



Water Purifier Autostill®


WG252/1012

Instruction Manual OPERATION

First Edition

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

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

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

Yamato Scientific Co. Ltd.

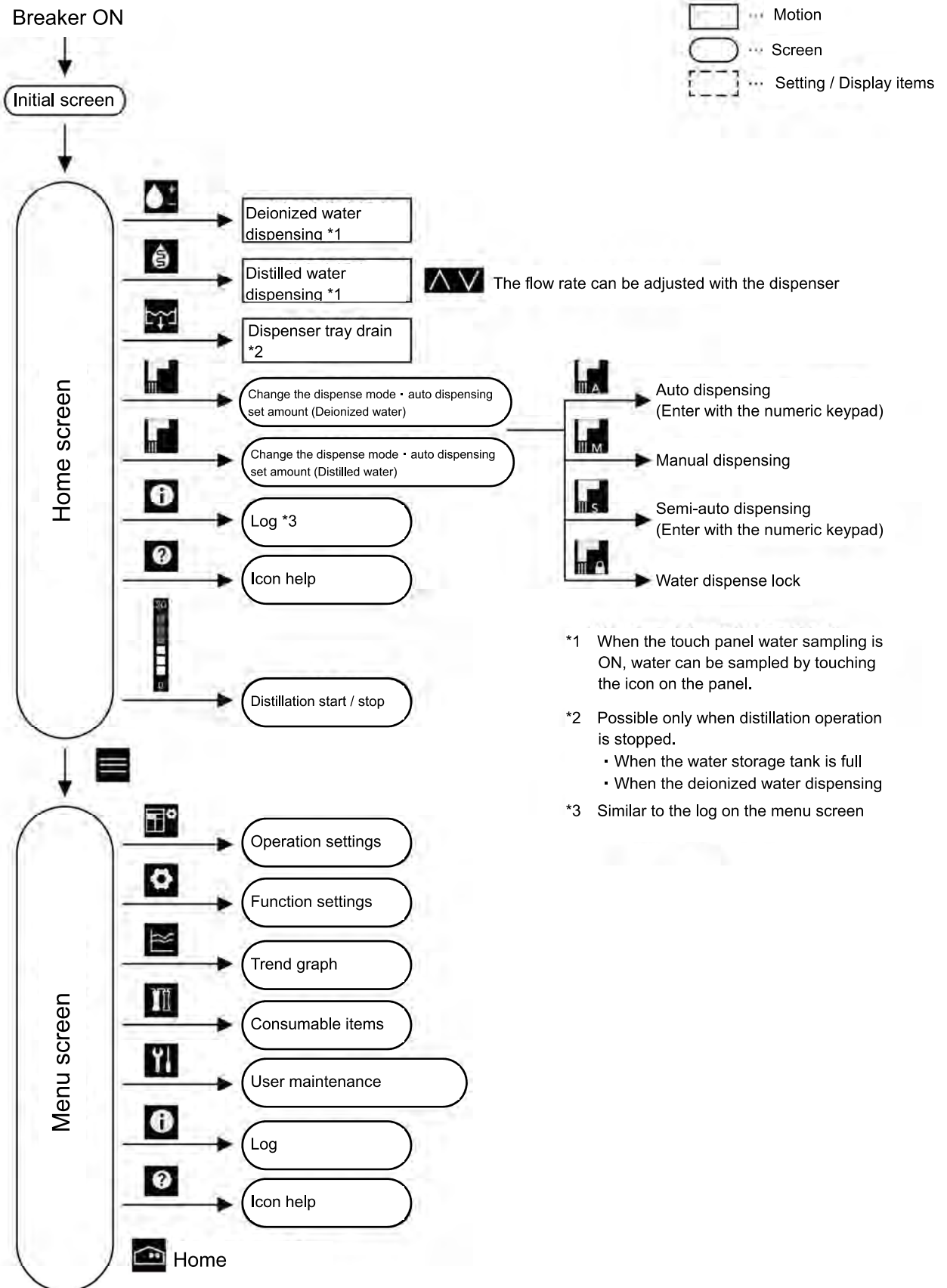
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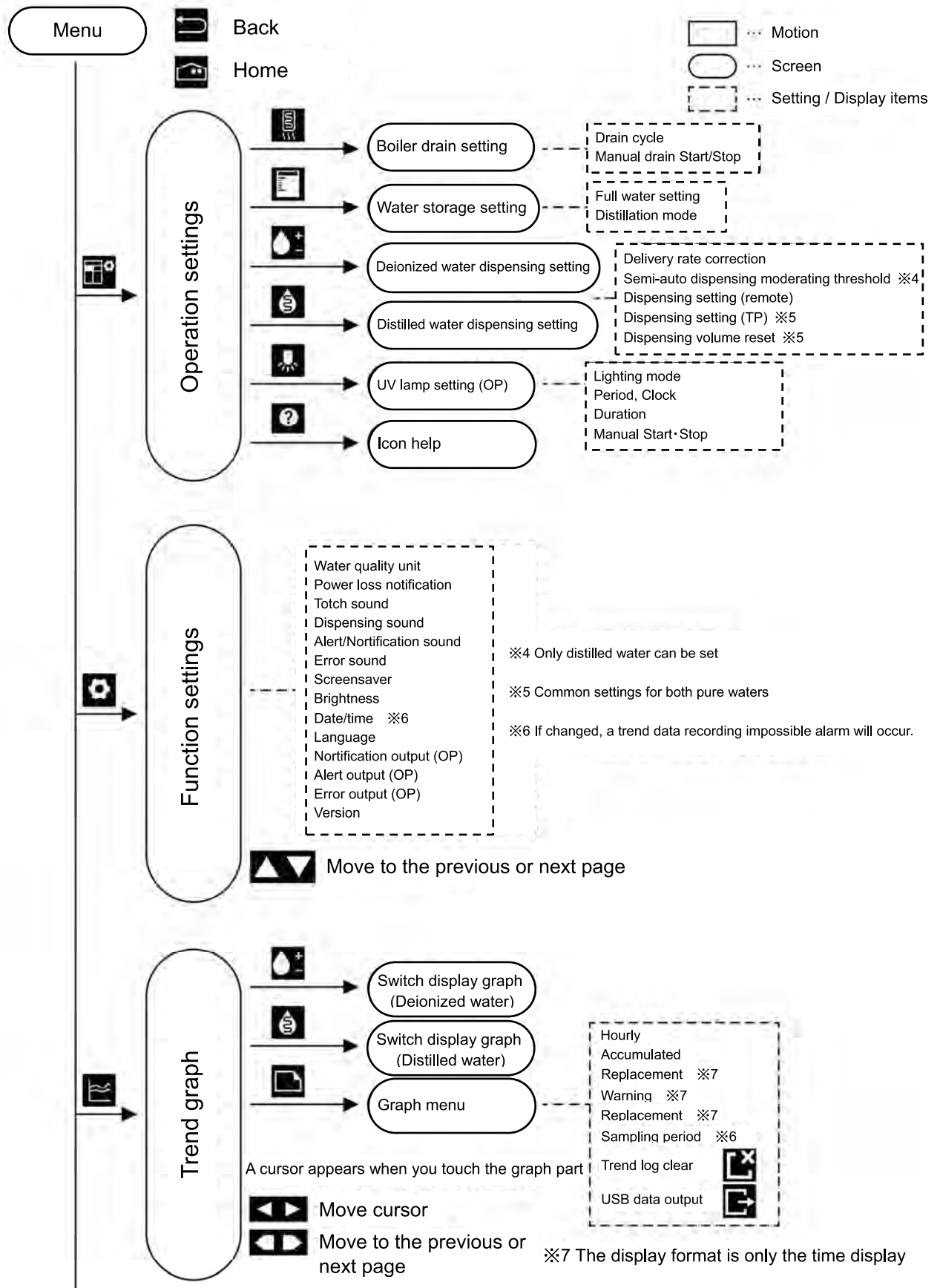
1. Description of the operation panel

Screen flow



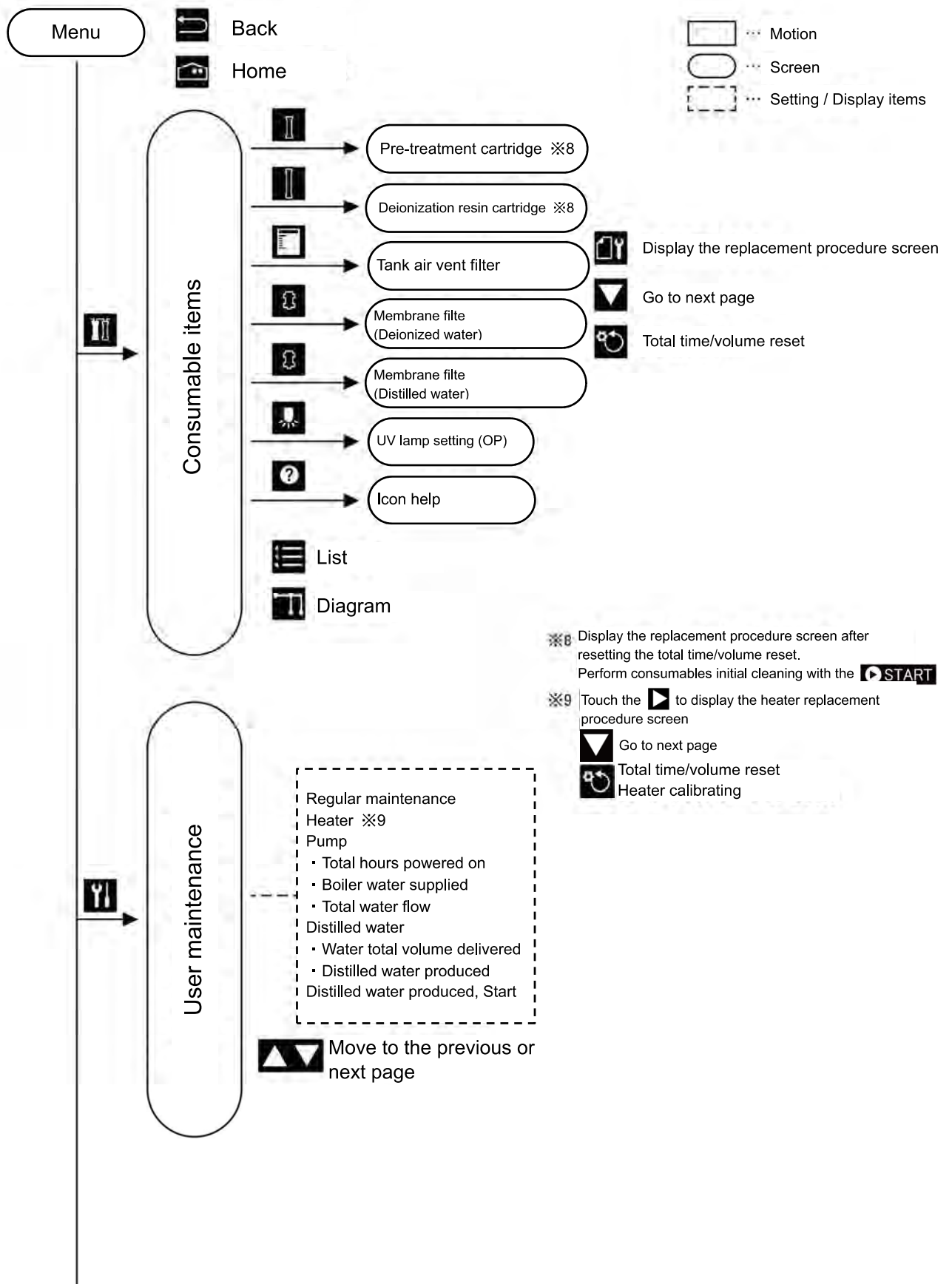
1. Description of the operation panel

Screen flow



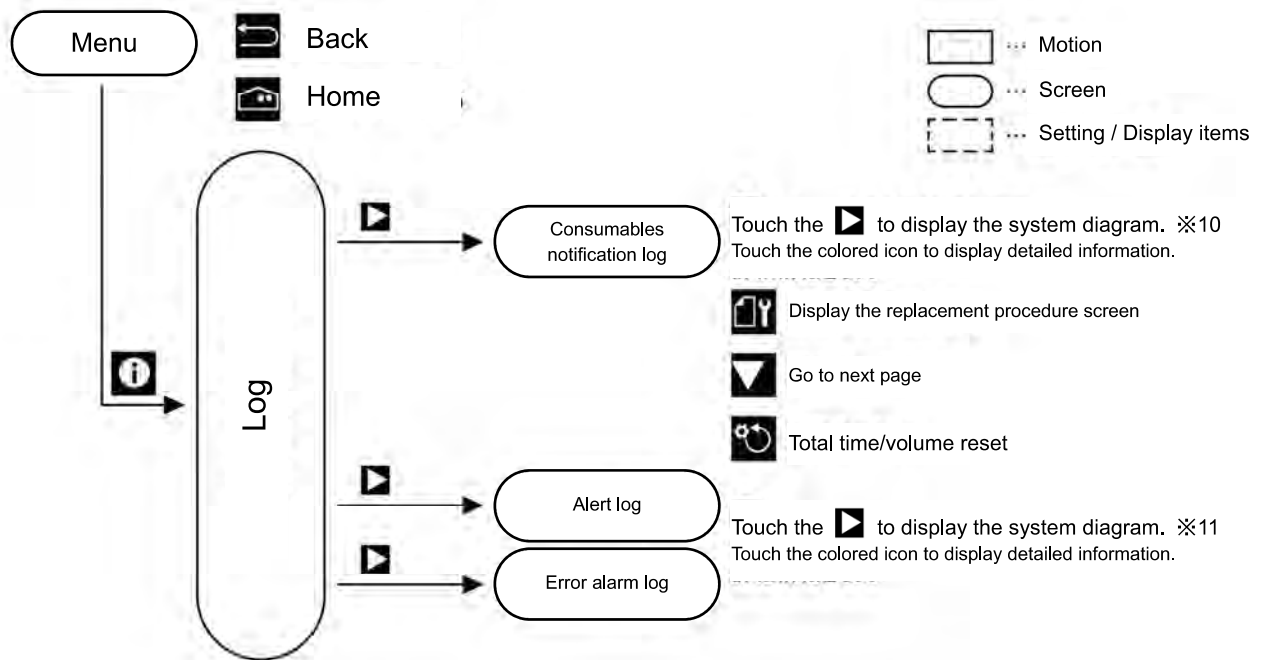
1. Description of the operation panel

Screen flow



1. Description of the operation panel

Screen flow

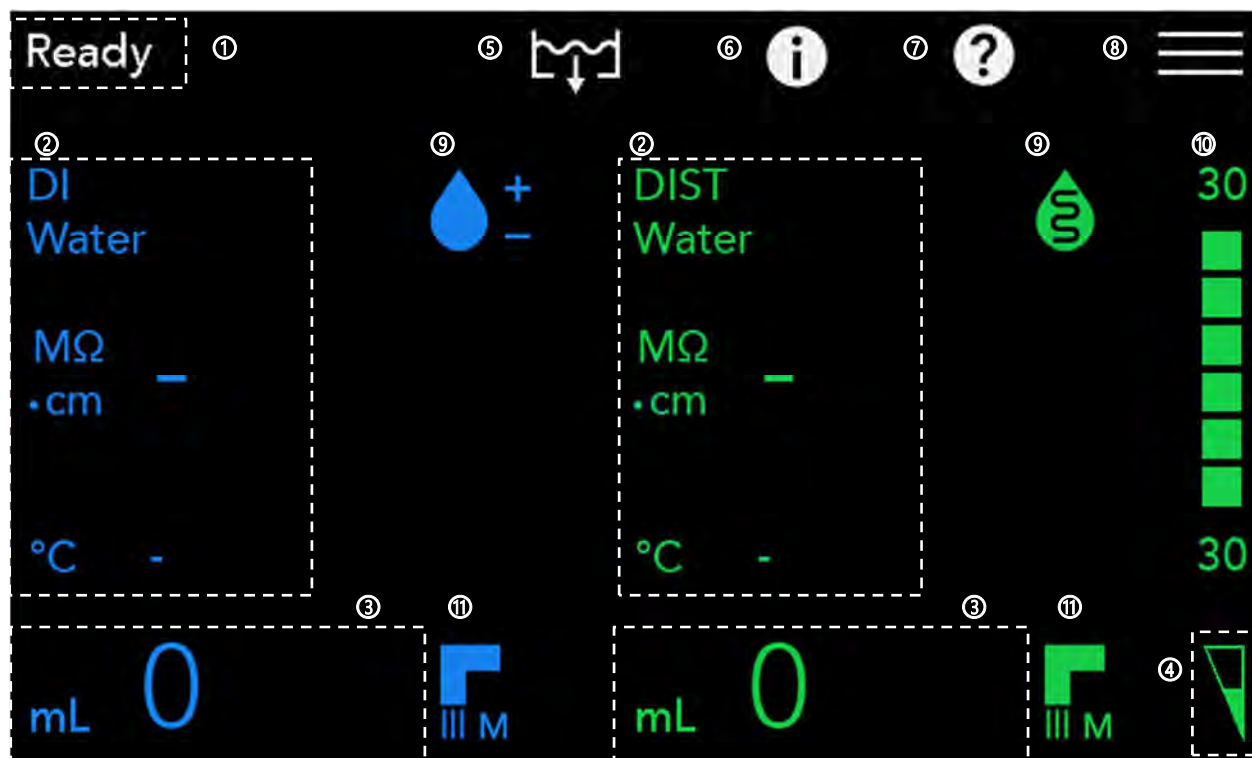


※10 Regular maintenance only
 Display user maintenance management screen
 (Heater replacement and initial cleaning of consumables are not possible)

※11 For some alarms / abnormalities, detailed information is displayed directly without going through the system diagram.

