



Installation and Operation Manual



AquaPure[®] Ei[®] Series

Chlorine Generating Device
Dual Voltage 240V/120V
APURE35

⚠ WARNING

FOR YOUR SAFETY - This product must be installed and serviced by professionals who are qualified in pool/spa product installation and service. Improper installation and/or operation can create an unwanted electrical hazard which can cause serious injury, property damage, or death. Improper installation and/or operation will void the warranty.

This manual contains important information about the installation, operation and safe use of this product. This information should be given to the owner/operator of this equipment.

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Section 1. Important Safety Instructions

READ AND FOLLOW ALL INSTRUCTIONS

All electrical work must be performed by a licensed electrician and conform to all national, state, and local codes. When installing and using this electrical equipment, basic safety precautions should always be followed, including the following:

WARNING

EQUIPMENT UNDER PRESSURE: Always turn pump off prior to installing or servicing the power pack or cell. Your pump/filter system is operated under pressure and the pressure must be released before you begin work. Please see your pump/filter owner's manual for further instructions.

WARNING

To reduce the risk of electric shock, fire or injury, service should only be attempted by a qualified pool service professional.

WARNING


Jandy® AquaPure® Ei chlorine generating devices are designed for domestic (residential) swimming pool use only. Contrary use could affect performance, void warranty, and may result in property damage, serious injury, or death.

- Operating a chlorine generator without water flowing through the cell may cause a build up of flammable gases, resulting in fire or explosion.
- Keep equipment out of reach of children.
- A damaged supply cord should only be replaced by the manufacturer, service agent or electrician.
- When installing and using this electrical equipment, always follow basic safety precautions.
- Before performing installation, disconnect all power.
- Connect to a circuit that is protected by a ground fault circuit interrupter (GFCI).
- Do not install within an outer enclosure or beneath the skirt of a hot tub or spa.

WARNING

Installation must be done in accordance with the National Electrical Code ("NEC" or NFPA-70) in the US, the Canadian Electrical Code ("CEC" or C22.1) in Canada, and/or any other local and national installation codes.

RISK OF ELECTRIC SHOCK, FIRE, PERSONAL INJURY, OR DEATH. Connect only to a branch circuit that is protected by a ground-fault circuit-interrupter (GFCI). Contact a qualified electrician if you cannot verify that the circuit is protected by a GFCI. Make sure such a GFCI should be provided by the installer and should be tested on a routine basis. To test the GFCI, push the test button. The GFCI should interrupt power. Push the reset button. Power should be restored. If the GFCI fails to operate in this manner, the GFCI is defective. If the GFCI interrupts power to the pump without the test button being pushed, a ground current is flowing, indicating the possibility of electrical shock. Do not use the device. Disconnect the device and have the problem corrected by a qualified service representative before using.

A wire-binding screw for grounding (labeled ) is provide inside the power pack. To reduce risk of electric shock, connect the ground wire to the grounding points in the power pack and of your electric service or supply panel with a conductor equivalent in size to the circuit conductors supplying this equipment.

The power pack must be interlocked/interconnected with the pool pump motor power source to ensure that the chlorinator only operates when the pool pump is operating.

 **WARNING**

- The power pack must be installed at least 5 ft. (1.5 m) vertically off the ground.
- In the US, the power pack must be installed at least 5 ft. (1.5 m) from the inside wall of your swimming pool or spa; in Canada, the power pack must be installed at least 10 ft. (3 m) from the inside wall of your swimming pool or spa.

 **WARNING**

Operating the Jandy® AquaPure® Ei chlorine generating device without water flow through the electrolytic cell can cause a buildup of flammable gasses which can result in FIRE OR EXPLOSION.

 **WARNING**

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

 **WARNING**

To reduce the risk of injury, do not remove the suction fittings of your spa or hot tub. Never operate a spa or hot tub if the suction fittings are broken or missing. Never replace a suction fitting with one rated less than the flow rate marked on the equipment assembly.

 **WARNING**

PREVENT CHILD DROWNING: Do not let anyone, especially small children, sit, step, lean or climb on any equipment installed as part of your pool's operational system. Locate the components of your operational system at least 3 feet from the pool so children cannot use the equipment to access the pool and be injured or drown.

 **WARNING**

Prolonged immersion in hot water may induce hyperthermia. 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 dizziness, fainting, drowsiness, lethargy, and an increase in the internal temperature of the body. The effects of hyperthermia include:

- Unawareness of impending danger
- Failure to perceive heat
- Failure to recognize the need to exit spa
- Physical inability to exit spa
- Fetal damage in pregnant women
- Unconsciousness resulting in a danger of drowning

 **WARNING**

To Reduce the Risk of Injury -

- The water in a spa should never exceed 104°F (40°C). Water temperatures between 100°F (38°C) and 104°F (40°C) are considered safe for a healthy adult. Lower water temperatures are recommended for young children and when spa use exceeds 10 minutes.
- Since 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 water temperatures to 100°F (38°C).
- Before entering a spa or hot tub, the user should measure the water temperature with an accurate thermometer since the tolerance of water temperature-regulating devices varies.
- The use of alcohol, drugs, or medication before or during spa or hot tub use may lead to unconsciousness with the possibility of drowning.
- Obese persons and persons with a history of heart disease, low or high blood pressure, circulatory system problems, or diabetes should consult a physician before using a spa.
- Persons using medication should consult a physician before using a spa or hot tub since some medication may induce drowsiness while other medication may affect heart rate, blood pressure, and circulation.

⚠ WARNING

- People with infectious diseases should not use a spa or hot tub.
- To avoid injury, exercise care when entering or exiting the spa or hot tub.
- Do not use drugs or alcohol before or during the use of a spa or hot tub to avoid unconsciousness and possible drowning.
- Pregnant or possibly pregnant women should consult a physician before using a spa or hot tub.
- Water temperature in excess of 100°F (38°C) may be injurious to your health.
- Before entering a spa or hot tub measure the water temperature with an accurate thermometer.
- Do not use a spa or hot tub immediately following strenuous exercise.
- Prolonged immersion in a spa or hot tub may be injurious to your health.
- Do not permit any electric appliance (such as a light, telephone, radio, or television) within 5 ft. (1.52 m) of a spa or hot tub.
- The use of alcohol, drugs or medication can greatly increase the risk of fatal hyperthermia in hot tubs and spas.
- Water temperature in excess of 100°F (38°C) may be hazardous to your health.

⚠ CAUTION

This device is intended for use with permanent swimming 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.

⚠ CAUTION

It is important to note that certain materials used in and around swimming pools and spas may not be compatible with chemicals commonly used to purify pool and spa water (e.g. acids, chlorine, salt, stabilizers, etc.).

Zodiac Pool Systems, Inc. does not warrant or guarantee that the chlorinated water generated by the Jandy® AquaPure® Ei chlorine generating device will not damage or destroy certain types of plants, decking, coping and other materials in and around your pool and/or spa. Before selecting materials to be used in and around your pool and/or spa, please discuss all options with your contractor to assess the compatibility of such materials and chemicals.

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

Some helpful considerations may include:

- Choosing plants that can withstand splash out of pool water containing chlorine and/or salt and other water purification chemicals.
- All metal components used in and around a pool should be of a high grade, quality stainless steel.
- Careful selection of masonry products. The porosity and hardness of natural stones varies greatly. Therefore we recommend you consult with your builder or stone contractor on the best choice for stone materials around your pool or spa.
- Sealing all masonry products. Professionals in the stone industry specify that even natural stone, especially when used outdoors, be sealed to prevent weathering, staining, and premature degradation. Consult with your stone or deck contractor for the proper sealer for the masonry products you have selected to use around your pool or spa.
- For the optimal results, sealers should be reapplied on a regular basis. Reapply the protective sealer on a schedule per the manufacturer's instructions.
- Use of chemicals other than those recommended may be hazardous. Follow the chemical manufacturers instructions.

SAVE THESE INSTRUCTIONS

Section 2. System Description

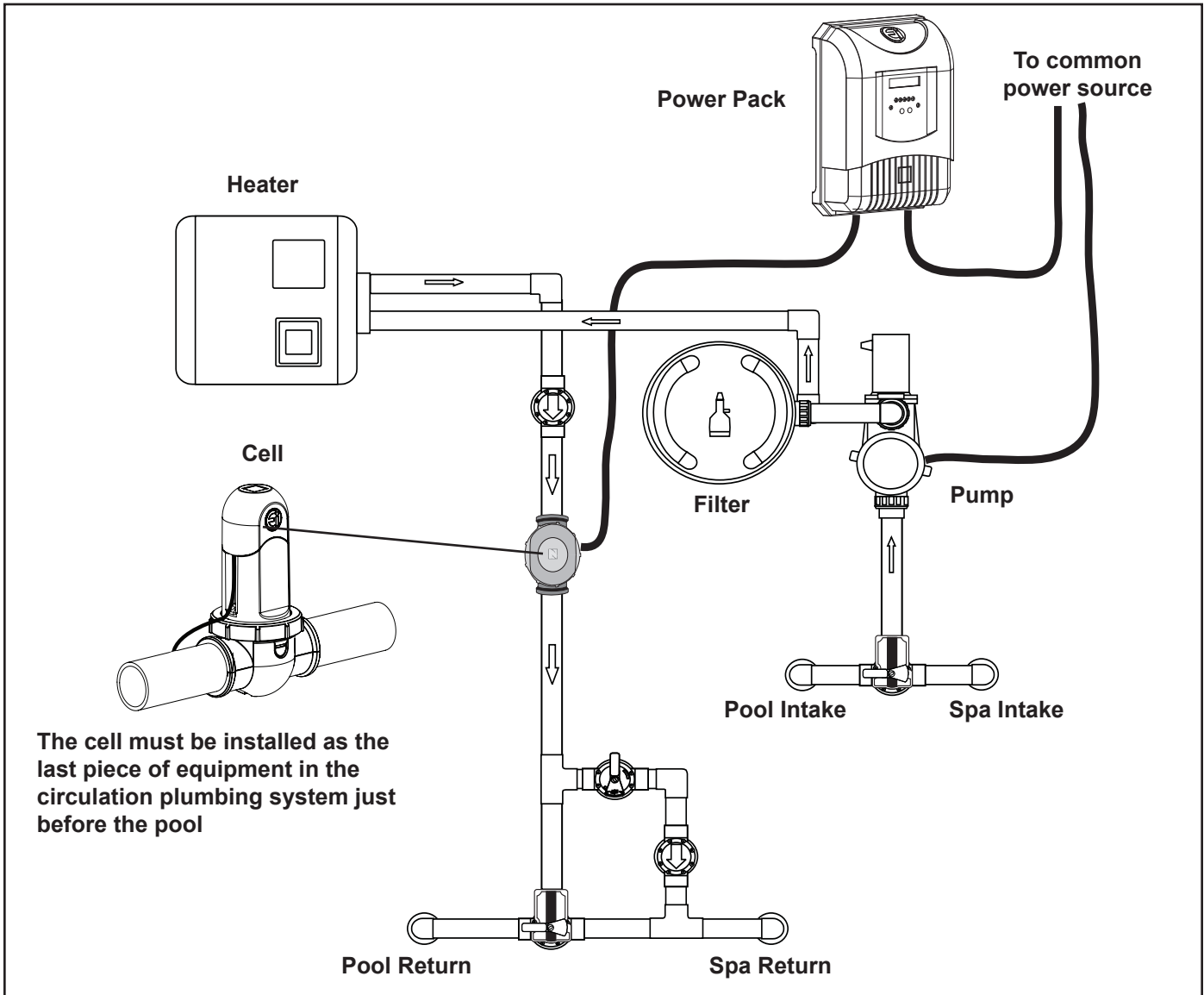


Figure 1. Example of Installation

2.1 Product Specifications

Maximum Operating Pressure: 50 psi	Input Current @ 240 VAC: ~1 A
Minimum Flow Rate: 40 gpm	Input Current @ 120 VAC: ~1.3 A
Maximum Flow Rate: 92 gpm	Input Freq: 47~63 Hz
Required Salt Level: 4,000 ppm (4.0 gpl)	Output Voltage: 25V DC (max)
Maximum water volume treated: APURE35 - 35,000 gal. (132,000 L)	Output Current (adjustable by switch): APURE35 - 5A DC
Chlorine Output: APURE35 - 0.62 oz. (17.5 g) per hour	Dimensions: Power Pack (L x W x H): 10 in. x 4.5 in. x 13 in. Electrolytic Cell (L x W x H): 6.5 in. x 5.5 in. x 12 in.
Input Voltages: 240 V or 120 V (the system auto-detects voltage)	Weight: Power Pack: 7 lbs. Electrolytic Cell: 2 lbs.

