



## Water Purifier

Pure Line<sup>®</sup>  
WL320A/B

# Instruction Manual

First edition

● Thank you very much for purchasing this Yamato Pure Line<sup>®</sup> WL320A/B.

● Please read the “Operating Instructions” and “Warranty” before operating this unit to assure proper operation. After reading these documents, be sure to store them securely together with the “Warranty” at a handy place for future reference.



### **Warning:**

Before operating the unit, be sure to read carefully and fully understand important warnings in the operating instructions.

**Yamato Scientific America Inc.  
Santa Clara, CA**

The documents are printed on recycled paper.



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# 1. Safety precautions


## Explanation of pictograms


### About pictograms

A variety of pictograms are indicated in this operating instruction and on products for safe operation. Possible results from improper operation ignoring them are as follows.

Be sure to fully understand the descriptions below before proceeding to the text.

---

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

 **Caution** Indicates a situation which may result in minor injury (Note 2) and property damages (Note 3.)

---

(Note 1) Serious injury means a wound, an electrical shock, a bone fracture or intoxication that may leave after effects or require hospitalization or outpatient visits for a long time.

(Note 2) Minor injury means a wound or an electrical shock that does not require hospitalization or outpatient visits for a long time.

(Note 3) Property damage means damage to facilities, devices and buildings or other properties.

### Meanings of pictograms



This pictogram indicates a matter that encourages the user to adhere to warning ("caution" included).  
Specific description of warning is indicated near this pictogram.



This pictogram indicates prohibitions  
Specific prohibition is indicated near this pictogram.



This pictogram indicates matters that the user must perform  
Specific instruction is indicated near this pictogram.

# 1. Safety precautions

## List of symbols

### Warning



General warnings



Danger!: High voltage



Danger!: High temperature



Danger!: Moving part



Danger!: Hazard of explosion

### Caution



General cautions



Electrical shock!



Burning!



Caution for no liquid heating!



Caution for water leak!



For water only



Poisonous material

### Prohibitions



General bans



Fire ban



Do not disassemble

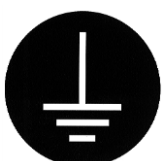


Do not touch

### Compulsions



General compulsions



Connect ground wire



Install levelly



Pull out the power plug



Regular inspection

# 1. Safety precaution

Warning • Caution

## Warning



### **Never operate the unit in an atmosphere containing flammable or explosive gas**

Never operate the unit in an atmosphere containing flammable or explosive gas. Otherwise, an explosion or a fire may result since the unit is not explosion-proof. See section "13. List of dangerous materials" on page43.



### **Be sure to connect the earth wire.**

Connect the earth wire to the earth socket outlet. If the earth socket outlet is not available, use the grounding adaptor to connect the earth lead to the ground. Otherwise, electric leakage occurs, causing electric shock or fire.



### **Be sure to insert the power cord plug firmly.**

Insert firmly the power cord to the extreme depth of the main body power socket. If not inserted firmly, overheat or fire may occur.



### **Stop using in case of abnormality**



Should any fuming or questionable odor be detected, turn OFF(O) the electric leakage breaker on the right-hand side of main body immediately, and disconnect the power plug from the master power supply. Then request inspection to the shop from which you have purchased the product, our sales office or our customer service center. If left unattended, such abnormality may cause fire or electric shock.



### **Never use electrical power cords bundled.**

When these are used bundled, they might overheat causing a fire.



### **Take care not to damage electrical power cords.**

Avoid tightly bend, pull with a strong force or twist to prevent electrical power cords from damaging. A fire or an electrical shock may result.



### **Never try to disassemble or alter the unit.**

Never try to disassemble or alter the unit. A malfunction, a fire or an electrical shock may result.



### **Always keep the tap closed when the product is not operated.**

Always keep the tap closed when the product is not to be operated (during nighttime or holidays). Otherwise, water leakage may occur.



### **Do not place an object on this product.**

Any object, if placed on the system, may drop. Placement of the solvent may also cause trouble.



### **Do not ride on this product.**

The person riding on the product may overturn or the system may be damaged, resulting in injury or trouble.

# 1. Safety precautions

## Warning • Cautions

### Warning



#### **Do not adjust the reducing valve.**

The reducing valve has been set to the water sampling rate of about 1.0L/min(raw water pressure :  $3 \times 100\text{kPa}$ , reducing valve pressure :  $0.6 \times 100\text{kPa}$ ) at the factory. Never attempt to readjust the reducing valve.

If the factory setting of the valve is lost, water leak or reduction of flow may result.



#### **Be sure to release the pressure before exchanging consumable parts.**



Release the pressure referring to the “Before replacing the ion exchange ion cartridges, the pretreatment cartridges and the membrane filter” on P.28 before replacing them. The unit has not draining function and pressure will remain inside the unit after sampling water. Be sure to first release the pressure before replacing such consumable parts to prevent water from belching out.



### Caution



#### **In case of thundering**



When thundering begins, turn OFF (O) the electric leakage breaker on the right-hand side of main body immediately and pull out the power cord.

Otherwise, lightning may cause failure of the control circuit of the system or may cause fire and electric shock.



#### **In case of power failure**

Although the unit will stop when a power outage occurs, the unit will not supply water to the tank if water is left in the tank at the recovery from the power outage while the power switch is ON. In contrast, it will start supplying water to the tank to the highest level if it is empty at the time of recovery.

Turn the electric leakage breaker on the right side of the unit to OFF(O) for safety when a power outage occurs.

To resume operation, follow the steps in “Turning power on” in the “4.Operation Method” on P.20

## 2. Before operating the unit

### Installing procedures and preparation before operation

#### Warning

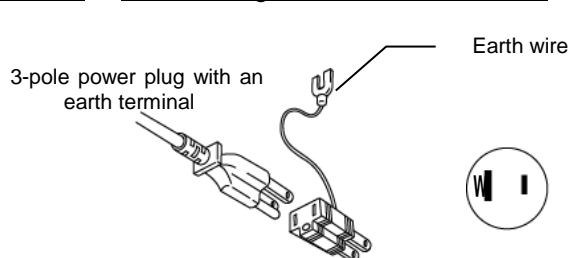
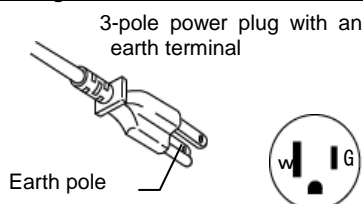
#### 1. Be sure to connect the earth wire.



- Connect the power cord with an earth terminal included to an earthed outlet.
- If a 3-pole power plug with an earth terminal is unavailable, be sure to connect the earth wire (the green core wire of the power cord) to the ground wire or the ground terminal to prevent an electrical shock accident from earth leakage.
- Never connect the earth wire to the gas pipe or water pipe, in order to prevent fire.
- The earth wire must never be used for grounding of the telephone line and lightning arrestor. This is to prevent fire and electric shock.
- Never use the branch socket outlet because it causes hazardous heat generation.

Used of ground socket outlet recommended

When using a diode socket outlet



When there is no ground terminal.

● In this case, class D grounding work is necessary and please consult your dealer or our customer service center.

Ground adaptor

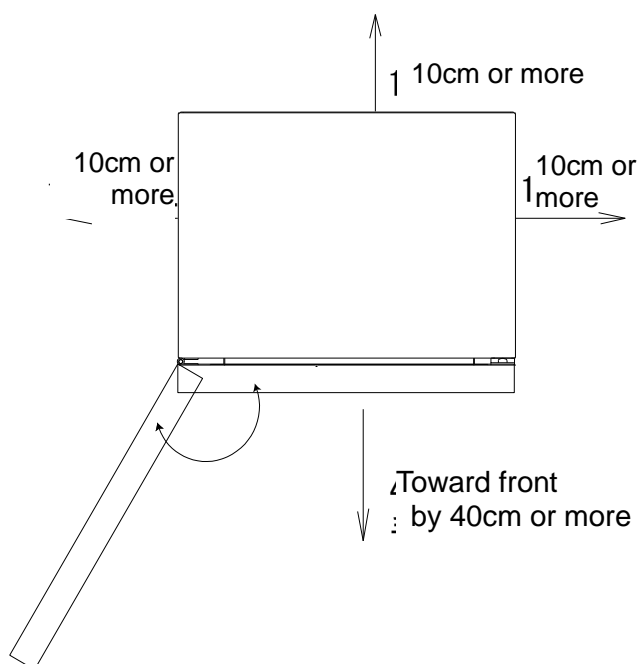
● Insert the ground adaptor into a power plug confirming the polarity of the outlet. Connect the grounding wire (green) of the ground adaptor to the ground terminal on the power supply equipment.

#### 2. Carefully select an installation site.



Take special care not to install the unit at a place described below:

- Uneven surfaces or dirty surfaces
- Where flammable gas or corrosive gas exists
- Where the ambient temperature is 5°C or less
- Where the ambient temperature is 35°C or more
- Where temperature changes severely
- Where dusty and humidity is high
- Where subject to direct sunlight
- Where vibration is severe
- Where unstable power supply
- Where uneven floor
- Where raw water pressure is  $5.0 \times 100\text{kPa}$  or more
- Where with raw water pressure is  $0.5 \times 100\text{kPa}$  or less
- Outdoors



It is recommended to secure the space of the range wider than the one shown above around the product.

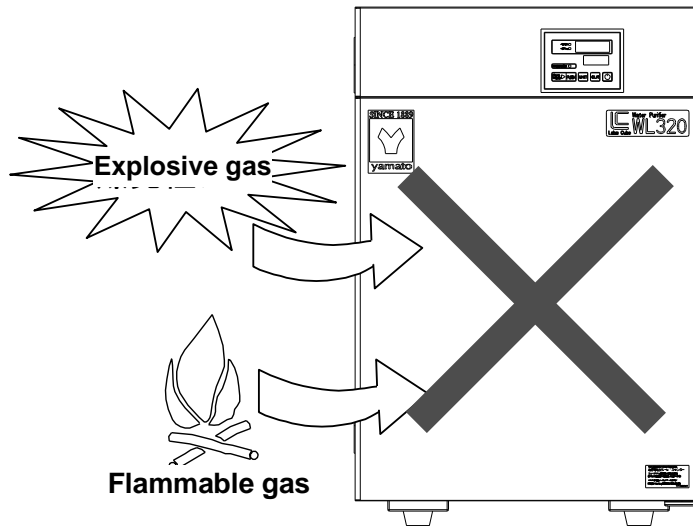
## 2. Before operating the unit

### Precautions for installation

#### 3. Never operate the unit in an atmosphere containing flammable or explosive gas.



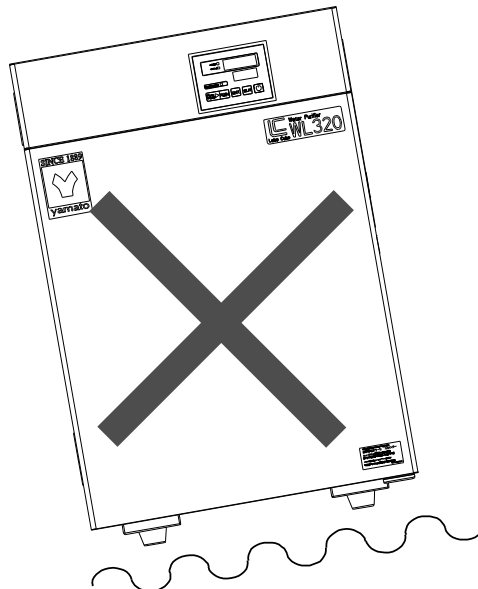
- Never operate the unit in an atmosphere containing flammable or explosive gas. Since This product is not of an explosion-proof structure. Accordingly, when the electric leakage breaker on the right side of the unit is turned ON( | )/OFF(O) and in the course of operation, arc may occur, possibly causing fire and explosion.
- See the section “13. List of dangerous materials” on page 43 for flammable and explosive gases.



#### 4. Always install the product on a horizontal floor.



- Accidental trouble or failure may occur unless the product is installed on the horizontal floor.
- The product weighs about 30 kg. Handle with care during transport and installation.



#### 5. Take the power supply from the dedicated socket outlet.



- Use the socket outlet appropriate to the power capacity (1A or larger capacity).
- The deficient power capacity causes not only decrease in the water sampling rate, but makes correct control impossible due to drop of the supply voltage. Always connect the product to the power supply system with sufficient allowance in the supply voltage.  
Power capacity : WL320A/B Single phase AC100~240V 0.5A or less
- Avoid starburst connection with branch socket outlet so as to prevent fire and electric shock.

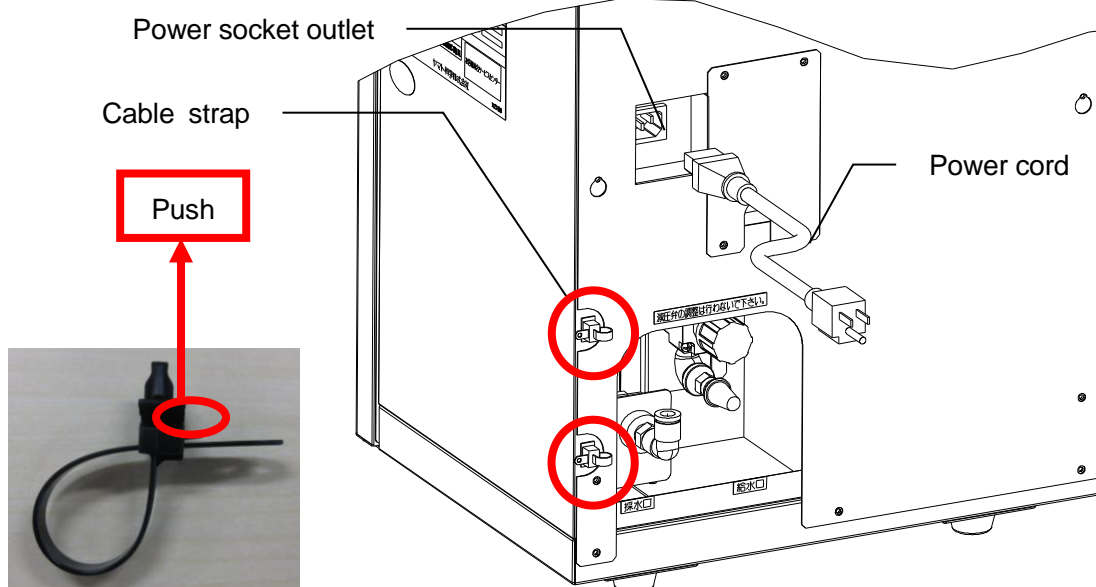
## 2. Before operating the unit

### Precautions for installation

#### 7. Connecting the power cord



- Connect the attached power cord to the power cord socket. Confirm that the Electric leakage breaker on the right side of the main body is OFF (O), and connect the power cord plug to the socket outlet. The power cord plug attached to this product is the three-wire cord including the earth wire, and the plug is also of a ground plug. If the socket outlet to be used does not match the plug (that is, the 2P outlet), use the ground adapter. When using this adapter, be sure to connect the earth lead wire to the ground.
- Connect a power cord (with an earth pole) that meets the source voltage to connect when you use a power cord other than the included one.
- Fix the inserted power cord using the cable strap connected to its back. If you do not fix the cord, it will interfere with access to the water sampling port and the water supply port as well as the power cord may come off when the product is moved. You can release the cable strap by pressing it in the direction of the arrow in the photograph below.



