Water Purifier

Pure Line®

WL200/220

Instruction Manual

1st edition

- **Thank you very much for purchasing this Yamato Pure Line® WL200/220.**
- **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 Co., Ltd.

This paper has been printed on recycled paper.

Contents

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

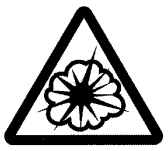
Warning

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 page40.

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 cord 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 the power switch 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 1.0 L/min(raw water pressure:3 × 100kPa、reducing valve pressure:WL200・・・0.4 × 100kPa、WL220・・・0.6 × 100kPa). Never attempt readjustment of the reducing valve.

Any change in the factory setting may result in water leakage or reduction of water volume.

⚠ Caution

In case of thundering

When thundering begins, turn OFF the power switch on the right-hand side of main body immediately and pull out the power cord.

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

In case of power failure

This system stops operation when power supply fails. To ensure the safety, turn OFF the power switch on the right-hand side of the main body.

To resume operation, refer to “Power Application” of “4. Operation Method” in Page 20

2. Before operating the unit

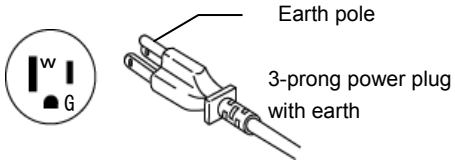
Precautions when installing the unit

⚠ Alarm

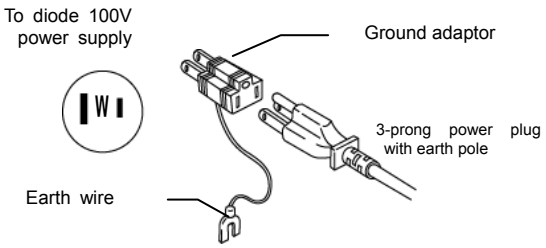
1. Be sure to connect the earth wire.

- Be sure to connect the earth wire (green wire of the power cord) to the earth wire or to the earth terminal.
- 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.

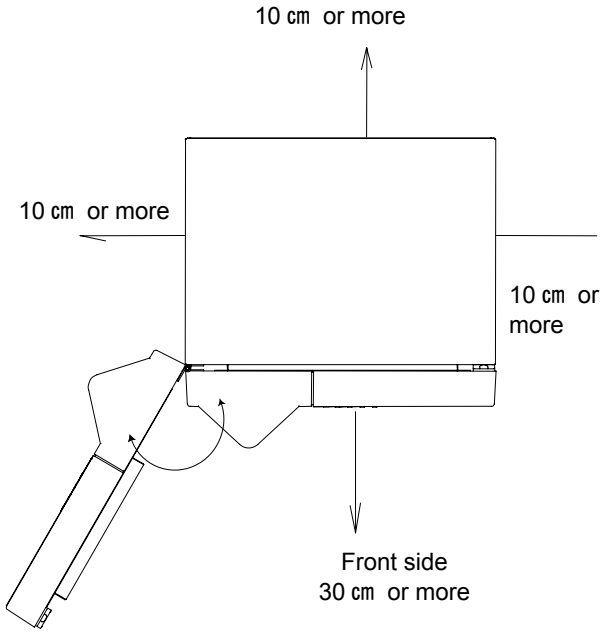
Ground adaptor

●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:

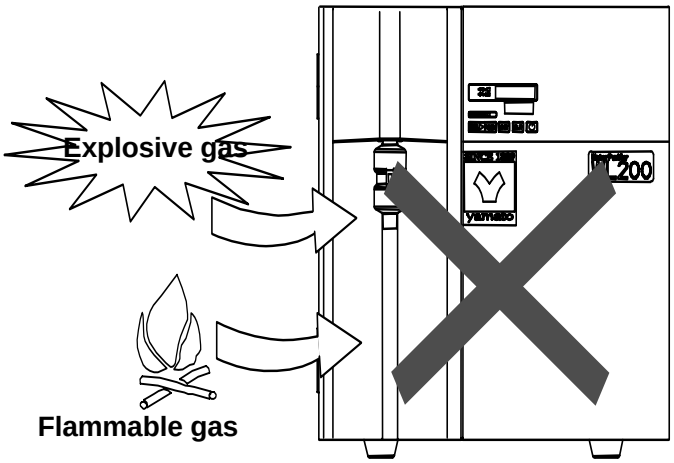
- Uneven surfaces or dirty surfaces
- Where flammable gas or corrosive gas exists
- Where the ambient temperature is 5℃ or less
- Where the ambient temperature is 35℃ or more
- Where temperature changes severely
- Where dusty and humidity is high
- Where subject to direct sunlight
- Where vibration is severe
- Where unstable power supply
- Where uneven floor
- Where raw water pressure is high
- Where with raw water pressure is low
- Outdoors



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

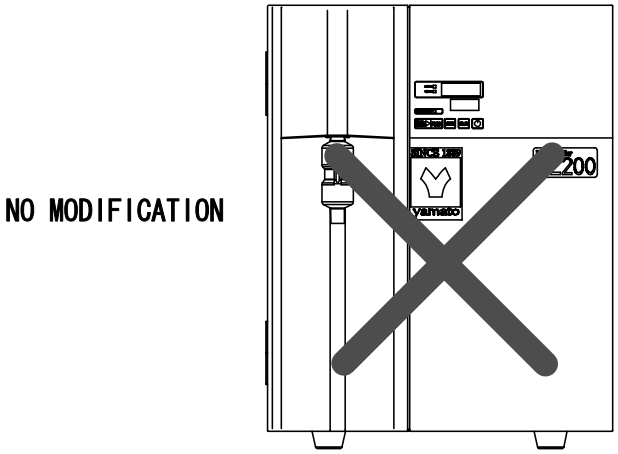
3. Never operate the unit in an atmosphere containing flammable or explosive gas.

- 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 power switch on the right side of the unit is turned ON/OFF and in the course of operation, arc may occur, possibly causing fire and explosion.
- See the section “13. List of dangerous materials” on page 40 for flammable and explosive gases.



4. Never attempt reconstruction.

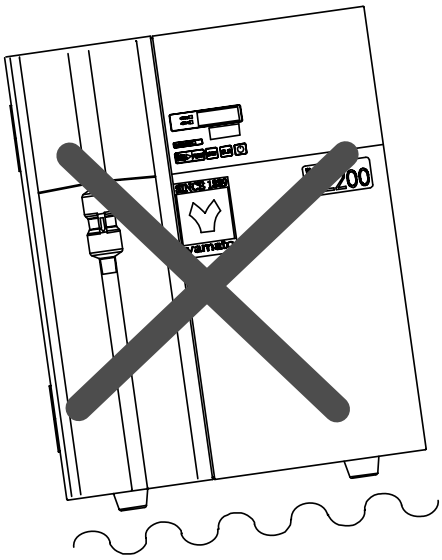
- Never disassemble the product.
- High-voltage components exist inside the product, which may cause electric shock. Always contact the shop from which you have purchased the product or our sales office or customer service center in case of internal adjustment or repair.
- Always carry out daily maintenance and inspection according to the procedure described in the manual. The customer must never attempt reconstruction because failure may result.



2. Before operating the unit

5.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 14 kg for WL200 and about 16 kg for WL220. Handle with care during transport and installation.



6.Take the power supply from the dedicated socket outlet.

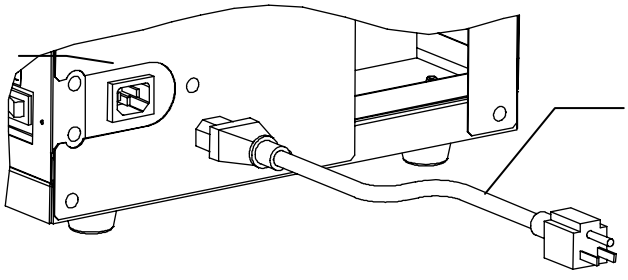
- Use the socket outlet appropriate to the power capacity (1A or larger capacity).
- The deficient power capacity causes not only decrease in the water sampling rate, but makes correct control impossible due to drop of the supply voltage. Always connect the product to the power supply system with sufficient allowance in the supply voltage.

  Power capacity : WL200/WL220 Single phase AC100～240V 0.5A or less
- **Note that the use of extension with a cord reel may cause drop of the voltage.**
- **Avoid starburst connection with branch socket outlet so as to prevent fire and electric shock.**

7.Connecting the power cord

- Connect the attached power cord to the power cord socket. Confirm that the power switch on the right side of the main body is OFF, 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.

Power socket outlet



Power cord

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 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 power supply in the right side of the main body off, 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.

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

● Use the supply water pressure within a range of 0.5～5×100kPa（0.5～5kgf/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 1.0×100kPa （1kgf/cm^2） or less.

● The raw water pressure range is the same even when the optional water inlet unit(see Page 23) is used.

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.

