

# Gas Filter

Ultra-high purity in-line



## TKF GAS FILTER SERIES

- Hastelloy Gas Filter
- Stainless Steel Gas Filter
- PTFE Gas Filter
- IGS Gas Filter
- Gasket Filter



## ELEMENT SELECTION GUIDE

No.	GAS CHEMICAL FORMULA		ELEMENT MATERIAL		
			SUS316L	HC-276	PTFE
1	Argon	Ar	●	●	●
2	Arsine	AsH3	●	x	●
3	Boron Trichloride	BCl3	●	●	●
4	Boron Trifluoride	BF3	x	●	●
5	Diborane	B2H6	●	●	●
6	Carbon Dioxide	CO2	●	●	●
7	Carbon Monoxide	CO	●	●	●
8	Chlorine	Cl2	●	●	●
9	Halocarbon 13	CClF3	●	●	●
10	Halocarbon 14 Tetrafluoromethane	CF4	●	●	●
11	Halocarbon 23 Trifluoromethane	CHF3	●	●	●
12	Halocarbon 115	C2ClF5	●	●	●
13	Halocarbon 116 Hexafluoroethane	C2F6	●	●	●
14	Halocarbon 23 Trifluoromethane	CH3F	●	●	●
15	Halocarbon 318 Octafluorocyclobutane	C4F8	●	●	●
16	Halocarbon 218 Perfluoropropane	C3F8	●	●	●
17	Trimethylamine	(CH3)3N	●	●	●
18	Germane	GeH4	●	●	●
19	Helium	He	●	●	●
20	Hydrogen	H2	●	●	●
21	Hydrogen Bromide	HBr	x	●	●
22	Hydrogen Chloride	HCl	x	●	●
23	Hydrogen Fluoride	HF	x	●	●
24	Hydrogen Selenide	H2Se	●	●	●
25	Hydrogen Sulfide	H2S	●	●	●
26	Krypton	Kr	●	●	●
27	Ammonia	NH3	●	●	●
28	Neon	Ne	●	●	●
29	Nitrogen	N2	●	●	●
30	Nitrogen Trifluoride	NF3	●	●	●
31	Nitrous Oxide	N2O	●	●	●
32	Oxygen	O2	●	●	●
33	Ozone	O3	x	x	●
34	Phosphine	PH3	●	●	●
35	Phosphorous Trifluoride	PF3	x	●	●
36	Silane	SiH4	●	●	●
37	Silicon Tetrachloride	SiCl4	x	●	●
38	Silicon Tetrafluoride	SiF4	x	●	●
39	Dichlorosilane	SiH2Cl2	x	●	●
40	Halocarbon 116 Hexafluoroethane	SF6	●	●	●
41	Trichlorosilane	SiHCl3	●	●	●
42	Trimethylsilane	SiH(CH3)3	●	●	●
43	Tungsten Hexafluoride	WF6	x	●	●
44	Xenon	Xe	●	●	●

● - Recommended, ▲ - Limited, X - Not Recommended

# SPECIFICATION

Item	Sample Q'ty	METHOD	CRITERIA
Raw Material & Element Powder	5PC/Lot*1)	(1) Mill Certificate (2) Visual (3) Dimension : Vernier Caliper Tape measure	- Confirm chemical contents and Mechanical properties in mill certificate. - No harmful damage on surface. - Meet to specification for O.D. and length. - Confirm Powder certificate.
Element	5PC/Lot	(1)Visual (2)Dimension: Vernier Caliper	- No harmful damage on surface. - Meet to specification for O.D. and length.
Visual	100%	External: Visual Inspection	- No burr, rust, discoloration, mechanical damage, and contamination
Dimensional Inspection	KS A ISO 2859	(1)O.D.: Vernier Caliper (2)Length: Vernier Caliper	- Designated dimension shall be met to required specification
Inner Surface Roughness	1PC / LOT*3)	(1)Cut Off Length : 0.25mm (2)Measuring Length: 1.25mm	- Ra ≤5 μinch
Welding	100%	External: Visual, Magnifier	- Maintain even width and height for welding bead - No Pit or crack is allowed - No discoloration
Particle	100%	(1)Test Fluid: Dry Air (2)Pressure : 4 ~ 6 kgf/cm <sup>2</sup> (3)Flow rate : 35 ~ 40l/min (4)Test time : 1min	- No count 0.0025μinch and larger
He Leak	100%	Equipment: He Leak Detector	- 1 x 10 <sup>-9</sup> atm · cc/sec

Note : \*1) Inspection Lot : Each heat number  
 \*2) AQL 2.5, II ,1time sampling, normal inspection  
 \*3) Inspection Lot: Each Traveller

# SELECTION CRITERIA

1	Particle Retention Efficiency
2	Particle Shedding
3	Removal Rating
4	Pressure Drop & Inlet Pressure
5	Flow Rate
6	Max. Operating Temperature
7	Gas Compatibility & Resistance
8	Connection Type
8	Pollutants & Contaminants
10	Cleanliness

## PRODUCTION FLOW

### CAREFULLY SELECTED MATERIALS

Selecting and standardizing a highly clean material reduced non-metallic inclusions and outgases. Further, production of VAR material that is highly resistant to corrosion and Hastelloy® C-22™ material are even made possible.

