

Simco-Ion Electrostatic Neutralizer Ionizing Air Blower AEROSTAT AS-31

INSTRUCTIONS Installation/Operation/Maintenance



CAUTION

It is important that these instructions be read and understood before installation or operation. Failure to follow these instruction so could result in serious personal injury and/or damage to the equipment. At the end of this manual, a written warranty is provided. This should be stored in a safe place.

Checking the contents of package

Please carefully remove the equipment from the carton and inspect. Note any damage that might have occurred during shipment. Empty the carton to ensure that small parts are not discarded.

If any damage has occurred during shipment, the local carrier should be notified at once. A report should be forwarded to SIMCO JAPAN, INC. The address and other relevant informations are written on the back cover page.

Package Contents

1) AEROSTAT AS-31	1 pc.
2) Mounting bracket U band and L angle	1 pc.
3) Screw M6×25	2 pc.
4) S washer, flat washer, nut M6 for each	2 pc.
5) Daily inspection label	1 pc.
6) Instructions Manual / Warranty (this book)	1 pc.

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.

NOTES TO USERS



WARNING

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



CAUTION

- This equipment employs high voltage. Please follow the operating instructions carefully in order to minimize electrical shock hazard.
- It is intended for use in electrostatic processes that are free from water, oil and other conductive contaminants. Exposure to such contaminants will cause failure of the electrical insulation system in the product.
- This equipment should not be operated in an ambient with corrosive fumes of acid/alkali or corrosive gases such as chlorine.
- Connect it correctly after confirming "Input voltage and frequency" described in the plaque of this product. Particularly, note a wrong input voltage. Moreover, do not capitalize on use conditions of the paragraph of "Specification" beyond the pale.
- It shall be connected to proper utility line. The utility line conditions are indicated on the nameplate.
- This equipment must have proper grounding. Without proper grounding there may be electrical shock/fire hazard.
- Do not insert objects through the unit's intake or outlet grilles. Damage to the ionizer and/or personal injury may result.
- The neutralizing electrodes in this product consist of sharp needles. Please take precautions against injury. Periodic maintenance, such as cleaning of needle electrodes, is necessary for satisfactory performance of the equipment.
- During normal use of this product, there should be no visible spark. If any spark is observed, please turn off power and clean the unit following proper maintenance procedure. In case sparking continues, contact us or our sales representatives in your area.
- This equipment is likely to be damaged if dropped. In such an event, it should be carefully examined and any necessary repairs be made by an authorized technician. It might produce considerable electrical noise and insulation might burn, if damaged.
- This equipment was assembled and inspected at Simco. Do not attempt to disassemble or modify its construction. If you are not clear about its operation and maintenance, call Simco Japan's authorized agent in your area.

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Explanation of Symbols:



