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HANKE FILTER

One-Stop Process Filtration Solution Provider
Trustworthy Filtration Expert & Partner





Trustworthy Filtration

Expert & Partner



HANKE Filter

Anping Hanke Filter Technology Co., Ltd

Hanke is a professional one-stop process filtration provider specializing in providing customers with a wide range of filters and supporting filter elements, process filtration solutions, filter design and batch production services.

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10 YEARS' Experience

Established in December 2011

Hanke is a comprehensive high-tech company integrating filter design, R&D, production and sales and mainly supplies a wide range of filters and supporting filter elements.

FILTRATION Solution Provider

At Hanke, we aim to be a world-leading process filtration solution provider. We work to optimize our customers production process and improve their operational efficiency with our advanced filtration facilities. In addition, we lay emphasis on environmental protection, and follow the path of sustainable development.



HANKE FILTER ONE-STOP PROCESS FILTRATION SOLUTION PROVIDER

Anping Hanke Filter Technology Co., Ltd (Hanke) is a professional one-stop process filtration provider specializing in providing customers with a wide range of filters and supporting filter elements, process filtration solutions, filter design and batch production services.

Established in December 2011, Hanke is a comprehensive high-tech company integrating filter design, R&D, production and sales and mainly supplies a wide range of filters and supporting filter elements. Our products are exported to dozens of countries including the US, South Korea, Japan and Germany and are widely used in fine chemicals, oil & gas, water treatment and other industrial fields.

At Hanke, we aim to be a world-leading process filtration solution provider. We work to optimize our customers production process and improve their operational efficiency with our advanced filtration facilities. In addition, we lay emphasis on environmental protection, and follow the path of sustainable development.



Filter housing production



Stainless steel cartridge production



Filter packaging



Workshop

MAIN PRODUCTS

Filter and supporting filter elements:

- Basket strainers
- Bag filters
- Self-cleaning filters
- Candle filters
- Pressure leaf filters
- Cartridge filters.

SERVICE ADVANTAGES

- Provide tailor-made filtration solutions and optimize production process.
- Supply a diversity of filters and all-around services.
- Have strong design and R&D capacities to meet and even exceed customer expectations.
- Sufficient filter and replacement filter element stocks to ensure stable and smooth operation.





Hanke Filter

APPLICATION



Oil & Gas



Metallurgy



Machining



Water Treatment



Fine Chemicals



Pulp & Paper



Pharmaceuticals



Marine Filtration System



Food & Beverage

APPLICATION

R&D

Since its establishment, Hanke has strictly implemented ISO 9001 quality management system operating procedures and quality control is put in place throughout the entire production and sales process. From raw material selection, production process control, finished product inspection and scientific after-sales processing, we do everything we can to make it better.



- Filter element for light rail brake systems
- Filter elements made of replaceable materials
- Gas filter
- Glue filter
- Plastic Extruder Screen
- Plastic extruder screen structure



- ISO 9001 Certificate



- Perforated metal welding process test report
- Steel plate welding process test report

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Basket Strainers

Basket strainer is a filter commonly used in pipeline systems to filter out particulate impurities in liquid and gas. It is composed of a stainless steel or carbon steel housing and one or more strainer baskets, and is widely used in oil & gas, water treatment, marine filtration system, fine chemicals, machining, metallurgy, etc.



Basket Strainer

Taking basket strainers as filter elements, basket strainers are used to filter out particulate impurities from liquids and gases to protect liquid pipelines such as seawater, fuel oil and slurry pipelines, gas pipelines such as natural gas and argon pipelines, and fittings downstream.

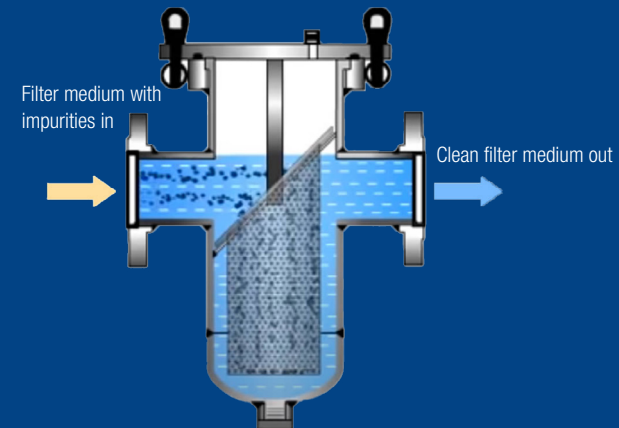
Features

- Stainless steel or carbon steel housing, or customized;
- Large screen area ensures efficient filtration with low pressure drop.
- Remove large particles, clean fluids and gases, and protect key devices.
- Easy to disassemble and clean, reusable.

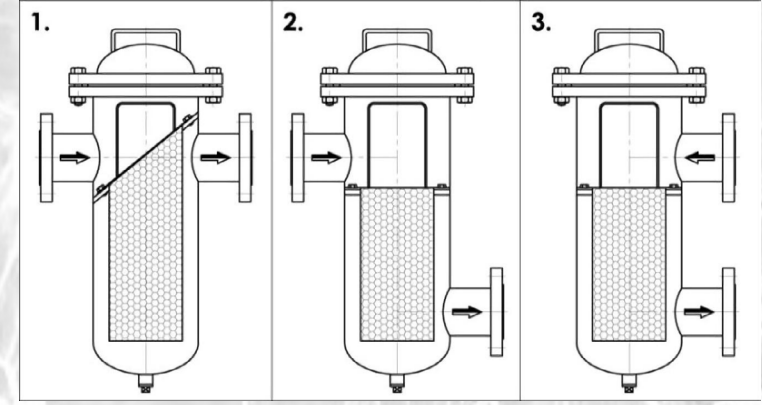
Working Principle

When the filter medium enters the chamber from the filter inlet, the solid impurity particles are retained in the filter basket and clean filtrate flows out from the filter outlet.

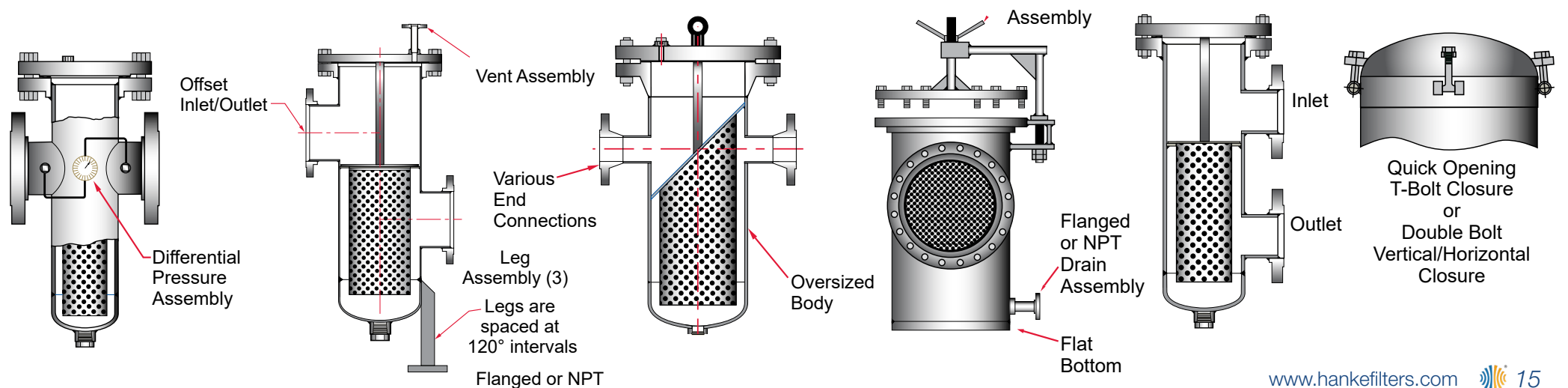
When cleaning or replacing the filter basket, close the pipeline system, unscrew the drain plug at the bottom of the main pipe and drain the fluid. And then open the filter cover, re-install the filter basket after cleaning, and fasten the filter housing and filter cover.



Nozzle Type



Custom Strainer Options



✧ Specification

Housing material: ● Carbon steel ● Stainless steel ● Customized.

Filtration efficiency: 95% **Filter rating:** 10 μ m \rightarrow 5000 μ m **Operating pressure:** 0.6 MPa \rightarrow 1.6 MPa

Nominal diameter: DN 15–400 mm (1/2" – 16"), or customized upon request.

Seal type: O-ring or flat gasket

Sealing material: NBR gasket, PTFE gasket, metal gasket

Surface treatment: Carbon steel: anti-corrosion paint;
Stainless steel: acid dipping or anti-corrosion paint

Connection type: Flange, female thread, male thread, quick opening clamp.

Lid / Cover type: Swing bolts, flange, etc.

Usage type: Liquid filtration

Operating temperature:

Carbon steel
30 °C \rightarrow 350 °C
Stainless steel
-80 °C \rightarrow 480 °C

Strainer Basket

Strainer basket is the most important element of the basket strainer as it intercepts the solid particle impurities entering the filter. The top of strainer baskets is available in both flat and slanted types and in both single layer and double layer structures.



★ Features

Material: ● stainless steel ● carbon steel ✂ special materials are available upon request

Category: 📏 standard 📏 slanted filter baskets

Filter rating: 5 μm → 200 μm

Diameter & length: ✂ Customized upon request.

Structure: The handle design makes it is easy to install, remove and clean.

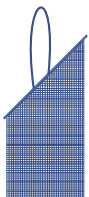
Application: Suitable for basket filters.

📏 Top Types

Standard strainer:
Suitable for basket strainers with a high inlet and a low outlet design;

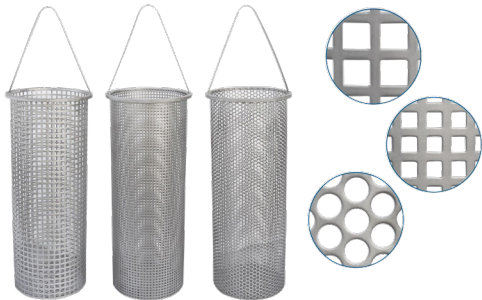


Slanted strainer baskets:
Suitable for simplex basket strainers with the inlet and outlet in the same height.

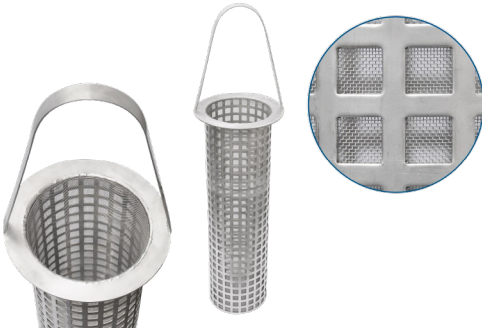


📏 Structure

Single layer strainer basket:
Poor structural strength and low filter rating, suitable for coarse filtration without large solid particles.



Double layer strainer basket:
Good structural strength and high filter rating, suitable for fine filtration applications.



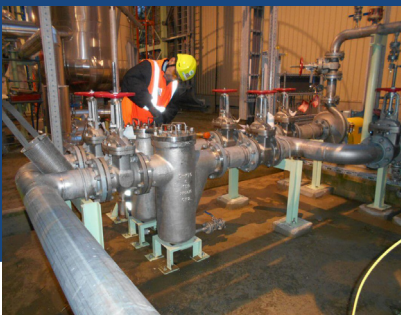
Application

Basket strainers are mainly used to remove rocks, sand, dirt, pipe scale, gravels and other solids from industrial liquids, gases, steam and water, and are widely used in the following industries.

- Oil & gas. Natural gas pipeline transportation and filtration;
- Water treatment. Raw water filtration; large farm irrigation water filtration; fire water filtration;
- Marine filtration systems. On-board freshwater system filtration, seawater valve box filters, fire line suction systems, bilge line filters, lubricating oil filters;
- Chemical. Cooling water filters and chemical process filters;
- Mining. Dewatering filters and process fluid filters;
- Metallurgy. Cooling water filters for rolling mills and furnaces.



For water treatment pipelines



For protecting flowmeter



For natural gas pipelines



For fire water pipelines





Bag Filters

Bag filter is one of the most economical filters with the combination of filter bag and reinforced metal basket as the filter element. It is commonly used for coarse filtration or pre-filtration of liquids and are widely used in fine chemicals, oil & gas, food & beverage, automobile manufacturing, pulp & paper, machining and other fields. Our bag filters include single bag filters, multi bag filters, duplex bag filters, filter bags and filter bag support baskets.



Filter Bag



Filter Bag Support Basket



Duplex Bag Filter



Single Bag Filter



Multi Bag Filter

Single Bag Filter

Single bag filter consists of a filter housing, a support basket and a filter bag and is suitable for solid filtration applications at low flow velocity range.

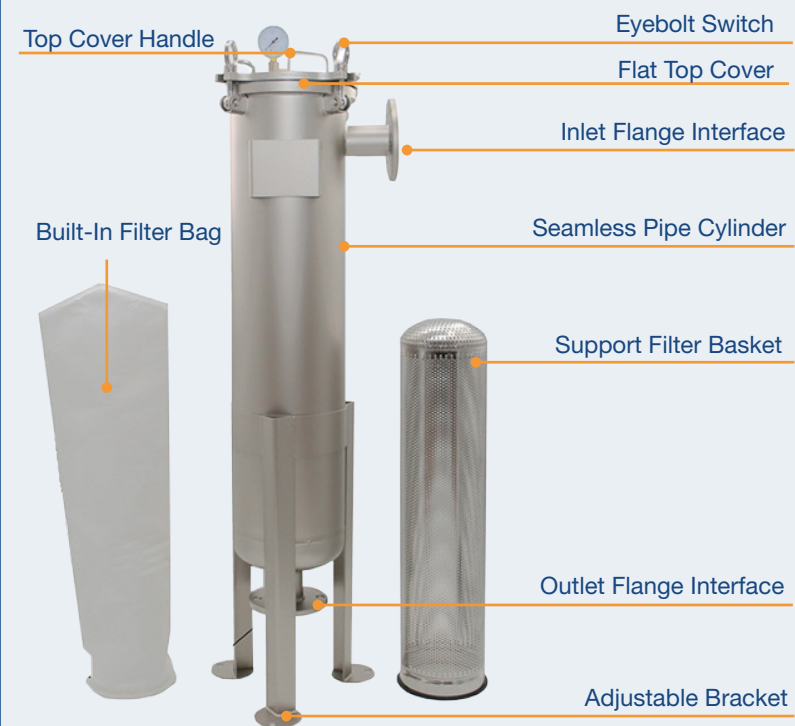
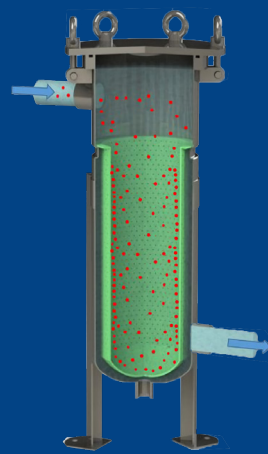
Features

- Carbon steel, SS304, SS316 filter housing, special materials are available upon request.
- Single filter bag structure, PE, PP, PA, PTFE and stainless steel filter bags for your option.
- Filter rating up to 0.5 – 1000 μm , flow rate up to 250 GPM
- An adjustable bracket is provided, as a result, the height of the filter is adjustable.

