



## Solar Water Purifier(S) ~SOLAMIZU~

# User Manual

Model Number: KTN-SWP-S

For a disaster

<Usable raw water>



Freshwater

Sea water

<Usable power>



PV panel



Household  
outlet



Car battery



Thank you for purchasing.

※Use this product after read and understand this user manual.

※This is also product warranty, so keep it in a safe place.

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Before use

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Other



KITANI ELECTRIC CO.,LTD

# What can do with SOLAMIZU

- The product can purify water such as river or rainwater to cleaned water with electricity stored in the battery (Li-ion battery) by photovoltaic generation when electricity and water supply stops in the event of a disaster.
- As an emergency power supply, compatible equipment can be charged and used from the USB port and cigar socket.

※When you store the purified water, take responsibility for your actions. If you store purified water in a vessel with insufficient disinfection or a vessel with dust, bacteria will propagate.

※We will bear no responsibility for any damage, accident or injury when used under conditions other than described in this manual.

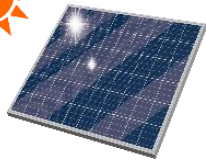
## You can select one of 3 types of power supplies to charge the built-in battery.

### Solar charge

The product generates Electricity and charges the Li-ion battery by sunlight.

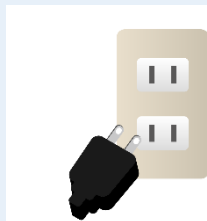


⇒P12



When it is sunny, it takes 5 hours to charge the built-in battery fully.

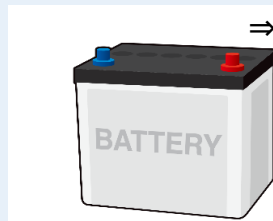
The product can work and charge the built-in battery with electricity supply from the 100-240V outlet.



⇒P14

It takes 3 hours to charge the built-in battery fully.

The product can work with electricity supply from the 12V car battery.



⇒P14

The built-in battery cannot be charged fully by this method. It can be charged about 30% and operate.

## The product has a water purification function and 2 types of power supply functions.

### Water purifying

You can easily secure drinking water at the time of disaster.

⇒P15



When fully charged, the product can work for about 5.5 hours.(About 66L of purified water.)

### Power supply①

You can use equipment that supports USB connection.

⇒P19



You can charge two smartphones at the same time.  
It is possible to charge 15 units with the battery full charged.

### Power supply②

You can use equipment for cigar socket.

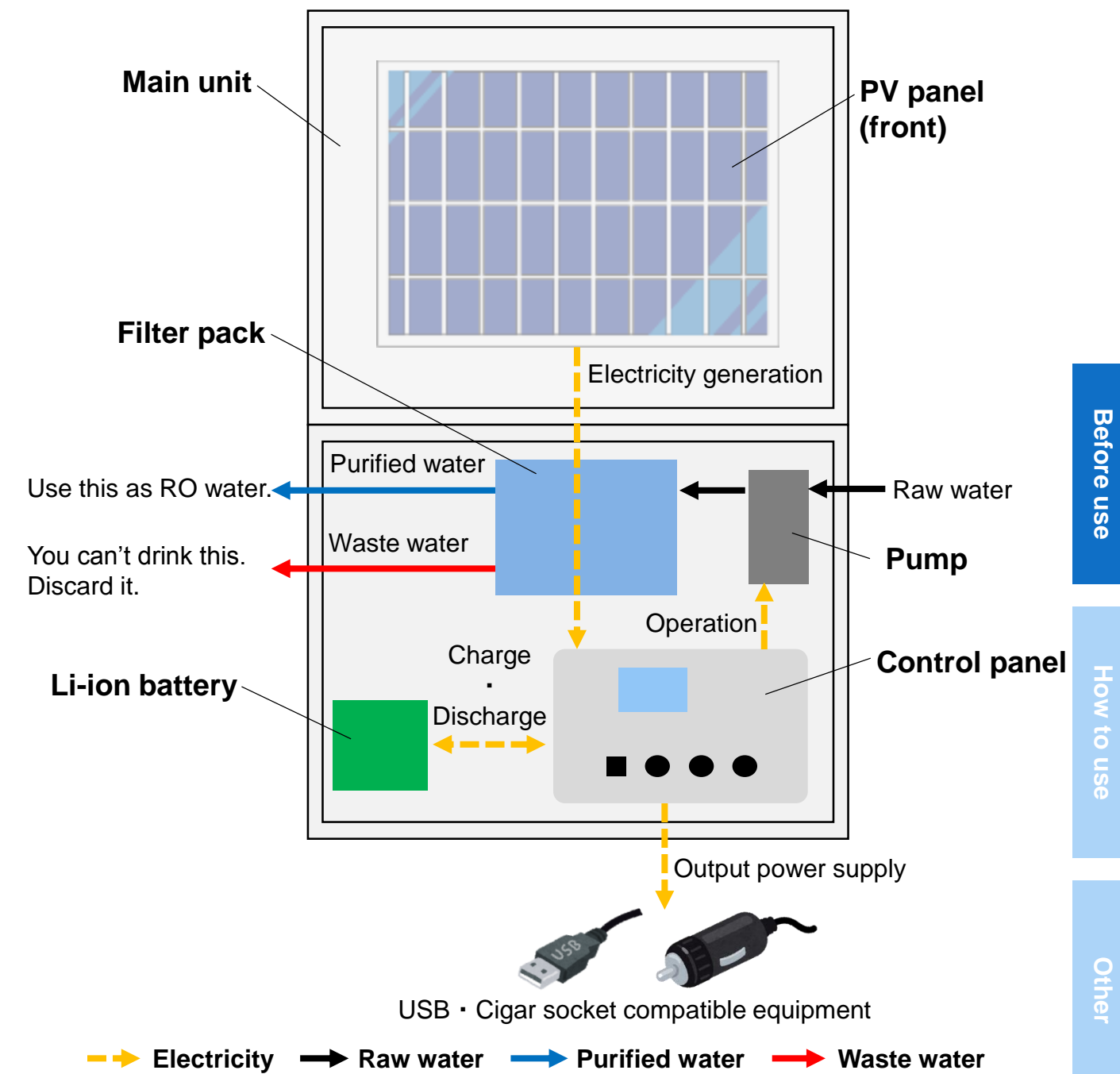
⇒P19



(Example of use)  
A car inverter is required (12VDC→100VAC).

# The construction of SOLAMIZU

The product is a reverse osmosis water purifier with power generation by solar module and storage Function with built-in battery.



## <Function of Filter pack>

There are Pre-filter, Activated filter and RO membrane filter in the filter pack.

- Pre-filter : It removes rust, dust, and fine solid in the water.
- Activated carbon filter : It removes chlorine, organic matter and musty smell in the water.
- RO membrane : It removes virus, bacteria, heavy metal, and chemical in the water.

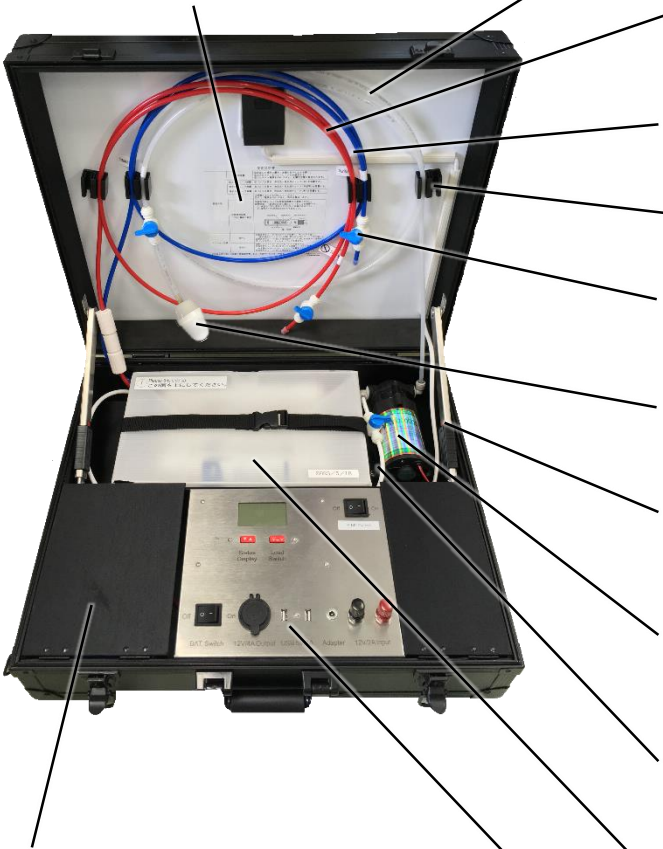
# Name and function

## Main unit

Please confirm whether there are the following parts.  
If there are missing parts, contact the distributor.

### PV panel

It generates electricity by sunlight.  
(front)



### Tube for intake water (Clear)

Raw water goes through it.

### Tube for drainage (Red)

Drainage goes through it.

### Tube for purified water (Blue)

Purified water goes through it.

### Tube holder

### Valve

It opens and closes the tube.

### Strainer

It removes large rust and dust.

### Stay (with stopper)

It fixes the lid (PV panel).

### Pump

It sucks raw water and supply it into the filter pack.

### Tube for intake (White)

Raw water goes through it.

### Filter pack

There are Pre-filter, Activated filter, and RO membrane filter in it.

### Control panel

It operates and displays the power supply.(P5)

### Battery cover

There is Li-ion battery under it.

## [Accessories]



### AC adapter

Use it to charge the product.



### TDS meter (with battery)

It measures the concentration of TDS.



