

pipetty

INSTRUCTION MANUAL



Item	Specification			
Capacity	1-20 μ L	10-250 μ L	50-1,000 μ L	
Repeatability (CV)	20 μ L \cong 0.5% 1 μ L \cong 5%	250 μ L \cong 0.5% 10 μ L \cong 3%	1,000 μ L \cong 0.3% 50 μ L \cong 3%	
Accuracy	20 μ l \pm 1.0% 1 μ l \pm 5.0%	250 μ l \pm 0.5% 10 μ l \pm 3.0%	1000 μ l \pm 0.5% 50 μ l \pm 3.0%	
Outside dimension	21 \times 30 \times 182			
Weight	Approx. 70g (Include battery)			
Driving method	Micro actuator ϕ 8			
Use environment	10 to 30°C (Temperature) 30 to 60% (Humidity)			
Power	A4 Nickel hydride battery (Recommended battery: Panasonic, EVOLTA BK-4HLD)			
Countinuous times	1,000 times over (EVOLTA BK-4HLD, Full Charged, Hi-Speed)			
Tips	Dedicated tips and general purpose tips			
	Eppendorf	0.5 - 20 (T.I.P.S series)	20 - 300 (T.I.P.S series)	50 - 1000 (T.I.P.S series)
	Gilson	-	D300 series	D1000 series
	Watson	207 series	505 . 703 series	706 . 806 series

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1. PREPARATION BEFORE USE

1-1 Before operating the pipette

1. When insert the battery into the pipette, please make sure that the battery is fully charged. For initial use, first charge the battery fully.



Battery : A4 Nickel hydride battery
(Recommended battery: Panasonic, EVOLTA BK-4HLD)

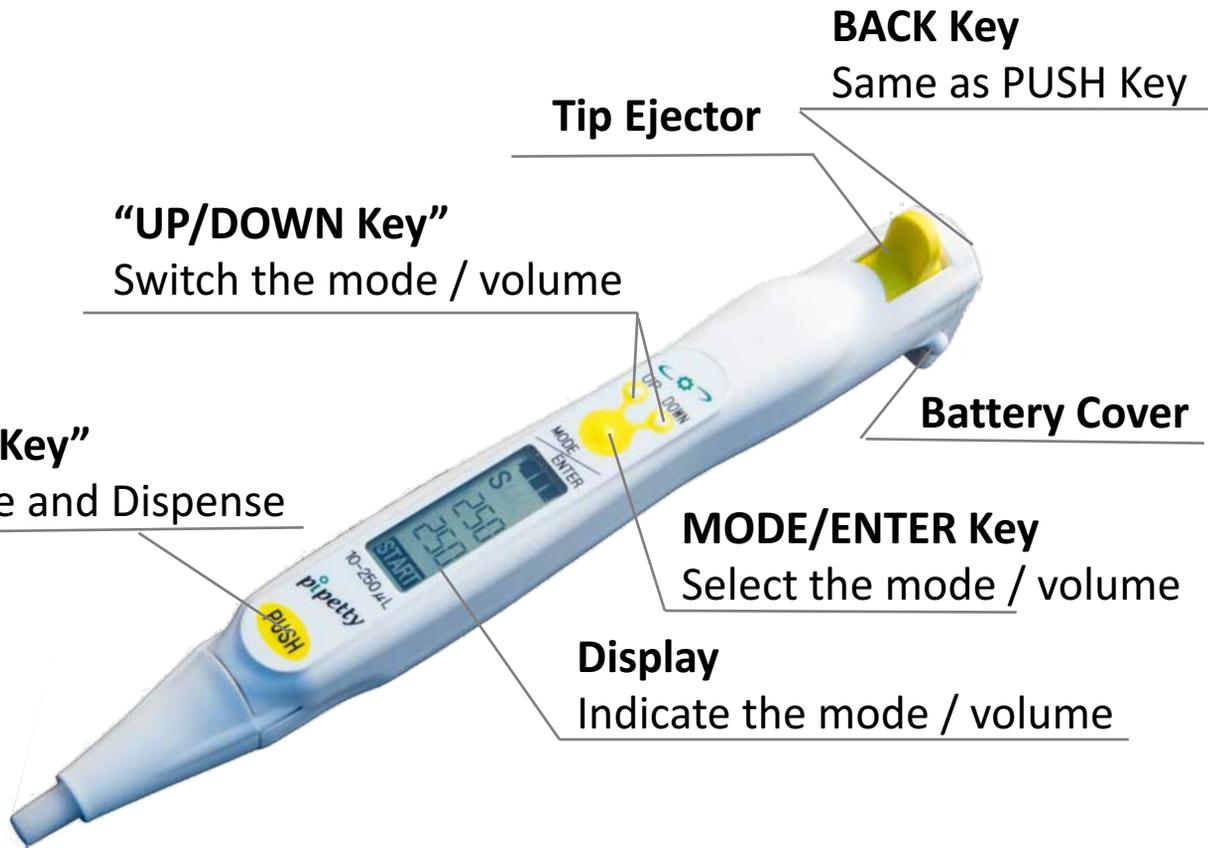
2. There is no power switch on the body. After battery insertion, flashing display of "S" in the display is the initial state.



