



*Hydrotherapy at its Best...*

# OWNER'S MANUAL



## Traditional Chlorine Start-Up

### PRODUCTS TO PURCHASE

Granulated Chlorine  
Stain & Scale OR Metal Gone  
pH Increaser  
pH Decreaser  
Test Strips

### OPTIONAL PRODUCTS

Anti Foam  
Water Clarifier  
Nature 2 Cartridge  
Enhanced Shock  
Alkalinity Increaser

### START UP FOR SPA

3-4 oz. of Stain & Scale or Metal Gone (Read directions on back of bottle)  
2-3 tablespoons of granulated Chlorinating Concentrate (for all spas 500 gallons or under)

### Optional-One Week Later

Insert Nature2 cartridge one week after you put in the Start up chemicals.  
Installing the Nature2 any sooner causes the Stain & Scale to pull the minerals out of the cartridge.

### MAINTENANCE

After last use of the day add 2 tablespoons granulated Chlorine Concentrate  
**Once a week** BALANCE the pH & Alkalinity. (See instructions on the back of the bottle.)

\*\*\*Improper pH levels, over chlorinating, or the use of Bromine will damage the heating element and Void your warranty (Do NOT use a Floater)

**Once a week**, as a booster, use Enhanced Shock, small spas 1.5 oz. and Large spas use 3 oz.

**Once every 2 weeks** clean the filter(s).

\*\*\*If spa is used often , clean the filter ONCE a WEEK

**Every 2-3 Months** all big rotating jets should be removed and cleaned, if jets are not cleaned calcium deposits will build up and cause jets to stop rotating. Jets will be harder to remove do to calcium build up.

\*\*\*Soak the jets in a solution of plain white vinegar and water for three to four hours. A 50/50 mix works well

\*\*\*Once an hour, swirl the jet gently in the vinegar solution to help loosen debris

\*\*\*Rinse the jets thoroughly and gently wipe away any leftover deposits

Anti Foam may be used only when necessary. Anti foam will quickly eliminate and prevent foaming in spas and hot tubs. Foaming is the result from the residual soap in swim suits, skin products, hair products or natural body oils. If foaming continues, we recommend the use of Water Clarifier.

Your new spa will also have to be drained and refilled. We recommend doing so every 4-6 months depending

\*\*\*\*These instructions are for spas with 500 or less gallons of water. If you have a Swim Spa adjust accordingly\*\*\*\*



## Swim Spa Start Up

### PRODUCTS TO PURCHASE

Granulated Chlorine  
Stain & Scale or Metal Gone  
pH Increaser  
pH Decreaser  
Test Strips

### ADDITIONAL PRODUCTS

Anti Foam  
Water Clarifier  
Alkalinity Increaser  
Enhanced Shock

### SWIM SPA START-UP

7 -8 oz of Stain & Scale or Metal Gone (Read directions on back of bottle)

1/2 Cup of granulated Chlorinating Concentrate

### MAINTENANCE

After last use of the day add 4 oz or 1/2 cup granulated Chlorine Concentrate

**Once a week** BALANCE the pH & Alkalinity (See instructions on the back of the bottle.) Ideal Level 7.2-7.6

\*\*\*Improper pH levels, over chlorinating, or the use of Bromine will damage the heating element and Void your warranty

**Once a week**, as a booster, use 4 oz or 1/2 Cup Enhanced Shock,

**Once every 2 weeks** clean the filter(s).

\*\*\*If spa is used often , clean the filter ONCE a WEEK

**Every 2-3 Months** all big rotating jets should be removed and cleaned, if jets are not cleaned calcium deposits will build up and cause jets to stop rotating. Jets will be harder to remove do to calcium build up.

\*\*\*Soak the jets in a solution of plain white vinegar and water for three to four hours. A 50/50 mix works well

\*\*\*Once an hour, swirl the jet gently in the vinegar solution to help loosen debris

\*\*\*Rinse the jets thoroughly and gently wipe away any leftover deposits

Anti Foam may be used only when necessary. Anti foam will quickly eliminate and prevent foaming in spas and hot tubs. Foaming is the result from the residual soap in swim suits, skin products, hair products or natural body oils. If foaming continues, we recommend the use of Water Clarifier.

Your new spa will also have to be drained and refilled. We recommend doing so every 4-6 months depending on the quality of the water. \*If using a Nature2 cartridge, it will need to be replaced every 4 months

\*\*\*These instructions are for spas with 2000-2500 gallons of water. \*\*\*\*





SPA MARVEL Start Up

PRODUCTS TO PURCHASE

Granulated Chlorine

Spa Marvel Water Treatment

pH Decreaser

pH Increaser

Test Strips

OPTIONAL PRODUCTS

Anti Foam

Water Clarifier

Alkalinity Increaser

Enhanced Shock

Spa Marvel Cleanser

Spa Marvel Filter Cleaner

1 Bottle Spa Marvel (for all spas 500 gallons or under)

2-3 tablespoons of granulated Chlorinating Concentrate (for all spas 500 gallons or under)

\*\*\*\*Spa Must Filter 6 Hours a day for Spa Marvel to work properly\*\*\*\*

After last use of the day add 2 teaspoons of granulated Chlorine Concentrate or Shock (a little more if a lot of usage)

*Once a week BALANCE the pH & Alkalinity (See instructions on the back of the bottle.) Ideal Level 7.2-7.6*

*\*\*\*Improper pH levels, over chlorinating, or the use of Bromine will damage the heating element and Void your warranty*

*Once a week, as a booster, use 2 oz Enhanced Shock,*

*Once every 2 weeks clean the filter(s).*

*\*\*\*If spa is used often , clean the filter(s) ONCE a WEEK*

**Once a Month** clean the filter(s) with Spa Marvel Filter Cleaner

**Month 4:** Add full Bottle of Spa Marvel Water Treatment

**Month 7 :** Add full Bottle of Spa Marvel Water Treatment

**Month 10:** Add full Bottle of Spa Marvel Water Treatment

**1 year from Purchase:** Add 1 Bottle of Spa Marvel Cleanser (per directions on bottle) **Drain Spa & Start All Over Again**

**Every 6 Months** all big rotating jets should be removed and cleaned, if jets are not cleaned calcium

deposits will build up and cause jets to stop rotating. Jets will be harder to remove do to calcium build up.

