

# Installation, Operation and Maintenance Instructions



## DUAL RATIO COOLANT MIXER

**ERIEZ** HEADQUARTERS: 2200 ASBURY ROAD, ERIE, PA 16506-1402 U.S.A.  
GLOBAL LEADER IN SEPARATION TECHNOLOGIES

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# Introduction

This manual details the proper steps for installing, operating and maintaining the Dual Ratio Coolant Mixer.

Careful attention to these requirements will assure the most efficient and dependable performance of this equipment.

If there are any questions or comments about the manual, please call Eriez at 814-835-6000 for assistance.



## SAFETY INFORMATION

1. **To avoid possible injury, read all manuals for full operating procedures before attempting operation of the Dual Ratio Coolant Mixer.**
2. **Wear safety goggles to protect eyes from splashing liquids when transferring into and out of clean and dirty coolant tanks. This is important, even if the fluids are not caustic or otherwise harmful, because metal particles suspended in the liquid could still cause serious eye damage.**
3. **Immediately clean up any spilled coolant to avoid slippery floors and possible dangerous falls.**
4. **DO NOT use this unit for solvents, flammable (low flash point) or other volatile liquids. Use only for water-soluble coolants.**
5. **This unit is to be operated and maintained by authorized personnel only.**



## CAUTION

**Safety labels must be affixed to this product. Should the safety label(s) be damaged, dislodged or removed, contact Eriez for replacement.**

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## Package Should Contain:

1. Proportioner unit.
2. Supply tubing.
3. Foot valve assembly & weight for each eductor.
4. Discharge tube for each eductor.
5. Metering tip kit(s).
6. Mounting bracket & anchor kit.
7. Hook(s) for discharge tube(s) - Models with high flow eductors only.
8. Instruction sheet.

## Safety Precautions

<b>THANK YOU FOR YOUR INTEREST IN OUR PRODUCTS</b>	
Please use this equipment carefully and observe all warnings and cautions.	
WEAR	protective clothing and eyewear when dispensing chemicals or other materials.
WEAR	protective clothing and eyewear 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 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.
ALWAYS	re-assemble 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 tap water outlets (85 PSI maximum).
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.



# Installation & Operation

1. Find suitable place close to water source for unit. Mounting bracket should be installed approx. 5' (1.52 m) from floor. Level bracket and mark holes. Drill 9/32" (7 mm) holes & install mounting anchors and screws in bracket. Drill holes for the three wall anchors with a 5/16" (8 mm) drill bit, using the cabinet back as a template for proper spacing of the mounting screws. Install mounting anchors, and then screws in top two anchors. Slide key holes in cabinet back over screw heads, tighten screws, then install bottom screw. Do not mount more than 6 feet (1.8 meters) above the bottom of the concentrate container, nor below the highest concentrate level (never mount your concentrate higher than the proportioner).
2. Remove cabinet cover and hang cabinet on bracket. Mark hole for lower cabinet screw. Remove cabinet & drill 9/32" (7 mm) hole. Install anchor and screw to lower unit hole. When mounting unit do not mount any higher than 5' (1.52 m) 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.
3. Select a metering tip, and insert into hose barb on eductor body. (Repeat for all eductors.)
4. Cut supply tubing provided into separate supply tubes for each product to be dispensed. Supply tubes should reach from hose barb on eductor to bottom of the concentrate container. 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.)
5. Slip other end of supply tube through an opening in either side of the cabinet and push 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 PERIODICALLY FOR CLOGGING: CLEAN IF NECESSARY.
7. A short discharge tube is used with the 1 GPM eductor; minimum tube length is 8" (20 cm) for proper operation. Longer tubes (4' (122 cm)) are used with a 3.5 GPM (13.24 LPM) eductor. Do not remove the flooding rings from inside the tubes. Slide end of tube with flooding ring

over eductor discharge outlet. (Repeat for all eductors.) Hooks may be installed on longer tubes to allow discharge tube to conveniently hang from dispenser when not in use.

