



# **AIM PCS 400 Ozone Generator**



## **Installation and Service Manual**

Dear Valued Customer:

Congratulations on your purchase of the AIM Series ozone generator!

This user manual was created to help you get the most out of your new device and to assist you with the initial set up. Please visit [www.ozotech.com](http://www.ozotech.com) to learn more about this and other products.

Thank you for choosing Ozotech products!



## SAFETY FIRST

Read the following safety guidelines thoroughly before attempting to install or operate your equipment:



As with all electrical devices, this equipment should never be allowed to come in contact with water.



Only qualified personnel should be allowed to set up, operate and maintain this equipment.



Do not use an extension cord to supply power to this equipment.



Use a power conditioner if line voltage fluctuates outside of specified range.



Unit **must** be disconnected from power prior to performing service or repair.

\*Ozotech, Inc., assumes no liability for damages or injuries incurred by misuse of this product.

**Table of Contents**

- 1.0 Installation and Operation 1
  - 1.1 Operating Environment
  - 1.2 Installation
  - 1.3 Operation
- 2.0 Maintenance 2
  - 2.1 Ozone Generator Maintenance
- 3.0 Spare/Replacement Parts 3
- 4.0 Specifications 4
- 5.0 Component Replacement 4
  - 5.1 CD Cell Replacement
- 6.0 Troubleshooting Guide 5
- 7.0 Illustrations 6
- 8.0 Limited Warranty 8
- 9.0 Service Returns 9

## **1.0 Installation and Operation**

Your ozone generator requires special operating conditions in order to maintain performance and reliability. Your ozone generator is designed to be operated under a negative or positive pressure situation. Your ozone generator has been factory tested to operate at a maximum positive pressure of 5 psi.

The use of an air preparation device is essential to increase your ozone generator performance and service life. Ozotech Inc. provides several air preparation options, based on application. Contact your distributor, an Ozotech, Inc. sales representative, or visit [www.ozotech.com](http://www.ozotech.com) for more information

Warranty coverage of your equipment is contingent upon strict compliance with the operating conditions specified in this manual.

### **1.1 Operating Environment**

#### **External**

It is most important to choose a cool, clean external operating environment. Consideration of these factors should be a priority. Mount your ozone generator in the best possible operating environment that is available at the chosen site. If possible, mount in an area that is free of airborne moisture particles.

#### **Internal**

Keep the inside of the generator chassis clean and dry. Dust particles and condensation pose a challenge to the consistent operation of all ozone generators. Make a note to inspect the internal cleanliness of the equipment when you perform scheduled maintenance. For further information refer to section 5.0.

### **1.2 Installation**

The AIM PCS 400 is designed to be mounted vertically on a wall, panel, or framework. There are two (2) keyhole mounting features within the chassis, sized for #8 screws. The use of wall anchors is recommended when stud(s) are not available. A minimum of six (6) inches clearance is required around the top, bottom and sides of the unit to ensure access and proper air flow. Choose a mounting location that permits power connection without the use of extension cords.

## 1.3 Operation

Ozotech, Inc., offers the AIM PCS 400 ozone generator with a variety of electrical input configurations to accommodate a wide range of applications. Configurations include a standard AC to DC wall transformer (included with purchase), a cigarette lighter adapter or twisted wire for connection to a hard 12 VDC source such as a car, boat or RV battery circuit. Most supply voltages fluctuate, so it is necessary to monitor your voltage and assure it is within acceptable variance values listed in section 4.0.

Your ozone generator is designed for simple and easy use.

1. Connect your air preparation device to the air input tubing of the ozone generator.
2. Connect your ozone output tubing, with inline check valve, to your appropriate ozone injection device.
3. Connect power to the DC power input jack (green LED will illuminate). Turn on your ozone generator using the High/Low rocker switch (corresponding red LED's will illuminate).
  - a. The 'Low' setting will produce 220 mg/hr. gaseous ozone, while the 'High' setting will produce 440 mg/hr. of gaseous ozone.
4. Adjust and balance air flow using Ozotech's 'Venturi Calibration Guide', available for download at [www.ozotech.com/support](http://www.ozotech.com/support).

