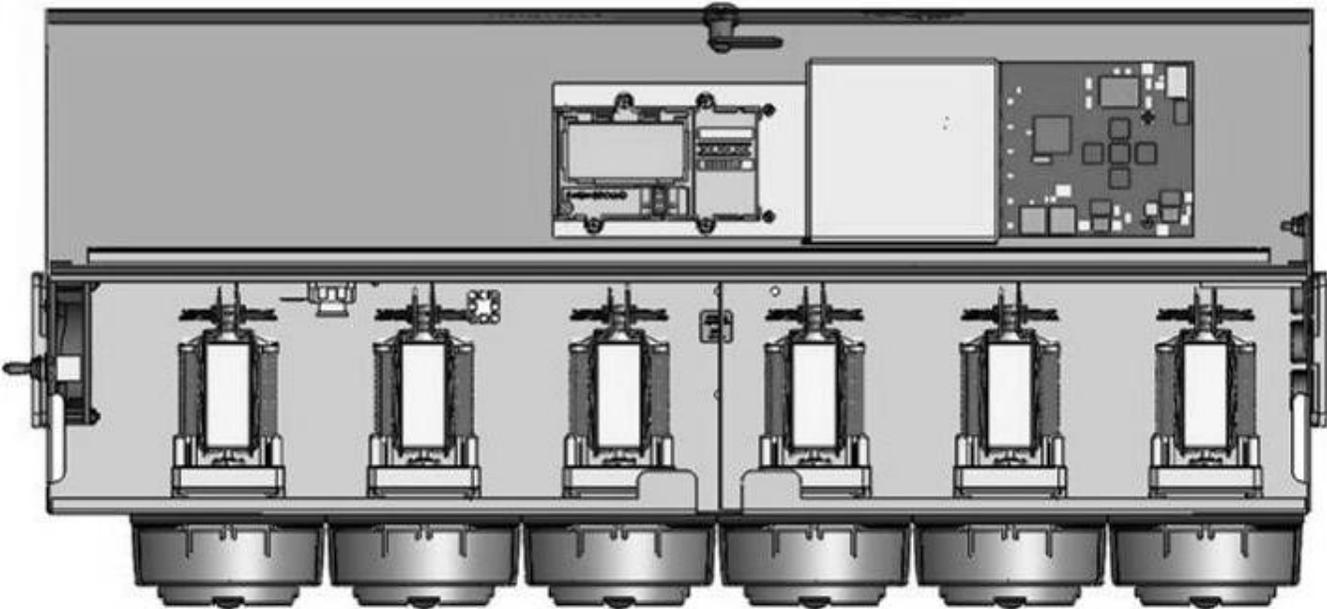
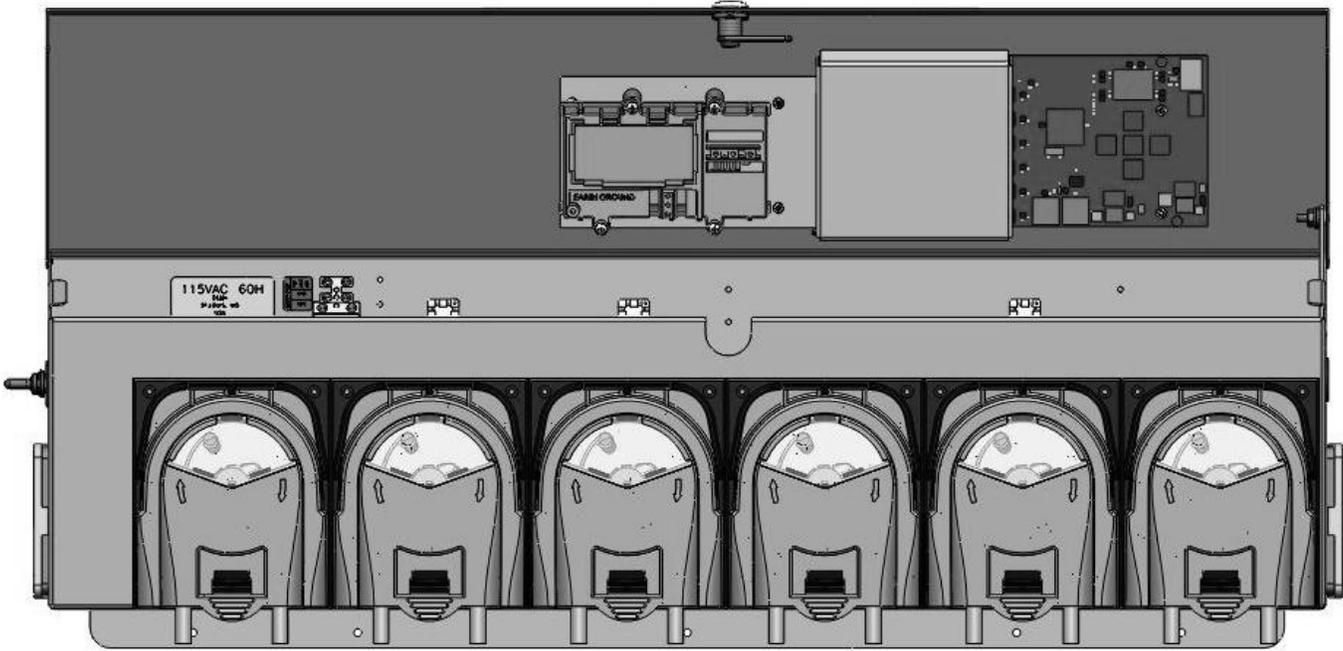