WARNING



ATTENTION / CAUTION

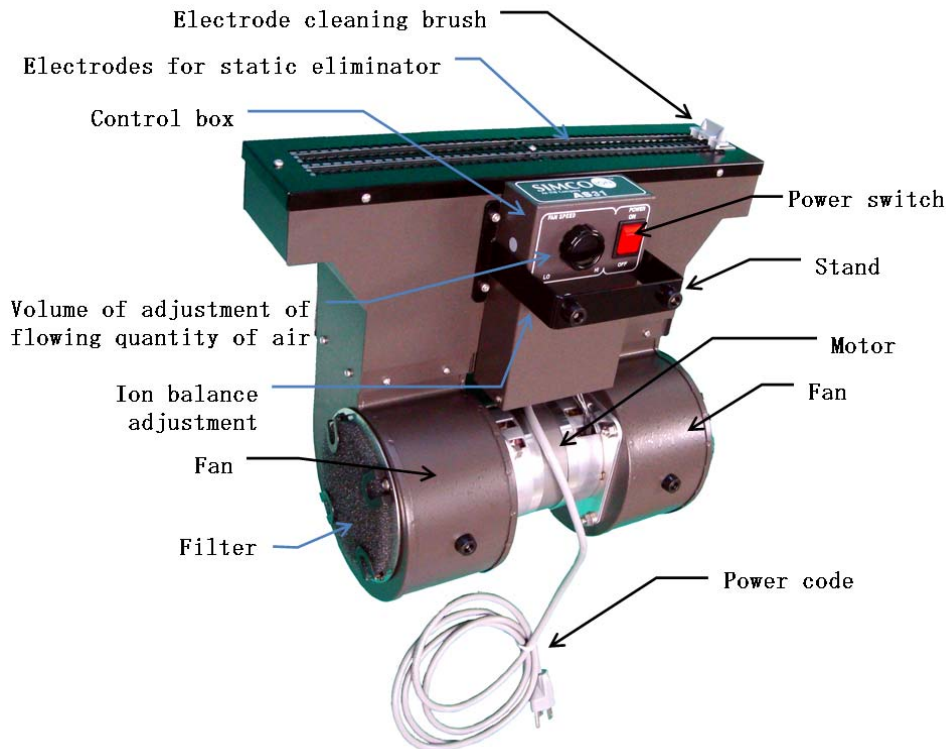


ELECTRIC SHOCK HAZARD

Section 1. GENERAL DESCRIPTION

Simco-Ion AEROSTAT AS-31 ionizes the air that spouts from the blower, and is a blower (static elimination equipment) for the removal of electricity that widely neutralizes static electricity. As for Simco-Ion AEROSTAT AS-31, the effect of the static electricity removal is high, and the removal of the static electricity of an electrification thing that the Static elimination area moves at widely, and high speed or a stereoscopic electrification thing is also possible.

Built for keeping circuit and ion balance essential neutralization of the electronic component, the effect of neutralizing very high, a cleaning brush electrodes neutralizing, Simco-Ion AEROSTAT AS-31 is provided with the ability to respond to all applications. It is not necessary to wire for a high voltage because the high voltage transformer is built into the main body.



Part name of AEROSTAT AS-31

Section 2. SPECIFICATIONS

Model : AEROSTAT AS-31

Input Voltage : Single-phase AC 100 V

Input frequency : 50 Hz or 60 Hz (It does not specify not be nor using combinedly.)

Input current : 1.6 A max. (50Hz) , 2.0 A max. (60Hz)

Consumption electric power : 170 VA or less

Input current : 1.6 A max. (50Hz) , 2.0 A max. (60Hz)

Ambient conditions : 0 - 50 °C, 10 - 85 %R.H. (non-condensing)

Air volume : 3.4 - 6.1 m³/min. (50Hz), 2.3 - 7.1 m³/min. (60Hz) (Stepless type)

Discharge time : Refer to the following table (Unit sec. max.)
(Decay time) (Speed controller max.)

Frequency	Measurement distance (cm)				
	30	60	90	120	150
50 Hz	0.4	0.9	1.5	2.2	3.1
60 Hz	0.4	0.8	1.4	2.0	2.6

Discharge time tested per ANSI/ESD STM3.1 ESD Association Standard Test Method using 6" × 6", 20 pF metal plate (Charged Plate Monitor). Decay times are in seconds from 1000 volts to 100 volts at location shown.

Range of Ionbalance : 0 ± 30 V (Ionbalance adjustment circuit method)

Measurement electrode : A metallic board of 6" × 6" and 20pF
(The charge plate monitor is used).

Installation distance : 300 mm (Speed controller max.).

Ozone production : less than 0.006 ppm (50Hz) / less than 0.005 ppm (60Hz)

Measured at 150 mm in front of unit, using Dasibi Ozone Monitor model 1003AH (By ultraviolet rays absorption method)

Audible noise : less than 74 dB-A

(Audible noise: Measured at 600 mm from unit)

Dimensions : 190 (H) × 415 (W) × 335 (D) [mm], Refer to attached drawing

Weight : Approx. 11.3 kg

Enclosure : Formed Steel

Air filter : Rough filter

Life expectancy : Approx. 10,000 hours (based on 8 h/d, 250 d/y, 5 years)

Warranty : One year after shipment

Section 3. INSTALLATION

WARNING

Do not switch on AEROSTAT AS-31 blower in an ambient that contains organic solvents or flammable gases.

