Meech

Operating Manual

Model 251
Ion Gun

Contents

Introduction

The Meech Model 251 Ion Gun has been designed to effectively eliminate localised static charges which exist in the work area.

Unpacking and Inspection

The Model 251 Ion Gun has been 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.

Description

The Meech Model 251 Ion Gun is a robust, light weight moulded product for use with the Meech Model 233v3 Pulsed DC Controller. It is suitable for contamination blow-off and neutralisation of static charges in electronic applications and in cleanroom environments. It is quick, easy and safe to use. The Model 251 features replaceable titanium emitters.

Installation and Use

The Model 251 Ion Gun should be connected to the Model 233v3 Pulsed DC Controller.

Connect each of the male plugs at the end of the HV cables of the Model 251 to the high voltage sockets of the 233v3 Pulsed DC Controller.

Connect the 6mm air hose from the Ion Gun to the air socket on the rear panel of of the Model 233v3 Controller.

Connect a switched compressed air supply to the air socket on the side of the Model 233v3 Controller, via 6 mm air hose .

Insert the 3.5 mm jack plug on the control cable of the gun to the remote control socket of the Model 233v3 Controller (It is important to ensure that this connection remains secure at all times).

Switch on the Model 233v3 Controller. The Model 251 is now ready to use.
The compressed air will be allowed to flow through the Ion Gun as the gun trigger is depressed. This also activates the high voltage circuit of the Model 233v3 Controller, energising the emitter pins within the gun nozzle which provide the ionisation to neutralise static charges on the work-piece. Both the compressed air supply and ionisation will be switched off when the trigger of the gun is not depressed.

Never point the air flow from the gun towards yourself or any other operator. Compressed air is dangerous. This device must not be used to clean personnel, or clothing worn by personnel.

It is important that the compressed air used with the 251 Ion Gun is dry and uncontaminated. If any water or oil is present in the compressed air line, and is carried into the nozzle cap of the gun, the operation and condition of the emitter pins may be seriously affected.

WARNING - High voltages are present in the unit.

Under no circumstances should the unit be opened without first turning off the power and isolating the unit by disconnection of the power cord. Operators must not try to insert fingers or any other object into the nozzle of the Model 251.

Maintenance

The Model 251 is designed with replaceable titanium emitter pins. These should be inspected periodically (typically every 30 days).

Inspection of the emitter pins must only be carried out with the Model 251 disconnected from both the compressed air supply and Model 233v3 Pulsed DC Controller.

To gain access to the emitter pins, unlatch the nozzle cap from the gun body and rotate it away. This is done by applying finger pressure to the base of the cap next to the rotation pivot whilst simultaneously levering upwards the retaining clip which secures the cap to the body of the gun. If the pins appear dirty they should be cleaned using a swab and isopropanol. The emitter pins must be allowed to dry before the cap is replaced. Before reactivating the Ion Gun ensure that the nozzle cap is correctly latched by locating the retaining clip over its lug and pressing down lightly.

If the pins are worn and require replacement, the pins should be removed using a pair of round nose pliers and replacements fitted. Replacement pins are available from Meech, item code A-200-EMITP-10/1.0

The exterior of the Ion Gun should be kept clean by wiping with a damp cloth.

For Best Results

1. Keep the target area clear and free from obstructions to the ion flow

2. Keep the work area clear of all static generative materials.

3. Use only approved static control grounding methods and material handling equipment.

4. By properly using ionised air, all static potentials in the work area are greatly reduced, even when humidity levels decrease.

Technical Specification

Model 251 Ion Gun

Body material	:	Moulded FR ABS
Length	:	190mm
Weight	:	0.16 Kg
Max Air Pressure rating	:	Not to be used above 100 psi (7 Bar)
Recommended operating pressure	:	20 to 60Psi (1.5 to 4 Bar)
Noise level	:	72 dBA (20 Psi at 1m)(1.5 Bar)
Emitter Pins	:	Machined titanium (replaceable) (7mm)
Decay time	:	0.7 sec at 150mm at 30 Psi (2 Bar) (1000V to 100V)
Ozone	:	Less than 0.01 ppm
Ion Balance	:	+/- 10 V or better at set up
Operating Voltage	:	+/- 8 kV DC Nominal (Model 233v3)

Calibration And Balance Verification

Balance verification should be checked in accordance with the ESD protection Standard ANSI-EOS/ESD-S3.1-1991.

Remember

It is important to verify calibration after any adjustments and before using your Ion Gun in the presence of sensitive electronics.

Fault Finding

Tests must be completed by a qualified electrical engineer.

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

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

Cable Plugs

Please note that, on leaving the factory, the brass ends of the cable plugs are configured to a standard size for fitment into the power sockets of the 233v3 Pulsed DC Controller. Meech has found that occasionally during transportation and handling the ends of the plugs can become slightly mis-shaped which may cause difficulty with their location into the power sockets.

If you find this to be the case, then (1) if the plugs are too tight, you should lightly pinch together the two halves of the brass end of the plug with a pair of pliers, or (2) if the plugs are too loose, you should gently open out the slot in the brass end with the blade of a screw-driver or knife.

Repairs and Warranty

Your Ion Gun 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 Ion Gun directly to Meech or to your distributor. All products returned to the factory MUST be accompanied by a return authorisation number and must be shipped prepaid. Meech Static Eliminators Ltd. liability under this warranty is limited to replacing or repairing any unit returned by the purchaser, that has not been subject to misuse, neglect, repair, alteration or accident. In no event shall Meech Static Eliminators Ltd be liable for collateral or consequential damages.

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 Ion Gun to you. Meech 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.

Important

Your Ion Gun has been designed to minimise effects of localised static charges. If your processing involves generation of considerable static charges, however, you may need more aggressive equipment. Meech Static Eliminators Ltd has available a complete range of Ionising Blowers, Air Guns, Bars and overhead room systems to meet all Static Elimination requirements.

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”)

Health and Safety

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

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