

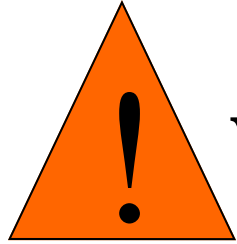
River Series

OWNERS INSTALLATION MANUAL PORTABLE SPA HOT TUBS

REVISED 07/2010



www.pdcspas.com



WARNING!

**REPLACE ALL
SAFETY SUCTION COVERS
EVERY 7 YEARS.**

**REPLACE WITH SIMILAR
VGB APPROVED FITTINGS
AT SAME OR HIGHER
FLOW RATINGS.**

**REPLACEMENT
APPLIES TO
ALL SPA MODELS.**



PDC SPAS OWNER'S MANUAL



SAVE THIS MANUAL FOR EASY FUTURE REFERENCE !

CONGRATULATIONS ON CHOOSING A QUALITY PDC SPA FOR YOUR BACKYARD RELAXATION!

PLEASE READ THE OWNER'S MANUAL COMPLETELY BEFORE INSTALLING AND USING YOUR NEW SPA. THE PURPOSE OF THIS MANUAL IS TO PROVIDE YOU WITH SAFETY, OPERATIONAL AND INSTALLATION INFORMATION WHICH WILL ALLOW YOU THE FULLEST ENJOYMENT OF THIS FINE PRODUCT.

AT THE TIME OF PRINTING, THIS MANUAL WAS DEEMED AS ACCURATE AS POSSIBLE. PDC SPAS RESERVES THE RIGHT TO CHANGE PRODUCT IN AN EFFORT TO ENHANCE AND IMPROVE, WITHOUT PRIOR NOTICE. TO BE AWARE OF ANY OF THESE POSSIBLE CHANGES, LOG ON TO WWW.PDCSPAS.COM, REFERRING TO THE CUSTOMER CARE SECTION, OR CONTACT YOUR RETAILER DIRECTLY.

OWNERSHIP INFORMATION

NAME _____

ADDRESS _____

INSTALLATION DATE ____ / ____ / ____

MODEL NAME _____

SERIAL # _____ (BEHIND CABINET SIDEWALL ON FILTER HOUSING)

RETAILER NAME _____

RETAILER PHONE NUMBER _____

SERVICE TECHNICIAN CONTACT INFO _____

**IMMEDIATELY UPON DELIVERY
REGISTER YOUR HOT TUB
ON THE PDC SPAS WEB SITE
WWW.PDCSPAS.COM**

**THIS INFORMATION IS VERY IMPORTANT
TO ENSURE WARRANTY COVERAGE
AND RECEIVE INFORMATION
FOR POSSIBLE PRODUCT UPDATES.**

YOU NOW OWN A HIGH QUALITY PDC SPA BUILT FOR YEARS OF ENJOYMENT AND RELAXATION. IT IS OF PRIME IMPORTANCE THAT YOU UNDERSTAND THE OPERATION OF YOUR SPA AND ENJOY IT WITH SAFETY IN MIND. YOU SHOULD READ THIS MANUAL THOROUGHLY AND UNDERSTAND ALL OF THE SAFETY PRECAUTIONS. USING YOUR SPA WITHIN THESE GUIDELINES ASSURES YEARS OF FUN AND RELAXATION GAINED FROM ADDING A PDC SPA TO YOUR LIFESTYLE.

WARNING

THIS UNIT IS A PROFESSIONAL-GRADE PRODUCT. A KNOWLEDGE OF CONSTRUCTION TECHNIQUES, PLUMBING AND ELECTRICAL INSTALLATION ACCORDING TO CODES ARE REQUIRED FOR PROPER INSTALLATION AND USER SATISFACTION. IT IS RECOMMENDED THAT A LICENSED CONTRACTOR PERFORM THE INSTALLATION. WARRANTY IS VOIDED FOR IMPROPER INSTALLATION RELATED ISSUES.

SAVE THESE INSTRUCTIONS

INCLUDED WITH THIS MANUAL IS A SAFETY SIGN THAT IS TO BE POSTED NEAR THE SPA WHERE ALL OCCUPANTS CAN EASILY READ. THIS SIGN IS INTENDED FOR YOU AND YOUR GUEST'S PROTECTION, SAFETY AND TO ASSURE THEIR SPA ENJOYMENT. TAKE THE TIME TO POINT OUT THE LOCATION OF THE SIGN AND INDICATE THE IMPORTANCE OF THE PRECAUTIONS.

ADHERE THE SIGN WITH SCREWS OR ANOTHER MANNER OF PERMANENT ADHESION. SHOULD YOU REQUIRE ADDITIONAL COPIES OR REPLACEMENTS, SIMPLY CONTACT THE FACTORY DIRECTLY OR YOUR NEAREST RETAILER.

READ AND FOLLOW ALL IMPORTANT SAFETY INSTRUCTIONS

WHEN INSTALLING AND USING THIS EQUIPMENT BASIC SAFETY PRECAUTIONS SHOULD ALWAYS BE TAKEN TO REDUCE THE RISK OF ELECTRICAL SHOCK, TO ENSURE SAFE USAGE, AND TO SAFEGUARD THE USER'S HEALTH.

READ AND FOLLOW ALL INSTRUCTIONS!!

THIS UNIT IS A PROFESSIONAL-GRADE PRODUCT. A KNOWLEDGE OF CONSTRUCTION TECHNIQUES, PLUMBING AND ELECTRICAL INSTALLATION ACCORDING TO CODES ARE REQUIRED FOR PROPER INSTALLATION AND USER SATISFACTION. IT IS RECOMMENDED THAT A LICENSED CONTRACTOR PERFORM THE INSTALLATION. WARRANTY IS VOIDED FOR IMPROPER INSTALLATION RELATED ISSUES.

IT IS THE RESPONSIBILITY OF THE HOME OWNER TO ENSURE THAT ALL USERS OF THE SPA ARE ADEQUATELY INFORMED OF ALL PRECAUTIONS.

USE THE SPA ONLY AS DESCRIBED IN THIS MANUAL. THE SPA IS INTENDED FOR HOME USE ONLY. DO NOT USE THE SPA IN A COMMERCIAL OR RENTAL SETTING. ALL WARRANTIES WILL BE VOIDED.

GROUND ALL METAL ELECTRICAL EQUIPMENT

- A GREEN COLORED TERMINAL OR A TERMINAL MARKED G, GR, GROUND, OR GROUNDING, IS LOCATED INSIDE THE SUPPLY TERMINAL BOX OR COMPARTMENT. THIS TERMINAL MUST BE CONNECTED TO THE GROUNDING MEANS PROVIDED IN THE ELECTRIC SUPPLY SERVICE PANEL, USING A CONTINUOUS COPPER WIRE EQUIVALENT IN SIZE TO THE CIRCUIT CONDUCTORS SUPPLYING THIS EQUIPMENT.
*ACCORDING TO, BUT NOT LIMITED TO: NEC, NFPA 70, SECTION 680.40, UL 1563.
- AT LEAST TWO LUGS MARKED "BONDING LUGS" ARE PROVIDED ON THE EXTERNAL SURFACE OR ON THE INSIDE OF THE SUPPLY TERMINAL BOX OR COMPARTMENT. CONNECT THE LOCAL COMMON BONDING GRID (HOUSEHOLD GROUND) IN THE AREA OF THE SPA TO THESE TERMINALS, USING AN INSULATED OR BARE COPPER CONDUCTOR NOT SMALLER THAN NO. 6 AWG.
- ALL FIELD-INSTALLED METAL COMPONENTS SUCH AS RAILS, LADDERS, DRAINS OR SIMILAR HARDWARE LOCATED WITHIN 5 FEET OF THE SPA OR HOT TUB MUST BE BONDED TO THE EQUIPMENT GROUNDING BUS WITH COPPER CONDUCTORS NOT SMALLER THAN NO. 6 AWG.
- ALL METAL SURFACES WITHIN 5 FEET OF THE SPA MUST BE BONDED TO THE HOME BONDING GRID.

GROUND FAULT CIRCUIT INTERRUPTER PROTECTION (OR EQUIVALENT; RCD, FOR EXPORT INSTALLS)

- ALL PDC SPAS ARE PERMANENTLY INSTALLED UNITS. **GROUND FAULT CIRCUIT INTERRUPTER PROTECTION IS REQUIRED.** ALL SPA EQUIPMENT SYSTEMS MUST BE PROTECTED BY A CLASS A GROUND FAULT CIRCUIT INTERRUPTER (GFCI) OR EQUIVALENT; RCD, FOR EXPORT INSTALLS. A GROUND FAULT CIRCUIT INTERRUPTER TYPE CIRCUIT BREAKER (NOT SUPPLIED) MUST BE INSTALLED IN THE HOME PANEL BOX BY A LICENSED ELECTRICIAN WHEN MAKING WIRE CONNECTION TO THE SPA SUPPORT PACK EQUIPMENT.

DANGER: RISK OF ELECTRICAL SHOCK:

- INSTALL THE SPA AT LEAST FIVE FEET (1.52 M) FROM ALL UNGROUNDED (UNBOUNDED) METAL SURFACES.
- GROUND FAULT CIRCUIT INTERRUPTER PROTECTION OF THE HOME POWER SUPPLY TO THE SPA IS NECESSARY. YOUR ELECTRICIAN SHOULD EXPLAIN HOW IT WORKS. (SEE SPA MAINTENANCE)
- DO NOT PERMIT ANY ELECTRIC APPLIANCE, SUCH AS A LIGHT, TELEPHONE, RADIO OR TELEVISION, WITHIN FIVE FEET (1.52 M) OF A SPA. KEEP ELECTRICAL APPLIANCES AND EXTENSION CORDS AWAY FROM THE SPA. WATER IS A CONDUCTOR OF ELECTRICITY.

DANGER: RISK OF ACCIDENTAL DROWNING.

- **EXTREME CAUTION MUST BE EXERCISED TO PREVENT UNAUTHORIZED ACCESS BY CHILDREN. TO AVOID ACCIDENTS, ENSURE THAT CHILDREN CANNOT USE A SPA UNLESS THEY ARE SUPERVISED AT ALL TIMES.**

DANGER: TO REDUCE THE RISK OF DROWNING:

1. **NEVER USE THE SPA ALONE.**
2. **CHILDREN SHOULD NOT USE THE SPA UNLESS THEY ARE SUPERVISED BY AN ADULT**
3. **KEEP PETS AWAY FROM THE SPA AT ALL TIMES.**
4. **ALWAYS REPLACE AND LOCK THE SPA COVER WHEN THE SPA IS NOT IN USE.**

DANGER: TO REDUCE THE RISK OF DROWNING

- **PROLONGED IMMERSION IN THE SPA MAY CAUSE HYPERTHERMIA. THE CAUSES, SYMPTOMS AND EFFECTS OF HYPERTHERMIA MAY BE DESCRIBED AS FOLLOWS: HYPERTHERMIA OCCURS WHEN THE INTERNAL TEMPERATURE OF THE BODY REACHES A LEVEL SEVERAL DEGREES ABOVE THE NORMAL BODY TEMPERATURE OF 98.6 °F (37°C). THE SYMPTOMS OF HYPERTHERMIA INCLUDE AN INCREASE IN THE INTERNAL TEMPERATURE OF THE BODY, DIZZINESS, LETHARGY, DROWSINESS, AND FAINTING. THE EFFECTS OF HYPERTHERMIA INCLUDE:**

1. **FAILURE TO PERCEIVE HEAT**
2. **FAILURE TO RECOGNIZE THE NEED TO EXIT THE SPA**
3. **UNAWARENESS OF IMPENDING HAZARD**
4. **FETAL DAMAGE IN PREGNANT WOMEN**
5. **PHYSICAL INABILITY TO EXIT THE SPA**
6. **UNCONSCIOUSNESS RESULTING IN THE DANGER OF DROWNING**

DANGER: RISK OF INJURY

- **DO NOT REMOVE THE SUCTION FITTINGS. THE SUCTION FITTING IN THIS SPA IS SIZED TO MATCH THE SPECIFIC WATER FLOW CREATED BY THE PUMP. SHOULD THE NEED ARISE TO REPLACE THE SUCTION FITTING OR THE PUMP, BE SURE THAT THE FLOW RATES ARE COMPATIBLE. NEVER OPERATE THE SPA IF THE SUCTION FITTING IS BROKEN OR MISSING. NEVER REPLACE A SUCTION FITTING WITH ONE RATED LESS THAN THE FLOW RATE MARKED ON THE ORIGINAL SUCTION FITTING.**

DANGER: RISK OF ACCIDENTAL DROWNING

- **KEEP HAIR AND BODY PARTS AWAY FROM THE SUCTION GUARD. DO NOT ALLOW LONG HAIR TO FLOAT FREELY IN THE WATER; LONG HAIR SHOULD BE RESTRAINED WITH A BATHING CAP. TO REDUCE THE RISK OF DROWNING FROM HAIR OR BODY ENTRAPMENT, INSTALL A SUCTION FITTING (S) WITH A MARKED FLOW RATE IN GALLONS PER MINUTE THAT EQUALS OR EXCEEDS THE FLOW RATE MARKED ON THE EQUIPMENT ASSEMBLY, IF REPLACEMENT OF SUCTION FITTINGS BECOMES NECESSARY.**

WARNING

- **GROUND FAULT CIRCUIT INTERRUPTER PROTECTION (GFCI) OR EQUIVELANT; RCD, FOR THE SPA SHOULD BE TESTED PRIOR TO EACH USE BY THE HOMEOWNER. WITH THE SPA IN OPERATION, PUSH THE “TEST” BUTTON ON THE GFCI CIRCUIT BREAKER AT THE PANEL BOX. THE SPA SHOULD SHUT DOWN IMMEDIATELY. NOW RESET THE GFCI. THE SPA SHOULD RETURN TO NORMAL OPERATION. IF THE GFCI FAILS TO OPERATE IN THIS MANNER, THERE EXISTS A POSSIBILITY OF ELECTRICAL SHOCK. APPROVED TESTING APPLIES FOR EXPORT PROTECTION DEVICES, I.E. RCD.**
- **DISCONTINUE SPA OPERATION BY DISCONNECTING THE POWER SOURCE AND NOTIFY A QUALIFIED ELECTRICIAN FOR IDENTIFICATION AND CORRECTION OF THE PROBLEM.**

WARNING

- **TO REDUCE THE RISK OF INJURY, DO NOT PERMIT CHILDREN TO USE THIS PRODUCT UNLESS THEY ARE CLOSELY SUPERVISED AT ALL TIMES.**

WARNING: TO REDUCE THE RISK OF INJURY

- **THE WATER IN A 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. LOWER WATER TEMPERATURES ARE RECOMMENDED FOR EXTENDED USE (EXCEEDING 10 TO 15 MINUTES) AND FOR YOUNG CHILDREN.**
- **EXCESSIVE WATER TEMPERATURES HAVE A HIGH POTENTIAL FOR CAUSING FETAL DAMAGE DURING THE EARLY MONTHS OF PREGNANCY. PREGNANT OR POSSIBLY PREGNANT WOMEN SHOULD LIMIT SPA TEMPERATURES TO 100° F (38° C).**
- **BEFORE ENTERING A SPA, THE USER SHOULD MEASURE THE WATER TEMPERATURE WITH AN ACCURATE THERMOMETER SINCE THE TOLERANCE OF WATER TEMPERATURE REGULATING DEVICES MAY VARY AS MUCH AS 5° F (3°C).**
- **THE USE OF ALCOHOL, DRUGS, OR MEDICATION BEFORE OR DURING SPA USE MAY LEAD TO UNCONSCIOUSNESS WITH THE POSSIBILITY OF DROWNING.**
- **PERSONS SUFFERING FROM OBESITY OR WITH A MEDICAL HISTORY OF HEART DISEASE, LOW OR HIGH BLOOD PRESSURE, CIRCULATORY SYSTEM PROBLEMS, OR DIABETES SHOULD CONSULT A PHYSICIAN BEFORE USING A SPA.**
- **PERSONS USING MEDICATION SHOULD CONSULT A PHYSICIAN BEFORE USING A SPA SINCE SOME MEDICATION MAY INDUCE DROWSINESS WHILE OTHER MEDICATION MAY AFFECT HEART RATE, BLOOD PRESSURE, AND CIRCULATION.**
- **ENTER AND LEAVE SPA SLOWLY AND WITH CAUTION. SURFACES AROUND SPA WILL BE WET AND SLIPPERY.**

WARNING

1. **NEVER USE THE SPA ALONE.**
2. **DO NOT BRING ANY OBJECT INTO THE SPA THAT COULD DAMAGE THE SPA SHELL.**
3. **DO NOT SIT ON SPA COVER OR PLACE OBJECTS ON IT; IT IS NOT DESIGNED TO SUPPORT WEIGHT.**
4. **REMOVE ANY WATER OR DEBRIS THAT MAY COLLECT ON THE SPA COVER.**
5. **KEEP ALL CHEMICALS AWAY FROM CHILDREN AND PETS.**
6. **THE PH AND CHEMICAL BALANCE OF THE WATER MUST BE MAINTAINED AS EXPLAINED IN THIS MANUAL. FAILURE TO DO SO MAY CAUSE INJURY TO USERS OR DAMAGE TO THE SPA, AND WILL VOID YOUR WARRANTY.**

