

Installation, Operation and Maintenance Instructions



COOLANT PROPORTIONER

ERIEZ MAGNETICS WORLD HEADQUARTERS: 2200 ASBURY ROAD, ERIE, PA 16506-1402 U.S.A.
WORLD AUTHORITY IN SEPARATION TECHNOLOGIES

Introduction

This manual details the proper steps for installing, operating and maintaining the Eriez Coolant Proportioner.

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 Coolant Proportioner assistance.

 **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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General Information

Introduction

The Coolant Proportioner was developed to meet the needs of all metalworking shops for accurate, automatic coolant metering and mixing: a need not met by the familiar venturi mixers. The Coolant Proportioner enables all shops to obtain the mixing accuracy possible only with a positive displacement proportioning pump.

Application

The Coolant Proportioner will provide accurate mixing of all types of coolant concentrates and dispenses coolant on demand at a consistent, user-selected concentration.

Principle of Operation

Water, under pressure, drives a reciprocating piston in the water motor cylinder. This piston in turn drives a piston in the concentrate metering cylinder which draws concentrate from the drum, meters the concentrate and injects it into the water from the water motor.

Specifications & Utility Requirements

Water Temperature: 40°F (4°C) to 150°F (66°C)

Note: For best results, most soluble oil coolants require mixing with water warmer than 65°F (18°C)

- Water Filtration:** 10 Micron filtration required
- Water Pressure:** 30psi (2.1kg/cm²) minimum;
60psi (4.2kg/cm²) maximum
- Water Flow Rate:** 2.0 US GPM (7.6 LPM)
@ minimum pressure
- 7.0 US GPM (26 LPM)
@ maximum pressure
- 5.0 US GPM (19 LPM)
noted average flow

(12 and 25 GPM models are available)

Dimensions

84-1240 - 8 oz

15-1/4" L* x 5-3/4" W x 7" H
(387mm x 146mm x 178mm H)

84-1245 - 8 oz

15-1/4" L* x 5-3/4" W x 7" H
(387mm x 146mm x 178mm H)

84-1260 - 8 oz

15-1/4" L* x 5-3/4" W x 7" H
(387mm x 146mm x 178mm H)

84-1300 - 16oz

16" L* x 5-3/4" W x 7" H
(406mm L x 146mm W x 178mm H)

84-1420 - 32 oz

17-1/2" L* x 5-3/4" W x 7" H
(445mm L x 146mm W x 178mm H)

84-1450 - 47 oz

18-1/2" L* x 5-3/4" W x 7" H
(470mm L x 146mm W x 178mm H)

Mixture Ranges

1% to 4% (84-1240)

1% to 8% (84-1300)