1. Description of the operation panel

Operation panel (home screen)











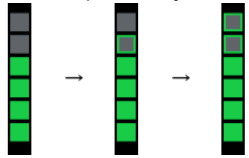
The following is displayed on the home screen.

No.	Component	Description
①	Status display	Displays the status of the device. Ready : It is waiting Distil : It is operating while distilling Dispense : It is dispensing Dispence locked : Locking water dispensing Drain : Boiler drainage, dispenser tray drainage Caution : The alert is ringing Error : An abnormality has occurred
②	Name of pure water / Water quality display	Displays the type of pure water and the water quality and temperature. Left (blue): Deionized water (DI Water). Water quality and temperature are only displayed for dispense. Right (green): Distilled water (DIST Water). Water quality and temperature are only displayed for distillation.
③	Dispensing amount / auto dispensing set amount	[Continuous dispensing] Displays the current cumulative dispensing amount. Dispensing counts up [Auto dispensing / semi-automatic dispensing] Displays the set amount of quantitative dispensing. The remaining amount will be counted down during the dispense. ※Semi-automatic dispensing can only be set for distilled water. ※Blinks before resetting the dispensing amount (P.24) and during interruption.
④	Flow gauge	Displays the flow rate setting value when collecting distilled water. You can change it with the "▼, ▲" keys on the dispenser. ※When semi-automatic dispensing is dropped, the flow gauge display will not be linked even if the pump output is changed.

1. Description of the operation panel

Operation panel (home screen)

Touch-operated is possible in the following display.

⑤	Dispenser tray drainage icon	<p>During the distillation operation, the dispenser tray is automatically drained and a gray animation is displayed.</p> <p>When manual drainage of the dispenser tray is possible, it will be displayed in white, and if you touch the icon, the dispenser tray drainage will operate. During drainage, an animation is displayed as shown in the figure below.</p>  <p style="text-align: right;">→ Top</p>
⑥	Log icon	<p>Displays the log screen (Replacement, alert, abnormal occurrence history).</p> <p>If there is a notification / history that is occurring, the icon lights up as shown in the figure below. In addition, the total number of histories for which detailed information has not been confirmed is displayed on the right side of the icon.</p> <p>Replacement (orange)  There are unconfirmed items </p> <p>Alert occurrence (yellow)  There are unconfirmed items </p> <p>Abnormal occurrence (Red)  There are unconfirmed items </p>
⑦	Help icon	Displays the explanation screen of various icons displayed on the Home.
⑧	Menu icon	Display the menu
⑨	Dispensing icon	<p>Touch the icon to dispense.</p> <p>※ Only when dispensing setting (TP) is ON, if the distilled water cannot be dispensed due to insufficient storage of the tank, the distillation dispense icon is displayed in gray.</p>
⑩	Distilled water tank Tank level icon	<p>Touch the icon to set the start / stop of distillation.</p> <p> is displayed while distillation is stopped.</p> <p>Full water setting value is displayed at the top of the gauge, and the current tank water storage capacity (approximate) is displayed at the bottom. During distillation, an animation is displayed in which the green frame line turns on and off repeatedly as shown in the figure below.</p>  <p style="text-align: right;">→ : Top</p> <p>The guideline for the amount of water stored in the tank may differ from the actual amount of water stored depending on the surrounding environment (power supply voltage, raw water pressure, etc...). Therefore, the gauge display may increase and decrease in a short time at the timing of correction.</p> <p>※ The amount of water collected from the multipurpose distilled water dispense port (see "WG252 / 1012 Instruction Manual Structure") is not reflected in the display of the tank water storage amount.</p>
⑪	Dispensing mode icon	<p>Displays the current dispense mode.</p> <p>Touch to change the dispense mode and the fixed amount of auto dispense.</p>

1. Description of the operation panel

Display icon

The icons displayed on the operation panel are as follows.

Various icons can be confirmed from the icons on the operation panel except for some.



5. OPERATION PROCEDURES

Behavior when starting for the first time

When you start it for the first time, be sure to follow the procedure below.

1. power on, initial screen display



When the earth leakage breaker is turned "ON (I)", the initial screen is displayed for about 5 seconds. The following setting screens and operations are performed only at the first startup.

- ① Date/time setting
- ② Consumables initial cleaning

2. Calendar settings

Enter in the order of year → month → day → hour → minute → second



After displaying the initial screen, the calendar setting screen shown on the left is displayed.

The underlined area is the input location. Enter in the order of year → month → day → hour → minute → second Each time you enter a number, it will automatically move to the next digit.

[C]... Cancels the value being set and returns to the beginning of input.

- ... Confirm with the value being set.

Example)

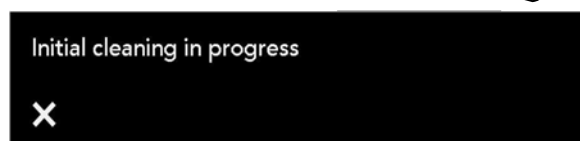
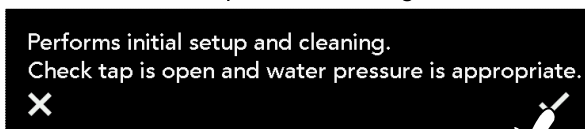
January 23, 2021 If you enter 12:34:56

[2] → [1] → [0] → [1] → [2] → [3] →

[1] → [2] → [3] → [4] → [5] → [6] → [✓]

※ Please enter it correctly as it will be necessary notification for notifying the replacement of various consumables and grasping the usage status of the product. If you enter the wrong date and date, complete the initial cleaning once and then reset it from the calendar settings (P.28) in the function settings.

3. Perform and stop initial cleaning



When the calendar settings have been entered, the confirmation window for initial cleaning of consumables will be displayed.

- ... Return to calendar settings.
- ... Starts initial cleaning of consumables.
- ※ If the water is cut off, it will be grayed out and cannot be touched.

Cleaning is completed when about 5L of water is flowed, and the screen automatically shifts to the home.

If you press in the window during initial cleaning, a confirmation window for canceling initial cleaning will be displayed. Press to cancel. The initial cleaning is stopped and the home is automatically displayed.

※ The purpose of initial cleaning is to bleed air from pipes and consumables, and to remove initial impurities. If you discontinue use, perform initial cleaning of consumables from User Maintenance Management (P.) before use.

※ If a power failure occurs before the initial cleaning of consumables is completed, it will be restarted from the beginning. No other operations can be performed until the initial operation is completed and the home is displayed.

2. OPERATION PROCEDURES

Operation after startup

Home display



When I started it for the first time ...

The initial cleaning is completed and the home is automatically displayed. It also automatically starts the distillation operation.

From the second time onwards ...

Turn the breaker "ON (I)" to display the initial screen for about 5 seconds, and then automatically switch to the home.

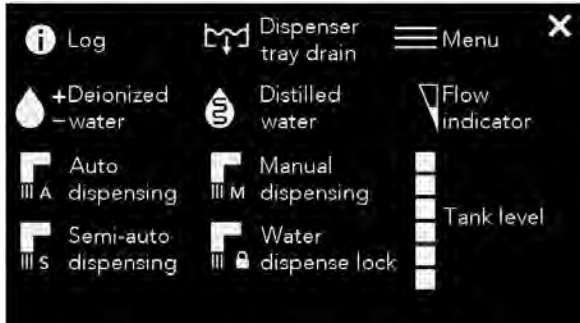
You can perform the following operations on the home.

- Dispensing deionized water (P.14)
- Dispensing distilled water (P.16)
- Dispenser tray manual drainage (P.19)
- Start / stop of distillation operation (P.19)
- Transition to menu (P.20)
- Transition to log (P.40)

The following operations are automatically performed while the home is displayed.

- Distillation operation (P.19)
- Initial boiler drainage, automatic boiler drainage (P.22)
- Automatic drainage of dispenser tray (linked to the above operation)

Display icon help (home)



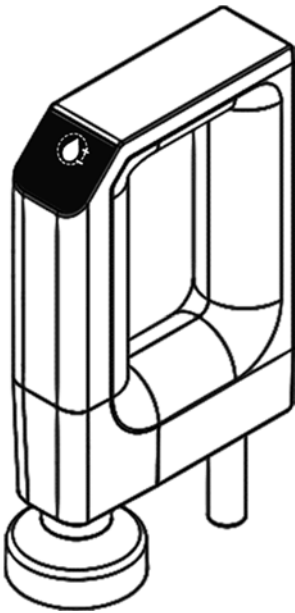
Touch the icon on the home to display the icon description window displayed on the screen.


Touch on the upper right to close the window.

2. OPERATION PROCEDURES

Dispensing deionized water (Dispenser)

How to operate the deionized water dispenser



Dispense deionized water with the dispenser shown on the left. 
When you press the button, water will be dispensed according to the set dispensing mode.

If you set the dispensing setting (TP) (P.24) to On, you can also dispense from the operation panel.

In the case of dispense, the "Dispense" screen is displayed in the upper left of the operation panel, and the deionized water Dispense icon and the "DI Water" screen blink.

- ※ Distillation operation will stop during deionized water dispensing.
- ※ Flow rate adjustment and semi-auto dispensing are not possible.
- ※ Water cannot be dispensed while the water cut-off alert is issued. If water is cut off during auto dispensing, water dispensing will be suspended. After returning, press the dispense button again to continue dispensing.
- ※ If there is a discrepancy in the amount of water dispensed, correct the amount of water dispensed (P.24,25).

2. OPERATION PROCEDURES

Collecting deionized water

Change the dispense mode and set the fixed amount of auto dispense



Touch the water dispense mode on the left side of the operation panel to display the window for selecting the dispense mode.



From the icon on the left side of the window, you can change the dispense mode by touching any dispense mode and then touching it.

After selecting the auto dispense mode, you can set the auto dispense amount with the numeric keypad on the right side before touching.

After entering an any amount of water, touch it to confirm the dispense mode and amount of auto dispense.



• Auto dispensing

It is a water sampling mode that automatically stops at the set amount of water.
Setting range: 0.01L to 100.0L (10 mL~100000 mL)



• Manual dispensing

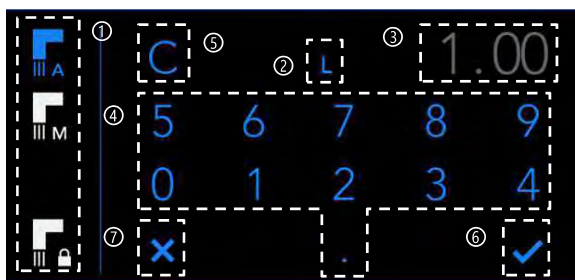
In this mode, water is continuously dispensed until the button is pressed to stop. The stopping method differs depending on how the switch is pressed during water dispense.
Single press ... Press the switch again to stop.
Press and hold (2 seconds or more)... Stops when the switch is released.



• Water dispense lock

Water cannot be dispensed until the water dispense lock is released.

Description of the dispense mode selection window



①: Touch the icon to switch to the corresponding dispense mode.

②: The unit being input is displayed.

You can switch the input unit by touching it. (L ↔ mL)

※ In the unit mL, the input starts from the tens digit.
Example) Enter '2' and '0' with the numeric keypad
In the case of unit L ... 20 L In the case of unit mL ...

200 mL

③: Displays the value being entered.

If nothing is entered, the previous amount of auto dispensing will be grayed out.

④: Only in the quantitative dispense mode, you can enter the auto dispense amount by touching the number.

Setting range: 0.01L to 100.0L (10~100000 mL)

※ If you enter a value outside the range, it will be limited to the upper and lower limits when it is confirmed.

⑤: Cancels the value being entered.

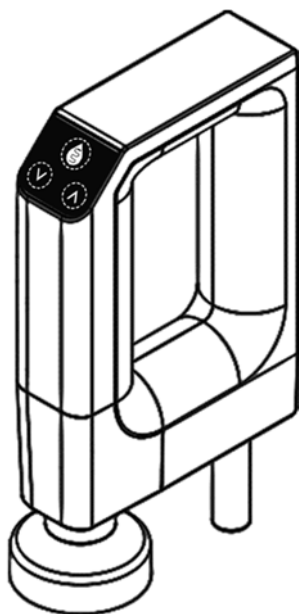
⑥: Confirm the dispense mode and auto dispense amount and close the window.

⑦: Close the window. The input information before confirmation is not reflected.

2. OPERATION PROCEDURES

Dispensing distilled water (Dispenser)

How to operate the distilled water dispenser




Distilled water is dispensed with the dispenser shown on the left.

When you press the button, water will be dispensed according to the set dispensing mode. You can adjust the flow rate at the time of dispense by pressing the button under the dispense switch.

If you set the dispensing setting (TP) (P.24) to On, you can also dispense from the operation panel.

In the case of dispense, the "Dispense" screen is displayed in the upper left of the operation panel, and the distilled water Dispense icon and the "DIST Water" screen blink.

When water is dispensed for the first time, air is accumulated in the pump, so remove the membrane filter and dispense about 5 liters of water.

- ※ The accuracy of auto dispensing and semi-auto dispensing is based on the maximum flow rate. Therefore, the accuracy may deteriorate when dispensing at a low flow rate.
- ※ During semi-automatic water dripping, the amount of water dispensed may not be detected depending on the flow rate. In addition, the flow rate may fluctuate depending on the usage conditions.
- ※ When the tank becomes drought, the  icon on the home turns gray and distilled water cannot be dispensed until the water storage amount reaches the tank water storage amount level 1 (P.23). If the tank becomes drought during auto dispensing or semi-automatic dispensing, water dispensing will be suspended. If you press the dispensing button again after water dispensing is possible, you can continue to dispense water.
- ※ If there is a discrepancy in the amount of water dispensed, correct the amount of water dispensed (P.24,25).

