Transferpette® S -8/-12

Gebrauchsanleitung · Operating Manual · Mode d'emploi
Instrucciones de manejo · 操作手册

BRAND

EG-Konformitätserklärung
EC-Conformity Declaration

Die bezeichneten Produkte sind entwickelt, konstruiert und gefertigt in Übereinstimmung mit den einschlägigen Anforderungen der EG-Richtlinie 98/79/EG (IVD). Die alleinige Verantwortung für die Ausstellung dieser Konformitätserklärung trägt der Hersteller. / The devices named below are developed, constructed and manufactured in accordance to the fundamental requirements of the EC directive 98/79/EC (IVD). This declaration of conformity is issued under the sole responsibility of the manufacturer.

Gerätebezeichnung / Device name:	Transferpette ®S, einschließlich Pipettenspitzen von BRAND Transferpette®S, including pipette tips from BRAND
Gerätetyp / Device type:	Transferpette®S, Typ Variabel, Typ Fix, -8, -12 Transferpette®S, Adjustable Volume, Fixed Volume, -8, -12 Art. No. : 703700, 703706, 703708, 703710, 703712, 703720, 703726, 703728, 703730, 703732, 704708, 704716, 704720, 704728, 704738, 704744, 704754, 704762, 704764, 704768, 704769, 704770, 704772, 704773, 704774, 704778, 704780, 704782, 704784, 705808, 705816, 705820, 705828, 705838, 705844, 705854, 705862, 705864, 705868, 705869, 705870, 705872, 705873, 705874, 705878, 705880, 705882, 705884, 705900, 705906, 705908, 705910, 705912, 705920, 705926, 705928, 705930, 705932 Pipettenspitzen: alle Größen/ Pipette Tips: all sizes Art. No. : 702595, 702600, 702603, 702604, 702605, 702608, 732002, 732004, 732006, 732008, 732010, 732012, 732022, 732024, 732026, 732028, 732030, 732032, 732102, 732104, 732106, 732108, 732110, 732112, 732122, 732124, 732126, 732128, 732130, 732132, 732202, 732204, 732206, 732208, 732210, 732212, 732222, 732224, 732226, 732228, 732230, 732232, 732244, 732248, 732252, 732264, 732268, 732272, 732302, 732304, 732306, 732308, 732310, 732312,732322, 732324, 732326, 732328, 732330, 732332, 732344, 732348, 732352, 732364, 732368, 732372, 732502, 732504, 732506, 732508, 732510, 732512, 732514, 732602, 732604, 732606, 732608, 732610, 732612, 732614, 732622, 732624, 732626, 732628, 732630, 732632, 732634, 732702, 732704, 732706, 732708, 732710, 732712, 732714, 732722, 732724, 732726, 732728, 732730, 732732, 732734, 732802, 732804, 732805, 732808, 732810, 732812, 732814, 732822, 732824, 732826, 732828, 732830, 732832, 732834
Registrier-Nr./ Registration No.:	DE/ CA37/IVD/3/13 (Volumenmessgerät mit Hubkolben – Kolbenhubpipette nach DIN EN ISO 8655 Teil 2 einschl. Pipettenspitzen) zur In-Vitro-Anwendung/ (Piston-operated *volumetric* apparatus -Piston pipettes according DIN EN ISO 8655 Part 2 incl. Pipette tips for In-Vitro application)
Hersteller / Manufacturer:	BRAND GMBH + CO KG
Adresse / Address:	Otto-Schott-Str. 25, 97877 Wertheim · Germany

Die Produkte sind keine Produkte des Anhang II. Die Konformitätsbewertung erfolgte gemäß Anhang III. Eine vollständige technische Dokumentation ist vorhanden. / The products are not products of annex II. The conformity assessment procedures follow annex III. A complete technical documentation is available.

