hidrotermal®

Automatic Valve for Deep Bed Filters

HT-F71B

HT-N75A

HT-F67B

USER MANUAL

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

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

Filter System Configuration

Tank size: Dia. _____ mm

Tank size: Height: _____ mm

Control valve model: _____

Pressure of inlet water: _____ Mpa

Refilled filter materials: _____ kg

Granularity of filter materials: _____ mm

Turbidity of inlet water: _____ FTU.

Water source: Ground-water ☐ Tap Water ☐

Filtered ground-water: ☐ Other _____

Parameter Set

Parameter	Unit	Factory Default	Actual Valve
Serivce Days(Time clock type, by days)	D.	03	
Serivce Hours(Time clock type, by hours)	H.	20	
Rinsing Time	/	02:00	
Rinsing Frequence	/	F-00	
Backwash Time	Min.	10	
Fast Rinse Time	Min.	10	
Output Mode b-01(02)	/	b-01	

Catalogue

Notice

- To ensure normal operation of the valve, please consult with professional installation or repairing personnel before use it.

- If there are 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 filter should be adjusted accordingly.

- Test water periodically to verity that system is performing satisfactorily.

- Do not put the valve near the hot resource, high humidity, corrosive, intense magnetic field or intense liberations environment. And do not leave it outside.

- Forbidden to use the drain pipeline or other connectors as support to carry the system.

- Please use this product under the water temperature between 5~50℃, water pressure 0.15~0.6MPa. Failure to use this product under such conditions voids the warranty.

- If the water pressure exceeds 0.6MPa, a pressure reducing valve must be installed before the water inlet. While, if the water pressure under 0.15MPa, a booster pump must be installed before the water inlet.

- Do not let children touch or play, because carelessness operations may cause the procedure changed.

- When the attached cables of this product and transformer are changed, they must be changed to the one that is from our factory.

- For HT-N75A product, in order to dismantle easily, it is suggested to install the strainer with M88*2 male thread.

1. Product Overview

1.1. Main Application & Applicability

1) Used for filtering water treatment systems
2) Be suitable for Residential filtering system
3) Swimming pool filtering equipment(HT-N75A)
4) Carbon filter or sand filter in RO pretreatment filtering system.

1.2. Product Characteristics

1) 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, and Fast Rinse.

2) No water pass the valve in rinsing in single tank type.

3) Manual function

Realize rinsing immediately by pressing  at any time

4) Long outage indicator

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

5) LED dynamic screen display

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

6) Buttons lock

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

7) Rinsing frequency

It could set up multiple risings, which means several times of backwash and fast rinse but one time of service. It is much better for cleaning the filter materials.(Refer to P14 for more details.)

8) There are two kinds of time clock types

Time clock type valve can be chose to be service by hours, by dialing the red switch on main control board to "1" (Refer to the Figure 3-1). Pointing to "ON" mean the time clock type service by days; "1" means the time clock type service by hours. (Attention: after dialing the switch, please restart the power)

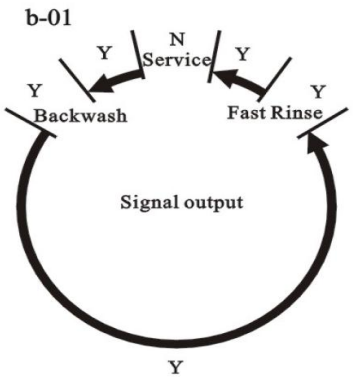
9) Interlock function

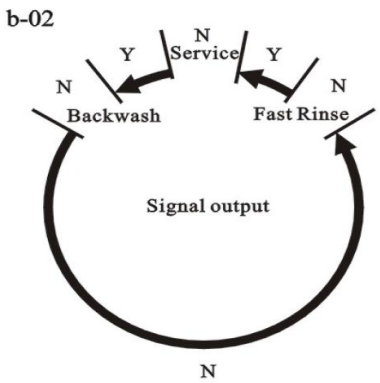
It has a function of interlock to realize only one valve in rinsing, but the other valves are in service while there are several valves parallel in system. In multi-steps treatment systems such as RO pre-treatment, when several valves are in series, there is only one valve in rinsing to ensure pass water all the times while different valves in rinsing. (Application refer to Figure 3-10)

10) 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 3-9).

There are two kinds of output modes. b-01 Mode: Turn on start of regeneration and shut off end of regeneration; b-02 Mode: Signal available only intervals of rinsing cycles and in service.





11) Remote handling input

This connector can receive external signal, used together with PLC, and computer etc. to control the valve.
(Application refer to Figure 3-12)

12) Pressure relief output

The valve will cut off feeding water to drain line when it switches in rinsing cycles (Same as signal output b-02). Thus in some water treatment system, e.g. Deep Well, one booster pump was installed on the inlet to increase the system water feeding pressure, this cut-off will cause pressure on inlet rising too fast to damage the valve. Pressure Relief Output can be used to avoid third problem.
(Application refer to Figure 3-11).

13) All parameters can be modified
According to the water quality and usage, the parameters in the process can be adjusted.

1.3. Service Condition

Filter Valve should be used under the below conditions:

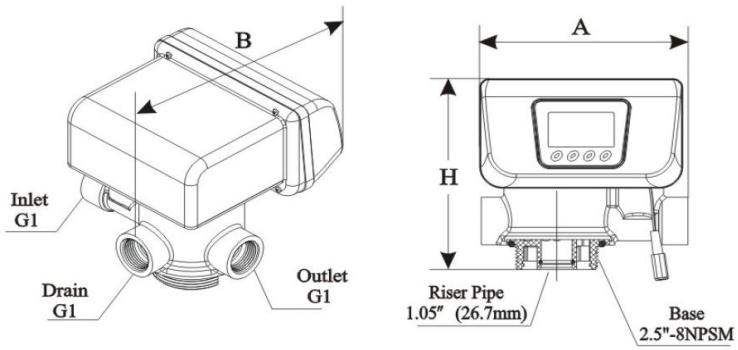
Items		Requirement
Working conditions	Water pressure	0.15MPa~0.6MPa
	Water temperature	5℃~50℃
Working environment	Environment temperature	5℃~50℃
	Relative humidity	≤95% （25℃）
	Electrical Facility	AC100~240V/50~60Hz
Inlet water quality	Water turbidity	<20FTU

Note: The parameter in the above chart is only suitable for the filter matched with our filter valves.
When the water turbidity exceeds the conditions, the impurity in the inlet water should be coagulated and precipitated firstly.

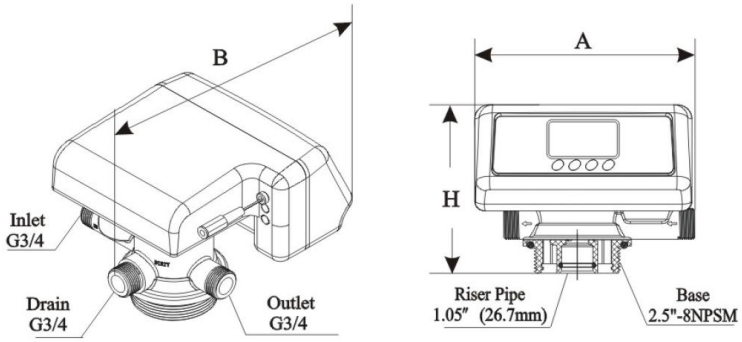
1.4. Product Structure and Technical Parameters

Dimension (The appearance is just for reference. It is subjected to the real product)

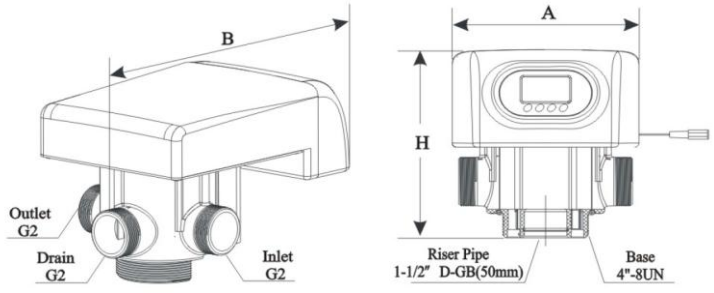
HT-F67B



HT-F71B



HT-N75A



Model	A(mm) max	B(mm) max	H(mm) max	Transformer Output	Flow Rate m³/h @0.3MPa
HT-F67B	180	194	178.5	DC12V, 1.5A	4
HT-F71B	182.5	195.5	143	DC12V, 1.5A	2
HT-N75A	220	346.5	230.5	DC24V, 1.5A	10

2. Installation

2.1 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 Water Inlet, Water Outlet, and Drain Outlet.

