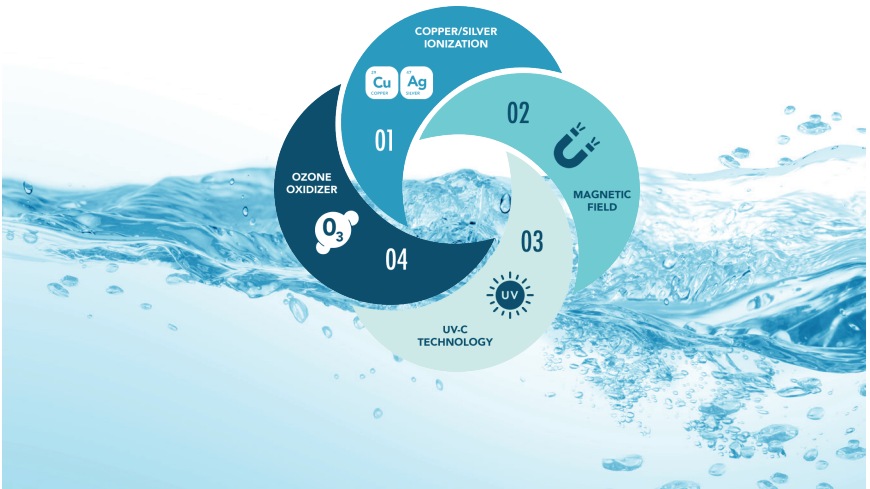


# CLEAR

STATE OF THE ART WATER MANAGEMENT

## USER GUIDE



## CLEAR SYSTEM OVERVIEW

**CLEAR** is a state of the art water management system exclusive to Clearwater. It combines four of the best technologies available to provide you the best fresh water experience. Natural and virtually chemical free water that just feels better.



**STAGE 1 Copper/Silver Ionization System:** Purifies water using safe and natural minerals which inhibit the growth of algae and bacteria and greatly reduces the need for chemical sanitizers.



**STAGE 2 Magnetic Field:** Water passes by the powerful magnetic field which polarizes molecules and gives water a positive (+) charge. This gives it a silky smooth feel.



**STAGE 3 Ozone Generator:** Ozone is an EPA-approved antimicrobial oxidizer, sanitizer, and disinfectant helping to rid water of contaminants, thereby improving water clarity and reducing the need for chemicals.



**STAGE 4 UV-C Technology:** Spa water passes over a focused wavelength ultraviolet (UV) lamp neutralizes waterborne pathogens, rendering them useless.

### Why is it better?

CLEAR allows you to soak in odorless, clear natural water.

To make CLEAR work at its optimum level, we have also included a 35 gallon per minute circulation pump. To put it in perspective, a Clearwater Spa working with our cleaning system and circulation pump, will put every drop of water through the filtration system 5 times an hour.

Most manufacturers use the jets pumps to do two jobs; filter the water on low speed and move water to the jets on high speed. We at Clearwater Spas believe it's more important to dedicate a pump to 24/7 water filtration. Every Clearwater Spa includes a 24/7 circulation pump.

# The CLEAR Button

Your CLEAR system has been preset at the factory for your particular spa model and water volume. The CLEAR button will give a boost of CLEAR sanitation when setting up the spa for the first time, when you have large number of guests, or when using your spa frequently. Left alone, CLEAR continues working at normal levels keeping your water clear and clean. It's that simple. You may never have to press the CLEAR button, but rest assured that it is there if you need it. Spa owners that want to adjust the settings themselves can still access the main control by removing the front cabinet panel.



## **Topside Mineral Action Indicator**

When the mode of the controller is set to Maintain and the Mineral Action light is illuminated on the controller, the area in the center of the topside control will illuminate in blue.

## **Topside Increase Function**

Press the center of the logo to engage the Increase mode for the number of hours programmed on the controller. When Increase is active, the area in the center of the topside control will flash in blue. Once the cycle expires, the controller will go back to Maintain, the center area will illuminate in blue, and the flashing will stop. To stop the Increase mode before the cycle finishes, hold down the button in the center of the logo for 10 seconds.

