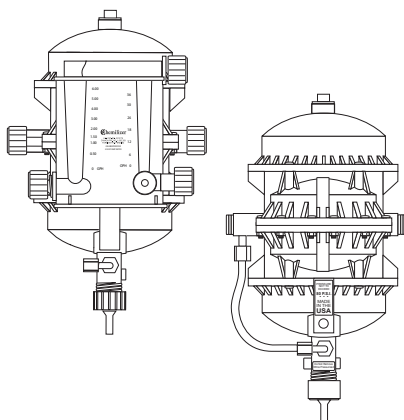




CP33 HN55

Commercial/Residential Pool Treatment Injectors



This CP33 and HN55 are tested and certified by WQA for materials safety according to NSF/ANSI 61 and 50.

Manual

Chemilizer Products, Inc.
230 Commerce Drive, N.
Largo, FL 33770

727-518-1665
800-234-7211
fax 727-559-8226

support@chemilizer.com
www.chemilizer.com

Safety Precautions

The dual sided Injection Control Panel allows a broad range of chemical delivery rates. When using any chemical, always consult manufacturers recommendations for safe handling.

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

CP33 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. Chemilizer does not suggest or recommend ways or procedures for using any chemical.

Chemilizer Products, Inc. is not responsible for injury incurred by the misuse or improper handling of chemicals.

Chemilizer Technical Support

1-800-234-7211

M-F 8:30am -5pm

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

Introduction

Your Chemilizer Injector

Thank you for purchasing a Chemilizer injector. We here at Chemilizer are committed to manufacturing the highest quality product to fill your injection needs. We are also committed to providing you with the best service possible. To help in our drive to achieve this, we ask that you please take a moment to fill out and send in the warranty card. You can also fill out the warranty online at our web site, www.chemilizer.com.

Contents

Included in the package:

1. Water Motor with Injection Line
2. Injection Control Panel/Hose (**CP33 ONLY**)
3. Chemical Pump with Jaco Nut
4. Suction Hose with Filter and Spring Clip
5. Mounting Screws (4) with Template
6. Owners Manual
7. Mounting Template

Also Available: Installation Kit

Water Motor Specifications

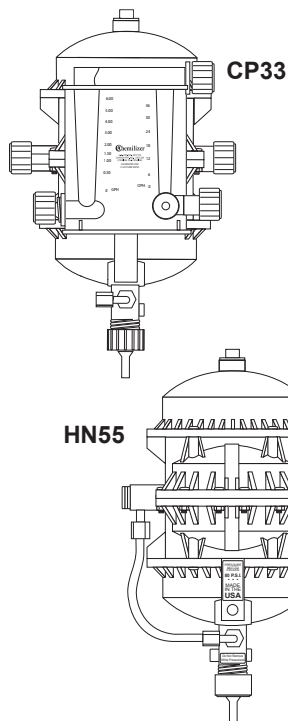
	CP33	HN55
Min. system water flow	12 gpm	1GPH - 13GPM
Pressure	4 psi to 80 psi	2 psi to 80 psi
metric .276 bar to 5.51 bar		metric .138 bar to 5.51 bar
Max. temp	110° F (43.3° C)	110° F (43.3° C)
Fitting/connection	3/4" nht (national hose thread)	3/4" nht (national hose thread)
Ratio	SEE PUMP LABEL*	SEE PUMP LABEL*
Size.....	11" height x 8 1/2" width	11" height x 8 1/2" width
metric 27.9 cm x 21.6 cm		metric 27.9 cm x 21.6 cm
Weight	8 lbs. (3.6 kg)	6 3/4 lbs. (2.5 kg)

CP33: 3 Models (Range of Injection)

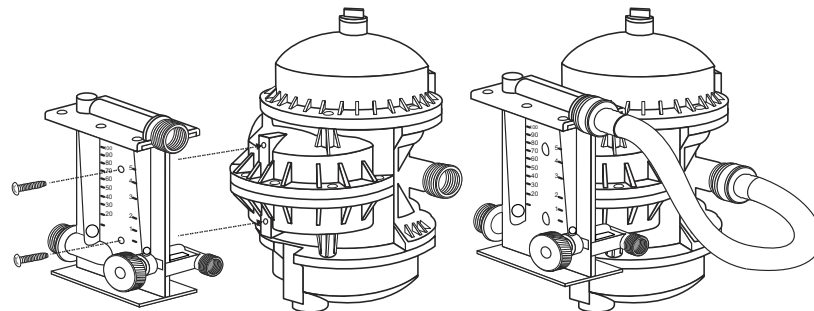
1 Ounce Per Hour to 1 Gallon Per Hour
3 Ounces Per Hour to 3 Gallons Per Hour
6 Ounces Per Hour to 6 Gallons Per Hour

HN55: 2 Models (Range of Injection)

2.5 Ounces Per Hour to 7.5 Gallons Per Hour
5 Ounces Per Hour to 15 Gallons Per Hour



CP33 Assembly



Injection Control Panel

Water Motor

Assembled CP33

Attach the Injection Control Panel to the front of the water motor using the two screws included with the Injection Control Panel.

