

LIQUID HANDLING TECHNOLOGY



User Manual Mode d`emploi Manual de instrucciones



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| English | 1 |
|----------|----|
| Français | 23 |
| Espanõl | 45 |





Contents

| 1. | Introduction | 2 |
|-----|---|----|
| 2. | Operation | 3 |
| | 2.1 Description | |
| | 2.2 Setting the Volume | 4 |
| | 2.3 Pipetting | |
| | 2.4 Pipette Identification | |
| | 2.5 Safety Notes | |
| 3. | Troubleshooting | |
| 4. | Cleaning and Decontamination | 9 |
| 5. | Technical Data | 10 |
| 6. | Calibration | 11 |
| 7. | Maintenance | 12 |
| | 7.1 Maintaining Single-Channel Pipettes | 13 |
| | 7.2 Maintaining Multi-Channel Pipettes | 16 |
| 8. | Ordering Information | 18 |
| 9. | Pipette Tip Compatibility | 20 |
| 10. | Warranty | 22 |

1. Introduction



ErgoOne® variable volume pipettes are designed in accordance with the latest ergonomic principles. The pipette is extremely easy to use and has minimal operating forces to help prevent hand fatigue. ErgoOne® provides accurate and precise pipetting in a variety of volume ranges and is available in single-channel, eight-channel and twelve-channel models.



At a glance:

- Comfortable ergonomic design
- Easy to use volume adjustment mechanism
- Volume lock
- Minimal operating forces
- Extremely accurate and precise
- Lightweight
- Low-maintenance high-quality product
- Fully autoclavable

2.1 Description Color-coded volume control button with volume adjustment mechanism 2 Tip ejector button 3 Alignment unit 0400 4 Volume display -10 4 6 Ejector fixing 5 Tip ejector Tip cone Along with your pipette, you should also have: - Declaration of conformity with test record 9ne

 Labels for personalization/ identification

2. Operation

- Auxiliary tool (single-channels up to 1ml only)
- Pipette filters (5ml only)

TipOne[®] pipet tips are recommended to obtain the best results with ErgoOne[®].

Introduction / Operation English

2.2 Setting the Volume

Unlock the volume adjustment catch by pulling up the volume control button • (Fig. 1), until you hear a click. Turn the volume control button • clockwise to reduce the aspirated volume, or counter clockwise to increase it. The set volume is shown in the four-digit volume display • from top to bottom. The white line indicates the decimal point. When increasing the volume setting, pass the required value by 1/3 of a turn and then slowly decrease to reach the volume, making sure not to go beyond the required volume. After the volume is set, push the volume control button • back to the the locked position until you hear a click. The pipette is now ready to use.



Please note the minimum and maximum volume range of your pipette (Table 1). You have reached the end of the volume adjustment when it becomes more ' difficult to turn the button.

| ErgoOne® Volume Ranges | | | | | | |
|----------------------------|-------------------------------|------------|-----------------|--|--|--|
| ErgoOne [®] model | Volume range (min./max.) | Color code | Increments (µl) | | | |
| 2.5µl | 0.1–2.5µl | Red | 0.002 | | | |
| 10µl | 0.5–10µl | Red | 0.01 | | | |
| 20µl (micro tip cone) | 20µl (micro tip cone) 2–20µl | | 0.02 | | | |
| 20µl (standard tip cone) | µl (standard tip cone) 2–20µl | | 0.02 | | | |
| 100µl | 10-100µl | Yellow | 0.1 | | | |
| 200µl | 20-200µl | Yellow | 0.2 | | | |
| 300µl | 30-300µl | Green | 0.2 | | | |
| 1000µl | 100–1000µl | Blue | 1 | | | |
| 5000µl | 500-5000µl | Violet | 5 | | | |

Do not use excessive force!

Table 1

Examples of typical volume displays:

10µl Pipette



10.00µl

50







200.0µl



20.0µl

1000µl Pipette





1000µl

100µl

2.3 Pipetting

Use the pipette only when a tip is attached!

Liquid aspiration

Set the required volume (see 2.2 Setting the volume) and attach the appropriate size pipette tip(s) to the tip cone(s) **2**:

- Press the volume control button ① until the first stop position.
- Hold the pipette upright and immerse approx. 3mm of the pipette tip into the liquid.
- Allow the volume control button 1 to return slowly back to the starting position.
- Hold the pipette tip in the liquid for a further 2 seconds to avoid drawing in air.
- Remove the pipette tip from the liquid.

Dispensing fluids

- Place the pipette tip against the inner wall of the tube or vessel, at an angle of 30–45°.
- Press the volume control button ① slowly and evenly until it reaches the first stop position.
- Wait one second and press the volume control button **1** down to the second stop position to empty the pipette tip fully (blow out).
- Keeping the volume control button
 pressed down, lightly draw the pipette tip up the inner wall of the tube to remove any residual liquid.
- Allow the volume control button 1 to return slowly back to the starting position.
- Press the tip ejector button 2 to eject the pipette tip.





Reverse pipetting

When pipetting critical viscous media, the precision and accuracy can be increased through 'reverse pipetting'. In reverse pipetting, a larger volume is aspirated than that indicated on the volume display. As a result, a small amount of residual liquid remains in the pipette tip after the pipetting process. How to reverse pipette:

- Secure the pipette tip.
- Press the volume control button until it reaches the second stop position.
- Hold the pipette upright and immerse the pipette tip approx.
 3mm into the liquid.
- Allow the volume control button 1 to return slowly back to the starting position.
- Hold the pipette tip in the liquid for a further 2 seconds to avoid drawing in air.