#### 8. Handling of a power cord

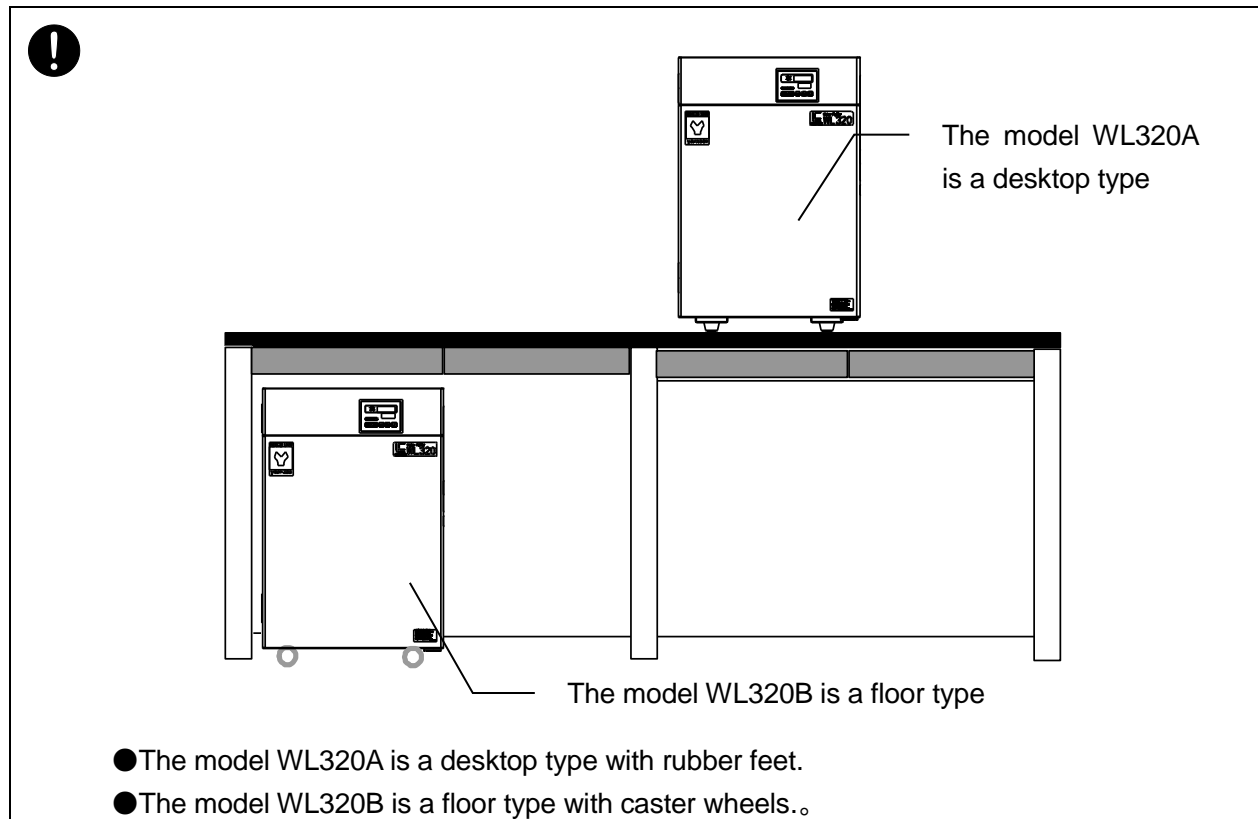


- Never use electrical power cords bundled. When these are used bundled, they might overheat causing a fire.
- Do not convert, forcibly bend, twist or pull the power cord. Otherwise, a fire or an electrical shock may result.
- Do not place the power cord under a desk or a chair, or sand between objects to avoid it from being damaged. Otherwise, a fire or an electrical shock may result.
- Do not place the power cord close to a stove or other heat generating device. Sheath of the cord may burn and result in a fire or an electrical shock.
- If the power cord should be damaged (exposure of core wire or disconnection), immediately turn the electric leakage breaker in the right side of the main body off(O), disconnect the power plug and ask your dealer to replace the cord. If the unit is operated with a damaged power cord, a fire or an electrical shock may result.
- Connect the power cord to an appropriate wall outlet or distribution board.

## 2. Before operating the unit

### Precautions for installation

#### 9. Installation



#### 10 Be sure to keep the raw water pressure from water supply within the specified range.



- Use the supply water pressure within a range of  $0.5 \sim 5 \times 100\text{kPa}$  ( $0.5 \sim 5\text{kgf/cm}^2$ ) 24 hours a day.  
Note that the water sampling range becomes 1.0 L/min or less at the raw water pressure of  $1.0 \times 100\text{kPa}$  ( $1\text{kgf/cm}^2$ ) or less.
- The raw water pressure range is the same even when the optional water inlet unit(see Page 24) is used.

#### 11.About raw water



- Check if raw water is not contaminated with red rust or other dirt. If raw water is contaminated, the specified water quality will not be assured and a malfunction may result.
- Use tap water for raw water.

## 2. Before operating the unit

### Installation procedures

#### 1. Always connect the feed water hose firmly.

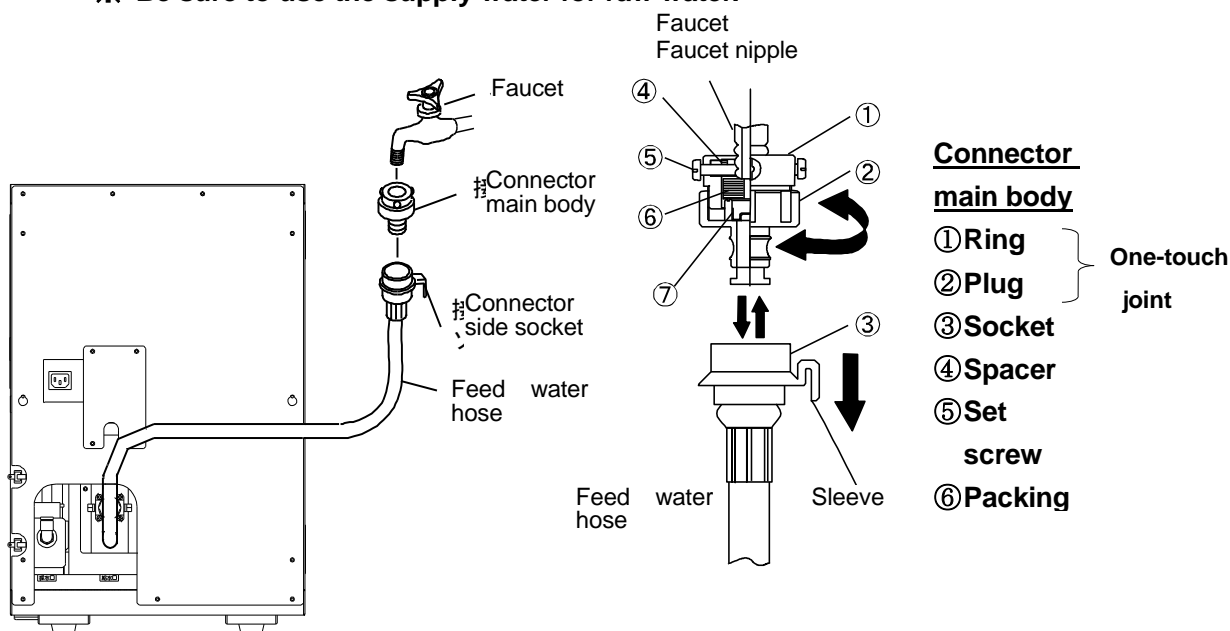


- Take out the feed water hose set (connector main body, feed water hose) from accessories to the main body. Install the main body on a horizontal stable place close to the faucet and sink.
- Unless the connection is firm, the feed water hose or connector may be disconnected, allowing water to spout.

#### 2. Carry out connection on the faucet side.



- (1) Allow the sleeve of socket ③ on the connector side to slide in the direction indicated with an arrow. Separate the connector main body from the feed water hose.
  - (2) Loosen the plug ② from the ring ① temporarily.
  - (3) Tighten four set screws ⑤ with equal torque while pressing the ring ① lightly and evenly in such a manner that the packing ⑥ contacts the faucet in a flat condition. When the faucet is a chemical faucet, adjust the position in such a manner that the set screw ⑤ comes to the lowest root of faucet nipple as shown in the figure.
  - (4) Turn the plug ② for firm tightening. This will ensure sealing of the faucet and connector with the packing ⑥.
  - (5) With the sleeve slid in the direction indicated with arrow, insert the plug ② into the socket ③ firmly. Connection is completed when the sleeve returns to the original position when released.
- ※ If the socket ③ is disconnected, water from the water supply side is interrupted by the valve provided on the connector main body.
- ※ **Be sure to use the supply water for raw water.**



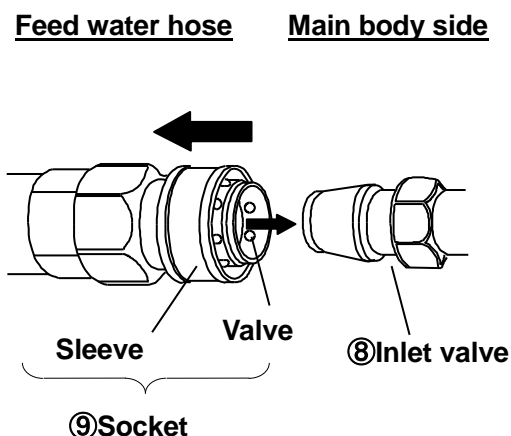
## 2. Before operating the unit

### Installation procedures

#### 3. Carry out connection on the main body side.



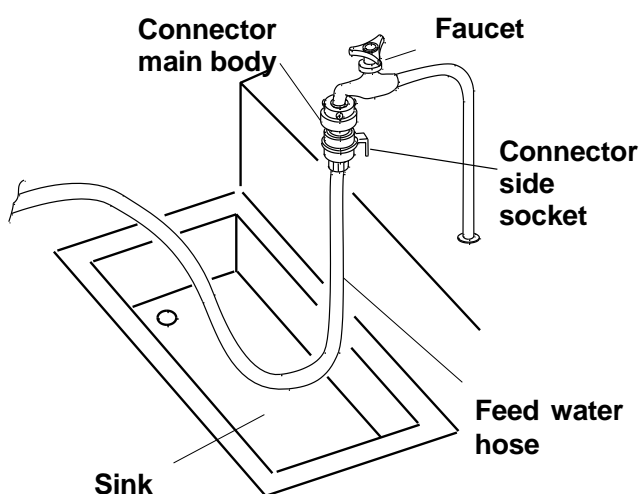
- (1) Remove rubber cap from the water inlet plug ⑧.
- (2) With the sleeve slid in the direction indicated with arrow, and insert the main body water inlet plug ⑧ to the socket ⑨. Connection is completed when the sleeve returns to the original position when released. The socket has a built-in valve. This valve does not open and allow water to flow unless connected with the inlet valve ⑧.



#### 4. Be sure to connect the feed water hose to the faucet equipped with the sink.



Connection of the hose to the faucet without sink equipment may cause damage in the case of disconnection or damage of the hose. Always connect to the faucet equipped with the sink.



#### 5. When the sink is distanced from the faucet, use an optional “inlet unit” (see P.24).



The “inlet unit” is of a construction in which the connection to the faucet is harder to loosen than the standard feed water hose set even under fluctuating water supply pressure.

When the faucet is not available, select the appropriate coupling joint from optional “connector coupler joints” (see P.24).

## 2. Before operating the unit

### Installation procedures

#### 6. Connect the ion exchange resin cartridge firmly.

● Install the ion exchange resin cartridge as follows:

- (1) Confirm that the electric leakage breaker on the right side of main body is OFF (O) and that the faucet is closed.
- (2) Select the ion exchange resin from accessories attached to the main body.  
For replacement in the course of use, relieve the internal water pressure while referring to "Before replacement of the ion exchange resin cartridge and pretreatment cartridge " of P 28.
- (3) Install the selected ion exchange resin cartridge firmly to the resin installation plate inside the system. (See Fig. 01)
- (4) Secure the ion exchange resin cartridge with a band to the resin installation plate. (See Fig. 02)

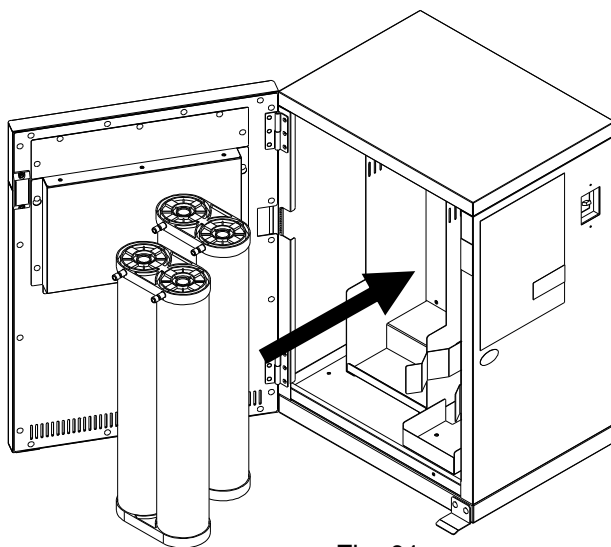


Fig. 01

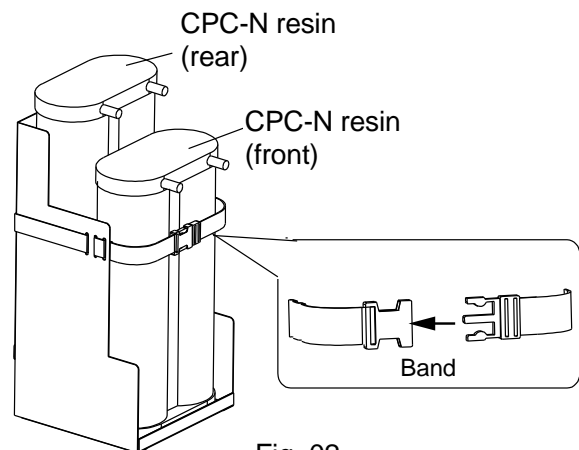


Fig. 02

※Both ion exchange resin cartridges are similar, and either one can be installed in the front portion.

## 2. Before operating the unit

### Installation procedures



- Connect ion exchange resin cartridges (CPC-C and CPC-E) as follows.  
Remove a rubber cap from the inlet and outlet of each ion exchange resin cartridge.

- (1) Push the one-touch joint with a (Back, OUT) mark into the outlet(right side) on the ion exchange resin cartridge in the back until it clicks.
- (2) Push the one-touch joint with a (Back, IN) mark into the inlet (left side) on the ion exchange resin cartridge and the joint with a (Front, OUT) mark into the outlet (right side) on the front ion exchange resin cartridge until they click.
- (3) Push the one-touch joint with a (Front, IN) mark (white hose) into the inlet (left side) on the ion exchange resin cartridge until it clicks.  
(See drawing 03.)