# DEMA™ 846E LAUNDRY MASTER INSTALLATION INSTRUCTIONS



## **Introduction**

The DEMA 846 Laundry Master dispensing system has been designed to accurately deliver chemical product to commercial laundry machines. The 846 uses the proven DEMA C4 peristaltic pumps to deliver the chemical product to the laundry machine pocket. The pumps and main control are mounted in a durable stainless steel enclosure designed to provide easy access to the various components inside.

The various electronic components of the DEMA 846 Laundry Master use a “plug and play” concept to provide easy setup. The heart of the 846 is the IQ-85 AC electronic control board that provides multi wash formula capability. The IQ-85 AC is mounted in the stainless steel enclosure. Along with the IQ-85 AC is the self contained Signal Transfer Unit (STU), which can be mounted at the laundry machine to receive trigger signals. Additionally, an optional handheld can be used to select formulas (USM). Both the STU and the USM are connected to the IQ-85 AC via low voltage communication cable.

**The 846E comes has a 30 formula configuration that requires the EDSM handheld for all programming and setup. See supplement instruction manual for direct usage of the EDSM.**

## **846 Laundry Master Contents**

The DEMA 846 Laundry Master includes the following:

- 846 Dispensing System, which contains the pumps, the power supply, and electronic control board.
- Hook Up Kit, which contains communication cable, Velcro, various strain reliefs, and wire ties.
- Signal Transfer Unit (STU), for receiving trigger signals and sending commands back to the IQ-85.
- Optionally the 846E must use a handheld formula selector. USM formula select handheld for selecting formulas, defeating bleach, and emergency stop remotely. EDSM formula select handheld for selecting formulas, defeating bleach, emergency stop and program/setup.
- Optional kits for tubing and pickup probes can also be provided which comes with 20ft of LDPE tubing per pump, one pickup probe per pump, and wire ties to secure the tubing.

**Before installing the 846 Laundry Master it will be helpful to read through the instructions to become familiar with the system and its options concerning the installation and setup.**

## **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 the power connection points on the laundry machine. The main power to the 846 Laundry Master must either be 120V or 230V 50/60Hz (+10%/-15% for voltage is acceptable). Each unit is set up to run one of these two voltage ratings. It is important to insure that the power available matches the voltage rating that the 846 has been set up to use. The voltage rating of the 846 can be found inside the case near the main power terminals.
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. Mount the Laundry Master on a wall by use of appropriate screws and anchors.
3. 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-85 AC via the supplied communication cable.
4. If using the USM or EDSM, select a location to mount the handheld where the laundry machine operator can easily access the buttons on the front of the USM or EDSM module. Again it can be mounted with the self-adhesive Velcro that is included in the hook up kit. The USM or EDSM can be connected to the IQ-85 AC or the STU by use of the supplied communication cable.

