

Filtration Solutions

Product Catalog 2022 Ver.00



CATALOG

CAF Series Capsule Filter	01
CAF SCS Capsule Filter	02
CAF SCF Capsule Filter	03
SCS LDF-Suporflow Ultra-low Diffusion Polyethersulfone Sterilizing Grade Filter Cartridge	04
SCS Suporflow Series Polyethersulfone Sterilizing Grade Filter Cartridge	06
SCF LFG-Solvent Hydrophobic Polytetrafluoroethylene Sterilizing Filter Cartridge	08
Sanitary Grade Stainless Steel Filter Housing	10
Storage Tank Respirator	12
ITPOWER Integrity Tester	14

CAF Series Capsule Filter

Introduction of CAF Series Capsule

CAF series capsule filter is specifically designed for the biopharmaceutical clients, with imported membrane, special folding and hot melt sealing technology, free of adhesive, metal and other substances. CAF series capsule filter including two categories: CAFSCS series capsule filter for liquid and CAFSCF series for gas, both of which allowing the scale - up from development to production.



CAF SCS Capsule

Product Description

CAF SCS series capsule filter contains imported polyethersulfone (PES) micron-rated filter membrane with high flow rates and low adsorption, providing high level of filtration accuracy and speed for liquid filtration.

Application

- Pre-filtration of liquid: remove particles, reduce bioburden, and protect terminal filter etc.
- Sterile filtration of liquid: sterile filtration for medium, buffer, purified water, biological products etc.
- Mycoplasma removal: mycoplasma removal for medium and buffer etc.

Product Parameters

Dimension	2 inches	5 inches	10 inches
Length	125mm	215mm	335mm
Effective Filter Area (m ²)	≥0.05	≥0.30	≥0.60
Bubbling Point (water)	≥3400mbar	≥3400mbar	≥3400mbar
Connections(inlet and outlet)	1.5 "TC cartridge	1.5 "TC cartridge	1.5 "TC cartridge
Sterilization method	Irradiation/ heat	Irradiation/ heat	Irradiation/heat
Removal Ratings	0.1um、0.2um、0.45um、0.65um、0.85um、1.0um		
Maximum operating pressure /temperature	0.50MPa/85°C		
Maximum differential pressure (forward)	0.42MPa / 25°C		
Maximum pressure (backward)	0.21MPa / 25°C		

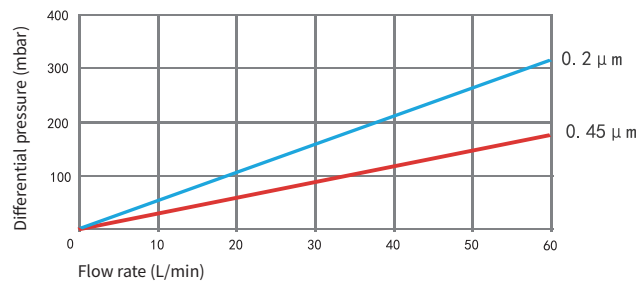


Figure: Typical Flow Rate

Flow rate VS. differential pressure of pure water

Ordering Information

CAFSCS P S

Coding	Removal Ratings
91	0.1μm
92	0.2μm
94	0.45μm
96	0.65μm
98	0.85μm
01	1.0μm

Coding	Membrane layers
H	Single layer
S	Double layer

No.	Dimension
1/5	2 inches
1/2	5 inches
1	10 inches

Coding	Connections
K1	1.5" TC

Coding	Irradiation
G	Irradiation

CAF SCF Bag Filter

Product Description

CAF SCF series bag filter adopts advanced imported hydrophobic polytetrafluoroethylene (PTFE) microporous filter membrane, featured by high flow rate, low differential pressure and steam resistance, providing a perfect solution for sterile filtration of air and gas in the biopharmaceutical process.

Application Scope

- Pre-filtration of gas: remove particles, and reduce bioburden etc.
- Sterile filtration of gas: sterile filtration for intake air and tail gas of fermenter, compressed air, gas of storage tank and mixing tank etc.