Working Principle



The position of the single bag filter inlet is higher than that of the filter bag. Filter medium flows into the filter bag from the inlet. After filtration, the impurities are trapped in the filter bag, and the clean filtrate flows out from the outlet along the fixed metal basket wall.

The filter bag needs to be replaced when the impurities on the filter bag build up into a filter cake and the differential pressure reaches 0.05-0.1 MPa. When replacing the filter bag, the filter system must be shut down for a period of time, open the pressure relief valve and filter cover, and reinstall the filter after replacing the filter bag. Filter bags can be reused after cleaning, but need to be replaced when damaged to a certain extent. Filter bags can be reused after cleaning, but need to be replaced when being damaged to a certain extent.



✧ Specification

Housing material: ● Carbon steel ● SS304 ● SS316

Support basket material:  Stainless steel woven wire mesh  Stainless steel perforated metal mesh

Filter rating: 0.5 μm → 1000 μm **Operating pressure:** 0 — 1.5 MPa

Bag type: Stainless steel, PE, PP, nylon or PTFE filter bags.

Surface treatment: Mirror polishing

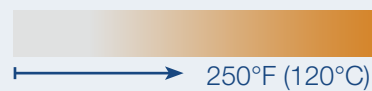
Gasket: EPDM, NBR, Viton, PEF, silica gel, etc.

Configurations: Side-in/side out and side-in/bottom-out.

Housing and cover connection: Eyebolt, eyebolt topline, V clamp

Installation: Flange connection, butt weld connection and threaded connection.

Operating temperature:



✧ Installation Instructions



step.1

Open the lid to the fullest extent.



step.2

Restraint baskets should be positioned in the housing.



step.3

Bag inserted into the holders and molded flush with the holder for complete support.



step.4

Center the collar of the bag on the holder rim to achieve a tight seal.

Maintenance

- The filter bag needs to be replaced when the impurities on the filter bag build up into a filter cake and the differential pressure reaches 0.05-0.1 MPa.
- As bag filters are frequently used, trapping a large quantity of impurities, as a result, regular inspection, maintenance and repair are required even the differential pressure is small.
- If the gasket is deformed, replace with a new one immediately.

Multi Bag Filter

Multi bag filter consists of a filter housing, multiple fixed baskets and multiple filter bags and is suitable for high flow fluid filtration with a flow rate of up to 2400 GPM.

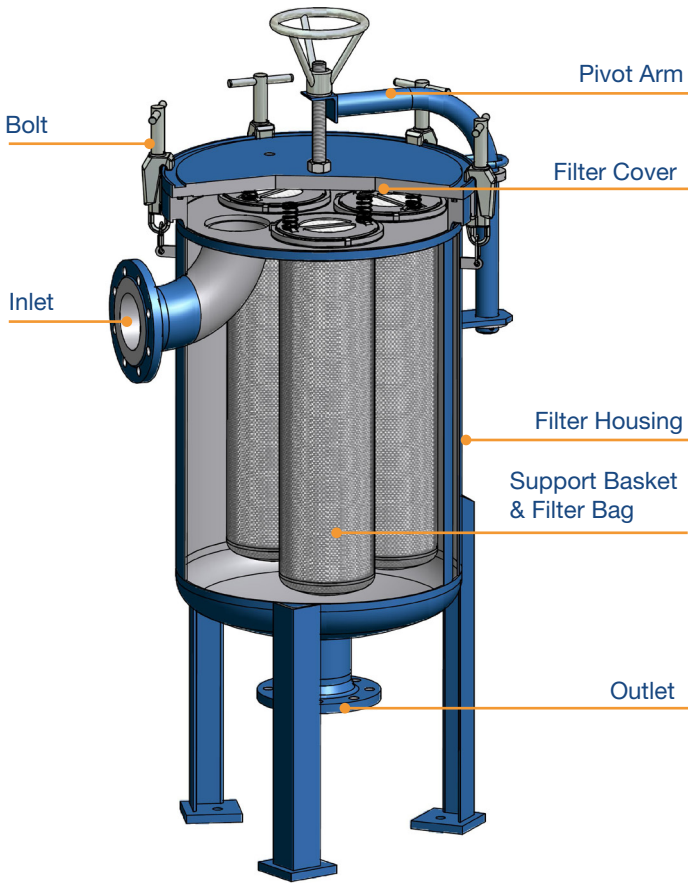
Features

- Material: carbon steel, SS 304, SS316, special materials are available upon request.
- Multi bag structure, PE, PP, PA, PTFE and stainless steel filter bags for your option.
- Filter rating up to 0.5 – 1000 μm , flow rate up to 2400 GPM

Working Principle

The position of the multi bag filter inlet is lower than that of filter bags. Filter medium enters from the inlet, reaches the top part of the housing above filter bags, flows downward and goes through filter bags for filtration. After filtration, impurities are trapped in filter bags, and the clean filtrate flows out from the outlet.



Filter bags need to be replaced when the impurities on filter bags build up into filter cakes and the differential pressure reaches 0.14–0.17 MPa. When replacing filter bags, you must shut down the filter system for a period of time, open the pressure relief valve and filter cover, and reinstall the filter after replacing filter bags. Filter bags can be reused after cleaning, but need to be replaced when damaged to a certain extent. Filter bags can be reused after cleaning, but need to be replaced when being damaged to a certain extent.



✧ Specification

We offer both standard and custom multi bag filters. Standard multi bag filter is provided with 2—24 filter bags while custom multi bag filter can accommodate up to 40 filter bags. For filters with a few filter bags, a handwheel and a swivel arm with standard bearings are provided to make filters easy to open and operate. For filters with 12 filter bags and above, pneumatic cylinders or hydraulic auxiliary devices may be selected as it makes filters open and close require one operator only. auxiliary devices include pressure relief valves, positioning pins, etc., to effectively ensure the safe operation of the equipment.

Housing material: ● Carbon steel ● SS304 ● SS316

Support basket material:  Stainless steel woven wire mesh  Stainless steel perforated metal mesh

Filter rating:  →  **Operating pressure:** 0 — 1.5 MPa

Bag type: Stainless steel, PE, PP, nylon or PTFE filter bags.

Surface treatment: Mirror polishing

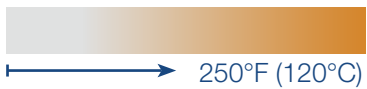
Gasket: EPDM, NBR, Viton, PEF, silica gel, etc.

Configurations: Side-in/side out and side-in/bottom-out.

Housing and cover connection: Eyebolt, flange and quick opening

Installation: Flange connection, butt weld connection and threaded connection.

Operating temperature:



✧ Maintenance

- The filter bag needs to be replaced when the impurities on the filter bag build up into a filter cake and the differential pressure reaches 0.14-0.17 MPa.
- As bag filters are frequently used, trapping a large quantity of impurities, as a result, regular inspection, maintenance and repair are required even the differential pressure is small.
- If the gasket is deformed, replace with a new one immediately.



Duplex Bag Filter

Duplex bag filter is a kind of filter that consists of 2 single bag filters and their inlets and outlets are connected together via butterfly valve and ball valves. This special design allows one bag filter to maintaining running when the other bag filter is in maintenance, thereby reducing the overall operating costs.

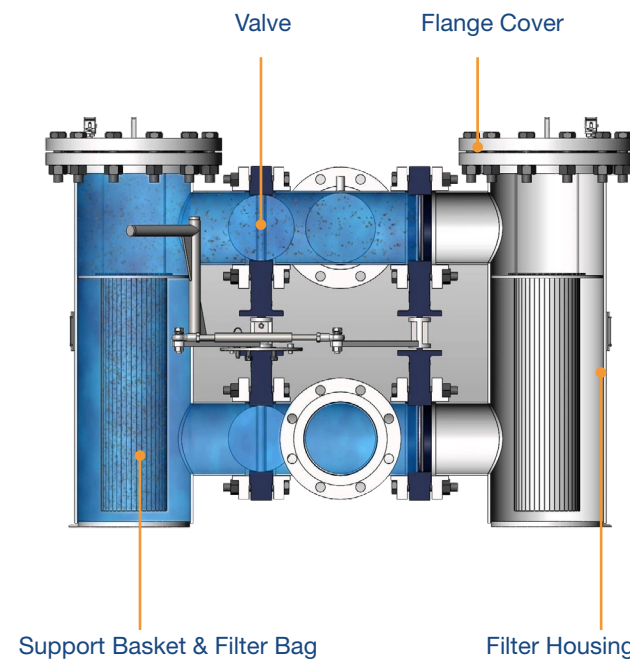
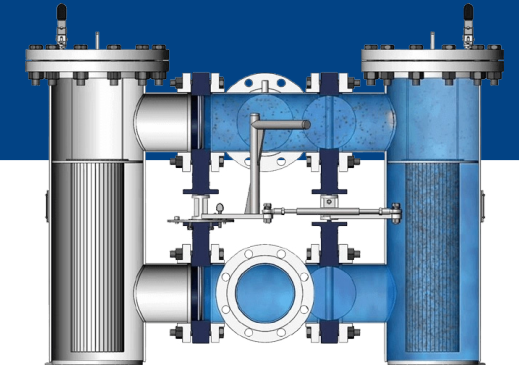
Features

- Allow continuous operation and reduce downtime.
- Filter rating: 0.5–800 μm
- Easy to install and replace filter bags, easy to operate
- An adjustable bracket is provided, as a result, the height of the filter is adjustable.
- Special materials and sizes are available upon request.

Working Principle

Duplex bag filter consists of 2 single bag filters connected together via valves. During the filtration, generally, one bag filter performs filtration and the other one works as a standby. The position of the inlet is higher than that of filter bags. Filter medium flows into the filter bag in service from the inlet. After filtration, the impurities are trapped in the filter bag, and the clean filtrate flows out from the outlet along the fixed metal basket wall.

When replacing the filter bag, you may close the filter on the side the filter bag needs to be replaced and open the standby filter for filtration. In this way, it ensures the system performs continuous filtration and reduces costly downtime.





✧ Specification

Housing material: ● Carbon steel ● SS304 ● SS316

Support basket material:  Stainless steel woven wire mesh  Stainless steel perforated metal mesh

Filter Rating:  $0.5 \mu\text{m}$ \rightarrow  $800 \mu\text{m}$ **Operating pressure:** 0 \rightarrow 150 MPa (10 bar)

Number of bags:  Two bags **Operating temperature:**  250°F (120°C)

Bag type: Stainless steel, PE, PP, nylon or PTFE filter bags.

Capacity: (50 gpm – 200 gpm per bag)

Gasket: EPDM, NBR, Viton, PEFE, silica gel, etc.

Surface treatment: Mirror polishing

Housing weight: 240 lb. (109 kg)



✧ Replacement

1. Cut off the water flow into the filter bag that needs to be replaced and drain it out.
2. Remove the filter cover and take out the dirty bag. It is recommended to check the filter basket and clean it as needed.
Put the cleaned basket and new bag back into the filter.
3. Check the O-ring at the top of the housing and apply food grade grease to prevent it from drying out. Be sure the chemical properties of the grease are compatible with the O-ring and then reinstall the filter and make it access to the system.



Filter Bag

Filter bags are one of the most common and economical filter elements in liquid filtration. They are installed in bag filters for high flow liquid filtration. We offer felt filter bags, monofilament mesh filter bags, multifilament mesh filter bags and stainless steel filter bags for you to choose from.

Working Principle

Place the filter bag into the support basket. Fluid flows into the filter from the inlet and flows out of the outlet after in-house filtration. Impurities are trapped in the filter bag. Filter bags need to be replaced after a period of use.



Felt Filter Bag

Felt filter bags are manufactured from polypropylene and polyester needle felt materials and provide the most economic value and reliable choice for a wide range of filtration applications.



- High-quality polyester and polypropylene felt media
- Silicone free felt media for paint and automotive applications
- Polyester & polypropylene bags adopt singed or glazed finish reduce fiber mitigation.
- Galvanized steel, stainless steel or molded plastic seal rings are employed to prevent liquid bypass leakage.

Filtration efficiency: 50%

Filter rating: 1μm → 300 μm

Monofilament Mesh Filter Bag

Monofilament mesh filter bags are woven from single-fiber threads. Bags made from this material have excellent strength and are washable.



- High-quality PP monofilament (PPMO) mesh and nylon monofilament (NMO) mesh
- Silicone free felt media for paint and automotive applications
- Great resistance to deformation and wear resistance, can be repeatedly washed and used.
- Galvanized steel, stainless steel or molded plastic seal rings are employed to prevent liquid bypass leakage.

Filtration efficiency: 90%

Filter rating: 1μm → 800 μm (PP monofilament filter bag) 1μm → 1200 μm (nylon monofilament filter bag)

Multifilament Mesh Filter Bag

Multifilament mesh filter bags are woven from monfilament threads made of twisted smaller fibers. Bags made from this material are low cost and disposable and their filtration efficiency is lower than those of monofilament mesh filter bags.



- High quality polyester media, disposable filter bags
- Silicone free felt media for paint and automotive applications
- Galvanized steel, stainless steel or molded plastic seal rings are employed to prevent liquid bypass leakage.

Filtration efficiency: 80%

Filter rating: 1μm → 1200 μm

Stainless Steel Filter Bag

Stainless steel filter bags are made of stainless steel woven cloth. Compared with non-woven filter bags, stainless steel filter bags have a longer service life and better corrosion resistance.



- Material: stainless steel wire mesh
- Galvanized steel, stainless steel or molded plastic seal rings are employed to prevent liquid bypass leakage.
- Great corrosion resistance, durable
- Reusable, easy to clean, high temperature resistance

Selection

Filter bags are made from a variety of materials, you may choose corresponding filter bags based on the chemical compatibility and temperature of the materials.

Material	Max. Operating Temperature (°C)	Aromatic Solvents	Aliphatic Solvents	Acid	Strong Acid	Base	Strong Base	Vegetable Oil/Animal Oil
PP	90	-	√	√	√	√	√	√
Polyester fiber	150	√	√	√	√	√	-	√
Nylon	135	√	√	-	-	√	√	-
PTFE	260	-	-	√	√	√	-	√

Note: Chemical compatibility refers to the harmonious conjugation of two substances when they come into contact with each other. When mixed, substances are considered compatible if they have no physical or chemical changes; they are considered incompatible if they undergo physical or chemical changes.

Specification

Size Code	Diameter	Bag Length	Flow Rate	Filter Surface Area	Inflated Volume
01	7" (177.8 mm)	17" (431.8 mm)	20 m³/h	0.25 m²	8.0 L
02	7" (177.8 mm)	32" (812.8 mm)	40 m³/h	0.50 m²	17.0 L
03	4" (101.6 mm)	8" (203.2 mm)	6 m³/h	0.09 m²	1.30 L
04	4" (101.6 mm)	14" (355.0 mm)	12 m³/h	0.16 m²	2.50 L
05	4" (101.6 mm)	20" (508.0 mm)	18 m³/h	0.20 m²	3.80 L

Filter Bag Support Basket

Filter bag support basket is a key element of bag filters. In the filtration process, filter bag meets industrial filtration precision requirements, however, it has a low impact strength and is easily damaged. Filter bag support basket is provided to support and protect the filter bag. It not only greatly reduces the use cycle of replacing the filter bag, but also plays the role of coarse filter.



