



Corona Supplies Ltd
for all your corona needs

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OZONE DESTRUCT UNIT – O³E 7-50



PRODUCT MANUAL

Requirements

IMPORTANT: *Please read this information BEFORE installing and operating the equipment.*

Intended Users

This manual is to be made available to all persons who are required to install, configure or service equipment described herein, or any other associated operation.

The information given is intended to highlight safety issues, EMC considerations, and to enable the user to obtain maximum benefit from the equipment.

Applications

The equipment described is intended for industrial & commercial removal of Ozone from surface treatment (corona treatment) equipment.

Personnel

Installation, operation and maintenance of the equipment should be carried out by competent personnel. A competent person is someone who is technically qualified and familiar with all safety information and established safety practices; with the installation process, operation and maintenance of this equipment; and with all the hazards involved.

Safety

Product warnings



DANGER
RISK OF ELECTRIC SHOCK



CAUTION
REFER TO DOCUMENTATION



CAUTION
OZONE CONNECTION PORT

Hazards

DANGER! Ignoring the following may result in injury or death

1. This equipment can endanger life by exposure to Ozone Gas and rotating machinery.
2. The Manganese Dioxide catalyst used in the destruct process is harmful and any handling of the catalyst should be carried out in conjunction with the material safety data sheet (MSDS)
3. Ensure all incoming supplies are isolated before working on the equipment. Be aware that there may be more than one supply connection to the Ozone destruct unit.
4. For measurements use only a meter to IEC 61010 (CAT III or higher). Always begin using the highest range. CAT I and CAT II meters must not be used on this product.
5. Guards, covers & doors must NOT be removed unless the Ozone destruct unit has been switched off and the incoming supply isolated.

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Machinery data

Ozone Destruct

Model: O³E-

Serial number:

Input voltage: volts

Input current: amps / phase.

Frequency: Hz

Phases:

Rated output power: kW.

Weight: kg

See fan motor rating plate for more information on
supply voltage and current.

Introduction

Ozone (O_3) is a toxic gas naturally present in the atmosphere. It is also produced as a by-product of the corona treatment process. As part of the equipment involved in the treatment process, the ozone destruct unit "breaks down/reduces" the ozone generated to oxygen for venting to atmosphere.

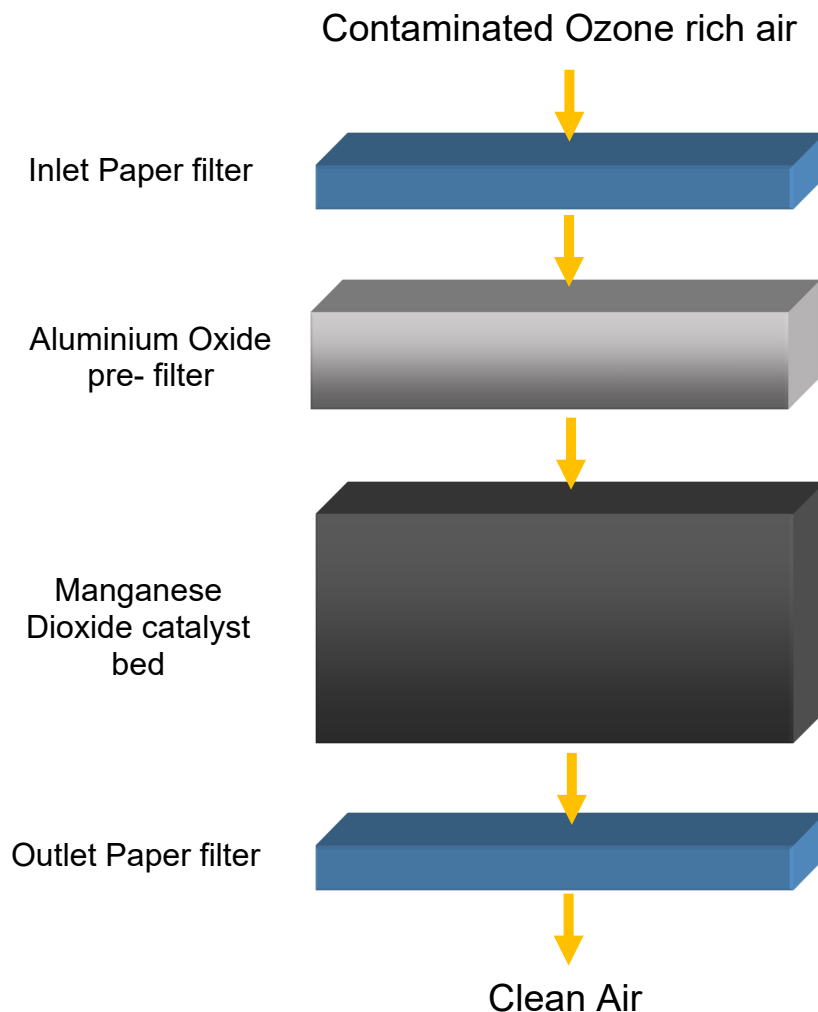
The Ozone Destruct unit consists of two Paper filters, an Aluminum Oxide pre-filter and the Manganese Dioxide catalyst.

Inlet paper filter – Removes large contaminants and foreign objects.

