

O & M INSTRUCTION

PRODUCT GROUP 1912 Electrostatic Precipitator

Safety

It is recommended that industrial gloves, overalls, eye protection and nuisance dust masks are utilised when changing filters which have been subjected to natural air, as opposed to air drawn from processes, where full risk assessments should be performed prior to changing. For some filters, an assessment regarding manual handling will need to be made.

Changing of filters should be carried out by experienced or trained personnel, in accordance with safety requirements as defined by the "Control of Substances Hazardous to Health" (COSHH) Regulations.

Specifications

POWER REQUIRMENTS		
Model	Voltage	AMPS (Max)
T1001	120V, 60 HZ, 1 PH.	0.4
T1001	230V, 50 HZ, 1 PH.	0.2
T1001	230V, 60 HZ, 1 PH.	0.2
T1001	230V, 60 HZ, 3 PH.	0.2
T1001	460V, 60 HZ, 3 PH.	0.1

T2002	120V, 60 HZ, 1 PH.	0.5
T2002	230V, 50 HZ, 1 PH.	0.3
T2002	230V, 60 HZ, 1 PH.	0.3
T2002	230V, 60 HZ, 3 PH.	0.3
T2002	460V, 60 HZ, 3 PH.	0.2

Note:

Ionizer Voltage: 12 KVDC

Collector Voltage: 6 KVDC

Motor: (where applicable) Ball bearing, Totally enclosed, Fan Cooled.

Preparation For Installation

This manual should be carefully read before starting the preparation and installation of the air cleaner. The installation should conform to all local ordinances associated with building codes and electrical codes required for the unit. Authorities having jurisdiction should be consulted before installation is made. If there are no local codes, the installation should conform to the National Electrical Code.

Safety Note

Factory designed access to all electrically charged high voltage components contain electrical interlocks for the safety of operating personnel. Any additional access that may be provided in the system, where there is access to high voltage, must be equipped with such interlocks. Interlocks are readily available from the factory.

The 575V, 3 Phase unit does not have internal motor overload protection. The installer must provide overload protection in accordance with National Electrical Code, Canadian Electrical Code, Part 1 or other applicable electrical codes.

The unit can be either wall-mounted or chain-hung.

New Unit Inspection

Immediately, upon receiving the unit, carefully examine the package for damage during transit. If the unit is damaged, contact the last carrier for claim filing and contact your AIRCLEAN representative. While unpacking the unit, look for concealed shipping damage. If there is damage, it should be reported to the last carrier for claim filing.

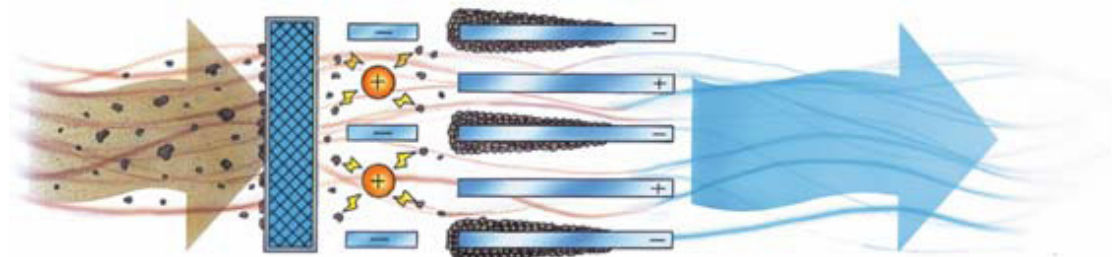
Operation

What is your Electronic Air Cleaner?

Your air cleaner is a high efficiency contaminant collector designed to remove up to 95% of the dust, smoke, liquid aerosol and other pollutants from the air passing through it.

