SIMCO ION™
An ITW Company

INST-11083113

Simco-Ion Ionizing Air Gun
Model HBA
Power Unit Model F164RJ

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 stared in a safe place.

Thank you for buying Simco−Ion products. This equipment will meet your expectations and provide safe operation when it is properly installed and maintained. Simco−Ion Ionizing Air Gun Model HBA must be connected with Simco−Ion power unit, Model F164RJ or Power Unit 47. Please read the installation instructions of Power Unit 47, if needed.

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)Gun with twin cable (3 m long; standard) 1 pc.

2）Power Unit (model F164RJ) 1 pc.

3)Daily Inspection sticker 1 pc.

4)Instructions Manual / Warranty 1 pc.

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

WARNING

This equipment is not designed for classified (hazardous) environment. It cannot be installed where it will be exposed to flameable or corrosive solvents and gases.

CAUTION

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 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.

The equipment is designed to be used with specific Simco−Ion power unit. Its performance and durability cannot be guaranteed if any other power supply used. The power unit, in turn, shall be connected to proper utility line. The utility line conditions are indicated on the nameplate of the power unit.

The equipment must have proper grounding. Without proper grounding there may be electrical shock/fire hazard.

The neutralizing electrodes, Emitter, in this product consist of sharp needles. Please take precautions against injury. Periodic maintenance, such as cleaning of Emitter, is necessary for satisfactory performance of the equipment.

Do not touch the Emitter when operating. High voltage is applied on the Emitter. There may be electrical shock hazard.

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, switch off the power unit and contact us or our sales representatives in your area. Inspection, exchange and repair service will be provided in accordance with the warranty conditions.

When not in use, please switch off the power unit.

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. The equipment will produce considerable electrical noise and insulation might burn if the unit is damaged.

The equipment was assembled and inspected at Simco Japan, Inc. 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.

Contents

Checking the contents of package.....page 1

Packing Contents.....page 1

Notes to Users.....page 2

Contents.....page 3

Section 1. General description.....page 4

Section 2. Specifications.....page 5

Section 3. Principle of Operation.....page 6

Section 4. Installation.....page 6

Section 5. Operation.....page 8

Section 6. Maintenance.....page 11

Section 7. Abnormal conditions.....page 13

Drawings.....page 14−17

Simco-Ion EQUIPMENT REPAIR WARRANTY.....enclosed

Explanation of Symbols:

WARNING

ATTENTION / CAUTION

ELECTRICAL SHOCK HAZARD

Section 1. General Description

HBA gun is an light-weight ionizing air gun that produces an intense air flow with both positive and negative ions. The gun is used to neutralize static charge which causes problems such as: attraction of dirt to product and undesirable adhesion of plastic films. Typical applications are the process of cleaning of objects that has static charge during handling or during fabrication. It can be applied in inspection, testing, assembly, and any other process.

Clean dry air up to a pressure of 0.7 MPa (≒ 7 kgf/cm^2) can be used with HBA gun. Compressed air line is connected to the gun. HBA can blow off as high speed and intense air blast for powerful cleaning.

HBA gun is used in conjunction with a Simco−Ion Power unit Model F164RJ which supplies low current, high voltage necessary for the static elimination. Ions produced by a emitter located inside of a nozzle are carried by the flowing air from the nozzle towards a charged object.

HBA gun is normally shipped completely assembled. It should be connected to Simco-Ion power unit using a twin cable assembly. The cable is supplied in a standard 3 m length and optional 6 m length.

HBA gun can also be connected with a Power Unit 47. The output voltage of the Power Unit 47 is adjusted to the proper voltage for HBA gun at the factory. Power Unit 47 includes a fault detection circuit to turn off the high voltage and inform an operator when there is a failure on high voltage output or cable. For the details of the Power Unit 47, please refer to the exclusive instruction manual.

⚠ CAUTION

A mistake in choosing a correct combination of static neutralizers and power unit might damage the units.

Features of the Ionizing Air Gun Model HBA are as follows;

- Efficient static charge removal
- Light−weight and durable gun body made of aluminum
- Light touch trigger for turning on the air flow
- Quick joint connection for 6 mm outside diameter air tube
- Holes of flare nut increase substantial air volume for intense air blast, powerful for positive cleaning.
- Small size power supply, model F164RJ, contains current limiting resistors which provides inherent safety on the output side.
- Fault detection circuit with Simco−Ion's Power Unit 47.
- If automatic failure detection circuit is required, please refer to Power Unit 47 manual.

Section 2. Specifications

2.1 General

Ambient conditions: 0 to 50 ℃, 10 to 90 %RH (non-condensing)

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

2.2 Gun specification

Construction: Hot type (with current limiting resistor/ Power unit model F164RJ)

Size : Refer to a drawing in page 14

Air supply : 0.7 MPa max. Quick joint connection for 6 mm o.d. tube.

Weight : Approx. 500 g (included 3 m long cable)

Paint : Silver/ Gun body

Air consumption: Refer to the following table

Input air pressure (MPa)	**0.05**	**0.1**	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**
Air consumption (NL/min.)	**25**	**48**	**80**	**108**	**135**	**170**	**200**
Audible noise (dB-A)	**63**	**74**	**86**	**89**	**92**	**93**	**94**
Blow offforce (g)	**4.3**	**17.0**	**46.8**	**84.3**	**122.3**	**163.2**	**196.6**

Measurement conditions:
Audible noise: measured at 1 m
Blow off force: at 75 mm distance, targeted size is ϕ 134 mm

Charge Decay Time: less than 1 second
20 pF charged metal plate, 100 mm from the gun.
Decay time from 1000 V to 100 V with air pressure
≧ 0.1 MPa.

