



## Multi-functional Flow Control Valve for Water Treatment Systems

- 17610 (F88A)    One in service and one standby fixed bed system  
17606 (F98A)
- 93610 (F88C)    One in service and one standby floating bed system  
93606 (F98C)

### **WENZHOU RUNXIN MANUFACTURING MACHINE CO.,LTD**

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Rev.A.2203

## Instruction Manual



Please read this manual in details  
before using this valve and keep it properly  
in order to consult in the future

0WRX.466.539

Before the valve put into use, please fill in the below content so as to help us to refer in the future.

**Softener System Configuration**

Tank Size: Dia. \_\_\_\_\_mm, Height\_\_\_\_\_mm;  
 Resin Volume \_\_\_\_\_L; Brine Tank Capacity\_\_\_\_\_L;  
 Hardness of Raw water\_\_\_\_\_mmol/L; Pressure of Inlet Water\_\_\_\_\_MPa;  
 Control Valve Model\_\_\_\_\_ ; Number\_\_\_\_\_ ;  
 The Specification of Brine Line Flow Control\_\_\_\_\_ ; Injector No.\_\_\_\_\_  
 Water Source: Ground-water  Filtered Ground-water  Tap Water  Other\_\_\_\_\_.

**Parameter Set**

Parameter	Unit	Factory Default	Actual Value
Time of Day	Hour:Min.	Current time	
Control Mode A-01/02	/	A-01	
Backwash Frequency (Only for 17610/17606)	/	F-00	
Unit Mode HU-01/02/03	/	HU-01	
Water Treatment Capacity	m <sup>3</sup>	80.00	
Resin Volume	L	50 L.	
Water Hardness	mmol/L	1.2 mmol/L	
Regeneration Factor	/	0.65	
Fast Rinse Time	Min.	10	
Settling Bed Time (Only for 93610/93606)	Min.	10	
Backwash Time (Only for 17610/17606)	Min.	10	
Brine & Slow Rinse Time	Min.	70	
Brine Refill Time	Min.	05	
Maximum Interval Regeneration Days	D	30	
Output Mode b-01(02)	/	b-01	

●If there is no special requirement when purchase product, we choose 3# injector for the standard configuration.

**Catalogue**

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## Notice

- To ensure normal operation of the valve, please consult with professional installation or repairing personnel before using it.
- If there is any of pipeline engineering and electric works, there must be finished by professional at the time of installation.
- Do not use the control valve with the water that is unsafe or unknown quality.
- Depending on the changing of working environment and water requirement, each parameter of softener should be adjusted accordingly.
- When the water treatment capacity is too low, please check the resin. If the reason is shortage of resin, please add; if the resin turn to reddish brown or broken, please replace.
- Test water periodically to verify that system is performing satisfactorily.
- Ensure that there is solid salt all the time in the brine tank in the course of using, when this valve is used for softening, the brine tank should be added the clean water softening salts only, at least 99.5% pure, forbidding use the small salt.
- Do not put the valve near the hot resource, high humidity, corrosive, intense magnetic field or intense vibrations environment. And do not leave it outside.
- Forbidden to carry the injector body. Avoid using injector body as support to carry the system.
- Forbidden to use the brine tube or other connectors as support to carry the system.
- Please use this product under the water temperature between 5 ~ 50°C, and water pressure 0.2 ~ 0.6MPa. Failure to use this product under such conditions voids the warranty.
- Control valve for floating bed have higher requirement for water inlet pressure, the pressure is better between 0.2 - 0.3MPa. It is advised to install a pressure maintaining valve in the inlet pipeline. If the water pressure exceeds 0.6Mpa, a pressure reducing valve must be installed before the water inlet. While, if the water pressure under 0.2MPa, a booster pump must be installed before the water inlet.
- It is suggested to install PPR pipe, corrugated pipe or UPVC pipe, instead of TTLSG pipe. Pipeline installation should be straight.
- Please use specific resin tank for floating bed and appropriate strainers (Water cap type is preferred). The resin should be filled to 10-15 cm lower than the top strainer.
- Do not let children touch or play, because careless operations may cause the procedure changed.
- When the attached cables of this product or transformer of this product are broken, they must be changed to the one that is from our factory.
- Please install a disc filter on the inlet of the control valve.

## 1. Product Overview

### 1. Product Overview

#### 1.1. Main Application & Applicability

Used for softening or demineralization water treatment systems

Suitable for:






- Residential softening system
- Ion exchange equipment
- Boiler softening water system
- RO pretreatment softening system, etc.

#### 1.2. Product Characteristics

##### ● Simple structure and reliable sealing

It adopts hermetic head faces with high degree pottery and corrosion resistance for opening and closing. It combines with Service, Backwash (Settling Bed), Brine & Slow Rinse, Brine Refill and Fast Rinse.

##### ● One Valve for dual purpose

When you install the valve, set up the outlet port toward left, it becomes valve 93610. If it is toward right, it becomes valve 17610(17606). When the valve power on, hold and press buttons  and  for 5 seconds can enter the model choice mode. Press  or  to select the right valve model and then press  to confirm.

##### ● Meter type, one valve on double tanks to supply water uninterruptedly

##### ● Manual function

Realize regeneration immediately by pressing  at any time.



##### ● Long outage indicator

If outage overrides 3 days, the time of day indicator "12:12" will flash to remind to reset new time of day. The other set parameters do not need to reset. The process will continue to work after power on.

##### ● LED dynamic screen display

The stripe on dynamic screen flash, it indicates the control valve is in service position, otherwise, it is in regeneration cycle.

##### ● Button lock

No operations to buttons on the controller within 1 minute, button lock indicator lights on which represents buttons are locked. Before operation, press and hold the  and  buttons for 5 seconds to unlock. This function can avoid incorrect operation.

##### ● Signal output

There is a signal output connector on main control board. It is for controlling external wiring (Refer to Figure from Figure 3-2 to Figure 3-6).

There are two kinds of output modes. b-01 Mode: Turn on start of regeneration and shut off at the end of regeneration; b-02 Mode: Signal is available only at intervals of each status. (For valve 93610/93606, the Backwash in Figure 1 and Figure 2 shall be Settling Bed.)

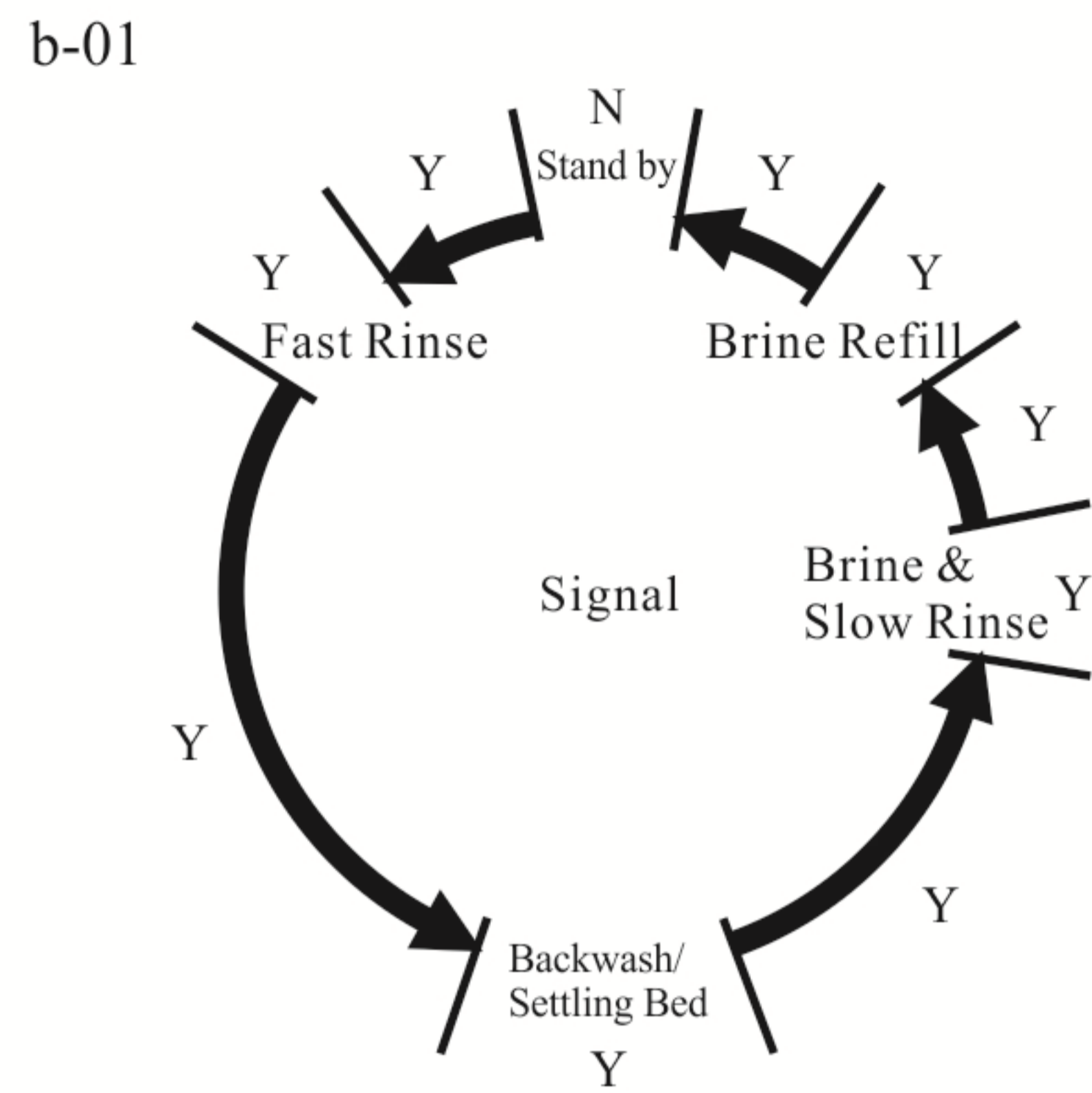


Figure 1 (b-01)

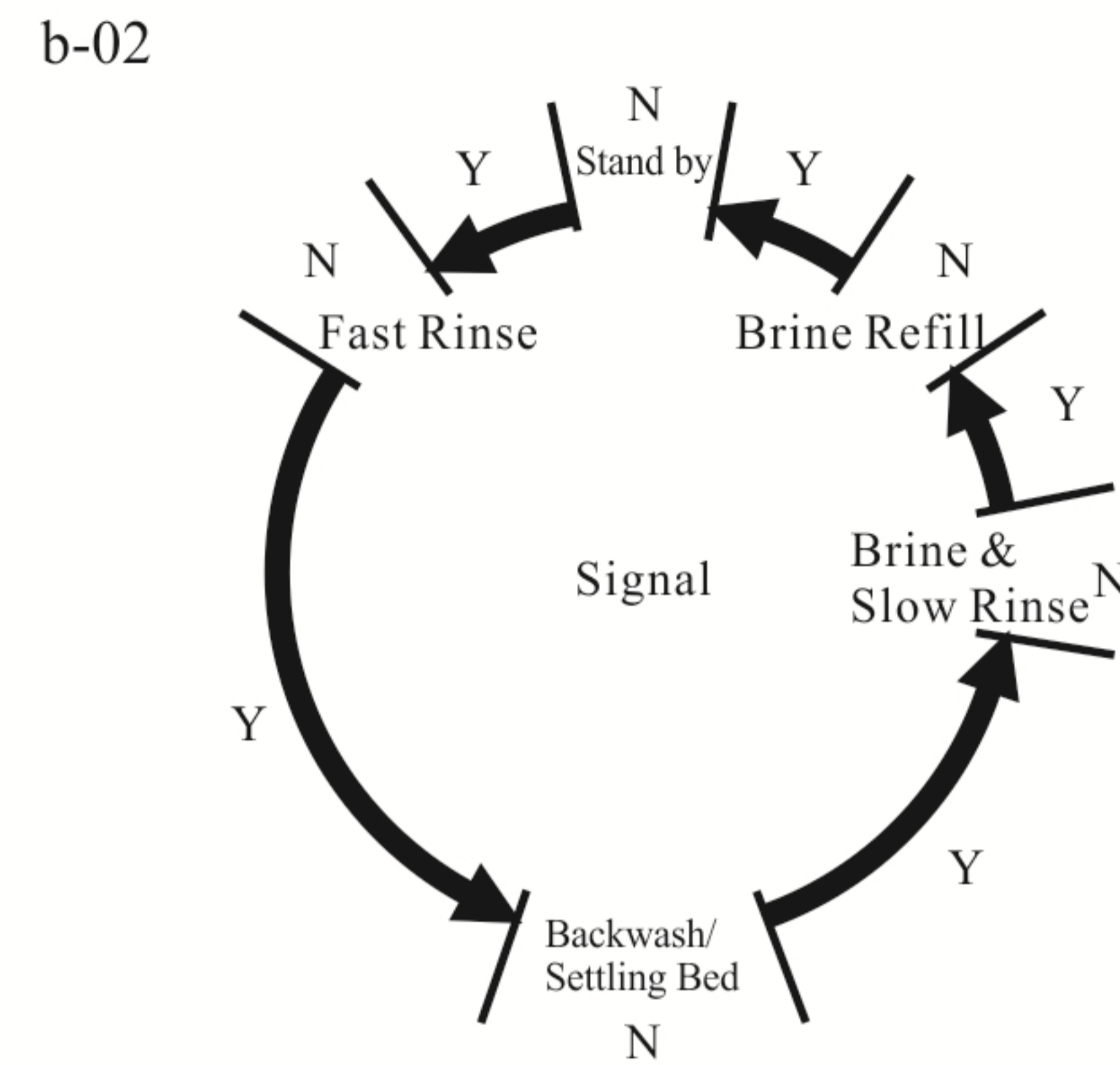


Figure 2 (b-02)

● **Remote handling connector**

This connector can receive external signal, used together with PLC, and computer etc. to control the valve. (Application refer to Figure 3-8)

● **Pressure relief connector**

17610/17606: The valve will cut off feeding water to drain line when it switches in regeneration cycles (Same as signal output b-02). It is usually adopted in the system with a boost pump installed on the inlet. When the motor switches, it releases the pressure between inlet and valve to avoid the pressure rinsing too fast to damage the valve. (Application refer to Figure3-7)

93610/93606: Signal is given all the cycle except settling bed status. It is mainly used in the system with pump supply water. It only turn off the pump in settling bed status.

● **Maximum interval regeneration days**

Under the situation of service reaching the setting days and the volume not yet, it could enter into regeneration process forcibly when current time is the same as regeneration time.

● **All parameters can be modified**

According to the water quality and usage, the parameters in the process can be adjusted.

**1.3.Service Condition**

This valve should be used under the below condition:

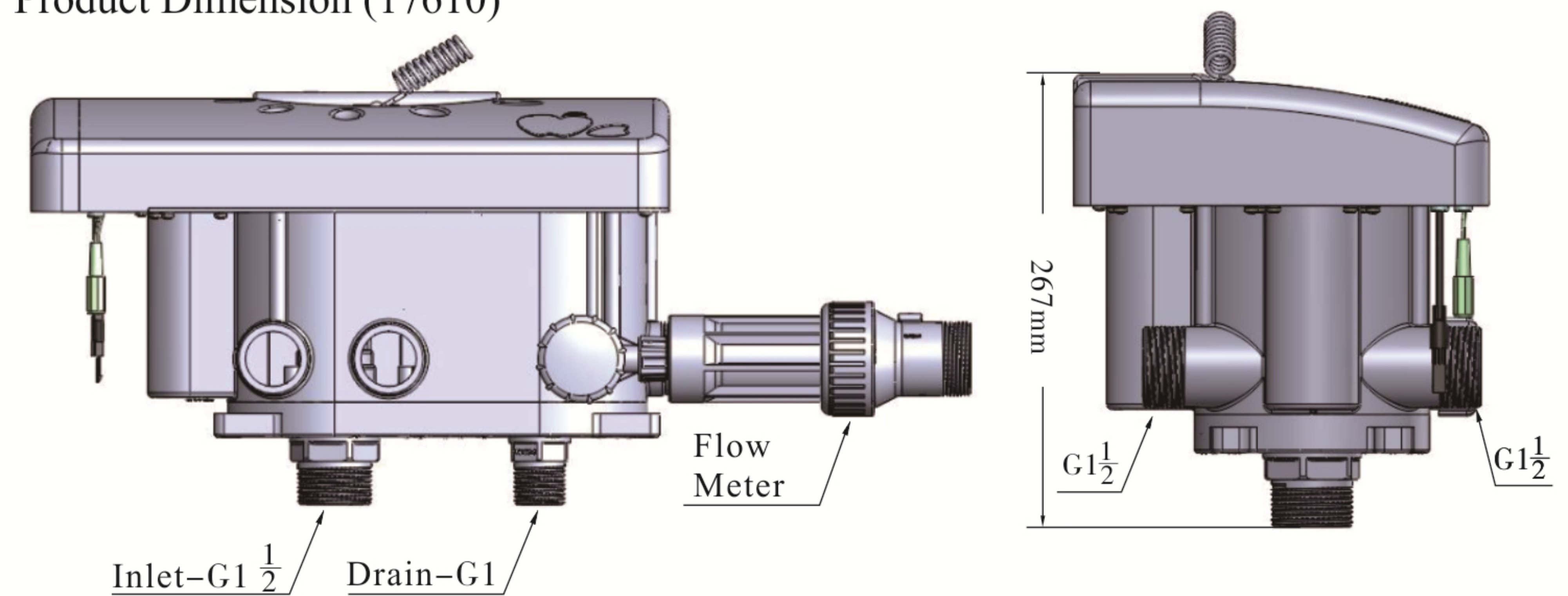
Item		Requirement
Working Conditions	Water Pressure	0.2MPa ~ 0.6MPa
	Water Temperature	5℃ ~ 50℃
Working Environment	Environment Temperature	5℃ ~ 50℃
	Relative Humidity	≤95% ( 25℃ )
	Electrical Facility	AC100 ~ 240V/50 ~ 60Hz
Inlet Water Quality	Water Turbidity	Down-flow regeneration <5FTU; Up-flow regeneration <2FTU
	Water Hardness	First Grade Na <sup>+</sup> : 93610/93606 <15mmol/L 17610/17606 <6.5mmol/L
	Free Chlorine	<0.1mg/L
	Iron <sup>2+</sup>	<0.3mg/L
	CODMn	<2mg/L ( O <sub>2</sub> )

In the above table, First Grade Na<sup>+</sup> represents First Grade Na<sup>+</sup> Exchanger. Second Grade Na<sup>+</sup> represents Second Grade Na<sup>+</sup> Exchanger.

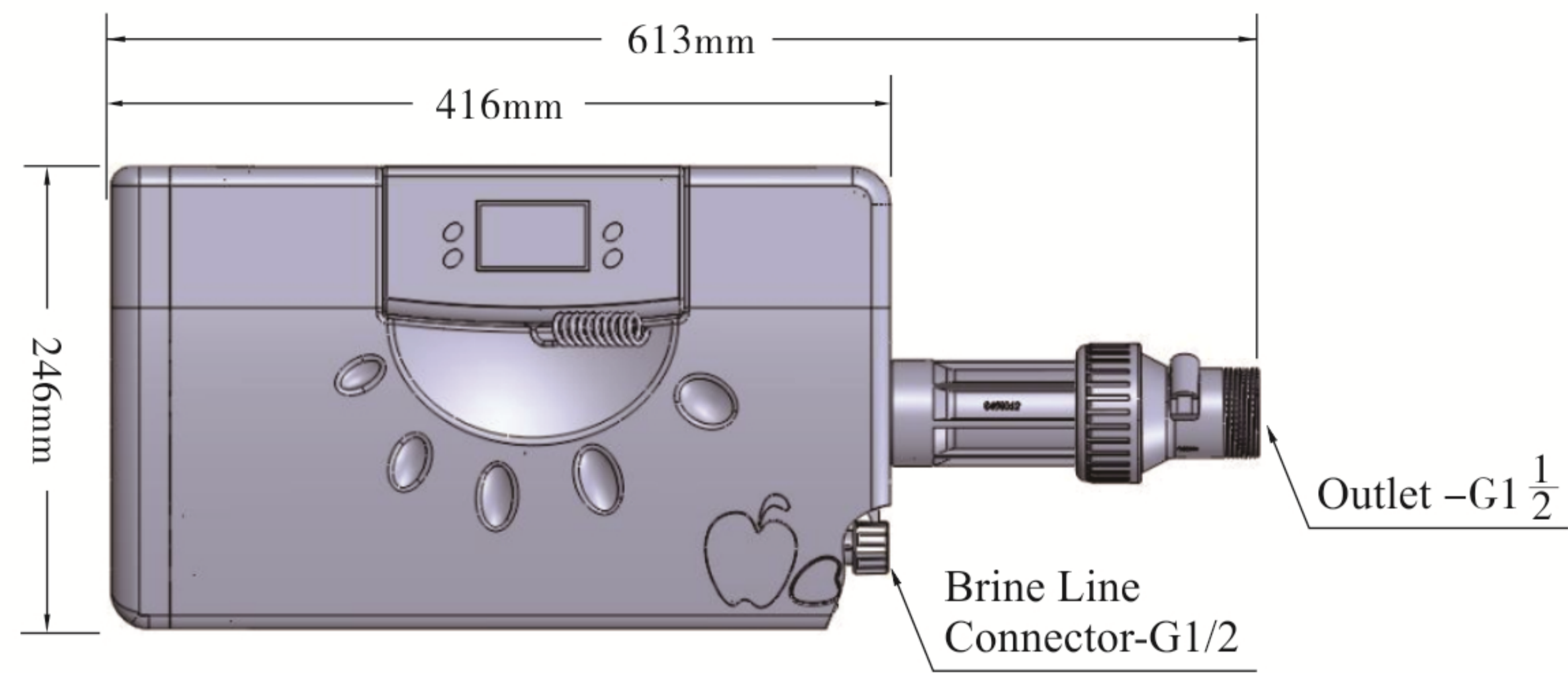
- When the water turbidity exceeds the conditions, a filter should be installed on the inlet of control valve.
- When the water hardness exceeds the conditions, the outlet water hardness will hardly reach the requirement of boiler feed water (0.03 mmol/L). It is suggested to adopt second grade softener.