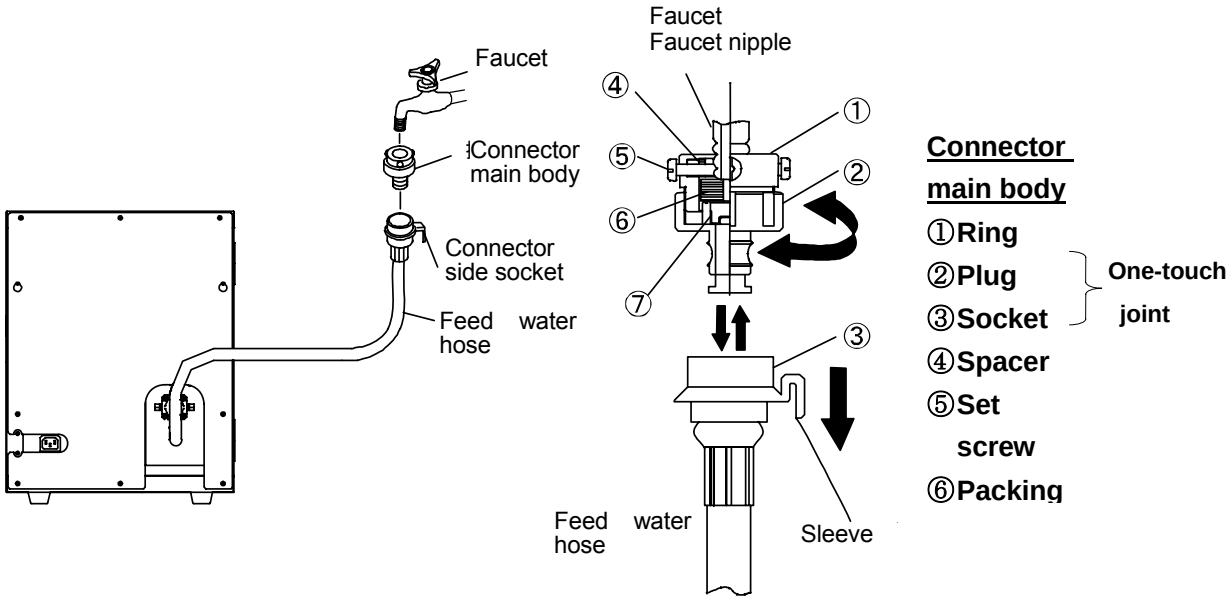
(3) Tighten four set screws ⑤ with equal torque while pressing the ring ① lightly and evenly in such a manner that the packing ⑥ contacts the faucet in a flat condition. When the faucet is a chemical faucet, adjust the position in such a manner that the set screw ⑤ comes to the lowest root of faucet 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.

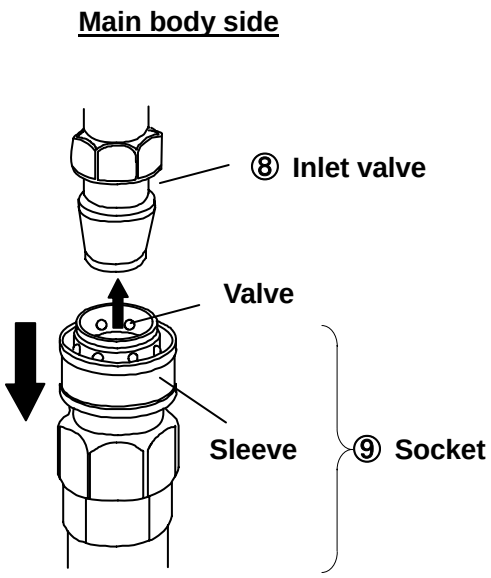
※ Be sure to use the supply water for raw water.



3. Carry out connection on the main body side.

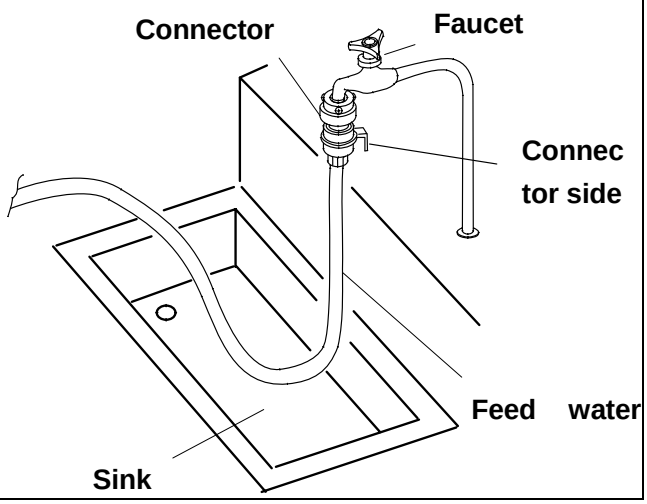
(1) Remove rubber cap from the water inlet plug ⑧.

(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 valve⑧.



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. 23).

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. 23).

6.Connect the ion exchange resin cartridge（CPC-P, CPC-E） firmly.

● Install the ion exchange resin cartridge (CPC-P, CPC-E) as follows:

(1) Confirm that the power switch on the right side of main body is OFF 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 (optional)” of P.28.

(3) Install the selected ion exchange resin cartridge firmly to the resin installation plate inside the system. For installation of the ion exchange resin cartridge of WL220, provide CPC-P in the front and CPC-E in the rear.(See Figs. 01 and 03)

(4) Secure the ion exchange resin cartridge with a band to the resin installation plate.
(See Figs. 02 and 04)

・For WL200 (CPC-P：1 piece)

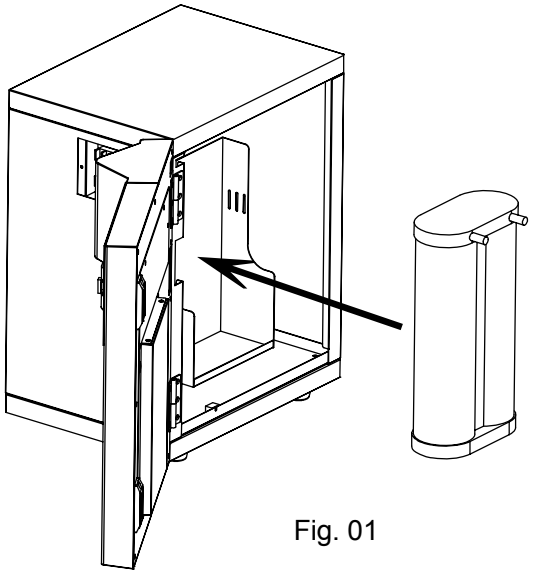


Fig. 01

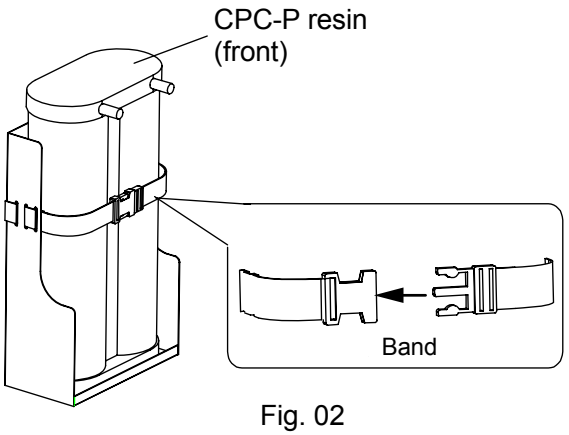


Fig. 02

・For WL220 (CPC-P、CPC-E：each 1 piece)

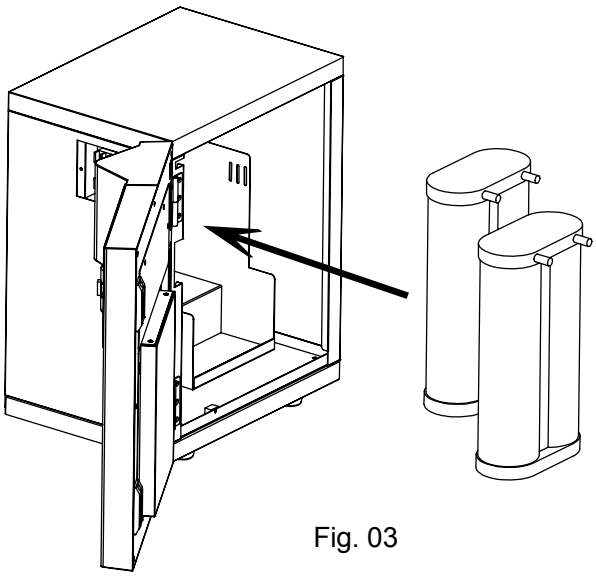


Fig. 03

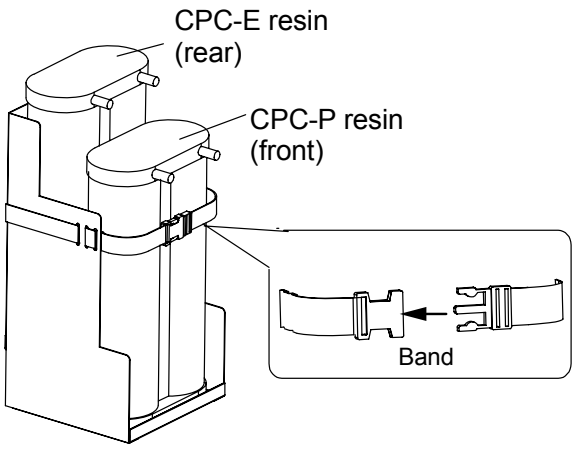


Fig. 04

●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.

・For WL200

(1) Press the coupler with (2 ,OUT) mark into the outlet (right side) of the ion exchange resin cartridge (CPC-P) till it clicks.

(2) Press the coupler with （ 1 ,IN） mark into the inlet (left side) of the ion exchange resin cartridge (CPC-P) till it clicks.
（See Fig. 05）

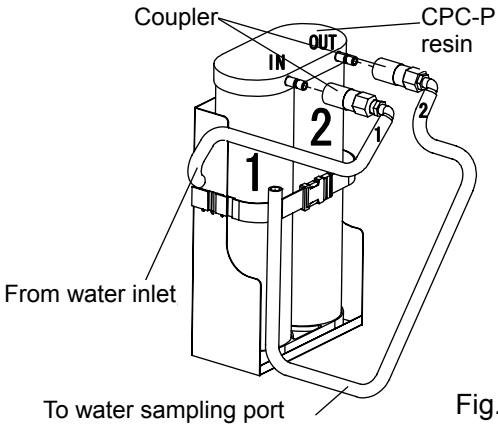


Fig.05

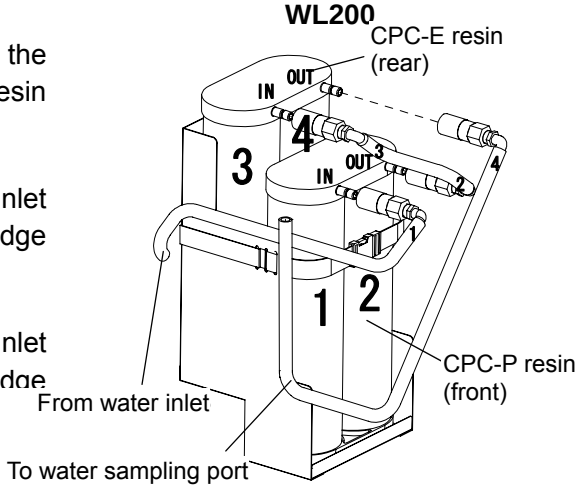
WL200

・For WL220

(1) Press the coupler with (4 ,OUT) mark into the outlet (right side) of the ion exchange resin cartridge (CPC-E) till it clicks.

