Labotronics

Digital Burette

LB-10DBR

Index

1. Safety Measures

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

- It is recommended to confirm the 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, 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.

2. Introduction

Digital Burette LB-10DBR is a digital motor-controlled unit. Features external control with TFT display module for simple volume selection and control. Designed with high quality stepper motor and reagent recovery function ensures minimal wastage and high-efficient operation.

3. Features

1. A digital motor-controlled burette
2. External control with TFT display module
3. Adjustable aspiration and dispensing speed
4. High-efficient quality stepper motor
5. Reagent recovery function for minimum wastage
6. Dual operation modes for convenience
7. Smooth and accurate dispensing
8. Ensure accuracy and reproducibility

4. Specifications

Model No.	LB-10DBR
Capacity	0.1 to 99.9 ml
Piston lift	10 ml
Resolution	100 µl
Operation mode	Continuous dispenser and stepper
Accuracy	Dispenser: R = 10 ml ± 30 µl; CV= 10 ml ± 10 µl Stepper: R = 1 ml ± 6 µl; CV= 1 ml ± 9 µl
Operating temperature range	10 to 30°C
Control type	External control
Display	TFT display module
Dimension (W×D×H)	225×185×120 mm
Packaging dimension (W×D×H)	300×240×220 mm
Net weight	1.4 kg
Gross weight	1.5 kg

5. Applications

Digital burette is used for precise liquid measurement and dispensing across laboratories, pharmaceutical, automotive, food, cosmetic, beverage industries etc.