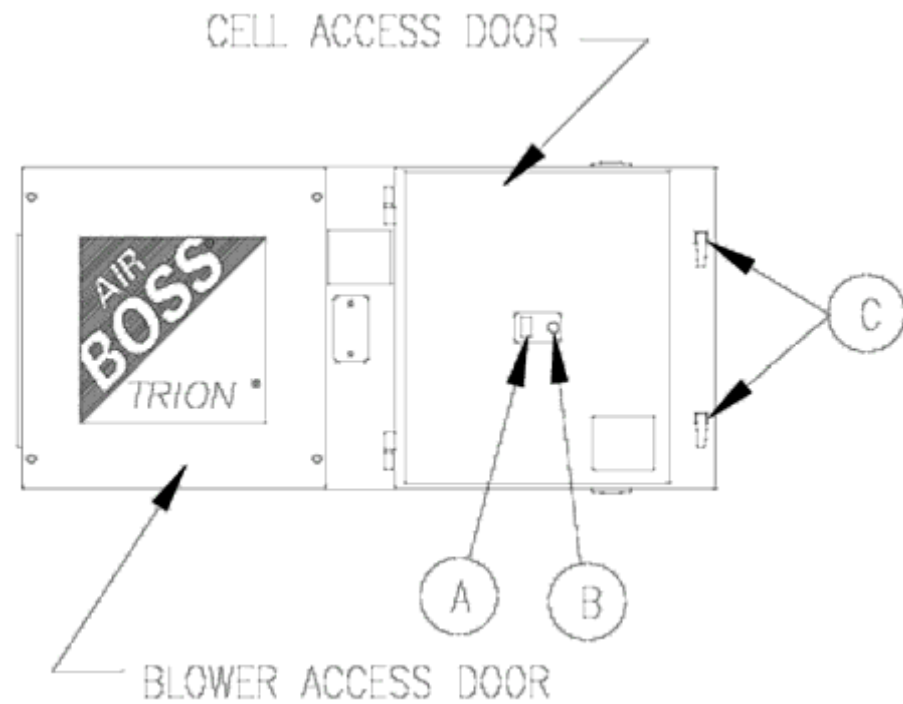
How It Operates

After passing through a pre-filter, the particles in the air are given an electrical charge supplied by the power supply. As the particles enter the collector cells, these charged particles are attracted to and collected on grounded collecting plates.



Typical Electronic Cell Operation

UNIT OPERATION



Control Switch (A): The control switch is located on the cell access door. It controls the operation of the power pack (and the belt driven blower on the T1300 and T2600). The control switch should be in the “OFF” position when the cell access door is open for maintenance of the unit.

Indicating Light (B): The light located adjacent to the control switch is an indicator of the performance of your electronic air cleaner. When the control switch is “ON”, the blower should operate on the T1300 and T2600, and the indicator light should glow. If the light does not glow or if it continually flickers and is accompanied with a continual snapping or arcing noise, the air cleaner requires attention and may need to be cleaned.

Cell Access Latches (C): The cell access latches are located on the door near the intake end of the unit. To open the cell access door, lift and turn the latches counter clockwise.

Arcing (snapping or cracking noise): An occasional arcing noise may be emitted from the air cleaner. This is a normal occurrence caused by exceptionally large pieces of dirt, etc., entering the collecting elements. In addition, an arcing noise accompanied by a flickering of the indicating light may be noticed after washing the cells. Should this occur, allow more drying time. Also, see “Troubleshooting Chart”, for additional causes of arcing.

Ducting Application

To maintain the selected cleaning efficiency, it is important to assure that the total air volume (capacity in CFM or m3/hr) is uniformly distributed across the entire face

area of the unit. The metal mesh filters, perforated plate or mist suppressors provide some resistance to effect even air distribution. However, since most air ducts are designed to handle air velocities greater than the rated velocity of the air cleaner, it is necessary to properly transition any attached ducting. If possible, a contraction ratio of 1 in 3 (approximately 20°) should be maintained. If space prohibits, turning vanes, air baffles or other means may be utilized. Ducting – where attached to the cabinet collars – should be gasketed, caulked or otherwise made watertight.