Features

- Material: perforated metal mesh
- Standard design perforated opening diameter is 9/64", with a high opening ratio and suitable for filter bags of all standard sizes.
- Available in a variety of standard sizes
- Great corrosion and chemical resistance, easy to clean
- Filter area: 0.05 m² to 0.5 m²
- Filter rating: 5–5000 μm

Working Principle

Place the filter bag into the support basket. Fluid flows into the filter from the inlet and flows out of the outlet after in-house filtration. Impurities are trapped in the filter bag. Filter bags need to be replaced after a period of use.

Specification

Item No.	Support Basket for 1# Filter Bags	Support Basket for 2# Filter Bags	Support Basket for 3# Filter Bags	Support Basket for 4# Filter Bags
Material	304 / 316			
Weight (kg)	1.3	2.5	0.3	0.6
Height (mm)	345	730	185	335
Diameter (mm)	178 mm		109 mm	
Size	Hole diameter 3.5 mm, center spacing 4.7 mm			
Surface treatment	Electrolytic polishing			

Application

Bag filters are mainly used to remove trace fine impurities from liquids and are widely used in the following industries.

- **Fine chemicals.** Paint and ink filtration;
- **Oil & gas.** Produced water filtration; well injection water filtration;
- **Food & beverage.** Beer and wine filtration; juice concentrate clarification; soft drink and bottled water production and filtration;
- **Automotive manufacturing.** Automotive spray coating pretreatment, electrophoretic paint, finish & primer filtration; parts cleaning fluid filtration;
- **Pulp & paper.** Coating filtration;
- **Machining.** Machine tool coolant circulation filtration; cleaning fluid filtration; hydraulic and lubricating oil filtration.





Self-Cleaning Filters

Compared with traditional filters, self-cleaning filters allow for automatic online filtration and replacing filter element without shutdown. The cleaning procedures will be automatically triggered when the pressure drop or time reaches the preset value. As a result, it reduces the costly downtime and is suitable for systems where shutdown is unacceptable in case of replacing the filter element.



Inner Scraper
Self-Cleaning Filter



Outer Scraper
Self-Cleaning Filter



Automatic
Backwash Filter



Pneumatic Disc Filter

Inner Scraper Self-Cleaning Filter

Inner scraper self cleaning filter is a kind of self-cleaning filter that is designed to remove impurities on the inner surface of filter screen through scraper rotation driven by motor or air cylinder. It applies to the filtration in medium and highly viscosity liquids. Both stainless steel sheet scrapers and stainless steel brush scrapers are available.

Features

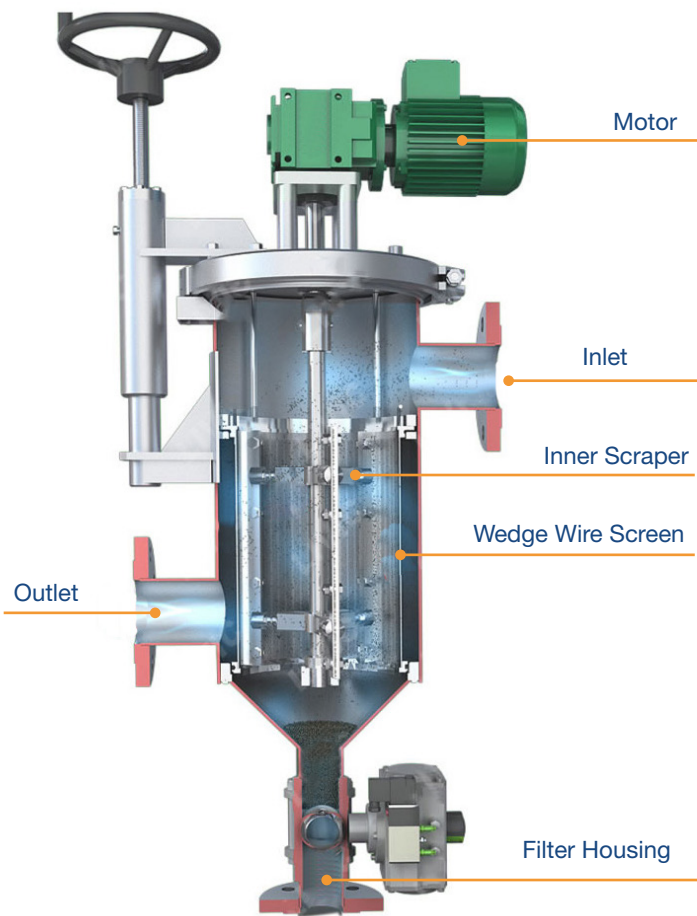
- Fully automatic operation, 24-hour continuous on-line filtration;
- Automatically discharge waste liquids containing high concentration impurities that can be recycled to reduce the loss of high value materials;
- Closed filtration to prevent the leakage of hazardous materials and ensure the work safety and employee health;
- Stainless steel sheet scraper and stainless steel brush scraper are employed to offer great scraping effect, which significantly improves its impurity removal capacity and avoids crushing impurities;
- Backwash function can be added to help cleaning filter elements;
- PLC-based control system is adopted to control scraping and draining time.

Working Principle

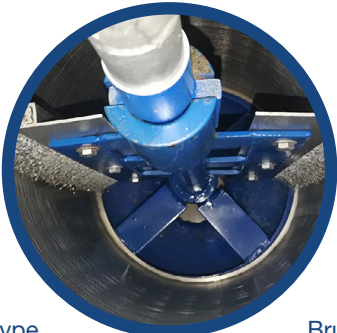
The liquid flows in from the inlet, flows through the filter element and then flows out from the outlet. Impurities are trapped on the inner surface of the filter element. When impurities trapped on the surface of the filter element accumulate to a certain amount, the cleaning procedure is initiated by a timer setting or triggered by a differential pressure sensor. The speed reducer or cylinder drives the scraper blades attached to the surface of the filter element to rotate and scrap off the impurities. These impurities fall into the bottom of the filter. Drain valve at the bottom of the filter shall be opened regularly to drain out the high concentration liquid for recycling.



Strainer basket inside



Scraper type



Brush type

Specification

Maximum flow: 1.5–110 m³/h

Operating pressure: 0.1 MPa – 1.6 MPa (10 bar)

Inlet & outlet nominal diameter: DN 50 – DN 200

Drain outlet nominal diameter: DN 25 – DN 50

Operating temperature: 0 – 200°C

Filter rating: 25 μm → 3000 μm

Filter area: 5600 cm² / 2200 cm²

Electronic control parameter: 0.37 kW, 380 V / 50 Hz / three-phase

Scraper material:

- SS304
- SS316L
- Stainless steel wire

Filter element material:

- SS304
- SS316L

Filter housing material:

- Carbon steel
- SS304
- SS316L
- Customized.

Pneumatic drain valve:

Air supply requirements: 5 SCFM / (m³/h):

Mini. Pressure: 0.4 MPa,

Max. Pressure: 0.8 MPa.

Control cabinet: Two-phase 220 V / 50 Hz

Outer Scraper Self-Cleaning Filter

Outer scraper self cleaning filter is a kind of self-cleaning filter that is designed to remove impurities on the outer surface of filter screen through scraper rotation driven by motor. It has a filter rating of 50–500 μm and applied to highly viscosity liquid filtration with high accuracy requirements.

Features

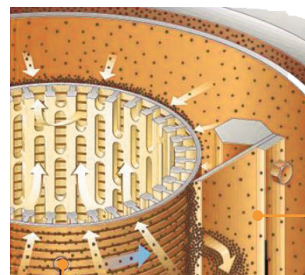
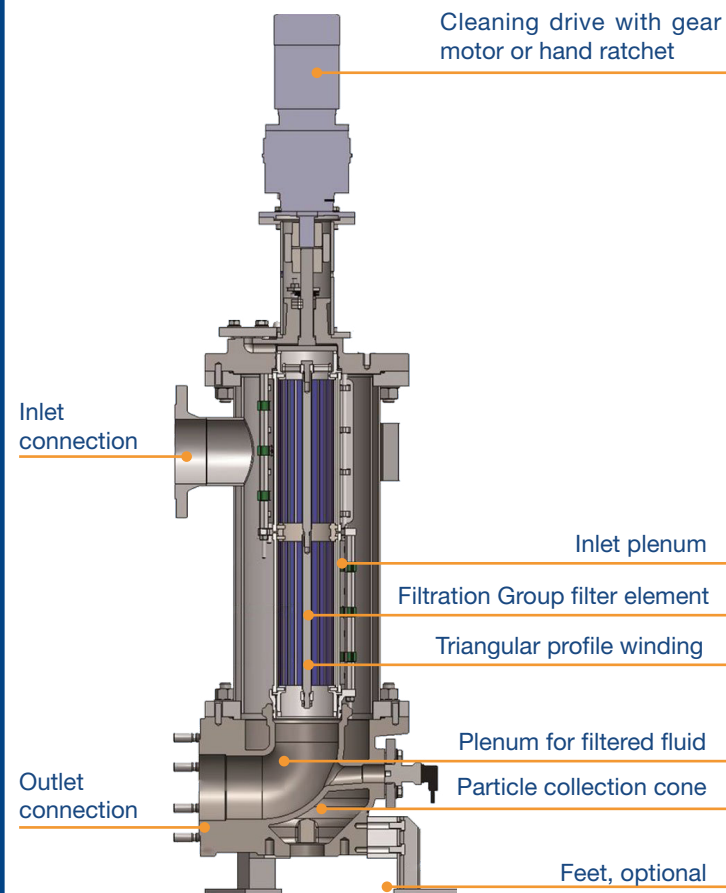
- Fully automatic operation, 24-hour continuous on-line filtration;
- Automatically discharge waste liquids containing high concentration impurities that can be recycled to reduce the loss of high value materials;
- Closed filtration to prevent the leakage of hazardous materials and ensure the work safety and employee health;
- Metal sheet scraper is employed, which makes the gap between the scraper and the filter element is small. Filter elements are provided with accurate slots and extremely smooth surface, which makes it easy to clean and avoid crushing impurities;
- Backwash function can be added to help cleaning filter elements;
- PLC-based control system is adopted to control scraping and draining time;
- Pre-assembled and tested for easy installation.

Working Principle

The liquid enters the filter from the inlet and flows through the filter element surface from outside to inside. The filter element bottom is connected to the outlet, through which the liquid flows out. When impurities trapped on the surface of the filter element accumulate to a certain amount, the cleaning action is triggered by the preset time or differential pressure value. The speed reducer drives the scraper blades attached to the surface of the filter element to rotate and scrap off the impurities. The impurities move off along the blades, fall down to the filter bottom and enters the particle collection cone. These impurities are collected at the filter bottom. Drain valve at the bottom of the filter shall be opened regularly to drain out waste liquid with high impurity concentration. Discharged waste liquid can be recycled if necessary.



Scraper and filter basket inside



Scraper

Triangular wire

✧ Specification

Operating pressure: 1.0 MPa

Inlet & outlet nominal diameter: DN 50 – DN 200

Drain outlet nominal diameter: DN 40

Operating temperature: 0 – 200°C

Filter rating: 50 μm → 500 μm

Filter area: 13600 cm^2 (outer) / 1100 cm^2 (inner)

Applicable liquid: Water and viscous liquid ($< 80,000 \text{ mPa}\cdot\text{s}$), Impurity $< 1000 \text{ ppm}$

Clean differential pressure: 0.05 MPa (depends on the liquid viscosity)

Differential pressure instrument: Differential pressure transmitter (DPT), differential pressure switch (DPS)

Drain valve: Pneumatic ball valve, protection class IP65

Gear motor: 180W, three-phase, 380V, IP55, worm reduction gear motor

Supply facility requirement: Control system 380 V AC, 0.4–0.6 MPa clean and dry compressed air

Filter housing material:

Carbon steel SS304 SS316L Customized.

Scraping blade material:

SS304 SS316L

Seal material:

NBR (standard), VITON

Filter element type:

V-slot slotted metal filter element, SS316L

Pneumatic Disc Filter

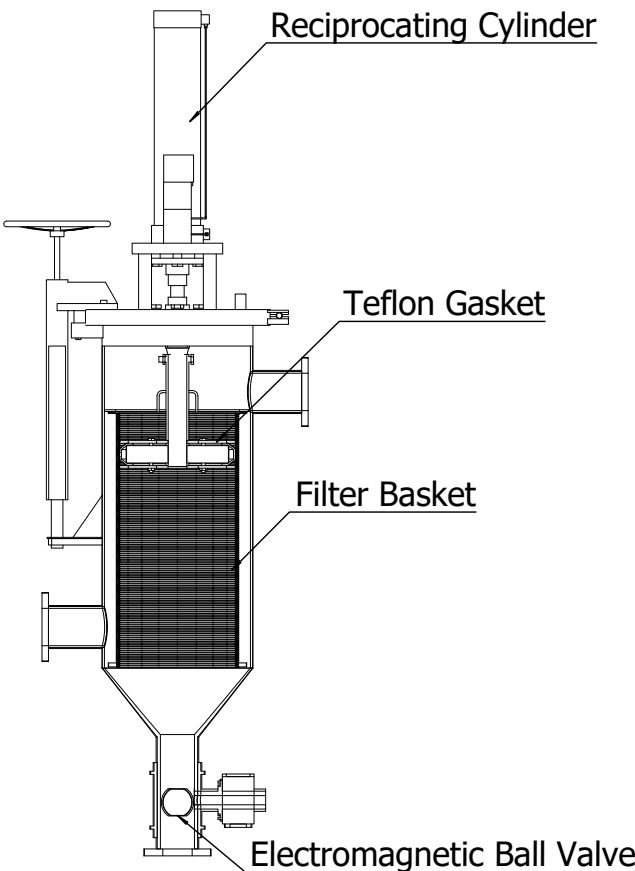
Pneumatic disc filter is designed to remove impurities on the inner surface of filter screen through vertical movement of scraper driven by air cylinder. It adopts a PTFE ring scraper and applies to filtration in highly viscosity liquids, corrosive, inflammable and explosive environments.

Features

- Fully automatic operation, 24-hour continuous on-line filtration;
- Automatically discharge waste liquids containing high concentration impurities that can be recycled to reduce the loss of high value materials;
- Closed filtration to prevent the leakage of hazardous materials and ensure the work safety and employee health;
- Unique PTFE ring scraper are employed to remove impurities and applies to filtering viscous liquids.
- A variety of control systems are available to offer powerful and efficient operation and meet customers' requirements.
- Pre-assembled and tested for easy installation.

Working Principle

When the unfiltered liquid flows into the filter from the inlet, solid impurities are filtered out and deposited on the inner surface of the filter screen. The filtered liquid flows out from the outlet. When the filter screen needs cleaning, the cleaning procedure is initiated by a timer setting or triggered by a differential pressure sensor. A spring-tightened clean disc tightened with spring continuously scrapes the inner surface of the filter screen back and forth and removes the solids deposits. These impurities fall off and are discharged through the drain outlet.