(2) Press the coupler with (3 ,IN) mark into the inlet (left side) of the ion exchange resin cartridge (CPC-E) till it clicks.

(3) Press the coupler with （ 1 ,IN） mark into the inlet (left side) of the ion exchange resin cartridge (CPC-P) till it clicks. (See Fig. 06)



WL220 Fig.06

※ Initially, the coupler 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 coupler is inserted, pull on the hose to confirm connection and to make sure that the coupler is not disconnected.

※ Set the coupler connected to the ion exchange resin cartridge (CPC-P) to face laterally (on the left side as viewed from the front). If the coupler is allowed to face downward, it contacts the door back plate to make door closing impossible.

※ 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 (optional)” of P.29. 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 “1→2→3→4.” Note also that water may drip from the ion exchange resin cartridge when the coupler 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.

7.Connect the pretreatment cartridge (optional) firmly.

● Connect the pretreatment cartridge and the ion exchange resin cartridge (CPC-P) as follows. Remove a cap from the inlet and outlet of pretreatment cartridge and a rubber cap from the inlet and outlet of ion exchange resin cartridge.

・Common for WL200/220

(1) Press the coupler with (2 ,OUT) mark into the outlet (right side) of the ion exchange resin cartridge (CPC-P) till it clicks.

(2) Press the coupler with (1 ,IN) mark into the inlet (left side) of the ion exchange resin cartridge (CPC-P) till it clicks.

(3) Press the coupler with (OUT) mark into the outlet (right side) of pretreatment cartridge and the coupler with (IN) mark, which extends from the backside to the front, into the inlet (left side) of pretreatment cartridge, till they click. (See Fig. 07)

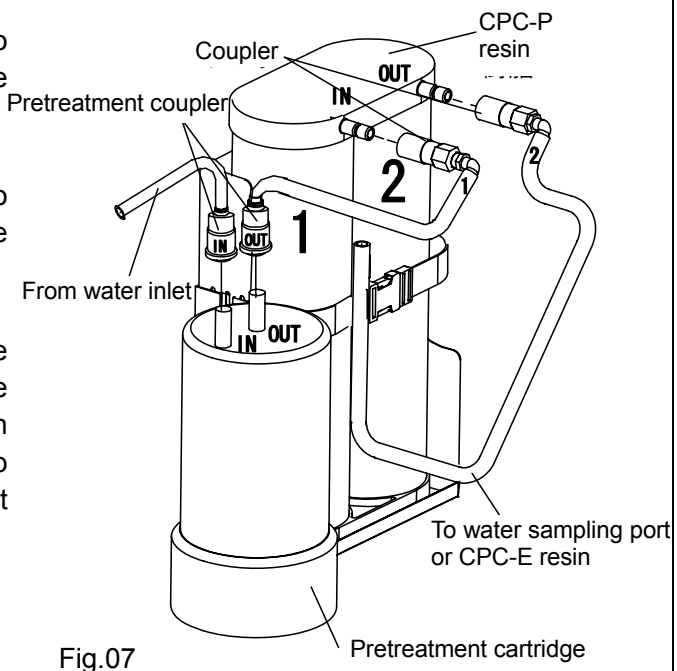


Fig.07

※ Initially, the coupler 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 coupler is inserted, pull on the hose to confirm connection and to make sure that the coupler is not disconnected.

※ Set the coupler connected to the ion exchange resin cartridge (CPC-P) to face laterally (on the left side as viewed from the front). If the coupler is allowed to face downward, it contacts the door back plate to make door closing impossible.

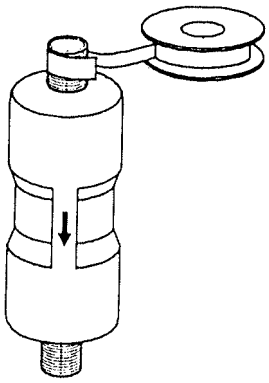
※ When removing the ion exchange resin cartridge, relieve the pressure before disconnecting the coupler while referring to “Before replacement of the ion exchange resin cartridge and pretreatment cartridge (optional)” of P. 28. The coupler can be removed with ease by pulling on it while pressing a black portion to the depth. For removal, reverse the order of installation. Note also that water may drip from the ion exchange resin cartridge when the coupler 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.

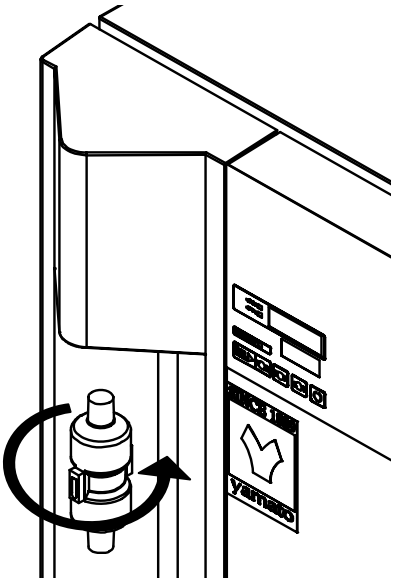
8.Connect the membrane filter firmly.

- 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.



※ Keep the seal tape in storage and do not lose it because it will be necessary at a time of membrane filter.