### Shoulder belt

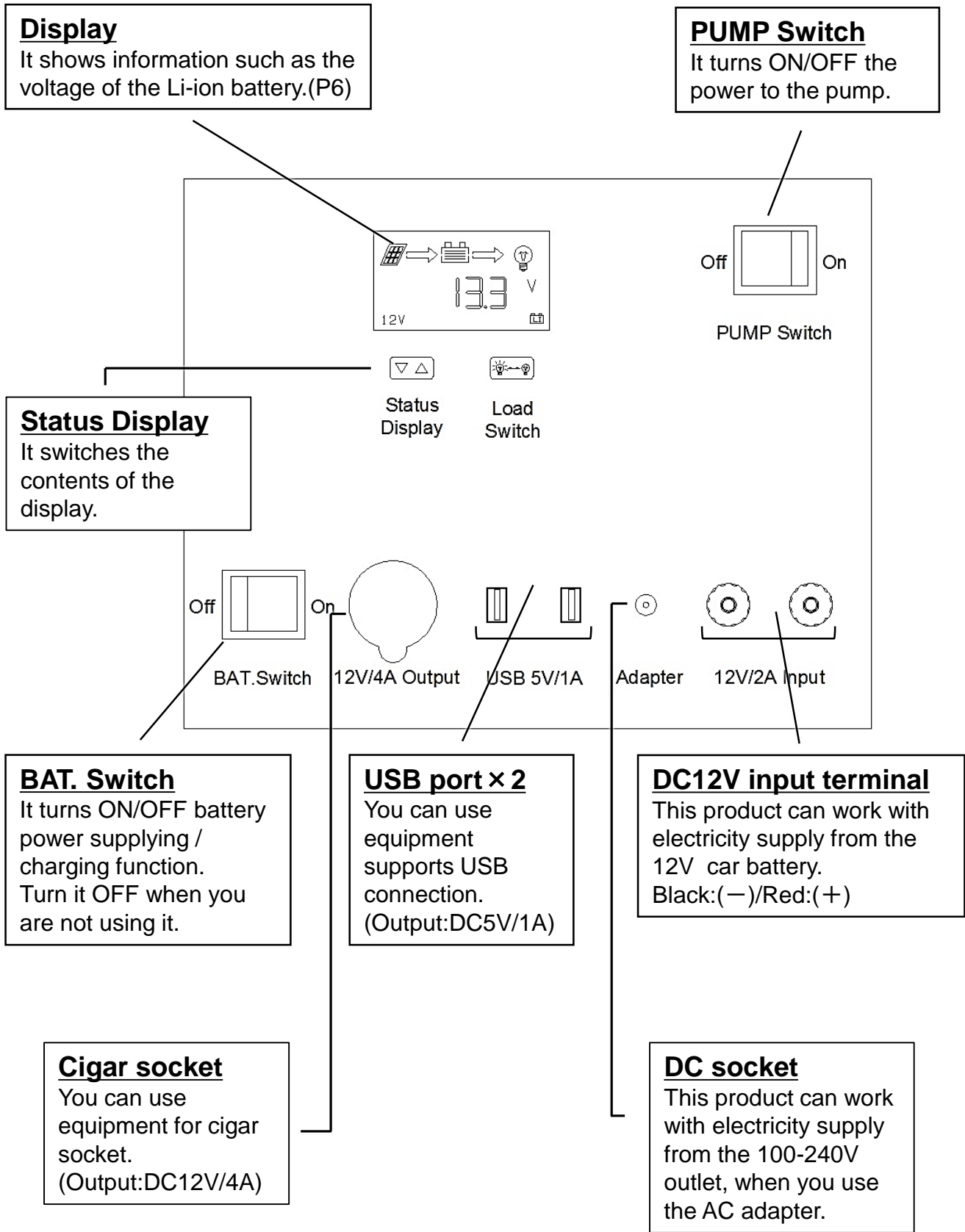
Use this when you hung the product on your shoulder.

Before use

How to use

Other












## Control panel

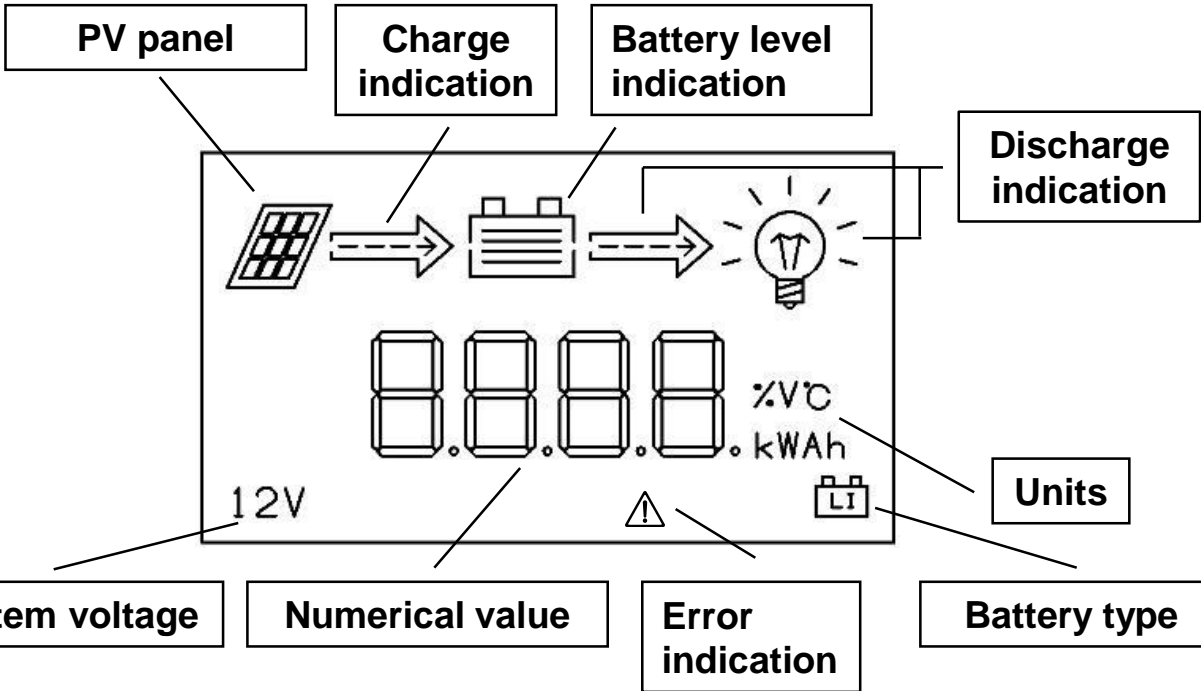


Before use

How to use

Other

Icon	Indicated object	State	Meaning
	PV panel	Steady on	PV panel indication
	Battery	Quick flashing	Battery overvoltage
		Slow flashing	Battery overdischarge
	Battery state of charge	4 dashes	100%
		3 dashes	75%
		2 dashes	50%
		1 dash	25%
		0 dash	0%
	Load	Steady on	Load turned ON
		Steady on	Load turned OFF
		Quick flashing	Overload or Short-circuit protection



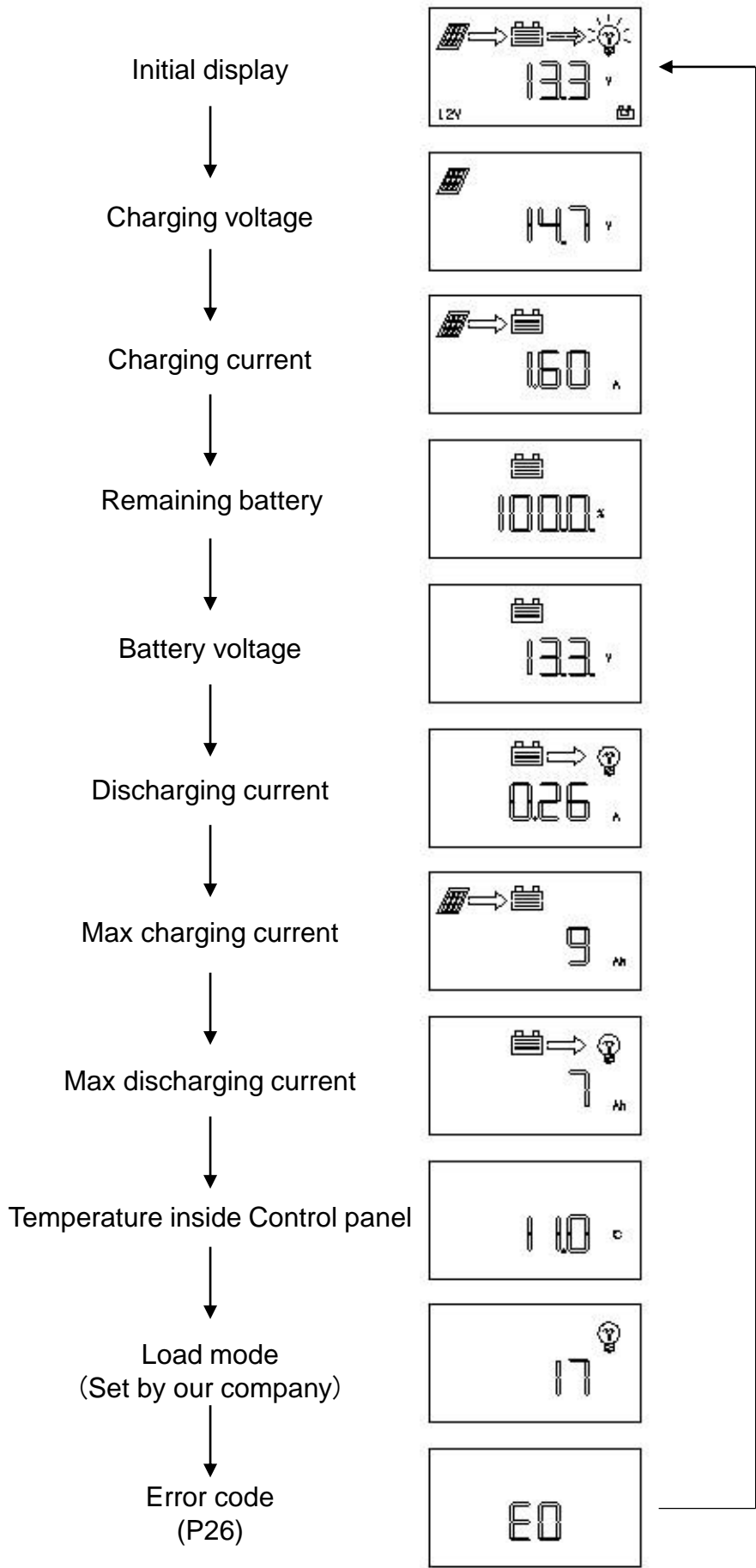
Before use

How to use

Other

# Name and function

By pressing Status Display repeatedly, the display shows the following in order.  
If the keys are not operated for 12 seconds, The initial display is restored automatically.



