Liquid Handling · Easy Handling!

BRAND

seripettor®

FIRST CLASS · BRAND

Table of Contents

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 safety precautions provided by reagent manufacturers.
4. When dispensing flammable media, make provisions to avoid electrostatic charging, 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 30)! 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 dispense into 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 closure 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 pump assembly or the valve block (see page 34). Breakage or loosening of the cylinder may lead to personal injury from chemicals.
12. Never use force on the instrument. Use smooth gentle movements to operate the piston 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 is 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 48), and contact the manufacturer if needed.

Functions and Limitations of Use

The bottle-top dispenser seripettor® is designed for dispensing liquids directly from the reservoir bottle and is offered in two models: seripettor® and seripettor® *pro.*

When the instrument is correctly used, the dispensed liquid comes into contact with only the following chemically resistant materials:

seripettor®: PP, PE, EPDM

seripettor® *pro*: PP, PE, Borosilicate glass, Al_2O_3 ceramic, ETFE, PFA, FEP, PTFE, Pt-Ir

seripettor®

seripettor® *pro*

Limitations of Use

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

- +15 °C to +40 °C (59 °F to 104 °F) of instrument and reagent (seripettor®: agar culture media up to 60 °C)
- vapor pressure up to 500 mbar
- kinematic viscosity:
  2 ml instrument: 1000 mm^2/s
  10 ml instrument: 150 mm^2/s
  25 ml instrument: 75 mm^2/s
  (dynamic viscosity [mPas] = kinematic viscosity [mm^2/s] x density [g/cm^3])
- density up to 2.2 g/cm^3

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).

When dispensing inflammable media, make sure to avoid to buildup of static charge, e.g., do not dispense into plastic vessels; do not wipe instruments with a dry cloth.

The seripettor® is designed for general laboratory applications. 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 in the medicinal/pharmaceutical/foodstuff processing areas are not available.

Operating Exclusions

seripettor® never use with:

- liquids attacking PP, PE or EPDM
- non-polar solvents like hydrocarbons and halogenated hydrocarbons
- concentrated or oxidizing acids
- explosive liquids (e.g., carbon disulfide)

seripettor® *pro* never use with:

- liquids attacking PP, PE, Al_2O_3 ceramic, ETFE, FEP, PFA and PTFE (e.g., dissolved sodium azide*)
- liquids attacking borosilicate glass (e.g., hydrofluoric acid)
- liquids which are decomposed catalytically by platinum-iridium (e.g., H_2O_2)
- non-polar solvents like hydrocarbons and halogenated hydrocarbons
- concentrated or oxidizing acids (excluding HCl)
- explosive liquids (e.g., carbon disulfide)
- suspensions as solid particles may clog or damage the instrument (e.g., of charcoal)

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

Storage Conditions

Store the instrument and accessories only in cleaned condition in a cool and dry place.
Storage temperature: -20 °C to +50 °C (-4° F to 122° F).

Recommended Application Range

seripettor®

- **Aqueous solutions**
  Routinely used biological buffer solutions and detergents, antifoaming agents, culture media, vitamin solutions etc., as well as hydrogen peroxide can be dispensed.

  Agar culture media can be dispensed at up to a max. of 60 °C (140 °F).
- **Acids**
  Weak, dilute or non-oxidizing acids can be dispensed.
- **Alkaline solutions**
  For dispensing of alkaline solutions, such as NaOH, KOH and ammonia.
- **Polar solvents**
  E.g., ethanol, methanol, acetylacetone, etc.

seripettor® *pro*:

The seripettor® *pro* bottle-top dispenser extends the operating range to include the dispensing of

- **Acids** such as concentrated HCl
- **Polar solvents** such as acetone
- **Essential oils**
- **UV-sensitive reagents**

Note:

For guidelines on selecting the right dispenser observe the corresponding operating exclusions and the "Dispenser selection chart" on the next page.