2.3 Power unit specification (Model F164RJ)

Input voltage:100V,115V,200V,230Vac
(It is possible to change with internal outputting set tap)

Frequency: 50 / 60 Hz

VA rating : 10 VA max.

Secondary output volts: 3.85 kVac ± 200V

Sec. short circuit current: 1.0 mA max.

Maximum load: Two HBA guns with ≦ 6 m of twin cable.

Power cable: 1.8 m long (AWG18, 3 wires)

Output terminal: Two Polycarbonate high voltage connectors with 10 MΩ resistors

Switch/Lamp: One switch with indicating lamp

Fuse : 0.5 A

Overall size: 165 (L) × 97.6 (W) × 100.5 (H) [mm] (includes flanges)
Refer to a drawing in page 15 − 17

Sheet thickness: 1.2 mm (box metal)

Weight : Approx. 4.0 kg

Color : White

Section 3. Principle of Operation

In general static eliminators consist of ionizing electrodes, a high voltage power unit and a high voltage cable to connect the power unit to ionizing electrodes. Power unit supplies high voltage to energize ionizing electrodes. The ionizing electrodes（emitters） are sharpened needle tips at high voltage, positioned near ground electrode.
HBA gun is a current limited type eliminator, which connected with a Power unit model F164RJ. Its output contains current limiting resistors. When in operation, never touch the electrode（emitter） because there is a risk of electrical shock. High voltage cable is special, which cannot be replaced by other general electrical cables. The cable should be placed away from other signal lines not to be affected by the electrical field of high voltage cable.

Simco-Ion Ionizing Air Gun Model HBA operates as follows:
1) When the power switch is turned on, it produces high voltage.
2) Because of the intense electric field at the emitter needle tip, corona discharge is initiated. Air around the needle is ionized and positive and negative ions are produced.
3) When the trigger of the gun is pulled, the clean compressed air supplied through HBA blows both ions to the charged object.
4) As the unlike charges attract, the charged object that needs to be neutralized attracts ions of opposite polarity until it is neutralized.
5) Neutralized dust particles are easily dislodged and blown away from the surface.

Section 4. Installation

WARNING

This equipment is not designd for classified (hazardous) environment.
It cannot be installed where it will be exposed to flammable or corrosive solvent and gases.

CAUTION

- **The installation must be done out by a trained electrician.**
- **Complete all installing, wiring and connecting before switching on the power unit.**

4.1 Installation of a power unit

Power unit model F164RJ can be used only for Ionizing air guns model HBA. The unit can be connected to two guns. (The maximum cable length is 6 m.) The unit includes 10 MΩ series resistors with the output for safety. The input voltage of the line voltage can be 100V, 115V, 200V or 230V(±10%). Those are not same units. The power unit can be easily adjusted to the supply voltage. If the adjustment is required, open the lid and change tap. The new input voltage setting should be written down on unit by the user.

The power unit can be fixed to the wall, floor or machine frame by four screws through the holes provided in the legs attached to the base of the unit.

⚠ CAUTION

- **Do not drill any hole on a power unit.**
- **The power units should not be operated in an ambient containing corrosive, combustible gases, solvents, water, dust, vibration and high humidity.**
- **In case a power unit is attached to a vertical wall or frame, the high voltage connector should be mounted downward.**

4.2 Ground connection

The equipment must have proper grounding. Connect the green cable of HBA gun to the ground terminal of the power unit. The power unit must be grounded using the grounding wire provided.

⚠ CAUTION

After completing all ground connections, the ground resistance should be checked with a tester. It should be ≦100 ohms. Improper grounding affects neutralization performance and could lead to electrical shock hazard.

4.3 High voltage cable connection

HBA gun has high voltage cable that must be connected to the power unit. The high voltage cable of HBA gun has a connector A3031 at the end of the cable. Insert the A3031 to the output female connector of the power unit and fighter the connector hand. Do not use any tool.

4.4 Connecting of the compressed air line

Clean dry air up to a pressure of 0.7 MPa (7 kgf/cm^2) can be used with HBA gun. Compressed air should be supplied to HBA gun by a 6 mm dia. synflex tubing using one touch connector at the grip end of the gun. Refer the table of "Section 2. SPECIFICATIONS" in page 5 for air volume. Be sure to limit the air pressure to 0.7 MPa. Exceeding this limit may cause accident or malfunction. The trigger of the gun is used to turn the air flow on and off. Recommended operating pressure is 0.4 MPa. Use a pressure regulator, a dryer, an air-filter and a mist separator.

4.5 Line cord connection

After completing ground, high voltage cable and air connection, the line cord of the power unit can be connected to a receptacle. Be sure of the frequency of the input. The utility line conditions are indicated on the nameplate of the power unit.

Section 5. Operation

5.1 Operation

When all electrical and air-supply connections have been completed, HBA gun is ready for operation. Apply utility line voltage to Simco-Ion power unit.

1) Turn on the power switch on the power unit.
   ・An indicating lamp switch turns on.

2) Gun should be held at a distance of 50～300 mm from the object to be cleaned and neutralized. When the gun trigger is pulled, air flow and neutralization starts.

