

Cobetter Filter Cartridge Solutions for Desalination Applications



Liquid & Gas Filtration

For Microelectronics, Pharmaceutical, Fine chemical,
Food and Beverage Industries

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Our Mission

**Through Excellent Products
& Sustainable Innovative Solutions,
We Help Customers
Solve Process Problems & Increase Yield.**

- Japanese Quality Control Methods are Implemented Throughout the Entire Manufacturing Process to Ensure 100% Passing Rate of Finished Products.
- Membrane Development and Research.
- Filter Material Know-How & Analysis.
- Design and Filter Production Capabilities.
- Design and Manufacture Filtration Solutions and Systems.





Quality Director Hara Shinji
Decades of Experience in the Japanese
Filtration Industry

Full Range of Manufacturing Capabilities for the Filtration Industry

We offer a full range of manufacturing capabilities for the filtration market including membrane development, filter production, filter housing design production, and validation analysis services.

We strive ourselves on providing our customers with high quality and cost-efficient products that meet all their requirements.



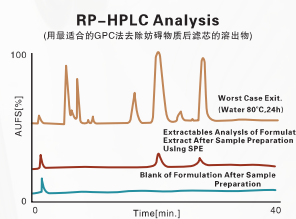
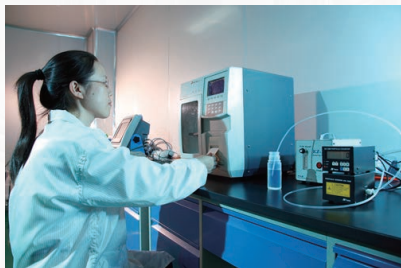
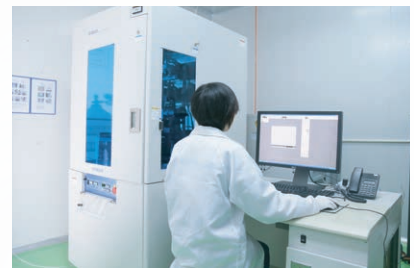
Analysis Center

9 Laboratory



ISO 17025

- Surface Analysis Lab (FESEM, SEM, EDS, Micro FT-IR)
- Filtration Performance Analysis Lab
- Particle Efficiency Analysis Lab
- Inorganic Chemical Analysis Lab (ICP-MS, Ion Chromatography)
- Organic Chemical Analysis Lab (LC-MS, GC-MS, HPLC)
- Bacteria Challenge Test Lab
- Media Performance Analysis Lab
- Ultra-filtration Analysis Lab
- Oil Separation Analysis Lab



HF150 High Flow Filter Cartridge

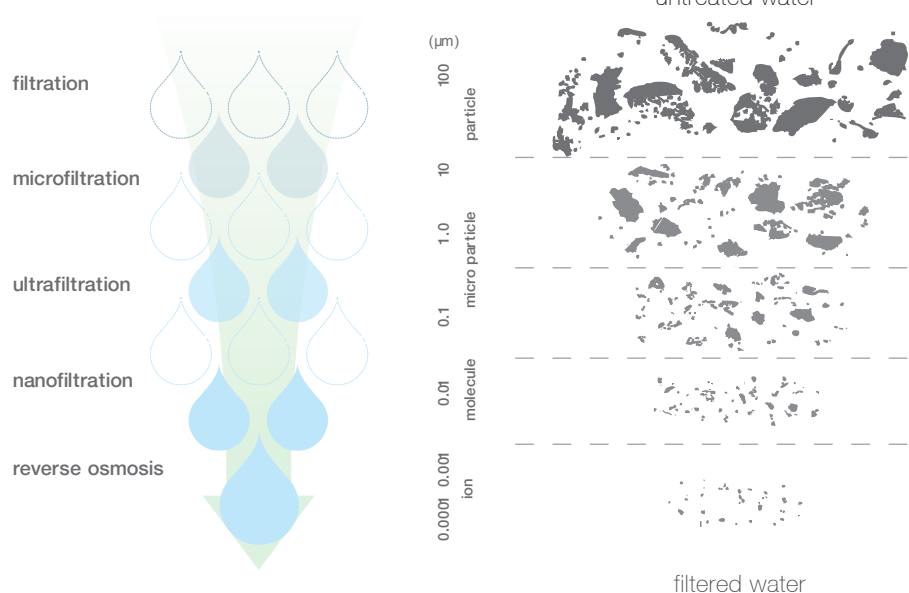
Filter Cartridge solutions system is designed for membrane process desalination applied for many ultra high flow design plants. Cobetter High Flow Filter is a large diameter, single open ended pleated cartridge filter. With a 6"/152mm diameter, large filtration area, and high flow rate up to 90m³/hr. It can be widely used in a wide variety of industry with less downtime for change-out.