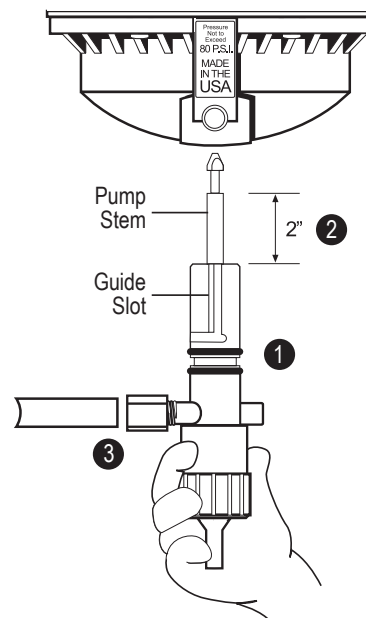
Attach one end of the connection hose to the Injection Control Panel and the other end to the inlet side of the water motor.



Overtightening the screws on the Injection Control Panel will damage it or cause it to break.



Installing the 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. Must be non-petroleum based.

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.

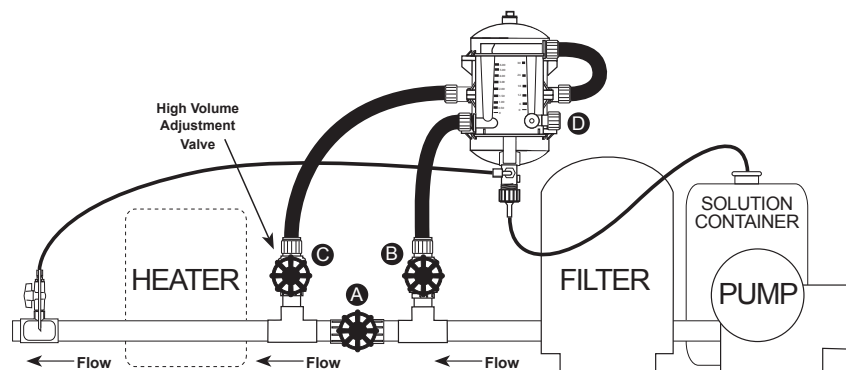
3. After installing pump into bottom of water motor - loosen Jaco nut on pump and insert hose into fitting. Re-tighten Jaco nut.

Installation: CP33

Placement

The CP33/HN55 injection point should always be installed **AFTER** the heater.

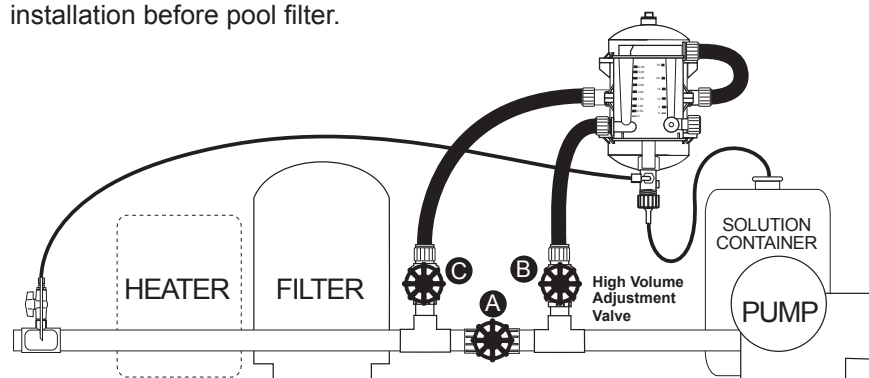
CAUTION



Note: Installation must be ahead of pool heater or spa heaters, and injection point must be AFTER heaters.

Water must flow through the motor from right to left as shown in diagram.

Note: Some local regulations may require installation before pool filter.



Note: Installation must be ahead of pool heater or spa heaters, and injection point must be AFTER heaters.

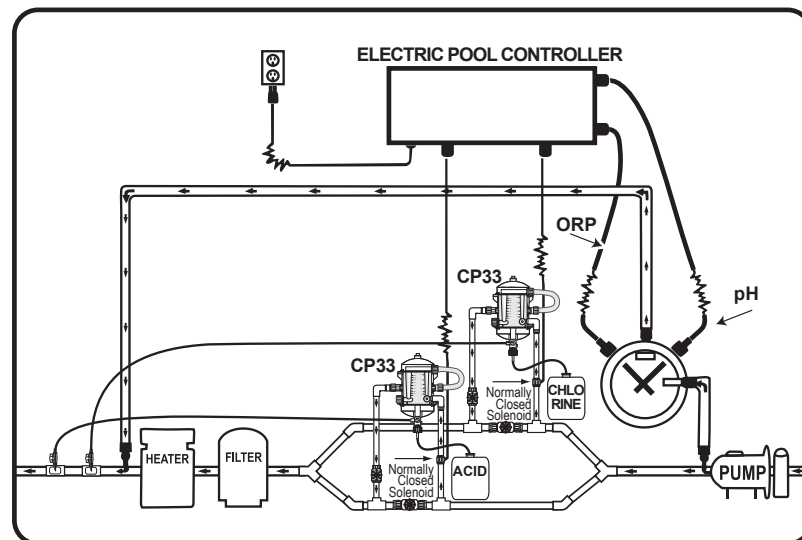
Water must flow through the motor from right to left as shown in diagram.

