



2002
MODEL YEAR
OWNER'S MANUAL

June 02

RECORD OF OWNERSHIP

NAME _____

ADDRESS _____

CITY _____ *STATE* ____ *ZIP* _____

DATE PURCHASED _____

MODEL _____ *SERIAL #* _____

DEALER NAME _____

PHONE # _____

SERVICE TECH REP _____

NOTES: _____

MANUFACTURED BY:



MASTER SPAS®
MasterSpaParts.com

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INTRODUCTION

It's time to relax! You now have your very own portable spa by Master Spas, Inc. By fully understanding the operation of each of the features of your new Down East Spa you will be assured of many years of hassle-free, hot water therapy and fun.

Your safety is of paramount importance to the Master Spa family. We urge you to read and become thoroughly familiar with all safety aspects addressed in this manual.

Through reading and totally understanding the important information in your owner's manual you will realize that you now own A SPA FOR ALL SEASONS!

IMPORTANT SAFETY INSTRUCTIONS

When installing and using this electrical equipment, basic safety precautions should be followed including:

READ AND FOLLOW ALL INSTRUCTIONS

1. **WARNING.** To reduce the risk of injury, do not permit children to use this product unless they are closely supervised at all times.
2. **DANGER – RISK OF CHILD DROWNING.** Extreme caution must be exercised to prevent unauthorized access by children. To avoid accidents, insure that children cannot use a spa or hot tub unless they are closely supervised at all times.
3. A pressure wire connector is provided on the surface of the control box inside the spa to permit connection of a minimum No. 8 AWG solid copper bonding wire between this point and any metal equipment, metal enclosures of electrical equipment, metal water pipe or conduit within 5 feet (1.5M) of the unit.
4. **DANGER – RISK OF ELECTRIC SHOCK.** Install spa at least five (5) feet (1.5M) from all metal surfaces. A spa may be installed within five (5) feet (1.5M) of metal surfaces if, in accordance with the National Electrical Code, each metal surface is permanently connected by a No. 6 AWG (8.4mm) solid copper conductor attached to the wire connector on the terminal box. A grounding plug is provided for this purpose.
5. **DANGER – RISK OF INJURY.** The suction fittings in this spa are sized to match the specific water flow created by the pump(s). Should the need arise to replace the suction fitting or the pump(s) be sure that the flow rates are compatible.

* Never operate the spa if the suction fittings are broken or missing. Never replace a suction fitting with one rated less than the flow rate marked on the original suction fitting.

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6. **DANGER** – To reduce the risk of injury to persons, do not remove suction grate. Suction through drains and skimmers are powerful when the jets in the spa are in use. Damaged covers can be hazardous to small children and adults with long hair. Should any part of the body be drawn into these fitting, turn off the spa immediately. As a precaution, long hair should not be allowed to float in the spa.
 7. Install spa so that water can be easily drained out of compartment containing electrical components so as not to damage equipment. Also, when installing spa, allow enough room to access for servicing. If adequate room is not provided for access and servicing, additional cost may be incurred by the spa owner.
 8. **WARNING – TO REDUCE THE RISK OF INJURY:**
 - a. Always enter and exit a spa slowly.
 - b. Do not use the spa alone.
 - c. Before entering the spa, always measure the water temperature with an accurate thermometer. Tolerance of water temperature regulating devices can vary as much as plus/minus 5° F (3° C).
 - d. Persons suffering from obesity or with a medical history of heart disease, diabetes, high or low blood pressure or circulatory system problems should consult with their physician before using the spa.
 - e. Since excessive water temperature has a high potential for causing fetal damage during early months of pregnancy, pregnant or possible pregnant women should limit spa water temperatures to 100° F (38° C).
 - f. Excessive water temperature can be dangerous. The water in the spa should never exceed 104° F (40° C). Water temperatures between 100° and 104° F are considered safe for a healthy adult. Lower water temperatures are recommended for extended use (exceeding 10 minutes) and for young children. Long exposures at higher temperatures can result in hyperthermia.

HYPER THERMIA

Hyperthermia occurs when the internal temperature of the body reaches a level several degrees above the normal body temperature of 98.6° F.

THE SYMPTOMS OF HYPERTHERMIA INCLUDE:

- Dizziness
- Fainting
- Drowsiness
- Lethargy
- Increase in Internal Body Temperature

THE EFFECTS OF HYPERTHERMIA INCLUDE:

- Unawareness of Impending Hazard
- Failure to Perceive Heat
- Failure to Recognize the Need to Exit Spa
- Physical Inability to Exit Spa
- Fetal Damage in Pregnant Women

-
- Unconsciousness Resulting in a Danger of Drowning
- g. Children's body temperature can increase more rapidly than adults in the same water with elevated temperatures (above 99° F). Children should spend less time in water above body temperature than adults.
 - h. The use of a spa while under the influence of alcohol, drugs and/or medication may lead to unconsciousness with the possibility of drowning.
 - * Persons on medication should consult with their physician before entering the spa since some medication may induce drowsiness while other medication may affect heart rate, blood pressure and circulation.
10. People with infections, sores or the like should not use the spa. Warm and hot water temperatures may allow the growth of infectious bacteria if not properly disinfected.
 11. **DANGER – RISK OF ELECTRIC SHOCK.** Do not permit any electric appliance, such as a light, telephone, radio or television, within five (5) feet of the spa. Never operate any electrical appliances from inside the spa or while wet.
 12. **WARNING – RISK OF SUFFOCATION.** If this spa is equipped with a gas heater, it is intended for outdoor use only, unless proper ventilation can be provided for an indoor installation.

SAVE THESE INSTRUCTIONS

SAFETY SIGN

Included with your new spa is a safety sign. The sign is for you and your guest's protection and is suitable for outdoor use in wet locations. The sign should be placed in a location visible to all users of the spa.

Please take time to point out the physical location of the safety sign and the importance of the safety precautions displayed on the safety sign to all of your guests. Remember, your safety and the safety of anyone who enjoys the use of your spa is our utmost concern.

The sign should be mounted with screws or another type of permanent fastener. Additional or replacement signs can be obtained from your dealer or direct from the factory.

