



## Chemilizer Injector

### Contents

#### Included in the package:

1. Water Motor with Chemical Line
2. Chemical Pump with Jaco Nut
3. Suction Hose with Filter and Spring Clip
4. Owners Manual
5. Mounting Screws (4) with Template

### 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

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

#### Ratios available:

Fixed Ratios	Adjustable Ratios
50:1	20:1 to 64:1
64:1	
100:1	50:1 to 164:1
120:1	
250:1	150:1 to 500:1
500:1	

### 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.

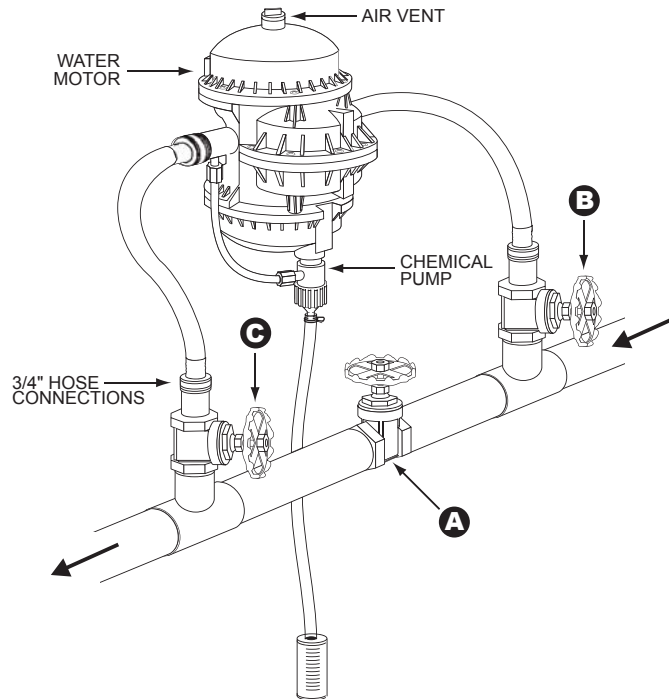
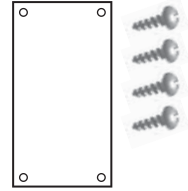
Hydro Systems Technical Support For the latest updates or modifications, please check our website at:  
**1-800-543-7184** **www.hydrosystemsco.com**

M-F 8:30am -5pm

# 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.



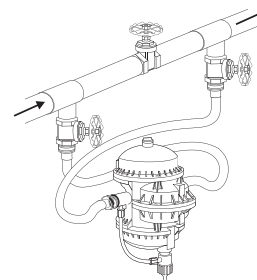
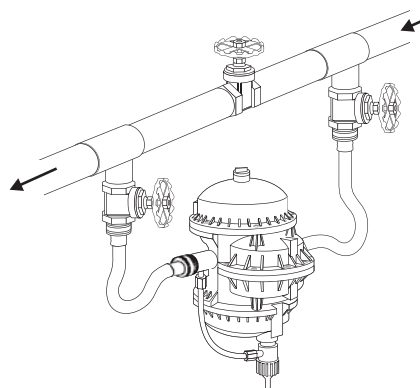
## Starting the Unit