CAUTION

- **Do not turn on power switch until all installation work is completed.**
- **AEROSTAT AS-31 blower must be grounded properly. It is dangerous to operate it without proper grounding; also, its neutralization performance suffers considerably.**
- **There is no restriction on the location of AEROSTAT AS-31 except that its air inlet should not be blocked by the wall on which it is mounted, paper or anything else.**
- **Being skilled in the handling of the appliance including the electric wiring etc. must take and do the installation work.**

3.1 Location

- The distance of a possible Static elimination reaches 3m or more. Bring close from the electrification thing as long as it doesn't hinder within 1m and set it up.
The Static elimination of the electrification of the electrification thing can be done early by the installation distance short.
- Select the place where the air that goes out of the Simco-Ion AEROSTAT AS-31 blower hits the electrification thing directly.
Do not put other one between Simco-Ion AEROSTAT AS-31 and the electrification thing.
An adequate Static elimination cannot be done when there is interrupting the blower air.
- The time that floats on the space is good best at the Static elimination of the electrification thing. When the electrification thing has come in contact with the earth body, the Static elimination in the part cannot be adequately done.

3.2 Installation procedure

- a) When installing on a desktop etc.
It is possible to use by supporting the main body in the stand which has adhered to AEROSTAT AS-31, and leaving sitting in desktop etc.
- b) When set up in Conveyor line etc.
Please fix the blower firmly by using accessory "U band", "L angle", and "Screws".

The installation procedure is as follows.

- ① Please fix L angle to the machine frame and the wall, etc. firmly. (At this time, the screws used are not accessories.)
- ② U band is put from the short hand side between the motor and the duct. At this time, please note no damage of cables by clamping, and scissors and crowding.
- ③ It fits the hole at both ends of U band to the hole of L angle of ①, and temporary is stopped with the screw, the washer, and the nut of the attachment.
- ④ Increase, tighten the screw after adjusting the direction of the blower (To adjust the direction of the balloon air) , and fix firmly.

3..3 Connection of power supply

The input voltage is 100 V and 50 Hz or 60 Hz.

The frequency is not using combinedly.

AEROSTAT AS-31 is a power supply plug for 3P with the earth pole.

Connect with the power supply outlet of 100V from which it is confirmed that the earth pole is surely connected.

Install and use adaptor 1 for 3P-2P exchange when the power supply plug for 3P with the earth pole is not used or it is not possible to use.

At this time, connect the earth line which has gone out from the adaptor with the earth.

Or, ground by using the earth terminal in the rear side of this machine in the earth line.

NOTE:

- Connect the earth (three kind earth). If the ground is not securely connected, there is a possibility that the risk of leakage or the like occurs, neutralizing the effect is significantly deteriorated.

Section 4. OPERATION

NOTE:

- Confirm "Input voltage" described in the nameplate on the main body back side ahead of the use.
 - Confirm the front panel of AEROSTAT AS-31 and conducting the ground terminal with the tester. (below 100Ω)
 - Confirm Electrode cleaning brush of a front panel is at the position at the right of the panel.
- 1) The power switch is 0N.
The lamp (Build into the switch) lights, and the fan starts.
Air blow reaches the charged object, static elimination is started.
 - 2) The flowing quantity of air is adjusted with Volume of adjustment of flowing quantity of air.
Maximize as much as possible when it is all right and use the flowing quantity of air to work.
Air flow (the wind speed is faster) large enough to close the installation distance, higher neutralizing effect can be obtained.

