

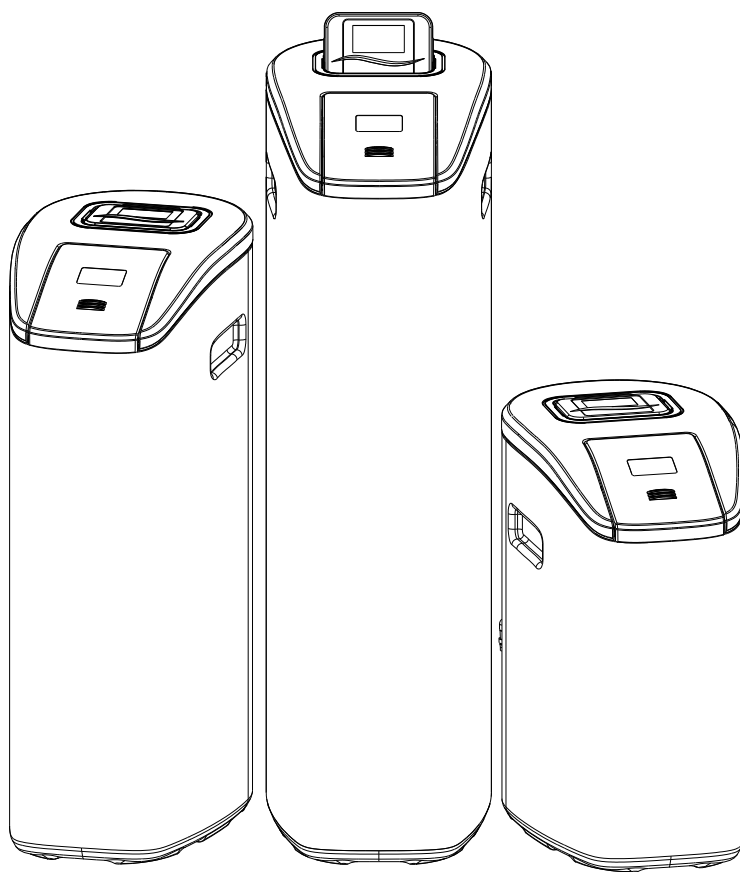
# Domestic Water Softener

Geneva Series

BGE22E

BGE15E

BGE08E



**Installation and Operation Manual**

# About this manual

## 1. Users

This manual is designed for use by the owner.

## 2. Symbol Description



### **Warning**

Please pay attention to this information and it protects the system and the owner/user.



### **Professional**

Only professionals are allowed to operate.



### **Attention**

Please follow the important information about the product. Any improper operation can lead to damage.

## 3. User's Instructions

3.1 Please install the product based on the manual strictly. Product damage, property damage, and possible injury caused by improper installation are not under warranty.

3.2 Please read the manual carefully and prepare the materials and tools for installation.

3.3 The installation of the product should be abide by the local Electric Laws and Regulations. If have any problem , please contact with the local agency.

3.4 High temperature under sunlight will cause deformation and damage for non-metallic accessories. Please do not install the product at outdoors and under strong sunlight directly.

3.5 The product should work within temperature 1°C~39°C. Please protect the water softener and supply lines from freezing .The damage caused by freezing and hot water is not covered under warranty.

3.6 Water softener can reduce the water hardness and reduce iron levels. It is not designed to remove organic contaminants, odor etc. It should only be connected to safe reliable drinking water, biologically and chemically safe potable water. If raw water contains high level of iron, manganese, heavy metals, organic matter, high turbidity, etc., it is suggested that appropriate water filter equipment is installed before the system.

3.7 USE ONLY specialized water softener salt tablets for regeneration. DO NOT use low quality industrial salt, edible salt or pool salt for regeneration. Please consult with the doctor for the people who strictly control the dosage for sodium salt.

# CONTENTS

Product Features .....	1
Product Parameters .....	5
Installation and Commissioning .....	6
Program .....	14
Common Failures .....	21
Main Components .....	22

# PRODUCT FEATURES

## 1. Salt reminding

If the water softener has a low salt sensor, the system will automatically detect the salt level in brine tank after every regeneration. When the salt level lower than the preset reserve level, the system will feedback it to intelligent control system and "SALT" alarming will show on display screen. The buzzer will not alarm in the period 19:30~22:30 every day to remind the users of adding salt until the salt level is raised above the reserve level.



**Please add the salt in time to avoid the risk of using untreated water. Even though show "SALT" alarming on display , the salt in brine tank still can be used for regeneration for 2 or 3 times.**

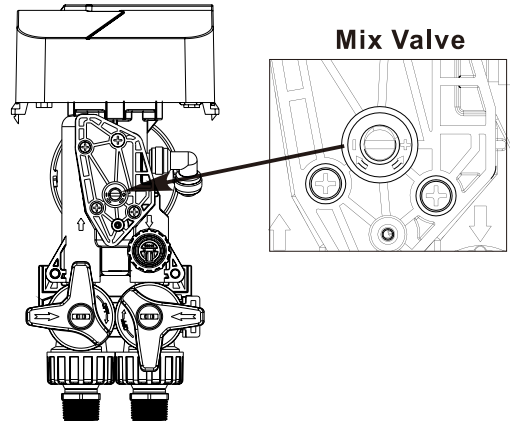
## 2. Built in mix valve,the hardness of outlet water is adjustable

It is convenient for the user to install and adjust the water hardness with mix valve .



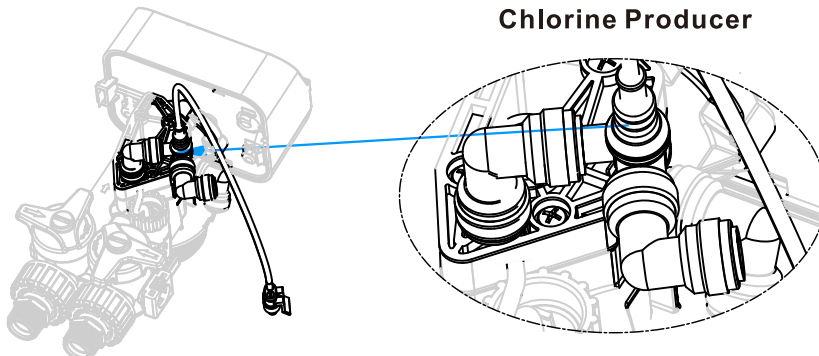
Mix valve is defaulted off. Turn clockwise to decrease the outlet water hardness. Turn anticlockwise to increase the outlet water hardness.

Only professional person can operate. The turning on of mix valve will affect the hardness of outlet water. Please test the outlet water hardness and reset the software.



## 3. Optional chlorine producer

Due to different water quality in different areas, bacteria will breed in resin tank after a long time and lower the exchange efficiency of resin. The chlorine producer will produce chlorine during each regeneration to sterilize the resin and keep it active for a longer time.



