

# SCS

## Ionized Air Blower 975

### Operation Manual

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Thank you for purchasing the SCS Ionized Air Blower 975

Before installing and using the product, please read this operation manual carefully and be sure you fully understand all safety information and operating procedures. Please store the manual in a secure location for convenient reference. If you need further help on the instructions and precautions given here, please contact a Desco Japan sales representative or authorized dealer.

## Safety Precautions

Read this operation manual carefully before installing and using this product and be sure to use the product correctly.



### Warning

- Never attempt to disassemble or modify the unit, or alter or repair circuits, as the unit contains components that generate high voltage. Do not directly touch the inside of the machine, including the electrode needles. Doing so may result in severe or fatal injury due to the hazardous high voltage generated internally, or cause a fire or malfunction of the unit.
- The unit does not incorporate explosion-proof specifications. Never attempt to use it in a place where there are flammable or volatile gases. Doing so may ignite the gases and cause an explosion.



### Caution

- When doing electrode needle maintenance, be sure to remove the sheathed wire (routed from an external power supply) from the unit or disconnect the AC adapter plug from the outlet. Do not connect or disconnect the power plug with wet hands as doing so puts you at risk of electrical shock or injury.
- Do not insert fingers into the front louver or moving parts of the unit as there is a risk of injury.
- The unit is designed to be used with the dedicated AC adapter or AC adapter is marked "LPS" or "Limited Power Supply" or "NEC Class2". Do not use it with incorrect AC adapter as that may cause a failure.
- Be sure to ground the GND terminal on the external terminal block through a ground cable. Failure to do so may result in electrical shock.
- Use the unit for the purpose of Electrostatic, Commercial and Industrial use only.
- Do not use the unit in a closed room for a long period of time. If it is used in a closed room, be sure to periodically ventilate the room. The unit emits a small amount of ozone. Prolonged use in a hermetically sealed space will increase ozone density, which is harmful to the human body.
- In order to prevent accidents, if any of the following problems occur, turn OFF the switch and remove the sheathed wire (routed from an external power supply) from the unit or disconnect the AC adapter plug from the outlet. Be sure to contact a Desco Japan sales representative or authorized dealer to request inspection and repair. Repairing the product yourself is dangerous. Never attempt to do so.
  - ▶ The fan sometimes does not rotate when the switch is turned ON.
  - ▶ The fan rotates in an abnormally slow or irregular manner.
  - ▶ The fan rotates but makes abnormal noises.
  - ▶ The unit becomes abnormally hot or you smell a burning odor.
  - ▶ Any other abnormality or malfunction occurs.

### Other precautions

Complete the necessary information on the enclosed warranty card (postcard), and be sure to return it to Desco Japan. Failure to do so may prevent you from receiving services such as repair, replacement, and inspection.

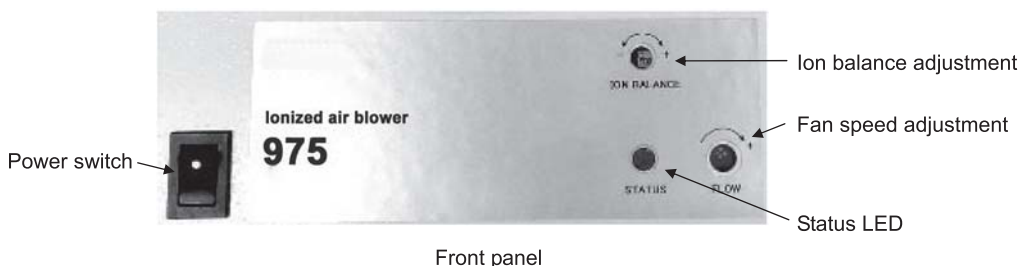
Do not disassemble the product or subject it to strong impact. The warranty does not cover, even within the warranty period, malfunctions resulting from i) these causes, ii) repair or alteration not performed by us or our authorized agents, iii) natural disasters, or iv) causes not attributable to us.

## Operating the Product

1. Use the provided ground cable in AWG18-24 size to ground Terminal 7 on the external terminal block on the rear of the unit.
2. The unit requires 24V DC, Limited Energy (LPS) power, which is supplied from the included power supply. Insert the outlet plug into an outlet of AC 100V to 240V (50 to 60 Hz) and the round plug of the AC adapter into the socket on the rear of the unit.
3. The Status LED will be lit green and the unit will start operation when you turn on the Power switch on the front of the unit.