WARNING: HEALTH CONSIDERATIONS

- **THE USE OF ALCOHOL, DRUGS, MEDICATION CAN GREATLY INCREASE RISK OF FATAL HYPERTHERMIA.**
- **INDIVIDUALS WITH INFECTIONS AND OPEN SORES OR WOUNDS SHOULD NOT USE THE SPA. BACTERIA THRIVE IN WARM AND HOT WATER. ALWAYS KEEP YOUR SPA DISINFECTED AND MAINTAIN THE PROPER CHEMICAL BALANCE.**
- **SHOWER BEFORE AND AFTER USING THE SPA. THIS WILL REMOVE ANY DEODORANT, PERSPIRATION, OR BODY OILS THAT COULD CONTAMINATE THE WATER. SHOWERING AFTER WILL REMOVE ANY RESIDUAL CHEMICALS AND ANY BACTERIA THAT MAY HAVE BEEN IN THE SPA.**

- **DO NOT USE THE SPA IMMEDIATELY AFTER STRENUOUS EXERCISE.**
- **IF YOU FEEL PAIN OR DIZZINESS AT ANY TIME WHILE USING THE SPA, DISCONTINUE USE AND CONTACT A PHYSICIAN.**

WARNING: TO REDUCE THE RISK OF INJURY

- **IT IS ESPECIALLY IMPORTANT FOR PERSONS OVER THE AGE OF 35 OR PERSONS WITH PRE-EXISTING HEALTH PROBLEMS, SUCH AS OBESITY, HEART DISEASE, HIGH BLOOD PRESSURE, CIRCULATORY PROBLEMS, OR DIABETES TO CONSULT THEIR PHYSICIAN BEFORE USING THE SPA.**
- **THE SPA JETS PRODUCE A STREAM OF WATER WITH RELATIVELY HIGH PRESSURE. PROLONGED EXPOSURE OF A LOCALIZED AREA OF THE BODY MAY CAUSE BRUISES TO THE SKIN.**
- **NEVER INSERT ANY OBJECT INTO ANY OPENING.**
- **DO NOT USE BREAKABLE CONTAINERS IN OR NEAR THE SPA.**

WARNING: ELECTRICAL CONSIDERATIONS

- **FOR CONTROLS OTHER THAN UNDERWATER LIGHTING CIRCUITS: A GROUND FAULT CIRCUIT INTERRUPTER (OR EQUIVALENT FOR EXPORT INSTALLS) MUST BE PROVIDED IF THIS DEVICE IS USED TO CONTROL AN UNDERWATER LIGHTING FIXTURE. THE CONDUCTORS ON THE LOAD SIDE ON THE GROUND FAULT CIRCUIT INTERRUPTER SHALL NOT OCCUPY CONDUIT, BOXES, OR ENCLOSURES CONTAINING OTHER CONDUCTORS UNLESS THE ADDITIONAL CONDUCTORS ARE ALSO PROTECTED BY A GROUND FAULT CIRCUIT INTERRUPTER (OR EQUIVALENT FOR EXPORT INSTALLS).**
- **THE ELECTRICAL SUPPLY FOR THIS PRODUCT MUST INCLUDE A SUITABLY RATED SWITCH OR CIRCUIT BREAKER TO OPEN ALL UNDERGROUND SUPPLY CONDUCTORS TO COMPLY WITH SECTION 422-20 OF THE U.S. NATIONAL ELECTRIC CODE. THE DISCONNECTING MEANS MUST BE READILY ACCESSIBLE TO THE TUB OCCUPANT BUT INSTALLED AT LEAST 5 FT (1.5 M) FROM THE SPA WATER.**

WARNING: FOR SPAS WITH AUDIO / VIDEO COMPONENTS

1. **CAUTION - RISK OF ELECTRIC SHOCK. DO NOT LEAVE COMPARTMENT DOOR OPEN.**
2. **CAUTION - RISK OF ELECTRIC SHOCK. REPLACE COMPONENTS ONLY WITH IDENTICAL COMPONENTS; AND,**
3. **DO NOT OPERATE THE AUDIO/VIDEO CONTROLS WHILE INSIDE THE SPA.**
4. **WARNING - PREVENT ELECTROCUTION. DO NOT CONNECT ANY AUXILIARY COMPONENTS (FOR EXAMPLE CABLE, ADDITIONAL SPEAKERS, HEADPHONES, ADDITIONAL AUDIO/VIDEO COMPONENTS, ETC.) TO THE SYSTEM.**
5. **THESE UNITS ARE NOT PROVIDED WITH AN OUTDOOR ANTENNAE; WHEN PROVIDED, IT SHOULD BE INSTALLED IN ACCORDANCE WITH ARTICLE 810 OF THE U.S. NATIONAL ELECTRICAL CODE, ANSI/NFPA 70.**
6. **DO NOT SERVICE THIS PRODUCT YOURSELF AS OPENING OR REMOVING COVERS MAY EXPOSE YOU TO DANGEROUS VOLTAGE OR OTHER RISK OF INJURY. REFER ALL SERVICING TO QUALIFIED SERVICE PERSONNEL.**
7. **WHEN THE POWER SUPPLY CONNECTION OR POWER SUPPLY CORD(S) ARE DAMAGED; IF WATER IS ENTERING THE AUDIO/VIDEO COMPARTMENT OR ANY ELECTRICAL EQUIPMENT COMPARTMENT AREA; IF THE PROTECTIVE SHIELDS OR BARRIERS ARE SHOWING SIGNS OF DETERIORATION; OR IF THERE ARE SIGNS OF OTHER POTENTIAL DAMAGE TO THE UNIT, TURN OFF THE UNIT AND REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.**
8. **THIS UNIT SHOULD BE SUBJECTED TO PERIODIC ROUTINE MAINTENANCE (FOR EXAMPLE, ONCE EVERY 3 MONTHS) TO MAKE SURE THAT THE UNIT IS OPERATING PROPERLY.**

ADDITIONAL SAFETY CONSIDERATIONS

- **INSTALL THE SPA TO PROVIDE DRAINAGE FOR COMPARTMENTS OF ELECTRICAL COMPONENTS.**
- **FOR FLOOR RECESSED SPAS: INSTALL TO PERMIT ACCESS FOR SERVICING FROM ABOVE OR BELOW THE FLOOR. SPA EQUIPMENT MUST BE INSTALLED BELOW WATER LEVEL.**
- **WHEN PLANNING YOUR SPA INSTALLATION SITE, PREPARE FOR THE UNLIKELY EVENT OF RAPID SPA DRAINAGE.**
- **DO NOT PLACE SPA IN DIRECT SUNLIGHT WHILE UNIT IS EMPTY OR WHEN SEALED IN SHIPPING MATERIALS. EXCESSIVE HEAT BUILD MAY CAUSE DAMAGE TO SPA AND VOID WARRANTY.**
- **INSTALL SPA SO THAT WATER CAN EASILY BE DRAINED OUT, LOCATING THE SIDE DRAIN VALVE ON THE SPA SPECIFICATION LISTING.**
- **WHEN INSTALLING SPA, ALLOW AMPLE SPACE FOR FUTURE SERVICING, NOTING LOCATION OF ALL SUPPORT EQUIPMENT PER THE MODEL SPECIFICATIONS.**

SAVE THESE INSTRUCTIONS



PDC SPAS
75 PALMER INDUSTRIAL ROAD
WILLIAMSPORT, PA 17701 USA
570-323-3060 TEL 570-323-8485 FAX
WWW.PDCSPAS.COM

A

CABINET PANEL WARNING SIGN

FOR YOUR REFERRAL AND CONVENIENCE, A WEATHER RESISTANT WARNING SIGN HAS BEEN MOUNTED ON THE CABINET SIDE OF YOUR PORTABLE SPA. BECOME FAMILIAR WITH THE PRECAUTIONS AND EXERCISE SAFETY AND CARE WHILE ENJOYING YOUR SPA.

ENCLOSED WARNING SIGN FOR POSTING

LOCATE THE WEATHER RESISTANT SIGN ENCLOSED WITH THIS MANUAL INTENDED FOR PERMANENT POSTING IN AN AREA NEAR THE SPA VISIBLE TO ALL SPA OCCUPANTS. NOTIFY THE FACTORY OR YOUR RETAILER SHOULD YOU REQUIRE ADDITIONAL SIGNS OR REPLACEMENTS.



BOTH OF THESE SIGNS HAVE THE SAFETY INSTRUCTIONS IN ENGLISH AND FRENCH ON THE FRONT SIDE, AND ITALIAN, GERMAN, AND SPANISH ON THE BACK SIDE. DISPLAY ACCORDING TO THE APPROPRIATE LANGUAGE.

WARNING: READ ALL INSTRUCTIONS BEFORE USING THE SPA. PDC SPAS ASSUMES NO RESPONSIBILITY FOR PERSONAL INJURY OR PROPERTY DAMAGE SUSTAINED BY OR THROUGH THE USE OF THIS PRODUCT.

SAVE THIS MANUAL, SIGNS, AND INSTRUCTIONS FOR FUTURE REFERENCE.

SPA PART TERMINOLOGY AND DESCRIPTION

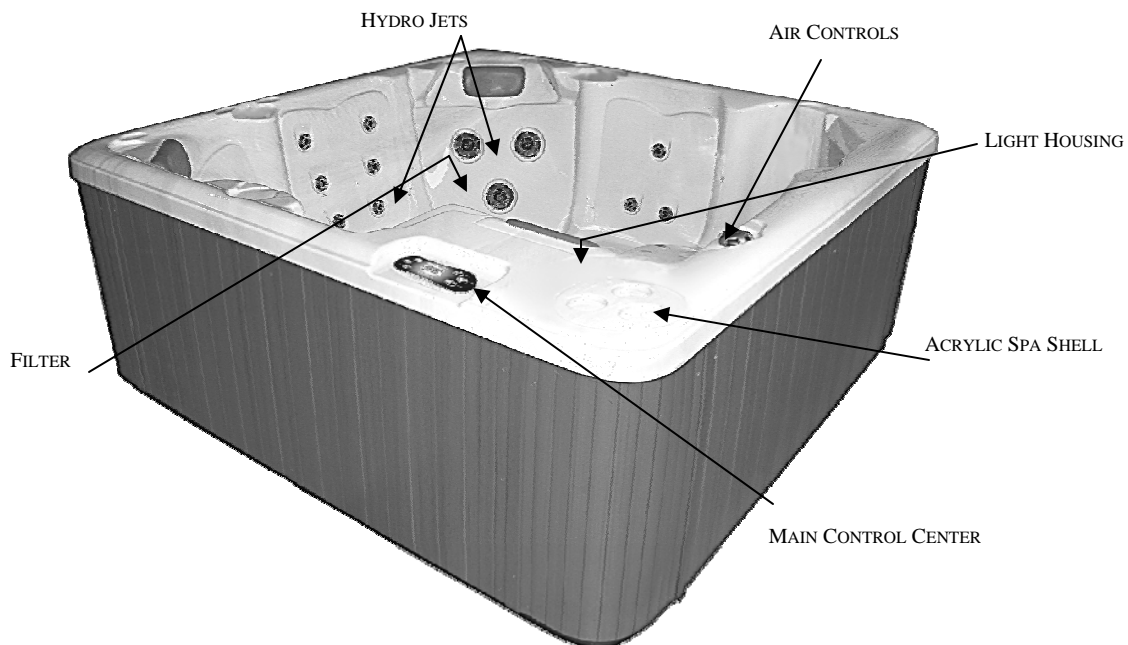
HYDRO-JETS: THESE ARE THE WALL FITTINGS AROUND THE INSIDE PERIMETER OF THE SPA. THEY MIX WATER WITH AIR TO PRODUCE LOCALIZED THERAPY, IN A STRAIGHT STREAM, CIRCULAR MOTION OR IN RANDOM PATTERNS FOR UPPER AND LOWER BACK MASSAGE IN THE LOUNGE AND CONTOURED SEATING AREAS.

FILTER: YOUR SPA IS EQUIPPED WITH A SKIM FILTER. THIS ASSURES OPTIMUM WATER FILTERING AND EASE OF CLEANING AT SPA SIDE. REVIEW THE MAINTENANCE SECTION OF THIS MANUAL FOR FILTER CARTRIDGE CLEANING AND REPLACEMENT.

SUCTION: THESE ARE CIRCULAR FITTINGS MOUNTED ON THE VERTICAL WALL OF THE FOOTWELL AND SERVE THE SAME FUNCTION AS THE SKIMMER. IT WORKS IN CONJUNCTION WITH THE SKIMMER TO RETURN WATER TO THE SUPPORT EQUIPMENT.

AIR CONTROLS: THESE ARE ROUND FITTINGS MOUNTED ON THE LIP OF SPA THAT CONTROL THE AMOUNT OF OUTSIDE AIR MIXED WITH THE INCOMING WATER OF THE HYDRO-JET. YOUR SPA HAS ONE AIR CONTROL ON THE SPA LIP THAT CONTROLS AIR/ WATER MIX FOR THE JETS.

AURA LIGHTING: LOW VOLTAGE SPA LIGHT, WITH VARYING SHADES OF A COLOR WASH, CONTROLLED AT THE SPASIDE CONTROL PANEL. CHOOSE ROTATION OF COLOR OR STATIONARY COLOR OF YOUR CHOICE. INCLUDES TWO LIGHTED CUP HOLDERS AT SPA SIDE.



SPA PART TERMINOLOGY AND DESCRIPTION

THE SPA SUPPORT PACK CONTAINS UP TO FIVE MAJOR COMPONENTS: EITHER SINGLE OR DUAL SPEED PUMPS, THAT CIRCULATE THE WATER THROUGH THE HYDRO-JETS AND BACK THROUGH THE SUCTIONS AND A CARTRIDGE FILTER THAT PHYSICALLY REMOVES DEBRIS FROM THE WATER. YOUR UNIT WILL ALSO BE EQUIPPED WITH AN ELECTRIC HEATER. ALL COMPONENTS ARE OPERATED BY SWITCHING AT SPA SIDE. WATER IS ROUTED THROUGH THE PUMP, HEATER AND JETS.

PUMP: YOUR NEW SPA HAS BEEN EQUIPPED WITH A PUMP FOR HYDROTHERAPY JET ACTION AND WATER FILTRATION. THE SPA SUPPORT PACK FEATURES A DUAL-SPEED PUMP AND, ON SOME MODELS ONE OR TWO ADDITIONAL SINGLE SPEED PUMPS. THE REVOLUTION CONTROL CENTER OPERATES, THE HIGH SPEED OF A DUAL-SPEED PUMP IS ACTIVATED BY THE PUMP1 CONTROL AT SPA SIDE. THE LOWER SPEED (FILTRATION SPEED) IS CONTROLLED BY THIS PROGRAMMABLE ELECTRONIC CONTROL. THE FILTRATION TIME REQUIRED TO MAINTAIN WARM, CLEAN WATER MAY VARY FROM SPA TO SPA. GENERALLY, NO LESS THAN SIX HOURS A DAY IS RECOMMENDED. THE PUMP1 BUTTON CAN ACTIVATE THE PUMP AT FULL SPEED AT ANY TIME FOR HYDROTHERAPY, EVEN THOUGH TURNING OFF THE PUMP AT THE PUMP1 BUTTON DOES NOT OVERRIDE THE FILTRATION CYCLE (LOW SPEED). FOR EXAMPLE, IF THE SPA HAS BEEN PROGRAMMED TO CIRCULATE THE SYSTEM AT A TIME WHEN BATHERS ARE EXITING THE SPA, THE PUMP WILL CONTINUE TO OPERATE AT LOW SPEED EVEN THOUGH THE JET BUTTON IS PUSHED. THE CONTROL UNIT WILL SHUT THE PUMP OFF WHEN PROGRAMMED TO DO SO. .

FILTER: YOUR RIVER SERIES SPA IS EQUIPPED WITH A SUCTION-SIDE FILTER. THIS ASSURES OPTIMUM WATER FILTERING AND EASE OF CLEANING AT SPA SIDE. REVIEW THE MAINTENANCE SECTION OF THIS MANUAL FOR FILTER CARTRIDGE CLEANING AND REPLACEMENT.

HEATER: YOUR SPA IS EQUIPPED WITH THERMOSTAT CONTROL AT SPA SIDE. ONCE YOU FIND THE TEMPERATURE YOU ENJOY MOST, LEAVE THE THERMOSTAT AT THAT SETTING, AND THE SPA WILL AUTOMATICALLY MAINTAIN THE CORRECT TEMPERATURE; READY FOR YOUR ENJOYMENT ANY TIME OF THE DAY. AVOID CONSTANT RESETTING OF THE THERMOSTAT; IT IS MORE ECONOMICAL TO MAINTAIN TEMPERATURE, THAN TO LET THE TEMPERATURE FALL AND THEN WAIT DURING HEAT-UP TIME BEFORE SOAKING.

OZONE: ALL SPAS ARE STANDARD WITH OZONE FOR SANITATION AND SHOULD CIRCULATE 16-24 HOURS DAILY. USE THE PROGRAMMABLE ELECTRONIC CONTROL CENTER TO PROGRAM THIS OPERATION.

AMAZON SPA MODEL



GENERAL

rev. 2010 / 07

Seating Capacity	5
Shell Material	Acrylic
Dimensions (Domestic)	76" (6'4")sq. x 31" (2'7")
Dimensions (Export)	193 cm. sq. x 79 cm.
Water Capacity	275 Gallons (1,041 liters)
Dry Weight	530 lbs. (240 kg)
Skirt Material	PermaWood™
Water Flow	100 Gallons per Minute

WATER SYSTEM** (photo ref.)

