WorldChem

Multifunction Foaming and Spraying System

Wall mounted, high volume washing, foaming and/or sanitizing proportioner for one or two products.

THANK YOU FOR YOUR INTEREST IN OUR PRODUCTS

Hydro Systems manufactures quality proportioning and dispensing equipment. Please use this equipment carefully and observe all warnings and cautions.

********** **NOTE** **********

WEAR	protective clothing and eyewear when dispensing chemicals or other materials.
ALWAYS	observe safety and handling instructions of the chemical manufacturers.
ALWAYS	direct discharge away from you or other persons or into approved containers.
ALWAYS	dispense cleaners and chemicals in accordance with manufacturer's instructions. Exercise **CAUTION** when maintaining your equipment.
CLEAN	equipment after each use in accordance with instruction sheet.
WEAR	protective clothing and eyewear when working in the vicinity of all chemicals, filling or emptying equipment or changing metering tips.
ALWAYS	re-assemble equipment according to instruction procedures. Be sure all components are firmly screwed or latched into position.
ATTACH	only to tap water outlets (85 PSI maximum).

Package includes:

-- complete unit
-- (2) 7-foot vinyl chemical inlet tubes with foot strainers and weights
-- (1) metering tip kit
-- (4) screws and (4) wall anchors for wall mounting (use 9/32" drill)
-- (1) 1/2" hose bracket and (1) 3/4" hose bracket and mounting screws
-- parts list and product structure diagram

Instructions for Operation:

1. Remove cover and attach unit to wall using hardware provided.
2. Select metering tip (see section on metering tip selection) and press firmly into check valve provided at the side of the eductor. Install chemical inlet tube on hose barb. The strainer end of the suction tube can be dropped directly into the concentrate container. Replace cover.
3. Connect water inlet hose with 3/4" male garden thread to female swivel at left side of unit. Tighten to avoid leaking.
4. Connect discharge hose to male 3/4" discharge provided at bottom of unit. Using 1/2" or 3/4" bracket and screws provided, secure discharge hose to wall about 12" below unit. This will help to prevent stress on the discharge fitting when tugging on the hose occurs. Hose of 1/2" ID is recommended if the hose length will be 25 feet or less. 3/4" ID hose may be needed if the total length of the hose will exceed 25 feet. Attach appropriate spraying or foaming gun (and ball valve or quick connect) to end of discharge hose.
5. Turn on water supply to unit. Minimum 25 PSI water pressure is required to operate the unit.
6. Turn on product valve to begin proportioning and dispensing. Slide selector switch to either side for product dispensing. Center position provides full volume rinse.

Metering Tip Selection:

The final concentration of the dispensed solution is related to the size of the metering tip orifice, the viscosity of the liquid being siphoned, water pressure, water flow rate, and other factors in the application. A chart is provided on the next page which can be used as a guideline for selecting a metering tip when proportioning water-thin concentrates. Test the actually achieved dilution using the Measurement of Concentration procedure discussed on the next page. If product viscosity is greater than that of water, choose a tip with a larger orifice than that which would deliver the desired water-to-product ratio for a water-thin product. Test the actually achieved ratio using the Measurement of Concentration procedure on the next page. Continue to choose and test tips until the desired dilution is achieved. One clear, undrilled tip is supplied to permit drilling orifice sizes not listed if necessary.

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)	8:1
Gray	.128	(30)	8:1
Black	.098	(40)	8:1
Beige	.070	(50)	9:1
Red	.052	(55)	12:1
White	.043	(57)	16:1
Blue	.040	(60)	20:1
Tan	.035	(65)	24:1
Green	.028	(70)	32:1
Orange	.025	(72)	48:1
Brown	.023	(74)	64:1
Yellow	.020	(76)	78:1
Aqua	.018	(77)	96:1
Purple	.014	(79)	128:1
Pink	.010	(87)	256:1
Lt. Purple	.009	(89)	380:1

CONVERSION CHART: Ratio Equivalents to Standard Measures		
Oz./Gal.	*Ratio*	*%*
128	1:1	50.0
64	2:1	33.3
32	4:1	20.0
21	6:1	14.3
16	8:1	11.1
14	9:1	10.0
8	16:1	5.9
6	24:1	4.0
4	32:1	3.0
3	48:1	2.0
2	64:1	1.5
1	128:1	0.8
1/2	256:1	0.4
1/4	512:1	0.2

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 water/product mixture, and the amount of concentrate used in preparation of the solution dispensed. The water-to-product ratio is then calculated as follows:

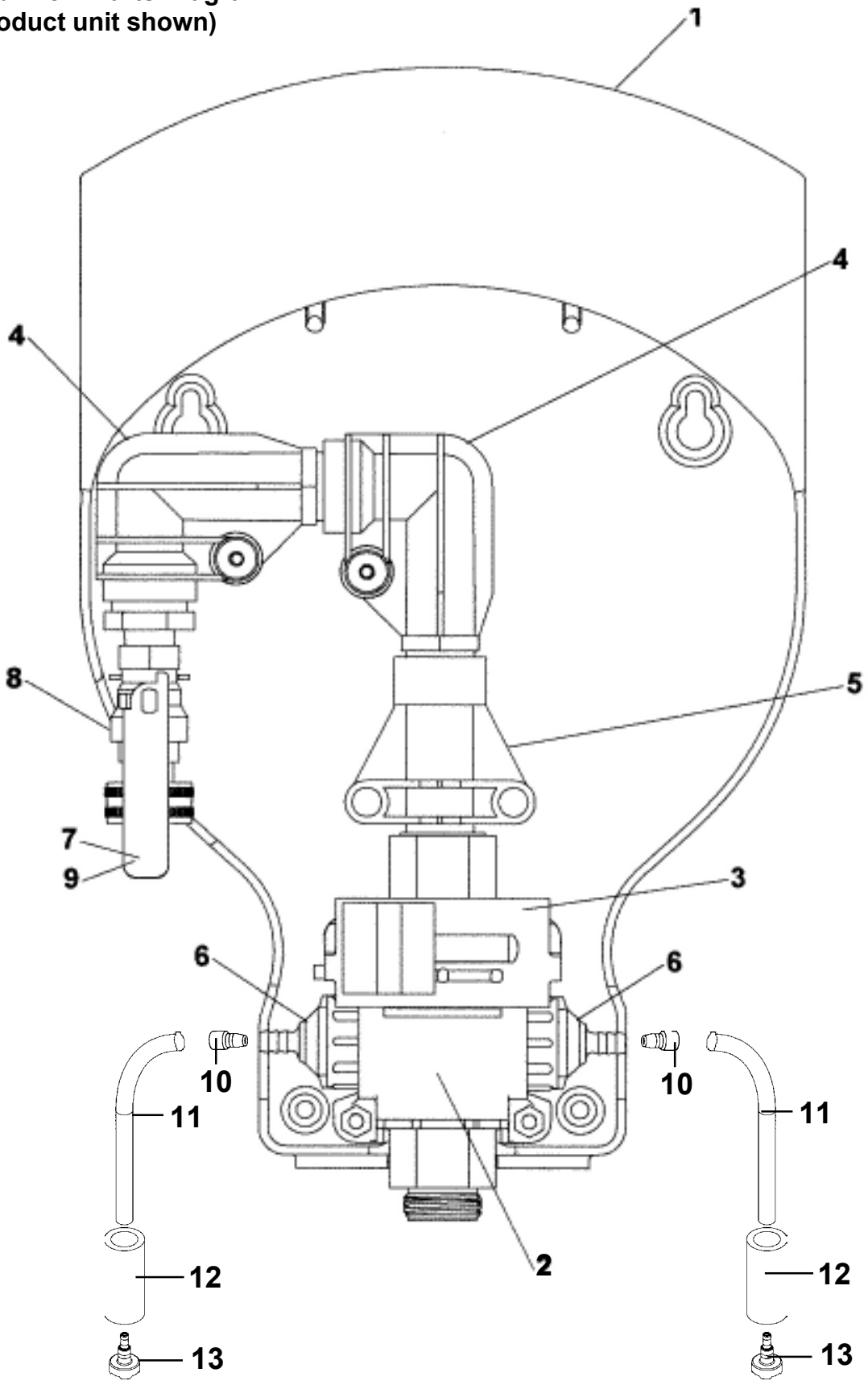
$$\text{Dilution (X)} = \frac{\text{Amount of Mixed Solution -- Amount of Concentrate Drawn}}{\text{Amount of Concentrate Drawn}}$$

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 LIST (Refer to diagram)

Key #	Part Number	Description
1	10089824	Cabinet back
2	10092102	Eductor Assembly
3	10092105	Gear & Bracket Assembly
4	10059204	Elbow
5	10048302	Connecting Tube
6	10069270	Check Valve, 3 psi, Viton
7	10089826	Handle, Ball Valve
8	10084020	Ball Valve
9	10089838	Handle Sleeve, Black
10	10027209	Metering tip kit
11	500814	Tubing
12	509900	Ceramic weight
13	609600	Foot strainer
Not Shown:		
	10089837	Cover

WorldChem Parts Diagram:
(2 product unit shown)



Troubleshooting Guide:

Problem	Cause	Solution
1. No discharge	a. No water b. Excessive water pressure c. Eductor clogged	a. Open water supply b. Install regulator if pressure exceeds 85 PSI c. Clean* or replace
2. No concentrate draw	a. Clogged check valve b. Metering tip clogged c. Eductor clogged d. Clogged water inlet e. Clogged foot strainer f. Low water pressure and/or volume g. Discharge hose is the wrong size. h. Check valve not screwed into eductor firmly	a. Clean or replace b. Rinse in hot water or replace: DO NOT REAM CLEAN! c. Clean or replace d. Clean screen e. Clean or replace f. Minimum 25 PSI and 4 GPM flow required to operate unit g. Use 3/4" hose if length exceeds 25'. h. Tighten, but DO NOT OVER TIGHTEN!
3. Excess concentrate draw	a. Metering tip not in place (Or wrong metering tip)	a. Press correct tip firmly into barb
4. Water flow won't shut off	a. Ball valve defective	a. Replace
5. Low or no water flow	a. Inlet screen clogged b. Supply source inadequate c. Scaled eductor or fittings	a. Clean or replace b. 4 GPM flow necessary to unit. Move unit or replumb incoming line. c. Clean* or replace
6. Backflow into concentrate	a. Eductor check valve inoperable	a. Clean or replace check valve

* In hard water areas, scale (mineral deposits) may form at the discharge of the eductor. This scale may be removed by running the descalant through the system.