

Total Pool Chemistry™ for Aqua Rite® Pro and Pro Logic®



**Work less, play more™
with chemistry automation.**

Installation and Operation Manual

AQL-CHEM-3-120
AQL-CHEM-3-240

IMPORTANT SAFETY INSTRUCTIONS

Danger - tank will be filled with corrosive acid:

- Poison - may be fatal if swallowed. Causes severe burns. Vapor harmful.
- Keep away from children and pets.
- Filling and service to be performed by pool service professional only.
- Read all manufacturer cautions and directions before use.

To homeowners and users:

- This tank contains acid that is dangerous to handle, and can harm people and equipment if not properly contained, transported, poured, stored, and dispensed.
- Perform safety check before entering water each day! Check the pool chemistry and pool controller alarm status prior to entering the pool or spa. Resolve any issues prior to entering the water.
- Keep equipment maintained! The pump tube must be replaced annually to avoid wear out and leaks. The system should be inspected annually.
- Don't open the lid! Slightly tip tank to check for liquid level.

To service personnel:

- Perform dilution by adding water to tank - then adding the acid. To prevent violent boiling and splashing, always add acid to water, and do so slowly.
- Always dilute acid according to manufacturer's specifications.
- Always follow chemical manufacturers' directions and warnings.
- Follow the installation checklist to verify proper operation upon installation and at the beginning of each pool season.

Safety precautions are required to ensure that an equipment malfunction is detected. Great care must be taken when installing, maintaining and operating acid pump feed systems.

CAUTION: Equipment failure can potentially cause too much acid to be dispensed into the water, causing an equipment and health hazard which would not be detectable without the use of independent pH measurement.

LIMITED WARRANTY (effective 04/01/09) Hayward/Goldline warrants its Pro Logic and E-Command pool automation products as well as its Aqua Rite, Aqua Rite Pfo, Aqua Plus and SwimPure chlorination products to be free of defects in materials and workmanship, under normal use and service, for a period of three (3) years. Hayward/Goldline also warrants its Aqua Trol chlorination products to be free of defects in materials and workmanship, under normal use and service for a period of one (1) year. These warranties are applicable from the initial date of installation on private residential swimming pools in the US and Canada.

Hayward/Goldline warrants all the above-identified pool automation and chlorination products installed on commercial swimming pools and on swimming pools outside of the US and Canada for a period of one (1) year. Likewise, Hayward/Goldline warrants all accessories and replacement parts for the above-identified pool automation and chlorination products for a period of one (1) year. Each of these warranties is not transferable and applies only to the original owner.

Proof of purchase is required for warranty service. If written proof of purchase is not provided, the manufacturing date code will be the sole determinant of the date of installation of the product. To obtain warranty service or repair, please contact the place of purchase or the nearest Hayward/Goldline authorized warranty service center. For more information on authorized service centers please contact the Hayward/Goldline Technical Service Support Center (61 Whitecap Road, North Kingstown RI, 02852) or visit the Goldline web site at www.goldlinecontrols.com or the Hayward website at www.haywardnet.com.

WARRANTY EXCLUSIONS:

1. Material supplied or workmanship performed by others in process of installation.
2. Damage resulting from improper installation including installation on pools larger than the product rating.
3. Problems resulting from failure to install, operate or maintain the product(s) in accordance with the recommendations contained in the owners manual(s).
4. Problems resulting from failure to maintain pool water chemistry in accordance with the recommendations in the owners manual(s).
5. Problems resulting from tampering, accident, abuse, negligence, unauthorized repairs or alterations, fire, flood, lightning, freezing, external water, degradation of natural stone used in or immediately adjacent to a pool or spa, war or acts of God.

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NO WHOLESALE, AGENT, DEALER, CONTRACTOR OR OTHER PERSON IS AUTHORIZED TO PROVIDE, SUPPLEMENT OR MODIFY ANY WARRANTY ON BEHALF OF HAYWARD/GOLDLINE.

