



WENZHOU RUNXIN MANUFACTURING MACHINE CO.,LTD.

NO.169.RUNXIN ROAD, SHANFU TOWN, WENZHOU, ZHEJIANG, CHINA

TEL: 0086-577-88630038, 88576512, 85956057

FAX: 0086-577-88633258

E-mail: sales@run-xin.com

Internet: <http://www.run-xin.com>

Rev.A.2408



Patent Number: ZL 201620552465.2
ZL 202223080527.9

Ceramic Hard Sealing Disk Filter System

User Manual



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

0WRX.466.808

Catalogue

Notice	2
1. Product Overview	3
1.1. Main Application & Applicability	3
1.2. Working Principle	3
1.3. Product Characteristics	3
1.4. Main Configuration, Product Structure and Technical Parameters	4
1.5. Operation of Filtration System	8
1.6. Mode Selection of Backwash	9
1.7. Design Calculation of Filter Units	9
2. Basic Setting & Usage	10
2.1. The Function of PC Board	10
2.2. Background Parameter Setting	11
2.3. Foreground Parameter Setting	12
2.4. Working Process Display	14
2.5. RS-485 Port	15
2.6. Wire Connection	18
2.7. Preparation of Trail Running	19
2.8. Start Operation	19
2.9. Trouble-Shooting	19
2.10. Long-term Shutdown of The Filtration System	20
2.11. Routine Maintenance	20
2.12. Assembly & Parts	21
3. Warranty Card	28

Notice

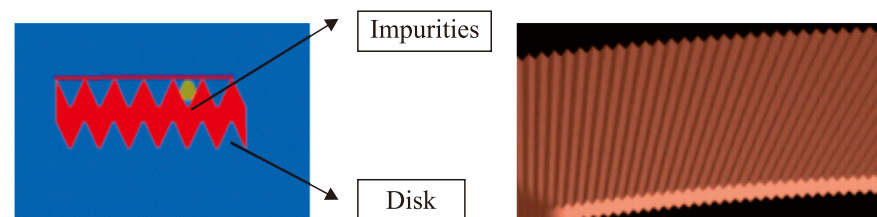
- To ensure proper operation of the product after installation, please consult with professional installation or repairing personnel before use it.
- If there are any of pipeline engineering and electric works, there must be finished by professional at the time of installation.
- Do not use the product with the water that is unsafe or unknown quality.
- Test water periodically to verify that system is performing satisfactorily.
- Do not put the system near heat sources or surroundings with corrosive, intense magnetic field or intense vibration environment.
- 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.
- Do not let children touch or play, because careless operations may cause the procedure changed.
- When the attached cables of this product and transformer are damaged, they must be changed to the one that is from our factory.
- Make sure that the rated voltage of this product matches the supply voltage of the AC power source.
- Do not disassemble the clamp while pressure exists in the filter unit.
- Please place the system on a flat surface while using.
- If it is necessary to inspect the inside of the filter unit, stop the system for about 3-5 minutes and wait until the water in the rinsing filter unit has drained out, then open the clamps to ensure personal safety.
- At the end of the product lifetime, parts and components of the product are sorted and properly disposed in accordance with local laws and regulations.

1. Product Overview

1.1. Main Application & Applicability

Disk filter system with ceramic hard sealing is mainly composed of ceramic hard sealing electronic tee valve with two-position, disk filter, controller, and piping accessories. It is mainly used for the impurity filtration treatment of industrial water, irrigation water and domestic water in the industry, agriculture, commerce, and residential fields.

1.2. Working Principle



The combination of surface filtration and depth filtration is realized by the plastic disks with grooves engraved on their surfaces, which are pressed against each other. When the grooves of disk accumulate large amounts of impurities, the system automatically losses the disks by changing the direction of the inlet and outlet water flow and the pressurized water drive the disks to rotate at high speed. In this way, the disks can be cleaned by the rinsing and rotation centrifugal force caused by the pressurized water. Then, by changing the flow direction of the water to restore the original filtration condition.

1.3. Product Characteristics

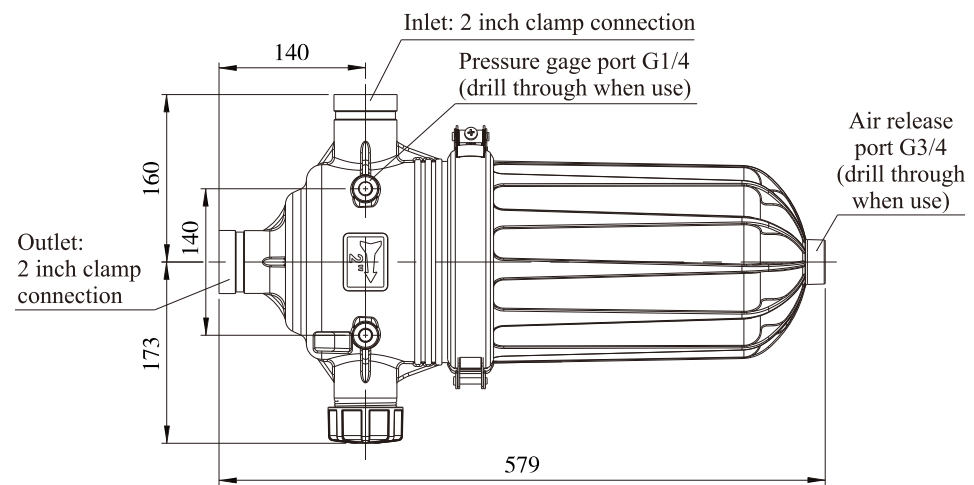
- ☞ **The electronic tee valve with two-position adopts ceramic head face hermetic structure, which is wear resistant, corrosion resistant, and reliable sealing.**
- ☞ **The electronic tee valve with two-position is motor driven, which can cut off power when switch in place, and have low power consumption, more stable and reliable.**
- ☞ **LCD display, microcomputer control system.**
- ☞ **Start backwash by time or differential pressure.**
- ☞ **Manual function**
Realize backwash immediately by pressing " ⏮ " .
- ☞ **Long outage indicator**
The setting parameters are saved for a long time after power outage.