8. Replace cabinet cover. Hook two bottom catches, and swing up to snap onto latch. A screw provided may be installed in the hole on top to prevent easy removal of cover.
9. Connect water supply hose of at least 3/8" (10 mm) ID to water inlet swivel. (Minimum 25 PSI pressure, maximum 85 PSI pressure, with water running, is required for proper operation.) Connect opposite end of hose to water supply. Turn water supply on.
10. 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.
11. 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:** clip or bend the two tabs behind the lower front portion of the button (see diagram). This allows the button to be fully depressed and allows it to latch in the "on" position. **To unlock, pull the button out.**

Clip or bend these tabs to depress button into locked position.



12. **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 below 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 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:

Dilution Ratio (X:1)

where X =

$$\frac{\text{Amount of Mixed Solution} - \text{Amount of Concentrate Drawn}}{\text{Amount of Concentrate Drawn}}$$

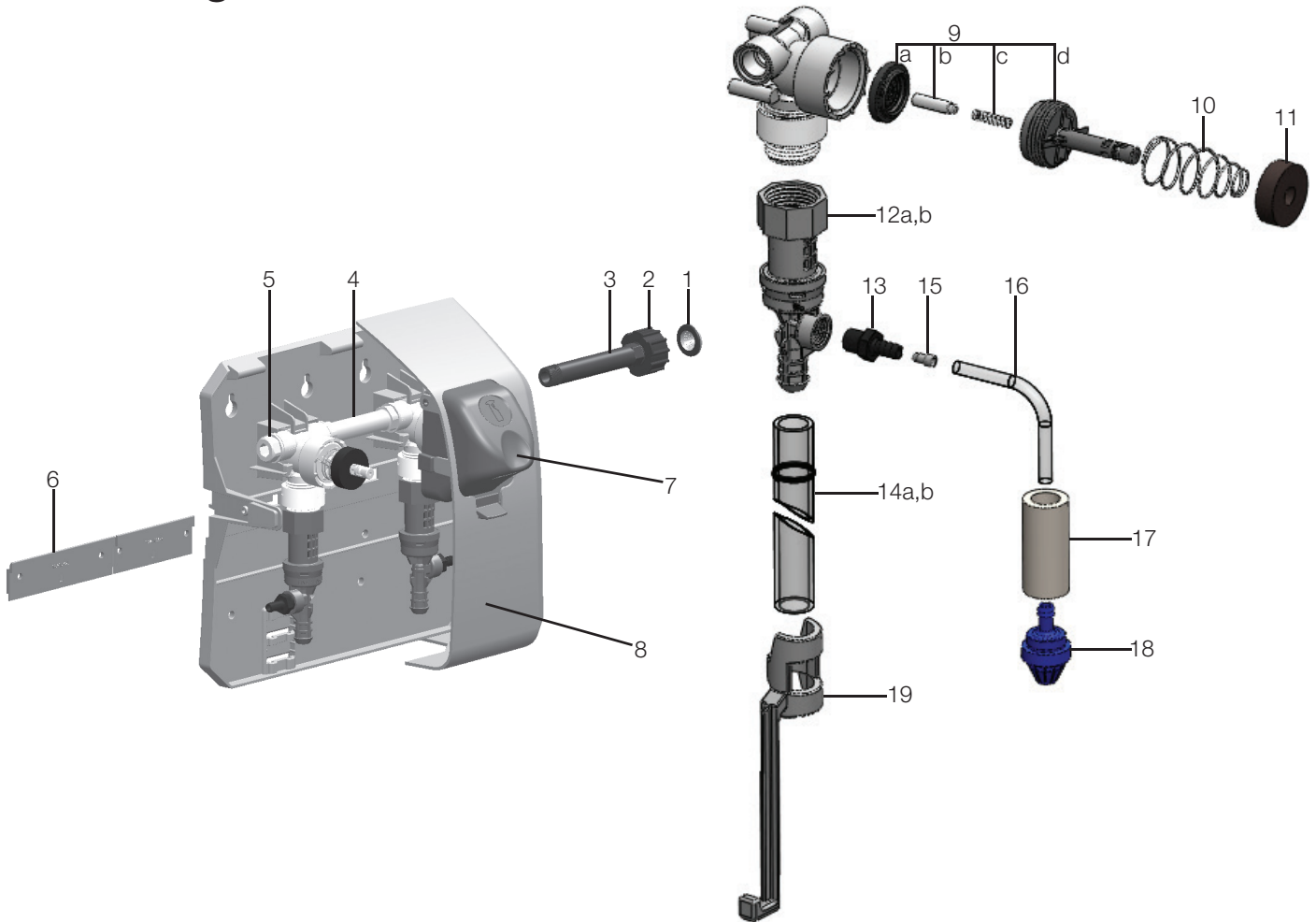
Dilution Ratio, then, equals X parts water to one part concentrate (X:1). If the test does not yield the desired ratio, choose a different tip and repeat the test.

