PLASTIC FILTER HOUSINGS SERIES

2024

EDITION FOR
SNOWATE CATALOG

Snowate

Hengshui Snowate Environmental Technology Co., Ltd.

www.snowate.com

HENGSHUI SNOWATE ENVIRONMENTAL TECHNOLOGY CO., LTD.

A TRUSTWORTHY SOURCING EXPERT ON WATER TREATMENT FACILITIES

As a senior sourcing expert on water treatment facilities and accessories, Hengshui Snowate Environmental Technology Co., Ltd. has extensive water treatment expertise, profound water treatment industry experience and a deep understanding of the water treatment industry purchasing demands. As a consequence, we are capable of providing one-stop purchase and technical support on water treatment facilities and accessories according to our customers' applications, thereby helping our customers to shorten the procurement cycle, reduce procurement costs and maximize economic benefits.

We integrate upstream supply chain products of the water treatment industry. In addition, we work with renowned suppliers and manufacturers. As a result, we can continuously supply high-quality water treatment components and systems for customers across the world to meet the needs of a Wide Range of Applications, Thereby Optimizing Water Resources and Promoting The Sustainable Development of The Global Environment.

Snowate

Contents

Plastic Filter Housing

Plastic filter housing, also known as plastic cartridge filter housing or plastic precision filters, is composed of an UPVC, PP, PVDF housing and filter bag, melt blown filter cartridges or high flow filter cartridges inside. The housing features stable structure, strong environmental adaptability and durability.

It is mainly installed after multi-media pretreatment filtration and before membrane filtration equipment such as reverse osmosis and ultrafiltration. It is used to filter out the residual trace suspended solids, colloids, microorganisms in the water, as well as fine materials (such as tiny quartz sand, activated carbon particles, etc.) after multi-media filtration, to ensure the water filtration accuracy and protect the membrane filtration element from damage by large particles. It has certain price advantages when compared with stainless steel filter housings and FRP filter housings.

Features

- Plastic filter housings have good corrosion resistance and can be used in acid and alkaline environments. It can be applied to fields where stainless steel and carbon steel cannot enter.
- The filter housing features compact structure, beautiful appearance, simple installation and operation, and small footprint.
- The filter housings adopt all-in-one molding and are produced in a standardized manner, which makes it easy to replace and maintain.
- The filter cover and the body are connected and sealed with wide threads or eyebolts, which not only ensures the intact sealing performance of the filter housing, but also brings convenience and speed to the disassembly and installation of the replacement filter cartridges.
- The pressure gauge and exhaust valve are separately installed to make operation easier and will not cause the pressure gauge vibrating when exhausting.

Category

By Filtration Mode

- Inside-out filter housing.
  Inside-out type refers to liquid flows from the filter cartridge inside to the outside and impurities are retained inside

- Outside-in filter housing.
  Outside-in type refers to liquid flows from outside to inside and impurities are retained outside of the filter cartridge.

By Material

- UPVC (rigid polyvinyl chloride) filter housing.
  It features strong corrosion resistance, low fluid resistance, high mechanical strength and good water tightness.
- PP (polypropylene) filter housing.
  It has good impact strength, good chemical stability and good anti-corrosion effect.
- PVDF (polyvinylidene fluoride) filter housing.
  In addition to good chemical resistance and high temperature resistance, it also has good oxidation resistance, weather resistance and corrosion resistance.

By Structure

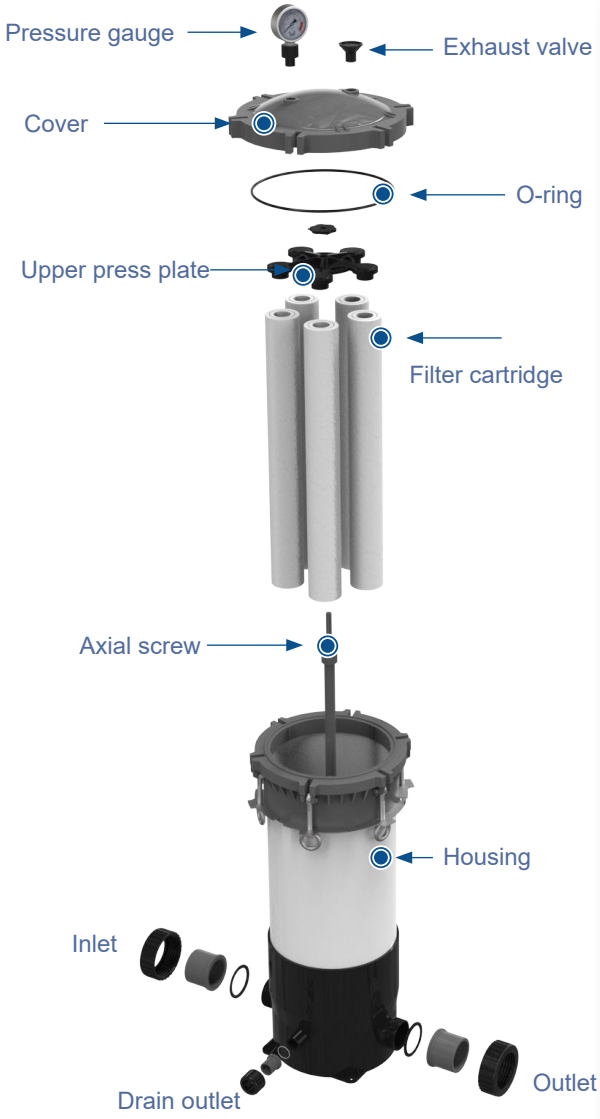
Bag filter housing
Work with filter bags

Cartridge filter housing
Work with DOE filter cartridges.