1.4. Main Configuration, Product Structure and Technical Parameters

A. Main configuration

Main Configuration	Model	Quantity	Remark
Disk filter unit	F90I/F90J	1~16	The configured filter unit quantity is according to the required flow rate
Ceramic hard sealing electronic tee valve with two-position	F146A/ F146B	1~16	The configured quantity matches with the filter unit and backwash process
Controller	F109C	1	Control up to 16 filter units

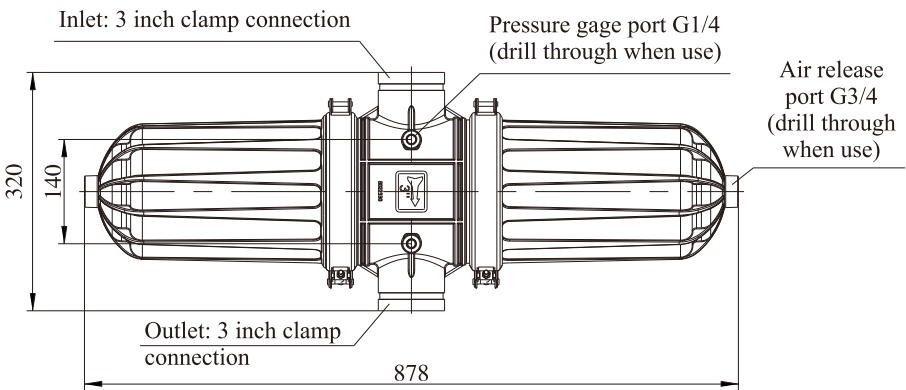
B. External dimension and technical parameter of F90I disk filter unit



Inlet/outlet	2 inch clamp connection		
Shell material	Reinforced nylon		
Disk material	PP		
Filtration accuracy (micron)	130 (Red)	100 (Orange)	50 (Navy)
Maximum flow rate (m³/h)	24	17	15
Working pressure (MPa)	0.15~0.6		
Working temperature (°C)	5~50		
Recommended initial filtration differential pressure (MPa)	0.01-0.03		

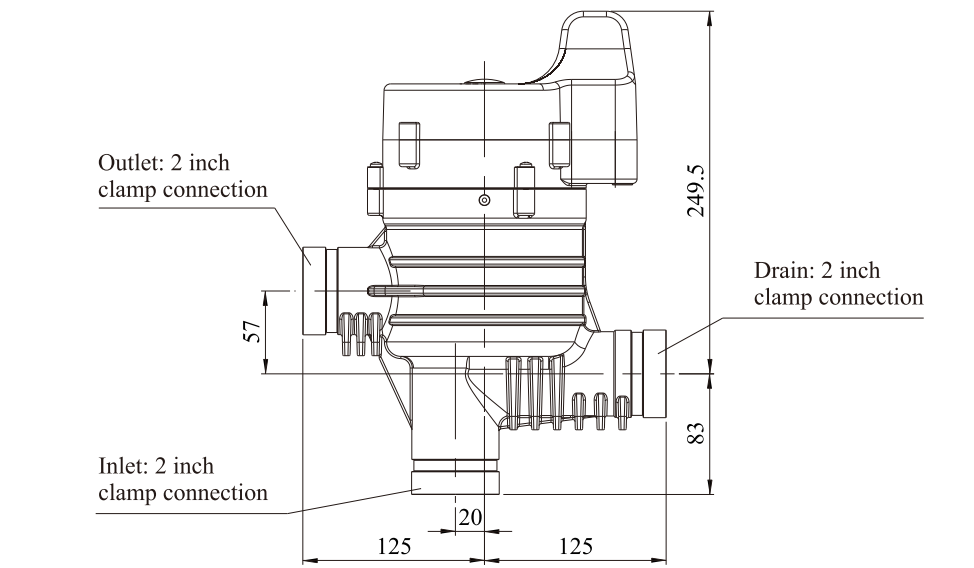
Recommended backwash differential pressure (MPa)	Initial filtration differential pressure +0.03-0.05
Backwash time (second)	10-20
Backwash pressure (MPa)	0.15-0.4
Backwash flow rate (m³/h)	9-14

C. External dimension and technical parameter of F90J disk filter unit

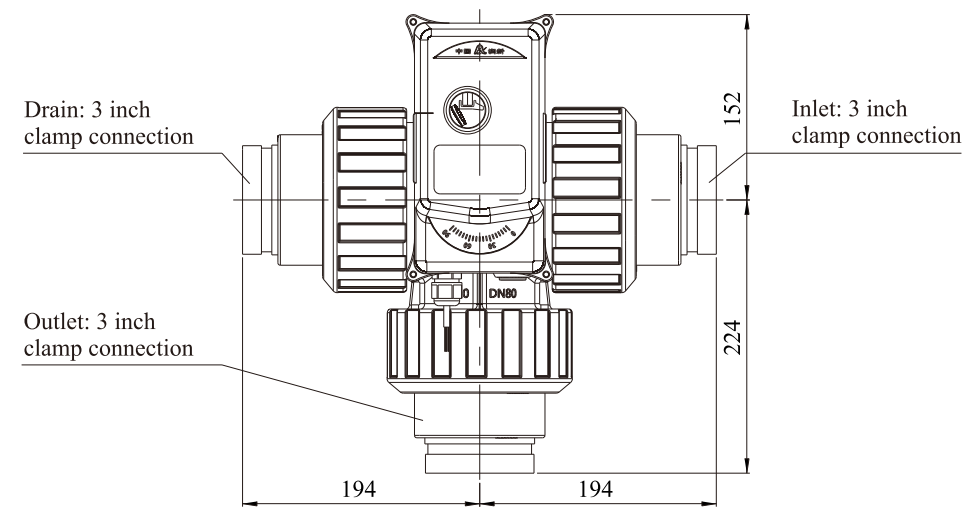


Inlet/outlet	3 inch clamp connection		
Shell material	Reinforced nylon		
Disk material	PP		
Filtration accuracy (micron)	130 (Red)	100 (Orange)	50 (Navy)
Maximum flow rate (m³/h)	48	34	30
Working pressure (MPa)	0.15~0.6		
Working temperature (°C)	5~50		
Recommended initial filtration differential pressure (MPa)	0.03-0.05		
Recommended backwash differential pressure (MPa)	Initial filtration differential pressure +0.03-0.05		
Backwash time (second)	10-20		
Backwash pressure (MPa)	0.15-0.4		
Backwash flow rate (m³/h)	18-28		

