

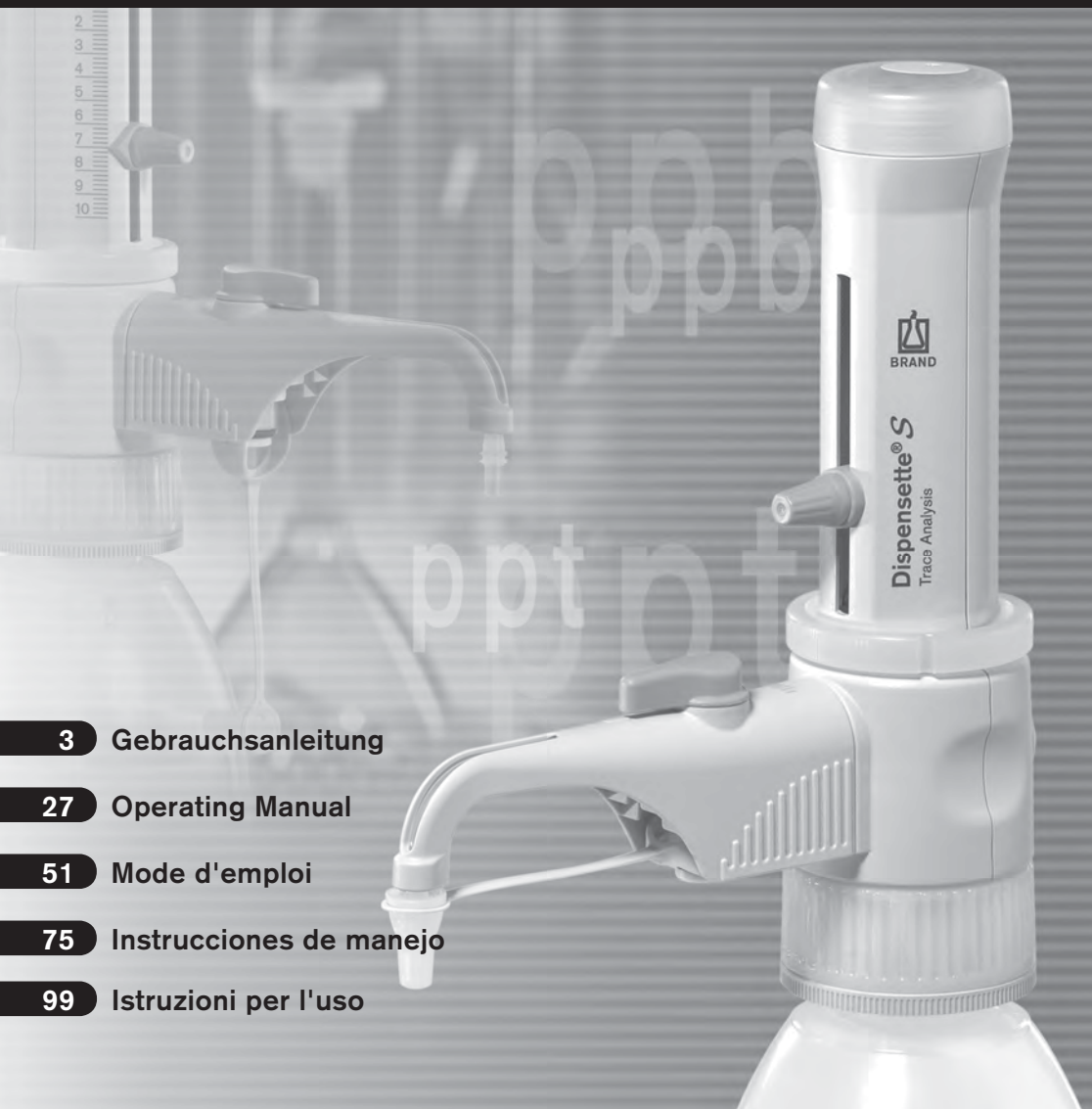
Liquid Handling · Easy Handling!



Dispensette® S

Trace Analysis

F I R S T C L A S S · B R A N D



3 Gebrauchsanleitung

27 Operating Manual

51 Mode d'emploi

75 Instrucciones de manejo

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Safety Instructions

This instrument may sometimes be used with hazardous materials, operations, and equipment. It is beyond the scope of this manual to address all of the potential safety risks associated with its use in such applications. It is the responsibility of the user of this instrument to consult and establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

Please read the following carefully!

