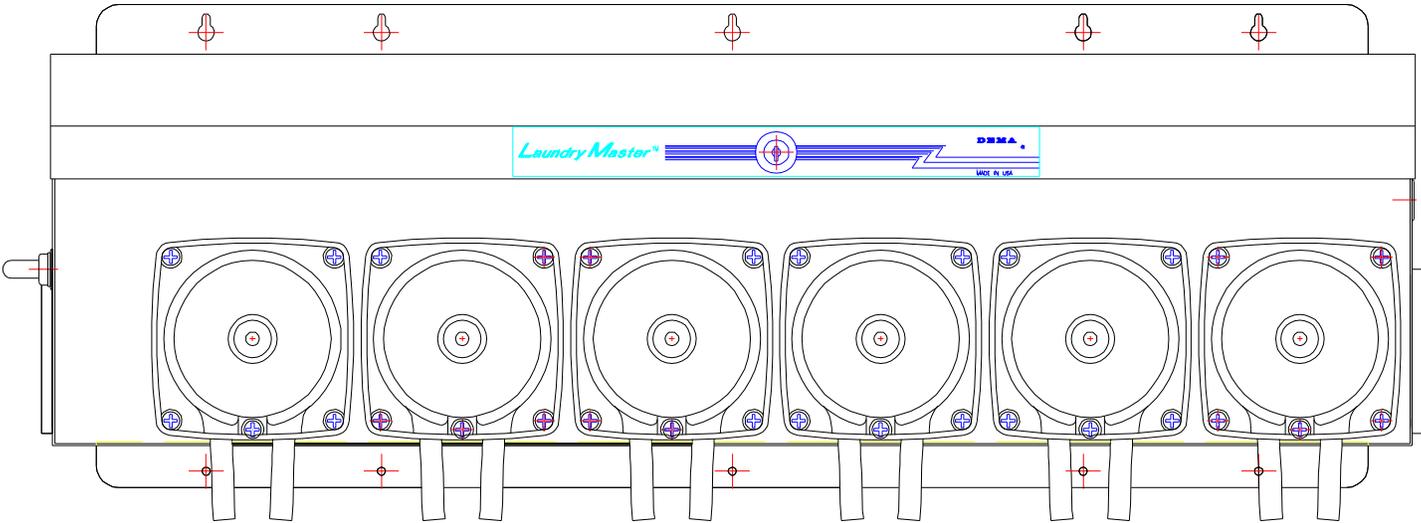


# DEMA 845 LAUNDRY MASTER INSTALLATION INSTRUCTIONS



## **Introduction**

The DEMA 845 Laundry Master dispensing system has been designed to accurately deliver chemical product to commercial laundry machines. The 845 uses the proven DEMA C2 and 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 845 Laundry Master use a “plug and play” concept to provide easy setup. The heart of the 845 is the IQ-80 electronic control board that provides 9 wash formula capability. The IQ-80 is mounted in the stainless steel enclosure. Along with the IQ-80 is the self contained Signal Transfer Unit (STU), which can be mounted at the laundry machine to receive trigger signals. Additionally, an optional handheld Formula Select Module (FSM) or Digital Select Module (DSM) is available to allow the user to interface with the system remotely. Both the STU and the FSM are connected to the IQ-80 via low voltage communication cable.

## **845 Laundry Master Contents**

The DEMA 845 Laundry Master includes the following:

- 845 Dispensing System, which contains the pumps, the power supply, and the IQ-80 electronic control board.
- Hook Up Kit, which contains communication cable, Velcro, various strain relieves, and wire ties.
- Signal Transfer Unit (STU), for receiving trigger signals and sending commands back to the IQ-80
- Optionally the 845 Dispensing System will come with either an FSM or DSM. The 842 does not require either a FSM or DSM to function properly.
  - Formula Select Module (FSM), for selecting 4 formulas, defeating bleach and emergency stop remotely.
  - Digital Select Module (DSM), for selecting 9 formulas, defeating bleach and emergency stop remotely.
- Optional Kits:
  - Tubing and pickup probe kit 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 845 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 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 FSM/DSM, 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.

## **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 845 Laundry Master has to offer. The following describe the 3 main modes, 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.

