Meech

Operating Manual

Model 914EX

Shockless AC Bar

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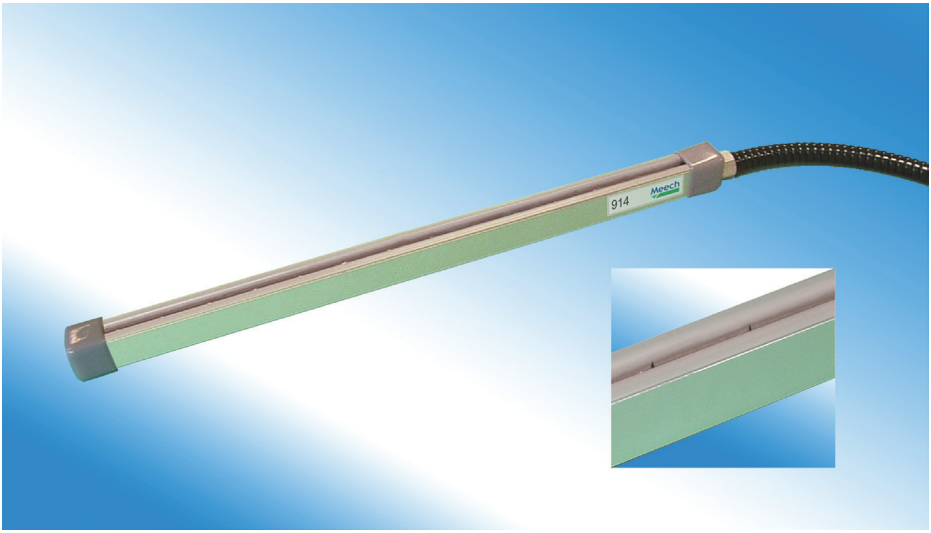
Introduction



The Meech Model 914EX has been designed to meet the most arduous of static elimination problems. The special resistive coupling of its emitter pins renders them shockless, whilst giving powerful static neutralisation performance. This enables the Bar to eliminate very high static charges on high speed webs and at longer ranges than has been previously possible.

Inspection

The Model 914EX Bar was carefully packed at the factory. Nevertheless, we recommend careful examination of the carton and contents for any damage.

If damage is evident, keep the packing material and immediately notify the carrier of a possible damage claim. Shipping claims must be made by the consignee to the delivering carrier.

Operation

The typical Meech Model 914EX installation consists of one or more bars connected to a Meech Model 905 Power Unit.

The Power Unit converts the electrical supply into a high voltage, low amperage output. This output energy is transferred to the 914EX bar by the HT cable.

The resistively coupled electrodes are energised by the AC voltage from the Power Unit. The electrodes emit this energy (corona discharge) in the form of a field of ionised air. This ionised air supplies ions of both polarities.

Electrostatically charged products which pass through this corona are immediately neutralised and become static free.

Under test conditions, the Meech Model 914EX has been found to give charge decay times that are up to eight times faster than standard AC shockless eliminator bars.

Installation

The 914EX Bar can be placed between 25mm and 100 mm from the surface to be neutralised. It is important to ensure that the target surface has free air on both sides and that earthed metal objects are, where possible, at least 20 mm away from the bar. These precautions will maximise the unit's ionisation capability.

Good results can be achieved at distances up to 100mm but as the distance from the object increases, the speed of charge neutralisation will decrease.

A typical installation distance is 40mm from the target surface. This gives exellent performance at high web or product speeds, whilest avoiding possible damage from web breaks or product mis-feeds. Very fast webs may require the bar to be as close as 25mm to the web.

