Introduction

Your Chemilizer Injector

Thank you for purchasing a Chemilizer injector. Hydro Systems Company is committed to manufacturing the highest quality product to fill your injection needs.

Water Motor Specifications

Water flow ................. .02 - 11GPM
Pressure .................. 3 psi to 85 psi
Max. temp .................. 100° F (38° C)
Pipe size .................... 3/4” nht (national hose thread)
Ratio ...................... SEE PUMP LABEL*
Size .................. 11” height x 8 1/2” width
Weight .................. 4.54 lbs. (5.48 lbs. box)

Ratios available:

<table>
<thead>
<tr>
<th>Fixed Ratios</th>
<th>Adjustable Ratios</th>
</tr>
</thead>
<tbody>
<tr>
<td>50:1</td>
<td>20:1 to 64:1</td>
</tr>
<tr>
<td>64:1</td>
<td></td>
</tr>
<tr>
<td>100:1</td>
<td>50:1 to 164:1</td>
</tr>
<tr>
<td>120:1</td>
<td></td>
</tr>
<tr>
<td>250:1</td>
<td>150:1 to 500:1</td>
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</table>

Operation & Maintenance Safety

NEVER install an injector directly over the solution tank. The suction hose from the tank to the injector should fall below the top of the tank, then rise back up to the injector (see installation diagrams).

NEVER leave the injector or water lines full of water during freezing temperatures. Visually inspect the injector and water system for leakage.

Before you back wash the filter, make sure you turn off valves B and C. When the backwash is complete, return them to the open position. If you fail to do this, water may drain from your unit and you may have to prime the pump.

Warning! Risk of Chemical Overdose

To reduce risk, follow proper installation methods and instructions. The point of chemical injection should be beyond all pumps, filters and heaters.

Caution! Plumbing

Unit installations must always adhere to your local plumbing codes and requirements. Check local plumbing codes for guidelines.

Notice:

Components of Chemilizer Injectors have been tested for tolerance to a wide variety of chemical compounds at common solution strengths. Chemilizer Injectors provide a means of delivery for chemicals in general. Hydro Systems does not suggest or recommend ways or procedures for using any chemical.

Hydro Systems Company is not responsible for injury incurred by the misuse or improper handling of chemicals.

Hydro Systems Technical Support
1-800-543-7184
M-F 8:30am -5pm

For the latest updates or modifications, please check our website at: www.hydrosystemsco.com
Installation

Mounting Template
In each box is a white envelope containing four screws. The envelope is marked for use as a template. Unit can be mounted to any stationary surface, or to a post. Tighten screws until the head is about 1/8” away from the surface. The brackets on the back of the unit will slide down between the screw head and the surface.

Starting the Unit
1. Be sure chemical pump is locked into the bottom of the water motor. (1/4 turn to the right)
2. Open valves (B) and (C)
3. Close valve (A)
4. Open air vent until all trapped air is released

Stopping the Unit
1. Open valve (A), then close valves (B) and (C)

Alternate Mounting Below Pipe

Note:
Do Not Hook Motor Up Backward
Water must flow through motor from right to left. If necessary, crisscross hoses to accommodate setup.
Injection Fitting

This optional remote injection fitting is made to be glued into a standard pvc “T” fitting with a 3/4” opening. For installation in other size pipes, a “reducer tee” or “reducer bushing” is required.

We recommend a ball valve (for easy on/off). This is not included with your injector purchase, but is available through Hydro Systems. FG8010 Remote Injection Kit.

Turn off water to injector before turning off this valve.

General Maintenance Tips

Water Motor
1. Do not let unit freeze.
2. Periodically clean or replace chemical hose (hose between pump & water motor) and connectors. Chemical buildup will cause the unit not to pump.
3. If chemical pump becomes hard to remove from bottom of water motor, clean inside of opening on bottom cap of water motor with tooth brush & white vinegar.

Chemical Pump
1. Clean pump after use by running clean water through the pump for 5 minutes, or by removing the pump and hand cleaning individual parts.

Other
1. Water is always a factor with the life of any injector. If you know you have problem water, an in-line filter before the injector is a wise investment.
2. Keep your stock solution bucket clean of foreign particles and trash.
3. Keep the suction hose filter off the bottom of the stock solution bucket, insoluble particles may cause clogging and accelerate wear.
Installing the Fixed Pump to the Water Motor

1. Lubricate “O” rings on pump housing with any biodegradable lubricant when pump is removed from motor.

**NOTE:** a light coating of lubricant is all that is required.

2. Make sure the pump stem is pulled all the way out (about 2”).

Push the pump up into the water motor, and turn 1/4 turn clockwise, port to front.

**NOTE:** the guide slot must be aligned to fit into the key on the inside of the water motor.

3. After installing pump into bottom of water motor - loosen Jaco nut on pump and insert hose into fitting. Re-tighten Jaco nut.

Removing the Fixed Pump from the Water Motor

1. Make sure the water is turned off, and water pressure in the water motor is released - this is done by loosening the Air Vent (pressure relief valve) on the top of the water motor and turning off the water at both gate valves.