CAUTION

Optional Installations

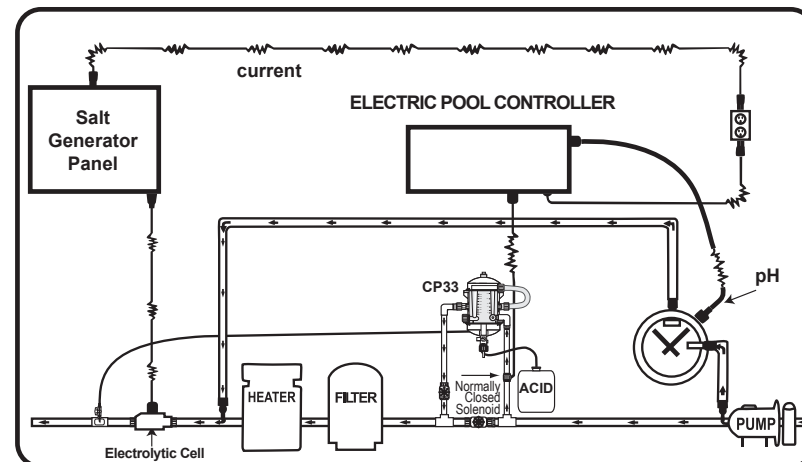
Installations can be used with HN55 or CP33

Installation with Electric Pool Controller



Safety switch to prevent injection when water not circulating is not required because Chemilizer injector cannot inject unless water is flowing.

Installation with Salt Chlorine Generator



Safety switch to prevent injection when water not circulating is not required because Chemilizer injector cannot inject unless water is flowing.

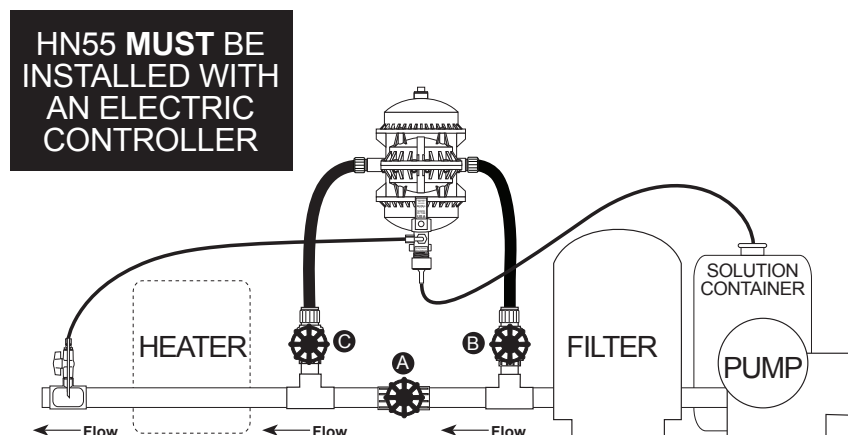
Note: Salt Chlorine Generator with its own pH sensor may not require separate electric pool controller.

Installation: HN55

Placement

The CP33/HN55 injection point should always be installed **AFTER** the heater.

//////////////// CAUTION //////////////////

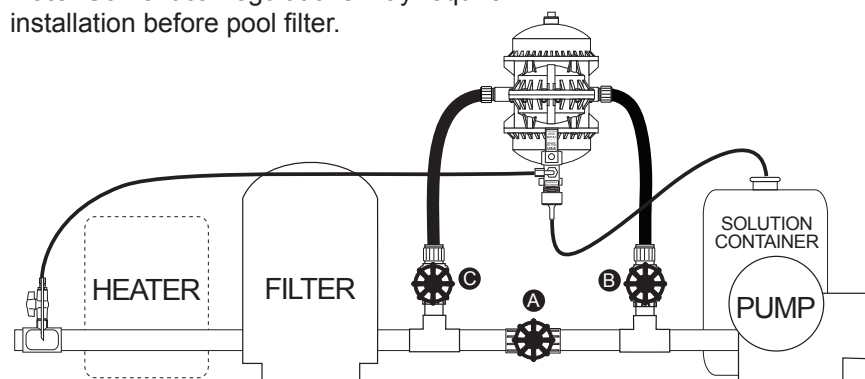


Note: Installation must be ahead of pool heater or spa heaters, and injection point must be **AFTER** heaters.

Water must flow through the motor from right to left as shown in diagram.

//////////////// CAUTION //////////////////

Note: Some local regulations may require installation before pool filter.



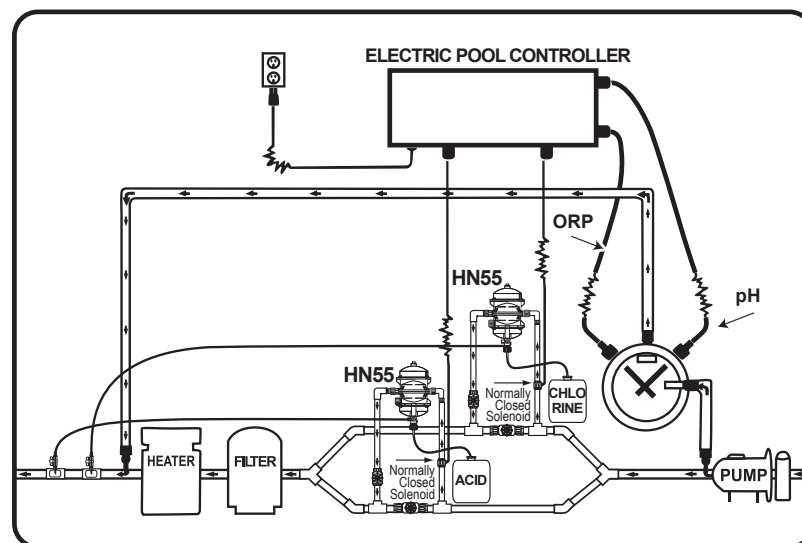
Note: Installation must be ahead of pool heater or spa heaters, and injection point must be **AFTER** heaters.