Features and Benefits

- High density pleated filter type resulting in a high filtration area, high flow rates, longer service life, and high dirt holding capacity.
- Multi-layered design provides gradient filtration.
- Internal PP core guarantees no distortion and resists higher reverse differential pressure.
- Ergonomically designed handle facilities fast and easy installation and remove without special tools.



Industrial	Municipal Water, Pre-RO Filtration, Reclaimed Water, Coolants, Nozzle Protection, Boiler Condensate
Chemical	Quench Water, Aqueous Salt Solutions, Final Products
Petrochemicals	Water-flooding, Produced Water, Enhances Oil Recovery, Completion Fluids, Amine Sweetening, Final Products
Electronics	Pre-RO Filtration, Process Water
Food & Beverage	Process Water
Pharmaceutical	Process Water



Materials of Construction

Filter Media	Support/Drainage	End Caps	Core	Outside Material	
PP	Pleated Polypropylene depth structure	Polypropylene	Glass filled polypropylene	Polypropylene	PP Cage (HFPP150 Series)
GF	Rein bonded glass fiber /Polyester support	Polyester			PET Net (HF150 Serie)

Recommended Operating Conditions

Max. Temperature	PP: 80°C
	GF: 121°C
Max. Pressure	0.40 Mpa/21°C HFPP150 (PP Cage)
	0.38 MPa/21°C HF150 (PET Net)
	0.15 MPa/80°C

Flow Rate

Length	Design Flow Rate	Max Flow Rate
20"	15 m³/h	30 m³/h
40"	30 m³/h	60 m³/h
60"	45 m³/h	90 m³/h
80"	60 m³/h	120 m³/h

Retention Ratings

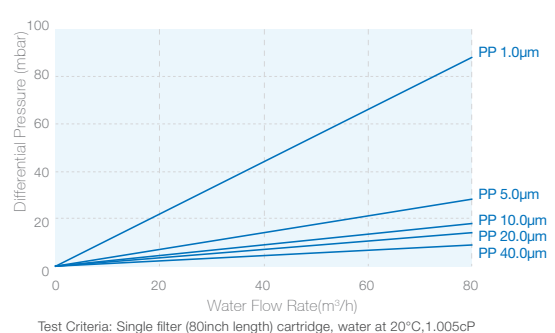
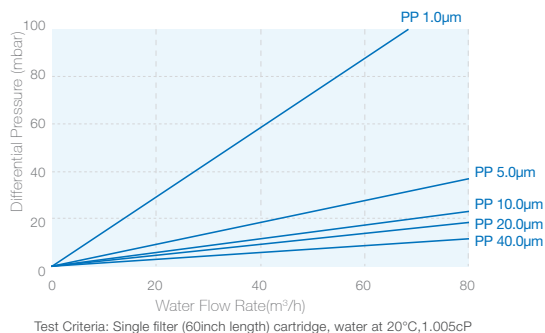
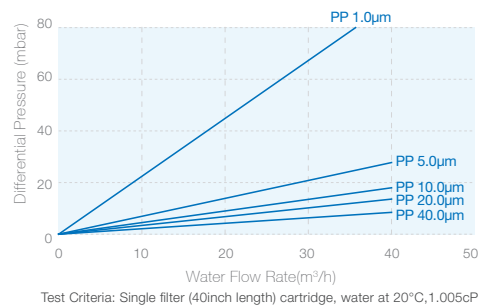
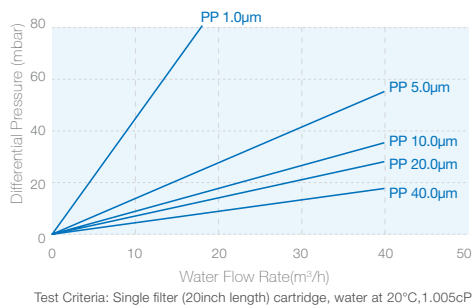
Polypropylene (PP)	1.0, 2.0, 5.0, 10, 20, 40, 70, 90µm
Glass Fiber (GF)	0.8, 1.0, 3.0, 5.0, 15, 25µm