Product Parameters

Dimension	2 inches	5 inches	10 inches
Length	125mm	215mm	335mm
Effective Filter Area (m ²)	≥0.05	≥0.30	≥0.60
Bubbling Point (IPA)	≥1260mbar	≥1260mbar	≥1260mbar
Connections(inlet and outlet)	1.5 "TC cartridge	1.5 "TC cartridge	1.5 "TC cartridge
Sterilization method	121°C 30min		
Removal Ratings	0.1um、0.2um、0.45um、0.65um、0.85um、1.0um		
Maximum operating pressure /temperature	0.50MPa/80°C		
Maximum differential pressure (forward)	0.42MPa / 25°C		
Maximum pressure (backward)	0.35MPa / 25°C		

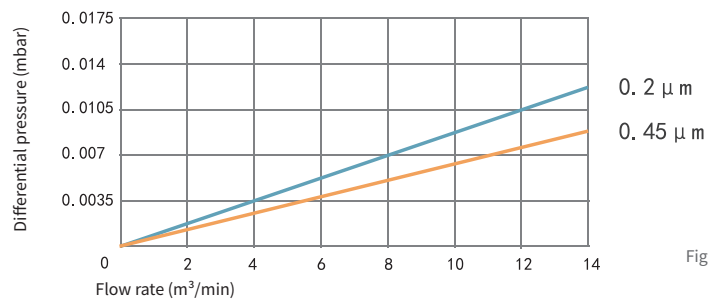


Figure: Typical Flow Rate

Ordering Information

CAFSCF ☆ P S △

Flow rate VS. differential pressure of air

Coding <input type="checkbox"/> Removal Ratings	Coding <input checked="" type="checkbox"/> Membrane layers	No. <input type="checkbox"/> Dimension	Coding <input type="checkbox"/> Connections
91 0.1μm	H Single layer	1/5 2 inches	K1 1.5"TC
92 0.2μm	S Double layer	1/2 5 inches	
94 0.45μm		1 10 inches	
96 0.65μm			
98 0.85μm			
01 1.0μm			

SCS LDF-Suporflow Ultra-low Diffusion Polyethersulfone Sterilizing-Grade Filter Cartridge

Product Description

This type of cartridge filter with imported and improved polyethersulfone membrane which are validated sterilizing-grade filter for liquid. The ultra-low diffusion flow can ensure the sterilization effect, and the integrity value is related to bacteria challenge.

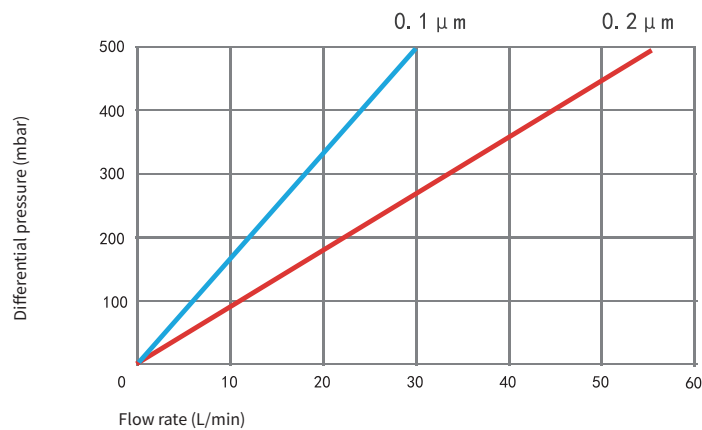
Applications

- Filtration of injections with high and low PH values
- Sterile filtration of water for injection
- Sterile filtration of cleaning fluid and disinfectant
- Sterile filtration of products with high viscosity (such as eye drops)
- Sterile filtration of lyophilized powder injection
- Sterile filtration of buffer and medium
- Sterile filtration of blood products and vaccines
- Removal of mycoplasma in serum and cell culture fluid



Product Features

- Ultra-low diffusion flow
- Good hydrophily, easy to wet
- PH application scope of 1-14
- Asymmetric membrane structure
- With extremely low protein nonspecific adsorption compared to products of the same category
- Independently numbered filter element, and traceable products



Flow rate VS. differential pressure of air

Product Parameters

Materials of Construction	
Membrane	Double-layer polyethersulfone membrane
Support/Drainage	Polypropylene
Core, Cage and End caps	Polypropylene
Sealing Technology	Thermal bonding without adhesives

Operating Parameters	
Maximum operating temperature	80°C, 0.173MPa
Maximum differential pressure (forward direction)	0.42MPa, 25°C
Maximum differential pressure (Reverse direction)	0.35MPa, 25°C

Biological Safety	
Acute toxicity test	Pass
Intracutaneous reactivity and implantation test	Pass
Endotoxin	≤0.25EU/ml
Extractables (NVR)	≤0.03g

