

**Obtaining Service Under the Warranty**

Any product and/or part not performing satisfactorily may be returned to CWT for evaluation. A Return Goods Authorization (RGA) number must first be obtained by either calling or writing your local authorized dealer, distributor or CWT direct, prior to shipping the product. The problem experienced with the product and/or part must be clearly described. The RGA number must appear prominently on the exterior of the shipped box(es). The product and/or part must be packaged either in its original packing material or in comparable and suitable packing material, if the original is not available. You are responsible for paying shipping charges to CWT and for any damages to the product and/or part that may occur during shipment. It is recommended that you insure the shipment for the amount you originally paid for the product and/or part.

If, after the product and/or part is returned prepaid and evaluated by CWT, it proves to be defective while under warranty, CWT will, at its election, either repair or replace the defective product and/or part and will return ship at lowest cost transportation prepaid to you except for shipments going outside the 50 states of the United States of America. If upon inspection, it is determined that there is no defect or that the damage to the product and/or part resulted from causes not within the scope of this limited warranty, then you must bear the cost of repair or replacement of damaged product and/or part and all return freight charges. Any unauthorized attempt by the end user to repair CWT manufactured products without prior permission shall void any and all warranties. For service, contact your authorized dealer or distributor or CWT direct at (805) 549-9724.

**Exclusive Warranty**

There is no other expressed warranty on CWT products and/or parts. Neither this warranty, nor any other warranty, expressed or implied, including any implied warranties or merchantability of fitness, shall extend beyond the warranty period. Some states do not allow limitation on how long an implied warranty lasts, so that the above limitation or exclusion may not apply to you.

**Disclaimer of Incidental and Consequential Damages**

No responsibility is assumed for any incidental or consequential damages; this includes any damage to another product or products resulting from such a defect. Some states do not allow the exclusion or limitation of incidental or consequential damages, so that above limitation or exclusion may not apply to you.

**Legal Remedies of Purchaser**

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

**THIS STATEMENT OF WARRANTY SUPERSEDES ALL OTHERS PROVIDED TO YOU AT ANY PRIOR TIME.**



**Installation & Operation Manual**

**CD325 & CD550**

Corona Discharge Ozone Generators



**ClearWater Tech, LLC**

Ozone Systems for Water & Air Purification

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# **APPENDIX B – WARRANTY INFORMATION**

## **ClearWater Tech. Limited One-Year Warranty**

### **Summary of the Warranty**

ClearWater Tech, LLC (“CWT”) makes every effort to assure that its products meet high quality and durability standards and warrants the products it manufactures against defects in materials and workmanship for a period of one (1) year, commencing on the date of original shipment from CWT, with the following exceptions: 1) The warranty period shall begin on the installation date if the installation is performed within 90 days of the original shipment from CWT; 2) The warranty period shall begin on the date of the bill of sale to the end user if the installation date is more 90 days after the original shipment date. To validate the warranty, a warranty card, accompanied by a copy of the bill of sale, must be returned to CWT and must include the following information:

- End user name
- Complete address, including telephone number
- Date installed
- Complete model and serial number information
- Name of company from which the unit was purchased



Repairs and replacement parts provided under this warranty shall carry only the unexpired portion of this warranty or 90 days, whichever is longer.

### **Items Excluded from the Warranty**

This warranty does not extend to any product and/or part from which the factory assigned serial number has been removed or which has been damaged or rendered defective as a result of:

- An accident, misuse, alteration or abuse
- An act of God such as flood, earthquake, hurricane, lightning or other disaster resulting only from the forces of nature
- Normal wear and tear
- Operation outside the usage parameters stated in the product user’s manual
- Use of parts not sold by CWT
- Service or unit modification not authorized by CWT
- Check valve failure
- Damage which may occur during shipping
- Failure to meet service requirements as outlined in the I & O manual
- Damage due to exposure to other chemicals