NOTE:

- When normally operating, the spark electrical discharge (spark discharge) is not seen as for AEROSTAT AS-31 at all. Clean the electrode part etc. according to the procedure of the following "Maintenance and check" if the spark has been intermittently generated from a part of the electrical discharge needle.
Contact we or our agencies when it doesn't put down the spark even if it cleans it. When the spark is generated, it becomes the decrease in the effect of the Static elimination or the source of an electric noise. At this time, there is a possibility of giving the adverse effect by the malfunction etc. to a peripheral electronic equipment etc. In addition, there is also built-in high voltage transformers, etc. part or electrode is damaged if it is used as it is allowed to stand.
- A long term, when AEROSTAT AS-31 is turned on, dust and dirt might be spouted when leaving it without using AEROSTAT AS-31. Clean internal of AEROSTAT AS-31 before it uses it.
- A long term, pull out the plug of the Power code from the outlet when you do not use AEROSTAT AS-31.

Section 5. MAINTENANCE

⚠ CAUTION

Turn off the power switch about AEROSTAT AS-31 when you exchange the filter and the cleaning.

5.1 Cleaning of electrode part point (electrical discharge needle point)

Be sure to do one-degree or more a week brush in Front panel in the slide right and left.

Take the dust adhering to the electrode point (needle discharge electrode), can be efficiently neutralizing.

The slide is shuttling one enough once.

5.2 Cleaning of fan guard

To secure the flow of excellent air, clean the dust that adheres to the mesh part of fan guard (air inhalation part) with the nylon brush, the compressed air or the cleaner, etc.

5.3 Exchange of filters

Exchange filters regularly to secure the flow of excellent air. Contact the order for the exchange filter we or our agencies.

5.4 Cleaning of internal

Turn off the power supply of AEROSTAT AS-31, and pull out the Power code from the outlet. Remove fan guard on both sides of AEROSTAT AS-31. Next, remove a top and bottom of the front panel fixation screw (4 pcs.), and detach the electrode section from the main body.

Blow off internal dust in the compressed air or suck with the cleaner.

NOTE:

Do not detach the impeller blade of the fan in inside of the blower.

A special tool is necessary for the installation and detaching. Moreover, the impeller blade of the fan misregisters. An abnormal sound generates or generates a defective rotation, and causes the motor failure at this time.

5.5 Ion output check

5.5.1 Measure by charge plate monitor

To test the unit for ion output, the use of charged plate monitor is recommended. Decay times can be measured and checked against the tables in Section 2, Specifications. These tables comply with ANSI/ESD STM3.1 ESD Association Standard Test Method.

The recommended measure condition is shown in the following.

- The measure part of the charge plate monitor and the distance between main bodies are set to 30 cm.
- Fan speed is maximized.
- Do the measure of the environmental temperature humidity in an environment $20^{\circ}\text{C} \pm 5^{\circ}\text{C}$ and 60%R.H following.

5.5.2 Measure excluding charge plate monitor

If a charged plate monitor is not available, but a static meter such as Simco-Ion Electrostatic Fieldmeter FMX-004 is available, ion output maybe checked with the following procedure.

- 1) Prepare two plastic plates of different materials, for example PVC and Acrylic; each 150 mm sq., 1 mm thick.
- 2) Rub the plates together to get more than 1 kV on the surface.
- 3) Measure the voltage and polarity of charge using the fieldmeter.
- 4) Hold the plates 30 cm away from the ionized air outlet of AEROSTAT AS-31; turn the blower on for 1 second (separately for each plate).
- 5) Measure voltage and polarity on the plates. If both the plates are neutralized, the performance of AEROSTAT AS-31 blower is acceptable.



Model FMX-004

NOTE:

If the plates are not neutralized, clean the electrodes and check its performance again, following the procedure mentioned above. If neutralization does not occur, please keep a record of the tests and contact us or our agents in your area.

5.6 Ion Balance Check

5.6.1 Measure by charge plate monitor

To test the unit for ion balance, the use of a charge plate monitor is recommended. Ion Balance (offset voltage) should be measured and checked against the specified value given in section 2, Specifications. The specification in section 2 has been prepared in accordance with ANSI/ESD STM3.1 ESD Association Standard Test Method.