\*\*\*Soak the jets in a solution of plain white vinegar and water for three to four hours. A 50/50 mix works well

\*\*\*Once an hour, swirl the jet gently in the vinegar solution to help loosen debris

\*\*\*Rinse the jets thoroughly and gently wipe away any leftover deposits

\*\*\*\*These instructions are for spas with 500 or less gallons of water. If you have a Swim Spa adjust accordingly\*\*\*\*

\*\*\*\*\*If you have any questions or concerns call Spa Marvel @ 1-888-400-1SPA (1772)\*\*\*\*\*

## SPA WATER MAINTENANCE TROUBLE-SHOOTING GUIDE

Problem	Possible Causes	How To Fix It
Chlorine / Bromine Odor	<ul style="list-style-type: none"> <li>• Excessive Chlorine or bromine level shock treatment</li> <li>• Low pH</li> </ul>	<ul style="list-style-type: none"> <li>• Shock water with non-chlorine</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</li> <li>• Water chemistry</li> <li>• Suspended particles or</li> <li>• Old water</li> </ul>	<ul style="list-style-type: none"> <li>• Clean filters and adjust filtration inadequate filtration</li> <li>• Adjust chemistry levels not balanced</li> <li>• Add spa clarifier (see dealer) organic materials</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</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 Or rise above 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>

## PORTABLE SPA OWNER'S MANUAL

Congratulations on your new ownership of your new spa, and welcome to a new Lifestyle of Good Health and Relaxation.

With proper care, your spa will provide many years of pleasure and comfort for you and your family. Please take some time to read the entire Do's and Don'ts of how to care for your spa, before and after installation. This Owner's Manual will help you understand the proper way to care for your spa so you can enjoy the most from your spa.

Please remember that your spa is a powerful appliance. Make sure that the spa is installed correctly and safely to prevent any accidents to you or your family. Have only a licensed electrician install all of the electrical wires, breakers, GFCI, and disconnects for your spa. Make sure that the electrician has experience in doing electrical work for spas. Ask for references and check your Better Business Bureau.

This manual will explain safety precautions, installation instructions, operating instructions and maintenance procedures. If you have any questions regarding this manual after reading it, feel free to ask your Diamante Spas dealer for any assistance.

Make sure to read and understand all safety, installation, and operating instructions before adding water or attaching electrical power to your spa. It is your responsibility, the spa owner, to maintain the spa in proper working condition, to place the spa on a level and solid surface supply the spa with the proper gauge wire, voltage, and amperage, keeping the water conditions at safe levels, and the pH levels, chlorine, or bromine levels at an ideal, normal and safe level. The spa's surface is always waxed after every change of water, always keep the cover on the spa when it is not in use.

**\*DO NOT FORGET TO SEND YOUR WARRANTY CARD RECEIPT BACK TO THE FACTORY WITHIN 10 DAYS OF DELIVERY WITH A COPY OF YOUR PURCHASE RECEIPT OR YOUR WARRANTY WILL BE INVALID.**

### **\*\*SAFETY INSTRUCTIONS\*\***

#### **IMPORTANT SAFETY INSTRUCTIONS**

When installing and using this electrical equipment, basic safety precautions should always be used, including the following:

Make sure that the following emergency telephone numbers are listed at the nearest telephone to the spa:

- PHYSICIAN
- LOCAL HOSPITAL
- AMBULANCE
- POLICE DEPT.
- FIRE DEPT.
- CLOSEST RELATIVE OR FRIEND
- 911

If possible, try to have at least one person in the family who knows CPR (cardiopulmonary resuscitation). It could save a LIFE in any emergency.

#### **WARNING:**

To reduce the risk of injury, you should always review these instructions with first time or occasional users of your spa. Remember that they may not be aware of the possible risks with the spa's hot water temperature.

#### **RISK TO CHILDREN OF ACCIDENTAL DROWNING**

Adults must exercise extreme caution to prevent unauthorized access by children. To avoid accidents, ensure that children cannot use the spa unless a responsible adult supervises them. It is your responsibility, the spa's owner, to prevent unauthorized access to the spa by children or guests that may need adult supervision while using your spa. Check with your local codes to see if you are required to have self-closing and self-locking gates around your spa and/or pool.

#### **ALCOHOL, DRUGS, AND SPAS**

The use of alcohol, illegal drugs, or prescribed medication before or during spa use may lead to unconsciousness with the possibility of drowning. Persons using medication should first consult their physician before using the spa. Some medication may have adverse interactions with the spa's hot water, so be careful and read your medication's directions and ask your physician if you have any questions.

#### **RISK OF HAIR OR BODY ENTRAPMENT**

The suction fittings in this spa are sized to match the specific flow rates needed by the pump. Should the need arise to replace the suction fittings or the pump, be sure that the flow rates are compatible.

Never operate your spa if the suction fittings are missing or broken. Never replace a suction fitting with one rated less than the flow rating on the original. Should your spa be missing or has a broken suction fitting whether the warranty has expired or not call your authorized Diamante Spas dealer to help you fix your spa.

### **HIGH BLOOD PRESSURE, OBESITY, HEART CONDITIONS**

Persons suffering from obesity or who have a medical history of heart disease, low or high blood pressure, circulatory system problems, and/or diabetes should first consult their physician before using a spa or your spa.

### **RISK OF ELECTRIC SHOCK**

Do not permit any electrical appliance, such as a light, telephone, radio, television, etc. within 5 feet (1.5m) of the spa.

### **RISK OF SCALDING**

The water in the spa should never exceed 104°F (40°C). Water temperatures between 100°F (38°C) and 104°F (40°C) are considered safe for a healthy adult (not exceeding 20 minutes of use). Lower water temperatures under 96 degrees F are recommended for extended adult use (exceeding 20 minutes of use), adults over the age of fifty and for your children under the age of twelve. Check with your physician if your child or children under the age of twelve are healthy enough and can withstand water temperatures above 98° F to use a spa. Remember to always check the water temperature before entering the spa.

### **RISK TO PREGNANT WOMEN**

Excessive water temperatures have a high potential to cause fetal damage to pregnant women. Pregnant women can use a spa with water temperature under 90°F. Pregnant or possibly pregnant women should first consult with their physician if they can use a spa, no matter what the water temperature is.