Wertheim, 02. Oktober 2019 / October 2, 2019

08.01.03.04

Hans-Walter Kern
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BRAND

Table of contents

1 *Scope of supply*

The package contains your Transferpette® S -8 or -12, 2 x TipBox, filled with suitable pipette tips, a container with silicone grease, 1 shelf mount, 1 reagent reservoir, 1 installation tool, 1 set of FKM/silicone sealing rings and this user manual.

2 *Terms of use*

- Please carefully read the operating manual before using the instrument for the first time.
- The operating manual is part of the instrument and must be kept in an easily accessible place.
- Be sure to include the operating manual if possession of this instrument IS transferred to a third party.
- Up-to-date versions of the operating manual are available at: www.brand.de.

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.

2.2 Icon

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.

3 *Safety regulations*

3.1 General safety regulations

Please read carefully!

This 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 p. 40. 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 splattering. Use only 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 instrument malfunctions are indicated (e.g. sluggish pistons, leaks), stop pipetting immediately and refer to the section “Troubleshooting”; see p. 60. Contact the manufacturer, if necessary.

3.2 Purpose

This is an air displacement pipette for pipetting aqueous solutions of medium density and low to medium viscosity.

3.3 Limitations of use

This instrument is intended for pipetting samples, within the following limitations:

- Operating temperature of instrument and reagent should be between +15 °C and +40 °C (59 °F to 104 °F) (other temperatures upon request)
- Vapor pressure up to 500 mbar
- Viscosity: 260 mPa s

3.4 Operating limitations

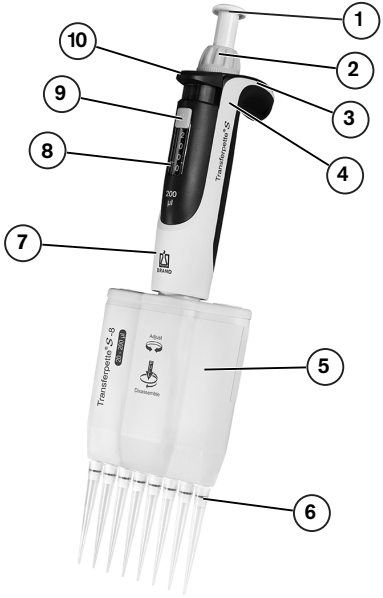
Viscous and wetting liquids may compromise volumetric accuracy. Volumetric accuracy may also be affected when pipetting liquids whose temperature deviates from the ambient temperature by more than ± 1 °C/ ± 1.8 °F.

3.5 Operating exclusions

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

- for liquids that corrode polypropylene and FKM
- for liquids that corrode polycarbonate
- for liquids that corrode polyvinylidene fluoride and silicone
- for liquids that corrode polyphenylsulphide (on 50 µl, 100 µl, 200 µl and 300 µl instruments)
- for liquids with very high steam pressure

4 *Functions and controls*



1 Pipetting key
2 Volume-setting wheel
3 Easy Calibration function
4 Finger rest
5 Pipetting unit
6 Tip cone
7 Hand grip
8 Volume display
9 Volume-change protection
10 Tip ejection key

Label window

The pipette can be individually labeled on the finger rest:

a. Remove the label window on the finger rest.

b. Mark the labeling film.

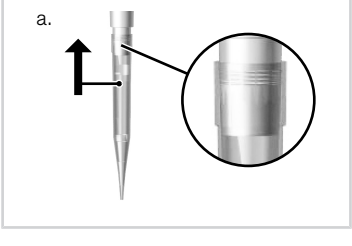
c. Reinsert the labeling film with window.

5 *Pipetting*

1. Inserting a tip

NOTICE

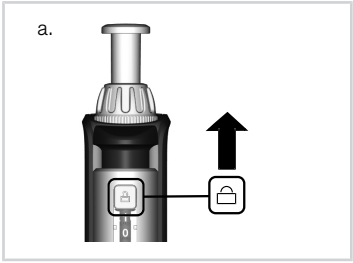
Perfect analysis results can only be achieved by using quality tips. We recommend BRAND pipette tips. For additional information, refer to the accuracy table p. 48.



a. Use the correct tips, in accordance with the volume range or color code! Make sure that the tips are firmly in place and leak tight.

