



10 000 V

5 000 V

2 000 V

Installation and service guide for AirMaid® V ozone cleaning system



AIRMAID® OZONE CLEANING SYSTEM

INNOVATIVE AIR TREATMENT

This guide describes a typical installation in a commercial kitchen exhaust duct. The product can also be used in other applications as long as the specific requirements according to the guide are fulfilled.

The device may not be used by children or by persons with diminished physical, sensory or mental capacity or lack of experience and knowledge unless supervised or having received instruction. Supervise children to ensure that they do not play with the device.

LIMITED WARRANTY FOR INTERZON EQUIPMENT

This warranty is subject to the following conditions.

To validate this warranty, the warranty application for the product must be mailed to Interzon within ten (10) days after installation.

A new product is warranted to be free from defects and/or workmanship for a period of 2 years from the date of the original installation.

A spare part is warranted to be free from defects and/or workmanship for a period of ninety (90) days from the date of the original installation.

The warranty for new equipment covers the repair or replacement of the defective part and includes labor charges according the recommended hours by Interzon and maximum kilometer charges of 300 km round trip.

The warranty for spare parts covers only the repair or replacement of the defective part and does not include any labor charges for the removal and installation of any parts, travel or other expenses incidental to the repair or replacement of a part.

Any claim must be presented to either Interzon or the distributor from whom the product was purchased. No allowance will be granted for repairs made by anyone else without Interzon written consent. If damage occurs during shipping, notify the sender at once so that a claim can be filed.

The above limited warranty does not apply to damage resulting from accident, alteration, misuse or if the serial number is removed or defaced.

CONTENT

1. Check Product
2. System Overview
3. Installation Guidelines
4. Electrical connection and settings
5. System Test
6. Service and Maintenance
7. Technical Specification
8. Airmaid® Warranty Application

1 CHECK PRODUCT

Check that the shipment consists of the components below and that there are no visible damages. Check also that the shock indicator on the generator has not been released. Any discrepancy must always be reported to the distributor or manufacturer. Read through the complete guide before starting the installation.



1 x AirMaid® Ozone Generator

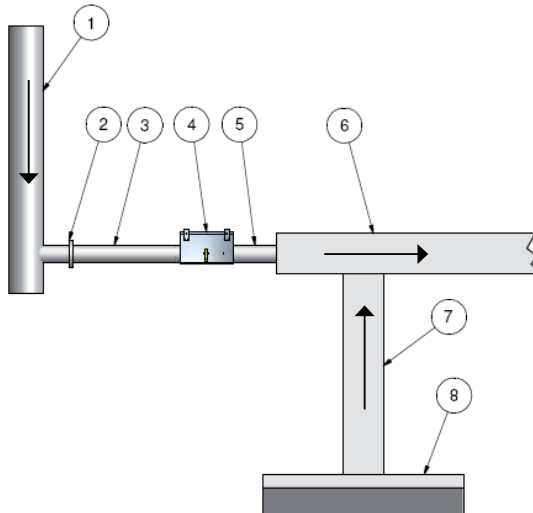


1 x AirMaid® Alarm Panel

2 SYSTEM OVERVIEW

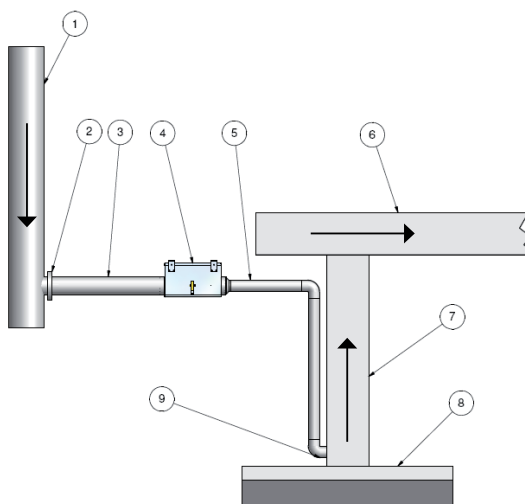
Study carefully the three different samples for installation. Choose one of the samples that is most appropriate for your case. If central ventilation (inlet) ① cannot be used, use filtered (EU3) fresh outdoor air less than 40°C. Do not use just indoor air for the generator. AirMaid® is very effective in reducing odours provided that the reaction time between the ozone and the exhaust air in the kitchen exhaust duct is at least 2 seconds. This condition is important and must be taken into account during the planning stage.