Do as a recommended measure condition as well as the measure of 5.5 ion output check.

5.6.2 Measure excluding charge plate monitor

- ① Measure by Electrostatic Fieldmeter FMX-004 for the ion balance check of the attachment.

Can the measure by using the plate for the ion balance check of the attachment in case of the measure with Simco-Ion Electrostatic Fieldmeter FMX-004.

(Refer to the manual of the Fieldmeter about use etc.)

◇NOTE

The ion balance of AEROSTAT AS-31 is $\pm 30V$. Make within $\pm 50V$ a standard in the plate for the ion balance measure of static electricity Electrostatic Fieldmeter FMX-004 by relate, that an area and electrostatic capacity of the detection part are different from ANSI/ESD STM3.1 ESD Association Standard Test Method.

- ② Measure by Electrostatic Fieldmeter

In case charged plate monitor is not available and a Electrostatic Fieldmeter in used to check ion balance, following steps should be followed.

- 1) A metal plate, of size equal to or larger than 150 mm square, supported on materials of high insulation resistance (glass, Teflon) is placed 30 cm away in front of AEROSTAT AS-31 air blower such that the direction of airflow is normal to its surface.
- 2) A Electrostatic Fieldmeter is placed behind the plate. Make certain that ionized air cannot reach the measuring device.
- 3) With the blower off, carry out zero adjustment of the measuring device.
- 4) Turn on the blower and read the static potential of the metal plate.
- 5) If a metallic board is electrification of $-30V$ to $+30V$, the ion balance is normal. If the electrification potential more than the range can be read, the ion balance is not normal.

NOTE:

Do not try to determine ion balance by holding a static meter in the ionized air stream. This will result in a meaningless reading.



CAUTION

- Measuring instruments used in sections 5.5 and 5.6 should be calibrated.
- Do not try to verify the operation of the unit by drawing a spark from an ion emitter point. The design of the balancing circuit makes the “spark test” inconclusive. Sustained grounding of the ion emitters may damage the balancing circuit.

5.7 Ion Balance calibration

So we shipped to adjust the ion balance in the factory, AEROSTAT AS-31 is not necessary to adjust the ion balance is usually.

If you wish to re-adjust, please contact us or our distributor.



CAUTION

- Do not try to determine ion balance by holding a static meter in the ionized air stream. This will result in a meaningless reading.
- Measuring instruments used in sections 5.5 and 5.6 should be calibrated.
- Do not try to verify the operation of the unit by drawing a spark from an ion emitter point. The design of the balancing circuit makes the “spark test” inconclusive. Sustained grounding of the ion emitters may damage the unit.
- Failure of the electrical insulation of electrodes in AEROSTAT AS-31 by dirt, moisture or other conductive contaminants might result bad ion balance. In this case, AEROSTAT AS-31 should be taken apart and cleaned, please contact Simco or our representatives in your area. Disassembly and cleaning are not covered by warranty.
- Clean the scanner, do not ever use the one or other solvents commercially available chestnut one person. Send back the product to the our company appropriating for the check or the repair when you find abnormality.

5.8 Spark because of electrical discharge needle

In the system of neutralization device, the discharge (spark) at the time of normal use will not happen any visible spark. Maintain the cleaning of the electrode part etc. if such a spark has been continuously generated from the discharge electrode (electrical discharge needle). If the power is turned OFF, when the occurrence of the spark does not go away even after cleaning, please contact us or our distributors fail

5.9 Other abnormalities

Stop operation if the power is turned OFF immediately if the following symptoms occur, please contact us or our distributor.

- The electrode or the main body of Blower is transformed or damages.
- Violently code is discolored or the coating of the power cord or burning.
- Smoke came out abnormal noise, or from motor or Blower.
- The wind blows because of Blower though the power supply is normally supplied and does not go out.