Pipette tips are disposable products!

2. Setting the volume



a. Slide the volume-change protection upward (UN-LOCK).

b. Turn the volume-setting wheel to select the desired volume. In doing so, turn the adjustment wheel steadily, avoiding abrupt turning motions.

c. Slide the volume-change protection downward (LOCK). The volume-setting wheel becomes noticeably more difficult to turn, but movement is not completely blocked!

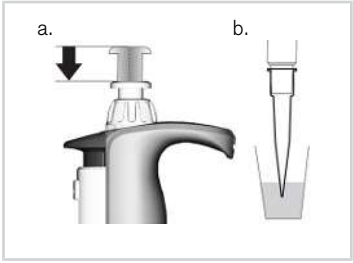
3. Adjusting the pipetting unit

The pipetting unit can be freely rotated in both directions.

4. Aspirating a sample

NOTICE

ISO 8655 requires that pipette tips are pre-wetted once before the actual pipetting procedure.



a. Press the pipetting button until first resistance is felt.

b. Hold the instrument vertically and immerse the tip in the liquid.

c. Allow the pipetting button to steadily move back to its original position.

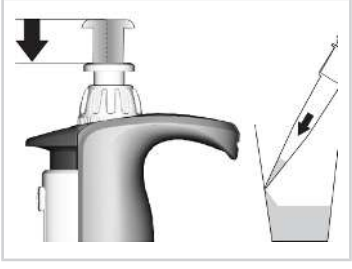
Leave the tip immersed in the liquid for a few seconds, so that the set volume is aspirated completely.

Volume range	Immersion depth in mm	Wait time in s
0.5 µl - 100 µl	2 - 3	1
> 100 µl	2 - 4	1

NOTICE

Do not lay the instrument down when the tip is filled; this can cause the medium to flow into the instrument and contaminate it! The instrument should always be stored in the provided shelf mount or table stand and kept in an upright position, without any tip inserted.

5. Dispensing a sample



a. Place the pipette tip against the vessel wall. Hold the pipette at an angle of 30-45° to the vessel wall.

b. Press the pipetting button at a uniform speed until the first resistance is felt and hold it. To improve accuracy, comply with the corre-

sponding wait time for serums, highly-viscous or low-density media.

c.

c. Completely empty the tip by over-stroking: press the pipetting button until the second resistance is felt.

d. While doing this, wipe the pipette tip against the vessel wall.

e. Remove the pipette tip from the vessel wall and allow the pipetting button to move back to its original position.

6. Ejecting a tip

NOTICE

The instrument should always be stored in the provided shelf mount or table stand and kept in an upright position, without any tip inserted.

Hold the pipette shaft over a suitable disposal bin and press the tip ejection button all the way down.

6 *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

Set the maximum specified instrument volume.

2. Conditioning the pipette

Condition the pipette before testing by aspirating and dispensing the test liquid (H_2O distilled) with a pipette tip five times.

3. Performing the test

NOTICE

In accordance with DIN EN ISO 8655-2, a tip change is recommended after each individual measurement. An exception to this rule can be made, according to DAkkS guideline DKD-R8-1.

a. Aspirate the test liquid and pipette into the weighing vessel.

b. Weigh the pipetted amount with an analysis scale. (Please refer to the user manual of the scale 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 3 volume ranges (100%, 50%, 10%) are recommended.

Calculation (for nominal volume)

x_I = Weighing results n = Number of weighings

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

Mean $\bar{x} = \frac{\sum x_I}{n}$

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

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

V_0 = Nominal volume

Coefficient of variation* $CV\% = \frac{100\ s}{\overline{V}}$

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

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

NOTICE

Test instructions (SOPs) and a version of the calibration software EASYCAL™ 4.0 are available for download at www.brand.de.