D. External dimension and technical parameter of F146A/F146B ceramic hard sealing electronic tee valve with two-position



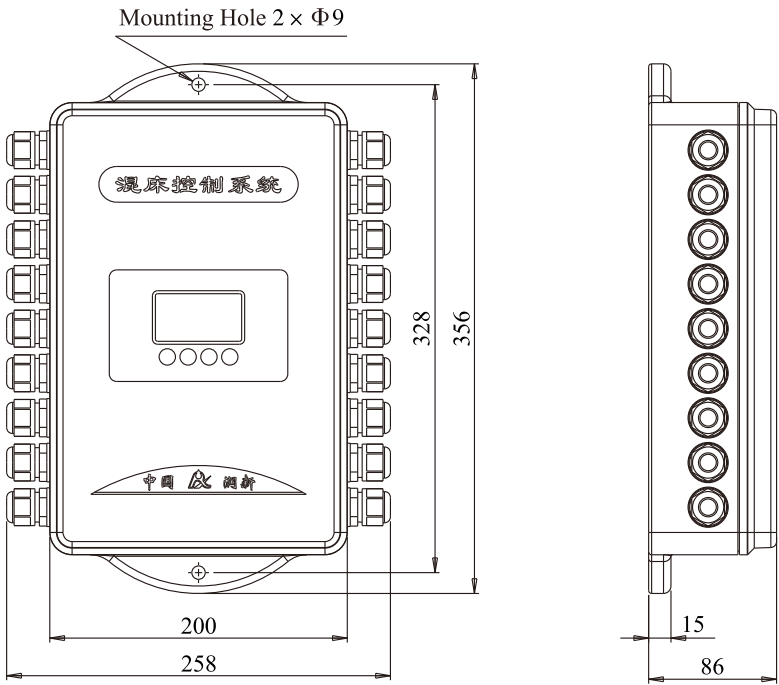
F146A



F146B

Model	F146A	F146B
Inlet/outlet	2 inch clamp connection	3 inch clamp connection
Shell material	Reinforced nylon	PPE+PA
Sealing material of opening and closing part	95 ceramic	95 ceramic
Maximum working pressure (MPa)	0.6	0.6
Maximum flow rate (m ³ /h)	40 (under 0.05MPa differential pressure)	59 (under 0.05MPa differential pressure)
Position switching time(S)	7.5	15
Rated voltage	DC24V	DC24V
Rated current	<1A	< 1.5A
IP grade	IP67	IP67

E. External dimension and technical parameters of F109C controller



Electrical facility	AC100 ~ 240V/50 ~ 60Hz
Transformer output	DC24V, 1.5A
Temperature (°C)	5-50℃
Display	LCD
Maximum quantity of filter units	16
Signal port of differential pressure	Passive
485 Communication protocol	MODBUS RTU
IP grade	IP67

1.5. Operation of Filtration System

A. Filtration process

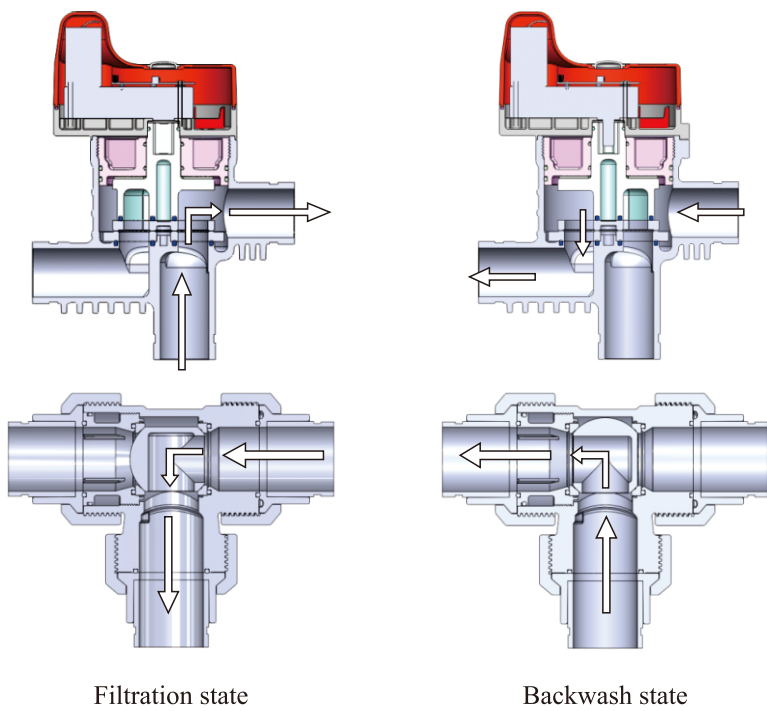
The raw water passes through the inlet and ceramic hard sealing electronic tee valve, enter and pass each filter unit, and filtered water is collected to the outlet pipes to flow out.

B. Backwash process

When the differential pressure or time reach the setting value of starting the backwash, the controller sends an electric signal of backwashing to the electronic tee valve connected to the first filter unit, switching it from the filtration state to the backwash state, that is cutting off the connection between first filter unit and inlet water pipe, and making the connection between the filter unit and drain pipe. At this time, the outlet filtered water enters into the first filter unit under the action of the backpressure and backwashes the first filter unit and discharges from the drain port. The backwash time is generally about 15 seconds (according to the setting). Meanwhile, the other filter units are still in filtration state.

When the backwash time of the first filter unit is reached, the controller sends out an electric signal to the electronic tee valve, switching it from the backwash state to the filtration state, and the first filter unit returns to the filtration state. The second filter unit and other filter units go through the same operating process, in sequence to complete the backwash. The backwash interval of each two filter units is few seconds (according to the settings), so as to maintain system pressure. After all filter units have finished backwash, the system returns to the initial filtration state.

C. Working figures of ceramic hard sealing electronic tee valve



1.6. Mode Selection of Backwash

- This system suitable for both endogenous backwash mode and exogenous backwash mode.
- A. Inlet pressure \geq (minimum backwash pressure +0.12) MPa, total filtration flow rate is more than 5 times of the backwash flow rate of the filter unit, the endogenous backwash mode can be selected, and no need backpressure valve.
 - B. Inlet pressure \geq (minimum backwash pressure +0.1) MPa, total filtration flow rate is more than 1.5 times of the backwash flow rate, the endogenous backwash mode can be selected, but it is necessary to configure an automatic backpressure valve at the outlet.
 - C. In other cases, it is necessary to select the exogenous backwash mode.

1.7. Design Calculation of Filter Units

The total design flow rate (the endogenous backwash mode needs to add the backwash flow rate) divided by the flow rate of the filter unit to calculate the needed quantity of filter unit. If you want to maintain a stable outlet water during the backwash, please add a spare quantity of filter unit.

Reference table for filter unit flow rate under different raw water quality:

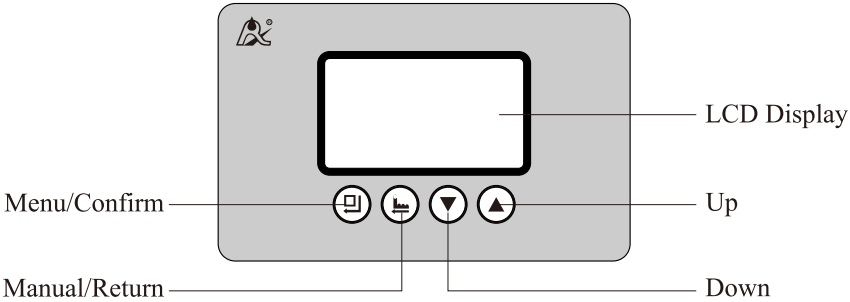
Filter unit model	Filtration accuracy (microns)	Backwash flow rate (M ³ /H)	Filtration flow rate (M ³ /H)			
			Good	General	Poor	Very poor
F90I 2 inch filter unit model	130	9-14	22	16	10	5
	100		17	12	7	3.5
	50		14	10	6	3
F90J 3 inch filter unit model	130	18-28	44	32	20	10
	100		34	24	14	7
	50		28	20	12	6

Notes:

- a. This flow rate table is based on previous experience. For complex water, it is best to do experiment first to determine the appropriate filter unit flow rate.
- b. Good water quality: municipal tap water, well water pumped from stable aquifer with less than 3 degrees of turbidity.
- c. General water quality: recycled cooling water, surface water treated with effective sedimentation, general well water, drainage water treated with effective sedimentation and complete biological treatment, with general suspended solids less than 30mg/L.
- d. Poor water quality: groundwater pumped from very poor water aquifer, with effective sedimentation, but no or little biological treatment of the drainage water; better surface water, generally with suspended solids less than 75mg/L.
- e. Very poor water quality: very poor well and surface water; drainage water without sedimentation and biological treatment.