2.2 Product Contents

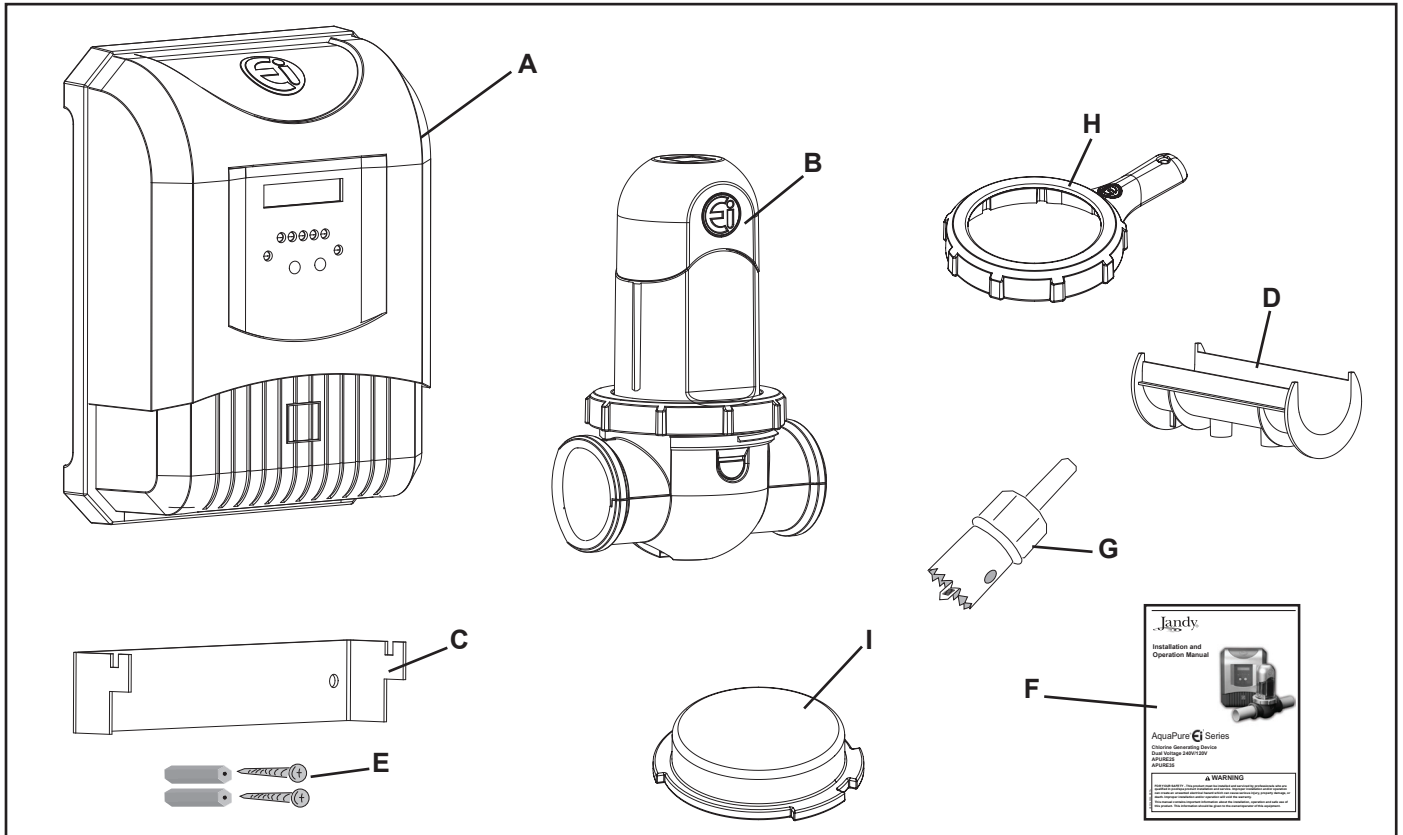


Figure 2. Carton Contents

ITEM	DESCRIPTION	QTY
A	Power Pack	1
B	Cell	1
C	Power Pack Bracket	1
D	Pipe Spacer - 1½ in. (40 mm) pipe only	1
E	Screw Set (includes wall plugs)	1
F	Installation and Operation Manual	1
G	Hole Saw	1
H	Locking Ring Tool	1
I	Winterizing Cap	1

Section 3. Installation Instructions

⚠ WARNING

FOR YOUR SAFETY: This product must be installed and serviced by a professional pool/spa service technician. The procedures in this manual must be followed exactly. Failure to follow warning notices and instructions may result in property damage, serious injury, or death. Improper installation and/or operation will void the warranty.

⚠ WARNING

EQUIPMENT UNDER PRESSURE: Always turn pump off prior to installing or servicing the Jandy® AquaPure® Ei chlorine generating device. Your pump/filter system is operated under pressure and the pressure must be released before you begin work. Please see your pump/filter owner's manual for further instructions.

Before you begin your installation, please check that you have the right tools and a suitable location to install the power pack and cell. Please ensure that you have read and understood the Important Safety Instructions section.

3.1 Materials and Tools

Installation Materials Furnished	Tools Needed for Installation
<ul style="list-style-type: none"> • Pipe Spacer - for 1½ in. (40 mm) pipe • Hole Saw • Screw Set (includes wall plugs) • Installation and Operation Manual 	<ul style="list-style-type: none"> • Cordless Drill (or Power Drill) • 15/64 in. (6 mm) Hammer Drill Bit (only necessary to drill into brick or concrete) • Pencil or Marking Pen • Phillips Head Screwdriver or Phillips Head Drill Bit

3.2 Installation Requirements

⚠ WARNING

The Jandy AquaPure Ei chlorine generating device must be installed horizontally with the cell above the pipe to avoid buildup of flammable gases which can result in FIRE OR EXPLOSION.

The installation requirements for the Jandy AquaPure Ei chlorine generating device are as follows:

- The power pack must be installed at least 5 ft. (1.5 m) vertically off the ground.
- In the US, the power pack must be installed at least 5 ft. (1.5 m) from the inside wall of your swimming pool or spa; in Canada, the power pack must be installed at least 10 ft. (3 m) from the inside wall of your swimming pool or spa.
- The cell must be installed on a 1 ½ ft. (0.4 m) horizontal length of pipe after the heaters, pumps, and filters, as the last piece of equipment in the circulation plumbing system just before the pool (see Figure 3).
- The cell must be installed no more than 15 ft. (4.6 m) from the power pack (see Figure 3).

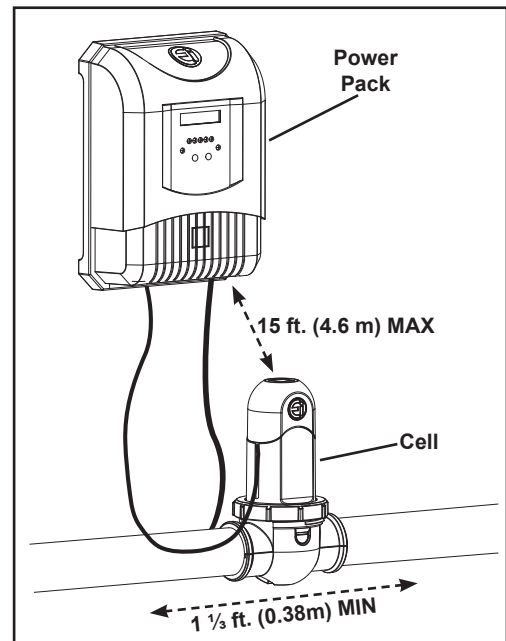


Figure 3. Installation Requirements

3.3 Installing the Power Pack and Cell

⚠ WARNING

To avoid property damage, serious injury or death, do not operate the electrolytic cell without water circulation. A buildup of flammable gasses which can result in FIRE OR EXPLOSION.

1. Ensure placement of the cell and the power pack will meet all the installation requirements outlined in Section 3.2.
2. Screw the power pack bracket into position ensuring it is no more than 15 ft. (4.6 m) from the cell (see Figure 4 and 5).
3. Position the power pack in place by aligning the bracket with the corresponding thru-holes (see Figure 5).
4. Wire the power pack to a power source and, if available, an AquaLink® RS Control System or PDA (see Sections 3.4 - 3.6).
5. Unscrew the locking ring from the cell in order to extract it from the upper clamp (see Figure 6).
6. Press the two (2) push-buttons on either side of the upper clamp to separate the upper clamp from the lower clamp (see Figure 6).

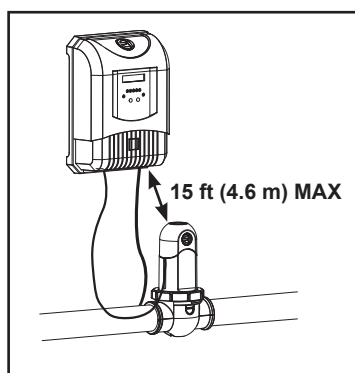


Figure 4. Installation Requirements

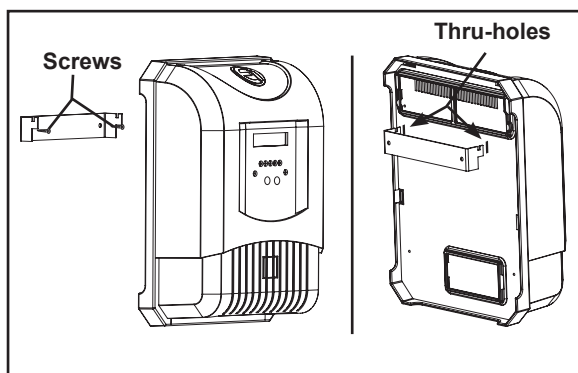


Figure 5. Attaching the Power Pack

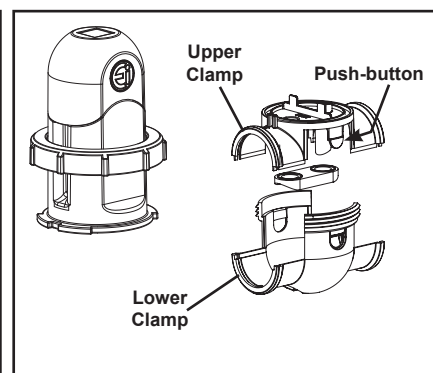


Figure 6. Disassemble Cell

7. Invert the lower clamp and place on the pipe. Mark the pipe for drilling the feeder holes (see Figure 7).
8. Drill the feeder holes using the holesaw provided. Ensure holes are clean and smooth (see Figure 8).
9. Use the pipe spacer as shown if mounting on a 1 ½ in. (40mm) pipe (see Figure 9).

NOTE: The pipe spacer is required for 1 ½ in. (40mm) diameter pipe only. The spacer is not required on 2 in. (50 mm) pipe.