Retention Characteristic

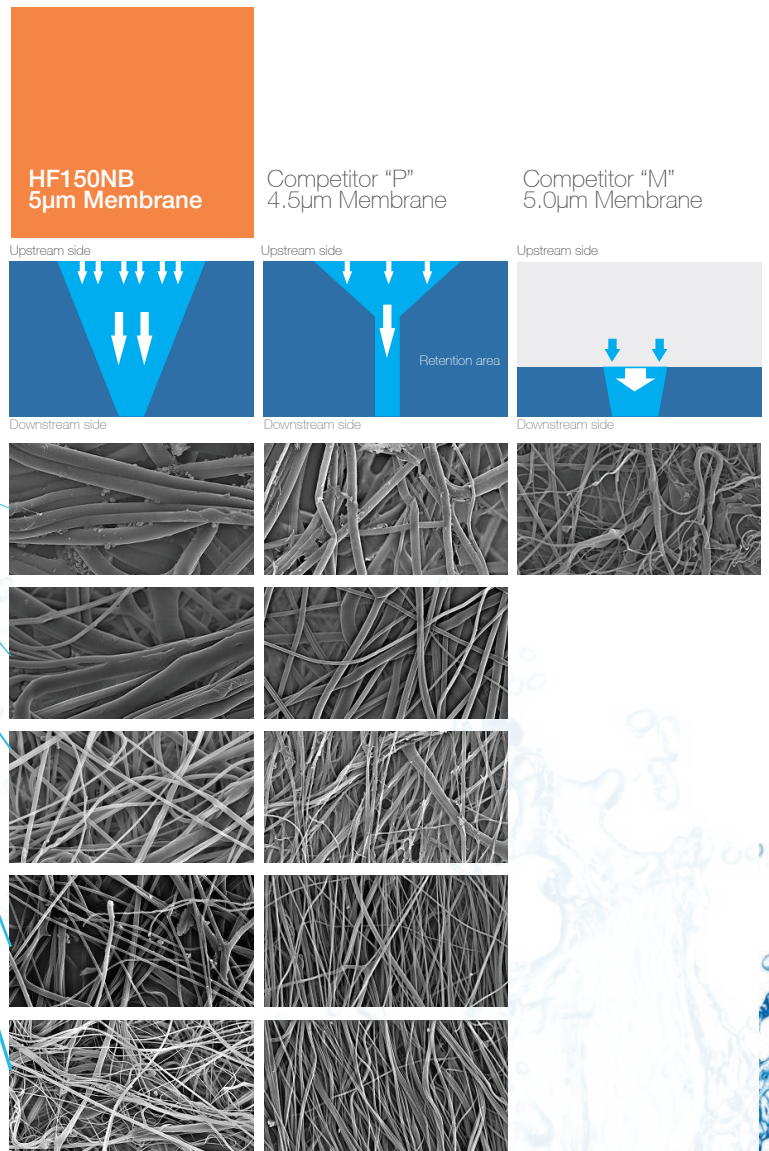
Particle Size	Filtration Efficiency HF150NB						
	PP0.8	PP1.0	PP2.0	PP3.0	PP5.0	PP10.0	PP20.0
≥1µm	99.89%	99.82%	95.00%	86.97%	79.86%	42.23%	24.38%
≥2µm	99.97%	99.87%	98.64%	96.84%	90.09%	70.49%	40.09%
≥5µm	100.00%	99.93%	99.90%	98.86%	98.36%	82.26%	76.66%
≥8µm	100.00%	100.00%	99.97%	99.20%	98.88%	95.25%	82.60%
≥10µm	100.00%	100.00%	100.00%	99.58%	99.39%	98.18%	89.42%
≥12µm	100.00%	100.00%	100.00%	99.78%	99.57%	98.76%	97.41%
≥25µm	100.00%	100.00%	100.00%	100.00%	100.00%	99.34%	99.14%

Remarks: The testing particle is made by mixed solution of standard silica .

