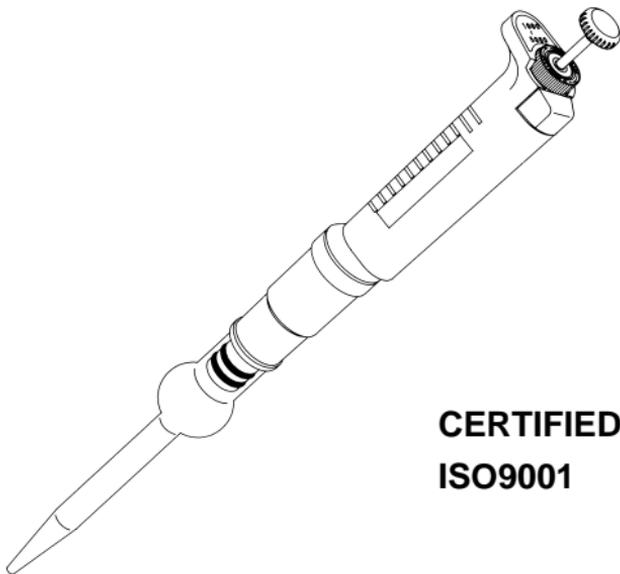


# *Nichipet ECO*

Pipette with Glass Tip for Endocrine Disruptors Research

## **User's Manual**



**CERTIFIED  
ISO9001**

- Thank you for your purchase of our Nichipet ECO.
- Before proceeding to work with Nichipet ECO, carefully read this manual for proper use of it.

Always Pursuing Originality  
Since 1944



# Nichipet ECO

Digital micro pipette for liquid handling

## Features

- Glass Tip enables totally bias free liquid handling for endocrine disruptors analysis.
- Nozzle with double O-ring enables easy tip fitting/ejection and reliable sealing secured.
- The sample volume can easily be set by simply turning the push button while looking at the digital indication.
- The instrument has a special structure so that its precision is hardly affected by the temperature of your hands if the instrument is used for long hours.
- Since PTFE (fluoroplastic) is used in the airtight chamber of the instrument, the instrument keeps air tightness and precise reproducibility for long hours.
- Ceramic (plunger), PTFE (Tip holder), and FPM (O-ring) are used for liquid contacting parts.
- Setting of the sample volume can be locked with locking mechanism so that the volume does not easily change.

## Standard accessories

- Glass tips ..... × 1
  - O-rings for nozzle .... × 2
- \* When unpacking the package, check to make sure that the above-mentioned items are included.

## Precautions on safety

- For using your Nichipet ECO properly and safely, carefully read "Precautions on safety" in this paragraph and "CAUTIONS" on the next page before starting work with it.
- The contents of "CAUTIONS" are matters that require the user's attention, not only for using the Nichipet ECO properly but for preventing the user from accidents and physical damage.
- After reading this manual, please keep it in a convenient place for referring to at any time.

**Please read the following prior to use for your safety and correct usage.**

## **CAUTIONS**

Be sure to observe the following instructions for using your Nichipet ECO properly and safely.

If the user uses the Nichipet ECO in the wrong way, disregarding the following instructions, it may result in injury to the user or/and other persons or physical damage to this instrument or/and other equipment.

1. Don't use this instrument for any purpose except pipetting / fractionizing liquid.
2. Don't modify this instrument, because modification may cause an accident.
3. Don't use this instrument for pipetting any liquid to be injected into the human body.
4. Don't discharge any sample liquid while pointing the instrument at anybody, because some kinds of liquid are harmful to humans.
5. Firmly fit the tip to the nozzle, otherwise the tip may fall off and the inside sample liquid may scatter.
6. Carefully handle the glass tips. They are very dangerous, if broken.
7. If the instrument is soiled with liquid harmful to the human body, immediately take proper measures to clean it safely before proceeding with work.
8. When handling liquid harmful to the human body , be careful not to directly touch the tip during or after use.
9. Don't use this instrument for stirring liquid and so on, otherwise not only the tip may be loose and fall off but the instrument may be soiled with the scattered liquid.
10. Although this instrument has good chemical resistance in general, it may be damaged by some kinds of chemicals such as N-methyl-pyrrolidinone etc. When using a special chemical, please make enquires to our company.

