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Costar® 12-Pette® Multichannel Pipettor

Instruction Manual

Your Costar 12-Pette Pipettor is a precision, adjustable volume, multi-channel pipetting instrument. It is designed for dispensing and sampling precise volumes of liquids using any number of channels from 1 to 12. Tips are spaced to match the rows or columns of standard 96 well microplates. Volume range is from 20 µL to 200 µL with 0.5 µL scale divisions. Accuracy and repeatability are within 2%.

All operations, including remote tip ejection, can be performed with one hand. The 12-Pette pipettor is ergonomically designed for easy right or left hand use. The unique two-finger trigger action is less fatiguing than thumb-on-top operation. The pistol grip handle provides a better frame of reference for aiming tips accurately into small wells than does a tall vertical configuration. The compact design is especially easy to use under laminar flow hoods.

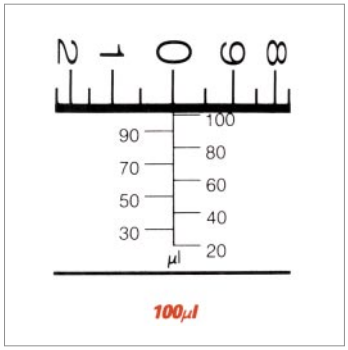
Safety features include remote one-hand tip ejection with a 7 to 1 mechanical advantage so that even jammed tips eject easily and never need to be touched by hand. In the event of possible contamination of the instrument, the entire unit can be autoclaved for your complete protection.

Before autoclaving, set volume at 200 µL and wrap unit in Kraft paper and tape. Autoclave 20 minutes at 250ºF (121ºC), 15 P.S.I.G. Although unit can withstand repeated autoclaving, it should not be done more than necessary. Eventual damage to lubricants and "O" rings may result.

WARNING: Excessive heat and/or time in autoclave can cause damage to the unit.







CORNING

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Your 12-Pette® Pipettor has been calibrated and verified for accuracy by the Corning Q.C. laboratory and unless severely mistreated should never need recalibration. A quality control statement showing C.V. and accuracy of your individual instrument is packaged with your 12-Pette pipettor.

Unit Serial number _____ .

All parts of the 12-Pette pipettor are made of high strength engineering materials to give you many years of reliable service; however, it should be treated with the same care you would give any other precision instrument such as a camera or microscope. The case provided makes a logical place to keep and protect your 12-Pette pipettor. For long periods of storage set the volume at 200 µL. Then, before using, make several full strokes of the dispensing trigger.

There are no serviceable parts inside the 12-Pette pipettor and you should not attempt to take it apart. It cannot be reassembled to perform accurately without the special calibration instruments and fixtures used by Corning. Should your 12-Pette Pipettor ever fail to operate properly, call Technical Service at 1.800.492.1110 or 1.978.442.2200 for help.

Setting the Volume

Corning has chosen a micrometer head design for setting volume. This is an extremely accurate method of adjustment since volumes can be precisely set, line on line, and fractional values can be estimated on the analog scale to about one tenth of a milliliter.

The following instructions are offered for those not familiar with the use of a micrometer:

A. The fixed scale on the inner barrel shows volumes in units of ten µL, i.e. 20 µL, 30 µL, 50 µL, etc.

B. To set a volume of 100 µL, turn the micrometer head using the quick setting knob until you can read 100 but not 110 on the fixed scale on the inner barrel. Now, holding the micrometer head, line up 0 on the moveable scale with the horizontal index line on the inner barrel. If set correctly, you now can read 100 and all smaller volumes on the fixed scale. You can also see the index line to the left of 100, but the 110 index line is covered by the edge of the micrometer head.

C. Now rotate the head so that 1, 2, and 3 appear in order. Line up 3 with the index line. Volume indicated is 100 plus 3 or 103 µL.

