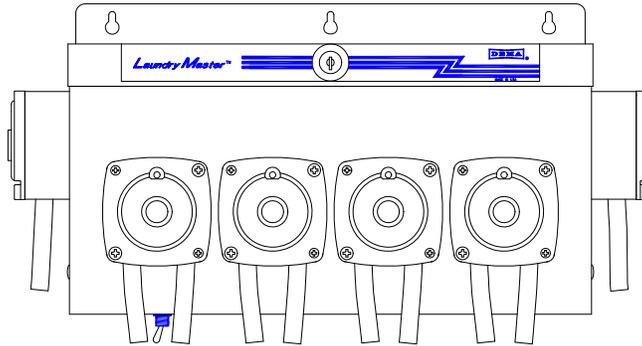


DEMA 844 Laundry Master Laundry Chemical Dispensing



Overview

The DEMA® Laundry Master is a digital laundry dispenser designed to dispense chemicals when signals are received from commercial laundry machines. The Laundry Master is programmed via the front panel display and programming keys found on the main control board.

Warnings



Please read these instructions carefully before proceeding to install/operate the unit

Keep these instructions in a safe place for future reference.

DEMA does not accept any responsibility for damage or harm caused by not (strictly) observing the safety requirements and instructions in this manual. DEMA cannot be liable for damage, injury, or consequential loss resulting from installation or servicing by unqualified personnel. DEMA will also not be liable for damage, injury or consequential loss resulting from incorrect operation or modification of the equipment.



Installation of DEMA products must meet all applicable electrical codes and regulations established by national, city, county, parish, provincial or other agencies. It is possible that electrical codes and regulations require that a certified electrical contractor or engineer perform the electrical installation. For questions, contact a certified electrician.



All installations must conform to local plumbing codes and use approved backflow prevention devices. A pressure indicating tee is to be installed with existing faucets according to local plumbing codes in the state of Wisconsin and any other state that requires the use of a pressure indicating tee.



ALWAYS WEAR PROTECTIVE CLOTHING AND EYEWEAR WHEN WORKING WITH CHEMICAL PRODUCTS.

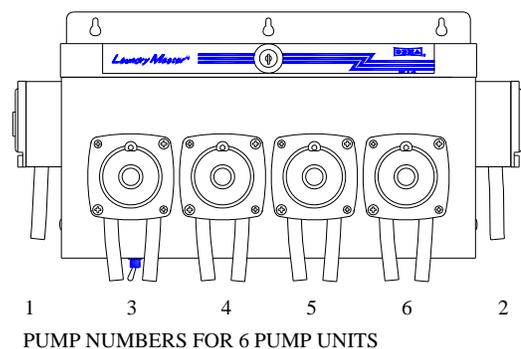
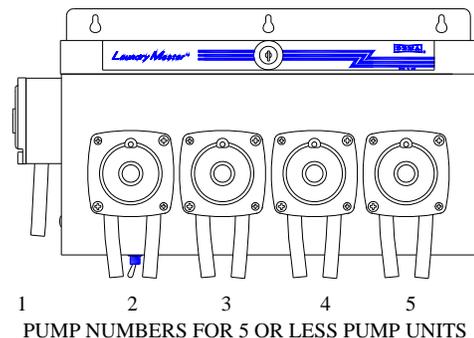
Laundry Room Survey

A complete survey of the laundry room or sight installation should be completed in advance of starting the Laundry Master installation.