- Remove the pipette tip from the liquid.
- Place the pipette tip against the inner wall of the tube or vessel, at an angle of 30–45°.
- Press the volume control button slowly and evenly until it reaches the first stop position (do not use the blow-out function).
- Keeping the volume control button pressed, remove the pipette tip from the tube or vessel before blowing out the residual liquid into a separate container.
- Allow the volume control button ① to return slowly back to the starting position.
- Press the tip ejector button 2 to eject the pipette tip.

Note: Pre-wetting

Some liquids (eg. solutions containing protein, organic solvents, or viscous liquids) leave a film on the inside of the pipette tip. To ensure maximum precision and accuracy, USA Scientific recommends pre-wetting each new tip first by aspirating and dispensing the liquid two or three times. Another alternative is to use TipOne[®] RPT ultra low retention pipette tips. TipOne[®] RPT tips have optimized surfaces that ensure improved delivery of detergents, viscous liquids, small volumes, and other difficult samples. Ask your local USA Scientific representative for more information or go to www.usascientific.com.

Operation English

2.4 Pipette Identification

Your pipette is supplied with autoclaveresistant labels in four different colors. These can be attached to the surface above the finger rest to personalize/ help identify your pipette (Fig. 2).



Each ErgoOne® pipette has its own serial number. This serial number can be found behind the tip ejector button 2 when it is pressed down.

2.5 Safety Notes

- Use the pipette only with tip(s) attached.
- Never allow liquid to enter the pipette.
- Do not set the pipette down when the pipette tip is full.
- Do not set the volume outside the specified range.
- Do not use any aggressive solvents or acetone to clean the pipette.
- Do not use cleaning agents in combination with autoclaving or UV-sterilization treatment.
- Only use original parts and accessories.
- Confirm that aggressive chemicals or organic solvents are compatible with the pipette and pipette tips before beginning to pipette.
- Avoid temperature differences between the pipette and pipette tip as this could lead to incorrect volume dispensing.
- Monitor the dispensing volume of liquids that strongly differ from the physical properties of water, eg. with different density (see also section 6 Calibration).

3. Troubleshooting

The following table provides information about the possible causes of problems with suggestions as to how these can be fixed. If you are not able to fix the problem please call USA Scientific at 800-522-8477 or 352-237-6288. You may also contact your local representative or send an email to infoline@usascientific.com.

| Troubleshooting | | | | | |
|---|---|---|--|--|--|
| Problem | Possible cause | Action | | | |
| | Incorrect pipette tip | Use TipOne® | | | |
| | Tip is loose | Attach the tip securely | | | |
| | Tip cone loose | Tighten the tip cone | | | |
| | Debris between the tip and tip cone | Clean the tip cone and use new tip | | | |
| Pipette tip drips | Seals/O ring damaged | Replace the affected seals/O rings | | | |
| | Debris between the piston and seal | Clean the seal and piston and re-lubricate | | | |
| | Piston insufficiently lubricated | Clean and re-lubricate the piston | | | |
| | Piston contaminated | Clean and re-lubricate the piston | | | |
| | Piston damaged | Replace piston and seal | | | |
| | Piston contaminated | Clean and re-lubricate the piston | | | |
| Volume control button sticks/not smooth | Seals contaminated | Unscrew lower housing, clean all seals and replace if necessary | | | |
| Sucks/hot shiooth | Exposure to solvent vapors | Unscrew the lower housing and allow to air. Clean and lightly lubricate the piston | | | |
| Pipette blocked, not enough intake of liguid | Liquid has penetrated the tip cone and dried | Unscrew lower housing and rinse with warm water. Then rinse with distilled water and allow to dry | | | |
| | | Replace tip cone | | | |
| Drop formation on inner | Uneven wetting of pipette tip | Attach new pipette tip | | | |
| wall of pipette tip | Using pipette tips with poor wetting properties | Use original USA Scientific TipOne® or TipOne® RPT pipette tips | | | |
| | Tip taken from liquid too quickly | Extract tip from liquid slowly | | | |
| Pipetting volume incorrect | Liquid with high vapour pressure used | Use positive displacement system, eg. USA Scientific Repeating Pipet | | | |
| | The pipette may require calibration | Refer to section 6 | | | |

4. Cleaning and Decontamination

External cleaning

- Check the pipette each day for external contamination.
- In particular, make sure the tip cone **?** is clean and undamaged.
- ErgoOne[®] pipettes should be cleaned regularly. They may also be placed under UV light if necessary.

Internal cleaning

- Regularly check the pistons, springs, seals, and the tip cones. For internal cleaning, we recommend a mild detergent, 60% isopropanol or a commercially available sterilizing agent.
- After cleaning, lightly lubricate the piston (for piston lubrication, see section 8 Ordering Information).
- For information about disassembling the pipette, see section 7 Maintenance.

Autoclaving

ErgoOne® can be fully autoclaved (121°C, 1 bar, 20 minutes). To increase effectiveness, we recommend removing the tip ejector ⑤. Also loosen the tip cone ⑦ by rotating it once (singlechannel only). After autoclaving, dry the pipette at low temperature. When all parts have fully cooled, re-tighten the pipette tip cone and replace the tip ejector sleeve.

