

# ADJUSTABLE SEQUENCING PIPET MODEL 203

Thank you . . . for purchasing a Drummond Microdispenser. This instruction sheet will help you operate and maintain your Microdispenser. Sample deliveries with a  $\pm 2\%$  full scale volumetric tolerance are assured through the use of Drummond Precision Bores.

CATALOG NO.	OVERALL CAPACITY	GRADUATION INCREMENTS	REPL. BORE POLYCARBONATE	REPL. SHAFT STAINLESS STEEL	REPL. "O" RINGS
3-000-203	3 $\mu$ l	.2 $\mu$ l	.35mm 3-000-203-G .2mm 3-000-203-G.2	3-000-000-203	3-000-002-5 small hole 3-000-002-1 large hole 3-000-002-6 spacer (plastic)

## A PRESETTING SAMPLE DELIVERY

The plunger should be turned clockwise until the desired sample size is opposite the reference mark on the spring housing. To return the unit to its full capacity, turn the plunger counter-clockwise.

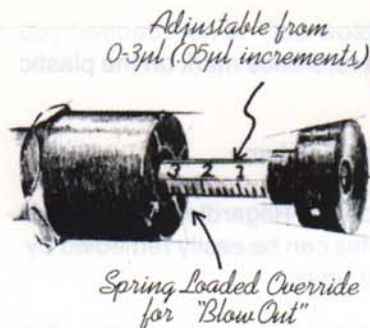
UNIT	ONE TURN	1/2 TURN	1/4 TURN
3-000-203	.2 $\mu$ l	.1 $\mu$ l	.05 $\mu$ l

## B SAMPLE COLLECTION

Depress the plunger until finger pad contacts spring housing immerse the tip into the solution and release the plunger slowly.

## C DELIVERY

Expel sample by depressing plunger until finger pad is completely depressed (blow out). To avoid bubbles, in loading a gel, the plunger is stopped before it is completely depressed, the small amount of sample remaining in the extreme tip is either touched off or rinsed out.

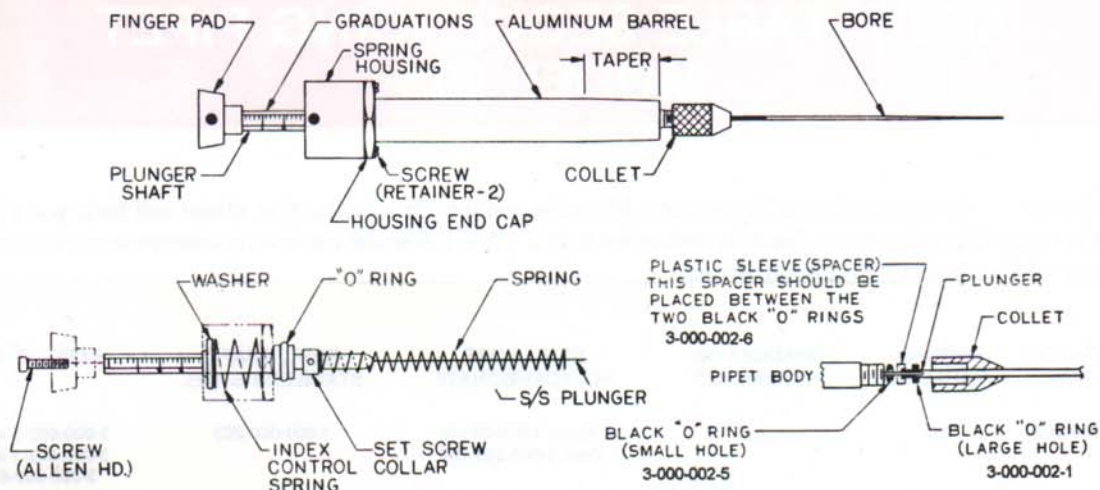


## D REPLACEMENT OF PLASTIC BORE

To replace plastic bore loosen knurled collet and remove used bore. Slip on new bore and tighten collet.

## E "O" RING REPLACEMENT

Please refer to drawing to determine proper sequence in replacing "O" rings. Overtightening collet can compress "O" rings and restrict plunger movement. Correct by slightly loosening collet.



## F PLUNGER REPLACEMENT

To replace plunger wire remove the end cap and turn plunger assembly counter clock wise until it is free of the barrel. Loosen the set screw and remove the old wire. Set the new wire into plunger assembly (wire must bottom in hole). Tighten set screws. Caution: It is not necessary or advisable to remove finger pad.

## G GENERAL COMMENTS ON SEQUENCING

- The plunger return is deliberately retarded, time must be allowed for liquids to overcome capillary restriction.
- The "blow out" provision assures complete sample delivery. If "blow out" is not required you have likely under pipetted. A simple check can be made by adding a reference mark on the plastic tip.
- Damaged tips can be trimmed with a razor without affecting sample volume.
- Tips should be rinsed between sample applications and before storage. Regardless occasional blockage can be caused by residual "stop" solution inside the tip. This can be easily remedied by dipping the tip in boiling water and depressing the plunger several times.
- Repetitive blocking, despite rinsing, is usually traceable to contaminated formamide solution. This is easily corrected by filtering the solution before use. A syringe type filter is usually adequate.
- To avoid "bubbles" in loading sequencing gels, the "blow-out" sequence is usually omitted. If sample is not completely expelled the remainder is miniscule and easily removed on rinsing.

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