



## **Water Purifier Autostill®**

**WG252/1012**

# **Instruction Manual** STRUCTURE

First Edition

**Thank you for choosing Auto Still® WG252/1012  
Yamato Scientific Co., Ltd.**

• **For proper equipment operation, please read and become thoroughly familiar with this instruction manual before use. Always keep equipment documentation safe and close at hand for convenient future reference.**

**Warning:** The warning items described in the instruction manual make the product safe. Please read it carefully and understand it well before use.



**Yamato Scientific Co. Ltd.**

Printed on recycled paper



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# 1. Safety precautions


## Explanation of Symbols

### A Word Regarding Symbols

Various symbols are provided throughout this text and on equipment to ensure safe operation. Failure to comprehend the operational hazards and risks associated with these symbols may lead to adverse results as explained below. Become thoroughly familiar with all symbols and their meanings by carefully reading the following text regarding symbols before proceeding

---

 **Warning** Signifies a situation which may result in serious injury or death (Note 1.)

 **Caution** Signifies a situation which may result in minor injury (Note 2) and/or property damage (Note 3.)

---

(Note 1) Serious injury is defined as bodily wounds, electrocution, bone breaks/fractures or poisoning, which may cause debilitation requiring extended hospitalization and/or outpatient treatment.

(Note 2) Minor injury is defined as bodily wounds or electrocution, which will not require extended hospitalization or outpatient treatment.

(Note 3) Property damage is defined as damage to facilities, equipment, buildings or other property.

### Symbol Meanings



Signifies warning or caution.  
Specific explanation will follow symbol.



Signifies restriction.  
Specific restrictions will follow symbol.



Signifies an action or actions which operator must undertake.  
Specific instructions will follow symbol.

# 1. Safety precautions

## Symbol Glossary

### WARNING / CAUTION



General



Danger!: High Voltage



Danger!: High Temperature



Danger!: Blast Hazard



Caution: Burn Hazard!



Caution: May Leak Water!



Caution: Shock Hazard!

### RESTRICTION



General Restriction



Do Not Disassemble

### ACTION



General Action Required



Connect Ground Wire



Level Installation



Disconnect Power



Inspect Regularly

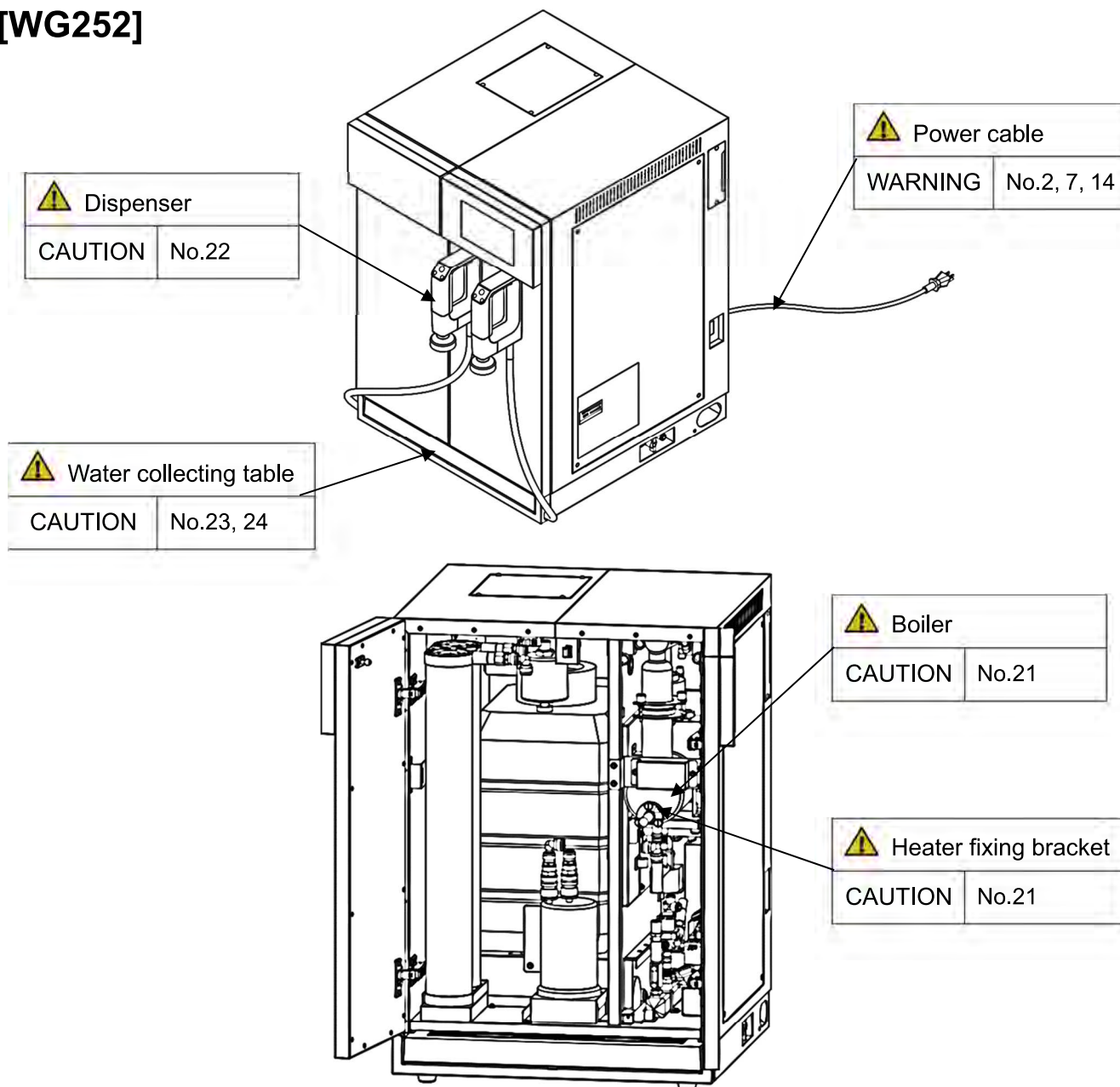
# 1. Safety precautions

## Residual Risk Map

The numbers shown in the figure indicate the numbers listed in the "List of Residual Risks" in this manual.

For details of individual residual risks, see the List of Residual Risks.

[WG252]



Residual risk of unspecified location on equipment	
<b>WARNING</b>	No.1, 13, 15, 26, 27, 28
<b>CAUTION</b>	No.3, 4, 5, 6, 8, 9, 10, 11, 12, 16, 17, 18, 19, 20, 25, 29

Contact us if the caution signs are no more visible because nameplate is peeled off or texts are eliminated. We will send you a new nameplate. (for charge)

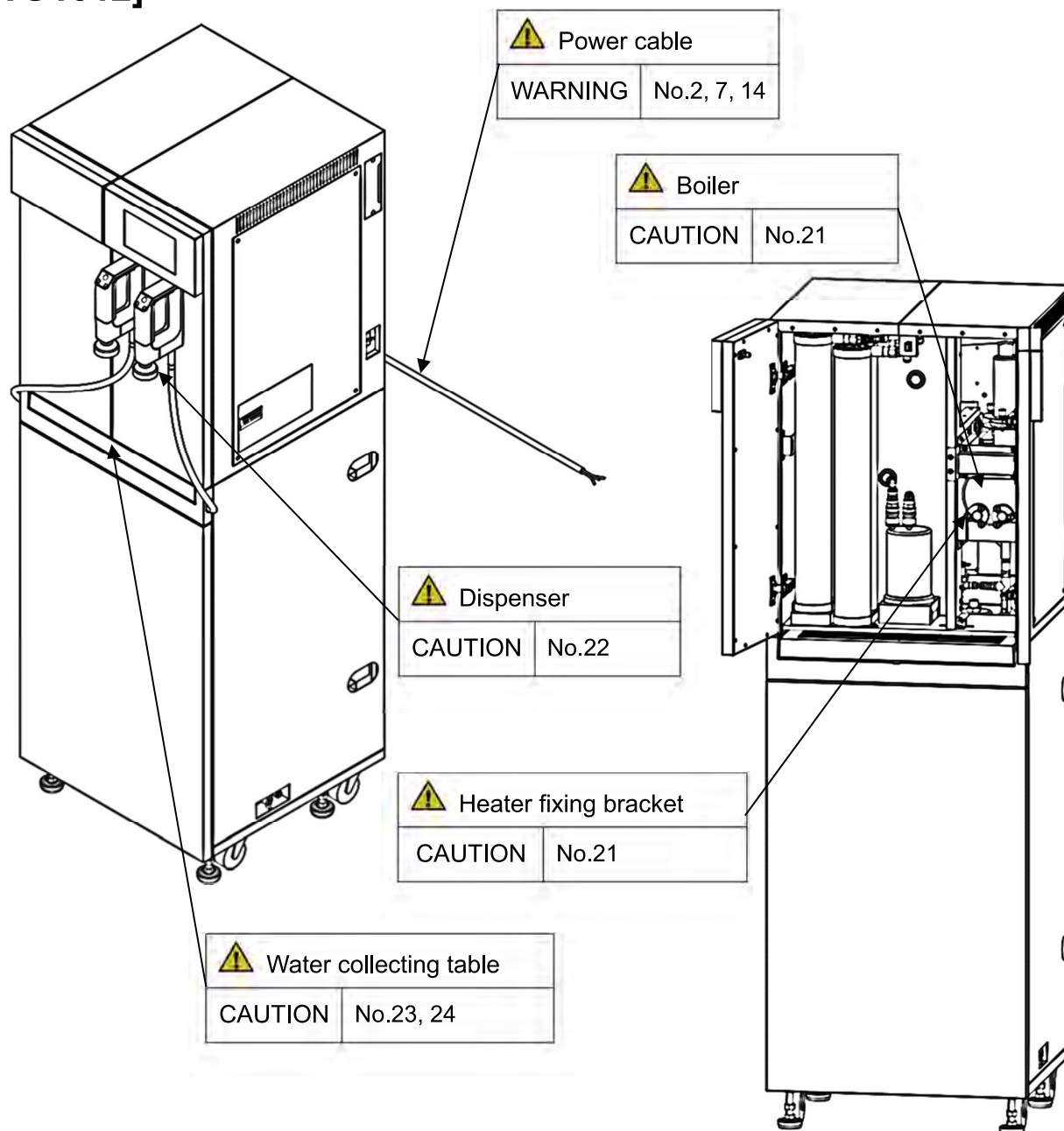
# 1. Safety precautions

## Residual Risk Map

The numbers shown in the figure indicate the numbers listed in the "List of Residual Risks" in this manual.

For details of individual residual risks, see the List of Residual Risks.

**[WG1012]**



Residual risk of unspecified location on equipment	
WARNING	No.1, 13, 15, 26, 27, 28
CAUTION	No.3, 4, 5, 6, 8, 9, 10, 11, 12, 16, 17, 18, 19, 20, 25, 29

Contact us if the caution signs are no more visible because nameplate is peeled off or texts are eliminated. We will send you a new nameplate. (for charge)



# 1. Safety precautions

## List of Residual Risks

### List of residual risks (instructions for risk avoidance)

This list summarizes residual risks to avoid personal injuries or damages to properties during or related to the use of equipment.

**Be sure to fully understand or receive instructions on how to use, maintain and inspect equipment before starting operation.**

Loading/Installation				
No	Degree of risks	Risk description	Protective measures taken by the user	Relevant page(s)
1	WARNING	Fire, breakdown	Install in a location free of flammables and explosives.	P.7
2	WARNING	Fire/Electric shock	Ground wire MUST be connected properly	P.7
3	CAUTION	Fire, breakdown	Choose an appropriate installation site.	P.28
4	CAUTION	Breakdown, injury	Use cargo-handling equipment for transportation and installation.	P.28
5	CAUTION	Errors	Install unit on a level surface.	P.29
6	CAUTION	Errors	Stabilize equipment properly to assure safe operation and a safe work area.	P.29
7	WARNING	Errors	Always connect power cable to appropriate facility outlet or terminal.	P.29
8	CAUTION	Breakdown, water leak	Ensure adequate raw water pressure.	P.29
9	CAUTION	Errors	Use tap water as raw water.	P.29
10	CAUTION	Breakdown, water leak	Do not turn the pressure reducing valve	P.29
11	CAUTION	Errors	Please install in a clean atmosphere	P.30
12	CAUTION	Breakdown, injury	Please fix with an adjuster	P.30

# 1. Safety precautions

## List of Residual Risks

Use				
№	Degree of risks	Risk description	Protective measures taken by the user	Relevant page(s)
13	WARNING	Fire/Electric shock	Turn OFF (○) ELB immediately when an abnormality occurs.	P.8
14	WARNING	Fire/Electric shock	Handle power cable with care.	P.8
15	WARNING	Errors	Please use at an appropriate temperature	P.8
16	CAUTION	Fire, breakdown	DO NOT operate equipment during thunderstorms	P.9
17	CAUTION	Fire	Turn OFF (○) ELB in case of power failure.	P.9
18	CAUTION	Water leak	When not driving, close the water tap and set the breaker to "OFF (○)".	P.9
19	CAUTION	Injury	Handle scale cleaner carefully.	P.9
20	CAUTION	Breakdown, injury	DO NOT climb or place any objects on top of equipment.	P.9
21	CAUTION	Burn	DO NOT touch hot surfaces.	P.10
22	CAUTION	Breakdown, injury	Be careful when handling the dispenser	P.10
23	CAUTION	Injury	Push in the front part when storing the dispenser tray.	P.10
24	CAUTION	Injury	Do not open the door with anything in front of it	P.10
25	CAUTION	Errors	Do not use the dispenser tray as a work table or storage table.	P.10

Daily inspection/maintenance				
№	Degree of risks	Risk description	Protective measures taken by the user	Relevant page(s)
26	WARNING	Fire/Electric shock	Remove the power cable for inspection and maintenance.	P.40
27	WARNING	Burn	Perform inspections and maintenance when unit is at room temperature.	P.40
28	WARNING	Fire/Electric shock	NEVER disassemble or modify unit.	P.8

Extended storage/disposal				
№	Degree of risks	Risk description	Protective measures taken by the user	Relevant page(s)
29	CAUTION	Injury	Do not leave unit in a location where children may have access.	P.52

# 1. Safety precautions

## Warnings and Cautions

### WARNING



#### **Install in a location free of flammables and explosives.**



Never install or operate unit in a flammable or explosive gas atmosphere. Unit is NOT fire or blast resistant. Simply switching earth leakage breaker (ELB) "ON" or "OFF" can produce a spark, which can then be relayed during operation, causing fire or explosion when near flammable or explosive fluids, chemicals or gases/fumes. See "12. LIST OF HAZARDOUS SUBSTANCES" (P.61 ) for information on flammable and explosive gases.



#### **Ground wire MUST be connected properly. (WG252)**

- Connect power cable to a grounded outlet in order to avoid electric shock.
- Never insert multiple plugs into a single outlet. Doing so may result in power cable overheating, fire or drop in voltage.

Grounded outlet



Grounding prong

Grounded plug

When no ground terminal is found

Contact original dealer of purchase for location-specific electrical requirements.

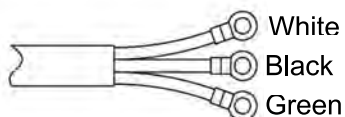


#### **Ground wire MUST be connected properly. (WG1012)**

If there is no grounding terminal contact original dealer of purchase for location-specific electrical requirements.

Securely connect to a distribution board.

No power plugs or connectors of any kind are included with xxxx series unit. When using a power plug, use a plug that meets the voltage and electrical capacity.



Core color	Wiring on distribution board
White	Neutral
Black	Live
Green	Ground



Never connect ground wire to gas lines, water lines or telephone grounding lines. Accident or equipment malfunction may result.

# 1. Safety precautions

## Warning / Caution



### Turn OFF (○) ELB immediately when an abnormality occurs.



If unit begins emitting smoke, fire or abnormal odors for reasons unknown, turn OFF (○) ELB immediately, disconnect power cable from power supply, and contact original dealer of purchase for assistance. Failure to do so may result in damage to components, fire or electric shock. Never attempt to disassemble or repair unit. Repairs should always be performed by a certified technician.



### Handle power cable with care.



Observe the following precautions in order to prevent fire, electric shock, or other accidents.

- Do not operate unit with power cable bundled or tangled.
- Do not modify, bend, forcibly twist or pull on power cable.
- Do not risk damage to power cable by positioning it under desks or chairs, or by allowing it to be pinched in between objects.
- Do not place power cable near kerosene/electric heaters or other heat-generating devices.
- Regularly check and clean the connection part, and avoid using an old outlet.

Turn off (○) ELB immediately and disconnect from facility terminal or outlet, if power cable becomes partially severed or damaged in any way. Contact original dealer of purchase for information about replacing power cable.



### DO NOT disassemble or modify equipment

Never attempt to disassemble or modify unit. Doing so may cause malfunction, fire, electric shock, or personal injury. Note that any malfunction resulting from unauthorized modifications or customizations to unit will void the warranty.



### Please use at an appropriate temperature

Use within the ambient temperature range described in the specifications column. Using it outside the surroundings ambient temperature range may cause a product failure or accident.

# 1. Safety precautions

## Warnings and Cautions



### Caution



#### **DO NOT operate equipment during thunderstorms**

In the event of a thunderstorm, turn OFF (○) ELB and disconnect power cable immediately. A direct lightning strike may cause equipment damage, fire or electric shock, resulting in serious injury or death.



#### **Turn OFF (○) ELB in case of power failure.**

Operation stops when power failures occur. For added safety however, turn OFF (○) ELB in the event of a power failure.



#### **When not driving, close the water tap and set the breaker to "OFF (○)".**

Be sure to close the tap when not operating (during the night or holidays). Failure to do so may result in water leakage.



#### **Handle scale cleaner (Orgazole) with care.**

- Store scale cleaner in a sealable container and avoid high temperature and humidity.
- The main component of Orgazole 10 scale cleaner is sulfamic acid (the pH of the water solution is about 1).
- Always wear protective equipment (gloves, mask, and glasses) when handling the cleaner.
- If the cleaner comes in contact with any part of human body, wash thoroughly with clean water.
- Neutralize the liquid used for cleaning with neutralizer (sodium hydrate, etc.).
- Use pH test paper to check whether the liquid has been neutralized.
- Empty container must not be used to contain drinks.
- Do not release the cleaner into agricultural canals and fields. Doing so may cause withering of crops.



#### **DO NOT climb or place any objects on top of equipment.**

Personal injury or equipment malfunction may result due to falling.

# 1. Safety precautions

## Warnings and Cautions



### **DO NOT touch hot surfaces**

Some parts of boiler become hot during operation or for a while after operation. Use caution not to get burned. Make sure that boiler is cooled before inspecting/maintaining heater and other components or draining boiler.



### **Be careful when handling the dispenser**

- A neodymium magnet is mounted inside the dispenser. If you are wearing an electronic medical device such as a cardiac pacemaker, handle it with care, such as using it away from your body. Be careful not to bring it close to a magnetic recording medium such as a magnetic card, the operation panel of this product, or precision electronic devices such as a personal computer, as it may cause a malfunction. Also, be careful not to pinch your hands or fingers when installing the dispenser.
- The dispenser is made of resin. If you handle it roughly or drop it, it may crack, so please be careful.
- Because there is a risk of water getting inside the dispenser, be sure to point the water sampling port downward when using.
- When moving the dispenser, be careful as the water accumulated in the membrane filter may drip.



### **Push in the front part when storing the dispenser tray.**

When storing the water sampling table, do not grab the water sampling table and push in the front part. If you grab it and store it, you may get injured by pinching your hands or fingers.



### **Do not open the door with anything in front of it**

Do not open the door with anything in front of it. Objects may fall from the dispenser tray and fall or be damaged.



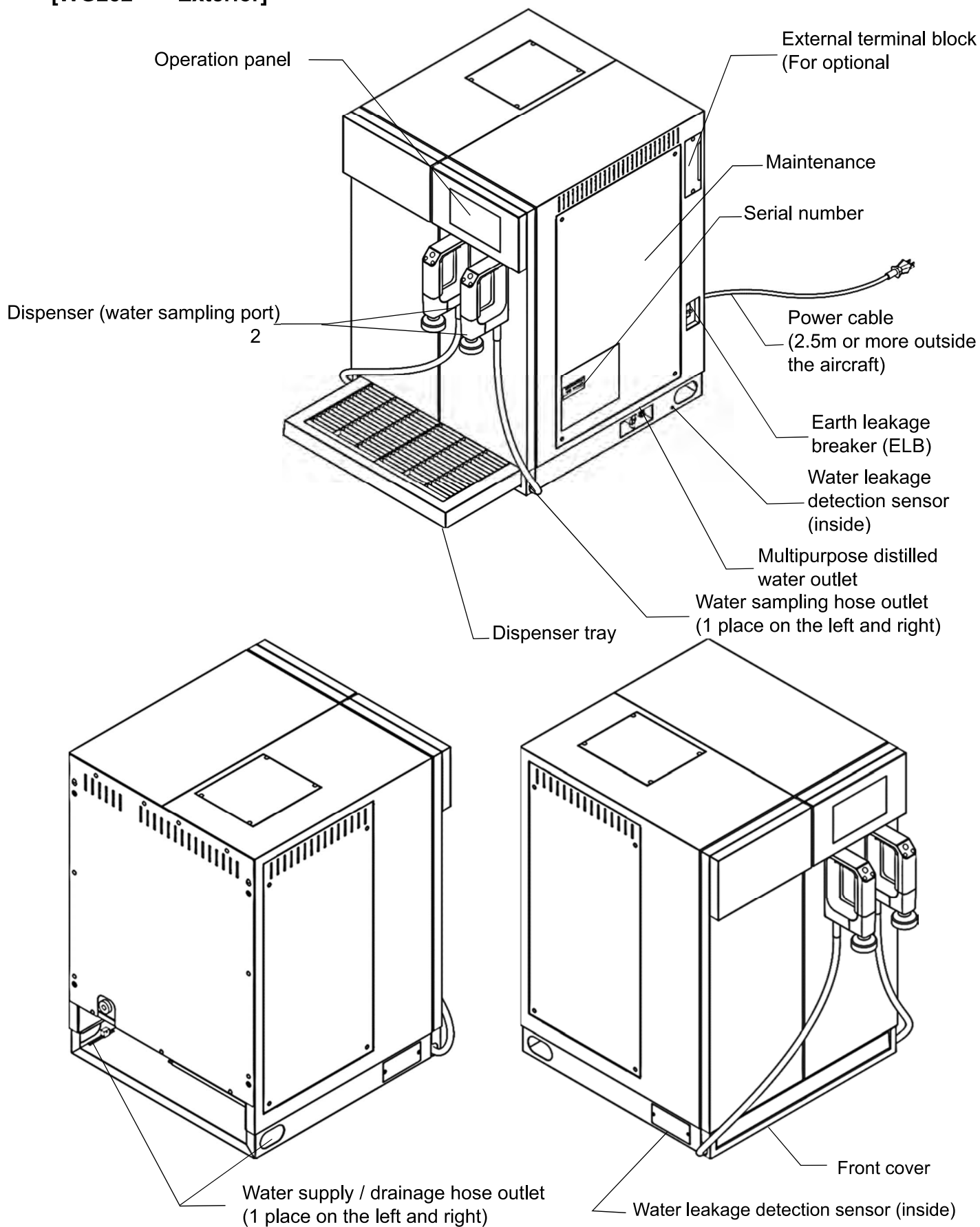
### **Do not use the dispenser tray as a work table or storage table.**

Do not use the dispenser tray as a work table or storage table. If an excessive load is applied, the dispenser tray may be damaged or the product may tip over.

