

IQ-80 OPL Laundry Control Board

By DEMA®

This instruction sheet covers programming and setup procedures for the DEMA® IQ-80 control board used on DEMA Laundry Master products 842, 844, 845, and 846. **These instructions are specific to DEMA® IQ-80 software package V2.56.** If the unit you are programming has any other software version number listed on the processor chip, contact a DEMA representative to assist you in receiving a set of instructions that are specific to that software package to be programmed.

Programming is specific to the mode in which the Laundry Master will be used. The Laundry Master can be setup to run in the following modes:

Formula Select

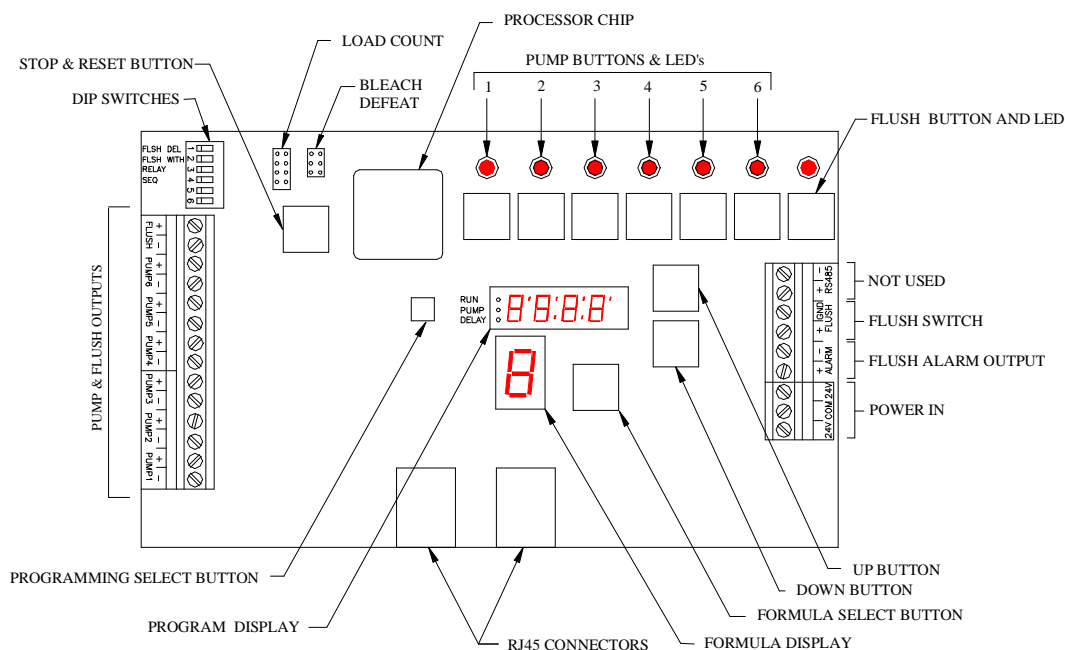
Mode:

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.



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Push Button, Switch and Jumper Definitions

See the IQ-80 control board illustration to locate the features.

DIP Switches are named as they are on the IQ-80 control board:

Flush Manifold Applications

FLSH DEL If this switch is in the “on” position, it will activate a 5-second delay time for a flush alarm. This feature would be used in conjunction with an audible alarm signal when there is a flush error. However, the display on the IQ-80 will flash “Err” when a flush error occurs.

Flush Manifold Applications

FLSH WITH If this switch is in the “on” position, it will run the flush output during any pump operation. The flush output will remain active for any additional time it has been programmed to run. When in the “off” position, the flush will not run while the pump is operating. However, the flush will run any programmed time at the end of the pump run time.

Note: Flush programmed time is the time that the flush output will be active at the conclusion of an active (running) pump. Example: A flush time is programmed to run 15 seconds. After a pump run time has elapsed, the flush will then operate for 15 seconds.

Relay Mode Applications

RELAY When this switch is in the “on” position, the IQ-80 board will work as a relay board. This means that the pumps will only run for the length of time that a signal is received at the STU. The laundry machine provides the formulas for each wash cycle.

Note: A programmed flush time can be set in for relay mode. This will operate the flush output after a pump has run. To operate the flush output during the pump operation the “flush with” DIP switch must in the on position.

Limited Trigger Signal Applications –possibly picking up trigger signals from a drain valve.

SEQ When this switch is in the “on” position the IQ-80 will run its programmed formulas based on a series of event counts (e.g. laundry machine drain closings). See Sequence Mode description at the beginning of electrical installation.

Jumpers are named as they are on the IQ-80 control board:

Load Count Feature

LDCNT There are 4 pair of jumper pins labeled 3, 4, 5, and 6. These numbers represent pumps. One of these pumps can be selected as a load count pump. The load count pump will count loads for each of the formulas. That means that each formula will have its own load count based on the number of operations of the selected load count pump.

