
*Infinity*TM CORONA DISCHARGE OZONE GENERATORS

CD-7 THRU CD-15



INSTALLATION & OPERATIONS MANUAL

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**ALL Infinity CD Ozone Generators are
 UL Classified and NSF Listed.**



IMPORTANT SAFETY INSTRUCTIONS

READ AND FOLLOW ALL INSTRUCTIONS.

- Read this manual completely before attempting installation.
- Install at least 5 feet (1.5meters) from wall of spa or pool water using nonmetallic plumbing. Install ozone generator no less than one (1) foot above maximum water level to prevent water from contacting electrical equipment. Install in accordance with the installation instructions.
- Connect to a grounded, grounding type receptacle only.
- Do not bury cord.
- Warning - To reduce the risk of electrical shock, replace damaged cord 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.
- Warning - Short term inhalation of high concentrations of ozone and long term inhalation of low concentrations of ozone can cause serious harmful physiological effects. 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.

SAVE THESE INSTRUCTIONS!



SECTION 1

General Information

1A. Description

The Infinity™ Corona Discharge series ozone generator described in this manual is designed to provide the benefits of ozonated water in an environmentally safe and effective manner. Infinity™ generators are UL and NSF listed. The high quality, specially engineered components ensure efficient ozone output and reliable performance.

As a result of proper use of the Infinity™ CD ozone generators, unpleasant effects of traditional chemical use, (dry skin, red eyes, green hair) are virtually eliminated. The Infinity CD ozone generator is safe and harmless to your equipment if installed properly.

1B. Specifications

Ozone Output:

Ozone output ($\pm 10\%$): CD-7 7 g/hr
 CD-15 15 g/hr
 Flow rate (max): CD-7 7 scfh (3.5 lpm)
 CD-15 15 scfh (7 lpm)
 % weight O₃: 2.5-3.0%

Power Requirements:

Domestic: CD-7 115VAC, 50/60 Hz, 1Ø, 6.0 Amp
 CD-15 115VAC, 50/60 Hz, 1Ø, 7.5 Amp
 Export*: CD-7 230VAC, 50 Hz, 1Ø, 3.5 Amp
 CD-15 230VAC, 50 Hz, 1Ø, 4.0 Amp

Cooling Water Requirements:

.1 GPM (.4 lpm) of clean, filtered, fresh water.
NOTE: Typical pool water may be used for cooling. Generator efficiency and life will be improved at inlet temperatures of 80°F or less.
 Inlet temperature: 50°F - 90°F (10°C - 32°C)
 Inlet pressure: 15.0 - 40 psi (100 - 270 kPa)

Shipping Weight:

CD-7: Approx. 135 pounds / 61 kilos
 CD-15: Approx. 150 pounds / 70 kilos

Location Requirements**:

Mounting: Floor or wall mount in a clean, protected area using supplied brackets.
 Ambient Temp: 40°F - 100°F (5°C - 40°C)
 Ventilation: 6 air changes per hour. (min)

* 230V/50Hz unit supplied with enclosed step down transformer

**Protection from weather elements must be provided for outdoor installations. Operating outside of the recommended temp. ranges may result in damage not covered under the manufacturer's warranty.

1C. Warranty Summary

Limited Warranty:

2 years on entire generator
 In addition to the two (2) year warranty:
 3 years on weldments
 5 years on high voltage electrodes
 2 years on compressors that are maintained according to operation and maintenance manual.

SECTION 2

Installation

2A. Location

CD-7 and CD-15 are designed for either floor or wall mounting in a clean, protected area, either indoors or outdoors. Locate generator out of reach of sprinklers or drainage spouts. Allow sufficient access for maintenance and all tubing and electrical wires. Ozone generator should be installed no less than one foot above maximum water level.

