

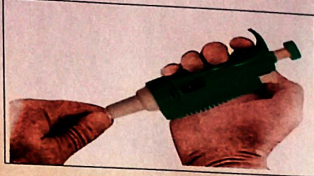
Now, dip the tip again in the solution.

Step 4. Release the 'plunger' to fill the tip again.

Repeat steps 3 and 4 for repetitive pipetting.

AUTOCLAVING

NOTE : Do not put the whole pipette in the autoclave because ONLY THE TIP CONE ASSEMBLY IS AUTOCLAVABLE.



(Fig. 3)

1. Disassemble the Pipette by pulling the Ejector as shown in Fig. 3
2. Dismount the tip-cone assembly by simply unscrewing the tip-cone.
3. Put the tip-cone assembly in autoclave at 120°C and 15 PSI pressure.
4. Re-assemble the pipette.
5. Re-calibration is not required. However, a quick calibration check on the electronic balance is recommended.

TESTING THE PIPETTE

Instruments required

1. Calibration tool.
2. Double distilled / Degassed Water.
3. New Compatible tip.
4. Analytical electronic balance.

5. Temperature controlled atmosphere.

6. Small plastic beaker.
- Step 1. Set the volume on the pipette.
- Step 2. Fix a new tip.
- Step 3. Keep the plastic beaker on the pan of the balance and tare. The reading on the balance will show 0.0000.
- Step 4. Fill the tip with double distilled water and dispense in the beaker on the balance. Repeat this step 5 time to get a mean value.

Note : Do not change the tip while re-peating step 4. In case the tip is changed, all the five readings should be taken again.

Now the mean value of the readings on the balance should be in the prescribed accuracy range.

TROUBLE SHOOTING

Symptom	Cause	Remedy
Pipette drips	1. Non-compatible tip.	Use compatible tip.
	2. Tip-cone is dirty.	Clean the tip cone with a dry tissue paper.
	3. Seal is damaged.	In case the first two causes have been checked and the pipette still drips, the pipette might have a damaged seal/o-ring. Contact your nearest dealer or the company directly.
	4. Liquid used is volatile and the dripping is due to vapour pressure.	Do not use volatile liquids with high vapour pressure.

Plunger jam
Due to rotation of plunger beyond the specified range.
Do not over rotate the plunger.

ACCURATE PIPETTING

1. Always clean the tip-cone with a dry tissue paper before fixing the tip.
2. Ensure that the tip is tightly fitted.
3. The solutions and the tip should be at the same temperature.
4. Always reject 3-4 dispensing before starting your work with the micropipette.
5. Get used to the two stages of plunger before starting the work with a new pipette.
6. Always keep the pipette upright.
7. Reject the tip if any liquid is sticking on the inner wall of the tip.

Volume Range	Incre-ment	Vol. (µl)	ACC (%)	C.V. (%)
0.5-10 µl	0.1 µl	0.5	±5.0	≤2.8
		5.0	±1.5	≤0.8
		10.0	±1.0	≤0.4
2-20 µl	0.1 µl	2.0	±5.0	≤1.5
		10.0	±1.0	≤0.6
		20.0	±1.0	≤0.3
5-50 µl	1.0 µl	5.0	±2.5	≤1.5
		25.0	±0.7	≤0.3
		50.0	±0.7	≤0.3
20-100 µl	1.0 µl	20.0	±2.0	≤0.7
		50.0	±0.7	≤0.3
		100.0	±0.8	≤0.2
50-200 µl	1.0 µl	50.0	±1.5	≤0.3
		100.0	±0.6	≤0.3
		200.0	±0.6	≤0.2
100-1000 µl	10.0 µl	100.0	±0.8	≤0.7
		500.0	±0.6	≤0.4
		1000.0	±0.4	≤0.3
200-1000 µl	10.0 µl	200.0	±1.2	≤0.3
		500.0	±0.6	≤0.2
		1000.0	±0.5	≤0.2

OPERATION MANUAL



LIQUID HANDLING SYSTEMS MICROPIPETTE

STATUS PASSED

CALIBRATION REPORT

DESCRIPTION : VARIABLE VOL. 100 - 1000µL

DATE : 23-02-2021

ENVIRONMENTAL FACTORS

TEMP : 20.00C

BARO. PRESSURE : 750.00 mmHg

REL. HUMIDITY : 50.00%

AIR DENSITY : 0.001200g/cm³

Z FACTOR : 1.002899/cm³g

CUBIC EXP. : 0.0000cm³/degC

CALIBRATION STATISTICS

VOL	NO.	WT.	VOL.	VOL.	MEAN	SD	INACCURACY E%			IMPRECISION CV%
							ACTUAL	TARGET	STATUS	
100.0	1	99.80	100.10	100.0	100.23	0.094	0.23	0.50	PASSED	≤ 0.60
100.0	2	199.80	100.30	500.0	499.14	1.056	0.17	0.60	PASSED	≤ 0.20
100.0	3	299.80	100.30	1000.0	1000.96	1.861	0.09	0.50	PASSED	≤ 0.20
500.0	1	497.80	499.24							
500.0	2	996.50	500.15							
500.0	3	1493.10	498.04							
1000.0	1	1000.00	1002.90							
1000.0	2	1997.90	1000.79							
1000.0	3	2994.20	999.19							

All Pipettes are calibrated at 20°C with degassed double distilled water conforming to DIN 12650 standards. Each Pipette is individually calibrated on electronic balance.