

National Sales, Inc dba  
MASTER SPA PARTS

## **MSP** Spa Maintenance Guide

# Spa And Hot Tub Care Guide

Comprehensive Spa Upholding Advice for Spa And Hot Tub  
Owners



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<b>A) Draining Your Spa</b>
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Spas and hot tubs must be drained and refilled on a regular basis. Draining and refilling is one of the most important keys to good spa care. Water should be drained every 6 to 8 months to help maintain clarity and sanitation.

### ***How to drain your Spa***

First, make sure all power is turned off to your spa by disconnecting your GFCI breaker. Once power is “off” you can begin draining your spa using the drain valve. The location of your drain valve will vary depending on the model and year of the spa. Your owner’s manual will provide the location as well as how to properly open it. Most drain valves can be connected to a garden hose to allow water to run off to a convenient spot. You may also use a submersible pump purchased from a third party to drain the spa rather than the provided drain valve.

**NOTE: When pushing or pulling the drain assembly in or out, water may drip from the drain during the transition. This is normal.**



### ***How to fill your Spa***

When the water has been drained from your spa, you may want to wipe down the shell prior to refilling it. Use a nonabrasive surface cleaner and a clean cloth to wipe away any scaling or build up. Make sure to thoroughly remove any cleaners used. Then, using a garden hose, fill your spa using regular, un-softened water. Remove the filters from the filter box and put the hose down one of the intake holes. Fill the spa halfway through one hole and then the rest of the way through the second hole if more than one intake is present. Once the spa is completely filled, you may turn the power back “on” at the GFCI breaker and begin your chemistry regimen.

<b>(B) Spa Water Maintenance</b>

**Water Quality Maintenance Start-Up**

**FOR SPAS WITH AN ECO PUR™ WATER FILTRATION SYSTEM**

*(This section pertains specifically to maintaining water chemistry in spas that have the Eco Pur™ filters.)*

**Step 1:**

Your spa should be filled using a pre-filter, which can be obtained from your local dealer. This pre-filter will help remove many of the minerals existing in the water, which will make adjusting the water chemistry easier after a new file.

**Step 2:**

After the initial filing of the spa, add a sequestering agent to combat suspended minerals in the water. The agents are sold under many different names such as Mineral Clear, Stain and Scale, Prevent II and other brands.

**Step 3:**

Test water for pH, total Alkalinity, and Calcium hardness. The pH should be 7.2 - 7.6 and the total Alkalinity 80-120 PPM. Calcium hardness levels should be maintained between 200-400 PPM (part per million).

**Step 4:**

Adjust pH, total Alkalinity and Calcium hardness utilizing the directions on the chemical bottles provided at your dealer's start up kit. Turn on your jets when adding chemicals. Do not pre-mix chemicals or add water to chemicals. Only add chemicals to the spa water. Make sure to allow 2-4 hours before retesting the water once chemicals have been added.

**Step 5:**

It may be necessary to retest and add additional chemicals to get to the proper levels in Step 3.

**Step 6:**

Add 2 oz. of concentrated chlorinating granules (sodium Dichlor-s-triazinetreone) per 500gallons on initial startup to begin sanitizing the spa water. It is important not to add the chlorinating granules until the pH, alkalinity and calcium hardness have been adjusted to their proper levels.

**SPECIAL NOTES:**

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*1) We recommend a minimum level of 1.0 ppm residual chlorine be maintained in the spa water.*

*2) It may be necessary to rinse your filters within the first few days after filling your spa to ensure that they are not restricting water flow due to the initial removal of heavy contaminants in the source water.*

*3) The Eco Pur™ water filter system is designed to reduce the use of chemicals in your spa. You will still be required, periodically, to add a small amount of chlorine to oxidize organic compounds in the water.*

*The Eco pur™ filter system will not eliminate the need to maintain proper water chemistry but will reduce the amount of chemicals needed.*

*4) Eco Pur™ filters are not recommended for use with Bromine. This manual references bromine as well as chlorine in case you decide to remove the Eco Pur™ filters and sanitize your spa with bromine. Consult your dealer for additional information. .*

**FOR SPAS WITHOUT ECO PUR™ FILTRATION SYSTEM**

**Step 1**

Read the spa owner's manual first.

**Step 2**

Clean the surface with a spa general purpose cleaner or wipe down with a clean wet towel.

**Step 3**

Begin filling the spa with fresh water. If possible, do not use softened water.