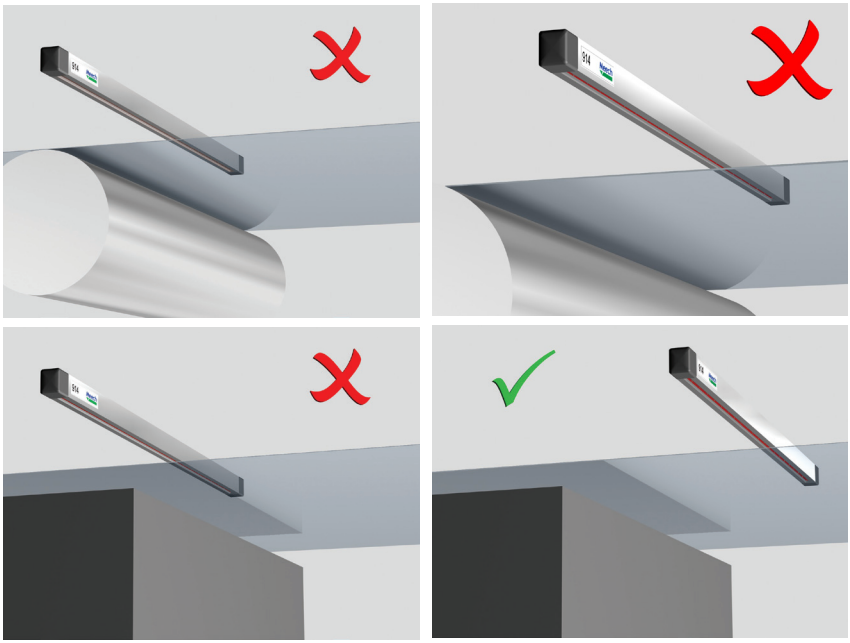
Correct positioning of the bar(s) is vital to efficient operation. The following diagrams show the correct installation procedures:

1. The optimal distance from material to be neutralised.

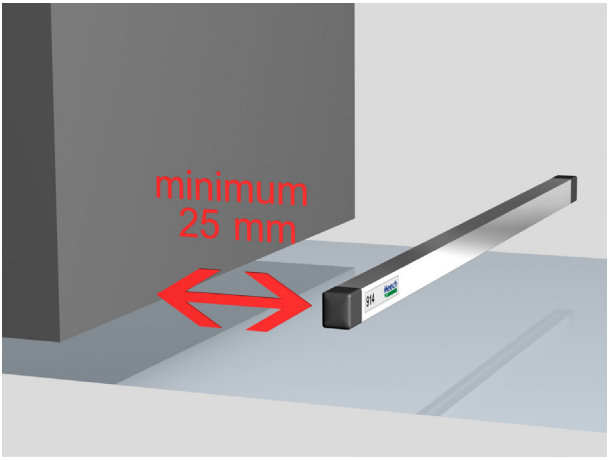
Mounting of the bar is by 20mm M4 studs mounted at the rear of the bar. The chassis of the bar is electrically connected to ground on the power unit via the flexible armoured conduit. However, it is good practice to provide a secondary grounding through the fixing points where practical.

The HT cable and armoured conduit require connection to a Meech model 905 power unit. Please consult the 905 instruction manual for further instruction.

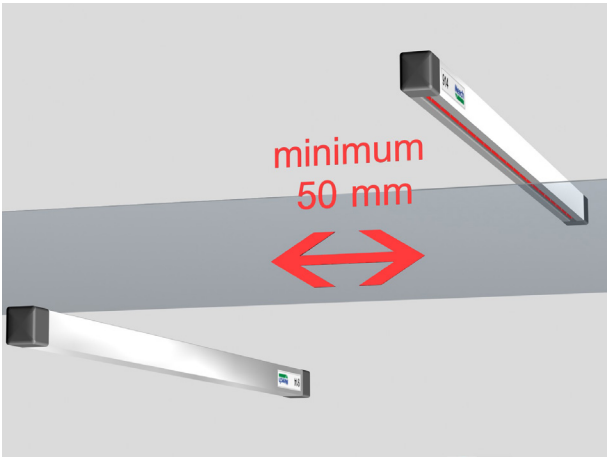
2. Free space is required on opposite sides of the target material, not a roller or solid object.



3. Avoid proximity to earthed parts of machinery as this will distort the corona and reduce its efficiency.



4. If bars are needed on both sides of the material, they should be staggered.



5. The bars must be earthed for correct operation. If in any doubt run an earth wire from the bar to the earth stud on the Power Unit.

Maintenance

Ionisers require periodic cleaning. During normal operation, dirt will build-up on the emitter pins and upon the body of the ioniser. This will cause a reduction in performance.

Typically, weekly cleaning is sufficient. However, equipment used in some heavy contamination areas, such as gravure printing or where plastic fumes are present, may require daily cleaning. Equally, in a Class 100 area, cleaning may only be required on a monthly basis. Advanced systems with performance monitoring, e.g 977CM and 904CM, will alert the operator to the need to clean the equipment before performance drops to an unacceptable level.

Before cleaning, ensure that the equipment is switched off.