Water must flow through the motor from right to left as shown in diagram.

//////////////// CAUTION //////////////////

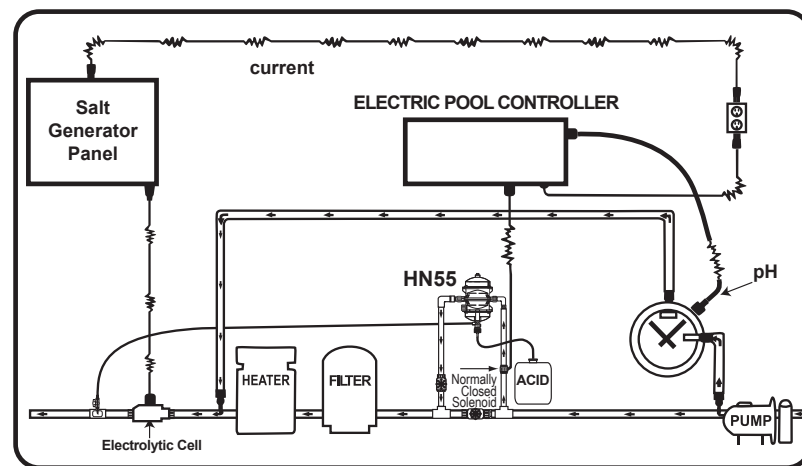
Optional Installations Installations can be used with HN55 or CP33

Installation with Electric Pool Controller



Safety switch to prevent injection when water not circulating is not required because Chemilizer injector cannot inject unless water is flowing.

Installation with Salt Chlorine Generator

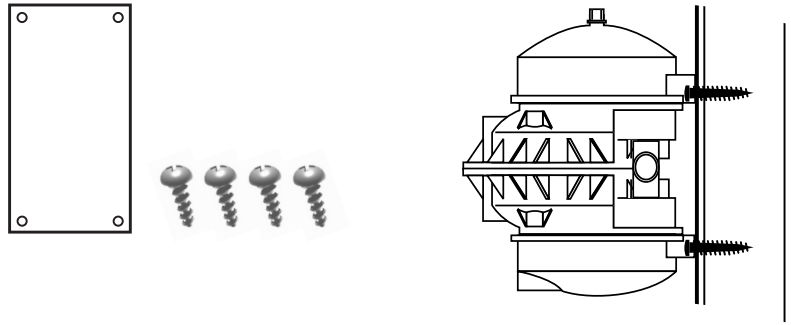


Safety switch to prevent injection when water not circulating is not required because Chemilizer injector cannot inject unless water is flowing.

Note: Salt Chlorine Generator with its own pH sensor may not require separate electric pool controller.

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 Injector

1. Be sure chemical pump is locked into the bottom of the water motor.
(1/4 turn to the right)
2. With the solenoid control valve (if present) in a closed position make sure valve (A) is all the way open. Close valve (A) 1/4 of the way. This will direct some of the water flow into the water motor whenever the control solenoid is open and cause the unit to inject.
3. Make sure that when the solenoid valve (if present) is open, the motor is clicking. Depending on how much water is being directed into the motor the frequency of the clicking could be from several minutes to every few seconds. To insure maximum delivery in the shortest amount of time, motor should cycle 2 times per second.
4. If the rate of injection is considered too fast, open the valve more driving less water through the motor. If the rate is considered too slow, close the valve more driving more water through the motor. Opening the valve will slow rate of injection, closing the valve will increase rate of injection but will reduce water flowing through system.
5. Open air vent until all trapped air is released.

Stopping the Unit

1. Open valve (A) all the way.

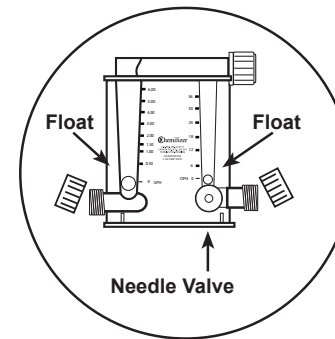
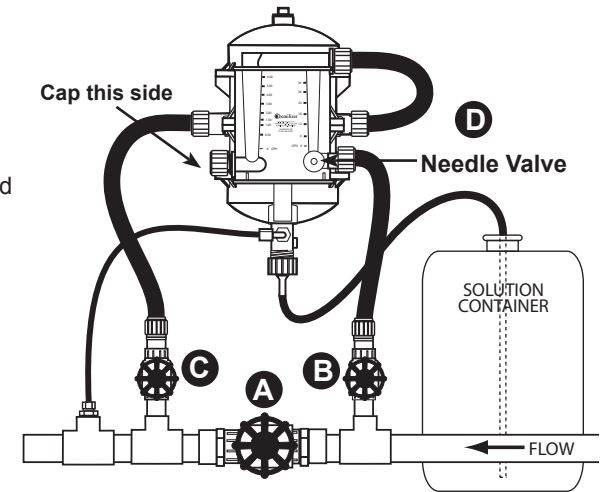
CP33 Chemical Volume Options

The dual sided **Injection Control Panel** allows a broad range of chemical delivery rates.

Low Volume Installation

Ounces Per Hour Injection

Injection rate is adjusted with the needle valve on the Injection Control Panel.