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

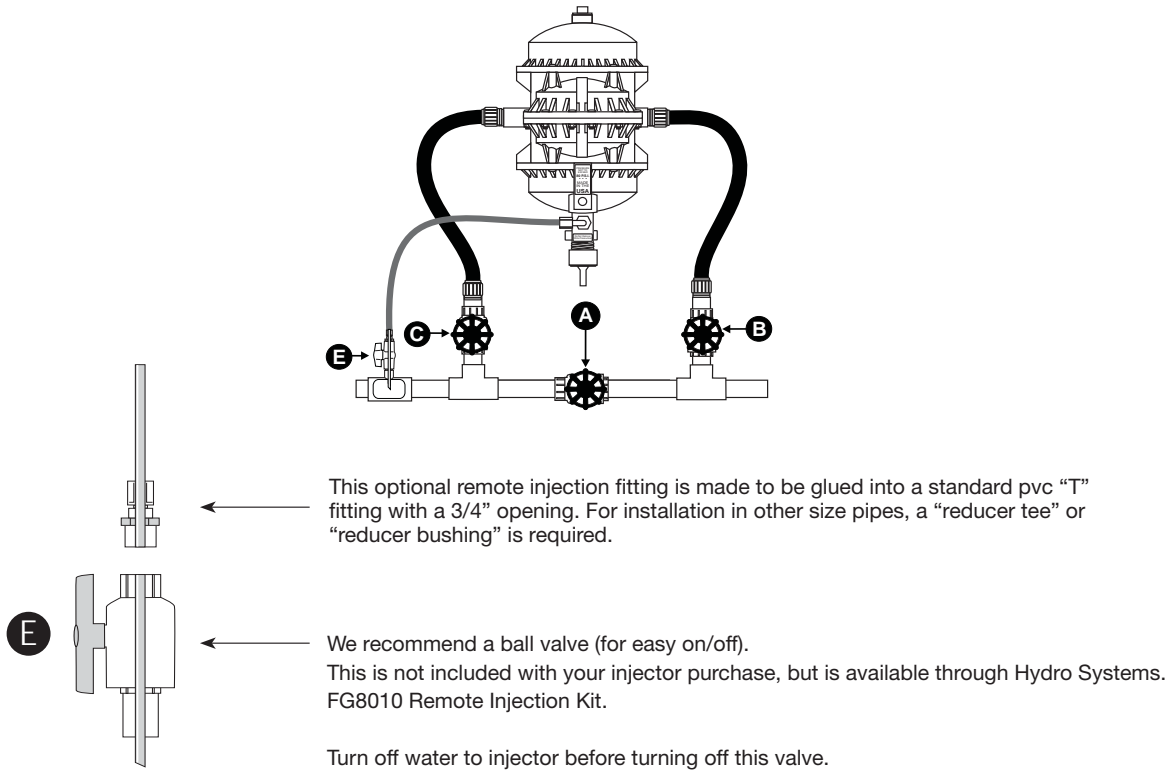


### Note:

#### Do Not Hook Motor Up Backward

Water must flow through motor from right to left. If necessary, crisscross hoses to accommodate setup.

## Injection Fitting



## 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.

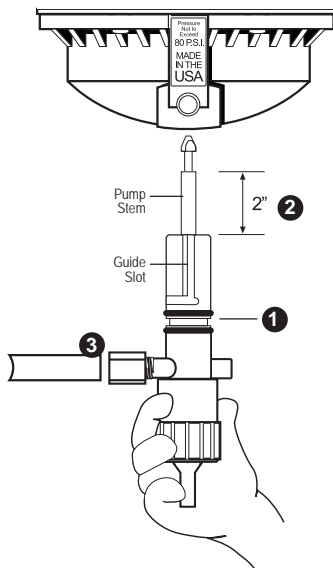
### **Chemical Pump**

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.

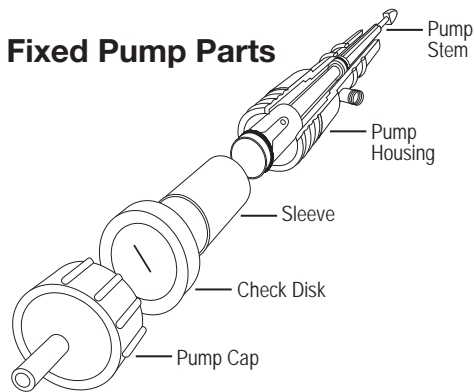
2. **Make sure the pump stem is pulled all the way out (about 2”).**

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

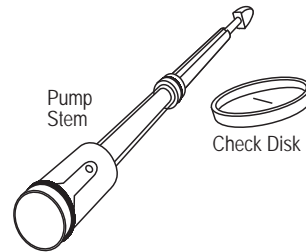
**NOTE:** the guide slot must be aligned to fit into the key on the inside of the water motor.

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

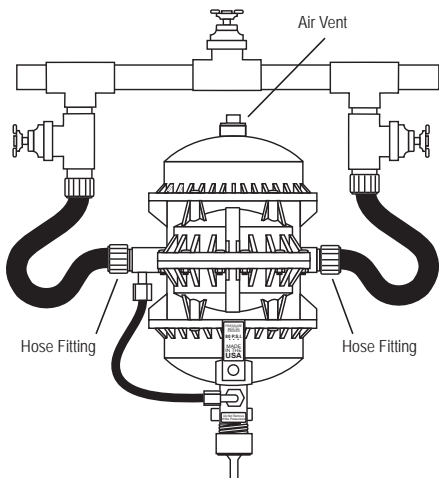
### Fixed Pump Parts



### Pump Rebuild Kit

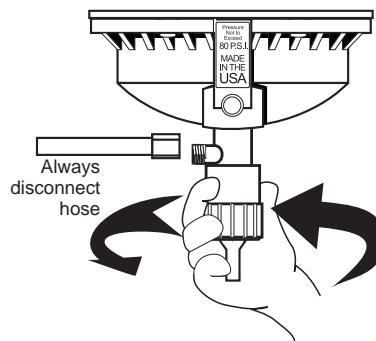


## Removing the Fixed Pump from the Water Motor



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.