**Step 4**

When the spa has 2 to 4 inches of water on the bottom, add the recommended amount of sequestering chemical for that size spa. See the chemical bottle for the correct amounts.

**Step 5**

When the spa is full, run the pumps on high speed for 30 minutes without air controls open. This will give the sequestering chemical time to mix well with the water.

**Step 6**

Using test strips or a test kit, test for total alkalinity, and adjust if necessary to between 80 to 120 ppm using the pH / alkalinity increaser or decreaser. Make sure your jets are on when adding chemicals to the water. Never add water to your chemicals, only chemicals to your spa water.

### **Step 7**

Using test strips or a test kit, test for pH, and adjust if necessary to within the 7.2 and 7.6 range using the pH / alkalinity increaser or decreaser. The pump should be running on high speed during this time, without air controls open.

### **Step 8**

Add the sanitizer of choice, following label directions. If chlorine is being used, add in 1 oz increments every 15-30 minutes (with jets running) until a 1-3 ppm total chlorine level has been achieved. If bromine is used, add bromine tablets to the bromine feeder following label directions. With the pump running on high speed, add 2oz. of sodium bromide, and shock the spa with 2oz. Of non chlorine shock. It may take several days adjusting the bromine feeder to obtain a total bromine reading of 3to 5 ppm. A bromine reading may not be obtained on the first day.

### **Water Quality Maintenance Schedule**

#### **FOR SPAS WITH ECO PUR™ WATER FILTER SYSTEM...**

##### **Once a Week**

Check spa water with a test strip for pH, and alkalinity levels and adjust accordingly to the proper levels. Add 2 oz of a sequestering agent. Add 2 tablespoons of chlorine. Add 1 oz of non-chlorine shock after each use. If spa is not in use that week, add 1 oz of chlorine 3-4 days after adding chlorine. Rinse filters to remove loose debris that has collected in the filter pleats.

##### **Once a Month\***

Soak your filter elements overnight in a bucket with spa Filter Cleaner and then rinse with clean water before re-inserting. (The Eco Pur™ mineral element should never be cleaned in a filter cleaner. Just rinse with water.)

##### **Every 180 Days**

Drain and refill your spa, install a new Eco Pur™ element, repeat start up procedure.

##### **As Needed**

If water looks hazy, treat with 1 teaspoon of Dichlor per 500 gallons. If water is foaming excessively, add 1 teaspoon of defoamer\*\*.

##### **SPECIAL NOTES:**

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*\* These are general recommendations for water quality maintenance that may vary by usage and/orbather load. Depending on bather load and frequency of use, drain and refill times may vary as*

*well as the frequency of cleaning your filters. When cleaning filters, be sure to never have the pumps (including the circulation pump) running without the filters in place. Failure to do so may result in debris in the pumps causing unwarranted damage.*

*\*\* Defoamer may be used when excessive foaming occurs. Over use of defoamer will result in cloudy, milky water. Only add defoamer when needed and in small doses.*

**NOTE:** As an alternative to non chlorine shock, Dichlor may be substituted.

1 tsp. Dichlor = 3 tablespoons of non chlorine shock

### **Use Only Spa Chemicals**

*(Most pool chemicals are not suitable for spa use).*

### **FOR SPAS WITHOUT ECO PUR™ FILTRATION SYSTEM**

#### **2-3 times per week**

Test and adjust total alkalinity if necessary to between 80 to 120 ppm using the pH / alkalinity increaser or decreaser. Test and adjust pH, if necessary, to within the range of 7.2 to 7.6 using the pH / alkalinity increaser or decreaser. Test and adjust sanitizer level. Add chlorine following label directions to maintain a total chlorine level of 1 to 3 ppm. If using bromine, adjust feeder to maintain a total bromine level of 3 to 5 ppm. Add bromine tablets to the dispenser if necessary, following label directions. Add a water clarifier following label directions. If the spa is equipped with an ozone unit, we recommend adding an enzyme product in place of the clarifier, following the label directions. Add 2 oz of a sequestering agent.

#### **Once per week**

Shock with 2oz. of non chlorine shock, or superchlorinate following label directions. A spa should be shocked at least once a week even if it is not used. Always shock a spa after any heavy bather load.

Check filter cartridge and clean if necessary. Clean with cartridge filter cleaner, following label directions. It is best to have a spare cartridge on hand, to prevent long spa down times while the cartridge is being cleaned. Never operate your spa without the filters in place.