Dispenser Selection Chart

Medium	seripettor®	seripettor® *pro*
Acetaldehyde		+
Acetic acid, 5%	+	+
Acetic acid, 96%		+
Acetic acid (glacial), 100%		+
Acetone		+
Acetonitrile		+
Acetophenone	+	
Acetylacetone	+	+
Acrylic acid		+
Acrylonitrile		+
Adipic acid	+	+
Agar (60 °C)	+	
Allyl alcohol	+	+
Aluminium chloride	+	+
Amino acids	+	+
Ammonia, 30%	+	+
Ammonium chloride	+	+
Ammonium fluoride	+	+
Ammonium sulfate	+	+
Amyl alcohol (Pentanol)	+	+
n-Amyl acetate		+
Aniline		+
Barium chloride	+	+
Benzaldehyde		+
Benzyl alcohol		+
Benzylamine		+
Benzylchloride		+
Boric acid, 10%	+	+
Butanediol	+	+
1-Butanol		+
Butylamine		+
n-Butyl acetate		+
Calcium carbonate	+	+
Calcium chloride	+	+
Calcium hydroxide	+	+
Calcium hypochlorite	+	+
Chloroacetaldehyde, 45%		+
Chloroacetic acid		+
Chromic acid, 50%		+
Copper sulfate	+	+
Cumene (Isopropyl benzene)		+
Diethylene glycol	+	+
Dimethyl sulfoxide (DMSO)		+
Dimethylaniline		+
Essential oil		+
Ethanol	+	+
Formaldehyde, 40%	+	+
Formamide	+	+
Formic acid, 100%		+
Glycerol	+	+

Medium	seripettor®	seripettor® *pro*
Glycol (Ethylene glycol)	+	+
Glycolic acid, 50%	+	+
Hexanoic acid	+	+
Hexanol		+
Hydriodic acid	+	+
Hydrobromic acid		+
Hydrochloric acid, 37 %		+
Hydrogen peroxide, 35%	+	
Isoamyl alcohol		+
Isobutanol	+	+
Isopropanol (2-Propanol)	+	+
Lactic acid	+	+
Methanol	+	+
Methyl benzoate		+
Methyl ethyl ketone	+	+
Methyl propyl ketone		+
Mineral oil (Engine oil)		+
Monochloroacetic acid		+
Nitric acid, 10%		+
Oxalic acid	+	+
Perchloric acid		+
Phenol		+
Phosphoric acid, 85%		+
Piperidine		+
Potassium chloride	+	+
Potassium dichromate	+	+
Potassium hydroxide	+	+
Potassium hydroxide in ethanol	+	+
Potassium permanganate	+	+
Propionic acid	+	+
Propylene glycol (Propanediol)	+	+
Pyridine		+
Pyruvic acid	+	+
Salicylaldehyde		+
Salicylic acid	+	+
Silver acetate	+	+
Silver nitrate	+	+
Sodium acetate	+	+
Sodium chloride	+	+
Sodium dichromate	+	+
Sodium fluoride	+	+
Sodium hydroxide, 30%	+	+
Sodium hypochlorite	+	+
Sulfuric acid, 10%	+	+
Tartaric acid		+
Urea	+	+
Zinc chloride, 10%	+	+
Zinc sulfate, 10%	+	+

seripettor® and seripettor® *pro* are not suitable for hydrofluoric acid (HF)!

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. In addition to these chemicals, a variety of organic and inorganic saline solutions (e.g., biological buffers), biological detergents and media for cell culture can be dispensed. Should you require information on chemicals not listed, please feel free to contact BrandTech Scientific, Inc. Status as of: 0311/6

Operating Elements

Is everything in the package? Confirm that your package includes:

seripettor®:
Bottle-top dispenser seripettor®, discharge tube, filling tube, spare dispensing cartridge, bottle adapters (PP) and this operating manual.

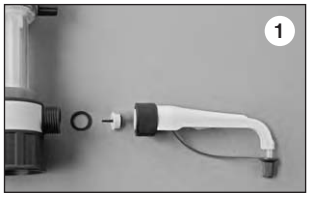
seripettor® *pro:*
Bottle-top dispenser seripettor® *pro,* discharge tube, filling tube, spare dispensing cartridge, adapter for discharge tube and filling valve, mounting tool, bottle adapters (PP) and this operating manual.

