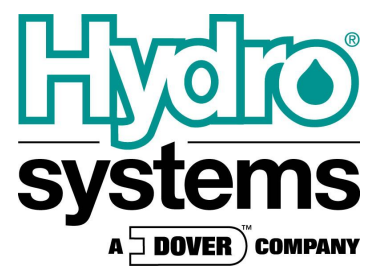


Chemilizer



Owner's Manual

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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:

This injection system and its components have been tested for use with the following solutions:

Sodium Hypochlorite (10-15%), Muriatic Acid (20 Baume/31.5%), Heatsavr™

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 Europe Ltd. does not suggest or recommend ways or procedures for using any chemical.

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



Your Chemilizer Chemical Injector

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

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

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. Owner's Manual
5. Mounting Screws (4) with Template

Water Motor Specifications

Water Flow	0.063 lpm (3.78 lph) to 45.4 lpm (2,724 lph)
Pressure	2 psi to 80 psi
Max. temp	43° C
Pipe Size	3/4+BSP
Ratio	SEE PUMP LABEL*
Size	27.9 cm x 21.6 cm
Weight	2.05 kg (2.48 kg box)

Chemical Pump Types

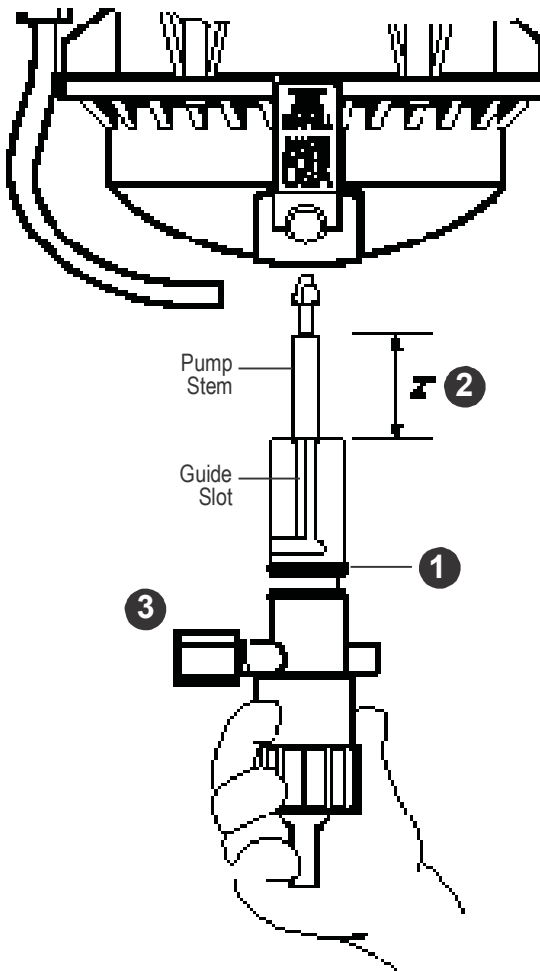
Viton (general purpose)

Pumps Pharmaceuticals, Citric Acid, Disinfectants, Fertilizer, Algicides, Fungicides, pH Controllers, Chlorine, Hydrogen Peroxide and Iodine.

Silicone

Pumps Vinegar

Installing a Fixed Ratio 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.

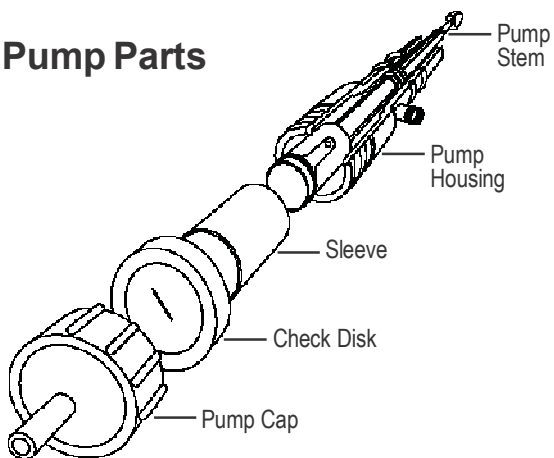
2. **Make sure the pump stem is pulled all the way out (about 2").**

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

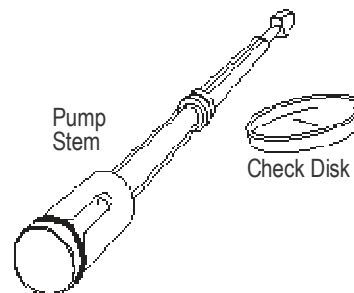
NOTE: The guide slot must be aligned to fit into the key on the inside of the water motor.