THESE WARRANTIES ARE VOID IF THE PRODUCT HAS BEEN ALTERED IN ANY WAY AFTER LEAVING THE FACTORY. FOR THE ABOVE-IDENTIFIED CHLORINATION PRODUCTS, THESE WARRANTIES ALSO ARE VOID IF, DURING THE WARRANTY PERIOD, YOU USE A REPLACEMENT CHLORINATOR CELL OTHER THAN AN UNMODIFIED, NEW HAYWARD/GOLDLINE CHLORINATOR CELL PURCHASED FROM HAYWARD/GOLDLINE. IF A WARRANTY BECOMES VOID, YOU STILL MAY PURCHASE SERVICE AND/OR TELEPHONE TECHNICAL SUPPORT AT THE THEN CURRENT TIME AND MATERIAL RATES.

Before You Begin

Compatibility

The AQL-CHEM-3-120 (120VAC) and AQL-CHEM-3-240 (240VAC) are compatible with all Hayward Aqua Rite Pro and Pro Logic pool controls using an AQL-CHEM Sense & Dispense system. The AQL-CHEM-3 is not compatible with Aqua Rite or Aqua Logic controls.

Description

The AQL-CHEM-3 is an automatic acid dispensing system which utilizes a Stenner 45M Series acid pump and 15 gallon tank to lower the pH level in your swimming pool. When used with a Hayward AQL-CHEM ORP and pH Sensing Kit, the Hayward Aqua Rite Pro or Pro Logic pool control will measure the pool's pH and, if too high, automatically enable the AQL-CHEM-3 to dispense muriatic acid into the pool until the pH reaches the desired level.

What's included

Ensure that the following contents have been included in the AQL-CHEM-3 box:

- Stenner 45M Series acid pump and 15 gallon tank containing:
 - 3 Connecting nuts
 - 3 Ferrules
 - 1 Weighted strainer (pre-installed)
 - 1 20' Roll of suction/discharge tubing 1/4" UV black
 - 1 Spare pump tube
 - 1 Injection fitting (not used, may be discarded)
 - 1 Mounting bracket (pre-installed)
 - 1 Rain roof
 - 1 Stenner Installation Manual
- 1 Flow Indicator
- 2 Injector Valves (short injector valve is not used and can be discarded)
- 1 Hose clamp
- 1 AQL-CHEM-3 Manual

Safety

Refer to the Stenner manual included with the dispenser for specific safety information related to that product. Because the AQL-CHEM-3 system uses muriatic acid, refer to the additional information below:

- Always use the proper dilution in the acid feed system (4:1 dilution of 20° Baume hydrochloric acid 31.45% by weight or equivalent).
- To prevent violent boiling and splashing, ALWAYS ADD ACID TO WATER; never add water to acid to dilute it. Some use the rhyme "do as you oughta- add acid to water".
- Strictly follow the acid vendor's safety and handling protocols including hand, body and eye protection when transferring or handling acid.
- Fill the 15 gallon tank to the following levels:
 - 5 gallons of 4:1 solution for pools up to 15,000 gallons of water
 - 10 gallons of 4:1 solution for pools up to 30,000 gallons of water
 - 15 gallons of 4:1 solution for pool above 30,000 gallons of waterThis limits the available acid in the event that equipment malfunctions and empties the tank into the pool or spa.

- If acid is not diluted properly or the feed pump is oversized, it will overshoot the pH correction.
- Periodically use an independent pH and chlorine test kit to verify that pH is at a safe level, and that chlorine is at a safe level. If the AQL-CHEM probes are broken, depleted, dirty, fouled with oils, lotions, or other contaminants, they can report an inaccurate result to the system causing incorrect water chemistry, which at worst, could harm people or equipment.
- Check the Aqua Rite Pro or Pro Logic's display each day before entering the water. If there is any Check System alarm, follow the troubleshooting guide in this manual to understand and rectify the condition. If the display is blank, or reporting a communications error, troubleshoot the equipment and rectify the failure before entering the water.
- Use commercially available tie-down straps (not supplied) to fasten the tank, as appropriate for your locality.
- Follow the installation checklist to verify proper operation upon installation and at the beginning of each pool season.

Before you begin

- Properly balance the pool chemistry. The AQL-CHEM-3 is designed to maintain a pool's pH, not correct an out-of-balance pool.
- Plan the mounting location of the AQL-CHEM-3. Look for an easily accessible location that is less than 20' (length of supplied hose) away from the existing pool plumbing. Consider that the hole location must be on the underside of the return plumbing pipe. The injector assembly (approximately 10" long) will be mounted to this hole, so be sure that there is adequate clearance under the pipe before drilling.
- Turn off the pool filter pump and drain the return line.
- Remove power to the control. If wiring to a Pro Logic, be sure to remove power at the home's main panel.