ELECTRICAL INSTALLATION REQUIREMENTS

HAVE YOUR ELECTRICIAN READ THE FOLLOWING INFORMATION BEFORE INSTALLATION BEGINS

Electrical connections made improperly, or the use of wire gauge sizes for incurring power which are too small, may continually blow fuses in the electrical equipment box, may damage the internal electrical controls and components, may be unsafe and in any case will void your warranty.

It is the responsibility of the spa owner to ensure that electrical connections are made by a qualified electrician in accordance to the National Electric Code and any local and state electrical codes in force at the time of installation. These connections must be made in accordance with the wiring diagrams found inside the control box. This equipment has been designed to operate on 60 HZ alternating current only, 240 volts as required. Make sure that power is not applied while performing any electrical installation. A copper bonding lug has been provided on the electrical equipment pack to allow connection to local ground points. The ground wire must be at least 6 AWG copper wire and must be connected securely to a grounded metal structure such as a cold water pipe.

All Down East Spa equipment packs are wired for 240 VAC only.

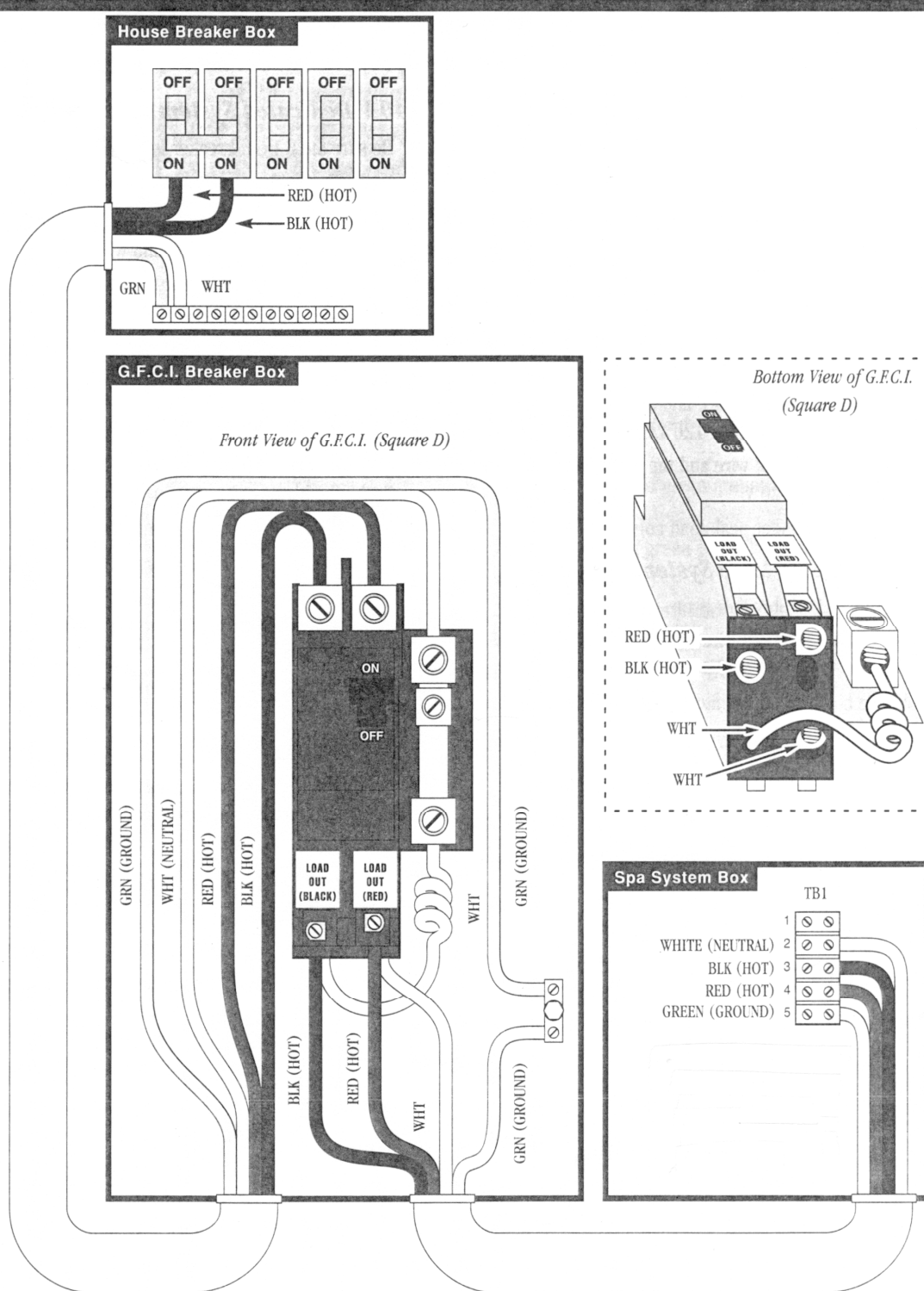
The only electrical supply for your spa must include a 50 AMP switch or circuit breaker to open all non-grounded supply conductors to comply with section 422-20 of the National Electrical Code. The disconnect must be readily accessible to the spa occupants, but installed at least five feet from the spa.

A Ground-Fault Circuit Interrupter (GFCI) must be used to comply with section 680-42 of the National Electrical Code. A ground fault is a current leak from any one of the supply conductors to ground. A GFCI is designed to automatically shut off power to a piece of equipment when a fault current is detected.

Power hook-up to the spa must be 240 volt stranded copper #6 AWG-3. Route the cable into the equipment for final hook-up to terminals inside the control panel.

Master Spas, or its authorized service centers will not be held responsible for any damage to the spa caused by improperly wired spas. Replacement costs shall be the responsibility of the customer.

Wiring Schematic



SITE PREPARATION/GENERAL GUIDELINES

Portable spa installation is simple when properly planned. To that end it is important that you read the following information carefully and consult with your Down East Spa dealer.