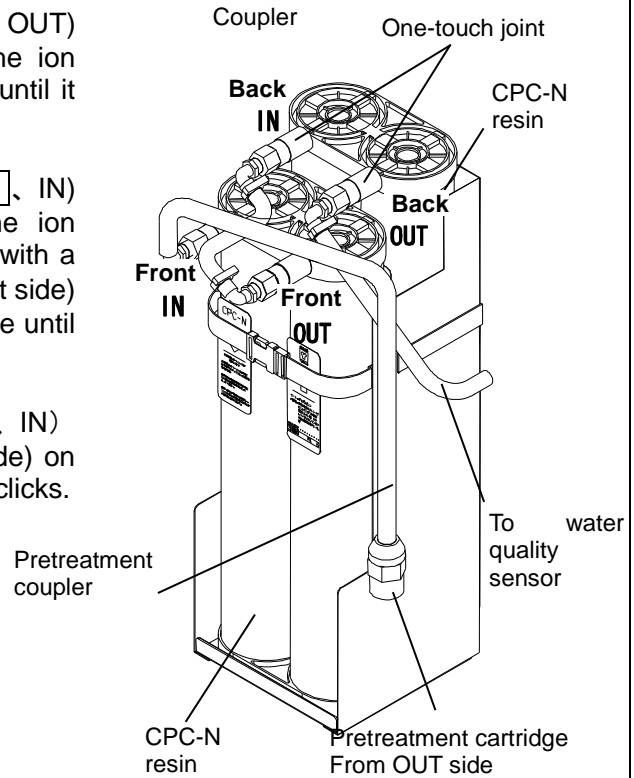


Fig. 0

- ※ Initially, the one-touch joint may be hard to insert and application of excessive force for insertion may cause the insertion port to break. When this is hard to insert, carry out connection in a state as removed from the resin installation plate while taking care not to insert in the bent state.
- ※ Once the one-touch joint is inserted, pull on the hose to confirm connection and to make sure that the coupler is not disconnected.
- ※ **Direct the one-touch joint connected to the front ion exchange resin cartridge upward or right (right side looked from front). If it faces downward, the joint will touch the back plate of the door preventing the door from opening.**
- ※ When removing the ion exchange resin cartridge, relieve the pressure before disconnecting the coupler while referring to "Before replacement of the ion exchange resin cartridge and pretreatment cartridge" of P.28. The coupler can be removed with ease by pulling on it while pressing a black portion to the depth. For removal, reverse the order of installation and follow the sequence of "Front • IN→Front • OUT→Back • IN→Back • OUT." Note also that water may drip from the ion exchange resin cartridge when the one-touch joint is disconnected.
- ※ Reverse installation of ion exchange resin cartridges or wrong connection of IN and OUT of each cartridge may cause failure, resulting in shorter service life of the cartridges.

## 2. Before operating the unit

### Installation procedures

#### 7. Connect the pretreatment cartridge firmly.



- Connect the pretreatment cartridge and the ion exchange resin cartridge as follows. Remove a cap from the inlet and outlet of pretreatment cartridge.

- (1) Connect the pretreatment coupler connected to the front ion exchange resin cartridge IN to the OUT of the pretreatment cartridge. (See drawing 04.)
- (2) Connect IN of the pretreatment coupler connected to the main unit to IN of the pretreatment cartridge.
- (3) To connect, align the pretreatment coupler with the cartridge port and push the coupler while sliding the gray or green part③ of the coupler toward the hose side and then release the gray or the green part ③. (See drawing 05.)
- (4) When finished connecting, store the pretreatment cartridge while taking care for possible kinks of the hose.

- ※ When you have inserted the pretreatment coupler, pull it once to make sure that it is securely connected and will not come off.
- ※ **Direct the one-touch joint connected to the front ion exchange resin cartridge upward or right (right side looked from front). If it faces downward, the joint will touch the back plate of the door preventing the door from opening.**
- ※ **Release the pressure referring to the “Before replacing the ion exchange ion cartridges and the pretreatment cartridges” on P.28 before replacing them.**
- ※ **To remove, first remove the IN side following the installation procedures in the reversed order. You can easily remove the pretreatment coupler simply by pulling the green or gray part out vertically while sliding the coupler toward the hose side. Take care for possible dripping of water from the pretreatment cartridge when removing the pretreatment coupler.**

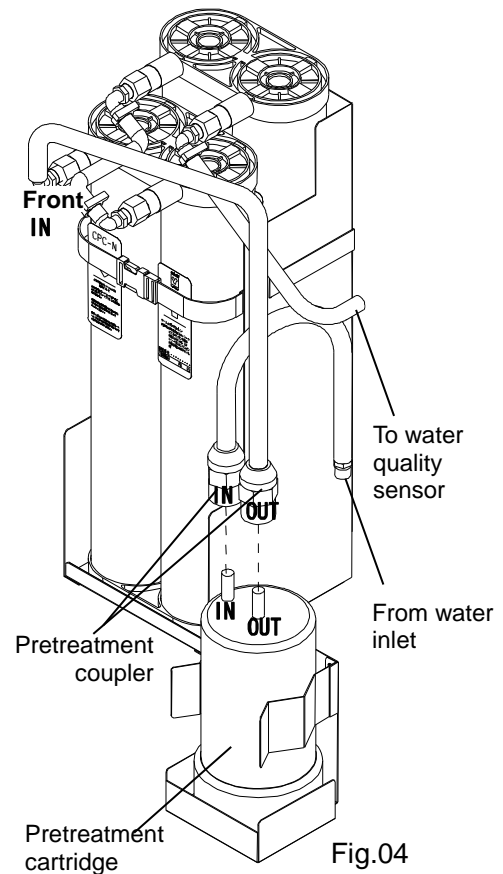


Fig.04

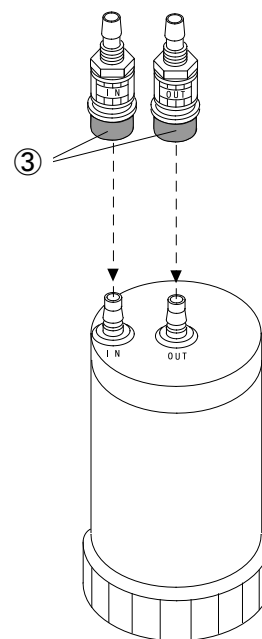


Fig.05

## 2. Before operating the unit

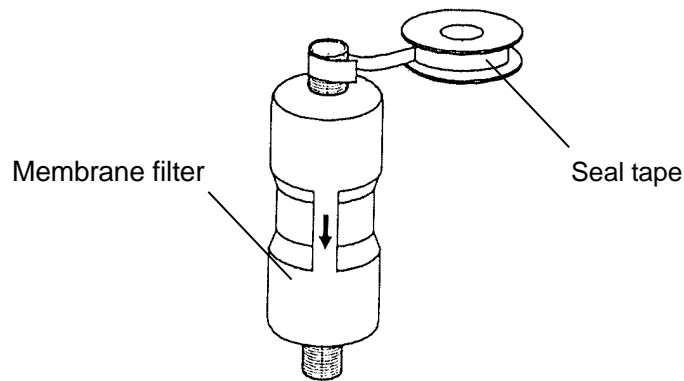
### Installation procedures

#### 8. Connect the membrane filter firmly.

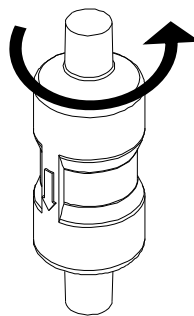
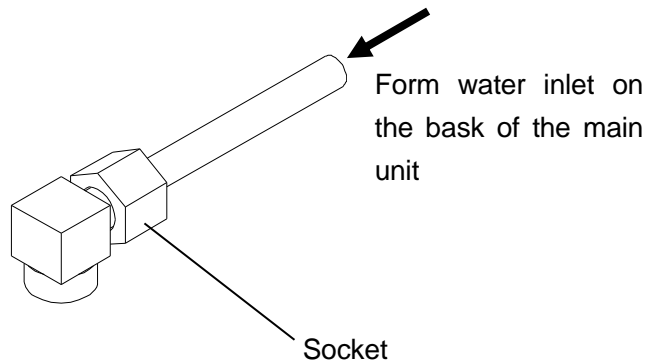


- Install the membrane filter as follows.
- Connect firmly. Otherwise, water may leak through the threaded portion.

- (1) Select the membrane filter and seal tape from accessories of the main body.
- (2) Pay attention to the arrow direction of membrane filter and wind the seal tape, clockwise as viewed from the winding side, by two to three turns while giving slight tension. Cut off any surplus tape. In this case, start winding of the seal tape while keeping about two leading threads free.



- (3) With the seal-taped portion on top, screw in the membrane while taking care not to damage threads. Check for leakage in the course of sampling of pure water. If not, screw in further. The rough guidance of tightening number is two and a half to three turns.



※ Be sure to securely store the seal tape, which be necessary when replacing the membrane filter.

## 2. Before operating the unit

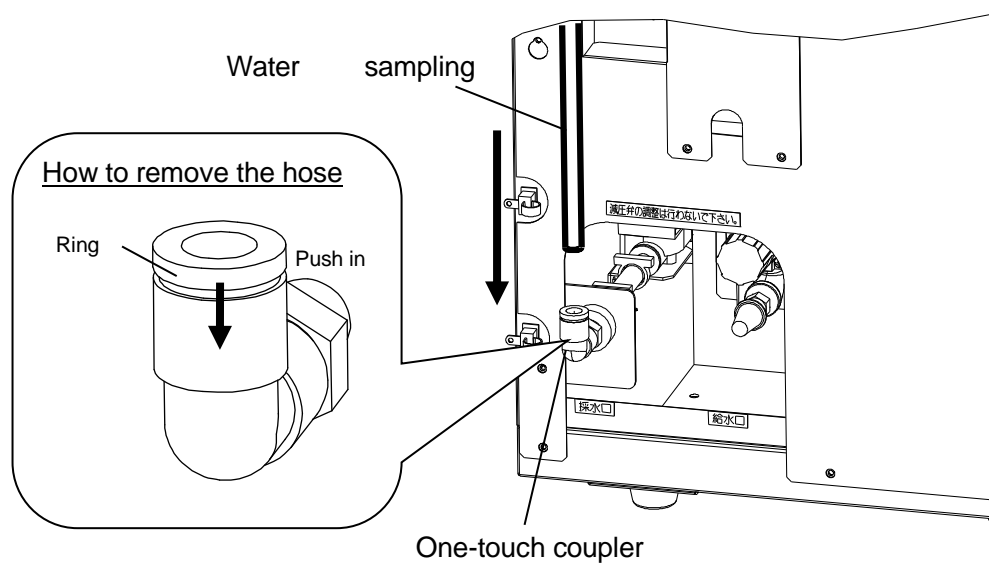
### Installation procedures

#### 9. Connect the water sampling hose to the main unit.



- Follow the steps below to install the water sampling hose.
- Be sure to connect the hose to prevent water leak at the connection with the piping.

- (1) Push the water sampling hose into the water sampling port on the back straight and completely while holding the one-touch coupler by hand



- ※1 To remove the water sampling hose, pull out it while push down the ring on the one-touch coupler.

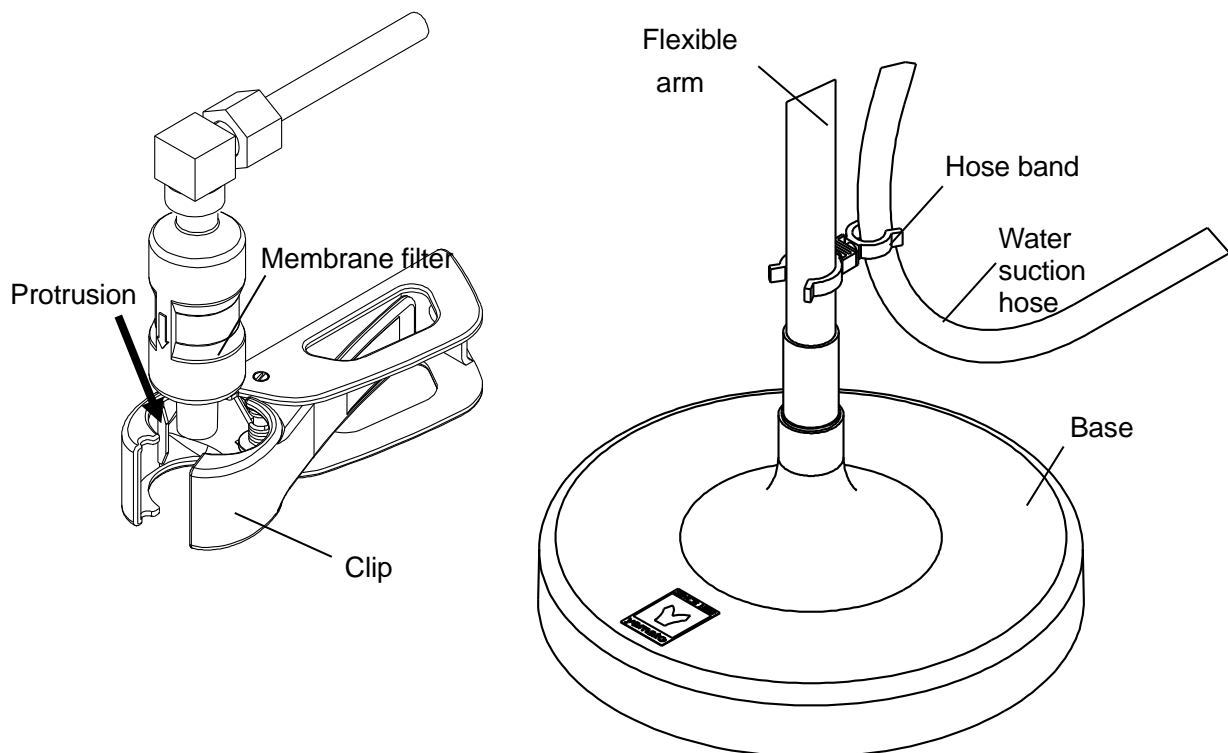
## 2. Before operating the unit

### Installation procedures

#### 10. Fix the membrane filter onto the water sampling base.

● Install the membrane filter onto the water sampling base following the steps below.

- (1) Direct the arrow on the membrane filter as shown in the drawing and then pinch the filter to which the water sampling hose is connected from above. Align the protrusion with the dent on the membrane filter when pinching.
- (2) Fix the water sampling hose connected to the membrane filter together with the flexible arm using the hose band.



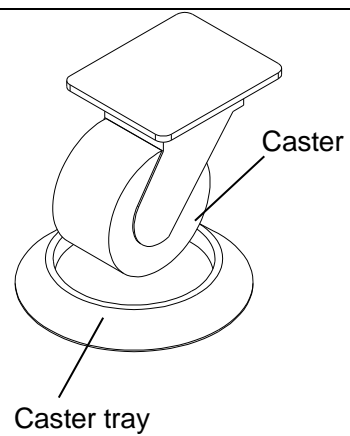
※ The height of the water sampling base may be adjusted from the floor to about 330mm. When you want sampling water in a container at higher place or when you want to use it at a place slightly away, remove the membrane filter off the clip.

#### 11. After installation



This product may overturn to cause injury due to unexpected earthquake and impact. Provide appropriate measure to prevent overturn to ensure the safety.