# O<sub>3</sub>

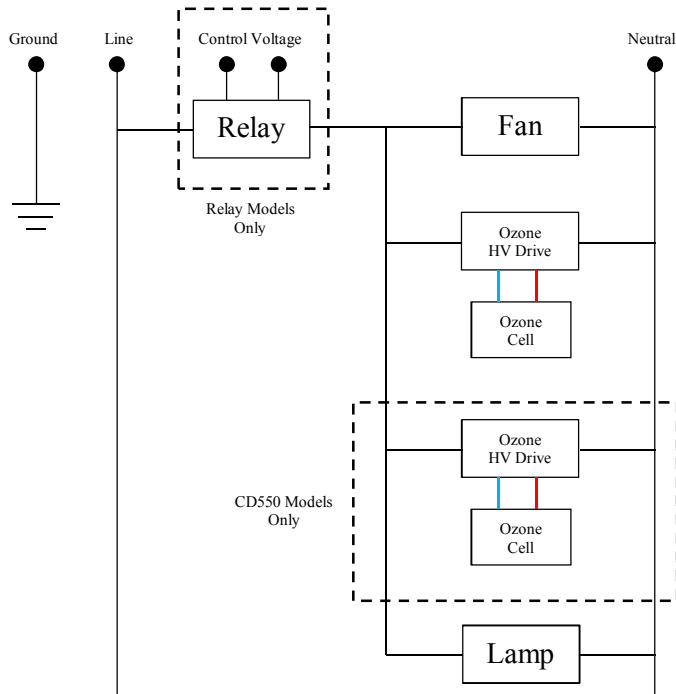


Fig 8: Wiring Schematic

## INTRODUCTION

This Installation and Operation Manual is written to assist in the installation, operation and maintenance of systems manufactured by ClearWater Tech. This equipment has been designed using the most modern materials and technology available.

Please read this manual carefully and in its entirety before proceeding with any installation, operation, or maintenance procedure associated with this equipment. Failure to follow these instructions could result in personal injury, damage to the equipment, or reduced product performance.

In an ongoing effort to improve reliability and operating efficiency, ClearWater Tech may find it necessary to make changes to its products. Therefore, the information contained in this manual may not conform in every respect to earlier versions of ClearWater Tech systems found in the field. If you have any questions, please contact your ClearWater Tech dealer or the ClearWater Tech service department.

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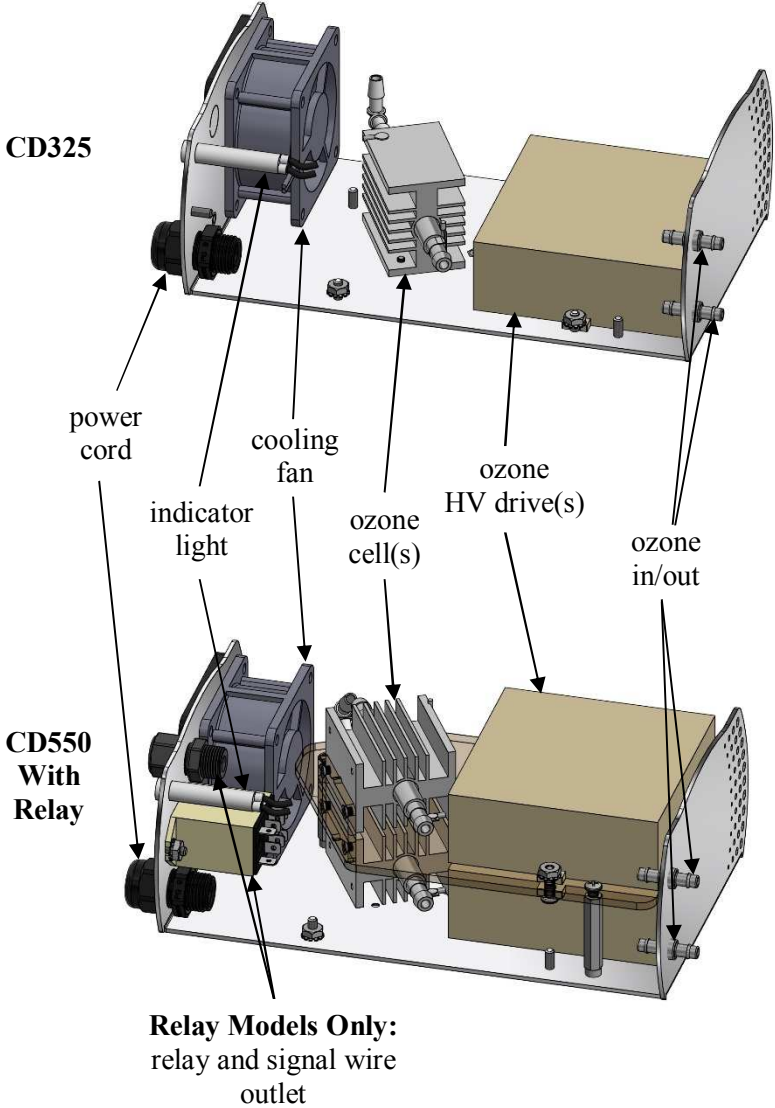


