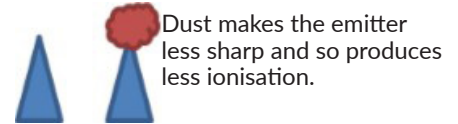


CLEANING, MAINTENANCE & HANDLING OF STATIC ELIMINATORS

CLEANING

A static eliminator becomes dirty in normal use, for two reasons:

- 1) It attracts airborne dust and contamination. The dirtier the factory atmosphere, the more contaminants will be attracted.
- 2) It "carbonises" the air. The result is a black carbon coating on the Bar – often reflecting the pattern of the electric field.



This dust and carbonisation contamination have two effects:

- a) Dust effectively reduces the sharpness of the emitter, so reducing the amount of ionisation produced.
- b) Dust and carbonisation can allow the energy from the emitter to conduct to earth or to the emitters of the opposite polarity for DC Bars, reducing the current going to the emitter.

The result is a Bar which seriously underperforms and in bad cases can increase the load so much that the transformer or electronics shut down. This applies to all static eliminators – and the more powerful the ionisation, the more contamination can be attracted.

With resistively coupled Bars – like all Fraser Bars, including generator Bars – dirt can also reduce the resistance by joining the resistors in parallel. In some cases this could result in a spark or shock to an operator.

The 3024F Bar, below, was in use at a customer who complained that there was something wrong with the Bar because it was not working as well as before:



It is so dirty that you cannot read the "Clean Regularly" label.

The photo above is a very dirty Bar, but even a small amount of dirt can affect the performance of the Bar. It is important that customers know that some cleaning is required for all static eliminators and static generators.

TRAINING AID

Cleaning Regime

The frequency of cleaning depends on the power of the Bar, the amount of airborne dust in the factory and whether the equipment is running 24/7 or just a few hours a day. This is for the customer to decide based on his factory conditions.

It could be that in a clean room where the Bar is working only 8 hours a day that the Bars are inspected every 3 months. In a high productivity factory which does not have clean air then an inspection every 7 days could be needed.

This regime should be written into the factory maintenance procedure.

How to Clean

Light dust can be removed using a nylon nailbrush. If the contamination is more, then a cleaning agent such as IPA / Isopropanol can be used. The cleaning agent must be compatible with the materials in the product – typically ABS, PCV, epoxy resin, aluminium and tungsten.

The Bar, or other static eliminator, must be turned off before cleaning is started – especially if a cleaning agent is used. The Bar should be dry before the power is turned on.



TRAINING AID

MAINTENANCE

Most static control equipment does not need any maintenance, apart from cleaning.

The exceptions are:

Ionstorm Emitters: replace every 12/24 months according to usage.



If you cannot see the tungsten wire in the Ionstorm emitter, then it needs to be replaced.

Replacing emitters provides a good reason for customer contact.

Jupiter Emitters: inspect every 12 months



If the tungsten emitters are not sharp then they should be replaced.

Jupiter and Ionstorm customers should be contacted every 12 months to see if they need replacement emitters.

Generator Parts: All emitter pins in generator Bars could be subject to high wear – this depends on how much current flows through them. In some applications where a 7080 Bar is very close to the reference earth/counter electrode the customers replace the Bars every three months.



The emitters in the 7093 should be inspected for sharpness every 3 months.

TRAINING AID

HANDLING

Connectors are high voltage insulators. It is important that the plastic insulation tubes are not contaminated by handling with fingers – even if they are clean they could put a conductive path on the insulator which will lead to breakdown.

This applies to all connectors – for AC, DC and Generator equipment.

Connectors must be kept clean with a suitable electronics cleaning agent.



Generator Connectors



HP Connectors



Ionstorm Connectors



9055-2 Connectors