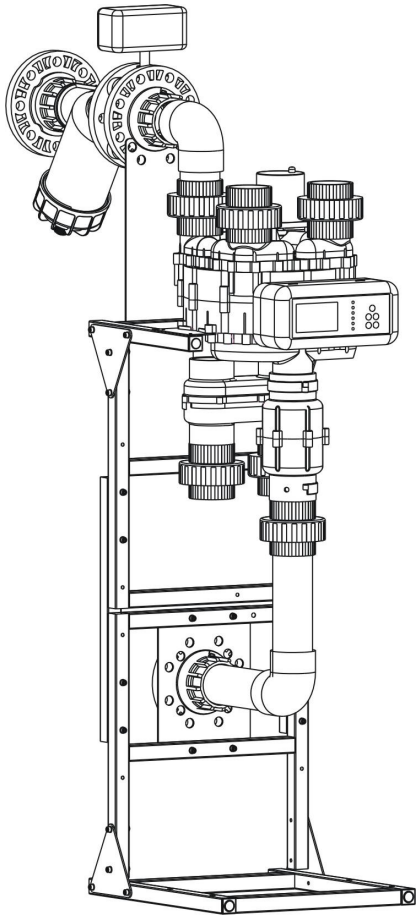
RF20、RF50

RF Side-loading soften Valve

Direction for Installation & Usage

Scan Qr code for the latest



RF20 Install

RF20
Install animation

RF50 Install

RF50
Install animation

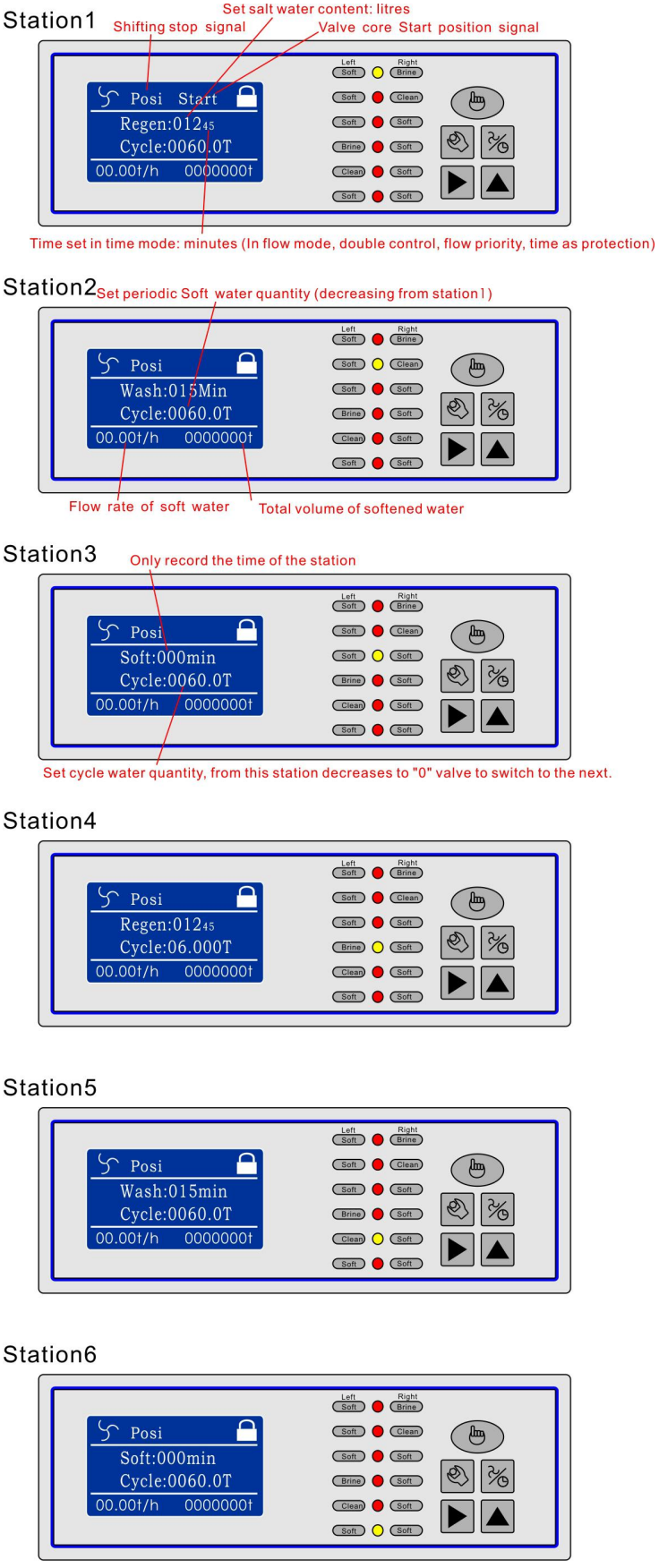
RF Shifting
animation

Brine absorb and
refill animation

Meter and electric
valve repair

Flow process
animation

Controller Handling Instruction



picture 1: Controller Front Panel

(1) 、LCD screen

1、Display station parameter status, such as: station time, reduced cycle of water per hour, water system, the cumulative total amount of water the system, operation mode (flow model" ", time model" ")

2、Controller display of Operational status

3、Display equipment failure prompted

（2） **Station light:** Light from top to bottom station of the station in which the display device, which top the starting station, station device in the spool automatically switch modes to find positive and operate.

（3）**Operation button:** Only in unlocking state " ", to the " ", " ", " " One button "▶" and "+1" is used to "unlock" and with the modified parameters to use.

（4）**Unlock**: First press the " " & " " in the meantime, then " " appear, unlock finished

（5） **Lock**: Equipment without any operation after 3 minutes, shut down automatically.

（6）**Mode** : Unlock state, the device only in a "left softening; Right regenerate (start position), click " " button, the time mode" " and flow mode" " to switch between displays.

（7） **Shift** : Unlock state, according to " " to go directly to the next station. Equipment through the operation of station parameters can be set.

（8）**SET** : perform the operation time to complete all the stations of the parameter setting.

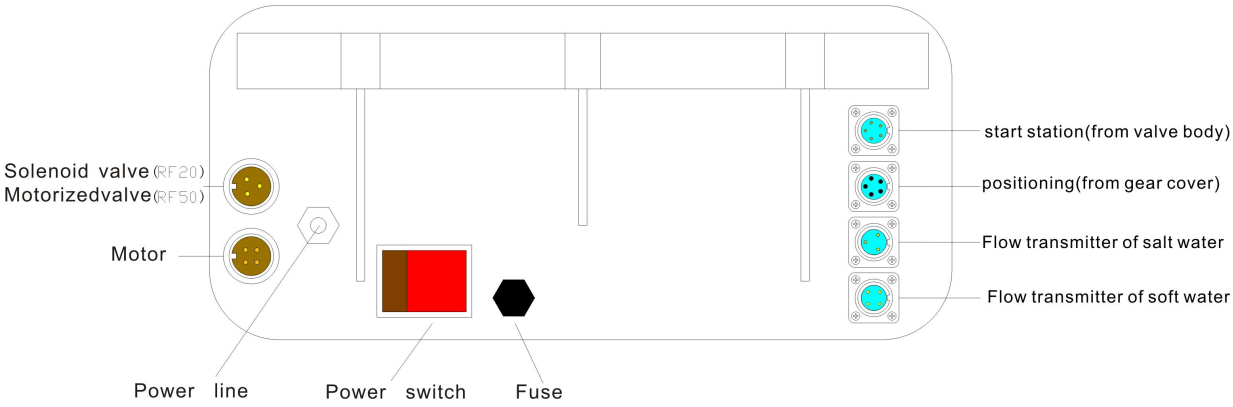
Ⅰ：**Time mode**, modify the parameters(Refer to Table 3)

Time mode, only the modified position time, including the regeneration time of about tanks, tank cleaning time around, time around the water tank. Operation, press the " " button, the display parameter setting interface, use button " " and " " to modify the various figures, finished press " " button to confirm, the operation to complete.

Ⅱ： **Flow mode** , Modify the parameters (Refer to Table 2)

In Flow mode, the station parameters include: Regeneration time, the cycle of water, left and right tank cleaning time. Operation, press the " " button, modify the parameters of the interface screen display, the use of buttons " " and " " to modify the digital, finished press the " " button to confirm.

4、Controller that the connection jack below:



Picture2: back of controller

（1）、**Power Switch**：The master switch of equipment start and stop, open the "power switch" to work.

