



PACIFIC WATER TECHNOLOGY

MP Series Operating Manual



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Important Safety Information

READ AND FOLLOW ALL INSTRUCTIONS

- Read this manual completely before attempting installation and/or operation.
- Install in accordance with the installation instructions.
- Connect to a grounded, grounding type receptacle only.
- To reduce the risk of electrical shock, replace damaged electrical cables immediately.
- Follow all applicable electrical codes.
- Electric shock hazard. Be sure to turn power OFF and disconnect from power source before any service work is performed. Failure to do so could result in serious injury or death.
- DO NOT inhale ozone gas produced by this device.
- For your safety, do not store or use gasoline, chemicals or other flammable liquids or vapors near this or any other appliance.
- A spontaneous and violent ignition may occur if oil, grease or greasy substances come in contact with oxygen under pressure. These substances must be kept away from oxygen regulators, cylinder valves tubing and connections and all other oxygen equipment.

PLEASE SAVE THESE INSTRUCTIONS FOR FUTURE REFERENCE

CAUTION!

In case of accidental leakage, keep the ozone generator in a well-ventilated area.

In accordance with California Regulations, this ozone generator is solely for industrial use and must be installed by a professional. Potential health hazard: emits ozone.

Technical Specifications

Items Included:

- MP Series ozone generator
- MP Series operation manual
- 5 feet of flexible tubing included
- 5 feet of PTFE tubing (MP-3000, MP-5000 & MP-8000)
- Two 1” oblong diffuser stones included (MP-1000 only)
- Two 2” oblong diffuser stones included
- Spare fuse included
- Fan filter replacement

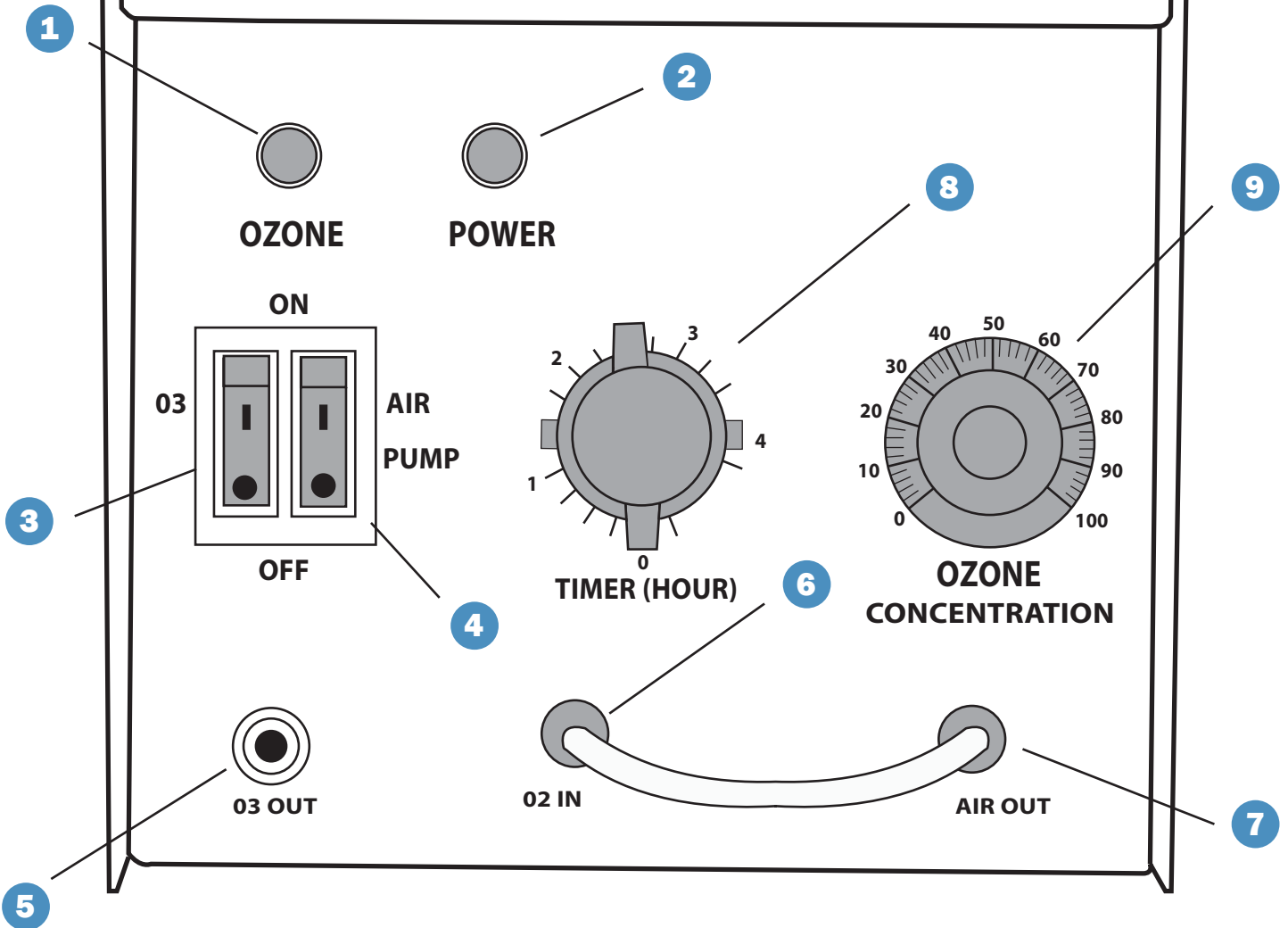
Model	Ozone Capacity		Oxygen Feed Gas Flow Rate		Dimensions	Energy Usage	Concentration	Unit Weight	
	lbs/day	g/hr	SCFH	LPM				H x W x D	Watts
MP-1000	0.050	1	8	4	10.7 x 6 x 9	45	0-14	8.5	4
MP-3000	0.150	3	12	8	8 x 12 x 10	115	0-20	13	6
MP-5000	0.260	5	12	8	8 x 15 x 10	135	0-30	15	7
MP-8000	0.424	8	12	8	9.8 x 15 x 10	145	0-45	18	8.1

