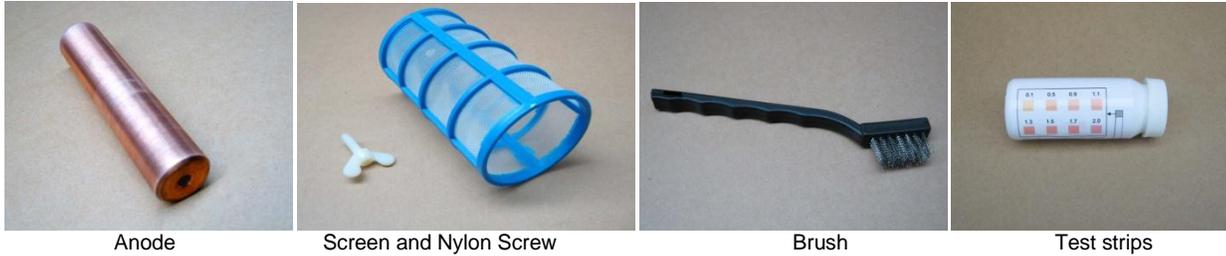




Solar Pool Ionizer and Purifier



RemingtonSolar.com



Anode

Screen and Nylon Screw

Brush

Test strips

INITIAL ASSEMBLY

Upon receipt of your **Chlorine-Free Sun Shock**, unpack all of the contents, being sure to look inside of the insert for parts. Read all instructions before proceeding. After carefully reading the operating instructions:

1. Inspect the solar panel for any visual damage or imperfections which may have occurred during shipping. If any discrepancies are noticed, contact your dealer or Chlorine-Free Sun Shock customer service.
2. Lay the unit face down on a smooth surface.
3. With one hand, hold the spring electrode down in a compressed condition to avoid interference.
4. Thread either end of the mineral electrode clockwise onto the silver metal screw stud at the center of the unit, which is also at the center of the spring electrode.
5. Place screen cage over electrodes and line up centered holes with the threaded bore in the mineral electrode end.
6. Thread the white thumbscrew clockwise into the electrode and tighten finger tight, or snugly. Do not over tighten as the plastic thumbscrew will strip or break if over-torqued.

IMPORTANT NOTE TO FUNCTION PROPERLY:

Your Sun Shock **WILL NOT WORK** unless you check the following:

1. And the copper anode *must* be screwed all the way in to the top of the disk.
2. The coil and the copper anode cannot touch. Make sure that the groove in the bottom of the basket fits snugly around the bottom of the coil and screwed on tightly (with the white vinyl thumbscrew) to keep the coil and anode separate.

NOTES

- The spring electrode is permanently installed and is not removable. Do not attempt removal by twisting or pulling. Permanent deformation may result.
- Save your original box and inserts for safe and convenient storage during the off season.
- The purpose of the screen cage is to trap any deposits or residues which may form on the electrodes during normal operation. The screen prevents any particles from falling into the water.

Your **Chlorine-Free Sun Shock** is now ready for the water, but your water may not be ready for the **Chlorine-Free Sun Shock**.

STARTING UP

The **Chlorine-Free Sun Shock** will protect your pool against microorganism invasion. Its solar ionization process transforms your water into biologically healthy and algae resistant mineral water. Depending on the volume of water, weather conditions, and usage, the initialization period will range from about a week to several weeks. The **Chlorine-Free Sun Shock** cannot ionize a pool instantly because it is designed as a trickle charger with a safe and effective low power output. Therefore, it is important to maintain a normal sanitizer level during this initialization period until the ion concentration reaches a protective level.

1. Begin with normally chlorinated water, and normal pH for your pool. Use your regular chlorine test kit to maintain approximately 1.0 ppm (Parts Per Million) chlorine residual. More chlorine may be necessary if conditions warrant. **(.5 to 1.0 ppm is fine)**
2. Clear the water prior to floating your **Chlorine-Free Sun Shock**. If your water is less than clear, it may require a 'shock' dose of oxidizer / chlorine.