- 1) Access - The actual dimensions of your new spa will determine the amount of space that is needed in moving the spa from curbside to its final installation area. Be sure to measure side yard dimensions, gates or doors and vertical obstructions such as roof overhangs and overhead cables. Any other space limiting obstacles such as trees or shrubs must be evaluated.

If the spa is being installed indoors, dimension limitations such as stairs, ceilings and walls must be taken into consideration. Please have your Down East Spa dealer or delivery service review site or installation plans prior to delivery.

- 2) Surface/Pad Requirements - When your new spa is filled with water and bathers, it may weigh as much as several tons. It is imperative that the base beneath the spa can support the actual weight. The spa must be on a uniformly firm and continuous surface. The recommended foundation is a concrete pad with a minimum thickness of four (4) inches with steel reinforcement bars crossed throughout the pad.

IMPORTANT

When installing your spa indoors or on a wood deck or balcony, the same load requirements must be met. Total load may be as much as 75 pounds per square foot. Your Down East Spa dealer should be consulted or you should speak with a qualified contractor or your local building department. Be sure to locate your spa so that equipment remains above grade and not subject to flooding.

The equipment side of the spa must be accessible in the event that future service is needed. Periodical maintenance checks require entry into the equipment bay. When possible, it is wise planning for the future to leave access to all sides of the spa in the event your spas plumbing requires maintenance. Your spa warranty does not cover the cost of providing access for service.

GENERAL CONSIDERATIONS FOR OUTDOOR INSTALLATION

Again, proper planning will increase your total enjoyment factor with your new spa. Listed below are some additional items to consider when planning your installation.

- How spa will complement landscaping and vice versa
- View from inside spa and view of spa from inside of home

-
- Exposure to sunlight and shading from trees
 - Privacy
 - Getting to spa from house and return
 - Proximity to dressing rooms and bathrooms
 - Storage for spa chemicals
 - Local building codes (if applicable)
 - Power cable (see electrical requirements)

GENERAL CONSIDERATIONS FOR INDOOR INSTALLATION

Installing your spa indoors creates an entirely different set of considerations. Here again, with proper planning, no matter what room you spa goes in, it will be your favorite room.

- Work with your Down East Spa dealer and contractor to insure all local building, electrical and plumbing codes are met
- Plan for a floor drain to drain off excess water or for draining and cleaning your spa
- A ventilation fan may be necessary due to high humidity created by your spa
- Finished material in your spa room should also be capable of withstanding increased humidity

INITIAL START-UP PROCEDURE

Now that all electrical connections to your new Down East Spa are complete, start-up procedures may begin. This is the fun part!

CAUTION - DO NOT APPLY POWER TO OR OPERATE THE SPA WHEN THE SPA IS PARTIALLY FILLED OR THERE IS NO WATER IN THE SPA!

- 1) Be sure that the circuit breaker in your breaker panel is off.
- 2) Be sure all jets in the spa are fully open by turning the jet face clockwise.
- 3) **LOCATE AND OPEN ALL VALVES.** *NOTE: There are two valves per pump.* Pump locations vary depending on model of spa.
- 4) Be sure drain fitting is fully closed.
- 5) Fill your new Down East Spa with water. We recommend using the ECO PUR Charcoal Pre-Filter which gives you much cleaner water to start your spa. Fill to waterline, which is approximately three inches above bottom of filter/skimmer opening.
- 6) Bleed air from system by briefly opening the external drain fitting then close. Turn breaker switches on. You may then press any of the spa function switches. After power has been applied your spa will automatically move into its pre-set filter cycle. (See operation section for further information.)

GLOSSARY OF SPA TERMS

CIRCULATION PUMP (CIRC PUMP) – This produces water flow through the heater in the spa and provides the water flow necessary to activate the ozone generator. This fractional HP pump runs silently for 24 hours of efficient filtration and heating. This is an optional feature on Portsmouth, Exeter, and Cape Cod models.

PUMP - The water pump(s) in your system produce flow through your hydro-therapy jets, heater and filtration system. In most systems pumps will consist of two speeds - high or low. Generally, low speed is used for maintaining a constant temperature or for filtering the water, while high speed operates your hydro-therapy jet functions.

HEATER – Down East Spas are equipped with a 5.5 KW 220 volt electric heater, thermostatically controlled and equipped with a high limit temperature safety shut-off switch. Should your spa water temperature exceed 112° F, the high limit switch will trip and will need to be re-set. Should your high limit switch repeatedly trip, please contact your authorized service center.

CONTROL PANEL/REMOTE - Your new Down East Spa is equipped with a solid-state spa-side control system. You control all functions from safely inside the spa. The digital display will give you a constant temperature read-out and will notify you in case of certain malfunctions. Several user programmable functions are also available.

JETS - Your new Down East Spa features a variety of jet styles. All jets, regardless of style, return the water to the spa. Air is mixed with the water creating a gentle to vigorous massage, adjusted by simply turning the outer face of the jet. Your Down East Spa will have a combination of rotating and directionally adjustable jets.

AIR CONTROL DIALS - You can decrease or increase the velocity of your jets by opening or closing the air control valves. Typically, one dial controls the air to water ratio and mix to a group of jets. When not in use the air controls should be kept in the closed position, as air bubbles tend to cool the water.

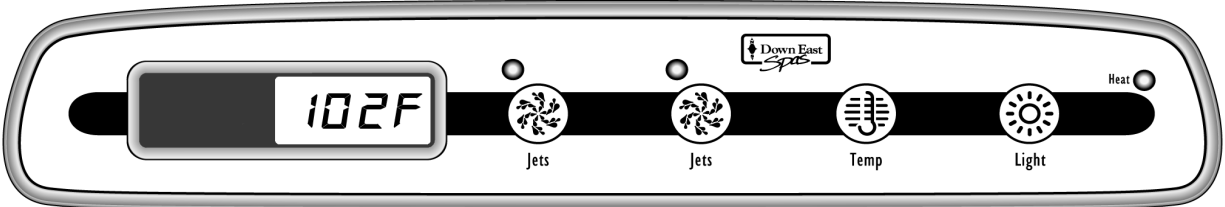
FILTRATION - Your cartridge filter elements are located under the floating weir and are designed to remove any debris and oils from your spa water.

