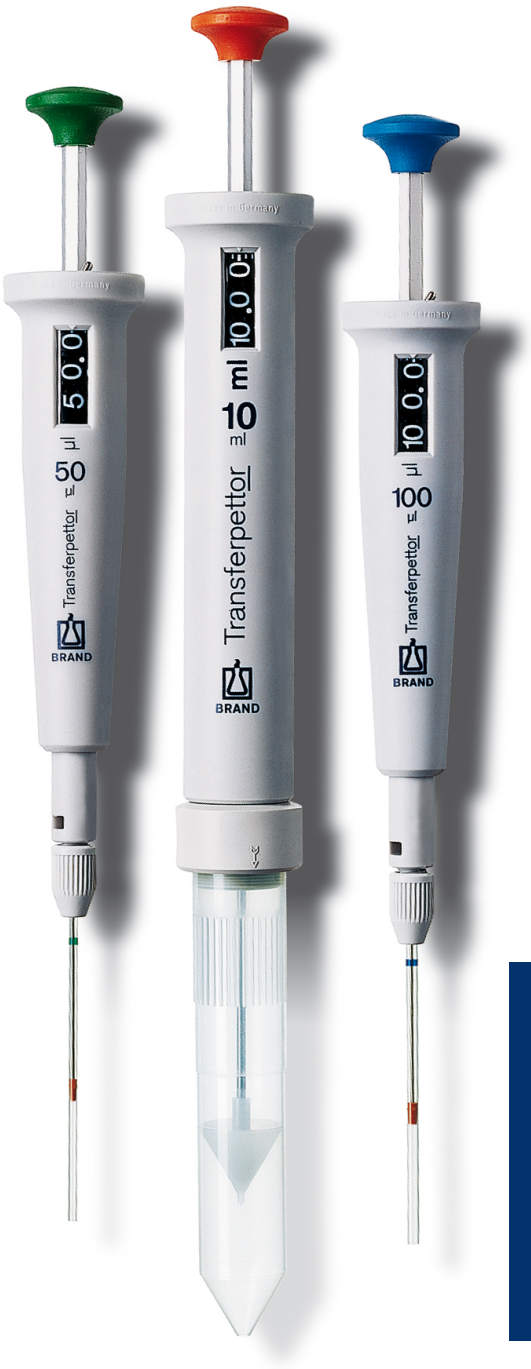
English



SOP
0623

Transferpettor

Standard Operating Procedure

Table of contents

1. Introduction

The test instruction transfers standards relevant to the test into a practical form. It can therefore be used as a basis for test equipment monitoring according to DIN EN ISO 9001, DIN EN ISO 10012, and DIN EN ISO/IEC 17 025.

Basically, we recommend an inspection every 3…12 months. However, the testing interval may be adjusted to your individual requirements. In the case of high frequency of use or the use of aggressive media, it is advisable to check more frequently.

The following instruments can be checked using these test instructions:

Instruments	Types	Relevant standards
Transferpettor®	Fixed volume Variable volume	ISO 8655:2022

For the regular checks according to DIN EN ISO 9001, DIN EN ISO 10 012, and DIN EN ISO/IEC 17 025 as well as the GLP Guidelines, we offer a calibration service (see *'BRAND Calibration Service, p. 16'*). This calibration service saves you time and internal effort, especially if you still have to perform calibrations in addition to ongoing operation.

Legend

In order to simplify the collection of the relevant data, the SOP refers to the respective items in the test report. The following graphics indicate to these positions:

Example:

Position in the test report:

Instrument

In the appendix, you will also find the health clearance form required to send in equipment as well as information about our accredited calibration laboratory and EASYCAL™ 5 calibration software.

2. Preparation

2.1. Instrument type and serial number

1. Determine instrument type and nominal volume. Enter the result in the test report: 1

2. Read off the serial number. The serial number is located on the Hand grip . Enter the result in the test report: 1

3. Read customers identification, if available. Enter the result in the test report: 1

2.2. Minimum equipment of the Transferpettor

+ Transferpettor
+ Cap/capillary
+ Seal

Use only original parts.

2.3. Cleaning

1. Clean cap/capillary.

→ Make sure there are no media residues.

→ Remove cap/capillary when cleaning.

→ Wipe the outside with a soft cloth!

2. Clean the housing adequately.

→ Minor soiling permissible!

2.4. Visual inspection for damage

1. Housing

→ Mechanical damage?

→ Cap/capillary/seal

→ Deformities? Damages?

