GX-A/GF-A Series Options

INSTRUCTION MANUAL

GXA-17   Large Glass Breeze Break with Ionizer

A&D

A&D Company, Limited

The contents of this manual and the specifications of the instrument covered by this manual are subject to change for improvement without notice.

Contents

Introduction

This manual describes how the GXA-17 (Large Glass Breeze Break with Ionizer) works and how to get the most out of it in terms of performance. Read this manual thoroughly before using and keep it at hand for future reference.

1. Features

□ The Large Glass Breeze Break with Ionizer (GXA-17) can be installed on all GX-A/GF-A balances.

□ The GXA‒17 can protect the balance from the effects of air drafts and will ensure more accurate weighing results.

□ An anti-static treatment has been applied to the breeze break components to reduce weighing error caused by static electricity.

□ A fanless ionizer (static eliminator), which causes no breeze, is built into the Large Glass Breeze Break.

□ The ionizer can eliminate static electricity from the weighing sample before weighing, reducing error. (Static is eliminated by bipolar ions which are generated by direct-current corona discharge.)

□ The ionizer electrodes are designed to be removed for cleaning and replacement.

□ By attaching the external IR switch (included with breeze break) to the ionizer, you can start static elimination without pressing any key.

□ Power is supplied from the balance to allow the ionizer to be operated without using an AC adapter.

□ PRINT or RE-ZERO or the static elimination function of 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 static electricity may cause a weighing error of several milligrams. The ionizer neutralizes this electrical charge.
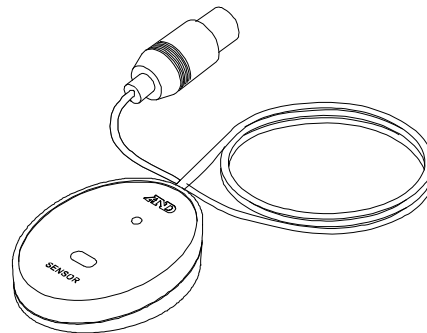
1.1. Part Names
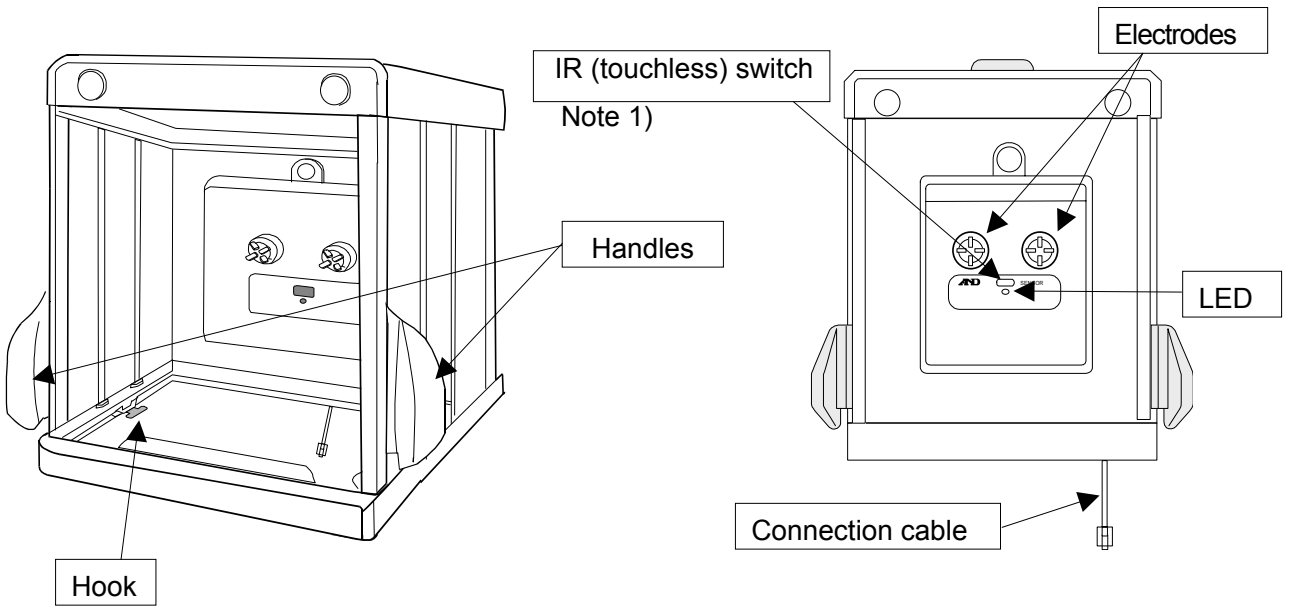
Large Glass Breeze Break with Ionizer