✧ Specification

Operating pressure: 1.0 MPa

Inlet & outlet nominal diameter: DN 50 – DN 200

Drain outlet nominal diameter: DN 40

Operating temperature: 0 – 200°C

Filter rating: 50 μm → 2000 μm

Filter area: 2480 cm² / 700 cm²

Applicable liquid: Water and viscous liquid (< 80,000 mPa.s), impurity < 1000 ppm

Clean differential pressure: 50–100 KPa (depends on the liquid viscosity)

Differential pressure instrument: Pressure transmitter, differential pressure transmitter (DPT)

Drain valve: Full-port pneumatic ball valve, single or double acting type, SS304/316

Supply facility requirement: Control system 220V AC, 0.4–0.6 MPa clean and dry compressed air

Filter housing material:
● SS304 ● SS316L ● Carbon Steel ● Customized.

Piston rod material: 316L
Piston rod seal materials: NBR/PU/VITON

Scraping blade material: PTFE

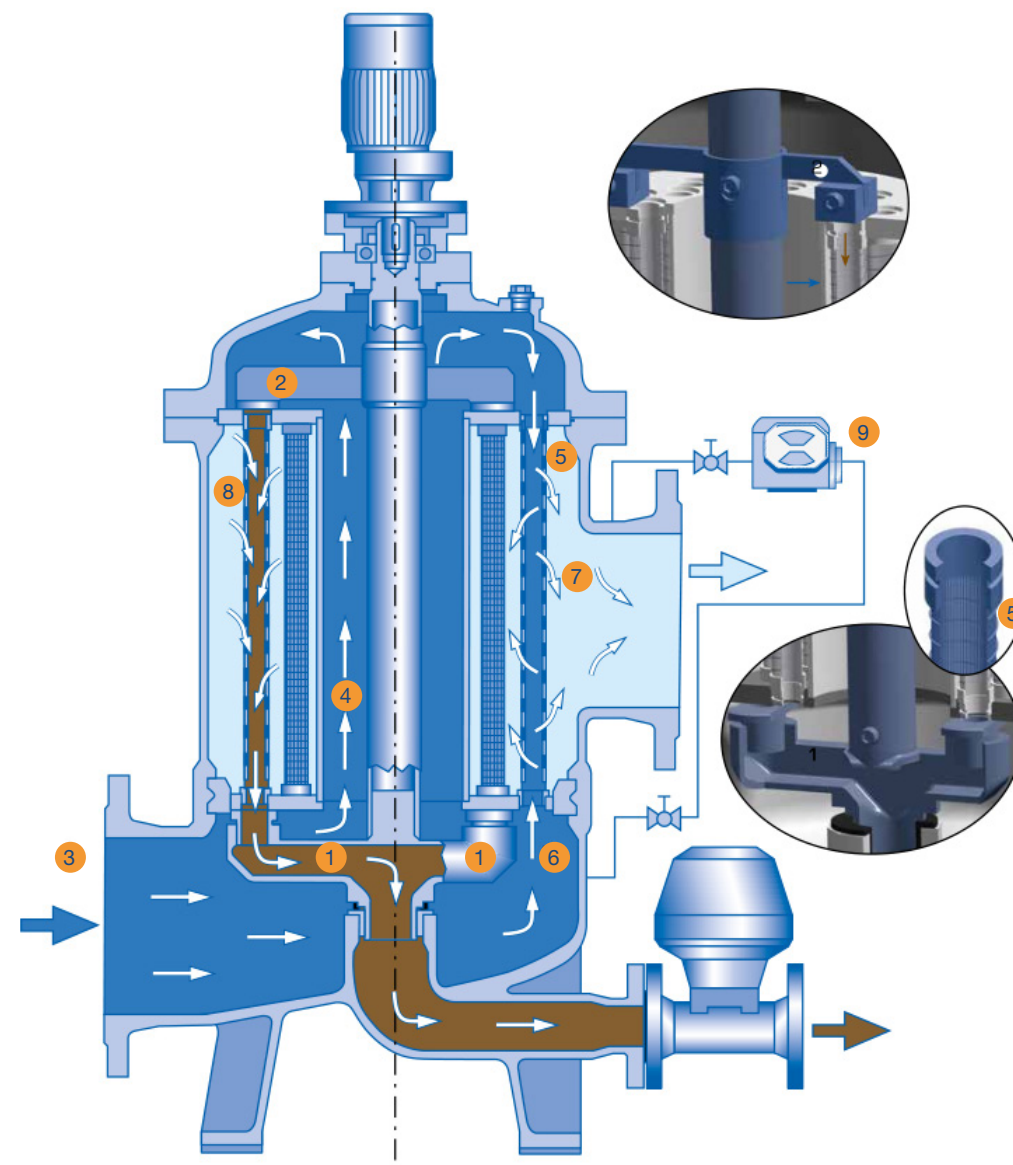
Housing seal material & Filter element seal material:
NBR/EPDM/VITON/silicone rubber/FEP covered silicone rubber

Automatic Backwash Filter

Automatic backwash filter is a kind of self-cleaning filter that consists of multiple stainless steel filter elements and can continuously perform filtration for 24 hours. It can effectively filter out solid particle contaminants from various water and low-viscosity liquids like rolling emulsions to make the liquid cleanliness meet the system operation and downstream process requirements and protect key downstream equipment. It is widely used in oil & gas, metallurgy, marine filtration systems, water treatment, Pulp & paper and other industries.

Features

- Automatic online continuous filtration, continuous filtration during backwashing to reduce downtime and maintenance costs.
- The control system can be tailored to monitor pressure and time settings for various fluids.
- Gap type high performance filter is adopted, which features high precision, large effective filter area, small pressure drop and high backwash efficiency.
- Compact design ensures that installation requires minimal space and is easy to install. The inlet and outlet ports are adjustable according to end users' requirements.
- Filter rating 50–2000 μm , suitable for the filtration of all kinds of raw water, cooling water, process water and low viscosity fluids with a viscosity of less than 40 mPa.s and impurity content less than 300 ppm.



- ① Back-Flushing Rotation Arm
- ② Sliding Block
- ③ Inlet
- ④ Direction of Fluid Flow
- ⑤ Filter Element Top
- ⑥ Filter Element Bottom
- ⑦ Outlet
- ⑧ Inner Surface of Filter Element
- ⑨ Timer or Pressure Drop Setting Device

Working Principle

The unfiltered liquid flows into the automatic backwash filter from the inlet ③, 50% of the liquid flows through the central distribution tube, moves towards the top of the filter ④ and enters filter elements from the top ⑤. The other part of the liquid flows into filter elements directly from the bottom of the filter ⑥. The unfiltered liquid enters filter elements from the upper and lower ends at the same time and flows out from the outlet after filtering ⑦.

When the pressure drop or time reaches the preset value ⑨, the automatic backwash procedure is triggered. The gear motor drives the back-flushing rotation arm ① to backwash the filter elements in turn while the filtration continues. During backwashing, the upper end of the filter element is covered by the sliding block ② and then the back-flushing valve opens. The differential pressure between the outside of the filter element and back-flushing outlet makes the clean filtrate reversely flush the inner surface of filter element ⑧. The washed down impurities are discharged through the sewage pipe.

✧ Specification


Applicable liquid:  Raw water, cooling water, process water and low viscous liquid (< 40 mPa.s),

 impurity < 300 ppm

Filter Rating:  \rightarrow 

Flow rate range:  10560 m³/h
17 m³/h

Inlet & outlet size:  2" – 24"/DN 50 – DN 1000

Fluid working temperature:  0°C \rightarrow 95 °C

Standard design pressure: 0.7 MPa  1.0 MPa

Self-cleaning differential pressure: 0.05 MPa  0.07 MPa

Minimum operating differential pressure:

Differential pressure between the outlet and back-flushing outlet > 0.15 MPa

Control system: Based on SIMENS controller, parallel control mode of differential pressure and time

Gear motor: 180W/370W, 3-phases, 380V, protection class IP55, CCWU

Valve actuator: Pneumatic or electric, IP65

Back-flushing valve: Wafer butterfly valve/full-port ball valve

Supply facility requirement: 0.4–0.6 MPa clean and dry air, 380V AC

Filter element type:

V-slot slotted metal filter element,

● SS304 ● SS316L

Filter housing material:

● SS304 ● SS316L ● Carbon steel ● Customized.

Inner corrosion protection:

Epoxy paint, PA11 or rubber Lining for sea water resistance

Housing seal material:

NBR/EPDM/VITON

Application

Traditional manual filters are frequently clogged when filtering viscous materials and soft impurities, self-cleaning filters can easily solve such problems and always keep the filter element clean. As a result, self-cleaning filters can replace traditional manual filters in many fields.

- Fine chemicals. Paint and ink filtration, softened glycol wastewater filtration, adhesive filtration;
- Food & beverage. Waste oil recovery filtration, fermented broth filtration, chocolate slurry filtration, honey filtration;
- Water treatment. Surface sewage filtration, backwater filtration, landscape water filtration, farm irrigation water filtration, cooling water filtration, boiler feed water filtration;
- Marine filtration system. Seawater desalination filtration, dredger effluent filtration, ballast water filtration;
- Metallurgy. Rolling mill coolant filtration;
- Oil & gas. Well completion filtration, natural gas treatment, injection water filtration; act as a pre-filter for hydrocracking, hydrogenation modification, hydrorefining and hydrodesulfurization reactor to prevent the catalyst bed from clogging;
- Pulp & paper. Starch slurry filtration, coating filtration, papermaking water filtration.

For viscous resin production

For paper mill production

For waste oil recovery

For ship cooling
seawater filtration

For chocolate slurry production

For resin filtration in paint production

For raw water filtration

For power plant cogeneration
water filtration

Candle Filters

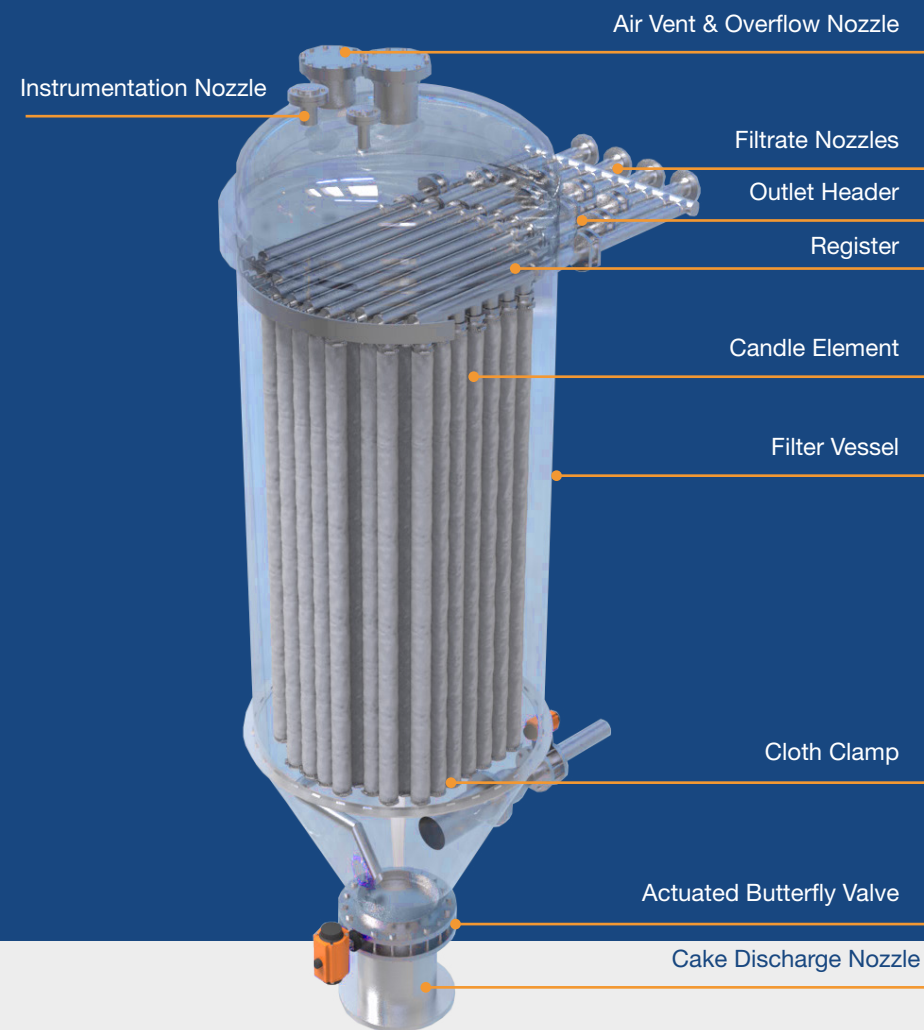
Candle filter is a self-cleaning filter specially designed for solid-liquid separation, typically used for the clarification and recovery of liquids with low solids content from 5 % to less than 1 % or even trace amounts of solids.

- Filter housing is made of stainless steel, special materials are available upon request;
- Fully closed operation, which makes it capable of handling corrosive and volatile liquids without doing harm to the environment and employees' health;
- Filter aid may be added as needed;
- No residual liquid design; at the same time, the filter cake can be dried, which is suitable for processing and recycling filter cakes with minimum liquid loss.
- Filter aids are available in a variety of materials to meet diversified filtration demands of all industries.

Candle filter is composed of a filter housing, filter bags, filter elements, registers, a computer control system, accessories, etc.

The filter housing is provided with instrument connection nozzle, air vent, inlet nozzle, discharge nozzle, inspection hole, etc.

Candle filter consists of multiple combined filter elements inside. Every filter element is composed of 6 porous metal tubes and a central tube and then covered with a filter bag. The filter bag is selected according to the characteristics of the raw material liquid. Filter aids are required when filtering some special raw material liquids, such as activated carbon, diatomaceous earth, etc. Filter elements are used to support filter bags, and all filter elements are connected to the register at the top of the filter.



Working Principle

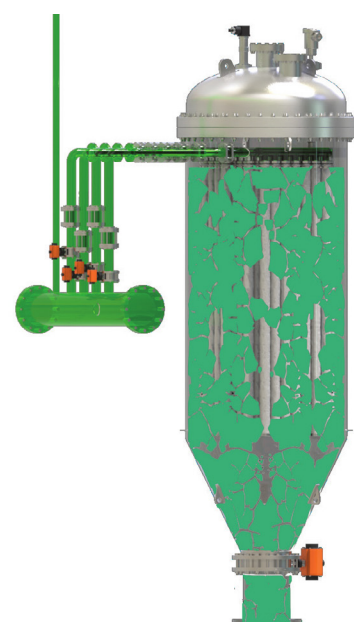
Filter aids are added into the liquid to be filtered. The liquid flows through the filter bag and flows from porous metal tubes to the central pipe. Filter bags are attached to the outer surface of filter elements due to pressure. Due to its unique structure, it offers an enlarged filter area. As the liquid circulates, a porous filter cake (precoating) is formed on the surface of the filter bag. The filter cake makes the filtrate get further filtration.

