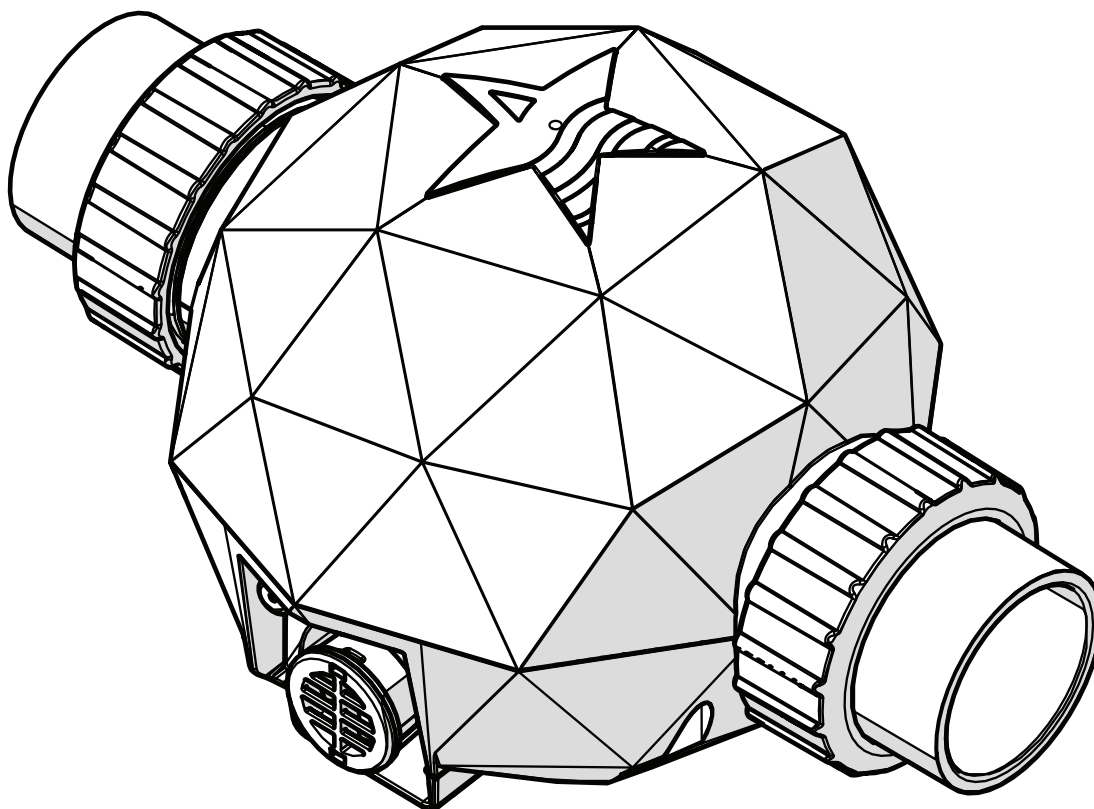




PURESTAR

CORONA DISCHARGE OZONE GENERATION SYSTEM



INSTALLATION AND USER'S GUIDE

MODEL # PS10

FOR YOUR SAFETY

Read, understand and follow all warning notices and instructions before installing, using, or servicing this system. Failure to follow warning notices and instructions may result in property damage, serious injury, or death.

SAVE THESE INSTRUCTIONS

PLEASE READ, FOLLOW, AND SAVE THESE INSTRUCTIONS!

Attention Installer: Read this manual completely before attempting installation. Failure to follow these instructions could result in injury or death and will void the product warranty. Consult AquaStar Pool Products with any question regarding this product. This guide must be left with the pool owner.

Attention User: This guide contains important information about the installation, operation and safe use of this product. Please retain this guide for future reference.

