U S Chemical

Lin N' Logic
5 Product Venturi Laundry Dispenser
Instruction Manual

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. install using a qualified technician only, in accordance with all applicable electrical and plumbing codes. disconnect all power to dispenser during installation, service, and/or any time dispenser cabinet is opened.
NEVER	mix incompatible chemicals that pose hazards.

CAUTION! All information provided in this Instruction Manual on Washing Machines should be considered as general. Please verify specific details with the machine manufacturer.

Table of Contents

Package Contents **D1227065** “LIN N LOGIC, 5 product, with Machine Interface”

1) Lin N’Logic 5 Product Venturi Dispenser
2) Machine Interface (Converts high-voltage washer signals to isolated, low-voltage control triggers.)
3) Accessory Kit - (not shown) Discharge Tubing, Y-connector, Water Inlet Hose and so forth.
4) Bag of Check Valves - (not shown) with Eductor Elbows installed.
   (Attach chemical input hoses onto check valves **before** installing check valves onto eductors.)

Product Description

- The Lin N’ Logic is a low maintenance, venturi-based laundry chemical dispenser.
- This unit is signaled by a host laundry machine to dispense chemical(s) at the correct point in the wash cycle.
- There are no moving parts such as peristaltic spinners, squeeze tubes and so forth.
  - Therefore, the need for regular servicing is greatly reduced.
- The Lin N’ Logic is only to be installed for use with microprocessor-controlled laundry machines.

General Specifications

Category	Specification
Electrical (Main Power)	110V AC at 50-60 Hz up to 0.4 Amps
Electrical (Machine Interface)	Input from Washer: 24-249 VAC or 20-24 VDC up to 10 mA Output to Dispenser: 24 VDC up to 0.4 A
Water Pressure Rating	Min: 25 PSI (1.5 Bar - 0.18 mPa) Max: 90 PSI (6 Bar - 0.6 mPa)
Inlet Water Temperature Rating	Between 40°F and 140°F (5°C and 60°C)
Chemical Temperature Rating	Intake chemicals should be at room temperature
Cabinet Material	Front: ASA Rear: PP-TF
Environmental	Pollution: Degree 2 Temperature: 50°-160° F (10°-50° C) Maximum Humidity: 95% Relative
Regulatory Approvals	North America: Conforms to ANSI/UL Std. 60730-1:2016 Ed. 5 Certified to CAN/CSA Std. E60730-1 2016 Ed. 5
Overall Dimensions Mounting Dimensions	5-Product: 16.5 in Wide x 9 in High x 5 in Deep (419 mm W x 229 mm H x 127 mm D) 12.5 in horizontally between mounting holes, 2.75 in between vertically.

Site Survey & Installation Requirements

Before an installation takes place it is necessary to complete a site survey to ensure the Lin N’ Logic system can be installed in a position that meets all of the requirements listed below.

1) Unit must not be installed near areas that suffer excess temperature changes, direct sunlight, frost or precipitation of any kind.

2) Water supply – Min 29 PSI (2 Bar) – Max 90 PSI (5.5 Bar). **Cold water recommended.**

3) Ensure the unit can be mounted in an accessible position above the height of the required discharge location.
NOTE: Discharge tubing should never exceed height of the Lin N' Logic dispenser.

4) The back-siphon performance of this unit is suitable for chemicals up to and including Category 3 on the LD50 scale.

5) Unit must have a means to shut off power so installation and maintenance can be safely performed. Always use proper Lock out / Tag out procedures when installing and performing maintenance to ensure safety for technicians.

6) Unit must be mounted in a well-lit area, with non-slip flooring / matting.

7) Unit must be supplied with water to the inlet only. Cold water is recommended, maximum temperature 140°F (60°C).

8) Laundry machine must provide independent supply signals that can be programmed per second. Machine must have signal for each chemical and one for flush.

9) Lin N' Logic units utilizes a Machine Interface which eliminates the need for voltage-specific units or conduit runs to the dispenser. The Machine Interface must be plugged into a standard 115 VAC wall outlet within 12 feet of the washer.

Mounting Enclosure

NOTE: No oil, grease or similar substance to be used with this product.