### HIGH PRECISION MACHINING PROCESS

Using fully automatic, high precision, high-speed CNC Machining center and lathe, a precision machining process is established. With high precision locating, automatic dimensional calculation and automatic compensation, an unattended, labor-reduced production process is made possible.

### ULTRA-HIGH CLEANING PROCESS

Using TKF unique technology for super cleanness, passivation treatment by means of special electropolishing, etc. is applied to the smooth machined surface before polishing process. This enables to form a highly corrosion-resistant and super clean surface structure.

### CLEAN WELDING

Clean welding method is made available by using a high speed, full-automatic orbital welding machine. Using a sealed inner and outer manostat gauge in the clean room, inner pressure is controlled with hyper pure inert-gas so that the totally clean welding technology can fully contribute to realization of the flat bead condition, etc..

### ULTRA PRECISION CLEANING

An automatic processing line including ultra pure hot water with resistivity of more than 17MΩcm has been established in the clean room. The best possible cleaning condition is achieved here prior to the assembly.

### ASSEMBLY IN THE CLEAN ROOM

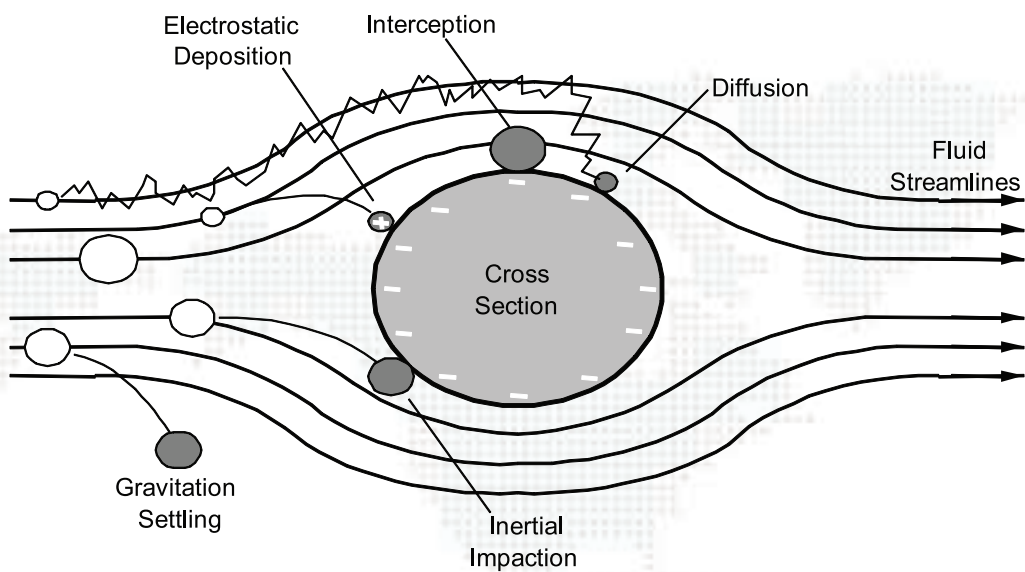
Production staffs fully acquainted with the special assembling method are dedicated to the assembly process in the certified clean room.

### CLEAN PACKING

Packing is carried out at the certified clean room with inner vacuum seal method. In this way, mixing-in of foreign particles at the time of packing is extensively reduced to its minimum.



## FILTRATION MECHANISM



## BUSINESS SCOPE

GASES & CHEMICALS

PHARMACEUTICAL

FAB INSTALLATION

SEMI-CONDUCTOR & TFT-LCD

CLEAN ROOM

LAB & RESEARCH

GENERAL INDUSTRY

ENERGY AND ENVIRONMENT

# HASTELLOY GAS FILTER

## HH-A SERIES

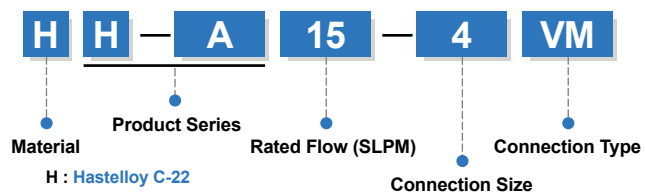
- Ultra-high purity in-line gas filter
- All Hastelloy constructions
- High temperature and dynamic pressure applications
- Compact size and variable end connections



### PRODUCT FEATURES

- Wide range flow rate from 15 to 300 SLPM
- Corrosion resistant Hastelloy body with excellent performance for either inert or corrosive gas applications
- 3 Nanometer particle filtering capability keeps up high flow efficiency with minimum pressure drop
- 5Ra electro-polished surface prevents internal contaminations
- Baked with hot nitrogen after DI water cleaning to meet semiconductor process standards
- Class 100 manufacturing, cleaning and packaging environment
- 100% helium leak tested

