



PT401 ANTI-SCALANT FEED SYSTEM

OPERATION & MAINTENANCE MANUAL

**Manufactured With Pride
In The USA**

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PT401 INSTALLATION

CAUTION: When using chemical feed pumps, basic safety precautions should always be followed to reduce risk of fire, electric shock, and personal injury. Failure to follow these instructions could result in death or serious injury. Be sure to read all instructions before use.

GENERAL SAFETY CONSIDERATIONS

- Always wear protective clothing including gloves and safety glasses when working on or near chemical metering pumps.
- Inspect tubing regularly when replenishing chemical solution for cracking or deterioration and replace as necessary.
- Follow directions and warnings provided with the chemicals from the chemical manufacturer. It is important to understand the safety hazards involved with the chemicals being used.
- Never repair or move the metering pump while operating. Always disconnect electrical power.
- Air purges should be performed when the pump-chamber contains no fluid at the time of start-up. As a safety measure, connect the return tubing to the air bleed valve and bypass fluid back to the storage tank or suitable drain.

INSTALLATION

1. The Antiscalant Feed System should be installed before the RO in a water treatment system, preferably prior to the RO pre-filter.
2. Install the Antiscalant Feed System on a firm, level floor. Be sure to follow all local plumbing and electrical codes.
3. Install a tee at the point the antiscalant is to be injected into the system. Then install the injection nozzle into the tee (figure 1.1).
4. Mount the metering pump on the wall close to the injection point.
5. Place the solution tank with injection pump in place and make all connections to the appropriate ports (figure 1.1).
6. Fill the solution tank with the supplied chemical and follow the pump priming procedure.

NOTE: Use AmeriWater, CP Grade (Chemically Pure) chemicals only!

7. For the system to run when the RO runs, it will be necessary to connect the wiring of the metering pump, to the RO pump contacts inside of the RO control.

CAUTION: Disconnect ALL power supplies to the RO, prior to wiring metering pump to the RO control, or electrical shock could result.

8. Connect the Black and white wires of the metering pump power cord to L1 and L2 under “RO PUMP” on the terminal block marked “P1”, on the RO control.
9. Connect the Green wire of the metering pump power cord to the common ground lug on the RO control.
10. Turn on the power to the RO and place RO into service, for the antiscalant metering pump to turn on.

NOTE: In order for the metering pump to run, the RO pump must also be running.

1. Suction Nozzle
2. Solution Tank
3. Power Cord
4. Suction Line
5. Metering Pump
6. 3-way Function Valve
7. Overflow Line
8. Injection Nozzle
9. Injection Tee

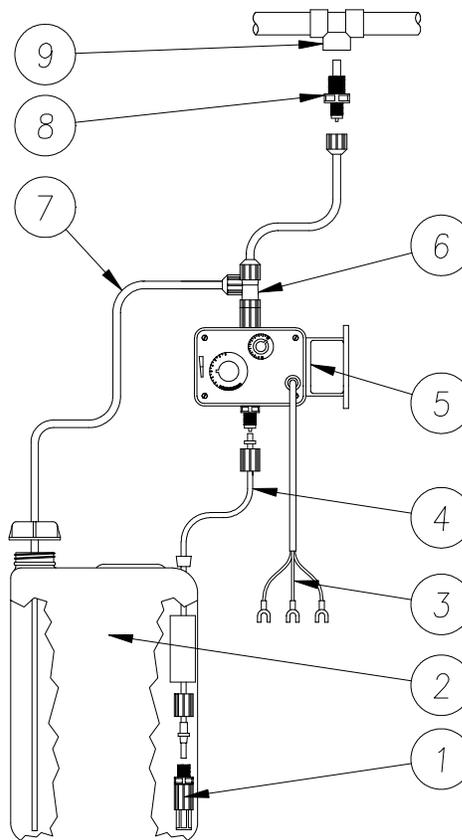


Figure 1.1

PT401 PRIMING PROCEDURE

The following procedure should be followed during the initial start up of the RO+ system, and whenever the PT401 pump loses its prime:

1. Verify that the RO+ is on and running.
2. Be sure the injection pump's suction line is immersed in solution in the PT401 container
3. Press the ON key to turn on the PT401 injection pump.
4. Press the "UP" key to increase the STROKE RATE up to approximately 150 to 200, or the "DOWN" key if already greater than 200.