1. Every user must read and understand this operating manual before operation.
2. Follow general instructions for hazard prevention and safety instructions; e.g., wear protective clothing, eye protection and gloves.
3. Observe all specifications provided by reagent manufacturers.
4. When dispensing inflammable media, make sure to avoid the buildup of static charge, e.g., do not dispense into plastic vessels; do not wipe instruments with a dry cloth.
5. Use the instrument only for dispensing liquids, with strict regard to the defined limitations of use and operating limitations. Observe operating exclusions (see page 29)! If in doubt, contact the manufacturer or supplier.
6. Always use the instrument in such a way that neither the user nor any other person is endangered. When dispensing, the discharge tube must always point away from you or any other person. Avoid splashes. Only use suitable vessels.
7. Never press down the piston when the discharge tube closure is attached.
8. Never remove the discharge tube while the dispensing cylinder is filled.
9. Reagents can accumulate in the screw cap of the discharge tube. Thus, it should be cleaned regularly.
10. For small bottles, and when using the flexible discharge tube, use a bottle stand to prevent tipping over.
11. Never carry the mounted instrument by the cylinder sleeve or the valve block. Breakage or loosening of the cylinder may lead to personal injury from chemicals (see page 33, Fig. 4).
12. Never use force on the instrument. Use smooth gentle movements to operate the piston upwards and downwards.
13. Use only original manufacturer's accessories and spare parts. Do not attempt to make any technical alterations. Do not dismantle the instrument any further than described in the operating manual!
14. Always check the instrument for visible damage before use. If there is a sign of a potential malfunction (e.g., piston difficult to move, sticking valves or leakage), immediately stop dispensing. Consult the 'Troubleshooting' section of this manual (see page 47), and contact the manufacturer if needed.
15. The screw coupling between the valve block and the dispensing cylinder must always be firmly tightened.
16. The instrument should not be autoclaved.

Functions and Limitations of Use

The bottle-top dispenser Dispensette® S Trace Analysis is designed for dispensing liquids directly from the reservoir bottle. The instruments are, according to the requirements of the DIN EN ISO 8655-5, DE-M marking and optionally equipped with recirculation valve.

When the instrument is properly handled, dispensed liquid will only come into contact with the following chemically resistant materials: various fluoroplastics (ETFE, FEP, PFA, PCTFE, PTFE), Al₂O₃ sapphire and platinum-iridium or tantalum, depending on the design (see label on the dispensing tube and recirculation valve).

Limitations of Use

This instrument is designed for dispensing liquids, observing the following physical limits:

- use temperature from +15 °C to +40 °C (from 59 °F to 104 °F) of instrument and reagent
- vapor pressure up to max. 600 mbar. Aspirate slowly above 300 mbar, in order to prevent the liquid from boiling.
- kinematic viscosity up to 500 mm²/s
(dynamic viscosity [mPas] = kinematic viscosity [mm²/s] x density [g/cm³])
- Density: up to 3.8 g/cm³

Operating Limitations

Liquids, which form deposits may accelerate wear on the piston seal, and make the piston difficult to move or may cause jamming (e.g., crystallizing solutions or concentrated alkaline solutions). If the piston becomes difficult to move, the instrument should be cleaned immediately (see page 41).

The Dispensette® S Trace Analysis is designed for general laboratory applications and complies with the relevant standards, e.g. DIN EN ISO 8655. Compatibility of the instrument for a specific application (e.g., trace material analysis, food sector etc.) must be checked by the user. Approvals for specific applications, e.g. for production and administration of food, pharmaceuticals and cosmetics are not available.

Operating Exclusions

Dispensette® S Trace Analysis must never be used with:

- liquids attacking Al₂O₃ sapphire or fluoroplastics like ETFE, FEP, PFA, PCTFA and PTFE (e.g., dissolved sodium azide*)
- liquids which are decomposed catalytically by platinum-iridium (e.g., H₂O₂) or tantalum. Depending on the construction of the instrument.
- organic solvents
- trifluoroacetic acid
- explosive liquids (e.g., carbon disulfide)
- suspensions (e.g., of charcoal) as solid particles may clog or damage the instrument

* Dissolved sodium azide permitted up to a concentration of max. 0.1%.

Functions and Limitations of Use

Storage Conditions

Store the instrument and accessories only in cleaned condition in a cool and dry place.

Storage temperature: from -20 °C to +50 °C
(from -4 °F to 122 °F).

Recommended Application Range

Select valves with platinum-iridium or tantalum valve springs, based on the intended application. The instrument can be used for the following dispensing media:

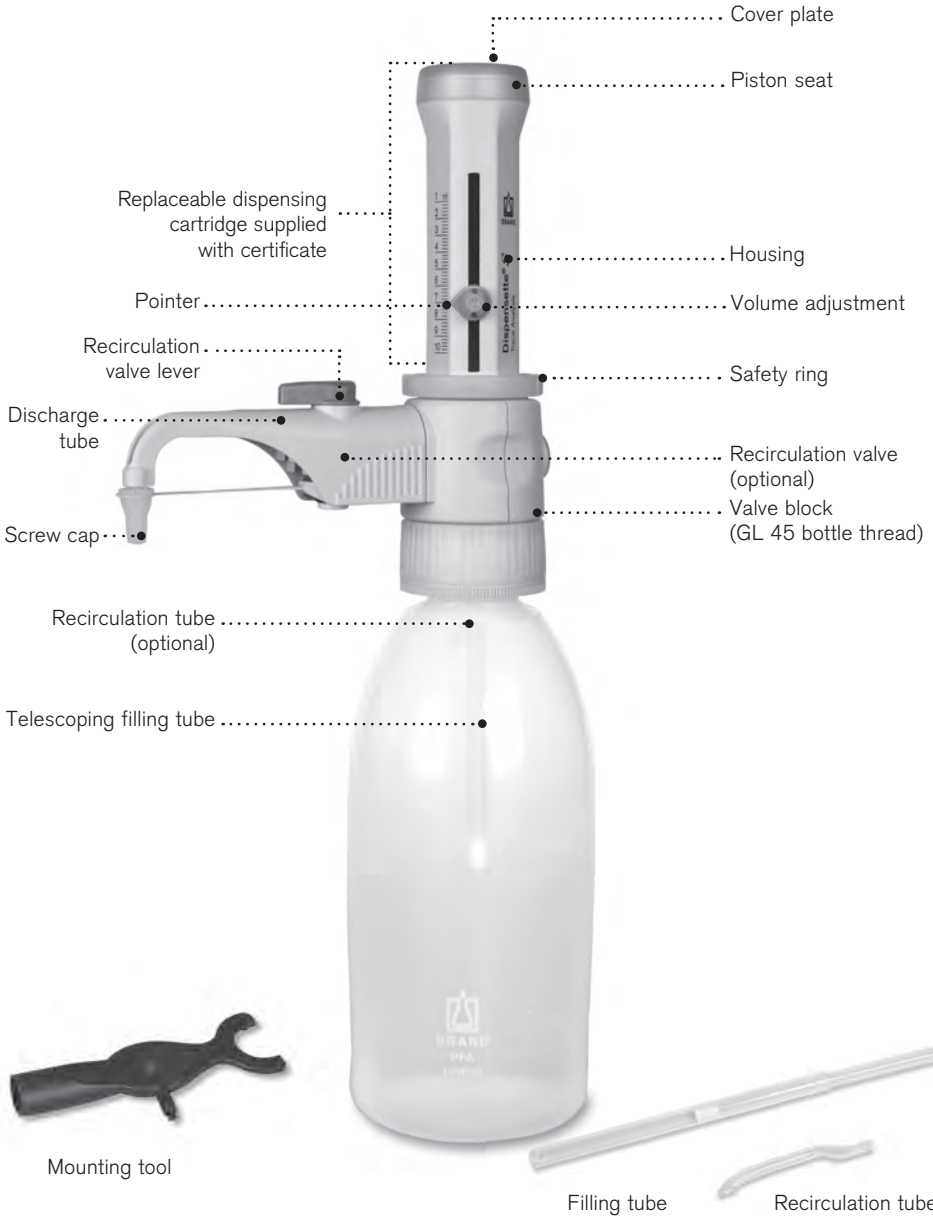
Dispensing medium	Valve springs: Pt-Ir	Valve springs: Ta
Acetic acid	+	+
Ammonia solution	+	+
Bromine	+	+
Hydrochloric acid	+	+
Hydrofluoric acid*	+	-
Hydrogen peroxide	-	+
Nitric acid	+	+
Perchloric acid	+	+
Phosphoric acid	+	+
Sodium hydroxide, 30 %	+	-
Sulfuric acid	+	+
Water	+	+

+ suitable - not suitable

* Note:

Hydrofluoric acid reacts slightly with sapphire resulting in mildly elevated aluminum values. To reduce these values we recommend discarding 3-5 dispensings of 2 ml each before performing the analysis. Compounds containing fluorine, such as NaF, attack tantalum.

The above recommendations reflect testing completed prior to publication. Always follow instructions in the operating manual of the instrument as well as the reagent manufacturer's specifications. Should you require information on chemicals not listed, please feel free to contact BRAND. Status as of: 0915/2



Attention

The safety ring between the valve block and the dispensing cylinder must always be firmly tightened.

First Steps

Is everything in the package?

Confirm that your package includes:

Bottle-top dispenser Dispensette® S Trace Analysis, telescoping filling tube, discharge tube or discharge tube with recirculation valve, telescoping filling tube, recirculation tube (included only in recirculation valve models), mounting tool, three bottle adapters, a performance certificate and this operating manual.

Nominal volume, ml	Adapters for bottle thread	Filling tube Length, mm
10	GL 28/ S 28 (ETFE), GL 32 (ETFE), S 40 (PTFE)	125-240

Assembly

Warning:

Wear protective clothing, eye protection and gloves! Follow all safety instructions and observe limitations of use and operating limitations (page 28-30).

- 1. Check safety ring** Make sure that the safety ring is firmly tightened (Fig. 1).



Note:

The discharge valve and discharge tubes are labeled with the spring material. The label 'Pt-Ir' or 'Ta' must match for each device. The spring material is selected based on the application ('Recommended application'; see table on page 30).

Before use in trace analysis, the instrument must be thoroughly cleaned first. See 'Cleaning for trace analysis' (see page 42).

- 2. Mounting the filling tube/ recirculation tube**

Adjust the length of the telescoping filling tube to the bottle height and attach it. Center and attach the filling tube carefully to avoid damaging the nozzle. If a discharge tube with a recirculation valve is used, the optional recirculation tube must also be installed. Insert it with the opening pointing outward (Fig. 2).