When the filter cake accumulates to a certain thickness and the differential pressure reaches the preset value, the control system gives a signal, and the filter stops feeding and empties the residual fluid. The filter is then filled with hot gas (air, nitrogen, steam) from the overflow vents at the top of the filter into the filter, the filter cake outside the filter bag is dried by the gas.

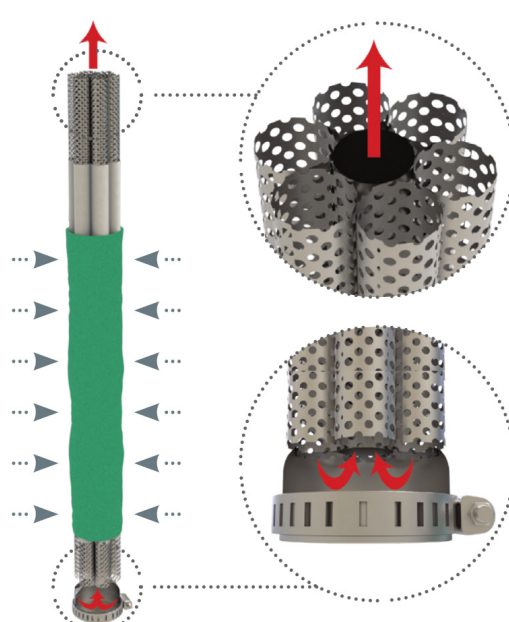
When the filter cake is dried, inject gas from the register for back flushing, the filter bag expands and the dried filter cake falls off and is discharged from the cake drainage nozzle.

When the filter cake is discharged, the nozzle on the register sprays liquid to clean these filter elements and then enters the next filtration cycle.

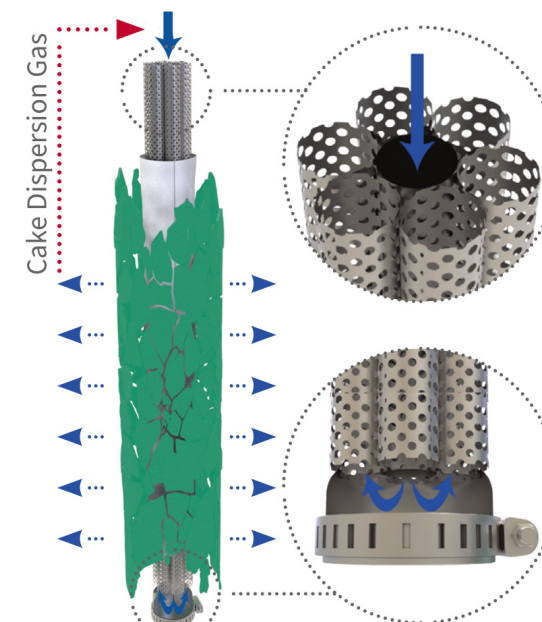
Working principle overall diagram



Filtrating status




Cake discharging status



✧ Specification

Filter rating:  →  depends on filter elements and functional design

Standard design pressure: 0.6 MPa, 1.0 MPa, 1.6 MPa, 2.0 MPa, higher pressures are available upon request.

Filter area:  0.9–60 m², other sizes are available upon request.

Housing diameter:  250–2500 mm

Flow rate range:  10 m³/h to 300 m³/h

Back flushing differential pressure: 0.2–0.3 MPa

Inlet & outlet size: 2" – 24"

Cake discharge nozzle: Soft seal or hard seal butterfly valve

Optional automation instrumentation:

Differential pressure/pressure transmitter, filter cake thickness detector, liquid level switch, flow transmitter, etc.

Filter bag material:

PP, PET, nylon, PPS, PVDF

Filter element material:

● SS316L ● PP ● PVDF

Housing material:

● SS304 ● SS316L ● Carbon steel ● Customized.

Inner corrosion protection:

PTFE, PVDF (suitable for strong acids and bases and other corrosion resistance requirements)

Application

Traditional manual filters are frequently clogged when filtering viscous materials and soft impurities, self-cleaning filters can easily solve such problems and always keep the filter element clean. As a result, self-cleaning filters can replace traditional manual filters in many fields.

- **Pharmaceuticals.** Biological and plasma products filtration, compressed air and gas filtration, catalyst recovery filtration;
- **Food & beverage.** Fermented beer filtration; edible oil bleaching & filtration, edible oil dewaxing or antifreeze oil filtration and catalyst recovery filtration, decolorizer and activated carbon filtration;
- **Oil & gas.** Crude oil mercury removal & filtration, gas desulfurization, sulfur recovery, etc.
- **Environmental protection.** Power station flue gas desulfurization, incineration waste gas disposal, waster toxic chemical precipitation & filtration, etc.
- **Mining.** Catalyst recovery & filtration, aluminum recovery washing water filtration, filtration in lithium and nickel production.

For pharmaceutical catalyst recovery & filtration



For environmental protection waste water filtration



For crude oil mercury removal



For edible oil production



For oil & gas exploitation



For metal lithium production





Pressure Leaf Filters

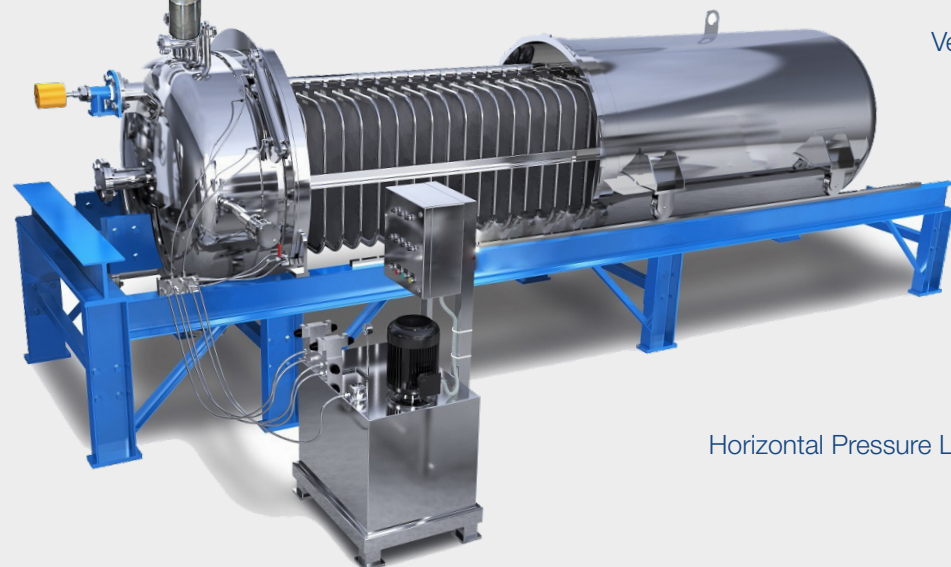
Pressure leaf filter is a kind of closed automatic solid-liquid separation device. It often works with a variety of filter aids for decolorization and filtration, pharmaceutical oil filtration and crystallization separation in oil and chemical industries. We provide both vertical pressure leaf filter and horizontal pressure leaf filter for you to choose from to meet your different industrial production needs.



Filter Leaf



Vertical pressure leaf filter



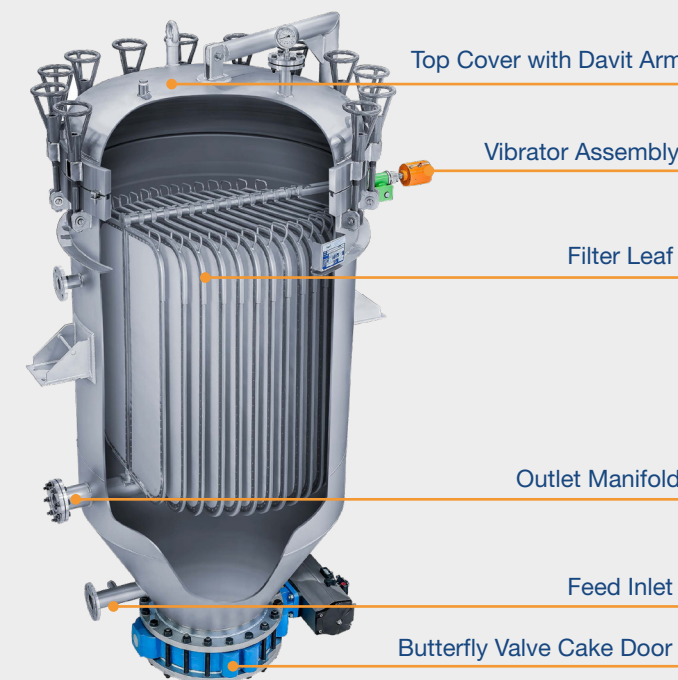
Horizontal Pressure Leaf Filter

Vertical Pressure Leaf Filter

Vertical pressure leaf filters are your ideal choice for batch process applications requiring high flow rates in a small footprint. As a result, it is suitable for places where the space is limited or interrupted flow is expected.

Features

- No filter cloth is required. Filter leaves are made of 5 layers of stainless steel wire screen and enjoy a long service life and a low maintenance cost;
- Fully closed structure and fully automated operation reduce environmental pollution and labor costs;
- A variety of filter aids can be added and the filter area ranges from 3 m² to 125 m²;
- The filter can operate in both dry and wet cake discharge modes to meet the demand of different industrial production;
- It applies to batch process applications requiring high flow rates and small solids removal in a small footprint and offer a filter area of up to 100 m².



- Vertical pressure leaf filter consists of a filter housing, filter leaves, a top cover, a vibrator assembly, a cake discharge nozzle and a manifold. The filter housing is provided with an inlet, an outlet, a davit arm, a butterfly valve, etc.

- In the filter, filter leaves are evenly placed. At the bottom, filter leaves are inserted into the manifold that collects the filtrate. At the top, filter leaves are clamped by leaf clamping bar with spacer rings to make the filter leave easy to install and remove.

- The spacing between filter leaves ranges from 30 mm to 100 mm.

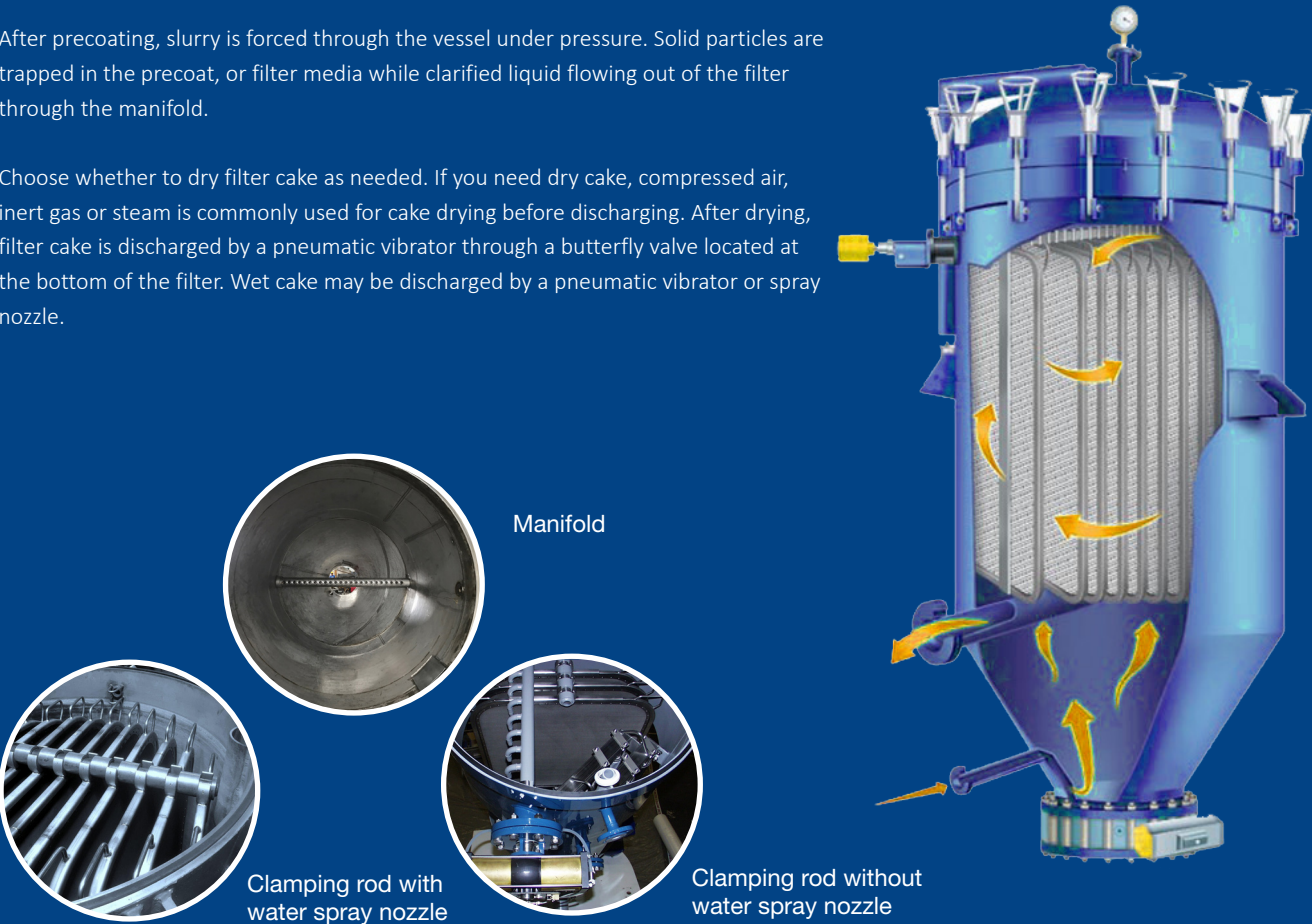
- For wet cake discharge, with or without water spray nozzles are provided.

Working Principle

First, precoat is applied before filtering. Agitate precoat tank containing filtrate and filter aid (diatomaceous earth, perlite, etc.) for around 10 minutes. Then, fill the vessel with the mixture, empty all the air, and pressurize the vessel. The precoat runs for 15 minutes at a fluid rate around 30–60 gallons per square foot per hour.

After precoating, slurry is forced through the vessel under pressure. Solid particles are trapped in the precoat, or filter media while clarified liquid flowing out of the filter through the manifold.

Choose whether to dry filter cake as needed. If you need dry cake, compressed air, inert gas or steam is commonly used for cake drying before discharging. After drying, filter cake is discharged by a pneumatic vibrator through a butterfly valve located at the bottom of the filter. Wet cake may be discharged by a pneumatic vibrator or spray nozzle.



✧ Specification

Housing material: ● Carbon steel ● Stainless steel

Filter element material: ● Stainless steel

Design pressure: -1/6 bar (g) (-14.5/87 psig)

Maximum allowable pressure drop: 4.5 bar (65 psi)

Gasket material: VITON, EPDM, NBR, silicone rubber, etc.

