LANCASTER
WATER TREATMENT

EOG

ENHANCED OXIDATION GENERATOR INSTALLATION AND SERVICE MANUAL

Congratulations on purchasing your new Lancaster Water Filter. This unit is designed to give you many years of trouble free service. For servicing and future inspection purposes, please file this booklet with your important documents.
In the event that you need assistance for servicing your water filter, please first contact the professional contractor who installed the system.

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CAUTION

Read the following safety guidelines thoroughly before attempting to operate or install 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, maintain and operate this equipment.

The equipment must be operated using a properly grounded electrical circuit that is protected by either a fuse or circuit breaker.

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

* Lancaster Water Group assumes no liability for damages or injuries incurred by misuse of this product.

INSTALLATION AND OPERATION

Your generator requires special operating conditions in order to maintain performance and reliability. Your ozone generator is designed to be operated under a negative pressure situation.

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

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.

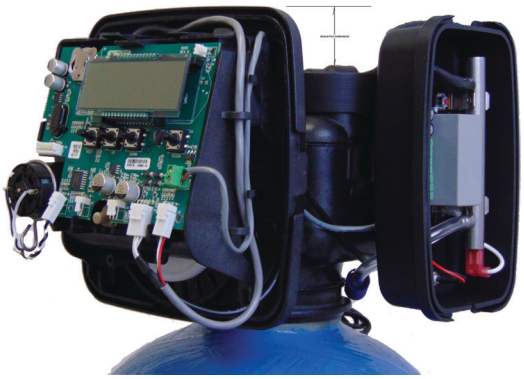
INTERNAL: Keep the inside of the generator chassis clean and dry. Dust particles and condensation pose a challenge to the consistent operation of all ozone generators. Make a note to inspect the internal cleanliness of the equipment when scheduled maintenance is performed. For further information, refer to page 5.

INSTALLATION

The EOG is factory installed on the filter control valve and is activated by the filter control valve's factory programmed timing schedule. The following installation instructions are offered only if needed e.g. field replacement.

1. Mount the EOG to the control valve. A #2 Philips screwdriver will be required.
    a. Install clamp ring into EOG backplate receiver.
    b. Install port clip into EOG backplate receiver.
    c. Loosen clamp screw, slide clamp over valve injector cap. Rotate EOG counterclockwise to secure port clip. Tighten clamp screw.

2. Disconnect power to the control valve. Remove the front valve cover from backplate. Release the control board bracket from backplate.



3. Route the grey control wire from the EOG into valve housing through the hole in the backplate, and through the strain relief channel above to keep wiring in place.
    a. Leave enough wire length to connect to the signal relay terminal block of the control circuit board. Make sure the wire is flush in the channel for proper bracket installation.
    b. Replace the control board bracket into backplate until it "snaps" into place.

4. Secure red wire into RLY I terminal, and black wire into +COM terminal on control circuit board.

5. Replace control valve front cover.

6. Plug the supplied wall transformer into a wall outlet. Plug the male DC plug into the female DC jack located at the back of the EOG.

OPERATION

The EOG will automatically turn on and off by the control PCB defined timing schedule. The EOG control board utilizes an on-board diagnostic LED light to convey real-time performance status of the unit. The control board within the EOG has several inputs and outputs. The following will address functions of the diagnostic LED, control input, and auxiliary outputs.

LED DIAGNOSTIC FUNCTIONS:

Green Light Blinking Slowly: Standby mode; unit is powered, pilot input is OFF.

Green Light Blinking Quickly: High voltage startup (up to 3 seconds).

Green Light Solid: High voltage is ON & stable; CD cell producing ozone.

Red Light Solid: Unstable operation; CD cell may need cleaning.

Green/Red Light Alternating Twice/Second: HV is ON, but operating current is low. If persistent, CD cell may need cleaning.

Red Light Flashing: NO or NC contacts are shorted. Remove short condition.

Orange Light: I-year timer has expired; clean CD cell, then reset timer by pressing red "alarm reset" button on PCB once.

Control Input:
The EOG PCB is activated to produce ozone when a pilot input signal is applied across "+" & "pilot" terminals.

