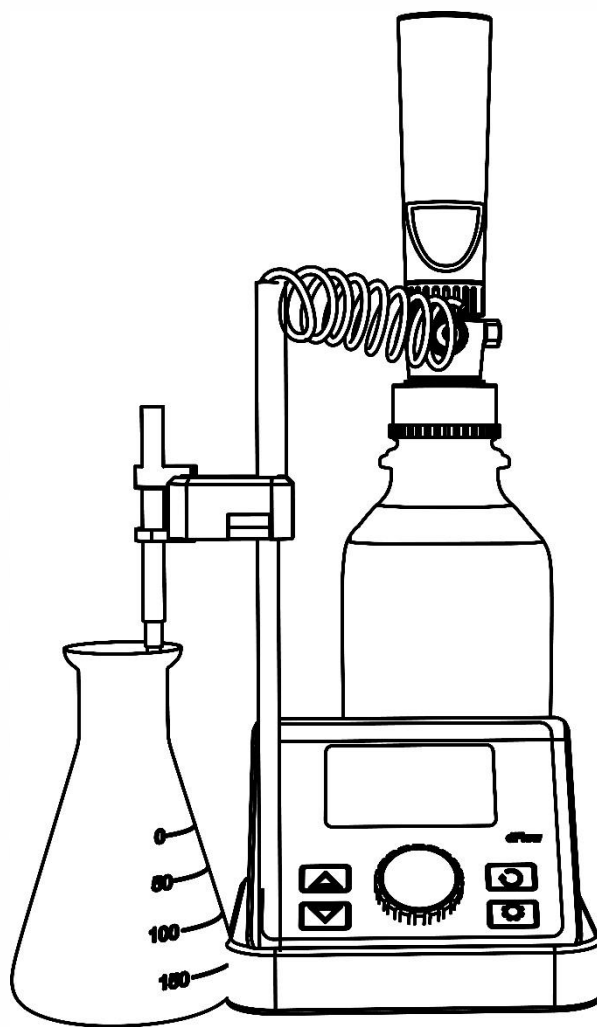


Liquid Handling



Electronic Bottle-Top Dispenser user manual



CE FC

12301707

Ver.20221026



Contents

SAFETY REMINDER.....	1
1. UNPACKING	1
2. OVERVIEW	2
2.1. SPECIFICATION	2
2.2. LIMITATIONS OF USE	3
3. PARTS DESCRIPTION	错误!未定义书签。
3.1. ELECTRONIC BOTTLE-TOP DISPENSER	错误!未定义书签。
3.2. REMOTE CONTROL HANDLE.....	6
3.3. CONTROLLER	6
4. DISPLAY	9
5. ASSEMBLY INSTRUCTION	10
6. OPERATION	13
6.1. POWER ON.....	14
6.2. DISPENSING	14
6.3. STEPPER	15





6.4. LIQUID EMPTYING	16
7. ACCESSORIES	17
7.1. REMOTE CONTROL HANDLE.....	17
7.2. ASSEMBLE SENSOR HOLDER	18
7.3. REMOTE DISPENSING PIPE.....	19
8. CALIBRATION.....	21
9. CLEANING AND MAINTENANCE	22
9.1. CLEANING THE OUTER SURFACE	22
9.2. CLEANING THE BARREL	22
9.3. FILLING AND DISPENSING VALVE REPLACEMENT	26
10. TROUBLE SHOOTING.....	24
11. STORAGE	26
12. WARRANTY	27
13. LIMITATIONS AND COMPATIBILITY	28
COMPATIBILITY (MAX. CONC. 1 MOL/L)	29





Safety Reminder



CAUTION: Possible damage to instrument. Caution notes indicate any condition or practice, which if not strictly observed or remedied, could result in damage or destruction of the instrument.

1. Unpacking

Apart from the user manual, the **Electronic Bottle-Top Dispenser** package should contain the following items.

- Dispensing pipe X1
- Dispensing pipe cover X1
- Electronic Bottle-Top Dispenser X1
- AC Adapter X 1
- Controller X 1
- Controller cable USB X 2
- User Manual X 1
- Bottle Adapter X 5(GL32; GL38; GL28; GL25; S40)
- Remote Dispensing pipe X 1
- Remote Control Handle X 1





- Filling valve X 1
- Dispensing valve X 1
- Filling pipe X 2
- Installation tools X 1
- Stander X 1

Please check that all the items are present and inform your supplier immediately if any of the above is missing.

2. Overview

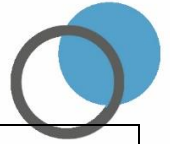
Electronic Bottle-Top Dispenser delivers accurate and precise bottle-top dispensing.

Please refer to "Limitations and Compatibility" for liquid compatibility prior to operation.