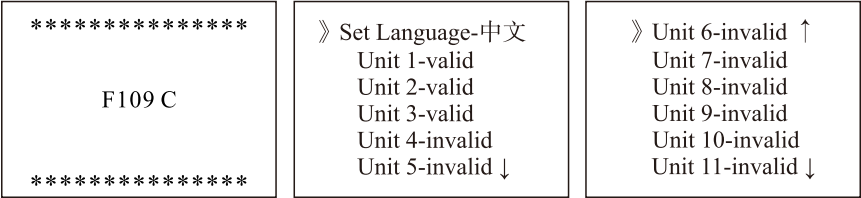
2. Basic Setting & Usage

2.1. The Function of PC Board



- A. Button lock indicator
 - When the icon lights on, it means that the buttons are locked. At this moment, press any single button will not work (in any state, no operation in one minute, the icon lights on and locks the buttons).
 - Solution: press and hold both and buttons for 5 seconds until lights off.
- B. Menu/Confirm button
 - In service mode, press to enter the program display mode, select settings to view parameter values.
 - In program display mode, press to enter program set mode, and adjust all values.
 - Press after all program are set, and then the voice “Di” means all settings are successful and return program display mode.
- C. Manual/Return button
 - Press in service status, it can proceed to next step. (Example: after unlock the buttons, press in service status, it will start regeneration cycles instantly if the outlet water is unqualified.)
 - Press in program display mode, and it will return in service; press in program set mode, and it will return program display mode.
 - Press while adjusting the value, then it will return program display mode directly without saving value.
- D. Down and Up
 - In program display mode, press or to view all values.
 - In program set mode, press or adjust values.
 - Press and hold both and for 5 seconds to unlock the buttons.

2.2. Background Parameter Setting (As shown in Figure 1 to Figure 4)



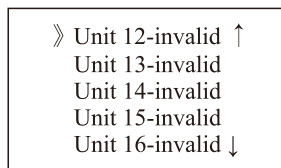


Figure 2-3



Figure 3

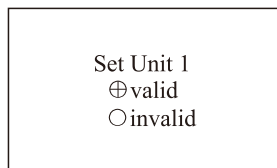


Figure 4

When connected with power, the screen will show as in Figure 1. Press and hold both and for more than 2 seconds within 6 seconds to enter the background setting state, and the menu will show as in Figure 2-1, Figure 2-2, and Figure 2-3.

A. In the menu as shown in Figure 2-1, "Set Language" is the default menu item, press to enter the "Set Language" menu as shown in Figure 3. The default language is "中文(Chinese)", select the required language by pressing or , then press to save the setting and return to the interface as Figure 2-1 shows. If pressing , then it won't save the setting and return to the interface as Figure 2-1 shows.

B. In the menu as shown in Figure 2-1, press or to select "Unit 1" menu, press to enter the interface of "Unit 1" as shown in Figure 4. The default is "Valid", press or to set the required value, then press to save the setting and return to the interface as Figure 2-1 shows. If you press , it will not save the setting and return to the interface as Figure 2-1 shows.

C. The setting method for "Unit 2" to "Unit 16" is the same as the setting method for "Unit 1". The default setting for "Unit 2/Unit 3" is "Valid", and the default setting from "Unit 4" to "Unit 16" is "Invalid".

D. If all the 16 units are set to invalid, the system will always display the "tips" interface in the working state, as shown in Figure 5.

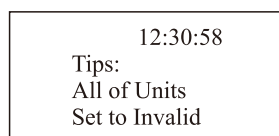


Figure 5

2.3. Foreground Parameter Setting

Confirm the button is unlocked in the service state, and press to enter the foreground menu, as Figure 6-1 and Figure 6-2 shows. Press or to select the required setting parameter, and press the to enter the parameter setting interface as Figure 7- Figure 12 shows, then to make modifications to the factory default values. The operation method is similar to the background parameter setting.

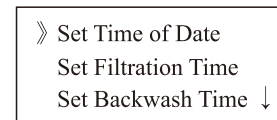


Figure 6-1

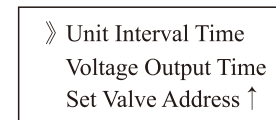


Figure 6-2

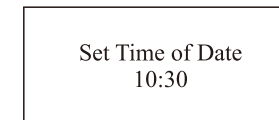


Figure 7

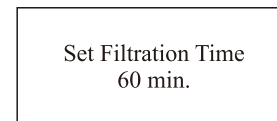


Figure 8

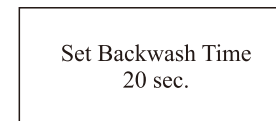


Figure 9

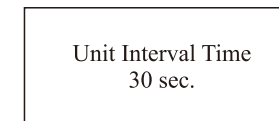


Figure 10

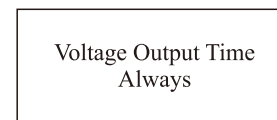


Figure 11

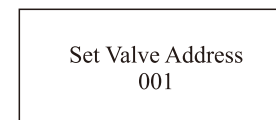


Figure 12

A. Current time setting, as shown in Figure 7. When the hour value of current time is flashing, press or to set the value of hour. Press to confirm, and then the minute value of current time is flashing, press or to set the value of minute. Press again to save the setting and return to the menu; if press , it will not save the setting and return to the menu; if the power outage is more than 3 days, 12:12 will continue to flash when power on, which indicates that the current time should be reset.

B. Filtration working time settings, as shown in Figure 8. Press or to set the value. Then press to save the setting and return to menu; if press , it will not save the setting and return to the menu. When the filtration working time counts down to 0, the system start backwash.

C. Backwash time setting, as shown in Figure 9, the setting method is the same as filtration working time.

D. Unit interval time setting, as shown in Figure 10, the setting method is the same as filtration working time.

E. Voltage output time setting, as shown in Figure 11, the setting method is the same as filtration working time. The voltage output time is the output time of 24V voltage from the connector corresponding to the valid unit.

F. Valve address setting, as shown in Figure 12. The setting method is the same as the filtration working time. It is suitable for setting multiple controllers with RS-485 communication address.

