

Safety Precautions



WARNING! Please read these warnings carefully and follow all applicable local codes and regulations.

THANK YOU FOR YOUR INTEREST IN OUR PRODUCTS!

TO AVOID SERIOUS PERSONAL INJURY AND PROPERTY DAMAGE:

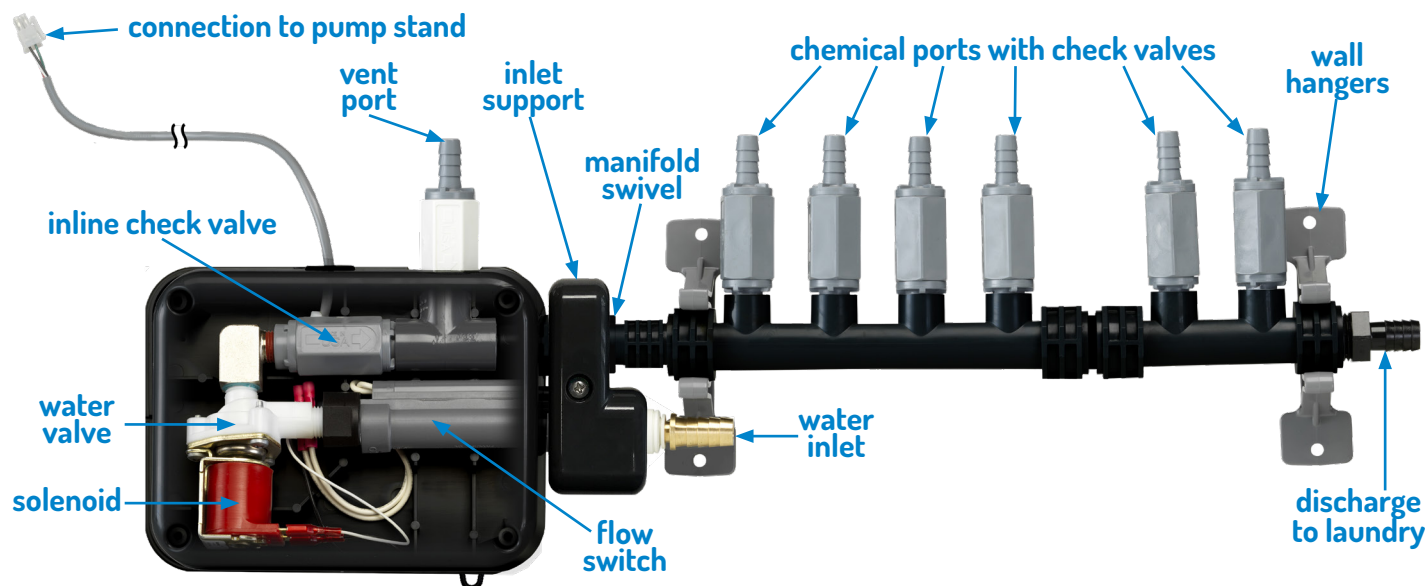
- WEAR** Protective clothing and eyewear when dispensing chemicals or other materials, when working in the vicinity of chemicals, and when filling or emptying equipment.
- ALWAYS** Read and follow all safety instructions in safety data sheets (SDS) for all chemicals. Observe all safety and handling instructions of chemical manufacturer. Dilute and dispense chemicals in accordance with chemical manufacturer's instructions. Direct discharge away from you and other persons and into approved containers. Regularly inspect equipment and keep equipment clean and properly maintained. Use a locally approved back-flow prevention device - not provided - as required for safe, legal operation.
- NEVER** Mix incompatible chemicals that pose hazards.
- ATTACH** Only to water tap outlets at 0.2 MPa / 1.7 Bar / 25 PSI Min., 0.6 MPa / 6 Bar / 85 PSI Max. and maximum water temperature 60°C / 140°F. Operating outside of these parameters will void manufacturer's warranty
- NOTE** It is recommended to flush with a dedicated COLD water supply only, when possible.

