3 OPERATION

3.1 OPERATING SUMMARY

1. Fill the reservoirs with the desired solvents and degas. (See Section 3.2.1).

2. Turn on the Series 400 by pressing the top of the On/Off rocker switch located on the lower right rear panel of the instrument. (See Section 2.1).

3. Put the solvent and sparging lines into the reservoirs, ensure the helium is connected, and the plungers representing the desired reservoirs are set correctly for sparging.
   - If you have the Solvent Tray, see Section 4.3.
   - If you have the SEC-4, see Section 4.4 and Section 6.

4. Set the solvent pressure limitations [P-Lim]. (See Section 2.2.5).

5. Prime the Series 400 by connecting the priming syringe to the FLUSH PORT and "RUN" Method 0. (See Section 3.2.3).

6. Generate and store a method. (See Section 3.3).

7. Ensure that your injector, column, and other plumbing is connected as well as the electrical connections for automated operations. (See Section 4).

8. Press [Run], to start the pump and equilibrate the system. (See Section 2.2.3).

9. When "Ready" is displayed in Zone 3, press [Run] again to start the method.

10. Press [Stop] at any time to stop the pump.
3.2 START-UP

After the Series 400 has been installed according to the installation instructions in Section 4, you are now ready to "start-up" your system.

3.2.1 Prepare the Solvents

1. Choose the solvents to carry out your analysis. HPLC grade solvents are recommended to ensure purity for accurate separations. As an additional precaution, filter the solvents through a 0.5 micron porosity medium (such as the aqueous solvent filtration kit (0089-0839) or the organic solvent filtration kit (0089-0841)).

**NOTE**

Even though there are system in-line filters, minute particulates can accumulate over time to increase the system pressure and effectively change the results.

2. Degas the solvents to remove any dissolved gas which can result in spikes or baseline drift. Degassing may be accomplished by any of the following methods:

- Subjecting the liquid to a source of vacuum

**CAUTION**

Even a simple aspirator can cause the collapse of an ordinary flask; use only heavy-walled flasks.

- Placing the container of solvent in an ultrasonic bath, or inserting an ultrasonic probe in the solvent.

- Bubbling a fine stream of helium through the solvent. Helium has the unique ability to dissolve other gases out of the solutions in which they are entrained. This can be done on both the solvent tray and SEC-4.

3.2.2 Start-up Diagnostics

The Series 400 contains built-in diagnostics to troubleshoot the instrument and to pinpoint problems, each time you turn on the instrument. The tests last for approximately 10-15 seconds and end with the default method displayed (Method 0).

Upon power-up the following seven tests are automatically performed:

1. Lamp Test
2. PROM Test
3. RAM Test
4. PIA Test
5. PTM Clock Test
6. PTM Motor Step Counter Test
7. EPCI Test
REMEMBER

Pressing [Run] aborts the start-up diagnostics.

Pressing [+] aborts the test in progress and starts the next test.

The prompt lights rapidly over the Time, Flow, %A, %B, and %C as each test is successfully completed. If a failure is detected, an error code and a "part" code are displayed in the Pressure and Time fields respectively. These codes will remain and further testing is halted until you either press [Run] or Forward Arrow [+]. Of course you could turn the Series 400 off, then power on again to determine if the error reoccurs.

IMPORTANT

Before pressing any key, write the error code on a piece of paper to help service identify the problem.

If the error is reproducible, then contact your PERKIN-ELMER service engineer and provide as much information as possible.
3.2.2.1 Lamp Test

The Lamp Test illuminates the entire display for a period of approximately eight seconds and allows you to view the display for a possible light failure. A completely lighted display is shown in Figure 3-1.

![Figure 3-1 — Display During a Lamp Test](image)

3.2.2.2 PROM Test

The PROM Test performs a checksum on each of the PROMS. The prompt bar is displayed over "Time" during the test with the prompt bar displayed over "Flow" if a failure occurs. Upon failure, the calculated checksum and the stored checksum values are displayed in the %A, %B and the %C, %D fields respectively.

**IF AN ERROR SHOULD OCCUR, WRITE DOWN THE DISPLAYED VALUES TO AID THE SERVICE ENGINEER TO PINPOINT THE PROBLEM.**

3.2.2.3 RAM Test

The RAM Test is a series of three tests signified by displaying the prompt bar over %A, %B, and %C when each test is performed. There is a fourth test which checks the EEPROM and is signified by displaying the prompt bar over "Time."
3.2.2.4 PIA Test

The PIA Test is signified by displaying the prompt bar over "Flow."