SAMPLE ONE



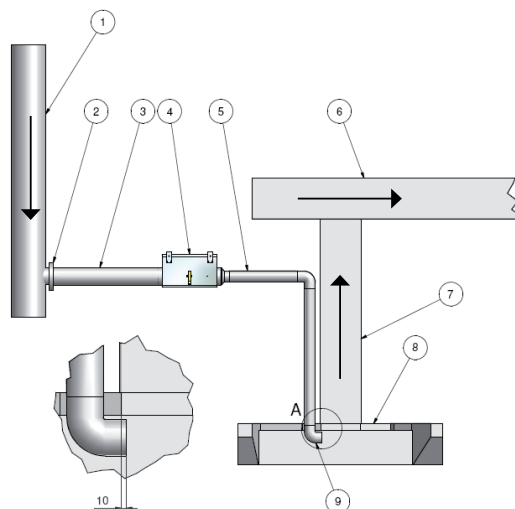
1	Central Ventilation (inlet)
2	Damper
3	Inlet tube Ø125 mm
4	AirMaid® Ozone Generator
5	Outlet Tube Ø 80-125 mm
6	Horizontal Exhaust Duct
7	Vertical Exhaust Duct
8	Kitchen Hood

SAMPLE TWO



1	Central Ventilation (inlet)
2	Damper
3	Inlet tube Ø125 mm
4	AirMaid® Ozone Generator
5	Outlet Tube Ø 80-125 mm
6	Horizontal Exhaust Duct
7	Vertical Exhaust Duct
8	Kitchen Hood
9	90° Tube Ø 80-125 mm

SAMPLE THREE

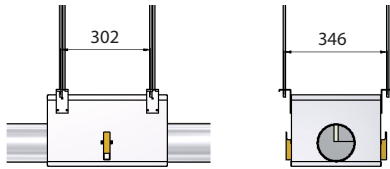


1	Central Ventilation (inlet)
2	Damper
3	Inlet tube Ø125 mm
4	AirMaid® Ozone Generator
5	Outlet Tube Ø 80-125 mm
6	Horizontal Exhaust Duct
7	Vertical Exhaust Duct
8	Kitchen Hood
9	90° Tube Ø 80-125 mm
10	Min. 10 mm overlap

3 INSTALLATION GUIDELINES

1. Prepare a circular hole in the exhaust duct (6)(7) or in the kitchen hood (8). The diameter of the hole is depended on the tube you select. The diameter must be between Ø 80-125 mm.
2. Install the ozone generator. (4)

The ozone generator must be installed horizontally with the suspension brackets upward and service hatch downward. Use M8 threaded rods and anchor these with nuts on each side of the respective bracket. Note that the minimum installation dimension for the generator is 500 x 600 x 439 mm.



Make sure that you have selected the correct ozone generator.

General sizing would be:

AirMaid® 2000 V: Exhaust-airflow max. 1000 m³/h (300 l/s)
 AirMaid® 5000 V: Exhaust-airflow max. 2500 m³/h (700 l/s)
 AirMaid® 10000 V: Exhaust-airflow max. 5000 m³/h (1400 l/s)

