




# IntelliChlor® Power Center

(For use with IntelliChlor  
model IC60, IC40 and IC20)



 **UL** **US**  
**LISTED** SWIMMING POOL  
AND SPA CHLORINATOR  
30ZR  
Patents  
pending



 **NSF** Certified to NSF/ANSI 50

## Installation and User's Guide

IMPORTANT SAFETY INSTRUCTIONS  
READ AND FOLLOW ALL INSTRUCTIONS  
SAVE THESE INSTRUCTIONS

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**P/N 520590 Rev D - 11/13/09**

IntelliChlor Power Center Installation Guide

## WARNINGS AND IMPORTANT SAFETY PRECAUTIONS

**⚠ DANGER** SERIOUS BODILY INJURY OR DEATH CAN RESULT IF THIS PRODUCT IS NOT INSTALLED AND USED CORRECTLY.

**⚠ DANGER** INSTALLERS AND POOL OPERATORS MUST READ THESE WARNINGS AND ALL INSTRUCTIONS BEFORE USING THIS PUMP AND SAND FILTER. To reduce the risk of injury, service should only be done by a qualified pool service professional.

**⚠ WARNING** Most states and local codes regulate the construction, installation, and operation of public pools and spas, and the construction of residential pools and spas. It is important to comply with these codes, many of which directly regulate the installation and use of this product. Consult your local building and health codes for more information. **Before attempting installation of service, ensure that all power to the circuit supplying power to the IntelliChlor Power Center(s) is disconnected/switched off at the circuit breaker.**

**⚠ WARNING** IMPORTANT SAFETY INSTRUCTIONS PERTAINING TO A RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS. READ AND FOLLOW ALL INSTRUCTIONS.



**IMPORTANT NOTICE - Attention Installer:** This Installation and User's Guide ("Guide") contains important information about the installation, operation and safe use of this product. This Guide should be given to the owner and/or operator of this equipment.

**⚠ WARNING** Before installing this product, read and follow all warning notices and instructions in this Guide. Failure to follow warnings and instructions can result in severe injury, death, or property damage. Call (800) 831-7133 for additional free copies of these instructions. Please refer to [www.pentaircommercial.com](http://www.pentaircommercial.com) for more information related to these products.

**⚠ WARNING** **CHLORINE GAS BUILDUP CAN OCCUR WITH IMPROPER WIRING:** To reduce the risk of personal injury the IntelliChlor® Electronic Chlorine Generator (IECG) Power Center must be installed on and wired to the load side of the time clock, electronically controlled switch, or relay load side, so that it will receive power only when the pool pump is on. Otherwise, dangerous chlorine gas buildup can occur. **The IECG should never be energized when the pool pump is OFF and water is not flowing through the unit.**

**⚠ WARNING** To reduce the risk of injury, do not permit children to use or operate this pump and sand filter.

**⚠ WARNING** When setting up pool water turnovers or flow rates the operator must consider local codes governing turnover as well as disinfectant feed ratios.

**⚠ WARNING** **DO NOT** increase pump size; this may increase the flow rate through the system and exceed the maximum flow rate stated on the drain cover. Never operate the IntelliChlor Electronic Chlorine Generator (IECG) without proper flow or water circulation. A build-up of flammable gases will result in hazardous conditions.

**Operate unit with minimum flow of 25 gpm. For high flow applications, use a bypass loop.**

## WARNINGS AND IMPORTANT SAFETY PRECAUTIONS

**⚠ WARNING** Never operate the IntelliChlor Electronic Chlorine Generator (IECG) without proper flow or water circulation. A build-up of flammable gases will result in hazardous conditions. Operate unit with minimum flow of 25 gpm. For high flow applications, use a bypass loop.

**⚠ WARNING** Only use pipe couplings that meet Schedule 80, maximum pressure 150 psi at 70° F.

**⚠ DANGER** **RISK OF ELECTRICAL SHOCK OR ELECTROCUTION:**  
 Always disconnect power to the IntelliChlor salt chlorine generator at the circuit breaker before servicing. Failure to do so could result in death or serious injury to service person, pool users or others due to electric shock.