Before use





How to use






Other









# Safety precautions

Be sure to this contents to prevent the harms to a person and the damages to property.

Meaning of marks	
	<b>Warning</b> This is a content that may cause death or serious illness.
	<b>Attention</b> This is a content that may cause mild symptoms or damage to property.
	This is a content that you must not do this.
	This is a content that you must do this.

 <b>Warning</b>	
 Don't disassemble this product. ※It may cause failure or injury.	
 Use genuine product absolutely for component parts of this product. Don't modify the parts or exchange them with the ones other than the genuine products. ※It may cause failure or accidents.	
 When using raw water, make sure to see and adhere closely to the contents shown in the specifications. ※Harmful substances may remain, and purified water may not be suitable for drinking.	(Raw water condition) Fresh water (tap water, river water, Lake water etc.) Water temperature:4 to 45°C(Not frozen) Freshwater fish can lives. ※Can not use following water. <ul style="list-style-type: none"><li>▪ Seawater.</li><li>▪ Waste water and water that contain many chemicals.</li><li>▪ Water that contain oils.</li></ul>
 Be careful not to get raw water and drainage water in your eyes. ※According to raw water, it may cause infections.	

 <b>Warning about AC adapter</b>	
 Don't hurt the power cord. ※It may cause ignition or electric shock.	
 Don't use this adapter with a voltage other than the power supply voltage (AC100-240V). ※It may cause failure or accidents.	
 Don't plug in / unplug the power plug with wet hands. ※It may cause injury or get an electric shock.	
 Insert the power plug securely. ※It may cause ignition or electric shock if plugging in of the power plug is incomplete.	
 Remove dust periodically. ※It may cause ignition or electric shock if dust pile on the power plug.	

Before use








How to use







Other



# Safety precautions

This product has built-in Li-ion battery. Be sure to observe the following for safe use.

 <b>Attention on battery</b>	
	Batteries are industrial waste. Therefore, don't throw away with general trash. ※Damage or short-circuited during garbage screening may cause overheating, explosion, or fire. ※There is a possibility that you will be punished if you dump it illegally.
	Don't incinerate the battery. ※Toxic gas may be generated, which may adversely affect the human body.
	Don't leave the battery in a place where it will be hot like a car in the scorching sun or near a heat source such as a stove. ※Damage to the protection circuit, leakage, overheating, explosion, or fire may occur.
	When storing waste batteries, keep in a place not affected by wind and rain. In the unlikely event that the electrolyte spills as it is broken, keep it on the floor that doesn't penetrate underground. ※Circuit inside the product may be short-circuited due to the leaked electrolyte, and it may cause fire or rupture.
	If the battery leaks electrolyte or has an unusual odor, stop using it immediately and keep it away from the fire. ※Circuit inside the product may be short-circuited due to the leaked electrolyte, and it may cause fire or rupture.
	Charge the battery regularly to avoid a complete discharge of it. ※If the battery is left for a long time in the state of discharge, the performance may decline.

 <b>Attention</b>	
	Don't give the product a shock. This is a precision instrument. ※It may cause failure.
	Don't put heavy things on this product. ※It may cause failure or damage.
	Don't give the surface of the PV panel a shock because it is made of glass. ※It may cause failure or injure.
	Don't splash water on this product. This product is not waterproofed. ※It may cause failure or get an electric shock.
	Don't pump solids such as sand or gravel. ※If they get caught in pump and valves, it may cause failure or damage.

Before use

How to use









Other

# Safety precautions

Before use

How to use

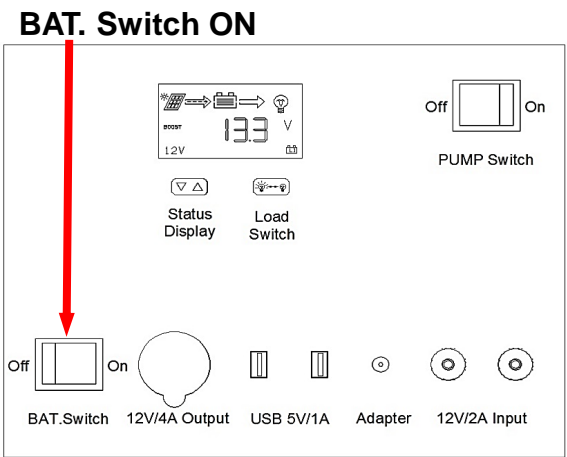
Other

<div> <b>Attention</b></div>	
<div></div>	<div>Keep the exit of the tube for purified water. ※If bacterium invade the tube for purified water and propagate themselves, purified water may not be suitable for drinking.</div>
<div></div>	<div>When you are not going to use the product more than 1 week after use, exchange the filter. ※If bacterium invade the tube for purified water and propagate themselves, purified water may not be suitable for drinking.</div>
<div></div>	<div>At starting of every use, pass water to the filter for more than 1 minute. When using for the first time or after 1 day or more interval, pass water for more than 20minutes. ※If bacterium invade the tube for purified water and propagate themselves, purified water may not be suitable for drinking. ※The purified water may be white and cloudy at the start of purification because air bubbles are mixed in.</div>
<div></div>	<div>To leave an unused filter for a long time , close all valves to prevent water from flowing into the filter. ※Exchange the unused filter before the expiration date.</div>
<div></div>	<div>Use purified water as soon as possible. ※To reserve purified water, put it in a clean vessel and seal it and save it in a cool dark place. Depending on the preservation environment, various bacteria may easily breed even within 1 day.</div>
<div></div>	<div>When using this product under the blazing sun, some parts will be hot of the product even under the proper environment. Check the temperature of the product before using. ※It may cause burns or injury.</div>
<div></div>	<div>Do a periodic inspection to use the product safety. If you don't inspect it and undiscovered product deterioration or breakage, it may cause injury or serious accident.</div>
	<div>(Inspection points) ①Expiration date of the filter(P20) ②Capacity of the battery(P24) ③Operation of the pump(P24)</div>

# Charging

## <From the solar light> (Details : P12)

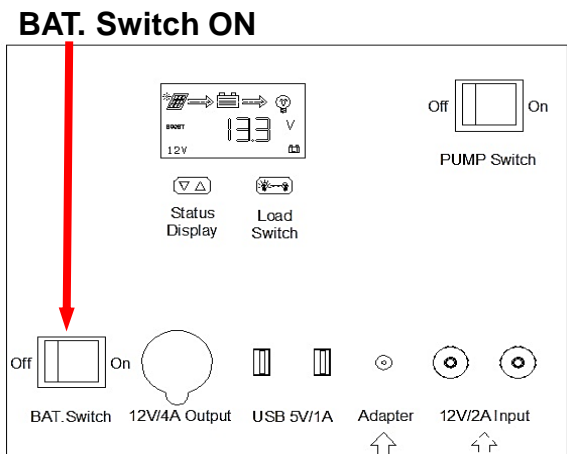
- Turn on BAT.Switch.
- PV panel towards the sun light.



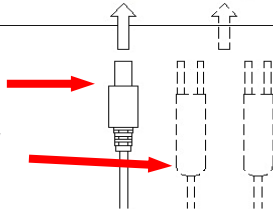
## <From external power source> (Details : P14)

- From outlet
  - Turn on BAT.Switch.
  - Connect the AC adapter of accessory to the outlet.
  - Connect the AC adapters connector to the socket of the control panel.
- From 12V car battery
  - Turn on BAT.Switch.
  - Connect booster cable to 12V car battery.
  - Match polarity and connect to DC 12V input terminals.

※This product can be charged fully with the supplied AC adapter.  
※Only water purification and output power supply function can be used with 12V car battery.

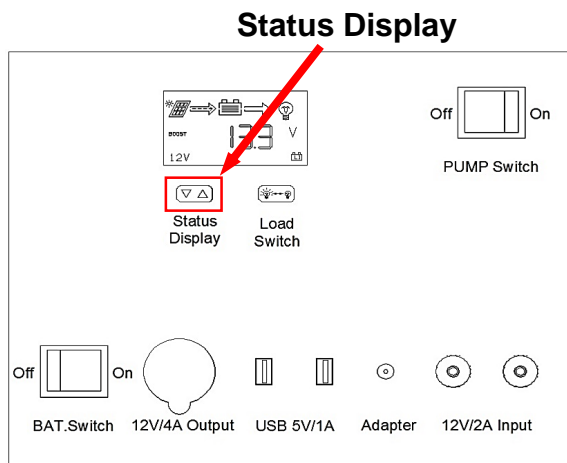


From the AC adapter  
From the 12V car battery



## <Confirmation of charging status>

Press once status display : Charging voltage  
Press twice status display : Charging current  
Press thrice status display : Remaining battery (%)