2.2 Device location

1) The filter should be located closely to drain.

2) Ensure the unit is installed in enough space for operating and maintenance.

3) The unit should be kept away the heater, and exposed outdoor. Sunshine or rain will cause the system damage.

4) Please avoid to install the system in one Acid/Alkaline, Magnetic or strong vibration circumstance, because above factors will cause the system disorder.

5) Do not install the filter, drain pipeline in circumstance which temperature may drop below 5℃, or above 50℃.

6) One place is recommended to install the system which causes the minimum loss in case of water leaking.

2.3 Pipeline connection (Taking HT-F71B for example)

1) Install control valve

a. As the Figure 1-1 shows, select the relevant riser pipe, glue the riser pipe to the bottom strainer and put it into the mineral tank, cut off the exceeding tube out of tank top opening. Plug the riser tube in case of mineral entering.

b. Fill the mineral to the tank, and the height is accordance with the design code.

c. Remove the tap covering on the central tube and check if the riser tube is on the central of tank.

d. Install the top distributor to the valve and insert the riser tube into control valve and screw tight control valve.

Note:

a. The length of riser tube should be neither higher 1mm nor lower 5mm tank top opening height, and its top end should be rounded to avoid damage of O-ring inside the valve.

b. Avoid floccules substance together with filter materials fill in the tank.

c. Avoid O-ring inside control valve falling our while rotating it on the tank.

2) Pipeline connection

a. As figure 1-2 shows, install a pressure gauge in water inlet.

b. Install valve A, valve B, valve C and valve D in the inlet and outlet pipeline. The valve D is sampling valve.

c. Install the check valve in the outlet pipeline.

d. Inlet pipeline should be in parallel with outlet pipeline. Support inlet and outlet pipeline with fixed holder.

Note:

a. If making a soldered copper installation, do all sweat soldering before connecting pipes to the valve. Torch heat will damage plastic parts.

b. When turning threaded pipe fittings onto plastic fitting, use care not to cross thread or broken valve.

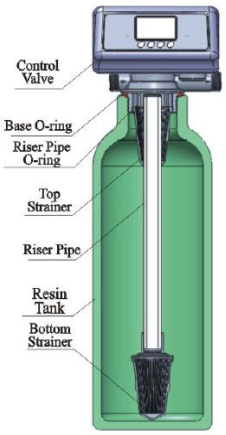


Figure 1-1

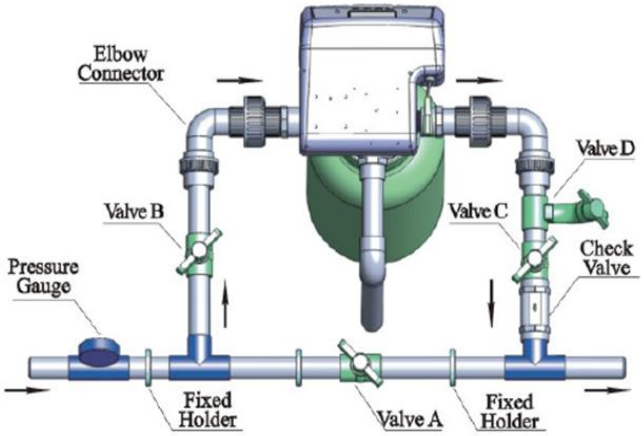


Figure 1-2

3) Install drain pipeline

Directly connect the outlet with the rigid pipeline, such as UPVC, etc.

Note:

a. Control valve should be higher than drain, and be better not far from the drain hose.

B. Be sure not to connect drain with sewer, and leave a certain space between them, avoid wastewater be absorbing to the water treatment equipment, such as showed in the Figure 1-3.

c. If wastewater is used for other purpose. Please use another container for loading. And also keep a certain space between drain and container.

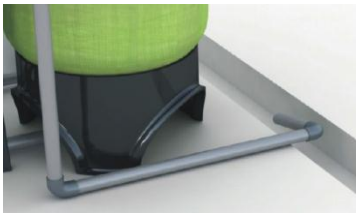
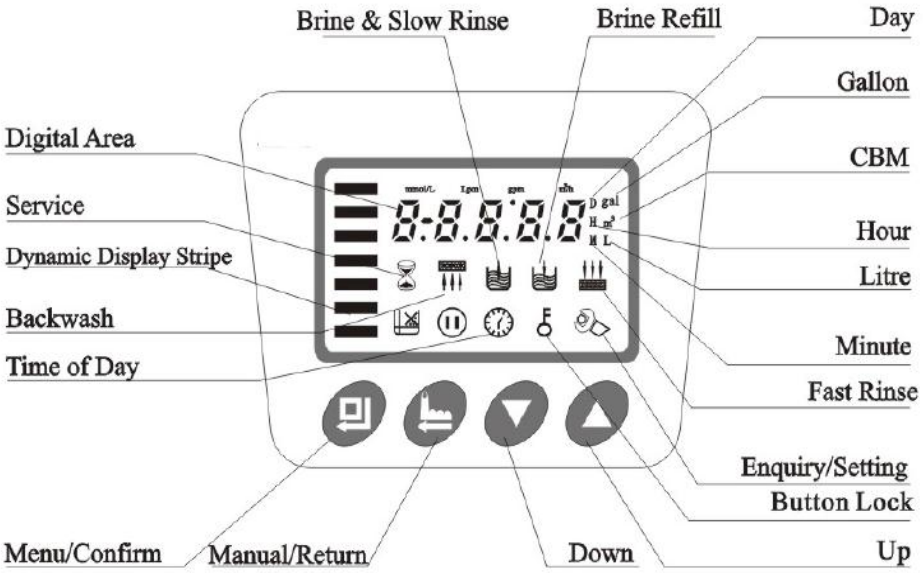


Figure 1-3

3. Basic Setting & Usage

3.1 The Function of PC Board



1) Time of day indicator

Light on, display the time of day.

2) Button lock indicator

a. Light on. indicate the buttons are locked. At this moment, press any single button will not work (No operation in one minute, will light on and lock the buttons.)

b. Solution: Press and hold both and for 5 seconds until the light off.

3) Program mode indicator

a. Light on, enter program display mode, use or to view all values.

b. Flash and enter program set mode. Press or to adjust values.

4) Manu/Confirm button

a. Press light on, enter program display mode and use or to view all values.

b. In program display mode, press , flash, enter program set mode, press or to adjust values.

c. Press after all program are set, and then the voice "Di" means all setting are success and return program display mode.

5) Manual/Return button

a. Press in working conditions, it can proceed to next step. (Example: when the outlet water fails to reach the requirement, you can press to end the service and start an immediate rising. During the process of rising, pressing the button can end one step in advance and proceed to the next step.)

b. Press in program display mode, and it will return in Service. Press in program set mode, and it will return program display mode.

c. Press while adjusting the value, then it will return program display mode directly without saving value.

6) UP and Down

a. In program display mode, press or to view all values.

b. In program set mode, press or to adjust values.

c. Press and hold both and for 5 seconds to lift the Button Lock status.