Emitter pins can be cleaned very effectively with a brush. A dry toothbrush is ideal.

Ionising bars will need periodic wiping to clean grey deposits from the surface of the bar. A cloth moistened with a small amount of IPA or methylated spirits is recommended.

Should you have any additional questions regarding the maintenance of Meech equipment please contact Meech International directly or you local Meech distributor.

Technical and Construction

Operating voltage	:	5.0 kV AC
Max temperature	:	30°C
Length	:	Available in lengths of 80 mm to 4000 mm in 25 mm steps. Overall length is 60mm greater than the effective length.
Cable	:	5 metres of HT cable shielded in flexible conduit is supplied as standard. Alternative lengths are available to suit specific applications
Weight	:	Approx 400gms per 1000mm length
Cross section	:	14mm (W) x 17mm (H)
Construction	:	Anodised aluminium outer with PVC extruded liner and resin potted components.
Emitter Points	:	Titanium pins with integral emitters
Mounting	:	2 x M4x20mm studs.

Special Conditions for Safe Use

1. The static eliminator bar shall be installed according to the manufacturer's installation instructions for the Model 914 EX.

2. The static eliminator bar must be protected from mechanical impact.

3. If there is any damage to the web or material that is being neutralised by the static eliminator bar, then the bar must be checked for damage and relevant maintenance or replacement of the bar carried out.

4. The 914 EX static eliminator bar shall be used in conjunction with only Meech Type 905 power supplies.

5. The power supply must be protected by a fuse capable of withstanding a prospective short circuit current of 1500A.

6. When used in dust environments, the equipment may not be used in association with dusts having an electrical resistance equal to or less than $10^3\Omega.m$,

7. When used in dust environments, the equipment may be used only with dusts requiring an ignition energy of greater than 0.2mJ.

8. The user must determine, in consultation with the manufacturer, the suitability of the apparatus for use with particular solvents.

Fault Finding

Tests must be completed by a qualified electrical engineer.

If in doubt please contact Meech head office or your local distributor.

CAUTION: Whilst no danger to personnel exists, it is essential that, with the exception of bars with a water resistant option, high voltage ionising equipment, makes no contact with water or water based fluids. Should such an event occur, disconnect immediately and return equipment to the manufacturer for water damage assessment.

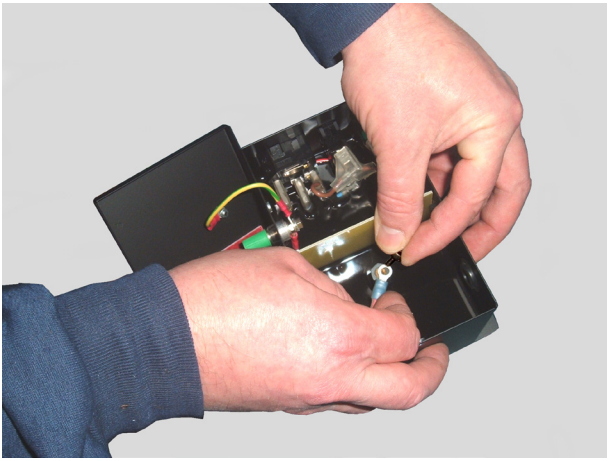
The Model 914EX ionising bar forms part of a system, comprising the bar itself and a Model 905 Power Unit. (See Fig 2)

To verify where a fault may have occurred it is important to test each item of the system individually. Should more than one bar be connected to a power unit, these must be tested individually.

To check the Model 914EX bar follow the procedure detailed below.

1. Switch off the electrical supply to the system and disconnect the IEC plug.

2. Disconnect all ionising bars from the power unit.



3. Follow the test procedure for the Model 905 Power Unit. This can be found in the instruction manual of the Model 905.

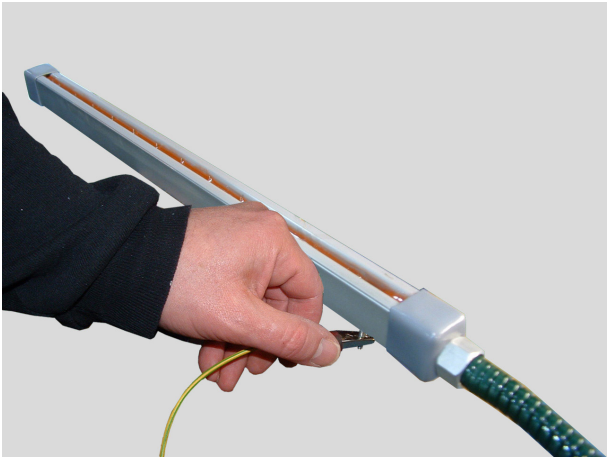
4. Having checked the power unit reconnect one Model 914EX ionising bar.