2. OPERATION PROCEDURES

Collecting distilled water

Change the dispense mode and set the fixed amount of auto dispense



Touch the water dispense mode on the right side of the operation panel to display the window for selecting the dispense mode.



From the icon on the left side of the window, you can change the dispense mode by touching any dispense mode and then touching it.

After selecting the auto dispense mode and the semi-auto dispensing, you can set the auto dispense amount with the numeric keypad on the right side before touching. After entering any amount of water, touch it to confirm the dispense mode and amount of auto dispense.



▪ Auto dispensing

This mode automatically dispenses the set amount of water.

Setting range: 0.01 to 30.00L (10 mL~30000 mL) WG252
0.01 to 90.00L (10 mL~90000 mL) WG1012



▪ Manual dispensing

In this mode, water is continuously dispensed until the button is pressed to stop.


The stopping method differs depending on how the switch is pressed during water dispense.

Single press ... Press the switch again to stop.

Press and hold (2 seconds or more)... Stops when the switch is released.



▪ Semi-auto dispensing

Water is auto dispensed up to near the set amount of water (see P.24 of the Semi-auto dispensing moderating threshold), and then dripping water is dispensed. Dispensing will stop for about 5 minutes after pressing the water dispensing switch again or starting dripping. You can fine-tune the flow rate by pressing the  button during dripping.

Setting range: 0.01 to 30.00L (10 mL~30000 mL) WG252
0.01 to 90.00L (10 mL~90000 mL) WG1012



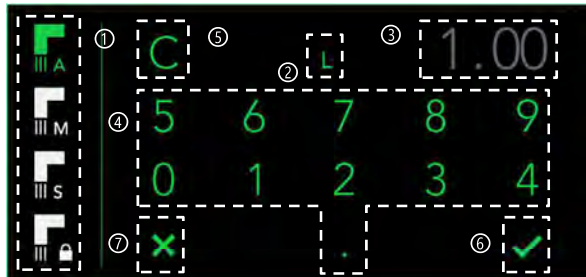
▪ Water dispense lock

Water cannot be dispensed until the water dispense lock is released.

2. OPERATION PROCEDURES

Collecting distilled water

Description of the dispense mode selection window



①: Touch the icon to switch to the corresponding dispense mode.

②: The unit being input is displayed.

You can switch the input unit by touching it.(L⇔mL)

※ In the unit mL, the input starts from the tens digit.
Example) Enter '2' and "0" with the numeric keypad

In the case of unit L ... 20 L

In the case of unit mL ... 200 mL

③: Displays the value being entered.

If nothing is entered, the previous amount of auto dispensing will be grayed out.

④: Only in the auto dispense and semi-auto dispense mode, you can enter the auto dispense amount by touching the number.

Setting range: 【WG252】 0.01L to 30.0L (10~30000 mL)

【WG1012】 0.01 to 90.00L (10~90000 mL)

※ If you enter a value outside the range, it will be limited to the upper and lower limits when it is confirmed.

⑤: Cancels the value being entered.

⑥: Confirm the dispense mode and auto dispense amount and close the window.

⑦: Close the window. The input information before confirmation is not reflected.

2. OPERATION PROCEDURES

Dispenser tray drain

Manual operation of dispenser tray drain



Dispenser tray drain does not work while distillation is stopped or when deionized water is sampled. You can operate it manually by touching the dispenser tray drain icon at the top of the screen. During manual drainage of the dispenser tray, "Drain" is displayed at the upper left of the screen, and the dispenser tray drain icon remains white and the following animation is displayed.



Water cannot be dispensed during manual drainage of the dispenser tray. After two and a half minutes or touch the icon again, drainage will stop.

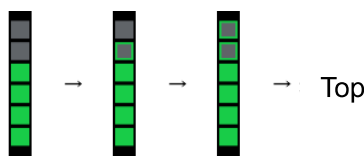
Distilling operation

Start / stop of distillation operation



You can change the start / stop of distillation operation by touching the tank gauge. When the distillation operation is stopped, is displayed at the top of the tank gauge.

During the distillation operation, distillation is performed according to the tank water storage capacity setting (P.23). During distillation, the upper left of the screen will be displayed as "Distil", and the tank gauge will display an animation in which the green frame line as shown below repeats turning on and off.



Dispenser tray drain operates automatically during distillation. During automatically drainage of the dispenser tray, the dispenser tray drain icon at the upper of the screen becomes gray and the following animation is displayed.



- ※ Distillation operation will stop during deionized water dispensing.
- ※ About the initial distilled water drain


During the distillation operation immediately after the initial boiler drainage and automatic boiler drainage (P.22), the initial distilled water drain operation starts for about 10 minutes from the start and waits for the water quality to stabilize. When the initial distilled water drain operation is completed, the water quality display of distilled water and the storage of distilled water in the tank will start.

2. OPERATION PROCEDURES

Menu

Transition to menu











Touch  the icon on the upper right of the home to move to the menu.

Explanation of menu

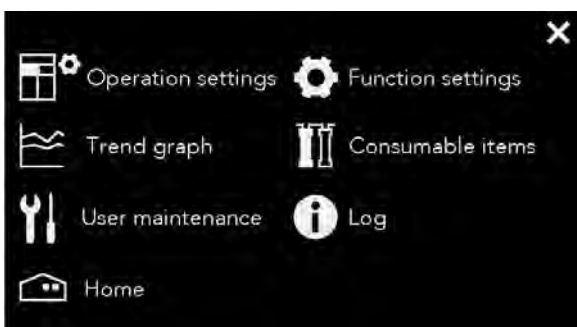


The menu will be as shown on the left. Touch the icon to move to the corresponding settings / functions.

	Operation settings	Set various operations such as correcting the amount of water collected during auto dispensing and setting the distillation mode. Manual drainage of the boiler is also performed from this setting.	P.21
	Function settings	Make various settings that are not related to driving operations, such as changing the water quality unit to be displayed, turning the buzzer ON / OFF, and changing the display language.	P.28
	Trend graph	The trend data of water quality and temperature is displayed as a graph for each pure water. You can also check the consumables notification, alert, and abnormal occurrence status according to the time.	P.30
	Consumable items	Check the usage status of various consumables and change the timing of replacement notifications. You can also replace consumables from this setting.	P.35
	User Maintenance management	You can check the timing of regular maintenance and the usage status of the product. Replacement of the heater and initial cleaning of consumables are also performed from this setting.	P.38
	Log	You can check replacement notifications, alert, when abnormalities occur / resolve, and detailed notification.	P.40

※ On each screen, the  icon to return to the front is displayed in the upper left of the screen, and the  icon to back to home is displayed in the upper right of the screen. Touch each to back to the previous screen or home.

Displaying icon help (menu)



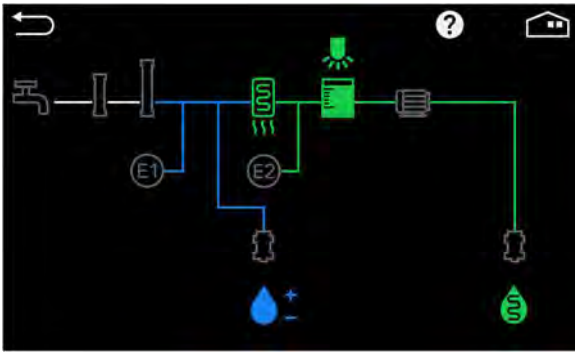
Touch the icon on the menu to display the icon description window displayed on the screen.

Touch on the upper right to close the window.

2. OPERATION PROCEDURES






Operation settings

About Operation settings




In the operation settings, a simple device configuration flow diagram (system diagram) is displayed as shown on the left.


Touch the icon of the item you want to change to move to the change screen for each item.

	Boiler drain setting	Change the boiler drainage period and manually drain the boiler.	P.22
	Tank Water storage setting	Change the tank full water setting and change the distillation mode.	P.23
	Deionized water Dispensing setting	Correct the amount of water collected, change the starting point of dripping water, change the dispensing settings (TP), etc.	P.24
	Distilled water Dispensing setting		
	UV lamp setting (option)	You can change the lighting mode of the UV lamp, change the lighting hours, and manually turn on the UV lamp.	P.26

Displaying icon help (operation settings screen)



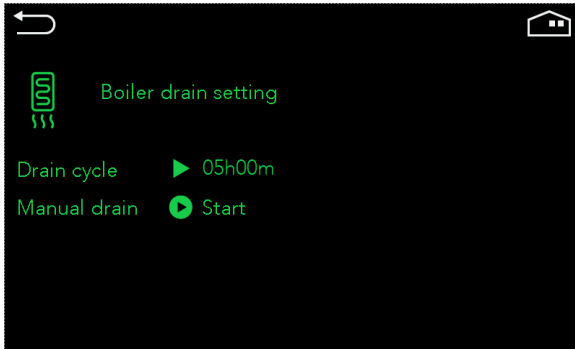
Touch the  icon on the operation settings to display the icon description window displayed on the screen.

Touch  on the upper right to close the window.

2. OPERATION PROCEDURES

Boiler drain setting

About boiler drain setting



The following operations can be performed on the boiler drain setting screen.

- Change of auto boiler drainage period**
 You can change the boiler drain period by touching next to "Drain period". When the accumulated duration of the distillation operation elapses for the set time, the auto drainage of the boiler will start.
 Setting range: 3h00m, 4h00m, 5h00m
Factory default : 5h00m

- Manual start / stop of boiler drain**

Touch **START** to start boiler drainage manually. You cannot move to another screen until the manual drain is completed. **STOP** is displayed on the screen during manual drain. Touch to stop manual drain. In addition, manual drain does not affect the periodic operation of boiler drain.

Boiler drain time: Approximately 60 seconds (WG252)
 About 90 seconds (WG1012)

About initial boiler drain, auto boiler drain



If the breaker has been turned off (○) for 10 minutes or more, the boiler will be drained at the same time as the home is displayed.

"Drain" is displayed on the upper left of the screen while the boiler is draining, and deionized water cannot be dispensed until it is completed.

Boiler drain is performed automatically when either I or II below is met after the boiler is drained once.

I : 10 hours have passed.

II : Distillation time elapses for the set time of the automatic boiler drainage period.

※ If the conditions for boiler drain are met during dispensing, drain will start after dispensing is completed.

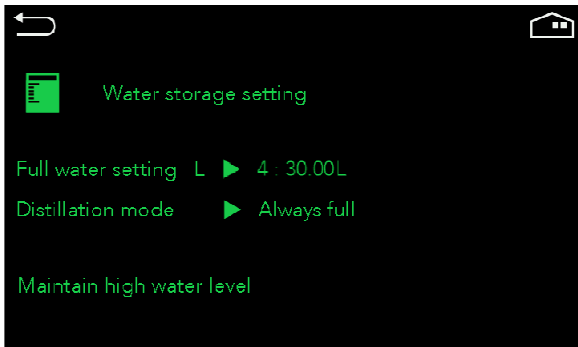
Dispenser tray drain operates automatically during boiler drain. During automatically drainage of the dispenser tray, the dispenser tray drain icon at the upper of the screen becomes gray and the following animation is displayed.



2. OPERATION PROCEDURES

Water storage setting

About water storage setting



The following operations can be performed on the tank water storage amount setting screen.

▪ Change the full water setting

Touch next to "Full water setting" to change the amount of water to end the distillation operation.
Setting range: 2L, 10L, 20L, 30L (WG252)
10L, 30L, 60L, 90L (WG1012)

By setting the tank full water value according to the amount of distilled water used per day, water of good quality can be used at all times.

▪ Change of distillation mode

You can change the restart timing of the distillation operation.

Always full: Resume distillation to keep it full.

Use-up: Resume distillation only when the tank is drought.

Set it together with the setting of the upper limit of the tank water storage amount according to the amount of distilled water used.

If you are using a lot, set the full water setting to maximum and set the distillation mode to "always full".

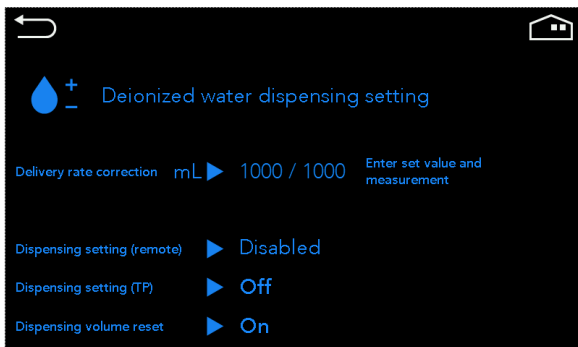
Factory default: Full water setting: 30L (WG252), 90L (WG1012) Distillation mode: Always full water

※Be sure to change the full water setting and the distillation mode setting at the start of the initial operation, after the distilled water in the tank is used up, and before the start of the distillation operation.

2. OPERATION PROCEDURES


Deionized water / Distilled water dispensing setting

About deionized water / distilled water dispensing setting




The following operations can be performed on the deionized water / distilled water dispensing setting screen.

• Correction of auto dispensing amount

Touch  to the right of the "Water dispensing correction" display to correct the water dispensing amount during quantitative / semi-auto water dispensing. See the next page for details on the procedure.

Factory default: 1000mL / 1000mL


• Change of dripping start point (distilled water only)

Touch  next to "Start dripping" to change the start timing of dripping water during semi-auto water dispensing.

Selection range: 5mL, 10mL, 15mL, 20mL, 25mL, 30mL

Factory default : 20mL

• Change water dispensing setting (remote) (Option : Foot switch dedicated function)

Touch  next to "Dispensing setting (remote)" to enable / disable dispensing setting (remote) function. It does not affect the dispensing setting (TP) described later.

Remote disabled: Dispensing setting (remote) are disabled.


Remote only: Dispensing setting (remote) are enabled and water dispensing with the dispenser is disabled.

All enabled: Both water dispensing with a dispenser and water dispensing with a remote control are effective.

Factory default: Disabled

※ Refer to the "OA107 Foot Switch Instruction Manual" for how to use the dispense setting (remote).

• Dispensing setting (TP) ON / OFF (※)

Touch next to  "Dispensing setting (TP)" to enable / disable dispensing setting (TP) function. The dispensing method is the same as the dispensing switch of the dispenser.

On : You can dispense water by touching the dispensing icon on the home.

Off : You cannot dispense water by touching the dispensing icon on home. If you try to dispense water from the operation panel while it is set to Off, a window indicating that the setting is Off will be displayed.

Factory default : OFF

• Change of dispensing volume reset setting (※)

Touch next to "dispensing volume reset" to select the operation when quantitative / semi-auto dispensing is stopped in the middle.

On: The remaining amount will be reset as soon as the dispensing is completed. The next dispensing will be from the beginning.

Off: Retains the remaining amount until one minute has passed since the end of the dispense. The next dispensing will be from the last time. If you touch a location other than the dispense icon and dispenser tray drain icon on the control panel while leaving the remaining amount, a confirmation screen for resetting the Dispense amount is displayed. You can reset the remaining amount by touching.

Setting range : On, Off

Factory default : On


※ The setting is common to deionized water and distilled water.

