

PU1

Spa Owner's Manual

Version française au verso

PN 378104 Rev A

OWNER'S INFORMATION

DEALER

Company _____
Address _____
Phone _____
E-mail _____



INSTALLER

Company _____
Address _____
Phone _____

SPA

Model _____
Serial Number (see below) _____
Color _____
Date of Delivery _____

Locate the black plate to the right or left of the access door, near the floor.

	LMT Roto LLC Lake Mary, FL CONFORMS TO UL STD 1563	RATINGS:
		Volts: _____ Amps: _____ CirBkr: _____ Hz: _____ SN: _____
Model #: _____ Part #: _____ MfgD: _____		
FOR INDOOR/OUTDOOR USE		



WARRANTY REGISTRATION FORM

Dealer Name: _____

Dealer Address: _____

Spa Owner's Name: _____

Address: _____

Phone: _____

Email: _____

Date of Purchase: _____

Spa Model & Color: _____

Spa Serial Number: _____

***Customer Signature:** _____

*By signing this registration form, you have read and understood the Owner's Manual in its entirety.



INSTRUCTIONS: Complete information in its entirety and mail to:

LMI ROTO LLC

2452 Lake Emma Road, Ste 1000

Lake Mary, FL 32746 Or fax to: 407-264-6388

Attn: Warranty

PLACE
POSTAGE
HERE.

LMI Roto LLC
2452 Lake Emma Road, Ste 1000
Lake Mary, FL 32746

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Important Safety Instructions

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

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. **WARNING:** A wire connector is provided on this unit to connect a minimum 4.11 mm (No. 6 AWG) solid copper conductor between this unit and any metal equipment, metal enclosures of electrical equipment, metal water pipe, or conduit within 1.5m (5 feet) of the unit.
3. **DANGER RISK OF INJURY:** (For cord and plug connected units):
 - a. Replace damaged cord immediately
 - b. Do not bury cord
 - c. Connect to a grounded, grounding type receptacle only.
4. **WARNING:** (For units with a Ground Fault Circuit Interrupter (G.F.C.I.): This product is provided with a Ground Fault Circuit Interrupter "G.F.C.I." on the end of the spa's power cord. This G.F.C.I. must be tested before each use. With the product operating depress the "test" button on the G.F.C.I. The spa should not operate. Depress the "Reset" button on the G.F.C.I. The product should now operate normally. If the spa fails to operate in this manner, there is a ground current flowing indicating a possible electric shock. Disconnect the power until the fault has been identified and corrected by a certified licensed electrician.
5. **WARNING:** (For permanently installed units):

The electrical supply for this product must include a suitably rated switch or circuit breaker to open all ungrounded supply conductors to comply with Section 442-20 of the National Electric Code. ANSI / NFPA 70-1987. In addition, all 230 volt installations must be protected by a 230 volt Ground Fault Circuit Interrupter "G.F.C.I.". Any G.F.C.I. circuit breaker used in the house panel must read current returning through the neutral conductor. 230 volt 2 conductor G.F.C.I. circuit breakers will not operate correctly for your application.
6. **DANGER RISK OF ACCIDENTAL DROWNING:** Extreme caution must be exercised to prevent unauthorized access by children. To avoid accidents, ensure that children cannot use this spa unless they are supervised at all times. For additional protection, select a cover which is classified by the Underwriters Laboratories Meeting ASTM F1346-91 requirements.
7. **DANGER RISK OF INJURY:** The suction fittings in this spa are sized to match the specific water flow created by the pump. Should the need arise to replace the suction fittings or the pump, be sure that the flow rates are compatible.

Never operate spa if suction fittings are broken or missing. Never replace a suction fitting with one less than the flow rate marked on the original suction fitting.
8. **DANGER RISK OF ELECTRIC SHOCK:** Install at least 1.5m (5 feet) from all metal surfaces. As an alternative, a spa may be installed within 1.5m (5 feet) of metal surfaces if each metal surface is permanently connected by a minimum No. 4.11 mm (No. 6 AWG) solid copper conductor to the wire connector on the terminal box that is provided for this purpose.
9. **DANGER RISK OF ELECTRIC SHOCK:** Do not permit any electric appliance, such as light, telephone, radio, or television, within 1.5m (5 feet) of a spa.
10. **WARNING TO REDUCE THE RISK OF INJURY:**
 - a. The water in a spa should never exceed 40°C (104°F). Water temperatures between 38°C (100°F) and 40°C (104°F) are considered safe for a healthy adult. Lower water temperatures are recommended for your children and when spa use exceeds 10 minutes.
 - b. Since excessive water temperatures have high potential for fetal damage during the early months of pregnancy, pregnant or possibly pregnant women should limit spa water temperatures to 38°C (100°F).
 - c. Before entering spa, the user should measure the water temperature with an accurate thermometer since the tolerances of water temperature-regulating devices vary.

(Safety instructions continued on next page)

- d. The use of alcohol, drugs, or medication before or during spa use may lead to unconsciousness with the possibility of drowning.
 - e. 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.
 - f. 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.
11. **WARNING:**
- a. People with infectious diseases should not use a spa or hot tub.
 - b. To avoid injury, exercise care when entering or exiting a spa or hot tub.
 - c. Do not use a spa or hot tub immediately following strenuous exercise.
 - d. Prolonged immersion in a spa or hot tub may be injurious to your health.
12. **Caution:** Maintain water chemistry in accordance to manufacturer's instructions.

Additional Important Safety Precautions

Your spa can be a source of great pleasure. It offers healthful stimulating recreation and is a delightful fun center for you, your family and friends. However, it contains large quantities of water and is deep enough to present inherent dangers to life and health unless the following safety rules are strictly observed.

