

# X-DEGREE<sup>TM</sup>

OWNER'S MANUAL





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# Welcome!

## *Congratulations on Choosing a Quality X-Degree Cold Plunge Spa!*

You now own a high quality PDC Spas® cold plunge spa built for years of enjoyment and relaxation. It is of prime importance that you understand the operation of your cold tub and enjoy it with safety in mind. You must read this manual thoroughly and understand all of the safety precautions. Using your X-Degree within these guidelines assures years of fun and relaxation gained from adding a cold tub to your lifestyle.

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. For additional copies of this manual, log onto [www.pdcspas.com/Customer Care](http://www.pdcspas.com/CustomerCare). 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](http://www.pdcspas.com), referring to the Customer Care section, or contact your retailer directly.

### Ownership Information

Name \_\_\_\_\_

Address \_\_\_\_\_

Installation Date \_\_\_\_ / \_\_\_\_ / \_\_\_\_

Model Name \_\_\_\_\_ Serial # \_\_\_\_\_

Retailer Name \_\_\_\_\_ Retailer Phone Number \_\_\_\_\_

Service Technician Contact Info \_\_\_\_\_

### Register Your X-Degree Cold Plunge Spa

Please be sure to register your new X-Degree upon delivery. Log onto <https://www.pdcspas.com/register> and enter the required information. We have no record of ownership until this is completed. This will ensure warranty coverage and information regarding possible product updates.

### Locating Your Serial Number

The serial number plate can be found attached to the frame directly below the spa side control. The panel will need to be removed in order to view the serial number.

## DOWNLOAD THIS MANUAL FOR FUTURE REFERENCE!





## 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.



## 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 cold tub models.



## WARNING SIGNS

**Cabinet Installed:** For your referral, safety and convenience, a weather resistant sign has been mounted on the end cabinet side of your X-Degree. Become familiar with the precautions, exercise safety and care while enjoying your cold tub. Notify the factory or your retailer should you require additional signs or replacements.

**Warning Sign Must Be Posted:** An additional copy of this sign can be found packaged with your new X-Degree. This sign must be posted permanently in a prominent area near the cold tub where it is clearly visible to all occupants. Post this sign immediately upon installation. Notify the factory or your retailer should you require additional signs or replacements.

**Important:** It is extremely important that this sign be posted permanently placed in clear view of persons using the cold tub. Occasional users may not be aware of some of the dangers hot water poses to pregnant women, small children, seniors, and people under the influence of alcohol. If you did not receive a warning sign or your sign has become damaged, please call your local retailer or the factory for a replacement.

**WARNING:** Read all instructions before using the cold plunge 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.

# SAFETY INSTRUCTIONS

## 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 all users of the spa are adequately informed of all precautions. **Use the X-Degree cold plunge spa only as described in this manual. The tub 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 cold 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 cold tub must be bonded to the home bonding grid.

## GROUND FAULT CIRCUIT INTERRUPTER PROTECTION (or equivalent; RCD, for export installs)

All X-Degree cold tubs 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 cold plunge 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 cold tub is necessary. Your electrician should explain how it operates. (See maintenance for function and testing)
- Do not permit any electric appliance, such as a light, telephone, radio or television, within five feet (1.52 m) of a X-Degree tub. 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 cold tub unless they are supervised at all times.

## DANGER: TO REDUCE THE RISK OF DROWNING:

1. Never use the cold tub 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 X-DEGREE TUB COVER WHEN THE NOT IN USE.

# SAFETY INSTRUCTIONS

## **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 cold tub
3. Unawareness of impending hazard
4. Fetal damage in pregnant women
5. Physical inability to exit the cold tub
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 cold tub 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 equivalent; RCD, for the tub 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 cold tub 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 COLD TUB 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 cold tub.



# SAFETY INSTRUCTIONS

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 tub slowly and with caution. Surfaces around tub will be wet and slippery.

## **WARNING**

1. Never use the cold tub alone.
2. Do not bring any object into the cold tub that could damage the shell.
3. Do not sit on X-Degree cold plunge 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 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 cold tub, 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 cold tub disinfected and maintain the proper chemical balance.
- Shower before and after using the cold tub. This will remove any deodorant, perspiration, or body oils that could contaminate the water. Showering after will remove any residual chemicals and/or possible bacteria.
- Do not use the cold tub immediately after strenuous exercise.
- If you feel pain or dizziness at any time while using the cold tub, 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 cold tub.
- The cold tub 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 cold tub.

## **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 spa occupant but installed at least 5 FT (1.5 M) away from the spa water.

**WARNING:** For X-Degree cold plunge 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.
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.



# SAFETY INSTRUCTIONS

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 the unit is operating properly.

## ADDITIONAL SAFETY CONSIDERATIONS

- Install the cold plunge spa to provide drainage for compartments of electrical components.
- For floor recessed tubs: Install to permit access for servicing from above or below the floor. tub 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.
- When installing X-Degree spa, allow ample space for future servicing, noting location of all support equipment per the model specifications.

*(For cord-connected/convertible units)*

**DANGER:** Risk of injury.

Replace damaged cord immediately.

Do not bury cord.

Connect to a grounded, grounding type receptacle only.

## HYPOTHERMIA

Hypothermia occurs when the internal temperature of the body reached a level several degrees below the normal body temperature of 98° F (37° C). Prolonged immersion in cold water may induce hypothermia.

## THE SYMPTOMS OF HYPOTHERMIA INCLUDE:

- Shivering
- Slurred speech or mumbling
- Slow shallow breathing
- Weak pulse
- Clumsiness
- Drowsiness
- Confusion
- Unconsciousness
- Bright red, cold skin (in infants)

# SAFETY INSTRUCTIONS

## THE EFFECTS OF HYPOTHERMIA INCLUDE:

- Failure of the nervous system
- Respiratory system and heart
- Failure to recognize the need to exit the X-Degree™ cold plunge spa
- Unawareness of impending hazard
- Fetal damage in pregnant women
- Physical inability to exit the X-Degree
- Unconsciousness resulting in the danger of drowning



**EN 17125: Do not put finger  
in massage jet**

**WARNING:** The X-Degree should be covered with an approved locking cover when not in use, to prevent unauthorized entry and injuries.

**WARNING:** People with infections, sores or the like should not use the X-Degree. Warm and hot water temperatures may allow the growth of infectious bacteria if not properly disinfected.

**CAUTION:** SAFE TEMPERATURES FOR SWIMMING OR AQUATIC EXERCISE IS AROUND 80F (26C).

**CAUTION:** REPLACE COMPONENTS ONLY WITH IDENTICAL COMPONENTS.

**WARNING:** PEOPLE WITH INFECTIOUS DISEASES SHOULD NOT USE A COLD OR HOT.

**WARNING:** TO AVOID INJURY EXERCISE CARE WHEN ENTERING OR EXITING THE X-DEGREE.

**WARNING:** DO NOT USE A X-DEGREE IMMEDIATELY FOLLOWING STRENUOUS EXERCISE.

**WARNING:** PROLONGED IMMERSION IN A X-DEGREE MAY BE INJURIOUS TO YOUR HEALTH.

**CAUTION:** MAINTAIN WATER CHEMISTRY IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTION.

## SAVE THESE INSTRUCTIONS FOR FUTURE REFERENCE.

# PARTS DESCRIPTION AND FUNCTION



## Hydrotherapy Jets

Various sized fittings mix water with air to produce localized therapy, in a straight stream, circular motion, or in random patterns for massage. Positioned in massage seats from neck to feet, upper and lower back in contoured and straight seating arrangements. Jet nozzles are easily interchangeable with a simple turn allowing user to enjoy the type and power of massage best suited to them.



## Air Controls

Fittings mounted on the lip of tub controlling amount of outside air mixed with in-coming water of the hydrotherapy jet. Your spa may have multiple air controls on the lip that control air/ water mix for a segment of the jets. You choose the strength that best suits you. When not in use, the air controls should be kept in the off position.



## Suction

Circular fitting mounted on the vertical wall of the foot well and serves as an additional pump water inlet. These fittings must be replaced every 7 years with similar VGB approved fittings at same or higher flow ratings.



## Pristine Filter

This suction-side filtration is a proven effective filtration system positioned on the suction side of the jet pump. The filter cartridge is easily accessible for maintenance and hidden from occupant's view.



## Skim Filter

Provides filtration to cold plunge spa. Remove front cover to access filter element.



## Ozone Jets

All spas are equipped with ozone jets for sanitation. The filter cycle should circulate 8-10 hours daily for proper ozonation. Use the programmable electronic control center to automatically operate this function.



## Ozonator

Your EverPure ozonator will operate in conjunction with your filtration system. Ozone is a gas, O<sub>3</sub>, that has been used for years as a sanitation treatment for drinking water, and now as a proven purifier for hot tubs.



## Slide Valves

Valves are used to shut off the water flow to the heater, circulation pump, and jet pump(s) for specific service problems. NOTE: Must be completely open during normal operation.

# PARTS DESCRIPTION AND FUNCTION



## Ball Valves

Used to shut off water flow to heat pump and circulation pump.



## Support Pack

The control system operates all functions of the spa. Make sure your electrician connects the power supply accordingly to all National Electric Code, and shows you how to test the GFCI circuit breaker (not supplied). This pack is connected to a 50 amp GFCI breaker. Make note of this location along with other major components prior to installation for possible servicing access.



## Heater (XD2 Hot Tub Side)

A thermostat control is located at the spa side (topside control). Set the water at the temperature you enjoy. Leave the thermostat at that setting, and the tub will automatically maintain the correct temperature; ready for you anytime. Avoid constant resetting of the thermostat; it is more economical to maintain temperature than to let the temperature fall and raise. Never raise above 104 degrees.



## Heat Pump

A thermostat control is located at the spa side (topside control). Set the water at the temperature you enjoy. Leave the thermostat at that setting, and the spa will automatically maintain the correct temperature; ready for you anytime. Avoid constant resetting of the thermostat; it is more economical to maintain temperature than to let the temperature fall and raise. Never raise above 104 degrees.



## EverLite

Exclusive to all X-Degree models is the cabinet mounted indicator light which confirms the EverPure ozone purification system is properly operating.



## Circulation Pump

Circulates water through the heat pump, filter, and ozonator.



## Water Spout Control Valve

X-Degree XD2 models feature the cascading water spout feature. A control valve is mounted on the tub adjusting the pressure and height of the spout

# SPECIFICATIONS / X-DEGREE / XD1 MODEL

## GENERAL

|                  |                              |
|------------------|------------------------------|
| Seating Capacity | 1                            |
| Shell Material   | Acrylic                      |
| Dimensions       | 93"x 39"x 32" (domestic)     |
| Dimensions       | 236cm x 99cm x 81cm (export) |
| Water Capacity   | 100 Gals (379 liters)        |
| Dry Weight       | 320 lbs (145 kg)             |

## WATER SYSTEM\*\*

|                    |    |          |
|--------------------|----|----------|
| Water Treatment    | OZ | Ozonator |
| Ball Valves        |    | 3        |
| Euro Jet w/eyeball | E  | 1        |
| Ozone Jet          | O  | 2        |
| Safety Suction     | U  | 1        |
| Skimmer            | K  | 1        |
| Spa Light          | L  | 1        |
| Drain Valve        | 5  | 1        |
| Spa Pillows        | P  | 1        |

## ELECTRICAL SYSTEM

| Pump Information | Ref No | Domestic (60Hz) |
|------------------|--------|-----------------|
| Circ. Pump       | 1      | 1/15 HP         |

## ELECTRONICS

|                |    |           |
|----------------|----|-----------|
| Electrical Can | 6  |           |
| Amperage       |    | 15 (110v) |
| Heat Pump      | HP |           |

## OPERATION SYSTEM

|                       |   |
|-----------------------|---|
| Main Spa Side Control | 7 |
|-----------------------|---|



\*\* Not every jet is referenced. Each type of jet is noted for ease of identification. \*Note location of audio components prior to install. All specifications are accurate at time of print. Manufacturer reserves the option to change product without prior notice. Dimensions are approximate.



# SPECIFICATIONS / X-DEGREE / XD1+ MODEL

## GENERAL

|                  |                              |
|------------------|------------------------------|
| Seating Capacity | 1                            |
| Shell Material   | Acrylic                      |
| Dimensions       | 93"x 39"x 32" (domestic)     |
| Dimensions       | 236cm x 99cm x 81cm (export) |
| Water Capacity   | 100 Gals (379 liters)        |
| Dry Weight       | 320 lbs (145 kg)             |

## WATER SYSTEM\*\*

|                    |    |          |
|--------------------|----|----------|
| Water Treatment    | OZ | Ozonator |
| Ball Valves        |    | 3        |
| Euro Jet w/eyeball | E  | 6        |
| Mega'assage Jet    | G  | 3        |
| Ozone Jet          | O  | 2        |
| Safety Suction     | U  | 1        |
| Skimmer            | K  | 1        |
| Spa Light          | L  | 1        |
| Drain Valve        | 5  | 1        |
| Spa Pillows        | P  | 1        |

## ELECTRICAL SYSTEM

| Pump Information | Ref No | Domestic (60Hz) |
|------------------|--------|-----------------|
| Circ. Pump       | 1      | 1HP             |

## ELECTRONICS

|                |    |           |
|----------------|----|-----------|
| Electrical Can | 6  |           |
| Amperage       |    | 15 (110v) |
| Heat Pump      | HP |           |

## OPERATION SYSTEM

|                       |   |
|-----------------------|---|
| Main Spa Side Control | 7 |
|-----------------------|---|



\*\* Not every jet is referenced. Each type of jet is noted for ease of identification. \*Note location of audio components prior to install. All specifications are accurate at time of print. Manufacturer reserves the option to change product without prior notice. Dimensions are approximate.