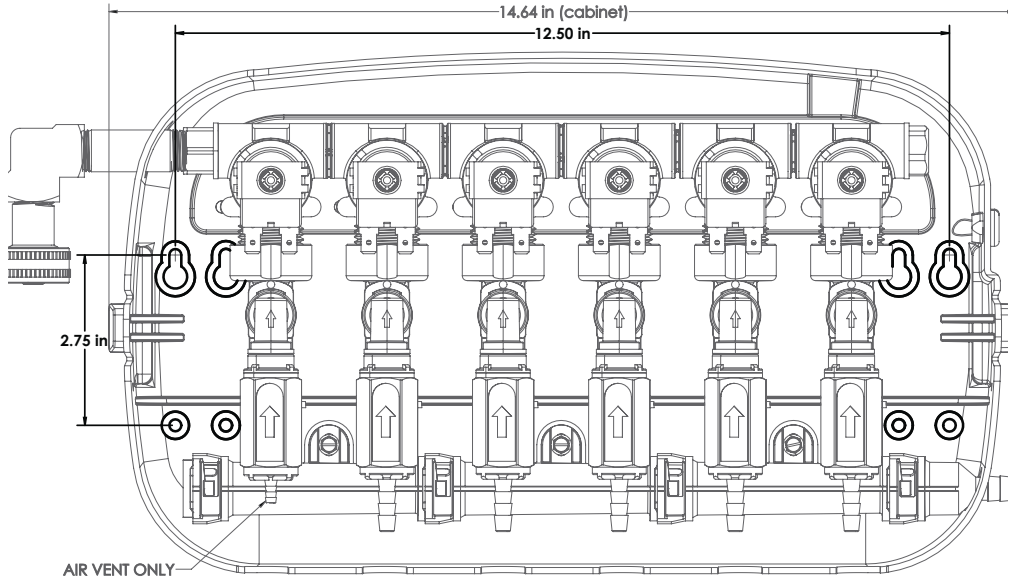


Figure 1

- Screws and wall anchors are supplied with the unit to mount the dispenser. Ensure wall is of quality and strength to support unit.
- Unit to be secured at all 4 positions shown above in Figure 1
- Screw hole centers are shown above in Figure1
- Unit should not be subject to vibration. Unit should be attached to a solid wall. Unit **MUST NOT** be attached to a laundry machine or other object subject to vibration.
- Unit should not be mounted or secured using adhesives since they are not considered to be reliable.

Important Note: Dispenser must be mounted higher than the injection point on the laundry machine.

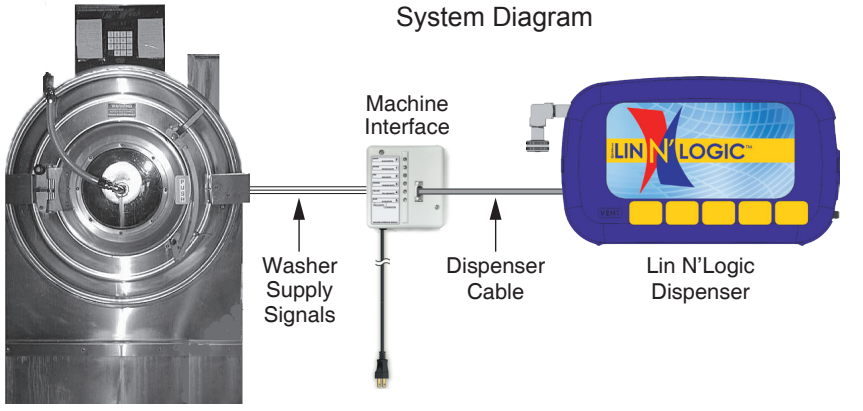
Water Connection – Cold (Maximum temperature must not exceed 140°F (60°C).

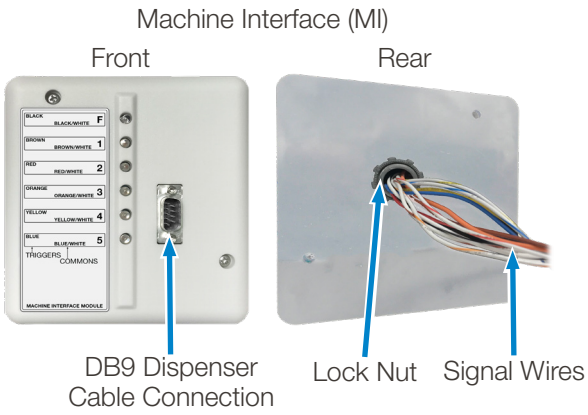
- A 6 ft. flexible water hose is provided to connect the water supply to the unit. Attach the water hose to the ¾" female swivel connector on the unit. A hose Y connector is also provided to use for the water supply.
- The installer should check for leaks at the maximum pressure that the unit will operate under during use. Pressure test **MUST BE** carried out before any electrical connections are made.
- Unit **MUST NOT** be subject to vibration through the main water connection. Ensure hose connections are tight.
- Make sure all tubing is secured and all clamps are tightened prior to use.