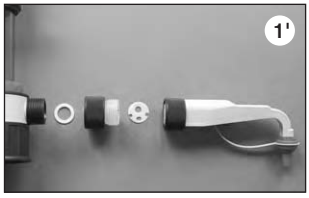
	Adapters for bottle thread	Filling tube length
seripettor®	33, 38	250 mm
seripettor® *pro*	33, 38	125 - 240 mm

Assembly

Warning:

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





1. Check seals

Before mounting the discharge tube make sure that the seal is inserted.

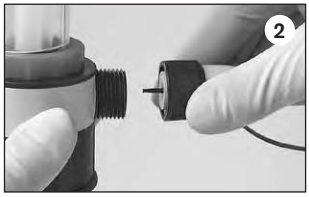
seripettor®:
sealing ring, discharge valve, discharge tube (fig. 1).

seripettor® *pro:*
sealing ring, adapter, gasket, discharge tube (fig. 1').

2. Mounting the discharge tube

seripettor®:
Slide the discharge tube onto the valve block and firmly finger-tighten the locking nut (fig. 2).

seripettor® *pro:*
Slide the discharge tube onto the adapter and firmly finger-tighten the locking nut. Then, slide the adapter onto the valve block and firmly finger-tighten the locking nut (fig. 2').



Note:

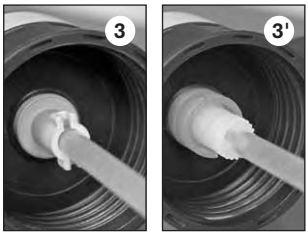
Check the discharge tube for a tight fit. After two days tighten up the locking nut(s).

Assembly (cont.)

3. Mounting the filling tube

seripettor®:
Cut off the filling tube to accommodate the bottle height, and attach it (fig. 3).

seripettor® *pro:*
Adjust the length of the telescopic filling tube to the bottle height and attach it (fig. 3').



4. Mounting the instrument on a bottle

Screw the instrument (GL 45 thread) onto the reagent bottle (fig. 4).
To prevent tipping over use a bottle stand for small bottles.

Note:

For bottles with other thread sizes, select a suitable adapter (Accessories, page 45).

5. Transporting the instrument

When mounted to a reagent bottle, always carry the instrument as shown in the figure (fig. 5)!

Warning:

Always wear protective gloves when touching the instrument or the bottle, especially when using dangerous liquids.

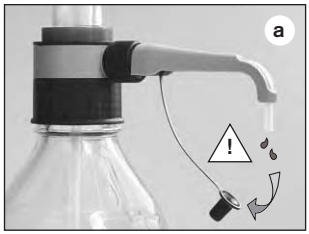
Assembly (cont.)

Warning:

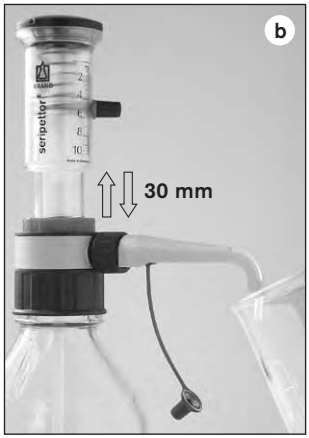
Never press down the piston when the discharge tube is closed with the stopper cap. Avoid splashing the reagent! The reagent can drip out from the discharge tube and stopper cap.

6. Priming the instrument

a) Open the stopper cap of the discharge tube (fig. a).
To avoid splashes, hold the discharge tube orifice on the inner wall of a suitable receiving vessel.



b) Allow the piston to rise up approx. 30 mm and push it down rapidly until the lower stop (fig. b).
Repeat this procedure approximately 5 times until the discharge tube is bubble-free. A few bubbles up to 1 mm in size are permissible.



Note:

Before using the instrument for the first time, ensure it is rinsed carefully and discard the first few samples dispensed. Avoid splashes.

