







### User guide

### A/S manual

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# 1. Safety Instruction

Please observe the following instructions that are precautions for safe and correct operation to prevent unexpected hazards of damage and injury.



## Electrical Specification

- Please check whether the voltage is matching up with field's one where you use the machine. If the voltage, current and pressure do not match up, the inner parts will be damaged. (The machine is set for **■110V 50/60Hz. You cannot use it with 220V.**)
- Do not use a damaged power cord or a socket.
- Do not touch the power plug with a wet hand.
- You have to use an approved single socket not a multi-socket.
- If you have to use an extension cord inevitably, make sure that rated capacity is not exceeded.
- Do not pull the power cord only from a distance.
- Do not put a heavy stuff on the power cord.
- You have to use **a grounded socket and an approved power-cord.** Electric shock due to electric leakage may result.
- Shut off the power to prevent electric shocks if the machine is not working.
- Do not attempt to disassemble, repair or alter the machine. You may suffer from electric shock or hurt.



## Water Specification

- Only use clean water such as tap water that complies with the drinking water regulations. If you have to use the underground water, please check the salinity in the water with salimeter first and remove any salinity to supply, if it has.
- Install Water softer when hard underground water is used, or you must use filtration filter (Strainer) to prevent any sand, gravel, etc for preventing blocking when you use underground (impure) water.
- If the water contains too much iron (Fe), it makes corrosion because it is oxidized by itself. Please remove the iron from the water before installing the machine.
- The proper main **water pressure is 3.0~4.0kgf/cm<sup>2</sup> to operate normally.** If you use the machine with the pressure lower than 2.5kgf/cm<sup>2</sup>, the concentration of chlorine will be too high and it makes 'Water check' error. If so, you have to install a booster pump to increase the water pressure.
- Supply with adequate amount of water by opening the main water supply valve. If the water supply is not enough due to low-pressure, the concentration of the cleaning solution will be increased and make an error (Er).

# 1. Safety Instruction



## Salt Specification

- Please use the **clean refined salt which has NaCl more than 99% with granule type.** Never use the powder type salt because it is hardened when it meets the water.
- Never use roasted salt or salt used for cooking that contains citric acid or amino acid.
- Never use picking or bay salt because it has high amount of impurities.
- Never use the salt which has a lot of bromine compound.
- Be careful any impurities are not into the salt tank. If it goes into the tank and blocks the filter, error (Er) will occur. If so, please disassemble the filter and wash out with tap water. (Refer to the page 20)
- Always keep clean the surface of the salt tank when you refill the salt.

- Keep the product away from the children or unskilled people.
- Always keep clean the surface of machine.
- If the surrounding temperature dropped below zero degrees, please stop using the machine and protect from a freezing trouble.
- Please wash out with tap water when you use on the materials which is weak for the cleaning solution. (Refer to the page 10)
- **Never install the non-standard hose reel or storage tank from the main unit without professional advice,** and please use a suitable size's pipe.



## Before starting

- Please check the main water supply valve is opened before using the machine.
- **Do not operate** the machine for a long time more than **3 hours at once (continuously).** A long time operating without rest may cause the heat and damage of parts. If you need to use more, please operate the machine after getting enough rest.
- **Never install any valve on the cleaning solution outlet hose** or pipe because the remained pressure inside the machine makes some damage of parts.
- When the machine doesn't work normally, please check below instruction first:
  - (1) Whether the salt specification is suitable
  - (2) Whether the supplying water has any impurity or salinity
  - (3) Whether water pressure is suitable to use
  - (4) Whether the main water supply valve is opened or not
- Do not install this machine in the area where ventilation does not function properly or oily, smoky, humid, dusty and water splashing places including some corrosive gas exists.
- Never use this machine for another use.
- Please note that the cleaning solution outlet hose is not pressed by anything. If the hose is pressed by something, the machine cannot work normally as the pressure sensors works.
- Never use the machine with any chemical that is not described.
- Do not attempt to disassemble, repair or alter the machine. You may suffer from electric shock or hurt.

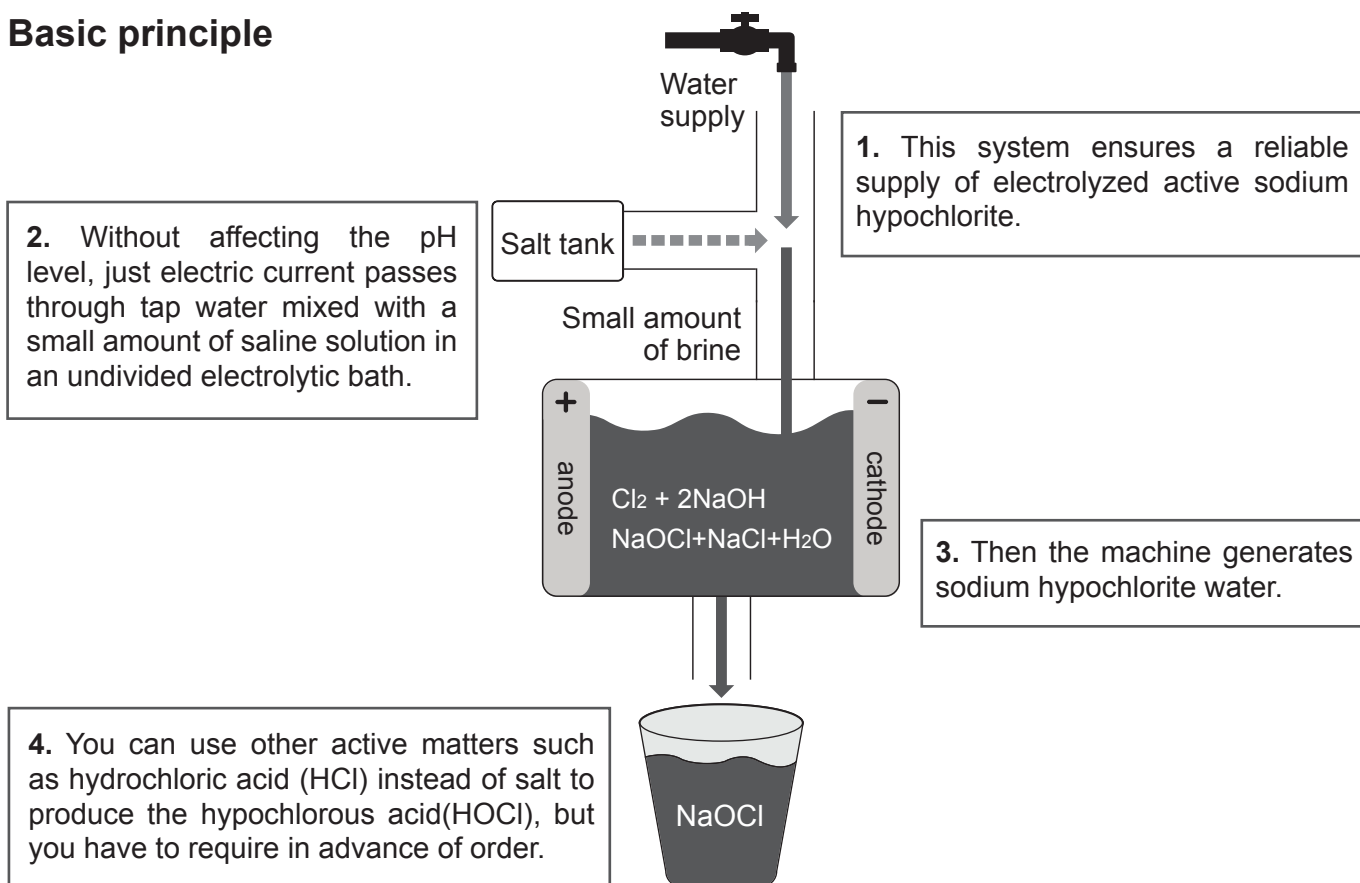
For more information, please check this manual with corresponding page.