⚠ DANGER FAILURE TO FOLLOW ALL INSTRUCTIONS AND WARNINGS CAN RESULT IN SERIOUS BODILY INJURY OR DEATH. **THIS OZONE SYSTEM SHOULD BE INSTALLED AND SERVICED ONLY BY A QUALIFIED POOL PROFESSIONAL.**

⚠ WARNING **DO NOT INHALE OZONE GAS PRODUCED BY THIS PRODUCT.** Short-term inhalation of high concentrations of ozone and long-term inhalation of low concentrations of ozone can cause serious harmful physiological effects. The ozone system must be installed in outdoor locations only, or indoor locations with forced air ventilation in accordance with ASHRAE Standard 62.1 2013, Ventilation for Acceptable Indoor Air Quality, and/or applicable local codes.

IMPORTANT SAFETY INSTRUCTION! PLEASE READ PRIOR TO INSTALLATION AND OPERATION!

⚠ WARNING The installation and operation of this ozone system can only be carried out after reading and understanding the information contained in this guide. The installation must be performed in accordance with all federal, state and local regulations and codes.

⚠ WARNING **This product must be wired in conjunction with a properly grounded, Ground Fault Circuit Interrupter (GFCI).** Only use supplied 12VDC outdoor rated power supply to connect this product. Mount power supply at least 12" off the ground. If an extension cord is necessary, a cord with a proper outdoor rating must be used. Locate the cord so that it will not be tripped over or pulled. If in doubt consult a qualified electrician.

⚠ DANGER ELECTRIC SHOCK HAZARD! DO NOT OPEN ENCLOSURE OR SERVICE INTERNAL PARTS.

⚠ DANGER Do not store or use gasoline, chemicals or other flammable liquids or vapors near this or any other appliance. Do not permit children to use this product.

⚠ WARNING HIGH VOLTAGE. DO NOT OPEN. NO SERVICEABLE PARTS INSIDE.

⚠ WARNING OZONE GENERATOR. For outdoor water use only.

INSTALLATION REQUIREMENTS:

- Read, understand and follow all instructions before use.
- Connect the included power supply to a covered Class A GFCI outlet rated for outdoor use.
- Install this product at least five feet from the waters edge.
- Install this product at least 12 inches above the ground.
- Install this product with the flow direction arrows pointing in the direction of water flow.
- DO NOT INSTALL BACKWARDS.
- For use with outdoor swimming pools and spas only.
- For vinyl-lined and covered pools, installing a degas chamber is required. Additionally, using a degas chamber can reduce visible bubbles.

This product is intended to enhance the primary sanitizer and improve the water quality of residential swimming pools, spas, and their related water features. Only use in conjunction with an EPA-registered sanitizer or electrolytic halogen generator.

SECTION 1. Overview

Description

Welcome to the AquaStar PureStar Ozone System. This revolutionary system transforms both pool maintenance and the swimming experience, offering a new level of ease and effectiveness. With a streamlined installation process requiring less than 18 inches of plumbing, PureStar eliminates the need for additional plumbing or bypass systems.

The vacuum-controlled smart activation ensures efficient ozone dispersion whenever the pool pump is in operation, while the advanced self-cleaning mechanism tackles calcium build-up, setting a new standard for system longevity and functionality.

Operating with a negligible increase in system pressure, it's an environmentally friendly solution suitable for pools up to 40,000 gallons. The system is engineered to generate ozone, which is then auto-injected into the water by a venturi injector optimized for hydraulic efficiency. This allows for effective operation even at lower pump speeds, providing a more energy-efficient solution. Please note, all ozone units must be used in conjunction with a registered EPA sanitizer.

Experience a transformation in pool care and enjoyment with the AquaStar PureStar Ozone System.

Specifications

POWER SUPPLY SPECIFICATIONS:

Input: 120 V ~ 50/60Hz, 0.5 A max.

Output: 12.0 VDC, 1.5 A max.