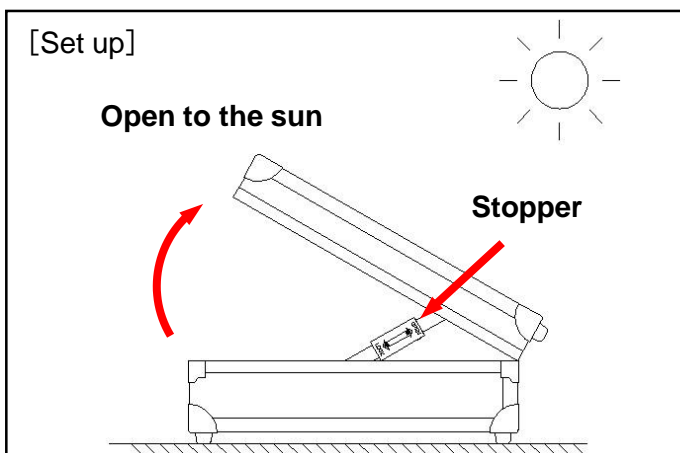


# Charging

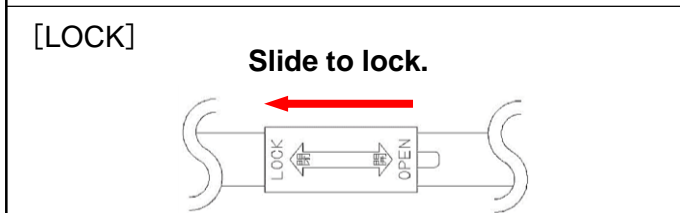
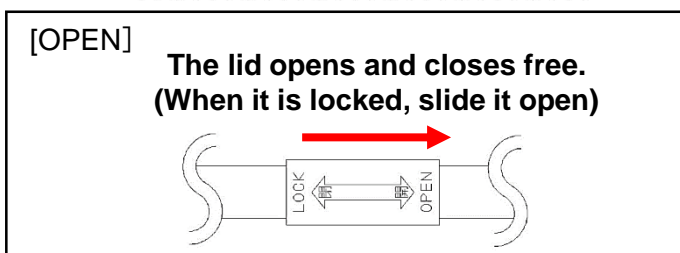
At the shipment, the battery is fully charged. When the battery capacity is decreasing due to self discharge during long term storage, charge the battery before use.

## <From the solar light>

- Put this product in a stable place and open the lid.

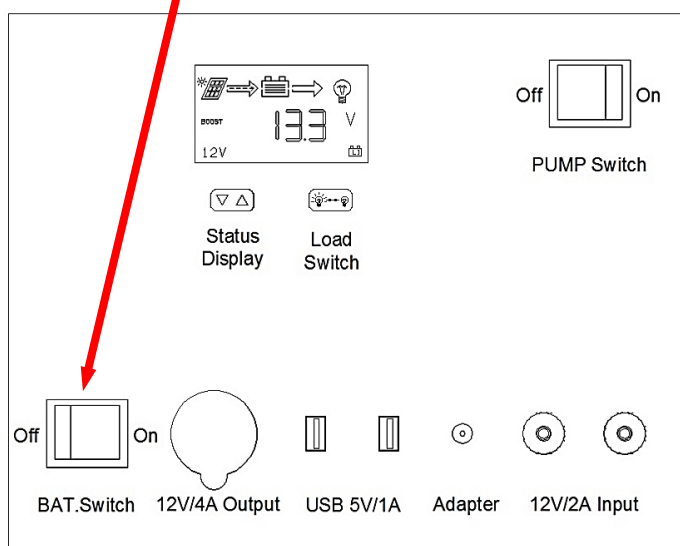


- Fix the lid towards the sun light with right and left stays.



### BAT. Switch ON

- Turn on the BAT.Switch.



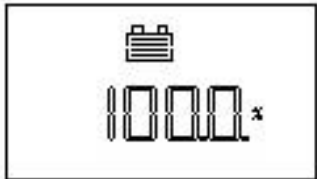
**!** When you open the lid and use it, lock stays so that the lid does not fall.  
 ※It may cause injury by sandwiching the finger.

**!** When using this product under the blazing sun, it will be hot depending on the part even under the specification environment. Check the temperature before using.  
 ※It may cause burns or injury.

# Charging

## <From the solar light>

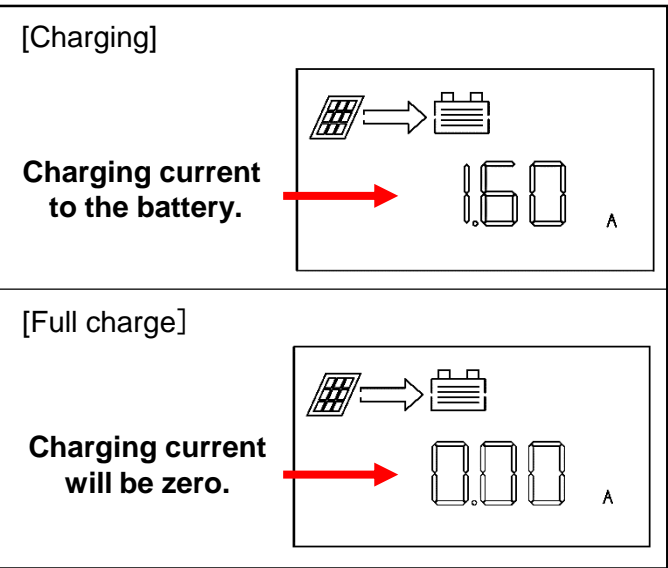
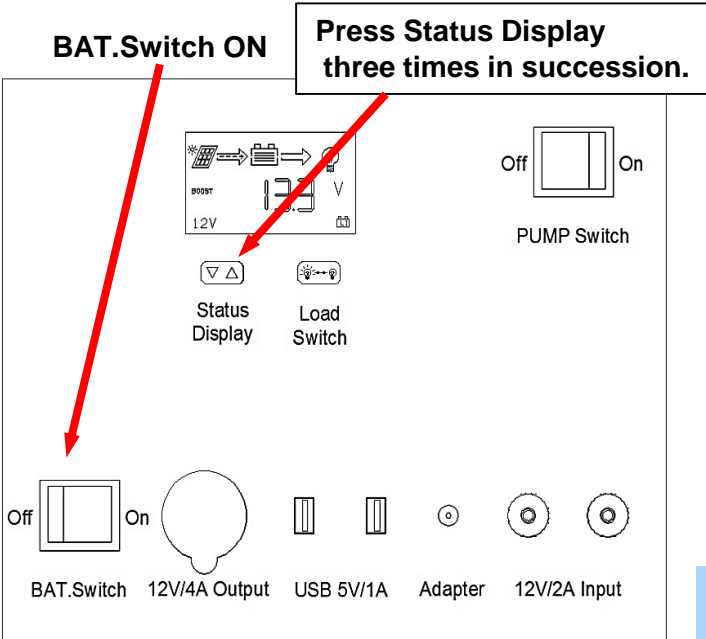
- After setting, When you turn on the BAT.Switch, the PV panel starts to charge the built-in battery.
- Charge it until the remaining battery reaches 100%. To check the battery capacity, press Status Display three times in succession.



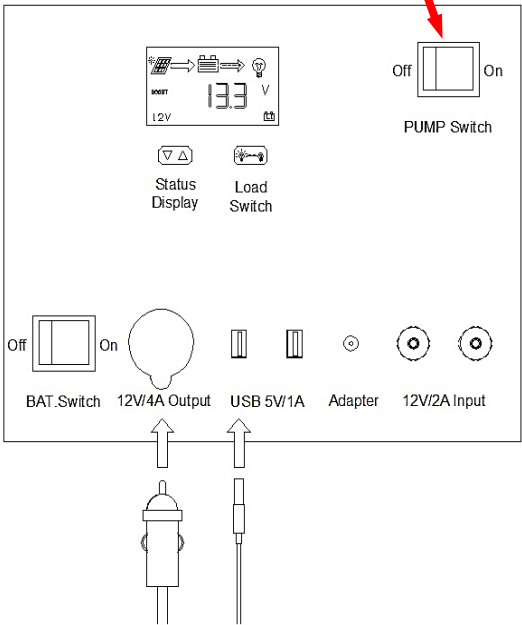
When the remaining battery is 100%.

During charging, charging current is showed.

When fully charged, even if under the sun light, 0.00A is showed.



The pump is available.



- While charging this product, you can use the pump and power supply function(USB port and cigar socket).

Power supply function is available.

Before use

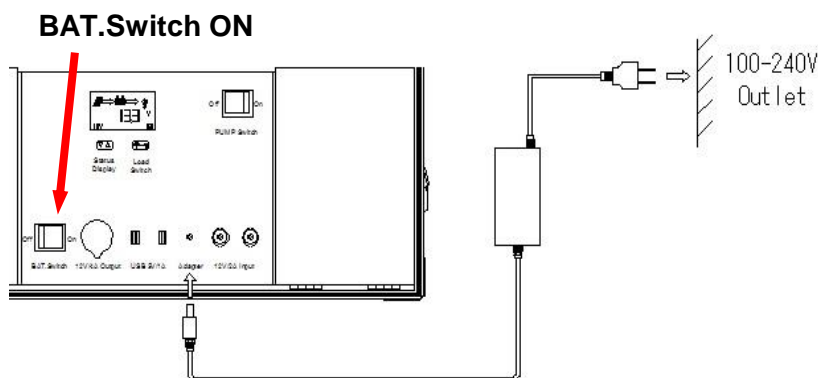
How to use

Other

# Charging

## <From outlet>

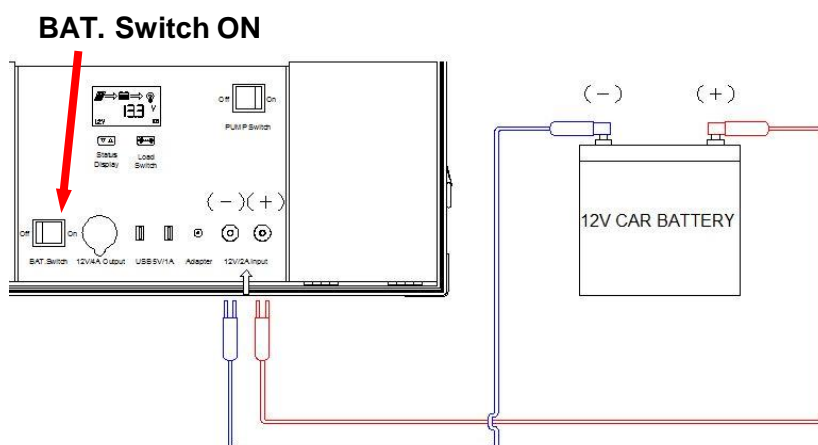
- When you turn on the BAT.Switch and use the supplied AC adapter, you can charge and operate the product connected to the 100-240V outlet.
- Charge it until the remaining battery capacity reaches 100%. To check the remaining battery, press Status Display three times in succession.



