

2016-5806  
2016-11-02

CARIBBEAN CLEAR WATER TREATMENT SYSTEM – COPPER GENERATING DEVICE FOR ALGAE CONTROL  
MODEL **SPA-II** MAXIMUM OUTPUT 1g CU/24HR – REGISTRATION NO.21335 PEST CONTROL PRODUCTS ACT  
**WARNING:** STAINING OF SPA SURFACES MAY OCCUR DUE TO DEPOSIT OF COPPER SALTS.  
EXCESSIVE LEVELS OF COPPER WILL INCREASE THE PROBABILITY OF THIS OCCURRENCE.  
READ OWNERS MANUAL AND LABEL BEFORE USING.  
FENIX TECHNOLOGY LTD., 3345 POND BRANCH ROAD, LEESVILLE, SC 29070 USA  
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DOMESTIC

CARIBBEAN CLEAR  
WATER TREATMENT SYSTEM  
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READ THE LABEL AND MANUAL BEFORE USING

# MODEL SPA-II

OWNERS MANUAL

FOR ALGAE CONTROL

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CARIBBEAN CLEAR

CARIBBEAN CLEAR WATER TREATMENT SYSTEM  
MODEL SPA-II FOR ALGAE CONTROL

Congratulations on your purchase of the Caribbean Clear Water Treatment System. Controlling algae in your spa is easy with the Caribbean Clear Water Treatment System, but a few simple steps must be followed, so please read this manual before using your Caribbean Clear Water Treatment System.

The Caribbean Clear Water Treatment System is an algicide producing product. Algae growth is controlled by copper which is introduced through the process of electrolysis.

**WARNING:**

Staining of spa surfaces may occur due to deposits of copper salts in contact with a chlorine oxidizer. Excessive levels of copper will increase the probability of this occurrence.

Do not add undissolved granular chlorine directly to the water.

Do not maintain the pH above 7.4.

Do not allow the copper level to exceed 0.2 ppm.

Refer to specific operating procedures in this manual for further information.

All copper based algicides have the potential to create stains. Chemicals, which quickly and efficiently remove stains, are now available as a result of new chemical refinements for the swimming spa industry. Liquid copper algicides have traditionally been a cause of staining, since high copper concentrations are suddenly added to the water, with little time for mixing. By maintaining a balanced spa, and using Caribbean Clear's proprietary techniques, the Caribbean Clear system will provide the benefits of a copper algicide without the increased risk of staining caused by locally excessive concentrations. Therefore, the possibility of staining is virtually eliminated. If you begin to notice very faint green, blue, or gray shadows on your spa surface, contact your Caribbean Clear dealer for diagnosis and assistance.

**MAINTAIN THE pH BETWEEN 7.2 AND 7.4**

The most important aspect of healthy and attractive water, is maintaining the proper pH. If the pH is allowed to rise above 7.4, the calcium, copper, and other dissolved minerals begin to fall out of solution. This could cause scaling, staining, or cloudy water. If your water test indicates an excessive acid demand, it is best to add the acid bi-weekly rather than to add large quantities of acid at one time. Always use an acid demand test kit to determine the correct amount of acid required. The pH should be maintained below 7.4. This means that acid should be added when the pH reaches 7.4. Do not wait for the pH to reach 7.8 before adding acid. A little extra effort used in maintaining the pH will be well rewarded.

Do not allow the pH to fall below 7.0 A pH below 7.0 is acidic. Water at a low pH will etch heaters, plumbing, pumps, and even your spa wall if it is made of a concrete compound.

## **MAINTAIN THE COPPER LEVEL BETWEEN 0.15 AND 0.20 PPM**

After the unit is installed, turn the unit up to the highest setting and check the copper every day until the proper level is reached. Caribbean Clear recommends a level of 0.15 to 0.20 ppm. This is easily tested by the copper test kit provided. The copper level will be in the correct range when 3 or 4 drops of the number 2 Color Reagent match the treated sample. Full instructions for the use of the test kit are provided with the test kit. Refills for this kit are available from your Caribbean Clear Dealer.

When the copper test shows a copper level of 0.20 ppm, turn the unit to a lower setting, either position 3 or a setting recommended by your dealer. Check the copper every other day and continue to adjust the control knob accordingly. If the copper level appears to fall, increase the output by turning the knob to the next higher setting, or the next lower setting if the copper level rises.

Once the copper level appears to be balanced, only a weekly check of the copper level will be necessary.

If at any time the copper level reaches 0.25 ppm, turn the control knob to "zero" and allow the copper to drop to 0.20 ppm before readjusting the unit.