Tools needed

The installation of the AQL-CHEM-3 requires the following:

- 7/16" drill bit
- flat head screwdriver

Pro Logic

At the local display/keypad:

1. Press "Menu" until Configuration Menu is displayed.
2. Hold both "<" and ">" for three seconds.
3. Press ">" repeatedly until "Chemistry Config. Wizard" is displayed.
4. Push "+" to start Wizard.
5. Advance through the Wizard until pH Reduction Control is displayed. Use "+" or "-" to set pH Reduction Control to "Forced On".
6. Continue through the Wizard and exit.
7. Verify that acid solution is visible at the flow indicator.
8. After the system is fully primed, return to the Chemistry Config. Wizard and set the pH Reduction Control setting to "Auto Sensing".

Every pool is different and requires different acid feed rates. In most applications, the pool controller will compensate for varying pool sizes and chemistries. If your pool is overshooting (too much acid dispense) or timing out (not enough acid dispense), you can adjust the pump rate as needed by turning the numbered collar on the pump. Refer to Stenner pump manual for additional instructions relating directly to the pump operation and service.

Troubleshooting

If the tank is full but the pool's pH is not adjusting or if the pool control continues to show a "pH timeout" indication:

- Check flow indicator for proper flow.
- Ensure that the acid dilution is correct.
- Check for leaks (pump tube, suction tube, discharge tube, all fittings)
- Check pool chemistry (especially Total Alkalinity)
- Check that suction line strainer is fully immersed
- Check timeout setting
- Adjust pump output higher

If the pool's pH is overshooting the pH setting:

- Ensure acid dilution is correct
- Check pool chemistry (especially Total Alkalinity)
- Adjust pump output lower
- Pump not operating as expected
- See Stenner pump manual

Spare Parts

GLX-SP-LP5TUBE – peristaltic (pumping) tube

GLX-SP-UVTUBE – UV-resistant suction/discharge tubing with nuts and ferrules

GLX-SP-STRAINER – weighted suction line strainer

GLX-SP-CHECKV – injection check valve

GLX-SP-FLO – flow indicator

GLX-SADDLE – injection fitting and clamp

GLX-SP-DB - replacement duck bill

GLX-SP-ROLLER - replacement roller assembly

GLX-SP-PUMP-120 -replacement pump - 120V

GLX-SP-PUMP-240 -replacement pump - 240V

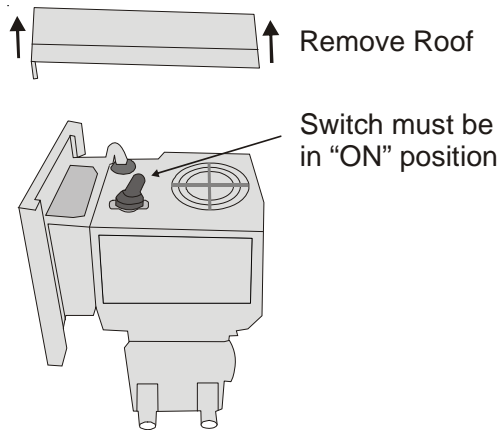
Installation Checklist

Before the installation is finished, the following checklist should be completed.

- Pool is properly balanced and functioning correctly
- Unit is mounted securely and in accordance with local codes and regulations
- The recommended amount of properly diluted acid has been added to the tank
- The child-resistant cap is securely tightened
- The check valve is in place and oriented properly
- The flow indicator is in place, oriented properly, and mounted vertically
- The tubing has been filled by running the pump until the flow indicator shows flow
- There are no leaks in the system
- The pump output has been set to "5"
- The homeowner has been instructed on the use and safety of the system

Operation

Enable the Stenner pump by putting the toggle switch in the ON position according to the diagram below.



Reinstall the protective roof for normal operation.

