LANCASTER
WATER TREATMENT

EOG-1

ENHANCED OXYGEN GENERATOR
ONE PLUG DESIGN
INSTALLATION AND SERVICE MANUAL

Used with AquaNue™ LXKATAIR03 Filter Models having the serial number ending with number 1

Congratulations on purchasing your new Lancaster Water Filter, fitted with the EOG-1 One Plug Design Ozone Generator. 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. Keep these instructions for reference. Heed all warnings. Follow all instructions.

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

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

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.

To reduce the risk of fire and electric shock, do not expose this product to rain or moisture.

Do not alter the product from its original construction. Doing so will cause the unit to function outside of the manufacturer's specifications, may cause damage to the unit, could cause harm to the user, and will void warranty terms.

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

Special Note:
This unit is not intended to aid in the mitigation of microorganisms and is not duly registered as a pesticidal device. Please follow all instructions within this manual for use.

SYMBOL DEFINITIONS

Read the Manual – Mandatory action that must be taken to avoid hazards.

Warning/Caution - An appropriate safety instruction must be followed or caution to a potential hazard exists.

Electrical Hazard – Safety instruction must be followed to avoid coming into contact with electricity.

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: For best operating performance and longevity, it is important to choose a cool, dry, clean operating environment for the EOG-I. Consideration of these factors should be a priority. If possible, install your filter fitted with the EOG-I in an area that is free of airborne dust and moisture.

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 pages 6-8.

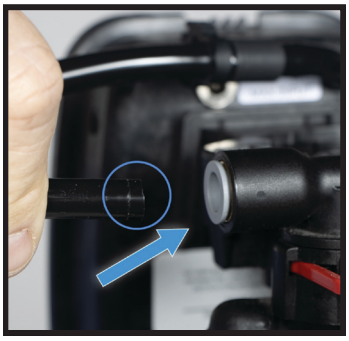
INSTALLATION

The LXKATAIRO3 filter has been factory assembled with...

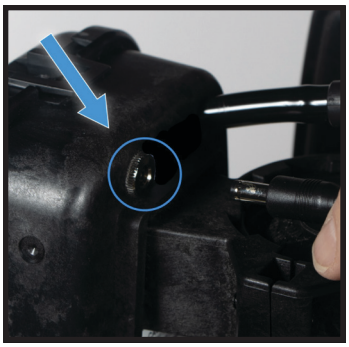
- an AIR BLOCKER inside the tank, bayonet connected to the control valve lower opening
- a black ozone resistant check valve cartridge inside the control valve brine elbow
- a white check valve cartridge inside the inlet elbow
- a light-green K-injector in the control valve DN position, providing optimum flow for the EOG-I CD cell
- an interconnect cable routed from the EOG-I to the backside of the control valve back plate, through the slot and up through the strain relief channel to keep the cable in place; the cable's pilot wire is secured into the control valve PC board RLYI terminal and the 4-pin female molex connector onto the control valve PC board 4-pin POWER connector

The EOG-I is factory installed on the filter control valve and is activated by the filter control valve's factory programmed timing schedule.

Make sure the black tube from the EOG-I is inserted into the 3/8" push to connect elbow on the filter control valve.



Plug the male DC connector from the included power adapter into the female DC jack located at the back of the EOG-I. Do **NOT** plug the power adapter into a 120V receptacle yet. The power adapter supplies the power to both the EOG-I and the control valve. Refer to the filter manual start-up procedure.



OPERATION

The EOG-I will automatically turn on and off by the filter control valve's factory programmed timing schedule. The EOG-I control board utilizes an on-board diagnostic LED light to convey real-time performance status of the unit. The control board within the EOG-I 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: 1-year timer has expired; perform recommended maintenance, then reset timer by pressing red "alarm reset" button on PCB once.

Control Input:
The EOG-I 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 on and off-delay, after the pilot signal is activated or deactivated. These outputs are capable of providing a maximum of 60mA @ 70°F and are intended to be used as a control circuit only.

Fusing:

The EOG-I PCB is equipped with automatically resetting on-board fuses. If these fuses trip, due to a short of the HV transformer, or an excessive load on the auxiliary output(s), remove the 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-I 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.**

Note: A CD cell cleaning kit may be purchased. Reference pages 9-10 for more information.

__CAUTION__: UNPLUG POWER SUPPLY TO EOG-I BEFORE PERFORMING SERVICE

Perform the following general maintenance procedure:

1. Disconnect the EOG-I from the 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 any in-line and brine elbow check valves.
7. Clean or replace the CD cell.

Normally, the EOG-I controller board will signal cell maintenance after one year of service by changing the LED indicator light to orange. Once service has been performed, the timer can be reset by pressing red "alarm reset" button on PCB once. However, if the cell is serviced or replaced prior to the one-year service signal, a "forced reset" of the timer should be performed by following the instuctions below.