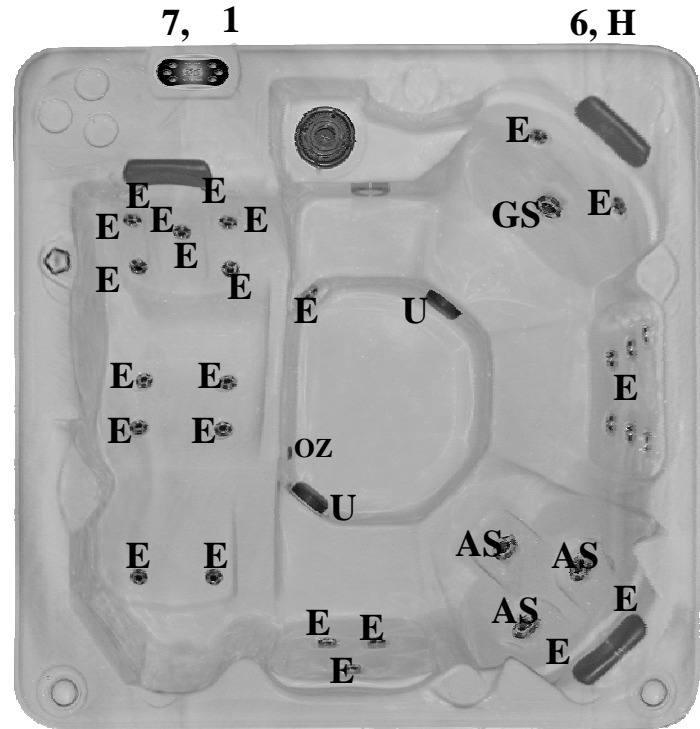
Water Treatment System	Ozonator
Filter	25 sq. ft.
Slide Valves	2
Mega Swirl Jet	AS 3
Large Euro Jet w/ Eyeball	E 28
Mega'ssage Jet	GS 1
Multi'ssage Jet	P 0
Ozone Jet	O 1
Diverter Valves	V 0
Safety Suction	U 2
Mini Skimmer	K 0
Air Control	I 1
Spa Light	L 1
Drain Valve	5 0

SPECIAL FEATURES

Spa Pillows	3
Aura™ Light	Standard
Stainless Steel Jetting	Standard
Waterfall Jet	WF N/A
Waterfall Control Valve	C N/A
SoundWave™ SE Audio	N/A
Ozone Water Purification	OZ Standard

ELECTRICAL SYSTEM

Pump Information	Reference Number	Domestic (60Hz)	Export (50Hz)
Pump #1 peak(Continuous) HP	1	4.0 (2.0) HP	4.0 (2.0) HP
Electronics			
Electrical Can	6	Balboa Revolution	Balboa Revolution
Voltage		240	240
Amperage		40	1x16 / 1x32
Heater (heater location for XM can)	H HXM	4.0 KW	3.0 KW
Operation System			
Main Spa Side Control	7	Balboa Revolution Control	Balboa Revolution Control
Secondary Spa Side Control	8	N/A	N/A



** Not every jet is referenced. Each type of jet is noted for ease of identification. *Note location of audio components prior to install. Equipment location relates to slimline design, AdvantagePack option has major components located beneath end cabinet. All specifications are accurate at time of print. Manufacturer reserves the option to change product without prior notice. Dimensions are approximate.

CONGO SPA MODEL



GENERAL

rev. 2010 / 07

Seating Capacity	3
Shell Material	Acrylic
Dimensions (Domestic)	60" (5') x 84" (7') x 33" (2'9")
Dimensions (Export)	152 cm. x 213cm x 84 cm.
Water Capacity	200 Gallons (757 liters)
Dry Weight	450 lbs (204 kg)
Skirt Material	PermaWood™
Water Flow	100 Gallons per Minute

WATER SYSTEM** (photo ref)

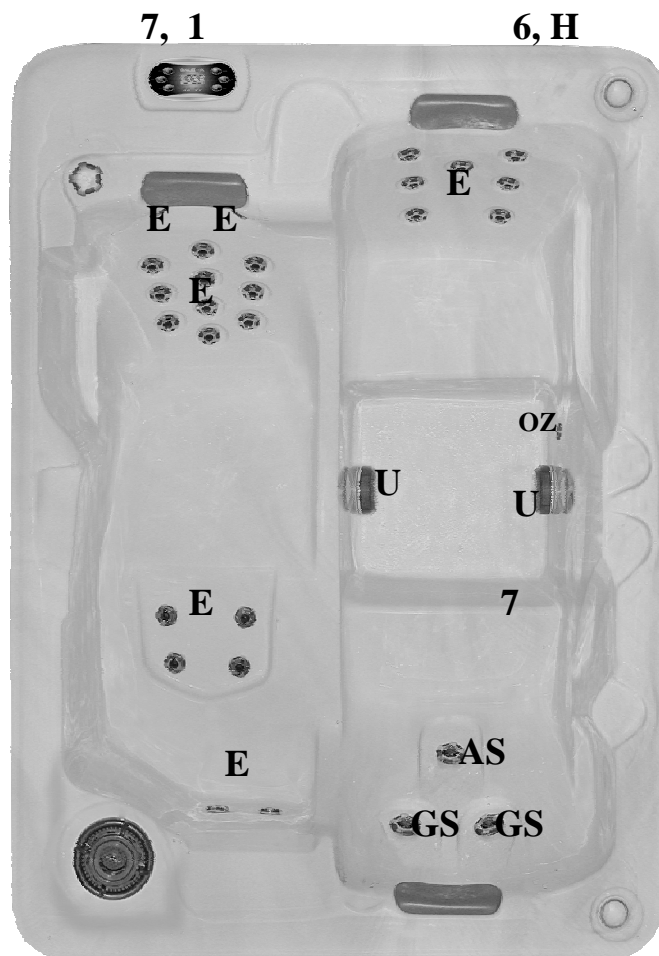
Water Treatment System	Ozonator
Filter	25 sq. ft.
Slide Valves	2
Mega Swirl Jet	AS 1
Large Euro Jet w/ Eyeball	E 26
Mega'ssage Jet	GS 2
Ozone Jet	O 1
Multissage Jet	P 0
Diverter Valves	V 0
Safety Suction	U 2
Mini Skimmer	K 0
Air Control	I 1
Spa Light	L 1
Drain Valve	5 0

SPECIAL FEATURES

Spa Pillows	3
Aura™ Light	Standard
Stainless Steel Jetting	Standard
Waterfall Jet	WF N/A
Waterfall Control Valve	C N/A
SoundWave™ SE Audio	N/A
Ozone Water Purification	OZ Standard

ELECTRICAL SYSTEM

Pump Information	Reference Number	Domestic (60Hz)	Export (50Hz)
Pump #1 peak (continuous) HP	1	4.0 (2.0) HP	4.0 (2.0) HP
Pump #2 peak (continuous) HP	2	N/A	N/A
Electronics			
Electrical Can	6	Balboa Revolution	Balboa Revolution
Voltage		240	240
Amperage		40	1x16 / 1x32
Heater (heater location for XM can)	H HXM	4.0 KW	3.0 KW
Operation System			
Main Spa Side Control	7	Balboa Revolution Control	Balboa Revolution Control
Secondary Spa Side Control	8	N/A	N/A



** Not every jet is referenced. Each type of jet is noted for ease of identification. *Note location of audio components prior to install. Equipment location relates to slimline design, AdvantagePack option has major components located beneath end cabinet. All specifications are accurate at time of print. Manufacturer reserves the option to change product without prior notice. Dimensions are approximate.

NILE SPA MODEL



GENERAL rev. 2010 / 07

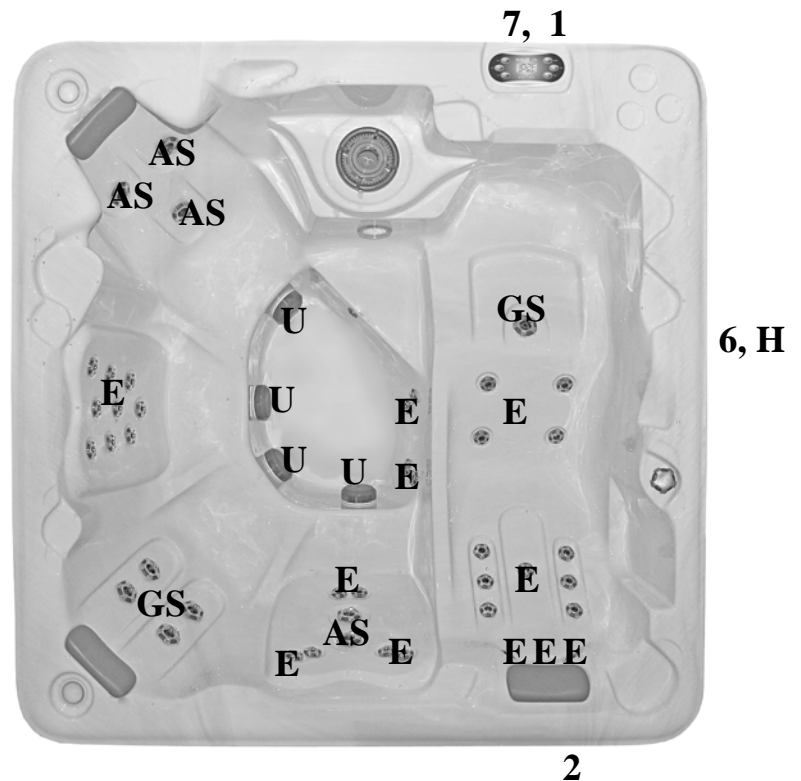
Seating Capacity	5
Shell Material	Acrylic
Dimensions (Domestic)	82" sq.(6'10") x 36" (3')
Dimensions (Export)	210 cm. sq. x 91 cm.
Water Capacity	375 Gallons (1,420 liters)
Dry Weight	665 lbs. (302 kg.)
Skirt Material	PermaWood™
Water Flow	305 Gallons per Minute

WATER SYSTEM** (photo ref)

Water Treatment System	Ozonator
Filter	25 sq. ft.
Slide Valves	2
Mega Swirl Jet	A S 5
Large Euro Jet w/ Eyeball	E 35
Mega'ssage Jet	GS 5
Multi'ssage Jet	P 0
Ozone Jet	O 1
Diverter Valves	V 0
Safety Suction	U 4
Mini Skimmer	K 0
Air Control	I 1
Spa Light	L 1
Drain Valve	5 0

SPECIAL FEATURES

Spa Pillows	3
Aura™ Lighting	Standard
Stainless Steel Jetting	Standard
Waterfall Jet	WF N/A
Waterfall Control Valve	N/A
SoundWave™ SE Audio	N/A
Ozone Water Purification	OZ Standard



ELECTRICAL SYSTEM

Pump Information	Reference Number	Domestic (60Hz)	Export (50Hz)
Pump #1 peak (continuous) HP	1	2.0 (1.0) HP	2.0 (1.0) HP
Pump #2 peak (continuous) HP	2	4.0 (2.0) HP	4.0 (2.0) HP
Electronics			
Electrical Can	6	Balboa Revolution	Balboa Revolution
Voltage		240	240
Amperage		40	1x16 / 1x32
Heater	H	4.0 KW	2.0 KW
Operation System			
Main Spa Side Control	7	Balboa Revolution Control	Balboa Revolution Control
Secondary Spa Side Control	8	N/A	N/A

** Not every jet is referenced. Each type of jet is noted for ease of identification. *Note location of audio components prior to install. Equipment location relates to slimline design, AdvantagePack option has major components located beneath end cabinet. All specifications are accurate at time of print. Manufacturer reserves the option to change product without prior notice. Dimensions are approximate.

INSTALLATION GUIDELINES

THE LOCATION OF YOUR SPA IS AN IMPORTANT FACTOR IN GUARANTEEING YOUR MAXIMUM SPA ENJOYMENT. GENERALLY, MOST SPAS ARE INSTALLED OUTDOORS WITH NO CONCERNS REGARDING MOISTURE ACCUMULATION, WATER SPILL-OVER, ETC. WHICH ARE CONSIDERATIONS FOR THOSE LOCATED INSIDE.

OUTDOOR INSTALLATION CONSIDERATIONS

1. LOCAL ELECTRICAL AND PLUMBING CODES.
2. CONSIDER LOCAL CODES PERTAINING TO FENCING, ENCLOSURES, WALLS, ELECTRICAL AND PLUMBING. YOU WILL NEED TO ENSURE THAT YOUR SPA IS AN ADEQUATE DISTANCE FROM POWER LINES, BOTH ABOVE GROUND AND UNDERGROUND. YOUR SPA WILL ALSO NEED TO BE CHILDPROOFED.
3. VIEW FROM HOUSE FOR AESTHETICS AND SUPERVISORY NEEDS.
4. DISTANCE FROM HOUSE FOR WINTERTIME SOAKING.
5. NIGHTTIME LIGHTING.
6. LOCATE THE SPA WITH AN AWARENESS TO SUNLIGHT EXPOSURE, VIEWS, ACCESS, PROPERTY LINES, LIGHTING, WIND DIRECTION, SHIELDING, SEPTIC TANKS, PLANTS, TREES. (CHEMICALS IN THE SPA WATER SPLASHED FROM YOUR SPA MAY DAMAGE NEARBY PLANT LIFE.)
7. CONSIDER THE LOCATION OF THE NEAREST BATHROOM.
8. IF YOUR SPA IS TO BE LOCATED ON A SECOND STORY, BE POSITIVE SUPPORT IS ADEQUATE. CALL YOUR BUILDER.
9. AREA FOR PLACEMENT OF SUPPORT EQUIPMENT WHERE ADEQUATE SPACE WILL BE NEEDED TO GAIN ACCESS TO COMPONENTS FOR MAINTENANCE AND GENERAL SERVICING.
10. BE SURE TO NOTE ANY OTHER CONSIDERATIONS, SUCH AS AESTHETICS OR PRIVACY CONCERNS, THAT MAY AFFECT THE SAFETY OR ENJOYMENT OF USING THE SPA.
11. PROVIDE ADEQUATE DRAINAGE AWAY FROM THE EQUIPMENT AND ADEQUATE ELEVATION TO ALLOW DRAINING BY SIPHON, IF SHOULD BE REQUIRED.
12. LOCATION OF ELECTRICAL SUPPLY. 120/240 VOLT SYSTEMS REQUIRE HARD WIRE INSTALLED FROM THE ELECTRICAL SOURCE TO THE SPA SUPPORT PACK TERMINAL. ALL EQUIPMENT MUST BE GROUND FAULT CIRCUIT PROTECTED AT THE POWER SOURCE. ALL ELECTRICAL WIRING OF THE SPA SUPPORT EQUIPMENT MUST COMPLY WITH THE NATIONAL ELECTRIC CODE.
13. LOCATIONS AT LEAST 5 FT (1.52 M) FROM ALL METAL SURFACES. (A SPA MAY BE INSTALLED WITHIN 5 FEET OF METALS SURFACES PROVIDING EACH METAL SURFACE IS PERMANENTLY CONNECTED BY A No. 8AWG (8.4 MM²) COPPER CONDUCTOR ATTACHED TO THE WIRE CONNECTOR ON THE TERMINAL BOX PROVIDED FOR THIS PURPOSE.) ALL INSTALLATIONS MUST COMPLY WITH ARTICLE 680 OF THE U.S. NATIONAL ELECTRIC CODE AND ANSI/NFPA 70-1984.
14. PLACE THE SPA ON A FIRM, LEVEL SURFACE THAT WILL NOT SHIFT.