#### **As needed**

Add defoamer if water is excessively foamy. Use 1 oz of shock or 1 teaspoon of chlorine to treat cloudy water.

#### **Note -**

*With a spa you are working with a small volume of hot water compared to a large volume of relatively cool water in a swimming pool. Because of this chemical will have a shorter life span and bacteria can grow more quickly than in a swimming pool. A spa is less forgiving than a pool and requires*

*that whatever is put into it have a pH as close to neutral as possible. Only chemicals made for spas should be used.*

### ***Spa Water Maintenance Trouble-Shooting Guide***

<b>Problem</b>	<b>Possible Causes</b>	<b>How To Fix It</b>
Chlorine / Bromine Odor	<ul style="list-style-type: none"> <li>• Excessive Chlorine or bromine level</li> <li>• Low pH</li> </ul>	<ul style="list-style-type: none"> <li>• Shock water with non-chlorine shock treatment</li> <li>• Adjust pH if necessary</li> </ul>
Water Odor	<ul style="list-style-type: none"> <li>• Low levels of sanitizer</li> <li>• pH out of range</li> <li>• Bacteria or algae growth</li> </ul>	<ul style="list-style-type: none"> <li>• Shock water with non-chlorine shock treatment or adjust sanitizer levels</li> <li>• Adjust pH level if necessary</li> <li>• Adjust sanitizer if necessary</li> </ul>
Cloudy Water	<ul style="list-style-type: none"> <li>• Dirty filters or inadequate filtration</li> <li>• Water chemistry not balanced</li> <li>• Suspended particles or organic materials</li> <li>• Old water</li> </ul>	<ul style="list-style-type: none"> <li>• Clean filters and adjust filtration</li> <li>• Adjust chemistry levels</li> <li>• Add spa clarifier (see dealer)</li> <li>• Change spa water</li> </ul>
Scum Ring Around Spa	<ul style="list-style-type: none"> <li>• Build up of oils, dirt and organic elements</li> </ul>	<ul style="list-style-type: none"> <li>• Wipe off with a clean towel</li> </ul>
Eye / Skin Irritation	<ul style="list-style-type: none"> <li>• Unsanitary water</li> <li>• Free chlorine level above 5 ppm</li> <li>• Poor sanitizer / pH levels</li> </ul>	<ul style="list-style-type: none"> <li>• Shock spa with non-chlorine shock</li> <li>• Allow level to drop below 5 ppm</li> <li>• Adjust according to spa test strip results</li> </ul>
Foaming	<ul style="list-style-type: none"> <li>• High levels of body oils, lotions, soap, etc.</li> </ul>	<ul style="list-style-type: none"> <li>• Add small amount of defoamer</li> </ul>

### **Recommended Levels of Chemicals**

Chlorine 1.0 - 3.0 ppm

pH 7.2 - 7.6



Total Alkalinity 80 - 120 ppm

Calcium Hardness 200-400 pm

### **Water Chemistry Terms You Should Know**

Before starting the Spa Water Maintenance regimen, here are some terms to help you.

- 1. Parts per million, or ppm:** This is a form of measurement used in most pool or spa chemical readings.
- 2. Average size spa:** The National Spa and Pool Institute (NSPI) states 350 to 400 gallons is considered average size. Check your owner's manual for the specific gallon capacity of your specific spa.
- 3. Total Alkalinity:** This is a measurement of the ability of the water to resist changes in pH. Put another way, it is the water's ability to maintain proper pH. Total alkalinity is measured in parts per million from 0 to 400 plus, with 80 to 120 ppm being the best range of spas. With low alkalinity, the pH could change back and forth and be hard to control. With high alkalinity it becomes extremely difficult to change the pH.
- 4. PH or potential hydrogen:** This is a measurement of the active acidity in the water, or it is the measurement of the concentration of active hydrogen ions in the water. The greater the concentration of active hydrogen ions, the lower the pH. pH is not measured in parts per million, but on a scale from 0 to 14, with 7 being the neutral. In spas, whenever possible, a measurement between 7.2 and 7.6 is best. With low pH, the results can be corroded metals, etched and stained plaster, stained fiberglass or acrylic, eye / skin irritation, rapid chlorine or bromine loss, and total alkalinity destruction. With high pH, the results can be cloudy water, eye / skin irritation, scale formation and poor chlorine or bromine efficiency.
- 5. Shocking:** This is when you add either extra chlorine (superchlorinate) by raising the chlorine level above 8 ppm, or add a non-chlorine shock (potassium monopersulfate or potassium monopersulfate) to burn off the chloramines or bromamines. A non-chlorine shock acts by releasing oxygen in the water, which serves the same function as chlorine. The advantage to using non-chlorine shock is you can enter the water within 15 minutes after shocking. Using chlorine, you must wait until the total chlorine reading is below 5 ppm.
- 6. Sequestering:** This can be defined as the ability to form a chemical complex which remains in solution, despite the presence of a precipitating agent (i.e. calcium and metals). Common names for sequestering chemicals are; minquest, stain and scale control, metal-x, spa defender, spa metal gone, (etc.).
- 7. Filtration:** Filters are necessary to remove particles of dust, dirt, algae, etc. that are continuously entering the water. Filtration time will depend on the spa size, pump and filter size, and of course,