3. Mounting and aligning the instrument on a bottle

Screw the instrument (GL 45 thread) onto the reagent bottle and then align the discharge tube with the bottle label by turning the valve block (Fig. 3). To prevent tipping over use a bottle stand for small bottles (page 46).

Note:

For bottles with other thread sizes, select a suitable adapter. The adapters supplied with the instrument are made of ETFE and PTFE.



4. Transporting the instrument

When mounted to a reagent bottle, always carry the instrument as shown in the figure (Fig. 4)!

Warning:

Always wear protective gloves when touching the instrument or the bottle, especially when using dangerous liquids (e.g. HF).



Warning!

Wear protective clothing, eye protection and gloves! Never press down the piston when the screw cap is screwed on! Avoid splashing the reagent! Liquid may accumulate in the screw cap. To avoid splashes dispense slowly. Follow all safety instructions and observe limitations of use and operating limitations (page 29).

Note:

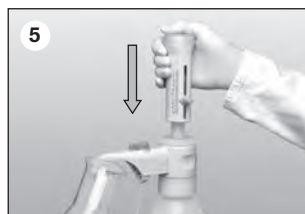
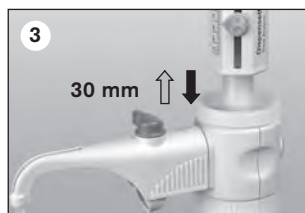
Before using the instrument for the first time, ensure it is rinsed carefully and discard the first few samples dispensed. Avoid splashes. Depending on application requirements, cleaning for trace analysis should be carried out (page 42).

Instruments with recirculation valve:

1. Open the screw cap of the dispensing tube (Fig. 1). For safety, hold the discharge tube orifice on the inner wall of a suitable receiving vessel.
2. Set valve to 'Recirculate' (Fig. 2).
3. For priming gently pull up the piston approx. 30 mm and push it down rapidly until the lower stop. Repeat this procedure at least 5 times (Fig. 3).
4. Turn valve to 'Dispense' (Fig. 4).
5. To avoid splashes when priming hold the discharge tube on the inner wall of a suitable receiving vessel and dispense liquid to prime the discharge tube until it is bubble-free. Wipe away any remaining drops from the discharge tube (Fig. 5).

Instruments without recirculation valve:

1. Open the screw cap of the discharge tube (see 'Instrument with recirculation valve', Fig. 1). To avoid splashes, hold discharge tube orifice on the inner wall of a suitable receiving vessel.
2. For priming pull up the piston approx. 30 mm and push it down rapidly until the lower stop. Repeat this procedure approximately 5 times until the discharge tube is bubble-free (Fig. 6).



1. Setting the volume

Loosen the volume selector thumb screw three-fourths turn (1), set the pointer to the desired volume (2) and then retighten the volume thumb screw (3).



2. Dispensing

Warning!

Wear protective clothing, eye protection and gloves! Never press down the piston when the screw cap is screwed on! Avoid splashing the reagent! Liquid may accumulate in the screw cap. To avoid splashes dispense slowly. Follow all safety instructions and observe limitations of use and operating limitations (page 29).

- Remove screw cap from the discharge tube (Fig. 1).
- When using instruments equipped with the recirculation valve, turn the valve to 'Dispense'.
- Hold the discharge tube orifice on the inner wall of a suitable receiving vessel.
- Gently lift the piston until the upper stop and then depress piston slowly and steadily with minimal force until the lower stop (Fig. 2).
- Wipe off the discharge tube against the inner wall of the receiving vessel.
- Reattach screw cap to discharge tube (Fig. 3).



Caution:

After use, always leave the piston in the down position (parking position). Only when cleaning for trace analysis should the instrument be left in the filled state, i.e. with the piston at the upper stop.

Warning!

The instrument must be clearly labeled when leaving the cylinder in a filled state.

Accessories

The following optional original accessories are available for the bottle-top dispenser Dispensette® S Trace Analysis:

Flexible discharge tube

For serial dispensing, except for HF, the flexible discharge tube can be used ('Accessories', page 45). The specified accuracy and coefficient of variation of the instrument are only obtained for volumes > 2 ml and by gently approaching the upper and lower stops. The coil of the tubing can be stretched to a length of the 800 mm max. Before use ensure, that the entire coil lies in regular loops and is not twisted.

Assembly

1. If the Dispensette® S Trace Analysis was already in use, the instrument must be cleaned before mounting the flexible discharge tube (page 45).
2. Instruments with a recirculating valve should be set to 'Recirculate', and the valve lever pulled upwards to remove it.
3. Slide the discharge tube housing all the way up. Then pull discharge tube forward with gentle up and down motions (Fig. 1).
4. Push the flexible discharge tube holder from the bottom of the valve block (Fig. 2) and tighten it. For this, Dispensette® S Trace Analysis must not be mounted on the bottle. Install the receiver tube.
5. Press the cock plug of the recirculation valve downwards.
6. Slide the flexible discharge tube housing into the valve block up to the stop (Fig. 3).
7. Slide the discharge tube housing all the way down (Fig. 4).
8. Attach the valve lever that fits the discharge valve and press it in firmly. Note the color coding and marking.

