With the Titrette® bottle-top burette, available in 10 ml, 25 ml, and 50 ml sizes, you can titrate quickly and reliably with highest precision, even in close quarters, with no power hookup needed – in the lab, in production, or in the field!

- **High accuracy**
  Precise titration within the error limits of Class A

- **Smooth, low-force operation**
  For sensitive, drop-wise titration

- **Compact design**
  Light and stable

- **Easy handling**
  No switching between ‘fill’ and ‘titrate’

- **Simple maintenance**
  Cleaning and part replacement right in the lab

- **PC interface (optional)**
  Data transmission directly to the PC
A closer look

The control elements of the Titrette® bottle-top burette have an intuitive layout. Separate buttons for On/Off and Pause; Clear button allows user to reset the display and select functions. Easy-grip hand wheel action and smooth precision gears for fast or drop-wise titration make handling extremely simple and reliable.
Adjustment with Easy Calibration

With Easy Calibration technology, you can easily make calibration adjustments of the instrument 'at the push of a button'. No tools needed! An adjustment may be necessary if the instrument has been in use for a longer period or if parts are replaced. To show that an adjustment has been carried out, a small 'CAL' icon will be shown in the upper portion of the display.

Save power with Auto Power Off

The instrument switches off automatically after longer periods of inactivity. The current display value is stored, and returned to the display after the power is switched on again manually. Under 'APO' (Auto Power Off), you can set the time until automatic power-off from 1 to 30 minutes.

Calibration schedule

To save a date for the next calibration, simply store it under 'GLP'. The date can be called up each time the instrument is turned on. Hold the on/off button down for a little longer, and the letters 'GLP', along with the month and year of the calibration date, are shown.

Changing decimal place settings

For use as a micro-burette, you can switch the titrated volume display from 2 to 3 decimal places under 'dP' (decimal point). Above 20.00 ml, the display automatically switches to 2 decimal places.

Four additional helpful electronic functions make your work easier.

Hold down the CLEAR button to select the desired function:
Easy Handling

With the Titrette® bottle-top burette, you can titrate drop-wise with great sensitivity. No switching needed between filling and titrating! The instrument is light-weight, compact, and can be dismantled for cleaning and maintenance in the lab. Easy handling!

Drop by drop!
The large, easy-grip hand wheels are conveniently easy to turn. With the optimized gear ratio, you can fill the device quickly and titrate drop-wise with great sensitivity. The drop size for the 10 ml instrument is approx. 20 µl, and for the 25 and 50 ml instruments approx. 30 µl.

Class A precision!
The Titrette® bottle-top burette has an innovative new measuring system which matches the Class A accuracy of glass burettes and, if needed, can offer the precision of 3 decimal places below 20 ml. This is an important feature for users who need to work within the Class A error limits of glass burettes according to DIN EN ISO 385 (e.g., in pharmaceutical work).

No switching needed!
To change between filling and titration, no switching is needed. The instrument automatically detects whether you are filling or titrating by the direction of hand wheel rotation greatly reducing the risk of handling errors. Pressing the Pause button allows you to interrupt the titration if priming was incomplete. Simply push the button again to resume titration.
Light-weight and compact!
All components move within the housing, reducing headroom requirements. The compact and lightweight design ensures good stability. The titrating tube can be adjusted horizontally and vertically. This provides flexibility when positioning the instrument, e.g., when using a magnetic stirrer or different bottle sizes.

User serviceable!
We have designed the instrument to be disassembled quickly and easily – in a matter of minutes – for cleaning, to replace the piston/cylinder, or to replace the batteries. Now you can carry out maintenance conveniently and easily in the lab, and in a few minutes the instrument is ready to go again!

Light protection!
For protection of light-sensitive media, you can replace the clear inspection windows with the amber colored windows (included). It’s quick and easy, because the windows just clip into place.
Comparison of error limits

* Error limits related to the nominal capacity (= maximum volume) indicated on the instrument, obtained when instrument and distilled water are equilibrated at ambient temperature (20 °C/68 °F) and with smooth operation.