Features

1	Ozone Light	Indicates ozone is functioning. If the LED is illuminated, the unit is working properly.
2	Power Light	Indicates when there is power to the unit. If the power is supplied, the light will remain illuminated.
3	O₃ Switch	Used to control ozone power within the unit.
4	Air Pump Switch	Used to power on the small internal air compressor built into each MP Series unit.
5	O₃ Out Port	Ozone produced by the unit exits through this port.
6	O₂ In Port	Optional hook up port for an external oxygen source. This can be used to produce a more pure ozone.
7	Air Out Port	Air port for the air compressor (loops into O ₂ In Port for ambient air use).
8	Timer (Hour)	Sets a time limit for the unit to produce ozone. The unit timer needs to be engaged for ozone production. The MP-3000 and above will have a continuous setting.
9	Ozone Concentration Knob	Controls the percentage of ozone produced by the unit.

A2Z Ozone, Inc. USA

www.a2zozone.com



Timer Functions

The MP Series is equipped with timer functions to match a wide variety of applications. The hourly timer knob can be adjusted between 15 minutes and 4 hours, at any time interval between.

- 15 minutes to 4 hours
 - To operate this timer, turn the knob clockwise.

Continuous Timer

- A continuous option is available for the MP-3000, MP-5000 and MP-8000.
 - To operate this timer, turn the knob counter-clockwise.

Installation Instructions

Ozone Generator Placement

- Install ozone generator in a clean, dry area with good ventilation.
- The MP unit should be placed above any water tank level.
- If pressure is lost in the venturi vacuum and the unit is below water tank level, gravity will cause water to travel down the ozone output hose and enter into the ozone generator.
- Please look at the provided drawing for more information (Figure 1.2).
- Water height should be less than 5 feet (1.5 m).

NOTE: Place the ozone generator in room temperatures below 130 degrees F. Prolonged exposure to extreme temperatures will void the warranty.

Venturi Installation

- Install the venturi injector with the bypass valve on water recirculation pipeline (Figure 1.1).
- **The arrow on venturi should be set in the same direction as water flow.**
- Turn water pump on and close the bypass valve until a vacuum is created at the venturi input.

NOTE: Use a gauge to check vacuum -2 to -3 PSI (-0.14 to -0.21 bars) or place finger over end of venturi valve to feel the vacuum. At this point, the air is injected into the water line. This can be observed as air bubbles inside the water tank.

NOTE: The water tank requires an exhaust to the outside of the building.

Main Power

- Use the power cable provided to connect the MP Series to a properly rated and grounded receptacle.
- **If the MP Series will be used where water is present, a ground fault circuit interrupter must protect the circuit.**

Operating Instructions

- Plug your power cord into the back of the unit and the wall socket.
- Remove the bulkhead nut on O₃ out port.
- Then insert the bulkhead onto the tubing.
- Screw the nut back onto the O₃ out port.
- Attach the diffuser stone of your choosing to the opposite end of the tubing.

NOTE: Be sure to set the unit above water level. A check valve can also help prevent water from back-flowing into the unit.

For Oxygen Air:

- Disconnect the small tubing from the O₂ in port.
- Connect the oxygen source to the O₂ in port with appropriate tubing.
- Adjust the flow rate of the oxygen source to:
 - For the MP-1000, a maximum of 4L/minute.
 - For MP-3000, MP-5000 and MP-8000 a maximum of 8L/minute, or a maximum of PSI 15.

NOTE: Ensure that the air compressor switch is in the OFF position when using an oxygen source.