Send the request goods to our company when the repair, the check or the overhaul is necessary. SIMCO JAPAN will do the check and the repair, etc. according to the guarantee outline. Contact our Sales Department or our handled agency when the repair estimate is necessary.

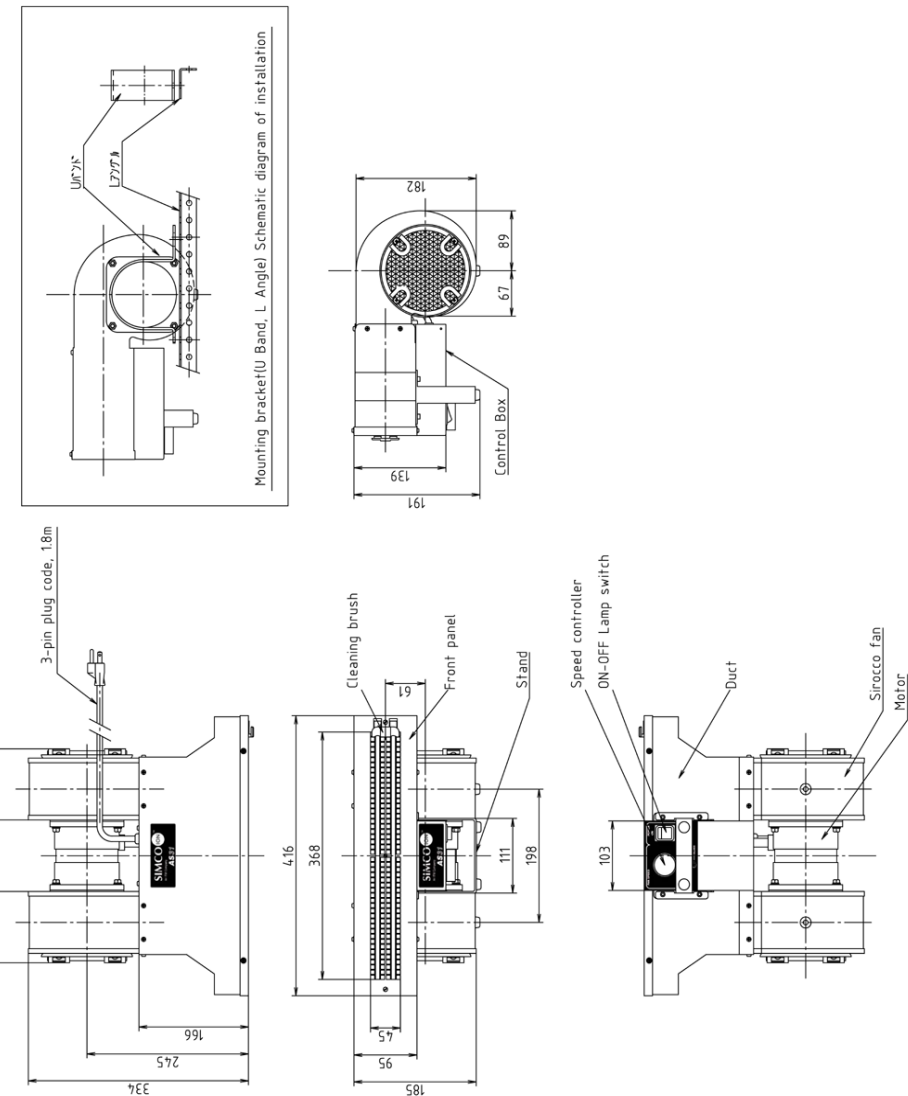
5.10 The main articles of consumption and exchange part list

Part	No. of units in the blower	Expected life
Filter	2	Depends on working condition