6. Instrument Introduction

6.1 Electronic Bottle-Top Dispenser

1. Liquid Level observation (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

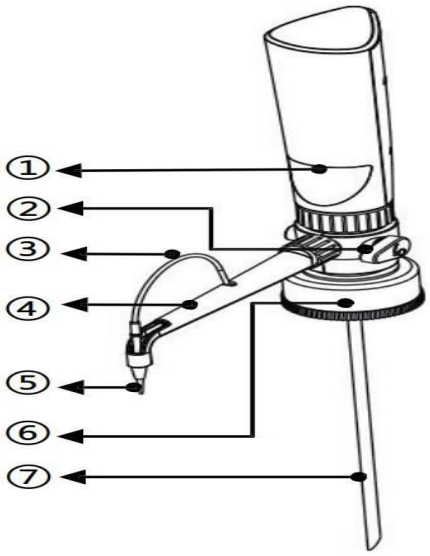

Figure-1

1. Controller Port (Micro USB)
2. Main Body lock
3. Air Admission Cap (pressure balance)

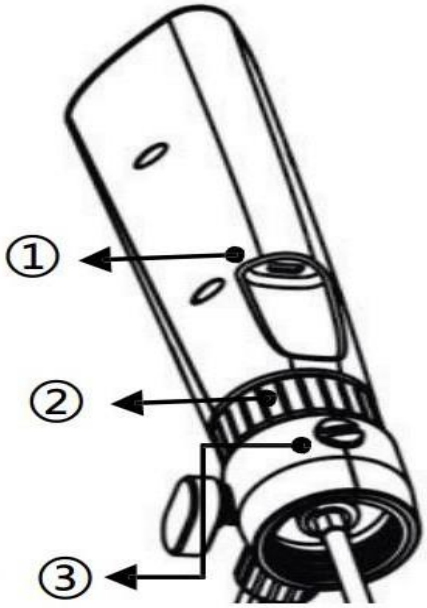

Figure-2

6.2 Remote Control Handle

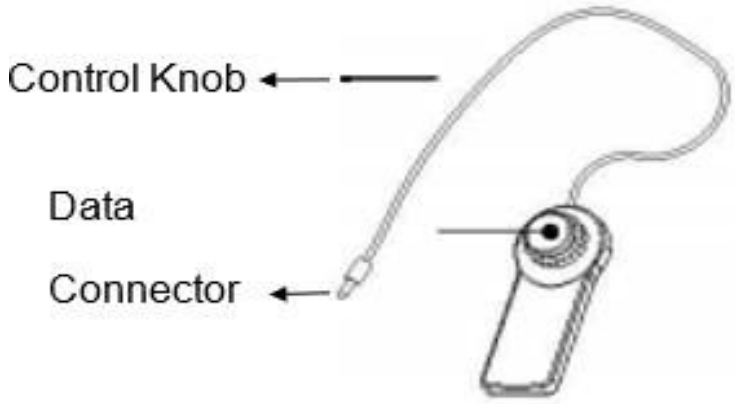

Figure-3

6.3 Controller

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

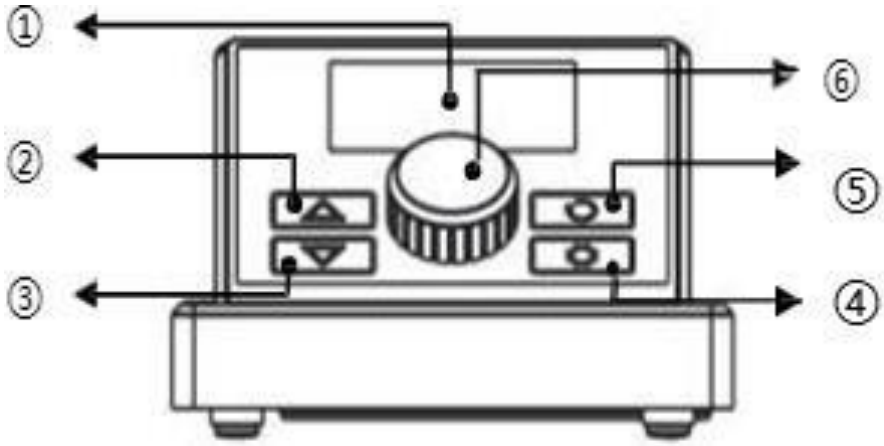

Figure-4

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 the setting interface)
5. Pre-Filling (press and hold 2s for the piston to complete an aspiring and dispensing process)
6. Knob (Turn knob for value adjusting, press for aspirating and dispensing)

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

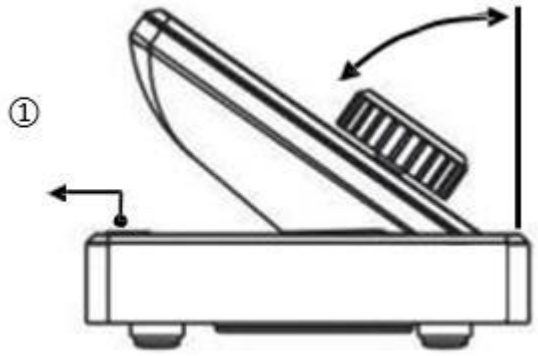

Figure-5

3) Sensor Holder Assembly Slot

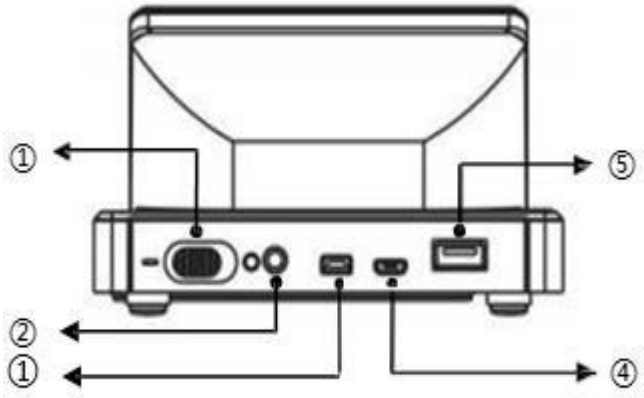

Figure-6

1. Power Switch (Symbol"0" indicates Off, "- "indicates on)
2. Remote control handle Port.
3. Communication port (non-function)
4. Charging/Communication port
5. Main Instrument Port