G. Parameter set ranges and default values.

Item	Parameter Set Range	Minimum Increase	Default Values	Unit
Set Time of Date	00~23:59	1/0.01	Current value	h:m
Set Filtration Time	0~9999	1	60	Minute
Set Backwash Time	0~9999	1	20	Second
Unit Interval Time	0~9999	1	30	Second
Voltage Output Time	Always output 20-90	1	Always	Second
Set Valve Address	1~247	1	1	/

2.4. Working Process Display (Taking the default validity of the first, second, and third units among the sixteen units as an example, in the filtration state, the corresponding control valves of the three units are in the open state.)

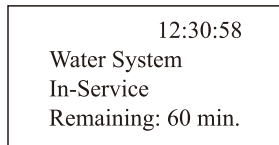


Figure 13

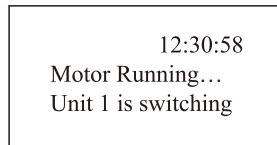


Figure 14

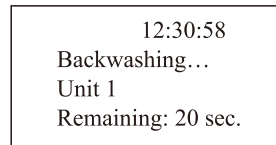


Figure 15

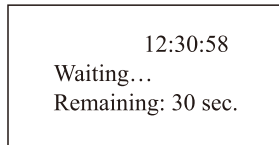


Figure 16

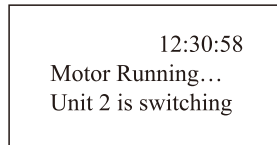


Figure 17

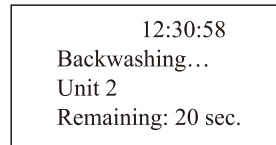


Figure 18

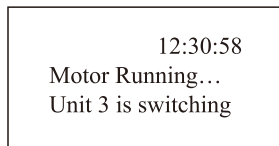


Figure 19

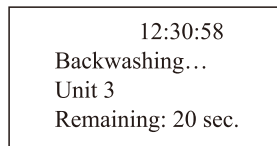


Figure 20

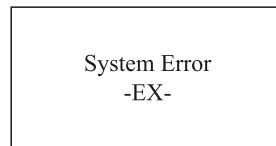


Figure 21

Illustration:

● In the filtration state, display screen shows as Figure 13. For unit 3, from backwash position to filtration position, the screen shows in sequence as follows: Figure 20 - Figure 19 - Figure 13.

● In the backwash state of unit 1, display screen shows as Figure 15. For unit 1, from filtration position to backwash position, the screen shows in sequence as follows: Figure 13 - Figure 14 - Figure 15.

● In the waiting position, display screen shows as Figure 16. When switching between two adjacent units for backwashing, a waiting position must be passed through.

● In the backwash state of unit 2, display screen shows as Figure 18. From backwash position of unit 1 to backwash position of unit 2, the screen shows in sequence as follows: Figure 15 - Figure 14 - Figure 16 - Figure 17 - Figure 18.

● In the backwash state of unit 3, display screen shows as Figure 20. From backwash position of unit 2 to backwash position of unit 3, the screen shows in sequence as follows: Figure 18 - Figure 17 - Figure 16 - Figure 19 - Figure 20.

● When the system is faulted, the display shows as Figure 21. The “X” of “EX” refers to number 3~4.

2.5. RS-485 Port

A. RS-485 communication protocol:

RS-485 communication protocol: it adopts the international MODBUS RTU.

Information transmission: half-duplex mode, in bytes.

Transmission speed: fixed 9600bps baud rate.

Byte format: 1 start bit, 8 data bits, 1 stop bit, no parity bit. The start bit is 0 and the stop bit is 1.

B. Read signal of controller (the read function code is 0x03)

The equipment such as PLC is the master, and controller is the slave. The data of the controller can be read by PLC. The MODBUS communication address and corresponding data are defined as follows:

MODBU Address	Instruction	Unit	Data Definition	Comment
0x1001	Remaining Time	Min./Sec.	0 ~ 9999	Reads the remaining time. Filtering unit is minute, other states' unit is second
0x1002	Fault State	/	0x0000: normal 0x0001: E3 0x0002: E4	Read the state of the valve (normal or malfunctioning)

0x1003	Current State	/	0x0001: Service (Filtration State) 0x0002: Waiting 0x0003: Unit 1 Backwashing 0x0004: Unit 2 Backwashing 0x0005: Unit 3 Backwashing 0x0006: Unit 4 Backwashing 0x0007: Unit 5 Backwashing 0x0008: Unit 6 Backwashing 0x0009: Unit 7 Backwashing 0x000A: Unit 8 Backwashing 0x000B: Unit 9 Backwashing 0x000C: Unit 10 Backwashing 0x000D: Unit 11 Backwashing 0x000E: Unit 12 Backwashing 0x000F: Unit 13 Backwashing 0x0010: Unit 14 Backwashing 0x0011: Unit 15 Backwashing 0x0012: Unit 16 Backwashing 0x0013: Motor running	Reads the current position of the valve
0x1004	Differential Pressure Signal	/	0x01: Have differential pressure signal 0x02: No differential pressure signal	Reads differential pressure signal (filter position detection)

C. Write data to the controller (write single data function code is 0x06, continuously write multiple data function code is 0x10)

The equipment such as PLC is the master, the controller is the slave. The PLC can write the data, as below table shows.

MODBU Address	Instruction	Data Definition	Comment
0x2003	Switch working position	One pulse 0~1 One change	Force to switch position Write 0x0000, then 0x0001

D. Equipment (such as PLC) connect with single controller with RS-485

The wire connection is as follows:

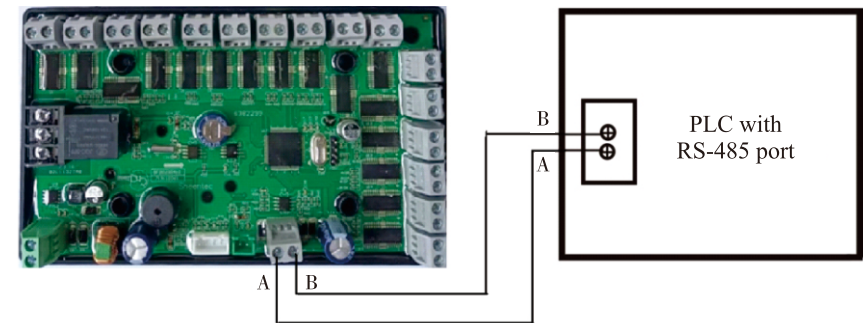
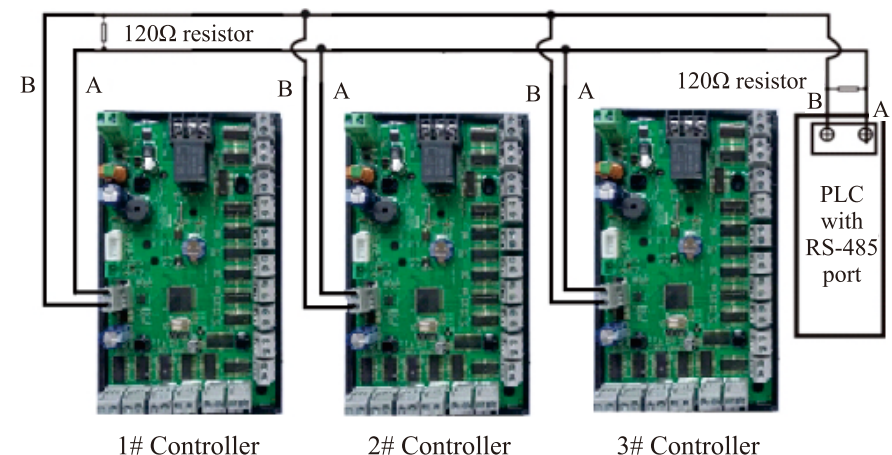