（2）、**Power line**

（3）、**Brine Flow transmitter** : Air plug socket (3 holes)

（4）、**Soft water Flow transmitter :** Air plug socket (4 holes)

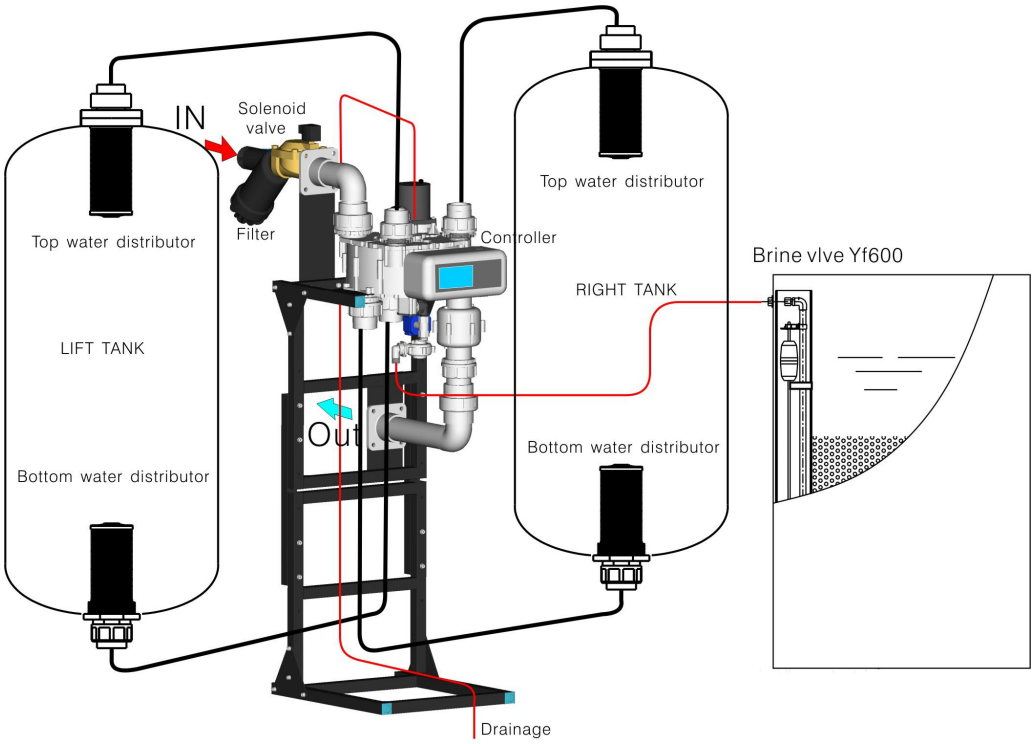
（5）、**Positioning**: Positioning signal socket (5 pin), the valve switching control signal in place to stop.

（6）、**Start station**: Start-position signal socket (5 holes), spool position control signal.

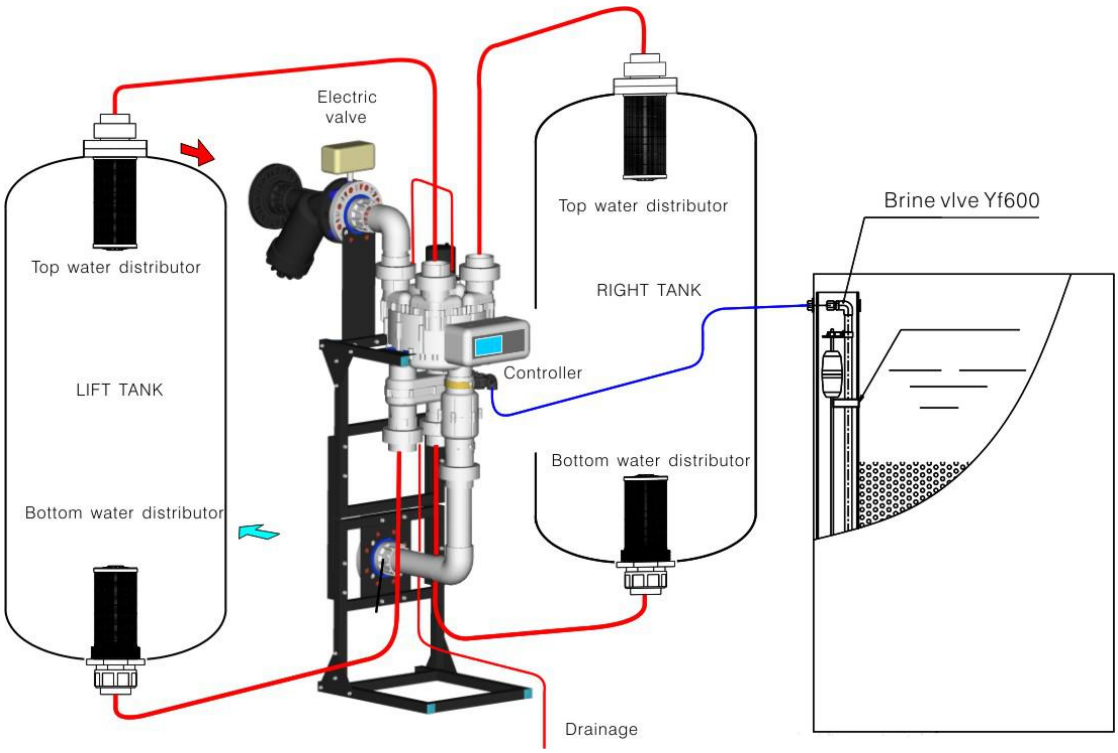
（7）、**Motor**: Electrical Outlet 220V, Multi-way valve switching station when the rotation.

（8）、**Solenoid Valve & Motorized valve**: Inlet valve outlet 220V, with power energized solenoid valve or motorized valve open, multi-position switching valve automatically closes.

