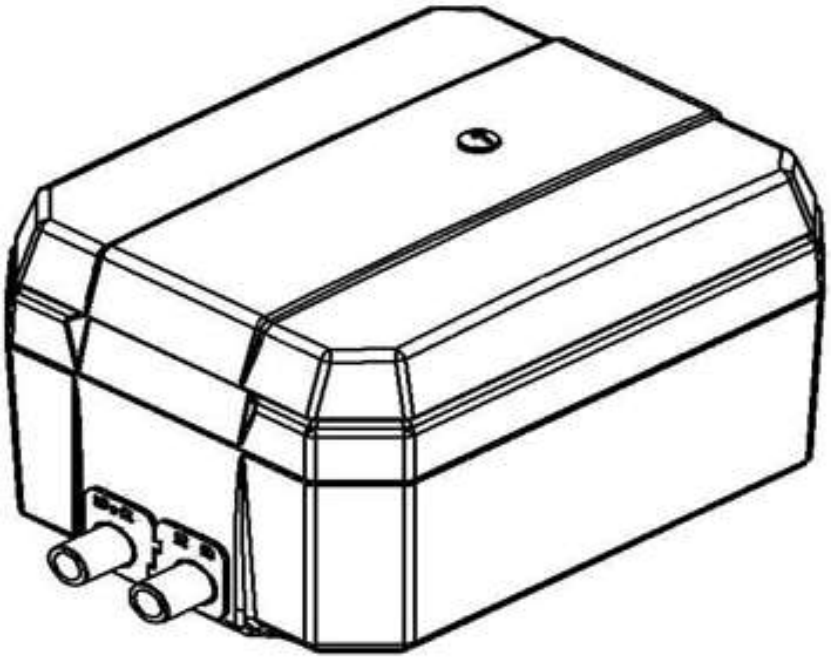
INSTRUCTION MANUAL
ELECTROMAGNETIC AIR PUMP

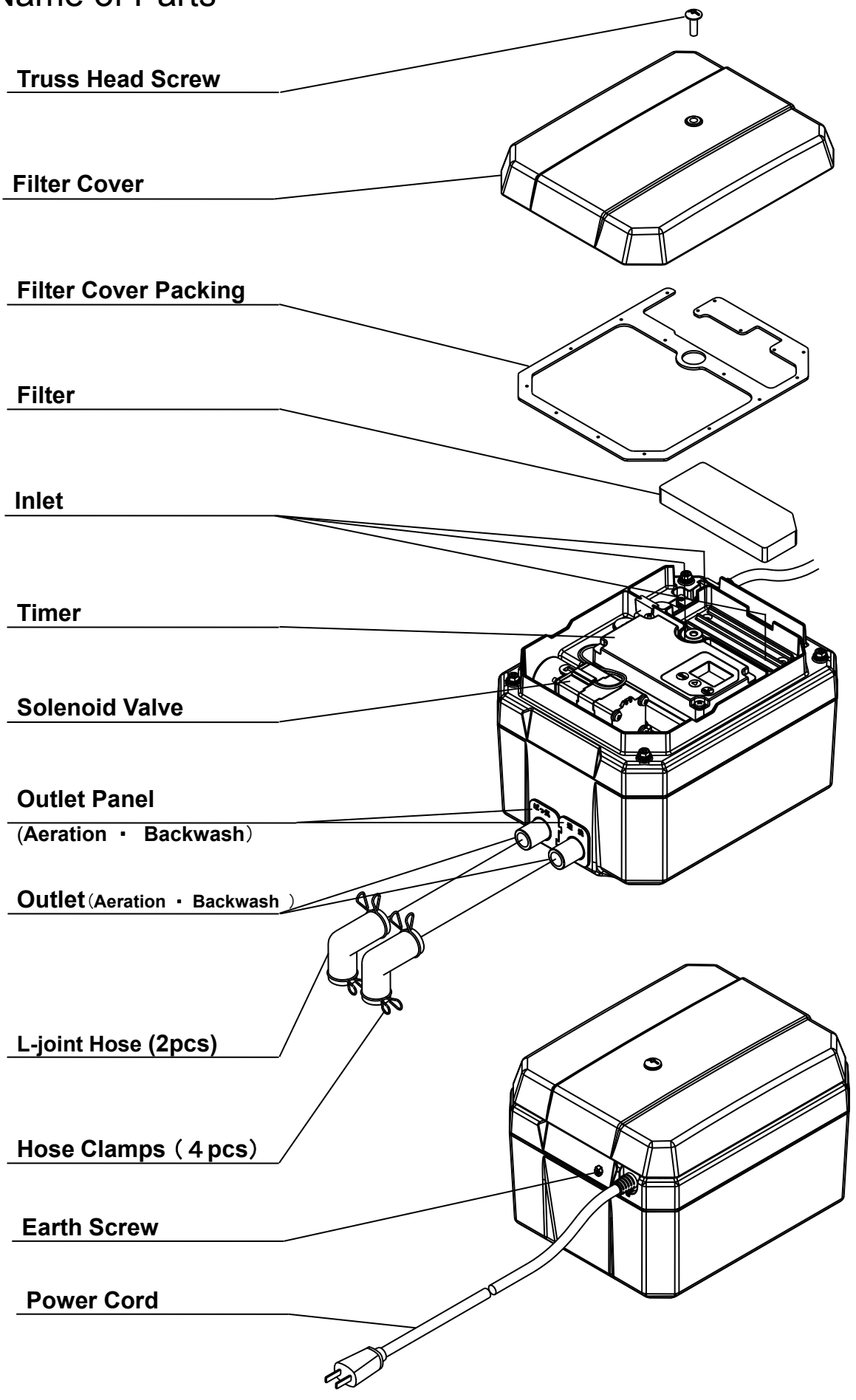
For Installation / Maintenance Personnel

MODEL: JDK-60T | JDK-80T | JDK-100T



Thank you for purchasing SECOH air pump. Prior to use, please read the instruction manual carefully before operating the air pump. Ensure this manual is kept with the air pump at all times.