## 2.0 Maintenance

The AIM series generators are delivered factory tested, calibrated, and adjusted for maximum efficiency and long life. Simple maintenance and appropriate operating conditions are the only requirements to keep the unit functioning within manufacturer's specifications.

Performing any modifications or adjustments to internal components will cause the unit to function outside of manufacturer's specifications and will cause damage to the unit not covered under terms of warranty.

### 2.1 Ozone Generator Maintenance

Frequency of Maintenance: Every 4800 hours or 6 months of operation:



**CAUTION: Disconnect ozone generator from power supply before performing maintenance.**

1. Remove the screws that secure cover and remove cover.
2. Clean or replace the Corona Discharge (CD) cells.
  - a. A CD cell cleaning kit may be purchased from Ozotech, Inc. Reference section 3.0 for more information.
  - b. Refer to section 5.1 for CD cell replacement.
3. Clean interior and exterior of chassis.
4. Replace ozone resistant check valves on the air in or ozone gas outlet lines.

### 3.0 Spare/Replacement Parts

<b>Part #</b>	<b>Description</b>
33217-BR	Corona Discharge Cell* (2)
47018-304	Ozone Resistant In-line Check Valve* (2)
40080-01	Wall Transformer, 230/115 VAC to 12 VDC/2A
47044-1	CD Cell Maintenance Kit
44140-1	Ozone Resistant Tubing, 1/4" ID x 3/8" OD
44077	Clear PVC Tubing, 1/4" ID x 3/8" OD
30078	DI Dryer 2.0 (Desiccant indicating air dryer)
43223	800 mA fast blow fuse*

(\*) Denotes recommended spare maintenance parts with initial purchase. Followed by additional quantity, recommended for one year's scheduled maintenance

## 4.0 Specifications

### Input Power Requirements:

- Operating Voltage (specified): 11.7 VDC to 13.9 VDC
- Power consumption: 700mA to 1.3A @ 12VDC (8.4 to 15.6 watts) nominal

Fusing Specification: 800 mA fast blow, IEC 127, 5x20mm

Product Size (L x W x H): 9" x 6" x 5"

Shipping Weight: 5 lbs.

Ozone Output: 220-440 mg/hr.

Enclosure: Powder coated aluminum

## 5.0 Component Replacement

Electrical failure is usually the result of a mechanical failure. For example, should the CD cell become plugged with nitric byproducts or should water back into the cell, it could cause a catastrophic electrical failure. Proper air preparation can usually avoid the build-up of nitric byproducts.

### 5.1 CD Cell Replacement

Should a CD cell need to be replaced, refer to the following procedure and figure 3, in section 7.0.



**CAUTION: Disconnect ozone generator from power supply before performing service.**

1. Remove the 4 screws that secure cover and remove cover.
2. Cut the shipping cable tie around the CD cell. Pull the CD cell out of the retaining clips, then disconnect tubing and the high voltage wire connection.
3. Reverse steps 1 & 2, reconnect power to the ozone generator, and return to service.



## 6.0 Troubleshooting Guide

<b>System</b>	<b>Possible Cause</b>	<b>Solution</b>
Unit doesn't turn on	Unit is not connected to power source, or is connected to improper power source	Refer to Input Power Requirements, section 4.0, for proper electrical requirements
Red light on power supply will not illuminate	Improper outlet voltage	Verify power at outlet
	Damaged or defective power supply	Replace power supply
Green light on ozone generator will not illuminate	Damaged or defective power supply	Check power supply operation; replace if necessary
	Loose or disconnected internal wiring	Check internal wiring; remedy any loose connections
Unit turns on, but no ozone output	High voltage lead(s) not connected to CD cell(s)	Connect frequency driver HV lead to CD cell
	Water has backed up into CD cell(s)	Clean or replace CD cell(s)
	Cell is plugged with nitric by-product buildup or particulate matter	Clean or replace CD cell(s). If not installed, install an air dryer onto ozone generator air inlet
	CD cell(s) not seated in retaining clips	Re-install CD cell(s) into retaining clips
Moisture in the inlet and/or outlet tubing	Improper air preparation	Install an air dryer onto ozone generator air inlet
Yellow discoloration in the outlet tubing	Nitric byproduct buildup in CD cell(s) and/or tubing	Clean or replace CD cell(s) and/or tubing
Water has backed up into the ozone unit	Failed or missing inline check valve on ozone output tubing	Clean or replace CD cell(s). Replace or install new inline check valve.

