

CALIBRATION

Each pipette has been checked & calibrated at factory with procedure confirming to DIN 12650 & EN ISO 8655 standards. It is recommended to check the calibration at least once a year, for regularly used pipette.

Checking Calibration

1. For checking calibration, each channel should be considered as an individual pipette.
2. Fit the new tips to all the tip cones (channels).
3. Pipette distilled water into a pre-weighed beaker at least ten times & record the weight each time.
4. Compare the results with permitted variation chart given earlier as specifications for imprecision & inaccuracy.

The calibration of the pipette must be set even if only one of the results falls outside the permitted range.

Important Notes

1. The permitted range of inaccuracy & imprecision established by us are at highly controlled environment & facilities. For user in a normal lab environment, the limits may be doubled.
2. There should be minimum 3 test volumes for every pipette as shown earlier.
3. Procedure should take place at 20° (± 0.5°) C. constant temperature.
4. The weighing beaker, distilled water, pipettor & tips must be at the same temperature.

5. Use an analytical balance with 0.01 mgs or better readability.
6. Pre-rinse the tips 3 to 5 times before pipetting.
7. Divide the weight of the water by its density (0.9982 at 20 C.) to get the volume.

Recalibration

1. Place the service tool in to the holes at the base of the Push button as shown below. Turn it clockwise to increase & anticlockwise to decrease the volume.
2. Repeat the 'Checking calibration' procedure.



STORAGE

When not in use, it is recommended that your pipettor is stored in a vertical position.

Leaving pipette on its side can cause liquids to leak in to the body of the pipette and cause corrosion.

TROUBLE SHOOTING

Trouble	Possible Reason	Correction
Droplets left inside the tip	Unsuitable tip, non-uniform wetting of the plastic	Use new tip
Leakage or Pipetted volume too small	Tip holder (cone) scratched or damaged	Send for repair.
	Organic Solvent as liquid.	Aspirate & discard the organic solvent several times before actual pipetting by the same tip.
	Tip incorrectly attached	Attach firmly.
Inaccuracies	Unsuitable tip.	Use new tip.
	Foreign particles between tip and tip cone.	Clean the tip cone.
	Incorrect operation.	Follow instructions carefully.
Push button jammed or moves erratically	Calibration altered.	Recalibrate according to instruction.
	Unsuitable for the particular liquid pipetting technique.	Use correct pipetting technique.
	Instrument damaged.	Send for repair.
Tip Ejector jammed or moves erratically.	Piston contaminated.	Send for repair.
	Penetration of solvent vapours.	
Volume setting is not properly click stopped.	Tip cone contaminated from outside.	Clean tip cone's outer surface with ethanol.
Push Button does not turn for volume setting.	Click stop mechanism damaged.	Send for repair.
	Use of excessive force beyond the range of pipette	Send for repair.

Research Multichannel Pipette INSTRUCTION MANUAL



PIPETTE DESCRIPTION

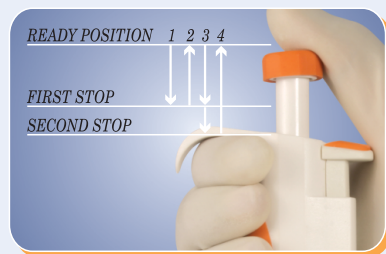
These MULTICHANNEL VARIABLE VOLUME 8 CHANNEL PIPETTES operate on the air displacement principle and use disposable tips.

All models are equipped with a built-in Tip Ejector.

They cover the volume range of 0.5 µl to 300 µl.

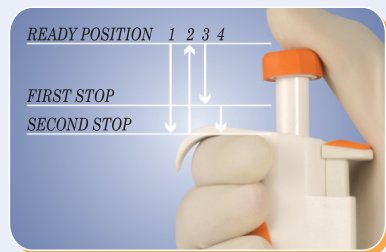
PIPETTING TECHNIQUE

A. Forward Pipetting



1. Press the operating button to the first stop.
2. Dip the tips attached to the pipette into the solution to a depth of about 1cm, and slowly release the operating button. Wait for a while then withdraw them from the liquid.
3. Dispense the liquid into the receiving vessel by gently pressing the operating button to the first stop. After a second, press the operating button to the second stop. This will empty the tips completely.
4. Release the operating button to the ready position.

B. Reverse Pipetting



1. Press the operating button to the second stop.
2. Dip the tips attached to the pipette into the solution to a depth of about 1cm, and slowly release the operating button. This action will fill the tips with a volume that is larger than the set volume. Wait 1-2 seconds and withdraw the tips from the liquid.
3. Dispense the liquid into the receiving vessel by pressing the operating button gently and steadily to the first stop. This volume is equal to the set volume. Hold button in this position. Some liquid will remain in the tips, which should not be dispensed.
4. The liquid remaining in the tips can be pipetted back into the original solution or disposed together with the tips.
5. Release the operating button to the ready position.

Note : Reverse pipetting technique is recommended for viscous solutions, solution having tendency to foam or dispensing very small volumes.

PIPETTING RECOMMENDATIONS

- ◆ Aspirate liquid into the pipette only when the tips are attached to the pipettes.
- ◆ While pipetting, the pipettor should be vertically straight and the tips should be dipped only a few millimeters into the liquid.
- ◆ Prerinsing of tips 5 times with the liquid to be dispensed is recommended. This is important especially when dispensing liquids which have a viscosity and density different from water.
- ◆ Always control the push button movements with the thumb for consistency.
- ◆ Allow liquids, Tips, and pipettes to equilibrate to the ambient temperature.
- ◆ Pre-rinse the tips several times before use while pipetting liquids at temperature different from ambient.
- ◆ Wipe the tips only if there is liquid on the outside of the tips, being careful to avoid touching tip's orifice.
- ◆ Don't keep pipette in your hand while not working to avoid transferring body heat.
- ◆ Use the correct pipette tip designed for use with the particular pipette.
- ◆ Select the correct pipetting technique (e.g. Reverse, Forward etc.) depending on the nature of the liquid.
- ◆ Using excessive force to turn the push button outside the range specified for it.

MAINTENANCE

To maintain the best results from your pipettor, each unit should be checked every day for cleanliness. Particular attention should be paid to the tip cone(s).

This pipettor has been designed for easy in-house service. However, we also provide complete repair and calibration service. Please return your pipettor to your local distributor for repair or calibration. Before returning please make sure that it is free from all contamination.

Check the performance of your pipettor regularly e.g every 3 months and always after in-house service or maintenance.

Cleaning Your Pipettor

To clean your pipettor use ethanol and a soft cloth or lint-free tissue. It is recommended to clean the tip cones regularly.

Autoclaving

The lower part (Manifold) of the pipette is fully autoclavable. Remove the manifold simply by rotating it anti-clockwise while holding the upper body.

Autoclave the manifold at 121°C and 15 psi for 20 minutes.



SPECIFICATIONS

Channel Ch.	Volume Range µl	Increment µl	Test Vol. µl	Inaccuracy %	Imprecision %
8	0.5-10	0.1	10	1.5	1.5
8	5-50	0.5	5	2.5	2.5
8	10-100	0.5	1	3.5	3.5
8	20-200	1.0	50	1	0.7
8	30-300	1.0	25	1.5	1
			5	3	2
			0	0	0
			0	0	0
			0	0	0
			0	0	0
			0	0	0
			300	0.8	0.25
			150	1	0.4
			30	1.5	0.5