3.2 Basic Setting & Usage

1) Parameter specification

Function	Indicator	Factory Default	Parameter Set Range	Instruction
Time of Day		Random	00:00~23:59	Set the time of day when use, ":" flash
Service Days		1-03D	0~99Days	Only for Time Clock Type, by days
Service Hours		1-20H	0~99 Hours	Only for Time Clock Type, by hours
Rinsing Time	02:00	02:00	00:00~23:59	Rinsing Time; ":" light on
Rising Frequence	F-00	00	0~20	Rising frequence. For example, F-01: indicate service 1 time, backwash and fast rinse 2 time
Backwash Time		10Min	0~99:59	Backwash time(Minute), correct to second;
Fast Rinse Time		10Min	0~99:59	Fast Rinse time(Minute), correct to second;
Output Control Mode	b-01	01	01 or 02	Mode 01: Signal turn on start of rinsing and shut off end of rinsing. (Refer to the figure on P4) Mode 02: Signal available only intervals of rinsing cycles and in service. (Refer to the figure on P4)

2) Process Display (Time Clock Type, by days)

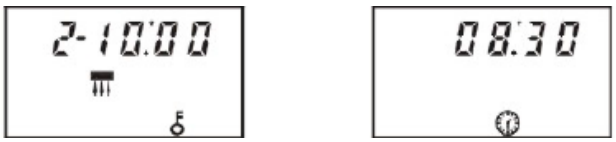
Working status	The circular interface display in turn
Service	
Backwash	
Fast Rinse	

Illustration:

a. The display screen will only show " -00- " when the electrical motor is running.

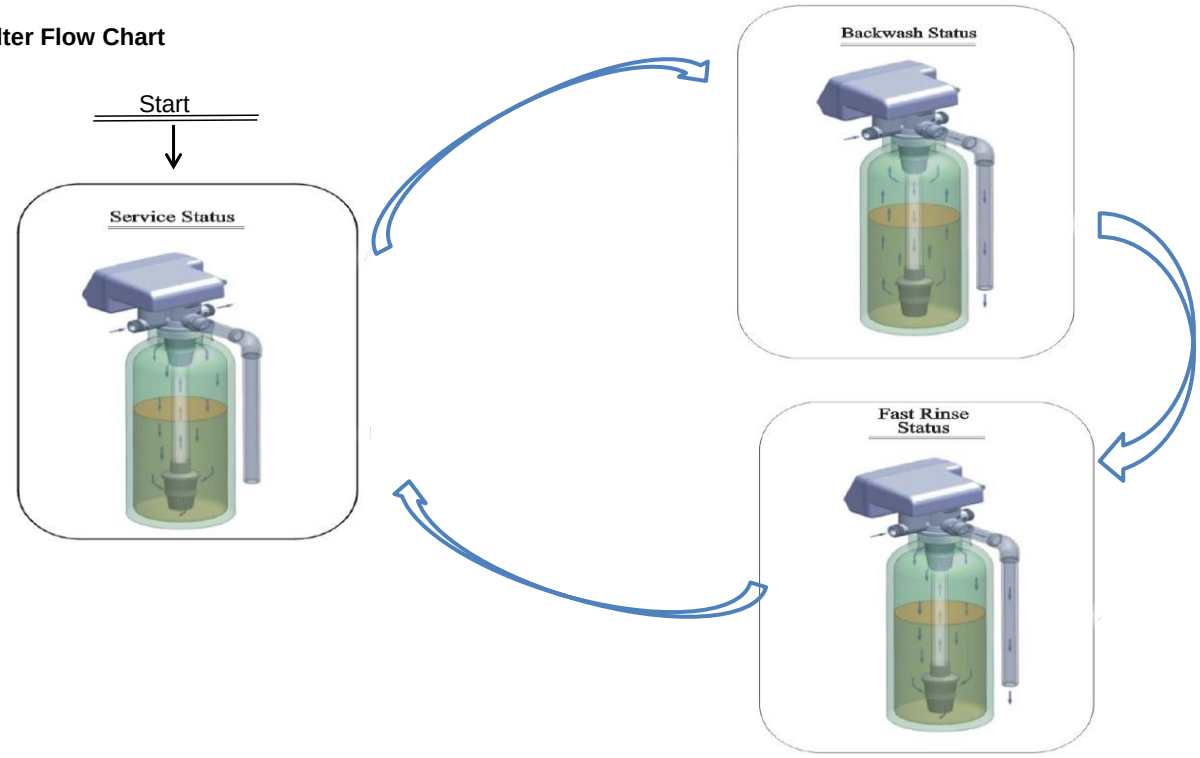
b. The time of day figure flash continuously, such as " 12:12 " flash, indicates long outage of power. It reminds to reset the time of day.

c. The display will show the error code such as " -E1- " when the system is in error.

d. Working process: Service ⟶ Backwash ⟶ Fast Rinse

4. Applications

4.1. Filter Flow Chart



4.2. The Function and Connection of PC Board

Opening the front cover of control valve, you will see the main control board and connection port as Figure 3-1A for HT-F71B, HT-F67B

Figure 3-1A For HT-F71B, HT-F67B

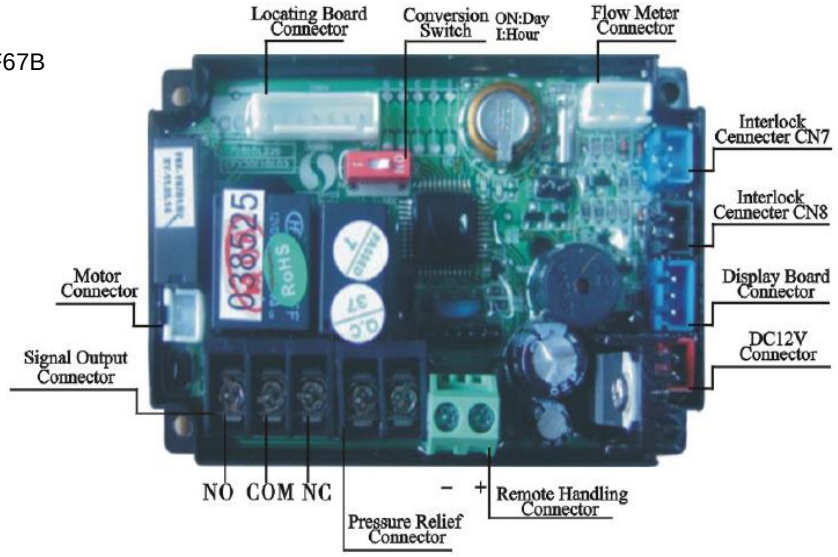
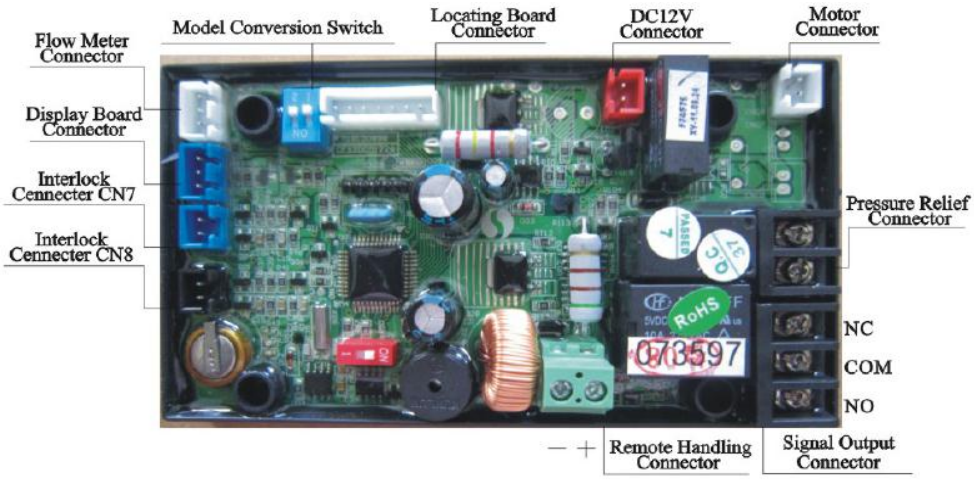


Figure 3-1B For HT-N75A



The main functions on main control board:

Function	Application	Explanation
Signal output connector b-01	Outlet solenoid valve	If system strictly require no hard water flow from outlet or controlling the liquid level in water tank
	Inlet pump	Increase pressure for regeneration or rinsing. 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 inlet when valve is rotating to protect motor.
Pressure relief connector	Control the inlet by-pass to release pressure	When valve is rotating, pressure relief connector opened to prevent pressure increasing rapidly.
Interlock connector	To ensure only one control valve regeneration or rinsing in system.	Use in RO Pre-treatment, water supply together but regeneration in turn, second grade ion exchange equipment, etc.
Remote handling connector	Receipt signal to make the control rotate to next circle	It is used for on-line inspection system, PC connection, and realize automatically or remote controlling valve.