1. Setting the volume

a) Loosen the stopper cap.

b) Hold the discharge tube orifice on the inner wall of a suitable receiving vessel.

c) Manually press the pump assembly all the way down and hold it there (see fig.).

d) Put the receiving vessel beneath the discharge tube orifice.

e) Loosen the volume selector thumb screw one-half turn, set the pointer to the desired volume and then re-tighten it (see fig.).

2. Dispensing

Warning:

Wear protective clothing, eye protection and gloves! Liquid may accumulate in the stopper cap. To avoid splashes dispense slowly. Follow all safety instructions and observe limitations of use and operating limitations (pages 28-30).

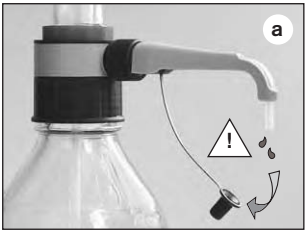
a) Loosen the stopper cap from the discharge tube.

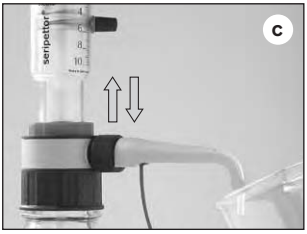
b) Hold the discharge tube orifice on the inner wall of a suitable receiving vessel.

c) Press the piston down slowly and steadily without using excessive force to the lower stop. Then let it rise up slowly (fig. c).

d) Wipe off the discharge tube against the inner wall of the receiving vessel.

e) Reattach the stopper cap to the discharge tube.

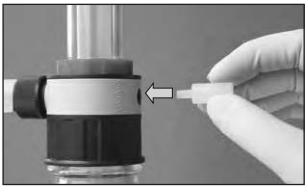




Note:

Closure stopper (optional, see 'Accessories' page 46)

For highly volatile media we recommend the stopper with Luer-cone. During longer periods of inactivity, the air vent opening can be closed with the stopper. The stopper has to be removed for dispensing.



Dispensing with flexible discharge tube

For serial dispensing the optional flexible discharge tube can be used (see 'Accessories' page 46). 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. The entire coil must lie in regular loops and must not be twisted.

The parts in contact with the media are made of: borosilicate glass, Al_2O_3 ceramic, ETFE, PTFE, platinum-iridium, PP.

Therefore, never use the flexible discharge tube for:

– liquids attacking borosilicate glass (e.g., hydrofluoric acid)
– Peroxides, as they are decomposed catalytically by platinum-iridium (e.g., H_2O_2)

Additionally the operating exclusions of the instrument apply.

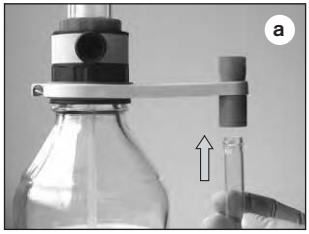
Mounting the flexible discharge tube

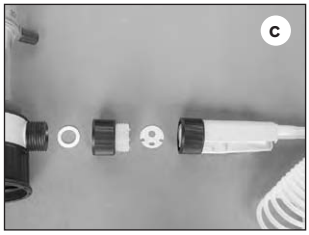
a) Attach the tube holder onto the valve block and mount the receiver tube (fig. a).

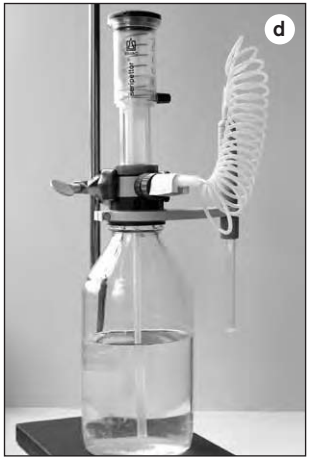
b) Prior to mounting the flexible discharge tube, remove the installed sealing ring and replace it with the accompanying sealing ring.

c) Check whether the gasket is properly seated in the adapter (fig. c)!

d) Slide the discharge tube onto the adapter and firmly finger-tighten the locking nut. Then, slide the adapter onto the valve block and firmly finger-tighten the locking nut.
Use a bottle stand (fig. d).







Warning:

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!