Installation- Read Thoroughly

1. Carefully unpack unit from shipping crate or carton and examine for damage in shipment.
2. Remove ionizer/collector cell(s), pre-filters and after-filters.
3. Attach 500 pound (227 kg) test chain to the ceiling joist using:
 - a. Wood joist – 3/8” (m10) eye bolts
 - b. Metal joist – wrap chain around joist at least twice and secure with 500 pound (227 kg) test connecting link
4. Chain should be cut to allow the unit to hang from a predetermined height from the floor. (Usually 10-12 feet or 3.0-3.6 m).
5. The unit is equipped with a locator dimple in each corner on the top and bottom. Using the dimples as a guide, drill (4) 13/32” dia. (10.3 mm) holes that will be required for mounting the eyebolts, which are attached to the suspension chain.
6. Position a 3/8” (m10) diameter eyebolt (or larger) in each hole and secure with a washer and appropriate nuts.
NOTE: Be sure to place two nuts on each eyebolt to act a locking nut. Failure to do so may cause the nuts to loosen and the unit to fall.
7. Using 3/8” (M10) connecting links, attach unit to chain. Use turnbuckles on diagonally opposite chains.
NOTE: Foul threads on turnbuckles after levelling unit to ensure that the turnbuckle will not “back off” or loosen and cause the unit to fall.
8. The units can be suspended with the direction of airflow from the right to left. If a left to right airflow is desired, the unit may be flipped over and the eyehooks installed in what was originally the bottom.

Liquid Aerosol Application Instillation

The unit is equipped with a sump, drain hole sized to accept a 1/2” NPT fitting. For the collection of liquid contaminant:

1. Install drain fitting to allow for the attachment of a liquid collection cup or drain hose. A drain fitting is available from your representative. An “S” trap is required in the drain hose to ensure proper drainage of the collected liquid.
2. Raise the front corner of the unit, opposite of the drain corner, ½” (13 mm) to enable the collected liquid to flow to the drain sump.

Contaminants to be collected – such as oils in vaporous state – must be condensed into particulate form prior to entering the ionizing-collecting cells in order to maintain the anticipated efficiency. Gases, vapors or any nonparticulate cannot be precipitated and will therefore pass through the air cleaner. Any condensing that takes place downstream from the air cleaner defeats the purpose. Similarly, heavy concentrations of water vapor, or other matter that becomes highly conductive when condensed, must be prevented from entering and/or condensing in the collecting elements to prevent electrical arc over and shorting.

Electrical Installation

All units must be wired directly in the junction box on the access door side of the unit. Use NEC Class I wiring methods. Size branch circuit protection in accordance with the NEC. Refer to the appropriate enclosed wiring diagram in the attached figures.

WARNING:

EXERCISE ALL THE NORMAL PRECAUTIONS WHEN WORKING WITH HIGH VOLTAGE AND COMPLY WITH NEC AND ALL APPROPRIATE LOCAL CODES.

Check Out for System Start-up

When the installation has been completed, assure that the equipment is ready for start-up by checking the following:

- A. All construction debris is removed from the ionizing collecting cells, drain connections and ductwork.
- B. The drain line from the drain basin is clear and completely connected to its point of termination.
- C. Supply line power is available and electrical wiring is completed to the junction box.

Maintenance

The following instruction are for use by qualified personnel.

WARNING

RISK OF ELECTRIC SHOCK

These serving instructions are for use by qualified personnel only. To reduce the risk of electric shock, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.

