

DEMAMaster™ DM-812 Series Installation Manual



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System Overview

The DEMAMaster series is designed for long reliable use with simplicity in mind for both the installer and user. The DEMAMaster dispenses using the reliable DEMA peristaltic pump or DEMA solenoid valve for dry detergent applications. The electrical controls are installed in a heavy plastic housing with a sealed cover that uses a Lexan® label with visible function indicators.

Pumps are available with three different motor/gear box speeds, 15, 60, and 105 RPM.

There are micro controllers housed in the unit that control the operation of the pump or valve. By use of the various DEMA control boards, chemical products can be dispensed in a manner that will allow proper usage of the chemical product.

Please read all instructions before proceeding with the DEMAMaster installation.

Preperation for Installation

First step in the installation is to know what type of DEMAMaster is to be installed. The following table will help identify the unit to be installed. This instruction sheet is only for those model numbers listed.

Table 1

DEMAMaster General Specifications								
Model Number	Hook Up Power	Transformer Qty	Pump or Valve		Control Board			
			Detergent	Rinse	Detergent	Rinse		
DM-812-LL-2T	120/208/240VAC	2	Pump (C2)	Pump (C2)	81-117-1	80-69-5		
DM-812-DL-2T			Valve		80-77-4			
DM-812-PLL-2T			Pump (C2)					
DM-812-PDL-2T			Valve					
DM-812-LL-1T		1	Pump (C2)				Pump (C2)	81-117-1
DM-812-DL-1T			Valve		80-77-4			
DM-812-PLL-1T			Pump (C2)					
DM-812-PDL-1T			Valve					
DM-812-LL-0T	24VAC	None	Pump (C2)	81-117-1				
DM-812-DL-0T			Valve					
*DM-812-PLPL-2T	120/208/240VAC	2	Pump (C4)	Pump (C4)	80-77-4	80-77-4		

*This unit is setup with (2) probeless control boards and (2) 105rpm C4 pumps. This unit does not have a typical rinse pump configuration.

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Electrical Installation

All installations must be in accordance with city, county, state or provincial electrical codes and be performed by a certified electrician. It is recommended to use a local licensed electrical contractor for the installation of this product.

1. All electrical power must be turned off to the dish or cleaning machine and any other circuits that is to be used for this installation. Lockout and tag procedures must be observed when installing this device. Never open the DEMAMaster while power is applied. Signals may be active from cleaning machine, even with the DEMAMaster power turned off. Use appropriately rated insulated wiring, electrical fixtures and other materials that meet all applicable electrical and building codes.
2. Wire the DEMAMaster to the dish or cleaning machine. The wiring configuration will depend on the transformer configuration of the DEMAMaster. It will have either 1, 2 or no transformers. The transformers are setup to utilize 120/208/240VAC 60Hz power.

2 Transformers (see figure 1): Each transformer will be wired to a control board individually. The power should be wired to the appropriate transformer based on the control board.

- Detergent in most cases will be supplied during the wash cycle. The power can be picked up parallel with the low voltage side of the wash pump.
- Rinse board will be powered during the rinse cycle. The power can be picked up parallel with the rinse solenoid.
- There may be alternatives than those listed above. Additionally, the dish or cleaning machine may be equipped with terminals specifically for wiring an automatic chemical dispenser.

1 Transformer (see figure 2): Both boards are powered off the same transformer.

- Power in comes from main power of machine. Detergent board always has power and operates accordingly. Rinse is cycled on by use of the pressure switch mounted to the rinse manifold. This type of hook up is normally on a conveyor type machine not a door machine.

No Transformers: Both boards must be powered directly at the 24VAC in terminals on each board.

- This is used on special applications where 24VAC 60Hz is available to operate the control boards properly. See the control board instruction sheet for location of 24VAC terminals.