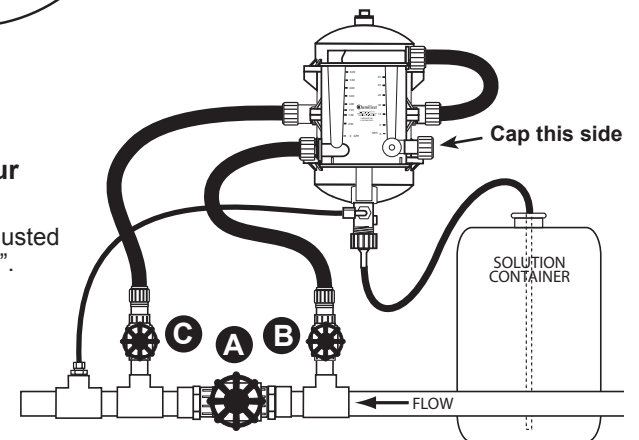
Injection Control Panel

Depending on which side of the Injection Control Panel you use, the other side is **capped off** (cap included)

High Volume Installation

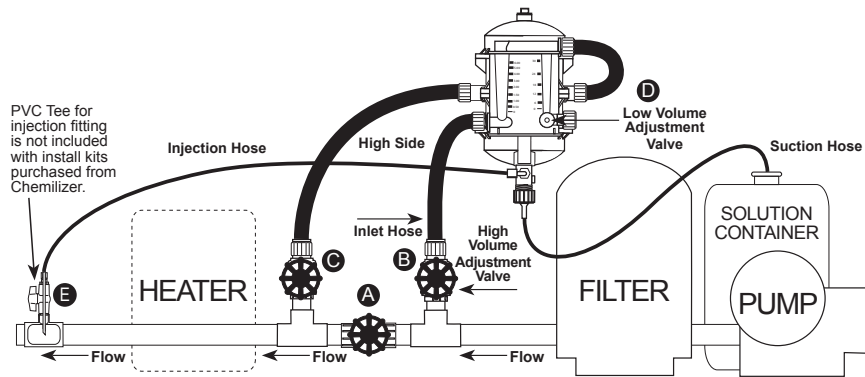
Gallons Per Hour Injection

Injection rate is adjusted by turning valve "B".



How to use the Injection Control Panel

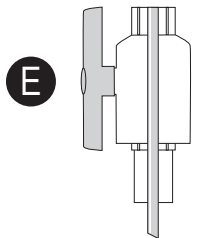
1. Locate the control valve **(A)**, inlet gate valve **(B)**, outlet gate valve **(C)**, and Low Volume Adjustment valve **(D)** in the diagram.
2. With your system water flow at its maximum, control valve **(A)** is fully open.
3. The inlet gate valve **(B)** and outlet gate valve **(C)** should be completely closed before proceeding.
4. Connect a water hose from inlet gate valve (B) to the Injection Control Panel:



Note: Installation must be ahead of pool heater or spa heaters, and injection point must be AFTER heaters.

Injection Fitting

The injection fitting is included with all CP33 injectors. It 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 Chemilizer Products, Inc. FG8010 Remote Injection Kit.

Turn off water to injector before turning off this valve.

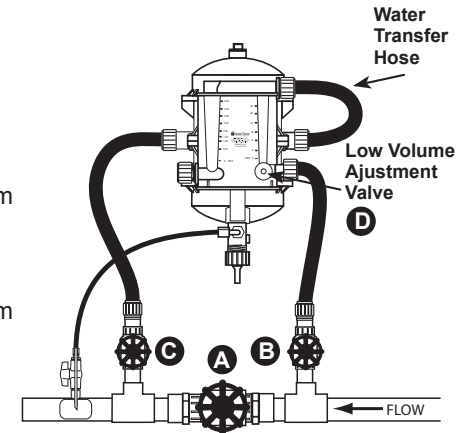
How to use the Injection Control Panel (continued)

Ensure the short blue water transfer hose provided with the injector is connected from the outlet of the Injection Control Panel (top right side) to the inlet T on the injector.

Ensure a water hose is connected from inlet T **(B)** to Injection Control Panel (bottom right side).

Ensure a water hose is connected from the outlet T on the injector to outlet gate valve **(C)**.

Open outlet gate valve **(C)** completely and then open inlet gate valve **(B)** until it is also fully open.



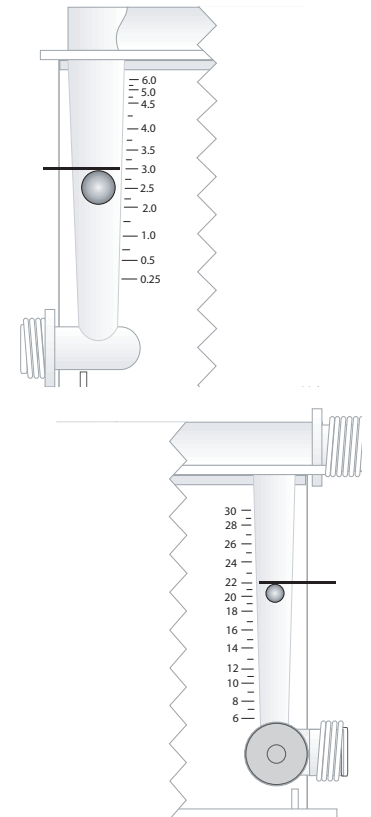
To set the volume of injection, slowly close control valve **(A)** until the top of the float inside the Injection Control Panel is positioned at the highest injection volume on the Injection Control Panel.