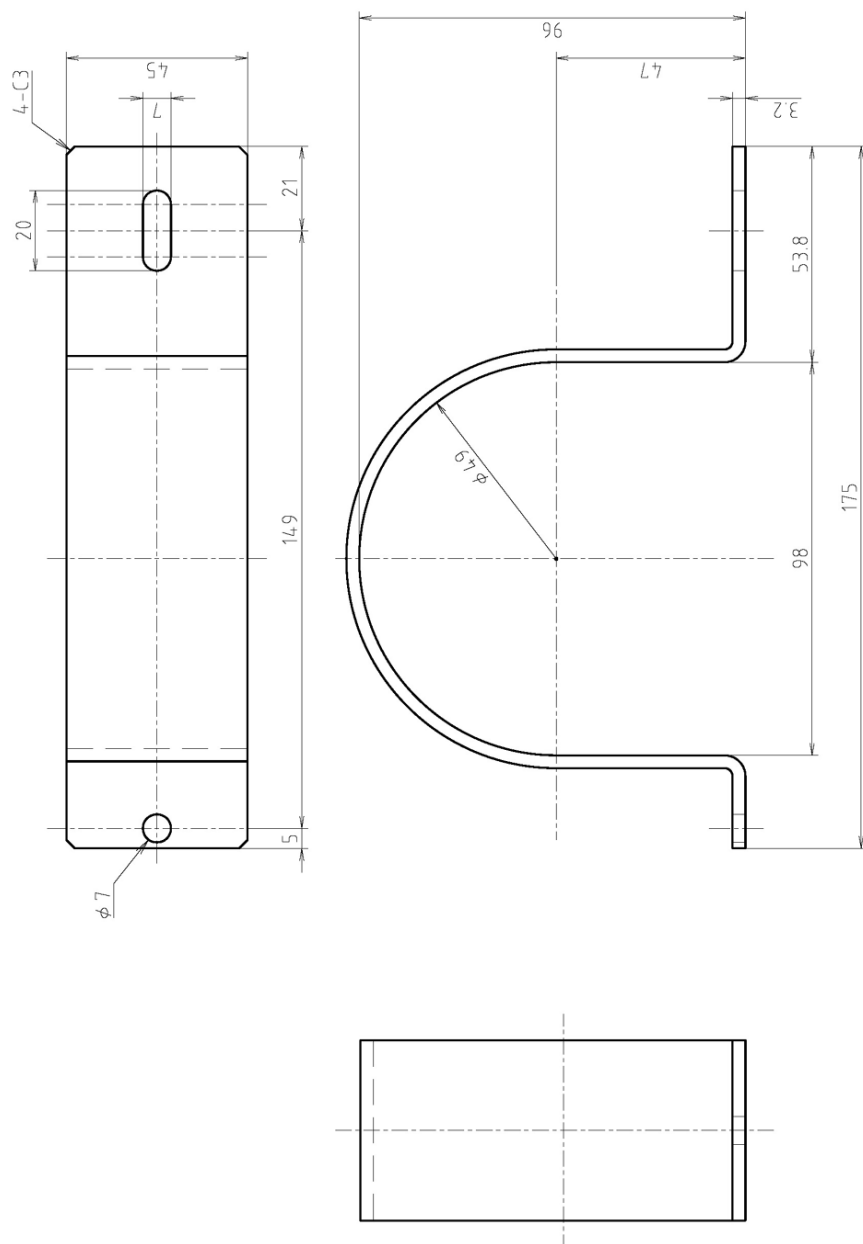
Common electrical parts such as fan, moter etc. are not included in this table.

⚠ ATTENTION
The air filter can be replaced by the customer on site. However, the replacement of the Ionizing electrode and the transformer must be done at the factory.