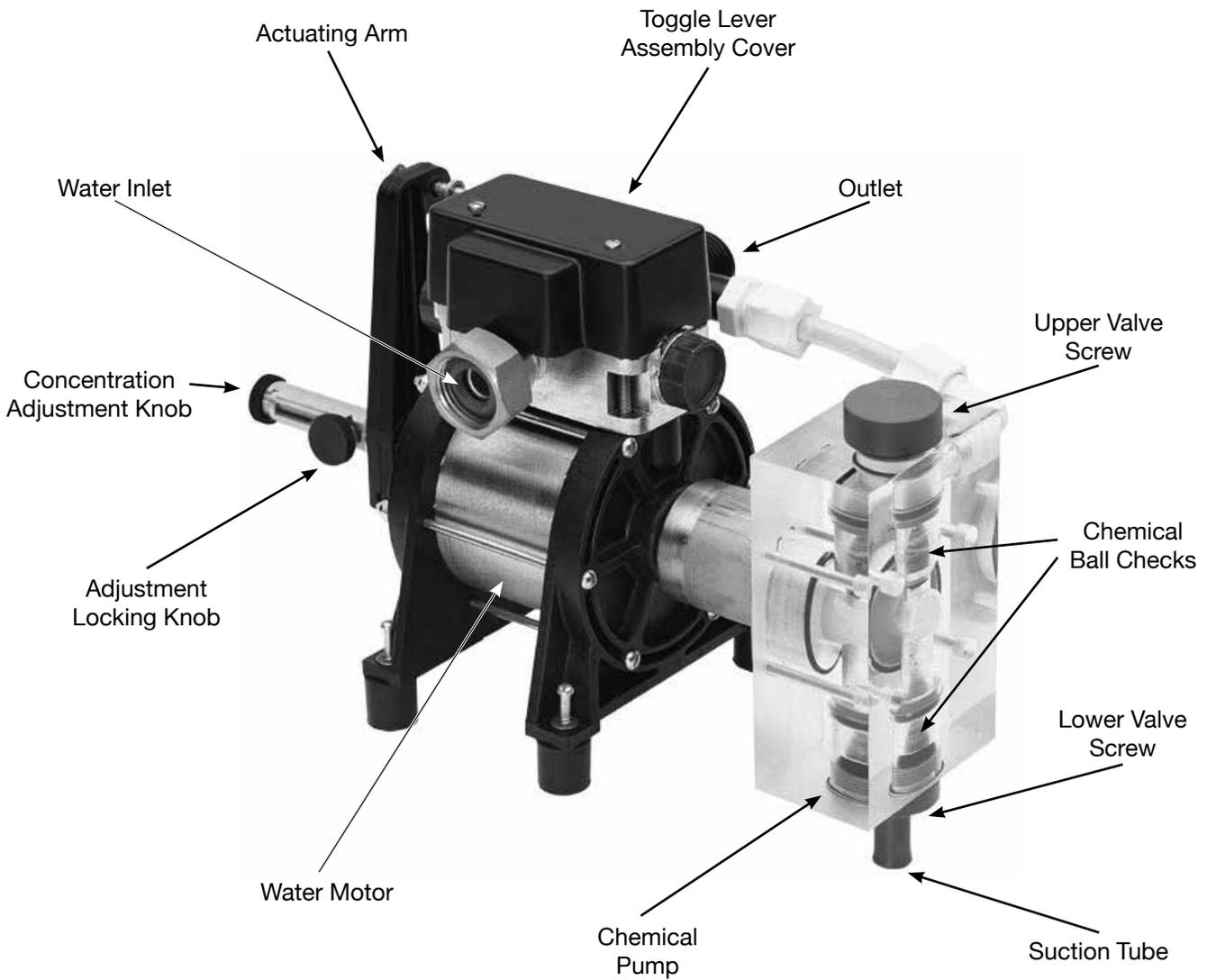
2% to 15% (84-1420)

4% to 19% (84-1450)

** The list concentration ranges presume the chemicals to be mixed have the viscosity of water. A substantial increase in viscosity and corresponding friction loss will limit the proportioning abilities of a given model



Parts Identification



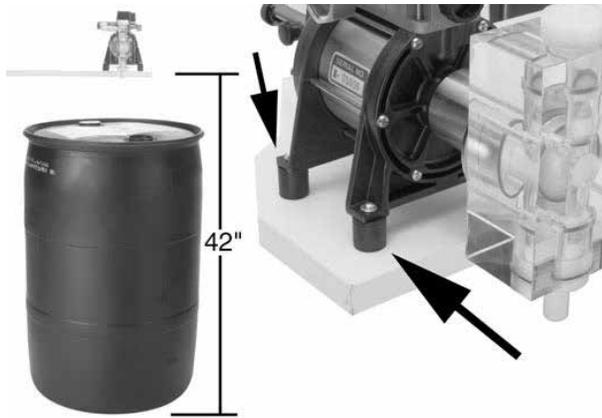


Figure 1

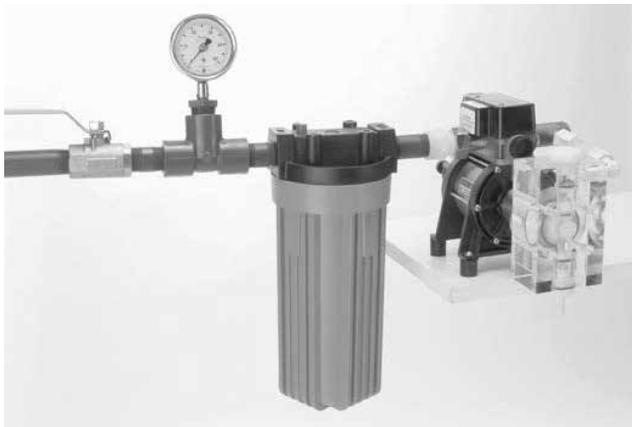


Figure 2

! STOP - WARNING

The proportioner must be installed in compliance with all local plumbing codes. The proportioner water feed line must be isolated to prevent chemical backflow through the proportioner.

Installation

1. Mount the proportioner on a bracket or using the four rubber feet provided with the machine (Figure 1). Do not tighten the rubber feet excessively. The rubber feet should be just snug. Over-tightening rubber feet will cause the end plates to crack.

! The bottom of the bracket should be 42" (1070 mm) from the floor. This will allow a drum of product to be placed under the product.