**1.4.Product Structure and Technical Parameters**

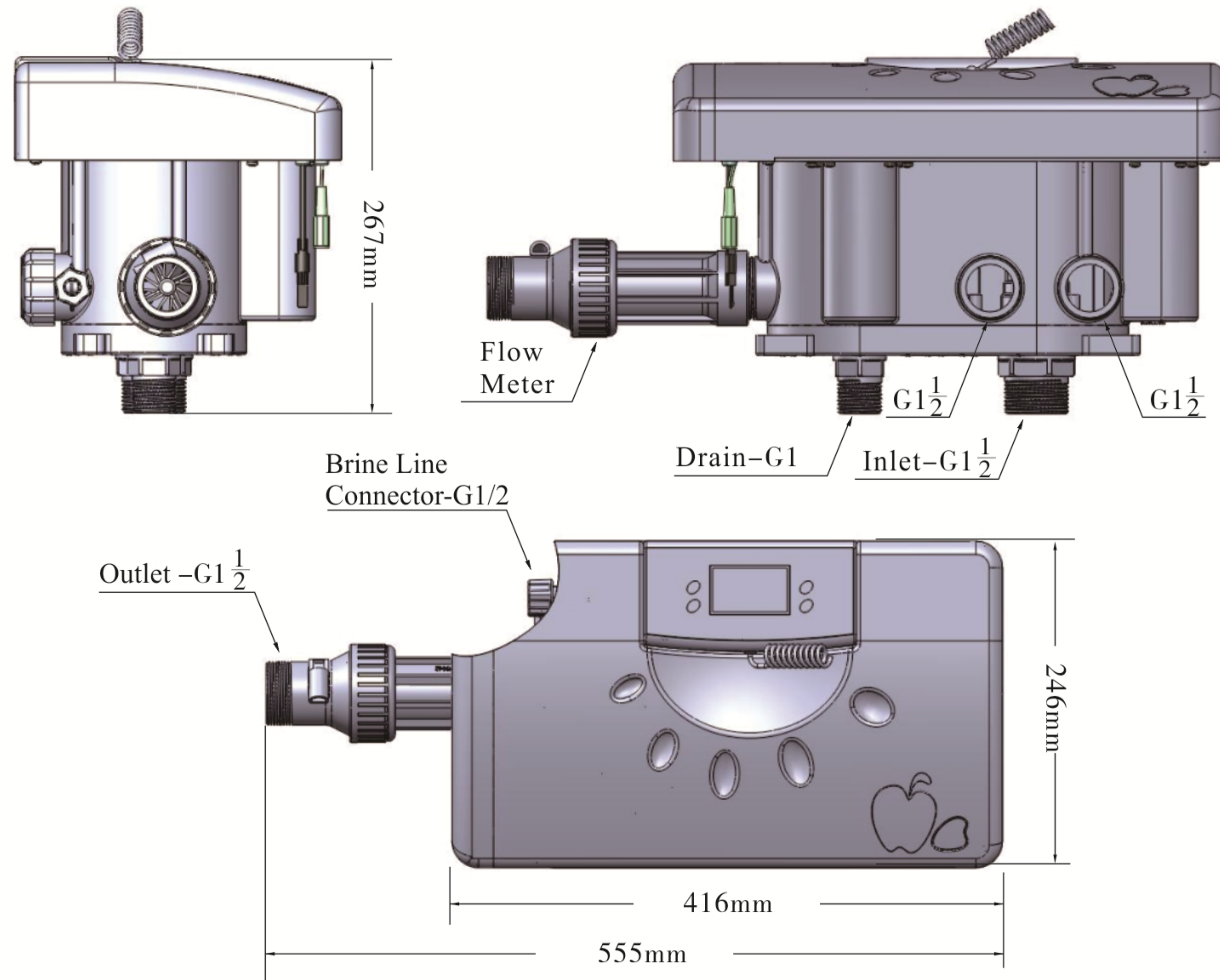
Product Dimension (17610)



MODEL:17610-F88A/17606-F98A/93610-F88C/93606-F98C



Product Dimension (93610)

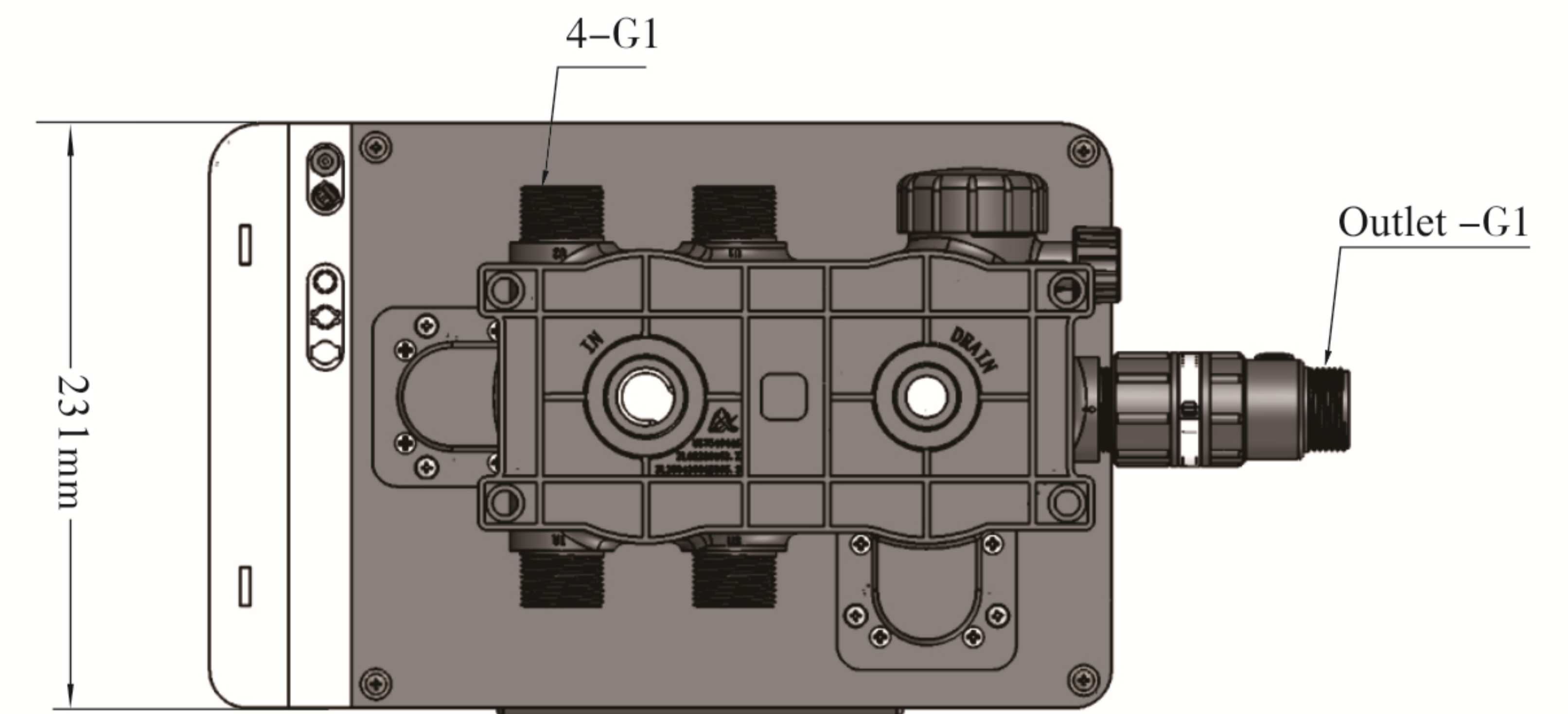
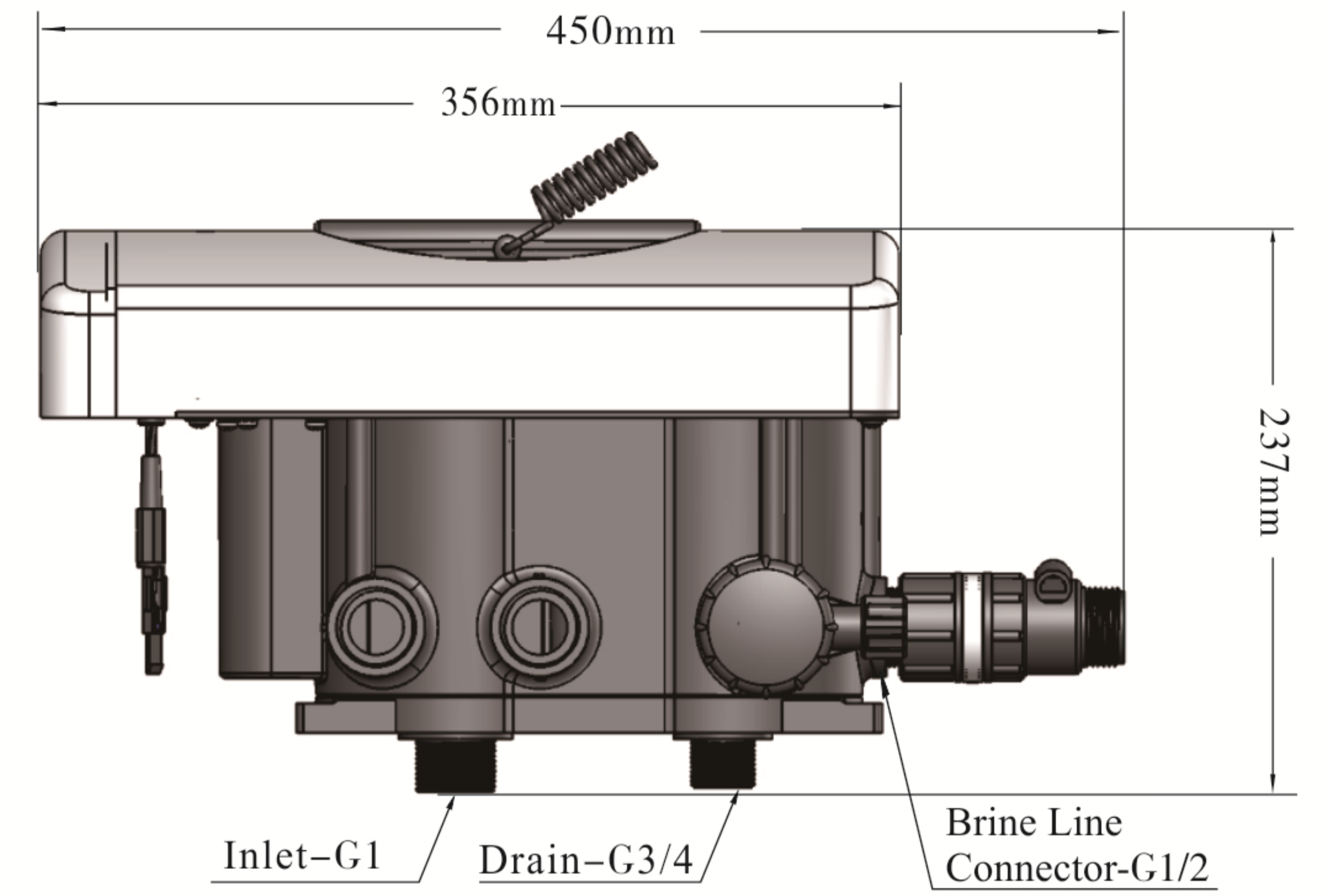


The suitable output of transformer: DC24V, 1.5A

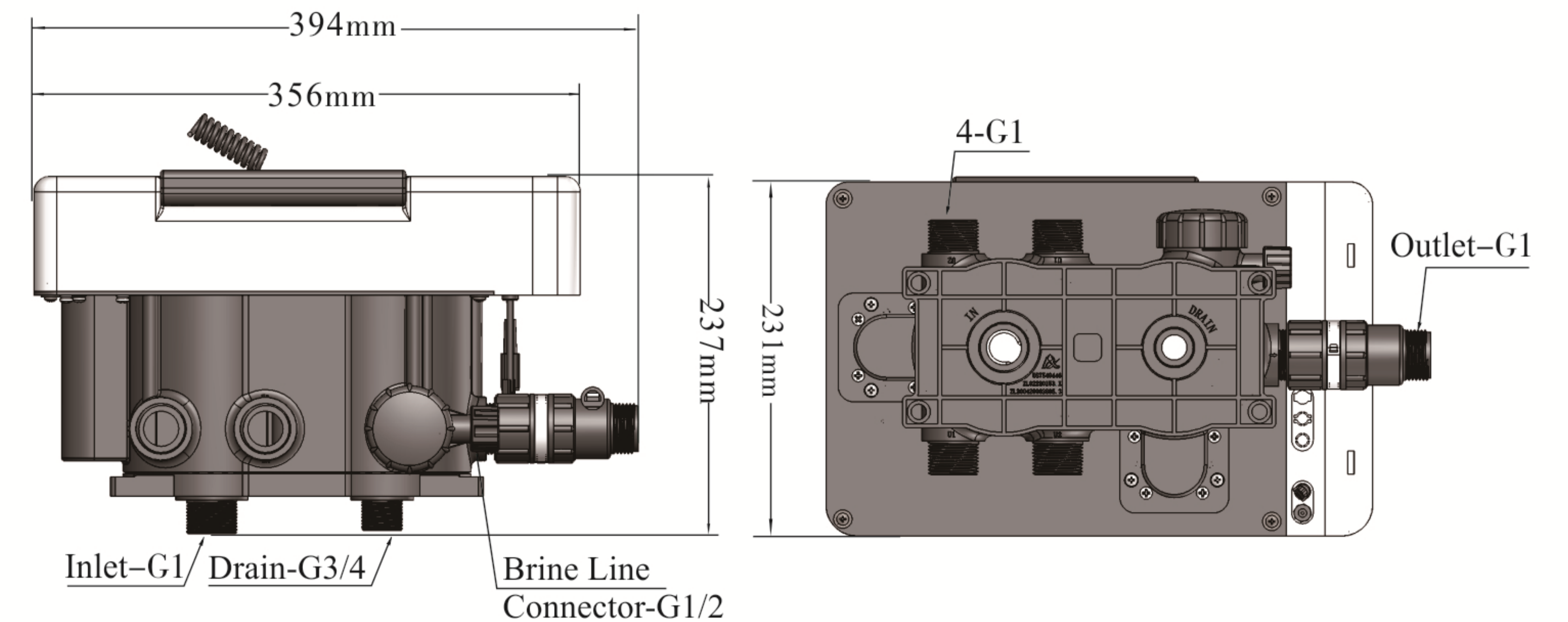
Model	Connect Size				Flow Rate m <sup>3</sup> /h @0.3MPa	Regeneration Mode	Remark
	Inlet/Outlet	Drain	Brine Line Connector	Top and Bottom Strainer			
17610	1.5"M	1"M	1/2"M	1.5"M	10	Meter Type	Fixed Bed
93610	1.5"M	1"M	1/2"M	1.5"M	10	Meter Type	Floating Bed

MODEL:17610-F88A/17606-F98A/93610-F88C/93606-F98C

Product Dimension (17606)



Product Dimension (93606):



The suitable output of transformer: DC12V, 1.5A

Model	Connect Size				Flow Rate m <sup>3</sup> /h @0.3MPa	Regeneration Mode	Remark
	Inlet/Outlet	Drain	Brine Line Connector	Top and Bottom Strainer			
17606	1"M	3/4"M	1/2"M	1"M	6	Meter Type	Fixed Bed
93606	1"M	3/4"M	1/2"M	1"M	6		Floating Bed

### 1.5.Installation

#### A.Installation notice

Before installation, read all those instructions completely. Then obtain all materials and tools needed for installation.

The installation of product, pipes and circuits, should be accomplished by professional to ensure the product can operate normally.

Perform installation according to the relative pipeline regulations and the specification of Inlet, Outlet, Drain, Brine Line Connector.

Be sure the correct installation direction and pipeline for 17610/17606 and 93610/93606.

#### B.Device location

- ①The softener should be located close to the drain.
- ②Ensure the unit is installed in enough space for operating and maintenance.
- ③Brine tank should be close to the softener.
- ④The unit should be kept away from the heater, and not be exposed to outdoor. Sunshine or rain will damage the system.
- ⑤Avoid installing the system in the Acid/Alkaline, Magnetic or strong vibration circumstance, because above factors will cause the system disorder.
- ⑥Do not install the softener, drain pipeline in circumstance which temperature may drop below 5°C, or above 50°C.
- ⑦Install the system in the place where with the minimum loss in case of water leaking.

#### C.Pipeline installation

##### ①Support installation

Take out all the fittings and screws and assemble them according to Figure 1-1.

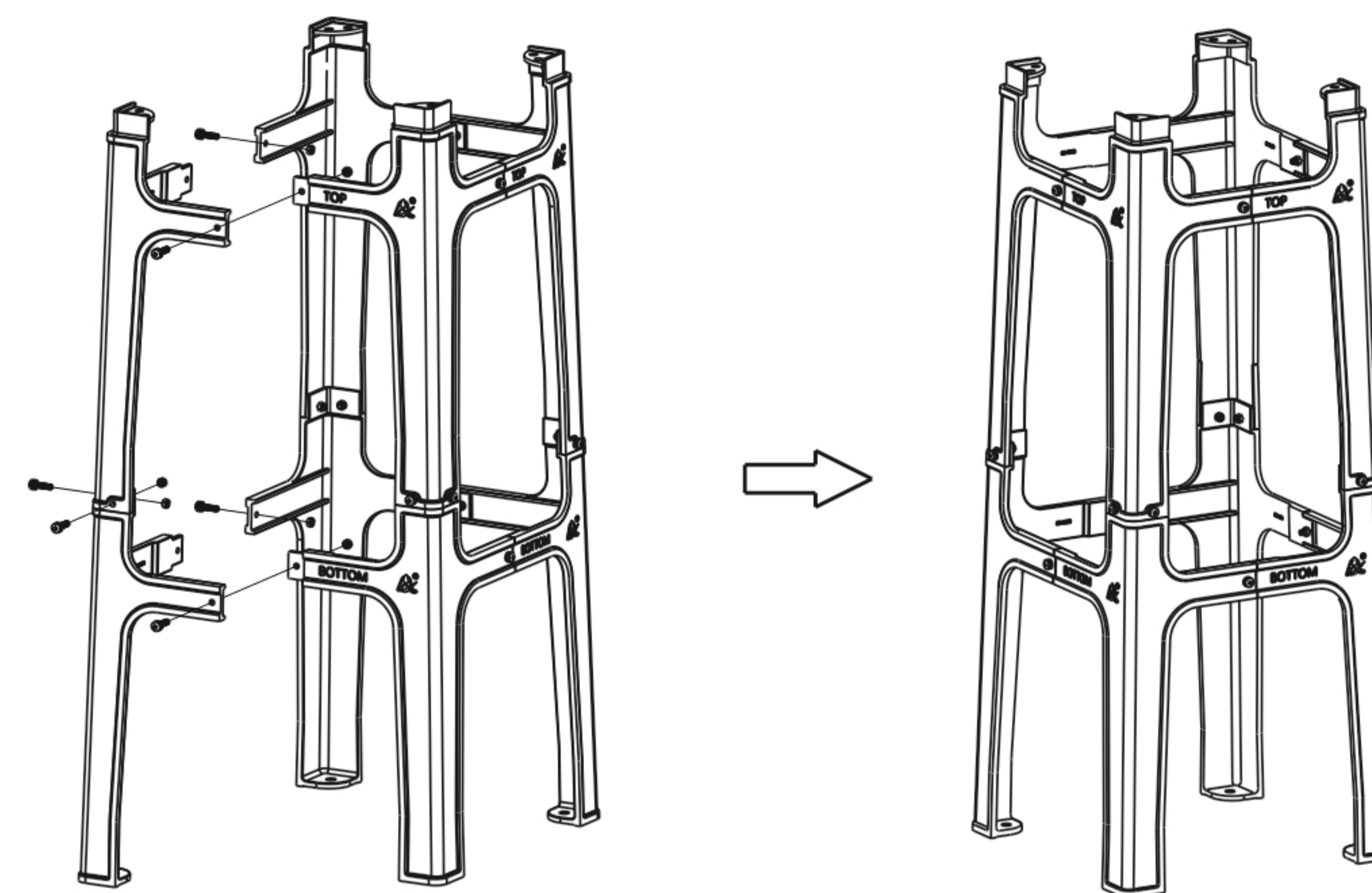


Figure 1-1

##### ②Install control valve

- a. Fix the control valve on the support with screws (as Figure 1-2a shows)
- b. Connect control valve with the top and bottom strainers of tank by using UPVC or PPR pipes, and install two ball valves on bottom strainer.

##### ③Install flow meter and the brine line (as Figure 1-2b shows)

- a. Put the sealing ring into the nut of flow meter, screw onto the outlet, then insert the probe wire into flow meter. Please make sure the impeller works well before the installation.
- b. Insert tube bushing into one side of brine tube and connect onto the brine line connector with nut. Connect another side of brine tube into the brine tank. (The brine valve with liquid level controlling and air-blocker should be installed in the brine tank)

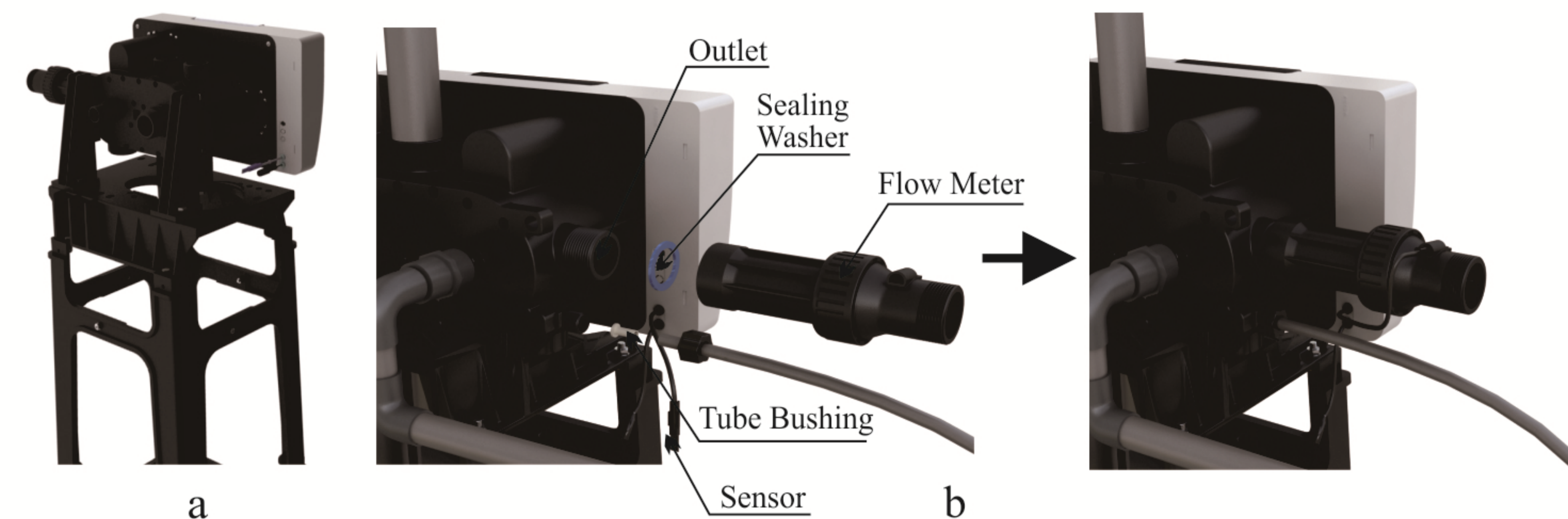


Figure 1-2

##### ④Pipeline of top and bottom strainer connection

When installing the top and bottom strainer pipeline, the valve's ports connection with U1/ U2 tank should correspond. For example, the top strainer pipe of U1 and bottom strainer

pipe of U1 tank should correspond to valve ports, and the top strainer pipe of U2 and bottom strainer of U2 should correspond to valve ports.

⑤ Installation of inlet and outlet

Please install a pressure gauge onto the inlet pipeline; then install the ball valves on inlet and outlet. It also would be better to install ball valves on each bottom strainer pipe, which will be easy for maintenance. Inlet pipeline should be in parallel with outlet pipeline. Support inlet and outlet pipeline with fixed holder (as Figure 1-3 shows).

**Notice:**

- If making a soldered copper installation, do all sweat soldering before connecting pipes to the valve. Torch heat will damage plastic parts.
- When turning threaded pipe fittings onto plastic fitting, use care not to cross thread or broken valve.
- Control valve should be higher than drain outlet, and be better not far from the drain hose.
- Be sure not connect drain with sewer, and leave a certain space between them, avoid wastewater be absorbed to the water treatment equipment.
- The brine tube and drain pipeline should not be bended or plugged.
- The height of resin volume in floating bed system should not lower than 1200mm. Usually, 200mm space should be left for avoiding disordering resin and supplying unqualified water.
- There is no backwash for floating bed, the resin need to be cleaned after using for a certain time. The inlet turbidity shall less than 2 FTU.

Installation of 17610/17606



Installation of 93610/93606



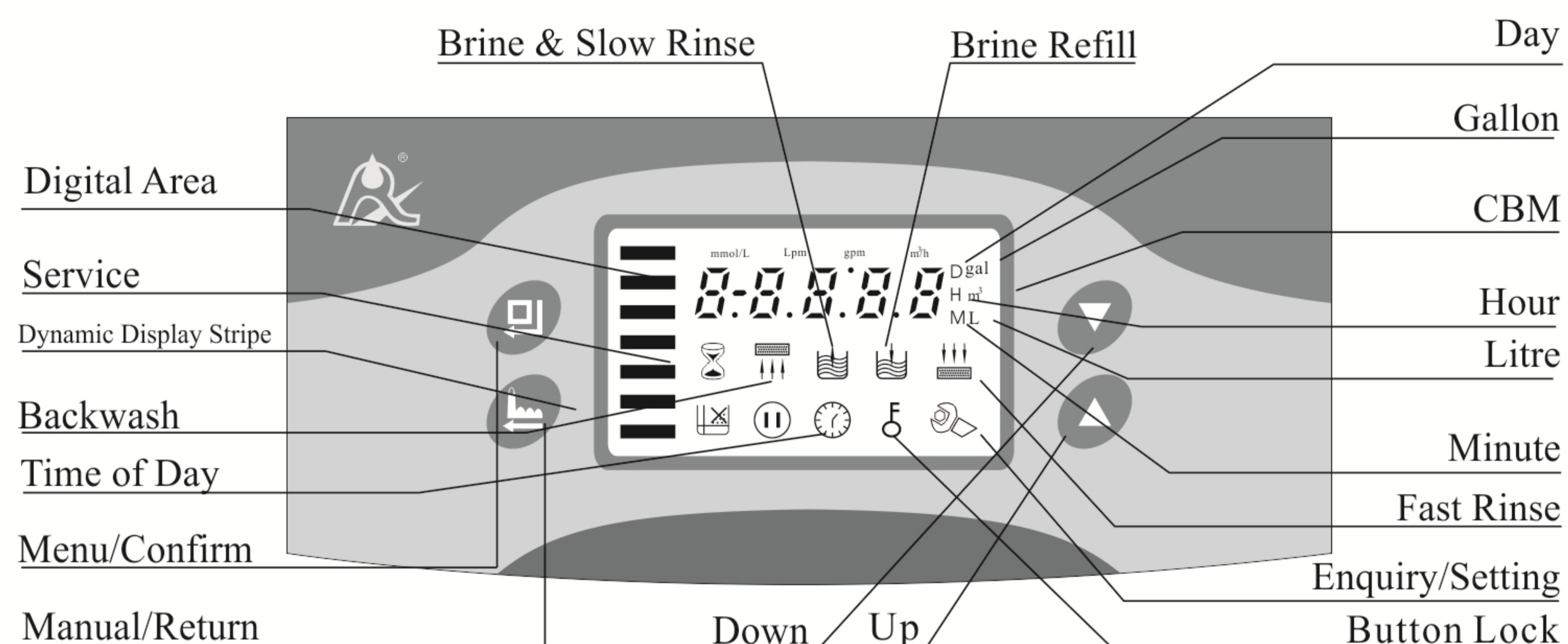
Figure 1-3

**Notice:**

- Avoid floccules substance together with resin to fill in the resin tank.
- Piping installation should be straight, and shall not make control valves or the fittings by torsion.