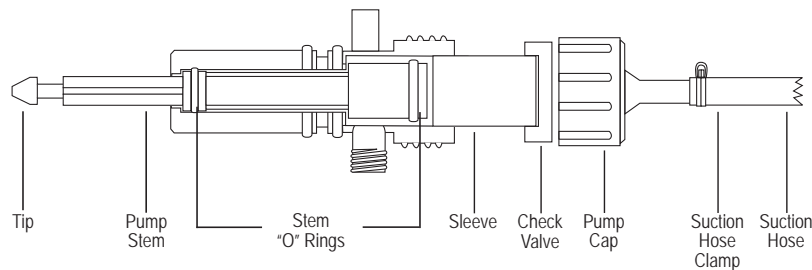
**NOTE:** always disconnect hose from pump before removing.

# Troubleshooting the Fixed Chemical Pump

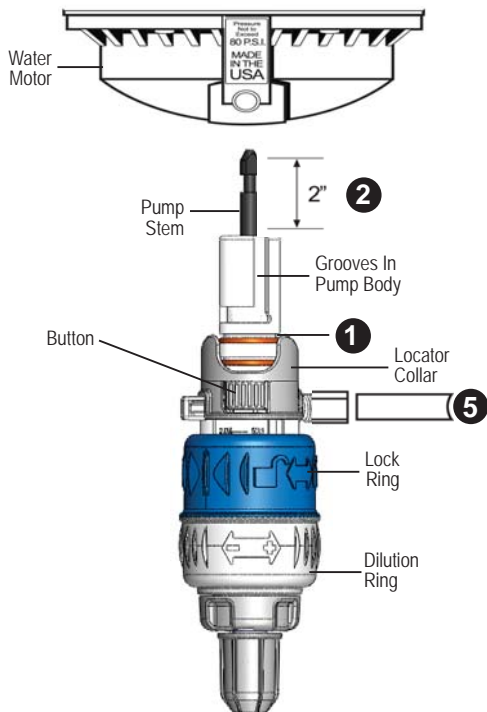
Problem	Cause	Solution
Motor clicks, but chemical is not drawn up into the suction hose.	Large "O" ring on lower seal is worn or damaged.	Replace stem assembly with a rebuild kit.
	Sleeve may be broken or extremely worn.	Replace sleeve.
	Pump cap is loose.	Hydro Systems ships all units and pumps with the pump caps loose. At installation caps need to be tightened to a minimum of 20 inch pounds of torque (hand-tighten only).
	Pump stem is not engaged into the piston clip in water motor.	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.
Chemical solution is drawn up in the suction hose, but then falls back down.	Vacuum leak.	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.

## Cutaway view of fixed pump

\* RGA number must be obtained before unit is returned. Call for further information.



# Installing the Adjustable Pump to the Water Motor



1. Lubricate “O” rings on pump housing with any biodegradable lubricant before pump is installed into 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”).**

**Remove the white shipping clip prior to installation.**

Push the pump up into the water motor, pins inside the water motor will engage with the grooves in the “Pump Body”. Turn pump 1/4 turn clockwise. The slot in the “Locator Collar” will mate with the “Square Projection” on the “Water Motor”.

**NOTE:** Depressing the “Buttons on each side of the “Locator Lock” will allow the “Locator Collar” to rotate 180 degrees to allow installation with chemical injection on the right side. If the slot in the “Locator Collar” does not mate with the “Water Motor”, depress the “Buttons” and rotate the “Locator Collar” until the “Groove” mates with the “Water Motor”.

- Rotating the “Dilution Ring” changes the dilution ratio. Rotate the “Dilution Ring” either direction until the correct dilution is set.
- Rotate the “Lock Ring” clockwise to lock the dilution setting. Rotating the “Lock Ring” counter-clockwise allows the dilution to be changed.
- After installing pump into bottom of water motor - loosen Jaco nut on pump and insert hose into fitting. Re-tighten Jaco nut.

