Ionizing Air Gun

OPERATION MANUAL

6CAUTION

For your safety, please read this Operating instruction carefully before operating. And always keep this Manual within reach.

Ionizing Air Gun

SECTION 1 INSTRUCTION

[1 - 1]General Description

The ionizing Air Gun is a light weight, hand-held compressed air gun utilizing a static eliminating nozzle. The gun is primarily designed for simultaneously cleaning and neutalizing small or sensitive parts and materials. Neutralizing makes it easier to blow parts clean and prevents reattaction of dust and dirt particles.

The gun is used in conjunction with a Power supply which supplies the high voltage necessary for operation of the gun. The gun is normally shipped completely assembled and connected to the power unit via a vinyl covered, high voltage interconnecting cable assembly. The cable is supplied in a standard 3 meter and 6 meter length.

[1 - 2] General Description

Caution: Do not operate this device in excess of specifications listed below or serious personal m3ury and/or damage to the equipment may result.

a. Air Supply R_{eq}uipments:
   Clean, dry air; 15 to 100 psi.

b. Air Supply Connection:
   1/8" male PT connector in gun lxxly;mating air conduit supplied by user.

c. High Voltage Requirement: (Supply to the Gun)
   4. 0KVAC derived from Power supplier.

d. Effective Neutralization Pattern.

e. Approximate Weight: 0. 275Kgs(gun only, less cable)

SECTION 2 INSTRUCTION

[2 - 1] Installation of Ionizing Air Gun and Power Unit

The Gun and power unit are normally shipped completely assembled and wired. Installation is as follows:

The Power Unit shipped with the gun is designed for wall, or flat surface mounting. Refer to the applicable instruction bulletin for the power unit mounting dimenstions and pertinent installation data. For proper operation of the gun, and to prevent shock to operating personnel, it is important that the gun and power unit be properly grounded. The prewired interconnecting cable between the gun and power unit contains a standard copper (yellow Green) ground wire which provides the necessary ground connection between the gun and power unit. A grounding stud is located on the power unit, and must be connected to a good earth ground.

Air supply pressure to the gun should be from 15 to l00psi. Since contaminated air may clog the gun or cause a short circuit, it is important that the supply air be filtered upstream of the gun unit. Then, it is recommended the air hose be run adjacent to the interconnection cable, and taped together approximately every 150mm to aid in easier handling of the gun unit.

SECTION 3 INSTRUCTION

[3 - 1] Operating Procedures

Caution: The Air Gun is not intended for use in hazardous area. DO NOT use near flammable materials or solvents. When all electrical and air supply connections have been completed the gun is ready for operation. Apply line power to the power unit. For optimum operation, first clean the part with the gun held as close to the part to be cleaned as required to ensure complete dirt and dust removal. Then direct the air flow over the part for a few seconds with the gun nozzle approximately 200 - 300mm

from the part. This second operation removes any small electrostatic charges which may remain when the gun is operated close to the part. Make certain the ionized air stream contacts all parts of the object to be cleaned to ensure complete neutralization and cleaning.

When handling the gun, handle only by the gun body to prevent undue strain on the cable assembly•

[3 - 2] Operational Check

To determine if the gun is functioning properly, place the grounded metal shaft of an insulated screwdriver against the inner edge of the nozzle tip and approach the ionizing point with a sharp corner of the screwdriver blade until arcing occurs. They arc between the point and the screw driver blade should be approximately 2 - 3mm. It's better to test in the shortest time.

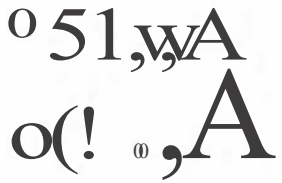
[3 - 3] Routine Maintenance

For efficient operation, it is essential that the gun point be kept clean. The point may be cleaned by using an ordinary pencil eraser. With power unit off, carefully insert the eraser into the nozzle opening and gently press the eraser down over the point while rotating the eraser. This will safely remove any deposits which may have accumulated on the point.

Example of effective Air Blow

BAD··· .. .

GOOD··· ···



Caution: Do not attempt to scrape the point with any hard or sharp object which could cause damage to the point. The point must remain as sharp as possible for optimum operation. If it becomes dull or damaged, it must be replaced.