High flow cartridge filter housing
Work with high flow filter cartridges

UPVC Cartridge Filter Housing
(3 elements /5 elements)

UPVC cartridge filter housing is made of UPVC and has a maximum working temperature of 45 °C. Filter housing bottom system and top cartridge positioning press plate adopt all-in-one design, which makes the cartridge installation easier while pressing the cartridge tightly to avoid internal leakage. The filter housing can accommodate 3 or 5 DOE flat type cartridges (or cartridges with standard 222 connector) with an inner diameter of 28 mm and an outer diameter of 60–70 mm. It has achieved 0-0.6 MPa 100,000 times recycle fatigue test successfully.



A Series

- Seal type: wide thread
- Pressure gauge type: stainless steel pressure gauge
- Working pressure: 0.4 MPa

B Series

B-P1

- Seal type: stainless steel 304/316 bolts
- Pressure gauge type: stainless steel pressure gauge
- Working pressure: 0.6 MPa

B-P2

- Seal type: stainless steel 304/316 bolts
- Pressure gauge type: PP diaphragm pressure gauge
- Working pressure: 0.6 MPa

C Series

C-P1

- Seal type: stainless steel 304/316 bolts
- Pressure gauge type: stainless steel pressure gauge
- Working pressure: 0.6 MPa

C-P2

- Seal type: stainless steel 304/316 bolts
- Pressure gauge type: PP diaphragm pressure gauge
- Working pressure: 0.6 MPa

Sealing Material: EPDM/Silicon/Viton

Thread for exhaust hole and pressure gauge mounting hole is G1/4" and an adapter is required for metric pressure gauge.

Pressure Gauge Type

It can be used for the pressure measurement of nitric acid, phosphoric acid, strong base liquids.

It can be used for the pressure measurement of medium with strong corrosion, high viscosity, easy to crystallize, easy to solidify, and suspended solids.

If you want to order pressure gauges, please inform of us when ordering.

Cartridge Connector Type

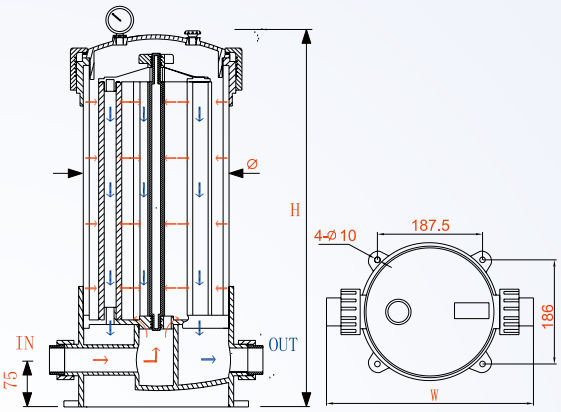
DOE flat cartridge

222 fin end cap cartridge

Working Principle

It adopts outside–in filtration mode. The raw liquid flows into the filter housing from the inlet, and the filter cartridge uses tiny pores for mechanical filtration. Under the action of pressure, the raw liquid passes through the filter material, filter residue is left on the wall of the cartridge, and filtrate flows out through the cartridge to achieve the purpose of filtration. The design of water entering from the bottom center and moving upward makes the water evenly distributed on the cartridge and the cartridge will not deform because of water impact, causing internal leakage. Besides, it is also conducive to discharge the air in the filter housing.

As time goes by, its operating resistance gradually rises due to the pollution of the intercepted materials. When the water pressure difference between the inlet and outlet is higher than the normal working value, the cartridge should be replaced.



SW–HPCF–5DC1

Brand	Product Series	No. Of Cartridge	Cartridge Size
Snowate	Cartridge filter housing	5	1-10" / 2-20" / 3-30" / 4-40"

Model	Housing Size (mm)	Cartridge Size	Reference Volume (T/H)
SW-HPCF-3DC1	Ø225–H465	10"	1–1.5
SW-HPCF-3DC2	Ø225–H715	20"	2.2–3
SW-HPCF-3DC3	Ø225–H965	30"	3.4–4.5
SW-HPCF-3DC4	Ø225–H1215	40"	4.5–6
SW-HPCF-5DC1	Ø225–H465	10"	2–2.5
SW-HPCF-5DC2	Ø225–H715	20"	3.7–5
SW-HPCF-5DC3	Ø225–H965	30"	5.6–7.5
SW-HPCF-5DC4	Ø225–H1215	40"	7.5–10

In/Out(mm): DN40/ANSI 1.5"(W= 365mm) OR DN50/ANSI 2"(W= 540mm)
Drain outlet: DIN1/2" or ANSI1/2"

40'' Filter Cartridge (5μm): 1.5-2T/H

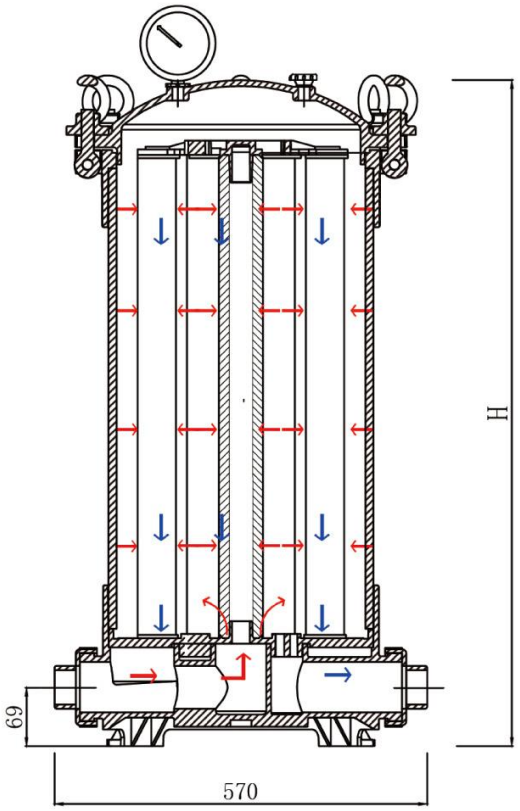
UPVC Cartridge Filter Housing
(8 elements /9 elements)

