

(4) Release the button and return to normal position and continue pipetting after changing tips as per the requirement.



Reverse pipetting (for viscous liquids or volatile liquids):

- (1) Press the liquid aspirating button to the second stop point. Gently release the button to the starting point to complete the aspiration. Draw more than the set volume of liquid.
- (2) Press the button to the first stop point to exclude the set volume of liquid.
- (3) Excess liquid remaining in the tip is to be discarded.

5. Sample Dispensing

- Place the pipette tip close to the container wall, Press the liquid dispensing button to the first stop point to remove the liquid and pause for a while, and continue to press the button to the second stop point to empty the liquid if any.
- Replace the tip and continue pipetting as per the requirement.



6. Tip Ejection

- Eject the pipette tip using the pipette tip ejector button and adjust the pipette to its maximum range.

Safety Instructions:

- Use appropriate volume range pipette based on the requirement.
- Ensure to use a suitable pipette tip
- If the aspiration is too fast it generates air bubbles and is blocked in the pipette tip.
- Set the volume within the range specified for the pipette.
- Ensure to place the pipettes in upright position only when there is liquid in the tip. Liquid might enter into the pipette and contaminate the pipette.
- Set the pipette volume to its maximum range after use as it restores the spring to its prototype and increase the pipette lifetime.
- Ensure that there is no leakage during use: Empty the pipette contents and leave it in vertical position for a few seconds to check whether the liquid level is dropped or not. In case of any leakage found, check whether the tip and the spring piston are normal.

Common Operational Errors



Pipette quick calibration and fine tuning

Quick Calibration

Weigh distilled water using analytical balance, a right way to calibrate.

1mL distilled water at 20°C weighs 1.000g.

Fine Tuning

Use the calibration tool to rotate the calibration adjustment lock to increase the volume, if the volume setting is to be adjusted

If the aspirating/dispensing volume is too high then use a calibration tool to turn the calibration adjustment lock counterclockwise to reduce it.



Pipette maintenance

Why do I need regular maintenance and care?

To remove the liquid entered into the piston chamber accidentally or to remove pollutants if any. To prevent frequent disinfection. If there is any need for piston lubrication.

How to clean or maintain a pipette?

Adjust the pipette to its maximum capacity so that the spring returns to its normal state and place it vertically on the hook or pipette rack.

New pipettes or pipettes which are left unused for a long time should be pressed several times before use. The pipette should be regularly cleaned, depending on the frequency of use.

For external cleaning of pipette just use soap and water. Wash with 60% ethyl alcohol, then rinse with double distilled water and allow it to dry.

For internal cleaning, disassemble the pipette and clean the lower part of the pipette using any cleaning fluid. The piston surface should be coated with a thin layer of grease uniformly.

Autoclavable

DLAB TopPette and MicroPette Pipettes are semi-autoclavable i.e., only the lower section can be autoclaved. The MicroPette Plus pipettes are fully autoclavable, enable easy cleaning and reduce the risk of contamination. Steam autoclaving can be performed at 121° C, 1bar pressure for 20 minutes. After autoclaving, the pipette must be cooled down and left to dry for 12 hours before use.

It is recommended to check the performance of the pipette after each autoclaving. It is also recommended to grease the piston and seal of the pipette after every 10 autoclaves.

Trouble Shooting:

Problem	Reason	Solution
Liquid droplets left inside the tip	Unsuitable tip	Use DLAB original tips
	Poor wetting of the tip	Repeat pipetting 4-5 times
	Improper insertion of tip	Re-insert the tip
Operation button jammed or moves erratically	Poor lubrication of piston and O-ring	Lubricate the piston and O-ring
	Piston contaminated	Clean and grease O-ring and piston
Pipette blocked Aspirating volume is too low	Unsuitable tip	Use DLAB original tips
	Liquid has penetrated tip cone and dried	Clean the tip with alcohol
	Piston contaminated	Clean and grease O-ring and the Piston
	O-ring damaged	Replace O-ring
Counter screw jammed	other problems	Return to factory for maintenance
	Cap stuck	Turn clockwise to twist
	Lower limit stuck	Screw back counter clock wise
	middle stuck	Return to factory for maintenance

Disassembly and Assembly:

DLAB single-channel adjustable or fixed volume pipettes

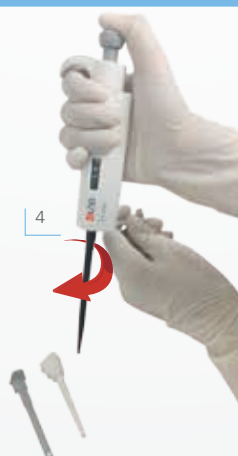
1. Push the tip ejector button.
2. Insert the calibration tool between the tip ejector collar and the tip ejector to release the locking position.
3. Remove the tip ejector and tip ejector ring.
4. Remove the tools from the tip assembly and turn counter clockwise.
5. Remove the tip, piston, spring and filter(if any).
6. Clean and grease all the disassembled parts properly.
7. Reassemble the pipette in reverse order.