IF AN ERROR SHOULD OCCUR, WRITE DOWN THE DISPLAYED VALUES TO AID THE SERVICE ENGINEER TO PINPOINT THE PROBLEM.

3.2.2.5 PTM Clock

The PTM Clock Test is signified by displaying the prompt bar over "%A."

IF AN ERROR SHOULD OCCUR, WRITE DOWN THE DISPLAYED VALUES TO AID THE SERVICE ENGINEER TO PINPOINT THE PROBLEM.

3.2.2.6 PTM Motor Step Counter Test

The PTM Motor Step Counter Test is signified by displaying the prompt bar over "%B."

IF AN ERROR SHOULD OCCUR, WRITE DOWN THE DISPLAYED VALUES TO AID THE SERVICE ENGINEER TO PINPOINT THE PROBLEM.

3.2.2.7 EPCI Test

The EPCI Test is signified by displaying the prompt bar over "%C."

IF AN ERROR SHOULD OCCUR, WRITE DOWN THE DISPLAYED VALUES TO AID THE SERVICE ENGINEER TO PINPOINT THE PROBLEM.

3.2.3 Purge the Reservoirs

At this point your reservoirs should be filled with the desired solvent, the solvent should be degassed and the start-up diagnostics completed. Before running an analysis, purge the reservoirs to ensure that the solvent in the reservoir completely fills the internal tubing up to the solvent proportioning valve. The Series 400 contains a default method (Method 0) for this purpose. The following procedure outlines how to purge the reservoirs in systems with either a solvent tray or a SEC-4:

1. Connect the supplied 30 mL Luer-Lock syringe to the FLUSH PORT on the front of the Series 400.
2. Turn the PRIME/PURGE VALVE, above the FLUSH PORT, approximately one turn counterclockwise to open the valve.
3. Press the [Recall] key, then press 0 followed by pressing [Enter] to make Method 0 your current method, if it is not your current method.
4. Press [Run] to start the pump.
   • When "Ready" is displayed press [Run] again and collect approximately 8-10 mL of Reservoir A.
   • Press the Forward Arrow key [+] to purge the next reservoir (Reservoir B).

NOTE
When the syringe is full, press [Stop] to stop the pump and empty the syringe in the solvent waste container.

5. Press [Run] to restart the pump (noting where the 100 is displayed). Press [Run] again to start the method, and press the Forward Arrow [+ ] to move the displayed 100 until it is under your desired reservoir.

6. After all reservoirs are purged, press [Stop] to stop the pump, and turn the PRIME/PURGE VALVE clockwise until closed (snug).

Caution

Do not overtighten because you may deform the valve seat, thereby causing premature leaking.

3.3 THE METHOD

To operate the Series 400, you must create a set of instructions called a "method."

The following functions are applicable when you are generating or modifying a method:

- After typing a value, press [Enter] to retain the entry.

NOTE

You must type a value in a blank field. Pressing [Enter] will not display a value if none are displayed. If you do not want to use a particular reservoir, then type "0," and press [Enter].

- Typing a flow of "0" will stop the pump during that Step for the amount of time you entered for the step.

- If you type a value and wish to change it, before you press [Enter], press [CE ] and type the new value.

- Press the Backspace Arrow to review values in a displayed Step.

The following sequence will illustrate how to program (generate) a method:

3.3.1 Generating a New Method

1. Press the [Prog ] key then press the [CE ] key to clear the display and start you at the beginning, (Step 0) of a new method. "Step 0" is generally used to equilibrate the system prior to running gradients. (A prompt bar is displayed over "Time," the parameter where you make your first entry. Also, the instrument status "Program" is displayed and "Store" is blinking.)
2. Type the required "Time" for "Step 0," then press the [Enter] key. The acceptable range is 0.1 to 99.9 minutes. This example displays a "Time" of five minutes.

NOTE

If "Step 0" is not required, then type a "0" for the "Time" and press the [Enter] key or press the Forward Arrow to advance to the first Step of the method.

Once you press [Enter], the prompt bar is displayed above "Flow," Zeros are displayed in the remaining fields with 100 displayed below %D.

3. Type the required "Flow" rate for "Step 0," then press the [Enter] key. The acceptable range is 0.01 to 10 mL/minute (check the specifications for the acceptable intervals). This example shows a requested flow of 2.0 mL/minute.