Flow Rate Characteristics



Performance Comparison Table I



Membrane Thickness	2.2 mm	2.2 mm	0.8 mm
IPA Velocity Time (@-0.005Mpa/50mlIPA)	11.2 s	12.78 s	5.67 s
Efficiency 0.5-2.0µm particle	99.1%	99.3%	11.79%
Service Life (by Hangzhou city water)	325.43 L	272.25 L	164.5 L

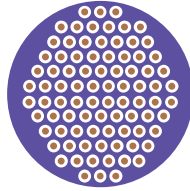
Performance Comparison Table II

Filters Quantities vs Same Filter Capacity

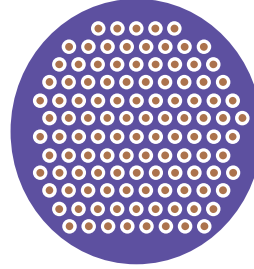
150m³/h



**High Flow
Filtration System**

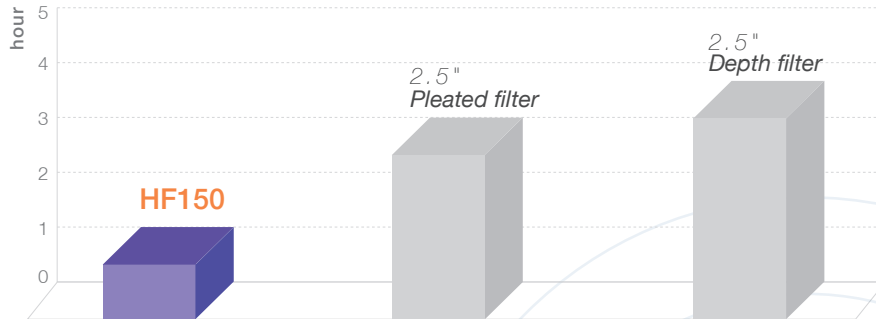


*Pleated Cartridge
Filtration System*



Depth Filter System

Change-Out Time



Reduce the number of filters by 90%,
Decrease the volume of housing by 50%,
Easier operation and change-out.

End Cap Configuration

 HF150NB	 HFM150	 DSHF150
 HFPP150	 G1HF150	
 N1HF150	 N2HF150	 N3HF150
 N4HF150	 N5HF150	 JL-150

Ordering Information

	Filter Media	Efficiency Rate		Length	Seal
HFPP150 (PP Cage)	PP GF	0050=0.5µm	1000=10µm	20=20"	S=Silicone
		0080=0.8µm	1500=15µm	40=40"	E=EPDM
HF150NB (PET Net)		0100=1.0µm	2000=20µm	60=60"	V=Viton
HFM150		0200=2.0µm	4000=40µm	80=80"	
DSHF150		0300=3.0µm	7000=70µm		
G1HF150		0500=5.0µm	9000=90µm		
N1HF150					
N2HF150					
N3HF150					
N4HF150					
N5HF150					
JL-150					

MBF-PP Series

Polypropylene Melt Blown Filter

MBF-PP series polypropylene melt blown filter apply the latest technology, the whole filter has very hard mechanical properties, and the compression resistance is twice that of ordinary melt blown filter. It can be applied to some high viscosity and high solid content feed liquids.

The melt blown process has a high dirt holding capacity and can withstand more impurities.