Note: After reassembly, press the button several times to ensure that the silicone oil is lubricated evenly.

O-ring cannot be removed for maintenance from ≤10μL pipettes. 5ml pipette tip cones can be removed without any tools and can be directly screwed down.

Pipettes should be opened for cleaning or maintenance by the authorized personnel only.



DLAB

Pipette User Guide

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DLAB Scientific Co., Ltd (Beijing) is manufacturing pipettes since its establishment in 2002 at Shanghai. Over the past 16 years, DLAB developed as one of the world's largest pipette manufacturers. Pipettes find their application in every field of science research like medical treatment, biology, chemical, food, environmental protection etc.

- 21,000 m² manufacturing facility in China
- ISO9001 and 13485 certified Products



Head Quarters in China



Production Facility Calibration Center Warehouse Center

DLAB Pipettes are manufactured in three series: TopPette, MicroPette and MicroPette Plus series. TopPette, MicroPette and MicroPette Plus series are produced in eight different volume ranges from 0.1-10mL as single channel adjustable/fixed, multi-channel adjustable pipettes.

The production unit is ensured to comply with ISO8655 international quality standards.

TopPette Series MicroPette Series MicroPette Plus Series



Pipette Structure



TopPette/MicroPette/MicroPette Plus Pipettes available volume range:

Single Channel Adjustable Volume	Single Channel Fixed Volume	8-Channel/ 12-Channel Adjustable Volume
• 0.1-2.5µL	• 5µL	• 0.5µL-10µL
• 0.5-10µL	• 10µL	• 5-50µL
• 2-20µL	• 20µL	• 50-300µL
• 5-50µL	• 50µL	
• 10-100µL	• 100µL	
• 20-200µL	• 200µL	
• 50-200µL	• 250µL	
• 100-1000µL	• 500µL	
• 200-1000µL	• 1000µL	
• 1000-5000µL	• 5000µL	
• 2-10ml		



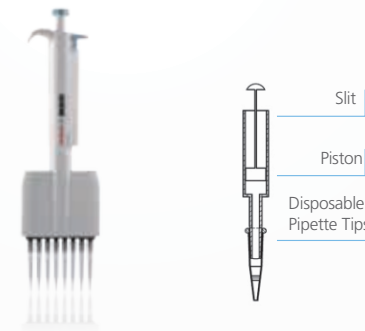
Generally 100µL pipette refers to 10-100µL and 1000µL Pipette refers to 100-1000µL

Pipette working principle

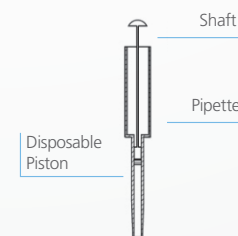
- TopPette/MicroPette and MicroPette Plus series of pipettes operate on air displacement principle.
- Adjustable volume pipettes can be set even in operation.

Pipette classification

Air displacement piston Pipette



External Piston Pipette



When the piston is in direct contact with the sample, piston moves to appropriate position if the volume is set. When the operating button is pressed to the first stop, the piston releases the same set volume of air. After placing the tip into the liquid, the volume adjustment button is released. This creates a partial vacuum and the set volume is aspirated into the tip. When the operating button is pressed to the first stop again, the air dispenses the liquid. To discard the remnant liquid in the tip, Positive displacement pipettes are recommended for use with viscous, dense, volatile and corrosive solutions.

Pipette Usefulness

Pipetting cycle:



1. Tip Insertion - by rotation method:

- Insert the pipette tip cone vertically into the tip and turn it half-clockwise and secure properly. Do not use the tips with your fingers. It is recommended to use at 35-100% range tips (Generally imported tips are preferred for multi-channel pipettes).



2. Volume Setting: Fine Adjustment

- Adjust the volume from high to low using the volume adjustment knob at the top by counterclockwise rotation. During volume adjustment, exceed the required volume to be set on scale and then decrease it to desired volume setting.

Note: Volume adjustment knob should be used within the range specified, as it may also jam the mechanical device and damage the pipette.



3. Rinse the tip

- If there is change in volume or inserting a new tip, the liquid is to be drained two or three times, and the absorption on the inner wall of the tip is saturated to ensure the accuracy of pipetting.

4. Sample Aspiration

- Different pipette ranges with different suction liquid immersion depths
- 0.1-2.5µL/0.5-10µL ≤ 1mm • 2-20µL/10-100µL/20-200µL ≤ 2mm
- 100-1000µL ≤ 3mm • 1000-5000µL/2-10mL ≤ 4mm

Forward pipetting (low density solution):

- (1) Press the aspiration/dispensing button to the lowest possible position.
- (2) Gently release the button to the start point to complete aspiration;
- (3) Press the liquid dispensing button to the first start point to remove the liquid and pause for a while, continue to press the button to the second stop point to empty the contents.