2. OPERATION PROCEDURES


Dispensing rate correction

About dispensing rate correction

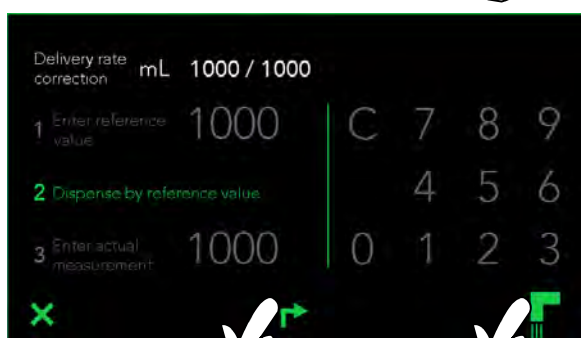


Touch  next to "Dispensing rate correction" to open the window shown on the left. Follow the procedure below to make corrections.



① Input of standard amount

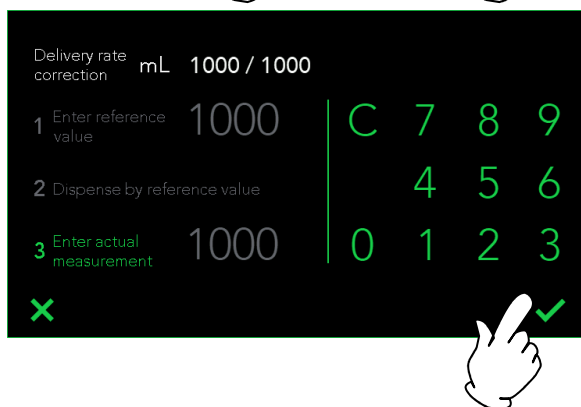
Enter the amount of water that will be the reference for correction. We recommend that you use the amount you use most often as a reference. When you have finished inputting, touch  to move to the next.

Setting range : 500 mL to 9990 mL




② Standard dispensing amount


Collect the amount of water entered in ①. Touch the icon  to dispense. You can stop the dispense by touching the icon again while it is being dispensed, but if you try to dispense again, it will stop from the beginning. When the dispense is complete, touch  the bottom center of the screen to move to the next.



③ Input of correction amount

Use a measuring cylinder, etc. to measure and input the amount of water intake in Phase ②. Touch  when the input is completed to finish the correction.

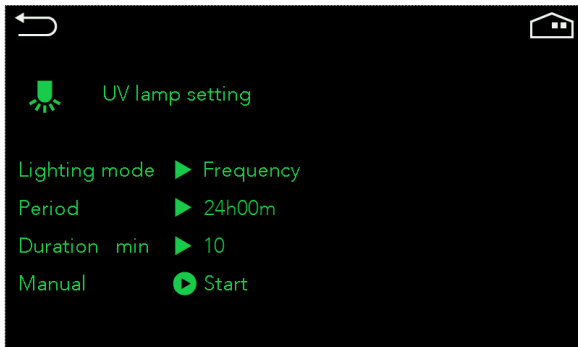
Inputtable range: Reference amount \pm 20%

- ※ To cancel the dispensing rate correction, touch . The window closes without reflecting the input information.
- ※ Please note that if you enter an incorrect value, it will not be corrected correctly.
- ※ If the dispensing amount of ② exceeds the inputtable range of ③, clogging of the device piping or defective parts may occur. Contact original dealer of purchase or Yamato sales office for assistance.

2. OPERATION PROCEDURES

UV lamp setting (option)

About UV lamp setting (option)



The following operations can be performed on the UV lamp setting screen.

▪ Change of lighting mode

Touch next to "Lighting mode" to change the auto lighting mode of the UV lamp.

Period : Turns on the UV lamp once every set period interval.

The period is also counted when the breaker is "OFF (O)". If the period set during the breaker "OFF (O)" has elapsed, it lights up at the next breaker "ON (I)".

Time : Turns on the UV lamp according to the set time.

The time that can be set is divided into clock 1, clock 2, and clock 3, and you can select whether to turn on or off at each time. It can be lit up to 3 times a day. If the set time is reached during the breaker "OFF (O)", the lighting at that time will be skipped.

Factory default : Period

※ Change of lighting period [Period mode]

You can change the lighting period by touching next to "Period".

Setting range: 8h00m, 12h00m, 24h00m

Factory default : 24h00m

▪ Change the lighting time [when the clock mode is set]

You can change the lighting time by touching next to "Clock".

The setting range differs for clock 1, clock 2, and clock 3. It cannot be turned on multiple time at the same time.

Setting range: Clock 1 ... 0:00 to 7:00 Clock 2 ... 8:00 to 15:00 Clock 3 ... to 23:00

Factory default : 0:00, 8:00, 16:00

▪ Change of lighting hours

You can change the time of the UV lamp by touching next to "Clock".

The setting range is limited by the number of lightings per day.

Setting range: 10min, 15min, 20min (lights up once a day)

10min, 15min, (lights up twice a day)

10min, (lights up 3 times a day)

Factory default : 10min

※ The set time is the lighting hours when the tank is full.

The lighting hours is shortened depending on the amount of water in the tank when it is lit (see the next page).

▪ Manual lighting / stopping of UV lamp

Touch to turn on the UV lamp manually. You cannot move to another screen until the manual is completed. is displayed on the screen during manual. Touch to stop manual. The lighting hours of the UV lamp depends on the lighting hours setting described above and the amount of water in the tank when manual is executed. In addition, manual does not affect the timing of auto lighting.

※ If the amount of water stored in the tank is small, manual may not be possible.

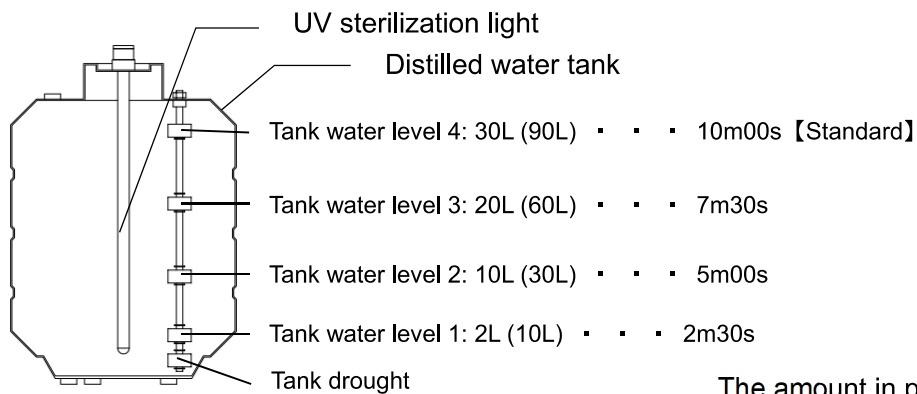
2. OPERATION PROCEDURES

About UV lamp setting (option)

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

About lighting hours ... The lighting hours of the UV lamp is automatically limited according to the amount of water stored in the tank when it is lit, as shown in the figure below.

Example) When the lighting hours is set to 10 min



The amount in parentheses is the amount of water in WG1012.

※ Caution: It is recommended that the UV lamp be lit for 10 minutes every 24 hours at the time of shipment from the factory.

Never look directly at the UV lamp. In addition, Extended irradiation with UV lamp may deteriorate distilled water tank and other components.

※ If the amount of water stored in the tank is less than the tank water level level 1 during automatic and manual, the UV lamp will not light.

2. OPERATION PROCEDURES

Function settings

About function settings



The function setting screen displays the settings such as enable / disable of various functions on the list. Touch the button ▲ and ▼ at the bottom left of the operation panel to move the page. The items that can be set are as follows.

•Water quality unit

Touch ▶ the right to change the unit of water quality displayed on the home screen.

Setting unit : $\times 10^4 \Omega \cdot m$, $M\Omega \cdot cm$, $10^{-4} S/m$, $\mu S/cm$

Factory default : $M\Omega \cdot cm$



•Power loss notification

Touch ▶ the right to change whether or not to notify the power failure occurrence alert.

On : Notifies an alert when the power is restored.

Off: No alert is given when the power is restored.

Factory default : On

•Sound setting (touch screen)

•Operating sound

•Sound setting (alert/notification)

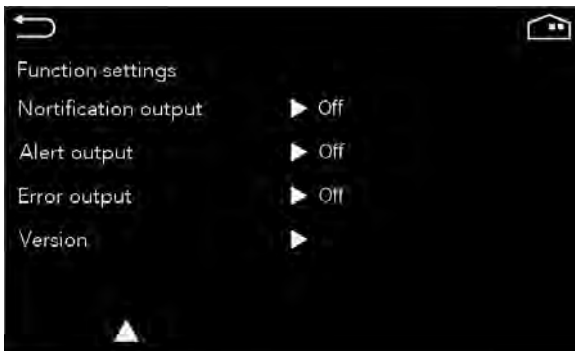
•Abnormal sound

Touch ▶ the right to change the presence or absence of the corresponding buzzer.

On: The buzzer sounds.

Off: The buzzer doesn't sound.

Factory default : ALL On



•Screen saver continuation time

By touching ▶ the right, you can change the time until the screen saver is displayed when there is no operation while the home screen is displayed.

Setting range: Off, 5min, 10min, 30min, 60min

Factory default : OFF

•Brightness

Touch ▶ the right to change the brightness of the operation panel.

Setting range: 25%, 50%, 75%, 100%

Factory default : 75%

•Date/time

Touch ▶ the right to change the date and time stored in the device.

※If you change the date and time, trend data before the change will not be synchronized and the alert for trend data acquisition failure will be generated. After outputting trend data as necessary, delete trend data. See the P.50 for details on the alert.

※Since the power circuit of the clock element is rechargeable, if the breaker remains "OFF (○)" for more than a month, it may stop due to running out of charge. In that case, the calendar will be initialized at the next startup and the alert for trend data acquisition failure will be generated.

2. OPERATION PROCEDURES

Various setting changes


•Language

Touch  the right to change the display language of the operation panel.

Setting language: JPN (Japanese), ENG (English), CHN (Chinese)

Factory default : JPN

•Replacement notification output (※)

Touch  the right to change the conditions for external alert output.

Pre-notification: Output when pre-notification or replacement notification of any consumable is generated.


Replacement notification: Output when a replacement notification of any consumable is generated.
Includes regular maintenance

Off: Does not output by notification of consumables or regular maintenance.

Factory default : OFF

•alert output (※)

•Abnormal output (※)


Touch  the right to change the conditions for external alert output.

On: Output when an alert or abnormal occurs.

Off: No output due to alert or abnormal occurrence.

Factory default : OFF

•Soft version

Touch  the right to move to the device notification display screen.

※Displayed only when the optional external terminal output function is installed.

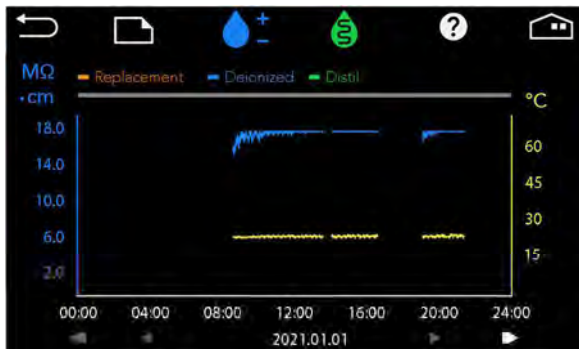
Set each output condition as necessary.

For the connection method, refer to "OA113 External alert Output Instruction Manual".

2. OPERATION PROCEDURES

Trend graph

About the trend graph



On the trend graph, you can check the past operating conditions in a graph.

There are two types of graph display formats: time display format and time display format. Details of the display format will be described on the next page.

The operations on the graph are as follows.

•Display of detailed notification

When you touch the graph part, the cursor is displayed and the detailed data of the overlapped part is displayed.

- ① Displays the operation when recording data



During dispensing



During distilling

- ② Display the time

- ③ Consumables replacement notification (orange), alert (yellow), and abnormality (red) occurrence status are displayed. If any exchange notification, alert, or abnormal occurs during data recording, the corresponding color will light up.

- ④ Display the time

- ⑤ Displays the water temperature

- ⑥ Displays the water quality



•Move cursor

With the cursor displayed on the graph, you can move the cursor back and forth by one dot by touching the ◀ · ▶ icon at the bottom of the screen.

•Page scroll of graph

By touching ◀ · ▶ the icon at the bottom of the screen, you can shift the displayed graph by one page. You can go back up to 10 pages for each scale of each graph. If you want to refer to data older than that, you can check by outputting the data to the outside from the trend data output (P.33).

•Switching of pure water to be displayed

Touch the icon corresponding to the type of pure water at the top of the screen to display the graph of the selected pure water.

•Display of graph menu

Touch 📄 the icon at the top of the screen to display the graph menu. See the next page for details.

•Display icon help

Touch the icon ⓘ at the top to display the icon description window displayed on the screen. Touch on the upper right to close the window.

※About the recorded water quality

For deionized water, the water quality during distillation operation and deionized water dispensing water is recorded, and for distilled water, the water quality during distillation operation is recorded.

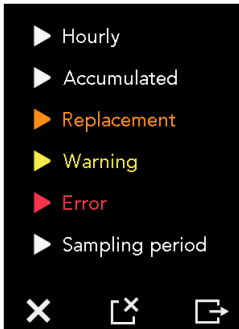
※About updating the trend graph

While the trend graph is displayed, the data acquired during that time is not reflected in the graph. It will be reflected at the timing of drawing a new graph, such as when the displayed pure water is switched or the scale is changed.

2. OPERATION PROCEDURES

Graph menu

About the graph menu



The following operations are possible in the graph menu.

•Display by Date/Time

Switch the graph to be displayed to "Hourly". Touch "Hourly", then select the scale on the horizontal axis, and touch to switch the graph display.

Display scale : 1day, 1week, 2weeks, 4weeks

Factory default : 1day

•Display by Operating hours

Switch the graph to be displayed to "Hourly". Touch "Hourly", then select the scale on the horizontal axis, and touch to switch the graph display. To check the measurement time, touch the graph part to display detailed information.

Display scale: 12hr, 24hr, 48hr, 96hr

Factory default : 12hr

•Replacement

Switch the graph to be displayed to "Replacement". Touch "Replacement", then select the scale on the horizontal axis, and touch to switch the graph display. You can also check the occurrence status of regular maintenance notifications from this graph. In either case, the status of pre-notification is not displayed.

Display scale : 1day, 1week, 2weeks, 4weeks

Factory default : 1day

•Alert

•Abnormality

Switch the graph to be displayed to "Alert" or "Abnormal". Touch "Alert" or "Abnormal", then select the scale on the horizontal axis, and touch to switch the graph display.

Display scale : 1day, 1week, 2weeks, 4weeks

Factory default : 1day

•Sampling period (※)

You can change the recording period of trend data. After touching "Sampling period", select the period you want to change and touch to change the recording period. ※ If you change the recording period, trend data before the change will not be synchronized and the alert for trend data acquisition failure will be generated. After outputting trend data as necessary, delete trend data. See the P.50 for details on the alert.

Setting range: 10Sec, 30Sec, 60Sec, 120Sec

Factory default : 30Sec

※Data may not be reflected in the graph due to the relationship between the set sampling period and the number of drawing dots.

※About the recording capacity of plotting trend date

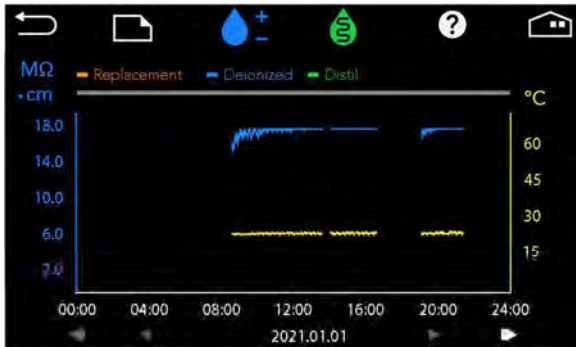
The recordable period of trend data varies depending on the sampling period setting. If the period is exceeded, the oldest data will be deleted automatically, so please output the trend data (P.33) on a regular basis.