MA'ITERS FOR DAILY INSPECTION

* Clean high voltage needles
* Verify grounding connection
* Inspect equipment·for damage
* Inspect for moisture or other contaminants

* Should your equipment requires repair or adjustment, contact our factory or the nearest sales repe-sentative.

High Voltage Power Supply
Notes to Users

(S)WARNING

This equipment is not constructed for classified(hazardous)environment. It cannot be used where it will be exposed to ignitable or corrosive material sand gases.

6CAUTION

- This equipment employs high voltage. Please follow the operating instructions carefully in order to minimize electrical shock hazard.
- This equipment is intended for use in electrostatic processes that are free from water, oil, solvents and other conductive contaminants. Exposure to such contaminants will cause failure of the electrical insulation system in the prcxluct.
- The primary side of this equipment must be connected to the correct line voltage as indicated on the nameplate. The applied input voltage should be within permitted range mentioned in the section 2. 2 (Specifications).
- The equipment must have proper grounding. Without proper grounding there may be electrical shock hazard.
- Do not perform insulation test on any charge neutralizer when connected to these power units.
- Cany out careful maintenance pericxlically according to the procedure given in the instruction manual.
- If any abnonnality is observed during inspection, the unit must be repaired or replaced as required. Inspection,exchange and repair service will be PJ:?vided in accordance with the arranty conditions.

This equipment is likely to be damaged lf dropp d. In sue n event, lt s ould be efully exami1:ed and any necessary repairs be made by an authon ed techn!CI.311- The equipment will produce considerable electrical noise and insulation might bum if the umt ls damaged.

Receipt of equipment

Please carefully remove the equipment from the carton and inspect. Note any damage that might have occured during shipment. Empty the carton to ensure that small parts are not discarded. If any damage has occured during shipment, the local carrier should be notified at once. A report should be forwarded to our factory or the agents nearby.

Packing articles and accessories

1) High voltage supplier	lpc.
2) Grounding lead, 2m long	lpc.
3) Instructions Manual	lpc.

Please check if any part is missing or does not have satisfactory finish. Contact us or our agents immediately in the event of such occurrence.

SECTION 1 General Description

The Power unit are designed and intended for use exclusively with static eliminators manufacured. Power unit is single- phase unit having an output voltage 4. 0KV(0- -40%).

6CAUfION

A high voltage failure detection circuit is not incorporated in the power unit. High voltage output is not interrupted even if an abnormal condition, such as short-circuit or sparkig caused by the insulation degradation of the ionizing electrodes or the high voltage cable, exists. If it persists(abnormal condition) , insulation might bum out. Regular inspection and maintenance is essential for efficient and trouble-free operation.

SECTION 2 Specifications

[2. 1]Common characteristics

Ambient conditions: About 0 to 50, 10 to 90 %RH

Life expectancy:About 10,000 hours(based on 8h/d, 250d/y years)

Warranty: One year after shipment

[2. 2]Other characteristics

Primary Volts (VAC) (lphase)	Supply frequency	Secondary output volts (KV AC)	Secretary short cct.current (mA max.)	VA rating (VA max.)
90-120or 180-240 *1	50Hz/60Hz	4.0KV (0- −40%)	<3mA	30VA

Switch/ lamp	Fuse (A)	Overall size (WXDXH) (mm)	Approx Weight (kg)	Maximum load
With indicating lamp and switch	0.5A	**165 x 103** X **115** (mm)	3.0 Kg	2 *2

NOTE: *1 The supply voltage of the Power units is to be decided white placing an order

SECTION 3 Installation

Check the voltage on the nameplate before use,input(primary)voltage of high voltage power supply is preset at the factory. Make certain that the input voltage corresponds to the preset voltage on the nameplate.

£CAUTION

* All installation must be carried out by a trained electrician.
* Complete all wirings before switching on the power.

[3. l]Location

Power units should be located near static Eliminator(load) . Power supply can be fixed to the wall, floor or machine frame by four screws in the holes provided in the legs attached to the base of the units.