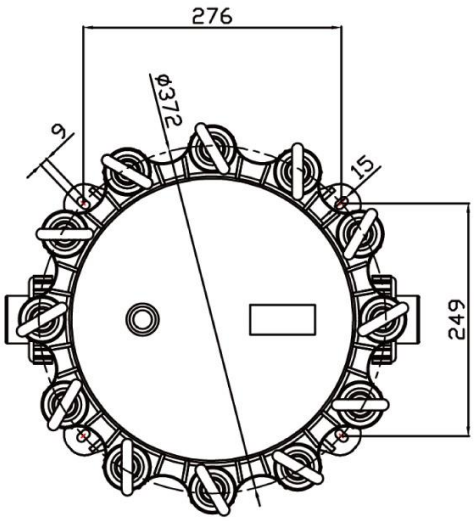
UPVC cartridge filter housing adopts bottom and top cartridge positioning press plate all-in-one design, which makes the cartridge installation easier while pressing the cartridge tightly to avoid internal leakage. The filter housing can accommodate 8 or 9 DOE flat type cartridges (or cartridges with standard 222 connector) with an inner diameter of 28 mm and an outer diameter of 60–70 mm.

Maximum working temperature: 45 °C. It has achieved 0-0.6 MPa 100,000 times recycle fatigue test successfully.

Working Principle

It adopts outside–in filtration mode. The raw liquid flows into the filter housing from the inlet, and the cartridge uses tiny pores for mechanical filtration. Under the action of pressure, the raw liquid passes through the filter material, filter residue is left on the wall of the cartridge, and filtrate flows out through the cartridge to achieve the purpose of filtration. The design of water entering from the bottom center and moving upward makes the water evenly distributed on the cartridge and the cartridge will not deform because of water impact, causing internal leakage. Besides, it is also conducive to discharge the air in the filter housing.





As time goes by, its operating resistance gradually rises due to the pollution of the intercepted materials. When the water pressure difference between the inlet and outlet is higher than the normal working value, the cartridge should be replaced.

Bolt & Pressure Gauge Type

B-P1

SS316 bolts – stainless steel pressure gauge

B-P2

SS316 bolts – PP diaphragm pressure gauge

Thread for exhaust hole and pressure gauge mounting hole is G1/4" and an adapter is required for metric pressure gauge. If you need pressure gauge, please inform of us when ordering.

SW–HPCF–9DC2

Brand	Product Series	No. Of Cartridge	Cartridge Size
Snowate	Cartridge filter housing	9	2-20" / 3-30" / 4-40"

Model	Housing Size (mm)	Cartridge Size	Reference Volume (T/H)
SW-HPCF-8DC2	Ø315–H745	20"	6–8
SW-HPCF-8DC3	Ø315–H995	30"	9–12
SW-HPCF-8DC4	Ø315–H1245	40"	12–16
SW-HPCF-9DC2	Ø315–H745	20"	6.7–9
SW-HPCF-9DC3	Ø315–H995	30"	10–13.5
SW-HPCF-9DC4	Ø315–H1245	40"	13.5–18

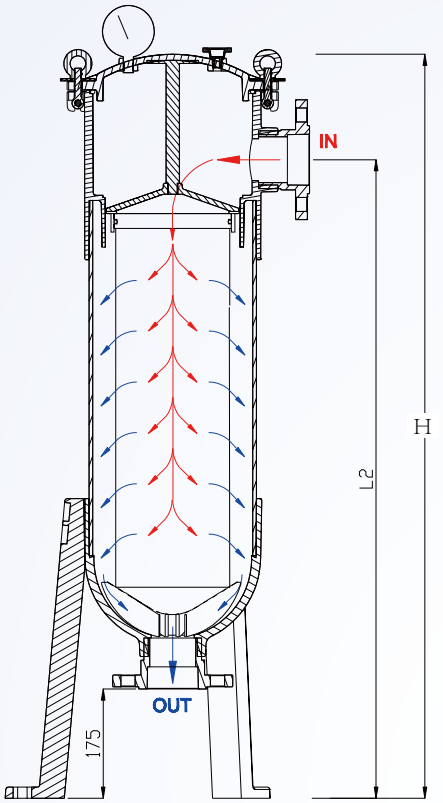
Inlet & outlet: DN80 or ANSI3".
Drain outlet: DIN1/2" or ANSI1/2".
Maximum working pressure: 0.6 MPa (86 PSI)