•If you are using high-volume injection (**gallons-per-hour**), use the inlet gate valve **(B)** to fine-tune the injection volume to the exact amount desired.

•If you are using low-volume injection (**ounces-per-hour**), use the Low Volume Adjustment valve to fine-tune the injection volume to the exact amount desired.

(Over tightening <closing> the needle valve will cause damage to the needle and seat.)

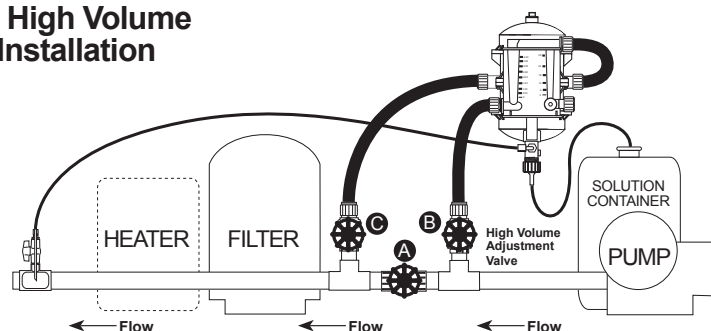
Note: fluctuations in your system's water pressure will cause the float to bounce; the injection volume indicated by the top of the float at the highest point of the bounce is the injection volume the CP33 will output.



Alternative Installation

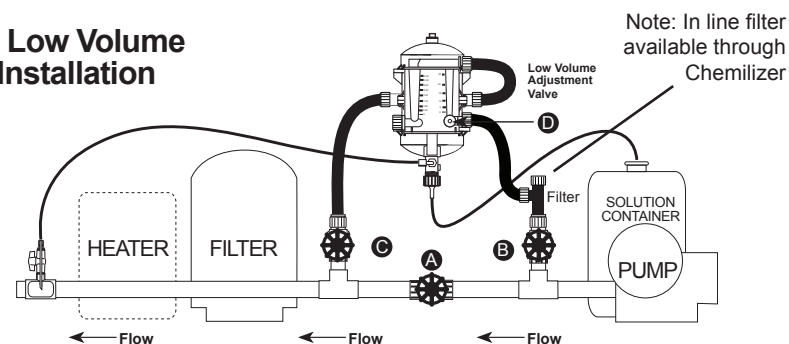
Note: Some local regulations may require installation before pool filter.

CP33 High Volume Pool Installation



Note: Installation must be ahead of pool heater or spa heaters, and injection point must be AFTER heaters.

CP33 Low Volume Pool Installation



Note: Installation must be ahead of pool heater or spa heaters, and injection point must be AFTER heaters.

Trouble Shooting the Injection Control Panel

If the Injection Control Panel low volume float has sunk to the bottom of the Injection Control Panel (when pool pump is on), the Low Volume Adjustment Valve may be clogged from debris that was not trapped by the filter. This can only occur when using the low volume side of the Injection Control Panel (the right side). This can be determined by the low rate of the water that comes out of valve with control knob removed.

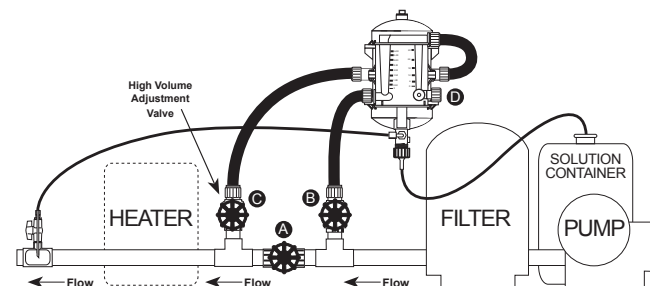
1. Remove the Low Volume Adjustment Valve control knob from the Injection Control Panel, by unscrewing it.
2. When clogged water will dribble out of the open valve.
3. Water will spurt with force from the open Low Volume Adjustment valve, clearing the debris.
4. Replace the control knob in the valve.
5. Repeat the steps for initially setting the injection level.

TROUBLESHOOTING - CP33/HN55

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.	Gate valve "A" may be incorrectly set.	Verify that gate valve "A" is partially closed, forcing water into the injection panel.
	Water motor is in by-pass condition due to worn or broken parts inside of the motor.	Send unit to a service center or Chemilizer Products for repair. Contact Chemilizer for assistance in diagnosing problem 800.234.7211
	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 runs constantly when filter pump is on.	Solenoid is malfunctioning (See Optional Installations)	Repair or replace.
Motor clicks a few times, then stops.	Water motor is in by-pass condition due to worn or broken internal parts.	See above.
	Unit is in bypass condition.	Shut off water flow. Relieve pressure by loosening air vent. Restart water flow.
	Clogged chemical feed tube.	Inspect chemical feed tube for blockage and clean or replace tube.
	Needle valve is clogged (if the low side of the Injection Control Panel is used).	Clean needle valve by unscrewing needle completely out of the valve seat. If valve seat is clogged water dribbles out with minimum force. Once cleared water flows in with a strong stream.
	Pump may have excessive wear on upper "O" ring allowing water to seep past, stopping motor.	Replace pump with a known good pump. If motor starts working, rebuild old pump with Chemilizer pump rebuild kit.



