HYDROMASTER MODEL 210
LINE CLEANING UNIT

Package Contains:
1. Drum proportioner
2. Suction tube (4 ft.) with foot valve
3. Water supply & Discharge hose
4. Metering tip kit (14 tips)
5. Product information sheet

THANK YOU FOR YOUR INTEREST IN OUR PRODUCTS

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	to water source: Optimum Pressure Range is 30 to 50 psi.

Installation and Operation:
1. Select a metering tip (see next section), and insert it into the suction stub. Slide the open end of the suction tube through the bung adaptor, then over the suction stub.
2. Connect water supply and discharge hoses to water lines.
3. Insert the foot valve end of the suction tube into the drum.
4. Swivel the drum adapter several turns in the bung opening until the bracket is secure. In case of no adapter, position unit above the drum.
5. Turn on water supply. To begin dispensing solution, open ball valve at inlet to unit.

Metering Tip Selection:
The final concentration of the dispensed liquid is related to both the size of the metering tip opening (orifice) and the viscosity of the liquid being siphoned. If product viscosity is noticeably greater than that of water, consult the procedure for Measurement of Concentration on the next page to achieve your desired water-to-product ratio. For water-thin products, use the chart below as a guideline. Because such factors as inlet water pressure and temperature can affect dilution ratios, the figures listed below are only approximate. Test the actual dilution you are achieving using the Measurement of Concentration procedure for best results. Two undrilled, clear tips are supplied for drilling sizes not listed.

Tip Color	Drill Size	Approximate Dilution Ratio at 40 PSI, water-thin viscosity (1.0 cp)
Gray	30	2.7:1
Black	40	4:1
Beige	50	7.5:1
Red	55	12.5:1
White	57	18.6:1
Blue	60	22.3:1
Tan	65	30.4:1
Green	70	47:1
Orange	72	64:1
Brown	74	66:1
Yellow	76	100:1
Purple	80	186:1
Pink	87	326:1

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.

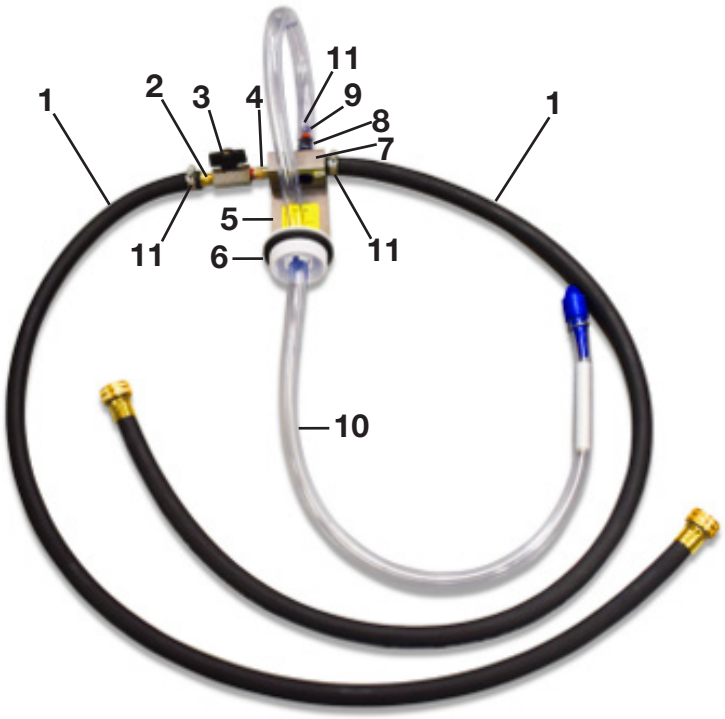
Troubleshooting:

Problem	Cause	Remedy
1. Unit does not draw concentrate	a. Clogged foot valve strainer b. Metering tip orifice obstructed c. Water pressure too low d. Mineral deposits in eductor	a. Clean or replace b. Rinse orifice or replace with new tip c. Minimum 30 PSI required. Replumb line or use different source d. Descale* or replace eductor
2. Water gets into concentrate container	a. Heavy mineral deposits in eductor b. Faulty or missing foot valve	a. Descale* or replace eductor b. Repair or replace foot valve
3. Unit continuously draws concentrate	a. End of discharge hose lower than eductor	a. Discharge tube has to be routed above the eductor

* Mineral deposits, known as scale, may form at the discharge of the eductor, particularly in hard water areas. To remove scale, soak the eductor in a descaling or deliming solution. Alternately, the descaling solution can be siphoned into the eductor by operating the unit with the foot valve in the descaling solution. After operating the unit in this manner for a minute, put foot valve in clear water and operate for another minute to flush the unit. Return the foot valve to the concentrate for normal use.

Parts Information:

KEY	PART NO.	DESCRIPTION
1	HYD10048530	HOSE,1/2IN ID X 4FT
2	HYD41-06473-84	Adapter
3	HYD502000	Ball valve
4	HYD234300	Nipple
5	HYD6150-K	Mounting bracket
6	HYD10090910	Bung adapter assy.
7	HYD440318	Eductor, Dark blue
8	HYD440101	Suction stub
9	HYD690015	Metering tip (kit)
10	HYD10099773	Suction tube assy. (includes c, d, e & f)
a	HYD616100	¼" x 7" tubing
b	HYD505804	1/2" ID tubing
c	HYD250006	Ceramic weight
d	HYD90060717	Foot valve, Viton*
11	HYD608300	Hose clamp



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