Materials of Construction

Filter Media	PP
Core/Cage/End Cap	PP

Operating Condition

Max Temperature	80°C
Max Pressure	4bar/21°C 2.4bar/80°C

Filter Dimensions

Outer Diameter	63mm
Inner Diameter	25mm
Length	Longest 60"



Selection

	Removal Ratings		End Cap	Length	Seal
MBF	0050=0.5µm	3000=30µm	DOE =DOE	05=5"	S=Silicone
-PP	0100=1.0µm	4000=40µm	TC =222/Flat	10=10"	E=EPDM
	0300=3.0µm	7000=70µm	TF =222/Pointed	20=20"	V=Viton
	0500=5.0µm	9000=90µm	SF =226/Pointed	30=30"	P=TEV
	1000=10µm	120H=120µm	SC =226/Flat	40=40"	N=Null
	2000=20µm	150H=150µm		50=50"	
				60=60"	

End Cap Example



Flat



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WDCC Series Wire-wound Filter

Honeycomb Structure Filter

The WDC series filter element is made of textile dimensional thread (polypropylene, absorbent cotton thread, glass fiber, polyester) precisely wound on a porous (PP, stainless steel) high-strength skeleton according to a specific density, and has a honeycomb structure with outer and inner density.

It is suitable for low-viscosity, low-impurity mass filtration, and can effectively remove suspended solids, particles, rust and other impurities in the material liquid, and has very good filtration characteristics.

Working Temperature

Polypropylene (PP)	80°C
Cotton wool (CO)	120°C
Polyester (PET)	120°C
Glass fiber (GF)	200°C

Working Characteristics

Working Pressure Difference	0.1 bar
Maximum Working Pressure Difference	4 bar
Recommended Replacement Pressure Difference	2 bar



Selection

	Series	Removal Ratings	Center rod	Length
WDC	PP=Polypropylene	0050=0.5µm 2500=25µm	P = Polypropylene	0=Custom Made 20=508mm
-PP	CO=Pledget	0100=1.0µm 3000=30µm	S = 304 stainless steel	05=127mm 30A=750mm
	GF=Glass Fiber	0300=3.0µm 4000=40µm	GF = glass fiber	10A=250mm 30=762mm
	PE=Polyester	0500=5.0µm 5000=50µm	SL = 306L stainless steel	10=254mm 40A=1000mm
		1000=10µm 7500=75µm		20A=500mm 40=1016mm
		1500=15µm 100H=100µm		
		2000=20µm 150H=150µm		
		200H=200µm		

End Cap Example



Flat



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H-HF150 Series High Flow Rate Industrial Filter Housing

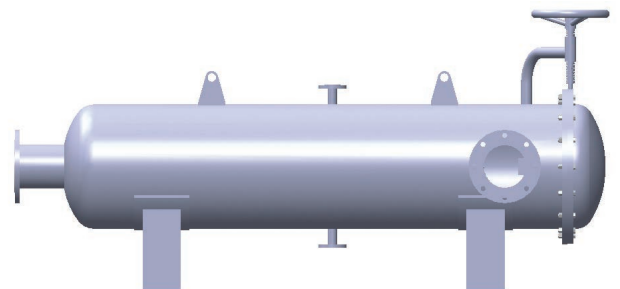
Large High Flow Rate Filter Housing

Cobetter H-HF150 Series Industrial Filter Housing designed for use with HF150 Series Filter Cartridges mainly used for large fluid (liquid/water) flow rate applications, especially in water treatment. Especially designed for large flow rates, this filter housing requires a small area for installation and is cost efficient and easy to operate when compared to traditional filter housings.

It is available in 304 or 316L stainless steel, which ensures strong corrosion resistance for a wide range of applications.



In addition, it is available in a horizontal or vertical configuration. A vertical configuration is normally composed of 10-round 40" filters. For large flow rates of over 1000m³/h, we recommend a horizontal configuration with 60" HF150 filter cartridges as it satisfies large flow rate applications and is relatively easy to change.