Illustration:

- The RS-485 port A and B of the control board are respectively connect to the RS-485 port A and B of the PLC or other devices.
- Make sure to use twisted pair wires for the connection.
- In case of far communication distance, in order to ensure stable communication, the RS-485 port A and B of the control board and PLC should be respectively connected with a 120Ω/0.25W resistor in parallel.
- Keep away from the high voltage wire when wiring the RS-485 communication wire, and do not bundle the high voltage power wire with RS-485 communication wire together.
- As the controller is slave, and its address range is 1~247. The default address is 1. Reading or writing data from PLC should correspond to the address of controller.

E. Equipment (such as PLC) connect with several controllers with RS-485

The wire connection is as follows:



5. No display on display board	A.Wiring of display board with control board fails to work B.Display board damaged C.Control board damaged D.Electricity is interrupted	A.Replace the wire B.Replace the display board C.Replace the control board D.Check the wiring and electrical service
6. E3 or E4 Flashes	A.Control board damaged	A.Replace the control board

2.10. Long-term Shutdown of The Filtration System

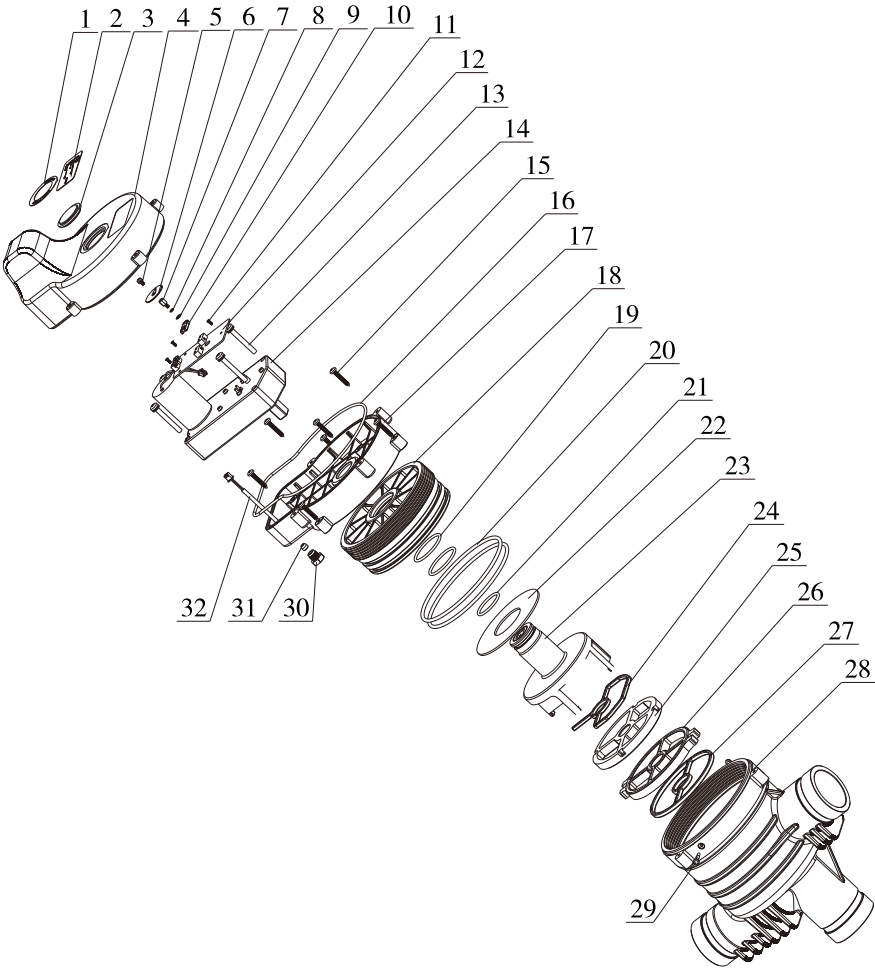
- A. Manually start backwash, close the inlet valve and outlet valve in sequence.
- B. Break the power supply of controller.
- C. Open the drain port, release the pressure and water inside the system.
- D. Open the shell of each filter unit, clean and maintain the disks, then reassemble for future usage.

2.11. Routine Maintenance

- A. Weekly maintenance
 - 1. Check if the inlet water, outlet water, differential pressure, and backwash pressure meet the design requirements;
 - 2. Check if there are any leaks in the system;
 - 3. Check if the controller is correct;
 - 4. Check if each valve is in the correct position;
- B. Monthly Maintenance
 - 1. Operate and check that backwash is initiated correctly based on the differential pressure;
 - 2. Check outlet pressure and drainage pressure (during backwash);
 - 3. Just after backwashing, open the cover of one filter unit and check that the disks are cleaned up;
- C. Quarterly maintenance
 - Open the filter unit and check the cleanliness of disks. If there is any dirt, make the disks be soaked in an acid solution to clean and reassemble them.
- D. Preparation for winter: if the system is not in operation, empty the water accumulated in the filtration system.
- E. If necessary, open the filter unit and remove the disks and make them be soaked in the acid, then wash the disks with water and reinstall them in the holder of disk filter.