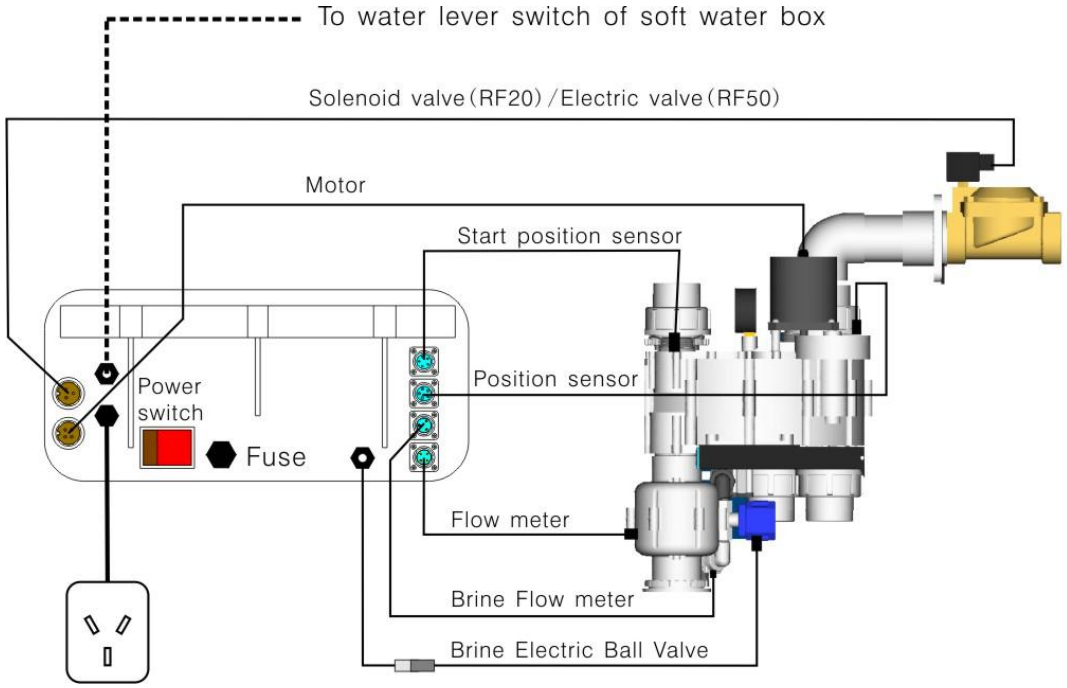
Installation



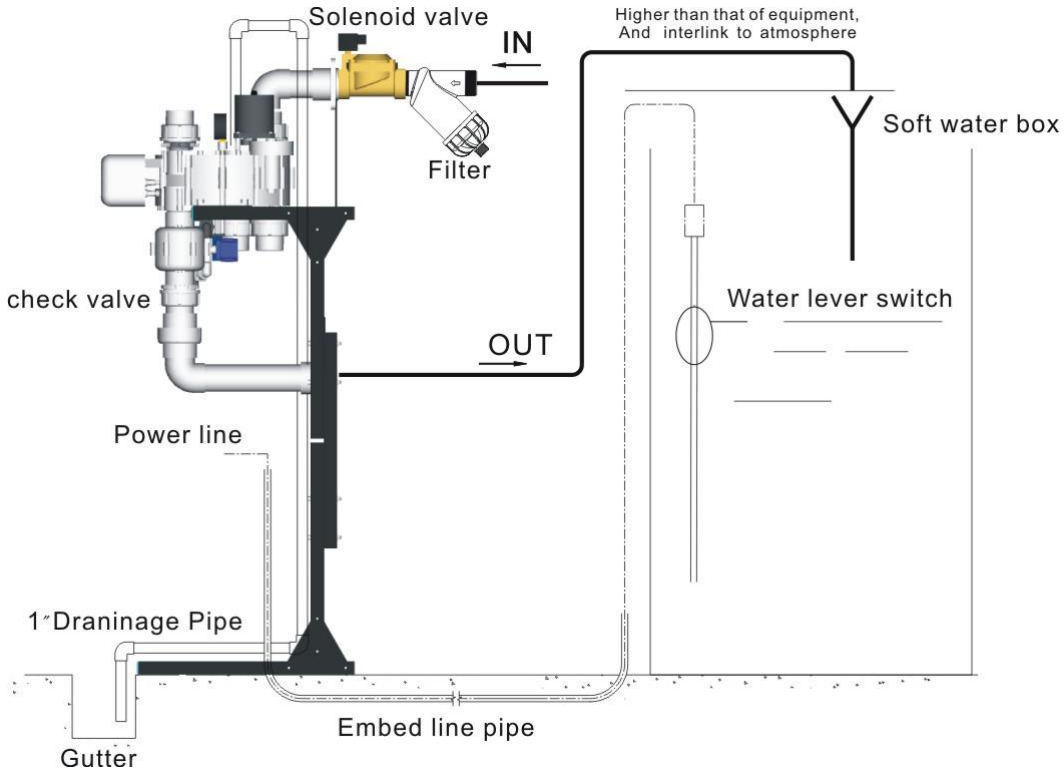
Picture3: RF20 pipe install



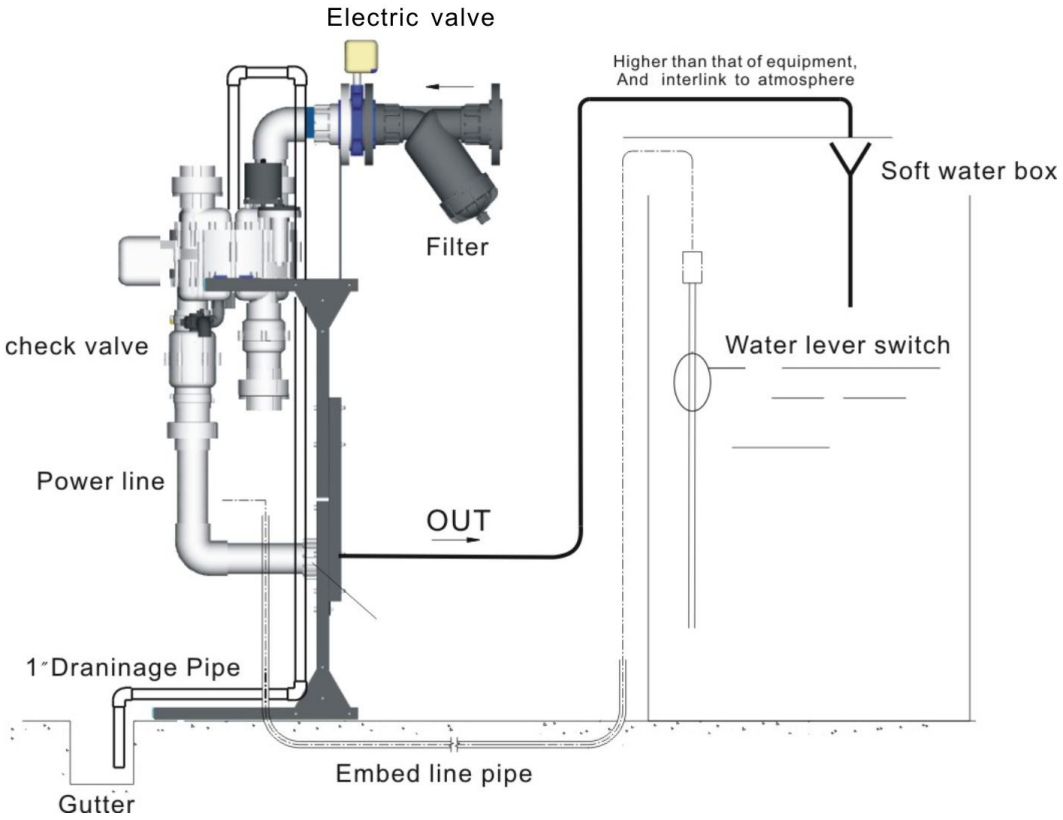
Picture 4: RF50 pipe install



Picture 5: Controller and valve connection



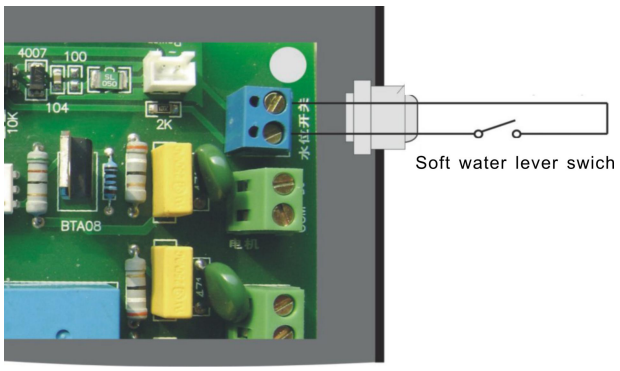
Picture 6: RF20 IN & OUT pipe install



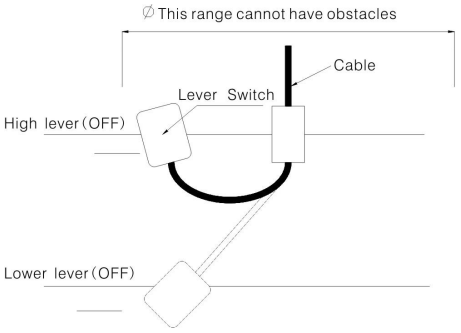
Picture 7: RF50 IN & OUT pipe install

Installation for water Level Switch and Power supply system

A、Controller output directly: when it received the closed signal of high water level, controller to control water or electric solenoid valve closed, the controller shows that "water is full" This output is + 12 v active signal, can not access to high voltage circuit

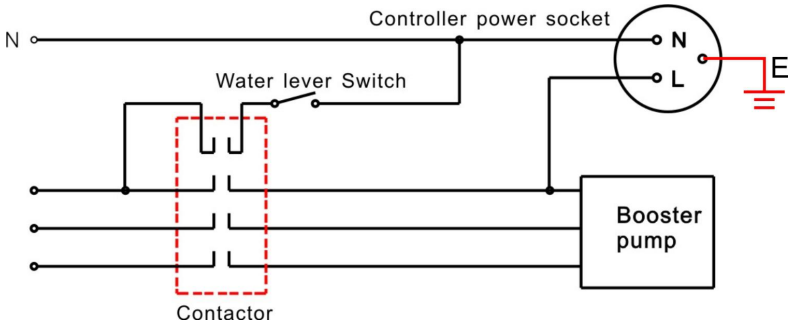


Picture 8:directly signal from lever switch

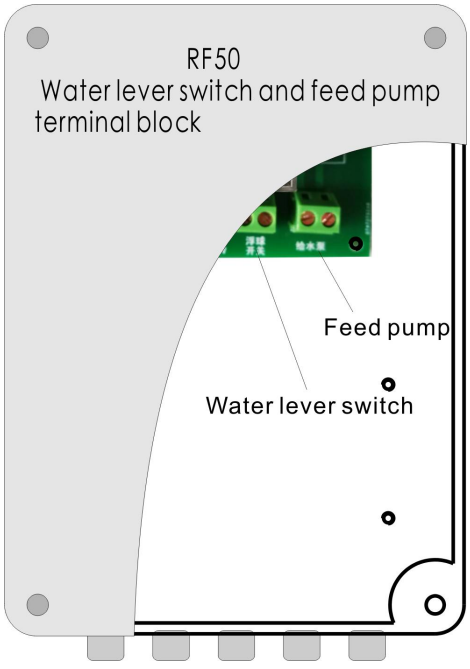


Picture 9:lever switch

B、Single contact water level switch, the linkage of the feed water pump control

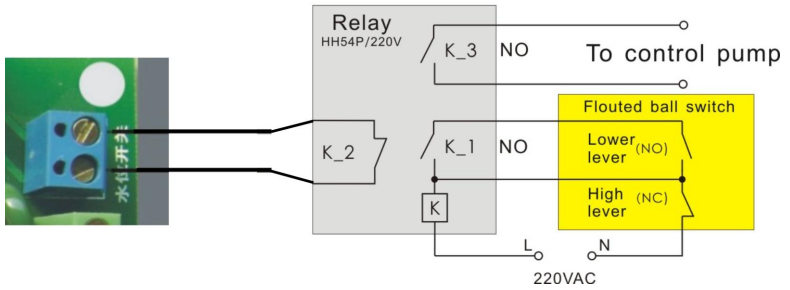


Picture 10: RF20 Single contact water level switch, the linkage of the feed water pump control