6.4 Display

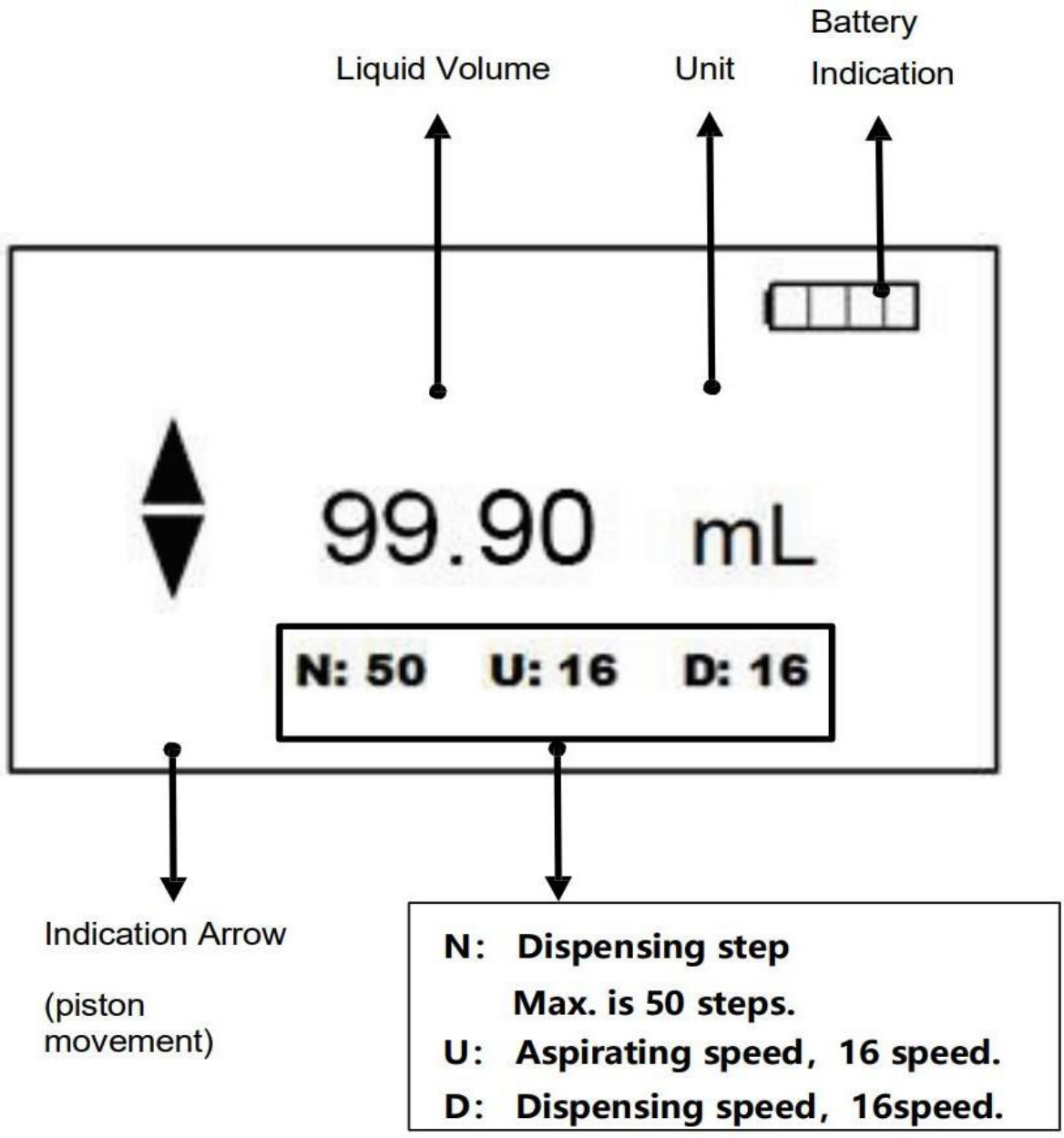

Figure-7

7. Installation

7.1 Assembly Instructions

Step 1: Push the guiding tube into position.