7 Accuracy table

Volume range [µl]	Partial volume [µl]	A* ≤ ±	CV* ≤ %	Sub steps [µl]	Recommended tip type [µl]
0.5 - 10	10 5 1	1.6 2 8	1.0 2 6	0.01	0.5 - 20
5 - 50	50 25 5	0.8 1.4 6	0.4 0.8 3	0.05	2 - 200
10 - 100	100 50 10	0.8 1.4 4	0.3 0.6 2	0.1	2 - 200
20 - 200	200 100 20	0.8 1.4 4	0.3 0.6 1.5	0.2	2 - 200
30 - 300	300 150 30	0.6 1.2 3	0.3 0.6 1.5	0.5	5 - 300
*A = Accuracy, CV = Coefficient of Variation					

20 °C
Ex

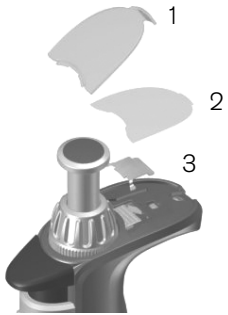
Final test values based on the nominal volume (= max. volume) printed on the instrument and the specified partial volumes at the same temperature (20 °C/68 °F) of the instrument, surroundings and distilled water, in accordance with DIN EN ISO 8655.

8 *Adjustment – Easy Calibration*

The instrument is permanently calibrated for aqueous solutions. If it is determined that the pipette is operating inaccurately or to adjust the instrument to work with solutions of varying density and viscosity or with specially-shaped pipette tips, it can be calibrated using the Easy Calibration Technique.

a. Perform a volume check and determine the actual value; see p. 46.

b.



b. Remove label window (1) and labeling film (2): Gently move the clamp and lift it off.

c. Using a paper clip or an unused pipette tip, remove the protective film (3) (the protective film can be discarded).

d.

d. Slide the red adjustment slider back completely, lift the volume-setting wheel (decoupling) and release the adjustment slider.

e.

e. Set the adjustment value:
Transferpette® S, adjustable: with the volume-setting wheel in the UNLOCK position, set to the previously determined actual value.
Transferpette® S, fixed-volume: set the volume by rotating in the +/- direction.
A volume check is recommended after every adjustment.

f.

f. Slide the adjustment slider completely back again, push the volume-setting wheel downward and release the adjustment slider. Re-attach the labeling film and reassemble the label window.

NOTICE

The change to factory settings is indicated by the red adjustment slider now visible in the label window.

9 *Cleaning and disinfection*

9.1 Autoclaving

The Transferpette® S and S -8/-12 are completely autoclavable at 121 °C (250 °F), 2 bar and a holding time of at least 15 minutes, in accordance with DIN EN 285.

NOTICE

The effectiveness of autoclaving must be verified by the user. Maximum safety is achieved through vacuum sterilization. We recommend the use of sterilization bags.

NOTICE

Prior to autoclaving, the volume-setting wheel must be set on an available numbered value (e.g., 11.25 or 11.26, but not between), with the volume-change protection set to fully unlocked (UNLOCK).

If the pipette is autoclaved frequently, the piston and seal should be greased with the supplied silicone grease in order to ensure proper movement. After autoclaving, tighten the connection between the hand grip and the pipette shaft if necessary.

a. Eject the pipette tip.

b. Autoclave the complete pipette without any further disassembling.

c. Allow the Transferpette® S or S -8/-12 to completely cool and dry.

9.2 UV sterilization

The instrument is resistant to normal exposure to a UV sterilization lamp. The effects of the UV exposure may cause some color change.