### **RISK OF ELEVATED BODY TEMPERATURE OR DROWNING**

Try not to use your spa alone. Long exposure in hot water may cause elevated body temperature. This occurs when the internal body temperature reaches several degrees above normal (98.6 degrees F). Symptoms include dizziness, fainting, drowsiness, and lethargy. The effects of elevated body temperature are:

- Unawareness of impending hazards
- Failure to perceive heat
- Failure to recognize the need to exit the spa
- Physical inability to exit the spa
- Fetal damage to a pregnant woman
- Unconsciousness resulting in a danger of drowning

The use of alcohol, drugs, or medication can greatly increase the risk of elevated body temperature in a spa.

### **INFECTIOUS DISEASES**

Persons with infectious diseases should not use a spa without first notifying any other person also using the spa of his/her health condition.

### **WARNINGS to Remember/PRECAUTIONS to be Taken:**

- Do not permit electric appliances (such as a light, telephone, radio, or television) within five feet (1.5m) of the spa or hot tub.
- Children should not use spas or hot tubs without adult supervision.
- Do not use spas or hot tubs unless all suction guards(s) are installed to prevent body and hair entrapment.
- Do not use drugs or alcohol before or during the use of a spa or hot tub to avoid unconsciousness and possible drowning.
- People using medications and/or having an adverse medical history should consult a physician before using a spa.
- The use of alcohol, drugs, and medication can greatly increase the risk of fatal hyperthermia.
- Before entering the spa or hot tub measure the water temperature with an accurate thermometer.
- Water temperature in excess of 104°F (40°C) may be injurious to your health.
- Prolonged immersion in a spa or hot tub may be injurious to your health.
- People with infectious diseases should not use a spa.
- Pregnant or possible pregnant women should consult a physician before using a spa or hot tub.
- To avoid injury, exercise care when entering and exiting the spa or hot tub.
- Do not use a spa or hot tub immediately following strenuous exercise.
- Maintain water chemistry in accordance with manufacturer's instructions.

## A. SITE PREPARATION

Because your spa is portable, you can locate it just about anywhere you wish, such as on a patio, on a deck, in the middle of your yard, or even indoors. Just be sure to position it above ground in a area with good drainage and on a level, continuous surface which can support the weight of the spa when filled with water and people. The weight of the spa filled with water and its occupants can weigh as much as *three and a half tons (7000 lbs.)*, depending on the model and the amount of people in the spa. Severe damage can occur to your spa if it is not placed in an approved surface.

- Place the spa on at least 4 inches of solid dry concrete. Do not place spa on wet or not completely dry concrete, which may tend to sink or sag and damage the spa and will void your warranty. Make sure that the concrete slab is level (for proper drainage a slight slope of 1" per 10 feet is allowable).
- If the spa is to be placed on a wood deck, be sure that the wood structure is able to withstand the weight. Typical standards of weight requirements are anywhere from 75 to 200 pounds per square foot, first verify with your contractor and/or your city's building codes.
- Placing your spa on a bed of pea-gravel (without a wooden frame), wood pavers, concrete pavers, on a dirt or grass surface will damage your spa, voiding your warranty.
- Make sure the wood decking, on which the spa is to rest on, does not have any low spots, high spots, or any gaps between the surface and the bottom of the spa. This will cause damage to your spa and will void your warranty.
- If any damage is done to your spa because the surface on which the spa is placed is not an approved surface, then the warranty will be voided.
- It is your responsibility, the spa owner, to make sure that the spa is on a solid, leveled, and appropriate surface or base.

## DANGER RISK OF ELECTRICAL SHOCK

The following steps are the basis for almost any electrical wiring for spas. This work must be done by a licensed electrician. If any damage is done to the spa because of improper electrical installation, your warranty will be voided. Make sure your electrician is knowledgeable in the installation of spas (ask for references). To ensure proper installation, provide a copy of these instructions to better aide the electrician. If your electrician is not sure of the installation procedures, have the electrician call the equipment manufacturer (the Owner's Manual is in the packet with all the papers inside the spa side's panel). **HAVE YOUR ELECTRICIAN READ THIS MANUAL AND SIGN THE APPROPRIATE AREAS SO HE OR SHE IS AWARE OF THE REQUIREMENTS FOR A SPA INSTALLATION.**

### **ELECTRICIAN SIGN BELOW:**

- SIGNATURE: \_\_\_\_\_
- NAME(print): \_\_\_\_\_
- COMPANY NAME: \_\_\_\_\_
- ADDRESS: \_\_\_\_\_
- CONTRACTORS LICENSE #: \_\_\_\_\_
- PHONE #: \_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_

## B. ELECTRICAL REQUIREMENTS

**230 Volt Systems (voltage range +/- 5%, between 218.5 volts to 241.5 volts)**

**230v. 50 Amp, 60 Hz, 1 Phase, 4 wire (Copper wire)**

**2 Hot wires #6 AWG (L1-Black, L2-Red)**

**1 Neutral wire #6 AWG (White)**

**1 Ground wire #6 AWG (Green)**

**#6 Bonding required.**

**NOTE: Always check your local and state codes for wiring requirements that may exceed NEC.**

**115 Volt Systems (voltage range +/- 5%, between 109.25 volts to 120.75 volts)**

**115v., 20 Amp, 60 Hz, 3 wire**

**1 Hot wire #6 AWG (L1-Black)**

**1 Neutral wire #6 AWG (White)**

**1 Ground wire #6 AWG (Green)**

**#6 Bonding required.**

**NOTE: Always check your local and state codes for wiring requirement that may exceed NEC.**

**B1. VOLTAGE REQUIREMENTS (+/- 5%)**

All of the electrical components in the spa need to have the required voltage to operate properly. All of the spas are manufactured to operate with 230 volts (+/- 5%). The voltage needs to be between 218.5 to 241.5 volts, which is the acceptable voltage range (+/- 5%). All spas manufactured to operate with 115 volts need to have the voltage between 109.25 to 120.75 volts, which is the acceptable voltage range (+/- 5%). These voltage readings need to be taken while the spa is under full load or with every component operating. If the voltage is not within range a Buck/Boost Transformer may be required, to either up the voltage (Boost) or lower the voltage (Buck). This type of transformer needs to be installed after the house main breaker and before the Disconnect/GFCI device. Only a certified electrician should install a Buck/Boost Transformer. The Buck/Boost Transformer will help keep the voltage going to your spa at the proper operating ranges. NOTE: Any damage to any electrical components caused by improper voltage is not a warrantable defect. See your dealer or certified electrician for information and availability on Buck/Boost Transformers.