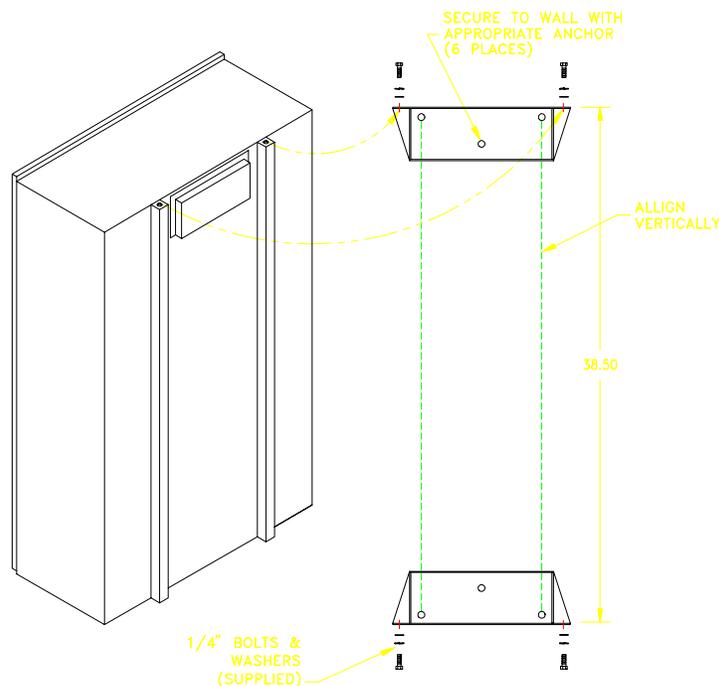


Figure 1: Wall Mount

2B. Mounting

2B-1. Wall Mount Option

1. Attach two mounting brackets to wall using anchors appropriate for mounting surface. **See figure 1.**
2. Using 1/4"-20 bolts (with washers as shown) secure generator to mounts.

2B-2. Floor Mount Option

1. Use the 4 1/4"-20 bolts with washers to secure feet to bottom of cabinet.
2. Stand upright and securely fasten to concrete slab using appropriate anchors and bolts.

2C. Electrical

Main power circuit: Unit is supplied with a standard power cord. Plug cord into standard 110V grounded, grounding type receptacle only. **NOTE:** The circuit must be protected by a ground-fault circuit interrupter (GFCI) installed in accordance with electrical codes.

2D. Plumbing

Ozone gas is introduced to the pool circulation line using a venturi injector. Suction developed by the venturi allows the CD to operate safely under vacuum. *See installation manual for MX-600-CD for proper venturi installation.*

2D-1. Ozone Gas Line

1. Connect ozone tubing to generator outlet fitting. (3/8" stainless steel compression fitting.)
2. Connect opposite end of ozone tubing to injector suction port. (Suction port fitting: 3/8" stainless steel compression fitting.) **See figure 2.**

NOTE: The ozone gas supply line must have a back flow prevention device (such as a check valve) installed between the ozone generator cabinet and the point of injection to prevent water from backing up into the generator system. An ozone supply check valve is included with the MX-600-CD system.

2D-2. Cooling Water

Cooling water must be supplied as specified in section 1B.

1/4" FPT connections are supplied on the generator. **See figure 2.** Be sure that the tubing is appropriately matched with the marked inlet and outlet ports. Carefully match and connect to water plumbing as shown in figure 2. Alternate method using connections at injector may be used.