Typical sizing for McDonald's

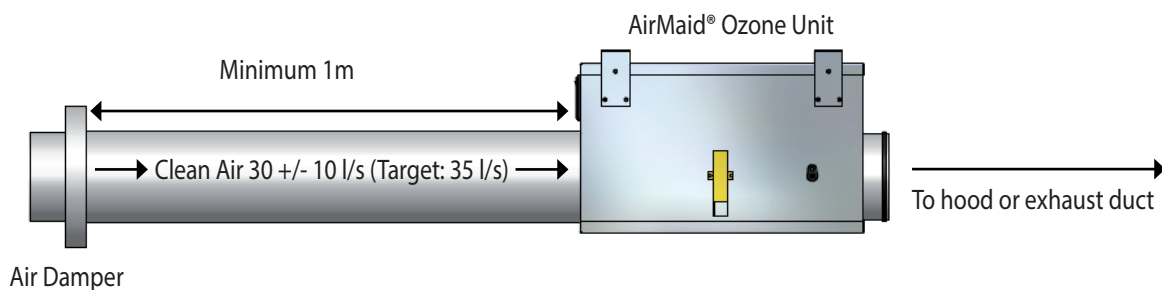
AirMaid® 2000 V: For each fryer
 AirMaid® 5000 V: For single grills
 AirMaid® 10000 V: For other grills

The generator must be easily accessible after installation. Never screw or drill through the generator. Always use the brackets for suspension.

The length of the ozone outlet tube (5) can be maximum 5 m. The minimum dimension of the ozone outlet tube can go down to Ø 80 mm. The material of the ozone outlet tube must be stainless steel (AISI 316). Make sure that the tube is not blocking any inspection hatches.

Note that the direction of the airflow must correspond to the arrows on the generator and the picture below.

3. Fasten the outlet air tube (5) between the ozone generator and the exhaust duct (6)(7) (or the hood). Make sure that all connections are properly fixed and sealed.
4. Connect the inlet air tube (3) and damper (2) to the ozone generator (4) according to the picture below.



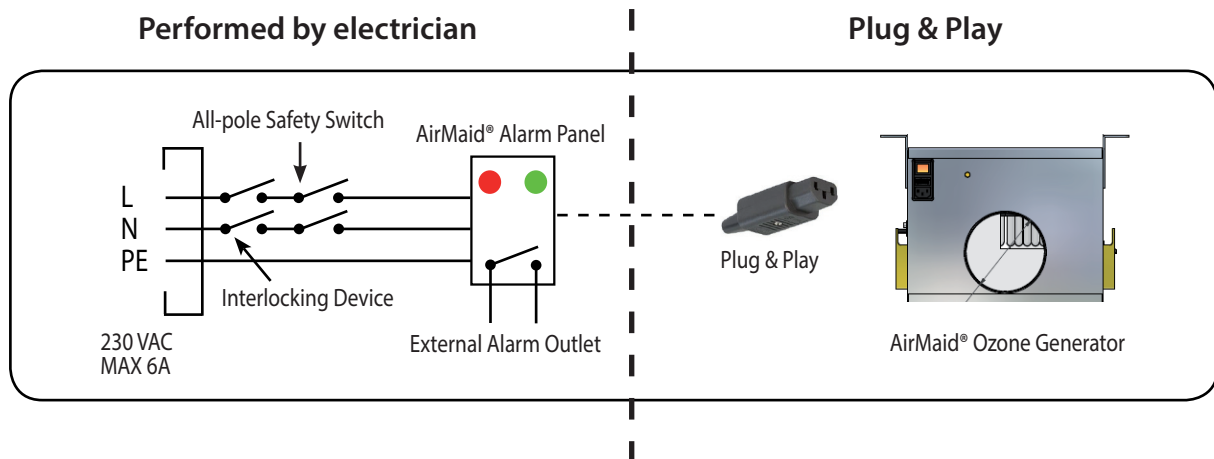
The damper is required to achieve proper airflow and pressure. For more information, see section "5 SYSTEM TEST".

The exhaust ducts must be swept clean of grease and soot at the time of installation. This is required to achieve the desired result of the ozone cleaning.

4 ELECTRICAL CONNECTION AND SETTINGS

ASSEMBLY AND ELECTRICAL INSTALLATION

The installation must be performed by an authorised electrician and follow national standards and regulations. The interlock device displayed on the diagram below is mandatory. A Typical example of the safety interlock would be to shut down the main power to the generator when the exhaust fan is shutting down. An all-pole safety switch with a break length of at least 3 mm must be installed as well. The electrical requirements for the ozone generator are 230V AC and 50 Hz. Each and every generator must be connected to its own 6A fuse.