External terminal block



Front panel

4. The electrode needles will be cleaned approximately one minute after the Power switch is turned on. The second and subsequent cleanings will be carried out once every hour. If it is needed to adjust the ion balance, make adjustments after the first electrode needle cleaning.
5. Find the fan speed adjustment dial, indicated as "FLOW," on the bottom right of the front panel. Use a Phillips-head screwdriver to rotate the dial clockwise to increase the fan speed or counterclockwise to decrease the fan speed (the maximum number of dial revolutions is approximately 3/4 revolution). Select the most suitable fan speed for your operation environment or type of work.
6. Find the ion balance adjustment dial on the front panel. Use a flat-blade screwdriver to rotate the dial clockwise to change the ion balance in the positive direction or counterclockwise to change the ion balance in the negative direction (the maximum number of dial revolutions is approximately 14 revolutions). The ion balance was adjusted at the time of the unit shipment. If you need to adjust it to your operation environment, make sure to use our measuring instrument: SCS Charge Plate Monitor/Charge Analyzer 711 or SCS Static Sensor 718. Contact a Desco Japan sales representative or authorized dealer if a measuring instrument is not available. Please note that a poor ion balance adjustment will have an adverse impact on electrostatic elimination performance.

If after having used the unit for a certain period of time, the Status LED blinks orange when an ion balance adjustment is made, the electrode needles may be significantly dirty. Clean the electrode needles as described in "2. Maintenance of the electrode needles" on page 6.

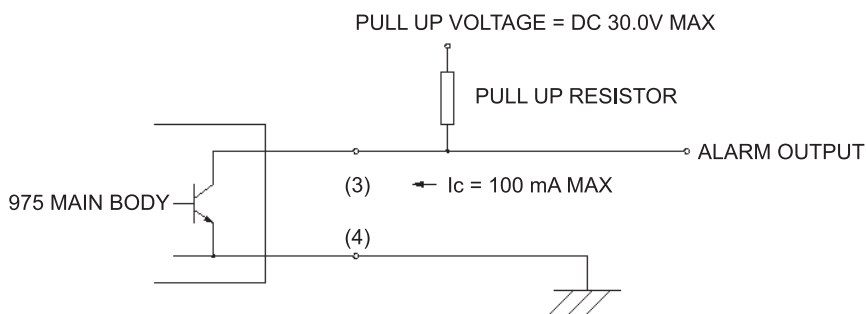
## Connection of the External Terminals

Use insulated wires in AWG18-24 size for wiring to the external terminals.

- Terminals 1 and 2 on the external terminal block for power supply  
Don't use terminals 1 and 2 on the external terminal block for power supply.  
Use the provided special AC adapter.
- Terminals 3 and 4 on the external terminal block for alarm output  
They are used for open collector output (up to 30V and 100 mA).  
Current flows between Terminals 3 and 4 (GND) on the external terminal block when an alarm is output.



External terminal block



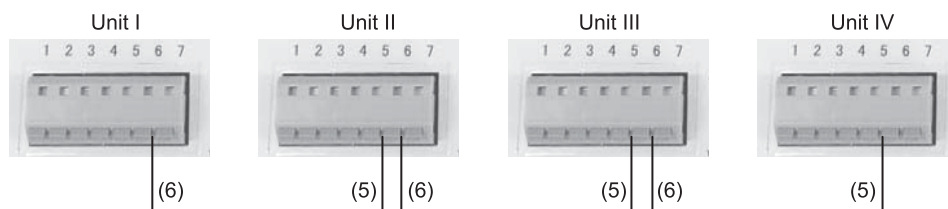
- Terminals 5 and 6 on the external terminal block for controlling timing of electrode needle cleaning  
When multiple units are fed from the same power supply, the rated power of the power supply might be insufficient if cleaning occurs at the same time.

To avoid this situation:

- Prepare a power supply that can provide the total power needed for simultaneous cleaning (see "4. Power consumption" on page 8). Terminals 5 and 6 on the external terminal block are not used in this case; or
- Make connections between the external terminal blocks on the multiple units to avoid a peak of power consumption at one time by allowing cleaning to occur in sequence if you cannot provide a power supply capable of the total power consumption. See the following procedures.

### \* Connection and operation

Connect the units as shown below. This will make Unit I work as a master (primary unit) and Units II, III, and IV work as slaves (units under control) so that the four sets of electrode needles are cleaned one after the other.