1. Locate a 120VAC electrical wall outlet for easy main power installation.
 - a. If hardwiring the main power to the laundry machine, locate power connection points on the laundry machine. The main power to the Laundry Master must either be 120V or 230V 50/60Hz (+10%/-15% for voltage is acceptable).
2. Select location to mount the stainless steel Laundry Master enclosure on a wall that will allow access to the chemical product containers and the chemical product feeds points on the laundry machine. The Laundry Master should be kept away from moisture releasing machinery and from water being splashed on the unit.
3. Mount the Laundry Master on a wall by use of appropriate screws and wall anchors.
4. Select a location to mount the Signal Transfer Unit (STU). The STU should be mounted close to, or on, or possibly inside the laundry machine. The STU will need to be wired to the various trigger signal sources on the machine. The trigger wires that are coming out of the STU are 12 inches in length and are used to receive the trigger signals. The STU can be mounted by use of the self-adhesive Velcro that is included in the hook up kit. Keep in mind that the STU is wired to the IQ-80 via the supplied communication cable.
5. If using the USM, select a location to mount the FSM/DSM where the laundry machine operator can easily access the buttons on the front of the FSM/DSM module. Again it can be mounted with the self-adhesive Velcro that is included in the hook up kit. The FSM/DSM can be connected to the IQ-80 or the STU by use of the supplied communication cable. See the FSM or DSM instruction manual for more information.
6. If using the DEMA 951 flush manifold or any other flush manifold, select a location that will allow all the electrical (power for solenoid valve and pressure switch) and tubing connections. It should be noted that the flush output on the IQ-81 is a 24VDC signal. The solenoid coil for the flush valve will need to match this output signal.

844 Pump Configurations

Before going any further, it is helpful to understand the arrangement of the pumps or valves on the 844. The 2 illustrations below describe the possible configurations. The illustrations show the pump numbers. These numbers match the numerical identifications listed on the IQ-80 and the STU. If the unit has 5 or less pumps/valves mounted on the case than the pumps will be in numerical order from left to right. If the unit has 6 pumps/valves then the 2 pumps/valves on the sides or 1 (left side) and 2 (right side), 3-6 are on the front side from left to right. Again examine the illustrations below.



Installation/Outline Check List

- Read instruction sheets
- Survey installation site and determine the setup and operation mode.
- Perform main power hookup as described under the Electrical Installation below
- Perform STU-II installation as described in the Stu-II instruction sheet (I-1036)
- Install 951 Flush manifold if necessary
- Install pump tubing and connections as described below
- Prime pumps as described in priming pumps section.
- Program 844 Laundry Master as described in programming section
- Test system to assure proper operation

Electrical Installation

All installations must be in accordance with city, county, state or provincial electrical codes and should be performed by a certified electrician. For questions, please contact local licensed electrical contractor.

Before the electrical installation, it is important to understand the various modes that the 844 Laundry Master has to offer. The following describe 3 main modes of operations; however there are sub-options that can be setup within these 3 modes. See setup section for additional information.

Formula Select

Mode: This is where the unit can be programmed with up to 9 different formulas. Each formula is driven to operate by individual trigger sources that are generated by the laundry machine.

Sequence Mode: This is where the unit can be programmed to count a single event from the laundry machine. A good example of this is using the drain valve on the laundry machine as a trigger source. The IQ-80 will count the drain valve operations and will operate pumps based on these counts. Up to 9 formulas can be programmed in this mode as well.

Relay Mode: There is only one programming variable to set on the IQ-80. The flush can be set to run with the pump with the "flush with" DIP switch in the on position. Additional flush time after each pump operation can also be programmed. Otherwise the IQ-80 is not programmed, but instead the laundry machine is programmed to provide various formulas. The IQ-80 acts like a relay board and will only operate pumps for the length of time that the STU receives a trigger signal from the laundry machine.

One sub-option to become familiar with before wiring the STU is Auto Formula Select. This feature allows the formula to be selected based on a trigger signal that is received from the laundry machine. It is necessary to have a separate programmable input from the laundry machine to correctly use the Auto Formula Select. For more information, see Auto Formula Select in the Setup section of this instruction manual.