2.1. Specification

Volume Range	0.1mL-99.9mL Increment 100µL
--------------	---------------------------------





Precision	Dispensing: $R= 10\text{mL} \pm 30\mu\text{L}$ $CV=10\text{mL} \pm 10\mu\text{L}$ Stepper: $R=1\text{mL} \pm 6\mu\text{L}$ $CV=1\text{mL} \pm 9\mu\text{L}$
Velocity	16 Stages
Battery	Capacity: 4000mA/h Fully charged in 4 hours (please use standard charger) working time: about 5 hours

2.2. Limitations of Use

Temperature : $15^{\circ}\text{C} \sim 40^{\circ}\text{C}$

Vapor pressure : $<500 \text{ mbar}$

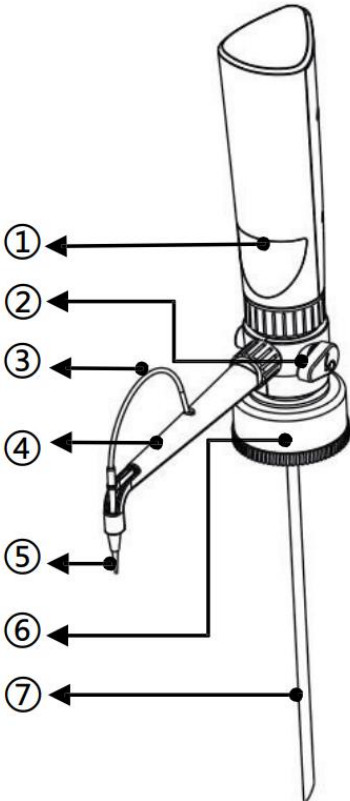
Viscosity : $<500 \text{ mm}^2/\text{s}$

Humidity : $20\% \sim 90\%$



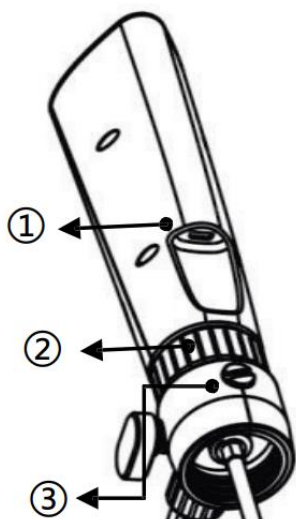


3.1. Electronic Bottle-Top Dispenser



No.	Description
①	Liquid Level Observatin (in piston running state)
②	Return Valve (to adjust the liquid direction of dispensing)
③	Dispensing pipe
④	Dispensing pipe cover
⑤	Dispensing pipe Tip
⑥	Bottle Adapter
⑦	Filling pipe



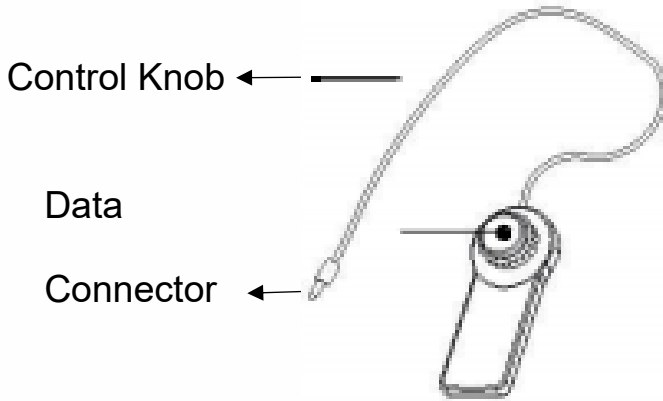


No.	Description
①	Controller Port (Micro USB)
②	Main Body lock
③	Air Admission Cap (pressure balance)



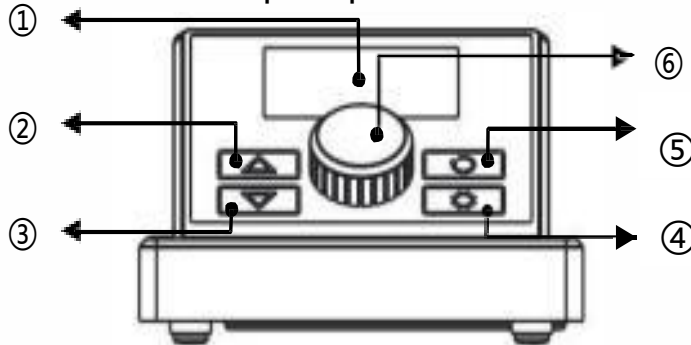


3.2. Remote Control Handle



3.3. Controller

Allows for Electronic Bottle-Top Dispenser control and function setting.