2. Enter the result in the test report 2.

Possible errors and the actions that can be taken as a result:

Error	Possible causes	Measures
Cap/capillary damaged.	Solids in the liquid; wear	Replace cap/capillary; see instructions for use
Seal damaged	Solids in the liquid; wear	Replace seal; see instructions for use

2.5. Functional test

1. Correctly attach the seal and cap/capillary.

→ Observe the instructions for use exactly.

→ Pay attention to the correct cap/capillary placement

2. Set nominal volume and set lever to “fixed”.

→ Can the volume setting be turned easily? Is the locking mechanism tight?

3. For instruments up to 200 µl, the lower end of the seal or the piston rod (up to 10 µl) must be in line with the ring mark of the capillary; this is an important prerequisite for volume testing.

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

→ For instruments from 0.5 ml, the button and seal must strike simultaneously; this is a prerequisite for the volume check (see instructions for use).

5. Immerse the cap/capillary in the water.

→ Immerse a few millimeters in the deionized water. The liquid must be aspirated slowly and evenly.

6. Wipe cap/capillary on the outside.

→ Use a lint-free cloth and do not touch the opening; otherwise, liquid will be sucked out.

7. Hold the filled cap/capillary vertically and observe whether a drop forms.

→ Test duration 10 s.

8. Dispense the test liquid again.

→ Hold the cap/capillary against the vessel wall, and wipe off the last drop on the vessel wall.

9. The pipetting knob must move smoothly and without jerks.

10. Enter the result in the test report 3.

Possible errors and the actions that can be taken as a result:

Error	Possible causes	Measures
Suction not possible or very slow	Cap/capillary or seal is dirty	Carry out cleaning; see instructions for use
Drop forms on the pipette	Cap/capillary defective Seal defective	Replace cap/capillary; see instructions for use Replace seal; see instructions for use

3. Test instruments and accessories

+ A test room with the following features:
  draft-free
  low temporal and spatial temperature fluctuations
  Taking into account the measuring tolerance of the hygrometer, a relative humidity of 45…80% should be reached.
  Ambient temperature of max. 20 ± 3°C
+ Place the instrument to be tested with accessories unpacked in the test room for at least 2 h so that the instrument and accessories can adjust to the ambient temperature.
+ A recipient vessel filled with deionized or distilled water (e. g. Erlenmeyer flask) (water quality in accordance with ISO 3696, at least quality 3) Consider the following aspects:
  Adjust the water and ambient temperature by max. 0.5°C.
  Prevent the water in the vessel from cooling down as a result of evaporation.
+ Provide a weighing vessel (e.g., Erlenmeyer flask). Fill this with a small amount of water.
  Make sure at least the bottom is covered.
  Provide evaporation protection for < 100 µl test volume.
+ Measuring instruments in accordance with DIN ISO 8655-6:

Instrument	**Resolution:**
Thermometer for liquids	0.1°C
Thermometer for ambient temperature	0.1°C
Hygrometer	1% relative air humidity
Barometer	0.1 kPa
Timer	1 s

+ Balance, recommended specifications:

Nominal volume of the instrument to be tested	**Resolution of the display**	**Repeatability and linearity** [a]
V	**mg**	**mg**
0.5 ≤ V < 20 µl	0.001 [b]	0.006 [b]
20 µl ≤ V < 200 µl	0.01	0.025
200 µl ≤ V ≤ 10 ml	0.1	0.2

[a] The repeatability in this table applies to the volume determination of a single-channel instrument. If a single-channel balance is used exclusively for the volume determination of multichannel pipettes, the repeatability is twice as high as specified in this table.

[b] single channel balance

Traceability of test results to the national standard

By using calibrated test equipment (balance and thermometers), the requirement of DIN EN ISO 9001, DIN EN ISO 10 012, and DIN EN ISO/IEC 17 025 for traceability of the test to the national standard is fulfilled. The calibration of the balance can be done by DAkkS calibration, a direct official calibration of the balance, or by calibrating the balance with correspondingly traced weights (corresponding precision). The thermometer can also be calibrated by means of a DAkkS calibration, an official calibration, or by comparison with corresponding traceable thermometers (under defined conditions).