## 2. COMPONENT NAMES AND FUNCTIONS

### Main Unit

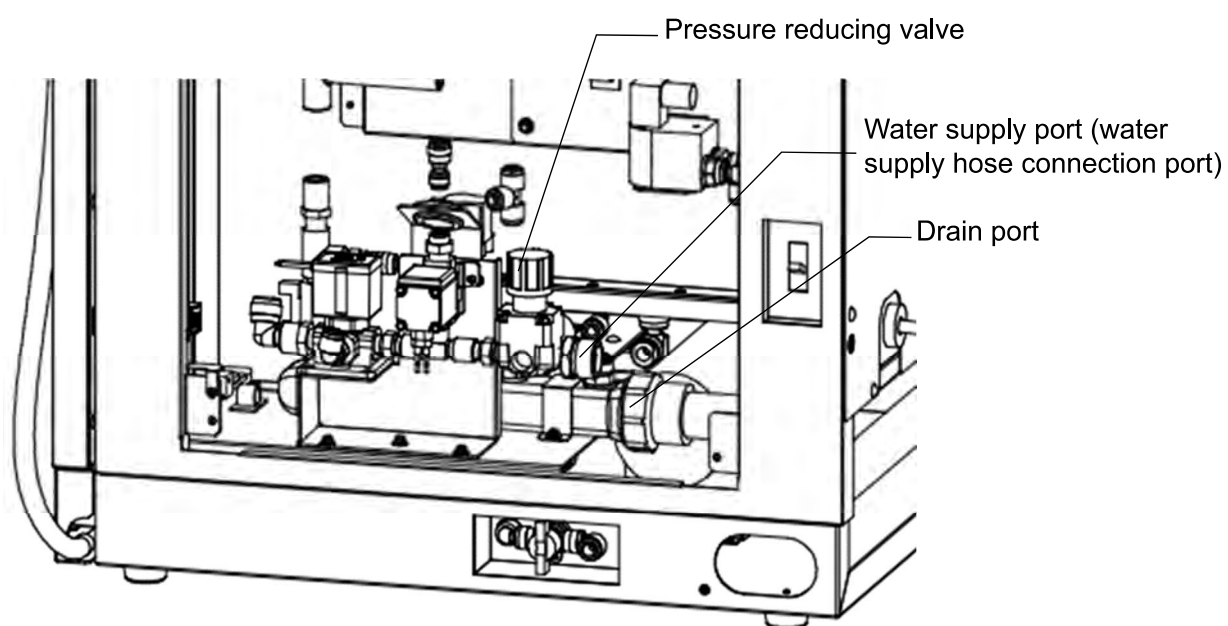
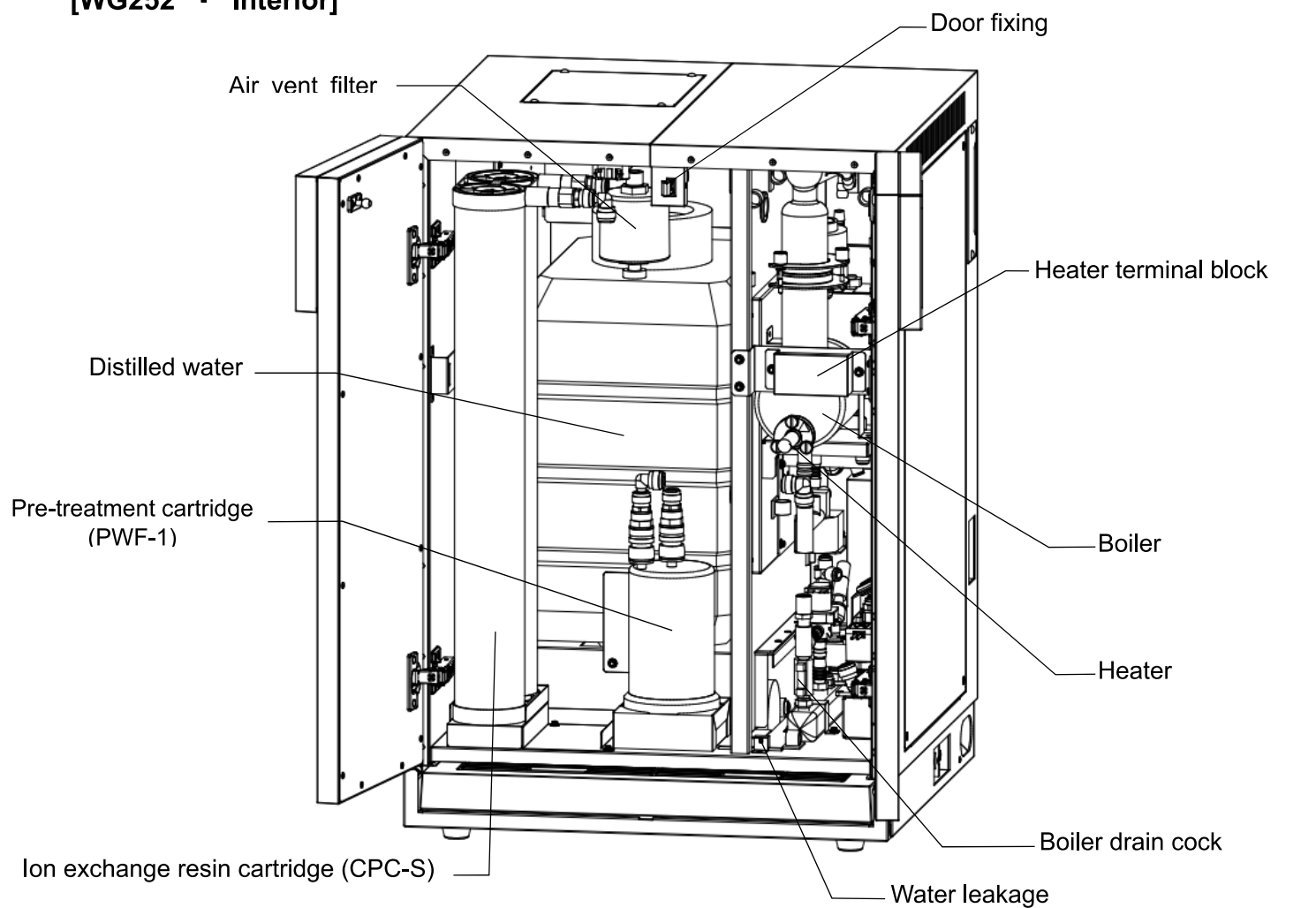
#### [WG252 ▪ Exterior]



## 2. COMPONENT NAMES AND FUNCTIONS

### Main Unit

#### [WG252 ▪ Interior]

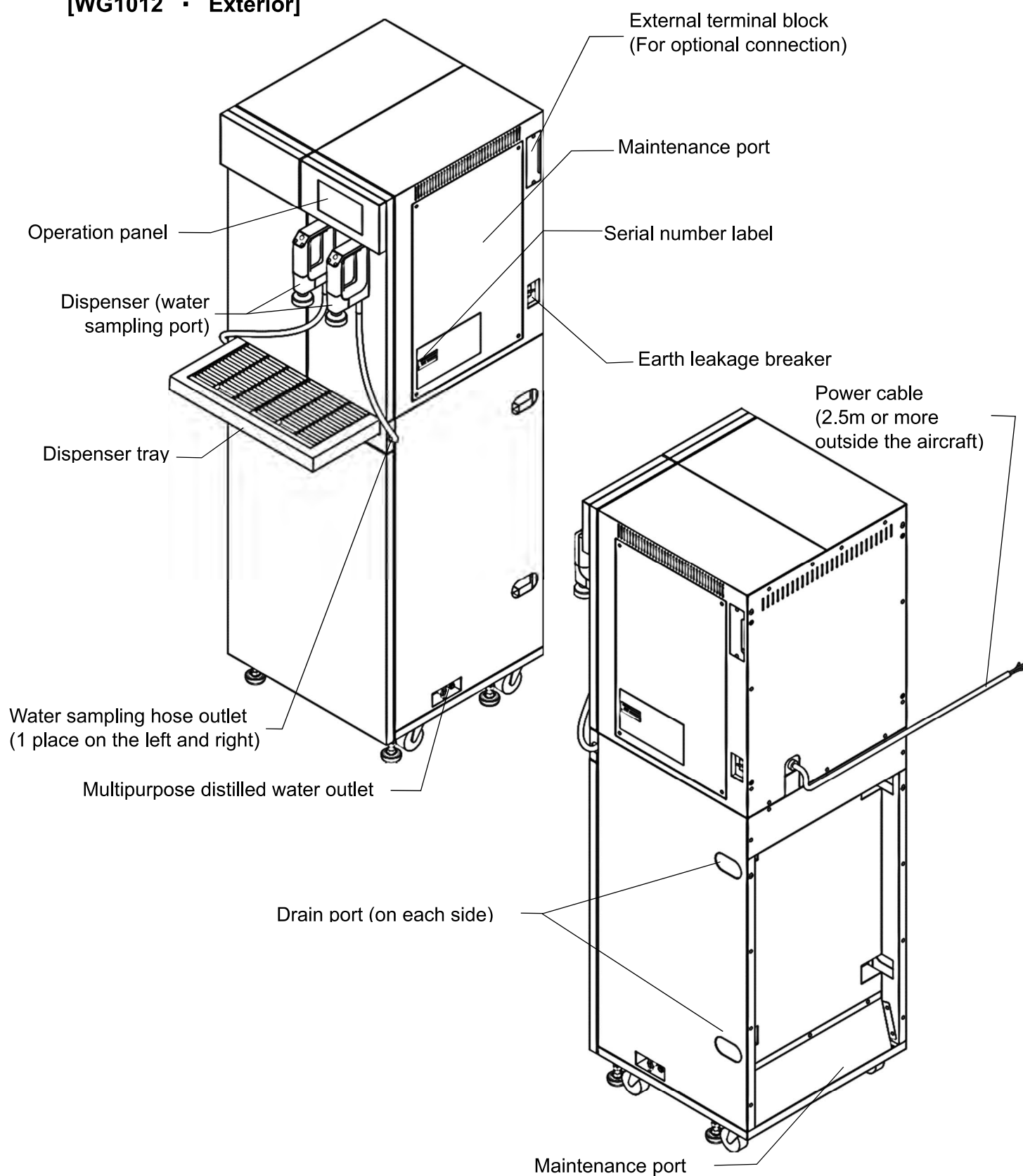




## 2. COMPONENT NAMES AND FUNCTIONS

### Main Unit

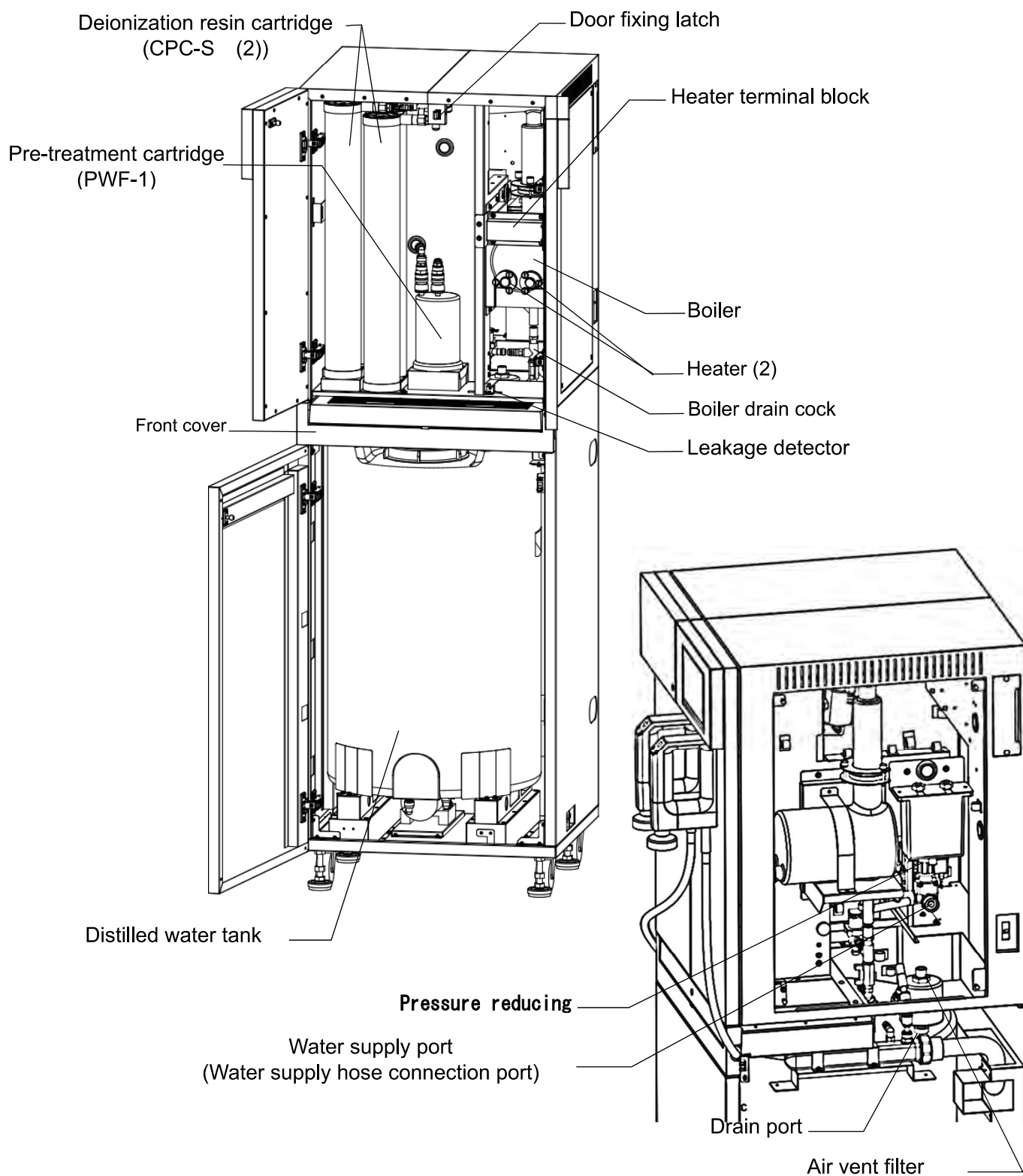
#### [WG1012 ▪ Exterior]



## 2. COMPONENT NAMES AND FUNCTIONS

### Main Unit

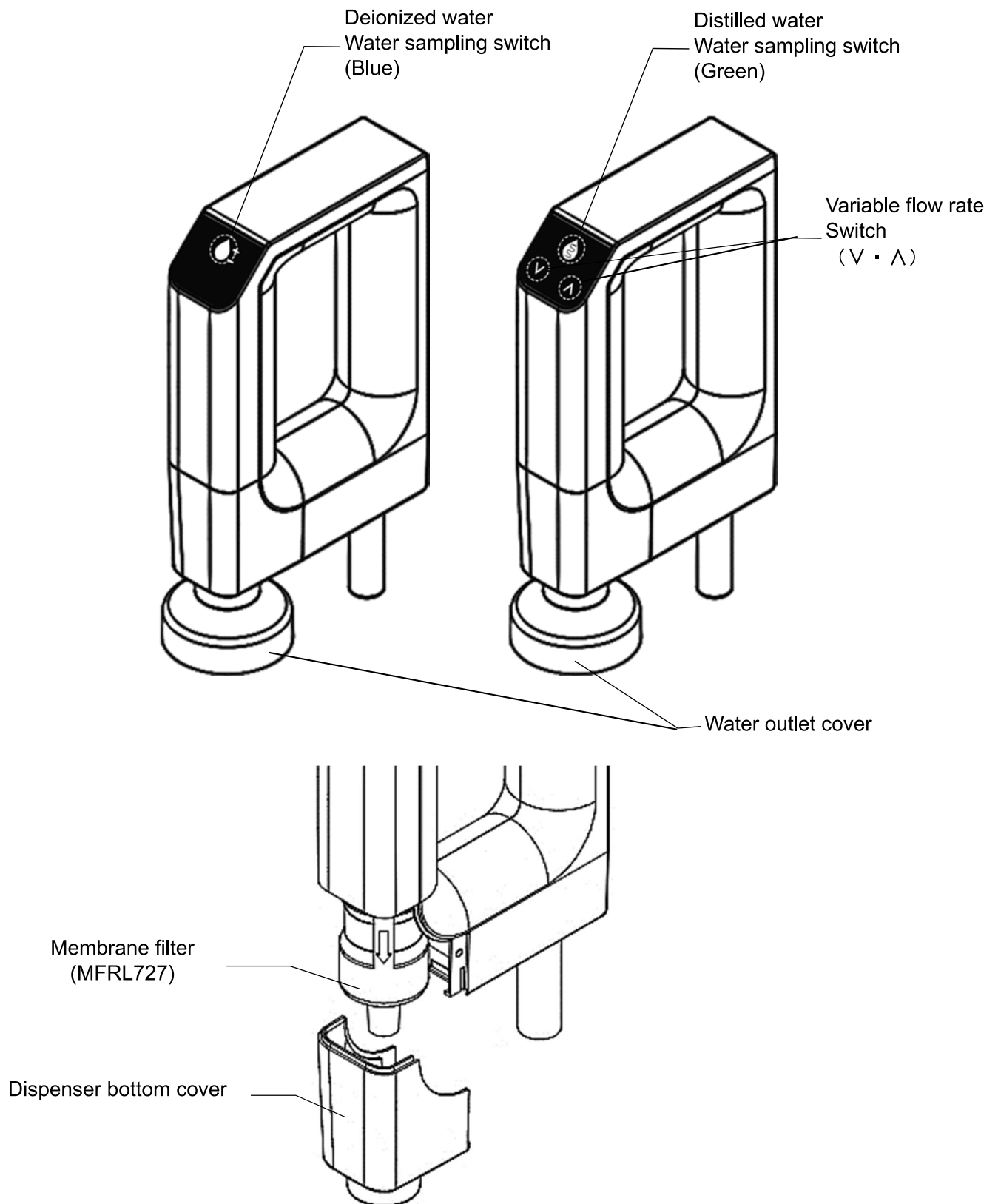
#### [WG1012 ▪ Interior]



## 2. COMPONENT NAMES AND FUNCTIONS

### Main Unit

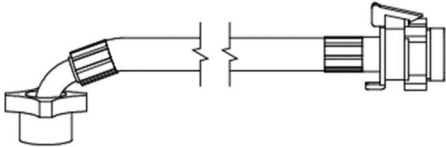
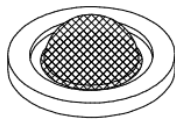

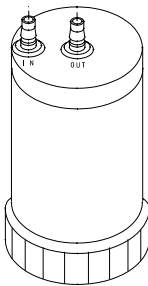
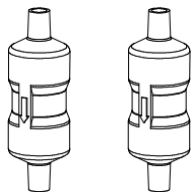

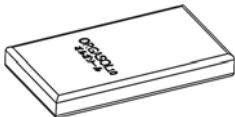
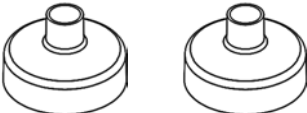

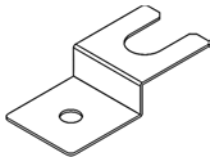
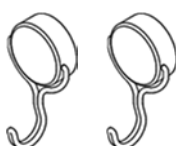

#### [Dispenser]



## 2. COMPONENT NAMES AND FUNCTIONS

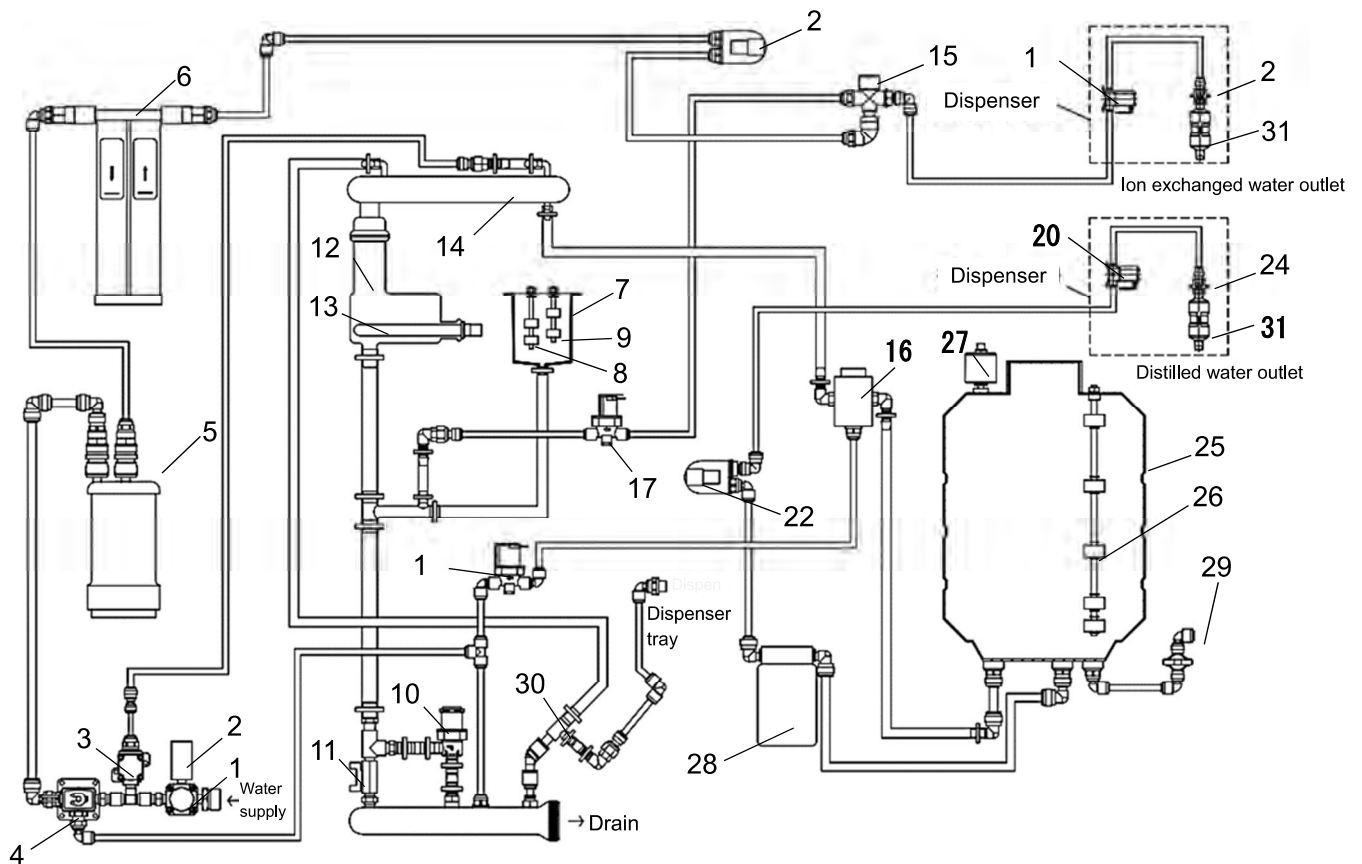
### Accessories

Check before operation that all the accessories are complete. Contact original dealer of purchase if anything is missing.