# SPECIFICATIONS / X-DEGREE / XD2 MODEL

## GENERAL

|                  |                                |
|------------------|--------------------------------|
| Seating Capacity | 5                              |
| Shell Material   | Acrylic                        |
| Dimensions       | 90"x 79"x 37" (domestic)       |
| Dimensions       | 220cm x 201cm x 94cm (export)  |
| Water Capacity   | 200 Gals (93 liters)           |
|                  | Cold Side 63 Gals (238 liters) |
|                  | Hot Side 180 Gals (681 liters) |
| Dry Weight       | 710 lbs (322 kg)               |
| Skirt Material   | EverLast                       |

## WATER SYSTEM\*\*

|                    |          |            |
|--------------------|----------|------------|
| Water Treatment    | OZ       | Ozonator   |
| Filter             | Pristine | 25 sq. ft. |
| Slide Valves       |          | 2          |
| Ball Valves        |          | 3          |
| MegaSwirl Jet      | A        | 6          |
| Euro Jet w/eyeball | E        | 13         |
| Mega'assage Jet    | G        | 2          |
| Ozone Jet          | O        | 4          |
| Large Euro Jet     | LE       | 6          |
| Safety Suction     | U        | 3          |
| Skimmer            | K        | 1          |
| Air Control        | AC       | 2          |
| Spa Light          | L        | 1          |
| Drain Valve        | 5        | 2          |
| Spa Pillows        |          | 5          |

## ELECTRICAL SYSTEM

| Pump Information             | Ref No | Domestic (60Hz) |
|------------------------------|--------|-----------------|
| Circ. Pump                   | 1      |                 |
| Pump #1 peak (continuous) HP | 2      | 6.0 (3.0) HP    |

## ELECTRONICS

|                |    |              |
|----------------|----|--------------|
| Electrical Can | 6  | Balboa 501X1 |
| Amperage       |    | 50 (240v)    |
| Heater         | H  | 5.5 KW       |
| Heat Pump      | HP |              |

## OPERATION SYTEM

|                       |    |         |
|-----------------------|----|---------|
| Main Spa Side Control | 7  | ProView |
| Plunge Side Control   | 7P |         |



\*\* Not every jet is referenced. Each type of jet is noted for ease of identification. \*Note location of audio components prior to install. All specifications are accurate at time of print. Manufacturer reserves the option to change product without prior notice. Dimensions are approximate.

# INSTALLATION GUIDELINES & SITE PREPARATION

Hot tub installation can be quick and simple if these general guidelines are considered in planning the site. Please read the following information carefully. Proper planning will make the delivery and install more economical and efficient while proper site selection will increase your year-round enjoyment.

## ACCESS FROM DELIVERY POINT TO FINAL SITE

Consider the route from where the unit is delivered to the installation site. The steepness of grade, trees, shrubs, gates, roof overhangs, cables and overhead wires need consideration. Outside dimensions of your model choice can be used to determine clearance required for the move. Review outdoor and indoor installation suggestions prior to choosing your hot tub spa location.

## SURFACE REQUIREMENTS

Your spa should be placed on a level concrete pad designed to support 6,000 lbs.( 2,722 kg.). 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 spa installation. A flat, level surface strong enough to support your unit is mandatory. Once your spa is filled, it has considerable weight. Make certain the location you choose can support a minimum of 100 lbs (46 kg) per square foot load, per recommended guidelines.

## GENERAL CONSIDERATIONS

Make sure your dimensions are correct as you prepare the site for your new spa. Click onto the web site ([www.pdcspas.com](http://www.pdcspas.com)) or call your retailer for dimensions of the model you have chosen. Allow a perimeter of the chosen ground surface to extend beyond the hot tub itself to provide a clean area for users to get in and out of the unit. ***The spa location and the spa itself must be level before filling with water.*** Allow adequate space to access the equipment behind the four access panels on the spa cabinet. Review the pages in this manual referencing the model specifications for the support equipment location for the model you have chosen. A cabinet corner drain has been installed on the bottom portion of a cabinet corner for easy draining. Locate this drain and leave appropriate access. Leave ample access to the GFCI circuit breaker for testing and frequent access. A quick disconnect (manual disconnect) or GFCI is to be installed between 5 - 15 ft. (1.5-4.6 m) of the spa and within the line of sight from the unit. Consider where this can be located when selecting and preparing the spa site. All wiring must comply with the U.S. National Electric Code. ALL EQUIPMENT MUST BE GROUND FAULT CIRCUIT PROTECTED (NOT SUPPLIED) AT THE POWER SOURCE. ALL ELECTRICAL WIRING OF THE SPA SUPPORT EQUIPMENT MUST COMPLY WITH THE NATIONAL ELECTRIC CODE.

Note location of electric source into the unit prior to positioning on surface.

Spa equipment must always be below water level, never above, and sheltered from weather elements.

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.

# INSTALLATION GUIDELINES & SITE PREPARATION

**Important:** All spa sides must be accessible for regular maintenance or in the event that service is required. General maintenance will require entry to equipment behind cabinet panels. It is recommended to allow 3 feet of access to all sides of the spa for routine and service maintenance. Your warranty does not include any cost associated with gaining access to equipment for servicing.

## 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 resistant to moisture and water should be of consideration.
- 3 Chemicals will vaporize from the water and may cause an odor and possibly corrosion to certain home hardware. Never store chemicals inside the spa cabinet or where they may come into contact with water.
- 4 During the normal use of the spa, water will escape from the 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 space around the spa for easy access in case of repairs and maintenance, 3 ft. is suggested.
- 6 Consider and prepare for the unlikely event of spa removal.
- 7 Read 7-13 in the Outdoor Installation Considerations.
- 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 or 120v 15A. It must be wired directly into a grounded circuit with a Ground Fault Circuit Interrupter (G.F.C.I.) or equivalent RCD (not supplied), for export installs. No other appliances should be on the same circuit.
- 10 The spa should be close to a source of water. The unit is filled with a garden hose
- 11 Be sure 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 unit may weigh up to 6,000 lbs ( 2,722 kg.) when it is filled with water. Contact a contractor or structural engineer to determine adequate support.
- 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 unit, provided adequate space for service is considered.
- 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.

## 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 aboveground and underground. Your spa will also need to be childproof.
- 3 View from house for aesthetics and supervisory needs.
- 4 Distance from house for wintertime use.
- 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 water splashed from your spa may damage nearby plant life.)
- 7 Consider the location of the nearest bathroom or dressing room.

# INSTALLATION GUIDELINES & SITE PREPARATION

## OUTDOOR INSTALLATION CONSIDERATIONS (CONT'D)

- 8 If your spa is to be located on a second story, be positive support is adequate. Call your builder and a structural engineer.
- 9 Positioning with adequate space for access to components for maintenance and general servicing. It is suggested 3 ft. on all cabinet sides.
- 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, should it be required.
- 12 Location of electrical supply. 120/240 120v/15A volt systems require hard wire installed from the electrical source to the spa support pack terminal. ALL EQUIPMENT MUST BE GROUND FAULT CIRCUIT PROTECTED (NOT SUPPLIED) 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 metal surfaces providing each metal surface is permanently connected by a No. 6AWG (8.4 mm<sup>2</sup>) 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.

## PARTIALLY OR FULLY RECESSED INSTALLATIONS

PDC Spas does not recommend this type of installation, although if this is what you have chosen for your new spa, please review the following considerations.

- 1 A system for preventing collection and pooling of water must be designed in accordance to local authorities.
- 2 If installed in designated floodways, additional attention to maximum water load entering that floodway must be addressed to prevent water from accumulating below grade. The spa is not designed to be submerged in water and will void all warranties.
- 3 Unit must be level and self-supporting and NEVER backfilled with sand, gravel or dirt. This will void all warranties.
- 4 Plan for complete drainage.
- 5 Must have proper ventilation so equipment does not overheat.
- 6 Must provide at least 3 feet of access around all sides of the spa. Warranty does not cover costs associated with gaining access for service and maintenance.
- 7 Below grade drainage needs to be evaluated based upon specific region rainfalls. This analysis must be done by a qualified local engineer to ensure proper drainage.

Once the cold plunge spa is in its final location perform the following steps to begin the start-up procedure.

**ATTENTION: BE SURE TO WAIT UNTIL TO FILL AND POWER YOUR UNIT FOR 24 HOURS AFTER IT HAS BEEN SET IN PLACE**

- 1 Consult the specification sheet for your specific hot tub model to locate the electrical spa pack. Remove the cabinet panel exposing pack for electric connection completion.
- 2 Consult the specification sheet to locate all the pumps for your specific model, then remove appropriate cabinet panels. Be sure all pump and heater unions are secure. Each pump has 2 unions, the heater has 2 unions. The unions of a newly delivered spa tub may have loosened during transportation. While checking the unions also check the slide valves are in the up position and the lock is installed. Photo right.

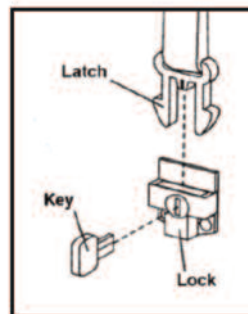
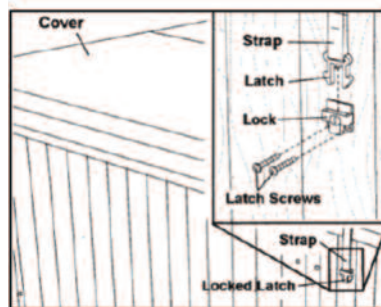




# INSTALLATION GUIDELINES & SITE PREPARATION

- 3 Inspect the spa for any dirt or particles that may have fallen onto the surface after the plastic was removed from the unit. Wipe the spa with a soft damp sponge.
- 4 Ensure your water source is safe for spa use. Water may contain minerals that could cause stains or deposits. Water with high mineral count may discolor the water once a sanitizer is added.
- 5 Let the water run out of your garden hose for several minutes before filling the spa. This will flush out stagnant water possibly harboring bacteria.
- 6 Begin filling the spa. We recommend filling the spa to approximately the midway or skimmer. During the filling process periodically check the unions to ensure they are tight and no water is leaking out.
- 7 Once the spa is filled, turn the XD2 or plug in other models breaker on. The spa will turn on and start the circulation pump.
- 8 It may be necessary to bleed air from the pump or pumps on your spa, if after start up your spa pumps do not operate. Due to the nature of water flow and hydrotherapy pumps, please be advised that air locking of pumps may occur. PDC Spas has taken measures to reduce the possibility of this, but it still may occur, especially after refilling a spa. This is not a service covered under warranty. To relieve an airlock situation, turn the pump off, loosen the the pump union on the discharge of the pump water should leak out of the union once the air has been purged. Tighten the union and test the pump for proper operation. Repeat the process if needed.
- 9 Refer to Control section for heating, filtration cycles and function for the model / series of your spa.
- 10 Adjust water chemistry according to the instructions provided in water chemistry guidelines section.
- 11 View current water temp on the control panel and set to desired level.
- 12 Remove the spa cover from the box and place it on the unit. 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 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 locks to the cabinet in the same manner. 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 counterclockwise 1/4 turn. Always keep locked when not in use. Keep the keys in a safe place, out of the reach of children.



Should you be installing a cover lifting device, refer to the manufacturer's instructions for proper installation. Those devices that are to be screwed into the cabinet must have consideration of the hot tub framework for proper support and function. Those devices should never be screwed into only the cabinet sidewall as there is not adequate support from the panel alone. The framework of the spa must be accessed.

Always use an approved insulating locking spa cover when not in use to assure safety, protection of the spa surface and efficiency. When not in use, spa must be covered to avoid prolonged exposure to weather conditions and sun. Constant, prolonged exposure and use of an unapproved cover can result in damage to the acrylic surface and void the warranty.

# WIRING GUIDELINES XD2 MODEL

## ELECTRICAL REQUIREMENTS

ELECTRICIAN MUST READ THE FOLLOWING INFORMATION PRIOR TO INSTALLATION.

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

It is the responsibility of the spa owner to ensure that electrical connections are made by a qualified electrician in accordance with the National Electrical Code and any local and state electrical codes in force at the time of installation.

### IMPORTANT

**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 (GFCI) protector or equivalent; (RCD, for export installs), at the power source (NOT SUPPLIED BY PDC SPAS) by a qualified electrician in accordance with all codes and regulations. Refer to typical GFCI installation photos and illustrations on the following pages.