Pump Rebuild Kit (includes Stem & Check Valve Kits)  
 10096920 Viton 20-64  
 10096938 Viton 50-164  
 10096916 Viton 150-500

Pump Stem Kit  
 10095910 Viton 20-64  
 10095909 Viton 50-164  
 10095908 Viton 150-500

Check Valve Kit  
 10096924 Viton 20-64  
 10096905 Viton 50-164  
 10096905 Viton 150-500

Check Valve Nut

Tube Nut



Upper Stem O-ring  
 10095063 Viton 20-64  
 10095063 Viton 50-164  
 10090138 Viton 150-500

Stem O-ring  
 10095934 Viton 20-64  
 10095066 Viton 50-164  
 10095063 Viton 150-500

## Troubleshooting the Chemical Pump

Problem	Cause	Solution
Motor clicks, but chemical is not drawn up into the suction hose.	Large “O” ring on lower seal is worn or damaged.	Replace pump stem.
	Pump stem is not engaged into the piston clip in water motor.	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.
	Piston clip may be broken or worn on the inside of the water motor.	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.*
Chemical solution is drawn up in the suction hose, but then falls back down.	Vacuum leak.	Check valve may need cleaning or replacing.
		Check suction hose to insure a tight fit with tube nut in place.
		Prime pump by hand and verify that chemical solution stays up in the suction hose.