## 2. Basic Setting & Usage

### 2.1 The Function of PC Board



- A. Time of day indicator  
 Lights on, display the time of day.
- B. Button lock indicator  
 ● Lights on, indicating the buttons are locked. At this moment, press button will not work. (No operation within one minute, will lights on and lock the buttons.)  
 ● Solution: Press and hold both and for 5 seconds until the light off
- C. Program mode indicator  
 ● Lights on, enter program display mode. Use or to view all values.  
 ● Flashes and enter program set mode. Press or to adjust values.
- D. Menu/Confirm button  
 ● Press , lights on, enter program display mode and use or to view all values.  
 ● In program display mode, press , flashes, enter program set mode, press or and adjust values.  
 ● Press after all program are set, and then the voice “Di” means all setting are successful and return program display mode.
- E. Manual/Return button  
 ● Press in any status, it can proceed to next step. (Example: when the water is unqualified, press in Service status, it turns into regeneration cycle instantly; press in regeneration or rinse status when you want to step into next position).  
 ● Press in program display mode, it will return to Service status; Press in program set mode, and it will return to program display mode.

- Press while adjusting the value, it will return to program display mode directly without saving value.
- F. Down and Up
- In program display mode, press or to view all values.
- In program set mode, press or to adjust values.
- Press and hold both and for 5 seconds to unlock the buttons.

### 2.2. Basic Setting & Usage

#### A. Parameter Specification

Function	Indicator	Factory Default	Parameter Set Range	Instruction
Time of Day	12:12	Random	00:00~23:59	Set the time of day when use; ":" flashes.
Control Mode	A-01	A-01	A-01	Meter immediate type: Regenerate immediately when the available volume of treated water drops to zero (0).
			A-02	Intelligent meter immediate type: Regenerate immediately when the calculated available volume of treated water drops to zero (0).
Interval Backwash Times	F-00	F-00	0 ~ 20	F-0X, indicates service X times, backwash 1 time
Water Treatment Capacity	80.00	80.00	0 ~ 999.99	Water treatment capacity in one cycle (m <sup>3</sup> )
Unit Mode	HU-01	HU-01	01, 02, 03	01-m <sup>3</sup> ; 02-gal; 03-L
Resin Volume	50L	50L	20 - 500	Resin volume in resin tank.(L.)
Feed Water Hardness	Yd1.2	1.2	0.1 - 30 0.1 - 9.9	Feed water hardness (mmol/L); 0.1-30 for 93610/93606; and 0.1-9.9 for 17610/17606
Exchange Factor	AL.65	0.65	0.30 - 0.99	/
Fast Rinse Time		10 min.	0 ~ 99:59	Fast rinse time (Min.)
Settling Bed Time		10 min.	0 ~ 99:59	Settling bed time (Hour:Min); Only for 93610/93606.



Backwash Time		10 min.	0 ~ 99:59	Backwash time(Min.) Only for 17610/17606.
Brine & Slow Rinse Time		70 min.	0 ~ 99:59	Brine & Slow Rinse time (Min.)
Brine Refill Time		5 min.	0 ~ 99:59	Brine Refill time (Min.)
Maximum Interval Regeneration Days	H-30	30	0 ~ 40	Regenerate on the day even through the available volume of treated water do not drop to zero (0)
Output Control Mode	b-01	01	01 or 02	Mode 01: Signal turn on start of regeneration and shut off end of regeneration. (Connection refer to the Figure 1) Mode 02: Signal available only intervals of regeneration cycles and in service. (Connection refer to the Figure 2)

B.Process Display

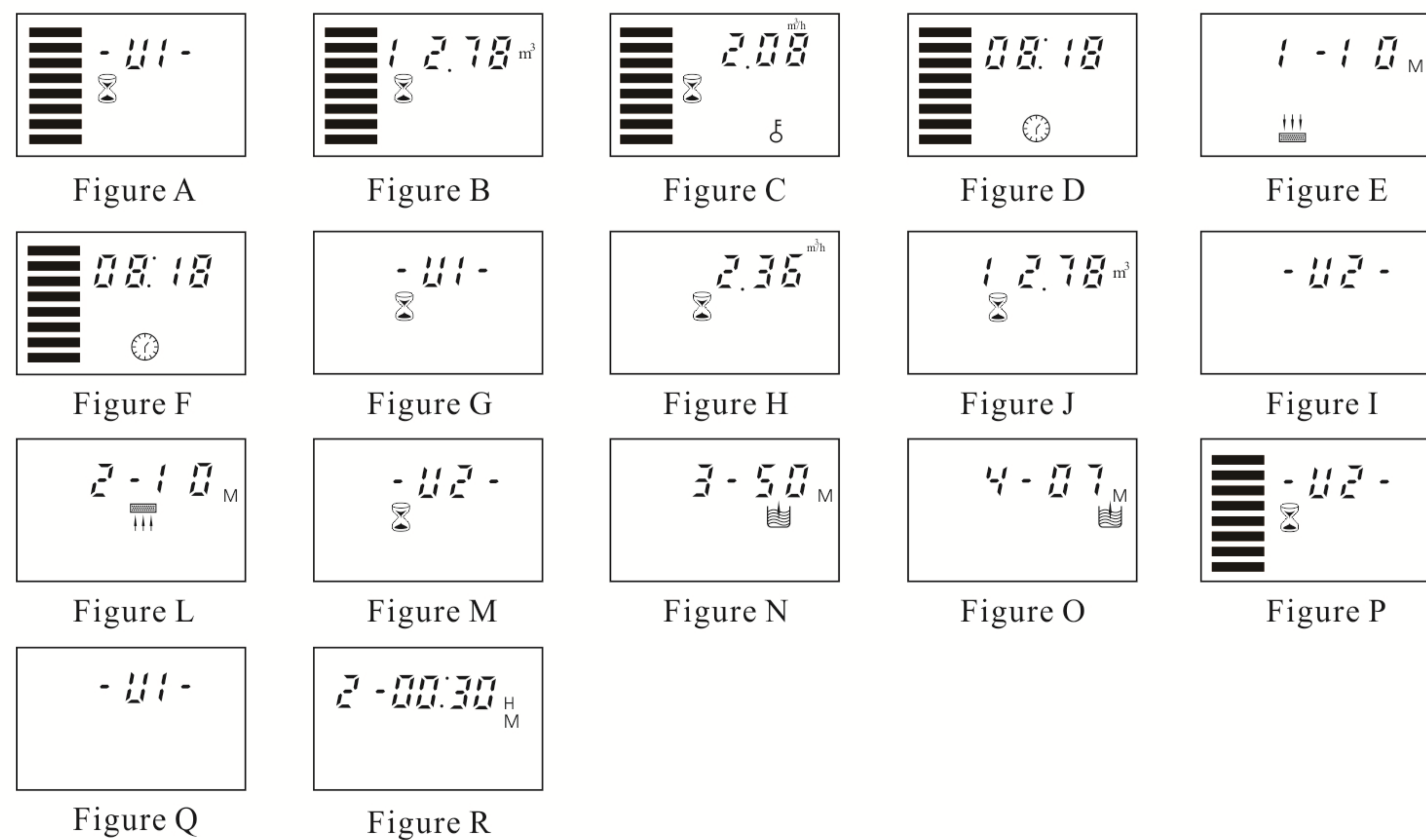


Illustration:

- Tank U1 is in service, tank U2 is standby: the screen cycle plays Figure A/B/C/D, each for 5 seconds.
- Tank U1 is in service, tank U2 is in Fast Rinse status: the screen cycle plays Figure E/F/G/H/J, each for 5 seconds.
- When switch from tank U1 to U2, the screen displays Figure I; switch from tank U2 to U1, the screen displays Figure Q.

- Tank U2 is in service, tank U1 is in Settling Bed status: the screen cycle plays Figure R/F/M/H/J, each for 5 seconds.
- Tank U2 is in service, tank U1 is in Backwash status: the screen cycle plays Figure L/F/M/H/J, each for 5 seconds.
- Tank U2 is in service, tank U1 is in Brine & Slow Rinse status: the screen cycle plays Figure N/F/M/H/J, each for 5 seconds.
- Tank U2 is in service, tank U1 is in Brine Refill status: the screen cycle plays Figure O/F/M/H/J, each for 5 seconds.
- Tank U2 is in service, tank U1 is standby: the screen cycle plays Figure P/B/C/D, each for 5 seconds.
- The display screen will only show "-00-" or "F-00", when the electrical motor is turning.
- The time of day figure flashes continuously, such as 12:12 flashes, indicates long outage of power. It reminds to reset the time of day.
- The display will show the error code, such as "-E11-" when the system is in error.

C. Usage

After being accomplished installation, parameter setting and trial running by professional, the valve could be put into use. In order to ensure the quality of outlet water can reach the requirement, the user should complete the below works:

- ① Ensure that there is solid salt all the time in the brine tank in the course of using when this valve is used for softening. The brine tank should be added the crystalline coarse salt only, at least 99.5% pure, forbidding use the small salt and iodized salt.
- ② Test the outlet water and raw water hardness regularly. When the outlet water hardness is unqualified, please press the after unlock, and the valve will temporarily regenerate again. (It will not affect the original set operation cycle.)
- ③ When the feed water hardness change a lot, you can adjust the water treatment capacity as follow:

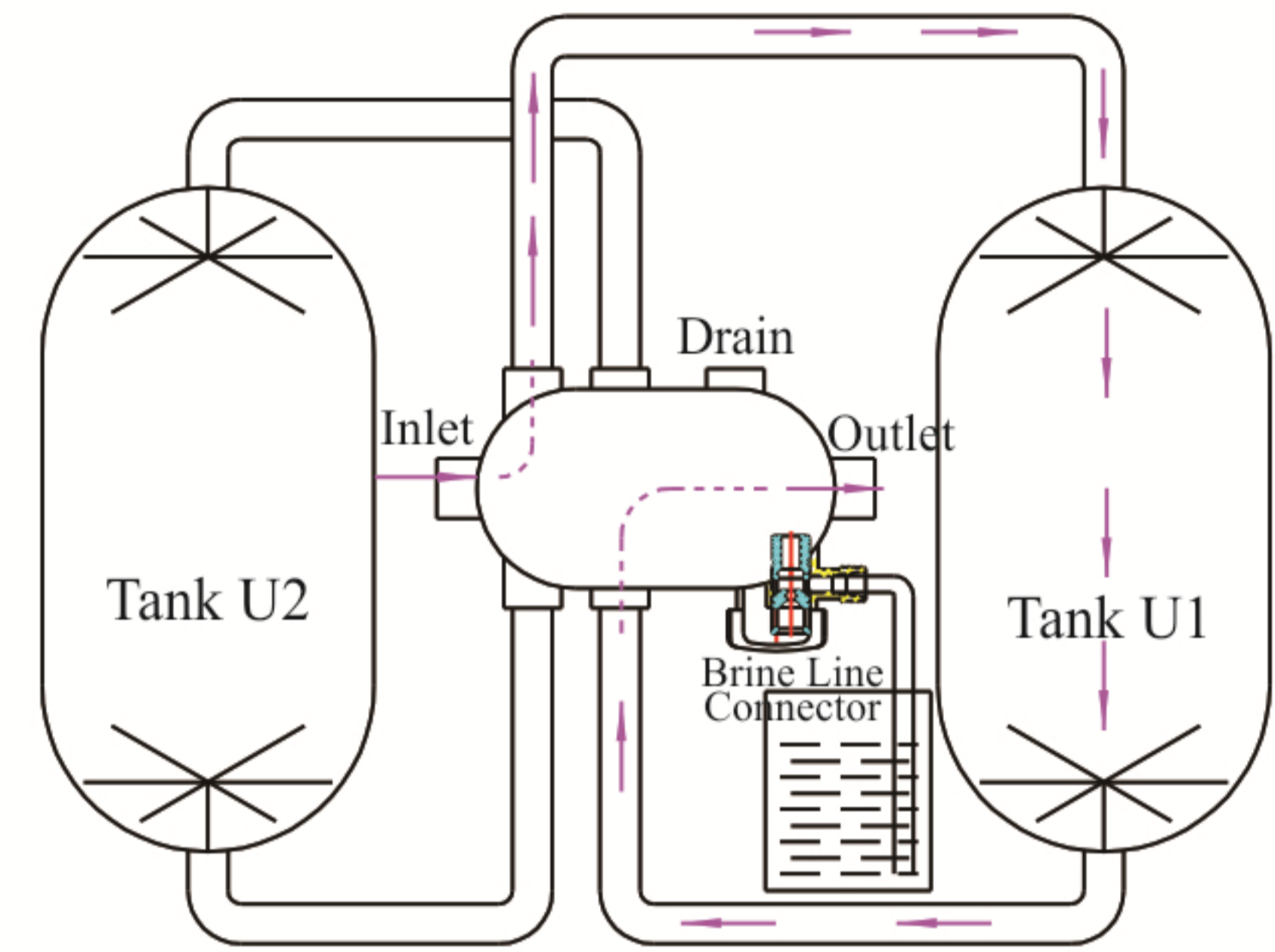
Press and hold both and for 5 seconds to unlock buttons. Press , and the light on, then press , the digital area show the control mode. If it shows A-01, press again, and the digital area will show the given water treatment capacity; press again, and digital flash. It turns into water treatment capacity setting mode. Press or continuously, reset the capacity value. Press and hear a sound "Di", then finish the adjustment. Press exit and turn back the service status.

The estimation of water treatment capacity, you can refer to the professional application specification. When select A-02 intelligent control mode, the controller will automatically calculate the water treatment capacity by setting resin volume, feed water hardness and regeneration factor.

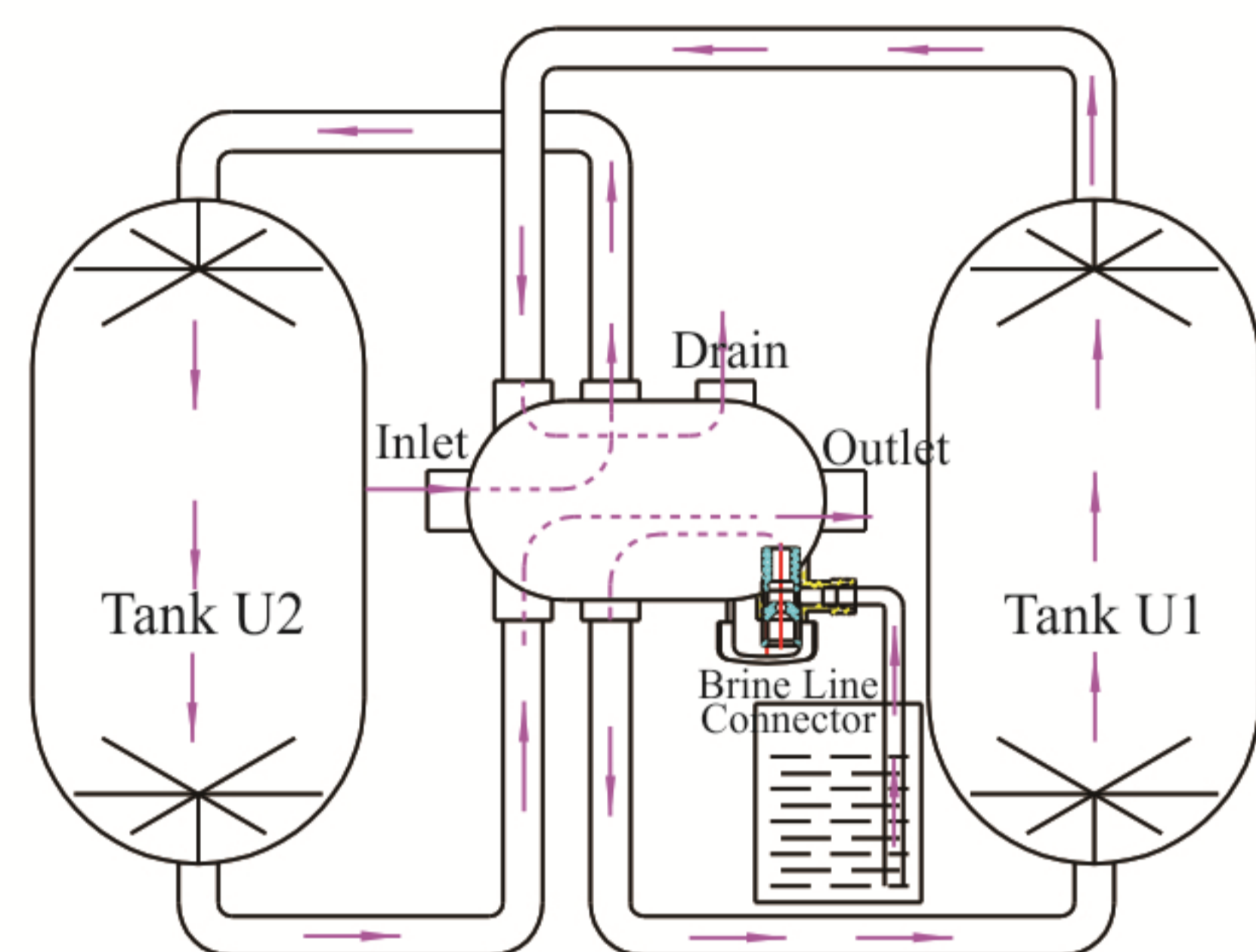
The regeneration parameters have been set when control valve left factory. Generally, it does not need to reset. If you want enquiry and modify the setting, you can refer to the professional application specification.

### 3.Applications

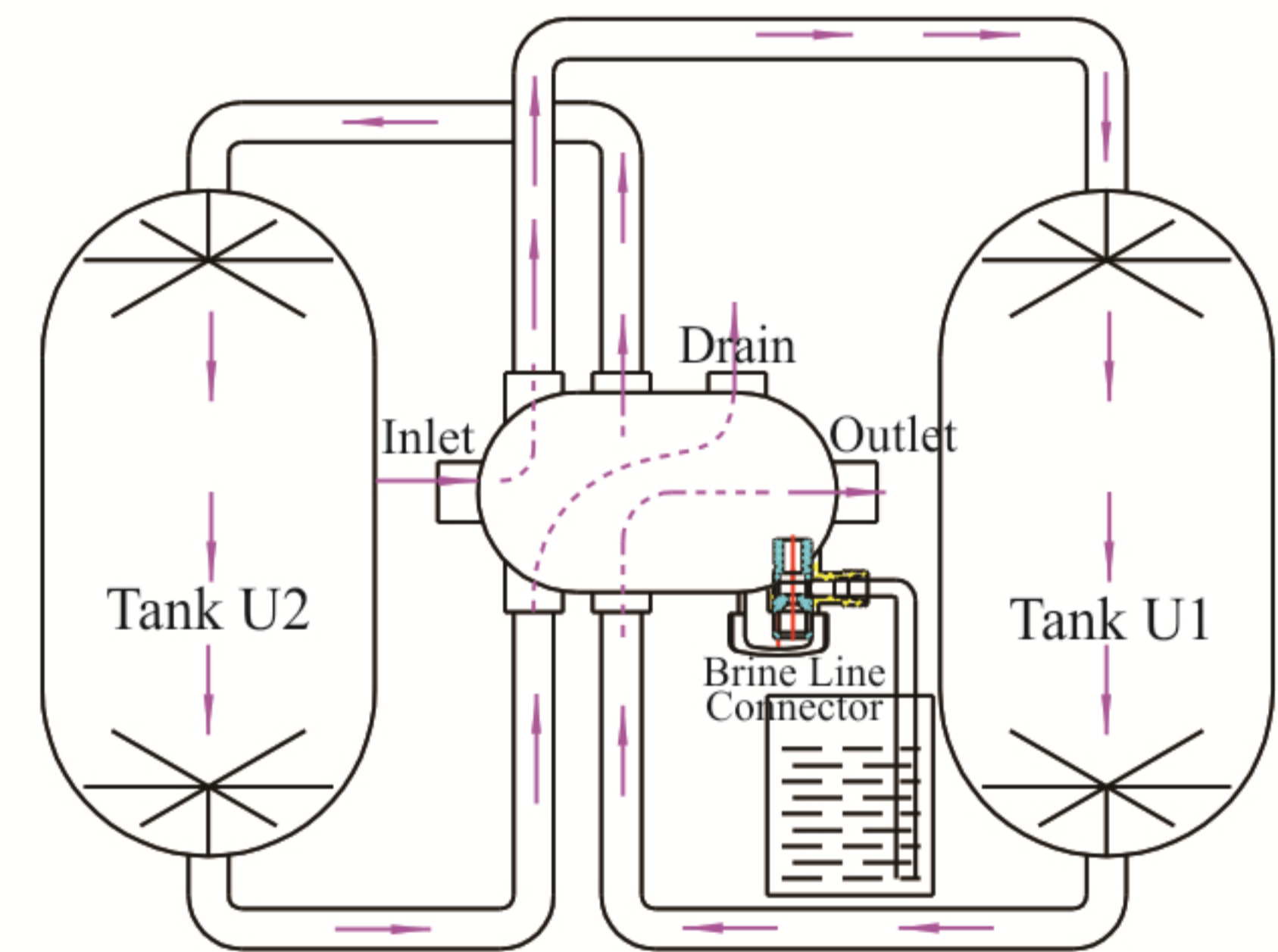
#### 3.1.Softener Flow Chart



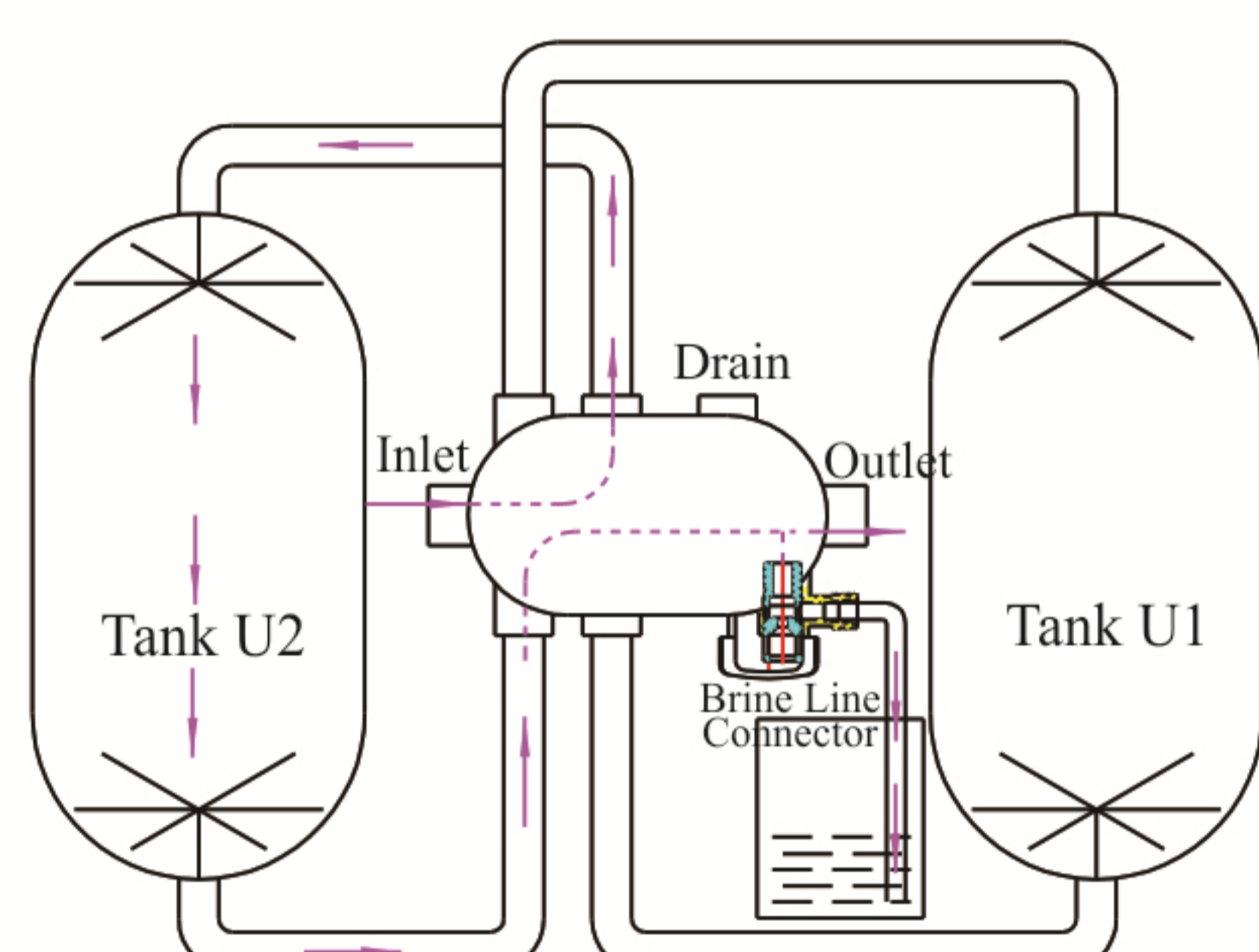
Tank U1 in Service and Tank U2 in Standby