Large Glass Breeze Break with Ionizer (front side)
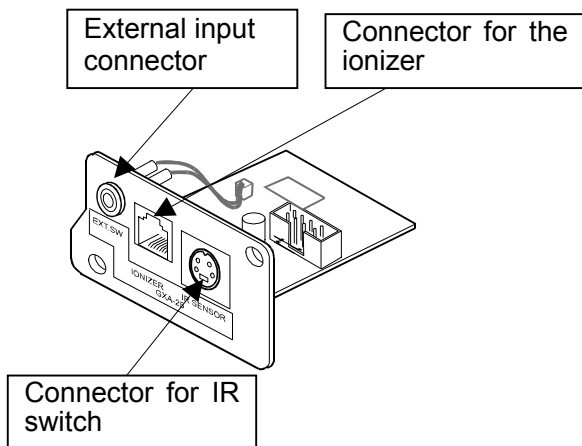
Option board

External IR switch

Note 1) When the external IR switch is connected, the IR switch of the glass breeze break with ionizer will no longer work.

1.2. How to Install

Caution: Disconnect the AC adapter from the balance body before performing the following operations.

Step 1 Remove the weighing pan and pan support to prevent damage to the balance. The figure to the right uses a drawing of the GX-6002A.

Weighing pan

Pan support

Step 2 Remove the dust plate

Floor plate
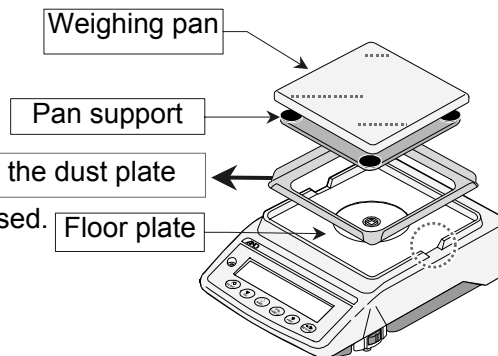
Step 2 Remove the dust plate if the following balances are used.

GX-2002A, GX-3002A, GX-4002A, GX-6002A,
GX-10002A, GX-6001A, GX-10001A,
GF-1202A, GF-2002A, GF-3002A, GF-4002A,
GF-6002A, GF-10002A, GF-6001A, GF-10001A

Step 3 Remove the two screws from the option panel and pull out the panel with the cable from the balance.
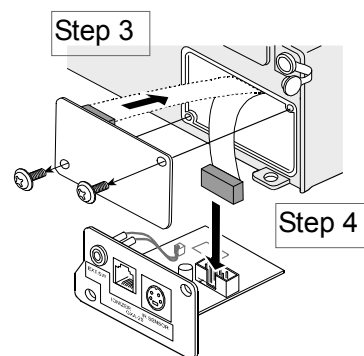
Step 3

Step 4

Step 4 Remove the connector that is taped to the panel and insert it into the socket of the option board.
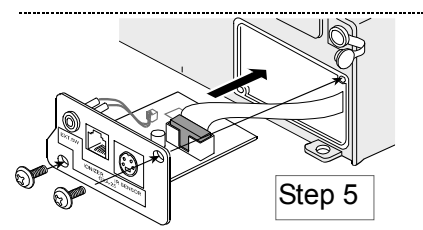
Step 5 Attach the option board to the balance.
Secure the board with the two screws removed in Step 3.