Design temperature:



Model	Filter Area	Cake Volume	Filter Leaves	Filter Volume	Leaf Spacing	Floor Space	Height	Weight (empty)
	m ²	dm ³		dm ³	mm	mm	mm	kg
1	1.65	35	5	210	70	1220 × 1100	2110	350
2	2.2	50	5	320	70	1320 × 1300	2210	400
3	3	70	3	600	70	1340 × 1540	3020	550
4	5	105	5					
5	7	135	7					
6	5	110	5					
7	7	155	7	800	70	1750 × 1090	3090	650
8	9	175	9					
9	8	175	7	1000	70	1190 × 1230	3190	800
10	10	220	9					
11	12.5	275	11					
12	15	330	9					
13	17.5	385	9	2000	70	2370 × 1680	4000	1100
14	20	440	11					
15	23.5	520	11					
16	25	550	11					
17	27	590	13	2500	75	2210 × 2650	4100	1725
18	30	660	15					
19	30.5	670	11					
20	35	770	13					
21	38.5	850	15	3600	75	2900 × 2110	4500	1980
22	42	920	13					
23	46	1010	15					
24	50	1100	17					
25	55	1210	15	4500	75	3110 × 230	4880	2300
26	60	1320	17					
27	70	1540	16					
28	78	1720	18					
29	85	1870	16	4900	75	3110 × 2350	5180	2500
30	100	2200	20					
				6300	75	3770 × 2640	5650	3200
				8200	75	3440 × 3890	3000	4400

Wet or Dry Cake Discharge



When filter cake needs to be recycled or disposed as solids, you may choose dry cake discharge, for example, sugar, cocoa or edible oil filtration, activated carbon removal, molten sulphur filtration or catalyst recovery. Compressed air, inert gas or steam is commonly used for cake drying before discharging.



If the cake formation is too low for dry discharge, the disposal is cheap (regeneration for wet discharge is shorter) or the cake needs to be transported via a pump, you may choose wet cake discharge, for example, saline water filtration.

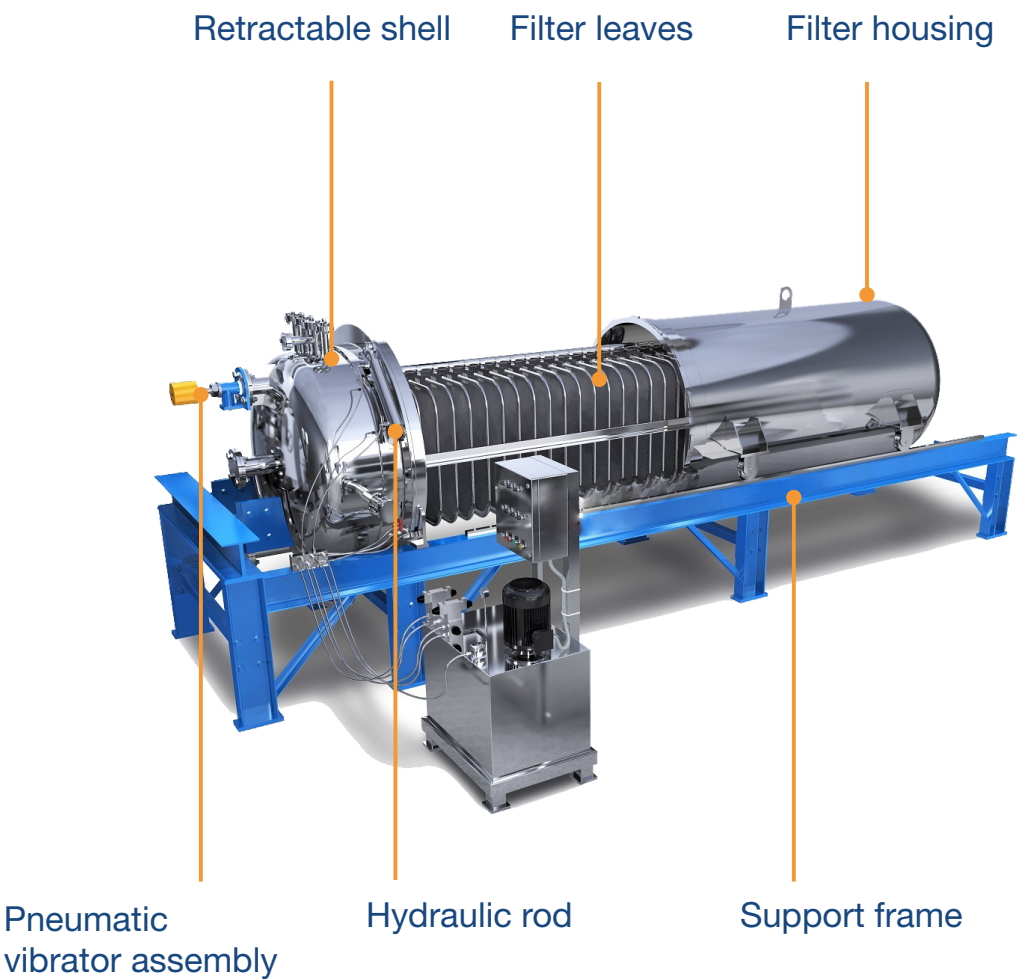
Horizontal Pressure Leaf Filter

Horizontal pressure leaf filters are your perfect choice for batch processing applications requiring high flow rates with small solids removal. As being placed horizontally, it takes a larger footprint than that of vertical pressure leaf filter. It is widely used in edible oil industry.

- No filter cloth is required. Filter leaves are made of 5 layers of stainless steel wire screen and enjoy a long service life and a low maintenance cost;
- Movement of bundle or shell by hydraulic power pack makes the filter easy to be observed and discharge filter cakes;
- A variety of filter aids can be added and the filter area is up to 200 m²;
- Automatic filter cake discharge. The filter can operate in both dry and wet cake discharge modes.
- Fully closed structure and fully automated operation reduce environmental pollution and labor costs;
- Suitable for batch processing applications requiring high flow rates with small solids removal.



Horizontal pressure leaf filter (shell retraction or bundle retraction) consists of a filter housing, filter leaves, a pneumatic vibrator assembly, a support frame and a hydraulic power back for bonnet ring opening/closing and shell or bundle retraction.



Wet or Dry Cake Discharge



When filter cake needs to be recycled or disposed as solids, you may choose dry cake discharge, for example, sugar, cocoa or edible oil filtration, activated carbon removal, molten sulphur filtration or catalyst recovery. Compressed air, inert gas or steam is commonly used for cake drying before discharging.



If the cake formation is too low for dry discharge, the disposal is cheap (regeneration for wet discharge is shorter) or the cake needs to be transported via a pump, you may choose wet cake discharge, for example, saline water filtration.

✧ Specification

Model	Filter Area	Cake Volume	Filter Leaves	Filter Volume	Leaf Spacing	Floor Space	Height	Empty Weight	Feed Connections
	m ²	dm ³		dm ³	mm	mm	mm	kg	
1	5.5	165	7	800	100	1150 × 2550	1800	800	1
2	9.5	285	13	1100	100	1150 × 3750	1800	1100	1
3	12.5	375	8	1300	100	1500 × 2800	2000	1500	1
4	15	450	10	1800	100	1500 × 3200	2000	1700	1
5	20	600	14	2300	100	1500 × 4000	2000	1900	1
6	25	750	17	2700	100	1500 × 4600	2000	2050	2
7	30	900	20	3100	100	1500 × 5200	2000	2200	2
8	40	1200	16	4400	100	2000 × 4700	2400	2500	1
9	50	1500	20	5200	100	2000 × 5500	2400	2750	2
10	60	1800	24	6000	100	2000 × 6300	2400	2810	2
11	70	2100	28	6800	100	2000 × 7100	2400	3000	2
12	80	2400	32	7600	100	2000 × 7900	2400	3250	2
13	100	3000	28	11000	100	2300 × 7200	2400	6500	2
14	125	3750	35	13000	100	2300 × 8800	2800	7200	2
15	150	4500	36	14000	100	2600 × 10000	2800	7800	2
16	175	5250	42	16000	100	2600 × 11200	3000	8150	3
17	200	6000	48	18000	100	2600 × 12400	3000	8500	3

Filter Leaf

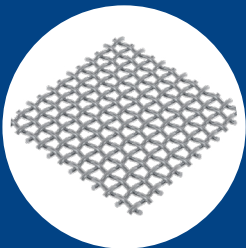
Filter leaves are filter elements installed in pressure leaf filters. Generally, 10 to 60 filter leaves are stacked inside a vertical or horizontal pressure leaf filter and filter leaves are the heart and the most critical part of pressure leaf filters.

- Suitable for both vertical and horizontal pressure leaf filters
- Every filter leaf consists of 5 layers of stainless steel woven mesh (2 layers of fine wire mesh, 2 layers of supporting mesh and 1 layer of drain mesh). All layers of wire mesh are bound together by a tubular frame and are made leak proof by machine riveting or bolting to offer a long service life.
- Longer replacement period means every filter leaf enjoys a longer service life and requires a lower maintenance cost.
- Made of stainless steel wire mesh, our filter leaves offer great corrosion and rust resistance.
- Suitable for precoat filtration systems

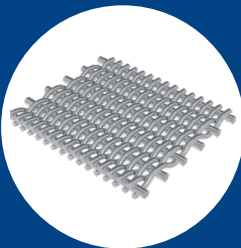


Weave Type

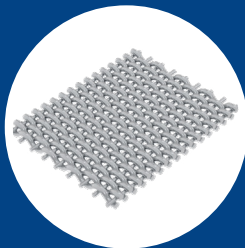
Stainless steel woven mesh for filter leaves generally adopts plain weave, plain dutch weave, reverse plain dutch weave and reverse dutch twill weave. Generally drain mesh and supporting mesh adopts plain weave, fine mesh adopts plain weave, plain dutch weave, reverse plain dutch weave or reverse dutch twill weave



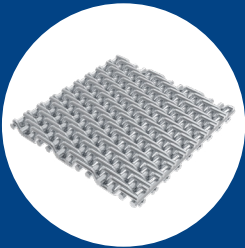
Plain weave



Plain dutch weave



Reverse plain dutch weave



Reverse dutch twill weave

✧ Specification

Housing material: ● AISI304, 316L

Filter rating: 98% **Shape:** □ rectangle, □ square, ○ round

Applicable filter type: vertical & horizontal pressure leaf filters

Package: waterproof paper box

Mesh process: plain weave, plain dutch weave, reverse plain dutch weave and reverse dutch twill weave

Construction	Mesh	Wire Thickness (mm)	Aperture (μm)
1 layer of drainage mesh	Plain weave, 4 × 4	1.6	4750
2 layer of support mesh	Plain weave, 8 × 8	0.7	2470
2 layer of fine filter mesh	Plain weave, 60 × 60	0.18	240
	Plain dutch weave, 24 × 110	0.54	152
	Plain dutch weave, 24 × 128	0.58	75
	Plain dutch weave, 30 × 150	0.53	85
	Reverse plain dutch weave, 132 × 32	0.77	91
	Reverse dutch twill weave, 325 × 40	0.73	100

Application

Pressure leaf filters are a closed type automatic solid-liquid separation device and can work with variety of filtering aids. They apply to decolorization and filtration, pharmaceutical oil filtration, crystallization separation process, etc. in the production of oil and grease and chemicals and are mainly used in the following industries.

- Food & beverage. Edible oil coarse filtration, bleached oil filtration, gelatin, vinegar, starch, sugar juice, sweet water, etc.; beer, juice, wine, milk, etc.
- Petrochemicals. Diesel oil, lubricating oil, petroleum wax, mineral oil products, etc.
- Fine chemicals. Resins, varnishes, dyes, lacquers, etc.
- Organic chemicals. A variety of organic acids, alcohols, benzene, aldehydes, etc.
- Inorganic chemicals. Bromine water, potassium cyanide, fluorite, etc.



For vegetable oil primary processing



For oil refinery



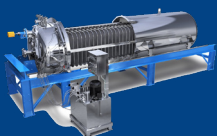
For sulfuric acid production



For vegetable oil primary refining



For engine oil purification



For sulfuric acid production



Cartridge Filters

According to the number of filter elements inside the filter, cartridge filters can be divided into single cartridge filters and multi cartridge filters to meet the needs of different flow rates and filtration areas. Cartridge filters are suitable for precision filtration of liquids and are widely used in oil & gas, metallurgy, machining, food & beverage, water treatment, pharmaceuticals, marine filtration systems, etc.

Single Cartridge Filter

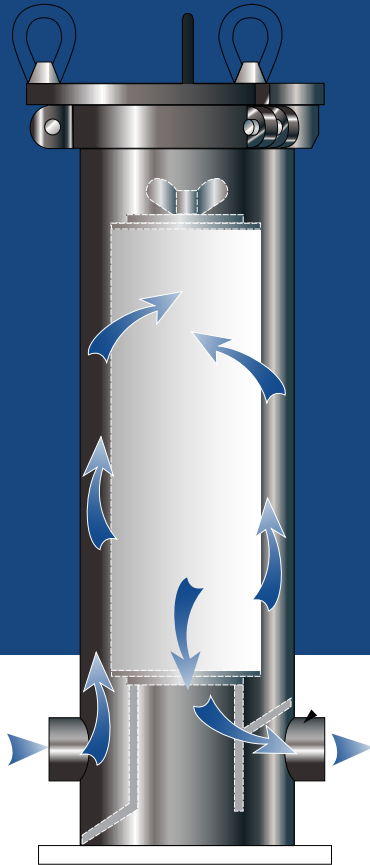
Single cartridge filter requires only one filter cartridge inside. Compared with multi cartridge filter, it requires a smaller footprint and filters a smaller area, as a result, it is suitable for applications with low flow rates in limited space.

Features

- V-bands or swing-bolt closures are provided for quick filter cartridge replacement.
- Suitable for accommodating filter cartridges with a length of 10", 20" or 30"
- Suitable for DOE and SOE filter cartridges
- Removable filter cartridges, easy to clean and replace.
- Suitable for filtering fluids in low flow at low flow rates.
- Cartridge filters in special specifications are available upon request.

Working Principle

First, precoat is applied before filtering. Agitate precoat tank containing filtrate and filter aid (diatomaceous earth, perlite, etc.) for around 10 minutes. Then, fill the vessel with the mixture, empty all the air, and pressurize the vessel. The precoat runs for 15 minutes at a fluid rate around 30–60 gallons per square foot per hour.



Stainless Steel Pleated Cartridge



Sintered Mesh Filter Cartridge



Single Cartridge Filter

Multi Cartridge Filter

✦ Specification

Optional cartridge:

PP melt blown, string wound PP cartridge, PP pleated cartridges, ceramic cartridges and stainless steel wire cartridges

Cartridge size (length): 10", 20", 30"

Cartridge end cap: DOE, SOE (222)

Housing material: SS304, SS316L, carbon steel

Operating pressure: 150 psi (10.3 bars) max

Operating temperature:

4°C —————> 149 °C
10°F —————> 300 °F

Model	Cartridge Size	Inlet Size	Flow Rate (GPM)	Drain Size (NPT)
1	10"	3/4" – 1"	6	1/4"
2	20"	3/4" – 1"	12	1/4"
3	30"	3/4" – 1"	18	1/4"

Multi Cartridge Filter

Multi cartridge filter consist of a stainless steel filter housing and multiple filter cartridges like filter PP filter cartridge inside. It is mainly used after multi-medium pretreatment filtration and before membrane filtration equipment such as reverse osmosis and ultrafiltration to ensure the water filtration rating and protect membrane filter elements from large particles.