INSTALLATION GUIDELINES

INDOOR INSTALLATION CONSIDERATIONS

1. LOCAL ELECTRICAL AND PLUMBING CODES.
2. VENTILATION FANS AND/OR DEHUMIDIFIERS SHOULD BE PROVIDED TO HANDLE THE HIGH HUMIDITY DEVELOPED BY YOUR SPA. WALLS, CEILING AND WOOD TRIM SHOULD BE RESISTANT, ALSO.
3. CHEMICALS WILL VAPORIZE FROM THE WATER AND MAY CAUSE AN ODOR AND POSSIBLY CORROSION TO CERTAIN HOME HARD-WARE. NEVER STORE CHEMICALS INSIDE THE SPA CABINET.
4. DURING THE NORMAL USE OF THE SPA, WATER WILL ESCAPE THE SPA VESSEL. NEVER PLACE THE SPA ON OR OVER ANY MATERIAL WHICH MAY BE DAMAGED BY THIS WATER OR THE CHEMICALS WITHIN THE WATER. KEEP DAMAGEABLE MATERIALS FAR ENOUGH AWAY FROM THE SPA TO AVOID WATER DAMAGE, EVEN IF THE SPA SHOULD LOSE ALL ITS WATER.
5. CONSIDER AND PREPARE FOR THE UNLIKELY EVENT OF RAPID SPA DRAINAGE. IF PLACEMENT OF THE SPA IS PERMANENT, YOU MAY WISH TO PROVIDE FLOOR DRAINS TO ACCOMMODATE DRAINING, ETC. ALWAYS LEAVE ROOM ALL AROUND THE SPA FOR EASY ACCESS IN CASE REPAIRS ARE NECESSARY.
6. CONSIDER AND PREPARE FOR THE UNLIKELY EVENT OF SPA REMOVAL.
7. READ 7-14 IN THE OUTDOOR INSTALLATIONS INFORMATION.
8. DO NOT SET SPA ON FINISHED FLOOR WITHOUT A WATERPROOF BARRIER PROTECTION UNDERNEATH.
9. THE SPA SHOULD HAVE ACCESS TO A POWER SOURCE CAPABLE OF SUPPLYING 240 VOLTS AC POWER. IT MUST BE WIRED DIRECTLY INTO A GROUNDED CIRCUIT WITH A GROUND FAULT CIRCUIT INTERRUPTER (G.F.C.I.)OR EQUIVALENT RCD, FOR EXPORT INSTALLS. NO OTHER APPLIANCES SHOULD BE ON THE SAME CIRCUIT.
10. THE SPA SHOULD BE CLOSE TO A SOURCE OF WATER.
11. BE SURE THAT THE LOCATION YOU CHOOSE IS STABLE. IT MUST BE ABLE TO SUPPORT THE WEIGHT OF THE SPA WHEN IT IS FILLED WITH WATER, PLUS THE WEIGHT OF THE OCCUPANTS. THE SPA MAY WEIGH UP TO 6000 LBS (2722 KG.) WHEN IT IS FILLED WITH WATER.
12. DO NOT USE THE SPA ABOVE A FINISHED LIVING AREA, DUE TO THE RISK OF WATER DAMAGE.
13. THE SPA IS NOT DESIGNED FOR IN-FLOOR INSTALLATION. HOWEVER, IT IS COMPATIBLE WITH A DECK SYSTEM THAT IS BUILT FLUSH WITH THE TOP OF THE SPA, PROVIDED YOU LEAVE ACCESS FOR SERVICE.
14. BE SURE TO NOTE ANY OTHER CONSIDERATIONS, SUCH AS AESTHETICS OR PRIVACY CONCERNS, THAT MAY AFFECT THE SAFETY OR ENJOYMENT OF USING THE SPA.

WARNING:

THIS IS A PROFESSIONAL GRADE PRODUCT.
A KNOWLEDGE OF CONSTRUCTION TECHNIQUES, PLUMBING AND ELECTRICAL
INSTALLATION ACCORDING TO CODES ARE REQUIRED FOR PROPER INSTALLATION
AND USER SATISFACTION. WE RECOMMEND THAT A LICENSED CONTRACTOR
PERFORM THE INSTALLATION. OUR WARRANTY DOES NOT COVER
IMPROPER INSTALLATION-RELATED PROBLEMS.

GENERAL LOCATION CONSIDERATIONS

REVIEW OUTDOOR INSTALLATIONS AND INDOOR INSTALLATIONS PRIOR TO CHOOSING YOUR SPA LOCATION. YOUR SPA SHOULD BE PLACED ON A LEVEL CONCRETE PAD OR ON A DECK DESIGNED TO SUPPORT 6000 LBS (2722 KG.) OR ON PATIO BLOCKS ON THE GROUND. DO NOT PLACE THE SPA ON A DIRT SURFACE OR DIRECTLY ON THE GROUND. ONCE YOU HAVE A LOCATION SELECTED, THERE ARE SEVERAL ISSUES YOU SHOULD CONSIDER IN PREPARING THE SITE FOR THE HOT TUB INSTALLATION.

A FLAT, LEVEL SURFACE THAT IS STRONG ENOUGH TO SUPPORT YOUR SPA IS REQUIRED. ONCE YOUR SPA IS FILLED, IT HAS CONSIDERABLE WEIGHT. MAKE CERTAIN THE LOCATION YOU CHOOSE CAN SUPPORT A MINIMUM OF 100 LBS (45.4 KG) PER SQUARE FOOT LOAD, PER RECOMMENDED GUIDELINES. STRUCTURAL DAMAGE TO THE SPA RESULTING FROM THE INCORRECT INSTALLATION OF PLACEMENT ON INADEQUATE FOUNDATION IS NOT COVERED IN THE SPA'S LIMITED WARRANTY.

MOST UNITS ARE INSTALLED OUTSIDE, ON GROUND LEVEL, ON EITHER A CONCRETE PAD OR A WOODEN DECK. IF THE SPA IS NOT ON GROUND LEVEL, HAVE A BUILDER DETERMINE IF THE SUPPORT IS ADEQUATE. IF THE UNIT IS PLACED DIRECTLY ON THE GROUND, YOU WILL WANT TO REMOVE THE GRASSY LEVEL, AND PLACE A LAYER OF GRAVEL ON THE SOIL. THE BEST WAY TO LEVEL THE GRAVEL MAY BE WITH THE STRAIGHT EDGE OF A PIECE OF SOLID LUMBER TO ACHIEVE A LEVEL SURFACE. PAVERS PLACED IN A SAND BASE IS ALSO A RATHER QUICK AND CONVENIENT WAY TO PREPARE THE LOCATION SITE. NOTE THAT PAVERS, STEPPING STONES, ETC. STILL HAVE A TENDENCY TO SETTLE AND MAY BECOME UNLEVEL AT SOME POINT. A REINFORCED CONCRETE SLAB SHOULD BE AT LEAST FOUR INCHES THICK WITH THE REINFORCING MESH OR ROD ATTACHED TO A BOND WIRE.

MAKE SURE YOUR DIMENSIONS ARE CORRECT AS YOU PREPARE THE SITE FOR YOUR NEW HOT TUB. CLICK ONTO THE WEB SITE OR CALL YOUR RETAILER FOR DIMENSIONS OF THE MODEL YOU HAVE CHOSEN. ALLOW A PERIMETER OF THE CHOSEN GROUND SURFACE TO EXTEND BEYOND THE SPA ITSELF TO PROVIDE A CLEAN AREA FOR USERS TO GET IN AND OUT OF THE SPA.

THE SPA LOCATION AND THE SPA ITSELF MUST BE LEVEL BEFORE FILLING WITH WATER.

SHOULD YOUR SPA SITE BE A WOODEN DECK, THIS PROVIDES A CLEAN AREA WITH WEATHER AND ROT RESISTANT QUALITIES, IF A PRESSURE-TREATED TYPE LUMBER IS USED. CONSIDER THE LOAD REQUIREMENTS AND CONSULT A BUILDER TO DETERMINE IF YOUR DECK IS OF ADEQUATE STRENGTH.

IF INSTALLING YOUR HOT TUB BELOW GRADE, CONSIDER ADEQUATE DRAINAGE FOR RUN-OFF AND THE UNLIKELY EVENT OF RAPID SPA DRAINAGE.

ALLOW ADEQUATE SPACE TO ACCESS THE EQUIPMENT BEHIND THE FOUR ACCESS PANELS ON THE HOT TUB CABINET. REVIEW THE PAGES IN THIS MANUAL REFERENCING SPA MODEL SPECIFICATIONS FOR THE LOCATION OF THE SUPPORT EQUIPMENT FOR THE MODEL YOU HAVE CHOSEN.

LEAVE AMPLE ACCESS TO THE GFCI CIRCUIT BREAKER FOR TESTING, ETC.

A QUICK DISCONNECT (MANUAL DISCONNECT) IS TO BE INSTALLED BETWEEN 5 - 15 FT (1.5-4.6 M) OF THE SPA AND WITHIN THE LINE OF SIGHT FROM THE HOT TUB. CONSIDER WHERE THIS CAN BE LOCATED WHEN SELECTING AND PREPARING THE SPA SITE. ALL WIRING MUST COMPLY WITH THE U.S. NATIONAL ELECTRIC CODE.

TO DRAIN THE SPA YOU WILL NEED TO SYPHEN THE WATER FROM THE SPA WITH A GARDEN HOSE.

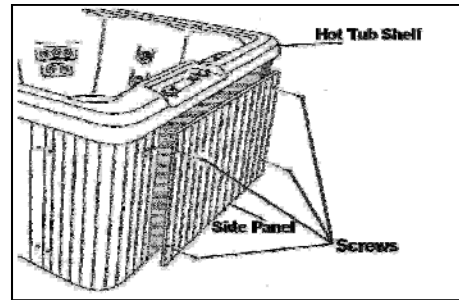
EQUIPMENT LOCATION

FOR ALL RIVER SERIES SPAS:

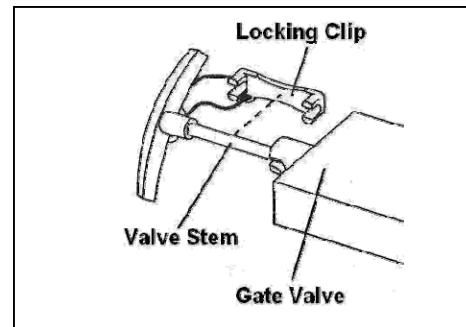
AFTER THE HOT TUB HAS BEEN PLACED IN THE DESIRED LOCATION REMOVE A CABINET ACCESS PANEL USING A SQUARE HEAD SCREWDRIVER. (SEE ILLUSTRATION)

NEXT, PULL AWAY THE CABINET PANEL AND LOCATE THE ELECTRICAL BOX, PUMP (OR PUMPS). NOTE THE HEATER ATTACHED UNDER THE ELECTRICAL BOX. BE SURE YOU HAVE ALLOWED AMPLE SPACE AROUND THE NECESSARY CABINET SIDES TO ACCESS EQUIPMENT. REVIEW YOUR SPA MODEL SPECIFICATION PAGE IN THIS MANUAL FOR A GUIDE OF EQUIPMENT LOCATION FOR THAT SPECIFIC SPA MODEL.

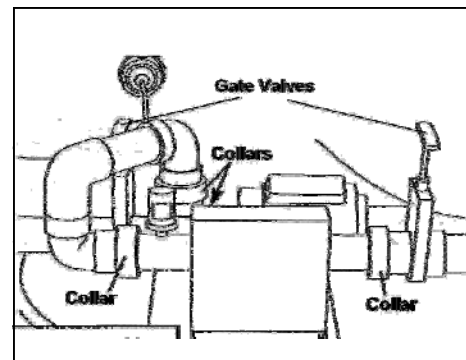
NOTE THE LOCATION OF THE ELECTRICAL BOX, THIS WILL NEED TO BE ACCESSED TO COMPLETE THE WIRING CONNECTION TO THE HOME POWER SOURCE. REFER TO THE SPA SPECIFICATION PAGE TO IDENTIFY THE CORRECT LOCATION FOR YOUR SPA UNIT..



CHECK THAT ALL VALVES: ON PUMP, ARE OPEN AND THE LOCKING CLIP HAS REMAINED SNAPPED ON THE VALVE STEM DURING SHIPMENT. (SEE ILLUSTRATION)



THE SPA EQUIPMENT HAS BEEN ASSEMBLED WITH NUMEROUS COLLARS (UNIONS) FOR EASE OF FUTURE SERVICING. LOCATE AND HAND-TIGHTEN ALL COLLARS CHECKING FOR ANY WHICH MAY HAVE LOOSENED DURING SHIPMENT. (SEE ILLUSTRATION)



• THE SPA SUPPORT EQUIPMENT MUST BE PLACED AT OR BELOW THE WATER LEVEL OF THE SPA.

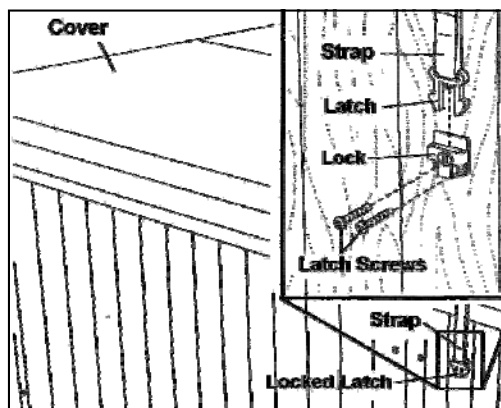
• NEVER PLACE THE EQUIPMENT ABOVE THE SPA WATER LEVEL.

• ALL PDC EQUIPMENT MUST BE IN A SHELTERED ENVIRONMENT THAT WILL PROTECT THE EQUIPMENT FROM RAIN, SLEET, SNOW, AND DIRECT SUNLIGHT.

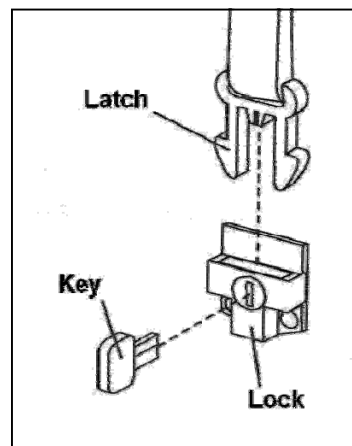
REFER TO SPA SPECIFICATION PAGES IN THIS MANUAL FOR THE LOCATION OF EQUIPMENT FOR THE MODEL YOU HAVE CHOSEN. INSTALLATION AND WIRING IS TO BE COMPLETED BY A QUALIFIED ELECTRICIAN.

INSTALLING THE THERMAL COVER

REMOVE THE SPA COVER FROM THE BOX AND PLACE IT ON THE SPA. PULL DOWN ONE OF THE STRAPS ON THE SPA COVER AND HOLD LATCH AGAINST THE CABINET SIDE PANEL. TO POSITION THE LOCK CORRECTLY, HAVE A SECOND PERSON HOLD THE STRAP TIGHT ON THE OPPOSITE SIDE OF THE SPA COVER. THE SPA COVER MUST BE TIGHT. DO NOT PLACE THE LATCH OVER THE GROOVES OF THE CABINET FINISH. REMOVE THE LATCH FROM THE LOCK, ATTACH THE LOCK TO THE CABINET SIDE PANEL WITH THREE #4 SCREWS PROVIDED. ATTACH THE OTHER THREE LOCKS TO THE CABINET IN THE SAME MANNER.

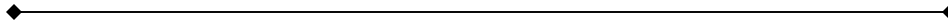


TO SECURE THE HOT TUB COVER, SNAP THE LATCHES ON THE SPA COVER INTO THE LOCKS ON THE CABINET SIDE PANEL. TO LOCK THE COVER IN PLACE, INSERT THE KEY AND TURN IT CLOCKWISE 1/4 TURN. TO UNLOCK THE LATCHES, INSERT THE KEY AND TURN IT COUNTER-CLOCKWISE 1/4 TURN. ALWAYS KEEP THE COVER LOCKED WHEN THE SPA IS NOT IN USE. KEEP THE KEYS IN A SAFE PLACE, OUT OF THE REACH OF CHILDREN.

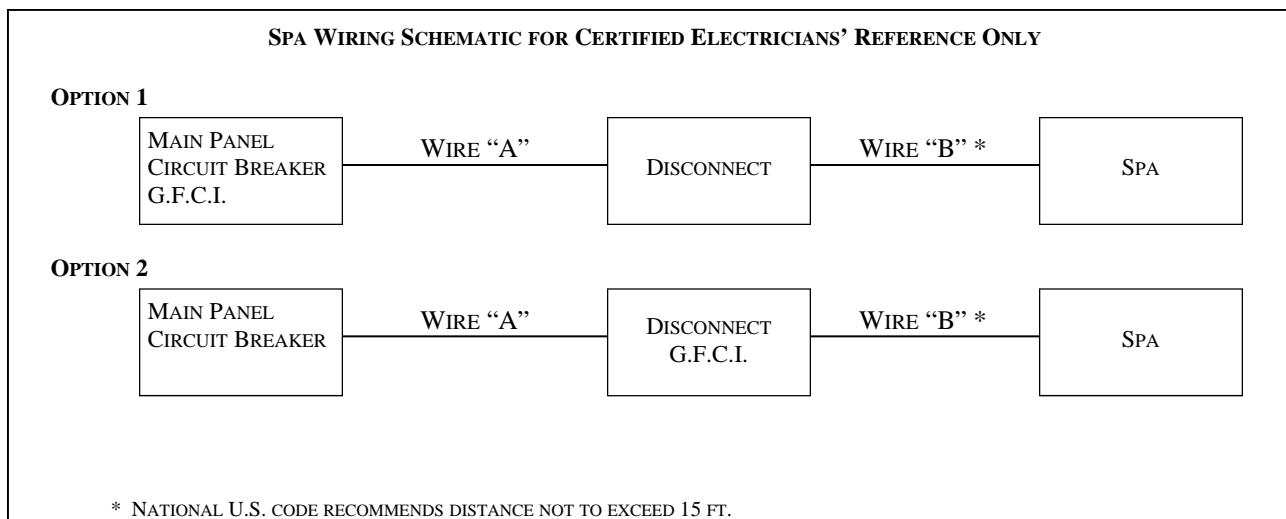


WIRING GUIDELINES

ALL EQUIPMENT MODELS ARE 120/240 VOLT, 60 CYCLE FOR STATE-SIDE, U.S. INSTALLATIONS, AND 50 HZ FOR EXPORT, CE, INSTALLATIONS.