## 2. Operating Instruction

- How the machine works    ▷ How to use your machine    ▷ Component of the machine

### Basic principle



Model	DES-10K
Demension	W480 X D300 X H490mm (Main body), W350 X D350 X H490mm (Salt tank)
Rated voltage	AC 110V, 50/60Hz
Wattage & Ampere	About 1.4kW ( $\pm 10\%$ )
Weight	About 45kg (with salt tank & hose reel)
Generating	15~20L/min $\pm 10\%$
pH	7.0~7.5pH Neutral
Active chlorine	Vegetables: strength 90~110ppm / Utensils: strength 180~200ppm (Adjustable)
Electrolysis method	Non-diaphragm
Additive	Refined Salt (NaCl more than 99%)
Condition	Surrounding temp. 5~40 degree, Water temp. 5~30 degree, Water pressure more than 3.0kgf/cm <sup>2</sup> , Humidity less than 95% RH

## 2. Operating Instruction



▷ How the machine works   ► How to use your machine   ▷ Component of the machine

### Follow the below step 1~3.

#### Step 1.

- Please check the water supply valve is opened properly.
- Put the salt into the tank by the marked point on the tank (Over half of the tank). You can be aware the lack of salt from 'Er: Saline check' message on the display board. Be careful any impurities are not into the tank.

#### Step 2.

- Turn on the power and Select the option about the 'Utensils' or 'Vegetables' with Function lever on the right side of the machine.

*(Concentration for Utensils (Equipment, machine): strength 200ppm, Vegetables: strength 100ppm (Something which has a lot of organic matter is needed to use with 200ppm to sterilize))*

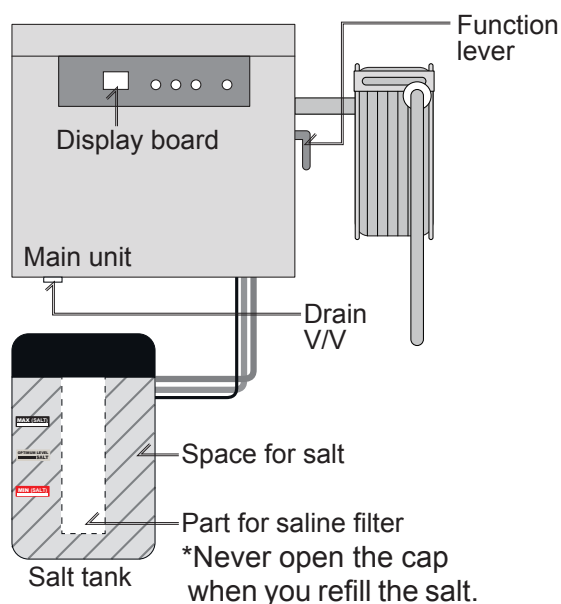
#### Step 3.

- Press the 'Generator (On/Off)' button to create the cleaning solution.
- After using, please press the 'Generator (On/Off)' button again to stop operating.

*When the [Er] error message occurs on the display, please refer to the page 18~19.*

#### If you don't use it for a long time...

1. Unwind the hose from the reel to flow the water normally. And then push the 'Clean' button to clean inside automatically about 2~3 times. (It works automatically about 2 minutes and then stops.)
2. After cleaning, close the main water supply valve. And then drain the remained solution inside the electrolytic bath by using the drain valve at the bottom of the main unit.
3. After draining, close the valve, turn off the power button and pull out the power cord.
4. Please clean the surface of the machine and salt tank by wiping up with a cloth completely.





## 2. Operating Instruction

▷ How the machine works   ► How to use your machine   ▷ Component of the machine

### Applications

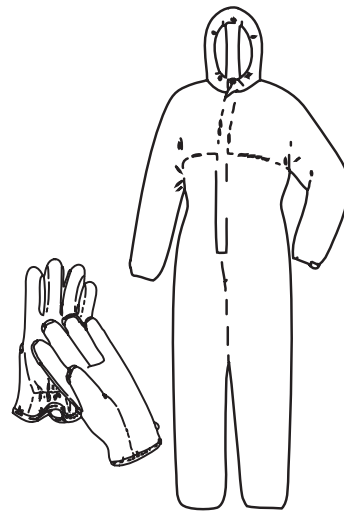
#### For agricultural, horticultural, etc.

It can effectively control during harvest and it also instantly dissolves and leaves no residue on crops and increase credibility through safe harvesting.

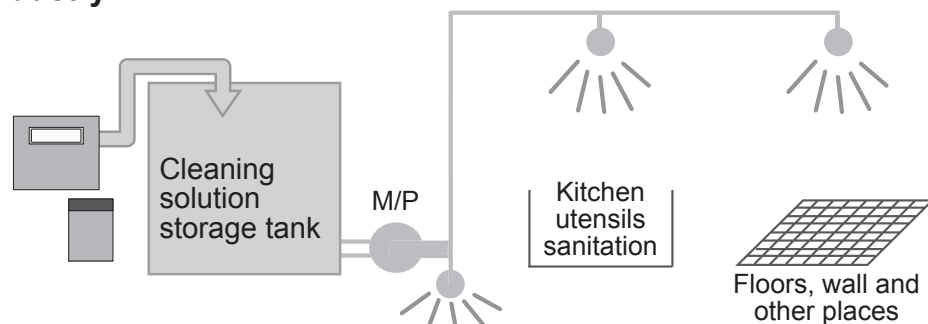


#### For utensils & Floor

It cleans dishtowel, dirty knives, cutting board, dishes, working clothes, caps, boots, and removes bad odor by soaking them for 5~10 minutes in NaOClean water. It is more effective to hand-rub them. (Be cautious as the solution may bleach the colored textiles.) Also, it can effectively remove the biofilm which is generated from the germs and makes a safe working environment by preventing from slipperiness.