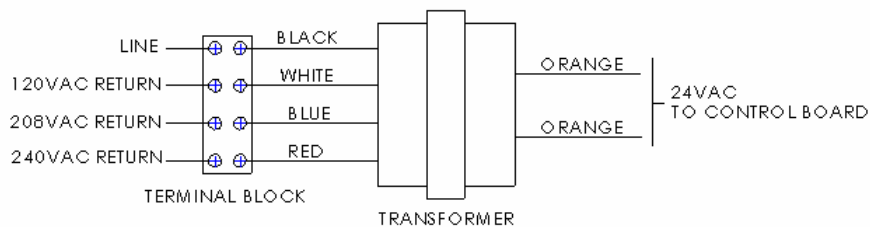


Figure 1

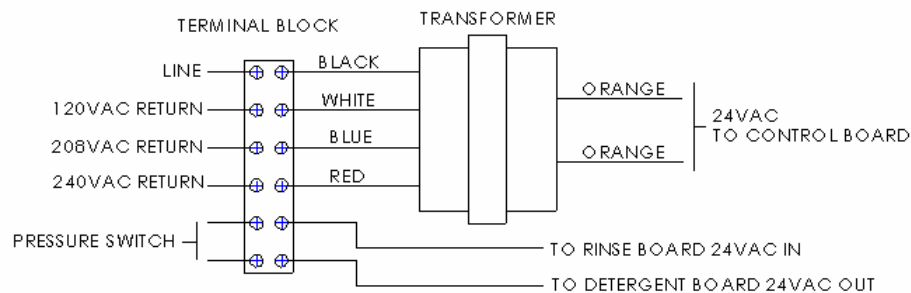


Figure 2

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Tubing Connections

Included in the installation kit is low-density polyethylene (LDPE) tubing. The tubing can be used to connect from the chemical container, to the pump, and from the pump to the injection fittings on the machine.

Peristaltic Pump Applications, Chemical Pickup

Measure the length of the tubing needed on the suction side from the chemical container to the pump and cut the tubing to proper length. Install the tubing into the pickup tubes (Grey PVC) through the compression nut, and tighten the nut. Route the tubing to the suction side of the pump. An arrow on the faceplate indicates the flow direction. Push the tubing into the pump squeeze tube approximately 1/2-3/4" (15-20mm). Secure the tubing with a tie wrap around the squeeze tube. Use the same procedure on the outlet of the squeeze tubing and route the LDPE tubing to the injection point of the machine. Cut off all excess tubing and keep tubing away from hot surfaces and sharp edges to prevent damage or leakage.

See Detergent and Rinse Tubing Connections below for specific information concerning discharge tube connection.

Detergent Tubing Connections

- 1) Install the bulkhead fitting into the dish or cleaning machine wash tank. Included with the kit is a bulkhead fitting that will accept the discharge of the detergent at the machine. There are two fittings depending on if the DEMAMaster has a detergent pump or solenoid valve.
 - Detergent pump - The fitting will have a 1/4" compression fitting that will accept the 1/4" LDPE pump discharge tubing.
 - Solenoid valve - The fitting will have a barb fitting designed for a 5/8" I.D. tube.
 - For either fitting a 7/8" diameter hole will need to be cut above the waterline in the side of the dish machine wash tank to accommodate the bulkhead fitting.
 - **Note: When using a concentration probe, the bulkhead fitting should not be located above the concentration probe.**
- 2) Attach Tubing to fittings:
 - When using the detergent pump simply run the tubing from the outlet of the pump to the 1/4" compression fitting on the bulkhead fitting.
 - When using the solenoid valve run the 1/4" tubing from the 1/4" compression fitting on the outlet of the valve to the siphon breaker for the solid bowl or powder feeder. Additionally, it will be necessary to attach a 1/4" water supply tube to the inlet of the solenoid valve. The water pressure should not exceed 125psi.

