



**Silver Water System Ionizer™**  
**Models A-650 & A-750**

**Installation Instructions & Operating Manual**

PLEASE CAREFULLY READ AND SAVE THESE INSTRUCTIONS

This Manual provides specific installation and operating instructions for your model. Use your system only as instructed in this manual. These instructions are not meant to cover every possible condition and situation that may occur. Common sense and caution must be practiced when installing, operating and maintaining any equipment.

Please record your serial number and purchase date below for future reference. Also attach your receipt/invoice to this manual.

Serial Number: \_\_\_\_\_  
Purchase Date: \_\_\_\_\_

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## IMPORTANT SAFETY INSTRUCTIONS

- Read all instructions before using this system.
- Do not reduce sanitizer usage until the ion level reaches 0.2-0.4 parts per million (p.p.m.)
- Check the ion level periodically to make sure the ions remain between 0.2-0.4 p.p.m.
- If possible, bring the unit indoors during long cold winters.
- If possible, keep the control box out of extended direct sunlight.
- External wall adapters should be kept indoors or in a weatherproof outdoor enclosure.
- Use this system only for its intended use as described in this manual.
- To reduce wear to electrodes avoid using excessive amounts of chemicals with this system.
- This system should be serviced only by the manufacturer. Contact your distributor or the manufacturer for examination, repair or adjustment.
- Do not operate this system if it has a damaged cord or plug.
- Do not immerse control box, cord or plug in water.
- Keep cord away from heated surfaces.

## GROUNDING INSTRUCTIONS

The plug must be plugged into an appropriate outlet that is properly installed and grounded in accordance with all local codes and ordinances.

## ELECTRICAL REQUIREMENTS

The electrical requirements are a 120 or 240 volt 60 Hz, AC only, 15+ amp. protected electrical supply. The unit is not interchangeable so determine which voltage the unit is before installation. Failure to use incorrect voltage may damage the unit. Power consumption is 3w. The dealer can accept no liability for damage to the equipment or personal injury resulting from failure to observe the correct electrical connection procedures. Contact a qualified electrician or service person and install according to electrical codes.

## PLUG INTO SAFETY WITH GROUND FAULT CIRCUIT INTERRUPTERS (GFCIS)

A GFCI is small, inexpensive, and could save your life. A Ground Fault Circuit Interrupter (GFCI) protects you and your family from potentially fatal electric shocks. GFCIs should be installed instead of regular wall outlets wherever electric appliances may inadvertently come into contact with water, such as the bathroom, kitchen and outdoors. Once installed, they should be tested regularly. For more information on gfcis, please email [info@argeniasystems.com](mailto:info@argeniasystems.com).

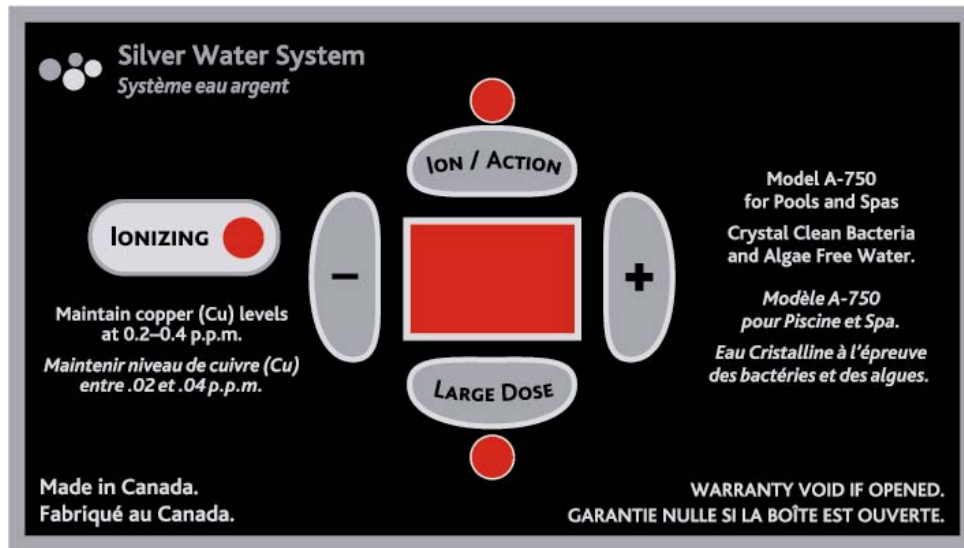
## INSTALLATION INSTRUCTIONS

The Silver Water System can be easily installed in under 30 minutes. The ion chamber (PVC tee) is usually installed in the pool circulation system after the pump, filter and heater. It is recommended that you install the tee as close to the pool as possible. If that location does not work for some reason you may install anywhere between the pump, filter or heater. Please follow these instructions:

1. Ensure the pH, alkalinity, hardness and TDS are within expectable levels. Excessive amounts of algae or bacteria should be controlled prior to start-up.
2. Unplug the filtering system.
3. Plan the placement of the tee, electrodes, controller and plug *or* wall adapter ensuring there is adequate room and all parts reach designated power source. A qualified electrician can extend the electrodes line cord if required.
4. Drain the water pipe in which you have chosen to install the tee.