# PRODUCT FEATURES

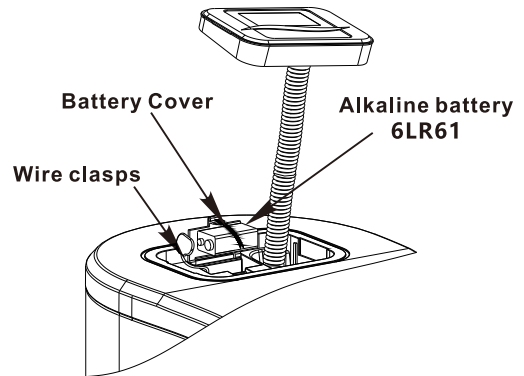
## 4. Backup battery

Once the electric power turns off in any regeneration step, the battery will maintain the control valve complete the current step and drive it to go back to the service position to prevent any possibility of water leakage or wasting water.

Once the electric power turns off in the service position, the backup battery can ensure the data and the settings in the control head to be maintained.



Back up battery is installed under the display. Please open the cover plate and connect the battery to the connectors after configuration.



## 5. Patented, cleanable high accuracy flow meter

Flow meter is one of the core parts of the control valve. The feed water quality varies in different places, the impurities in the feed water will influence the accuracy of flow meter after long running. The control valve uses the external flow meter which is convenient to disassembly and cleaned.

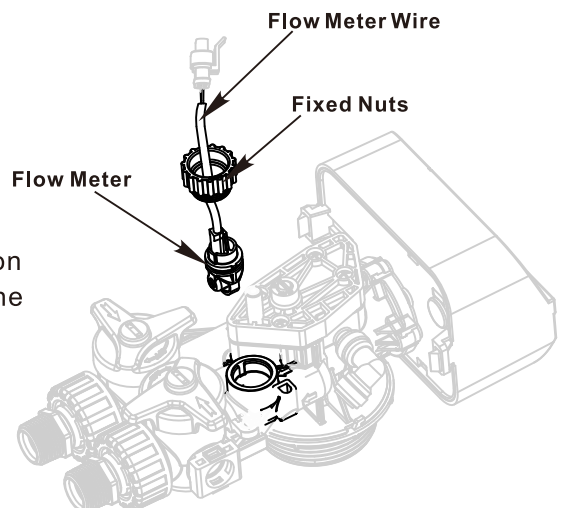


### Cleaning steps for flow meter:

- 1) Pull out the flow meter and PCB plug;
- 2) Screw out the fixed nuts;
- 3) Clamp the flow meter handle and pull out;
- 4) Clean the flow meter;
- 5) Install the flow meter based on the direction of valve. Screw up the fixed nuts and put the plug into control box.

### The flow meter must be cleaned and maintained by professionals only!

The bypass valve should be placed in bypass position when clean the flow meter. Do not grasp the wire and use force to pull up the flow meter. Please pay attention to the clip direction and seal ring when assembly the meter back.

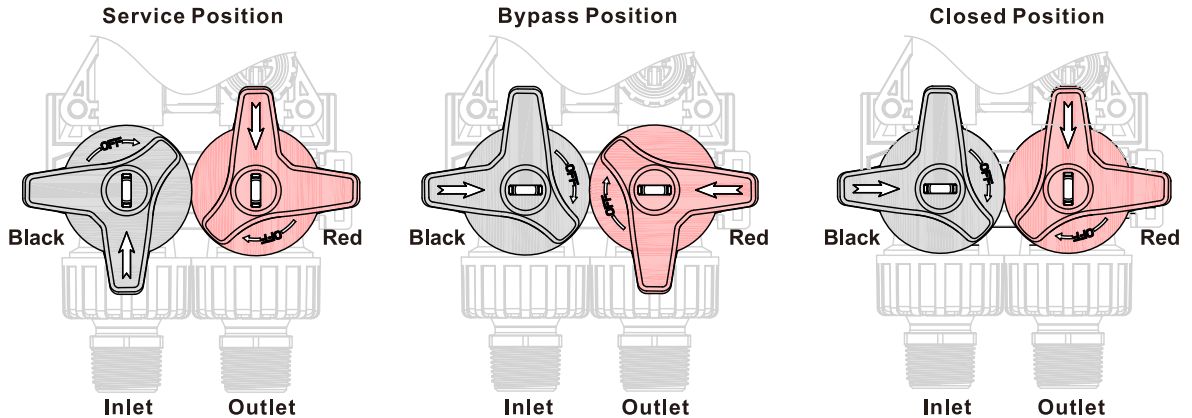


# PRODUCT FEATURES

## 6. Bypass Valves

Bypass valves ensure the convenience of installation and maintenance.

Black handle is for water inlet, red handle is for water outlet. There are three different kinds of state by rotating the bypass handle.



### Instructions for water flow direction in system under different status for bypass valves.

1) **Service Position:** Raw water → Water inlet → Control valve Resin tank → Soft water flow out from outlet

The softener keep normal work when bypass on service position.

2) **Bypass position:** Bypass position → Water inlet → Bypss → Water outlet

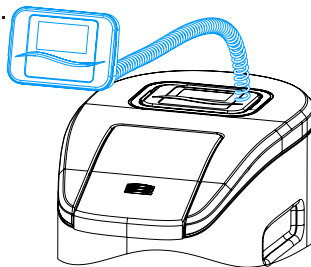
Water flows out from outlet. When changing the resin or performing maintenance, the downstream the control valve is in bypass position. Or do the maintenance, there is no water flow into the softener at this moment.

3) **Closed Position:** Raw water → Water inlet

The other situations when need to close the water outlet

## 7. Wired remote operation

The remote unit is connected with a retractable cable to the softener cabinet for convenient operation within certain distance.



## 8. Pre-refill

Pre-refill keeps the brine tank dry and prevents bacteria from growing in certain conditions.

# PRODUCT FEATURES

## 9. Intelligent control

The water softener is with the latest intelligent control valve with the following advantages.

### ● Up-flow regeneration

During regeneration, the water flow direction is via pilot distributor then upwards from the bottom of resin tank. This reconfigures the compacted resin and flushes impurities from the resin. Brine water passing through the resin dislodges collated hard minerals from resin and regenerates ability of resin to remove hard minerals from the feedwater.

### ● Proportional regeneration

The system will only regenerate the exhausted resin according to the water usage . This can save regenerant and guarantee to keep the resin fully functional.

### ● Holiday mode

When you go out or on a vacation, the holiday mode can ensure the freshness of the resin. It's no need to set by manual. Holiday mode can be turned on and turn off automatically by controller detecting the water usage situation.

- 1) Holiday mode automatically turn-on: Total water usage < 85L , Current flow < 6L/min, treat the day as the 1st day, then enter into holiday mode cycle.
- 2) Holiday mode cycle: Initiate full regeneration for the first time on the fifth day. Only back wash and rapid rinse for each four days after the first regeneration.
- 3) Holiday mode automatically turn-off: Total water usage  $\geq$ 85L or Current flow  $\geq$ 6L/min.



