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# GX-A/GF-A Series Option

# INSTRUCTION MANUAL

## GXA-25 External Fanless Ionizer

A&D Company, Ltd.

1WMPD4003577B

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# Introduction

This manual describes how the GXA-25 External Fanless Ionizer (static eliminator) works and how to get the most out of it in terms of performance. Read this manual thoroughly before using the ionizer and keep it at hand for future reference.

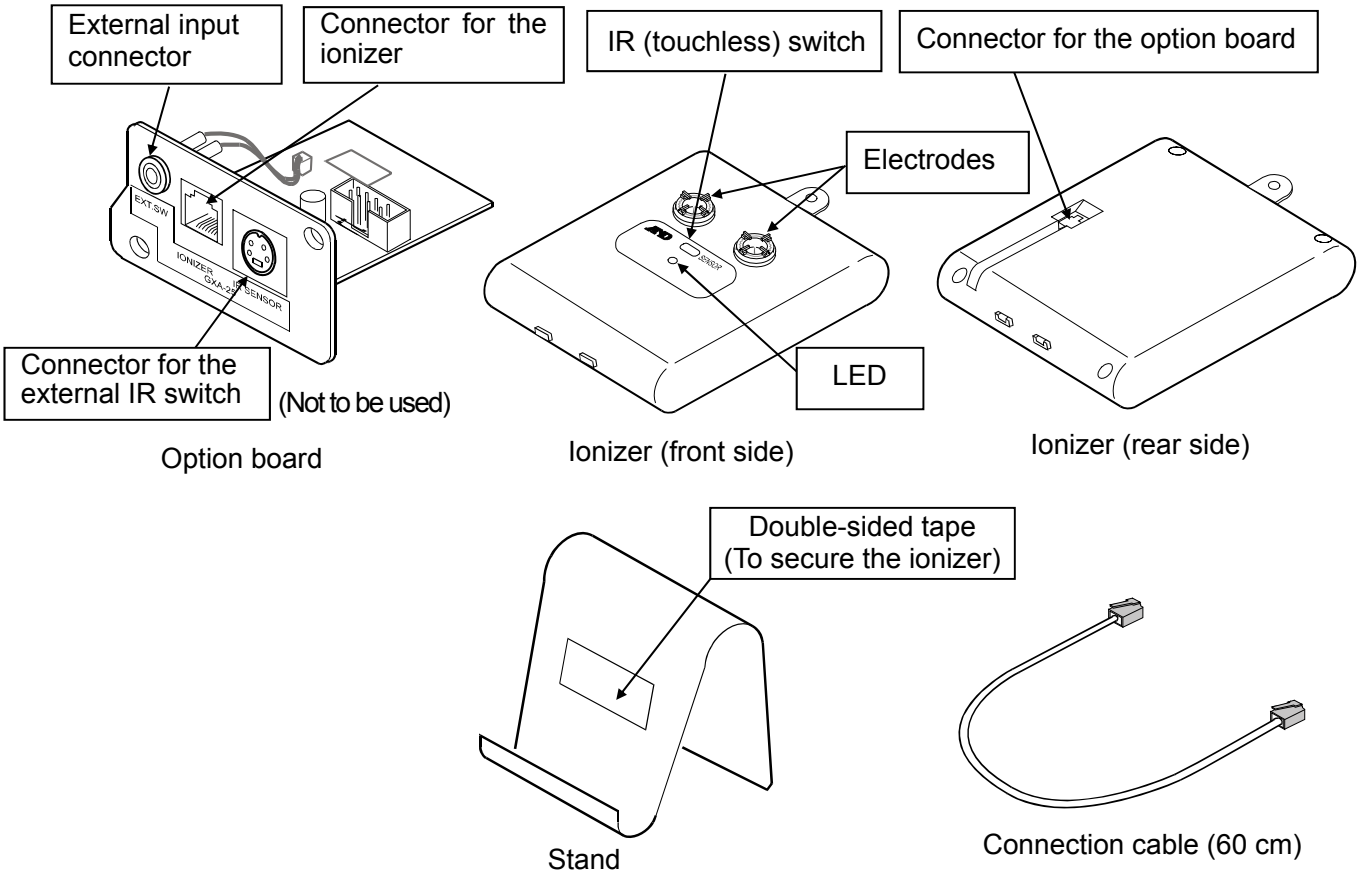
# 1. Features

- ☐ The fanless ionizer (static eliminator) can eliminate static electricity from the weighing sample before weighing, reducing errors.
  (Bipolar ions are generated by corona discharge and the weighing sample is irradiated by those to neutralize it.)
- ☐ Each electrode unit of the ionizer is designed to be removed, cleaned and replaced.
- ☐ An IR (touchless) switch is attached to the ionizer, and neutralization can be started without touching the ionizer.
- ☐ Power is supplied from the balance to allow the ionizer to be operated without using an AC adapter.