## **Turn Off Mineral Action**

If the mineral level is too high, or you would like to stop the release of minerals for any other reason, hold down the button in the center of the logo for 10 seconds or until the blue light goes off.

## **Turn On Mineral Action**

If the mineral releasing function has been turned off, press the button in the center of the logo to turn it back on. The center of the logo will illuminate in blue to indicate that the system is releasing minerals.

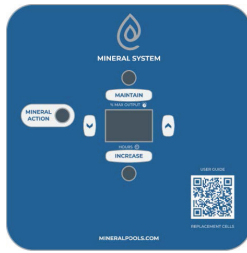
## **Topside Cell Connection Indicator**

When the mineral cell is unplugged, the electrode bars are not under water, the TDS of the water is too low, or the cell is worn past its useful life, the light in the center of the topside control will flash red.

## **Replacing the Mineral Cell**

The mineral cell will last 3 – 12 months in a pool and 2 – 3 years in a hot tub depending on the volume of water, the temperature of the water, the amount and intensity of sun reaching the water, and usage. In a pool, the first cell will always wear down faster because it is used up quicker to ramp up the minerals.

# MAIN CONTROLLER OVERVIEW



## Maintain

The *Maintain* setting is the maintenance setting. It represents **a percentage of the maximum output level** and is set according to your pool or hot tub size. For example, a *Maintain* setting of 88 means the controller is outputting minerals at 88% of maximum output. Use the  $\nabla$  and  $\wedge$  keys to increase or decrease the number and reach the desired setting. When the controller is set to *Maintain*, the blue light above the *Maintain* button will illuminate and the Mineral Action light will be solid blue.

## Increase

The Increase setting is the ramp-up setting. It represents **the number of hours that the controller is set to maximum output**. For example, an Increase setting of 88 means the controller will run on 'full blast' for 88 hours. As the hours count down, the number will decrease by one each hour until it gets to 01. After the final hour, the controller will switch automatically to the *Maintain* mode. Use the  $\nabla$  and  $\wedge$  buttons to increase or decrease the number and reach the desired setting. When the controller is set to Increase, the blue light below the Increase button will illuminate and the Mineral Action light will be flashing blue.

## Program Lock (PL)

The Program Lock feature allows you to lock the controls so that they are not inadvertently changed. To activate the Program Lock, press and hold the  $\nabla$  and  $\wedge$  keys simultaneously for 20 seconds or until 'PL' is shown on the two-digit number screen. Do the same to remove the Program Lock.

## High Power Mode (Decimal on Number Screen)

If the cell is almost used up or the total dissolved solids (TDS) level of the water is low, the controller will go into High Power Mode which is indicated by a decimal on the screen. If the system switches into High Power Mode, it is recommended to check the cell and test the TDS.



## GETTING STARTED

1. Fill your hot tub with water to the appropriate level (check your spa manual for reference).
2. Test the alkalinity, pH, and calcium levels using the test strips provided. Adjust the water if necessary using the appropriate products.
3. If the TA (total alkalinity) and pH both need adjusting, correct the TA first. Reference the test strip to determine the levels. Your water should read as follows:
  - pH: 7.2-7.6 (*too low and the copper cell will erode; too high and copper will precipitate on the spa's surface*)
  - TA: 80-120 ppm
  - CH: 150-300 ppm
4. Setting the copper level: Press the button. It's as simple as that. If you need to bring the copper level up press the CLEAR button to give it a boost in copper/silver ionization. It will take approximately 2 days to attain the minimum copper residual of 0.2ppm and 5 days to attain the copper residual of 0.4ppm.
5. Bacteria Test: Once the copper has reached optimum level, you may test water for bacteria by following the directions on the bacteria test kit provided. Use the bacteria test strips and repeat as needed. **IMPORTANT! CLEAR IS DESIGNED TO WORK IN CONJUNCTION WITH LOW LEVELS OF CHLORINE.** A minimum of 0.6 to 5 ppm is recommended. Check the sanitization levels regularly. **IMPORTANT!** Do not use bromine or chlorine tablets.