1． Name of Parts



2. Instructions

● Prior to operation, read "Instructions" carefully to ensure the air pump is correctly installed.

● Be sure to follow the instructions herein described, especially, the following safety instructions.

⚠ WARNING High potential risks resulting from improper handling, as it can cause death or serious injuries.

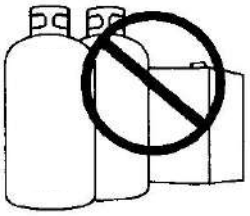
⚠ CAUTION High potential risks resulting from improper handling, as in some cases it can cause serious injuries.

● Keep the manual in a designated place for future reference.
Regular maintenance “in accordance with this manual” is essential to ensure a long working life.

2-1 Prior To Operation

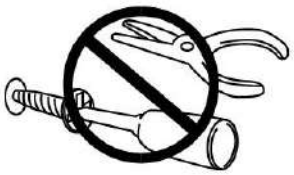
⚠ CAUTION

○ The air pump is designed for pumping ambient air only.
● Do not attempt to pump flammable gases or liquid, this may cause ignition, electrical shock or short fuse.

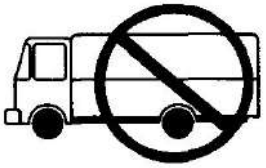


○ This air pump is designed only for the voltage of AC220-240V(50Hz).
● Using undesignated power supply cord could cause electric shock or short-circuit.

○ Do not transform the pump.
○ Only a qualified engineer should attempt to disassemble or repair the air pump.



○ This air pump is not designed to be mounted on the vehicle.
Do not install it on the vehicle.



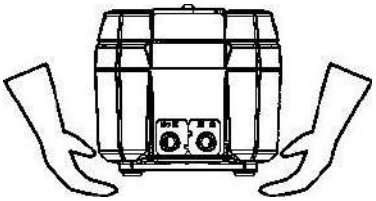
2-2 Storage and Transfer

⚠ CAUTION

○ When transferring the air pump. Carry the body with both hands.

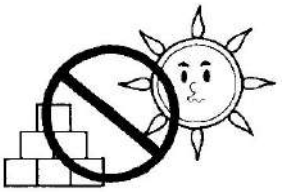
●Do not carry the air pump by holding the filter cover only, as it may lead to injury if dropped.

●The body is heated during operation. Please wait for it to cool down or wear gloves to prevent from being hurt.



●Do not carry the air pump by holding the power cord, which will cut the wires in it. It may cause heat or ignition.

○ Do not store the air pump in direct sunlight or high temperature, as this could lead to premature deterioration of rubber components.



2-3 Installations

1）Location of the Air Pump

⚠ CAUTION

○ Do not install the air pump in a place where it can be submerged by rain or snow.

●Electric leakage or shock will be caused by water leaked in the charged part of the submerged air pump.



⚠ CAUTION

○ Set the air pump above the water level.

●Setting of the air pump below the water level will cause counterflow of water from siphon phenomenon, when stopping the air pump. Such counterflow of water will cause the part charged to be immersed in water, and result in leakage, electric shock or short circuit.

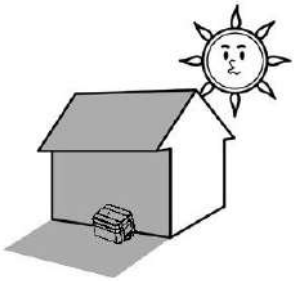


○ Set the air pump away from places like bedrooms, reception room, Noise may bother in the quiet nighttime etc

●At night when the surrounding is quiet, the operating sound may be a nuisance.



○ Set the air pump in the shade and well ventilated place.



● The lives of the diaphragms and valves in the air pump may be shortened under quite high temperature caused by the heat of the sunlight.

○ Do not set the air pump in a humid or dusty place such as drift.

● The lives of the diaphragms and valves of the air pump may be shortened by the overheat of the air pump due to the less suction air through easily blocked filter element in a dusty place.



○ Do not install the pump right under ventilators which may cause suction of oily air.

● Contacting with oil will speed up the deterioration of rubber parts like diaphragms, valves etc.

○ Set the air pump in a place where working space for maintenance can be secured.

2) Instruction to Electric Installation

⚠ CAUTION

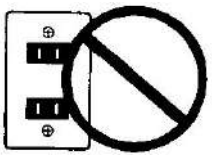
○ A Breaker with Ground-Fault Protection should be set in the wiring of power supply.



● No provision of Breaker with Ground-Fault Protection will be cause of electric shock.

● If for outdoor use, the appliance shall be supplied through a residual current device(RCD)having a rated operating current not exceeding 30mA .

○ When installing the air pump outdoors, be sure to use a waterproof receptacle.



● Exposing of the part changed to rain water will be cause of leakage or electric shock.

○ This product should be grounded with an appropriate grounding wire.



● Do not connect the grounding wire with gas pipe, downcomer, lighting rod or telephone line.

● Improper grounding or no grounding can result in a risk of electric shock.