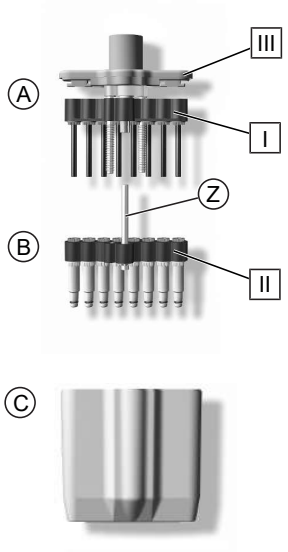
10 *Maintenance*

10.1 Disassembling/cleaning (Transferpette® S -8/-12)

The three main components of the pipetting unit can be easily separated and disassembled for maintenance, cleaning or replacing parts. The procedure is explained in detail on the following pages.

Changing the O-rings on the individual shafts is described in detail in the instructions included with the replacement part.

Main components of the pipetting unit



A

Piston unit with piston support bar [I] and inserted pistons, which can be individually unscrewed for cleaning or replacement.

B

Shaft unit with shaft support bar [II] and attached central guide axis (Z) as well as the shafts and seals, which can be individually unscrewed for cleaning and replacement.

C

Pipette housing, which is connected to the pipette housing cover [III] of the piston unit using two turn-lock closures.

Maintenance

In order to ensure proper functioning, the Transferpette® S -8/-12 should be serviced at regular intervals and cleaned as necessary.

What must be checked?

a. Check the pipette shafts, pistons and seals for damage and contamination.

b. Check the instrument for leaks. We recommend using BRAND's leak testing unit, the BRAND PLT unit. As an alternative to this, aspirate a sample and hold the instrument vertically for approx. 10 s. If drops form on the pipette tips, refer to "Troubleshooting" p. 60.

c. Check the pipette tip cone for damage.

d. Inspect the piston and seal for contamination.

e. Check the pipette for leaks.

We recommend using BRAND's leak detector, the BRAND PLT unit. As an alternative to this, aspirate a sample and hold the pipette vertically for approx. 10 s. If a drop forms on the pipette tip, refer to p. 60.

Cleaning instructions

a. Clean the individual shafts, pistons and shaft/piston bars (only these parts) with a soap solution or isopropanol, and then rinse with distilled water.

b. Allow the parts to completely dry and cool. Liquid residues in the shafts result in deviations in accuracy.

c. Re-grease pistons with a very thin coat of the supplied silicone grease. For the central guide axis (Z), use only the prescribed fluorine static grease!

Separating the hand grip from the pipetting unit

a. Eject the pipette tips.

b. To separate, pull the pipetting unit downward as far as possible, **only then**, turn it clockwise. After one revolution, the unit no longer needs to be pulled downward while turning.

NOTICE

Improper handling can lead to damage!

Removing shafts and seals for cleaning or replacement

a. Separate the pipetting unit from the hand grip.

b.

b. Rotate both closures of the pipette housing cover by 90° (e.g. using a coin) and pull off the pipette housing.

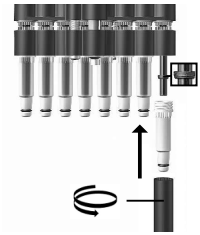
c.

c. Place the installation tool (M) onto a single shaft and unscrew the shaft.

d.

d. Push the piston unit all the way down. After removing the shaft, the seal is located either in the shaft or on the piston. Remove and inspect the seal and clean or change as necessary. If required, re-grease the piston with the supplied silicone grease. (To clean the Transferpette® S -8/-12 30-300 µl, remove the additional pressure ring from the piston.)

e.



e. Slide the seal onto the piston with the flat side upwards. (On the Transferpette® S -8/-12 30-300 µl, first re-install the additional pressure ring!) Tighten the cleaned or new shaft using the installation tool.

f.

f. Reassemble the pipetting unit. The pipetting unit must be screwed onto the hand grip in a counter-clockwise direction until it clicks into place. Check the instrument for leaks, see p. 52.

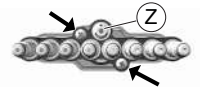
Removing pistons for cleaning or replacement

a. Separate the pipetting unit from the hand grip.

b.

b. Rotate both closures of the pipette housing cover by 90° (e.g. using a coin) and pull off the pipette housing.

c.