** Error limit: \( EL = A + 2CV \), according to DIN EN ISO 8655-6 Annex B

\( A = \) accuracy, \( CV = \) coefficient of variation, \( EL = \) error limit

<table>
<thead>
<tr>
<th>Volume ml</th>
<th>Partial volume, ml</th>
<th>( A^\ast ) ≤ % µl</th>
<th>( CV^\ast ) ≤ % µl</th>
<th>( A^\ast ) ≤ % µl</th>
<th>( CV^\ast ) ≤ % µl</th>
<th>( EL^\ast ) ± µl</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>10</td>
<td>0.10</td>
<td>0.05</td>
<td>0.3</td>
<td>0.2</td>
<td>20</td>
</tr>
<tr>
<td>5</td>
<td>10</td>
<td>0.20</td>
<td>0.10</td>
<td>0.6</td>
<td>0.2</td>
<td>20</td>
</tr>
<tr>
<td>1</td>
<td>10</td>
<td>1.00</td>
<td>0.50</td>
<td>3</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>25</td>
<td>25</td>
<td>0.07</td>
<td>0.25</td>
<td>0.2</td>
<td>1</td>
<td>30</td>
</tr>
<tr>
<td>12.5</td>
<td>18</td>
<td>0.14</td>
<td>0.05</td>
<td>0.4</td>
<td>0.2</td>
<td>30</td>
</tr>
<tr>
<td>2.5</td>
<td>18</td>
<td>0.70</td>
<td>0.25</td>
<td>2</td>
<td>1</td>
<td>30</td>
</tr>
<tr>
<td>50</td>
<td>50</td>
<td>0.06</td>
<td>0.02</td>
<td>0.2</td>
<td>0.1</td>
<td>50</td>
</tr>
<tr>
<td>25</td>
<td>30</td>
<td>0.12</td>
<td>0.04</td>
<td>0.4</td>
<td>0.2</td>
<td>50</td>
</tr>
<tr>
<td>5</td>
<td>30</td>
<td>0.60</td>
<td>0.20</td>
<td>2</td>
<td>1</td>
<td>50</td>
</tr>
</tbody>
</table>

The titration volume is displayed in steps of 1 µl at instruments with 10 ml and 25 ml size and in steps of 2 µl for 50 ml size instruments. For titration volumes above 20 ml the display will automatically switch to steps of 10 µl.

Note:
If you need an official certification which confirms the error limits that are much stricter than those of DIN EN ISO 8655-3, we recommend a calibration certificate from an accredited calibration laboratory (e.g., the DAkkS laboratory at BRAND).

Material and reagents

The instrument can be used for the following titration media (maximum concentration 1 mol/l):

- Acetic acid
- Alcoholic potassium hydroxide solution
- Ammonium iron (II) sulfate solution
- Ammonium thiocyanate solution
- Barium chloride solution
- Bromide bromate solution
- Cerium (IV) sulfate solution
- EDTA solution
- Hydrochloric acid
- Hydrochloric acid in Acetone
- Iodide iodate solution*
- Iodine solution*
- Iron (II) sulfate solution
- Nitric acid
- Oxalic acid solution
- Perchloric acid
- Perchloric acid in glacial acetic acid
- Potassium bromate solution
- Potassium bromide bromate solution
- Potassium dichromate solution
- Potassium hydroxide solution
- Potassium iodate solution
- Potassium permanganate solution*
- Potassium thiocyanate solution
- Silver nitrate solution*
- Sodium arsenite solution
- Sodium carbonate solution
- Sodium chloride solution
- Sodium hydroxide solution
- Sodium nitrite solution
- Sodium thiocyanate solution
- Sulfuric acid
- Tetra-n-butylammonium hydroxide solution
- Triethanolamine in Acetone*
- Zinc sulfate solution

* Use light shield inspection window

When the instrument is properly handled, dispensed liquid will only come into contact with the following chemically resistant materials: borosilicate glass, \( \text{Al}_2\text{O}_3 \), ETFE, PFA, FEP, PTFE, platinum-iridium; PP (screw cap).

Limitations of use

Chlorinated and fluorinated hydrocarbons or chemical combinations which form deposits may make the piston difficult to move or may cause jamming.

Compatibility of the instrument for a special application (e.g., trace material analysis) must be checked by the user. For additional information, please contact the manufacturer.

The instrument is not autoclavable!