Remove the four screws that fasten the AirMaid® alarm panel to its base. Fasten the base to the wall using devices suitable for the wall material. In commercial kitchens place the alarm panel where it will be visible to the staff but not to customers.

NOTE: Upon delivery the generator and alarm panel within the shipping carton are calibrated together and have matching serial numbers. Make sure that generators are always connected to their own alarm panel.

EXTERNAL ALARM OUTLET

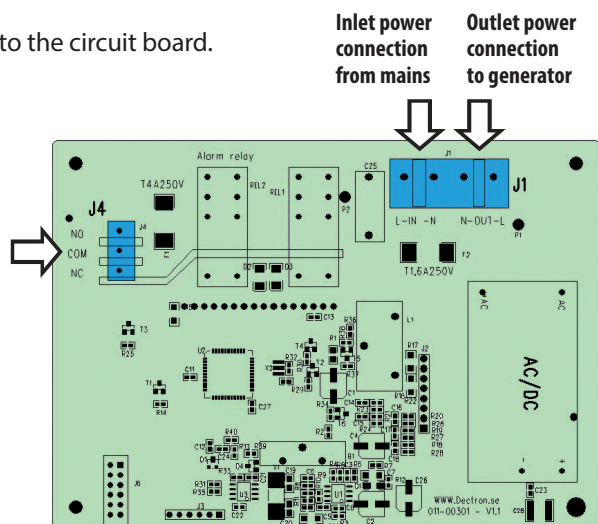
If you desire to connect AirMaid® to an external monitoring or alarm system, you can accomplish this by connecting it to the external alarm terminal block within the AirMaid® alarm panel.

NOTE: The maximum load is rated to 250V and 4A.

The earth ground cable is connected to the chassis screw next to the circuit board.



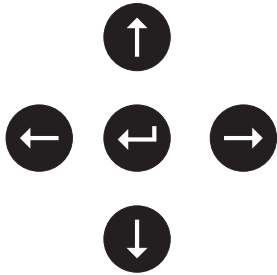
Connection to external alarm device.
Voltage freerelay output
NO=Normally open
COM=Common
NC=Normally closed



FIRST START:

Once you have adjusted and configured the required airflow and under-pressure, you can then apply power to the generator. The first time the Alarm panel is started the time and date must be configured.

CONFIGURING THE AIRMAID® ALARM PANEL



Press ← or → to step through menu options or reposition the cursor.

Press ↑ or ↓ to change the value.

Press ↵ to select the current option.

Press ↵ for 5 seconds to save the displayed value.

STATUS OF OPERATION:

AirMaid® Running: The GREEN lamp is on. The generator is working in normal mode.
Press ↓ to display run and alarm time.

AirMaid® Not Running: The RED lamp is flashing. An error has occurred. Please see the troubleshooting guide under section "5 SYSTEM TEST".

Inspect/Clean: Both the RED and the GREEN lamps are flashing. Contact the service company for a routine inspection and cleaning of the generator according to the instructions found in this manual.

Call Service: The RED lamp is flashing. An error has lasted for more than 72 hours.
Contact the service company to remedy the error.

ENTERING/EXITING THE SETTINGS MENU

To ENTER the settings menu:

Press ↵ once. "Setup code" will be displayed. Enter 401 on the keyboard.

Press and hold ↵ for 5 seconds. The first menu option, "Set time", is now displayed.

To EXIT the settings menu:

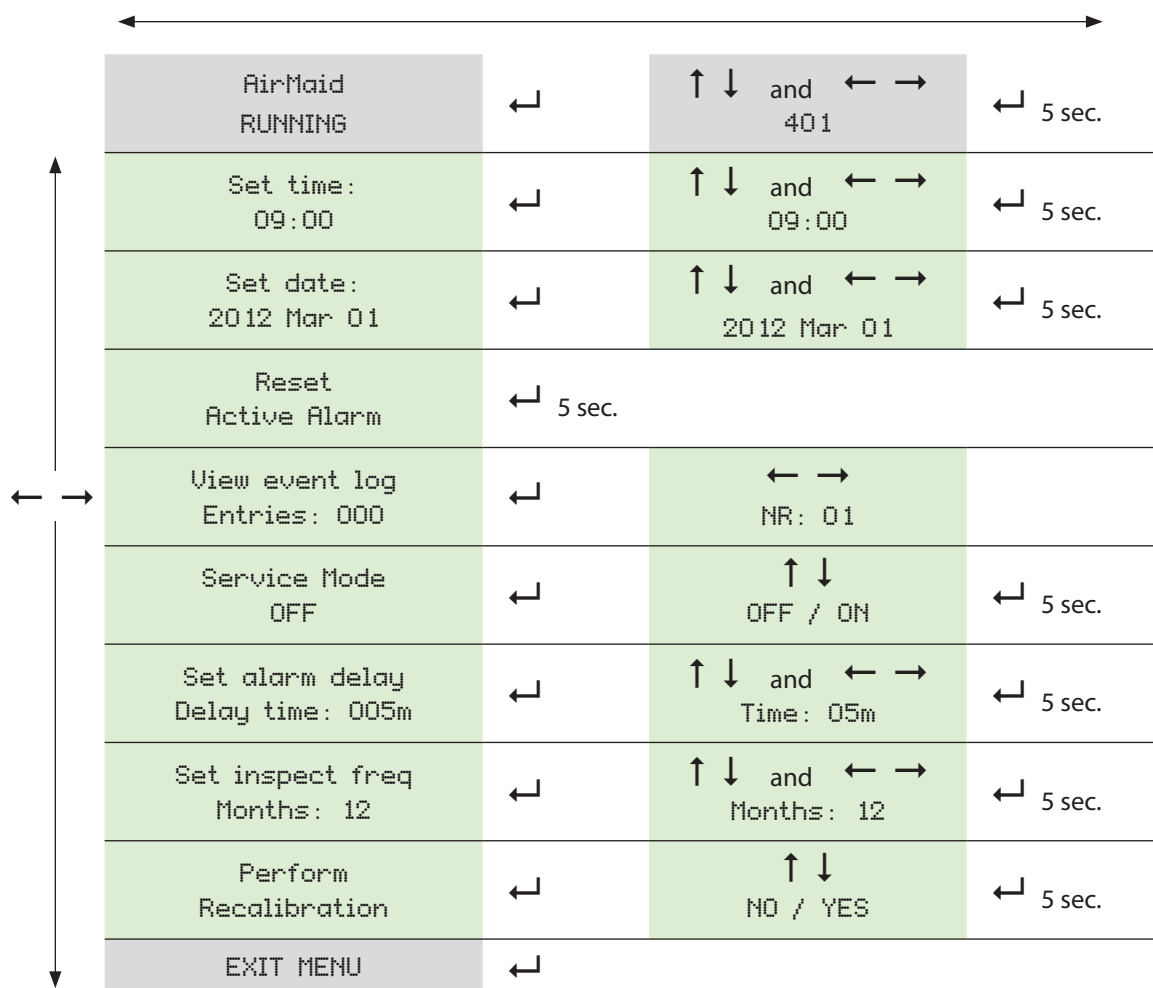
Press ← and → to go to "EXIT MENU", then press ↵

or wait for 60 seconds and the menu will be closed automatically.

SETTINGS OPTIONS (*values that should be set at time of installation)

Text displayed	Description of the menu option
* Set time:	Set the time.
* Set date:	Set the date.
Reset Active Alarm:	Reset an active alarm status and restart the functional test.
View event log:	View a list of historic events, including alarms and recalibration. The 100 most recent events will be displayed.
Service Mode:	Service Mode ON forces the alarm unit to supply the generator with power for diagnostic purposes. To end, change to OFF and save. For reasons of safety, Service Mode will automatically exit after one hour.
Set alarm delay:	By default, the delay is set to 5 minutes in order to prevent an alarm in case of a temporary disruption.
Set inspect freq:	Service and maintenance interval in months.
Perform Recalibration:	This menu option must be used after the generator has been repaired and electronic components have been replaced. Do not recalibrate at any other time.
EXIT MENU:	Leave the settings menu.