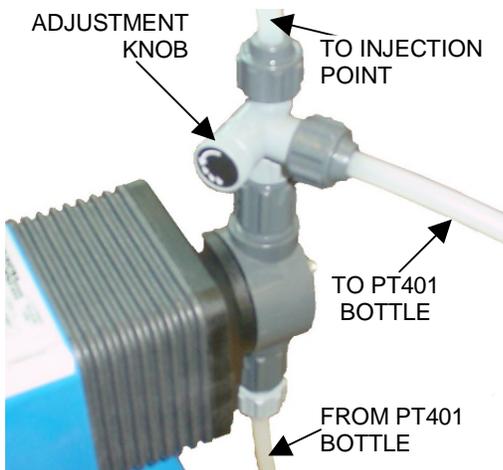
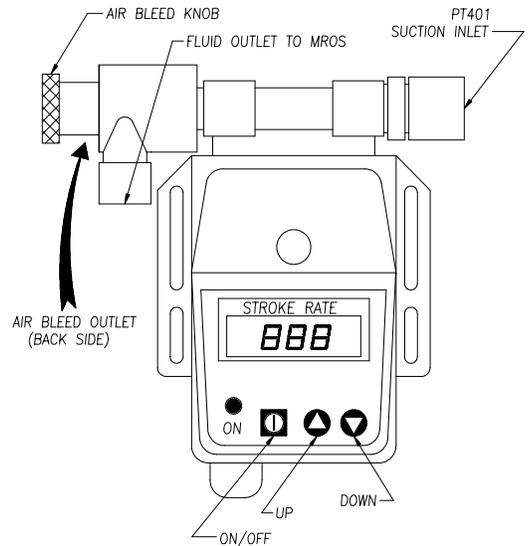


FIGURE 1.3

5. Run the injection pump until a stream of PT401 without air bubbles flows out of the air bleed tube. (Catch the expelled fluid in a small cup or container and discard after priming is complete.)
6. Close the adjustment knob completely by turning clockwise until the knob stops, and make sure there is no liquid flow out of the air bleed tubing.
7. If the pump does not prime, repeat the foregoing steps.
8. Once the pump has been primed, and is pumping the chemical through the head, into the water stream, adjust the stroke rate to 5.

At the stroke rate of 4, the PT401 injection pump will put about 30 milliliters (approximately 1 liquid ounce) per hour into the MROS incoming water stream.

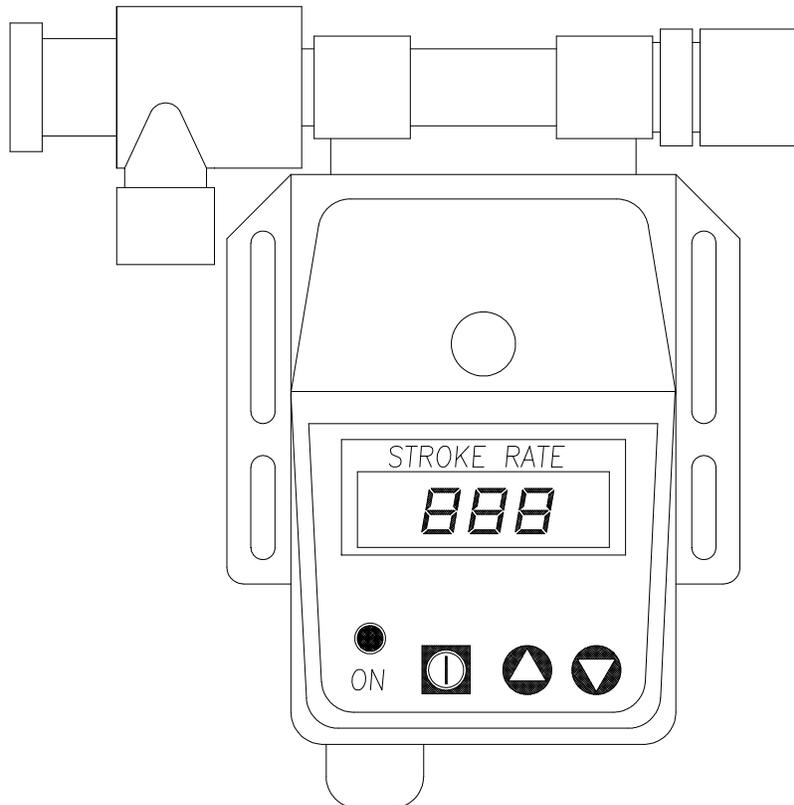
Repeat these steps as necessary when the system is started after sitting for extended periods of time or the PT401 Bottle is empty and air has drawn into the pump. The priming may not take as long as the initial time.