3) For efficient dust removal, move the gun back and forth over the object with air flow on.

4) Air flow stops when the trigger is released.

5) Turn off the power switch when work is over.
   ・The indicating lamp switch turns off.

⚠ CAUTION

- **Occupational Safety and Health Act (OSHA), 29 CFR ch.XVII, Part 1910.95, entitled "Occupational noise exposure" specifies a maximum permissible noise exposure of 3 hours per day at 97 dB. Therefore, please wear hearing protectors if gun is operated continuously for more than 3 hours per day at maximum pressure.**
- **If there is a possibility that blown off dust might hit workers in the vicinity, protect them with suitable covers.**
- **Confirm that there is no visible spark.**
- **Compressed air from the gun should be blown directly to the charged object.**
- **When the indicating lamp turns on, the high voltage is present at the output (emitter). The trigger for air flow is not linked up with the high voltage output.**
- **When handling the gun, support it only by the gun body. Holding it by the cable will place excessive strain on the connection between the cable and the gun.**
- **Turn off the switch on the power unit when gun is not in use. If left unused for a long period of time, the power unit should be unplugged from line socket. And also, the stopcock of air valve should be closed.**

5.2 Example of Effective Air-blow

The material to be neutralized should not be in contact with another surface, since static charges cannot be easily neutralized if the object is not free. (Recommended is
for example, holding by hand or hanging on a hook)
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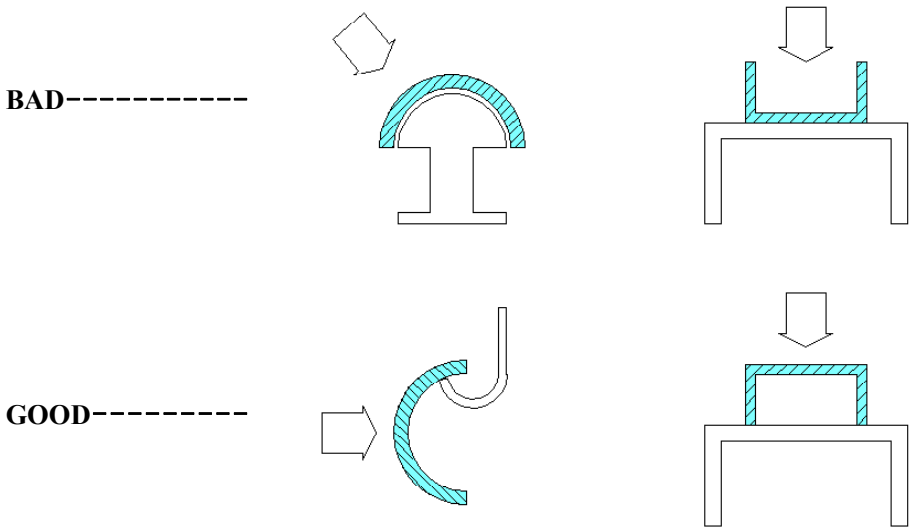


5.3 Operation checks

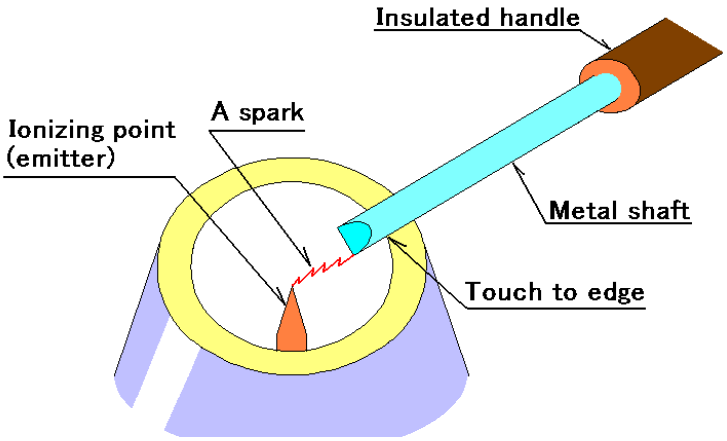
5.3.1 Spark test

WARNING

- **Do not perform this test in a hazardous area, and especially near flammable materials or solvents.**
- **If electrical noise can effect devices in the area, turn off that device during the test.**

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.

An arc, approximately 3-5 mm long, should be observed. (It might be necessary to observe this discharge in dim light.)



Spark test

CAUTION

- **The metal shaft of the screwdriver must be grounded by touching to the nozzle chip, because there is a risk of electrical shock.**
- **This test should be done periodically to prevent considerable trouble.**
- **In the case of Power Unit 47, when spark occurs, this would turn off high voltage supply and the pilot lamp. In this case, remove the screwdriver; turn the power switch off. After three seconds, turn the power switch on again. The pilot lamp should light up and high voltage output should be restored.**

If the spark cannot be observed, please check as follows;

1) Check the input voltage, the fuse, the switch and the plug. Check the high voltage cable and ground connections of the gun. Check the compressed air condition that should not contain water, oil or dust.
2) If these are properly done, but no spark, then remove the high voltage cable from the power unit and check the output of the power unit only. Insert a grounded screw driver to the output of the power unit. Sparking sound occurs when the high voltage is present. If no sparking from the power unit, even if the gun is disconnected. There may be a failure in the power unit. Please contact Simco Japan or an authorized agent in your area.
3) No sparking from the emitter even if the high voltage is properly output, clean the emitter in accordance with the cleaning instructions provided below (Maintenance) and test again.

