

FIXED VOLUME MICROPIPETETTE INSTRUCTION MANUAL

CE



The company which is in possession of a registered and certified quality management system which includes the development, production, and sales of high quality Liquid Handling products.

CONTENTS

- 1- INTRODUCTION
- 2 - ASPIRATION AND DISPENSING LIQUIDS
- 3 - CALIBRATION
- 4 - RECOMMENDATIONS
- 5 - CLEANING AND STERILISATION

1- INTRODUCTION

The fixed volume micropipettes are designed for accurate and repeatable measure and transfer of liquids of constant volume from 5 to 1000 μ l.

Liquid is aspirated into a disposable tip attached to the pipette shaft.

NOTE: Disposable tips ensure maximum safety and eliminate possibility of cross-contamination of liquid samples.

The fixed volume micropipettes have a blow out mechanism ensuring complete removal of liquid from the tip.

The micropipettes have a built in tip ejector. Using it makes removing the tip from the pipette shaft easier, and protects against contact with a contaminated tip. When using narrow tubes it may be necessary to remove the tip ejector. It is simply removed by pulling down.

The accuracy (A) and repeatability (P) of liquid volume depends on the quality of tips used.

The values for accuracy and repeatability were obtained using the company or other universal tips of liquid sampling.

Below shows the outside elements of the pipette and their materials:

CONTENTS

- 1 - INTRODUCTION A. Pipetting pushbutton Polypropylene (PP)
- 2 - ASPIRATION AND DISPENSING LIQUIDS B. Eject pushbutton Polypropylene (PP)
- 3 - PIPETTING TIPS C. Handle Polypropylene (PP)
- 4 - RECOMMENDATIONS D. Ejector Polypropylene (PP)
- 5 - RECALIBRATION E. Pipette shaft Polyvinylidene fluoride
- 6 - PIPETTING DENSE AND VISCOUS LIQUID (PVDF)

Please, description before reading the instruction manual.

Fixed Volume Single Channel Micropipette(121°C autoclavable)

Cat.NO.	Part.NO.	Volume	Accuracy		CV	
			≤ %	± ul	≤ %	± ul
8011122	TF05H	5ul	2.0%	0.1	0.80%	0.04
8011123	TF10H	10ul	1.0%	0.1	0.50%	0.05
8011124	TF20H	20ul	1.0%	0.2	0.30%	0.06
8011125	TF25H	25ul	1.0%	0.25	0.30%	0.075
8011126	TF50H	50ul	1.0%	0.5	0.30%	0.15
8011127	TF100H	100ul	1.0%	1.0	0.25%	0.25
8011128	TF200H	200ul	0.8%	1.6	0.20%	0.4
8011129	TF250H	250ul	0.8%	2.0	0.20%	0.5
8011130	TF500H	500ul	0.8%	4.0	0.20%	1.0
8011131	TF1000H	1000ul	0.8%	8.0	0.20%	2.0

Fixed Volume Single Channel Micropipette

Cat.NO.	Part.NO.	Volume	Accuracy		CV	
			≤ %	± ul	≤ %	± ul
8011132	TF05H	5ul	2.0%	0.1	0.80%	0.04
8011133	TF10H	10ul	1.0%	0.1	0.50%	0.05
8011134	TF20H	20ul	1.0%	0.2	0.30%	0.06
8011135	TF25H	25ul	1.0%	0.25	0.30%	0.075
8011136	TF50H	50ul	1.0%	0.5	0.30%	0.15
8011137	TF100H	100ul	1.0%	1.0	0.25%	0.25
8011138	TF200H	200ul	0.8%	1.6	0.20%	0.4
8011139	TF250H	250ul	0.8%	2.0	0.20%	0.5
8011140	TF500H	500ul	0.8%	4.0	0.20%	1.0
8011141	TF1000H	1000ul	0.8%	8.0	0.20%	2.0

The accuracy and precision figures are obtained using the company tips, using a gravimetric method, performing at least 10 measurements of distilled water at the temperature of $20 \pm 1^\circ \text{C}$, according to EN ISO 8655 standard.