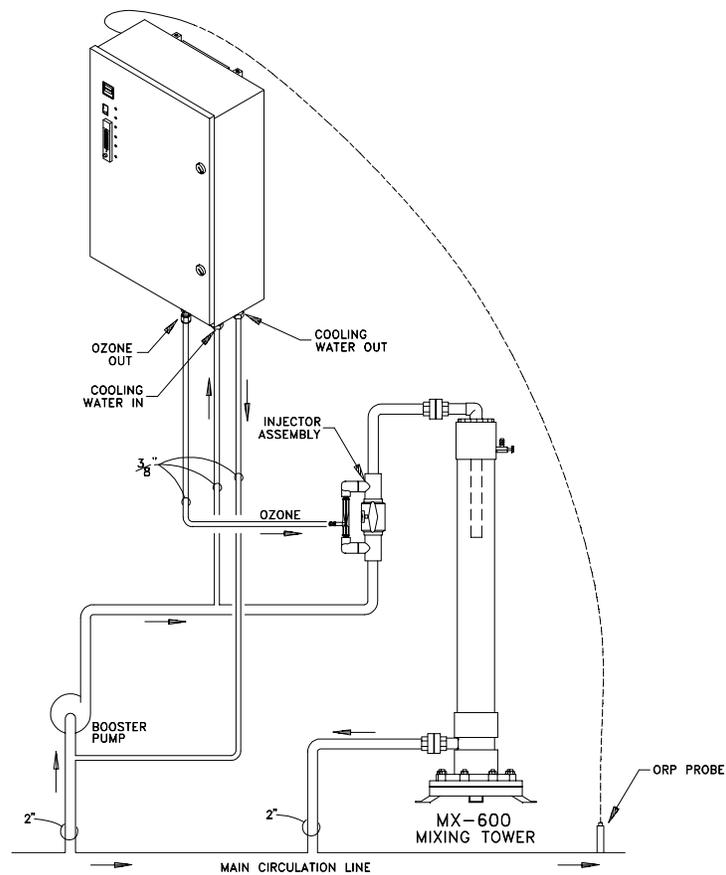


Figure 2: Plumbing Schematic

2E. ORP Sensor Connection

(For optional ORP Controller) Consists of mounting the ORP probe and routing the sensor cables.

2E-1. ORP Probe Mounting

The sensor should be placed in the water stream at a point downstream from the ozone injector. **See figure 2.**

1. Locate the point of insertion in the process pipe. **NOTE:** Install the ORP probe in a location which provides easy access for removal and cleaning of the probe. The probe should be installed such that the main stream ORP is measured. Locating the ORP probe upstream of the ozone measures the "pool" water. Locating the probe downstream of the ozone measures the ORP of water returning to pool.
2. Install an appropriately sized tee in the process line or drill and tap a 1/2" FPT hole in the process pipe as shown in figure 3.
3. Remove the protective cap and apply Teflon tape to the sensor threads. Thread the sensor into the fitting or tapped hole. Save the protective sensor cap for storage.
4. Start the circulation system and check for leaks around the sensor.

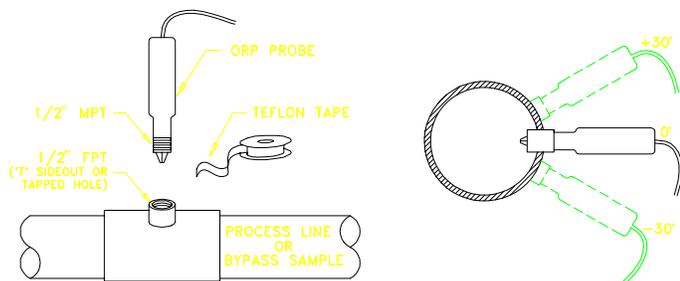


Figure 3: ORP Probe

2E-2. ORP Cable Routing:

Route the cable away from other power wires and protect cable from damage. (i.e. Conduit or attached to plumbing.) Connect the sensor cable to the BNC connector located on the left exterior wall of the generator cabinet.

SECTION 3 Operation

3A. General

To achieve optimal performance from the ozone system, the pool must be as clean as possible to start with.

1. Backwash or clean filters one day before starting the ozone generator.
2. Superchlorinate pool water using a chlorine based shock treatment.
3. Test pool chemistry and adjust pH between 7.4 and 7.6. Adjust total alkalinity between 80 and 120 ppm.
4. Run pool filtration continuously for 24 hours prior to starting ozone system.

3B. Initial System Start-Up

Upon completing all of the generator system connections and cleaning the pool as outlined above, you are ready to begin start up procedures.

1. Check electrical fittings.
2. Check for proper voltage.
3. Turn on circulation pump.
4. Check for leaks.
5. Check cooling water.
6. Adjust injector by-pass to attain required vacuum. (Red vacuum light will go out)
7. Turn main power switch to "ON" position.

3C. Normal Operation

At this point, the system's cooling fans will start up. The oxygen concentrator will begin operating and the output solenoid valve will open. The ozone generator should be producing ozone and injecting it into the process line.

Both (2) **green** indicator lights should be lit. If the optional ORP Controller is installed, it should be displaying a reading from the sensor probe and will automatically cycle the generator on and off as needed to maintain water quality. A high ORP (650-750 mV) is necessary for biological control.