13. **Never permit the spa to be used unless it is attended by at least one person other than the bather.**
Someone should be present to lend assistance if the bather should be in trouble due to injuries, cramps, drowning especially in case of children, etc.
14. **Always use care in and around your spa.**
The spa has many rigid, unyielding parts and many areas that become wet and slippery; these are all potentially dangerous when rough play is permitted or if care is not used particularly when entering or leaving the spa.
15. **Keep the water sanitary and healthful at all times.**
Your filter system will remove suspended particles from the water. Regular application of spa chemicals in proper quantities will destroy harmful bacteria and prevent formation of algae. Your surface skimmer will remove insects, leaves, and other debris from the water surface. Unsanitary water is a serious health hazard.
16. **The water in your spa should NOT be warmer than 38°-40°C (100° - 104° F).**
Always keep an accurate thermometer in the water because your spa's thermostat may be in error. Use a high quality, shatterproof thermometer with increments of one degree or less.
The National Spa and Pool Institute consider a temperature of 38°C (100°F) safe and comfortable for a healthy adult. Most healthy adults can enjoy this water temperature for as long as desired, although it may raise the body temperature to the water temperature and eventually become uncomfortable (like a fever). At higher water temperatures the soaking time should be shorter; never soak for more than 20 minutes when the water temperature is 39°C (102°F) or higher. If you are planning a long rest in the spa, lower the water temperature closer to normal body temperature, about 37.2°C (99°F). Some people find even lower water temperatures relaxing and pleasing. Try different water temperatures in the 36.6°-39°C (98°-102°F) range until you find what temperatures suit you best.
17. **Hot water can raise the body temperature high enough to cause heat stroke.**
This can be fatal even to healthy adults. If you have any questions about your own fitness or whether you should soak in the spa, check with your physician.
18. **Prolonged immersion in hot water may induce hyperthermia.**
Hyperthermia occurs when internal body temperature reaches a level several degrees above the normal body temperature of 36.6°C (98.6°F). The symptoms of hyperthermia include: (1) dizziness, (2) fainting, (3) drowsiness, (4) lethargy, (5) increases in the internal body temperature. The effects of hyperthermia include: (1) unawareness of impending hazard, (2) failure to perceive heat, (3) failure to recognize the need to exit spa, (4) physical inability to exit spa, (5) unconsciousness resulting in danger of drowning.

(Safety instructions continued on next page)

19. **WARNING: The use of alcohol, drugs, or medication can greatly increase the risk of fatal hyperthermia in hot tubs or spas.**

Despite the popular image of people in spas drinking wine or other alcoholic beverages, DO NOT use alcoholic beverages before or during spa use. Alcohol is a depressant which causes slowed reflexes and drowsiness, especially in conjunction with the relaxed soaking in hot water. This can lead to sleep or unconsciousness and possibly result in drowning. Using your spa with other people who are also drinking is not a preventative measure since they are likely to become similarly affected by the combinations of alcohol and hot water soaking.

Soaking in hot water causes changes in the circulatory system, such as enlargement of blood vessels near the skin. Therefore, people with a medical history of heart disease, circulatory problems, diabetes, high or low blood pressure should check with their physician before using spas. Additionally, people taking medications causing drowsiness, such as tranquilizers, narcotics, antihistamines, or anticoagulants should not use spas without asking their physician.

20. **Broken or missing drain covers should be replaced immediately.**

Accidents can occur when long hair or a body part is trapped by suction from a drain or outlet whose cover is broken or removed. Children are particularly vulnerable, and they should be warned against danger.

21. **WARNING:** Do not use electrical appliances in or around your spa. Do not use glass or other breakable items in or around your spa. Do not remove spa cabinet panels and attempt to make repairs. Do not attempt electrical repairs. Retain a certified licensed electrician.

22. **This spa is for residential use only.** It is not intended for commercial use.

SAVE THESE INSTRUCTIONS

Select a Location

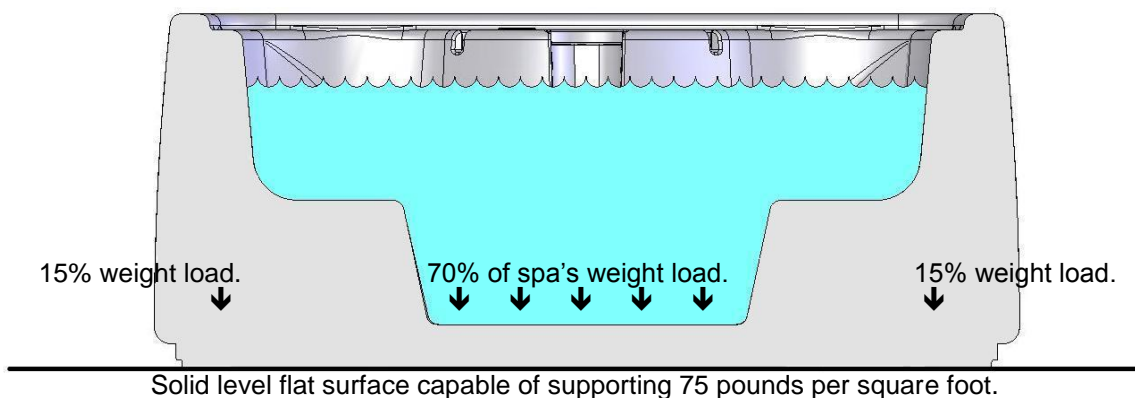
Site Selection

Your new spa will provide you and yours with hour upon hour of healthy, relaxing enjoyment. The following suggestions and recommendations will help you select a safe and compatible site for your spa, maximizing your enjoyment.

Before proceeding, please read the “Important Safety Instruction” at the beginning of this manual.

1. **Certified Licensed Electrician Required.** Electrical installation, (approval of and connection to power source) must be completed by a qualified certified licensed electrician in compliance with all codes.
2. **No Overhead Power Lines.** Do not locate your spa under overhead power lines or in near proximity to existing buried or exposed electrical circuits. See your electrician.
3. **Childproof Your Spa.** Plan for limiting access of children. Precautions such as self closing and locking gates or access doors, fencing and other child barriers, as dictated by the site.
4. **UL Safety Cover Required.** In addition to its insulating factors, a good cover also provides a measure of additional protection from unwanted access. Select a cover which is classified by the Underwriters Laboratories meeting ASTM F1346-91 requirements.

