



# Sunshine Pool Products, LLC

*Manufacturer of Quality Pool & Spa Products*

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## PURITY INSTALLATION INSTRUCTIONS MODEL P40ID

Thank you for purchasing PURITY combination chlorine generator and ionizer. Carefully and completely read these instructions before installing.

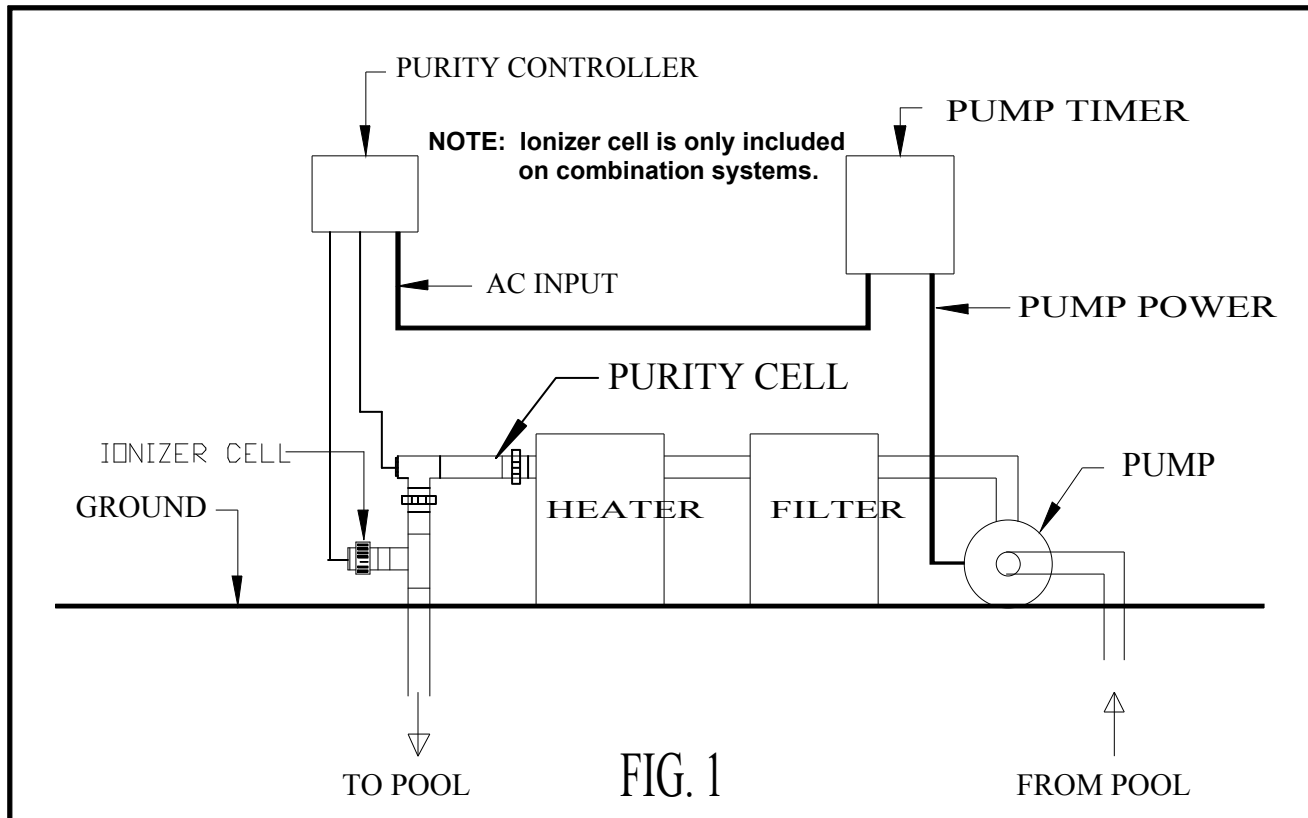
1. Before installing PURITY the pool should be clean, pH balanced, stabilized (cyanuric acid) at 60 to 80 ppm, free of algae, the filter cleaned, and then shock the pool with chlorine to 5 ppm. Failure to add the stabilizer will allow the sun to destroy the chlorine as fast as it is produced and you will not be able to maintain your chlorine level. Do not proceed until you have added the proper stabilizer level to your pool. You can purchase chlorine stabilizer (cyanuric acid) and a test kit at your local pool dealer. Your stabilizer level will only need increased once or twice a year as it is diluted due to water replacement.
2. Turn off the power to the pool equipment.
3. Install the cells on the return side of the filter, or after the heater if your pool has one. Install the cells so that water flows through the PURITY cell first, if possible. See FIG. 1. The PURITY cell can be installed on a horizontal or vertical pipe in any position or with water flowing in either direction in place of an elbow fitting. See FIG. 2. The ionizer electrodes can be installed in any position except above the pipe. See FIG. 3. If your plumbing is 1 1/2" and you ordered your system for 1 1/2" pipe, you will be supplied with reducing bushings for the ionizer cell. Glue the 1 1/2" x 2" bushings into the ionizer tee using PVC glue if your existing pipe is 1 1/2". Do not use the bushings if your existing pipe is 2" PVC. Glue the tees in place using PVC glue. If you are not sure how to install the cells you should have a swimming pool contractor do it for you.
4. Mount the controller on a wall or vertical surface where the wires will reach the cells. See FIG. 1. It is best to install the controller where it is protected from the sun and weather. To mount the control box, remove the cover and insert the 2 mounting screws into the slots on diagonal corners and fasten to the vertical surface.
5. The controller AC power should be connected so it is on only when circulating pump is running. It is auto sensing and can be connected to either 120 or 240 volts AC. If you cut the plug off the power cord, the AC power is connected to the power cord as follows: the black wire is the hot wire; the white wire is the neutral wire if 120 volts, or the other hot if 240 volt; the green wire is the ground. A licensed electrician should perform the wiring if you are not sure how to wire the AC power.