1) Signal Output Connector

A. Control Solenoid Valve (Set b-01)

a. Solenoid valve on outlet controls water level in brine tank.

Instruction: If system strictly requires no unfiltered water flow from outlet in rinsing cycle (Mainly for no unfiltered water flow out when valve is switching. When valve in backwash positions, there is no unfiltered water flow from outlet), a solenoid valve could be installed on outlet, the wiring refer to Figure 3-2.

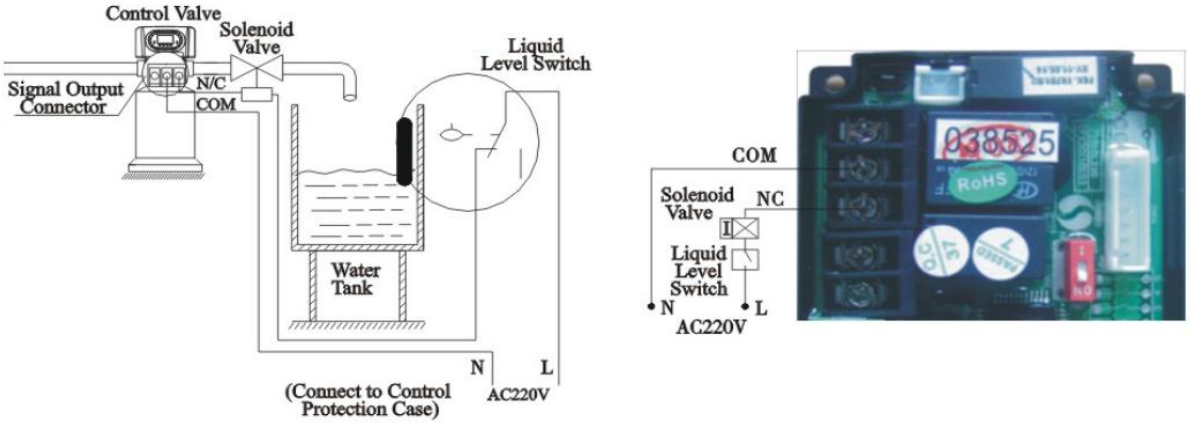


Figure 3-2 Wire of Solenoid Valve on Outlet

Function:

In service status, if water tank is short of water, solenoid valve is open to supply filtered water. But if water tank has enough water, solenoid valve is closed, so no filtered water supplied.

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

b. Solenoid valve on inlet(Set b-02)

Instruction: When inlet pressure exceeds 0.6MPa, connect a solenoid valve on inlet in series. Control mode is b-02. Solenoid valve closed when valve switching, the wiring refer to Figure 3-3. As Figure 3-4 shows, it also can use the pressure relief port to connect a solenoid valve on inlet in series.

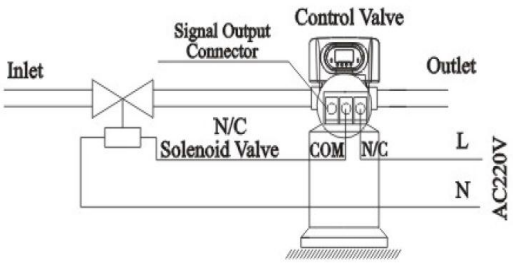


Figure 3-3 Wire of Solenoid Valve on Inlet

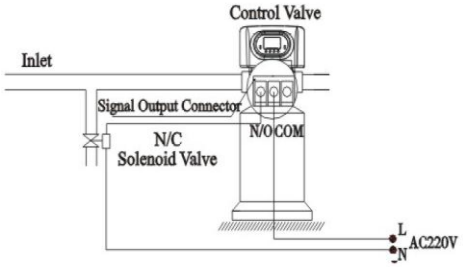


Figure 3-4 Wiring of Pressure Relief Port

Function:

When inlet pressure is high, install a solenoid valve on inlet to ensure valve switching properly. When valve is exactly at position of Service, Backwash, and Fast Rinse, solenoid valve is open. When valve is switching, solenoid valve is closed, no water flow into valve to ensure valve switching properly. It could prevent the problem of mix water and water hammer.

Use interlock cable to realize valves in parallel and series in same system which is suited for RO pretreatment system or second grade Na + system. The Wiring refer to Figure 3-5:

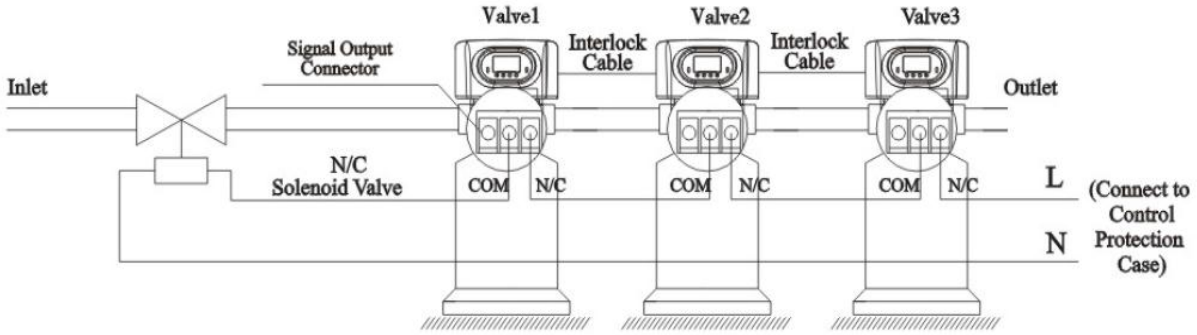


Figure 3-5 Wire of Solenoid Valve on Inlet for Valve in Parallel and Series

B. Liquid Level Controller controls Inlet Pump (Two-phase motor)(Set b-01)

Instruction: For the system using well or middle-tank supplying water, use switch of liquid level controller and valve together to control pump opening or closing. The wiring refer to Figure 3-6.

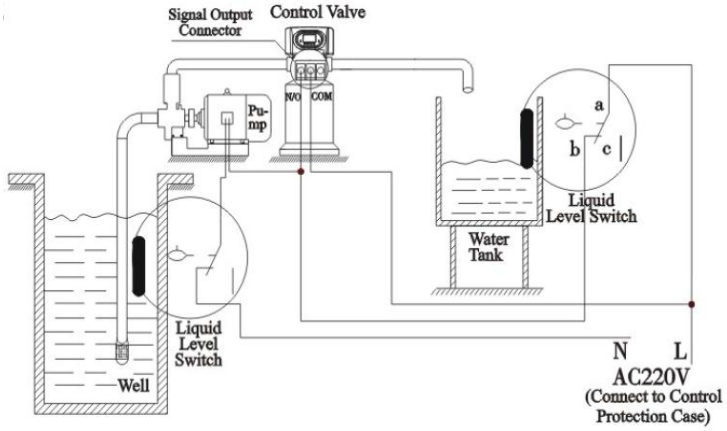


Figure 3-6 Wire of Liquid Level Controller Controlling 220V Inlet Pump

Function:

When valve in service status , if water tank is short of water, start up pump, but if water tank has enough water, the switch of liquid level controller is closed, so pump doesn't work.

When valve in generation status like backwash, inlet always has water no matter what is water condition in water tank. As the valve no water pass outlet in regeneration cycle, it ensures no water fill into brine tank.

A liquid level switch at well mouth or in middle water tank in RO system protects pump from working without water in case of out of raw water.