1. **CAUTION: All electrical power must be turned off to the laundry machine and any other circuit that is to be used for this installation. Lockout and tag procedures must be observed when installing this device. Never open the DEMA Laundry Master while power is applied. Signals may be active from laundry machine, even with the DEMA Laundry Master power turned off. Use appropriately rated insulated wiring, electrical fixtures and other materials that meet all applicable electrical and building codes.**
2. See step 2a for wall plug main power, see step 2b for hardwiring main power.
 - a. Plug the main power cord for the 844 into 120VAC wall outlet for main power.

5. Press the RIGHT button to exit pump priming. The system will automatically exit priming after 30 seconds of no activity (no button pushes).

Programming

1. Press RIGHT button and hold for 3 or more seconds. The LANGUAGE screen will appear.
2. A different language can be selected by pressing the ENTER (center) button. A cursor will appear. Use the UP and DOWN buttons to move to a different language. Press Enter when the desired language is displayed.
3. Press the DOWN button to move to the ENTER CODE screen. Press ENTER to enter the pass code. Use the LEFT and RIGHT buttons to move cursor to the four different character positions. Use the UP and DOWN buttons to adjust the numeric value for each character position. When correct passcode is displayed press ENTER to gain access to programming.
 - a. Note: When entering programming on a new system out of the box or a system that has had the factory defaults reset. No passcode will be required to enter programming. When setting up a new system, it is recommended that a passcode be setup in programming.

Important - The remaining programming instructions below have 3 different sections based on a specific operation mode. The sections (operation modes) are:

- Formula Select – Pump and formula programming. Formula select remote (USM) or Auto Formula Select can be used to select formulas for usage.
- Sequence – using the drain or fill valves on the laundry machine to interface and trigger pump operations. Uses formula/pump programming as Formula Select mode.
- Relay – No pump and formula programming, pumps run with active trigger signals from the laundry machine. Requires programmable laundry machine.

Formula Select Mode Programming

1. Enter programming - see Enter Programming section.
2. Move cursor to CONFIGURATION and press ENTER.
 - a. Operation Mode (FORMULA SELECT, SEQUENCE and RELAY, one of these will be displayed) – This should be set to FORMULA SELECT.
 - i. Press ENTER to select operation mode.
 - ii. USE UP and DOWN buttons to scroll thru the 3 different operation modes.
 - iii. Press ENTER when Formula Select is displayed.
 - b. Pumps – how many pumps are being used? This can be set from 1 thru 8.
 - i. Press ENTER and adjust the number of pumps using the UP and DOWN buttons.
 - ii. Press ENTER when the desired amount of pumps is displayed.
 - c. AFS – Auto Formula Select On or Off? If 8 set to OFF, the number 8 input (AFS) on the STU-II can be used to trigger the number 8 pump. Additionally, any pump including number 8 can be programmed to trigger with another input from the STU-II, thus allowing AFS to be used with an 8 pump system.
 - i. Press ENTER and adjust to on or off.
 - ii. Press ENTER when desired selection is displayed.
 - d. Flushes – Choices are 0, 1 and 2. How many flushes?
 - i. Press ENTER and adjust to 0, 1 or 2 using the UP and DOWN buttons.
 - ii. Press ENTER when the desired selection is displayed.
 - e. Bleach Pump – Choices are “-“ which is "no bleach pump selected" or 1 thru PUMPS setting. Which pump number is the bleach pump?

