

## Instructions for use

epMotion® Dispensing Tools/Dosierwerkzeuge

English (EN)

Before using the accessories for the first time, read these instructions for use. Also read the operating manual of the device the accessories are used with.

## 1 Product description

### 1.1 Product overview

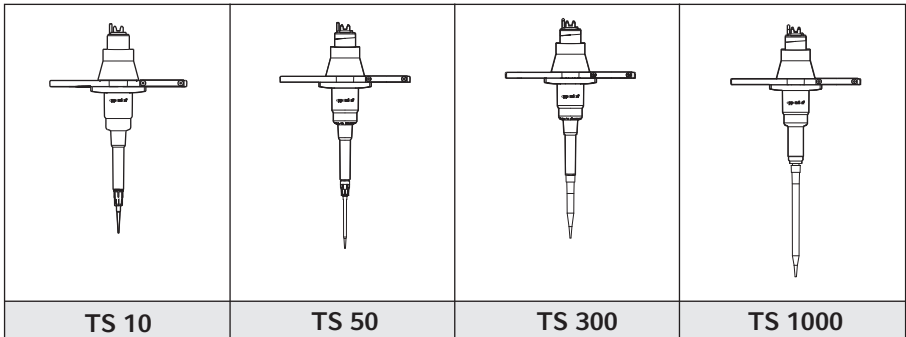


Fig. 1: Single-channel dispensing tools

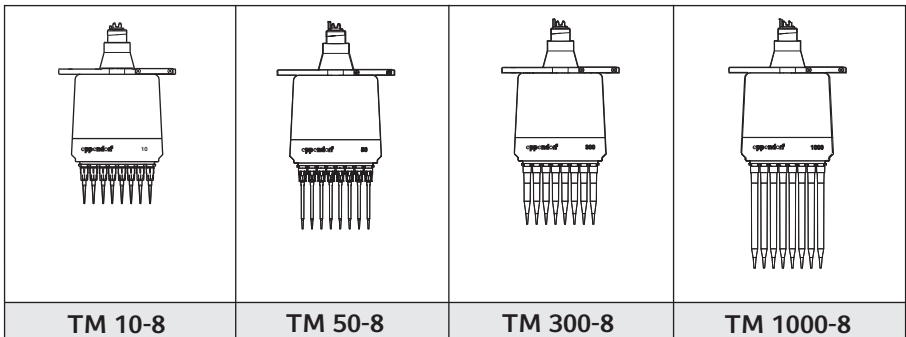


Fig. 2: Multi-channel dispensing tools

### 1.2 Features

The dispensing tools for the epMotion are piston-stroke pipettes which operate according to the air cushion principle.

If the piston moves upward in the dispensing tool, liquid will be aspirated into the pipette tip. If the piston moves downward in the dispensing tool, liquid will be dispensed from the pipette tip.

In multi-channel dispensing tools all pistons move simultaneously.

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### 1.3 Delivery package

- Dispensing tool as ordered
- Instructions for use
- Eppendorf certificate

For multi-channel dispensing tools the following is also enclosed:

- Tool for the removal of worn o-rings
- Mounting aid for o-rings
- 8 sealing rings

## 2 Operation

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### **NOTICE! Damage to gold contacts due to handling.**

If you damage or contaminate the gold contacts on the tool, it will damage the tool.

- ▶ Do not touch the gold contacts.
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- ▶ Use the dispensing tools as described in the operating manual.

## 3 Maintenance

### 3.1 Carrying out wipe decontamination

Prerequisites

- Decontamination agent
  - Deionized water
  - Lint-free cloths
  - Cotton swabs/paragraph
1. In the case of single-channel tools, remove the ejector sleeve of the single-channel dispensing tool.
  2. Moisten the lint-free cloth and cotton swab with decontamination agent.
  3. Clean the surfaces and tip cones with a lint-free cloth. Clean hard to access surfaces with cotton swabs.
  4. Allow the decontamination agent to take effect.
  5. Wipe off the decontamination agent with deionized water.
  6. Allow the surfaces to dry.