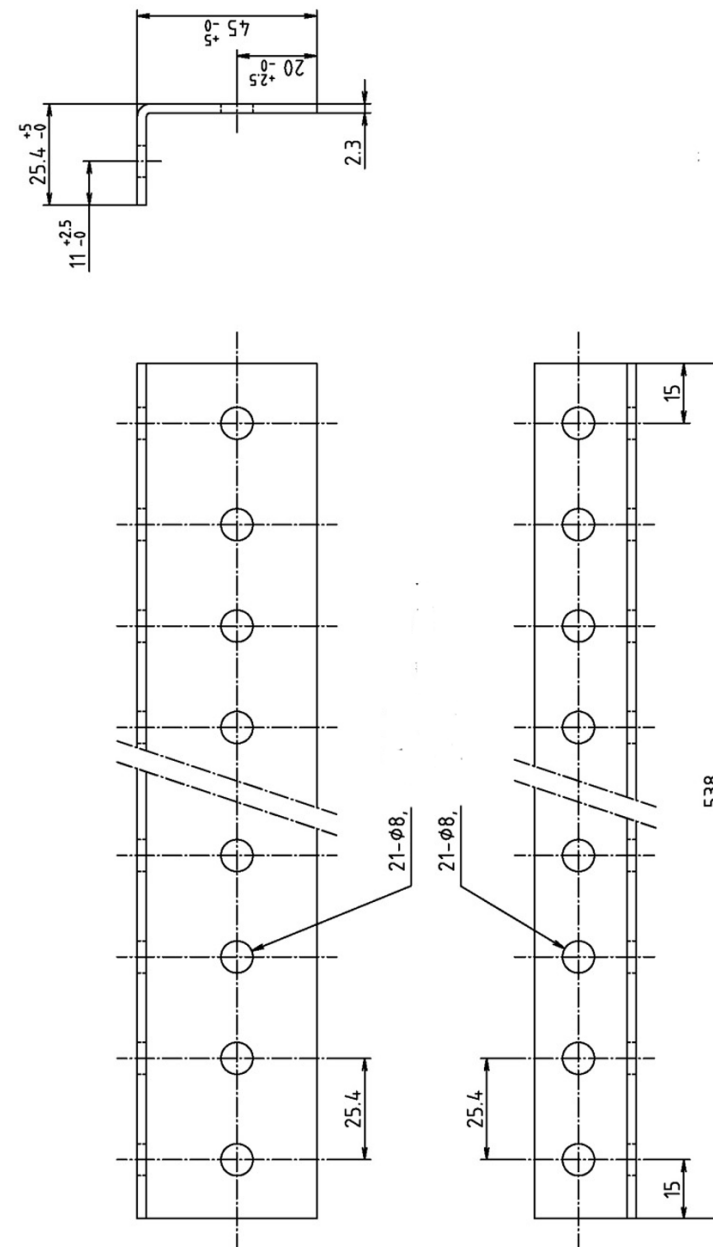
DRAWINGS



DRAWINGS U band



DRAWINGS L angle



SIMCO EQUIPMENT REPAIR WARRANTY

Simco-Ion equipment has been carefully tested and inspected at the factory and is warranted to be free from any defects in materials or workmanship.

Simco Japan, Inc. will, under this warranty, repair or replace any equipment, which proves upon their examination, to have become defective within the Warranty period from the date of purchase. A one year Warranty applies to all Simco equipment. The equipment is to be returned by the purchaser to Simco Japan, Inc. or authorized agent of Simco, transportation prepaid and insured for its full purchase price. Prior to returning any goods for any reason, contact Simco Japan, Inc. or authorized agent for an Authorized Return Number. This number must accompany all returns.

The Warranty does not apply when the equipment has been tampered with, misused, improperly installed, altered, has received damage through abuse, carelessness, accident, connected to improper line voltage, or has been serviced by anyone other than an authorized factory representative. The warranty does not apply when Simco parts and equipment have been energized by other than appropriate Simco Power unit or generator, or when Simco Power unit or generator has been used to energize other than Simco parts and equipment.

Simco Japan, Inc. makes no Warranty, expressed or implied, nor accepts any obligation, liabilities or responsibility in connection with the use of this product other than the repair or replacement of parts as stated herein.

Product Name	<i>Simco-Ion Electrostatic Neutralizer AEROSTAT AS-31 Ionizing Air Blower</i>		
Delivery Date	Product's serial number contains information on the shipping date.	Warranty Period	<i>A one year Warranty</i>