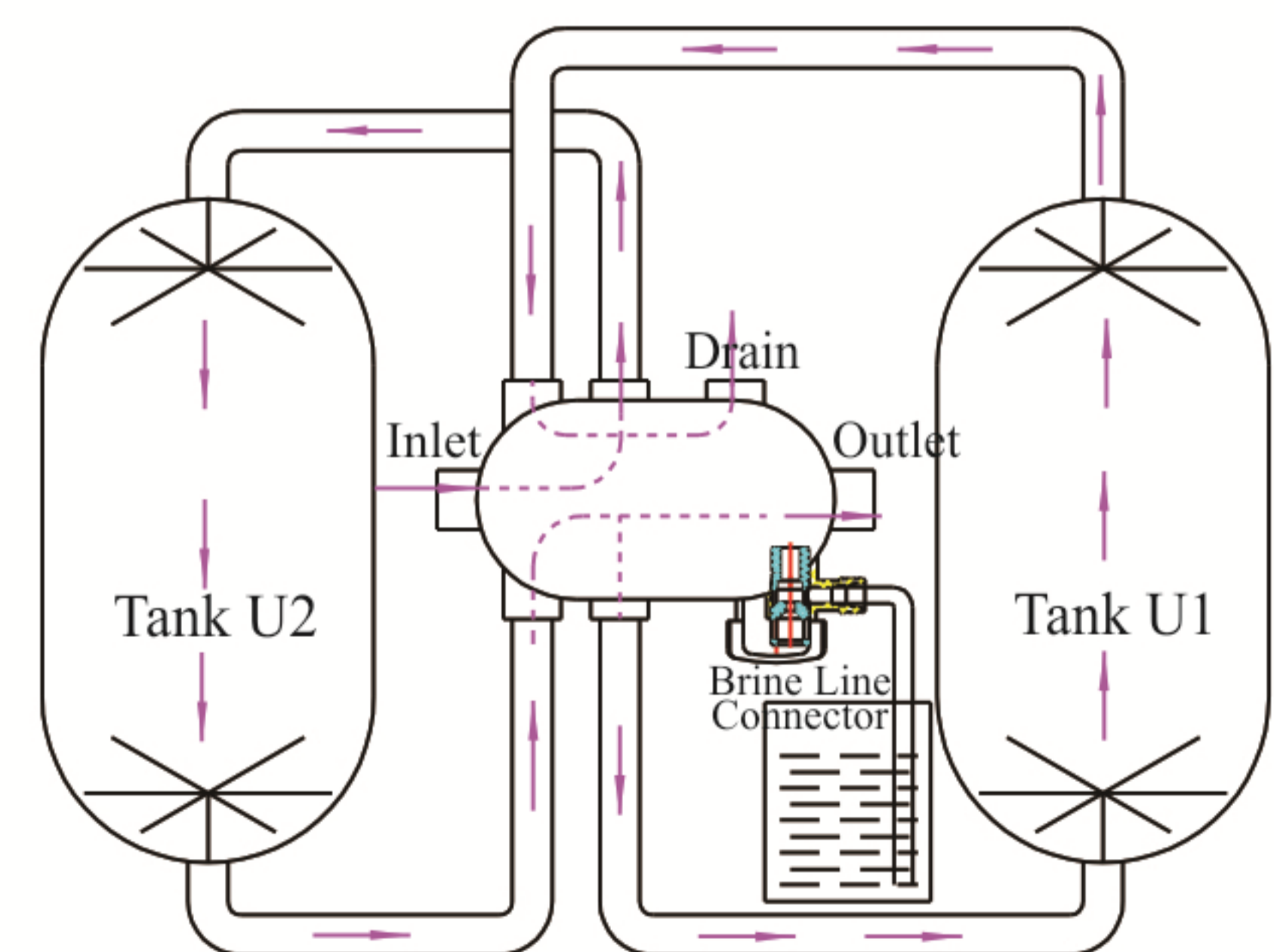
Tank U2 in Service and Tank U1 in Brine&Slow Rinse (Up-flow regeneration)



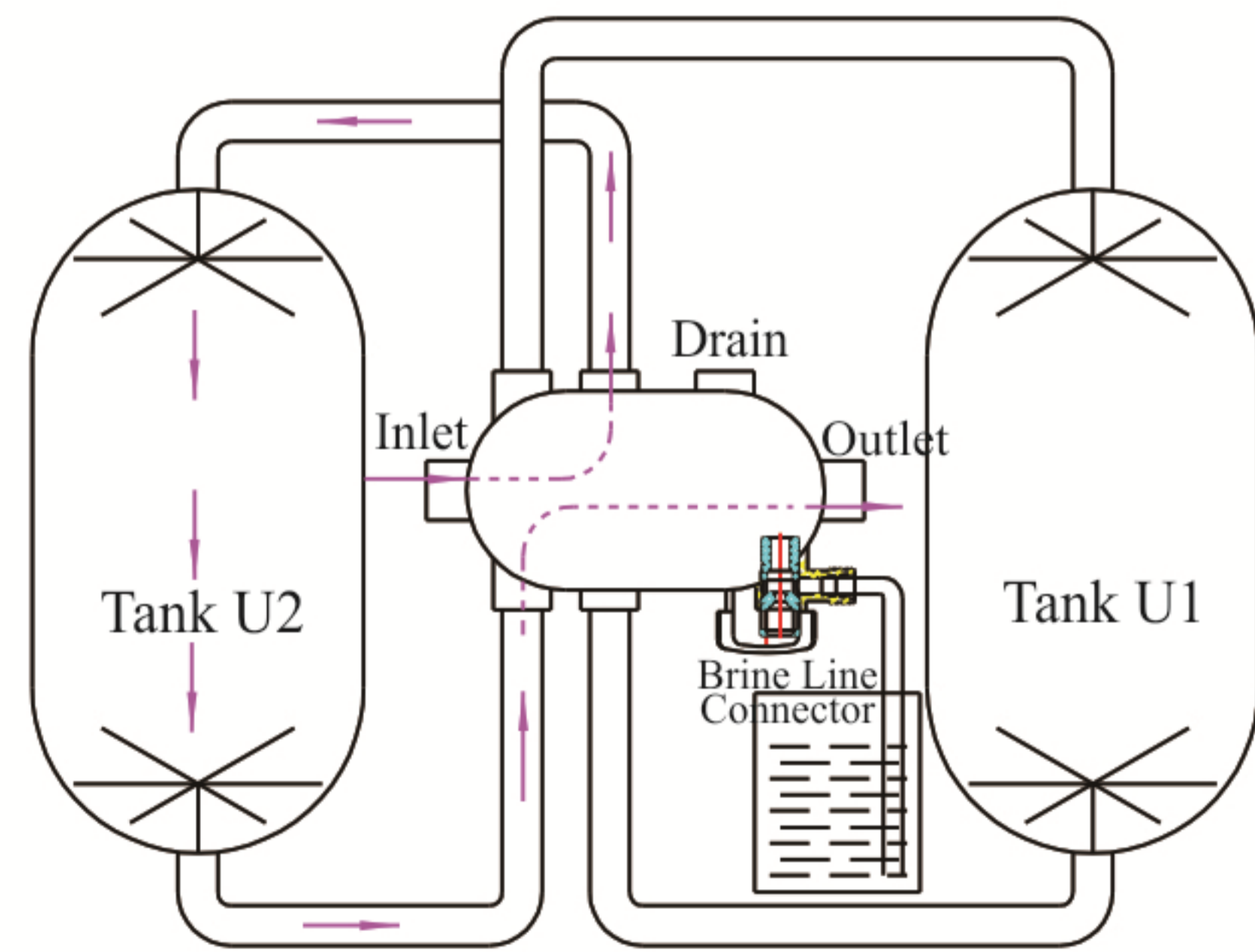
Tank U1 in Service and Tank U2 in Fast Rinse



Tank U2 in Service and Tank U1 in Brine Refill

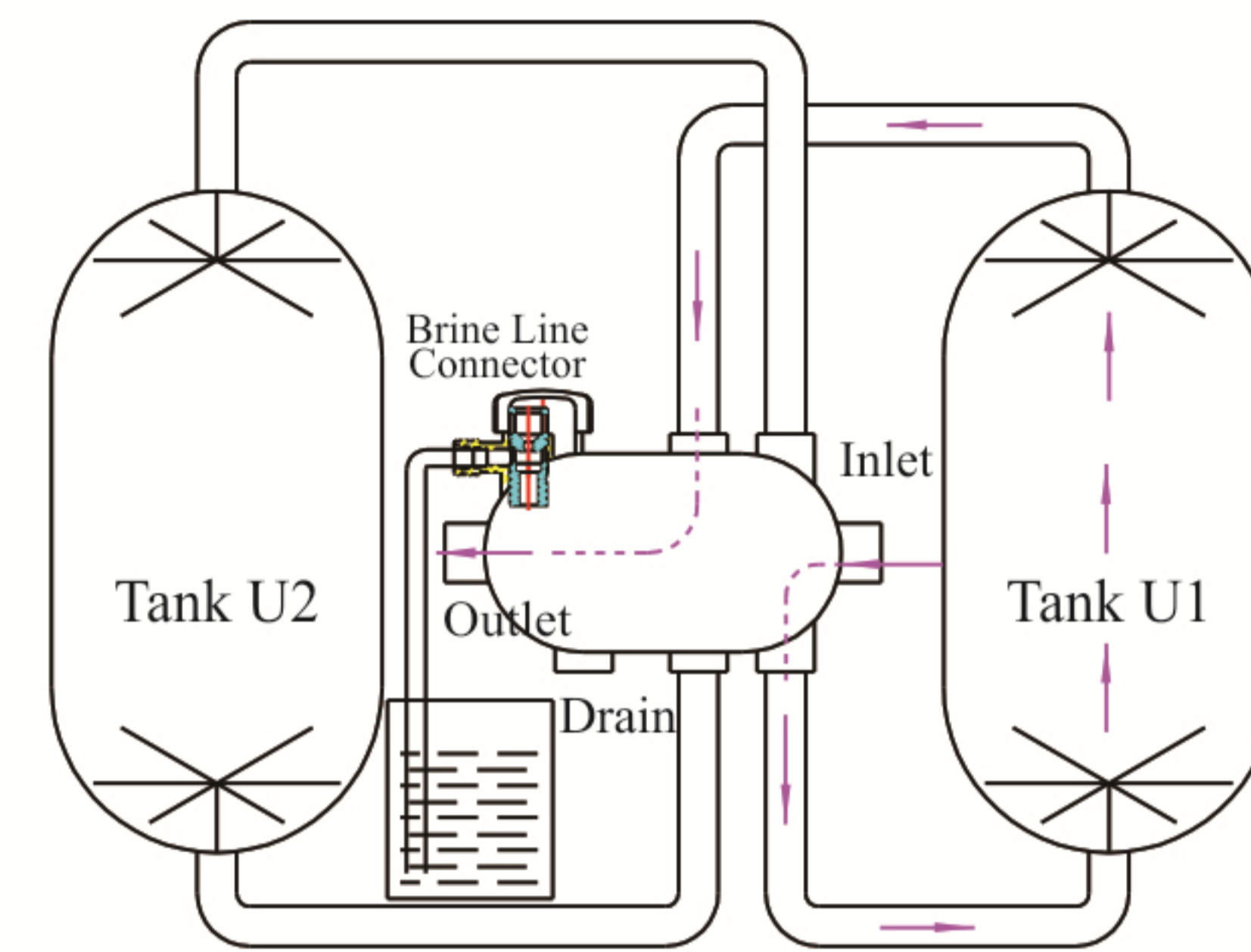


Tank U2 in Service and Tank U1 in Backwash

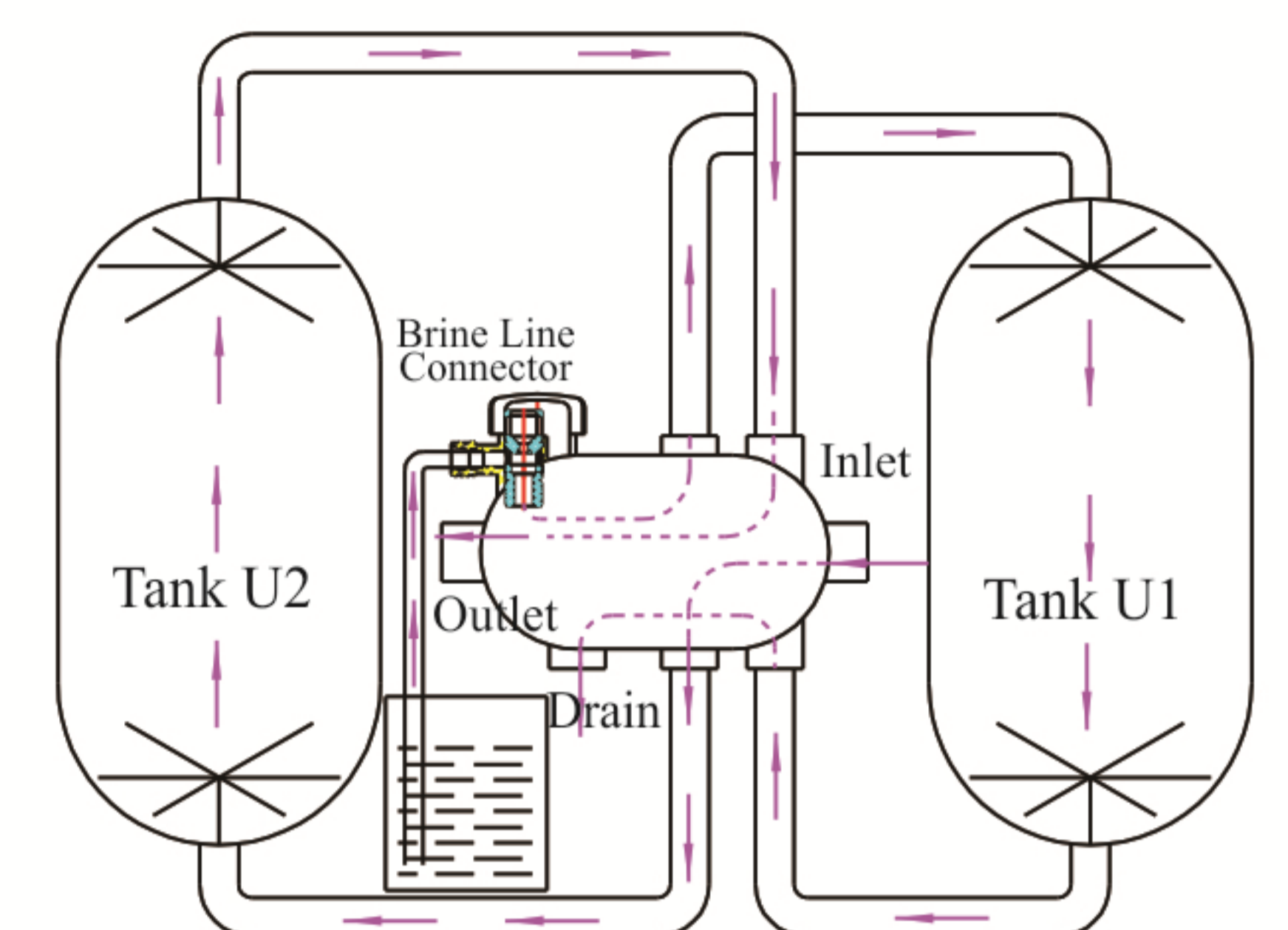


Tank U2 in Service and Tank U1 in Standby

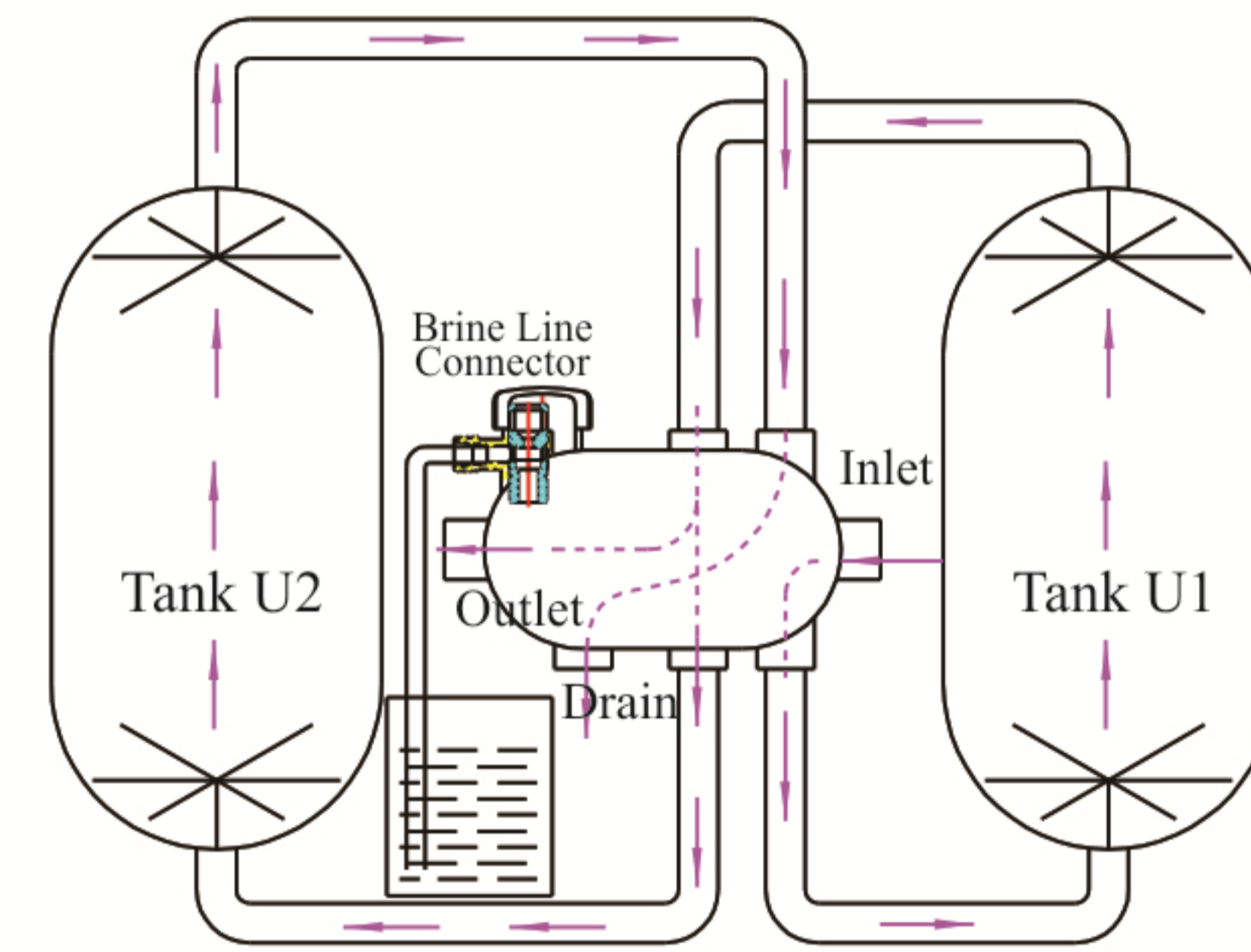
One in service and one standby fixed bed system (17610/17606)



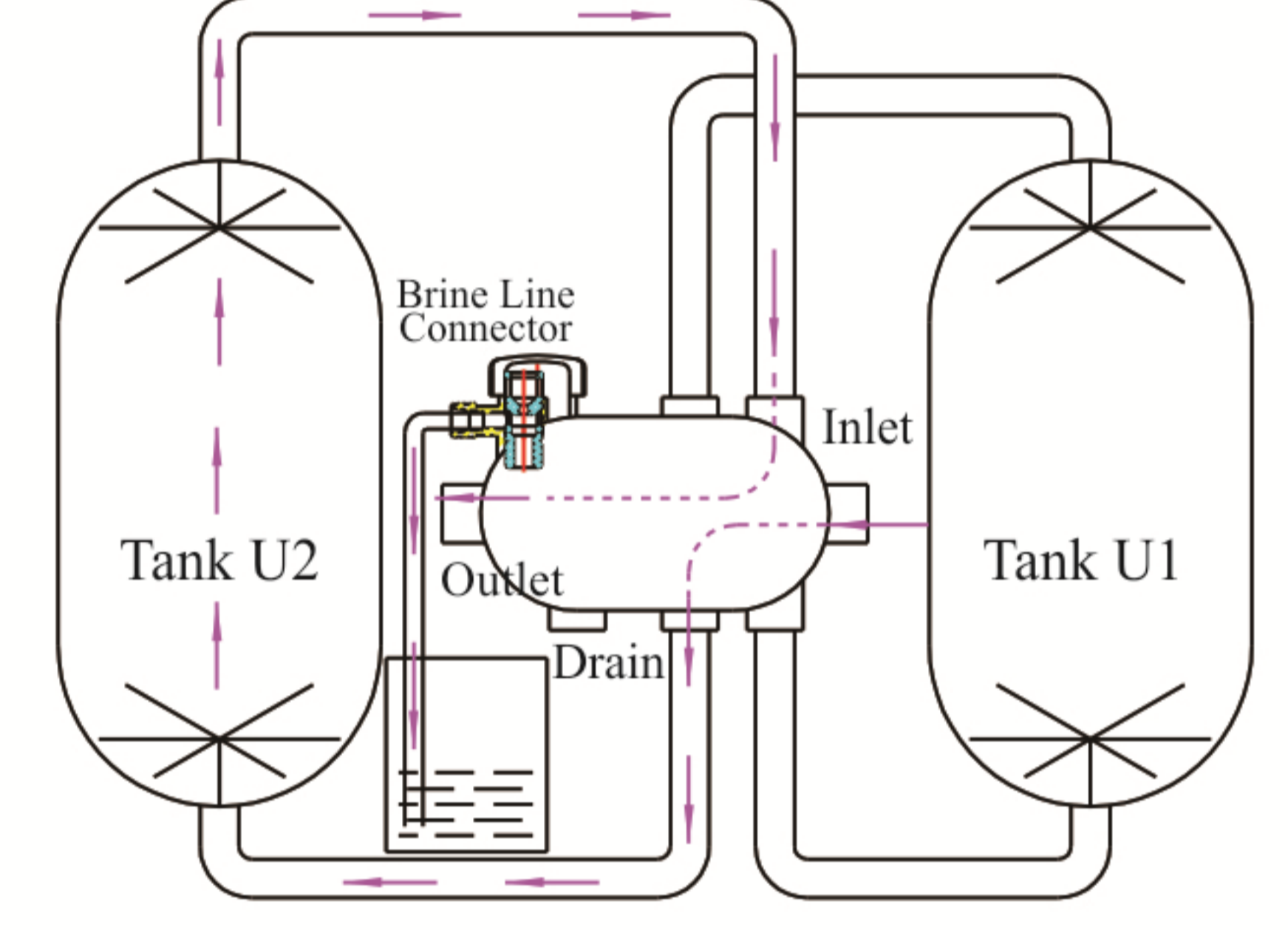
Tank U1 in Service and Tank U2 in Standby