- ALL SPAS MUST BE PERMANENTLY CONNECTED.
- ALL SPA SUPPORT SYSTEMS ARE MULTIPLE SUPPLY CIRCUITS.
- ALL SPA SYSTEMS REQUIRE THE INSTALLATION OF A GROUND FAULT CIRCUIT INTERRUPTER PROTECTOR (GFCI) OR EQUIVALENT; RCD, FOR EXPORT INSTALLS, AT THE POWER SOURCE (NOT SUPPLIED) BY A QUALIFIED ELECTRICIAN IN ACCORDANCE WITH ALL CODES AND REGULATIONS. REFER TO TYPICAL G.F.C.I. INSTALLATION ON FOLLOWING PAGE.
- PRIOR TO EACH USE, TESTING OF THE GFCI (OR EQUIVALENT) IS REQUIRED. REFER TO THE MAINTENANCE SECTION OF THIS MANUAL FOR INSTRUCTIONS.
- ALL SPA SUPPORT EQUIPMENT MUST BE BONDED (GROUNDED) TO THE PRESSURE CONNECTOR LOCATED WITHIN THE CONTROL PANEL, AS WELL AS THE BONDING TERMINAL LOCATED ON THE OUTSIDE OF THE CONTROL PANEL. (*see wiring schematic below*)
- DISCONNECT ALL ELECTRICAL SUPPLIES AND CONTACT A QUALIFIED TECHNICIAN BEFORE SERVICING.
- ALL SPA INSTALLATIONS ARE TO BE PERFORMED BY A LICENSED ELECTRICIAN AND IN ACCORDANCE WITH ALL LOCAL AND NATIONAL CODES.

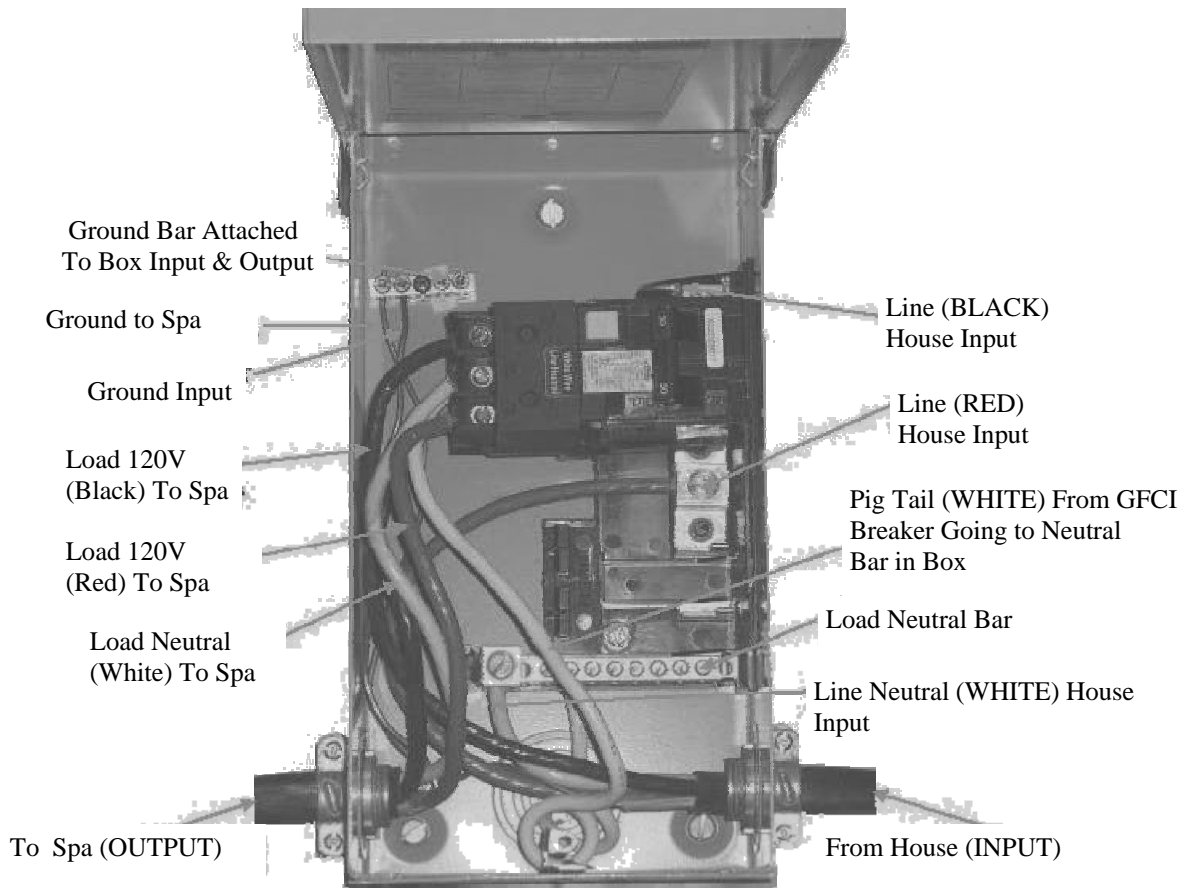


WIRING GUIDELINES - STATE-SIDE (U.S. INSTALLATIONS)

ATTENTION ELECTRICIAN:

ALL PDC SPA UNITS MUST BE INSTALLED WITH AN APPROVED G.F.C.I. IN ACCORDANCE WITH ALL APPLICABLE CODES. INSTALLATION OF G.F.C.I. VARIES AMONG THOSE MANUFACTURERS. FOLLOW EACH MANUFACTURER’S GUIDELINES TO ENSURE PROPER OPERATION AND PROTECTION OF SPA OCCUPANTS. THIS DIAGRAM IS A “TYPICAL” INSTALLATION TO BE USED ONLY AS A REFERENCE FOR THE INSTALLING ELECTRICIAN.

**TYPICAL INSTALLATION BREAKER BOX
CLASS A 50 AMP, 120/240 VOLT, GFCI**



TO BE NOTED: Installation of this GFCI Circuit Breaker, including ampere sizing and choice of qualified electrician in accordance with the National Electrical Code, and all applicable federal, state and local codes and regulations in effect at the time of installation.

TO BE NOTED: The white neutral wire from the back of the GFCI Circuit Breaker **MUST** be connected to an incoming Line Neutral. The internal mechanism of the GFCI requires this Neutral connection for proper GFCI function.

**IMPORTANT: 6 GAUGE COPPER WIRE MUST BE USED
TEST GFCI MONTHLY AND PRIOR TO EACH USE.**

WIRING INSTALLATION—EXPORT GUIDELINES



INSTALLATION GUIDELINES for Revolution

ALL INSTALLATIONS AND CONNECTIONS ARE TO BE PERFORMED BY A QUALIFIED, LICENSED ELECTRICIAN ONLY AND IN ACCORDANCE WITH LOCAL REGULATIONS. IDENTIFY THE CORRECT CE PLATFORM ON THE SPA UNIT, IN ACCORDANCE WITH THE HOME'S ELECTRICAL OUTPUT, AND FOLLOW THE GUIDELINES BELOW. ENSURE POWER IS TURNED OFF PRIOR TO MAKING ANY ELECTRICAL CONNECTIONS.



Warning!

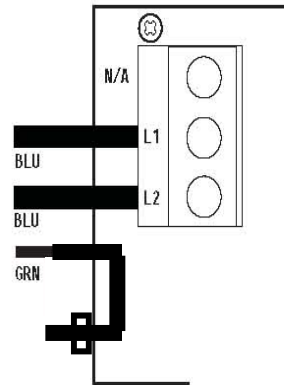
This product must always be connected to a circuit protected by a residual-current device (RCD) having a rated operating residual-current not exceeding 30 mA. Proper wiring of the electrical service box, RCD and Revolution terminal block is essential! Check your electrical code for local regulations. Only copper wire should be used, never aluminum.



REVOLUTION PLATFORM CONTROL CENTER

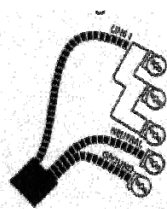
1 x 230 VAC (1 x 32A) single phase,
or
1 x 230 VAC (1 x 16A) dual phase,

WHEN INSTALLING THE REVOLUTION POWER BOX WE RECOMMEND THE FOLLOWING:

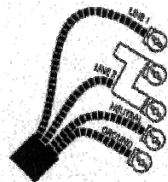


To install the wiring for the Revolution spa control, you'll need a Phillips screwdriver and a flat screwdriver. Loosen the 4 screws of the spa pack lid and open it. Remove 70 mm (3") of cable insulation. Strip away 25 mm (1/2") of each wire insulation. Pull the cable through the cutout of the box and use an IEC certified plastic bushing that will maintain the IPX5 rating. Also, the power cord must be in accordance with the national electrical code of the country in which it's to be installed and must maintain IPX5 rating. Make sure that only the uncut sheathing is clamped at this opening. Push the color-coded wires into the terminals as indicated on the sticker, use the flat screwdriver to tighten the bolts on the terminals. After making sure wire connections are secure, push them back into the box and close the lid. Tighten the 4 screws of the spa pack lid.

Connect the bonding conductor to the bonding lug on the left side of the revolution spa pack (a grounded electrode conductor shall be used to connect the equipment grounding conductors).



1x230 VAC(1x32A)
Single phase



1x230 VAC(1x16A)
Dual phase

An IEC certified bushing that will maintain the IPX5 rating must be used. The power cord must be in accordance with the national electrical code of the country in which the Revolution is to be installed.

Make sure all accessories are linked to the bonding connector and connected to the pack. Electrical connections should be made only by qualified personnel and in accordance with local regulations.

INITIAL START-UP



GENERAL GUIDELINES

1. BE SURE THAT THE POWER IS TURNED OFF AT THE MAIN CIRCUIT BREAKER.
2. CAUTION: ELECTRIC HEATER ELEMENT MUST BE FULLY SUBMERGED IN WATER BEFORE BEING ENERGIZED.
3. FILL SPA TO THE RECOMMENDED LEVEL, ASSURING ALL SUCTION OUTLETS ARE COVERED WITH WATER.
4. MAKE SURE VALVES ON THE SUCTION AND RETURN SIDES OF THE SPA PUMP ARE OPEN TO ALLOW WATER TO FLOW TO AND FROM THE SPA AND SPA SUPPORT SYSTEM.
5. IF THE PUMP IS AIR-LOCKED, LOCATE PUMP #1, LOOSEN RETURN FITTING FROM THE TOP OF THE PUMP A FEW TURNS. AFTER ABOUT 10 SECONDS, TIGHTEN UNION AND CONTINUE START-UP.
6. TURN POWER "ON" AT MAIN CIRCUIT BREAKER.
7. PRESS JET / PUMP BUTTON TO ACTIVATE CYCLE.
8. TURN AIR REGULATOR KNOB TO "OFF" POSITION.
9. WHEN THE SYSTEM HAS FULLY PRIMED, ALL THE JETS SHOULD BE FREELY ROTATING AND FREE OF EXCESS AIR; EXCEPT THE JETS ATTACHED TO OZONE, IF THIS OPTION IS INCLUDED ON THE SYSTEM. ALLOW THE SYSTEM TO OPERATE FOR FIVE MINUTES IN THIS POSITION.
10. SET THE THERMOSTAT TO THE DESIRED TEMPERATURE TO BEGIN HEATING THE SPA WATER. THE INDICATOR ICON ON THE SPA SIDE CONTROL WILL BE ON WHEN THE SPA IS HEATING.
11. THE ECONOMICAL, GRADUAL HEATING OF THE WATER TAKES PLACE OVER A NUMBER OF HOURS, DEPENDING UPON THE SIZE OF THE SPA, SIZE OF THE HEATER AND THE RECOMMENDED USE OF A PDC SPA COVER. WHEN THE DESIRED TEMPERATURE IS REACHED, NOT OVER 104°F (40°C). LEAVE THE THERMOSTAT AT THIS SETTING, THE TEMPERATURE WILL AUTOMATICALLY BE MAINTAINED. RE-CHECK WATER TEMPERATURE WITH AN ACCURATE THERMOMETER BEFORE ENTERING THE SPA.
12. SET THE FILTRATION PROGRAM TO DESIRED SETTING PER INSTRUCTIONS FOUND IN THE CONTROL CENTER SECTION OF THIS MANUAL.
13. CHEMICALLY TREAT THE SPA WATER. READ THE SECTION ON WATER CHEMISTRY MAINTENANCE AND FOLLOW INSTRUCTIONS ON CONTAINER OF ANY PRODUCT USED.
14. COVER THE SPA WITH THERMAL COVER TO MAINTAIN TEMPERATURE AND LOCK FOR SAFETY.

WARNING: READ ALL INSTRUCTIONS BEFORE USING THE SPA. PDC Spas, PDC International assumes no responsibility for personal injury or property damage sustained by or through the use of this product. When installing and using this equipment basic safety precautions should always be taken to reduce risk of electrical shock, ensure safe usage, and safeguard the user’s health.

Main Menus

Navigation

Navigating the entire menu structure is done with 2 or 3 buttons on the control panel.



The **WARM** and **COOL** buttons are indicated by a single **Temperature** icon throughout this User Guide. Some panels only have one Temperature Button.

Panels that have two Temperature buttons can use both of them to simplify navigation and programming where a single Temperature icon is shown.

The **LIGHT** Button is also used to choose the various menus and navigate each section.

Typical use of the Temperature button(s) allows changing the Set Temperature while the numbers are flashing in the LCD. Pressing the **LIGHT** button while the numbers are flashing will enter the menus.

The menus can be exited with certain button presses. Waiting for 10 seconds will return the panel to normal operation and a display of spa status.

Power-up Screens

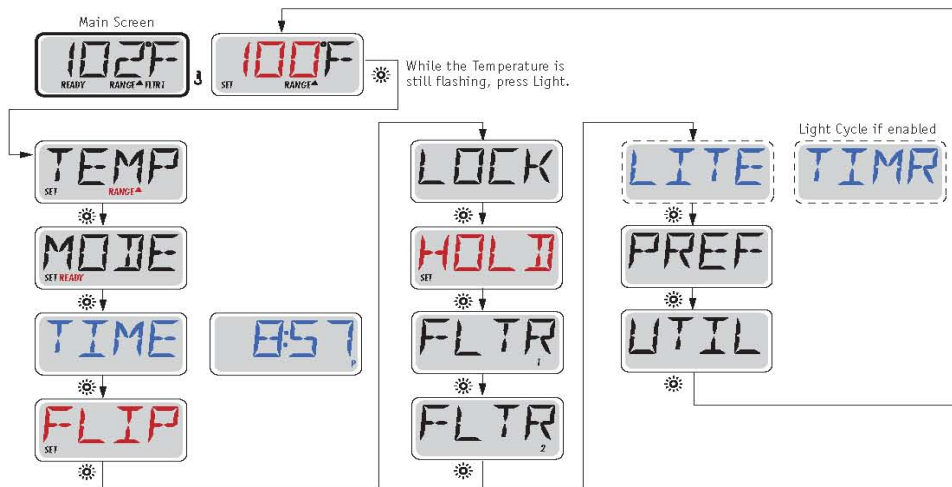
Each time the System powers up, a series of numbers is displayed.



After the startup sequence of numbers, LINK will appear if no button has been pressed. Press any button to Link the Panel with the System.

Key

- Indicates Flashing or Changing Segment
- Indicates Alternating or Progressive Message - every 1/2 second
- 3** A temperature button, used for "Action"
- Light or dedicated "Choose" button, depending on control panel configuration
- Waiting time - varies depending on function



Indicates a Menu Item that Depends on a Manufacturer Configuration and may or may not appear.



Waiting Approx. 10 Seconds in the Main Menu will allow the display to revert to the Main Screen

Fill it up!

Preparation and Filling

Fill the spa to its correct operating level. Be sure to open all valves and jets in the plumbing system before filling to allow as much air as possible to escape from the plumbing and the control system during the filling process.

After turning the power on at the main power panel, the top-side panel display will go through specific sequences. These sequences are normal and display a variety of information regarding the configuration of the hot tub control.

Priming Mode – M019*

This mode will last for 4-5 minutes or you can manually exit the priming mode after the pump(s) have primed.



Regardless of whether the priming mode ends automatically or you manually exit the priming mode, the system will automatically return to normal heating and filtering at the end of the priming mode. During the priming mode, the heater is disabled to allow the priming process to be completed without the possibility of energizing the heater under low-flow or no-flow conditions. Nothing comes on automatically, but the pump(s) can be energized by pushing the “Jet” buttons. If the spa has a Circ Pump, it can be activated by pressing the “Light” button during Priming Mode.

Priming the Pumps

As soon as the above display appears on the panel, push the “Jet” button once to start Pump 1 in low-speed and then again to switch to high-speed. Also, push the Pump 2 or “Aux” button, if you have a 2nd pump, to turn it on. The pumps will now be running in high-speed to facilitate priming. If the pumps have not primed after 2 minutes, and water is not flowing from the jets in the spa, do not allow the pumps to continue to run. Turn off the pumps and repeat the process. Note: Turning the power off and back on again will initiate a new pump priming session. Sometimes momentarily turning the pump off and on will help it to prime. Do not do this more than 5 times. If the pump(s) will not prime, shut off the power to the spa and call for service.

Important: A pump should not be allowed to run without priming for more than 2 minutes. Under NO circumstances should a pump be allowed to run without priming beyond the end of the 4-5 minute priming mode. Doing so may cause damage to the pump and cause the system to energize the heater and go into an overheat condition.

Exiting Priming Mode

You can manually exit Priming Mode by pressing a “Temp” button (Up or Down). Note that if you do not manually exit the priming mode as described above, the priming mode will be automatically terminated after 4-5 minutes. Be sure that the pump(s) have been primed by this time.