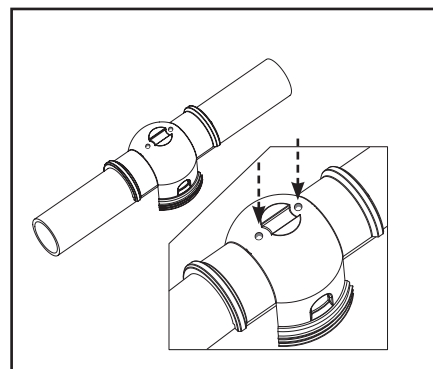


Figure 7. Marking Pipe for Drilling Feeder Holes

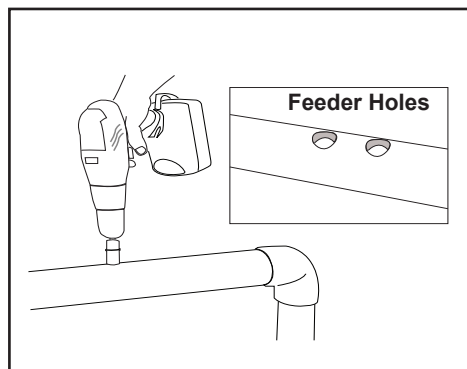


Figure 8. Drilling Feeder Holes

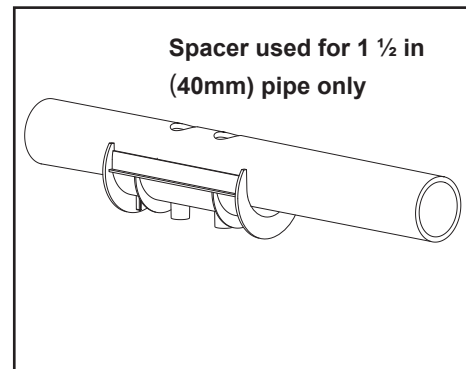


Figure 9. Pipe Spacer

10. Verify the gasket is attached to the upper clamp. The curved side of the gasket must be pointing down so that it will create a seal with the pipe.
11. Secure the clamps, pipe spacer, and gasket around the pipe as shown (see Figure 10) making sure the flow arrows on the clamp point in the direction of the water flow (see Figure 11). Make sure the two (2) clips on the sides of the clamp are snapped into place.
12. Insert the o-ring into the channel on the clamp and then attach the cell (see Figure 11 and 12).

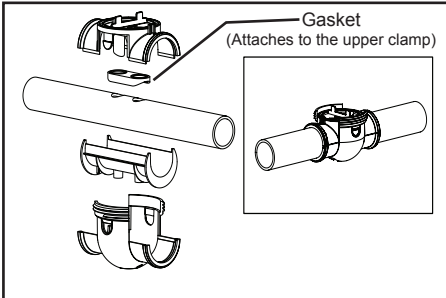


Figure 10. Attaching Cell Clamps

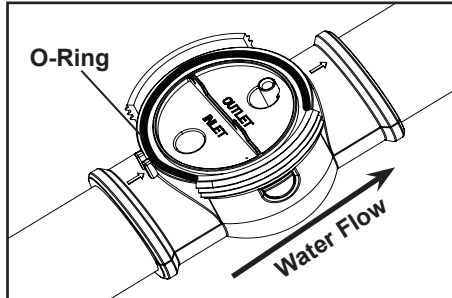


Figure 11. Water Flow Arrows

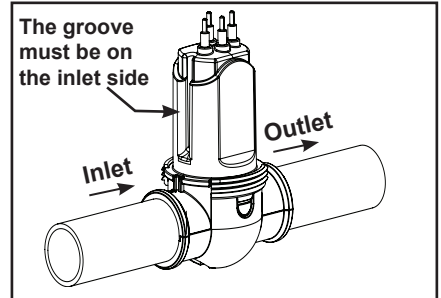


Figure 12. Cell Attached

13. Position the locking ring in proper alignment, making sure the bump aligns with the top thread (see Figure 13).
14. Screw down the locking ring to the threaded clamp using the locking ring tool (see Figure 14).

NOTE: Ensure the locking ring is level when engaging the threading clamp (see Figure 15).

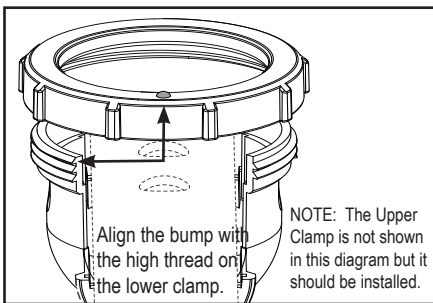


Figure 13. Locking Ring Alignment

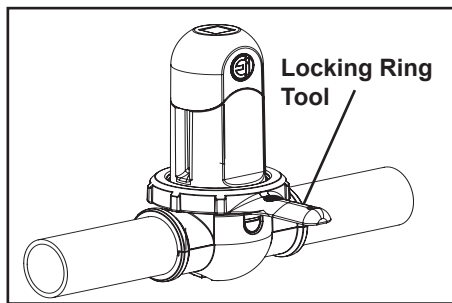


Figure 14. Locking Ring

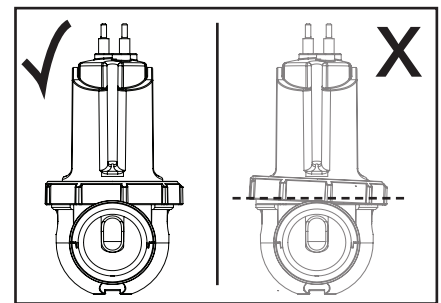


Figure 15. Locking Ring Level

15. Securely connect the cell leads to the like colored terminals (see Figure 16).
16. Attach the terminal cap (see Figure 17).

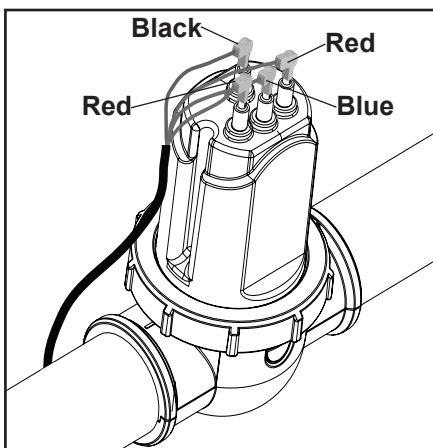


Figure 16. Connecting Cell Leads

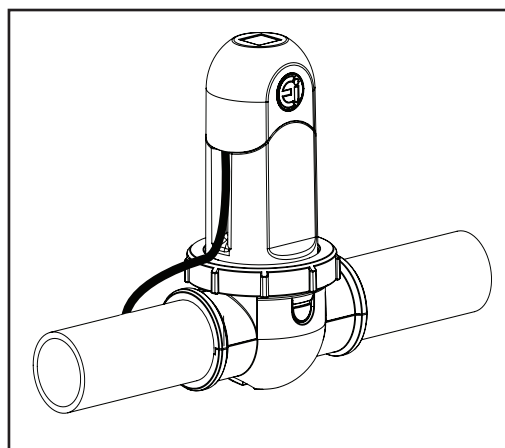


Figure 17. Attaching Terminal Cap

3.4 Wiring the Power Pack to Power Source

⚠ WARNING

When using electrical products, basic precautions should always be followed, including the following:

- **DANGER: RISK OF ELECTRIC SHOCK WHICH CAN RESULT IN SERIOUS INJURY OR DEATH.** Before attempting installation or service, ensure that all power to the device is disconnected/turned off at the circuit breaker. Connect only to a circuit protected by a ground-fault circuit-interrupter (GFCI).
- Grounding is required. The unit should be installed by a qualified service representative and should be properly grounded and bonded (See Section 3.5, Earth Bonding).
- Install to permit access for servicing.
- Please read all cautions and safety instructions in the Important Safety Instructions section. **Before attempting any electrical wiring, be sure to read and follow safety instructions. Wiring should only be attempted by a qualified professional.**

1. Wire power pack to pool pump power source using #12 AWG (3.0 mm²) insulated wire and conduit. The power pack should be connected to the pump motor switch or automatic timer (pool pump timer) as shown in Figure 18.
2. Attach the third wire (ground) from the electrical panel to the ground point inside the power pack. Additionally, applicable local and/or National installation codes may require the equipment to properly bonded to other pool equipment or to a bonding grid. Earth bonding per Section 3.5 must also be accomplished to ensure personal safety and safety of equipment.

3.5 Earth Bonding

The National Electric Code (NEC) requires pool equipment to be bonded to each other. Check your local codes to determine if the NEC and/or other local installation codes are enforced by the Authority Having Jurisdiction (AHJ). A solid, copper # 8 AWG (8.37 mm²) wire is recommended, per the NEC, for bonding the power pack to a permanent earth bonding connection that is acceptable to the local AHJ. Refer to your locally enforced codes for the acceptable grounding wire gauge. Attach the bonding point located on the bottom of the chassis backplate to a common earth bonding point. Do not use the power pack as the common bonding point. Each piece of non-related pool equipment requiring a ground should also be bonded to the common, approved earth bonding point. Never ground a pool pump to the chassis backplate. In Canada, the Canadian Electrical Code (CEC) dictates that the bonding conductor be, minimum 6 AWG (13.3 mm²).

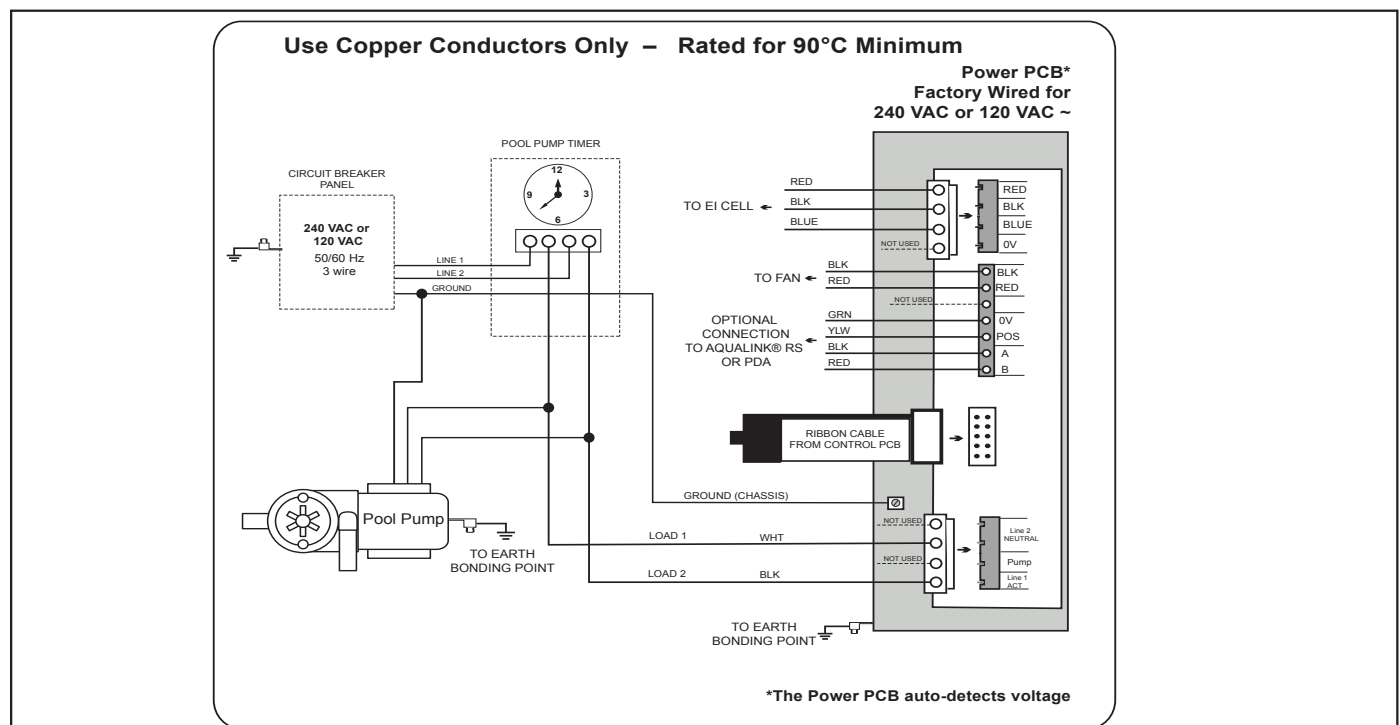


Figure 18. 240 VAC or 120 VAC Wiring Diagram

3.6 Connection to an AquaLink® RS Control System or PDA (Optional)

The Jandy® AquaLink RS or PDA is a multi-function pool controller which can fully control the function of the Jandy AquaPure® Ei chlorine generating device. Adjustment of the chlorine production rate can be controlled from the main menu of the Jandy AquaLink RS or PDA. The AquaLink RS or PDA offers individual pool and spa settings for output percentage. Refer to the AquaLink RS or PDA Owner's Manual for more information.

