



user manual

AccuMax™1, 2, & 3 button units with HydroGap AirGap Eductors

For Models 3530AG, 3533AG, 3535AG, 3541AG, 3544AG, 3545AG, 3546AG, 3550AG, 3553AG, 3556AG, 3558AG, 3581AG, 3583AG

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 - ASSE, UPC and CSA certified to ASSE1055 | 5) Metering tip kit(s) |
| 2) Supply tubing | 6) Mounting anchor kit |
| 3) Foot valve assembly & weight for each eductor | 7) Hose hook for discharge tube(s) - Models with 3.5 GPM eductors only |
| 4) Discharge tube for each eductor | |

installation and operation

Installation

- Find suitable place close to water source for unit. Mounting bracket should be installed approx. 5' from the floor. Level bracket and mark holes. Drill 9/32" holes and install mounting anchors and screws in bracket.
- Remove cabinet cover and hang cabinet on bracket. Mark hole for lower cabinet screw. Remove cabinet and drill 9/32" hole. Install anchor and screw in lower cabinet hole. When mounting unit, do not mount more than 5 feet from the floor. Also, never mount your concentrate container higher than the unit. Keyhole slots are also provided in the cabinet back if the mounting bracket won't be used.
- Select a metering tip (Refer to section **metering tip selection**), and insert into hose barb on eductor body. (Repeat for all eductors.)
- Supply tube should reach from hose barb on eductor to bottom of the concentrate container. Cut supply tube provided to length required. Slide a ceramic weight over one end of tube and slide a foot valve into the same end of the tube. (Prepare a tube for each eductor.)

installation and operation (continued)

5. Push other end of supply tube over the hose barb/metering tip on the eductor. (Repeat for all eductors.)
6. Place foot valve ends of supply tubes into concentrate containers. **REMEMBER TO CHECK FOOT VALVE STRAINERS REGULARLY FOR CLOGGING: CLEAN IF NECESSARY.**
7. If required, the optional Foam/Froth Reducing Tube can slide on the end of the grey 1 GPM eductor. Push the tube as far as possible. Warm the end of the tube for easy installation. This tube will reduce the amount of foam that may occur with some chemicals. It is not needed if your chemical does not foam.
8. A short discharge tube is used with the 1.0 GPM eductor; minimum tube length is 7 in. (18 cm) for proper operation. Longer tubes (4 feet) are used with a 3.5 GPM eductor. Repeat for all the eductors.
Hooks may be installed on longer tubes to allow discharge tube to conveniently hang from the dispenser when not in use.
9. Replace cabinet cover. Guide supply tubes through slots in sides of cabinet cover. Push the sides in, behind the latch holes, to snap the cover in place. The two screws provided may be installed in the holes in the cabinet sides to prevent easy removal of cover.

Operation

1. Connect water supply hose of at least 3/8" ID to water inlet swivel. (Minimum 25 psi pressure, with water running, is required for proper operation.) Connect opposite end of hose to water supply. Turn water supply on.
2. Purge air from the system by depressing the buttons briefly. There may be some water discharge from the eductor vents until the air is purged.
3. Push button to start flow of desired water/concentrate solution, and hold until supply tube is primed (filled). Then push the button whenever dispensing is desired, and release button to stop flow of solution. **If you wish to be able to lock the button in the "on" position: Depress button and slide button lock up. To unlock, depress button and release.**
4. **It is essential that the discharge hose not be obstructed. If discharge is restricted, water will flow out the eductor vents. Do not start to operate the dispenser with liquid in the discharge tube.**

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:

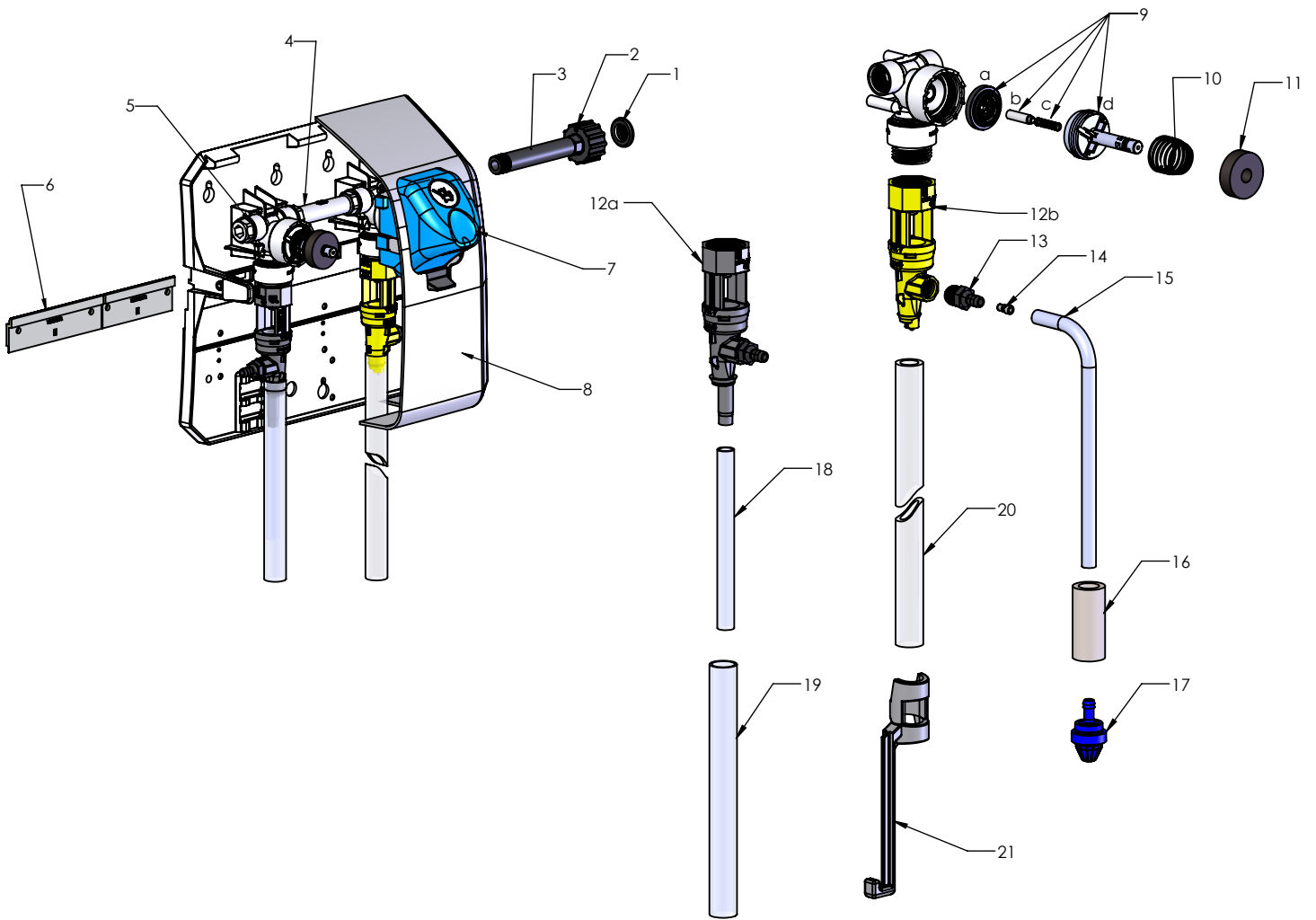
You can determine the dispensed water-to-product ratio for any metering tip size and product viscosity. All that is required is to operate the primed dispenser for a minute or so and note two things: the amount of dispensed solution, and the amount of concentrate used in preparation of the solution dispensed. 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 | Ratio (per Eductor Flow) | |
| | | 1 GPM | 3.5 GPM |
| No Tip | .187 | 2.6:1 | 4:1 |
| Grey | .128 | 2.6:1 | 4:1 |
| Black | .098 | 2.5:1 | 5:1 |
| Beige | .070 | 3:1 | 8:1 |
| Red | .052 | 5:1 | 13:1 |
| White | .043 | 7:1 | 22:1 |
| Blue | .040 | 9:1 | 26:1 |
| Tan | .035 | 11:1 | 34:1 |
| Green | .028 | 17:1 | 52:1 |
| Orange | .025 | 19:1 | 64:1 |
| Brown | .023 | 22:1 | 71:1 |
| Yellow | .020 | 32:1 | 102:1 |
| Aqua | .018 | 39:1 | 128:1 |
| Purple | .014 | 64:1 | 213:1 |
| Pink | .010 | 128:1 | 447:1 |