Sampling period : 10Sec ... about 1 month, 30Sec ... about 3 months, 60Sec ... about 6 months, 120Sec ... about 12 months

2. OPERATION PROCEDURES

Graph type

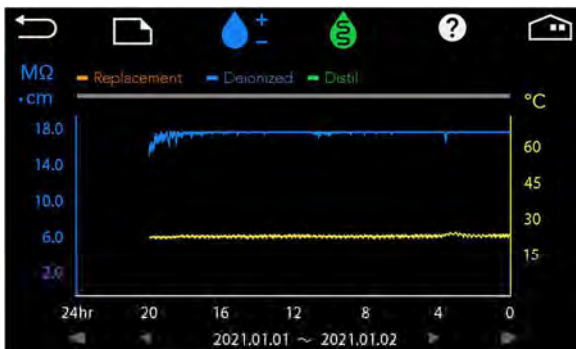
List of display graphs



• Display by Date/Time

The data acquired by the device is displayed on the graph according to the date and time. Data for unused hours will be hidden.

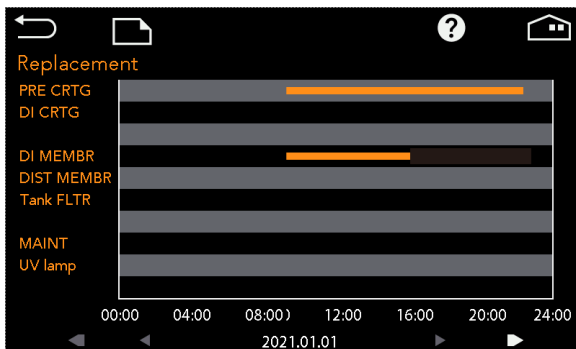
Display scale : 1day, 1week, 2weeks, 4weeks



• Display by Operating hours

The data of the hours when the device is actually operating is continuously displayed on the graph.

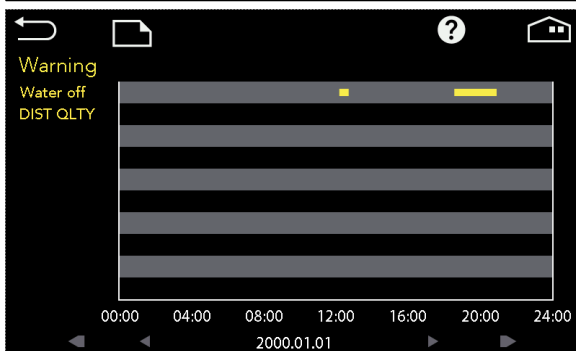
Display scale: 12hr, 24hr, 48hr, 96hr



• Replacement

The occurrence status of replacement notifications for each consumable item is displayed in a graph according to the date and time. The status of pre-notification is not displayed.

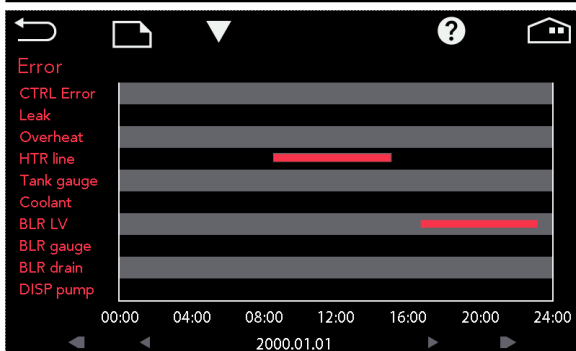
Display scale : 1day, 1week, 2weeks, 4weeks





• Alert

The alert occurrence status is displayed on the graph according to the date and time.

Display scale : 1day, 1week, 2weeks, 4weeks



• Abnormality


The abnormalities occurrence status is displayed on the graph according to the date and time. You can switch the displayed abnormality by touching  or  on the upper left of the operation panel.

Display scale : 1day, 1week, 2weeks, 4weeks

2. OPERATION PROCEDURES

Erase / output data

•Erasing trend data


Touch  icon at the bottom of the graph menu to display the confirmation window for deleting trend data. Touch to erase all recorded trend data.

If the alert for trend data acquisition failure has occurred, the alert will be canceled.

Data once deleted cannot be recovered. Make sure to check the data before deleting it.

•Output of trend data

Trend data recorded by this device can be output to a USB flash drive from the USB port installed in this device.

Touch  icon at the bottom of the graph menu with the USB flash drive inserted in the device to display the trend data output confirmation window. Touch to start outputting the recorded trend data.

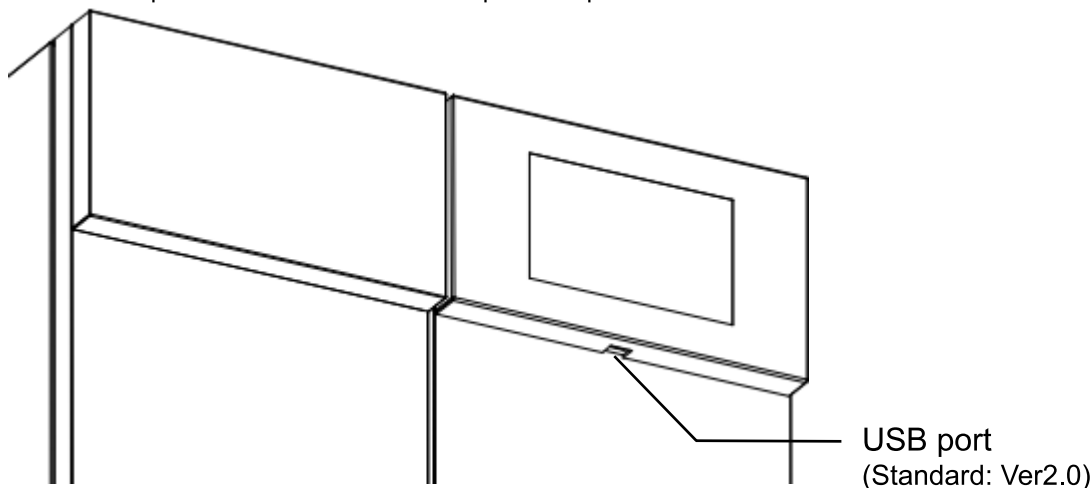
The output data is stored in the folder "YAMATO_Autostill" in the USB flash drive.

File name : LOG_ "output date-time"

File format : csv

Example) When outputting at 12:34:56 on January 23, 2020 ... "LOG_20210123-123456.csv"

The USB port is at the bottom of the operation panel.



If the following message is displayed during data output ...

"USB flash drive is not inserted":

The USB flash drive is not recognized. Please output again after reinserting the USB flash drive. If the same display appears, prepare another USB flash drive.

"Insufficient free space on the USB flash drive" :

Insufficient space on the USB flash drive. Please prepare a new USB flash drive.

※Do not connect a USB flash drive larger than 64GB as it may not be recognized by the device.

In addition, we do not guarantee the operation of all USB flash drive.

※Other external media such as hard disks cannot be used.

※Writing to the USB flash drive may fail in a noisy environment. Output the data in a noise-free environment.

2. OPERATION PROCEDURES

Output data format

About output data format

DATE	TIME	INTERVAL	QUALITY1	TEMP1	QUALITY2	TEMP2	QUALITY3	TEMP3	DISPENCE(DI)	DISPENCE(DIST)	DISPENCE(DIST+DI)	DISTILL	REFRESH	ERR1	ERR2	ERR3	ERR4	ALM1	EXP1	EXP2	
20100101	000000	0	0	0	0	0	0	0	0	0	0	0	0	0	00000000b	00000000b	00000000b	00000000b	00000001b	00000000b	00000000b
20100101	000000	0	0	0	0	0	0	0	0	0	0	0	0	0	00000000b	00000000b	00000000b	00000000b	00000001b	00000000b	00000000b
20100101	000000	0	0	0	0	0	0	0	0	0	0	0	0	0	00000000b	00000000b	00000000b	00000000b	00000001b	00000000b	00000000b
20100101	002000	120	18.2	20.6	1.2	23.6	-----	-----	0	0	0	0	1	0	00000000b	00000000b	00000000b	00000000b	00000000b	00000000b	00000000b
20100101	002300	150	17.2	21.7	1.1	22.7	-----	-----	0	0	0	0	1	0	00000000b	00000000b	00000000b	00000000b	00000000b	00000000b	00000000b
20100101	003000	180	17.9	21.1	1.1	22.8	-----	-----	0	0	0	0	1	0	00000000b	00000000b	00000000b	00000000b	00000000b	00000000b	00000000b
20100101	003900	210	18.2	17.8	1.1	23.8	-----	-----	0	0	0	0	1	0	00000000b	00000000b	00000000b	00000000b	00000000b	00000000b	00000000b
20100101	004000	240	18.2	17.2	1.1	23.8	-----	-----	0	0	0	0	1	0	00000000b	00000000b	00000000b	00000000b	00000000b	00000000b	00000000b
20100101	004300	270	18.2	16.7	1.1	23.8	-----	-----	0	0	0	0	1	0	00000000b	00000000b	00000000b	00000000b	00000000b	00000000b	00000000b
20100101	005000	300	18.1	16.6	1.2	23.8	-----	-----	0	1	0	0	1	0	00000000b	00000000b	00000000b	00000000b	00000000b	00000000b	00000000b
20100101	005300	330	18.1	17	1.2	23.8	-----	-----	0	1	0	0	1	0	00000000b	00000000b	00000000b	00000000b	00000000b	00000000b	00000000b
20100101	006000	360	18.1	17.4	-----	-----	-----	-----	1	1	0	0	0	0	00000000b	00000000b	00000000b	00000000b	00000000b	00000000b	00000000b
20100101	006300	390	18.1	17.6	-----	-----	-----	-----	1	1	0	0	0	0	00000000b	00000000b	00000000b	00000000b	00000000b	00000000b	00000000b
20100101	007000	420	18	17.8	1.1	23.6	-----	-----	1	0	0	0	0	0	00000000b	00000000b	00000000b	00000000b	00000000b	00000000b	00000000b
20100101	007300	450	17.9	18	1.1	21.5	-----	-----	0	0	0	0	1	0	00000000b	00000000b	00000000b	00000000b	00000000b	00000000b	00000000b
20100101	008000	480	17.8	18.1	1.2	22.9	-----	-----	0	0	0	0	1	0	00000000b	00000000b	00000000b	00000000b	00000000b	00000000b	00000000b
20100101	008300	510	17.8	18.3	1.2	23.3	-----	-----	0	0	0	0	1	0	00000000b	00000000b	00000000b	00000000b	00000000b	00000000b	00000000b
20100101	008900	540	17.7	18.4	1.2	23.4	-----	-----	0	0	0	0	1	0	00000000b	00000000b	00000000b	00000000b	00000000b	00000000b	00000000b
20100101	009300	570	17.6	18.5	1.2	23.4	-----	-----	0	0	0	0	1	0	00000000b	00000000b	00000000b	00000000b	00000000b	00000000b	00000000b
20100101	010000	600	17.5	18.7	1.3	23.4	-----	-----	0	0	0	0	1	0	00000000b	00000000b	00000000b	00000000b	00000000b	00000000b	00000000b
20100101	010300	630	17.4	18.8	1.3	23.5	-----	-----	0	0	0	0	1	0	00000000b	00000000b	00000000b	00000000b	00000000b	00000000b	00000000b
20100101	011000	660	17.3	18.9	1.3	23.5	-----	-----	0	0	0	0	1	0	00000000b	00000000b	00000000b	00000000b	00000000b	00000000b	00000000b
20100101	011300	690	18.2	18	1.3	23.3	-----	-----	0	0	0	0	1	0	00000000b	00000000b	00000000b	00000000b	00000000b	00000000b	00000000b
20100101	012000	720	18.1	16.8	-----	-----	-----	-----	1	0	0	0	0	0	00000000b	00000000b	00000000b	00000000b	00000000b	00000000b	00000000b
20100101	012300	750	18.1	17.3	-----	-----	-----	-----	1	0	0	0	0	0	00000000b	00000000b	00000000b	00000000b	00000000b	00000000b	00000000b
20100101	013000	780	18.1	17.7	-----	-----	-----	-----	1	0	0	0	0	0	00000000b	00000000b	00000000b	00000000b	00000000b	00000000b	00000000b

- ① DATE... It is the date when the data was acquired.
- ② TIME... The time when data was acquired.
- ③ INTERBAL... The elapsed time from the start of trend data recording.
- ④ QUALITY1, TEMP1... The quality and temperature of deionized water.
- ⑤ QUALITY1, TEMP1... The quality and temperature of distilled water.
- ⑥ It is a status display.
DISPENCE (DI)... It becomes "1" when the deionized water is dispensed.
DISPENCE (DIST)... It becomes "1" when the distilled water is dispensed.
DISTILL... It becomes "1" during distillation operation.
- ⑦ It is an abnormal display. When an abnormal occurs, the value of the corresponding digit will be "1".
Since b on the right side represents a binary number, it is not included in the number of digits.

ERR1

- 1st digit ... Controller error
- 2nd digit ... Abnormal water leakage
- 3rd digit ... Heater heating detection
- 4th digit ... Heater disconnection detection
- 5th digit ... Water level gauge error detection
- 6th digit ... Coolant error detection
- 7th digit ... Boiler water level error detection
- 8th digit ... Boiler water level gauge error detection

ERR2

- 1st digit ... Boiler drainage route abnormal detection
- 2nd digit ... Distilled water dispensing pump abnormal detection
- 3rd digit ... Deionized water quality gauge error
- 4th digit ... Distilled water quality gauge error
- 5th digit ... Not used
- 6th digit ... Water type 1 dispensing route abnormal detection
- 7th digit ... Water type 2 dispensing route abnormal detection
- 8th digit ... Water type 1 dispensing flow rate drop abnormal detection

- ⑧ It is a warning display. When an alert occurs, the value of the corresponding digit will be "1".
Since b on the right side represents a binary number, it is not included in the number of digits.

ALM1

- 1st digit ... Water cut-off alert
- 2nd digit ... alert for trend data acquisition failure
- 3rd digit ... Power loss alert
- 4th digit ... Distilled water quality alert

- ⑨ Replacement display. When the consumables replacement notification is generated, the value of the corresponding digit will be "1".

Since b on the right side represents a binary number, it is not included in the number of digits.

EXP1

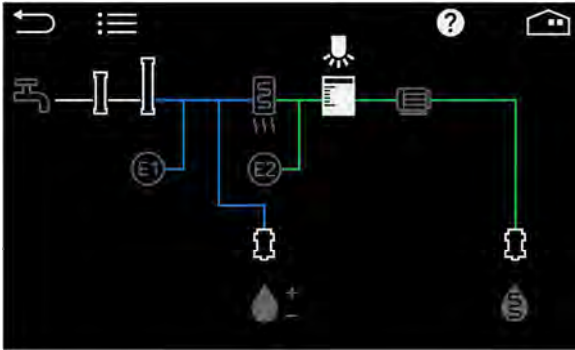
- 1st digit ... Pre-treatment cartridge
- 2nd digit ... Deionization resin
- 3rd digit ... Not used
- 4th digit ... Membrane filter (DI)
- 5th digit ... Membrane filter (DIST)
- 6th digit ... Not used
- 7th digit ... Regular maintenance
- 8th digit ... Boiler water level gauge error detection

* QUALITY3, TEMP3, DISPENCE (DIST + DI), REFRESH, ERR3, ERR4, EXP2 are not used in this device.