CAUTION: Your spa must be installed on a level, flat, solid load-bearing surface. Do not locate the spa on a surface that can be damaged or altered by water.



Provide a solid load-bearing site:

The site must provide a solid foundation with a minimum load bearing capacity of 34 kg per 929 sq. cm (75 pounds per square foot). Concrete slabs and decks must be designed to support this weight. Do not select a site composed of individual unsupported bricks, blocks, or other materials which will shift unevenly and cause damage to your spas internal frame.

Provide a level, flat site:

A level site is critical to both the performance and enjoyment of your spa. Water is unforgiving and will always settle level. A flat and level site provides the surface necessary to properly dispense weight between the foot well (which bears most of the spa's weight) and the structural frame which primarily provides stabilization and secondary support. The importance of proper support for the foot well in conjunction with the spa cabinet can not be overstressed.

Filling Your Spa

Make sure that the electrical cord has been routed properly. (See page 10). Do not supply electrical power at this point.

Check to be sure that the drain valve is closed and that the drain safety cap is securely in place. (See page 10)

Remove filter cartridge and place garden hose end through opening (inside filter area), fill the spa with cold (never warm or hot) water 150 to 200 mm (6" to 8") below the top edge of the spa. Do not overfill, as the spa's water level will rise as each person enters the spa.

Always keep the spa water level above the jet openings.

WARNING: DO NOT SUPPLY POWER TO AN EMPTY SPA!

Location of Electrical Cord & Drain

The spa equipment requires a 15 amp outlet, dedicated to the spa. **The use of any extension cord will void your warranty.** Carefully read all of the safety requirements before plugging in the spa.



Remove & Save access panel screws. Use caution when reinstalling the screws. Do not over tighten.



Find G.F.C.I. power plug located below the left corner of the equipment access door and cut the white tie.



Pull G.F.C.I. along with power cord and inspect the full length of the cord for any damage before each use.



Figure 1

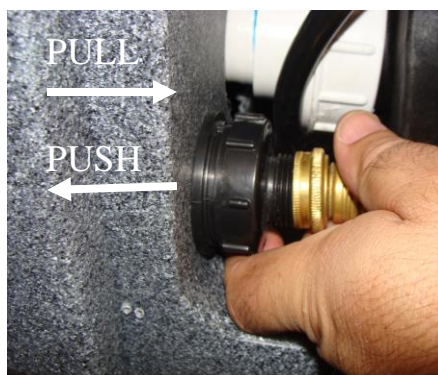


Figure 2



Figure 3

The spa drain valve assembly consists of a garden hose connector with a twist on/off valve and a safety drain cap. It is located inside at the bottom of the spa.

EACH TIME BEFORE FILLING THE SPA

1. Make sure the drain valve is closed. Turn handle clockwise until it stops.
2. Make sure the safety cap is secure. Turn handle clockwise until it stops.
3. If the drain valve is facing a wall, leave enough space between the drain valve and wall 15.4 cm (6" minimum) to allow enough room to connect a garden hose.

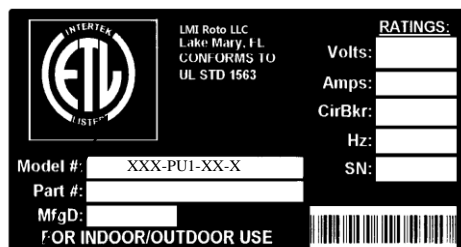
TO DRAIN THE SPA

Drain every three months. Draining your spa on a regular basis rids the spa of dissolved solids and protects your spa equipment from the effects of residual calcium hardness and total alkalinity problems

1. Turn Power Off. Turn power off at the spa consoles and deactivate any disconnect switches at the G.F.C.I. plug or load center.
2. Locate Spa Drain Valve. The drain valve is located inside, at the bottom of the spa. See figures 1, 2 and 3 for reference.
3. Remove Drain Valve Safety Cap. Remove the safety drain cap (see figure 1) and store for use when refilling your spa. Attach a standard garden hose to the drain valve.
4. Select Safe Suitable Drain. Route the hose to a sewer drain capable of safely assimilating 300 plus gallons of water which may contain both unsanitary contaminants and chemical residue. To open the drain valve twist counter clockwise, then pull outward (see figure 2).

CAUTION: Drain waste water may contain chemical residue and unsanitary contaminants which could be a hazard to health or the environment. Drain to specified sanitary sewer only.

PU1 System Operation





Initial Start-Up


When your Spa is first activated, it will perform a self diagnostics test showing a series of numbers followed by Pr, then by --along with the low speed pump for approximately 7 minutes. Also the internal clock that keeps track of the filtration cycles every 12 hours will start at that point. The system is preset to heat up to 37.7° C (100° F) and it is also preset to run on low speed for two hours (F2).

Temperature Adjustment


21°C-40° C (70° F-104° F)

When either of the temperature pads  or  are pressed once, the LCD will display the temperature which has been set. Each time either one of these pads are pressed again, the temperature will change by .556°C(1°F). After 5 seconds, the LCD will automatically display the current spa temperature.

Jets




Press the  pad to run the pump on and off. If left running, the high speed pump will automatically turn off after 15 minutes or low speed in four hours.



Light

Press the  pad to turn the spa light on. To switch color modes, press the pad again immediately after turning it off. If left on, the light will automatically turn off after four hours.

Spa Water Maintenance

This function enables you to program the amount of water filtration time.

Press  or  and  to enter the programming mode.

Once in the programming mode press  or  to select the filtration time.

F2 In this mode the water will be filtered for 2 hours every 12 hours.

F4 In this mode the water will be filtered for 4 hours every 12 hours.

F6 In this mode the water will be filtered for 6 hours every 12 hours.

F8 In this mode the water will be filtered for 8 hours every 12 hours.




FC In this mode the water will be filtered continuously.

To exit press  .

WARNING: SHOCK HAZARD! NO USER SERVICEABLE PARTS. Do not attempt to service this control. Contact your dealer or service center for assistance. Follow all owner's manual power connection instructions. Installation must be performed by a certified licensed electrician and all grounding connections must be properly installed.

