

## Instructions for use

MoveIt®

English (EN)

This document is a supplement to the operating manual for the pipettes (Research plus, Xplorer/Xplorer plus) and does not replace it. Before using the multi-channel lower part, read the operating manual for the pipette. You will find the current version on the Internet at [www.eppendorf.com](http://www.eppendorf.com).

## 1 Intended use

The Eppendorf Research plus, Xplorer and the Xplorer plus pipettes are designed and constructed for low-contamination transfer of liquids. They are intended exclusively for use in research. These pipettes are intended exclusively for indoor use and for operation by trained and skilled personnel.

The multi-channel pipettes with adjustable cone spacing are designed and constructed for low contamination transfer of liquids between different tube formats.

## 2 Safety

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### **CAUTION! Poor safety due to incorrect accessories and spare parts.**

The use of accessories and spare parts other than those recommended by Eppendorf may impair the safety, functioning and precision of the device. Eppendorf cannot be held liable or accept any liability for damage resulting from the use of accessories and spare parts other than those recommended, or from the improper use of such equipment.

- ▶ Only use accessories and original spare parts recommended by Eppendorf.



### **NOTICE! Damage to device due to missing pipette tips.**

- ▶ Use the pipette with fitted pipette tips only.



### **NOTICE! Damage to device due to penetration of liquid.**

- ▶ Only immerse the pipette tip in the liquid.
- ▶ Do not put the pipette down when the pipette tip is filled.
- ▶ The pipette itself may not come into contact with the liquid.



### **NOTICE! Damage to device due to penetration of liquid.**

Liquid can enter the tip cones due to the use of unsuitable pipette tips with too little volume.

- ▶ Use the appropriate pipette tips for the multi-channel lower part.
  - ▶ Note the coloring of the trays and the multi-channel pipette.
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### 3 Product overview – Research plus

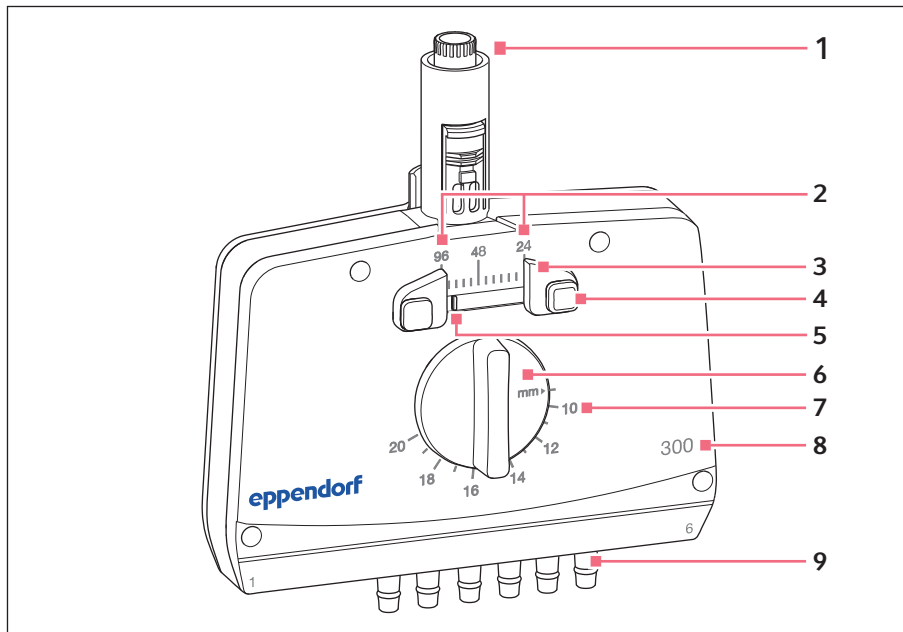


Fig. 1: Multi-channel lower part with adjustable cone spacing – example 300  $\mu$ L, 6-channel