SETTING THE OPTIONAL PT401 FEED PUMP

WARNING: Overdosing PT401 will adversely affect the membrane causing a decrease and/or loss of permeate flow.

There is one control that needs to be set on the feed pump.

STROKE RATE = the number of strokes per minute (Set at 5 during use).



Your PT401 Antiscalant/Scale Inhibitor feed pump has been set at the factory default setting of 4 for the stroke rate. The factory default setting supplies the appropriate amount of antiscalant to the system for most water conditions.

If you have very hard water and/or iron water condition, AmeriWater will work with you set the pump injection rate for your particular water hardness condition. The recommended pump rate is for “average” water hardness. Higher injection rates may be necessary to control hardness and prevent damage to the MRO membrane.

If a reduction of PRODUCT flow is observed over a few months, the PT-401 pump may not be adjusted high enough to control the hardness at your particular hardness condition.

REFILLING PT401

The amount of PT401 in the container should be checked weekly. When it is less than half full, you should add more PT401.

1. Remove the cap from the PT401 bottle. It is not necessary to remove the rubber stopper with the hose; this will break the prime of the PT401 pump.
2. Refill the bottle with new PT401 purchased from AmeriWater (P/N 95810125, sold in (4) 1 gallon containers). Close the bottle with the cap.
3. Follow priming procedures above to ensure the PT401 pump remains primed.

PT401 REPLACEMENT PARTS

84-0002	PUMP,WALCHEM, CHEMICAL INJECTOR, EZB SERIES
84521001	VALVE,3-WAY, PRIMING
95810125	PT401, ANTISCALANT (4) 1 GALLON CONTAINERS

MATERIAL SAFETY DATA SHEET

Effective Date: 01/94

Product Name: PT401
Chemical Name and Synonyms: Acrylic polymer
Chemical Family: Poly (acrylic) acid, phosphonate
Formula: Multi component Liquid

1. **HAZARDOUS COMPONENTS** Contains no hazardous materials

2. **PHYSICAL PROPERTIES**

Boiling Point: 212°F (100°C)
Specific Gravity: 1.20
Vapor Pressure: Similar to H₂O
Percent Volatile: 57
Vapor Density: Similar to H₂O
Evaporation Rate: <1
Water Solubility: Dilutable
pH (as is): 4.1 +/- 0.5
Appearance and odor: Clear, light yellow solution

3. **FIRE AND EXPLOSION DATA**

Flash Point: N/A
Extinguishing media: N/A
Special fire fighting procedures: None
Unusual fire and explosion hazards: Can splatter above 212°F (100°C).
Polymer film can burn

4. **REACTIVITY**

Stability: Stable
Incompatibility: Strong bases
Hazardous decomposition products: None known
Hazardous polymerization: Will not occur

5. **ENVIRONMENTAL AND DISPOSAL INFORMATION**

Coagulate emulsion by stepwise addition of ferric chloride and lime. Remove clear supernatant and flush to chemical sewer. Incinerate liquid and contaminated solids in accordance with local, state, and federal regulations.

6. **HEALTH HAZARD CONTACT**
 Eye Contact: Mild Irritant
 Skin Contact: Mild Irritant
 Inhalation: N/A
7. **FIRST AID**
 Eyes: Flush with water
GET MEDICAL ATTENTION
 Skin: Flush with water
 Ingestion: Get water or milk to dilute
GET MEDICAL ATTENTION
 Inhalation: N/A
8. **HANDLING PRECAUTIONS**
 Respiratory protection: None required
 Ventilation: Special ventilation not required
 Protective gloves: Non-absorbent chemical type
 Other equipment: None
9. **ADDITIONAL INFORMATION**
 Special precautions to be taken in handling and storage: None
 Other precautions: Avoid freezing

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