## ! Matters that require strict observance

Users are required to strictly observe the following points in order for the instrument to keep its excellent precision, reproducibility and original performance for a long time.

1. Don't expose this instrument directly to the sun when working with it or for 2 hours before starting work, otherwise the instrument may fail in precise pipetting. Avoid working with this instrument in a humid and hot place.
2. Just before starting work with this instrument, avoid touching the tip and nozzle cylinder as far as circumstances permit. If the nozzle cylinder is warmed by your hand, it is hard to maintain accuracy.
3. For fractional pipetting, follow the forward method (the way explained in this manual). If it is performed in a different way, it may result in inaccurate pipetting.
4. Operate the push button very gently. If it is quickly released, it may result in not only inaccurate pipetting but also deterioration in the instrument, because the sample liquid is sucked into the main body.
5. Don't reuse a glass tip that has been used once without washing. If a glass tip is repeatedly used, it may cause inaccurate and impure pipetting and cross contamination (\*) among samples.

(\*) For example, if the previous sample liquid remains inside the tip, it is mixed in with new sample liquid and the new sample is contaminated by the previous one. Therefore, pipetting of the next sample ends with a wrong result. This phenomenon is called mutual contamination of samples.

6. Don't hold the instrument horizontally or upside down when there is liquid inside the tip, otherwise the liquid gets into the main body and the instrument may deteriorate.
7. When turning the push-button, don't exceed the specified sample volume limit, otherwise the instrument may be damaged or deteriorate.
8. Don't perform pipetting with less liquid than the set volume. If the quantity of liquid is less than the set volume, it may cause the liquid to scatter into the main body and the instrument may deteriorate in quality.

## Operating procedure

### 1. Setting the liquid volume

- 1) Turn the lock screw in the unlocking direction to loosen it. (Fig. A)
- 2) Turn the push button to set the digital counter to a desired liquid volume. To increase the setting volume, turn the push button to pass the last set graduation on the scale by half a turn and then set at the higher graduation as desired. To decrease the setting volume, reset the digital counter directly at the lower graduation as desired. When setting the liquid volume, set the counter's graduation at the point mark appearing in the lower part of the counter window. (Fig. B)
- 3) After setting the liquid volume, turn the lock screw in the locking direction to lock it. (Fig. A)

**Note: Don't exceed the specified liquid volume limit, otherwise the instrument may be damaged or deteriorate in the quality.**

### 2. Extracting liquid

- 1) Attach a glass tip to the nozzle.
- 2) Press the push button down from point "a" to the point "b". (Fig. C)
- 3) While depressing the push button, immerse the tip into the liquid to the extracting volume (approximately 3 mm deep). (Fig. D-①)
- 4) Pull up the push button to point "a" to suck the liquid into the tip. With the tip immersed in the liquid, keep the instrument stationary for about 1 second to wait until the liquid is completely sucked into the tip. (Fig. D-②)
- 5) Gently extract the instrument to separate the tip from the liquid so that there are no drops of liquid left on the outside of the tip. If there are some drops left on the outside of the tip, wipe them off with a tissue, or the like, taking care not to touch the tip.

**Note: Don't extract liquid with the push button depressed at point "c" shown in the Fig. C.**

**Note: Be careful to operate the push button very gently. If it is rapidly released, the liquid may possibly be sucked into the main body and pipetting may end with an inaccurate result.**

### 3. Discharging the liquid

- 1) Gently place the tip on the inner wall of a proper vessel. (Fig. D-③)
- 2) Gently press the push button down from point "a" to point "b". Five seconds later, press down the push button again from point "b" to point "c". The liquid is discharged from the tip. (Fig. D-⑤)



