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Transferpettor micro | macro

Direktverdränger-Pipetten | Positive displacement pipettes

Impressum

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Do you need more operating manuals and translations?
Please refer to <http://www.brand.de/om> or use the following
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The original operating manual is written in German. Other languages are translations of the original operating manual.

Table of contents

1	Introduction	43
1.1	Scope of delivery	43
1.2	Terms of use	43
2	Safety regulations.....	44
2.1	Safety regulations	44
2.2	Limitations of use.....	45
2.3	Application restrictions	45
2.4	Operating exclusions	46
3	Transferpettor micro.....	47
3.1	Functional and operational components.....	47
3.2	Purpose	48
3.3	Pipetting.....	48
3.4	Accuracy table.....	50
3.5	Checking the volume	51
3.6	Cleaning.....	52
3.7	Maintenance.....	53
3.8	Troubleshooting	59
3.9	Ordering data for instruments and spare parts.....	59
3.10	Accessories	60
4	Transferpettor macro	61
4.1	Functional and operational components.....	61
4.2	Purpose	62
4.3	Pipetting.....	62
4.4	Checking the volume	64
4.5	Accuracy table.....	66
4.6	Cleaning.....	66
4.7	Maintenance.....	67
4.8	Troubleshooting	71

4.9	Ordering data for instruments and spare parts.....	72
4.10	Accessories	72
5	Product markings	73
6	Repairs.....	74
6.1	Sending for repair	74
7	Calibration service	76
8	Warranty	77
9	Disposal	78

1 Introduction

1.1 Scope of delivery

- Positive displacement pipette Transferpettor

1.2 Terms of use

- Carefully read the operating manual before using the device for the first time.
- The operating manual is part of the device and must be kept in an easily accessible place.
- Be sure to include the operating manual if you transfer possession of this device to a third party.
- You can find up-to-date versions of the operating manual on our website: www.brand.de.

1.2.1 Hazard levels

The following signal words identify possible hazards:

Signal word	Meaning
DANGER	Will lead to serious injury or death.
WARNING	May lead to serious injury or death.
CAUTION	May lead to minor or moderate injuries.
NOTICE	May lead to property damage.

1.2.2 Format

Format	Meaning	Format	Meaning
1. Task	Indicates a task.	>	Indicates a condition.
a., b., c.	Indicates the individual steps of a task.	⇒	Indicates a result.

2 Safety regulations

2.1 Safety regulations

Please read carefully!

The instrument can be used in combination with hazardous materials, work processes and equipment. However, the operating manual cannot cover all of the safety issues that may occur in doing so. It is the user's responsibility to ensure compliance with the safety and health regulations and to specify the corresponding restrictions before use.

1. Every user must read and observe this operating manual before using the instrument.
2. Follow the general hazard instructions and safety regulations (e.g., wear protective clothing, eye protection and protective gloves). When working with infectious or hazardous samples, the standard laboratory rules and precautions must be adhered to.
3. Follow the instructions given by the reagent manufacturer.
4. Use the instrument only for pipetting liquids within the defined limitations and restrictions of use. Comply with the operating exclusions; see Operating exclusions. In case of doubt, contact the manufacturer or dealer.
5. Always perform work in a manner that does not endanger users or other people. Avoid splashes. Only use suitable vessels.
6. Avoid touching the tip opening when working with aggressive media.
7. Never use force.
8. Use only original spare parts. Do not make any technical modifications. Do not disassemble the instrument further than described in the user manual.
9. Always check that the instrument is in proper working condition before use. If the instrument appears to have a malfunction (e.g., sluggish piston, leakage), stop pipetting immediately and observe Troubleshooting . Contact the manufacturer, if necessary.

2.2 Limitations of use

Transferpettor macro (PP Caps)

Suitable for media with:

- Density up to 13.6 g/ cm³
- Vapor pressure up to 500 mbar
- Viscosity (see table):

Nominal volume [μl]	Suitable for viscosity up to (kinematic viscosity) [mm ² /s]
500	40000
1000	20000
5000	6000
10000	2000

Operating temperature range: 15 - 40 °C (59 °F - 104 °F)

Transferpettor micro (glas capillaries)

Suitable for media with:

- Density up to 3.8 g/ cm³
- Vapor pressure up to 500 mbar
- Viscosity (see table):

Nominal volume [μl]	Suitable for viscosity up to (kinematic viscosity) [mm ² /s]
1, 2, 5	6000
10	20000
20	50000
25	50000
50	100000
100	140000

Operating temperature range: 15 - 40 °C (59 °F - 104 °F)

2.3 Application restrictions

Crystallization of concentrated salt solutions and other crystallizing liquids can damage the seal.