**Holiday mode will produce waste water. Please make sure drainage pipeline smooth and avoid the loss due to waste water blocked.**

## 10. Check water usage data

The user can check below information via display :

- 1) View the average every day water consumption.
- 2) View the maximum daily consumption within recent 7 days.
- 3) View the total water consumption within recent 7 days.
- 4) View the remaining days for maintenance.

## 11. User reminding

The product has the function of automatical reminding for maintenance. When the maintenance time reaches, it will automatically remind the user to call for maintenance by showing the information on the screen, the buzzer will also alarm.

If "Error" and "Call" shows alternately on the screen, along with a beep from buzzer, it means the softener may have malfunctioned. Please contact a service professional for maintenance.



**For the safety of your softener, the maintenance must be done by professionals!**

# PRODUCT PARAMETERS

## 1. Raw Water Requirements

Raw water standard: City water

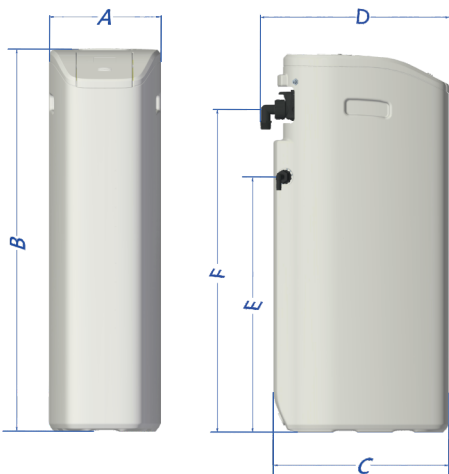
## 2. Product Specification

Model	BGE08E	BGE15E	BGE22E
Working Pressure(MPa)	0.14~0.6		
Water inlet temperature (°C)	1~39		
Power supply	AC 100 ~ 240V 50/60Hz		
Inlet/outlet size	1" or 3/4"		
Drain line size	5/8" OD		
Maximum flow(m <sup>3</sup> /h)	2.7		
Rate flow(m <sup>3</sup> /h)	0.8	1.2	1.8
Water consumption per regeneration(L)	41.6	65.6	79.6
Resin volumn(L)	8	15	22
Salt weight(kg)	16	26	37
Package dimension(mm)	L460*W310*H575	L460*W310*H800	L460*W310*H1010
Shipping weight(kg)	15.1	25.7	32.6

## 3. Softener dimension

### Softener Dimension Drawings

Unit:mm



Model	BGE08E	BGE15E	BGE22E
A	280	280	280
B	530	755	965
C	445	445	445
D	480	480	480
E	215	445	650
F	390	613	825

# INSTALLATION AND COMMISSIONING



Only professional person is allowed to install the water softener.

## 1. Installation Conditions

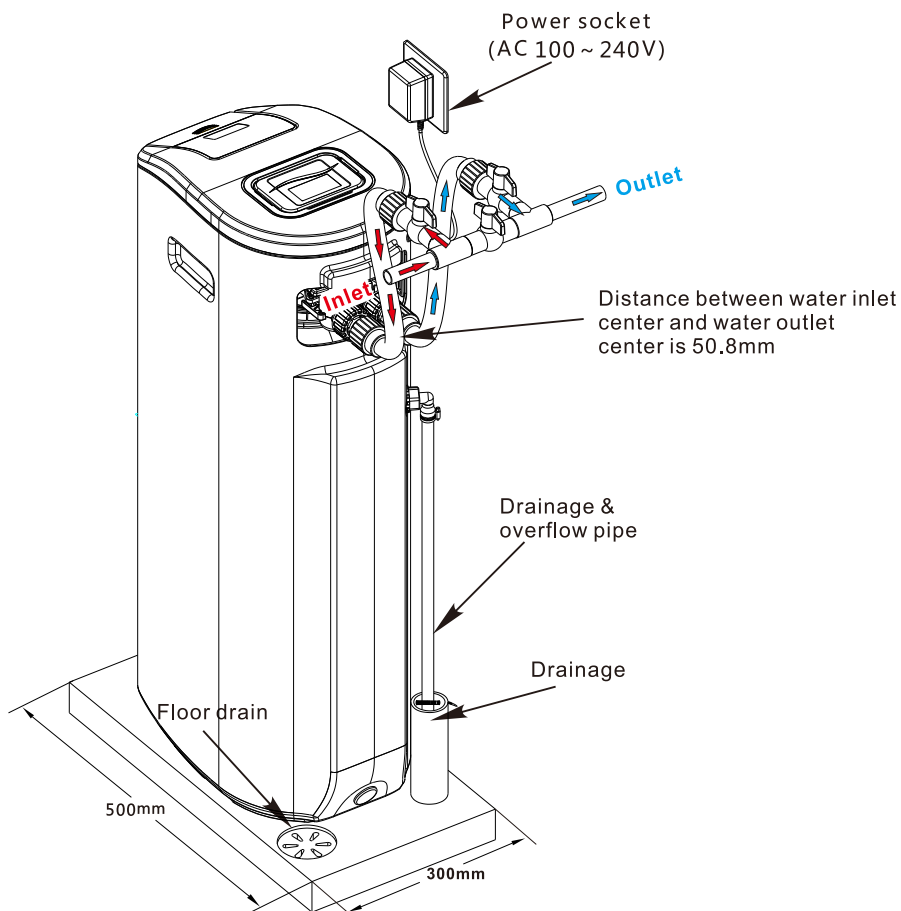
The water softener is usually installed on the inlet line of the municipal water access to kitchen, balcony, etc. The below factors should be taken into consideration for installation.

**Installation space :** Flat ground with Length 60cm\* Width 40cm and can bear pressure no less than 150kg . There are water inlet and outlet , floor drain, power supply and so on . Please reserve enough space for daily salt added and maintenance ;

**Inlet water pressure:** 0.14 ~ 0.6MPa and maximum instantaneous water pressure is not above 0.8MPa.

**Power socket:** Wide voltage design, voltage 100 ~ 240V, the power line is 2 meters.

**Inlet water temperature:** 1°C ~ 39°C and avoid water freezing. Please install check valve between water softener and water heater to avoid damage caused by hot water .



Instructions for the installation

# INSTALLATION AND COMMISSIONING

## 2. Installation Notes

- Please do not install the product close to acid material or gas to avoid the corrosion for the water softener.
- Keep the drainage pipeline fluent to avoid waste water to leak from drainage pipeline. To avoid the risk of water leakage and malfunction. Please contact a service professional for maintenance.
- Drainage&overflow pipeline should be placed above 5~10cm air gap from the waste water to avoid waste water be siphoned.
- Fix the pipe firmly on the wall. Pay attention to the height and angle of the pipe and keep it relaxed to avoid the pipe damage due to the stress.
- Install the water softener vertically to avoid accessory or resin fall into the water softener.