5. Using a high voltage probe and meter measure the voltage on the pins of the ionising bar. This voltage should be approximately 4.5 kV.

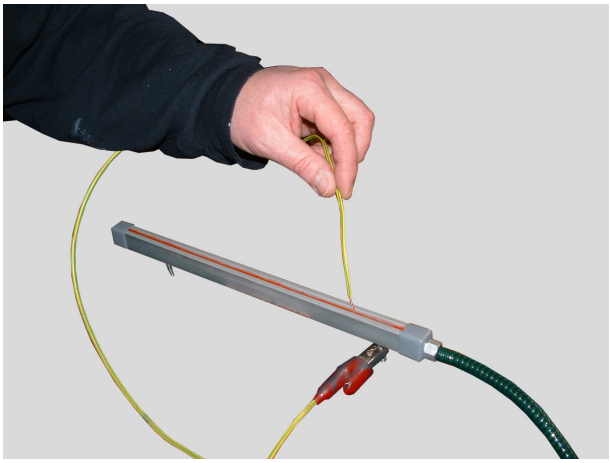
6. If the voltage is below 4.0 kV then the bar should be returned to Meech for service and/or repair.

7. If no meter and probe is available, then a fast and simple test can be undertaken by shorting a pin of the bar to earth.

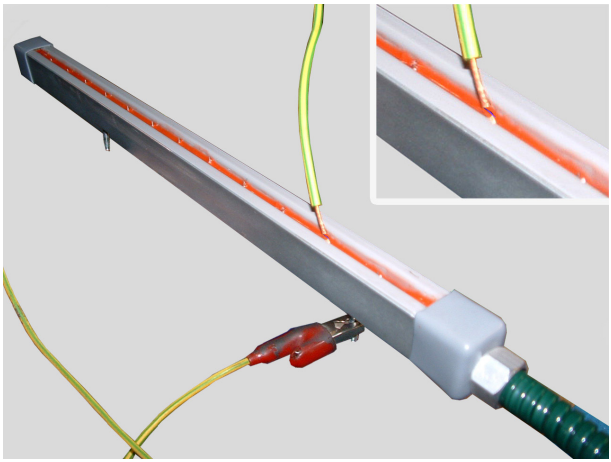
- Attach a short length of insulated wire to either fixing stud on the bar.



- Holding the wire insulation, approach any of the bar emitter pins with the bare end of the wire.



- As the pin is approached, a small faint spark should jump from the pin to the wire.



- As the spark is drawn a slight buzzing sound will also be heard. This indicates that the bar is functioning correctly.

If there is more than one bar to test, disconnect the first item and repeat the above steps with subsequent bars.

Repairs And Warranty

The 914EX bar is warranted by Meech Static Eliminators Ltd to the original purchaser against defects in material and workmanship for one year after purchase. Should any malfunction occur, please return the bar directly to Meech Static Eliminators or your local distributor.

All products returned to the factory MUST be accompanied by a return authorisation number and must be shipped prepaid. For prompt service, ship the unit to the factory with the return authorisation number shown clearly on the label. Be sure it is well packed in a sturdy carton with shock absorbing material.

Include a note stating the nature of the problem as specifically as possible, and also include instructions for returning the bar to you. We will pay one-way return surface shipping costs on any repairs covered under the warranty.

Field repairs should not be undertaken during the warranty period. Repair attempts by unqualified personnel will invalidate the warranty.

CE Approval

A CE Declaration of Conformity for this product exists in respect of the Low Voltage Directive: 72/23/EEC (“LVD”) & Electromagnetic Compatibility Directive: 89/336/EEC (“EMCD”)

Certification

EC type examination certificate No:

BASEEFA 10 ATEX0097x

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CE 1180 Ex II 2GD Ex mb IIA T6 Gb
Ex mb IIIC T85°C Db
Current:<5mA, Voltage: 5kV; T amb -20°C to +30°C
Model: 914Ex Baseefa:10ATEX0097X

Health and Safety

Emission of Ozone: Considerably below international standard of 0.1 ppm.

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