**When handling liquid harmful to humans, be careful not to touch the tip during and after operation.**

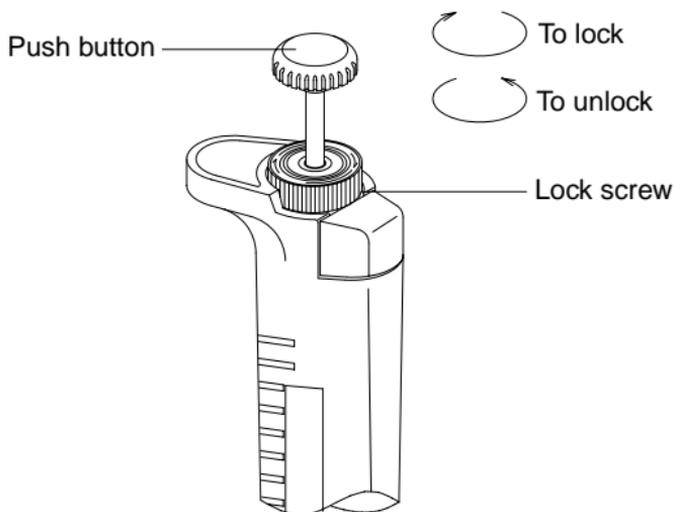


Fig. A

Nichipet ECO 1000 $\mu\ell$   
Digital counter 100~1000 $\mu\ell$

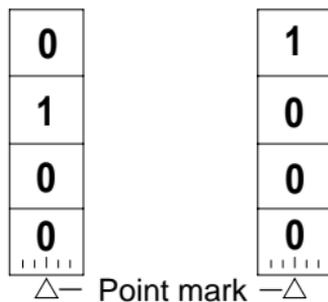


Fig. B

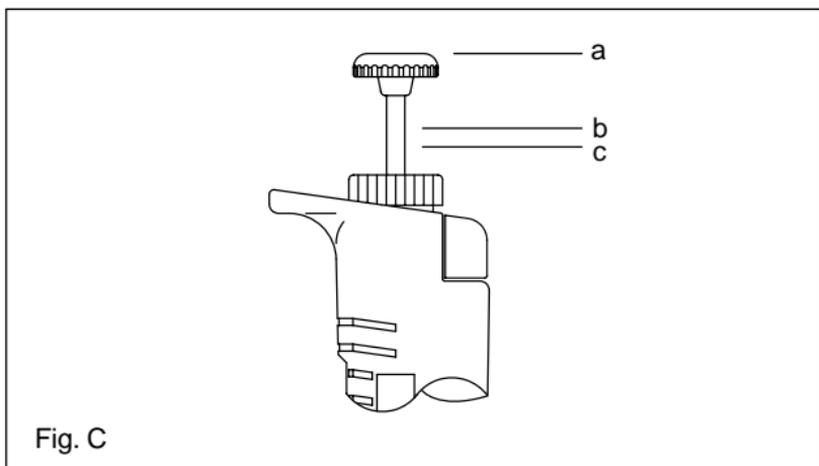


Fig. C

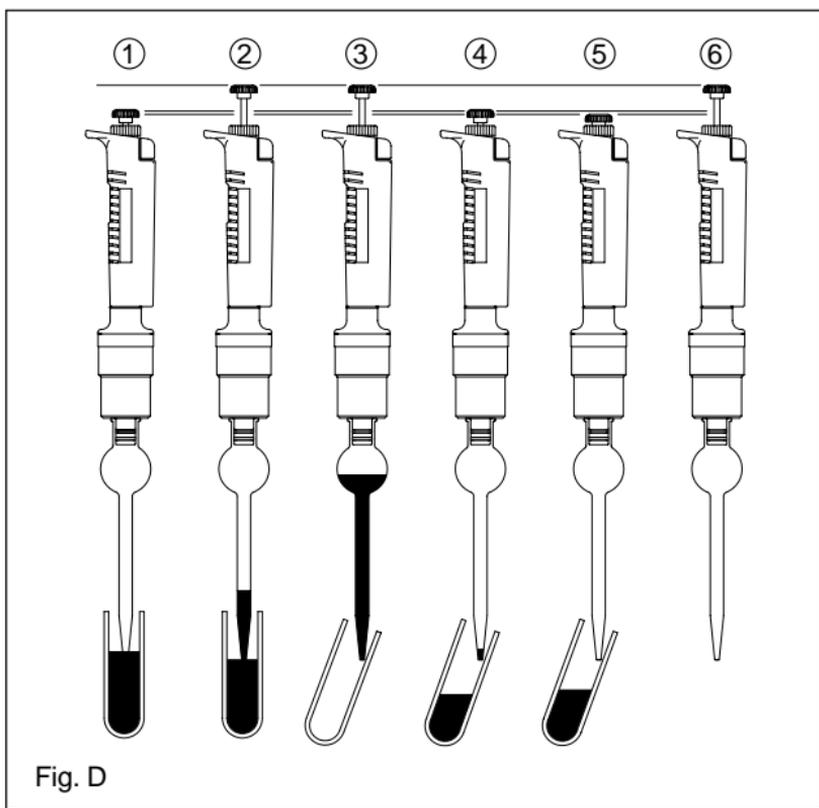


Fig. D

## Disassembling / Reassembling the airtight chamber

If such symptoms as mentioned in "Troubleshooting" (page12) occurs, disassemble and inspect the instrument according to the following procedures.

### 1. Disassembling

- ① Turn the nozzle cylinder counterclockwise to remove it, as it is screwed into the main body.

**Note: When removing the nozzle cylinder, take care with the internal parts as some of them occasionally spring out of the body (for types of 0.2mℓ to 1mℓ capacity).**

- ② Remove internal parts one after another
  - 0.2mℓ , 1mℓ : Fig. E  
Remove the plunger, single spring, O-ring retainer, O-ring from the nozzle cylinder.
  - 5mℓ , 10mℓ : Fig. F, Fig. G  
Remove the O-ring retainer and seal ring from the nozzle cylinder.

**Note: Take care not to lose small parts during disassembling.**

### 2. Reassembling

- ① Reassemble the nozzle cylinder.
  - 0.2mℓ , 1mℓ : Fig. E  
First set the single spring on the plunger, next set the O-ring retainer, O-ring in this order. Then, insert the assembled plunger into the nozzle cylinder and screw it into the body.
  - 5mℓ , 10mℓ : Fig. F, Fig. G  
Set the seal ring, O-ring on the plunger in this order, and then insert the assembled plunger into the nozzle cylinder while taking care that the O-ring does not come off the center. After insertion, screw the nozzle cylinder into the body.

**Note: When reassembling, be careful not to put the seal ring and O-ring in the wrong order. If they put together in the wrong order, it not only affects air tightness but causes liquid to leak, inaccuracy, failure in extracting liquid, etc.**

**Note: After reassembling, repeat trial operation several times and check to see that there is nothing wrong with the instrument.**

### 3. Replacement for O-ring on nozzle

- ① Insert the O-ring replacing tool (such as a  $\ominus$  shaped driver) between the O-ring and the nozzle. Remove the o-ring from the nozzle. (Fig. H)
- ② Attach the new O-rings to the nozzle.