## 3. Installation preparation

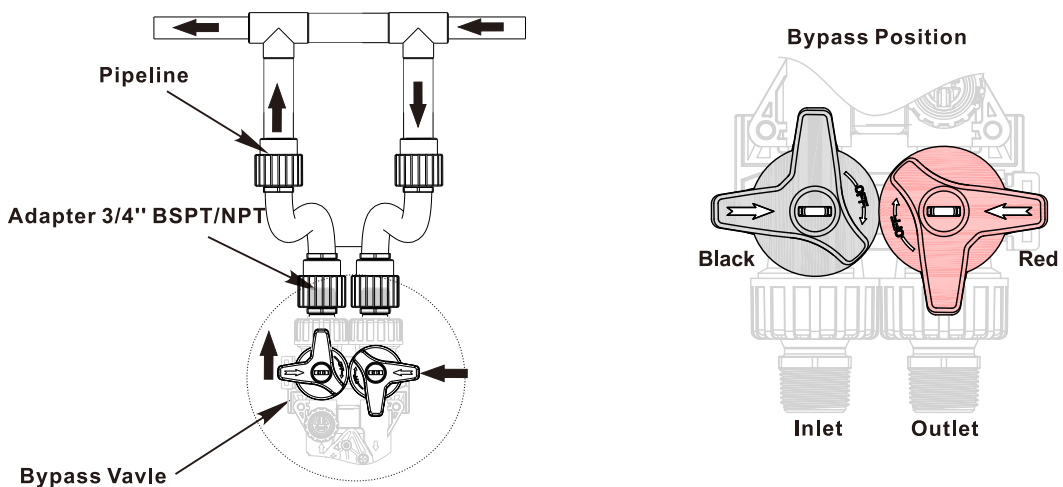
The below materials is attached with the softener. 1 set of bypass , 1 set of 3/4"connector , 1pc of hose clamp , 1pc of Cable tie. Please consult with the local agency if need other accessories.

## 4. Equipment Installation

### 4.1 Install external pipeline

#### (1) Install existing bypass valve

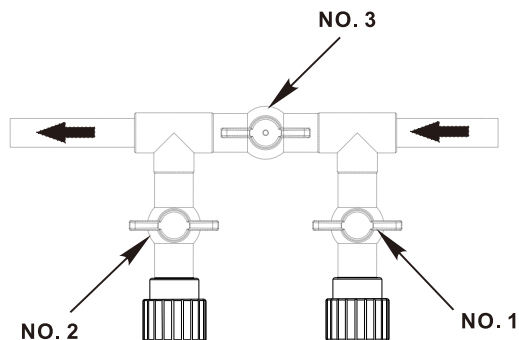
See below pictures , keep the bypass valve in bypass position and the user can use water as usual.



# INSTALLATION AND COMMISSIONING

## (2) Install extra bypass if necessary (option)

No Bypass valve assy - We recommend to install inlet pipeline. After installation, close No.1 and No.2 water inlet valves, open No.3 bypass valve. Then you can use the water as usual.

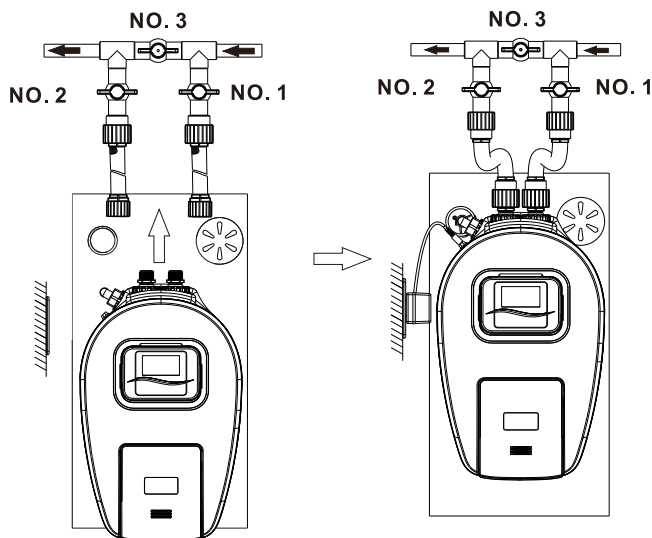


## 4.2 Installation Procedure

Please adjust the external pipeline based on the size of water softener and then start to install the water softener in the proper place.

### (1) Bypass Installation

Connect the bypass with the inlet and outlet pipeline. Please tighten the nuts firmly but not too much strength to avoid the damage to the nuts.

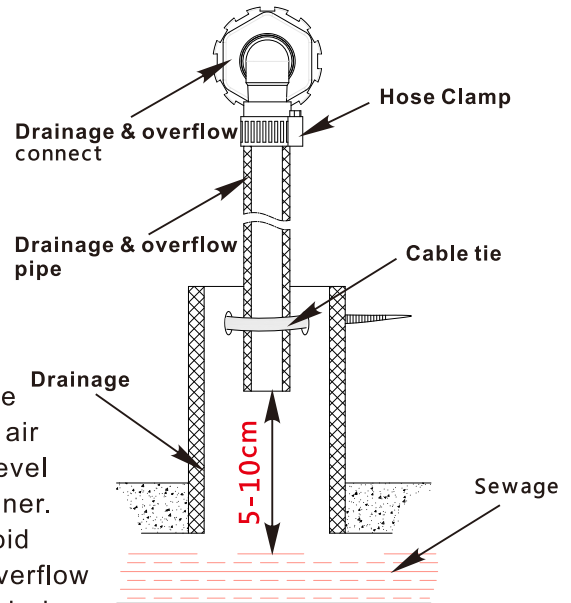


# INSTALLATION AND COMMISSIONING

## (2) Drainage & overflow pipeline installation

- 1) Intercept the appropriate length of drainage & overflow plastic tubes;
- 2) Put one end of drainage&overflow pipeline into the drainage overflow connector and fix them with hose clamp;
- 3) Put the other end of drainage&overflow pipeline into drainage with cable tie and fix it firmly.

Please minimize the connection length of drainage pipe to reduce the pipe bends. Make sure 5-10cm air gap between drainage pipe and the waste water level to prevent waste water siphoned back to the softener. Please connect the drainage pipe vertically to avoid overflow! If the home drainage pipe higher than overflow drain on the softener, please directly connect the drainage pipe from the control valve instead of from the brine tank to avoid overflow.



## 5 Debugging the program

### 5.1 Power adapter

There is power adapter 100~240V AC 50/60Hz for the water softener. Connect one end of power adapter with socket and the other end with water softener and then debugging the softener.



**To protect the safety of your property, please make sure no water on the ground and keep surface of power adapter dry. Please pack up the wires properly.**

### 5.2 Programe

#### (1) Start-up softener

Turn on the water softener and the display screen will show as the picture. If the softener is built in low salt sensor, salt alert will appear for reminding of adding salt.




Omit adding salt reminding and skip into next step.