FORCED ONE-YEAR SERVICE TIMER RESET INSTRUCTIONS

Follow these instructions to perform a forced reset of the EOG board:

1. Disconnect power from the EOG-I.
2. Press and hold reset button while re-powering the EOG-I, then release.
3. Pulsing orange LED will indicate timer reset function is active.
   * Press reset button again to complete reset. LED will pulse green when finished.
4. The EOG-I is now ready to operate as normal.

Notice: This feature only applies to EOG-I manufactured after May 2020.

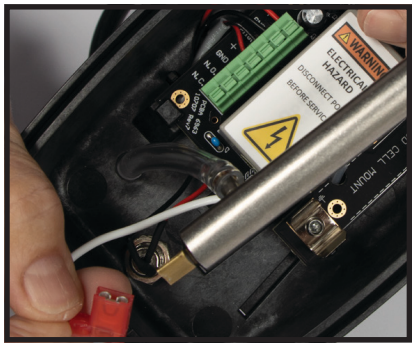
To abort the timer reset once timer reset function is active (pulsing orange), disconnect then reconnect power without pressing any buttons.

CLEANING THE CORONA DISCHARGE CELL

CAUTION: UNPLUG POWER SUPPLY TO THE EOG-I BEFORE PERFORMING SERVICE

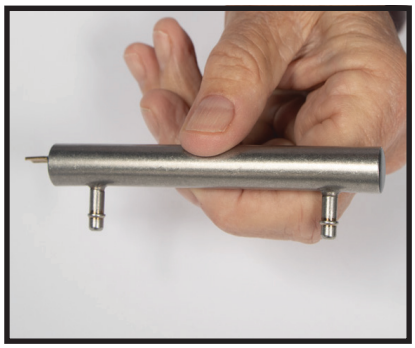
1. Remove any cable ties that may be securing the CD cell into the grounding clips.
   (1a.) Disconnect the cell from the unit by removing cell-to-board electrical connections and the (1b.) CD cell from it's mounting clips. (1c.) Remove the tubing from the cell barbs. (1d.)The cell is now free from the generator.

1a.

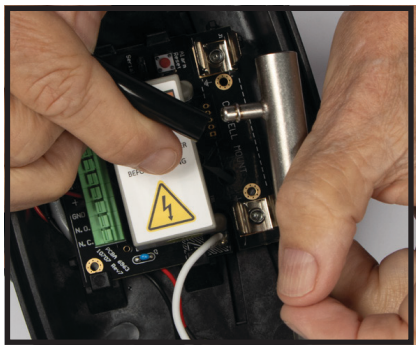


1b.

1c.



1d.



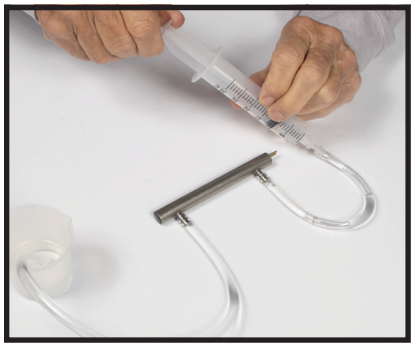
2. Connect the longer piece of clear tubing from your cleaning kit to one of the cell barbs. (2a.) Attach the shorter piece of clear tubing from the kit to the open CD cell barb. (2b.)Insert the tubing adapter, attached to the syringe, into the open end of the short piece of tubing. Fill the beaker included in your kit with warm water. (2c.) Place the open end of the long clear tube into the beaker. Now you're ready to flush the cell.

2a.

2b.

2c.

3. Flush water through the cell by pulling back and pushing the syringe plunger. Water may become cloudy or discolored as the nitric byproducts are released from the CD cell during flushing. Discard and replace warm water in the beaker as cloudiness continues. Flush the CD cell until the water is clear.



4. Remove both pieces of tubing from the CD cell barbs. To dry the cell, place the nozzle of the compressed air into one of the barbs of the CD cell. Depress the trigger on the can to dry the cell until all moisture is evacuated from the cell.

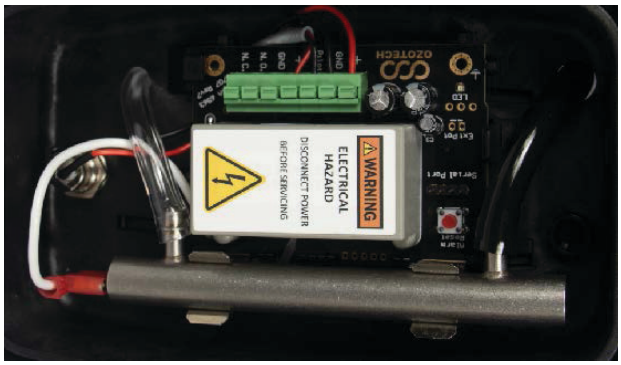
5. Follow steps I to Id. in reverse order to replace the clean CD cell into the ozone generator. Restore power to the ozone generator once all covers are replaced.

REPLACING A CORONA DISCHARGE CELL

__CAUTION__: UNPLUG POWER SUPPLY TO EOG-I BEFORE PERFORMING SERVICE

I. With the cover of your unit removed, remove the CD cell from the ozone generator:
   a. Disconnect any electrical connections between the CD cell and the electronics board.
   b. Remove and discard any shipping ties that may be securing the CD cell(s).
   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 a new CD cell in reverse order, making sure all air and electrical connections are secure.