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

Pump Parts



Pump Rebuild Kit



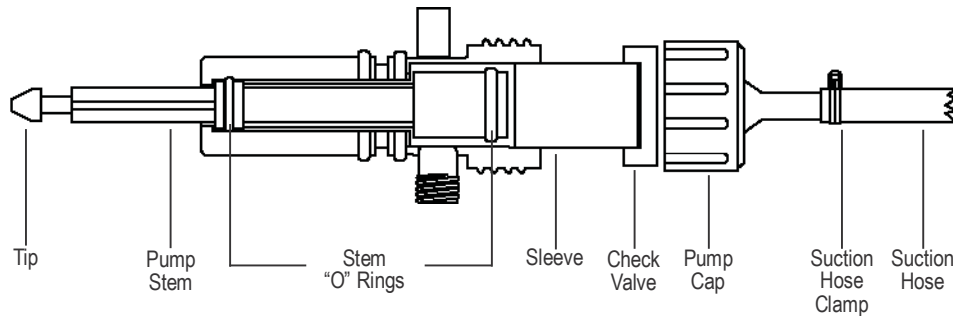
Troubleshooting – Fixed Ratio Pump

Troubleshooting the Fixed Ratio Chemical Pump

Note: The chemical pump will NOT work properly if the pump cap is not tight enough

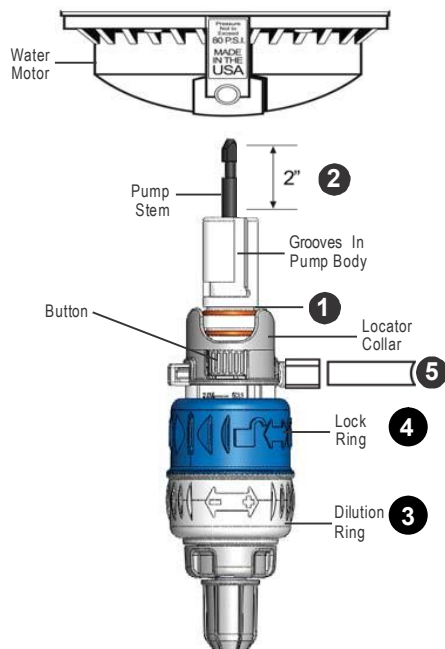
Problem	Cause	Solution
Motor clicks, but chemical is not drawn up into the suction hose.	Large O-ring on lower seal is worn or damaged.	Replace stem assembly with a Chemilizer Products rebuild kit.
	Sleeve may be broken or extremely worn.	Replace sleeve.
	Pump cap is loose.	Hydro Systems Europe Ltd. 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. 2.5 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 Europe Ltd. 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.
		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 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").

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.

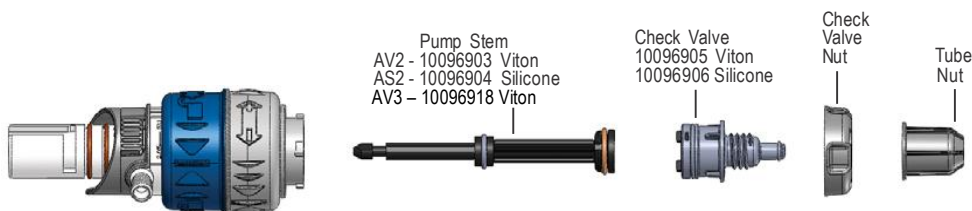
NOTE: If the pump stem has fallen down inside the body, pull lightly whilst twisting, until it re-locates within the groove in the pump body.

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.

3. Rotating the Dilution Ring changes the dilution ratio. Rotate the Dilution Ring either direction until the correct dilution is set.

4. Rotate the Lock Ring clockwise to lock the dilution setting. Rotating the Lock Ring counter-clockwise allows the dilution to be changed.