## ORDERING INFORMATION

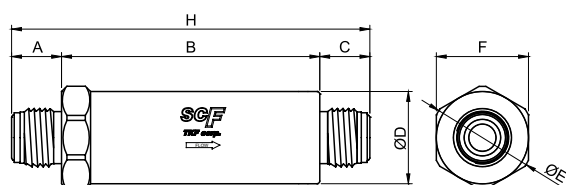


Size		Connection	
4	1/4"	VM	MFS male type
6	3/8"	SW	Lok type
8	1/2"		

## SPECIFICATIONS

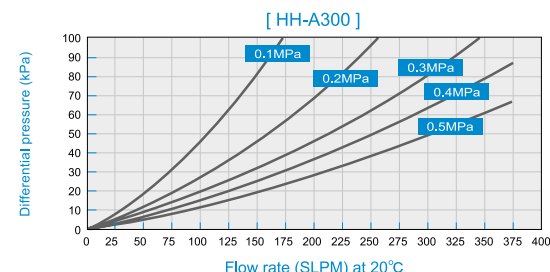
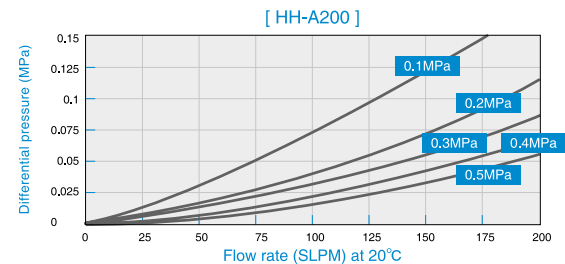
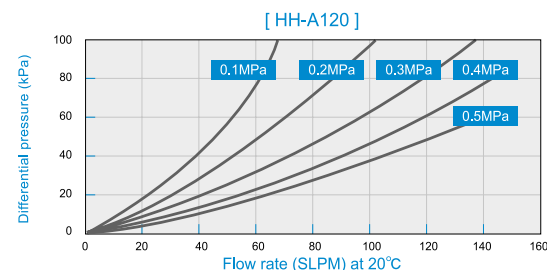
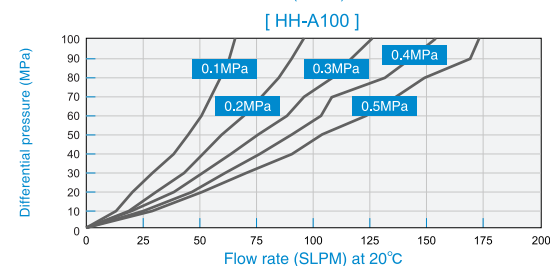
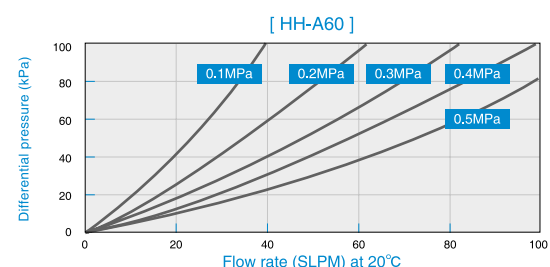
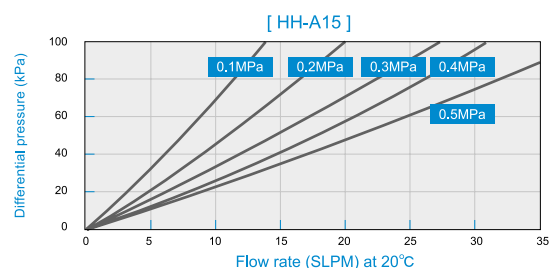
<b>Removal Rating</b>	≥ 0.0025μm	
<b>Retention</b>	Greater than 99.999999% Removal of all particles down to 0.0025μm	
<b>Rated Flow @ 10<sup>9</sup></b>	15 SLPM	
	60 SLPM	
	120 SLPM	
	200 SLPM	
	300 SLPM	
<b>Materials</b>	Filter element	Hastelloy C-276
	Electropolished housing	Hastelloy C-22
<b>Operating Conditions</b>	Maximum inlet pressure	21 MPa (210kgf/cm <sup>2</sup> ) at 20°C
	Maximum differential pressure	15 MPa (153kgf/cm <sup>2</sup> ) at 20°C
	Maximum operating temperature	460°C (Inert gas)
<b>Helium Leak Rating</b>	1 x 10 <sup>-9</sup> atm·cc/sec	
<b>Surface Finish Interior</b>	≤ Ra 5μinch	