SPA LIGHT - Your spa light is designed for safety and is located in the footwell of your spa. The on/off switch is located on the topside of the control panel.

EQUIPMENT COMPARTMENT - Located behind the door below the spa-side control panel. This area houses the major components responsible for spa operation. Those components include the pumps, heater, control panel box and ozonator (if applicable). Before operating spa, all valves should be fully open and hose bib should be closed.

PORTSMOUTH/EXETER/CAPE COD (2 PUMP SYSTEMS)

Your spa side control panel consists of two main parts. The control pads operate individual functions and allow for several programming modes. The LCD Display shows constant water temperature and will monitor various functions. When your spa is first activated, it will go into priming mode indicated by “Pr” on the display lasting 6 minutes.



Your spa will maintain the water temperature at the programmed setting. It has been factory set at 100° F. Temperature adjustment is controlled by pushing the “Temp” button. The display shows the actual water temperature unless the pad is pressed. When the pad is pressed, the display will show the set temperature. Pressing the pad a second time will cause the set temperature to increase or decrease depending on what direction was last chosen. Each successive press will change the set temperature in the same direction. Set temp display will flash while you are setting temp. Display will show constant when set temp is accepted.

If the opposite direction is desired, release the pad and let the display revert to the actual water temperature again. Press the pad to display the set temperature, and again to make the temperature change in the desired direction. After three seconds, the LCD will automatically display the current spa temperature.



Jets

JET / PUMP OPERATION

The Portsmouth, Exeter, and Cape Cod models are equipped with a dual pump system, one pump operates on either high or low speed. Pressing the first “Jets” button to the right of the display once will turn the pump on low speed. Press again for high speed and once more for off. Pressing the second “Jets” button will turn pump two on high speed, press button again and pump turns off. Pump two is activated only in high speed.

The low speed of the pump may activate for at least 2 minutes every 30 minutes to detect the spa temperature and then to heat to the set temperature if needed, depending upon mode. When the low speed turns on automatically, it cannot be deactivated from the panel; however, the high speed may be started. If your spa is equipped with an optional circ pump, the circ pump will monitor temperature and filter 24 hours a day.

Also, as a safety feature your spa is equipped with "Freeze protection." Should the temperature sensors detect a drop below 40° F within the heater, then the pump (as well as the heater, if necessary) will automatically activate to provide freeze protection. The equipment stays on until the sensors detect that the spa temperature has risen to within 15° F of the set temperature. It is recommended that if you are going to be away from your spa for a long period of time during usually cold weather that you contact your Down East Spas dealer for proper winterizing details or see the section "Winterizing Your Spa."

FILTRATION

Your Down East Spa is designed to automatically filter twice each day on low speed through the pump. The first cycle will begin six minutes after the spa is energized. The second daily cycle will begin twelve (12) hours later. Each filter cycle is preset at two (2) hours. After the start of every cycle, pump 2 (plus pump 1 if equipped with a circ pump) purges for 5 minutes. It may be reset for two, four, six, or eight hour increments via the top panel control.

Note: Spas equipped w/circ pump will only purge for 5 minutes 2X/day as circ pump will perform filtration. The filter cycle duration settings will be redundant.

TO PROGRAM FILTER CYCLE:

- Press "Temp"
- Then press the first "Jets" button to the right of display
- Press "Temp" to adjust hours
- Then press the first "Jets" button to the right of the display to exit



Light

SPA LIGHT

The button labeled "Light" controls the spa light. Press the pad once for "on" and again for "off." The light will automatically shut off after FOUR hours. To reactivate, simply press the button again.

OZONE SYSTEM - STANDARD ON CIRC SYSTEM (OPTIONAL ON NON CIRC SYSTEM)

Your ozone system will operate whenever the spa is in its normal filtration cycle. On non circ models, Ozone will not operate when a pump button is manually pressed.

STEREO MODELS AVAILABLE ON THE PORTSMOUTH/EXETER/CAPE COD (2 PUMP SYSTEMS)

Refer to the Sony's Stereo Operations Manual enclosed in your Owner's Manual Packet.

MODE

Mode is changed by pressing the “Temp” button, then pressing the “Light “button.

Standards Mode is programmed to maintain the desired temperature. Note that the last measured spa temperature displayed is current only when the pump has been running for at least 2 minutes. “St” will be displayed momentarily when you switch into Standard Mode.

Economy Mode heats the spa to the set temperature only during filter cycles. “Ec” will display solid when temperature is not current, and will alternate with temperature when temperature is current.

Sleep Mode heats the spa to within 20° F of the set temperature only during filter cycles. “SL” will display solid when temperature is not current, and will alternate with temperature when temperature is current.

LCD ERROR INDICATOR

Your LCD will readout the following if any problems are detected:

MESSAGE	MEANING	ACTION REQUIRED
	No message on display. Power has been cut off to the spa	The control panel will be disabled until power returns. Spa settings will be preserved for 30 days with a battery back-up.
--	Temperature unknown.	After the pump has been running for 2 minutes, the temperature will be displayed.
HH	“Overheat” – The Spa has shut down. One of the sensors has detected 118°F at the heater.	DO NOT ENTER THE WATER. Remove the spa cover and allow water to cool. Once the heater has cooled, reset by Pushing any button. If spa does not reset, shut off the power to the spa and call your dealer or service organization.
OH	“Overheat” – The Spa has shut down. One of the sensors has detected 110°F.	DO NOT ENTER THE WATER. Remove the spa cover and allow water to cool. At 107°F, the spa should automatically reset. If spa does not reset, shut off the power to the spa and call your dealer or service organization.