C. Liquid Level Switch in Water Tank Controls Inlet pump (Three-phase) (Set b-01)

The principle is the same as for two-phase's, only change single-phase pump into three-phase motor, and use an AC contractor (Refer to Figure 3-7)

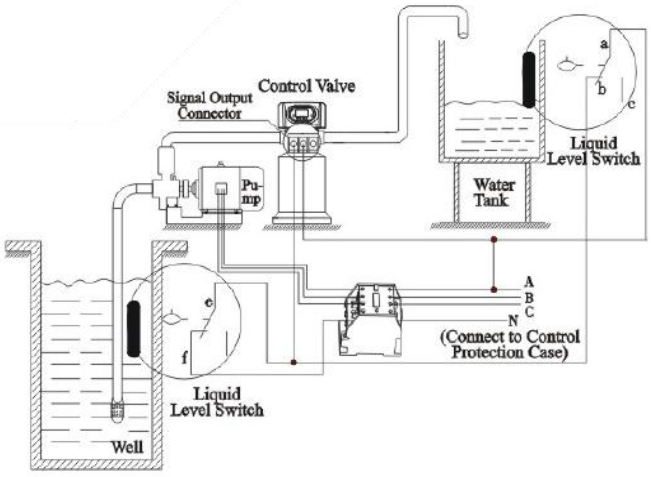


Figure 3-7 Wire of Liquid Level Switch in Water Tank Controls 380V Inlet Pump

D. Control Inlet Booster Pump (Set b-01)

Instruction: If inlet water pressure is less than 0.15MPa, which makes backwashing and drawing difficult, a booster pump is suggested to be installed on inlet. Control mode b-01. When system in regeneration cycle, booster pump is open, the wiring refer to Figure 3-8. If the booster pump current is bigger than 5A, system need to install an contactor, the wiring refer to Figure3-9.

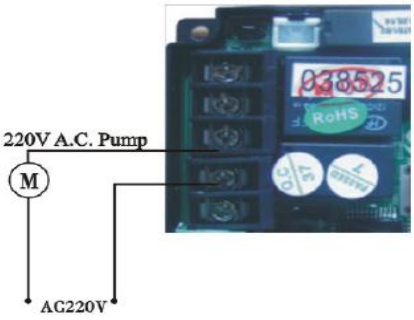


Figure 3-8 Wiring of Booster Pump on Inlet

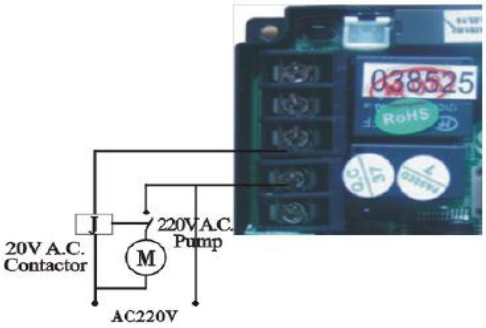


Figure 3-9 Wiring of Booster Pump on Inlet

2) Interlock

Instruction: In the parallel water treatment system, it ensures only one valve in regeneration or rising cycle and (n-1) valves in service, that is, realizing the function of supplying water simultaneously and regenerating individually.

In the series water treatment system (Second grade Na+ exchanger or RO pre-treatment system), it ensures only one valve in regeneration or washing cycle and there is/are water(s) in service. The wiring refer to Figure 3-10.

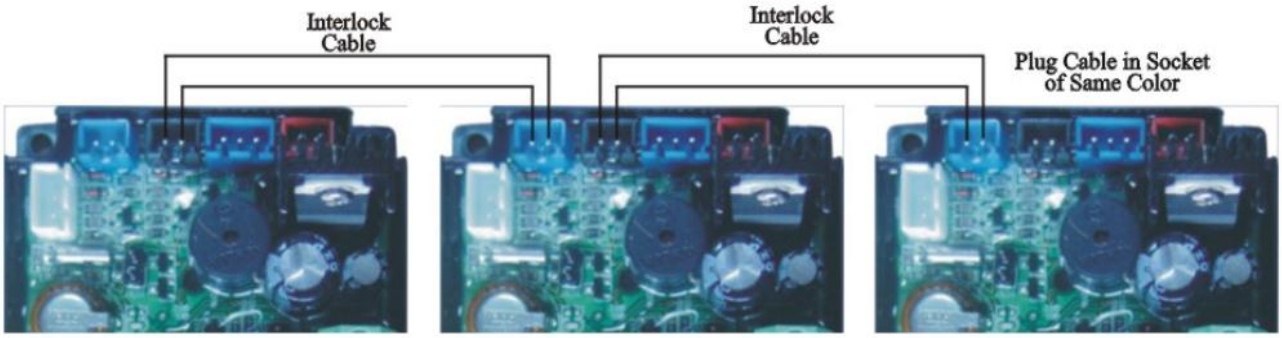


Figure 3-10 Network System Wiring with Interlock Cable

Use interlock cable to connect CN8 to CN7 on next valve in the loop.

One system with several valves, if interlock cable is disconnected, the system is divided into two individual systems.

3) Pressure Relief Output Port

The Valve will cut off feeding water to drain line when it switches in rinsing cycles. Thus in some water treatment system, e.g. deep well, one booster pump is installed on the inlet to increase the system water feeding pressure, this cut-off will cause pressure on inlet rising too fast to damage the valve. Pressure Relief Output Port can be used to avoid this problem. The wiring refer to Figure 3-11.

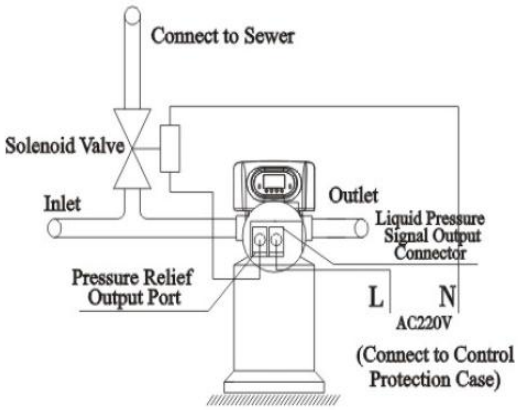


Figure 3-11 Wiring of Pressure Relief Output

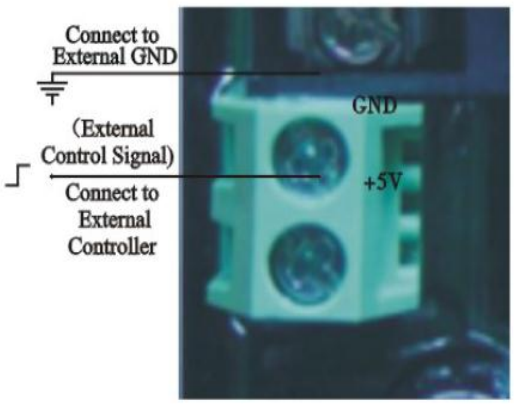


Figure 3-12 Wiring of Remote Input

4) Remote Handling Connector

Online TDS meter monitors treated water other than a flow meter, or PLC controls the rinsing time. When the controller receives a contact closure from above instruments, rinsing begins. The wiring refers to Figure3-12.

4.3. System Configuration and Flow Rate Curve

1) Product Configuration

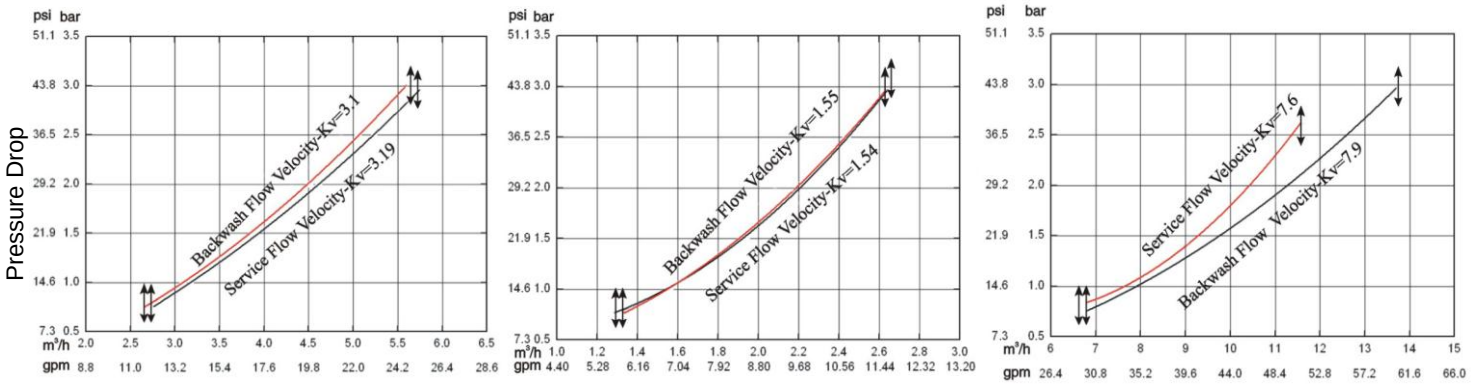
Product configuration with tank, filter materials volume