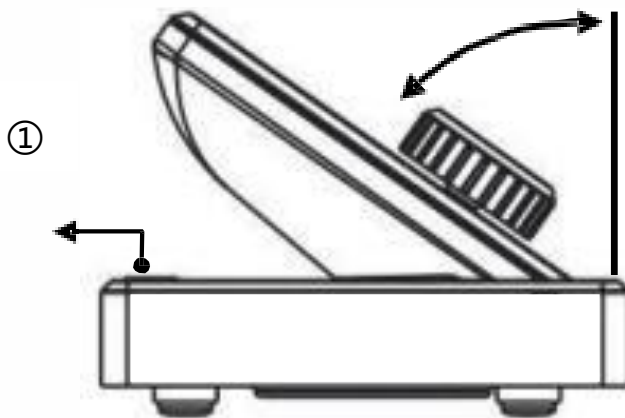
No.	Description
①	LCD Display (show Electronic Bottle-Top Dispenser running state)
②	Filling (press and hold for filling, release it to stop)
③	Dispensing (press and hold for dispensing, release it to stop)





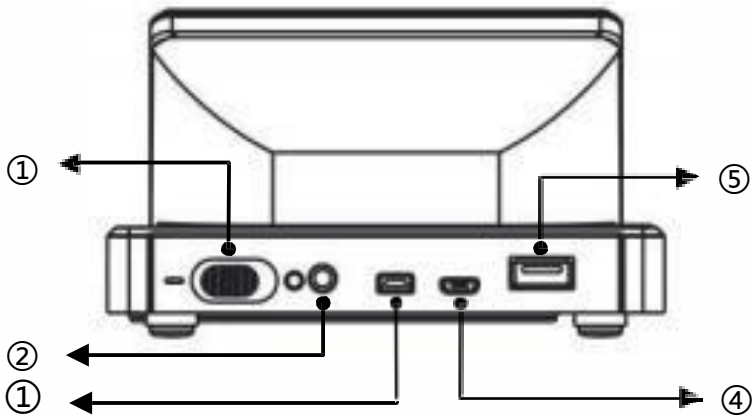
④	Setting (press and hold 2s into setting interface)
⑤	Pre-Filling (press and hold 2s for piston to complete a aspirating and dispensing process)
⑥	Knob (Turn Knob for value adjusting, press for aspirating and dispensing)