introduction

Package Contents

- FM-800 Flush Manifold Assembly w/Brackets (P/N varies by model)
- Hardware Kit
- 3/8" Braided Tubing (A 2-foot section for each port)

Model Numbers	Description	Chemical Port Barb Size	Discharge Barb Size
HYD00-03608-02XT	FM-800, 2 Product Flush Manifold	3/8"	1/2"
HYD00-03608-04XT	FM-800, 4 Product Flush Manifold	3/8"	1/2"
HYD00-03608-06XT	FM-800, 6 Product Flush Manifold	3/8"	1/2"
HYD00-03608-08XT	FM-800, 8 Product Flush Manifold	3/8"	1/2"
HYD00-03608-01XT	FM-800, 2 Product Add-on Kit	3/8"	1/2"



installation

Overview

The FM-800 Flush Manifold is intended for use with our LM-100, LM 200, Electrolux SDS, and LL-6000 liquid laundry dispensing systems.

This is a single unit that includes a water valve, manifold and integrated flow switch all in one convenient assembly. This FM-800 Flush Manifold is designed to provide the easiest and most cost-effective means of flushing liquid laundry products.

The FM-800 Flush Manifold aids in safe delivery of 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 integrated check valves that keep unwanted liquids from entering the chemical line and also keep unwanted chemical from dripping into the water flow. 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 Standard Eclipse, Total Eclipse or Electrolux SDS Controller.

Mounting the Flush Manifold

1. Position the drilling template (located on the packing insert) on the wall near the dispenser pump stand, in the position and orientation you desire.
2. Using the drilling template and a pencil, mark the location of the required holes (5 total) on the mounting surface.
3. Drill the marked holes with a 1/4" masonry bit and place a wall anchor, supplied, into each hole.
4. Using the swivel, rotate the manifold to the desired angle in 45° increments. **Do Not** rotate by threaded joints.
5. Secure the manifold assembly to the wall anchors with supplied screws. **Note:** The long screw (provided) must be used to secure the electronics cover.
6. Connect the cold water supply line to one of the supplied hose barb fittings (straight or 90°). Once connected, push the smooth end of the fitting into the press-to-fit connection on the FM-800.
7. Connect hose between the FM-800 discharge and the washing machine.
8. Avoid kinks and other restrictions in discharge tube. Dynamic manifold pressure that exceeds 0.2 MPa / 2 Bar / 30 PSI during operation can severely reduce pump and squeeze tube life. This condition may also cause excessive back pressure in the squeeze tubes resulting in potential dispensing equipment damage and/or personal safety risks.

IMPORTANT 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 sizes or types of water inlet and/or flush outlet hoses, obtain fittings locally.

Connecting the Pump Tubes

1. Connect one end of the 3/8" ID tubing supplied with the FM-800 to the pump tube hose barb with hose clamps or tie wraps to ensure a leak-free assembly.
2. Trim the 3/8" ID tubes to fit, but do not connect to the check valves yet.
3. Calibrate each pump using the calibration steps of the system controller, capturing product at the open ends of the braided tubing.
4. Now connect 3/8" ID tubing to the hose barbs on the check valves. Secure with hose clamps or tie wraps to ensure a leak-free assembly.
5. **Do Not Connect Any Chemical Line To The White Vent Check Valve!**

NOTE: Appliances connected to the water mains by detachable hose should use hoses provided with the appliance and should not reuse previous hoses.

Installing Hard Copper Plumbing

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.



WARNING!

A locally approved back-flow prevention device - not provided - may be required for safe and legal operation. A list of approved back-flow prevention devices is listed below:

- Watts 9D
- Watts 008 - Preferred
- Hydro HYD282511



WARNING! For units installed in Australia:

This apparatus **MUST** be installed in accordance with the requirements of the Plumbing Code of Australia (PCA) AS/NZS 3500.1, including all backflow prevention requirements outlined.

installation

Electrical Power Connection to Pump Stand

The Flush Manifold is a Class III Appliance and has an electrical power cable for the flush solenoid, with a connector that will fit any Hydro Systems' pump stand. A Class III appliance is designed to be supplied from a separated/safety extra-low voltage (SELV) power source. The standard FM 800 manifold, when paired with the LM-100, LM 200, Electrolux SDS and LL-6000 systems utilizes 24v~ for the water solenoid valve. If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.