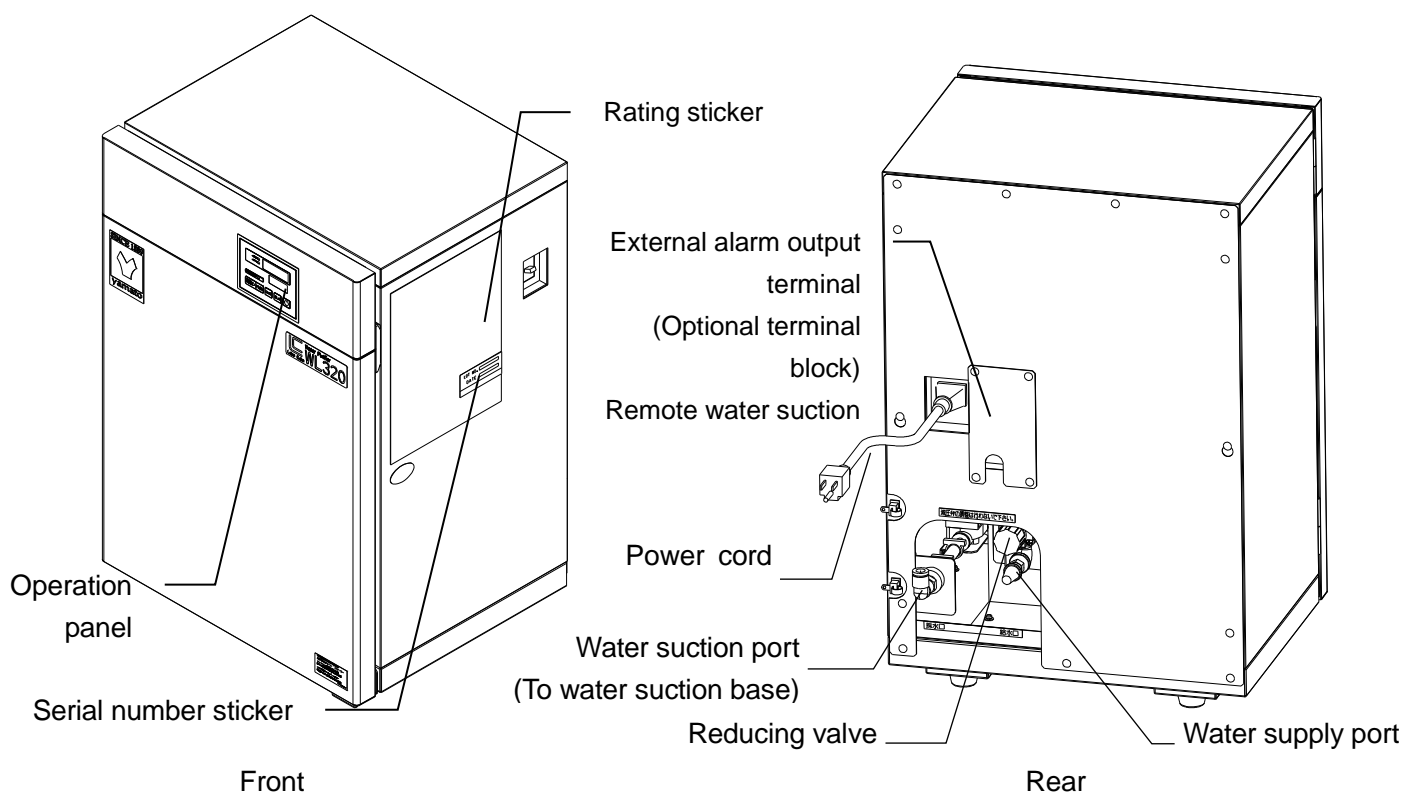
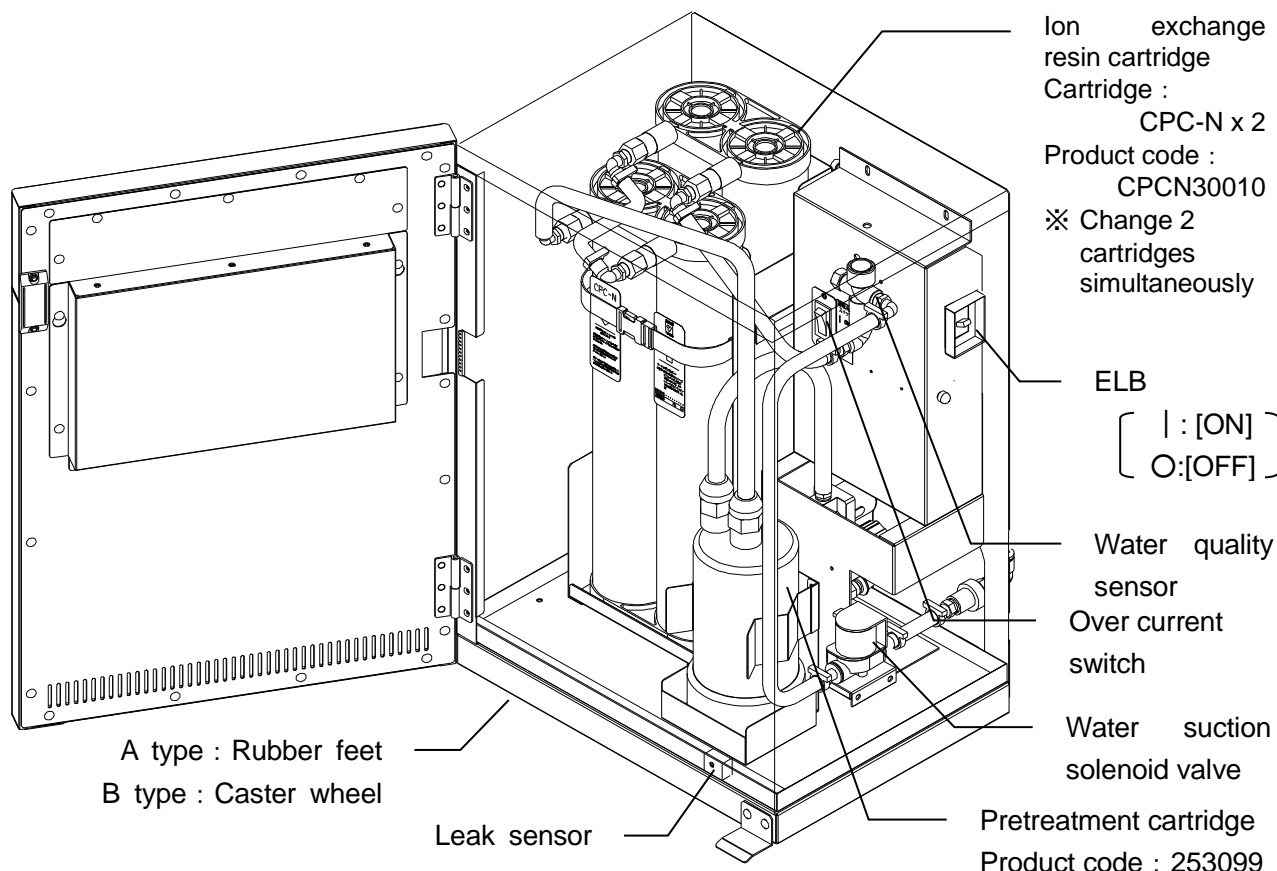
The model WL320B is a caster wheel type. When installing it, fix it using the caster wheel included.



### 3. Names and Functions of Parts

#### Main unit

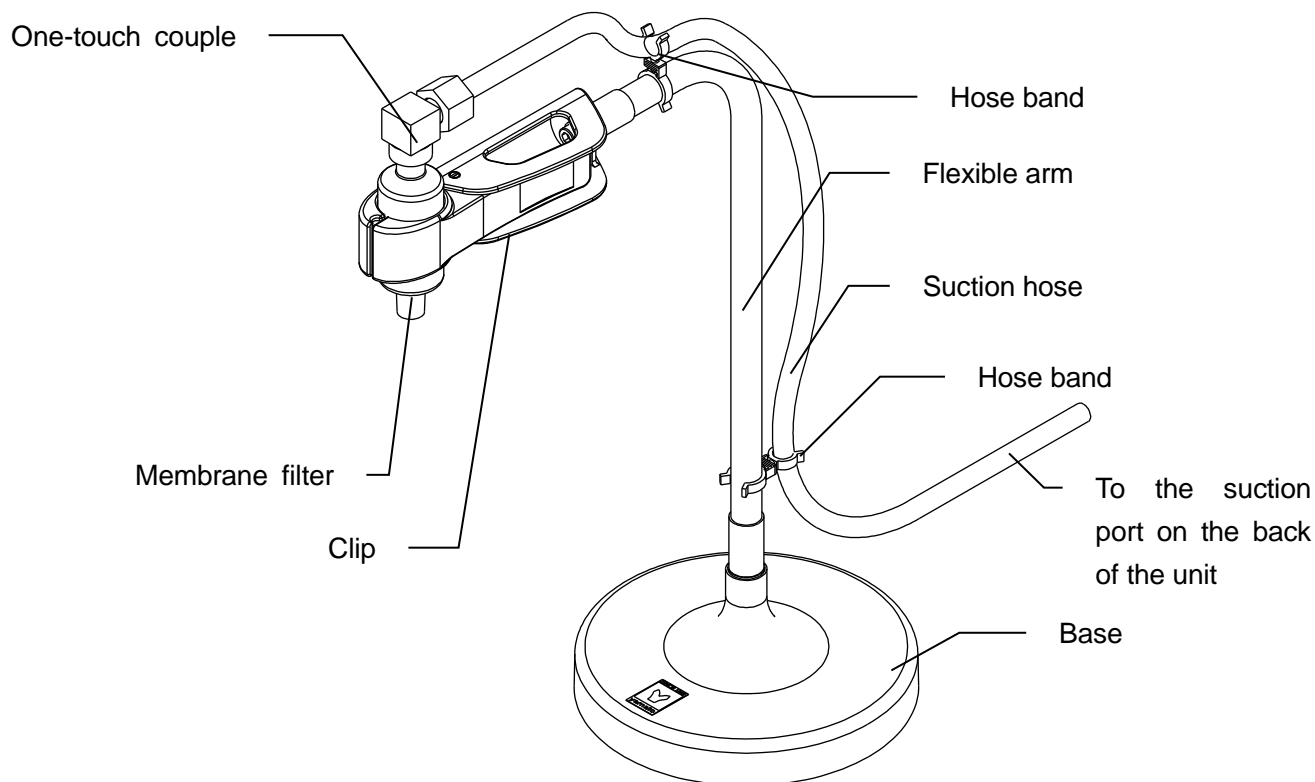
The A type has rubber feet while the B type has caster wheels on the main unit.



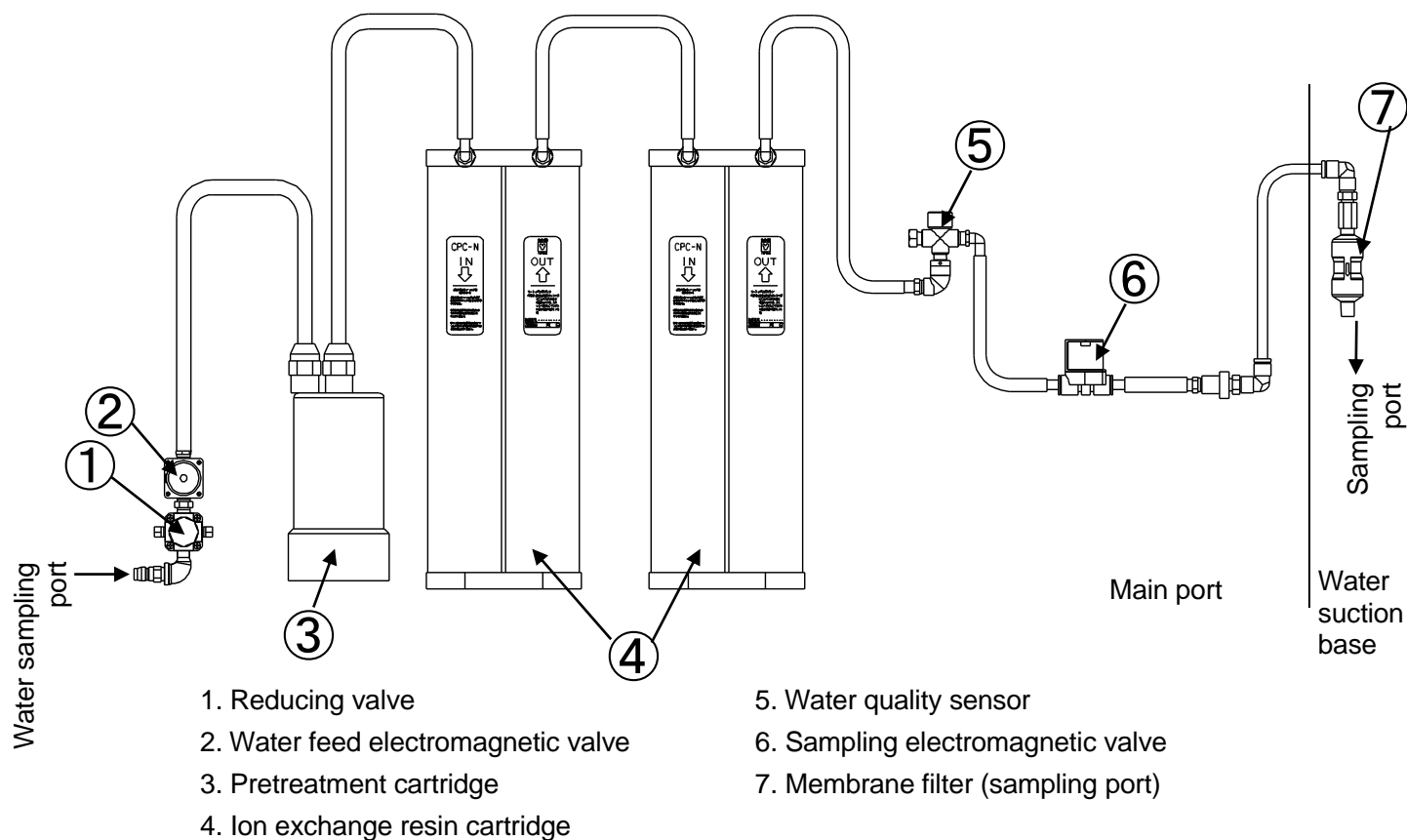
Note) The reducing valve has been set for the sampling rate of about 1.0 L/min (raw water pressure: 3 x 100 kPa, reducing valve pressure: 0.6 x 100 kPa) before shipment. The customer must never attempt changing the set value.