2.12. Assembly & Parts

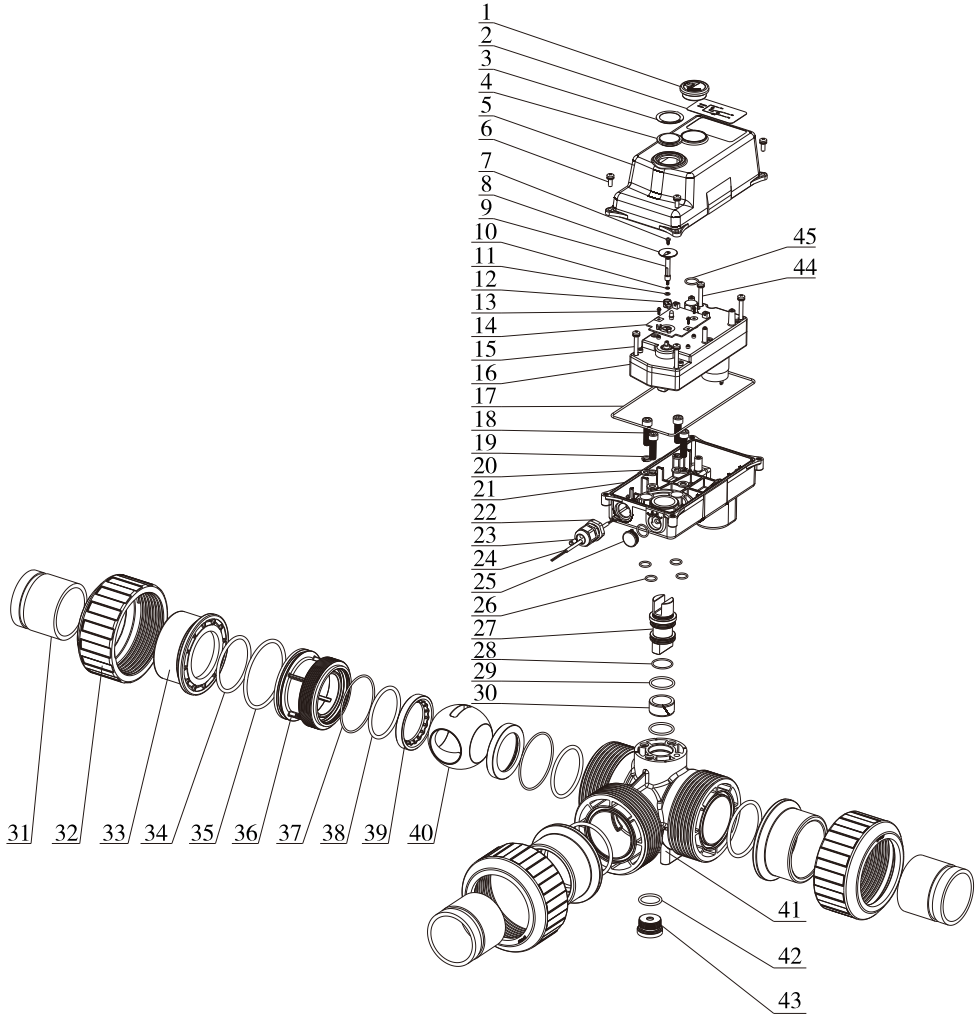
F146A Structure diagram



F146A Components

Item No.	Description	Part No.	Quantity	Item No.	Description	Part No.	Quantity
1	Sticker	8869140	1	17	Connect Part	5152017	1
2	Sticker	8869141	1	18	Fitting Nut	8092068	1
3	Cover	8315245	1	19	O-ring 35.5×2.65	8378086	2
4	Dust Cover	8005164	1	20	O-ring 117.6×3.55	8378133	2
5	Screw, Cross M3×6	8902034	1	21	O-ring 28×2.65	8378081	1
6	Indicator Panel	8444048	1	22	Anti-friction Washer	8216053	1
7	Connecting Rod	8040073	1	23	Shaft	5258011	1
8	Spring Washers	8953008	1	24	Sealing Ring	8370185	1
9	Gasket	8952008	1	25	Moving disk	8459127	1
10	Shaft	8152135	1	26	Fixed Disk	8469139	1
11	Screw, Cross M2×5	8902075	3	27	Sealing Ring	8370186	1
12	Control Board	6382298	1	28	Valve Body	8022310	1
13	Screw, Cross	8902049	4	29	Plastic Screw	8993002	2
14	Motor	6158113	1	30	Cover	8315031	1
15	Screw, Cross ST3.9×25	8909041	7	31	Washer	8950019	1
16	O-ring 153.5×2.65	8378420	1	32	Wire for Power	5513025	1

F146B Structure diagram

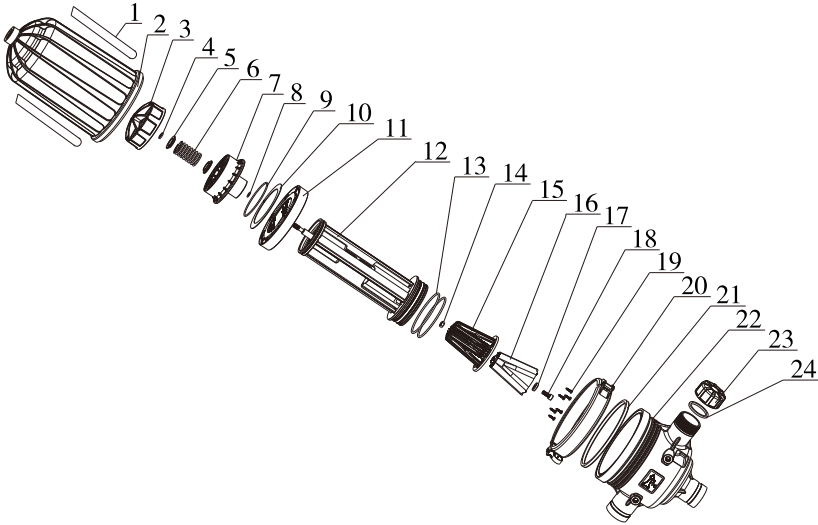


F146B Components

Item No.	Description	Part No.	Quantity	Item No.	Description	Part No.	Quantity
1	Decorative Part	8084007	1	4	Cover	8315245	1
2	Sticker	8869149	1	5	Dust Cover	8005058	1
3	Sticker	8869119	1	6	Screw, Cross M5×14	8902061	4

Item No.	Description	Part No.	Quantity	Item No.	Description	Part No.	Quantity
7	Screw, Cross ST3×8	8909007	1	27	Valve Shaft	8206090	1
8	Indicator Panel	8444048	1	28	O-ring 25×1.8	8378238	1
9	Connecting Rod	5040038	1	29	O-ring 29×2.65	8378237	2
10	Spring Washers3	8953008	1	30	Ring	8994025	1
11	Gasket 3	8952008	1	31	Coupling Joint	8457317	3
12	Locator	8271024	1	32	Animated Nut	8947057	3
13	Screw, Cross M2×7	8902050	3	33	Connector	8458309	3
14	Control Board	6382353	1	34	O-ring 80×5.3	8378236	3
15	Screw, Cross M5×40	8902049	2	35	O-ring 100×5.3	8378219	1
16	Motor	6158070	1	36	Nut	8945063	1
17	O-ring 183.3×2.5	8378240	1	37	O-ring 86×2.8	8378458	2
18	Screw, Hexagon M8×30	8902076	4	38	O-ring 73×5.3	8378143	2
19	Spring Washers8	8953016	4	39	Valve Seat	8371052	2
20	Gasket8	8952013	4	40	Valve Core	8259040	1
21	Connecting Plate	5152005	1	41	Valve Body	5022276	1
22	Cable Gland	5457085	1	42	O-ring 22.4×2.65	8378185	1
23	Plastic Screw	8993011	1	43	Fitting Nut	8092057	1
24	Wire for Power	5513006	1	44	Screw, Cross M5×50	8902062	2
25	Decorative Part	8084006	1	45	O-ring 17×1.8	8378148	2
26	O-ring 12.5×1.8	8378244	4				