- i. Press ENTER and select the pump number to be the bleach pump or no bleach pump (--) using the UP and DOWN buttons.
 - ii. Press ENTER when desired selection is displayed.
 - f. Press LEFT button to back out to main menu list.
- 3. Formula Lockout – Each formula can be programmed to have a lockout time. Press ENTER to modify.
 - a. Use UP and DOWN buttons to select desired formula.
 - b. Press ENTER to save the desired setting at each formula.
 - c. Press LEFT button to back out to main menu list.
- 4. Program Formula – Program formula pump run and delay times. Press ENTER to modify.
 - a. Cursor is next to the FORM
 - b. Press ENTER button to change the formula or Press the RIGHT button to move to levels and delay, LEFT will move back towards level 1.
 - c. Move cursor to each pump and press ENTER to modify the pump run and delay times in seconds.
 - d. Note: Observe the top line on the display for the formula number and level 1, 2 or delay as times are entered to assure desired programming. Also only the pumps that have been configured will be displayed for programming.
 - e. Press LEFT button to back out to main menu list.
- 5. Assign Triggers – Allows the system to assign a specific trigger signal to a specific pump. Press ENTER to modify.
 - a. MOVE cursor to the pump and press ENTER to modify the trigger signal.
 - b. Note – It is possible to program 2 or all pumps to one trigger signal. However, the system will only operate 3 pumps simultaneously. Remaining pumps would run as the first pumps in discontinue operation.
 - c. Press LEFT button to back out to main menu list.
- 6. Load Count Pump – Select the load count pump for each Formula (default is Pump 1). Press ENTER to modify.
 - a. Use UP and DOWN buttons to move through formulas.
 - b. Press ENTER at desired formula.
 - c. Use UP and DOWN to move through the pump choices.
 - d. Press ENTER to save the desired load count pump.
 - e. Press LEFT button to back out to main menu list.
- 7. Flush Time – Program the amount of post flush time. Will apply to all formulas and pump runs. Press ENTER to modify.
 - a. Use RIGHT and LEFT and UP and DOWN buttons to adjust the time.
 - b. Press ENTER when desired time is displayed.
 - c. If one flush is being used, the flush time programming is complete. The following steps are required if 2 flushes are being used.
 - d. If 2 flushes are being used move the cursor from flush 1 to flush 2 and repeat the process directly above.
 - e. If 2 flushes are being used move the cursor to the bottom of the screen to assign flush 1 or 2 to each pump.
 - f. Press ENTER and move to each pump and adjust to a 1 or 2 using the UP and DOWN buttons.
 - g. Press ENTER when the desired setting is displayed.
 - h. Press LEFT button to back out to main menu list.
- 8. Test Formulas – Any programmed pump value at any formula can be tested for accuracy. This function will run the pump for the programmed amount so that the actual pump output can be measured using a measuring cup or graduated cylinder. Press ENTER to test a pump /formula.
 - a. Use the UP and DOWN buttons to move cursor from Formula to Pump.

- b. Press ENTER to enter a selection of Formula or Pump.
 - c. Use the UP and DOWN buttons to change the Formula/Pump
 - i. Note that Pump will scroll through the pump numbers and RT 1 & 2. The RT 1 & 2 are level 1 & 2.
 - d. When the desired Formula and Pump number is displayed move the cursor next to Start (bottom line of display).
 - e. Press ENTER to start the pump. Allow the pump to run its programmed time, collecting the output of the pump in a measuring cup or graduated cylinder.
 - f. Press LEFT button to back out to main menu list.
9. Enter New Code – Program a unique 4 digit numeric pass code that allows access to programming. Press ENTER to program a passcode.
 - a. Press ENTER again to program a new pass code.
 - b. Use the LEFT and RIGHT buttons to move cursor to each of the 4 characters.
 - c. Use the UP and DOWN buttons to scroll through the numbers (0-9) for each character.
 - d. When desired pass code is displayed, make a written note of the pass code for reference.
 - e. When desired pass code is displayed, press ENTER to save. The new pass code will now need to be entered when accessing programming.
 10. Set Defaults – This will restore the programming and setup to factory defaults. This is recommended when the laundry dispenser is being refurbished or when the control board is being replaced. Press ENTER to set factory defaults and follow prompts on the display. At any time the LEFT arrow button can be used to back out.
 - a. Press LEFT button to back out to main menu list.
 11. Press LEFT button to exit programming.