Configuring Chemical Pickup

- 1/4" flexible pickup tubes are not supplied with the unit and should be selected based on product chemical compatibility. Outside diameter of tubing should be at least 3/8". Secure chemical pick up tube to barb using pull tie.
- Chemical containers are to be placed below the unit and as close as possible so that the pickup tubes are kept as short as possible. Pickup tubes should not exceed 6 feet.
- Maximum recommended discharge length is 40'. We supply 15' 3/8" EVA discharge tubing.
- It is recommended that the Destainer/Chlorine Bleach is separated from the Sour. Place Destainer/Chlorine Bleach pickup on #1 position closest to the air vent and Sour on the #4 or #5 position based on the number of products.

Electrical Installation





- Mount the Machine Interface (MI) as close to the washer supply signals as possible. If high-voltage washer signal wiring is run externally from the washer to the MI, it must be protected by electrical conduit, which is fixed at regular intervals and restrained at suitable distances. (A junction box will be needed for the MI connection.)

Signal Connections:	Trigger (DC+)	Ground (DC-)	Intended Use	Priority
Trigger 1	Black	Black / White	Flush	6 (Lowest)
Trigger 2	Brown	Brown / White	Chemical 1 (Destainer/Bleach)	1 (Highest)
Trigger 3	Red	Red / White	Chemical 2	2
Trigger 4	Orange	Orange / White	Chemical 3	3
Trigger 5	Yellow	Yellow / White	Chemical 4	4
Trigger 6	Blue	Blue / White	Chemical 5	5

Their is NO automatic flush with the 5-product Lin N'Logic dispenser. You must program the washer to a send the flush signal for every product dosage, to ensure the solution is properly delivered to the washer. Start with a minimum flush time of 15 seconds for each dosage, then add one second of flush time per foot of discharge tube length. Check that the products are being delivered and adjust the washer's flush signal time as necessary. Contact your chemical specialist or technical service for specific product dosages.

There is no delivery queuing with the 5-product Lin N'Logic dispenser. And the dispenser cannot have more than one valve open at the same time. If two trigger signals are received at the same time the signal with the higher priority (see table above) will be accepted, and for the duration of the accepted signal any other signals will be ignored. After the accepted signal ends, any other signal(s) present will be handled using the same rule. So if a 10 second washer signal wired to Trigger 2 and a 20 second signal wired to Trigger 4 are sent at the same time, Trigger 2 will be accepted (because it is higher priority) and Chemical 1 will dispense for 10 seconds, then Chemical 3 will be dispensed for the last 10 seconds of it's signal duration. Remember to always program a post-delivery flush.

Machine Interface Installation

The Machine Interface (MI) accepts washer signals and converts them to low-voltage inputs. The MI is installed near the laundry machine control wiring area, often to the exterior of the laundry machine, and can accept supply signal voltages ranging from 24-240VAC or from 22-24VDC. With DC signals, polarity must be observed, where common connects to negative. The signals must be positive voltages.

1) Route MI signal wires through 1/2 inch knock-out on washer (within the wiring area). Use lock nut on MI 1/2 inch nipple to secure MI to washer.
2) Connect cable marked DB9 from the Machine Interface to the Lin N' Logic Dispenser. Bundle excess cable outside washer .