NOTE The Jandy AquaPure Ei chlorine generating device will communicate with all AquaLink models Rev. K or later.

3.6.1 Setting the Controller Type on the Power Pack

Before wiring to the AquaLink RS Control System, the controller type must be set on the power pack to allow communication between the power pack and the AquaLink RS Control System or PDA. The default controller type setting is Jandy L/M.

NOTE: The controller type must be set before making the wiring connection between the power pack and the AquaLink otherwise the power pack may be locked out of the AquaLink.

To set the controller type:

1. Turn the power pack on by pressing the ON/OFF button.
2. Wait for the start-up sequence to complete.
3. Press and hold the OUTPUT button for approximately four (4) seconds. After four (4) seconds, a controller type will be displayed on the screen.
4. Keep the OUTPUT button pressed to toggle through the list of controllers. Each controller will be displayed on the screen for two (2) seconds.
5. Release the OUTPUT button when the desired controller is displayed. To connect to the Aqualink RS Control System or PDA, select the JANDY L/M controller type.

3.6.2 Wiring to the AquaLink RS Control System or PDA

WARNING

FOR YOUR SAFETY: This product must be installed and serviced by a professional pool/spa service technician. The procedures in this manual must be followed exactly. Failure to follow warning notices and instructions may result in property damage, serious injury, or death. Improper installation and/or operation will void the warranty.

When using electrical products, basic precautions should always be followed, including the following:

- **DANGER: RISK OF ELECTRIC SHOCK WHICH CAN RESULT IN SERIOUS INJURY OR DEATH.** Before attempting installation or service, ensure that all power to the device is disconnected/turned off at the circuit breaker. Connect only to a circuit protected by a ground-fault circuit-interrupter (GFCI).
- Grounding is required. The unit should be serviced by a qualified service representative and should be properly grounded. (See Section 3.5, Earth Grounding).
- Install to permit access for servicing.
- Please read all cautions and safety instructions in the Important Safety Instructions section. **Before attempting any electrical wiring, be sure to read and follow safety instructions. Wiring should only be attempted by a qualified professional.**

1. Ensure that all power to the power pack and the controller is disconnected/turned off at the circuit breaker.
2. Remove the screws attaching the cover to the back plate and prop the cover up to expose the terminals (see Figure 19).

NOTE: Be carefully not to pull the ribbon cable that is connected to the Power Supply and the Cover.

3. Remove the white cap covering the comm hole (see Figure 19).
4. Thread the controller cable through the hole. A grommet may be necessary depending on the size of the cable being used.
5. Attach a cable tie to the controller cable as shown (see Figure 19).

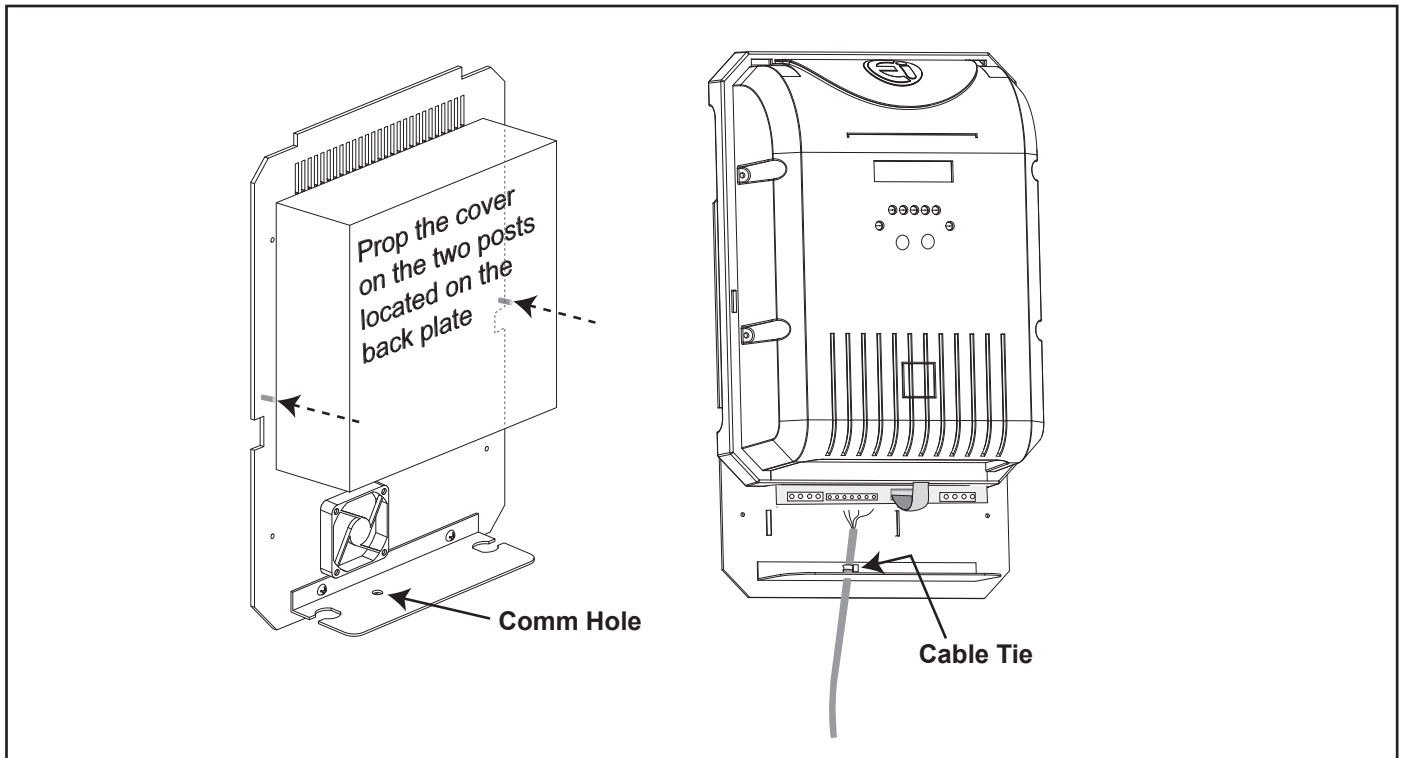


Figure 19. Accessing and Wiring to the Power PCB

6. In the AquaLink® RS or PDA power center, wire the power pack directly to the LOAD SIDE of the filter pump relay (see Figure 20).

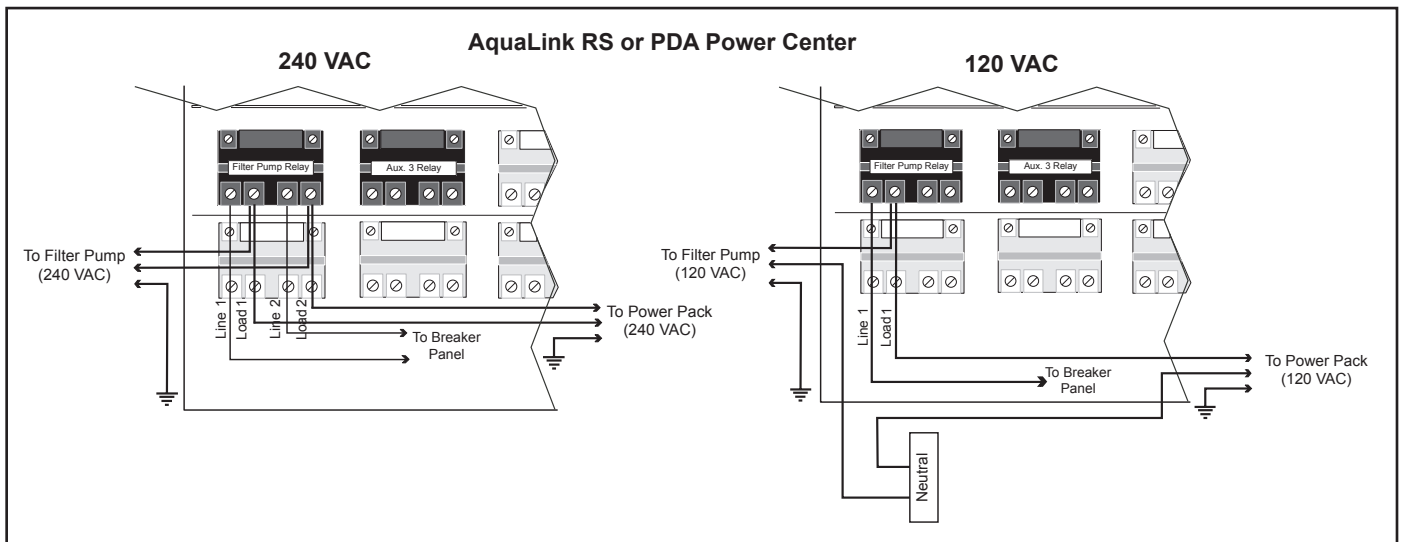


Figure 20. Wiring Power Pack to an AquaLink RS or PDA Power Center (240 VAC and 120 VAC)

7. The Jandy® AquaLink® RS or PDA and power pack use a four (4) wire connection to communicate and can be wired up to 500 feet apart. Any outdoor rated four conductor cable, minimum 22 AWG, can be used. Locate the appropriate screw terminals on the circuit board and wire the power pack to the AquaLink RS or PDA red 4-pin terminal bar (see Figure 21).

NOTE The screw terminals on the AquaLink RS or PDA are removable to aid in installation.

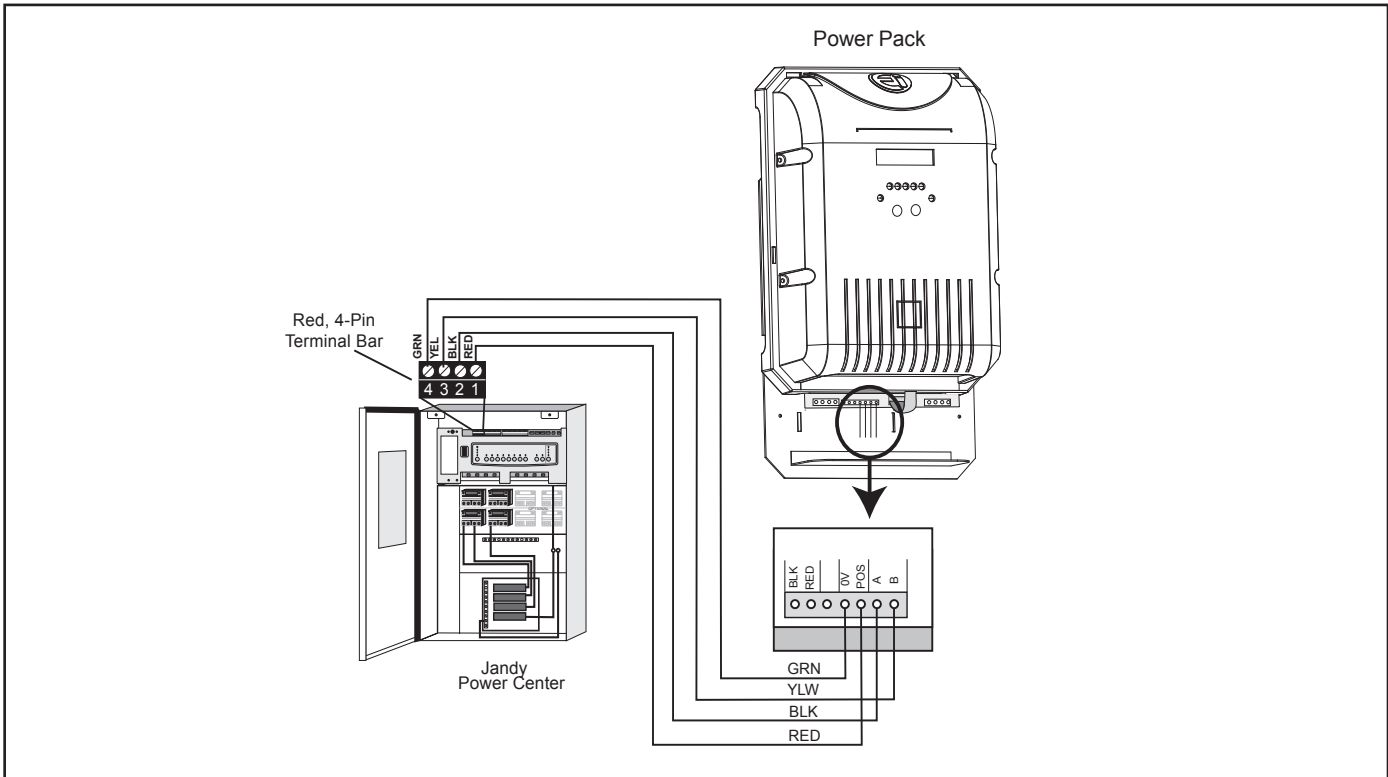


Figure 21. Communication Wiring between Power Pack and AquaLink RS Control System or PDA Network

3.6.3 Testing the Connection

Once the power pack has been wired to the AquaLink RS Control System or PDA, follow these steps to test the connection:

1. Turn on the power pack and the AquaLink RS Control System or PDA.
2. Wait about 20 seconds. If the connection was successful, a **F** symbol will appear in the top right corner of the power pack display.

