

Volumetric Flask, DAkKS calibrated, for Function Check of the Titrette® Bottle-Top Burette

Volumetric flask:

BLAUBRAND® – USP, class A, DAkKS calibrated – nominal volume 10 ml (Cat. No. DAKKS36943), nominal volume 25 ml (Cat. No. DAKKS36947), nominal volume 50 ml (Cat. No. DAKKS36948).

Cleaning:

Fill completely the volumetric flasks with a 3% Mucaso® solution (ca. 2.5 ml Mucaso® per 100 ml water) and let it soak stand for 1 day before rinsing it vigorously with tap water 10 times and 5 times with deionized water.

On the last rinse with deionized water, hold the volumetric flask vertically and check whether the water is draining off without leaving drops at the wall.

The volumetric flask is clean when the water leaves no drops on the inside surface of the flask neck when it runs out.

The cleaning procedure must be repeated if any drops of water remain on the wall.

Drying:

Place the volumetric flask upside-down in a drying rack and let it to dry overnight.

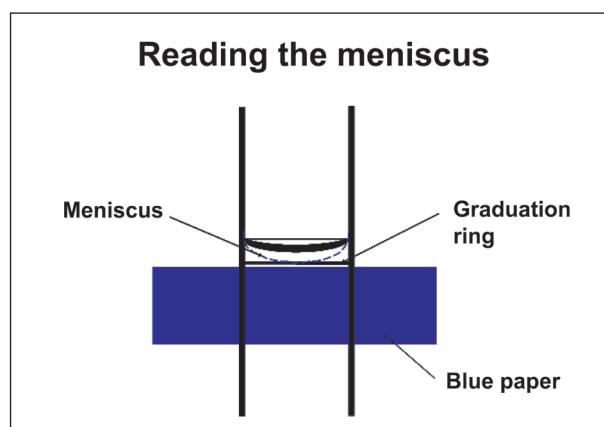
Function Check of the Titrette® Bottle-Top Burette:

Position the volumetric flask at eye-level such that the graduation ring can be easily read and adjust the burette titrating tube such that its tip ends just above the graduation ring of the volumetric flask.

Fill up the burette, release 3 drops of fluid into a separate container, wipe off the tube and set the burette to zero.

Then fill the test volumetric flask up to the graduation ring by turning the hand wheels continuously until it nears the desired volume. Finally, adjust the meniscus drop-by-drop and inspect its correct position relative to the graduation ring using a piece of dark paper.

A volumetric flask free of grease and an accurately set meniscus are crucial for correct test results. The lowest point of the meniscus should barely touch the graduation ring.



Result:

Compare the value displayed on the burette to the exact volume listed on the DAkKS calibration certificate (German Calibration Service). The burette is working properly if the difference between the volume in the volumetric flask and the volume displayed by the burette lies within the operational error limit (double error limit) of the burette.

Example:

- Titrette® bottle-top burette, volume 50 ml, ($R \leq \pm 0.06 \%$, $VK \leq 0.02 \%$).
The formula $FG = R + 2 VK$ gives an error limit of $FG = \pm 0.05$ ml; (operational error limit = ± 0.10 ml)
- Volumetric flask, volume per DAkKS calibration certificate = 49.970 ml
- Reading value displayed on the burette after volumetric flask has been filled = 49.96 ml
- The difference between the volumetric flask and the reading value is 0.01 ml, therefore the burette is operating properly.

In case of error:

Repeat the experiment if the result is located outside of the operational error limit (double error limit). If, after the second attempt, this error limit is still exceeded it may be due to a defective instrument or to human error. We recommend looking for the cause of the error according to the troubleshooting procedure described in the instruction manual and cleaning carefully the burette. Please subsequently perform a gravimetric volume test as described in the SOP.

If this gravimetric volume test returns results that lie outside of the single error limit, please contact the manufacturer.

The burette may be faulty and may need to be sent for repair.

Instructions (SOP) for Testing the Titrette®

The Titrette® bottle-top burette operation test using the volumetric flasks calibrated by the DAkKS is not a substitute for regular calibration of volumetric instruments as described by the SOP.

The SOP can be downloaded at www.brand.de.

The SOP is a set of instructions for gravimetric volume testing.

The volume is calculated according to the simple formula:

$$V_{20} = (W_2 - W_1) \cdot Z$$

Please refer to the SOP for factor Z.