#### Cleaning solution process for a large volume industry

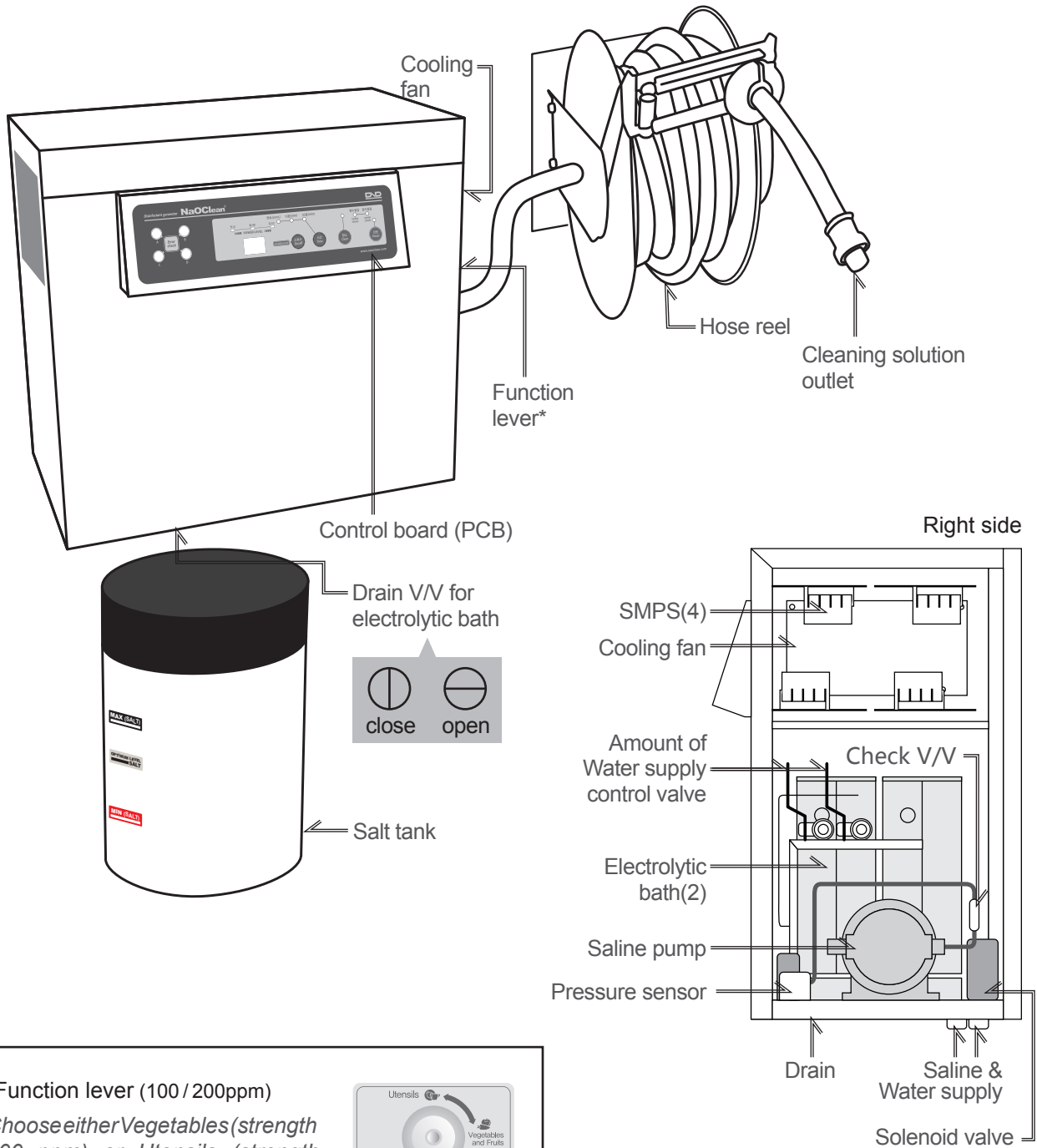




## 2. Operating Instruction

▷ How the machine works    ▷ How to use your machine    ▶ Component of the machine

### Inside the unit



\*Function lever (100 / 200ppm)

Choose either Vegetables (strength 100 ppm) or Utensils (strength 200ppm) with lever. For food materials, you must turn the lever to the Vegetables side.



## 2. Operating Instruction

- ▷ How the machine works
- ▷ How to use your machine
- ▶ Component of the machine

### Control board

**Indicator lamp for SMPS**  
Normal: 4 lamp are turned on.  
Error: More than one lamp was not turned on.

**Generator (On/Off)**  
This button is to start and stop for generating the sodium hypochlorite solution. The normal cleaning solution is supplied after 10 seconds.

**Saline check lamp**  
When the saline solution is not supplied normally, the lamp will blink with a buzzer alert.

**Water check lamp**  
When the water is not provided normally, the lamp will blink with a buzzer alert.

**Display**  
Normal: Display the number '18~25'  
Error: Display the 'Er'  
*It is normal the number goes up and down continually from the normal range.*  
**Normal range is different for the water quality & salt specification**

**Time**  
When the machine is operating, you can choose the time '10min', '20min' or 'continuation'. After that time, it is turned off automatically.

**Clean**  
When you press the cleaning button, water is supplied for 2 minutes and cleans inside the machine automatically. When cleaning, any buttons (except on the power and generator button) are not operated.





### 3. Recommended salt

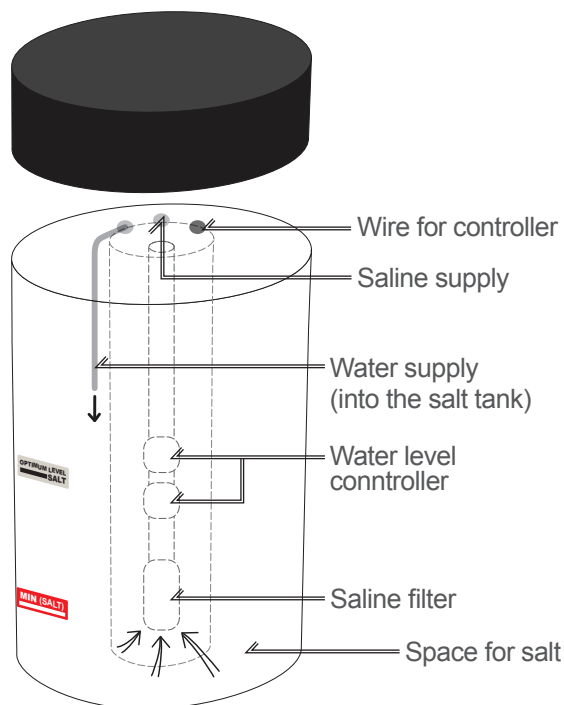
#### MUST USE REFINED SALT NOT BAY SALT!

Component	Chemical symbol	Composition
Sodium	NaCl	more than 99%
Calcium	Ca	≤ 25mg/kg
Magnesium	Mg	≤ 8mg/kg
Potassium	K	≤ 78mg/kg
Iron	Fe	≤ 10mg/kg
Insoluble Sulfates	SO	≤ 1900mg/kg
Aluminum	Al	≤ 0.01mg/kg
Manganese	Mn	≤ 0.02mg/kg
Copper	Cu	≤ 0.1mg/kg

You can use general salt, if it contains more than 99% of the NaCl.

#### Salt tank - Structure

Please fill the enough salt into the salt tank by marked 'OPTIMUM LEVEL' of salt. Be careful any impurities are not into the tank when you refill.



#### Cautions for using salt :

- Please use the clean refined salt which has NaCl more than 95% with granule type.
- The powder type salt may be hardened when it meets water as the particle is too small.
- Never use roasted salt or salt used for cooking that contains citric acid or amino acid.
- Never use picking or bay salt because it has high amount of impurities.
- Never use the salt which has a lot of bromine compound.
- Be careful any impurities are not into the salt tank. If it goes into the tank and blocks the filter, error (Er) will occur.
- Always keep clean the surface of the salt tank when you refill the salt.



## 4. Cautions for handling

► Handling of solution (Electrolyzed sodium hypochlorite)

Please note below property for your safety

### Analysis table for corrosion-resistant material

Materials	Corrosion resistance		
	weak	normal	strong
ABS resin			○
polyethylene			○
acrylic			○
polypropylene			○
teflon			○
silicon			○
epoxy resin			○
urea resin			○
Butyl-rubbe, NBR			○
natural, urethane rubber			○
titanium, glass, ceramics			○
stainless steel		○	
plating, copper	○		
phosphor bronze	○		
brass	○		
aluminium alloy	○		
steel	○		

- You have to rinse after using the cleaning solution water. If not, it may have a weak smell of the chlorine.
- When the large amount of solution get into the eyes, hold eye open and rinse gently with tap water if you feel something is wrong.
- Move to the place with fresh air when you feel dizzy.
- If you drink sodium hypochlorite water, drink clean water or milk and contact the nearest hospital if you feel something is wrong.
- Please do not spray on the materials which are listed on the left table marked as 'weak'.