For Ambient Air:

- Turn on both air compressor switch and the ozone switch, in that order.
- Keep in mind, the unit will NOT power up until the timer is set.
- Turn the power button on – it is located on the back of the unit by the power cord.
- Turn the ozone concentration knob to 100 percent or desired concentration for the given application.

CAUTION: If ozone concentration is below 20 percent, the unit will not power up unless external oxygen is attached. The dial can be adjusted after starting, but avoid dialing up and down continually, as this action may harm the control board.

- Set the unit timer for the desired application duration.
- The timer can be dialed counterclockwise to allow for an “Always On” function.
- Keep in mind, this function is not recommended for oxygen air.
- At this point, the MP Unit is powered up.

To turn the unit off:

- For Ambient Air:
 - Turn off the ozone switch.
 - Wait 10 seconds before continuing.
 - Turn off the air compressor switch.
- For Oxygen Air:
 - Turn off the ozone switch
 - Wait 10 seconds before continuing.
 - Turn off the oxygen source.

Tube Connection and Start Up

An oxygen tank or oxygen generator should be used when pure ozone needed.

Using Oxygen Bottle/Tank:

- Connect oxygen bottle/tank to ozone generator (Oxygen In Port).
- Connect MP unit (Ozone Out Port) to venturi injector.
- Install a check valve 10 inches after ozone outlet tube fitting. This can be done by cutting a tube ten inches after ozone outlet fitting.
- Connect both ends of cut tubes to the check valve. Please direct the arrow on the check valve toward venturi injector.
- Set tank gas flow meter at 3 to 4 liters per minute and 15 PSI maximum.
- First, open the oxygen valve then only turn on the main ozone power switch on the front panel of the MP unit (internal air compressor switch stays OFF). The ozone light and fan should turn on.
- Increase power to the cells by turning the ozone concentration knob clockwise.
- Prior to shutting off the feed gas to the unit, turn off the switch and allow the unit to purge for about 1 minute.
- Then, turn the flow of oxygen gas off.

NOTE: Do not turn the air pump switch ON when using oxygen generator, oxygen bottle or tank.

Using Oxygen Generator:

- Connect oxygen generator (Oxygen Out Port) to ozone generator (O₂ In Port).
- Connect MP unit (Ozone Out Port) to the venturi injector.
- Install a check valve 10 inches after ozone outlet tube fitting. This can be done by cutting a tube ten inches after ozone outlet fitting.
- Connect both ends of cut tubes to the check valve.

- Please direct the arrow on the check valve toward the venturi injector.
- Turn the oxygen generator ON first and then the ozone generator switches (the air pump stays OFF).
- Turn timer knob clockwise to the amount of time needed for the given application.
- To run continually, turn the timer knob counter-clockwise.
- The ozone light and fan should turn on.
- Increase power to the cells by turning the ozone control knob clockwise.
- Prior to shutting off the oxygen generator feed gas to the MP Series, first turn off the ozone generator switch and allow the unit to purge with oxygen for about 1 minute.
- Then, turn off the oxygen generator.

Using Internal Air Compressor: This unit comes with a small air compressor built inside the ozone generator

- Connect the air out of the unit with the O₂ In using the supplied oxygen tubing, located on the front panel on the ozone generator side.
- Connect ozone generator (Ozone Out) to the venturi injector.
- Install a check valve 10 inches after ozone outlet tube fitting.
- You may do this by cutting tube ten inch after ozone outlet fitting.
- Connect both ends of cut tubes to the check valve.
- Please direct the arrow on the check valve toward the venturi injector.
- Turn ON/OFF both the main power and air compressor switch located on the front panel.
- To power down, flip the ozone switch and wait 30 seconds. Then flip the air pump switch.

Using External Air Compressor:

- Install air dryer after the air compressor.
- Connect air dryer outlet to ozone generator (Oxygen In).
- Set air inflow rate at 4 to 6 liters per minute.
- Connect ozone generator (Ozone Out) to venturi injector.
- Install a check valve 10 inches after ozone outlet tube fitting. This can be done by cutting a tube ten inches after ozone outlet fitting.
- Connect both ends of cut tubes to the check valve. Please direct the arrow on the check valve toward venturi injector.
- Turn ON/OFF main power and air compressor switch at the same time.
- To turn off, flip off the ozone power switch and wait 30 seconds. Then turn off external air pump.

NOTE: Do not turn ON the air compressor switch on the front panel when using oxygen generator, oxygen bottle or tank.

Applications

The MP Series can be used to clean water in emergency storage, spas, bathtubs, fountains, wading pools and more. It can also be used to clean drinking water from well sources or city water supplies. Ozone will remove undesirable tastes, chemicals, odors and colors caused by iron, copper, manganese, chlorine and organic chemicals such as pesticides, and herbicides.

NOTE: Do not use water from a source that is questionable.