Control Panel can be fully adjustable up to an angle of 45°



No.	Description
①	Sensor Holder Assembly Slot



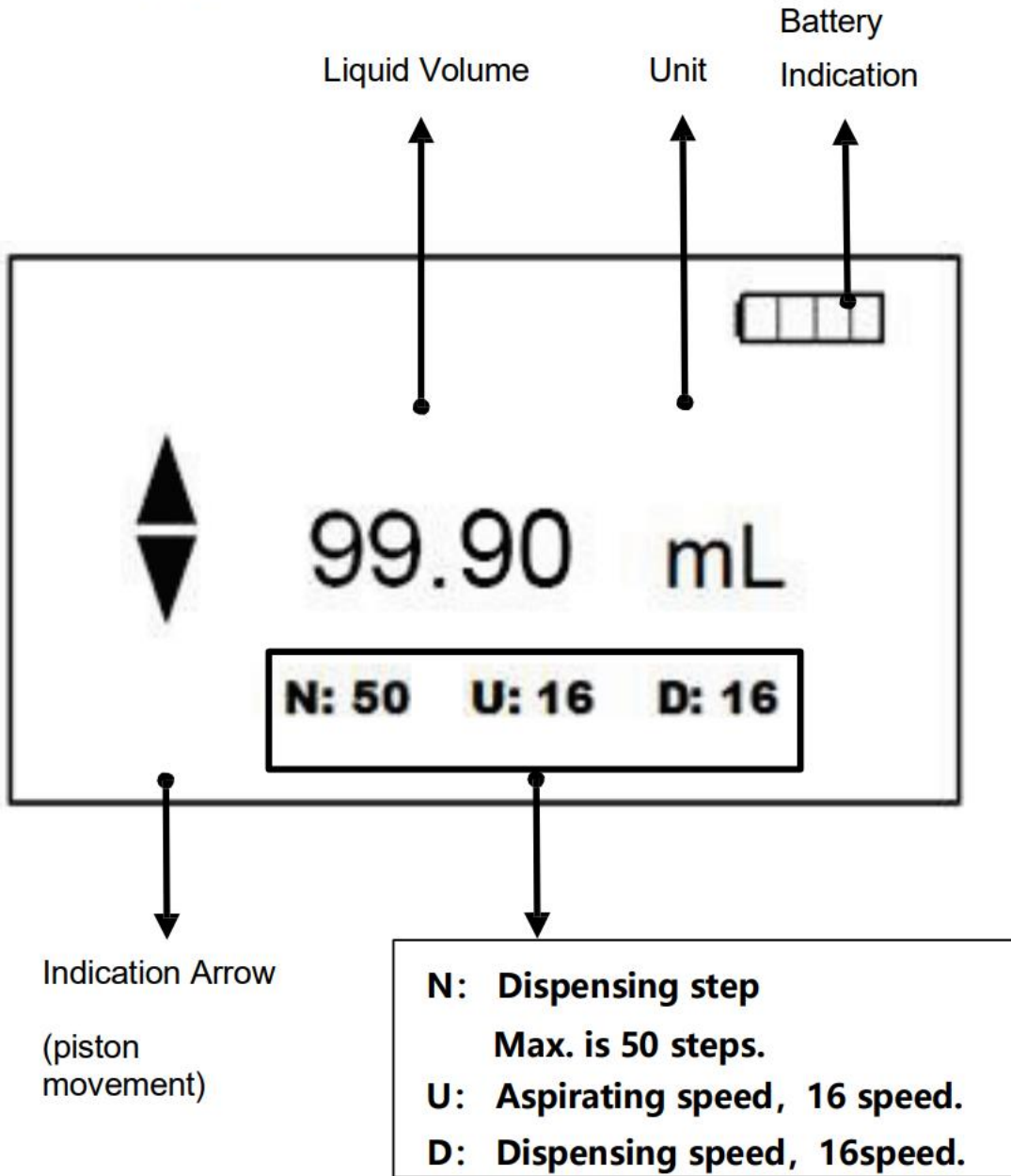


No.	Description
①	Power Switch (symbol "O" indicates Off, "-" indicates On)
②	Remote control handle Port
③	Communication port (non-function)
④	Charging/Communication port
⑤	Main Instrument Port





3. Display



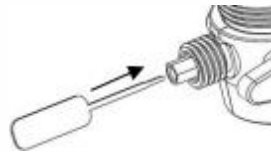


4. Assembly Instruction

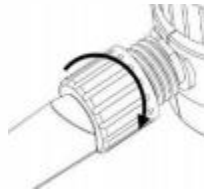
Step - 1: Push the guiding tube into position.



Step - 2: Poke the Dispensing valve slightly with the tool as shows in the picture; ensure the balls in the valve can move slightly.



Step - 3: Connect the dispensing pipe tail end with the Dispensing valve. Locking the dispensing pipe.



CAUTION: Dispensing pipe are made of FEP. Please confirm compatibility prior to use(Refer to chapter“Limitations and Compatibility”)





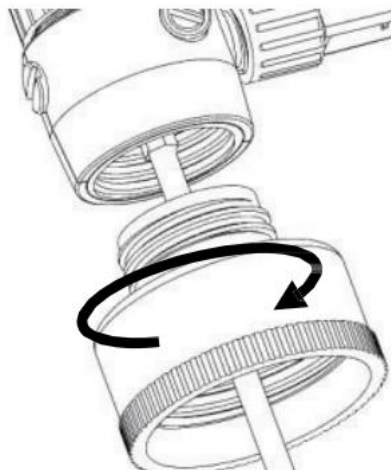
Step - 4: Poke the filling valve slightly with the tool as shows in the picture; ensure the balls in the valve can move slightly.



Step - 5: Connect filling pipe with filling valve.



Step - 6: Choose a suitable bottle adapter, then connect it with Electronic Bottle-Top Dispenser main body.





Step - 7: Turn bottle adapter to fasten main body and bottle



CAUTION:



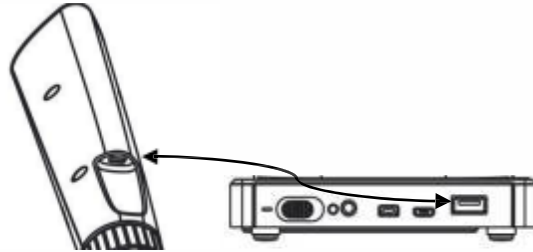
- ① Please ensure that the adapter is fastened prior to each use.
- ② For perfect working, please do not move or touch main Instrument during operation to avoid physical damage to your

Electronic Bottle-Top Dispenser



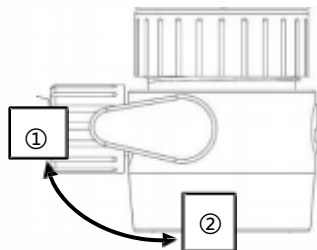


Step - 8: Use USB cable to connect Main body with Controller.



Step - 9: Turn Return Valve to direction

- ①.If liquid is needed to be emptied from the barrel, turn Return Valve to direction
- ②.Electronic Bottle-Top Dispenser basic system was assembled.



5. Operation

CAUTION:




Do a complete process of aspirating and dispensing before the first time work.





4.1. Power on


Step - 1: Power on and waiting system self-checking complete.

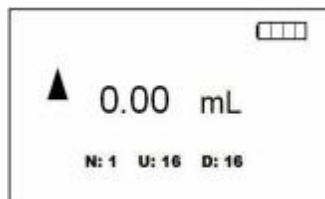
Step - 2: Long press Pre-filling button (), 2 seconds to let air out, leaving the piston at the bottom of the barrel finally.