## 3.2 Autoclaving dispensing tools

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### **NOTICE! Damage on the tool due to autoclaving.**

The tool is damaged by excessive temperature in the autoclave.

- ▶ Make sure that the temperature in the autoclave is 121 °C – 126 °C.
  - ▶ Make sure that the tools do not touch the wall of the autoclave.
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### Prerequisites

- 121°C at 100 kPa overpressure is set on the autoclave.
- Any chemical decontamination agents have been removed.

1. Autoclave the dispensing tools for at least 20 min.
2. Rinse the dispensing tools with deionized water.
3. Allow the dispensing tools to dry.



The dispensing tools must be decontaminated before they are shipped. Additional information can be found in chapter *Shipping the device* in the operating manual.

## 3.3 Servicing the dispensing tools

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### **NOTICE! Incorrect dispensing due to lack of service.**

To ensure a dispensing procedure as specified, each dispensing tool must be serviced after 100,000 full strokes or 200,000 strokes.

When a dispensing tool has reached 100,000 full strokes or 200,000 strokes, the epBlue displays a message.

- ▶ Have the dispensing tool serviced after 100,000 full strokes or 200,000 strokes.
  - ▶ Send the dispensing tool to the authorized service partner.
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### 3.3.1 Exchanging the sealing rings on the eight-channel dispensing tool

Exchange the sealing rings at the described intervals and if the following problems occur:

- Sealing rings are damaged.
- Tips are not attached in parallel.
- Tips are dripping.
- Once a year.



**NOTICE! Damage to gold contacts due to handling.**

If you damage or contaminate the gold contacts on the tool, it will damage the tool.

- ▶ Do not touch the gold contacts.

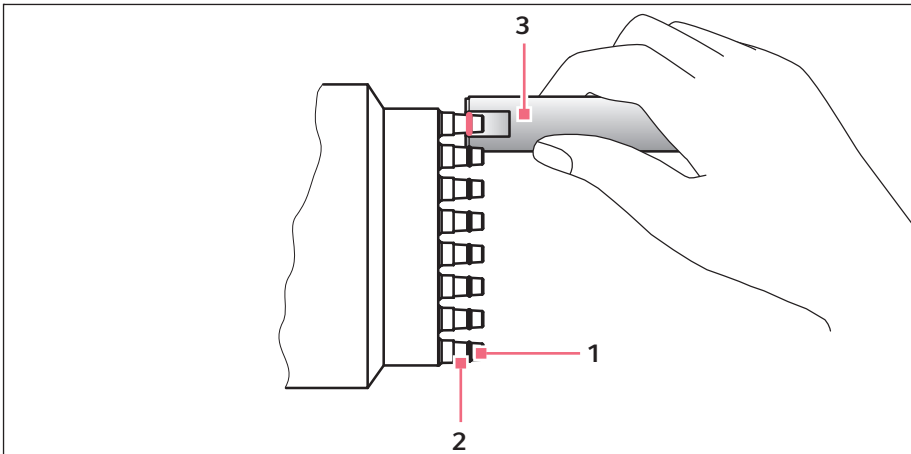


Fig. 3: Exchanging the sealing rings

**1 Sealing ring**

**3 Auxiliary tool**

**2 Tip cone**

Exchange the sealing rings as follows:

Prerequisites

- New sealing rings
- Auxiliary tool
- Mounting aid
- Damp, lint-free cloth

1. Place the edge of the auxiliary tool at the height of the sealing ring.
2. Use the auxiliary tool to cut the sealing rings on the dispensing tool.
3. Remove the sealing rings with your fingers.
4. Clean all tip cones with a damp, lint-free cloth.
5. Attach the new sealing ring with the mounting aid.
6. Position the sealing rings in the grooves of the tip cones.