2.4 Operating exclusions

NOTICE

Do not autoclave

The instrument is not autoclavable.

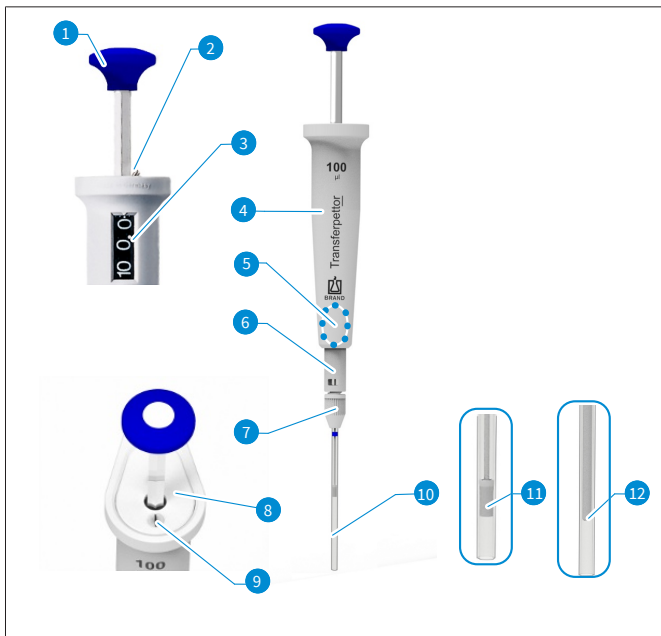
The user is responsible for checking the compatibility of the instrument with the intended application. The instrument cannot be used:

- For liquids that attack polypropylene or polyethylene.
Transferpettor macro (PP Caps)
- For liquids that attack glass, stainless steel (instruments up to 10 μl), and PTFE (instruments from 20 μl). Transferpettor micro (glas capillaries)

3 Transferpettor micro

3.1 Functional and operational components

Transferpettor micro



1 Pipetting button

3 Volume display (digital instrument)

5 Hexagon socket screws (under the housing)

7 Union nut

2 Volume adjustment locking lever (digital instrument)

4 Housing (here: Fixed volume)

6 Shaft with viewing window

8 End plate

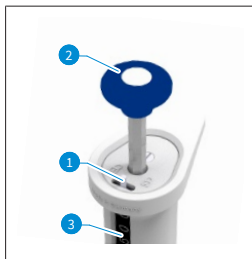
- 9 Slotted screw for housing mounting
- 10 Capillaries
- 11 Piston rod with seal (from 20 μ l)
- 12 Piston rod without seal (up to 10 μ l)



3.2 Purpose

The instrument is used for pipetting liquids. It works on the principle of direct displacement.

3.3 Pipetting

Setting the volume



- a. Set lever (1) to 
- b. Turn the pipetting button (2) until the desired volume appears in the display (3).
- c. Set lever (1) to 

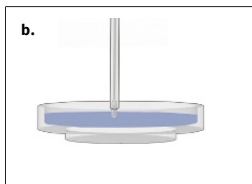
Recommended working range:

20–100% of the nominal volume. For volumes below 20 %, accuracy is no longer guaranteed.

Aspirating liquid

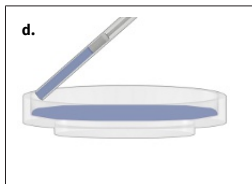


- a. Press the pipetting button as far as it will go.

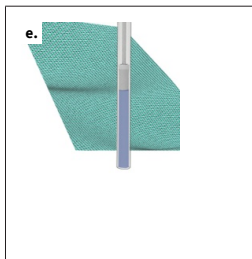


b. Immerse the capillary in the liquid (2–3 mm).

c. Allow the pipetting button to slowly slide back.

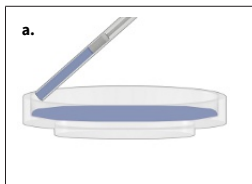


d. Gently wipe capillary along vessel wall.



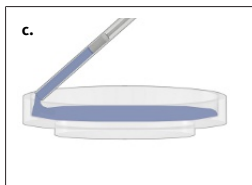
e. Carefully wipe the outside of the capillary with a lint-free cloth or swab. Do not touch the opening; otherwise, liquid will be sucked out.

Eject liquid



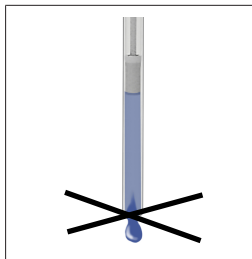
a. Place capillary against vessel wall.

b. Press the pipetting button as far as it will go.