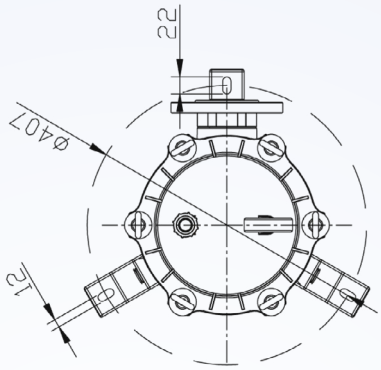
40'' Filter Cartridge (5μm): 1.5-2T/H

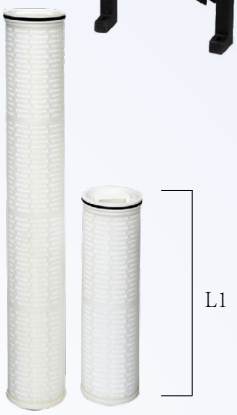
UPVC High Flow Cartridge Filter Housing

UPVC high flow cartridge filter housing can accommodate one PALL high flow filter cartridge, featuring high flow and long service life. UPVC filter housing has excellent corrosion resistance and can be applied to fields where stainless steel and carbon steel cannot enter. It can be widely used in sewage and wastewater reuse, seawater desalinization, brackish water treatment, acid-base liquid filtration, agricultural irrigation, swimming pools, etc.

The highest of working temperature is 45°C,







Working Principle

It adopts inside–out filtration mode.The raw liquid flows into the filter cartridge from the inlet, and the filter cartridge uses tiny pores for mechanical filtration. Under the action of pressure, the filtrate flows out through the filter cartridge and flows into the designated container through the outlet of the filter housing, while the impurities are retained in the filter cartridge.

High flow filter cartridges have a long service life, generally 3—4 times higher than ordinary filter cartridge. It has a larger filter area and a higher flow rate than ordinary filter cartridge in the housing of the same size.

Pressure Gauge Type

It can be used for the pressure measurement of nitric acid, phosphoric acid, strong base liquids.

PP diaphragm pressure gauge can be used for the pressure measurement of medium with strong corrosion, high viscosity, easy to crystallize, easy to solidify, and suspended solids.

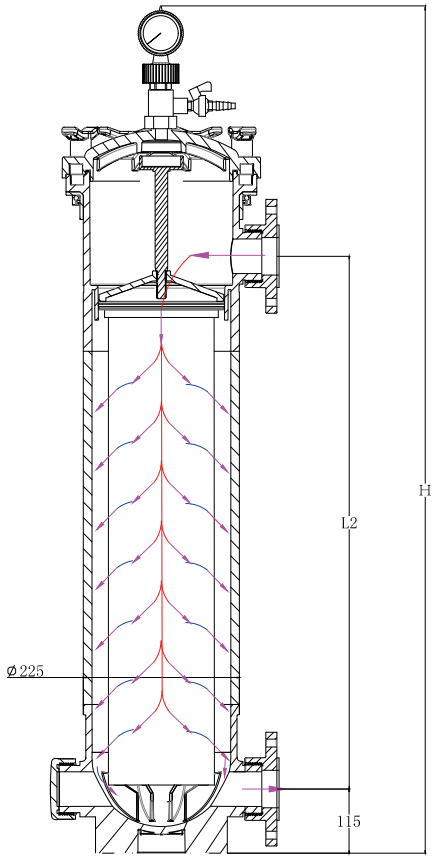
The size of the two holes in the lid of the filter is G1/4". If the thread of the pressure gauge is metric standard,should add an adaptor. If need pressure gauge, please note clearly on the order.

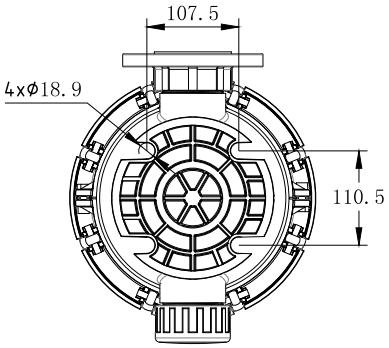
Model	Housing Size (mm)	Cartridge Height L1 (mm)	Inlet Height L2 (mm)	Reference Volume (T/H)
SW-PF20	Ø225-H1070	525	905	10–15
SW-PF40	Ø225-H1560	1015	1395	15–20

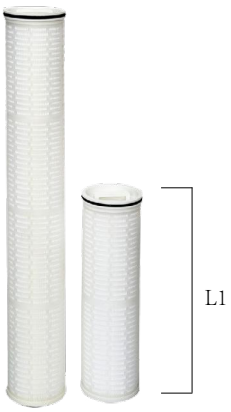
Inlet & outlet: FLG:DN50 or ANSI2"
Maximum working pressure: 0.7 MPa (100 PSI)

PP/PVDF High Flow Cartridge Filter Housing

PP/PVDF high flow cartridge filter housing adopts side-in and side-out C-type structure design, and is provided with PP diaphragm pressure gauge and sampling valve as standard configuration. Made of PP/PVDF, its pressure resistance and high temperature resistance are higher than that of UPVC filter housing. It has good corrosion resistance, acid and alkali resistance, and organic solvent resistance, and can accommodate one PALL high flow filter cartridge. PP Filter housing can withstand a pressure of 0.8 MPa and a temperature of up to 65 °C. PVDF filter housing can withstand a pressure of 1.0 MPa and a temperature of up to 100 °C. It can be used in chemical, electroplating and other applications where chemical analysis of medium samples is often required. It has achieved 0-0.8 MPa 100,000 times recycle fatigue test successfully.







Working Principle

It adopts inside–out filtration mode.The raw liquid flows into the filter cartridge from the inlet, and the filter cartridge uses tiny pores for mechanical filtration. Under the action of pressure, the filtrate flows out through the filter cartridge and flows into the designated container through the outlet of the filter housing, while the impurities are retained in the filter cartridge.