- |                                                                             |                                                                                                            |
|-----------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| <b>1 Mechanical coupling</b>                                                | <b>6 Rotary knob</b><br>For switching between source and destination formats                               |
| <b>2 Formats</b><br>Display showing the possible plate and tube formats     | <b>7 Cone spacing</b><br>Scale with cone spacing in millimeters                                            |
| <b>3 Format limiter</b><br>For adjusting the source and destination formats | <b>8 Nominal volume</b>                                                                                    |
| <b>4 Unlock button</b><br>For unlocking and moving the format limiter       | <b>9 Adjustable cones</b><br>The spacing can be adjusted between 4.5 mm and 33 mm (depending on the model) |
| <b>5 Format indicator</b>                                                   |                                                                                                            |

#### 4 Product overview – Xplorer plus

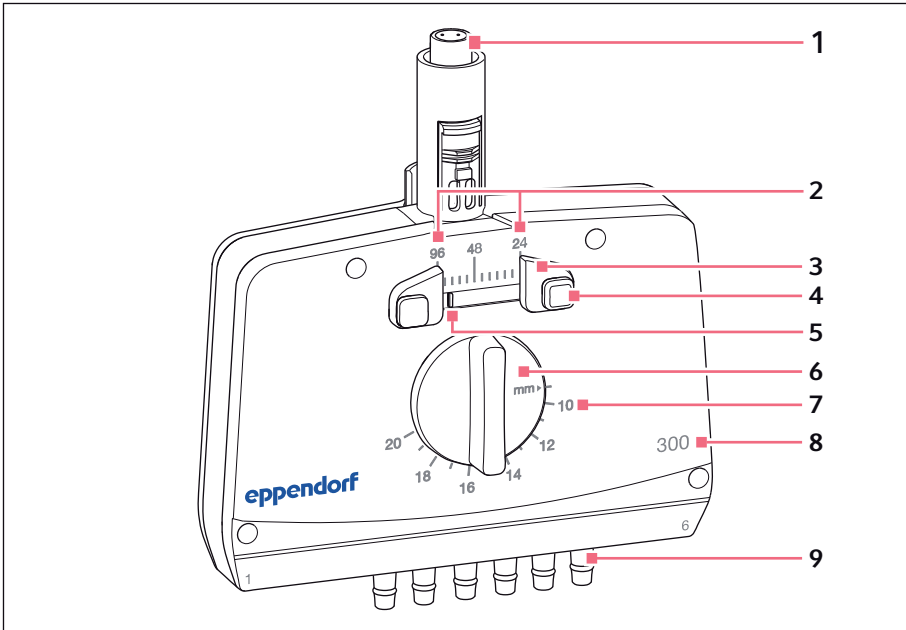


Fig. 2: Multi-channel lower part with adjustable cone spacing – example 300 µL, 6-channel

- |                                                                                     |                                                                                                                    |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| <p><b>1 Magnetic coupling</b></p>                                                   | <p><b>6 Rotary knob</b><br/>For switching between source and destination formats</p>                               |
| <p><b>2 Formats</b><br/>Display showing the possible plate and tube formats</p>     | <p><b>7 Cone spacing</b><br/>Scale with cone spacing in millimeters</p>                                            |
| <p><b>3 Format limiter</b><br/>For adjusting the source and destination formats</p> | <p><b>8 Nominal volume</b></p>                                                                                     |
| <p><b>4 Unlock button</b><br/>For unlocking and moving the format limiter</p>       | <p><b>9 Adjustable cones</b><br/>The spacing can be adjusted between 4.5 mm and 33 mm (depending on the model)</p> |
| <p><b>5 Format indicator</b></p>                                                    |                                                                                                                    |

## 5 Models with pipette tips – Research plus

Models	Channels	Adjustable cone spacing	Pipette tips
1 µL – 20 µL	12-channel	4.5 mm – 9 mm	20 µL epT.I.P.S. 384
	8-channel	4.5 mm – 14 mm	
5 µL – 100 µL	12-channel	4.5 mm – 9 mm	100 µL epT.I.P.S. 384
	8-channel	4.5 mm – 14 mm	
15 µL – 300 µL	8-channel	9 mm – 14 mm	300 µL epT.I.P.S.
	6-channel	9 mm – 20 mm	
	4-channel	9 mm – 33 mm	