- ☐ PRINT or RE-ZERO or the neutralization function for the ionizer can be operated by using the optional foot switch (AX-SW137-PRINT or AX-SW137-REZERO).

Static electricity

In general, when the ambient humidity is less than 45% RH, nonconductors such as powders, paper, and plastics easily become charged with static electricity. The influence of the static electricity may cause a weighing error of several milligrams. The ionizer effectively neutralizes the electrical charge.

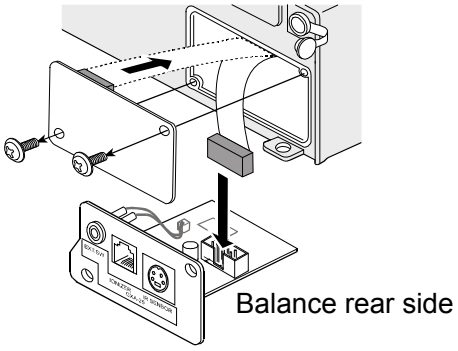
## 1.1. Part Names




## 1.2. Installing the Ionizer

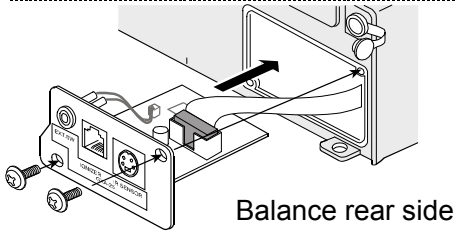
**Caution** Disconnect the AC adapter before installing the ionizer to the balance.

1. Remove the two screws, and then gently pull the option panel with the cable connector from the balance.

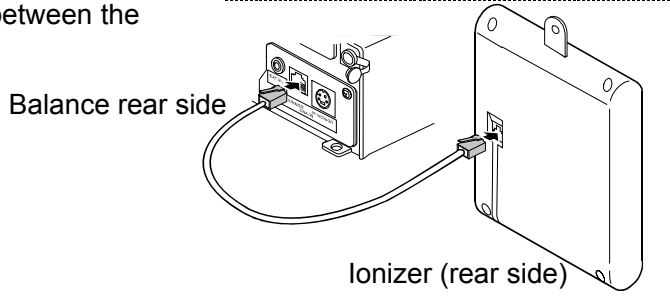



2. Peel off the connector that is secured to the panel with double-sided tape and insert it into the socket of the option board.

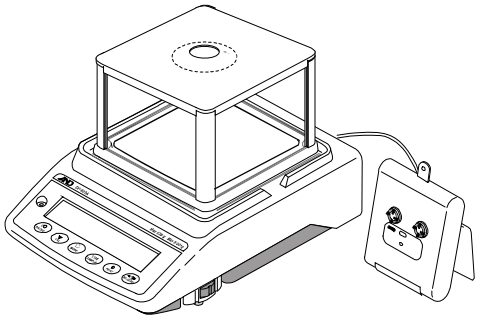
3. Attach the option board to the balance.
   Secure the board with the two screws removed in step 1.