## DIMENSIONS



Part No.	A/mm	B/mm	C/mm	D/mm	E/mm	F/mm	H/mm
HH-A15-4VM	15.5	53	15.5	27.5	30	27	84
HH-A15-4SW	10.4	52.2	10.4	27.5	30	27	73
HH-A60-4VM	15.5	53	15.5	27.5	30	27	84
HH-A60-4SW	10.4	52.2	10.4	27.5	30	27	73
HH-A60-6(8)VM	19	53	19	27.5	30	27	91
HH-A100-8VM	19	46	19	35	39	35	84
HH-A120-4VM	15.5	96	15.5	29.5	33	30	127
HH-A120-4SW	10.4	95.2	10.4	29.5	33	30	116
HH-A120-6(8)VM	19	96	19	29.5	33	30	134
HH-A120-6(8)SW	12	96	12	29.5	33	30	120
HH-A200-4VM	15.5	98	15.5	35	39	35	129
HH-A200-4SW	10.4	97.2	10.4	35	39	35	118
HH-A200-6(8)VM	19	98	19	35	39	35	136
HH-A200-6(8)SW	12	98	12	35	39	35	122
HH-A300-4VM	15.5	98	15.5	35	39	35	129
HH-A300-4SW	10.4	97.2	10.4	35	39	35	118
HH-A300-6(8)VM	19	98	19	35	39	35	136
HH-A300-6(8)SW	12	98	12	35	39	35	122

## PERFORMANCE DATA



# HASTELLOY GAS FILTER

## HH-H SERIES

- Ultra-high purity in-line high flow gas filter
- All Hastelloy constructions
- High temperature and dynamic pressure applications
- Compact size and variable end connections

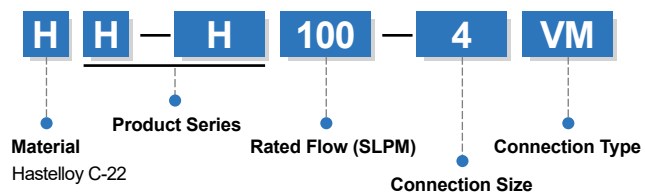


### PRODUCT FEATURES

- Wide range flow rate from 100 to 800 SLPM
- Corrosion resistant Hastelloy body with excellent performance for either inert or corrosive gas applications
- 3 Nanometer particle filtering capability keeps up high flow efficiency with minimum pressure drop
- 5Ra electro-polished surface prevents internal contaminations
- Baked with hot nitrogen after DI water cleaning to meet semiconductor process standards
- Class 100 manufacturing, cleaning and packaging environment
- 100% helium leak tested



## ORDERING INFORMATION



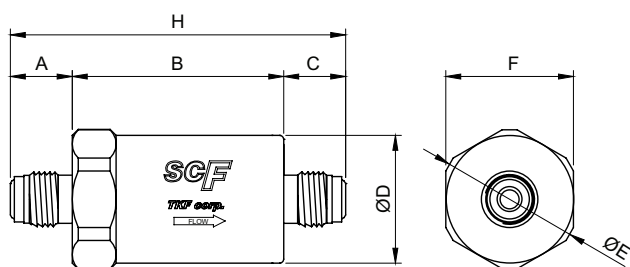
Size		Connection	
4	1/4"	VM	MFS male type
6	3/8"	SW	Lok type
8	1/2"		

H : Hastelloy C-22

## SPECIFICATIONS

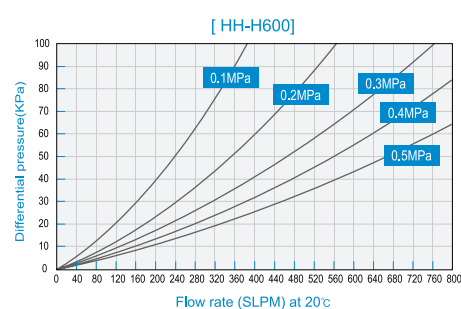
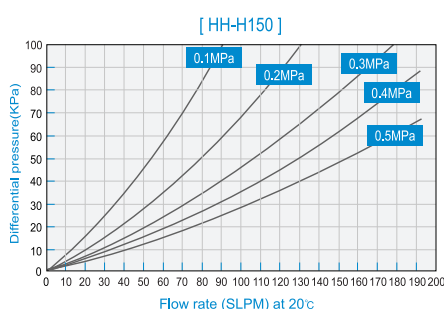
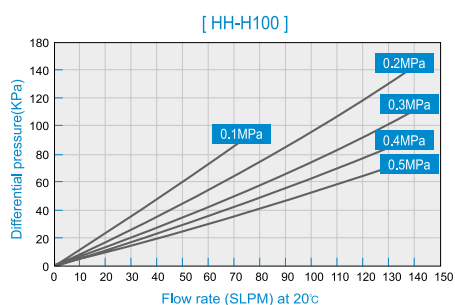
Removal Rating	≥ 0.0025μm	
Retention	Greater than 99.9999999% Removal of all particles down to 0.0025μm	
Rated Flow @ 10 <sup>5</sup>	100 SLPM (MAX 150SLPM)	
	150 SLPM (MAX 200SLPM)	
	600 SLPM (MAX 800SLPM)	
Materials	Filter element	Hastelloy C-276
	Electropolished housing	Hastelloy C-22
Operating Conditions	Maximum inlet pressure	12 MPa (122kgf/cm <sup>2</sup> ) at 20°C
	Maximum differential pressure	10 MPa (101kgf/cm <sup>2</sup> ) at 20°C
	Maximum operating temperature	460°C (Inert gas)
Helium Leak Rating	1 x 10 <sup>-9</sup> atm·cc/sec	
Surface Finish Interior	≤ Ra 5μinch	