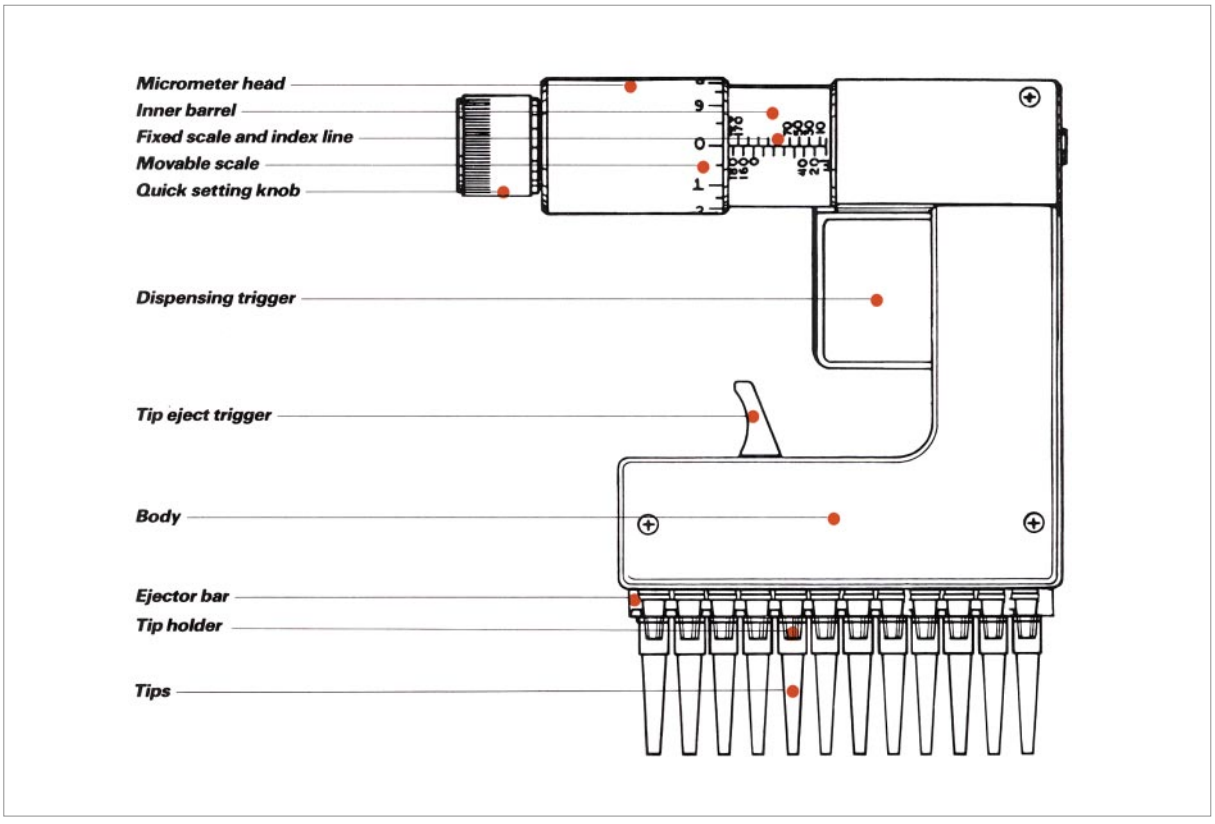
D. Now rotate the head to the line halfway between 3 and 4. Volume is 100 plus 3 µL, or 103 µL or 103.5 µL. The setting increments are very large on the micrometer head to allow easy reference to volume settings. (See Figure 1.)

Pipette Tips

Your 12-Pette pipettor has been designed and calibrated with Corning® tips. They are available in bulk or in racks of 96, spaced for picking up 8 or 12 at one time on the tip holders of your 12-Pette pipettor.

To eject tips, hold the 12-Pette pipettor vertically over a suitable waste container and pull ejector trigger firmly. (Ejector trigger is remote from dispensing trigger to avoid accidental ejection.)

For more information about Corning tips, visit **www.corning.com/lifesciences**.