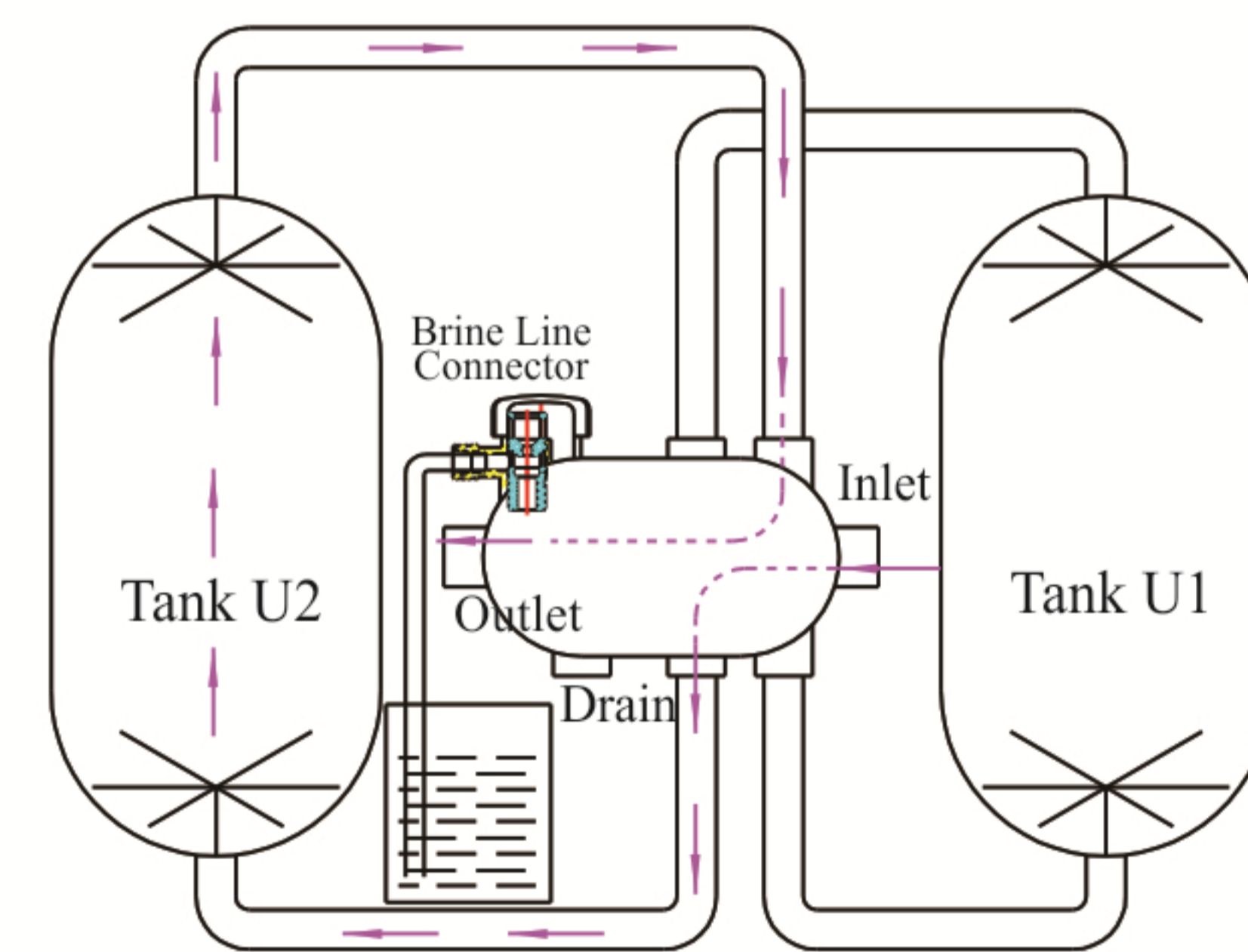
Tank U2 in Service and Tank U1 in Brine&Slow Rinse



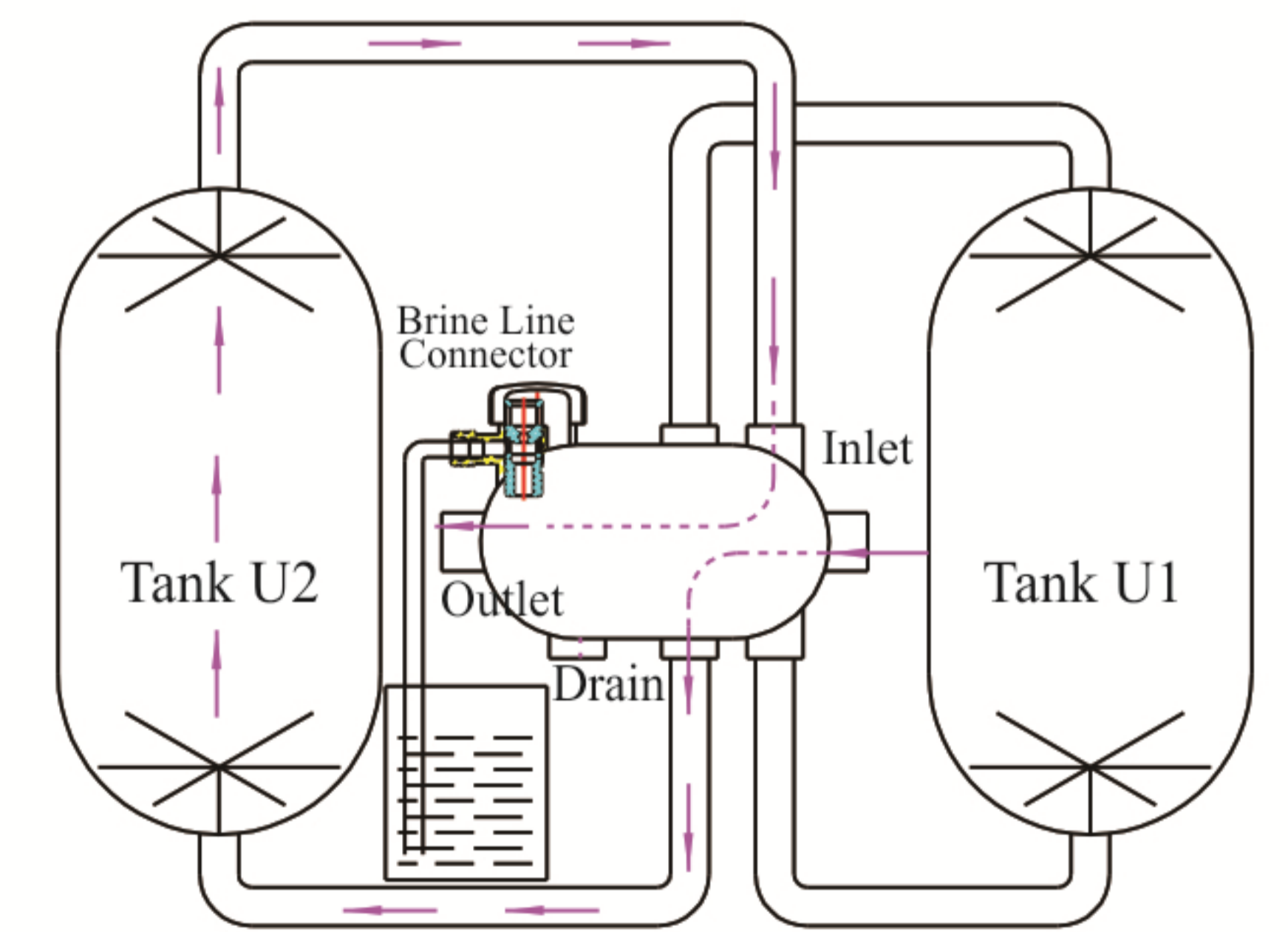
Tank U1 in Service and Tank U2 in Fast Rinse



Tank U2 in Service and Tank U1 in Brine Refill



Tank U2 in Service and Tank U1 in Settling Bed



Tank U2 in Service and Tank U1 in Standby

Control valve for floating bed system (93610/93606)

**3.2.The Function and Connection of PC Board**

Open the front cover of control valve, you will see the main control board and connection port as Figure 3-1.

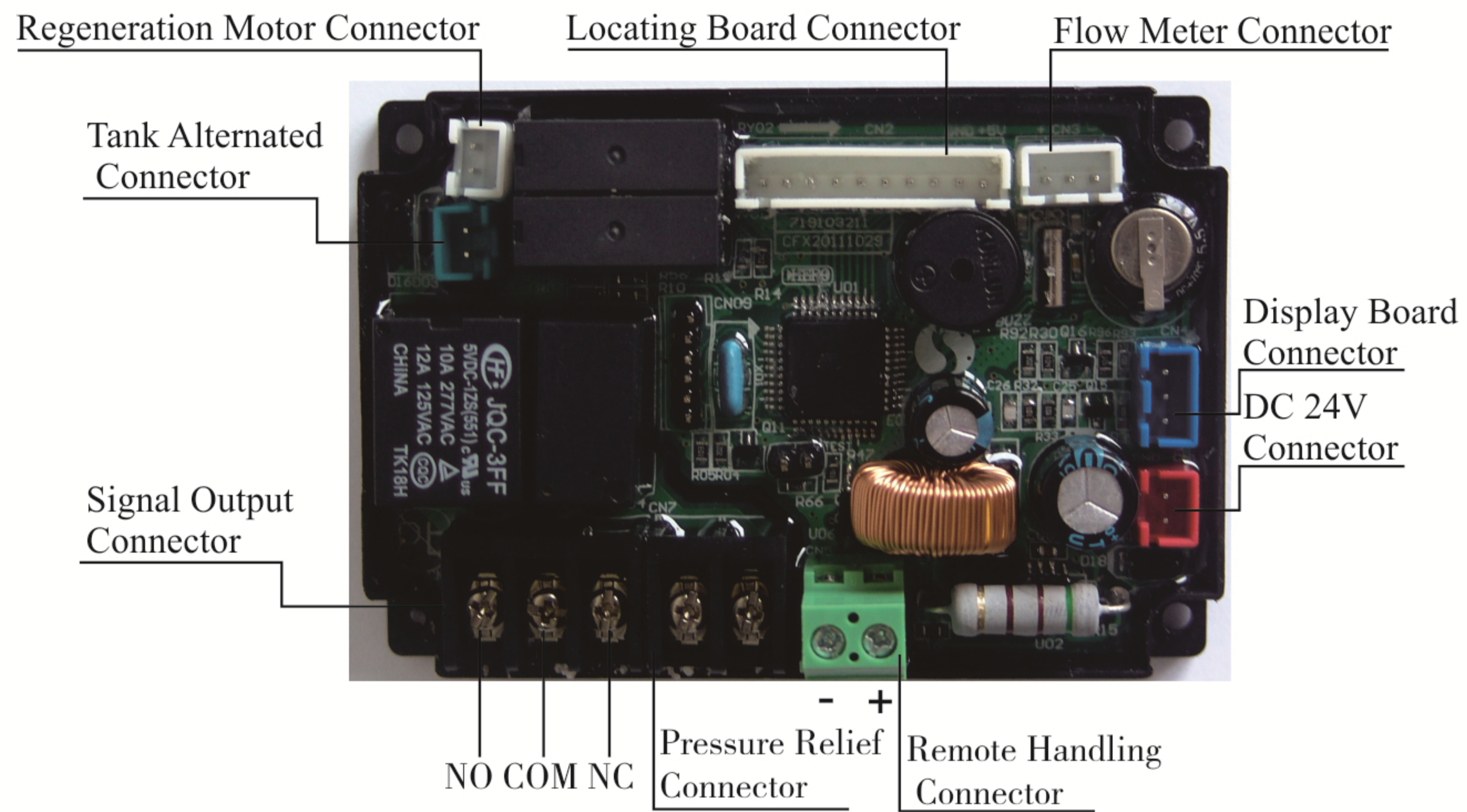


Figure 3-1.

The main functions on main control board:

Function	Application	Explanation
Signal output connector b-01	Outlet solenoid valve	Used in strict requirements regarding no hard water flowing from outlet or controlling the liquid level in water tank.
	Inlet pump	Increase pressure for regeneration or washing. Use the liquid level controller to control inlet pump to ensure there is water in tank.
Signal output connector b-02	Inlet solenoid valve or inlet pump	When inlet pressure is high, it needs to close water to protect motor when valve is rotating.
Pressure relief connector	Control inlet pump	Turn off the inlet pump during settling bed status, and turn on in other status. Only for 93610/93606.
Remote handling connector	Receive signal to make the control valve rotate to next step	It is used for on-line inspection system, connected with PC to realize automatically or remotely control valve.

**A. Signal output connector**

1) Control Solenoid Valve (Set b-01)

① Solenoid valve on outlet controls water level in water tank.

**Instruction:** If system strictly requires no hard water flowing from outlet in regeneration cycle( mainly for no hard water flow out when valve is switching or valve in backwash or brine drawing positions), a solenoid valve could be installed on outlet, the wiring refer to Figure 3-2.

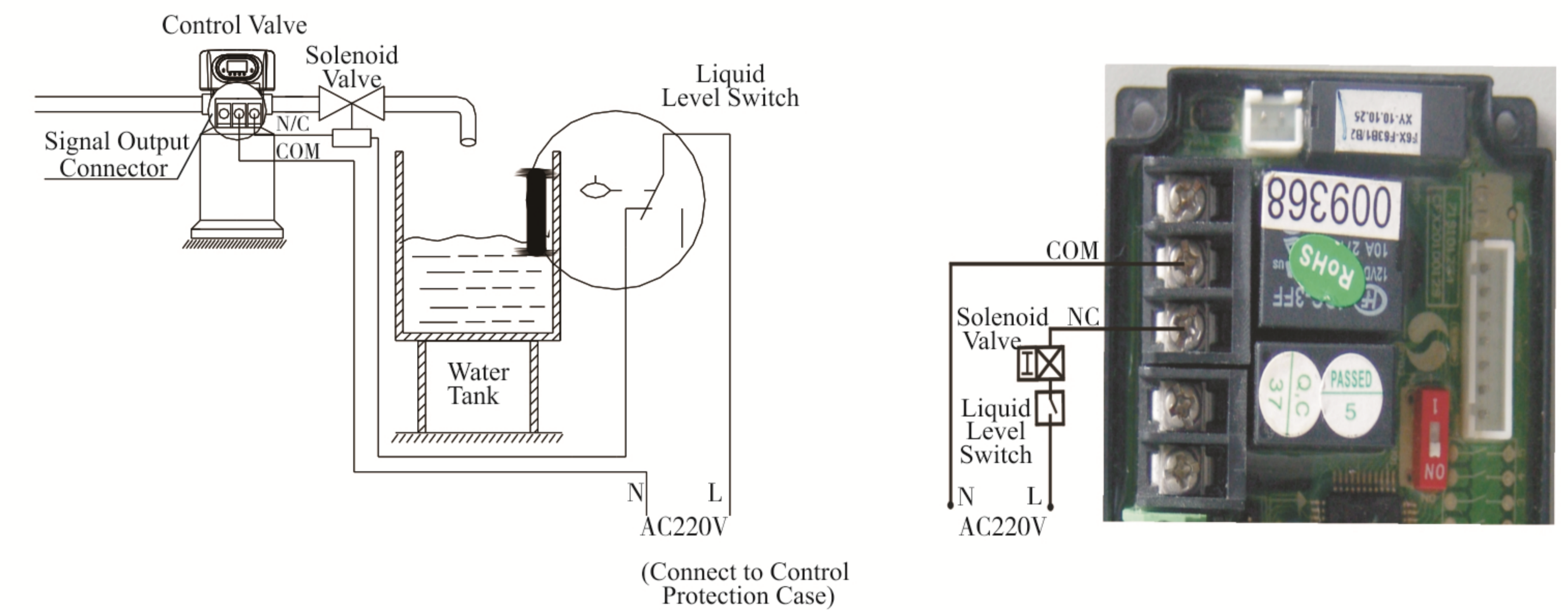


Figure3-2 Wring of Solenoid Valve on Outlet

**Function:**

When valve is in service status, if the water tank is short of water, solenoid valve is open to supply soft water; otherwise, the solenoid valve is closed to ensure no soft water is supplied to tank.

When the valve is in backwash status, there is no signal output. So the solenoid valve is closed and no water flows into the water tank.

② Solenoid Valve on Inlet (Set b-02)

**Instruction:** When inlet pressure exceeds 0.6MPa, install a solenoid valve on inlet. Set the control mode to b-02. Pressure is relieved when valve switching, the wiring refers to Figure 3-3. As Figure 3-4 shows, it also can use the pressure relief port to release pressure.

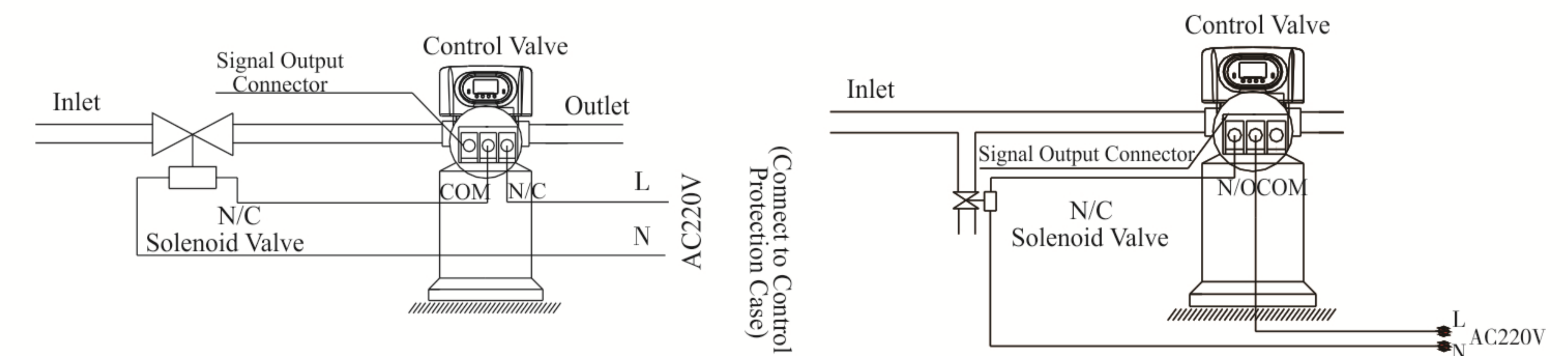


Figure 3-3 Wiring of Solenoid Valve on Inlet      Figure 3-4 Wiring of Pressure Relief Connector

**Function:**

When inlet pressure is high, install a solenoid valve on inlet to ensure valve to switch properly. When valve is exactly at position of Service status, such as “Tank U1 is in service, Tank U2 is standby”, ” Tank U1 is in service, Tank U2 is in Fast Rinse status”, “Tank U2 is in service, Tank U1 is in Backwash status” etc., solenoid valve is open. When valve is switching, solenoid valve is closed, no water flow into valve to ensure valve to switch properly.

2)Liquid Level Controller Controls Inlet Pump (Two-phase motor) ( Set b-01)

**Instruction:** For the system using well or middle-tank supplying water, switch of liquid level controller and valve work together to control pump turn on or turn off. The wiring refer to Figure 3-5.

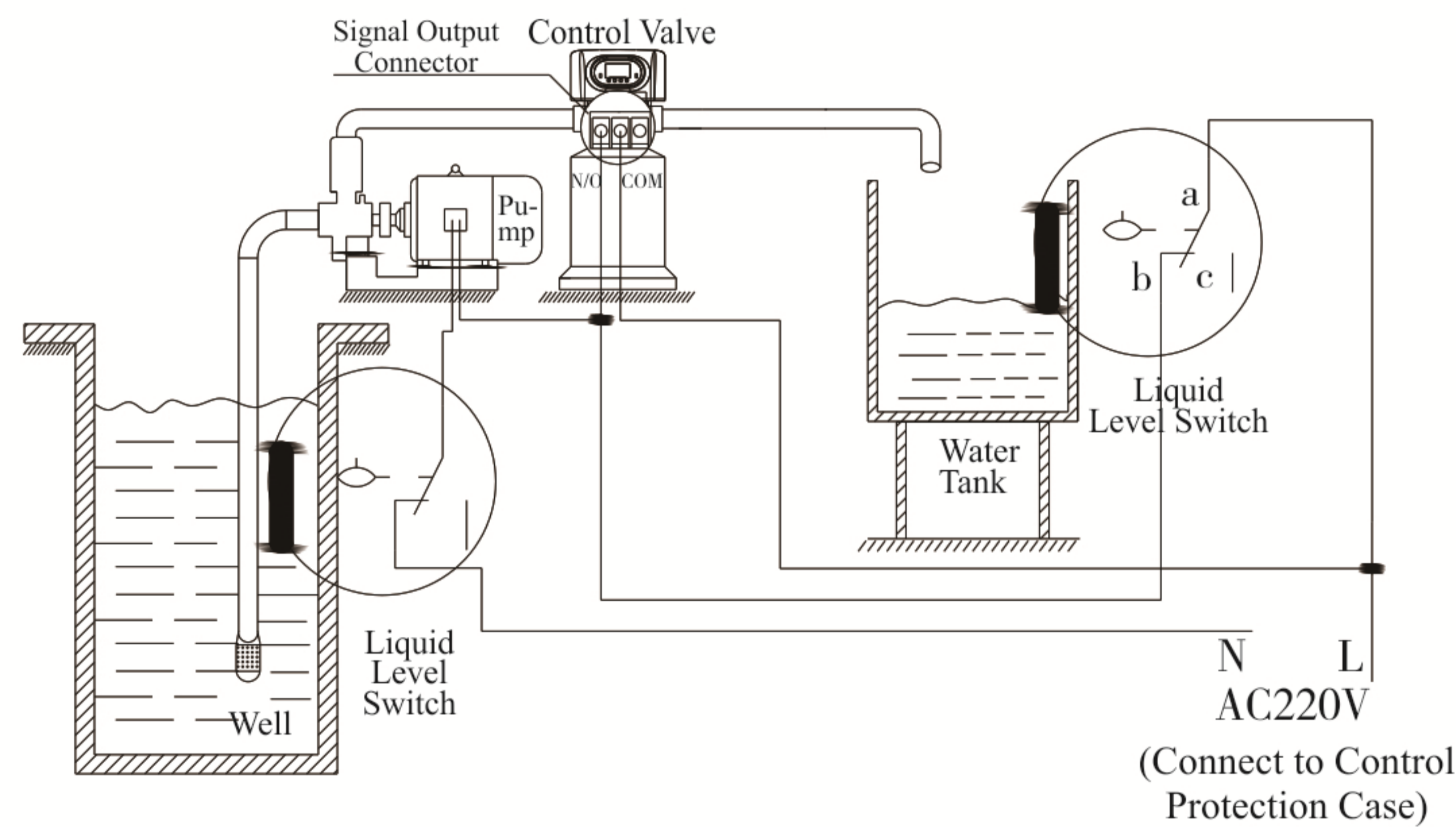


Figure 3-5 Wiring of Liquid Level Controller Controlling Inlet Pump

**Function:**

When valve in service status, if the water tank is short of water, pump starts working; otherwise, the switch of liquid level controller closed, so the pump doesn't work.

When valve in regeneration cycle (such as backwash status), pump starts working to ensure the inlet always has water no matter what is water condition in water tank.

A liquid switch installed at the top opening of the well or in middle water tank in RO system protect pump from working without water.

3)Liquid Level Switch in Water Tank Controls Inlet Pump (Three-phase) (Set b-01)

The principle is the same as for two-phase's. It just has to change the single-phase pump into three-phase motor, and use an AC contactor (Refer to Figure 3-6).