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.

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	3:1	3.5:1
Grey	.128	3:1	4:1
Black	.098	3:1	4:1
Beige	.070	4:1	8:1
Red	.052	5:1	14:1
White	.043	7:1	20:1
Blue	.040	8:1	24:1
Tan	.035	10:1	30:1
Green	.028	16:1	45:1
Orange	.025	20:1	56:1
Brown	.023	24:1	64:1
Yellow	.020	32:1	90:1
Aqua	.018	38:1	128:1
Purple	.014	64:1	180:1
Pink	.010	128:1	350:1



# Parts Diagram/List



Key	PART No.	DESCRIPTION
1	238100	Strainer washer
2	10082830	Swivel collar (molded)
3	10082801	Swivel stem 1 button (molded)
	10082811	Swivel stem 2 button (molded)
4	10075902 10075903 10075950	Nipple, plastic 3/8" (10 mm) (2 button models) Nipple, plastic 3/8" (10 mm) (3 button models) O-ring (two required per nipple)
5	10098573	Kit, Pipe plug & o-ring
6	10091035	Wall bracket
7	10098821 10098824	Button, Low flow, process blue Button, High flow, process blue
8	10098539 10098541 10098836	Cabinet set, 1 button unit Cabinet set, 2 button unit Cabinet set, 3 button unit
9	10075980	Valve parts kit a. diaphragm b. armature c. spring d. valve bonnet

10	10079010	Spring
11	10079000	Magnet
12 a b	290 291	1.0 GPM (3.78 LPM) eductor assembly 3.5 GPM (13.24 LPM) eductor assembly
13	3401-R	Hose barb assembly* included in eductor assemblies
14 a b	10088822 90048495	1 GPM discharge tube with flooding ring (8" (203 mm)) 3.5 GPM discharge tube with flooding ring (4' (102 mm))
15	690014	Metering tip kit
16	500870	Tubing 1/4" x 7' (6 mm x 2.13 m)
17	509900	Weight
18	10089410	Footvalve -Viton (EPDM also available. Order 10076302)
19	10080730	Hose hook dark gray (standard)
NOT SHOWN:		
	641751	Security screws (for cabinet sides)

# Troubleshooting Chart

Problem	Cause	Solution
1. No discharge	a. No water b. Excessive water pressure c. Clogged water inlet strainer d. Magnetic valve not functioning e. Eductor clogged	a. Open water supply b. Install regulator if water pressure (with water running) exceeds 85 PSI c. Disconnect inlet water line and clean strainer d. Install valve parts kit e. Clean* or replace
2. No concentrate draw	a. Clogged foot valve b. Metering tip or eductor has scale build-up c. Low water pressure d. Discharge tube and/or flooding ring not in place e. Concentrate container empty f. Clogged water inlet strainer g. Inlet hose barb not screwed into eductor tightly h. Air leak in pick-up tube	a. Clean or replace b. Clean (descale)* or replace c. Minimum 25 PSI (with water running) required to operate unit properly d. Push tube firmly onto eductor discharge hose barb, or replace tube if it doesn't have a flooding ring e. Replace with full container f. Disconnect inlet water line and clean strainer g. Tighten, but do not overtighten h. Put clamp on tube or replace tube if brittle
3. Excess concentrate draw	a. Metering tip not in place b. Chemical above eductor	a. Press correct tip firmly into barb on eductor b. Place concentrate below eductor
4. Failure of unit to turn off	a. Water valve parts dirty or defective b. Magnet doesn't fully return c. Push button stuck	a. Clean or replace with valve parts kit b. Make sure magnet moves freely Replace spring if short of weak 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

\* 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 unscrew the 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.