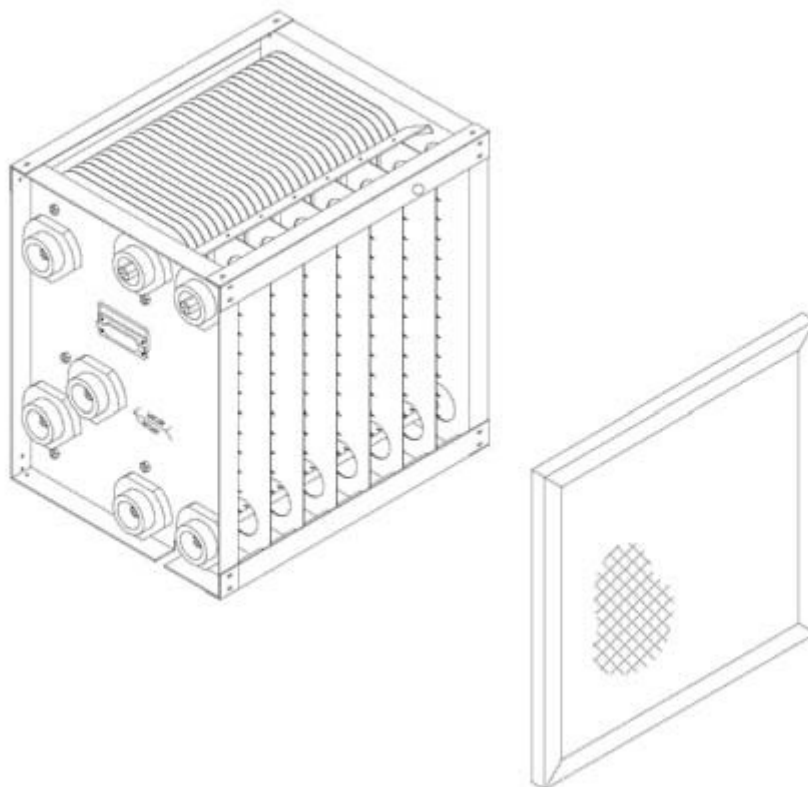
SAFETY NOTE:

Factory designed access to all electrically charged high voltage components contain electrical interlocks for the safety of operating personnel. Any additional access that may be provided in the system, where there is access to high voltage, must be equipped with such interlocks. Interlocks are readily available from the factory.

Cleaning

To maintain optimum collection efficiency, the pre-filters and ionizer/collector cells should be removed periodically and soaked in a solution of hot water and AIRCLEAN detergent for 2 to 4 hours, rinsed thoroughly and then air dried completely before reinstalling in the unit.

The frequency of cleaning is dependent on the type of contaminant being collected. Liquid aerosol requires less cleaning while welding smoke may require more frequent cleaning.



Wash Ionizing/ Collecting Cells

WARNING:

DO NOT USE HIGH PRESSURE STEAM CLEANING EQUIPMENT TO CLEAN CELLS. THE EXCESSIVE HEAT AND PRESSURE WILL CAUSE THE PLATES TO WARP AND IN TURN POSSIBLY CAUSE EXCESSIVE ARCING.

1. Turn the control switch "OFF" and disconnect power to the unit.

2. Open the cell access door.
3. Remove ionizer/collector cells and wash in HOT detergent water. If the collected contaminant is of extremely dry nature, it can be blown off the cells with a pressure hose or by gently tapping the end plate of the cell.
4. Remove the mechanical pre-filter. Remove collected dust or lint by vacuuming or brushing. Wash with warm, soapy water.
5. Rinse all components thoroughly in warm, clear water and allow to drip dry completely.
6. Replace pre-filters and ionizer/collector cells.
ENSURE the airflow arrows point in the direction of airflow (towards the blower).
7. Close the access door; reconnect power to the unit.
8. Turn control switch to "ON". If arcing occurs or the indicating light flickers, the components may still be damp. Turn the unit OFF and allow the cells to dry completely.

For Spare Parts Contact AIRCLEAN

Telephone; 01622 832777

Email; sales@airclean.co.uk

Address; Bays 2-3 Pattenden Lane

Marden

Tonbridge

Kent

TN12 9QS

Warranty

All AIRCLEAN Electronic Air Cleaners are warranted for 3 Year Limited Warranty on units and 1 Year Limited Warranty on replacement parts. Labor is NOT included. Do not return defective parts without permission from the factory and receiving a material return acceptance number.