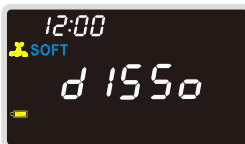
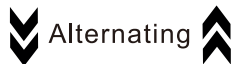
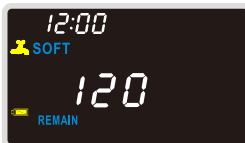
# INSTALLATION AND COMMISSIONING


## (2) Time Setting


Please refer to user program set on page 16 for time setting.


## (3) Clean the pipeline, exhaust all the air, airtightness inspection


 To well protect your accessories, please follow the below steps for the installation !



1) Turn on the power and show service position, long press  3s to initiate an immediate regeneration.

2) Countdown for refill step show on the screen, short press  and will switch to next step.

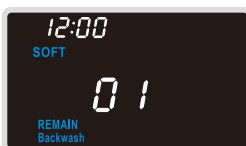
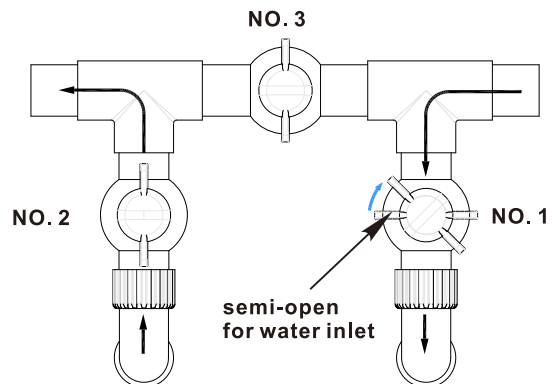
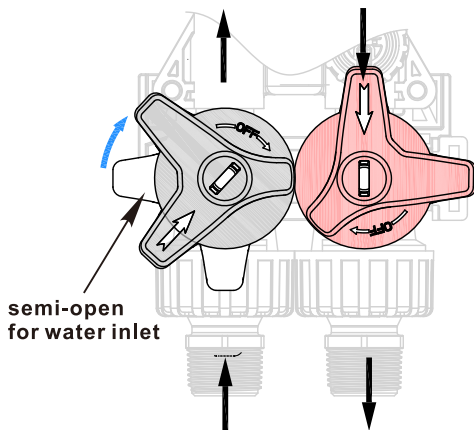
3) Countdown for salt dissolving step show on the screen, short press  and switch to next step.

4) Countdown for brine step show on the screen, short press  and switch to next step.


5) Countdown for back wash show on the screen. Turn off the power in this position and the user can wash pipeline and exhaust the inner air.

# INSTALLATION AND COMMISSIONING

- Make sure the bypass valve in the bypass position.
- Open one home water taps near the softener, let the water flow to flush any residues inside the pipe. Then close the water taps.
- Check the water inlet valve to make sure that water flow is fluent and no impurities in water. Then close the water.
- Adjust the bypass as below position to exhaust the air.
  - a. For softener built in bypass valve, rotate the bypass semi-open to exhaust the air slowly.
  - b. For the external bypass valves installed by the user, close the NO. 3 and open NO. 2. Rotate the water inlet NO. 1 semi-open to exhaust the air slowly.
- It will take about 15 minutes to exhaust the air. Please check if have water and air from drainage line and make sure drainage pipeline fluent.
- Make sure no leakage for water softener and pipeline.




6) Turn on the power, after exhausting the air and the screen will show reset.

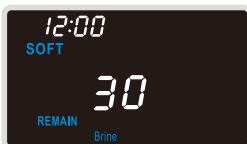
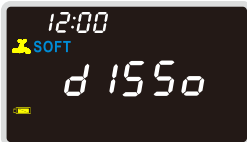
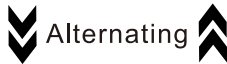
7) After reset, the screen stay on backwash position, short press  back to service position.

8) Rotate bypass to service position.

# INSTALLATION AND COMMISSIONING

## (4) Inspection for refill and brine

Make sure refill and brine draw of water softener is normal after exhausting the air. In service position, long press  for 3 seconds to initiate an immediate regeneration.




1) On service position, long press  for 3 seconds and initiate immediate regeneration.

2) Count down in refill position  
It takes about 4~5 minutes to refill. Please observe whether the refill is normal. After finishing refill step, the system automatically goes into salt dissolving position.

3) Short press  to skip dissolve position and go into next step.

4) It usually takes about 15 minutes for brine draw on brine position. Please observe if the water level in brine tank. Then observe if have water and air from drain line to make sure drainage pipeline fluent and no leakage for pipeline connectors.

## (5) Inspection for backwash position and rinse position

Short press  to backwash position, observe whether the water flow out from drainage pipe is normal. System automatically move into rinse position. Observe whether the water flow out from drainage pipe is normal. After rinse step, the system automatically moves back to service position.

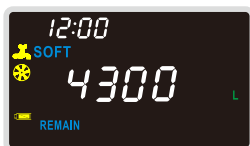


1) Back wash position

# INSTALLATION AND COMMISSIONING



2) Rinse position



3) Service position

The system will go back service position automatically after the above steps.


## 6. Salt Adding

Press down the brine tank cover and fill in the brine tank with regenerated grain salt. The adding salt reminding on screen will disappear at the same time.

## 7. System Parameter Setting

Set the system parameters according to local regulations and user's demand. Please follow the below three points.

- 1) Set water hardness unit;
- 2) Set inlet water hardness based on the test data of inlet water hardness;
- 3) Set treated water hardness by adjusting mix valve.

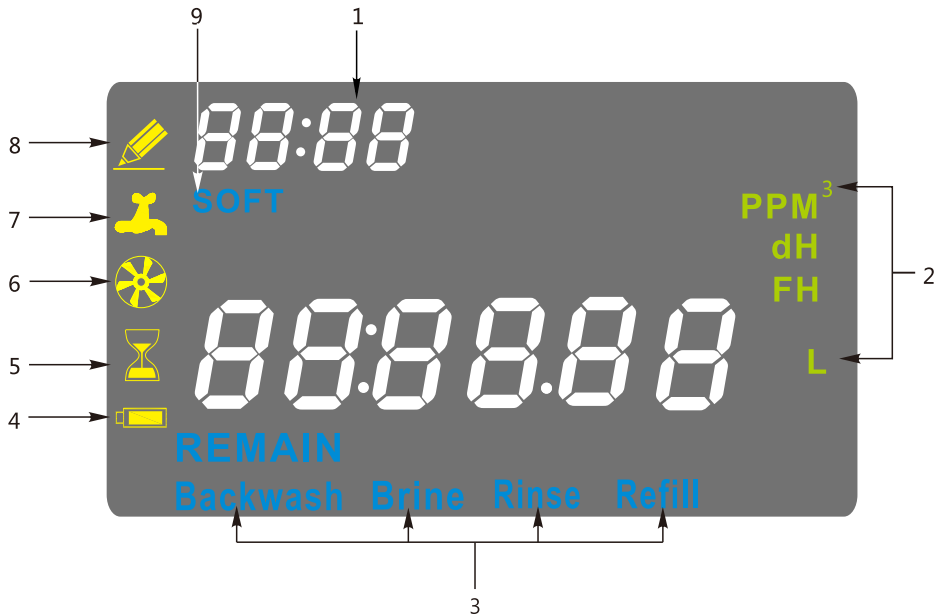
If the user wants to adjust the outlet hardness manually, open the mix valve, test the outlet hardness in service position. Input the required water treated hardness into the system and then water capacity will be automatically updated. Press  return to service position after finishing the setting.