## DIMENSIONS



Part No.	A/mm	B/mm	C/mm	D/mm	E/mm	F/mm	H/mm
HH-H100-4VM	15.5	53	15.5	32	35	32	84
HH-H100-4SW	10.4	52.2	10.4	32	35	32	73
HH-H100-6(8)VM	19	53	19	32	35	32	91
HH-H100-6(8)SW	12	53	12	32	35	32	77
HH-H150-4VM	15.5	53	15.5	32	35	32	84
HH-H150-4SW	10.4	52.2	10.4	32	35	32	73
HH-H150-6(8)VM	19	53	19	32	35	32	91
HH-H150-6(8)SW	12	53	12	32	35	32	77
HH-H600-6(8)VM	19	96	19	32	35	32	134
HH-H600-6(8)SW	12	96	12	32	35	32	120

## PERFORMANCE DATA



# STAINLESS STEEL GAS FILTER

## SS-A SERIES

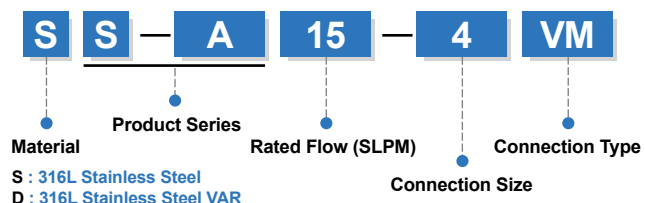
- Ultra-high purity in-line gas filter
- All 316L stainless steel constructions
- High temperature and dynamic pressure applications
- Compact size and variable end connections



### PRODUCT FEATURES

- Wide range flow rate from 15 to 300 SLPM
- Excellent compatibility with most high purity semiconductor process gases
- 3 Nanometer particle filtering capability keeps up high flow efficiency with minimum pressure drop
- 5Ra electro-polished surface prevents internal contaminations
- Baked with hot nitrogen after DI water cleaning to meet semiconductor process standards
- Class 100 manufacturing, cleaning and packaging environment
- 100% helium leak tested

## ORDERING INFORMATION

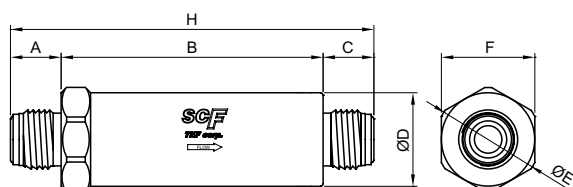


Size		Connection	
4	1/4"	VM	MFS male type
6	3/8"	SW	Lok type
8	1/2"		

## SPECIFICATIONS

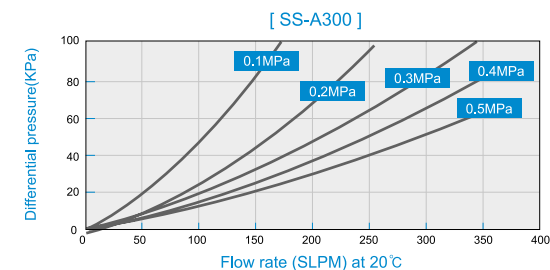
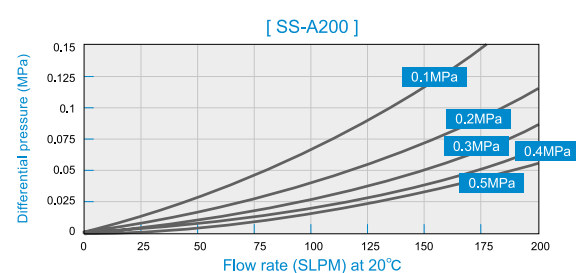
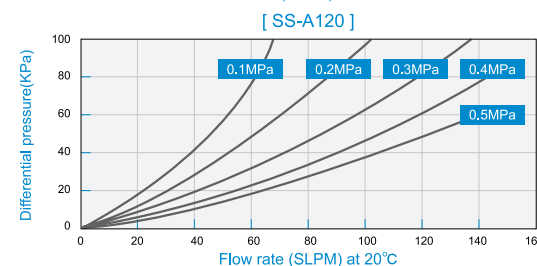
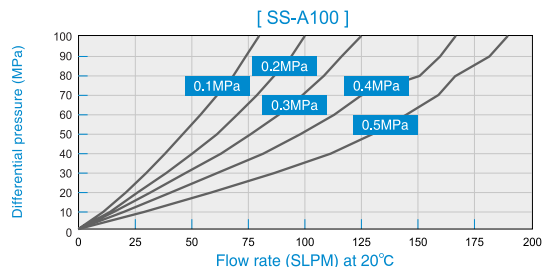
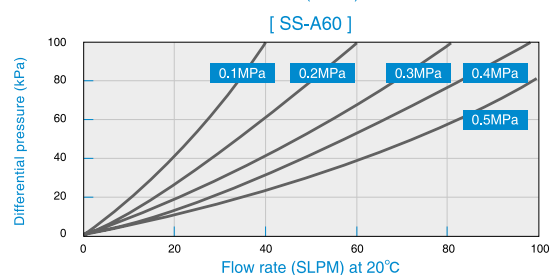
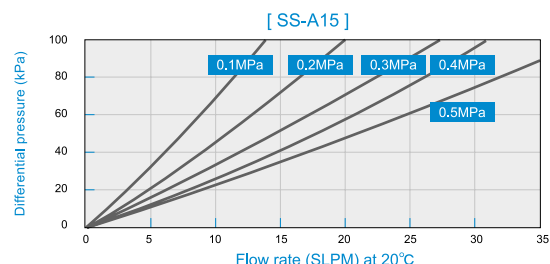
Removal Rating	≥ 0.0025μm	
Retention	Greater than 99.999999% Removal of all particles down to 0.0025μm	
Rated Flow @ 10 <sup>5</sup>	15 SLPM	
	60 SLPM	
	120 SLPM	
	200 SLPM	
	300 SLPM	
Materials	Filter element	316L Stainless steel
	Electropolished housing	316L Stainless steel 316L Stainless steel VAR
Element Operating Conditions	Maximum inlet pressure	21 MPa (210kgf/cm <sup>2</sup> ) at 20°C
	Maximum differential pressure	15 MPa (153kgf/cm <sup>2</sup> ) at 20°C
	Maximum operating temperature	460°C (Inert gas)
Helium Leak Rating	1 x 10 <sup>-6</sup> atm·cc/sec	
Surface Finish Interior	≤ Ra 5μinch	