4. Type the required percentage of Reservoir A, then press the [Enter] key. If you do not wish to use this reservoir, press "0," followed by pressing the [Enter] key. (Note that Reservoir D is automatically proportioned to keep the sum of Reservoirs A+B+C+D equal to 100%). This example shows a %A of 25.
5. Type the required percentage of Reservoir B, then press the [Enter] key. If you do not desire an entry, then press "0" followed by pressing [Enter]. This example shows a %B of 0.

<table>
<thead>
<tr>
<th>Pressure</th>
<th>Method</th>
<th>Step</th>
<th>Time</th>
<th>Flow</th>
<th>%A</th>
<th>%B</th>
<th>%C</th>
<th>%D</th>
</tr>
</thead>
<tbody>
<tr>
<td>00</td>
<td>0</td>
<td>5.</td>
<td>2</td>
<td>25</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>75</td>
</tr>
</tbody>
</table>

6. Type the required percentage of Reservoir C, then press the [Enter] key. The complement percentage to total 100% is automatically entered and displayed under Reservoir D. This example shows a %C of 0.

<table>
<thead>
<tr>
<th>Pressure</th>
<th>Method</th>
<th>Step</th>
<th>Time</th>
<th>Flow</th>
<th>%A</th>
<th>%B</th>
<th>%C</th>
<th>%D</th>
</tr>
</thead>
<tbody>
<tr>
<td>00</td>
<td>0</td>
<td>5.</td>
<td>2</td>
<td>25</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>75</td>
</tr>
</tbody>
</table>

7. The timed events are displayed to the right of %D. "TE 1" indicates that the timed event is inactive. Press [Toggle] to display "TE 1 On" (active), this puts the prompt bar over "Time" and sets the "Time" display in Zone 1 to "0.0." Type the desired time for the timed event to switch on, then press [Enter]. A Time of 0 causes the timed event to switch on at the beginning of the Step. After pressing [Enter], "On" is displayed to remind you that "TE 1" is active during this Step. The range is 0 to 99.9 minutes.

This example shows a timed event to switch on at 2 minutes.

**NOTE**

This time can not be larger than the Step time.
8. "TE 2" is the next timed event displayed. Follow the same procedure as in "TE 1." "TE 2" is not used in this example.

**REMEMBER**

Press [Toggle] to display the timed event options (on or off) and press [Enter] to accept your options and move to the next parameter. If you do not want a timed event in that Step, then simply press [Enter] when "TE 1" or "TE 2" is displayed.

9. The next entry is the "Time" for "Step 1." In this example, the entries in Step 1 are identical to Step 0.

**NOTE**

The Step number is now 1.

<table>
<thead>
<tr>
<th>Pressure</th>
<th>Method</th>
<th>Step</th>
<th>Time</th>
<th>Flow</th>
<th>%A</th>
<th>%B</th>
<th>%C</th>
<th>%D</th>
</tr>
</thead>
<tbody>
<tr>
<td>00</td>
<td></td>
<td>1</td>
<td>5.2</td>
<td>2</td>
<td>25</td>
<td>0</td>
<td>0</td>
<td>75</td>
</tr>
</tbody>
</table>

10. The timed events are displayed to the right of %D. Follow the same procedure as previously mentioned.

<table>
<thead>
<tr>
<th>Pressure</th>
<th>Method</th>
<th>Step</th>
<th>Time</th>
<th>Flow</th>
<th>%A</th>
<th>%B</th>
<th>%C</th>
<th>%D</th>
<th>TE 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>00</td>
<td></td>
<td>1</td>
<td>5.2</td>
<td>2</td>
<td>25</td>
<td>0</td>
<td>0</td>
<td>75</td>
<td></td>
</tr>
</tbody>
</table>

**REMEMBER**

Press [Toggle] to display the timed event options (on or off) and press [Enter] to accept your options and move to the next parameter.
11. "Step 2" will illustrate the display for a linear gradient. When the prompt bar is displayed over "Time," type the desired time for "Step 2." This example shows a time of ten minutes.

<table>
<thead>
<tr>
<th>Pressure</th>
<th>Method</th>
<th>Step</th>
<th>Time</th>
<th>Flow</th>
<th>%A</th>
<th>%B</th>
<th>%C</th>
<th>%D</th>
<th>Lin Grad</th>
</tr>
</thead>
<tbody>
<tr>
<td>00</td>
<td></td>
<td>2</td>
<td>10</td>
<td>00</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

12. Type the required Flow rate for "Step 2," then press the [Enter] key. The acceptable range is 0.01 to 10 mL/minute (check the Specifications for the acceptable intervals).