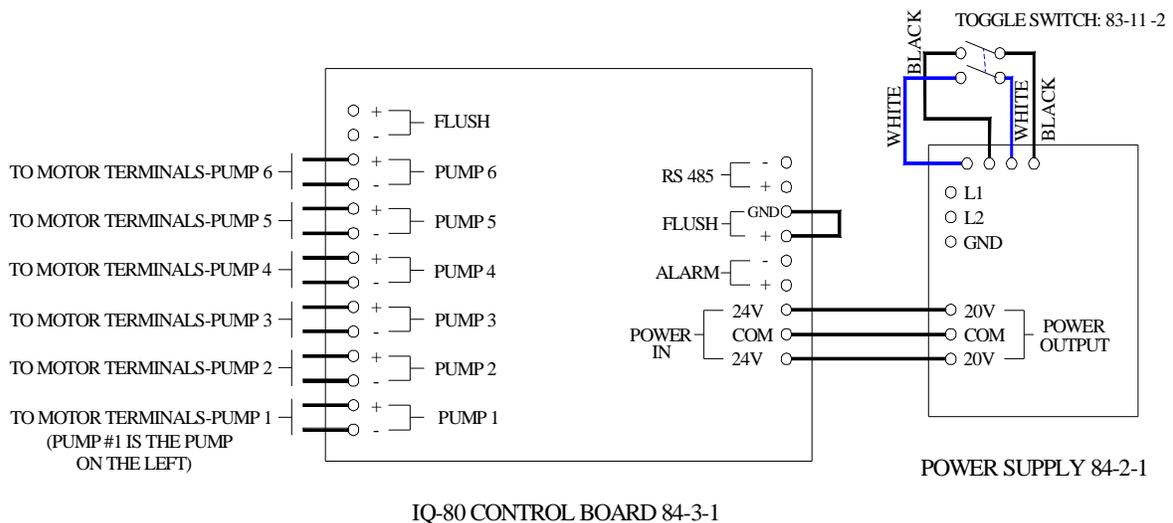
**Sequence Mode:** This is where the unit can be programmed to count a single event from the laundry machine. A good example of this is using the drain valve on the laundry machine as a trigger source. The IQ-80 will count the drain valve operations and will operate pumps based on these counts. Up to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

**Relay Mode:** This is where 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.

- 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.**
- 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). Locate the 115/230VAC switch on the power supply and switch it to the appropriate selection. Power should be applied to Laundry Master anytime the laundry machine is on. 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 sized to fit a ½” conduit fitting in Laundry Master enclosure. 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.
- Connect the flush manifold. See note labeled flush switch below if a flush manifold is not being used. If using a flush manifold, the solenoid valve that supplies the manifold must be rated for 24V DC. The valve should be connected to the output terminal position labeled “flush” on the IQ-80 control board. In addition, a manifold flush switch must be wired to the terminals labeled “Flush + and GND” on the IQ-80 control board.

Flush Switch: When a flush manifold is not used, step number 3 can be skipped. However, it is essential that a jumper be connected between the “Flush + and GND” terminals on the IQ-80 control board. The jumper is installed at the factory. Examine the unit to be installed to assure that it has the jumper installed. Without the jumper, the Laundry Master pumps will not run. If a jumper needs to be installed, use a short piece (2-4 inches) of insulated 18GA electrical wire stripped approximately 3/16” at each end.



## WIRING DIAGRAM

4. Wire the STU to the laundry machine. The hookup configuration will depend on which of the operational modes the DEMA 845 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.*

5. Connect the FSM, DSM and STU modules to the IQ-80 by using the RJ45 patch cords that have been supplied. The STU is required in all installations, but the FSM and DSM are optional. It is possible to connect the FSM or DSM to the STU RJ45 jack instead of connecting to the IQ-80, providing that the STU is connected to the IQ-80. See the following note concerning the FSM and DSM.

**FSM/DSM Note: The FSM and DSM modules are 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 FSM or DSM the only way to manually select a formula would be to select it at the IQ-80 board inside the stainless steel enclosure.**

*Note: The patch cord is a communication link between the IQ-80 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.**

An optional installation kit may be ordered with the 845 Laundry Master. The kits includes a 20ft of LDPE tubing per pump to connect from the chemical container to the DEMA 845 pump, and from the DEMA 845 pump to the fittings on the machine and 18" pickup tubes designed to accommodate 5 gallon buckets. For identification purposes, the pumps are identified starting with 1 and up to a possible 6 depending on the model. In all cases pump number 1 is the pump that is furthest left, count up as you see pumps to the right of this position. Included with the 845 Laundry Master is a sheet of product labels that can be adhered to the front of the Laundry Master or any other useful locations to identify the product that 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 LDPE tubing is about a ¼" from the bottom of pickup tube (LDPE tubing should not stick out through the bottom of pickup tube). Tighten the compression nut to secure LDPE 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 LDPE 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.**

## **Laundry Master Operation**

Once the system has been programmed and setup to the desired configuration the 844 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-80 for no more than 5 seconds, and the pump will run for the programmed time. The second way is 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. The FSM will not prime pumps. All priming is done at the IQ-80 board.