5.3.2 Neutralizing performance check

This test should be done periodically. The neutralization performance should be measured with an electrostatic fieldmeter such as Simco−Ion's FMX-004.

1) Obtain two kinds of plastics such as PVC, PP, Acrylic, etc. Recommended size is 150 mm x 150 mm x 1 mm.
2) Rub those together for charging up enough; near 5 kV.
3) Measure and record the initial voltage of the charged objects using the fieldmeter.
4) Turn the ionizing air gun on and use it to neutralize a charged objects. (distance: 100 mm) Two or three seconds are enough to eliminate the charges.
5) Measure and record the final voltage again. Please maintain records of these measurements.
   If the charged objects are neutralized quickly, the ionizing air gun and the power unit are working properly. Please note that the voltage of the objects does not decrease without the ionizing air .

FMX−004

If it is not neutralized, clean the gun in accordance with the cleaning instructions described below in Section 6 and then perform the spark test. Also, all other check should be done for remedy in accordance with the Section 6.

⚠ ATTENTION

Use an electrostatic field meter with traceable calibration.

Section 6. Maintenance

⚠ CAUTION

The ionizing air gun is specific product that is designed for use with high voltage. There fore maintenance must be performed periodically to or sure that the static elimination performance is fully demoonstrated.

6.1 Periodic visible check

Be sure to turn the power OFF before starting maintenance. Check that there is no damage of gun, high voltage cable and the power unit. Inspect the high voltage connector A3031 and output terminal of the power unit for cracks, dirty and electrical tracking.

6.2 Cleaning of the emitter and the nozzle body

For efficient operation, it is essential that the gun's ionizing point, emitter, be kept clean. The need for emitter cleaning is indicated by an apparent lack of sharpness at the emitter tip caused by debris.

Turn the power unit OFF. Remove the flare nut from the nozzle. The emitter consists of a sharp needle. Please take precautions against injury. Carefully clean the emitter using a nylon brush or a cotton or foam swab. Recommended interval time is every 100 - 200 hours.

In order to remove dirt that cannot be removed by brushing alone, a cotton or foam swab lightly moistened with pure methanol or pure IPA may be used. Clean up the emitter, the insulator "nozzle body" and holes of air outlet on the nozzle. Recommended interval time of this work is every 500 - 2000 hours.

After cleaning, assemble the nozzle. Then, check the ground connection between the flare nut and the grounding terminal of the power unit with a tester. If the resistance is below 100 ohms, the ground connection is satisfactory.

⚠ CAUTION

- **Do not directly touch the emitter. Take care not to touch the emitter even, if the power is turned OFF.**
- **The power unit must be turned OFF before starting maintenance.**
- **The suggested cleaning intervals mentioned in 6.2 should be somewhat varied depending on working conditions.**
- **Do not use a metallic brush or cleaning solvents. Do not attempt to scrape the emitter with any hard or sharp object which could cause damage to the emitter.**
- **The emitter should not be bent or damaged. It should be sharp and straight for proper operation. If it becomes dull or damaged, it must be replaced.**
- **Be sure not to leave any cotton fiber on the emitter tip if a cotton swab is used.**
- **In case alcohol is used, do not pour it on the ionizer. Also, Allow the ionizer to dry completely before use.**

6.3 Maintenance of the high voltage cable

Periodically check the high voltage cable for color change or damage on the external black tube that protects the cable. Also, please check if the inside cable is damaged. When the inside cable is damaged, ionizing cannot be achieved.

1) In case a high voltage cable becomes dirty with oil, water etc., please wipe it off with a piece of soft cloth.
2) In case of minor problem that does not involve the high voltage cable inside, it can be easily taken care of by putting some insulation tape around this region.
3) In case the high voltage cable inside is damaged, contact our sales division as repair or replacement of the ionizing air gun may be necessary.

6.4 Periodic operation check

Operation checks described in **5.3.1 "Spark test"** and **5.3.2 "Neutralizing performance check"** should be done periodically.

6.5 Inspection with instruments

CAUTION

The following checks should be done out by a trained electrician.

6.5.1 Grounding resistance check

By a tester, measure the resistance between the flare nut of HBA gun and machine frame, ground terminal of the power unit. The measured value must be less than 100 ohms. The connections should be remade if the ground resistance is higher.

6.5.2 High voltage output

Check the high voltage output of the power unit periodically (at least once a year). A special instrument is needed to do this check. Please ask to Simco Japan's sales division or an authorized agent in your area for detail.

CAUTION

A high voltage failure detection circuit is not incorporated in the Power unit model F164RJ. High voltage output is not interrupted even if an abnormal condition, such as short-circuit or sparking caused by the insulation degradation of the ionizing electrodes or the high voltage cable, exists. And also, the fuse of the power unit is not blown by secondary short circuit. If it persists (abnormal condition), insulation might burn out. In the case of these high voltage failure, turn the switch off and inspect or repair. In case an automatic failure detection circuit is required, please use Power Unit 47.

Section 7. Abnormal Conditions

7.1 Spark from an ionizing needle electrode

There should be no visible spark between emitter during normal operation. In the event of any visible spark, the electrode system should be cleaned following the procedure mentioned earlier. If sparking persists, the power unit should be turned off and Simco Japan or Simco Japan's authorized agents should be contacted.