<p>Water supply hose (2 m) . . . 1</p> 	<p>Water supply hose filter . . . 1</p> 
<p>Ion-exchange resin cartridge (CPC-S) . . . 1 ※WG1012 (2)</p> 	<p>Pre-treatment cartridge (PWF-1) . . . 1</p> 
<p>Membrane filter (MFRL727) . . . 2</p> 	<p>Air vent filter (YABF-1) . . . 1</p> 
<p>Scale cleaner . . . 1</p> 	<p>Water outlet cover . . . 2 (For membrane filter)</p> 
<p>Connection hose assembly . . . 1 ※WG1012 (2)</p> 	<p>Adjuster fixing bracket . . . 4 ※ WG1012 only</p> 
<p>Magnet hook . . . 2</p> 	<p>Instruction manual(2 types), Warranty card . . . 1 each</p> 

## 2. COMPONENT NAMES AND FUNCTIONS

### Piping System Diagram



- 1 Pressure reducing valve
- 2 Pressure switch
- 3 Solenoid valve for cooling water
- 4 Solenoid valve for raw water supply
- 5 Pre-treatment cartridge
- 6 Ion-exchange resin cartridge (CPC-S)  
(Use two for WG1012 type)
- 7 Float cylinder
- 8 Float switch for boiler (1)
- 9 Float switch for boiler (2)
- 10 Solenoid valve for boiler drainage
- 11 Boiler drain cock
- 12 Boiler
- 13 Heater
- 14 Condenser
- 15 Ion exchanged water quality gauge electrode

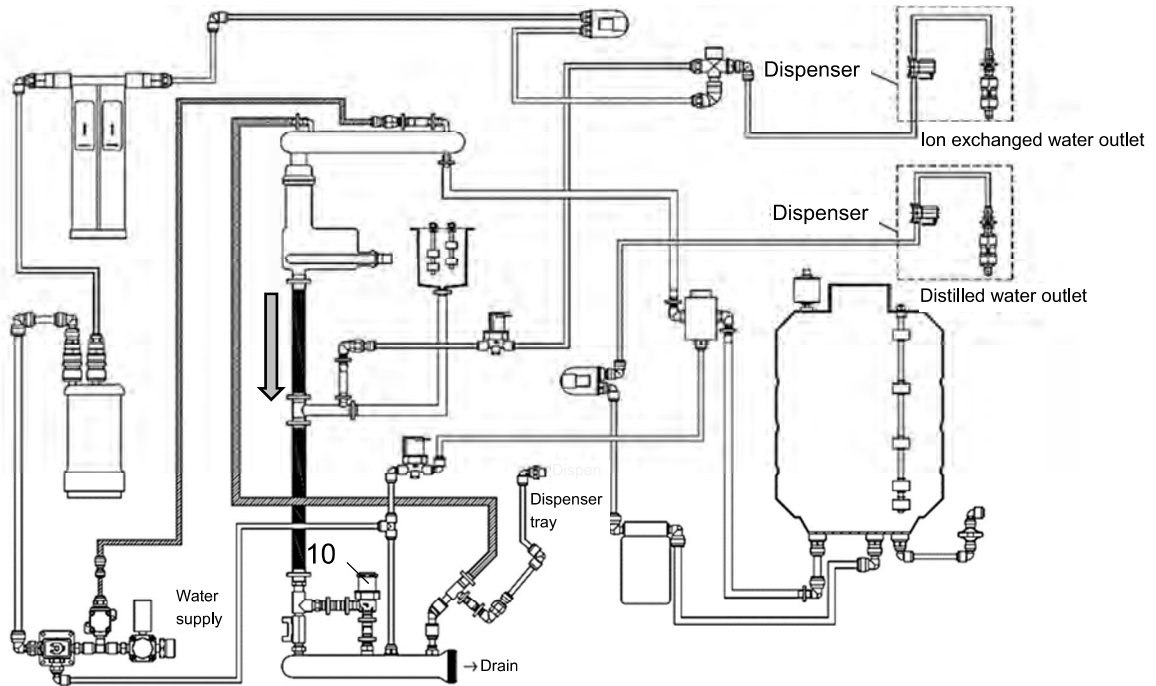
- 16 Distilled water quality gauge electrode
- 17 Solenoid valve for boiler water supply
- 18 Solenoid valve for initial distilled water drain
- 19 Solenoid valve for deionized water collection
- 20 Solenoid valve for distilled water collection
- 21 deionized water flow rate sensor
- 22 Distilled water flow rate sensor
- 23 Ion exchanged water outlet
- 24 Distilled water outlet
- 25 Distilled water tank
- 26 Float switch for tank
- 27 Tank air vent filter
- 28 Distilled water dispensing pump
- 29 Multipurpose distilled water outlet
- 30 Aspirator
- 31 Membrane filter

## 2. COMPONENT NAMES AND FUNCTIONS

### Operating principle

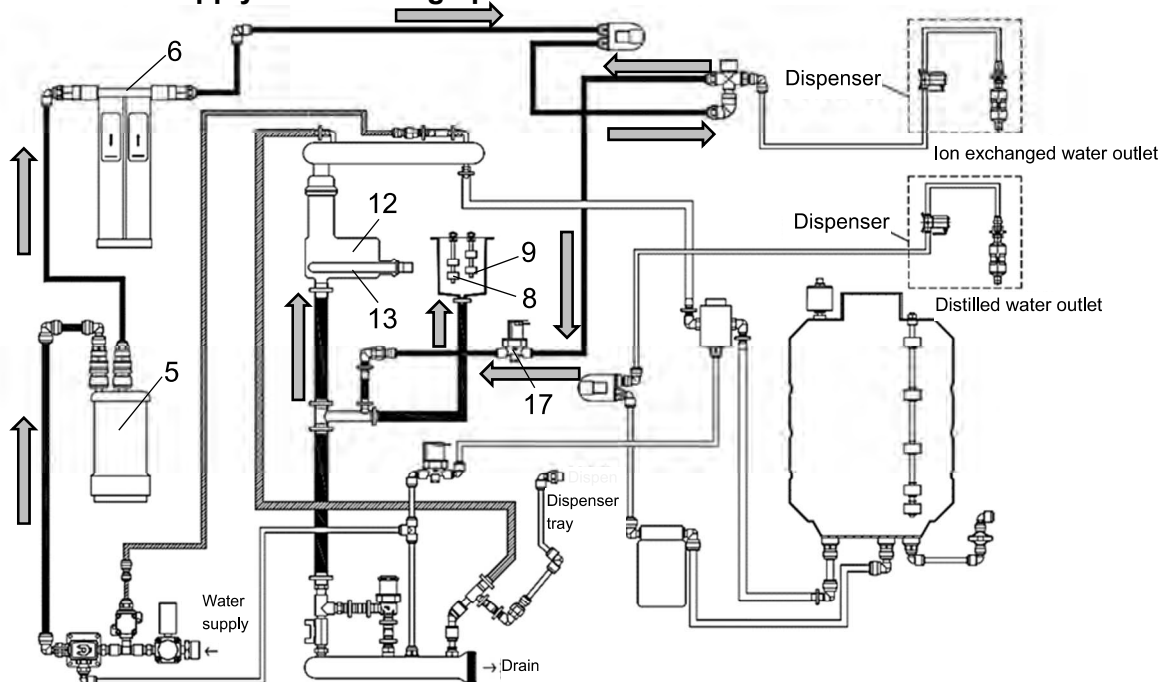
The operation principles of WG252/1012 for each process is defined as follows.

#### (1) Drain boiler



- If you turn the breaker off (○) for 10 minutes or more and then turn it on (|), "10. Solenoid valve for boiler drainage" will open to drain the boiler. After that, while the product is in operation, distillation is performed for 3 to 5 hours, or boiler drainage is performed every 10 hours including the standby state.

#### (2) Boiler water supply and distilling operation

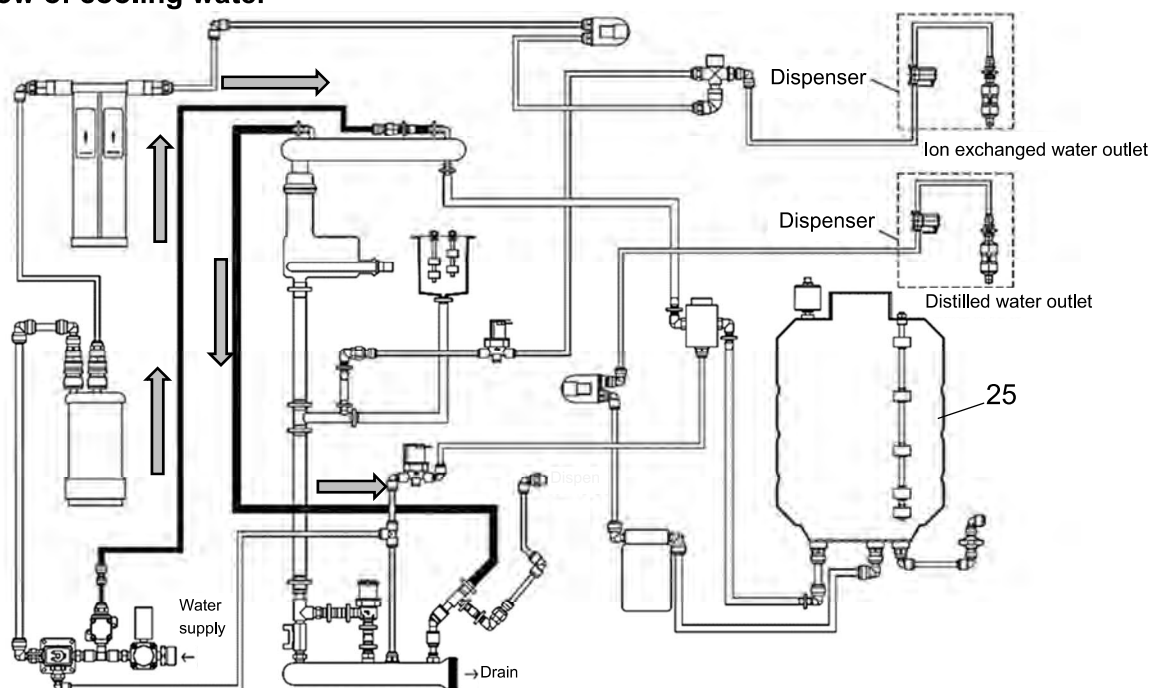


- When the boiler drainage is completed, water is supplied to "12. Boiler" via "5. Pretreatment cartridge" and "6. Ion exchange resin cartridge (CPC-S)". When water accumulates in "12. Boiler", "13. Heater" is energized to start distillation and at the same time, cooling water flows. The water level of "12. Boiler" is monitored by "8,9. Float switch".

## 2. COMPONENT NAMES AND FUNCTIONS

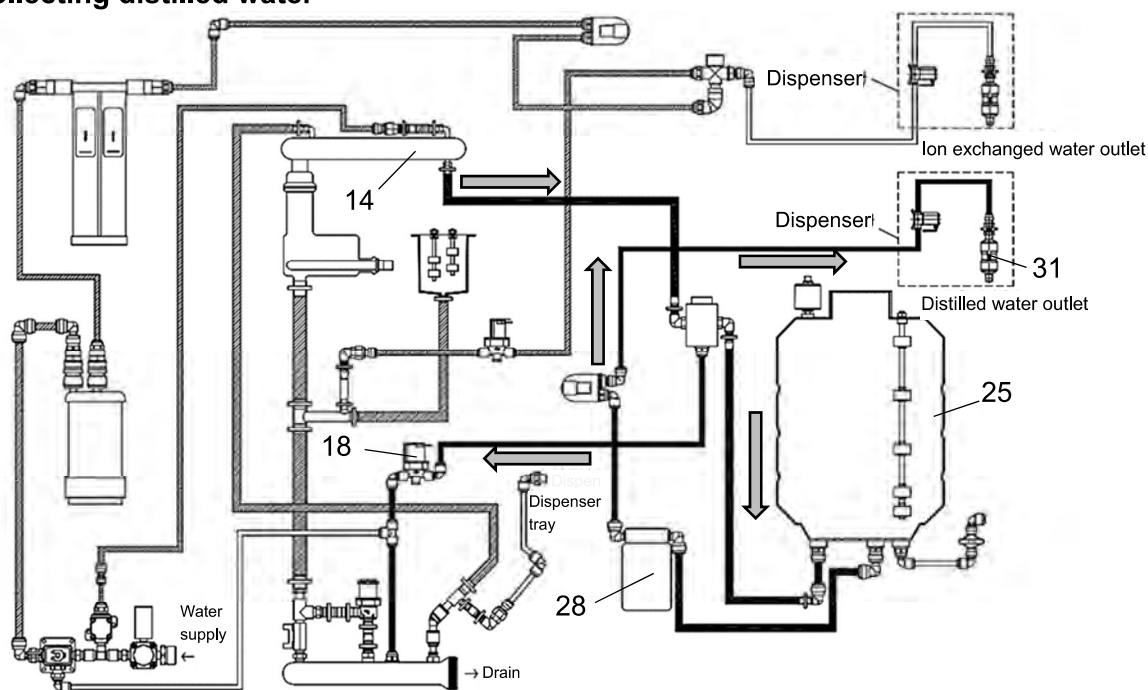
### Operating principle

#### (3) Flow of cooling water



- During distillation, cooling water flows. Distillation stops when "25 Distilled water tank" is full, or while collecting ion exchanged water. Cooling water also stops automatically.

#### (4) Collecting distilled water



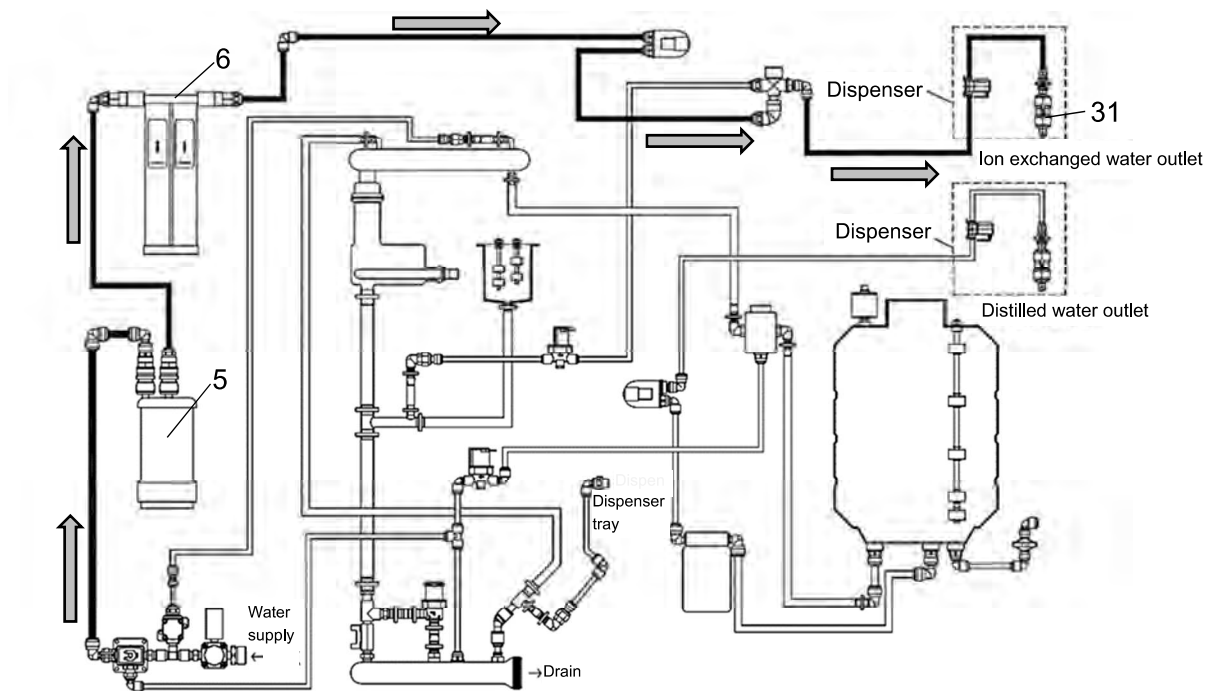
- Distilled water condensed by "14. Condenser" is drained by opening "18. Solenoid valve for drainage of first distillate" until about 10 minutes have passed from the start of distillation, and after about 10 minutes, "25. Water is stored in the "distilled water tank". When distilled water tank becomes full, distillation stops. When distilled water is consumed at a certain level, unit automatically begins to produce distilled water.

The distilled water stored in the tank is sucked up by "28. Distilled water sampling pump" and sampled through "31. Membrane filter".

## 2. COMPONENT NAMES AND FUNCTIONS

### Operating principle

#### (1) Collecting deionized water



- Deionized water is dispensed by way of "5. Pre-treatment cartridge", "6.Deionization resin cartridge (CPC-S)", "31.Membrane filter"



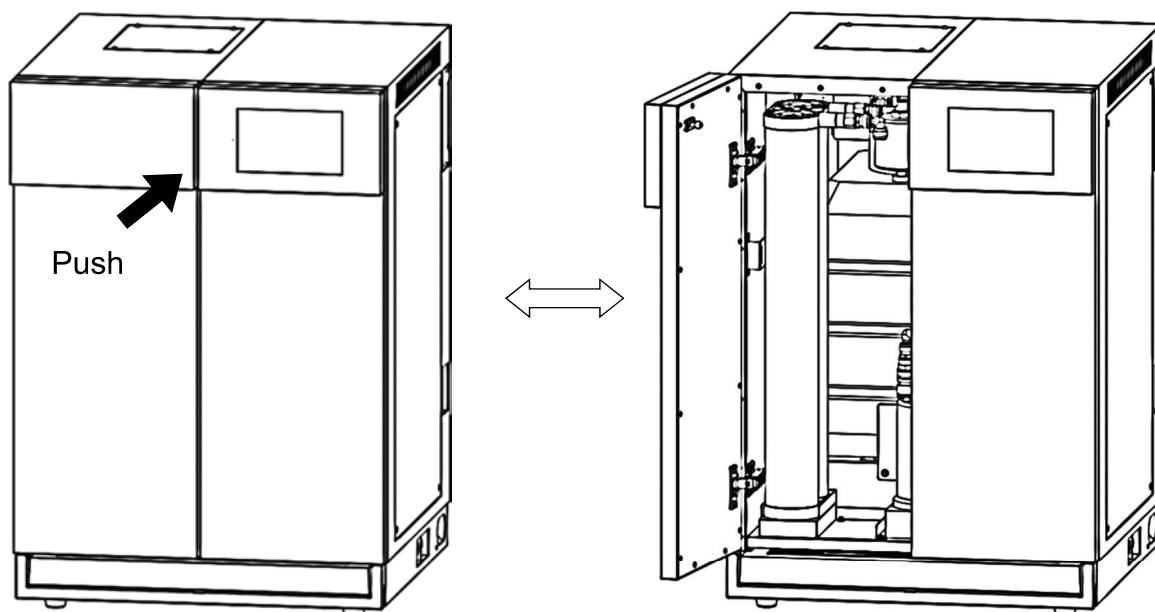
## 2. COMPONENT NAMES AND FUNCTIONS

### Door

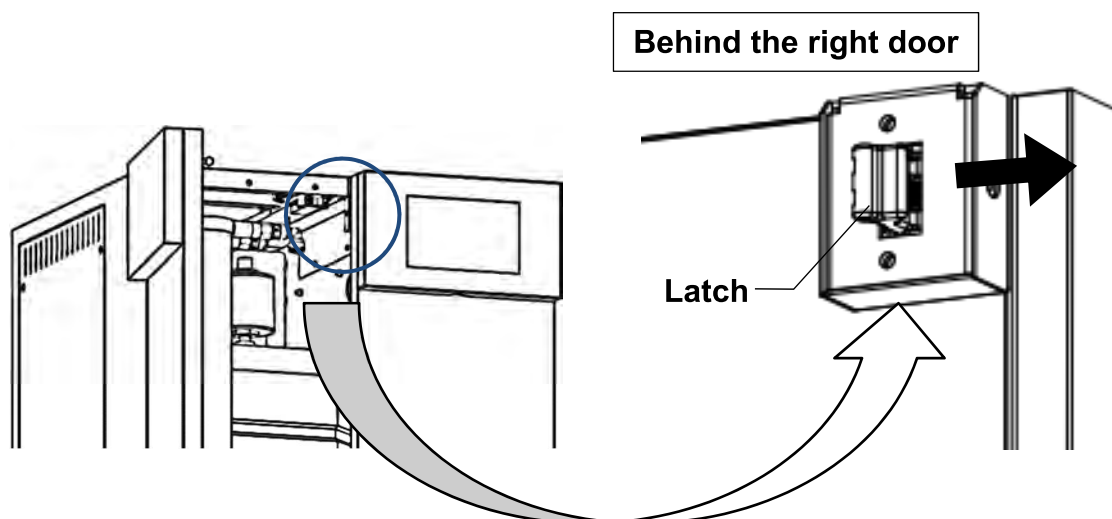
#### How to open and close the door

This product opens on both sides.

The left door is a push-open type, so when opening it, push the door in by hand and release it to open it. To close it, push the door in again to close it (the WG1012 mount door is also a push-open type).



The right door is a latch type. To open the right door for maintenance etc., pull the latch on the back of the right door. To close it, push the door in.



## 2. COMPONENT NAMES AND FUNCTIONS

### Dispenser tray

#### Dispenser tray

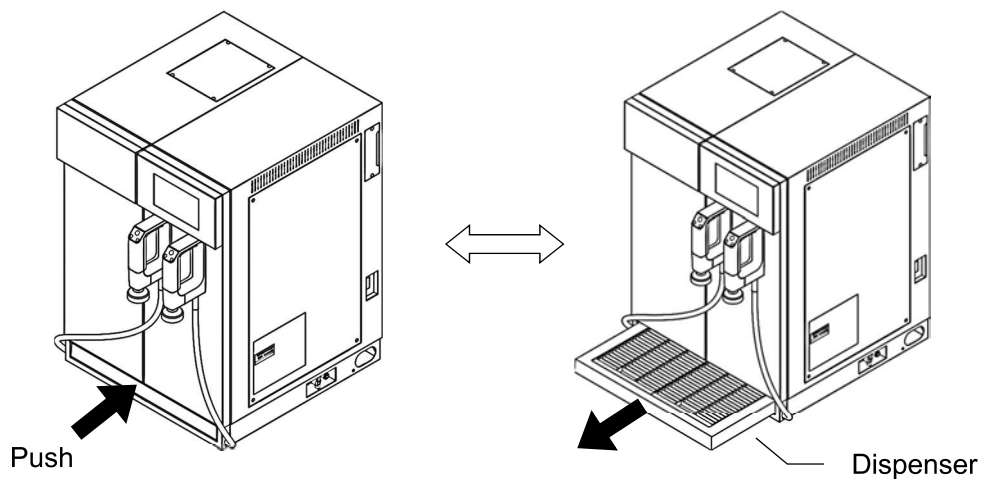
The dispenser tray is a push-open type. Press the PUSH mark [●] in the center of the dispenser tray before pulling it out. The load capacity of dispenser tray is Approx 10 kg. If an excessive load is applied, the dispenser tray may be damaged or the product may tip over.

The water collected in the dispenser tray is drained using the flow of cooling water, so it cannot be drained when the flow of cooling water stops. In that case, touch the dispenser tray drainage icon at the top center of the home screen on the operation panel. Cooling water flows for less than 2 minutes, and the water is drained from the dispenser tray. The flow of cooling water stops in the following cases ① and ②.

