Short instructions

Transferpette® *pro*

Mikroliterpipetten | Micropipettes

Table of contents

1 Use operating manual

- Please carefully read the operating manual before using the device for the first time.
- Keep the operating manual in an easily accessible place. It is part of the instrument.
- Be sure to include the operating manual if you transfer possession of this device to a third party.

1.1 Signal words and their meaning

Signal word	Meaning
⚠ WARNING or ⚠WARNING! ...	WARNING indicates a dangerous situation that, if not avoided, could result in death or serious injury.
⚠ CAUTION or ⚠CAUTION! ...	CAUTION indicates a hazardous situation that, if not avoided, could result in moderate or minor injury.
NOTICE or NOTICE ...	NOTE is used to address actions that are not related to physical injury. Example: Possible property damage.

1.2 Presentation of descriptions of actions

Format	Meaning
1. Task	Indicates a task.
a., b., c.	Indicates the individual steps of a task.
>	Indicates a prerequisite for a task.
⇨	Indicates a result of a completed task.

2 Safety regulations

2.1 Safety regulations

Please read carefully!

The laboratory device Transferpette® pro Can be used in combination with hazardous materials, operations and equipment. However, the instructions for use cannot identify all the safety problems that may occur. It is the responsibility of the user to ensure compliance with safety and health regulations and to determine the appropriate restrictions before use.

- Each user must have read and observe the instructions for use accompanying the laboratory device before using the device. The laboratory equipment must only be used by trained and qualified personnel.
- Follow general hazard warnings and safety regulations, e.g. wear protective clothing, eye protection and protective gloves.
- When working with infectious or hazardous samples/media (e.g. hazardous materials), the general safety rules in the laboratory must be followed and regulations for handling the samples/media must be observed. The information provided by the media manufacturers (e.g. safety data sheets) must be observed.
- Use the laboratory equipment only for pipetting or dispensing media within the defined limits and limitations of use. Observe usage exclusions.
- When working with flammable media, take precautions to avoid electrostatic charges, e.g. do not dose into plastic containers and do not rub equipment with a dry cloth. Do not use the laboratory equipment in explosive atmospheres. If in doubt, it is essential to contact the manufacturer or dealer.

- Always check that the laboratory equipment is in good condition before use. If there are any signs of malfunctions in the laboratory equipment (e.g. Stiff piston, leaks or power supply), immediately stop working with the appliance and refer to the troubleshooting section in the user manual. If necessary, contact the manufacturer.
- Always work in such a way that neither users nor other persons are at risk. Avoid splashes. Use only suitable vessels. Never use unnecessary force or force while operating, cleaning, or maintaining the laboratory equipment.
- If the laboratory equipment is powered by a power supply, batteries or rechargeable batteries, the correct condition of the components and the connection to the equipment must be checked regularly. Do not operate the laboratory equipment or its accessories in an unprotected, damp or wet environment.
- Do not make any technical changes. Use only original manufacturer's spare parts, and do not use power supplies or batteries of identical sizes and specifications from other manufacturers. Do not disassemble the laboratory equipment and its accessories (e.g., power supplies, cables, stands, batteries, etc.) any further than the instructions for use.
- Do not autoclave the laboratory equipment unless permitted by the instructions for use.

2.2 Target group

The operating manual is intended for users who use the laboratory instrument in the course of their professional activities. Users are familiar with the typical safety regulations and working methods in laboratories and have been trained accordingly. They can recognize potential hazards and protect themselves from them. The operating manual assumes this expertise and does not replace basic laboratory training or specific safety training.

2.3 Purpose

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

2.4 Use

Use the laboratory device Transferpette® pro only for pipetting or dispensing liquids within the defined limits of use.

2.5 Limitations of use

The pipette is used for dispensing liquids within the following limits:

- Operating temperature from +15 °C to +40 °C (59 °F to 104 °F). Additional temperatures upon request
- vapor pressure up to 500 mbar
- Viscosity: 260 mPa s

With viscous liquids, the dispensing speed may need to be adjusted.

2.6 Operating exclusions

The user must verify the suitability of the instrument for the intended purpose, as aggressive liquids and their vapors can damage the instrument (corrosion!). The instrument cannot be used for the following liquids:

- for liquids with very high steam pressure
- Liquids that corrode the following materials:
  Fluoroelastomer rubber (FKM)
  Polyamide (PA)
  Polycarbonate (inspection window)
  Polyetheretherketone (PEEK)
  Polyphenylene sulfide (PPS)
  Polypropylene (PP)
  Polyvinylidene fluoride (PVDF)

Additional information on the chemical resistance of plastics can be found at www.brand.de.