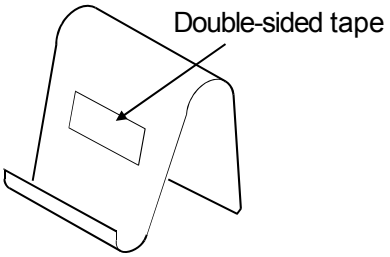



4. Using the connection cable (60 cm), connect between the option board and the ionizer.



5. Place the ionizer on the stand and set it up on the side of the balance.
   (Secure the ionizer to the stand using the double-sided tape if necessary)

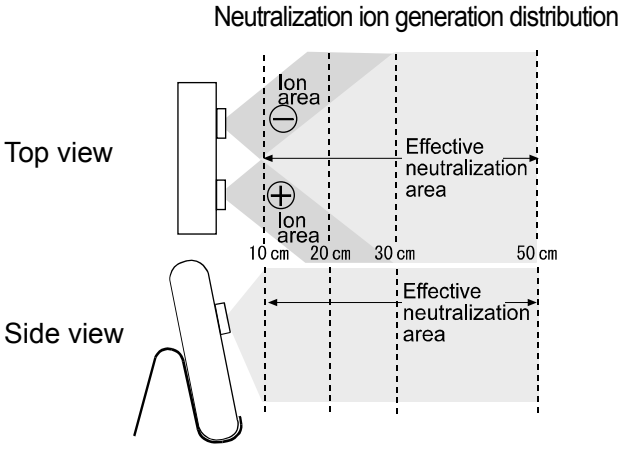


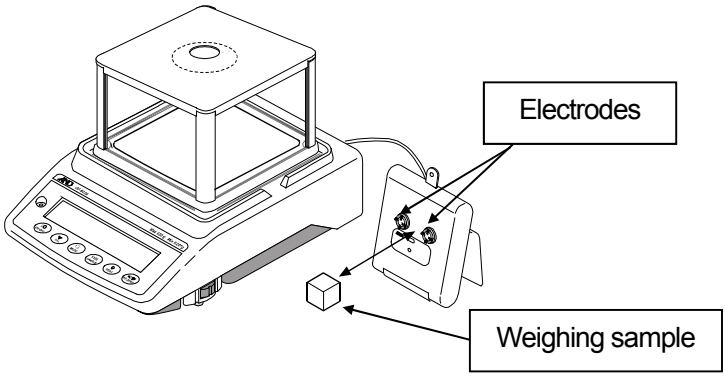



## 1.3. Using the Ionizer

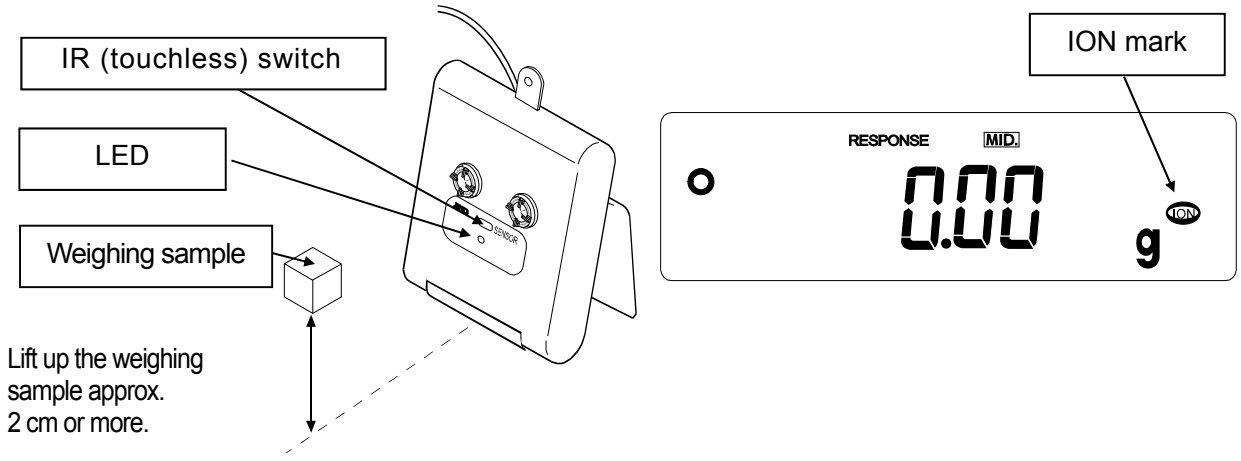
**Note**: □ Keep the weighing sample away from the electrodes while neutralizing. Placing the sample too close to the electrodes may cause the sample to become charged.
□ Remove any obstacle between the electrodes and the weighing sample.
□ The electrodes must not be touched with tweezers, etc., while neutralizing.