## **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 a local licensed electrical contractor.

Before the electrical installation, it is important to understand the various modes that the 846 Laundry Master has to offer. The following describe the 4 main modes; however there are sub-options that can be set up within these 4 modes. See set up 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-85 AC 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:** This is where the IQ-85 AC is not programmed, but instead the laundry machine is programmed to provide various formulas. The IQ-85 AC 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.

**Auto Formula Select :** One sub-option to become familiar with before wiring the STU is Auto Formula Select. This allows formulas to be selected based on a trigger signal 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 section in this instruction manual.

1. Before going any further, all electrical power must be turned off to the laundry machine and any other circuit that is to be used for this installation. Lock out/Tag out procedures should be observed when installing this device. Never open the Laundry Master unless power has been turned off. Signals may be present from laundry machine, even with the Laundry Master power turned off. Only use electrical code approved insulated wiring and electrical fixtures with this installation.

**Note: It is critical that the 846 voltage rating match the hookup power at the application site. The 846 voltage rating can be found inside the 846 case near the main terminal block. This must be confirmed before going any further.**

Connect the power to the Laundry Master. The power requirement will either be 120VAC or 240VAC 50/60 Hz (+10%/-15% of these voltages is acceptable). Power should be applied to Laundry Master anytime the laundry machine is powered. Some laundry machines have a terminal block setup for power; see schematic or owner’s manual for the specific machine being used. Locate the power terminal block inside the Laundry Master enclosure. Connect “hot” or “live” wire to the terminal labeled “L1”. Connect the “return line” to the terminal block position labeled “L2”. The “earth ground” wire must be connected to the terminal block position labeled “GND”. The power line should be secured by use of proper electrical fitting through access hole in Laundry Master Enclosure. The access hole is sized to accept a ½” conduit fitting. The power line must also be secured properly between the laundry machine or power source and the Laundry Master according to any electrical codes that apply.

2. Connect the flush manifold. If using a flush manifold, the solenoid valve that supplies the manifold must be rated 24VDC wired directly to the IQ-85 AC flush output. When using a flush manifold a flush switch must be wired to the terminals labeled “Flush + and GND” on the IQ-85 AC control board.
3. Wire the STU to the laundry machine. The hookup configuration will depend on which of the operational modes the DEMA 846 Laundry System will be used. The following two tables show the wiring configurations for the input signals to the STU. The first is for normal and relay modes and the second is for sequence mode. Verify the mode that will be used and wire the STU according to the appropriate table below using the leads that are coming out of the left side of the STU. Keep in mind that trigger sources should be at least 70VAC but no higher than 240VAC 50/60Hz.

STU Wiring Configuration				
Trigger Input	Line (signal)	Common	Function of Trigger Input	
			Relay/Normal Mode	Sequence Mode
1	Black	White or Grey	Signal Pump 1	Event Trigger
2	Brown	White or Grey	Signal Pump 2	Event Trigger
3	Red	White or Grey	Signal Pump 3	Reset (optnl), ex. Door switch
4	Orange	White or Grey	Signal Pump 4	Not used
5	Yellow	White or Grey	Signal Pump 5	
6	Green	White or Grey	Signal Pump 6	
7	Blue	White or Grey	Signal Flush (optional)	
8	Purple	White or Grey	Auto Formula Select	

*There are more features for the STU. Please See I1036 for further instruction.*

4. **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 8<sup>th</sup> trigger input on the STU is used for this purpose. 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-85 AC. To determine the amount of signal time for any formula simply calculate as follows: Multiply the formula number by 2 then subtract 1. Example: Formula 7 needs a trigger signal equal to 13 seconds. ( $7 \times 2 = 14$  then  $14 - 1 = 13$ ). A 13 second trigger signal to STU input number 8 (purple and common wires) will change to formula 7.