Operating limits

This instrument is designed for titrating liquids, observing the following physical limits:
- +15 °C to +40 °C (59 °F to 104 °F) of instrument and reagent
- Vapor pressure up to 500 mbar
- Viscosity up to 500 mm²/s
- Altitude: maximum 3000 m above sea level
- Relative humidity: 20% to 90%
**Titrette®**

**Items supplied:**

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**Note:**
When ordering instruments with DAkkS calibration certificates, the prefix 'DAkkS' must be added to the order number, e.g., DAkkS 4760 161.

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**Volume Standard with RS 232 interface**

<table>
<thead>
<tr>
<th>Volume</th>
<th>Cat. No.</th>
<th>Cat. No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 ml</td>
<td>NEW! 4760 141</td>
<td>4760 241</td>
</tr>
<tr>
<td>25 ml</td>
<td>4760 151</td>
<td>4760 251</td>
</tr>
<tr>
<td>50 ml</td>
<td>4760 161</td>
<td>4760 261</td>
</tr>
</tbody>
</table>

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**Storage conditions**

Store the instrument and accessories at dry conditions.
Storage temperature: -20 °C to +50 °C
Relative air humidity: 5% to 95%

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**PC interface (optional)**

The instrument is available with an optional RS 232 communications interface.

Advantages compared to the standard configuration:

- The titration results are automatically transmitted to the PC by double-clicking on the CLEAR key. This eliminates transcription errors while recording primary data, and complies with an important requirement of GLP.
- With each data transfer, the burette sends the titrated volume, the serial number of the instrument, the nominal volume and the adjustment value, as well as the next scheduled calibration date. Thus, all raw data is collected and displayed together with actual date/time stamp from the PC.

The transmitted data is recognized as keyboard inputs by the PC. This universal input format ensures that the instrument is compatible with all PC applications that accept keyboard inputs.

To connect the instrument to a USB interface, simply use a standard USB/RS 232 adapter.

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*Additionally included:
2 m interface cable (Sub-D plug connector, 9-pin), one CD (driver software and open RS232 communication protocol). The CD also includes an example application in XLS-file format, as well as a special operating manual.*
### Accessories · Spare parts

**Titrette® and BRAND® are trademarks of BRAND GMBH + CO KG, Germany.**

Our technical literature is intended to inform and advise our customers. However, the validity of general empirical values, and of results obtained under test conditions, for specific applications depends on many factors beyond our control. Please appreciate, therefore, that no claims can be derived from our advice. The user is responsible for checking the appropriateness of the product for any particular application.

Subject to technical modification without notice. Errors excepted.

For laboratory bottles, and an assortment of adapters, please visit www.brand.de.

<table>
<thead>
<tr>
<th><strong>Titrating tube</strong></th>
<th><strong>Telescopig filling tube</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>with screw cap and integrated discharge and recirculation valve. Pack of 1.</td>
<td>FEP. Pack of 1.</td>
</tr>
<tr>
<td>for volume Cat. No.</td>
<td></td>
</tr>
<tr>
<td>ml</td>
<td>170 - 330 mm</td>
</tr>
<tr>
<td>10</td>
<td>7075 25</td>
</tr>
<tr>
<td>25 + 50</td>
<td>7075 29*</td>
</tr>
</tbody>
</table>

* Manufactured from Jan. 2012 onwards (serial number 01K)

<table>
<thead>
<tr>
<th><strong>Filling valve</strong></th>
<th><strong>Inspection window</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>with olive-shaped nozzle and sealing ring. Pack of 1.</td>
<td>1 set colorless and 1 set amber colored (light shield).</td>
</tr>
<tr>
<td>Cat. No.</td>
<td>6636</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Piston</strong></th>
<th><strong>Dispensing cylinder with valve block</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>for volume Cat. No.</td>
<td>for volume Cat. No.</td>
</tr>
<tr>
<td>ml</td>
<td>10</td>
</tr>
<tr>
<td>25</td>
<td>7075 31</td>
</tr>
<tr>
<td>50</td>
<td>7075 30</td>
</tr>
</tbody>
</table>

* Manufactured from Jan. 2012 onwards (serial number 01K)

<table>
<thead>
<tr>
<th><strong>Bottle Stand</strong></th>
<th><strong>Drying tube</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Cat. No.</td>
<td>7042 75</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Cat. No.</strong></th>
<th><strong>ml</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>7079 29*</td>
<td>25</td>
</tr>
<tr>
<td>7079 30*</td>
<td>50</td>
</tr>
</tbody>
</table>

* Manufactured from Jan. 2012 onwards (serial number 01K)