2.7 Improper use

Various risks may arise if the laboratory instrument is used improperly. These risks include: inaccurate liquid delivery, damage to the laboratory instrument, and the risk of contamination, infection, and injury from contact with the pipetted media.

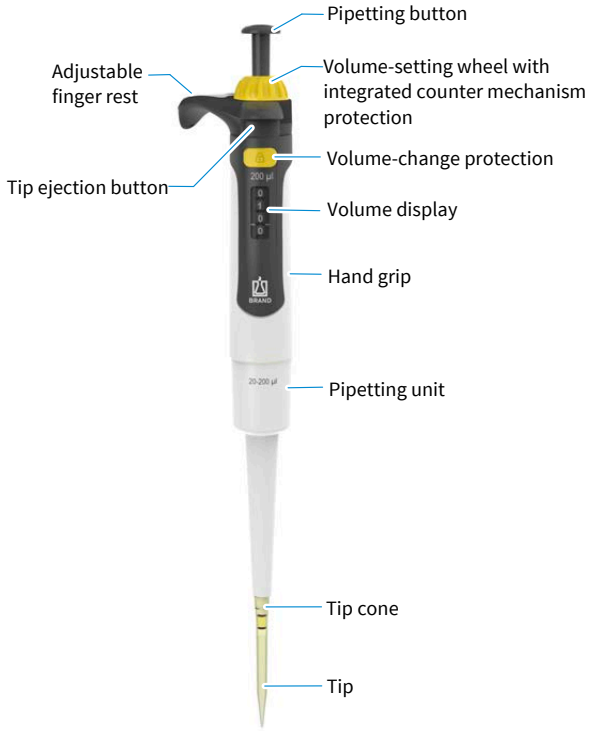
Any use other than for pipetting or dispensing liquids within the defined operating limits is considered improper use.

2.8 Foreseeable misuse

A typical misuse is pipetting or dispensing liquids with too high viscosity or using unsuitable tips.

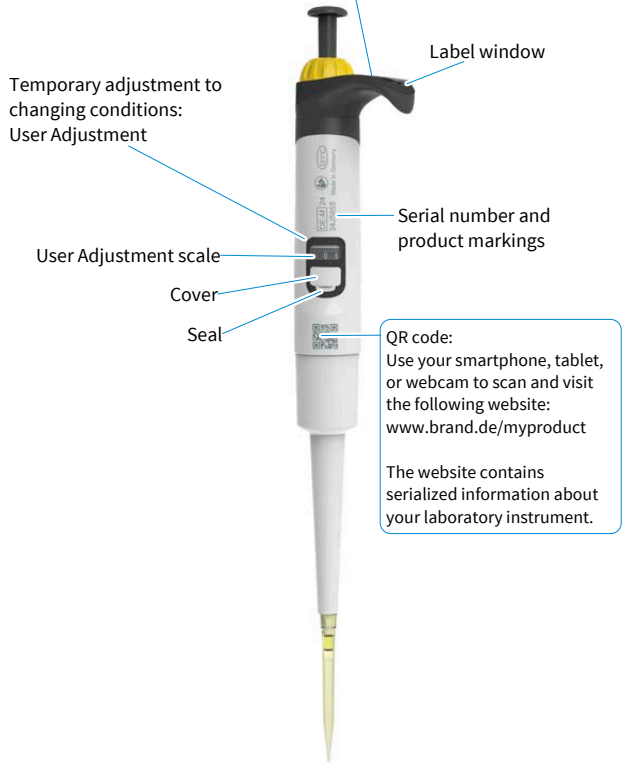
3 Functional and operational components

Front



Adjustable finger rest	The laboratory instrument Transferpette® pro has an adjustable finger rest. This allows you to adapt the pipette to your preferred grip, see " Pipetting The instrument can be labeled at the finger rest: to do so, remove the label window from the finger rest and take out the label strip.
Volume-change protection	The volume adjustment lock prevents the volume from being changed during pipetting work. To unlock it, slide the volume adjustment lock toward the pipetting button.
Volume display	The numbers in the display are read from top to bottom; the white dash corresponds to the decimal point.
Counter mechanism protection	Once the volume adjustment lock is released, set the volume using the volume-setting wheel. The integrated counter mechanism protection overrides the volume-setting wheel once the maximum or minimum volume setting is reached: the volume-setting wheel remains rotatable but no longer adjusts the volume.
Hand grip	Screw the pipetting unit into the hand grip. Attach the tip onto the tip cone.