Note: The ErgoOne* piston material is an innovative, wear-resistant plastic polymer, treated with a special lubricant during manufacture. During normal use, it is not necessary to re-lubricate. If the pipette is frequently autoclaved it may be necessary to re-lubricate the piston (see Internal cleaning). The piston material for the red color coded models is made from stainless steel

5. Technical Data

| Technical Data ErgoOne® Pipettes | | | | | |
|--|-------------------|---|--|--|--|
| ErgoOne [®] Single-Channel | Pipette volume | Systematic Measurement Deviation (Inaccuracy) | Coincidental Measurement Deviation (Imprecision; CV) | | |
| 0.1–2.5µl | 0.1µl | ±24% | ±12% | | |
| | 0.25µl | ±12% | ±6.0% | | |
| | 1.25µl | ±2.5% | ±1.5% | | |
| | 2.5µl | ±1.4% | ±0.7% | | |
| 0.5–10µl | 1.0µl | ±2.5% | ±1.8% | | |
| | 5µl | ±1.5% | ±0.8% | | |
| | 10µl | ±1.0% | ±0.4% | | |
| 2–20µl (micro tip cone) | 2µl | ±5.0% | ±1.5% | | |
| | 10µl | ±1.2% | ±0.6% | | |
| | 20µl | ±1.0% | ±0.3% | | |
| 2–20µl (standard tip cone) | 2µl | ±5.0% | ±1.5% | | |
| | 10µl | ±1.2% | ±0.6% | | |
| | 20µl | ±1.0% | ±0.3% | | |
| 10–100µl | 10µl | ±3.0% | ±1.0% | | |
| | 50µl | ±1.0% | ±0.3% | | |
| | 100µl | ±0.8% | ±0.2% | | |
| 20–200µl | 20µl | ±2.5% | ±0.7% | | |
| | 100µl | ±1.0% | ±0.3% | | |
| | 200µl | ±0.6% | ±0.2% | | |
| 100–1000µl | 100µl | ±3.0% | ±0.6% | | |
| | 500µl | ±1.0% | ±0.2% | | |
| | 1000µl | ±0.6% | ±0.2% | | |
| 500–5000µl | 500µl | ±2.4% | ±0.6% | | |
| | 2500µl | ±1.2% | ±0.25% | | |
| | 5000µl | ±0.6% | ±0.15% | | |
| ErgoOne [®] Multi-Channel | Pipette volume | Systematic Measurement Deviation (Inaccuracy) | Coincidental Measurement Deviation (Imprecision; CV) | | |
| 0.5–10µl | 1.0µl | ±8.0% | ±5.0% | | |
| | 5µl | ±4.0% | ±2.0% | | |
| | 10µl | ±2.0% | ±1.0% | | |
| 10–100µl | 10µl | ±3.0% | ±2.0% | | |
| | 50µl | ±1.0% | ±0.8% | | |
| | 100µl | ±0.8% | ±0.3% | | |
| 30–300µl | 30µl | ±3.0% | ±1.0% | | |
| | 150µl | ±1.0% | ±0.5% | | |
| | 300µl | ±0.6% | ±0.3% | | |
| Measurement data determined in compliance with the test conditions for piston-stroke pipettes according to EN ISO 8655 | | | | | |
| Measurement carried out with original TipOne® pipette tips | | | | | |

6. Calibration

During manufacture, ErgoOne® pipettes are aligned for transferring aqueous solutions and calibrated according to EN ISO 8655. We also recommend that you check your pipettes at regularly, defined intervals such as every 3 or 12 months.

Realignment is not necessary with normal use. However, if your pipettes still do not achieve the specified limiting values (see section 5 Technical Data), check the following points:

- Is the pipette seal broken?
 Is it dripping? (see section 3 Troubleshooting)
- Is the density of the liquid you are using different from that of water?
- Are there any temperature differences between the pipette, liquid and air?
- Was the liquid pipetted slowly and evenly?

If the check is unsuccessful, calibrate and realign your pipette. This can be carried out according to the following instructions. Alternatively, USA Scientific offers a professional Pipette Calibration Service with a fast turnaround.

Note that each alignment means a zero point shifting. The amount by which the pipette setting is changed is constant across the entire measurement range. If for example $1000\mu l$ is realigned by $10\mu l$ (1%) for a $100-1000\mu l$ pipette, then for $100\mu l$, the pipette must also be corrected by $10\mu l = 10\%$.

Calibration & alignment

Calibration is a gravimetric analysis which requires an analytical balance adjusted to the pipetting volume, a weighing vessel and distilled water (room temperature).

General information

- Only use TipOne[®] pipette tips and attach these securely.
- Ensure that the pipette, pipette tips, and water are at the same temperature.
- Pre-wet each tip with distilled water at least three times.
- Always pipette evenly and slowly and hold the pipette upright.
- Immerse no more than 3 mm of the pipette tip into the liquid when taking a sample.
- Position the pipette at an angle of 30–45° to the inner wall of the tube when dispensing liquid.
- All channels of a multi-channel pipette must be checked separately.

Implementation

- a) Adjust the pipette to the required nominal volume.
- b) Pipet ten times, weighing and recording individual measurements...
- c) Calculate the mean value:

Mean value $x = \frac{\sum xi}{n}$

xi = weighing results n = number of individual weighings

d) Calculate the corresponding volume:

Volume (μ l) = $\frac{x (mg)}{Density of liquid}$ x = calculated mean value

The calculated volume corresponds to the actual setting of your pipette (the density of water at $20^{\circ}C =$ 0.9982 g/ml).

e) If realignment is necessary, open the volume adjustment catch by pulling up the volume control button ① until you hear a click. Remove the cover of the alignment unit ③. Slide the button down, using a pointed object or pen (with the nib retracted), and (whilst holding the button down) turn the volume control button ① to change the piston stroke of the pipette (the volume display remains unchanged). Turn the volume control

button ① clockwise to increase the volume, counter clockwise to reduce the volume (see table 2 for details). Once alignment is complete, push the volume control button ① down again until you hear a click. Replace the alignment unit ③ cover, and the pipette is ready for use again.