4. Gravimetric calibration

4.1. Gravimetric test for Transferpettor with nominal volume > 50 µl

1.	Set the nominal volume.	
2.	Determine the temperature of the deionized water.	Enter the result in the test report 4.
3.	Pre-rinse cap/capillary once.	Take up test liquid and dispense it again; there should be no more air bubbles in the cap/capillary.
4.	Place the weighing vessel (containing a small amount of deionized water) on the balance and tare the balance.	
5.	Press the pipetting button as far as it will go.	
6.	Immerse the cap/capillary in the water.	Immerse about a few millimeters vertically into the sample.
7.	Take up the test liquid from the receiving vessel.	Slide the pipetting knob back slowly and evenly. Keep the tip in the test liquid for approx. 1 s. Gently wipe the cap on the vessel wall at an angle of 30…45°. Capillary: make sure the meniscus lines up with the lower edge of the capillary.
8.	Wipe cap/capillary on the outside.	Use a lint-free cloth and do not touch the opening; otherwise, liquid will be sucked out.
9.	Remove the weighing vessel from the balance.	
10.	Dispense the sample into the weighing vessel.	Place the cap/capillary at an angle of approx. 30…45° to the vessel wall. Press the pipetting button at a steady speed until the stop and hold it. Wipe the cap/capillary along the vessel wall over a length of approx. 10 mm; pull the pipette away upwards. Allow the pipetting button to steadily move back to its original position.
11.	Place the weighing vessel onto the balance.	Enter the result in the test report 5.
12.	Re-tare the balance.	
13.	Repeat steps 5…10 times.	Enter the result in the test report 5.
14.	Then pipette analogously at 50% and 20% of the nominal volume.	Only for digital instruments! Enter the result in the test report 5. This results in 30 weight values (digital instrument) or 10 weighing values (fixed instrument).

4.2. Gravimetric test for Transferpettor with nominal volume ≤ 50 µl

Note on evaporation

For pipettes with a nominal volume ≤ 50 µl, the tolerance limits are usually smaller than 0.5 µl. This low tolerance limit means that the evaporation of water during the test has a relatively high influence on the measurement result. For this reason, a test method that largely prevents evaporation must be used for pipettes ≤ 50 µl. If a special pipette calibration balance with an “evaporation trap” is used, carry out the procedure as in For Transferpette® with nominal volume > 50 µl . BRAND has developed a new test method especially for this purpose. The weighing vessel used is a disposable micropipette or a micro-weighing vessel; these allow almost no evaporation.

1	Set the nominal volume.	
2.	Determine the temperature of the deionized water.	Enter the result in the test report 4.
3.	Pre-rinse the capillary once.	Take up test liquid and dispense it again; there should be no more air bubbles in the cap/capillary.
4.	Clamp the disposable micropipette to the pipette holder, place on the balance, and tare the balance.	
5.	Press the pipetting button as far as it will go.	
6.	Immerse the capillary in the water.	Immerse approximately 2…3 mm vertically into the sample.
7.	Take up the test liquid from the receiving vessel.	Slide the pipetting knob back slowly and evenly. Keep the tip in the test liquid for approx. 1 s. Gently wipe the capillary on the vessel wall at an angle of approx. 30…45°. Make sure the meniscus lines up with the lower edge of the capillary.
8.	Wipe the outside of the capillary.	Use a lint-free cloth and do not touch the opening; otherwise, liquid will be sucked out.
9.	Remove the disposable micropipette from the balance.	The pipette holder facilitates handling.
10.	Dispense sample into the disposable micropipette.	Hold the capillary in the opening of the disposable micropipette. Press the pipetting button at a steady speed until the stop and hold it. Pull the disposable micropipette out of the capillary while pressing the pipetting button (no wiping necessary). Allow the pipetting button to steadily move back to its original position.
11.	Place the disposable micropipette on the balance; note the weight value.	Enter the result in the test report 5.
12.	Tare the balance again with a new disposable micropipette.	
13.	Repeat steps 4 through 10 ten times.	Enter the result in the test report 5.
14.	Then pipette analogously at 50% and 20% of the nominal volume.	Only for digital instruments! Enter the result in the test report 5. This results in 30 weight values (digital instrument) or 10 weighing values (fixed instrument).

5. Evaluation of gravimetric test results

The weight values obtained during the gravimetric test are only the mass values of the dispensed volume. In order to obtain the actual volume, an adjustment calculation must be carried out. The following calculations must be carried out:

Step	Calculation	Remark
1.	**Mean weight**: (Example for 10 weight values) $\bar{x} = \frac{x_1 + x_2 + x_3 + x_4 + x_5 + x_6 + x_7 + x_8 + x_9 + x_{10}}{10}$	
2.	**Mean volume**: $\overline{V} = \overline{x} * z$	Factor Z (see Table 1). Enter the result in the test report 6a.
3.	**Standard deviation**: $s = Z * \sqrt{\frac{\sum(x_i - \overline{x})^2}{n-1}}$	Factor Z (see Table 1). Enter the result in the test report 6b.
4.	**Accuracy**: $A\% = \frac{\overline{V} - V_0}{V_0} * 100$	Enter the result in the test report 6c.
5.	**Coefficient of variation**: $CV\% = \frac{100\ s}{\overline{V}}$	Enter the result in the test report 6d.
	Actual/nominal value comparison: For error limits, see *'Manufacturer limits for Transferpettor, p. 10'* and *'ISO error limits for pipettes, p. 11'* and the following accuracy tables for the respective instrument, or define your own error limits.	Enter the result in the test report 6e.
	Result:	Enter the result in the test report 6g.