High flow filter cartridges have a long service life, generally 3—4 times higher than ordinary filter cartridge. It has a larger filter area and a higher flow rate than ordinary filter cartridge in the housing of the same size.

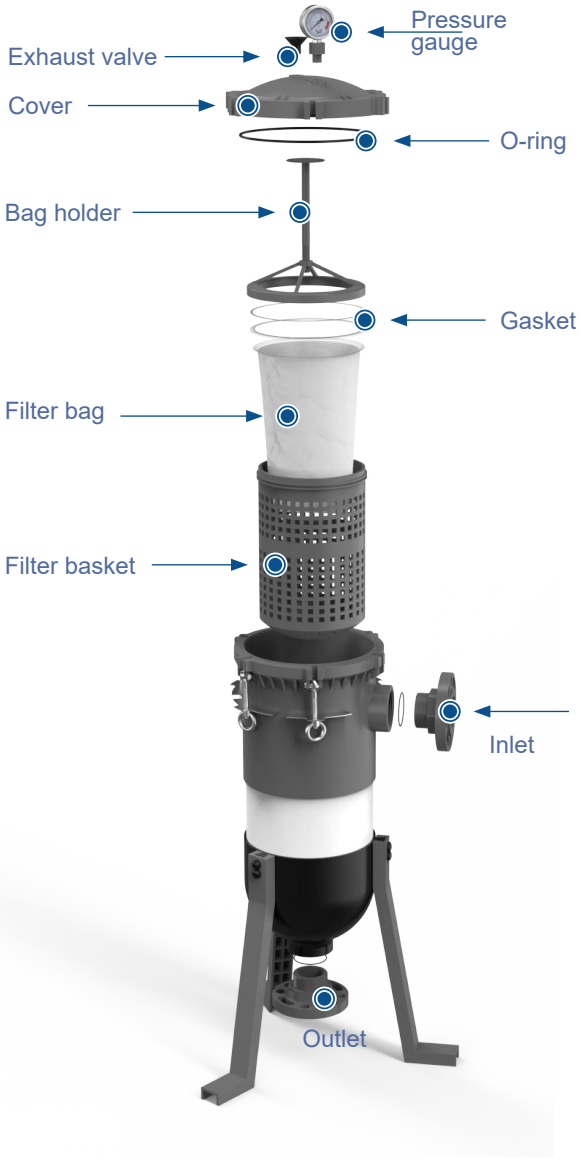
Model	Material	Housing Size (mm)	Cartridge Height L1 (mm)	Inlet Height L2 (mm)	Reference Volume (T/H)
SW-PF20-C	PP/PVDF	Ø225-H1110	525	596±3	10–15
SW-PF40-C		Ø225-H1590	1015	1078±3	20–25

FLG: DN50/ANSI2"; DN80/ANSI3"
Max pressure: PP: 0.8MPA(116PSI); PVDF: 1.0MPA(150PSI)

UPVC Bag Filter Housing

UPVC bag filter housing is a kind of multi-purpose filtration equipment featuring novel structure, small size, easy and flexible operation, energy saving, high efficiency, and strong applicability. UPVC filter housing has good corrosion resistance and can withstand up to 45 °C working temperature.

It can be widely used in sewage treatment, reclaimed water reuse, acid-base liquid filtration, agricultural irrigation, swimming pool, etc. It has achieved 0-0.6 MPa 100, 000 times recycle fatigue test successfully.



Cover Type

A Series Cover

- Wide thread connection and sealing, cover opens easily.
- Working pressure 0.4 MPa.

B Series Cover

- Eyebolt sealing, higher pressure resistance.
- Working pressure 0.7 MPa

Thread for exhaust hole and pressure gauge mounting hole is G1/4" and an adapter is required for metric pressure gauge.

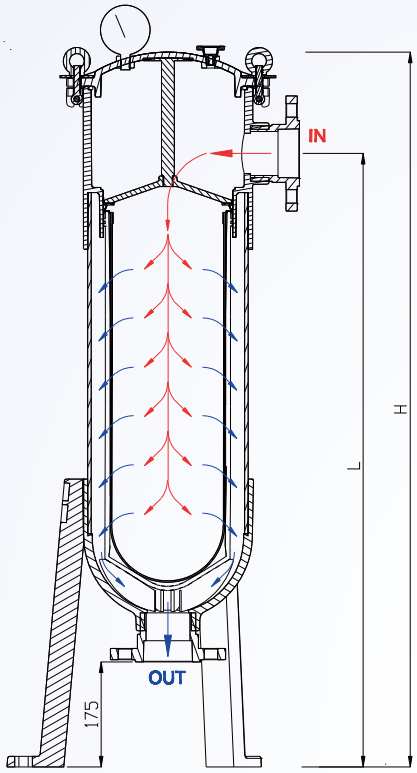
Pressure Gauge Type

It can be used for the pressure measurement of nitric acid, phosphoric acid, strong base liquids.

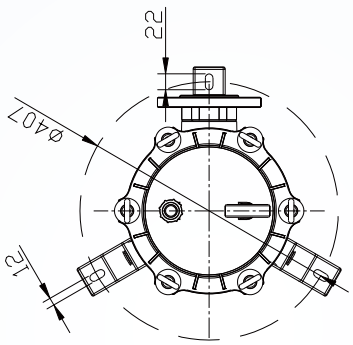
PP diaphragm pressure gauge can be used for the pressure measurement of medium with strong corrosion, high viscosity, easy to crystallize, easy to solidify, and suspended solids.

If you want to order pressure gauges, please inform of us when ordering.