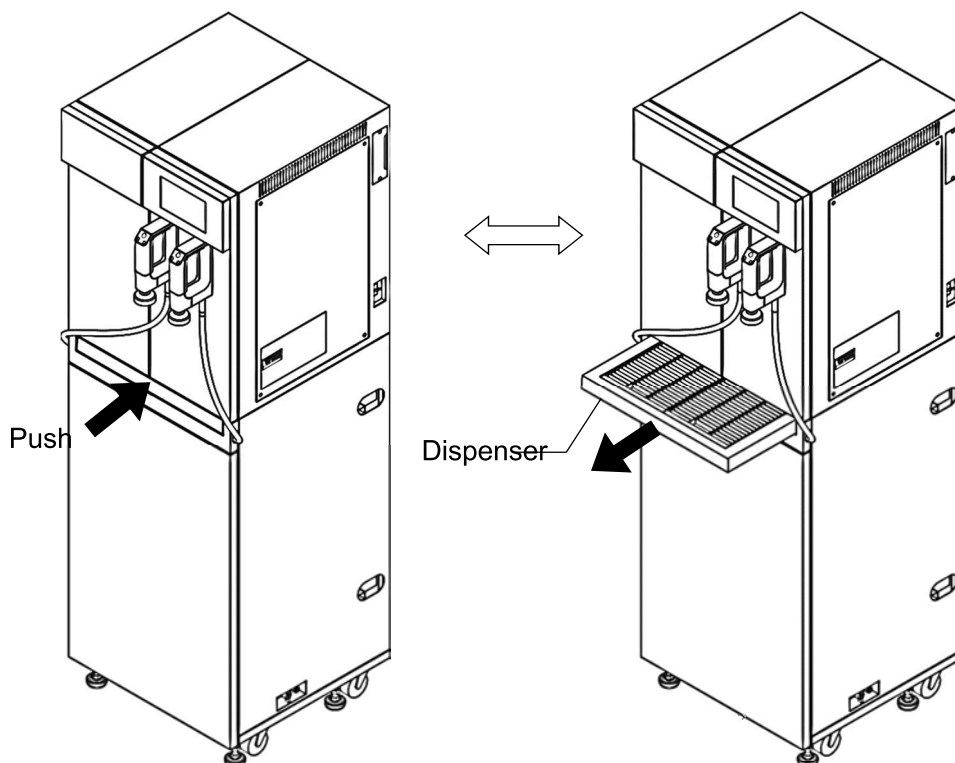
- ① When the tank is full (distillation is stopped)
- ② When collecting ion exchanged water

※When storing the water sampling table, do not grab the water sampling table and push in the front part. If you grab it and store it, you may get injured by pinching your hands or fingers.

#### WG252



#### WG1012



## 2. COMPONENT NAMES AND FUNCTIONS

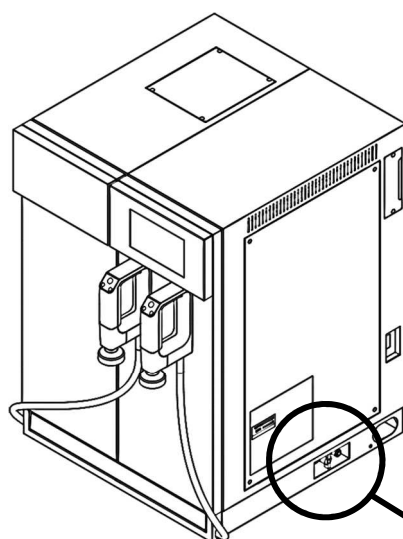
### Multipurpose distilled water outlet

#### About multipurpose distilled water sampling port

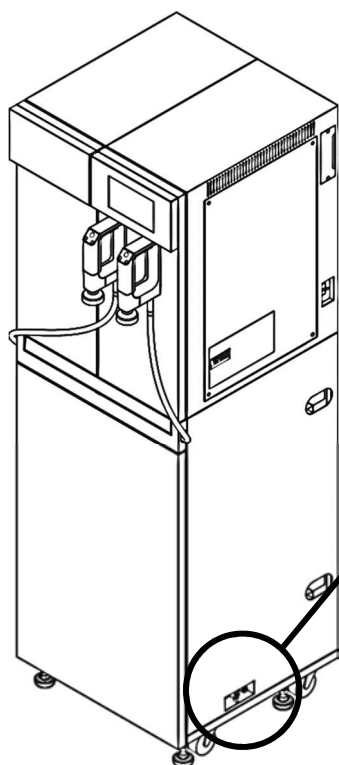
The multipurpose distilled water outlet is located on the right side of unit and equipped with one-touch joint. Connect the rigid tube with an O.D. of  $\phi 8$  mm. This allows to collect distilled water directly from the tank. It can also be used as a connection port for distilled water replacement/drainage of tanks and options.

Since the structure uses the weight of the distilled water in the tank, when collecting water without using a pump, etc., collect the water at a position lower than the multipurpose distilled water sampling port.

#### WG252



#### WG1012



Water sampling

Multipurpose distilled

## 2. COMPONENT NAMES AND FUNCTIONS

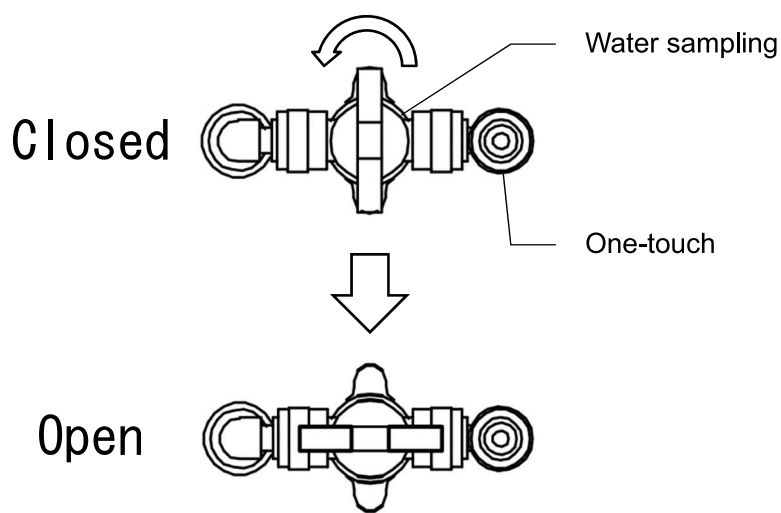
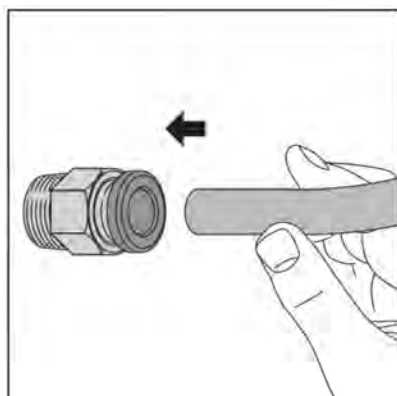
### Multipurpose distilled water outlet

#### Handling of one-touch joint

When using the multipurpose distilled water outlet, attach and detach tube by following procedure.

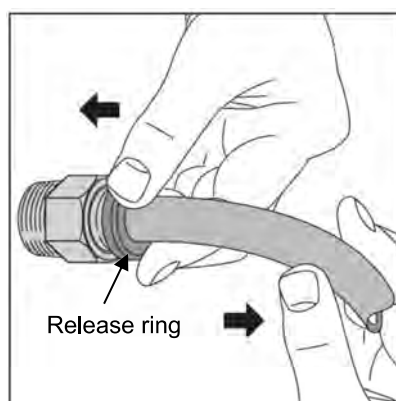
- Insertion of the tube

1. Check that the tube is cut at right angle and has no scratch or damage in the outer surface.
2. Insert the tube firmly deep into the one-touch joint. Unless the tube is inserted properly, water leakage may result.
3. After inserted, pull the tube to ensure that it does not come out.



- Removal of the tube

Close the water sampling valve, push the opening ring evenly, and pull out the tube toward you. If the release ring is not pushed in sufficiently, it will not come off. If you pull it out forcibly, the tube may be scratched and shavings may remain inside the fitting.



## 2. COMPONENT NAMES AND FUNCTIONS

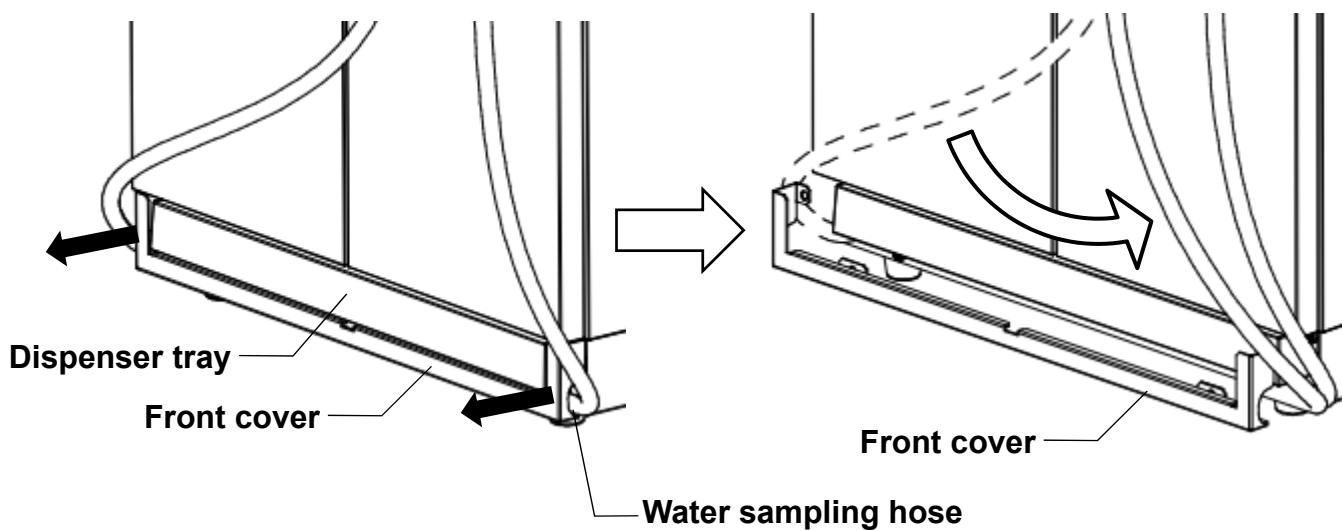
### Change the drawing direction of the water sampling hose

#### How to change the pull-out direction of the water sampling hose

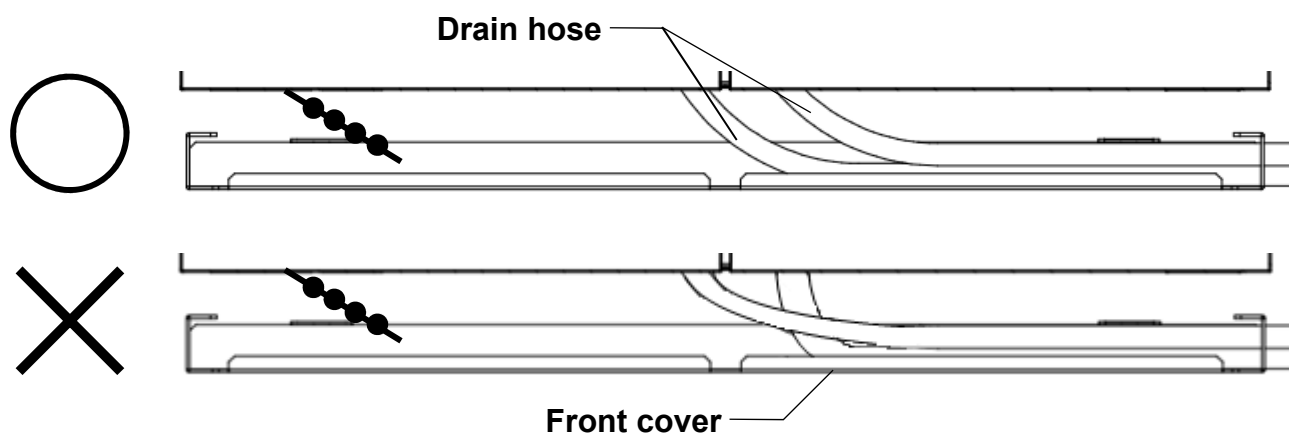
The water sampling hose extending from the main body dispenser can be pulled out from either the left or right water sampling hose outlet.

When changing the pull-out direction of the water sampling hose, remove the front cover toward you and change the pull-out direction of the water sampling hose as shown in the figure below.

After changing the drawer direction, attach the front cover. At this time, be careful not to pinch the water sampling hose between the dispenser tray and the front cover. If the front cover is not attached, the dispenser tray and the water sampling hose may interfere with each other, or the dispenser may fall directly to the floor, which may cause the product to malfunction.



When routing the water sampling hose, refer to the figure below and do not cross the hoses with each other. Also, route the water sampling hose so that it fits inside the front cover. If the water sampling hose bends and rubs against the dispenser tray, lightly pull the water sampling hose to correct the bending of the hose. If the dispenser tray is taken in and out with the water sampling hose rubbed, the water sampling hose may be damaged.



※When removing the front cover, be careful not to drop it.

## 2. COMPONENT NAMES AND FUNCTIONS

### UV lamp (optional)

#### About UV lamps

Over time, bacteria grows in stored distilled water in the tank, decreasing its quality. This product has an optional UV lamp that has a bactericidal effect on bacteria, and can be automatically lit over time or manually lit by panel operation.

For details, refer to "WG252 / 1012 Operation Manual Operation".

### Water quality and water quality display

#### Measurement of electrical conductivity (conductivity / resistivity)

The water quality meter on the operation panel displays the electrical conductivity (conductivity / resistivity) at the outlet of the ion exchange resin cartridge and the outlet of the condenser of distilled water. Use water quality readout of ion exchanged water as a guide to determine a time for ion-exchange resin cartridge replacement. It is necessary to check the water quality display when the electrode part is completely filled with water, that is, while the deionized water is flowing. In the following cases, the electrode is not immersed in water and is affected by air bubbles. Therefore, displayed values are not accurate.

1. When unit has just started operation, or during stop
2. Immediately after replacement of ion-exchange resin cartridge and pre-treatment cartridge
3. Immediately after the start of the distillation process

#### Electrical conductivity (conductivity / resistivity)

- Electrical conductivity is a numerical value representing the ease of passing electricity. When greater quantity of electrolytes or impurities are dissolved, water is more likely to pass electricity and in that state the value of electrical conductivity is high.
- The smaller value represents the better purity of pure water.  
However, the value of electrical conductivity (conductivity) does not show the content of non-electrolytic substances (organic substances, colloidal substances, dissolved gases, microorganisms, etc.) but only indicates electrolytic substances. Consider it as one index of the purity of water.
- Specific resistance (R) also indicates the flow of electric current (ρ). Specific resistance is inversely related to the electrical conductivity. The higher value, therefore, represents the better purity of water.

$$R[\Omega \cdot m] = \frac{1}{\rho [S / m]} \quad \text{or} \quad R[\times 10^4 \Omega \cdot m] = \frac{1}{\rho [\times 10^{-4} S/m]}$$

The value of theoretical pure water is calculated as follows:

$R = 18.3 \times 10^4 \Omega \cdot m$  (18.3 MΩ · cm) 25 °C

$\rho = 0.055 \times 10^{-4} S/m$  (0.055 μS/cm) 25 °C

## 2. COMPONENT NAMES AND FUNCTIONS

### Water quality and water quality display

#### Water quality of deionized water and distilled water

• Ion exchanged water and distilled water have the following characteristics. Use them suitably for the purpose.

It is the best to use pure water immediately after collection. If it is not going to be used for a long period of time, drain all the water from distilled water tank. If you have stored it in a distilled water tank for a long period of time, drain it once and then store the newly distilled water in the distilled water tank before using it.

If you want to reduce the amount of water stored in the tank so that the distilled water is not wasted, touch the tank gauge on the home screen to stop the distillation, or change the tank full value or distillation mode from the tank water storage amount setting in the menu. give me. For details, refer to "WG252 / 1012 Operation Manual Operation".

#### ( 1 ) Deionized water

It removes electrolytic substances in water and obtains water with low electrical conductivity. Occasionally, the purity of water more or less drops while the resin is new, or when operation after extended storage of unit.

#### ( 2 ) Distilled water

Distillation can remove both electrolytic and non-electrolytic substances averagely, except for substances of low boiling point such as ammonia. However, in the production process (condensation and storage), water absorbs carbon dioxide gas in the air, and produces carbonic acid gas. This makes electrical conductivity 1 to  $2.5 \times 10^{-4}$  S/m (1 to 2.5  $\mu$ S/cm 、0.4~1.0  $M\Omega \cdot$  cm) 25 °C, which is worse than that of deionized water, and It is weakly acidic (pH: 5 to 6).

See JIS K 0102 (Testing methods for industrial wastewater) for how to remove dissolved gas (oxygen/carbon dioxide) in pure water.

Deionized water and distilled water processed by this product conform to the JIS K0557 A4 standard.

#### JIS K0557 standard

JIS K0557 is a standard for pure water used for testing industrial water and plant wastewater. The classification and quality of pure water are defined as shown in the table below.

Item	Classification and quality			
	A1	A2	A3	A4
Electrical conductivity mS/m(at25 °C)	0.5 or less	0.1 or less	0.1 or less	0.1 or less
Specific Resistance $M\Omega \cdot$ cm(at25 °C)	0.2 or more	1 or more	1 or more	1 or more
Total organic carbon mg / L	1 or less	0.5 or less	0.2 or less	0.05 or less
Zinc $\mu$ g / L	0.5 or less	0.5 or less	0.1 or less	0.1 or less
シリカ $\mu$ g / L	-	50 or less	5.0 or less	2.5 or less
Chloride ion $\mu$ g / L	10 or less	2 or less	1 or less	1 or less
Sulfate ion $\mu$ g / L	10 or less	2 or less	1 or less	1 or less

- A1 is used for cleaning instruments, or as material for pure water of A2 and A3.
- A2 is used for general tests and as material for pure water of A3 and A4.
- A3 is used for preparation of reagents and microanalysis.
- A4 is used for microanalysis. (Refined by distillation using a quartz glass distillation unit, or a procedure which yields equivalent water quality)

※The specific resistance is shown as reference. The original standard does not contain specific resistance.

### 3. PRE-OPERATION PROCEDURES

#### • Installation Precautions



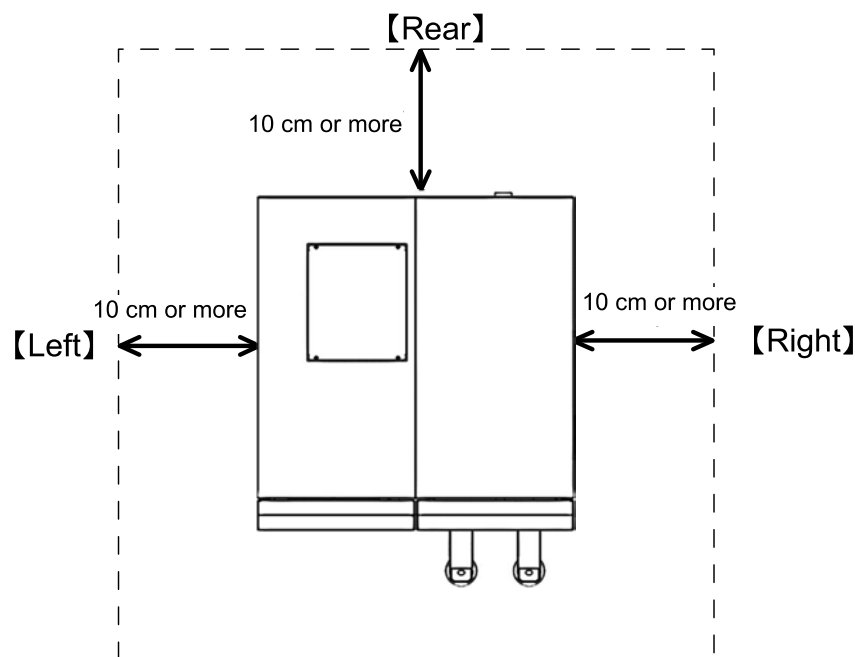
##### **Choose an appropriate installation site.**

DO NOT install unit:

- Where installation surface is not completely level, not even or not clean.
- Where flammable or corrosive gases/fumes may be present
- Where external temperature will exceed 35 °C or fall below 5 °C
- Where external temperature will fluctuate largely.
- In excessively humid or dusty locations.
- In direct sunlight or outdoors.
- Where there is constant vibration.
- In direct contact with the outside air
- Where power supply is erratic.
- Where there is a risk of freezing or condensation.
- Where the raw water pressure is higher than 0.5 MPa
- Where the raw water pressure is lower than 0.05 MPa (WG252)
- Where the raw water pressure is lower than 0.10 MPa (WG1012)
- Outdoor



Install unit in a location with sufficient space, as specified below.



- Leave 30 cm or more space above unit.
- On the right side of the unit, secure a workable space for installation, maintenance, and breaker operation.



##### **Use cargo-handling equipment for transportation and installation.**

Always use cargo-handling equipment to move or install unit. When moving manually, be sure to use an appropriate number of people of 4 or more and an appropriate work method. In particular, WG1012 has a high center of gravity, so be careful when moving it.



### 3. PRE-OPERATION PROCEDURES

#### Installation Precautions



##### **Install unit on a level surface.**

Install unit on level and even surface. The WG1012 can be leveled with the adjuster. Failure to do so may cause abnormal vibrations or noise, possibly resulting in complications and/or malfunction. It may also cause vibration and noise.



##### **Stabilize equipment properly to assure safe operation and a safe work area.**

Implement appropriate safety measures for the installation environment. In the event of an earthquake or other unforeseen incident, equipment may unexpectedly shift or fall, causing serious injury.

Please use the WG1012 as it comes with an adjuster fixing bracket. (P.30)



##### **Always connect power cable to appropriate facility outlet or terminal.**

Connect power cable to a suitable facility outlet or terminal, according to the electrical requirements.

Power [WG252] 100 V AC single-phase 50/60 Hz 12.5 A (ELB capacity: 15 A)

requirements : [WG1012] 200 V AC single-phase 50/60 Hz 20 A (ELB capacity: 30 A)

Standard test conditions with no load should be as follows. Operational voltage rating:  $\pm 10\%$ ,

Voltage range at which specified performance is guaranteed:  $\pm 5\%$ , Frequency rating:  $\pm 1\%$ .

Check the line voltage on distribution board and properly evaluate whether to utilize a line being shared by other equipment. If unit is not activated by turning on ELB, take an appropriate course of action, such as connecting unit to a dedicated power source.

Inserting multiple cords into a single outlet, using branch outlets or extension cords, may cause a drop in voltage, which may affect performance, resulting in failure to control or maintain proper temperature.



##### **Ensure adequate raw water pressure.**

- For WG252, use the water pressure in the range of 0.05 to 0.5 MPa, including at night. For WG1012, use the water pressure in the range of 0.1 to 0.5 MPa. If the water pressure is low, the drainage temperature may exceed 60.
- Even when using the optional "water faucet" (see P.58), the pressure range of the raw water pressure is the same.



##### **Use tap water as raw water.**

Use tap water as raw water. If raw water is not clean, water quality may fall below specified quality level. Moreover, it may cause equipment malfunction.

If the quality of the raw water is poor, use the wind cartridge (9020036001) in the optional filter housing (OA111).



##### **Do not turn the pressure reducing valve**

The pressure inside this product is adjusted to a constant pressure by the pressure reducing valve. Do not turn the pressure reducing valve as it may cause performance degradation and water leakage.

### 3. PRE-OPERATION PROCEDURES

#### Installation Precautions



##### Please install in a clean atmosphere

If there is smoke or volatile gas in the atmosphere, the quality of distilled water may deteriorate. So install it in a clean atmosphere.