The pipette design enables the user to perform the recalibration process according to the rules presented in section 5.

Volume change ΔV is the change of the distilled water volume aspirated by the pipette caused by a single complete turn of the calibration key - 24 increments.

2 - ASPIRATION AND DISPENSING LIQUIDS

1. Fitting the tip

Use the correct tip according to the volume range or the color code. Ensure that the tip is securely seated.



2. Aspirate sample

- Press pipetting button to the first stop.
- Hold the pipette vertically and immerse the tip 2 to 3 mm into the liquid.
- Let the pipetting button slide back slowly. In order for the liquid to reach its end position, leave the tip immersed for another 1-2 s.
- Touch the tip against the container wall.

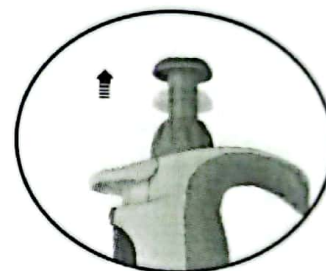


3. Discharge sample

- Place the pipette tip against the wall of the vessel. Hold the pipette at an angle of 30-45° relative to the container wall.
- Press the pipetting button slowly to the first stop and hold it down.

For serum and liquids of high viscosity or low surface tension, observe adequate waiting time to improve accuracy.

- The blow-out stroke empties the tip completely: Press the pipetting button down to the second stop.
- While doing this, wipe the pipette tip against the wall of the container.
- Remove the pipette tip from the container wall and let the pipetting button slide back.



4. Ejecting the tip

Hold the pipette shaft over a suitable disposal container and press the tip ejection key to the stop.

Note:

Don't lay the instrument horizontal when the tip is filled. Liquid may enter and contaminate the instrument.

3 - CALIBRATION

First, fit the calibrating tool onto stem of the push button. be sure the to align the prongs into the first, fit the calibrating to matching cavities located at the top of the pipette(see the photo) To recalibrate for addition volume rotate calibration tool in a counter clockwise direction. to recalibrate for decreased volume rotate in a clockwise direction.



4 - RECOMMENDATIONS

Observing the following recommendations will ensure maximum possible accuracy and precision of liquid sampling.

- Operate the pipette pushbutton slowly and smoothly when liquid aspirating and dispensing.
- The depth of tip immersion in the aspired liquid should be kept at necessary minimum, and should remain constant during aspiration.
- While operating, the pipette should be held in a vertical position.
- The tip should be replaced with a new one each time a different kind of liquid is handled.
- The tip should also be changed if visible droplets of liquid remain inside it.
- Each new tip should be pre-rinsed with the pipetted liquid.
- Pipetted liquid must not enter the pipette shaft. To ensure this:
 - operate the pipetting pushbutton slowly and smoothly;
 - do not lay the pipette down in a horizontal position if there is any liquid in the tip.
- Do not aspirate liquids of temperatures above 70° C.
- After pipetting acids and aggressive liquids, it is recommended to disassemble the pipette and rinse the pipette plunger, shaft, seal and other elements in distilled water.

5 - CLEANING AND STERILISATION

Cleaning:

External surfaces of the pipetting pushbutton, the ejector pushbutton, the handgrip and the body can be cleaned with tissue dipped in isopropyl alcohol. Remaining parts removed from the pipette during disassembly can be washed with distilled water or isopropyl alcohol.

Sterilisation:

The pipette can be subjected to sterilisation, as a whole, in the autoclave at temperature 121° C for 20 minutes. After performing the sterilisation the pipette should be dried and cooled down to room temperature.

It is recommended:

- to sterilise the pipettes in an autoclave with initial vacuum and drying cycle,
- to test pipette calibration every 10 sterilisation cycles.