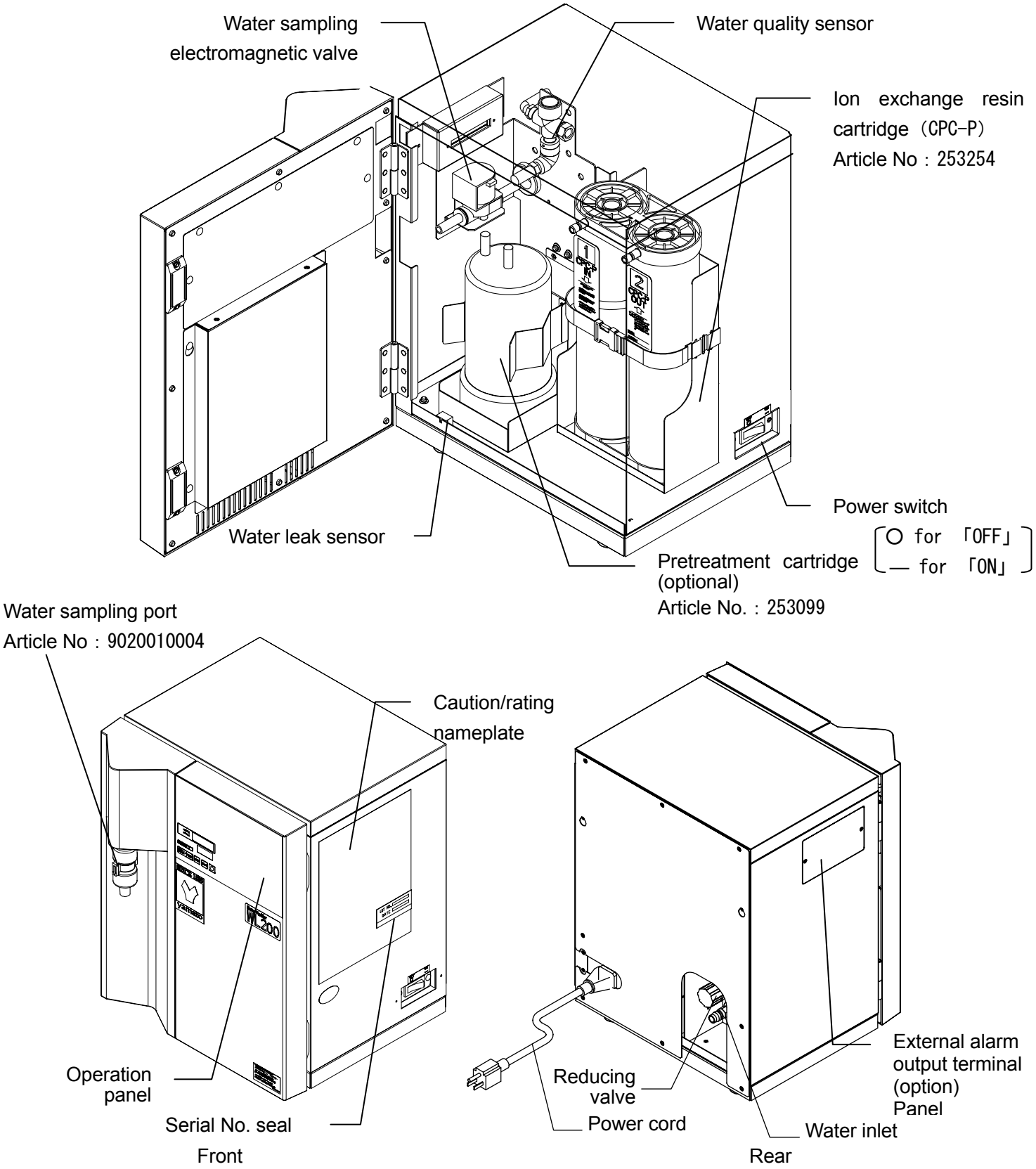
9. After installation

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

3. Names and Functions of Parts

Main unit

WL200

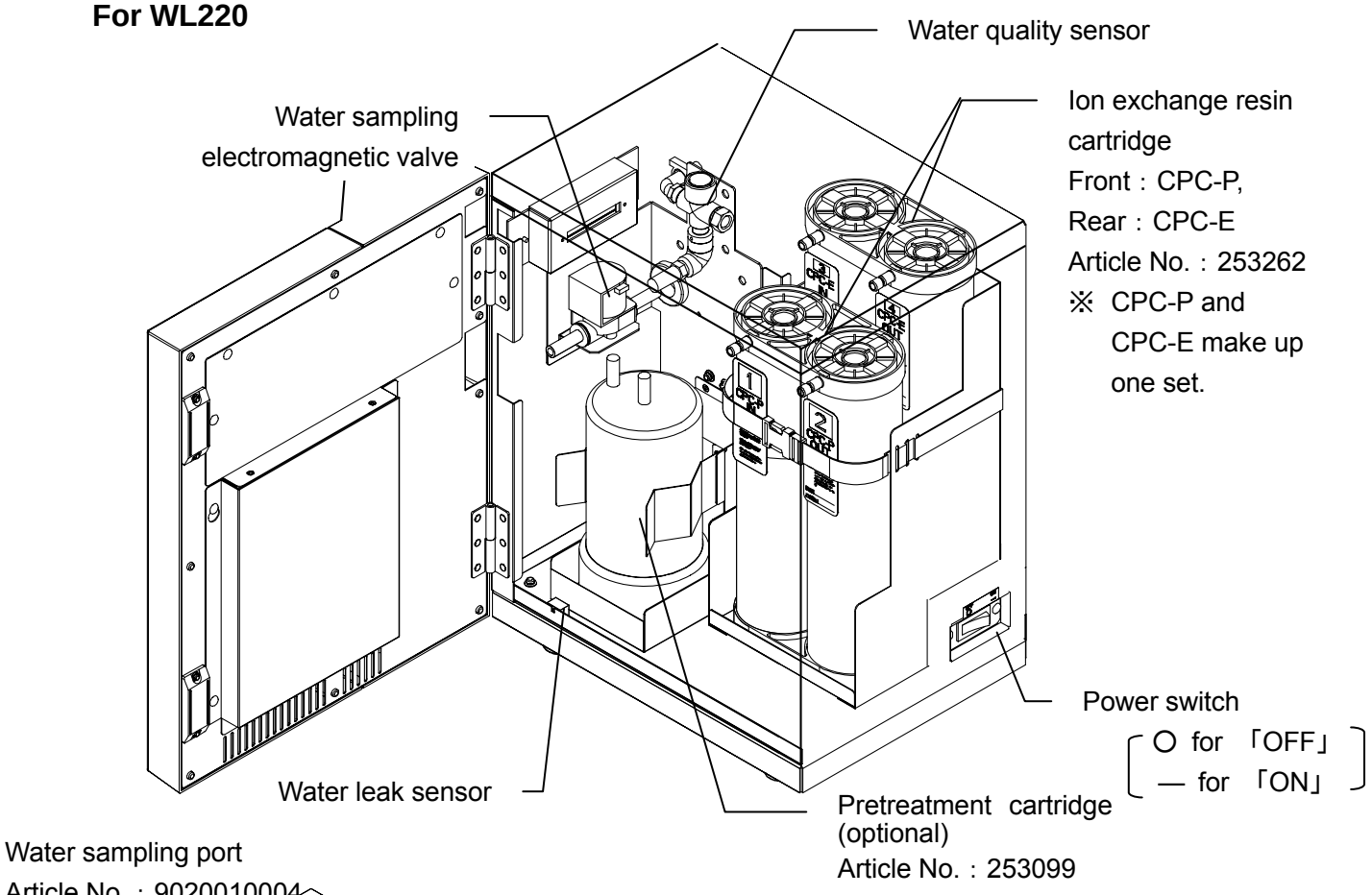


Note) The reducing valve has been set for the sampling rate of about 1.0 L/min (raw water pressure: 3 x 100 kPa, reducing valve pressure: 0.4 x 100 kPa) before shipment. The customer must never attempt changing the set value.

3. Names and Functions of Parts

Main body

For WL220

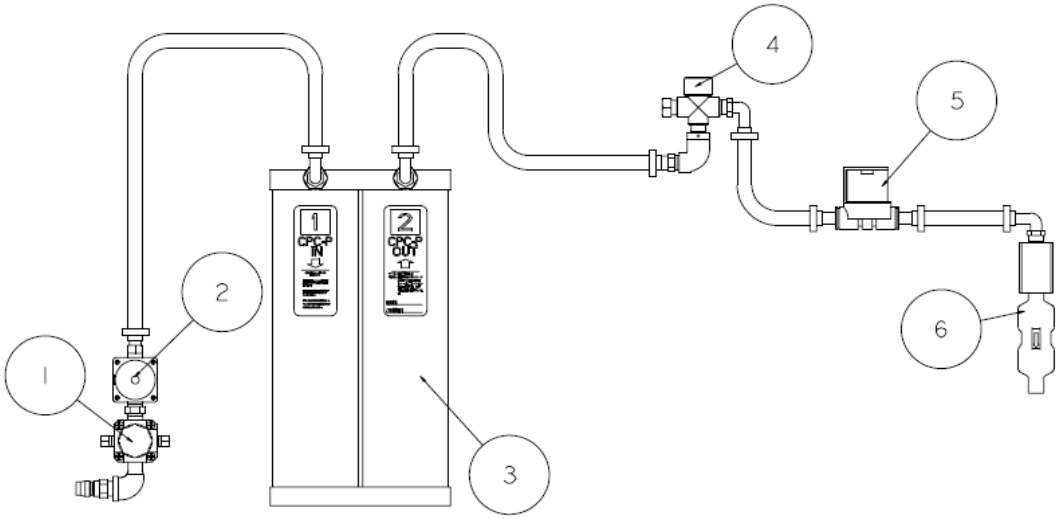


Note) The reducing valve has been set for the sampling rate of about 1.0 L/min (raw water pressure: 3 x 100 kPa, reducing valve pressure: 0.6 x 100 kPa) before shipment. The customer must never attempt changing the set value.

3. Names and Functions of Parts

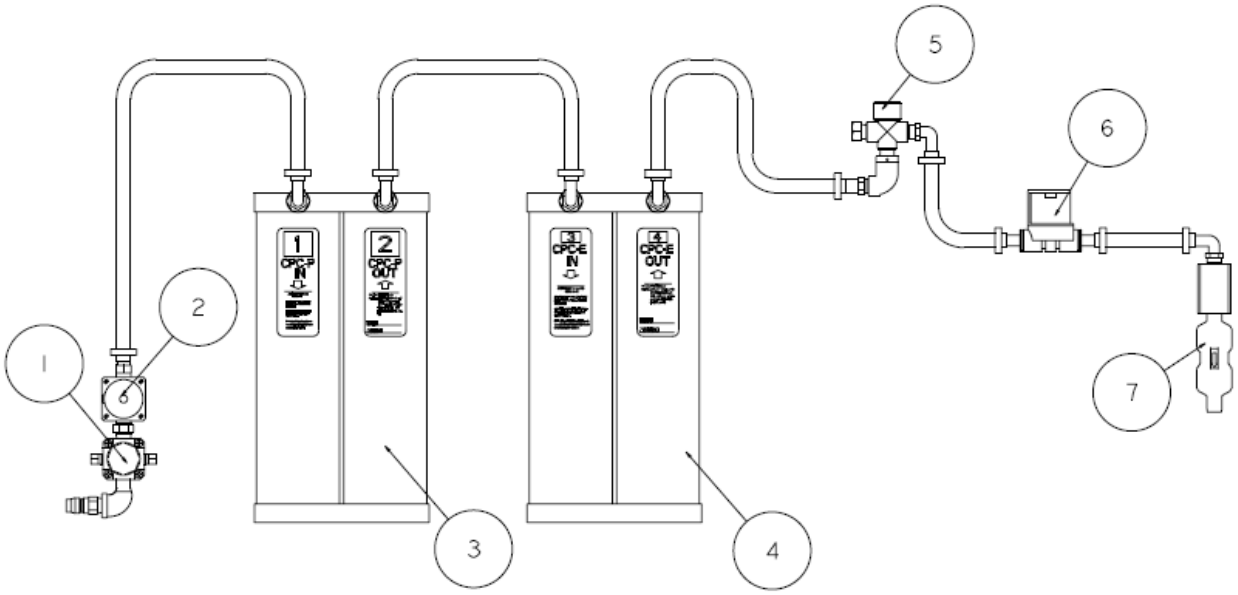
Piping diagram

WL200



1. Reducing valve
2. Water feed electromagnetic valve
3. Ion exchange resin cartridge (CPC-P)
4. Water quality sensor
5. Sampling electromagnetic valve
6. Membrane filter (sampling port)