2. OPERATION PROCEDURES






Consumable items

About consumable items screen




In the consumable items screen, a simple device configuration flow diagram (system diagram) is displayed as shown on the left.

Touch the icon of each consumable to move to the consumable details screen.

-  Pre-treatment cartridge
-  Deionization resin
-  Tank air vent filter
-  Membrane filter
-  UV lamp (option)


If pre-notification of consumables has occurred, the icon of the corresponding consumables will blink orange. If a replacement notification has occurred, the icon will light orange.

Touch  the icon at the top left of the screen to move to the list display screen.

Icon help (consumable items screen)




Touch the icon help on the consumable items to display the help icon description window displayed on the screen.

Touch  on the upper right to close the window.

About the list display of consumables

Consumable items	Current usage / Last time	Current usage / Last time	
Pre-treatment cartridge	▶ 0/0	L 0/0	day
Deionization resin (CFC-S)	▶ 0/0	L	
Tank air vent filter	▶ 0/0	day	
Membrane filter DI	▶ 0/0	L 0/0	day
Membrane filter DI-ST	▶ 0/0	L 0/0	day

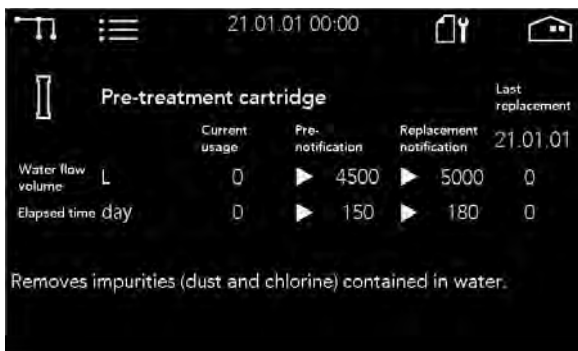
On the list display screen, you can check the current usage status and previous usage status of each consumable items. Touch  to the right of the consumable name to move to the consumable details screen.

If pre-notification of consumables has occurred, the name of the corresponding consumables will blink orange. Lights orange when a replacement notification has occurred.

2. OPERATION PROCEDURES

Consumables details screen

About consumable details screen



On the consumables details screen, you can check the usage status of consumables and the timing of pre-notification and replacement notification. If pre-notification or replacement notification has occurred, the name of the consumable item and the value corresponding to the notification will light orange.

The following operations can be performed on the consumables details screen.

• Change of notification timing

Touch next to each notification to pop up the numeric keypad, enter the desired number and touch to change the timing of each notification.

Notification time (factory default)

Consumables name	Item	Pre-notification	Replacement notification
Pre-treatment cartridge	Water flow volume	4500 [L]	5000 [L]
	Elapsed time	150 [day]	180 [day]
Deionization resin cartridge	Water quality	5.00[MΩ·cm] (0.200 [μS / cm])	1.00[MΩ·cm] (1.000 [μS / cm])
Membrane filter	Water flow volume	400 [L]	500 [L]
	Elapsed time	60 [day]	90 [day]
Tank air vent filter WG252 WG1012	Elapsed time	150 [day]	180 [day]
		335 [day]	365 [day]
UV lamp (option)	Total hours powered	90 [hr]	100 [hr]

※Consumables with two notification items will be notified when one of the items reaches the notification time.

※About the setting range

- The timing of pre-notification cannot be set to be later than the replacement notification.
- The replacement notification cannot be set larger (smaller for water quality) than the factory default.

• Transition to the replacement procedures screen

Touch the icon at the top right of the screen to display the consumables replacement procedures screen. When replacing consumables, touch this icon before replacing. See the next page for details.


Touch the icon at the top left of the screen to display the flow diagram (system diagram), and touch the icon to return to the list.



2. OPERATION PROCEDURES

Consumables replacement procedures screen

Consumables replacement procedures screen




When replacing various consumables, a simple replacement procedure is displayed (the figure on the left shows the replacement procedures for the pre-treatment cartridge). Touch  at the bottom left of the screen to move to the next step.



Touch  the icon at the top right of the screen to display the confirmation window for the preliminary reset. Touch  to reset the usage status such as water flow volume and elapsed time, and start counting from 0. Be sure to perform this preliminary reset after the replacement work is completed.

※Be sure to replace according to the note displayed on the screen. The same screen will be restored the next time the breaker is turned "ON (I)" only when the breaker is turned "OFF (O)" while the replacement procedures screen is displayed.

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



Some consumables require initial cleaning of the consumables after the integration reset. Follow the instructions on the screen and touch  **START** at the bottom right of the screen to perform initial cleaning of consumables. Cleaning is completed when about 5 L of water is flowed, and the screen moves to the details screen of the replaced consumables.

Touch  the initial cleaning in progress to display the confirmation window for canceling the initial cleaning. Touch  to cancel. The initial cleaning is stopped and the screen automatically shifts to the details screen of the replaced consumables.

※Initial cleaning cannot be performed while water is cut off or water leakage occurs. In addition, if water is cut off or leaks during the initial cleaning, cleaning will be automatically stopped.

※The purpose of initial cleaning is to bleed air from consumables, and to remove initial impurities. If you discontinue use, perform initial cleaning of consumables from User Maintenance Management (P.38) before use.

2. OPERATION PROCEDURES

User maintenance

About user maintenance screen



On the user maintenance screen, you can check the regular maintenance date and the usage status of the device.

Touch the button ▲ and ▼ at the bottom left of the screen to move the page.

The information that can be confirmed is as follows.

- Pre-notification date for regular maintenance
- Notification date for regular maintenance
- Last date of regular maintenance
- Heater operating time
- Operating time of distilled water dispensing pump
- Energizing time of the device
- Deionized water total volume delivered
- Boiler supply of deionized water
- Deionized water total volume delivered
- Distilled water total volume delivered
- Cumulative purification amount of distilled water



You can also perform the following operations.

- Heater replacement / calibration
- Consumables initial cleaning

See the next page for details.


2. OPERATION PROCEDURES

Heater replacement / calibration

About heater replacement procedures screen



Displays a simple replacement procedures for cleaning and replacing the heater. Touch at the bottom left of the screen to move to the next step.

Touch  the icon at the top right of the screen to display the confirmation window for the preliminary reset. Touch to reset the energization time and automatically calibrate the heater for 5 minutes. When finished, a pop-up will be displayed to inform you of the completion.

After completing the heater replacement work, be sure to perform this integrated reset and heater calibration.

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


※Carry out replacement work after turning OFF breaker. The same screen will be restored the next time the breaker is turned "ON (I)" only when the breaker is turned "OFF (O)" while the replacement procedures screen is displayed.

※In a state where distillation operation is prohibited due to water outage or abnormality (P.44), the integrated reset of the heater and the heater calibration cannot be executed. If an alert or abnormal occurs during calibration, calibration will be automatically stopped.

※Touch in the confirmation window for the integrated reset to display the confirmation window for calibration execution. Touch to perform only heater calibration without resetting the heater total hours powered.

• Consumables initial cleaning

• Execution of consumables initial cleaning

Touch  START next to "Consumables initial cleaning" to perform consumables initial cleaning to bleed air and remove impurities in the consumables. After passing about 5L of water, the buzzer sounds and the process ends automatically.

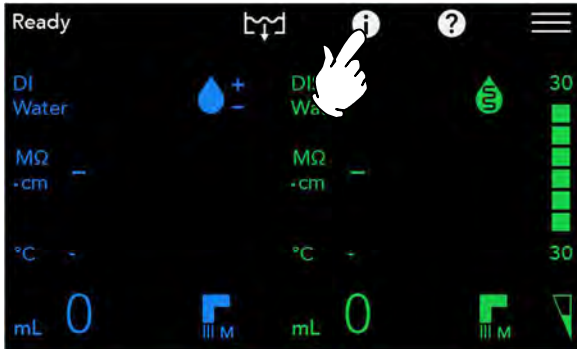
Touch the pop-up that appears during the initial cleaning in progress to display the confirmation window for canceling the initial cleaning in progress. Touch to cancel. The initial cleaning is stopped and the home is automatically displayed.


※Initial cleaning cannot be performed while water is cut off or water leakage occurs. In addition, if water is cut off or leaks during the initial cleaning, cleaning will be automatically stopped.

2. OPERATION PROCEDURES

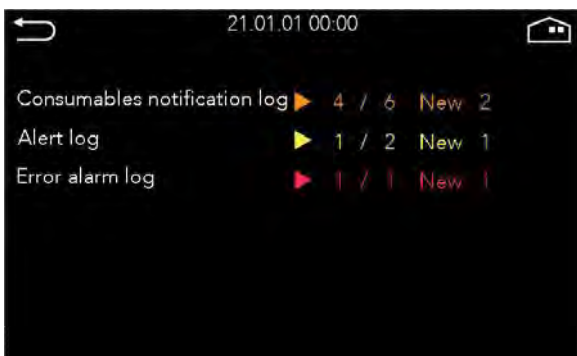
Log

Transition to log




Touch  the icon on the home or menu to display the log.

About log



On the log, you can check the notification of consumables, alert, and the history of occurrence of abnormalities.

Touch  next to each item to move to the history list display screen.

• Consumables notification log

You can check the pre-notification of consumables, replacement notification, and regular maintenance notification history.

If there is an item that is occurring, the display on the right lights up in orange.

• Alert log

You can check the alert log.

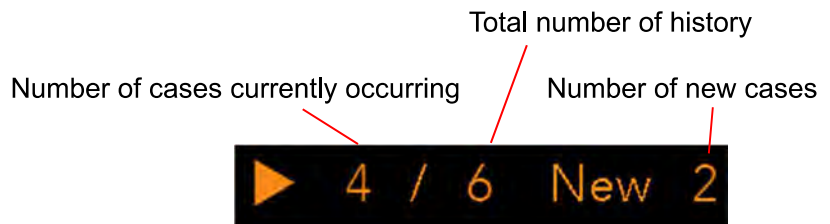
If there is an item that is occurring, the display on the right lights up in yellow.

• Error alert log

You can check the error alert log.

If there is an item that is occurring, the display on the right lights up in red.

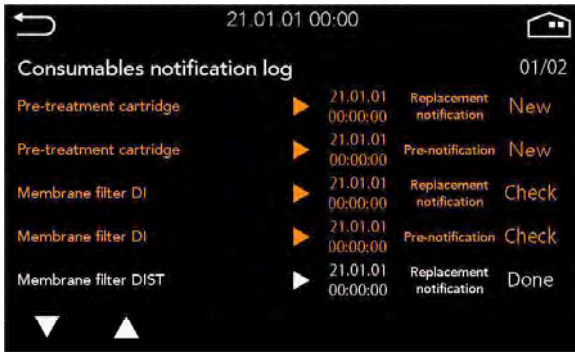
The meanings of the numbers displayed on the right are as shown on the right.



2. OPERATION PROCEDURES

Log

About consumables notification log



On the consumables notification log, the history of consumable pre-notification, replacement notifications, and regular maintenance notifications is displayed in order from the latest one.

Touch the button ▲ and ▼ at the bottom left of the screen to move the page.

The display on the far right of each history shows what the notification is current usage.

New : Notification is occurring. Detailed information unconfirmed.

Check : Notification is occurring. Detailed information has been confirmed.

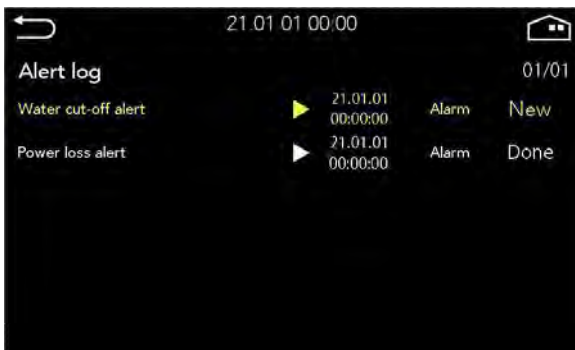
Done : Notification canceled and supported.

※ Done log is displayed in white.

Touch ▶ to the right of the consumable name to display the flow chart of the main device configuration and change the color of the corresponding icon. Touch the icon to move to the consumable details screen (P.36) .

For regular maintenance notifications, touch ▶ on the right to move to the user maintenance screen (P.38).

About alert log, error log screen



On the alert log and error alert log screen, the alert and error alert log are displayed in order from the latest one.

Touch the button ▲ and ▼ at the bottom left of the screen to move the page.

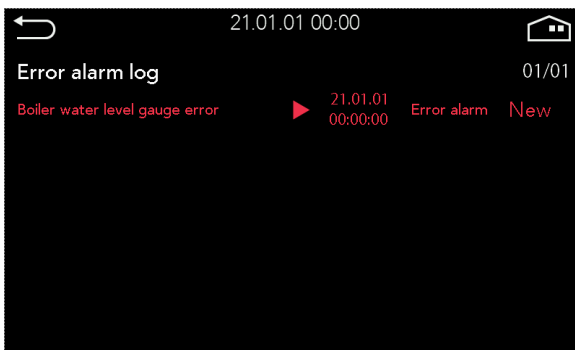
The display on the far right of each history shows what the alert or error is current usage.

New : Alert, error is occurring. Detailed information unconfirmed.

Check : Alert, error is occurring. Detailed information has been confirmed.

Done: Alert, error resolved.

※Done log is displayed in white.



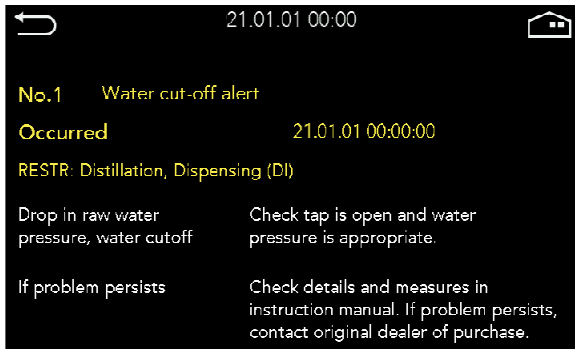
Touch ▶ to the right of the alert and abnormal name to display the flow chart of the main device configuration and change the color of the corresponding icon. Touch the corresponding icon to move to the detailed information display screen.

※For alert and abnormality not related to the flow chart, the screen will move directly to the detailed information screen.

2. OPERATION PROCEDURES

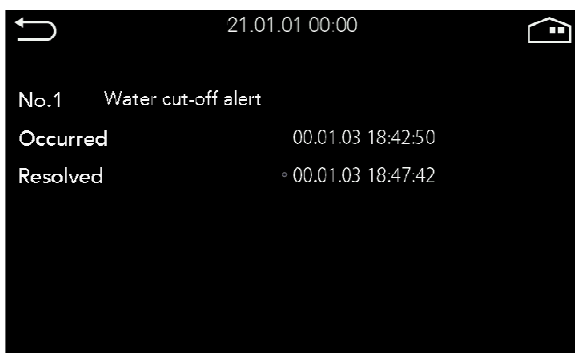
Log

About alert details and abnormal details screen



The following information is displayed for each alert or error on the alert or error details screen.