### 3. Names and Functions of Parts

#### Water sampling base

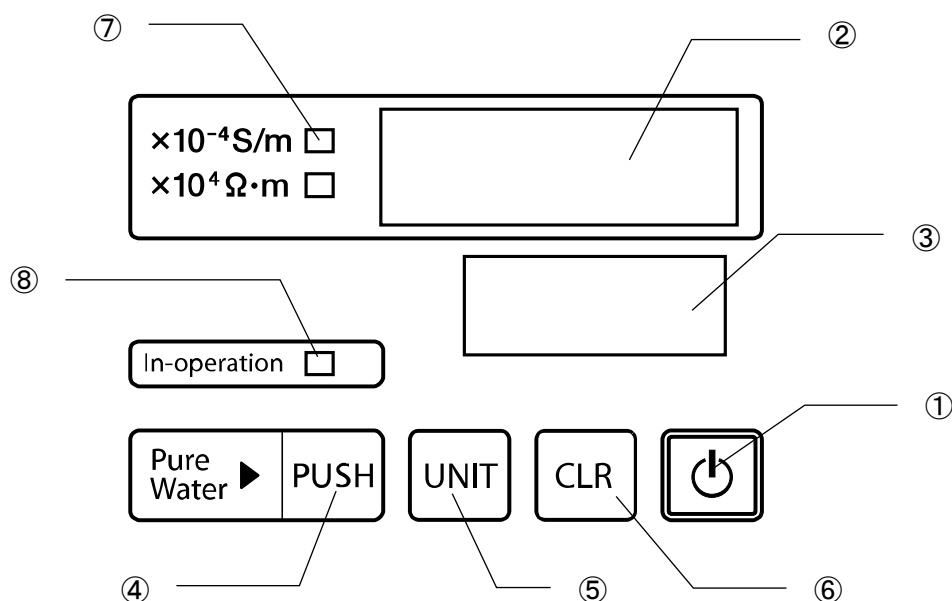


#### Piping diagram



### 3. Names and Functions of Parts

#### Operation panel



No.	Nomenclature	Control/operation
①	Power key	Turns ON/OFF power supply to the controller.
②	Water quality display	Displays the quality of deionized water.
③	Information display	Displays errors, replacement timing of consumable parts and the operation status of the unit.
④	PUSH key	Starts/stops sampling of deionized water
⑤	UNIT key	Selects the water quality unit ( $\times 10^{-4} \text{S/m} \leftrightarrow \times 10^4 \Omega \cdot \text{m}$ )
⑥	CLR key	Used when consumables are replaced
⑦	Water quality unit lamp	Turns ON the lamp of the selected quality unit.
⑧	In-operation lamp	Turns ON the lamp in case of sampling of deionized water

List of display characters

0	1	2	3	4	5	6	7	8	9
A	B	C	D	E	F	G	H	I	J
K	L	M	N	O	P	Q	R	S	T
U	V	W	X	Y	Z	-	Blank		

## 4.Operation Method

### Pre-start preparation and checks

#### Be sure to check again before use.

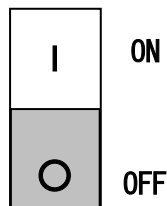
- (1) Confirmation of water feed
  - Confirm that the feed water hose is firmly connected.
  - Open the faucet.
  - Confirm that the connection of feed water hose is free from water leakage.
- (2) Confirmation of power supply
  - Check if the power cord is connected to the appropriate socket outlet.
  - Confirm that the power cord is inserted to the depth of main body power cord socket outlet.

### Operation method

Upon completion of preparation, start operation as follows.

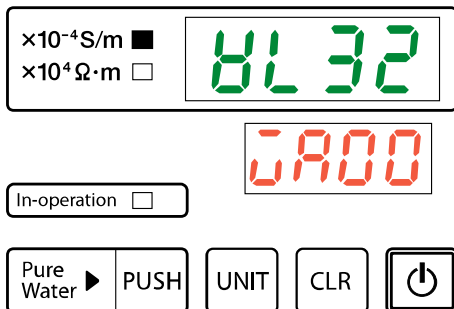
#### Power application

Electric leakage breaker



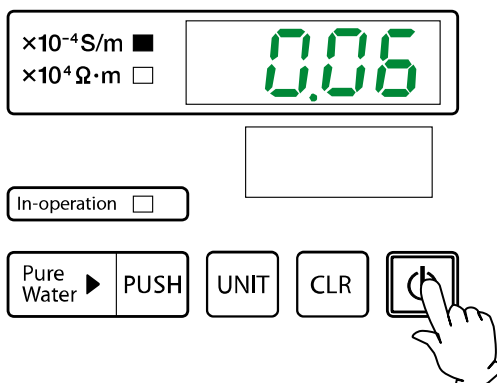
- ① Set the electric leakage breaker on the right side of main body to "ON ( | ) ."

Operation panel (initial display)



- Initial display for 4 seconds
- Only the water quality unit lamp ON in 4 seconds

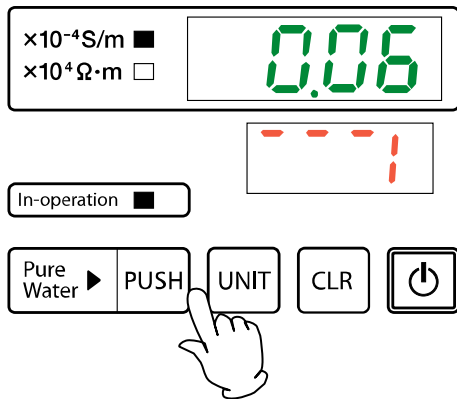
Operation panel (**POWER** key ON)



- ② Press the **POWER** key.

- The water quality is displayed in the Water Quality Display.

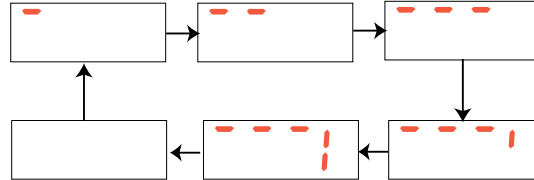
### Sampling the deionized water



① Press the **PUSH** key. Sampling of deionized water is possible. Sampling continues even when the key is released.

- In-operation lamp ON
- The information Display provides animated display during sampling.

Animated indication during sampling



※ If sampling is not made for a long time, the quality of water remaining in the unit may be degraded. Confirm the water quality display during initial period of sampling and carry out drainage in appropriate timing.

② Press the **PUSH** key again, Sampling of deionized water stops.

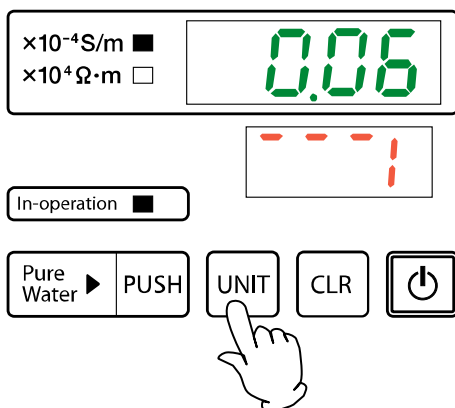
- In-operation lamp OFF
- Animated indication goes OFF in the information Display during sampling.

Note1: At initial power application and immediately after replacement of ion exchange resin cartridge, a certain time period is required till sampling begins because of air remaining in the ion exchange resin cartridge and piping.

Note2: The pressure remains in the piping at a time of stopping sampling, which may discharge small amount of deionized water.

## Selecting the water quality unit

### Selecting the water quality unit



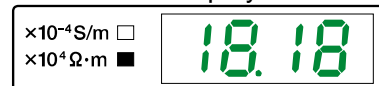
Press the **UNIT** key, and the water quality unit can be changed.

To change the water quality unit:

- Electric conductivity (conductivity) display



- Specific resistance display



※The unit conversion equation is shown below:

$$\begin{array}{c} \text{Electric} \\ \text{conductivity} \\ (\text{S/m}) \end{array} = \frac{1}{\text{Specific resistance} \\ \text{value } (\Omega \cdot \text{m})}} \quad \begin{array}{c} \text{Specific resistance} \\ \text{value} \\ (\Omega \cdot \text{m}) \end{array} = \frac{1}{\text{Electric conductivity} \\ (\text{S/m})}$$

For details, refer to "Electric Conductivity (Conductivity)" of P.22.

## 4.Operation Method

### Water quality and water quality display

#### Measuring the electric conductivity (conductivity)

The Water Quality Display of operation panel shows the electric conductivity at the outlet of ion exchange resin cartridge. Use the displayed reading as a guideline to determine the cartridge replacement timing. Read the conductivity while the electrode is fully immersed in water, that is, while the deionized water is flowing.

Correct reading cannot be made in the following cases because of failure of immersion of electrode into the water or the effects of air bubbles:

1. During initial operation period and while the unit is down
2. Immediately after replacement of ion exchange resin cartridge and the pretreatment cartridge.

#### Electric conductivity (conductivity)

- The electric conductivity is the numerical value representing the easiness of the material to conduct electricity. Water tends to conduct electricity more readily with increasing content of dissolved electrolyte, that is, impurities. The numerical value of such conductivity decreases with decreasing content of electrolyte.
- The smaller numerical value of electric conductivity means higher purity of pure water.  
Note however that the numerical value of electric conductivity refers only to electrolyte and not to non-electrolytes (organic and colloidal substances, dissolved gases, microorganisms). The value does not represent the total purity and should be handled only as one of indices to represent the water purity.
- The resistivity (R) is a factor representing the content the same as for the electric conductivity ( $\rho$ ). Since the resistivity is the reciprocal of electric conductivity, the higher numerical value of resistivity means higher purity.

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

Accordingly, factors for the theoretical pure water are defined as follows:

$$R = 18.2 \times 10^4 \Omega \cdot m \quad (18.2 M\Omega \cdot cm) \quad 25^\circ C$$

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

#### Water quality of deionized water

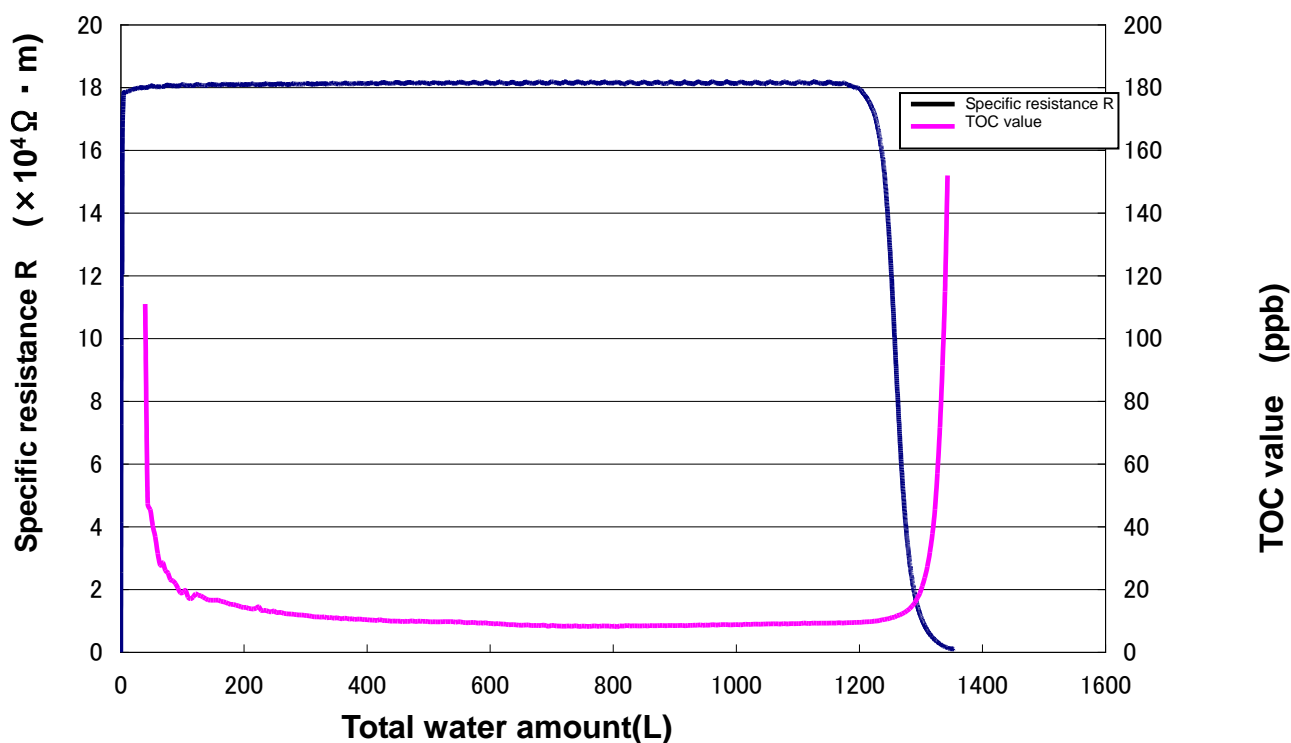
Deionized water

Water with the lowest electric conductivity can be obtained by eliminating most of electrolytes in water, except that non-electrolytes can be removed. More or less deterioration of purity may be observed immediately after replacement of resin or at resumption of water flow after shutdown of the system.

## 4.Operation Method

### Water quality characteristics data (reference)

#### Use life of an ion exchange resin cartridge(reference)

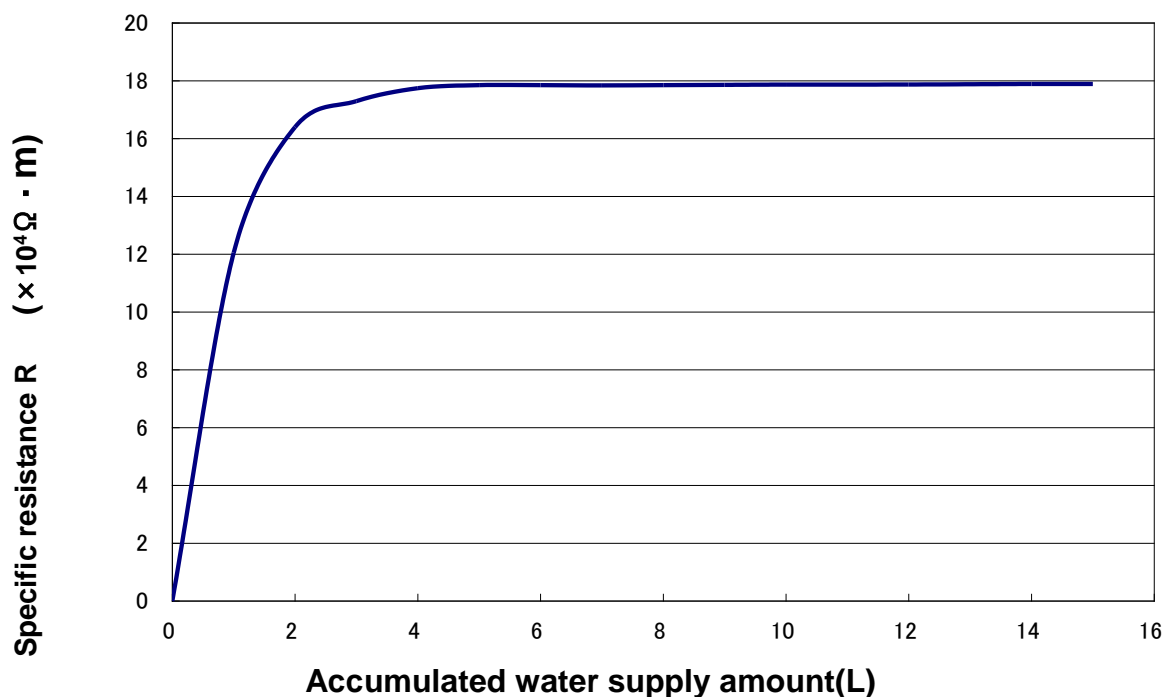


※Tap water in Yamanashi pref.

Specific resistance R: approx.  $0.005 \times 10^4 \Omega \cdot m$

TOC : Approx.300ppb

#### Initial water quality characteristics after replacing an ion exchange resin cartridge (reference)



One of sampled water characteristics of an ion exchange cartridge is the transient characteristics above, which necessitates several minutes to stabilize. To cope this, discard about four liters of water immediately after replacing the cartridge. Use the data above only as a reference because the same results may not be necessarily obtained depending on specific cartridge or quality of the raw water.

