Meech

Operating Manual

993R Spark Free Generator Bar

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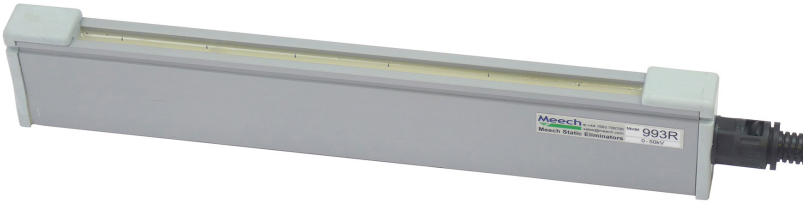
Introduction



Model 993R

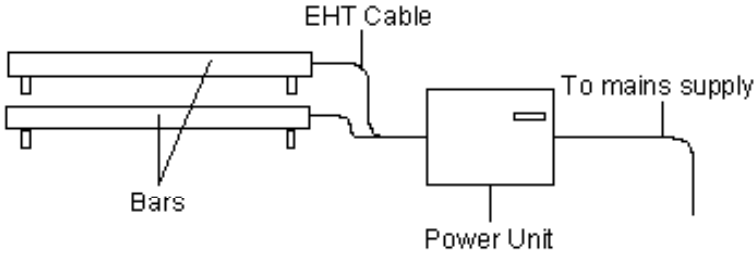
The Model 993R is a high performance Generator Bar for use with the Meech range of 50kV and 30kV high voltage DC power supplies. The 993R features resistively coupled emitter pins, rendering it near shockless and providing a controlled delivery of power.

Unpacking and Inspection

Your Generator Bar was carefully packed at the factory in a container designed to protect it from accidental damage. Nevertheless, we recommend careful examination of the carton and contents for any damage. If damage is evident, do not destroy the carton or packing material and immediately notify the carrier of a possible damage claim. Shipping claims must be made by the consignee to the delivering carrier.

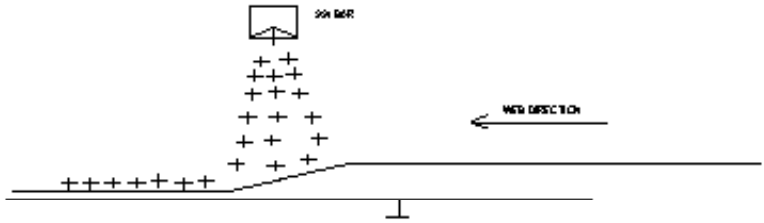
Operation

A typical charging system comprises one or more generator bars connected to a Meech high voltage power supply.



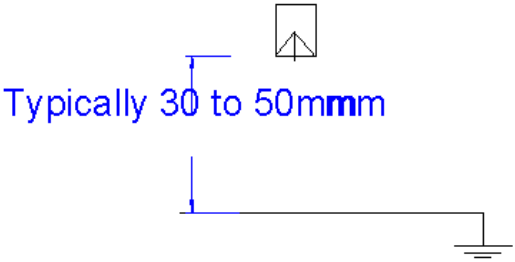
The Power supply converts the primary electricity supply into a high voltage DC output. The generator bars are connected to this output by means of an EHT cable.

The resistively coupled electrodes of the generator bar are energised by the high voltage DC, generated by the power supply. The electrodes emit this energy in the form of a Corona Discharge. This electrical discharge creates an ion stream of a single polarity (defined by the type of power supply from which it is operating). Non-conductive materials passing through the ion stream, between the emitters of the bar and a grounded plate, take on the same electrical charge and adhere to the ground plate (see below).

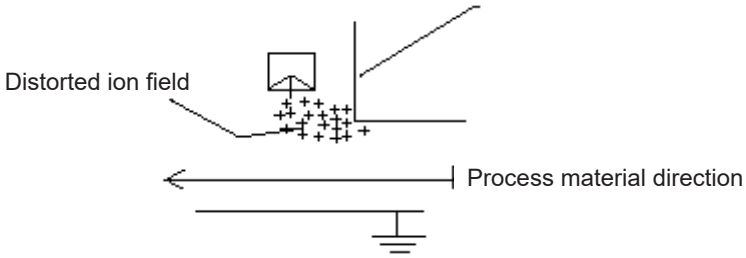


Installation

Correct positioning of the bar is vital for efficient operation. The bar should be positioned directly opposite an earthed point/plate or a bar of opposite polarity. Non-conductive materials passing between the Generator bar and earth, or bar of opposite polarity, will be pinned together. The bar should typically be positioned 30 to 50mm away from the nearest earthed object but this is subject to set up conditions. If the generator 'trips' the bar has been positioned too close to and ground reference.



The bar should be positioned away from any other ground reference point. These may disrupt the ion stream and reduce the effectiveness of the bar and the degree of pinning achieved on the process material.



Installation“ Caution” Notes

Whilst no danger to personnel exists, it is essential that any high voltage ionising equipment makes no contact with water or water based fluids. High voltage electrical equipment should not make contact with water. Should such an event occur, disconnect immediately and return equipment to the manufacturer for inspection.

If the bar is positioned too close to the earth plane, an intense blue haze will be seen between the emitter pin of the bar and the earth plane. This will cause the High Voltage DC power supply to trip and switch off. The bar should be repositioned further away from any earth plane and the High Voltage power supply reset (depress and release the reset button).

The High voltage system must be disconnected from the mains electrical supply before any adjustments to the position of the bar are made.

If the unit continues to trip, contact Meech International Head Office or your local distributor.

As this equipment may give an electrical shock if the pins are touched, the following procedure must be followed:

The supply voltage of the power supply must be interlocked with the ON/OFF control of the machine to which the equipment is fitted.

This will ensure that whilst the machine is switched off and thus operatives may gain access to the machine and our equipment there will be no danger of operatives receiving shocks.

It is assumed that normal safety barriers are in place on the machine to ensure that operatives are unable to access the machine and hence our equipment whilst the machine is switched ON.

For permanently connected equipment, a readily accessible disconnect device shall be incorporated in the fixed wiring. This disconnect device must have a minimum 3mm contact separation with appropriate current rating. For plug-able equipment, the socket outlet shall be installed near the equipment and shall be easily accessible.

Technical Specification

Model 993R

Operating Voltage	:	Up to 50kV D.C.
Operating Current	:	0.5mA max
Operating Polarity	:	Either +VE or -VE.
Max Temperature	:	60°C
Weight	:	400g per m approx.
Cable	:	2 metres in flexible conduit as standard, longer lengths can be specified when ordering
Construction	:	PVC extrusion, titanium emitter pins.
Dimensions	:	24mm x 44mm x length (Up to 3000mm)
Power Supply	:	Meech Models 992v3
Mounting	:	Two M10 x50mm nylon studs

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. Allow a moment to dry before switching back on.

The Bar Should not be washed down.

Repairs And Warranty

Your Generator 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 agent. 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

An EC 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”)

Health and Safety

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

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