- Before use**
- ⊘ Don't use AC adapters of other products.  
※It may cause failure or accidents.
  - ⊘ Don't hurt the power cord.  
※It may cause ignition or electric shock.
  - ⊘ Don't use this adapter with a voltage other than the power supply voltage (AC100-240V).  
※It may cause failure or accidents.
  - ⊘ Don't plug in / unplug the power plug with wet hands.  
※It may cause injury or get an electric shock.
- How to use**
- ⊘ Don't charge outside the operating temperature range written in the specification sheet.  
※It may cause fever, explosion, or fire.
  - ⊘ Insert the power plug securely.  
※It may cause ignition or electric shock if plugging in of the power plug is incomplete.
  - ⊘ Remove dust periodically.  
※It may cause ignition or electric shock if dust pile on the power plug.

## <From 12V car battery>

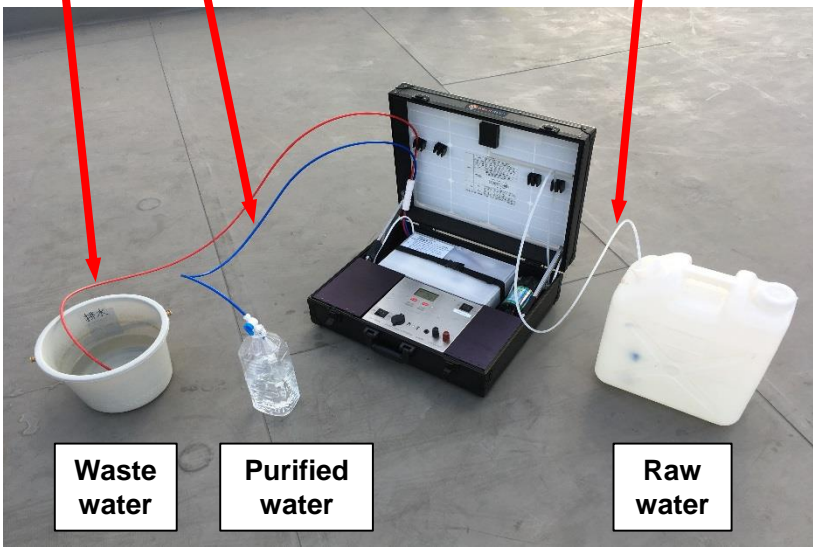
- When you turn on the BAT.Switch, this product can operate with electricity supply from the 12V car battery.
- When using 12V car battery, connect the (+) terminal of the 12V car battery to the (+) terminal(Red) of the control panel, and the (-) terminal of the 12V car battery to the (-) terminal(Black) of the control panel.



- Other**
- ⊘ Be careful not to connect to the wrong polarity when you operate this product with car battery.  
※It may cause failure or accidents.

## 1.To prepare tubes

Tube for drainage (Red)    Tube for purified water (Blue)    Tube for intake water (Clear)



### <Tube for drainage (Red)>

- Remove the red tube for drainage from the case.  
※Remove one by one to avoid that the tube holder comes off.
- Open the valve and remove the cap from the tube.
- Set the tube where you want to drain.  
※You can't drink this water.

### <Tube for intake water(Clear)>

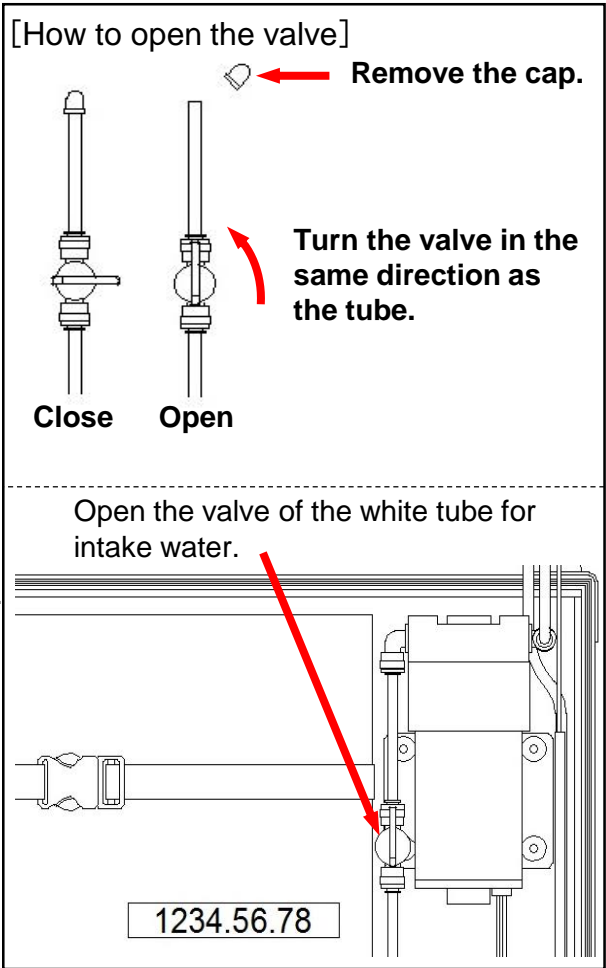
- Remove the clear tube for intake from the case.
- Open the valve.
- Put the tube into the raw water.

### <Tube for purified water(Blue)>

- Remove the blue tube for purified water from the case.
- Open the valve and remove the cap from the tube.
- Set the tube to clean vessel.

### <Tube for purified water(White)>

- Open the valve of the white tube for intake water.



Before use

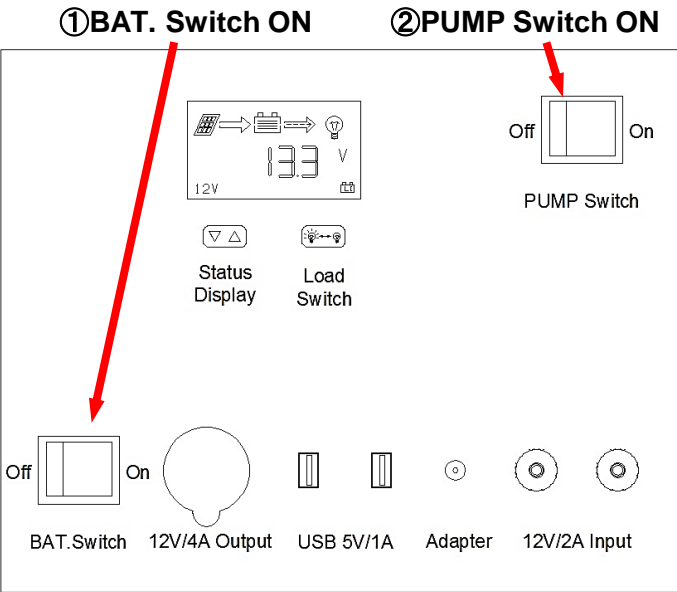
How to use

Other



2.Start water purification

- ①Turn on the BAT.Switch.
- ②Turn on the PUMP Switch, water purification starts.



<div><div>!</div><div>Use purified water as soon as possible. ※To reserve purified water, put it in a clean vessel and seal it and save it in a cool dark place. Depending on the preservation environment, various bacteria may easily breed even within 1 day.</div></div>	
<div><div>!</div><div>At starting of every use, pass water to the filter for more than 1 minute. When using for the first time or after 1 day or more interval, pass water for more than 20minutes. ※If bacterium invade the tube for purified water and propagate themselves, purified water may not be suitable for drinking. ※The purified water may be white and cloudy at the start of purification because air bubbles are mixed in.</div></div>	
<div><div>!</div><div>When using raw water, make sure to see and adhere closely to the contents shown in the specifications. ※Harmful substances may remain, and purified water may not be suitable for drinking.</div></div>	<div>(Raw water condition) Fresh water (tap water, river water, Lake water etc.) Water temperature:4~45°C(Not frozen) Freshwater fish can lives. ※Can not use following water.<ul style="list-style-type: none"><li>▪ Seawater.</li><li>▪ Waste water and water that contain many chemicals.</li><li>▪ Water that contain oils.</li></ul></div>
<div><div>!</div><div>Be careful not to get raw water and drainage water in your eyes. ※According to raw water, it may cause infections.</div></div>	
<div><div>!</div><div>Keep the exit of the tube for purified water. ※If bacterium invade the tube for purified water and propagate themselves, purified water may not be suitable for drinking.</div></div>	
<div><div>⊘</div><div>Don't operate the product when the exits of tubes are stopped or valve is closed. ※It may cause failure.</div></div>	
<div><div>⊘</div><div>Don't pump solids such as sand or gravel. ※If they get caught in pump and valves, it may cause failure or damage.</div></div>	

Before use

How to use

Other

## 3.Examination of water

### <Measuring Total Dissolved Solids> (Operation)

- Pour purified water into clean vessel for preparation of measuring.
- Remove the cap.
- Turn on the TDS meter by pressing the ON/OFF button.
- Soak the sensor in measuring water until Max water level.
- When the display value stabilizes, press the HOLD button to fix it.
- Wash the sensor with purified water and shake off water of it and attach the cap after use.

※This product is not waterproofed.  
Don't soak the Sensor above the max water level.

### <Measuring Total Dissolved Solids> (Examination)

- Measure the Total Dissolved Solids(TDS) of water.  
The unit is ppm(mg/L).
- ※Be sure to measure the raw water and purified water and use this product after confirming that all of the following items are satisfied.

Total Dissolved Solids : Material remaining when sample water is evaporated to dryness.

(TDS : Total Dissolved Solids)

- Criterion :Confirm that all of the following items are satisfied.