Once the system has exited Priming Mode, the top-side panel will momentarily display the set temperature but the display will not show the temperature yet, as shown below. This is because the system requires approximately 1 minute of water



flowing through the heater to determine the water temperature and display it.

Spa Behavior

Pumps

Press the “Jets 1” button once to turn pump 1 on or off, and to shift between low- and high-speeds if equipped.

If left running, the pump will turn off after a time-out period. The pump 1 low-speed will time out after 30 minutes. The high-speed will time out after 15 minutes.

On non-circ systems, the low-speed of pump 1 runs when the blower or any other pump is on. If the spa is in Ready Mode

Pump 1 low may also activate for at least 1 minute every 30 minutes to detect the spa temperature (polling) and then to heat to the set temperature if needed. When the low-speed turns on automatically, it cannot be deactivated from the panel, however the high speed may be started.

Circulation Pump Modes

If the system is equipped with a circ pump, it will be configured to work in one of three different ways:

- 1, The circ pump operates continuously (24 hours) with the exception of turning off for 30 minutes at a time when the water temperature reaches 3°F (1.5°C) above the set temperature (most likely to happen in very hot climates).
- 2, The circ pump stays on continuously, regardless of water temperature.
- 3, A programmable circ pump will come on when the system is checking temperature (polling), during filter cycles, during freeze conditions, or when another pump is on.

The specific Circulation Mode that is used has been determined by the Manufacturer and cannot be changed in the field.

Filtration and Ozone

On non-circ systems, Pump 1 low and the ozone generator will run during filtration. On circ systems, the ozone will run with the circ pump.

The system is factory-programmed with one filter cycle that will run in the evening (assuming the time-of-day is properly set) when energy rates are often lower. The filter time and duration are programmable.

A second filter cycle can be enabled as needed.

At the start of each filter cycle, the blower (if there is one) or Pump 2 (if there is one) will run briefly to purge its plumbing to maintain good water quality.

Freeze Protection

If the temperature sensors within the heater detect a low enough temperature, then the pump(s) and the blower automatically activate to provide freeze protection. The pump(s) and blower will run either continuously or periodically depending on conditions.

In colder climates, an optional additional freeze sensor may be added to protect against freeze conditions that may not be sensed by the standard sensors. Auxiliary freeze sensor protection acts similarly except with the temperature thresholds determined by the switch. See your dealer for details.

Clean-up Cycle (optional)

When a pump or blower is turned on by a button press, a clean-up cycle begins 30 minutes after the pump or blower is turned off or times out. The pump and the ozone generator will run for 30 minutes or more, depending on the system. On some systems, you can change this setting.

Temperature and Temp Range

Adjusting the Set Temperature

When using a panel with Up and Down buttons (Temperature buttons), pressing Up or Down will cause the temperature to flash. Pressing a temperature button again will adjust the set temperature in the direction indicated on the button. When the LCD stops flashing, the spa will heat to the new set temperature when required.

If the panel has a single temperature button, pressing the button will cause the temperature to flash. Pressing the button again will cause the temperature to change in one direction (e.g. UP). After allowing the display to stop flashing, pressing the Temperature Button will cause the temperature to flash and the next press will change the temperature in the opposite direction (e.g. DOWN).

Press-and-Hold

If a Temperature button is pressed and held when the temperature is flashing, the temperature will continue to change until the button is released. If only one temperature button is available and the limit of the Temperature Range is reached when the button is being held, the progression will reverse direction.

Dual Temperature Ranges

This system incorporates two temperature range settings with independent set temperatures. The High Range designated in the display by an “up” arrow, and the Low Range designated in the display by a “down” arrow.

These ranges can be used for various reasons, with a common use being a “ready to use” setting vs. a “vacation” setting. The Ranges are chosen using the menu structure below. Each range maintains its own set temperature as programmed by the user. This way, when a range is chosen, the spa will heat to the set temperature associated with that range.

High Range can be set between 80°F and 104°F.

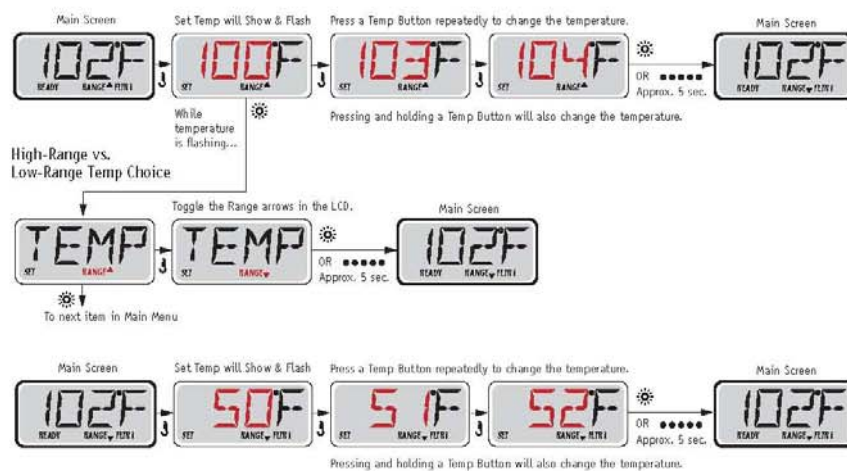
Low Range can be set between 50°F and 99°F.

More specific Temp Ranges may be determined by the Manufacturer.

Freeze Protection is active in either range.

Key

- Indicates Flashing or Changing Segment
- Indicates Alternating or Progressive Message - every 1/2 second
- ⏏ A temperature button, used for “Action”
- ☀ Light or dedicated “Choose” button, depending on control panel configuration
- Waiting time - varies depending on function



Mode – Ready and Rest

In order for the spa to heat, a pump needs to circulate water through the heater. The pump that performs this function is known as the “heater pump.”

The heater pump can be either a 2-Speed Pump 1 or a circulation pump.

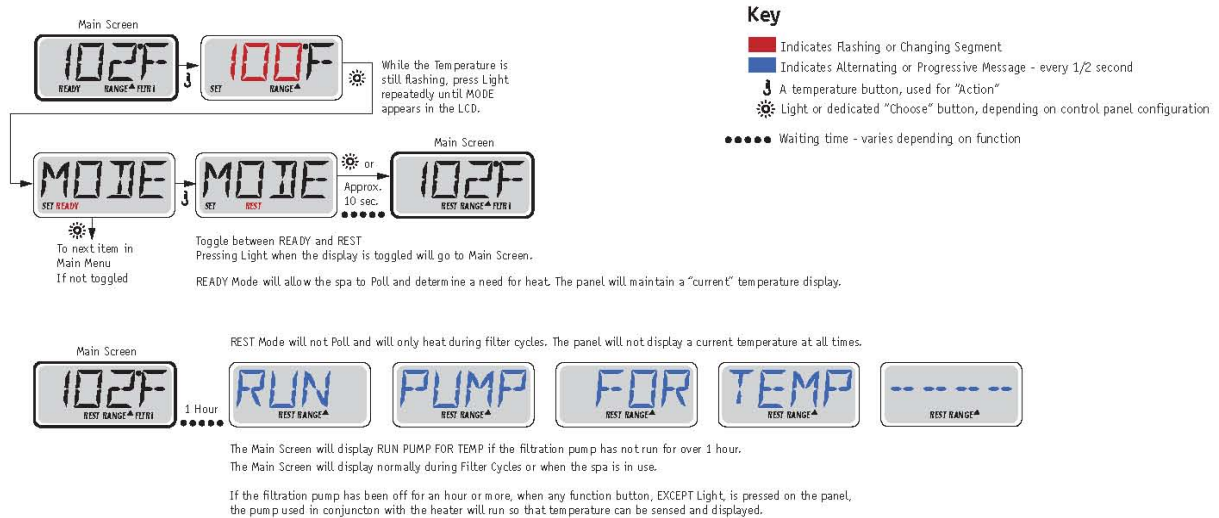
If the heater pump is a 2-Speed Pump 1, READY Mode will circulate water every 1/2 hour, using Pump 1 Low, in order to maintain a constant water temperature, heat as needed, and refresh the temperature display. This is known as “polling.”

REST Mode will only allow heating during programmed filter cycles. Since polling does not occur, the temperature display may not show a current temperature until the heater pump has been running for a minute or two.

Circulation Mode

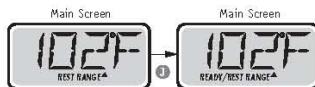
If the spa is configured for 24HR circulation, the heater pump generally runs continuously. Since the heater pump is always running, the spa will maintain set temperature and heat as needed in Ready Mode, without polling.

In Rest Mode, the spa will only heat to set temperature during programmed filter times, even though the water is being filtered constantly when in Circulation Mode.



Ready-in-Rest Mode

READY/REST appears in the display if the spa is in Rest Mode and Jet 1 is pressed. It is assumed that the spa is being used and will heat to set temperature. While Pump 1 High can be turned on and off, Pump 1 Low will run until set temperature is reached, or 1 hour has passed. After 1 hour, the System will revert to Rest Mode. This mode can also be reset by entering the Mode Menu and changing the Mode.



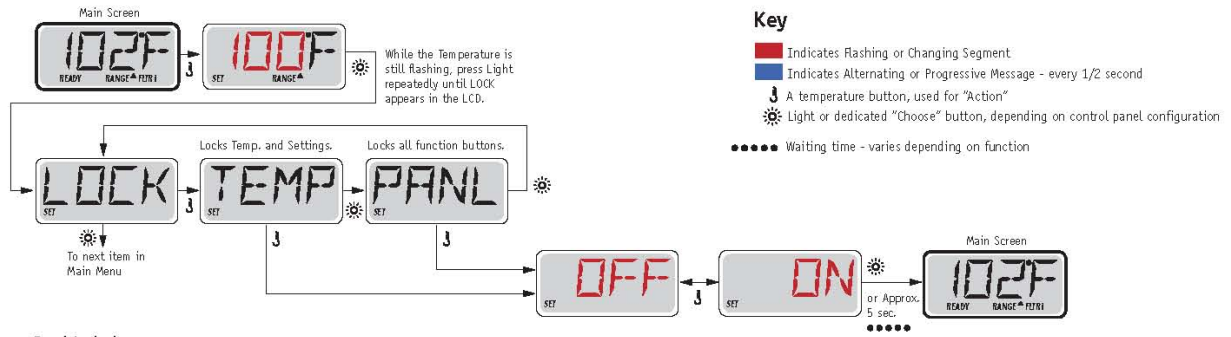
Restricting Operation

The control can be restricted to prevent unwanted use or temperature adjustments.

Locking the panel prevents the controller from being used, but all automatic functions are still active.

Locking the Temperature allows Jets and other features to be used, but the Set Temperature and other programmed settings cannot be adjusted.

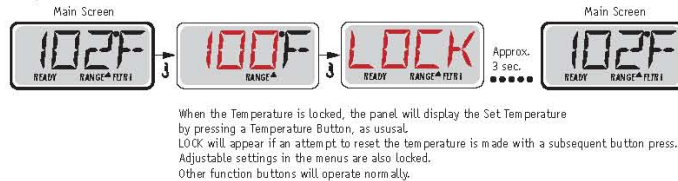
Temperature Lock allows access to a reduced selection of menu items. These include Set Temperature, FLIP, LOCK, UTIL, INFO and FALT LOG.



Panel Locked

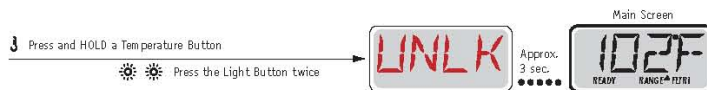


Temperature Locked



Unlocking

This Unlock sequence may be used from any screen that may be displayed on a restricted panel.



Hold (Standby)

Hold Mode – M037*

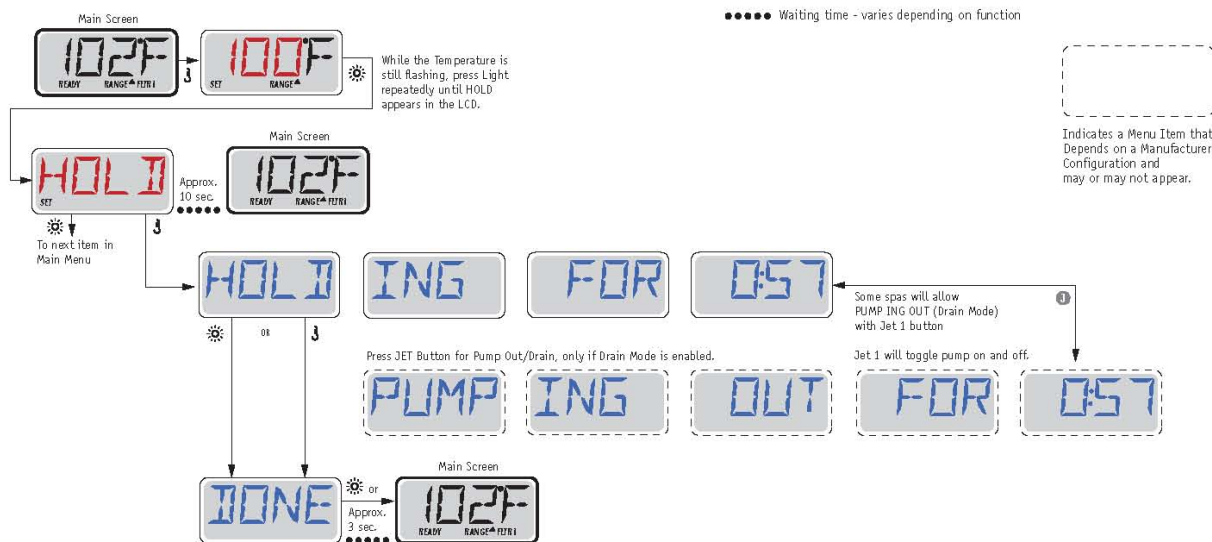
Hold Mode is used to disable the pumps during service functions like cleaning or replacing the filter. Hold Mode will last for 1 hour unless the mode is exited manually.

Drain Mode

Some spas have a special feature that allows a pump to be employed when draining the water. When available, this feature is a component of Hold Mode.

Key

- Indicates Rashing or Changing Segment
- Indicates Alternating or Progressive Message - every 1/2 second
- ⏏ A temperature button, used for "Action"
- ☀ Light or dedicated "Choose" button, depending on control panel configuration
- Waiting time - varies depending on function



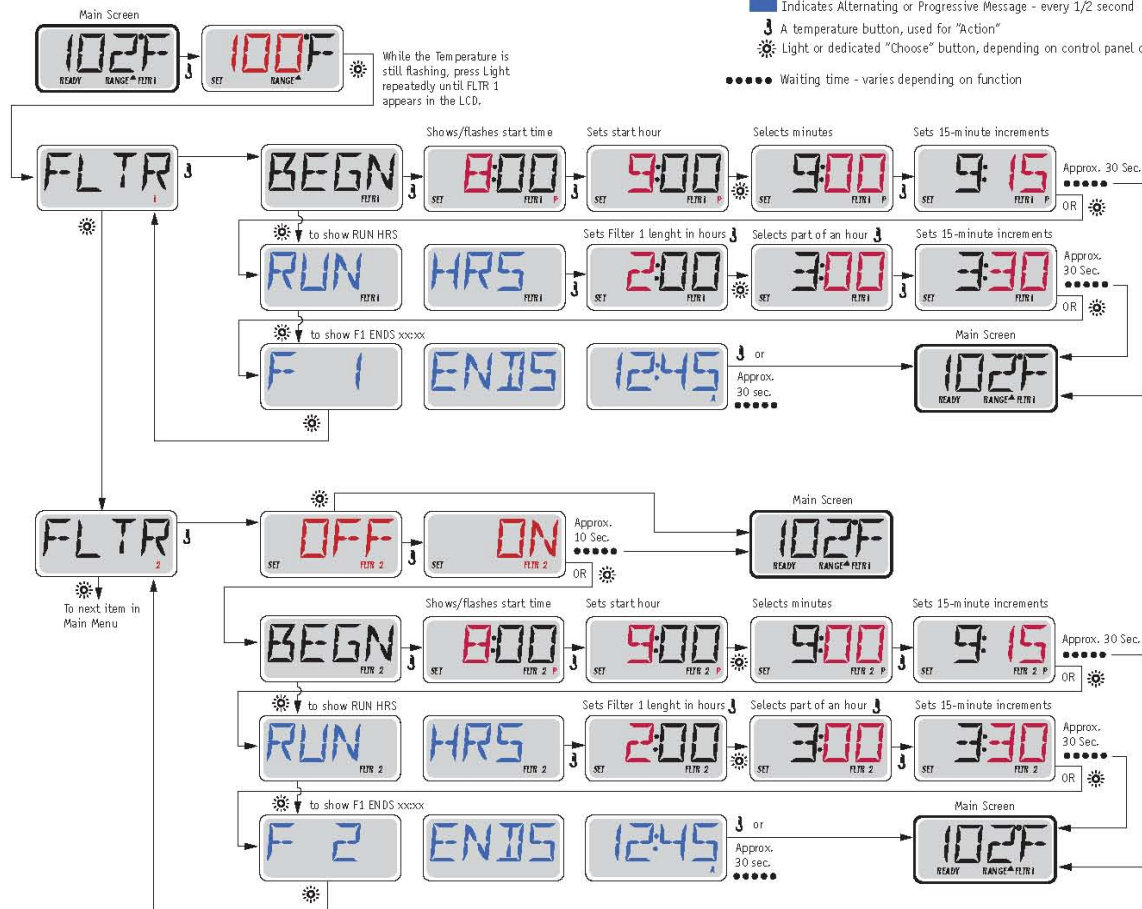
Adjusting Filtration

Main Filtration

Filter cycles are set using a start time and a duration. Start time is indicated by an "A" or "P" in the bottom right corner of the display. Duration has no "A" or "P" indication. Each setting can be adjusted in 15-minute increments. The panel calculates the end time and displays it automatically.

