



user manual

SinkMaster Proportioner with E-Gap eductors For Models 8821, 8831, 8841, 8851, 886

Safety Precautions



WARNING! Read and fully understand the user manual before operating this product.

THANK YOU FOR YOUR INTEREST IN OUR PRODUCTS

Please use this equipment carefully and observe all warnings and cautions.

- WEAR** protective clothing and eyewear when dispensing chemicals or other materials or when working in the vicinity of all chemicals, filling or emptying equipment, or changing metering tips.
- ALWAYS** observe safety and handling instructions of the chemical manufacturer.
direct discharge away from you or other persons or into approved containers.
dispense cleaners and chemicals in accordance with manufacturer's instructions. Exercise CAUTION when maintaining your equipment.
reassemble equipment according to instruction procedures. Be sure all components are firmly screwed or latched into position.
- KEEP** equipment clean to maintain proper operation.
- ATTACH** only to water tap outlets (25 psi Minimum, 85 psi Maximum and Maximum water temperature 120° F).
- NOTE** If the unit is used to fill a sink, or the discharge hose can be placed into a sink. The unit must be mounted so that the bottom of the cabinet is above the overflow rim of the sink.
Device shall be installed in a vertical orientation.
A plumbed, dedicated line is preferred for installation. When a dedicated line is not available, installation shall ensure that no cross-connections between hot and cold water are created, and that atmospheric vacuum breakers integrated into the building water supply are not negatively affected by being under pressure for over 12 continuous hours.

introduction

Package Contents

1) Proportioning unit	4) Discharge tubes
2) Suction tubing: 1/4" x 14'	5) Metering tip kit(s)
3) Foot valves and weights.	6) Mounting anchor kit

installation and operation

Installation

1. Hold unit up to wall and drill holes for the wall anchors with a 9/32" drill. Install mounting anchors, and then install screws into top two anchors. Slide key holes at top of dispenser over screw heads. Install bottom two screws through holes in cabinet. Tighten all screws. Do not mount more than 6 ft. (1.8 m) above bottom of concentrate container, nor below the highest concentrate level (never mount your concentrate higher than the dispenser). Turn ball valves so they are in a horizontal position (pointing left and right).
2. Select metering tips (see next section) and insert a tip into each hose barb on the eductor bodies.
3. Suction tubes should reach from hose barbs on eductors to bottoms of concentrate containers. Cut tube supplied to lengths required. (There is enough tube for 7 feet of tube per eductor.) Slide a weight over one end of each suction tube and slide a foot valve into the same ends of the tubes.
4. Slip open ends of suction tubes over the hose barbs/metering tips on the eductors (one at each side).

installation and operation (continued)

5. A long (4ft.) discharge tube is used with 4 GPM (yellow) eductors. Do not remove flooding rings from inside the tubes. Slide end of tube with flooding ring over discharge outlet.
6. Install discharge tubes over inner discharge tubes. Put the ends of the tubes into the appropriate sink compartments.
7. Place foot valve ends of supply tubes into concentrate containers. **REMEMBER TO CHECK FOOT VALVE STRAINER PERIODICALLY FOR CLOGGING: CLEAN IF NECESSARY.**

Operation

1. Connect water supply hose of at least ½" ID to water inlet swivel. (Minimum 25 psi pressure, with water running, is required for proper operation.) Connect other end of hose to water supply. Turn water supply on.
2. Purge air from the system by opening the ball valves briefly. (Ball valves will be in vertical position -- pointing up and down -- when open.) There may be some water discharge from the eductor vents until the air is purged.
3. Open one ball valve to start flow of desired water/concentrate solution, and run unit until supply tube is primed (filled). Repeat priming operation for other ball valve. Then, open ball valves when dispensing is desired. Close ball valves to stop flow of solution.
4. **It is essential that the discharge hose not be obstructed. If discharge is restricted, water will flow out the eductor vents.**

metering tip selection

The final concentration of the dispensed solution is related to both the size of the metering tip opening and the viscosity of the liquid being siphoned. For water-thin products, the chart at right can be used as a guideline. If product is noticeably thicker than water, consult the Measurement of Concentration procedure to achieve your desired water-to-product ratio. Because dilution can vary with water temperature and pressure, actual dilution achieved can only be ascertained by using the Measurement of Concentration procedure. The clear, undrilled tip is provided to permit drilling to size not listed should you need a dilution ratio that falls between standard tip sizes.

NOTE: A 1.0 GPM eductor is grey; a 3.5 GPM eductor is yellow. Refer to parts diagram if unfamiliar with names of system components.

Measurement of Concentration:

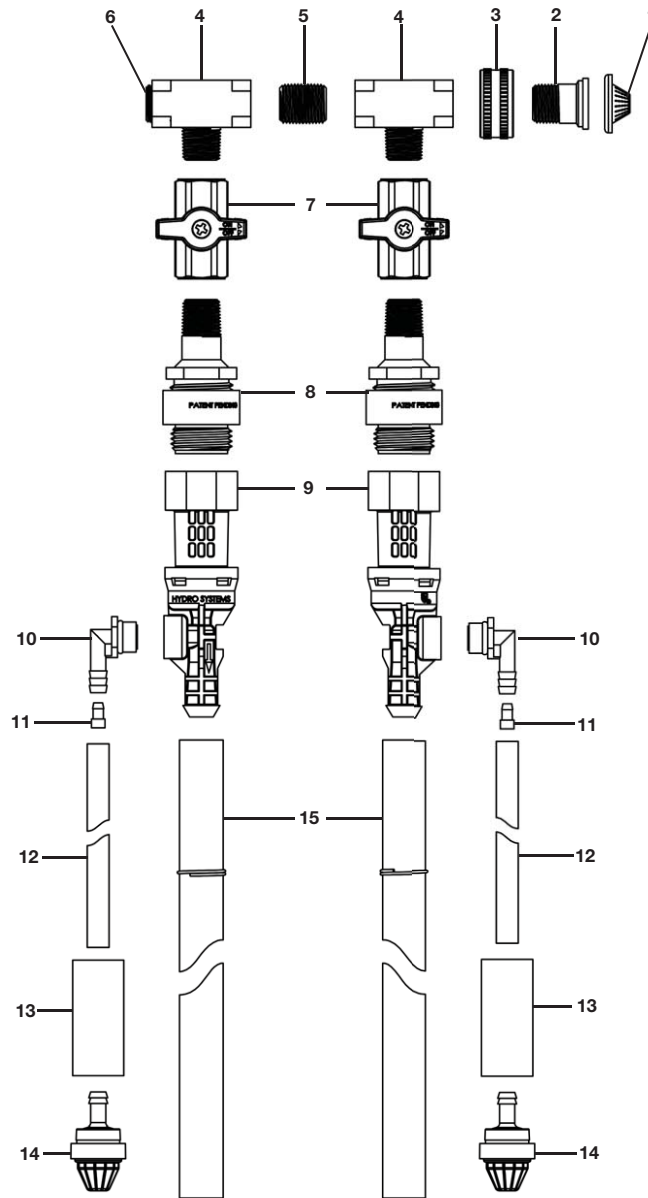
You can determine the dispensed water-to-product ratio for any metering tip size and product viscosity. All that is required is to operate the primed dispenser for a minute or so and note two things: the amount of dispensed solution, and the amount of concentrate used in preparation of the solution dispensed. The water-to-product ratio is then calculated as follows:

APPROXIMATE DILUTIONS AT 40 psi FOR WATER-THIN PRODUCTS (1.0 CP)			
Tip Color	Orifice Size	Std. Drill Number	Ratio
No Tip	.187	3/16	6:1
Gray	.128	30	6:1
Black	.098	40	7:1
Beige	.070	50	12:1
Red	.052	55	20:1
White	.043	57	28:1
Blue	.040	60	32:1
Tan	.035	65	45:1
Green	.028	70	80:1
Orange	.025	72	95:1
Brown	.023	74	120:1
Yellow	.020	76	150:1
Aqua	.018	77	190:1
Purple	.014	79	300:1
Pink	.010	87	750:1
Lt. Purple	.009	89	875:1

Dilution Ratio (X:1) where $X = \frac{\text{Amount of Mixed Solution} - \text{Amount of Concentrate Drawn}}{\text{Amount of Concentrate Drawn}}$

Dilution Ratio, then, equals X parts water to one part concentrate (X:1). If the test does not yield the desired ratio, choose a different tip and repeat the test. Alternative methods to this test are 1) pH (using litmus paper), and 2) titration. Contact your concentrate supplier for further information on these alternative methods and the materials required to perform them.

parts diagram



Key	Part No.	Description
1	HYD238100	Strainer washer
2	HYD276800	Swivel stem
3	HYD506502	Swivel nut
4	HYD133000	Branch tee
5	HYD10027700	3/8" nipple (For 2 products only)
6	HYD323338	Pipe plug, brass
7	HYD10080320	Ball valve
8a	HYD10091989	Adaptor, APAD (white)
b	HYD10082821	Adaptor (gray)
9a	HYD290	1 GPM E-gap eductor kit (gray)
b	HYD291	3.5 GPM E-gap eductor kit (yellow)
10	HYD10077500	90° Angle hose barb
11	HYD10027209	Metering tip (kit)
12	HYD500814	Tubing, 1/4" x 14'
13	HYD509900	Weight
14	HYD10089410	Foot valve, Viton

Key	Part No.	Description
15a	HYD90074581	1 GPM discharge tube (gray ring inside)
b	HYD90048495	3.5 GPM discharge tube (yellow ring inside)
Not Shown:		
	HYD10080308	Bracket/Cover

troubleshooting

Problem	Cause	Solution
1. No discharge	a. No water	a. Open water supply
	b. Clogged water inlet strainer	c. Disconnect inlet water line and clean strainer
	c. Eductor clogged	e. Clean* or replace
2. No concentrate draw	a. Clogged foot valve	a. Clean or replace
	b. Metering tip or eductor has scale build-up	b. Clean (descale)* or replace
	c. Low water pressure	c. Minimum 25 psi (with water running) required to operate unit properly
	d. Discharge tube and/or flooding ring not in place	d. Push tube firmly onto eductor discharge hose barb, or replace tube if it doesn't have a flooding ring
	e. Concentrate container is empty	e. Replace with full container
	f. Inlet hose barb not screwed into eductor tightly	f. Tighten, but do not overtighten
3. Excess concentrate draw	a. Metering tip not in place	a. Press correct tip firmly into barb on eductor
	b. Chemical above eductor	b. Place concentrate below eductor

* In hard water areas, scale may form inside the discharge end of the eductor, as well as in other areas of the unit that are exposed to water. This scale may be removed by soaking the eductor in a descaling solution (deliming solution). To remove an eductor located in the cabinet, firmly grasp water valve and unthread eductor. Replace in same manner. Alternatively, a scaled eductor can be cleaned (or kept from scaling) by drawing the descaling solution through the unit. Operate the unit with the suction tube in the descaling solution. Operate the unit until solution is drawn consistently, then flush the unit by drawing clear water through it for a minute. Replace concentrate container and put suction tube into concentrate.

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) 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, expressed 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