- Do not storage the solution for a long period.
- Never mix sodium hypochlorite water with other cleaning solution, abstergent and chemicals. (But, it can be used with kitchen detergent in some case.)
- If you have sensitive skin, wear protective equipment such as rubber gloves.
- Wear a protective goggles while using the Washer. Small pieces of debris may be flying around.
- Do not sell the solution created from the machine without approval.
- Chlorine concentration may be degraded by ultraviolet rays, high temperature or long period of time.

- Be careful that the solution may bleach the colored textiles.
- If the brine remains in the tank for an extended period of time, it may cause corrosion.
- If you exceed the available chlorine concentration, rinse with tap water.
- Be sure to wash the Metal-drainage-pipe with tap water after using the large amount of solution, because it may cause corrosion.
- Do not use the solution on sesame seeds.
- Do not use the solution in cooking and drinking water.

## A/S manual



### 5. How to install

- ▷ Note of caution ..... 12
- ▷ Ground connection ..... 13
- ▷ Wire connection ..... 14
- ▷ Pipe connection ..... 16



### 6. Troubleshooting

- ▷ Check the saline solution ..... 18  
& water supply
- ▷ Check other parts ..... 19
- ▷ Troubleshooting ..... 20



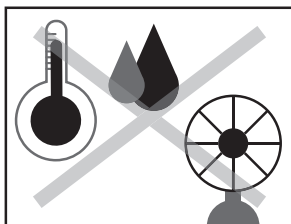
### 7. Replacement period ..... 22



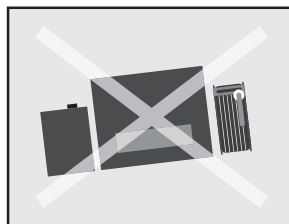
## 5. How to install

- ▶ Note of caution    ▷ Ground connection    ▷ Wire connection    ▷ Pipe connection

### Note of caution when installing



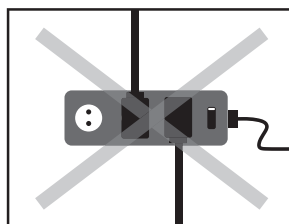
1. Never install in the area where ventilation doesn't work properly, or in oily, smoky, humid, dusty, and water splashing places including corrosive gas exists.



2. Install the machine in a flat ground so that the machine maintains level and avoids danger of falling.



3. Install the machine in a place with surrounding temperature of 5~40°C and humidity must be less than 95% RH. It must be protected from a freezing trouble.



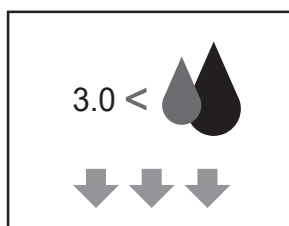
4. You have to use an approved single socket. Do not use a multi-socket.

### Water supply specifications



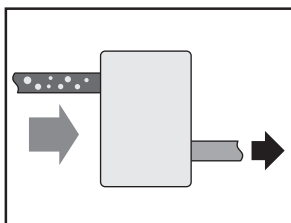
1. Only use clean and room temperature (5~30°C) water such as tap water that complies with the drinking water regulations. If the water contains too much

iron (Fe), it makes corrosion because it is oxidized by itself. Please remove the iron from the water before installing the machine.

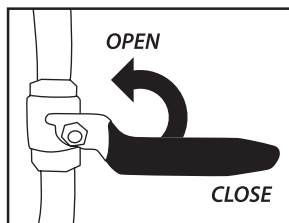


2. The proper main water pressure is 3.0~4.0kgf/cm<sup>2</sup> to operate normally. If you use the machine with the pressure lower than 2.5kgf/cm<sup>2</sup>, the

concentration of chlorine will be too high and it makes 'Water check' error. If so, you have to install a booster pump to increase the water pressure. If the water pressure is over than 5kgf/cm<sup>2</sup>, please use the reducing valve to reduce the water pressure.



3. Install Water softer when hard underground water is used. And install a strainer to remove any impurities for preventing blocking. Also please check the salinity of the water with salimeter first and remove that, if it has.



4. Supply with adequate amount of water by opening the main water supply valve. Please check the valve is opened before using the machine.



< Water filter



< Salimeter

If the water supply is inadequate due to low-pressure, water condition or salt specification, the concentration of the solution will be high and makes error. So, please check the using condition surely before using the machine.

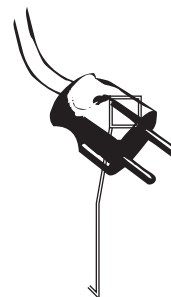


## 5. How to install

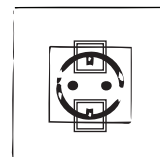
▷ Note of caution   ▶ Ground connection   ▷ Wire connection   ▷ Pipe connection

### How to make a proper ground connection

- Please use a Grounded receptacle or make a ground for safety. If not, it may involve some danger of electric shock.
- Make sure to connect the Ground wire to a Grounding pole of the floor or Grounding connector. (metal pipes)
- Do not ground the machine to a gas pipe or an antenna.



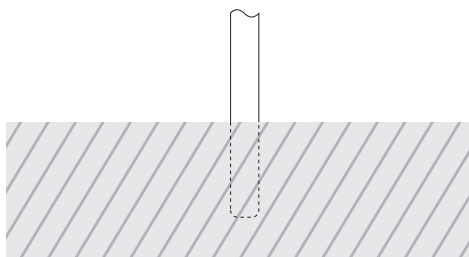
Grounding pin



Cover of grounded outlet box

### Typical earthing method

- A typical earthing electrode, consisting of a conductive rod driven into the ground.
- Electrical cords specify that earthing wires must be a certain color, to prevent wiring errors.
- In case of connecting a grounding conductor to copperplate, please bury copperplate under humid enough ground more than 75cm.

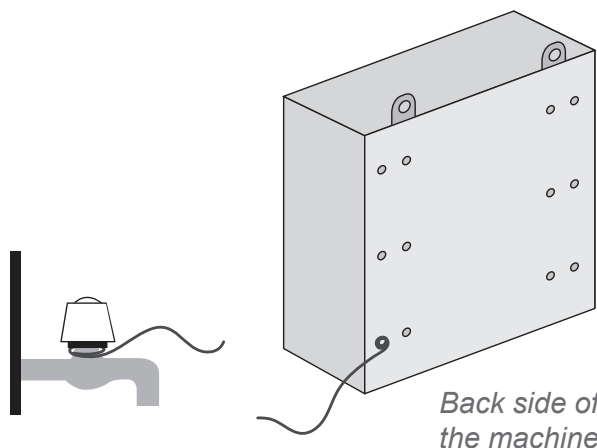


*Dig a hole about 2 feet deep.*

### Earthing method with Water pipe

**This is a temporary method if there is no way to ground, but we don't recommend this kind of way. Please have to find the correct typical earthing method for your safety.**

- Please wind a grounding conductor on a faucet 2~3 times.
- Loosen the bolt at the back of the machine.
- And wind the grounding conductor 2~3 times.
- After that, fasten the bolt.