NOTE: If the power pack does not connect to the controller, turn the power off to both devices and repeat steps 1 and 2. If the power pack still does not connect to the controller, re-check the wiring connections (see Section 3.6.2) and the controller setting on the power pack (see Section 3.6.1).

3.7 Bypass Plumbing Instructions

The maximum flow rate for the cell is 92 gpm. If flow rate exceeds 92 gpm, the cell **MUST** be plumbed on by-pass (see Figure 22). A control valve must be installed to regulate the flow through the cell. It can be installed on the inlet side of the cell or between the inlet and discharge side of the bypass piping. The proper flow will be achieved by adjusting the handle of the valve until the red “No Flow” light has turned off and all large air bubbles are cleared from the cell.

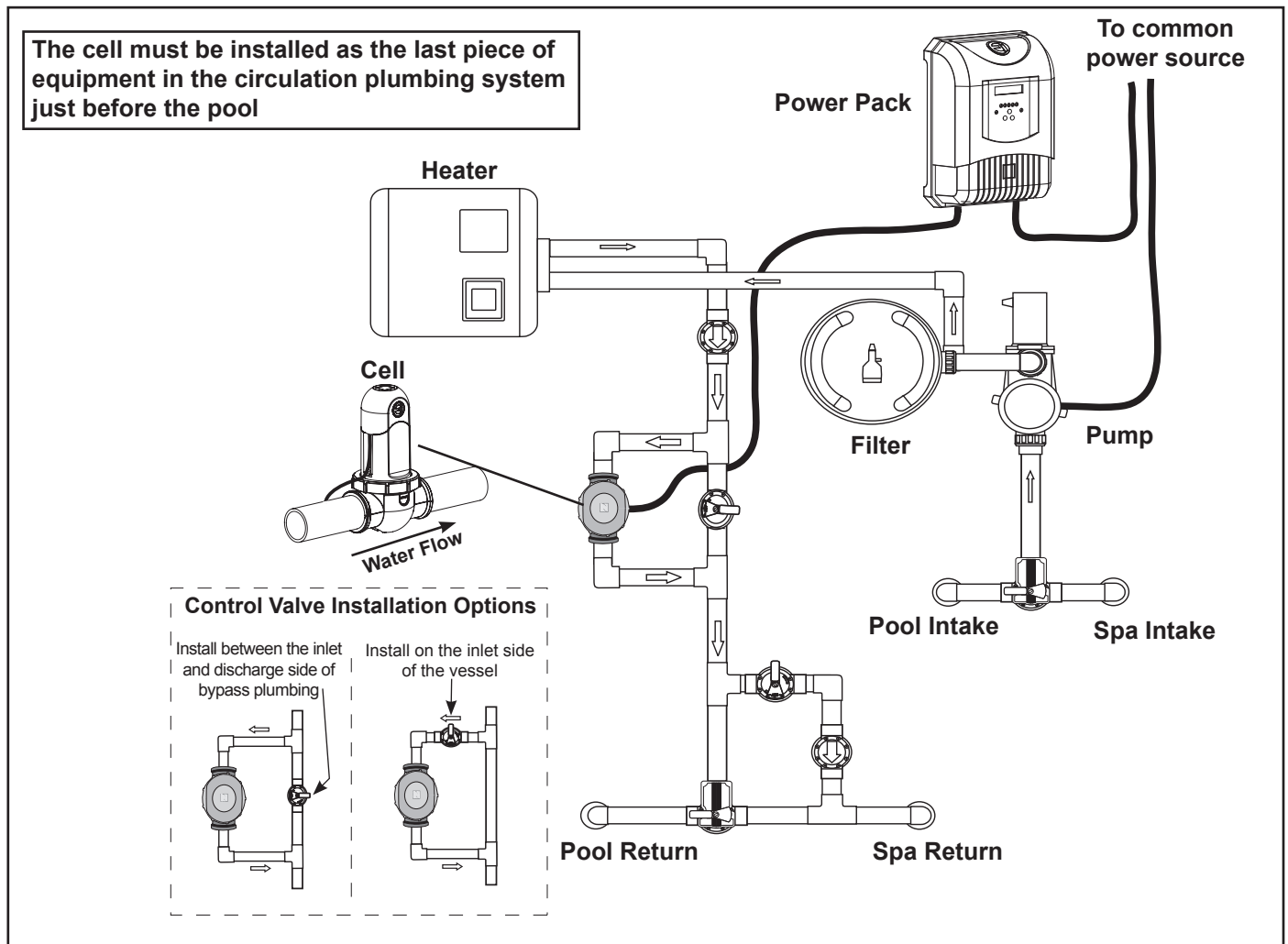


Figure 22. Example of Bypass Installation

3.8 Alternative Installation (When Pipe is Obstructed)

If the only suitable length of pipe is obstructed, such as on a multiport valve often found on a sand filter, it is acceptable to ‘lean’ the cell over up to a maximum of 45 degrees (see Figure 23). Mark the feeder holes in the same angle that the cell will be leaning to ensure that you drill in the right position.

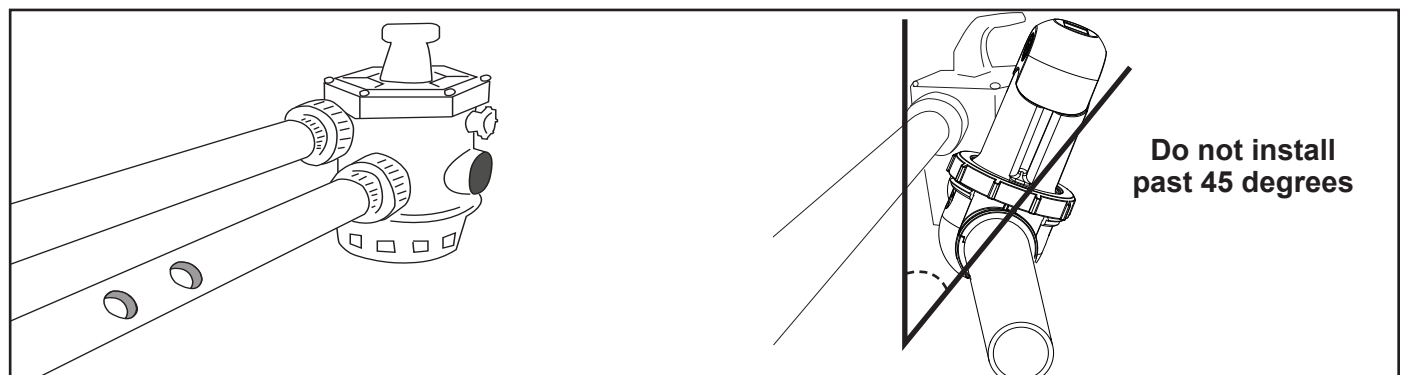


Figure 23. Example of Alternative Installation

Section 4. Pool Water Preparation

4.1 Determining Pool Size (Gallons of Water in Your Pool)

- **Rectangular Pools**
Average length (feet) x average width (feet) x average depth (feet) x 7.5 = gallon capacity.
- **Circular Pools**
Diameter (feet) x diameter (feet) x average depth (feet) x 5.9 = gallon capacity.
- **Oval Pools**
Long diameter (feet) x short diameter (feet) x average depth (feet) x 5.9 = gallon capacity.
- **Sloping Sides**
Multiply total gallons by 0.85 = gallon capacity.

4.2 Determining Pool Size (Litres of Water in Your Pool)

- **Rectangular Pools**
Average length (metres) x average width (metres) x average depth (metres) x 1000 = litres capacity.
- **Circular Pools**
Diameter (metres) x diameter (metres) x average depth (metres) x 790 = litres capacity.
- **Oval Pools**
Long diameter (metres) x short diameter (metres) x average depth (metres) x 790 = litres capacity.
- **Sloping Sides**
Multiply total litres by 0.85 = litres capacity.

4.3 Selecting Model Size

APURE35
Chlorine Production
0.62 oz. (17.5 g) per hour
Residential Pools
One (1) unit per 35,000 gal. (up to 132,000 L) (See General Rule of Sizing notes below)

General Rule of Sizing: In areas with year-round use and high water temperatures, such as Florida, Texas, Arizona, Las Vegas and Southern California, the following must be considered:

Year Round Use: Up-sizing the Jandy® AquaPure® Ei chlorine generating device or adding more than one unit may be recommended for pools that are close to the maximum size and used year round. Please consult your pool professional.

High Water Temperatures: Because chlorine demand increases with the rise of water temperature, adjustments must be made in order to keep up with chlorine demand. In hot summer months, where the water temperature rises above 85°F, you must increase the pump run time and increase the percentage (%).

4.4 Chemistry You Need to Know

- **Chlorine Stabilizer** (cyanuric acid) is needed to maintain proper levels of chlorine. Most non-stabilized chlorine is destroyed by the UV radiation from the sun within two (2) hours. Chlorine stabilizer should be maintained between 30 - 50 ppm. For indoor pools, it is not necessary to add chlorine stabilizer to the swimming pool water.
- **Nitrates** can cause extremely high chlorine demands and will deplete chlorine from your swimming pool. In some cases nitrates may even lower your chlorine levels to zero. Your local pool professional can test for nitrates. Make sure nitrates are not present in your pool.

- **Metals** (some metals) can cause loss of chlorine and stain your pool. Have your local pool professional check for metals and recommend methods of removal.
- **Chloramines** should not be present in pool water. When organic materials combine with free chlorine, chloramines are formed. This ties up the free chlorine in your pool and does not allow the chlorine in your pool to disinfect. Chloramines also cloud pool water and burn the eyes. Shock to remove chloramines at the initial startup of the pool.
- **Super Chlorination** burns out the organic material that has combined with chlorine which frees the chlorine for sanitizing. Super Chlorination is accomplished by raising the chlorine level quickly and dramatically. To super chlorinate the pool using the Jandy® AquaPure® Ei chlorine generating device, set the chlorine production to 100% and then set the pump and the cell to run for 24 hours.
- **Shocking** (Superoxidation) is also a means of burning out the organic material that has combined with chlorine. This method involves the manual addition of chemicals to quickly raise the level of chlorine. When the chlorine level is quickly raised to 5 - 15 ppm the pool water is said to have been shocked.

NOTE On initial startup of a pool, it is best to shock using an alternate source, i.e., use a shock treatment available at your local pool supplier.

CAUTION

Never use dry acid to adjust pH in arid geographic areas with excessive evaporation and minimal dilution of pool water with fresh water. A buildup of by-products can damage the electrolytic cell.