Fig 7: Internal Component Callout

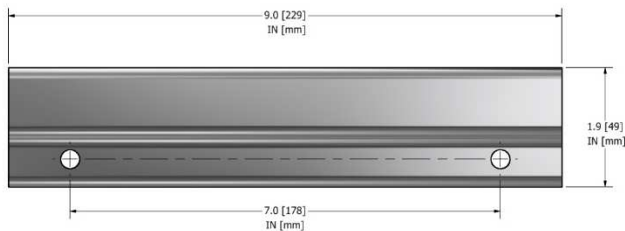
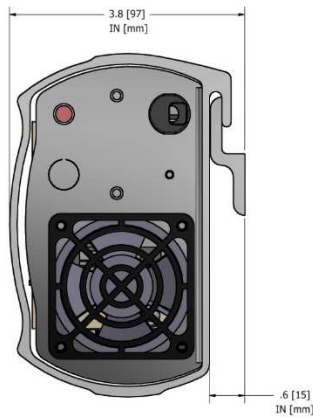
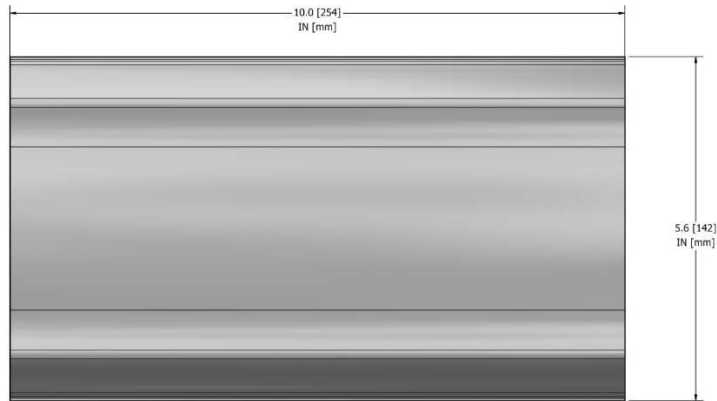


Fig 6: Overall Dimensions

## THEORY OF OPERATION

The Microzone ozone generators may be used to inject or diffuse ozone into water.

The injection method requires a venturi injector to draw the ozone from the ozone generator and into the water line. ClearWater Tech has developed the PRO Series System with magnetic drive pump, programmable timer and venturi to provide a suitable suction port for the injection method (see Figure 2). For typical spa applications, many spa manufacturers provide an “ozone ready” suction port, which eliminates the need for additional equipment (see spa manual for installation).

The diffusion method requires a pressurized air source, which feeds air through the ozone generator and out to an atmospheric body of water. A diffuser stone provided with the Microzone ozone generator is used for increased mixing of ozone in solution. For this application ClearWater Tech has developed the OAS series compressor, with programmable timer to provide the pressure required (see Figure 3).

# SAFETY WARNINGS

- Read, follow, and save all instructions.
- Before attempting any electrical connections, be sure all power is off at the main circuit breaker.
- Install all electrical equipment at least five feet from any open body of water using non-metallic plumbing.
- Mount the Microzone unit horizontally on a wall. Do not mount vertically or at an angle. See installation instructions for more detail. Alternatively, place on a solid horizontal surface.
- Do not operate the unit with the cover removed.
- Do not use an extension cord.
- Clean with a damp cloth. Avoid using harsh chemicals, abrasives, or cleaners.
- Install check valves and a Hartford Loop to prevent water from contacting the electrical equipment.
- **GROUNDING INSTRUCTIONS** - This appliance must be grounded. In the event of a malfunction or breakdown, grounding will reduce the risk of electric shock by providing a path of least resistance for electric current. This appliance is equipped with a cord having an appliance-grounding conductor and a grounding plug. The plug must be plugged into an appropriate outlet that is installed and grounded in accordance with all local codes and ordinances.
- Be sure to bond (ground) the system using the copper bonding lug on the side of the ozone generator. The system should be bonded with solid copper wire conforming with all local, state and national electrical codes.