## **MAINTAIN A CHLORINE RESIDUAL**

Maintain a chlorine residual in your water as you normally would, to ensure proper water sanitization. You will quickly determine that the necessary amount of chlorine to maintain this level will be reduced due to the Caribbean Clear Water Treatment System.

## **OXIDATION**

You may already be using a non-chlorine oxidizer to remove body oils, suntan lotion, other organic debris, and chloramines from the water. The most common form of non-chlorine oxidizer is potassium monopersulfate. Proper oxidation is necessary to give your water a clean and sparkling appearance. A non-chlorine oxidizer will actually enhance the effectiveness of the Caribbean Clear Water Treatment System. Be sure to follow the label instructions for the oxidizer that you use.

## **CONTINUE YOUR BASIC SPA CARE**

Your basic spa care should continue as usual. This should include proper filter care and cleaning, vacuuming, and in addition to the chemicals mentioned above, maintenance of chemicals necessary for a proper water balance.

These chemicals necessary for a proper water balance should not be overlooked, as they are an integral part in maintaining water quality and are just as important as pH and chlorine. Any questions about your water balance may be answered by your Caribbean Clear dealer.

## **THE PERFORMANCE INDICATOR LIGHT**

The performance indicator light on the front panel indicates the performance level of the unit. If the light is on, it indicates that the unit is putting out the correct amount of ion current and, therefore, the proper amount of copper for that switch position. When the unit is set to "zero," it will still have a very slight glow to indicate that the power is connected. Also note that the light will not be bright in position "1" because of the very low output current. The slight glow at "zero" and "1" may not be visible in direct sunlight.

The performance indicator light will help you determine when the electrodes need inspecting. If the light is bright on your normal switch setting, all is fine. If the light is dim or off, you should inspect your electrodes for fouling or wear.

## **ELECTRODE CLEANING AND REPLACEMENT**

Electrodes will last one season or longer depending on the water volume, weather, bather load, etc. Over a period of time you may notice that the maximum ion current of the unit has slowly dropped. This means that the performance indicator will be dim or out on higher settings. When the display begins to dim on the setting which you are currently using, it is time to inspect the electrodes.

Turn off the power to the Caribbean Clear Water Treatment System and unscrew the electrode assembly. Clean the electrodes by scraping with a knife and then rinsing in a 50% muriatic acid solution. Replace the electrode assembly using six or seven full wraps of teflon tape. Never use glue to secure the assembly. Be sure the electrodes are aligned so that the water will flow between them. Now restart the system. If the performance indicator light is still off, you will need to replace the electrodes. If the light is present, the electrodes only needed cleaning.

The electrodes will normally wear to the size of a pencil, however, water conditions and usage will govern the actual point of non performance.

## **WINTER**

If you are treating water which is located outdoors, the colder weather will reduce the algae growth and thus the demand for copper. You will need to adjust the unit to lower settings as the weather turns colder to compensate for this decrease in demand. You should follow the normal procedures for winter spa care in your area, however, the use of algicides, and metal treatments will not be necessary.

## **HOW TO SOLVE SPECIAL WATER QUALITY PROBLEMS**

### **What if the water is cloudy?**

The most important factors in maintaining clear water are proper circulation and adequate filtration. Be sure the filter is cleaned properly and, if necessary, increase the filtration time. Be sure that the majority of water is being pulled from the bottom drain if you have one. If you have a sand filter, remember that the sand should be changed every two years.

Water which does not have the proper balance of available chlorine, pH, total alkalinity, and calcium hardness may also be cloudy. Check with your Caribbean Clear dealer for help in balancing your water.

An additional amount of chlorine or oxidizer may be necessary to remove any organic debris in the water. Remember, a properly operating filter should remove this organic material.

Clarifiers may be added if necessary.

### **What if the water has a clear green tint?**

Generally water which is out of balance will cause sunlight to reflect differently and may produce a clear green tint. This can be caused by high copper levels or low total alkalinity. Check the copper level and balance the spa water if necessary. After the water is balanced, a small addition of chlorine will correct the problem. Do not add undissolved granular chlorine.

### **What if the water has algae?**

Algae will produce a cloudy green tint. Be sure your copper level is between 0.15 and 0.20 ppm. Brush the walls and bottom and add additional chlorine to remove the algae. Remember, never shock with granular chlorine. If you are constantly plagued with algae growth, contact your Caribbean Clear dealer for further water testing to determine if contaminants such as nitrates are the reason for this problem.

Contact your Caribbean Clear Dealer or the factory if you have any further questions.

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This model is designed for residential spas not exceeding 3,800 liters.

**NOTICE TO USER:** This pest control product is to be used only in accordance with the directions on the label. It is an offence under the Pest Control Products Act to use this product in a way that is inconsistent with the directions on the label. The user assumes the risk to persons or property that arises from any such use of this product.

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