Figure-8

Step 2: Poke the dispensing valve slightly with the tool as shown in the picture; ensurethe balls in the valve can move slightly.

Figure-9

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

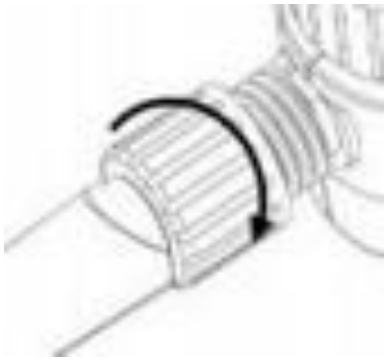

Figure-10

Caution: Dispensing pipes are made of FEP. Kindly confirm compatibility before use.

Step 4: Poke the filling valve slightly with the tool as shown in the picture; ensure theballs in the valve can move slightly.

Figure-11

Step 5: Connect the filling pipe with the filling valve.

Figure-12

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

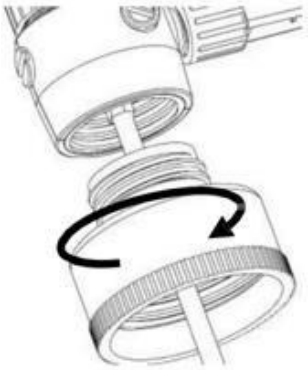

Figure-13

Step 7: Turn the bottle adapter to fasten the main body and bottle.

Figure-14

Caution:

1. Kindly ensure that the adapter is fastened before each use.
2. For perfect working, kindly do not move or touch the main instrument during operation toavoid physical damage to your Electronic Bottle- Top Dispenser.

Step 8: Use a USB cable to connect the main body to the Controller.

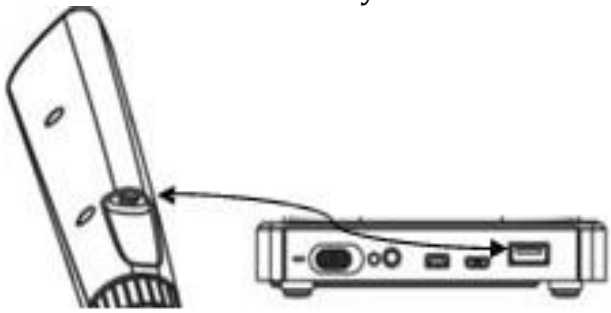

Figure-15

Step 9: Turn the return valve in the right direction.

1. If the liquid needs to be emptied from the barrel, turn the return valve in the right direction.
2. The Electronic Bottle-Top Dispenser basic system was assembled.

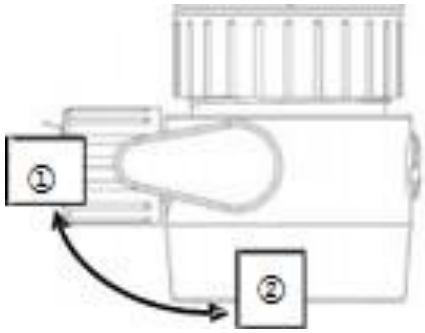

Figure-16

7.2 Remote Control Handle

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

Figure-17 (MAX. Length-90cm)

7.3 Assemble Sensor Holder

Step 1: Fasten the Holder into place.