Prior to each use, testing of the GFCI (or equivalent RCD) is required! Refer to the maintenance section of this manual for instructions

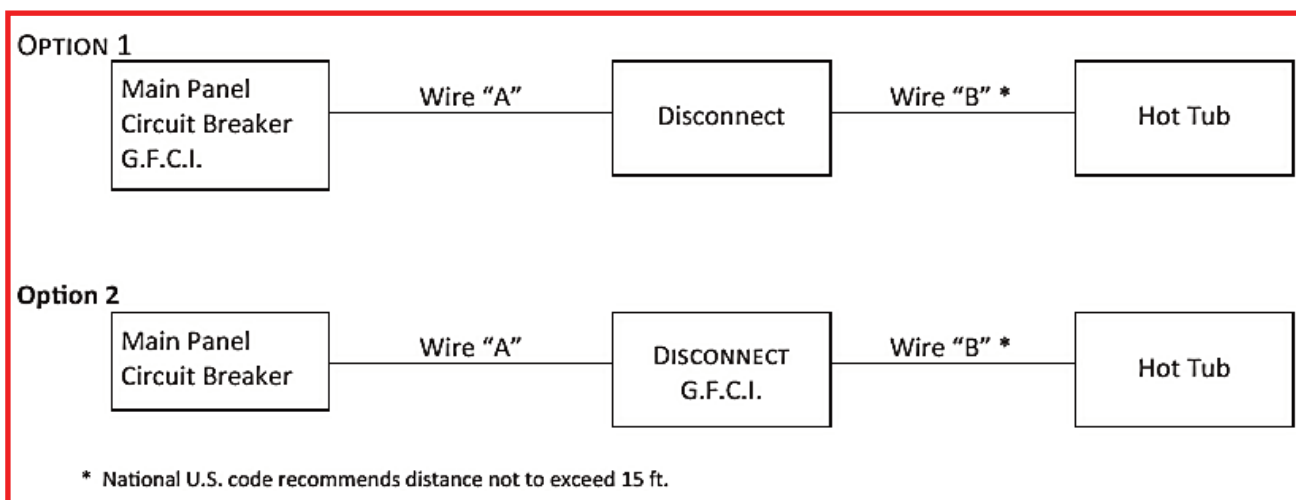
All spa support equipment must be bonded (grounded) to the pressure connector located within the control support box as well as the outside of the control support box.

(see wiring schematic below and references on following pages)

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.

### HOT TUB WIRING SCHEMATIC FOR CERTIFIED ELECTRICIANS' REFERENCE ONLY





# WIRING GUIDELINES XD2 MODEL

## ATTENTION ELECTRICIAN

All PDC Cold Plunge 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 hot tub occupants. This diagram is a "Typical" installation to be used only as a reference for the installing electrician.

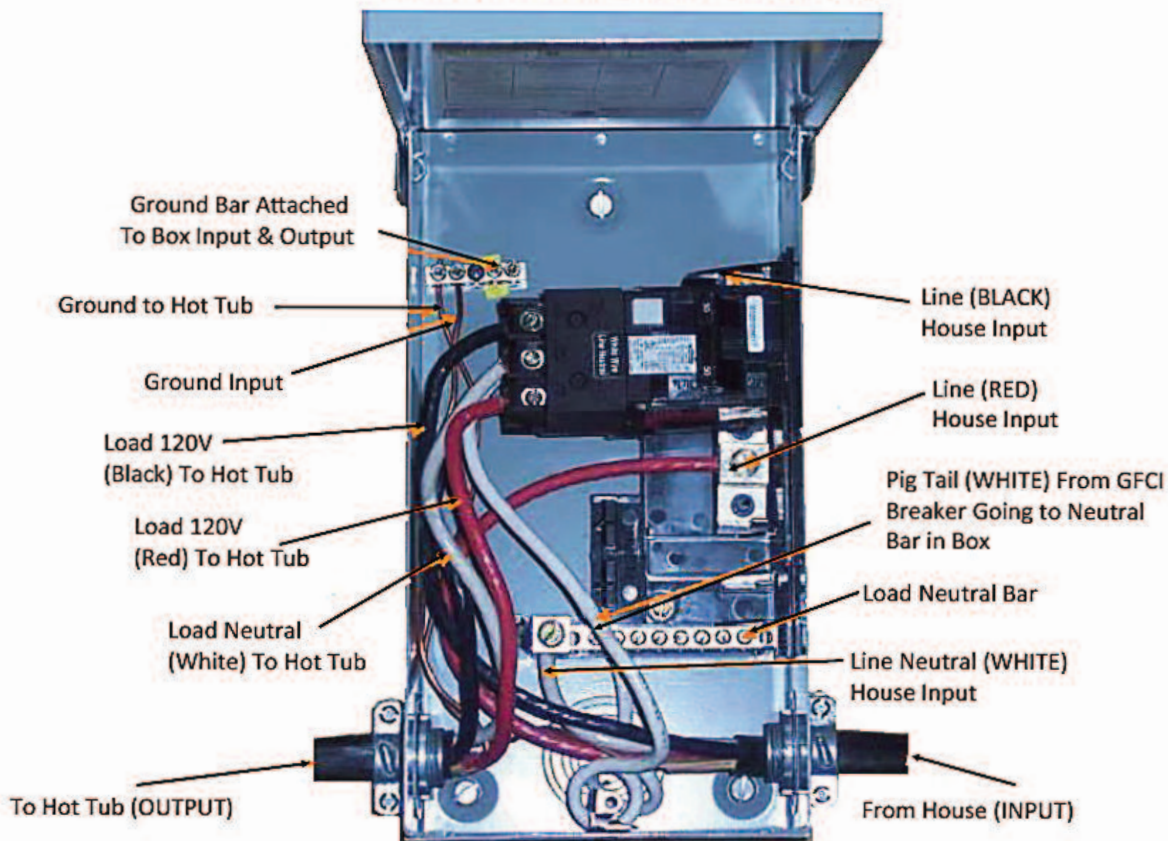
PDC does not supply the GFCI breaker. It is recommended to NOT use Eaton-Cutler Hammer brand.

**IMPORTANT: 6 Gauge Copper Wire MUST Be Used.**

**Never Use Aluminum Wire.**

**Test GFCI Monthly and Prior to Each Use.**

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 wire must be made by a 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.

# WIRING GUIDELINES XD2 MODEL

## FOR QUALIFIED ELECTRICIAN REFERENCE ONLY!

All installations and connections are to be performed by a qualified, licensed electrician only and in accordance with the National electric code and all applicable local regulations.

**Ensure power is turned off prior to making any electrical connections.**

## ATTENTION ELECTRICIAN

**All spa units must be installed with a Class A 50 Amp Ground Fault Circuit Interrupter (not supplied) in accordance with the National Electric Code and all applicable local codes. Installation of GFCI varies among those manufacturers. Follow each manufacturer's guidelines to ensure proper operation and protection of spa occupants.**

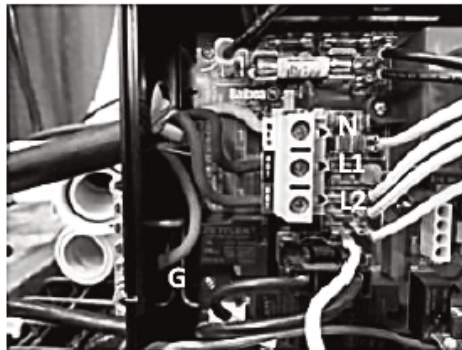
**IMPORTANT: 6 Gauge Copper Wire MUST Be Used.**

**Never use Aluminum Wire!!**

**Test GFCI Monthly and Prior to Each Use.**

Correct wiring of the electrical service box, GFCI and pack terminal block is essential. Contacting a qualified electrician may be necessary. \*If connected to a 3 wire system, no 240V component will operate.

**240V (4 wires)**



- To install the wiring for the spa equipment controller, a Phillips screwdriver and a flat screwdriver will be needed.
- Loosen the 3 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.
- 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 3 screws of the spa pack lid.

# WIRING GUIDELINES XD2 MODEL

## FOR QUALIFIED ELECTRICIAN REFERENCE ONLY!

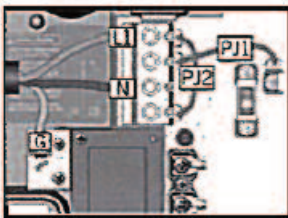
All installations and connections are to be performed by a qualified, licensed electrician only and in accordance with all applicable local regulations. Identify the correct CE platform on the spa unit, in accordance with the home's electrical output and follow the guidelines below. **ENSURE POWER IS TURNED OFF PRIOR TO MAKING ANY ELECTRICAL CONNECTIONS.**

## ATTENTION ELECTRICIAN

All hot tub units must be connected to a circuit protected by a residual current device (RCD) having a rated operating residual-current not exceeding 30 mA (not supplied). Proper wiring of the electrical service box, RCD and the terminal block is essential! Check your electrical code for all regulations that apply.

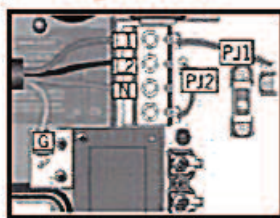
IMPORTANT: 6 Gauge Copper Wire MUST Be Used.  
Never use Aluminum Wire!!  
Test RCD Monthly and Prior to Each Use.

1-Phase



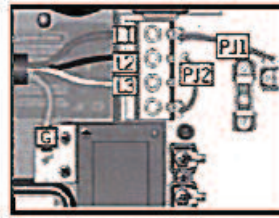
Connect PJ1 between P7 and P13.  
Connect PJ2 between P10 and P74.

2-Phases with single neutral



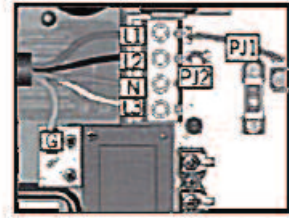
Connect PJ1 between P7 and P10.  
Connect PJ2 between P13 and P74.

3-Phases Delta



Connect PJ1 between P7 and P10.  
Connect PJ2 between P13 and P74.

3-Phases with single neutral



Connect PJ1 between P7 and P10.  
Connect PJ2 between P11 and P13.

- Disconnect power before starting electrical work!
- To complete the electrical connections, you will need a Phillips screwdriver and flat-head screwdriver.
- Remove the screws from the system control lid and remove it.
- Strip away 5 1/2" (142 mm) of cable insulation. Strip away 1" (25 mm) of insulation from each wire.
- Pull the cable through the cutout of the box and secure it with a NPT strain relief (hole diameter 1,335" -34,42 mm). For CE use an IEC certified plastic bushing that will maintain the IPX5 rating. Ensure the NPT strain relief clamps around the outer sheath of the cable.
- Insert each wire into the appropriate socket of the main entry terminal block according to the color code indicated on the sticker. Use a flat-head screwdriver to tighten the screws on the terminal.
- After making sure wires are securely connected, push them back into the box and replace the cover. Do not over-tighten cover screws (torque to 8 in. lb max (0.9 N.m)).
- Connect the bonding conductor to the bonding lug on the front of the spa pack (a grounded electrode conductor should be used to connect the equipment grounding conductors).

**Electrical connections should be made only by qualified personnel and in accordance with local regulations.**



# OPERATION SYSTEM / SmartTouch™ CONTROL

**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.



## 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 will display a company logo screen.

### PRIMING MODE

After the initial start-up sequence, the control will enter Priming Mode and display a Priming Mode screen. Only pump icons appear on the priming mode screen. 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 selecting the "Jet" buttons.

### PRIMING THE PUMPS

As soon as the Priming Mode screen appears on the panel, select the "Jets 1" button once to start Pump 1 in low-speed and then again to switch to high-speed. 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 Turn-ing 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 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 prim-ing 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 into an overheat condition.



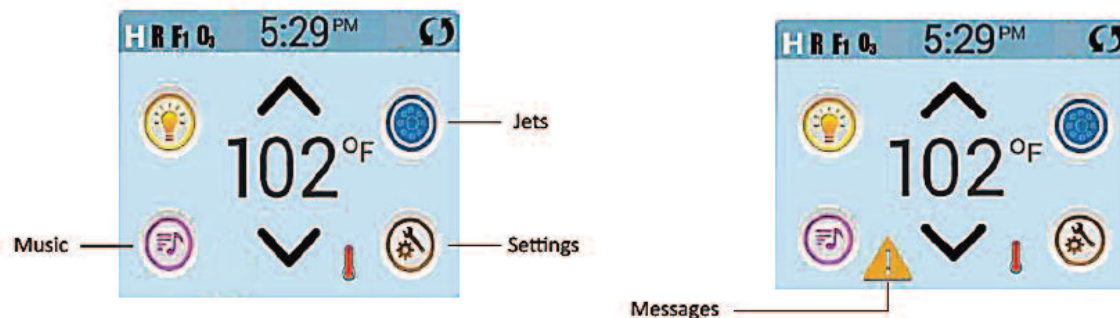
### EXITING PRIMING MODE

The system will automatically enter the normal heating and filtering at the end of the priming mode, which lasts 4-5 minutes. You can manually exit Priming Mode by pressing the "Back" button on the Priming Mode Screen. 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 display the Main Screen, but the display will not show the water 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. ---°F ---°C

# OPERATION SYSTEM / SmartTouch™ CONTROL

## NAVIGATION

Navigating the entire menu structure is done by touching the screen. Screen selections indicated below can be selected. Touch one of these to enter a different screen with additional controls. Most menu screens time out and revert to the main screen after 30 seconds of no activity.



## MESSAGES

At the bottom of the screen, at certain times an indicator may appear showing that a message is waiting. Touch this indicator to go to the Message Display Screen. On that Screen some of the messages can be dismissed.

## SPA STATUS

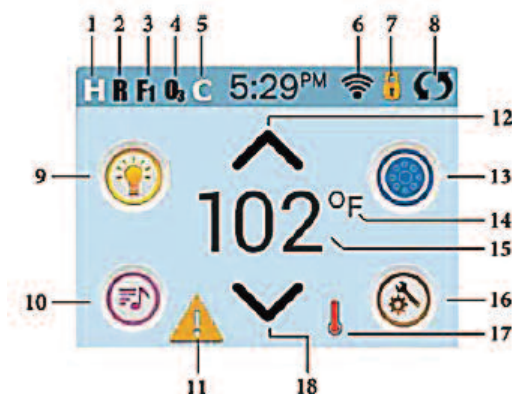
Important information about spa operation can be seen on the Main Screen.

Most features, including Set Temperature adjustment, can be accessed from this screen. The actual water temperature can be seen, and the Set Temperature can be adjusted. The selected Temperature Range is indicated in the upper left corner.

Time-of-Day, Ozone and Filter status is available, along with other messages and alerts. The Spa Equipment Control Icon will spin if any pump is running. A Lock icon is visible if the panel or settings are locked.