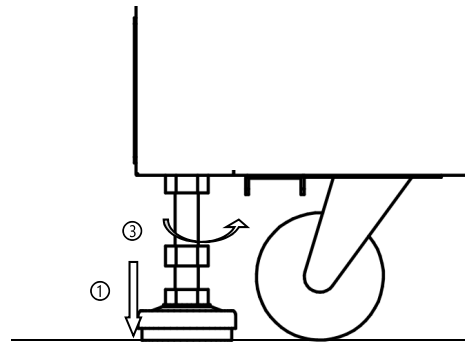


##### Please fix with an adjuster

This product has adjusters attached to the front and rear four places. (WG1012)

After unit installation is complete, position the adjustable leveling feet using the following procedure. If it is not fixed, the product may move and cause an accident or malfunction.

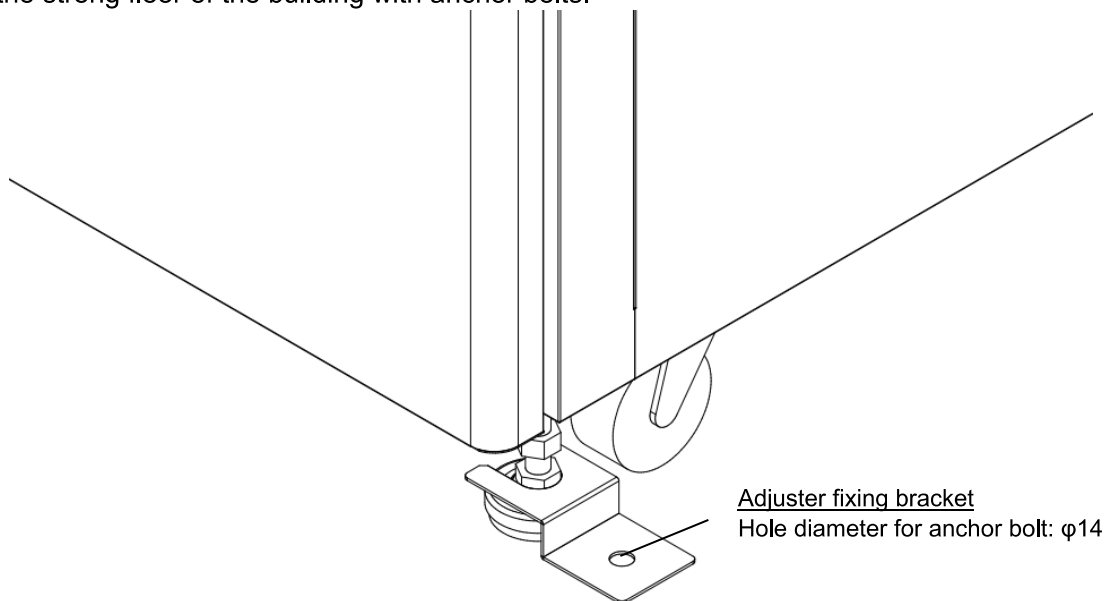
- ① Rotate leveling feet down until unit stands securely on the floor.
- ② Check the level of the installation surface of this product. Check that there are no floats on the adjusters at the four locations.
- ③ Once unit is secure, tighten both leveling feet stop nuts firmly against the topmost nut to prevent leveling feet from turning under vibration.



##### How to use the adjuster fixing bracket (WG1012)

This product may fall over due to an unexpected earthquake or impact. Be sure to stabilize unit properly to assure safe operation and a safe work area. We recommend using the adjuster fixing bracket.

- (1) For safety, remove the power plug and water supply hose, and fix the main body with the adjuster.
- (2) Place the adjuster fixing brackets on the main body adjusters (4 places) and fix them to the ground or the strong floor of the building with anchor bolts.



### 3. PRE-OPERATION PROCEDURES

#### Installation Procedure

##### 1. Connect the water supply hose securely.

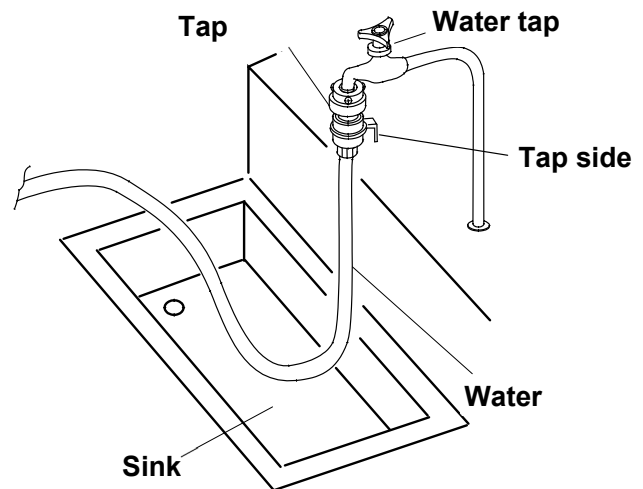


- Take out water supply hose set (tap connector, water supply hose) from among the accessories.
- Install unit on a level and stable location close to a water tap and sink. Improper connection may cause water supply hose or tap connector to come off, resulting in water splash or leakage.
- Note that tap connector can possibly break when fastened more than necessary.

##### 2. Be sure to attach the water supply hose to a tap with the drainage facility.



- If water supply hose is connected to a water tap without drainage facility, and the hose comes off or becomes damaged, severe water damage may result. Be sure to connect water supply hose to a water tap with drainage.
- Close the tap when not in operation.
- Use optional "water supply extension hose" (See P.58) when the drainage facility is away from the tap.



※ If you do not have a water tap facility, use the optional "water supply tap"(See P.58).

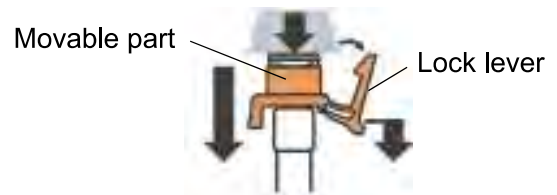
## 3. PRE-OPERATION PROCEDURES

### Installation Procedure

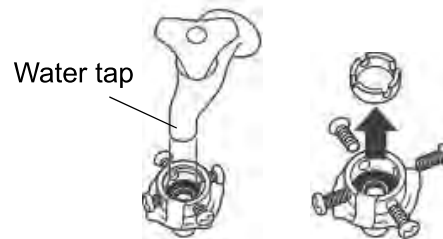
#### 3. Make connection on the water tap side.



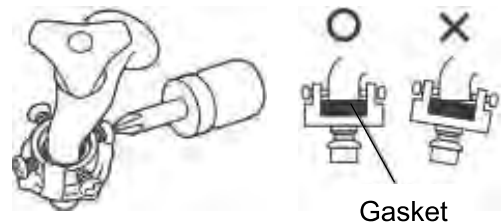
- (1) Hold the lock lever and knob (moving part) on the water supply hose and pull it down. Both parts of Tap connector and water supply hose can be separated.



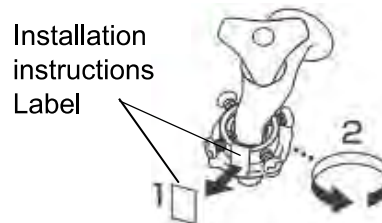
- (2) Loosen screws according to the size of the faucet. If the faucet is too thick to fit in, remove the white ring inside.



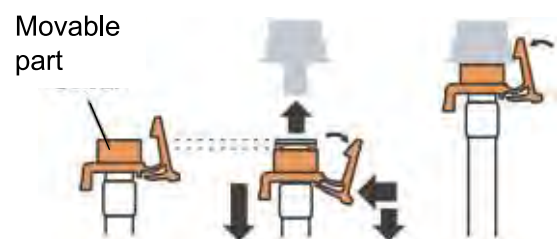
- (3) Fasten four screws uniformly and firmly while pressing Gasket evenly to the faucet spout.



- (4) Peel off the installation instructions label and turn the bottom to fasten securely.



Connect top connector and the water supply hose. Connect by inserting while pulling down the lock lever and knob (moving part). After connecting, pull the water supply hose and check that it does not come off.



### 3. PRE-OPERATION PROCEDURES

#### Installation Procedure

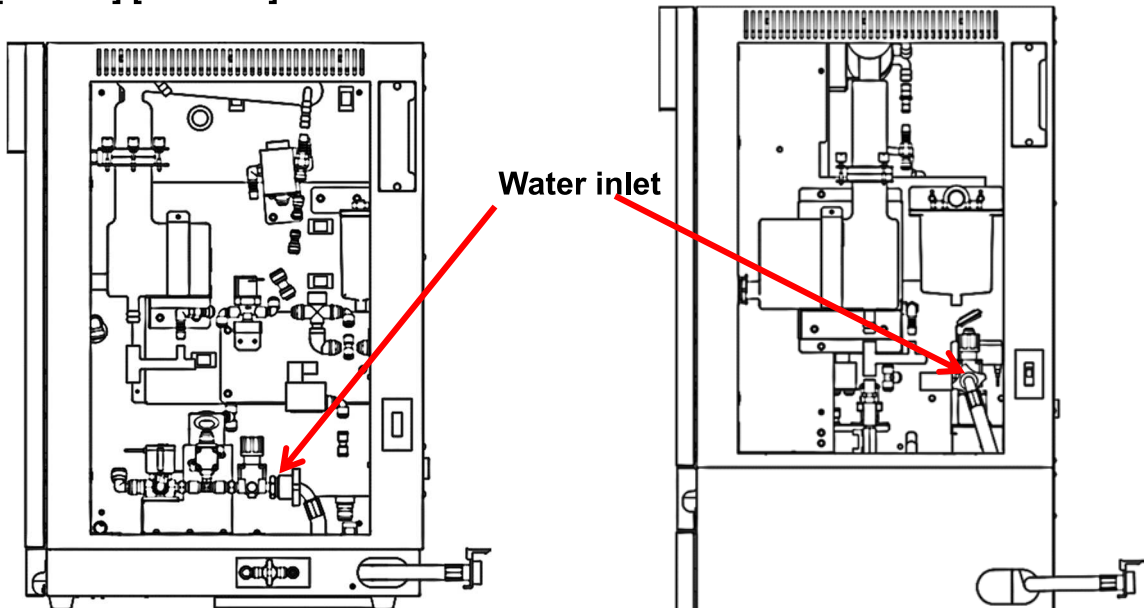
##### 4. Connection on main unit side.



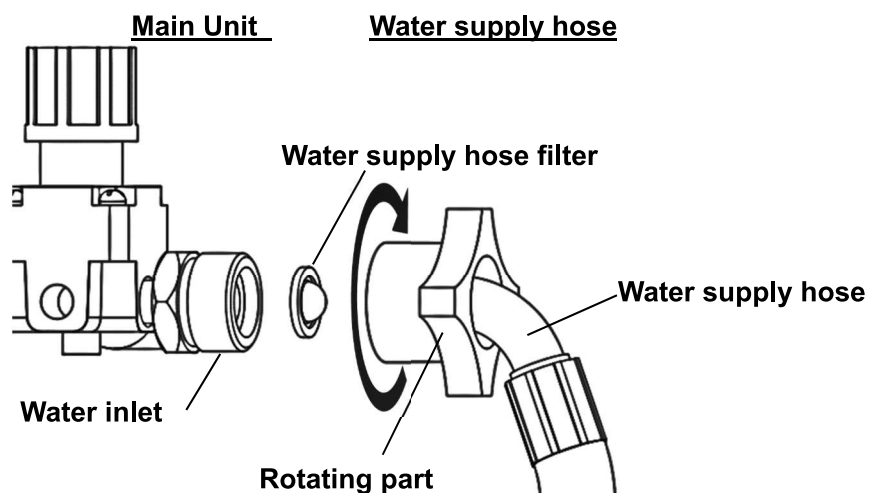
- Connect water supply hose according to the following procedure.
- Unless firm connection is ensured, water may leak from the threaded portion.

- (1) Open the maintenance port on the right side with a Phillips screwdriver.  
See the figure below for the location of the water inlet.

[WG252] [WG1012]



- (2) Put the water supply hose into the product through the left or right drains or the opening on the back.
- (3) Insert the water supply hose filter into the water supply port in the direction shown in the figure. Insert the water supply hose parallel to the water inlet on the main unit, and turn the rotating part to fix it. The Gasket built-in the water supply hose prevents water leakage.



- (4) Close the maintenance port.

### 3. PRE-OPERATION PROCEDURES

#### Installation Procedure

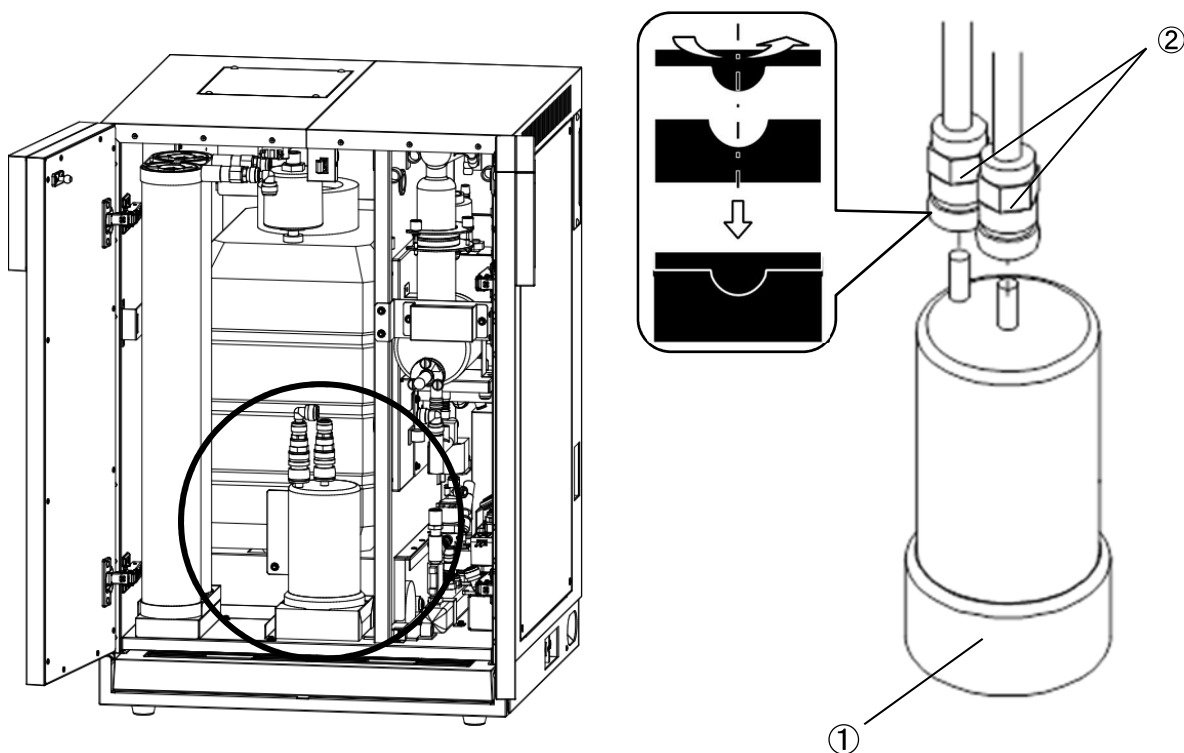
##### 5. Connect pre-treatment cartridge securely.



- Connect pre-treatment cartridge according to the following procedure  
Remove caps on IN and OUT ports on pre-treatment cartridge.

- (1) Make sure that ELB on unit is "OFF (○)" and that water tap is closed.
- (2) Take out ①pre-treatment cartridge from among the accessories.
- (3) Remove caps on IN and OUT ports on ①pre-treatment cartridge.
- (4) Open the front door of this product and put the pretreatment cartridge in the position shown on the right (on the right side of the ion exchange resin cartridge).
- (5) Open front door. There are connection hoses labeled IN and OUT on ②couplers. Connect the hoses to ①pre-treatment cartridge so that the IN and OUT coincide with the IN and OUT of the cartridge.
- (6) For connection, align the unevenness of the ring attached to the coupler, align the coupler with the connection of the cartridge, and push it in until it clicks.
- (7) When the connection is finished, Be careful not to bend the hose and close the front door of this product.

※When removing, go back to steps 1 to 6 above.



- After inserting pre-treatment cartridge coupler, pull it once to confirm that the coupler is securely connected, and will not come off.
- Pre-treatment cartridge coupler can be easily removed by vertically pulling it out while pulling up the bottom of coupler to the hose side. Be careful that water may drip from pre-treatment cartridge when the coupler is removed.

### 3. PRE-OPERATION PROCEDURES

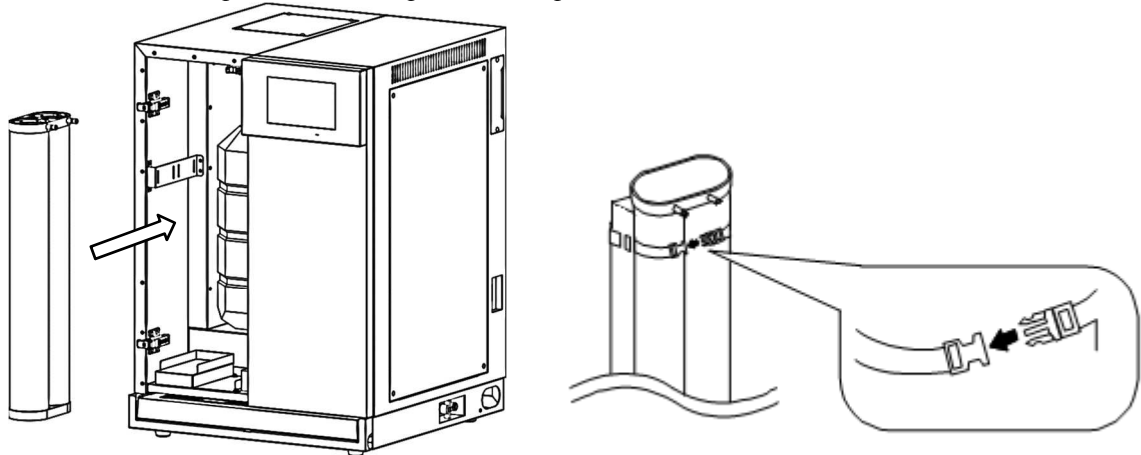
#### Installation Procedure

#### 6. Connect ion-exchange resin cartridge (CPC-S) securely.

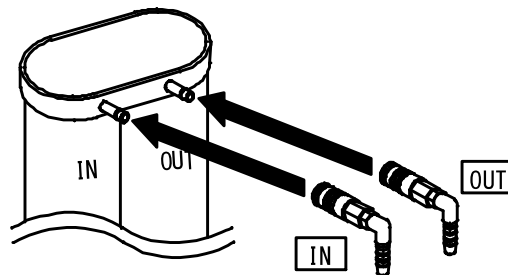


- Connect ion-exchange resin cartridge (CPC-S) according to the following procedure. Remove the rubber caps from the IN and OUT of the cartridge.

- (1) Make sure that ELB on unit is "OFF (○)" and that water tap is closed.
- (2) Take out ion-exchange resin cartridge (CPC-S) from among the accessories.
- (3) Install ion-exchange resin cartridge on the mount in unit.
- (4) Secure ion-exchange resin cartridge with fixing band of the mount.



- (5) Push the one-touch joint marked with (OUT CPC-S) into the outlet (on right) of ion-exchange resin cartridge until it clicks.  
Push the one-touch joint marked with (IN CPC-S) into the inlet (on left) of ion-exchange resin cartridge until it clicks.  
※When removing, go back to steps 1 to 6 above.



※When the ion exchange resin cartridge (CPC-S) is replaced, it is necessary to perform initial cleaning to remove initial impurities and air. After resetting after replacement, perform initial cleaning according to the instructions on the screen. For details, refer to "WG252 / 1012 Instruction Manual Operation".

※One-touch joints may be stiff at the outset. Note that forcing one-touch joint diagonally into plug-in port may result in damage to one-touch joint or plug-in port. If it is difficult to insert the one-touch joint, attach it with the cartridge cradle removed, and be careful not to bend it when connecting.

※After inserting one-touch joint, pull it once to confirm that one-touch joint is securely connected, and will not come off.

※To remove the ion-exchange resin cartridge, pull the one-touch joint frontward with the black portion pressed in. Be careful that water may drip from the cartridge when the one-touch joint is removed.

※Connecting the IN and OUT of each resin cartridge in reverse may cause malfunction. Use caution when making connection of the cartridges.



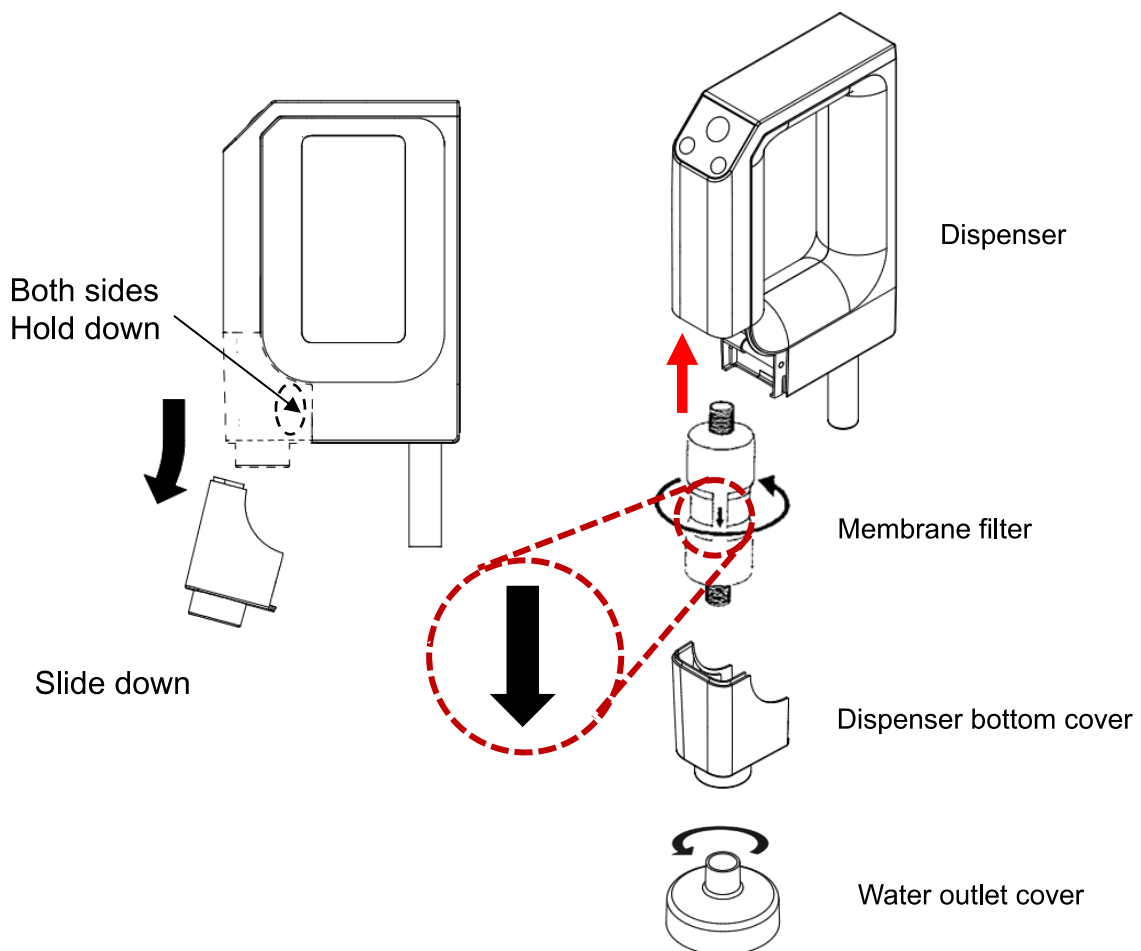
### 3. PRE-OPERATION PROCEDURES

#### Installation Procedure

##### 7. Install membrane filter securely.



- **Distilled water dispensers require pump air bleeding before connecting the membrane filter.** Store 10 L or more of distilled water in the tank, collect water until the pump is bleeding air, and then connect the membrane filter. (Air bleeding is completed in about 5 L)
  - Install membrane filter according to the following procedure.
  - Unless firm connection is ensured, water may leak from the threaded portion.
- (1) Take out the membrane filter and water sampling port cover from the accessories of the main body.
  - (2) Remove the dispenser bottom cover by sliding while pressing the three points on the side and front of the dispenser bottom cover.
  - (3) Screw it in so that the arrow engraved on the membrane filter points downward. Seal with the packing built into the dispenser. Check for water leaks when sampling pure water, and if water leaks, retighten. Please note that excessive tightening may damage the dispenser and membrane filter.
  - (4) Install the dispenser bottom cover and water sampling port cover.
  - (5) The upper part of the water sampling port cover is threaded, and it is connected to the Membrane filter thread to fix it, so lightly screw it in to fix it.  
※When removing, go back to steps 1 to 6 above.