### Emergency Stop

At anytime, the pumps and flush can be stopped by pressing the “stop and reset” button on the IQ-80 or by pressing the “stop” button on the FSM. When pressed, it will also reset the system to a starting point of the formula.

### Changing Formulas

Formulas can manually be changed at the FSM/DSM or the IQ-80.

- The FSM has 4 formula capabilities and has a button for each of the 4 formulas with an LED next to each button.
- The DSM has 9 formula capabilities and has a numeric display that will identify the formula.

The IQ-80 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 (after 4 when using the FSM). 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 FSM or DSM. Keep in mind that the bleach pump is selected by use of the bleach defeat jumper on the IQ-80. See bleach defeat in the Setup section of this instruction manual for more information.

### Load Counts

While unit is in run mode (normal and relay modes) the “program display” on the IQ-80 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-80 will store is 999.

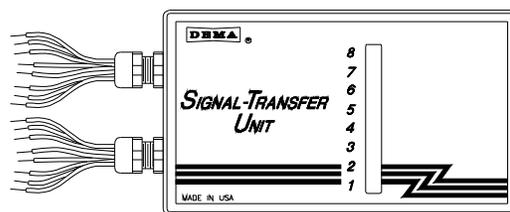
### Return Policy

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

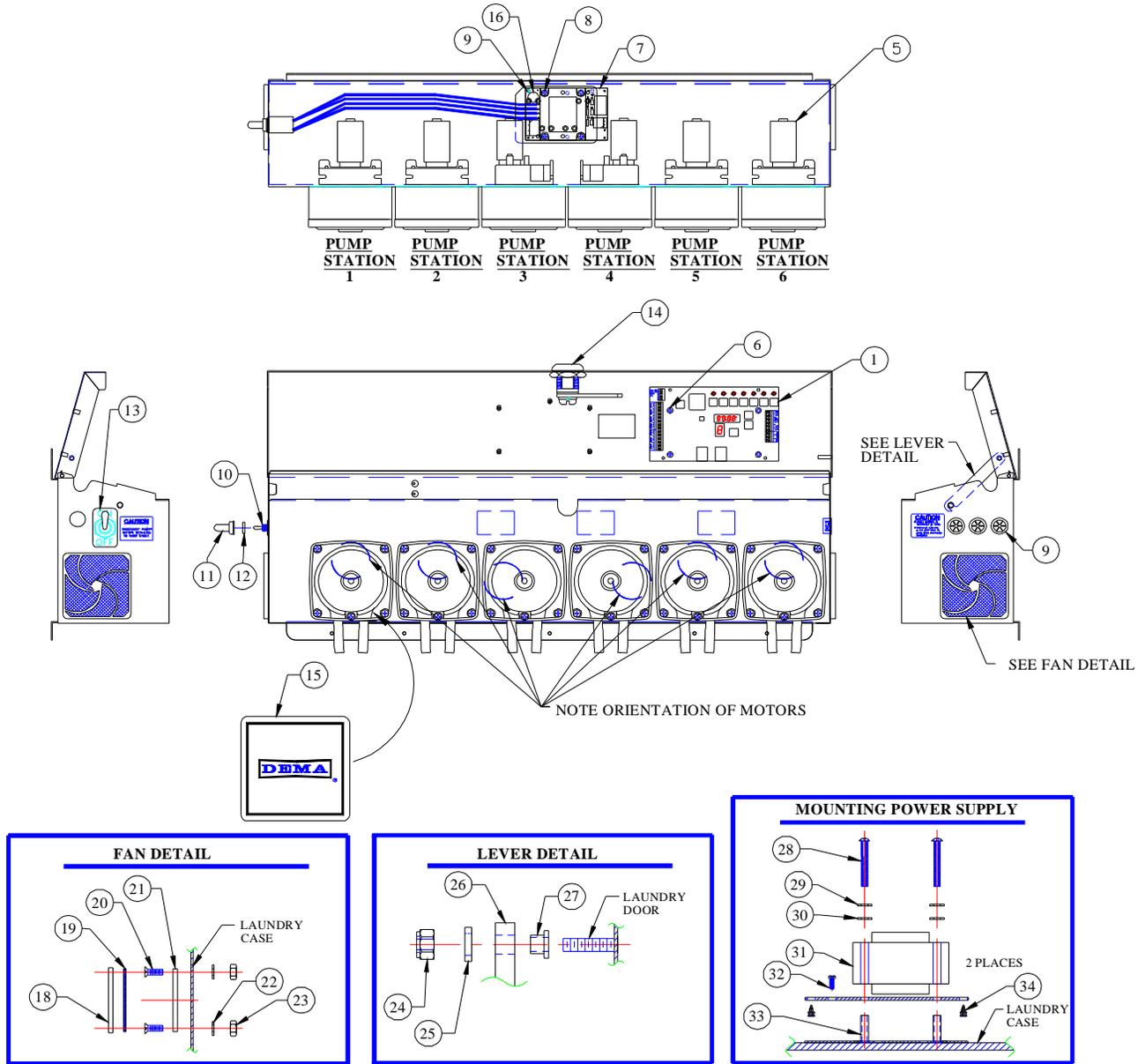
### Warranty

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.

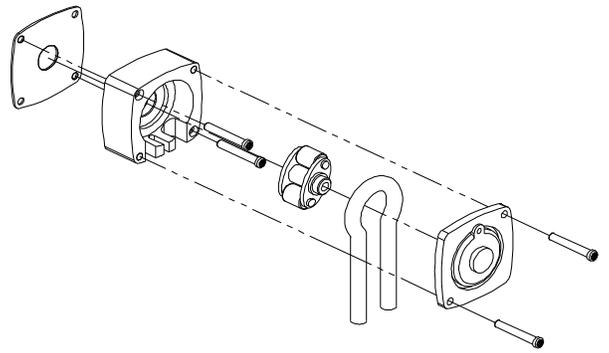
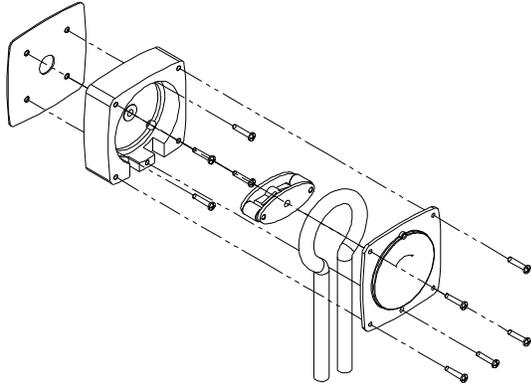
