Viper Ion Gun
Installation, Operation and Maintenance

Made in the United States of America

Figure 1. Desco 19595 Viper Ion Gun

Description

The Desco 19595 Viper Ion Gun is a point-of-use ioniser used for neutralising electrostatic charges to eliminate attraction, visual imperfections and contamination issues by dislodging charged dust and debris. It uses compressed clean dry air (CDA). Fast discharge times with ±15 volt offset voltage meet the required limits of EN 61340-5-1 tested per IEC 61340-4-7.
A high frequency piezo AC power supply is located inside the hand piece to maintain consistent ionisation performance with longer hose lengths (standard 1.8 m hose included) and eliminate the need for a remote console. The light weight of the Viper Ion Gun (less than ½ pound; 200 grams) allows for comfortable extended use by operators. The Viper Ion Gun is designed with slotted tips to meet the OSHA requirement for pressure relief. A green LED on the back of the hand piece illuminates when the trigger is depressed to indicate that the gun is outputting ionised air. A red LED indicates abnormal output. Normal power consumption is approximately 2.5 Watts.

"There is sometimes a need to provide static control in a small defined area or location. This may be done to provide static control within production equipment, in mini-environments or to facilitate particle removal from part of a product. Ionizers used for this purpose may be blowoff guns or nozzles that work with a supply of compressed air or nitrogen. They may use either nuclear, soft x-ray or any of the previously described types of corona ionization technology. It will be important to choose a method of ionization and cleanliness of the gas supply that is appropriate to the work area." [CLC/TR 61340-5-2 User guide sub-clause 4.7.6.5.2.4 Point-of-use ionization]

"Air ionization can neutralize the static charge on insulated and isolated objects by charging the molecules of the gases of the surrounding air. Whatever static charge is present on objects in the work environment, this will be neutralized by attracting opposite polarity charges from the air." [CLC/TR 61340-5-2 User guide ionization clause 4.7.6.1]

Packaging

1 Viper Ion Gun
1 Power Adapter, 24VDC, with interchangeable plugs (North America, UK/Asia, Europe)
1 Air Tube, 1.8 m Length
1 Certificate of Calibration

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Features and Components

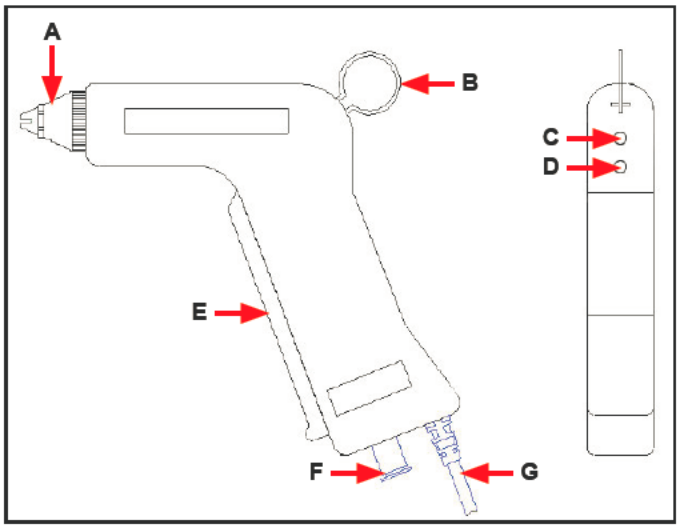

Figure 2. Viper Ion Gun Meter features and components

A. Output Air Nozzle: Outputs ionised air when the trigger is depressed.

B. Hanging Hook: Use to hang the hand piece when not in use. The hook may be rotated 90 degrees.

C. Power LED: Illuminates green when the trigger is depressed and ionised air blows out the nozzle.

D. Alarm LED: The red LED will illuminate during the following conditions:

- the high frequency transformer breaks down and no longer outputs high voltage
- the high voltage line shorts to ground
- the emitter becomes dirty or contaminated with moisture or oil

E. Trigger: Depress to output ionised air.

F. Air Input Port: Use the one-touch joint to secure a 6 mm air tube to the ion gun.

G. Power Cable: Connect the power cable to the power adapter to supply power to the ion gun.

Installation

1. Connect the Viper Ion Gun's power cable to the power adapter.
2. Connect the power adapter to an appropriate power outlet.
3. Connect the green wire to earth protective ground.
4. Insert an air tube (6 mm outside diameter) into the ion gun's air input port.
5. Connect the other end of the air tube to a source of clean dry air.