Picture11:RF50 Single contact water level switch terminal block

C、Conversion Relay for TWO contact water level switch, the linkage of the feed water pump control



Picture 12: Relay for two contact water level switch, the linkage of the feed water pump control

Picture 13:two contact

RF20 Recommended configuration

Model		RF20-10	RF20-15	RF20-20	RF20-25
Rated water output		10T/H	15 T/H	20 T/H	25 T/H
Rated operating pressure		0.08MPa	0.10MPa	0.12MPa	0.15MPa
Operation flow speed		15-55 m/h			
the consumption of regenerant		1:1.4 or 82g/mol			
Power & power consumption		AC:220V；power consumption 0.03kw			
Soften the hard residue		≤0.03mmol/L			
Raw water hardness		Ⅰ：≤6mmol/L；Ⅱ：≤12mmol/L；Ⅲ：≤20mmol/L see report of raw water)；			
Own use of water rate		≤5%（and the hardness of raw water）			
Exchange tank （Top&bottom4"-8UN） (NO.×D× Effective vertical height）	Ⅰ	2-Φ450×1368	2-Φ500×1636	2-Φ600×1636	2-Φ750×1600
	Ⅱ	2-Φ450×1650	2-Φ600×1800	2-Φ600×1800	2-Φ750×1800
	Ⅲ	2-Φ500×2000	2-Φ600×2200	2-Φ750×2200	2-Φ750×2200
Brine tank Capacity		350L	500L	500L	800L
The amount of resin filling		90%-95% of the tank			
Distributors（4"-8UN）		40	60	80	100
Solenoid valve(Pilot type)		DF40	DF40	DF50	DF50
Inlet pipe diameter		DN40	DN40	DN50	DN50
Station parameter （flow mode）	Period water volume(Tune)	117 * ÷water hardness (mmol/L)	173 * ÷water hardness (mmol/L)	253 * ÷water hardness (mmol/L)	394 * ÷water hardness (mmol/L)
	Period salt water volume(L)	47	69	101	158
	Cleaning time(minute)*	10	12	15	20

RF50 Recommended Configuration

Mode		RF30	RF40	RF50
Rated water output		30t/h	40t/h	50t/h
Rated operating pressure		0.16MPa	0.18MPa	0.28MPa
Operation flow speed		15-55 m/h		
the consumption of regenerant		1:1.4 or 82g/mol		
Power & power consumption		AC 220V；power consumption 0.03kw		
Soften the hard residue		≤0.03mmol/L		
Raw water hardness		Ⅰ：≤6mmol/L；Ⅱ：≤12mmol/L；Ⅲ：≤20mmol/L(see report of raw water)；		
Own use of water rate		≤5%（And the hardness of raw water）		
Exchange tank（Top&bottom6"-flange）（NO.×D× Effective vertical height）	Ⅰ	2-Φ750×1513	2-Φ900×1587	2-Φ1000×1587
	Ⅱ	2-Φ750×1800	2-Φ900×2000	2-Φ1000×2000
	Ⅲ	2-Φ750×2200	2-Φ900×2300	2-Φ1000×2300
Brine tank Capacity		800L	1000L	1000L
The amount of resin filling		90%-95% of the tank		
Stacked high flow water distributor		60（6"flange）	80（6"flange）	100（6"flange）
Solenoid valve(Pilot type)		DF65	DF80	DF80
Inlet pipe diameter		DN65	DN80	DN80
Station parameter（flow mode）	Period water volume(Tune)	375÷raw water hardness (mmol/L)	576÷raw water hardness (mmol/L)	720÷raw water hardness (mmol/L)
	Period salt water volume(L)	150	230	288
	Cleaning time(minute)*	30	40	50

Notes:

1、Typically, the equipment running with flow mode, but the time parameters of the model must be based on "Installation Manual" provides the appropriate type of station set time, because flow mode are set for regeneration under the salt volume (liters) and the regeneration mode call time (minutes) dual control, to decrease salt content in advance to the "zero" shall prevail.

*2. * 117,173,253,394,375,576,720 respectively, the corresponding exchange resin exchange capacity cans filled to 50% (unit: mol), 50% is to consider both the exchange tank water were recycled resin produced failure at the same time the end of the role of the different and the protective layer, so dual-tank valve continuous production of water, frequent switching.*

3. Salt water volume 47, 69, 101, 158 ware 117, 173, 253, 394 divided by 2.5 (related calculation approximate) results.

Equipment commissioning

(1)、Equipment, general usage should be selected flow mode, flow mode, changes in water pressure can not affect the operation of equipment results, guaranteed yield under salt water consumption.

(2) Time mode"  " (Safety standby mode)

When the water pressure is stable, the device is stable instantaneous output can choose the time mode. Time mode, a user of the equipment time management. When the device is malfunctioning flow mode, the "" to the time mode, does not affect the normal use of equipment.

Operation

1 、Equipment should be used more than 4 mm large particles of industrial salt. Salt in a timely manner to ensure the salt inside the salt surface to a certain height to ensure the absorption of salt and salt concentration in the stable.

2 、Salt, open the bottom of salt under the sewage outfall, discharge of salt water tank bottom sediment sludge.

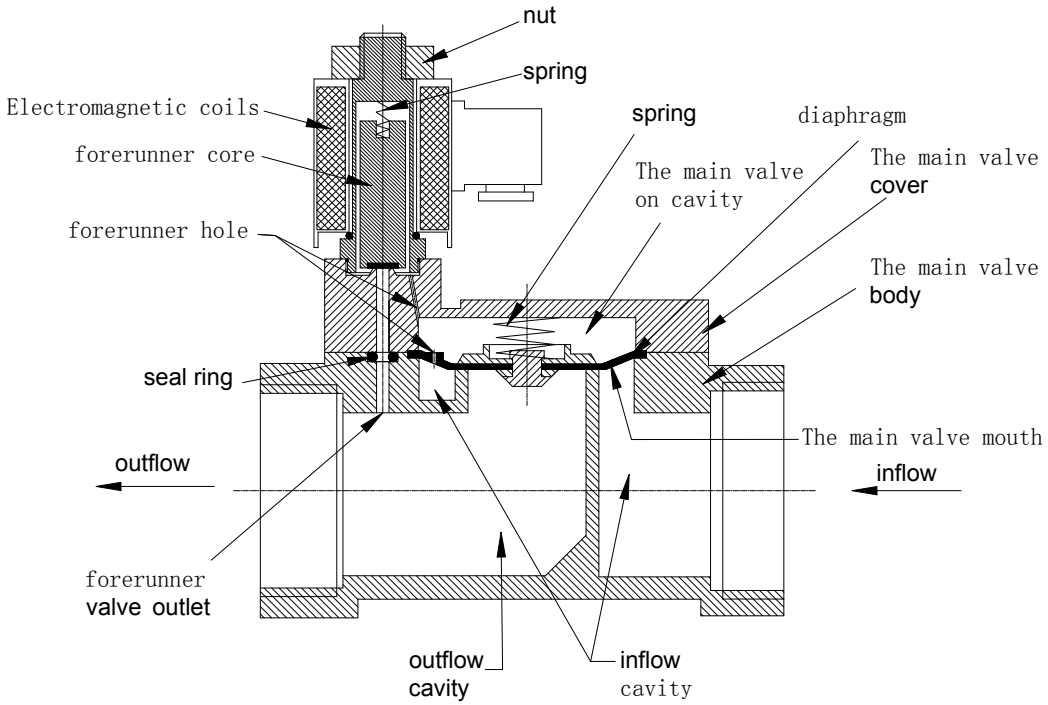
3 、Clean the filter regularly to prevent water blockage cause the device to reduce the work pressure, the water reduction.