Defective units or parts should be returned to the factory with transportation prepaid. If inspection shows them to be defective, they will be repaired or replaced without charge. F.O.B. factory DEMA assumes no liability for damages. Return merchandise authorization number to return units for repair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



**SIGNAL TRANSFER UNIT  
(STU)**



Replacement Parts		
Item No.	DEMA P/N	Description
1	84-65-2	IQ-80 Control Board Kit
2 (Not Shown)	84-65-7	FSM Assembly Kit
3	84-65-6	STU Assembly Kit
4 (Not Shown)	84-65-8	DSM Assembly Kit
5	80-59-60MK 80-59-105MK	60 RPM Gear/Motor 24VDC 105 RPM Gear/Motor 24VDC
6	84-65-4	Toggle Switch Kit
7	84-65-3	80VA Power Supply Kit
8	84-65-13	Lock and Key Kit
9	81-122-1	Pump Blank Plug
10	84-48-2	Fuse 2A, 250V 5 X 20mm Kit
11	84-65-16	Grommet/wire tie/wire anchor kit
12	84-65-12	Cooling Vent/Filter Kit
13	84-65-20	Support Lever Kit
14 (Not Shown)	84-27-3	25 Foot, RJ-45 Patch Cable (connection between STU-DSM/FSM-IQ-80)
15 (Not Shown)	84-27-4	6 Foot, RJ-45 Patch Cable (connection between STU-DSM/FSM-IQ-80)
16	25.C2D	C2 Pump Head Kit
17	25.130.1	C4 Pump Head Kit
18	25.65CE.11	C2 Squeeze Tube 1/2" OD X 1/4" ID EPDM
19	25.65CV.11	C2 Squeeze Tube 1/2" OD X 1/4" ID Viton
20	25.89CE.14	C4 Squeeze Tube 5/8" OD X 3/8" ID EPDM



**C4 Pump Head Kit Item Number 17 (Does not include squeeze tube, item number 20)**

**C2 Pump Head Kit Item Number 16 (Does not include squeeze tube, item number 18 or 19)**

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)