## 6 Models with pipette tips – Xplorer plus

Models	Channels	Adjustable cone spacing	Pipette tips
1 µL – 20 µL	12-channel	4.5 mm – 9 mm	20 µL epT.I.P.S. 384
	8-channel	4.5 mm – 14 mm	
5 µL – 100 µL	12-channel	4.5 mm – 9 mm	100 µL epT.I.P.S. 384
	8-channel	4.5 mm – 14 mm	
15 µL – 300 µL	8-channel	9 mm – 14 mm	300 µL epT.I.P.S.
	6-channel	9 mm – 20 mm	
	4-channel	9 mm – 33 mm	
50 µL – 1200 µL	8-channel	9 mm – 14 mm	1250 µL epT.I.P.S.
	6-channel	9 mm – 20 mm	
	4-channel	9 mm – 33 mm	

## 7 Attaching the pipette tips

- ▶ Adjust the minimum cone spacing.
- ▶ Place the multi-channel lower part on the pipette tips and press it down (300 µL and 1200 µL).
- ▶ Place the multi-channel lower part on the pipette tips and press it down until the tip cones are completely compressed (20 µL and 100 µL).

## 8 Operation

- i** Multi-channel upper parts and multi-channel lower parts have been matched to each other at the factory and must not be mixed up with other upper or lower parts. Mixed up upper and lower parts will lead to measuring errors.

The format of microplates can be adjusted directly with the format limiters. For other sample tubes or tubes in holders, the cone spacing can be freely selected using the rotary knob.

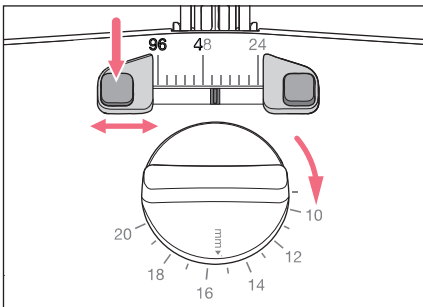
### 8.1 Adjusting the source and destination formats for a defined plate format

Prerequisites

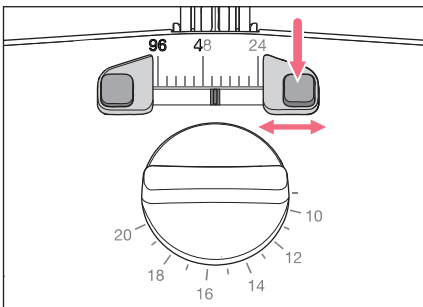
- Pipette tips are attached.

Example application:

- From the source format of a 96-well plate to the destination format of a 24-well plate



1. Adjust the rotary knob to a free position. The format limiters can be moved.
2. Unlock the left format limiter and adjust it to the desired format.



3. Unlock the right format limiter and adjust it to the desired format.

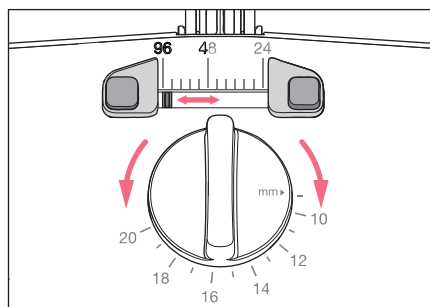
**6** Instructions for use  
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English (EN)

### 8.2 Adjusting the source and destination formats for an undefined format

#### Prerequisites

- Pipette tips are attached.
1. Adjust the format limiters to the outermost positions.
  2. Hold the multi-channel pipette with the pipette tips above the source format.
  3. Use the rotary knob to adjust the cone spacing to the distance between the source vessels.
  4. Lock the determined distance with the format limiter.
  5. Hold the multi-channel pipette with the pipette tips above the destination format.
  6. Use the rotary knob to adjust the cone spacing to the distance between the destination vessels.
  7. Lock the determined distance with the format limiter.

### 8.3 Changing the format



1. Turn the rotary knob for the source format to the stop on the format limiter.
2. Aspirate liquid.
3. Turn the rotary knob for the destination format to the stop on the format limiter.
4. Dispense liquid.