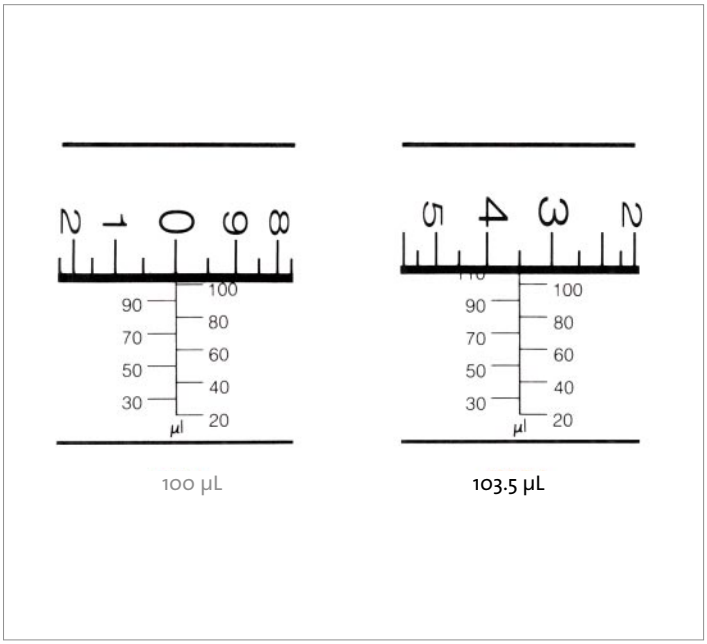


Figure 1. Head Settings

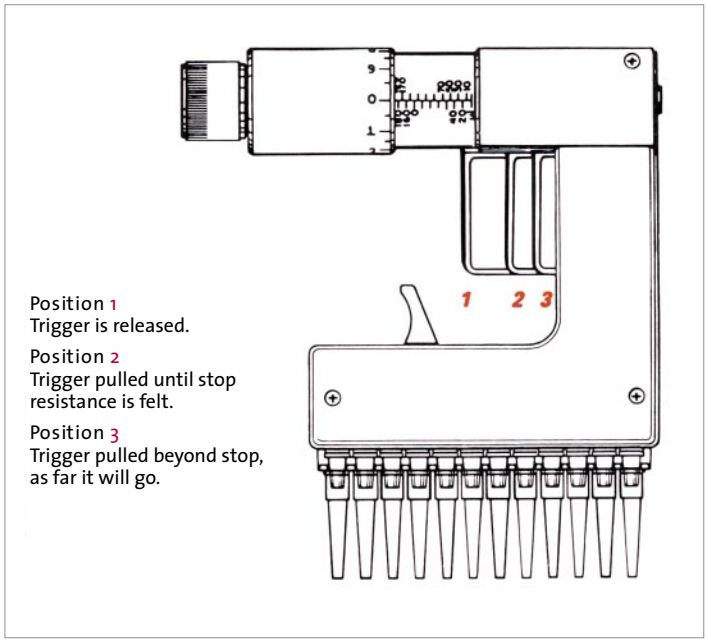


Figure 2. Trigger Positions

Liquid Handling with the 12-Pette® Multichannel Pipettor

Liquid is drawn into the tips when the dispensing trigger is released.

Liquid is dispensed from the tips when the trigger is pulled.

Residual liquid is "blown out" from the tips when the trigger is pulled beyond the first stop.

Always pull and release the trigger gently, smoothly, and consistently.

Make it a habit to quickly check the volume setting before each and every use.

Even though you may be thoroughly familiar with pipetting, we suggest you practice the various pipetting methods we will describe using water, a reservoir, and a 96 well plate.

To follow our directions for different pipetting procedures you must first memorize the three trigger positions:

Conventional Method

A. Pull trigger to Position 2.
B. Insert tips several millimeters below the surface of the liquid to be transferred.
C. Release trigger to Position 1. Remove from liquid, touching tips to reservoir side to dispose of any excess liquid.
D. Dispense liquid by pulling trigger to position 2. Hesitate a second or so and pull to Position 3 to blow out residue.
E. Change tips if necessary and repeat steps.

Alternate Method

This method is usually more accurate for dispensing very small volumes of liquid. It may also be superior for liquids that foam easily and for high viscosity fluids.

A. Pull trigger to Position 3.
B. Insert tips several millimeters below the surface of the liquid to be transferred.
C. Release trigger to Position 1. Remove from liquid, touching tips to reservoir side.
D. Dispense liquid by pulling trigger to Position 2. Touch tips to liquid surface or well sides to release droplets.
E. Liquid remaining in tips may be returned to reservoir or discarded.

Repeated Volume Dispensing Method

This is a quick and accurate method for multiple dispensing of identical volumes.

A. Pull trigger to Position 3.
B. Insert tips several millimeters below the surface of the liquid to be transferred.
C. Release trigger to Position 1. Remove from liquid, touching tips to reservoir side.
D. Dispense liquid by pulling trigger to Position 2. Touch tips to liquid surface or well sides to release droplets.
E. Return tips to reservoir and release trigger to Position 1.
F. Repeat steps D and E until pipetting is complete.

Warranty

Your Costar® 12-Pette® Multichannel Pipettor is guaranteed by Corning for 12 months from the date of purchase. We will repair or replace at our option any parts we find defective. Such repair will be free of charge unless, in our opinion, the instrument has been abused or used improperly.

If your 12-Pette pipettor needs service within or after the warranty period, call 1.800.492.1110 for instructions and a return authorization number. Do not return the unit until you have this number.

For customers outside the U.S., please call 1.978.442.2200 or contact your local Corning sales office listed below.

Costar 12-Pette Multichannel Pipettor, catalog number 4880

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