Step 5

Step 6 Pull both latch levers on the glass breeze break and place the glass breeze break on the balance.

*   Be careful not to pinch the connection cable when placing the breeze break on the balance.

Hook

Latch lever

Step 6

4
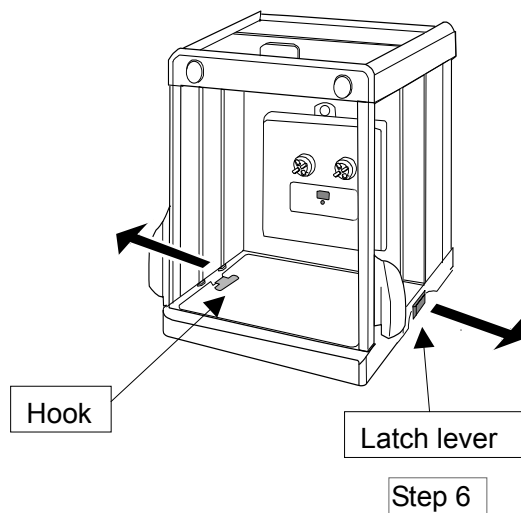
Step 7 Confirm that both hooks of the latch levers are inserted under the floor plate. Push in both latch levers.

Step 8 Connect the option board and cable from the breeze break. Install the weighing pan and pan support to the balance.

Step 9 Connect the plug of the external IR (touchless) switch to the jack on the option board panel. If inserted correctly the LED will light up. Place the external IR switch in an appropriate place near the balance.

(For right handed people, place the external IR sensoron the left side of the breeze break so that it can be operated with the left hand.)

Step 8

Floor plate

Hook

Balance

Latch lever

Step 6

Step 7

Sectional view
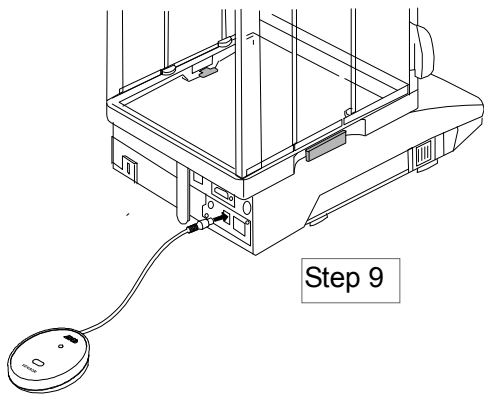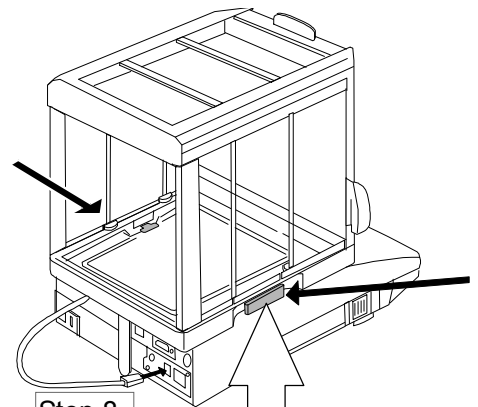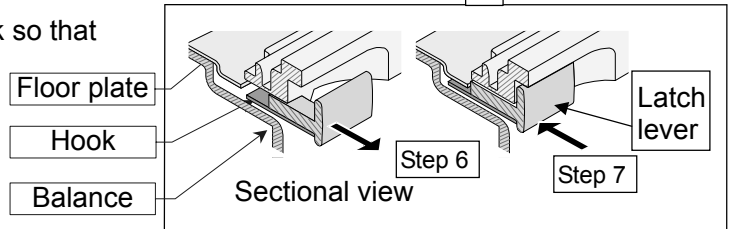
Note

☐ The ionizer LED flashes for some time after installation and the external IR switch LED lights up when you connect the AC adapter.

☐ Do not hold the balance by the glass breeze break when moving the balance. Hold the balance body when moving.