### 3. PRE-OPERATION PROCEDURES

#### Installation Procedure

#### 8. Install the tank air vent filter



- Follow the steps below to install the tank air vent filter.
- If it is not securely connected, the distilled water stored in the tank will be affected by the outside air (carbon dioxide, etc.), so be sure to connect it securely.

##### [WG252]

- (1) Take out the tank air vent filter from the accessories of the main body and remove the cap.
- (2) Open the left door and screw the air vent filter into the mounting port on the top of the tank. Seal with the packing built into the tank mounting port. Be careful not to turn the letters on the air vent filter upside down.

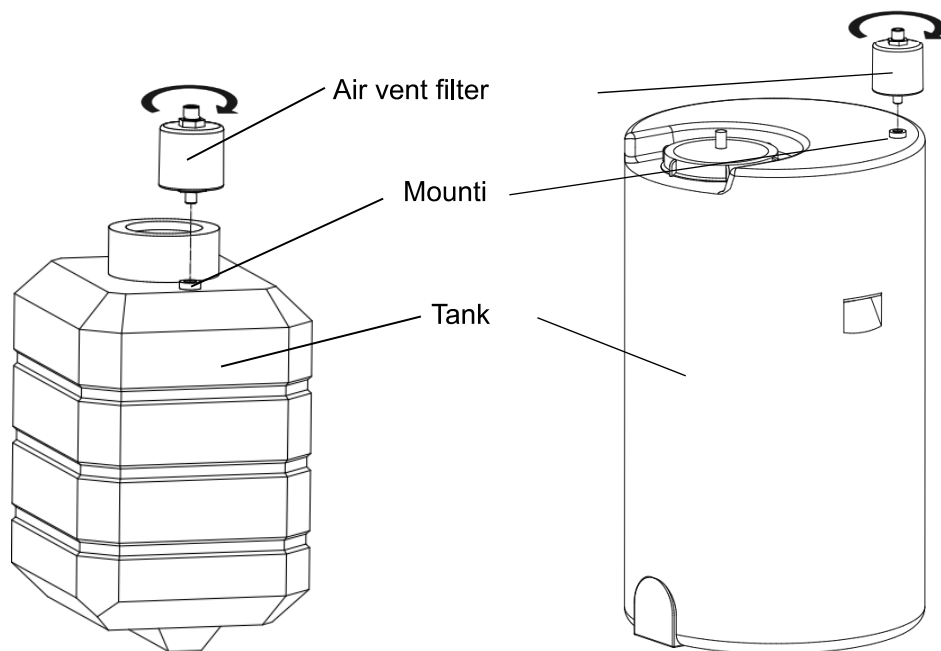
※When removing, go back to steps 1 to 6 above.

##### [WG1012]

- (1) Take out the tank air vent filter from the accessories of the main body and remove the cap.
- (2) Open the maintenance port on the right side and screw the air vent filter into the mounting port on the top of the tank. Seal with the packing built into the tank mounting port. After installing, close the maintenance port. Be careful not to turn the letters on the air vent filter upside down.

Note that excessive tightening may damage the tank mounting port and air vent filter.

※When removing, go back to steps 1 to 6 above.



[WG252]

[WG1012]

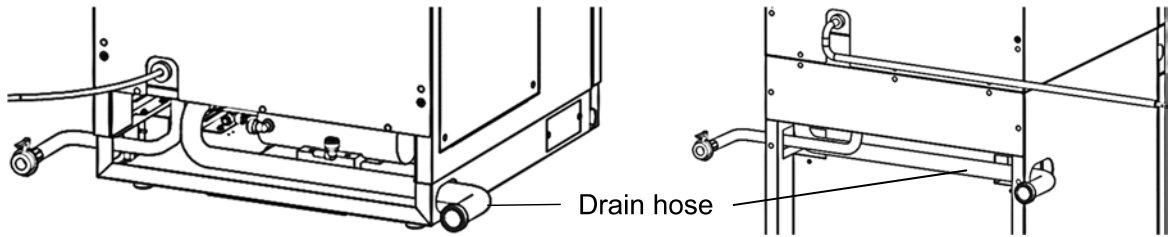
### 3. PRE-OPERATION PROCEDURES

#### Installation Procedure

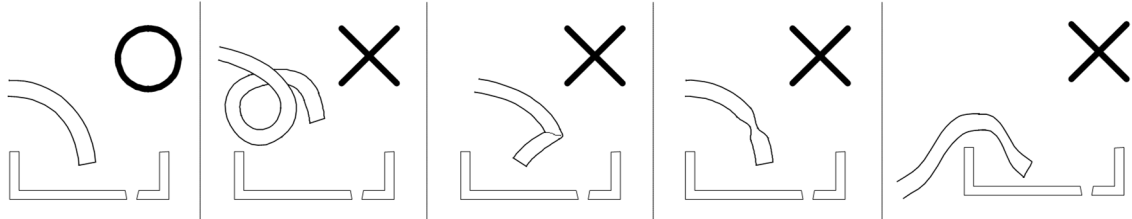
##### 9. Pay due attention when routing drain hose.



- See the figure below, pull out the hose from the drain hose connection in the left, right or rear side of unit.



- Make sure that drain hose does not bend, or form protrusions.
- If drain hose is bent and water is not drained properly, it may cause backflow or damage to the hoses inside unit. Also, if it is piped directly to the drain pipe, etc., it may cause performance deterioration or failure due to backflow.
- Lead drain hose to a drainage facility lower than drain port of unit. Avoid piping that allow puddles in the middle or end of the hose, which can interrupt water to be drained.
- The drain hose end should be positioned in drainable area. While producing distilled water, about 2 L/min (WG252) or 2.6 L/min (WG1012) of cooling water is discharged. In addition, the amount of drainage water will increase when draining boiler, there is a need for a drainage facility with sufficient capacity.



- Be sure to draw drain hose into a drainage facility

##### 10. After installation



Unit may tip over or fall, causing injury or death during an earthquake or other unforeseen incident. Be sure to stabilize unit properly to assure safe operation and a safe work area. Refer to "How to use the adjuster fixing bracket" (P.) for how to use the fall prevention bracket that comes with the WG1012.

##### 11. Check drainage temperature of cooling water.



- When draining boiler, drainage temperature may exceed 60 °C. As there is a risk of burns, drain the water away from the work environment so that it will not be easily touched.
- Depending on the raw water pressure and raw water temperature, high temperature cooling water may flow out. If vinyl chloride pipes are used in the drainage system of the sink, it may cause deterioration or breakage of the pipes. Use the optional drain trap (OA104) when the drain temperature is high (60 °C or higher). Likewise, use the optional Drain trap if not using the heat-resistant piping and joints, even if drainage temperature is 60 °C or less.
- Drain trap (OA104) reduces temperature by temporarily storing the drainage water. And then adds tap water to cool it furthermore. The drainage water will be discharged after adequately cooled. For details on the drain trap, contact to our distributors from whom you purchased, our sales office, or the customer service center.

## 4. Preparation for operation

### Preparations before Use

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#### Check again before use.

##### (1) Water supply

- Be sure that water supply hose is securely connected.
- Open the tap.
- Check that there is no water leak from the connection of water supply hose.

##### (2) Drainage water

- Be sure that drain hose is securely connected.
- Make sure that the drain hose is connected to a sink without being bent or twisted.
- If drain hose is bent or twisted, it may lead to a water leak as well as to hinder proper unit operation.
- Lead drain hose to a drainage facility lower than drain port of unit. If the drain hose is routed higher than the unit, drainage will flow back and it may lead to a water leak as well as to hinder proper unit operation.

Inspect drain hose periodically to confirm that water drains properly.

##### (3) Power supply

- Check that power cable is connected to a proper power source.

For the operation method, refer to "WG252 / 1012 Operation Manual Operation".

## 5. Inspection and Maintenance

### Precautions before Inspection



## WARNING

- Be sure to disconnect power cable before daily inspection and maintenance.
- Perform inspections and maintenance when unit is at room temperature.
- Never attempt to disassemble unit.



## Caution

- Clean unit using soft damp cloth. Never use benzene, paint thinner, scouring powder, scrubbing brush or other abrasives and solvents to clean unit. Superficial damage and/or discoloration, as well as deformity to some components may result.

### Maintenance and Inspection

#### Maintenance and inspection period

Daily inspection is highly recommended to ensure proper operation for longer period of time

#### What the customer should do

Maintenance · inspection item	Estimated timing	Replacement time (manufacturer recommended value)
Pre-treatment cartridge replacement (See P.41)	When a replacement notification occurs	Replacement display when the amount of water flow is 5000 L or more from the start of use, or the accumulated time has passed 180 days
Ion-exchange resin cartridge (CPC-S) replacement (See P.35)	When a replacement notification occurs	Exchange display when the quality of deionized water is 10 MΩ · cm or less ( $0.1 \times 10^{-4}$ S / m or more) ※Processing power: Approximately 700 L with raw water of 0.005 MΩ · cm ( $200 \times 10^{-4}$ S/m)
Replacing the air vent filter for the tank	Replacement notification	Exchange display after 365 days (WG252) and 180 days (WG1012) have passed since the start of use
Membrane filter replacement (See P.36)	Replacement notification	Replacement display when the amount of water flow is 500L or more from the start of use, or the accumulated time has passed 90 days
Cleaning the water supply hose filter (See P.49)	6 months	When raw water quality is poor, more frequent replacement may be required.
Circuit breaker inspection (See P.43)	1 month	Inspect each month
Cleaning the water dispenser tray	3 months	Inspect each month
Draining distilled water tank	3 months	Discharge water when unit is not in use for a long period of time.
UV lamp replacement (optional)	Replacement notification	Replacement display after 100 hours of use

#### Maintenance and inspection to be carried out by Yamato Scientific

Maintenance · inspection item	Estimated timing	Replacement time (manufacturer recommended value)
Hose replacement	2 years	Check the hose and its connection each month for water leakage or discoloration.
Pump replacement	2 years	Replace once every two years.
Solenoid valve and pressure reducing valve replacement	5 years	Replace once every five years.
UV lamp replacement (optional)	Replacement notification	Replacement display after 100 hours of use
Washing of Distiller	3 months (recommended)	Should be periodically carried out to maintain water quality.

※ Notification of the consumables replacement time is made based on the water quality, water flow volume, and the total water flow time.

The actual replacement time varies depending on the quality of raw water.

Can change the advance / replacement notification time for consumables on the consumables management screen.

For details, refer to "4. Daily inspection / maintenance" in "WG252 / 1012 Operation Manual Operation".

## 5. Inspection and Maintenance

### Replacement of ion exchange resin cartridges

- If the quality of the deionized water deteriorates, it is necessary to replace the deionization resin cartridge.
- See "6. Connect ion-exchange resin cartridge (CPC-S) securely" (P.35) for replacement procedure. If the quality of the deionized water improves after the exchange, the notification will be automatically cleared. For the reset method after replacement, refer to "WG252 / 1012 Operation Manual Operation".
- Long term storage of the cartridge will compromise the performance of the cartridge, leading to degraded water quality and treatment capacity. Preparing (requesting for) the cartridge right before replacement is, therefore, recommended. The standard storage period is about four months.
- Dispose of the replaced cartridges according to the local laws and regulations. When returning, fill in the invoice attached to a replacement cartridge and send it with the used cartridges.
- Yamato Scientific Co., Ltd. promotes proper collection and recycle for environmental preservation.
- When the deionization resin cartridge (CPC-S) is replaced, it is necessary to perform initial cleaning to remove initial impurities and air. After resetting after replacement, perform initial cleaning according to the instructions on the screen. ※ For details, refer to "WG252 / 1012 Instruction Manual Operation".

### Pre-treatment cartridge replacement

- The pre-treatment cartridge needs to be replaced every 5000 L of water flow or every 180 days.
- Installation procedure: "5. Connect the pre-treatment cartridge securely" (P.34) For the reset method after replacement, refer to "WG252 / 1012 Operation Manual Operation".
- Note that continuing to use the cartridge without replacement may shorten the life span of ion-exchange resin cartridge.
- Dispose of the replaced cartridges according to the local laws and regulations. When returning, fill in the invoice attached to a replacement cartridge and send it with the used cartridges.
- Yamato Scientific Co., Ltd. promotes proper collection and recycle for environmental preservation.

### Membrane filter replacement

- The membrane filter needs to be replaced every 500 L of water flow or every 90 days.
- Installation procedure: "7. Connect the membrane filter securely" (P.36) For the reset method after replacement, refer to "WG252 / 1012 Operation Manual Operation".
- If the membrane filter is not replaced, the water quality may deteriorate.

### Replacing the air vent filter for the tank

- The air vent filter needs to be replaced once a year for WG252 and once every 180 days for WG1012.
- See "8. Connect tank air vent filter securely." (P.37) for replacement procedure. For the reset method after replacement, refer to "WG252 / 1012 Operation Manual Operation".
- If the air vent filter is used without replacement, the water quality in the distilled water tank will deteriorate more quickly.

### Reset after consumables replacement

- Since the life of each consumable is specified, this product counts the amount of water flow and the accumulated time for each consumable. When the current usage status reaches the set value of the notification time, advance notification of consumables replacement and replacement notification will appear. After replacing the target consumables, reset the total. For the detailed procedure of the reset operation, refer to "WG252 / 1012 Operation Manual Operation".

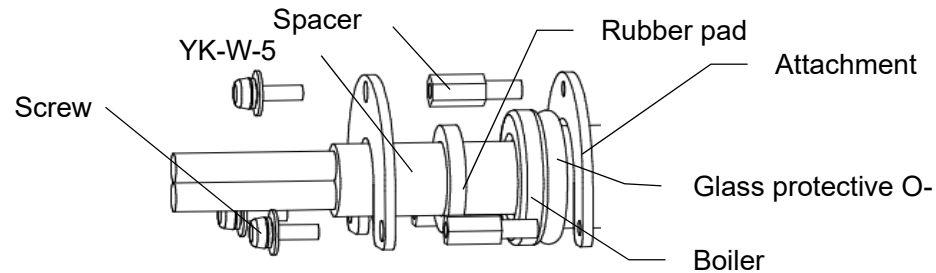
## 5. Inspection and Maintenance

### Heater replacement procedure

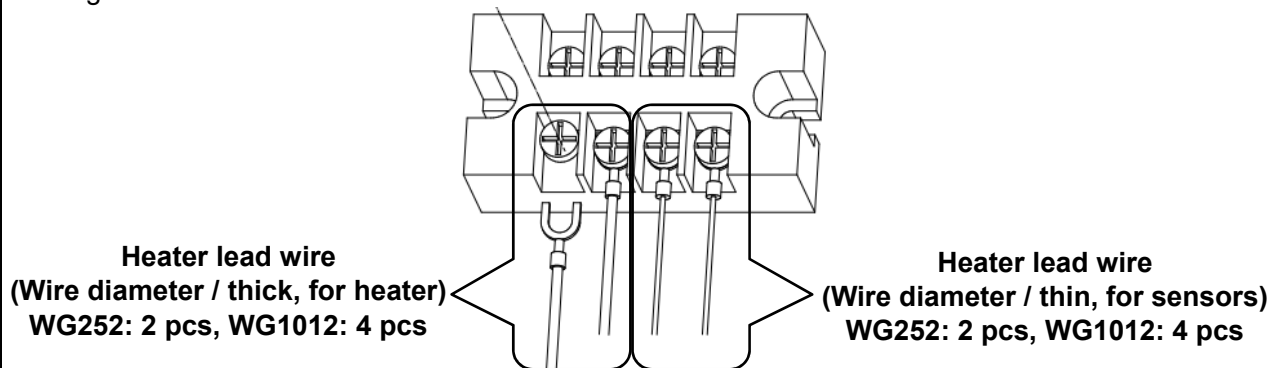
If heater is disconnected or damaged due to scale build-up, replace heater according to the following procedure.

We recommend that you ask the sales agent from whom you purchased the product, our sales office, or the customer service center to replace the heater. You will need a Phillips screwdriver to replace the heater yourself. Prepare in advance.

1. Turn OFF (○) ELB.
2. Close the water tap.
3. Leave unit at least 30 minutes to cool boiler down, and open front door and turn on boiler drain cock.
4. Loosen the four screws "WG1012 · · · 8" on the underside of the terminal block and disconnect the heater lead wire.
5. Loosen the screw, remove the fixing bracket, and pull out the heater.
6. Remove the gasket and cap nut from damaged heater. Be careful not to lose the gasket as it may stick to the boiler.
7. Put the gasket and the fixing bracket on new heater.  
Use caution not to touch heater with bare hands, in order to prevent heater from being soiled by handling.
8. WG252 is "YK-W-5" WG1012 is attached to the boiler so that the heater mark of "YK-W-4" is on top, and after confirming that the glass protection O-ring is in between, screw it in.



9. Check the heater lead wire mounting position and fix it to the terminal block, referring to the figure below.



10. Close boiler drain cock.
11. Close front door and then open the water tap.
12. Turn OFF (○) ELB.
13. Be sure to perform the calibration operation from the heater item on the user maintenance management screen. For details, refer to "WG252 / 1012 Operation Manual Operation".  
Calibration is to store temperature of the sensors under normal operating conditions in the internal controller as a reference temperature. When heater temperature exceeds this reference temperature by 20 °C or more, unit will detect the abnormality.
14. A message is displayed on the message screen of the control panel until calibration completes.
15. After calibrating for about 5 minutes, the user maintenance management screen will be displayed and normal operation will be resumed.

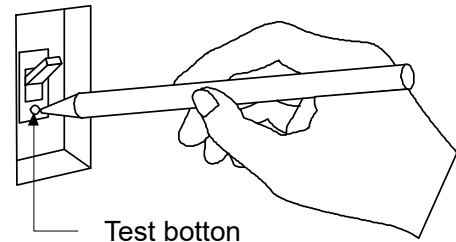
## 5. Inspection and Maintenance

### Hose replacement

- Use only Yamato-prescribed components for the replacement hose.
- We recommend that you ask the sales agent from whom you purchased the product, our sales office, or the customer service center to replace the heater.
  - Contact original dealer of purchase, if further questions arise concerning maintenance procedures.

### ELB inspection

- Inspect ELB ON and OFF function.
  - Prepare unit for inspection by connecting power cable to a facility outlet or terminal.
  - Turn ON(●) ELB.
  - Press the test button on ELB using a ball-point pen or other fine-tipped object. If ELB shuts OFF (○), it is functioning normally.



※ELB must be inspected, as prescribed above, prior to every instance of extended or overnight operation.

### Power Plug inspection






- Check power plug for damage
  - Check power plug for dust or dirt on its prongs, and clear off if any accretions found. If there is dust or dirt on it, remove it.
  - Confirm that the prongs of power plug are not bent or damaged. Replace if bent or damaged.
  - Check the power plug for discoloration or abnormal heat generation. If there is discoloration or abnormal heating, the contacts in the outlet may be corroded or deteriorated.
  - Contact original dealer of purchase, if further questions arise concerning maintenance procedures.

## 5. Inspection and Maintenance

### Washing of Distiller

Scale builds up on distiller (boiler, condenser, heater) by distillation. Scale will accumulate as the duration of use becomes longer, which may cause drop in water quality or interruption of heater. Clean distiller regularly with the included scale cleaner. We recommend that you ask the sales agent from whom you purchased the product, our sales office, or the customer service center to wash the distiller.

Cleaning distiller requires tools such as a Philips screwdriver and plier and these tools should be prepared separately. Prepare in advance.

Precautions in cleaning distiller Read carefully before cleaning distiller.	
	Turn OFF (○) ELB. Be sure to turn OFF (○) ELB before cleaning distiller. Electric shock may result.
	Always carry out cleaning after distiller is sufficiently cooled. Distiller becomes very hot after distillation. Leave unit at least 30 minutes after turning ELB OFF (○). It may cause burn injury or damage to distiller.
	Use protective equipment. Always wear protective equipment (gloves, mask, and glasses) when cleaning distiller. Direct contact with bare hands may cause damage to distiller. If the can stone cleaner comes into contact with the human body, rinse it thoroughly with fresh water.
	Handling of distiller <ul style="list-style-type: none"><li>Be careful not to drop the boiler or condenser when you remove the boiler. Since distiller is made of a fragile material (boiler/condenser: hard glass, heater: ceramic), it may break on impact of contact or falling.</li><li>Boiler and Be sure to install the gasket and hose clamp at the condenser joint. Water leakage may result.</li></ul>
	Handling of heater <ul style="list-style-type: none"><li>Do not touch heater with bare hands. Doing so may cause damage to heater.</li><li>Do not forcibly bend the heater lead wire in an improper direction. The lead wire may break.</li><li>Ensure that the screw is not loose after fastening the lead wire to the terminal block. Electric shock may result.</li></ul>

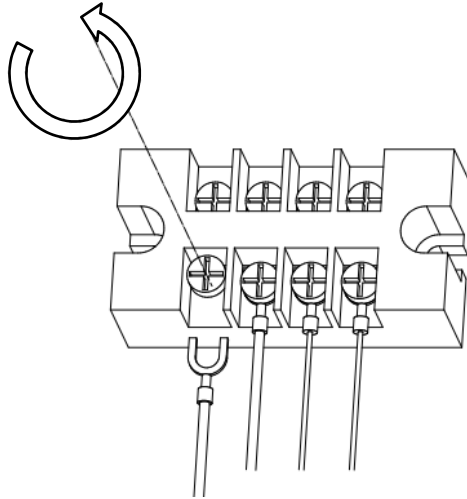


## 5. Inspection and Maintenance

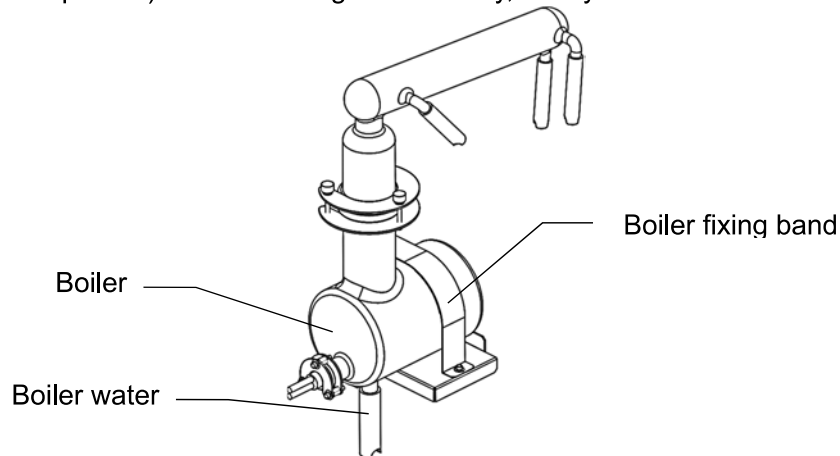
### Washing of Distiller

#### ● Removing distiller

1. Turn OFF (○) ELB.
2. Close the water tap.
3. Turn OFF (○) ELB and wait for at least 30 minutes to dissipate heat, and then open front door and turn on boiler drain cock.
4. Open the right door of the main unit, loosen the four screws on the lower side of the terminal block with a Phillips screwdriver, and pull out the heater lead wire. (since WG1012 employs two heaters, there are eight screws)



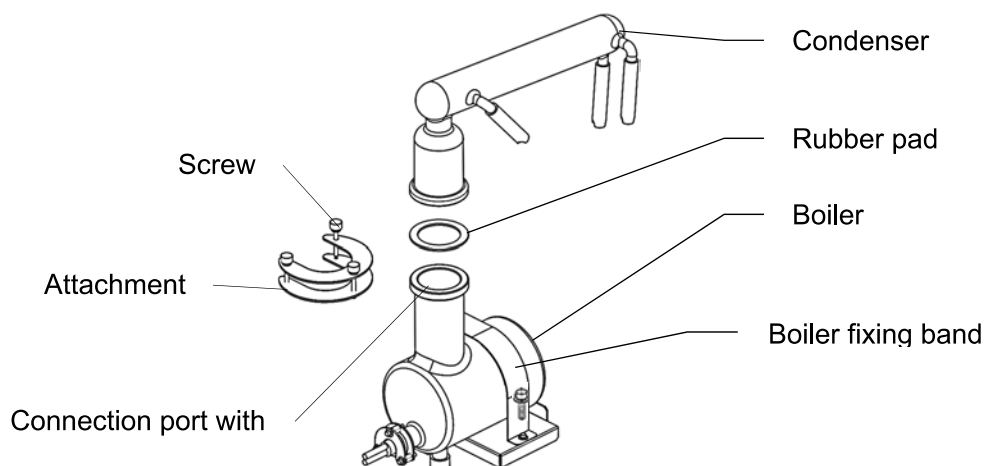
5. Remove the maintenance port on the right side and disconnect the hose connected to the boiler. Boiler water supply/drain port by twisting the hose clamp with a tool to disengage the meshing portion (serrated portion). Remove the glass carefully, it may break if excessive force is applied.