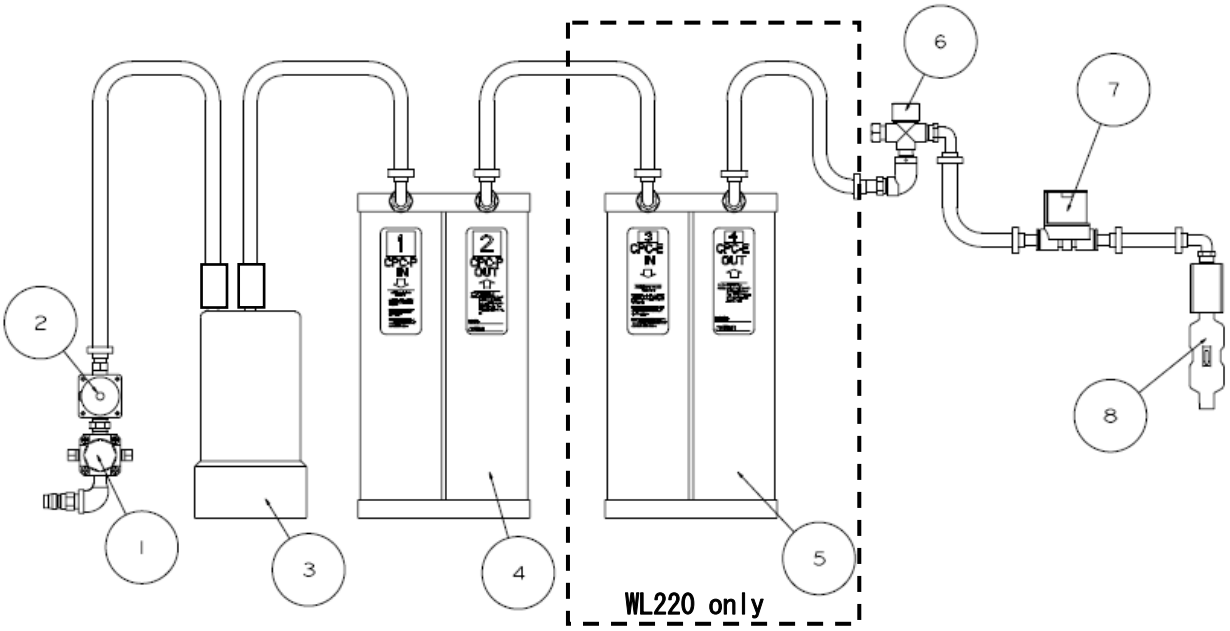
WL220



1. Reducing valve
2. Water feed electromagnetic valve
3. Ion exchange resin cartridge (CPC-P)
4. Ion exchange resin cartridge (CPC-E)
5. Water quality sensor
6. Sampling electromagnetic valve
7. Membrane filter (sampling port)

3. Names and Functions of Part

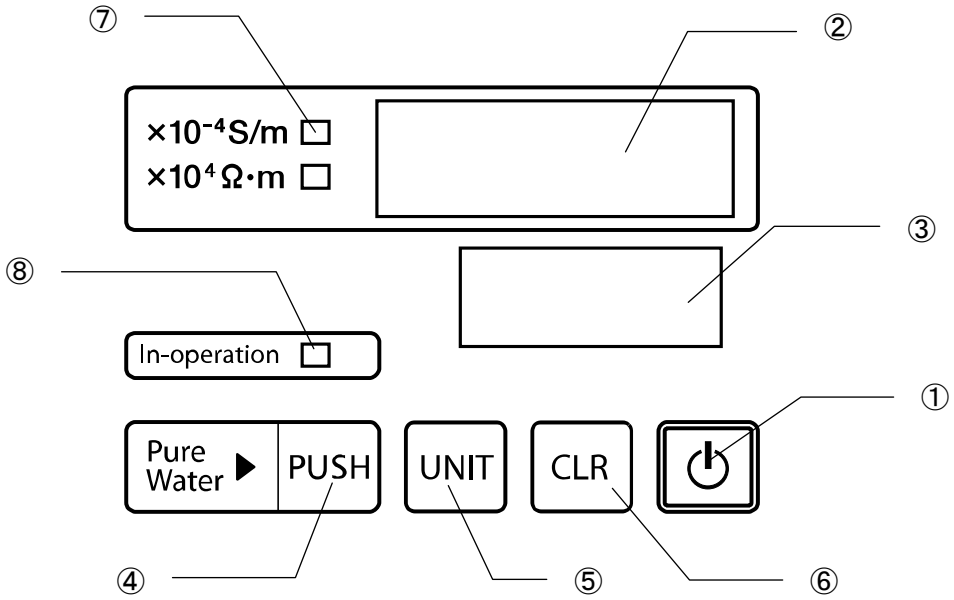
Pretreatment cartridge connection set (option)



1. Reducing valve
2. Water feed electromagnetic valve
3. Pretreatment cartridge
4. Ion exchange resin cartridge (CPC-P)
5. Ion exchange resin cartridge (CPC-E)
6. Water quality sensor
7. Sampling electromagnetic valve
8. Membrane filter (sampling port)

3. Names and Functions of Part

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	Error・consumables replacement display	Displays the error or consumables replacement timing.
④	PUSH key	Starts/stops sampling of deionized water
⑤	UNIT key	Selects the water quality unit ($\times 10^{-4}$S/m⇔ $\times 10^{4}\Omega$ ・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.

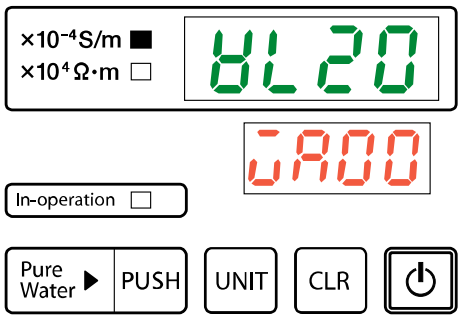
Power application

Power switch

OFF ON

① Set the power switch on the right side of main body to “ON（—）.”

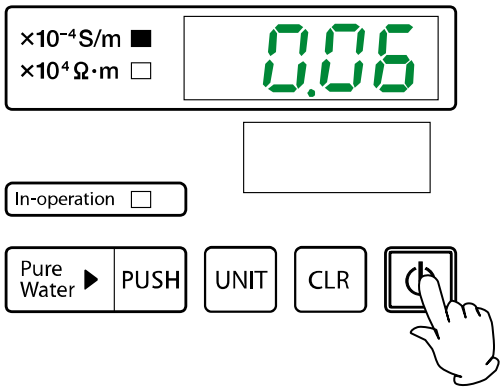
Operation panel (initial display)



●Initial display for 4 seconds

●Only the water quality unit lamp ON in 4 seconds

Operation panel (POWER key ON)

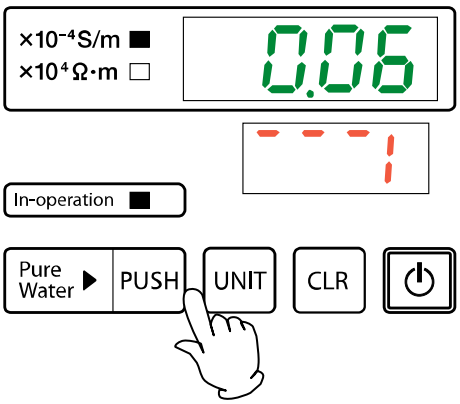


② Press the POWER key.

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

Sampling the deionized water

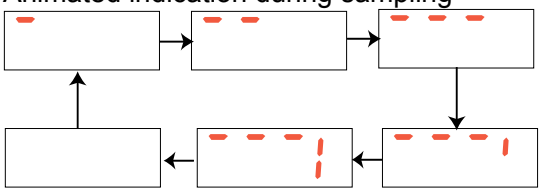
Sampling the deionized water



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

- ●n-operation lamp ON
- ●The Error・Consumables Replacement 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.

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

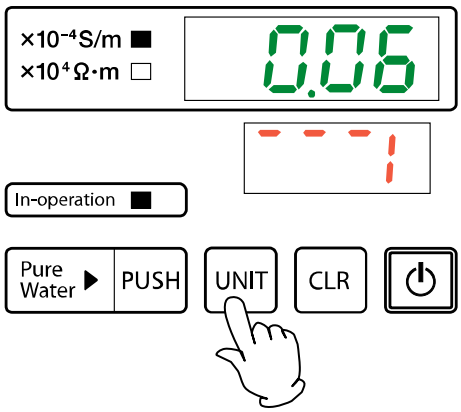
- ● In-operation lamp OFF
- ● Animated indication goes OFF in the Error・Consumables Replacement Display during sampling.

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

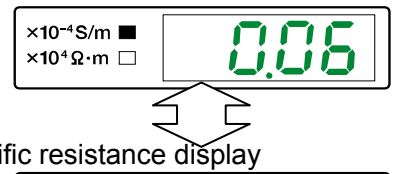
Selecting the water quality unit



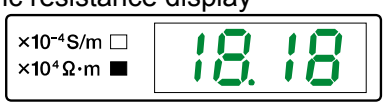
Press the UNIT key, and the water quality unit can be changed.

To change the water quality unit:

- ● Electric conductivity (conductivity) display



- ●Specific resistance display



※The unit conversion equation is shown below:

$$\text{Electric conductivity (S/m)} = \frac{1}{\text{Specific resistance value (Ω・m)}} \qquad \text{Specific resistance value (Ω・m)} = \frac{1}{\text{Electric conductivity (S/m)}}$$

For details, refer to “Electric Conductivity (Conductivity)” of P. エラー! ブックマークが定義されていません。.

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 (optional).

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 （ρ）. 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＝１８．２４×１０^{4}Ω・ｍ（１８．２４ＭΩ・ｃｍ）２５℃

ρ＝０．０５５×１０$^{-4}$Ｓ／ｍ（０．０５５μＳ／ｃｍ）２５℃

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.

5. Useful Functions

List of options

Name of material	Article No.	Compatible model	Remarks
Ion exchange resin CPC-E connection set （OWL36）	253261	WL200	The set to add CPC-E to WL200 to extend the life of ion exchange cartridge The sampling rate can be increased from 300 L to 700L for the raw water of 200 μ S/cm. One set includes a installation plate, fixing band, connection hose (with coupler), and ion exchange resin cartridge (CPC-E).
Pretreatment cartridge connection set （OWL38）※	253267	WL200 WL220	The set to add the pretreatment cartridge to WL200/220 when raw water contains large amount of fine particles (iron rust, etc.) and impurities. This set can reduce clogging of the membrane filter. One set includes the connection hose (with coupler) and the pretreatment cartridge (PWF-1). This is to be made to order because installation of the joint or hose to the feed water electromagnetic valve must be changed.
Sampling bed (with the connection set） （OWL40）	253266	WL200 WL220	Used for sampling at a point remote from the main body. On this bed, the membrane filter attached to the end of pipe (3 m) extended from the membrane filter connection port of the main body is fixed. Use this bed on the table.
Feed water port unit （OWH10）	253686	WL200 WL220	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	WL200 WL220	Used to keep the raw water pressure constant. Use this valve when the raw water pressure is not constant or is 5 × 100kPa (5kgf/cm^2) or more.