However, the system will not start under any of the following conditions:

1. If the optional ORP controller is installed the system will not start up if the ORP level is already above the setpoint of the ORP controller.
2. The system will not start up if the door is not secured. A door interlock switch is incorporated into the system enclosure.
3. The system will not start up if there is not enough vacuum being generated by water flow through injector. Red vacuum light will go out when proper vacuum is attained.
4. System will not operate if there is too much vacuum. Red vacuum light will go out when proper vacuum is attained.

If you experience complications, see TROUBLESHOOTING section 4C or call 800-676-1335 for assistance.

3D. System Shut-Down

The Infinity Corona Discharge ozone generator is a specialized water cooled device that must be properly protected during shut-down/storage periods. The following sequence of steps must be used for servicing or for storage.

1. Toggle the main system power switch to the "OFF" position to shut down generator.
2. After the generator has been shut down, the process water circulation pump may be turned off.
3. If the system is going to be shutdown and stored during freezing weather, it is very important that the cooling water jacket be drained to protect it from rupture or damage.

NOTE: Process water flow *must not* be shut down when the ozone generator is operating. Doing so may cause water to backflow into the system and damage the generator module and electrodes.

3E. Water Chemistry

Regular chlorine/bromine testing should be performed as normal. Ozone will be eliminating the majority of contaminants. Therefore, only a small amount of chemicals will need to be added - just enough to maintain a minimum of residual level of .5-1.0 ppm chlorine or 1.0-2.0 ppm bromine. Ozone has very little if any impact on pH, reducing pH adjustments to a minimum.

SECTION 4

Maintenance and Service

4A. System Electro-Mechanical Overview

Refer to Figure 4 for component locations.

4A-1. Indicator Lights

1. **Main Power:** Green light indicates that power is being supplied to the ozone generator.
2. **Ozone Power:** Green light indicates that power is being supplied to the high voltage Corona Discharge circuits and that ozone is being produced.
3. **Vacuum:** Red light indicates proper vacuum being supplied from the venturi injector. Light will be lit for either low or high vacuum conditions.
4. **High Coolant Temperature:** Red light indicates coolant temperature is over 150°F - resulting from loss of cooling water flow. (Refer to TROUBLESHOOTING section.)
5. **High Transformer Temperature:** Red light indicates transformer temperature is over 150°F - resulting from high current through the transformer. (Refer to TROUBLESHOOTING section.)
6. **Water Backflow Detected:** Red light indicates water backflow from injector into generator. (Refer to TROUBLESHOOTING section.)

4A-2. Remaining External Components

1. **Main Power Switch:** Power switch is used for system start-up and shut-down. Switch activates the control system allowing the generator to start up.
2. **Flowmeter:** Flowmeter controls and indicates the oxygen flow through the system.
3. **Circuit Breaker:** Circuit breaker protects the generator from over current conditions. Push the breaker button to reset.
4. **ORP Controller (optional):** ORP controller receives a millivolt (mV) signal from the ORP sensor mounted in the process water line. ORP (Oxidation-Reduction Potential) is a measure of the relative oxidation strength of the water. As ozone is added to the water system the ORP level will rise. As ozone is used up in the water system the ORP level will drop. The ORP controller continuously analyses the sensor signal, compares it to the setpoint that has been programmed, indicates the ORP level on the digital display, and relays the signal to the ozone generator.
5. **Variac (Optional):** Variac adjusts high voltage power supplied to the ozone generator module controlling ozone output concentration.

4A-3. Internal Components

1. **Corona Discharge (CD) Module:** Generator module consists of stainless steel water jacket and ground tubes and two end housings. Enclosed inside the module are the high voltage glass tube electrodes. The top end housing (the cylindrical glass chamber) encloses the high voltage connection for the electrodes and allows for visual inspection.
2. **High Voltage Transformer(s):** Transformer raises supplied voltage up to the voltage necessary for ozone production. Transformer is thermally protected by a temperature switch attached to the transformer casing.
3. **Air Compressor:** Compressor produces and supplies compressed air to oxygen concentrator.
4. **Oxygen Concentrator:** Supplies concentrated, dry, oxygen feed gas to the ozone generator.
5. **Lo Limit Vacuum Switch:** If the vacuum in the ozone output supply line falls below 2 in. Hg the switch will open causing the system to shut down.
6. **Hi Limit Vacuum Switch:** If the vacuum in the ozone output supply line rises above 10 in. Hg the switch will open causing the system to shut down.
7. **Water Backflow Detector:** Backflow detector senses water present in ozone tubing in generator. If water is detected, system will close solenoid valve to prevent additional water backflow from occurring. Water in the generator will cause severe damage to the high voltage electrodes.
8. **Ventilation Fan:** Cooling fan operates when main power switch is "ON".
9. **Air Filter:** Filter cleans ventilation air entering the enclosure.
10. **Door Interlock Switch:** Interlock switch will shut down entire system if door is opened. Securing the door will bring the system back into operation.
11. **Relay Panel:** Contains control relays for system interlocks, indicator lights and main power control.