Purge air out of the system by using the 15 minute force feed until the flow indicator shows that the acid solution is flowing. To do this, use the following procedure:

Aqua Rite Pro

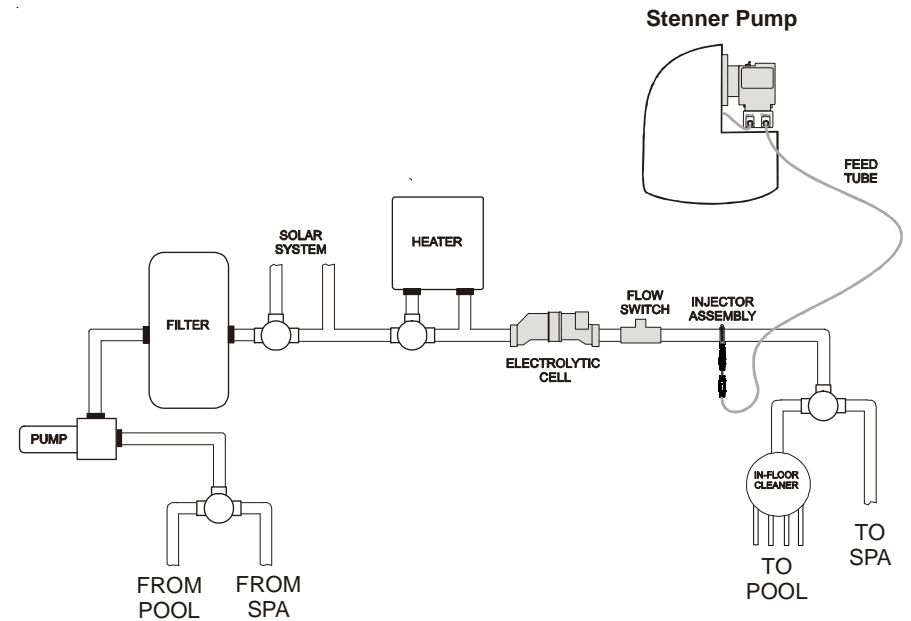
1. Press the "Settings" button.
2. Press ">" repeatedly until "Chemistry Config. Wizard" is displayed.
4. Push "+" to start Wizard.
5. Advance through the Wizard until pH Reduction Control is displayed. Use "+" or "-" to set pH Reduction Control to "Forced On".
6. Continue through the Wizard and exit.
7. Verify that acid solution is visible at the flow indicator.
8. After the system is fully primed, return to the Chemistry Config. Wizard and set the pH Reduction Control setting to "Auto Sensing".

Installation

Overview

Installation of the AQL-CHEM-3 requires:

- Setup and installation of the Stenner pump/tank
- Installation of the Feed Tube and Injector assembly to the return plumbing
- Connection of the AQL-CHEM-3 to the pool control
- Programming the pool control for use with the AQL-CHEM-3
- Filling the Stenner pump/tank



Setup of Stenner pump and tank

Refer to the included Stenner manual for specific information on installing, securing and use of the pump and tank.

Install the Feed Tube and Injector assembly into the return pipe

1. Drill 7/16" hole on the UNDERSIDE of the pool's return pipe AFTER the electrolytic cell and flow switch.

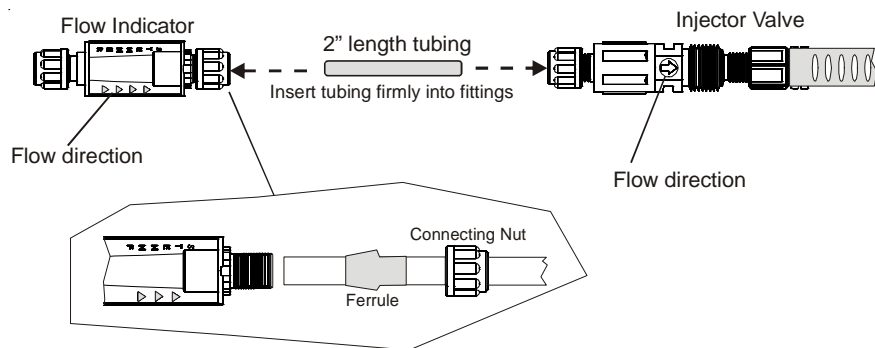
Be sure there is at least 10" of clearance under the pipe before drilling. Clear out any PVC shavings and make sure there are no sharp edges within the hole.