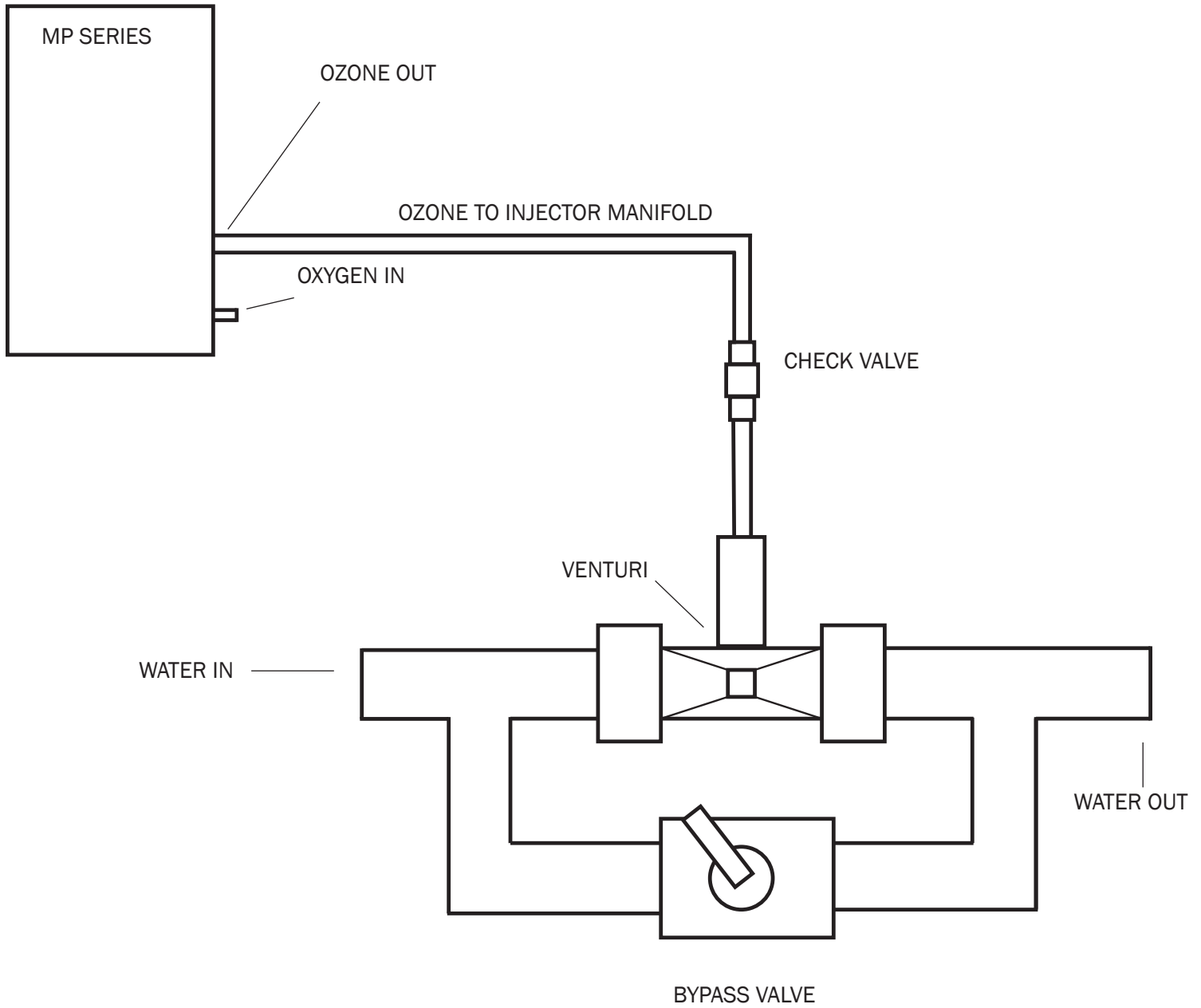
With the MP Series, treating water is a simple process. Times will vary based on the application and strength of the MP Series unit.

Follow these steps:

- To treat water, place the white or gray dispersion stone into the water container.
- The stones used with the MP-1000 unit should be no more than 12 inches deep in the liquid. The stones, when used with the other MP Series units should be no more than 18 inches deep in the liquid being ozonated.
- Ozone removes excess minerals including iron, manganese and lead, as well as radon and sulfur gases.