Trouble Shooting Guide

T1001 / T2002

Problems and Possible Causes:

1. Indicating Light Out
 - a. Unit not plugged in
 - b. Control switch "Off"
 - c. Cell access panel not fully closed
 - d. Broken cell insulator
 - e. Extremely dirty cells
 - f. Service panel not secured in place
2. Excessive arcing noise after washing
 - a. Collector elements still wet – Allow more drying time
 - b. See "Continuous arcing noise" below

3. Continuous arcing noise and flickering indicating light
 - a. Extremely dirty collector plates
 - b. Bent collector plates
 - c. Large piece of material lodged between cell plates

4. Contaminant Bypass
 - a. Velocity of airflow is too high through unit
 - b. Collector plates not grounded
 - c. Collector cell not making solid connection to access door and high voltage contact.

**IF PROBLEM CANNOT BE DETERMINED OR CORRECTED – CONTACT
AIRCLEAN 01622 832777**

T1300 / T2600 Troubleshooting Guide

The troubleshooting chart, shown on the next page, will enable the user to pinpoint the cause of most problems. Refer to the Ordering Information for replacement parts.

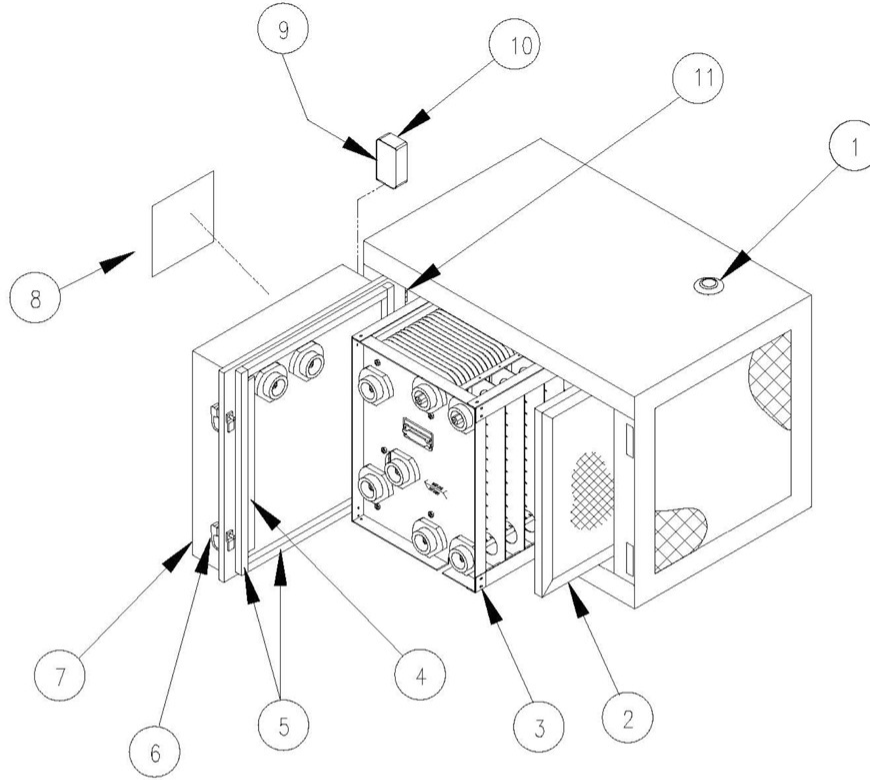
Before performing any troubleshooting, ensure the correct input line voltage is present.

WARNING

Factory designed access to all electrically charged high voltage components contain electrical interlocks for the safety of operating personnel.

Always unplug the unit while performing service within the cabinet.