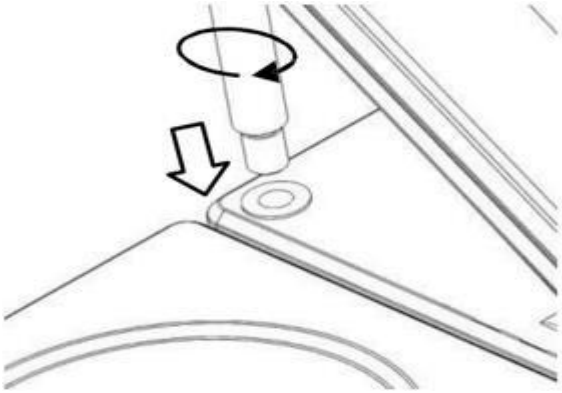

Figure-18

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

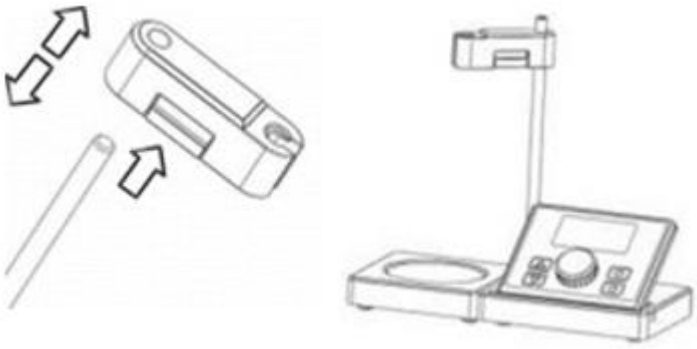

Figure-19 (Assembly diagram)

7.4 Remote Dispensing Pipe

Remote Dispensing pipe can effectively extend the dispensing distance.

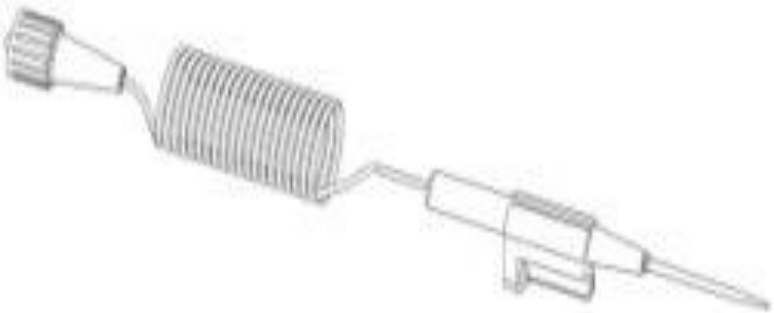

Figure-20 (Max. Length 1.5m)

Caution: Dispensing pipes are made of FEP. Kindly confirm compatibility before use.
Step 1: Connect the dispensing pipe tail end with the Dispensing valve.

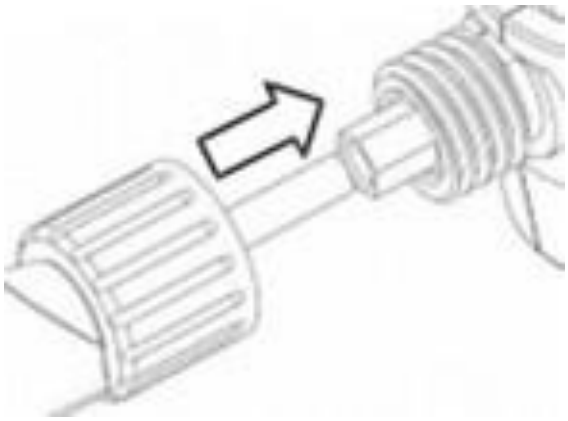

Figure-21

Step 2: Locking the dispensing pipe.