If the calculated values (A% and CV%) are less than or equal to the error limits, the instrument is in good working order.

We recommend using software to help perform the calculation and evaluation. For this purpose, BRAND offers the EASY-CAL™ calibration software (see here). This convenient software runs on Windows and speeds up the calculation considerably.

5.1. Possible volume error

Possible volume errors and the following measures:

Error	Possible causes	Measures
Volume too small	Pipetting button not pressed to the stop	Press the pipetting button as far as it will go.
	Cap/capillary is not positioned correctly	Mount cap/capillary correctly; see instructions for use
	Liquid remains in cap/capillary	Cap/capillary or seal defective; replace according to instructions for use, and mount cap correctly
Volume too large	Air bubbles in the liquid taken up	Liquid taken up too quickly.
	Cap/capillary is not mounted correctly	Mount cap/capillary correctly; see instructions for use.

5.2. Temperature and factor Z

Extract from DIN EN ISO 8655

Table refers to 1,013 hPa.

In the validity range from 950 hPa to 1040 hPa.

Temperature: ° C	Factor Z ml/g		Temperature: ° C	Factor Z ml/g
15	1.0020		23	1.0035
15.5	1.0020		23.5	1.0036
16	1.0021		24	1.0038
16.5	1.0022		24.5	1.0039
17	1.0023		25	1.0040
17.5	1.0024		25.5	1.0041
18	1.0025		26	1.0043
18.5	1.0026		26.5	1.0044
19	1.0027		27	1.0045
19.5	1.0028		27.5	1.0047
20	1.0029		28	1.0048
20.5	1.0030		28.5	1.0050
21	1.0031		29	1.0051
21.5	1.0032		29.5	1.0052
22	1.0033		30	1.0054
22.5	1.0034			

5.3. Manufacturer limits for Transferpettor

Transferpettor macro

Enter in the test report at 6e .

Volume	Accuracy R ≤ ±		Coefficient of variation CV ≤		Graduation
	%	µl	%	µl	
100–500 µl	0.5	2.5	0.2	1.0	1.0 µl
200–1000 µl	0.5	5.0	0.2	2.0	1.0 µl
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

Transferpettor micro

Enter in the test report at 6e .

Volume	Accuracy R ≤ ±		Coefficient of variation CV ≤	
	%	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
50	1.8	0.9	0.4	0.2
100	1.5	1.5	0.4	0.4
200	1.5	3	0.2	0.4

5.4. ISO error limits for pipettes

Nominal volume	A ≤ ± %	CV ≤ %
1 to 3 µl	2.5	2
> 3 to 5 µl	2.5	1.5
> 5 to 10 µl	1.2	0.8
> 10 to 50 µl	1.0	0.5
> 50 to 5,000 µl	0.8	0.3
> 5,000 to 10,000 µl	0.6	0.3

Laboratory instruments Transferpettor up to a volume range of 200 µl cannot comply with the tolerances of ISO 8655. Nevertheless, we also recommend gravimetric volume testing as a test method for these laboratory instruments as described, for example, in DIN EN ISO 8655 Part 6.

5.5. Error limits to be defined by the user

For calibration, the applicable error limits must be defined by the user. Different methods can be applied to accomplish this:

If the application requires it and the optimized test conditions exist for measurement, the error limits specified in the *'Manufacturer limits for Transferpettor, p. 10'* can also be expected in the case of used, intact volumetric instruments.

In accordance with the German Calibration Law, however, it is also admissible to apply operational limits. The operational limits equate to double the calibration error limits. This means that the values of the manufacturer's error limits*', p. 10'* must be doubled. Users may also define their own individual error limits related to their particular application, which their calibrated (adjusted) measuring instrument should adhere to.

This procedure meets the requirements of DIN EN ISO 9001, DIN EN ISO 10 012, and DIN EN ISO/IEC 17 025.