Sequence (Drain) Mode Programming

1. Enter programming - see Enter Programming section.
2. Move cursor to CONFIGURATION and press ENTER.
 - a. Operation Mode (FORMULA SELECT, SEQUENCE and RELAY, one of these will be displayed) – This should be set to SEQUENCE.
 - i. Press ENTER to select operation mode.
 - ii. USE UP and DOWN buttons to scroll thru the 3 different operation modes.
 - iii. Press ENTER when Sequence is displayed.
 - b. Pumps – how many pumps are being used? This can be set from 1 thru 8.
 - i. Press ENTER and adjust the number of pumps using the UP and DOWN buttons.
 - ii. Press ENTER when the desired amount of pumps is displayed.
 - c. AFS – Auto Formula Select On or Off? If 8 set to OFF, the number 8 input (AFS) on the STU-II can be used to trigger the number 8 pump. Additionally, any pump including number 8 can be programmed to trigger with another input from the STU-II, thus allowing AFS to be used with an 8 pump system.
 - i. Press ENTER and adjust to on or off.
 - ii. Press ENTER when desired selection is displayed.
 - d. Flushes – Choices are 0, 1 and 2. How many flushes?
 - i. Press ENTER and adjust to 0, 1 or 2 using the UP and DOWN buttons.
 - ii. Press ENTER when the desired selection is displayed.
 - e. Bleach Pump – Choices are "--" which is "no bleach pump selected" or 1 thru PUMPS setting. Which pump number is the bleach pump?
 - i. Press ENTER and select the pump number to be the bleach pump or no bleach pump (--)
using the UP and DOWN buttons.

- ii. Press ENTER when desired selection is displayed.
 - f. Press LEFT button to back out to main menu list.
- 3. Formula Lockout – Each formula can be programmed to have a lockout time. Press ENTER to modify.
 - a. Use UP and DOWN buttons to select desired formula.
 - b. Press ENTER to save the desired setting at each formula.
 - c. Press LEFT button to back out to main menu list.
- 4. Program Formula – Program formula pump run and delay times. Press ENTER to modify.
 - a. Cursor is next to the FORM
 - b. Press ENTER button to change the formula or Press the RIGHT button to move to levels and delay, LEFT will move back towards level 1.
 - c. Move cursor to each pump and press ENTER to modify the pump run and delay times in seconds.
 - d. Note: Observe the top line on the display for the formula number and level 1, 2 or delay as times are entered to assure desired programming. Also only the pumps that have been configured will be displayed for programming.
 - e. Press LEFT button to back out to main menu list.
- 5. Invert Trigger – will allow the system to work with a normally closed drain valve on the laundry machine. Press ENTER to modify.
 - a. Use UP and DOWN buttons to select ‘not inverted” or “inverted.”
 - i. Not Inverted – normally open drain valve, this is the most common
 - ii. Inverted – normally closed drain valve
 - b. Press ENTER when the desired setting is displayed.
 - c. Press the LEFT button to back out to main menu list.
- 6. Enter Sequence – each formula can be programmed to coordinate pump operations with drain or fill valve operations on the laundry machine. Press ENTER to modify.
 - a. Use UP and DOWN buttons to move cursor to Formula.
 - b. Press ENTER to change the formula.
 - c. Use UP and Down buttons to move through formula numbers.
 - d. Press ENTER when desired formula is displayed.
 - e. Use the DOWN button to move cursor to Sequence number. The sequence number is the drain or fill event on the laundry machine.
 - f. Press ENTER button to change the sequence number.
 - g. Use UP and DOWN buttons to scroll through the sequence numbers.
 - h. When desired sequence number is displayed press ENTER.
 - i. Use the DOWN button to move the cursor to the pump selection row. This is the row of numbers 1-6, F at the bottom. This will program pumps to be triggered on for the given sequence number displayed above.
 - j. Press ENTER to add or deselect pumps.
 - k. Use the RIGHT and LEFT buttons to move the cursor over the various pumps.
 - l. Use the UP button to add a pump. Use the DOWN button to deselect a pump.
 - i. An asterisks (*) will appear for selected pumps.
 - ii. A dash (-) will appear for deselected pumps.
 - iii. The “F” at the right end of the row of numbers represents the final event on the laundry machine. This should be selected for the final event (drain or fill valve) operation on the laundry machine.
 - m. Repeat the above steps f thru l t complete a formula.
 - n. Repeat all steps for each formula.
 - o. Press LEFT button to back out to the main menu list.
- 7. Load Count Pump – Select the load count pump for each Formula (default is Pump 1). Press ENTER to modify.