Tanks Size	Volume of Filter Material	Carbon Filter		Sand Filter	
		Filtering Flow Rate	Backwash Flow Rate	Filtering Flow Rate	Backwash Flow Rate
mm	L	m³/h	m³/h	m³/h	m³/h
φ180*1130	16	0.3	0.9	0.6	1.3
φ205*1300	25	0.4	1.1	0.8	1.7
φ255*1390	40	0.6	1.7	1.2	2.6
φ300*1390	60	0.8	2.5	1.7	3.8
φ355*1670	100	1.2	3.4	2.4	5.2
φ400*1670	120	1.5	4.5	3.1	6.8
φ450*1670	150	2	5.9	4.1	8.8
φ500*1800	200	2.4	7	4.9	10.6
φ600*1800	300	3.4	10	7	15.2

Attention: the filtering flow rate of carbon filter is calculated based on the 12m/h operation rate; the backwash flow rate is calculated based on the 10L/(m²*s) backwash intensity; the filtering flow rate of sand filter is calculated based on the 25m/h operation rate; the backwash flow rate is calculated based on the 15L/(m²*s) backwash intensity.

2) Flow Rate Characteristic

Pressure-flow rate curve

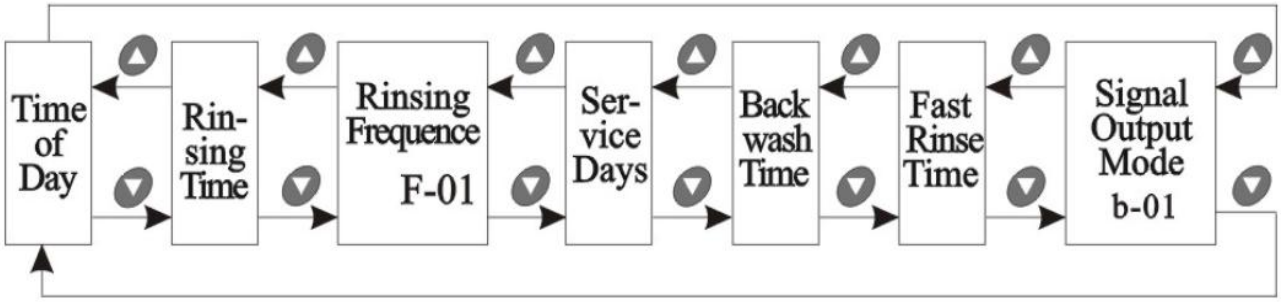


HT-F67B **HT-F71B** **HT-N75A**

4.4. Parameter Enquiry and Setting

1) Parameter Enquiry

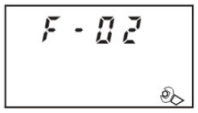
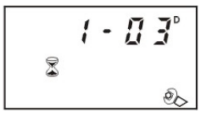
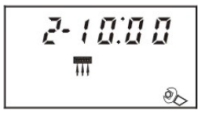
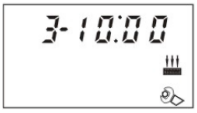
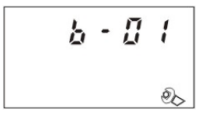
When light on, press and hold both and for 5 seconds to lift the button lock status;
then press and light on, enter to program display mode; press or to view each value according to below process. (Press exit and turn back to service status)



2) Parameter Setting

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

3) The steps of parameter setting

Items	Process steps	Symbol
Time of Day	When the clock symbol continuously flash, it reminds to reset; 1. Press to enter into program enquiry mode; both and symbol light on, ":" flash; 2. Press both and hour value flash, through or to adjust the hour value; 3.Pres again, both and minute value flash, through or to adjust the minute value; 4. Press and hear a sound "Di", then finish adjustment, press to turn back.	
Rinsing Time	1. In the Rinsing Time program display mode, press and enter into program set mode, and 02 value flash; through or to adjust the hour value. 2. Press again, both and "00" flash, through or to adjust the minute value; 3. Press and hear a sound "Di", then finish adjustment, press to turn back.	
Rinsing Frequency	1. In the Rinsing Frequency display mode, it shows "F-02"; press and enter into program set mode. and 02 flash; 2. Press or to adjust the valve; 3. Press and hear a sound "Di" then finish adjustment, press to turn back.	
Service Days	1. In the Service Days display mode, it shows and "1-03"; press and enter into program set mode. and 03 flash; 2. Press or to adjust the value; 3. Press and hear a sound "Di" then finish adjustment, press to turn back.	
Backwash Time	1. In the Backwash Time display mode, it shows and "2-10:00"; press and enter into program set mode. and 10:00 flash; 2. Press or to adjust the value; 3. Press and hear a sound "Di", then finish adjustment, press to turn back.	
Fast Rinse Time	1. In the Fast Rinse Time display mode, it shows and "3-10:00"; press and enter into program set mode. and 10:00 flash; 2. Press or o adjust the value; 3. Press and hear a sound "Di" then finish adjustment, press to turn back.	
Signal Output Mode	1. In Signal Output Mode display mode, it shows b-01. Press and enter into program set moc and 01 flash; 2. Press or to adjust to b-02; 3. Press and hear a sound "Di", then finish adjustment, press to turn back.	

5. Trial Running

After installing the multi-functional flow control valve on the tank with the connected pipes, as well as setting up the relevant parameter, please conduct the trail running as follows:

1) Close the inlet valve B & outlet valve C, and open the bypass valve A. After cleaning the foreign materials in the pipe, close the by-pass valve A. (As Figure 1-2 shows)

2) Press and enter into the Backwash position; when light on, slowly open the inlet valve B to 1/4 position, making the water flow into the resin tank; you can hear the sound of air-out from the drain pipeline. After all air is out of pipeline, then open inlet valve B completely and clean the foreign materials in the tank until water from drain is clean. It will take 8~10minutes to finish the whole process.

3) Press , turning the position from Backwash to Fast Rinse; light on and start to fast rinse. It will take 10~15 minutes to finish the whole process.

4) After finishing fast rinse, take some outlet water for testing: if the water reaches the requirement, press to finish the fast rinse; Then the control valve return to Service Status; light on and start to running.

Illustration:

In the process of rinsing the program will be finished automatically in accordance with the setting time; pressing the button can end one step in advance and proceed to the nest step.

Note:

- If water inflow too fast, the media in tank will be damaged. When water inflow slowly, there is a sound if air-out from drain pipeline.
- After changing the filter materials, please empty air in the materials according to the above Step B.
- In the process of trial running, please check the water situation in all position, ensuring there is no filter materials leakage.
- The time for Backwash and Fast Rinse position can be set and executed according to the suggestions from the control valve suppliers.