Key

- Indicates Flashing or Changing Segment
- Indicates Alternating or Progressive Message - every 1/2 second
- ⏴ A temperature button, used for "Action"
- ☀ Light or dedicated "Choose" button, depending on control panel configuration
- Waiting time - varies depending on function



Filter Cycle 2 - Optional Filtration

Filter Cycle 2 is OFF by default.

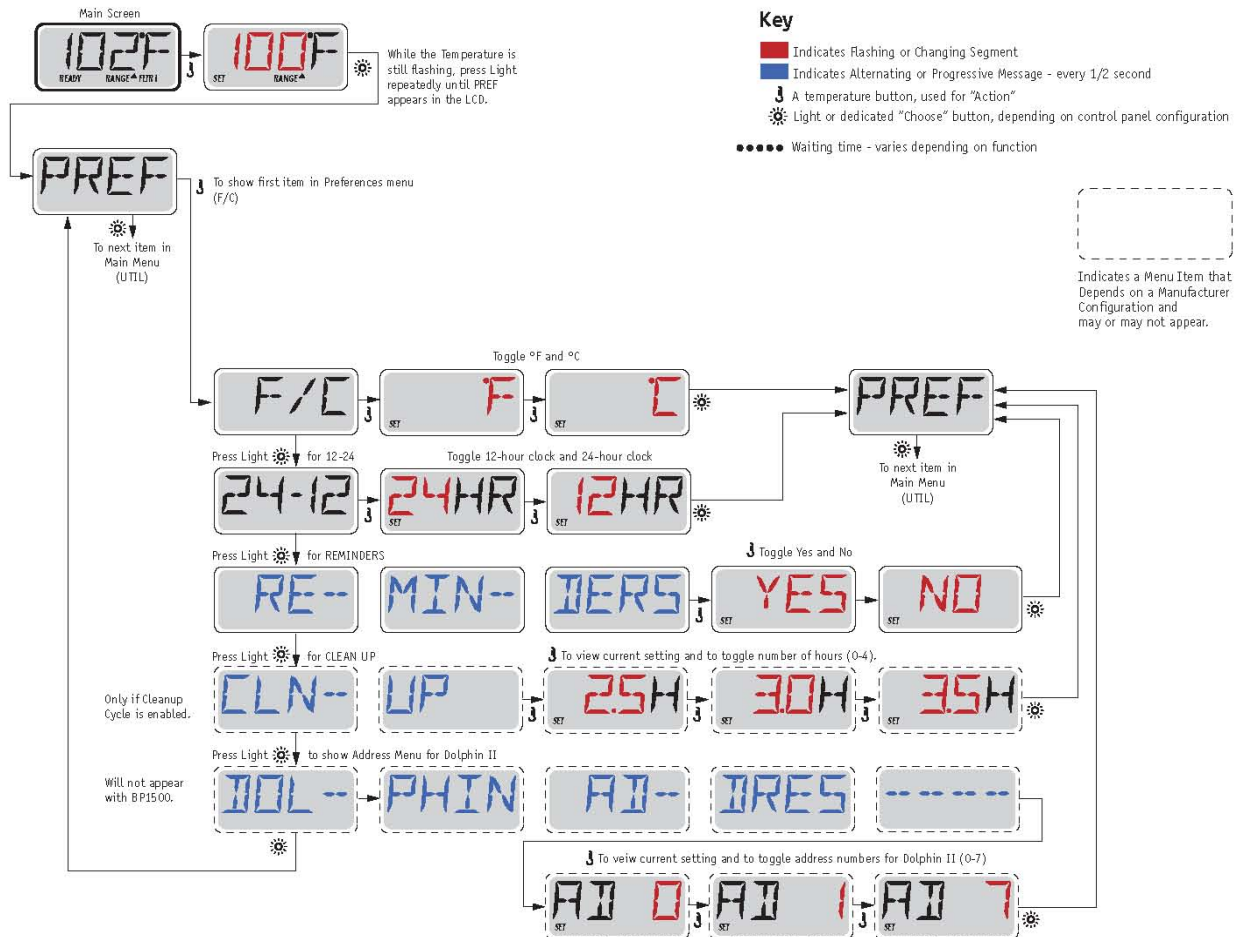
It is possible to overlap Filter Cycle 1 and Filter Cycle 2, which will shorten overall filtration by the overlap amount.

Purge Cycles

In order to maintain sanitary conditions, secondary Pumps and/or a Blower will purge water from their respective plumbing by running briefly at the beginning of each filter cycle.

If Filter Cycle 1 is set for 24 hours, enabling Filter Cycle 2 will initiate a purge when Filter Cycle 2 is programmed to begin.

Preferences



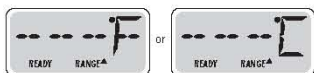
General Messages



Priming Mode – M019

Each time the spa is powered up, it will enter Priming Mode. The purpose of Priming Mode is to allow the user to run each pump and manually verify that the pumps are primed (air is purged) and water is flowing. This typically requires observing the output of each pump separately, and is generally not possible in normal operation. Priming Mode lasts 4 minutes, but you can exit it earlier by pressing any Temp button. The heater is not allowed to run during Priming Mode.

NOTE: If your spa has a Circ Pump, it will turn on with Jets 1 in Priming Mode. The Circ Pump will run by itself when Priming Mode is exited.



Water Temperature is Unknown

After the pump has been running for 1 minute, the temperature will be displayed.



Too Cold - Freeze Protection

A potential freeze condition has been detected, or the Aux Freeze Switch has closed, and all pumps and blower are activated. All pumps and blower are ON for at least 4 minutes after the potential freeze condition has ended, or when the aux freeze switch opens.

In some cases, pumps may turn on and off and the heater may operate during Freeze Protection.

This is an operational message, not an error indication.



Water is too Hot (OHS) – M029

One of the water temp sensors has detected spa water temp 110°F (43.3°C) and spa functions are disabled. System will auto reset when the spa water temp is below 108°F (42.2°C). Check for extended pump operation or high ambient temp.



Safety Trip - Pump Suction Blockage* – M033

The Safety Trip error message indicates that the vacuum switch has closed. This occurs when there has been a suction problem or a possible entrapment situation avoided. (Note: not all spas have this feature.)

Heater-Related Messages

HTR FLOW LOSS -----

Heater Flow is Reduced (HFL) – M016

There may not be enough water flow through the heater to carry the heat away from the heating element. Heater start up will begin again after about 1 min. See “Flow Related Checks” below.

HTR FLOW FAIL -----

Heater Flow is Reduced (LF)* – M017

There is not enough water flow through the heater to carry the heat away from the heating element and the heater has been disabled. See “Flow Related Checks” below. After the problem has been resolved, you must press any button to reset and begin heater start up.

HTR MAY BE DRY ----- WAIT -----

Heater may be Dry (dr)* – M028

Possible dry heater, or not enough water in the heater to start it. The spa is shut down for 15 min. Press any button to reset the heater start-up. See “Flow Related Checks” below.

HTR DRY -----

Heater is Dry* – M027

There is not enough water in the heater to start it. The spa is shut down. After the problem has been resolved, you must press any button to reset and restart heater start up. See “Flow Related Checks” below.

HTR TOO HOT -----

Heater is too Hot (OHH)* – M030

One of the water temp sensors has detected 118°F (47.8°C) in the heater and the spa is shut down. You must press any button to reset when water is below 108°F (42.2°C). See “Flow Related Checks” below.

PRES BTTN TO RSET -----

A Reset Message may Appear with other Messages.

Some errors may require power to be removed and restored.

Flow-Related Checks

Check for low water level, suction flow restrictions, closed valves, trapped air, too many closed jets and pump prime.

On some systems even when spa is shut down, some equipment may occasionally turn on to continue monitoring temperature or if freeze protection is needed.

* This message can be reset from the topside panel with any button press.

Sensor-Related Messages



Sensor Balance is Poor – M015

The temperature sensors MAY be out of sync by 2°F or 3°F. Call for Service.



Sensor Balance is Poor* – M026

The temperature sensors ARE out of sync. The Sensor Balance is Poor fault has been established for at least 1 hour. Call for Service.



Sensor Failure – Sensor A: M031, Sensor B: M032

A temperature sensor or sensor circuit has failed. Call for Service.

Miscellaneous Messages



No Communications

The control panel is not receiving communication from the System. Call for Service.



Pre-Production Software

The Control System is operating with test software. Call for Service.



°F or °C is replaced by °T

The Control System is in Test Mode. Call for Service.

* This message can be reset from the topside panel with any button press.

System-Related Messages

MEM FAIL -----

Memory Failure - Checksum Error* – M022

At Power-Up, the system has failed the Program Checksum Test. This indicates a problem with the firmware (operation program) and requires a service call.

MEM RSET -----

Memory Failure - Persistent Memory Error* – M021

Contact your dealer or service organization if this message appears on more than one power-up, or if it appears after the system has been running normally for a period of time.

CLOK FAIL -----

Memory Failure - Clock Error* – M020 - Not Applicable on the BP1500

Contact your dealer or service organization.

CNFG FAIL -----

Configuration Error – Spa will not Start Up

Contact your dealer or service organization.

GFCI FAIL -----

GFCI Failure - System Could Not Test the GFCI – M036

May indicate an unsafe installation. Contact your dealer or service organization.

STUK PUMP -----

A Pump Appears to be Stuck ON – M034

Water may be overheated. POWER DOWN THE SPA. DO NOT ENTER THE WATER. Contact your dealer or service organization.

HOT FALT ----- CALL FOR SRVC -----

A Pump Appears to have been Stuck ON when spa was last powered – M035

POWER DOWN THE SPA. DO NOT ENTER THE WATER.
Contact your dealer or service organization.

* This message can be reset from the topside panel with any button press.

Reminder Messages

General maintenance helps.

Reminder Messages can be suppressed by using the PREF Menu.

Reminder Messages can be chosen individually by the Manufacturer. They may be disabled entirely, or there may be a limited number of reminders on a specific model.

The frequency of each reminder (i.e. 7 days) can be specified by the Manufacturer.

Press a Temperature button to reset a displayed reminder message.



Alternates with temperature or normal display.

Appears on a regular schedule, i.e. every 7 days.

Check pH with a test kit and adjust pH with the appropriate chemicals.



Alternates with temperature or normal display.

Appears on a regular schedule, i.e. every 7 days.

Check sanitizer level and other water chemistry with a test kit and adjust with the appropriate chemicals.



Alternates with temperature or normal display.

Appears on a regular schedule, i.e. every 30 days.

Clean the filter media as instructed by the manufacturer.



Alternates with temperature or normal display.

Appears on a regular schedule, i.e. every 30 days.

The GFCI is an important safety device and must be tested on a regular basis to verify its reliability.

Every user should be trained to safely test the GFCI associated with the hot tub installation.

A GFCI will have a TEST and RESET button on it that allows a user to verify proper GFCI function.

Reminder Messages Continued

CHNG WATR

Alternates with temperature or normal display.

Appears on a regular schedule, i.e. every 90 days.

Change the water in the spa on regular basis to maintain proper chemical balance and sanitary conditions.

CLN COVR

Alternates with temperature or normal display.

Appears on a regular schedule, i.e. every 180 days.

Vinyl covers should be cleaned and conditioned for maximum life.

TRT WOOD

Alternates with temperature or normal display.

Appears on a regular schedule, i.e. every 180 days.

Wood skirting and furniture should be cleaned and conditioned per the manufacturers instructions for maximum life.

CHNG FLTR

Alternates with temperature or normal display.

Appears on a regular schedule, i.e. every 365 days.

Filters should be replaced occasionally to maintain proper spa function and sanitary conditions.

CHNG CART

Alternates with temperature or normal display.

As needed.

Install new mineral cartridge

WATER CHEMISTRY MAINTENANCE

pH CONTROL:

CHEMICALLY BALANCED WATER DEPENDS PRIMARILY ON:

1. THE AMOUNT OF ACID OR BASE IN THE WATER (pH),
2. THOSE CHEMICALS THAT HELP MAINTAIN OR STABILIZE pH (TOTAL ALKALINITY) AND,
3. THOSE CHEMICALS THAT CAUSE SCALING (CALCIUM HARDNESS). DESCRIBED AS A MEASURE

OF RELATIVE ACIDITY OR ALKALINITY OF WATER, pH IS MEASURED ON A NUMBER SCALE FROM 0 - 14. THE MID-POINT, 7, IS SAID TO BE PRECISELY NEUTRAL, ABOVE WHICH ALKALINITY BECOMES PROGRESSIVELY GREATER AND BELOW WHICH ACIDITY BECOMES PROGRESSIVELY GREATER. PROPERLY BALANCED SPA WATER SHOULD HAVE A pH BETWEEN 7.2-7.8, A TOTAL ALKALINITY OF 75-150 PPM AND AN OPTIMUM RANGE OF 100-400 PPM OF CALCIUM HARDNESS. WITHIN THESE LIMITS, YOUR SANITIZING CHEMICALS AND FILTERING FUNCTIONS WILL BE MOST EFFECTIVE. TEST KITS ARE AVAILABLE TO MEASURE THE pH AND SHOULD BE REPLACED ON AN AT LEAST ANNUAL BASIS TO ASSURE ACCURACY.

DISINFECTION:

THE HIGH TEMPERATURE AND INCREASED VELOCITY OF THE WATER, AS WELL AS THE HEAVY BATHER LOADS, ALL CONTRIBUTE TO THE ORGANIC CONTAMINATION OF SPA WATER. IT IS VERY IMPORTANT TO MAINTAIN AN EFFECTIVE RESIDUAL OF SANITIZING AGENT, TO SHOCK TREAT AT PERIODIC INTERVALS AND, IF NEEDED, TO CONTROL ALGAE GROWTH.

BROMINE IS THE BEST-SUITED SANITIZER FOR SPA WATER. ALTHOUGH CHLORINE IS POPULAR AS A SWIMMING POOL SANITIZER, THE HIGH TEMPERATURES AND AERATION OF A SPA GREATLY ACCELERATE CHLORINE LOSS. FREE CHLORINE REACTS WITH ORGANIC MATERIALS TO FORM COMBINED CHLORINE, WHICH IS A POOR DISINFECTANT THAT CAUSES OFFENSIVE ODORS AND OFTEN CAUSES EYE BURN. BROMINE IS SIMILAR TO CHLORINE, ALTHOUGH IN THE FREE AND COMBINED FORM IT IS AN EFFECTIVE SANITIZING AGENT AND CAUSES NO OFFENSIVE ODOR OR EYE BURN. IT IS EASIER TO MAINTAIN A BROMINE RESIDUAL THAN CHLORINE AND IT IS EFFECTIVE OVER A WIDER pH RANGE THAN CHLORINE.

THE TEST FOR BROMINE SHOULD READ 1 PPM IN A RESIDENTIAL SPA. DEPENDING UPON BATHER LOAD, AMOUNT OF USAGE, TYPE OF WATER, ULTRAVIOLET EXPOSURE, ETC., THE AMOUNT OF CHEMICALS NEEDED WILL VARY. ON A WEEKLY BASIS, A "SHOCK" TREATMENT SHOULD BE USED TO DESTROY ORGANIC CONTAMINATION NOT READILY DESTROYED BY NORMAL ADDITIONS OF THE SANITIZING AGENT. THIS IS ACCOMPLISHED BY USING A POWERFUL, LONG-LASTING OXIDIZING AGENT CAPABLE OF DESTROYING THE ORGANIC CONTAMINANTS SO THE SANITIZER CAN BE EFFECTIVE IN KILLING BACTERIA.

CONTACT YOUR CHEMICAL SUPPLIER FOR THE BEST "SHOCKING" AGENT IN CONJUNCTION WITH THE LINE OF CHEMICALS BEING USED. FOR SPAS INSTALLED OUTSIDE AND DIRECTLY IN SUNLIGHT, ALGAE GROWTH MAY BE A PROBLEM. IF THIS OCCURS, CONTACT YOUR RETAILER OR CHEMICAL MANUFACTURER FOR ADVICE ON THE BEST AGENT AVAILABLE TO HANDLE THIS PROBLEM.

REMEMBER!:

1. BEFORE USING CHEMICALS, READ THE LABELS AND FOLLOW DIRECTIONS CAREFULLY.
2. ALWAYS ADD THE CHEMICALS DIRECTLY TO THE SPA WATER, EITHER IN A SUITABLE FEEDER, DISTRIBUTED OVER THE SURFACE OF THE WATER, OR Poured INTO THE WATER, PREFERABLY WITH THE PUMP AND BUBBLER ON.
3. NEVER ADD CHEMICALS TO THE SPA WHILE PEOPLE ARE USING IT.
4. MAINTAINING TEMPERATURE BETWEEN 95-104°F (35-40°C) IS ESSENTIAL AS A HEALTH FACTOR FOR BATHERS AND IS HELPFUL IN CONTROLLING WATER PROBLEMS.
5. THE BOTTOM LINE TO PROPER WATER MAINTENANCE IS TO ADHERE TO A REGULAR SCHEDULE OF TESTING CHEMICAL LEVELS AND MAINTAINING THEM.