- c. Gently wipe capillary along vessel wall.
- d. Allow the pipetting button to slide back.

Check for leaks daily



- a. Set the nominal volume.
- b. Aspirate the liquid.
- c. Hold the instrument vertically for 10 s (capillary downwards).
- d. If a drop forms (see Troubleshooting, p. 59)

3.4 Accuracy table

Volume	Accuracy ¹ A ±		Variation coefficient VC ≤	
	%	µl	%	µl
Variable				
2.5–10	3.0	0.3	0.8	0.08
5–25	2.4	0.6	0.5	0.125
10–50	1.8	0.9	0.4	0.2
20–100	1.5	1.5	0.4	0.4
Fixed				
1	12.0	0.12	4.0	0.04
2	7.5	0.15	2.0	0.04
5	3.0	0.15	0.8	0.04
10	3.0	0.3	0.8	0.08
20	2.4	0.48	0.5	0.1
25	2.4	0.6	0.4	0.1

Volume	Accuracy ¹ A ≤ ±		Variation coefficient VC ≤	
	50	1.8	0.9	0.4
100	1.5	1.5	0.4	0.4
200	1.5	3	0.2	0.4

1) Final test values based on the nominal volume (= max. volume) printed on the device and the specified partial volumes at the same temperature (20 °C/68 °F) of the device, surroundings and distilled water.

3.5 Checking the volume

We recommend testing the instrument every 3 to 12 months depending on the level of use. However, the testing cycle can be adapted to meet individual requirements. For gravimetric volume testing, we recommend the test procedure as described (e.g., in DIN EN ISO 8655 Part 6).

1. Setting the nominal volume

- a. Set the maximum specified instrument volume (for procedure, see).

2. Conditioning the pipette

- a. Condition pipette before testing by pipetting once with test liquid (distilled water).

3. Performing the test

- a. Aspirate the test liquid and pipette into the weighing vessel.
- b. Weigh the pipetted amount with an analysis scale. (refer to the operating manual of the balance manufacturer.)
- c. Calculate the pipetted volume. In doing so, take into account the temperature of the test liquid.
- d. At least 10 pipettings and weighings are recommended. With a digital pipette, perform at least 10 weighings in three volume ranges (100%, 50%, 20%).

Calculation (for nominal volume)

 x_i = weighing results

n = number of weighings

 V_0 = nominal volume

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

Mean:

$$\bar{x} = \frac{\sum x_i}{n}$$

Mean volume:

$$\bar{V} = \bar{x} * z$$

Accuracy*:

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

Coefficient of variation*:

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

Standard deviation*:

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

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

NOTICE

Test Instructions (SOPs) are available for download from www.brand.de.

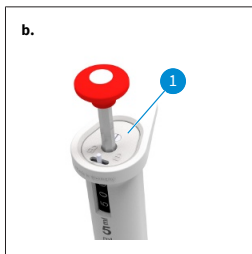
3.6 Cleaning

- Disassemble the instrument (see).
- Clean the piston rod.
- Allow to dry completely.
- Assemble the instrument.

Check instrument

NOTICE

Temperatures above 40°C (104°F) and storage times of more than three months can deform the cap and seal and thus negatively affect the tightness and limit the functional performance.



- Check instrument after each change of cap, seal, or piston rod.
- Check whether the pipetting button can be pressed to the end plate (1).
- Ensure that the cap is firmly in place.
- Check for leaks
- Checking the volume

3.7 Maintenance

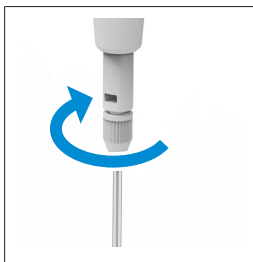
3.7.1 Change capillary

Remove old capillary

CAUTION**Risk of contamination**

Do not touch the contaminated area of the capillaries. Wear protective gloves.





- a. Loosen the union nut (half turn).
- b. Pull the capillary off the piston rod.

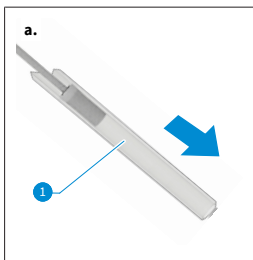
Remove damaged capillaries (instruments from 20 μ l)

CAUTION

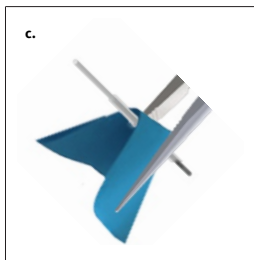


Risk of injury

Pull only front fragment over the seal. Wear protective gloves.