**C. DISCONNECT/GFCI (Ground Fault Current Interrupter) Device**

All spas require a Disconnect/GFCI device at least 5 feet (1.5m) from the spa. This device is to disconnect all power to the spa in case of an emergency. The Disconnect/GFCI device and the installation need to comply with NEC 680.42 & 680.12 codes. Your electrician should know about these requirements, so ask them about this. If your spa is installed in the middle of your yard where there is nothing on which you can install the Disconnect, then you need to place a 4" x 4" post 5 feet (1.5m) from your spa. The Disconnect/GFCI device needs to be at least 4 feet (1m) from the floor or ground. Ground Fault Current Interrupter or GFCI must be installed with or next to the disconnecting device (only if a Disconnect/GFCI combo device is not used). The Disconnect/GFCI device must be in plain view from the spa, and should always be free from any obstructions. If this Disconnect/GFCI device is not installed on the electrical lines running to your spa, you may be in risk of an accident and your warranty to be voided. Note: spas are not equipped with a Disconnect/GFCI combo unit that is installed at the main housed electrical panel is not recommended or up to code (check your local electrical codes). See your dealer or certified electrician for information and availability on Buck/Boost Transformers.

**ELECTRICIAN SIGN BELOW:**

- SIGNATURE: \_\_\_\_\_
- NAME(print): \_\_\_\_\_
- COMPANY NAME: \_\_\_\_\_
- ADDRESS: \_\_\_\_\_
- CONTRACTORS LICENSE #: \_\_\_\_\_
- PHONE #: \_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_

**D. INSTALLATION PROCEDURE**

1. The main electrical panel for the spa must have a 50-amp (60 amp is optional) breaker installed for 230v.
2. Only use non-metallic waterproof conduit and fittings when installing power from the GFCI/Disconnect device to and through your spa.
3. Only, after the spa has been set in its location, run the non-metallic waterproof conduit through the inside of the spa.
4. Make sure the spa is in a location that you, a service technician, or your electrician can have easy access to all four sides of the spa (at least 30"). Failure to do so can result in extra work and can result in a costly charge to you not covered under any warranty.

**E. INSTALLING POWER THRU SPA SKIRT**

1. Remove the front panel by unscrewing the 10 screws.
2. Your electrician may have to drill a hole through a panel for the conduit. Make sure you seal any exposed wood after the hole has been drilled.
3. Open the panel on the control head to reveal the terminal blocks.
4. Run the wires to the blocks in order that the blocks are marked.
5. On 115v...The blocks are marked, L1 for a Hot (color: Black), Neutral (color: White), and a Ground (color: Green).
6. On 230v...The blocks are marked, L1 for a Hot (color: Black), L2 also for a Hot (color: Red), Neutral (color: White), and a Ground (color: Green).
7. Try to use non-metallic waterproof flexible conduit when running the power lines in through the spa (unless local or state laws specify not to use it).
8. Also, refer back to the Equipment manufacturer's diagram for more details.
9. Make sure the wires are all in their correct positions, at the main electrical panel, the Disconnect/GFCI device and at the spa before turning on the power.
10. Once everything has checked out, make sure all water gate valves are open (metal stem should be visible with red stem lock in place) and that all pump and heater unions are hand tight. Sometimes during freight and/or deliveries unions can become loose and leak when water is added to the spa. This is not a warrantable defect.
11. Briefly turn on the power to test that connections are working, test the GFCI to make sure that it is working properly. Also, test the disconnecting device to ensure that it will work in an emergency. Only test all the junctions for power. Never leave the spa without water and/or uncovered, damage may occur to the spa and/or its components and this is not covered under any warranty.
12. Now turn the power off and start adding water (refer to Starting Up Your Spa section).
13. Each time you refill your spa with new water you need to apply a spa wax to the interior surface of the spa. This wax will help maintain the surface of the spa new and keep it from damage caused by water chemistry and the weather.

**ELECTRICIAN SIGN BELOW:**

- SIGNATURE: \_\_\_\_\_
- NAME(print): \_\_\_\_\_
- COMPANY NAME: \_\_\_\_\_
- ADDRESS: \_\_\_\_\_
- CONTRACTORS LICENSE #: \_\_\_\_\_
- PHONE #: \_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_