Sterilization	
Autoclave	121°C@30min
In situ Steam	121°C@30min

Filter area	
Filter area (m ² / φ69-10")	≥0.50

Integrity test (water, 25°C)	
Bubbling point (BP)	≥3400mbar

Removal Rating	
Removal Rating (μm)	0.1、0.2、0.45、0.65、0.85、1.0

Ordering Information

SCS □ S ☆ ◇ ○ △

Coding Removal Ratings	Coding Grade	No. Connector form	No. Length	No. O-ring material
91 0.1μm	G Medical grade	0 both ends plain	1/4 2.5"	S Silicone
92 0.2μm		1 215/Flat sealing	1/2 5"	E EPDM
94 0.45μm		2 222/Flat sealing	1 10"	V Fluoroelastomer
96 0.65μm		3 222/Fin	2 20"	
98 0.85μm		4 226/Fin	3 30"	
01 1.0μm		5 222 stainless steel lining/flat sealing	4 40"	
		6 222 stainless steel lining/Fin		
		7 226 stainless steel lining/Fin		
		8 226 stainless steel lining/flat sealing		
		9 226/Flat sealing		

SCS Suporflow Series Polyethersulfone Sterilizing Grade Filter Cartridge

Product Description

The filter element adopts imported polyethersulfone membrane, and its unique hydrophilic filter membrane does not contain surfactant and surface wetting agent, providing high level of filtration accuracy and high throughput for filtration solution.

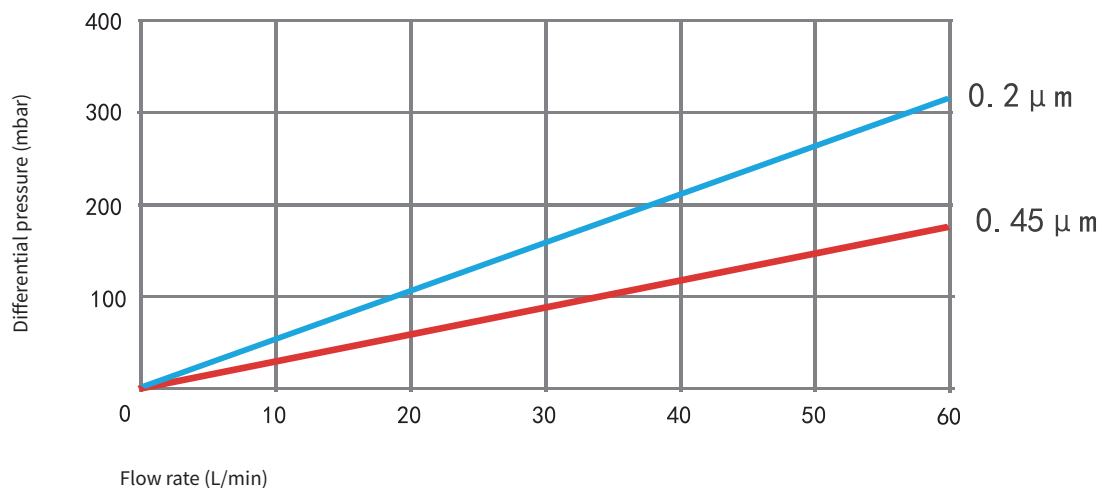
Application Scope

- Filtration of large volume (LVP) and small volume (SVP) injection
- Sterile filtration of eye drops and power injections
- Sterile filtration of buffer and medium
- Sterile filtration of water for injection and purified water
- Sterile filtration of cleaning fluid and disinfectant



Product Features

- Asymmetric membrane Structure
- With extremely low protein nonspecific adsorption compared to products of the same category
- The filter cartridge has extremely high flow rate and total throughput



Flow rate VS. differential pressure of air

Product Parameters

Materials of Construction	
Membrane	Single-layer polyethersulfone membrane
Support/Drainage	Polypropylene
Core, Cage and End caps	Polypropylene
Sealing Technology	Thermal bonding without adhesive

Operating Parameters	
Maximum operating temperature	85°C, 0.05MPa
Maximum differential pressure (forward direction)	0.42MPa, 25°C
Maximum differential pressure (Reverse direction)	0.21MPa, 25°C

Biological Safety	
Acute toxicity test	Pass
Intracutaneous reactivity and implantation test	Pass
Endotoxin	≤0.25EU/ml
Extractables (NVR)	≤0.03g

Sterilization	
Autoclave	121°C@30min
In situ Steam	121°C@30min

Filter area	
Filter area (m ² / φ69-10")	≥0.60

Integrity test (water, 25°C)	
Bubbling point (BP)	≥3400mbar

Removal Rating	
Removal Rating (μm)	0.1、0.2、0.45、0.65、0.85、1.0

Ordering Information

SCS □ H ☆ ◇ ○ △

Coding Removal Ratings	□
91	0.1μm
92	0.2μm
94	0.45μm
96	0.65μm
98	0.85μm
01	1.0μm