CAUTION: OSHA Permissible Exposure Limit is 100 PPB

Schematic Diagrams

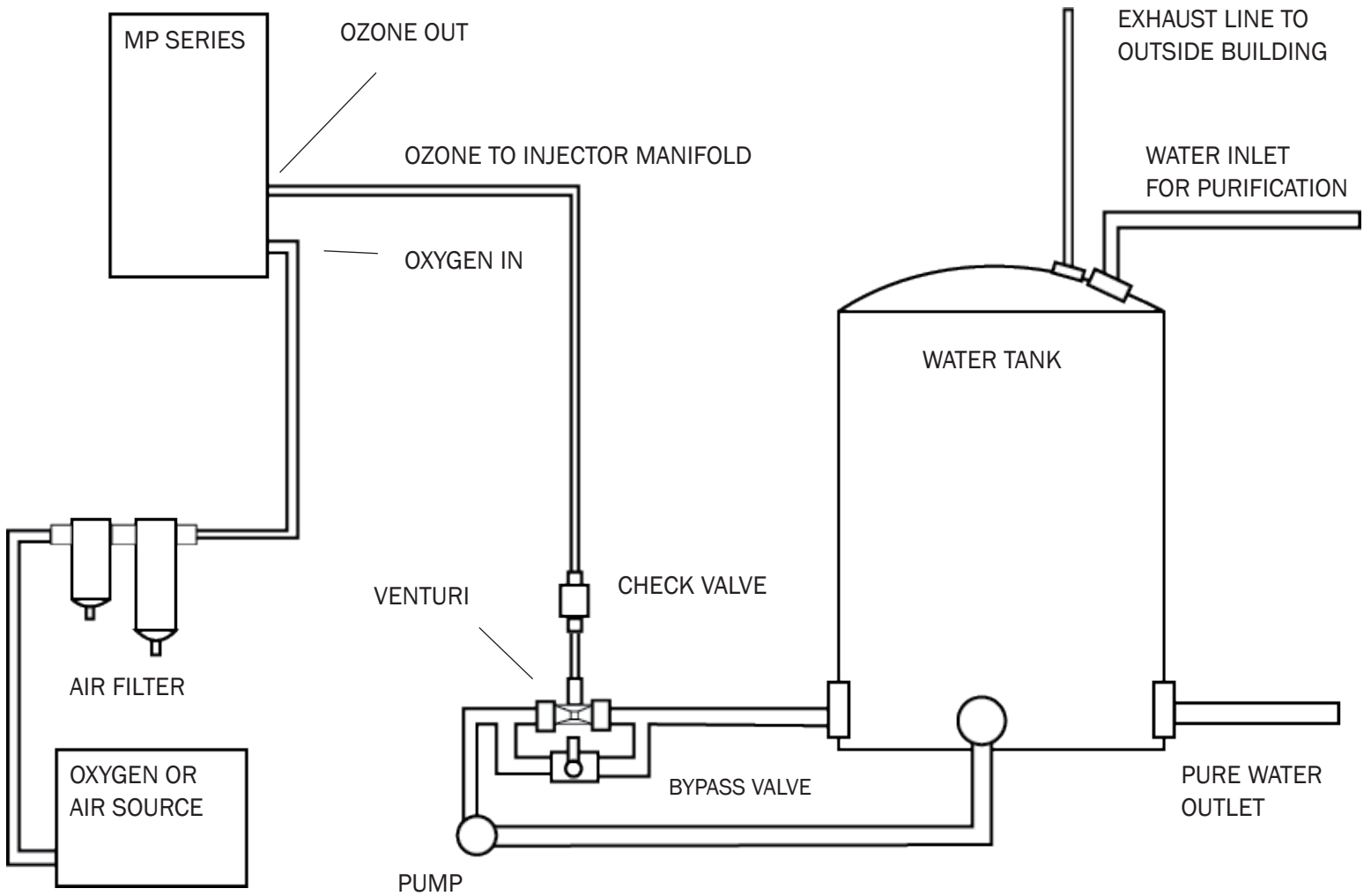


INJECTOR MANIFOLD

(Figure 1.1)