Additional PU1 system feature

Spa heating modes

The Heating Mode offers the ability to control your heater in special circumstances. Your spa is preset at the factory to Standard Mode. However, the Standard Heating Mode can be changed to Economy or Sleep by pressing the  or  then  button. With each press of the buttons, the display will cycle through the three different modes described below.

Standard Mode (ST): Your spa is preset to this mode. This mode operates the heater whenever needed to maintain the programmed spa water temperature. (See Temperature Adjustment page11).

Economy Mode (EC): This mode operates the heater only during programmed Filtering Cycles (See Spa Water Maintenance page11). This mode is ideal for areas that charge a premium for electricity during peak hours. This mode will maintain the thermostat setting. If it does not reach the thermostat setting, you may have to allow for more heating time by increasing the Filtration Cycles.

Sleep Mode (SL): This mode works in the same manner as the Economy Mode except the thermostat setting is automatically lowered by 20 degrees. This mode is best suited for extended leaves from home when it is not important to maintain constant water temperature, such as vacations or business trips.

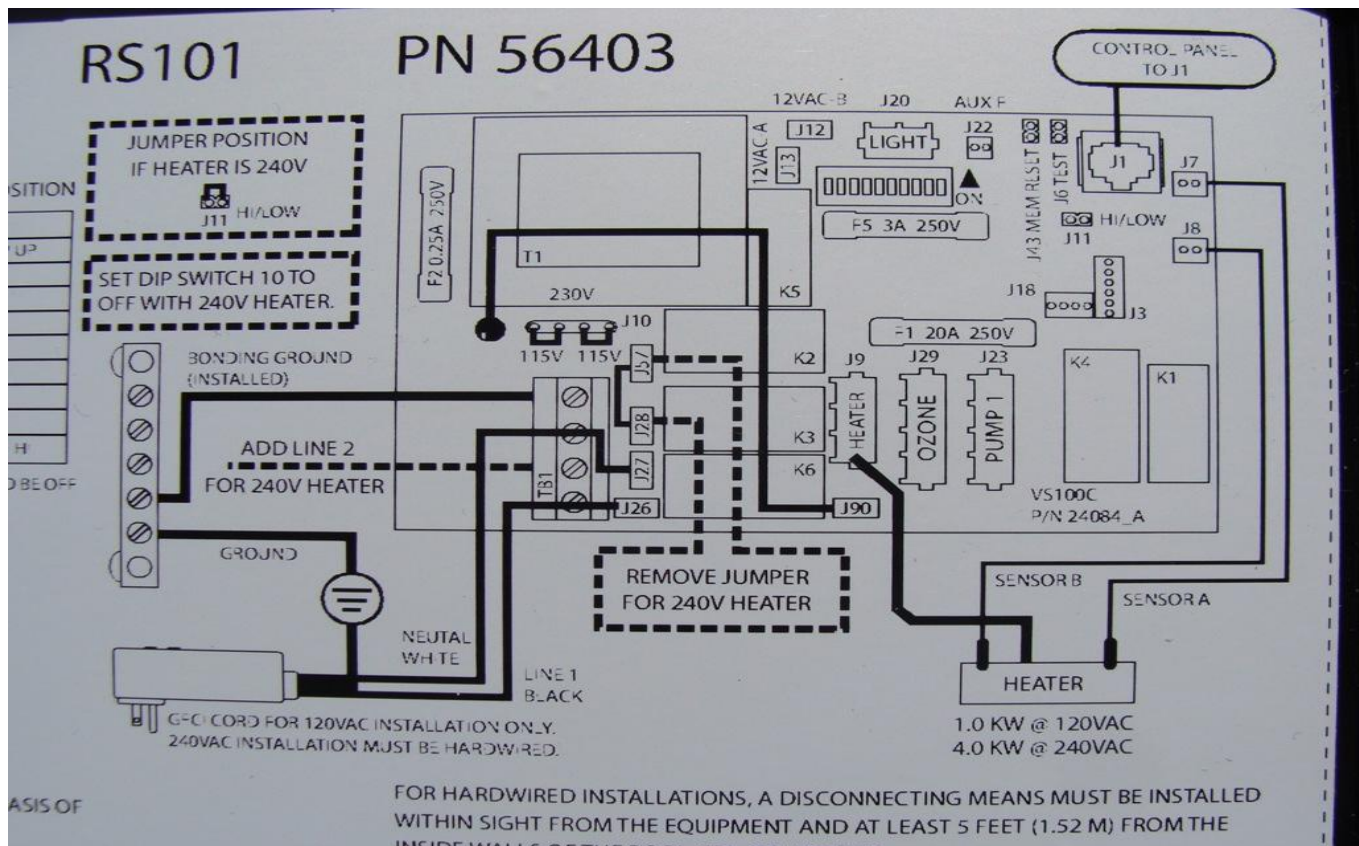
Summer Set Temperature

In hot weather, it is possible for water temperature to exceed the temperature setting. This is especially common when your temperature setting is lower than air temperature. If the water temperature exceeds the temperature setting more than 3°, an automatic safety circuit will turn off all of the electrical systems. The systems will remain off until either the water temperature cools to below the setting, or the setting is increased above the water temperature.

PU1 Display Messages

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.
H H	Overheat -The spa has shut down. One of the sensors has detected 47°C (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.
O H	Overheat" -The spa has shut down. One of the sensors has detected that the spa water is 43°C (110°F).	DO NOT ENTER THE WATER. Remove the spa cover and allow water to cool. At 41°C (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
1 C	Ice -Potential freeze condition detected.	No action required. The pump will automatically activate regardless of spa status.
S A	Spa is shut down. The sensor that is plugged into the "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.)
S b	Spa is shut down. The sensor that is plugged into the "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.)
S N	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.
H L	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.
L F	Persistent low flow problems. (Displays on the fifth occurrence of "HL" message within 24 hours.) Heater is shut down, but other spa functions continue to run normally.	Follow action required for "HL" message. Heating capability of the spa will not reset automatically; you may press any button to reset.
D R	Possible inadequate water, poor flow, or air bubbles in the heater. Spa is shut down for 15 minutes.	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 automatically will reset within 15 minutes. If problem persists, contact your dealer or service organization.
D Y	water detected in heater. (Displays on third occurrence of "DR" message.) Spa is shut down.	Follow action required for "dr" message. Spa will not automatically reset. Press any button to reset.