**⚠ WARNING** IntelliChlor Electronic Chlorine Generator (IECG) is for use with permanently-installed pools and may also be used with hot tubs and spas if so marked. **Do not use with storable pools.** A permanently installed pool is constructed in or on the ground or in a building such that it cannot be readily disassembled for storage. A storable pool is constructed so that it is capable of being readily disassembled for storage and reassembled to its original integrity.

**⚠ WARNING** The IECG Power Centers must be interconnected with the pool pump motor power source. This ensures the IECG and pool pump will **switch on and off together**.

**⚠ WARNING** When mixing acid with water, ALWAYS ADD ACID TO WATER. NEVER ADD WATER TO ACID.

**⚠ WARNING** Use of chemicals other than those recommended may be hazardous. Follow the Chemical Manufacturer's Instructions.

**⚠ WARNING** To reduce the risk of electric shock, install IntelliChlor Electronic Chlorine Generator (IECG) a minimum of five (5) feet away from the inside wall of the pool.

**⚠ WARNING** Install the IECG a minimum of three (3) feet away from the heater outlet. Allow ample access to the IntelliChlor control panel buttons and the IntelliChlor Power Center.

**⚠ WARNING** It is recommended to install a Pentair two (3) inch CHECK VALVE (P/N 263060) between the input side of the IECG and the main heater output pipe.

**⚠ WARNING** A solid copper, bonding conductor not smaller than No. 8 AWG (8.4 mm) should be connected to all metal parts of the swimming pool, spa, or hot tub structure and to all electrical equipment, metal conduit, and metal piping.

## WARNINGS AND IMPORTANT SAFETY PRECAUTIONS

For information about the Virginia Graeme Baker Pool and Spa Safety Act, contact the Consumer Product Safety Commission at (301) 504-7908 or visit [www.cpsc.gov](http://www.cpsc.gov).

**NOTE:** Always turn off all power to the pool pump before installing the cover or working on any suction outlet.



When mixing acid with water, **ALWAYS ADD ACID TO WATER. NEVER ADD WATER TO ACID.**

**Do not operate electrolytic cell without proper flow or water circulation. A build-up of flammable gases will result in hazardous conditions.**



When using IntelliChlor with an IntelliTouch system, it is recommended to wire the IntelliChlor Power Center to the pump side of the relay located in the IntelliTouch Load Center. This wiring method does not require a ground fault circuit-interrupter (GFCI) to protect the circuit. A green colored terminal (or a wire connector marked “G”, “GR”, “Ground” or “Grounding”) is provided within the terminal compartment in the Power Center transformer enclosure. To reduce risk of electric shock, connect this terminal or connector to the grounding terminal of your electric service or supply panel with a conductor equivalent in size to the circuit conductors supplying this equipment. The power supply must be interconnected with pool pump motor power source. This insures the IntelliChlor chlorinator and pool pump will switch on and off together.



Use of chemicals other than those recommended may be hazardous. Follow the Chemical Manufacturer’s Instructions.



Install the IntelliChlor unit a minimum of two (2) feet from the heater outlet.



**It is recommended to install a Pentair Water Pool and Spa® two (2) inch CHECK VALVE (P/N 263042) between the input side of the IntelliChlor cell and the main heater output pipe.**