**Note:** Be careful not to damage the nozzle when replacing O-rings with the tool.

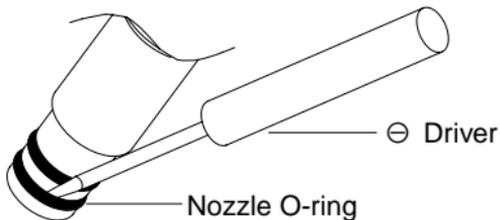
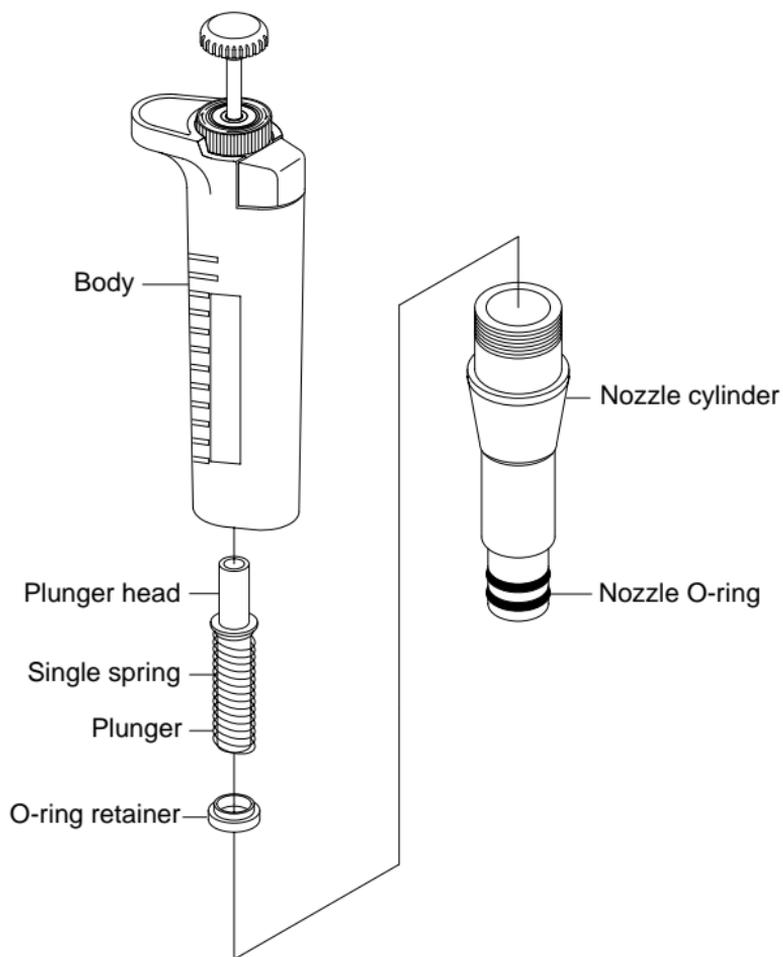