Surface Finish

Polish Type	Mirror Finish; Internal Mirror Finish Outer sand Blast
Surface Option	Internal Ra: 0.6µm; External Ra: 0.8µm

Operating Conditions

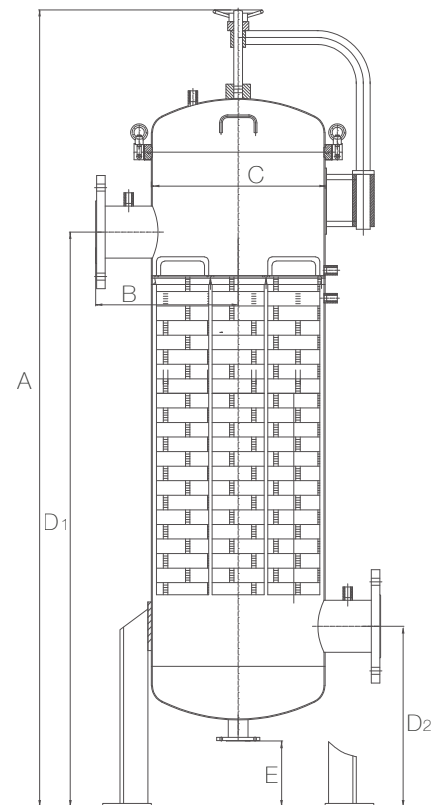
Max. Operating Pressure	0.6Mpa(6bar) / 1.0Mpa(10bar)
Max. Operating Temperature	135°C (266°F)

Material of Construction

Housing Body	304;316L
Vent / Drain	304;316L
Screw Bolt	304
Leg	304
O-ring / Gaskets	Silicon, Viton, EPDM

Connection

Body Connection	Swing Bolt / C-Clamp
Inlet / Outlet	Flange
Vent	G1/2"
Drain	G1"
Pressure Gauge	M14*1.5



Drawings & Dimensions

	1round		3round		4round	
	40"	60"	40"	60"	40"	60"
A	1555	2055	2170	2670	2200	2700
B	250	250	380	380	400	400
C	219	219	400	400	450	450
D ₁	1355	1855	1655	2155	2175	2675
D ₂	335	335	405	405	420	420
E	150	150	150	150	200	200

	5round		6round		7round	
	40"	60"	40"	60"	40"	60"
A	2580	3080	2600	3100	2600	3100
B	410	410	455	455	455	455
C	550	550	550	550	550	550
D ₁	1840	2340	1860	2360	1860	2360
D ₂	550	550	570	570	570	570
E	200	200	200	200	200	200

Ordering Information

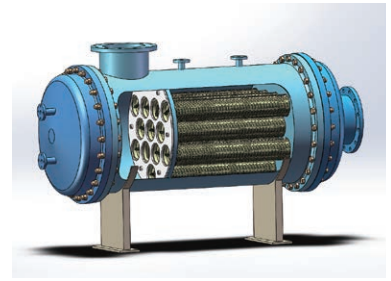
	Number of Filters	Filter Length	Material	End Cap	Housing Connection	Inlet / Outlet	Sealing Material	Design Pressure	Surface Finish	Configuration
H-HF150	<u>3</u>	<u>10</u>	<u>F</u>	<u>H</u>	<u>D</u>	<u>F80</u>	<u>S</u>	<u>X</u>	<u>A</u>	<u>V</u>
	01 1 round	20 20 inch	F 304	H HF150	D Screw Bolt	F80 Flange DN80 (1round)	S Silicone	X 0.6MPa	A Mirror Polish	V Vertical
	02 2 round	30 30 inch	S 316L		C C-Clamp	F125 Flange DN125 (2-3round)	E EPDM	Y 1.0MPa	C Internal Mirror Finish Outer Sand Blast	H Horizontal
	03 3 round	40 40 inch				F150 Flange DN150 (4round)	V Viton			
	04 4 round	60 60 inch				F200 Flange DN200 (5-6round)				
	05 5 round	80 80 inch				F250 Flange DN250 (7round)				
	06 6 round					F250 Flange DN250 (8round)				
	07 7 round					F250 Flange DN250 (9round)				

H-FRP Housing

High Anti-Corrosive Performance
Economical Design

Cobetter- H-FRP-150 filter is made of glass fiber reinforced plastic material, especially suitable for seawater, brine, brine and other applications. The performance characteristics of FRP make it have good corrosion resistance and guarantee long-term use. The HF150 series high-flow filter element is used inside. A 6-inch diameter HF150 is equivalent to 10-25 2.5 "deep-layer filter elements, which effectively reduces the number of filter elements and the diameter of the filter barrel at the same flow rate.