5. Cut out a 3" section of the horizontal run of pipe where you have chosen to install the tee.
6. Replace this part of the pipe with the tee assembly and fasten with standard PVC glue making sure that the electrodes are vertical in order to allow maximum contact with water and to avoid dirt formation or air pockets around the electrodes.
7. Mount the controller with the (4) screws provided on a suitable surface.
8. Connect cable from electrodes and wire from power supply into the controller.
9. Wrap Teflon tape around the threads on the electrodes six times. Use your hand to turn the electrodes clockwise into the Tee until it is secure. For more even wearing of electrodes: Before installing the electrodes and fastening them to the provided tee, make a small mark on the white PVC cap that indicates the half way point between the two electrode bars. When threading electrodes into the tee, align the mark with the middle of the tee. This procedure will ensure that the water will flow between both bars and even erosion of both electrodes. *(Optional)*
10. Plug into suitable ground fault protected outlet.
11. Do not stop using your current sanitizer until the ion level reaches 0.2 p.p.m. or higher!

## THE CONTROL PANEL (DIGITAL DISPLAY)



- Ionizing** When the “ionizing” light is illuminating, it confirms the system is ionizing the water. To illuminate, the electrodes must be fully submersed in water, and at least 80mA of current must be flowing from the electrodes into the water. The more ions that are being released into the water, the faster the light will blink. The light will look solid at maximum dose.
- Ion/Action** This user defined setting is the duty cycle, or the number of minutes in each hour the Ionizer is on for. The suggested duty cycle follows in the operating instructions.
- Large Dose** Press this button to release the maximum amount of ions for the number of hours you choose. There is a 24 hour default setting. The display will count down the amount of hours left. The system will return to the previously set ion/action setting when the large dose ends. Use this function at your discretion whenever a large increase in ions is required. You may choose to use this when the ionizer is first installed, upon re-filling, or during large amounts of rain or spillage.
- “-” This button will *decrease* the duty cycle time or large dose hours.
- “+” This button will *increase* the duty cycle time or large dose hours.

## OPERATING INSTRUCTIONS

- 1. Power Up** Plug in controller. The digital display should turn on.
- 2. Program** Press the “Ion/Action” button to set the duty cycle time. Follow the guidelines below based on the gallons you are ionizing.
- 3. Optional** Press the “Large Dose” button to set the hours of large dose. You may set from 1 to 99 hours. 24 hours will activate as the default setting. Follow the guidelines below. When the large dose cycle is finished it will return to the previously set ion duty cycle.

### Model A-650

Gallons:	Application:	Ion/Action (Duty Cycle)	Large Dose
1,500 (or less)	Spas, Ponds	15%	6 hours
10,000	Wading Pools	45%	45 hours
25,000	Small Pools	95%	96 hours

### Model A-750

Gallons:	Application:	Ion/Action (Duty Cycle)	Large Dose
1,500 (or less)	Spas	10%	4 hours
8,000	Wading Pools	20%	24 hours
20,000	Small Pools	50%	48 hours
40,000	Large Pools	95%	96 hours

*Please note these are only general guidelines. You will need to adjust the levels based on your copper test kit readings. See the maintenance section for more information.*

*Based on the ion output, it will take approximately 4 days to attain the minimum copper residual of 0.2ppm and 9 days to attain the copper residual of 0.4ppm in the maximum pool volume stated on the label.*

## MAINTENANCE

- 1. Copper (Ion) Tests:** Using a copper test kit, ensure ions are between 0.2 p.p.m. - 0.4 p.p.m.; spa applications can increase to 0.6 p.p.m. Test the ion level at least once a week until you have found the proper duty cycle for your pool or spa. Increase or decrease the duty cycle as required.
2. Occasionally, you will need to **oxidize** the water to help break down excess organic matter (i.e. suntan oils) The NSF International suggests running your ionizer system in conjunction with 0.4 p.p.m. chlorine. This is far less chlorine than would normally be used (~3.0 ppm). Chlorine pucks are recommended before liquid shock as they are extremely stable and slow releasing. You may try a non-chlorine oxidizer such as Spaboss Energize which is pH neutralized (or equivalent brand).
3. As with chlorinated pools, you may need to add a **clarifier or flocculent** if you see extremely fine particles in the water which the filter cannot separate. This clarifier makes these fine particles clump together and sink to the bottom when your pump is off. When the particles have settled on the bottom of the pool they are easily removed by vacuuming. This is not a dangerous chemical and it is used in small quantities. Follow the directions of the side of the container.