5. Connect the EDSM, USM and STU modules to the IQ-85 AC by using the RJ45 patch cords that have been supplied. The STU is required in all installations, but the USM is optional. It is possible to connect the USM or EDSM to the STU RJ45 jack instead of connecting to the IQ-85 AC, providing that the STU is connected to the IQ-85 AC. See the following note.

**EDSM Note:** The EDSM is required on 846E systems for programming once programmed the USM, Auto Formula Select, or the EDSM can be used to select formulas during usage.

**USM Note:** The USM module is handheld remote controls that give the operator the ability to select formulas, defeat a bleach operation, or do an emergency stop. It is not necessary to use them, but without the USM the only way to manually select a formula would be to select it at the IQ-85 AC board inside the stainless steel enclosure.

*Note: The patch cord is a communication link between the IQ-85 AC board, the STU and the FSM and can be subjected to electrical interference when not installed properly. When securing the RJ45 patch cord between the On-Premise Laundry Controller and the Laundry Master, avoid sharp edges, electrical motors and relays, additionally do not run parallel to electrical power lines and conduit.*

## **Tubing Connections**

### **ALWAYS WEAR PROTECTIVE CLOTHING AND EYEWEAR WHEN WORKING WITH CHEMICALS**

**PRODUCTS.** An optional installation kit may be ordered with the 846 Laundry Master. The kit includes 20ft of LDPE tubing per pump to connect from the chemical container to the individual pumps, and from the pumps to the machine and 18" pickup tubes designed to accommodate 5 gallon buckets. For naming purposes, the pumps are identified starting with 1 going to 6. Pump 1 is the pump that is furthest left, count up as you see pumps to the right of this position. Included is a sheet of product labels that can be adhered to the unit or another useful location to identify what each pump is supplying.

Measure the length of tubing needed for the suction side from the chemical container to the inlet of pump and cut tubing to proper length. The 18" pickup tubes may be used with 5-gallon buckets of chemical products. Feed the LDPE tubing through the compression nut and sleeve and into the pick-up tube until tubing is about a ¼" from the bottom of pickup tube (tubing should not stick out through the bottom of pickup tube). Tighten the compression nut to secure tubing. Route the tubing to the suction side of the pump and insert into squeeze tube approximately ½". Secure the tubing together by tightening a cable tie around the squeeze tube. Use the same procedure on the outlet of the squeeze tube and route the tubing to the injection feed points of the laundry machine. Cut off all excess tubing and keep tubing away from hot surfaces and sharp edges to prevent damage or leakage.

**At this point the Laundry Master installation is complete.**

## **Operation**

Once the system has been programmed the 846 Laundry Master is ready for operation.

### **Priming the Pumps**

There are two ways to prime a pump. The first is to press the desired pump button on the IQ-85 AC for no more than 5 seconds, and the pump will run for the programmed time or to hold the pump button down past 5 seconds and the pump will continue to run for as long as the pump button is held down. Also, the EDSM has a priming function allowing the pump to be primed remotely.

### **Emergency Stop**

At anytime, the pumps and flush can be stopped by pressing the "stop and reset" button on the IQ-85 AC or by pressing the "stop" button on the USM or EDSM. When pressed, it will also reset the system to a starting point of the formula.