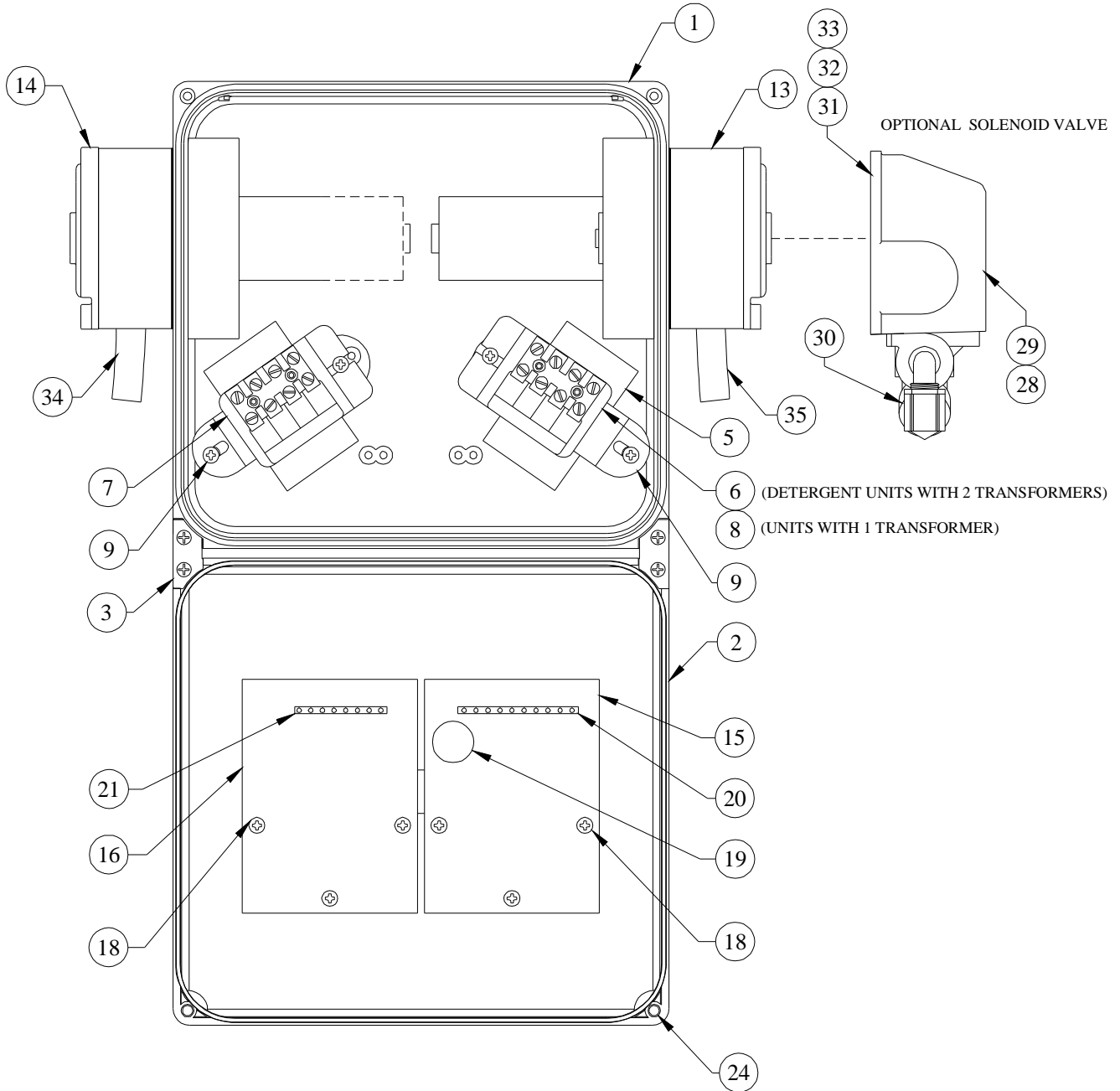
Rinse/Sanitizer Tubing Connections

Note: To confirm identify which pump is the rinse and which is the sanitizer, press the rinse prime button and see which pump runs, and press the sanitizer prime button and see which pump runs.

- 1) Install 1/4" compression by 1/8" NPT rinse injection check valve (included in installation kit) into the rinse manifold on the dish or cleaning machine between the vacuum breaker and the final rinse arm. Drill an 11/32" hole and tap to 1/8" NPT. When installing to copper pipe or tubing use saddle clamps.
 - **Note: Each application may require specific hardware that is not included in the installation kit.**
- 2) Connect the 1/4" OD EPDM tubing between the 1/4" rinse check valve and the discharge side of the peristaltic rinse squeeze tubing. Use a plastic tie to hold the 1/4" polypropylene tubing into the peristaltic squeeze tube.