**4 Technical data**  
**4.1 Dispensing tool errors**  
**4.1.1 Pipetting**

Dispensing tool	Volume range Pipetting	Testing volume	Maximum permissible errors			
			Error			
			Systematic		Random	
			± %	± µL	± %	± µL
TS 10	0.2 µL – 10 µL	0.2 µL	±25	±0.05	±19.8	±0.04
		1 µL	±5	±0.05	±3	±0.03
		5 µL	±2.4	±0.12	±0.5	±0.025
		10 µL	±1.2	±0.12	±0.25	±0.025
TS 50	1.0 µL – 50 µL	1 µL	±15.0	±0.15	±5.0	±0.05
		5 µL	±5.0	±0.25	±3.0	±0.15
		25 µL	±1.5	±0.375	±0.6	±0.15
		50 µL	±1.0	±0.5	±0.4	±0.2
TS 300	20 µL – 300 µL	20 µL	±4.0	±0.8	±2.5	±0.5
		30 µL	±3.0	±0.9	±1.5	±0.45
		150 µL	±1.0	±1.5	±0.4	±0.6
		300 µL	±0.6	±1.8	±0.3	±0.9
TS 1000	40 µL – 1 000 µL	40 µL	±5.0	±2.0	±1.5	±0.6
		100 µL	±2.0	±2.0	±1.0	±1.0
		500 µL	±1.0	±5.0	±0.2	±1.0
		1 000 µL	±0.7	±7.0	±0.15	±1.5
TM 10-8	0.2 µL – 10 µL	1 µL	±7.5	±0.075	±5	±0.05
		5 µL	±2.5	±0.125	±2	±0.1
		10 µL	±2	±0.02	±0.6	±0.06
TM 50-8	1.0 µL – 50 µL	1 µL	±25.0	±0.25	±10.0	±0.1
		5 µL	±5.0	±0.25	±5.0	±0.25
		25 µL	±2.0	±0.5	±1.2	±0.3
		50 µL	±1.2	±0.6	±0.6	±0.3
TM 300-8	20 µL – 300 µL	20 µL	±10.0	±2.0	±4.0	±0.8
		30 µL	±10.0	±3.0	±3.5	±1.05
		150 µL	±2.5	±3.75	±0.8	±1.2
		300 µL	±1.5	±4.5	±0.5	±1.5
TM 1000-8	40 µL – 1 000 µL	40 µL	±6.0	±2.4	±2.5	±1.0
		100 µL	±3.0	±3.0	±1.5	±1.5
		500 µL	±1.5	±7.5	±0.3	±1.5
		1 000 µL	±0.8	±8.0	±0.15	±1.5

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### 4.1.2 Test conditions

Test conditions and test evaluation based on ISO 8655-6.

The errors for the volume  $\geq 1 \mu\text{L}$  were determined under the following conditions:

- Water in accordance with ISO 8655-6
- epT.I.P.S. Motion pipette tips with the purity grade Eppendorf Quality
- Free-jet dispensing

The error for the volume  $0.2 \mu\text{L}$  was determined by the liquid dispensing in contact dispensing.

## 5 Ordering information

### 5.1 Tools

Order no. (International)	Description
5280 000.100	<b>Single-channel dispensing tool TS 10</b> Volume range $0.2 \mu\text{L}$ - $10 \mu\text{L}$
5280 000.010	<b>Single-channel dispensing tool TS 50</b> Volume range $1 \mu\text{L}$ - $50 \mu\text{L}$
5280 000.037	<b>Single-channel dispensing tool TS 300</b> Volume range $20 \mu\text{L}$ - $300 \mu\text{L}$
5280 000.053	<b>Single-channel dispensing tool TS 1000</b> Volume range $40 \mu\text{L}$ - $1000 \mu\text{L}$
5280 000.304	<b>Eight-channel-dispensing tool TM 10-8</b> Volume range $0.2 \mu\text{L}$ - $10 \mu\text{L}$
5280 000.215	<b>Eight-channel-dispensing tool TM 50-8</b> Volume range $1 \mu\text{L}$ - $50 \mu\text{L}$
5280 000.231	<b>Eight-channel-dispensing tool TM 300-8</b> Volume range $20 \mu\text{L}$ - $300 \mu\text{L}$
5280 000.258	<b>Eight-channel-dispensing tool TM 1000-8</b> Volume range $40 \mu\text{L}$ - $1000 \mu\text{L}$
5075 774.003	<b>Holder for 6 dispensing tools</b>

Your local distributor: [www.eppendorf.com/contact](http://www.eppendorf.com/contact)

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