Rear


Permanent adjustment to factory settings:
Easy Calibration
Label window
Temporary adjustment to changing conditions:
User Adjustment
Serial number and product markings
User Adjustment scale
Cover
Seal
QR code:
Use your smartphone, tablet, or webcam to scan and visit the following website:
www.brand.de/myproduct
The website contains serialized information about your laboratory instrument.

Easy Calibration Technology	The Easy Calibration function is located in the finger rest and is used to reset the pipette to its factory settings (see Adjusting – User and factory adjustment, p. 41).
User Adjustment Technology	The hand grip also includes the User Adjustment function. This allows the pipette to be adjusted for specific liquids and dispensing conditions. See Temporary adjustment: User Adjustment, p. 43 The switch for user adjustment is located behind the cover. A seal is applied at delivery. Remove it upon first use and dispose of it.
QR Code and serialized information	The QR code provides access to www.brand.de/myproduct and serialized information about your pipette. If you wish to access the MyProduct information without the QR code, you will also need the order number and serial number of your pipette.

4 Pipetting

a.

a. Turn the finger rest to a comfortable working position.

b.

b. Slide the volume adjustment lock in the direction shown, against slight resistance.

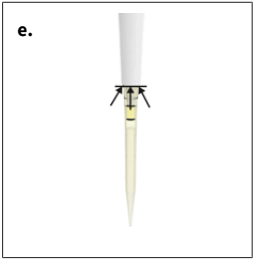
c.

c. Set the volume using the volume-setting wheel.

NOTICE If the volume-setting wheel is turned beyond the maximum or minimum volume, it glides over the volume adjustment and thus protects the counter mechanism from damage.

d. Close the volume adjustment lock.

⇨ The volume-setting wheel can still be turned but will no longer change the volume.



e. Attach the pipette tip. Ensure a secure fit.

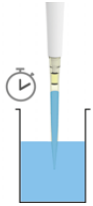
The 2 ml to 10 ml pipettes should only be used with a built-in PE filter (see UV sterilization).

NOTICE Pipette tips are disposable products!

f. Press the pipetting button down to the first stop.

NOTICE We recommend rinsing the pipette tip five times with the liquid (aspirate and dispense) before pipetting in order to ensure maximum precision and accuracy.

g.



g. Immerse the tip in the liquid.

h.

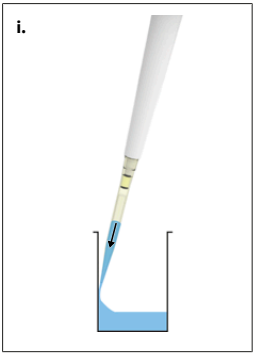
h. Slowly release the pipetting button.

⇨ Liquid is aspirated.

Keep the tip submerged until the volume is fully aspirated. Increase the wait time when pipetting more viscous liquids or larger volumes.

⚠CAUTION! Do not lay the pipette down with filled tips. Contamination may occur!

Volume range	Immersion depth [mm]	Wait time [s]
0.1–1 µl	1–2	1
1–100 µl	2–3	1
100–1000 µl	2–4	1
> 1,000 µl	3–6	3



i. To dispense the liquid, hold the tip at an angle against the vessel wall, slowly press the pipetting button, and wipe the tip.

To improve accuracy, comply with the corresponding wait time for serums, highly-viscous or low-density fluids.

To fully empty the tip, press the pipetting button down to the second stop (Fig. f).

j. To remove the tip, hold the pipette over a container and press the tip ejection button.

Storage

You can also hook the Transferpette® pro in the holder or rack with an adjustable finger rest.

⚠**CAUTION!** Do not hang the pipette with a filled tip in the holder. Contamination may occur!

5 Adjusting – User and factory adjustment

You have the following options to adjust the instrument:

- Factory adjustment:
  The factory adjustment is used for permanent calibration of the instruments to aqueous media according to ISO 8566 in cases of volume deviations.
- Temporary User Adjustment:
  The User Adjustment is used for temporary volume adjustment under changing conditions. It can be reset to the original state (factory adjustment).