4.2. Dispensing

Step - 1: Press and hold Setting button () about 2s to active the parameter setting.

Step - 2: Press Setting button () to N value, set it to 1. The filling speed U and dispensing speed D can be set by user intention, the range is 1 to 16.

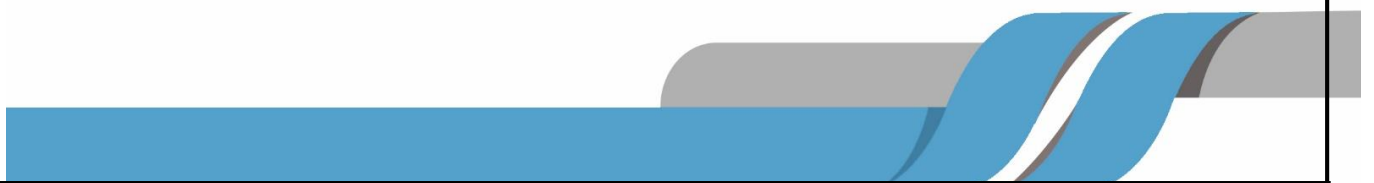
Press and hold Setting button () or not to do any operation about 2s, will quit from the parameter setting.



Step - 3: Press and hold Filling button () to fill arbitrary target liquid.

Press and hold Dispensing button () to dispense arbitrary target liquid.


CAUTION:







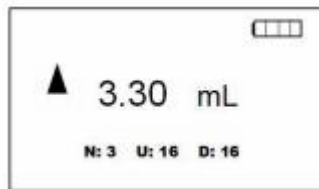
The value of liquid volume will not recording or display target liquid volume change.

4.3. Stepper

Step - 1: Press and hold Setting button () about 2s to active the parameter setting.

Step - 2: Press Setting button () to parameter N, setting the step value, range 1-50. Filling speed U and Dispensing speed D, can be set by user intention, the range is 1 to 16.

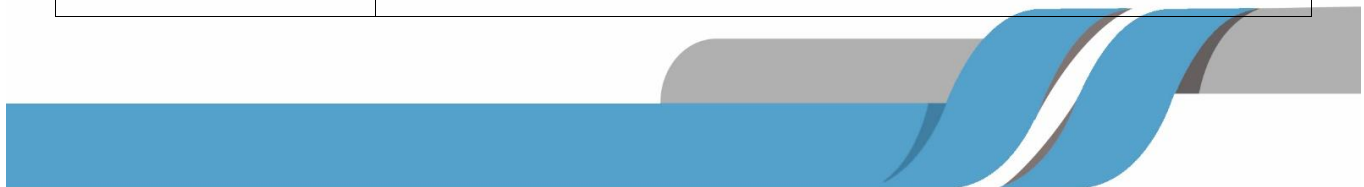
Step - 3: Press Setting button () to liquid volume parameter, setting the total volume of the target liquid.



Parameter N setting:

(Electronic Bottle-Top Dispenser one times max dispensing volume is 10mL)

Parameter N	The volume adjusting range of each time dispensing
--------------------	--





1	0.1-99.9mL
2	0.1-5mL
3	0.1-3.3mL
4	0.1-2.5mL
.	.
.	.
50	0.1-0.2mL

CAUTION:



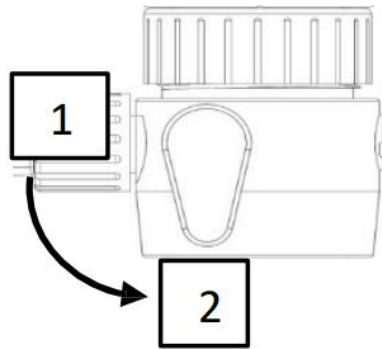
There will may be some air bubble in the barrel during the operation.

These bubble dose not effect the actual use.If the bubble is bigger to effect the actual use, please running several times aspirating and dispensing. If this solution not works, please contact with the dealer or.

4.4. Liquid Emptying

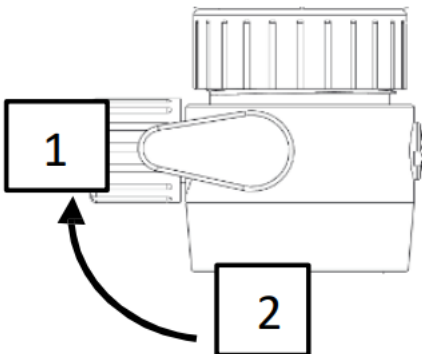
If liquid is needed to be emptied from the barrel. Step - 1: Turn Return Valve to direction





Step - 2: Long press Dispensing button (∇), until the piston run to the bottom of the barrel, make the liquid had been emptying.

Step - 3: Turn Return Valve to direction ①. Emptying operation was completed.