Please refer to user program setting on page 16 step 3 for system setting.

8. Install the backup battery after installation and commissioning, the softener is now ready for use.

# PROGRAMME

## 1. Screen Display



**1. Current time:** Diagnosis information in the diagnosis mode.

**2. Unit**

**3. Cycle step:** When it's flashing, it means the control is moving to the current cycle step.

**4. Battery:** The backup battery has been installed. When it's flashing, it means the battery power is low.

**5. Queued regeneration:** A queued regeneration is initiated. When it's flashing, it means the control valve is waiting for regeneration.

**6. Flow meter:** When it's flashing, it means the flow is passing the meter.

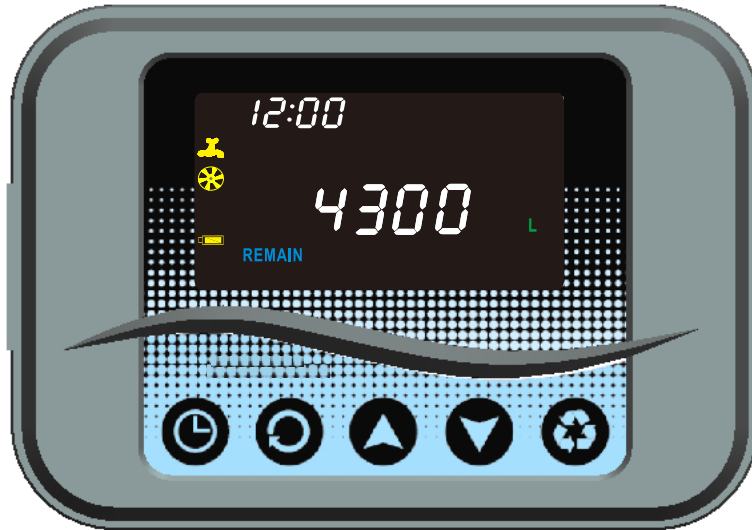
**7. In service:** When it's flashing, it means the control valve is moving to service position.

**8. Edit:** When it's shown on the screen, it means the control valve is in setting.

**9. TYPE:** "SOFT" means water softener

# PROGRAMME

## 2. Panel & Buttons



### Menu

Short press - Enter the OEM setting



### Enter

1 Short press - enter  
2 Long press(3s)- Enter the users query



### Up

1 Short press - Increase or cancel reminding



### Down

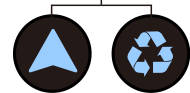
1 Short press - Decrease



### Cycle

1 Short press - Return last setting or queued regeneration or skip to the next cycle step.  
2 Long press(3s) - Initiate an immediate regeneration

Press and hold for  
3 seconds simultaneously



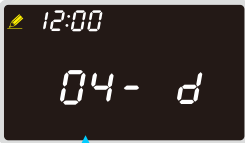
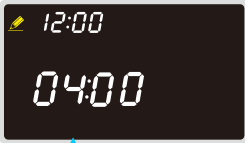
Reset

# PROGRAMME

## 3. User Program Set





Display	Default	Range	Description
	N/A	N/A	1) Press  menu for 3 seconds to set current time.
<p>Flashing</p> 	12	00 ~ 23	2) Set hour Press  or  to edit, then press  to save.
<p>Flashing</p> 	00	00 ~ 59	3) Set minute Press  or  to edit, then press  to save.
 <p>Flashing</p>	PPM	PPM dH FH	4) Set hardness unit Press  or  to edit, then press  to save.
 <p>Flashing</p>	200(PPM) 20(dH) 30(FH)	30 ~ 1000 1 ~ 150 1 ~ 250	5) Set the hardness number of inlet Press  or  to edit, then press  to save.
 <p>Flashing</p>	0	0 ~ the hardness number of inlet	6) Set the hardness number of outlet Press  or  to edit, then press  to save. "0" means the mix valve function off.

# PROGRAMME

Display	Default	Range	Description
 Flashing	04	00 ~ 10	7) Set override day Press ▲ or ▼ to edit, then press ⏻ to save.
 Flashing	04:00	00:00 ~ 23:59	8) Set regeneration time Press ▲ or ▼ to edit, then press ⏻ to save and back to home screen.

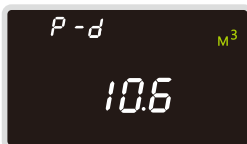
# PROGRAMME

## 4. User queries

Press  and hold for 3 seconds into user queries. Press  or  to check. Short press  to exit and back to home screen.



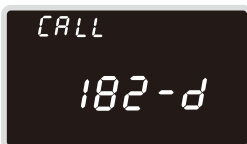
1) View the average water consumption(Average water consumption within recent 7 days, updated at 00:00,once a day).



2) View the maximum daily water consumption within recent 7 days(Updated at 00:00,once a day).



3) View the total water consumption within recent 7 days (Updated at 00:00, once a day).





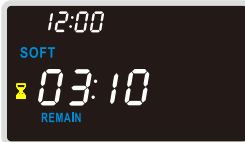
4) View the remaining days for maintenance.

# PROGRAMME



## 5. Set manual regeneration mode

### • Queued regeneration

On service position, short press  initiate a queued regeneration. The control valve will regenerate at the preset regeneration time of that day. Press  again to cancel the queued regeneration.



### • Manual Initiate regeneration

On service position, press  and hold for 3 seconds, the control valve will initiate a immediate regeneration. Press  again will switch to the next cycle step.




**All manual regeneration is 100% full regeneration!**

## 6. Reminding information




### (1) Replace battery

When the battery power is low , the icon "" is flashing to remind the user to replace the battery . After replacing the battery , the battery icon is back to normal.



### (2) Adding salt reminding

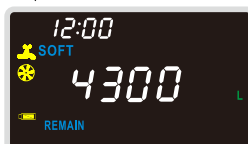
- 1) When the salt level in brine tank lower than the reserved level, the screen will alternate between the home screen and "Add Salt". The buzzer will alarm in the period of 19:30~22:30 to remind the user to add the salt in time.
- 2) The user can short press  to cancel the buzzer alarm manually, but not the screen reminding.
- 3) When the salt added and the level is higher than the reserved level, the reminding and alarm will disappear.