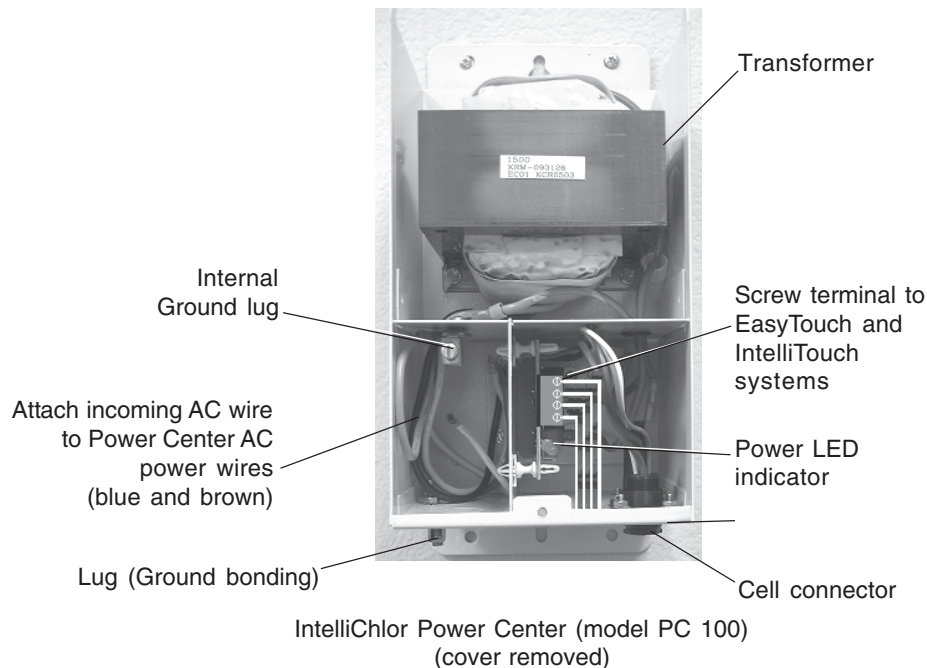


Water temperature in excess of 100° F (37.7° C) may be hazardous to your health. Prolonged immersion in hot water may induce hyperthermia. Hyperthermia occurs when the internal temperature of the body reaches a level several degrees above normal body temperature of 98.6° F (37° C.). Effects of hyperthermia include: (1) Unawareness of impending danger. (2) Failure to perceive heat. (3) Failure to recognize the need to leave the spa. (4) Physical inability to exit the spa. (5) Fetal damage in pregnant women. (6) Unconsciousness resulting in danger of drowning. The use of alcohol, drugs, or medication can greatly increase the risk of fatal hyperthermia in hot tubs and spas.

## IntelliChlor® Power Center Overview

The IntelliChlor electronic chlorine generator system comprises of a Power Center and electrolytic Cell. The Power Center converts AC electrical current to a low voltage DC current required by the IntelliChlor electrolytic cell to operate and create chlorine for the swimming pool and spa. The Power Center is connected with the pool circulation pump electrical source so that the electrolytic cell only operates when the pool pump is on. It is recommended that a pool pump timer be used to save on energy and prolong the service life of your pool pump and IntelliChlor. A timer is not included as part of the Power Center kit. The IntelliChlor Power Center can be connected to an IntelliTouch, EasyTouch or SunTouch system for automation control.

The Power Center enclosure can be mounted vertically on a flat surface such as a wall or post no more than 15 feet away from the cell controller. The Power Center houses the transformer, fuse, and connector to the cell. 110 VAC and 220 VAC wiring is connected at this box, with 35 VDC output to the cell controller. A 10 AMP slo-blo fuse is mounted on the bottom of the enclosure for additional protection. There are no other controls or lights on the outside of the Power Center. A green power LED indicator is mounted on the inside main board. When the Power Center is switched on, the power LED is lit.



## IntelliChlor System Components

An IntelliChlor Electronic Chlorine Generator IntelliChlor system consists of one or more of the following:

- **PC100 (P/N 520556):** Power Center Kit. Provides power and control communication to and from the IntelliChlor cell.
- **IC20 Cell (P/N 520554):** Designed for pools up to 20,000 U.S. gallons (75,000 liters). The cell will produce the equivalent of 0.70 lbs. of pure chlorine per 24 hours of continuous pool pump run time.
- **IC40 Cell (P/N 520555):** Designed for pools up to 40,000 U.S. gallons (150,000 liters). The cell will produce the equivalent of 1.40 lbs. of pure chlorine per 24 hours of continuous pool pump run time.
- **IC60 Cell (P/N 521105):** Designed for pools up to 60,000 U.S. gallons (227,124 liters). The cell will produce the equivalent of 2 lbs. of pure chlorine per 24 hours of continuous pool pump run time.
- **IntelliChlor “dummy” bypass cell (P/N 520588):** For new pool start-up.