1. Place the weighing sample to be neutralized in front of the ionizer.
   At this time, the weighing sample to be neutralized must be kept in a range of approx. 10 cm to 30 cm from the electrodes as shown in the figure below.



2. Bring your hand close to the IR (touchless) switch located at the center of the ionizer.
   When the IR switch responds to the hand, the ION mark on the balance's display and the ionizer's LED light up and neutralization starts. When an interval (three seconds at factory settings) set in the balance's function settings beforehand has passed, neutralization stops automatically. While neutralizing, make sure that the weighing sample is lifted up approx. 2 cm or more and is neutralized until the ionizer's LED turns off.




- ☐ When a balance with a minimum display of 0.001g or 0.0001g is used, the balance operates using a minimum display of 0.01g while the ionizer is being operated. The balance automatically returns to the previous weighing mode a certain amount of time after neutralization is completed.
- ☐ While neutralizing, make sure that the weighing sample is lifted up and is neutralized until the ionizer's LED turns off. Failure to do so may result in the weighing sample not being sufficiently neutralized and cause weighing errors.
- ☐ The neutralization interval (ionizer operating interval) can be changed using the balance's function settings. (Refer to "2. Function Settings of the Balance")
  (Reference) at 4kV electrical charge

| Distance (distance between the ionizer and the statically charged weighing sample) | 10 cm | 20 cm | 30 cm |
|---|---|---|---|
| Neutralization interval (ionizer operating interval) | 1 second | 3 seconds | 10 seconds |

- ☐ If the IR switch is kept at ON after neutralizing, the ionizer indicates a warning by flashing the LED.
- ☐ When the neutralization interval is set to "manual", the ionizer can only be controlled externally. The "manual" neutralization interval is up to 10 minutes.
- ☐ While the balance is outputting data other than the weighing data (GLP data, statistical data, data stored in memory), do not perform neutralization or operation using the foot switch (AX-SW137-PRINT or AX-SW137-REZERO).
  Doing so may prevent the balance from updating the display. If the balance's display is not updated, reset the balance by unplugging the AC adapter and plugging it back in.
  For details about the balance data output (function settings), refer to the balance instruction manual.

## 1.4. Controlling the Ionizer Externally

By using the foot switch (AX-SW137-PRINT or AX-SW137-REZERO), PRINT or RE-ZERO or the neutralization function for the ionizer can be operated.

- ☐ Connect the foot switch to the external input connector.
- ☐ By selecting "Functions for the external input connector ( EX PRT )" or "Functions for the external input connector ( EX R )" for "Ionizer function ( ion FNC )" in the balance's function settings, key functions can be assigned to the terminal for the AX-SW137-PRINT (sold separately) or AX-SW137-REZERO (sold separately).
- ☐ Press the foot switch while the ionizer is operated to stop neutralization.