4. Because ions are pH neutral, they won't change the pH level of the water. But your choice of oxidizer or environmental factors may. You should **ensure the pH level is maintained at 7.2-7.8**. Also **ensure the filter is always clean**.
5. **Keep total dissolved solids (TDS) between 500 and 2,000 ppm.**
6. **Keep calcium hardness between 200 and 300 ppm.**
7. **Keep the total alkalinity between 80 and 120 ppm.**

**Note: Do Not Use a Stain & Scale Preventer** with an Ionizer. Stain & Scale Preventer is only ever needed if you have water from a well with high concentrations of metal, lime etc. Although Stain & Scale Preventer is designed to sequester ions of iron and calcium, it will also do so to the copper, zinc and silver. If you have serious staining and scaling problem, it should be treated at the point where the water enters the home so as to protect all the other plumbing and fixtures in the house.

## CLEANING & CARE

**Electrodes:** Cleaning will remove oxidization. Some deposits have a tendency to form on the electrodes depending on the water conditions. Clean the flat face of the electrodes using a smooth file and some water. The surface does not have to be "polished"; simply remove any traces of oxidization and other sediments. Remove the old Teflon tape, use new tape and wrap it around six times.

**Exterior Housing:** The housing of the ionizer is made from a durable PVC plastic. Clean the outside with a mild soap and water; rinse and dry with a soft cloth. Do not use any type of household or abrasive cleaner.

**Control Panel:** Care should be taken in cleaning the touch control panel. If the control panel becomes soiled, wipe the panel with a cloth dampened slightly with water only. Dry with a soft cloth. Do not scrub or use any sort of chemical cleaners.

## WARRANTY

All Argenia ionizers carry a full one (1) year limited warranty to be free from all manufacturing defects. This warranty does not include replacement electrodes, which are subject to normal wear and must be replaced every twelve to forty eight months. The device will be repaired or replaced within the first fifteen days following a claim. This warranty is in effect starting the date of purchase and is only applicable to those units with an unopened enclosure and a serial number that is in its original unaltered state. The warranty does not cover damages caused by lightning, abuse, inadequate installation of the device, frost or lack of maintenance.

## REPLACEMENT PARTS & ACCESSORIES

<u>Description</u>	<u>Part No:</u>
Control Panel	A-650 or A-750
Electrodes (Anodes)	A-750E
Copper Test Kit	A-CUI
Copper Test Kit Liquid Refills	A-CUI-R
1 ½" PVC Tee	PLA-85150
2" PVC Tee (by request)	PLA-85142
12 DC Adapter	ELI-25000
Universal Adapter	ELI-25050

## SPECIFICATIONS

Input Voltage: 120 or 240 Volts AC  
Input Frequency: 50 to 60 Hertz  
Output Voltage: 12 VDC  
Output Current: 2 Amps Max  
Outside Dimensions: 5" x 3" x 2.5"  
Controller: Touch Switches and Digital Display with 0-99 variable settings  
Flow Rate: 10 to 80 GPM  
Electrode Housing: 1 1/2" PVC Tee with Threaded Fitting  
Electrode Replacement: 1 1/2" Threaded Plug  
Electrode Size: 3" x 1/2" x 5/16" Each x (2) Bars  
Electrode Weight: 8 ounces  
Electrode Material: Silver (Ag) 10%, Zinc (Zn) 10% and Copper (Cu) 80%, 99.99% pure  
Typical Electrode Life: 3-48 months  
Capacity: Up to 25,000-40,000 Gallons

## FEATURES

Easily Installed Into Your Pool or Spas Circulation System  
Micro Controller with Memory Chip (Safeguards in Power Failure)  
Large Dose Option for Easy System Start-up  
Interactive Digital Display  
Electronic Touch Switches  
Ultra-Durable IP66 and NEMA 4X Rated Weather Resistant Enclosure  
Lock 'n Seal® Weatherproof Connectors  
1 1/2" PVC Tee (2" Tee Request)  
Automatic Polarity Switching Electrodes  
99.9% Pure Metals (no trace metals)  
Silver (Ag), Zinc (Zn) and Copper (Cu) Electrodes  
Replacement Parts Available