A full rotation of the volume control button **1** corresponds to the following volume change:

| Volume change | | | | | |
|--|------------------------------|--|--|--|--|
| ErgoOne [®] Single-Channel | Approximate Volume Change | | | | |
| 0.1–2.5µl | 0.13µl | | | | |
| 0.5–10µl | 0.7µl | | | | |
| 2–20µl (micro cone) | 1.4µl | | | | |
| 2–20µl (standard cone) | 1.4µl | | | | |
| 10-100µl | 7µl | | | | |
| 20-200µl | 14µl | | | | |
| 100–1000µl | 70µl | | | | |
| 500–5000µl | 340µl | | | | |
| ErgoOne [®] Multi-Channel | Approximate Volume Change | | | | |
| 0.5–10µl | 0.7µl | | | | |
| 10–100µl | 7µl | | | | |
| 30-300µl | 14µl | | | | |

Table 2

Note: Multi-channel pipettes are only aligned on one channel. Attach a single tip to any channel and proceed as described above.

7. Maintenance

ErgoOne[®] is a low maintenance pipette. However, individual working methods, length of application and internal quality control guidelines mean that regular monitoring and maintenance of your pipette is necessary.

Note: If you make any changes to the pipette or replace individual parts, a check with recalibration is required. If the pipette cannot be calibrated successfully or if a fault continues, contact USA Scientific.

Maintenance English

7.1 Maintaining Single-Channel Pipettes

The figures shown below refer to the 200 μ l model. They may differ slightly for other pipette models.

The maintenance work is carried out with the aid of the auxiliary tool supplied (tool not required for 5ml pipette) (Fig. 3)



- Ø For removing and replacing the seals on the 100µl and 1000µl models
- B For removing and replacing the seals on the 200µl model
- For loosening the lower housing of all single channel pipettes up to the 1000µl model

Disassembly and cleaning up to the 1000µl model

- Fully depress the tip ejector button 2 and pull the tip ejector 3 down (Fig. 4).
- Carefully unscrew the tip cone by turning the auxiliary tool clockwise (ErgoOne[®] 5ml tip cone can be removed without the auxiliary tool).



Remove the O-ring ^(a), spring ^(a) and piston ^(g)
 (Fig. 5).

Note: The piston is subject to spring tension.

- Degrease the piston ② using an alcoholic disinfectant and re-lubricate the piston with original
 USA Scientific piston grease (see section 8 Ordering Information). A damaged piston must be replaced.
- Reassemble the pipette in the reverse order.



Replacing seals for models up to 1000µl

- Remove the spacer ring ① (only 100µl, 200µl and 1000µl models) (Fig. 5).
- Remove the sealing ring ¹ from the tip cone using the auxiliary tool (Fig. 6) and replace it (see section 8 Ordering Information for replacement sealing ring).
- Reassemble the pipette in the reverse order.



Cleaning pistons and seals for 5ml model

- Fully depress the tip ejector button 2 and pull the tip ejector 5 down (Fig. 7).
- Carefully unscrew the pipette tip cone **2** and the piston unit **3** in a clockwise direction.
 Pull the support ring **1** off the piston **9**. Remove the O-ring **1**. Now you can clean the spring **3** and the piston (Fig. 8).

Note: The piston is subject to spring tension. If the spring or piston should become damaged, the piston unit must be replaced (see section 8 Ordering Information for a replacement piston unit).

- Degrease the O-ring ⁽¹⁾ of the piston unit ⁽¹⁾ using an alcoholic disinfectant and re-lubricate it with original USA Scientific piston grease (see section 8 Ordering Information).
- The pipette filter ⁽¹⁾ is easy to remove by pulling it out of the tip cone ⁽²⁾. Three replacement filters are included with the pipette. Further replacement filters are available (see section 8 Ordering Information).
- Reassemble the pipette in the reverse order.



Maintenance English



Fig.8











7.2 Maintaining Multi-Channel Pipettes

The figures shown below refer to the 100µl model. They may differ slightly for other pipette models.

Changing the O rings (100µl and 300µl models only)

O-rings for the pipette cone are removed and replaced using the optional auxiliary tool (see section 8 Ordering Information).



Disassembling the lower housing of the pipette

- Fully unscrew the lower housing ⁽⁶⁾ by turning clockwise (Fig. 9).
- To remove the tip ejector **3** squeeze with finger and thumb on either side of the tip ejector, just below the ejector fixing **3**. This will allow you to slightly lift the ejector fixing **3** which will release the tip ejector **3**.
- Pull both clips 1 down and rotate the lower housing through 180° (Fig. 10).





Cleaning/changing the piston unit

- The piston unit ^(B) is released from the piston frame by turning it with the Allen key (Fig. 11).
- The piston cylinder (1) is pushed up (Fig. 12) and the entire piston unit (2) can now easily be removed from the front (Fig. 13) and cleaned externally using an alcoholic disinfectant.
 Re-lubricate the piston with original USA Scientific piston grease (see section 8 Ordering Information).
- The piston unit should not be disassembled. In the event of damage, it should be fully replaced (see section 8 Ordering Information for a replacement piston unit).
- Reassemble the pipette in the reverse order.