See Drawing on Next Page

# Sunshine Pool Products

## PURITY POOL DRAWING

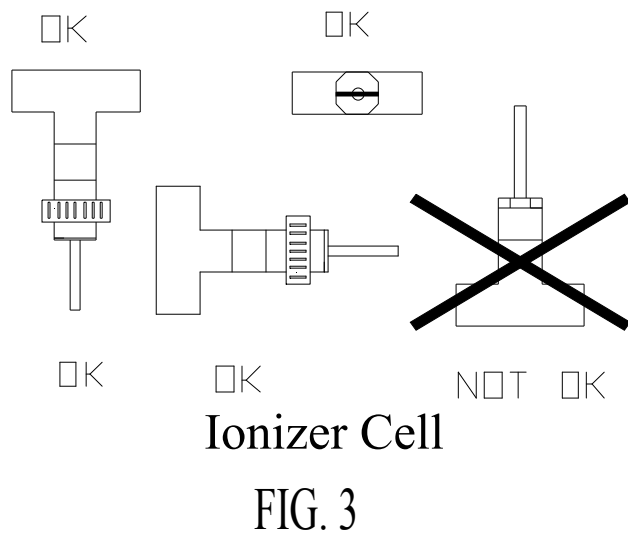
### Automatic Pool Purification Sysyem



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PURITY CELL

FIG. 2



## **PURITY OPERATION**

1. Turn on the power to the pool equipment.
2. Turn on the pool filter pump. Turn on the 24-hour circulating pump if you have one.
3. Turn the PURITY Control and Ionizer Control to MAX. See the PURITY label for indicator light operation of LIGHT will change colors from green to red equally every 2 hours, which indicates the cleaning circuit is operating properly. The IONIZER OUTPUT LIGHT will change colors from green to red equally every 5 minutes, which indicates the cleaning circuit is operating properly. The IONIZER CURRENT will increase as the control is turned towards MAX. If the ionizer level is near the normal range the control should be adjusted for 2 or 3 flashes for most pools. Turn to MAX if the copper level is low. Turn down if the copper level is high. If connected to the pool timer it should be set to run a minimum of 4 hours each time it comes on so the cleaning cycle has time to operate properly.
4. Test the salt level with the salt test kit. The older your pool is the less salt you will probably need to add. On a pool with a salt level below 500 ppm you will need to add about 200 lbs. of salt per 10,000 gallons of water. Use 40 lb. bags of fine grain, untreated, salt. You can purchase this salt from your local pool dealer. You can use rock salt (water softener salt) if you are unable to find fine grain salt, but it will take longer to dissolve. Make sure any salt used is at least 99.5% salt with NO additives. Be careful not to add too much salt, because if you do you will have to remove some of your pool water and add fresh water to dilute the water. Before adding salt to the pool turn on the pump and turn off the PURITY controller and leave it off until all the salt is dissolved. Add salt by pouring it directly into the pool, or by pouring it slowly into the skimmer while the pump is running. When you have added the proper amount of salt (3,000 ppm) the LOW OUTPUT light will go out. If you add too much salt the HIGH OUTPUT light will come on or the OVER CURRENT light will come on. When the OVER CURRENT light comes on the output will turn off for 1 minute. After 1 minute the output will come on and if the current is still high the output will turn off again for 1 minute. Do not operate PURITY with the HIGH OUTPUT OR OVER CURRENT light on. Now you may be able to see a stream of tiny bubbles coming from the electrodes, so you know you are generating your own chlorine. Run the pump for 24 hours to ensure that the salt is properly dissolved.
5. Add the Instant Ions to your pool according to the instructions on the bottle. Maintain .3 ppm of copper by adjusting the Ionizer control. If the copper level reaches .5ppm turn Ionizer control to MIN. Test copper level about once a week. When copper level is at .3 ppm the chlorine level can be maintained at .2 ppm.
6. Monitor the chlorine level and adjust the OUTPUT CONTROL to maintain the proper chlorine level. Wait at least 24 hours between adjustments. Once every 3 months check the stabilizer level. Keep the stabilizer level between 60 and 80 ppm. If algae are ever present in the pool shock the pool with chlorine to 5 to 10 ppm and maintain 3 ppm of chlorine until all algae are gone.
