

ULTIMATE OZONE™

OZONE GENERATION SYSTEM



INSTALLATION AND USER'S GUIDE

MODELS U1000 and U3000 Kit

*IMPORTANT SAFETY INSTRUCTIONS
READ AND FOLLOW ALL INSTRUCTIONS
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 box and ozone stone must be installed in outdoor locations only, or indoor locations with forced air ventilated rooms and indoor pool and spas areas must be ventilated 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, operation and servicing 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 three (3) wire grounded cord suitable for outdoor use should be used to connect this product. For outdoor use, a suitable watertight cord connector must be used. 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.

⚠ WARNING Receptacles that provide power for this product must be located at least 10 feet (3.0 meters) from the inside wall of the pool or spa. The ozone unit box must be installed at least 5 feet (1.5 meters) from the inside wall of the pool or spa and no less than one foot above overflow water level to prevent water from contacting electrical equipment.

⚠ DANGER **ELECTRIC SHOCK HAZARD!** Disconnect from power source before opening the ozone system box for any reason. Failure to do so can result in serious injury or death.

⚠ DANGER Never attempt any servicing while unit is wet. 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.

ONLY use ozone compatible tubing and ozone stone. Never replace with metal tubing.

SECTION 1. Overview

Description

The Ultimate Ozone™ system is like no other ozone injection system on the market. Our easy to install design delivers ozone through our unique ozone compatible FlowStar® skimmer.

Unlike other ozone systems, which rely on return side venturi type injection systems, the Ultimate Ozone™ system injects ozone through a diffuser stone located in the skimmer. The ozonated water is drawn through the skimmer by the pump. As it moves towards the filtration system it oxidizes contaminants, often changing the structure of organic materials, which makes it easier for the contaminants to be removed from the water by the filtration system.

Ozone systems that rely on return side injection systems return restructured contaminants back into the pool, can permanently increase operating costs, and may be ineffective with low settings on variable speed pumps. Our suction side self-injection system is the solution.

Crystal clear water is now easy to deliver with the Ultimate Ozone™ system.

Specifications

Power Requirements:

U1000 110/120 volts, .28 amps

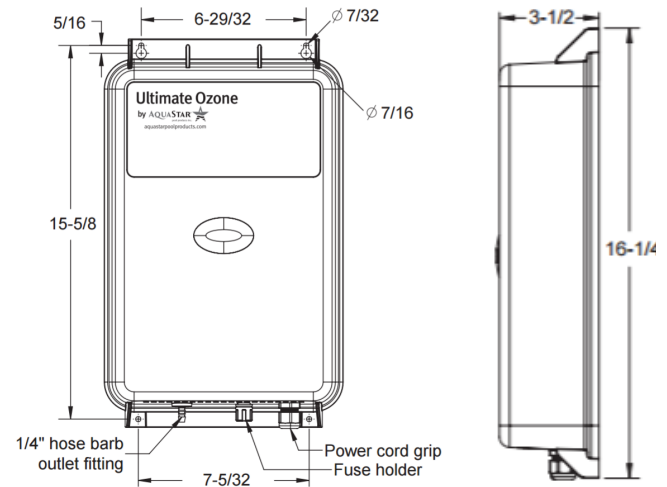
U3000 Kit Includes:

U1000 - Corona Discharge Pump, 1 unit
 AWN - Acid Collector, 1 unit
 OZG4017 - Ozone Diffuser Stone, 1 unit
 OZG4016 - Ozone Compatible 1/4" Tubing, 100 ft

SKR1xx-OZ Kit Includes:

JBRxxx - Junction Box with Round Lid
 JBSxxx - Junction Box with Square Lid
 BPxxx - Bubble Plate Fitting
 35xx - Flush Mount Fitting (Fits over 2")

Figure 1.2 Front and Side View



Limited Warranty:

Aquastar Pool Products Inc. offers a one-year limited warranty on the Ultimate Ozone™. See warranty section for details and limitations.