For uses with Water via Injector Manifold

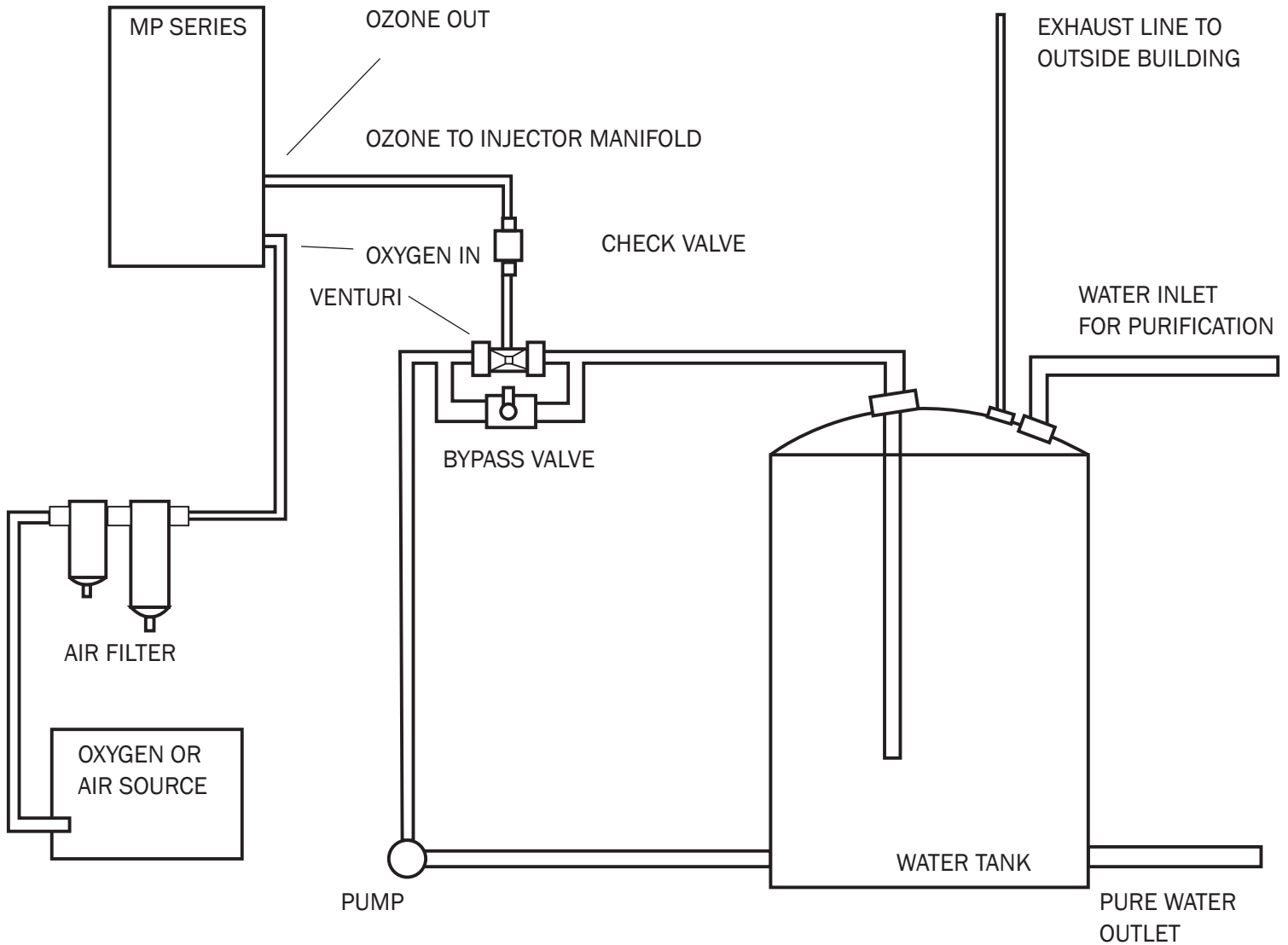
(Figure 1.2)



NOTE: Ozone generator and ozone line should be above the water tank level. This would prevent of back flow of water to ozone generator.

For uses with Water via Injector Manifold

(Figure 1.3)



NOTE: Ozone generator and ozone line should be above the water tank level. This would prevent of back flow of water to ozone generator.

Maintenance

Clean Fan Screen

Clean fan screen every 2 to 4 weeks as needed. If ozone generator is installed in poor air quality area with dust, the screen must be cleaned as needed in order for air to pass through the unit and cool the parts inside the generator.

- Turn the ozone generator off
- Remove the back fan guard and screen
- Clean sponge screen with water and soap
- Dry sponge screen with a clean towel
- Reinstall the screen and fan guard
- Turn the ozone generator on
- Be sure the screen does not touch the fan blade

Changing Board Voltage

- To begin, unplug the unit
- Open up the MP unit by removing the outer shell
- Next, find the three small silver prongs on a black piece next to the ozone board power wire
- The jumper will be placed on this black piece with the three small silver prongs
- Find the small black jumper on the board
- Next, move the jumper forward one prong
- Then, secure the prong in place by pressing it down
- By moving the jumper forward, you have successfully changed your unit to 220 volts
- Other parts will still be 110 volts (ex: fan, air pump)