This example shows an example of 2.0 mL/minutes.

<table>
<thead>
<tr>
<th>Pressure</th>
<th>Method</th>
<th>Step</th>
<th>Time</th>
<th>Flow</th>
<th>%A</th>
<th>%B</th>
<th>%C</th>
<th>%D</th>
<th>Lin Grad</th>
</tr>
</thead>
<tbody>
<tr>
<td>00</td>
<td></td>
<td>2</td>
<td>10</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

13. Type the required percentage of Reservoir A, then press the [Enter] key. The example shows that Reservoir A will now be 75%. (Note that Reservoir D is automatically proportioned to keep the sum of Reservoirs A+B+C+D equal to 100%.)

This example shows that Reservoir A now has a value of 75%.

<table>
<thead>
<tr>
<th>Pressure</th>
<th>Method</th>
<th>Step</th>
<th>Time</th>
<th>Flow</th>
<th>%A</th>
<th>%B</th>
<th>%C</th>
<th>%D</th>
<th>Lin Grad</th>
</tr>
</thead>
<tbody>
<tr>
<td>00</td>
<td></td>
<td>2</td>
<td>10</td>
<td>2</td>
<td>75</td>
<td>0</td>
<td>0</td>
<td>25</td>
<td></td>
</tr>
</tbody>
</table>
14. Type the required percentage of Reservoir B, then press the [Enter] key. If no percentage is required, press type "0" followed by pressing [Enter] or simply press the [Enter] key.

<table>
<thead>
<tr>
<th>Pressure</th>
<th>Method</th>
<th>Step</th>
<th>Time</th>
<th>Flow</th>
<th>%A</th>
<th>%B</th>
<th>%C</th>
<th>%D</th>
<th>Lin Grad</th>
</tr>
</thead>
<tbody>
<tr>
<td>00</td>
<td></td>
<td>2</td>
<td>10</td>
<td>2</td>
<td>75</td>
<td>0</td>
<td>0</td>
<td>25</td>
<td></td>
</tr>
</tbody>
</table>

15. Type the required percentage of Reservoir C, then press the [Enter] key. The compliment percentage to total 100% is automatically entered and displayed under Reservoir D. The example shows that Reservoir C is 0% and Reservoir D is automatically proportioned to keep the sum of this Step at 100%.

<table>
<thead>
<tr>
<th>Pressure</th>
<th>Method</th>
<th>Step</th>
<th>Time</th>
<th>Flow</th>
<th>%A</th>
<th>%B</th>
<th>%C</th>
<th>%D</th>
<th>Lin Grad</th>
</tr>
</thead>
<tbody>
<tr>
<td>00</td>
<td></td>
<td>2</td>
<td>10.0</td>
<td>2</td>
<td>75</td>
<td>0</td>
<td>0</td>
<td>25</td>
<td></td>
</tr>
</tbody>
</table>

16. The linear gradient prompt (Lin Grad) is displayed at the right of Reservoir D. Since we want a linear gradient, press the [Enter] key to program a linear change from "Step 1" to "Step 2."

If a Step change is desired, press [Toggle] when "Lin Grad" is displayed to display "Step Grad." Press [Enter] to program a step change from "Step 1" to "Step 2."

<table>
<thead>
<tr>
<th>Pressure</th>
<th>Method</th>
<th>Step</th>
<th>Time</th>
<th>Flow</th>
<th>%A</th>
<th>%B</th>
<th>%C</th>
<th>%D</th>
<th>Lin Grad</th>
</tr>
</thead>
<tbody>
<tr>
<td>00</td>
<td></td>
<td>2</td>
<td>10.0</td>
<td>2</td>
<td>75</td>
<td>0</td>
<td>0</td>
<td>25</td>
<td></td>
</tr>
</tbody>
</table>
17. The next prompt displayed is "TE 1." Timed events are not necessary in this example, therefore press [Enter] to ignore "TE 1" and press [Enter] to ignore "TE 2" when displayed.

<table>
<thead>
<tr>
<th>Pressure</th>
<th>Method Step</th>
<th>Time</th>
<th>Flow</th>
<th>%A</th>
<th>%B</th>
<th>%C</th>
<th>%D</th>
<th>Lin Grad</th>
</tr>
</thead>
<tbody>
<tr>
<td>00</td>
<td>2</td>
<td>10</td>
<td>2</td>
<td>75</td>
<td>0</td>
<td>0</td>
<td>25</td>
<td>TE 1</td>
</tr>
</tbody>
</table>

18. Continue the method generation procedure for the remaining Steps in your method. When your method is complete and you want to exit the method generation, type a Time of "0" followed by pressing [Enter] or exit by pressing [Prog].