## ICON SPECIFICATIONS

1. H = High Temperature Range
2. R = Ready Mode
3. F1 = Filter Cycle 1 Running
4. O3 = Ozone Running
5. C = Cleanup Cycle
6. Wi-Fi Signal Indicator
7. Lock Indicator Icon
8. Invert Screen
9. Light Icon = Turns On/Off
10. Music Icon = Press To Enter Music Screen
11. Message Waiting Indicator
12. Set Temperature Up
13. Spa Equipment Control Icon
14. Temperature Scale (F/C)
15. Current Water Temperature
16. Settings Icon
17. Heat Indicator
18. Set Temperature Down



**NOTE: After 30 minutes\* the display will automatically go into sleep mode, which turns the display off. This is normal operation. Touch anywhere on the screen to wake the panel back up.**

# OPERATION SYSTEM / SmartTouch™ CONTROL

## ICON SPECIFICATIONS

1. = High Temperature Range. = Low Temperature Range.
2. = Ready Mode. = Ready And Rest Mode. = Rest Mode.
3. = Filter Cycle 1 is running. = Filter Cycle 2 is running. = Filter Cycles 1 and 2 are both running.
4. = Ozone is Running. If you don't see the icon that means the Ozone is OFF.
5. = Cleanup Cycle is Running.
6. = Wi-Fi icon just indicates that the Wi-Fi link is connected. It does not indicate signal strength.  
Note: Not all systems that support Wi-Fi display this icon.

7. Lock Icon: When displayed, indicates the panel is in a locked mode. To unlock or lock a setting or panel lock, first press the corresponding icon on the Lock Screen, then press and hold the word "Lock" for 5+ seconds until the text and icon change to the opposite state.

There are 2 lock icons that can be shown on the title bar of most screens. A tall skinny one representing a settings lock is applied.

It is shown on screens that are affected by the settings lock. And the standard lock icon Padlock which represents the Panel being locked. If both settings and panel are locked, only the panel lock will show since the settings lock doesn't do much in that situation. When the panel is locked, the Settings Screen will only show items not affected by that lock (System Info and LockScreens).

8. = Invert (or flip) Screen.
9. = Lights is ON. = Light is Inactive. = Light is Disabled.
10. = Music is Active. = Music is Inactive. = Music is Disabled.
11. Message Waiting Indicator: The Message Waiting Indicator will show one of the following icons:

- = fatal error (Spa can't function until it's fixed)
- = Normal Error or Warning
- = Reminder Message
- = Information Message

Touch the Indicator to go to a Message Screen which shows the message.

Some messages will include the "Call for Service" text as it requires a service technician to fix the problem. If the panel is locked and a message alert appears, you will be taken to the Lock Screen (where you will need to Unlock the panel) before you can clear the message.

Touching the Error/Warning/Reminder/Info Icon on the Message Screen will take you to the System Information Screen to allow for troubleshooting over the phone or for a field service tech to better understand what is going on. Exiting the System information Screen will take you back to the Message Screen in that situation.

12. Adjust set temperature higher.
13. = Spa Equipment Control Icon. Brings up a screen where the spa jets, blower or other equipment can be controlled. While on the Spa Equipment Screen, you can press a Jets button once for low speed, and if configured press it again for high speed. = Jet is Inactive. Indicates if a pump is running or not.
14. Indicates if the temperature is in = Fahrenheit or = Celsius.
15. Current water temperature if or is solid; set temperature if or is flashing.
16. Setting Icon. = Settings is Active. = Settings is Inactive (when the panel is locked). Takes you to Settings Screen
17. Different animation sequences, including blinking, may indicate different stages of heating.
18. Adjust set temperature lower.



# OPERATION SYSTEM / SmartTouch™ CONTROL

## SETTINGS SCREEN

### HEAT MODE - READY VS 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 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. When the heater pump has come on automatically (for example for heating) you can switch between low speed and high speed but you cannot turn the heater pump off.

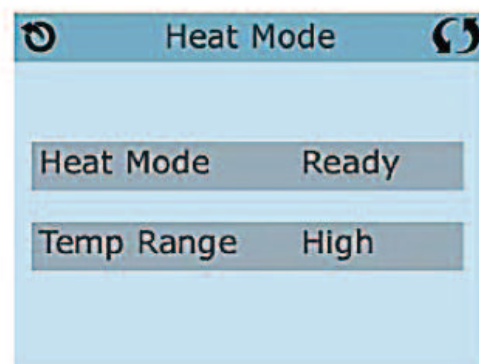
### READY-IN-REST MODE

Ready in Rest Mode appears in the display if the spa is in Rest Mode and the Jets 1 Button is pressed. When the heater pump has come on automatically (for example for heating) you can switch between low speed and high speed but you cannot turn the heater pump off. After 1 hour, the System will revert to Rest Mode. This mode can also be reset by selecting the Heat Mode line.

## SETTINGS

### PROGRAMING, ETC

The Settings Screen is where all programming and other spa behaviors are controlled. Each icon on the Settings screen takes you to a different screen, where one or more setting may be viewed and/or edited. The Heat Icon takes you to a screen where you control the Heat Mode and the Temperature Range.



The Heat icon (🔥) takes you to a screen where you control the Heat Mode and the Temperature Range.

### DUAL TEMPERATURE RANGES (HIGH VS LOW)

This system incorporates two temperature range settings with independent set temperatures. The specific range can be selected on the Settings screen and is visible on the Main Screen in the upper left corner of the display. These ranges can be used for various reasons, with a common use being a “ready to use” setting vs. a “vacation” setting. 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.

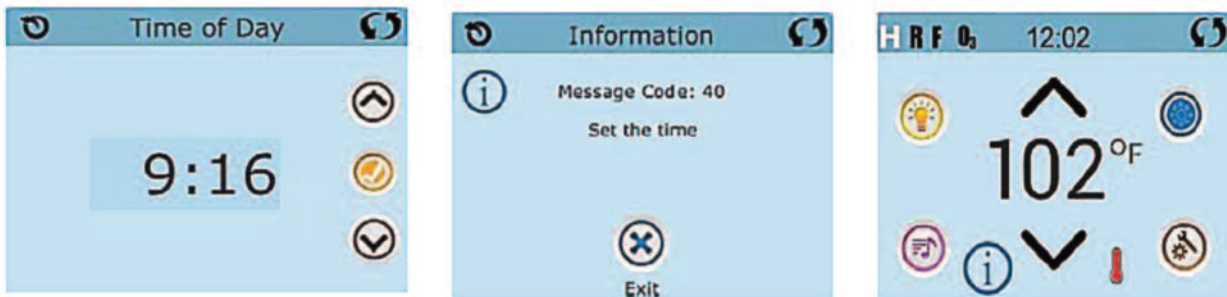
*High Range can be set between 80°F and 104°F. Low Range can be set between 50°F and 99°F. Freeze Protection is active in either range.*

# OPERATION SYSTEM / SmartTouch™ CONTROL

## TIME-OF-DAY

### BE SURE TO SET THE TIME-OF-DAY

Setting the time-of-day is important for determining filtration times and other background features. The Heat Icon on the Settings Screen takes you to a screen where you control the Time-of-Day. On the Time-of-Day screen, simply select the Hours and Minutes. Use the Up and Down Buttons to make changes, then Save. If no time-of-day is set in the memory an Information Screen will appear. If you exit it an Information Icon will appear at the bottom of the Main Screen, until the time-of-day has been set. NOTE: If power is interrupted to the system, Time-of-Day will be maintained



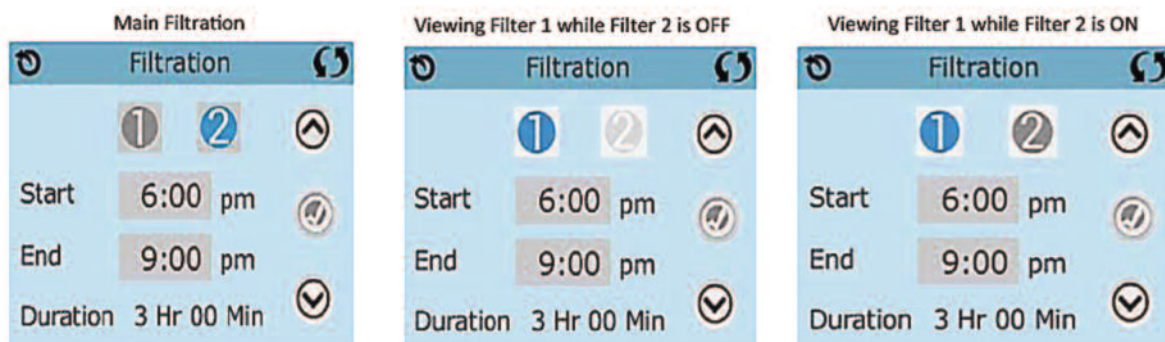
## ADJUSTING

### MAIN FILTRATION

Using the same adjustment as Setting the Time, Filter Cycles are set using a start time and a duration. Each setting can be adjusted in 15-minute increments. The panel calculates the end time and displays it automatically. The Filter Icon on the Settings Screen takes you to a screen where you control the Filter Cycles.

### FILTRATION 2-OPTIONAL FILTRATION

Filter Cycle 2 is OFF by default. Press “1” to view Filter 1. Press “2” once to view Filter 2. Press “2” again to turn Filter 2 ON or OFF. When Filter Cycle 2 is ON, it can be adjusted in the same manner as Filter Cycle 1. It is possible to overlap Filter Cycle 1 and Filter Cycle 2, which will shorten overall filtration by the overlap amount.



### THE MEANING OF FILTER CYCLES

1. The heating pump always runs during the filter cycle\*
2. In Rest Mode, heating only occurs during the filter cycle
3. Purges happen at the start of each filter cycle

\*For example, if your spa is set up for 24/hour circulation except for shutting off when the water temperature is 3°F/1.3°C above the set temperature, that shutoff does not occur during filter cycles.

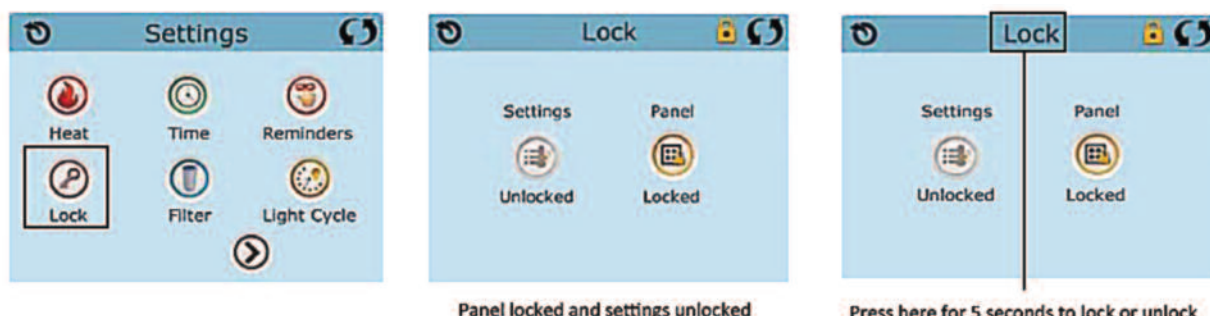
# OPERATION SYSTEM / SmartTouch™ CONTROL

## ADDITIONAL SETTINGS

### RESTRICTING

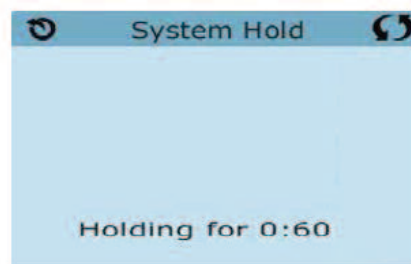
The control can be restricted to prevent unwanted use or temperature adjustments.

Locking the Panel prevents the controller from being used, but all automatic functions are still active. Locking the Settings allows Jets and other features to be used, but the Set Temperature and other programmed settings cannot be adjusted. Settings Lock allows access to a reduced selection of menu items. These include Filter Cycles, Invert, Information and Fault Log. They can be seen, but not changed or edited. To lock either Settings or Panel first select Settings (if it says “Unlocked”) or Panel (if it says “Unlocked”), then press the word “Lock” for at least 5 seconds. To unlock either Settings or Panel first select Settings (if it says “Locked”) or Panel (if it says “Locked”), then press the word “Lock” for at least 5 seconds. Press for 5 seconds to unlock.



### HOLD-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. If spa service will require more than an hour, it may be best to simply shut down power to the spa. The Hold Icon on the Settings Screen places the spa in Hold Mode and displays the System Hold screen. Touch Back to exit Hold Mode.

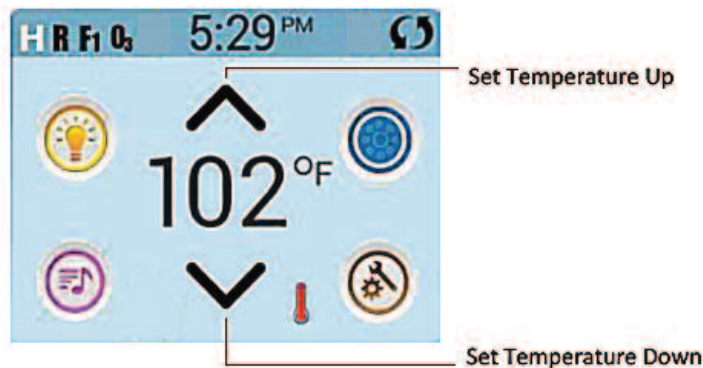


### SET TEMPERATURE

Press Up or Down once to display the Set Temperature (indicated by a flashing °F or °C, plus a change in color of the temperature). Press Up or Down again to modify the Set Temperature. The Set Temperature changes immediately. If you need to switch between High Temperature Range and Low Temperature Range you need to go to the Settings Screen.