Working Principle



The raw liquid flows into the filter bag from the inlet, and the filter bag uses tiny pores to mechanically filter the raw liquid. Under the action of pressure, the filtrate flows out through the filter bag and flows into the designated container through the outlet of the filter housing, while the impurities are retained in the filter bag. As time goes by, its operating resistance gradually rises due to the pollution of the intercepted materials. When the water pressure difference between the inlet and outlet is higher than the normal working value, the filter bag should be replaced. The filter can continue to operate after the filter bag is replaced.



- High precision, the filter rating ranges from 0.5 μm to 200 μm.
- High flow treatment capacity per unit filter area, high dirt holding capacity, high filtration efficiency.
- 1#, 2# filter bags made of various materials and precision can be installed in the filter housing.
- Unique structure design is adopted to prevent the filter bags from falling into the filter basket and ensures 100% leakage free.

SW–BF–1–1–A

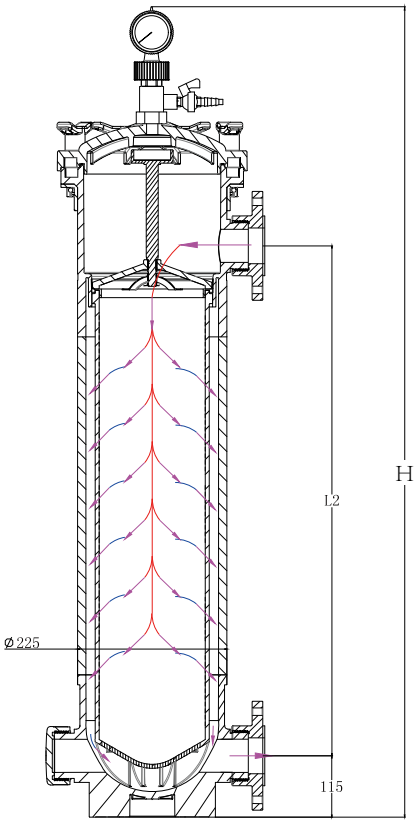
Brand	Product Category	No. Of Filter Bags	Filter Bag Model	Cover Type
Snowate	Bag filter housing	Single filter bag	1-1# filter bag 2-2# filter bag	A-Thread connection B-Bolt connection

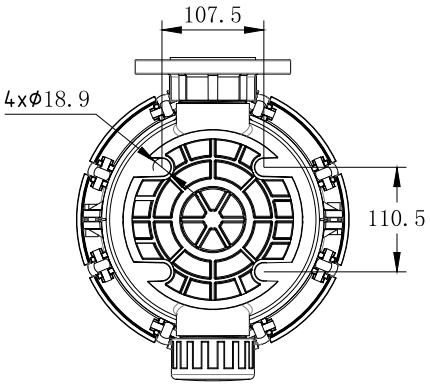
Model	Housing Size (mm)	Filter Bag Size D × H (mm)	Inlet Height L (mm)	Maximum Working Pressure	Reference Volume (T/H)
SW-BF-1-1-A	Ø225–H805	D(178) × H(17"/419)	650	0.4 MPa (58 PSI)	10–15
SW-BF-1-2-A	Ø225–H1190	D(178) × H(32"/813)	1035		15–20
SW-BF-1-1-B	Ø225–H820	D(178) × H(17"/419)	685	0.7 MPa (102 PSI)	10–15
SW-BF-1-2-B	Ø225–H1200	D(178) × H(32"/813)	1065		15–20

Inlet & Outlet: flange FLG:DN50/ANSI2"

PP/PVDF Bag Filter Housing

PP/PVDF bag filter housing adopts side-in and side-out C-type structure design, and is provided with PP diaphragm pressure gauge and sampling valve as standard configuration. Made of PP/PVDF, its pressure resistance and high temperature resistance are higher than that of UPVC filter housing. It has good corrosion resistance, acid and alkali resistance, and organic solvent resistance. PP Filter housing can withstand a pressure of 0.8 MPa and a temperature of up to 65 °C. PVDF filter housing can withstand a pressure of 1.0 MPa and a temperature of up to 100 °C. It can be used in chemical, electroplating and other applications where chemical analysis of medium samples is often required. It has achieved 0-0.8 MPa 100,000 times recycle fatigue test successfully.





Working Principle

The raw liquid flows into the filter bag from the inlet, and the filter bag uses tiny pores to mechanically filter the raw liquid. Under the action of pressure, the filtrate flows out through the filter bag and flows into the designated container through the outlet of the filter, while the impurities are retained in the filter bag. As time goes by, its operating resistance gradually rises due to the pollution of the intercepted materials. When the water pressure difference between the inlet and outlet is higher than the normal working value, the filter bag should be replaced. The filter can continue to operate after the filter bag is replaced. The filter housing can accommodate a 1#, 2# filter bag made of various materials and precision.