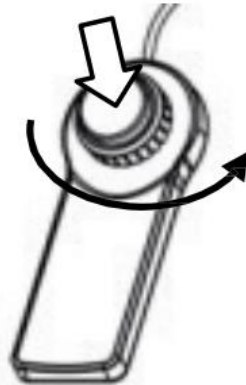


6. Accessories

5.1. Remote Control Handle

The Control Handle is fully map the operation of Control Panel, easy to operate over a long distance.

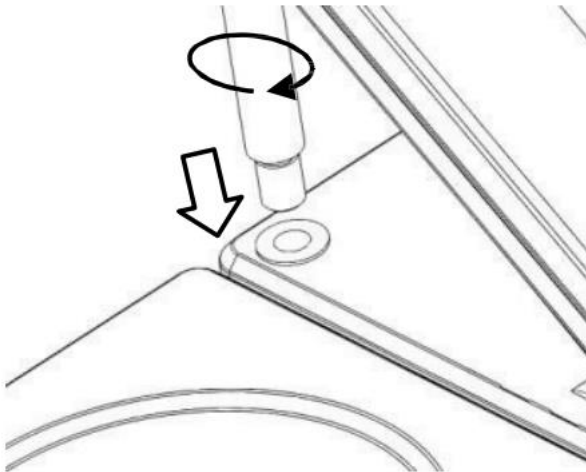




MAX. Length: 90 cm

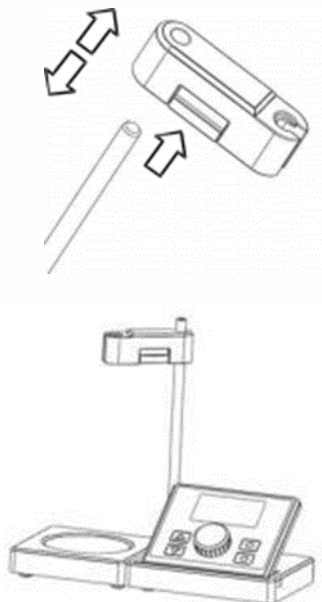
5.2. Assemble Sensor Holder

Step - 1: Fasten the Holder into place.





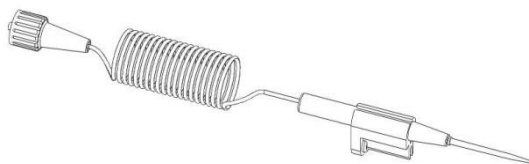
Step - 2: Press black button of the clamp and release until reaching the appropriate altitude



Assembly diagram

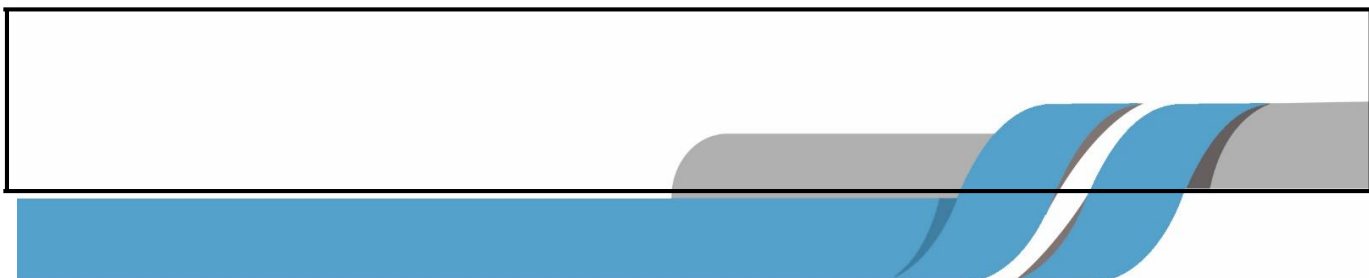
5.3. Remote Dispensing pipe

Remote Dispensing pipe can effectively extend the dispensing distance.



MAX. Length 1.5m

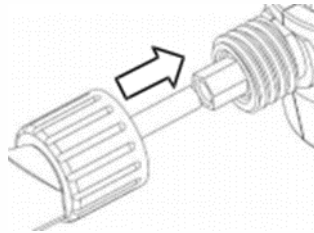
CAUTION:



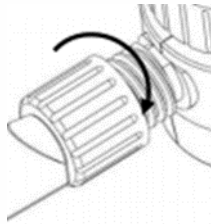


Dispensing pipe are made of FEP. Please confirm compatibility prior to use (Refer to chapter “Limitations and Compatibility”).

Step - 1: Connect the dispensing pipe tail end with the Dispensing valve.