## Operating Instructions

**When using a pool pump timer:** The Association of Pool and Spa Professionals (APSP) recommends that all water in a residential pool pass through the filtration system at least once every 12 hours (referred to as pool water turnover). However, many factors have an effect on actual pump and filter system run times. Pool size, source of water, direct sun light, indoor/outdoor, screened and unscreened, filtration system, cold or hot weather, swimmer load, rain, organic debris, algae, etc., are all factors which contribute to either more or less pool pump and filter system run times. Because of these differences, it is extremely difficult to set an initial run time (starting point) for the pool pump and chlorinating system.

Try initially setting the pool pump timer to 12 hours. It will take a few days to get just the right amount pool pump operating time. When the Chlorinator is wired with a pool pump timer (see page 6) results will vary greatly from one pool installation to the next, so this should be discussed with either the pool builder or your pool professional.

### Installation

The following information describes how to install the IntelliChlor Power Center. Before installing, review the IntelliChlor kit contents and required tools. For cell installation instructions, see the “IntelliChlor User’s Guide” (P/N 520584).

### Kit Contents

- One Power Center
- Installation Guide (this manual)

### Required Tools

- Phillips & Flathead Screwdrivers
- Voltmeter. (To determine AC line voltage to Power Center)
- Electric drill and 1/4" masonry drill bit. (To mount Power Center)

## Installing the Power Center



### WARNING

**IMPORTANT SAFETY PRECAUTIONS. PLEASE READ THE FOLLOWING:** Read all the safety precautions in this manual before attempting any electrical wiring. Be sure to read and follow all safety Instructions on page ii. Wiring should only be performed by a qualified professional. When using electrical products, basic precautions should always be followed, including the following:



### DANGER



### RISK OF ELECTRIC SHOCK, WHICH CAN RESULT IN SERIOUS PERSONAL INJURY OR DEATH.

Before attempting installation of service, ensure that all power to the circuit supplying power to the system is disconnected/switched off at the circuit breaker. When using IntelliChlor with an IntelliTouch system, it is recommended to wire the IntelliChlor Power Center to the pump side of the relay located in the IntelliTouch Load Center. This wiring method does not require a ground fault circuit-interrupter (GFCI) to protect the circuit. A green colored terminal (or a wire connector marked “G”, “GR”, “Ground” or “Grounding”) is provided within the terminal compartment in the Power Center transformer enclosure. To reduce risk of electric shock, connect this terminal or connector to the grounding terminal of your electric service or supply panel with a conductor equivalent in size to the circuit conductors supplying this equipment. The power supply must be interconnected with pool pump motor power source. This insures the IntelliChlor chlorinator and pool pump will switch on and off together.

- Grounding (earth bonding) is required. The unit should be installed by a qualified service person and grounded.



### CAUTION

Install the IntelliChlor unit a minimum of two (2) feet from the heater outlet.

- Allow ample access to the IntelliChlor control panel buttons and the IntelliChlor Power Center.
- Pipe couplings: Schedule 80, maximum pressure 150 psi at 70° F.
- Operate unit with minimum flow of 20 gpm. For high flow applications, use a bypass loop.