5.1 Permanent factory adjustment: Easy Calibration

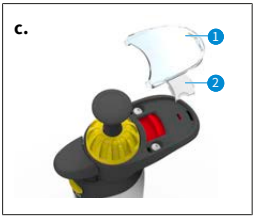
The instrument is factory-calibrated to aqueous solutions in accordance with ISO 8655. If it is determined that the pipette is inaccurate, it can be adjusted using the Easy Calibration technique.

a.

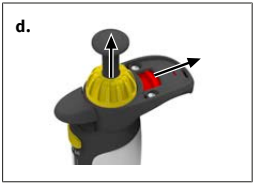
a. Check whether the User Adjustment is set to 0 (see Temporary adjustment: User Adjustment, p. 43).

   NOTICE If the User Adjustment is not set to **0**, the pipette will be misaligned when attempting to perform factory adjustment. In this case, set the User Adjustment to **0** and repeat the factory adjustment as described.

b. Perform a volume check and determine the actual value (see Checking the volume).



c. Slightly lift and set aside the labeling window (1) on the finger rest with your thumb. Use a paperclip or an unused pipette tip to remove and dispose of the protective foil (2).



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

e. Set the volume adjustment lock to the UNLOCK position and adjust the previously determined actual volume using the volume-setting wheel. Position UNLOCK (see > “Set volume”). Set the volume adjustment lock back to the LOCK position. After each adjustment, a volume check is recommended.

f.

f. Slide the adjustment slider completely back again, allow the volume-setting wheel to slide downward and release the adjustment slider. If the volume-setting wheel does not slide down easily, move it slightly back and forth until it clicks into place. Reinsert the label window.

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

5.2 Temporary adjustment: User Adjustment

Temporary User Adjustment improves accuracy under conditions that deviate from the factory settings (aqueous medium, ISO 8655). This enables temporary volume corrections under changing conditions because deviations from water in physical properties, temperature differences between liquid and ambient conditions, specific tip designs, and environmental factors can all affect accuracy.

NOTICE User Adjustment modifies the volume setting by a certain volume offset (e.g. 100 µl: +2 µl = +2%). If the volume setting changes significantly (e.g. 10 µl: +2 µl = +20%), the adjustment value must be recalculated.

Setting the User Adjustment

a. Pry off and remove the cover (1) and seal (2) (e.g., using a paperclip). Dispose of the seal.

b. Slide the slider (3) down into the recess and hold it there. Use the volume-setting wheel (4) to set the desired User Adjustment value (see below) on the scale. Release the volume-setting wheel and slowly return the slider (3).

NOTICE If the slider is stuck, gently push it back toward the recess (3) and slowly return it again.

⇨ The value is set when the user adjustment value aligns with the marking (5).

c. Reinsert the cover (1).

d. Verify the adjustment gravimetrically.

Determining the User Adjustment

Example: Pipetting 180 µl with a 20–200 µl pipette

a. Perform control weighings on a precision balance and calculate the actual volume:
Actual volume: 178.4 µl

b. Calculate the volume to be corrected:
Volume offset: 1.6 µl (= 180 µl – 178.4 µl)

c. Determine and set the User Adjustment value:
For our 200 µl instrument, each dash corresponds to a step value of 0.2 µl (see assignment table). A volume offset of 1.6 µl is added by setting to +8 (= 1.6 µl / 0.2).

$$\text{Actual volume} = \frac{\text{Mean of liquid weights}}{\text{Density of liquid} - \text{Density of air (0.0012 g/ml)}}$$

$$\text{Volume offset} = \text{Target volume} - \text{Actual volume}$$

$$\text{User Adjustment value} = \frac{\text{Volume offset}}{\text{Step value}}$$

Assignment table for User Adjustment

The highlighted column [1] indicates the step value for the respective instrument.