- a. Use UP and DOWN buttons to move through formulas.
 - b. Press ENTER at desired formula.
 - c. Use UP and DOWN to move through the pump choices.
 - d. Press ENTER to save the desired load count pump.
 - e. Press LEFT button to back out to main menu list.
8. Flush Time – Program the amount of post flush time. Will apply to all formulas and pump runs. Press ENTER to modify.
- a. Use RIGHT and LEFT and UP and DOWN buttons to adjust the time.
 - b. Press ENTER when desired time is displayed.
 - c. If one flush is being used, the flush time programming is complete. The following steps are required if 2 flushes are being used.
 - d. If 2 flushes are being used move the cursor from flush 1 to flush 2 and repeat the process directly above.
 - e. If 2 flushes are being used move the cursor to the bottom of the screen to assign flush 1 or 2 to each pump.
 - f. Press ENTER and move to each pump and adjust to a 1 or 2 using the UP and DOWN buttons.
 - g. Press ENTER when the desired setting is displayed.
 - h. Press LEFT button to back out to main menu list.
9. Test Formulas – Any programmed pump value at any formula can be tested for accuracy. This function will run the pump for the programmed amount so that the actual pump output can be measured using a measuring cup or graduated cylinder. Press ENTER to test a pump /formula.
- a. Use the UP and DOWN buttons to move cursor from Formula to Pump.
 - b. Press ENTER to enter a selection of Formula or Pump.
 - c. Use the UP and DOWN buttons to change the Formula/Pump
 - i. Note that Pump will scroll through the pump numbers and RT 1 & 2. The RT 1 & 2 is level 1 & 2.
 - d. When the desired Formula and Pump number is displayed move the cursor next to Start (bottom line of display).
 - e. Press ENTER to start the pump. Allow the pump to run its programmed time, collecting the output of the pump in a measuring cup or graduated cylinder.
 - f. Press LEFT button to back out to main menu list.
10. Enter New Code – Program a unique 4 digit numeric pass code that allows access to programming. Press ENTER to program a passcode.
- a. Press ENTER again to program a new pass code.
 - b. Use the LEFT and RIGHT buttons to move cursor to each of the 4 characters.
 - c. Use the UP and DOWN buttons to scroll through the numbers (0-9) for each character.
 - d. When desired pass code is displayed, make a written note of the pass code for reference.
 - e. When desired pass code is displayed, press ENTER to save. The new pass code will now need to be entered when accessing programming.
11. Set Defaults – This will restore the programming and setup to factory defaults. This is recommended when the laundry dispenser is being refurbished or when the control board is being replaced. Press ENTER to set factory defaults and follow prompts on the display. At any time the LEFT arrow button can be used to back out.
- a. Press LEFT button to back out to main menu list.
12. Press LEFT button to exit programming.