☐ To clean the area around the weighing pan, remove the glass breeze break in the reverse procedure as above.

Step 9

Note: Keep some space between electrodes and the weighing sample. (Placing the sample too close to an electrode may cause the sample to become charged.)

Remove any obstacles between electrodes and the weighing sample.

Do not activate the ionizer with weighing sample on the weighing pan. (Static will not be fully removed.)

Do not touch the electrodes while the ionizer is active.

Step 1 Open the door of the breeze break and hold the sample above the weighing pan (center) to neutralize it. <u>At this time, do not place the sample on the weighing pan.</u> (The charge on the sample will not be sufficiently eliminated.)

(Example uses GX-1603A)

Top view

Weighing sample

Weighing pan

Ion area ⊕

5cm

Effective neutralization area

Electrodes

Ion area ⊖

Ionizer

Glass breeze break

Side view

Weighing sample

Weighing pan

Effective neutralization area

Electrodes

Hold about 2 cm above the weighing pan
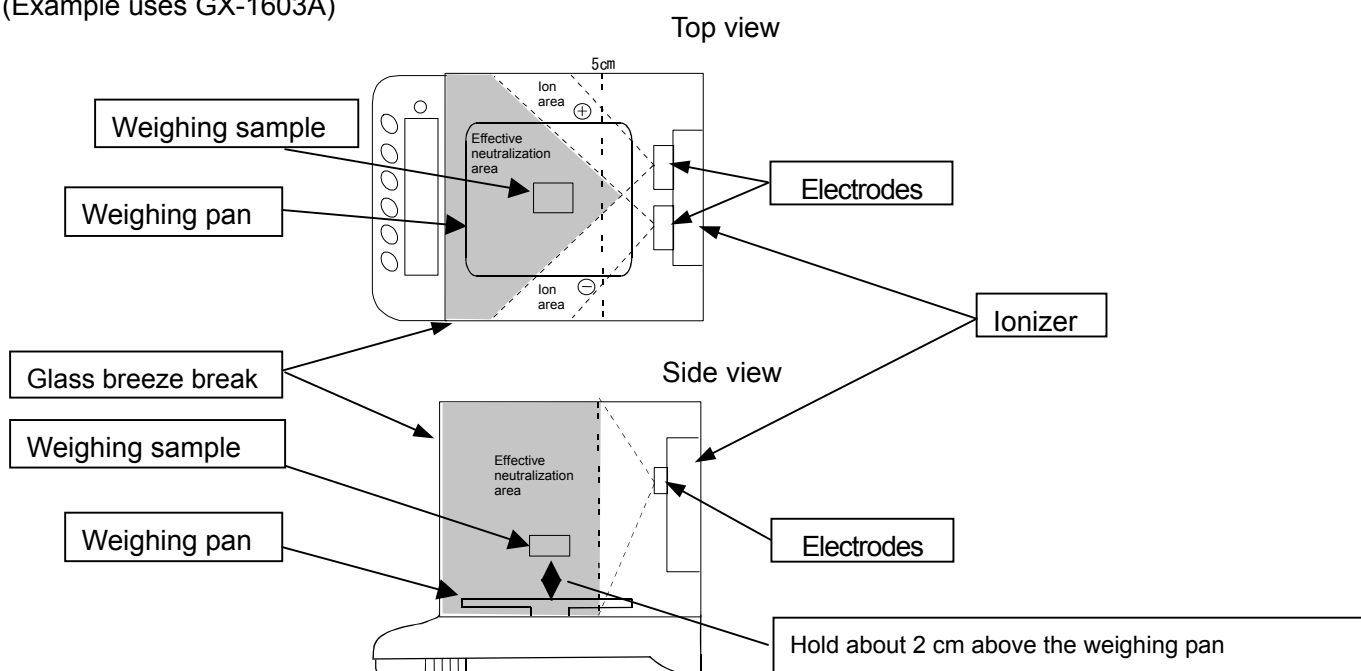
Step 2   Move your hand close to the external IR (touchless) switch. The sensor can detect motion from about 5 cm. When the IR switch responds, the ION mark on the balance's display and the ionizer's LED light up and static elimination begins.