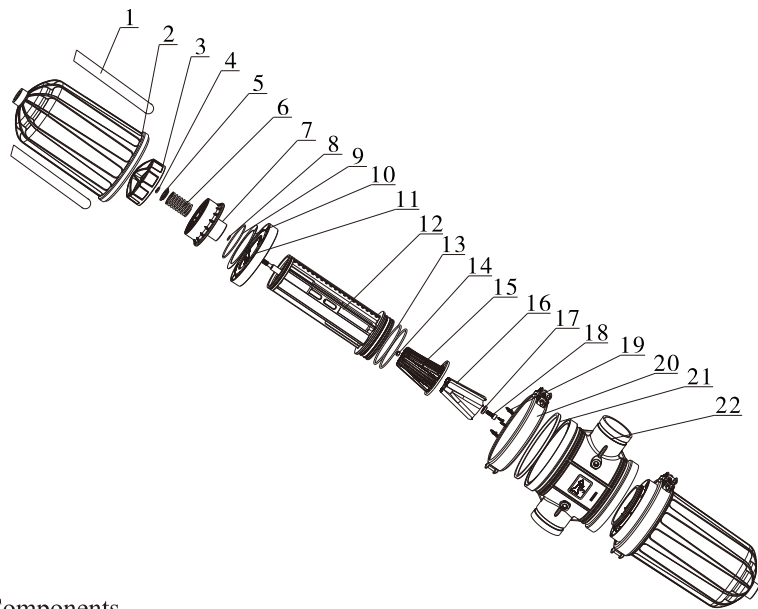
F90I Structure diagram



F90I Components

Item No.	Description	Part No.	Quantity	Item No.	Description	Part No.	Quantity
1	Sticker (Chinese)	8867348	2	12	Fixed Base	5109014	1
	Sticker (English)	8867347		13	O-ring 112×3.55	8378419	2
2	Shell	8002132	1	14	Hexagonal Nut	8940021	1
3	Cover	5315020	1	15	Valve Base	8109205	1
4	Spring Washer	8953006	1	16	Sealing Part	8371132	1
5	Spring Seat	8282023	2	17	Gasket	8952018	1
6	Spring	8282022	1	18	Screw, Hexagon M8×20	8902060	1
7	Cover	8315265	1	19	Screw, Cross ST3.9×16	8909030	6
8	O-ring 10.6×1.8	8378196	1	20	Hoop	5144013	1
9	O-ring 95×2.65	8378418	1	21	Sealing Ring	8370183	1
10	Disk (130 μ m)	8339072	254	22	Valve Body	8022311	1
	Disk (100 μ m)	8339071		23	Blind Nut	8945073	1
	Disk (50 μ m)	8339070		24	Sealing Ring	8371050	1
11	Turbine	8436011	1				

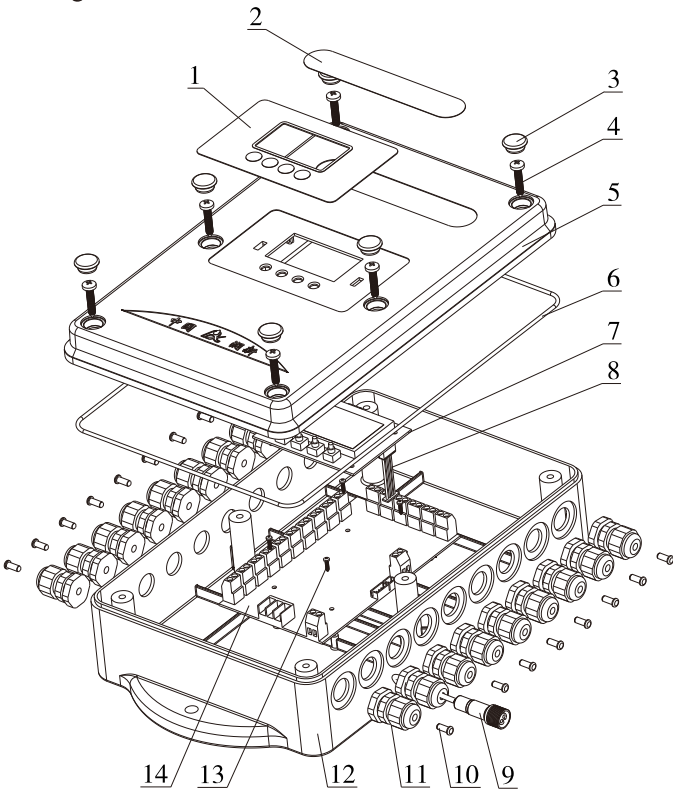
F90J Structure diagram



F90J Components

Item No.	Description	Part No.	Quantity	Item No.	Description	Part No.	Quantity
1	Sticker (Chinese)	8867348	2	11	Turbine	8436011	2
	Sticker (English)	8867347		12	Fixed Base	5109014	2
2	Shell	8002132	2	13	O-ring 112×3.55	8378419	4
3	Cover	5315020	2	14	Hexagonal Nut	8940021	2
4	Spring Washer	8953006	2	15	Valve Base	8109205	2
5	Spring Seat	8282023	4	16	Sealing Part	8371132	2
6	Spring	8282022	2	17	Gasket	8952018	2
7	Cover	8315265	2	18	Screw, Hexagon M8×20	8902060	2
8	O-ring 10.6×1.8	8378196	2	19	Screw, Cross ST3.9×16	8909030	12
9	O-ring 95×2.65	8378418	2	20	Hoop	5144013	2
10	Disk (130 μ m)	8339072	508	21	Sealing Ring	8370183	2
	Disk (100 μ m)	8339071		22	Valve Body	8022330	1
	Disk (50 μ m)	8339070					

F109C Structure diagram



F109C Components

Item No.	Description	Part No.	Quantity	Item No.	Description	Part No.	Quantity
1	Label	8865084	1	8	Wire for Display Board	5512002	1
2	Sticker (Chinese)	8860102	1	9	Wire for Power	5513101	1
	Sticker (English)	8860105		10	Plug	8323032	17
3	Decorative Part	8084027	6	11	Cable Gland	5457139	18
4	Screw, Cross ST4.8×25	8909021	6	12	Dust Cover	8005065	1
5	Control Box	8300049	1	13	Screw, Cross ST2.2×9.5	8909005	4
6	O ring 296.7×2.5	8378428	1	14	Control Board	6382299	1
7	Display Board	6381006	1				

3.Warranty Card

Dear client:

This warranty card is the guarantee proof of our products. It is kept by client self. You could get the after-sales services from the supplier. 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 from the manufacturing date);
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	Ceramic Hard Sealing Disk Filter System				
Model		Code of Valve Body			
Purchase Company Name		Tel/Cel.			
Problem					
Solution					
Date of Repairing		Maintenance Man Signature		Date of Accomplishment	