## FEQUENTLY ASKED QUESTIONS

### ***Why do I need to oxidize my pool with the ionizer?***

The silver ionizer is a disinfectant system which uses silver to kill bacteria and copper to kill the algae. Zinc is used to prevent staining on the pool liner. Organic material such as insects, leaves, body oils, suntan lotion, shampoo, deodorant, hair gel, make-up etc. need to be removed through oxidation. An oxidizer such as chlorine, bromine or a non-chlorine oxidizer is useful to 'burn out' organic material which is then removed by the filter.

### ***Will the ionizer filter the water?***

No. The ionizer is not a filter. You must still use your regular filter and backwash regularly.

### ***How long does it take to get the ion level up?***

It usually takes 7-14 days in a pool; one day in a spa. During this time, do not stop using your current sanitizer (chlorine) add algaecide until the ion level has reached maximum, then you can reduce the oxidizer level. If you cannot get the ion level up in this time frame, read the troubleshooting section.

### ***Can I run the ionizer on a timer with the pump?***

You can but the amount of time the ionizer is available is reduced. If a small pool is used, the maximum setting of the ionizer may produce enough ions to keep the level up. Larger pools may not attain the desired 0.4 ppm level and need to be supplemented with a small amount of oxidizer and algaecide. Alternatively, you can increase the amount of time the pump runs.

We recommend the ionizer be placed on a separate circuit which is not on the timer, the ionizer can run full time even though the water is not circulating. The ionizer will concentrate the microscopic ions in the pipe

and it will be dispersed in the pool or spa when the pump starts again. If the water drains from the electrodes when the pump is off, then no ionization can take place while the pump is not on.

### ***How often do I need to oxidize the pool?***

Generally once a week is sufficient, maybe less if the pool is not used much. Pools can turn green overnight after a large rainstorm, so that is a good time to oxidize it.

### ***Should I use an algaecide?***

If the ion level is 0.4 p.p.m. as recommended, an algaecide is optional. It is always a safety precaution which helps avoid the surprise algae attack. An algaecide is usually a copper based solution which is not harmful and poses no danger to the swimmers. The regular strength algaecide is cheaper than the superkill variety, and is quite effective in keeping the ion level 'topped up'.

### ***How do I close the pool?***

Before closing the pool, set the generator to maximum and get the ion level as high as you can. These ions will stay in the water all winter long and keep the water algae free. Shocking the pool before closing is a good idea too to get the water in good shape before closing. (Premix any powdered shock before putting it into the pool to prevent a nasty bleached area on the liner.) If leaves or other dirt fall in the water during the winter and algae starts to form while your ionizer is off, it will be necessary to add shock. If you reside in a region where there is frost, you should unplug and remove your system from its installation. Store the unit in a warm place.

### ***How does this ionizer compare to a salt based chlorinator?***

Salt based electrodes break down the added salt, which is sodium chloride, into sodium and chlorine. The chlorine then oxidizes any organic matter (yes, even the bathers) and quickly recombines with the sodium. The salt system is a chlorine based sanitizer even though you don't have the hassle of adding chlorine, you just add salt instead. Some people like the feel of the salt water and others don't like the salt residue left on your body and hair, and you may need a shower after swimming in the pool.

The silver system uses silver as an anti-microbial and disinfectant as discussed, and is not chlorine based. See the *Silver Water Ionizer Guide* for more information.

### ***Why would I need to add salt to the water?***

If the water has a low TDS (Total Dissolved Solids) reading, the electrodes may not emit sufficient ions to raise the level to the suggested value. This is because the water is too pure and pure water is not conductive. Adding 10 or 20 lbs of sea salt will boost the conductivity and also improve the softness of the water, but will not be detectible.

### ***How long do the electrodes last, and how do I check them?***

The best time to check them is in the spring when the water level is low. The "Ionizing" light on the control box only illuminates as 80mA of current is going through the electrodes into the water. If this light is not illuminating, there is a good chance the electrodes need replacing. The electrodes should last from 1 to three seasons, depending on the pool size, conductivity and usage.