3. Power is automatically turned OFF in the following cases.
 - Select the mode (Initial state)
 - Not operate for one minute during "S" or "M" or "START" indicating in display.
4. When you turn ON the power, press "PUSH" button or "back button".

1. PREPARATION BEFORE USE

1-2 Name and functions of keys and display



Battery mark



OPERATION MODE

- S** (Single) Aspirating one time and dispensing one time
 - Contain **"Mixing Mode"**: mixing different types of liquids
- M** (Multiple) Dispense the same volume continuously
- C** (Calibration) Use for volume calibration
- SP** (Setting speed in 5 levels)
- EC** (Electrophoresis) Use for electrophoresis

Dispensing volume

Dispensing number of times

Indicate when dispensing can be started

2. FUNCTION AND HOW TO USE



It initializes automatically when you insert the battery. State S is flashing in the initial screen.

Switch the mode by press UP or DOWN Key, select by MODE / ENTER Key.

2-1 S (Single Dispensing) Mode

This is a basic operation for pipetting. Aspirating one time and dispensing one time. This operation is the same as for a manual pipette.



1. Switch dispense volume by press UP or DOWN Key.
2. Select the number by press MODE/ENTER Key.
3. Setting complete when START is indicated in display.
4. Start the aspirating and dispensing by pressing PUSH Key. (Back Key)

Mixing Mode

This is a useful operation when uniformly mixing different types of liquids. In this method, aspirating and dispensing are repeated. This type of repetitive operation often results in fatigue, but with this pipette it is automatically carried out with the touch of one switch.



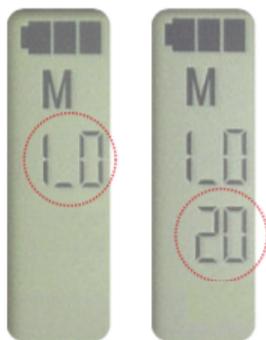
1. Mixing while the PUSH or BACK Key is held down.
2. It will stopped by release the key and after dispensed all

✘ Can not use Mixing Mode by long press when “EC Mode”

2. FUNCTION AND HOW TO USE

2-2 M (Multiple Dispensing) Mode

This is a suitable function to dispense the same liquid continuously, such as when dispensing a liquid on a microplate, etc. The operation consists of aspirating one time and dispensing several times.



1. Press the UP or DOWN Key to set dispensing amount for one time. Press MODE / ENTER Key to select.
2. Press the UP or DOWN Key to set dispensing count.
3. Setting complete when START is indicated in display.
4. After dispensing, press PUSH Key (BACK Key) twice to dispense the remaining liquid. (In the Multi mode, reverse operation occurs automatically.)