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). Testing takes place with a completely filled instrument and with uniform and smooth dispensing.

Error limits seripettor®

Nominal volume ml	A* ≤ ± %	µl	CV* ≤ %	µl
2	1.2	24	0,2	4
10	1.2	120	0,2	20
25	1.2	300	0,2	50

* A = Accuracy, CV = Coefficient of Variation

Note:

The maximum error limit for a single measurement can be calculated EL = A + 2 CV (e.g. for volume 10 ml: 120 µl + 2 x 20 µl = 160 µl).

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.

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 40), fill it with distilled H_2O and then prime it carefully.

2. Check the volume

a) 10 dispensing operations with distilled H_2O in 3 volume ranges (100 %, 50 %, 10 %) are recommended.

b) For discharge depress piston slowly and steadily without force until the lower stop.

c) Wipe off the tip of discharge tube.

d) Weigh the dispensed quantity on an analytical balance. (Please follow the operating manual of the balance manufacturer.)

e) 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)

Mean value $\overline{x} = \frac{\Sigma\ x_i}{n}$

Mean volume $\overline{V} = \overline{x} \cdot Z$

Accuracy*

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

V_0 = nominal volume

Standard deviation

$$\mathbf{s} = Z \cdot \sqrt{\frac{\Sigma\ (x_i - \overline{x})^2}{n - 1}}$$

Coefficient of variation*

$$\mathbf{CV\%} = \frac{100\ s}{\overline{V}}$$

* Calculation of accuracy (A %) and coefficient of variation (CV %):
A % and CV % are calculated according to the formulas for statistical control.

Cleaning

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

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

Warning!

The cylinder, valves, filling tube and discharge tube contain reagent! Never remove the discharge tube while the dispensing cylinder is filled. Point the valves and tube openings away from your body. Wear protective clothing, eye protection and appropriate hand protection.

1. Screw the instrument onto an empty bottle and empty it completely by dispensing.

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.

Cleaning / replacing valves

seripettor®

1. Filling valve

a) Pull out the filling tube (fig. a).

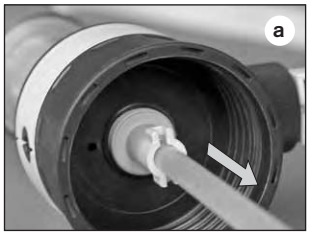
b) Use a coin to unscrew the filling valve (fig. b) and remove the filling valve body.

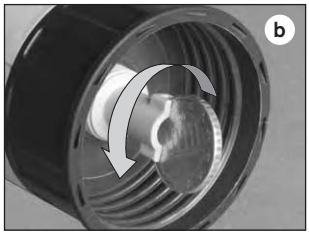
c) If the sealing ring is contaminated or damaged, carefully remove it with a pair of curved forceps (fig. c).

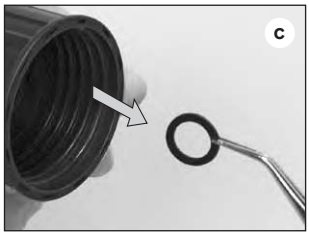
d) If necessary, clean any contaminated individual parts (e.g., in an ultrasonic bath).

e) Insert cleaned or new sealing ring.

f) Screw in the clean or replacement filling valve, first by hand, and then tighten it with a coin (fig. f).







2. Discharge valve

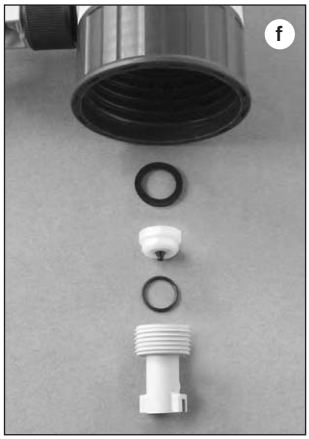
a) Loosen the discharge tube locking nut.

b) Remove the discharge valve.

c) If the sealing ring is contaminated or damaged, carefully remove it with a pair of curved forceps.

d) If necessary, clean any contaminated individual parts (e.g., in an ultrasonic bath).

e) Mount the discharge tube with cleaned or new discharge valve (see page 33, fig. 1).