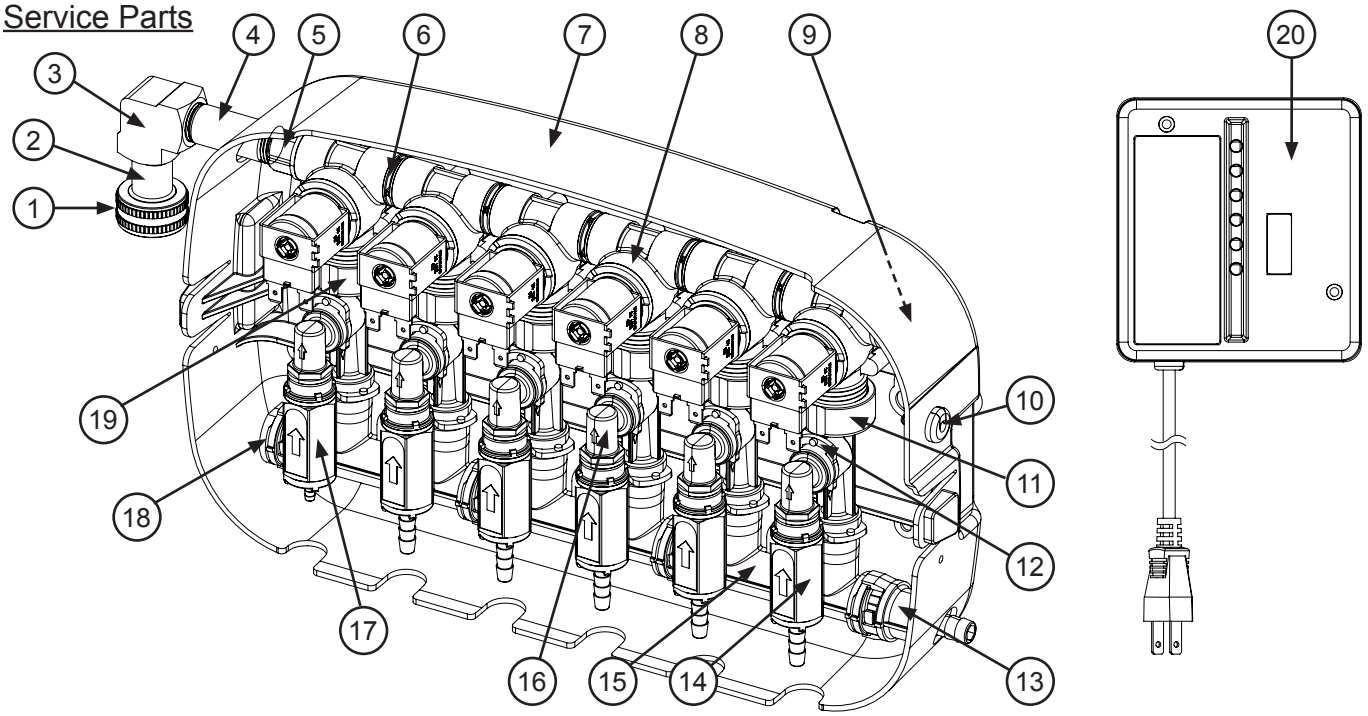
Supply Trigger Wiring:

1) Identify the washer supply signals. Check with technical service or with the washer manufacturer if you are not sure of the connections. If one or more product signals are not used, they do not need to be connected.
   - Protect any unused wire with a wire nut. If the washer has only a single common, wire nut all the common wires together.

Machine Interface Operation:

1) When the dispenser is powered, but no triggers are active, the green flush LED will slowly fade up and down over 2 seconds, then pause for 8 seconds before repeating the 2-second pulse. This "heartbeat" display is suspended when any trigger signals are active, and resumes again once the dispenser is idle.
2) When the flush is active, the green flush LED will illuminate constantly.
3) When any chemical dosage signal is received, the green flush LED will turn off and the red LED for the chemical being dispensed will illuminate constantly.
4) The Lin N'Logic cannot dispense two or more chemicals at the same time. If two trigger signals are received at the same time the signal with the higher priority (see table on page 5) will be accepted, and for the duration of the accepted signal any other signals will be ignored. (See detailed explanation at the bottom of page 5.) On the machine interface the red LED for any signal being ignored will flash rapidly.

Service Parts



Reference	Description	Qty per Unit
1	Swivel Nut, Female Garden Hose	1
Not Shown	Garden Hose Water Inlet Strainer Washer	1
2	Swivel Stem, 3/8" NPT	1
3	Fitting, Elbow 3/8" X 3/8" FPT Brass	1
4	Nipple, 3/8"NPT x 1.5" Long, Brass, Plated	1

5	3/8" NPSM X 3/8" NPT Adapter	1
6	3/8” NPS Plastic Close Nipple x 1.178”	5
Not Shown	Parker “-016” O-ring, Solenoid Valve to Close Nipple	12
7	Back Cover, US Chemical Eductor Laundry	1
8	Solenoid water valve, 24 Volt DC	6
9	Upper Manifold Pipe Plug, 3/8” NPS-M, INT. Hex, Plastic	1
10	Cable Strain Relief, Heyco	1
11	Eductor, 0.5 GPM, Kynar	5
Not Shown	Eductor to Solenoid Water Valve Washer	6
12	Clip T Connector	12
13	EVCL, Discharge Hose Barb, 0.375” (10MM), PP	1
14	Eductor Check Valve, 3/8” barb x 1/4” NPT-F	5
15	EVCL, 2-port Lower Manifold Tee, PP	3
Not Shown	O-ring 14mm ID x 2mm, Lower Manifold Tees	4
16	Elbow, EvoClean, Kynar	6
Not Shown	Parker “-014” O-ring, Elbow to Eductor & Eductor to Lower Mainfold	12
Not Shown	Parker “-013” O-ring, Elbow to Check Valve	6
17	Flush Check Valve, 1/8” barb x 1/4” NPT-F	1
18	EVCL, Lower Manifold Plug, PP	1
19	Eductor, 1.0 GPM, Kynar	1
20	Machine Interface Assembly, 110V-24V, PWD-MI	1
Not Shown	Machine Interface Signal Cable Assembly, DB9	1
Not Shown	No 8 x 1/2” Phillips Pan Head Screw	5
Not Shown	Front Cover, US Chemical Eductor Laundry	1