SETTINGS MENU FLOW DIAGRAM



5 SYSTEM TEST

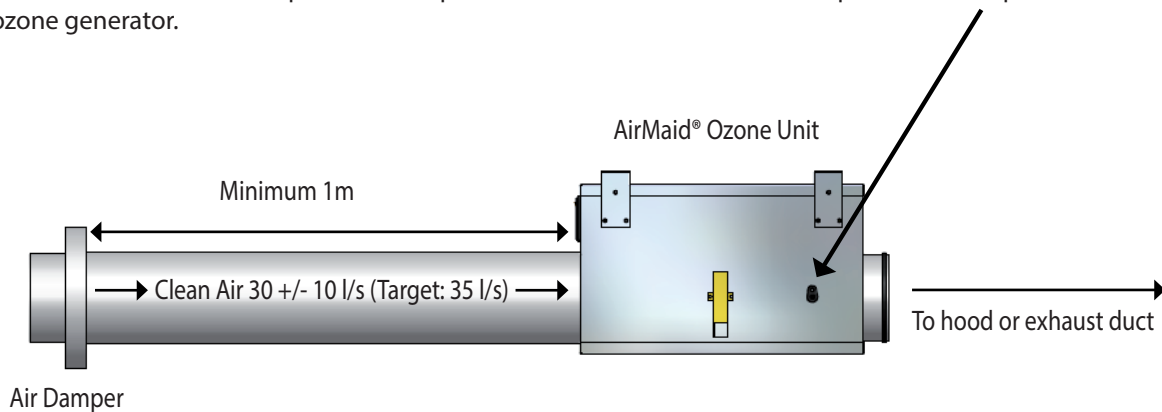
AIRFLOW AND PRESSURE

Measure the airflow through the ozone generator and note the value here _____

Measure the pressure inside the ozone generator and note the value here _____

The values must be transferred to the attached warranty application.

The specified airflow must be 30 ± 10 l/s and the specified pressure must be less than -20 Pa (max -10 kPa). Usually the airflow is measured over the damper while the pressure can be measured from the pressure checkpoint on the long side of the ozone generator.



TROUBLESHOOTING

1. Ensure that the correct airflow and pressure is maintained according to the specification.
2. Ensure that the electrical wiring is correctly installed.
3. Ensure that the exhaust fan is running.
4. Ensure that the grease filters are properly installed in the hoods in the kitchen.
5. Ensure that the main power switches are ON (red light must glow) at the ozone generators.
6. Ensure that the interlock is working properly.
7. Ensure that there is no leak in the tubing after the ozone generator.
8. If the system still does not start call the distributor or the manufacturer.

6 SERVICE AND MAINTENANCE

The ozone cells inside the ozone generator must be checked and if necessary cleaned at least once a year according to the instructions below. If a separate air filter is used for the inlet air, make sure that this filter is changed at least one time per year. After a new installation it is anyhow recommended to make an inspection already after three months.

1. Switch OFF the main power to the ozone generator



If any work needs to be performed in the kitchen extraction ducts, the power to the ozone generator must be disconnected.

2. Open the service hatch on the bottom of the ozone generator.



3. Make sure that the glass electrodes of the ozone cells are not damaged or cracked. In AirMaid® 10000 V there are two ozone cells whereas there is only one ozone cell in AirMaid® 2000 V and 5000 V.



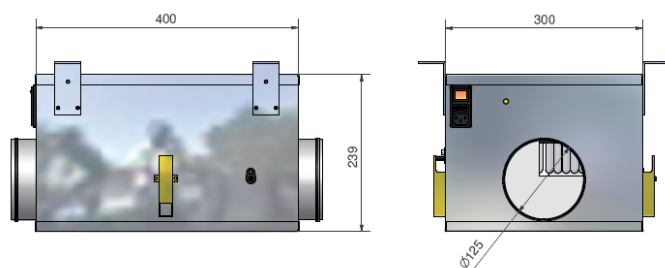
A proper ozone cell should be clean and free from any mechanical damage according to the picture to the right above.