For balance software version 1.200 to 1220

When the AX-SW137-PRINT is connected to the balance

| Class | Item | Parameter | Description | |
|---|---|---|---|---|
| ion FNC | EX PRT | 0 | ION key | Assigns a neutralization starting key to the AX-SW137-PRINT. (The ionizer's IR switch is disabled.) |
| | | • 1 | PRINT key | Assigns the function of the balance' PRINT key. |

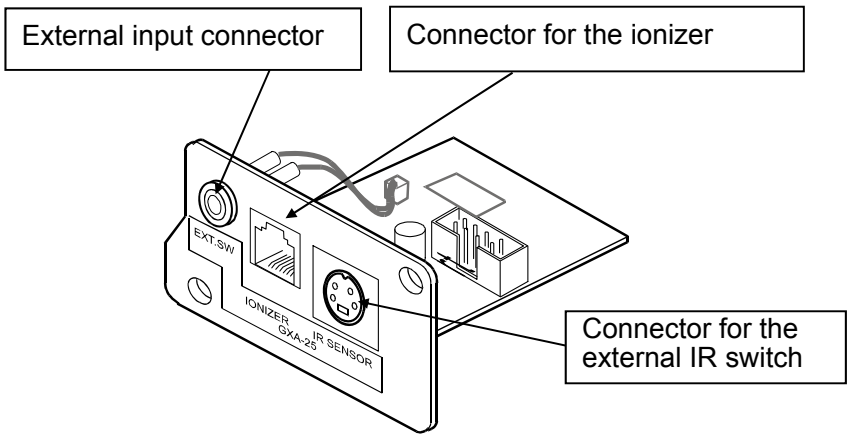
When the AX-SW137-REZERO is connected to the balance

| Class | Item | Parameter | Description | |
|---|---|---|---|---|
| ion FNC | EX R | 0 | ION key | Assigns a neutralization starting key to the AX-SW137-REZERO. (The ionizer's IR switch is disabled.) |
| | | • 1 | RE-ZERO key | Assigns the function of the balance RE-ZERO key. |

For balance software version 1.300 or later

| Class | Item | Parameter | Description | |
|---|---|---|---|---|
| ion FNC | EX SW | 0 | ION key | Assigns a neutralization starting key. (The ionizer's IR switch is disabled.) |
| | | • 1 | PRINT key or RE-ZERO key | When the AX-SW137-PRINT (sold separately), assigns the function of the balance' PRINT key. When the AX-SW137-REZERO (sold separately), assigns the function of the balance' RE-ZERO key. |

• indicates factory settings.




- ☐ The connector for the external IR switch is not used with the GXA-25.