Relay Mode Programming

1. Enter programming - see Enter Programming section.
2. Move cursor to CONFIGURATION and press ENTER.
 - a. Operation Mode (FORMULA SELECT, SEQUENCE and RELAY, one of these will be displayed) – This should be set to RELAY.
 - i. Press ENTER to select operation mode.
 - ii. USE UP and DOWN buttons to scroll thru the 3 different operation modes.
 - iii. Press ENTER when Relay is displayed.
 - b. Pumps – how many pumps are being used? This can be set from 1 thru 8.
 - i. Press ENTER and adjust the number of pumps using the UP and DOWN buttons.
 - ii. Press ENTER when the desired amount of pumps is displayed.
 - c. AFS – Auto Formula Select On or Off? If 8 set to OFF, the number 8 input (AFS) on the STU-II can be used to trigger the number 8 pump. Additionally, any pump including number 8 can be programmed to trigger with another input from the STU-II, thus allowing AFS to be used with an 8 pump system.
 - i. Press ENTER and adjust to on or off.
 - ii. Press ENTER when desired selection is displayed.
 - d. Flushes – Choices are 0, 1 and 2. How many flushes?
 - i. Press ENTER and adjust to 0, 1 or 2 using the UP and DOWN buttons.
 - ii. Press ENTER when the desired selection is displayed.
 - e. Bleach Pump – Choices are “-“ which is "no bleach pump selected" or 1 thru PUMPS setting. Which pump number is the bleach pump?
 - i. Press ENTER and select the pump number to be the bleach pump or no bleach pump (--) using the UP and DOWN buttons.
 - ii. Press ENTER when desired selection is displayed.
 - f. Press LEFT button to back out to main menu list.
3. Formula Lockout – Each formula can be programmed to have a lockout time. Press ENTER to modify.
 - a. Use UP and DOWN buttons to select desired formula.
 - b. Press ENTER to save the desired setting at each formula.
 - c. Press LEFT button to back out to main menu list.
4. Assign Triggers – Allows the system to assign a specific trigger signal to a specific pump. Press ENTER to modify.
 - a. MOVE cursor to the pump and press ENTER to modify the trigger signal.
 - b. Note – It is possible to program 2 or all pumps to one trigger signal. However, the system will only operate 3 pumps simultaneously. Remaining pumps would run as the first pumps in discontinue operation.
 - c. Press LEFT button to back out to main menu list.
5. Flush Time – Program the amount of post flush time. Will apply to all formulas and pump runs. Press ENTER to modify.
 - a. Use RIGHT and LEFT and UP and DOWN buttons to adjust the time.
 - b. Press ENTER when desired time is displayed.
 - c. If one flush is being used, the flush time programming is complete. The following steps are required if 2 flushes are being used.
 - d. If 2 flushes are being used move the cursor from flush 1 to flush 2 and repeat the process directly above.
 - e. If 2 flushes are being used move the cursor to the bottom of the screen to assign flush 1 or 2 to each pump.
 - f. Press ENTER and move to each pump and adjust to a 1 or 2 using the UP and DOWN buttons.

- g. Press ENTER when the desired setting is displayed.
 - h. Press LEFT button to back out to main menu list.
6. Enter New Code – Program a unique 4 digit numeric pass code that allows access to programming. Press ENTER to program a passcode.
 - a. Press ENTER again to program a new pass code.
 - b. Use the LEFT and RIGHT buttons to move cursor to each of the 4 characters.
 - c. Use the UP and DOWN buttons to scroll through the numbers (0-9) for each character.
 - d. When desired pass code is displayed, make a written note of the pass code for reference.
 - e. When desired pass code is displayed, press ENTER to save. The new pass code will now need to be entered when accessing programming.
7. Set Defaults – This will restore the programming and setup to factory defaults. This is recommended when the laundry dispenser is being refurbished or when the control board is being replaced. Press ENTER to set factory defaults and follow prompts on the display. At any time the LEFT arrow button can be used to back out.
 - a. Press LEFT button to back out to main menu list.
8. Press LEFT button to exit programming.

844 Laundry Master Operation

- Formula Selection
 - Manual formula selection can be performed at the USM or the control board. The USM is recommended for manual formula selection.
 - Auto Formula Selection – is driven by the laundry machine. See STU – II instructions for the appropriate wiring and setup.
- Bleach Defeat can be activated at the USM. This requires that a bleach pump be selected in the programming of the system. Bleach defeat is not available in relay mode.
- Load Counts are displayed on the main control board (IQ-81) and which includes the load counts for each formula and the total load counts for all formulas.
- If any problems occur with the 844 the power switch at the bottom should be turned off and the main power should be disconnected if possible.