Hydro®

Proportioning & Dispensing Systems

A DOVER RESOURCES COMPANY

Hydro Systems Company 3798 Round Bottom Road, Cincinnati, OH 45244 USA
Phone: (513) 271-8800 • Fax: (513) 271-0160

10072165 Rev. C
7/07

HydroMinder Model 530

Package Contains:
1. Proportioner with U-clamp for mounting
2. Float with chain
3. Suction tube with foot valve -- 9 ft.
4. Discharge tube -- 2 ft.
5. Metering tip kit -- 14 tips
6. Product information sheet

THANK YOU FOR YOUR INTEREST IN OUR PRODUCTS

Hydro Systems manufactures quality chemical proportioners. 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).

Through proper care and maintenance, this equipment will serve your toughest cleaning jobs.

Installation:
1. Select a metering tip (see next section) and insert it into the suction stub on the eductor body.
2. Attach the end of the discharge tube with the clamp and flooding ring to the discharge barb on the eductor.
3. Mount the unit in a level position on the side of the reservoir. The U-clamp may be repositioned or removed as necessary.
4. Insert the foot valve end of the suction tube into the concentrate container. (The concentrate container must be below the level of the HydroMinder, or the unit will continue to siphon concentrate after the water flow stops.)
5. Slide the open end of the suction tube over the suction stub and metering tip.
6. Adjust the float chain length to position the float at the highest desired level of solution. To prevent foaming, be certain that the solution level will always be above the point of discharge (open end of the discharge tube). Be sure float mechanism is not hampered by water turbulence caused by discharging solution. It may be necessary to baffle the float from the discharge in order for the unit to work properly.
7. Install a minimum 3/8" water hose between the inlet swivel and water supply. Minimum 25 PSI pressure is required at the inlet to properly operate the HydroMinder.

Metering Tip Selection:
Final dilution of concentrate is related to many factors, including the size of the metering tip opening and the viscosity of the liquid being siphoned. For water-thin products, consult the chart on the next page as a **guideline**. Use the Measurement of Concentration procedure on the next page to test the actual dilution achieved in your application. Two undrilled, clear tips are supplied for drilling sizes not listed. If greater dilution of your concentrate is required, an additional HydroMinder may be installed on an adjoining reservoir for two-step dilution.

Operation:
Open the water supply and shut-off valve. Water will flow through the HydroMinder, causing a suction in the eductor which draws concentrate into the water flow. When the solution in the reservoir reaches the level set by the float, the valve will close and stop the water flow. When withdrawal of solution from the reservoir causes the level to drop more than 1-1/2 inches, the valve will open and the reservoir will be refilled to the previous level. This cycle will be repeated automatically. The shut-off valve should be **fully closed** when changing metering tips or concentrate containers, when reservoir is drained or when the unit is not in use.

APPROXIMATE DILUTIONS AT 40 PSI FOR WATER-THIN PRODUCTS (1.0 CP)			
Tip Color	Orifice Size	Std. Drill Number	Ratio (per Eductor Flow)
No Tip	.187	(3/16)	4:1
Gray	.128	(30)	6:1
Black	.098	(40)	10:1
Beige	.070	(50)	20:1
Red	.052	(55)	35:1
White	.043	(57)	52:1
Blue	.040	(60)	55:1
Tan	.035	(65)	70:1
Green	.028	(70)	100:1
Orange	.025	(72)	140:1
Brown	.023	(74)	160:1
Yellow	.020	(76)	190:1
Purple	.014	(79)	250:1
Pink	.010	(87)	530:1

CONVERSION CHART: Ratio Equivalents to Standard Measures		
Oz./Gal.	*Ratio*	*dl/l*
1/4	512:1	0.02
1/2	256:1	0.04
1	128:1	0.08
2	64:1	0.16
3	48:1	0.23
4	32:1	0.31
6	24:1	0.47
8	16:1	0.62
14	9:1	1.09
16	8:1	1.25
21	6:1	1.64
32	4:1	2.50
64	2:1	5.00
128	1:1	10.00

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:

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

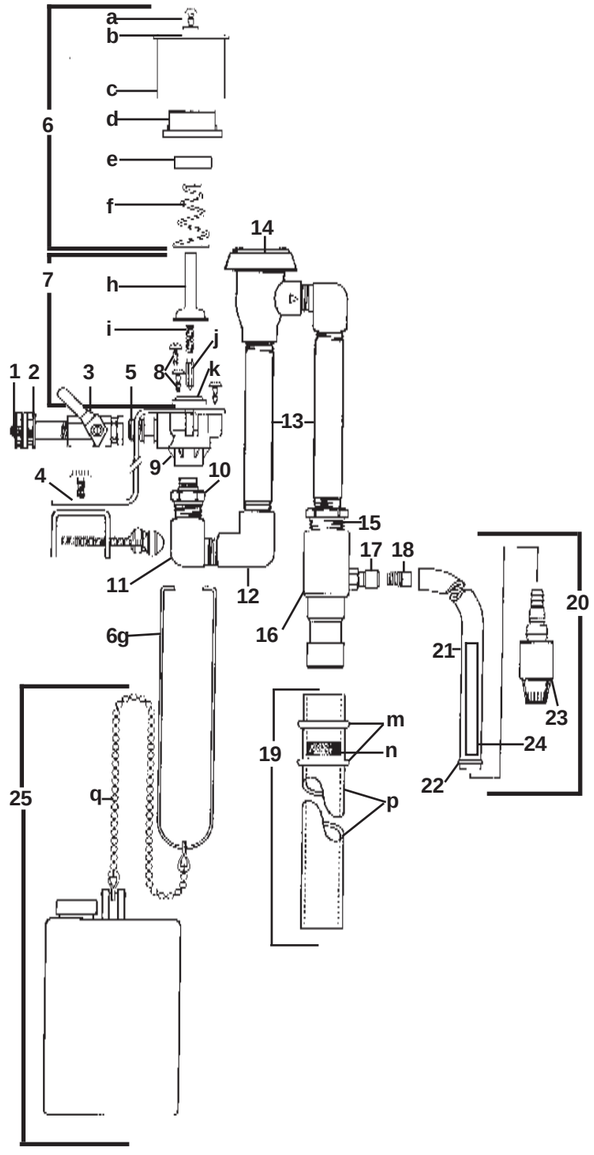
Dilution ratio, then, equals X parts water to one part concentrate (X:1). If the test does not yield the desired ratio, choose a different tip and repeat the test. Alternative methods to this test are 1) pH (using litmus paper), and 2) titration. Contact your concentrate supplier for further information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

Trouble-Shooting Chart:

Problem	Cause	Remedy
1. No discharge	a. No water	a. Open water inlet valve
	b. Defective magnetic valve assembly	b. Replace assembly
	c. Excessive water pressure	c. Install regulator if pressure exceeds 85 PSI
2. No concentrate draw	a. Clogged foot valve strainer	a. Clean or replace
	b. Metering tip clogged or eductor scaled	b. Clean or replace*
	c. Low water pressure	c. Minimum 25 PSI, flowing, required
	d. Discharge tube or flooding ring not in place	d. Replace tube. Order new tube if flooding ring is missing
	e. Loose hose barb	e. Tighten hose barb on eductor
3. Failure of unit to turn off	a. Valve parts dirty or defective	a. Clean or replace*
	b. Magnet spring too short or weak	b. Replace magnet spring (magnet parts kit)
	c. Clogged valve orifice	c. Clean or replace
4. Backflow into concentrate	a. Dirty or defective foot valve	a. Clean or replace foot valve
	b. Weak eductor directs water into concentrate	b. Replace eductor

* In hard water areas, scale may form at the discharge of the eductor or in valve parts. This scale may be removed by soaking the eductor in a descaling or deliming solution. Or, the delimer may be drawn through the unit for a few minutes, then the unit flushed with clear water before returning to service. Be sure deliming solution is not dispensed into the solution holding tank.

HydroMinder Model 530 Parts Diagram/List



Key	Part No.	Description
1	238100	strainer washer
2	2767-K	hose swivel connector
3	10080320	ball valve
4	5030-K	mounting bracket kit (specify model 530) Includes bracket, clamp, screws, etc.
5	637900	hex nipple
6	5207-K	magnet parts kit
		a. screw
		b. washer
		c. magnet cover
		d. magnet cap
		e. magnet
		f. spring, magnet
		g. yoke, magnet
7	665520	valve parts kit
		h. valve guide assy.
		i. spring, armature
		j. armature
		k. diaphram
8	641750	screw (3 req'd)
9	520000	water valve body
10	419500	reducing hex nipple
11	233100	street elbow
12	506900	1/2" elbow
13	507000	6" nipple
14	507100	siphon breaker assembly
15	236500	bushing
16	6331-K	9 GPM eductor ass'y (includes #17 suction stub)
17	440101	suction stub only
18	690015	metering tip kit
19	5084-2A	discharge tube assy.
		m. hose clamp
		n. flooding ring
		p. tube
20	5058-9A	suction tube/foot valve assembly (includes 21-24)
21	505809	suction tube only
22	5093-7	ring clamp
23	10076301	foot valve, Viton
24	250006	ceramic weight (inside tube)
25	5043-A	float & chain assemlby
	507200	q. bead chain only