Note:

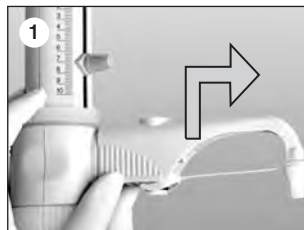
Always follow the instructions for valve marking on page 32!

Use a bottle stand ('Accessories', page 45).

Warning:

The flexible discharge tubing must not be used with HF (hydrofluoric acid).

There should be no visible damage to the discharge tube (e.g. kinks or the like). Each time you are going to use the tubing, examine it carefully! To dispense aggressive liquids, you should take safety measures in addition to the normal precautions. We recommend use of a protective shield. The bottle must be supported using a bottle stand. To help avoid reagent splashing from the tube, always grip the tube firmly by the handle and replace into the holder after use. For cleaning rinse the tube carefully. Do not dismantle!



Drying tube

Use of a drying tube, filled with a suitable absorbent (purchased separately), might be necessary for moisture- and CO₂- sensitive media ('Accessories', page 46).

Assembly

1. Use a coin to unscrew the air vent cap (Fig. 1).
2. Screw the filled drying tube in (Fig. 2).
3. Place the PTFE sealing ring on the bottle thread (Fig. 3) and screw the instrument onto the bottle.

Note:

If necessary, seal the threads of the drying tube, the bottle and/or the bottle adapter with PTFE tape.

**Sealing ring for valve block**

For highly volatile media we recommend to seal the connection from valve block to bottle with the PTFE sealing ring and PTFE tape (see 'Accessories', page 46).

Assembly

Place the PTFE sealing ring on the bottle thread or the screwed-on adapter (Fig. 3) and screw the instrument onto the bottle.

Bottle stand

For small bottles, and when using the flexible discharge tube, use a bottle stand to prevent tipping over (see 'Accessories', page 46).

Assembly

Position the mounting plate at the corresponding height, then firmly secure the device in the holder as shown until it clicks audibly. Then lock the holder into place with the screw.



Error limits

Error limits according DIN EN ISO 8655-5 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). Testing takes place according DIN EN ISO 8655-6 with a completely filled instrument and with uniform and smooth dispensing.

DE-M

 20 °C
Ex

Error limits Dispensette® S Trace Analysis

Nominal volume ml	A* ≤ ±		CV* ≤	
	%	µl	%	µl
10	0.5	50	0.1	10

* A = Accuracy, CV = Coefficient of Variation

Partial volume

The percentage values for A and CV are relative to the nominal volume (V_N) and must be converted for partial volumes (V_T).

$$A_T = \frac{V_N}{V_T} \cdot A_N$$

e.g.	volume	A* ≤ ±		CV* ≤	
		%	µl	%	µl
V_N	10.0	0.5	50	0.1	10
$V_T = 50\% N$	5.0	1.0	50	0.2	10
$V_T = 10\% N$	1.0	5.0	50	1.0	10

* A = Accuracy, CV = Coefficient of Variation

Note:

The error limits are well within the limits of DIN EN ISO 8655-5. The maximum error limit for a single measurement can be calculated $EL = A + 2 CV$ (for volume 10 ml: $50 \mu\text{l} + 2 \times 10 \mu\text{l} = 70 \mu\text{l}$).

Checking the Volume (Calibration)

Depending on use, we recommend that gravimetric testing of the instrument be carried out every 3-12 months. This time frame should be adjusted to correspond with individual requirements. The complete testing procedure (SOP) can be downloaded at www.brand.de. In addition, you can also carry out function checks at shorter intervals, e.g. dispensing the nominal volume into a volumetric test flask (volumetric flask with 3 marks, DAkkS calibrated). For GLP- and ISO-compliant evaluations and documentation, we recommend the EASYCAL™ calibration software from BRAND. A demo version can be downloaded from www.brand.de.

Gravimetric volume testing according to DIN EN ISO 8655-6 (for measurement conditions, see 'Error Limits', page 38) is performed as follows:

1. Preparation of the instrument

Clean the instrument ('Cleaning', page 41), fill it with distilled H₂O and then prime it carefully.

2. Check the volume

- 10 dispensing operations with distilled H₂O in 3 Volume ranges (100 %, 50 %, 10 %) are recommended.
- For filling pull up the piston gently until the upper stop of the volume set.
- For discharge depress piston slowly and steadily without force until the lower stop.
- Wipe off the tip of discharge tube.
- Weigh the dispensed quantity on an analytical balance. Please follow the operating manual of the balance manufacturer.
- Calculate the dispensed volume. The Z factor takes account of the temperature and air buoyancy.

3. Calculations

Mean volume

x_i = results of weighings
 n = number of weighings

Z = correction factor
(e. g., 1.0029 µl/mg at 20 °C, 1013 hPa)

$$\text{Mean value } \bar{x} = \frac{\sum x_i}{n}$$

$$\text{Mean volume } \bar{V} = \bar{x} \cdot Z$$

Accuracy

$$A\% = \frac{\bar{V} - V_0}{V_0} \cdot 100$$

V_0 = nominal volume

Standard deviation

$$s = Z \cdot \sqrt{\frac{\sum (x_i - \bar{x})^2}{n - 1}}$$

Coefficient of variation

$$CV\% = \frac{100 s}{\bar{V}}$$

Adjustment

After a long period of use an adjustment of the instrument might be necessary.