## 9 Troubleshooting

Problem	Cause	Solution
Pipette tips cannot be attached.	<ul style="list-style-type: none"><li>• Incorrect cone spacing.</li></ul>	<ul style="list-style-type: none"><li>▶ Set the smallest cone spacing.</li></ul>
Source or destination format cannot be adjusted.	<ul style="list-style-type: none"><li>• The format limiter is blocked by the format indicator.</li></ul>	<ul style="list-style-type: none"><li>▶ Adjust the rotary knob to a free position.</li><li>▶ Adjust the format limiter to the desired distance.</li></ul>

Problem	Cause	Solution
Liquid drips from the pipette tips.	<ul style="list-style-type: none"> <li>The pipette tips are not securely attached.</li> <li>The tip cones were not compressed during attachment (at 20 µL and 100 µL).</li> </ul>	<ul style="list-style-type: none"> <li>Eject the pipette tips.</li> <li>Attach the tip cones to new pipette tips and press them down (at 300 µL and 1200 µL).</li> <li>Attach the tip cones to new pipette tips and press them down until the tip cones are compressed (at 20 µL and 100 µL).</li> </ul>
Liquid in the tip cones.	<ul style="list-style-type: none"> <li>The attached pipette tips are too small.</li> <li>The volume of the pipette tips does not match the volume of the multi-channel pipette.</li> </ul>	<ul style="list-style-type: none"> <li>Eject the pipette tips.</li> <li>Contact authorized service personnel.</li> </ul>

## 10 Multi-channel pipette with adjustable cone spacing – Research plus

Model	Test tip epT.I.P.S./epT.I.P.S. 384	Testing volume	Error of measurement			
			systematic		random	
			± %	± µL	± %	± µL
1 µL – 20 µL light pink 8/12-channel	1 µL – 20 µL light pink 42 mm	2 µL	10.0	0.2	5	0.1
		10 µL	5	0.5	2	0.2
		20 µL	2.5	0.5	1	0.2
5 µL – 100 µL light yellow 8/12-channel	5 µL – 100 µL light yellow 53 mm	10 µL	3	0.3	2	0.2
		50 µL	1.2	0.6	0.8	0.4
		100 µL	1	1	0.6	0.6
15 µL – 300 µL orange 4/6/8-channel	20 µL – 300 µL orange 55 mm	30 µL	3.7	1.1	1.8	0.5
		150 µL	1	1.5	0.6	0.9
		300 µL	0.7	2.1	0.6	1.8
50 µL – 1200 µL dark green 4/6/8-channel	120 µL – 1250 µL L dark green 103 mm	120 µL	6	7.2	1.3	1.6
		600 µL	2.7	16.2	0.4	2.4
		1200 µL	1.2	14.4	0.3	3.6

## Instructions for use

Movelt®

English (EN)

### 11 Multi-channel pipette with adjustable cone spacing – Xplorer plus

Model	Test tip epT.I.P.S./epT.I.P.S. 384	Testing volume	Error of measurement			
			systematic		random	
			± %	± µL	± %	± µL
1 µL – 20 µL light pink 8/12-channel	1 µL – 20 µL light pink 42 mm	2 µL	8	0.16	5	0.1
		10 µL	7	0.7	2	0.2
		20 µL	4	0.8	1	0.2
5 µL – 100 µL light yellow 8/12-channel	5 µL – 100 µL light yellow 53 mm	10 µL	3	0.3	2	0.2
		50 µL	1.2	0.6	0.8	0.4
		100 µL	1	1	0.6	0.6
15 µL – 300 µL orange 4/6/8-channel	20 µL – 300 µL orange 55 mm	30 µL	3	0.9	1	0.3
		150 µL	1	1.5	0.5	0.75
		300 µL	0.6	1.8	0.25	0.75
50 µL – 1200 µL green 4/6/8-channel	120 µL – 1250 µL green 76 mm	120 µL	6	7.2	0.9	1.08
		600 µL	2.7	16.2	0.4	2.4
		1200 µL	1.2	14.4	0.3	3.6

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

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