- The **pH** condition resulting from the operation of a salt water chlorination system is close to neutral. However, other factors usually cause the pH of the pool water to rise. Therefore, the pH in a pool chlorinated by a salt water system tends to stabilize at approximately 7.6. If the pool pH rises above 7.6 have a pool professional test to see if other factors such as high calcium hardness or total alkalinity are the cause and then balance accordingly.
- **Total Dissolved Solids (TDS)**. Adding salt to pool water will raise the TDS level. While this does not adversely affect the pool water chemistry or clarity, the pool water professional testing for TDS must be made aware salt has been added for the sanitizing system. The individual performing the TDS test will then subtract the salinity level to arrive at the correct TDS level.
- **New pool water** in a recently filled or newly refinished pool may contain undesirable matter which could interfere with the salt water chlorinator's ability to sanitize properly. Make sure the water is tested by a pool professional and properly balanced before turning on the chlorinator system.
- **Sequestering Agents** can be used to compensate for source water which may have unusually high calcium hardness. High calcium hardness can contribute to scale formation in the pool. Sequestering agents will help keep minerals in solution and under some conditions can prevent scaling from happening. Consult your pool professional about the use of a sequestering agent.

4.5 Optimum Pool Water Conditions

In accordance with Association of Pool and Spa Professionals (APSP) standards, we recommend the following water balance conditions be maintained on an on-going basis to protect the pool finish and the equipment and to ensure the pleasing appearance of the water. The Jandy AquaPure Ei is warranted to operate properly only if the following conditions are met:

Free Chlorine	1.0 - 3.0 ppm. Continuous exposure to levels above 3.0 ppm may cause corrosion of pool metals.
Combined Chlorine (Chloramines)	None (Super chlorinate to remove all chloramines).
pH	7.4 - 7.6 (Use muriatic acid to lower pH and soda ash to raise pH).
Chlorine Stabilizer (Cyanuric Acid)	30 - 50 ppm (For outdoor pools only).
Total Alkalinity	80 - 120 ppm
Calcium Hardness	175 - 400 ppm
Metals (Iron, Manganese)	None
Nitrates	None
Phosphates	None

4.6 Chlorine Testing

Use a home test kit or ask your pool professional to test your water. It is recommended that chlorine test samples be taken from two (2) places, described below. Compare the two (2) samples. A higher level should be found at the pool return line. The higher level at the pool return line indicates the salt water chlorinator system is producing chlorine.

1. At the pool return line.
2. 18 in. (46 cm) below the surface and well away from the pool return line.

4.7 Salt (NaCl Sodium Chloride)

4.7.1 When to Add Salt

Add salt to the pool if the salt is too low (see Table 1) or if salt indicator light turns on. For a new pool or newly resurfaced pool it is recommended to wait at least 30 days (surface should be completely cured) before adding salt. Follow the pool surface manufacturer's guidelines for your particular pool. For vinyl and fiberglass pools, salt can be added at start up.

4.7.2 What Type of Salt to Use

- The purer the salt, the better the life and performance of the electrolytic cell. Use a salt that is at least 99.8% pure NaCl. The salt is an evaporated, granulated, food quality, non-iodized salt. Consult your salt supplier.
- Avoid using salt with anti-caking agents (sodium ferrocyanide, also known as YPS or yellow prussiate of soda) that could cause some discoloration of fittings and surface finishes in pool.
- Water conditioning salt pellets are compressed forms of evaporated salt and may be used but will take longer to dissolve.
- **Do not** use calcium chloride as a source of salt. Use sodium chloride only.
- **Do not** use rock salt because insoluble impurities mixed with the rock salt can shorten the life of the unit.

CAUTION

It is important to note that certain materials used in and around swimming pools and spas may not be compatible with chemicals commonly used to purify pool and spa water (e.g. acids, chlorine, salt, stabilizers, etc.).

Zodiac Pool Systems, Inc. does not warrant or guarantee that the chlorinated water generated by the Jandy® AquaPure® Ei chlorine generating device will not damage or destroy certain types of plants, decking, coping and other materials in and around your pool and/or spa. Before selecting materials to be used in and around your pool and/or spa, please discuss all options with your contractor to assess the compatibility of such materials and chemicals.

Some helpful considerations may include:

- Choosing plants that can withstand splash out of pool water containing chlorine and/or salt and other water purification chemicals.
- All metal components used in and around a pool should be of a high grade, quality stainless steel.
- Careful selection of masonry products. The porosity and hardness of natural stones varies greatly. Therefore we recommend you consult with your builder or stone contractor on the best choice for stone materials around your pool or spa.
- Sealing all masonry products. Professionals in the stone industry specify that even natural stone, especially when used outdoors, be sealed to prevent weathering, staining, and premature degradation. Consult with your stone or deck contractor for the proper sealer for the masonry products you have selected to use around your pool or spa.
- For optimal results, sealers should be reapplied on a regular basis. Reapply the protective sealer on a schedule per the manufacturer's instructions.
- Use of chemicals other than those recommended may be hazardous. Follow the chemical manufacturers instructions.

Table 2. Aproximate Pounds and Kilograms of Stabilizer Needed to Obtain 50 ppm

Current Cyanuric Acid Level - ppm	Pool/Spa Size US Gallons (Litres)					
	10,000 g (38,000 L)	15,000 g (57,000 L)	20,000 g (76,000 L)	25,000 g (95,000 L)	30,000 g (114,000 L)	35,000 g (132,000 L)
0	4.2 lbs (1.9 kgs)	6.3 lbs (2.9 kgs)	8.4 lbs (3.8 kgs)	10.5 lbs (4.8 kgs)	12.6 lbs (5.7 kgs)	14.8 lbs (6.7 kgs)
10	3.4 lbs (1.5 kgs)	5.1 lbs (2.3 kgs)	6.7 lbs (3.1 kgs)	8.4 lbs (3.8 kgs)	10.1 lbs (4.6 kgs)	11.8 lbs (5.4 kgs)
20	2.5 lbs (1.1 kgs)	3.8 lbs (1.7 kgs)	5.1 lbs (2.3 kgs)	6.3 lbs (2.9 kgs)	7.6 lbs (3.4 kgs)	8.9 lbs (4.0 kgs)
30	1.7 lbs (0.8 kgs)	2.5 lbs (1.2 kgs)	3.4 lbs (1.5 kgs)	4.2 lbs (1.9 kgs)	5.1 lbs (2.3 kgs)	5.9 lbs (2.7 kgs)
40	0.8 lbs (0.4 kgs)	1.3 lbs (0.6 kgs)	1.7 lbs (0.8 kgs)	2.1 lbs (1.0 kgs)	2.5 lbs (1.2 kgs)	3.0 lbs (1.3 kgs)

NOTE The above chart is for general reference only. The recommended stabilizer reading is between 30-50 ppm and will vary dependent on geographic climate. Warm, sunny climates will require a stabilizer reading at the higher end of the given range. Consult your local pool professional for your optimum level. Always add stabilizer according to manufacturer's instructions. For indoor pools, it is not necessary to add chlorine stabilizer to the swimming pool water.

Section 5. Operating Instructions

⚠ WARNING

To avoid property damage, serious injury or death, do not operate the electrolytic cell without water circulation. A buildup of flammable gasses which can result in FIRE OR EXPLOSION.

5.1 Control Panel

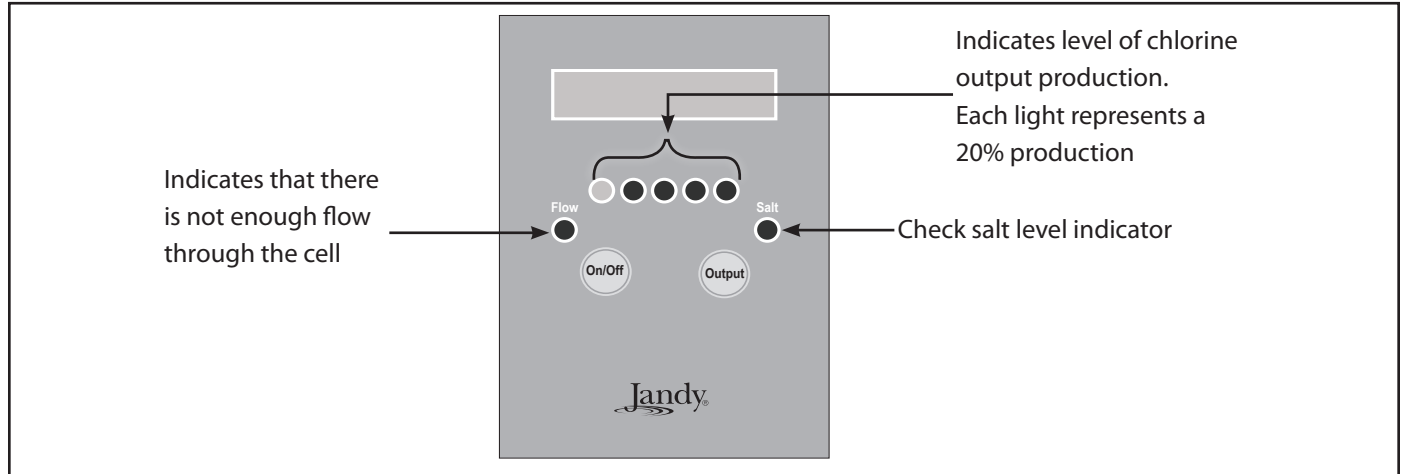


Figure 24. Control Panel on the Power Pack

5.2 Turning Power Pack On/Off (Manually)

To turn the Jandy® AquaPure® Ei chlorine generating device on or off press the  button.



NOTE: Because the power pack is wired to the pump's power source, the power pack can only be turned on when the pump is turned on.

5.3 Turning Power Pack On/Off (Using the Pump's External Timer)

If the power pack is wired to the pump's external timer and the power to the power pack is on, the power pack will automatically turn on and off when the pump turns on and off (see Section 3.3). When the power pack is wired as such, the only setting that must be set manually is the chlorine output level (see Section 5.4).

5.4 Setting the Chlorine Output Level

When setting the chlorine output level you must consider the size of the pool, the amount of use the pool will be receiving and how hot the weather is. All these factors weigh greatly on the level of output needed. To adjust the output level, follow these steps:

1. Turn the power pack on by pressing the  button.
2. Press the  button to reach the desired output level. The minimum setting is 20% (one amber light). The output can be adjusted in increments of 20% up to 100%. If the OUTPUT button is pressed beyond 100%, the output level setting will drop back to 20%.

Output Setting	Amount of time cell will run
20% - one (1) light	Cell will run two (2) min. every ten (10) min.
40% - two (2) lights	Cell will run four (4) min. every ten (10) min.
60% - three (3) lights	Cell will run six (6) min. every ten (10) min.
80% - four (4) lights	Cell will run eight (8) min. every ten (10) min.
100% - five (5) lights	Cell will run non-stop.

5.5 Connection to an AquaLink® RS / PDA Control System

The Jandy® AquaPure® Ei chlorine generating device can be connected to an AquaLink RS or PDA Control System. See Section 3.5 and 3.6. For detailed instructions for the AquaLink RS or PDA Control System, see the respective manuals.

5.6 Polarity Reversal

The Jandy AquaPure Ei chlorine generating device is a reversible polarity cell which means that for every five (5) hours of operation the cell will switch its polarity to help prevent any build up of calcium on the cell plates. This is sometimes referred to as the automated cell cleaning feature. During the transition between changing its polarity there is a five (5) minute wait time when the cell will not produce any chlorine. Once it has changed polarity it will continue to make chlorine.

NOTE: 'CLEANING' will be displayed on the screen during the five (5) minute 'WAIT' period. The output level indicator will remain as set during the cleaning period).

5.7 Backup Battery

The power pack is fitted with a rechargeable battery which can last in excess of 500 hours without the power being connected. In the event of a power failure the battery will retain ALL settings.