4、Equipment should not be frequent starts and stops, otherwise it will create chaos resin layer, affecting water quality

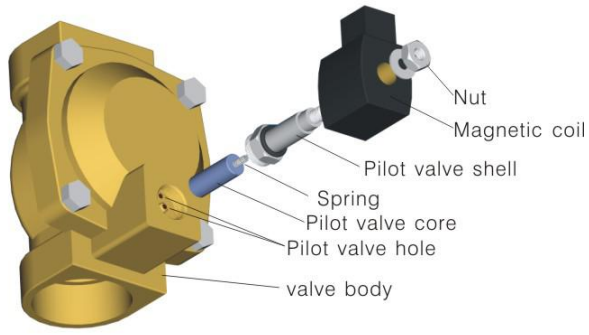
5、Frequent observation equipment, in the process of transposition pressure gauge pointer is back to "zero"

Softener maintenance

1、Inlet solenoid valve cleaning



Picture14: Solenoid valve Principle



Picture :Repair picture of DF series solenoid valve

Electromagnetic valve closed the possible cause of the failure

1 the pilot valve exiting slage within shell
2 spring lose flexibility
3 the pilot valve hole be blocked

Picture15: pilot valve remove of the solenoid valve

2、Resin scrub

Prolonged use of equipment which, by the raw water suspended solids, turbidity, iron deposition and other effects in the viscous resin into the surrounding pool of pollutants, resulting in declining water quality, water pressure and reduce water production, this time the need for resin to scrub. Scrubbing process can be divided into in vitro and in vivo scrub, to borrow equipment for their own devices. Take the following steps are on the left and right exchange resin Sassafras wash tank.

（1）Turn off the device inlet valve, a device to "Deputy tank water (left), the main tank cleaning (right)";

（2）、Demolition of the left pipe and the exchange of tank water distributor

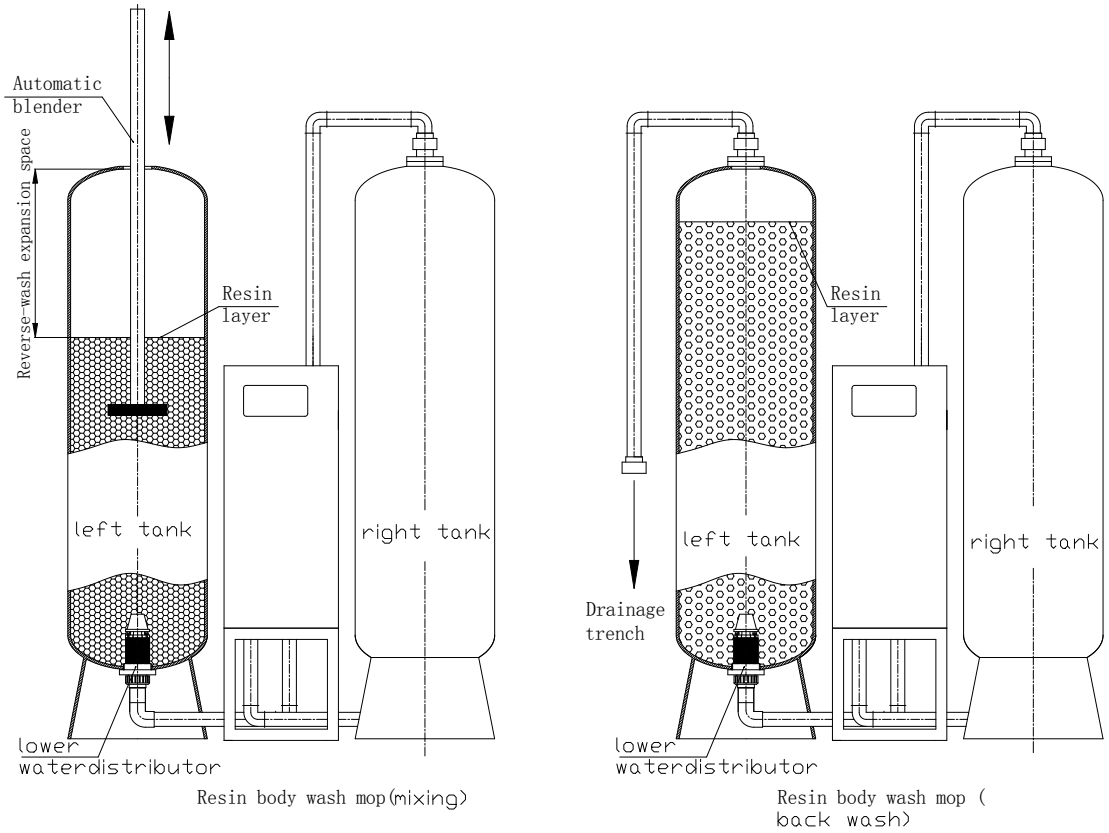
（3）、Remove from the mouth part of the exchange resin, the use of external container vitro scrub, leaving enough of the exchange resin backwash tank expansion space upper

（4）、Ensuring the exchange of the tank is full of cases, the self-mixing device to stir resin tank;

（5）、Water distributor removed the water distribution chip, together with the left click the icon to install the exchange pipe;

（6）、。Slightly open the inlet valve, so that the formation of sludge after mixing discharge, pay attention to the inlet valve opening is not too large, so that was out of resin, is to be clean.

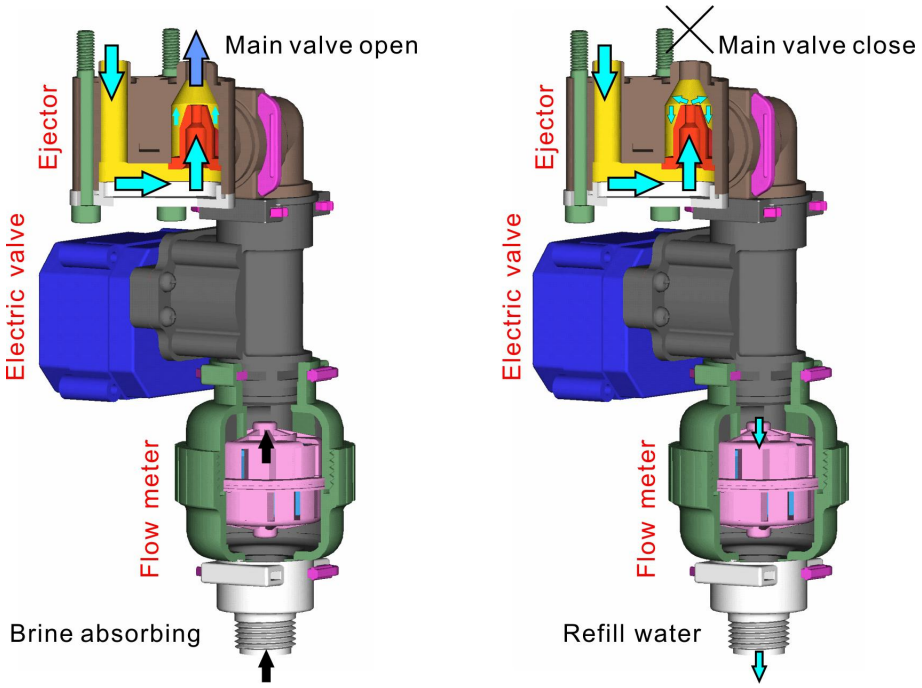
Take the same approach on the right (main) switch can scrub



