

## Flush Manifold For Liquid Laundry Supply Systems

### Reference Manual FM-200 Series



Online and downloadable Product Manuals and Quick Start Guides are available at [www.HydroSystemsCo.com](http://www.HydroSystemsCo.com)

Please check online for the latest version of this Reference Manual.

**NOTE:** Always use proper lockout tagout procedures when servicing the dispenser.

### Preface

This manual has been written and illustrated to present the basic installation, operation and servicing instructions of the Flush Manifold. Guidelines will be suggested in reference to the preferred method of installation, however, the variety of equipment and the surrounding environment will dictate the actual installation of the Flush Manifold.

# Description

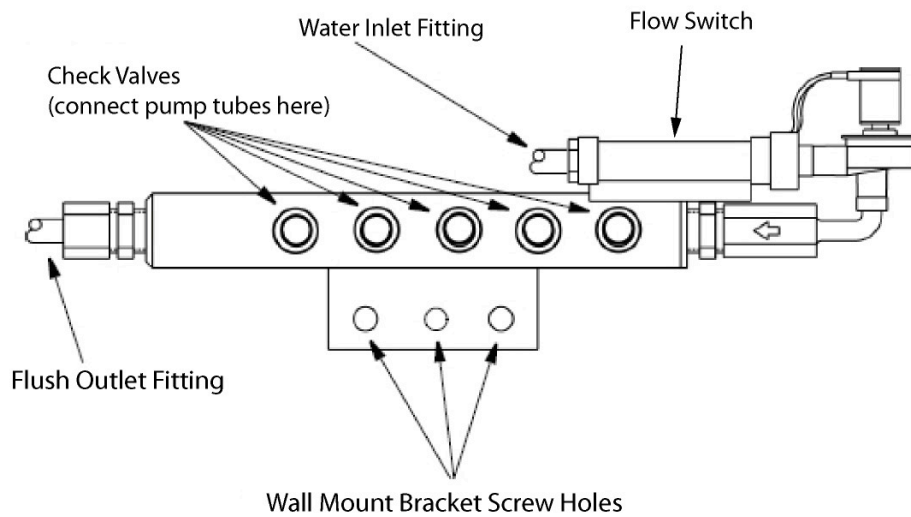
## Overview

The FM-200 series Flush Manifold is intended for use with our series of liquid laundry dispensing systems.

This Flush Manifold is a single unit that includes the water valve, manifold, and flow switch all in one convenient assembly. The FM-200 series Flush Manifold is designed to provide the easiest and most cost effective means of flushing liquid laundry products when used with our series of dispensing systems.

## Theory of Operation

The FM-200 series Flush Manifold transfers liquid laundry chemical products from the dispensing system to the washer using water flow (or flush) via a single discharge tube. The dispenser pumps chemical products into the manifold via the check valves. The flush valve controls water flow through the manifold, which in turn transfers product to the washer. The flush valve may be controlled by our LM-200 series Eclipse Controllers or by our LM-100 Orion series using an Orion EXF controller and an Orion II PI Board or an 8-pump PI board.



*Figure 1: Top Down View, FM-200 Flush Manifold System Diagram*

# Installation & Setup

The FM-200 is designed to be installed directly below the dispensing system Pumpstand.

Electrical installation simply requires connecting a plug connector to the underside of the Pumpstand.



## REQUIRED

A locally approved back-flow prevention device—not provided—is required for safe and legal operation. A water pressure regulator is required to limit flow pressure in the flush manifold to 10 psi at flow. This regulator may be shared by a number of flush manifolds. It is important that the flush discharge hose DOES NOT exceed 50'.

## Mechanical

1. Position the FM-200 on the wall below the dispenser Pumpstand with the water inlet and flush discharge fittings on the desired end.
2. Using a pencil, outline each of the three holes on the FM-200 mounting bracket.
3. Drill the outlined holes with a 1/4" masonry bit and place a wall anchor, supplied, into each hole.
4. Secure the Manifold assembly to the wall anchors with supplied screws.
5. Drop strainer into hose connection and connect hose to spigot.
6. Connect flush outlet hoses.

**NOTE:** Water inlet fitting size is 1/2" hose barb (1/2" ID hose). Flush outlet fitting size is 1/2" hose barb (1/2" ID hose). To connect other size/type water inlet and/or flush outlet hoses, obtain fittings locally.

## Pump Tube Connection

Use short lengths of 3/8" ID tubing and appropriate size (3/8" x 3/8" or 5/16" x 3/8") hose barbs (supplied with installation kit) to connect the discharge side of the dispenser pumps to the Check Valve hose barbs.

1. Connect lengths of the 3/8" ID flexible tubing that are long enough to connect the dispenser pump tubes with the corresponding check valves on the flush manifold. Secure the flexible tubing to the pump tube barbed fitting with hose clamps or tie wraps to ensure a leak free assembly.
2. Trim the 3/8" ID tubes to fit—do not connect to the check valves yet.
3. Perform "Calibrate Pumps" on the Orion controller, capturing product at the open ends of the flexible tubing.
4. Connect flexible tubing to the hose barbs on the check valves. Secure with hose clamps or tie wraps to ensure a leak free assembly.