# PROGRAMME



↕ Alternating ↗



### (3) Maintenance reminding

- 1) When the maintenance time reaches, the screen will alternate between the home screen and reminding information. The buzzer will alarm in the period of 19:30~22:30 to remind the user to contact with professionals for maintenance.
- 2) The user can short press to cancel the alarm manually and the display will return home screen. It will not remind maintenance until the next maintenance time reached.



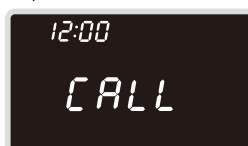
**It is defaulted that the water softener had been maintained if the user cancel the maintenance reminding and won't remind again. The system will countdown the days for next maintenance. Please contact with the professional service person if required.**

## 10. System errors automatically detect and reminding

If the error show on the display caused by system failures, then it can not be cancelled manually. After problems solved, the reminding will automatically disappear.



↕ Alternating ↗



### 1) Errors reminding

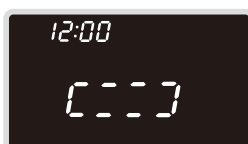
The screen will show "Error" and "Call" alternating if have errors for control valve, the buzzer will also alarm.



**If several reminders appear at the same time, priority sequence is error alarm, low salt reminding and maintenance reminding.**

## 11. Reset

Reset can be tried once any error alarm appear. If the error still exists after reset, please call professionals for more assistance. If the error disappears, the valve will return to its position where the error occurs.



Press + simultaneously and hold for 3 seconds, the screen show as left

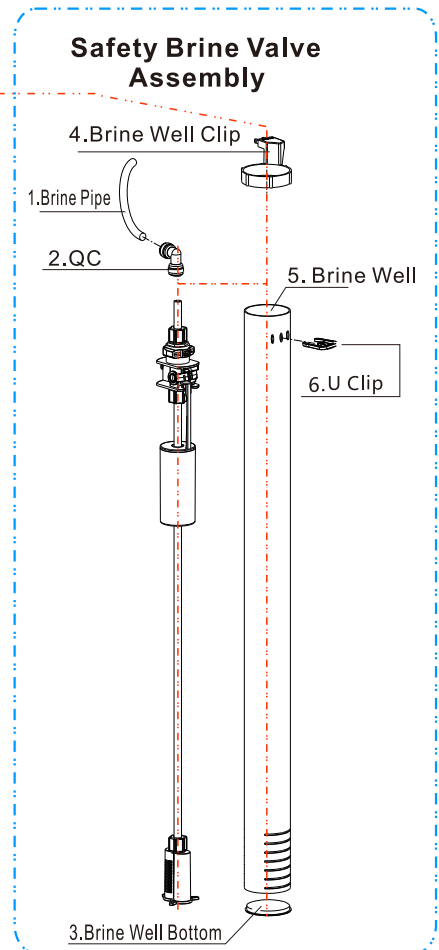
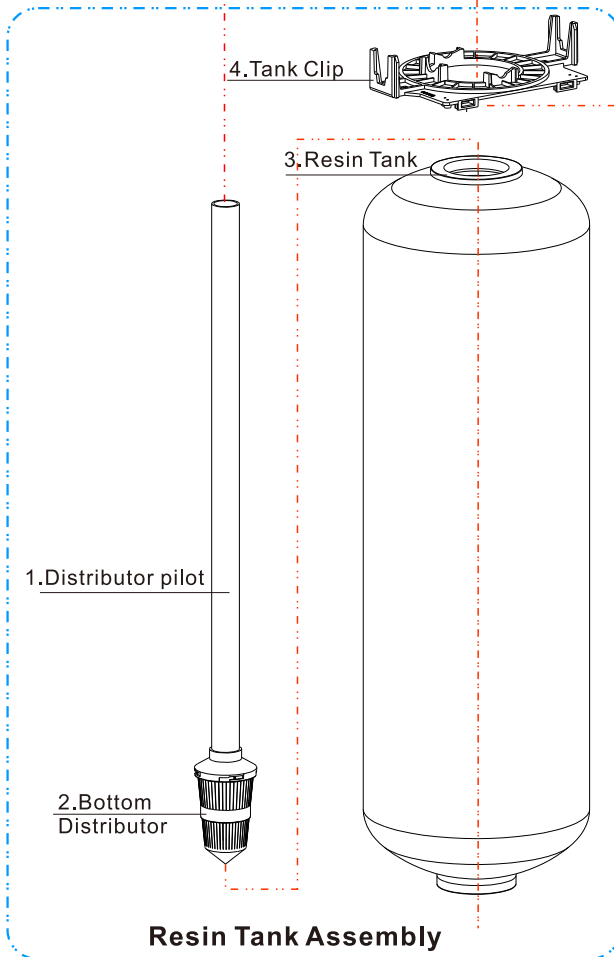
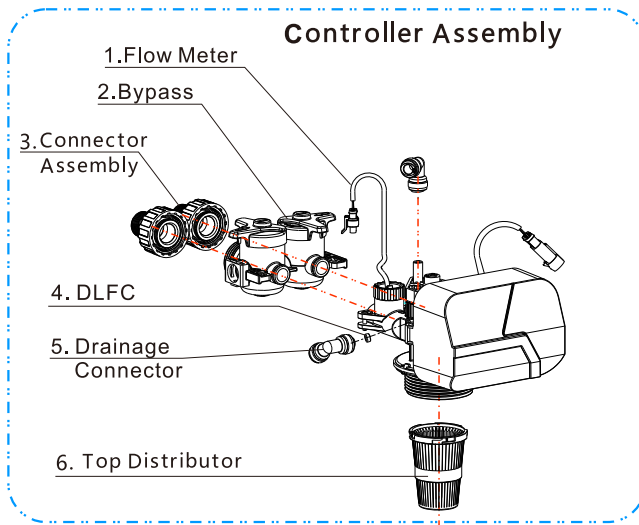
# COMMON FAILURES

Common Failures	Reason analysis	Solutions
No soft water after regeneration	1. No salt in the brine tank, or there's salt bridge inside the tank.	Adding salt or smash the salt bridge.
	2. Brine pipeline is blocked by impurity.	Disassemble the safety valve, clean the brine pipeline and brine tank.
	3. Drainage pipeline is blocked or freezed.	Clean the drainage pipeline and keep it warm. Make sure it is not twisted.
	4. Injector is blocked.	Open the control valve and clean the injector.
	5. Brine draw step error.	Repair or change safety valve and control valve.
The treated water hardness is higher than setting	1. Bypass valve is not in service position	Adjust the bypass valve to service position.
	2. The inlet and outlet water pipe are installed in reverse.	Install the water inlet and water outlet pipe correctly.
	3. The raw water hardness is higher than setting.	Reset the inlet hardness.
	4. Resin is polluted and invalid.	Contact with the agency and change the resin.
	5. Error for flow meter and water softener can not regenerate.	Change the flow meter if it does not work after cleaning the flow meter.
Salty taste for treated water	1. Low pressure for inlet water makes pipe not fully cleaned.	Install booster pump to increase pressure of inlet water.
	2. Drainage pipeline or D.L.F.C is blocked.	Clean up the jams.
Treated water is yellow	1. Treated water is yellow after new installation.	The treated water will be normal after 15 minutes of washing.
	2. Treated water is turbidity.	If softener is not used for a long time, bacteria will grow on the resin. After wash the resin with plenty of water, if the treated water is clean, then you can use the softener normally. Or else you need to change the resin.
No blinking for icon of flow meter	1. Flow meter is broken out.	Clean the flow meter first and replace it if it still doesn't work.
	2. Poor contact for wire of flow meter.	Plug the wire of flow meter tightly or replace wire plug.
Blinking for icon of flow meter when no water outflow	1. There is water leakage for pipeline in the house.	Repair the pipeline with water leakage.