Coding Grade	☆
G	Medical grade

No. Connector form	◇
0	both ends plain
1	215/Flat sealing
2	222/Flat sealing
3	222/Fin
4	226/Fin
5	222 stainless steel lining/flat sealing
6	222 stainless steel lining/Fin
7	226 stainless steel lining/Fin
8	226 stainless steel lining/flat sealing
9	226/Flat sealing

No. Length	○
1/4	2.5"
1/2	5"
1	10"
2	20"
3	30"
4	40"

No. O-ring material	△
S	Silicone
E	EPDM
V	Fluoroelastomer

SCF LFG-Solvent Hydrophobic Polytetrafluoroethylene Sterilizing Filter Cartridge

Product Description

The filter element is imported hydrophobic polytetrafluoroethylene micron-rated membrane, with large filter area and large throughput. It is widely used in sterile air filtration in fermentation process and sterile filtration of the materials such as antibiotics and solvents etc.

Application Scope

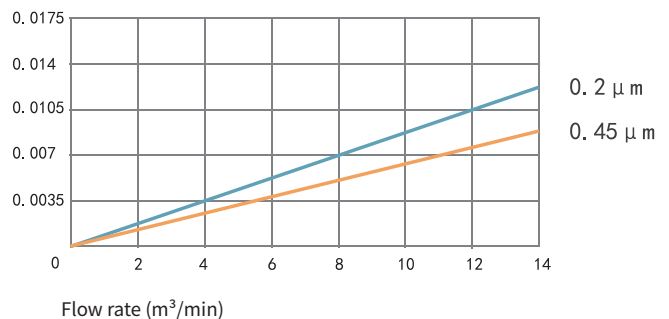
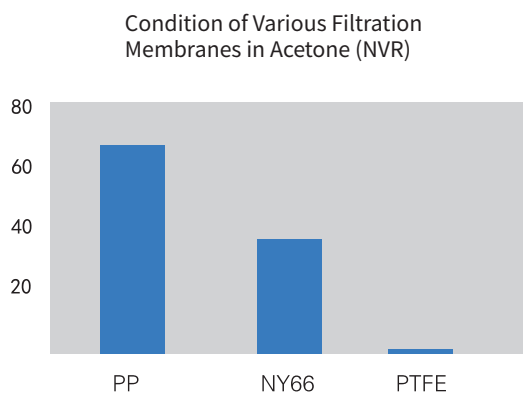
- Sterile filtration of various gas and compressed gas in pharmaceutical industry
- Sterile filtration fermenter air and vent gas in pharmaceutical industry
- Sterile filtration of intake air of autoclave in pharmaceutical industry
- Sterile filtration of intake air of fermenter and sterilizing room in pharmaceutical industry
- Sterile filtration of solvent and organic solvent with strong corrosivity



Product Features

- Natural materials with strong hydrophobicity
- Single-layer hydrophobic polytetrafluoroethylene micron-rated membrane
- With large filter area, small differential pressure, large flow and long service life
- Good chemical compatibility, and it can tolerate strong acid, alkali and organic solvents

Extractable (NVR) Data



Flow rate VS. differential pressure of air

Product Parameters

Materials of Construction	
Membrane	Hydrophobic polytetrafluoroethylene membrane
Support/Drainage	Polypropylene
Core, Cage and End caps	Polypropylene
Sealing Technology	Thermal bonding without adhesive

Operating Parameters	
Maximum operating temperature	80°C, 0.173MPa
Maximum differential pressure (forward direction)	0.42MPa, 25°C
Maximum differential pressure (Reverse direction)	0.35MPa, 25°C

Filter area	
Filter area (m ² / φ69-10")	≥0.60

Integrity test (IPA, 25°C)	
Bubbling point (BP)	≥1260mbar

Biological Safety	
Acute toxicity test	Pass
Intracutaneous reactivity and implantation test	Pass
Endotoxin	≤0.25EU/ml
Extractables (NVR)	≤0.01g

Sterilization	
Autoclave	121°C@30min
In situ Steam	121°C@30min

Removal Rating	
Removal Rating (μm)	0.1、0.2、0.45、0.65、0.85、1.0

Ordering Information

SCF □ H ☆ ◇ ○ △

Coding Removal Ratings
91 0.1μm
92 0.2μm
94 0.45μm
96 0.65μm
98 0.85μm
01 1.0μm

Coding Grade
P Medical grade

No. Connector form
0 both ends plain
1 215/Flat sealing
2 222/Flat sealing
3 222/Fin
4 226/Fin
5 222 stainless steel lining/flat sealing
6 222 stainless steel lining/Fin
7 226 stainless steel lining/Fin
8 226 stainless steel lining/flat sealing
9 226/Flat sealing