- Calibrate for example at nominal volume (see page 39).
- Calculate mean volume (result of weighing) (see page 39).
- Adjust the instrument (to the calculated mean volume).
- After adjusting, recalibrate for control.

1. Insert the pin of the mounting tool into the cover plate (Fig. 1), and break it off with a rotating motion (Fig. 2). Discard the adjustment cover.
2. Insert the pin of the mounting tool into the adjustment screw (Fig. 3) and rotate to the left in order to increase the dispensing volume, or rotate to the right to decrease the dispensing volume (e.g. for an actual value of 9.97 ml, rotate approx. 1/2 turn to the left).
3. The change in the adjustment is indicated by a red disk (Fig. 4).



Adjustment range

Max $\pm 60 \mu\text{l}$

One rotation corresponds to $\sim 80 \mu\text{l}$.

The instrument must be cleaned in the following situations to assure correct operation:

- before the first use
- immediately when the piston is difficult to move
- before changing the reagent
- prior to long term storage
- prior to dismantling the instrument
- prior to changing the valves
- regularly when using liquids which form deposits (e.g., crystallizing liquids)
- regularly when liquids accumulate in the screw cap

The instrument should **not** be autoclaved!

Warning!

Cylinder, valves, telescoping filling tube and discharge tube contain reagent. Point the valves and tube openings away from your body. Wear protective clothing, eye protection and appropriate hand protection.

Standard Cleaning

1. Screw the instrument onto an empty bottle and empty it completely by dispensing (Fig. 1). If the instrument is equipped with a recirculation valve, it must be emptied in both the "dispensing" and 'recirculating' settings.
2. Screw the instrument onto a bottle filled with a suitable cleaning agent (e.g. deionized water) and rinse the instrument several times by completely filling and emptying it.
3. If the instrument is equipped with a recirculation valve, after rinsing the instrument, it must also be rinsed in the 'recirculating' setting (Fig. 2).



Note:

'Cleaning for trace analysis' see page 42.

Cleaning for trace analysis

Before use in trace analysis, the instrument must first be thoroughly cleaned. Pure chemicals used for analytical purposes are used for this cleaning procedure. If contamination of the bottle contents must be avoided, use the instrument without the recirculation valve. If the instrument is used with the recirculation valve, it must be cleaned in both dispensing and recirculation modes (Fig. 1 and 2).

Good results have been obtained in practice with the following recommended cleaning procedures. They can be modified according to need.

1. Screw the instrument onto a bottle filled with **Acetone**, prime it and then fill it completely. Leave the piston at the upper stop and close the dispensing tube with the screw cap. After approx. 24 hours contact time, dispense twice, then completely empty the instrument and rinse it five times with pure water.
2. Screw the instrument onto a bottle filled with **20% hydrochloric acid**, prime it and then fill it completely. Leave the piston at the upper stop and close the dispensing tube with the screw cap.
3. After approx. 24 hours contact time, dispense twice, and then fill it up again completely.
4. Repeat step 3 twice more. After another approx. 24 hours contact time, completely empty the instrument and rinse it five times with pure water.
5. Repeat steps 2 to 4 with **30% nitric acid**.
6. Screw the instrument onto a bottle filled with the desired dispensing medium, prime it, and then fill it completely. Leave the piston at the upper stop and close the dispensing tube with the screw cap.
7. After approx. 24 hours contact time, dispense twice, and then fill it up again completely.
8. Repeat step 7 twice more. After another approx. 24 hours contact time, dispense twice and then leave the piston at the lower stop.



Note:

If the cleaning is not sufficient, repeat the cleaning procedure.

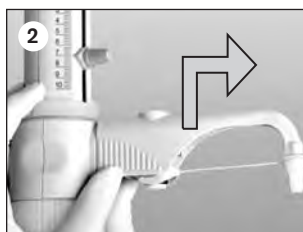
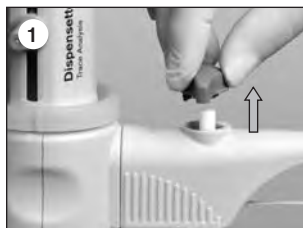
Replacement of discharge tube/ valves

Warning!

The valve, telescoping filling tube and dispensing tube are full of reagent! For this reason, always perform a standard cleaning before dismantling the instrument. The dispensing tube must not be disassembled! Follow the safety instructions (page 28)!

Replacing the discharge tube

1. Instruments with a recirculating valve should be set to 'Recirculate', and the valve lever pulled upwards to remove (Fig. 1).
2. Slide the discharge tube housing all the way up. Then pull the discharge tube forward with gentle up and down motions (Fig. 2).
3. Hold coupling piece of the new discharge tube and pull housing up. Push housing into the valve block until it meets the stop.
4. Slide the discharge tube housing all the way down.
5. For instruments with a recirculation valve, pull up the valve lever to the 'Recirculate' position, and press it in tightly (Fig. 3).