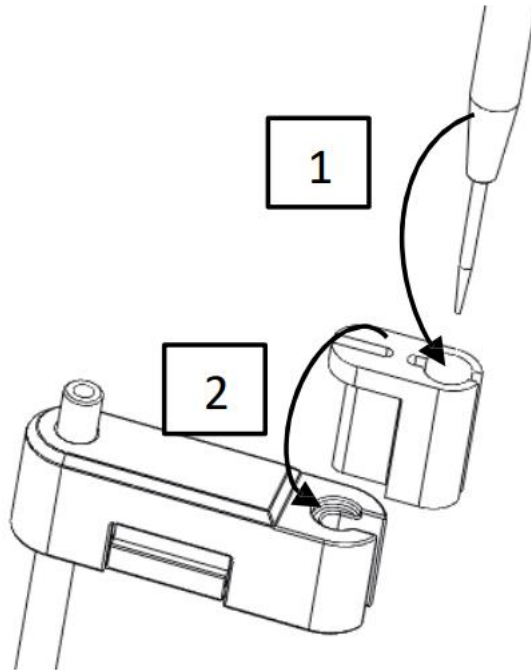


Step - 2: locking the dispensing pipe.



Step - 3: Follow the figure to assemble the adapter and remote Dispensing pipe.





7. Calibration

Calibration should take place at 20-25°C, kept constant within $\pm 0.5^\circ\text{C}$. A dedicated calibration software will write calibration values in your Electronic Bottle-Top Dispenser, after the distilled water has been repeatedly weighed up at least five times.

Hardware needed: :

- Electronic balance with readability of 0.01 mg



- Distilled water
- X86-or X64-architected PC with pre-loaded Windows(XP/Vista / 7/8/10)operating system

Software needed:

- Dedicated calibration software of Electronic Bottle-Top Dispenser

(For more information, please contact with your nearest distributor.)

CAUTION:



If your Electronic Bottle-Top Dispenser can not work properly after calibration, please contact your nearest distributor.

8. Cleaning and Maintenance



CAUTION:

Electronic Bottle-Top Dispenser cannot be autoclaved.

7.1. Cleaning the Outer Surface

The outer surface of your Electronic Bottle-Top Dispenser is made of ABS, ideal for easy cleaning with simply clean water.

7.2. Cleaning the Barrel

Electronic Bottle-Top Dispenser barrel cleaning is repeatedly inhale row clear water for cleaning.

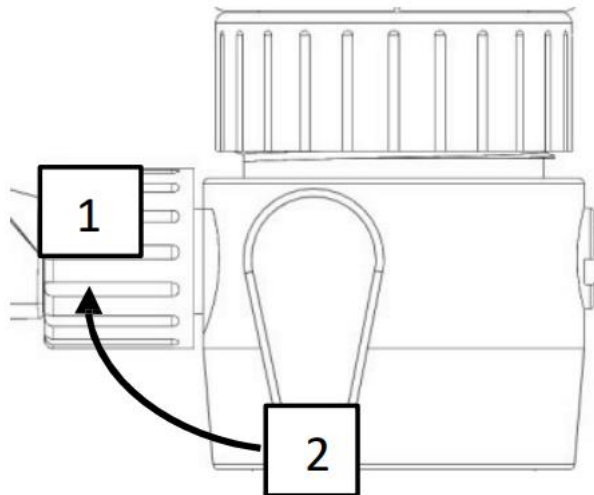




Aspiration and dispensing at least 5 times, according to user's actual situation to increase or decrease.

To ensure emptying remained in the barrel, the operation reference “liquid emptying”

Step - 1: Turn Return Valve to direction①, long press Pre-filling button make the piston stop at the barrel bottom.



Step - 2: Press Filling and Dispensing button to aspiration and dispensing simply clean water at least 5 times.

Step - 3: long press Pre-filling button make the piston stop at the barrel bottom.

Step - 4: Ensure that into the tube is not submerged in a liquid, Press filling button make piston run to the top of the barrel.





Step - 5: Turn Return Valve to direction②, press Dispensing button make piston run to the bottom of the barrel.

Step - 6: Cleaning work is finish, Turn Return Valve to direction①.

CAUTION:

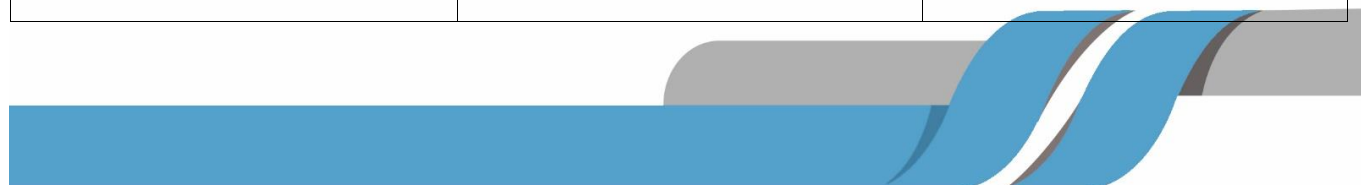


User is not recommended to remove and cleaning of Electronic Bottle-Top Dispenser barrel, if the barrel cleaning operation fail to meet the cleaning requirements of users. Please contact the dealer or manufacturer professional services personnel for cleaning.