4B. Preventative Maintenance Schedule

The Infinity™ Corona Discharge ozone system requires very little maintenance beyond general housekeeping practices.

DAILY:

1. Check ozone generator for proper operation.
 - Make sure no red indicator lights are lit.
 - Make sure flow meter is indicating proper air flow.
2. Practice normal pool maintenance.

MONTHLY:

1. Remove and clean ORP probe.
 - Remove from water stream.
 - Clean tip of probe with non-abrasive cleanser to remove any contaminant build up on probe.
 - If there is a heavy build up on probe surface, clean with a mild muriatic solution.
 - Rinse and return to water stream.

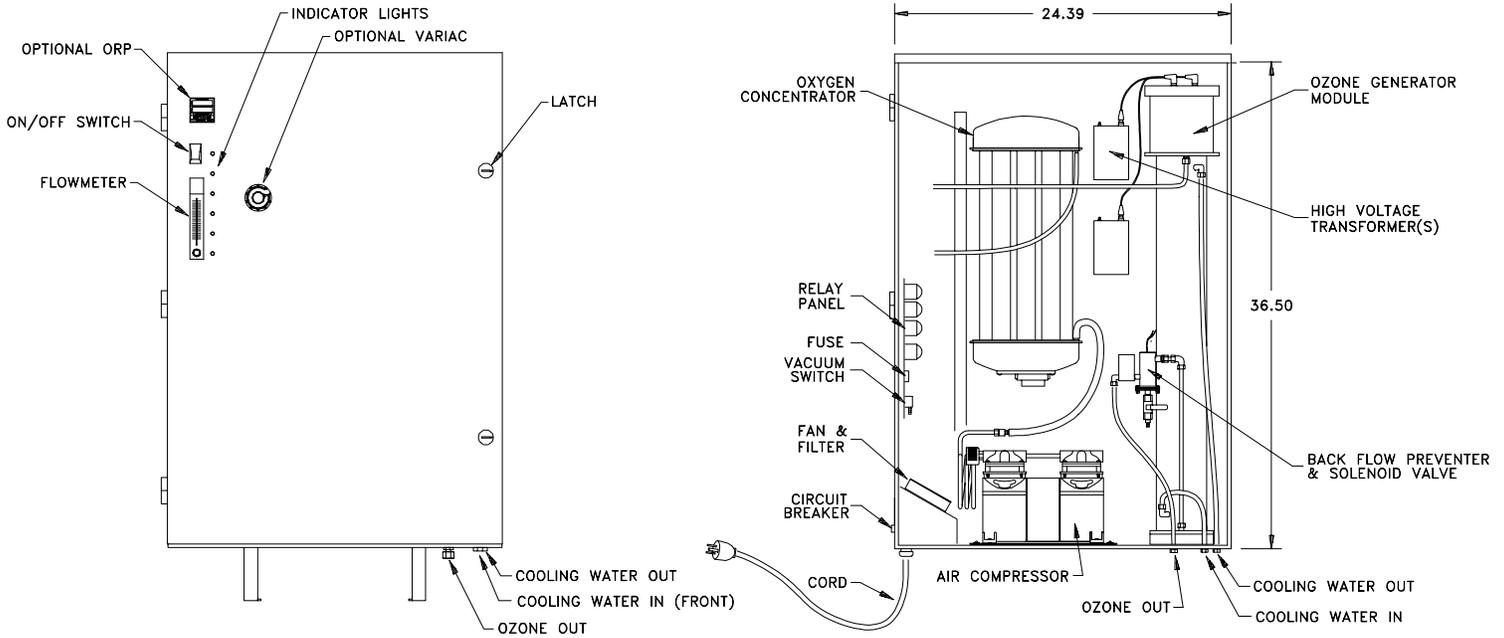


Figure 4: Component Locations

2. Remove and clean air filter.
 - Remove filter housing to access filter.
 - Rinse filter in warm, soapy water and blow dry.
 - Replace filter.