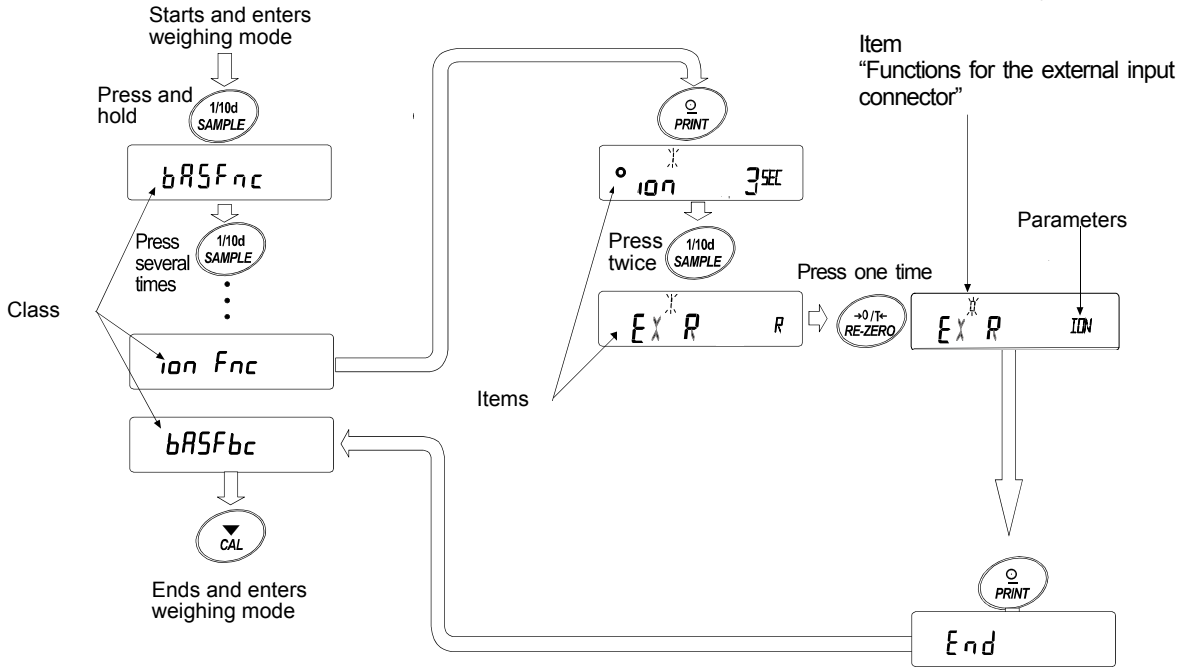
# 2. Function Settings of the Balance

The function table stores parameters that specify how to operate the balance, and it is used to monitor or update the parameters. In the function settings, specify the GXA-25 operations. The parameters are stored in memory even if the AC adapter is removed and are retained until updated.

The function table menu consists of two layers as shown in the diagram below. The first layer is the "**Class**" and the second layer is the "**Item**". Each item stores a "**parameter**". The last displayed parameter is in effect. After the PRINT key is pressed, these updated parameters are applied to operations of the balance.

Example of settings and menu structure

The following example is when "External input connector (AX-SW137-REZERO)" is set to the ION key.




**Note**: The balance may not function properly depending on the settings and the operating environment. Be sure to set parameters correctly.

## 2.1. Display Symbol and Operation Keys

| | |
|---|---|
| ○ | The ○ indicates that the parameter displayed is in effect. |
| 1/10d SAMPLE | Enters the function table when pressed and held in the weighing mode.<br>Selects the class or item in the function table. |
| →0/T← RE-ZERO | Changes the parameter. |
| PRINT | Moves to an item in the class when a class is displayed.<br>Stores the new parameter and displays the next class when an item is displayed. |
| CAL | Cancels the new parameter and displays the next class when an item is displayed.<br>Exits the function table and returns to the weighing mode when a class is displayed. |

## 2.2. Function Table

**Note**: Functions available differ by the balance model.

| Class | Item | Parameter | Description |
|---|---|---|---|
| bASFnc Environment display | | | |
| CLAdJ Clock adjustment | | | |
| CP Fnc Comparator | | | |
| CP VALUE Comparator value | | | |
| CP bEEP Comparator buzzer | | | |
| doUt Data output | | | |
| S iF Serial interface | | | |
| USb USB interface | | | Refer to the balance instruction manual. |
| AP Fnc Application | | | |
| MW Fnc Minimum weighing warning function | | | |
| Un it Unit | | | |
| dS Fnc Specific gravity measuring function | | | |
| id ID number setting | | | |
| PASSwd Password lock | | | |
| Auto CAL* Auto calibration | | | |
| ion Fnc Ionizer function | ion Neutralization interval | 0 | 1 second |
| | | • 1 | 3 seconds |
| | | 2 | 10 seconds |
| | | 3 | Manual for up to 10 minutes (Only external control is enabled. The ionizer's IR switch is disabled.) |
| ★1 | EX PRt Functions for the external input connector | 0 | ION key (The ionizer's IR switch is disabled.) |
| | | • 1 | PRINT key |
| | EX R Functions for the external input connector | 0 | ION key (The ionizer's IR switch is disabled.) |
| | | • 1 | RE-ZERO key |
| ★2 | EX SW Functions for the external input connector | 0 | ION key (The ionizer's IR switch is disabled.) |
| | | • 1 | PRINT key (When the AX-SW137-PRINT is connected.)<br>RE-ZERO key (When the AX-SW137-REZERO is connected.) |
| CS in* Internal mass value correction | | | Refer to the balance instruction manual. |