OPTIONAL: The injector assembly (saddle fitting, check valve, short length of feed tube, and flow indicator) should be installed on the underside of the plumbing to ensure that the flow indicator maintains a vertical orientation. If there is not enough space underneath the plumbing, the assembly may be mounted on the top or side of the plumbing as long as the flow indicator is in a position that has enough feed tube length to allow it to be oriented vertically when flow reading is required.

2. Connect the Flow Indicator to the Injector

NOTE: Two injector valves are included with the AQL-CHEM-3. Discard the shorter injector as it does not included a flow-check system and must not be used. The correct injector has a flow direction indicator as shown in the diagram below.

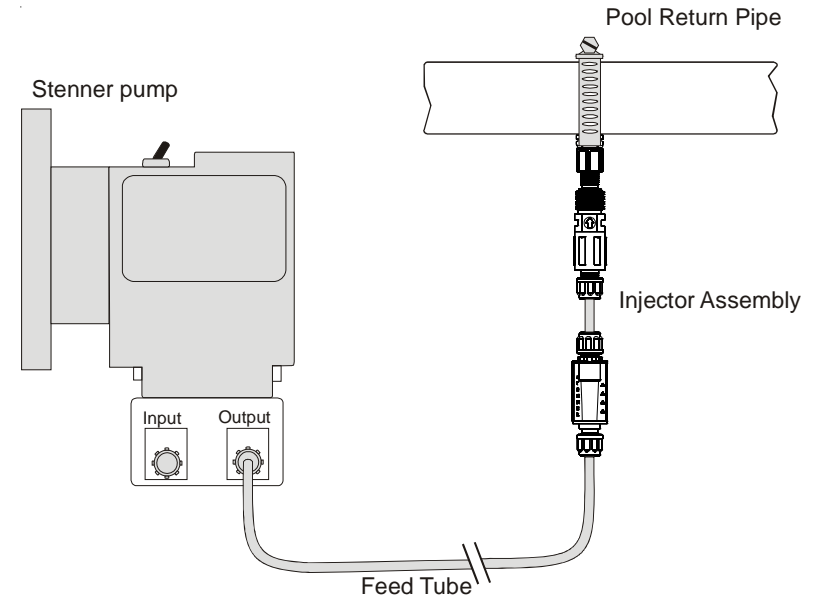
Cut a 2" piece of 1/4" tubing to connect the injector to the flow indicator. With the fittings loose, insert the tubing firmly into each component and handtighten fittings until tubing is secure. Note that the flow Indicator and the injector are directional and must be assembled in the proper orientation according to the diagram below.



3. Fasten the Injector assembly to the return pipe and install the Feed Tube

Fasten the injector assembly to the return pipe by pushing the injector fitting into the 7/16" hole. Tighten the hose clamp until the assembly is snug against the return pipe. Do not overtighten.

Cut the 20' feed tube to the desired length. Connect one end of the feed tube to the injector assembly by firmly pushing it into the flow indicator and handtightening the fitting. Connect the other end of the feed tube to the output side of the Stenner pump as shown below.



Fill the tank

Fill the tank with acid based on the guidelines provided in this manual and the Stenner manual.

Use a diluted mixture of 4 parts water to 1 part Muriatic acid (20° Baume hydrochloric acid 31.45% by weight). Always add acid to water, and do so slowly. Fill the 15 gallon tank to the following levels:

- 5 gallons of 4:1 solution for pools up to 15,000 gallons of water
- 10 gallons of 4:1 solution for pools up to 30,000 gallons of water
- 15 gallons of 4:1 solution for pool above 30,000 gallons of water

Connect the AQL-CHEM-3 to the Aqua Rite Pro or Pro Logic control

Plug the Stenner pump's linecord into the pH Dispense pigtail of the Aqua Rite Pro or Pro Logic. This pigtail is provided with the AQL-CHEM. If the pigtail isn't already installed, refer to the AQL-CHEM product manual for installation instructions.

Program the Aqua Rite Pro or Pro Logic

The pool control must now be programmed to operate the AQL-CHEM-3. Refer to the Aqua Rite Pro or Pro Logic operation manual for specific programming instructions.