## **F. STARTING YOUR SPA**

1. **Begin to fill your spa with water from your garden hose. As you are filling the spa with water, put the hose down your filter area. The use of a “fill filter” helps eliminate metals in the water. The water level should be half way up the filter area (approximately 3 inches above the filter opening or on some models until the water clears the highest jet or jets).**
2. **Once the water level is correct, inspect the area around the spa. Make sure that no water is running from underneath the spa. Sometimes during freight or during a delivery, a hose or a union may get loose. If you see water, immediately locate the leak. *If it is a lose pump union or heater union, just tighten it as much as you can with your hands or channel locks.* This is a common occurrence and can happen any time you drain & fill your spa (This is NOT a service call or a warranty issue) If leak cannot be located, call your Dealer. If everything is fine, you can turn on the power.**
3. **With the power on, turn on the Jets 1 pump. Adjust thermostat to begin heating the water. The pump will sometimes not pump water through the jets immediately, due to air in the plumbing lines. Give the pump some time to prime itself. Once the pump has primed itself, you will see the jets begin to work. Press the button for the main pumps (or Jets 1) so the two pumps, press the button for the booster pump (Jets 2) so the pump can begin to prime itself. You will see the jets begin to work. Give the pump or pumps about 15 to 20 seconds to prime. If by 20 seconds the pumps have not primed turn off the pumps and *try the procedure again.***
4. **If your spa is equipped with a supercharger press the button to turn it on. You should see the air bubbles coming out of the jets. The small diverter valve by the control panel will divert the pressurized air to two jet banks in the spa.**
5. **Turn on your mood light. Press the button for light, and your light should turn on.**
6. **If you have done everything correctly, your spa should be working.**
7. **If the pumps are on and you notice that a jet is not working, you can turn the jet clockwise or counterclockwise to open or close the jet. NOTE: Not all the jets are adjustable so if the jet does not turn do not force it.**
8. **At this time you can set the thermostat to the temperature you desire. Remember the spa can only heat the water to the desire temperature. NOTE: Your spa heater on a 230v. system can only heat so fast. A 230v. 5.5 kw heater can heat the water from 8 to 10 degrees an hour, a 4.0 kw heater can heat the water from 6 to 8 degrees an hour, and a 3.0 kw heater can heat the water from 5 to 6 degrees an hour, so do not expect the water to be hot in the first couple of hours. On 115 v. system the 1.5 kw heater can heat the water about 3 to 5 degrees an hour. Be patient for the first time you start up your spa.**
9. **Now that the spa is heating and filtering the water, you can begin to add the chemicals to the water. Be sure to read very carefully how to add chemicals and how much chemicals to add. Your best bet is to ask your Diamante Spas dealer for help regarding water chemistry, since every city has different water conditions. Also, check with your chemical kit instruction manual for proper water chemistry.**
10. **Always keep your water pH at an ideal level, which is at about 7.4 to 7.6 in the pH scale of 0.0 to 14.0.**
11. **Failure to keep your pH at a safe level for extended periods can cause bather discomfort, unsanitary water, eyes to burn, clogged plumbing hoses, spinning jets to stop spinning, staining and calcification to the heater or pumps, and will cause the spa’s surface to discolor, the surface’s texture to get rough, and to crack. Any damage to these or any other components cause by unbalance pH levels is not a warrantable defect. It is the spa owner’s responsibility to always maintain properly balanced pH levels.**
12. **Over chlorinating or over-brominating can also cause your spa surface to discolor, surface to get rough, crack, spinning jets will stop spinning, stainless steel escutcheons to rust or pit, or even discoloring your jets. Any damage to these or any other components caused by unbalanced chlorine or bromine levels is not a warrantable defect. It is the spa owner’s responsibility to always maintain properly balance chlorine or bromine levels.**
13. **Now that you have added water, checked that pumps are working properly, and the jets are aerating and water is flowing through them, set you thermostat to the desired setting. Add the right amount of chemicals to the water. You can now re-install any panel(s) that had been removed. Cover you spa with its spa cover and lock it down. NOTE: Depending on the chemicals you have added, if the manual for the chemicals says to keep the cover off for an hour, do so. This will vent out any fumes resulting from chemicals in the water. Remember to replace the cover.**
14. **Always keep your spa cover on the spa. Leaving the cover off, exposing the spa to the sun or the elements for extended periods, can damage the spa. Any damage caused due to the cover not being on the spa will void the warranty.**
15. **Let water get warm and enjoy your new Xtreme Backyard spa. Never use a spa before you have added the spa chemicals to the water. Read the spa’s chemical manual regarding when it is safe to enter a spa after the chemicals have been added. Remember to always check the water temperature before entering the spa.**

## G. MAINTAINANCE FOR YOUR SPA

### **\*\*THE SPA'S SKIRTING\*\***

#### (Redwood Panels)

- You must seal the wood skirt surrounding your spa.
- Seal the wood in the first 5 days after you have received the spa. To prevent the wood from being damaged by the weather, the sun, and the chemicals in the water.
- Depending on where you live, you may need to seal your wood 3 to 4 times a year.
- The factory recommends using stains and sealers available at your local hardware store.
- Remove any sprinkler heads that aim the water spray at the spa skirt.
- It is your responsibility, the spa's owner, to always maintain the spa skirt clean, stained, and sealed.

#### (Synthetic Panels)

- If you have opted for Synthetic Panels, you already know that you will need neither seal nor stain them. The synthetic Panels are made out of synthetic material, so regular maintenance is not required.
- When the panels do get soiled, all you will need to do is rinse off the dirt.
- To dry the panels off, a soft cotton towel or chamois is all you will need.

### **\*\*THE SPA'S WATER\*\***

- Remember to always read your chemical kit's instructions before adding any chemicals to the spa water.
- Always use brand name spa chemicals available only at pool and/or spa stores.
- Try to always use the same brand of spa chemicals. This will help you balance your water better.
- Never use spa chemicals if you do not know how to use them.
- Never buy spa chemicals at a yard or garage sale or from any person who does not know how to use the spas chemicals. Never buy spa chemicals at super market, hardware store, or a discount outlet.
- Always buy spa chemicals at a pool and/or spa supply store or at your dealer who knows how to use the spa chemicals.
- Never add too much of any chemical or not enough of another chemical to the water or risk damage to the spa's surface, the plumbing system, the pumps, or the heater.
- Remember to always keep your water pH balance at an ideal point. Ideal point being 7.4 to 7.6 points in a 0.0 to 14.0 scale.
- Also, remember to always maintain a safe and ideal level of either chlorine or bromine in the spa's water and check with your spa chemical owner's manual for instructions.
- The spa must filter the water for at least 6 to 8 hours a day. Filter the spa's water longer with heavier use. Program the filter cycles accordingly.
- Failure to keep the spa's water clean, balanced, and filtered may result in clogged jets, calcification to the spa's surface, which may result in discoloration, texture to become rough, and to crack, heater to calcify and stop heating, filter to get clogged more often, and pumps to leak or crack around the unions and seals, is not covered under any warranty.
- It is your responsibility, the spa owner, to always maintain clean, balanced, and safe water. Never leave the spa without water and/or uncovered, damage may occur to the spa and/or its components and this is not covered under any warranty.

### **\*\*SPA SURFACE\*\***

- Always keep your spa cover on the spa to avoid the spa's surface from being discolored, cracked, sun-grazed, spider-like cracks, or gloss to fade on the smooth glossy acrylic finish.
- To clean the spa surface, all you need is a soft cotton towel (a chamois) or moist cellulose sponge with clean water. For daily or weekly cleaning, rub lightly with a soft cotton towel (a chamois) or a moist cellulose sponge over the dirty surface with just clean water.
- Softly rub the spa in a circular motion. Do not rub in one place to long. Keep moving the towel or sponge as if you were applying wax on your vehicle. Be sure to remove the entire dirt form the spa before your begin adding new water to the spa.
- Never use harsh abrasives, cleaning solvents, acetone, or alcohol to clean the spa. This can fade, discolor, or even crack the surface, voiding the warranty.
- It is your responsibility, the spa owner, to always maintain clean, balanced, and safe water. Never leave the spa without water and/or uncovered, damage may occur to the spa and/or its components and this is not covered under any warranty.