3. Perform general cleaning of cabinet interior.

ANNUALLY:

1. Remove, disassemble and clean CD module. See GENERATOR SERVICING section 4C.

BIANNUALLY:

1. Rebuild compressor. See GENERATOR SERVICING section 4C.

4C. Generator Servicing

Before performing any servicing to the ozone generator, make sure the power is off by disconnecting electrical plug from wall socket.

4C-1. Corona Discharge (CD) Module

1. Disconnect the wires from the thermostat switch and ground terminal attached to the generator housing.
2. Unplug high voltage cable(s) from the top end of the CD module.
3. Very carefully disconnect the oxygen feed and ozone output lines by removing the stainless steel compression nuts.
4. Drain cooling water from ozone module and disconnect cooling water lines.
5. Remove module from cabinet.
6. Carefully remove glass end housing, inspect for damaged glass or retainer springs, and set aside.
7. Remove the opposite end (aluminum discharge end) taking care not to lose retainer springs. Inspect for damage and set aside.

8. Gently glide glass tube electrodes out from module. Inspect for damage.
9. Wipe down electrodes using a solvent such as denatured alcohol and set in a safe area.
10. Swab out the stainless steel tubes using a solvent such as denatured alcohol or acetone.
11. Replace electrodes - *be sure to wipe off any fingerprints*, and reassemble module in reverse order.

4C-2. Air Compressor

Air compressor requires a rebuild every two (2) years or 15,000 hours of operation.

1. Purchase rebuild kit from DEL Industries, Inc. See Section 5 for ordering information.
2. Follow instructions in kit to rebuild compressor.

4D. Trouble Shooting

Knowledge of electrical applications is required for trouble shooting. Contact a certified electrician if you are unsure of your ability to service the equipment. If any condition persists, call 800-676-1335 for technical assistance.

Symptom: "Main power" light out when system switch is in the "ON" position.

1. *No power to the generator module from the power supply:*
 - a. Check the circuit breaker at the facility power distribution box.
 - b. Check for loose connections or wiring breaks from the power distribution box to the generator.

2. *G.F.C.I. has tripped.**
 - a. Check power cord and reset G.F.C.I.
3. *Circuit breaker has tripped.**
 - a. Reset breaker.

**If G.F.C.I. or breaker continue to trip after reset, call for technical assistance.*

Symptom: "Ozone power" indicator light out.

1. *If optional ORP is installed, ORP may have shut down the generator when ORP level reached setpoint.*
 - a. Wait for ORP to come down. Generator will restart when ORP level is below set point.
2. *Abnormal operating condition exists.*
 - a. Check red fault indicator lights. Refer to corresponding symptom and corrective action.

Symptom: "Vacuum" indicator light is on indicating out of range vacuum being supplied.

1. *Injector not supplying adequate suction.*
 - a. Check pump and ensure water is flowing through injector.
 - b. Check by-pass valve and adjust if necessary to obtain proper pressure differential in order to reestablish suction.
2. *Injector supplying too much suction.*
 - a. Check by-pass valve and adjust to obtain proper suction.
 - b. Check system back pressure and increase to reduce suction.
3. *Another abnormal condition exists causing ozone output solenoid valve to be closed.*
 - a. Check red fault indicator lights. Refer to corresponding symptom and corrective action.
 - b. Solenoid valve may be stuck in closed position. Free solenoid plunger and return system to normal operation.

Symptom: "High coolant temperature" indicator light is on indicating ozone module temperature over 150°F.

1. *Coolant water flow has been interrupted.*
 - a. Check all tubing connections, ensuring tight, leak free connections.
 - b. Trace tubing and look for blockage of flow.
 - c. Re-establish proper coolant water flow.

Symptom: "High transformer temperature" indicator light is on indicating high voltage transformer temperature over 150°F.