7.2 Other abnormalities

In the event of the following abnormalities, switch off the power unit and contact us or our authorized agents promptly.

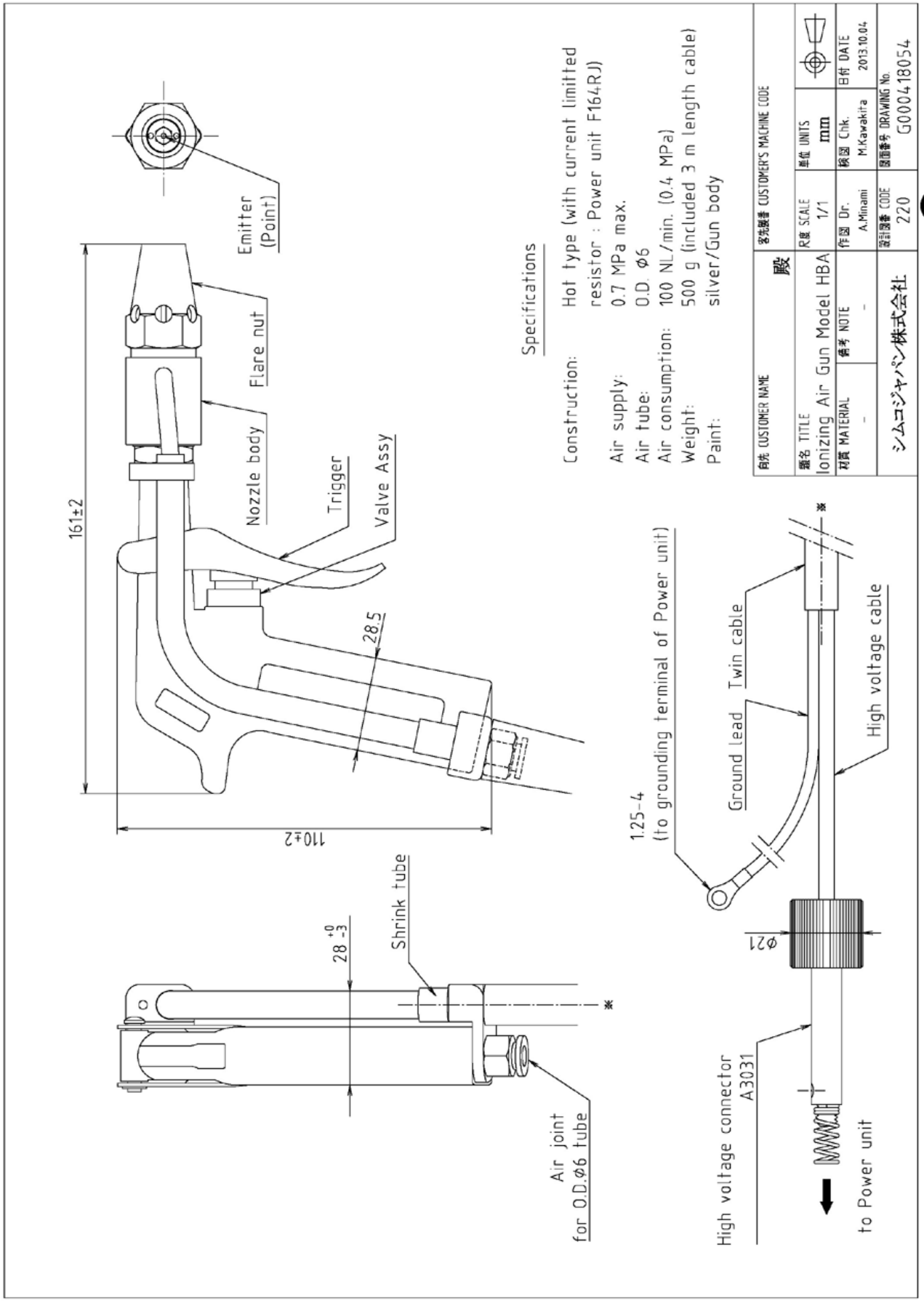
a) Sparking from any part of the gun/ high voltage cable
b) Melting or burning of the high voltage cable
c) Abnormal sound, smell or smoke from the gun/ high voltage cable/ power unit
d) Change in shape of the gun/ high voltage cable/ power unit
e) Overheating of the power unit

All these problems need inspection/ repair. Inspection/ repair request should be accompanied by a detailed description of the observed abnormality.

⚠ CAUTION

- **There are no parts which can be exchanged by the customer oneself. I will exchange the high voltage cable, the nozzle body, the ionizing electrode（emitter）, and the high voltage connector, etc. in Simco-Ion. (require payment)**
- **After the warranty period expires, any repair or checking will be charged and require payment, even if it is within the life expectancy period.**

In case a repair is needed, please contact Simco Japan's sales division or an authorized agent in your area with the details of the defects, test results, observations etc. and ask for an estimate. Any inspection and repair will be treated in accordance with the warranty provided at the end of this manual.