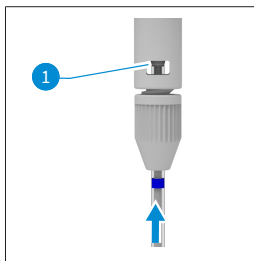


- a. Loosen the union nut (half turn).
- b. Pull off the front fragment (1) from the seal.



- c. Pull rear fragments from holder, wrap in cloth, and crush with pliers.
- d. Insert new capillary.

Insert new capillary



- a. Push the capillary up to the stop (1).
- b. Tighten the union nut by hand.
- c. Check correct seating/attachment of the capillary through the inspection window.

NOTICE

The color marking (color code) of the pipette button, the capillaries, and the accessories must match.

3.7.2 Change piston rod

Remove capillary

CAUTION



Risk of contamination

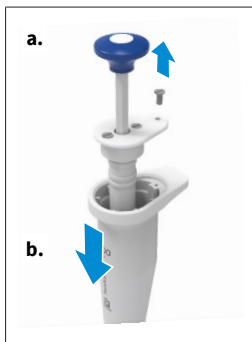
Do not touch the contaminated area of the capillaries. Wear protective gloves.



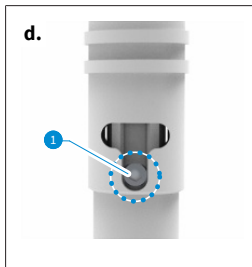
- a. Loosen the union nut.
- b. Pull the capillary off the piston rod.
- c. Unscrew the union nut.

Remove piston rod

(Tools in repair set, see Ordering data for instruments and spare parts, p. 59)

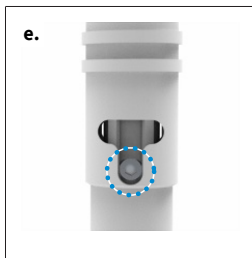
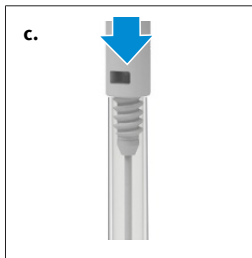
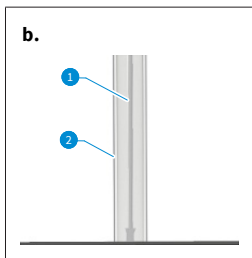


- a. Unscrew the slotted screw.
- b. Pull off the housing.
- c. Press the pipetting button.

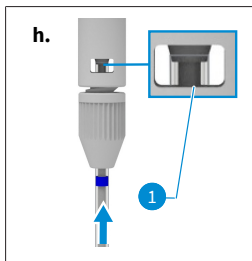


- d. Allen screws appear in the recess (1). With digital instruments, the pipetting button may have to be turned slightly for this purpose.
- e. Loosen Allen screws (half turn).
- f. Pull out the piston rod.

Install piston rod



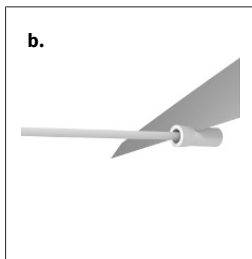
- a. Place the setting gauge from the repair set vertically on a hard, level surface. Frosted end upwards.
- b. Insert the piston rod into the shaft, and place the shaft on the setting gauge.
- c. Press the pipetting button as far as it will go. The piston rod and shaft must be in a vertical position (do not tilt).
- d. Tighten the Allen screws (with the pipetting button pressed).
- e. Place the housing, and screw in the slotted screw.
- f. Screw the union nut onto the shaft (do not tighten).



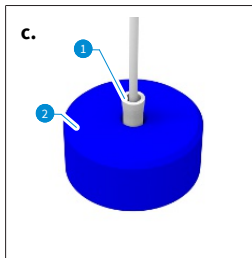
- g. Push the capillary up to the stop (1) (color code upwards).
- h. Tighten the union nut by hand.
- i. Check correct seating/attachment of the capillary through the inspection window.

3.7.3 Change seal

Remove old seal



- a. Remove capillary (see Change capillary, p. 53).
- b. Cut the old seal with a sharp knife (scalpel or similar), and remove it.



- c. Insert a new seal (1) into the attachment block (2) (included in the repair set, see Ordering data for instruments and spare parts, p. 59).
- d. Press the piston rod firmly into the seal.
- e. Pull off the attachment block.
- f. Check that the seal is firmly seated.