**NOTE:** Do Not Remove Air Vent.

2. Turn pump counter clockwise 1/4 turn, then pull down.

**NOTE:** always disconnect hose from pump before removing.
# Troubleshooting the Fixed Chemical Pump

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<thead>
<tr>
<th>Problem</th>
<th>Cause</th>
<th>Solution</th>
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<tbody>
<tr>
<td>Motor clicks, but chemical is not drawn up into the suction hose.</td>
<td>Large gasket on lower seal is worn or damaged.</td>
<td>Replace stem assembly with a rebuild kit.</td>
</tr>
<tr>
<td>Sleeve may be broken or extremely worn.</td>
<td></td>
<td>Replace sleeve.</td>
</tr>
<tr>
<td>Pump cap is loose.</td>
<td>Hydro Systems ships all units and pumps with the pump caps loose. At installation caps need to be tightened to a minimum of 20 inch pounds of torque (hand-tighten only).</td>
<td></td>
</tr>
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<td>Pump stem is not engaged into the piston clip in water motor.</td>
<td>Remove pump, check for a broken or worn pump stem at tip. Pump stem must be pulled out completely (approx. 2 in.) before being inserted into the bottom of the water motor.</td>
<td></td>
</tr>
<tr>
<td>Piston clip may be broken or worn on the inside of the water motor.</td>
<td>This is an extremely rare occurrence but if the pump stem was not pulled out when initially installed this could cause excessive wear of the piston clip. The water motor must be sent to an authorized repair center or Hydro Systems for repair.*</td>
<td></td>
</tr>
<tr>
<td>Chemical solution is drawn up in the suction hose, but then falls back down.</td>
<td>Vacuum leak.</td>
<td>Check valve may need cleaning or replacing. Tighten pump cap to recommended 20 inch pounds of torque. Check suction hose to insure a tight fit with clamp in place. Prime pump by hand and verify that chemical solution stays up in the suction hose.</td>
</tr>
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* RGA number must be obtained before unit is returned. Call for further information.

### Cutaway view of fixed pump

![Cutaway view of fixed pump diagram](image)
Troubleshooting the Chemical Pump

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<td>Check suction hose to insure a tight fit with tube nut in place.</td>
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<td>Prime pump by hand and verify that chemical solution stays up in the suction hose.</td>
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**TROUBLESHOOTING - Chemilizer Injector**

**Troubleshooting the Water Motor**

Note: When the water motor is working properly, you should hear a clicking sound.

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<td>Water motor does not click. Water does not flow past unit.</td>
<td>No water flow to motor.</td>
<td>Check that gate valves “B” &amp; “C” are open.</td>
</tr>
<tr>
<td>Water motor does not click. Water does flow past unit.</td>
<td>Water motor is in “bypass” due to damaged parts on the inside of water motor or excessive wear of moving parts.</td>
<td>Send unit to a service center or to Hydro Systems for repair.*</td>
</tr>
<tr>
<td>Motor clicks a few times, then stops.</td>
<td>Unit is in bypass condition.</td>
<td>Shut off water flow. Relieve pressure by loosening air vent. Restart water flow.</td>
</tr>
<tr>
<td>Gate valve “A” is not fully closed or may be leaking due to wear from sand or debris.</td>
<td></td>
<td>Check that gate valve “A” is fully closed and not leaking by closing valve “B” and removing hose from “C”, open valve “C”, water should not come out of valve “C” if valve “A” is working properly.</td>
</tr>
<tr>
<td>Motor works on high flow (over 5 gpm) but stops on low flows (under 2 gpm).</td>
<td>Gate valve “A” may be leaking.</td>
<td>See above.</td>
</tr>
<tr>
<td>Gasket or “O” ring on pump stem may have excessive wear.</td>
<td></td>
<td>See above.</td>
</tr>
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**Diagram:**

- Remote Injection (optional)
- Chemical Container
- Pressure Tank
- Pump
- Well
- A, B, C valves

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Water Motor Parts
**Water Motor Limited Warranty.** The water motor is warranted to be free from defects in materials and workmanship for a period of two years from the date of purchase. During the first six-month period, should the water motor fail, it will be replaced with a new water motor. For the balance of the warranty period, should the water motor fail, it will be rebuilt or replaced, at the option of Hydro Systems, and warranted for the balance of the original warranty period. This warranty does not cover damage due to misuse, abuse, neglect, or alteration. This warranty does not cover any labor or shipping charges for removal and reinstallation. This warranty is void if the serial number label is removed from the unit. This warranty is non-transferable.

**Chemical Pump.** The Chemical Pump is not covered under warranty. Hydro Systems Company has no control over the types of materials or chemicals that will be used in this equipment, therefore we cannot guarantee the chemical pump to be impervious to each and every chemical. Wear of seals and other components is normal and will vary depending on operating conditions and the chemicals being used. Wear to the pump and components, due to use or chemical attack, are not covered by warranty.

**Miscellaneous Products.** Hydro does not warrant parts manufactured by outside sources which are used in the assembly of other product offered by Hydro Systems. This includes parts used in installation kits such as gate valves and PVC components.

**Warranty Claims.** Return to your local dealer, or to Hydro Systems Company. Proof of purchase date, serial number, and an explanation of the complaint must accompany the merchandise along with an Returned Goods Authorization (RGA) Number. In the event proof of purchase is not available, manufacture date on the unit will be used to determine warranty period. Final determination of all warranty claims will be made by manufacturer.