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DEMAMaster ASSEMBLY



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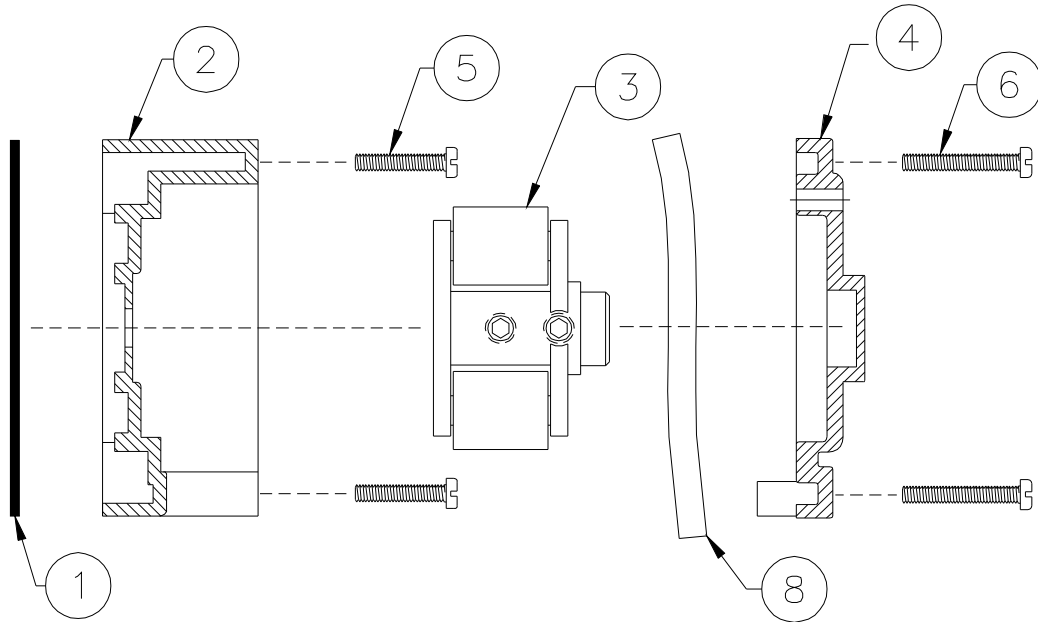
Table 2

Replacement Parts			
Item No.	DEMA Part No.	Qty Required	Description
1	81-2	1	DEMAMaster Double Control Box
2	81-5	1	DEMAMaster Double Control Box Lid
3	81-6	1	Hinge and Screw Kit
4	81-1	1	Mounting Bracket Kit
5	80-70	1-Qty Model No. ends 1T 2 Qty Model No. ends 2T	Transformer 40VA
6	81-10-1	1	Terminal Block & Bracket Assy. (Detergent, units with 2 transformers)
7	81-10-2	1	Terminal Block & Bracket Assy. (Rinse, units with 2 transformers)
8	81-10-5	1	Terminal Block & Bracket Assy. (units with 1 transformer)
9	44-116-1	2 / Transformer	# 8 x ½ HI-LO Screw (mounting transformer)
10	81-35	1 / Transformer	Fuse Holder
11	81-34-16	1 / Transformer	Fuse 1A, 250V
12	81-36-2	1 / Transformer	Blue Wire Nut
13	80-59-60MK	1	60 RPM Gear/motor
14	80-59-15MK	1/Rinse	15 RPM Gear /moter
15	80-77-4	1	Pro-bless Detergent Control (circuit board for controlling detergent)
16	80-69-5	1 (for 812 Models)	Rinse Control Board (circuit board for controlling rinse)
17			
18	81-20-2	3 / control board	# 4 HI-LO Screw (mounting circuit boards)
19	80-99	1	Coin Cell Battery (CR2032) (for Probeless Detergent Control Board)
20	81-13-10	1	Modular Connector 10 pole (for Concentration Control Board)
	81-13-6	1	Modular Connector 6 pole (for Probeless Detergent Control Board)
21	81-13-8	1	Modular Connector 8 pole (for Rinse and/or Sanitizer Control Board)
22	81-94-1	2 (1 transformer units)	18 AWG Orange Wire – 8” long
23	81-94-2	1 (1 transformer units)	18 AWG Orange Wire – 10” long
24	81-29-2	2	Captive Screw
25	81-47-1	1	Hole Plug
26	L604	1	Caution Label – Electrical
27	L605	1	Caution Label - Chemical
28	44-125	1	Solenoid Cover
29	44-116-1	1	Cover Screw
30	44-123-4B	1	Solenoid Valve-Detergent (Dry Feed Models)
31	44-124-2	2	Solenoid Mounting Screw
32	44-29	2	Lock Washer
33	44-90	2	Hex Nut
34	25-65RE-11	2	Squeeze Tube - Rinse
35	25-65CE-11	1	Squeeze Tube - Detergent

