Quick Reference Guide

Hot Tub Prep and Start-Up

PDC® spas

PDC
spas

Congratulations on your healthier, more relaxed lifestyle with the addition of a PDC Spa hot tub. Designed for countless years of enjoyment and relaxation, you will find this new addition is an asset to your home and everyday living.

Please take the time to carefully read this guide as it has been provided to offer tips for safe and efficient delivery and installation. This guide should never take the place of your Owner's Manual, but to be reviewed in conjunction with it. There are sections in this guide regarding delivery, site selection, electrical requirements, general considerations for preparation.

Always read and refer to the Owner's Manual available on the website under the Support section: www.pdcspas.com.

Take note of the safety label on the hot tub cabinet. There is an additional copy in your owner's packet that is to be displayed within view of the hot tub. Take note of the serial number location for possible future reference. The serial number can be found inside the top load filter housing on the spa lip.

Consider Applicable Codes and Permits

Most cities and boroughs require permits for the installation of electrical circuits or the construction of exterior surfaces; decks, sunrooms, concrete pads, etc. Contact the codes departments in your area for the parameters you are required to meet.

Also, some areas have adopted residential barrier codes, which may require fencing or self-closing gates on the property to prevent children and/or unsupervised, unwanted guests from entering the spa. Your PDC Spa is complete with a locking thermal cover that meets the ASTM standards for safety covers and as a result, is usually exempt from most barrier requirements. As a general practice, your local Building Department will inform you of any applicable barrier requirements at the time a permit is obtained for the installation of an electrical circuit.

Site Location

Choosing a spot for your spa is a personal choice, although there are many considerations common for all spa owners. Site preparation and selection is the owner's responsibility. Carefully read these guidelines to consider numerous variables in choosing the best location for your hot tub.

- The closer to the house, the better. The easier the access, the more frequent the use. Is there a convenient short path or sidewalk to the hot tub, one that is clear of debris and comfortable to walk in your bare feet or slippers? Enjoying the spa in the winter time is by far a great enjoyment. Do not let a long distance from the house to the spa prevent you from using the spa during the colder fall and winter months.

- Accessibility. Is it easy to get to for installation and servicing? Your Owners Manual will indicate where the equipment is located behind the cabinet walls and it should remain easy to get to for occasional servicing and/or maintenance. Review that section before permanently placing the spa.

- Privacy. Is it in direct eye-view of the neighbors? Visible, or not visible, from certain areas of the home. Consider your bathroom or changing room location.

- Type of use. Will you use your new spa personally; near the master bedroom? Or is it intended to be enjoyed by the whole family and your friends? If so, the hot tub may fit better on the center of your deck for all to use and enjoy.

- Consider your view from inside the spa. What will you be looking at from the best seat in the hot tub? Imagine soaking in the warm swirling water while gazing at a wall or fence. Strategically place your hot tub to enjoy your natural surroundings like a colorful sunset.

- Aesthetics. Consider the design of your home and backyard environment. Where will it look the best and still complement your home?

- Landscaping. Large trees that shed their leaves in the autumn may create debris in the spa water if you use your spa during that time of the year. You may want to consider another location without that concern and also keep in mind flowers and shrubs that may deter rather than enhance the spa area.

- A flat, level surface is required for your spa to rest on. You may want to consider the best and easiest spot in your yard to accommodate this.

- Over-head cables and electrical lines should not be near or above the spa.

- Indoor Installations. Most hot tubs are installed outside on a deck or patio, although if you choose to place yours indoors in a sunroom, etc., there are additional concerns that need to be addressed. Remember that the more people you have in the spa, the more water is displaced onto your floor. Consider flooring and material nearby that may be damaged by spa water. There should be adequate drainage for spillage and consider the event of having to replace the spa water several times a year. Ventilation should also be a consideration, due to the moisture that is introduced into the air with each spa use, much like a bathroom. The use of fans or vents may be used to allow the heat and moisture to escape.

- Child access. Your new hot tub will have a locking thermal cover that meets or exceeds the ASTM cover safety standards. The cover must be in place and locked when not in use and the spa should never be used by unattended children. Consider the view of the hot tub from the home to keep an eye on children and/or uninvited guests.