IC	“Ice” – Auxiliary Freeze Sensor detects potential Freeze condition.	No action required. The pump(s) will automatically activate regardless of spa status.
Cd	“Cold Water” Temperature sensors detect a potential freeze condition.	No action required. Freeze protection has initiated as described above. (If pump 1 was turned on due to this reason alone, this message will appear for up to two minutes right after very cold water is sensed.)
SA	Spa is shut down. The sensor that is plugged into the Sensor “A” jack is not working.	If the problem persists, contact your dealer or service organization. (May appear temporarily in an overheat situation and disappear when the heater cools.)
Sb	Spa is shut down. The sensor that is plugged into the Sensor “B” jack is not working.	If the problem persists, contact your dealer or service organization. (May appear temporarily in an overheat situation and disappear when the heater cools.)
Sn	Sensors are out of balance. If alternating with spa temperature, it may just be a temporary condition. If flashing by itself, spa is shut down.	If the problem persists, contact your dealer or service organization.
HL	A significant difference between temperature sensors has been detected. This could indicate a flow problem.	Check water level in spa. Refill if necessary, if the water level is okay, make sure the pumps have been primed. If problem persists, contact your dealer or service organization
LF	Persistent low flow problems. (Display on the fifth occurrence of “HL” message.) Heater is shut down, but other spa functions continue to run normally.	Follow action required for “HL” message. Turn spa off, then back to restore heating capability.
dr	Possible inadequate water, poor flow, or air bubbles in the heater. Spa is shut down for 15 minutes.	Check water level in spa. Refill if necessary. if water level is okay, make sure the pumps have been primed. Press any button to reset, or this message will automatically reset within 15 minutes. If problem persists, contact your dealer or service organization.

dy Inadequate water detected Follow action required for “dr” message.
in heater. (Displays on third Spa will not automatically reset. Press any
occurrence or “dr” message) button to reset.
Spa is shut down.

WARNING - THERE IS A SHOCK HAZARD AND THERE ARE NO USER SERVICEABLE PARTS.

Do not attempt service of this control. Contact your dealer or service organization for assistance. Follow all owner’s manual power connection instructions. A licensed electrician must perform installation, and all grounding connections must be properly installed.

FIBER OPTIC LIGHT OPTION

The Fiber Optic light option is only available on the Portsmouth, Exeter, Cape Cod, Newport, and Providence. To operate press the light button once the fiber optics will come on and scroll through the four colors. Press the light button once more and the fiber optics will turn off. Stopping the color wheel on one color is not optional on this series.

**INSTRUCTIONS PERTAINING TO A RISK OF FIRE, ELECTRIC SHOCK,
EXPOSURE TO EXCESSIVE UV RADIATION, OR INJURY TO PERSONS.**

IMPORTANT SAFETY INSTRUCTION SAVE THESE INSTRUCTIONS

LIGHTED LAMP IS HOT!

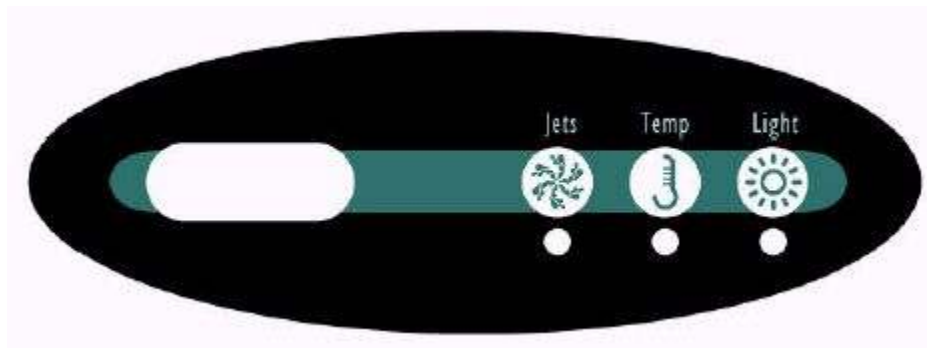
**WARNING – TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK,
EXPOSURE TO EXCESSIVE UV RADIATION, OR INJURY TO PERSONS.**

- 1) Turn off /unplug and allow to cool before replacing bulb.
- 2) Bulb gets hot quickly.
- 3) Do not look directly at lighted bulb.
- 4) Use only with a 75 W or smaller bulb. (see your Dealer for replacement)
- 5) Handle lamp by reflector only. Do not touch bulb at any time. Use a soft cloth.
- 6) Do not operate the unit with missing or damaged guard, lamp containment barrier or UV filter.

NEWPORT BAR HARBOR/MYSTIC (1 PUMP SYSTEMS)

INITIAL START-UP

When your spa is first energized, it will go into Priming mode. Indicated by Pr. **Please see the M-7 Installation Instruction Manual for complete instruction on Power-up and Pump Priming.** The Priming mode will last for less than 5 minutes **and** then the spa will begin to heat the spa and maintain the water temperature in the Standard mode.



PORTSMOUTH, PROVIDENCE, EXETER, CAPE COD (1 PUMP SYSTEMS)



Temp Set (80°F - 104°F / 26°C - 40°C)

The start-up temperature is set at 100°F/37.5°C. The last measured temperature is constantly displayed on the LCD.

Note that the last measured spa temperature displayed is current only when the circ pump has been running for at least 2 minutes.

Press the “Temp” button to display the temperature previously set. This set temperature is flashed on the display. Pressing the “Temp” button a second time, while it is still flashing, will cause the set temperature to increase or decrease depending on which direction was last chosen. Each press to follow will change the set temperature in the same direction. If the opposite direction is desired, release the pad and let the display revert to the actual water temperature. Press the button to display the set temperature and again to make the temperature change in the desired direction.

Jets

Touch the “Jets” button once to activate the low speed of the pump and again for the high speed. Press the “Jets” button again to turn off the pump. If left running, the pump’s low speed will automatically turn off after 4 hours, and the pump’s high speed will automatically turn off after 15 minutes. The low speed pump may also activate for at least 2 minutes every 30 minutes to detect the spa temperature and then to heat, to the set temperature if needed, depending upon mode. When the low speed turns on automatically, it cannot be deactivated from the panel; however the high speed may be started.

Light

Press the “Light” button to turn the light on and off. If left on, the light automatically turns off after 4 hours.

Mode

Mode is changed by pressing the “Temp” button, then pressing the “Light” button.

Standard Mode is programmed to maintain the desired

temperature. Note that the last measured spa temperature displayed is current only when the pump has been running for at least 2 minutes. “St” will be display momentarily when you switch into Standard Mode.