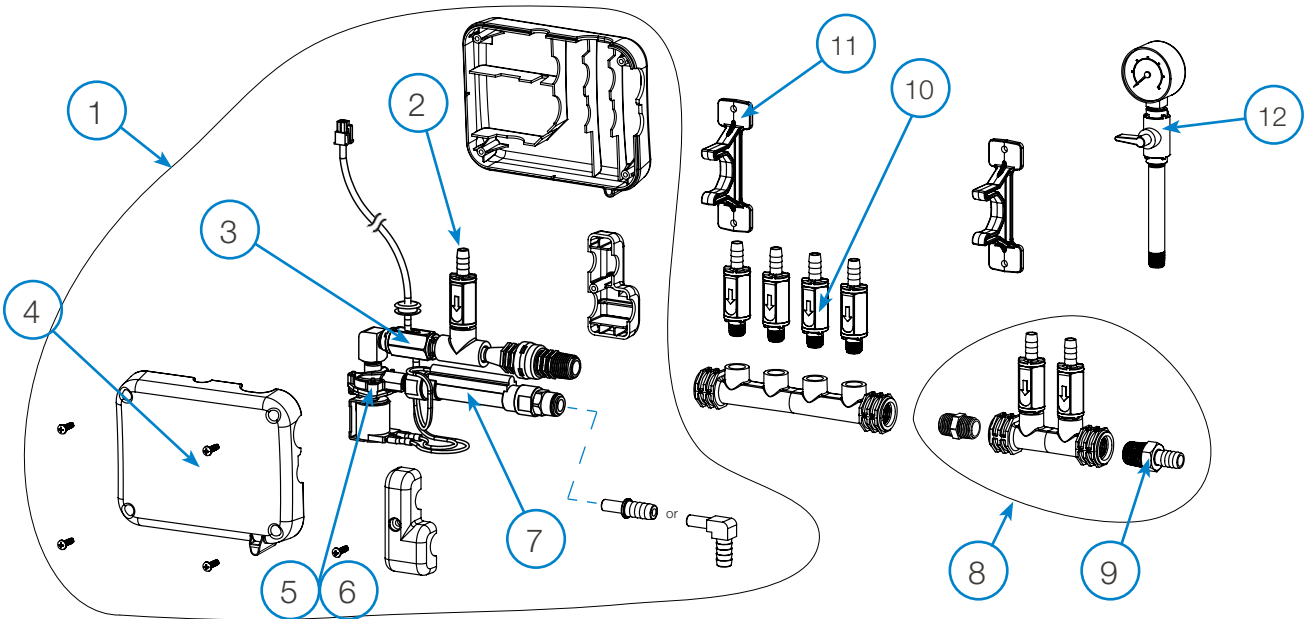
NOTE: To manually open the flush valve, to purge or clean water lines and manifold, use the Prime Pumps function of the controller. If no product delivery is desired, use an unused pump or temporarily remove the pump tube.

Safety Access and Use by Children

The appliance is not to be used by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction. This appliance can be used by children from aged 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved.