External IR (touchless) switch

Sensor

LED

Ionizer

ION mark

RESPONSE MID.

0.00 g

Display section of the balance

6
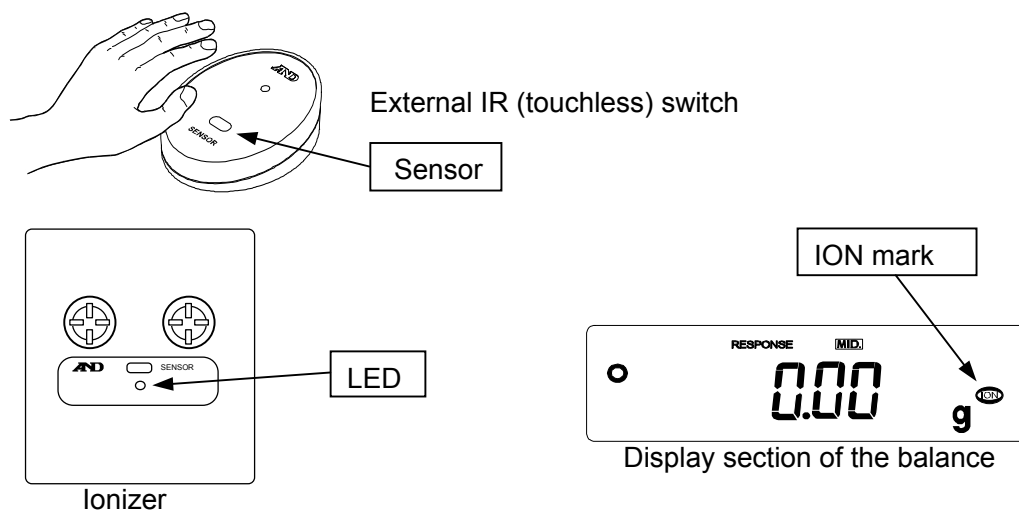
Step 3　Static elimination stops automatically after an interval has passed (set in function settings, default: three seconds).

The buzzer will sound and the ionizer LED will turn off to signal the end of static elimination.

While the ionizer is active, hold the weighing sample until the ionizer LED turns off. (Failure to do so may result in the weighing sample not being sufficiently neutralized and cause weighing errors.)

Note

□　When the external IR switch is connected, the IR switch inside of the ionizer cannot be used.

□　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 used. The balance automatically returns to the previous weighing mode some time after neutralization is completed.

□　While the ionizer is active, make sure that the weighing sample is neutralized until the ionizer 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, default: three seconds) can be changed using the balance's function settings. (Refer to 2. Function Settings of the Balance)

□　If the IR switch is kept at on after static elimination is complete, the ionizer LED will blink to alert the user.

□　When the static elimination interval is set to manual, the ionizer can only be controlled externally (external IR switch or optional foot switch). Manual static elimation can be done up to 10 minutes.

□　When the external IR switch is not connected, the IR switch inside the breeze break can be used, but depending on the material of the sample it may not respond.
（We recommended using the external IR switch）

□　Do not perform static elimination, weighing or use the foot switch (AX-SW137-PRINT or AX-SW137-REZERO) while the balance is outputting non-weighing data (GPL data, calculation result data, statistical data, or data stored in memory).

Doing so may cause the balance to prevent the display from updating. If the balance display does not update, reset the balance by unplugging and replugging the AC adapter.

For details about the balance data output (function settings), refer to the balance instruction manual.

1.4. Controlling the Ionizer Externally

By using a foot switch (AX-SW137-PRINT or AX-SW137-REZERO), PRINT or RE-ZERO or the static elimination function for the ionizer can be used.

□ Connect the foot switch to the external input connector.