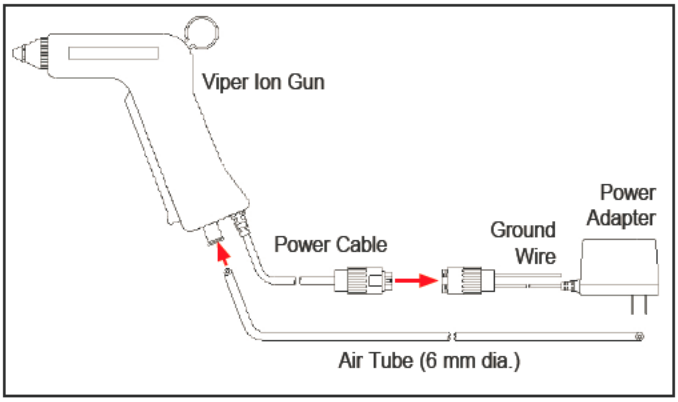

Figure 3. Installing the Viper Ion Gun

Operation

NOTE:

- Do not operate the main unit by turning the nozzle toward a human body, especially to the face or to the eye of a person. This may cause serious injury to the person.
- Do not let the nozzle of the main unit touch conductive or live parts.
- Do not drop the ion gun as it may damage the piezoelectric power supply embedded in the unit.
- This product emits ozone. Do not use this products in an enclosed space.

1. Hold the gun approximately six inches (15 cm) from the surface you want to neutralise and blow off. Aim the nozzle and hold down the trigger. The green LED on the back of the gun should illuminate. Static charges are typically discharged within one second.
2. Release the trigger when the surface is clean.

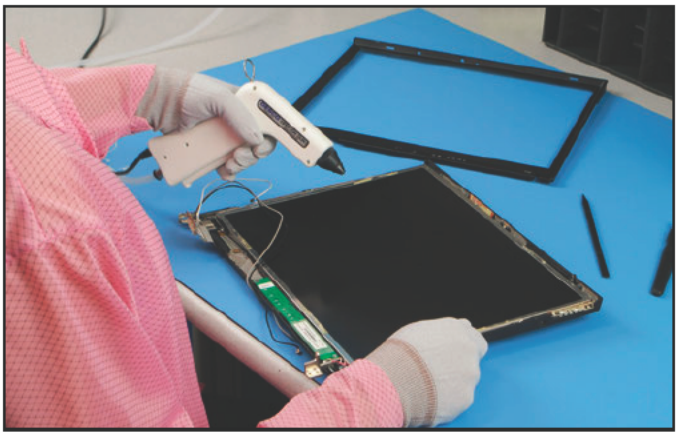

Figure 4. Using the Viper Ion Gun

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Maintenance

"All ionization devices will require periodic maintenance for proper operation. Maintenance intervals for ionizers vary widely depending on the type of ionization equipment and use environment. Critical clean room use will generally require more frequent attention. It is important to set up a routine schedule for ionizer service. Routine service is typically required to meet quality audit requirements." [CLC/TR 61340-5-2 User guide Ionization sub-clause 4.7.6.7 Maintenance and cleaning]

EIA-625, recommends checking ionisers every 6 months, but this may not be suitable for many programs particularly since an out-of-balance may exist for months before it is checked again. EN 61340-5-1 clause 5.2.4 Compliance Verification Plan states: "The test equipment selected shall be capable of making the measurements defined in the compliance verification plan."

Cleaning the Emitter Point

To maintain optimum neutralisation efficiency and operation, cleaning should be performed on a regular basis. Use the Desco Europe 200155 Emitter Point Cleaners or a swab dampened with isopropyl alcohol to clean the ion gun's emitter point.

1. Disconnect the ion gun from its power supply and air supply.
2. Remove the nozzle.
3. Gently clean the emitter point using a swab dampened with Isopropyl alcohol. Screw the nozzle back onto the ion gun when complete.

Neutralisation (Discharge) Times

All measurements were taken from ±1,000 V to ±100 V at a distance of 6 inches (15 cm).

Air Pressure (psi)	15	29	44	58	73	87
+ Discharge (seconds)	.5	.3	.3	.2	.2	.2
- Discharge (seconds)	.6	.3	.3	.2	.2	.2

Specifications

Power Supply Input Voltage	100-240 VAC, 50/60 Hz
Power Supply Output Voltage	24 VDC
Operating Temperature	32ºF to 104ºF (0 to 40ºC)
Dimensions	6.5" x 5.4" x 1.0" (165 mm x 136 mm x 25 mm)
Weight	0.4 lbs (0.2 kg)
Balance	±15 V
Ozone	<0.04 ppm
Supply Pressure	7 psi to 87 psi
Minimum Airflow	13 CFM
Gas Input	Clean Dry Air (CDA)
Gas Connection	6 mm port
Enclosure	Gun - PBT polymer Nozzle - PPS polymer

Limited Warranty, Warranty Exclusions, Limit of Liability and RMA Request Instructions

See the Desco Europe Warranty - DescoEurope.com/Limited-Warranty.aspx

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