Aluminium Oxide Pre-filter – Absorbs moisture, oil mists, hydrocarbons, etc from the air flow which may reduce the life of the catalyst.

Manganese Dioxide Catalyst – Eliminates the ozone by converting O^3 to O^2 .

Outlet paper filter – Traps any catalyst dust that may be present in the air flow.



Installation

The Ozone Destruct unit should be positioned in such a way that access is possible to all sides of the unit especially the side with the paper filter drawers. It should also be positioned to allow free air movement around the extraction fan motor (300mm around the cooling impellor).

The unit must be mounted on the four leveling feet which should be adjusted to ensure the unit is level. If levelling feet are not supplied the transportation wheels must be removed or locked in position so that the unit cannot move during operation.

Ducting to and from the ozone destruct unit must be positioned as not to pose a hazard to personnel working in the area i.e., from being positioned on the ground (trip hazard) or at low level (head height).

The ducting to the ozone destruct unit (input) should be made from ozone resistant materials and have a smooth internal bore wherever possible. Ducting from the ozone destruct unit (output) can be made from any suitable material capable of carrying air at temperatures up to 80⁰c but again should have a smooth bore where possible.

The main power supply to the Ozone destruct unit must be protected by correctly rated fuses or circuit breaker (see machinery data) suitable for the starting & running of motors. If not supplied the power supply to the Ozone destruct unit must have an isolator switch installed close to the unit that can be "locked off" for maintenance.

Cabling to the Ozone destruct unit should be sized correctly according to the machinery data and be routed as not to cause a trip hazard and in ducting or cable tray wherever possible.

The extraction fan motor should be wired as shown in the included circuit diagram and the rotation of the motor checked after installation.

CAUTION:
EVEN THOUGH THE OZONE IS BROKEN DOWN TO SAFE LEVELS BY THE OZONE DESTRUCT SYSTEM THE EXHAUST GAS STREAM MUST BE DUCTED AWAY FROM THE OPERATOR AREA AS THE MANGANESE DIOXIDE DUST PARTICLES COULD BE HAZARDOUS.

Start-up & Operation

Once the installation of the Ozone destruct unit is complete it should be switched on before ozone production commences so that the system can be checked for correct operation.

Firstly, the extraction fan motor should be checked to ensure it is rotating in the correct direction as shown by the arrow attached to the fan body.

With the ozone destruct unit running checks for leaks in the ducting from the ozone source to the destruct unit and in the ducting from the ozone destruct unit to atmosphere should be carried out.

With the ozone destruct unit connected to the ozone source and fully ducted the readings from the two differential pressure gauges can be made and logged as the normal operating pressures. If the gauges are fitted with alarm setpoints (option) these can now be set either side of the normal running pressure so that if the pressure changes indicating filter or catalyst degradation the alarms will activate.

Once the above checks have been carried out the ozone destruct unit can be put into operation.

Maintenance

The Ozone destruct unit has two differential pressure gauges fitted to allow external monitoring of the condition of the paper, prefilter and catalyst beds. Any significant deviation in pressure reading from initial installation should be investigated as it may indicate a blocked or damaged filter or degradation of the pre-filter or catalyst bed.

The paper filters should be checked every 2 – 3 months and changed if necessary.

The catalyst efficiency should be checked annually by a competent person by measuring the ozone concentration in the outlet stream of the ozone destruct unit. If the level exceeds 0.1 ppm then the catalyst and pre-filter must be replaced.

CAUTION
**HANDLING AND PERSONAL EXPOSURE SECTIONS OF THE MATERIAL
SAFETY DATA SHEET (MSDS) SHOULD BE ADHERED TO WHEN HANDLING
THE ALUMINIUM OXIDE PRE-FILTER OR MANGANESE DIOXIDE CATALYST**

External ducting should be checked annually especially on the input side the ozone destruct unit for damage and leaks that may reduce efficiency of the ozone removal and cooling of the corona treater system.

The extraction fan and motor should be checked periodically for damage or signs of wear. A noisy extraction fan motor or excessive vibration may indicate motor bearing failure or possible impellor damage.

If in any doubt contact Corona Supplies service department for assistance

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Warranty & Aftersales Service

All our products are warranted for 12 month from invoice date within the underwrite conditions:

Complete replacement of any mechanics or electrics parts not properly functioning.

This replacement will be accomplished only to the following condition:

- a)** We are quickly informed by phone or email about a fault on our machinery, specifying equipment plate data and if possible component characteristic and identifier.
- b)** The faulty and/or malfunctioning material to be returned to our office within 30 days from receiving new spare parts. If within this time we don't receive the faulty part we will be obliged to charge the required.
- c)** Will be verified by our technicians that the component is truly faulty. Otherwise if the damage is caused by improper equipment use or there is evidence of tampering with tools and/or unauthorized personnel or the equipment has not been used in accordance with the instruction manual, we will not be liable for damages and parts will be charged.
- d)** The freight will be charged to customer.

The warranty doesn't cover technician's costs for replacement and/or spare parts installation supplied, so this cost will be charged and invoiced in the usual way

THIS EQUIPMENT WAS SUPPLIED TO YOU BY:



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**FOR FURTHER ASSISTANCE, PARTS OR SERVICE
PLEASE CONTACT US IMMEDIATELY**

THANK YOU