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

Optional function list

Remote sampling function (without sampling switch) ※1 ※2	253269	WL200 WL220	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.
Foot switch （ for remote sampling） ※1	253270	WL200 WL220	Function to enable sampling without using hands and by means of the foot switch. The use together with the optional sampling bed will prove convenient. This function must be specified at a time of placing the order.
External alarm output terminal ※1	253268	WL200 WL220	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.

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

※2 As the remote operation is made, 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.

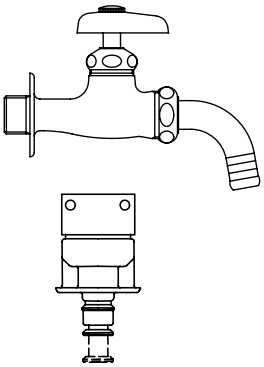
5. Useful Functions

Optional function list

List of patterns of connection with the feed water port

Standard feed water hose cap (with stopper)

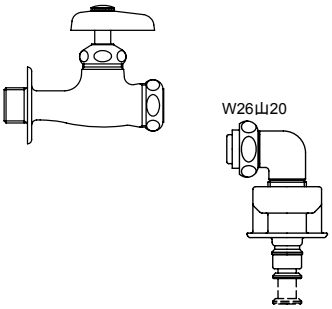
Connection with the chemical faucet (faucet for hose connection)



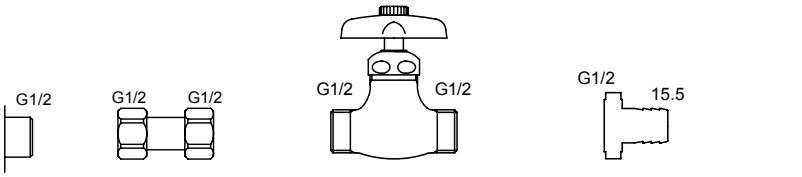
Feed water port coupler (OWG32)

(Screw-in type with stopper)

When connecting while removing the pipe portion of the universal faucet and flexible faucet

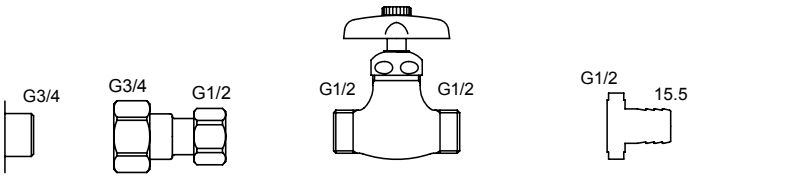


Feed water port coupler joint A (OWG34) ・・・ Connection when the water pipe is provided with G1/2 male threads



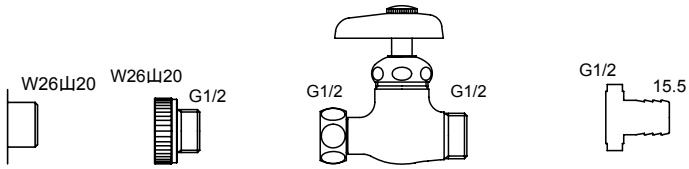
Double-nut union | External thread makeup valve | Coupling for water outlet of hose

Feed water port coupler joint B (OWG36) ・・・ Connection when the water pipe is provided with G3/4 male threads



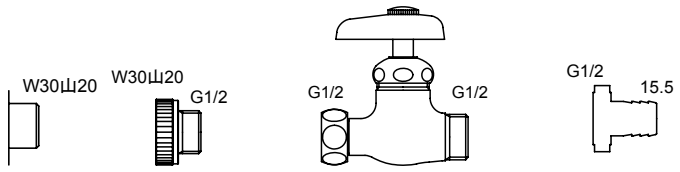
Double-nut union | External thread makeup valve | Coupling for water outlet of hose

Feed water port coupler joint C (OWG38) ・・・ When the chemical faucet is to be W26



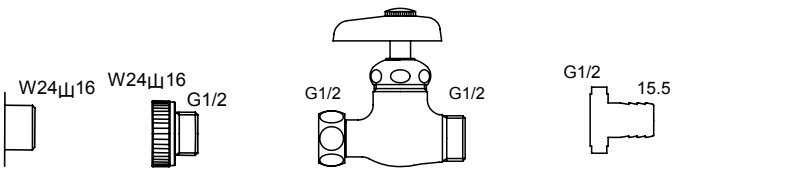
1/2 screw removal nipple (small) | Single-nut valve | Coupling for water outlet of hose

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



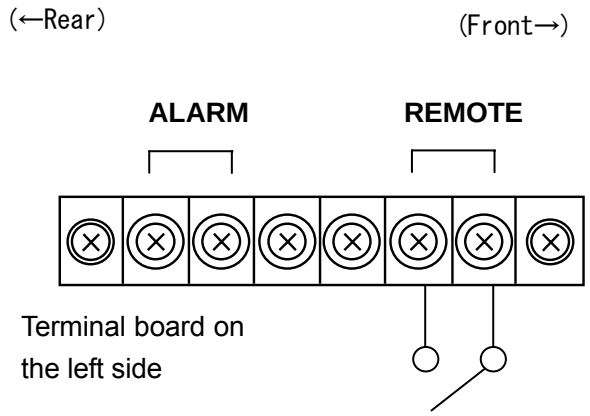
Conversion nipple | Single-nut valve | Coupling for water outlet of hose

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



（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.

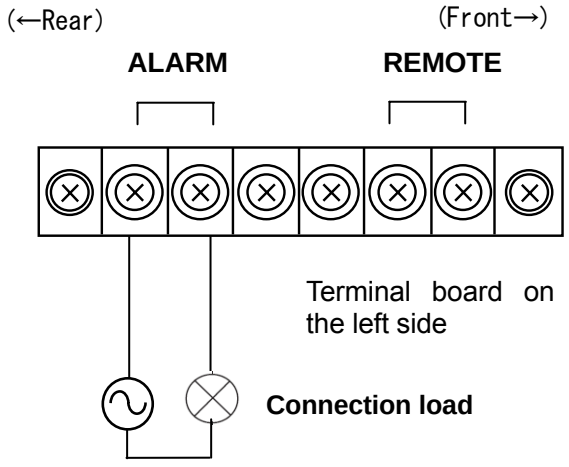
※ Do not apply voltage to the remote sampling output terminal to prevent failure of the unit. During remote sampling, the PUSH key becomes invalid.

※ To ensure the safety during remote operation, it is recommended to use the MIZU guard (Article No: 254199) which detects the remote error signal and shuts down water supply.

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.



（Example） Alarm lamp or buzzer can be connected to the terminal.

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.

6. Maintenance procedures

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 cartridges CPC-P and CPC-E (see P. 1)	CPC shown in the Error・Consumables Replacement Display	Treatment capacity : WL200＝about 300L WL220＝about 700L for the raw water of 200×10^{-4}S/m
Replacing the membrane filter (see P. 14)	F,LE shown in the Error・Consumables Replacement Display	Treatment capacity : About 500 L with pure water flowing The sampling rate of 0.5L/min or less means that it is time to replace.
Replacing the pretreatment cartridge (optional)	PRF shown in the Error・Consumables Replacement Display	Treatment capacity : About 5000 L with Tokyo City Water
Cleaning the feed water hose (see P. 30)	Six months	Carry out cleaning earlier than scheduled when the raw water quality is poor.
Replacing the piping hose (see P. 30)	Two years	Check the connection for leakage once a month.

※ If the ion exchange resin replacement timing is indicated earlier than usual or the membrane filter is degraded rapidly, the raw water quality may be poor. In such an event, it is recommended to use the “Pretreatment cartridge connection set (Article No. 253267) of P. 23 Ordering of the “Pretreatment cartridge connection set (Article No. 253267)” after the order for the product has been placed will be handled by the service representative.

※ 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.

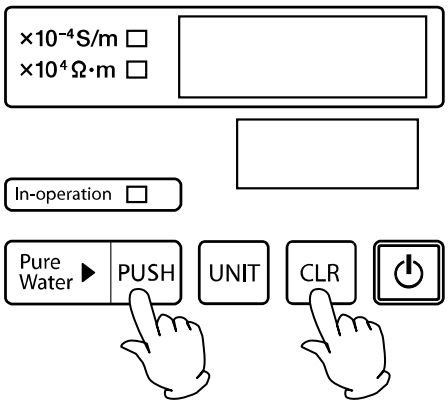
※ Replace the pretreatment cartridge (optional) once a year.

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

6. Maintenance procedures

Before replacement of the ion exchange resin cartridge and the pretreatment cartridge (optional)

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 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 "Consumables alarm display reset" of 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.

Replacing the ion exchange resin cartridge

For the replacement method, refer to "6. Connect the ion exchange resin cartridges (CPC-P and CPC-E) firmly" of P. 1. The alarm is reset automatically when the water quality is improved after replacement.

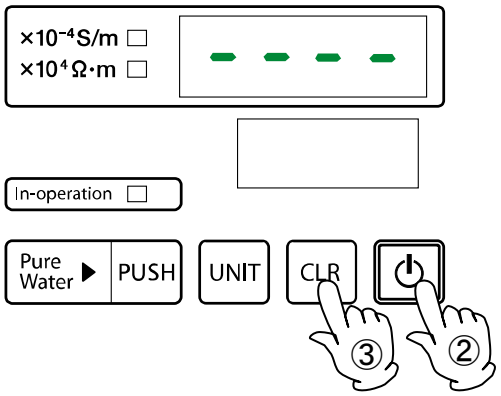
- Storage of the cartridge over a long period of time may result in deterioration of the water quality and degradation of the treatment capacity. Prepare the spare cartridge by projecting the replacement timing. The guideline for storage is about four months.
- The replaced cartridge should be either disposed of as non-combustible waste or sent back to us while using the specified invoice attached to the replaced cartridge.
- We promote adequate disposal, recovery and recycling for the purpose of energy conservation.
- When the ion exchange resin cartridge is to be replaced, replace also simultaneously the CPC-P ion exchange cartridge for WL200 and both CPC-P and CPC-E cartridges for WL220.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 2 L. In such an event, exhaust air from resin at the same time till intermittent water flow stops.