### **Changing Formulas**

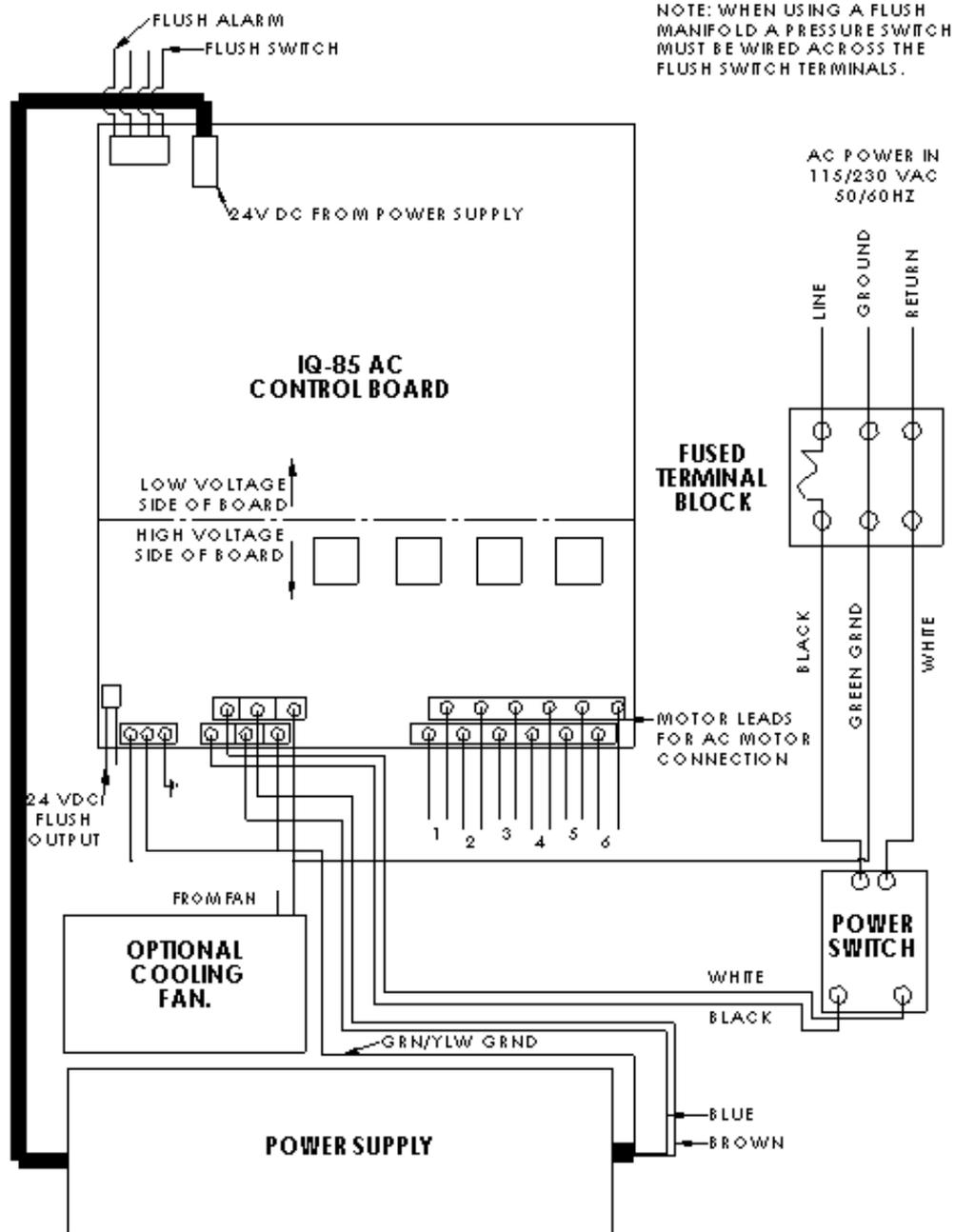
Formulas can manually be changed at the USM/EDSM or the IQ-85 AC. The IQ-85 AC has a formula select button that allows the formulas to be selected. As you press the formula select button it will toggle through the formulas in numeric order wrapping back to 1 after 9. The "formula display" will indicate the formula that is active.

### **Bleach Defeat**

The bleach defeat function can be activated by pressing the "bleach defeat" button on the USM or EDSM. The bleach pump is selected by use of the Bleach Pump menu item on the EDSM. See bleach defeat section of the EDSM instruction manual.