*Back side of the machine*

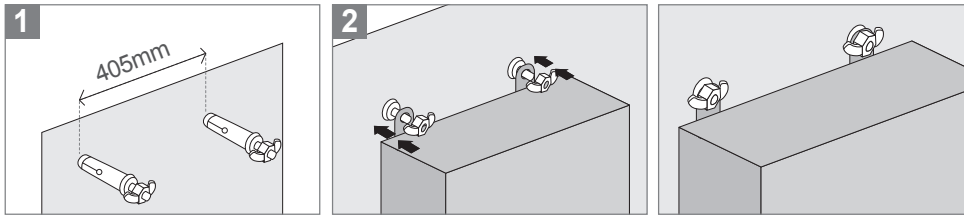


## 5. How to install

▷ Note of caution   ▷ Ground connection   ▶ Installation   ▷ Pipe connection

### How to hang the machine on the wall

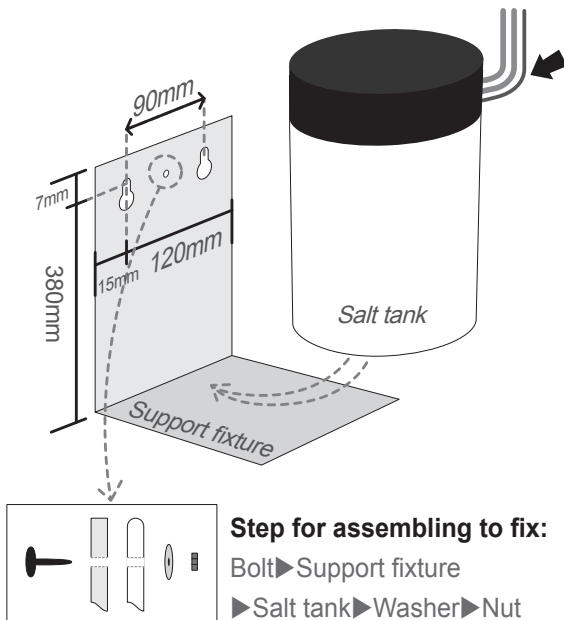
#### Main unit



1. Drill two holes and screw each anchor bolts on the position where the main unit will be installed. (Clearance between the holes 405mm)
2. Hang the main unit on the anchor bolts and tighten the nuts.

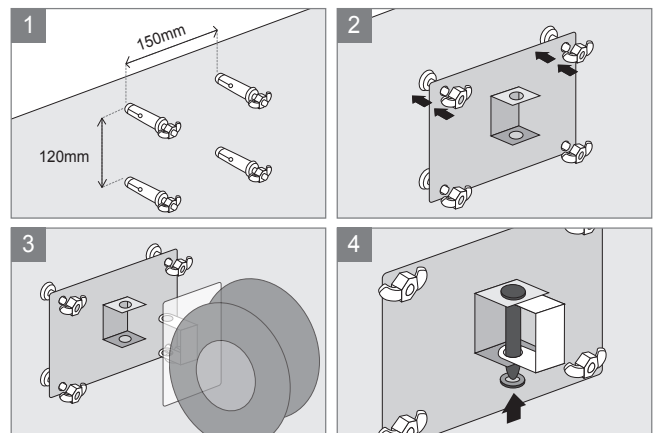
#### Salt tank & Support fixture

You must connect the Hose for [saline], [water] and Wire for controller before making a trial run.



**\*\*\* PLEASE INSTALL THE SALT TANK WHERE USER CAN SEE INSIDE.**

#### Hose reel



1. Drill four holes and screw each anchor bolts on the position where the hose reel will be installed. (Clearance between the holes: width 150mm X length 120mm)
2. Hang the rear panel on the wall where the anchor bolts are stuck and tighten the nuts.
3. Place the hose reel at the U-shaped bracket and then attach the bracket hole with the fixing pin.
4. Lastly, anchor the fixing pin that the hose reel may not to be fallen out.



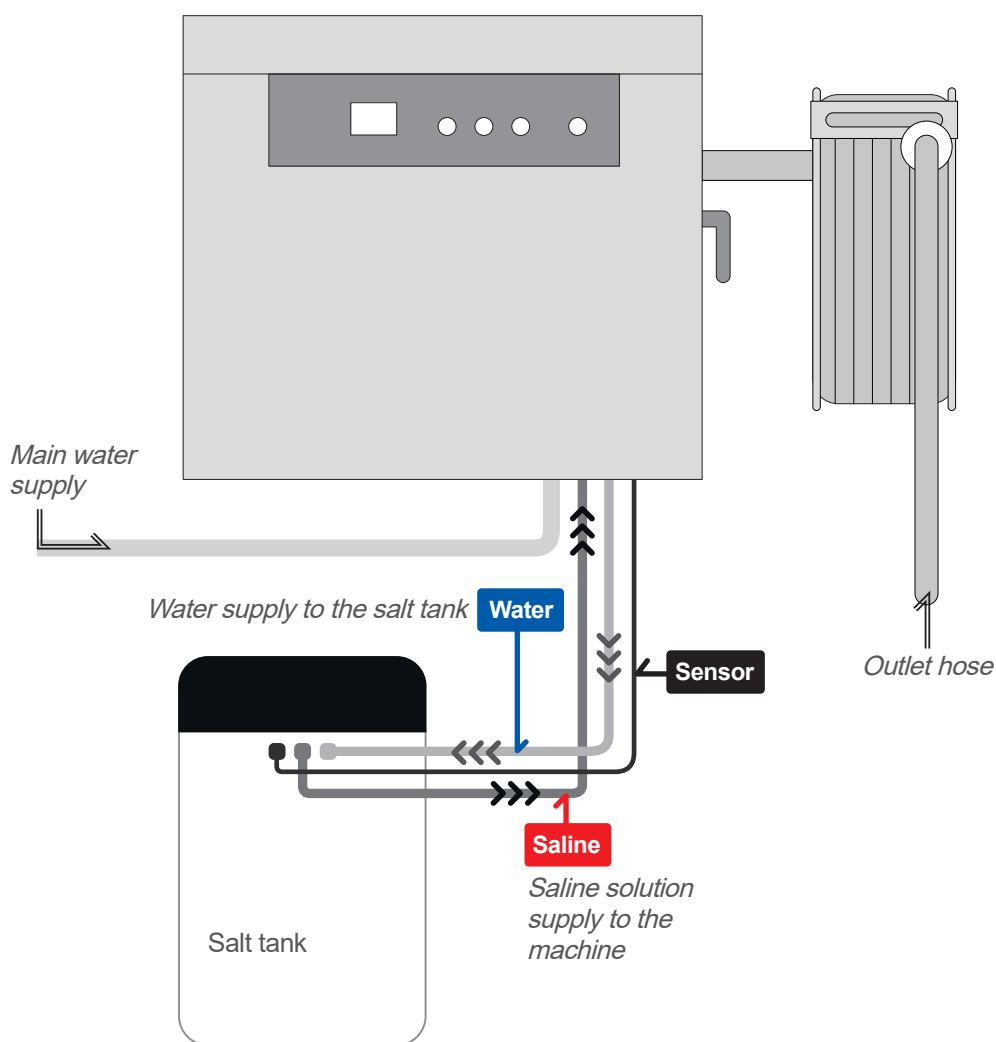
## 5. How to install

▷ Note of caution   ▷ Ground connection   ▶ Installation   ▷ Pipe connection

### How to connect the wire of salt tank

Please connect the each hoses with the same color's label between the main unit and salt tank.