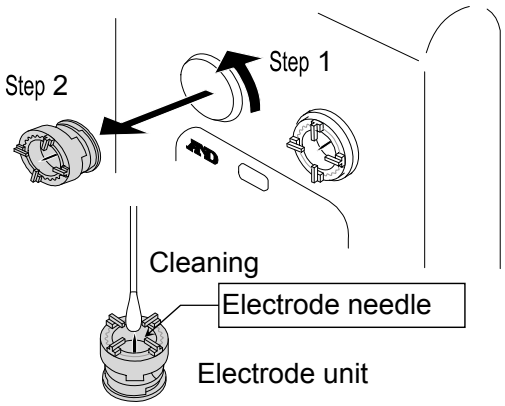
* Applies only to the GX-A series. • indicates factory settings.

★ 1 For balance software version 1.200 to 1220

★ 2 For balance software version 1.300 or later

# 3. Maintenance of the Electrode Unit

- When using the ionizer for a long time, dust and stains may stick to the electrodes. Clean them periodically to maintain performance.
- When needles of the electrodes are worn down and neutralization ability is not restored after cleaning them, replace both electrode units with new ones.
  The standard life of an electrode unit is approximately 10,000 hours.




Replacing the Electrode Units

1 Turn the electrode units 45 degrees counterclockwise and remove them from the ionizer.

2 Replace both electrode units with new ones.

3 Turn the electrode units 45 degrees clockwise and insert them into the ionizer.

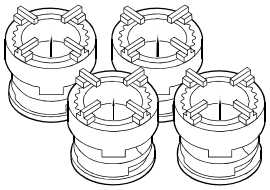
**Note**: Do not replace, remove and clean the electrode units while the ionizer is operating as there is danger of electrical shock.
(Replace the balance with the power supply disconnected or with the connection cable disconnected.)

# 4. Specifications

| | |
|---|---|
| Static neutralization method | Corona discharge |
| Effective neutralization range | Approx. 10 cm to 50 cm from the electrode needle |
| Neutralization performance | 1 second (at a distance of approx. 10 cm and 4 kV electrical charge) |
| Ambient temperature and humidity | 10 to 40 °C, 85% RH or less (no condensation) |
| Electrode needle | Tungsten (with a life of approx. 10,000 hours) |
| Mass | Approx. 300 g (including the stand) |

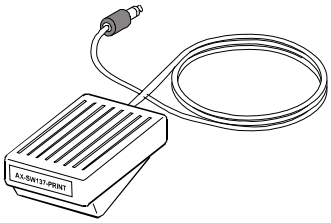
# 5. Options

Electrode Unit AX-BM-NEEDLESET (4 pieces)



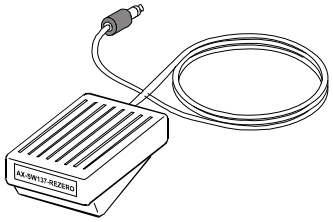
- ☐ Replacement electrode units
- ☐ Replace both units with new ones at the same time.
- ☐ Refer to "3. Maintenance of the Electrode Unit " for the replacement method.

Foot switch with a plug (PRINT) AX-SW137-PRINT




- ☐ Controls the balance PRINT operation and the ionizer operations.

Foot switch with a plug (REZERO) AX-SW137-REZERO




- ☐ Controls the balance RE-ZERO operation and the ionizer operations.

# MEMO

# MEMO

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