## 5. Useful Functions

### List of options

Name of material	Article No.	Compatible model	Remarks
Feed water port unit (OWH10)	253686	WL320A/B	Used when the raw water feed port is not equipped with the sink. Install a faucet to the water supply line.
Feed water port coupler (OWG32)	253764	Screw type	For the use, refer to the "List of connection patterns with the feed water port" of P.25
Feed water port coupler joint A (OWG34)	253765	For water supply pipe G1/2	
Feed water port coupler joint B (OWG36)	253766	For water supply pipe G3/4	
Feed water port coupler joint C (OWG38)	253767	For chemical faucet W26	
Feed water port coupler joint D (OWG40)	253768	For chemical faucet W30	
Feed water port coupler joint E (OWG46)	253771	For chemical faucet W24	
Reducing valve for raw water (OWG42)	253769	WL320A/B	Used to keep the raw water pressure constant. Use this valve when the raw water pressure is not constant or is $5 \times 100\text{kPa}$ (5kgf/cm <sup>2</sup> ) or more.
Remote water sampling function (wo/ foot switch for water sampling ) (OWL56) ※ 1 ※ 2	253275	WL320A/B	Function to enable sampling at a point remote from the main body by using the remote signal (ON-OFF contact), which must be specified at a time of placing the order. ※The product is not equipped with a water sampling switch. We recommend purchase the OWL58 foot switch if you want one.
Remote water sampling function (w/ foot switch for water sampling) (OWL58) ※1	253276	WL320A/B	Function to enable sampling without using hands and by means of the foot switch. The use together with the sampling bed (un accessory of the main unit) will prove convenient. This function must be specified at a time of placing the order. ※Use this together with a remote water sampling input terminal(OWL56).
Assembling kit for draft and sink	253277	WL320B	This is used when using a water hose through the draft or sink for taking water samples.
External alarm output terminal (OWL54) ※1	253274	WL320A/B	Function to output the alarm signal in case of error (water leakage, etc.) and to output the alarm signal for replacement timing. This can be interlocked with a rotating flash light or the destination system. This function must be specified at a time of placing the order.
Power cord:4m (OWL52)	253273	WL220T WL320A/B	This is used when the length of the original power cord is insufficient. ※Never use this extension for electric devices other than those support our products.
MIZU guard	254199	Y-MGB	Install a line-shaped leak sensor around the water purifier. This detects water leak from the unit, shuts off the water supply pipe with a motor valve to stop the leak.

※1 Specify at a time of placing the order on the main body.

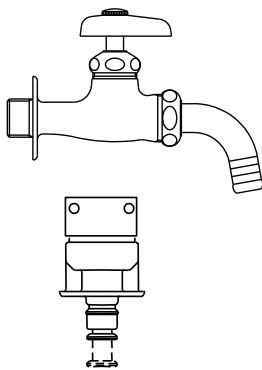
※2 When used in the remote operation, it is recommended to provide the MIZU guard (Article No. 254199), which detects water leakage, if any, and shuts down water supply to ensure the safety.

# 5. Useful Functions

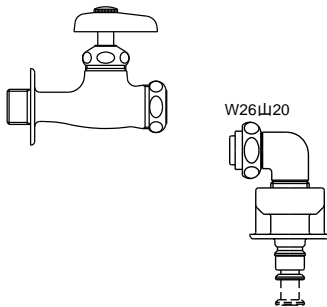
## Optional function list

### List of patterns of connection with the feed water port

Standard feed water hose cap  
(with stopper)  
Connection with the chemical  
faucet (faucet for hose  
connection)



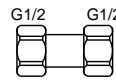
Feed water port coupler  
(OWG32)  
(Screw-in type with stopper)  
When connecting while  
removing the pipe portion of the  
universal faucet and flexible  
faucet



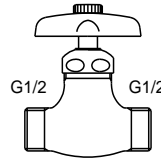
Feed water port coupler  
joint A (OWG34)

...

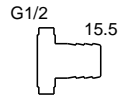
Connection when the  
water pipe is provided  
with G1/2 male threads



Double-nut union



External thread  
makeup valve

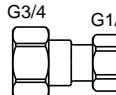


Coupling for water  
outlet of hose

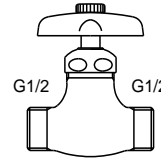
Feed water port coupler  
joint B (OWG36)

...

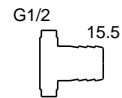
Connection when the  
water pipe is provided  
with G3/4 male threads



Double-nut union



External thread  
makeup valve



Coupling for water  
outlet of hose

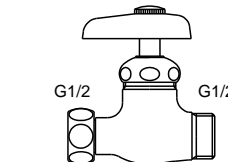
Feed water port coupler  
joint C (OWG38)

...

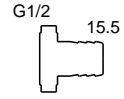
When the chemical faucet  
is to be W26



1/2 screw removal  
nipple (small)



Single-nut valve



Coupling for water  
outlet of hose

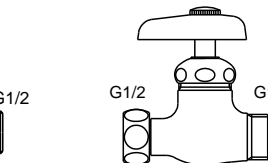
Feed water port coupler  
joint D(OWG40)

...

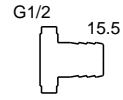
When the chemical faucet  
is to be W30



1/2 screw removal  
nipple (large)



Single-nut valve



Coupling for water  
outlet of hose

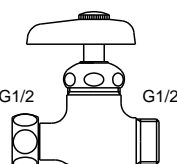
Feed water port coupler  
joint E (OWG46)

...

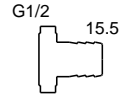
When the chemical faucet  
is to be TOTO W24



Conversion nipple



Single-nut valve



Coupling for water  
outlet of hose

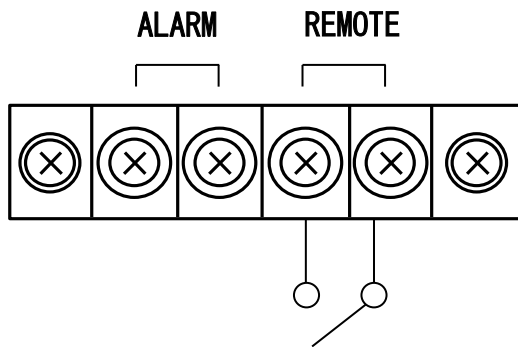
## 5. Useful Functions

### Setting of the remote sampling functions (optional)

This is a function to enable sampling without operating the sampling key by means of the remote signal.

#### Connect terminals

(Terminal screw size : M4)



(Example) Connect the foot switch for use.

Connect to the remote sampling input terminal in the upper portion of the left side of main body.

#### REMOTE

Non-voltage contact input

- Sampling  
Shorting the contacts causes start of sampling.
- Sampling stop  
Opening the contacts causes stop of sampling.

※ Do not apply voltage to the remote sampling output terminal to prevent failure of the unit. During remote sampling, the PUSH key becomes invalid.

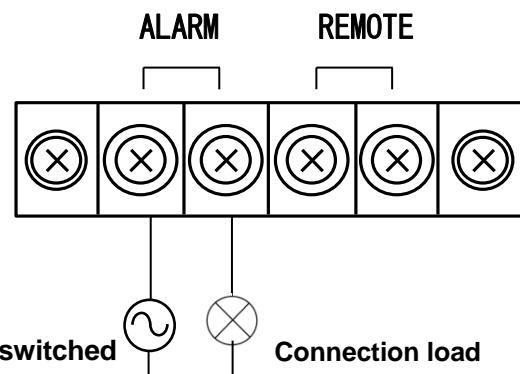
※ We recommend using a MIZU card (product code: 254199) that detects water leak from wrong operation signals or unit malfunctions and stops supplying water for safety when you use the unit with remote operations.

### Setting of the external alarm output (optional)

This is a function to output the alarm signal in case of abnormality of the main body or to notify the consumables replacement timing.

#### Connect terminals

(Terminal screw size : M4)



Load switched

Connection load

(Example of connected load)

You can connect an alarm lamp or a buzzer as connected load.

Connect to the external alarm output terminal in the upper portion of the left side of main body.

ALARM Relay a contact (Normal Open)

Contact capacity : AC250V 1A (resistance load)

DC30V 1A (resistance load)



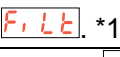

- The relay contact closes at a time of alarm of consumables and in case of abnormality in the unit.
- The external alarm output is maintained even while the buzzer is cancelled temporarily.
- External alarm is canceled when the power key is OFF.

## Maintenance procedures

### Maintenance and inspection

#### Maintenance and inspection timing

(To ensure stable operation of the product, be sure to carry out daily inspection.)

Maintenance • inspection items	Timing	Remarks
Replacing the ion exchange resin cartridge (see P.11 and 12)	When  appears on the information display.	Treatment capacity : About 1200L for the raw water of $200 \times 10^{-4}$ S/m
Replacing the membrane filter (see P.14)	When  appears on the information display. *1	Treatment capacity : About 500 L with pure water flowing
	When the amount of sampled water drops to 0.5L/min or less even if the information display does not indicate  . *1	
Replacing the pretreatment cartridge (see P.13)	When  appears on the information display. ※2	Treatment capacity : About 5000 L
Cleaning the feed water hose (see P.31)	Six months	Carry out cleaning earlier than scheduled when the raw water quality is poor.
Replacing the piping hose (see P.31)	Two years	Check the connection for leakage once a month.
Replacement of the water supply solenoid valve and the reduction valve.	Five years	Replace once every five years.
Inspection of the ELB. (See P.31.)	One month	Check every month.

※1 Replace the membrane filter once every six months regardless of the use frequency.

※2 Replace the pretreatment cartridge once a year.

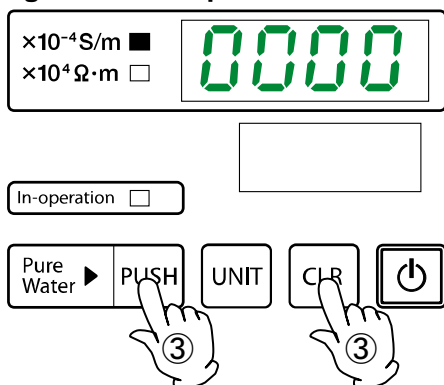
※ This unit notifies the consumables replacement timing on the basis of the water quality and cumulative water flow hours.

※ The actual replacement timing may differ depending on the raw water quality.

## 6. Maintenance procedures

### Before replacement of the ion exchange resin cartridge and the pretreatment cartridge

#### Relieving the internal pressure before replacement of consumables



① Turn ON the power switch on the right side of main body.

② Place a beaker at the sampling port.

③ Without pressing the **POWER** key, press both **CLR** and **PUSH** once simultaneously.

● Drain through the sampling port for five seconds and relieve the internal pressure from the cartridge.

● “0000” flashing during pressure relief

● Repeat this step till no more water flows out through the sampling port.

④ Carry out “Resetting after replacement of consumable parts” on P.29.

※ Water may spout from the cartridge if pressure relief is not made before replacement.

※ Carry out sampling till ERROR display disappears after replacement.

※ You can also release pressure by performing water sampling with the main water main cock closed.

### Replacing the ion exchange resin cartridge

For the replacement method, refer to “6. Connect the ion exchange resin cartridges firmly” of P.11. The alarm is reset automatically when the water quality is improved after replacement.

- Storage of the cartridge over a long period of time may result in deterioration of the water quality and degradation of the treatment capacity. Prepare the spare cartridge by projecting the replacement timing. The guideline for storage is about four months.
- The replaced cartridge should be either disposed of as non-combustible waste or sent back to us while using the specified invoice attached to the replaced cartridge.
- We promote adequate recovery and recycling for the purpose of energy conservation.
- When the ion exchange resin cartridge is to be replaced, replace also simultaneously the CPC-N ion exchange cartridge. If not, sampling of water enough to maintain the specified water quality cannot be made.
- After replacement of each cartridge, dispose of initially sampled water in quantity of about 4 L. In such an event, exhaust air from resin at the same time till intermittent water flow stops.

### Replacing the pretreatment cartridge

For the replacement method, refer to “7. Connect the pretreatment cartridge firmly” of P.13. For the alarm display reset method after replacement, refer to “Resetting after replacement of consumable parts” on P.29.

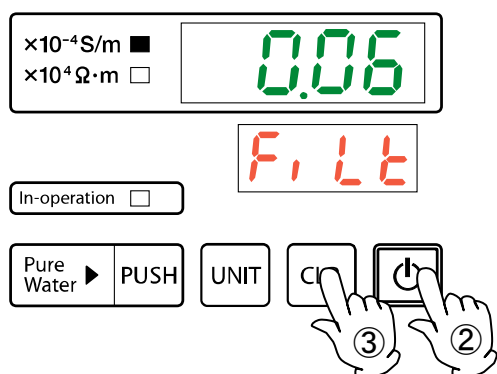
- The use of the cartridge without replacement may result in shorter cartridge life.
- The replaced cartridge should be either disposed of as non-combustible waste or sent back to us while using the specified invoice attached to the replaced cartridge.

## 6. Maintenance procedures

### Resetting after replacement of consumable parts

The product counts accumulated water supplying time for each of consumable parts as a rough indication for replacement since each consumable part has a total water supplying amount before its use life. When the accumulated water supplying time is reached, the consumable part replacement error is triggered. Replace the consumable part with the error, and then follow the procedures below to reset the accumulated water supplying time count.

#### Consumable part replacement error and resetting the accumulated water supplying time counter (when an alarm is triggered)



- ① Turn the ELB on the right side of the main unit to "ON( | )".
- ② Press the **POWER** key.

#### • For the replacement error of single consumable part

- ③ Press the **CLR** key on the operation panel longer to sound the acceptance tone when the alarm indication is reset and you can start normal operation.

#### • For the replacement error of multiple consumable parts

- ③ Pressing the **CLR** key on the operation panel longer to sound the acceptance tone and the **CPC** indication will be reset.
- ④ Pressing the **CLR** key on the operation panel longer again to sound the acceptance tone and the **PBF** indication will be reset.
- ⑤ Pressing the **CLR** key on the operation panel longer again to sound the acceptance tone, the **FILL** indication will be reset and you can start normal operation.

- ※ Be sure to reset the unit after having replaced consumable parts. When the error is for the replacement of multiple consumable parts, first replace all consumable parts before resetting.
- ※ During the alarms for multiple consumable parts, the alarms will be reset in the order below. Repeat operations for the number of the alarms.

Resetting order : **CPC** → **PBF** → **FILL**

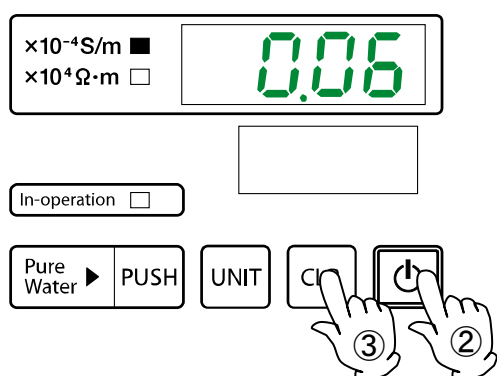
- ※ Alarm may be triggered again if water quality will not improve.