- Operational Flow Rate Range: 1 to 83 GPM
- Maximum Pressure: 40 PSI
- Maximum Ozone: 1 g/hr

Contents:

- PureStar Ozone Generator
- 2" and 2½" Unions, Nuts, and O-Rings, Qty 2
- Blank Pipe (Start-up / Winterizing)
- Water Resistant 12V Power Supply and 8 Foot Power Cord (Standard Electrical Plug, No Wiring Required)
- Instructions

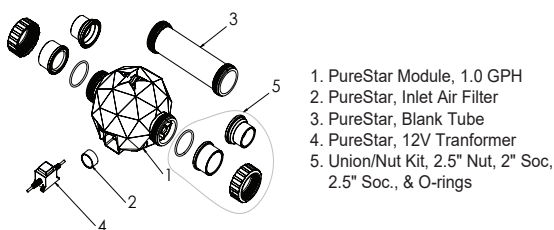
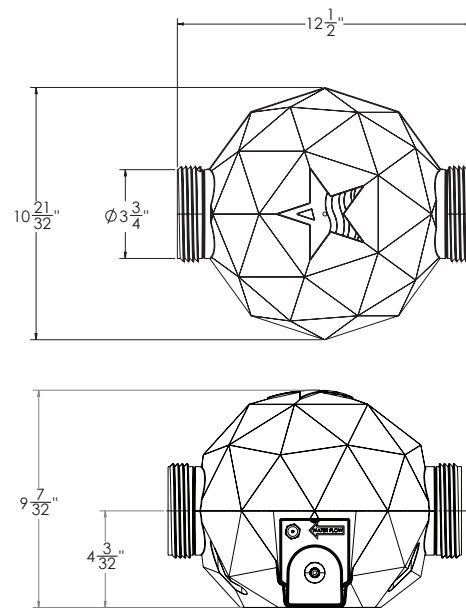


Figure 1 Front and Side View



SECTION 2. Installation

Location

The PureStar ozone unit should be installed at the equipment pad, after any heater and filter. If there is no heater, it should be installed after the filter (refer to Figure 2 and 3). It is important to choose a clean, covered outdoor area for installation, preferably indoors or in a location that is out of direct sunlight. This will ensure optimal performance of the unit.

When installing the unit, be sure to position the generator at least 12 inches off the ground, away from sprinklers or drainage spouts, while still allowing for easy access for maintenance. The unit requires at least 17 inches of straight plumbing for installation, and no bypass plumbing is needed.

To ensure proper function, the unit must be installed horizontally, with the blue star pointing in the direction of flow. Vertical installations are not recommended.

Figure 2 - Typical Installation with Heater

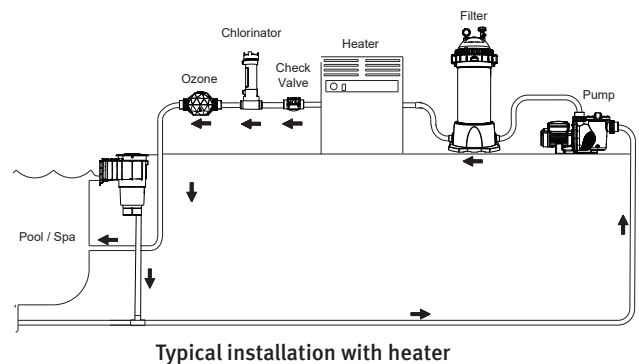
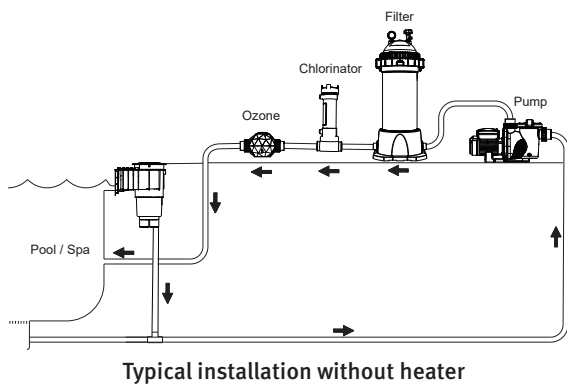


Figure 3 - Typical installation without Heater



Plumbing Connections

The PureStar system comes equipped with 2" and 2 1/2" PVC union connections. When lubricating these connections, use only a silicone-based lubricant on the provided O-rings. Avoid using petroleum jelly, pipe joint compound, glue, or solvents.