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

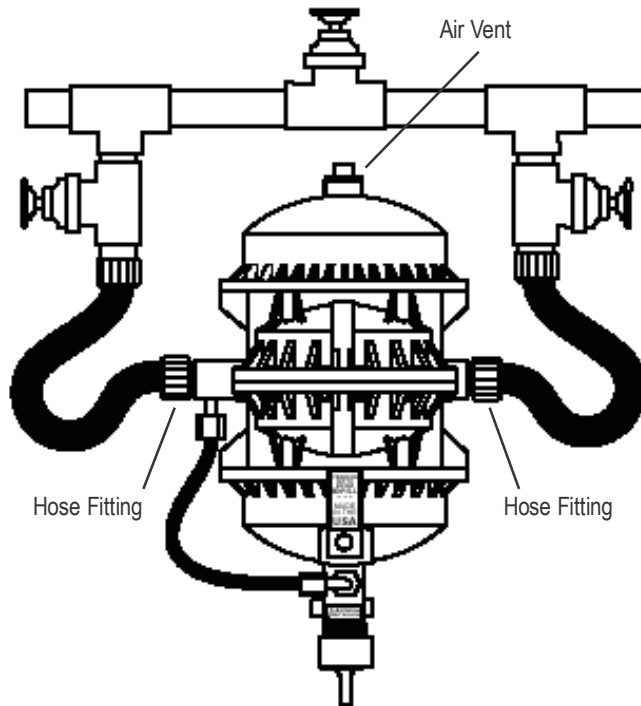


Troubleshooting the Chemical Pump

Note: The chemical pump will NOT work properly if the pump cap is not tight enough.

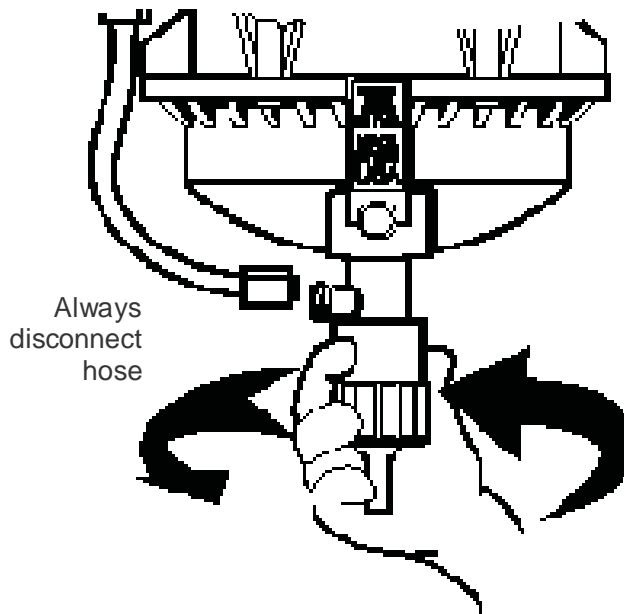
Problem	Cause	Solution
Motor clicks, but chemical is not drawn up into the suction hose	Large O -ring on lower seal is worn or damaged.	Replace pump stem.
	Pump stem is not engaged into the piston clip in water motor.	Remove pump, check for a broken or worn pump stem at tip. Pump stem must be pulled out completely (approx. 2.5 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

Removing the 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.

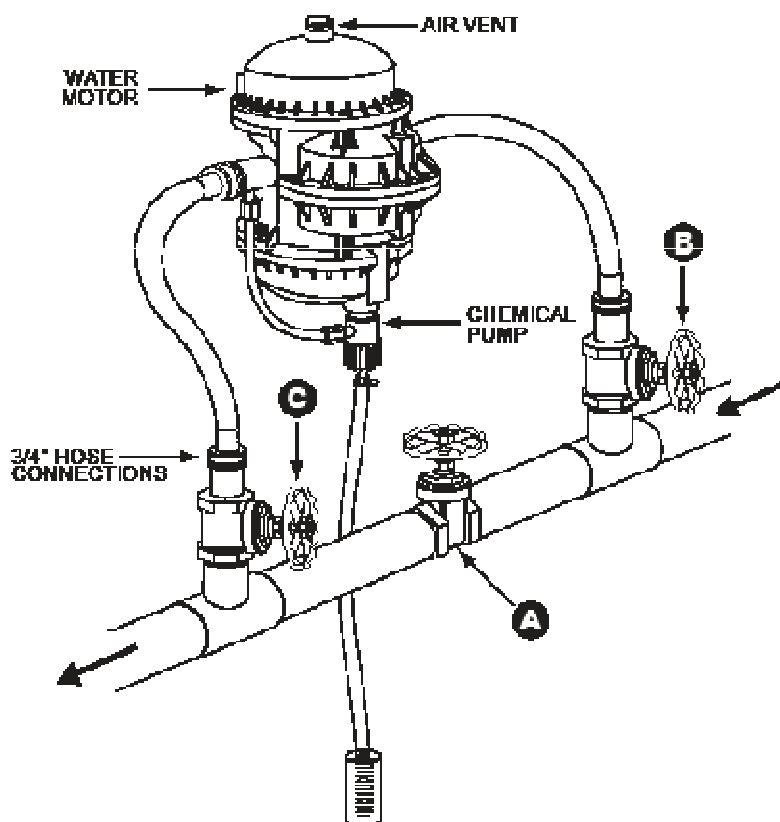
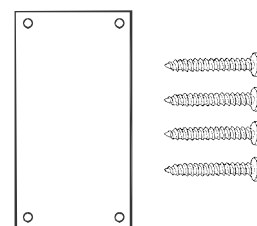
NOTE: always disconnect hose from pump before removing.