## Maintenance procedures

### Resetting after replacement of consumable parts

The total amount of water supply is specified for each of consumable parts and the unit counts accumulated water supplying time to monitor the use life of each consumable part. Note, however, that we recommend replacing pretreatment cartridges or membrane filters at least once in six months or one year irrespective of their frequency of usage before the consumable part replacement error appears on the unit since they are subject to clogging. The procedures below shall be used to reset the accumulated water supplying time for consumable parts during normal operation before the consumable part error on the unit.

**Resetting the accumulated water supply time counter for consumable parts during normal operation (This operation shall be performed during replacement of consumable parts before the alarm)**



① Turn the ELB on the right side of the main unit "ON( | )".

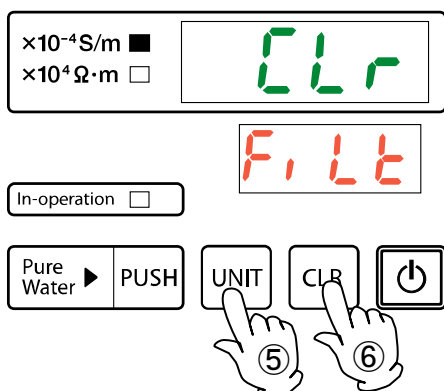
② Press the **POWER** key.

③ Pressing the **CLR** key on the operation panel longer indicates **CLr** in the water quality display and the unit switches to the consumable reset mode.

④ An indication, **PBF** that means the pretreatment cartridge will appear on the information display.

⑤ Pressing the **UNIT** key will indicate **F.Lt**.

⑥ Select the consumable part you want to reset, press the **CLR** key on the operation panel longer to beep the acceptance tone to reset the accumulate water supply time counter for consumable parts and the mode will return to the normal operation. If you want to finish this mode in the middle of operation and return to the normal operation, press the **UNIT** key longer.



※ Be sure to replace consumable parts before resetting. You cannot recover accumulated time once it is deleted.

※ Perform this procedure when replacing consumable parts degraded due to time before an indication appears for replacing consumable parts.

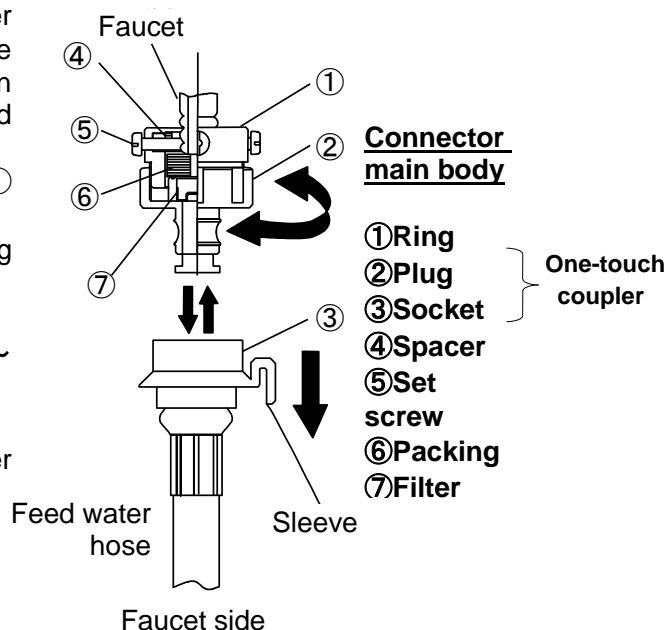
## 6. Maintenance procedures

### Clean the feed water hose filter.

#### Clean the feed water hose filter.

- (1) Turn OFF(O) the electric leakage breaker on the right side of main body, close the faucet, and slide the sleeve in a direction indicated by arrow. Disconnect the feed water hose from the connection port.
- (2) Disconnect the plug ② from the ring ① while turning it.
- (3) Clean the filter ⑦ attached to the packing with supply water.
- (4) Clean the filter ⑦ with brush, etc.
- (5) Reverse the above procedure of (1) ~ (2) for reassembling.

※ The guideline for cleaning of feed water hose filter is six months.



### Replace the piping hose.

#### Replace the piping hose.

- Be sure to use our specified hose for replacement.
- The guideline for replacement of piping hose is two years.

※ Be sure to contact us before replacement.

### Replacing the water supply solenoid valve and the reducing valve

#### Replacing the water supply solenoid valve and the reducing valve

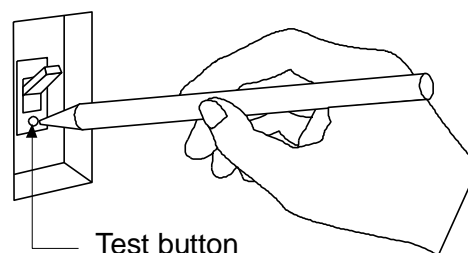
- Be sure to use the water supply solenoid valve and the reducing valve specified by Yamato.
- The rough interval for replacing the piping hose is five years.

※Contact to one of our sales offices for replacement.

### Checking the ELB

#### Checking the ELB

- Connect the power cord and perform test in the live state.
- First, turn the ELB to "ON( | )".
- Then press test button of the ELB with a tip of a ball point pen. It is normal if the ELB is turned off.



## 7. When the unit is not to be used for a long time or when disposing



**Alarm**

### 1. For disposal



- Dispose of the product as a waste.
- When disposing of, do not leave the product in a place where children gather to play.

### 2. When the product is not to be operated in the nighttime and during holidays



- Be sure to turn OFF (○) the power switch on the right side of main body.
- Be sure to close the faucet.
- Fluctuating water supply pressure may cause water leakage, resulting in unexpected accident.

### Requests in case of disposal

Always pay attention to the preservation of the global environment.

- We highly recommend taking the unit apart as far as possible for separation or recycling to contribute to the preservation of the global environment. Major components and materials for the unit are as follows:

Name of principal parts	Material
<b>Principal components of exterior</b>	
Exterior	Ferrous, galvanized sheet steel, melamine resin baking finishing
Exterior back plate	Ferrous, galvanized sheet steel, melamine resin baking finishing
Door	Ferrous, galvanized sheet steel, melamine resin baking finishing
Door back plate	Stainless steel plate SUS304
Installation plates (coated)	Ferrous, galvanized sheet steel, melamine resin baking finishing
Installation plates (uncoated)	Stainless steel plate SUS304
Hinge	Stainless steel plate SUS
Rubber legs	Synthetic rubber
Caster	Iron steel
Nameplates	PET
<b>Principal components of water circuit system</b>	
Feed water port	Brass
Water quality sensor	Polypropylene
Membrane filter	Polycarbonate
<b>Water circuit components</b>	
Ion exchange resin	Polystyrene
Resin pipe case	Polypropylene
Water quality sensor electrode	Titanium
Reducing valve	Metallic : body of brass

## 7. When the unit is not to be used for a long time or when disposing

### Requests in case of disposal

Name of principal parts	Material
<b>Principal components of piping system</b>	
Feed water hose	Vinyl chloride
Piping hose (transparent)	Vinyl chloride
Water sampling hose	Polyurethane
Hose clamp	Polyacetal
Hose nipple (resin)	Polypropylene
Hose nipple (metal)	Brass
<b>Principal components of electric system</b>	
Feed water electromagnetic valve	Metallic : body of brass
Sampling electromagnetic valve	Body : Polyphenylene sulphide Frame : ferrous Plungers : stainless steel
Power cord and wiring materials Others	Wiring materials and substrates of synthetic rubber insulation and resin insulation
<b>Major components of the water sampling base</b>	
Clip	Frame : ABS resin ; axis : stainless steel ; spring : Steel
Base	Outer frame : ABS resin; weight : iron
Flexible arm	Flexible arm : iron; contraction tube : polyolefin

### When the unit is not to be used for a long time



When the product is not to be used over a long period of time, be sure to turn OFF(○) the electric leakage breaker on the right side to ensure the safety and close the faucet.

When the product has not been used for one month or more, be sure to replace all of consumables beforehand. Otherwise, the ion exchange resin cartridge and membrane filter may be deteriorated, resulting in deterioration of water quality.

# 8.Troubleshooting Guide



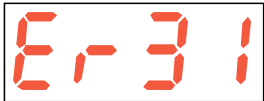
## Display and contents

### How to take the countermeasure

In case of display of the error as follows in the Error • Consumables Replacement Display, take note of the content of error. Turn OFF(O) the electric leakage breaker on the right side of main body and close the faucet. In case of abnormality, parts replacement or system check is necessary. Contact the shop from which you have purchased the product, our sales office, or our service center.




Note that the serial number must also be informed together with the details of abnormality when contacting us.

The contact address of the customer service center is shown at the end of the page.

Error	Display	Cause	Countermeasure
Water quality sensor error		Wire disconnection/shorting of the temperature compensation sensor of water quality sensor or when the state of deviation from the measurement range of 0°C~100°C continues for more than a certain period of time	Turn ON the electro leakage breaker on the right side of main body again. If error persists, call the service center.
Controller error		Set value stored in the memory device not read correctly or abnormal value Error in the A/D circuit detected	Contact our service center.
Water leakage		When water splashes over the leak sensor	Turn OFF( O ) the electro leakage breaker on the right side of main body and confirm water leakage. Call the service center. (See P.36)

## 8. Troubleshooting



### Display and contents

Alarm	Display	Conditions	Countermeasure
Notifying ion exchange resin replacement		Water quality of deionized water: $1 \times 10^{-4} \text{S/m}$ or more $1 \times 10^4 \Omega \cdot \text{m}$ or less	Replace the ion exchange resin. (See P. 11) Continue sampling till the water quality is improved and the CPC display disappears after replacement (automatic reset) ( Alarm display can be temporarily reset by pressing <b>CLR</b> continuously during alarm after replacement.)
Notifying pretreatment cartridge replacement		When the accumulated water sampling time reaches 84 hours.	Replace the pretreatment filter. (See P.13.) Alarm display can be reset by pressing <b>CLR</b> of the operation panel continuously. (See P.29)
Notifying membrane filter replacement		When the accumulated water sampling time reaches 9 hours.	Replace the membrane filter. (See P.14) Alarm display can be temporarily reset by pressing <b>CLR</b> continuously during alarm after replacement. (See P.29)
Occurrence of multiple notifications for above replacement	Alternate display of notification of each of consumables	When multiple alarm notification conditions are overlapped	Replace the corresponding consumable. Alarm display is reset as follows by pressing <b>CLR</b> of operation panel continuously: CPC→PWF→FILT Repeat reset procedure till all of consumables are reset.

※1The condition to indicate replacement timing for consumable parts is the water sampling operation time accumulated from reset of the **CLR** key at the last replacement of filters.

※2Life time of each consumable part varies depending on the raw water quality, etc. while exerting effects on the sampling rate and water quality values.

※3The buzzer sound activated can be temporarily canceled by pressing any switch of the operation panel (the error display continues). On detecting abnormality in the water quality again, the buzzer sound is resumed for notification.

Other displays	Display	Conditions	Countermeasure
Measurement over-range		Overshooting the upper limit of water quality measuring range: • Electric conductivity $< 0.05 \times 10^{-4} \text{S/m}$ • Resistivity $> 2 \times 10^4 \Omega \cdot \text{m}$	Press <b>PUSH</b> of the operation panel to start sampling. If no reading is shown after sampling, call the service center.
		Undershooting the lower limit of water quality measuring range: • Electric conductivity $> 10 \times 10^{-4} \text{S/m}$ • Resistivity $< 0.1 \times 10^4 \Omega \cdot \text{m}$	Replace the ion exchange resin. (See P.11) If the reading is not shown even after replacement, call the service center.

## 8. Troubleshooting

### Repairing procedure

#### Measures to be taken in case of display of water leakage, **Er31**

1. Imperfect connection of the water supply port coupler, the one-touch joint of the ion exchange resin cartridge, and the preprocess coupler of the pretreatment cartridge.

※ When water is leaking from other piping, immediately shut power and the tap water main cock and consult your dealer or the general customer service center.

2. When water splashed on the leak sensor when replacing the ion exchange resin cartridge

#### Countermeasures

(1) Turn the ELB on the right side of the main body to "OFF(O)".

(2) Isolate the leaking point. The leak sensor is located on the front side behind the door.

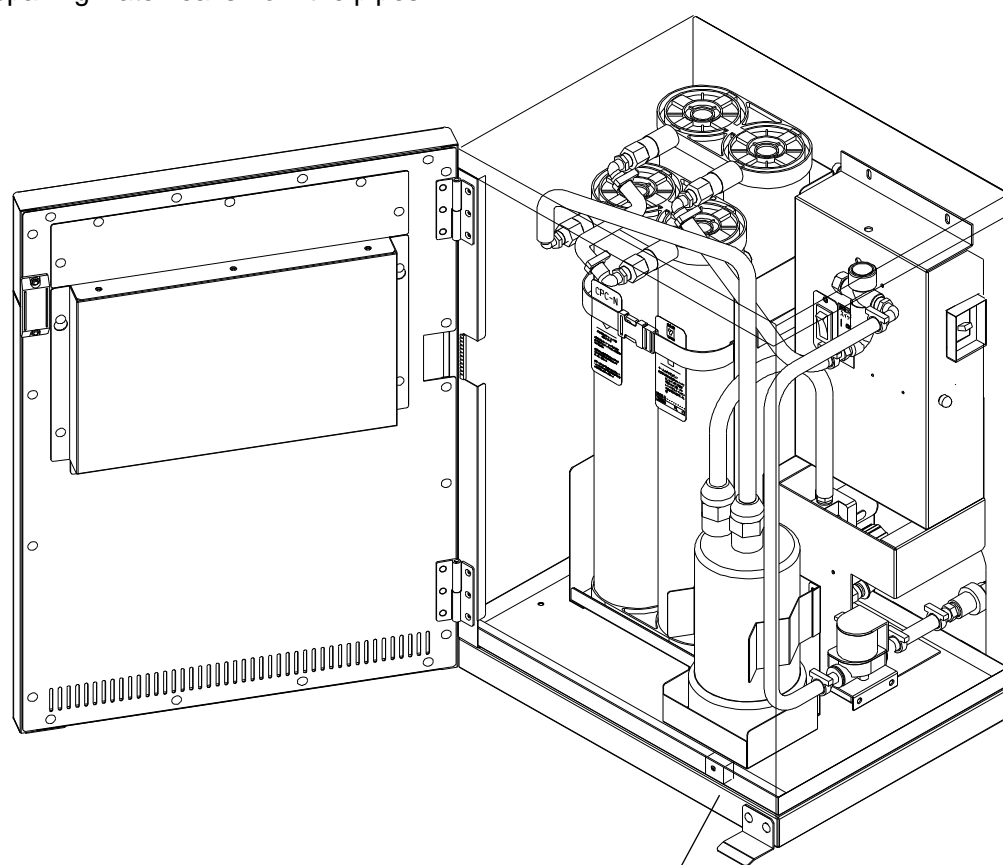
(3) Wipe off water in the bottom of the unit and let it dry, remove the leak sensor from the main unit, wipe it completely and allow it completely dry.

(4) When the drying process has completed, be sure to set the leak sensor to the original position.

(5) Return the door to the original position.

(6) Turn the ELB on the right side of the main unit to "ON( | )" and press the **POWER** key on the operation panel to resume normal operation.

※ Be sure to close the tap water main cock before starting disassembly of pipes such as repairing water leaks from the pipes.