Auxiliary Output Functions:
The NO/NC auxiliary outputs have a 3 second off-delay, after the pilot signal is shut off. These outputs are capable of outputting a maximum of 60mA @ 70°F and are intended to be used as a control circuit only. Attach positive wire to NO or NC output terminal, and negative wire to GND terminal to complete the desired circuit. See figure I, on page 8 for auxiliary output locations.

Fusing:
The control PCB is equipped with automatically resetting on-board fuses. If these fuses trip, due to a short of the HV transformer, excessive load on the auxiliary output(s), remove excessive load/cause of short, and cycle main power on/off to reset. If the HV transformer is shorted, the LED indicator will stay solid red until condition is remedied. If either NO or NC output is active and experiences excessive load, the LED indicator will quickly flash red until condition is removed.

MAINTENANCE

The EOG ozone generator is 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 other 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 warranty terms.

OZONE GENERATOR MAINTENANCE

Frequency of Maintenance: **Every 12 months, more frequently in high humidity areas.**

Perform the following CD cell cleaning procedure:

Note: A CD cell cleaning kit may be purchased. Reference page 6 for more information.

__CAUTION:__ UNPLUG POWER SUPPLY TO EOG BEFORE PERFORMING SERVICE

1. With the front cover removed, remove the CD cell from the ozone generator:
    a. Disconnect the red spade terminal connector from the CD cell connection terminal.
    b. Cut the CD cell retaining strap holding the cell into the cell clips, and discard.
    c. Disconnect the air inlet and ozone outlet hoses from the CD cell barb fittings.
    d. Pull the CD cell straight up from the retaining clips.

2. Flush the CD cell with warm water until the water comes out entirely clean:
    a. Connect a 3/16" I.D. piece of tubing to either of the CD cell barb fittings.
    b. Using a syringe or rubber bulb pump to work the warm water through the CD cell, flushing until all nitric acid or obstructions are removed, and the water runs clean. **(NOTE: Hot water can be used if nitric acid buildup is severe)**

3. Ensure that the CD cell is completely dry, inside and out, before re-installation:
    a. Use dry, compressed air to blow through either CD cell barbed fitting until no moisture is ejected from the opposite barbed fitting.

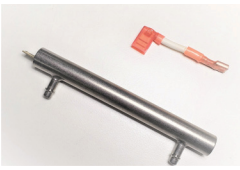
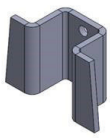
4. Reinstall clean, dry CD cell into EOG in reverse order, making sure all air and electrical connections are secure.

Frequency of Maintenance: Every 12 months

Perform the following general maintenance and CD cell cleaning procedure:

1. Disconnect EOG from power source.
2. Remove cover.
3. Inspect the inside of the generator for dust and moisture.
4. Thoroughly clean and dry the inside of the generator.
5. Replace top cover.
6. Replace the in-line check valves.

SPARE/REPLACEMENT PARTS

IMAGE	PART NUMBER	DESCRIPTION
	47044-I	**CD Cell Cleaning Kit** CD cells within Ozotech products are designed for easy cleaning. Periodic cleaning of the CD cell is important and will keep your generator operating effectively and efficiently. Cleaning the cell can be done quickly ...in four easy steps.
	47047	**Cartridge Air Dryer Kit** Protect your EOG from the harmful effects of wet, humid air. The EOG Air Dryer promotes long-lasting, trouble-free service for your EOG based water treatment system.
	47047-R	**Air Dryer Replacement Cartridge** Keep Ozotech air dryer cartridges on hand to replace worn out cartridges as needed.
	33218-R	**EOG and Ozotech EOG Replacement CD Cell** Keep a clean, spare Ozotech Corona Discharge cell on hand for easy scheduled maintenance. Fits the 31504 and the 31506 series EOG and Ozotech EOG.
	47049	3/16" Barbed Check Valve Kit The in-line check valve on your Ozotech EOG should be replaced once a year to ensure water does not back up into the CD Cell.
	40085	**1.5 Meter Cord Extension** The 1.5 Meter (59") low voltage cord extension is available to get your Ozotech EOG power transformer to the closest existing power outlet. (Only one extension may be used with the power supply)
	40080-03	**1500 mA 12 VDC Power Supply w/1.5 Meter Cord** Supplies 12 Volts DC power for the Ozotech EOG.
	34260	**Ozotech EOG Wall Mount Adaptor** Replaces control valve mounting clamp and clip for wall or flat surface mount installations.