Installation Instructions

Mounting Template

In each box is a white envelope containing four screws. The envelope is marked for use as a template. Mount the Chemilizer on a stable, flat surface with the Air Vent facing upwards. Tighten screws into the mounting substrate 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.

Please Note: It is the installer's responsibility to ensure suitability of mounting substrate and fixings.



Starting the Unit

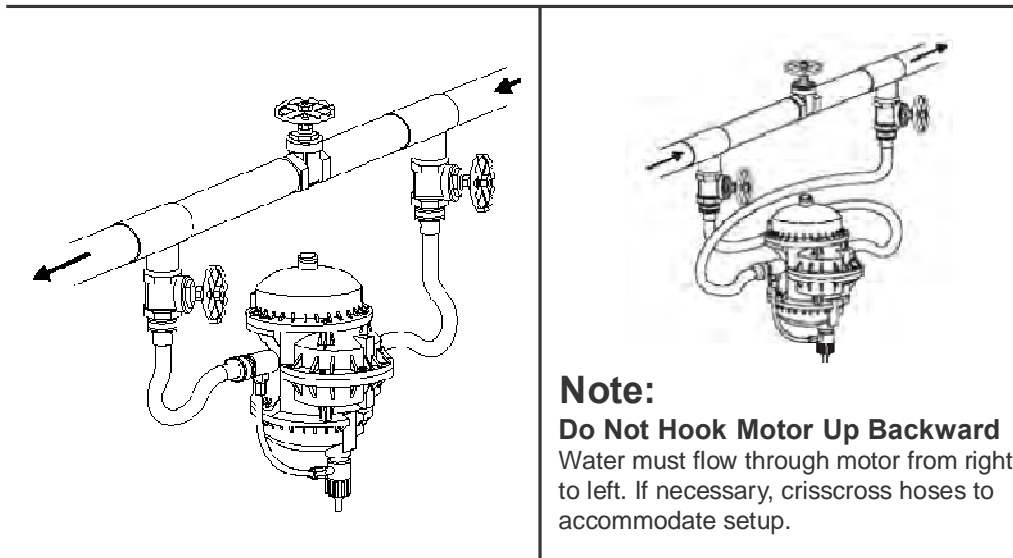
1. Be sure that the chemical pump is locked into the bottom of the water motor. (1/4 turn to the right)
2. Open valves (B) and (C)
3. Close valve (A)
4. Open air vent until all trapped air is released