This example shows that after "Step 2" is complete, typing a "0" for the "Time" in "Step 3" retains all the values and exits from Method Generation. ("Program" displayed in Zone 3 extinguishes, leaving "Store" blinking.) It is advisable to "Store" your newly created method. (See Section 3.3.2, Storing a Method)

<table>
<thead>
<tr>
<th>Pressure</th>
<th>Method Step</th>
<th>Time</th>
<th>Flow</th>
<th>%A</th>
<th>%B</th>
<th>%C</th>
<th>%D</th>
</tr>
</thead>
<tbody>
<tr>
<td>00</td>
<td>3</td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

If you have the RS-232 Accessory in the Series 400 and the LCI-100 (see Section 4.5.1) you can print the method on the GP-100 or the LCI-100. Figure 3-2 shows a printout of the method on a GP-100. Note that the method number has not been assigned indicating, the method has not been stored.

<table>
<thead>
<tr>
<th>METHOD</th>
<th>STEP</th>
<th>TIME</th>
<th>FLOW</th>
<th>%A</th>
<th>%B</th>
<th>%C</th>
<th>%D</th>
<th>TE1</th>
<th>TE2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
<td>5.0</td>
<td>2.00</td>
<td>25</td>
<td>0</td>
<td>0</td>
<td>75</td>
<td>2.0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>5.0</td>
<td>2.00</td>
<td>25</td>
<td>0</td>
<td>0</td>
<td>75</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>10.0</td>
<td>2.00</td>
<td>75</td>
<td>0</td>
<td>0</td>
<td>25</td>
<td></td>
<td>L</td>
</tr>
</tbody>
</table>

PMIN  PMAX  TOTAL TIME
3.3.2 STORING A METHOD

After generating a new method, it is advisable to store the method in the Series 400 memory for future use. The Series 400 is capable of storing nine user generated methods protected by battery backup when fully charged.

The following sequence illustrates how to "Store" the newly created method from the previous method generate sequence:

1. Ensure that the pump is not running by observing that "Run" is not displayed in Zone 3. A running method cannot be stored. ("Store" is blinking when the method is not stored).

2. Press [Store] in Zone 4. This causes a blank display under "Method" in Zone 1 and "Store" stops blinking in Zone 3.

<table>
<thead>
<tr>
<th>Pressure</th>
<th>Method</th>
<th>Step</th>
<th>Time</th>
<th>Flow</th>
<th>%A</th>
<th>%B</th>
<th>%C</th>
<th>%D</th>
</tr>
</thead>
<tbody>
<tr>
<td>00</td>
<td>0</td>
<td>5.0</td>
<td>2</td>
<td>25</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>75</td>
</tr>
</tbody>
</table>

3. Type a desired method number (from 1 to 9), which is displayed under method in Zone 1, then press [Enter].

- If the prompt "Program Exists" is displayed in Zone 3, then type a different value, and press [Enter].

- If you want to overwrite a stored method, press [Enter] when the "Program Exists" prompt is displayed.

Another way to store a current method is to press [Store] then [Enter] and the Series 400 will assign the current method the next available number.

- If the prompt "Program Exists" is displayed in Zone 3, then the memory is full and pressing [Enter] will overwrite an existing method to store the current method. Of course you can press [Store] to exit this routine, then "Recall" and review the stored methods to determine which method to overwrite.

4. When "Store" is displayed in Zone 3 pressing [Store] will always exit that routine.
3.3.3 RECALLING A METHOD FROM MEMORY

The following procedure illustrates how to RECALL a stored method from memory and make it the current method.

1. Press [Recall] located in Zone 4 of the Control Module, observe "Recall" displayed in Zone 3, and a blank display in Zone 1, except for the displayed pressure value.

<table>
<thead>
<tr>
<th>Pressure</th>
<th>Method</th>
<th>Step</th>
<th>Time</th>
<th>Flow</th>
<th>%A</th>
<th>%B</th>
<th>%C</th>
<th>%D</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>00</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. Type the number of the desired method and note that the number also is displayed under "Method" in Zone 1.

3. Press [Enter], if the prompt "No Method Exists" is displayed in Zone 3, then press [CE], type a different number and press [Enter].