6. Trouble-Shooting

1) Control Valve Fault

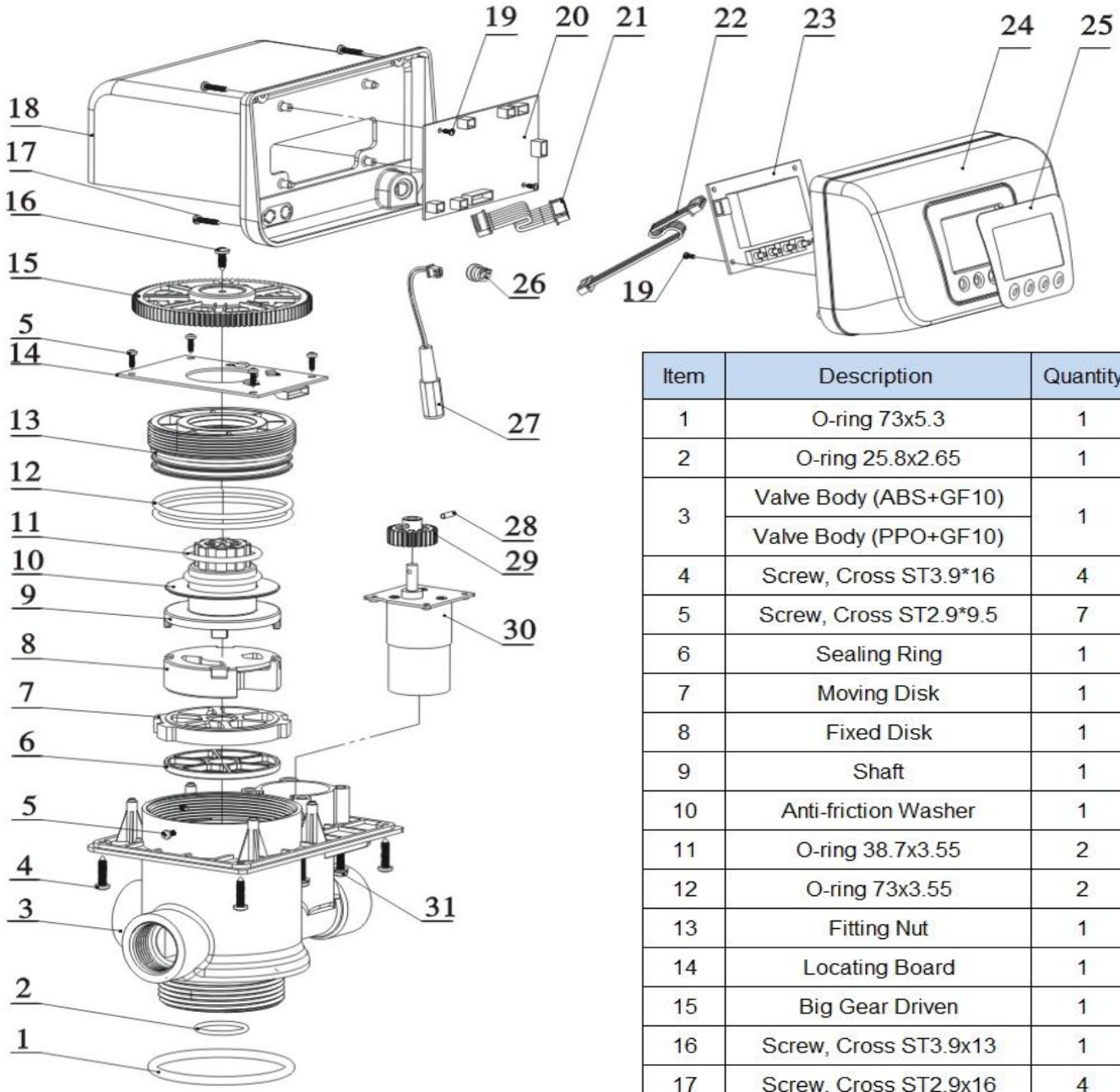
Problem	Cause	Correction
1. Filter fails to rinse	A. Electrical service to unit has been interrupted. B. Rinse time is set incorrect. C. Valve is defective.	A. Assure permanent electrical service(check fuse, plug or switch). B. Reset the time. C. Check or replace the valve.
2. Filter supply raw water	A. Bypass valve is open. B. Riser pipe leak. C. Interval valve leak.	A. Close the bypass valve. B. Make sure riser pipe and O-ring are not cracked. C. Check or change valve body.
3. Water pressure lost	A. Iron is in the water supply pipe. B. Iron mass is in the filter.	A. Clean the water supply pipe. B. Clean valve and add filter materials cleaning chemical, increase frequency of rinsing.
4. Loss of filter materials through drain line	A. Air in the water system. B. The strength of backwash is too high. C. Strainer is broken.	A. Assure that the system is dry and has proper air eliminator control. B. Reduce the strength of backwash. C. Replace the strainer.
5. Control valve cycle continuously.	A. Locating signal wiring break-down. B. Valve is faulty. C. Foreign material stuck the driving gear.	A. Check and connect locating signal wiring. B. Replace valve. C. Take out foreign material.
6. Drain flows continuously	A. Internal valve leak. B. When electricity fails to supply, the valve is in backwash or fast rinse position.	A. Check and repair valve body or replace it. B. Turn off bypass valve and restart when power on.

2) Controller fault

Problem	Cause	Correction
1. All indictors display on front panel.	A. Wiring of display board with control board fails to work. B. Control board is faulty. C. Transformer damaged. D. Voltage is 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 control board fails to work. B. Display board damaged. C. Control board damaged. D. Electricity is interrupted.	A. Check and replace the wiring. B. Replace display board. C. Replace control board. D. Check electricity.
3.EI Flash	A. Wiring of locating board with control board fails to work. B. Locating board damaged. C. Mechanical driver fails. D. Faulty control board. E. Wiring of motor with control board is fault. F. Motor damaged.	A. Replace wiring. B. Replace locating board. C. Check and repair mechanical part. D. Replace control board. E. Replace wiring. F. Replace motor.
4. E2 Flash	A. Hall component on locating board damaged. B. Wiring of locating board with control board fails to work. C. Control board is faulty.	A. Replace locating board. B. Replace wiring. C. Replace control board.
5. E3 or E4 Flash	A. Control board is faulty.	A. Replace control board.