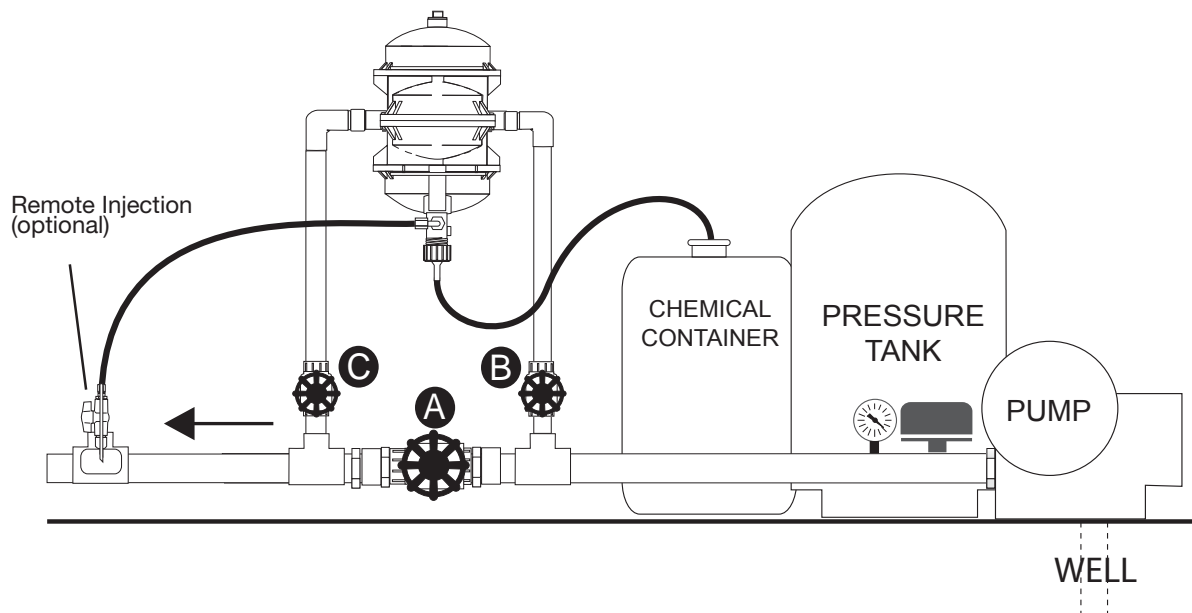
# TROUBLESHOOTING - Chemilizer Injector

## Troubleshooting the Water Motor

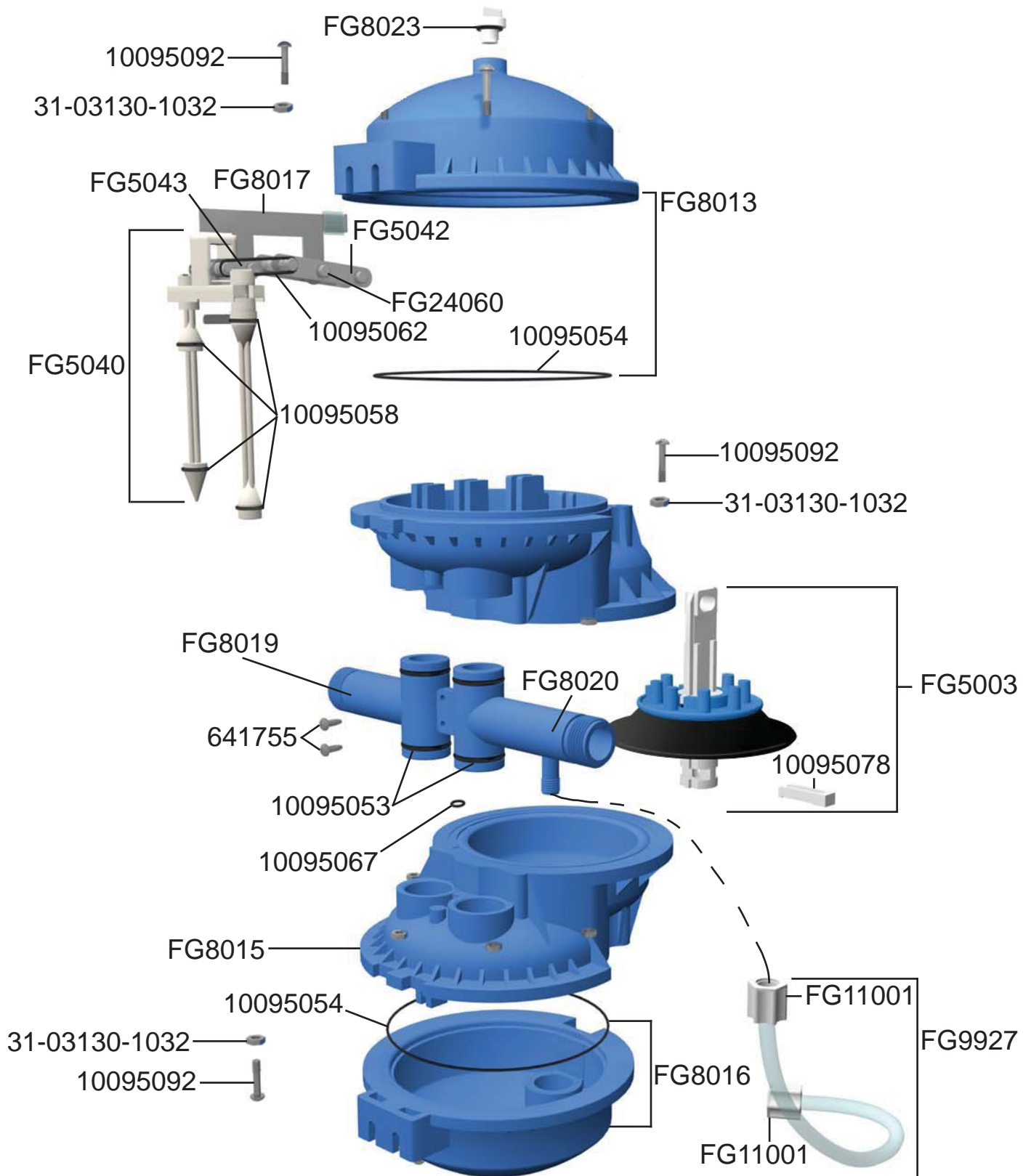
Note: When the water motor is working properly, you should hear a clicking sound.

Problem	Cause	Solution
Water motor does not click. Water does not flow past unit.	No water flow to motor.	Check that gate valves "B" & "C" are open.
	Incoming water is incorrectly connected to outlet side of water motor.	Verify that incoming water is connected to the inlet (right side) of the water motor.
Water motor does not click. Water does flow past unit.	Water-motor is in "bypass" due to damaged parts on the inside of water motor or excessive wear of moving parts.	Send unit to a service center or to Hydro Systems for repair.*
	Gate valve "A" is not fully closed or may be leaking due to wear from sand or debris.	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.
Motor clicks a few times, then stops.	Unit is in bypass condition.	Shut off water flow. Relieve pressure by loosening air vent. Restart water flow.
	Motor may be in bypass due to worn or broken parts.	Send unit to a service center or to Hydro Systems for repair.*
	"O" ring on pump stem may have excessive wear, allowing water to seep past at low flows stopping motor.	Change out pump with a known good pump. If unit continues to work, rebuild old pump with pump rebuild kit.
	Clogged chemical feed tube.	Inspect chemical feed tube for blockage and clean or replace tube.
Motor works on high flow (over 5 gpm) but stops on low flows (under 2 gpm).	Gate valve "A" may be leaking.	See above.
	"O" ring on pump stem may have excessive wear.	See above.

\* RGA number must be obtained before unit is returned. Call for further information.



# Water Motor Parts





# United States Warranty Policy\*

**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 can not 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.

Before sending merchandise to Hydro Systems Company, call for a return authorization number. **1-800-543-7184.**

\* This warranty policy applies only to units and component parts purchased and installed in the United States.

For the latest updates or modifications, please check our website at: [www.hydrosystemsco.com](http://www.hydrosystemsco.com)



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