### PRESS AND HOLD

If Up or Down is pressed and held, the temperature will continue to change until you stop pressing, or until the temperature Range limits are reached.



# OPERATION SYSTEM / SmartTouch™ CONTROL

## SPA SCREEN

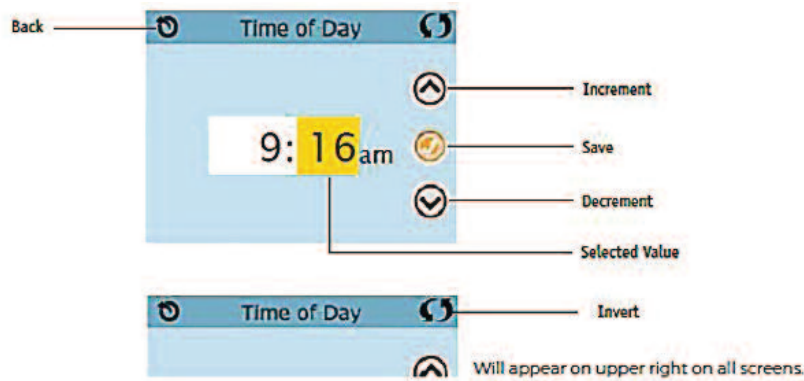
The Spa Screen shows all available equipment\* to control. The display shows icons that are related to the equipment installed on a particular spa model, so this screen may change depending on the installation. The icon buttons are used to select and control individual devices.



Some devices, like pumps, may have more than one ON state, so the icon will change to reflect the state of the equipment. Below are some examples of 2-speed Pump indicators.

## VALUES INCREMENT/DECREMENT AND INVERT

If an Up or Down button is shown and pressed when on an editing page, and a value has been selected (highlighted), the value can be incremented by pressing the up arrow or decremented by pressing the down arrow.



## COMMON BUTTONS

### EXITING SCREENS

The Back button is on every screen except the Main Screen, the Priming Mode screen and the Message Display Screen.

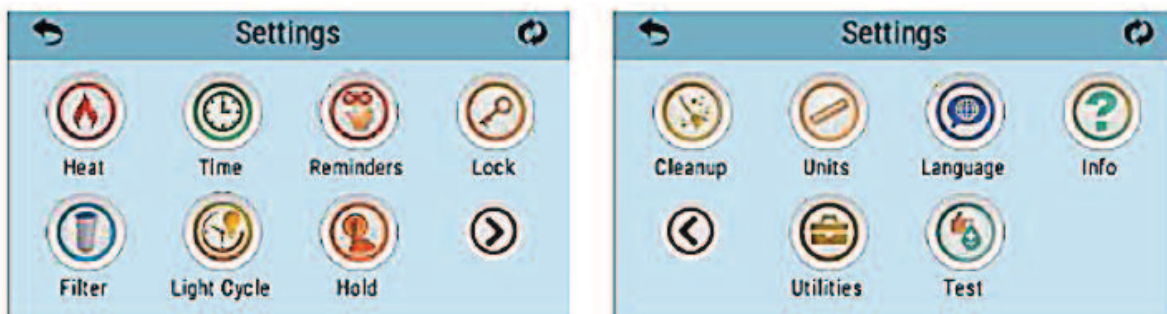
When you see only this button, or this button plus an Inactive Save Button, it means Back or Exit. It appears on editing screens before you have changed any value, as well as on all other screens. When you see both the Back button and an Active Save button, the Save button will Save, while the Back button will Cancel. If the screen times out due to no activity it will act like Cancel.



### PAGE RIGHT/LEFT

If there is a right arrow at the bottom of the screen, it takes you to the next page.

If there is a left arrow at the bottom of the screen, it takes you to the previous page.

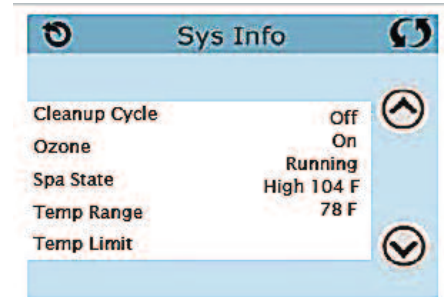




# OPERATION SYSTEM / SmartTouch™ CONTROL

## PAGE UP/DOWN

If an Up or Down button is shown and pressed when on a page with a text list, the list can be scrolled a page at a time.



## SPA UNIT

### PUMPS

On the Spa Screen, select a “Jets” button once to turn the pump on or off, and to shift between low- and high-speeds. If left running, the pump will turn off after a time-out period. 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.

### FILTRATION AND OZONE

Pump 1 low and the ozone generator will run during filtration. 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 pro-grammable.

A second filter cycle can be enabled as needed.

At the start of each filter cycle, the water devices like blower and other pumps will run briefly to purge the plumbing to maintain good water quality.

### CLEAN-UP CYCLE

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.

### FREEZE PROTECTION

If the temperature sensors within the heater detect a low enough temperature, then the water devices automatically activate to provide freeze protection. The water devices will run either continuously or periodically depending on conditions.

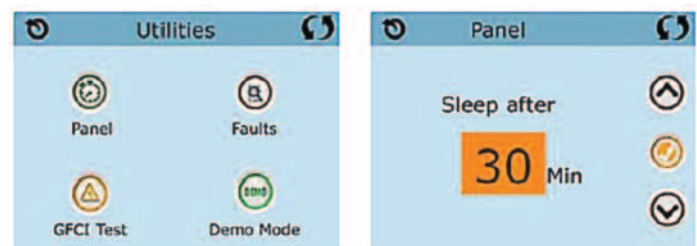
## UTILITIES SCREEN

### UTILITIES

The Utilities Icon on the Settings Screen takes you to the Utilities Screen.

### PANEL

Touching the Panel Icon takes you to the Panel Screen, where you can set how long it takes the panel to go to sleep after the last activity. The Sleep Timer can be set from 1 to 60 minutes. The default is 30 minutes.



# OPERATION SYSTEM / SmartTouch™ CONTROL

## FAULT LOG

The Fault Log is a record of the last 24 faults that can be reviewed by a service tech. Use the Up and Down buttons to view each of the Faults. When Priming Mode shows in the Fault Log, it is not a fault. Rather, it is used to keep track of spa restarts.

## GFCI TEST

The Ground Fault Circuit Interrupter (GFCI) or Residual Current Detector (RCD) is an important safety device and is required equipment on a hot tub installation.

CE registered systems do not have an RCD Test Feature due to the nature of the electrical service. The end-user must be trained how to properly test and reset the RCD.

## RESET BUTTON

Only use the Reset Button prior to moving the spa to a new location. Pressing the Reset the button forces a new Test to be performed at the new location. It is mandatory to verify proper installation and function of the GFCI or RCD. Users / owners are to manually test this safety device prior to each use. Should the device not function properly, shut the hot tub off at the breaker and contact service tech.

## UNITS SCREEN

The Units Icon on the Settings Screen takes you to the Units Screen.

1. Press “Temp Display” to change the temperature between Fahrenheit and Celsius.
2. Press “Time Display” to change the clock between 12 hr and 24 hr display.

## REMINDERS

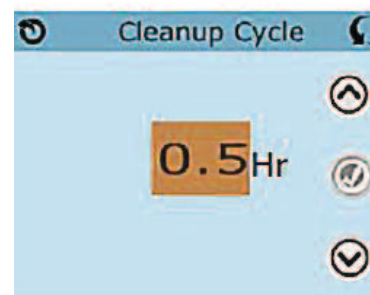
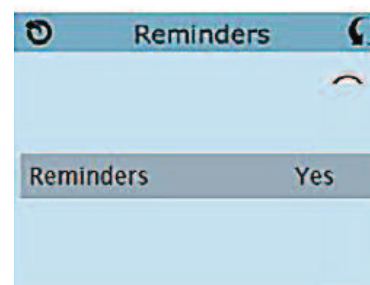
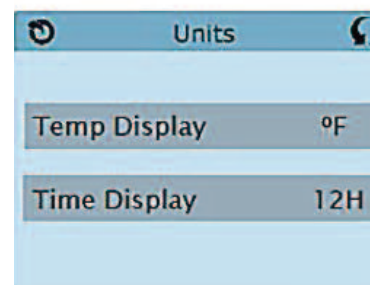
The Reminder Icon on the Settings Screen takes you to the Reminders screen. Press “Reminders” to turn the reminder messages (like “Clean Filter”) ON (Yes) or OFF (No).

## CLEAN-UP CYCLE

Cleanup Cycle Duration is not always enabled, so it may not appear. When it is available, set the length of time Pump 1 will run after each use. 0-4 hours are available. Setting it to 0.0 Hr keeps the Cleanup Cycles from running. The Cleanup Icon on the Settings Screen takes you to the Cleanup Cycle screen.

## LANGUAGE

The Language Icon on the Settings Screen takes you to the Language screen. Change the language displayed on the panel.





# OPERATION SYSTEM / SmartTouch™ CONTROL

## GENERAL

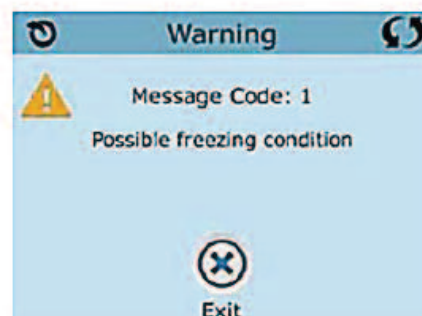
Most messages and alerts will appear at the bottom of the normally used screens. Several alerts and messages may be displayed in a sequence.

## WATER TEMPERATURE

After the pump has been running for 1 minute, the temperature will be displayed — — — —°F — — — —°C

## POSSIBLE FREEZING CONDITION

A potential freeze condition has been detected. All water devices are activated. 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.



## THE WATER IS TOO HOT - M029\*

The system has detected a spa water temp of 110°F (43.3°C) or more, 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.

## HEATER RELATED

### THE WATER FLOW IS LOW - 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.

### THE WATER FLOW IS HAS FAILED - 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, reset the message\*.

### THE HEATER MAY BE DRY - M028\*

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

### THE 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 reset the message\* to restart heater start up. See “Flow Related Checks” below.

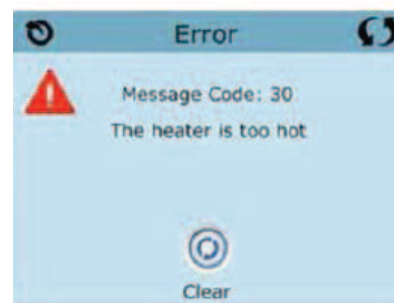
### THE HEATER IS TOO HOT - M030\*

One of the water temp sensors has detected 118°F (47.8°C) in the heater and the spa is shut down. You must reset the message\* when water is below 108°F (42.2°C).

## 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 by an error condition, some equipment may occasionally turn on to continue monitoring temperature or if freeze protection is needed.

*\* Some messages can be reset from the panel. Messages that can be reset will appear with a Clear Icon at the bottom of the Message Screen. Press the Clear Icon text to reset the message.*



# OPERATION SYSTEM / SmartTouch™ CONTROL

## SENSOR-RELATED

### SENSORS ARE OUT-OF-SYNC-M015\*\*

The temperature sensors MAY be out of sync by 3°F. Call for Service if this message does not disappear within a few minutes.

### SENSORS ARE OUT-OF-CALL FOR SERVICE-M026\*\*

The temperature sensors ARE out of sync. The fault above has been established for at least 1 hour. Call for service.

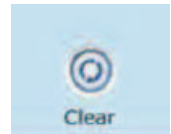
### SENSORS A FAULT, SENSOR B FAULT-SENSOR A: M031\*\*. SENSOR B: M032\*\*

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

## COMMUNICATIONS ERROR

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

*\* Some messages can be reset from the panel.* Messages that can be reset will appear with a Clear Icon at the bottom of the Message Screen. Press the Clear Icon text to reset the message.



## SYSTEM-RELATED

### PROGRAM MEMORY FAILURE\* – 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.

### THE SETTINGS HAVE BEEN RESET (PERSISTENT MEMORY ERROR)\* – M021\*\*

Contact your dealer or service organization if this message appears on more than one power-up.

### THE CLOCK HAS FAILED\* – M020\*\*

Contact your dealer or service organization.

### CONFIGURATION ERROR (SPA WILL NOT START UP)

Contact your dealer or service organization.

### THE GFCI TEST FAILED (SYSTEM COULD NOT TEST THE GFCI) – M036\*\*

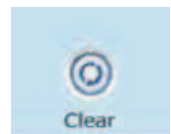
(North America Only) May indicate an unsafe installation. Contact your dealer or service organization.

### A PUMP MAY BE STUCK ON – M034\*\*

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

### HOT FAULT – M035\*\*

A Pump Appears to have been Stuck ON when spa was last powered  
POWER DOWN THE SPA. DO NOT ENTER THE WATER. Contact your dealer or service organization.



*\* Some messages can be reset from the panel.* Messages that can be reset will appear with Clear Icon at the bottom of the Message Screen. Press the Clear Icon text to reset the message.

# OPERATION SYSTEM / SmartTouch™ CONTROL

## **GENERAL MAINTENANCE REMINDERS**

Reminder Messages can be suppressed by using the Reminders Screen.

## **CLEAN THE FILTER**

May appear on a regular schedule, i.e. every 30 days. Clean the filter media as instructed by the manufacturer. See Hold on page 19.

