

# SCS USER GUIDE TB-9118

## 961JH Ionized Air Blower Installation, Operation, and Maintenance



Figure 1. SCS 961JH Ionized Air Blower

### Description

The SCS 961JH Ionized Air Blower is used for neutralizing electrostatic charges on insulators and ungrounded conductors. Its discharge times (< 2 seconds at 12 inches) and ±15 volt offset voltage exceed the required limits of ANSI/ESD S20.20 and ESD TR53. The 961JH Ionized Air Blower features a powder coated steel enclosure and stainless steel multi-mount stand.

The 961JH Ionized Air Blower operates on steady-state DC. Steady-State DC systems consist of separate negative and positive ion emitters connected by a pair of high-voltage cables to their respective high-voltage power supplies. DC power is constantly applied to the emitter points. The ionizer maintains its offset voltage via its grounded enclosure and finger guard.

Ionizers are useful in preventing electrostatic charge generation, electrostatic discharge, electrostatic attraction, as well as preventing equipment latch-up. Per ANSI/ESD S20.20 section 6.2.3.1. Protected Areas Requirement states: "Ionization or other charge mitigating techniques shall be used at the workstation to neutralize electrostatic fields on all process essential insulators if the electrostatic field is considered a threat." "Air ionization can neutralize the static charge on insulated and isolated objects by producing separate charges in the molecules of the surrounding air. When an electrostatic charge is present on objects in the work environment, it will be neutralized by attracting opposite polarity charges from the ionized air. Note that ionization systems should not be used as a primary means of charge control on conductors or people." (Reference: EN 61340-5-2:1 clause 5.2.9)

"The primary method of static charge control is direct connection to ground for conductors, static dissipative materials, and personnel. A complete static control program must also deal with isolated conductors that cannot be grounded, insulating materials (e.g., most common plastics), and moving personnel who cannot use wrist or heel straps or ESD control flooring and footwear. Air ionization is not a replacement for grounding methods. It is one component of a complete static control program. Ionizers are used when it is not possible to properly ground everything and as backup to other static control methods. In clean rooms, air ionization may be one of the few methods of static control available." [ESD Handbook ESD TR20.20 Ionization, section 5.3.6.1 Introduction and Purpose / General Information]

The 961JH Ionized Air Blower and its accessories are available as the following item numbers:

Item	Description
<a href="#">961JH</a>	Ionized Air Blower, 120 VAC
<a href="#">770047</a>	Benchtop Ionizer Boom Arm

### Packaging

- 1 961JH Ionized Air Blower  
(with hard-wired North American power cord)

## Features and Components

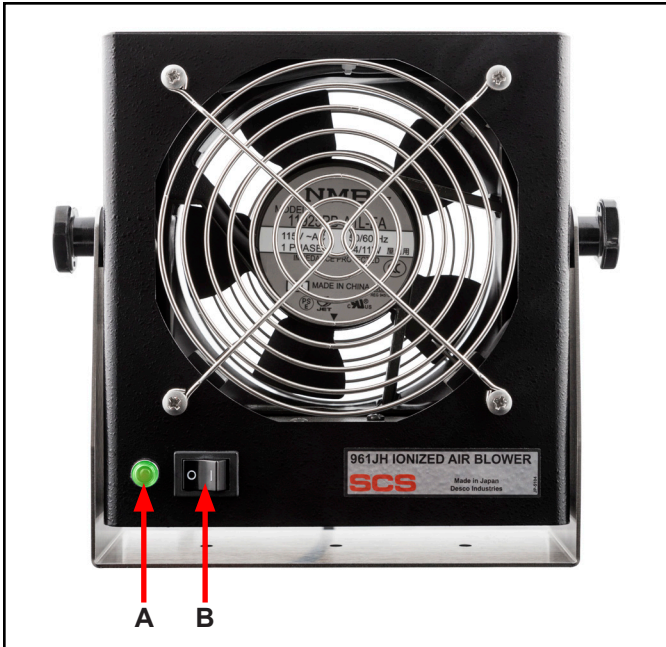


Figure 2. 961JH Ionized Air Blower features and components

**A. Power Status LED:** Illuminates green when the ionizer is powered on.

**B. Power Switch:** Powers the ionizer ON and OFF.

## Installation

Place the 961JH Ionized Air Blower at a desired location where the airflow will not be restricted. Ensure a space of at least 5 inches (15 cm) at the rear and on both sides of the ionizer to provide sufficient airflow. Use the tilt lock knobs to aim the ionizer at the area to be neutralized. Utilize the SCS 770047 Benchtop Ionizer Boom Arm to lift the ionizer off the workbench if desired. Connect the ionizer's power cord into an appropriate AC power source.