In the event of the battery losing its charge, the microprocessor in the unit will retain the following settings permanently:

- Operating hours
- Cell hours
- Controller setting

Section 6. Maintenance Instructions

Before servicing the Jandy® AquaPure® Ei chlorine generating device please ensure you have read and understood the Important Safety Instructions section.

Important: Always test the chlorine levels of your pool before each use.

6.1 Daily

1. **Chlorine Test.** Test pool water chlorine level with a reliable test kit. Maintain an ideal range by adjusting the chlorine output level on the power pack (see Section 5.4). The recommended free chlorine level is 1.0 - 3.0 ppm.

NOTE It is recommended that chlorine test samples be taken from two (2) places, one (1) at the pool return line, the other well away from the pool return line. Compare the two (2) samples. A higher level should be found at the pool return line. The higher level at the pool return line indicates the system is producing chlorine.

2. **pH Level Test.** Test the pH level of your pool with a test kit. If necessary, adjust to maintain a pH level of 7.4 - 7.6 (see Section 4.4).

CAUTION

Never use dry acid to adjust pH in arid geographic areas with excessive evaporation and minimal dilution of pool water with fresh water. A build up of by products can damage the electrolytic cell.

3. **Total Alkalinity Test.** Test pool water for total alkalinity with a test kit. Take steps necessary to maintain an alkalinity of 80 - 120 ppm (see Section 4.4).
4. **Calcium Hardness.** Test pool water for calcium hardness level using test kit or by having a water sample tested by a pool professional. Adjust as necessary to maintain a calcium hardness of 175 - 400 ppm (see Section 4.4).

6.2 Monthly

1. **Check the cell.** It is recommended that every month the cell be removed and inspected for scale formation and/or debris. If cell needs to be cleaned, see Section 6.3 for instructions.
2. **Salt Level Test.** Use salinity test strips, a TDS/salinity meter, or another reliable method to test the salinity of the pool water. Once the existing salinity has been established, use Table 1 in Section 4.7.4 to determine the amount of salt to add to reach the desired level. Be conservative when adding salt as it is easier to add more if needed than it is to dilute if there is too much salt. If the salinity level of the pool is correct and the salt LED does not go out, see Section 7. Troubleshooting.
3. **Pool Water Sample.** Take water sample to local pool store for testing.
4. **Stabilizer (Cyanuric Acid).** Test pool water stabilizer (cyanuric acid) level using a test kit or by having a water sample tested by a pool professional. Maintain ideal range of 30 - 50 ppm. Follow your pool professional's recommendations. For indoor pools, it is not necessary to add chlorine stabilizer to the swimming pool water.
5. **Metals Test.** It is recommended that the pool water be tested periodically for the presence of metals such as iron, and manganese. These metals should not be present in the pool water. If those metals are present, contact your local pool professional.

6.3 Cleaning the Cell

⚠ WARNING

Disconnect power to the system at the main circuit breaker before performing this procedure to avoid risk of electric shock which can result in property damage, severe injury or death.

⚠ WARNING

- When cleaning the cell, wear protective eyeglasses and gloves.
- When mixing acid with water, **ALWAYS ADD ACID TO WATER. NEVER ADD WATER TO ACID.**

The power pack has an automatic cell cleaning feature (polarity reversing) that removes scale deposits from the cell (see Section 5.6).

Scale will form in excessively hard water or from pool water that is out of balance and in a scaling condition. Following the installation of the Jandy® AquaPure® Ei chlorine generating device, check the cell once a month for signs of scale.

If the cell has a tendency to scale, it is recommended that every month the cell be removed and inspected for scale formation and/or debris. Some filters allow debris to pass through to the cell which could lodge between the plates in the cell. A small amount of scale formation is normal. If by looking through the cell it is observed that there is excessive scale formation between the plates or debris is present, the cell must be cleaned as follows:

1. Ensure that all power to the power pack and the controller is disconnected/turned off at the circuit breaker.
2. Shut off any necessary valves to prevent any water loss.
3. Remove the terminal cap and cell leads.
4. Undo the locking ring. If required, use the locking ring tool provided (see Figure 25).
5. Remove the cell (see Figure 26).
6. Refit the cap on the cell and invert (see Figure 27).
7. With protective glasses and gloves on, add one (1) part acid to ten (10) parts water and mix.
8. Fill the cell to the top of the electrode plates with the acid solution. Leave solution in cell no longer than 30 min.
9. After the cell has been cleaned, you can dispose of the solution by pouring it into the pool water or dispose of according to local regulations.
10. Reattach the cell as described in Section 3.3, steps 13 and 14.

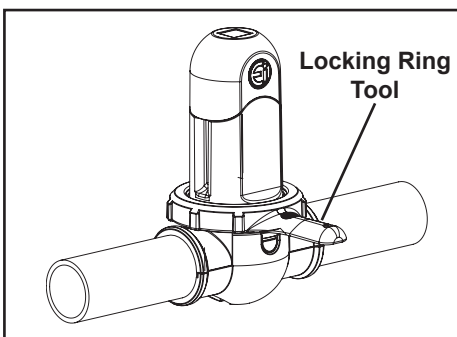


Figure 25. Undo Locking Ring

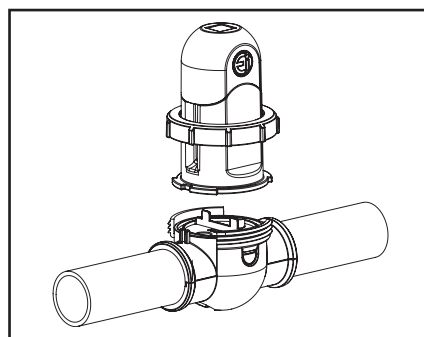


Figure 26. Remove the Cell

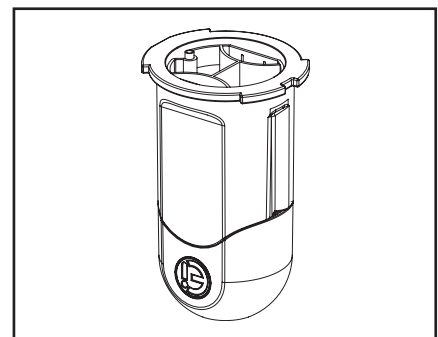


Figure 27. Invert the Cell

6.4 Winterizing

Very little chlorine is needed in cold water. Below 51°F (11°C), chlorine production is not permitted; operating the chlorinator in cold water might result in over-chlorinated pool water.

If preventative measures are not taken, freezing water may cause severe damage to the cell. Prevent freeze damage to the cell by running pump continuously or winterize pool by draining water from pump, filter, and all intake and return lines. Remove the cell, clean and store it indoors. Coil the cell leads, wrap in plastic and tape to the power pack.

An optional winterizing cap is available to replace the cell during winterizing or cell maintenance. This will enable pool pump to circulate water with the cell out of the line.

When a FREEZE CONTROLLER is used on pump equipment and the chlorinator is run through the winter, turn the CHLORINE PRODUCTION down to 10 - 20%. Otherwise, chlorine production will exceed the recommended level of 1 - 3 ppm.

6.4.1 Winterizing Procedure

⚠ WARNING

Disconnect power to the system at the main circuit breaker before performing this procedure to avoid risk of electric shock which can result in property damage, severe injury or death.

1. Ensure that all power to the power pack and the controller is disconnected/turned off at the circuit breaker.
2. Shut off any necessary valves to prevent any water loss.
3. Remove the terminal cap and cell leads.
4. Undo the locking ring. If required, use the locking ring tool provided (see Figure 25).
5. Remove the cell (see Figure 26).
6. Attach the winterizing cap (see Figure 28)
7. Position the locking ring in proper alignment, making sure the bump aligns with the top thread.
8. Screw down the locking ring to the threaded clamp using the locking ring tool.

NOTE: Ensure the locking ring is level when engaging the threading housing (see Figure 29).

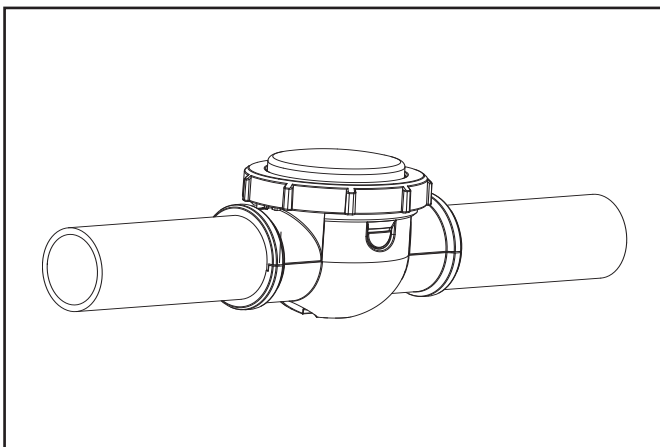


Figure 28. Winterizing Cap Installed

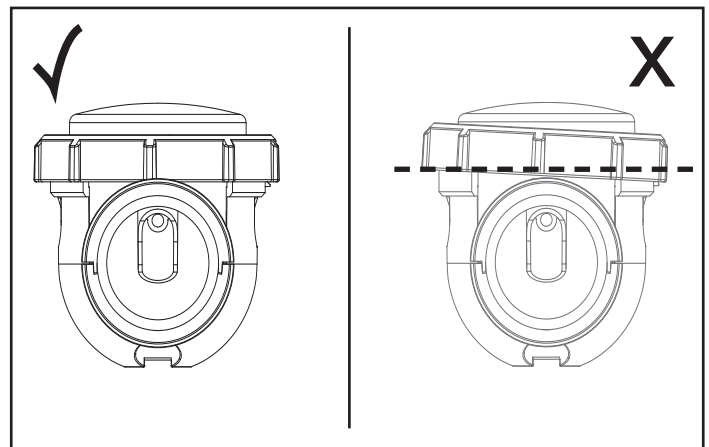


Figure 29. Locking Ring Level

Section 7. Troubleshooting

WARNING

Always turn pump off prior to attempting service or repair. Your pump and filter system is operated under pressure and pressure must be released before you begin to avoid system damage or personal injury. Open the air relief valve on your pool filter to release the pressure in the system.

7.1 Problems and Corrective Action

Problem	Possible Cause	Corrective Action
Low or no chlorine.	Low stabilizer (cyanuric acid) level in pool water (for outdoor pools only).	Add stabilizer to maintain 30-50 ppm (see Section 4.7.4, Table 2).
	Insufficient operating hours of the unit.	Increase the system operating time per day.
	Chlorine output percentage set too low.	Increase chlorine production by pressing the output button (see Section 5.4).
	Recent increases in weather temperature without increasing the chlorine production of your unit.	Increase chlorine production by pressing the output button (see Section 5.4).
	Temporary loss of chlorine due to heavy organic load - rain, leaves, fertilizer or heavy bather load. Pets using pool.	Set chlorine production to 100% and set the pump and the cell to run for 24 hours. After 24 hours, recheck chlorine levels. If still too low, super chlorinate with alternate source.
	Low (less than 3,500 ppm) salt level in pool water.	Use salinity test strips, a TDS/salinity meter, or another reliable method to test the salinity of the pool water. Once the existing salinity has been established, use Table 1 in section 4.7.4 to determine the amount of salt to add to reach the desired level. Maintain a salinity level of 4,000 ppm - 4,500 ppm.
	High nitrate level.	Contact a pool professional.
	Metals present in pool water.	Contact a pool professional.
	New pool water. Not shocked properly upon startup.	Super chlorinate the pool.
	Clogged or dirty cell.	Remove cell for inspection and clean if necessary (see Section 6.3).

Problem	Possible Cause	Corrective Action
Chlorine level too high.	Chlorine output percentage set too high.	Decrease the chlorine production rate by pressing the output button (see Section 5.4).
	Power pack and cell turned on too long.	If chlorine output is set at the lowest setting and it consistently provides excessive chlorine levels, decrease operation time as much as necessary.

Problem	Possible Cause	Corrective Action
No display on LCD (screen is blank).	No power to unit.	Check the connection to the pump timer (see Section 3.4).