No. Length
1/4 2.5"
1/2 5"
1 10"
2 20"
3 30"
4 40"

No. O-ring material
S Silicone
E EPDM
V Fluoroelastomer

E5 G-Polypure Economy Polypropylene Deep Filter Element

Product Description

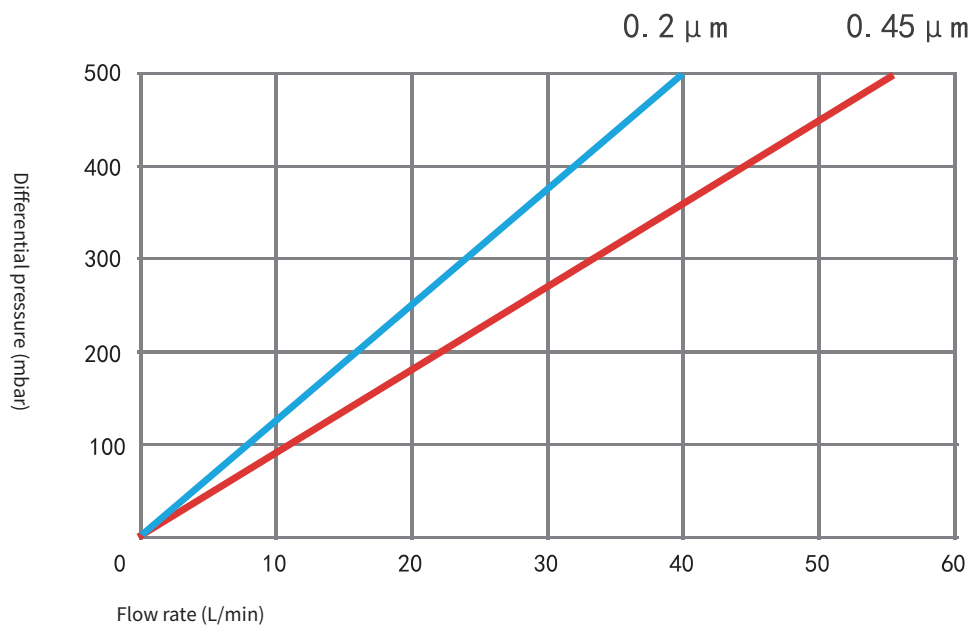
This type of filter element has the characteristics of low cost, high dirt holding capacity, long life, excellent acid and alkali resistance, and extensive chemical compatibility, and is mainly used in the pre-filtration of biopharmaceuticals.

Application scope

- Security Filtration of Reverse Osmosis Water Treatment Process
- Pre-filtration of process water
- Pre-filtration of high purity chemical reagents
- Clarification and filtration of strong acid and alkali solutions
- Filtration of compressed air and gas

Product Features

- Polypropylene filter media that media meets the requirements of CFDA
- Wide chemical compatibility, resistance within PH value 1~ 14, large flux, low-pressure difference, long life
- Wide range of filter fineness, large selectivity, designed for various applications
- Hot-melt process, firm structure, with no foreign matter release



Flow rate VS. differential pressure of pure water

Product Parameters

Materials of Construction	
Filter membrane	Polypropylene thermal sprayed fiber membrane
Support/Drainage	Polypropylene
Core, Cage and End caps	Polypropylene
Sealing Technology	Adhesive-free hot melt sealing technology
Operating Parameters	
Maximum operating temperature	88°C, 0.28MPa 60°C, 0.42MPa
Maximum differential pressure (forward direction)	0.42MPa, 25°C
Maximum differential pressure (Reverse direction)	0.28MPa, 60°C
Filter area	
Filter area (m ² / φ69-10")	≥0.40-0.65

Biological Safety	
Acute toxicity test	Pass
Intracutaneous reactivity and implantation test	Pass
Sterilization	
Autoclave	121°C@30min
In situ Steam	121°C@30min
Removal Rating	
Removal Rating (μm)	0.1、0.2、0.45、0.65、1、3、5、10、20、30、60