## DIMENSIONS



Part No.	A/mm	B/mm	C/mm	D/mm	E/mm	F/mm	H/mm
SS-A15-4VM	15.5	53	15.5	27.5	30	27	84
SS-A15-4SW	10.4	52.2	10.4	27.5	30	27	73
SS-A60-4VM	15.5	53	15.5	27.5	30	27	84
SS-A60-4SW	10.4	52.2	10.4	27.5	30	27	73
SS-A60-6(8)VM	19	53	19	27.5	30	27	91
SS-A100-8VM	19	46	19	35	39	35	84
SS-A120-4VM	15.5	96	15.5	29.5	33	30	127
SS-A120-4SW	10.4	95.2	10.4	29.5	33	30	116
SS-A120-6(8)VM	19	96	19	29.5	33	30	134
SS-A120-6(8)SW	12	96	12	29.5	33	30	120
SS-A200-4VM	15.5	98	15.5	35	39	35	129
SS-A200-4SW	10.4	97.2	10.4	35	39	35	118
SS-A200-6(8)VM	19	98	19	35	39	35	136
SS-A200-6(8)SW	12	98	12	35	39	35	122
SS-A300-4VM	15.5	98	15.5	35	39	35	129
SS-A300-4SW	10.4	97.2	10.4	35	39	35	118
SS-A300-6(8)VM	19	98	19	35	39	35	136
SS-A300-6(8)SW	12	98	12	35	39	35	122

## PERFORMANCE DATA



# STAINLESS STEEL GAS FILTER

## SS-C SERIES

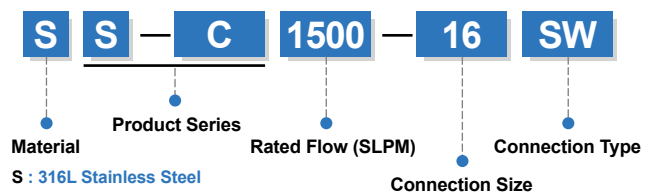
- Ultra-high purity inline Gas filter
- All 316L Stainless steel constructions
- High temperature and dynamic pressure applications



## PRODUCT FEATURES

- For high flow applications
- Excellent compatibility with most high purity semiconductor process gases
- 3 Nanometer particle filtering capability keeps up high flow efficiency with minimum pressure drop
- 5Ra electro-polished surface prevents internal contaminations
- Baked with hot nitrogen after DI water cleaning to meet semiconductor process standards
- 100%helium leak tested