Bleach Defeat Feature

BLDEF There are 3 pair of jumper pins labeled 2, 3, and 4. These numbers represent pumps. One of these pumps can be selected as a bleach pump. The bleach pump can be defeated in any formula for a single wash cycle by pressing the “bleach defeat” button on the FSM or DSM. The bleach defeat function will need to be activated at the FSM or DSM every time it is to be used.

Note: The load count pump and the bleach defeat pump should not be the same pump.

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Buttons are named as they are on the IQ-80 control board:

STOP This button will stop any pumps that are running. It will also reset the unit to the starting point.

PROG SELECT This button will take the IQ-80 into the various program modes for pump run times, delay times and event counts (sequence mode).

Change This button will change the formula. (Formula Select)

UP and DOWN These buttons are used in programming mode to advance or decrease run and delay times and other programming parameters.

P1-P6 & FL These buttons operate pumps for priming and can also be used to program times while in program mode.

Auto Formula Select

This allows the formulas to be selected based on a trigger signal that is received from the laundry machine. The following list outlines the setup of this feature:

- The 8th trigger input on the STU is used for this purpose (see table in the electrical installation section of Laundry Master Instruction Manual).
- A trigger source that can be programmed at the laundry machine will be required.
- The timing of this trigger source is what determines which formula is selected by the IQ-80.
- The table below lists the times for each formula. For example, if a wash cycle is programmed into the laundry machine and will use formula 2 on the IQ-80, one of the first events should be a trigger signal sent to the 8th input on the STU for 3 seconds. This will set the Laundry Master to run formula 2.

| Formula | Trigger Signal Time (from laundry machine) |
|---------|--|
| 1 | 1 sec |
| 2 | 3 sec |
| 3 | 5 sec |
| 4 | 7 sec |
| 5 | 9 sec |
| 6 | 11 sec |
| 7 | 13 sec |
| 8 | 15 sec |
| 9 | 17 sec |

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Formula Programming

All programming is done using the IQ-80 board. The FSM and DSM are only for operational procedures and they do not program the IQ-80 control board.

Clear the Memory - It is a good practice to clear the memory of the IQ-80 board before programming. Following these steps will clear the memory:

1. Power the Laundry Master down by use of the power toggle switch located on the bottom or side of the enclosure.
2. With the 844/IQ-80 powered down, press and hold the “down” and “formula” buttons on the IQ-80.
3. Power the 844/IQ-80 back up.
4. Release the “down” and “formula” buttons.
5. The formula display should read “0” momentarily and then change to show one of the nine formula numbers.
6. Press and release the “stop” button.
7. Go into programming and check a few pump run times and a lockout time. They all should read “0”.
8. If for some reason there are values other than “0”, the repeat this procedure again.

Note: Clearing the memory will result in the loss of any stored programming. All values will be reset to zero.

Programming Formulas

1. Turn the power on to the Laundry Master.
2. The displays should be illuminated.
3. Select formula to be programmed using the “formula select” button. The “formula” display will indicate the formula number.
4. The pump run programming can be accessed, by pressing the “program select” button once.
5. The middle “pump” LED dot on far-left side of “program” display should be illuminated. Additionally, the LED above a “pump button” should also be illuminated.
6. If the pump (or the flush) LED that is illuminated is not the desired pump, another pump (or the flush) can be selected by pressing its pump button. When doing so, the new pump LED should be illuminated.
Note: While in relay mode the flush time can be programmed.
7. A run time can be programmed for a pump or the flush by using one of the following:
 - Use the “up” and “down” buttons. Single button pushes will increase or decrease the time by 1 second. If either button is held for about 4-5 seconds it will begin a rapid scroll either “up” or “down”.
 - The next method would be to push and hold the pump button (5 seconds) until the pump begins to operate. Once the pump begins to operate the button can be released. Simply press the pump button again to stop the pump. Since this method would most likely be used to measure output to a desired volume, it will be necessary to prime the pumps. See Priming the Pumps in the Operation section of this instruction manual.
 - The time can be reset to “0” by pushing the “up” and “down” button simultaneously.
8. A delay time can be programmed by pushing the “program select” button (not applicable to the flush output).
9. The “delay” LED dot on far lower left corner of “program display” should be illuminated. Additionally, an LED above a pump button should be illuminated.
10. Select the pump that the delay time will be programmed using the pump buttons.
11. The delay time can be set by using the following:
 - Use the “up” and “down” buttons. Single button pushes will increase or decrease the time by 1 second. If either button is held for about 4-5 seconds it will begin a rapid scroll either “up” or “down”.