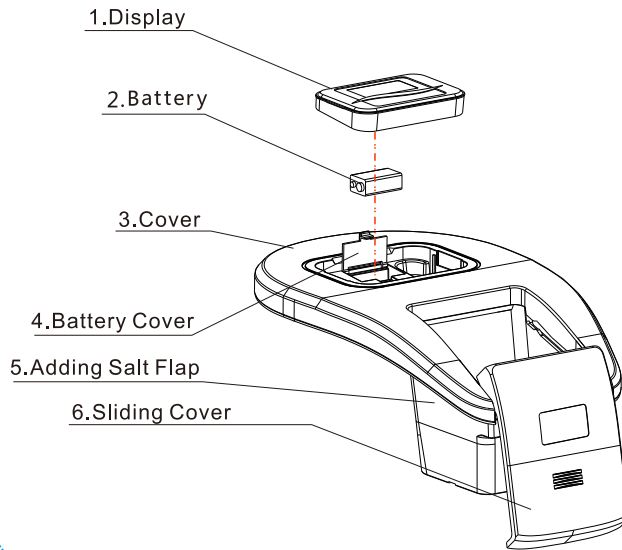
**Please contact with professionals for service except lack of salt and yellow water for new water softener !**

# MAIN COMPONENTS

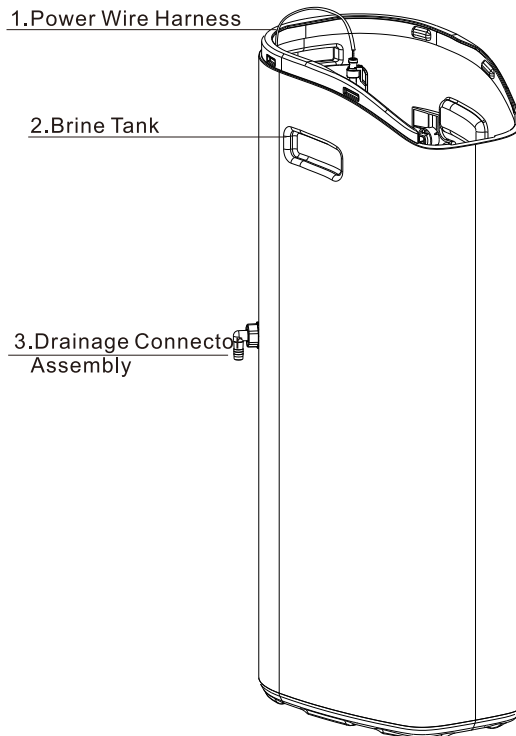


# MAIN COMPONENTS

## Upper Cover Assembly

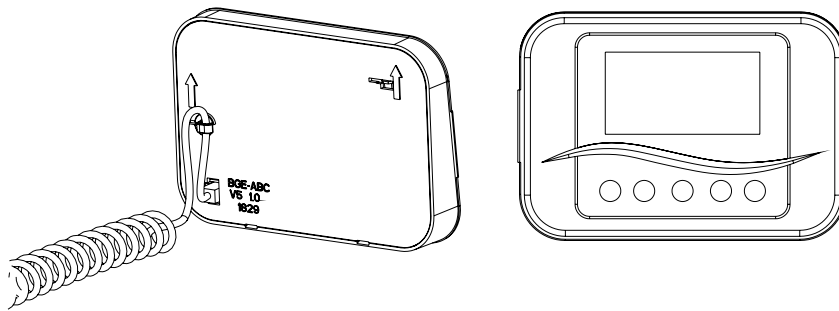


## Brine Tank

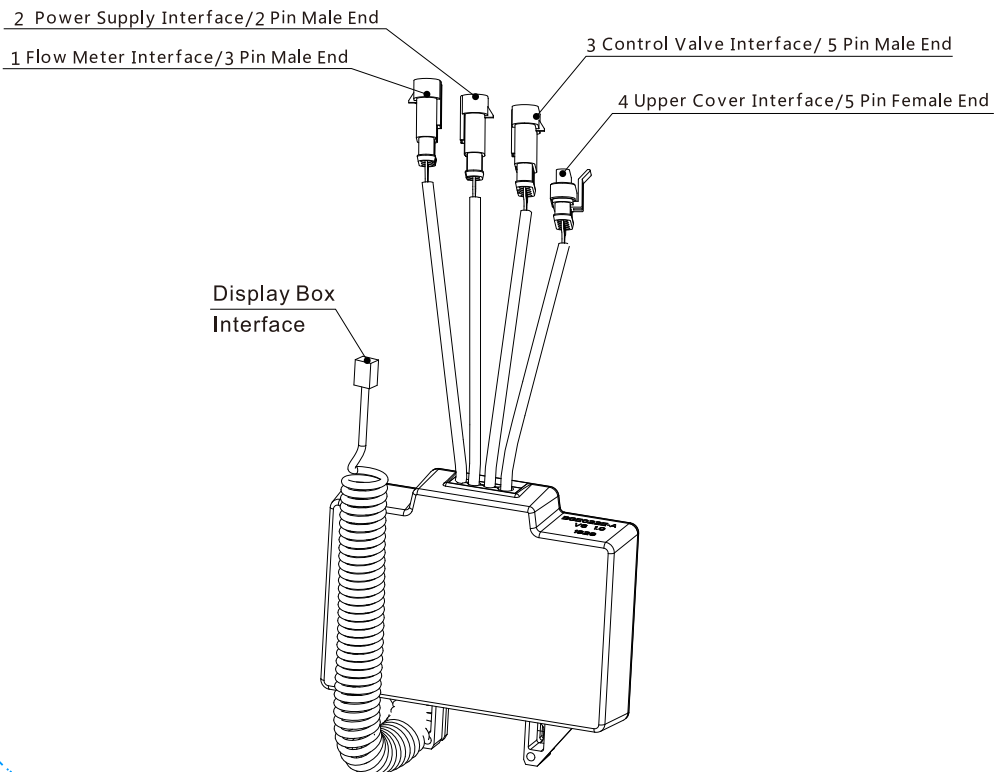


# MAIN COMPONENTS

## Display Module



## Control Module



Rev. V2 2019.12.19

1908243