□ You can assign a key to an AX-SW137-PRINT or AX-SW137-REZERO foot switch (sold separately) through the external input connector function $Ex\ PRt$ or $Ex\ R$ (depending on the foot switch model) in ionizer function ($ion\ Fnc$) balance settings.

□ Press the foot switch while the ionizer is operating to stop neutralization.

Balance software version 1.200 to 1.220

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

| Class	Item	Parameter		Details and usage
$ion\ Fnc$	$Ex\ PRt$	0	ION key	Assigns a key to begin static elimination to the AX-SW137-PRINT. (The ionizer internal IR switch is disabled.)
		• 1	PRINT key	Assigns the PRINT key function of the balance.

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

Class	Item	Parameter		Description
$ion\ Fnc$	$Ex\ R$	0	ION key	Assigns a key to begin static elimination to the AX-SW137-REZERO. (The ionizer internal IR switch is disabled.)
		• 1	RE-ZERO key	Assigns the RE-ZERO key function of the balance.

Balance software version 1.300 or later

| Class	Item	Parameter		Description
$ion\ Fnc$	$Ex\ SW$	0	ION key	Assigns a key to begin static elimination to the AX-SW137-PRINT or AX-SW137-REZERO. (The ionizer internal IR switch is disabled.)
		• 1	PRINT key or RE-ZERO key	When connecting the AX-SW137-PRINT (accessory), assigns the PRINT key function of the balance. When connecting the AX-SW137- REZERO (accessory), assigns the RE-ZERO key function of the balance.

• indicates factory settings.