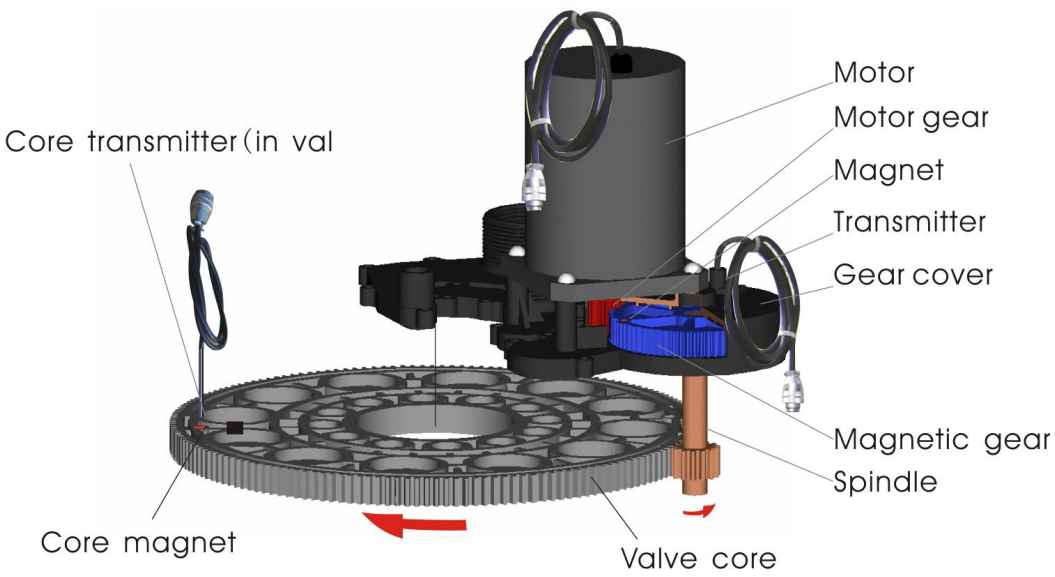
Picture16: Resin scrub

3、Clean water ejector and its component

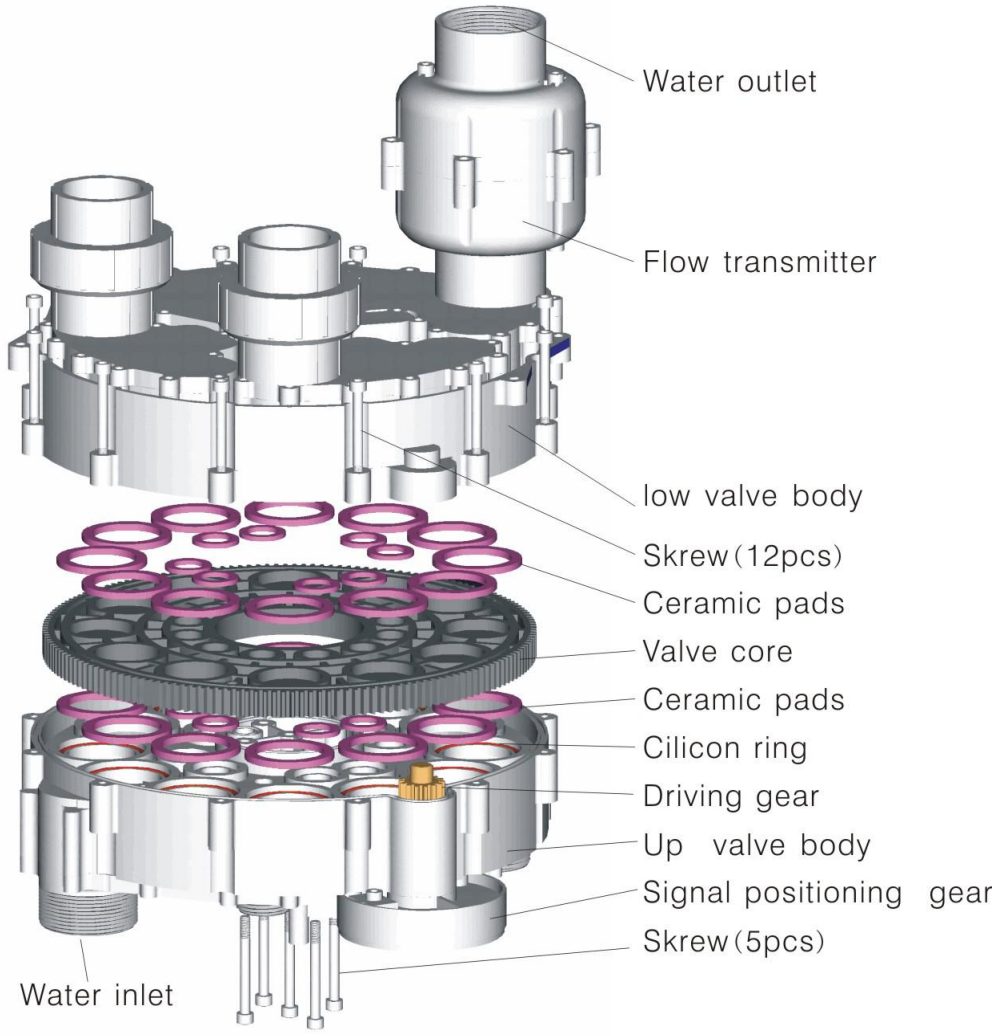
When the regeneration station do not absorb salt, do not feed water, they may be absorbing brine injector nozzle clogging, the removal of water injector maintenance.



Picture17: Brine flow meter and electric valve system



Picture18: multiple valve drive schematic



Picture19: Main valve exploded view

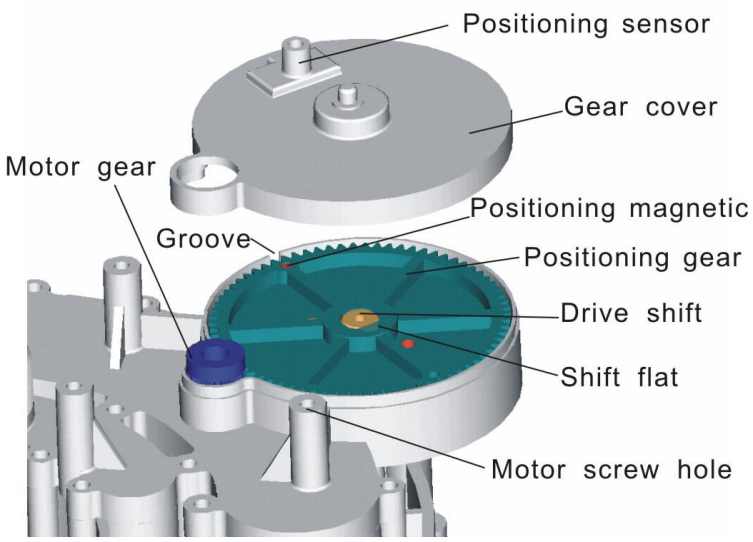
Note:

1、Remove should be put on the ground or bigger clean on stage, in order to avoid ceramic pads drop ground to break.

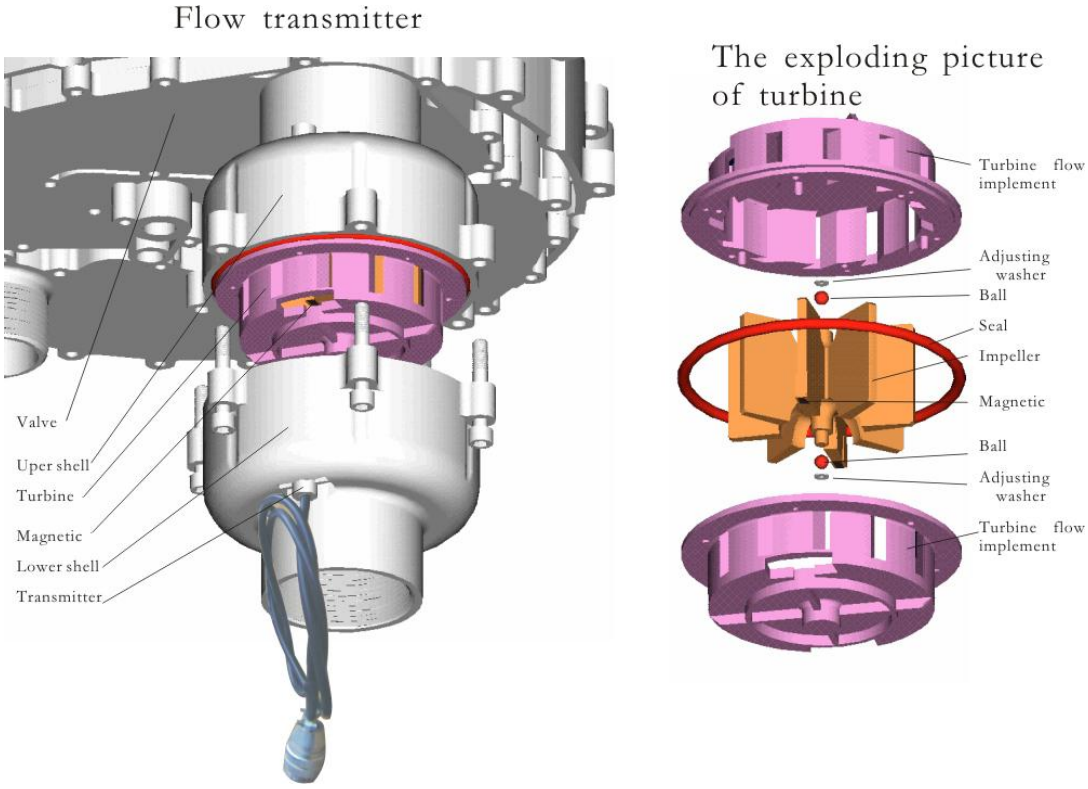
2、Ceramic pads polishing end toward the valve core, a magnet valve core side on the uper valve body(starting work stations) direction

3、Install the valve core, the first guarantee positioning magnets and groove on (FIG. 26-3), the valve core hole and let a pair of valve installed at the mouth.

