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1 PRODUCT DESCRIPTION

The Finn pipette BioControl is an electronically-assisted pipette with interchangeable tip cone modules for a wide range of liquid handling operations. The dual-stop trigger that activates the Finn pipette BioControl uses a natural hand movement, increasing comfort and reducing the risk of repetitive stress injuries. Thanks to the electric motor and electronic control, pipetting is easy and comfortable, yet still fast and accurate.

Normal and stepper mode pipetting are possible with the same pipette. Forward and reverse pipetting are possible after volume adjustment; no other programming is needed. The dual stop trigger controls the pipetting action.

The pipette works on the air displacement principle (i.e. an air interface is left between the piston and the liquid).

The pipette's power source, an NiCd battery, is suitable for rapid recharge. If needed, the battery can even be recharged over the lunch hour.

The pipette uses detachable, disposable tips, which are easy to eject with a soft-touch lever action ejector. To insure sterility, the entire tip cone module can be detached and autoclaved.

PACKAGE

The complete Finn pipette BioControl package contains:

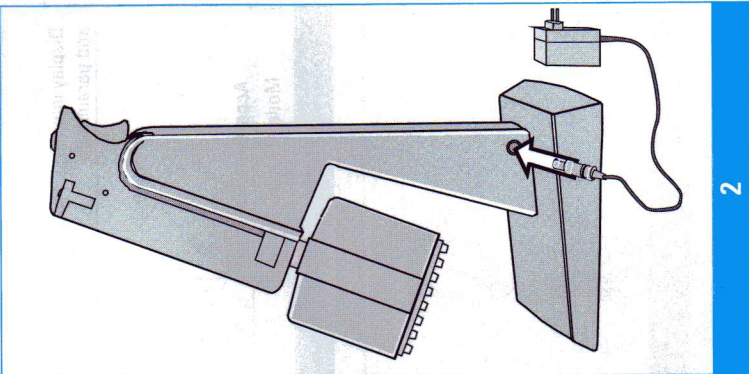
- Finn pipette with detachable tip cone module(s)
- transformer
- recharge stand
- instructions for use
- calibration software diskette
- tube of grease
- sample Finn tips

2 GETTING STARTED

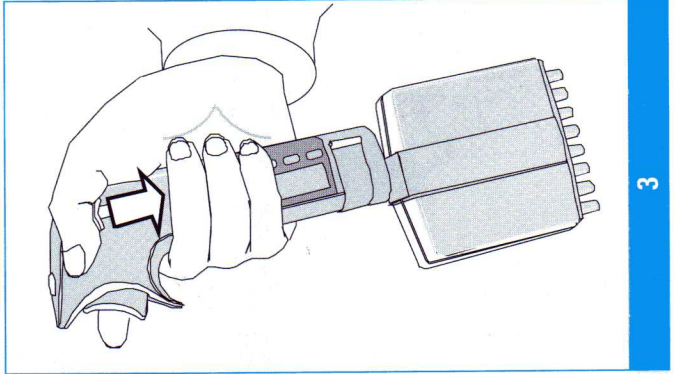
Remove the contents from the package (Fig. 1), and verify that all items listed above are included. Inspect for possible shipping damage. Save the packaging. Make sure that the modules are the desired volume range and that the mains voltage of the transformer is correct.

RECHARGING

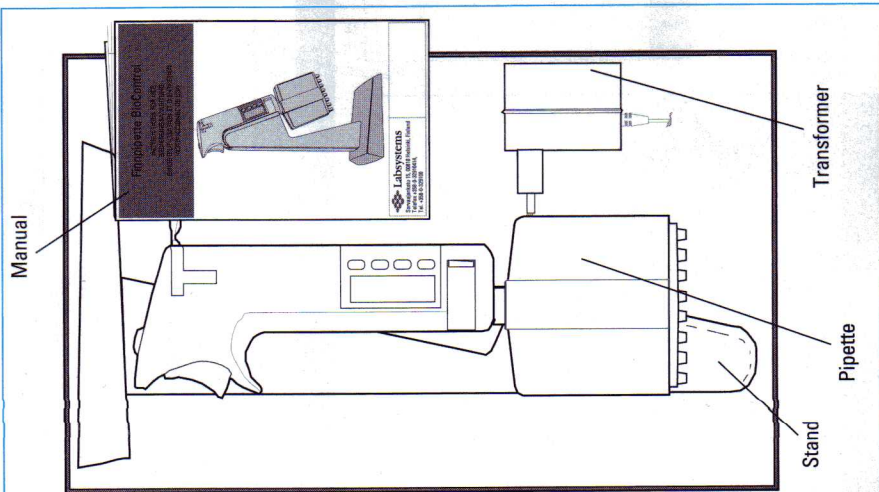
The pipette battery may be empty when delivered and must be recharged before initial use. Connect the transformer cord to the outlet on the side of the stand. Plug the wall transformer into an outlet matching the specification on the cover (Fig. 2). **Use only the original BioControl transformer.**



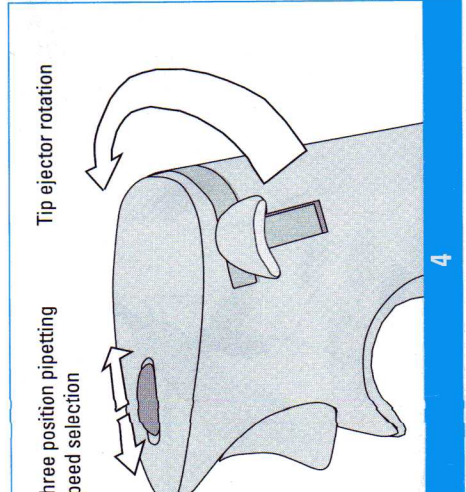
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Place the pipette on the stand, noting the light beside the pipette display screen. A green light indicates that the power is on, and the pipette is ready for use. A red light indicates that a rapid recharge has been activated. The initial charge takes about one hour. To ensure maximum battery capacity, the pipette should be stored on the stand when not in use. The power switches off automatically when the pipette is not in use or on the stand. The pipette display is blank when the power is off.