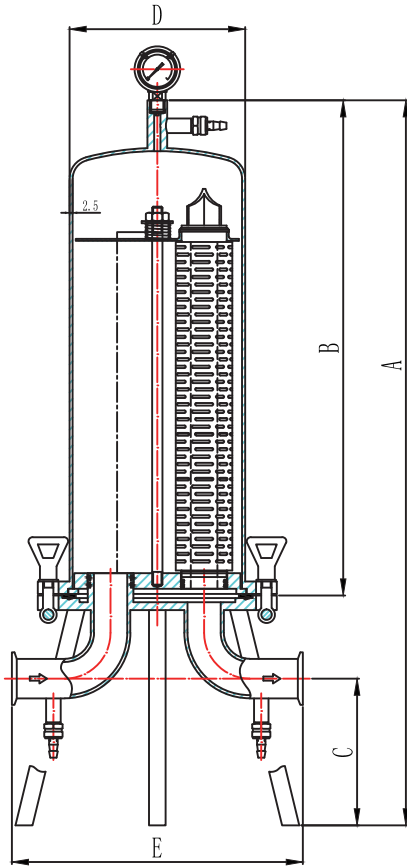
Ordering Information

E5 □ ☆ ○ ◇ △

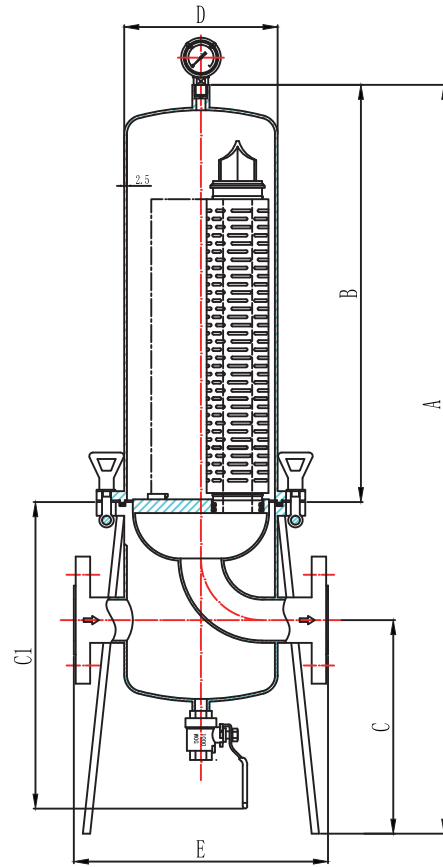
Coding Removal Ratings □	Coding Filter Material ☆	No. Connector form ◇	No. Length ○	No. O-ring material △
91 0.1μm	G Polypropylene	A both ends plain/ one end sealed	1/4 2.5"	S Silicone
92 0.2μm		B both ends plain/ both ends open	1/2 5"	E EPDM
94 0.45μm		M 222/Flat sealing	1 10"	V Fluoroelastomer
96 0.65μm		P 222/Fin	2 20"	
01 1.0μm		O 226/Flat sealing	3 30"	
03 3.0μm		Q 226/Fin	4 40"	
05 5.0μm		J 222 stainless steel lining/flat sealing		
10 10μm		K 222 Stainless steel lining/Fin		
20 20μm		W 226 Stainless steel lining/Flat sealing		
30 30μm		R 226 Stainless steel lining/Fin		
60 60μm				

Sanitary Grade Stainless Steel Filter Housing

The filter is divided into two types: liquid filter TYM-Y type and gas filter TYM-Q.



TYM-Y



TYM-Q

Ordering Information

TYM ○ □ ◎ ☆ △ ◇

Coding Quantity ○		Coding Length □		No. Adapter form ◎		Coding Cylinder base connection ☆		Coding Inlet and outlet Connection △		Coding Type ◇	
01	1 pc	0	5"	222	222 type	K	Quick-fit	K	Quick-fit	Y	Liquid
02	2 pcs	1	10"	226	226 type	F	Flange	L	Thread	Q	Gas
03	3 pcs	2	20"					F	Flange		
04	4 pcs	3	30"								
05	5 pcs	4	40"								
06	6 pcs										
07	7 pcs										
08	8 pcs										
09	9 pcs										
10	10 pcs										
11	11 pcs										
12	12 pcs										