# APPENDIX A - SPECIFICATIONS

Microzone Ozone Generator	
Dimensions	10W x 5.6T x 3.6D inches (254W x 142T x 92D mm)
Inlet/Outlet	3/16" Barb
Power	See dataplate on unit
Power Connection	6' (1.8m) 3-prong cord
Mounting	Z-bar
Ambient Conditions	32-95 °F (0-35 °C) 10-90% RH non-condensing
Ozone Output Ambient Air	CD325: 325 mg/h @ 3 SCFH 0.3% by weight CD550: 550 mg/h @ 6 SCFH 0.3% by weight
Shipping Weight	CD325: 5 lbs (2.3 kg) CD550: 6 lbs (2.7 kg)
Shipping Dimensions	15x11x7 inches (381x279x178 mm)

# SERVICING

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**WARNING:** Disconnect power from unit before performing any maintenance procedures.

## Monthly

Clean fan filter: Remove fan cover by grasping the fan grill with a pair of needle nose pliers and gently pulling. Take out foam filter, wash with warm soapy water, allow to dry, and re-install.

## Annual

Replace check valve and fan filter.

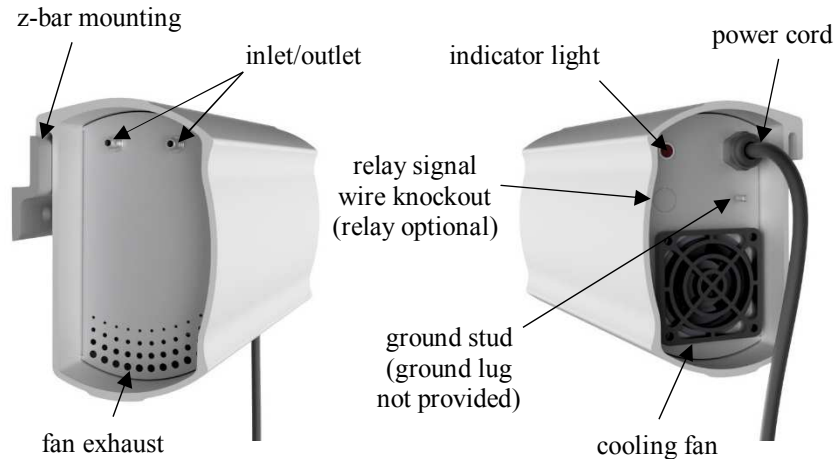
## Three Year

Replace ozone generator cell and barb inlet/outlet.

- **WARNING** – Improper connection of the appliance-grounding conductor can result in a risk of electric shock. Check with a qualified electrician or service representative if you are in doubt whether the appliance is properly grounded. Do not modify the plug provided with the appliance; if it will not fit the outlet, have a proper outlet installed by a qualified technician.
- **WARNING** – The unit has only been evaluated for mechanical, electrical shock, and fire hazards. The method to control ozone release or the effectiveness of the water treatment has not been investigated.
- **WARNING:** Short Term Inhalation of High Concentrations of Ozone and Long Term Inhalation of Ozone Can Cause Serious Harmful Physiological Effects. Do Not Inhale Ozone Gas Produced By This Device.
- **WARNING:** ClearWater Tech ozone generators operate at high voltages. If contact is made with operating high voltage components electric shock will occur.

# INSTALLATION

## Ozone Generator



## Accessories

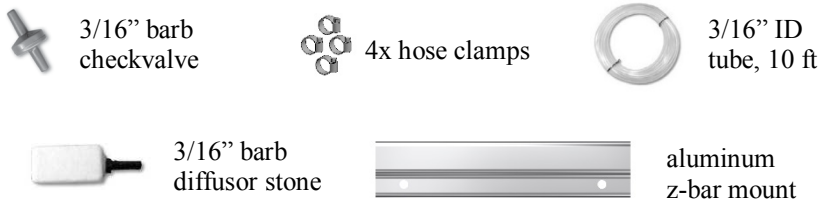


Fig 1: Feature Callout and Accessory List

## Unpacking

Compare the ozone system equipment to packing list provided. Before beginning any installation procedures, thoroughly inspect all components for damage. If damage is noticed, promptly notify the freight carrier and request an on-site inspection. Inspect all packing materials for small parts before discarding.