Stopping the Unit

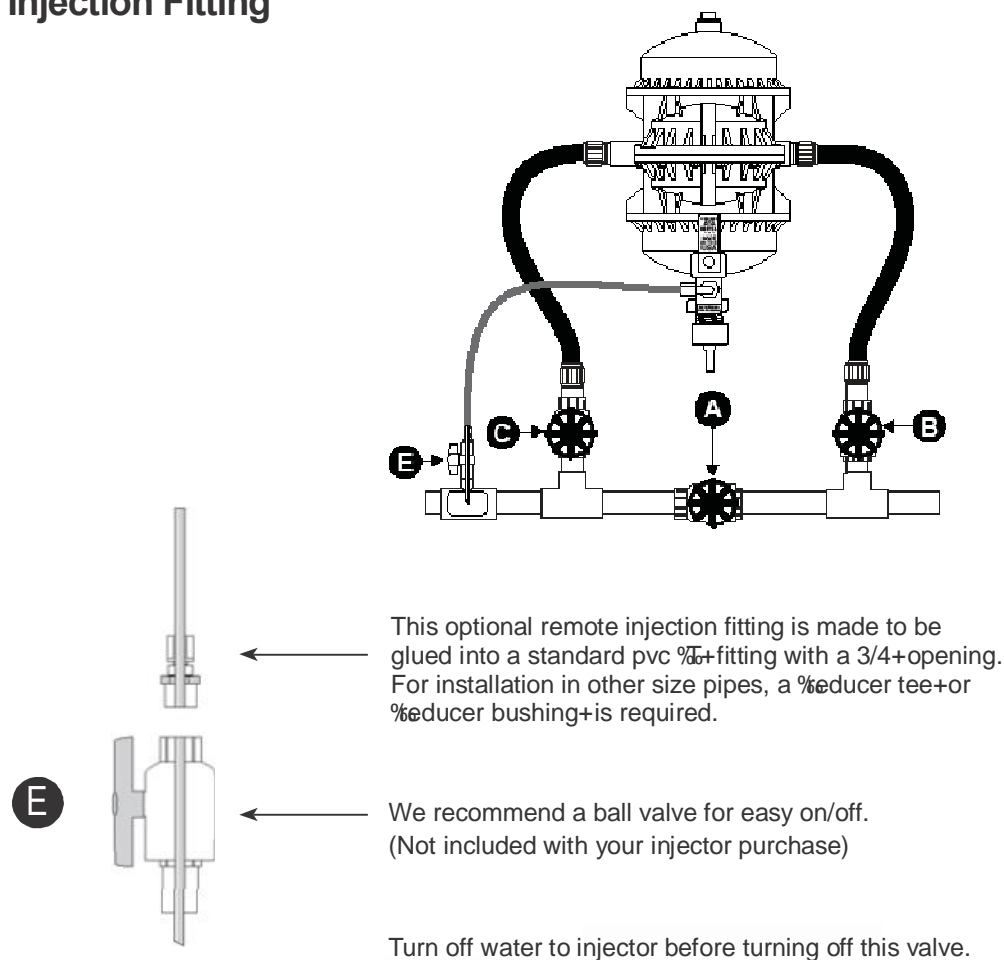
1. Open valve (A), then close valves (B) and (C)