Note that placement of the ionizer is important in determining its effectiveness. The distance from the targeted object and fan speed affect the ionizer's performance. The discharge time will increase as the distance increases.

## Operation

1. Position the ionizer so that maximum airflow is directed towards the items or area to be neutralized.
2. Rock the power switch to the ON position. The power status LED will illuminate green during normal operation.

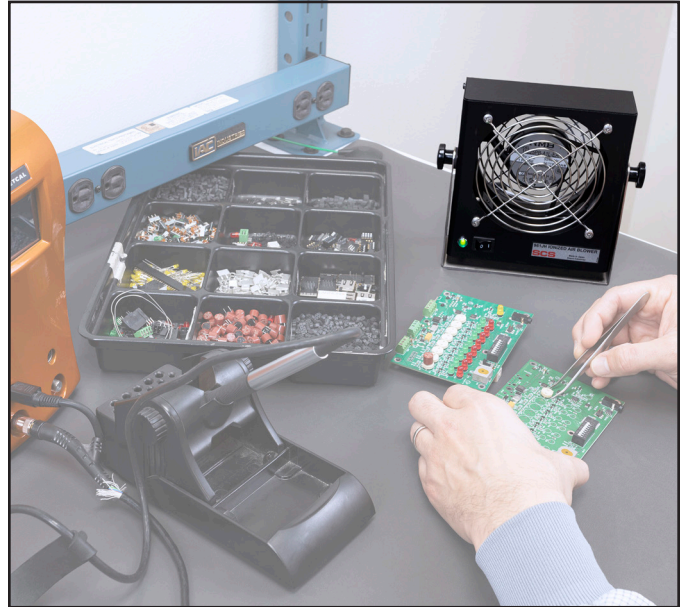


Figure 3. Using the 961JH Ionized Air Blower on a workbench

## Maintenance

**CAUTION** - When cleaning the ionizer's housing or emitter points, verify that the unit is off and disconnected from electrical power.

Occasional cleaning of the case and emitter points are the only routine maintenance procedures required. Dusty environments require more frequent cleaning to maintain optimal performance. Wipe the case with a soft cloth moistened with water. If a stronger cleaning solution is required, mild detergent of alcohol may be used. Do not use solvents that will damage the case. When the emitter points become dirty, contamination on the needlepoint may inhibit ionization to a limited degree. The emitter points are located between the fan blades and the front grill. A jet of clean, compressed air can be used to remove dirt on emitter points. If a more rigorous cleaning method is needed, clean the points and their plastic holders with a cotton swab dampened with isopropyl alcohol. Access to the points is available through the front grill. Be careful not to damage the points during cleaning. There is no need to replace the emitter points. The 961JH Ionized Air Blower has no user-serviceable parts.

## Calibration

The SCS 961JH Ionized Air Blower is factory adjusted to provide optimum performance. Further adjustment in the field is not possible. However, the following instructions can be followed to determine whether the ionizer is performing to specifications. The testing follows the procedure outlined in the standard for ionization, ANSI/ESD STM3.1. Please refer to this standard for more complete information.

Frequency of recalibration should be based on the critical nature of those ESD sensitive items handled and the risk of failure for the ESD protective equipment and materials. In general, SCS recommends that calibration be performed annually.

Periodically measure the balance and neutralization times of the ionizer to verify that it is performing within specifications. These measurements should be taken using a charged plate monitor. Calibration should be performed in accordance with the ESD Association ionization standard ANSI/ESD STM3.1. With the ionizer positioned a distance of 12 inches (30 cm), the neutralization (discharge) time of  $\pm 1000V$  to  $\pm 100V$  should be less than 2 seconds, and the balance should be  $\pm 15V$  or better.