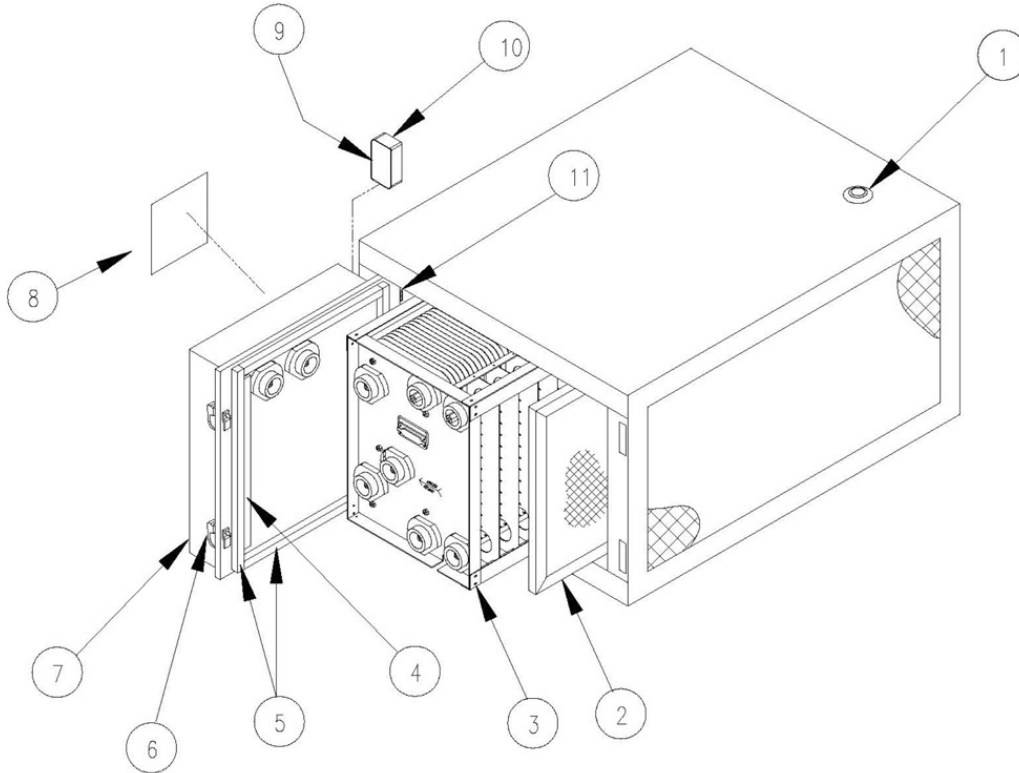
T1001 MODULE ASSEMBLY



ITEM	TRION PART NO.	DESCRIPTION	QTY.
1	247962-002	Cap Plug	2
2	224451-006	Aluminum Mesh Prefilter	1
3	450568G-001	Ionizer Collector Cell	1
4	224779-028	Gasket, Adhesive Back (3/4" x 11/16")	19"
5	224779-015	Gasket, Adhesive Back (1" x 1/4")	86"
6	334562-005	Draw Latch	2
7	348667-001	Control Enclosure Assembly	1
8	252029-001	Label	1
9	149882-001	Outlet Box Cover	1
10	249884G-001	Outlet Box	1
11	146442G-001	Hinge	2

FIG 3

T2002 MODULE ASSEMBLY



ITEM	TRION PART NO.	DESCRIPTION	QTY.
1	247962-002	Cap Plug	2
2	224451-006	Aluminum Mesh Prefilter	2
3	450568G-001	Ionizer Collector Cell	2
4	224779-028	Gasket, Adhesive Back (3/4" x 11/16")	19"
5	224779-015	Gasket, Adhesive Back (1" x 1/4")	86"
6	334562-005	Draw Latch	2
7	348667-001	Control Enclosure Assembly	1
8	252029-001	Label	1
9	149882-001	Outlet Box Cover	1
10	249884G-001	Outlet Box	1
11	146442G-001	Hinge	2

FIG 4

WIRING DIAGRAM