1. *Enclosure ventilation is blocked.*
 - a. Check air filter on bottom left-hand side of enclosure for blockage.
 - b. Clear blockage or clean filter.
 - c. Restart system and allow transformer to cool. When temperature returns to normal system will **return to normal operation.**

2. *Excessive ambient temperatures in installation area.*
 - a. Generator should not be exposed to ambient temperatures above 100°F. Higher temperatures may damage generator components.

Symptom: "Water backflow detected" indicator light is on.

1. *Water has backed into generator from injector.*
 - a. Establish proper water flow through injector and correct suction.
 - b. Drain Back Flow Preventer by first routing drain tubing out of cabinet, opening cabinet and opening 1/4" stainless steel ball valve.
 - c. After water has completely drained close drain valve, secure cabinet door and restart system.

Symptom: CD Module is not operating. Ozone output has dropped.

1. *No power to the generator module from the power supply:*
 - a. Check H.V. cables for breaks or loose connections, replace if necessary.
 - b. Check for power at input terminals of the H.V. transformers.*
 - c. Check ozone power relay for loose connections or faulty operation.

***CAUTION: HIGH VOLTAGE.**

Symptom: No air flow through the generator. The air flow meter indicates 0 scfh flow.

1. *Flowmeter control valve is improperly set:*
 - a. Open flowmeter valve until proper air flow is indicated (~8 scfh for CD-7, ~14 scfh for CD-15).
2. *Air compressor is not operating properly.*
 - a. Listen for air compressor operation.
 - b. Check all tubing connections from the air compressor through the system for leaks.

SECTION 5

Replacement Parts and Order Information

5A. Ordering information:

For replacement parts call DEL at **1-800-676-1335**.

Be prepared with the following information:

- Customer Name · Customer Address
- DEL Model Number · DEL Serial Number
- Date Purchased · Proof of Purchase

5B. Standard replacement parts list:

1. Compressor rebuild kit, CD-7 9-1007
2. Compressor rebuild kit, CD-15 9-1015
3. Ventilation air filter 7-0401
4. High voltage electrode 9-0540
5. Ozone tubing, Teflon 7-0126
6. Ozone tubing, Stainless Steel 8-0098
7. Ozone module gasket (1 ea.) 7-0801
8. Installation & Operations Manual 4-0401

DEL INDUSTRIES, INC. LIMITED WARRANTY

The limited warranty set forth below applies to products manufactured by DEL INDUSTRIES, Inc. - 3428 Bullock Lane, San Luis Obispo, California 93401, and sold by DEL INDUSTRIES and 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.

DEL INDUSTRIES 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 two (2) years of the date of final commissioning by DEL INDUSTRIES or its authorized agent. Warranties on systems not commissioned by an authorized DEL INDUSTRIES representative shall be deemed null and void. DEL INDUSTRIES reserves all rights to determine and authorize DEL INDUSTRIES representatives. This policy pertains to ALL installations. This warranty is extended to three (3) years on weldments and five (5) years on high voltage electrodes. Compressors shall be covered under the two (2) year warranty when, and only when, maintained per operation and maintenance manual. Required maintenance includes a compressor rebuild after one (1) year. Warranty does not include parts for rebuild kit. This warranty specifically excludes any components not manufactured by DEL INDUSTRIES that are external to the products covered, such as pumps, air compressors, monitors or related components. DEL INDUSTRIES will assist with all warranty claims for such components purchased through DEL INDUSTRIES; limited to the extent of the manufacturer's standard warranty. ANY REPAIR OR REPLACEMENT WILL BE WARRANTED ONLY FOR THE BALANCE OF THE ORIGINAL WARRANTY PERIOD.

NOTE: USE ONLY DEL AUTHORIZED REPLACEMENT PARTS. USE OF ANY OTHER PART(S) WILL AUTOMATICALLY VOID THIS WARRANTY.

Any replaced parts must be returned to DEL Industries for evaluation.