Problem	Possible Cause	Corrective Action
Flow light is on (Display says “No Flow”). Caused by insufficient water flow through the cell. NOTE: When the Flow light is on, the chlorine output will be turned off.	Filter is dirty.	Clean the filter.
	Closed valves.	Check and correct all valve alignments.
	Pump fails to provide sufficient water flow.	Check for correct operation of the pump. Ensure there is no loss of pump prime or clogged strainer baskets.

Problem	Possible Cause	Corrective Action
Salt light is on (Display says “Check Salt”). NOTE: The Salt light will turn on when the salt level drops below 3,000 ppm and it will remain on until the salt level is raised above 3,500 ppm.	Salt level is less than 3,000 ppm, depending on water temperature.	Maintain a salinity level of 4,000 ppm - 4,500 ppm (see Section 4.7 or contact your local pool professional).
	A combination of extremely low water temperature (close to freezing) and low salt level (~3,500 ppm).	Maintain a salinity level of 4,000 ppm - 4,500 ppm (see Section 4.7 or contact your local pool professional).
	Cell life expired.	Replace the cell.

Problem	Possible Cause	Corrective Action
“Output Fault” appears on the screen.	Power supply.	Turn the power off to the power pack and consult your local pool care professional.

Problem	Possible Cause	Corrective Action
Salt level too high.	Too much salt has been added to pool.	Backwash or partially drain pool and dilute with fresh water until salinity returns to 4,000 ppm - 4,500 ppm.

Problem	Possible Cause	Corrective Action
Salt level too low.	Not enough salt added to pool.	Add salt to pool until salinity returns to 4,000 ppm - 4,500 ppm (see Section 4.7.4).
	Heavy rainfall diluted the pool water.	Add salt to pool, until salinity returns to 4,000 ppm - 4,500 ppm (see Section 4.7.4).
	Leak in pool.	Repair pool.

Problem	Possible Cause	Corrective Action
Chlorine odor.	Presence of excess chloramines (combined chlorine).	Manually shock the pool (see Section 4.4).

Problem	Possible Cause	Corrective Action
Cloudy water, slimy walls of pool.	Combined algae and bacteria growth.	Brush down the affected walls and then manually shock the pool (see Section 4.4).

Problem	Possible Cause	Corrective Action
Eye and/or skin irritation.	Improper water balance.	Balance the water to recommended levels in Section 4.5.

Problem	Possible Cause	Corrective Action
Scale formation on pool equipment. NOTE: To clean the deposit (scale) on the cell (see Section 6.3).	Incorrect pH causing minerals to come out of solution.	Adjust total alkalinity to 80 - 120 ppm. Then adjust pH to within the range 7.4 - 7.6 (see Section 4.5).
	High calcium hardness.	Dilute pool with fresh water. Consult your pool professional regarding use of a sequestering agent.

Section 8. Replacement Parts and Exploded Views

8.1 Parts List

Key No.	Description	Order Part No.
Cell		
1	R-Kit, Terminal Cap, APURE Ei	R0511200
2*	R-Kit, Locking Ring	R0511300
3*	R-Kit, Electrode, APURE Ei 35	R0511500
4*	R-Kit, O-Ring, Electrode Housing	R0511600
5*	R-Kit, Saddle Clamp Assy, APURE Ei	R0511700
Power Pack		
6	R-Kit, Power PCB Assy, APURE 35	R0512200
7**	R-Kit, Control PCB Assy, APURE Ei	R0512300
8**	R-Kit, Cover Assy, Controller, APURE Ei	R0512400
9	R-Kit, Output Cable Assy, APURE Ei	R0512500
10	R-Kit, Screws, PCB Mounting, APURE Ei	R0512800
11	R-Kit, Screws, Cover, Power Supply, APURE Ei	R0512900
Miscellaneous		
12	R-Kit Locking Ring Tool	R0512600
13*	R-Kit, Winterizing Kit	R0512700

* Replacement o-ring supplied in this kit

** Screws are supplied in this kit

8.2 Exploded Views

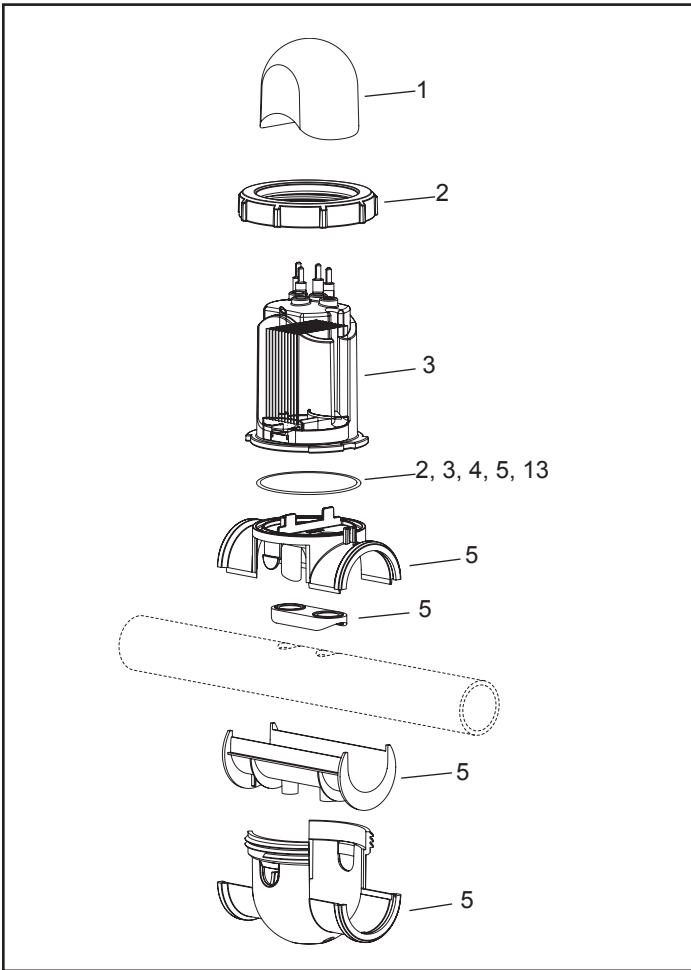


Figure 29. Cell Exploded View

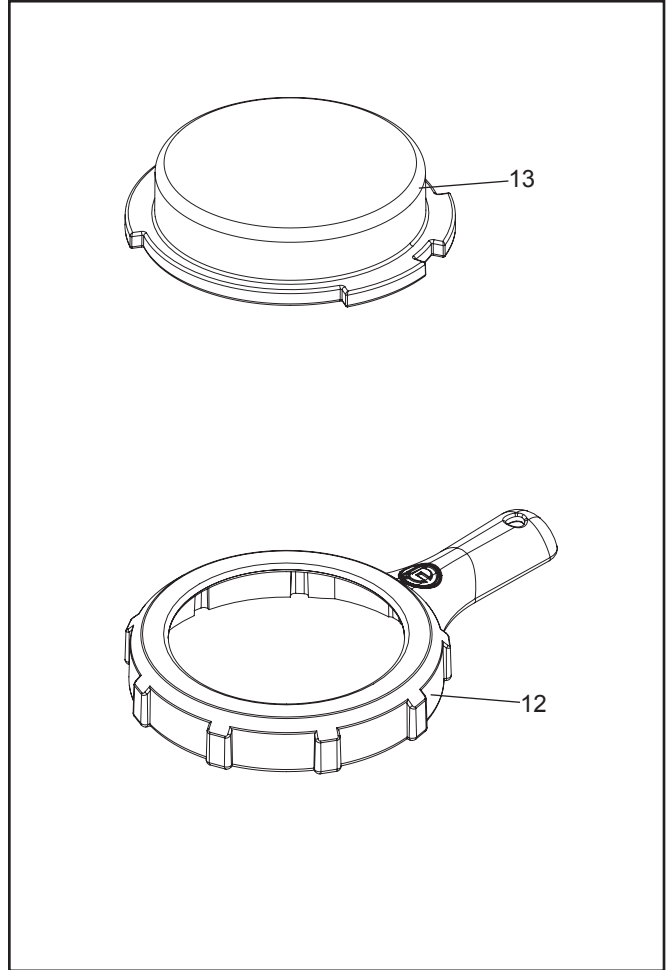


Figure 30. Winterizing Cap and Locking Ring Tool

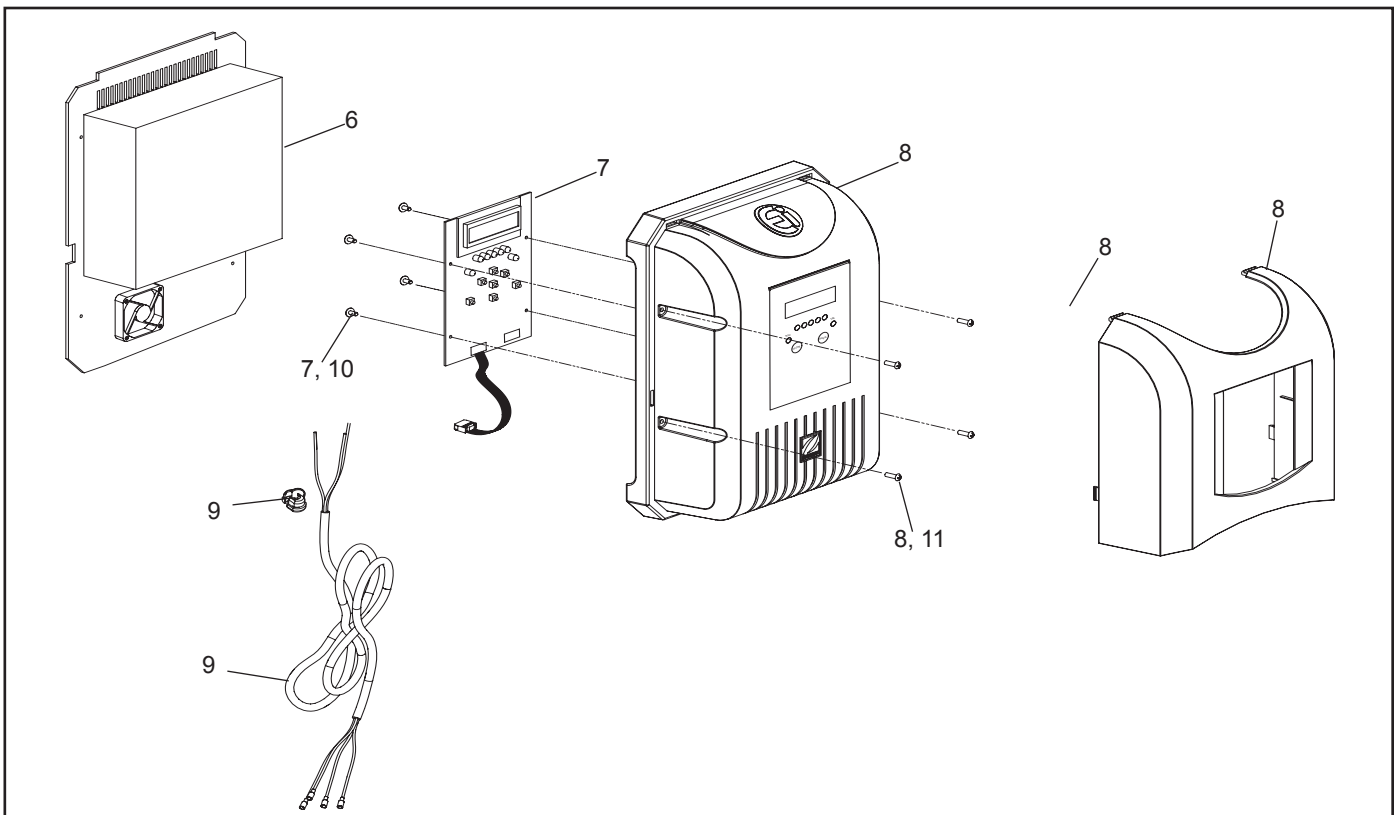


Figure 31. Power Pack Exploded View

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