8. Ordering Information

| ErgoOne® Pipettes | | | | | | | |
|----------------------------|-------------------------------------|-----------|------------|--|--|--|--|
| Volume Range | Catalog No. | Pack Size | Color Code | | | | |
| | ErgoOne [®] Single-Channel | | | | | | |
| 0.1–2.5µl | 7100-0125 | 1 | Red | | | | |
| 0.5–10µl | 7100-0510 | 1 | Red | | | | |
| 2–20µl (micro tip cone) | 7100-0221 | 1 | Red | | | | |
| 2–20µl (standard tip cone) | 7100-0220 | 1 | Yellow | | | | |
| 10–100µl | 7100-1100 | 1 | Yellow | | | | |
| 20-200µl | 7100-2200 | 1 | | | | | |
| 100–1000µl | 7110-1000 | 1 | Blue | | | | |
| 500 - 5000µl | 7150-5000 | 1 | Violet | | | | |
| | ErgoOne [®] 8-C | hannel | | | | | |
| 0.5–10µl | 7108-0510 | 1 | Red | | | | |
| 10–100µl | 7108-1100 | 1 | Yellow | | | | |
| 30-300µl | 7108-3300 | 1 | Green | | | | |
| ErgoOne® 12-Channel | | | | | | | |
| 0.5–10µl | 7112-0510 | 1 | Red | | | | |
| 10–100µl | 7112-1100 | 1 | Yellow | | | | |
| 30-300µl | 7112-3300 | 1 | Green | | | | |

| ErgoOne® Accessories | | | | | | |
|---|-----------|-----------|--|--|--|--|
| Description | Cat.No. | Pack Size | | | | |
| Universal Pipette Carousel Stand for up to 8 pipettes | 7200-0000 | 1 | | | | |
| | | | | | | |
| Silicone Grease for Pipette Piston | 7200-0100 | 1 | | | | |
| Tool for Single-Channel Pipettes | 7200-0101 | 1 | | | | |
| Tool for Multi-Channel Pipettes | 7200-0102 | 1 | | | | |