### **\*\*SPA EQUIPMENT AND PUMPS\*\***

- The spa equipment and the pumps do not need any regular maintenance. The equipment and the pumps are virtually maintenance free. However, if you notice the equipment or the pumps not working, call your Dealer to check the problem.
- The same goes for the supercharger (if your spa is equipped with one).
- If you have any questions about the equipment refer to the Owner's manual for the equipment manufacturer.
- It is your responsibility, the spa owner, to always maintain clean, balanced, and safe water. Never leave the spa without water and/or uncovered, damage may occur to the spa and/or its components and this is not covered under any warranty.

### **\*\*JETS\*\***

- Once a month, check all your jets to see if they are working properly. For the adjustable jets, turn the face left to turn on and right to turn them off making sure they are free from any obstructions. If your jets are not adjustable, do not try to turn them.
- If the spa you own has jets that spin, the easiest way to check if they are working properly is as follows: If a jet is spinning then it is fine. However, if the jet is not spinning then you need to take the jet out of its jet housing and check for any obstruction in the race of the bearings. Sometimes calcification, dirt or sand, or unbalanced water can cause the bearings to wear it out faster. So, keep a sharp eye on the water balance. Try to clean out any build up or obstructions to free up the bearings. Remove the spinning jet from the jet face and place it in a solution of ½ water and ½ white vinegar. Let the jet sit in the solutions for about half an hour to one hour. Remove the jet from the solution and lightly tap the jet to remove the dissolved calcium build or debris from the jet. Now rinse the jet with clean water, spin the jet and re-install the jet back in its jet face. NOTE: Buildup of any kind is not covered by your warranty. Only if the jet is defective it will be replaced free of charge if under warranty.
- If the jet is not working take it to your dealer for a closer inspection.
- It is your responsibility, the spa's owner, to always maintain clean, balanced, and safe water. Never leave the spa without water and/or uncovered, damage may occur to the spa and/or its components and this is not covered under any warranty.

### **\*\*SUCTIONS\*\***

- Before any spa activity, check for any obstructions caught in front of the suction.
- If you find there is an obstruction caught in the suction, make sure the pumps are turned off.
- With the pumps off you can remove any obstructions from the front of the suction.
- With the suction all clear, you can enjoy your spa. Be careful – Risk of Shock: If you have exited the spa you are probably soaking wet, try to have someone else turn the power back on. If no one is around to help you, dry off the water before touching any electrical equipment.
- Remember; just like in the section of Risk of Hair or Body Entrapment, never use your spa if a suction fitting is broken or missing. Visit your Diamante Spas dealer for a replacement fitting.
- It is your responsibility, the spa owner, to check and report any problems to your dealer.
- It is your responsibility, the spa owner, to always maintain clean, balanced, and safe water. Never leave the spa without water and/or uncovered, damage may occur to the spa and/or its components and this is not covered under any warranty.

### **\*\*CHECKING YOUR FILTER ELEMENT\*\***

- You should check your filter element once a week. If your filter element looks clean there is no reason to clean it. However, if your filter element is beginning to get dirty you will need to clean it.
- Go to Xtreme Backyards for a new filter element or a cleaning solution for your filter element.
- To replace your filter element follow the steps listed:
- Turn off the power to your spa. You may have to re-adjust your filter cycle to the correct time when you turn our power back on.
- With the power off, you can remove the filter floating weir and strainer basket by giving the assembly a ¼ turn counterclockwise. You then lift the assembly off. NOTE: Hot water tends to swell plastic, so it might be a bit difficult to get off.
- Once you have removed the floating weir and the strainer basket, you can see and remove the filter element. Lift the filter element out and clear of the spa, use a bucket or pail so you do not accidentally drop dirt from the filter element into your clean water. After cleaning your filter element, inspect your filter element for any ripped or cracked areas. If the filter element is ripped or cracked go to your Dealer to purchase a new one.
- If the filter element needs to be cleaned, use the cleaning solution you can purchase at your Dealer and follow directions.

- Now, place the strainer basket and the floating weir assembly on the canister and turn the assembly ¼ turn clockwise to lock it in place.
- It is now time to turn your power on. Turn on the main pump (Jets 1) to see that water is being pulled through the filter. If it looks O.K., you are now finished checking your filter element.
- It is your responsibility, the spa owner, to always check the filter and maintain clean, balanced, and safe water.

#### **\*\*SPA COVER\*\***

- Your spa cover is very durable and will rarely require cleaning. However, when it does get soiled you will need to clean it. Use a soft bristle brush with clean water and a small amount of non-abrasive dish detergent or baking soda or check with your Dealer for products for cleaning your spa cover. Make sure to thoroughly rinse off all the soap and then put the cover back on the spa and let it dry on the spa.
- It is your responsibility, the spa owner, to always maintain clean, balanced, and safe water. Never leave the spa without water and/or uncovered, damage may occur to the spa and/or its components and this is not covered under any warranty.

#### **\*\*SPA LIGHT\*\***

- To replace your spa light bulb you need to first turn your power off.
- Then remove the front panel by unscrewing the 10 screws and removing the panel. Place the panel on a dry flat surface, so it does not warp.
- Follow the thin black and white wires to the light housing and turn the light bulb holder ½ to one full turn counterclockwise to release the holder.
- Pull the bulb out with a towel or clean rag. Do not touch the new bulb with your fingers; try to use a towel or clean rag to replace the bulb. You can find the new bulb at your Diamante Spas dealer or at an auto parts store.
- Now put the light bulb holder on the light housing and give it a ½ to one turn clockwise until it is snugly in place.
- Turn the power on and test the light to make sure that it is working properly.
- Put the panel back on the spa frame and replace all the screws. Be careful not to over tighten the screws and risk breaking a screw or the panel.
- Do not forget to turn the light off before you go inside your house.

