



Training on *Mycobacterium tuberculosis* drug susceptibility testing (MGIT DST - Liquid Method)

Module 6: Use and maintenance of micropipettes

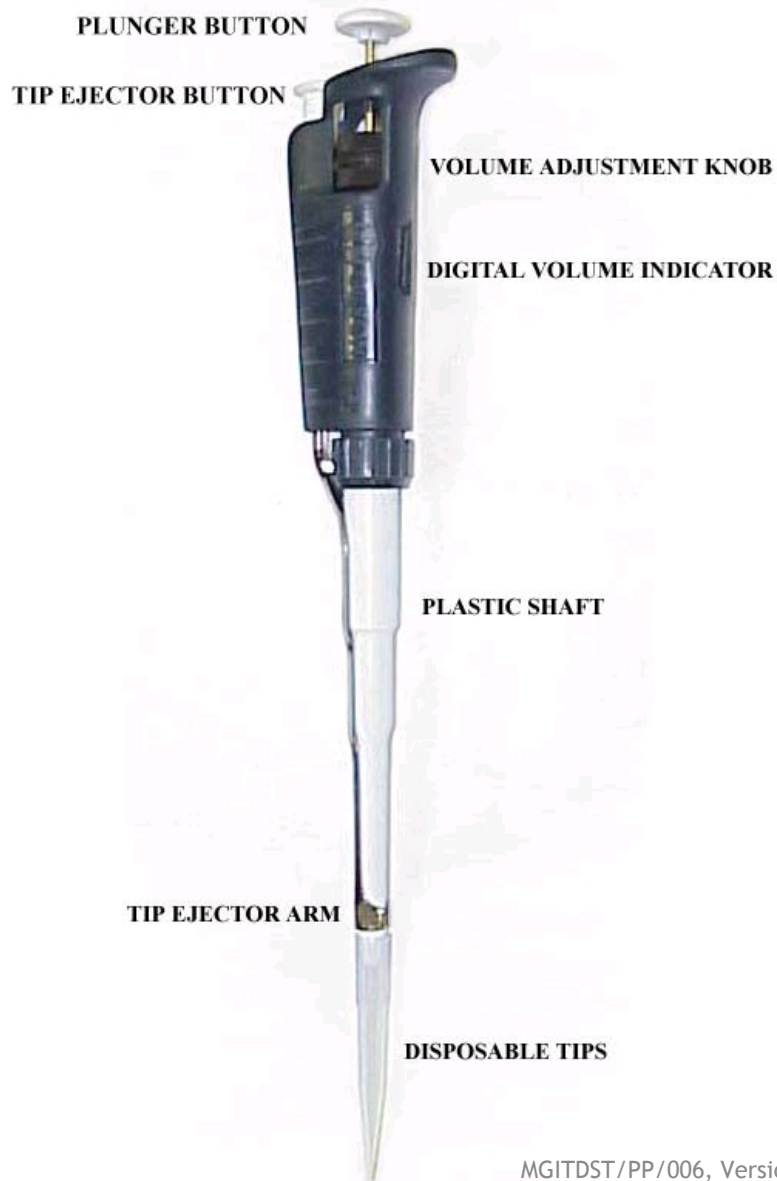
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Uganda Supranational Reference Laboratory

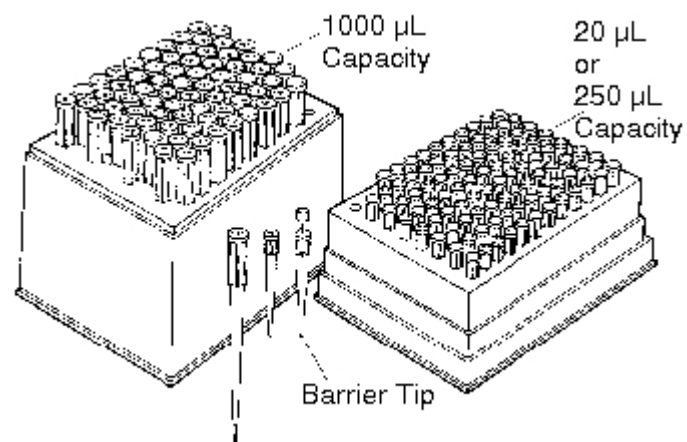
Introduction

- Automatic pipettes are used to accurately transfer small liquid volumes
- These are continuously adjustable digital pipettes
- Each pipette can be set to transfer any volume within its own volume range