bather load. A spare cartridge should be kept on hand to make it easy to frequently clean the cartridge without the need for a long shutdown. This will also allow the cartridge to dry out between

usages, which will increase the cartridge life span. Replace the cartridge when the pleats begin to deteriorate. Cartridge cleaning should be done a minimum of once a month and more often with a heavy bather load.

**8. Sanitizers:** This is what kills the germs and bacteria that enter the water from the environment and the human body.

**A. Chlorine**

- Only one type is approved for spa use. Sodium dichlor which is granular, fast dissolving and pH neutral chlorine.
- Chlorine is an immediate sanitizer.

**B. Bromine (Note: Bromine use is not recommended with Eco Pur filters.)**

- Bromine comes in either granular or tablet form.
- Bromine is a slow dissolves chemicals and may take a few days to develop a reserve or reading in the water.

**9. Total dissolved solids (TDS):** Materials that have been dissolved by the water.

**10. Useful life of water (in days):** Water should be drained at least once every 180 days. Useful life may vary by usage and bather load.

**11. Defoamer:** Foaming may be caused by body oils, cosmetics, lotions, surface cleaners, high pH oralgeacides as well as other organic materials. Low levels of calcium or sanitizer can also cause foaming. Also, double rinse your bathing suits as they will hold residual soap after being washed. Defoamer temporarily breaks apart the materials that cause foaming. It should only be used when needed and in small doses.

**12. Calcium hardness:** Water that is too hard (over 400 ppm) can cause scale formation in components and on spa surface. Water that is too low in hardness (below 180 ppm) may cause excessive foam and cloudy water.

**NOTE:**

*Always leave spa cover open for 15 minutes after adding chemicals to prevent gases from damaging your spa cover, spa pillows and other critical parts.*

## **(C) General Maintenance Recommendations for your Spa**

### **SPA PILLOWS**

- Your spa pillows need to be rinsed periodically to remove any chemical residue. This should help to prevent pillows from becoming stiff and discolored.
- If spa is not to be used for a period of time, pillows should be removed. Removing your pillows from the spa can greatly extend the life of your pillows.
- Always leave the cover open for 15 minutes in order to prevent gases from damaging your spa pillows, cover and other materials. Signs of off gas damage include but are not limited to: pillows peeling and bubbling, cover vinyl deteriorating prematurely, plastics wearing prematurely, etc.

## **D) Regular Cleaning and Maintenance Procedures**

**These are areas that will require the spa owner to perform routine maintenance. These are not areas covered under the warranty of the spa.**

### **CLEANING JETS**

The majority of jets in your spa can individually be turned on/off by turning the face of the jet. If any of these jets become hard to turn, it will be necessary to remove the jet to clean it as grit/sand and mineral deposits may be present. The jets in your spa can be removed for cleaning by unscrewing them (counter clockwise) and then pulling out the jet.



### **To Clean Jets**

Place the jet(s) in a bucket, fully immerse in white vinegar or a stain and scale remover mixed with water. Let the jet(s) soak overnight and then rinse with clean water. Reinstall the jet(s).

### **CLEANING DIVERTER VALVES**

Some spas have diverter valves. Due to mineral deposits and grit/sand that may get into the internal parts of the diverter valve, it may become hard to turn or freeze up completely. In this case, it is

necessary to remove the handle and cap of the diverter valve. Before proceeding, make sure the power to the spa is turned off.