Alternate Mounting Below Pipe

Alternate Mounting Below Pipe



Injection Fitting



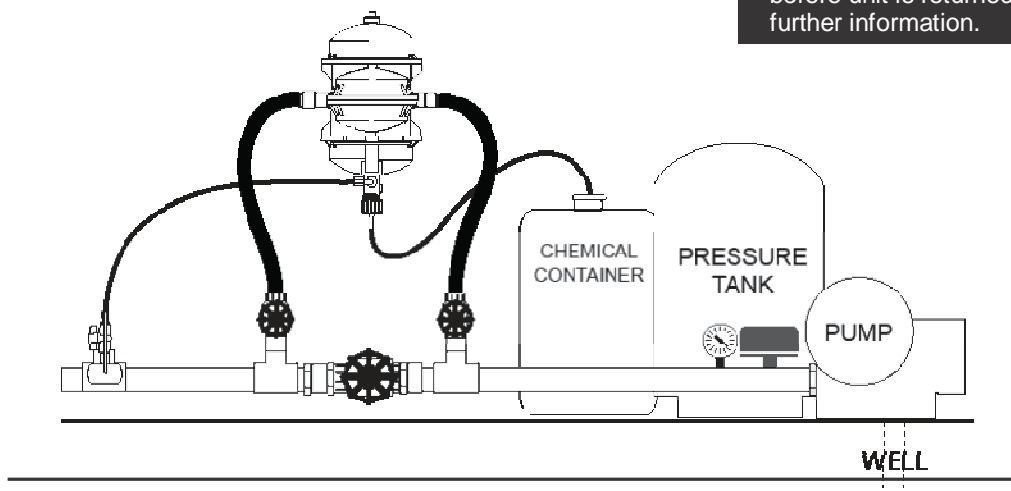
Troubleshooting

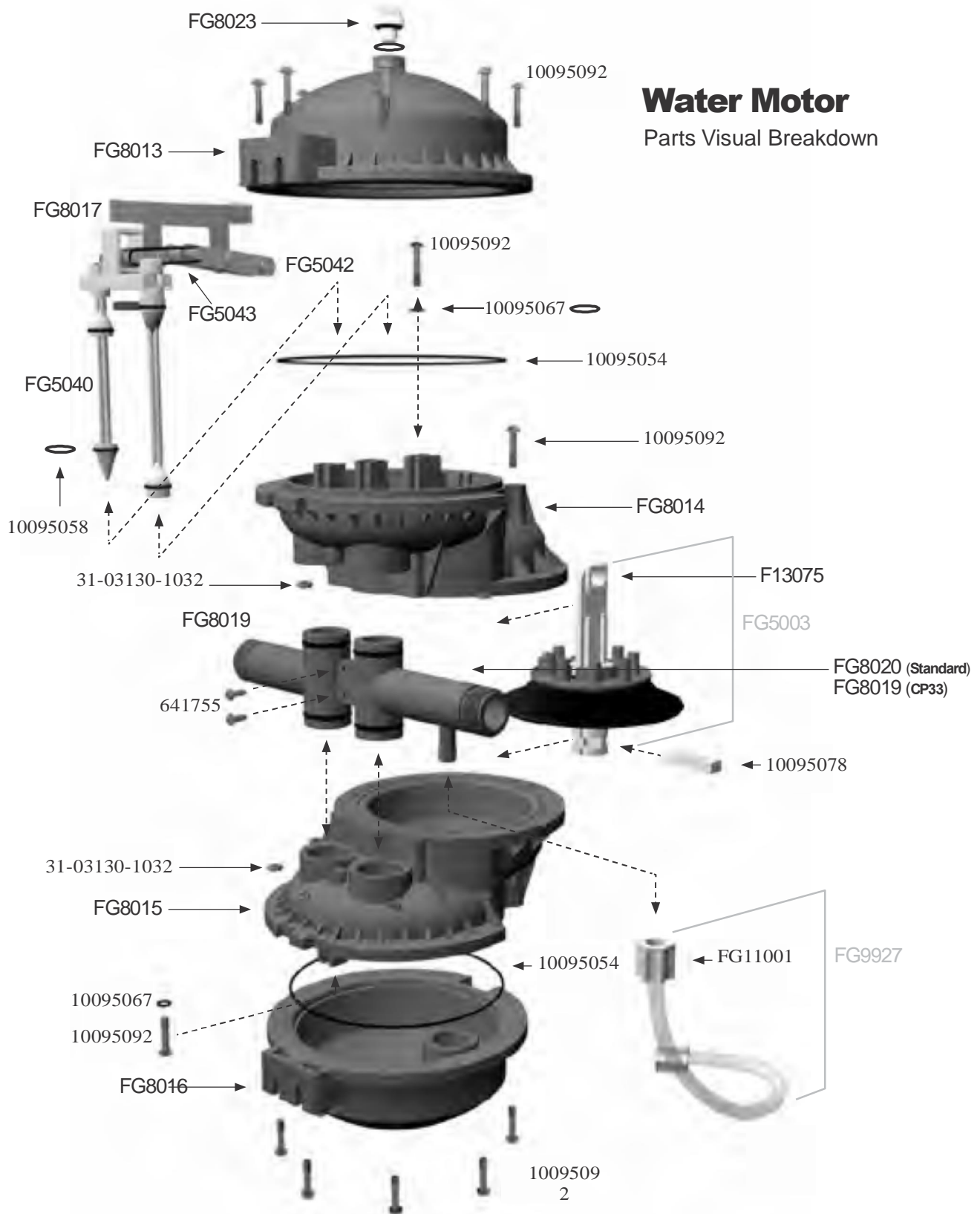
Troubleshooting the Water Motor

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+ & %G+ 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 Europe Ltd. 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 %G+ ; open valve %G+ ; water should not come out of valve %G+ 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 Europe Ltd. for repair.*
	%Q+ 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.
Motor clicks a few times, then stops.	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.
	%Q+ ring on pump stem may have excessive wear.	See above.

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





General Maintenance Tips

Water Motor

1. Do not let unit freeze.
2. Periodically clean or replace chemical hose (the 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 toothbrush & white vinegar.

Chemical Pump

1. When pumping vinegar, use a vinegar pump.
2. Clean pump after use by running 5 gallons of clean water through the pump, 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.

Warranty

Hydro Systems Europe Chemilizer Injectors, except pump assemblies, pump parts and tubes, are warranted against defective material and workmanship for 2 years from the date of manufacture. This warranty excludes failure caused by chemical attack or physical abuse.

Defective parts or products must be returned with a valid Returned Goods authorisation number to the UK address freight paid. If inspection shows them to be defective they will be repaired or replaced without charge Ex Works UK. Our obligation to repair or replace shall be in substitution for all warranties, conditions and liabilities in respect of the quality, condition or description of goods except liabilities of death or personal injury caused by our negligence. In particular, we shall accept no liability for consequential or financial loss or other monetary claims exceeding the cost of the defective goods.

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Notes

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