PU1 SERIES 120-240 VOLTS HARD WIRE CONVERSION



CONVERSION OF THE PU1 SERIES EQUIPMENT

The conversion of a PU1 equipment package from a factory installed 120 volt system to a hardwired 240 volt system must be completed by a certified licensed electrician.

REMOVE WHITE JUMPER FROM J28 TO J57

ON J11 INSTALL BLACK JUMPER ON 2 PINS IF HEATER IS 240V

SET DIP SWITCH 10 TO OFF WITH 240V HEATER

ADD LINE 2 FOR 240V HEATER

A G.F.C.I. AND A DISCONNECT SWITCH ARE REQUIRED

The National Electrical Code requires that spas connected to 240 volts circuits be equipped with a "G.F.C.I." and Disconnect Switch. See National Electric Code Articles 680-12 and 680-42.

P1 SERIES SPAS ARE NOT EQUIPPED WITH A 240V G.F.C.I. OR A DISCONNECT SWITCH. A G.F.C.I. SHOULD BE INSTALLED BY A CERTIFIED LICENSED ELECTRICIAN

OUTDOOR LOAD CENTER

The addition of an outdoor load center such as a Siemens W0408ML 1125 or equal must be added to the circuit. This type of load center provides both a G.F.C.I. and Disconnect Switch in a convenient configuration as required by the National Electric Code. (See next page for suggested wiring configuration)

ISOLATED, DEDICATED 240 VOLT, 30 OR 50 AMP CIRCUITS ARE REQUIRED

An isolated, dedicated 240 volt, 30 or 50 amp circuit is required to provide the power necessary to properly operate the 240V equipment package.

PERMANENTLY HARD WIRED

All 240 volt operations wiring must be permanently hard wired, installed in grounded conduit and installed in compliance with the National Electrical Code and all local codes.

WIRE SIZING MUST MEET ELECTRICAL CODES

All installations are different. Wire sizing must meet the National Electrical Code and all local code specifications.

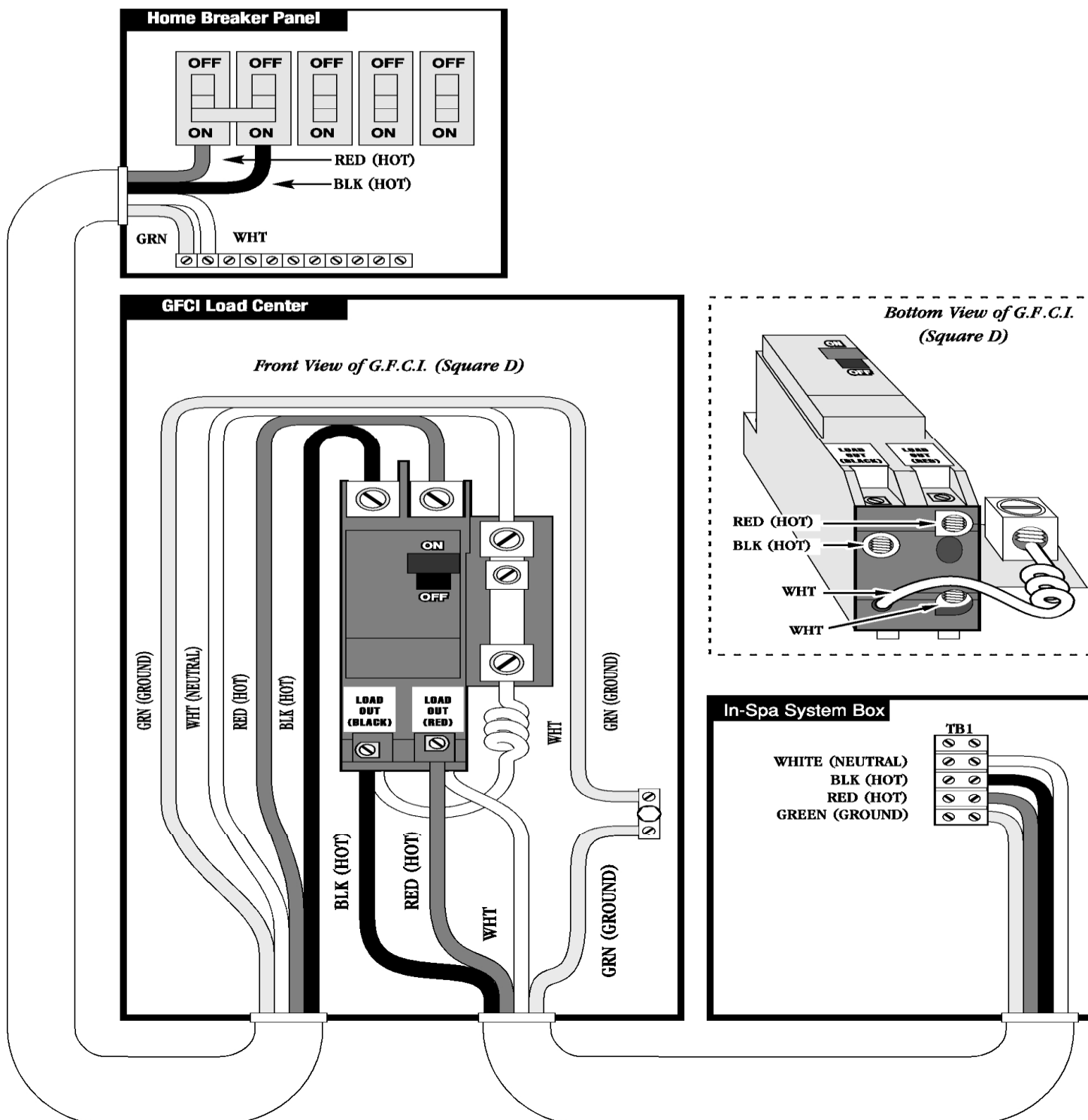
See next pages for more conversion details.