2. If deionized water is not used, connect a 10 micron water filter (available as an option) to the inlet fitting of the proportioner (Figure 2). If the inlet water pressure exceeds 60 psi (4.2 kg/cm²), a regulator must be installed in the inlet water line.

! The proportioner is designed to be used with 3/4" garden hose connections for both the water inlet and outlet.

The unit can be connected with rigid pipe if desired. All necessary hoses and piping must be supplied.

3. Connect the pipe or line that will feed the mixture to a central reservoir or to the mixture use point, to the discharge side of the proportioner. If you are using pipe to make these connections, use a garden hose to NPT adapter.
4. Attach the suction tube to the chemical pump and place the bottom end of the tube into the drum of concentrate. The proportioner must be installed in compliance with all local plumbing codes. The proportioner water feed line must be isolated to prevent chemical backflow through the proportioner.



Figure 3

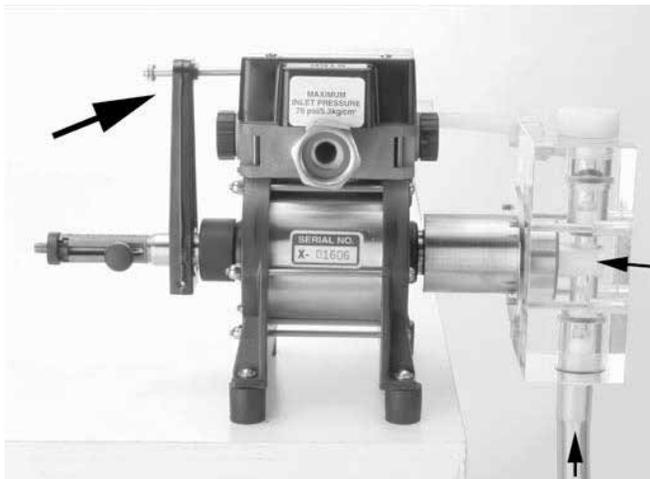


Figure 4

Machine Start-Up

1. Loosen the adjustment locking knob and turn the concentration adjustment knob to the maximum setting, position 10 (Figure 3).
2. Check all connections and fittings for proper tightness and turn on the water to the machine.

⚠ The plastic fittings on the proportioner should only be hand tightened for proper sealing.

3. As water flows through the water motor of the proportioner, the actuating arm and piston at the rear of the proportioner will move back and forth. This shaft operates the chemical pump piston. The concentrate will start rising up the suction tube (Figure 4).
4. Once the product leaving the chemical pump reaches the main water stream, take a 1 gallon sample of the mixture for a concentration test using either a titration kit or a refractometer. Adjust the concentration adjustment knob as needed to give the desired product to water ratio.

! The numbers on the graduated guide are reference marks only and do not represent any particular ratio. The #10 is the strongest concentration and the #0 is the weakest. Once the proper ratio is reached, hand-tighten the adjustment locking knob.

Complete overhaul kits can be ordered through Eriez.

Troubleshooting

Complaints

Causes

Corrections

1. Water motor will not run



A. Water turned off to unit

B. Water filter clogged

C. Discharge lines shut off or clogged.

D. Proportioner stalled; proportioner operates intermittently-then stalls. Sluggish toggle switching action.

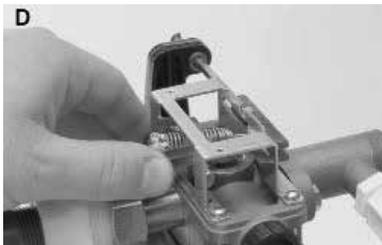
A. Turn water on to unit.

B. Remove filter element and replace with new filter.

C. Check to be sure lines are clear and all system valves are open.

D. Manually flip toggle arm. If Proportioner operates and valve assembly is undamaged, replace toggle lever spring.

2. Will not draw chemical



A. Water motor not working.

B. Proportioner concentrate adjustment set on minimum.

C. Pump head/valves dry.

D. Upper or lower valve screws sucking air.

E. Foreign material on valve seat.

F. Excessive discharge back pressure.

A. Check motor per item 1 above.

B. Re-adjust. Set on Max. to Prime.

C. Remove upper valve screw; fill cavity with water carefully replace and tighten valve screws.

D. Tighten fittings-hand tighten only.

E. Remove upper and lower valve screws, springs, spring retainers and ball checks. Rinse balls and clean ball seats. Reassemble pump head and tighten upper and lower valve screws.

F. Relieve downstream back pressure until unit is primed.

Notes

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World Authority in Separation Technologies

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