7. Occasionally visually inspect the PURITY electrodes for calcium build up by looking through the see through cell. Using a flashlight will make it easier to see the electrodes in low light. Check the pH weekly and maintain the pH between 7.2 and 7.6. Keep some liquid Hydrochloric or Muriatic Acid on hand to lower the pH as the chlorine produced has a high pH and you will need to lower it occasionally.
8. The electrodes should stay clean, but if the electrode should clog with white calcium build up the cell must be cleaned chemically. To clean the cell, turn off the power to the pump and PURITY controller. Add 1 part hydrochloric (muriatic) acid to 5 parts water in a covered container. Remove the electrodes and place the electrode cell in the solution for about five minutes or until clean. Rinse with water when clean. Do not try to clean the electrodes with a brush or any other object. Reinstall the cell. If you use a container with a tight lid you can store the cleaning solution and use it many times.
9. Now you can relax and enjoy your pool in the nicest, softest, cleanest, safest water you have ever experienced.
10. Keep these instructions in a safe place.

### **Dual Use in a Spa or Hot Tub**

PURITY cannot be used for a spa. The maximum temperature is 95 degrees F.

### **Winter Operation**

When operating in the winter in mild climates, or in spring or fall in cold climates, when the water is cooler than normal, you can ignore the low output warning light if you haven't changed your salt level. The colder the water the lower the chlorine output will be. Do not operate below 40 degrees F or 5 degrees C.

### **How to Winterize PURITY**

Winterize your pool water and pool equipment. Turn off power to the pool equipment. Loosen the cell unions and drain all the water from the cells. Clean the electrodes if needed according to above instructions. Tighten the cells before operating pool equipment.

IF YOU HAVE ANY PROBLEMS OR QUESTIONS, PLEASE FEEL FREE TO CONTACT US!

## **PURITY TROUBLESHOOTING GUIDE**

**Please read this guide before calling your dealer or the manufacturer.**

<b>PROBLEM</b>	<b>CAUSE</b>	<b>SOLUTION</b>
1. Low Chlorine Level	Output Control setting to low  Insufficient Pump Run Time  Low Salt Level  Electrodes Need Cleaned  Worn Out Electrodes  Equipment Failure	Increase Output Control setting  Pump should run 24 hours every day.  Check salt level and add salt if below 3,000 ppm.  Clean electrodes according to cleaning instructions under OPERATION.  Check electrodes for wear or damage. If the salt level is correct and water temperature is above 70 degrees the low current light should not come on. Check CELL POWER light. It should be on when output is set at MAX.  Contact Dealer for repair.
2. High Chlorine level	Output Control setting to high	Set control to a lower setting until chlorine level is below .5 ppm.
3. Cloudy Water	Insufficient Chlorine Level  Insufficient pump run time  Dirty filter	Shock water with chlorine and test for at least 5 ppm after 30 minutes. Shock with chlorine if ever the water just begins to cloud.  Circulating Pump should run at least 8 hours every day.  Check and clean filter