## **TEST THE GFCI (OR RCD)**

May appear on a regular schedule, i.e. every 30 days. The GFCI or RCD is an important safety device and must be tested on a regular basis to verify its reliability. Every user and owner is to be trained to safely test the GFCI or RCD associated with the hot tub installation. A GFCI or RCD will have a TEST and RESET button on it that allows a user to verify proper function.

## **CHANGE THE WATER**

May appear 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.

# OPERATION SYSTEM / ProView™ CONTROL

**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

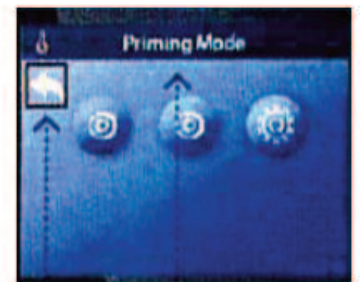


## PREPARATION AND FILLIN

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 will display a startup screen.

## PRIMING MODE

After the initial start-up sequence, the control will enter Priming Mode and display a Priming Mode screen. Only pump icons appear on the priming mode screen. 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 selecting the “Jet” buttons. Manually exit Priming Mode by pressing the “Exit” Button.



## PRIMING THE PUMPS

As soon as the Priming Mode screen appears on the panel, select the “Jets 1” button once to start Pump 1 in low-speed and then again to switch to high-speed. Also, select the other pumps, to turn them on. The pumps should 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.

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 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 navigating to the “Back” button on the Priming Mode Screen. Note that if you do not manually exit the priming mode as described above, the priming mode will be automatically terminated after 4 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 display the Main Screen, 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. ---°F ---°C

## PUMPS

On the Spa Screen, select a “Jets” button once to turn the pump 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.

# OPERATION SYSTEM / ProView™ CONTROL

## MAIN FUNCTIONS

### SPA STATUS

Important information about spa operation can be seen quickly from the Main Screen.

The most important features, including Set Temperature adjustment, can be accessed from this screen.

The actual water temperature can be seen in large text and the desired, or Set Temperature, can be selected and adjusted. Time-of-day, Ozone operation and Filter Operation status is available, along with other messages and alerts. High Temperature Range vs. Low Temperature Range is indicated in the upper right corner.

A Lock icon is visible if the panel or settings are locked.



### NAVIGATION

Navigating the entire menu structure is done with the 5 buttons on the control panel.

The right navigation arrow on the screen indicates a menu. Press the right navigation button to enter the menu. A selection box will then appear in the center of the screen. Press the left or right navigation button to view different choices. Press the center select button once on the desired choice.



### MESSAGES

At the bottom of the screen, messages may appear at various times. Some messages must be dismissed by the user.

### ALL EQUIPMENT ACCESS

The Spa Screen shows all available equipment to control. The display shows icons that are related to the equipment installed on a particular spa model, so this screen may change depending on the installation.

The navigation buttons are used to select an individual device. The device that is chosen will have a box around it and will be shown at the top of the screen. Once a device is selected, it can be controlled using the center Select Button.

Some devices, like pumps, may have more than one ON state, so the icon will change to reflect the state that the equipment is in.

### PROGRAMMING, ETC.

The Settings Screen is where all programming and other spa behaviors are controlled.

This screen has several features that can be acted on directly. These features include Temp Range, Heat Mode, and Invert Panel. When one of these items is highlighted, the Select Button is used to toggle between two settings.

All other menu items (with an arrow pointing to the right) go to another level in the menu.



# OPERATION SYSTEM / ProView™ CONTROL

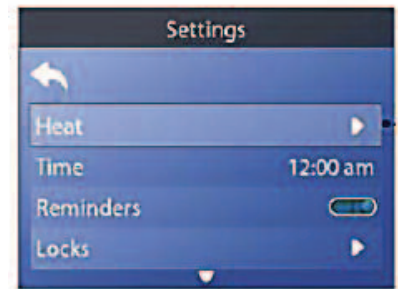
## DUAL TEMPERATURE RANGES (HIGH VS. LOW)

This system incorporates two temperature range settings with independent set temperatures. The specific range can be selected on the Settings screen and is visible on the Main Screen in the upper right corner of the display.

These ranges can be used for various reasons, with a common use being a “ready to use” setting vs. a “vacation” setting. 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.



## HEAT MODE – READY VS. 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 will be a 2-speed pump (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.

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.



## READY-IN-REST MODE

READY/REST appears in the display if the spa is in Rest Mode and the Jets 1 Button 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 Settings Menu and changing the Heat Mode.

## TIME-OF-DAY

Setting the time-of-day is important for determining filtration times and other background features. “Set Time” will appear on the display if no time-of-day is set in the memory.

On the Settings Screen, select the Time. On the Time screen, simply navigate right and left to select the Hour, Minutes, AM/PM. Use the Up and Down Buttons to make changes.

When changes are made, the icon to go “Back” changes to “Save” and a new con for “Cancel” appears under the Save icon. Navigating to the right will highlight the Save icon, and navigating left will allow the user to cancel the pending change. Pressing the “Select” button will save or cancel the changes and go back to the previous screen.

NOTE: If power is interrupted to the system, Time-of-Day will be maintained for several days.



# OPERATION SYSTEM / ProView™ CONTROL

## ADJUSTING

### MAIN FILTRATION

Using the same navigation and adjustment as Setting the Time, Filter Cycles are set using a start time and a duration. Each setting can be adjusted in 15-minute increments. The panel calculates the end time and displays it automatically.

### FILTRATION AND OZONE

Pump 1 low and the ozone generator will run during filtration.

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.

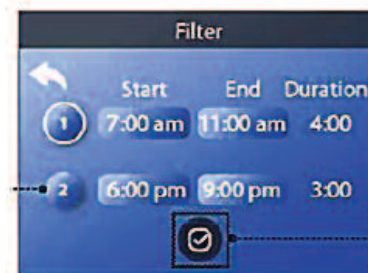
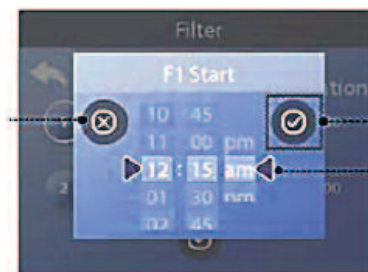
A second filter cycle can be enabled as needed.

At the start of each filter cycle, the water will run briefly to purge the plumbing to maintain good water quality.

### FILTER CYCLE 2 - OPTIONAL FILTRATION

Follow the same process to change the other filter time settings, if desired.

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



### CLEAN-UP CYCLE (OPTIONAL)

When a pump is turned on by a button press, a clean-up cycle begins 30 minutes after the pump is turned off or times out. The pump and the ozone generator will run for 30 minutes or more, depending on the system.

### PURGE CYCLES

In order to maintain sanitary conditions, as well as protect against freezing, secondary water devices will purge water from their respective plumbing by running briefly at the beginning of each filter cycle.

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

### INVERT PANEL

Selecting Invert Panel will flip the display and the buttons so the panel can be easily operated from inside or outside the cold plunge spa.

### 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 Settings allows Jets and other features to be used, but the Set Temperature and other programmed settings cannot be adjusted. Settings Lock allows access to a reduced selection of menu items. These include Set Temperature, Invert, Lock, Utilities, Information and Fault Log. They can be seen, not changed or edited.

# OPERATION SYSTEM / ProView™ CONTROL

## LOCKING & UNLOCKING

- 1) Navigate to Locks.
- 2) Press the select navigation button to view lock screen.
- 3) Navigate to either Settings or Panel.
- 4) Press and hold the Select button for 5 seconds.
- 5) Follow the same steps to Unlock.

## ADDITIONAL SETTINGS

### REMINDERS

Helpful Maintenance messages that may appear periodically.

**Hold:** Used to display the pumps during service functions like cleaning or replacing the filter. Hold mode will last for 1 hour unless exited manually. If the spa service will require more than 1 hour, it is best to shut power off to spa.

**Units:** Specify time and temperature units.

**Panels:** Set how long it takes the panel to go to sleep after the last activity. Default is 30 minutes.

Turn on/off the panel lights.

Control the brightness of both the panel lights and the panel display together.

**Cleanup:** Cleanup Cycle Duration is not always enabled, so it may not appear. When it is available, set the length of time Pump 1 will run after each use. 0-4 hours are available.

**Color:** Pressing the Select Button when Color is highlighted will cycle through 5 background colors available in the control.

**Language:** Select language.

### GFCI TEST

The Ground Fault Circuit Interrupter (GFCI) or Residual Current Detector (RCD) is an important safety device and is required equipment on a hot tub installation.

CE registered systems do not have an RCD Test Feature due to the nature of the electrical service. The end-user must be trained how to properly test and reset the RCD.

**It is mandatory to verify proper installation and function of the GFCI or RCD. Users / owners are to manually test this safety device prior to each use. Should the device not function properly, shut the hot tub off at the breaker and contact service tech.**

### PANEL MESSAGES

Most messages and alerts will appear at the bottom of the normally used screens. Several alerts and messages may be displayed in a sequence. Some messages can be reset from the panel. Messages that can be reset will appear with a “right arrow” at the end of the message. This message can be selected by navigating to it and pressing the Select button.

### POSSIBLE FREEZING CONDITION

A potential freeze condition has been detected, or the Aux Freeze Switch has closed. All water devices are activated. 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.

# OPERATION SYSTEM / ProView™ CONTROL

## **THE WATER IS TOO HOT – M029**

The system has detected a spa water temp of 110°F (43.3°C) or more, 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.

## **HEATER-RELATED**

### **THE WATER FLOW IS LOW – 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.

### **THE WATER FLOW HAS FAILED\* – 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.

### **THE HEATER MAY BE DRY\* – 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.

### **THE 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 clear the message to restart heater start up. See “Flow Related Checks” below.

### **THE HEATER IS TOO HOT\* – 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 clear the message when water is below 108°F (42.2°C). See “Flow Related Checks” below.

## **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 by an error condition, some equipment may occasionally turn on to continue monitoring temperature or if freeze protection is needed.

## **SENSOR-RELATED**

### **SENSORS ARE OUT OF SYNC – M015**

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

### **SENSORS ARE OUT OF SYNC -- CALL FOR SERVICE\* – M026**

The temperature sensors ARE out of sync. The fault above has been established for at least 1 hour. Call for service.

### **SENSOR A FAULT, SENSOR B FAULT – SENSOR A: M031, SENSOR B: M032**

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

## **MISCELLANEOUS MESSAGES**

### **COMMUNICATIONS ERROR**

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

## **SYSTEM-RELATED**

### **PROGRAM MEMORY FAILURE\* – 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.

# OPERATION SYSTEM / ProView™ CONTROL

## **THE SETTINGS HAVE BEEN RESET (PERSISTENT MEMORY ERROR)\* – M021**

Contact your dealer or service organization if this message appears on more than one power-up.

## **THE CLOCK HAS FAILED\* – M020**

Contact your dealer or service organization.

## **CONFIGURATION ERROR (SPA WILL NOT START UP)**

Contact your dealer or service organization.

## **THE GFCI TEST FAILED (SYSTEM COULD NOT TEST THE GFCI) – M036**

(North America Only) May indicate an unsafe installation. Contact your dealer or service organization.

## **A PUMP MAY BE STUCK ON – M034**

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

## **HOT FAULT – M035**

A Pump Appears to have been Stuck ON when spa was last powered. POWER DOWN THE SPA. DO NOT ENTER THE WATER. Contact your dealer or service organization.

## **REMINDERS**

### **GENERAL MAINTENANCE HELPS.**

Reminder Messages can be suppressed by using the Preferences Menu.

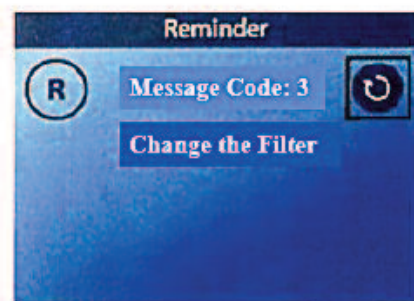
### **CLEAN THE FILTER**

May appear on a regular schedule, i.e. every 30 days. Clean the filter media as instructed by the manufacturer.

### **TEST THE GFCI (OR RCD)**

May appear on a regular schedule, i.e. every 30 days.

The GFCI or RCD 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 or RCD associated with the hot tub installation. A GFCI or RCD (European) will have a TEST and RESET button on it that allows a user to verify proper function.



### **CHANGE THE WATER**

May appear 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.

### **CHANGE THE FILTER**

May appear on a regular schedule, i.e. every 30 days. Filters should be replaced regularly to maintain proper spa function and sanitary conditions.

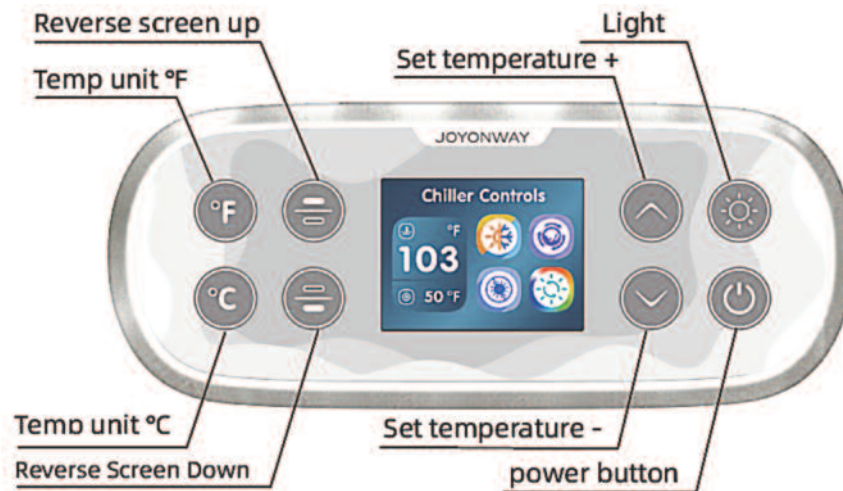


# OPERATION SYSTEM / XD1 COLD SIDE CONTROL

## BUTTON DESCRIPTION

### WARNING

1. Please strictly follow the SPA wiring diagram to connect the power supply.
2. Please do not power on the SPA until the water level reaches the water level line inside the tub.
3. After power on the SPA, wait for 1 minute before pressing the power button to turn on the system.