First, the internal timer in Unit I (master) will cause the electrode needles in the unit to be cleaned. When cleaning is completed, the other three sets of electrode needles in Units II, III, and IV will be cleaned in order. The timing of the cleaning operation will not overlap between the connected units.

**\*Power consumption**

Example: If the four units are connected as shown above, the total power consumption will be power usually consumed by three units plus the power required for cleaning the electrode needles on one unit.

Prepare a power supply for operating the multiple units by calculating the total power consumption indicated above.

**4. Terminal 7 on the external terminal block for grounding**

Be sure to ground Terminal 7 on the external terminal block before using the unit. The prescribed performance may not be achieved if the terminal is not grounded properly.

## Status LED Indications and Corresponding Actions

You can check the operating status of the unit through the indications of the Status LED on the front panel.

The six indications of the Status LED are:

Status	Status LED indications	Unit Action
1. Normal operation	Lit green	Unit Action 1
2. Maintenance needed *1	Blinking orange once/cycle *2	Unit Action 1
3. Fan does not rotate	Blinking red once/cycle	Unit Action 2
4. Failure in high-voltage power supply	Blinking red twice/cycle	Unit Action 2
5. Ion balance out of control	Blinking red three times/cycle	Unit Action 2
6. Failure in electrode needle cleaning drive	Blinking red four times/cycle	Unit Action 2

\* 1 It may blink orange when the ion balance adjustment dial isn't set to 0V. In this case, maintenance is not needed. Please adjust to appropriate ion balance by using a measuring instrument.

\* 2 One cycle is 1.6 seconds.

Unit Action corresponding to Status LED indications

Unit Action 1: Normal operation continues.

Unit Action 2: An alarm is output to Terminals 3 and 4 on the external terminal block. No operation is performed except for Status LED indications and alarm output.

## Installation

### 1. Space requirements

Ensure a space of at least 10 cm at the rear and on both sides of the unit. The unit needs the space to draw in air from the rear and blow ions to the front of the unit. A restricted space may prevent electrostatic elimination due to insufficient airflow.

## Maintenance



### Caution

When performing maintenance, be sure to turn off power to the unit by disconnecting the AC adapter plug from the outlet.

#### 1. Maintenance of the air path

When the air path becomes clogged with dust attracted during operation, electrostatic elimination performance will degrade due to insufficient airflow. Use a cotton swab soaked with water (and if necessary a neutral detergent) to clean the air path.

If the unit is equipped with a filter, it will become clogged after extended use. Periodically vacuum dust from the filter. Replace deteriorated filters.

#### 2. Maintenance of the electrode needles

Be sure to check that the unit is turned off when the electrode needles are manually maintained. The unit automatically cleans the electrode needles. If dirt remains after the automatic cleaning, use a cotton swab soaked with alcohol to remove dirt. Check for any bends or cracks at the electrode needle tips after manual cleaning. Do not turn on the unit until the alcohol has completely evaporated. Before using the unit, check ion balance and make adjustments as required because manual maintenance of the electrode needles may sometimes change the ion balance.

#### 3. Cleaning the case

Use a soft, dry cloth to wipe the case. If the case is extremely dirty, soak a cloth with a solution of neutral detergent diluted in water then squeeze the cloth well before wiping the dirt off. Then, use a cloth soaked with water to remove any detergent residue. Finally, use a dry cloth for finishing. Do not use any solvents other than a neutral detergent.