WARNING Ensure the power to the pool pump is turned off at the circuit breaker before starting any work.

Connect the recirculating system piping to the unions:

1. Turn off the power to the pool pump at the circuit breaker.
2. Release the pressure in the plumbing system by opening the air relief valve on the filtration system.
3. For 2 inch recirculation system piping, cut a 14 21/32" gap into a straight run of pipe that is at least 17" long (refer to the Installation Location section for more details). For 2 1/2 inch piping, cut a 13 5/32" gap
4. Clean both ends of the cut pipe thoroughly.
5. Slide a Union Nut over each end of the cut pipe, with the threads facing the cut ends.
6. Using PVC Primer & Glue, attach the included unions to each end of the pipe according to the manufacturer's recommendations. Test the spacing with the included "PureStar Blank Tube."

Note: For new installations the "PureStar Blank Tube" can be used to ensure union spacing is set correctly.

System Flush & Leak Test

WARNING DO NOT install PureStar until the system has been flushed and leak tested. Debris from installation process could damage unit.

1. Install the included O-Rings into the grooves on the sealing face of the unions. These O-Rings come pre-lubricated.
2. Place the "PureStar Blank Tube" between the unions and hand tighten the union nuts.

3. Close the air relief valve and turn on the power to the pool pump at the circuit breaker.
4. Run the pool pump at full speed for at least 5 minutes to flush out any remaining debris from the installation process.
5. Check the plumbing glue joints and union connections for water leaks. If any leaks are found, repair or replace the necessary components.

PureStar Module Installation

To install the PureStar module, follow these steps:

1. Turn off the power to the pool pump at the circuit breaker.
2. Release the pressure in the plumbing system by opening the air relief valve on the filtration system
3. Loosen the union nuts and remove the "PureStar Blank Tube."
4. Carefully slide the "PureStar Module" between the union fittings, being careful not to remove or damage the O-rings. Hand tighten the union nuts.
5. Make sure that the flow arrows on the side of the unit are aligned with the flow direction of the recirculation system.
6. Close the air relief valve and turn on the power to the pool pump at the circuit breaker.
7. Plug the power supply into a 120 V GFCI protected outlet, and mount it at least 12 inches off the ground. The unit should light up in a steady on state.

Initial System Start-Up

After completing the installation procedures, it is important to determine the optimal run conditions for your pool pump and PureStar system. If you have a single speed pump, you can skip this step as you only have one pump run speed. Variable speed pumps can save energy by operating at a slower, more efficient speed for longer periods of time. The PureStar system was designed to work at a range of flow conditions for optimal energy efficiency.

To determine the optimal pool pump speed:

1. Set the recirculation system valve to normal pool filtration mode.
2. Start the pool pump at full speed and let the system run for at least 5 minutes.
3. Observe the light pattern on the top of the unit. If the flow conditions are within the PureStar's normal operating range, the light will pulse slowly from on to off, indicating that ozone gas is flowing into the water path. If the light is steady on, then the PureStar system will not work at this full speed condition. Record this information in the Full Speed row of the Operation Log, on page 6.

- If the PureStar does not operate at full speed, reduce the speed by 100 RPM at a time and wait 60 seconds for the system to stabilize. Continue to do this until you find the highest speed that the PureStar will operate. Record this speed in the High Operation row of the Operation Log below.
- Reduce the pump to the lowest speed setting and let it run for 5 minutes.
- Check the light pattern again at this low speed and record this speed in the Low Speed row of the Operation Log below.
- If the PureStar does not operate at this lowest speed, increase the speed by 100 RPM at a time and wait 60 seconds for the system to stabilize. Continue to do this until you find the lowest speed that the PureStar will operate. Record this speed in the Low Operation row of the Operation Log below.