Replacing valves

Filling valve

1. Pull out the recirculation tube and the telescoping filling tube.
2. Use the mounting tool to unscrew the filling valve (Fig. 4).
3. Screw in the cleaned (e.g., in an ultrasonic bath) or new filling valve first by hand and then tighten it with the mounting tool.



Note:

If the instrument does not fill up, and if some elastic resistance is evident when the piston is pulled upward, then it is possible that the ball valve is merely stuck.

In this case, loosen the ball valve using light pressure, for example, with a 200 µl plastic pipette tip (Fig. 5).



Replacement of discharge tube/ valves

Replacing valves (cont.)

Discharge valve

1. After disassembling the discharge tube (see 'Replacing the discharge tube', page 43), use the mounting tool to unscrew the discharge valve (Fig. 1).
2. Screw in the new discharge valve first by hand, then tighten it securely with the mounting tool (the threads should no longer be visible).



Caution:

Always install the valve provided for the specific instrument types (see 'Ordering data', page 46). For the Dispensette® S Trace Analysis model, an identical filling valve is used, but different discharge valves. To distinguish between them, the discharge valves of the Dispensette® S Trace Analysis are marked 'Pt-Ir' or 'Ta'. Be sure that only the discharge valve specified for the Dispensette® S Trace Analysis with marking 'S' (sapphire) is used.

Dismantling instrument

Warning! The valve, telescoping filling tube, dispensing tube, and recirculation valve and recirculation tube if present, are full of reagent! For this reason, always perform a standard cleaning before dismantling the instrument. Follow the safety instructions (page 28)!

Note:

A function test must always be carried out after dismantling.

Replacing the dispensing cartridge

1. Completely unscrew the safety ring of the dispensing cartridge by hand and remove the dispensing cartridge.
2. Screw the new dispensing cartridge into the valve block and tighten the safety ring by hand.
3. Carry out a function check for leaks.

Note:

The dispensing cartridge has been calibrated at the factory. Thus, calibration after replacement can be omitted. Rinse the instrument thoroughly before use, and discard the first sample dispensed. Avoid splashes. Depending on the application requirements, cleaning for trace analysis is to be carried out (page 42). The dispensing unit must not be disassembled!



Dispensette® S Trace Analysis, Analog-adjustable

Capacity ml	Valve spring	Without recirculation valve Cat. No.	With recirculation valve Cat. No.
10	Platinum-iridium	4640 040	4640 041
10	Tantalum	4640 240	4640 241



Note:

Items supplied see page 32.

Accessories · Spare Parts

Bottle adapters ETFE/PTFE.

Outer thread	for bottle thread	Material	Cat. No.
GL 32	GL 25	ETFE	7043 75
GL 32	GL 28/ S* 28	ETFE	7043 78
GL 32	GL 30	ETFE	7043 80
GL 32	GL 45	ETFE	7043 95
GL 45	GL 32	ETFE	7043 98
GL 45	GL 38	ETFE	7043 99
GL 45	S* 40	PTFE	7043 91

* Buttress Thread



Discharge tubes

With and without recirculation valve. Nominal volume 10 ml. Screw cap ETFE. Marking of the discharge tubes with 'Pt-Ir' or 'Ta'. Pack of 1.

Valve spring	Length mm	Without recirculation valve Cat. No.	With recirculation valve Cat. No.
Pt-Ir	105	7080 22	7081 22
Ta	105	7080 24	7081 24



Flexible discharge tubing with recirculation valve

PTFE, coiled, length 800 mm, with safety handle. Pack of 1.

Nominal volume ml	Dispensing tube		Cat. No.
	outer-Ø mm	inner-Ø mm	
10	3	2	7081 32



Accessories · Spare Parts

Dispensette® S Trace Analysis discharge valve

PFA/sapphire. Valve spring: Valve marking 'Pt-Ir' or 'Ta'. Pack of 1.



For nominal volume ml	Valve spring	Cat. No.
10	Platin-Iridium	6732
10	Tantal	6733

Dispensing cartridge with safety ring

nominal volume 10 ml, calibrated, incl. quality certificate. Pack of 1.

Cat. No. 7080 35



Drying tube

Drying tube and seal, without drying agent. Pack of 1.

Cat. No. 7079 30



Filling valve

PFA/sapphire. Valve marking 'S'. Pack of 1.

Cat. No. 6739



Recirculation tube

Pack of 1.

Cat. No. 6747



Calibrating-, mount- ing-tool

Pack of 1.

Cat. No. 6748



Telescoping filling tubes

FEP. Adjusts to various bottle heights. Pack of 1.

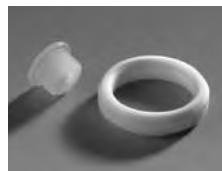


Nominal volume ml	Outer Ø mm	Length mm	Cat. No.
10	6	70-140	7082 10
		125-240	7082 12
		195-350	7082 14
		250-480	7082 16

Air vent cap for micro filter with Luer-cone

PP. Air vent cap and PTFE-sealing ring. Pack of 1 each.