## 5. Inspection and Maintenance

### Washing of Distiller

1. Remove the two screws of the boiler fixing band with a Phillips screwdriver, and remove the boiler fixing band from the main body.
2. Loosen the three knurled screws on the connector and remove the boiler and packing. At this time, do not remove the condenser from the product. Be careful not to drop the condenser.



#### ● Boiler cleaning

1. Density adjustment of scale cleaner
  - 1) Prepare about 2 L of hot water at 50 to 60 °C.
  - 2) Add about 200 g of scale cleaner (Orgazole) to the hot water, and stir it thoroughly.
2. Plug water inlet/drain port at the bottom of boiler with a rubber stopper, etc.
3. Secure boiler on a level and stable surface to prevent the cleaner from spilling.
4. With heater on, pour the cleaner into boiler through the connection port to condenser.

Most scale will be removed in about four to five hours. Drain scale cleaner out of boiler. When the scale cannot be completely removed and much left inside boiler, add the cleaner and wash once again.

  - (1) Once scale removing completes, dismantle heater from boiler, and wash each of them thoroughly with tap water. Always clean heater in a large beaker or other container filled with water in order to avoid wetting lead wire and its outlet. Do not pour water directly through a water tap.
  - (2) Follow the procedure below if solid scale remains after washing with the cleaner.

Boiler: Scrape off with a brush, etc.  
Heater: Scrape off with a wood piece or other soft object.

Ensure that all the scale over heater is removed evenly and not sparsely left in solid form. In an extreme case, the thermal resistance may increase only at that part, causing serious damage to heater.

## 5. Inspection and Maintenance

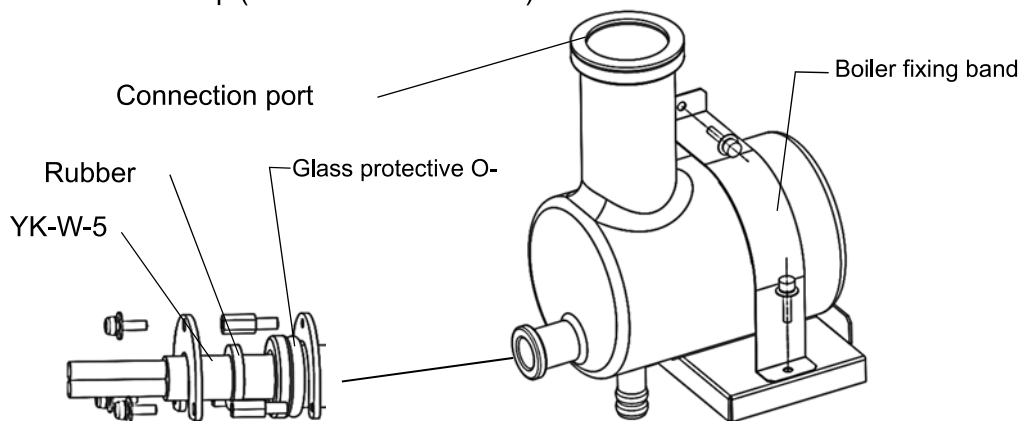
### Washing of Distiller

- Handle scale cleaner with care

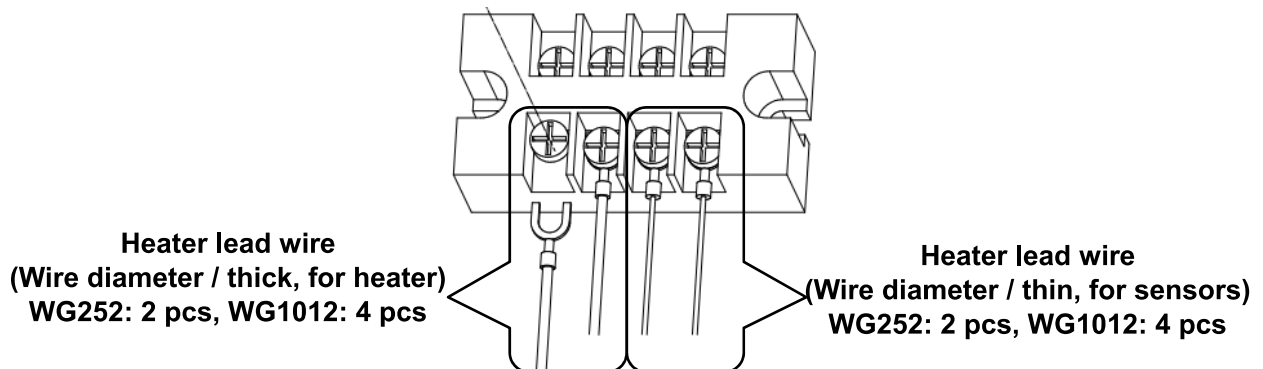
1. Cleaning boiler and heater in shorter period is recommended. When large amount of scale accumulates, it becomes more difficult to remove, and may lower the volume of distilled water collection, or cause damage to heater.
2. After cleaning, discharge the cleaner and neutralize it with neutralizer (sodium hydrate, etc.). Use pH test paper to check whether the liquid has been neutralized. The main component of the scale cleaner is sulfamic acid (the pH of the water solution is about 1)
3. Store scale cleaner in a sealable container and avoid high temperature and humidity.
4.
  - Always wear protective equipment (gloves, mask, and glasses) when handling the cleaner.
5. If the cleaner comes in contact with any part of human body, wash thoroughly with clean water.
6. Empty container must not be used to contain drinks.
7. Do not release the cleaner into agricultural canals and fields. Doing so may cause withering of crops.

- Installation of boiler

1. Secure boiler with the boiler fixing band so that the connection port of the condenser becomes horizontal.  
Make sure that the gasket is placed inside the cap nut before installing heater into boiler so that the letter "YK-W-5" turns up ("YK-W-4" for WG1012).



2. Attach the thick heater lead wire on the left side and the thin heater lead wire on the right side to the terminal block.  
(Attach 4 heater lead wires for WG252 and 8 heater lead wires for WG1012 to the terminal block.)



3. Insert a hose into boiler water inlet/drain port and fix it with a hose clamp.

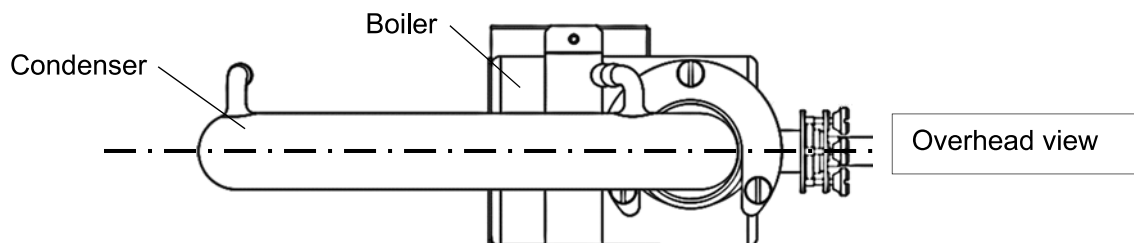
## 5. Inspection and Maintenance

### Washing of Distiller

#### ● Installation of condenser

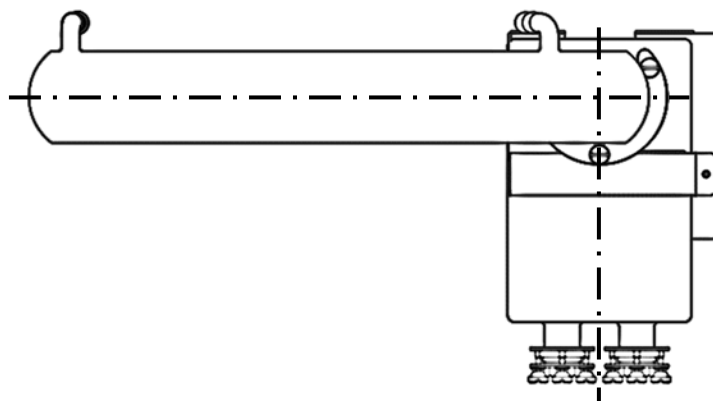
##### (1) 【WG252】

Insert the packing into the connection port between the boiler and the condenser, and fix it so that the boiler and the condenser are in the same direction as shown in the figure below. If the position does not match, loosen the boiler fixing band, align it, and then fix it again.

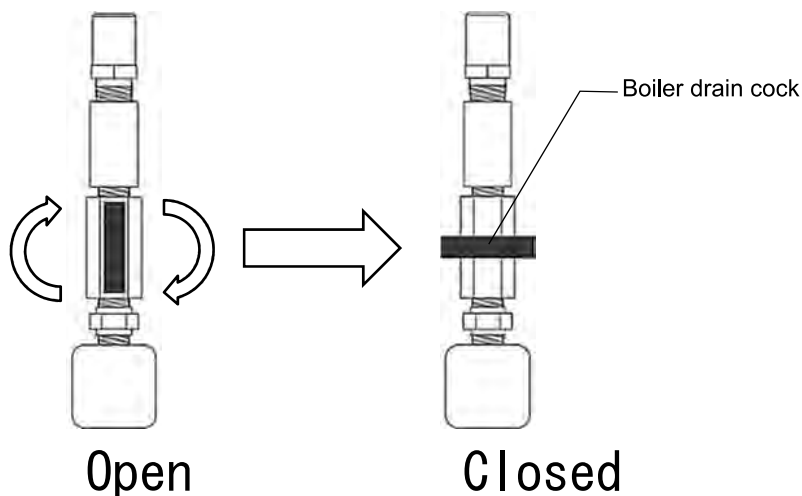


##### 【WG1012】

Insert the packing into the connection port between the boiler and the condenser, and fix it with the connection bracket so that the direction of the boiler and the condenser is rotated by 90 ° as shown in the figure below. If the position does not match, loosen the boiler fixing band, align it, and then fix it again.



##### (2) Close boiler drain cock.

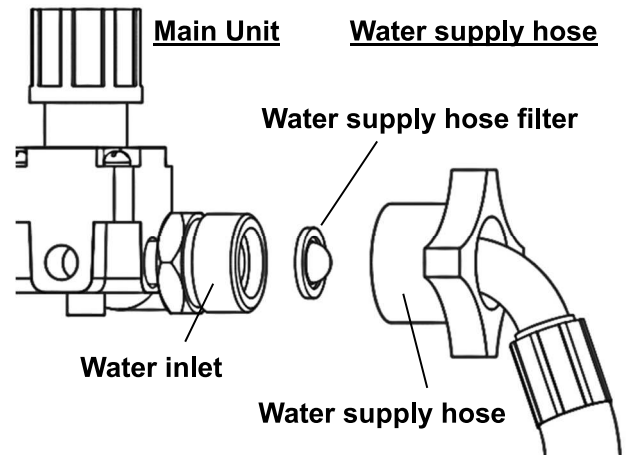


## 5. Inspection and Maintenance

### Cleaning the water supply hose filter

1. After turning the breaker on the right side of the main unit to "OFF (O)", close the water tap and open the maintenance port on the right side. Remove the water supply hose from the water supply port.
2. Remove a water supply hose filter inside the water inlet or water supply hose.
3. Clean the water supply hose filter with tap water. Use a brush to clean the metal parts.
4. Assemble it in the reverse order.

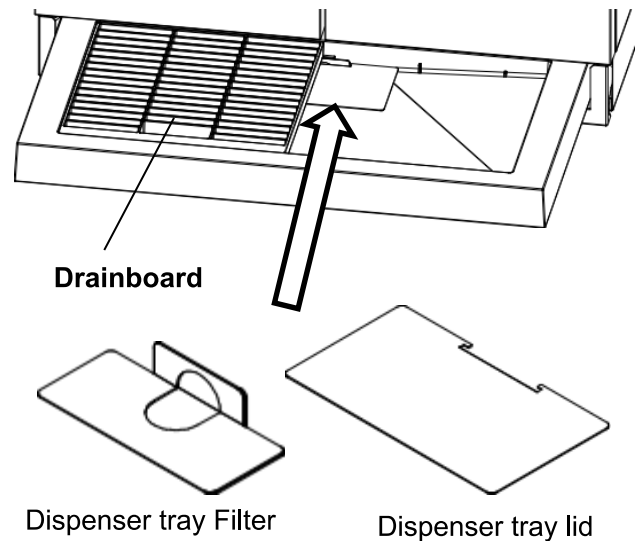
※Clean the filter of water supply hose once in about 6 months.



### Cleaning the water dispenser tray

1. After turning the breaker on the right side of the main unit to "OFF (O)", close the water tap and pull out the water sampling table. The dispenser tray is a push-open type.
2. Remove the drainboard from the dispenser tray, and remove the dispenser tray lid and dispenser tray Filter near the drain.
3. Clean the water dispenser tray lid and dispenser tray filter with tap water. If there is a lot of dirt, clean it with a brush.
4. Wipe off any dirt on the dispenser tray and drainboard with a soft cloth that has been wrung out well.
5. 2. Assemble in the reverse order.

※Please wash the water sampling table every 6 months.



## 6. EXTENDED STORAGE AND DISPOSAL

To store or to place unit out of service



### WARNING

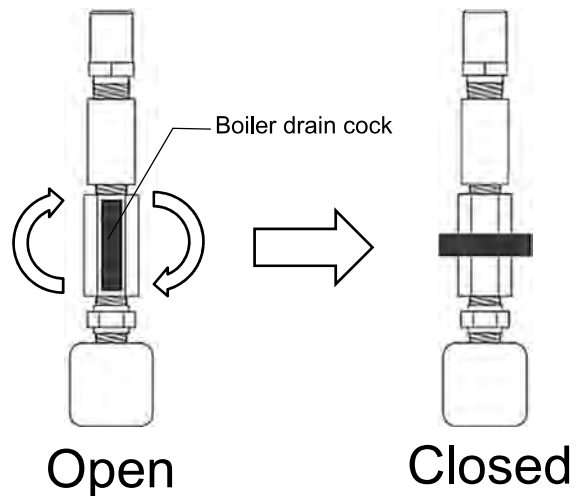


#### When unit will be out of service for an extended period.

Be sure to turn OFF (○) ELB and close water tap for safety. Leaving the water stored in boiler and distilled water tank will allow the growth of bacteria or algae, impairing the water quality. Discharge water by following the steps below.

##### Drain boiler

- (1) When draining boiler, turn OFF (○) ELB, close water tap and wait for at least 30 minutes to dissipate heat, and then open front door and turn on boiler drain cock.
- (2) Open boiler drain cock.
- (3) Check that all the water in boiler and float cylinder has been discharged.
- (4) Be sure to close boiler drain cock. If the boiler water drain cock is open the next time you use it, water will not pass through the boiler, distillation will not start, and the deterioration of the pretreatment cartridge and ion exchange resin will be accelerated.



##### Distilled water tank drain

- (1) Attach the tube to the multipurpose distilled water outlet on the right side of the unit. See P.24 for connecting procedure.
- (2) Turn the water sampling valve of the multipurpose distilled water sampling port counterclockwise to open it. Water is drained from the distilled water tank.
- (3) After draining is complete, turn the water sampling valve to the right to close it. If the boiler water drain cock is open, not only will distilled water not collect in the tank, but it will also leak.



#### When not in use during the night or holidays.

- Turn OFF (○) ELB on the right side of unit.
- Be sure to close the tap.
- If unit is used in a place where it becomes extremely cold in winter, beware of freezing of tank, boiler, and condenser while unit is in storage.

※ If the breaker remains "OFF (○)" for more than a month, the calendar may be initialized and an alarm may be issued at the next startup. For details, refer to WG252 / 1012 Operation Manual Operation.

## 6.EXTENDED STORAGE AND DISPOSAL

### Disposal Considerations



### CAUTION



#### Unit disposal

- Dispose of this unit in accordance with local laws and regulations.
- Do not leave unit where it may be unattended, or in a location where children may have access.
- UV lamps contain mercury, so please contact the local government when disposing of them.

Dispose of or recycle this unit in a responsible and environmentally friendly manner.

Yamato Scientific Co., Ltd. strongly recommends disassembling unit, as far as is possible, in order to separate parts and recycle them in contribution to preserving the global environment. Major components and materials, comprising WG204 unit are listed in the table below

Component Name	Material
<b>Main</b>	
Exterior parts	Chromium-free electrogalvanized steel sheet, baked-on finish
Exterior rear panel	Chromium-free electrogalvanized steel sheet, baked-on finish
Door	Chromium-free electrogalvanized steel sheet, baked-on finish
Door back plate	Stainless steel sheet metal
Mounting plates (coated)	Chromium-free electrogalvanized steel sheet, baked-on finish
Mounting plates (uncoated)	Stainless steel sheet metal
Hinge	Stainless steel sheet metal
Rubber feet	Synthesized rubber
Labels	Polyethylene terephthalate
<b>Water Circuit</b>	
Air vent filter	Exterior: ABS resin Filters: polyethylene, polypropylene, Teflon Soda lime, activated carbon
Boiler	Hard glass
Condenser	Hard glass
Float cylinder	Polypropylene
Pure water tank	Polyethylene
Drain port	Polyethylene
Float cylinder branch tube	Polyethylene
Electrode holder	Polypropylene
Dispenser (exterior)	Polycarbonate
magnet	Neodymium magnet
Operation panel resin frame	ABS resin
Dispenser tray	Polycarbonate
Resin cylinder case	Polypropylene rubber
Deionization resin	Polystyrene resin

## 6.EXTENDED STORAGE AND DISPOSAL

### Disposal Considerations

Component Name	Material
<b>Internal plumbing</b>	
Water quality gauge electrode	Titanium
Heater	Ceramic
Water supply hose	Vinyl chloride
Drain hose	Vinyl chloride
Hose (transparent)	Silicon rubber
Hose (white)	Polypropylene
Hose clamp	Polyacetal
Hose nipple (resin translucent)	Polypropylene
Hose nipple (metal)	Brass
One-touch fitting (white / gray)	Polyacetal
<b>Electrical Parts</b>	
Pump	Casing: polypropylene Magnet: Ferrite magnet Motor case: Iron Rotor: Iron
Solenoid valve (metal)	Body: brass Resin: Body polyacetal
Float switch	Polypropylene
Power cable, wiring and other components	Synthetic rubber or resin coated wiring materials, boards
UV lamp (optional)	<b>Hard glass, mercury *</b>

※About disposal of UV lamps

UV lamps contain mercury. Please contact each local government when disposing.



## 7.TROUBLESHOOTING

### Troubleshooting Guide

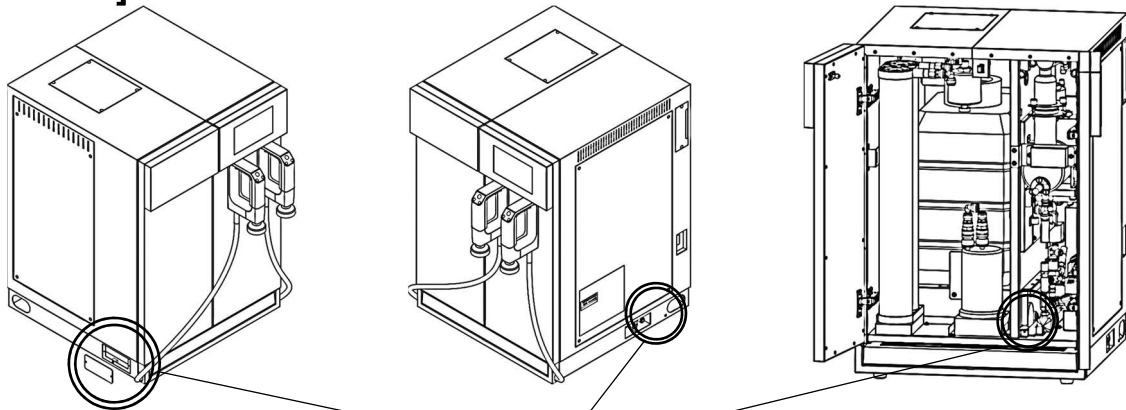
#### When water leakage alert is displayed

##### Corrective actions

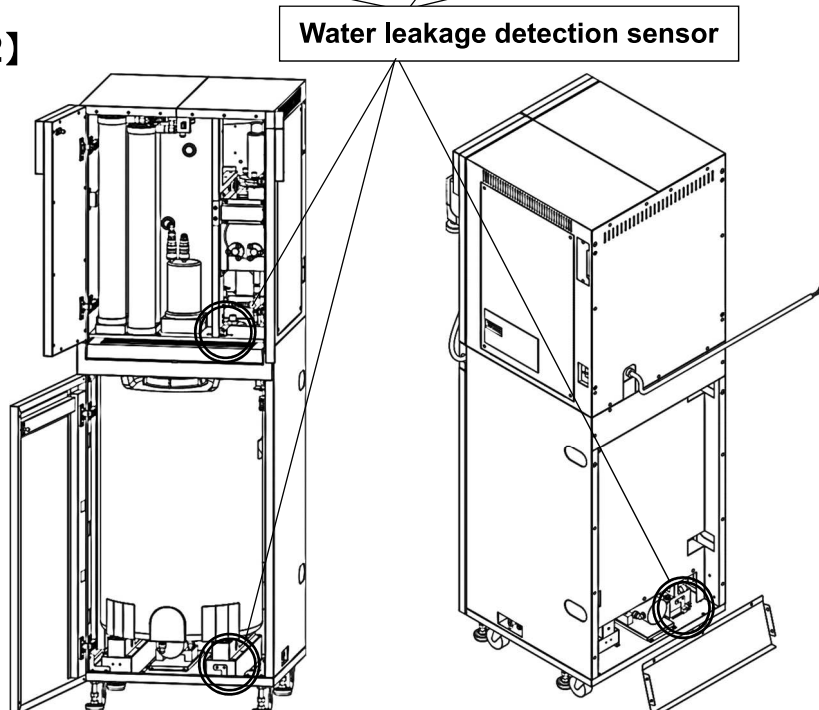
- (1) Turn OFF (O) ELB on the right side of unit.
- (2) Identify the water leakage point.
- (3) Wipe off and dry the water at the bottom of unit. Remove leak sensor and dry the electrode thoroughly. (A Philips screw driver is required to remove the leak sensor)
- (4) When the leak sensor is dry, be sure to set it back.
- (5) Replace the door and cover on the unit.
- (6) Turn "ON (I)" ELB on the right side of unit, to resume operation.