Economy Mode heats the spa to set temperature only during filter cycles. “Ec” will display solid when temperature is not current, and will alternate with temperature when temperature is current.

Sleep Mode heats the spa to within 20°F of the set temperature only during filter cycles. The “SL” will display solid when temperature is not current and will alternate with temperature when temperature is current.

Preset Filter Cycles

The first filter cycle begins 6 minutes after the spa is energized. The second filter cycle begins 12 hours later.

Filter duration is programmable at the Master Control Pad for 2, 4, 6, 8 hours or for continuous filtration. (Indicated by “FC”). The default filter time is 2 hours. To program, press “Temp”, then “Jets”. Press “Temp” to adjust. Press “Jets” to exit programming.

The low speed of the pump runs during filtration and the ozone generator (if installed) will be enabled.

Freeze Protection

If the temperature sensors detect a drop below 40° F within the heater, then the pump (as well as the heater, if necessary) will automatically activate to provide freeze protection. The equipment stays on until the sensors detect that the spa temperature has risen to within 15° F of the set temperature. The blower will purge for 30 seconds at the end of the freeze condition.

LCD ERROR INDICATOR

Your LCD will readout the following if any problems are detected:

MESSAGE	MEANING	ACTION REQUIRED
	No message on display. Power has been cut off to the spa	The control panel will be disabled until power returns. Spa settings will be preserved until next power up.
--	Temperature unknown.	After the pump has been running for 2 minutes, the temperature will be displayed.
HH	“Overheat” – The Spa has shut down. One of the sensors has detected 118°F at the heater.	DO NOT ENTER THE WATER. Remove the spa cover and allow water to cool. Once the heater has cooled, reset by Pushing any button. If spa does not reset, shut off the power to the spa and call your dealer or service organization.
OH	“Overheat” – The Spa has shut down. One of the sensors has detected 110°F.	DO NOT ENTER THE WATER. Remove the spa cover and allow water to cool. At 107°F, the spa should automatically reset. If spa does not reset, shut off the power to the spa and call your dealer or service organization.
IC	“Ice” – Auxiliary Freeze Potential freeze condition detected.	No action required. The pump will automatically activate regardless of spa status.
SA	Spa is shut down. The sensor that is plugged into the Sensor “A” jack is not working.	If the problem persists, contact your dealer or service organization. (May appear temporarily in an overheat situation and disappear when the heater cools.)
Sb	Spa is shut down. The sensor that is plugged into the Sensor “B” jack is not working.	If the problem persists, contact your dealer or service organization. (May appear temporarily in an overheat situation and disappear when the heater cools.)
Sn	Sensors are out of balance. If alternating with spa temperature, it may just be a temporary condition. If flashing by itself, spa is shut down.	If the problem persists, contact your dealer or service organization.

HL	A significant difference between temperature sensors has been detected. This could indicate a flow problem.	Check water level in spa. Refill if necessary if the water level is okay, make sure the pumps have been primed. If problem persists, contact your dealer or service organization.
LF	Persistent low flow problems. (Display on the fifth occurrence of “HL” message.) Heater is shut down, but other spa functions continue to run normally.	Follow action required for “HL” message. Turn spa off, then back to restore heating capability.
dr	Possible inadequate water, poor flow, or air bubbles in the heater. Spa is shut down for 15 minutes.	Check water level in spa. Refill if necessary, if water level is okay, make sure the pumps have been primed. Press any button to reset, or this message will automatically reset within 15 minutes. If problem persists, contact your dealer or service organization.
dy	Inadequate water detected in heater. (Displays on third occurrence or “dr” message) Spa is shut down.	Follow action required for “dr” message. Spa will not automatically reset. Press any button to reset.

Warning! Shock Hazard! No User Serviceable Parts.
 Do not attempt service of this control system. Contact your dealer or service organization for assistance. Follow all owner’s manual power connection instructions. Installation must be performed by a licensed electrician and all grounding connections must be properly installed.

MAINTENANCE RECOMMENDATIONS

Your spa requires periodic draining and cleaning to ensure a safe, healthy environment. It is recommended that you clean your spa every 60-90 days. Heavy bather load will require cleaning it more often.

TO DRAIN YOUR SPA

- Turn off power at breaker box.
- Pull out the drain valve located on the exterior wall of the cabinet.
- Turn the black knob counter-clockwise.
- Attach a garden hose and turn the valve counter-clockwise to open and drain.

TO CLEAN YOUR SPA SURFACE

- With a soft cloth, wipe down the spa surface with a non-abrasive cleaner such as “409,” “Fantastik” or equivalent. Do not use paper towels.
- If your spa has developed an oily or chalky residue at the waterline it may require special treatment. Consult your dealer.

TO REFILL YOUR SPA

- Be sure to close the drain valve located on the exterior cabinet wall.
- Be sure all valves are fully opened located next to the pump(s).
- Fill the spa with water. Be sure water level is above skimmer opening.
- Refer to “*Initial Start-Up Procedure*” section with any questions.

TO CLEAN YOUR FILTER ELEMENTS

The filter in your spa is one of the most important components of your spa. It not only is essential for clean water, but also for extending the life of the spa equipment. Your filter elements must be cleaned regularly (twice a month on average) with normal spa use. With heavy use, they will need to be cleaned more often.

- Turn spa off.
- Remove filter element(s).
- With a garden hose, spray each element under pressure. Periodically, the elements need to be soaked in a filter cleaner compound. Check with your Down East Spa dealer for details on cleaning and/or filter replacement recommendations on the Portsmouth, Exeter, Cape Cod, and Providence models; the filtration consists of a dual element **the interior mineral element should never be cleaned in a filter cleaner, but only rinsed periodically using water and replaced every 180 days.**

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- Be sure to remove any debris from between filter pleats.
 - Replace filter elements.
 - Be sure water level is adequate.
 - Turn spa on and refer to “*Initial Start-Up Procedure*” with any questions.