Changing Fuse

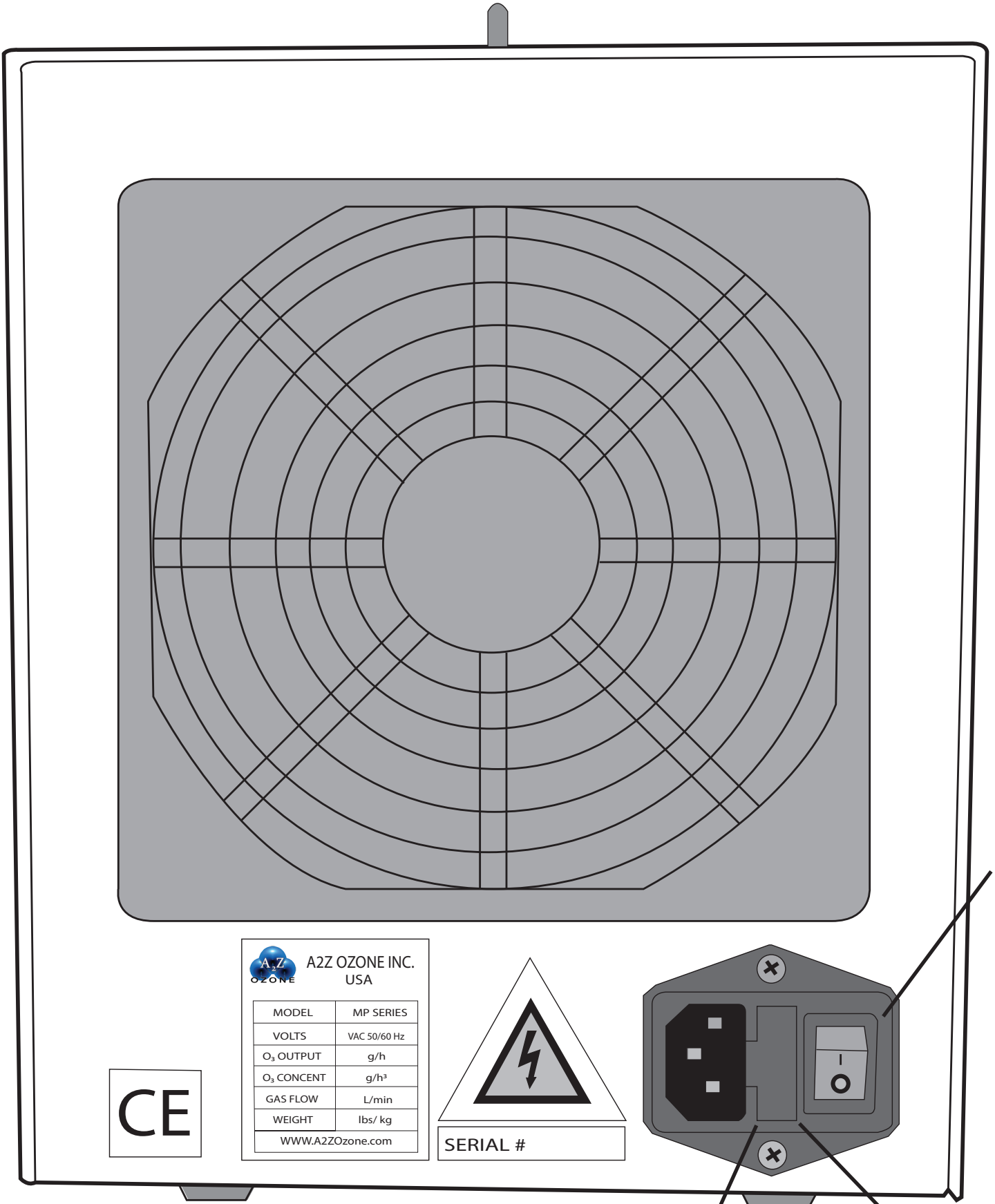
Fuses are located on the back left side and inside on the board.

See the table below for details:

Unit	Outside Fuse (AMPS)	Inside Fuse (AMPS)
MP-1	3A	3A
MP-3, MP-5, MP-8	3A	5A

Troubleshooting

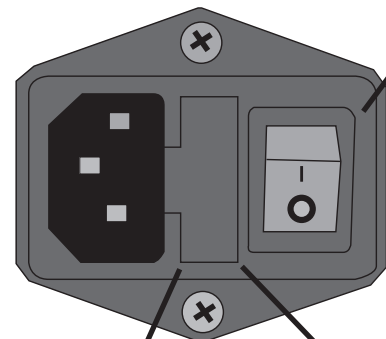
Problem	Possible Cause	What to Do
No Ozone	Bad ozone board	Normally the fuse on the back of the unit will blow or the ozone light won't light up. Contact us for a replacement board.
	No air flow	Make sure the air loop is in the correct position if using ambient air. Make sure O ₂ generator is functioning and O ₂ is flowing.
	Broken power switch	If the power switch is broken then there won't be power to the exhaust fan. Contact us for a replacement.
No Power	Check fuses	There are two fuses. Usually the back rocker will blow. The other fuse is on the ozone board.
	Check the timer knob	If the timer knob isn't engaged then the unit won't power on.
	Back switch	If there is no power entering the unit then there is something wrong with the back rocker switch.