**NOTE:** When ordering replacement transport tubes for FM-200 series dispensers with flush manifolds, be sure to specify the tube length:  
03-07527-01 for Braided PVC, 1'  
03-07527-02 for Braided PVC, 2'

# Installation

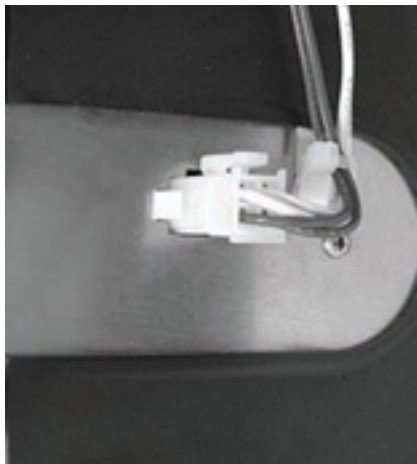
## Hard Copper Plumbing

If the water supply connection must be copper tubing, you will be responsible for the correct pipe fittings and connectors to complete the installation. Always use an approved Back Flow Prevention Device and Water Pressure Regulator. Hose barb fittings can be removed and replaced with the appropriate fittings to accommodate copper tubing. Use RTV sealant on the plastic plumbing threads and DO NOT solder to fittings that are threaded into plastic.

## Electrical

The FM-200 series flush manifold has a single electrical connector specifically designed to connect to either the Eclipse LM-200 series Pumpstand or the LM-100 Orion series using an Orion EXF controller and Orion II or 8-pump ACPI.

Depress the locking tab on the Pumpstand shorting connector (connected to flush connector on non-flush units) and remove the shorting connector. Connect the FM-200 connector to the Pumpstand flush connector.



*Figure 2: Pumpstand Flush Connector*



## WARNING

DO NOT connect any voltage other than 24 VAC to the solenoid coil!

## System Setup

Depress locking tab on the Pumpstand shorting connector (connected to flush connector on nonflush units) and remove. Retain for reuse in case the Pumpstand is used without flush in the future. Connect the FM-200 connector to the Pumpstand flush connector.

Check entire dispensing system for correct electrical and plumbing connections. After pump calibration and formula programming, test run the system to determine appropriate flush time setting to transfer all product to the washer. Input new flush time in program mode of the Controller. Also, reconfirm that the washer calls for product at appropriate times and the dispensing system pumps when it should. Flush system pressures should be measured while flushing if possible. Adjust the water pressure regulator for no more than a 10 psi reading while flushing. Inspect flush system for water leaks, and test run a load of linen.

**NOTE:** To manually open flush valve, to purge or clean water lines and manifold, use the Prime Pumps function of the Controller. If no product delivery is required, use an unused pump position or temporarily remove the pump tube.

# Flush Manifold FM-200 Series Spare Parts

## Replacements Parts

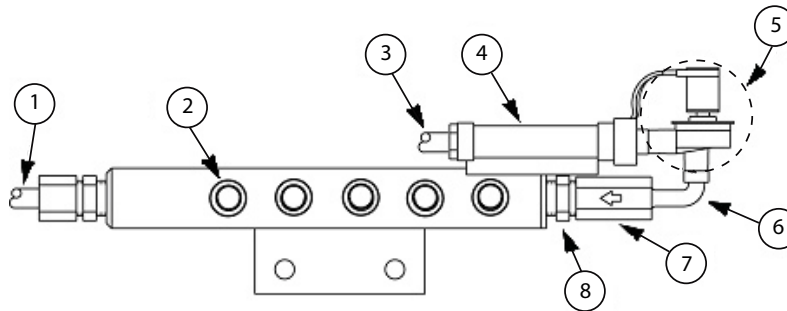


Figure 3: Flush Manifold FM-200 Series

Reference #	Description	Part #
1	Flush Outlet Fitting, 1/2" MPT x 1/2" Barb (option) Flush Outlet Fitting, 1/2" MPT x 3/8" Barb	41-04996-01 41-07544-00
2	Check Valve, gray, 3/8" Barb x 1/4" MPT	41-04207-46
3	Water Inlet Fitting, 1/4" MPT x 1/2" Barb (option) Water Inlet Fitting, 1/4" MPT x 3/8" Nut	41-06473-84 41-07777-46
4	Flow Switch w/1/4" FPT fittings, and Wire Harness	13-06592-00
5	Solenoid Valve, 24 VAC (no strainer)	49-06472-10
6	Elbow, 1/4" MPT x 1/4" FPT	41-06924-44
7	Check Valve, 1/4" FPT x 1/4" MPT	41-06508-44
8	Reducer, 1/2" MPT x 1/4" FPT	41-03965-072
*	Hole Plug (for empty Check Valve Positions)	41-04468-00
*	Strainer Kit (with washer), 70 mesh, 10 pk.	13-08480-10
*	Vent Check Valve, white, optional	41-04807-00

\* Denote item(s) not shown.

# Warranty

## Limited Warranty

**Seller** warrants solely to **Buyer** the Products will be free from defects in material and workmanship under normal use and service for a period of one year from the date of completion of manufacture. This limited warranty does not apply to (a) hoses; (b) and products that have a normal life shorter than one year; or (c) failure in performance or damage caused by chemicals, abrasive materials, corrosion, lightning, improper voltage supply, physical abuse, mishandling or misapplication. In the event the Products are altered or repaired by **Buyer** without **Seller's** prior written approval, all warranties will be void. **No other warranty, oral, express or implied, including any warranty of merchantability or fitness for any particular purpose, is made for these products, and all other warranties are hereby expressly excluded.**

**Seller's** sole obligation under this warranty will be, at Seller's option, to repair or replace F.O.B. **Seller's** facility in Cincinnati, Ohio any Products found to be other than as warranted.

## Limitation of Liability

**Seller's** warranty obligations and **Buyer's** remedies are solely and exclusively as stated herein. **Seller** shall have no other liability, direct or indirect, of any kind, including liability for special, incidental, or consequential damages or for any other claims for damage or loss resulting from any cause whatsoever, whether based on negligence, strict liability, breach of contract or breach of warranty.