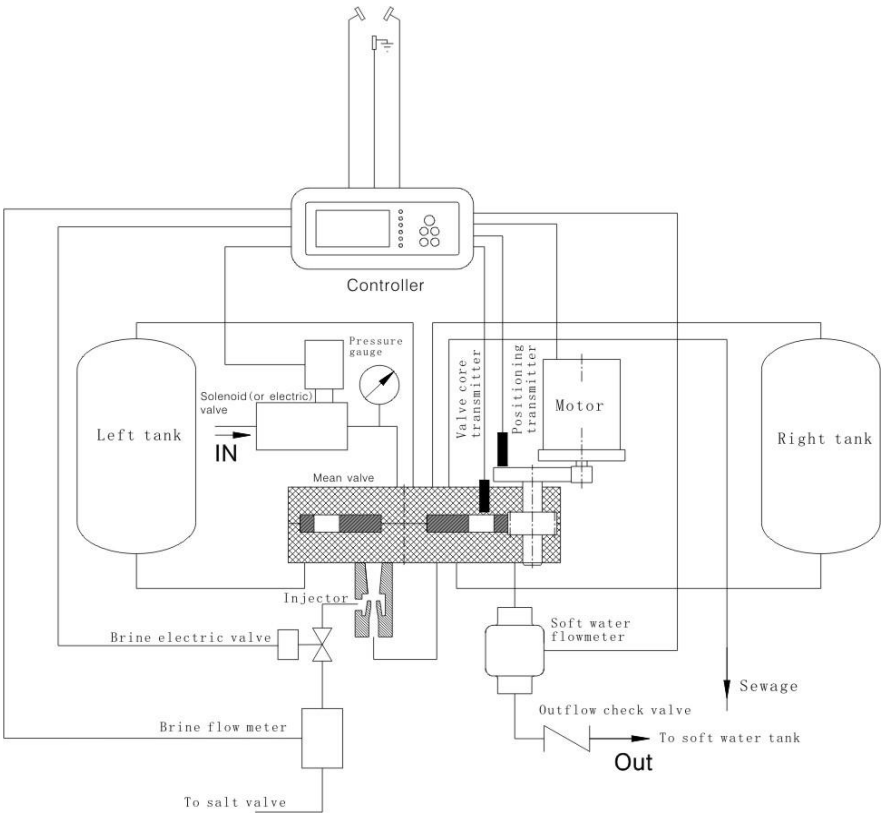
4、Installation motor controller and and associated, use "manual inversion" to the start location, perform multiple road valve and controller available calibration.



Picture 20: Position gear and drive system



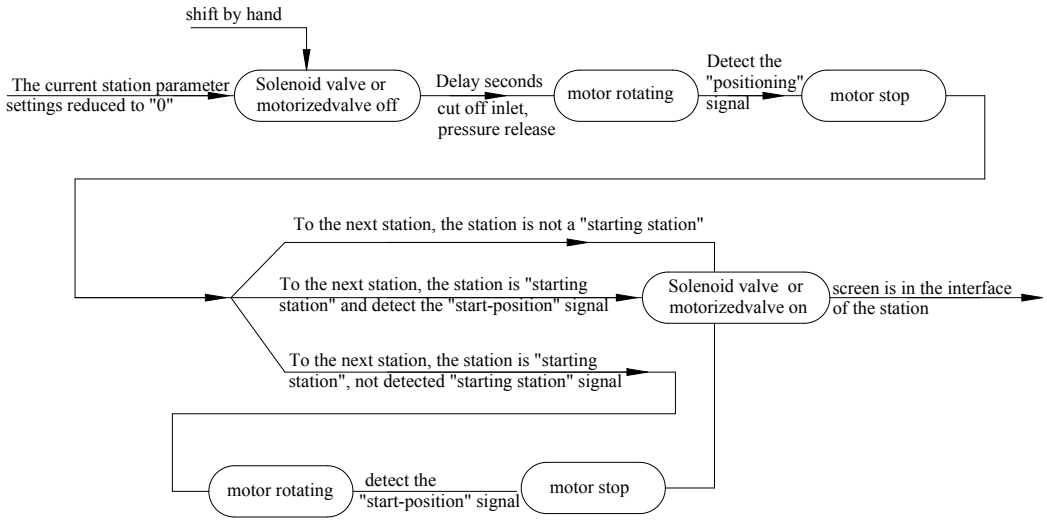
Picture 21: Soft water meter demolition plan



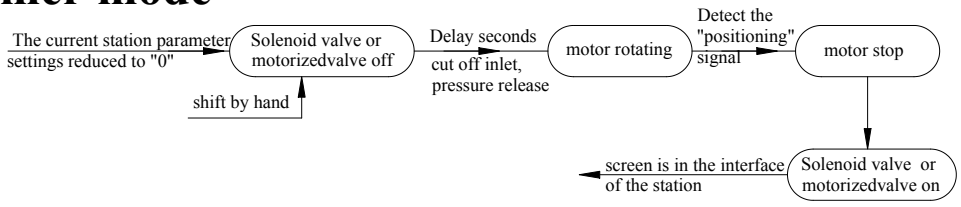
Picture 22:Control principle diagram

Control valve switch procedure:

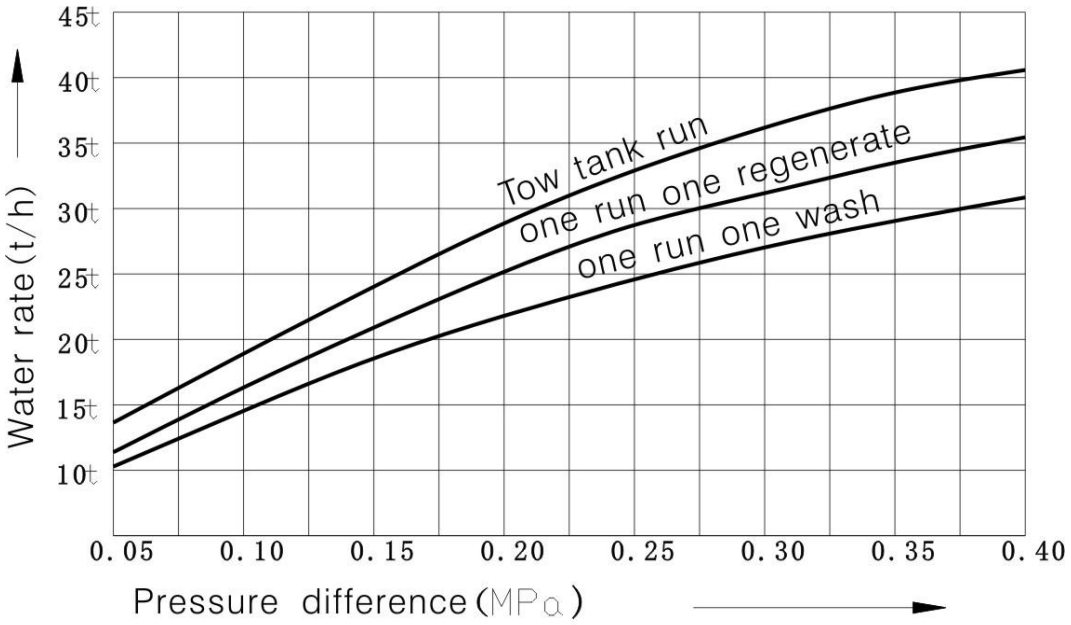
in flow mode



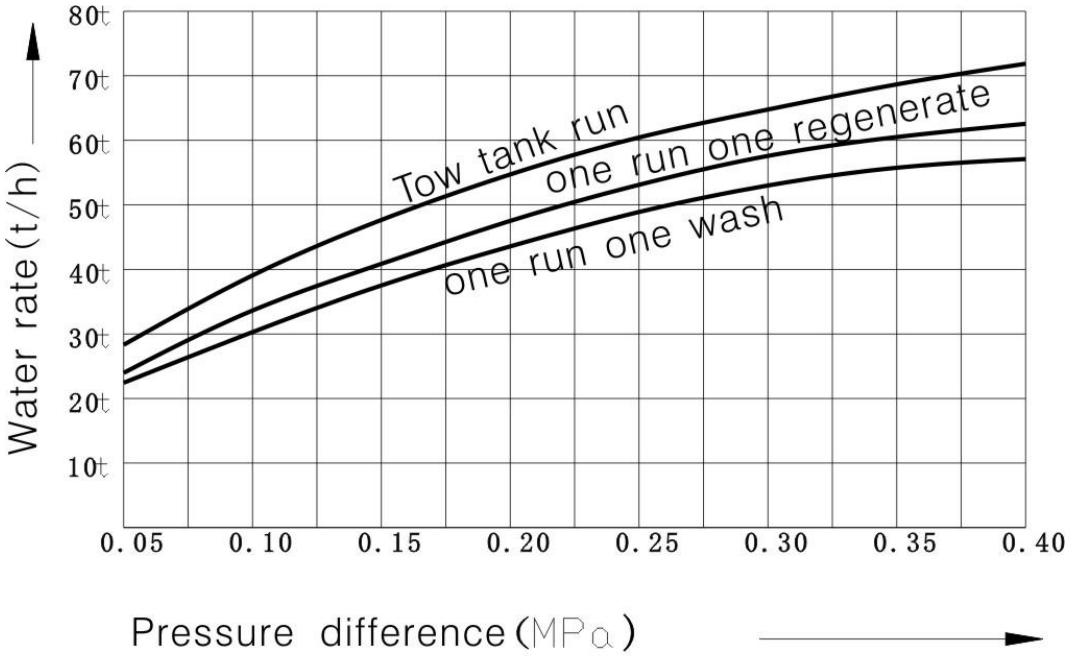
in timer mode



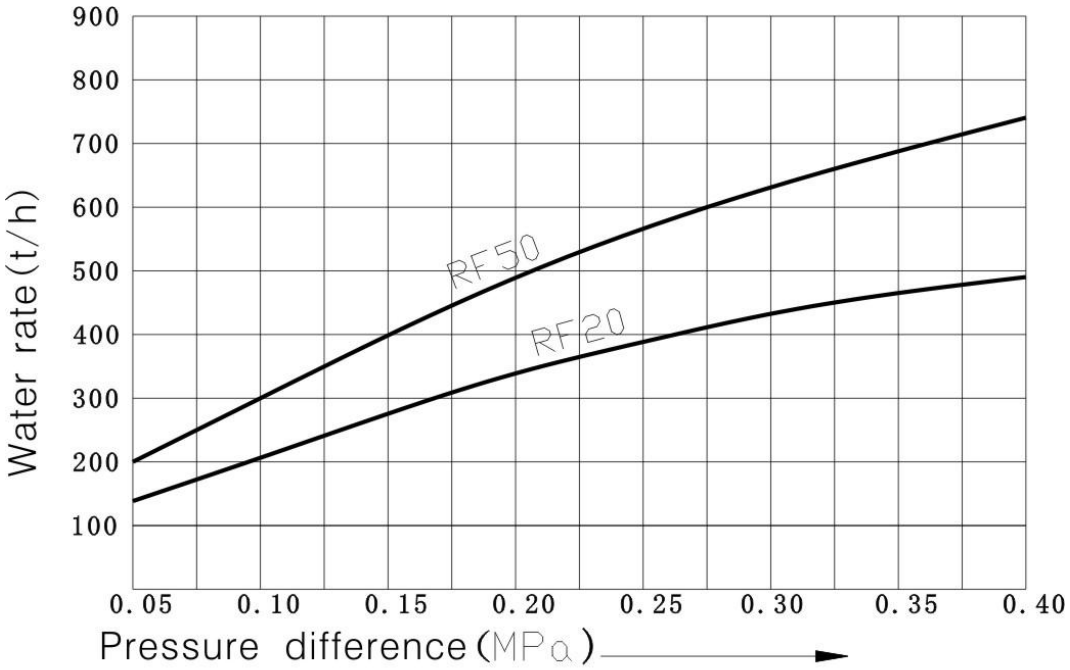
Picture 23:Main valve shifting procedure



Picture 24:RF20 Flow pressure curve

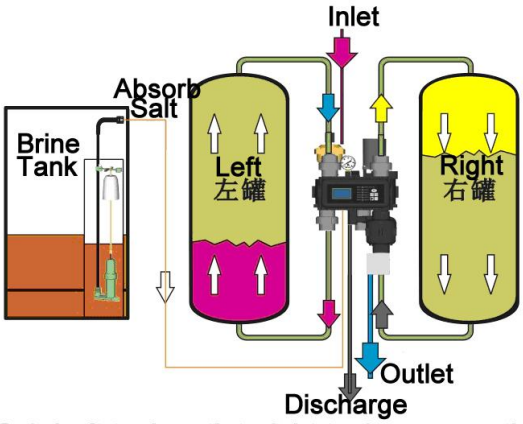


Picture 25: RF50 Flow pressure curve

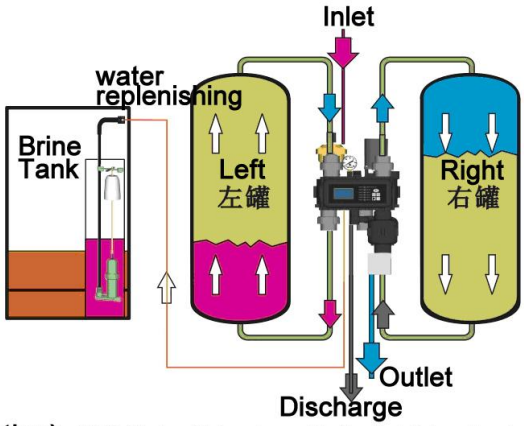


Picture 26: RF Brine flow pressure curve

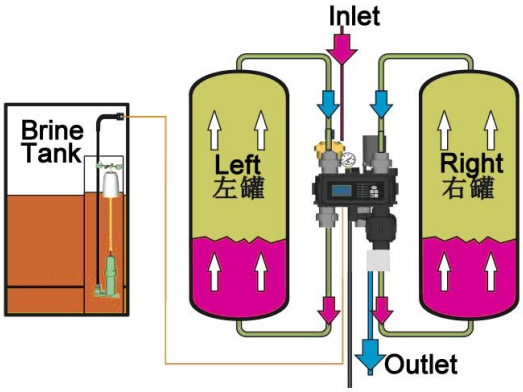
Rf Softening Process of Floating Bed Control Valve



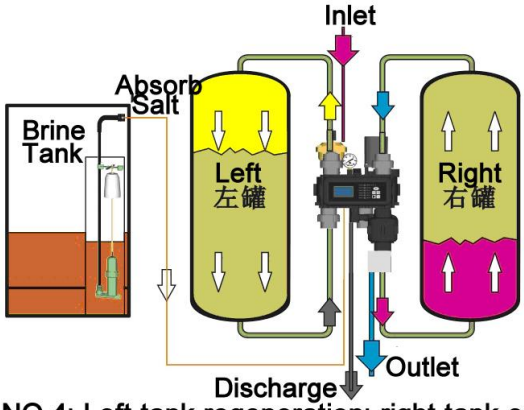
NO.1: Left tank outlet; right tank regeneration(Initiating)



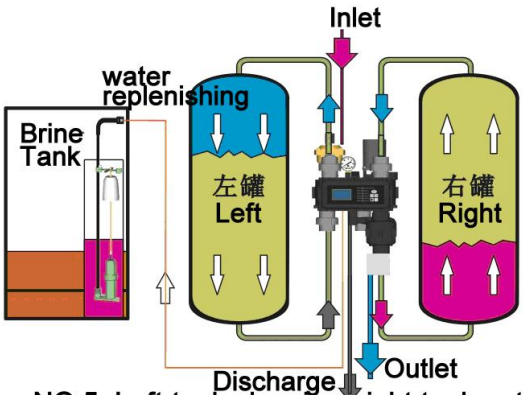
NO.2: Left tank outlet; right tank cleaning



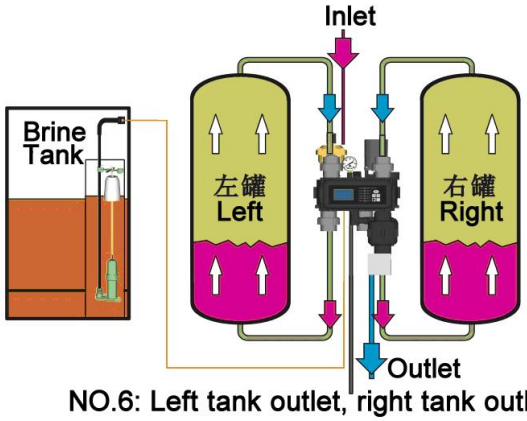
NO.3: Left tank outlet; right tank outlet



NO.4: Left tank regeneration; right tank outlet



NO.5: Left tank cleaning; right tank outlet



NO.6: Left tank outlet, right tank outlet