## ORDERING INFORMATION

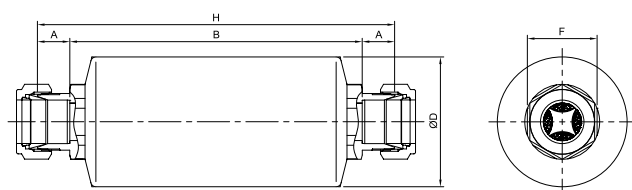


Size		Connection	
12	3/4"	VM	MFS male type
16	1"	SW	Lok type

## SPECIFICATIONS

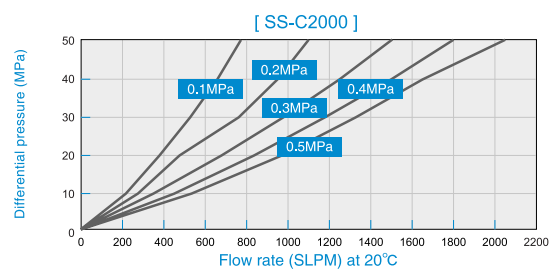
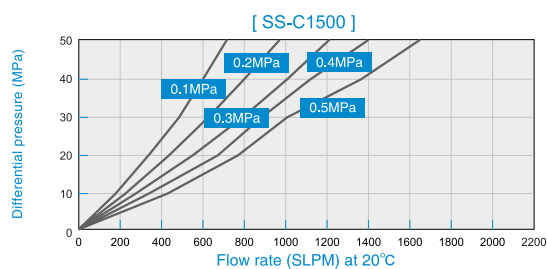
<b>Max. Inlet Pressure</b>		0.98MPa(10kg/cm <sup>2</sup> ) @ 20°C
<b>Removal Rating</b>		≥ 0.0025 μinch
<b>Particle Retention</b>		99.9999999% Removal of all particles down to 0.0025 μinch
<b>Temperature Range (Fluid)</b>		Less than 460°C
<b>Materials</b>	<b>Housing</b>	316L Stainless steel
	<b>Element</b>	316L Stainless steel
<b>Leakage</b>	<b>External Leakage Allowance (He)</b>	Test pressure ≤ 1x10 <sup>-2</sup> Torr Holding time ≥ 1min. ≤ 1x10 <sup>-9</sup> atm·cc/sec
	<b>Internal Leakage Allowance (He)</b>	Test pressure ≤ 1x10 <sup>-2</sup> Torr Holding time ≥ 1min. ≤ 1x10 <sup>-9</sup> atm·cc/sec
<b>Nominal DIA.</b>		1"
<b>Flow Rate</b>		1500 SLPM
<b>Connection Method</b>		Lok
<b>Products Grade</b>	<b>Grade</b>	EP
	<b>Inner Surface Roughness</b>	Ry ≤ 0.7μinch 5μ Inch Ra (Avg.) Cut off Length : 0.25mm Measuring Length : 1.25mm
	<b>Electropolishing</b>	Electro Polishing Finish

## DIMENSIONS



Part No.	A/mm	B/mm	C/mm	D/mm	F/mm	H/mm
SS-C1500-12VM	25.5	176	25.5	76.3	36	227
SS-C1500-16SW	19.0	172	19.0	76.3	41	210
SS-C2000-16SW	19.0	172	19.0	76.3	41	210

## PERFORMANCE DATA



# STAINLESS STEEL GAS FILTER

## SS-H SERIES

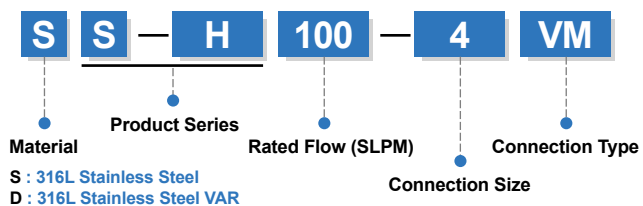
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- Compact size and variable end connections



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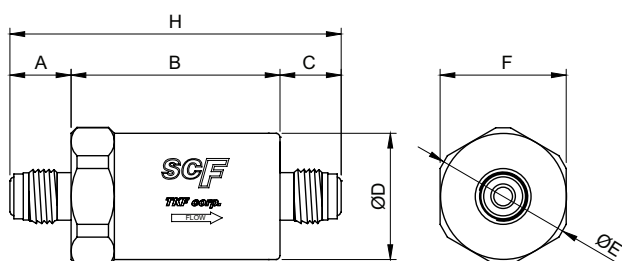


Size		Connection	
4	1/4"	VM	MFS male type
6	3/8"	SW	Lok type
8	1/2"		