3) Instruction to Mounting

○ The exclusive mount for air pump installation made of concrete should be arranged. The mount should be away from the foundation for at least 150mm and its height should be min 100mm higher than the foundation.

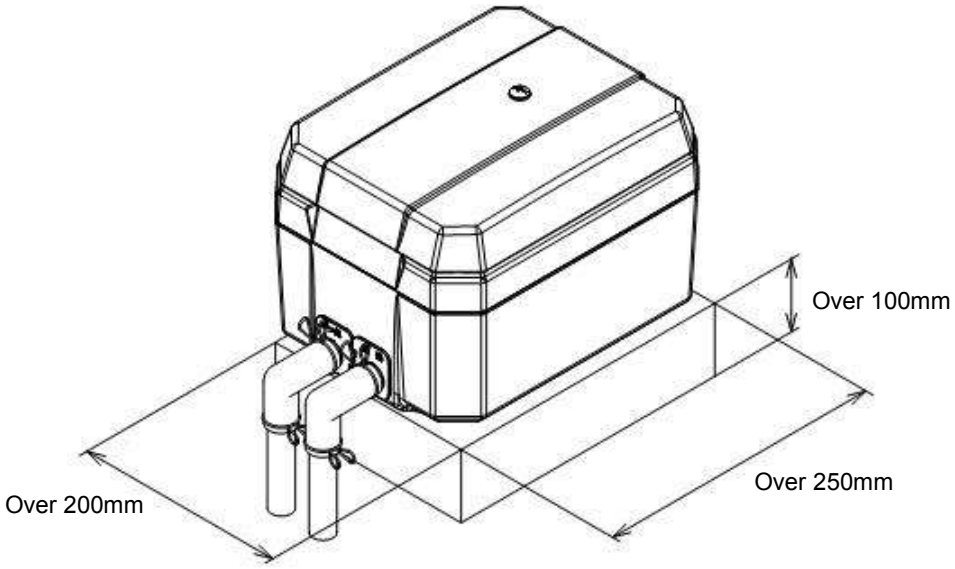
● Noise may be caused by vibration of the air pump mounted on an unstable place such as concrete blocks, shelf etc.

○ Install the air pump on a horizontal mount taken a level after the concrete has been completely dry.

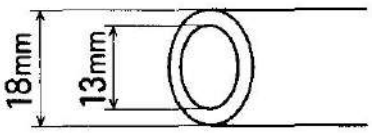
● Setting the air pump before concrete has been completely dry can embed it therein.

● The load caused by setting the pump in a declining position may shorten the life of the parts.

○ If the pump needs to be equipped with water-proof,noise-proof gadgets, please install a ventilation fan and make sure the temperature inside below 40℃.



4) Instruction to Piping



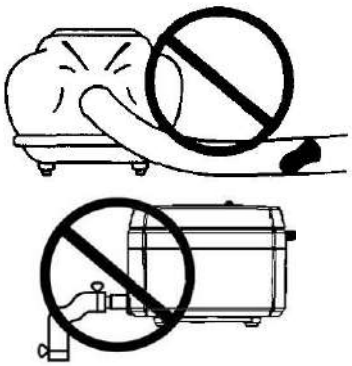
○ The pipe to discharge air should be hard chloride vinyl pipe VP13(ID13mm × OD18mm).

○ Air piping line should be as short and straight as possible.

- The total length of air piping shall be shorter than 5m (each bend is regard as 1.5m).The longer air piping, the larger air pipe diameter should be picked.

○ Make sure that no particles of soil, sand etc are left in the piping under its construction.

- An extra pressure drop is caused by piping longer than 5m and may result in overheating of the pipe..



○ Connect the air pump to the air piping with an accessory L-joint hose, and secure the connection with a hose band.

- Adjust the locations of the air pump outlet and air piping so that no forcible loads are applied to the L-joint.

○ The outlet function can be distinguished by the colour of the board. Blue is aeration, red is backwash. Please connect the pipe with the corresponding part in the cleaning tank correctly. According to different cleaning tanks, if you need to change the function of aeration outlet and backwash outlet, please read *5.Outlet Switch*.

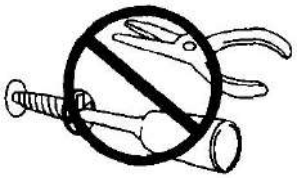
5) Instruction to Operation

⚠ WARNING

○ Do not break or work the power cord.

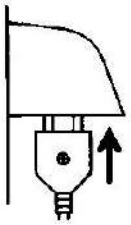
● Breaking or working of the cord will be cause of electric shock or fire.

● Heavy loading, heating or pulling may cause breaking of the power cord.



○ Clean the dust on electric source plug at least once a year. Plug in completely.

● Dust on the power plug or incomplete plugging may cause an electric shock.



⚠ CAUTION

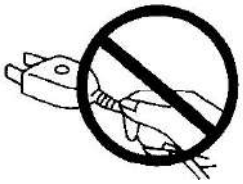
○ Do not touch the cords with wet hand.

● Touching with wet hand may cause electric shock.



○ Pull off the power cord by holding the plug.

● Pulling the power cord by itself will cause a part of the core wire to be broken, and lead to heating or ignition.

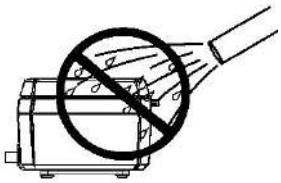


○ Do not wash the air pump with water.

● Washing can be leakage, electric shock or short circuit.

○ Do not clean the pump with naphtha, paint thinner etc.

● It may damage powder-coated surface or plastics.