Table 3

Control Board Accessory Components			
Board Number	Modular Terminal	Shunt	Coin Cell Battery
80-117-1	81-13-10	None	None
80-69-5	81-13-8	82.5	None
80-77-4	81-13-6	None	80-99

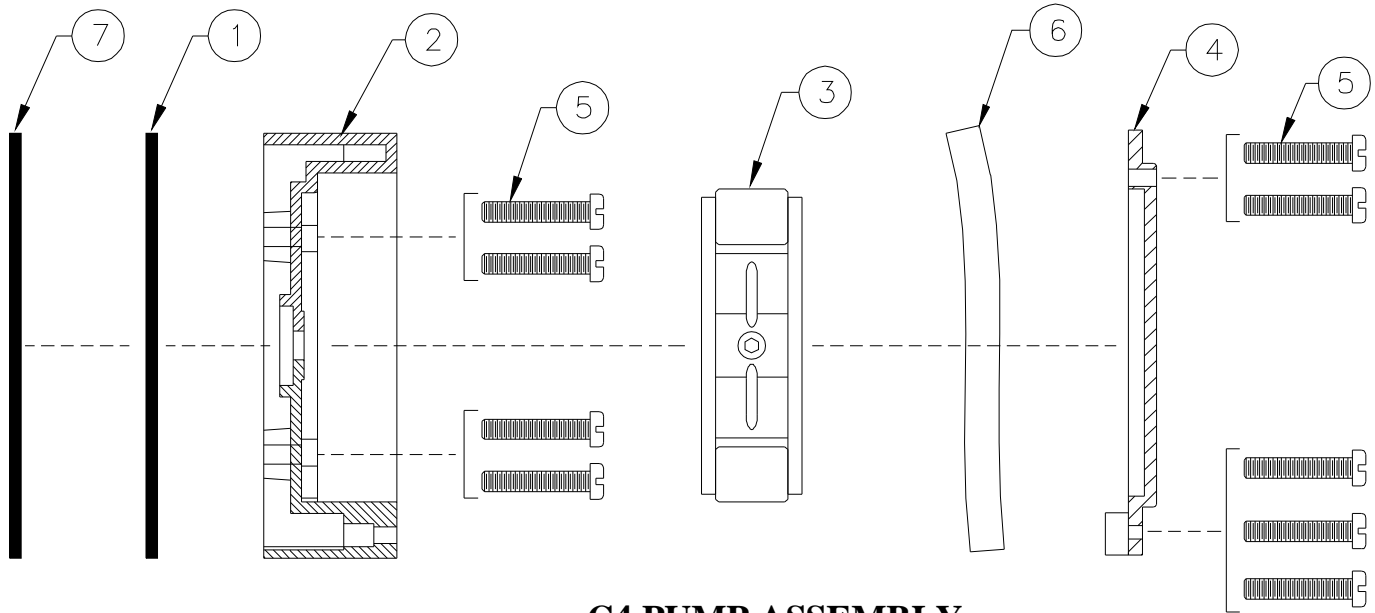
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C2 PUMP ASSEMBLY

C2 Pump Replacement Parts		
Item No.	DEMA Part Number	Description
1	25-91-C2	C2 Pump Head Gasket
2	25-67C2-2	C2 Pump Head
3	25-84C2	C2 Roller Block (2 roller)
4	25-83C2-2	C2 Face Plate
5	25-85S	#10-32 X 1 3/4" Machine Screw
6	25-85L	#10-32 X 2 1/4" Machine Screw
7	25-C2D	C2 Pump Head Kit (kit includes C2 Pump parts listed except squeeze tubes)
8	25-65CE-11	1/2"OD x 1/4" ID Squeeze Tube EPDM
	25-65RE-11	1/2"OD x 3/16" ID Squeeze Tube EPDM
	25-65CV-11	1/2" OD x 1/4" ID Squeeze Tube Viton

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C4 PUMP ASSEMBLY

C4 Pump Replacement Parts		
Item No.	DEMA Part Number	Description
1	25-114C4	C4 Pump Head Gasket
2	25-129-1	C4 Pump Head Assembly
3	25-86C4	C4 Roller Block Assembly
4	25-87C4	C4 Face Plate
5	25-85-5	#10-32 x 1" Machine Screw
6	25-89CE-14	Squeeze Tube 5/8" OD x 3/8" ID

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 products that 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 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.