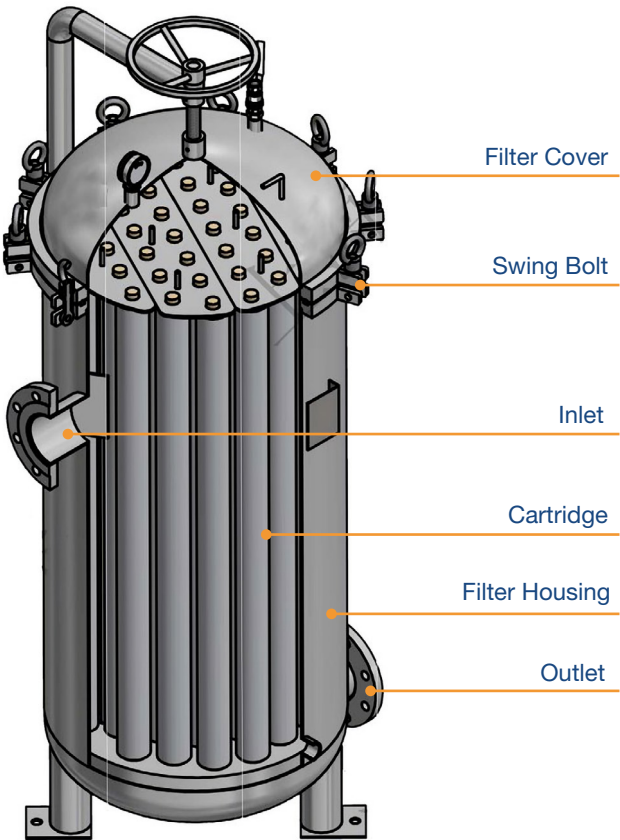
Features

- V-bands or swing-bolt closures are provided for quick filter cartridge replacement.
- Suitable for accommodating filter cartridges with a length of 10", 20", 30" or 40".
- Suitable for DOE and SOE filter cartridges.
- Removable filter cartridges, easy to clean and replace.
- Suitable for filtering fluids in high flow at various flow rates.
- Other specifications are available upon request.

Working Principle

The unfiltered liquid flows into the filter from the inlet, flows through the cartridge from outside to inside and becomes clean. Impurities are trapped in the deep layer or on the surface of the cartridge and clean fluid flows out from the outlet.

When the differential pressure upstream and downstream is more than 0.2MPa and the flow rate of the liquid is 30% less than before, it is time to change the filter cartridge to prevent system clogging.



✧ Specification

Optional cartridge:

PP melt blown, string wound PP cartridge, PP pleated cartridges, ceramic cartridges and stainless steel wire cartridges

Rated value: 0.05–200 μm

Cartridge size (length): 1–200

Cartridge end cap: DOE, SOE (Fin/ 222, Fin/ 226, Flat/ 222, Flat/ 226)

Housing material: SS304, SS316L, carbon steel

Surface treatment: Sandblasting, mechanical polishing, electrolytic polishing

Operating temperature:



Inlet/outlet: BSP, Tri-cover, ANST flange

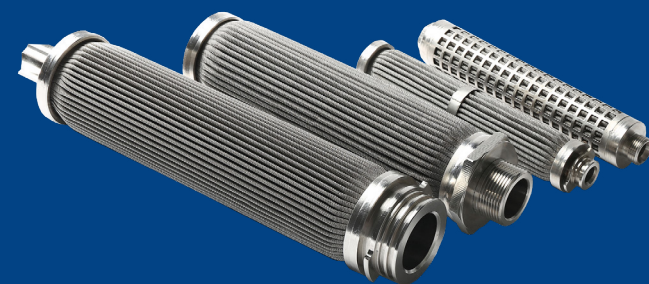
Applicable viscosity (cp): 1–500

Design pressure: 0.6 MPa, 1.0 Mpa

Cover connection: V-band, swing-bolt

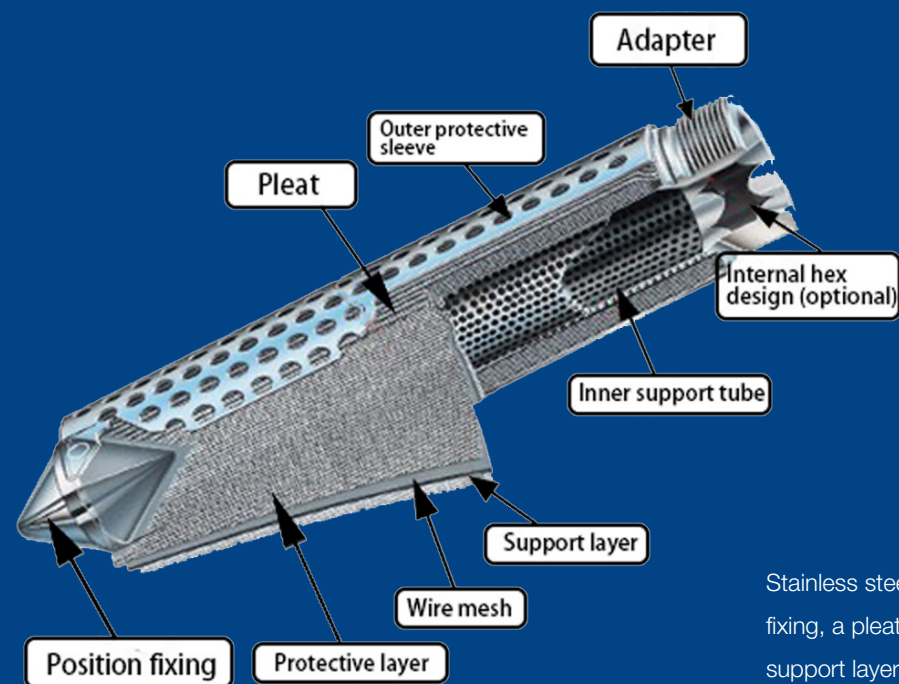
Model #	Cartridge Requirements	Pipe Size (flange)	Max. Flow Rate (GPM)	Drain Size (NPT)
1	(4) of 10"	2"	24	1/2"
2	(4) of 20"	2"	48	1/2"
3	(4) of 30"	2"	72	1/2"
4	(4) of 40"	2"	96	1/2"
5	(5) of 10"	2"	30	1/2"
6	(5) of 20"	2"	60	1/2"
7	(5) of 30"	2"	90	1/2"
8	(5) of 40"	2"	120	1/2"
9	(6) of 40"	3"	144	1/2"
10	(7) of 20"	2"	84	1/2"
11	(7) of 30"	2"	126	1/2"
12	(7) of 40"	3"	168	1/2"
13	(9) of 40"	3"	216	1/2"
14	(12) of 40"	4"	288	1/2"
15	(22) of 30"	4"	396	1/2"
16	(22) of 40"	6"	528	1/2"
17	(27) of 40"	6"	660	1/2"
18	(36) of 40"	6"	720	1/2"
19	(42) of 40"	6"	1,008	1/2"
20	(55) of 40"	8"	1,320	1/2"
21	(61) of 40"	8"	1,464	1/2"
22	(73) of 40"	8"	1,752	1/2"
23	(98) of 40"	10"	2,340	1/2"
24	(120) of 40"	10"	2,880	1/2"
25	(150) of 40"	10"	3,000	1/2"

Stainless Steel Pleated Cartridge



Stainless steel pleated cartridge is made of stainless steel woven mesh or stainless steel sintered felt after pleating and welding. It is generally installed in melt filters to remove impurities from polymer melts in chemical fiber, textile and plastics industries, therefore, it is also known as polymer candle filter or polymer melt candle filter.

- According to its filtration layer, it is divided into pleated wire mesh candle filters and pleated sintered fiber candle filters.
- The filter area of the pleated cartridge is 5-10 times as large as the traditional cartridge filter, which makes its dirt holding capacity and service life greatly improved.
- Filtration efficiency up to 95%
- Suitable for melt filter or high pressure, highly corrosive, high viscous or radioactive applications.
- Stainless steel construction can be reused after backwashing or ultrasonic cleaning.



Stainless steel pleated cartridge consists of a position fixing, a pleated layer (protective layer, wire mesh support layer), an inner support tube, an outer protective sleeve and an adapter.

- The pleated layer consists of a protective layer, a filtration layer and a support layer. The filtration layer is made of stainless steel woven mesh or stainless steel sintered felt. As the filtration layer has a poor strength, therefore, a protective layer at the top and a support layer at the bottom are provided to protect the filtration layer.
- Outer protective sleeve makes the cartridge have a better compressive strength. You may choose to install it or not as your needed.
- End caps are available in a variety of types including double opening ends, single opening end, threaded caps, etc.

❖ Specification

Material: ● SS304, SS316, SS316L.

Operating temperature:

Filtration efficiency: $\geq 95\%$

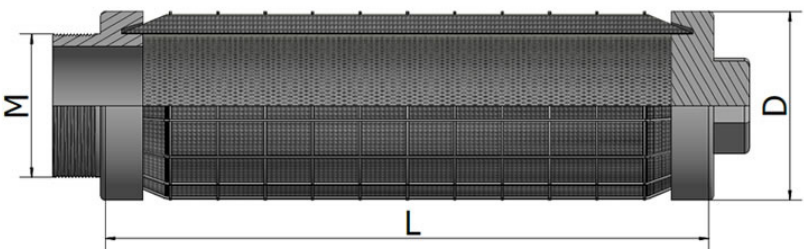
Filter rating: $1\ \mu\text{m} \rightarrow 300\ \mu\text{m}$

Stainless steel
 $\rightarrow 600\ ^\circ\text{C}$

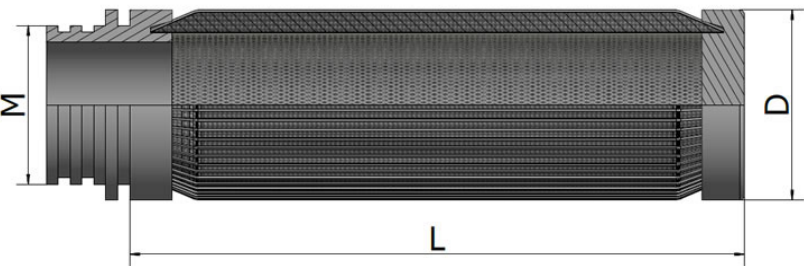
Operating pressure: 30 MPa

Main filter media: stainless steel sintered fiber web and stainless steel wire woven cloth.

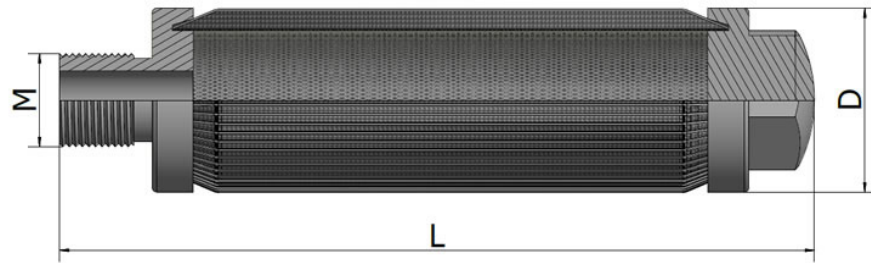
Installing form: standard (using O-ring to seal), thread, tie rod, flange, fast interface.



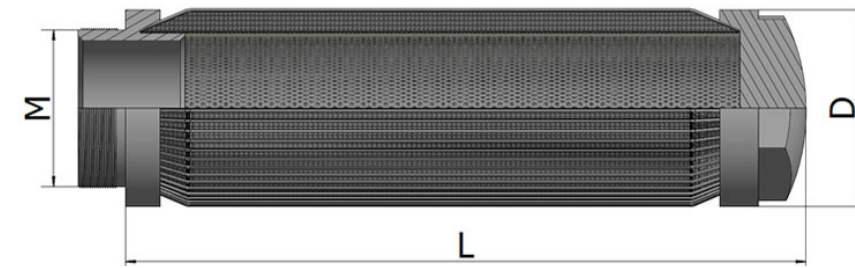
Model	L	D	M	Filter Area	Filter Rating	Filter Media
	mm	mm		m ²	μm	
SSPC-86/200	200	86	M65 × 2P	0.20	3, 5, 7, 10, 15, 20, 25, 30, 40, 60, 75	Stainless steel sintered fiber felt, stainless steel wire cloth
SSPC-86/350	350			0.35		
SSPC-86/500	500			0.50		
SSPC100/800	800	100	M80 × 2P	1.00		



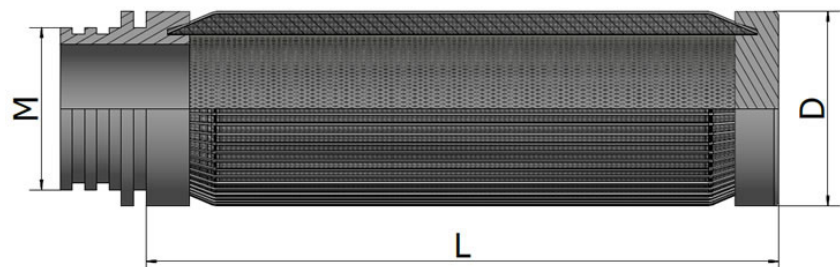
Model	L	D	M	Filter Area	Filter Rating	Filter Media
	mm	mm		m²	µm	
SSPC-65/250	250	65	226, 223, 220, 215	0.135	3, 5, 7, 10, 15, 20, 25, 30, 40, 60, 75	Stainless steel sintered fiber felt, stainless steel wire cloth
SSPC-65/500	500			0.38		
SSPC-70/750	750	70		0.42		
SSPC-70/750	750	70		0.60		



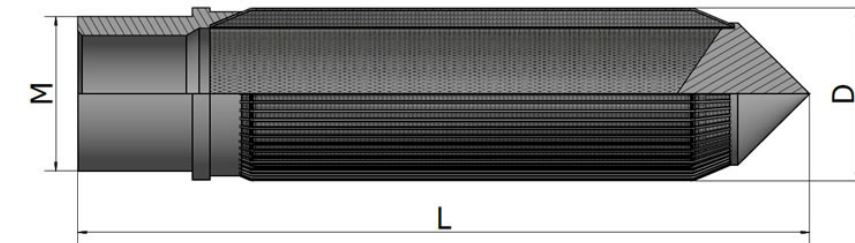
Model	L	D	M	Filter Area	Filter Rating	Filter Media
	mm	mm		m ²	μm	
SSPC-35/102	102	35	M18, M20 × 2.5, M20 × 1.5, NPT1", 3/4-16	0.026	3, 5, 7, 10, 15, 20, 25, 30, 40, 60, 75	Stainless steel sintered fiber felt, stainless steel wire cloth
SSPC-35/207	207			0.07		
SSPC-35/210	210			0.07		
SSPC-35/242	242			0.08		
SSPC-35/425	425			0.15		
SSPC-35/485	485			0.20		