WARNING: USE COPPER CONDUCTORS ONLY!

ELECTRICAL DATA FOR THE USE OF CERTIFIED LICENSED ELECTRICIAN

WARNING: Shock Hazard! Under No Circumstances Should This Spa Be Installed By Anyone Other Than A Certified Licensed Electrician!


REQUIRED WIRING FOR 240 VOLT INSTALLATION



All wiring MUST be in accordance with the National Electrical Code and all local codes.

DIP SETTINGS

MAIN POWER TO SYSTEM SHOULD BE TURNED OFF BEFORE ADJUSTING DIP SWITCHES

DIP SETTINGS 	TEST MODE OFF	← 1	TEST MODE ON
	15 MIN TIMEOUT FOR P1 HIGH	2 →	30 MIN TIMEOUT FOR P1 HIGH
	DUPLEX PANEL	3 →	MINI PANEL
	N/A MUST BE OFF	← 4	N/A MUST BE OFF
	N/A MUST BE OFF	← 5	N/A MUST BE OFF
	60HZ OPERATION	← 6	50HZ OPERATION
	STD, ECON, SLEEP ALLOWED	← 7	STANDARD MODE ONLY
	DEGREES FAHRENHEIT	← 8	DEGREES CELSIUS
	N/A MUST BE OFF	← 9	N/A MUST BE OFF
	HIGH AMP – HEAT W/P1 HI	10 →	LOW AMP – NO HEAT W/P1 HI

USE COPPER CONDUCTORS ONLY.

EMPLOYER UNIQUEMENT DES CONDUCTEURS DE CUIVRE.

#6 AWG MIN. WIRE= 90°

FOR SUPPLY CONNECTIONS, USE CONDUCTORS SIZED ON THE BASIS OF 60°C AMPACITY BUT RATED MINIMUM OF 90°C.

TORQUE RANGE FOR MAIN TERMINAL BLOCK (TB1): 27-30 IN. LBS 31.1-34.5 kg cm

CONNECT ONLY TO CIRCUITS PROTECTED BY A CLASS A GFCI.

WARNING: Main Power to system should be turned OFF BEFORE adjusting DIP switches.
WARNING: Persistent Memory (J43) must be RESET to allow new DIP switch settings to take effect.

JUMPER KEY

- J11** When heater is running 1.0kW – 3.0 kW, jumper must be placed on 1 pin.
 When heater is running 3.0kW - 4.0 kW, jumper must be placed on 2 pins
- J43** When jumper is placed on 2 pins during power-up, system will reset persistent memory.
 Leave on 1 pin only to enable persistent memory feature.

Equipment Operation



Surface Skim Filter

The spa's automatic surface skim filter is designed to remove floating debris and contaminants such as body lotions by drawing water through a specially formulated filter cartridge element. It is critical that this element be routinely cleaned.



To Clean the Cartridge

1. Place system on lockout Mode or disconnect power.
2. Remove the end nut turning counter close wise.
3. Pull up filter cartridge.
4. Remove the cartridge element and thoroughly rinse with a garden hose until element is free front dirt and debris.
5. Return the cartridge to the filter well by following steps 1- 4 in reverse order.



Air injection Venturi Adjustment

Air injection into the massage jet water flow may be controlled by manipulation of the venture dials located on either side of the spa. Each dial is independent and controls up to 5 jets respectively.

Water Chemistry

Spa water chemistry (or water balance) affects the safety of your equipment as well as the appearance of your spa water. Water balance has five factors: pH, total alkalinity, calcium hardness, temperature and total dissolved solids. pH is the most critical but total alkalinity and calcium hardness must also be watched closely. Low calcium hardness can lead to corrosion of equipment, while high calcium hardness can lead to scaling, cloudy water and staining. Water temperature should never exceed 40°C (104°F), and total dissolved solids should be kept below 1500 PPM.

Algicidal and sanitizing chemicals are either alkaline or acid. Sodium and calcium hypochlorites are alkaline. Chlorine gas and practically all other dry chlorine spa products are acid. On the market are a number of bromine sanitizers. Bromines are usually preferred since they don't emit a strong chlorine odor.

SEE YOUR SPA WATER EXPERT FOR ADDITIONAL INFORMATION

USE OF CALCIUM HYPOCHLORITES OR TRICHLORS WILL VOID WARRANTY

1. Check and adjust water conditions. You must maintain proper chemical balance to insure safe sanitary conditions and to prevent your spa from becoming a breeding place for bacteria. This is done by:
 - A. Test daily and maintain pH between 7.2 and 7.8. Adjust if necessary, above 7.8 use pH decrease, if below 7.2 use pH Increase. Improper pH can damage spa finish, equipment, cause eye irritation and chemical loss. Use dosage according to manufacturer's label.
 - B. Test alkalinity and maintain at 80 ppm to 140 ppm. Adjust if necessary, above 140 ppm use pH Decrease, if below 80 ppm use Total Alkalinity Control. Use dosage according to manufacturer's label.
 - C. Test daily and maintain proper sanitizer level. It's recommended to use bromine sanitizer and maintain bromine at 3.0
5.0 ppm. Typically two or three bathers relaxing in an average spa with 103°F (39.4°C) temperature will consume all the bromine sanitizer in about twenty minutes. Therefore, prolonged or heavy use may require additional bromine to maintain safe sanitary conditions.
 - D. "Shock" (with a non-chlorine shock) once a week and after each water change. Do not use spa until the bromine residual has dropped to less than 5.0 ppm. NOTE: Improper pH will cause early corrosion to your pump. Corrosion is not handled under any warranty.

SPA MAINTENANCE SCHEDULE

DAILY

Test and maintain pH: Ideal range 7.2 - 7.8b.

Test and maintain bromine: Ideal range 3.0 - 5.0 ppm.

WEEKLY

Test and maintain alkalinity 80 - 140 ppm. Shock with a non-chlorine shock.