4. The display in Zone 3 will be blank when the stored method becomes the current method, with the first line of the recalled method displayed in Zone 1.
3.3.4 MODIFYING A METHOD

The following sequence illustrates how to change parameters in a method. You can only modify a current method. Follow the RECALL procedures in Section 3.3.3 if you must modify a stored method.

The modify sequence in the following example assumes that the desired method has been recalled and is the current method.

The following functions are applicable in modify:

- The Forward Arrow [>] increases the method Steps one at a time.
- Pressing [Enter] retains the displayed value and moves one parameter to the right throughout the entire method.
- The Backspace Arrow [<] moves one parameter to the left until the prompt bar is over "Time," then pressing the Backspace Arrow decreases the "Steps" by one, thereby thus displaying the "Step" number.

Pressing [Prog] at any time will retain all the values and exit from modify.

To Modify a Method:

1. Press [Prog]. (The prompt bar is displayed over "Time," "Program" is displayed and "Stored" is blinking in Zone 3.)

NOTE

Do not press [CE] to clear the present value displayed under "Time," this will start you in generate.

2. Type a new "Time" and press [Enter] or press [Enter] to retain the displayed value. (The prompt bar moves one parameter to the right, over "Flow.")

The time is changed to 1 minute.

```
Pressure Method Step Time Flow %A %B %C %D
00 0 1. 2 25 0 0 75
```
3-16

3. Type a new "Flow" rate and press [Enter], or press [Enter] to retain the displayed flow rate.

<table>
<thead>
<tr>
<th>Pressure</th>
<th>Method Step</th>
<th>Time</th>
<th>Flow</th>
<th>%A</th>
<th>%B</th>
<th>%C</th>
<th>%D</th>
</tr>
</thead>
<tbody>
<tr>
<td>00</td>
<td>0</td>
<td>1.0</td>
<td>3.25</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>75</td>
</tr>
</tbody>
</table>

The flow rate is changed to 3.0 ML/min.

4. Type a new %A and press [Enter], or press [Enter] to retain the displayed %A. This example shows %A retained.

5. Type a new %B and press [Enter], or press [Enter] to retain the displayed %B. This example shows %B retained.

6. Type a new %C and press [Enter], or press [Enter] to retain the displayed %C. This example shows %C retained.

7. Type a new %D and press [Enter], or press [Enter] to retain the displayed %D. This example shows %D retained.

8. Press [Enter] to retain the displayed timed event or press [Toggle] to enter a timed event. (The prompt bar is over "Time" and the time displayed is "2.0").

<table>
<thead>
<tr>
<th>Pressure</th>
<th>Method Step</th>
<th>Time</th>
<th>Flow</th>
<th>%A</th>
<th>%B</th>
<th>%C</th>
<th>%D</th>
</tr>
</thead>
<tbody>
<tr>
<td>00</td>
<td>0</td>
<td>2.0</td>
<td>3.25</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>75</td>
</tr>
</tbody>
</table>

When all the necessary changes are completed, press [Prog] to retain all changes and exit from method modification. "Store" will remain blinking to remind you that the method is not stored.
3.3.5 PRINTING A METHOD

The current method can be printed on either an LCI-100 Integrator (with the RS-232 option) or a GP-100 Printer provided the optional Series 400 RS-232 communications card is installed. Refer to Accessories in Section 4.5 for the installation procedure.

Pressing [Store] then [Prog] prints the current method on the GP-100 printer. Figure 3-3 is an example of a current method printed on a GP-100 Printer.

```
METHOD STEF TIME FLOW %A %B %C %D TE1 TE2
0  5.0  2.00  25  0  0  75  2.0
1  5.0  2.00  25  0  0  75
2 10.0  2.00  75  0  0  25 L
```

**FMIN** **FMAX** **TOTAL TIME**

0 6006 20.6

Figure 3-3 — Method Printed On A GP-100

Pressing [Store] then [.] prints the current method on the LCI-100 Integrator.

3.4 SHUTDOWN PROCEDURES

**SHORT-TERM SHUTDOWN (OVERNIGHT AND WEEKENDS)**

Observe all the precautions regarding hazardous solvents and/or those which may form harmful deposits or byproducts (see Section 1.5).

1. Remove harmful mobile phases.
   - Remove buffer salts from the system with water (evaporation leaves salt crystals which may form harmful deposits).

**WARNING**

Any damage caused by precipitating buffer salts in capillary tubing or any damage resulting from this condition are specifically excluded from warranty.

- Remove chloroform or solvents which can decompose to form hydrochloric acid from the system.