6. Test report for volumetric instruments

1 Instrument

- ☐ Titrette®
- ☐ Burette Digital
- ☐ Dispensette®
- ☐ Transferpette®
- ☐ Transferpette® S
- ☐ Transferpette® electronic
- ☐ Transferpettor

Type

- ☐ fixed
- ☐ variable

- ☐ analog
- ☐ digital

Nominal volume:

Serial number:

Customer's marking:

2 Damage

Nominal volume:

Serial number:

Customer's marking:

3 Operating defects

- ☐ Type of damage
- ☐ Damage remedied
- ☐ none
- ☐ Type of functional defect
- ☐ Functional defect eliminated

4 Environment

Water temperature:

Balance:

Thermometer:

Continued on next page

Relative humidity: (at least 45%):

Correction factor Z:

5 Weight values of the gravimetric test

Weight value No.	At 10% in mg	At 50% in mg	For nominal volume in mg
x_1:			
x_2:			
x_3:			
x_4:			
x_5:			
x_6:			
x_7:			
x_8:			
x_9:			
x_{10}:			

6 Evaluation of the gravimetric test

Calculated value		At 10%	At 50%	For nominal volume
6a	$\overline{V}$			
6b	s			
6c	A [%] actual			
6d	CV [%] actual			
6e	A [%] target			
6e	CV [%] target			
6g	Result			

The test was carried out according to DIN EN ISO 8655 and DIN EN ISO 4787.

Date: Signature:

7. Appendix

7.1. Abbreviations, units, and notations

The following abbreviations are used in this or other test instructions:

Symbol	A < B: A is less than B A ≤ B: A is less than or equal to B
Ranges	Example: 980…1,000 hPa Prevents sign confusion (i.e., en dash as minus sign)
	Example: 20 µl < V < 100 µl The volume V is between 20 µl and 100 µl (V is larger than 20 µl and smaller than 100 µl).
Materials	PFP: perfluorinated pentacene
	PMP: polymethylpentene
	PFA: perfluoroalkoxy polymer
	Boro 3.3: borosilicate glass
	AR-GLAS®: A soda-lime glass from SCHOTT AG, 55122 Mainz, Germany
	PUR: polyurethane
W1	Tare weight of the weighing vessel
W2	Weight of the weighing vessel filled with the medium to be weighed.
A	Correctness
CV	Coefficient of variation:
V	Volume
s	Second
l	Liter
ml	Milliliter(s)
µl	Microliters
g	Gram(s)
mg	Milligrams(s)

7.2. Declaration on the Absence of Health Hazards

Please enclose with the instrument or send as an e-mail to service@brand.de.

BRAND GMBH + CO KG

Otto-Schott-Str. 25
97877 Wertheim

service@brand.de
F +49 9342 808 91290

We are required by law to protect our employees against hazards caused by contaminated instruments. We therefore ask for your understanding that we do not perform calibrations | Repairs can be carried out only if we have received this declaration completely filled in and signed.

ATTENTION: If you are a customer outside of Germany, please contact our local service partner in your country. Please send in instruments from outside Germany only after being requested to do so. Unsolicited instruments cannot be processed.

To the instrument shipment from | To delivery slip number

The undersigned hereby declares:

+ That the instruments have been carefully cleaned and decontaminated before shipment.
+ That the instruments pose no danger through bacteriological, viral, chemical, and/or radioactive contamination.

Applications:

Media used:

- ☐ Acids
- ☐ Bases
- ☐ Solvents
- ☐ Serum, blood
- ☐ Other:

Decontamination measures:

Company / laboratory (official stamp)

Tel. / fax / e-mail

Name:

Pos.

Date / legally binding signature:

_____

7.3. BRAND Calibration Service

BRAND offers a complete service that includes calibration and adjustment of BRAND and third-party instruments as well as any necessary maintenance and repair of BRAND instruments. This saves time and money, with the added benefit of testing by an independent laboratory. Find more information and the order form for the repair and calibration service on brand.de.

7.3.1. Range of instruments

1. Piston-operated pipettes (single- and multi-channel)
2. Bottle-top dispensers
3. Bottle-top burettes
4. Repetitive pipettes

7.3.2. Testing in accordance with DIN EN ISO 8655

A team of qualified staff, working in temperature and humidity controlled rooms and using state-of-the-art balances and calibration software, calibrates Liquid Handling instruments, regardless of their make, in accordance with DIN EN ISO 8655.