# OPERATING INSTRUCTIONS

**Note:** Ozone will not be generated until airflow is passed through the system.

## Standard Models

- Plug the Microzone into a suitable outlet. The indicator light will illuminate, showing that the system is receiving power and ready to produce ozone.

## Relay Models

- Remove cover and crimp wires to connectors on pins A and B of the relay (0.205 inch Tab Connectors), route wires through the provided strain relief, and connect to a power supply of the appropriate voltage (not provided). Re-install cover and plug the Microzone into a suitable outlet.
- Supply power to the signal wires to switch an internal relay, which turns on the ozone generator. This illuminates the indicator light, showing that the system is receiving power and ready to produce ozone
- Relay units are wired from the factory to be off until a signal is supplied to the relay (normally open). This will ensure the ozone generator will “fail safe”. If a problem occurs with the control signal, the ozone will shut off. If it is preferred for the unit to be on until a control signal is supplied (normally closed), open the unit and move the tab as shown below to normally closed. In this configuration, supplying a signal voltage will open the relay, switching off power to the ozone generator. Follow all safety precautions and disconnect power from unit before removing cover.

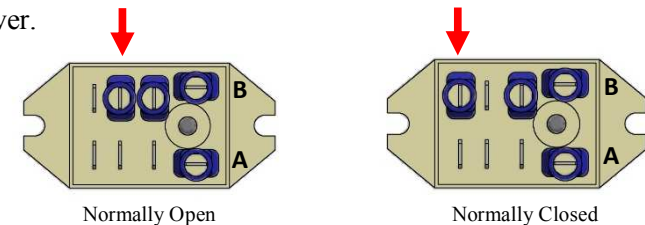
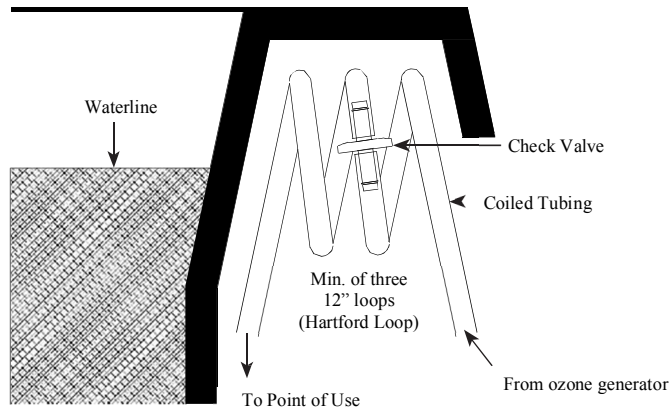


Fig 5: Relay Wiring Configurations



## Hartford Loop



**NOTE:** The top of the Hartford loop and the check valve must be mounted above the waterline

*Fig 4: Hartford Loop*

## Equipment Placement

- When placing ozone system components, make sure to consider safety, maintenance requirements, local building and fire codes.
- To determine the most favorable placement, the following should be considered:
  - ✓ Located downstream of all other existing water system components.
  - ✓ Located upstream of the residual sanitizer injection point (if so equipped).
  - ✓ The pH adjustment chemical injection point should be located downstream of the residual sanitizer injection point (if so equipped).
  - ✓ Location of ozone generator should be no more than 8 feet from point of use.
  - ✓ Adequate protection from weather, dust and excessive heat. Ambient temperature range: 20°F to 85° F continuous.

**NOTE:** Equipment installed in extreme environmental conditions will void manufacturer's warranty.

## Mounting the System

The Microzone system can be mounted on a wall or placed on a stable flat surface. To mount the unit to a wall, follow these steps:

- The z-bar mounting holes are located 7 inches apart.
- Using a level to make sure it is horizontal, attach the z-bar to a wall using appropriate tools and mounting hardware for the material of the wall (see Figure 1 for z-bar orientation).
- Place the Microzone onto the z-bar.