## Troubleshooting

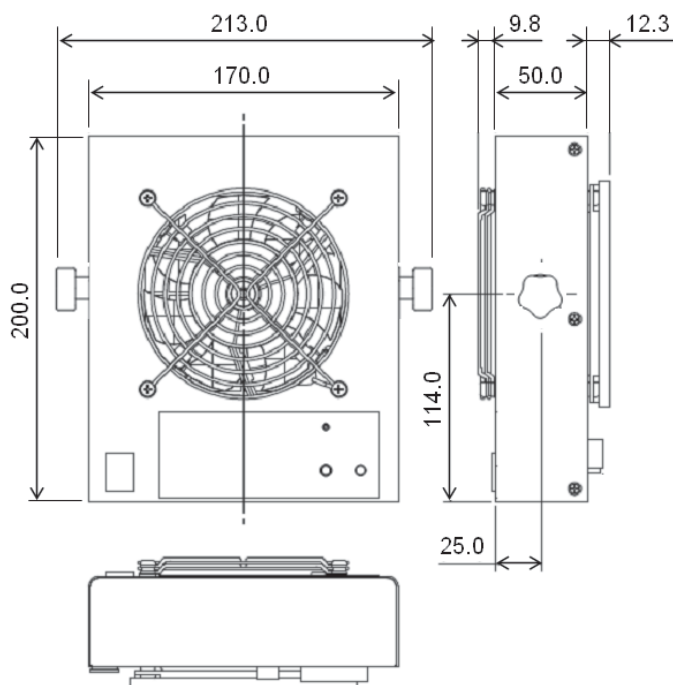
Problem	Action
<ul style="list-style-type: none"> <li>The fan does not rotate. (Status LED blinks red once/cycle)</li> </ul>	<p>1) Turn off the unit. Disconnect the AC adapter plug from the outlet. Be sure to contact a Desco Japan sales representative or authorized dealer to request inspection and repair. Repairing the product yourself is dangerous. Never attempt to do so.</p>
<ul style="list-style-type: none"> <li>Failure in the electrode needle cleaning drive (Status LED blinks red four times/cycle)</li> </ul>	<p>1) When power is supplied to the unit from an external DC power source whose rated output is 40W or less, this problem may occur as the supplied power is insufficient for cleaning the electrode needles. Replace the DC power source with the one that can provide sufficient output.</p> <p>Turn off the unit if the above step does not improve the situation. Disconnect the AC adapter plug from the outlet. Be sure to contact a Desco Japan sales representative or authorized dealer to request inspection and repair. Repairing the product yourself is dangerous. Never attempt to do so.</p>
<ul style="list-style-type: none"> <li>Failure in the high-voltage power supply (Status LED blinks red twice/cycle)</li> <li>Ion balance out of control (Status LED blinks red three times/cycle)</li> <li>Ion balance cannot be adjusted to 0V.</li> </ul>	<p>1) Check that the environmental conditions at the installation site fall within the service environment conditions of the unit.</p> <p>2) Perform maintenance of the electrode needles as described in "2. Maintenance of the electrode needles" on page 6.</p> <p>Turn off the unit if the above step does not improve the situation. Disconnect the AC adapter plug from the outlet. Be sure to contact a Desco Japan sales representative or authorized dealer to request inspection and repair. Repairing the product yourself is dangerous. Never attempt to do so.</p>
<ul style="list-style-type: none"> <li>Others Examples: Abnormally slow rotation of the fan, the unit being abnormally hot, a burning odor, abnormal noises, etc.</li> </ul>	<p>1) Turn off the unit. Disconnect the AC adapter plug from the outlet. Be sure to contact a Desco Japan sales representative or authorized dealer to request inspection and repair. Repairing the product yourself is dangerous. Never attempt to do so.</p>



## Specifications

### 1. Dimensions:

Main body: 170.0 mm (W) × 200.0 mm (H) × 72.1 mm (D)



### 2. Weight:

1.3 kg, without AC adapter

### 3. Power voltage:

DC 24V  $\pm$  10% (Source: AC adapter)

AC adapter

(1) Input voltage: AC100V – 125V, 50 – 60Hz)

(2) Output Voltage: DC 24 V

(3) Output current: >1.9A

(4) Limited power source: It is marked “LPS” or “Limited Power Supply” or “NEC Class2” (Model 3A-603DB24 is available as “LPS”).

The provided the AC cord is limited as usage of only the unit.

### 4. Power consumption:

20W during normal operation; 40W during electrode needle cleaning

### 5. Service environment:

10 – 40°C

20 – 70% RH (No condensation)

### 6. Storage conditions:

0 – 55°C

10 – 85% RH (No condensation)

## Package Contents

(1) SCS Ionized Air Blower 975 unit:	1
(2) Operation manual:	1 (this document)
(3) Certificate of compliance:	1
(4) Warranty card:	1
(5) AC adapter:	1
(6) AC cord:	1
(7) Ground cable (insulated wire):	1

- Contact an Desco Japan sales representative or authorized dealer if you have any questions about the contents of this manual or find any errors in this manual.
- Part or all of the contents in this manual are protected by copyright. It is prohibited to reprint, duplicate, or modify the contents of this manual without the prior consent of SCS.
- The technical information given in this manual is based on reliable information, but the accuracy or completeness is not guaranteed.
- Before using this product, you must evaluate it and determine if it is suitable for your intended application. You assume all risks and liability associated with such use. And statements related to the product which is not contained in our latest publications, or any contrary statements contained on your purchase order shall have no force or effect unless expressly agreed upon, in writing, by our authorized officer.
- The product characteristics or design may be changed without advance notice for improvements or other reasons.

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