3. Check for presence of copper ions in the water with the ion test kit. See 'ION TESTING'. The typical reading at this point is zero to trace amount (.0 - .1 ppm). If higher concentrations are detected, this is usually caused by the previous addition of a copper based algacide, if so, manage as outlined under 'ION TESTING' chapter.
4. Free float while ensuring direct sunlight on the unit. If necessary, tether in a sunny part of the pool any suitable restraint may be tied to the tethering chain for this purpose.
5. Operate pump and filter system during daylight hours when your **Chlorine-Free Sun Shock** is generating ions. This will allow proper mixing and circulation of the minerals. Pump operation is unnecessary and optional at night, and the unit can be left in the pool overnight.

INITIAL TESTING

The mineral electrode is made of a unique alloy of several specific metals, predominantly copper. The ion test kit detects the presence of the copper ion, thereby enabling you to determine if the water has an adequate level of protective minerals. The reagents in the kit are very sensitive, and readings can be affected by various interferences. Accordingly, use the ion test as a basic and general indicator. Test only once a week; more often is unnecessary.

1. Read ion test kit instructions on the test kit.
2. Weekly checks should show an increasing concentration over time.
3. The target is .3 ppm, which upon reaching, chlorine reduction may begin.
4. If the ion reading climbs to .5 ppm or more, remove the unit from the water for a week and monitor ion level (weekly).
5. Once the level drops to .3 ppm or less, resume floating the unit and continue weekly ion checks.
6. If the ion level maintains at .3 ppm, then continue floating full time.

The purpose of ion testing is to initially determine that it is safe to reduce chlorine, and subsequently to establish a floating schedule which results in a steady ion reading of approximately .3 ppm. Depending on conditions, pools with 20,000 gallons or more usually require full time floating. Smaller pools will usually maintain an adequate ion level with a part time floating schedule. For example, one day in, one day out, two days in, one day out, one week in, one week out, etc. Pools with screened enclosures will probably require full time floating as the output will be about half of that with normal full sun.

FIRST FEW WEEKS

During this period you should witness the ion level build up to approximately .3 ppm. Float the unit daily and do not reduce the floating schedule unless the ion level tends to climb too high. Remember, more ions are not better. The water has a capacity to hold only a certain amount of minerals, and attempting to exceed what is known as 'saturation point' may result in minerals collecting on pool surfaces. It is important to spend a few minutes a week to check the ion level and to keep the electrodes clean (see 'ELECTRODE CLEANING').

1. Upon reaching the recommended ion level of .3 PPM, initiate chlorine reduction by allowing the chlorine concentration to drop to about half of its normal level, or approximately .5 ppm.
2. The pH range may now be expanded from 7.2 - 7.8. The Chlorine-Free Sun Shock works well at higher pH values, so do not arbitrarily attempt to adjust the pH if it is within this recommended range. Keep in mind that the general idea is to use your Chlorine-Free Sun Shock just enough to maintain an adequate ion level, and to determine how little chlorine is necessary to keep the water clear. Allow the water to settle down and seek its own balanced condition.
3. Clean electrodes weekly.

ELECTRODE CLEANING

The **Chlorine-Free Sun Shock** is the only purifier which, in addition to generating beneficial mineral ions, collects undesirable minerals such as calcium and iron. This has the effect of softening your water. The sacrificial mineral electrode is designed to slowly erode away, and in the process will form a scale buildup which will require occasional cleaning. The spring electrode may also form a scale, which normally consists of calcium, and should also be cleaned. The initial rate of buildup will be quicker in harder water, and will slow as the water becomes progressively softened. Heavily scaled electrodes will restrict electrical flow and slow the ionization process, therefore it is advantageous to clean them on a weekly basis:

1. Lay unit face down, preferably on grass.
2. Remove thumbscrew and screen
3. Blast with a jet of water from garden hose nozzle, from different directions, to knock off loose material and scale.
4. Reduce the water flow, and with water running over the electrodes, attack buildup with cleaning brush to remove most of the remainder of residues,
AND / OR

With water running over the electrodes, slide the spring up and down, while making contact with the center electrode from various directions. The residues will wash away with the water.