3. Daily Maintenance

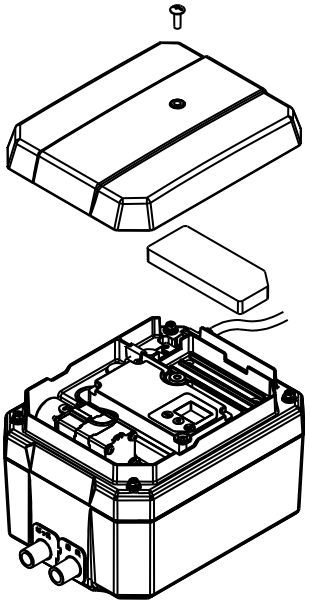
⚠ CAUTION

○ Prior to maintenance servicing, pull off the power cord to stop operation of the air pump.



○ Since dust could enter the air pump and cause accidents such as leakage or shock circuit, be sure to do cleaning regularly.

● Clean the filter every four months.



1) Undo the truss head screw. Remove the filter cover.
2) Take out the filter, and slap down dust by hand. If it is heavily contaminated, wash it by rubbing using neutral detergent. Then, wash with water and dry it in the shade.
3) Please confirm whether there is any dust or dirt blocking the inlets. If yes, please clear it up.
4) After drying, Reassemble the filter back in place, and press in the filter cover. Secure the filter cover with truss head screw.

○ Please make sure that the cover packing is not offset or damaged.

● If the filter cover packing is broken, please replace it in time, or it could be the cause of leaking rain water in or abnormal noise.

⚠ CAUTION

○ Keeping running over four months without cleaning-up could cause block of the filter or inlet, which will lead to air circulation problem. Low discharged air volume could decrease the life of diaphragms and valves, and have negative influence on the water quality in the purification tank.

● Daily checks

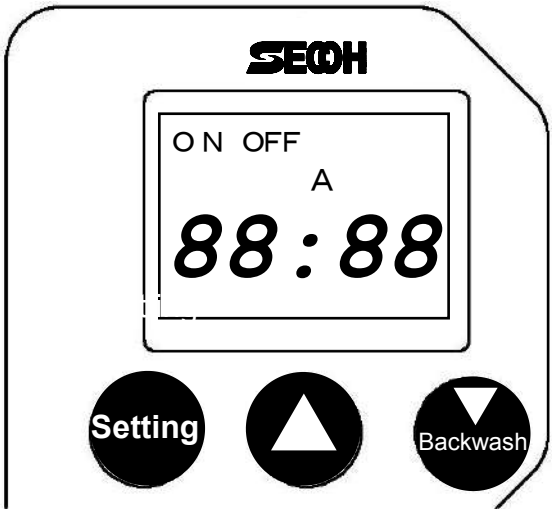
○ Is air blowing out properly?
○ Is there abnormal noise and/or vibration?
○ Is the temperature abnormally high?
○ Is the power cord or plug damaged, swollen or colour faded?

※ if any irregularity is found, please stop operation of the pump and read 6-1 REPAIR AND ITS ORDER.

4. Timer Operation

4－1 Indication and Switch Instructions

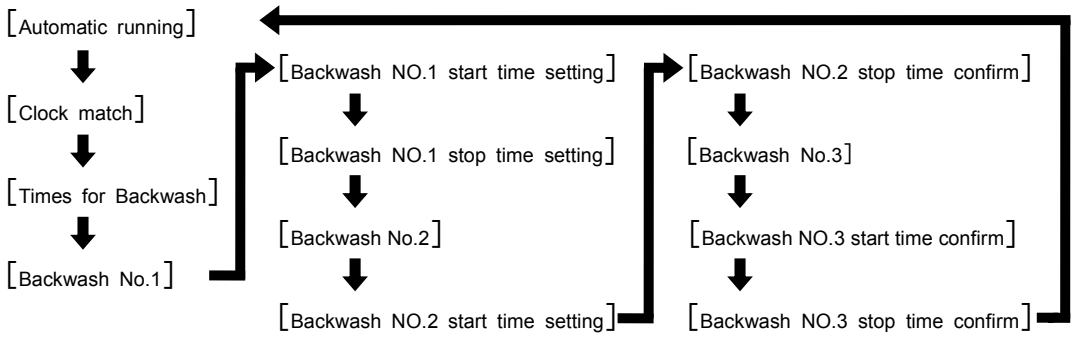
LED Indication



Indication	Content
ON	When backwash is running, word “ON” displays. At the time backwash starting to run or during the emergency backwash setting, word “ON” doesn’t display. When emergency backwash is running, word “ON” displays.
OFF	At the time backwash ends or during the emergency backwash setting, word “OFF” doesn’t display. When emergency backwash is running, word “OFF” displays.
A	When it’s in automatic running mode or during the emergency backwash, word “A” displays.
88:88	It displays the present time, backwash frequency, backwash start time and end time.

Switches

Setting switch : each time you press it, mode will change among the following states. (Standard settings)



switch : increase the number of time or frequency.

Backwash switch : decrease the number of time or frequency.

Manual Backwash: Change the backwash on/off during automatic running.

After the set time of manual backwash, [automatic running] is on.