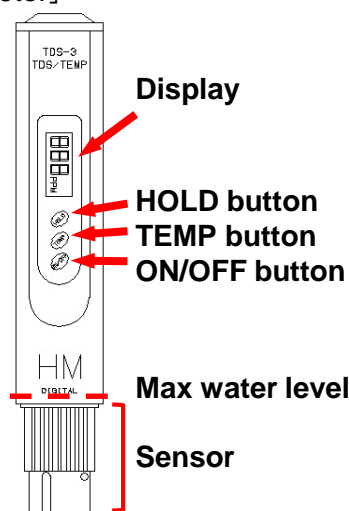
- ①TDS of purified water ÷ TDS of raw water = less than 0.1

②TDS of purified water is less than or equal to 30ppm

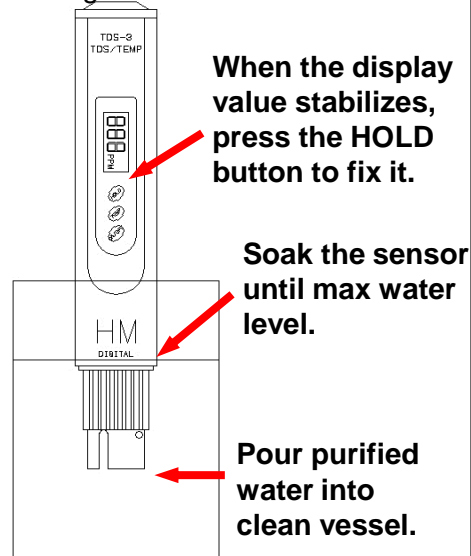
(e.g.)Case of above figures.

$$5[\text{ppm}] \div 110[\text{ppm}] \doteq 0.045$$

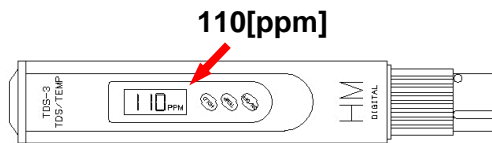
[TDS meter]



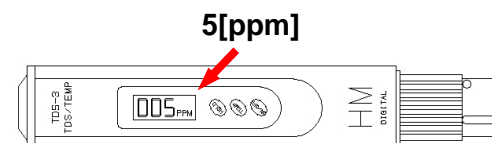
[Measuring]



[(e.g.)Measured value of raw water]



[(e.g.)Measured value of Purified water]



The calculated value is less than 0.1 and the TDS of purified water is 30 or less, it can be used.

Before use

How to use

Other

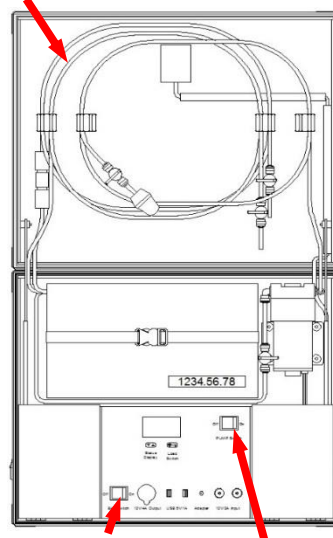
# Care & storage method

## Care

- In order to drain water of the pump, remove the intake tube from the raw water. Then run the pump for 5 minutes.
- Confirm that water does not come out from the tubes for drainage and for purified water.
- Turn off the BAT.Switch and PUMP Switch.
- Close all valves.
- Clear water and close the caps to top of each tubes. Then store these tubes in the back of the lid.
- Close the lid and keep this product in a cool dark place.

[Before closing the lid]

**Close all valves and store all tubes.**



**BAT.Switch OFF PUMP Switch OFF**



When you are not going to use the product more than 1 week after use, exchange the filter.

※If bacterium invade the tube for purified water and propagate themselves, purified water may not be suitable for drinking.



At starting of every use, pass water to the filter for more than 1 minute.

When using for the first time or after 1 day or more interval, pass water for more than 20minutes.

※If bacterium invade the tube for purified water and propagate themselves, purified water may not be suitable for drinking.

※The purified water may be white and cloudy at the start of purification because air bubbles are mixed in.

## Storage method

Store it in a location which satisfies the conditions below.

- Location where might not become wet.
  - ※This product is not waterproofed.
- Location not exposed to direct sunlight
- Location without flammable gas and corrosive gas.
- Location where is not vibrated or impacted
- Location where the temperature is from 4 to 35°C and the humidity is from 25 to 85% (No condensation).
  - ※This product is not be damaged under the condition of 35°C or higher temperature, but the battery power reduces faster.



To leave an unused filter for a long time, close all valves to prevent water from flowing into the filter.

※Exchange the unused filter before the expiration date.

# Output power supply

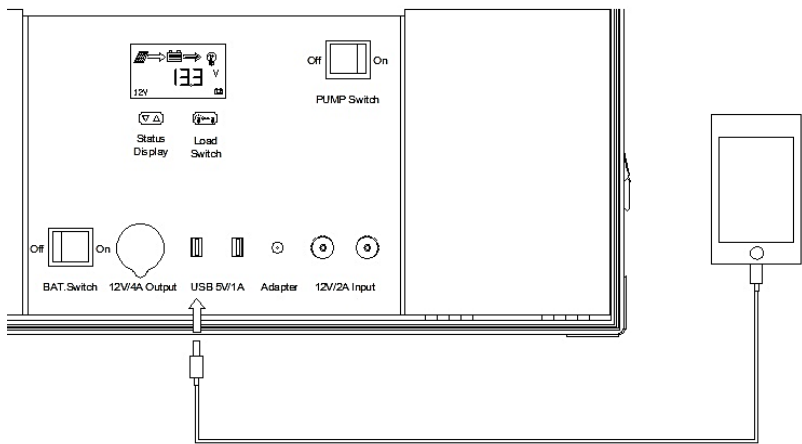
This product has USB ports and cigar socket.

As an emergency power supply, compatible equipment can be charged **or** used from the USB port or cigar socket.

## Supplying power using USB

[(e.g.) Charging of smartphone]

- When you turn on the BAT.Switch, you can use equipment that supports USB connection. Two compatible equipment can be used at the same time.

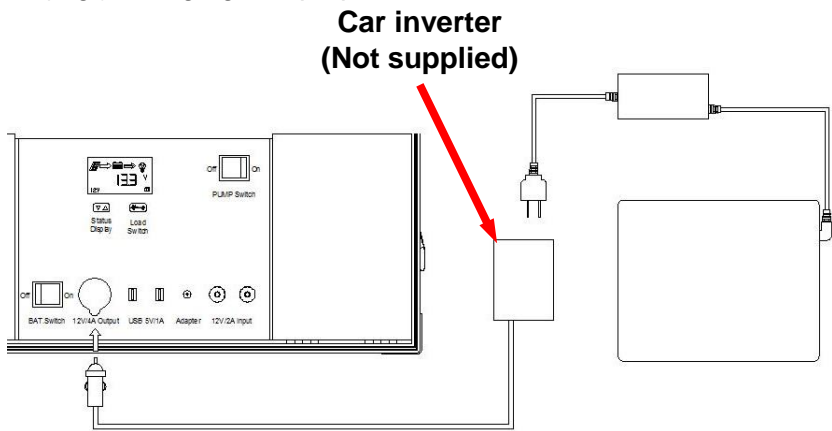


Before use

## Supplying power using cigar socket

[(e.g.) Charging of laptop]

- When you turn on the BAT.Switch, you can use equipment by the power supplied from cigar socket.

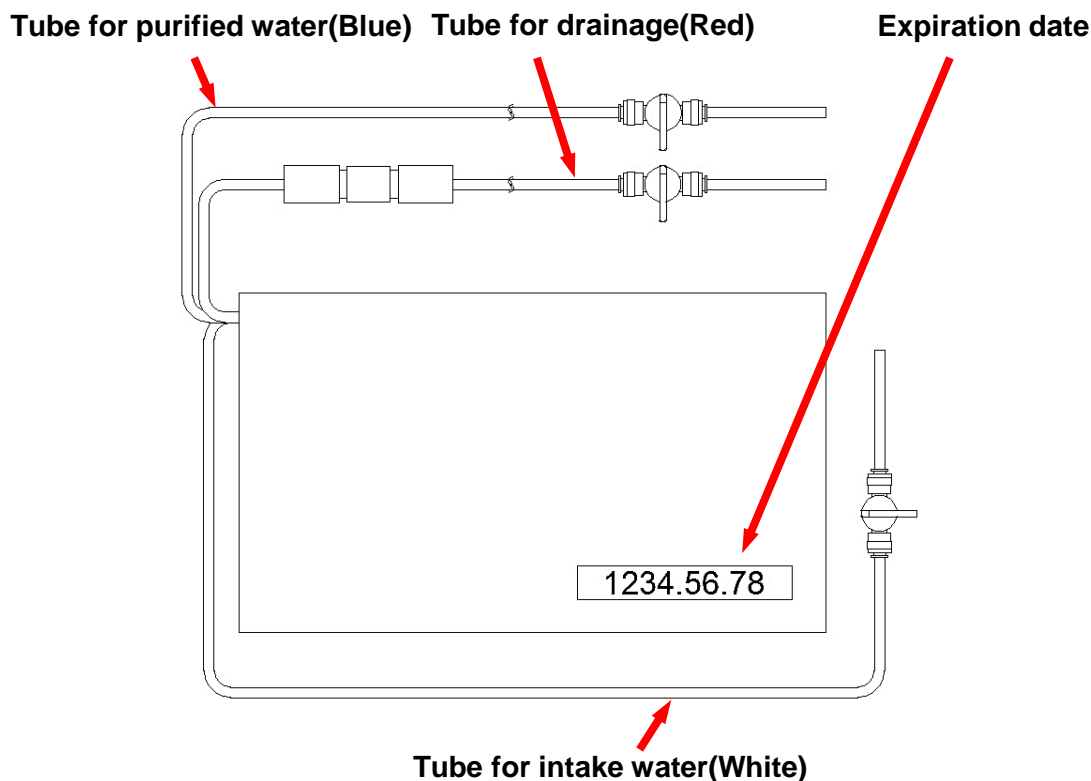


How to use

Other

# Filter exchange

## <Handling of filter pack>



※Exchange the filter pack in following cases.