SECTION 2. Installation

Location

Ultimate Ozone™ units are designed for wall mounting. Mount the unit in a clean, protected area, either indoors or outdoors (preferably out of direct sunlight). Locate generator out of reach of sprinklers or drainage spouts. Allow sufficient access for maintenance, tubing, and electrical wires. Install the Ultimate Ozone™ at least (not less than) one foot above the overflow water level of the pool or spa where the ozone skimmer is located.

Wall Mounting

1. Locate the four mounting holes on the top and bottom of the back panel, two large holes near the top on the left and right corners and two smaller holes located respectively on the bottom. Refer to *Figure 1.2* for clarification.
2. Install screws through the mounting holes. Secure the two bottom screws last. Mounting hardware head must not be smaller than 0.25 inches (6.3 mm) in diameter and the threads of the hardware must be smaller than 0.25 inches (6.3 mm) in diameter.

Figure 2.1 Overview of System

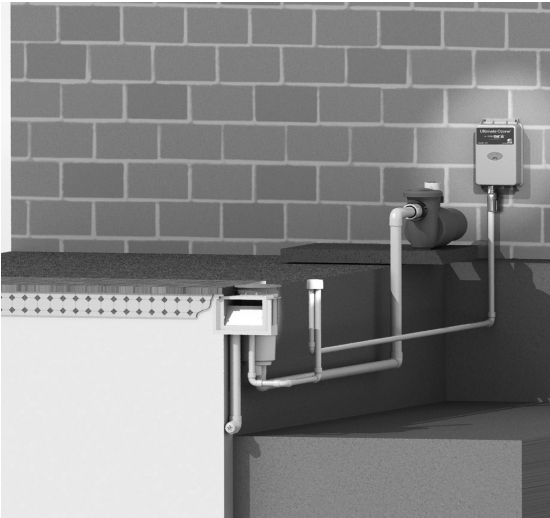
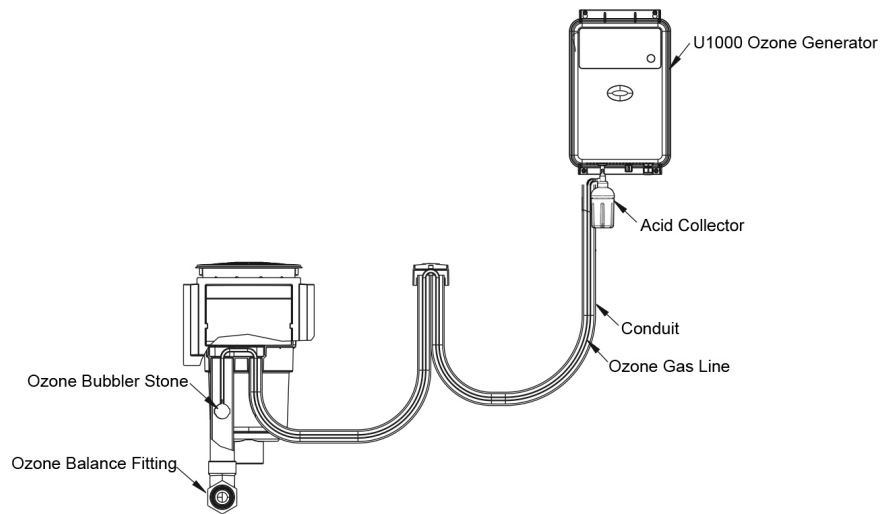


Figure 2.2 Front View of System



General System Overview and Installation

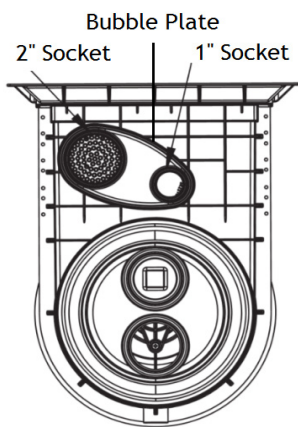


Figure 2.3
Skimmer Ozone Ports

The Ultimate Ozone™ system uses an air pump to move air through a corona discharge ozone generator. Our model U1000 is capable of outputting 1 gram per hour of ozone which is suitable for treating up to 40,000 gallon pools.