7.0 Illustrations

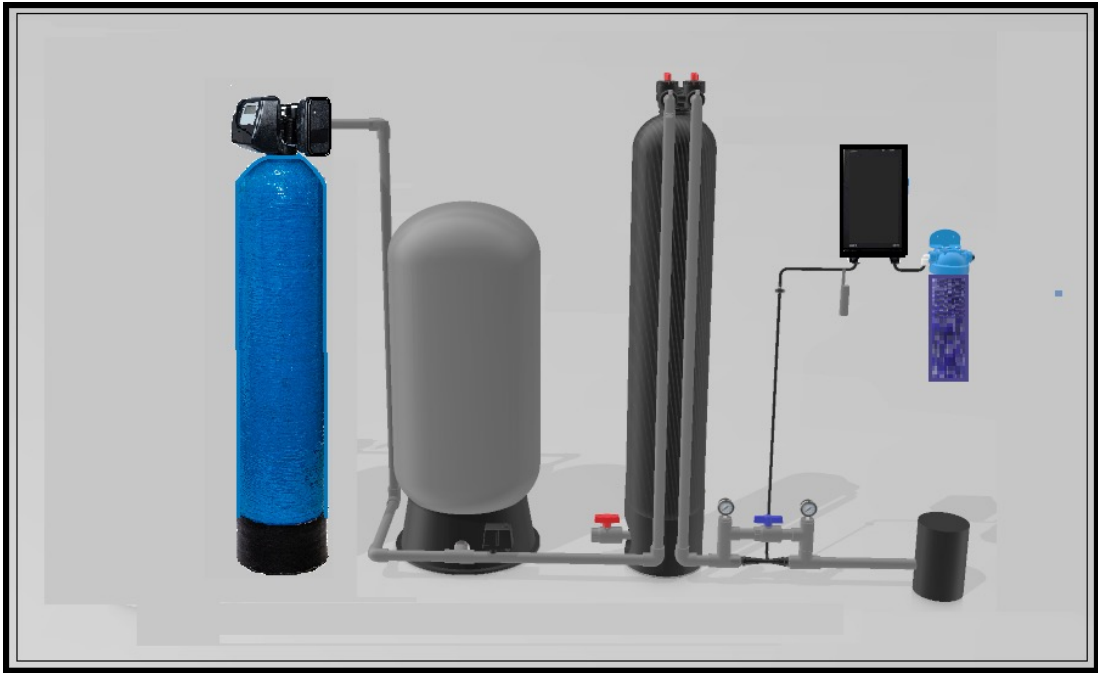


Figure 1. Typical well application w/contact tank and EOG filter



Figure 2. Typical well application w/EOG filter

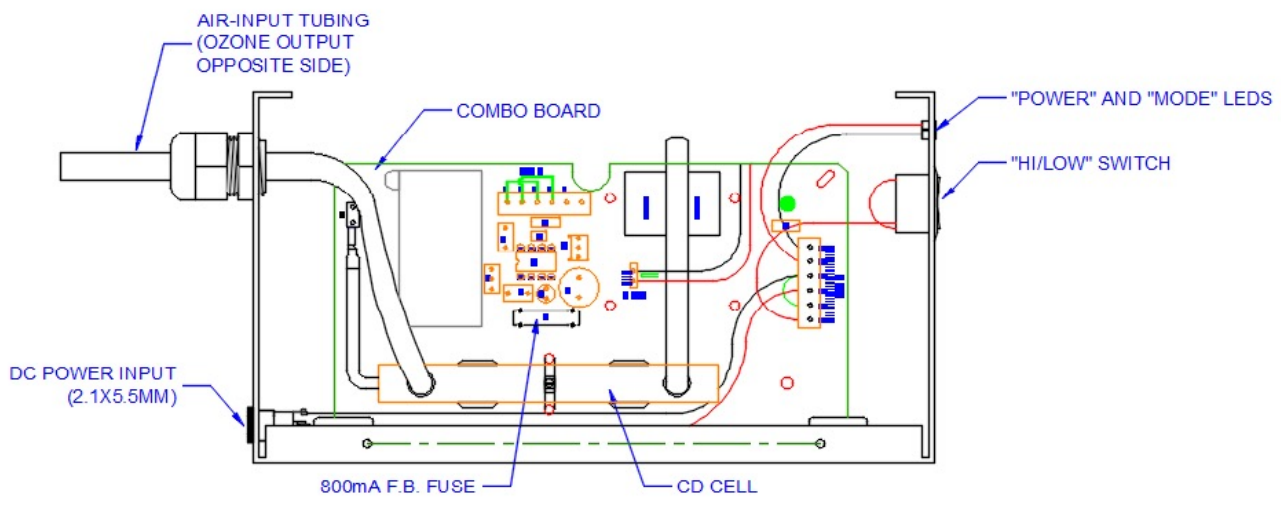


Figure 3. AIM PCS 400 internal diagram

## 8.0 Limited Warranty

Ozotech, Inc., warrants, to the original purchaser, the A.I.M. series ozone generators to be free from defects in workmanship and material for (12) months from date of purchase. The corona discharge cell is warranted against catastrophic electrical failure for (2) years from date of purchase. All parts, repaired or replacement, will be warranted only for the balance of the original warranty period. Ozotech, Inc.'s warranty obligation with regard to equipment not of its own manufacture is limited to the warranty actually extended to the Ozotech, Inc. by its supplier. Ozotech, Inc. will refund the purchase price, perform repairs or replace equipment, at the option of Ozotech, Inc.

**The warranty shall be null, void, and non-binding upon Ozotech, Inc. if Ozotech, Inc. (or authorized service center) determines the cause of malfunction or defect to be a result of:**

- 1) Failure to perform proper maintenance as defined and recommended in this manual.
- 2) Failure to adhere to and provide proper operating conditions, as defined in this manual, including operation outside of temperature range, operating in wet or dirty environment, operation outside of manufacturer's specifications.
- 3) Adjustments made by user other than product output flow rate within ranges specified by manufacturer.