- g. Slide on the capillary (see Change capillary, p. 53).

Check instrument

- a. Check the volume after each change of capillary, piston rod, or seal.

3.8 Troubleshooting

Problem	Possible cause	Corrective action
Pipetted volume too large/ air bubbles in liquid taken up.	Capillary is not seated correctly.	Loosen the union nut, push the capillary as far as it will go, and tighten the union nut. See Change capillary, p. 53
Pipette is dripping.	Capillary damaged.	Change capillary (see Change capillary, p. 53)
	Piston rod damaged (instruments up to 10 μl).	Repair instrument (see Repairs, p. 74) Change piston rod (see Change piston rod, p. 55) Clean instrument (see Cleaning, p. 52)
	Seal damaged (instruments from 20 μl).	Change seal (see Change seal, p. 58) Repair instrument (see Repairs, p. 74)
	Instrument soiled.	Clean instrument (see Cleaning, p. 52)

3.9 Ordering data for instruments and spare parts

Volume	Color code	Instru- ment	Capillaries ¹	Seals ²	Piston rod ³	Repair set ⁴
variable						
2.5–10	Orange	701807	701902	—	701930	701965
5–25	2 × white	701812	701906	701920	701932	701966
10 - 50	Green	701817	701908	701922	701934	701967
20 - 100	Blue	701822	701910	701924	701936	701968
Fixed						
1	White	701842	701900	—	701928	701964
2	White	701844	701900	—	701928	701964
5	White	701853	701900	—	701928	701964
10	Orange	701858	701902	—	701930	701965

3 Transferpettor micro

Volume	Color code	Instrument	Capillaries ¹	Seals ²	Piston rod ³	Repair set ⁴
20	Black	701863	701904	701920	701932	701966
25	2 × white	701864	701906	701920	701932	701966
50	Green	701868	701908	701922	701934	701967
100	Blue	701873	701910	701924	701936	701968
200	Red	701878	701910	701924	701938	701968

1) Packaging unit 100 pieces; for 100/200 µl: 50 pieces.

2) Packaging unit 3 pieces.

3) Packaging unit 3 pieces; from 20 µl, already equipped with seal.

4) Repair set consisting of: 1 Allen key, 1 screwdriver, 1 setting gauge, 1 attachment block (from 20 µl), 1 piston rod (from 20 µl with seal attached), 3 seals, 3 sealing rings, 1 slotted screw.

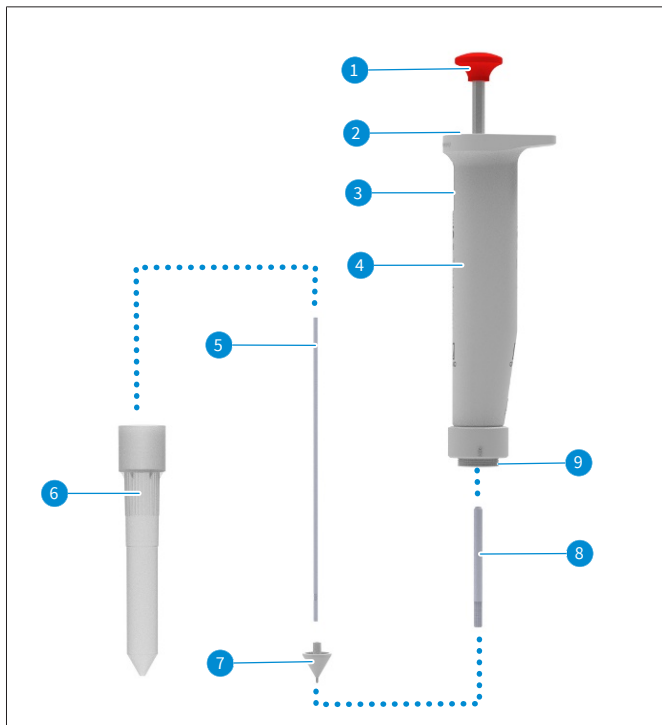
3.10 Accessories

Description	Pkg unit	Order No.
Transferpettor station For storage of four instruments up to 200 µl with accessories.	1 pc.	701960

4 Transferpettor macro

4.1 Functional and operational components

Transferpettor macro



1 Pipette button

3 Volume adjustment

5 Piston rods

2 Lever for locking the volume setting

4 Hand grip

6 Plastic tip (cap)

4 Transferpettor macro

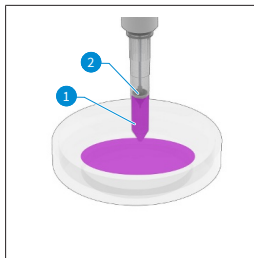
7 Piston (Seal)

9 Recording for Cap

8 Piston rod lock

— —

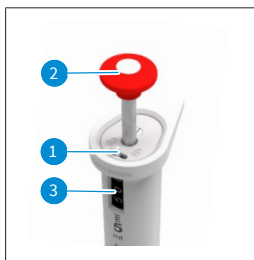
4.2 Purpose





The instrument is used for pipetting liquids. It works on the principle of direct displacement. The liquid is drawn directly from the seal (2) (= piston) into the cap (1) (= tip) without an air cushion.