### TEMP UNIT °F

Use this button to switch the display temperature unit of the system to Celsius degrees.



### TEMP UNIT °C

Use this button to switch the display temperature unit of the system to Fahrenheit.



### REVERSE SCREEN UP

Used to reverse the screen upwards.



### REVERSE SCREEN DOWN

Used to reverse the screen downwards..



### SET TEMPERATURE +

Used to increase the set temperature . The maximum set temperature is 104 °F (40 °C).



### SET TEMPERATURE -

Used to reduce the set temperature. The Minimum set temperature is 40 °F (5 °C).



### LIGHT

Used to switch the on/off of the light switch. The light will automatically turn off after being on for 1 hour.



### POWER BUTTON

Used to toggle the system on and off. After power on the SPA, wait for 1 minute before pressing the power button to turn on the system. When the system is turned off, all buttons except the power button cannot be operated, and when the system is turned off, all loads will be turned off. When the system is turned on, the screen lights up, the circulating pump and disinfection function are turned on (always running or automatic), all the buttons can be operated, and the system will run automatically, controlling the water temperature to the set temperature.

# OPERATION SYSTEM / XD1 COLD SIDE CONTROL

## INTRODUCTION TO THE MAIN INTERFACE



### DETAILS ARE AS FOLLOWS



Current water temperature °F/°C.



Preset water temperature °F/°C.



Heat pump icon



Circulating pump icon



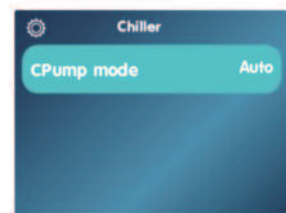
Disinfection icon icon



Light icon

### SET THE CIRCULATING PUMP MODE (ONLY FOR INSTALLERS):

Within 2 minutes after powering on, when the main interface is displayed, touch the TEMP UNIT °C button 5s to enter the setting menu, touch the TEMP UNIT °F button to change the circulating pump mode, you can set the circulating pump mode to Always On or Auto, at this time touch the TEMP UNIT°C button to return to the main interface. Circulating pump mode will remain when power is down.



**Always On mode:** When system is on, the circulating pump is always on. **Auto mode:** When system is on, the circulating pump is only turned on after the heat pump starts, when the heat pump is turned off, the circulating pump will be closed for a delay of 2 minutes, if the circulating pump has not been run within 1 hour, the circulating pump will run automatically or 1 minute.



Always On mode



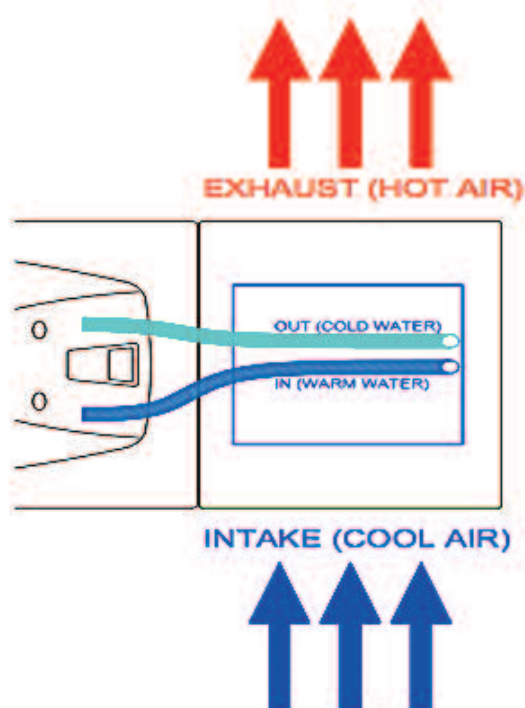
Auto mode

# OPERATION SYSTEM / XD1 COLD SIDE CONTROL

## COLD PLUNGE RATE OF COOLING

The cold plunge spa uses a water chiller to lower the water temperature within the spa. The chiller operates similarly to a HVAC system. The chiller operates efficiently when ambient temperature is at or below 90°F, when the ambient temperature is above 90°F the heat generated by the condenser has nowhere to go. This causes the cooling capability of the chiller to go down.

In optimal conditions the chill spa can bring room temperature water to 39°F within 8-10 hours. With cold plunge spas that have heating capabilities, it takes about 3-4 hrs to heat up from room temperature to reach 104°F. When water within the chill spa is cooling from 104°F to 39°F, the expected waiting time can be anywhere between 8-16 hours. This figure varies based on ambient temperature, and ventilation.



With any chiller or refrigeration system, when the ambient temperature is above a certain threshold, the heat generated by the refrigeration system has no where to go. This causes a problem where hot air is being used to cool down the unit when it is operating. When this occurs the water within the chill spa will still cool, but the rate of cooling is less than when the chill spa is operating in its ideal conditions below 90°F.

**Note:** If the spa is filled and activated during a heatwave or a sudden hot weather event, the rate of cooling will decrease exponentially, in some cases the lowest temperature the chiller can achieve during a heatwave can be around 45-55°F after continuous operation.

**Note:** The spa is designed to maintain the cold water within the spa, if heatwave conditions are occurring the cold plunge spa will cool the fastest during the evening/night. The chill spa may take up to 24-36hrs to properly cool when it is first filled. In optimal conditions

# WATER CHEMISTRY BASICS

## THE IMPORTANCE OF PROPER WATER CHEMISTRY

### EVAPORATION

Only pure water evaporates leaving a higher concentration of salts, metals, minerals and unused chemicals in the remaining cold tub water. Over time, the water can become saturated with these impurities causing stain and scales to build up on the cold tub walls and equipment components. Discoloration and possible corrosion may occur on fittings, pillows and cover.

### HOT/COLD SPA USERS

Occupants introduce contaminants to the water. That level of contamination is dependent on the number of users, time used and frequency of use. Skin lotions and detergent residue in bathing suits may cause excessive foaming and cloudy water.

### TEMPERATURE

Cold spas are normally kept in the range of 40°F to 104°F. Increased temperatures lead to evaporation, increasing the solidification of minerals, metals and scale formation. The heat level also increases the need for proper sanitation to inhibit bacteria growth.

### OUTDOOR INSTALLATIONS

Where occupants introduce grass, leaves insects, dust, etc. from the environment. Both indoor and outdoor installations are exposed to pollen, dust, etc. in the surrounding air.

*Adhere to the routine maintenance suggested in this manual for proper water chemistry and maximum enjoyment of your new cold tub.*

## BASIC UNDERSTANDING OF WATER CARE

### FILTRATION

Cartridge filters, remove dust, debris, algae that are continuously entering the spa. The cartridge is recommended to be changed at least once a month and cleaned per the instructions under maintenance. A spare cartridge is recommended to avoid shut-down during the cleaning process.

### SHOCKING THE WATER

This is the term used when super chlorinating the water by adding extra chlorine raising the chlorine level above 8 ppm (part per million) or by adding a non-chlorine (oxidizer) to eliminate chloramines or bromamines. The non-chlorine additive releases oxygen into the water acting as a chlorinator. Do not enter the water until the chlorine level is below 5 ppm. The non-chlorine additive will not treat bacteria.

### TOTAL ALKALINITY

This is a measurement of the water's ability to maintain a proper pH level. Total alkalinity is measured in ppm from 0 - 400+ with the optimum reading 80-120 ppm. With low alkalinity, the pH level will flip easily. With a high alkalinity reading, it becomes difficult to regulate.

### PH LEVELS

This is a measurement of acidity (active hydrogen) in the water. pH is not measured in ppm but on a scale of 0-14 with 7.4—7.6 being the neutral desired level. Anything below 7 is considered acidic and will cause eye and skin irritation and corrode metals with excessive chlorine loss. Anything above the neutral range may cause cloudy water, eye and skin irritation and scale formation. This level should never be below 7.2 or above 7.6.

# WATER CHEMISTRY BASICS

## **OZONE SANITATION**

Ozone is a natural sanitizer, a byproduct of oxygen; O<sub>3</sub>. It has been used successfully for many years as a purifier of drinking water. Ozone kills bacteria and has an “after rain” smell as it leaves the spa water. There is no test for ozone levels in the cold tub water. It is introduced into the spa water by an ozonator component located behind the cabinet wall. This is a virtually maintenance-free treatment for sanitizing the spa water keeping the water clear and odor free. It is necessary to adjust pH levels, alkalinity and shock as needed. The EverLite’s light is located on the upper corner of your cold tub is lit when ozone is being introduced into the tub water.

## **CHLORINE / BROMINE AS SANITIZERS**

Only sodium dichlor, granular, is approved for spa use. This is a fast dissolving, pH neutral chlorine. Chlorine immediately sanitizes and levels should be kept between 2-4 ppm. Bromine is a slow dissolve chemical which takes up to a few days to build a reserve and test levels. Bromine levels should also read between 2-4 ppm.

## **CALCIUM HARDNESS**

Water that is considered too hard (over 250 ppm) may cause scale formation in electrical components and water too low (less than 150 ppm) may also have a negative effect on components.

## **FOAMING**

Body oils, lotions cosmetics, cleaners, high pH levels, algacides and detergents often cause foaming. Foam can also be a result of low calcium and sanitizer levels.

**PLEASE BE AWARE THE USE OF BAQUA SPA WILL CAUSE DAMAGE TO  
X-DEGREE TUB COMPONENTS AND VOID WARRANTY.**



# WATER MAINTENANCE AND CARE

## WATER CARE INITIAL START-UP

Improper use of cold tub chemicals may be dangerous and could damage your cold tub and cover. Since this damage is not covered by the warranty, it is extremely important to take precautions when using these products. Only use chemicals and cleaning agents designed for cold tubs. Damage resulting from the use of non-recommended chemicals and/or cleaning agents is not covered under the warranty. Following the procedures in this guide will make the maintenance and care of your cold tub simple and reliable.

## PROPER HANDLING OF CHEMICALS

- Keep all chemicals out of the reach of children.
- Always keep lids on chemicals when not in use and store in a cool, dry location away from direct sunlight.
- Do not store chemicals within the interior of the cold tub cabinet.
- Do not interchange caps or measuring scoops for different types of chemicals.
- Do not smoke around chemicals. Some may emit highly flammable fumes.
- In case of contact or if a doctor is required, bring the chemical container to medical authorities for proper treatment.
- Never use swimming pool chemicals in your cold spa. This may void the warranty.
- Never mix chemicals or chemical solutions directly with each other.
- Always add chemicals to water when mixing them. Never add water to chemicals.

## IMPORTANT

- Before using chemicals, read the labels and follow directions carefully.
- Always add the chemicals directly to the cold tub water, either in a suitable feeder, distributed over the water surface, or poured into the water, preferable with the pump on.
- Never add chemicals to the water while persons are using it.
- Leave the cover off and circulate the water for at least 15 minutes after adding chemicals to effectively distribute the chemicals and allow odors to escape.

## INITIAL START-UP

1. Never use more than 50% softened water when filling the spa. It is suggested to use an in-line filter on the hose when filling to prevent many minerals from entering the water making balancing and adjusting the water easier.
2. Add a sequestering agent to treat suspended minerals in the water during this initial fill. Allow water to circulate and filter for at least half an hour before adding additional chemicals.
3. Test water for pH, total alkalinity and calcium hardness. Acceptable levels for pH are 7.4-7.6, for total alkalinity 100-120 ppm and calcium hardness between 150-250 ppm.
4. Adjust pH and total alkalinity per the instructions on the chemical bottle. Allow the chemicals to circulate and wait at least 24 hours to retest.
5. Adjust and retest as necessary.
6. Add concentrated chlorinating granules (sodium dichlor) until a level of 5-8 ppm is reached to effectively treat initial fill water. Add this chlorine by broadcasting over the water surface while the pumps are operating. Do not use the hot tub until that level drops to below 5 ppm. DO NOT add the chlorine granules until after the pH, alkalinity and calcium hardness levels are appropriately met. You may use a suitable floating dispenser. Never use trichlor. cold tub water care is NOT like pool care and the PDC Spas effective ozone systems reduce the amount of chemicals required. High doses of chemical cause component damage and may void the warranty.

# WATER MAINTENANCE AND CARE

## WATER CARE SCHEDULE

### BEFORE USE

Each time before the unit is used, check the water with a test strip for proper sanitation levels and adjust accordingly achieving the optimum 2-4 ppm level. The unit should not be used if the level is 5 ppm or higher.

### EVERY OTHER DAY

Using test strips, monitor the pH, alkalinity and sanitizer levels. The pH should read between 7.4-7.6, alkalinity between 100-120 ppm.

### WEEKLY

Add non-chlorine shock as needed to maintain correct level dependent upon amount of users, frequency and length of use during that week

### MONTHLY

Change the cartridge filter. Soak overnight in a non-sudsing cleanser, preferably Filter Clean available at your retailer. Rinse well and replace. Be sure to turn off all circulation for removal and replacement. Review in Maintenance section

### EVERY 6 MONTHS

Drain and refill your unit. Wipe down the acrylic surface, install a clean filter. Refer to the Maintenance section.