Cleaning / replacing valves (cont.)

seripettor® *pro*

1. Filling valve

a) Pull out the filling tube (fig. a).

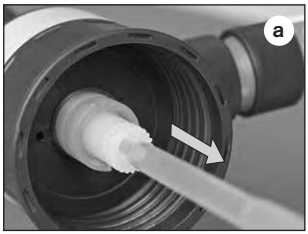
b) Use the mounting tool to unscrew the filling valve (fig. b).

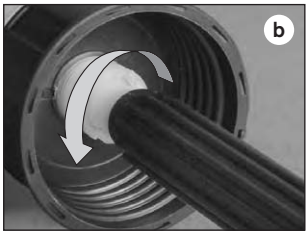
c) If the sealing ring is contaminated or damaged, carefully remove it with a pair of curved forceps (fig. c).

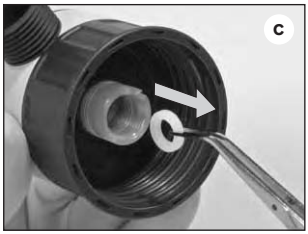
d) If necessary, clean any contaminated individual parts (e.g., in an ultrasonic bath).

e) Insert cleaned or new sealing ring.

f) Screw in the cleaned or replacement filling valve, first by hand, and then tighten it with the mounting tool (fig. f).







2. Discharge valve

The discharge valve is integrated in the discharge tube.

a) Remove the discharge tube and clean it in the ultrasonic bath if necessary.

b) Mount cleaned or new discharge tube (s. page 33, fig. 1').

Note:

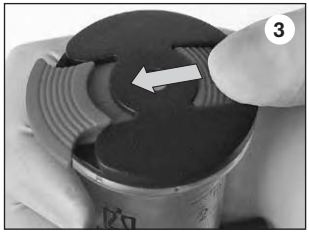
If the instrument does not fill up, and if some elastic resistance is evident when the piston is pulled upward, then it is possible that the ball valve is merely stuck.
In this case, loosen the ball valve using light pressure, for example, with a 200 µl plastic pipette tip (see fig.).

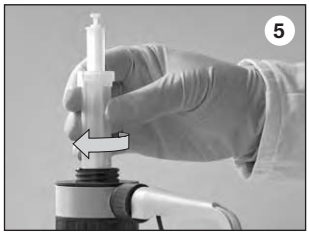
Replacing the dispensing cartridge

The dispensing cartridge is a wearing part. Replace the cartridge when the piston is difficult to move or is not airtight.

To prevent chemical injury, the dispensing cartridge has to be cleaned prior to replacement (page 40).

1. Screw the instrument onto an empty bottle, and empty it completely with several dispensings.
2. Manually press the pump assembly all the way down and hold it there. Loosen the volume selector thumb screw one-half turn, slide the pointer vertically to the upper stop and then retighten the volume selector thumb screw (fig. 2).
3. Loosen the piston lock (fig. 3).
4. Unscrew and remove the pump assembly (fig. 4).
5. Unscrew the dispensing cartridge (fig. 5) and replace it with a new one (Accessories, page 45).
6. Screw the pump assembly on and secure the piston lock.





Autoclaving

Both the seripettor® and seripettor® *pro* instruments are autoclavable without pump assembly and dispensing cartridge at 121 °C (250 °F), 2 bar absolute (30 psi) with a holding time of at least 15 minutes according to DIN EN 285.

1. Unscrew the pump assembly and dispensing cartridge (see page 43).
2. Close the valve block loosely with the closure cap (Accessories, page 47).
3. Insert the autoclavable filling tube with the sealing ring at the upper end into the filling valve (Accessories, seripettor® filling tube, page 47).
4. Loosely screw the closed valve block with the filling tube and discharge tube onto the filled bottle.
5. Close the air vent opening with an autoclavable sterile filter (0.2 µm) (fig. 5).
6. Open the discharge tube and loosen the locking nut (fig. 6).
7. Autoclave.