Ozone is moved into the pool/spa through compatible 1/4" tubing that is to be connected to the 1/4" Hose Barb Outlet Fitting on the bottom of the U1000, the tubing connects to an Acid Collector (Model # AWN), then fed through conduit into an optional junction box, the conduit connects to a FlowStar™ Ozone Compatible Skimmer (Model # SKR1xx-OZ) (See Figure 2.2)

Mount the Ultimate Ozone generator on the wall and then mount the Acid Collector so that the center line of the screws holes on the upper housing are a minimum of 6" below the U1000 Ultimate Ozone generator and that the inlet barb on the Acid Collector aligned vertically below the outlet barb on the generator. Measure the distance between both barbs and cut a piece of the ozone compatible tubing (included with Model # U3000) so that the hose fits completely on each barb and that it fits in between the two units without any kinks in the tubing.

The ozone compatible tubing should be connected to the outlet barb of the Acid collector and be run inside 1" conduit/PVC pipe; sweeps should be used for any 90° turns. A junction box must be installed on the deck to avoid water back-flow (Model #JBRxxx or JBSxxx). Connect the conduit to the 1" port located at the bottom of the junction box. Connect the 1/4" ozone compatible tubing to the 1/4" hose barb located on the bottom of the ozone unit and feed the tubing through the conduit to the junction box.

Another line of conduit should be run from the second 1" socket port located on the bottom of the junction box to the 1" socket port located on the bottom of the Ozone compatible FlowStar™ skimmer's throat. (See Figure 2.3). Remove the bubble plate, by unscrewing the two screws located on either side, from inside the skimmer's throat and feed the ozone compatible tubing from the junction box to the skimmer.

Connect 2" PVC pipe to the 2" socket located on the bottom of the throat of the FlowStar™ skimmer, the PVC pipe must be at least 2'4" below the water line and no greater than 4 feet, See Figure 2.3.

BLOW OUT OZONE TUBE TO CLEAR LINE OF WATER AND DEBRIS BEFORE ATTACHING OZONE DIFFUSER STONE.

Attach the ozone diffuser stone to the ozone compatible tubing and feed the diffuser stone into the 2" pipe (contact chamber). The ozone diffuser stone should rest a minimum of three-quarters of the way down the pipe. Secure the bubble plate back into the throat of the skimmer by fastening both screws.

The contact chamber will allow water in through a return fitting, (included with SKR1xx-OZ) that fits into 2" pipe (35xx and BPxxx). Install the fitting housing so that it is flush with the pool's finish and thread in bubbler plate (BPxxx).

NOTE: THE THREAD IN BUBBLER PLATE IS NOT A SUCTION OUTLET AND DOES NOT NEED TO BE A VGB COMPLIANT DRAIN TO COVER THE OPEN PIPE.

Acid Collector

In areas of high humidity, the ozone generator may create acidic vapors that can condensate into a strong acid inside the Ozone Gas Line to the pool. The Acid Collector (Model # AWN) collects this vapor so it doesn't gather in the Ozone Gas Line. While this mixture is a highly corrosive acid, it harmlessly dissolves into the pool water just like other pH reducers.



WARNING: Strong Acid Burn Hazard!
Failure to follow these instructions can result in severe chemical burns.

Acid Collector Set-up

1. Before using Ultimate Ozone for the first time, install the Acid Collector with the power to the generator turned off. Carefully screw the glass container into housing and tighten. The Acid Collector is now ready for operation.
2. Follow the section below, Disposal of Acid, to dispose of the contents once when it reaches the empty line.