Cat. No. 7044 95



Sealing ring for valve block

PTFE, for highly volatile reagents. Pack of 1.

Cat. No. 7044 86



Screw cap with fastener

ETFE. Pack of 1.

Cat. No. 7060 29



Bottle Stand

PP. Support rod 325 mm, Base plate 220 x 160 mm. Pack of 1.

Cat. No. 7042 75



Problem	Possible cause	Corrective action
Liquid is above the piston	Piston is leaking.	Perform a standard cleaning, replace the piston/cylinder assembly (see page 41-44).
Piston difficult to move	Formation of crystals, dirty	Stop dispensing immediately. Follow all cleaning instructions (page 41).
Filling not possible	Volume adjusted to minimum setting	Set to required volume (see page 35).
	Filling valve stuck	Clean the filling valve. If the valve is stuck use a 200 µl pipette tip to loosen it (see page 43). If necessary, replace the filling valve.
Dispensing not possible	Discharge valve stuck	Unscrew the discharge valve from the valve block, clean it, use a 200 µl plastic tip to loosen any ball valve that is stuck, replace the discharge valve if necessary (see page 43).
Discharge tube or discharge tube with recirculation valve cannot be mounted sufficiently	Discharge valve is not screwed in deeply enough	Tighten the discharge valve with the mounting tool until it meets the stop so that the threads are no longer visible.
Air bubbles in the instrument	Reagent with high vapor pressure has been drawn in too quickly	Draw in reagent slowly.
	Screw couplings loose	Tighten valve with the mounting tool
	The instrument has not been primed	Prime the instrument (see page 34).
	Filling tube is loose or damaged	Push the filling tube on firmly. If necessary, cut off approx. 1 cm of tube at the upper end and re-connect it or replace filling tube.
	Valves not firmly connected or damaged	Follow cleaning procedure (see page 41-43). Tighten the valves firmly using the mounting tool.
Dispensed volume is too low	Recirculation tube not connected	Connect recirculation tube (see page 32, Fig. 2).
	Filling tube is loose or damaged	Cleaning procedure (see page 41-42). Push the filling tube on firmly. If necessary, cut off approx. 1 cm of the tube at the upper end and re-connect it or replace filling tube.
	Filling valve is loose, contaminated, or damaged	Cleaning procedure (see page 41-42). Tighten the valves using the mounting tool. If necessary, replace filling valves.
Liquid leaking at the safety ring	Dispensing cartridge is loose, or the piston seal is damaged	Tighten the safety ring, and if necessary replace the dispensing cartridge
Leaking liquid between instrument and bottle	Recirculation tube not connected	Connect recirculation tube (see page 32, Fig. 2).
	Volatile reagent dispensed without sealing ring	Mount sealing ring ('Accessories', page 37).

Repairs · contact addresses

Return for repair

Caution! Transporting of hazardous materials without a permit is a violation of federal law.

- Clean and decontaminate the instrument carefully.
- It is essential always to include an exact description of the type of malfunction and the media used. If information regarding media used is missing, the instrument cannot be repaired.
- Shipment is at the risk and the cost of the sender.

Outside the U.S. and Canada:

- Complete the "Declaration on Absence of Health Hazards" and send the instrument to the manufacturer or supplier. Ask your supplier or manufacturer for the form. The form can also be downloaded from www.brand.de.

In the U.S. and Canada:

- Contact BrandTech Scientific, Inc. and obtain authorization for the return **before** sending your instrument for service.
- Return only cleaned and decontaminated instruments, with the Return Authorization Number prominently displayed on the outside of the package to the address provided with the Return Authorization Number.

ISO 9001 and GLP-guidelines require regular examinations of your volumetric instruments. We recommend checking the volume every 3-12 months. The interval depends on the specific requirements on the instrument. For instruments frequently used or in use with aggressive media, the interval should be shorter. The detailed testing instruction can be downloaded on www.brand.de or www.brandtech.com.

BRAND also offers you the possibility to have your instruments calibrated by the BRAND Calibration Service or the BRAND-owned DAkkS Calibration Service.

Just send in the instruments to be calibrated, accompanied by an indication of which kind of calibration you wish. Your instruments will be returned within a few days together with a test report (BRAND Calibration Service) or with a DAkkS Calibration Certificate. For further information, please contact your dealer or BRAND. Complete ordering information is available for download at www.brand.de (see Technical Documentation).

Warranty

We shall not be liable for the consequences of improper handling, use, servicing, operation or unauthorized repairs of the instrument or the consequences of normal wear and tear especially of wearing parts such as pistons, seals, valves and the breakage of glass as well as the failure to follow the instructions of the operating manual. We are not liable for damage resulting from any actions not described in the operating manual or if non-original spare parts or components have been used.

U.S. and Canada:

Information for warranty please see www.brandtech.com.



Disposal

For the disposal of instruments, please observe the relevant national disposal regulations.

Subject to technical modification without notice. Errors excepted.