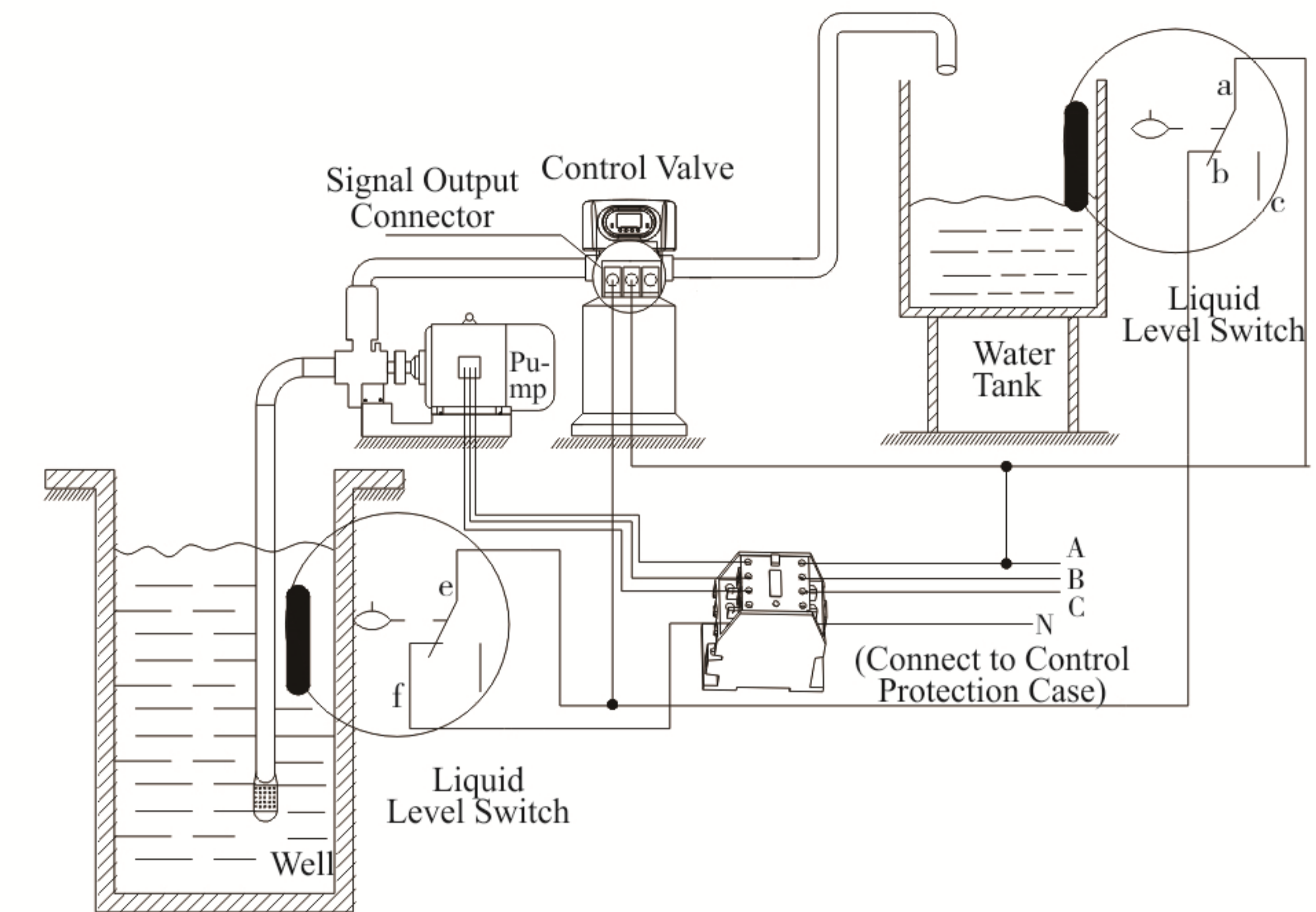


Figure3-6 Wiring of Liquid Level Switch in Water Tank Controls 380V Inlet Pump

**B. Pressure Relief Connector (Only for 93610/93606)**

In pump water supply system, turn off the inlet pump during settling bed status, and turn on in other status. The wiring refers to Figure3-7.

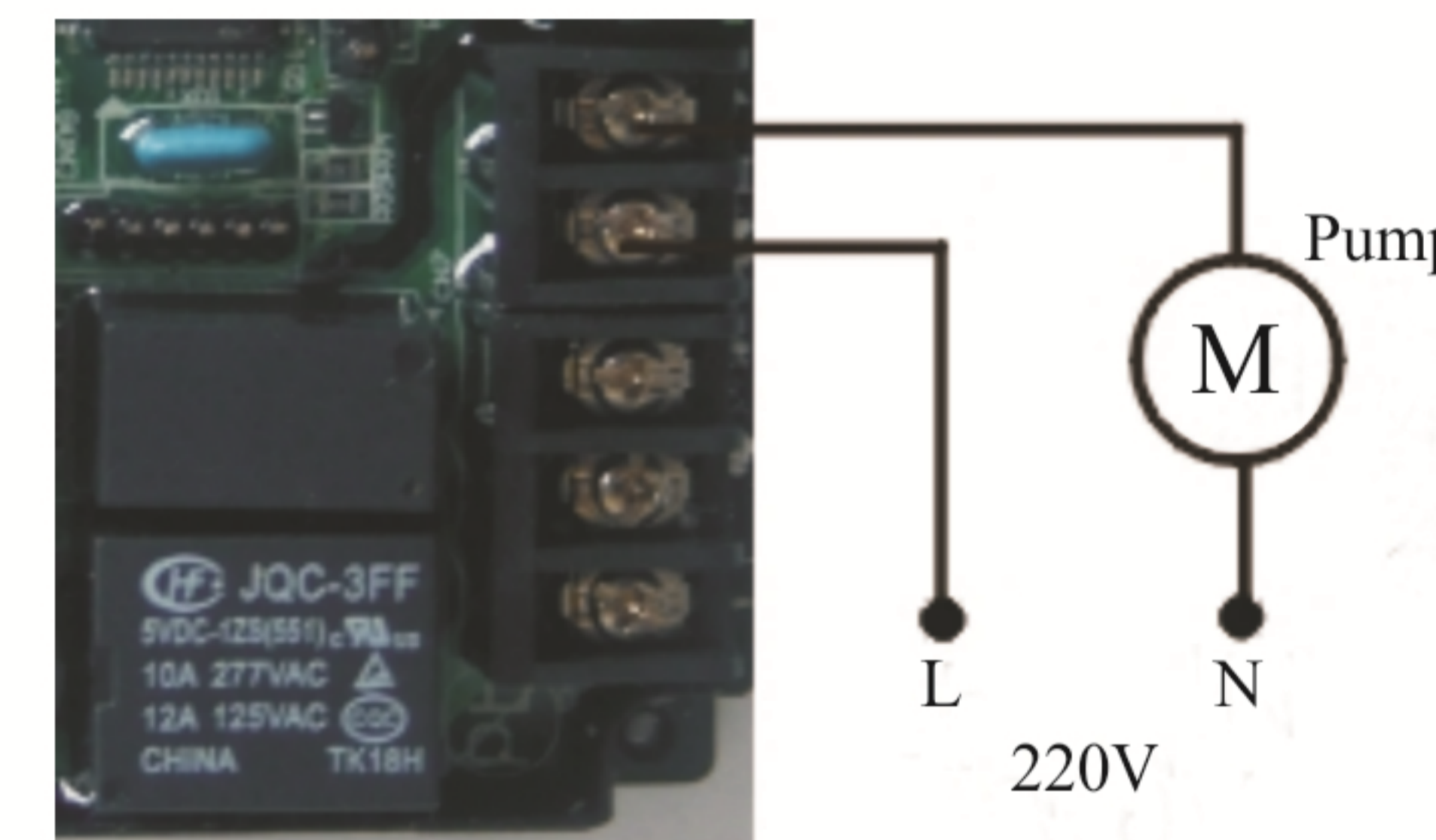


Figure 3-7 Wiring of Pressure Relief Connector

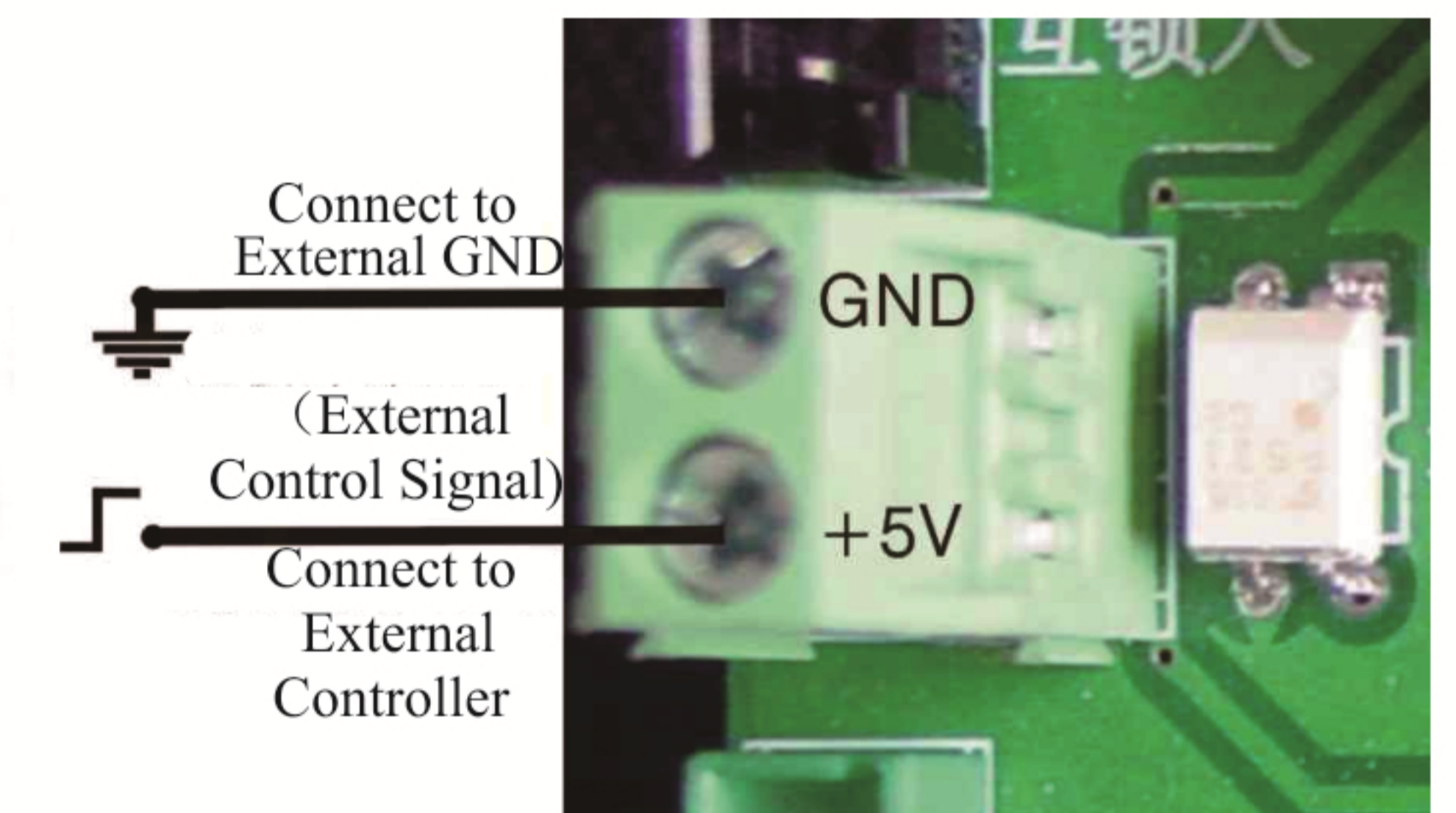


Figure 3-8 Wiring of Remote Handling Connector

**C. Remote Handling Connector**

When the valve is used to make pure water or other system that can be monitored online or connected to a PC, etc., when the conductivity or other parameters reach the set value or the PC sends a signal and needs system regeneration, it can be provide a signal to remote handling connector of main control board by the signal line, which can make the valve regenerate immediately. The connector receiving the signal is equivalent to pressing the manual button. The wiring refers to Figure3-8.

**3.3 System Configuration and Flow Rate Curve**

**A. Product Configuration**

The configuration of control valve with tank, resin volume, brine tank and injector.

17610:

Tank Size (mm)	Resin Volume (L)	Flow Rate (t/h)	Brine Tank Size (mm)	The Minimum Salt Consumption for Regeneration (Kg)	Injector Model
φ 500 × 1800	200	5.0	φ 740 × 1275	30.00	2#
φ 600 × 1800	300	7.0	φ 740 × 1275	45.00	3#
φ 750 × 1800	450	11.0	φ 840 × 1335	67.50	3#

93610:

Tank Size (mm)	Resin Volume (L)	Flow Rate (t/h)	Brine Tank Size (mm)	The Minimum Salt Consumption for Regeneration (Kg)	Injector Model
φ 500 × 2000	90% volume of resin tank	8.0	φ 840 × 1335	45.00	2#
φ 550 × 2200		10.0	φ 840 × 1335	67.5	3#

17606:

Tank Size (mm)	Resin Volume (L)	Flow Rate (t/h)	Brine Tank Size (mm)	The Minimum Salt Consumption for Regeneration (Kg)	Injector Model
φ 500 × 1800	200	4.0	φ 740 × 1275	30.00	2#
φ 600 × 1800	300	6.0	φ 740 × 1275	45.00	3#

93606:

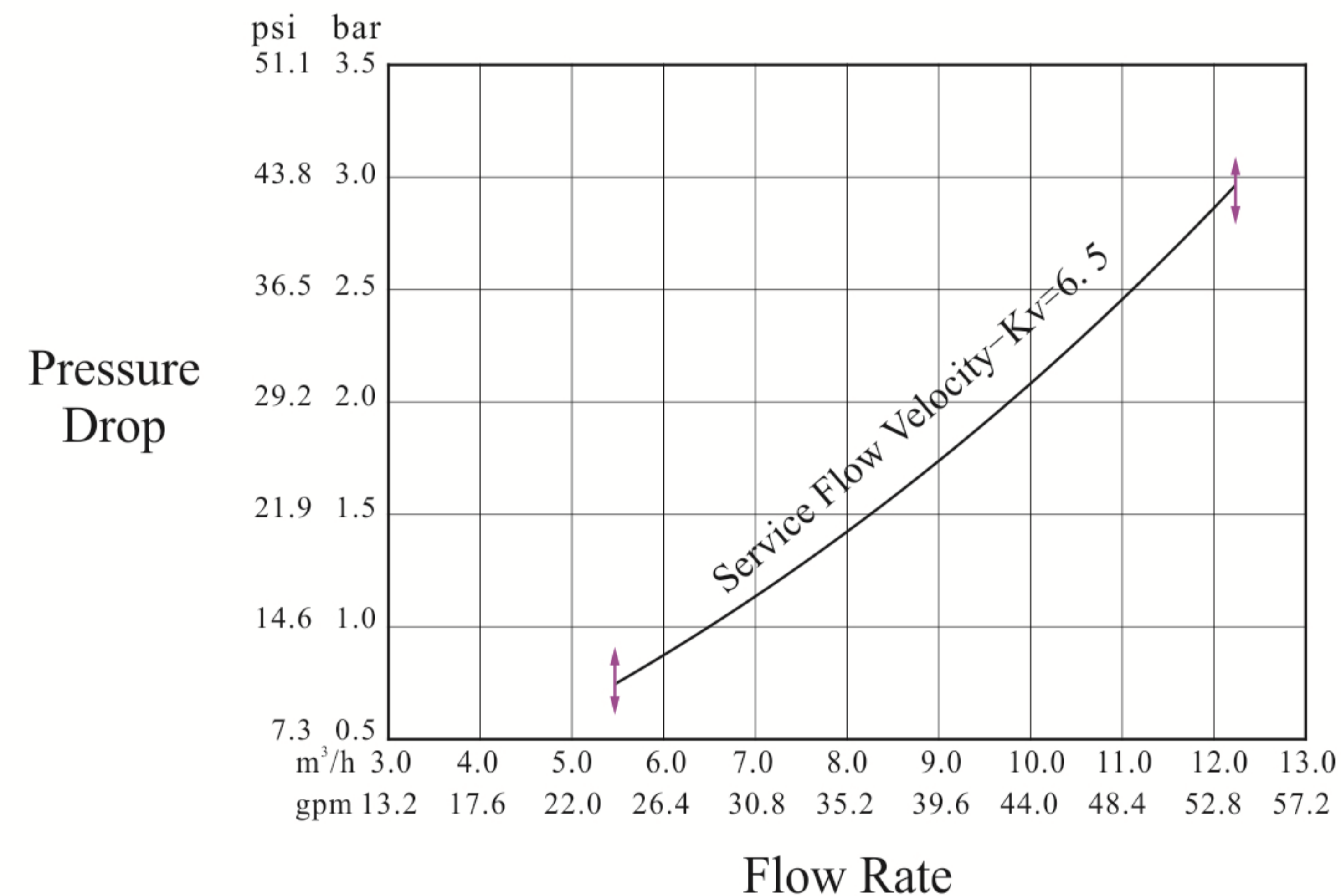
Tank Size (mm)	Resin Volume (L)	Flow Rate (t/h)	Brine Tank Size (mm)	The Minimum Salt Consumption for Regeneration (Kg)	Injector Model
φ 450 × 1900	90% volume of resin tank	6.0	φ 740 × 1275	45.00	3#

**Note:** The flow rate here is the theoretical calculation based on linear velocity 25 m/h (17610/17606) or 45 m/h (93610/93606); the minimum salt consumption for regeneration calculation is based on salt consumption 150g / L (Resin).