4-2 Setting Items

Setting Items

①.Backwash Frequency: 0~24 times available [Backwash Frequency]

②.Backwash Start Time: set by hour [Backwash 1 Start Time Setting]

③.Backwash Time : 1~20 minutes available [Backwash 1 Stop Time Setting]

④.Backwash Interval : 1~23 hours available [Backwash 2 Start Time Setting]

	Backwash		
Backwash Frequency	**①1**	**①2**	**①3**
Backwash Start Time	**②2:00**	**④3:00**	**4:00**
Backwash End Time	**③2:10**	**3:10**	**4:10**

※Initial Settings

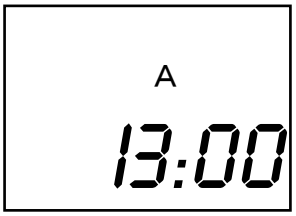
After inputting the 4 items above, the whole setting is completed.

※The items above are the initial settings before shipment, so please reset them according to different purification tank maker's setting contents.

4-3 Setting Details

1) Confirmation and Setting of the Present Time

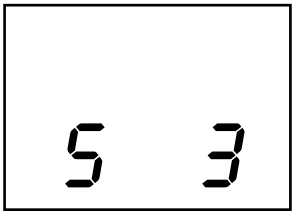
■Please confirm the present time in [Automatic Running Mode]. (「Time」 and character 「A」 displays)



■If the present time doesn't display, press the Setting switch once. Then the time disappears. In that state, please use the ▲ ▼ Backwash switches to set the right time. It will increase or decrease 1 minute for a short press, or 30 minutes for a long press.

2) Confirmation and Change of the Backwash Frequency

■Press the Setting switch to change to [backwash frequency setting] mode(character 「S」 and 「Present Backwash Frequency Number」 displays), then confirm that the backwash frequency is 「S 3」.



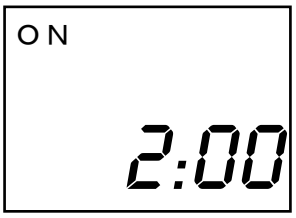
■To change the backwash frequency, please press the ▲ Setting switch to set. Set range varies from 0 to 24 times per day. If the backwash frequency is set to 「0」, backwash won't run even in the automatic running mode.

3) Confirmation of the Backwash No.1

■Press the Setting switch to change to [Backwash No.1] mode (backwash number 「1」 displays). Confirm that backwash frequency is on ce.



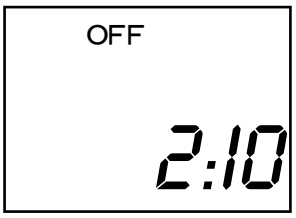
4) Confirmation and Change of the First Time Backwash Start Time 《Standard Settings》



■Press the Setting switch to change to [Backwash 1 Start Time Setting] mode (「Time」and「ON」doesn't display). Confirm that the first time backwash start time is 「2:00」.

■To change the start time, press the ▲ Backwash switch to set. It will increase or decrease 1 minute for a short press, or quick change for a long press.

5) Confirmation and Change of the First Time Backwash Stop Time 《Standard Settings》

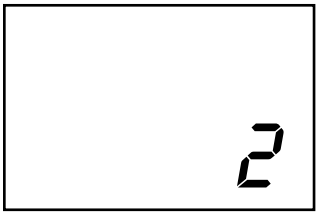


■Press the Backwash switch to change to [Backwash 1 Stop Time Setting] mode (「Time」and「OFF」doesn't display). Confirm that the first time backwash stop time is「2:10」.

■To change the stop time, press the ▲ Backwash switch to set. It will increase or decrease 1 minute for a short press, or quick change for a long press.

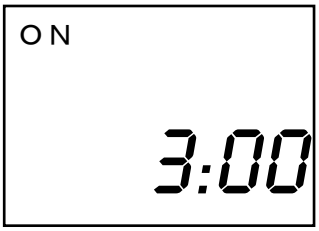
Caution! The longest time for bacwash is 20 minutes. If exceeds 20 minutes. If exceeds 20 minutes, it will return to 00 minutes. Besides, if the backwash time above becomes standard setting, the backwash time after the second time cannot be set separately because the bakwash time after that is automatically

6) Confirmation of the Backwash No.2



■Press the Setting switch to change to [Backwash No.2] mode (backwash number 「2」 displays). Confirm that it's the second time of the backwash setting.

7) Confirmation and Change of the Second Time Backwash Start Time 《Standard Settings》



■Press the Setting switch to change to [Backwash 2 Start Time Setting] mode (「Time」and「ON」doesn't display). Confirm that the second time backwash start time is 「3:00」.

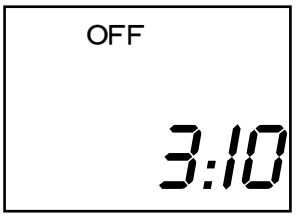
■To change the start time, press the ▲ Backwash switch to set. It will increase or decrease 1 minute for a short press, or quick change for a long press.

Caution! If the interval between backwash 1 and 2 is set to be the standard setting, the backwash start time after the third time cannot be set separately because the backwash time after that is automatically set.

Caution! After 8), only confirmation is available. You cannot set or change.

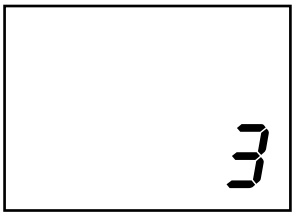
8) Confirmation of the Second Time Backwash Stop Time

■Press the Setting switch to change to [Backwash 2 Stop Time Confirmation] mode (「Time」and「OFF」doesn't display). Confirm that the second time backwash stop time is 「3:10」.



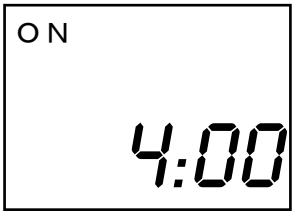
9) Confirmation of the Backwash No.3

■Press the Setting switch to change to [Backwash No.3] mode (backwash number「3」displays). Confirm that it's the third time of the backwash setting.