### **G. HOW YOUR SPA'S FEATURES WORK**

#### **\*\*HOW YOUR PUMPS WORK\*\***

Your spa is equipped with an electronic control head. The main pump (Jets 1), press the button once and the pump goes on low speed. Press the same button again and the pump goes on high speed. Press the same button for a third time and the pump turns off. The second pump or Jets 2 will work the same as Jets 1. **NOTE: NEVER UNDER ANY CIRCUMSTANCES TURN ON PUMP OR PUMPS AND LEAVE IT ON IF YOU ARE NOT PLANNING TO USE THE SPA.** If you leave a pump running and forget to turn it off, the pump will add heat to the water. A pump running for 1 hour will create 1 to 1 ½ degrees of friction heat to the water. This can result in a possible scalding. Remember to always check the water temperature before entering the spa.

#### **\*\*HOW YOUR SUPERCHARGER WORKS\*\***

If your spa is equipped with a Supercharger system then you will see a big difference in the performance of your spa. The Supercharger is a high-pressure air pump that pushes air into your jets. The air being pushed to your jets is mixed with the water and gives you a more invigorating massage. You see the difference and can feel the difference when you turn your Supercharger on or off.

Press the button for the Supercharge and it will turn on. Press the same button again and the Supercharger will turn off.

#### **\*\*HOW YOUR THERMOSTAT AND HEATER WORK\*\***

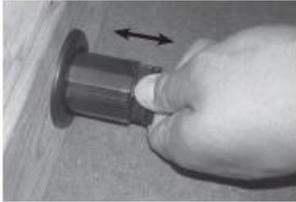
The way your spa water gets hot is the same way your house does. When you want your house to get hotter or warmer in the winter, you turn up the thermostat. When your house is at a set temperature the furnace turns off. Your spa is the same way. When you want your spa water to get hotter, just turn up the thermostat and the main pump (Jets 1) will turn on low speed. The heater has a delay built in, so the heater will turn on a few seconds after the main pump (Jets 1). Remember that the heater will only turn on if the water temperature is below 104 degrees F (40 degrees C). When the water temperature has reached the set temperature the heater and the main pump (Jets 1) will turn off.

#### **\*\*HOW YOUR SPA LIGHT WORKS\*\***

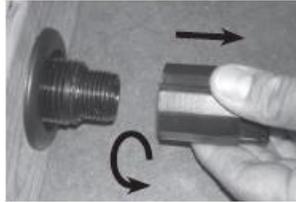
The spa light is very simple to operate. Push the Light button and the light will turn on. Press the button again the light turns off.

### **\*\*HOW YOUR SPA DRAIN VALVE WORKS\*\***

To drain the water from your spa, use the drain valve spigot. The drain valve is located on the left-hand side of the spa. Remove the black cap and attach your garden hose to it. Turn the outer black valve ring  $\frac{1}{4}$  turn counterclockwise and pull the valve out about  $\frac{1}{2}$  of an inch. Now the water will begin to drain out. **NOTE: WHEN YOU DRAIN YOUR SPA MAKE SURE THAT THE POWER TO THE SPA IS TURNED OFF.** The spa will take up to about two hours to drain the water. **NOTE: Do not drain spa water on grass, trees, or plants. The chemical contents in the water will harm or even kill the grass, trees, or plants.** Once, the spa water has been drained. Close the valve by pushing the valve back in, turn the outer black valve ring  $\frac{1}{4}$  turn clockwise, remove the garden hose, and replace the black cap. Refer back to section F, "Starting Up Your Spa" for filling the spa with water. Turn on the power, reapply the chemicals needed, set your thermostat and/or filter cycles, and get ready to enjoy the spa once more.



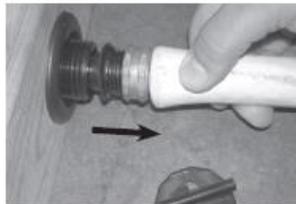
5. Pull knob out from the housing approximately 2" until it snaps into place.



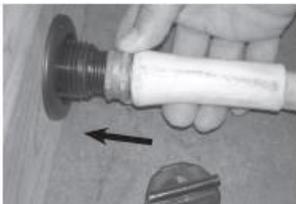
6. Remove cap by unthreading counter clockwise.



7. Thread hose onto the spa drain.



8. Pull the hose outward to allow water to flow. Push inward to shut water flow off.



9. To disconnect the hose, push the hose inward approximately  $\frac{1}{2}$ " to shut the water flow off. Unthread the hose.



10. Thread the cap back on then push the internal back into the housing until it snaps into place.

### **\*\*HOW YOUR LARGE WATER DIVERTER VALVE WORKS\*\***

The large water diverter valve diverts the water to either the whirlpool jet or a bank of jets. The handle on the diverter valve turns only 180 degrees of half a circle. All spas are different on the actual position of the diverter valve and are different on the function and position of the handle. Turn the handle all the way to your left while standing directly behind it. Do not force it, it should turn easily. See what jet or jets are working and made a note of it. Turn the handles all the way to your right while standing directly behind it and see what jet or jets are now working. This is the simplest way to explain the function of the large water diverter. **NOTE: If your spa is equipped with an ozone generator it will function more efficiently if, when you are finished using your spa, you then turn the handle so that the whirlpool jet is on. The ozone jet will draw more air through the ozone when the whirlpool jet is on. By doing this, you will help keep your spa water cleaner.**

### **\*\*HOW YOUR OZONE GENERATOR WORKS\*\***

If your spa is equipped with an ozone generator, this paragraph will help you understand how it works. The ozone generator is a unit in which it uses a CD (corona discharge) or UV (ultraviolet) lamp to add on extra oxygen atom to the oxygen molecule. Instead of O<sub>2</sub>, which is in the normal oxygen molecule, the generator makes it into O<sub>3</sub>, which is ozone. The molecule ozone is actually an oxidizer that can kill bacteria in the spa's water, and will help reduce the use of chemicals. Don't be mistaken, you still need to use your spa chemicals to keep your spa water clean and balanced. The ozone generator will help you use less chemicals but will not totally get rid of your spa chemicals.

## **\*\*HOW THE CONTINUOUS FILTERING SYSTEM WORKS\*\***

If your spa is equipped with the Continuous Filtering System this is how it works: The Continuous Filtering System that uses a Circ. Master pump to do all the filtration, heating, ozonating, and circulating of the spa's water. This system runs 24 hours a day. This means that the water is constantly being filtered. Once the water temperature is at the thermostat setting the heater turns off, but the Circ. Master pump remains on. The ozone generator is also constantly on, oxidizing the water to help keep the water clean and clear. However, this system will turn off the Circ. Master pump if the water temperature is 2 degrees of more above the thermostat's setting. This is normal. After the water's temperature has lowered to the thermostat's setting the Circ. Master pump will turn back on.