- ※ Press and hold Key more than 2 seconds to full dispensing.
- ※ The dispensing amount can be set within the capacity range of the pipette.
- ※ Automatically calculate the maximum dispensing number of times from dispensing amount and pipette capacity.
- ※ Can not dispense all by long press when “EC Mode”

[How to return to initial screen]

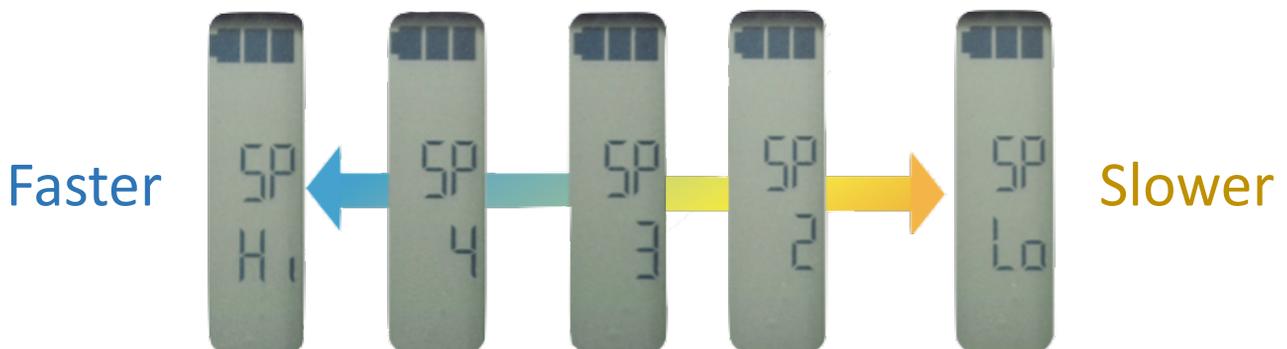
1. Switch the dispensing volume by holding down UP or DOWN key when indicated START in display.
2. Return to mode select by holding down MODE / ENTER Key when indicated START in display.

2. FUNCTION AND HOW TO USE

2-3 **C** (Volume Calibration) Function

“pipetty” provide user with a dispensing volume calibration function. Using this function, it is easy to correct errors due to differences in tips used, etc. To calibrate the dispensing volume, complete the following procedure:

2-4 **SP** (Setting Speed) Function



- ※ "Aspirate Speed" and "Dispense Speed" can not be set separately. Both are the same speed.
- ※ When used in a long-term continuously at "Lo" speed, please note that there is a case body feel hot.

2-5 **EC** (Electrophoresis) Function

pipetty will provide a valid dispensing function for electrophoresis. One of the features of pipetty, release the Key and the operation will start. It can dispense smoothly by releasing the Key in target site without shaking tip of chip.

3. TROUBLE SHOOTING

Due to repeatedly aspirating and dispensing various liquids the micropipette easily succumbs to damage and contamination. In the event of device failure consult the following table. Request repair if that still doesn't solve the problem.

Problem	Reason	How to fix
Device won't turn on	Battery not charged	Charge the battery
	Battery degradation	Contact us for replace the battery
Device will not aspirate or dispense	Battery charge insufficient	Charge the battery
Leakage from the tip	Use of contaminated tip	Use a new tip
	Tip is loose	Attach the tip properly
	Use of volatile liquids	Calibrate at "C" Function
Err 002 	Internal error	<ul style="list-style-type: none"> • Press "PUSH" or "BACK" Key • Remove and reattach the battery
Device produces an abnormal noise (Display looks pale) 	Stepping out of the actuator inside	<ul style="list-style-type: none"> • Remove and reattach the battery →If it does not resolve the problem, please contact us

4. FOR SAFE USE

Precautions on pipette use and handling battery

DANGER

This instrument is not an explosion proof instrument. Do not use the pipette in an environment where there is a risk of explosion, or use it for explosive chemicals that may cause explosion.

1. Do not use for purposes other than liquid sampling.
2. Do not use radioactive material, including the radiation liquid.
3. Do not use the liquid of bio-hazard.
4. Although this product is excellent in chemical resistance, do not use
5. following chemicals that cause of body damage.
(Strong acid, strong alkaline, acetone, and trichloroethylene)

CAUTION

Do not attempt to disassemble or repair the pipette by yourself. "TROUBLE SHOOTING" when it appears that the pipette has a mechanical error.

1. Do not modify this product. It will be the cause of the accident.
2. Use our specification of the battery. If you use the other battery, it will be cause of the leak, overheat, rupture or ignite. And also performance will degrade.
3. When storing, please avoid the location of the dusty or high humid place. It will be the cause of the failure.
4. By repeating the charge and discharge, the continuous number of operations will be reduced. If necessary, replace to new battery.

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