4.3 Pipetting

Setting the volume

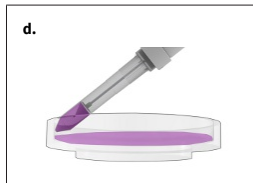
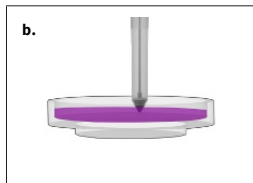
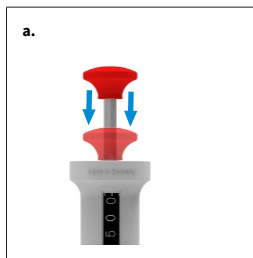


- Set lever (1) to 
- Turn the pipetting button (2) until the desired volume appears in the display (3).
- Set lever (1) to 

Recommended working range:

20–100% of the nominal volume. For volumes below 20%, accuracy is no longer guaranteed.

Aspirating liquid



a. Press the pipetting button as far as it will go.

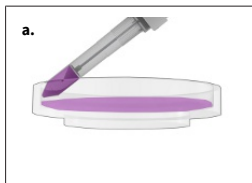
b. Immerse the cap in the liquid (2–3 mm).

c. Allow the pipetting button to slowly slide back.

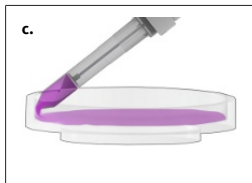
d. Lightly wipe the cap on the vessel wall.

e. Carefully wipe the outside of the cap with a lint-free cloth or swab. Do not touch the opening; otherwise, liquid will be sucked out.

Eject liquid

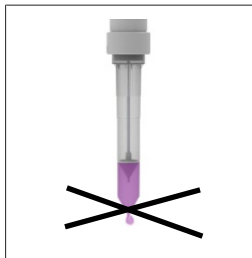


- Place cap against vessel wall.
- Press the pipetting button as far as it will go.



- Lightly wipe the cap on the vessel wall.
- Allow the pipetting button to slide back.

Check for leaks daily



- Set the nominal volume.
- Aspirate the liquid.
- Hold the instrument vertically for 10 s (cap downwards).
- If a drop forms (see)

4.4 Checking the volume

We recommend testing the instrument every 3 to 12 months depending on the level of use. However, the testing cycle can be adapted to meet individual requirements. Gravimetric volume testing of the pipette is carried out according to the following steps and complies with DIN EN ISO 8655, Part 6.

1. Setting the nominal volume

- a. Set the maximum specified instrument volume (for procedure, see).

2. Conditioning the pipette

- a. Condition pipette before testing by pipetting once with test liquid (distilled water).

3. Performing the test

- a. Aspirate the test liquid and pipette into the weighing vessel.
- b. Weigh the pipetted amount with an analysis scale. (refer to the operating manual of the balance manufacturer.)
- c. Calculate the pipetted volume. In doing so, take into account the temperature of the test liquid.
- d. At least 10 pipetting series and weighings in three volume ranges (100%, 50%, 20%) are recommended.

Calculation (for nominal volume)

x_i = weighing results

n = number of weighings

V_0 = nominal volume

Z = Correction factor (e.g. 1.0029 $\mu\text{l}/\text{mg}$ at 20°C, 1013 hPA)

Mean:

$$\bar{x} = \frac{\sum x_i}{n}$$

Mean volume:

$$\bar{V} = \bar{x} * Z$$

Accuracy*:

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

Coefficient of variation*:

Standard deviation*:

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

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

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

NOTICE

Test Instructions (SOPs) are available for download from www.brand.de.

4.5 Accuracy table

Volume	Accuracy R \pm		Coefficient of variation CV \leq		Graduation
	%	μ l	%	μ l	
100–500 μ l	0.5	2.5	0.2	1.0	1.0 μ l
200–1000 μ l	0.5	5.0	0.2	2.0	1.0 μ l
1–5 ml	0.5	25.0	0.2	10.0	0.01 ml
2–10 ml	0.5	50.0	0.2	20.0	0.01 ml



Final test values based on the nominal volume (= max. volume) printed on the device and the specified partial volumes at the same temperature (20 °C/68 °F) of the device, surroundings and distilled water, in accordance with DIN EN ISO 8655.