Emitter (Point)
Flare nut
Nozzle body
Trigger
Valve Assy
161±2
110±2
28.5
Shrink tube
28 +0 -3
Air joint for O.D.φ6 tube
1.25-4 (to grounding terminal of Power unit)
Ground lead
Twin cable
High voltage cable
12φ
21φ
High voltage connector A3031
to Power unit
Specifications
Construction: Hot type (with current limited resistor : Power unit F164RJ)
Air supply: 0.7 MPa max.
Air tube: O.D φ6
Air consumption: 100 NL/min. (0.4 MPa)
Weight: 500 g (included 3 m length cable)
Paint: silver/Gun body
SIMCO ION SIMCO JAPAN, INC.
An ITW Company
Ionizing Air Gun Model HBA
シムコジャパン株式会社
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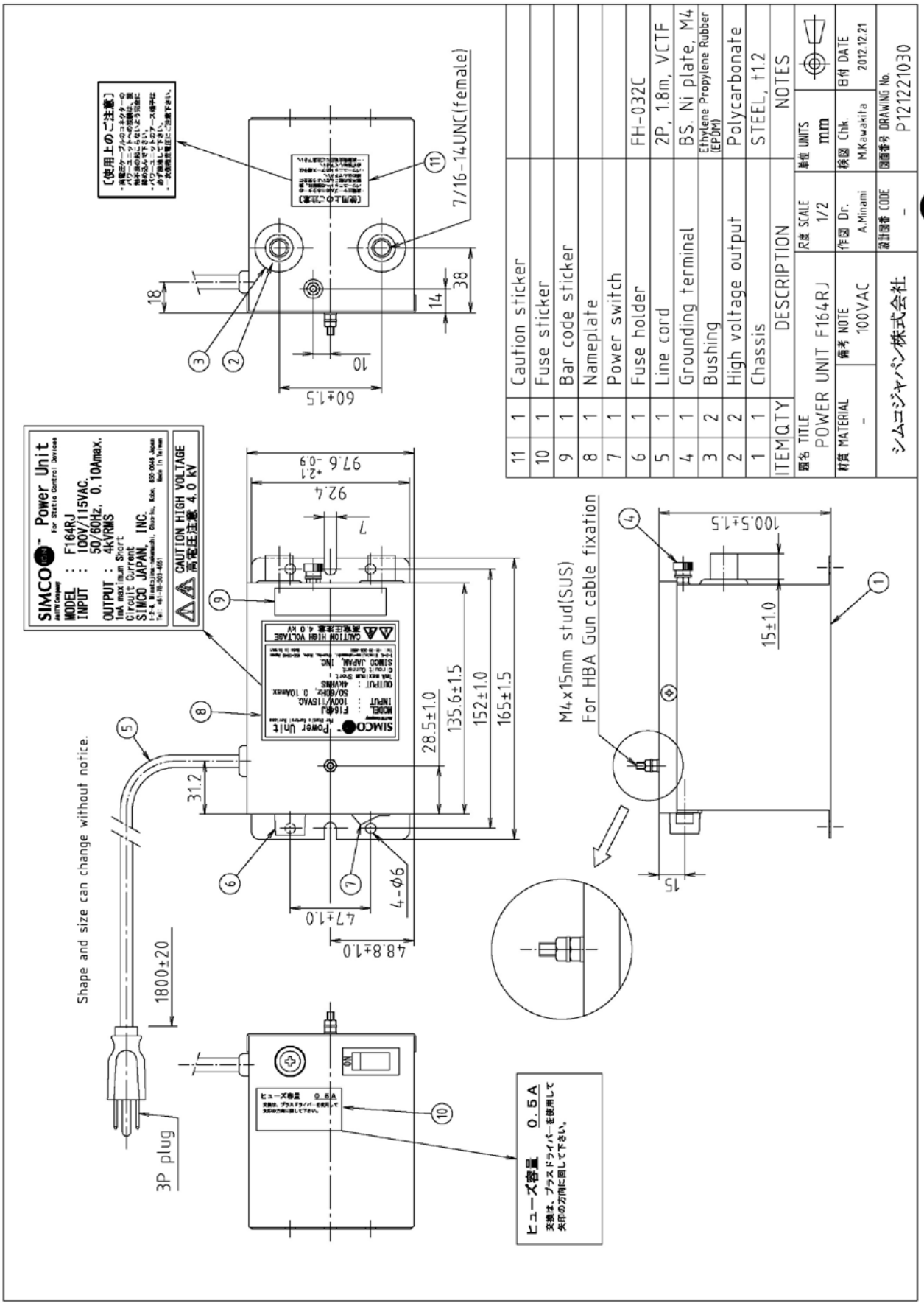
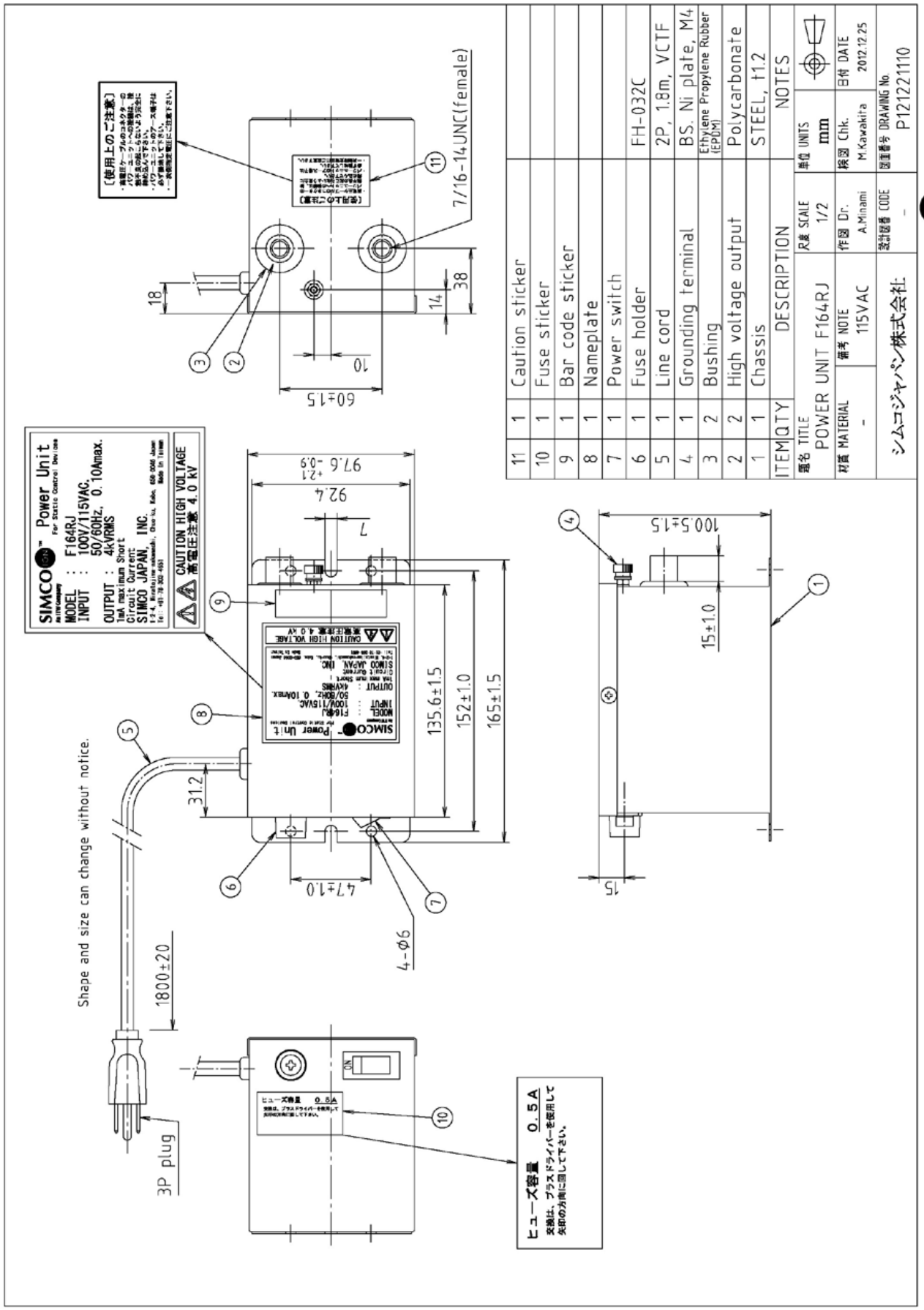
G0004180054
2013.10.04