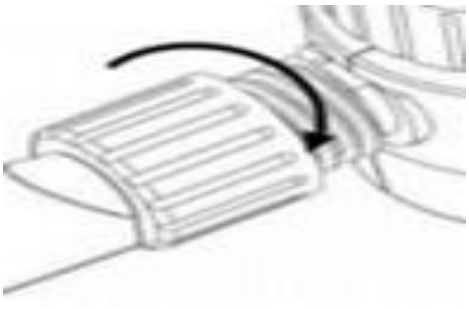

Figure-22

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

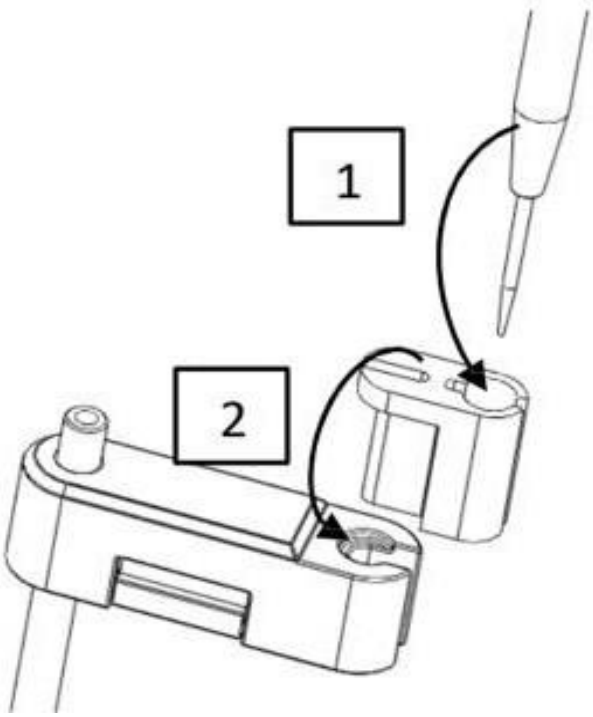

Figure-23

8. Operations

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

8.1 Power on

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

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

8.2 Dispensing

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

Step - 2: Press the setting button （ ） to N value and 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 the setting button （ ） or not to do any operation about 2s, will quit from the parameter setting.

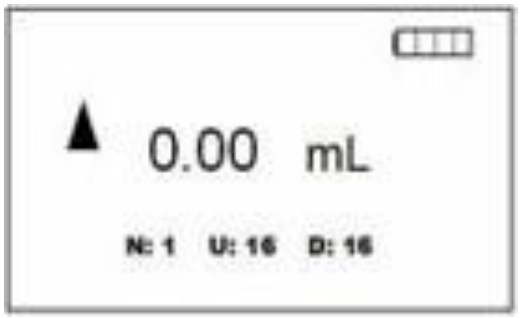

Figure-23

Step 3: Press and hold the filling button （△） to fill an arbitrary target liquid. Press and hold the dispensing button （▽） to dispense arbitrary target liquid.

Caution: The value of liquid volume will not be recorded or display target liquid volume change.

8.3 Stepper

Step 1: Press and hold the setting button （ ） for about 2s to activate the parameter setting.

Step 2: Press the 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.

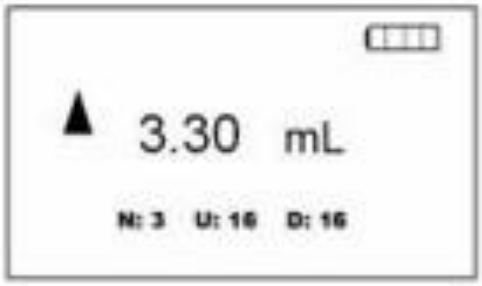

Figure-24

Parameter N setting

(Electronic Bottle-Top Dispenser one-time 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 may be some air bubbles in the barrel during the operation. These bubbles do not affect the actual use. If the bubble is bigger to affect the actual use, kindly run it several times aspirating and dispensing.

8.4 Liquid Emptying

If liquid is needed to be emptied from the barrel.

Step - 1: Turn the return valve in the direction.