Operation Log

Pump Speed		Functional (Light Pulse)
State	RPM	Yes/No
Full Speed		
High Operation		
Low Speed		
Low Operation		

- Use the above table to set your pool filtration schedule within the PureStar's operational speed range.

Normal Operation

If properly configured, the PureStar system will inject ozone gas into the return line of the recirculation plumbing during normal filtration operation. You can determine if ozone gas is flowing into the water path by observing the light on the top of the PureStar unit. If the light is pulsing slowly, it indicates that ozone gas is being injected. If the light is steady on, it means that the system is not producing ozone and the flow conditions need to be adjusted. If the light is flashing, consult the troubleshooting table to look up the error code.

During normal operation, it is normal to see small bubbles exiting the returns. These bubbles may contain a small residual amount of ozone gas at low concentrations.

⚠ WARNING Inhalation of high concentrations of ozone and long-term inhalation of low concentration of ozone can cause serious harmful physiological effects.

Water Chemistry

It is important to regularly test for chlorine or bromine to ensure that proper sanitizer residual is present in the pool or

spa. Ozone will be eliminating the majority of contaminants, so only a small amount of sanitizer will be needed to maintain a minimum residual level of 1.0 ppm chlorine or 1.0 ppm bromine. It is also important to maintain the pH between 7.2 and 7.8.

Note: The U.S. EPA has established a maximum chlorine level of 4.0 ppm for re-entry of swimmers into pool or spa water. Additionally, bromine levels should not exceed 8.0 ppm (As Br₂) when bathers are present.

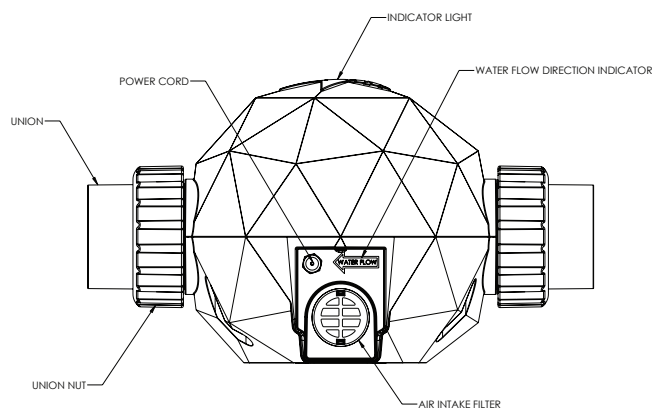
Maintenance

The PureStar is a self cleaning system and does not require regular maintenance. If the system is not operating properly see the troubleshooting section.

Winterizing

If the pool is located in an area with temperatures that may drop below freezing, it is recommended to remove the PureStar system during the winter months to prevent freeze damage to the unit. To winterize the PureStar system, follow these steps:

- Turn off the power to the pool pump at the circuit breaker.
- Unplug the PureStar from the 120 V GFCI protected outlet.
- Release the pressure in the plumbing system by opening the air relief valve on the filtration system
- Loosen the union nuts and remove the PureStar unit from the plumbing system.
- Place the PureStar unit indoors and out of reach of the elements.
- Install the "Blank Tube" and tighten the union nuts.
- Winterize the pool as you normally would.