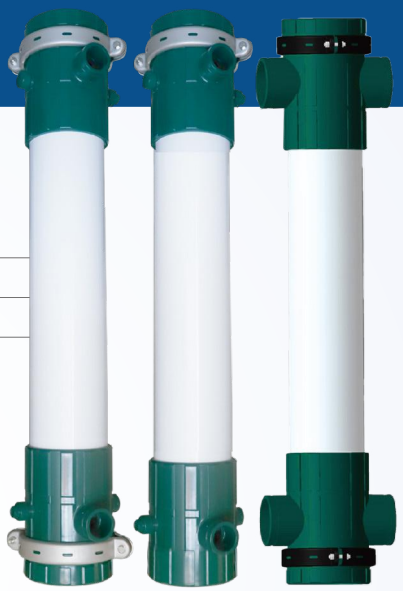
SW–BF–C–1–PP

Brand	Product Category	Filter Housing Structure	Filter Bag Model	Housing Material
Snowate	Bag filter housing	C-type	1-1# filter bag 2-2# filter bag	PP / PVDF

Model	Housing Size (mm)	Filter Bag Size D × H (mm)	Inlet Height L2 (mm)	Maximum Working Pressure	Reference Volume (T/H)
SW-BF-C-1-PP	Ø225–H900	D(178) × H(17"/419)	387	0.8 MPa (116 PSI)	10–15
SW-BF-C-2-PP	Ø225–H1270	D(178) × H(32"/813)	757		20–25
SW-BF-C-1-PVDF	Ø225–H900	D(178) × H(17"/419)	387	1.0 MPa (150 PSI)	10–15
SW-BF-C-2-PVDF	Ø225–H1270	D(178) × H(32"/813)	757		20–25

Inlet & Outlet: flange FLG:DN50/ANSI2"; DN80/ANSI3"

High flow cartridge filter housing



Dimension

In/Out	3''/4''/6'' clamp
Vent	1/4" Female
Drain	1/4" Female
End cover installation	Quick coupling

Material

Body	UPVC
Quick coupling	SS304
O-Ring	EPDM

Design parameters

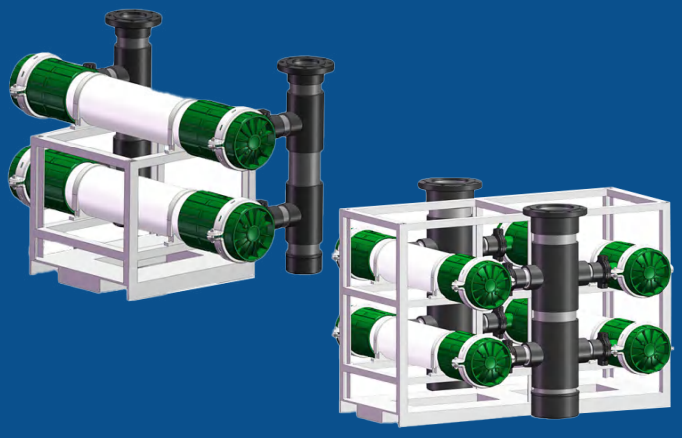
Max working pressure	6 bar
Hydraulic test pressure	15 bar
Max working temperature	45 °C
Life test	100,000 cycles from 0 bar to 6 bar
PH	2-12

Type	Flowrate (m^3/h)	In/Out	Dimension (mm)	Length	Qty of element
SW-HPCF-HPF20	10-20	3"/3"	375x985	20"	1
SW-HPCF-HPF40	20-40	3'' /3'' 4'' /4'' 6'' /6''	375x1475	40"	1
SW-HPCF-HPF60	30-60		375x1985	60"	1

High flow Skid package units

Product Merits:

- Higher design strength standard, through 0.6MPA, 100,000 fatigue strength verification.
- More convenient to install and maintenance, multiple choice of drain and discharge pressure interface.
- Price is more competitive, especially for large sea water desalination and waste water reuse projects.
- Superior anti-corrosion performance, flow passage components are all made by UPVC/CPVC.
- 20", 40", 60" large flux folding filter element is suitable for this housing.
- The end cover adopts the form of quick coupling, easy to remove and replace the filter element.
- The inlet & outlet and the shell are integrated. Compared with the FRP filter, which inlet and outlet are made of plastic connector, and the mechanical seal is used for the connection of the shell, there will be a risk of leakage.



Application field:

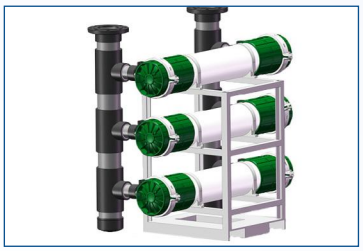
- Brackish water, sea water desalination
- Bottled water, pure water production
- Waste water,sewage reuse
- Circulating cooling water reuse
- Corrosive liquid filtration
- Pool,aquarium filtration
- Agricultural flower drip irrigation water filtration

High Flow Skid Package Units

Modular features:

- Standard modular design;different flow design can be combined arbitrarily
- High flow rate, small footprint