※Close the tap before disassembling the piping, such as repairing water leakages from the piping.

#### [WG252]



#### [WG1012]



# 7. TROUBLESHOOTING

## Troubleshooting Guide

Symptoms	Possible causes	Measures
Displays are blank when control panel is turned on	ELB is OFF (○)	Turn ON (I) ELB on the right side of unit.
	Power supply failure	Check the power supply capacity. WG252 : 1 φ AC100 V WG1012 : 1 φ AC200 V
	ELB failure	Replace relevant parts
No water is supplied	Water tap is not sufficiently open.	Open the tap.
	Water is cut off or pressure is low.	Check whether the tap is turned on.
	Water supply hose is not properly connected	Reconnect water supply hose (P.31).
	Raw water supply solenoid valve failure	Replace relevant parts
	Boiler water supply solenoid valve failure	Replace relevant parts
	Float switch failure	Replace relevant parts
	Clogged consumables	Please check the replacement time.
	Boiler drain solenoid valve is open	Close the drain cock.
	Clogging of water supply hose filter	Check the water hose.
The water sampling hose vibrates greatly (distilled water)	The air in the pump has not escaped	Remove the membrane filter and collect about 5 L distilled water.
Water supply will not stop	Failure in solenoid valve for raw water supply.	Replace relevant parts
	Float switch failure	Replace relevant parts
Water collection of deionized water will not stop.	Failure in solenoid valve for deionized water collection	Replace relevant parts
	Failure in solenoid valve for deionized water collection	Replace relevant parts
Distilled water collection will not stop.	Failure in solenoid valve for distilled water collection	Replace relevant parts
	Distilled water sampling switch failure	Replace relevant parts
Heater does not turn on	Float switch failure	Replace relevant parts
	Heater interruption or disconnection	Replace relevant parts
Cooling water does not flow	Failure in solenoid valve for cooling water	Replace relevant parts
Water in the boiler does not drain	Failure in solenoid valve for boiler drainage	Replace relevant parts
Water from the dispenser tray does not drain	Bad aspirator	Replace relevant parts
	Dispenser tray Filter	Check the dispenser tray
Initial distilled water is not discharged.	Failure in solenoid valve for initial distilled water drainage	Replace relevant parts
Distilled water is not accumulated.	Water storage setting	Check the full water setting *
	Failure in solenoid valve for initial distilled water drainage	Replace relevant parts
Distillation will not stop	Float switch failure	Replace relevant parts
Cannot collect water	Water dispense lock	Remove the water sampling lock from the setting screen. *
	Failure in solenoid valve for deionized water collection/distilled water collection	Replace relevant parts
	Clogged consumables	Please check the replacement time.
	Defective membrane switch	Replace relevant parts
	Piping connection failure	Check the hose connection. (See P.31)
Poor water quality	Ion-exchange resin cartridge is degraded	Dispense about 5 L of water. If not improved, replace deionization resin cartridge.
	Remaining air in the deionization resin cartridge	
	Ion-exchange resin cartridge has not been used for a long period of time	Drain distilled water tank and produce distilled water again.
	Distilled water is stored in the distilled water tank for an extended period.	

※For details, refer to WG252 / 1012 Operation Manual Operation.

## 8. SERVICE & REPAIR

### Requests for Repair

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#### Warranty card (attached separately)

Warranty card will be handed by dealer or Yamato personnel upon delivery and installation, or will be attached to equipment if no one from dealer or Yamato is to be present at delivery and installation.

Register warranty card at <https://www.yamato-net.co.jp/support/warranty.htm>  
<https://www.yamato-net.co.jp/support/warranty.htm>

- Keep warranty card safe.

#### Requests for Repair

If abnormalities remain after confirming "Troubleshooting Guide", terminate operation, turn off controller and ELB, and disconnect power cable. Contact original dealer of purchase or Yamato sales office for assistance.

The following information is required for all repairs.

- Product Name
  - Model
  - Serial Number
  - Date (year/month/day) of Delivery
  - Description of problem in as much detail as possible
- } Refer to warranty card.
- Repair this equipment for free of charge according to the contents on warranty card. Warranty period is 1 (one) year from date of purchase.
  - Consult with original dealer of purchase or Yamato sales office for any repair after warranty ended. Charged repair service of this equipment will be available on customer's request when it can be maintained functional by its repair.

※Be sure to present warranty card to the service representative.

#### Guaranteed Supply Period for Repair Parts

Guaranteed maximum supply period for repair parts is 7 (seven) years from date of discontinuation for this equipment.

"Repair parts" is defined as components which, when installed, allow for continued equipment operation.

# 9. Specifications

## Specifications

Model	WG252		WG1012	
System / Performance※1	Water purifying system	Ion exchange → distillation → filtration		
	Water supply system	Resin hose connection to water tap with one-touch coupler/ hose connection		
	Drain system	Drain water connector on both sides for the connection of a drain hose		
	Purified water	deionized water, distilled water		
	Distilled water production	Approx. 1.5 L/h	Approx. 5 L/h	
	Distilled water delivery rate※2	Dripping ~ Approximately 2.5 L / min (with variable flow rate function)		
	Deionized water delivery rate※2	Approximately 1.0L / min (without variable flow rate function)		
	Water collection capacity setting range※3	0.01 ~ Tank water storage L / Continuous water sampling	0.01 ~ Tank water storage L / Continuous water sampling	
Configuration	Condenser	Hard glass		
	Heater	Ceramic heater 1.2 kW	Ceramic heater 1.9 kW x 2	
	Pre-treatment cartridge	0.1μm hollow fiber membrane + activated carbon (PWF-1)		
	Deionization resin cartridge	CPC-S 4 L: 1 pc (Cartridge with activated carbon)	CPC-S 4 L: 1 pc (Cartridge with activated carbon)	
	Final filtration	0.1 μm x 2 (membrane filter)		
	Water leakage detection	When water leakage is detected, leak sensor shuts off water supply solenoid valve.		
	Distilled water storage tank	30 L PE tank	100 L PE tank	
	UV sterilization for distilled water	option		
	Dispenser tray	Push-open type, load capacity: 10 kg, 5 L for beaker with hand		
	Multipurpose distilled water outlet	For Φ8 rigid tube connection (on the right side)		
Water level detection	Float switch 5-stage detection			
Standard	Raw water pressure range	0.05~0.5 MPa	0.1~0.5 MPa	
	Raw water requirement	Approx. 2.0 L/h	Approx. 2.6 L/h	
	Operating ambient temperature range	5~35 °C		
	Power supply (50/60 Hz), Rated current	AC100 V 12.5 A (15 A)	AC200 V 20 A (30 A)	
	External dimensions * 4	W540 × D570 × H780mm	W550 × D570 × H1715mm	
	Weight	Approx. 63 kg	Approx. 113 kg	
Display	Water level	Digital		
	Water quality readout	Digital display (electrical conductivity/specific resistance) (×10 <sup>4</sup> Ω・m ⇔×MQ・cm ⇔×10 <sup>-4</sup> S/m ⇔×μS/cm)		
	Other displays	Notification (including advance): Various consumables / regular maintenance Warning: Water outage / Trend data recording impossible / Power outage / Distilled water quality deterioration Abnormal: Controller / Leakage / Heater overheat / disconnection / Tank water level gauge/ Boiler water level, water level gauge / boiler drainage route / cooling water / water quality meter / water sampling pump / Flow rate decrease (ion exchanged water) / Water sampling route		
	Accessories	Water supply hose (2 m)	1	
		Water supply hose filter	1	
		Connection hose assembly	1 (2 for WG1012)	
		Scale cleaner	1	
		Pre-treatment cartridge	1	
		Deionization resin cartridge	1 (2 for WG1012)	
		Air vent filter	1	
		Membrane filter	2	
		Water outlet cover	2	
		Magnet hook	2	
Adjuster fixing bracket (WG1012 only)		4		
Instruction Manual		2 copies (including this book)		
Warranty card	1			

※1 Performance data above based on WG252: 100V AC supplied power, 23 °C ±5°C room temperature, and 65%RH ±20% humidity.  
WG1012: 100V AC supplied power, 23°C ±5°C room temperature, and 65%RH ±20% humidity.  
Operating ambient temperature range for this unit is between 5 °C and 35 °C. Keep temperature range of raw water between 5°C and 30°C. When raw water temperature is high, the drainage temperature may also be high. If the temperature exceeds 60 °C, a drain trap is required.

※2 The guaranteed performance range is raw water pressure 0.2 to 0.5 MPa. Water dispensing volume varies depending on water temperature.

※3 The accuracy of quantitative water sampling is approximately 10%.

※4 Protrusions excluded.

## 10.REPLACEMENT PARTS LIST

### Consumables

Part name	Model	Code No.
Pre-treatment cartridge	PWF-1	253099
Deionization resin cartridge	CPC-S	253080
Air vent filter for tank	YAVF-1	LT00040430
UV lamp for germicidal lamp (optional)	OWG28	253773
Scale cleaner (1 kg)	-	8190010001
Membrane filter (2 pcs)	MFRL727	9020010004

The following consumables are used as **a set with the filter housing (OA111)**.

Part name	Use	Code No.
Wind cartridge	Filtration of raw water	9020036001
Activated carbon filter	Removal of iron rust, chlorine, etc. in raw water	9020026002

Contact original dealer of purchase for further assistance.

# OPTIONAL ACCESSORIES

## Option list

Options listed in Table 11 are required to be installed at the Yamato manufacturing facility.  
Contact original dealer of purchase for requests for options.

Option	Product Code	Model	Description
Stand	281333	OA097	<b>For WG252</b> External dimensions: W540 x D 660 x H 800 mm Caster with adjuster Accessories: Shelf board, adjuster fixing bracket
Sterilization light	281334	OA098	<b>Cannot be installed after delivery for WG252</b>
Sterilization light	281335	OA099	<b>Cannot be installed after delivery for WG252</b>
Water supply joint	281337	OA101	It is a mouthpiece used by removing the pipe part of the free faucet.
Water Tap	281338	OA102	Used when there is no sink near water supply equipment.
Water Tap (Pressure reducing valve)	281339	OA103	A water tap and a pressure reducing valve are included in the set. Regulates raw water pressure. Used when the raw water pressure is not constant or when the raw water pressure is 0.5 MPa or more.
Drain trap	281340	OA104	Used when the drainage temperature is high.
Water supply extension hose (1m)	281341	OA105	For extending the water supply hose
Drain hose (3 m)	281342	OA106	Replace the existing drain hose (2m).
Foot switch	281343	OA107	Allows you to operate the sampling of deionized water and distilled water with your feet.
Water outlet cover	281344	OA108	It is a cover to be attached to the membrane filter water outlet. (Equivalent to the standard accessory water sampling port cover)
Shower nozzle	281345	OA109	It is used by attaching it to the water sampling port of the dispenser. Can be used for cleaning utensils.
Hose for deionized resin expansion	281346	OA110	<b>For WG252</b> Deionization resin cartridge (CPC-S) can be added to two, to reduce the frequency of cartridge replacement.
Pure line	253669	WL100H	Separately placed large deionization resin cartridge (resin amount: 10 ) It helps to reduce the frequency of replacement of cartridge by connecting. Comes with hoses and fittings for connecting to WG252/1012
Filter housing	281347	OA111	This is the case to insert an optional filter. Use it as a set with a filter. See 10. Replacement BOM (P. 57) for optional filters. Comes with a hose for connecting to WL100H and WG252/1012.
Filter stand	281348	OA112	Used to secure the filter housing. It can fix up to two with one stand.

## 11.OPTIONAL ACCESSORIES

### Option list

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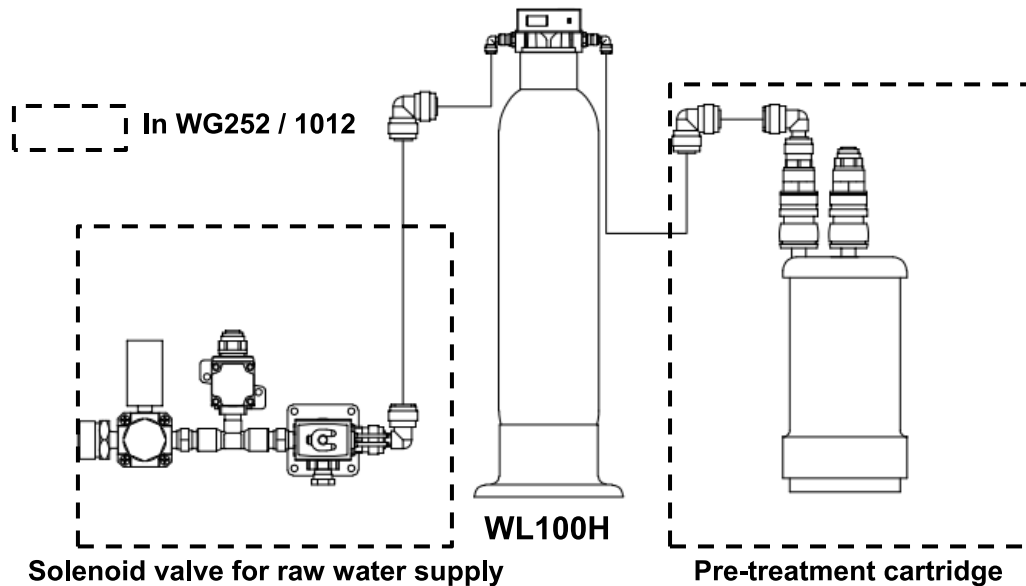
Option	Product Code	Model	Description
External alarm output	281351 281352	OA113 OA114	<b>OA113: for WG252, OA114: for WG1012</b> When a consumables notification, alarm, or abnormality occurs, a signal is output to the outside.
Pure water delivery unit	253135	PW200	Used by connecting to a multipurpose distilled water outlet. Use this when you want to dispense water from a remote location, or when you want to connect to a separate tank or other product.

Contact original dealer of purchase for further assistance.

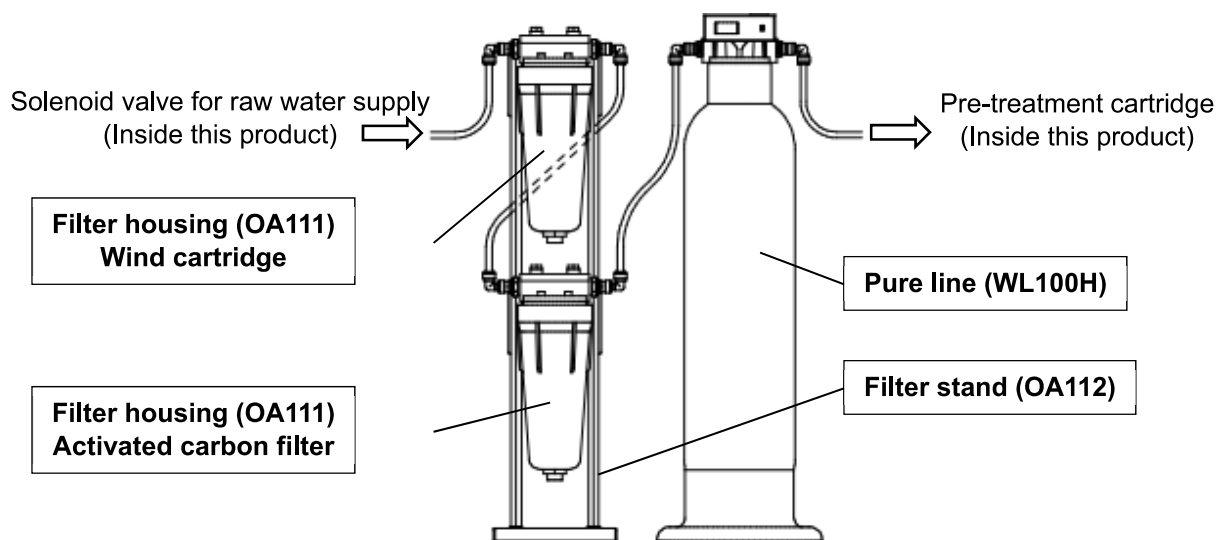
# 11.OPTIONAL ACCESSORIES

## Pure Line (WL100H)

Pure Line (WL100H) is an option to add a large Deionization resin cartridge prior to the Pre-treatment cartridge of this unit. By connecting as shown in the figure below, the frequency of replacement of the deionization resin cartridge can be reduced.



As shown in the figure below, the pure line (WL100H), filter housing (OA111), and filter stand (OA112) can be combined and connected to this product. In addition, the filter housing (OA111) can be equipped with an "activated carbon filter" or "wind cartridge" depending on the purpose. For the filter, refer to 10. Replacement BOM (P. 57).



Configuration Model	Only pure line (WL100H) is added	Added Pureline (WL100H) and Filter Housing (OA111).	Added two pure lines (WL100H) and filter housing (OA111).
WL100H	○	○	○
OA111	×	○	○(x2)
OA112	×	○	○



## 12. LIST OF HAZARDOUS SUBSTANCES



Never use this product in the atmosphere of explosive substances, flammable substances, or substances containing them.

LIST OF HAZARDOUS SUBSTANCES

Explosive substances	① Trinitrobenzen, Trinitrotoluene, Picric Acid and other explosive nitro compounds
	② Trinitrobenzen, Trinitrotoluene, Picric Acid and other explosive nitro compounds
	③ Acetyl Hydroperoxide, Methyl Ethyl Ketone Peroxide, Benzoyl Peroxide and other organic peroxides
	④ Metallic Azide, including Sodium Azide, etc.
Combustible substances	①Metal "Lithium" ②Metal "Potassium" ③Metal "Natrium" ④Yellow Phosphorus ⑤ Phosphorus Sulfide ⑥Red Phosphorus ⑦Phosphorus Sulfide ⑧Celluloids, Calcium Carbide (a.k.a, Carbide) ⑨Lime Phosphide ⑩Magnesium Powder ⑪Aluminium Powder ⑫ Metal Powder other than Magnesium and Aluminum Powder ⑬Sodium Dithionous Acid (a.k.a., Hydrosulphite)
Oxidizing Substances	① Potassium Chlorate, Sodium Chlorate, Ammonium Chlorate, and other chlorates
	② Potassium Perchlorate, Sodium Perchlorate, Ammonium Perchlorate, and other perchlorates
	③ Potassium Peroxide, Sodium Peroxide, Barium Peroxide, and other inorganic peroxides
	④ Potassium Nitrate, Sodium Nitrate, Ammonium Nitrate, and other nitrates
	⑤ Sodium Chlorite and other chlorites
	⑥ Calcium Hypochlorite and other hypochlorites
Flammable Substances	① Ethyl Ether, Gasoline, Acetaldehyde, Propylene Chloride, Carbon Disulfide, and other substances having ignition point of 30 or more degrees below zero.
	② N-hexane, Ethylene Oxide, Acetone, Benzene, Methyl Ethyl Ketone and other substances with ignition point between 30 degrees below zero and less than zero.
	③ Methanol, Ethanol, Xylene, Pentyl n-acetate, (a.k.a. amyl n-acetate) and other substances having ignition point of between zero and less than 30 degrees.
	④ Kerosene, Light Oil, Terebinth Oil, Isopentyl Alcohol (a.k.a. Isoamyl Alcohol), Acetic Acid and other substances having ignition point of between 30 degrees and less than 65 degrees.
Combustible gas	Hydrogen, acetylene, ethylene, methane, ethane, propane, butane and other flammable objects that are gases at 1 atm and 1 atm

Excerpt from Table 1, Hazardous Substances, of Cabinet Order of the Occupational Safety and Health Law (substances related to Articles 1, 6, and 9)

# 13. STANDARD INSTALLATION MANUAL

※Install this equipment according to following format (check options and special specifications separately).

Model	Serial Number	Installation Date	Charged Personnel or Company Name for Installation	Installation proved by	Judgment

No	Item	Implementation method	Chapter No. & Reference page of instruction manual	Judgment
<b>Specification</b>				
1	Accessories	Quantity check according to the accessories column	2. COMPONENT NAMES AND FUNCTIONS ▪ Accessories P.16	
2	Installation	<ul style="list-style-type: none"> <li>▪ Visual check of surrounding conditions</li> <li>Caution: Take care for environment</li> <li>▪ Securing a space</li> </ul>	3. PRE-OPERATION PROCEDURES ▪ Installation Precautions P.28	
<b>Operation-related matters</b>				
1	Power-supply voltage	<ul style="list-style-type: none"> <li>▪ Measure customer voltage (switchboard outlet, etc.) with a tester</li> <li>▪ Voltage measurement during operation (Being within the standard)</li> <li>Caution: Use a compliant device to install on a plug or an ELB.</li> </ul>	1. Safety precautions P.7 ▪ Be sure to use the ground wire ... P.29 3. PRE-OPERATION PROCEDURES ▪ Power supply is a dedicated outlet ... P.56 9. SPECIFICATIONS ▪ Standard-Power supply	
2	Raw water	Drainage water	3. PRE-OPERATION PROCEDURES ▪ The raw water pressure of the water supply is ... P.29	
3	Water collection	Explain about water dispensing operation according to instruction manual.	WG252 / 1012 Operation * 2. OPERATION PROCEDURES	
<b>Description</b>				
1	Operational descriptions	Explain operations of each component and handling precautions according to instruction manual.	1. Safety precautions P.1~ ~ 15. LIST OF HAZARDOUS SUBSTANCES 61	
2	Abnormal sign	Explain about error messages and procedures for reset according to instruction manual.	7. TROUBLESHOOTING P.54 ▪ Is it a malfunction? When... * WG252 / 1012 Operation 3. TROUBLESHOOTING	
3	Maintenance and Inspection	Explain operations of each component and handling precautions according to instruction manual.	5. Inspection and Maintenance P.40 ~49	
4	Completion of installation Matters to be Stated	<ul style="list-style-type: none"> <li>▪ Fill in Installation Date and Charged Personnel or Company Name on OK and Service label of this equipment.</li> <li>Fill in necessary information to warranty card and hand it over to customer</li> <li>▪ Explain how to contact with service personnel</li> </ul>	8. SERVICE & REPAIR P.54	

※For details, refer to "WG252 / 1012 Operation Manual Operation".

## Limited Liability

Always operate equipment in strict compliance to the handling and operation procedures set forth by this instruction manual.

**In the unlikely event that it is used with contents other than those described in the instruction manual, an accident or failure may occur.**

**Never attempt to disassemble, repair or perform any procedure which are not expressly mandated by this manual.**

**Doing so may result in equipment malfunction, serious personal injury or death.**

## Notice

- Instruction manual descriptions and specifications are subject to change without notice.
- Yamato Scientific Co., Ltd. will replace flawed instruction manuals (pages missing, pages out of order, etc.) upon request.

Water Purifier    Auto Still ®  
Instruction Manual  
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Revised:

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For repair service, maintenance service and consumables purchase support, please contact to our distributors from whom you purchased.

Or please visit to our customer support website at  
<https://www.yamato-scientific.com/support/inquiry/>

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