**\*\*\*You must connect the each hoses and wire before making a trial run of the machine.**



**Do not bend the outlet hose and never install any valve in front of the outlet hose.**

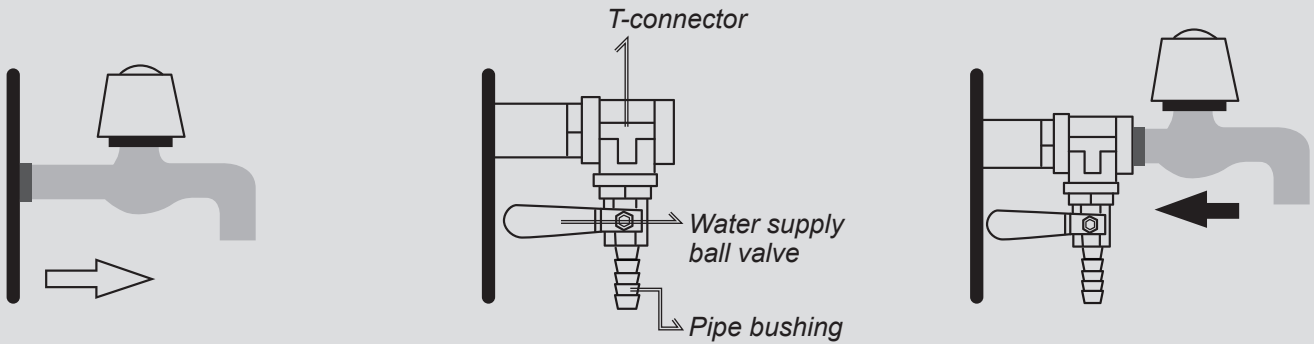


## 5. How to install

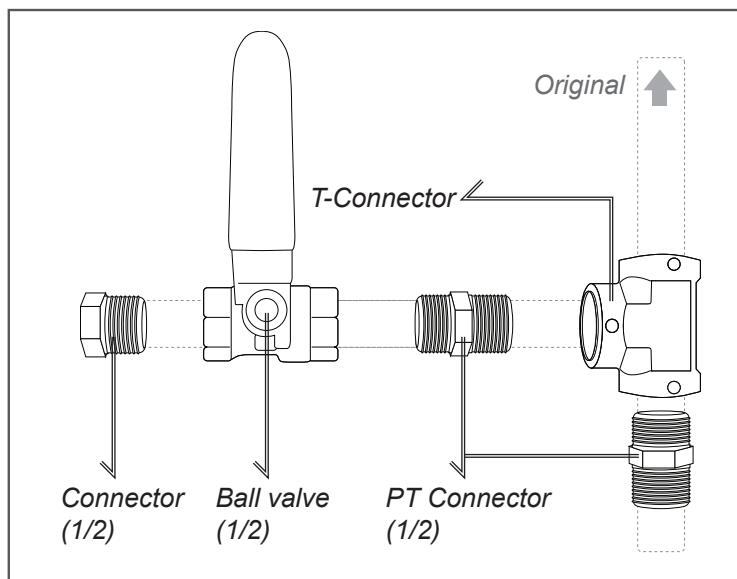
- ▷ Note of caution   ▷ Ground connection   ▷ Wire connection   ▶ Pipe connection

### Water pipe connection

1. Remove the faucet.  
(Close the Water pipe before this.)
2. Connect the appropriate Water pipe connector.
3. Reconnect the original faucet and Check the water pressure is appropriate or not.



### Piping materials (Provided)



### Check for Water quality

Install a Water filter (Strainer) to remove any impurities for preventing blocking of the flow, if the water quality is not good.





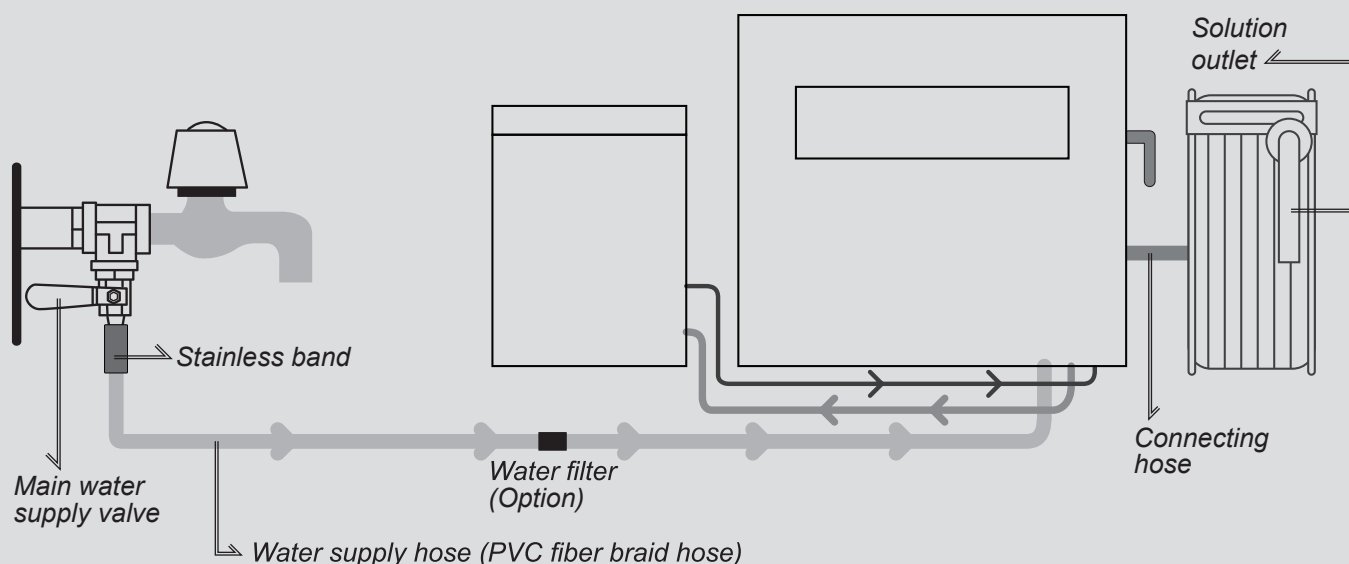


## 5. How to install

- ▷ Note of caution   ▷ Ground connection   ▷ Wire connection   ▶ Pipe connection

4. Connect the water supply hose from main faucet to the connector at the bottom of the machine.

5. Open the Main water supply valve to supply water to the machine. And please operate the machine by pressing the 'Generator (On/Off)' button to check it works normally. First time, it may show error message 'Er'. Then just turn off the power and try again. (Because of 'Air pressure' inside hose at first.)



### Water pipe connection

- Hose standard: PVC fiber braid hose 12mm
- Pipe bushing : 1/2, 13mm
- Ball Valve: 1/2
- Pipe T-connector: 1/2
- Tightening band: Stainless band

After completion of installation, please check sodium hypochlorite is produced properly. If the outlet cleaning solution does not meet the product specification (100/200ppm of chlorine concentration), open the front cover and adjust the Water supply control valve (Refer to the page 21) to gain right concentration(ppm) of solution.

### NOTED :

**If you want to use the maximum amount (around 20L/min) of the solution,**

you should break the parts of hose reel off because the hose reel's internal diameter is quite narrow, so the supplied water into the machine cannot go out entirely. **But never install any valve or something in front of the cleaning solution outlet part.**



## 6. Troubleshooting

▶ Check the saline solution & water supply    ▷ Check other parts    ▷ Troubleshooting

NEVER touch, modify or repair the parts inside the machine arbitrarily.