Add Spa Clear.

MAINTENANCE

Add defoamer as needed.

Inspect filter cartridge every 2 weeks and clean when needed.

Water Chemistry (Continued)

It is recommended that the spa be drained regularly depending on its size, location and the frequency of use.

1. Clean filter and cartridge periodically according to manufacturer's instructions.
2. Keep the spa covered when not in use to reduce the loss of heat and to keep out leaves, dirt, and other foreign materials from settling in the water.
3. Since the water capacity of your spa is far less than that of a swimming pool, the chemical reaction caused by the presence of one or more persons in the spa is more rapid and pronounced. For these reasons, it is important to frequently check the bromine level, the pH level and total alkalinity of water then add the prescribed chemicals as necessary to maintain the proper chemical balances.
4. If questions or doubts arise regarding quantities and timing or chemical applications to your spa, contact your spa dealer who can assist you in prescribing the correct program for your spa.
5. Store all chemicals in a cool dry place and in such a manner as to prevent contact by children and pets.
6. When adding chemicals to your spa water, add to the center of the spa with the pump operating. Never add chemicals to unheated water as this will affect chemical action.

Freeze Protection

DO NOT ALLOW THE SPA TO FREEZE

If the spa is to be stored or transported in temperatures 0°C (32°F) or lower, it is critical that the unit be fully winterized.

- 1 The spa itself must be completely emptied.
- 2 The main drain valve must be in the open position.
- 3 The drain safety cap must be removed and stored.
- 4 Remove the pump wet end drain plug.
- 5 The filter cartridge element must be removed, dried and stored.
- 6 The massage jet faces must be removed and stored.
- 7 The spa must be inverted for at least five minutes to facilitate draining of the internal plumbing.

CLEANING YOUR SPA

Do not use cleaners or compounds containing harsh abrasives. Also, avoid using heavy-duty rubbing or buffing compounds. Use a soft liquid cleaner.

CARE OF DELUXE VINYL HARDCOVER

Vinyl coated fabrics are perhaps the most maintenance-free fabrics ever produced and certainly will provide exceptional service life if given the proper care. Almost all vinyl manufacturers now provide information concerning the necessary cleaning procedures for their products. In reality, all care maintenance instructions are the same for all coated fabrics regardless of their manufacturing origin.

Products are now on the market that are manufactured to enhance the beauty and service life of all vinyls. However, by using methods described below with minimal care and attention, you should enjoy years of satisfaction and pride with any vinyl coated fabric.

EVERYDAY SOIL

A gentle mixture of any mild soap and warm water will generally dissipate most common soil from the surface. Using a soft cloth, wash the area to be cleaned and rinse. If stubborn dirt remains, as a stain embedded in the grain of the vinyl, use a soft brush, and if necessary, a touch of cleaning powder. In both situations, rinse and dry with a soft cloth

Most Frequently Asked Questions

- 1. Why does my spa not shut off?** Your spa is designed to run from the time you plug it in to run until it reaches your desired temperature. Once desired temperature is reached then you can control the on/off with the buttons on the top control. **For example: On the initial startup the spa will run for approximately 18 hours to reach 38°C (100°F). At that point the spa will shut off, and then the spa will maintain your desired temperature settings. Keep in mind that anytime power is disrupted from the spa, the spa will reset itself and run until it reaches the spa's default settings.**
- 2. Why does my spa turn on late at night?** The spa is designed to filtrate every 12 hours. The clock starts the second you plug it in. Recommend unplugging and plugging back in between 7 and 8. This means the spa will come on every 12 hours at the designated time and filtrate the amount of time you have it set for.
- 3. Why is my spa hotter than it is set for?** If your spa is set for 38.3°C (101°F) but it reads 39.4°C (103°F) most likely your filter cycle is set too high. Adjust your filter cycle down to the next lower setting or **F0**. Remember, when the spa is running to filtrate it is also heating.
- 4. Why is my spa not heating?** All spas heat at approximately 0.833°C (1.5°F) per hour. If your water temperature is 21.1°C (70°F) when you first fill your spa it will take approx. 20 hours to reach 38°C (100°F). **Remember, it is imperative to keep your safety cover on and the air control valves turned off while heating.**
- 5. How do I change the light bulb?** Turn off electrical power to the spa. Remove the 4-5/8" vent cover (two screws) located on the outside wall of the spa, directly behind the light. Rotate the bulb housing one quarter turn counter clockwise to take out the bulb. To install, follow the same steps in reverse order.
- 6. How many gallons does my spa hold?**
Fantasy II = 185 gallons EZ Spa II = 200 gallons
Big EZII/Odyssey II = 260 gallons
- 7. I see water on the floor. What does this mean?** The cover can accumulate condensation between the seams and run down the sides of the spa. You can verify that water is coming from the cover by squeezing the seam, or by repositioning the cover so that the seam is on a different side. This only occurs when the temperature and humidity are at certain levels.
- 8. What do I do if I cannot fix a problem?**
Contact the dealer from whom you purchased the spa.

Troubleshooting Guide

NO HEAT OR HEAT TOO LOW

PROBABLE CAUSE #1 Operating while spa cover is open.

ACTION Ensure that spa cover is properly closed.

PROBABLE CAUSE #2# Dirty filter

ACTION Remove filter cartridge and clean.

JETS WON'T COME ON

PROBABLE CAUSE #1 No power to spa control.

ACTION Check incoming power to spa.

PROBABLE CAUSE #2# Pump disconnected from control box.

ACTION Call dealer for recommended action.

PROBABLE CAUSE #3 Faulty pump or top control panel.

ACTION Call dealer for recommended action.

NO CONTROL DISPLAY OR FUNCTIONS

PROBABLE CAUSE #1 No power or improper voltage to spa control.

ACTION Have a licensed electrician check the voltage to spa.

PROBABLE CAUSE #2# Control box fuse blown.

ACTION Call dealer for recommended action.

PROBABLE CAUSE #3 Faulty top control panel.

ACTION Call dealer for recommended action.

LOW WATER FLOW

PROBABLE CAUSE #1 Dirty filter.