Variable volume instruments such as the HandyStep®Touch, HandyStep®Touch S, HandyStep® electronic, Transferpette®, Transferpette®S, Transferpette®electronic, Transferpette®-8/-12, Transferpette®-8/-12 electronic, Transferpette®S -8/-12, Transferpettor, Dispensette®, digital burettes, or Titrette® are checked at nominal volume, 50% of the nominal volume, and at 10% or 20% of the nominal volume.

To document the results, a detailed test report that fully complies with all relevant regulations is compiled.

The BRAND Calibration Service provides:

1. Calibration of Liquid Handling instruments, regardless of their make
2. Detailed calibration certificate
3. Return of instrument within a few working days
4. Cost-efficient implementation

7.4. Accredited calibration laboratory D-K-18572-01-00 by BRAND

Precise measurement results are essential in all areas – both for internal quality assurance and to meet various standard requirements.

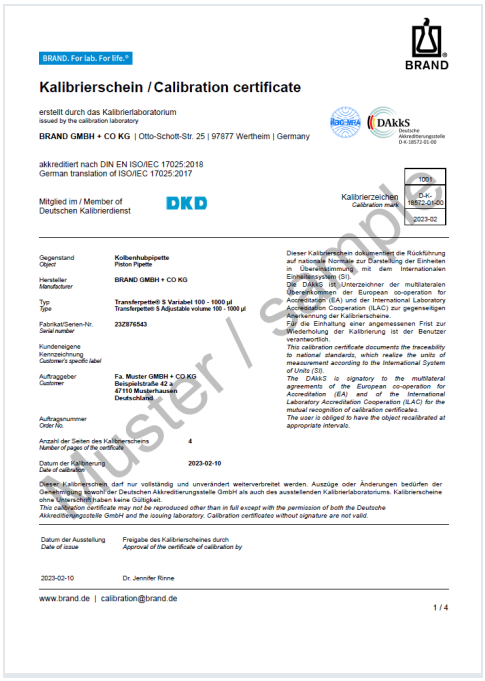
BRAND has been accredited since 1998 – first by the DKD (German Calibration Service) and since 2013 by the DAkkS (German Accreditation Body) as a calibration laboratory for volumetric instruments in accordance with DIN EN ISO/IEC 17025.

Thanks to these many years of experience in the calibration of volumetric instruments as well as liquid handling instruments, customers also find BRAND a trustworthy service provider for test equipment monitoring

Standards (e.g., DIN EN ISO 9001 and DIN EN ISO/IEC 17 025) require that measured values are metrologically traceable to international units. Proof of this is provided by calibration certificates issued by accredited laboratories (often also called DAkkS or DKD calibration certificates).

With the calibration certificate in accordance with DIN EN ISO/IEC 17025, our customers receive a calibration that is internationally recognized as metrologically traceable in many countries. This is possible thanks to the membership of DAkkS in the EA (European Cooperation for Accreditation) and ILAC (International Laboratory Accreditation Cooperation).

Calibration certificate according to DIN EN ISO/IEC 17025



BRAND. For lab. For life.®

BRAND

Kalibrierschein / Calibration certificate

erstellt durch das Kalibrierlaboratorium
issued by the calibration laboratory

BRAND GMBH + CO KG | Otto-Schott-Str. 25 | 97877 Wertheim | Germany

akkreditiert nach DIN EN ISO/IEC 17025:2018
German translation of ISO/IEC 17025:2017

Mitglied im / Member of Deutschen Kalibrierdienst

DKD

Kalibrierzeichen / Calibration mark

D-K-18572-01-00

2023-02

Gegenstand / Object	**Kolbenhubpipette** / **Piston Pipette**
Hersteller / Manufacturer	**BRAND GMBH + CO KG**
Typ / Type	**Transferpette® S Variabel 100 - 1000 µl** / **Transferpette® S Adjustable volume 100 - 1000 µl**
Fabrikat/Serien-Nr. / Serial number	**2328765 43**
Kundeneigene Kennzeichnung / Customer's specific label	
Auftraggeber / Customer	**Fa. Muster GMBH + CO KG** **Beispielstraße 42 a** **47110 Musterhausen** **Deutschland**
Auftragsnummer / Order No.	
Anzahl der Seiten des Kalibrierscheins / Number of pages of the certificate	4
Datum der Kalibrierung / Date of calibration	**2023-02-10**

Dieser Kalibrierschein dokumentiert die Rückführung auf nationale Normale zur Darstellung der Einheiten in Übereinstimmung mit dem Internationalen Einheitensystem (SI).
Die DAkkS ist Unterzeichner der multilateralen Übereinkommen der European co-operation for Accreditation (EA) und der International Laboratory Accreditation Cooperation (ILAC) zur gegenseitigen Anerkennung der Kalibrierscheine.
Für die Einhaltung einer angemessenen Frist zur Wiederholung der Kalibrierung ist der Benutzer verantwortlich.
This calibration certificate documents the traceability to national standards, which realize the units of measurement according to the International System of Units (SI).
The DAkkS is signatory to the multilateral agreements of the European co-operation for Accreditation (EA) and of the International Laboratory Accreditation Cooperation (ILAC) for the mutual recognition of calibration certificates.
The user is obliged to have the object recalibrated at appropriate intervals.