## Injection Method Installation

1. Mount the Microzone ozone generator according to guidelines in the previous section. **NOTE:** The distance from the Microzone to the injection port should be no more than 8 feet.
2. Attach one end of the supplied tubing to either port of the Microzone generator and secure with a hose clamp provided.
3. Coil the tubing to create a “Hartford Loop” above the water line. Insert the check valve provided at the highest point of the Hartford Loop (see Figure 4). Determine orientation of the check valve by blowing through it, flow should be directed to the point of use.
4. Attach the other end of the tubing to the injection port and secure with the hose clamp provided.
5. Plug the Microzone into a suitable outlet. If a ClearWater Tech PRO Series system is being used, the Microzone may be plugged into its switched outlet provided. **NOTE:** All equipment wiring and grounding must comply with all local electrical codes.

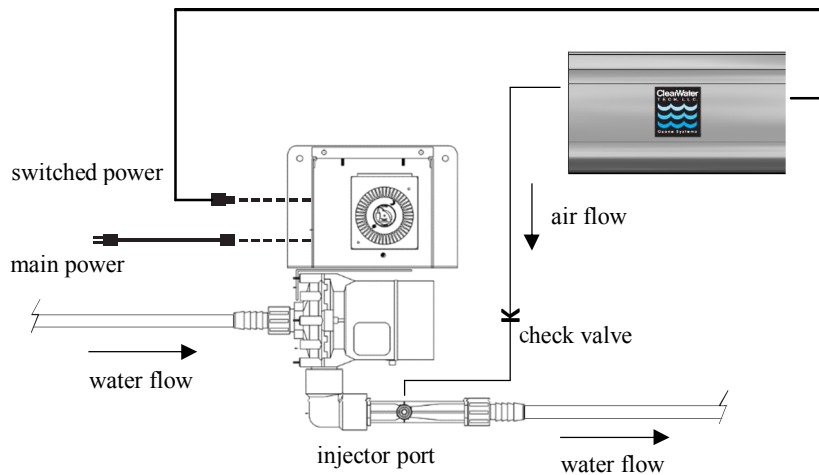


Fig 2: Injection Method Schematic

## Diffusion Method Installation

1. Mount the Microzone ozone generator according to guidelines in the previous section. **NOTE:** The distance from the Microzone to the injection port should be no more than 8 feet.
2. Cut a suitable length of the supplied tubing, attach one end to the air prep outlet of the pressurized source used. Attach the other end to either port of the Microzone and secure with a hose clamp provided.
3. Attach one end of the remaining tubing to the other open port of the Microzone and secure with the hose clamp provided.
4. Coil the tubing to create a “Hartford Loop” above the water line. Insert the check valve provided at the highest point of the Hartford Loop (see Figure 4). Determine orientation of the check valve by blowing through it, flow should be directed to the point of use.
5. Attach the opposite end of the tubing to the barbed fitting of the diffuser stone provided.
6. Plug the Microzone into a suitable outlet. If a ClearWater Tech OAS system is being used, the Microzone may be plugged into its switched outlet provided. **NOTE:** All equipment wiring and grounding must comply with all local electrical codes.

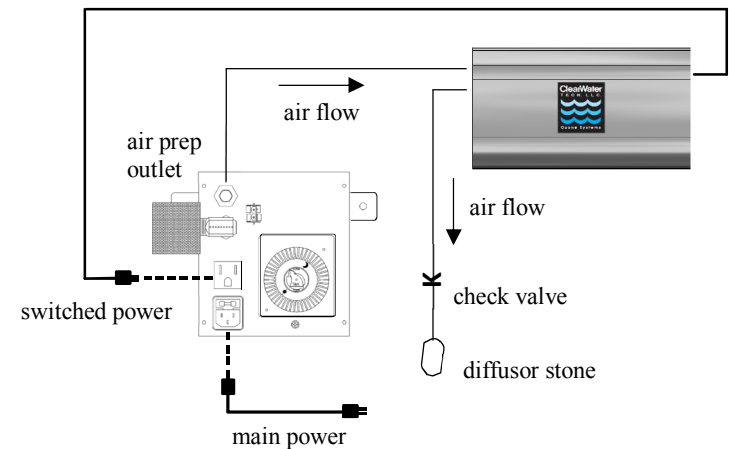


Fig 3: Diffusion Method Schematic