CE

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MODEL	MP SERIES
VOLTS	VAC 50/60 Hz
O ₃ OUTPUT	g/h
O ₃ CONCENT	g/h ³
GAS FLOW	L/min
WEIGHT	lbs/ kg
WWW.A2ZOzone.com	



1

3

2

The test method for failure of the MP Series:

- Check the power input for correct voltage (110V or 220V).
- If the unit is on but no ozone is being produced, this could be due to:
 - Overheating of the unit
 - Water back flow to the ozone generator
- Turn off ozone generator and let air flow through the unit for five to ten minutes.
- Check the fuse, change if needed.
 - The MP Series units use a 2 or 3 AMP fuse depending on the model.
- Check the air compressor line or oxygen input
- If the generator is taking in oxygen, please check the tube inside the machine for kinks.
- If the machine can produce some air, but the air is not ozone please check the following:
 - The ozone power indication lamp is lit
 - Check ozone control knob is set above 20%

If you are still experiencing problems, please contact A2Z Ozone at (502) 499-4977 or service@a2zozone.com for more information.

1	Main Power Switch	Powers the whole unit. If there is no power to the unit, check here first.
2	Main Fuse	If no power to the unit, check the Main Power Switch first, then check this fuse.
3	Spare Fuse	Holds spare 3A fuse.

Warranty

A2Z Ozone Systems Inc. - ONE YEAR LIMITED WARRANTY

The limited warranty set forth below applies to products manufactured by A2Z Ozone Systems Inc. - and sold by A2Z Ozone Systems or its authorized dealers. This limited warranty is given only to the first retail purchaser of such products and is not transferable to any subsequent owners or purchasers of such products. A2Z Ozone warrants that it or its authorized dealers will repair or replace, at its option, any part of such products proven to be defective in materials or workmanship within ONE (1) year from the date of retail purchase of such products. (All parts) ANY REPAIR OR REPLACEMENT WILL BE WARRANTED ONLY FOR THE BALANCE OF THE ORIGINAL WARRANTY PERIOD. NOTE: USE ONLY A2Z Ozone AUTHORIZED REPLACEMENT PARTS. USE OF ANY OTHER PART(S) WILL AUTOMATICALLY VOID THIS WARRANTY. THIS LIMITED WARRANTY DOES NOT INCLUDE ANY OF THE FOLLOWING:

- (a) Any labor charges for troubleshooting, removal, or installation of such parts;
- (b) any repair or replacement of such parts necessitated by faulty installation, improper maintenance, improper operation, misuse, abuse, negligence, accident, fire, repair material, and/or unauthorized accessories;
- (c) Any such products installed without regard to required local codes and accepted trade practices;
- (d) ANY IMPLIED WARRANTY OF MERCHANTABILITY OR IMPLIED WARRANTY OF FITNESS FOR PARTICULAR PURPOSE, AND SUCH WARRANTIES ARE HEREBY DISCLAIMED: AND
- (e) A2Z Ozone SHALL NOT BE LIABLE UNDER ANY CIRCUMSTANCES FOR LOSS OF USE OF SUCH PRODUCTS, LOST PROFITS, DIRECT DAMAGES, INDIRECT DAMAGES, CONSEQUENTIAL DAMAGES AND/OR INCIDENTAL DAMAGES.

TO OBTAIN WARRANTY SERVICE

Contact A2Z Ozone, 1844 Cargo Court Louisville, KY 40299, USA

Customer Service Number: +1 502-499-4977.

When filing a claim, you must provide:

- 1) Your name, mailing address and telephone number
- 2) The selling dealer's name
- 3) Proof of date of purchase
- 4) The date of failure
- 5) A description of the failure.

After this information is provided, A2Z Ozone will release a RETURN GOODS AUTHORIZATION (RAN) NUMBER. After receiving the RAN number the part in question must be returned to A2Z Ozone, freight prepaid, with the RAN number clearly marked on the outside of the package. All preauthorized defective parts must be returned to A2Z Ozone within thirty (30) days. Under no circumstances may any product be returned to A2Z Ozone without prior authorization. You must call or write prior to returning product or your returned goods shipment will be refused. Upon receipt of preauthorized returned goods, A2Z Ozone will repair or replace, at its option, the defective product(s) and return them (shipping is prepaid for units under warranty for USA customers only). Buyer's acceptance of the product and use thereof constitutes acceptance of these terms.

A2Z Ozone WARRANTY REGISTRATION CARD

This information can be also be sent by EMAIL to us. Please provide ALL pertinent information and send within twenty (20) days to: service@a2zozone.com

Otherwise, please fill out completely and return to A2Z Ozone by post within twenty (20) days of purchase.

Customer Info:

Name _____

Address _____

City _____ State _____ Zip _____

Phone (____) _____

Dealer Info:

Dealer Name _____

Dealer Address _____

City _____ State _____ Zip _____

Phone () _____

Purchase/Product Info:

Purchased Date: _____ Date Installed _____

Product Purchased: _____

Comments / Questions:

DO NOT FORGET TO CUT OUT, PLACE IN ENVELOPE AND MAIL TO THE FOLLOWING ADDRESS FOR INSTANT WARRANTY COVERAGE!

**A2Z Ozone Systems Inc.
ATTN: Warranty Dept.
1844 Cargo Court
Louisville, KY 40299, USA**