Fig. H

**200 $\mu$ l , 1000 $\mu$ l**



**Fig. E**

5000 $\mu$ l

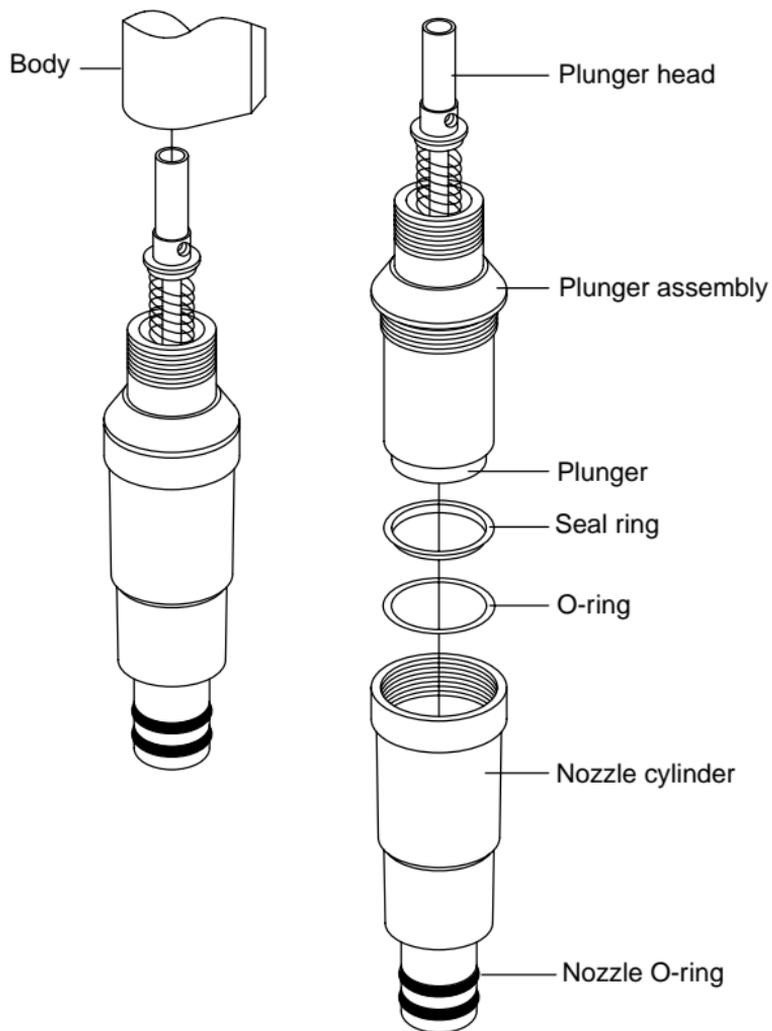


Fig. F

10mℓ

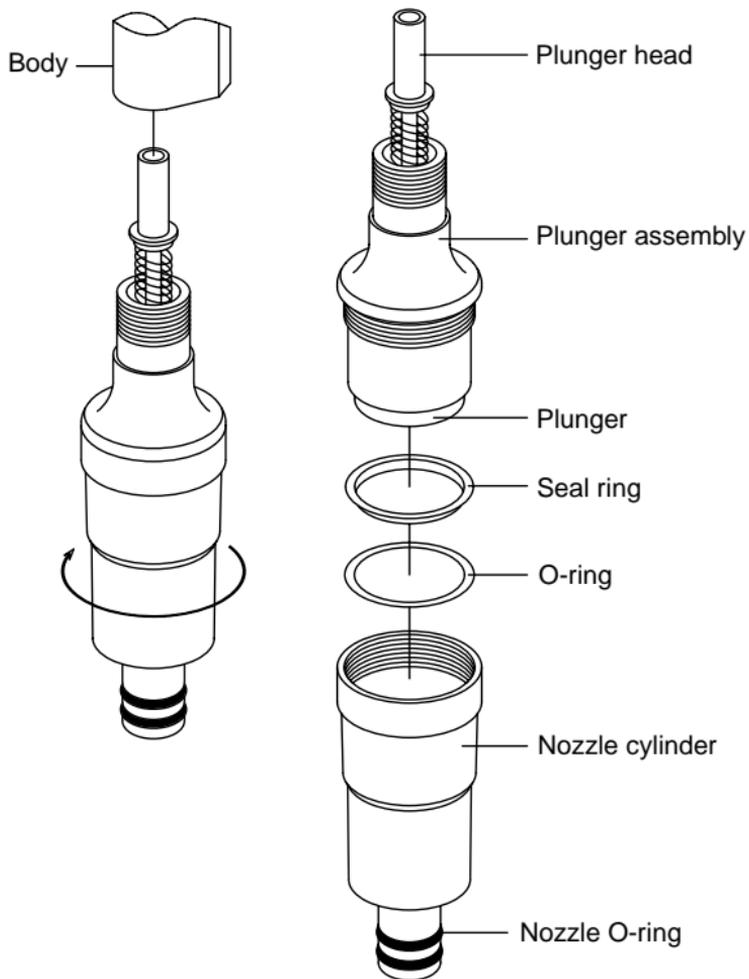


Fig. G

## Troubleshooting

The instrument fails to extract liquid.	▷	The nozzle cylinder has come loose.	▷	Try to screw the nozzle cylinder firmly into the body again.
	▷	The O-ring / seal ring set are assembled in the wrong order.	▷	Reset the O-ring / seal ring according to the instructions in disassembling / reassembling
	▷	The O-ring / seal ring set are worn.	▷	Replacement parts: Purchase nozzle cylinder set for 0.2ml and 1ml for replacement. Purchase O-ring/seal ring set for 5ml and 10ml for replacement.
Extracted liquid leaks from the tip.	▷	The nozzle cylinder has come loose.	▷	Screw the nozzle cylinder firmly into the body again.
	▷	The nozzle cylinder is worn (stepped wear can be checked by eye.)	▷	Replacement parts: Purchase nozzle cylinder set for 0.2ml and 1ml for replacement. Purchase nozzle cylinder for 5ml and 10ml for replacement.
	▷	The O-ring / seal ring are worn, because the plunger is damaged or rusty.	▷	Replacement parts: Purchase plunger set or/and nozzle cylinder set for 0.2ml and 1ml for replacement. Purchase plunger assembly or/and O-ring /seal ring set for 5ml and 10ml for replacement.
	▷	The tip is loosely attached.	▷	Try to attach the tip to nozzle tightly again.
	▷	The nozzle O-ring is worn or damaged.	▷	Replace the nozzle O-ring with new one.
	▷	Liquid has been sucked into the main body.	▷	If the push button does not work well just after extracting liquid or it is just sticking to the body, disassemble the instrument and wash/clean every part (or wipe down every part with a soft cloth). If there are some parts getting rusty or corroded inside the body, replace the parts with new ones by purchasing optional replacement parts.
The push button operates poorly.	▷	Liquid has been sucked into the main body.	▷	If the push button does not work well just after extracting liquid or it is just sticking to the body, disassemble the instrument and wash/clean every part (or wipe down every part with a soft cloth). If there are some parts getting rusty or corroded inside the body, replace the parts with new ones by purchasing optional replacement parts.