- Turn the cap piece counter clockwise.
- Once loose, the cap and handle can be pulled up out of the white plumbing fitting.
- Wipe down the internal piece that attaches to the cap and handle.
- Soak the cap and handle in white vinegar or a stain and scale remover mixed with water.
- The white plumbing fitting should also be wiped down.
- Rinse the diverter internals and reassemble.

In the future, it is helpful to turn the diverter valve only when the pump is not on.

### **REPLACING YOUR LIGHT BULB (NON L.E.D.)**

If your light bulb goes out, it is very easy to replace.

- Use a 12 volt, 6 watt bulb that should be available through your dealer.
- First, make sure the power to the spa is off. You can access the spa light fitting by removing the spa panel.
- Once the panel is removed, unfasten the black fitting inside the white light assembly, by turning it counter clockwise.
- Attached to the black fitting is the light bulb. Replace the bulb and reinsert the fitting, by turning it clockwise.

*This may also be necessary when installing an LED light.*

### **CARE OF YOUR SPA COVER**

- Always cover your spa when not in use. This will greatly reduce energy consumption and will cause spa water to heat more rapidly. Water loss and chemical usage will also be reduced.
- Be sure to lock down all straps on cover after each use to prevent wind damage.
- Do not allow spa to sit uncovered in direct sunlight. This may cause damage to exposed surfaces of spa and possible discoloration of spa fittings.
- Periodically clean off both sides of spa cover for maximum life of cover. Once a month use a vinyl cleaner and conditioner on the vinyl portion of your cover. Rinse residue off. Wash the underside of the cover with mild bleach water.
- Keep cover open for 15 minutes after adding chemicals to prevent gas damage.

### **CARE OF YOUR SPA CABINET**

- Your DuraMaster™ Polymer Skirt, Master Select Skirt or Dreamstone Skirt is a maintenance free skirt.

- No conditioning is necessary. Simply hose off the waterproof / U.V. resistant material if it becomes dirty.



## **FILTER CLEANING**



- Turn power off to the spa.
- Remove any large or floating debris from the filter area.
- Remove the filters.

Rinse filters thoroughly with clean water, making sure to separate the filter pleats to remove loose debris. Using a pressurized water source will make removing debris easier. Ideally, your filters should be rinsed weekly.

It is also helpful to soak filters in an approved cartridge cleaner periodically. Frequency of soaking treatments will vary depending on how often they were previously rinsed. The more often you rinse your filters, the less likely it is that you will need to soak them. Most filters have a useful life of approximately 1-2 years. This time can vary depending on maintenance procedures.

Remember that the ECO PUR mineral filters should only be rinsed with clear water and never soaked in a cartridge cleaner. The ECO PUR filters should be replaced every 6 months

### **NOTE:**

***Never operate the spa without filters in place. If done, damage will result to pumps and other components. We recommend having an extra set of filters to install when cleaning the filters.***

## **E) Winterizing Your Spa**

Many people find they enjoy using their spa more in the winter than any other time. Your spa is designed to be used year round in any type of climate.

\* However, if you decide you don't want to use your spa in the winter, you must drain it and follow the winterizing steps listed below:

1. Drain your spa completely using the drain valve or use a submersible pump that you can buy from your dealer or your local hardware store.
2. Use a shop vac to get all standing water out of your unit.
3. Remove access panels.
4. Loosen all pump and heater unions.
5. Remove freeze plugs from face of the pump(s) where applicable.
6. Using your shop vac in a blowing mode, insert the hose into the nozzle of each jet and blow the trapped water from the lines into the interior of the spa. It is best to work from top to bottom. Make sure ALL water is removed from the lines.
7. After this is completed, use the shop vac to remove any standing water in the spa and in the equipment area.
8. Clean the spa with a soft cloth and a non-abrasive spa surface cleaner.
9. Replace access panels.
10. Cover spa to prevent water from entering the spa.

**NOTE: Damage caused by or during winterization is not covered by your warranty.**

## **(F) General Safety Tips**

**SAFETY TIPS:**

- ❖ Never heat your spa above 104\* F
- ❖ Limit your time in the spa to 15 minutes.
- ❖ Always add chemicals to water, not water to chemicals.
- ❖ Do not drink alcohol while using your spa.
- ❖ Maintain a proper sanitizing level.
- ❖ Always store chemicals according to the manufacturer's instruction and keep them out of the reach of children.
- ❖ Always shower before entering the spa.
- ❖ Do not mix chemicals before adding to the water. Add each chemical separately.





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