Dieser Kalibrierschein darf nur vollständig und unverändert weiterverbreitet werden. Auszüge oder Änderungen bedürfen der Genehmigung sowohl der Deutschen Akkreditierungsstelle GmbH als auch des ausstellenden Kalibrierlaboratoriums. Kalibrierscheine ohne Unterschrift haben keine Gültigkeit.
This calibration certificate may not be reproduced other than in full except with the permission of both the Deutsche Akkreditierungsstelle GmbH and the issuing laboratory. Calibration certificates without signature are not valid.

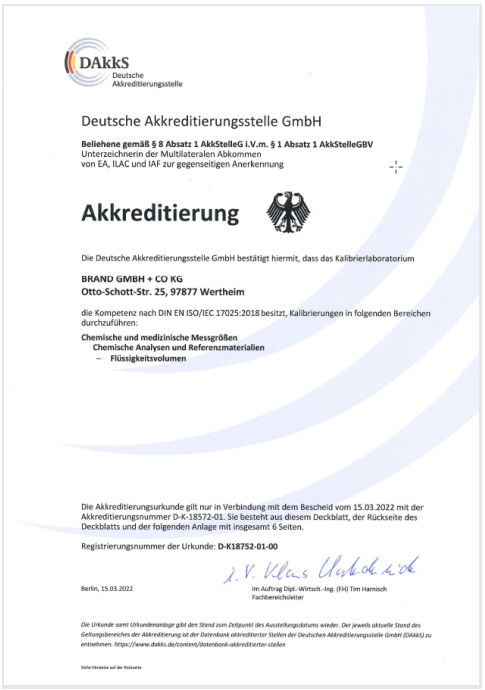
Datum der Ausstellung / Date of issue	Freigabe des Kalibrierscheines durch / Approval of the certificate of calibration by
2023-02-10	Dr. Jennifer Rinne

www.brand.de | calibration@brand.de

1 / 4

Muster / sample

BRAND accreditation certificate



DAkkS Deutsche Akkreditierungsstelle

Deutsche Akkreditierungsstelle GmbH

Beliehene gemäß § 8 Absatz 1 AkkStelleG i.V.m. § 1 Absatz 1 AkkStelleGBV
Unterzeichnerin der Multilateralen Abkommen
von EA, ILAC und IAF zur gegenseitigen Anerkennung

Akkreditierung

Die Deutsche Akkreditierungsstelle GmbH bestätigt hiermit, dass das Kalibrierlaboratorium

BRAND GMBH + CO KG
Otto-Schott-Str. 25, 97877 Wertheim

die Kompetenz nach DIN EN ISO/IEC 17025:2018 besitzt, Kalibrierungen in folgenden Bereichen durchzuführen:

Chemische und medizinische Messgrößen
Chemische Analysen und Referenzmaterialien
– **Flüssigkeitsvolumen**

Die Akkreditierungsurkunde gilt nur in Verbindung mit dem Bescheid vom 15.03.2022 mit der Akkreditierungsnummer D-K-18572-01. Sie besteht aus diesem Deckblatt, der Rückseite des Deckblatts und der folgenden Anlage mit insgesamt 6 Seiten.

Registrierungsnummer der Urkunde: **D-K18752-01-00**

Berlin, 15.03.2022

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Die Urkunde samt Urkundenanlage gibt den Stand zum Zeitpunkt des Ausstellungsdatums wieder. Der jeweils aktuelle Stand des Geltungsbereiches der Akkreditierung ist der Datenbank akkreditierter Stellen der Deutschen Akkreditierungsstelle GmbH (DAkkS) zu entnehmen. https://www.dakks.de/content/datenbank-akkreditierter-stellen

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BRAND performs the calibration of liquid handling equipment in accordance with the gravimetric reference method in compliance with all requirements of DIN EN ISO 8655-6:2022.

For volumetric instruments made of glass or plastic, we work in accordance with DIN EN ISO 4787:2022 or, if necessary, in accordance with accredited in-house procedures.