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- The time can be reset to “0” by pushing the “up” and “down” button simultaneously.
12. A lockout time can be programmed for each formula by pressing the “program select” button until an “Lxx” appears on the “program display”.
- The two digits indicate a lockout time in minutes.
 - The lockout time can be set from 0-99 minutes by pressing the “up” or “down” arrow buttons. The lockout time can be reset back to zero by pressing the “up” and “down” arrow buttons simultaneously. It should be noted that 0 minutes of lockout actually equals 35 seconds.
 - Each formula has one programmable lockout time and the first pump to trigger and operate activates the lockout clock. This can be any of the six pumps.
 - While the lockout time is active, it simply allows each pump to run only one time and any additional trigger signals that are received will be ignored.
 - The formula display on the IQ-80 will flash while an active lockout clock is counting.
 - **Example:** If the lockout time for formula 1 is set for 30 minutes. 4 pumps are programmed to run. Pump 2 is the first to run. When pump 2 runs the lockout clock will start counting. While the lockout clock is counting the 30 minutes, pump 2 and any other pump that runs during the 30 minutes will only be able to run one time. The formula display will flash during the 30 minutes of lockout.
13. When programming is completed, exit programming by simply pressing the “program select” button until the “run” LED dot in the upper left hand corner of the “program display” is illuminated.
- Note: Keep in mind that it is possible to program all the pump run times and then program all the delay times. This can be done, by simply selecting pumps and formulas while in a programming mode and setting the pump run times. The same can be done for the delay times as well. The IQ-80 will remember the times that have been programmed when programming is exited. Also note that the IQ-80 will automatically leave programming if it is left in a program mode without any activity for 2 minutes. Activity can be defined as button pushes.*

Sequence Programming

When unit is in sequence mode, additional programming is required. Programming of formulas as described in the previous section is required for proper operation while in sequence mode. The following describes the programming of the “event counts”, which will determine when pumps will operate while running a specific formula.

1. Before proceeding the DIP switch labeled “SEQ” on the IQ-80 board will need to be switched in the “on” position and the “stop/reset” button on the IQ-80 should be pressed to reset the system into sequence mode.
2. Enter the Sequence Programming by pressing the “program select” button until the middle (pump) and lower (delay) LED dots on left side of “program” display are both illuminated.
3. The “program display” should read “E01” or any other number up to 25 could be next to the “E”. The “E” signifies event counts. The event count is what the IQ-80 is measuring to determine when to dispense a specific product. The event can be any action that sends a trigger signal that can be sent to the STU (e.g. drain valve). It should be noted that the IQ-80 will count a trigger signal as an event only if there is at least 10 seconds of no trigger signal prior to the intended event trigger signal.
4. By using the “up” and “down” buttons the event counts can be scrolled. There are a maximum of 25 events that can be programmed.
5. When a desired event is displayed simply press the desired pump button to activate that pump at the displayed event count. A maximum of 3 pumps can be programmed to activate at a single event.
6. A final event will need to be established to signify the IQ-80 that the laundry machine wash cycle is complete and that the IQ-80 can reset the event count. The final event count can be set, by pressing the “up” and “down” buttons simultaneously while the desired final event count is displayed. If the final event count needs to be changed simply toggle to the new desired event count and press the “up” and “down”

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buttons simultaneously. The new final event count will be set and the old final event count will be removed. When a final event count is set the IQ-80 will not count additional events. This means that the next time the IQ-80 receives a trigger signal from the STU it will be counted as the first event.

Note: The final event (reset) may also be determined by a specific trigger signal such as a door switch, received to the 3rd input on the STU, which operates as a reset while in sequences mode. See STU wiring section for details. This simply resets the event count. Using both reset systems is optional; however, it will be necessary to use one of the reset options.

7. This procedure can be repeated to program all 9 formulas.
8. When programming is completed, exit programming by simply pressing the “program select” button until the “run” LED dot in the top right hand corner of the “program display” is illuminated.

Relay Mode

Relay mode does not require any programming unless a flush manifold is used. If a flush manifold is being used then the “flush with” and the flush programming can be used. The system will operate the flush just as it does in Formula Select Mode. See Formula Programming section for details on programming the flush.

Return Policy

No merchandise may be returned for credit without DEMA Engineering Company’s written permission. Return Merchandise Authorization (RMA) number required in advance of return.

Warranty

DEMA products are warranted against defective material and workmanship under normal use and service for one year from the date of manufacture. This limited warranty does not apply to any products, which have a normal life shorter than one year or failure and damage caused by chemicals, corrosion, improper voltage supply, physical abuse or misapplication. Rubber and synthetic rubber parts such as “O”-rings, diaphragms, squeeze tubing and gaskets are considered expendable and are not covered under warranty. This warranty is extended only to the original buyer of DEMA products. If products are altered or repaired without prior approval of DEMA, this warranty will be void.

Defective units or parts should be returned to the factory with transportation prepaid. If inspection shows them to be defective, they will be repaired or replaced without charge. F.O.B. factory DEMA assumes no liability for damages. Return merchandise authorization number to return units for repair or replacement must be granted in advance of return.