| Volume Range Catalog No. Tip Ejector Tip Holder Piston 0.1-2.5µl 7200-0200 7200-0210* 7200-0220 0.5-10µl 7200-0201 7200-0211* 7200-0221 2-20µl (micro tip cone) 7200-0202 7200-0213* 7200-0223 10-100µl 7200-0204 7200-0214 7200-0224 20-200µl 7200-0205 7200-0215 7200-0225 100-1000µl 7200-0206 7200-0216 7200-0226 20-200µl 7200-0206 7200-0216 7200-0225 100-1000µl 7200-0230 Included with tip cone - 0.1-2.5µl 7200-0230 Included with tip cone - 0.5-10µl 7200-0230 Included with tip cone - 2-20µl (micro tip cone) 7200-0230 Included with tip cone - 2-20µl (standard tip cone) 7200-0230 Included with tip cone - 2-20µl (micro tip cone) 7200-0230 7200-0244 7200-0250 20-20µl 7200-0230 7200-0245 7200-0250 <t< th=""><th colspan="6">Spare Parts for ErgoOne® Single Channel</th></t<> | Spare Parts for ErgoOne® Single Channel | | | | | |
|--|---|---------------------------|------------------------|--------------|--|--|
| 0.1 - 2.5µl 7200-0200 7200-0210* 7200-0220 0.5 - 10µl 7200-0201 7200-0211* 7200-0221 2 - 20µl (micro tip cone) 7200-0202 7200-0212* 7200-0223 10 - 100µl 7200-0204 7200-0213* 7200-0224 20 - 200µl 7200-0205 7200-0215 7200-0225 10 - 1000µl 7200-0206 7200-0216 7200-0226 10 - 1000µl 7200-0206 7200-0216 7200-0226 10 - 1000µl 7200-0230 Included with tip cone - 0.1 - 2.5µl 7200-0230 Included with tip cone - 0.5 - 10µl 7200-0230 Included with tip cone - 2 - 20µl (micro tip cone) 7200-0230 Included with tip cone - 2 - 20µl (micro tip cone) 7200-0230 Included with tip cone - 2 - 20µl (standard tip cone) 7200-0230 7200-0244 7200-0250 20 - 200µl 7200-0230 7200-0245 7200-0250 20 - 200µl 7200-0236 7200-0246 7200-0250 20 - 2 | Volume Range | Catalog No. | | | | |
| 0.5-10µl 7200-0201 7200-0211* 7200-0221 2-20µl (micro tip cone) 7200-0202 7200-0212* 7200-0223 2-20µl (standard tip cone) 7200-0202 7200-0213* 7200-0223 10-100µl 7200-0204 7200-0214 7200-0224 20-200µl 7200-0205 7200-0215 7200-0225 100-1000µl 7200-0206 7200-0216 7200-0226 Spring Sealing Ring, Set of 3 Spacer Ring 0.1-2.5µl 7200-0230 Included with tip cone - 0.5-10µl 7200-0230 Included with tip cone - 2-20µl (micro tip cone) 7200-0230 Included with tip cone - 2-20µl (standard tip cone) 7200-0230 Included with tip cone - 2-20µl (standard tip cone) 7200-0230 7200-0244 7200-0250 20-200µl 7200-0230 7200-0245 7200-0250 20-200µl 7200-0236 7200-0246 7200-0250 20-200µl 7200-0236 7200-0246 7200-0252 100-1000µl < | | Tip Ejector | Tip Holder | Piston | | |
| 2 - 20µl (micro tip cone) 7200-0202 7200-0212* 7200-0222 2 - 20µl (standard tip cone) 7200-0202 7200-0213* 7200-0223 10 - 100µl 7200-0204 7200-0214 7200-0224 20 - 200µl 7200-0205 7200-0215 7200-0225 100 - 1000µl 7200-0206 7200-0216 7200-0226 Spring Sealing Ring, Set of 3 Spacer Ring 0.1 - 2.5µl 7200-0230 Included with tip cone - 0.5 - 10µl 7200-0230 Included with tip cone - 2 - 20µl (micro tip cone) 7200-0230 Included with tip cone - 2 - 20µl (standard tip cone) 7200-0230 Included with tip cone - 2 - 20µl (standard tip cone) 7200-0230 Tacluded with tip cone - 2 - 20µl (standard tip cone) 7200-0230 7200-0244 7200-0250 20 - 200µl 7200-0230 7200-0245 7200-0250 20 - 200µl 7200-0236 7200-0246 7200-0252 100 - 1000µl 7200-0236 7200-0246 7200-0252 | 0.1–2.5µl | 7200-0200 | 7200-0210* | 7200-0220 | | |
| 2 - 20µl (standard tip cone) 7200-0202 7200-0213* 7200-0223 10 - 100µl 7200-0204 7200-0214 7200-0224 20 - 200µl 7200-0205 7200-0215 7200-0225 100 - 1000µl 7200-0206 7200-0216 7200-0226 Spring Sealing Ring, Set of 3 Spacer Ring 0.1 - 2.5µl 7200-0230 Included with tip cone - 0.5 - 10µl 7200-0230 Included with tip cone - 2 - 20µl (micro tip cone) 7200-0230 Included with tip cone - 2 - 20µl (standard tip cone) 7200-0230 Included with tip cone - 2 - 20µl (standard tip cone) 7200-0230 Included with tip cone - 2 - 20µl (standard tip cone) 7200-0230 7200-0244 7200-0250 20 - 200µl 7200-0230 7200-0245 7200-0250 20 - 200µl 7200-0236 7200-0246 7200-0252 100 - 1000µl 7200-0236 7200-0246 7200-0252 100 - 1000µl 7200-0236 7200-0246 7200-0252 | 0.5–10µl | 7200-0201 | 7200-0211* | 7200-0221 | | |
| 10-100μl 7200-0204 7200-0214 7200-0224 20-200μl 7200-0205 7200-0215 7200-0225 100-1000μl 7200-0206 7200-0216 7200-0226 Spring Sealing Ring, Set of 3 Spacer Ring 0.1-2.5µl 7200-0230 Included with tip cone - 0.5-10µl 7200-0230 Included with tip cone - 2-20µl (micro tip cone) 7200-0230 Included with tip cone - 2-20µl (standard tip cone) 7200-0230 Included with tip cone - 10-100µl 7200-0230 7200-0244 7200-0250 20-200µl 7200-0230 7200-0245 7200-0250 20-200µl 7200-0236 7200-0246 7200-0250 100-1000µl 7200-0236 7200-0246 7200-0252 100-1000µl 7200-0236 7200-0246 7200-0252 100-1000µl 7200-0207 7200-0217 7200-0227 | 2–20µl (micro tip cone) | 7200-0202 | 7200-0212* | 7200-0222 | | |