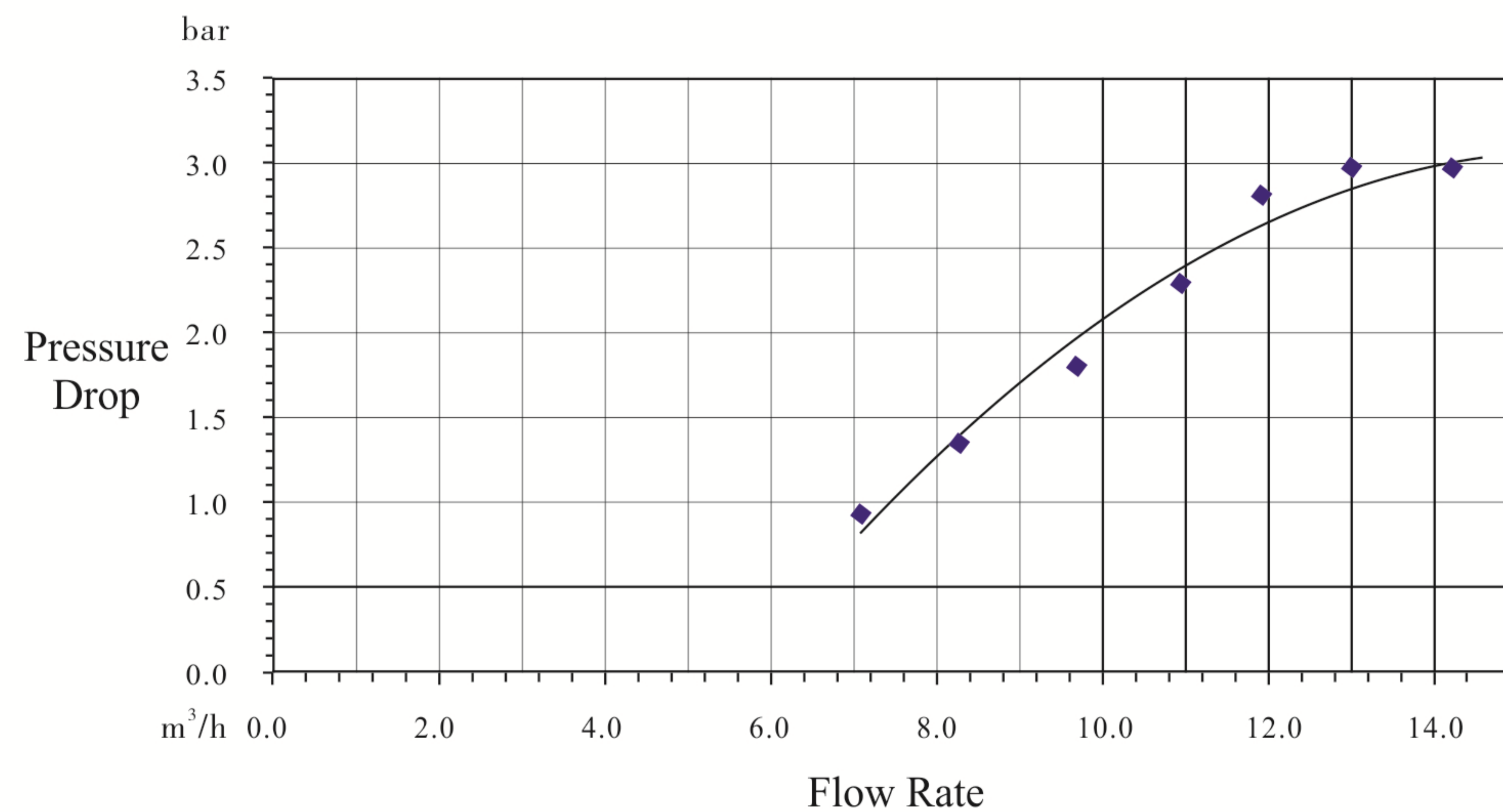
**B. Flow Rate Characteristic**

**1) Pressure-flow rate curve**

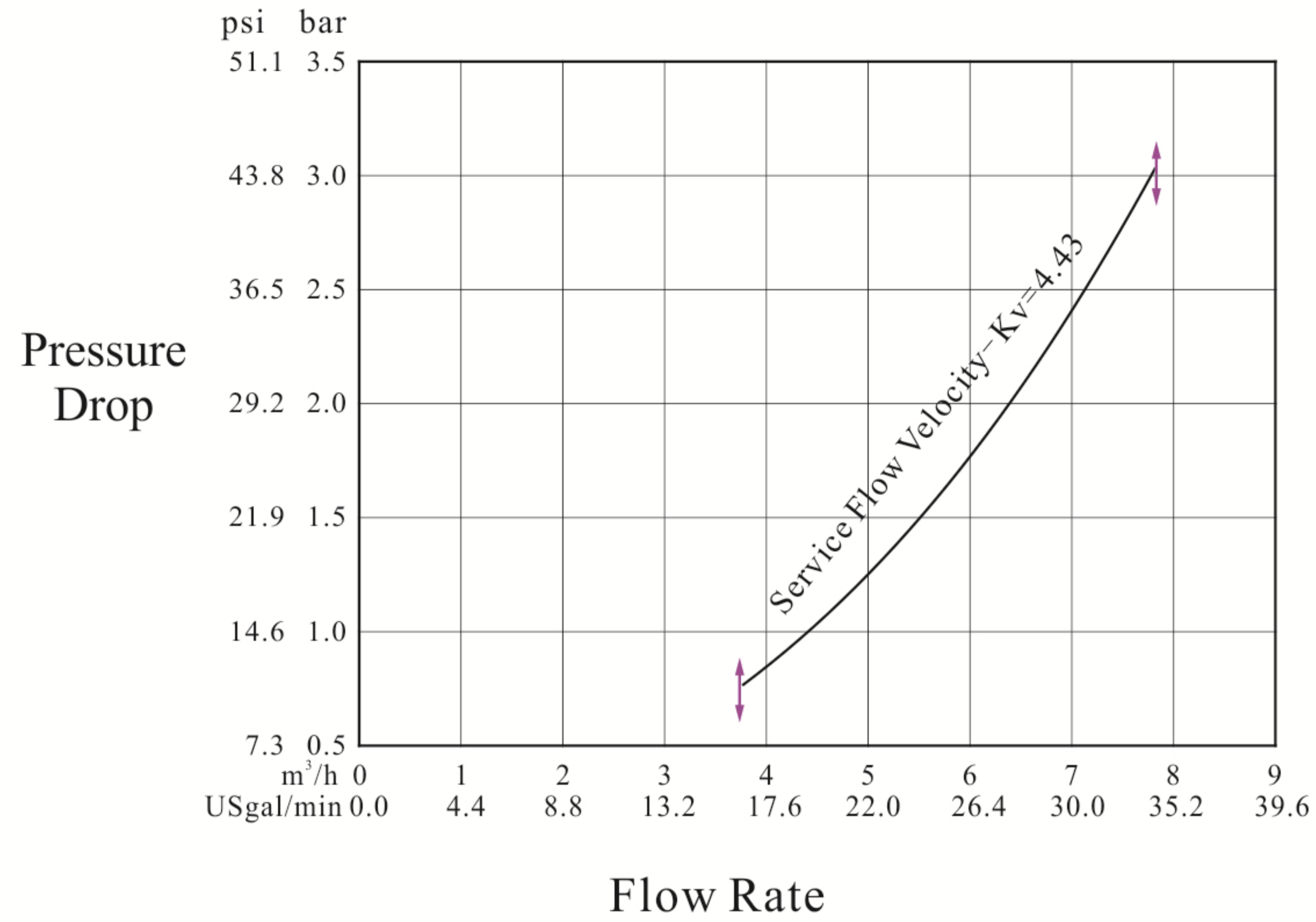
17610



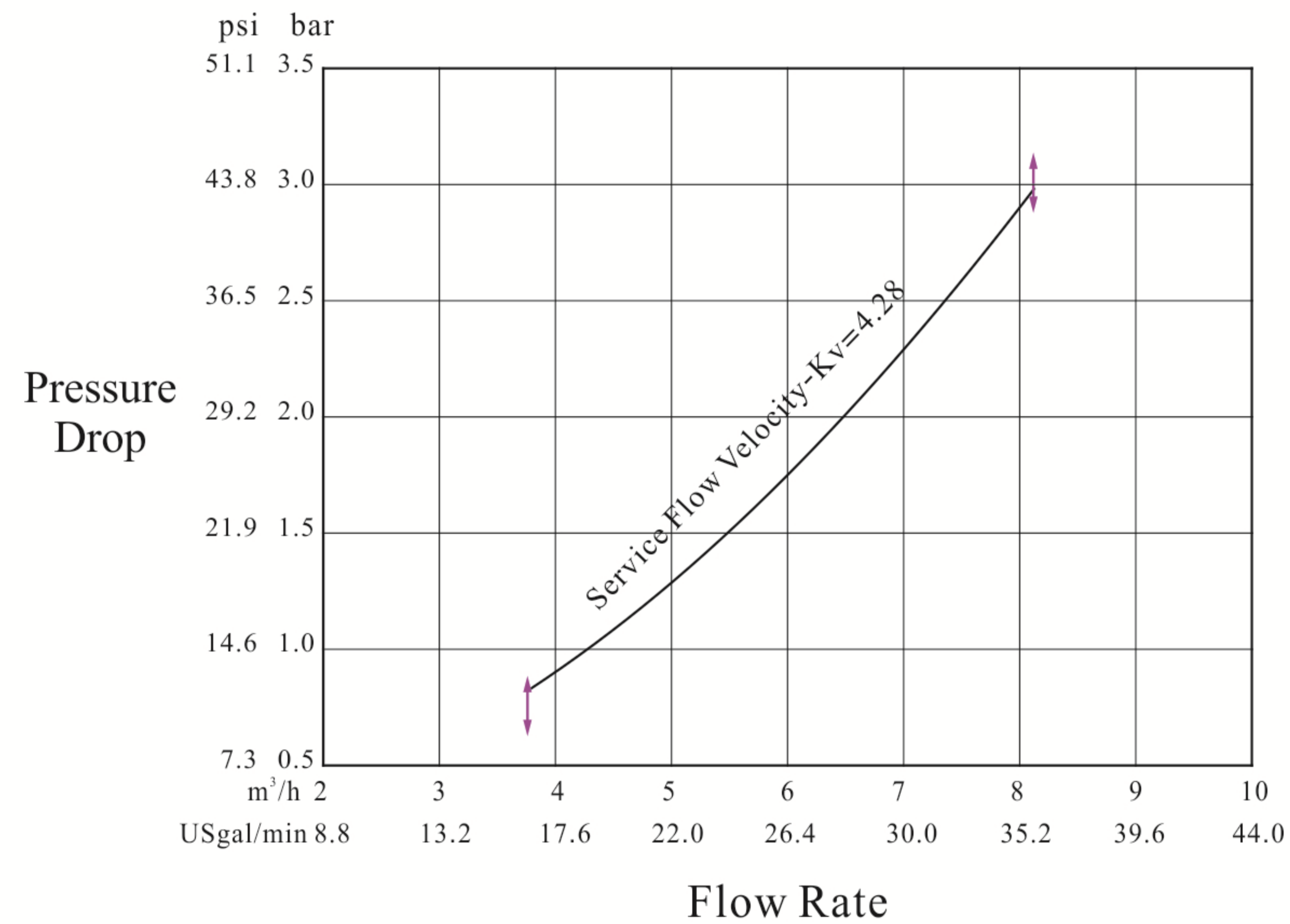
93610



17606



93606



2) Injector parameter table

Pressure of inlet	Draw Rate (L/Min.)				
	93610/17610		17606		93606
Mpa	2# Pink	3# Yellow	2# Pink	3# Yellow	3# Yellow
0.15	13.86	16.08	8.42	9.67	8.19
0.20	16.60	19.32	9.64	11.11	9.15
0.25	18.17	21.30	10.74	12.35	9.96
0.30	20.00	23.40	11.89	13.57	14.88
0.35	21.64	25.19	12.89	14.93	16.01
0.40	23.33	26.98	13.54	15.41	16.47

3) Configuration for standard injector and drain line flow control

Tank Dia. (Mm)	Injector Model	Injector Color	Draw Rate	Slow Rinse Rate	Brine Refill Rate	Backwash / Fast Rinse
			L/min	L/min	L/min	L/min
500	2#	Pink	16.0	10.56	23	46.3
600	3#	Yellow	23.4	15.75	32.9	71
750	3#	Yellow	23.4	15.75	32.9	71

**Remark:** Above data for the product configuration and relevant characteristics are only for reference. When put in practice, please subject to the different requirements of raw water hardness and application.

### 3.4. Parameter Settlement

#### ① Service time T1

Water treatment capacity:

$$Q = V_R \times K \div Y_D \text{ (m}^3\text{)}$$

- Hardness of inlet water (mmol/L)
- Exchange factor (mmol/L) 400~1000.  
Down-flow regeneration, take 400~750.  
Up-flow regeneration, take 450~1000.  
If the inlet water hardness is higher, the factor is smaller.
- Resin volume (m<sup>3</sup>)

By hours:  $T1 = Q \div Q_h \text{ (Hour)}$

- Average water consumption per hour (m<sup>3</sup>/h)
- Water treatment capacity (m<sup>3</sup>)

By days:  $T1 = Q \div Q_d \text{ (Day)}$

- Average water consumption per day (m<sup>3</sup>/d)
- Water treatment capacity (m<sup>3</sup>)

#### ② Backwash time T2 (Only for 17610/17606)

It is subject to the turbidity of the inlet water. Generally, it is suggested to be set 10-15 minutes. The higher the turbidity is, the longer backwash time can be set. If the turbidity is more than 5 FTU, it should be better to install a filter before the exchanger.

#### ③ Settling bed time T3 (Only for 93610/93606)

It is suggested to be set 8-12 minutes.

#### ④ Brine draw and slow rinse time T4

$$T4 = (40 \sim 50) \times H_R \text{ (min)}$$

Generally,  $T4 = 45 H_R \text{ (min)}$

In this formula,  $H_R$ —The height of resin in exchange tank (m).

#### ⑤ Brine refill time T5

Down-flow regeneration:  $T5 = 0.45 \times V_R \div \text{Brine refill speed}$

Up-flow regeneration:  $T5 = 0.34 \times V_R \div \text{Brine refill speed}$

In this formula,  $V_R$ —Resin volume (m<sup>3</sup>)

The brine refill speed is related to inlet water pressure. It is suggested to lengthen 1-2 minutes of calculated brine refill time to make sure there is enough water in tank (The condition is that there is a level controller installed in the brine tank).

#### ⑥ Fast rinse time T6

$$T6 = 12 \times H_R \text{ (min)}$$

Generally, the water for fast rinse is 3~6 times of resin volume. It is suggested to be set 10~16 minutes, but subject to the outlet water reaching the requirement.

#### ⑦ Exchange factor

$$\text{Exchange factor} = E / (k \times 1000)$$

In this formula, E—Resin working exchange capability (mol/m<sup>3</sup>). It is related to the quality of resin. Down-flow regeneration, take 800~900. Up-flow regeneration, take 900~1200.

K—Security factor, always take 1.2~2. It is related to the hardness of inlet water: the higher the hardness is, the bigger the K is.









#### ⑧ Set up interval backwash times (Only for 17610/17606)

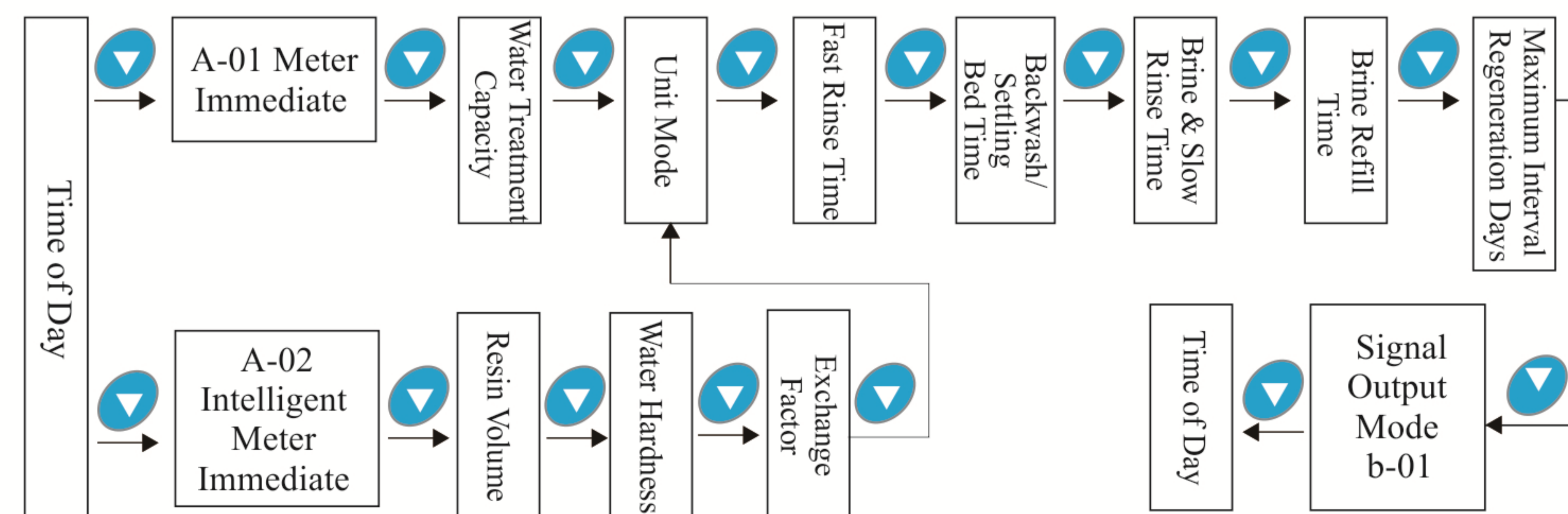
When the turbidity of raw water is higher, the interval backwash time should be set F-00. That is, backwash in each regeneration; when the turbidity is lower, the interval backwash time could be set F-01 (Or other number value,), it is to say that backwash in every two regenerations. Thus, Standby → Fast rinse → Service → Brine & Slow rinse → Brine refill → Fast rinse → Service → Backwash → Brine & Slow rinse → Brine refill → Fast rinse.

The calculation of parameters for each step is only for reference, the actual proper time will be determined after adjusting by water exchanger supplier. This calculation procedure of softener is only for industrial application; it is not suitable for small softener in residential application.




### 3.5. Parameter Enquiry and Setting

#### 3.5.1. Parameter enquiry














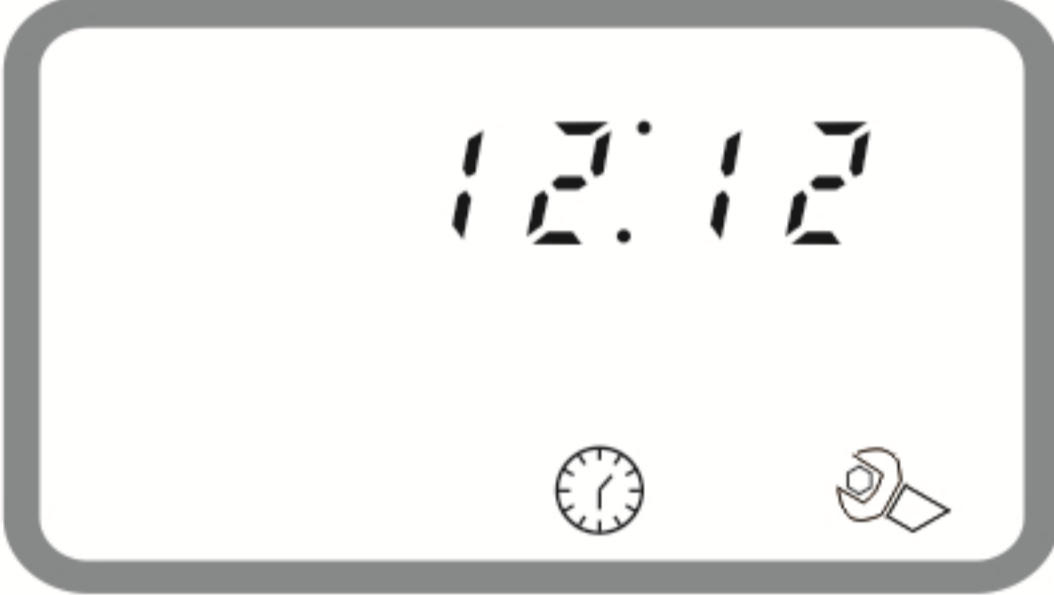













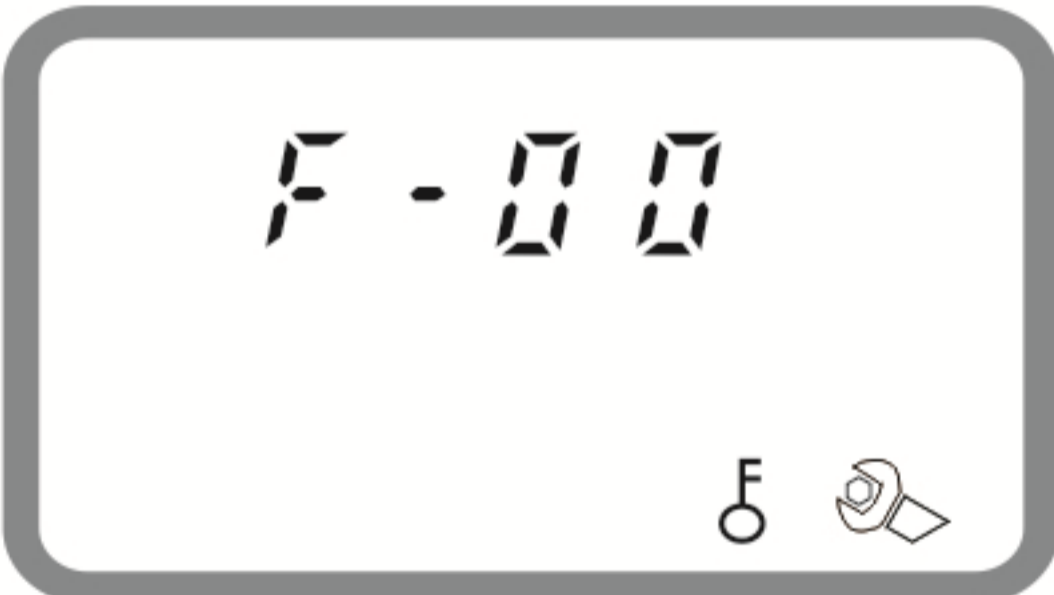


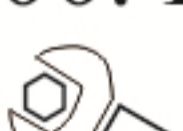
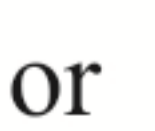




When  lights on, press and hold both  and  for 5 seconds to unlock buttons; then press  and  lights on, enter to program display mode; press  or  to view each value according to below process (Press  exit and turn back to service status).













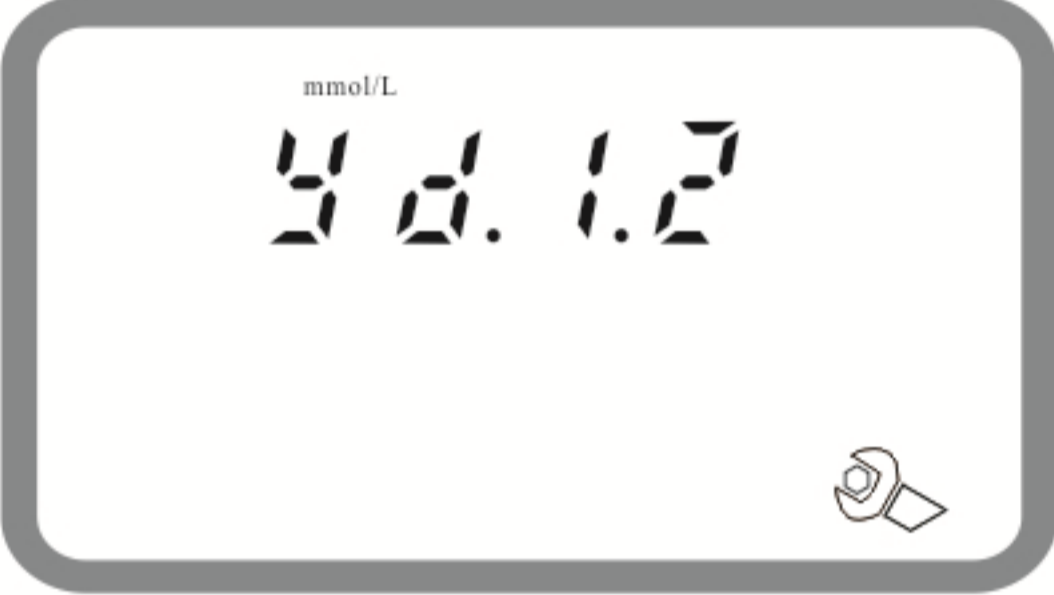

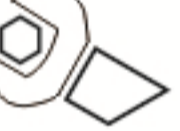




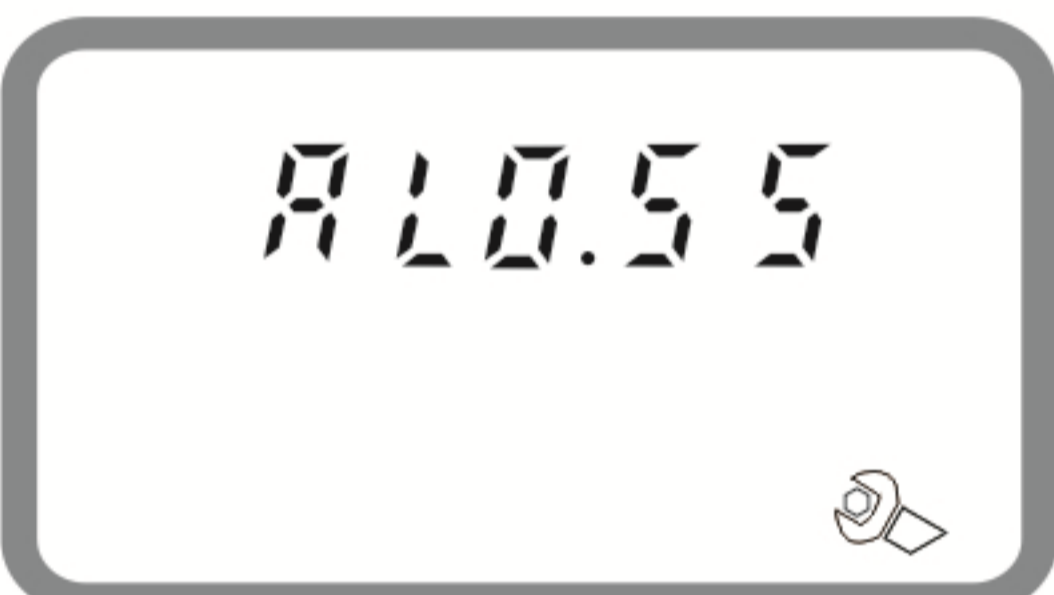







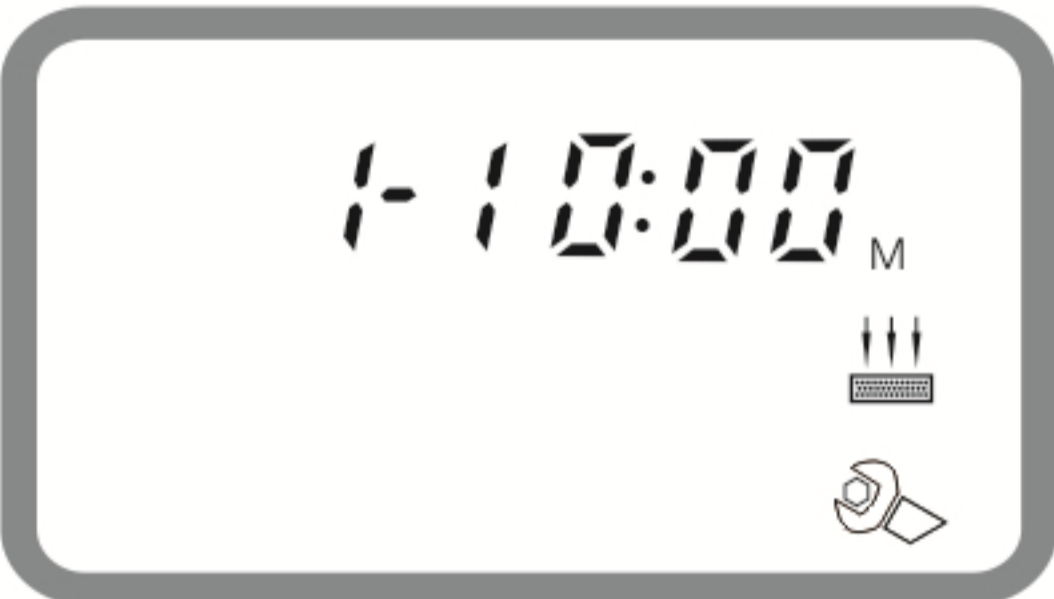







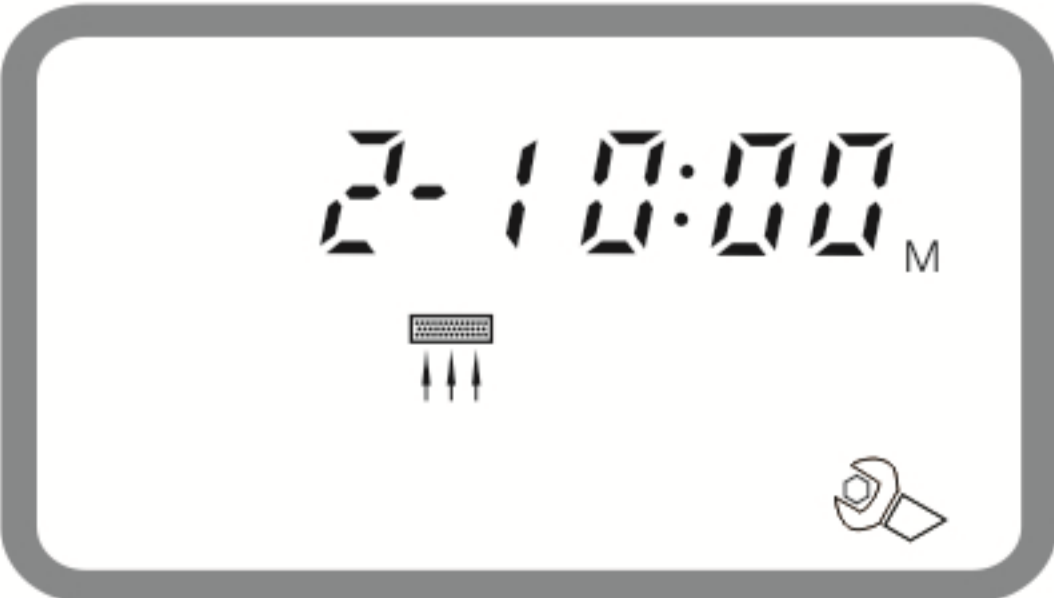


**3.5.2. Parameter setting**

In program display mode, press  and enter into program set mode. Press  or  to adjust the value.