SW-HPCF-HPF40×2
SW-HPCF-HPF60×2



SW-HPCF-HPF40×3
SW-HPCF-HPF60×3

SW-HPCF-HPF40×4
SW-HPCF-HPF60×4

SW-HPCF-HPF40×6
SW-HPCF-HPF60×6

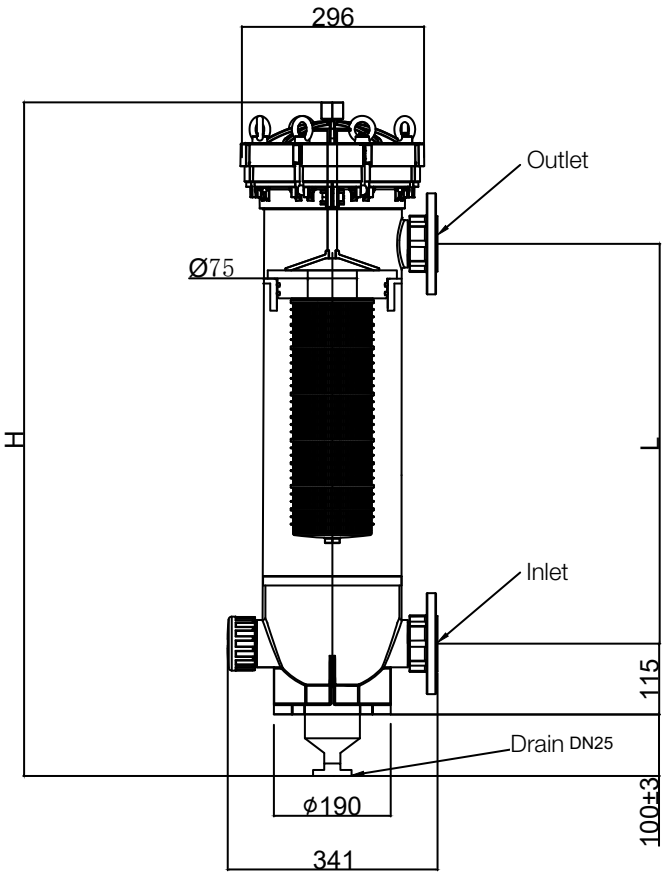
SW-HPCF-HPF40×8

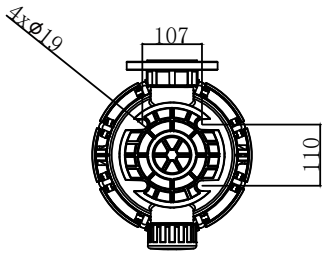
Type	Flowrate (m^3/h)	In/Out	Length	Qty of Element
SW-HPCF-HPF40×2	40–80	DN125	40"	2
SW-HPCF-HPF40×3	60–120	DN150	40"	3
SW-HPCF-HPF40×4	80–160	DN200	40"	4
SW-HPCF-HPF40×6	120–240	DN200	40"	6
SW-HPCF-HPF40×8	160–320	DN250	40"	8
SW-HPCF-HPF60×2	60–120	DN150	60"	2
SW-HPCF-HPF60×3	90–180	DN200	60"	3
SW-HPCF-HPF60×4	120–240	DN200	60"	4
SW-HPCF-HPF60×6	180–360	DN300	60"	6

Resin Trap

The Resin Trap is mainly installed on the water system pipeline at the outlet of equipment containing resin |such as ion exchangers. When the nozzle or the water distributor are damaged, resulting in the leakage of resin passing through, it can be intercepted and captured by the Resin Trap to avoid affecting the downstream system.

The Resin Trap is made of Polypropylene (PP) can be acid and alkali resistant, corrosion resistant, high temperature resistant, usually used in industries such as softened water, fermentation industry, chemical industry,the Extraction of Lithium from the Salt Lake Brine etc.





Model	Material	Housing Size (mm)	Inlet Height L (mm)	Inlet & Outlet (mm)	Drain (mm)	Max pressure	Reference Volume (T/H)
SW-HPRT-50	PP	Ø225-H950	500	FLG: DN50	FLG: DN25	0.8MPA (116PSI)	10–20
SW-HPRT-80		Ø225-H1110	650	FLG: DN80	FLG: DN25		20–40

Filtration precision ≤ 0.25mm; customized filtration precision is also available.

Resin Trap

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The Resin Trap is made of Polypropylene (PP) / PVC-C, can be acid and alkali resistant, corrosion resistant, high temperature resistant, usually used in industries such as softened water, fermentation industry, chemical industry,the Extraction of Lithium from the Salt Lake Brine etc.

Model	Material	Inlet & Outlet (mm)	Max pressure	Reference Volume (T/H)
SW-HPRT-4	PPH/PVC-C	FLG: DN65/DN80/DN100/DN125	0.8MPA (116PSI)	40–60

Filtration precision ≤ 0.25mm; customized filtration precision is also available.

Related Products

Filter bag

High flow filter cartridge

PP string wound filter cartridge

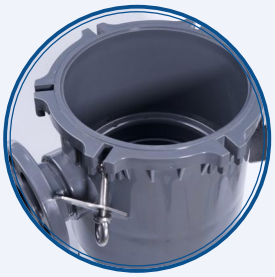
FRP membrane housing

Stainless steel membrane housing

FRP tank

Bag Filter Housing Installation & Filter Bag Replacement

1 Clean the gasket and the hold down groove.



2 Put the filter bag holder onto the filter bag neck ring and hold down the filter bag neck ring.

3 Put the crescent fixing rings into the housing grooves and fix them with fastening screws.

4 Connect the filter cover with the filter housing. Install pressure gauge connector and pressure gauge.

Filter Bag Replacement

1.Stop the water pump operating, close the inlet and outlet valve, open the drain valve and drain out all liquids in the filter housing.
2.Open the filter cover and take out the filter bag.
3.Clean all components in the bag filter housing.
4.Install new filter bags in accordance with the installation steps mentioned above.

Cartridge Filter Housing Installation & Filter Cartridge Replacement

1

1.Clean the gasket and the hold down groove.

2

Insert the filter cartridge into the sealed tray to ensure there is no gap between the filter cartridge and the base.

3

Put the upper hold down plate onto the filter cartridge and hold down the filter cartridges tightly.

4

Connect the filter cover with the filter housing. Install pressure gauge connector and pressure gauge.

Filter Cartridge Replacement

1. Stop the water pump operating, close the inlet and outlet valve, open the drain valve and drain out all liquids in the filter housing.
2. Open the filter cover and unscrew the hold down plate.
3. Take out the filter cartridge and clean all components in the bag filter housing.
4. Install new filter bags in accordance with the installation steps mentioned above.

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