## Neutralization (Discharge) Times

The comparative efficiency of benchtop ionizers is determined by a standard test published by the ESD Association: ANSI/ESD STM3.1. Typical positive and negative decay times ( $\pm 1000V$  to  $\pm 100V$ ) measured using this standard are shown in Figure 4.

NOTE: All discharge times are in seconds and representative only. They are not a guarantee. The discharge times were recorded in a factory ambient environment.

## Specifications

Input Voltage and Frequency	Power Input: 100-120 VAC, 50/60 Hz  Power Cord Length: 6.6' (2 m)
Operating Environment	41° to 104° F (5° to 40° C) 15 to 70% R.H.
Neutralization (Discharge) Time @ 12"	< 2 seconds
Offset Voltage (Balance) at 12"	$\pm 15 V$ typical
Ion Emission	Steady-State DC
Airflow	71 CFM (2.0 m <sup>3</sup> /min)
Ozone	<0.05 ppm
Power Consumption	25 W
Emitter Points	Tungsten
Dimensions	6.3" H x 6.0" W x 2.4" D (160 mm x 153 mm x 63 mm)
Weight (without stand)	2.9 lbs (1.3 kg)
Certifications	UL
Country of Origin	Japan

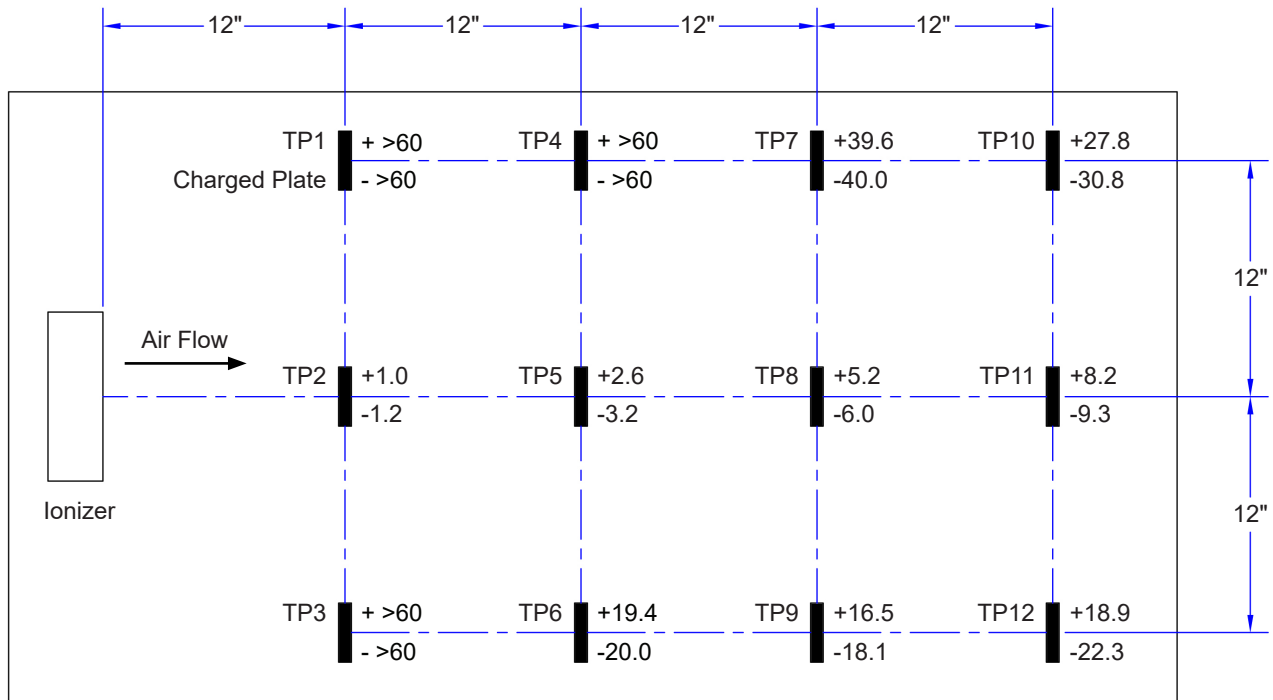


Figure 4. Neutralization (discharge) times in seconds at 120 VAC, 60 Hz input