Nominal volume [µl]	−25	−20	−15	−10	−5	−1	0	1	5	10	15	20	25	30	35
	The step value corresponds to a volume compensation in µl:														
1	−0,025	−0,02	−0,015	−0,01	−0,005	−0,001	0	0,001	0,05	0,01	0,015	0,02	0,025	0,03	0,035
2,5	−0,05	−0,04	−0,03	−0,02	−0,01	−0,002	0	0,002	0,01	0,02	0,03	0,04	0,05	0,06	0,07
10	−0,25	−0,2	−0,15	−0,1	−0,05	−0,01	0	0,01	0,05	0,1	0,15	0,2	0,25	0,3	0,35
20	−0,5	−0,4	−0,3	−0,2	−0,1	−0,02	0	0,02	0,1	0,2	0,3	0,4	0,5	0,6	0,7
50	−1,25	−1	−0,75	−0,5	−0,25	−0,05	0	0,05	0,25	0,5	0,75	1	1,25	1,5	1,75
100	−2,5	−2	−1,5	−1	−0,5	−0,1	0	0,1	0,5	1	1,5	2	2,5	3	3,5
200	−5	−4	−3	−2	−1	−0,2	0	0,2	1	2	3	4	5	6	7
300	−6,225	−4,98	−3,735	−2,49	−1,245	−0,249	0	0,249	1,245	2,49	3,735	4,98	6,225	7,47	8,715
1000	−25	−20	−15	−10	−5	−1	0	1	5	10	15	20	25	30	35
1250	−25	−20	−15	−10	−5	−1	0	1	5	10	15	20	25	30	35
2500	−50	−40	−30	−20	−10	−2	0	2	10	20	30	40	50	60	70
5000	−125	−100	−75	−50	−25	−5	0	5	25	50	75	100	125	150	175
10000	−250	−200	−150	−100	−50	−10	0	10	50	100	150	200	250	300	350

Volume offset for excess volume

Volume offset for missing volume

NOTICE The table shows the mechanical relationship between the steps of the User Adjustment. The volume changes indicated are approximate values and apply to the entire volume range of the instrument.

User Adjustment calculation tool

www.brand.de/uad

Recognizing user adjustment

If the red switch is visible on the back of the instrument, it has already been adjusted by a user with the user adjustment. Check whether this adjustment still suits your application (e.g., by performing a control weighing of the pipetted volume). Reset User Adjustment if necessary.

Restore factory adjustment, reset User Adjustment

To reset the User Adjustment, set it to 0 on the scale. This restores the factory adjustment state. We recommend performing a volume check afterward.

6 Order Information

Various pipettes

Nominal volume	Cat. No.
0.1–1 µl	706868
0.1 - 2.5 µl	706869
0.5 - 10 µl	706870
2 - 20 µl (gray)	706871
2 - 20 µl (yellow)	706872
5 - 50 µl	706873
10 - 100 µl	706874
20 - 200 µl	706878
30 - 300 µl	706879
100 – 1,000 µl	706880
250 - 2500 µl	706881
500 - 5,000 µl	706882
1,000 - 10,000 µl	706884

Accessories

Table stand for
1 pipette
Cat. No. 703440 or
705384

Wall mount
Cat. No. 704882

Table stand for 6 single-channel or multi-channel pipettes
(Can be used with the holders of the Transferpette® pro)
Cat. No. 704807

Shelf mount
Cat. No. 704881

Labeling window
Cat. No. 704752

Labeling foil
Cat. No. 704753

Filter for volume range 2 - 5 ml, PU 25 pcs
Cat. No. 704652

Silicone grease volume range up to 1000 µl
Cat. No. 705502

Filter for volume range up to 10 ml, PU 25 pcs
Cat. No. 704653

PLT unit (pipette leak detector)
Cat. No. 703970

Spare parts - volumes up to 1000 µl

A
Upper part of ejector unit

B
Piston unit

C
Seal with spring

D
Shaft with ejector spring

E
Lower part of ejector unit

Vol.	A	B	C	D	E
0.1–1 µl	705513	704600	—	704718 *	704705
0.1–2.5 µl	705513	704667	—	704717	704706
0.5–10 µl	705513	704601	—	704721 *	704707
2 – 20 µl (gray)	705513	704602	704610	704727	704710
2 – 20 µl (yellow)	705513	704602	704610	704723	704710
5–50 µl	705513	704615	704617	704722	704711
10–100 µl	705513	704654	704661	704724	704712
20–200 µl	705513	704655	704662	704725	704713
30 - 300 µl	705513	704668	704664	-	704714
100–1000 µl	705513	704656	704663	704726	704715

* Seal permanently installed in shaft – not removable!

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

Spares - volumes 2.5, 5 and 10 ml

Vol.	F + F'	G	H	I	O
0.25– 2.5 ml	704755	704669	704689	704626	7228
0.5– 5 ml	704756	704606	703247	704626	7228
1– 10 ml	704757	704607	704628	704626	7228

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

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