Disposal of Acid

1. Check the Acid Collector level each time you check your water chemistry. When contents reach the empty line, it is time to dispose of the acid.
2. Carefully unscrew the bottle from the top housing, ensuring that the bottle doesn't drop upon release. For extra protection you may choose to put on gloves to protect your hands and skin, butyl rubber, neoprene, and polythene are some of the best skin protectors against acid.
3. Dump the acid water into the pool or spa while being very careful to avoid splashing or spilling. NEVER pour the acid into a small body of water or rinse the bottle when acid is inside.
4. Wait for 15 minutes and check pH chemistry of pool, use pH increaser if needed.
5. Carefully screw the filled container back into housing and tighten. The Acidic Collector is now ready for continued operation.

SECTION 3. Operation

Initial System Start-Up

Upon completing installation you may be ready to begin start-up procedures.

1. Ensure water level is appropriate for normal skimmer operation.
3. Ensure that the 1/4" ozone compatible tubing is connected securely to the 1/4" Hose Barb Outlet Fittings.
3. Turn on circulation pump.
4. Check that the electrical outlet to be used is an approved 120V GFCI outlet. Plug the ozone generator into outlet.
5. Check for normal operation, *see below*.

Normal Operation

Upon plugging in the Ultimate Ozone™ the system will turn on and begin producing ozone. The unit may generate a quiet hum, this is the sound of the air pump operating. Inspect the FlowStar™ ozone compatible skimmer, small bubbles should begin to emerge from the bubble plate located in the throat of the skimmer.

Water Chemistry

Regular chlorine or bromine testing should be performed to assure proper sanitizer residual is present in the pool or spa as normal. Ozone will be eliminating the majority of contaminants. Therefore, only a small amount of sanitizer will need to be added – just enough to maintain a minimum of residual level of 1.0 ppm chlorine or 1.0 ppm bromine. Maintain pH between 7.2 and 7.8.

Note 1: The U.S. EPA has established a maximum chlorine level of 4.0 ppm for re-entry of swimmers into pool or spa water.

Note 2: Bromine shall not exceed 8.0 ppm (As Br₂) when bathers are present.

Maintenance

The Ultimate Ozone™ requires little maintenance. For a properly performing system, ensure that the skimmer basket is regularly checked and kept clean from excess debris. Every month all visual components should be inspected. If anything is found to be damaged it should be replaced.

SECTION 4. Troubleshooting

Knowledge of electrical applications is required for troubleshooting. Contact a certified electrician if you are unsure of your ability to service the equipment.

Improper servicing or opening the Ultimate Ozone™ casing will void warranty.

Symptom: Ozone output has dropped.

No power to the generator module from the power supply:

- a. Unplug unit and check fuse located at the bottom of the Ultimate Ozone™ unit.
- b. Check cables for breaks or loose connections, replace if necessary.

Symptom: No air flow through the generator.

1. Check to see if ozone unit is getting proper power.
2. Air compressor is not operating properly.
 - a. Listen for the slight hum of the air compressor.
 - b. Check all tubing connections from the air compressor through the system for leaks.
3. Ozone compatible tubing damaged.
 - a. Check tubing for blockage, kinks, or leaks.

Symptom: Large bubbles are coming from skimmer bubble plate.

1. Ozone diffuser stone is worn, damaged, missing or disconnected.
 - a. Replace Ozone diffuser stone, part #OZG4017

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 Ultimate Ozone™ models U1000 and U3000 as follows:

Limited Warranty: AquaStar Pool Products, Inc warrants the Models U1000 and U3000 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 U1000 and U3000 Installation and User's Guide.
3. Damage caused by failure to install products as specified in the U1000 and U3000 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 U1000 and U3000 Installation and User's Guide.
6. Damage caused by failure to maintain water chemistry in conformity with the standards set forth in the U1000 and U3000 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 U1000 and U3000 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 U1000 and U3000 are 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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