4.6 Cleaning

- a. Disassemble the instrument (see).
- b. Clean the piston rod.
- c. Allow to dry completely.

d. Assemble the instrument.

Check instrument

NOTICE

Temperatures above 40°C (104°F) and storage times of more than three months can deform the cap and seal and thus negatively affect the tightness and limit the functional performance.

b.



- a. Check instrument after each change of cap, seal, or piston rod.
- b. Check whether the pipetting button can be pressed to the end plate (1).
- c. Ensure that the cap is firmly in place.
- d. Check for leaks
- e. Checking the volume

4.7 Maintenance

Maintenance is not required when used properly.

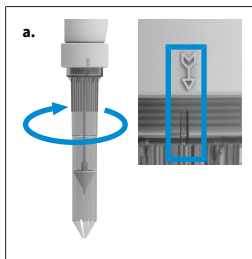
4.7.1 Change cap

Remove old cap

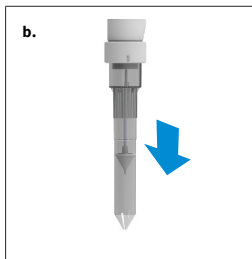
CAUTION



Do not touch the contaminated area of the cap and seal. Wear protective gloves.

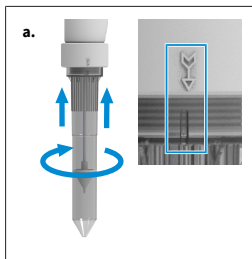


- a. Rotate the cap until the arrow on the instrument and the notch in the cap are aligned.

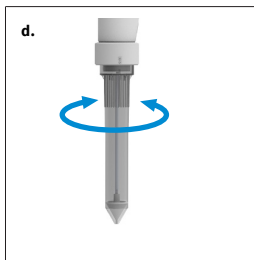


- b. Pull the cap off the seal.

Push on new cap



- a. Slide the cap over the seal.
- b. Align the arrow on the instrument and the notch in the cap.
- c. Push the cap into the receptacle, and hold it in place by pressing lightly.



- d. To position the cap precisely, push the pipetting button **all the way** down and tighten the cap to the right or left (max. 45°). If the pipetting button is not fully depressed when the cap is pushed on, the cap will remain pushed on too far, and the instrument will deliver too low a volume.
- e. Allow the pipetting button to slide back.

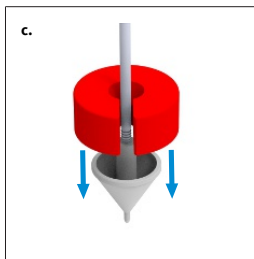
4.7.2 Change seal

CAUTION



Do not touch the contaminated area of the cap and seal. Wear protective gloves.

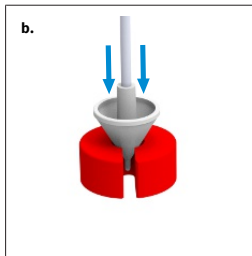
Remove old seal



- a. Pull off cap.
- b. Hold the instrument vertically.
- c. Place the red attachment block on the seal (conical recess facing upwards).
- d. Press the pipetting button as far as it will go.
- e. With a jerk, remove old seal from piston rod with the red attachment block.

- f. Allow the pipetting button to slide back.

Put on new seal



- a. Put on new seal
- b. Place the new seal in the conical recess of the red attachment block. For the 0.5 ml and 1 ml sizes, the blue attachment block must be used.
- c. Press the piston rod into the seal as far as it will go.
- d. Check that the seal is firmly seated.
- e. Push on cap

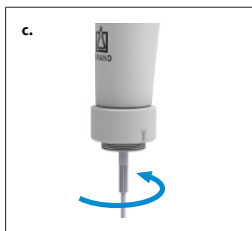
4.7.3 Change piston rod

⚠ CAUTION



Do not touch the contaminated area of the cap and seal. Wear protective gloves.

Remove piston rod



- a. Pull off cap.
- b. Press the pipetting button as far as it will go.
- c. Turn the piston rod lock counter-clockwise. This involves unscrewing the piston rod from the instrument.

- d. Unscrew piston rod retainer from piston rod.