Replacing the pretreatment cartridge (optional)

For the replacement method, refer to "7. Connect the pretreatment cartridge (optional)firmly" of P.13. For the alarm display reset method after replacement, refer to "Consumables alarm display reset" of 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.

Consumables alarm display reset（reset to be made after replacement in case of alarm）



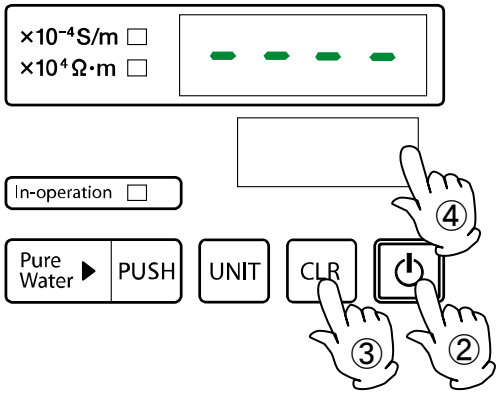
① Turn ON the power switch on the left side of main body.

② Press the POWER key.

③ Keep pressing the CLR key of the operation panel. The acknowledge sound is heard and the alarm display is reset. Normal operation can be made.

※ Be sure to perform reset after replacement of consumables.
※ In case of multiple alarms, the corresponding alarm is reset as follows. Repeat the step in the same number of times as the number of alarms.
Reset sequence：CPC→PWF→FILT
※ Alarm may be output again when the water quality is not improved.

Consumables alarm display reset（reset to be made in case of replacement before alarm）



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

② Press the POWER key.

③ Keep pressing the CLR key. The Water Quality Display shows CLr and the operation enters the consumables reset mode.

④ The Error・Consumables Replacement Display shows PWF, indicating the pretreatment cartridge. If the pretreatment cartridge is not installed as an option, FILt indicating the membrane filter is shown.

⑤ Press the UNIT key and select the consumables to be cleared.

⑥ Keep pressing the CLR key of the operation panel. The acknowledge sound is heard and the alarm display is reset. Normal operation can be made. In order to quit the mode halfway of operation, keep pressing the UNIT key. The normal mode is resumed.

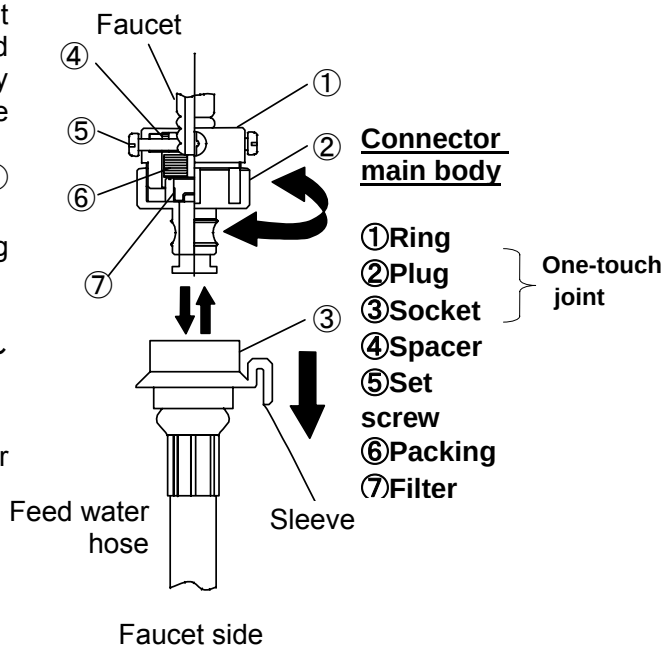
※ Be sure to perform reset after replacement of consumables.
※ Use this function for consumables replacement due to time-course deterioration before appearance of consumables replacement display.

6. Maintenance procedures

Clean the feed water hose filter.

(1) Turn OFF the power switch 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 ring① 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.

・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.

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
Principal components of exterior	
Exterior	Ferrous, galvanized sheet steel, melamine resin baking finishing
Exterior back plate	Ferrous, galvanized sheet steel, melamine resin baking finishing
Door	ABS resin
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
Piping part installation plate	Stainless steel plate SUS304
Hinge	Stainless steel plate SUS
Rubber legs	Synthetic rubber
Nameplates	Polyester film
Principal components of water circuit system	
Feed water port	Brass
Water quality sensor	Polypropylene resin
Membrane filter	Polycarbonate
Water circuit components	
Ion exchange resin	Polyester resin
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
Principal components of piping system	
Feed water hose	Vinyl chloride
Piping hose (transparent)	Vinyl
Hose clamp	Polyacetal
Hose nipple (resin white)	Polypropylene resin
Hose nipple (metal)	Brass
Principal components of electric system	
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

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

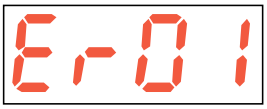
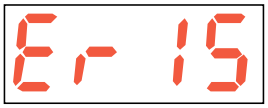
When the product is not to be used over a long period of time, be sure to turn OFF the power switch on the right side to ensure the safety and close the faucet.
When the product has not been used for one month or more, be sure to replace all of consumables beforehand. Otherwise, the ion exchange resin 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 the power switch 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℃～100℃ continues for more than a certain period of time	Turn ON the power switch 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	Turn ON the power switch on the right side of main body again. If error persists, call the service center.
Water leakage		Resistance of the leak sensor input falling below the value to determine whether or not leakage has occurred	Turn OFF the power switch on the right side of main body and confirm water leakage. Call the service center. (See P.35)

8. Troubleshooting

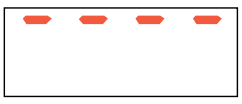
Display and contents

Alarm	Display	Conditions	Countermeasure
Notifying ion exchange resin replacement		Water quality of deionized water: 1×10^{-4}S/m or more 1×10^{4}Ω・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 CLR continuously during alarm after replacement.）
Notifying membrane filter		When the guideline for the filter life to allow flowing, that is, three months, has passed	Replace the membrane filter. (See P.14) Alarm display can be temporarily reset by pressing CLR continuously during alarm after replacement. (See P.29)
Notifying pretreatment filter replacement (displayed only when the option has been set)		When the guideline for the filter life to allow flowing, that is, six months, has passed	Replace the pretreatment filter. (See P.13) Alarm display can be reset by pressing CLR of the operation panel continuously. (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 CLR of operation panel continuously: CPC→PWF→FILT Repeat reset procedure till all of consumables are reset.

※ The guideline for the filter life to allow flowing is the sampling period calculated from the previous filter replacement time through resetting of the CLR key.

※ The filter life time of filters varies depending on the raw water quality, etc. while exerting effects on the sampling rate and water quality values.

※ The 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.

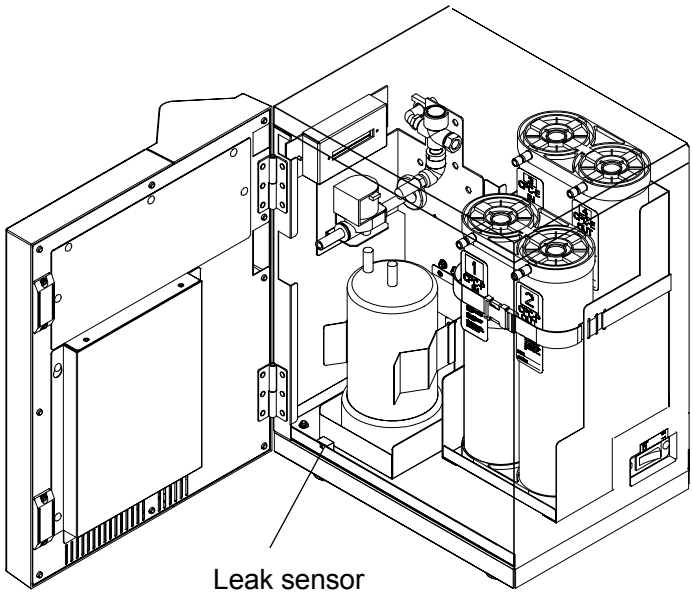
Other displays	Display	Conditions	Countermeasure
Measurement over-range		Overshooting the upper limit of water quality measuring range: ・Electric conductivity＜0.05μS/cm ・Resistivity＞20MΩ・cm	Press PUSH of the operation panel to start sampling. If no reading is shown after sampling, call the service center.
		Undershooting the lower limit of water quality measuring range: ・Electric conductivity＞10μS/cm ・Resistivity＜0.1MΩ・cm	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, E-31

(1) Turn OFF the power switch on the right side of main body.
(2) Dain water accumulating in the unit bottom and dry it. Remove screws fixing the sensor, remove the electrode from the main body and wipe it well, and dry thoroughly.
(3) Upon completion of water drainage, be sure to reset the sensor to the original position.
(4) Close the door.
(5) Turn ON the power switch on the right side of main body and press the POWER key of the operation panel. Since any faulty portion has been corrected, normal operation will begin.



Check list

Symptom	Probable cause
Power not applied	●Faulty connection of the power cord and power cord socket outlet ●Wire breakage of connection cord ● Faulty power switch
Water not supplied	●Insufficient water pressure or supply failure ●Faulty feed water electromagnetic valve
Water supply not stopped	●Faulty feed water electromagnetic valve
Water not sampled	●Faulty feed water electromagnetic valve or sampling electromagnetic valve ●Clogged ion exchange resin or membrane filter ●Faulty piping
Poor water quality	●Degradation of CPC-P and CPC-E ion exchange resin cartridges ●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

If any trouble occurs, immediately stop operation, turn the power switch off, 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

} See the warranty card or the nameplate on the unit. See the section “3. Names and Functions of Parts” on page 15.