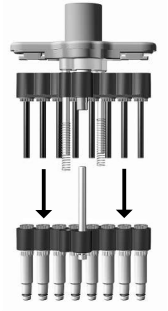


c. Remove both outer Phillips-head screws on the shaft unit.

NOTICE

The central guide axis (Z) must not be removed!

d.



d. Pull apart and separate the piston and shaft unit. Remove stroke springs.

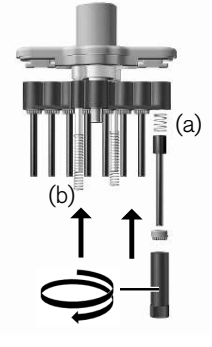
e.

e. Place the installation tool onto the piston nut and unscrew it.

f.

f. Remove the piston nut and pull off the piston with piston spring.

g.



g. Insert piston spring (a) and cleaned or new piston. Retighten the piston nut using the installation tool. Insert stroke springs (b).

h.

h. Reassemble the pipetting unit. The pipetting unit must be screwed onto the hand grip in a counter-clockwise direction until it clicks into place. Check the instrument for leaks, see p. 52.

11 *Troubleshooting*

Problem	Possible cause	Corrective action
Tip dripping (instrument leaking)	Unsuitable tip	Only use high-quality tips
	Tip not seated tightly	Firmly press tip on
The instrument does not aspirate or aspirates too little; the dispensed volume is too low	Seal contaminated	Clean seal
	Seal or cone is damaged	Replace seal or shaft
	Piston is contaminated or damaged	Clean or replace piston
Aspiration is very slow	Shaft is clogged	Clean shaft
Dispensed volume too large	Pipetting button pressed too far (to the over-stroke point) before aspirating	Ensure proper handling.
Piston sluggish	Piston is contaminated or not greased	Clean piston and apply grease

12 *Product markings*

Symbol or number	Meaning
	Read the user manual.
XXZXXXXX	Serial number
CE	With this mark, we confirm that the product complies with the requirements set out in the EC Directives and has been subjected to the specified testing procedures.
DE-M 18	The instrument is marked in accordance with the German Weights and Measures Act and the Weights and Measures Ordinance. Character sequence DE-M (DE for Germany), framed by a rectangle, as well as the two last digits of the year the marking was added (here: 2018).
121 °C	Autoclavable up to the temperature shown

13 *Ordering Information*

13.1 Order info/accessories

Transferpette® S -8

Volume	Description	Order No.
0.5 - 10 µl	M8-10	7059 00
5 - 50 µl	M8-50	7059 06
10 - 100 µl	M8-100	7059 08
20 - 200 µl	M8-200	7059 10
30 - 300 µl	M8-300	7059 12

Transferpette® S -12

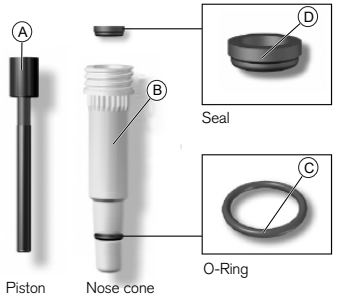
Volume	Description	Order No.
0.5 - 10 µl	M12-10	7059 20
5 - 50 µl	M12-50	7059 26
10 - 100 µl	M12-100	7059 28
20 - 200 µl	M12-200	7059 30
30 - 300 µl	M12-300	7059 32

Benchtop rack for 6 Transferpette® S or 6 Transferpette® S -8/-12	Wall mount for 1 Transferpette® S or 1 Transferpette® S -8/-12	Shelf mount for 1 Transferpette S or 1 Transferpette® S -8/-12
		
Order No. 7048 07	**Order No. 7048 12**	**Order No. 7048 11**

13.2 Spare parts

13.2.1 Transferpette® S -8/-12

The appearance and dimensions of the spare parts correspond to the respective nominal volume



Volume	A	B*	C	D
0.5 - 10 µl	7056 59	7056 77	7033 80	7033 40
5 - 50 µl	7056 66	7056 20	7056 18	7033 43
10 - 100 µl	7056 62	7056 21	7056 18	7033 44
20 - 200 µl	7056 63	7056 22	7056 18	7033 45
30 - 300 µl	7056 64	7056 23	7056 18	7033 46

* incl. seal, O-ring and installation tool. Transferpette® S -8/-12 30-300 µl also with pressure ring.