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 | HYD10082830 | Swivel collar (molded) |
| 3 | HYD10082811 | Swivel stem (Molded) |
| 4 | HYD10075902 | Nipple, plastic (2 btn models) |
| | HYD10075903 | Nipple, plastic (3 btn models) |
| | HYD10075950 | O-ring (2 required per nipple) |
| 5 | HYD10098573 | Kit, Pipe plug & O-ring |
| 6 | HYD10091035 | Wall bracket |
| 7 | HYD10098821 | Button, Low flow, process blue |
| | HYD10098824 | Button, High flow, process blue |
| 8 | HYD10098539 | Cabinet set, 1 button unit |
| | HYD10098541 | Cabinet set, 2 button unit |
| | HYD10098836 | Cabinet set, 3 button unit |
| 9 | HYD10075980 | Valve parts kit a. diaphragm b. armature c. spring d. valve bonnet |

| Key | Part No. | Description |
|-----|-------------|--|
| 10 | HYD10079010 | Spring |
| 11 | HYD10079000 | Magnet |
| 12a | HYD160 | 1.0 GPM eductor - Grey |
| b | HYD161 | 3.5 GPM eductor - Yellow |
| 13 | HYD3401R | Hose barb (included in eductor assemblies) |
| 14 | HYD690014 | Metering tip kit |
| 15 | HYD500870 | Tubing 1/4" x 7' |
| 16 | HYD509900 | Weight |
| 17 | HYD10089410 | Footvalve -Viton (EPDM also available. Order 10076302) |
| 18 | HYD10099721 | Optional Foam Reduction Tube (1 GPM Only) |
| 19 | HYD10064794 | 1 GPM Discharge Tube (7") |
| 20 | HYD505804 | 3.5 GPM Discharge Tube (4") |
| 21 | HYD10080730 | Hose hook, Dark grey (Standard) |
| | Not Shown: | |
| | HYD641751 | Security screws (for cabinet sides) |

troubleshooting and maintenance

| Problem | Cause | Solution |
|--|---|--|
| 1. No discharge | a. No water | a. Open water supply |
| | b. Excessive water pressure | b. Install regulator if water pressure (with water running) exceeds 85 psi |
| | c. Clogged water inlet strainer | c. Disconnect inlet water line and clean strainer |
| | d. Magnetic valve not functioning | d. Install valve parts kit |
| | e. 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 not in place | d. Push tube firmly onto eductor discharge hose barb |
| | e. Concentrate container is empty | e. Replace with full container |
| | f. Clogged water inlet strainer | f. Disconnect inlet water line and clean strainer |
| | g. Inlet hose barb not screwed into eductor tightly | g. Tighten, but do not overtighten |
| | h. Air leak in pick-up tube | h. Put clamp on tube or replace tube if brittle |
| 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 |
| 4. Failure of unit to turn off | a. Water valve parts dirty or defective | a. Clean or replace with valve parts kit |
| | b. Magnet doesn't fully return | b. Make sure that magnet moves freely. Replace spring if short or weak |
| | c. Push button stuck | c. Remove button and clean cabinet/button to remove excess dirt lodged in slide recess |
| 5. Excess foaming in discharge | a. Air leak in pick-up tube | a. Put clamp on tube or replace tube if brittle |
| 6. Water discharge from air vents of eductor | a. Restricted discharge hose | a. Be sure discharge tube is not immersed, kinked or elevated. Be sure there is no liquid in the discharge hose when beginning to operate dispenser. |
| | b. High water pressure | b. Install pressure regulator if flowing water pressure exceeds 85 psi. |

* 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