- Description of trouble (as in detail as possible)

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.Specifications

Type		WL200	WL220	
Performance ※1	Sampling method	Ion exchange		
	Feed water type	One-touch coupler water supply connection resin hose		
	Sampled pure water	JIS K 0557　A3 deionized water		
	Sampling rate and method ※2	About 1L/min　deionized water, taken continuously		
Composition	Ion exchange resin cartridge	2L ion exchange resin containing activated carbon (CPC-P)　1 piece	2L ion exchange resin containing activated carbon (CPC-P) 1 piece 2L ion exchange resin (CPC-E)　1 piece	
	Final filtration	0.1μm 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/㎝^{2}）		
	Safety devices	Circuit breaker, leak sensor, reducing valve, alarm of abnormal water quality		
	Power supply（50/60Hz）※3	Single phase　AC100～240V　0.05～0.2A		
	Overall dimensions※4（Width × Depth × Height）	350mm×350mm×450 ㎜		
	Sampling port	230mm above floor		
	Mass	About 14 ㎏（in dry state）	About 16kg(in dry state)	
Marking	Water quality display	LED display (conductivity/resistivity)		
	Other displays	Display for timing of consumables (CPC-P and CPC-E：to be replaced simultaneously to prevent degradation of water quality) Membrane filter, alarm display (water leakage alarm)		
Accessories		Feed water hose set　1 piece Power cord　1 piece Instruction manual　This manual Guaranty card　1 piece Ion exchange resin (CPC-P)　1 piece Ion exchange resin (CPC-E)　1 piece (WL220 only) Seal tape　1 piece Membrane filter　1 piece		
Consumables		Name of part	Type	Article No.
		Ion exchange resin cartridge (for WL200)	CPC-P	253254
		Ion exchange resin cartridge (WL220、WL200 optional CPC-E connection set (for OWL36)※5	CPC-P + CPC-E	253262
		Membrane filter (two pieces enclosed)	MFRL727	9020010004

※1 The performance applies to the conditions with power supply of AC100～240V, room temperature of 23℃±5℃, and humidity of 65%RH±20%.
The ambient temperature of this unit ranges from 5℃ to 35℃. For the raw water temperature, the guideline must be set to 10℃～35℃.

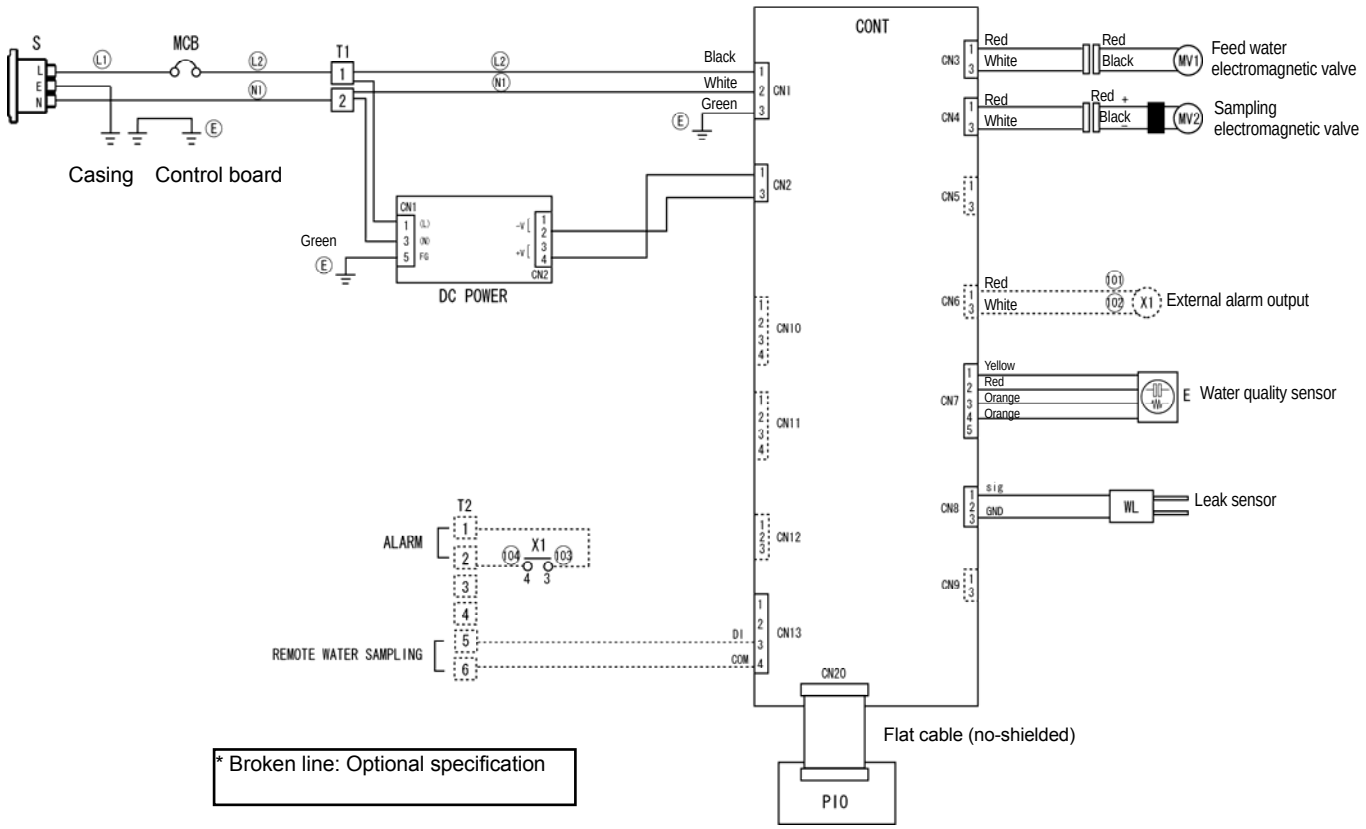
※2 With the raw water of 1.0×100kPa (1kgf/cm^2) or less, the sampling rate becomes 1.0L/min or less.

※3 The 100V power cord (with 3P plug attached) is provided.

※4 No projection included

※5 CPC-E and CPC-P are marketed as a set and not sold separately and individually.

11. Wiring Diagram



・Standard parts

Symbol	Name of part	Symbol	Name of part
S	Power socket	POWER	Switching power supply
MCB	Circuit protector	MV1	Feed water electromagnetic valve
T1	Terminal board	MV2	Sampling electromagnetic valve
CONT	Planer substrate	E	Water quality sensor
PIO	Display substrate	WL	Leak sensor

・Options

Symbol	Name of part	Symbol	Name of part
X1	External alarm output relay	T2	Optional terminal board

12.Replacement Parts List

・Common to WL200/WL220

Electric parts

Name of part	Code №.	Specifications	Manufacturer
Display substrate	LT00023454	TTM00B-WL	Yamato Scientific
Planer substrate	LT00035290	WL200-SEIGYO	Yamato Scientific
Power switch	LT00015041	3130-F110P7TIW 02Q-3A	ETA
Switching power supply	LT00035552	LFA30F-24-J1	COSEL
Power cord	LT00034726	KP3000C-KS16FSJT#14x3HV Domestic specifications	Kawasaki Densen
Power cord socket	LT00034528	SS-120-0.8A-4.8	Osada
Terminal board	2070080001	TB-20C 2P	Sakazume
Feed water electromagnetic valve	LT00035512	AB21-02-2-A-DC24V	CKD
Sampling electromagnetic valve	LT00035538	VDW41—5GER2-4-C10-A-N-XF	SMC
Water quality sensor	5130000001	GZY-WG240/260 5P electrode working	Yamato Scientific
Leak sensor	WL22049600	Lead wire 0.85m	Yamato Scientific

Mechanical parts

Name of part	Code №.	Specifications	Manufacturer
Reducing valve	LT00019465	WR110-02-X242	SMC
Feed water hose	LT00014151	Stopper piece	Yamato Scientific
Rubber legs	7230020001	K3220	Yamato Scientific
Magnetic catch	LT00014457	C-91-1 ivory	Takigen
Removable hinge	LT00035511	B-1004-2-L	Takigen
Nipple	LT00035611	KQ2N10-99	SMC
Side releasing buckle (for WL200)	WG20140100	L=500mm	Yamato Scientific
Side releasing buckle (for WL220)	LT00020556	L=800mm	Yamato Scientific

13. List of dangerous materials

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

Explosive substance	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.
Flammable substances	Explosive substances	①Metal “lithium” ②metal “potassium” ③metal “natrium” ④yellow phosphorus ⑤phosphorus sulfide ⑥red phosphorus ⑦phosphorus sulfide ⑧celluloids, calcium carbide (a.k.a, carbide)⑨lime phosphide⑩magnesium powder⑪aluminum powder ⑫metal powder other than magnesium and aluminum powder⑬sodium dithionous acid (a.k.a., hydrosulphite)
	Oxidizing substances	①Potassium chlorate, sodium chlorate, ammonium chlorate, and other chlorates
		②Potassium 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	①Ethyl 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, isopenthyl 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℃ 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.37	
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.7 P.37	
2	Water sampling	Explain sampling to the customer while referring to the manual	4.Operation Method ・Operation method	P.20 ～ 22	
Description					
1	Operational descriptions	Explain the customer about each assembly as per the operation manual.	4. Operating procedures ・Operating procedures 1. Safety precautions ～ 13. List of dangerous materials	P.20～22 P.1～ P.40	
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.33～ 36	
3	Maintenance and inspection	Explain operations of each component according to the operational instructions	6. Maintenance procedures ・Daily inspection/ maintenance	P.27～30	
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.36	

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®
WL200/220
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