## **H. TROUBLESHOOTING**

### **SYMPTOMS:**

1. No equipment operates:

### **CORRECTIVE ACTIONS:**

\*Check to see if the spa wires have not come loose (call your electrician).

\*Check that the breaker has not been turned off.

\*Check if the GFCI has not tripped. Push the RESET button to RePower the spa.

\*Check that the disconnect box has been shut off.

2. Pump does not work

\*Check all items on "No equipment operates," section above.

\*Make sure that there are no blockages in front of the suction.

\*Check if the pump cord has not come loose.

\*Check if the gate valves have been shut.

\*Check if the filter element has been clogged.

\*Check if the air lines from the buttons to the control head have not come loose (or the plug of wires for the electronic control head).

3. Inadequate jet injection:

\*Check items on above two sections

\*Check that the air controls are open to MAX.

\*Check that the correct pump for the jets in question is on.

\*Make sure that the jets are all open.

4. No heat:

\*Check items on first two sections.

\*Check & Clean Filter Cartridges

\*Make sure that spa needs heater to be on.

\*Check that the water level is not too low, causing no water flow through the heater.

5. No light:

\*Press the light button to turn on the light.

\*Make sure the light bulb is not burned out.

\*Make sure power is turned on to the spa's control head.

6. Pump surging:

\*Check for blockages or restrictions in the suction of filter.

\*Make sure filter is clean or not damaged.

\*Check items on sections 1 and 2.

\*Check that the water level is not too low at the filter(s).

7. Water is cloudy:

\*Check your chemistry balance; pH, alkalinity, chlorine, bromine, acidity, hardness

\*Check filter to see if it needs to be cleaned or replaced.

\*Make sure the spa is circulating a minimum of 6 hours per day (depending use, you may need to filter the water more often) to ensure properly filtered water.

\*Check for an excess of soap build up in the water.

\*Water Clarifier could help to solidify small particles so they can filter out.

## **\*\*HOW TO AVOID AN AIR LOCK IN YOUR SPA\*\***

Spa air locks come in varying severities and there are a couple of ways to remedy this issue. One preventative method is on spa start-up involves putting the hose into the filter well as you re-fill the tub allowing water to fill the spa plumbing easier. This way we can take to try to avoid the hassle of an air locked hot tub in the first place.

Yet even when we try to prevent the dreaded air lock it still happens. Here are a couple ways to release the air lock and get on with enjoying the hot bubbly goodness!

If the air lock is not severe you can sometimes release it by simply “burping” the system. Before you do this you want to make sure all of the individual jets are completely open by turning the jet faceplate clockwise as far as they will go. This will make sure there is no added resistance on the system and the air and water can escape from the jets uninterrupted.

One more thing before we start turning the jets on is to make sure the heat is off, either by turning the heat off at the control panel or turning the temperature down as far as it will go, this way the heater won't try to kick on when there is no water flow as that can damage the heater.

To burp the system all you are going to do is quickly turn the jets on high for 10 seconds and then turn them off, if you have two jet buttons make sure you do this with each jet zone. Do this 3 times and you should see the amount of air bubbles coming out increase each time you turn them on. Keep burping the jets increasing the length of time you hold the jets on by 10 seconds each time. Eventually the whole system will burp and a huge blast of air bubbles will rush out of the jets. If this happens, congratulations you have released the air lock the easy way!

Now if during your initial attempts you see no increase in the amount of air bubbles coming out of the jets or worse no air bubbles at all coming out of the jets you have a severe air lock and you should STOP the “burping” process. The reason you need to stop burping the system if this happens is because if you continue to run the pumps dry you could damage them. This is when we move on to the next method for releasing an air locked hot tub.

Air locks happen when we fill the hot tub from inside the tub and water falls into the plumbing from the jets, this pushes all the air that is in those lines back to the spa equipment. This air is then trapped between the suction and pressure sides of the system on either side of the jet motor. Therefore the easiest way to release this air pocket is to crack open the union nuts on the spa motor itself.

Where the plumbing connects to the spa pump will be a big white union nut threaded onto the wet end of the motor. You will probably need a good size pair of pipe grips to loosen the union nut, but sometimes you can loosen them by hand. When you loosen the union nut enough you should hear the air escaping. Once all the air has escaped out of that union water should leak out and you should be able to start the jets right up without any further problems.

## **\*\*PRIMING YOUR SPA PUMPS IF YOU HAVE AN AIR-LOCK\*\***

There could be a number of things preventing your pump/jets from pumping water, however if this began immediately after draining and refilling, it is not uncommon to have air in the pump preventing water flow. Or if the water level is too low and the filters have sucked air into the spa lines.

#1 (Burping)

Using the control panel:

Turn the spa on and wait for PR (Priming Mode) to appear on the topside display. Press the JETS button to turn on the pump and let it run for 10 seconds. The pump should be running in low speed. Press the JETS buttons again and let the pump run in high speed for 10 seconds. Press the JETS button again to turn off the pump. The pump should be left in the off position for 10 to 15 seconds. Repeat steps 1 through 4 until water is flowing through all the jets and all air is removed from the plumbing.

#2

Frequently the air can be forced from the pump by putting a garden hose down into the filter compartment and forcing water through the plumbing. If this doesn't work, the air will have to be manually bled from the pump.

#3

Remove front panel of spa (usually phillips head screwdriver is needed) Look for tiny bleed screws on the end of the pump (see image below). Open (loosen) these bleed screws to allow air to escape. Always do this with the power off and be ready to close them quickly when water begins spray out with the air. If you don't have any bleed screws (or if this procedure doesn't correct the problem), Locate the large union nut connecting spa plumbing to motor. Loosen nut on pump by hand or using a large set of channel lock pipe grips. Once water starts leaking out all air has been released, you can now re-tighten the union nut. After bleeding, try turning the power on again and see if the jets work. You may have to bleed the lines several times before the jets are fully functional, but you should see an improvement each time. As long as you get the majority of air out of the lines and the jets start flowing again, the remainder of the air will work its way out.