Cause	Action
<p>When the Saline check lamp is blinking with a buzzer alert and the number of display cannot increase more than 10, with a display 'Er' message.</p>	<ol style="list-style-type: none"> <li><b>1. Lack of salt:</b> Turn off the power and refill the refined salt into the Salt tank sufficiently.</li> <li><b>2. When the air was filled inside the pump and other parts:</b> Press the button in order; [Power] - [Clean] - [Time]. Then the machine checks the condition inside automatically for maximum 3 minutes. After that (the working condition is set normally) machine will work to generate the cleaning solution automatically.</li> <li><b>3. When Solenoid valve was blocked by foreign substance:</b> Change the valve. Please request repair service.</li> <li><b>4. If it keeps flashing an error message:</b> You have to check the SMPS &amp; Pump. (Refer to the page 20) If there are some problems, please request repair service.</li> <li><b>5. If the machine automatically goes into the Cleaning mode during generating (After cleaning, Saline check error occurs.):</b> Check to make sure that salt tank is filled with the appropriate amount and also the salt is not solid. If there is normal, electrolytic bath has a lot of salt inside. So, please clean the inside by pressing the 'Clean' button more. (About 2 to 3 times repeatedly). If the problem still can not be solved, please request repair service.</li> </ol>
<p>When the Water check lamp is blinking with a buzzer alert and the number of display increases more than 25, displaying 'Er' message.</p>	<ol style="list-style-type: none"> <li><b>1. Lack of water supply:</b> Please check the main water supply valve is opened properly. (If this is closed, please open the valve slowly to increase the supply of water to adjust the amount of water.) And check water pressure is suitable or not.</li> <li><b>2. Damage of Water supply Solenoid valve:</b> Change the Water supply Solenoid valve. Please request repair service.</li> <li><b>3. Damage of the sensor unit or control box for controlling the water level:</b> Change that by request repair service.</li> <li><b>4. When the water pressure or amount is weakened by arbitrarily manipulating the 'Concentration adjustable valve' inside the machine:</b> Press 'Clean' button to clean inside automatically 2~3 times. After that, please request repair service.</li> </ol> <p><i>This Error (Water check) is caused by lack of the amount of supply water. In that case, <b>you have to clean salinity inside the machine by pressing the 'Clean' button to lower the salinity.</b> Water is supplied for 2 minutes and cleans inside automatically. (When cleaning, any other buttons except on the Power and Generator button are not operated.)</i></p>

\*\*\* When the number on the display is over '28' with a 'beep' sound, the machine operates to supply the water inside to clean automatically. (Max. 20sec. & Max. 5times) After that, it will work normally.

\*\*\* But if this issue occurs frequently, please check about that; 1) Water supply issue(amount & pressure), 2) Saline filter (Refer to the page 20; How to clean the saline filter inside the salt tank).



## 6. Troubleshooting

▷ Check the saline solution & water supply   ► Check other parts   ▷ Troubleshooting

In case of abnormal operation, unplug the power cord and request a repair by contacting the seller.

Condition	Cause	Action
1. When the power lamp is not turned on and no 'beep' sound.	1. Power cord is unplugged from the socket. 2. Burnt out fuse.	1. Check the cord, fuse and plug in the cord. (To reduce the risk of fire, replace only with the same type '250V 15A' fuse.)
1. When the power lamp is not turned on but can hear 'beep' sound only.	1. Control PCB is damaged.	1. Please request a repair service to change the Control PCB.
1. When any operation is not performed without only turning on the power lamp and a 'beep' sound.	1. The power was shut off because of Pressure sensor. ('Error lamp' of power PCB is turned on only.) 2. If install any valve on the Outlet hose.	1. Check whether the outlet part is blocked and the water pressure is within normal range. 2. If both of them are normal, request repair service. because there may be pressure issue due to foreign substances in the parts inside.
1. Water and saline solution are supplied, but the num. on the display doesn't go up (0~5). 2. When the front 4 lamps (SMPS) were turned off more than one.	1. Abnormal SMPS power due to overload. 2. PCB circuit problem.	1. Check the SMPS. (Refer to the page 20) If it is damaged, request a repair service.
1. Leaking water.	1. Hose or piping problem. 2. Solenoid valve was blocked by foreign substance.	1. Check the hose and pipe (pipe line, tighten band, elbo, etc.) and repair that parts. 2. Change the part of Solenoid valve.
1. When you have twinge because of micro electricity.	1. Machine is not grounded properly. 2. Socket is not grounded.	1. Check your socket is grounded.
1. When the exact concentration (100/200ppm) cannot be made normally.	1. Lack of supply amount of water. 2. The water pressure is not proper. 3. Water solenoid valve doesn't work normally because supplied water has many impurities.	1. Disassemble the front cover and adjust the water amount control valves for adjusting concentration. 2. Check the water pressure and if it is too low, install a booster pump. 3. Change solenoid valve or Install a water filter to remove impurities.
1. The machine seems to work normal on the display board, but something is not normal.	1. Some wires are broken. 2. Power PCB is damaged.	1. Check the wires are connected well. 2. Check the each lamps are turned on on the Power PCB. If not, please request a repair service.



## 6. Troubleshooting

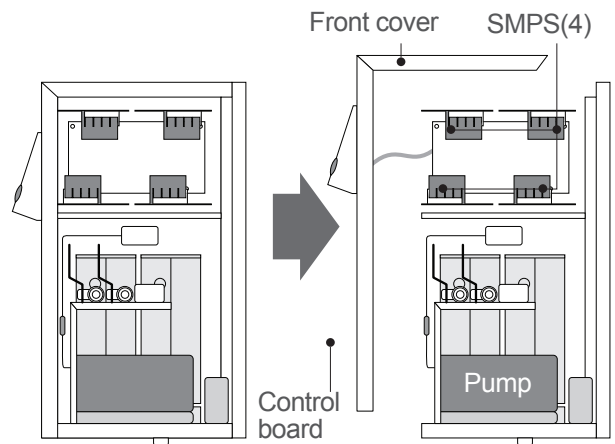
- ▷ Check the saline solution & water supply    ▷ Check other parts    ▶ Troubleshooting

### ▶ Check the SMPS

1. Please check that the Indicator lamp for SMPS is turned off, and make sure which parts have a problem (A, B, C, D).
2. Please turn off the power before disassembling the machine.
3. Disassemble the front cover of the machine. (Be careful of breaking off the Wire of control panel which is connected each other.)
4. Turn on the power and press the Generator (On/Off) button.
5. Please check that the lights-out lamp on the SMPS Unit was turned on or not. And the lamp is not turned on still, it is broken down, and you have to request repair service.

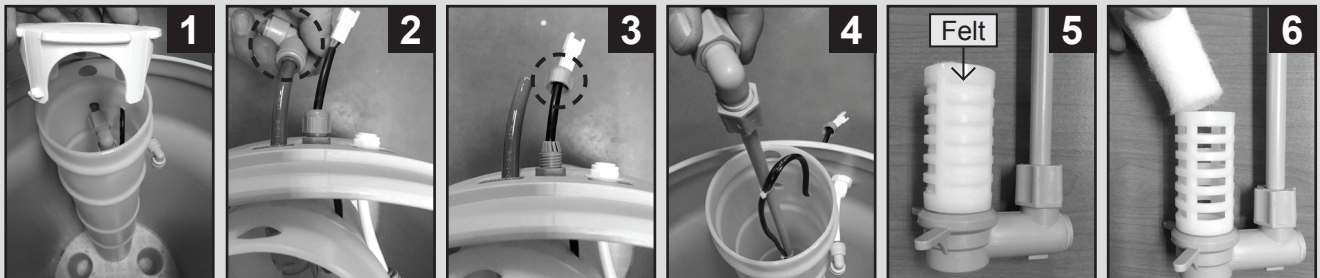
### ▶ Check the Pump

1. Please turn off the power before disassembling the machine.
2. Disassemble the front cover of the machine.
3. Press the power switch and Generator button.
4. Simply see with eyes that pump is working with some sounds and vibration. If it doesn't work, it was broken down and you have to request repair service.