- Local and National Codes. Your new hot tub must be installed in accordance to all applicable codes. You may want to contact your local office for an update on those regulations as they may help in deciding the appropriate location.

- Electrical Considerations. Your PDC Spa® requires a 120/240v/50 amp Ground Fault Circuit Breaker for all spa models. PDC Spas does not include the GFCI in the spa purchase Contact a qualified electrician for this connection and consider the location and available amperage of your current electrical service for the best location of the new spa. (Refer to the suggested diagram in this guide.)

Site Preparation

Once you have a location selected, there are several issues you should consider in preparing the site for the hot tub installation.

- A flat, level surface that is strong enough to support your spa is required. Once your spa is filled, it may weigh over 3 tons. Make certain the spot you choose can support a minimum of 100 pounds per square foot load, per recommended guidelines. Structural damage to the spa resulting from the incorrect installation or placement on inadequate foundation is not covered in the spa's limited warranty.

- Most units are installed outside, on ground level, on either a concrete pad or reinforced wooden deck. A reinforced concrete slab should be at least four inches thick with the reinforcing mesh or rod attached to a bond wire. If the spa is not on ground level, have a builder determine if the support is adequate.

- Make sure your dimensions are correct as you prepare the site for your new spa. Click onto the website www.pdcspas.com or call our toll free number 800-451-1420 for dimensions of the spa model you have chosen. Allow a perimeter of the chosen ground surface to extend beyond the tub itself to provide a base for your step unit as well as a clean area for users to get in and out of the spa. The spa location and the spa itself must be level before filling with water.

- If you choose to place your spa on a deck, consider the load requirements and consult a builder to determine if your deck is of adequate strength. You should confirm that your deck will support a minimum of 100 lbs. per square foot.

- Allow adequate space to access the equipment behind the four access panels on the hot tub sides for possible future service needs.

- Leave ample access to the GFCI circuit breaker for testing.

- A quick disconnect (manual disconnect) is to be installed between 5 feet and 15 feet of the spa, according to the National Electric Code, and within the line of sight from the hot tub. Consider where this can be located when preparing the spa site.

- A cabinet side drain has been installed on the bottom portion of the cabinet panel for easy draining. Locate this drain and allow ample access.

- If installing your hot tub below grade, consider the drain plug will no longer be accessible. You may have to use a water pump in the instance that your spa needs drained.

Electrical Requirements

IMPORTANT: All spas installed in the US must meet the requirements of the National Electric Code (NEC) and any applicable state and local codes. The electrical circuit must be installed by a licensed electrician and approved by your local building/electrical inspector. Refer to the electrical GFCI installation diagram in this guide.

- All spas must be permanently connected to the power supply. The power supply is to be dedicated; no other appliances or lights sharing the circuit. The spa requires 50 or 40 amps of power.

- The electrical circuit must be protected with a 50 amp, 120/240V, GFCI circuit breaker. All wiring is to be #6 copper wire with ground. Review the GFCI diagram page indicating a typical GFCI installation and note that all connections are to be completed only by a licensed electrician.

- The NEC requires that a manual disconnect device for the spa be installed at least 5 feet from the spa edge and no more that 15 feet from the spa, within the line of sight, for spa safety.

- The electrical requirements should be complete when delivery personnel arrives and there should be about 6 feet of wire under where the spa pack will be located. The installers should complete the connection of the power to the spa control box. Make sure to purchase the G.F.C.I. early enough to have the wiring completed prior to spa delivery.

- If the installers do not have direct access to the spa site, it is the responsibility of the homeowner

to supply additional help to get the spa to the site.

- The wiring may be hidden by running it under the deck or underground, obeying all codes that may require special wiring sheathing or conduit. All code requirements are the responsibility of the home owner and should be adhered to for both safety and liability reasons.

Preparing for Delivery

Begin by confirming the dimensions of your spa model by accessing the website's specific model page; www.pdcspas.com. If you choose to move the unit to the site while still packaged, you will want to add additional inches to the spa measurements, depending on the packaging. Make certain you have adequate clearance for the move.