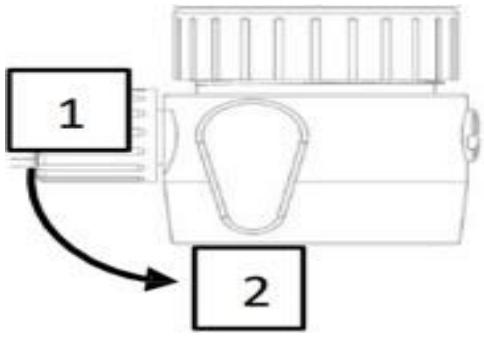

Figure-25

Step 2: Long press the Dispensing button (▽) , until the piston runs to the bottom of the barrel, making the liquid empty.
Step 3: Turn the return Valve in the direction. ①. The emptying operation was completed.

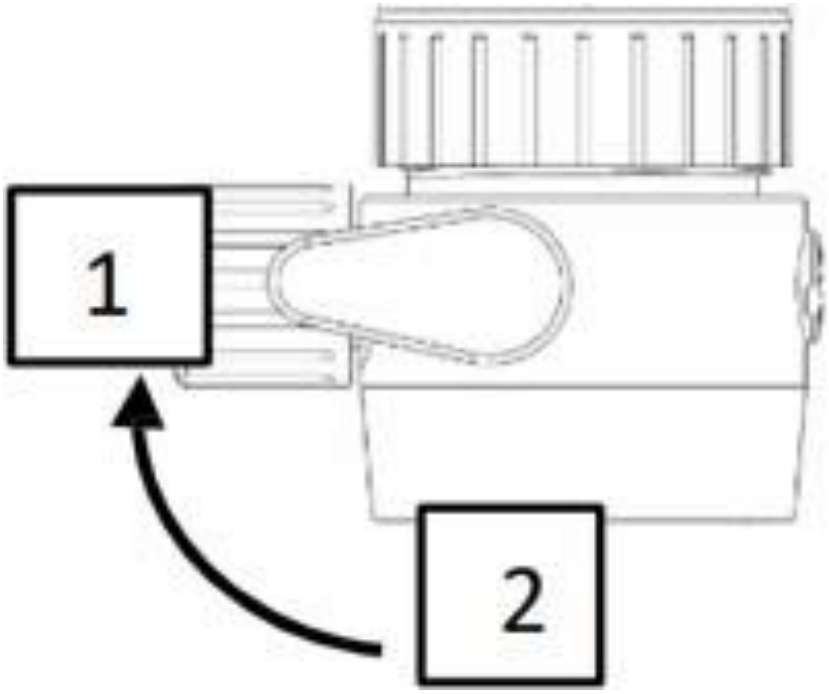

Figure-26

8.5 Calibration

Calibration should take place at 20-25℃ kept constant within ±0.5℃ 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.

1) Hardware needed:

- Electronic balance with a readability of 0.01 mg.
- Distilled water
- X86-or X64-architectured PC with pre-loaded Windows (XP/Vista / 7/8/10) operating system.

2) Software needed:

Dedicated calibration software for Electronic Bottle-Top Dispensers.

9. Maintenance

Caution: Electronic Bottle-Top Dispenser cannot be autoclaved.

9.1 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.

9.2 Cleaning the Barrel

- Electronic Bottle-Top Dispenser barrel cleaning is repeatedly inhaling row clear water forcleaning.
- Aspiration and dispensing at least 5 times, according to the user's actual situation to increase ordecrease.