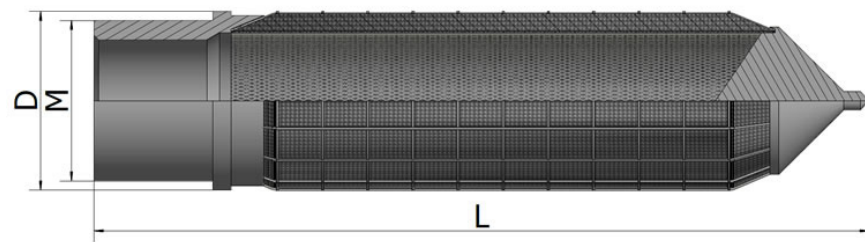
Model	L	D	M	Filter Area	Filter Rating	Filter Media
	mm	mm		m ²	μm	
SSPC-1.75/16.31	16.31	1.75	1.25"-12UNF-2A	0.20	3, 5, 7, 10, 15, 20, 25, 30, 40, 60, 75	Stainless steel sintered fiber felt, stainless steel wire cloth
SSPC-1.75/18.63	18.63			0.35		
SSPC-1.75/31	31			0.50		
SSPC-1.75/47	47			1.00		



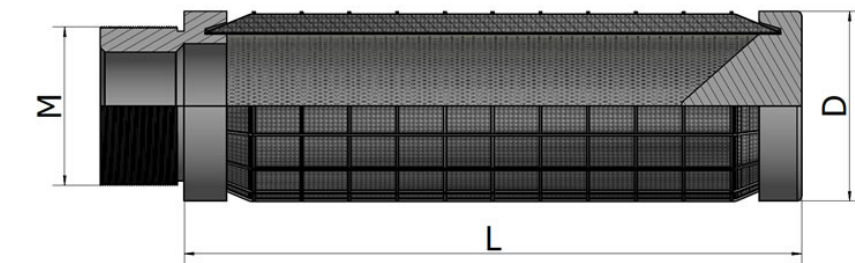
Model	L	D	M	Filter Area	Filter Rating	Filter Media
	mm	mm		m ²	μm	
SSPC-62/180	180	62	G1"	0.09	3, 5, 7, 10, 15, 20, 25, 30, 40, 60, 75	Stainless steel sintered fiber felt, stainless steel wire cloth
SSPC-86/254	254	86	G2"	0.17		
SSPC-86/381	381			0.20		
SSPC-86/508	508			0.27		
SSPC-86/760	760			0.58		
SSPC-140/760	760	140		0.65		



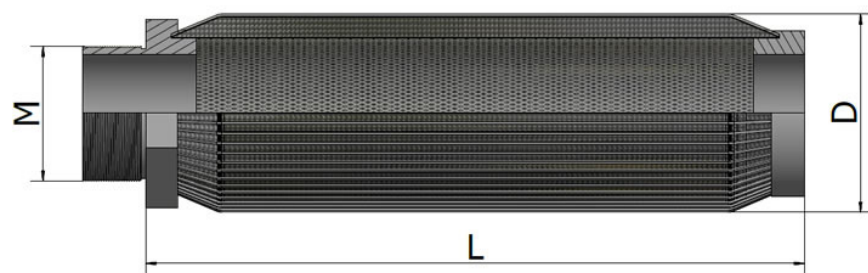
Model	L	D	M	Filter Area	Filter Rating	Filter Media
	mm	mm		m ²	μm	
SSPC-45/200	1432	45	1.25"-12UNF, 2"-12UN	1.015	3, 5, 7, 10, 15, 20, 25, 30, 40, 60, 75	Stainless steel sintered fiber felt, stainless steel wire cloth
SSPC-45/800	1241			0.98		
SSPC-57/1023	1025	57		0.81		



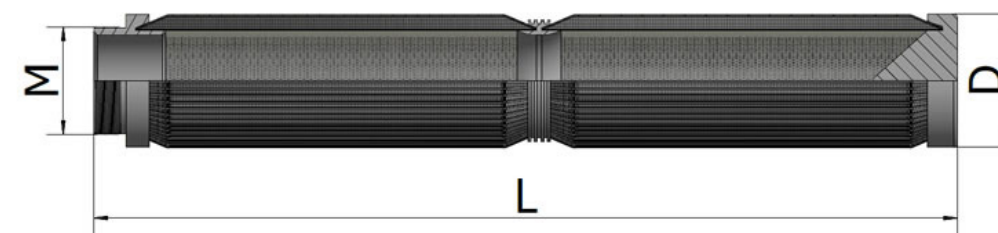
Model	L	D	M	Filter Area	Filter Rating	Filter Media
	mm	mm		m ²	μm	
SSPC-60/1432	1432	60	2" × 12UN-2A	1.015	3, 5, 7, 10, 15, 20, 25, 30, 40, 60, 75	Stainless steel sintered fiber felt, stainless steel wire cloth
SSPC-60/1241	1241			0.98		
SSPC-60/1025	1025			0.81		



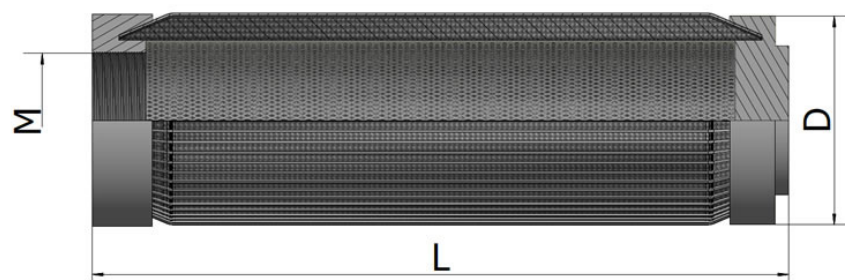
Model	L	D	M	Filter Area	Filter Rating	Filter Media
	mm	mm		m ²	μm	
SSPC-46/965	965	46	1.25"-12UN	0.52	3, 5, 7, 10, 15, 20, 25, 30, 40, 60, 75	Stainless steel sintered fiber felt, stainless steel wire cloth
SSPC-50/1020	1020	50	M42 × 2P	0.62		
SSPC-60/1020	1020	60	M52 × 2P	0.80		
SSPC-60/1210	1210			1.00		



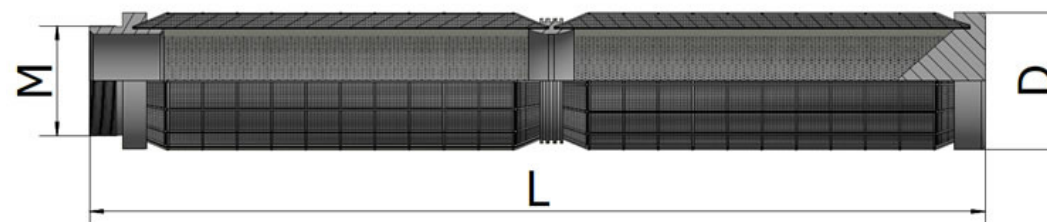
Model	L	D	M	Filter Area	Filter Rating	Filter Media
	mm	mm		m ²	μm	
SSPC-50/275	275	50	M30 × 1.5P	0.18	3, 5, 7, 10, 15, 20, 25, 30, 40, 60, 75	Stainless steel sintered fiber felt, stainless steel wire cloth
SSPC-50/525	525			0.33		
SSPC-50/870	870			0.54		
SSPC-50/1395	1395			0.80		



Model	L	D	M	Filter Area	Filter Rating	Filter Media
	mm	mm		m ²	μm	
SSPC-62/1195	1195	62	M36 × 2P	0.60	3, 5, 7, 10, 15, 20, 25, 30, 40, 60, 75	Stainless steel sintered fiber felt, stainless steel wire cloth
SSPC-62/1395	1395			0.70		



Model	L	D	M	Filter Area	Filter Rating	Filter Media
	mm	mm		m ²	μm	
SSPC-60/400	400	45	M33 × 1.5P, M33 × 2P	0.40	3, 5, 7, 10, 15, 20, 25, 30, 40, 60, 75	Stainless steel sintered fiber felt, stainless steel wire cloth
SSPC-60/500	500			0.50		
SSPC-60/1000	1000	57		1.00		



Model	L	D	M	Filter Area	Filter Rating	Filter Media
	mm	mm		m ²	μm	
SSPC-55/1245	1245	55	M33 × 2P	0.91	3, 5, 7, 10, 15, 20, 25, 30, 40, 60, 75	Stainless steel sintered fiber felt, stainless steel wire cloth
SSPC-55/1247	1247			0.91		
SSPC-55/1347	1347			0.95		
SSPC-55/1350	1350			0.95		

Application

Stainless steel pleated cartridges are mostly used in melting filters for high-temperature and high-pressure polymer processing and are widely used in the following industries.

- Textile. Filtration in the production of polymers such as polyester fiber, nylon fiber and film.
- Pharmaceutical. Filtration in the production of polymers for medical non-woven fabrics and masks;
- Environmental protection. Filtration in plastic recycling and granulation.



For textile fiber filtration



For non-woven fabric production



For plastic recycling and granulation

Sintered Mesh Filter Cartridge



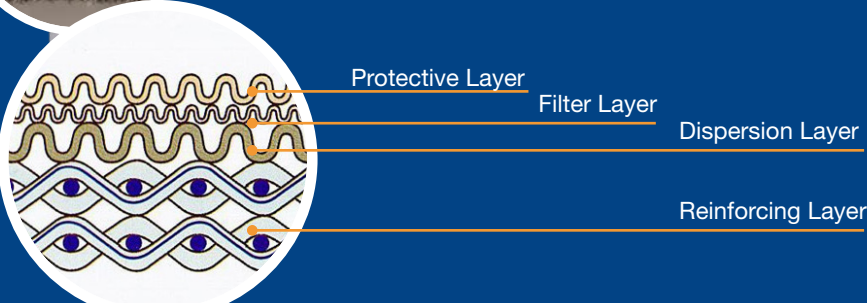
Sintered mesh filter cartridge is constructed from 5 layers of stainless steel wire sintered by high temperature vacuum, argon arc or plasma welding.

- Made of five layers of stainless steel wire mesh sintered at high temperature.
- Can be used for filtration in acid and alkaline environments at temperature ranging from -200 °C to 650 °C.
- Backwashing, ultrasonic and other common procedures are employed for multiple cleaning for a long service life.
- It achieves uniform surface filtration of the materials with 2–200 μm filter granularity.
- Multiple connections are available for you to choose from.

Structure

Sintered mesh filter cartridge generally adopts standard 5-layer sintered wire mesh laminate as the filter medium.

- The surface layer is plain square weave wire cloth and this layer is the protective layer for the second filtration control layer.
- The filtration control layer determines the filtration rating. It can be square weave, Dutch weave, twill weave or other types of wire cloth.
- The third layer is usually same with the first layer, but often functions as dispersion and transition layer.
- The fourth and fifth layers are Dutch weave wire mesh, but with 90-degree variation. These two reinforcing layers give the sintered wire mesh support and strength.



✦ Specification

Filter rating: 2 μm → 200 μm

Diameter: 65 mm, 70 mm or customized Length: 10", 20", 30", 40" or customized

Connection type: M42, M30, M32, M20, 215, DOE, 226, 222 or customized

Seal material: Silicon, NBR, EPDM, VITON

Permeability: 0.02–20 L/cm²·min·pa

Operating pressure: 1 bar

Operating temperature:



Application

Cartridge filters are suitable for liquid precision filtering to remove tiny impurities and bacterium, and are widely used in the following industries.

- Oil & gas. Produced water filtration; injection water filtration; completion fluid filtration; natural gas extraction; amine sweetening; desiccant dehydration;
- Metallurgy. Hydraulic and lubrication system filtration;
- Machining. Machine tool coolant circulating filtration;
- Food & beverage. Fermented beer filtration, beer final filtration, wine filtration, bottled water filtration, soft drink filtration, juice filtration, dairy filtration;
- Water treatment. household drinking water filtration, domestic wastewater filtration;
- Pharmaceuticals. Ultra-pure water filtration
- Marine filtration system. Seawater desalination.



For milk production



For vegetable oil extraction



For water treatment



For soft drink production



For municipal water filtration



For drinking water filtration



Filtration Basics

Dirt-Hold Capacity

The quantity of a filter element can trap and hold solid particulate contaminants, usually expressed in grams (g), from the start of use until the differential pressure reaches the specified end of use. This indicator is measured by the Filtration Performance Test or Multi-Pass Test, according to ISO 16889.

Verification of Fabrication Integrity, or Bubble' Test

Measured in accordance with ISO 2942.

Compatibility with Hydraulic Media

Measured in accordance with ISO 2943.

Flow Fatigue Characteristic

Measured in accordance with ISO 3724.

Flow Characteristic

Measured in accordance with ISO 3698.

Viscosity

It describes the flow characteristics of the media. The higher the viscosity of the media, the greater the flow resistance. Kinematic viscosity is often expressed in mm²/s with the symbol of cSt; The Chinese name is filament. Typically, the higher the temperature of the media, the lower the viscosity.

Differential Pressure

Fluid flows through the filter assembly, the difference between the upstream and downstream pressure is called the filter assembly differential pressure. Fluid flows through a new clean filter element, the difference between the upstream pressure and the downstream pressure is called the filter element initial differential pressure. With the accumulation of contaminants in the filter element in use, the resistance of the medium flowing through the filter element will gradually increase, and the pressure difference will go up as well. The greater the viscosity of the fluid, the greater the flow resistance, and the higher the differential pressure value. Media flowing through the filter housing without filter element is called the filter housing differential pressure.

Differential pressure, pressure loss or pressure drop is the same concept, and is a similar expression of this concept.

The pressure of the filter housing is divided into the following aspects.

Maximum Operating Pressure

The maximum pressure index that the filter works continuously without structural damage and the system applies pressure inside the filter until pressure value is basically stable.

Rated Fatigue Pressure

In the system, the filter can withstand a certain amount of alternating pulse pressure. The rated fatigue pressure is verified by simulation tests using the National Fluid Association Standard (NFPA2.6.1) with 90% reliability. The number of cycles of alternating pulse pressure load is one million cycles @ 3Hz, measured by a special pressure fatigue test bench. Usually, the rated fatigue pressure of a filter product is lower than the maximum working pressure.

Burst Pressure

The maximum pressure that the filter housing can withstand without structural damage.

Proof Pressure

It is 1.5 times of the maximum operating pressure of the filter, and is tested by a special test bench in a safety box. Before the filter leaves the factory, it is randomly tested according to the procedure. High pressure filter parts of cast iron type are subject to 100% pressure resistance test.

Flow Rate

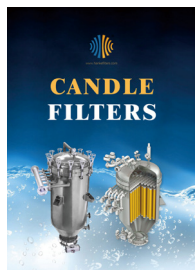
Maximum flow rate of filter and filter element

The maximum flow rate that a filter or filter element flows through under the maximum acceptable pressure drop. The maximum flow rate recommended for each product line is based on the premise that the medium viscosity is relatively low and the filtration rating is relatively low. When selecting filters and calculating the flow rate, please note that the temperature and viscosity of the medium are closely related, the higher the viscosity, the greater the flow resistance, and the viscosity has a significant impact on the flow capacity of the filter element.

10⁺
years
est. 2011



BASKET STRAINERS,
BAG FILTERS,
SELF-CLEANING FILTERS,
CANDLE FILTERS,
PRESSURE LEAF FILTERS,
FILTER CARTRIDGES



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