- Check that the path to the site is clear and is of adequate size to accommodate the unit. Walk the path and consider any obstacles that may make the move difficult.

- Note any gates, utility meters, AC units, shrubs, trees, etc. that may be in the way for the move.

- Check that there are no low eaves, gutters, overhead phone or electrical lines, tree branches, etc. that are in the way to the site.

- Consider any turns, narrow sidewalks or hallways, that may be prohibitive to the move.

- Stairs, steps, and anything other than a flat surface will make the move more difficult. Many installs require the use of a crane to get the spa in the exact location chosen, if it involves going over a fence, dealing with a considerable slope or placing the spa on an elevated surface. It is not as alarming as you may think. The move generally takes less than a half hour.

Initial Spa Start-Up

After the spa has been placed in the desired location, you only have a few more steps until you are relaxing in the warm waters of your new hot tub.

- Be sure that the power is turned off at the main circuit breaker.

- Make sure all T-valves on the suction and return sides of the spa pumps are in the open position to allow water to flow to and from the hot tub and the hot tub support pack.

- Use a garden hose to fill the hot tub to the recommended level, assuring all suctions are submerged. For best operating results, the water level should be just below the bottom of the spa pillows.

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Once the hot tub is filled, locate the filter on the top of the spa lip. Remove the gray lid and locate the small black bleeder valve on the top of the filter lid. Carefully open the air bleeder valve by turning slowly in the counter-clockwise direction. You will hear the release of built up air in the spa plumbing lines. Wait until you see a constant flow of water from the bleeder valve (no water unless pump is turned on), then tighten the valve to the closed position. Be careful not to over tighten for possibility of breaking the valve. This will prevent the pumps from getting air-locked at initial start-up. If the pump does get air-locked, loosen the bleeder value on top of filter, release air. This may need to be done several times for pump to start to move water.

- Turn the power “on” at the main circuit breaker and then press the pump 1 button on the spa side control to activate the filtration cycle.

- Turn all small gray air regulator valves located on the spa lip to the “off” position, minimizing the pressure flowing through the jets. When the system has fully primed, all of the jets should be freely rotating and free of excess air. Allow the spa to operate in this position for about five minutes.

- Set the thermostat by using the up/down arrows on your keypad to the desired temperature. When on, a heating icon will display on the spa control indicating the heater is warming the water.

- The economical, gradual heating of the water takes place over a number of hours, depending upon the size of the spa. When the desired temperature is reached, not over 104℉ (40℃), leave the thermostat at this setting and the temperature will automatically be maintained. It will be less efficient if you lower the temperature after spa use and increase it before spa use.

- Set the filtration cycle to the desired setting per instructions found in the Control Section of the Owners Manual.

- Chemically treat the spa water. Refer to the Water Chemistry Section in the Owners manual and follow the instructions on the container of any product used.

- Cover the spa with the thermal cover to maintain temperature and lock it for safety.

Winterizing Your Hot Tub

If you wish to operate your spa during the winter months in cold climate where the danger of freezing exists, certain precautions should be taken to avoid damage to the spa. An increased circulation cycle is recommended so the water is moving more often. Be certain that you have a high quality cover that creates an efficient heat seal around the spa shell. Contact your retailer for advice.

Many spa owners find that outdoor wintertime soaking is quite enjoyable. PDC Spas certainly suggests the use of a spa year-round, although certain situations do require closing the hot tub for the winter months (i.e. vacation homes). If the spa will not be used for a period of time over the colder months, please perform the following winterizing procedures to prevent damage:

- Turn the heat all the way down using the up/down arrows on the spa control. Then turn the power “off” at the breaker.

- Attach a hose to the hose bib located on the cabinet panel. Begin by pulling the hose fitting all of the way out of the spa cabinet, about 2". Attach the hose and push the fitting half way back in, about 1", to start the gravity draining process. Remove any excess water from the spa shell using a dry sponge.

- Remove excess water from the air channel, only included on Luxury Series spas, by turning the power back on at the breaker. Turn the blower option on at the spa side control by hitting your spas "Blower" button. Allow the blower to run for several minutes to spray out the excess water. Wipe out the spa and repeat as necessary. Then, shut off all electrical power to the unit.