External input connector

Connector for the ionizer

Connector for IR (touchless) switch

8
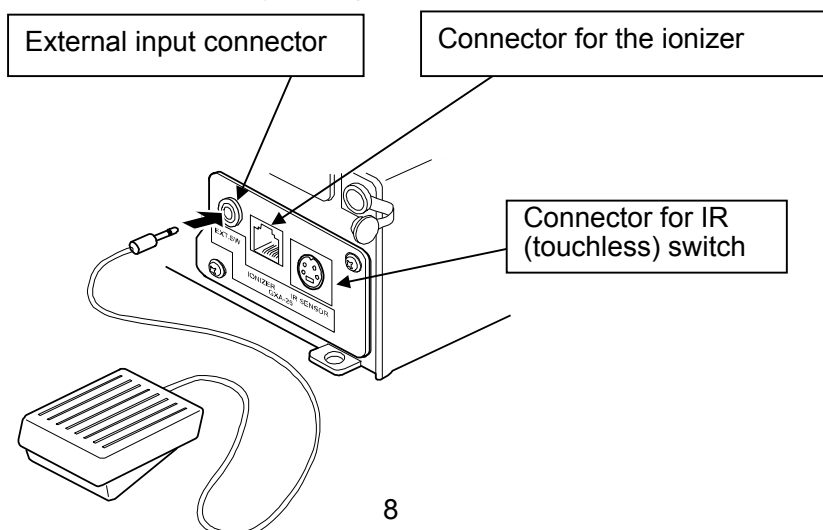
2. Function Settings of the Balance

The function table stores parameters that specify how the balance operates and is used to monitor or update those parameters. Function settings can be used to configure the performance of the ionizer. The parameters are stored in memory until overwritten even if the AC adapter is removed. The 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.
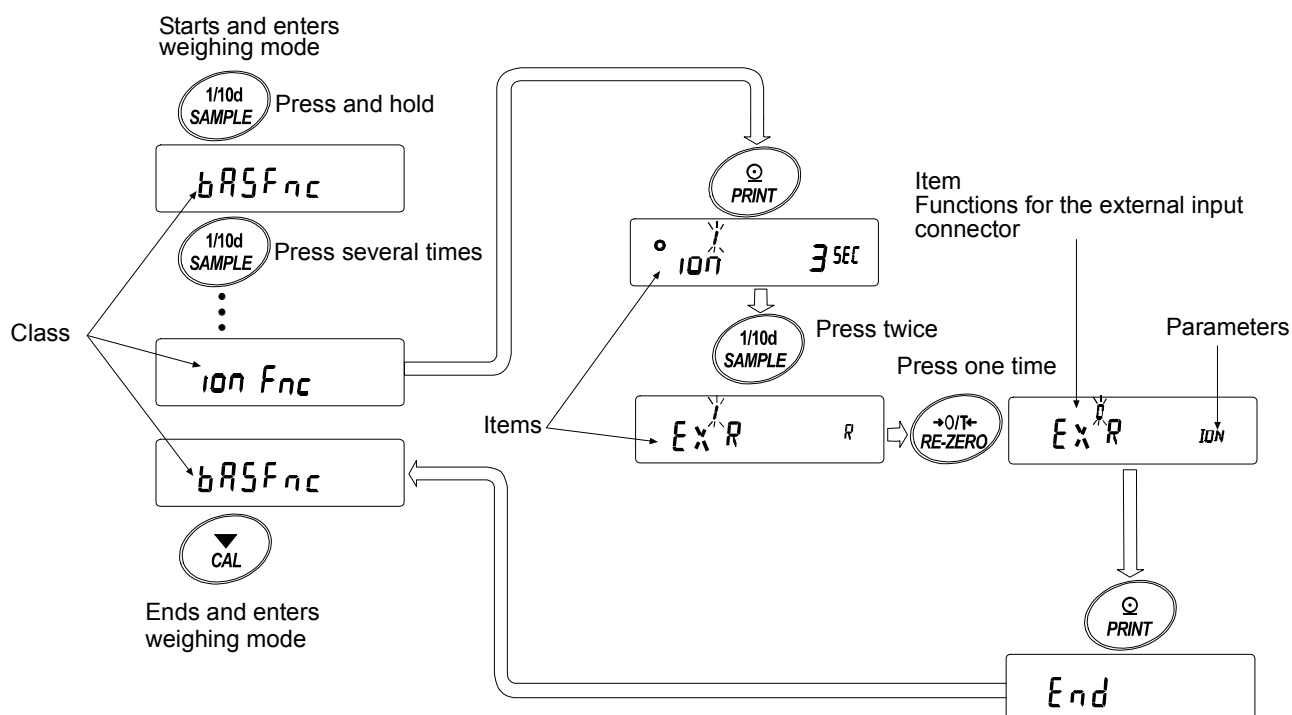
Note: The balance may not function properly depending on the settings and the operating enviroment.

Be sure to set parameters correctly.

2.1. Function settings display 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. 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. Stores the new parameter and displays the next class when an item is displayed.
▼ CAL	Cancels new parameter and displays the next class when an item is displayed. Exits the function table and returns to the weighing mode when a class is displayed.

2.2. Function Table

Note: Functions 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 balance's 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 locking			
Auto CAL ✱ Auto calibration			
ion Fnc Static eliminator ※1 ※2	*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 internal IR switch is disabled.)
	Ex PRt Functions for the external input connector	0	ION key (The internal IR switch is disabled.)
		• 1	PRINT key
	Ex R Functions for the external input connector	0	ION key (The internal IR switch is disabled.)
		• 1	RE-ZERO key
	Ex SW Functions for the external input connector	0	ION key (The internal IR switch is disabled.)
		• 1	PRINT key (When connecting the AX-SW137-PRINT) RE-ZERO key (When connecting the AX-SW137- REZERO)
CS in ✱ Correction for internal weight value			(Refer to balance's instruction manual.)

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

※1 With balance software version 1.200 to 1.220

※2 With balance software version 1.300 or later

3. Maintenance of the Electrode Unit

☐   In general, when using the ionizer for a long time, dust may stick to the electrodes, which decreases static elimination performance. Clean them periodically to maintain performance.