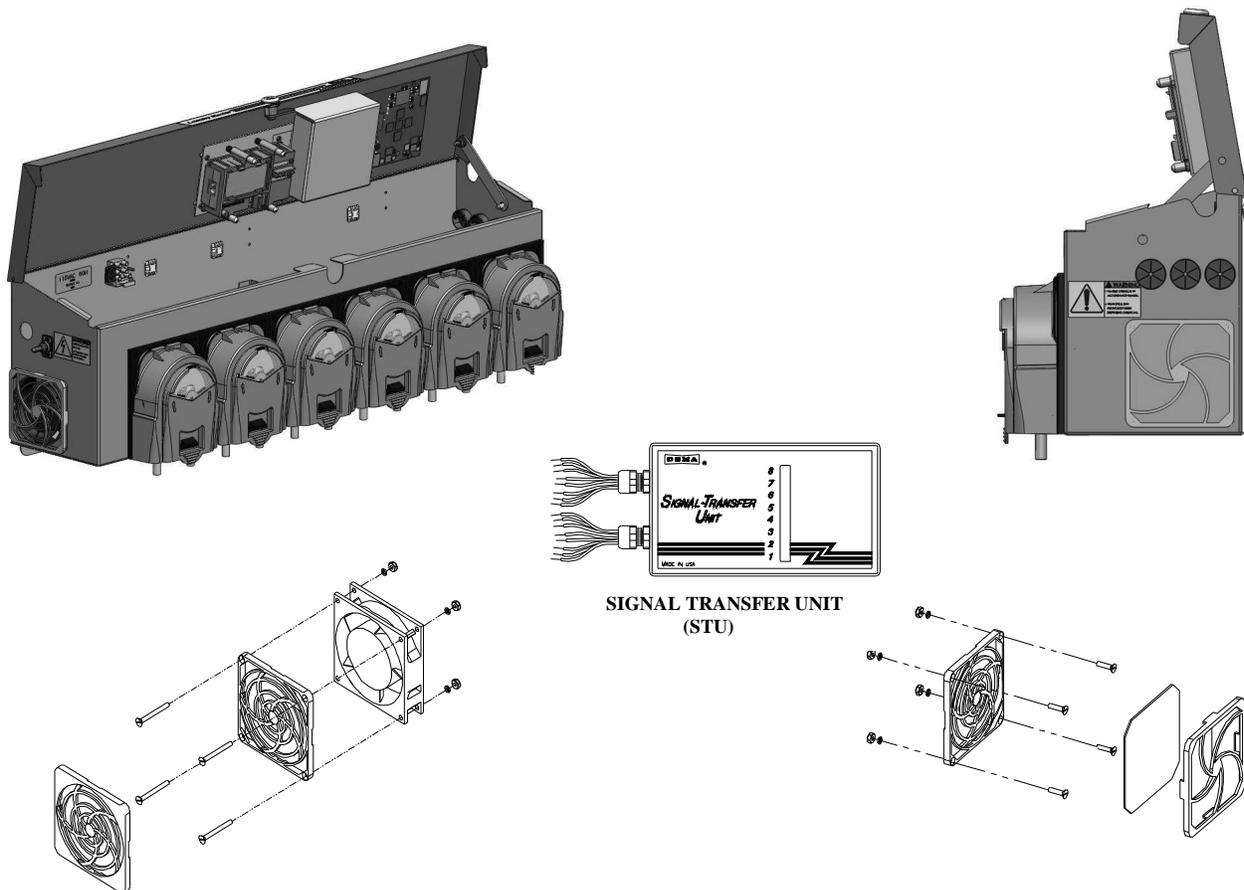
**Load Counts**

While unit is in run mode (normal and relay modes) the “program display” on the IQ-85 AC displays load counts. The number displayed represents the formula that is displayed in the “formula display”. Each formula’s load count can be observed by toggling through the formulas by pressing the “formula select button”. Each load count can be reset to zero by pressing the “up” and “down” button simultaneously. The maximum amount of load counts that the IQ-85 AC will store is 999. The USM and EDSM can also display load counts for each formula.