£CAUTION

Do not drill any hole on a Power unit.
Power units hould not be operated in an ambient containing corrosive, combustible gases, solvents, water, dust and high humidity.
In case a JX)Wer unit is attached to a vertical wall or frame, the voltage ronnector should be underside.

[3. 2] Grounding

The ground lead(yellow green)from the grounding terminal of Power unit must be connected to the machine frame using M4 or screws and grounded. Confirm the connection by a tester. It should be< 40.

[3. 3] High Voltage Cable Connection

The high voltage cable from the neutralizer must be terminated with connector our factory provided. To connect high voltage cable to the Power unit, no other connector can be used.

After being connected to the ground, the high voltage connector of the high voltage cable can be connected to the Power unit output terminal and finger tightened. Please do not use any tool.

NOTE:

For wiring instructions on high voltage cable please refer to the manual of instruction of static neutralizer.

[3. 4] Utility Power unit

The line cord is to be connected to a power gource of correct voltage. These utility conditions are listed on the nameplate offixed to the power unit.

Lt, £CAUTION:

I)o not apply line voltage to the Power unit before all ground and high voltage connections have been completed.

SECTION 4 Operation

[4. l] The power supply mode has a power switch and an indicating lamp. ON position is marked on the left side of the switch. When the switch is in ON position, the indicating lamp is turned on and high voltage appears at the output.

[4. 2] The emitting electrodes in neutralizers are connected to the output of the Power unit by a high voltage cable.

[4. 3] High voltage is turned off by sliding the power switch to the right. The indicating lamp goes out and high voltage is turned off.

ATTENTION

In case of a periodic duty cycle when the Power unit is turned on and off periodically, the on as well as the off time should be at least one minute in a cycle. If a cycle is shorter than this, the life of the Power unit may be adversely affected.

SECTION 5 Inspection/Maintenance

NOTE:
The inspection of these products should be carried out by a qualified technician.

[5.1]Grounding

Measure the resistance between the casing of static neutralizing equipent, machme frame and the Power unit ground terminal. The meter should read less than 4!1.

[5.2] Neutralizing performance

Neutralizing performance should be checked periodically with a neutralizer connected to the Power unit acoording to the following steps.

a) Measure the voltage of a charged object by an electrostatic measuring device.
b)Connect the Power unit to an appropriate neutralizer and use it to neutralize the charged object. p
c) Measure the voltage of the charged object again.
If the enutralization is complete(within acceptable limit), then the Power unit is ok.

NOTE.:
Check that neutralization efficiency decreases as the charged object is rroved away from the neutralizer.

[5.3]Spark test

Spark test can be carried out following the instruction manual of the neutralizer to which the Power unit is c hnected.A visual spark will be an indication of the existence of high voltage. As there is not failure detection circuit with these power supplies, high voltage will not be interrupted due to sparking. It must be turned off manually.

[5.4]Output voltage

Check the high voltage output of a Power unit periodically(at least once a year)following the procedure, given below:

a)Connect a high impedance high voltage voltmeter to the output of the Power unit. The ground terminal of the meter must be oonnected to ground.
b) Switch on the high voltage; the measured voltage should be O- - 40 % of the rated value.

SECTION 6 Troubleshooting

Trouble	Probable cause	Countermeasure
Charge neutralization is ineffective or frequent sparking in the neutralizer.	During normal operation, there should be no visible sparking. The static charge eliminator might need cleaning.	Switch off the Power unit. The eliminator should be cleaned with a soft cloth or a soft nylon brush. Do not use any solvent or metallic brush. Regular cleaning will maintain a high performance level for a static eliminator.
No neutralization, failure in spark test (no spark)	The supply voltage has not been switched on.	Switch on the supply voltage.
	High voltage cable and/or static neutralizer may need cleaning or may be damed.	Tum the Power unit off. Clean the ionizing emitters and the insulation. If it does not work now with Power unit on, then the high voltage cable or static neutralizers may need repair or replacement.
	The Power unit may be damaged.	Remove the high voltage cable from the Power unit and test it separately for output voltage. If there is not output, a repair or replacement may be necessary. C.Cmtact us or our agent with the serial number of the Power unit and a deseription of the problem.