### CAUTION

**Install the Power Center at eye level as close to the IntelliChlor pump and filtration as possible.**

**The Power Center must be installed more than 8 ft. (2.44 m) from the pool edges.**

**Leave sufficient clearance on all sides of the Power Center.**

**Ensure that the 15 ft. (4.61 m) DC power cord from the Cell**

**assembly pipe location can reach the Power Center location. The**

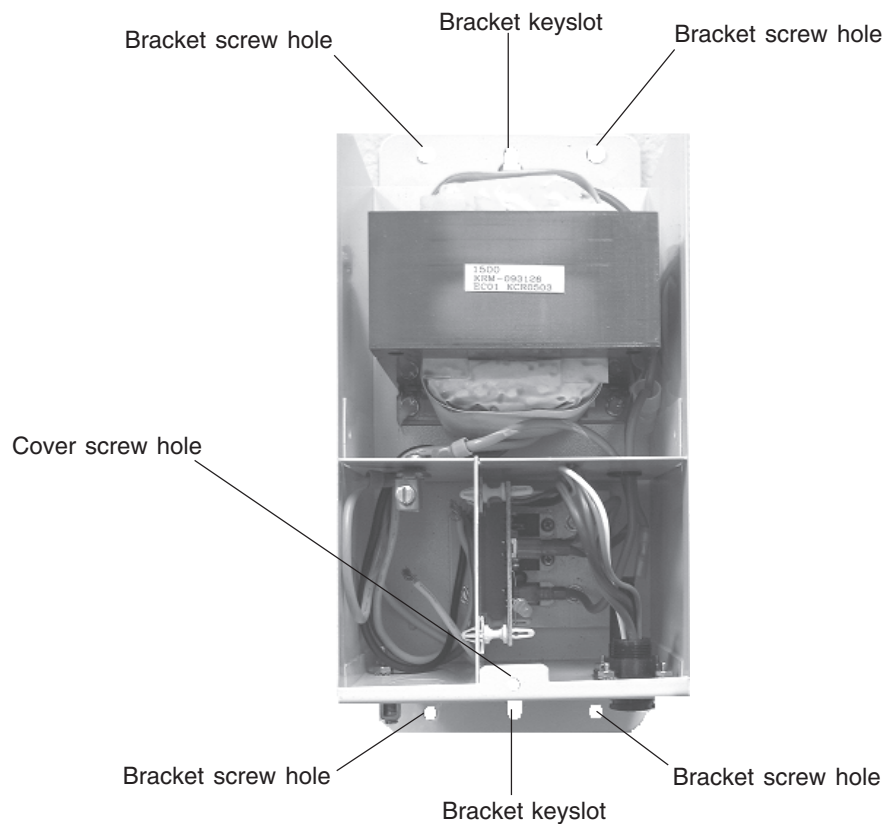
**Power Center enclosure can be mounted on the wall up to 15 feet away from the cell controller.**

***Note: For installation instructions about connecting the cell to Power Center, see the “IntelliChlor User’s Guide” (P/N 520589).***



## Preparing the SiteMount the Power Center enclosure

1. Remove the screw securing the Power Center cover and remove the cover.
2. Mount the Power Center on a flat surface such as a wall or post and mark each mounting bracket screw hole location. There are two (2) screw holes and a keyslot for the top and lower bracket.
3. Drill six ¼ inch (6.35 mm) holes. Install anchors if necessary and one screw for each bracket keyslot location.
4. Position each Power Center keyslot (top and lower) slot over the two mounting screws just installed. Tighten the two screws to secure the enclosure.
5. Install and tighten four mounting screws (two in the top and two in the lower bracket).