The center electrode need not be cleaned down to bare metal, although the spring is relatively easy to clean completely. If the majority of the scale is removed, the **Chlorine-Free Sun Shock** will perform satisfactorily. It is not possible to clean the electrodes too much or too often. The cleaner the electrodes, the more efficient the operation. Occasionally, the screen will require cleaning to ensure a free flow of water and ion exchange. Because the mesh is very fine, deposits can slowly choke the openings in the screen and restrict water flow. To clean the white mesh screen:

1. Hose out loose debris.
2. Immerse screen in a jar of vinegar until visually free of blue / white scale buildup,

OR

Mix about 1/3 muratic / hydrochloric acid to 2/3 water and place screen into a jar containing this mixture. The cleaning process will take a minute or less. Do not expose screen to the acid mix for more than a minute or so as it could soften the plastic. Rinse screen and reinstall.

NOTES

The dilute acid dip can also be used to clean the electrodes. Place the unit on top of the jar with the electrodes immersed, and remove when the bubbling action ceases. Do not leave electrodes submerged for more than a few minutes. Rinse and reinstall screen.

ROUTINE

It is important to spend a few minutes a week to monitor the water balance, clean the unit, and to learn the trends. After a couple of months of experience, you should have a good idea about how little chlorine or oxidizer, is required, how much floating time does the job, the best way and frequency to clean the electrodes, etc.

The **Chlorine-Free Sun Shock** works well with trace chlorine, or any other oxidizer of your choice. Algaecides, conditioners, clarifies, etc., etc., are unnecessary. Higher chlorine levels may be required with an increase in water temperature, increased swimmer load, rainfall, or new water added. If using liquid chlorine, add at or after sundown because the sun's rays quickly neutralize chlorine. The recommended levels are not absolute and may vary with changing water conditions. What works best for your pool is determined by experience. Allow your water to seek its own balance. Do not arbitrarily alter the pH, apply large doses of chlorine (AKA 'Shock'), add algaecide, add conditioner, or try to change perfectly clear water. Give your pool water time to stabilize, and remember, SIMPLICITY IS THE KEY.

ELECTRODE REPLACEMENT

The mineral electrode is sacrificial and design to slowly disintegrate. After an average of 12 - 24 months, depending on conditions, the electrode will wear away and require replacement. You will know this when it is 'pencil thin', or about 1/4 inch at its thinnest point. To remove the spent electrode:

1. Remove screen and endcap, and clean parts.
2. While compressing spring electrode with one hand, rotate center electrode counterclockwise. If necessary, use pliers for leverage.
3. Continue to unthread until free.
4. Always keep the same end of the electrode to the floater. Do not swap ends when removing and replacing your electrode.

CLOSING/ REOPENING

Whether closing for the winter or for vacation, your pool water should remain clear for months if you prepare the pool correctly:

1. Ensure ion reading .3 to .5 ppm. The mineralized water will protect against algae; the ions act as an algaecide, therefore no need to add additional algaecide.
2. Turn off all equipment, including pumps, chlorinators, etc.
3. If the water is clear, no need to oxidize. If less than clear, add chlorine / oxidizer.
4. Remove **Chlorine-Free Sun Shock**
5. Drain water, winterize pumps, cover, etc. as desired.
6. Clean and remove electrode from the unit and store in an airtight plastic bag or jar.
7. Store your **Chlorine-Free Sun Shock** indoors. Avoid freezing.