- Exchange the unused filter within the expiration date.
- When you didn't purifying water for a long time (1 week), after previous use.
- When TDS is out of the values of criterions.  
(Criterion)

- ①  $\text{TDS of purified water} \div \text{TDS of raw water} = \text{less than } 0.1$
- ②  $\text{TDS of purified water is less than or equal to } 30\text{ppm}$

- When amount of water to be purified is remarkably lower than before.

### ■How to dispose filter cartridges

- Dispose of used cartridges according to your local government as non-burnable garbage.



Don't drop the filter pack.

※It may damage the filter pack and cause water leakage, and water may not be purified properly.



When you exchange the filter pack, insert tubes certainly.

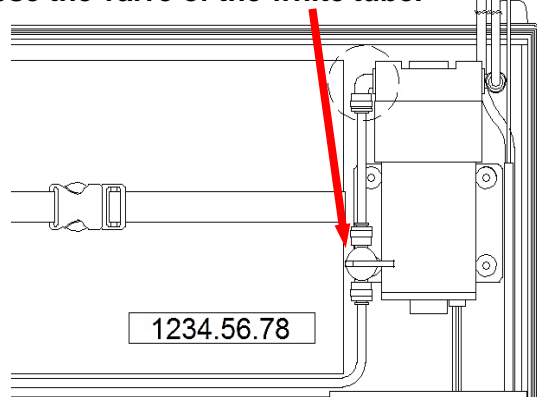
※If not, water may not be purified properly because of water leakage.

# Filter exchange

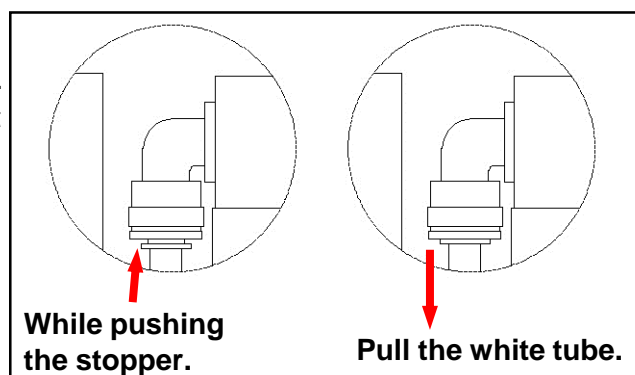
## How to remove

- Close the valve of the white tube.

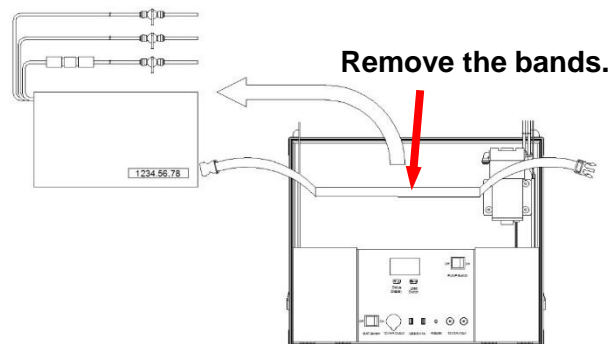
**Close the valve of the white tube.**



- Remove the white tube for intake water from pump.  
(Pull the tube while pushing the stopper at the root of the joint.)

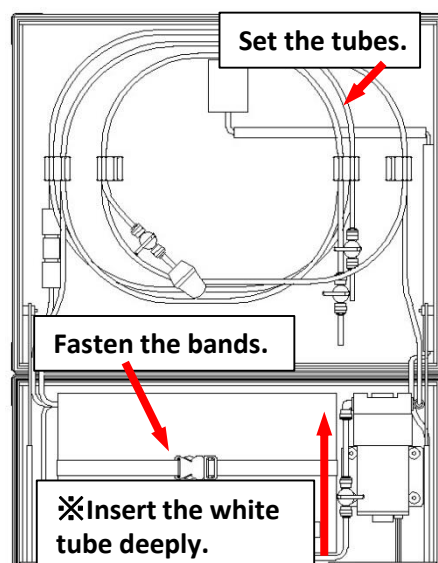


- Remove the red tube for drainage and blue tube for purified water from the case.  
✕ Remove one by one to avoid that the tube holder comes off.
- Remove the bands and remove the filter pack from the case.



## How to install

- Set a new filter pack to the unit and fix it with bands.  
✕ Face the side with expiration date up.  
When it is placed in a wrong direction, ability remarkably falls.
- Insert the white tube for intake to the pump.  
✕ Insert deeply into the joint.
- Set the red tube for drainage and the blue tube for purified water to the case as the previous state.



Before use






How to use

Other

# Battery exchange

## <Handling of battery>

- ※Exchange the battery pack in following cases.
  - When the voltage of the battery has decreased remarkably.  
(e.g.) Even in charge long time, the voltage is in the lower 12V range.
  - When the use time of the battery has become remarkably short.  
(e.g.) Even in the fully charged state, the pump stops less than 1 hour.
- How to handle the waste battery
  - Throw away the waste battery following the rules of each country.

Before use	 Batteries are industrial waste. Therefore do not throw away with general trash. ※There is a possibility of being punished if illegal dumping is done.
	 Don't incinerate the battery. ※Toxic gas may be generated, which may adversely affect the human body.
	 Don't leave the battery in a place where it will be hot like a car in the scorching sun or near a heat source such as a stove. ※Damage to the protection circuit, leakage, overheating, explosion, or fire may occur.
How to use	 When storing waste batteries, keep in a place not affected by wind and rain. In the unlikely event that the electrolyte spills as it is broken, keep it on the floor that doesn't pervious electrolyte to the underground. ※Circuit inside the product may be short-circuited due to the leaked electrolyte, and it may cause fire or rupture.
	 If the battery leaks electrolyte or has an unusual odor, stop using it immediately and keep it away from the fire. ※Circuit inside the product may be short-circuited due to the leaked electrolyte, and it may cause fire or rupture.

Before use

How to use

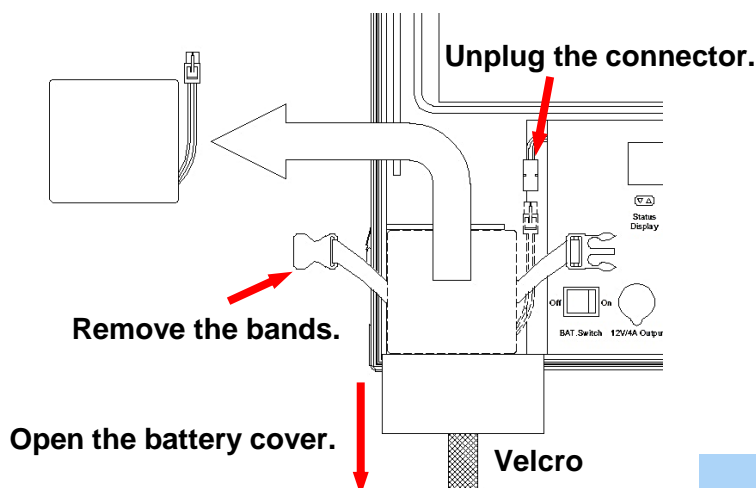
Other



# Battery exchange

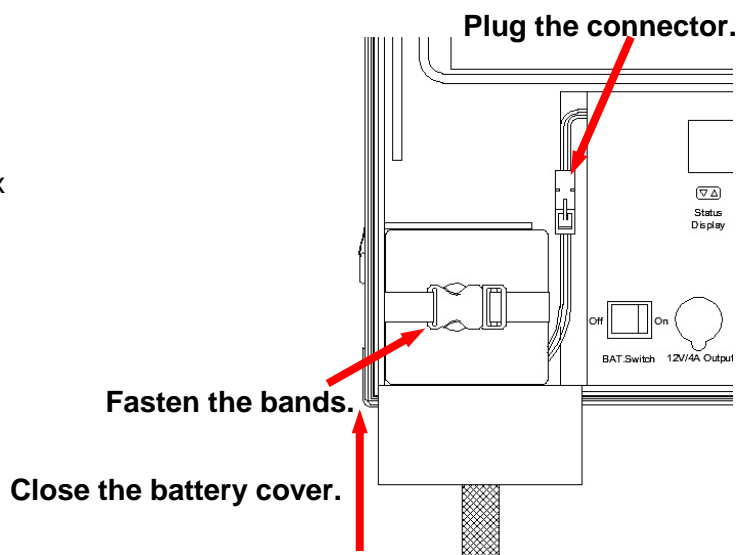
## Remove the battery

- Open the battery cover by taking off the velcro at the top of the battery cover.
- Unplug the connector.
- Remove the belt and remove the battery pack.



## Install the battery

- Set the new battery pack to the unit and fix it with belt.
- Plug the connector.
- Close the battery cover and fix it with the velcro.



Before use

How to use

Other

# Periodic check once a half year

If you do not use this product for a long time, periodic check is necessary to maintain performance and prevent failure.

## Expiration date of the filter

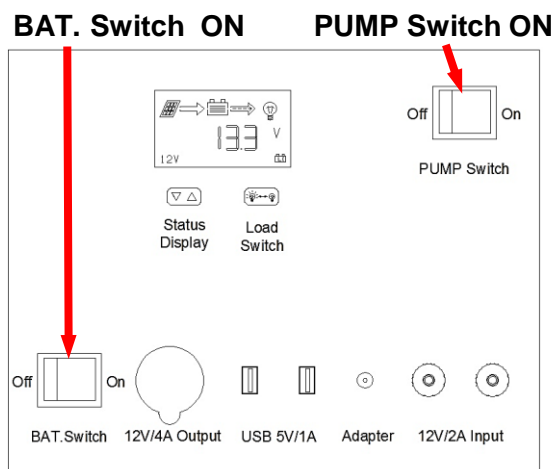
- Exchange the unused filter before the expiration date.(P20~21)

## Operation of the pump

- Turn on the BAT. Switch and PUMP Switch every half year, confirm operating sound of the pump.