Water Flow Direction Indicator, Power Cord, Union, and Air Intake Location

SECTION 3. Troubleshooting

PROBLEM	POSSIBLE CAUSE	CORRECTIVE ACTION
No or low water flow	No power to pump	Check that the power is on at the breaker and that the pump is running.
	PureStar installed backwards	Check the flow direction arrow on the side of the PureStar (next to the power cord). If the arrow is not in the direction of flow, remove the PureStar and reinstall it in the correct direction. Follow the PureStar Module Installation section of these instructions.
	Pump underpowered	If using a small single speed pump, it could be possible that the added flow restriction of the PureStar module is too much for your pump. Have a pool professional inspect your system and determine if a new pump is required.
	Internal obstruction	Remove the PureStar Module and visually inspect the internal water flow path for debris. If obstructions are found, clean and replace the system. Follow the PureStar Module Installation section of these instructions for removal and installation.
Unit will not light up	No power	Check that the power cord is plugged in to a working outlet.
	GFCI tripped	Check that the GFCI outlet is not tripped. Press the "Test" and then "Reset" button on the GFCI to ensure the outlet is functioning properly.
	Power supply disconnection	Check that the power cord is connected to the power supply and that the threaded connection is tight.
Light stays on and will not "Slow Pulse"	Flow conditions are not correct	Follow the steps described in Initial System Start-Up to find a working condition. If no conditions are found, a stronger bypass may be necessary. Contact AquaStar Pool Products Technical Support at (877) 768-2717.
Light continues to "Slow Pulse" after pump has stopped	High internal vacuum	This is a normal condition. The system may continue to add ozone to the water for some time after the pump stops.
	Electrical failure	If the system remains in the "Slow Pulse" state indefinitely after the pump has stopped, an electrical failure has occurred. Contact AquaStar Pool Products Technical Support at (877) 768-2717.

Troubleshooting *continued*

PROBLEM	POSSIBLE CAUSE	CORRECTIVE ACTION
Loud noise during operation	By-pass valve obstruction	Remove the PureStar Module and remove and clean any debris from the bypass valve and spring assembly. Follow the PureStar Module Installation section of these instructions for removal and installation.
	Electric valve failure	If the noise continues after cleaning the bypass valve, it is possible the internal electric valve has failed. Contact AquaStar Pool Products Technical Support at (877) 768-2717.
System only operates at low speeds	System back-pressure too high	If the system only operates at low speeds, the system back-pressure is too high for the bypass spring and a stronger spring may be needed. Contact AquaStar Pool Products Technical Support at (877) 768-2717.
System is leaking water	Weep hole drainage	The PureStar system is designed for outdoor use but is not a fully sealed unit. Water is designed to naturally weep out of the bottom of the unit. This is normal anytime the unit has come in contact with water.
	Weep hole leakage	If the PureStar is draining water from the bottom weep holes but the system has not been in contact with an external water source (e.g., rain, sprinklers, hose, or heavy condensation), then there may be an internal leak. Contact AquaStar Pool Products Technical Support at (877) 768-2717.
	Union seal failure	If the leakage appears to be coming from the unions, remove the PureStar Module, inspect and lubricate the O-rings, and reinstall the module. Refer to "PureStar Module Installation" for instructions on removing and installing the module.
2 Flash Error Code = Voltage low	Power supply failure	Unplug the PureStar from the outlet, wait 30 seconds, and then plug the unit back in. If flashing continues, contact AquaStar Pool Products Technical Support at (877) 768-2717 and report the error code.
3 Flash Error Code = Voltage high	Power supply failure	Unplug the PureStar from the outlet, wait 30 seconds, plug the unit back in. If flashing continues, contact AquaStar Pool Products Technical support at (877) 768-2717 and report error code.