Technical Parameter

Model	Fitted Filter Element		Tube diameter of inlet and outlet (mm)	Connection (inlet, outlet)			Reference of boundary dimension (mm)							
	No.	Length		Method	Code	Diameter (mm)	A	B	C	D	E			
TYM010-□□□-Y	1	5"	DN20	Quick-fit	K	φ 50.5	440	230	115	102	220			
TYM011-□□□-Y		10"					585	375						
TYM012-□□□-Y		20"					835	625						
TYM013-□□□-Y		30"					1080	870						
TYM010-□□□-Q		5"	DN25	flange	K	φ 50.5	465	205	G1:260	200				
TYM011-□□□-Q		10"					610	350						
TYM012-□□□-Q		20"					860	600						
TYM013-□□□-Q		30"					1105	845						
TYM031-□□□-Y	3	10"	DN32 DN40(adapter)	Quick-fit	K	φ 50.5	655	400	175	168	280			
TYM032-□□□-Y		20"					885	630						
TYM033-□□□-Y		30"					1145	890						
TYM031-□□□-Q		10"		flange	F	φ 120	830	425	275					
TYM032-□□□-Q		20"					1060	655						
TYM033-□□□-Q		30"					1290	885						
TYM051-□□□-Y	5	10"	DN32	Quick-fit	K	φ 50.5	760	455	195	235	350			
TYM052-□□□-Y		20"					1010	705						
TYM053-□□□-Y		30"	DN40		F	φ 120	1260	955						
TYM051-□□□-Q		10"					DN50 DN80(adapter)	flange	F			895	430	
TYM052-□□□-Q		20"	1145		680	305						400		
TYM053-□□□-Q		30"	1395		930									
TYM072-□□□-Y	7	20"	DN32	Quick-fit	K	φ 50.5				1030	725	195	245	360
TYM073-□□□-Y		30"					1280	975						
TYM074-□□□-Y		40"	DN40		F	φ 120	1530	1225						
TYM072-□□□-Q		20"					DN50	flange	F	φ 130	Customized			
TYM073-□□□-Q		30"	φ 140											
TYM074-□□□-Q		40"												
TYM092-□□□-Y	9	20"	DN40	Quick-fit	K	φ 64					1055	750	195	296
TYM093-□□□-Y		30"					1305	1000						
TYM094-□□□-Y		40"					1555	1250						
TYM092-□□□-Q		20"	DN50	flange	F	φ 140	Customized							
TYM093-□□□-Q		30"												
TYM094-□□□-Q		40"												
TYM123-□□□-Y	12	30"	DN70	flange	F	φ 160	1380	1025	245	406	630			
TYM124-□□□-Y		40"					1630	1275						
TYM153-□□□-Y	15	30"	DN80	flange	F	φ 185	Customized							
TYM154-□□□-Y		40"												

Storage Tank Respirator

Product Description

GXM type of respirator is mainly used for sterile filtration of gas during gas exchange in the pharmaceutical industry, to ensure that the gas is isolated from the outside world via respirator and drained smoothly; while, the microorganisms and particles outside the tank will not enter the tank.

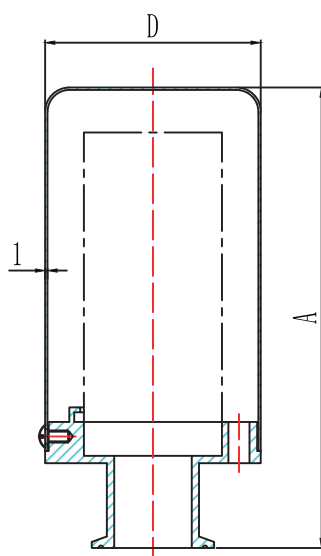
The design of GXM type structure meets the requirements of sanitary grade and GMP, and the structure is extremely easy to clean, and electrolytic polishing can be done for the full series, to guarantee the polishing accuracy of the entire filter.

TXM type is used for filtration of sterile gas with high requirements, with closed structure, and integrity test can be done.

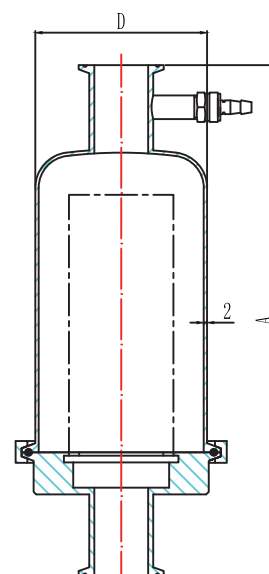
Parameters for Respirator Housing

GXM type	1 core 5 inches	1 core 10 inches	1 core 20 inches
Total height (mm)	210	340	600
Diameter (mm)	85	85	85

TXM type	1 core 5 inches	1 core 10 inches	1 core 20 inches
Total height (mm)	300	445	695
Diameter (mm)	85	100	100



Simple respirator GXM



Straight through filter GXM

Materials

Chinese GB	Japanese JIS	US ASTM	EU EN
06Cr19Ni10	SUS304	304	4301
022Cr19Ni10	SUS304I	304I	4306
06Cr17Ni12Mo2	SUS316	316	4401
022Cr17Ni12Mo2	SUS316L	316L	4404