Ensure Electronic Bottle-Top Dispenser empty without liquid residue before delivery to service personnel and inform details of last liquid handling.

9. Trouble Shooting

Problem	Possible cause	Solution
Piston overflows with liquid	Piston wears out.	Contact with manufacturer
Piston moves with difficulty	Piston or its parts are contaminated or damaged due to crystallization and	① Do“Cleaning the Barrel” ② Contact with manufacturer





	sedimentation.	
Failure to filling	Filling valve is clogged.	① Replace filling valve
Failure to refill;refilling sucks back into the dispensing tip.	Dispensing valve is contaminated or dispensing tip damaged.	② Contact with manufacturer
Bubbles in the instrument/Dispensing volume is less than the volume displayed.	Filling pipe is loose or damaged.	Replace filling pipe
	Filling pipe is away from the liquid.	Checking filling pipe
	Return pipe is not installed or wrongly installed.	Contact with manufacturer
	The instrument is not fully refilled.	Checking Operation
	Filling valve is clogged or damaged	Checking filling valve Replace filling valve





No display	Battery dead	charging
	Connection fail	USB cable connection checking

7.3. Filling and Dispensing valve Replacement

Use the Installation tools to disassemble the old valve, replace the new valve to the same position.

Valve has no fixed replacement cycle, problems after the replacement.

The issue that could be has involvement with valve, please checking the “Trouble Shooting”.

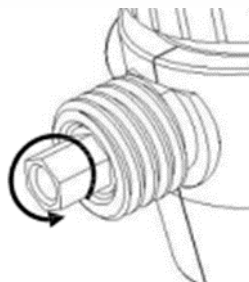
CAUTION:



The following operation must to use installing tools to do.

Before disassemble, ensure to remove the dispensing and filling pipe.

Disassemble Dispensing valve





Disassemble Filling valve



10. Storage

During storage periods at constant temperature and humidity, the recommended temperature range is from 0-40°C and humidity no more than 80%.

Please every month to charging for Electronic Bottle-Top Dispenser if being unused in long time , make sure there are 50% power in battery at least.

11. Warranty

The multi-functional electronic pipettes are covered by one - year warranty against defects in workmanship and materials. Please contact us or your nearest distributor.

ANY WARRANTY WILL, HOWEVER, BE DEEMED AS VOID DUE TO NORMAL WEAR AND TEAR OR FOR OPERATIONS CONTRARY TO THE





INSTRUCTIONS GIVEN IN THIS MANUAL.

Each and every electronic pipette has been calibrated and tested in compliance with ISO8655-6 / DIN12650 (calibration card included in the contents of delivery package) when manufactured, ensuring safe and comfortable pipetting.

12. Limitations and Compatibility

It is recommended to confirm reagent's compatibility with this instrument when applied for special purposes, trace analysis for example.

- The liquid-path construction of your Electronic Bottle-Top Dispenser is made of borosilicate glass, FEP and PTFE. Do not apply it in handling liquids like hydrofluoric acid.
- The instrument would be clogged or damaged by solid particles in turbid liquid like activated carbon.
- The plastic parts of your Electronic Bottle-Top Dispenser would be in swelling condition if concentrated acid and alkaline, and methylbenzene, benzene and other nonpolar organic solvents are put into use.
- Keep your Electronic Bottle-Top Dispenser away from the highly combustible carbon disulfide.
- Electronic Bottle-Top Dispenser cannot be autoclaved.





– Do not put your Electronic Bottle-Top Dispenser in contact with corrosive gas like HCL smog.

Compatibility (Max. Conc. 1 mol/L)

Acetic acid

Alcoholic potassium hydroxide solution

Ammonium iron (II) sulfate solution

Ammonium thiocyanate solution

Barium chloride solution

Bromide bromate solution

Cerium (IV) sulfate solution

EDTA solution

Hydrochloric acid

Hydrochloric acid in Acetone

Iodine solution*

Iodide Iodate solution*

Iron (II) sulfate solution

Nitric acid





Oxalic acid solution

Perchloric acid

Perchloric acid in glacial acetic acid

Potassium bromate solution

Potassium bromate bromide solution

Potassium dichromate solution

Potassium hydroxide solution

Potassium iodate solution

Potassium permanganate solution*

Potassium thiocyanate solution

Silver nitrate solution*

Sodium arsenite solution

Sodium carbonate solution

Sodium chloride solution

Sodium hydroxide solution

Sodium nitrite solution

Sodium thiosulfate solution

Sulfuric acid





Tetra-n-butylammonium hydroxide sol.

Triethanolamine in Acetone*

Zinc sulfate solution

CAUTION: This compatibility is against parts which are directly in contact with liquid, if any of above solution needs to be applied, contact with manufacturer for consultation