- The filter cartridge should be removed from the filter housing, cleaned and stored in a dry place. All pumps, motors and connecting lines should be drained fully to protect from freezing. Blow air through all connection lines to remove water using a shop-vac. You may wish to use a non-toxic RV type anti-freeze to guarantee better freeze protection. Be sure to read the manufacturer's instructions and remove all anti-freeze before the next spa use.

- Cover the spa with a waterproof rigid cover and/or tarp to protect it from snow, ice and wind preventing any outside moisture from entering the unit.

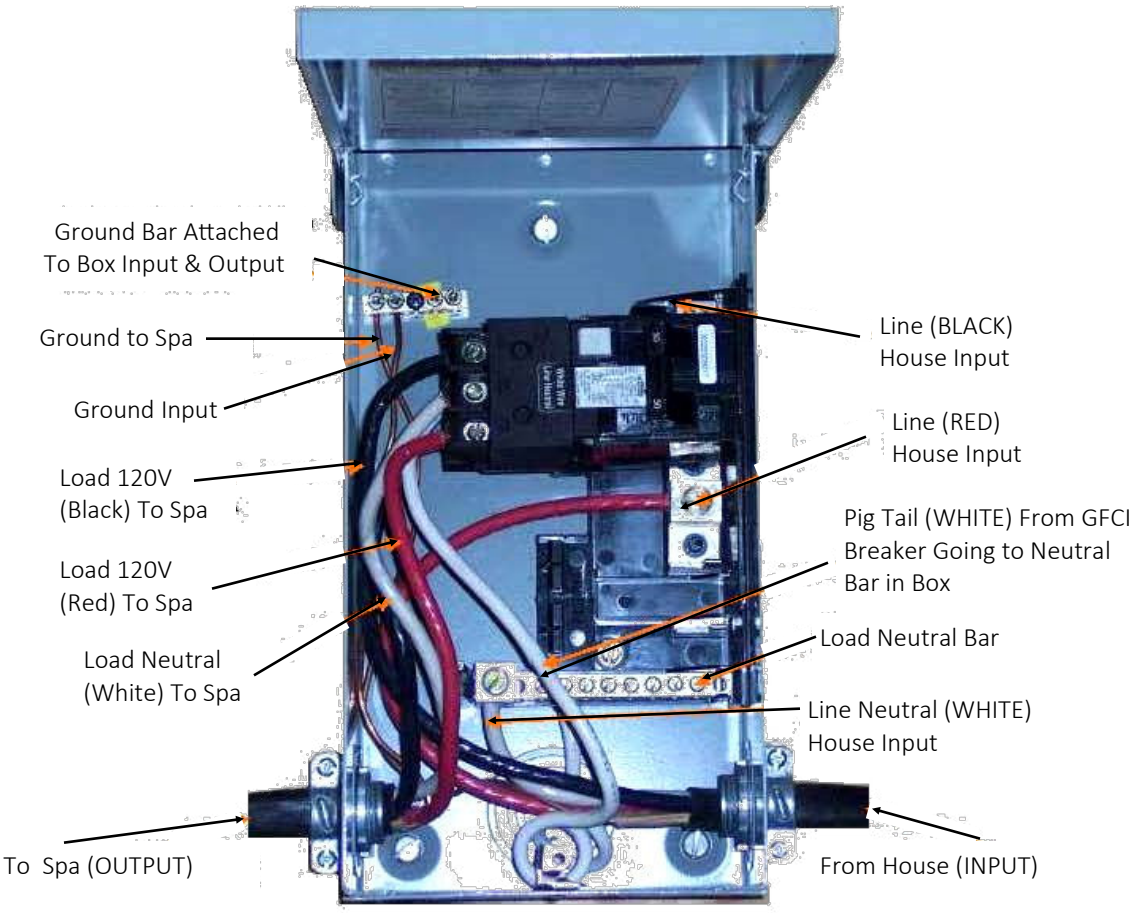
Typical GFCI Installation Guidelines

ATTENTION ELECTRICIAN:

ALL PDC SPA UNITS MUST BE INSTALLED WITH AN APPROVED G.F.C.I. IN ACCORDANCE WITH ALL APPLICABLE CODES. INSTALLATION OF G.F.C.I. VARIES AMONG THOSE MANUFACTURERS.