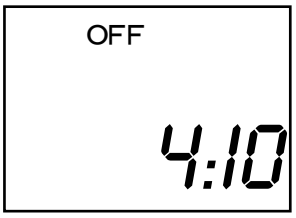
10) Confirmation of the Third Time Backwash Start Time

■Press the Setting switch to change to [Backwash 3 Start Time Confirmation] mode (「Time」and「ON」displays). Confirm that the third time backwash start time is 「4:00」.



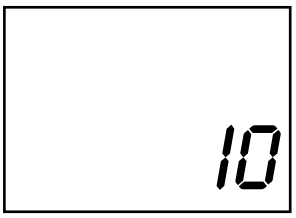
11) Confirmation of the Third Time Backwash Stop Time

■Press the Setting switch to change to [Backwash 3 Stop Time Confirmation] mode (「Time」and「OFF」displays). Confirm that the third time backwash stop time is 「4:10」.



Caution! Standard setting includes 3 times, so press the Setting switch after that will return to the [Automatic Running] mode. Confirm the frequency display changes by set frequency (0~24).

○If you want to skip the confirmation of backwash frequency, start time and stop time, press the ▲ ▼ Backwash switch to change the backwash number you want to confirm when the backwash number displays. For example, if the backwash frequency is set to 10 times per day, it will return to the [Automatic Running] mode after keeping pressing the Setting switch to backwash no.10 from any number and confirming the backwash start time and stop time.



Caution! Please be sure to press the Setting switch to return to the [Automatic Running] mode after all the confirmations and changes.

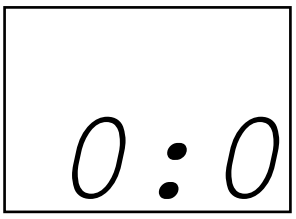
12) Reset

■In the [Automatic Running] mode, then press the Setting switches together for 5 seconds.

■All the settings will be reset and return to the initial settings.

■Please input the present time again because it returns to the [Clock Match] mode (「Time」 doesn't display).

■Please set all the items.

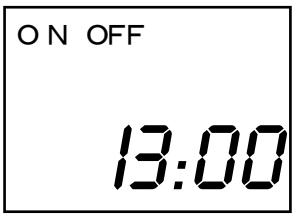


※Urgent Backwash Setting

- ○ If the inlet load is higher than the design value, in the facilities where water level rise of biological filtration being checked every time, please have a discussion about the [Emergency Backwash] mode.
- ○ In the [Emergency Backwash] mode, besides ordinary backwash, you can run backwash just another 1 minute every 2 hours to unblock the biological filtration.
- ○ After inputting the standard settings, automatic backwash will run just 1 minute every 2hours from 4 hours to 18 hours after backwash 1 start time.
- ○ However, if the backwash frequency is set to be 4~12 in standard settings, standard settings have priority in operation. (For example, if the backwash frequency is set to be 12, backwash will run just 1 minute at the time 14, 16, 18, 20, 22 hours after the backwash 1 start time.)

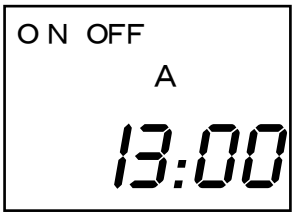
■In the [Automatic Running] mode, then press the switches together for 3 seconds.

■Confirm that it has been set to [Emergency Backwash] mode when 「Present Time」 displays, 「ON」and「OFF」 doesn't display.



■If you press the Setting switch, it will return to the [Automatic Running] mode. 「Time」「ON」「OFF」「A」all displays, and the [Emergency Backwash] mode will run.

■To cancel the [Emergency Backwash] mode, press the switches together for 3 seconds when in the [Automatic Running] mode. It's same to the time of setting it. Then it will return to the ordinary [Automatic Running] mode.



Caution! When in the [Emergency Backwash] mode, the Setting switch is not available. Please cancel the [Emergency Backwash] mode before changing the backwash frequency or time.

5． Outlet Swtich

⚠ WARNING

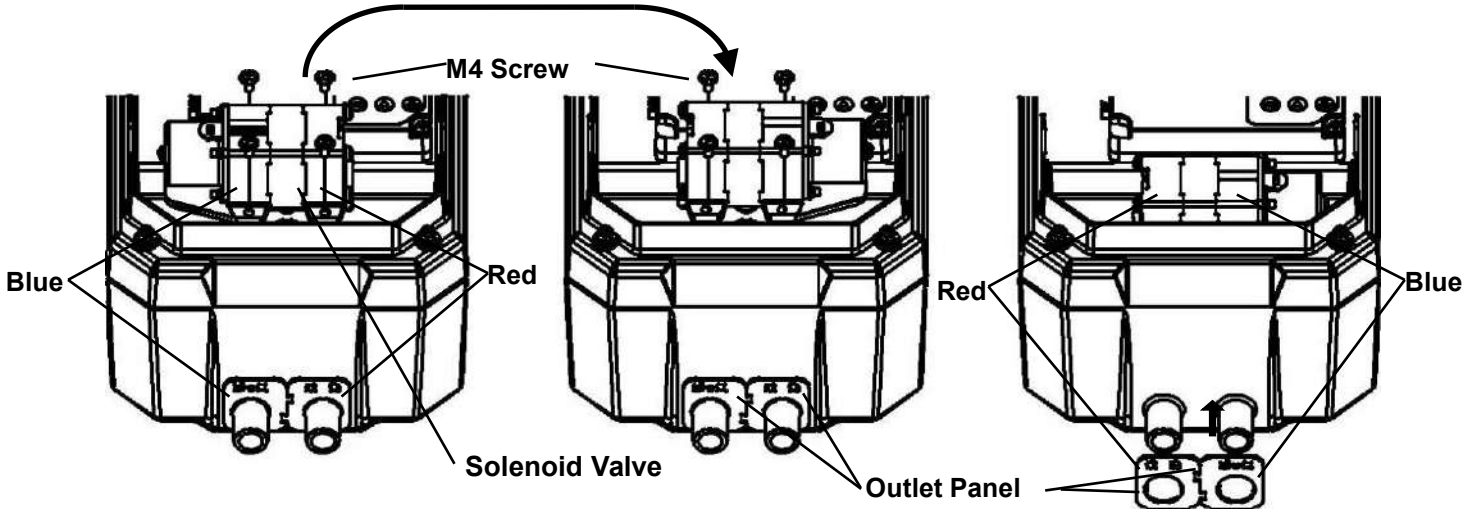
○To switch the solenoid valve, please pull the plug.