- Alert number, error code
- Alert, abnormal name
- Date and time of occurrence
- Actions that are prohibited during occurrence
- Cause of alert (abnormality)
- Workaround

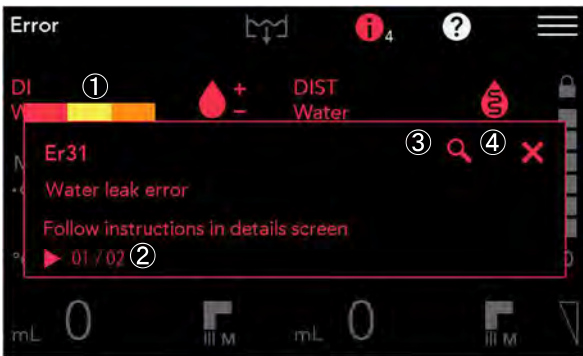


If an alert (abnormality) occurs, take action according to the display on this detailed screen and the description in "3. Troubleshooting (P.50 ~)" in this instruction manual.

After the alert (abnormality) is cleared, it will be displayed in white as shown in the screen below, and the date of clearing will be displayed.

7. TROUBLESHOOTING

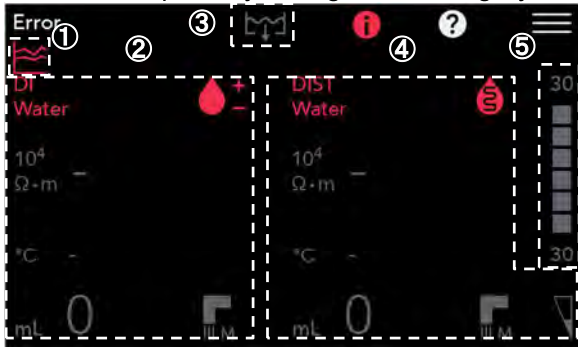
Error Indications and Descriptions



A buzzer sounds and a pop-up like the one on the left is displayed on the home when replacement notifications, alert, or abnormalities occur for various consumables.

①	Switch between consumable notifications, alert, and abnormal pop-ups.
②	Switches the displayed notification or abnormal content.
③	The displayed notification and the part that causes the abnormality are displayed in the flow chart. Touch the lit icon to move to the detailed information screen. For notifications and abnormality not related to the flow chart, the screen will move directly to the detailed information screen.
④	Clear the pop-up. When multiple displays are displayed, they are erased one screen at a time.

In the event of a water outage alert or an abnormality, specific operations are prohibited. The display on the home will partially change to red or gray according to the prohibited actions.



①	Prohibition of recording trend data
②	Prohibition of deionized water dispense
③	Prohibition of dispenser tray drain
④	Prohibition of distilled water dispense
⑤	Prohibition of distillation operation

3. TROUBLESHOOTING

Error Indications and Descriptions

The list of prohibited operations is as follows.

○... Operation is possible ×... Operation prohibited

	Distilling operation	Deionized water dispense	Distilled water dispense	Dispenser tray drain	Drain boiler	Recording trend data
Various consumables pre-notification	○	○	○	○	○	○
Various consumables replacement notification	○	○	○	○	○	○
Water cut-off alert	×	×	○	×	○	○
Distilled water quality alert	○	○	○	○	○	○
Power loss alert	○	○	○	○	○	○
Alert for trend data acquisition failure	○	○	○	○	○	×
Controller error (Er15)	×	×	×	×	×	○
Water leak error (Er31)	×	×	×	×	×	○
Heater overheat error (Er32)	×	○	○	○	○	○
Heater line interruption error (Er03)	×	○	○	○	○	○
Water level gauge error (Er34)	×	○	×	○	○	○
Coolant error (Er35b)	×	○	○	○	○	○
Boiler water level error (Er35a)	×	○	○	○	○	○
Boiler water level gauge error (Er35a)	×	○	○	○	○	○
Boiler drain path error (Er35c)	×	○	○	○	×	○
Distilled water dispensing pump error (Er27)	×	○	×	○	○	○
Deionized water quality gauge error (Er42a)	×	×	○	○	○	○
Distilled water quality gauge error (Er40)	×	○	○	○	○	○
Deionized water delivery path error (Er38e)	○	×	○	○	○	○
Distilled water delivery path error (Er38f)	×	○	×	○	○	○
Deionized water flow rate drop error (Er38a)	○	×	○	○	○	○

3. TROUBLESHOOTING

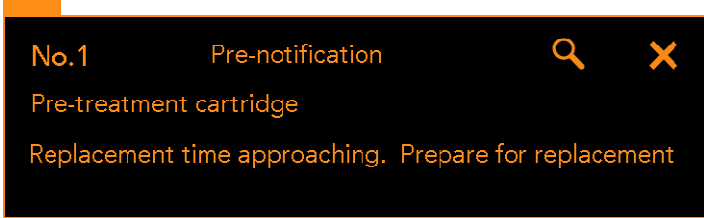
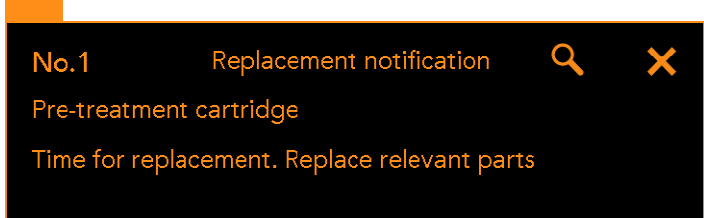
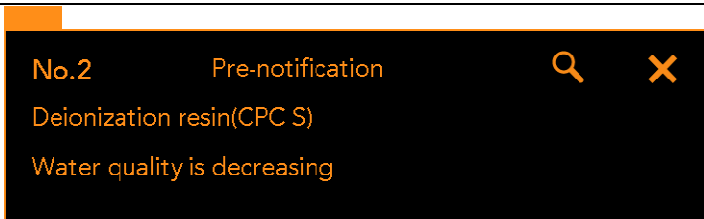
Replacement

There are two types of consumable-related notifications:

Pre-notification ... The replacement time is approaching, so please prepare a new one.

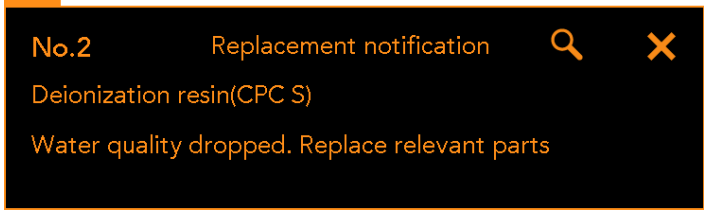
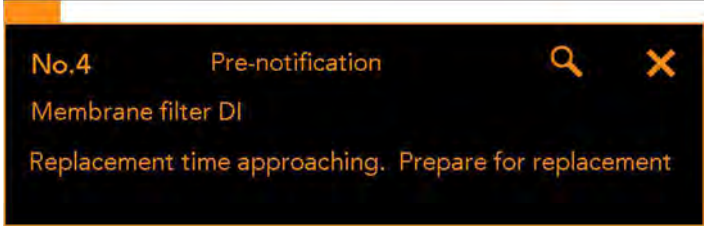
Replacement notification ... It is time to replace the consumables.

※Refer to P. 35~37 for the operation when replacing consumables.

Symptom	Display		
Pre-treatment cartridge Pre-notification			
	Prohibited operation	Possible causes	Possible measures
	none	When the water flow rate and the number of days of use of the pre-treatment cartridge exceed the advance notification conditions.	The replacement time of pre-treatment cartridge filter is approaching, so please prepare a new one.
Symptom	Display		
Replacement notification of pre-treatment cartridge			
	Prohibited operation	Possible causes	Possible measures
	none	When the water flow rate and the number of days of use of the pretreatment cartridge exceed the replacement notification conditions.	Replace pre-treatment cartridge. After replacement, enter the replacement procedures from the consumables details screen and perform the reset operation (see P.37).
Symptom	Display		
Deionization resin cartridge Pre-notification			
	Prohibited operation	Possible causes	Possible measures
	none	When the water quality of the deionized water is below the pre-notification condition for more than the decision time	<ul style="list-style-type: none"> The water quality may have deteriorated temporarily, so please take deionized water for a while. If there is no change in the water quality, it is almost time to replace the deionization resin cartridge, so prepare for replacement such as preparing a new one.

3. TROUBLESHOOTING

Replacement

Symptom	Display		
Deionization resin cartridge Replacement notification			
	Prohibited operation	Possible causes	Possible measures
	none	When the water quality of the deionized water is below the replacement notification condition for more than the decision time.	<ul style="list-style-type: none"> The water quality may have deteriorated temporarily, so please take deionized water for a while. If there is no change in water quality, replace the deionization resin cartridge. After replacement, enter the replacement procedures from the consumables details screen and perform the reset operation (see P.37).
Symptom	Display		
Membrane filter (DI) Pre-notification			
	Prohibited operation	Possible causes	Possible measures
	none	When the amount of water flowing through the membrane filter on the deionized water side and the number of days of use exceed the pre-notification conditions.	The replacement time of membrane filter is approaching, so please prepare a new one.
Symptom	Display		
Membrane filter (DI) Replacement notification			
	Prohibited operation	Possible causes	Possible measures
	none	When the amount of water flowing through the membrane filter on the deionized water side and the number of days of use exceed the replacement notification conditions.	Replace membrane filter. After replacement, enter the replacement procedures from the consumables details screen and perform the reset operation (see P.37).

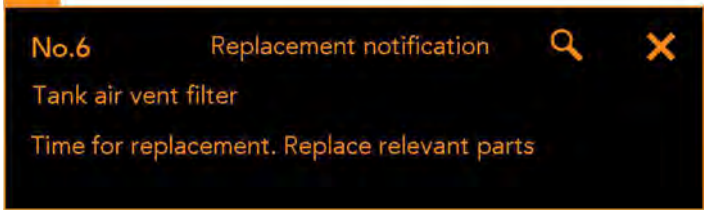
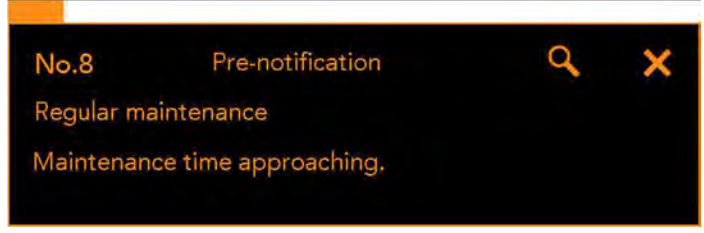
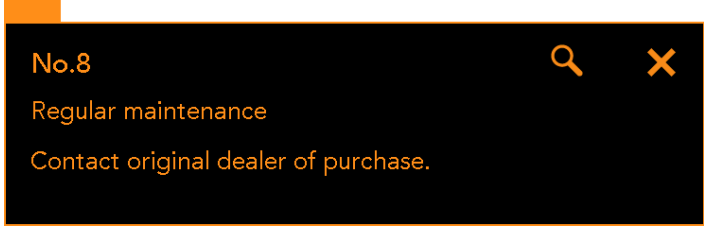
3. TROUBLESHOOTING

Replacement

Symptom	Display		
Membrane filter (DIST) Pre-notification			
	Prohibited operation	Possible causes	Possible measures
	none	If the amount of water flowing through the membrane filter on the distilled water side and the number of days of use exceed the conditions for pre-notification.	The replacement time of membrane filter is approaching, so please prepare a new one.
Symptom	Display		
Membrane filter (DIST) Replacement notification			
	Prohibited operation	Possible causes	Possible measures
	none	When the amount of water flowing through the membrane filter on the distilled water side and the number of days of use exceed the pre-notification conditions.	Replace membrane filter. After replacement, enter the replacement procedures from the consumables details screen and perform the reset operation (see P.37).
Symptom	Display		
Pre-notification of tank air vent filter			
	Prohibited operation	Possible causes	Possible measures
	none	If the amount of water flowing through the tank air vent filter and the number of days of use exceed the conditions for pre-notification.	The replacement time for the tank air vent filter is approaching, so prepare for replacement such as preparing a new one.

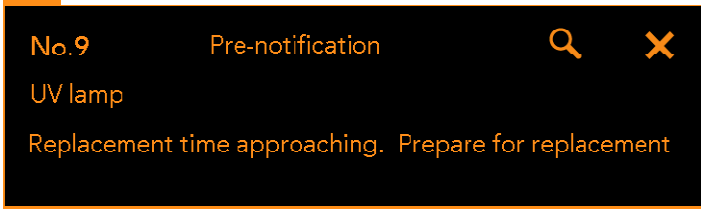

3. TROUBLESHOOTING

Replacement

Symptom	Display		
Replacement notification of tank air vent filter			
	Prohibited operation	Possible causes	Possible measures
	none	If the amount of water flowing through the tank air vent filter and the number of days of use exceed the replacement notification conditions.	Replace the tank air vent filter. After replacement, enter the replacement procedures from the consumables details screen and perform the reset operation (see P.37).
Symptom	Display		
Regular maintenance pre-notification			
	Prohibited operation	Possible causes	Possible measures
	none	If the number of days the product has been used exceeds the pre-notification conditions.	The time for regular maintenance is approaching, so please contact your sales agent to request regular maintenance.
Symptom	Display		
Regular maintenance			
	Prohibited operation	Possible causes	Possible measures
	none	If the product has been used for more than the notification conditions.	It may cause malfunction or water leakage due to deterioration of parts. Please contact your dealer as soon as possible to request regular maintenance.

3. TROUBLESHOOTING

Replacement

Symptom	Display		
[Option] UV lamp pre-notification			
	Prohibited operation	Possible causes	Possible measures
	none	If the total hours powered of the UV lamp exceeds the pre-notification conditions.	The UV lamp replacement time is approaching, so prepare for replacement such as preparing a new one.
Symptom	Display		
[Option] UV lamp replacement notification			
	Prohibited operation	Possible causes	Possible measures
	none	If the total hours powered of the UV lamp exceeds the replacement notification conditions.	After replacement, enter the replacement procedures from the consumables details screen and perform the reset operation (see P.37).

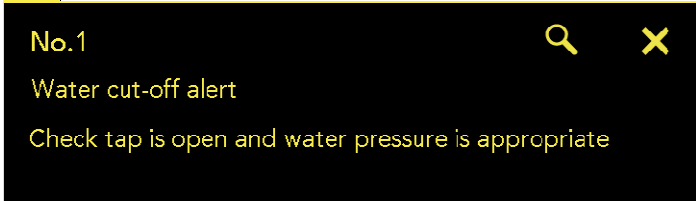
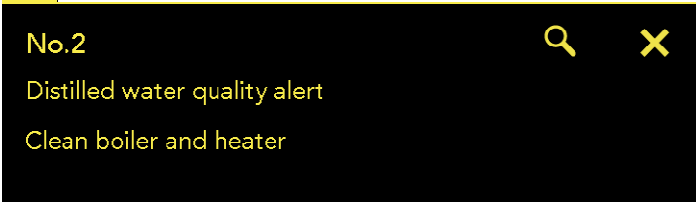
3. TROUBLESHOOTING

Alert

When an alert occurs, the following pop-up will be displayed on the home. Check the details and follow the processing measures described. It will automatically recover as soon as the cause is resolved.


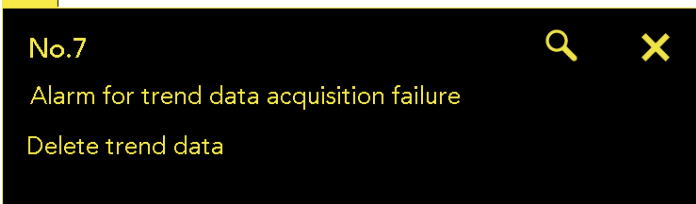
※Depending on the type of alert, the display on the home may change and the operation may be restricted.

Please refer to P.43 for the change of the display.