If there is still something wrong with the instrument after checking the above-mentioned item, immediately stop using the instrument and ask us or our agent to repair it. Before bringing the instrument for repair, be sure to check whether it has been polluted with microbes or matter harmful to humans. In case it has been polluted, be sure to give it a sterile treatment such as autoclaving.

Code	Variable capacity (ml)	Measured volume (ml)	Accuracy (%)	Precision (%)
00-NPC-200	0.02~0.2	0.02	±6.0	<6.0
		0.2	±3.0	<3.0
00-NPC-1000	0.1~1.0	0.1	±5.0	<5.0
		1.0	±3.0	<3.0
00-NPC-5000	1.0~5.0	1.0	±5.0	<5.0
		5.0	±3.0	<3.0
00-NPC-10ML	1.0~10.0	1.0	±6.0	<6.0
		10.0	±3.0	<3.0

**Note:** The value of accuracy and precision is made with distilled water at room temperature 22°C~23°C

● **Tip**

Code	Usable model	Q'ty (box)
00-GLT-S	0.2ml 00-NPC-200	10
00-GLT-L	1ml 00-NPC-1000	10
00-GLT-X	5ml 00-NPC-5000	10
00-GLT-Z	10ml 00-NPC-10ML	10

● **Replacement parts list (when placing order, make sure to specify the capacity of each item.)**

Name of replacement part	Contents of set capacity	Capacity (ml)
1. Plunger set	Plunger head / plunger	0.2ml 1ml
2. Plunger Assembly	Plunger / Joint block Joint plate Joint shaft	5ml 10ml
3. Single spring	—————	Common
4. Nozzle cylinder	—————	5ml , 10ml
5. Nozzle cylinder set	Nozzle cylinder / O-ring Seal ring	0.2ml 1ml
6. O-ring / Seal ring set	O-ring / Seal ring	5ml , 10ml
7. Nozzle O-ring	Nozzle O-ring (2pcs)	0.2ml
8. Nozzle O-ring	Nozzle O-ring (2pcs)	1ml 5ml , 10ml

- \* Specifications of the instruments and optional accessories as well as contents of accessory sets are subject to change without notice.
- \* No part of this manual may be reproduced/reprinted in any form without permission of the copyright holder. The copyright law strictly prohibits this.

## **Inspection and Calibration Statement**

The enclosed pipette was tested and calibrated under closely controlled environmental conditions to ensure that it meets published calibration specifications. The precision and accuracy results obtained for this pipette are provided on the enclosed calibration certificate.

Because temperature and humidity conditions affect the calibration results of liquid measurement devices, your pipette should be calibrated under conditions of use. The calibration results obtained in your laboratory may vary from our results due to differences in environmental testing conditions.

For repair, service or information you may contact your local distributor.



**MANUFACTURER:**



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