ACTION Remove filter cartridge and clean.

PROBABLE CAUSE #2 Low water level."

ACTION Make sure water level in spa is correct.

NO AIR BUBBLES IN JET

PROBABLE CAUSE #1 Air control valve in the closed position.

ACTION Open air control valve. See page 17.

PROBABLE CAUSE #3 Faulty jet internal valve.

ACTION Call dealer for recommended action.

SPA IS LEAKING

PROBABLE CAUSE #1 Spa drain valve and cap partially open.

ACTION Ensure that drain valve and cap are fully closed.

PROBABLE CAUSE #2 Loose pump union (s).

ACTION Call dealer for recommended action.

NO SPA LIGHT

PROBABLE CAUSE #1 Burned out bulb.

ACTION Replace bulb.

PROBABLE CAUSE #2 Light fuse blown.

ACTION Call dealer for recommended action.

PROBABLE CAUSE #3 Light harness unplugged from control box.

ACTION Call dealer for recommended action.

SLOW WATER DRAIN

PROBABLE CAUSE #1 Drain valve not fully opened.

ACTION Ensure that valve is fully open. See page 10.

PROBABLE CAUSE #2 Dirty filter or suction drain cover grate.

ACTION Remove filter cartridge or clean cover grate.

PROBABLE CAUSE #3 Kinked garden hose

ACTION Make sure that drain hose is fully extended and placed in a flat or downhill position

Glossary of Terms

AIR CONTROL VALVE

Mounted on the lip of the spa or at the equipment shroud, to induce air to the jets.

CHECK VALVE

Prevents back flow of water through system.

CONTROL BOX

Basically the brain of the spa. Power is distributed to all functions of the spa, pumps, lights, heat, etc.

DRAIN VALVE

Used in the draining of the spa, looks like an outdoor faucet and fits a standard garden hose.

FILTER

The filter cleans the spa and removes particles and debris and protects the equipment from foreign substances.

FOOTWELL

The bottom of a spa where you place your feet.

G.F.C.I. BREAKER

The electronic switch installed in the power cord to give power to the spa.

HEATER The thermostatically controlled heater raises the temperature of the water to the desired degree. This is located under the control box in the equipment area.

JETS

The fittings on your spa that direct the flow of water for massaging action.

pH Stands for "Potential for Hydrogen" This is the term used to describe the acid (low pH) or alkalinity (high pH) condition of the water. The ideal pH for spa water is 7.5.

SKIMMER The skimmer removes surface debris to the filter. The water level in the spa should be kept at the proper range for optimum skimmer operation.

SUCTION DRAIN

The fitting set into the footwell that drains water from the spa.

TOP CONTROL PANEL

Mounted on the lip of the spa. The digital panel that controls the spas functions.

2013 Limited Warranty

1. Life Time Shell Warranty – Should a crack in the shell result in a loss of water through the shell due to defects in the spa shell, Dream Maker Spas, will, at its option, repair or replace the shell portion of the spa. The freight costs incurred will be shared by Dream Maker Spas and the consumer. Except where prohibited by law, lifetime warranty is defined as 10 years from the original date of purchase.

2. 1 Year Plumbing – Dream Maker warrants the plumbing harness and related components (jets, air controls and unions), against leaking due to defects in workmanship or materials for a period of One (1) year from the original date of Purchase.

3. 1 Year Equipment – All electronic components used in the manufacture of the Dream Maker spa, are warranted to be free from defects in material or workmanship, subject to the limitations and exclusions listed herein, for a period of One (1) year from the original date of Purchase. Filters, LED lights or light bulbs and pump seals are excluded from the warranty.

Consumers will be asked to provide full payment via credit card if electrical components need to be shipped for replacement. The original part must be returned within 30 days to qualify for a full refund of your payment. Dream Maker cannot accept COD shipments. Dream Maker will pay for the shipping for returning the defective parts. Customer will be responsible for shipping charges of replacement part to them.

4. 1 Year Labor - Labor will be covered for a period of One (1) year from original date of purchase. This does not include routine maintenance such as tightening jets, lubricating o-rings, changing/cleaning filters, chemical checks and adjustments, or anything else that would be considered routine maintenance. Trip charges, if applicable, are not covered under the labor warranty and are the responsibility of the purchaser.

Limitations and Exclusions

This limited warranty extends solely to the original purchaser of any 2013 Dream Maker branded product produced after January 1, 2013. It covers only the spa unit and equipment or components used in its manufacture, for the periods stated. This warranty negates or limits all other warranties, implied or expressed, except those limited by the laws of the state in which the product is used. Dream Maker Spas does not authorize any party, including its agents, distributors, or dealers to assume for it any other obligations or liability. In no event, will Dream Maker Spas be liable for any special or consequential damages arising from the use of the spa, nor for injury to any person, or any claim for damages arising from the use, installation, or repair of the spa, including but not limited to, water or sewage cost, water damage to surrounding areas, rooms, furnishing, or landscaping. The purchaser is responsible for providing adequate access for the spa to be properly serviced.

This warranty does not apply to wearable items such as filter elements, fuses, pump seals, spa cover, and jet internals.

Dream Maker Spas reserves the right to examine photographs prior to repair or replacement.

This warranty shall be rendered void if the spa has not been installed in strict accordance with the owner's manual provided, including being attached to an extension cord.

This warranty shall not apply with respect to any damage caused by accident, abuse, misuse, improper installation, exposure to fire or excessive heat, acts of god, or any damage due to improperly maintained water chemistry.

Repairs not performed by Dream Maker Spas, or its agent, without authorization, may void warranty.

Commercial & rental applications are excluded from all warranty coverage.

Warranty valid only for product produced during model year 2013

Warranty Performance

The purchaser must establish by dated sales slip or invoice, the date of original purchase.

Dream Maker Spas shall not be responsible for cartage, removal and/or re-installation labor or any other associated cost incurred in obtaining warranty service.

All costs for removal or reinstallation of the spa, or any components, are the responsibility of the purchaser.

**Dream Maker Spas
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