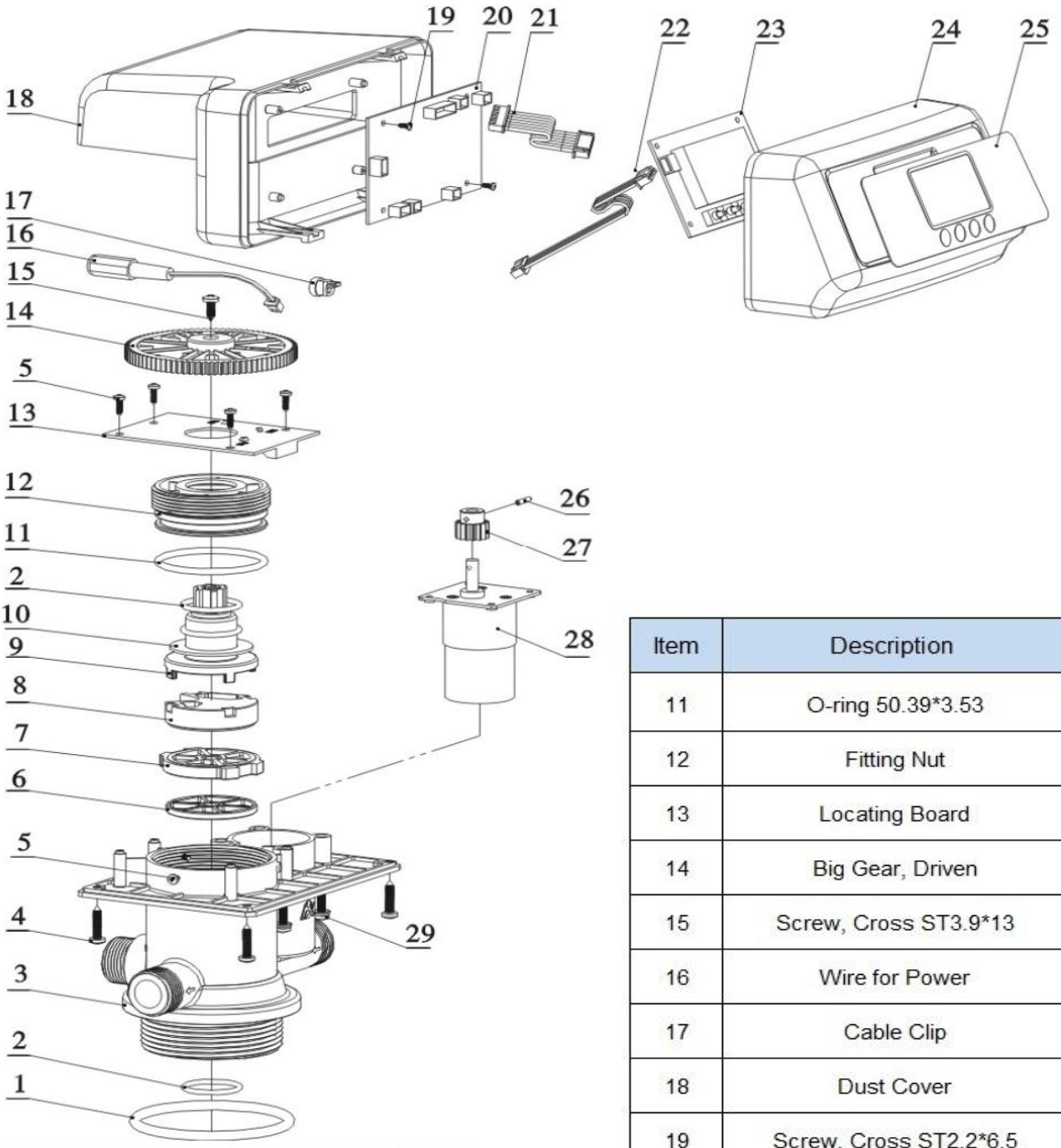
7. Assembly & Parts

HT-F67B Valve Body Assembly



Item	Description	Quantity
1	O-ring 73x5.3	1
2	O-ring 25.8x2.65	1
3	Valve Body (ABS+GF10)	1
	Valve Body (PPO+GF10)	
4	Screw, Cross ST3.9*16	4
5	Screw, Cross ST2.9*9.5	7
6	Sealing Ring	1
7	Moving Disk	1
8	Fixed Disk	1
9	Shaft	1
10	Anti-friction Washer	1
11	O-ring 38.7x3.55	2
12	O-ring 73x3.55	2
13	Fitting Nut	1
14	Locating Board	1
15	Big Gear Driven	1
16	Screw, Cross ST3.9x13	1
17	Screw, Cross ST2.9x16	4
18	Dust Cover	1
19	Screw, Cross ST2.2x6.5	4
20	Control Board	1
21	Wire for Locating Board	1
22	Wire for Display Board	1
23	Display Board	1
24	Front Cover	1
25	Label	1
26	Cable Clip	1
27	Wire for Power	1
28	Pin φ2.5*12	1
29	Small Gear, Motor	1
30	Motor	1
31	Screw, Cross M4*30	4

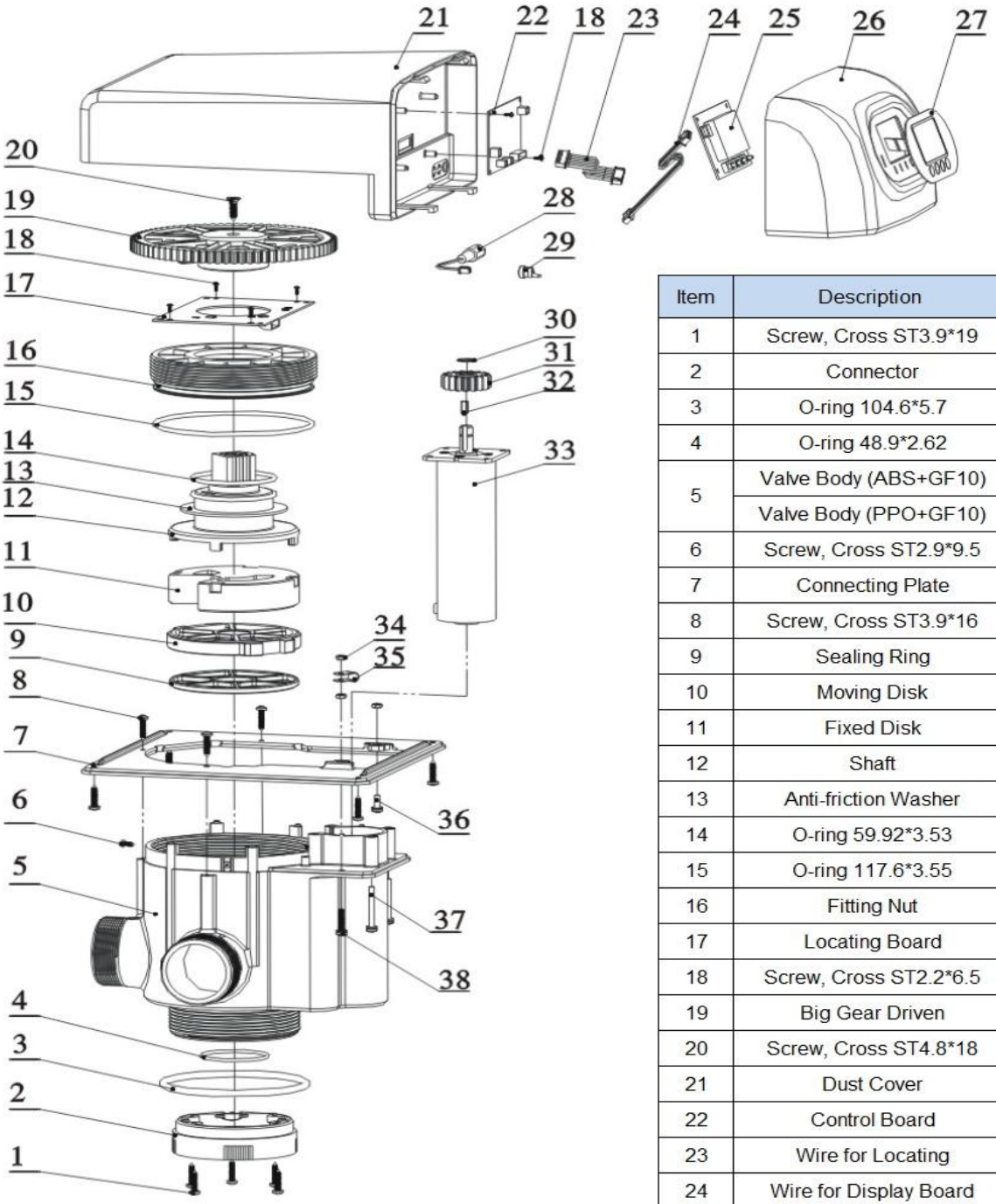
HT-F71B Valve Body Assembly



Item	Description	Quantity
1	O-ring 73*5.3	1
2	O-ring 25.8*2.65	1
3	Valve Body (ABS+GF10)	1
	Valve Body (PPO+GF20)	
4	Screw, Cross ST3.9*16	4
5	Screw, Cross ST2.9*9.5	7
6	Sealing Ring	1
7	Moving Disk	1
8	Fixed Disk	1
9	Shaft	1
10	Anti-friction Washer	1

Item	Description	Quantity
11	O-ring 50.39*3.53	1
12	Fitting Nut	1
13	Locating Board	1
14	Big Gear, Driven	1
15	Screw, Cross ST3.9*13	1
16	Wire for Power	1
17	Cable Clip	1
18	Dust Cover	1
19	Screw, Cross ST2.2*6.5	2
20	Control Board	1
21	Wire for Locating Board	1
22	Wire for Display Board	1
23	Display Board	1
24	Front Cover	1
25	Label	1
26	Pin φ2.5*12	1
27	Small Gear, Motor	1
28	Motor	1
29	Screw, Cross M4*25	4

HT-N75A Valve Body Assembly



Item	Description	Quantity
1	Screw, Cross ST3.9*19	5
2	Connector	1
3	O-ring 104.6*5.7	1
4	O-ring 48.9*2.62	1
5	Valve Body (ABS+GF10)	1
	Valve Body (PPO+GF10)	
6	Screw, Cross ST2.9*9.5	3
7	Connecting Plate	1
8	Screw, Cross ST3.9*16	7
9	Sealing Ring	1
10	Moving Disk	1
11	Fixed Disk	1
12	Shaft	1
13	Anti-friction Washer	1
14	O-ring 59.92*3.53	2
15	O-ring 117.6*3.55	1
16	Fitting Nut	1
17	Locating Board	1
18	Screw, Cross ST2.2*6.5	6
19	Big Gear Driven	1
20	Screw, Cross ST4.8*18	1
21	Dust Cover	1
22	Control Board	1
23	Wire for Locating	1
24	Wire for Display Board	1
25	Display Board	1
26	Front Cover	1
27	Label	1
28	Wire for Power	1
29	Cable Clip	1
30	Circlip	1
31	Small Gear, Motor	1
32	Bolt C4*12	1
33	Motor	1
34	Hexagonal Nut	3
35	Cable Clip	1
36	Screw, Cross M4*12	1
37	Screw, Cross M4*36.5	4
38	Screw, Cross M4*20	1