Troubleshooting *continued*

PROBLEM	POSSIBLE CAUSE	CORRECTIVE ACTION
4 Flash Error Code = Valve current low	Valve open circuit	Unplug the PureStar from the outlet, wait 30 seconds, plug the unit back in. If flashing continues, contact AquaStar Pool Products Technical support at (877) 768-2717 and report error code.
5 Flash Error Code = Valve current high	Valve short circuit	Unplug the PureStar from the outlet, wait 30 seconds, plug the unit back in. If flashing continues, contact AquaStar Pool Products Technical support at (877) 768-2717 and report error code.
6 Flash Error Code = CDT current low	CDT open circuit	Unplug the PureStar from the outlet, wait 30 seconds, plug the unit back in. If flashing continues, contact AquaStar Pool Products Technical support at (877) 768-2717 and report error code.
7 Flash Error Code = CDT current high	CDT short circuit	
8 Flash Error Code = Switch error	Vacuum switch error	If the Vacuum Switch senses an edge case flow condition it will attempt to open and then close again. If this happens 10 times in a row the system will 8 Flash Error for 10 minutes and then restart the process. Increase the speed of the pump or reduce the back-pressure. Unplug the PureStar from the outlet, wait 30 seconds, and plug the unit back in to reset the error.
9 Flash Error Code = Controller error	Electrical failure	Unplug the PureStar from the outlet, wait 30 seconds, plug the unit back in. If flashing continues, contact AquaStar Pool Products Technical support at (877) 768-2717 and report error code.
10 Flash Error Code = System overheat	Ambient temperature exceeded working temperature	The system has turned itself off and will monitor the ambient temperature. Once conditions improve the system will restart. If problem persists contact AquaStar Pool Products Technical support at (877) 768-2717 and report error code.

Contact Information

For Technical Assistance:

Call: 877-768-2717

Visit: www.aquastarpoolproducts.com

Email: Info@aquastarpoolproducts.com

LIMITED WARRANTY

AquaStar Pool Products, Inc warrants the PureStar, model PS10, as follows:

Limited Warranty: AquaStar Pool Products, Inc warrants the model PS10 to be free from defects in material and/or workmanship for a period of one (1) year from the original date of installation.

Exceptions that shall result in AquaStar Pool Products, Inc denial of a warranty claim:

1. Damage caused by careless handling, improper repackaging, or shipping damage.
2. Damage due to misapplication, misuse, abuse or failure to operate equipment as specified in the PS10 Installation and User's Guide.
3. Damage caused by failure to install products as specified in the PS10 Installation and User's Guide.
4. Damage due to unauthorized product modifications or alterations, or failure to use AquaStar Pool Products, Inc's original replacement parts.
5. Damage caused by negligence, or failure to properly maintain products as specified in the PS10 Installation and User's Guide.
6. Damage caused by failure to maintain water chemistry in conformity with the standards set forth in the PS10 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 AquaStar.

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 date of installation will be required for all warranty claims. Customer agrees to pay all shipping charges to and from AquaStar Pool Products, Inc.

Warranty Obligations of AquaStar Pool Products, Inc: 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, AquaStar will, at its option, repair or replace such item or part at its own cost and expense. AquaStar's maximum obligation under this warranty is limited to the repair and replacement of the PS10 Kit. AquaStar disclaims all other expressed or implied warranty obligations.

AquaStar is not, however, responsible under this warranty for any cost of shipping or transportation of the equipment or parts thereof to or from AquaStar Pool Products, Inc's Technical Service Department. Also, AquaStar Pool Products, Inc 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 and skimmer in which the PS10 is installed.

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, AQUASTAR POOL PRODUCTS, INC DISCLAIMS ALL OTHER WARRANTIES, WHETHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

In order to obtain the benefits of this warranty, the Customer who made the original retail purchase must contact AquaStar Pool Products, Inc's 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, AquaStar Pool Products, Inc 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 AquaStar Pool Products, Inc's Technical Service Department 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 third party entity has any authority to make any warranties or representations concerning AquaStar Pool Products, Inc or its products. Accordingly, AquaStar Pool Products, Inc 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.

KEEP THIS DOCUMENT. PLEASE RECORD THE DATE OF INSTALLATION AND THE SERVICE PROVIDER'S NAME.

SERVICE PROVIDER'S NAME: _____ PHONE NUMBER: _____ DATE OF INSTALLATION _____

AquaStar Pool Products, Inc - 2340 Palma Dr #104, Ventura, CA 93003- Phone 877-768-2717 - Fax 877-276-7665



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