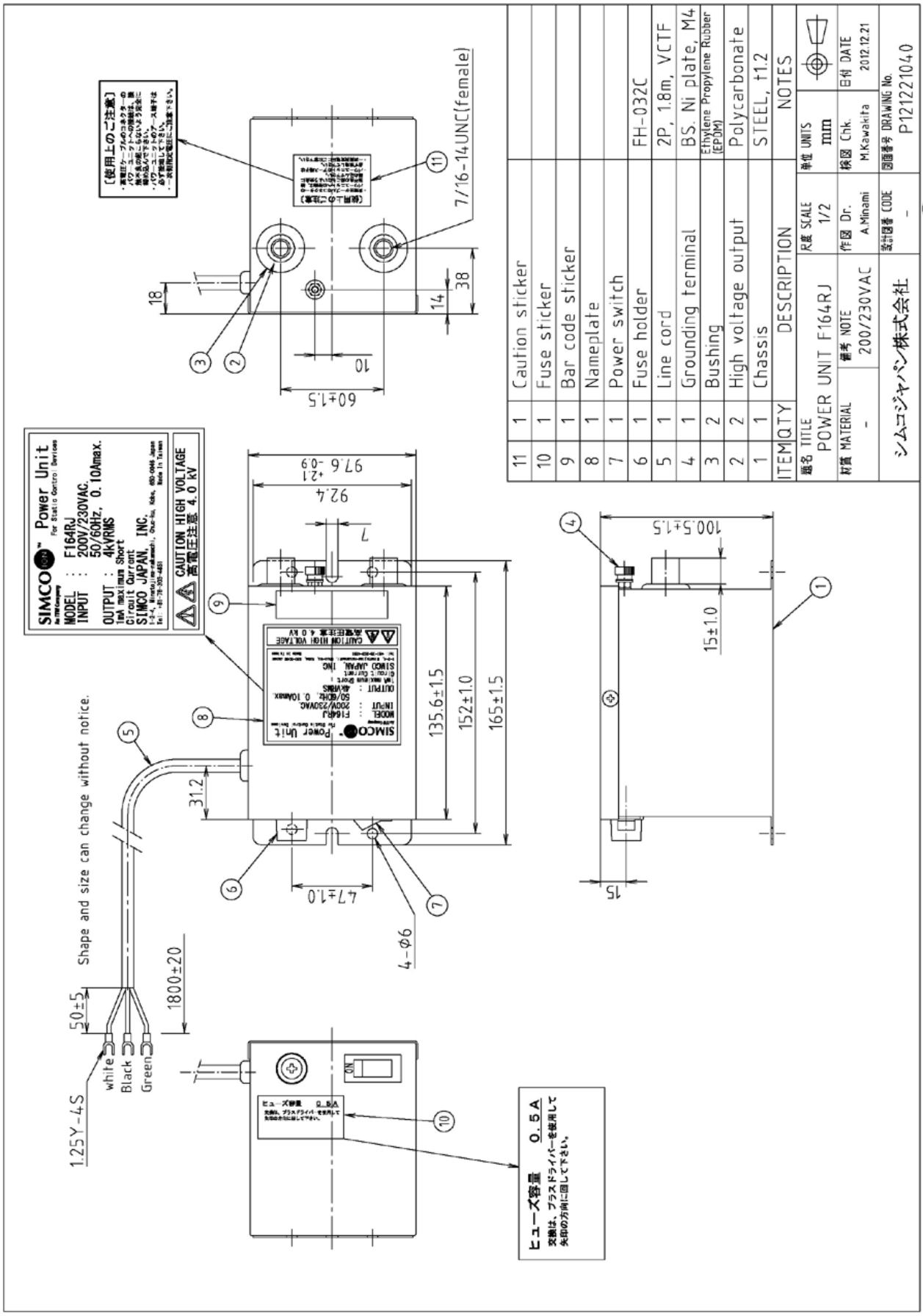


ITEM	QTY	DESCRIPTION	NOTES
11	1	Caution sticker	
10	1	Fuse sticker	
9	1	Bar code sticker	
8	1	Nameplate	
7	1	Power switch	
6	1	Fuse holder	FH-032C
5	1	Line cord	2P, 1.8m, VCTF
4	1	Grounding terminal	BS. Ni plate, M4
3	2	Bushing	Ethylene Propylene Rubber (EPDM)
2	2	High voltage output	Polycarbonate
1	1	Chassis	STEEL, t1.2

品名 TITLE POWER UNIT F164RJ		尺度 SCALE 1/2	単位 UNITS mm	
材質 MATERIAL -	備考 NOTE 100VAC	作図 Dr. A.Minami	検図 Chk. M.Kawakita	日付 DATE 2012.12.21
シムコジャパン株式会社		設計図番 CODE -	図面番号 DRAWING No. P121221030	

SIMCO JAPAN, INC.
An ITW Company


SIMCO Power Unit
For Static Control Devices
MODEL : F164RJ
INPUT : 100V/115VAC, 50/60Hz, 0.10Amax.
OUTPUT : 4kVRMS
1mA maximum Short Circuit Current
SIMCO JAPAN, INC.
CAUTION HIGH VOLTAGE
高電圧注意 4.0 kV
7/16-14UNC(female)
60±1.5
10
18
14
38
92.4
97.6 +2.1 -0.9
7
135.6±1.5
152±1.0
165±1.5
31.2
47±1.0
4-φ6
100.5±1.5
15±1.0
15
1800±20
3P plug
Shape and size can change without notice.
ヒューズ容量 0.5A
交換は、プラスドライバーを使用して
矢印の方向に回してください。
(使用上のご注意)
11 1 Caution sticker
10 1 Fuse sticker
9 1 Bar code sticker
8 1 Nameplate
7 1 Power switch FH-032C
6 1 Fuse holder
5 1 Line cord 2P, 1.8m, VCTF
4 1 Grounding terminal BS. Ni plate, M4
3 2 Bushing Ethylene Propylene Rubber (EPDM)
2 2 High voltage output Polycarbonate
1 1 Chassis STEEL, t1.2
ITEM QTY DESCRIPTION NOTES
題名 TITLE POWER UNIT F164RJ
尺度 SCALE 1/2
単位 UNITS mm
材質 MATERIAL -
備考 NOTE 115VAC
作図 Dr. A.Minami
検図 Chk. M.Kawakita
日付 DATE 2012.12.25
シムコジャパン株式会社
設計図番 CODE -
図面番号 DRAWING No. P121221110
SIMCO JAPAN, INC.
An ITW Company



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4	1	Grounding terminal	BS. Ni plate, M4
3	2	Bushing	Effylene Propylene Rubber (EPDM)
2	2	High voltage output	Polycarbonate
1	1	Chassis	STEEL, t1.2

品名 TITLE POWER UNIT F164RJ		尺度 SCALE 1/2	単位 UNITS mm	
材質 MATERIAL -	備考 NOTE 200/230VAC	作図 Dr. A.Minami	検図 Chk. M.Kawakita	日付 DATE 2012.12.21
シムコジャパン株式会社		基本図番 CODE -	図面番号 DRAWING No. P12122104 0	

SIMCO ION™ SIMCO JAPAN, INC.
An ITW Company

Simco−Ion 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-Ion equipment. The equipment is to be returned by the purchaser to Simco Japan, Inc. or authorized agent of Simco-Ion, 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−Ion parts and equipment have been energized by other than appropriate Simco-Ion Power unit or generator, or when Simco−Ion Power unit or generator has been used to energize other than Simco−Ion 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	***Simco−Ion Electrostatic Neutralizer*** **Ionizing Air Gun Model HBA** **Power Unit Model F164RJ**		
Delivery Date	Product's serial number contains information on the shipping date.	Warranty Period	***A one year Warranty***

SIMCO ION™
An ITW Company

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