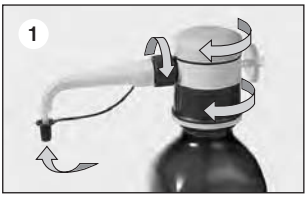
   After autoclaving, the instrument should be used only after it has reached room temperature.
   (Exception: seripettor® with agar culture media up to 60 °C).

Note:

It is the user's responsibility to ensure effective autoclaving.

Preparations for sterile operation

1. After autoclaving, close the discharge tube and tighten the screw coupling (fig. 1).
2. Remove the closure cap in a clean bench hood.
3. Screw in the sterile dispensing cartridge (Accessories, page 45).
4. Fasten the pump assembly.



seripettor®

Capacity ml	Subdivision ml	A* ≤ ± %	A* µl	CV* ≤ ± %	CV* µl	Cat. No.
0.2 - 2	0.4	1.2	24	0.2	4	4721 120
1 - 10	0.2	1.2	120	0.2	20	4721 140
2.5 - 25	0.5	1.2	300	0.2	50	4721 150

seripettor® *pro*

Capacity ml	Subdivision ml	A* ≤ ± %	A* µl	CV* ≤ ± %	CV* µl	Cat. No.
0.2 - 2	0.4	1.2	24	0.2	4	4721 420
1 - 10	0.2	1.2	120	0.2	20	4721 440
2.5 - 25	0.5	1.2	300	0.2	50	4721 450

* The values of accuracy and coefficient of variation are final test values referring to the delivered volume, instrument and distilled water at equilibrium with ambient temperature (20 °C/60 °F) and smooth and steady operation.
A = Accuracy, CV = Coefficient of variation

Bottle adapters, PP.
For seripettor® and seripettor® *pro*.
Pack of 3.

Outer thread	for bottle thread/ fits ground joint	Cat. No.
33	24	27048 21
33	28 / S* 28	27048 22
45	S* 40	27048 29
45	33	27048 28
45	38	27048 27
Set:	24, 28, 33, 38	27048 70 [1)]
33	STj 19/32	27048 36 [1)]
33	STj 24/40	27048 38 [1)]
33	STj 29/42	27048 40 [1)]

[1)] 1 each
* buttress thread

Dispensing cartridges
For seripettor® and seripettor® *pro*.
Non-sterile and sterile.
Piston (PE), cylinder (PP).

Description	Pack of	Cat. No.
2 ml, non-sterile	3	7045 00
10 ml, non-sterile	3	7045 02
25 ml, non-sterile	3	7045 04
2 ml, sterile**	7	7045 07
10 ml, sterile**	7	7045 06
25 ml, sterile**	5	7045 08

** individually wrapped

Note:

Dispensing cartridges are not autoclavable.

Discharge tube seripettor®
PP. Incl. closure cap, EPDM discharge valve and sealing ring.
Pack of 1.

Description	Cat. No.
Fine tip (2 ml)	7045 18
Standard (10 + 25 ml)	7045 20

Valve set seripettor®
1 discharge valve with sealing ring, 1 filling valve with sealing ring and filling valve body with seal.

Cat. No. 6790

Sealing rings seripettor®
Pack of 5 (EPDM).

Cat. No. 6788

Filling valve seripettor® *pro*
Filling valve with sealing ring. Pack of 1.

Description	Cat. No.
2 + 10 ml	6697
25 ml	6698

Filling valves are ordered separately.

Discharge tube seripettor® *pro*
PP. With integrated valve with gasket.
Pack of 1.

Description	Cat. No.
2 ml	7079 15
10 ml	7079 16
25 ml	7079 18

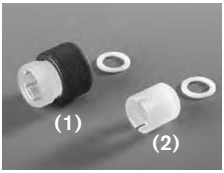
Discharge tube adapters are ordered separately.

Flexible discharge tube
For seripettor® and seripettor® *pro*.
PTFE, coiled, length approx. 800 mm, with safety handle.
Pack of 1.

Description	Cat. No.
2 + 10 ml	7045 22*
25 ml	7045 23

* not suitable for peroxides

Adapter seripettor® *pro*
PP. With sealing ring.
Pack of 1.



