

445/445D Ionizing Air Gun

OPERATION MANUAL

Thank you very much for purchasing the Ionizing air gun. For your safety, please read this Operating instruction carefully before operating. And always keep this Manual within reach.

SECTION 1 INSTRUCTION

1. Summary

The 445 or 445D Ionizing Air Gun is used for removing static and dust of the inaccessible charged object, and it can easily clear the parts and prevent it from being attached again after removing static.


The cover of the 445 ionizing air gun is made of metal and 445D is made of plastic but with same specifications and frame. When removing static and dust, each of them need connect with the 446 high voltage power supply unit, which can connect two ionizing air gun.

2. Specification

445: the case is made of metal and wear well.


445D: the case is made of plastic, light and with good insulation.

3. Parameters

 **NOTE: Never use it beyond the following parameter range, otherwise it will damage the machine or hurt the human body.**

Request of air supply:	Clean and dry air, 0.1~0.7Mpa
Connection with air supply:	a 4×6mm PU tube
Request of high voltage	4.0KVAC (0~-40%)from 446 High Voltage Power Supply unit,50HZ/60HZ
Effective distance of removing static:	Within1000mm
Discharge time:	0.4S (test distance: 15cm)
Weight(including high voltage cord):	460g (445), 370g (445D)
Standard length of high voltage cord:	3 meter

SECTION2 Installation

 **NOTE: the unit cannot be used in the danger zone, such as use with flammable gas or solvent.**

1. Installation of the high voltage power supply

High voltage power supply can be fixed on the wall or flat surface. Detailed operation can refer to the installation part of operation manual of high voltage power supply.

2. Grounding

For having a necessary good ground between the ionizing air gun and the high voltage power supply, connect the grounding cord to the grounding socket on the high voltage power supply and then screw down the screw cap. Test the grounding resistant which must be less than $4\ \Omega$ between grounding part of the ionizing air gun and the metal cover of the high voltage power supply. For avoiding the badness grounding of the three-terminals socket, one end of the grounding cord (green & yellow, enclosing with the ionizing air gun) connects with the grounding pole on the high voltage power supply, and the other end connects to the earth.

3. Connection with the high voltage cord

Connect the plug of the high voltage cord of the ionizing air gun to the high voltage output socket on the high voltage power supply, and tighten the screw by hands. Please don't use any tool.

4. Connection with the outer air source

Connect the outer air source to the inlet of the ionizing air gun by a 4×6 mm PU tube. The inlet is in the tail end of the ionizing air gun.

5. Connection with the power cord

The cord should be connected to a power supply of a rating voltage. These using conditions are listed on the nameplate. All power sockets should be the three-terminal sockets with a good grounding system.

 NOTE:

- Do not to connect the power cord of power supply unit, before all grounding line and power cord connections completed.
- In order to use the ionizing air gun correctly and prevent operator from electric shock, make sure there is a reliable grounding among the ionizing air gun, high voltage power supply and the earth. Since the infectant air can block the nozzle or make it short circuit, the air should be filtered cleanly before using. Air pressure should be within 0.1~0.7Mpa.

SECTION 3 OPERATION

 NOTE:

The unit cannot be used in hazardous environment where it will be exposed to ignitable or corrosive materials, gases or solvents. It can be used after all of the electric and air supply connections have been completed.

1. Turn on the switch of air source, and adjust the air pressure and make it within a suitable range.
2. High Voltage Power Supply has a switch with indicator lamp.

When turn on the switch, the indicator lamp will be on, and high voltage outlet will produce high voltage. Ion discharged needle will ionizes the air, and produces positive and negative ions. When need to neutralize electrostatic on the charged object, press the spanner of the ionizing air gun, and then positive and negative ions will be exported along with airflow, and neutralize static of charged objects in working area, remove dust stuck to the charged objects, prevent it from being attached again the emergence of electrostatic.

For getting the better effect of removing the dust and neutralize electrostatic, firstly, the ionizing air gun must be very near the charged object when working

for blowing away all the dust. Secondly, move the ionizing air gun and make the nozzle of the gun away from the object about 200~300mm, and keep the ionizing airflow blow to the charged object about several seconds for neutralizing the electrostatic left on the object. All the parts of the charged object must be blew and make sure remove all the dust and static on it.

3. If necessary, test the balance voltage. In case of balance voltage exceeds the normal range, open the top cover of High Voltage Power Supply and adjust the ion balance regulator inside.
4. Turn off the power switch, and the indicator lamp will be off, high voltage output is stopped.

⚠NOTE:

When the Power unit is turned on and off periodically, in a cycle, the on and off interval time should be one minute at least. If the interval time is less than this, the service life of the power unit may be shortened.

SECTION 4 INSPECTION AND MAINTENANCE

4.1 Grounding inspection

Measure the resistance between the ionizing nozzle and grounding wire port of high voltage Power supply. The result should be less than $4\ \Omega$.

4.2 Checking of ionizing air gun

1. Recommend using a charge plate monitor (for instance CPM374) to check the ion balance, according to the Ionization Standard ANSI/ESD-STM3.1-2000 of the ESD Association.
2. If there is only a charge plate monitor held by hands, check the neutralizing performance periodically according to the following steps.
 - 1) Measure the static voltage of a charged object by a charge plate monitor.
 - 2) Turn on the power switch and the ionizing nozzle works normally. Make

the charged objects under the air outlet of ionizing bar and 15~30mm from it for several seconds.

- 3) Measure the static voltage of the charged object again.

If the voltage obtained is within the eligible range, it means that the unit is in good service.

⚠NOTE: If the ion balance has deflection, please open the top cover of the high voltage power supply and then adjust the ion balance adjustor. When the ion balance is negative, adjust the adjustor anticlockwise and when the ion balance is positive, adjust the adjustor clockwise.

3. If want to check whether the Ionizing air gun work normally, hold the insulated part of screwdriver by hand, touch inside of nozzle with the metal part of screwdriver, and the tine of screwdriver closes to ionization point of ion discharged needle, until emit arc. The length of arc between ionization point and tine of screwdriver is about 2~3mm, the time should be as short as possible. (Not recommend using it.)

4.3 Regular maintenance

For working effectively, please keep the ion-discharged needle clean. Ion discharged needle can be cleaned by ordinary eraser. Turn off the power switch, put the eraser to placket of nozzle slowly, press it down lightly, and make the ion-discharged needle prick into the eraser and rotate the eraser at the same time. By this way the deposit in ion-discharged needle can be safely cleared.

⚠NOTE:

Not to use any sharp and hard object to scrape the ion-discharged needle, since it will scathe the ion discharged needle. Ion discharged needle should be kept as sharp as possible, in order to keeping the best effect of using. In case of ion discharged needle become blunt or scathed, replace it.