If the pool was shut down with an insufficient ion level, or severe conditions were encountered late in the off season, less than clear water conditions may be experienced. Upon opening:

1. Top off water level, backwash, and vacuum as necessary.
2. Add chlorine to clear any cloudiness, if present.
3. Test ion level. Float unit to reestablish .3 ppm.
4. If ion level is below .3 ppm, Temporarily increase chlorine for protection.
5. Maintain enough oxidizer to ensure water clarity.
6. Verify pH is within 7.2 - 7.8 Range. Correct if necessary.

OPERATIONAL CHECK

It is highly unlikely that your **Chlorine-Free Sun Shock** will not generate ions. Should there be any doubt, the following quick check will visually prove electrical generation:

1. Fill a clear, glass or plastic, quart sized jar or equivalent with pool or tap water.
2. Clean electrodes and leave screen off.
3. Place the **Chlorine-Free Sun Shock** on the top of the jar, resting on the lip, with the electrodes immersed in the water.
4. With a full sun shining on the solar panel, very fine bubbles will be observed after a few seconds originating from the spring coils. This demonstrates that electrical current is being generated. Absence of bubbles indicates a problem.

TIPS

1. Spent cleaning acid may be poured back into pool.
2. Allow new plaster type finishes to cure for a month prior to using the **Chlorine-Free Sun Shock**.
3. Baking soda works well to raise pH, and is readily available and reasonably priced.
4. Household bleach works excellently for small and medium sized pools. For large pools, too many gallons may be required, making more concentrated forms of chlorine more convenient.
5. Keep a tablet of chlorine in the skimmer, or floating dispenser, to provide a constant input of oxidizer into the pool. When necessary, add an additional boost of liquid or granulated chlorine to maintain clear water.
6. A toothbrush helps in electrode and screen cleaning.
7. A cutoff golf tee can be used to secure the screen if the thumbscrew is lost.
8. Store chlorine in a cool and dark place.
9. Keep ion test kit in refrigerator.
10. Check water hardness, measured as total dissolved solids (TDS) at your local pool store. Readings of approximately 2000 PPM or greater indicate the need to drain and refill with refresh water. If that is not possible, partial draining and refilling is beneficial. With a high TDS, the water cannot absorb and retain minerals very easily.
11. The addition of cyanuric acid (stabilizer) is not necessary if you already use a stabilized form of chlorine, such as tablets.
12. The **Chlorine-Free Sun Shock** works well with a pool cover. The choices are to open the cover enough to float the unit, or cut a 3 inch "X" into the cover which allows the electrodes to remain in the water while the top is exposed to the sun.
13. Clear, high quality water without algae, and an abnormally low ion reading, does not necessarily indicate that your **Chlorine-Free Sun Shock** is not functioning properly, in this situation, call the factory.
14. When replacing the mineral electrode, ensure that the threads are dry and free of water.
15. In hard water conditions, over time, the solar panel may form calcium deposits which are left by water evaporation. To quickly and easily remove the scale, apply diluted acid / water (as described under 'ELECTRODE CLEANING') with a toothbrush. Allow to dissolve deposits and rinse. Vinegar may be used although more time will be required to do the job.

DO's and DON'T's

1. Do not automatically take advice for granted from those who are not experienced with the **Chlorine-Free Sun Shock**. This type of expert opinion is often influenced by the desire to sell or use chlorine and related pool chemicals, additionally, recommendations more often than not reflect a chlorine based pool chemistry, and are not applicable to ionized water.
2. Do not add any clarifiers or metal removers which will eliminate the beneficial mineral ions generated by your **Chlorine-Free Sun Shock**.
3. Do not use with Baquacil or Soft Swim brand products, or others with similar chemistry. These chemicals must be removed from the water first.
4. Addition of algaecide is unnecessary as the **Chlorine-Free Sun Shock** is an algaecide generator.
5. 'Shocking' ionized mineral water is poor technique. It's like an atomic bomb to the water. The water should be finessed. Oxidizer should be added at reduced dosages to clarify cloudy water.