13.3 Additional accessories

Description	Order No.
Label window, PU 1 pc.	7047 50
Labeling film, PU 5 pcs.	7047 51
Silicone grease	7036 77
Fluorine static grease	7036 78
Reagent reservoir, PP. Content 60 ml. Suitable for autoclaving (121 °C).	
Non-sterile, with cover. PU 10 pcs.	7034 59
Sterile, without cover. Packaged individually. PU 100 pcs.	7034 11
sterile, without cover. 5 pcs./bag. PU 200 pcs.	7034 09
PLT unit (pipette leak detector)	7039 70

14 *Repairs*

14.1 Sending for repairs

NOTICE

Transporting hazardous materials without approval is prohibited by law.

Clean the instrument thoroughly and decontaminate!

- When returning products, please enclose a general description of the type of malfunction and the media used. The instrument cannot be repaired if information about the media used is not provided.
- Only send the instrument without a battery installed.
- The instrument is returned at the risk and expense of the sender.

Outside USA and Canada

Fill out the “Declaration on the Absence of Health Hazards” and sent it together with the instrument to the manufacturer or dealer. Pre-printed forms can be requested at the dealer or manufacturer, or are available for download at www.brand.de.

Within USA and Canada

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

Send only cleaned and decontaminated instruments to the address, which you received together with the return number. Attach the return number in a clearly visible place on the package.

Contact addresses

BRAND GMBH + CO. KG
Otto-Schott-Str. 25
97877 Wertheim (Germany)
T: +49 9342 808-0
F: +49 9342 808-98000
info@brand.de
www.brand.de

India:
BRAND Scientific Equipment Pvt. Ltd.
303, 3rd Floor, 'C' Wing, Delphi
Hiranandani Business Park,
Powai
Mumbai–400 076 (India)
T: +91 22 42957790
F: +91 22 42957791
info@brand.co.in
www.brand.co.in

USA and Canada:
BrandTech® Scientific, Inc.
11 Bokum Road
Essex, CT 06426-1506 (USA)
T: +1-860-767 2562
F: +1-860-767 2563
info@brandtech.com
www.brandtech.com

China:
BRAND (Shanghai) Trading Co., Ltd.
Guangqi Culture Plaza
Room 506, Building B
No. 2899, Xietu Road
Shanghai 200030 (P.R. China)
T: +86 21 6422 2318
F: +86 21 6422 2268
info@brand.cn.com
www.brand.cn.com

15 *Calibration service*

The ISO 9001 and GLP guidelines require regular inspection of your volume measuring instruments. We recommend performing a volume check every 3 to 12 months. The cycle is dependent on the individual requirements of the instrument. Checks should be performed more frequently, in case of high frequency of use or the use of aggressive media. The detailed testing instructions are available for download on www.brand.de or www.brandtech.com.

BRAND also offers the possibility to have your instruments calibrated by our factory calibration service or by the BRAND DAkkS laboratory. Simply send us the instrument to be calibrated, accompanied by details about which type of calibration you would like. The instrument will be returned to you after a few days together with a test report (factory calibration) or a DAkkS calibration certificate. More information can be obtained from your dealer or directly from BRAND.
The order document is available for download on www.brand.de (see Technical Documents).

16 *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.

17 *Disposal*

For the disposal of the intrument and pipette tips, please follow the respective national disposal regulations.

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