Note: Installation must be ahead of pool heater or spa heaters, and injection point must be AFTER heaters.

Water must flow through the motor from right to left as shown in diagram.

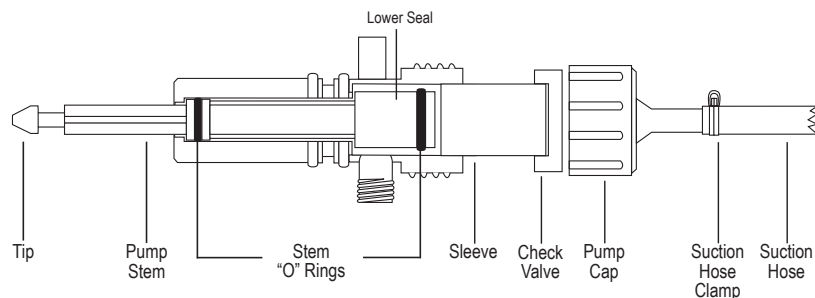
TROUBLESHOOTING - Pump

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 stem assembly with a Chemilizer Products rebuild kit.
	Sleeve may be broken or extremely worn.	Replace sleeve.
	Pump cap is loose.	Chemilizer 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 Chemilizer Products 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.



Injection Pump Replacement

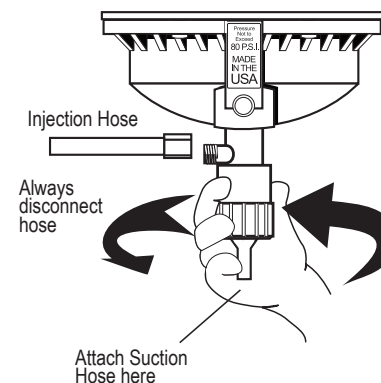
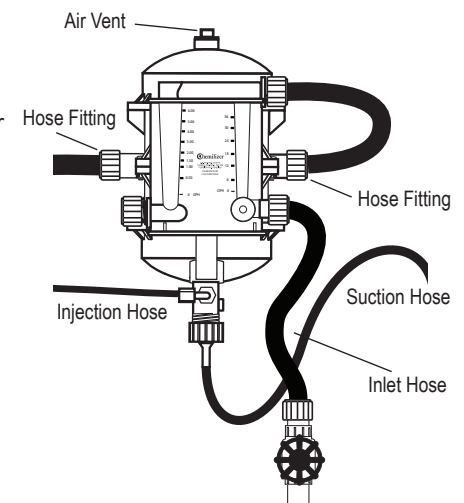
If the chemical pump becomes worn and no longer injects properly, it must be replaced.

1. Turn off pool pump.
2. Release the water pressure by loosening the twist air vent on top of the injector.
3. Remove the injection hose from the injection port by unscrewing the jaco nut and remove the tube from the port. Be careful since a small amount of chemical is likely to spill.
4. Remove the suction hose from the base of the pump.
5. Turn pump one quarter turn counter clockwise and remove from the injector. Water will drain from the unit.
6. Insert the new pump (NOTE: Be sure to fully extend pump stem prior to insertion into motor) and turn clockwise one quarter turn to lock in place. Make sure it is locked by trying to pull it from the injector. The injection port should face to the left.
7. Reattach the injection hose and the suction hose.
8. Turn on the pool pump and run until water comes out of the twist air vent.
9. Tighten twist air vent.
10. Run pump briefly checking for water leaks.

Note: Pump can be hand primed prior to insertion into motor to save time.

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.



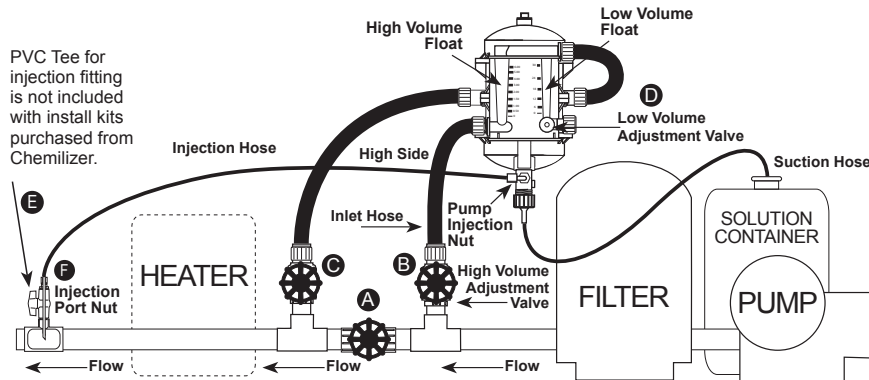
2. Turn pump counter clockwise 1/4 turn, then pull down.

NOTE: always disconnect injection hose from pump before removing.

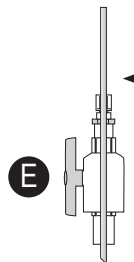
Injection Hose Replacement

If the injection hose becomes cracked or starts leaking, it must be replaced.

1. Turn off pool pump.
2. Remove the injection hose from the injection port by unscrewing the injection port nut (F).
3. Remove the hose from the port. Be careful since a small amount of chemical is likely to spill.
4. Remove the other end of the injection hose from the chemical injection pump by unscrewing the pump injection nut and dispose of properly.
5. Replace injection hose by inserting one end into the injection port on the pump. Hand tighten nut.
6. Turn on pool pump and run until chemical flow from other end of the injection hose.
7. Turn off pool pump.
8. Insert the injection hose into the injection port of the water line and hand tighten the injection port nut.
9. Return pool pump to normal cycle.