4. Clean the glass electrodes carefully with a soft towel together with some cleaning spirit. Never use any sharp tools or abrasive materials for cleaning the glass electrodes.



5. Close the service hatch and switch ON the main power on the ozone generator. Make sure that the generator starts by checking the alarm panel. If everything works the green lamp will glow. If the red lamp flashes then see – "TROUBLESHOOTING".

7 TECHNICAL SPECIFICATION



AirMaid®	Ozone Capacity (mg/t)	Output	Pressure drop at 30 l/s	Voltage	Weight
2000 V	2000	100 W	100 Pa	230V/50 Hz	10 kg
5000 V	5000	100 W	100 Pa	230V/50 Hz	10 kg
10000 V	10000	200 W	160 Pa	230V/50 Hz	12 kg

Material: AISI 304 stainless steel

Operating temperature: -25 to +40°C

Dimensions WxLxH: 300 x 400 x 239 mm

Sound pressure level (A-weighted) at 1 m: 72,1 dB

The ozone generator is supplied with a pressure and thermal switch. The pressure switch ensures that the ozone generator only starts when the required negative pressure is established. The thermal switch prevents the ozone generator from overheating. The main switch is supplied with a thermal overload protection of 2A.

EC DECLARATION OF CONFORMITY



This product has been designed, constructed and distributed in compliance with the safety requirements of EC Directives:

- EMC directive 2004/42/EC
- Low voltage directive 2006/95/EC
- Machinery Directive 2006/42/EC
- WEEE Directive 2002/96/EC



This symbol indicates that when the end-user wishes to discard this product, it must be sent to separate collection facilities for recycling.

Facts about Ozone

Ozone is a colorless gas with a pungent smell that can be detected by any person at a concentration of 0,02ppm (0,4mg/m³). The smell of ozone is similar to chlorine like in a swimming baths.

Local protection legislations must be followed when using ozone. In Sweden the Swedish Work Environment Authority issues the following hygienic limits for ozone:

- 0,1ppm (during a working day, 8 hours)
- 0,3ppm (during 15 minutes)

At acute exposure ozone can cause following injuries:

- On skin: Irritation and burning feeling
- In eyes: Hard irritation, burn injuries and reduced vision
- In lungs: Irritated effect on respiratory organs and breathing problems

Basically one should always take precautions if ozone in some way can be detected in indoor environment.

8 AIRMAID® WARRANTY APPLICATION

THE WARRANTY FORM MUST BE SENT TO INTERZON TO VALIDATE THE 2-YEAR WARRANTY!

This can be done online at www.interzon.com.

INSTALLATION/SERVICE COMPANY

Company Name: _____

Installed by: _____

Telephone _____ E-mail: _____

PLACE OF INSTALLATION

Name: _____

Address: _____

Town: _____ Postal code: _____

Country: _____

Email: _____

Contact name: _____

Telephone: _____ E-mail: _____

PRODUCT IDENTIFICATION

Model: AirMaid® 2000 V ☐ AirMaid® 5000 V ☐ AirMaid® 10000 V ☐

Product Serial No: —

Date of installation: mm/dd/yy

FROM SYSTEM TEST

Generator Airflow l/s Generator Pressure Pa

This warranty application must be sent by mail, fax or completed on the internet within 10 days to:

Interzon AB
Propellervägen 4A
SE-183 62 Täby, Stockholm
Sweden

Tel: +46 8 544 444 30
Fax: +46 8 544 444 39
Email: info@interzon.com
Internet: www.interzon.com



Reproduction, modification or translation without a prior written consent is forbidden with the exception of what is permitted by the Act on Copyright.

Copyright Information

© 2012 Copyright Interzon AB

Edition 11, 05/2012

Distributor:



Manufacturer:

Interzon AB

Propellervägen 4A

SE-183 62 Täby, Stockholm

Sweden

Tel: +46 8 544 444 30

Fax: +46 8 544 444 39

Email: info@interzon.com

Internet: www.interzon.com