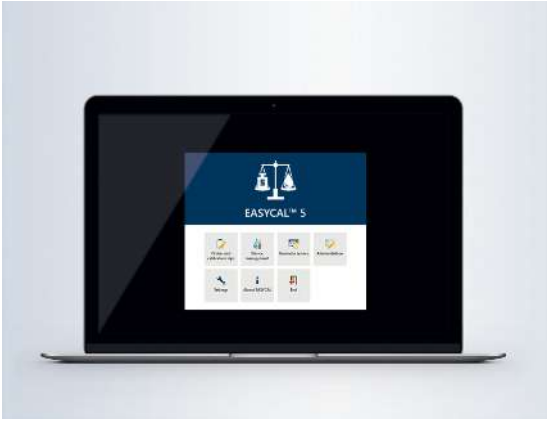
As a rule, and unless otherwise requested by our customers, our calibration results are assessed for conformity on the basis of the ILAC-G8:03/2009 decision rule. For this purpose, the measurement result is evaluated taking into account the expanded measurement uncertainty with 95% overlap probability in relation to relevant standard or manufacturer tolerances. This provides our customers with good assistance in assessing whether the test equipment meets their own quality requirements.

7.4.1. Volumetric instruments with DAkkS calibration certificates issued by BRAND

BRAND calibrates the following volumetric instruments (new or already in use and regardless of make):

+ **Piston-operated pipettes**, from 0.1 µl to 10 ml
+ Multi-channel piston-operated pipettes from 0.1 µl to 300 µl
+ **Piston-operated burettes**, from 5 µl to 200 ml
+ Dispensers and dilutors from 5 µl to 200 ml
+ **Glass volumetric instruments**, adjusted to contain (TC, In) from 1 µl to 10,000 ml
+ **Glass volumetric instruments**, adjusted to deliver (TD, Ex) from 100 µl to 100 ml
+ **Plastic volumetric instruments**, adjusted to contain (TC, In) from 1 ml to 2,000 ml
+ **Plastic volumetric instruments**, adjusted to deliver (TC, Ex) from 1 ml to 100 ml
+ **Glass pycnometers**, from 1 cm^3 to 100 cm^3

7.5. EASYCAL™ Calibration software – test equipment monitoring made easy



The EASYCAL™ 5 calibration software facilitates the monitoring of liquid handling instruments (piston-stroke instruments such as pipettes, dispensers, burettes, and manual dispensers) as well as volumetric instruments made of glass or plastic according to GLP/GMP and DIN EN ISO 9001. EASYCAL™ 5 can be used not only for BRAND instruments but also for the instruments of all manufacturers.

EASYCAL™ 5 performs all calculations automatically and compares them with the tolerances from the current standards or their individually defined limits. The tolerances of numerous instruments and the interface settings of over 100 test instruments (e.g., balances) are already stored for you.

Choose between a stand-alone version for working on one workstation (recommended for small laboratories where calibration is done by a single person) or a client/server version for parallel, distributed work on multiple workstations (floating licenses are installed on the server).

Functions:

+ Testing of liquid handling instruments and volumetric instruments made of glass and plastic in accordance with ISO 8655, ISO 4787, and others.
+ Open software, suitable for all volumetric instruments – regardless of manufacturer.
+ Extensive library with instrument specifications from well-known manufacturers can be expanded and modified by the user.
+ Scope of testing can be individually defined by the user via test plans. An extensive library of test plans is included to help you get started with EASYCAL™ 5 and minimize data entry time.
+ Instrument management – quickly and easily search and find the owner, test history, and next test date.
+ Continuous control of the current actual state during the test by graphical representations and ad hoc calculation of statistical values.
  Reminder function for upcoming tests with automatic notification of the instrument owner via e-mail.
+ Integration of the address data of your customers and suppliers in a business partner database User administration with user roles (e.g., auditor, supervisor, system administrator) and access restriction to EASYCAL functions.
  Dual-control principle for the release of critical data such as test plans, calibration orders before certificate printing, and instrument specification.
+ Interface connection via RS232 of measuring instruments such as balances, thermometers, barometers, and hygrometers with automatic transmission of the measured values.
+ In the integrated certificate editor, you can customize the certificates, and test reports supplied to your needs and create the design.

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Technical changes, errors and misprints excepted.

At store.brand.de you will find accessories and spare parts, user manuals, test instructions (SOP) and videos for the product.

For more information on products and applications, please visit our Youtube channel mylabBRAND.

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