Leak sensor

## 8. Troubleshooting

### Check list

Symptom	Probable cause	Countermeasures
Power will not turn on.	● Imperfect connection of the power cord and the power socket.	Reconnect the power cord.
	● Overcurrent switch OFF	Turn the overcurrent switch inside the main unit door to "ON(   )".
	● Defective power supply at the customer site	Set to 1 $\phi$ AC100V~240V.
	● Defective ELB	Replacement of parts
Water is not supplied.	● The tap water main cock is insufficiently open	Open the tap water main cock.
	● Insufficient tap water pressure or water outage	Check that the tap water main cock is open.
	● Imperfect connection of the water supply hose	Reconnect the water supply hose. (See P.9~10.)
	● Defective water supply solenoid valve	Replacement of parts
Water supply does not stop.	● Defective water supply solenoid valve	Replacement of parts
Water not sampled	● Clogged ion exchange resin cartridge or membrane filter	Remove the membrane filter and replace the filter if water can be sampled.
	● Faulty piping	Check the hose connection. (See P.12)
	● Faulty feed water electromagnetic valve or sampling electromagnetic valve	Replacement of parts
Poor water quality	● Degradation of ion exchange resin cartridge	Sampling water of about 4L. Replace parts if the quality does not improve.
	● Air left in the ion exchange cartridge	
	● Ion exchange resin cartridge not used over a long period of time	

## 9. After sales service and warranty

### When requesting a repair

#### When requesting a repair

If any trouble occurs, immediately stop operation, turn the electric leakage breaker off(O), disconnect the power plug and contact your dealer or our sales office.

Information necessary for requesting a repair

- Model name of the product
  - Serial number
  - Date (y/m/d) of purchase
  - Description of trouble (as in detail as possible)
- } See the warranty card or the nameplate on the unit.  
} See the section “3. Names and Functions of Parts” on page 16.

Be sure to indicate the warranty card to our service representative.

#### Warranty card (attached separately)

- Warranty card is given by your dealer or one of our sales offices and please fill in your dealer, date of purchase and other information and fax it to our customer center (the number is described in the back cover), then store it securely.
- Warranty period is one full year from the date of purchase. Repair service for free is available according to the conditions written on the warranty card.
- For repairs after the warranty period consult your dealer or one of our sales offices. Paid repair service is available on your request when the product's functionality can be maintained by repair.

#### Minimum holding period of repair parts

The minimum holding period of repair parts for this product is seven years after end of production.

Repair parts here refer to parts necessary for maintaining performance of the product.

# 10.Specification

Model		WL320A	WL320B
Legs of main unit		Rubber legs	Caster
Performance	Sampling method	Ion exchange	
	Feed water type	One-touch coupler water supply connection resin hose	
	Sampled pure water	JIS K 0557 A4 deionized water	
	Sampling rate and method ※2	About 1L/min deionized water, taken continuously	
※1	Ion exchange resin cartridge	3L ion exchange resin (CPC-N) 2	
	Final filtration	0.1 μm membrane filter	
	Leak detection	Feed water electromagnetic valve forced to close on detecting leakage	
Standard	Raw water pressure range	0.5~5 × 100kPa (0.5~5kgf/cm <sup>2</sup> )	
	Safety unit	ELB, overcurrent switch, leak sensor, reducing valve, water quality alarm	
	Power supply (50/60Hz) ※3	Single phase AC100~240V 0.2A or less	
	External dimensions※4 (W × D × H)	350mm × 350mm × 450 mm	
	Water sampling base	Flexible tube and membrane filter may be detached.	
	Weight	Main unit : approx. 30 kg (in dry state) Water sampling base : approx. 5kg	
Marking	Water quality display	7-segment LED display (electric conductivity/specific resistance)	
	Other indications	Indication to replace consumable parts(CPC : Two units shall be replaced at the same time depending on the degradation of water quality) Pretreatment cartridge, membrane filter, alarm indication (water leak alarm)	
Accessories		Feed water hose (with connector)	1 piece
		Power cord	1 piece
		Instruction manual	This manual
		Guaranty card	1 piece
		Ion exchange resin (CPC-N)	2pieces
		Pretreatment cartridge	1 piece
		Seal tape	1 piece
		Membrane filter	1 piece
		Water sampling base	1set
		Water sampling hose	3m × 1 piece
		Hose band	2 piece
Consumables	Name of part		Model
	Ion exchange resin cartridge		CPC-N
	Pretreatment cartridge		PWF-1
	Membrane filter (two pieces enclosed)		MFRL727
			Article No.
			CPCN30010
			253099
			9020010004

※1 The performance applies to the conditions with power supply of AC100 ~ 240V, room temperature of 23°C±5°C, and humidity of 65%RH±20%.

The ambient temperature of this unit ranges from 5°C to 35°C. For the raw water temperature, the guideline must be set to 10°C~35°C.

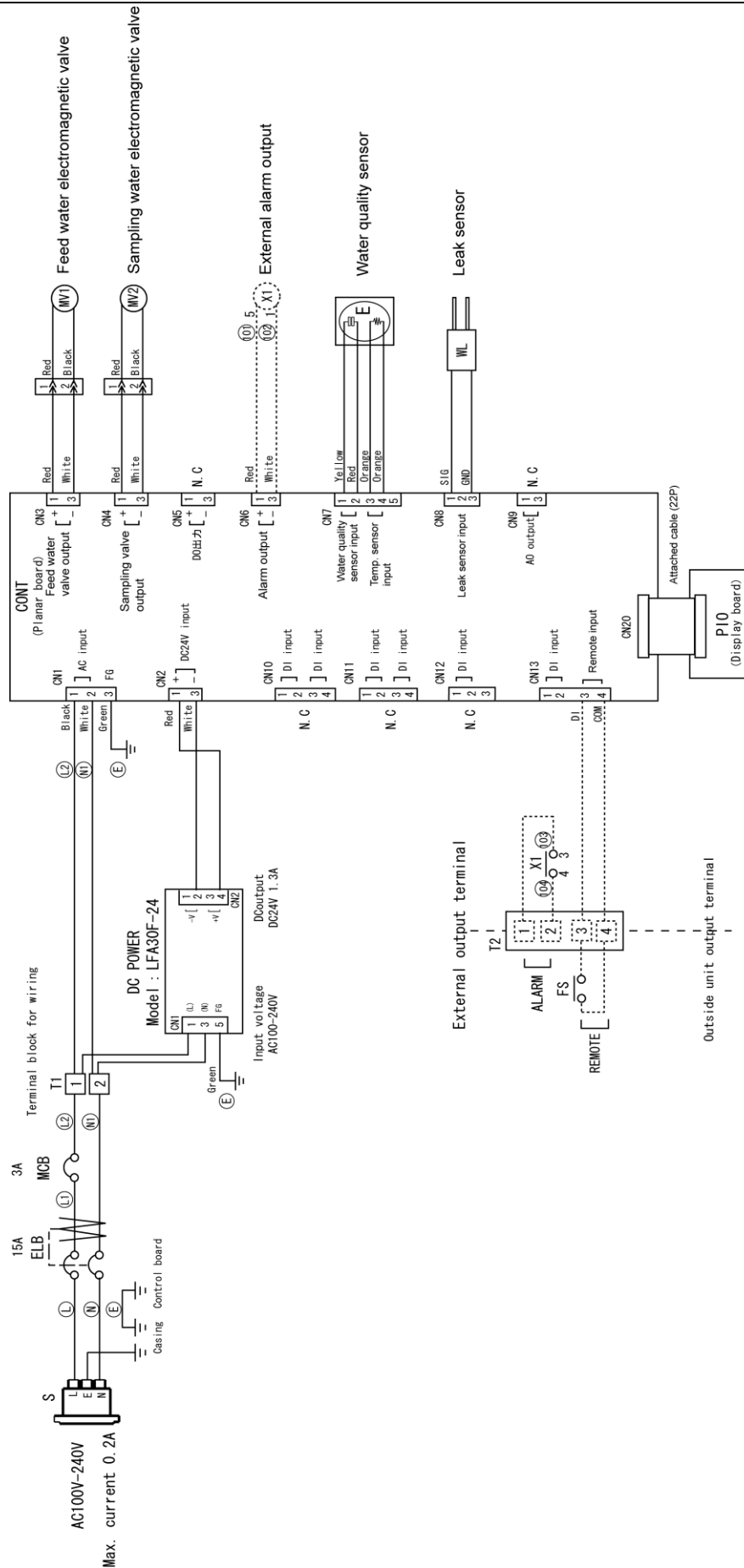
※2 With the raw water of 1.0 × 100kPa (1kgf/cm<sup>2</sup>) or less, the sampling rate becomes 1.0L/min or less.

※3 The 100V power cord (with 3P plug attached) is provided. Use a separately available power cord for voltages other than AC100V.

※4 No projection included

# 11.Electric Circuit Diagram

## Wiring diagram



Note) • Circled number shows marking number on harness drawing.  
• Broken lines indicate optional specifications.

# 11.Electric Circuit Diagram

## Parts symbols for wiring diagram

### • Standard parts

Symbol	Name of part	Symbol	Name of part
S	Power socket (AC250V、15A)	DC POWER	Switching power supply (Dc output : 24V、1.3A)
MCB	Circuit protector AC250V、3A)	MV1	Feed water electromagnetic valve
T1	Terminal board (AC250V、20A)	MV2	Sampling electromagnetic valve
CONT	Planer substrate	E	Water quality sensor
PIO	Display substrate	WL	Leak sensor
ELB	Electric leakage breaker (AC100-240V、15A)		

### • Optional parts

Symbol	Name of part	Symbol	Name of part
X1	External alarm output relay (DC24V)	T2	Optional terminal board (for external output terminal)
FS	Foot switch		

## 12.Replacement Parts List

Name of part	Code No.	Specifications	Manufacturer
Ion exchange resin cartridge (one included)※	CPCN30010	CPC-N	Yamato Scientific
Preprocess cartridge	253099	PWF-1	Yamato Scientific
Membrane filters (two included)	9020010004	MFRL727	Yamato Scientific
Hose in pipe (Flexible hose)	3040060005	$\phi 9 \times \phi 13$	Yamato Scientific
Water sampling hose (Polyurethane tube)	LT00035885	UB1065 transparent $\phi 6.5 \times \phi 10$	Yamato Scientific
One-touch joint	3140030008	QJ-22D	Wamoto
Preprocess coupler	LT00014448	IN OUT set	Yamato Scientific

\* Both of two ion exchange resin cartridges shall be replaced at the same time. (Please purchase two cartridges.)

## 13. List of dangerous materials



Never use an explosive substance a flammable substance or a substance containing them for this device.

Explosive substance	①Nitroglycol, glycerine trinitrate, cellulose nitrate and other explosive nitrate esters
	②Trinitrobenzen, trinitrotoluene, picric acid and other explosive nitro compounds
	③Acetyl hydroperoxide, methyl ethyl ketone peroxide, benzoyl peroxide and other organic peroxides
	④Metallic azide, including sodium azide, etc.
Ignitive substances	① Metal “lithium” ② metal “potassium” ③ metal “natrium” ④ yellow phosphorus ⑤ phosphorus sulfide ⑥ red phosphorus ⑦ phosphorus sulfide ⑧ celluloids, calcium carbide (a.k.a, carbide) ⑨ lime phosphide ⑩ magnesium powder ⑪ aluminum powder ⑫ metal powder other than magnesium and aluminum powder ⑬ sodium dithionous acid (a.k.a., hydrosulphite)
Oxidizing substances	①Potassium chlorate, sodium chlorate, ammonium chlorate, and other chlorates
	② Potassium perchlorate, sodium perchlorate, ammonium perchlorate, and other perchlorates
	③Potassium peroxide, sodium peroxide, barium peroxide, and other inorganic peroxides
	④Potassium nitrate, sodium nitrate, ammonium nitrate, and other nitrates
	⑤Sodium chlorite and other chlorites
	⑥Calcium hypochlorite and other hypochlorites
Flammable substances	① Ethyl ether, gasoline, acetaldehyde, propylene chloride, carbon disulfide, and other substances with ignition point at a degree 30 or more degrees below zero.
	②n-hexane, ethylene oxide, acetone, benzene, methyl ethyl ketone and other substances with ignition point between 30 degrees below zero and less than zero.
	③Methanol, ethanol, xylene, pentyl n-acetate, (a.k.a.amyl n-acetate) and other substances with ignition point between zero and less than 30 degrees.
	④Kerosene, light oil, terebinth oil, isopenthy alcohol(a.k.a. isoamyl alcohol), acetic acid and other substances with ignition point between 30 degrees and less than 65 degrees.
Combustible gas	Hydrogen, acetylene, ethylene, methane, ethane, propane, butane and other gases combustible at 15°C at one air pressure.

Quoted from the separate table 1 in Article 6, the enforcement order of the Industrial Safety and Health Law; Dangerous Substances (in Article 1, 6 and in 3 of Article 9)

# 14. Standard installation manual

\* Install the product according to the following: (Confirm separately for optional items or special specifications)

Model	Serial number	Date	Installation mgr.(company name)	Installation mgr.	Judgment

No.	Item	Implementation method	TOC No. Reference page of the operating instruction manual	Judgment
Specifications				
1	Accessories	Check for number of accessories on the basis of the column for accessories.	10. Specifications field P. 39	
2	Installation	▪ Visual check of environmental conditions Caution: Take care for environment	2. Before operating the unit ▪ On the installation site P. 5	
		▪ Securing a space		
Operation-related matters				
1	Source voltage	▪ Measure the user side voltage (outlet, distribution board, etc.) with a tester ▪ Measure voltage during operation (shall meet the specifications) Caution: Always use a plug that meets the specification for attaching to the ELB.	2. Before operating the unit ▪ Be sure to connect the ground wire. ▪ Power supply is .... 10.Specifications ▪ Specification - power supply P. 5 P. 6 P. 39	
2	Raw water	Check for raw water	2. Before operating the unit ▪ About raw water P. 8	
3	Water sampling	Explain sampling to the customer while referring to the manual	4.Operation Method P. 20~ ▪ Operation method 22	
Description				
1	Operational descriptions	Explain the customer about each assembly as per the operation manual.	4. Operating procedures P. 20~ ▪ Operating procedures 22 1. Safety precautions P. 1~ ~ 13. List of dangerous materials 43	
2	Error sign	Explain the error sign and the method to reset it to the customer while referring to the manual.	8. Troubleshooting~9. After sales service and warranty P. 34~ 38	
3	Maintenance and inspection	Explain operations of each component according to the operational instructions	6. Maintenance procedures P. 27~ ▪ Daily inspection/ maintenance 31	
4	Completion of installation Entries	▪ Fill in the installation date and the installation mgr. on the nameplate of the main unit ▪ Fill in necessary information to the warranty card and hand it over to the customer ▪ Explanation of the route for after-sales service	9. After sales service and warranty P. 38	

## Limited liability

**Be sure to use the unit strictly following the handling and operating instructions in this operating instruction.**

**Yamato Scientific Co., Ltd. assumes no responsibility for an accident or a malfunction caused by use of this product in any way not specified in this operating instruction.**

**Never attempt to perform matters prohibited in this operation instruction.**

**Otherwise, an unexpected accident may result.**

## Notice

- **Descriptions in this operating instruction are subject to change without notice.**
- **We will replace a manual with a missing page or paging disorder.**

Instruction Manual

Water Purifier

Pure Line

WL320A/B

First edition January 20, 2017

Revision

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