FOLLOW EACH MANUFACTURER'S GUIDELINES TO ENSURE PROPER OPERATION AND PROTECTION OF SPA OCCUPANTS. THIS DIAGRAM IS A "TYPICAL" INSTALLATION TO BE USED ONLY AS A REFERENCE FOR THE INSTALLING ELECTRICIAN. PDC SPAS DOES NOT SUPPLY THE GFCI. IT IS RECOMMENDED TO NOT INSTALL EATON-CUTLER HAMMER BRAND.

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



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

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

IMPORTANT: 6 GAUGE COPPER WIRE MUST BE USED
TEST GFCI MONTHLY AND PRIOR TO EACH USE.
READ FOLLOWING INFORMATION FOR TESTING INSTRUCTIONS

IF INSTALLING WIRING IN A CONDUIT ABOVE OR BELOW GRADE, FOR PROPER GFCI OPERATION THE OPEN END (S) OF THE CONDUIT MUST BE HIGHER THAN THE SURROUNDING SURFACE TO PREVENT WATER INTRUSION INTO THE CONDUIT.

GROUND FAULT CIRCUIT INTERRUPTER (GFCI)
Information and Testing Instructions

What the GFCI does for you:

The GFCI helps protect you against hazardous electrical shock that may be caused if your body becomes a path through which electricity travels to reach ground. This could happen when you touch an appliance that is "live" through a faulty mechanism, damp or worn insulation on the power cord, etc. You don't even have to be on the ground yourself. You could be touching plumbing or other material that leads to the ground. When using a GFCI devise you may still feel a shock, but the GFCI is designed to cut off power quickly enough so that a normal, healthy adult will not experience serious electrical injury.

WARNING: What a GFCI will not protect against:

Line-to-line shocks (of the type received when touching metal inserted into the slots of a receptacle).

Current overloads or line-to-neutral short circuit. THE FUSE OR CURCUIT BREAKER AT THE DISTRIBUTION BOX OR PANEL MUST PROVIDE SUCH OVER-CURRENT PROTECTION!

CAUTION:

If the GFCI trips on it's own accord, this indicates a possible ground fault condition, which is potentially hazardous. Carry out the test procedure outlined below to ensure that your GFCI is operating properly. If the GFCI does not reset, this indicates a ground fault still exists, and must be corrected. Have a qualified electrician investigate the ground fault condition and correct the defect at once.

TEST THE GFCI UNIT BEFORE EACH USE! - AT LEAST ONCE PER MONTH. DO NOT BYPASS THE GFCI TO USE POTENTIALLY FAULTY EQUIPMENT.

Test Procedure:

YOUR GFCI UNIT SHOULD BE CHECKED BEFORE EACH USE.

Turn your equipment ON to the lowest setting. PUSH THE TEST BUTTON. This should result in the motor or lamp going OFF. (NOTE: Be sure you are turning off all applicable motors. Some equipment, such as spas, have blower motors, jet motors, and heater motors.)

CAUTION: If the motor keeps running or lamp remains lit, DO NOT USE YOUR EQUIPMENT. UNPLUG EQUIPMENT OR TURN OFF POWER AT CIRCUIT BREAKER OR FUSE. CONSULT A CERTIFIED ELECTRICIAN.

If the GFCI tests okay, restore power by pushing the RESET button and releasing it. The motors or lamps should go ON again. If the GFCI fails to reset property, DO NOT USE EQUIPMENT! UNPLUG EQUIPMENT OR TURN OFF POWER AT CIRCUIT BREAKER OR FUSE. CONSULT A QUALIFIED ELECTRICIAN.

DANGER-Risk of Electrical Shock.

Install at least five feet from all metal surfaces. A spa may be installed within five feet of a metal surface if, in accordance with the Local Electrical Codes, each metal surface is permanently connected by a No. 8 AWG (8.4) solid copper connector attached to the wire connector on the control box that is provided for this purpose.

The GFCI and wire is NOT supplied by PDC Spas.

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