| 20-200μl 7200-0205 7200-0215 7200-0225 100-1000μl 7200-0206 7200-0216 7200-0226 Spring Sealing Ring, Set of 3 Spacer Ring 0.1-2.5µl 7200-0230 Included with tip cone - 0.5-10µl 7200-0230 Included with tip cone - 2-20µl (micro tip cone) 7200-0230 Included with tip cone - 2-20µl (standard tip cone) 7200-0230 Included with tip cone - 10-100µl 7200-0230 7200-0244 7200-0250 20-200µl 7200-0230 7200-0245 7200-0250 100-1000µl 7200-0236 7200-0246 7200-0252 100-1000µl 7200-0236 7200-0246 7200-0252 100-1000µl 7200-0236 7200-0246 7200-0252 Tip Ejector Tip Cone Piston Unit 7200-0207 7200-0217 7200-0227 | 2–20µl (standard tip cone) | 7200-0202 | 7200-0213* | 7200-0223 | | |
| 100–1000µl 7200-0206 7200-0216 7200-0226 Spring Sealing Ring, Set of 3 Spacer Ring 0.1–2.5µl 7200-0230 Included with tip cone 0.5–10µl 7200-0230 Included with tip cone 2–20µl (micro tip cone) 7200-0230 Included with tip cone 2–20µl (standard tip cone) 7200-0230 Included with tip cone 10–100µl 7200-0230 7200-0244 7200-0230 7200-0244 7200-0250 20–200µl 7200-0236 7200-0245 7200-1000µl 7200-0236 7200-0246 7200-0250 7200-0252 7200-0252 Tip Ejector Tip Cone Piston Unit 7200-0207 7200-0217 7200-0227 | 10–100µl | 7200-0204 | 7200-0214 | 7200-0224 | | |
| Spring Sealing Ring, Set of 3 Spacer Ring 0.1-2.5µl 7200-0230 Included with tip cone - 0.5-10µl 7200-0230 Included with tip cone - 2-20µl (micro tip cone) 7200-0230 Included with tip cone - 2-20µl (standard tip cone) 7200-0230 Included with tip cone - 10-100µl 7200-0230 7200-0244 7200-0250 20-200µl 7200-0230 7200-0245 7200-0250 100-1000µl 7200-0236 7200-0246 7200-0252 Tip Ejector Tip Cone Piston Unit 7200-0207 7200-0217 7200-0227 | 20–200µl | 7200-0205 | 7200-0215 | 7200-0225 | | |
| 0.1 - 2.5µl 7200-0230 Included with tip cone - 0.5 - 10µl 7200-0230 Included with tip cone - 2 - 20µl (micro tip cone) 7200-0230 Included with tip cone - 2 - 20µl (standard tip cone) 7200-0230 Included with tip cone - 10 - 100µl 7200-0230 Included with tip cone - 10 - 100µl 7200-0230 7200-0244 7200-0250 20 - 200µl 7200-0230 7200-0245 7200-0250 100 - 1000µl 7200-0236 7200-0246 7200-0252 100 - 1000µl 7200-0236 7200-0246 7200-0252 100 - 1000µl 7200-0236 7200-0246 7200-0252 100 - 1000µl 7200-0207 7200-0217 7200-0227 | 100–1000µl | 7200-0206 | 7200-0216 | 7200-0226 | | |
| 0.1 - 2.5µl 7200-0230 Included with tip cone - 0.5 - 10µl 7200-0230 Included with tip cone - 2 - 20µl (micro tip cone) 7200-0230 Included with tip cone - 2 - 20µl (standard tip cone) 7200-0230 Included with tip cone - 10 - 100µl 7200-0230 Included with tip cone - 10 - 100µl 7200-0230 7200-0244 7200-0250 20 - 200µl 7200-0230 7200-0245 7200-0250 100 - 1000µl 7200-0236 7200-0246 7200-0252 100 - 1000µl 7200-0236 7200-0246 7200-0252 100 - 1000µl 7200-0236 7200-0246 7200-0252 100 - 1000µl 7200-0207 7200-0217 7200-0227 | | Spring | Sooling Ping Sot of 2 | Spacor Ping | | |
| 0.5-10µl 7200-0230 Included with tip cone - 2-20µl (micro tip cone) 7200-0230 Included with tip cone - 2-20µl (standard tip cone) 7200-0230 Included with tip cone - 10-100µl 7200-0230 7200-0244 7200-0250 20-200µl 7200-0230 7200-0245 7200-0250 100-1000µl 7200-0236 7200-0246 7200-0252 Tip Ejector Tip Cone Piston Unit 7200-0207 7200-0217 7200-0227 | 04.25.1 | | | Spacer King | | |
| 2 - 20μl (micro tip cone) 7200-0230 Included with tip cone - 2 - 20μl (standard tip cone) 7200-0230 Included with tip cone - 10 - 100μl 7200-0230 7200-0244 7200-0250 20 - 200μl 7200-0230 7200-0245 7200-0250 100 - 1000μl 7200-0236 7200-0246 7200-0252 Tip Ejector Tip Cone Piston Unit 7200-0207 7200-0217 7200-0227 | · · · · · · · · · · · · · · · · · · · | | • | - | | |
| 2 - 20μl (standard tip cone) 7200-0230 Included with tip cone 10 - 100μl 7200-0230 7200-0244 7200-0250 20 - 200μl 7200-0230 7200-0245 7200-0250 100 - 1000μl 7200-0236 7200-0246 7200-0252 Tip Ejector Tip Cone Piston Unit 7200-0207 7200-0217 7200-0227 | 0.5–10µl | 7200-0230 | Included with tip cone | - | | |
| 10-100μl 7200-0230 7200-0244 7200-0250 20-200μl 7200-0230 7200-0245 7200-0250 100-1000μl 7200-0236 7200-0246 7200-0252 Tip Ejector Tip Cone Piston Unit 7200-0207 7200-0217 7200-0227 | 2-20µl (micro tip cone) | 7200-0230 | Included with tip cone | - | | |
| 20-200μl 7200-0230 7200-0245 7200-0250 100-1000μl 7200-0236 7200-0246 7200-0252 Tip Ejector Tip Cone Piston Unit 7200-0207 7200-0217 7200-0227 | 2-20µl (standard tip cone) | 7200-0230 | Included with tip cone | - | | |
| Του του Του του Του του 100 – 1000μl 7200-0236 7200-0246 7200-0252 Tip Ejector Tip Cone Piston Unit 7200-0207 7200-0217 7200-0227 | 10–100µl | 7200-0230 | 7200-0244 | 7200-0250 | | |
| Tip Ejector Tip Cone Piston Unit 7200-0207 7200-0217 7200-0227 | 20–200µl | 7200-0230 | 7200-0245 | 7200-0250 | | |
| 7200-0207 7200-0217 7200-0227 | 100–1000µl | 7200-0236 | 7200-0246 | 7200-0252 | | |
| 7200-0207 7200-0217 7200-0227 | | Tin Finnten | Tin Come | Distant Unit | | |
| | | | • | | | |
| 500–5000 Pipette Filter Set of 10 | | 7200-0207 | 7200-0217 | 7200-0227 | | |
| There inter, set of ito | 500-5000 µl | Pipette Filter, Set of 10 | - | - | | |
| 7200-0260 | | 7200-0260 | - | - | | |