SPECIFICATIONS

INPUT POWER REQUIREMENTS:

Operating Voltage: 12VDC via 120/240VAC 50/60Hz switching power supply
Power Consumption: 600mA @ 12VDC (7.2 watts) nominal

Size (L x W x H): 6.8" x 4.4" x 5.4"
Shipping Weight: 2 lbs.
Ozone Output: 220 mg/hr.
Enclosure: ABS

COMPONENT REPLACEMENT

CD CELL REPLACEMENT

CAUTION: UNPLUG POWER SUPPLY TO EOG BEFORE PERFORMING SERVICE

1. With the front cover removed, remove the CD cell from the ozone generator:
    a. Disconnect the red spade terminal connector from the CD cell connection terminal.
    b. Cut the CD cell retaining strap holding the cell into the cell clips, and discard.
    c. Disconnect the air inlet and ozone outlet hoses from the CD cell barb fittings.
    d. Pull the CD cell straight up from the retaining clips.

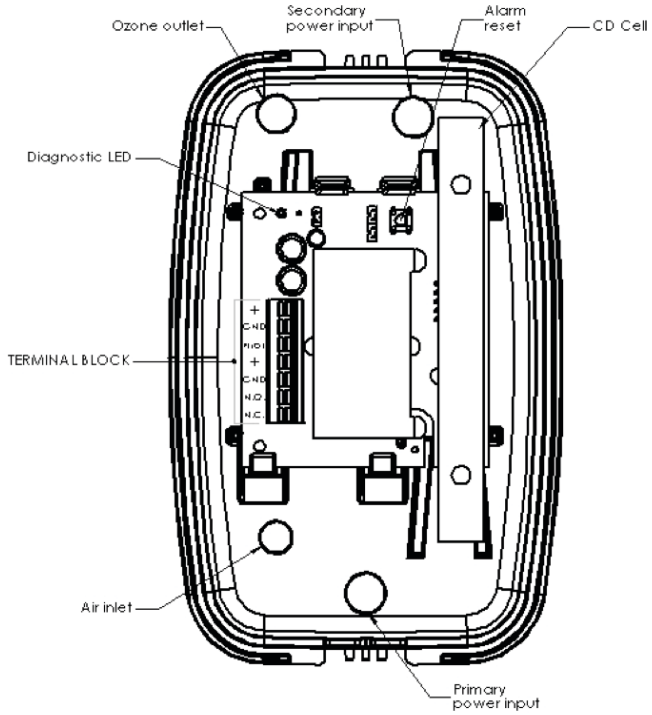
2. Replace with new CD cell in reverse order, making sure all air and electrical connections are secure.

TROUBLESHOOTING GUIDE

SYSTEM	POSSIBLE CAUSE	SOLUTION
Unit doesn't turn on	Unit is not connected to power source, or is connected to improper power source	Refer to input power requirements on pg. 7, and Figure I on pg. 8 for proper electrical connections.
	Electrical short circuit	Visually inspect unit and check for loose connections. Inspect printed circuit board (PCB) for burn marks. Inspect HV wire from PCB to CD cell for disconnection or burn marks. Repair any and all problems prior to placing unit back into service, or contact factory for service.
	Unit is connected to improper power source	Refer to pg. 7 to ensure that unit is plugged into proper voltage outlet.
Unit turns on, but no ozone output	Frequency driver is defective	Replace PCB board.
	Frequency driver high voltage lead not connected to ozone cell	Connect red flag terminal to CD cell spade connection.
	Water has been allowed to back up into the CD cell and has caused a direct short	Dry CD cell using drying procedure on pg. 5. Replace CD cell.
	Cell is plugged with build-up of nitrous byproducts and particulate matter. Usually caused by the lack of proper air preparation	Refer to Maintenance on pg. 5 to clean CD cell. Replace CD cell.

ILLUSTRATIONS

FIGURE I: EOG INTERNAL LAYOUT



LANCASTER WATER TREATMENT A DIVISION OF C-B TOOL CO.
1340 MANHEIM PIKE ● LANCASTER PA 17601-3196 ● TEL:717-397-3521 ● FAX: 717-392-0266
www.lancasterwatergroup.com ● E-mail: info@lancasterwatergroup.com