When you pick up the pipette, the power switches on automatically. If the power is going low, the text LOW BATT will appear on screen, indicating that the battery should be recharged. If you continue pipetting, an audible warning will sound.

3 PIPETTE OPERATIONS

The Finn pipette BioControl has four different operating modes: RESET, PIPETTE, STEPPER and POWER OFF.

RESET MODE

The pipette automatically switches to reset mode (on-screen text CALIBRATE) whenever the snaplock attaching the tip cone module has been released or the pipette has been charged from empty. To activate the pipette, close the snaplock, choose the appropriate module (on the display) and press the set key. Press the dual-stop trigger to the second stop. Release the trigger, and the pipette is ready for use (Fig.6).

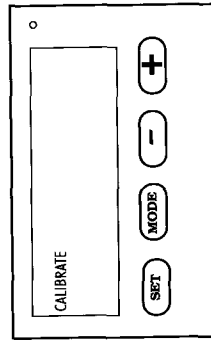


Fig.6. On-screen text CALIBRATE

PIPETTE MODE

Pipette is the normal operating mode. Forward and reverse pipetting are possible without programming.

STEPPER MODE

In stepper mode, the volume selected is dispensed repeatedly until the maximum capacity of the tip cone module has been delivered.

POWER OFF MODE

The pipette switches to POWER OFF mode after the pipette has been motionless for 10 minutes. A slight movement reactivates the pipette, switching it back on. Volume and mode settings remain as before.

CHANGING THE TIP CONE MODULE

To change the tip cone module, first open the snaplock (about 45 degrees), and then pull out the module. To attach the module to the pipette, insert the module in the pipette and close the snaplock. This activates the RESET mode. (To activate the pipette, close the snaplock) Next, choose the appropriate module (channel number and max. volume will be blinking on screen). Accept the previous module by pressing the SET key or choose another module by pressing the + or - keys. Confirm your selection with the SET key. Then press the dual stop trigger to the second stop, so the piston mechanism inside the handle descends to its lowest position. Release the trigger, and the pipette is ready for use (Fig.6).

TIP EJECTION

To eliminate the risk of cross-contamination, the Finn pipette BioControl has a specially designed tip ejector lever. Eject tips by pressing down the lever (Fig. 3). If you are left-handed, just rotate the tip ejector lever to the opposite side of the handle (Fig. 4) and press the lever with your left thumb.

SELECTING PIPETTING MODES

Both PIPETTE and STEPPER pipetting modes are possible with the Finn pipette BioControl. PIPETTE, the normal aspirate and dispense technique, can be used with or without blow-out. In stepper mode, the pipette repeatedly aspirates and dispenses the selected volume.

To change modes, press the MODE key (Fig. 5). The words PIPETTE or STEPPER will blink on the screen. To confirm your choice, press SET. If you do not press SET within 20 seconds, the pipette will return to the previous setting. You cannot change modes when the trigger is pressed.

PIPETTE

Set the volume after selecting and confirming PIPETTE mode, (Fig. 7). Press the + or - key to change the volume on the display. If you hold down the + or - key, the figures will scroll on the screen. Like the mode text, the volume figures will blink until you confirm your selection with the SET key. Once the volume is set, the pipette is ready for use.



Fig.7. Display in PIPETTE mode

STEPPER

After selecting and confirming STEPPER mode, (Fig. 8), set the volume using the + and - keys. The unit volume figures will blink until you confirm your choice by pressing SET. Once the unit volume is set, the number of repetitions will start to blink on the display. The first option is the maximum number of repetitions. Use the + and - keys to choose the appropriate volume. Press SET to confirm your choice.

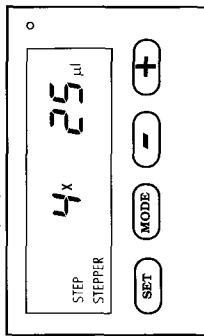


Fig.8. Display in STEPPER mode

The maximum number of repetitions depends on the size of the tip cone module and the adjusted unit volume. If the maximum number of repetitions is needed, press SET when MAX STEP appears on screen (Fig. 9).

PISTON SPEED

Before pipetting, select the piston speed by adjusting the switch on top of the pipette, (Fig. 4). The three pipetting speeds are fast, normal and slow. Fast pipetting is for aspirating and dispensing liquid solutions with a viscosity and surface tension similar to water. Slower speeds are required for liquids with a high viscosity, low surface tension or a tendency to foam.

PIPETTING TECHNIQUES

Figures 10-12:

- A = Ready position
- B = First stop
- C = Second stop

