

<b>Bauer Core Standard protocol</b>		
Title: Dispensing into Plates with the Biotek $\mu$ Fill		
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## 1. Purpose

This protocol provides instructions for using the Biotek  $\mu$ Fill to dispense liquid into microtiter plates (96 or 384 well plates, including deep well plates). The protocol is designed as a reference and is not a substitute for training. Users must complete a training session before using any Bauer Core instrumentation.

## 2. Materials

- 2.1. Microtiter plate (96 or 384 well, deep well plates may be used).
- 2.2. Liquid to dispense.

## 3. Instrumentation

- 3.1. Biotek  $\mu$ Fill plate washer.

## 4. Reagent preparation

- 4.1. ddH<sub>2</sub>O
- 4.2. 70% Isopropanol

## 5. Procedure

### 5.1. Setup

- 5.1.1. Optional: the manifold, syringe head, and tubing may all be autoclaved
  - 5.1.1.1. remove the manifold by loosening the thumb screws.
  - 5.1.1.2. remove the two mounting screws on the syringe head and pull back to remove the syringe head.
  - 5.1.1.3. Loosen the setscrew and remove the piston.
  - 5.1.1.4. **The piston and syringe head must be autoclaved separately.**
  - 5.1.1.5. Autoclave all parts at 121°C and 115 kPa for 30 minutes.
  - 5.1.1.6. Reassemble and reattach the syringe head, tubing and manifold.
- 5.1.2. Ensure that the plate carrier is positioned properly on the rails.
- 5.1.3. To fill standard-height plates, place the tall plate adapter onto the carrier. This adapter must be removed when filling deep-well plates
- 5.1.4. Place the priming plate onto the plate carrier or plate adapter. the smaller section should be towards the front of the instrument.
- 5.1.5. Connect the input tubing to the bottle containing the liquid to be dispensed.
- 5.1.6. Prime to fill the lines with liquid.

- 5.1.6.1. From the *Main Menu*, select *Run* then *Prime*.
- 5.1.6.2. Use the *Options* key to toggle between priming programs.  
“New\_Buffer\_Prime” or “P\_Day\_Rinse” are good programs.  
See section 5.2 for instructions on writing programs.
- 5.1.6.3. Hit “Enter” to select the program, then “Start to begin the prime.

## 5.2. Writing a Program.

- 5.2.1. The easiest way to write a program is to copy an existing program  
The copied program can then be edited as needed.
  - 5.2.1.2. From the Main Menu hit Define.
  - 5.2.1.3. Choose Copy.
  - 5.2.1.4. Choose the type of program you wish to copy:
    - Prime programs fill the lines with buffer.
    - Dispense programs dispense liquid.
    - Soak is a timed delay built into a linked series of dispenses.
    - Link programs combine other dispense and/or soak programs.  
The linked programs then run sequentially.
  - 5.2.1.5. Name your program.
    - Use the Options key to toggle between letters.
    - Use the keypad for numbers and the softkeys for punctuation.
    - Hit enter when finished.
  - 5.2.1.6. Hit Yes when asked “ok to copy?”
- 5.2.2. Edit the copied program.
  - 5.2.2.1. From the Main Menu hit Define.
  - 5.2.2.2. Choose Edit.
  - 5.2.2.3. Choose the type of program you wish to edit.
  - 5.2.3.3. Select the program to edit.
    - Use the Options key to toggle and Enter to select.
  - 5.2.3.3. Use the Enter key to proceed from screen to screen.  
Change parameters as desired on each screen.

## 5.3 Running a Program

- 5.3.1. From the Main Menu press Run to start a program.
  - 5.1.6.1. Select the type of program to run: prime, dispense, or link.
  - 5.1.6.2. Select the program to run
    - Press the Options key to toggle between programs.
    - See section 5.2 for instructions on writing programs
  - 5.1.6.3. Press Enter to select the program then Start to begin the program

## 5.4. Clean up.

- 5.3.1. Prime with 70% isopropanol, water, and then air to clean out the lines.
- 5.3.2. Wipe up any spills and remove plates from the area.