Description	Cat. No.
for discharge tube (1)	6208
for filling valve (2)	6707

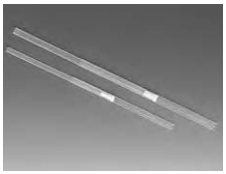
Closure stopper
For seripettor® and seripettor® *pro*.
For volatile media.
Pack of 1.

Cat. No. 8502

Filling tubes seripettor®
PP. Autoclavable design with additional sealing ring.

Length mm	Pack of	Cat. No.
250	2	7045 32
500	2	7045 34
250, with sealing ring	1	7045 36
500, with sealing ring	1	7045 38

Telescopic filling tubes seripettor® *pro*
FEP. Adjusts to various bottle heights.
Pack of 1.



Description	Length	Cat. No.
2 + 10 ml*	70 - 140	7042 02
	125 - 240	7042 03
	195 - 350	7042 08
	250 - 480	7042 01
25 ml**	170 - 330	7042 04
	250 - 480	7042 05

* Outer-Ø: 6 mm ** Outer-Ø: 7.6 mm

Pump assembly seripettor®
PC, stainless steel lifting spring.
Pack of 1.

Description	Cat. No.
2 ml	7045 41
10 ml	7045 42
25 ml	7045 44

Pump assembly seripettor® *pro*
PPO. PEI (UV protection). Hastaloy (stainless) lifting spring.
Pack of 1.

Description	Cat. No.
2 ml	7045 51
10 ml	7045 48
25 ml	7045 49

Valve block
For seripettor® and seripettor® *pro*.
Pack of 1.

Description	Cat. No.
2 + 10 ml	6792
25 ml	6794

Cap for closing valve block
For seripettor® and seripettor® *pro*.
Pack of 1.

Description	Cat. No.
2 + 10 ml	7045 52
25 ml	7045 54

Problem	Possible cause	Corrective action
Piston difficult to move	Formation of crystals	Replace dispensing cartridge (page 43).
	Dispensing of incompatible liquid	Check for operating exclusions ('Dispenser selection chart', page 31).
Liquid above piston seal	Dispensing cartridge worn	Replace dispensing cartridge (page 43).
Filling not possible	Valve not correctly mounted	Mount valve correctly (pages 41, 42).
	Volume adjusted to minimum setting	Set to required volume (page 36).
	Sticking filling valve	Clean filling valve (pages 41, 42). If necessary, replace the valve and sealing ring (observe operating exclusions, page 30).
	Dispensing cartridge worn	Replace dispensing cartridge (page 43).
Dispensing not possible	Sticking discharge valve	Clean discharge valve. If necessary replace discharge valve.
Air bubbles in the instrument	Reagent with high vapor pressure has been drawn in too quickly	Slowly draw in reagent.
	The instrument has not been primed	Prime the instrument (page 35).
	Dispensing cartridge worn	Replace dispensing cartridge (page 43).
	Filling tube not firmly connected or damaged	Cleaning procedure (page 40). 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, contaminated or damaged	Cleaning procedure (page 40). Tighten filling valve and discharge tube. If necessary, replace valves and seals.
Dispensed volume is too low	Discharge tube not firmly connected or damaged	Push the discharge tube on firmly. Replace a deformed or damaged discharge tube.
	Filling tube not firmly connected or damaged	Cleaning procedure (page 40). 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 not firmly connected or damaged	Cleaning procedure (page 40). Tighten filling valve. If necessary, replace valve and sealing ring.
	Frequent dispensing > 40 °C	Replace dispensing cartridge (page 43).

If a problem cannot be fixed by following the troubleshooting guide, or by replacing spare parts, then the instrument must be sent in for repair.

For safety reasons, instruments returned for checks and repairs must be clean and decontaminated!

Warranty

We shall not be liable for the consequences of improper handling, use, servicing 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 parts have been used. For length of warranty period please see our warranty card enclosed with the product.

Disposal

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

Subject to technical modification without notice. Errors excepted.