Ozotech, Incorporated assumes no liability for damages incurred by deliberate or incidental misuse of this product, or damages incurred in transit.

## 9.0 Returns

If the need arises to return your equipment for service, the following procedure must be followed to ensure accurate and timely processing of repairs.

- ✓ Obtain the serial number, model number and model name of unit to be returned.
- ✓ Contact Ozotech, Inc. and request a Return Material Authorization (RMA) form. Make sure to give the factory representative an accurate and current shipping address.
- ✓ Provide a description detailing the problem with the unit. Be as specific as possible.
- ✓ After receipt of RMA form, package unit for shipment. Enclose the RMA form with the unit. Use the original packaging materials if possible. If not possible, please package the product to ensure against shipping damage.
- ✓ Clearly write the RMA number on the outside of the shipping package.
- ✓ Verify that the address is correct and current.
- ✓ Shipments that are not factory authorized will be refused.

It is recommended that you ship with a reputable and reliable shipping company, and that the contents of the package are insured. Ozotech, Inc., accepts no responsibility for damage or loss of equipment in transit.

**ALL FREIGHT CHARGES INTO THE FACTORY MUST BE PREPAID.** If the repair is covered under warranty, the factory will pay return shipping charges (surface rates only) to the address listed on the RMA, within the continental United States.

If the repair is not covered under warranty, the returning party is responsible for payment of return shipping and handling charges, as well as labor and equipment costs associated with the repair.