### ▶ How to clean the saline filter inside the salt tank

If the saline filter inside the white bottle of tank is mossy with impurities, please disassemble it and wash out. **Never disassemble it when the machine is working because the salt particle will go into the hole and makes some problem.**



1  
Open the white cap from the bottle.

2  
Disconnect the fitting from the back side of the tank.

3  
Disconnect the fitting from the cap.

4  
Let out the Supporter from the bottle.

5  
let out the 'felt' inside the filter case and wash out with tap water.

6  
After washing, roll up the felt and put into the filter case again.



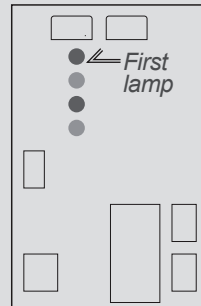
## 6. Troubleshooting

- ▷ Check the saline solution & water supply    ▷ Check other parts    ▶ Troubleshooting

### ▶ Circuit for Salt tank

Disassemble the cover and check the Water level control circuit.

The first lamp on the circuit is turned on and others also are turned on in rotation when it works normally. If any lamps didn't turn on, please request repair service.

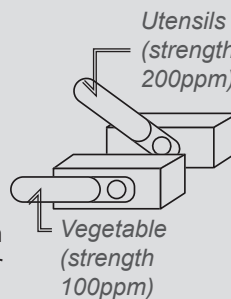


### ▶ Concentration adjustable valve

You can adjust the amount of water to adjust the concentration(ppm) with this valve placed inside the machine by disassembling the front cover. If you close this valve, the amount of supply water will be decreased.

#### Why the Utensils side's valve is quite closed?

As 'Utensils' is needed 200ppm which is more high concentration than 'Vegetable (strength 100ppm)', the supplied amount of water has to lower than that.

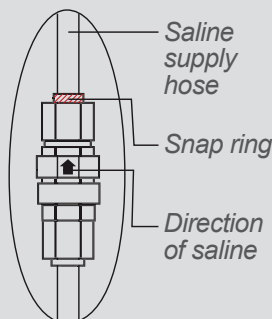


### ▶ How to clean the Check valve

#### Check valve for saline solution :

Prevent flowing backward of the saline solution or sodium hypochlorite during the machine is operating.

- 1. Disassembly :** Push the snap ring and pull out the Saline supply hose.
- 2. Assembly :** Put in the Saline supply hose to the original place. Please put it into the end, or it will cause leakage.



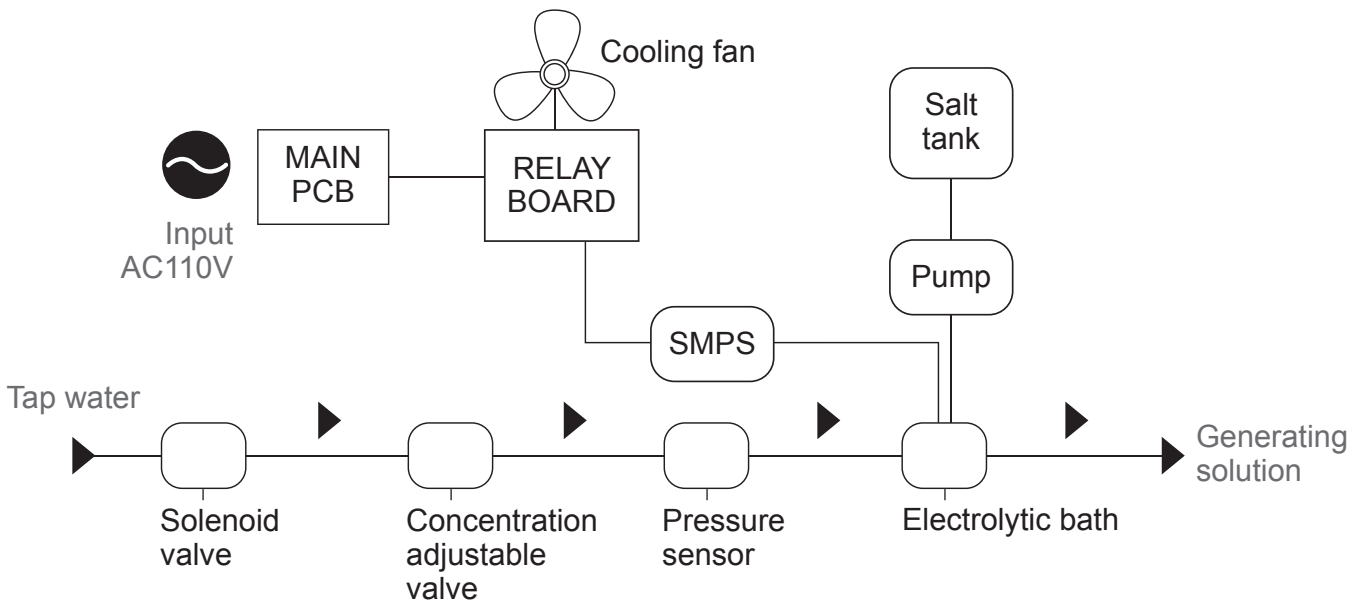


## 7. Replacement period

### Electrodes replacement period

- When the consumption of saline solution is significantly increasing abnormally.
- If the display number inside the machine decreases during its normal operating process and 'Er (error)' message keeps showing up.
- When the smell of chlorine significantly decrease.
- The lifespan (approx. 10,000 hours) of the electrode may vary depending on water quality.
- Request a repair in case of the above situation after a prolonged use.

### Block diagram



**- M E M O -**

## Quality Warranty

Product Name	NaOClean Generator
Model	DES-10K
Warranty Period	One (1) year from the date of purchase
Date of purchase	
Purchaser : address	
Point of purchase : address	

### Regulations of Product Warranty

- This product was manufactured through strict quality control and inspection.
- Services arising from failure that takes place after the expiry of the warranty period will be charged for.
- During the warranty period, one year from the date of purchase, this product shall be serviced free of charge as far as manufacturing defect is concerned.
- This product is warranted in accordance with the description on the quality warranty.

### How to request for service

- If you find any abnormality or have a question while using this product, please contact a nearby distributor or our head office.
- In order to request for services, you need to present this quality warranty duly filled out. Therefore please keep it carefully. In case you get charged services, please make sure to keep the receipt carefully.

### Consumer damages compensation

#### • **Free services:**

For any failure related to the function and performance of the product that takes place in the course of normal operation within the warranty period.

#### • **Charged services:**

1. When the warranty period has expired

2. **During the warranty period, if failure was caused by:**

- **Careless handling of the product.**

- **Unauthorized repair or alteration of the product.**

- **Damage during transportation due to mishandling.**

**\*\*\* Please fill out the quality warranty completely and keep it carefully.**

# USHIO

800.838.7446

Form No. M-DES-10K-1217