At this time, don't open the valve

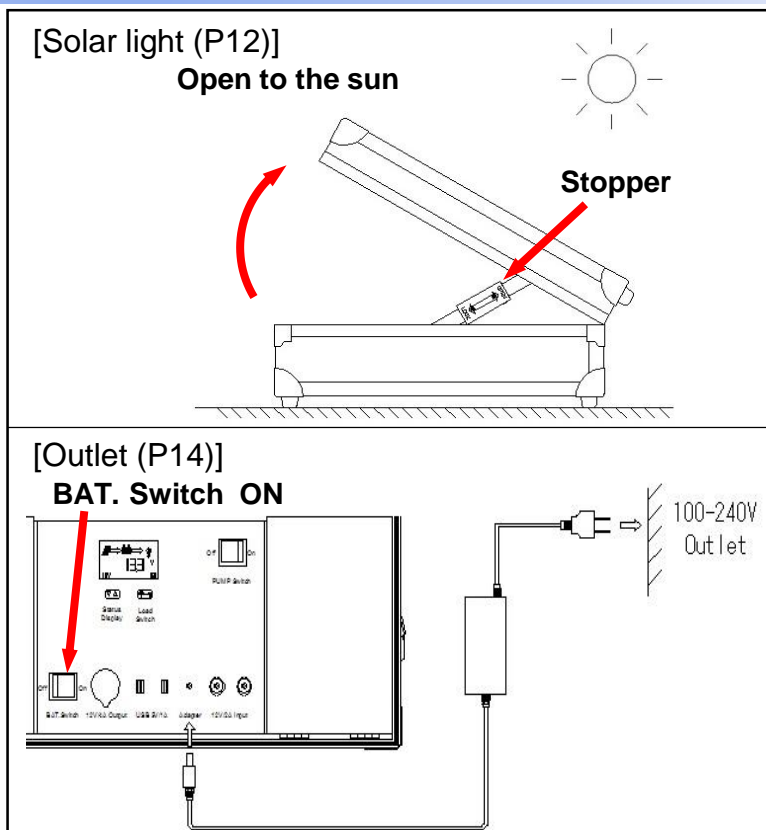
※If moisture remaining in the pump enters the filter, it cannot be stored for a long time.



## Capacity of the battery

- Charge the battery every half year in order to avoid overdischarge.

※If you leave the Li-ion battery for a long time, it continues to discharge little by little until it discharges completely. As a result, the battery deteriorates (remarkable decline of battery capacity).



⚠ When you open the lid and use it, lock stays so that the lid does not fall.  
※It may cause injury by sandwiching the finger.

⚠ When using this product under the blazing sun, it will be hot depending on the part even under the specification environment. Check the temperature before using.  
※It may cause burns or injury.

## <When operating>

Symptom	Possible cause	Action needed
Water doesn't flow out from tubes.	The strainer is clogged.	Remove deposits on the surface of the strainer.
	Either valves are not open.	Open all valves.
	Battery level is low.	Charge until the voltage of the battery reaches 12V or more.
	BAT. Switch is turned off.	Turn on BAT. Switch and Pump Switch.
Water is leaking from somewhere.	Connection between the pump and tube is incomplete.	Turn off the BAT. Switch and connect completely.
The product do not work with the car battery.	Polarity of connection is not right.	Connect the car battery with the correct polarity to the 12V input terminal. (Black: -/Red: +)
	BAT. Switch is turned off.	Turn on BAT. Switch.
	Car battery that you are using outputs low power.	Use a charged car battery with a capacity of 12V.
Power is not supplied by the built-in battery.	BAT. Switch is turned off.	Turn on BAT. Switch.
	Battery level is low.	When lowering of the battery voltage is detected, output is stopped to protect against overdischarge. Charge the battery. (P14~16)
The product cannot be turned on.	Battery level is low.	Charge until the voltage of the battery reaches 12V or more.

## < When charging >

Symptom	Possible cause	Action needed
Solar charge does not start.	BAT. Switch is turned off.	Turn on BAT. Switch.
	As the PV panel does not get sunshine enough, voltage of it is lower than voltage of battery.	Charge in a sunny place.
The product is not charged by the AC adapter.	BAT. Switch is turned off.	Turn on BAT. Switch.
	There is no electricity in the outlet.	Check the power board of your home or office. Wait for recovery in case of power failure.

## < When supplying power >

Symptom	Possible cause	Action needed
The product does not supply power from cigar socket to compatible equipment.	Battery level is low.	Charge until the voltage of the battery reaches 12V or more.
	BAT. Switch is turned off.	Turn on BAT. Switch.
The product does not supply power from USB ports to compatible equipment.	Battery level is low.	Charge until the voltage of the battery reaches 12V or more.
	BAT. Switch is turned off.	Turn on BAT. Switch.

# Troubleshooting

## < Error code list >

Code	Corresponding error	Action needed
E0	No error	
E1	Battery overdischarge	Charge until the voltage of the battery reaches 12V or more.
E2	Battery overvoltage	Stop charging and discharge until the error is hidden
E3	Battery undervoltage	Charge until the voltage of the battery reaches 12V or more.
E4	Short circuit	Check that abnormal heat generation, smoke emission, or ignition has not occurred. Contact the dealer for replacement.
E5	Over load	Check that abnormal heat generation, smoke emission, or ignition has not occurred. Because the load is heavy, connect a light load.
E6	High temperature inside the controller	Turn off all switches and leave the product at cool place until it is cooled.
E8	Excess current for charging	Turn off the BAT. Switch and leave at cool place until the error is hidden.
E10	Overvoltage of the solar panel input	Adjust the power generation voltage by moving the installation location or adjusting the angle of the panel.

Check “Troubleshooting” on page 24~25. If any phenomenon other than the description occurs, or if you have any other unclear points, do not repair by yourself, contact the dealer.

**※If there is a change in the flavor of water or this product is abnormal, stop using it immediately.**

# Specification

## < Main unit >

Type	Type S
Solar panel output	Max 30W
Rated voltage	12V
Battery capacity	153Wh (Li-ion)
Charge time	About 5h (When sunny)
Amount of water purification	Max 0.2L/min(at 25°C)
Filter specifications	Pre-filter × 1 , Activated carbon filter × 1 , RO membrane × 1
Drive time	About 5.5h (Max Charge)
Raw water condition	Freshwater (tap water, river water, well water, lake water etc.) Water temperature:4 to 45°C (Not frozen) Freshwater fish can lives. ※Do not use following water. Seawater. Waste water and water that contain many chemicals. Water that contain oils.
Filter life	When using tap water as raw water everyday, filter life is about 1 year. Exchange the unused filter before the expiration date. ※Depending on the water quality, the life changes. ※To leave an unused filter for a long time, close all valves to prevent water from flowing into the filter. ※When you are not going to use the product more than 1 week after use, exchange the filter.
Environmental condition	Temperature : 4 to 45°C (Not frozen) Humidity : 25 to 85%RH (Not condensation)
Pump ability	Rated voltage : DC24V , Suction height : 2m
Size	Approx. W550 × D460 × H170mm
Weight	Approx. 12.5kg
Country of origin	China

## < AC adapter >

Rated voltage	100-240VAC 50/60Hz
Rated current	2A
Output voltage	14.5VDC 4A
Output current	4A
Type of output plug	OD φ5.5mm(ID φ2.5mm) Center plus
Length	2800mm
Weight	320g

## < Shoulder belt >

Width	37mm
Length	130mm

## < TDS meter >

Range of TDS value	0-9990ppm(mg/L)
Temperature	0-80°C
Precision	±2%
Power source	2 × 1.5V button battery(LR44)
Battery life	About 1000h
Size	W155 × D31 × H23mm
Weight	76.5g

※Specifications and design of the product may be changed from the contents shown here because of performance improvement etc.

※In the environmental conditions that are described in the specifications, we guarantee that this product shows performance. Stresses on the product will be reduced by keeping the state of ordinary temperature (25°C±15°C) and ordinary humidity (45 to 85%). As a result, you can prevent failure and prolong life of the product.

Before use

How to use

Other

# Parts Exchange

Exchange parts are shown in the list. If there is dirt or aged deterioration due to the use of this product or parts with some problem need to be replaced (paid service). Please call the dealer you purchased the product.

Exchange parts	Model number	Criterion of exchange
Filter pack S	KTN-SWP-S-B03	<div><div><div>▪ When TDS is out of the values of criterions. (Criterion)</div><div>①TDS of purified water÷TDS of raw water = less than 0.1 ②TDS of purified water is less than or equal to 30ppm</div></div><div><div>▪ When amount of water to be purified is remarkably lower than before.</div><div>▪ When you didn't purifying water for a long time (1 week), after previous use.</div><div>▪ When the expiration date of the unused filter has passed.</div></div></div>
Battery S	KTN-SWP-S-B06	<div><div>▪ When the voltage of the battery has decreased remarkably.</div><div>▪ When the use time of the battery has become remarkably short.</div></div>
Kit of intake water tubes	KTN-SWP-B05	<div><div>▪ When the amount of water pumped decreases due to dirt on the surface of the strainer.</div></div>
TDS meter	TDS-3	<div><div>▪ When it breaks down due to submergence.</div></div>

Option parts	Model number	Purchase in this case
Pre-Filter Pack	KTN-SWP-B04	When there are many dust, iron rust, etc. in the raw water, attaching this to the tip of the intake tube will make the subsequent process be smooth and prevents deterioration.

- How to buy exchange/option parts.
- Please call the dealer and tell them your name, address, phone number, exchange parts name and model number.