PROBLEM	CAUSE	SOLUTION
4. Algae in water or on pool surfaces	Low Chlorine level	Shock water with chlorine and test for at least 5 ppm after 30 minutes. Treat daily until all algae are gone. Treat water with non-copper algaecide, and shock water with chlorine daily until all algae are gone.
5. Controller Shuts Off as soon as power is turned on.	Shorted Electrodes	Clean and check electrodes for a short. If problem is not corrected, disconnect electrode wires from controller and test controller.
	Controller Failure	Contact Dealer for repair
6. POWER light not illuminated	No AC power	Check incoming AC power
	Shorted Electrodes	Clean and check electrodes for a short
	Controller Failure	Contact Dealer for repair
7. CELL POWER light not on	Controller is in an off cycle	This is normal. Set control to MAX and light should come on.
	Cannot see light in direct sunlight	Check in low light
8. Scale Build-up on Electrodes	Electrodes need cleaning	If there is a scale build-up between the electrodes, then clean electrodes according to instructions under OPERATION.
9. High pH	pH too high	Add acid to lower pH. The pH should always be tested weekly and maintained at 7.2 to 7.6
10. Low Output Light is On	Low Salt Level	Check salt level and add salt if below 3,000 ppm.
	Low Water Temperature	Low water temperature below 70 degrees F may cause low output. The output decreases with lower water temperature.
	Electrodes Need Cleaned	Clean electrodes according to cleaning instructions under OPERATION.
	Worn Out Electrodes	Check electrodes for wear or damage. Check CELL POWER light. It should be on when output is set at MAX.
	Equipment Failure	Contact Dealer for repair.
11. High Output Light is On	High Salt Level	Check salt level. If above 3,000 ppm remove some pool water and add fresh water.
	High water temperature.	High water temperature above 90 F may cause high output. The output increases with higher water temperature.

**Do not call your PURITY Dealer or Sunshine Pool Products with pool chemistry problems.**

## IONIZER TROUBLESHOOTING GUIDE

**Please read this guide before calling your dealer or the manufacturer.**

<b>PROBLEM</b>	<b>CAUSE</b>	<b>SOLUTION</b>
1. Low Copper Level	Output Control setting to low Insufficient pump run time Worn Out Electrodes Low Chlorine Level Algae Present in Pool Water	Increase Output Control setting Pump should run at least 8 hours every day Check electrodes for wear. If they have worn to small stubs, they need replaced. Shock pool water with chlorine to 3 ppm Add a non-copper algaecide and shock pool water with chlorine,
2. High copper level	Output Control setting to high	Set control to MIN until copper level is below .3 ppm. This may take a few weeks.
3. Cloudy Water	Insufficient pump run time Dirty filter Low Copper level Low Chlorine Level	Pump should run at least 8 hours every day Check and clean filter See # 1 See # 1 in above section
4. Blue or copper colored stains on pool surface  Note: With proper operation and proper pool chemistry your ionizer will not stain your pool.	Copper level to high  pH to high  Improper application of granular chlorine  Other high mineral levels in water such as iron	Set control to MIN until copper level is below .3 ppm. This may take a few weeks.  Add acid to lower pH. The pH should always be tested weekly and maintained at 7.2 to 7.6  Granular chlorine should be pre-dissolved before adding to pool water. Never use Calcium Hypo chlorite as it adds scale and hardens to water.  See # 5
5. Black or brown stains on pool surface	Other high mineral levels in water such as iron	Treat water with a stain remover such as Staintrine. Your ionizer will need to be turned off for at least a week and the ionizer level started again.

**Do not call your Dealer or Sunshine Pool Products with pool chemistry problem**

## **PURITY LIFETIME LIMITED WARRANTY**

Sunshine Pool Products, LLC warrants PURITY for life from date of purchase with the following limitations. Parts are fully covered for one year. Parts are covered at 50% off of suggested retail for year two. Parts are covered at 20% off of suggested retail for all years after year two. For warranty service return PURITY with a copy of your sales receipt, transportation prepaid, to the dealer you purchased it from, if available, or to Sunshine Pool Products, LLC.

### **Warranty Exclusions**

This warranty does not apply to damage resulting from tampering, accident, abuse, negligence, fire, flood, freezing, lightning, improper operation, maintenance, or storage. This warranty does not apply to normal wear to any ionizer electrodes, which are designed to erode over time.

### **Total Obligations**

The forgoing constitutes the entire liability of Sunshine Pool Products to the original purchaser of PURITY. Sunshine Pool Products makes no other warranty of any kind, whatsoever, expressed or implied. In no event will Sunshine Pool Products be liable to the owner for direct, indirect, incidental or consequential loss, damage or, economic injury to any person or property arising out of or relating to the use of PURITY except as expressly set forth herein.

This warranty gives you specific legal rights and you may also have other rights, which vary from state to state.