The Cobetter-H-FRP-150 series has 3 specifications. 1 core, 3 cores, and 12 cores, which is able to meet the needs of different flows. H-FRP-150-12 can reach a maximum flow of 1000m³/h.



Filter Cartridge Specifications

	Model	H-FRP150-1	H-FRP150-3	H-FRP150-12
Parameters	Filter element diameter	6"	6"	6"
	Filter length	40"/60"/80"	40"/60"/80"	40"/60"/80"
	Number of filter elements	1	3	12
	Filter material	PP/GF	PP/GF	PP/GF
Design Parameters	Flow direction	Inside to outside Outside to inside	Inside to outside Outside to inside	Inside to outside Outside to inside
	Standard design flow	30 / 45 / 60 m³/h	90 / 135 / 180 m³/h	360 / 540 / 720 m³/h
	Design flow	40 / 60 / 80 m³/h	120 / 180 / 240 m³/h	480 / 720 / 960 m³/h
Texture	Design pressure	0.6 / 1.0Mpa	0.6 / 1.0Mpa	0.6 / 1.0Mpa
	Set temperature	-10~65°C	-10~65°C	-10~65°C
	Shell material	FRP		
	Seal ring material	Silicone/EPDM/Viton		



Ordering Information

	Number of Filters	Filter Length	Flow Direction	Sealing Material	Design Pressure
H-FRP150	<u>1</u>	<u>60</u>	<u>I</u>	<u>S</u>	<u>X</u>
	01 1 round 03 3 round 12 12 round	20 20 inch 40 40 inch 60 60 inch 80 80 inch	I From inside to outside O From outside to inside	S Silicone E EPDM V Viton	X 0.6MPa Y 1.0MPa Z Customize

FRP Filtration System Design

Cobetter Solution

At the design stage, professional engineers from Cobetter will design and provide a complete set of filtration systems based on your comprehensive flow requirements.

Application on Water Treatment System by Membrane: Electronics, Power Generation, Metallurgy, Chemical Industry, Food & Beverage, Brackish Water, Seawater Desalination, Garbage Permeate etc.

FRP-150-1 and H-FRP-150-3, built-in 1 and 3 filter elements, single unit application or combined system both could meet the needs of large flow

The system integration is similar to the installation method of RO reverse osmosis membrane shell, and the combination is flexible without being limited by space;

The interfaces are all side-connected to facilitate the replacement of the filter element;

The filter comes with a filter element positioning and support assembly to facilitate the installation of the filter element.

Technical characteristics

Single-core FRP filter is suitable for 20" / 40" / 60" high-flow folding filter element. FRP filter has better corrosion resistance than stainless steel filter. Glass fiber reinforced plastic pipe has higher strength than PVC pipe.

The glass fiber reinforced plastic pipe can significantly reduce the manufacturing cost and reduce the frame height.

The design is flexible and the filter element is easy to replace.

Excellent corrosion resistance and high strength.

Flexible design for horizontal or vertical installation.

Space saving and Cost saving up to 30%.



System Information



Code	Filter Dimension	Filter Quantity	Flow Rate
H-FRP-1-40	6"×40"	1	40m ³ /h
H-FRP-1-60	6"×60"	1	60m ³ /h
H-FRP-1-80	6"×80"	1	80m ³ /h
H-FRP-3-40	6"×40"	3	120m ³ /h
H-FRP-3-60	6"×60"	3	180m ³ /h
H-FRP-3-80	6"×80"	3	240m ³ /h
H-FRP-12-40	6"×40"	12	480m ³ /h
H-FRP-12-60	6"×60"	12	720m ³ /h
H-FRP-12-80	6"×80"	12	960m ³ /h

Note: multiple sets required if total flow exceed above table, connect with FRP or PVC pipeline.
Max Pressure: 1.0Mpa



Multi-core contains filter



cobetter[®]
— filtration —

Please contact us for more information

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