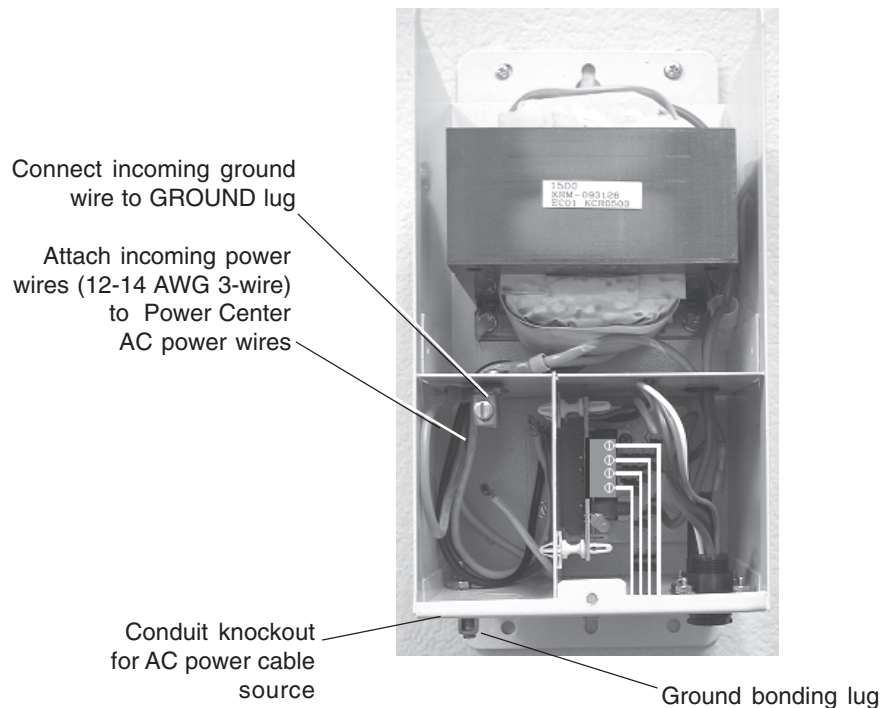


## Connect AC Power to the IntelliChlor® Power Center

6. Use 12-14 AWG three conductor insulated wire for the main AC power connection. Connect the Power Center to pool pump AC power source. The Power Center should be connected to the pump motor switch or automatic timer. For system wiring information, see page 6.
7. Attach incoming GROUND wire to the ground lug inside the Power Center.
8. Earth Bonding (Grounding): Connect the earth wire to the GROUND BONDING LUG located on the bottom of the Power Center enclosure. Earth bonding is necessary to ensure personal safety and safety of equipment.

**IMPORTANT:** A number 8-gauge (8.4 mm) wire is recommended when connecting the power supply to a Permanent Earth Ground connection that is acceptable to the local inspection authority. Attach the bonding point located on bottom of the Power Center to a Common Earth Bonding Point. Do not use the IntelliChlor as the Common Bonding Point. Each piece of non-chlorinator pool equipment requiring a ground should be bonded to the Common Approved Earth Bonding Point. Never ground pool pump to Power Center.

9. Reinstall the Power Center cover and secure with the cover screw.
10. The Power Center installation is complete. For IntelliChlor operating information, refer to the IntelliChlor User's Guide (P/N 520589).



## Troubleshooting

*Note: Turn off power to unit before attempting to service or repair.*

Problem	Possible Cause	Corrective Action
The IntelliChlor green power light on the control panel is not on.	Fuse in Power Center is open.	Replace 10 AMP slo-blo fuse, located at bottom of Power Center.
	No AC power to Power Center.	Verify time clock is providing 110 VAC or 220 VAC to Power Center when active.
	Transformer leads not wired correctly in Power Center.	Verify transformer leads wired to AC source by referring to wiring diagram decal on inside of Power Center cover.

## Electrical Specifications

**Circuit Protection:** Two-pole 20 AMP device at the electrical panel.

### IntelliChlor Model IC20

Input: 90-130 VAC, 50/60 Hz, 220 Watts (2 AMP) or 220-240 VAC, 50/60 Hz, 220 Watts (1 AMP).

Output: 22-39 VDC @ 6 AMPS maximum from the Power Center.

Chlorine: 0.70 lb. / 24 hour. (317 gm / 24 Hour).