- Danger of electric shock if the plug is on!

○from front view, the left side is aeration (blue), right side is backwash (red).

○In some applications, the situation might be reverse and it's necessary to switch the o utlet. This can be easily done by reverse installation of the solenoid valve.

1) Undo the screws of filter cover and take off the cover.
2) Undo the 4 screws which fixate the solenoid valve.
   (Pay attention not to drop the screws when undoing.)
3) Do a 180 degree turnaround on the solenoid valve to switch red and blue.
4) If the solenoid valve direction changes, the outlet panels must be changed according to the solenoid valve colour.
5) Put back the filter cover to finish outlet switch.



1. Take off solenoid valve

2.Installation after switching solenoid valve direction

3. Adjust the panel on the left and right

⚠ CAUTION

○Please note that incomplete installation of the solenoid valve or even the screw might lead to a leakage.

As a result, it will cause an insufficient air flow which might have an effect on the cleaning results in the tank.

6. After-sale Servicing

4-1 Repair and its Order

○ When there is failure during the operation, please check the following:

Phenomenon	Checks	Solutions
No operation	Is the plug inserted correctly?	Insert plug correctly.
	Does the fuse blow	Check the supply power input fuse. If you can't find the reason, please contact service office.
	Is the auto stopper activated?	If diaphragms or valves break, please change new ones. If there is no other defect, please reset the auto stopper. (see *Supplementary Instructions*).
	Are the diaphragms broken or worn out?	If yes, please replace new ones.
Little or no airflow	Is the piping or diffuser pipe clogged?	If yes, clean it.
	Is the valve in the piping shut?	If yes, adjust the valve.
	Is the filter clogged?	If yes, clean it.
No abnormal noise or vibration	Does the pump touch any objects?	If yes, shift the pump.
	Any shaking between pump and foundation?	If yes, shift the pump and place it on a solid base.
	Is truss head screw loosened?	If yes, fix it.
	Is filter cover packing worn out?	If yes, replace it.
	Is pressure out of range	If yes, adjust to regular value.
	Is the piping ok?	If not, please fix it.
No Backwash	Is timer set correctly?	Please reset clock and backwash time.

If the failure is found even after checking above points, uplug the pump to stop Operation. Call service office/partner, provide the serial number, the production date and the date of putting into service.

⚠ WARNING

○ Do not continue the operation of pump when there is malfunction.

● Continuous operation in spite of malfuction may cause leakage, electric shock or short circuit.

Supplementary instruction (Reset of auto stopper)