THIS LIMITED WARRANTY DOES NOT INCLUDE ANY OF THE FOLLOWING: (a) any repair or replacement of such parts necessitated by faulty installation, improper maintenance, improper operation, misuse, abuse, negligence, accident, fire, repair materials, and/or unauthorized accessories; (b) any such products installed without regard to required local codes and accepted trade practices; (c) ANY IMPLIED WARRANTY OF MERCHANTABILITY OR IMPLIED WARRANTY OF FITNESS FOR PARTICULAR PURPOSE, AND SUCH WARRANTIES ARE HEREBY DISCLAIMED; AND (d) DEL INDUSTRIES 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.

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

TO OBTAIN WARRANTY SERVICE:

DEL Industries, Inc. CD Department
3428 Bullock Lane, San Luis Obispo, CA 93401
Customer Service Number: 800-676-1335
Fax Number: 805-541-8459

PROVIDE:

1. Project, contact name, mailing address and telephone number.
2. Installer/Mechanical Contractor.
3. Serial # and date of commissioning.
4. The date of failure.
5. A description of the failure.

APPENDIX “A” SAFETY

HEALTH HAZARDS OF OZONE

Detection Levels

Ozone can be detected in air by its distinctive odor at concentrations of about 0.02 ppm. Although each nose varies, olfactory fatigue occurs quickly. As a result, **DO NOT RELY ON ODOR AS A WARNING OF HIGH OZONE CONCENTRATIONS.**

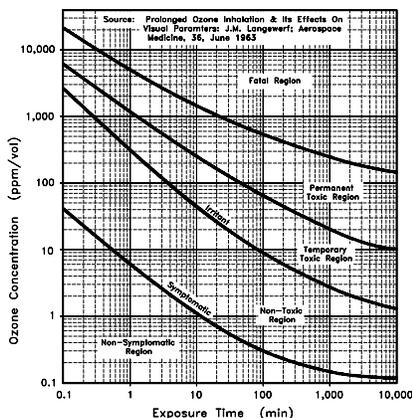
The permissible exposure level (PEL) or time weighted concentration for ozone to which workers may be exposed is 0.1 ppm averaged over 8 hours, 5 days a week (OSHA). The short term exposure limit is 0.3 ppm average over 15 minutes. The concentration of 10 ppm ozone in air is generally accepted as immediately Dangerous to Life or Health (DLH).

Effects on Humans

Ozone acts as a primary irritant, affecting mainly the eyes, upper respiratory tract and the lungs. Onset of pulmonary edema (fluid buildup in the lungs) may be delayed for a few hours after exposure. Inhaling ozone at concentrations of 50 ppm for 30 minutes can be fatal. Many people exposed to airborne ozone rapidly develop a headache, which often disappears after a few minutes in fresh air.

Reduction in lung function due to scar tissue forming in the lung may occur due to long-term exposure to ozone at concentrations above 0.2 ppm, or a single high exposure. Although medical studies show no evidence of ozone causing cancer or lung allergies or harming the unborn, there is some evidence that the oxidizing power of ozone could lead to premature aging of the body as a whole.

The owner of any ozone installation should advise any person who may be exposed to ozone that those with a history of heart or respiratory disease should take every precaution to avoid exposure to ozone.



FIRST AID

General

First Action

1. If exposure to ozone causes headache or shortness of breath, immediately remove the patient to a fresh air environment.

Second Action

1. Workers who have been exposed to low concentrations of ozone should be given oxygen to breathe while under the observation of trained personnel.
2. If exposure is severe, send for medical assistance immediately.

Inhalation

First Action

1. Assess patient's breathing.
2. All unconscious patients must be placed in the drainage position (on their sides), so that fluids can drain from the airways once breathing has been restored.
3. Check pulse.

Second Action

1. If breathing has ceased, start artificial respiration (rescue breathing is the most effective) method until breathing has been restored.
2. Send for medical assistance immediately.
3. If absent, begin cardiopulmonary resuscitation (CPR).

Eye Contact

First Action

1. Effective irrigation should start immediately. Eyes should be irrigated for 30 minutes by the clock with running tap water or preferably normal saline.

Second Action

1. Effective irrigation must be continued while en route to hospital.

Precautions

Workers with a previous cardiopulmonary (heart and lung) condition must consult their physician prior to working in an area in which they may be exposed to ozone. Significant alterations in cardiopulmonary functions have been documented when such workers have been exposed to low concentration of ozone.

END OF DOCUMENT.