**Avoid using any biguanide or copper based algaecide in the unit.  
Use of these products is not recommended and may void the warranty.**

| TROUBLESHOOTING REFERENCE            |                                                                                                                                                           |                                                                                                                                  |
|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| SYMPTOM                              | PROBABLE CAUSE                                                                                                                                            | SUGGESTED CORRECTION                                                                                                             |
| Cloudy Water                         | High total alkalinity levels, High pH levels, High calcium hardness. Algae growth, low sanitizer levels, high user load, pets, rain. Overuse of defoamer. | Test levels and make correcting adjustments.                                                                                     |
| Colored Water                        | Red-Brown; overall imbalance<br>Blue-Green; high pH level.                                                                                                | Brown-Red; Test pH, alkalinity and calcium hardness. Drain and refill if necessary.<br>Blue-Green; Test pH and make adjustments. |
| Foaming                              | Low calcium hardness. Build up of soaps, lotions, organic matter, etc.                                                                                    | Raise calcium hardness level. Use defoaming agent. Replace filter. Drain if necessary.                                           |
| Skin/Eye Irritation                  | pH level imbalance. Low sanitizer level.                                                                                                                  | Test pH, alkalinity and sanitizer levels. Make adjustments. Shock if necessary.                                                  |
| Stains at Waterline, Pillows, etc.   | Low alkalinity, pH levels.                                                                                                                                | Adjust pH and alkalinity. Drain, clean off stained areas, change filter and refill.                                              |
| pH Fluctuation                       | Low alkalinity levels.                                                                                                                                    | Test alkalinity level and make adjustments.                                                                                      |
| pH Resistance                        | High alkalinity levels.                                                                                                                                   | Test alkalinity level and make adjustments.                                                                                      |
| Sanitizer Inefficiency               | High pH and/or alkalinity level.                                                                                                                          | Test both levels and make adjustments.                                                                                           |
| Scale Formation                      | High pH, calcium hardness and/or alkalinity levels.                                                                                                       | Test all levels and make adjustments. Drain and refill if necessary.                                                             |
| Algae Formation                      | Low sanitizer level.                                                                                                                                      | Clean spa walls, add algaecide*, add shock.                                                                                      |
| Corrosion in Fittings and Components | Low pH and/or alkalinity levels. High chlorine level.                                                                                                     | Test all levels and make adjustments. (This build-up may cause operation failure and void warranty.)                             |

# REGULAR MAINTENANCE

## REGULAR COLD SPA MAINTENANCE PROCEDURES

There is some basic maintenance that will need to be performed on your cold tub. By following these basic maintenance suggested procedures, you will insure that your tub provides years of service. These basic maintenance procedures are not covered under warranty.

## TESTING THE G.F.C.I. (EQUIVALENT RCD FOR EXPORT INSTALLATIONS)

Ground Fault Circuit Interrupter (G.F.C.I.) protection for the cold tub should be tested prior to each use by the homeowner. With the cold spa in operation, push the “test” button on the G.F.C.I. breaker at the panel box or on the plug. The tub should shut down immediately. Now reset the G.F.C.I. The cold 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 cold tub operation by turning off power and disconnecting the power source and notify a qualified electrician for identification and correction of the problem.

## CLEANING JETS

Most of the jets in your cold tub are able to be turned on or off. Over time they may become difficult to turn. When this happens it will be necessary to remove the jet and clean any grit or debris from the jet body. To remove the jet you will need to turn the face of it counter clockwise until it stops. Next continue to turn the jet counter clockwise as you pull on the face. The jet will then pull away from the jet body. Clean jet body with cloth to remove all debris.

To clean the jet barrels you can soak them overnight in white vinegar. Once the jet has soaked overnight rinse thoroughly with water. To reinsert the jet barrel into the jet body simply put the barrel back into the body and push while turning clockwise.

## CABINET CARE

Your cold tub cabinet is constructed from a wood alternative, polymer material designed to be durable, tough, and virtually maintenance-free. It may require periodic cleaning with a non-abrasive cleaner and/or rinsed with a hose.

## PILLOW CARE

Your cold tub pillows should periodically be rinsed to clear them of any chemical residue. If the unit is not intended to be used for a period of time, it is recommended to remove them for extended life.

## STAINLESS JET FINISH CARE

The stainless trim on your jets can keep its luster for many years with proper care. Frequent wiping with clean water and a good car cleaning wax at time of drain and refill will protect against possible rusting. Never clean with bleach, corrosive materials or abrasive material such as steel wool. High levels of chlorine may cause corrosion / rust. Failure to properly care for stainless steel components could result in rust formation which is not covered under the warranty.

## THERMAL COVER CARE

Always use the locking thermal cover when not in use to reduce heat-up time, operating costs and keep unwanted debris out. To prolong the life of the cover, handle it with care and clean it regularly using mild soap and water. Never allow anyone to stand or sit on the cover, and avoid dragging it across rough surfaces. Be sure to lock all straps when not in use for safety and to prevent wind damage. Keep cover open at least 15 minutes after adding chemicals.

## EVERPURE OZONE CARE

The ozone hose and check valve connection between the ozone generator and ozone injector should be inspected or replaced, if necessary, annually. The air quality pulled into the generator may cause rapid wear on the hose and check valve. The EverLite will light green when the ozone generator is operating (during the filtration cycle) indicating the EverPure system is indeed sanitizing the water.

# REGULAR MAINTENANCE

## PLUMBING CARE

Cold 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 with years of operation, subjected to many hot-cold cycles and the high pressure generated by the powerful jet pump stressing pipes and joints. Although the factory has a rigorous testing procedure, even transportation from the factory to you can cause vibration and possible loosening of the joints. Should a leak occur, remove that appropriate section of cabinet wall exposing the leaking area. Drain the cold tub to below the leak and contact a qualified technician for repair.

## FILTER CARTRIDGE CARE

Cold spa water filtration begins as soon as the flow is steady through the pump. 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. This generally occurs monthly depending upon use and water care

### XD2 HOT SIDE FILTER SYSTEM

1. Shut off power.
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.

### XD1 & XD1+ COLD SIDE FILTER SYSTEM

1. Shut off power.
2. Slide cover up and pull off.
3. Turn filter counter clockwise to remove.
4. Remove filter element.
5. Replace with clean filter element.
6. Turn clockwise to tighten.
7. Replace filter cover.

# REGULAR MAINTENANCE

## COLD PLUNGE SPA ACRYLIC SURFACE CARE

To preserve the sheen of the acrylic surface, clean and sanitize with clean water to remove any particles and use rubbing alcohol or a non-abrasive, non-sudsing cleaner to wipe clean. Use a soft, lint free cloth and never use an aggressive solvent such as a lacquer thinner or acetone which will cause damage to the acrylic. Prolonged sun exposure could damage the acrylic surface due to its capacity to absorb heat. Do not leave the spa exposed to the sun without adequate protection when not in use. Any damage as a result to adhere to these guidelines will void the warranty.

## PERIODIC WATER DRAINING AND REFILLING

After a certain time, you may find the addition of chemicals will not clarify or eliminate odors in the spa. This is an indication 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.

2. Turn off all power.
3. Connect a garden hose to the recessed drain valve found on the corner of your cold tub cabinet, by slowly pulling the cap out all the way (approximately 2") and turn cap counterclockwise to remove. Attach the hose and pull valve 1", this will start the draining process. After draining the tub, replace the cap and push the valve all the way in. (See photo.) Note: Unscrew the large nut around the drain valve to remove the cabinet panel from the spa for servicing, if necessary.
4. Clean cartridge filter as noted previously in this section regarding maintenance recommendations.
5. Clean acrylic shell surface with non-sudsing cleanser per maintenance recommendations.
6. Begin filling the hot tub. We recommend filling the cold tub to approx. the middle of skimmer. During the filling process periodically check the unions to ensure they are tight and no water is leaking out.
7. Once the spa is filled, turn the power on. The tub will turn on and start the circulation pump.
8. It may be necessary to bleed air from the pump or pumps on your cold spa, if after start up your spa pumps do not operate. Due to the nature of water flow and hydrotherapy pumps, please be advised that air locking of pumps may occur. PDC Spas has taken measures to reduce the possibility of this, but it still may occur, especially after refilling a cold spa. This is not a service covered under warranty. To relieve an airlock situation, loosen the pump union on the discharge side of the pump. You may possibly hear air come out when union is loosened, after a few seconds tighten the union. Turn the pump on to see if proper jet flow has been achieved. If proper jet flow has not been achieved repeat process.
9. Open air regulators allowing maximum flow through jets assuring pump operation.
10. Refer to Control section for heating, filtration cycles and function.
11. Adjust water chemistry according to the instructions provided in water chemistry guidelines section.
12. View current water temp on the control panel and set to desired level.
13. Close cover to expedite heating or cooling and assure safety. Always keep the cover locked when not in use. Keep the keys in a safe place, out of the reach of children.

## WINTERIZING THE COLD PLUNGE SPA

Your cold spa has been designed to be used year-round and it is certainly suggested that you enjoy the many benefits of enjoying your purchase in any season. If you should decide to not use your cold tub during the winter months, it must be cared for properly to avoid damage. During those months of shut-down, we recommend the unit being checked periodically to assure no water is entering the unit causing potential freezing resulting in damage. Your warranty does not cover this type of damage, both structural and operational. **Winterizing must be done before prior to atmosphere freezing temperatures.**



# REGULAR MAINTENANCE

1. Turn off at circuit breaker, open air controls and jets, drain completely using drain valve and sump pump if needed. Remove all water as even a low level remaining in the tub shell can freeze drains and cause unwarranted damage.
2. Remove filter cartridges and all cabinet panels to access equipment.
3. Loosen pump unions and winterizing plug from face of pump. Replace plugs after all water has been cleared from the unit.
4. Use a shop vac in blowing mode to remove all water from return and suction lines.
5. Use the wet vacuum to pull all water from jets.
6. Replace all cabinet panels.
7. Cover the unit with the thermal cover, lock in place. Considerable snow accumulation may break the cover, remove snow as necessary. It is recommended to wrap the unit with a tarp to prevent outside moisture from entering the unit.

## STORING THE COLD PLUNGE SPA

Always use the thermal cover! The cold tub shell is to never be unprotected and uninsulated during storage. Thermal cover and cabinet side panels must be in place. Never use a clear plastic wrap or it's like to cover / wrap the unit. Never leave unprotected in direct sunlight as it can damage the acrylic and fittings, not covered under warranty. The unit, even when winterized, must have the thermal cover in place and locked. During times of storage, infrequent use or winterization, the cover must be in place and locked.

# BASIC TROUBLESHOOTING

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. NOTHING ON THE COLD PLUNGE SPA OPERATES

- Check power source G.F.C.I. breaker. (or equivalent)
- Check to assure spa has dedicated circuit.
- Check the “test” and “reset” buttons on G.F.C.I. (or equivalent)
- Check internal fuses.
- Review control panel for any error code. Refer to that section of this manual.

## 2. PUMP DOES NOT WORK

- Check all items above.
- Check filter; clean or replace cartridge.
- Check for blockages (restrictions) at suction, 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.
- Check to be sure the diverter valve is in center position.
- Check for dirty filters and change if necessary.

## 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. WATER IS TOO HOT

During periods of warm weather, it is possible a prolonged filter cycle may cause the tub temperatures to creep above the set point, due in part to the efficient insulation of the unit. Should this occur, it is recommended to set your filter cycle or cycles to operate between the hours of 8PM- 10AM to avoid pump operation during the warmer times of day. This action will help limit the temperature gain.

Should the water temperature be above the desired set point, there are actions that can be taken to reduce the temperature: Remove the tub cover during the cooler evening out side temperatures. Drain an amount of spa water and replace with cold water.

Should the tub water reach 110°F, all of the spa pumps will automatically turn off until the water temperature returns below 108°F and “The water is too hot” will be displayed on the tub side panel. Once the tub water temperature returns to below the 108°F, the cold tub pumps will auto reset.

# BASIC TROUBLESHOOTING

## 6. NO LIGHT

Check “light” button.

Check G.F.C.I. (or equivalent) “test” and “reset” buttons.

## 7. WATER IS CLOUDY

Increase circulation cycle.

Test water chemistry.

Clean/replace filter cartridge.

## 8. GFCI OR EQUIVALENT IS TRIPPING

A ground fault circuit interrupter (GFCI) is required by the National Electric Code for your protection. The tripping of the GFCI may be caused by a component on the spa or by an electrical problem. Electrical problems include although are not limited to, a faulty GFCI breaker, spa component, power fluctuations, or improper wiring. If this is a new electrical service and GFCI installation, an instantly tripping GFCI may likely be caused by improper wiring of the neutral from the tub to the GFCI. Contact a qualified technician to rectify the problem.

**If above checks do not solve the problem, contact a qualified service technician.**

# X-DEGREE CARE AND MAINTENANCE RECORD

## MAINTENANCE AVERAGE TIMETABLES

Below is a list of routine maintenance and the guidelines on how often they should be done. The frequency in which these actions should be performed may vary depending on bather load and how often you use your cold tub.

## MAINTENANCE LOG

Use the following lines to document your cold tub care and maintenance.

- Test GFCI - Before each use
- Clean Filter Cartridge - at least once a month
- Clean and Condition Spa Cover - twice a month
- Drain and Clean X-Degree - every 6 months or as needed

| Maintenance Performed | Date | Date | Date |
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X-DEGREE CARE AND MAINTENANCE RECORD

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X-Degree™ is Manufactured by PDC Spas®  
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