Common Quick-assembled Inlet and Outlet Dimension

Nominal bore diameter	Inch	Outer diameter of cartridge	Outer diameter of tube
DN15	1/2	25	12.7
DN20	3/4	25	19
DN25	1	50.4	25.4
DN32	1.25	50.4	32
DN38	1.5	50.4	38.1
DN50	2	63.9	50.8
DN65	2.5	77.4	63.5

Common Flange Inlet and Outlet Dimension

Nominal bore diameter	Diameter of screw hole center circle	Outer diameter of flange	Outer diameter of tube
DN25	85	115	32
DN32	100	140	38
DN40	110	150	45
DN50	125	165	57
DN65	145	185	76
DN80	160	200	89
DN100	180	220	108
DN125	210	250	133
DN150	240	285	159
DN200	295	340	219

Relationship of flow and tube diameter

Nominal bore diameter	Inch	Estimated flow of liquid m ³ /h /(Flow rate 2 m/s)	Estimated flow of gas m ³ /h /(Flow rate 10 m/s)
DN15	1/2 (4'')	1.3	6.3
DN20	3/4 (6'')	2.3	11.3
DN25	1	3.0	17.6
DN32	1.25	5.9	28.9
DN40	1.5	9.0	45.2
DN50	2	14.1	70.6
DN65	2.5	23.9	119.4
DN80	3	36.2	180.8
DN100	4	56.5	282.6
DN125	5	88.4	441.6
DN150	6	127.2	635.9
DN200	8	226.2	1130.4

ITPOWER Integrity Tester

Product Description

Duoning integrity tester (ITPOWER) is a fully-automatic filter integrity tester, with the purpose of carrying out a set of integrity tests for the filter cartridge and capsule filter etc., and the integrity test is an important process to guarantee product quality and for batch release.



Product Features

- ◎ HIM interface friendly
 - 10 inches color touch screen, with strong Windows system support;
 - One-click switch between Chinese and English, and other languages can be customized based on demands;
 - The operation interface can display the test data and process in real time, and monitor the whole process of test.
- ◎ Humanized design + precise hard core hardware + superior performance
 - The independent pipeline setting can prevent the liquid from flowing back to the machine body;
 - Perfect power on self-test procedure, to ensure accurate and correct operation of equipment;
 - The screen has its own heat dissipation function, and the back of the machine has its own heat dissipation plate, to ensure accurate operation of equipment;
 - The accurate algorithm and testing pressure can be adjusted automatically based on change in temperature of the equipment, to ensure accuracy of data measurement;
 - Staubli interface is adopted for the entire machine, to guarantee airtightness at the junction and convenient operation;
 - Festo piezoelectric pressure regulating valve is adopted, with pressure feedback, high accuracy and flexible reaction;
 - Imported Honeywell sensor meeting FDA is adopted, with high accuracy and small fluctuation, which has no influence on calculation of amplifying circuit.

© Data integrity

- 500 test methods can be pre-edited and saved, and the user can realize on-line modification and editing method;
- It is equipped with standard in-built printer, meeting the requirements of FDA for data recording, and the paper data can be saved for over 10 years;
- The system can save 10,000 data records, supporting the USB to export in PDF format;
- It is provided with the functions such as authority grading, audit trial and log inquiry etc.

Optional

- Scan reader (enter the filter information automatically through scanning)
- Expansion pressure container (test large bubble point)

Tests that can be carried out by the integrity tester

- Bubbling point · Water intrusion
- Forward flow · Bubbling point + forward flow

Product Parameters

Items	Parameters
Dimension	450*230*330
Weight	11.5kg
Power	100-240V, 50-60HZ
Withstand pressure	8000mbar
Protection grade	IP54
Test scope	Bubble point: 100 - 9,000mbar Forward flow: 1- 600mL/min Water intrusion: 0.05 - 100 mL/min Pressure Decay: 0 - 2,000mbar
Tested scope	Minimum membrane: ≤25mm Upstream volume of filter : ≤50L
Test accuracy	Bubble point: ±50mbar Forward flow: ±4% Water intrusion: ±4% Pressure Decay: ± 1 mbar
Test environment	Temperature: 0°C to 40°C Humidity: ≤80%

SHANGHAI DUONING BIOTECHNOLOGY CO.,LTD.

Tel: 021-64340155

E-mail: marketing@duoningbio.com

Website: www.duoningbio.net

Address: Building 30, Shentian New Office Space, No. 1525, Minqiang Road,
Songjiang District, Shanghai