LIGHT BULB REPLACEMENT

Replacing a light bulb in your spa is not difficult. Access to the light fixture is through your equipment door and behind the electrical panel box. Simply twist (turn counter clockwise) the holding fixture and remove. The bulb will then pull loose. Replace with new 12 volt bulb (available through your dealer). Reverse process for fixture replacement.

CARE OF YOUR SPA PILLOWS

- Your spa pillows need to be rinsed periodically to remove any chemical residue. This should help to eliminate pillows becoming stiff and discolored.
- If spa is not to be used for a period of time pillows should be removed. Pillow life will be extended.

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. Reduction of water loss and chemical usage will also be accomplished.

- Do not allow spa to sit uncovered in direct sunlight. This may cause damage to exposed surfaces of spa. Exposure may void your warranty.
- Periodically hose off both sides of spa cover for maximum life of cover.

NOTE: IF YOUR SPA IS GOING TO BE LEFT EMPTY FOR PROLONGED PERIODS, DO NOT PLACE COVER DIRECTLY ON SURFACE OF SPA. PLACE 2”-3” BLOCKS BETWEEN COVER AND SPA. THIS ALLOWS FOR ADEQUATE VENTILATION OF COVER AND SPA.

CARE OF YOUR SPA CABINET (WOOD ONLY)

Your quality spa cabinet is produced from hand-crafted cedar. It has been factory treated with a stain/sealer to maintain its appearance and to preserve its life. Several times a year (especially if located outdoors) it is recommended that your cabinet be re-treated. Your local dealer or service center can recommend the appropriate product based on your cabinet finish. Periodically, remove dust, dirt and grime with clean water.

On spas with polymer cabinets, spray down with a garden hose or use a wet rag to clean.

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:

NOTE: FAILURE TO WINTERIZE YOUR SPA COULD CAUSE FREEZE DAMAGE TO YOUR PLUMBING WHICH WILL VOID YOUR WARRANTY. FOLLOW THESE STEPS CAREFULLY.

- 1) Drain your spa completely using the drain valve (see "*To Drain Your Spa*") or use an inexpensive 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 from equipment area.
- 4) Loosen all pump unions
- 5) Remove square winterizing plug from the face of the pump.
- 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.
- 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 cleaner (409, Fantastik, Glass Plus, etc.).
- 9) Replace access panels.
- 10) Cover spa to prevent water from entering the spa.

GENERAL CHEMICAL MAINTENANCE

GUIDELINES

There are certain variables to proper chemical application in spas. This information, as it states, is to be used as a general guideline. Your spa dealer or service center will assist you with properly detailed recommendations and instructions.

NOTE: IT IS IMPERATIVE THAT pH, TOTAL ALKALINITY AND CALCIUM HARDNESS LEVELS BE PROPERLY MAINTAINED. FAILURE TO MAINTAIN PROPER LEVELS WILL DAMAGE YOUR SPAS EQUIPMENT AND MAY VOID YOUR WARRANTY.

SAFETY CONSIDERATIONS

- ⇒ Always follow the manufacturer's instructions with any chemical application.
- ⇒ If you are to dilute a chemical, always add the chemical to the water, never the water to the chemical.
- ⇒ **DO NOT EVER MIX TWO CHEMICALS TOGETHER.**
- ⇒ Avoid contact with skin.
- ⇒ Always add chemicals with pump in operation. Leave pump running for 30 minutes.

NOTE: USING A GOOD CHEMICAL TEST KIT RECOMMENDED BY YOUR DEALER IS ESSENTIAL FOR PROPER WATER CARE. ALSO, CHANGING YOUR WATER ON A REGULAR BASIS IS A VERY INEXPENSIVE CHEMICAL TREATMENT.

ADDITIONAL INFORMATION / RECOMMENDATIONS

CHEMICAL ADDITIVE BENCHMARKS

♦ Sanitizer	2.0 - 3.0 PPM free available Chlorine
or	4.0 - 6.0 PPM Bromine
♦ pH	7.4 - 7.6
♦ Shock Treatment	Weekly/consult your dealer
♦ Total Alkalinity	120 - 150 PPM
♦ Calcium Hardness	180 - 250 PPM

SANITATION

Sanitation is the process of killing bacteria, algae and other organisms that will multiply in water. Several methods of sanitation are available - Organic Bromine or Chlorine. Consult your dealer. Always be sure to read and understand chemical instructions.

pH CONTROL

- ▶ pH is the measure of the relative acid/base content of the water.
- ▶ If the pH indicator is below 7.4, your water is too acidic and may corrode your spa equipment and/or cause irritation to bathers.
- ▶ If the pH indicator is above 7.6, the water is too basic and may result in cloudiness and a scale formation in the spa. High pH also reduces the effectiveness of chlorine as a sanitizer.
- ▶ Proper pH control is essential.

SHOCK TREATMENT

Consult your dealer.

TOTAL ALKALINITY

“TA” is the amount of carbonate, bicarbonate and hydroxyl ions in the water. Increasing TA increases water pH and acts as a buffer against pH changes. High TA promotes high pH and makes the water resistant to adjustment. Low TA makes the pH unstable and difficult to keep in ideal range. Consult your dealer for methods to measure and control TA.

CALCIUM HARDNESS, STAIN AND SCALE

Calcium hardness can be very important. Water that is too hard (dissolved calcium over 250 PPM) can promote scale formation, making deposits in the spa and reducing your heaters efficiency. Water that is too low in calcium hardness may also be harmful. Soft water (under 180 PPM) will more rapidly dissolve metals, shortening the life of your spas heater or other metal components.

Staining and scaling are common problems. Hot water causes calcium to deposit more rapidly. Some local water conditions may require the use of a stain and scale remover. Please consult your dealer.

NOTE: IF YOU HAVE READ THROUGH YOUR SPA CARE MAINTENANCE SECTION TO THIS POINT, “GO TO THE HEAD OF THE CLASS!” YOU ARE GOING TO ENJOY MANY HAPPY, PROBLEM-FREE YEARS OF ENJOYMENT IN YOUR DOWN EAST SPA.