Parts of the Automatic Pipettor



Parts of the Pipette



Step-wise Operation of the MICRoPipet

- (1) Set the volume
- (2) Attach disposable tip
- (3) Depress the plunger to the first stop
- (4) Immerse tip in sample
- (5) Draw up the sample
- (6) Pause
- (7) Withdraw the tip
- (8) Dispense the sample
- (9) Withdraw the pipette
- (10) Release plunger
- (11) Discard the tip



Operating the Micropipette

Step 1: Set the Volume



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Operating the Micropipette

Step 2: Attach the Disposable Tip



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Operating the Micropipette

Step 3: Depress the Plunger to the First Stop



Step 4: Immerse Tip in Sample



Step 5: Draw up the sample

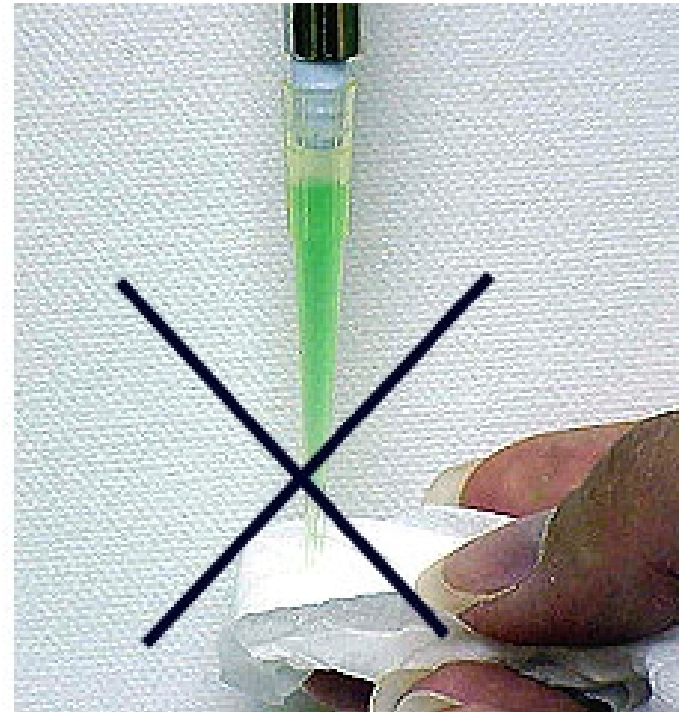
Step 6: Pause

Wait a few seconds to ensure that the full volume of sample is drawn into the plastic tip.

Operating the Micropipette

Step 7: Withdraw the Tip

Remove the tip from the sample liquid. No liquid should remain on the OUTSIDE of the tip.



Operating the Micropipette

Step 8: Dispense the Sample

- a) Touch the tip end to the side wall of the receiving vessel
- b) Depress the plunger to the FIRST STOP.
- c) Pause
- d) Press the plunger to the SECOND STOP (the second point at the bottom of the stroke) to expel any residual liquid in the tip



Operating the Micropipette

Step 9: Withdraw the Pipette

With the plunger fully depressed, withdraw the pipette from the receiving vessel carefully, sliding the tip along the wall of the vessel.



Step 10: Release the Plunger

Gently allow the plunger to return to the UP position. **DO NOT** allow it to **SPRING BACK!**

Operating the Micropipette

Step 11: Discard the Tip

Discard the tip by depressing the tip ejector button, as shown below. A fresh tip should be used for each sample to prevent sample carryover



Questions???

Practice