**3.5.3. The steps of parameter setting**

Item	Process Step	Symbol
Time of Day	<p>When time of day "12:12" continuously flash, it reminds to reset;</p> <p>1. Press  to enter into program display mode; both  and  symbol light on, " : " flash;</p> <p>2. Press , both  and hour value flash, through  or  to adjust the hour value;</p> <p>3. Press  again, both  and minute value flash, through  or  to adjust the minute value;</p> <p>4. Press  to finish the adjustment, press  to turn back.</p>	
Control Mode	<p>1. In control mode display status, press  and enter into program set mode,  and 01 value flash;</p> <p>2. Press  or , set the value to be A-01 or A-02 control mode;</p> <p>3. Press  to finish the adjustment, press  to turn back.</p>	
Interval Backwash Times	<p>1. In interval backwash times display status, it shows F-00. Press  and enter into program set mode.  and 00 flash;</p> <p>2. Press  or  to adjust the value of times;</p> <p>3. Press  to finish adjustment, press  to turn back.</p>	
Water Treatment Capacity	<p>1. In water treatment capacity display status, it shows  and 10.00. Press  and enter into program set mode.  and 10.00 flash;</p> <p>2. Press  or  to adjust the water treatment capacity value;</p> <p>3. Press  to finish adjustment, press  to turn back.</p>	

Resin Volume	<p>1. In resin volume display status, it shows 50 L; press  and enter into program set mode.  and 50 flash;</p> <p>2. Press  or  to adjust the resin volume in the tank;</p> <p>3. Press  to finish the adjustment, press  to turn back.</p>	
Feed Water Hardness	<p>1. In feed water hardness display status, it shows yd  and 1.2 flash;</p> <p>2. Press  or  to adjust the hardness value (mmol/L);</p> <p>3. Press  to finish the adjustment, press  to turn back.</p>	
Exchange Factor	<p>1. In exchange factor display status, it shows AL0.55. Press  and enter into program set mode.  and 55 flash;</p> <p>2. Press  or  to adjust the exchanger factor value;</p> <p>3. Press  to finish the adjustment, press  to turn back.</p>	
Fast Rinse Time	<p>1. In fast rinse display status, it shows  and 1-10:00; press  and enter into set mode.  and 10 flash;</p> <p>2. Press  or  to adjust the service time (minute);</p> <p>3. Press  to finish the adjustment, press  to turn back.</p>	
Backwash Time	<p>1. In backwash time display status, it shows  and 2-10:00; press  and enter into set mode.  and 10 flash;</p> <p>2. Press  or  to adjust the backwash time;</p> <p>3. Press  to finish the adjustment, press  to turn back.</p>	



<p>Brine &amp; Slow Rinse Time</p>	<p>1. In brine &amp; slow rinse time display status, it shows  and 3-60:00; press  and enter into program set mode.  and 60:00 flash; 2. Press  or  to adjust the brine &amp; slow rinse time (minute); 3. Press  finish the adjustment, press  to turn back.</p>	
<p>Brine Refill Time</p>	<p>1. In brine refill time display status, it shows  and 4-05:00; press  and enter into program set mode.  and 05:00 flash; 2. Press  or  to adjust the brine refill time (minute); 3. Press  to finish the adjustment, press  to turn back.</p>	
<p>Maximum Interval Regeneration Days</p>	<p>1. In maximum interval regeneration days display status, it shows H-30; press  and enter into program set mode.  and 30 flash; 2. Press  or  to adjust the Interval regeneration days; 3. Press  to finish the adjustment, press  to turn back.</p>	
<p>Signal Output Mode</p>	<p>1. In signal output mode display status, it shows b-01; press  and enter into program set mode.  and 01 flash; 2. Press  or  to adjust the signal output mode to b-02; 3. Press  to finish the adjustment, press  to turn back.</p>	

For example, the fast rinse time of a softener is 12 minutes. After regenerating, the chloridion in the outlet water is always higher than normal, indicating that there is not enough time for fast rinse. If you want the time to set to 15 minutes, the modification steps as follows:

- ① Press and hold both and to unlock buttons ( lights off);
- ② Press , and light on;
- ③ Press or continuously until light on. Then the digital area shows: 1-12:00M;

- ④ Press , and 12:00 flash;
- ⑤ Press continuously until 12 is changed to 15;
- ⑥ Press , there is a sound "Di" and the figure stop flashing; the program back to enquiry status
- ⑦ If you want to adjust other parameters, you can repeat the steps from ② to ⑤; If you don't, press and quit from the enquiry stat, the display will show the current service status.

### 3.6.Trial Running

After installing the multi-functional flow control valve on the resin tank with the connected pipes, as well as setting up the relevant parameter, please conduct the trail running as follows (taking 17610/17606 as example):

- A. Set Tank U1 in service status, Tank U2 in standby status.
- B. Turn the inlet ball valve to quarter open, fill Tank U1. Then open outlet ball valve. After no air in pipeline, close outlet ball valve. Make sure the system without leakage.
- C. Make the inlet ball valve full open.
- D. Press to switch Tank U2 to Fast Rinse status and Tank U1 is in Service status, making the water flow out from the drain for 8~15 minutes.
- E. Press to switch Tank U2 to Service status and Tank U1 is in Backwash status, cleaning the foreign materials in the U1 tank until the drainage water is clean. It will take 8~10 minutes to finish the whole process.
- F. Fill the brine tank with the planned amount of water which is above the air check valve. Then add solid salt to the tank and dissolve the salt as much as possible.
- G. Press to switch Tank U1 to Brine & Slow Rinse status, drawing brine to regenerate the resin in U1 tank. When brine drawing is stopped by air check valve, stay in this status for few minutes (that is slow rinse).
- H. Press to switch control valve to Brine Refill status.
- I. Press to switch Tank U1 to Standby status, Tank U2 in Service status.
- J. Press to switch Tank U1 to Fast Rinse status. It will take 8~15 minutes to finish.
- K. After the treated sample water is qualified, press to switch Tank U1 to Service status and Tank U2 to Backwash status, cleaning the foreign materials in the U2 tank until the drainage water is clean. It will take 8~10 minutes to finish the whole process.
- L. Repeat steps from G to I, turn Tank U2 to Standby status and Tank U1 in Service status, then the system is ready to put into use.

#### Note:

● If water inflow too fast, the media in tank will be damaged. When water inflow slowly, there is a sound of air emptying from drain pipeline.

- After changing resin, please empty air in the resin according to the above Step C.
- In the process of trial running, please check the water situation in all position, ensuring there is no resin leakage.
- The time for Settling Bed, Brine draw& Slow Rinse, Fast Rinse, and Brine Refill status can be set and executed according to the calculation in the formula or suggestions from the control valve suppliers.

**3.7.Trouble-Shooting**

**A. Control Valve Fault**

Problem	Cause	Correction
1. Softener fails to regenerate.	A. Electrical service to unit has been interrupted. B. Regeneration cycles set incorrectly. C. Controller is defective D. Motor fails to work.	A. Assure permanent electrical service (Check fuse, plug, pull chain or switch). B. Reset regeneration cycles. C. Replace controller. D. Replace motor.
2. Softener supply hard water.	A. Bypass valve is open or leaking. B. No salt in brine tank. C. Injector is plugged. D. Insufficient water flowing into brine tank. E. Leak at O-ring on riser pipe. F. Internal valve leak.	A. Close or repair bypass valve. B. Add salt to brine tank and maintain salt level above water level. C. Change or clean injector. D. Check brine tank refill time. E. Make sure riser pipe is not cracked. Check o-ring and tube pilot. F. Change valve body.
3. Softener fails to draw brine.	A. Inlet water pressure is too low. B. Brine line is plugged. C. Brine line is leaking. D. Injector is damaged. E. Internal control leak.	A. Increase inlet water pressure. B. Clean brine line. C. Replace brine line. D. Replace injector. E. Replace valve body.
4. Excessive water in brine tank.	A. Overlong brine refill time. B. Remain too much water after brine draw.	A. Reset correct refilling time. B. Clean brine line and injector.
5. Pressure lost	A. Iron scale in the water supply pipe. B. Iron scale accumulated in the softener.	A. Clean the water supply pipe. B. Clean valve and add resin cleaning chemical, increase frequency of regeneration.

6. Resin discharged through drain pipe	A. Air in water system.	A. Exhaust air existed in system.
7. Control cycle continuously.	A. Wire of locating board is damaged. B. Controller is faulty. C. Foreign material stuck the driving gear.	A. Check and connect the wire of locating board. B. Replace controller. C. Take out foreign material.
8. Drain flows continuously.	A. Internal valve leak. B. When electricity fails to supply, valve is in backwash or fast rinse status.	A. Check and repair valve body or replace it. B. Adjust valve to service status or turn off bypass valve and restart after electricity supply is normal.

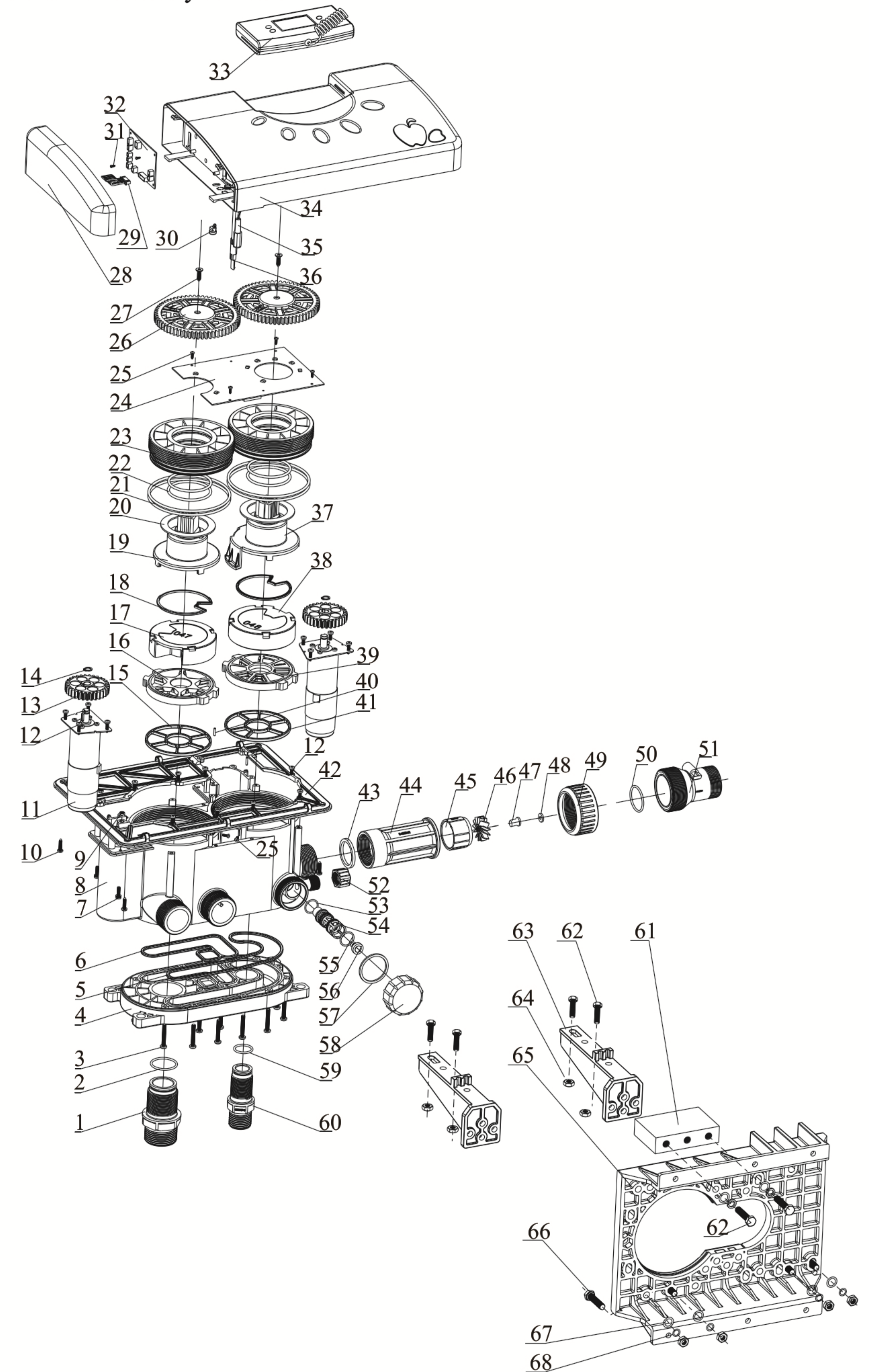
**B. Controller Fault**

Problem	Cause	Correction
1. All indicators display on front panel.	A. Wiring of display board with control board fails to work. B. Control board is faulty. C. Transformer is damaged. D. Electrical service not stable.	A. Check and replace the wiring. B. Replace control board. C. Check and replace transformer. D. Check and adjust electrical service.
2. No display on front panel.	A. Wiring of display board with controller fails to work. B. Display board is damaged. C. Control board is damaged. D. Electricity is interrupted.	A. Check and replace wiring. B. Replace front panel. C. Replace control board. D. Check electricity.
3. E11 Flash	A. Wiring of locating board with controller fails to work. B. Locating board is damaged. C. Mechanical driven is failure. D. Control board is damaged. E. Wiring of tank switching motor with controller is fault. F. Tank switching motor is damaged.	A. Replace wiring. B. Replace locating board. C. Check and repair mechanical part. D. Replace control board. E. Replace wiring. F. Replace tank switching motor.

<p>4. E21 Flash</p>	<p>A. Wiring of locating board with controller fails to work.                  B. Locating board is damaged.                  C. Mechanical driven is failure.                  D. Control board is damaged.                  E. Wiring of regeneration motor with controller is fault.                  F. Regeneration motor damaged.</p>	<p>A. Replace wiring.                  B. Replace locating board.                  C. Check and repair mechanical part.                  D. Replace control board.                  E. Replace wiring.                  F. Replace regeneration motor.</p>
<p>5. E12 or E22 Flash</p>	<p>A. Hall component on locating board is damaged.                  B. Wiring of locating board with controller fails to work.                  C. Control board is faulty.</p>	<p>A. Replace locating board.                  B. Replace wiring.                  C. Replace control board.</p>
<p>6. E3 or E4 Flash</p>	<p>A. Control board is faulty.</p>	<p>A. Replace control board.</p>

**3.8.Assembly & Parts**

93610/17610 Valve Body Assemble



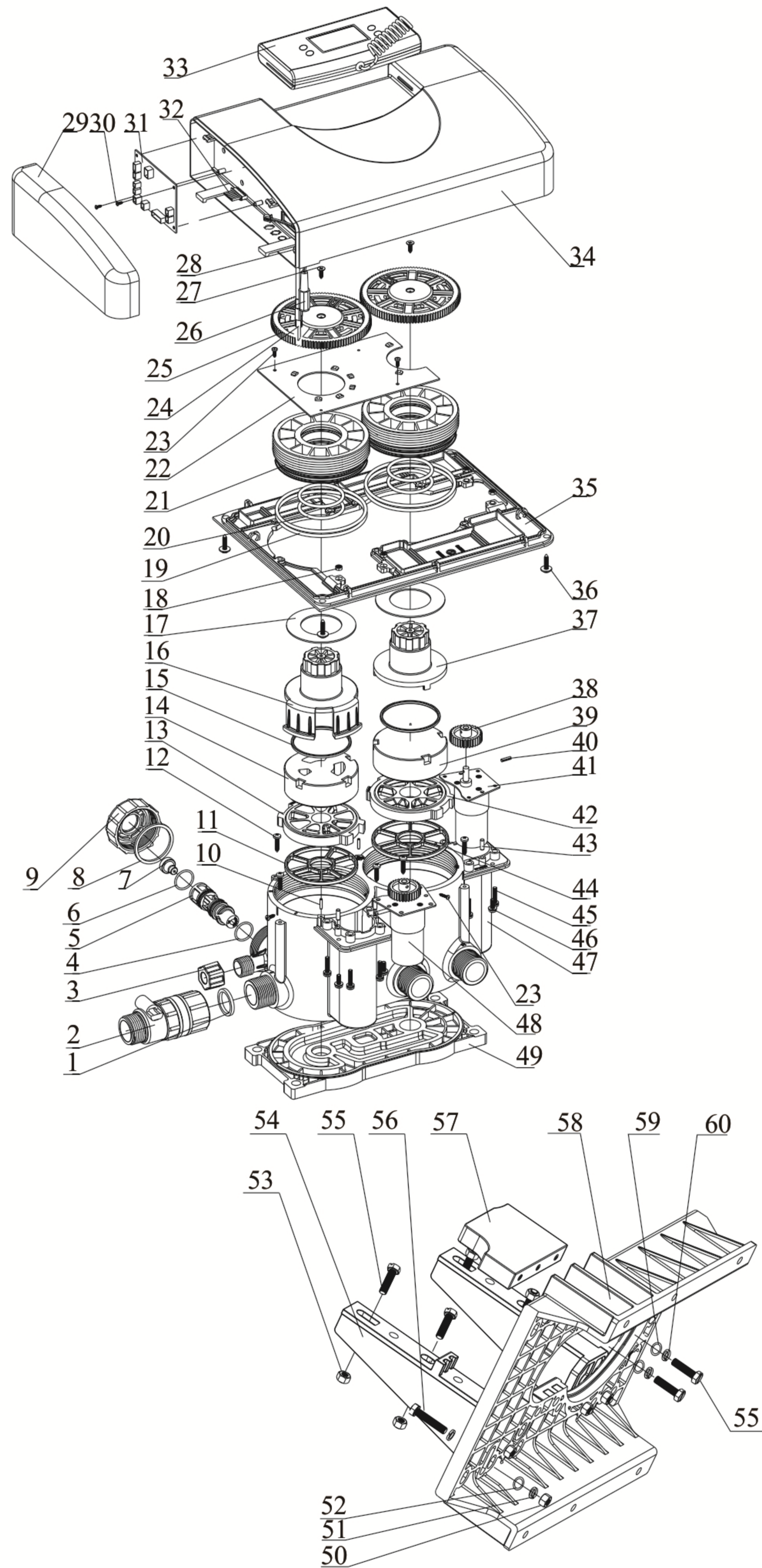
93610/17610 Valve Body Components and part Number

Item No.	Description	Part No.	Quantity
1	Reducer	8458055	1
2	O-ring 35.5×2.65	8378086	1
3	Screw M5×35	8902017	17
4	Valve Body	8022151	1
5	Seal Ring	8371027	1
6	Seal Ring	8371028	1
7	Screw (3 parts) M4×16	8902006	4
8	Valve Body	5022043	1
9	Nut	8940002	1
10	Screw ST3.9×16	8902016	4
11	Motor	6158038	2
12	Screw ST ST3.9×16	8909044	16
13	Motor Gear	5241008	2
14	Locking Ring	8994009	2
15	Seal Ring	8370071	1
16	Fixed Disk	8469044	1
17	Moving Disk	8459047	1
18	Moving Seal Ring	8370018	2
19	Shaft	8258005	1
20	Anti-friction Washer	8216006	2
21	O-ring 117.6×3.55	8378133	4
22	O-ring 59.92×3.53	8378110	4
23	Fitting Nut	8092032	2
24	Locating Board	6380002	1
25	Screw ST2.9×9.5	8909008	4
26	Gear	5241015	2
27	Screw ST4.8×19	8909018	2
28	Front Cover	8300028	1
29	Wire for Locating Board	5511010	1
30	Wire Clasp	8126004	3
31	Screw ST ST2.2×6.5	8909004	2
32	Control Board	6382019	1
33	Display Control Box Assembly	5356029	1
34	Dust Cover	8005029	1

35	Power Wire	5513001	1
36	Probe Wire (93610)	6386001	1
	Probe Wire (17610)	6386009	
37	Shaft	8258026	1
38	Moving Disk	8459048	1
39	Fixed Disk	8469045	1
40	Pin 2.5×12	8993004	2
41	Seal Ring	8370072	1
42	Connect Board	8152014	1
43	Washer	8371030	1
44	Connect Fitting	8458062	1
45	Fixed Connector	8109040	1
46	Turbine	5436009	1
47	Rotate Core	8211003	1
48	Bushing	8210002	1
49	Animated Nut	8947023	1
50	O-ring 50.39×3.53	8378107	1
51	Shell	5002004	1
52	Nut	8940016	1
53	O-ring 19×1.8	8378021	1
54	Throat, Injector	8467022~8467025	1
55	O-ring 20×1.8	8378024	1
56	Nozzle, Injector	8454027~8454030	1
57	Seal Ring	8371006	1
58	Injector Cover	8315013	1
59	O-ring 24×2.6	8378061	1
60	Reducer	8458056	1
61	Fixed Part	8109041	1
62	Hex Bolts M10×35	8920001	6
63	Fixed Part	8109043	2
64	Hex Nut M10	8940023	8
65	Fixed Part	8109061	1
66	Hex Bolts M10×45	8920007	4
67	Washer	8952006	6
68	Spring Washer	8953006	6

**Remark:** For item No.54, the standard configuration is 8467024; for item No.56, the standard configuration is 8454029.

93606/17606 Valve Body Assemble



93606/17606 Valve Body Components and part Number

Item No.	Description	Part No.	Quantity
1	Washer $\Phi 30 \times \Phi 24 \times 33$	8371001	1
2	Flow Meter	5447001	1
3	Nut	8940016	1
4	O-ring $19 \times 1.8$	8378021	1
5	Throat, Injector	8467022~8467025	1
6	O-ring $20 \times 1.8$	8378024	1
7	Nozzle, Injector	8454027~8454030	1
8	Seal Ring	8371006	1
9	Injector Cover	8315013	1
10	Pin $2.5 \times 12$	8993004	2
11	Seal Ring	8370084	1
12	Screw $ST3.9 \times 13$	8909003	12
13	Fixed Disk	8469056	1
14	Moving Disk	8459055	1
15	Moving Seal Ring	8370065	2
16	Shaft	8258030	1
17	Anti-friction Washer	8216012	2
18	Hex Nut $M4 \times 3$	8940002	4
19	O-ring $92.5 \times 3.55$	8378199	4
20	O-ring $43.7 \times 3.55$	8378123	4
21	Fitting Nut	8092037	2
22	Locating Board	6380029	1
23	Screw $ST2.9 \times 9.5$	8909008	2
24	Probe Wire (17606)	6386017	1
	Probe Wire (93606)	6386014	
25	Gear	5241016	2
26	Power Wire	5513001	1
27	Screw $ST3.9 \times 13$	8909012	2
28	Wire Clasp	8126004	3
29	Front Cover	8300012	1
30	Screw $ST2.2 \times 6.5$	8909004	2
31	Control Board	6382019	1

32	Wire for Locating Board	5511010	1
33	Display Control Box Assembly	5356029	1
34	Dust Cover	8005011	1
35	Connect Board (93606)	8152021	1
	Connect Board (17606)	8152023	1
36	Screw ST3.9×16	8909016	4
37	Shaft	8258014	1
38	Gear	8241012	2
39	Moving Disk	8459054	1
40	Pin Φ2.5×12	8993003	2
41	Motor(93606)	6158013	1
	Motor(17606)	6158014	1
42	Fixed Disk	8469055	1
43	Pin Φ4x12	8993006	4
44	Seal Ring	8370083	1
45	Screw (3 parts) M4×20	8802007	8
46	Screw (3 parts) M4×12	8902005	4
47	Valve Body	8022165	1
48	Motor(93606)	6158014	1
	Motor(17606)	6158013	1
49	Valve Body	8022166	1
50	Hex Bolt M10	8940023	4
51	Spring Washer M10	8953006	4
52	Washer M10	8952006	4
53	Hex Nut M8	8940021	8
54	Fixed Part	8109043	2
55	Hex Bolt M8×30	8920012	6
56	Hex Bolt M10×40	8920013	4
57	Fixed Part	8109049	1
58	Fixed Part	8109061	1
59	Washer M8	8952005	1
60	Spring Washer M8	8953005	1


**Remark:** For item No.5, the standard configuration is 8467024; for item No.7, the standard configuration is 8454029.

### 4. Warranty Card

Dear client:

This warranty card is the guarantee proof of Runxin brand multi-functional flow control valve. It is kept by client self. You could get the after-sales services from the supplier which is appointed by Runxin manufacturer. Please keep it properly. It couldn't be retrieved if lost. It couldn't be repaired free of charge under the below conditions:

1. Guarantee period expired.(One year);
2. Damage resulting from using, maintenance, and keeping that are not in accordance with the instruction;
3. Damage resulting from repairing not by the appointed maintenance personnel;
4. Content in guarantee proof is unconfirmed with the label on the real good or be altered;
5. Damage resulting from force majeure.

Product Name	 Multi-functional Flow Control Valve for Water Treatment Systems		
Model		Code of Valve Body	
Purchase Company Name		Tel/Cel.	
Problem			
Solution			
Date of Repairing		Date of Accomplishment	Maintenance Man Signature

When product needs warranty service, please fill in the below content and sent this card together with the product to the appointed suppliers or Runxin company.

End-user Company Name		Tel/Cel.	
Purchase Company Name		Tel/Cel.	
Model		Code of Valve Body	
Tank Size φ ×		Resin Tank Size L	Raw Water Hardness mmol/L
Water Source: Ground-water <input type="checkbox"/> Tap Water <input type="checkbox"/>		Water Treatment Capacity m <sup>3</sup>	Backwash Time min
Brine & Slow Rinse Time min		Brine Refill Time min	Fast Rinse Time min
Problem Description			