WATER CHEMISTRY MAINTENANCE (cont'd.)

OZONE:

YOUR SPA IS EQUIPPED WITH OZONE AS THE SANITIZING AGENT. STANDARD ON THE RIVER SERIES SPAS. THIS UTILIZES ULTRAVIOLET LIGHT AND OFFERS A “HANDS-FREE” ROUTINE TO SPA WATER CARE. THE pH MUST BE MAINTAINED AND SHOCKING MAY BE NEEDED AFTER HEAVY BATHER LOADS. WITH THE USE OF OZONE, THE PERIODIC DRAINING MAY BE NEEDED LESS FREQUENTLY, AND THE BROMINE ODOR NO LONGER AN ISSUE. IT IS SUGGESTED THAT 24-HOUR CIRCULATION IS REQUIRED TO EFFECTIVELY SANITIZE THE WATER, AND A CHLORINE SHOCK USED PERIODICALLY. CONTACT YOUR CHEMICAL SUPPLIER FOR MORE INFORMATION.

1. THERE IS NO TEST KIT AVAILABLE TO TEST OZONE PRESENCE IN SPA WATER, ALTHOUGH A 24-HOUR CIRCULATION PERIOD IS RECOMMENDED FOR CLEAN, CLEAR WATER. A CLEAN, “AFTER RAIN” SMELL WILL BE PRESENT WHEN YOU OPEN YOUR SPA COVER AS AN INDICATOR THAT THE OZONE IS DOING IT’S JOB.
2. A PROPER pH MUST BE MAINTAINED AND A ROUTINE BROMINE OR CHLORINE SHOCK IS SUGGESTED.

OZONE UNIT

Location varies with spa model. Refer to specifications for location and take note during installation positioning.



BASIC WATER CHEMISTRY CHART

PROBLEM	DESCRIPTION	CAUSE	REMEDY
Green Algae	Green Water Green spots on surface Slippery surface	Low ozone, bromine, or chlorine levels Low algacide levels	Superchlorinate Brush spa; removing algae Vacuum spa; removing algae Increase oxidizer residual
Black Algae	Black spots on spa surface	Low oxidizer levels Low algacide levels.	Superchlorinate Brush spa; removing algae Vacuum spa; removing algae Increase oxidizer residual
Unpleasant Odor, Burning Eyes	Chlorine-like odor. Burning sensation in eyes.	Combined chlorine and/or pH out of balance	Superchlorinate. Balance pH to 7.2-7.6
Colored Water	Water in newly-filled spa turns black, blue, or brown when treated with ozone	Copper, iron, or manganese in water being oxidized by chlorine or ozone	Adjust pH to 7.2-7.6 Run filter continuously Vacuum settled material Use sequestering agent for prevention
Hard Water	Cloudy water Scaling	Excessive hardness of makeup water or building up of dissolved minerals in the water caused by continued use of spa chemicals.	Clean filter Filter continuously Adjust pH to 7.2-7.6 Use scale inhibitor Dilute with makeup water

TESTING THE G.F.C.I. EQUIVALENT (RCD)

GROUND FAULT CIRCUIT INTERRUPTER (G.F.C.I.) PROTECTION FOR THE SPA SHOULD BE TESTED PRIOR TO EACH USE BY THE HOMEOWNER. WITH THE SPA IN OPERATION, PUSH THE “TEST” BUTTON ON THE G.F.C.I. BREAKER AT THE PANEL BOX OR ON THE POWER CORD. THE SPA SHOULD SHUT DOWN IMMEDIATELY. NOW RESET THE G.F.C.I. THE SPA SHOULD RETURN TO NORMAL OPERATION. IF THE G.F.C.I. FAILS TO OPERATE IN THIS MANNER, THERE EXISTS A POSSIBILITY OF ELECTRICAL SHOCK.

DISCONTINUE SPA OPERATION BY DISCONNECTING THE POWER SOURCE AND NOTIFY A QUALIFIED ELECTRICIAN FOR IDENTIFICATION AND CORRECTION OF THE PROBLEM.

THE SPA SURFACE

TO PRESERVE THE SHEEN OF YOUR SPA’S SURFACE, CLEAN AND SANITIZE THE ACRYLIC SURFACE WITH RUBBING ALCOHOL. AVOID USING ABRASIVE CLEANSERS. IF YOU ARE NOT CERTAIN AS TO THE SUITABILITY OF A PARTICULAR CLEANSER, CONSULT YOUR DEALER. DO NOT USE SOAP, AS IT CAN CAUSE SUDSING.

PERMA-WOOD CABINET:

YOUR SPA MAY BE CONSTRUCTED FROM A WOOD ALTERNATIVE MATERIAL DESIGNED TO BE DURABLE, TOUGH, AND VIRTUALLY MAINTENANCE-FREE. IT MAY REQUIRE PERIODIC CLEANING WITH A NON-ABRASIVE CLEANER.

THE COVER

USING THE OPTIONAL INSULATING SPA COVER ANYTIME THE SPA IS NOT IN USE WILL SIGNIFICANTLY REDUCE YOUR OPERATING COSTS, HEAT-UP TIME AND MAINTENANCE REQUIREMENTS. TO PROLONG THE LIFE OF THE COVER, HANDLE IT WITH CARE AND CLEAN IT REGULARLY USING MILD SOAP AND WATER. PERIODIC TREATMENTS WITH A VINYL CONDITIONER WILL HELP PROTECT AGAINST DETERIORATION CAUSED BY UV RAYS FROM THE SUN. NEVER ALLOW ANYONE TO STAND OR SIT ON THE COVER, AND AVOID DRAGGING IT ACROSS ROUGH SURFACES. KEEP COVER LOCKED WHEN NOT IN USE.

THE FILTER

SPA WATER FILTRATION BEGINS AS SOON AS THE FLOW IS STEADY THROUGH THE PUMP. THE SKIM FILTER ASSURES OPTIMUM CLEANING CAPACITY. AS THE FILTER CARTRIDGE REMOVES DIRT FROM THE WATER, THE ACCUMULATED DEBRIS WILL CAUSE A RESISTANCE TO FLOW. WHEN THIS IS NOTICED, ALONG WITH CLOUDY WATER, CLEAN OR REPLACE THE FILTER ELEMENT AS NOTED BELOW.

1. SHUT OFF POWER AT THE MAIN OR SUB PANEL.
2. REMOVE THE FILTER HOUSING TOP BY USING THE RAISED PORTIONS OF THE FILTER TOP AND TURNING IT COUNTER CLOCKWISE. AFTER TOP STOPS TURNING, LIFT UP TO REMOVE TOP FROM FILTER.
3. LIFT THE SKIMMER BASKET OUT OF THE FILTER CANISTER.
4. REMOVE THE FILTER FROM THE CANISTER.
5. REPLACE WITH CLEAN FILTER (REVIEW ABOVE FOR CLEANING RECOMMENDATIONS.)
6. PLACE SKIMMER BASKET BACK IN FILTER CANISTER.
7. PLACE FILTER TOP ONTO FILTER CANISTER AND TURN CLOCKWISE UNTIL TOP STOPS.

PERIODIC SPA WATER DRAINING

AFTER A CERTAIN TIME, YOU MAY FIND THAT THE ADDITION OF CHEMICALS WILL NOT CLARIFY OR ELIMINATE ODORS IN THE SPA. THIS IS AN INDICATION THAT THE WATER NEEDS TO BE DRAINED AND REPLACED. GENERALLY, DEPENDING UPON BATHER LOAD AND WATER CHEMISTRY MAINTENANCE, THIS MAY NEED DONE EVERY 3 MONTHS. WITH THE USE OF OZONE, THIS MAY NEED DONE LESS FREQUENTLY.

1. REDUCE SET TEMPERATURE TO LOWEST SETTING.
2. TURN OFF ALL POWER.
3. USING A GARDEN HOSE START A SIPHON TO DRAIN THE WATER FROM THE SPA.
4. CLEAN CARTRIDGE FILTER AS NOTED PREVIOUSLY IN THIS SECTION REGARDING MAINTENANCE RECOMMENDATIONS.
5. CLEAN SPA SHELL WITH NON-SUDSING CLEANSER.
6. FOLLOW INSTRUCTION UNDER START-UP.

PLUMBING CARE

ALL SPAS ARE PLUMBED WITH PLASTIC JETS, PIPES AND FITTINGS WHICH ARE GLUED TOGETHER. THESE PLASTIC PARTS AND THEIR MANY GLUE JOINTS ARE SUBJECTED TO HARSH TREATMENT. EVERY SPA IS TESTED WITH WATER TO ASSURE THERE ARE NO LEAKS WHEN IT LEAVES THE FACTORY; HOWEVER, SOMETIMES SPAS DEVELOP A LEAK CAUSED BY SHIPPING VIBRATION. OVER THE YEARS, YOUR SPA IS SUBJECTED TO MANY HOT-COLD CYCLES AND THE HIGH PRESSURE GENERATED BY THE POWERFUL JET PUMP, WHICH TOGETHER STRESSES THE PIPES AND JOINTS. PDC SPAS ARE DESIGNED TO BE OWNER SERVICEABLE WITH EASY-ACCESS PANELS ON ALL 4 SIDES OF THE PORTABLE SPA WHICH ALLOW QUICK AND THOROUGH INSPECTION AND REPAIR OF THE PLUMBING SYSTEM. SHOULD A LEAK OCCUR, FOLLOW THESE INSTRUCTION TO MAKE THE REPAIR.

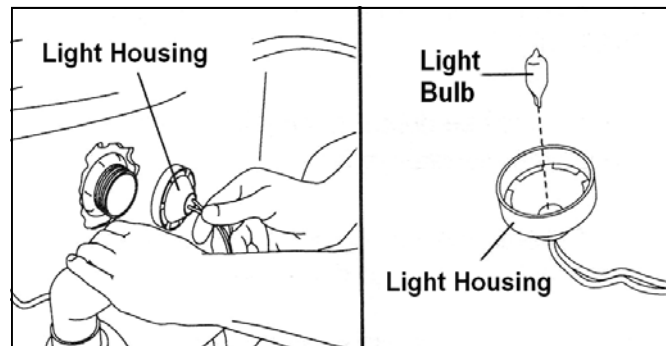
1. REMOVE SIDE PANEL TO LOCATE LEAK. MARK THE LEAK WITH A MARKING PEN.
2. TURN OFF ALL POWER. DRAIN SPA BELOW LEAK, ALLOW PLASTIC PARTS TO DRY.
3. CONTACT QUALIFIED SERVICE TECHNICIAN TO REPAIR PLUMBING.

REPLACING THE LIGHT BULB

IF THE UNDERWATER LIGHT BULB SHOULD BURN OUT (AURA LIGHTING) YOU WILL NEED TO REMOVE THE ACCESS PANEL TO REPLACE IT. (REFER TO THE MANUAL SECTION REGARDING REMOVAL).

BE SURE THE POWER IS "OFF". LOCATE THE LIGHT HOUSING, TURN THE HOUSING COUNTERCLOCKWISE AND REMOVE FROM SPA SHELL. TO REPLACE THE BULB, PULL THE OLD BULB FROM THE HOUSING AND INSERT NEW ONE. RE-ATTACH THE LIGHT HOUSING TO SPA SHELL. REPLACE CABINET PANEL AND ENDS.

(SEE ILLUSTRATIONS)



WINTERIZING YOUR HOT TUB



IF YOUR SPA IS TO BE USED DURING THE WINTER MONTHS IN COLD CLIMATE WHERE THE DANGER OF FREEZING EXISTS, CERTAIN PRECAUTIONS SHOULD BE TAKEN TO AVOID DAMAGE. AN INCREASED CIRCULATION CYCLE, AND USE OF A RIGID FOAM COVER ARE SUGGESTED. CONTACT YOUR DEALER FOR ADVICE.

MANY SPA OWNERS FIND THAT OUTDOOR WINTERTIME SOAKING IS QUITE ENJOYABLE, AND PDC CERTAINLY SUGGESTS THE USE OF A SPA YEAR-ROUND, ALTHOUGH CERTAIN SITUATIONS DO REQUIRE CLOSING THE UNIT FOR THE WINTER MONTHS (I.E., VACATION HOMES). IF THE SPA WILL NOT BE USED FOR A PERIOD OF TIME, PERFORM THE FOLLOWING WINTERIZING PROCEDURES:

1. TURN HEAT ALL THE WAY DOWN AND TURN OFF AT THE BREAKER.
2. DRAIN SPA OF ALL WATER.
3. REMOVE ANY REMAINING WATER WITH SPONGE.
4. FILTER SHOULD BE DRAINED, REMOVED AND CLEANED. STORE IN A DRY PLACE.
5. PUMP, MOTOR AND ALL CONNECTING LINES SHOULD BE DRAINED FULLY TO PROTECT FROM FREEZING. BLOW AIR THROUGH ALL CONNECTION LINES TO REMOVE WATER. YOU MAY WISH TO USE A NON-TOXIC RV TYPE ANTIFREEZE TO GUARANTEE FREEZE PREVENTION. BE SURE TO READ THE MANUFACTURER'S INSTRUCTIONS AND REMOVE ALL ANTI-FREEZE BEFORE THE NEXT SPA USE.
6. COVER THE SPA WITH A WATERPROOF RIGID COVER TO PROTECT IT FROM SNOW, ICE AND WIND.

A GOOD GENERAL RULE IS TO VISUALLY INSPECT YOUR SPA AND EQUIPMENT AREA FREQUENTLY. IF ANYTHING LOOKS BROKEN, WORN, OR INCORRECT, CONTACT YOUR ELECTRICIAN OR SPA RETAILER. A SIMPLE REPAIR MAY PREVENT AN INJURY OR MORE SERIOUS PROBLEMS REQUIRING EXPENSIVE REPAIRS. IF YOUR SPA IS NOT OPERATING, CHECK THE FOLLOWING:

1. ALL EQUIPMENT IS IN-OPERATIVE

- CHECK POWER SOURCE G.F.C.I. OR EQUIVALENT (RCD).
- CHECK TO ASSURE SPA HAS DEDICATED CIRCUIT.
- CHECK THE “TEST” AND “RESET” BUTTONS ON G.F.C.I. OR EQUIVALENT (RCD).
- CHECK INTERNAL FUSES.

2. PUMP DOES NOT WORK

- CHECK ALL ITEMS ABOVE.
- CHECK FILTER; CLEAN OR REPLACE CARTRIDGE.
- CHECK FOR BLOCKAGES (RESTRICTIONS) AT SUCTIONS, SKIMMER AND PUMP.
- PUSH “PUMP” BUTTON(S) TO CHECK IF HIGH SPEED IS FUNCTIONING, ON A DUAL-SPEED PUMP.

3. INADEQUATE JET ACTION

- MAKE SURE JETS ARE TURNED ON.
- MAKE SURE AIR CONTROLS ARE OPEN.
- CHECK FOR RESTRICTIONS (BLOCKAGES) IN JETS AND/OR MAIN SKIMMER AND PUMP.
- CHECK WATER LEVEL.
- PUSH “PUMP” BUTTON(S) TO CHECK IF HIGH SPEED IS FUNCTIONING ON A DUAL-SPEED PUMP.

4. NO HEAT

- CHECK ALL STEPS UNDER PART “1”.
- CHECK TEMPERATURE SETTINGS.
- CHECK FOR CLOGGED FILTER ELEMENT AND OTHER RESTRICTIONS.
- CHECK WATER LEVEL.
- CHECK IF PUMP IS RUNNING.

5. NO LIGHT

- CHECK “LIGHT” BUTTON.
- CHECK G.F.C.I. EQUIVALENT (RCD) “TEST” AND “RESET” BUTTONS.

6. WATER IS CLOUDY

- INCREASE CIRCULATION CYCLE.
- TEST WATER CHEMISTRY.
- CLEAN/REPLACE FILTER CARTRIDGE.

7. PUMPS HAVE STARTED FOR 1 MINUTE SEVERAL TIMES

- IF THE TEMPERATURE SENSORS WITHING THE HEATER DETECT A LOW ENOUGH TEMPERATURE, THEN THE PUMPS AND BLOWER AUTOMATICALLY ACTIVATE TO PROVIDE FREEZE PROTECTION. THE PUMPS WILL RUN PERIODICALLY OR CONTINUOUSLY DEPENDING ON CONDITIONS.

IF ABOVE CHECKS DO NOT SOLVE THE PROBLEM, CONTACT A QUALIFIED SERVICE TECHNICIAN.



ELECTRICIAN

COMPANY NAME _____
CONTACT NAME _____
ADDRESS _____
PHONE, E-MAIL ADDRESS _____

BUILDER, MASON

COMPANY NAME _____
CONTACT NAME _____
ADDRESS _____
PHONE, E-MAIL ADDRESS _____

SERVICE TECHNICIAN

COMPANY NAME _____
CONTACT NAME _____
ADDRESS _____
PHONE, E-MAIL ADDRESS _____

GENERAL NOTES

! SAVE THIS MANUAL FOR FUTURE REFERENCE !



*75 Palmer Industrial Road
Williamsport, Pennsylvania 17701
USA*

*1.800.451.1420 tel
1.570.323.8485 fax*

www.pdcspas.com www.pdcspasinternational.com