Note: Installation must be ahead of pool heater or spa heaters, and injection point must be AFTER heaters.



Injection Fitting

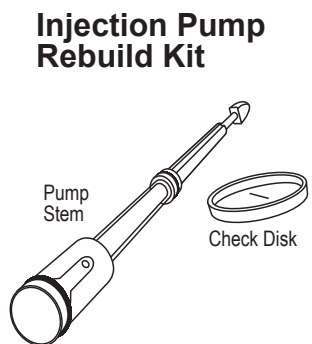
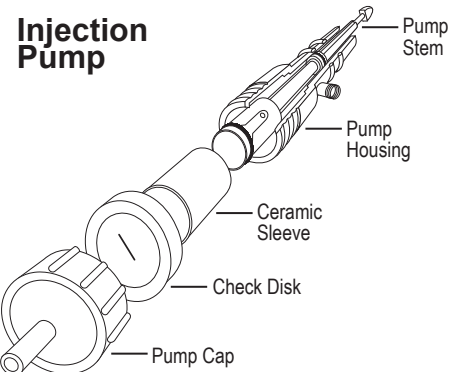
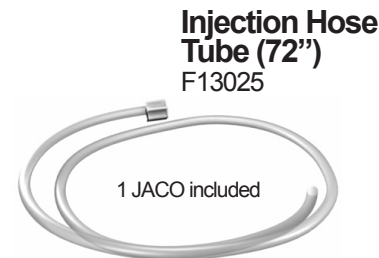
The injection fitting is included with all CP33 injectors. It is made to be glued into a standard pvc "T" fitting with a 3/4" opening. For installation in other size pipes, a "reducer tee" or "reducer bushing" is required.

We recommend a ball valve (for easy on/off) This is not included with your injector purchase, but is available through Chemilizer Products, Inc.

CP33 Volumetric Chemical Injector

No. CH6000

Water Motor, Flow Meter* with Attachments and Caps, Chemical Pump, Chemical Hose with Injection Fitting, Suction Hose with Brass Clamp and Suction Hose Filter.



CP33 Parts List

	FG8013 Top Cap Assembly Includes: FG8023 Twist Air Vent F12318 O-Ring		FG8023 Twist Air Vent Assembly		FG8019 Inlet/Outlet Tee Assembly Includes: F12238 O-Ring (x2)
	FG8014 Main Top Body Assembly Includes: F12018 O-Ring F12318 O-Ring		F22005 Screw 10-32 S.S. for Body		FG9927 Chemical Hose Assembly 72"
	FG8015 Main Bottom Body Assembly Includes: F12018 O-Ring F12318 O-Ring		F21015 Nut 10-32 S.S. for Body		FG8001 Water Supply Hoses 3' x 1/2"
	FG8016 Main Bottom Cap Assembly Includes: F12318 O-Ring		F22002 Screw For Inlet/Outlet Tee		F33006 Motor Piston Clip
	FG6406 1GPH/128OPH Injection Control Panel Includes: Cap & Elbow Adapter		FG5040 Inlet/Outlet Valve Assembly Includes: F12218 O-Ring		FG5003 Diaphragm Assembly
	FG6108 Injection Panel Elbow		FG5042 Pivot Arm Assembly		F13075 Piston Guide Insert NOTE: This is round until inserted
	FG6117 Injection Panel Hose 3/4"		FG5043 Actuator Arm Assembly Includes: F12232 Tension Bands		FG8017 Top By-Pass Assembly
					F12232 Tension Bands NOTE: Not an O-Ring
					F24060 Retaining Clip Set of 10
					F11020 1/4" Cap for Injection Fitting

FG5001 Motor Rebuild Kit

The following parts are part of the Motor Rebuild Kit.

F12018	O-Rings 009
F12238	O-Rings 119
F12318	O-Rings 159
FG5040	Inlet/Outlet Valve Assembly
FG5042	Pivot Arm Assembly
FG5043	Actuator Arm Assembly
FG5003	Diaphragm Assembly
FG8017	Top By-Pass Assembly

Water Motor Limited Warranty United States Warranty Policy*

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 Chemilizer, 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.

Injection Pump.

The Injection Pump is not covered under warranty.

Chemilizer Products, Inc. has no control over the types of materials or chemicals that will be used in this equipment, therefore we can not guarantee the injection 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.

Chemilizer does not warrant parts manufactured by outside sources which are used in the assembly of other products offered by Chemilizer. This includes parts used in installation kits such as gate valves and PVC components.

United States Warranty Claims.

Return to your local dealer, or to Chemilizer Products, Inc. Proof of purchase date, serial number, and an explanation of the complaint must accompany the merchandise. In the event no warranty card is on file or 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.

Warranty Registration:

Please take a moment to fill out the Warranty Registration card that comes with the unit or register on the internet at **www.chemilizer.com**

* This warranty policy applies only to units and component parts purchased and installed in the United States. Before sending merchandise to Chemilizer Products, call for a return authorization number.
1-800-234-7211

To the extent permitted by law, this warranty is made expressly in place of all other guarantees or warranties, express or implied, with respect to quality, merchantability, or fitness for a particular purpose. Chemilizer hereby disclaims any other express or implied warranties. Some states do not allow limitations on how long an implied warranty lasts or their disclaimer so the above limitations may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.