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

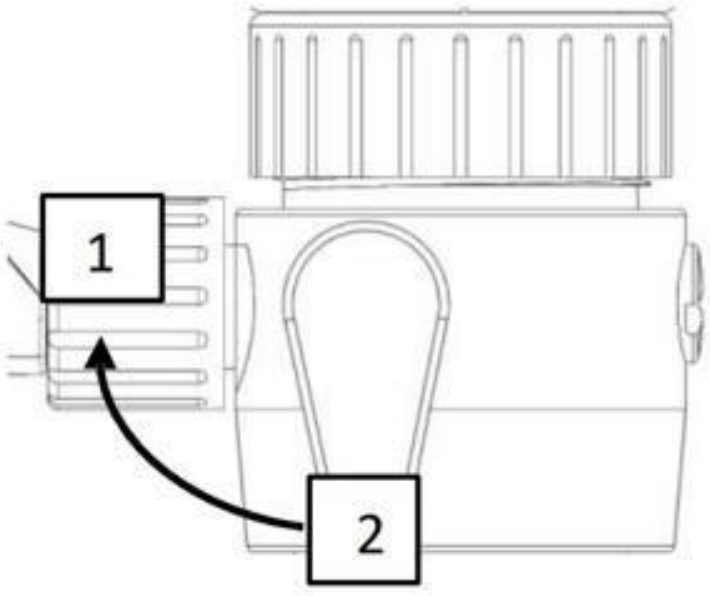

Figure-27

Step 2: Press the Filling and Dispensing button to aspiration and dispense simply clean waterat least 5 times.
Step 3: Long press the Pre-filling button to make the piston stop at the barrel bottom.
Step 4: Ensure that the tube is not submerged in a liquid, press the filling button to make the piston run to the top of the barrel.

Step 5: Turn the Return Valve to direction②, press the dispensing button make the piston run to thebottom of the barrel.
Step 6: Cleaning work is finished, Turn Return Valve to direction①.

9.3 Storage

- During storage periods at constant temperature and humidity, the recommended temperature range is from 0-40℃and humidity no more than 80%.
- Kindly charge the Electronic Bottle-Top Dispenser every month if it is unused for a long time.
- Ensure the battery maintains at least 50% power.

10. Troubleshooting

Problem	Possible Cause	Solution
Piston overflows with liquid.	The piston wears out.	
The piston moves with difficulty.	The piston or its parts are contaminated or damaged due to crystallization and sedimentation.	Do “Cleaning the Barrel”.
Failure to filling	The filling valve is clogged.	Replace the filling valve.
Failure to refill; refilling sucksback into the dispensing tip.	The dispensing valve is contaminated, or the dispensing tip is damaged.	
Bubbles in the instrument/Dispensing volume are less than the volume displayed.	The filling pipe is loose or damaged.	Replace the filling pipe.
	The filling pipe is away from the liquid	Checking filling pipe.
	The return pipe is not installed or is wrongly installed.	
	The instrument is not fully refilled	Checking Operation.
	The filling valve is clogged or damaged.	Checking filling valve.
		Replace the filling valve.
No display	Battery dead.	Charging.
	Connection fails.	USB cable connection checking.

11. Accessories

Optional Accessories

- Filling Tube
- Discharge Tube

12. Replacement

1) **Filling and Dispensing valve Replacement**
   - Use the installation tools to disassemble the old valve and replace the new valve in the same position.
   - The valve has no fixed replacement cycle and problems after the replacement.
   - The issue that could be involved with the valve.
   - **Caution:** The following operation must use installation tools to do.
   - Before disassembling, ensure to remove the dispensing and filling pipe.

2) **Disassemble Dispensing valve**

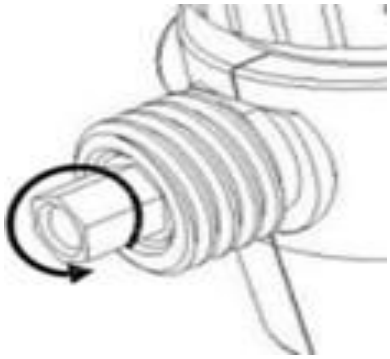

Figure-28

3) **Disassemble the filling valve**

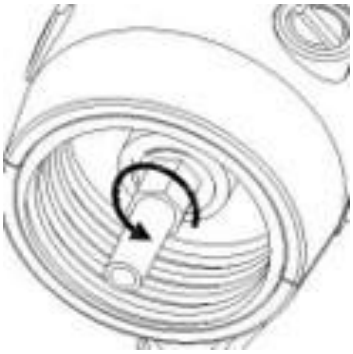

Figure-29