### IntelliChlor Model IC40

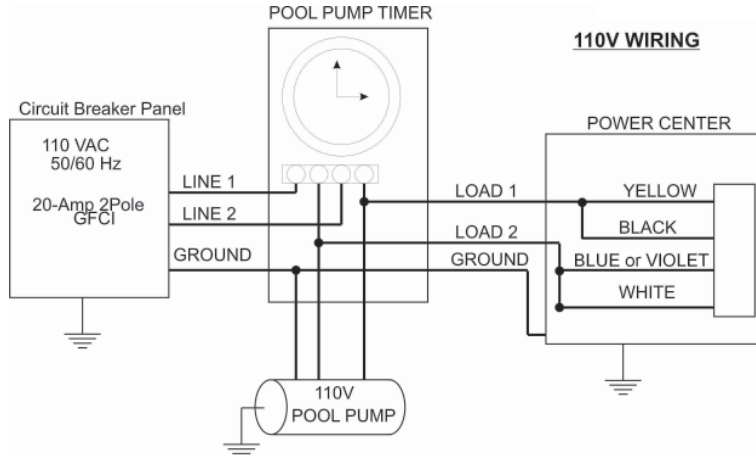
Input: 90-130 VAC, 50/60 Hz, 220 Watts (2 AMP) or 220-240 VAC, 50/60 Hz, 220 Watts (1 AMP).

Output: 22-39 VDC @ 6 AMPS maximum from the Power Center.

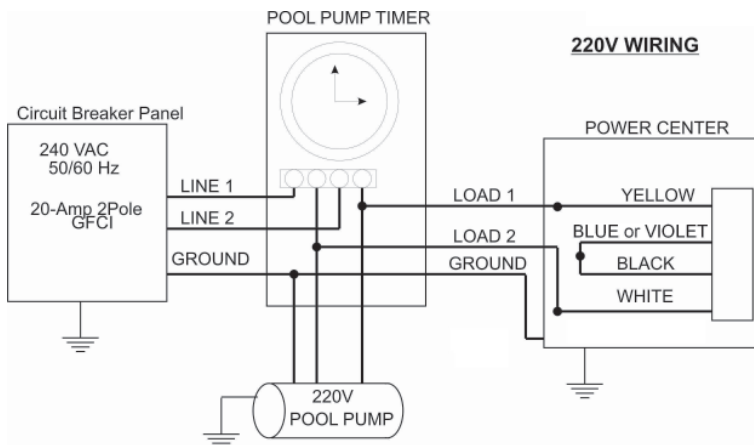
Chlorine: 1.40 lb. / 24 Hour (635 gm / 24 Hour).

***IMPORTANT: When using IntelliChlor with a Pentair Water Pool and Spa® IntelliTouch®, EasyTouch® or SunTouch® automation control system, it is recommended to wire the Power Center to the PUMP SIDE OF THE RELAY located in the automation control system load center. This method does not require a ground fault circuit-interrupter (GFCI) to protect the circuit.***

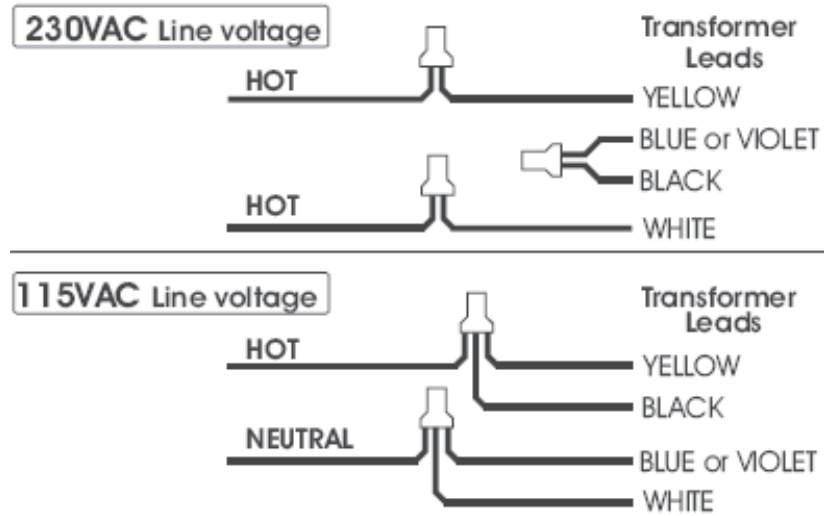
## 110 VAC and 220 VAC Transformer Wiring



### 115 VAC Basic System Wiring



### 230 VAC Basic System Wiring



### IntelliChlor Power Center 230 VAC and 115 VAC Transformer Wiring

## LIMITED WARRANTY

Pentair Water Pool and Spa, Inc. ("Pentair") warrants the IntelliChlor® Electronic Chlorine Generator (IECG) as follows:

**IECG Cell Limited Warranty:** Pentair warrants the IECG to be free from defects in material and/or workmanship for a period of one (1) year from the original date of installation.