* The tip cone for the 0.1-2.5 μ l, 0.5-10 μ l and 2-20 μ l models include sealing ring.

| Spare Parts for ErgoOne® Multi Channel | | | | | | | |
|---|--------------------|------------|-----------|--|--|--|--|
| Volume Range | | | | | | | |
| O-Rings for Tip Cone, Piston Unit, Lower Part Set of 4 Set of 2 Complete | | | | | | | |
| | ErgoOne | 8-Channel | | | | | |
| 0.5-10µl | - | 7200-0320 | 7200-0330 | | | | |
| 10-100 µl | 7200-0310 | 7200-0321 | 7200-0331 | | | | |
| 30-300µl | 30-300µl 7200-0310 | | 7200-0332 | | | | |
| | ErgoOne® | 12-Channel | | | | | |
| 0.5-10µl | - | 7200-0320 | 7200-0335 | | | | |
| 10-100 µl | 7200-0310 | 7200-0321 | 7200-0336 | | | | |
| 30-300µl | 7200-0310 | 7200-0322 | 7200-0337 | | | | |

9. Pipette Tip Compatibility

| | | Bulk | Racks | Sterile Racks | Refills | Stack Racks | |
|--------------------------------------|-------------------------------------|--------------|-----------------|-----------------|-----------------|-----------------|--|
| [| | | | | | | |
| ErgoOne [®] Volume Range | TipOne [®] Pipette Tips | 1000 Tips | 10 x 96 Tips | 10 x 96 Tips | 10 x 96 Tips | 10 x 96 Tips | |
| 0.1–2.5 μl 0.5–10 μl | 10 µl Graduated | 1111-3000 | 1111-3800 | 1111-3810 | 1111-3700 | 1111-3200 | |
| 2−20 µl (Micro Tip Cone) | 10/20 µl XL Graduated | 1110-3000 | 1110-3800 | 1110-3810 | 1110-3700 | - | |
| | 20 µl Bevelled | - | - | - | - | - | |
| | 20 µl Profile | - | - | - | - | - | |
| | 50 µl Bevelled | - | - | - | - | - | |
| | 100 µl Bevelled | - | - | - | - | - | |
| 2–20 µl (Standard Tip | 100 µl Profile | - | - | - | - | - | |
| Cone) 10–100 µl | 200 µl Graduated | - | - | - | - | - | |
| 20–200 µl | 200 µl | 1111-0000 | 1111-0800 | 1111-0810 | 1111-0700 | 1111-0200 | |
| | 200 µl Yellow | 1111-0006 | 1111-0806 | 1111-0816 | 1111-0706 | 1111-0206 | |
| | 200 µl Bevelled | 1111-1000 | 1111-1800 | 1111-1810 | 1111-1700 | 1111-1200 | |
| | 200 µl Yellow, Bevelled | 1111-1006 | 1111-1806 | 1111-1816 | 1111-1706 | 1111-1206 | |
| | 200 µl Profile, Graduated | 1110-1000 | 1110-1800 | 1110-1810 | 1110-1700 | 1110-1200 | |
| 30–300 µl | 300 µl Graduated | 1110-9000 | 1110-9800 | 1110-9810 | 1110-9700 | - | |
| | 1000 µl | - | - | - | - | - | |
| 100 1000 | 1000 µl Graduated | 1111-2020 | 1111-2820 | 1111-2830 | 1111-2720 | - | |
| 100–1000 µl | 1000 µl Blue, Graduated | 1111-2021 | 1111-2821 | 1111-2831 | 1111-2721 | - | |
| | 1250 μl XL (1000 μl XL Filter) | 1112-1020 | 1112-1820 | 1112-1830 | 1112-1720 | - | |
| | | 250 Tips | 10 x 50 Tips | 10 x 50 Tips | | | |
| 500–5000 µl | 5000 µl Graduated, Macro | 1050-0000 | 1050-0700 | 1050-0710 | - | - | |

When using TipOne RPT tips please recalibrate your pipette for best accuracy.

| Stack Racks Sterile | Sterile Filter Tip Racks | Sterile Filter Tip Refills | RPT Racks | RPT Refills | RPT Sterile Filter Tip Racks | RPT Sterile Filter Tip Refills |
|------------------------|-----------------------------|-------------------------------|-----------------|-----------------|------------------------------------|--------------------------------------|
| 10 x 96 Tips | 10 x 96 Filter Tips | 10 x 96 Filter Tips | 10 x 96 Tips | 10 x 96 Tips | 10 x 96 Filter Tips | 10 x 96 Filter Tips |
| 1111-3210 | 1121-3810 | 1121-2710 | 1161-3800 | 1161-3700 | 1181-3810 | 1181-3710 |
| - | 1120-3810 | 1120-3710 | 1160-3800 | 1160-3700 | 1180-3810 | 1180-3710 |
| - | 1120-1810 | 1120-1710 | - | - | 1180-1810 | 1180-1710 |
| - | 1123-1810 | 1123-1710 | - | - | 1183-1810 | 1183-1710 |
| - | 1120-2810 | 1120-2710 | - | - | - | - |
| - | 1120-1840 | 1120-1740 | - | - | 1180-1840 | 1180-1740 |
| - | 1123-1840 | 1123-1740 | - | - | 1183-1840 | 1183-1740 |
| - | 1120-8810 | 1120-8710 | - | - | 1180-8810 | 1180-8710 |
| 1111-0210 | - | - | - | - | - | - |
| - | - | - | - | - | - | - |
| 1111-1210 | - | - | 1161-1800 | 1161-1700 | - | - |
| - | - | - | - | - | - | - |
| - | - | - | 1163-1800 | 1163-1700 | - | - |
| - | 1120-9810 | 1120-9710 | 1160-9800 | 1160-9700 | 1180-9810 | 1180-9710 |
| - | 1126-7810 | 1126-7710 | - | - | - | - |
| - | - | - | - | - | | |
| - | - | - | - | - | - | - |
| - | 1121-1830 | 1122-1730 | 1161-1820 | 1161-1720 | 1182-1830 | 1182-1730 |
| | 10 x 50 Tips | | | | | |
| - | 1050-0810 | - | - | - | - | - |
| | | | | | | |

10. Warranty

Please check the all the goods have been delivered and are intact. If you have any problems, please contact our Customer Service department. ErgoOne® Limited Warranty is effective for 36 months from the date of delivery when the product is used according to the instructions. Damage caused by improper use is not covered. This Limited Warranty covers, at the sole discretion of USA Scientific, repairs to or replacements of the equipment. Our "General Terms and Conditions" apply.

USA Scientific reserves the right to make changes to specifications without prior notice in order to implement short-term innovations.

ErgoOne® pipettes are manufactured to high quality standards. Each pipette is marked with an individual serial number behind the tip ejector button. The test results of the EN ISO 8655 quality test are also documented in a test record. The test record is delivered as a separate "Declaration of Conformity" document in each package.

Version November 2016 - subject to errors and modifications