☐   If the static elimination function does not work after the needles of the electrodes are cleaned, replace both electrode units with new ones. This is generally caused by wear to the needles.
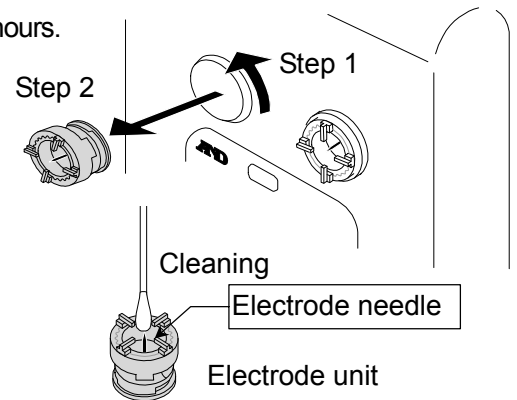
The standard life of an electrode unit is approximately 10,000 hours.

Replacing Electrode Units

Step 1 Turn the electrode units 45 degrees counterclockwise to remove from the ionizer.

Step 2 Replace both electrode units with new ones.

Step 3 Turn the electrode units 45 degrees clockwise to insert into the ionizer.

Note

Do not remove the electrodes while the LED is on and the ION mark is flashing.

(Disconnect the AC adapter or the cable from the breeze break before replacing the electrodes.)

4. Specifications

|	
Static neutralization method	Corona discharge
Effective neutralization range	Approx. 10 cm to 50 cm from the electrode needle
Neutralization performance	1 sec. (at a distance of approx. 10 cm and 4kV electrical charge)
Ambient temperature and humidity	5 to 45°C, 85%RH or less (No condensation)
Electrode needle	Tungsten (with a life of approx. 10,000 hours)
Mass	Glass breeze break with ionizer: about 2.5 kg external IR switch: about 80 g
Dimension (Glass breeze break with ionizer)	259W x 274D x 268H

Materials of the glass breeze break

Glass parts	Tempered glass (anti-static treatment on inside face)
Resin parts	Anti-static ABS, Polyacetal
Metal parts	Stainless steel, iron
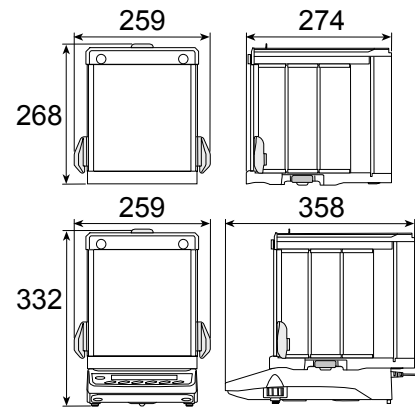
5. Options

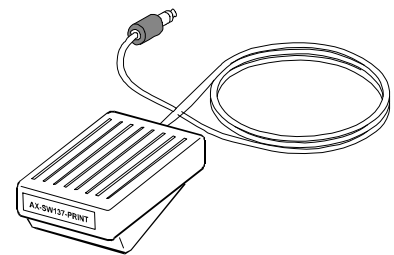**Electrode Unit   AX-BM-NEEDLESET (4 pieces)**

□   Replacement parts for the electrode units.

□   Replace both two units with new ones at the same time.

□   Refer to 3. Maintenance of the Electrode Unit
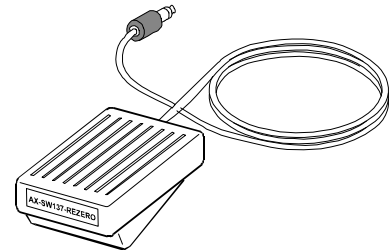
for the replacement method.
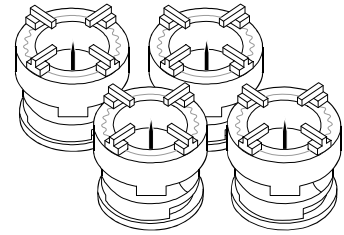
Foot switch with a plug (PRINT)   AX-SW137-PRINT

□   Controls the balance PRINT operation and the

ionizer activation.

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

□   Controls the balance REZERO operation and the

ionizer activation.

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