If your spa tests positive for bacteria, immediately super-chlorinate minimum 10ppm) your spa using spa chlorine only and do not use for 8 hours.

## GENERAL GUIDELINES

**TESTING:** the spa owner is responsible to maintain a routine for testing your water (i.e., weekly, biweekly, etc.) to ensure guidance levels within the specified ranges as stated in the 'Getting Started' section of this guide are maintained. Adequate testing routine must include alkalinity, pH, calcium, copper levels, and bacteria presence. Remember to check expiration dates of the test strips/kits and replace as needed.

**SANITATION:** the spa owner is responsible to ensure the spa water is free from bacteria. As a regular practice to ensure there is no bacteria, test water regularly with a valid bacteria test kit. In the absence of regular testing free chlorine may be used at any time. The CDC recommends a minimum chlorine level of 3 parts per million in hot tubs/spas.

**FILTERS:** cleaning filters is recommended after every 6-8 people have soaked in the spa, or every 6-8 uses. It is recommended that you replace the filters annually.

**SHOCKING:** the CLEAR system includes an ozone generator to oxidize organic material, but an additional oxidizer may be needed if bather load is unusually heavy. Use 2oz. of Potassium Monopersulfate (spa shock) for every 6-8 people or 6-8 uses.

**PHOSPHATES:** the presence of phosphates can keep the system from maintaining the proper level of copper ions. Phosphates can be found in the source water or build up over time from cosmetics or detergents found in swimwear. Ensure phosphates are at 100ppb or less by testing phosphates on an algae free spa (chlorine must be below 5ppm). Use PHOSfree or similar product to treat.

**STAIN & SCALE** or sequestering products conflict with CLEAR: **DO NOT USE.** Stain & scale or other sequestering products will remove the minerals from the water and neutralize new minerals for several weeks. The Magnetic Field portion of CLEAR is designed to prohibit scale. If iron or other contaminants are found in the source water, we recommend using a filter that attaches to a garden hose prior to filling.

**USAGE:** the CLEAR system is intended for moderate, private usage. Commercial uses including vacation rentals and general public use is prohibited and will result in voiding of manufactures warranty.

## **EQUIPMENT MAINTENANCE**

**COPPER/SILVER IONIZATION SYSTEM:** the copper anode (cell) should be checked every 6 months and will last approximately 2yrs under normal conditions. Additional cells can be purchased from your authorized dealer.

- Cleaning the anode (cell): deposits can be removed using a smooth metal file and water. The surface does not have to be polished; simply remove any traces of oxidation and other sediments.
- Replacing the anode (cell): shut off the circ pump valve and spa system pack valve or drain the spa's water. Turn old cell counterclockwise to release it from the tee. If there is not enough room unthread the spa system pack/heater union adjacent to the anode tee so the plumbing can be moved. Reverse these steps after threading the new cell by hand into the tee. To ensure even wearing of the electrodes, turn until the two prongs are oriented so the water flows between them.
- Cleaning the Controller: The housing of the controller is made from a durable PVC plastic. Clean the outside with mild soap and water, rinse and dry with a soft cloth. Do not use any type of household or abrasive cleaner.

**MAGNETIC FIELD:** no maintenance required!

**UVC SANITIZER:** the UV bulb or lamp should be replaced every 12-18 months even if it is still working to ensure optimum performance. See manufacturer's manual for replacement details.

**OZONE GENERATOR:** no maintenance required! Ozone generators will wear out after a few years. Replace as needed. (Note: the UV and Ozone generator are combined in a single component. The Ozone generator is not replaceable separately)

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Exclusively from *Clearwater Spas*