Troubleshooting

Full PPE MUST be worn for all maintenance of unit – See Safety Section.

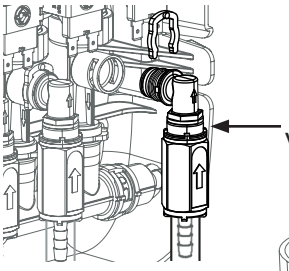
Warning – Before carrying out any replacement of parts you must disconnect water and power supplies to the unit. All maintenance must be completed by a trained technician and adhere to all applicable standards.

Problem	Cause	Solution
1. No output of solution.	a) Water Supply	Check Main Water Supply
	b) Solenoid Closed	Check connections and System Controller
	c) Strainer Washer Blocked	Clean / replace Strainer Washer
	d) Solenoid Faulty	Replace Solenoid Valve

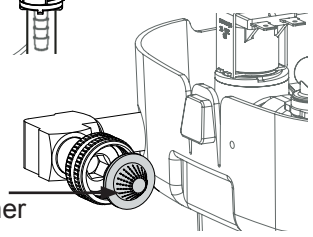
Maintenance

Check Valves:
Check valves and strainer washers should be inspected and replaced as needed. Many different factors affect check valve life, including chemical compatibility, time and operating conditions.

Check valve maintenance:
1) Make sure water and electricity are off, and pressure released from the unit.
2) Remove front cover by removing side screws and pressing on side tabs.
3) Remove the clip holding the elbow and check valve assembly in place.
4) Remove pickup tube from failed check valve. 1/4” / 6mm or 3/8” / 10mm.
5) Repair / replace the check valve assembly. Ensure sealing o-ring is in place.
6) Re-attach the chemical pick up tube to barb and secure using pull tie, then push the check valve assembly onto the eductor and secure it with the clip.



Strainer Washer Cleaning:
1) Ensure water and electricity are off, and pressure released from unit.
2) Unscrew garden hose from female inlet fitting.
3) Use pliers to remove clogged strainer washer. Clean or replace as needed.
4) Put clean strainer washer into female garden hose fitting.
5) Reconnect water input hose to input fitting and tighten. Check for leaks.



Washer Wiring

If you are unfamiliar with the washer that you are wiring, **contact the washer manufacturer** or U S Chemical for technical assistance. The list of manufacturers and contact numbers below is supplied for your reference. This list, current at the time of publication, may be outdated if manufacturers cease doing business or change their contact info. Have the model and serial numbers of the machine handy, as on-going washer upgrades may change the wire numbers from time to time.

Washer Manufacturers (Wash Machine Names)	Location	Contact
Alliance Laundry Systems (Huebsch)	Ripon, WI	800.553.5120
Alliance Laundry Systems (Speed Queen)	Ripon, WI	800.345.5649
Alliance Laundry Systems (UniWash, UniMac, Ajax)	Ripon, WI	800.587.5458 or 920.748.3121
Brim Laundry Machinery Co.	Dallas, TX	800.527.5886 or 214.630.4517
Dexter Co.	Fairfield, IA	641.472.5131
Edro Corp. (DynaWash)	East Berlin, CT	860.828.0311
Ellis Corp.	Itasca, IL	800.453.9222
G A Braun Inc.	Syracuse, NY	800.432.7286 or 315.475.3123
Girbau Co. / Continental	Oshkosh, WI	800.256.1073 or 920.231.8222
IPSO, USA	Panama City, FL	800.872.4776
Jensen (Senking, D'Hooge, L-TRON)	Fort Mills, SC	803.548.3653
Kannegiesser USA (Favorit, Futura, PowerTrans, RotaFlex)	Grand Prairie, TX	800.344.0403
Pellerin Milnor	Kenner, LA	504.467.9591
Wascomat, Inc. (Wascomat, Wascator)	Inwood, NY	516.371.4400
Washex / Lavatec	Wichita Falls, TX	800.433.0933 or 940.855.3990