***Can I use well water to fill my pool?***

Most well water is fine. If the water has high sulphur content it may smell a bit like rotten eggs. A high iron content may cause a metallic taste to the water and cause rust stains. Its not a bad idea to take the well water sample to a pool shop and have then test for alkalinity, PH as well as other water quality parameters such as TDS , turbidity etc. Then you will know that the well water is in good shape. We recommend that as you top off the pool after opening that you test the water before you turn on the ionizer. This is simply to get an accurate sample of water for testing.

***Is silver or copper harmful if I drink pool water?***

The EPA has published guidelines for the amount of silver, copper and zinc that are required for good health and the maximum recommended daily intake. You would have to drink 200 gallons of pool water a day to even come close to reaching the maximum level. Since the pool water is bacteria free and fresh, go ahead and enjoy because it's actually good for you!

***Can I use the ionizer in my fish tank or pond?***

No. This unit has not been tested on fish tanks or pond life creatures. They are very sensitive to copper levels. You should consult your local pet store for information and products tested on aquariums and ponds.

**TROUBLESHOOTING*****The “ionizing” light is not blinking***

The “ionizing” light will only blink if 80mA of power is flowing from the electrodes to the water. 80mA of power will not flow if the electrodes are not submerged in water or if the conductivity is low. To increase conductivity, add salt. You can test the unit by placing the electrodes in a glass of water. If the ionizing light is not blinking add a dash of salt to the glass of water.

***My ion level isn't raising fast enough!***

If you are in a hurry to get the ion level up, drop in a 10-20 pound bag of salt which you can purchase at a pool or spa supply store (used for salt water generators). This does not produce chlorine like the generators do, but it does help with water conductivity! It will raise the ion level very quickly! Roughly 1 out of every 100 pools would need this method to help raise the ion level.

***My ion level is too high!***

If you over ionize your pool or spa (the ion level goes over 0.8ppm) decrease the ionizer duty cycle to zero until the level drops to 0.4 ppm. Keeping the ion level above 0.4 ppm will never harm you but would corrode the electrodes faster then necessary.

***My ion level isn't reaching the required 0.2 ppm!***

If the pool is large, you may find the ion level isn't reaching the required 0.2-0.4 ppm. This may be due to a large algae population, which is present but not yet visible. To get the maximum ion concentration, put the ionizer to large dose for 99 hours and repeat as necessary. The ionizer may be able to maintain the level at 0.2 but cannot increase since all available ions are used to fight the algae battle. You can boost the level by adding algaecide once to get the level higher and you may find the level stays steady at 0.4 without any additional algaecide.

We always add a bit of algaecide anyway because the regular algaecide is cheap and acts as an additional defense against an algae attack in hot weather.

### ***My pool looks white and cloudy!***

A white milky appearance often is the result of algae in the pool which was killed and bleached white after super-chlorination. It is dead but still is suspended in the water. It is so fine that the sand filter cannot filter out the particles. Use a flocculent as directed to cause the particles to clump together and let the pool settle overnight with the pump off. In the morning you can vacuum up the dust on the bottom being careful not to be too rough and cause it to swirl back into the water. It is best to 'vacuum to waste', so the filter is bypassed and the fine particles do not make their way back into the pool. If algae never gets a foothold this should never occur.

### ***I have this brown sediment on the bottom of the pool!***

This is likely dead algae that was killed by the copper ions. If this occurs frequently, it indicates the algae is not under control, even though the copper is doing its job, the copper level is too low. Crank up the ion level and add some algaecide to kill off any residual algae then keep the ionizer at 0.4 p.p.m. and add a half cup of algaecide weekly if needed to ward off any re-occurrence

### ***My pool turned green overnight after a rainstorm!***

After a rainstorm, a lot of airborne algae and dust gets washed into the pool. Couple this with warm water and sunshine and the usual protein in the water and it's a perfect growing environment for algae. If the algae load is suddenly increased, the copper ions responsible for eradicating the algae are over-whelmed and outnumbered and cannot keep up with the accelerated growth of algae.

To counteract this possibility you can do several things. Firstly, keep the ion level at 0.3 to 0.4 ppm copper at all times. This concentration can help keep algae from taking a foothold. Secondly, when it calls for rain, add some algaecide to the water to boost the copper content. (Algaecide is copper based). Thirdly, shocking the pool with a strong oxidizer more often during hot weather and during rainy weather will help burn out proteins which the algae feed on and kills any residual algae. Fourthly, add a chlorine puck to the skimmer basket if the weather is hot or if a large bather load occurs.

Once algae starts and the pool turns green, you must use super kill algaecide and then shock the pool to return it to the clear state. Also make sure the PH and alkalinity are in the optimum range. You can get a test kit to test for those parameters as well.