TROUBLE SHOOTING / PROBLEM SOLVING

<u>SYMPTOM</u>	<u>SOLUTION</u>
SYSTEM NOT OPERATING-	<ul style="list-style-type: none">a) Check circuit breaker in panel box.b) Check GFCI. If GFCI has been tripped, reset. If it trips repeatedly, locate cause of problem or consult your dealer.c) Check for correct wiring.
HEATER NOT WORKING-	<ul style="list-style-type: none">a) Be sure temperature is set to the desired temperature.b) Be sure adequate time has been allowed for heating.c) Refer to heater control instructions.
“OVERHEAT” IS DISPLAYED ON READOUT SUBSEQUENTLY TRIPPING HIGH LIMIT-	<ul style="list-style-type: none">a) Be sure filter is clean.b) Be sure water level is adequate.c) Be sure shut off valves are fully open.d) Contact dealer or service center.
PUMP SURGES OR NO WATER IS COMING FROM JETS-	<ul style="list-style-type: none">a) Water level may be low or possible air lock in plumbing. If so, loosen the union on suction side of pump and allow air to bleed out of the pipe while pump is running. When water flows—tighten union.
LOW FLOW RATE FROM JETS OR “FLOW SENSOR”-	<ul style="list-style-type: none">a) Be sure pump(s) are on high speed.b) Be sure valves in equipment compartment are fully open.c) Remove filter cartridge. If flow then improves, clean or replace cartridge(s).d) Be sure jets are open.e) Check suction for any blockage.

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SPECIAL NOTE

ECO PUR™ water purification system is designed to reduce the use of conventional sanitizers. You may still be required, periodically, based on usage to add a small amount of chlorine to oxidize organic compounds. ECO PUR™ will not eliminate the need to maintain proper water chemistry but can make the maintenance a more natural experience.

Master Spa Products are not designed to be used with Biquanides. These chemicals are found in SoftSwim® and Baqua Spa. Due to adverse effects from these types of products, the warranty of the spa may be void.

WATER QUALITY MAINTENANCE START-UP FOR ECO PUR® WATER PURIFICATION SYSTEM

- Step 1: Fill spa using ECO PUR® Charcoal Pre-filter.
- Step 2: During initial filling of the spa with fresh water, add a sequestering agent such as Mineral Clear or Stain and Scale, etc. depending on the brand name. Allow to circulate and filter for 24 hours , if practical.
- Step 3: Test water for pH, total Alkalinity, and Calcium hardness. The pH should be 7.2 – 7.8 and the total Alkalinity 80-150 PPM. Calcium hardness levels should be maintained between 150 and 250 PPM (part per million).
- Step 4: Adjust pH, total Alkalinity and Calcium hardness utilizing the directions on the chemical bottles provided by your dealers start up kit.
- Step 5: It may be necessary to retest and add additional chemicals to get to the proper levels in Step 2.
- Step 6: Add 2 oz. of concentrated chlorinating granules (sodium Dichlor-s-triazinetreone) per 500 gallons on initial start up to begin sanitizing the spa water.

SPECIAL NOTE: If you choose to maintain a chlorine residual, we recommend a level of 0.5 ppm being maintained.

THE ADVANTAGES OF ECO PUR® MINERAL PURIFICATION

- Completely destroys most bacteria, pathogens, algae, and fungi, protecting you from disease.
- Removes heavy metals like lead and mercury from water to reduce the risk of skin absorption.
- Removes calcium carbonate and hydrogen sulphide from spa water to protect heaters and equipment from precipitation.
- Leaves residual mineral sanitation in the spa to protect pipe systems and equipment from bacterial growth.
- Helps stabilize the pH and alkalinity of the spa water.
- Reduces 95% of chemical usage and still provides safe odor-free water.
- Depletes excess chlorine after chemical shock to prevent damage to skin, hair, and swimwear.
- All-natural, environmentally safe sanitizing system that does not require chemical registration with the EPA.
- Produces ultra-pure water.
- Requires maintenance only after usage.

SPECIAL NOTES

The ECO PUR® water purification system contains specific minerals found in nature that when combined create an effective bactericide and algicide that will protect your spa water. Mineral purification will not oxidize organic compounds and will require periodic doses of chlorine to assist in sanitization and oxidation processes required to maintain clear spa water:

- ECO PUR® water purification will not alter the pH of spa water. The mineral combination will actually aid in stabilizing the pH. ECO PUR® does not alter the (TDS) total dissolved solids as it performs sanitization in the filter and does not add anything to the water. The use of sequestrants and stain and scale inhibitors is not required for regular maintenance and should only be used in the start up procedures.
- The main function of the ECO PUR® water purification system is to provide clean and clear spa water. The ECO PUR® system is effective at destroying almost all bacteria and algae that will be found in the spa water, but proper chemical balance and filtration are also key components in maintaining healthy spa water. Always ensure that the pH and TA of the spa water is checked and balanced at all times. To ensure proper filtration, clean the outer filter cartridge with a “filter cleaner” every 30 days and rinse the ECO PUR® cartridge with a hose to remove buildup of contaminants. (Do not soak ECO PUR® mineral cartridge in filter cleaner.) If water appears to be visually cloudy or dull or has an odor, shock water with 2 oz of chlorine to remove excessive contaminants and allow the ECO PUR® to concentrate on removing bacteria.

WATER QUALITY MAINTENANCE SCHEDULE

- ◆ EVERY DAY – filter the spa a minimum of 4-6 hours. If the spa is equipped with 24 hour circulating pump, you will not need to adjust filter time.
- ◆ BEFORE EACH USE – Add 1 tablespoon of non-chlorine shock to spa per 250 gallons.
- ◆ ONCE A WEEK – Add 3 Tablespoons of a non-chlorine shock or 1 teaspoon of Dichlor to spa per 250 gallons.
- ◆ 3 TIMES A WEEK – Test water using chemical test strips. Adjust sanitized, pH and Alkalinity accordingly.
- ◆ ONCE A MONTH – Soak your filter element 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, replace the ECO PUR® element, repeat start up procedure.
- ◆ AS NEEDED – If water looks hazy, shock treat with 1 teaspoon of Dichlor per 250 gallons.

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 (some pool chemicals are not suitable for spa use).