Symptom	Display		
Water cut-off alert			
	Prohibited operation	Possible causes	Possible measures
	Distilling operation Deionized water dispense Dispenser tray drain	The state of low raw water pressure. Or when the water is cut off (WG252: 0.05MPa or less, WG1012: 0.1MPa or less)	Check raw water pressure and that water tap is open. When the raw water pressure is restored, the alert will be cleared and the operation will resume. If the alert does not go away, please contact the distributor where you purchased the product.
Symptom	Display		
Distilled water Water quality alert			
	Prohibited operation	Possible causes	Possible measures
	none	When the water quality of the distilled water during the distillation operation is below the alert decision condition for more than the decision time (0.1 [MΩ·cm] or 10.00 [μS / cm])	※Clean the boiler and heater (refer to "WG252/1012 Instruction Manual Operation"). The alert is canceled when the quality of distilled water exceeds the alert decision conditions. If the alert does not go away, please contact the distributor where you purchased the product.

3. TROUBLESHOOTING

Alert


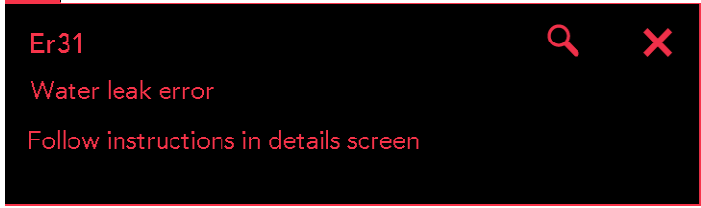
Symptom	Display		
Power loss alert			
	Prohibited operation	Possible causes	Possible measures
	none	<p>When the breaker turns "OFF (○)" while the device is operating (other than the status display is Ready or the Caution display due to a power loss alert).</p> <p>※ When the power loss notification setting (P.28) is ON, a pop-up is displayed when the power is restored.</p>	<p>When the power is restored, the power loss will be resolved.</p> <p>Touch <input checked="" type="checkbox"/> the pop-up that appears to close it.</p>
Symptom	Display		
Alarm for trend data acquisition failure			
	Prohibited operation	Possible causes	Possible measures
	Recording trend data	<p>When the calendar setting or the sampling cycle of trend data is changed and the previous data cannot be synchronized.</p> <p>※It also occurs when the calendar is initialized due to the clock element power circuit running out of charge. Estimated: When the breaker remains "OFF (○)" for one month or longer.</p>	<p>When the trend data is deleted, the alert is cleared and recording is restarted (see P.33).</p> <p>※Please write the necessary data by USB output before erasing (see P.33). ※If the calendar is initialized, reset the calendar before deleting the data (see P.28).</p>

3. TROUBLESHOOTING

Abnormality

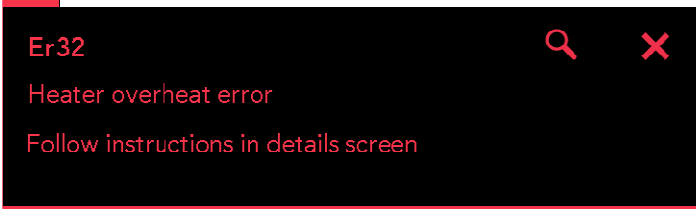
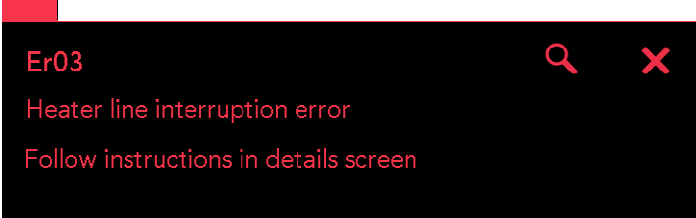
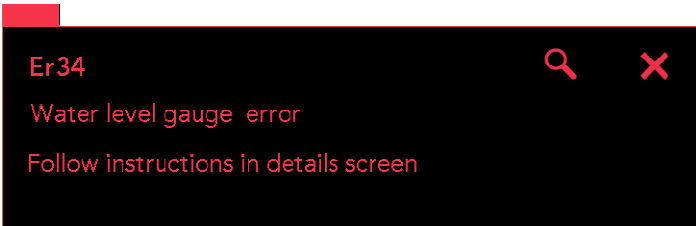
When an alert occurs, the following pop-up will be displayed on the home. Check the details and follow the processing measures described. Even after an abnormality occurs, it can be used for operations unrelated to the cause of the abnormality, but it is necessary to replace parts or inspect the product to clear the abnormality. Contact original dealer of purchase or Yamato sales office for assistance. Please inform of the error message appeared on the screen and serial number of main unit. Contact information for the Customer Service Center can be found at the end of this manual.

※ All the following abnormalities can be canceled by reinserting the breaker.

Symptom	Display		
Controller error			
	Prohibited operation	Possible causes	Possible measures
	All operations except screen operation and trend data recording	When the set value stored in the storage cell cannot be read or is an abnormal value	Reset ELB on the right side of unit. If problem persists, contact original dealer of purchase.
Symptom	Display		
Water leak error			
	Prohibited operation	Possible causes	Possible measures
	All operations except screen operation and trend data recording	When water contacts leak sensor. [option] When an abnormality (abnormal water level, overheating of drainage temperature) occurs in the drain trap	<ul style="list-style-type: none"> If water leaks from the water supply port or when replacing consumables, turn the breaker on the right side of the device to "OFF (O)" and dry the water leak detection sensor (see "WG252 / 1012 Instruction Manual"). If there is something wrong with the optional drain trap, refer to "OA104 Drain Trap Instruction Manual". <p>If any of the above does not apply, or if water leaks from other piping parts, contact the distributor where you purchased the product.</p>

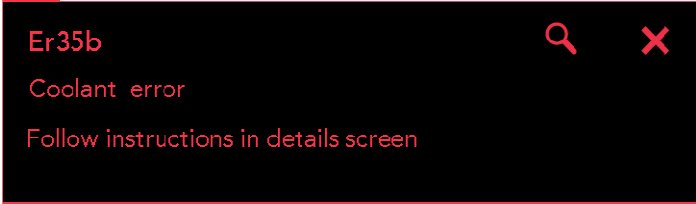
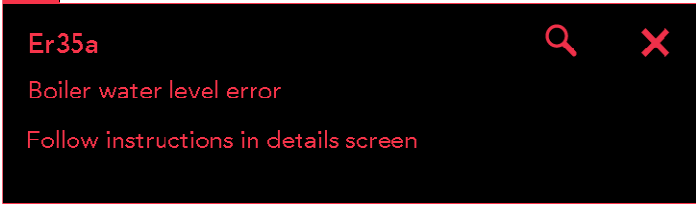
3. TROUBLESHOOTING

Error

Symptom	Display		
Heater overheat error			
	Prohibited operation	Possible causes	Possible measures
	Distilling operation	When temperature of heater unit exceeds the abnormality determination value, or when the temperature sensor is interrupted or short-circuited.	※Check and replace the heater wiring route (refer to "WG252 / 1012 Instruction Manual Operation"). Reset ELB on the right side of unit. If problem persists, contact original dealer of purchase.
Symptom	Display		
Heater line interruption error			
	Prohibited operation	Possible causes	Possible measures
	Distilling operation	If heater temperature does not rise after a certain time has passed since the start of the distillation operation.	※Check and replace the heater wiring route (refer to "WG252 / 1012 Instruction Manual Operation"). Reset ELB on the right side of unit. If problem persists, contact original dealer of purchase.
Symptom	Display		
Water level gauge error			
	Prohibited operation	Possible causes	Possible measures
	Distilling operation Distilled water dispense	When the float switch of the tank water level gauge is suspected to be defective.	Reset ELB on the right side of unit. If problem persists, contact original dealer of purchase.

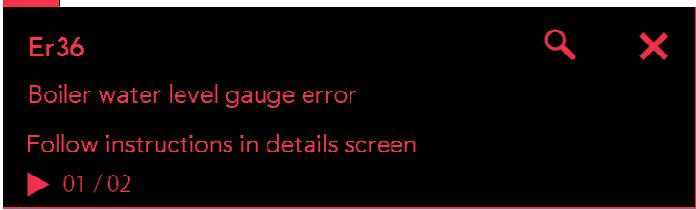
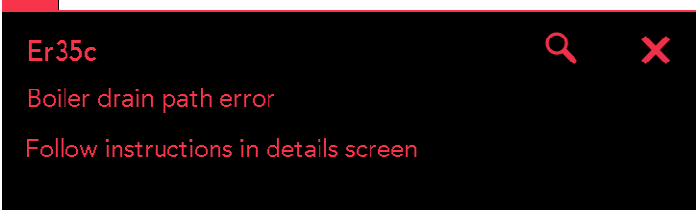
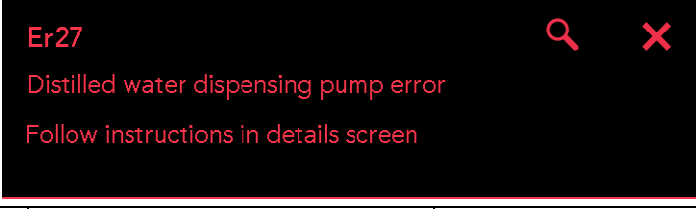
3. TROUBLESHOOTING

Error

Symptom	Display		
Coolant error			
	Prohibited operation	Possible causes	Possible measures
	Distilling operation	When the boiler overflow input is OFF even after a certain time has passed	<ul style="list-style-type: none"> • Check pressure and temperature of raw water • Perform manual drainage of the boiler (see P.22) 30 minutes after the distillation is stopped. <p>Reset ELB on the right side of unit. If problem persists, contact original dealer of purchase.</p>
Symptom	Display		
Boiler water level error			
	Prohibited operation	Possible causes	Possible measures
	Distilling operation	If the heater operation water level is entered OFF after the abnormality determination time has passed from the start of water supply to boiler.	<ul style="list-style-type: none"> • Check raw water pressure and that water tap is open. • After turning the breaker to "OFF (○)", check if the manual cock at the bottom of the boiler inside the right door of the device is open (see "WG252 / 1012 Instruction Manual Structure"). • Perform consumables initial cleaning from the user maintenance screen (see P.38). <p>Reset ELB on the right side of unit. If problem persists, contact original dealer of purchase.</p>

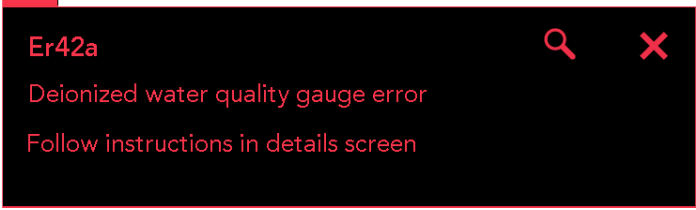
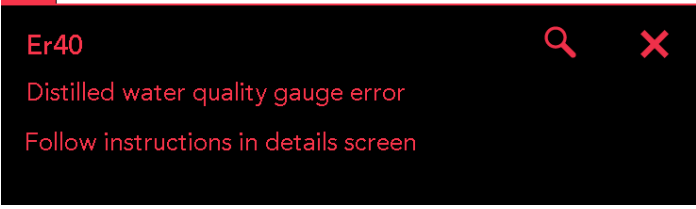
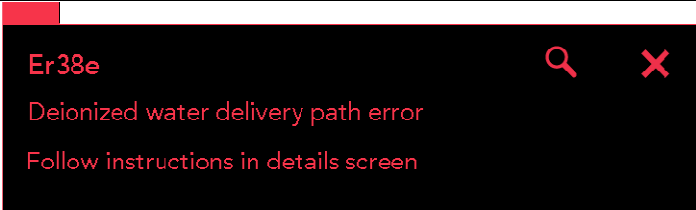
3. TROUBLESHOOTING

Error

Symptom	display		
Boiler water level gauge error			
	Prohibited operation	Possible causes	Possible measures
	Distilling operation	When the float switch in the float cylinder is suspected to be out of order.	Reset ELB on the right side of unit. If problem persists, contact original dealer of purchase.
Symptom	display		
Boiler drain path error			
	Prohibited operation	Possible causes	Possible measures
	Distilling operation Drain boiler	If the heater operation water level is entered ON after the abnormality determination time has passed from the start of water boiler drainage.	<ul style="list-style-type: none"> •Check the drain hose routing. (Refer to "WG252 / 1012 Instruction Manual Structure"). Reset ELB on the right side of unit. If problem persists, contact original dealer of purchase.
Symptom	display		
Distilled water dispensePump error			
	Prohibited operation	Possible causes	Possible measures
	Distilling operation Distilled water dispense	When the load current of the distilled water dispensing pump is higher than the abnormality decision condition for more than the abnormality decision time.	<ul style="list-style-type: none"> •Check if the membrane filter has been used beyond the replacement period. •Check if there is anything that could be a load on the distilled water dispensing port. Reset ELB on the right side of unit. If problem persists, contact original dealer of purchase.


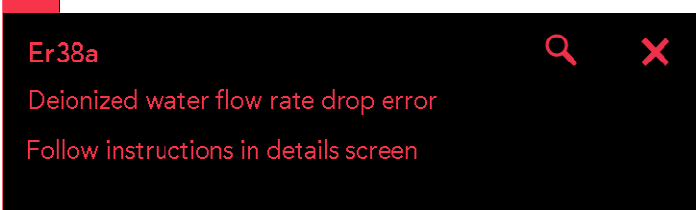
3. TROUBLESHOOTING

Error

Symptom	display		
Deionized water Water quality gauge error			
	Prohibited operation	Possible causes	Possible measures
	Distilling operation Deionized water dispense	Thermistor sensor of deionized water quality gauge continues being interrupted/short-circuited for longer than the abnormality determination time.	Reset ELB on the right side of unit. If problem persists, contact original dealer of purchase.
Symptom	display		
Distilled water Water quality gauge error			
	Prohibited operation	Possible causes	Possible measures
	Distilling operation	Thermistor sensor of distilled water quality gauge continues being interrupted/short-circuited for longer than the abnormality determination time.	Reset ELB on the right side of unit. If problem persists, contact original dealer of purchase.
Symptom	display		
Deionized water Distilled water delivery path error			
	Prohibited operation	Possible causes	Possible measures
	Deionized water dispense	When the flow rate cannot be detected even after the abnormality decision time has elapsed when the deionized water is dispensed.	<ul style="list-style-type: none"> Perform consumables initial cleaning from the user maintenance screen (see P.38). If the initial cleaning is not completed within 20 minutes from the start of cleaning, set the breaker on the right side of the main device to "OFF (o)" and contact the store where you purchased the product.

3. TROUBLESHOOTING

Error

Symptom	display		
Distilled water Distilled water delivery path error			
	Prohibited operation	Possible causes	Possible measures
	Distilling operation Distilled water dispense	When the flow rate cannot be detected even after the abnormality decision time has elapsed when the distilled water is dispensed.	Reset ELB on the right side of unit. If problem persists, contact original dealer of purchase.
Symptom	display		
Deionized water Abnormal flow decrease			
	Prohibited operation	Possible causes	Possible measures
	Deionized water dispense	When the dispensing flow rate of deionized water is 200 ml / min or less and continues for more than the abnormality decision time.	<ul style="list-style-type: none"> •Check raw water pressure and that water tap is open. •Perform consumables initial cleaning from the user maintenance screen (see P.38). •Check if the membrane filter has been used beyond the replacement period. •Check if there is anything that could be a load on the deionized water dispensing port. Reset ELB on the right side of unit. If problem persists, contact original dealer of purchase.

Limited Liability

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

Yamato Scientific Co., Ltd. assumes no responsibility for malfunction, damage, injury or death resulting from negligent equipment use.

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

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

Notice

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

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

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

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