- Children shall not play with the appliance.
- Cleaning and user maintenance shall not be made by children without supervision.

parts diagram

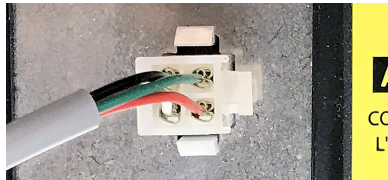


Key	Part No.	Description
1	HYD00-03608-00XT	Inlet Manifold Kit
2	HYD41-04807-00	Vent Port Check Valve, White
3	HYD41-06508-44	In-line Check Valve
4	HYD10096138XT	Cover Kit (with Screws)
5	HYD15-03778-00	Solenoid Valve Rebuild Kit
6	HYD49-06472-10	Solenoid Valve Replacement
7	HYD10098690	Flow Switch Replacement Kit (includes fitting and wire harness)

Key	Part No.	Description
8	HYD00-03608-01XT	2 Port Add-On Kit (includes check valves and end fittings)
9	HYD41-04996-01	Discharge Barb
10	HYD41-04207-46	Chemical Port Check Valve
11	HYD10096115	Wall Hanger Kit (2 hangers w/ screws and anchors)
12	HYD10098692	Optional Pressure Gauge Kit



WARNING! DO NOT connect any voltage other than 24 v~ to the solenoid coil!



Manifold Power Connection



Power Rating:

Voltage / Power = 24v~ / 7W

troubleshooting and maintenance

Problem	Cause	Solution
1. Pump will not run	There are various potential causes for this problem. Please follow the steps below to diagnose and address the problem: a. Is water supply on? If not, turn on water supply. If yes continue to step b. b. Disconnect flush manifold wire harness from the pump stand and install the flush jumper that came with the pump stand. c. Using the prime pump function of the controller, run one of the pumps. d. If the pump runs, go to step e. If pump does not run, STOP troubleshooting, call Hydro Systems Technical Support for help. e. Measure your water flow by following the steps below: 1) Turn off the incoming water supply. 2) Disconnect the brass water inlet fitting from the push-fit connector on the flow switch 3) Get an empty one gallon container. 4) Turn on water supply. 5) Capture the incoming water flow with the one gallon container and time how long it takes to fill the one gallon container. 6) If it fills in one minute or less, so your flow rate is at least 1 gallon per minute, proceed to step f. 7) If the incoming water flow is less than 1 gallon per minute, STOP and check your water supply. (Water supply flow must be at least 1 gallon per minute for the Flush Manifold's flow switch to activate.) f. Reconnect the brass water inlet and supply hose to the push-fit connector on the Flush Manifold. g. Reconnect the flush manifold wire harness to the pump stand. h. Check that discharge hose to the washer is free of kinks. i. Disconnect discharge hose at the washing machine inlet. j. Aim discharge hose to floor drain and activate a pump using the prime feature. If the pump runs, there is blockage at inlet fitting. If pump does not run proceed to step k. k. Turn on a pump with the prime function and collect the fluid coming out the discharge hose in a one gallon container. If the output is less 1 gallon per minute, proceed to step l. If the output is 1 gallon per minute or more, call Hydro Systems Technical Support for assistance. l. Activate a pump with the prime function and check voltage at the coil of the Flush Manifold solenoid valve. If you measure 24 v~ and there is no flow at the manifold outlet, replace the solenoid valve. If you do not measure 24 v~ on the coil of the solenoid with a pump active, call Hydro Systems Technical Support for help.	
2. Water in chemical line, between pump and flush manifold	a. Chemical check valve defective or clogged	Replace check valve.
3. Water drips/runs into the washer at all times	a. Defective solenoid valve	Rebuild or replace the solenoid valve.
4. Water leaks out of vent check valve	a. Defective or clogged vent check valve	A small amount of water may periodically leak from the vent check valve in normal operation. You can attach a short length of tubing to the barb to capture the fluid. If you still see a significant amount of water exiting the vent and tubing, the check valve has probably failed. Replace the vent check valve.



WARNING! Under no circumstances should the flow switch be by-passed by jumping wires. The flow switch is a safety feature that if by-passed will void the warranty of the Flush Manifold and Hydro Systems will not assume any responsibility for the mixing of chemicals in the manifold!

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.



Hydro Systems
3798 Round Bottom Road
Cincinnati, OH 45244

Phone 513.271.8800
Toll Free 800.543.7184
Fax 513.271.0160
Web hydrosystemsco.com