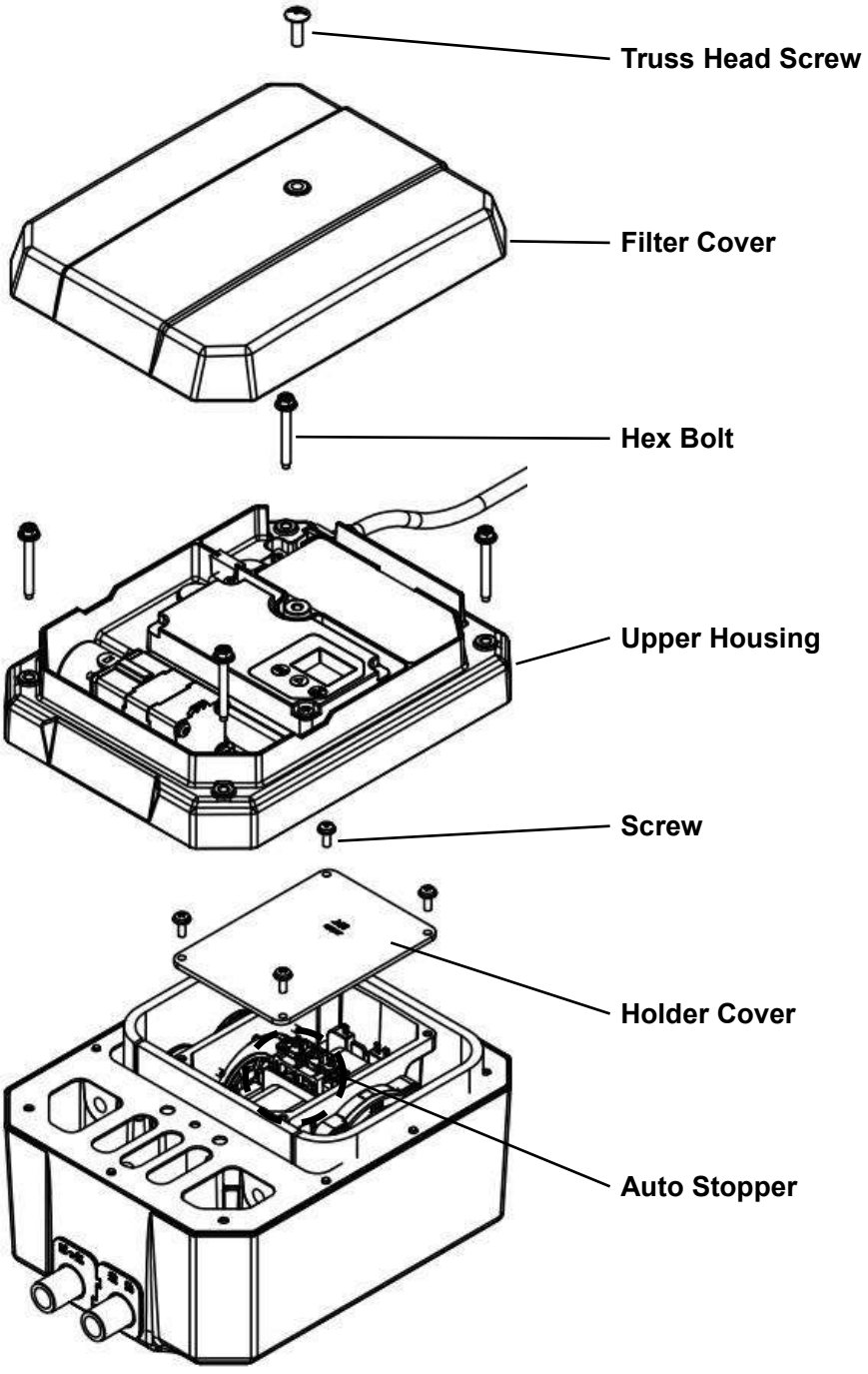
⚠ WARNING

○Please unplug power cord before starting maintenance.

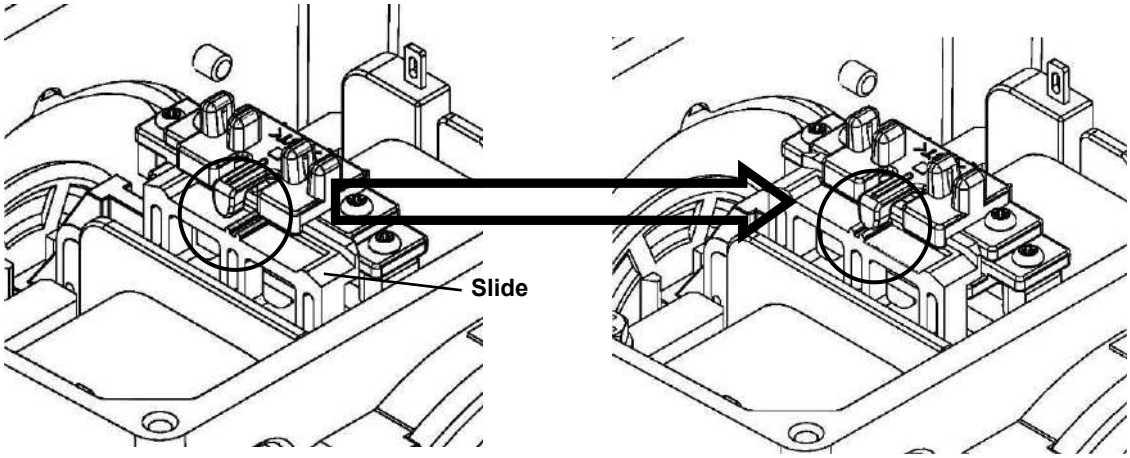
● Do not touch the terminal of the switch. If hazard is ignored, it may cause electric shock.

●If the pump is not disconnected and the magnet starts moving upon reset of auto stopper, it may cause personal injury.

1) Undo the truss head screw (1pc) and remove the filter cover.
2) Undo the hex bolts (4pcs) and remove the upper housing.
3) Undo the screws (4pcs) and remove the holder cover.



4) If the slide deviates from the middle position, please adjust it to the middle (as the picture below).
A sound can be heard when the slide clicks into place (as the picture below).



5) Connect power supply and make sure that the magnet moves centered and the air flow is OK, unplug and reassemble the pump with procedures 3) ~1).

6-2 Replacement Parts

○Do not use any parts for replacement other than genuine parts. SECOH cannot be held responsible for damages that are caused by using non-genuine parts.

●Parts other than genuine parts may have different size, and so the air pump will not perform as intended but even cause to be broken.

○For longer use of the pump, it is recommended to replace diaphragms and valve boxes once a year.

●Diaphragms and valves are consumables. The deterioration of the rubber components may lead to decreasing performance and malfunction.

○The replacement parts will be available for seven (7) years after production stop of the pump.

7. Specifications

Model			JDK-60T	JDK-80T	JDK-100T
Rated Voltage		V	220~240		
Frequency		Hz	50		
Oper.Press.		kPa	20		
Air Capacity	Aeration	L/min	60	80	100
	Backwash				
Power		W	40	58	78
Outlet Dia.		mm	O.D.19×2（hard vinyl chloride pipe VP13）		
Mass		kg	Approx. 8.5		
Standard Accessories			L-joint hose (with hose band) 2pcs		

※**The air capacity, power in the specifications shown are typical values in service at operating pressure, and so these are not guaranteed values.**

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