**846 Wiring Diagram**

## Replacement Parts

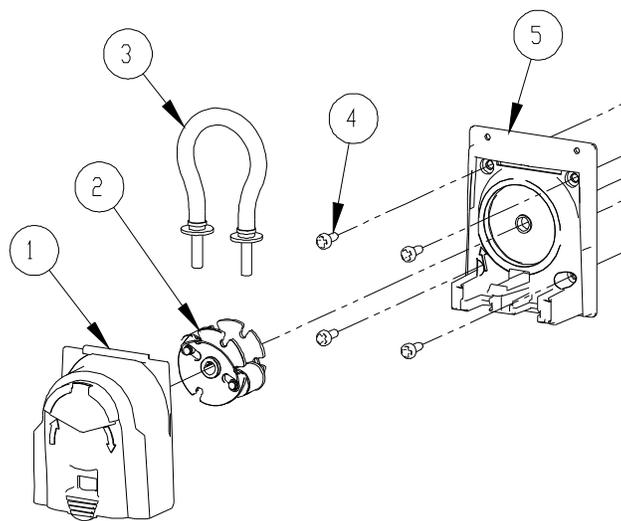


**Fan Kit Detail (Note: no filter (this end of unit))**

**Cooling Vent/Filter Kit Detail**

Item No.	Part No.	Description
1	84.65.4	Toggle Switch Replacement Kit
2	84.65.5	AC Laundry Label Kit
3	84.65.6	STU Replacement Kit
4	84.65.31	USM Handheld Formula Selector Kit (not shown)
5	84.65.15	115VAC 60Hz Cooling Fan Replacement Kit
6	84.65.11	230VAC 60Hz Cooling Fan Replacement Kit
7	84.65.12	Cooling Vent/Filter Kit
8	84.65.13	Lock Kit
9	84.65.14	3 Position Fused Terminal Block Kit
10	84.48.2	12.5A 250VAC 5x20mm Fuse Kit (5 fuses)
11	84.65.16	Grommet/wire tie/wire anchor kit
12	84.65.17	115VAC 60Hz Pump Motor Replacement Kit
13	84.65.18	230VAC 60Hz Pump Motor Replacement Kit
14	84.65.19	Chemical/Electrical Caution Label Kit

Accessory Replacement Parts	
DEMA Part No	Description
25-68-20	20 ft of 1/4" O.D. LDPE Tubing
25-68-40	40 ft of 1/4" O.D. LDPE Tubing
25-68-60	60 ft of 1/4" O.D. LDPE Tubing
25-68-80	80 ft of 1/4" O.D. LDPE Tubing
25-68-100	100 ft of 1/4" O.D. LDPE Tubing
25-68-120	120 ft of 1/4" O.D. LDPE Tubing
25-115	20 ft of 3/8" O.D. LDPE Tubing
25-115-40	40 ft of 3/8" O.D. LDPE Tubing
25-115-60	60 ft of 3/8" O.D. LDPE Tubing
25-115-80	80 ft of 3/8" O.D. LDPE Tubing
25-115-100	100 ft of 3/8" O.D. LDPE Tubing
25-115-120	120 ft of 3/8" O.D. LDPE Tubing
80-66	10" PVC Pick-up Tube Assembly (for 1/4" LDPE tubing)
80-66-2	18" PVC Pick-up Tube Assembly (for 1/4" LDPE tubing)
81-16-1	8" Tie Wrap (for securing wiring or tubing)



**Quick Change Pump (Blue Pump)**

NO.	QTY.	DEMA NO.	DESCRIPTION
1	1	84-209-1	PUMP COVER
2	1	84-207-1 (Detergent)	ROLLER ASSY.
3	1	84-208-1 (Detergent)	SQUEEZE TUBE (includes stem fittings)
4	4	25-85-2	SCREW
5	1	84-188-2	PUMP BASE
1 oz.		81-17-1	SILICONE LUBE

**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.