New CD cell as installed on the EOG-I

SPARE/REPLACEMENT PARTS & ACCESSORIES

IMAGE	PART NUMBER	DESCRIPTION
	47047-01	Intake Air Dryer Cartridge with Mounting Clip and Tubing
	47047-01R	Intake Air Dryer Cartridge
	30078	Intake Air Dryer 2.0 with Mounting Kit and Tubing
	32099	Intake Air Dryer 2.0 Cartridge
	40080-01	Wall Transformer, 100-240Vac, 50/60 Hz, regulated to 12Vdc/2A, For Use with Two Plug Design EOG
	40067	Wall Transformer, 100-240Vac, 50/60 Hz, regulated to 14Vdc/2.1A, For Use with One Plug Design **EOG-I**
	34260-R	Flat Surface Mount Bracket
	34054	Air inlet Filter
	31506-CC	Clip and Clamp Mounting Assembly
	33218-R	Corona Discharge Cell
	OV15-V	Brine Elbow Check Valve* Black with Viton O-Ring

SPARE/REPLACEMENT PARTS & ACCESSORIES

IMAGE	PART NUMBER	DESCRIPTION
	47044-I	Corona Discharge Cell Cleaning Kit
	47049	Check Valve, 3/16" , In/Out, Kynar
	38113-H3	EOG-I One Plug Design Interconnect Cable
	V3957	Control Valve Inlet Check Valve*

*To be used with Clack® control valves only.

SPECIFICATIONS

SPECIFICATION	EOG-I
OPERATING VOLTAGE	15 VDC via 120/240VAC 50/60HZ SWITCHING POWER SUPPLY
POWER CONSUMPTION	600mA @ 15VDC (7.2 WATTS) NOMINAL
OZONE OUTPUT	220 MG/HR
SIZE	6.8" x 4.4" x 5.4"
SHIPPING WEIGHT	2 LBS.
ENCLOSURE	ABS

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. 10, and Figure 1 below 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. 10 to ensure that unit is plugged into proper voltage outlet.
Unit turns on, but no ozone output	Frequency driver is defective	Contact factory for service.
	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	Clean and dry CD cell using cleaning procedure on pages 7-8. 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 pages 7-8 to clean CD cell. Replace CD cell.

ILLUSTRATIONS

FIGURE 1: EOG-1 INTERNAL LAYOUT

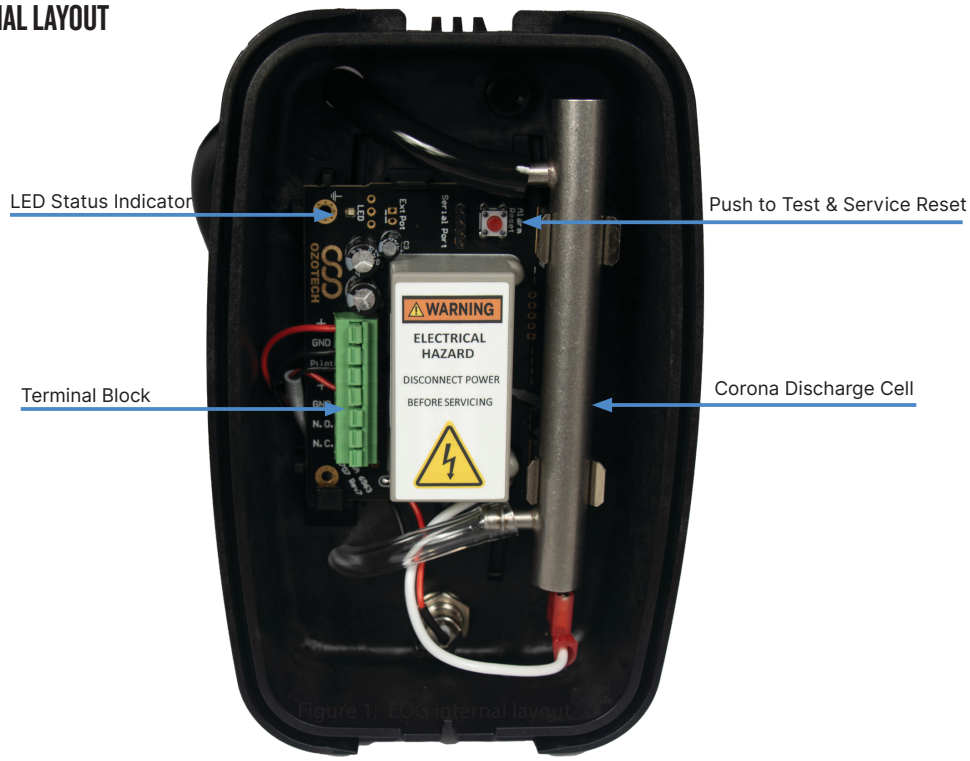


Figure 1: EOG internal layout

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