**IECG Power Center Limited Warranty:** Pentair warrants the IECG Power Center to be free from defects in material and/or workmanship for a period of one (1) year (parts only) from the original date of installation.

*Exceptions that shall result in Pentair's denial of a warranty claim:*

1. Damage caused by careless handling, improper repackaging, or shipping.
  2. Damage due to misapplication, misuse, abuse or failure to operate equipment as specified in the IECG Installation and User's Guide.
  3. Damage caused by failure to install products as specified in the IECG Installation and User's Guide.
  4. Damage due to unauthorized product modifications or alterations, or failure to use Pentair original replacement parts.
  5. Damage caused by negligence, or failure to properly maintain products as specified in the IECG Installation and User's Guide.
  6. Damage caused by failure to maintain water chemistry in conformity with the standards set forth in the IECG Installation and User's Guide.
  7. Damage caused by water scaling, freezing or any conditions causing inadequate water circulation.
  8. Accidental damage, fire, acts of God, or other circumstances outside the control of Pentair.
- This warranty extends to the original retail owner (Customer) only, beginning on the date of installation and is not enforceable by any other party. Proof of purchase and/or date of installation will be required for all warranty claims. Customer agrees to pay all shipping charges to Pentair.
  - Warranties by others: Some products incorporate components manufactured by other manufacturers. Some of these provide warranties in addition to the warranty provided herein. In all such cases a copy of that warranty will be provided with the product. To the extent protection provided under any such third party warranty exceeds the Limited Warranty provided herein, the Customer must look only to that other manufacturer for the additional warranty protection.

**Warranty Obligations of Pentair Water:** Should a defect in workmanship and/or material in any item covered by this warranty become evident during the term of the warranty, then upon the Customer following the procedures set forth below, Pentair will, at its option, repair or replace such item or part at its own cost and expense. Pentair's maximum obligation under this warranty is limited to the repair and replacement of the IECG. Pentair disclaims all other expressed or implied warranty obligations.

Pentair is not, however, responsible under this warranty for any cost of shipping or transportation of the equipment or parts thereof to or from Pentair's Technical Service Department. Also, Pentair is not liable for any loss of time, inconvenience, incidental expenses such as telephone calls, labor or material charges incurred in connection with the removal or replacement of the equipment, or any other incidental or consequential damages, including but not limited to damage to pool equipment or any surface in or around the pool in which the IECG is installed. *Continued on next page.*

PLEASE NOTE: Some states do not allow the exclusion or limitation of incidental, or consequential damages, so the above limitation or exclusion may not apply to you.

**No Other Warranties:** TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, PENTAIR DISCLAIMS ALL OTHER WARRANTIES, WHETHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

**Procedure for Obtaining Performance:** In order to obtain the benefits of this warranty, the Customer who made the original retail purchase must contact the Pentair Technical Service Department upon discovery of the defect, but in no event later than the expiration date of the warranty period provided in this warranty. Upon receipt of this communication, Pentair will promptly notify the Customer of the address to which the defective item may be shipped. The Customer shall then ship the item, freight prepaid, to the address indicated, together with a "RETURN GOODS AUTHORIZATION" form obtained from Pentair's Technical Service and a brief description of the problems encountered. Unauthorized returns will not be accepted. Freight must be prepaid by customer.

**Warranties or Representations by Others:** No dealer or other third party entity has any authority to make any warranties or representations concerning Pentair or its products. Accordingly, Pentair is not responsible for any such warranties or representations.

**Other Rights:** This warranty gives you specific legal rights and you may also have other rights, which vary from state to state. This warranty supersedes all previous publications.

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P/N 520590 Rev D