Insert new piston rod

- Screw the piston rod lock onto the piston rod as far as it will go.
- Then screw the piston rod into the instrument as far as it will go.
- Press the pipetting button and tighten the piston rod lock by hand.
- Put on new seal.
- Push on new cap.

4.8 Troubleshooting

Problem	Possible cause	Corrective action
Pipetted volume too low. Pipetting button cannot be pressed all the way to the end plate.	Cap pushed on too far. Piston rod loosened.	Remove cap. Tighten the piston rod lock. Push on cap. See: Change cap, p. 67 Change piston rod, p. 70
Pipette is dripping.	Cap does not sit properly. Seal damage.	Remove the cap, and slide it on again. See: Change cap, p. 67 Change seal, p. 69
Air bubbles in liquid taken up.	Liquid taken up too quickly. Cap does not sit properly. Seal damage.	Allow the pipetting button to slowly slide back. Remove the cap, and slide it on again. See: Change cap, p. 67 Change seal, p. 69
Liquid above the seal.	Cap or seal damaged.	Change cap or seal. See: Change cap, p. 67 Change seal, p. 69
Liquid remains in the cap.	Cap does not sit properly.	Remove cap.

Problem	Possible cause	Corrective action
	Piston rod loosened. Seal damage.	Tighten the piston rod lock. See: Change cap, p. 67 Change seal, p. 69 Change piston rod, p. 70

4.9 Ordering data for instruments and spare parts

Volume	Color code	Instrument Order no.	Caps ²⁾ Order no.	Seals ³⁾ Order no.	Piston rod ⁴⁾ Order no.
100–500 µl	Green	702804	702852	702864	654021
200–1000 µl	Yellow	702806	702854	702866	654020
1–5 ml	Red	702810	702858	702870	654019
2–10 ml	Orange	702812	702860	702872	654003

²⁾ Packaging unit 10 pieces.

³⁾ Packaging unit 10 pieces.



⁴⁾ Packaging unit 1 piece.

4.10 Accessories

Transferpettor station

Designation	Packaging unit	Order no.
Transferpettor station for storing two instruments of size 0.5 to 10 ml with accessories.	1 pc.	702890

5 Product markings

Symbol or number	Meaning
	Read the user manual.
	Read the user manual.
XXZXXXXX	Serial number

6 Repairs

6.1 Sending for repair

NOTICE

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

Clean the instrument thoroughly and decontaminate!

- When returning products, please enclose a general 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 USA 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.

Outside USA and Canada

Please clarify the requirements for the return delivery with BrandTech Scientific, Inc **before** sending the instrument in for service.

Return only cleaned and decontaminated instruments to the address provided with the Return Authorization Number. Place the Return Authorization number so that it is clearly visible on the outside of the package.

Contact addresses

Germany:
BRAND GMBH + CO KG

USA and Canada:
BrandTech® Scientific, Inc.

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F +91 22 42957791
info@brand.co.in
www.brand.co.in

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Shanghai 200030 (P.R. China)
T +86 21 6422 2318
F +86 21 6422 2268
info@brand.com.cn
www.brand.cn.com

7 Calibration service

The ISO 9001 and GLP guidelines require regular inspection of your volume measuring devices. We recommend performing a volume check every 3 to 12 months. The cycle is dependent on the individual requirements of the device. Checks should be performed more frequently, in case of high frequency of use or the use of aggressive media.

The complete SOP for testing can be downloaded from www.brand.de or www.brandtech.com.

BRAND also offers you the option of having your devices calibrated through our factory calibration service or through our accredited calibration laboratory. Just send us the devices to be calibrated, indicating the type of calibration you would like. You will get your devices back in a few days. A detailed calibration report (factory calibration) or an accredited calibration certificate in accordance with DIN EN ISO/IEC 17025 is enclosed with each device. More information can be obtained from your retailer or directly from BRAND. The order document is available for download at www.brand.de (Service & Support).

For customers outside Germany

If you would like to use our calibration service, please contact one of our service partners in your region. Our service partners can forward your devices to BRAND for factory calibration, if required.

8 Warranty

We shall not be liable for the consequences of improper handling, use, servicing, operating or unauthorized repairs of the device or for the consequences of normal wear and tear, especially of wearing parts such as pistons, seals, valves and the breakage of glass. The same applies for failure to follow the instructions of the operating manual. We are not liable for damage resulting from disassembly beyond that described in the operating manual or if non-original spare parts or components have been installed.

USA and Canada:

Find more warranty information on www.brandtech.com.

9 Disposal

Before disposal, observe the relevant national disposal regulations, and ensure that the product is disposed of properly.

Subject to technical changes, errors, and misprints.