## SPECIFICATIONS

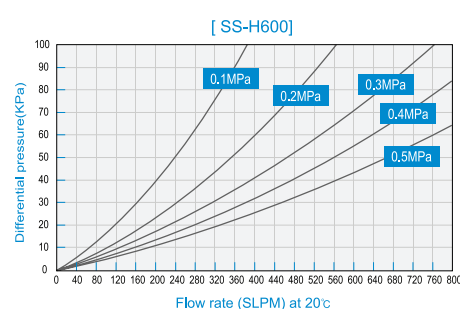
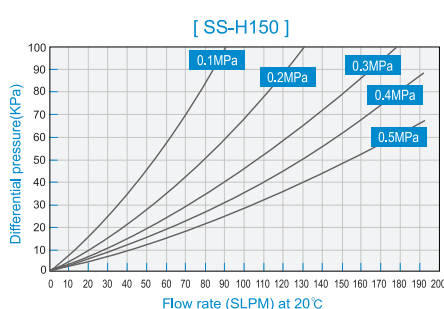
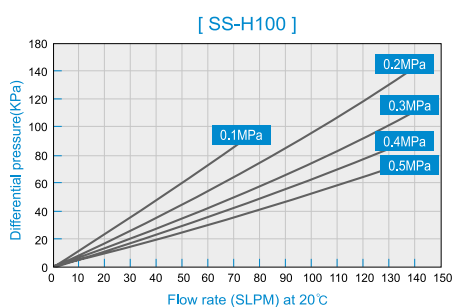
Removal Rating	≥ 0.0025μm		
Retention	Greater than 99.9999999% Removal of all particles down to 0.0025μm		
Rated Flow @ 10 <sup>5</sup>	100 SLPM (MAX 150SLPM)		
	150 SLPM (MAX 200SLPM)		
	600 SLPM (MAX 800SLPM)		
Materials	Filter element	316L Stainless steel	
	Electropolished housing	316L Stainless steel / 316L Stainless steel VAR	
Operating Conditions	Maximum inlet pressure	12 MPa (122kgf/cm <sup>2</sup> ) at 20°C	
	Maximum differential pressure	10 MPa (101kgf/cm <sup>2</sup> ) at 20°C	
	Maximum operating temperature	460°C (Inert gas)	
Helium Leak Rating	1 x 10 <sup>-9</sup> atm-cc/sec		
Surface Finish Interior	≤ Ra 5μinch		

## DIMENSIONS



Part No.	A/mm	B/mm	C/mm	D/mm	E/mm	F/mm	H/mm
SS-H100-4VM	15.5	53	15.5	32	35	32	84
SS-H100-4SW	10.4	52.2	10.4	32	35	32	73
SS-H100-6(8)VM	19	53	19	32	35	32	91
SS-H100-6(8)SW	12	53	12	32	35	32	77
SS-H150-4VM	15.5	53	15.5	32	35	32	84
SS-H150-4SW	10.4	52.2	10.4	32	35	32	73
SS-H150-6(8)VM	19	53	19	32	35	32	91
SS-H150-6(8)SW	12	53	12	32	35	32	77
SS-H600-4VM	15.5	96	15.5	32	35	32	127
SS-H600-4SW	10.4	95.2	10.4	32	35	32	116
SS-H600-6(8)VM	19	96	19	32	35	32	134
SS-H600-6(8)SW	12	96	12	32	35	32	120

## PERFORMANCE DATA



# PTFE GAS FILTER

## ST-A SERIES

- Ultra-high purity in-line gas filter
- All fluoropolymer filter element
- Electropolished 316L stainless steel housing

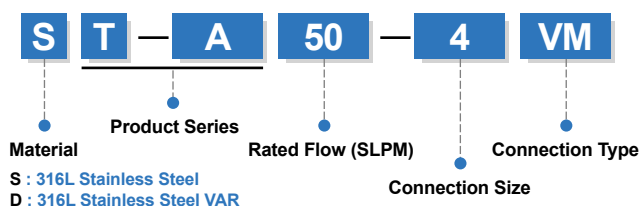


### PRODUCT FEATURES

- PTFE element with superior corrosion resistance and excellent compatibility for most high purity semiconductor process gases
- 3 Nanometer particle filtering capability keeps up high flow efficiency with minimum pressure drop
- 5Ra electro-polished surface prevents internal contaminations
- Baked with hot nitrogen after DI water cleaning to meet semiconductor process standards
- Class 100 manufacturing, cleaning and packaging environment
- 100% helium leak tested



## ORDERING INFORMATION

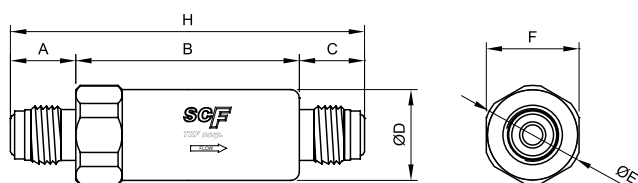


Size		Connection	
4	1/4"	VM	MFS male type
6	3/8"	SW	Lok type
8	1/2"		

## SPECIFICATIONS

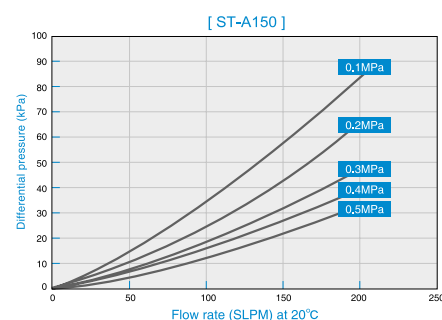
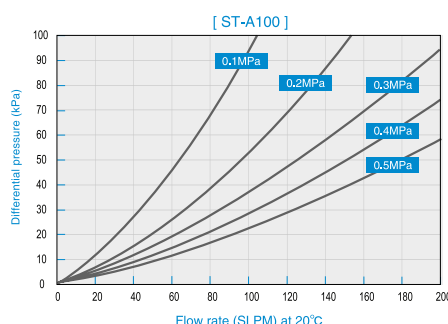
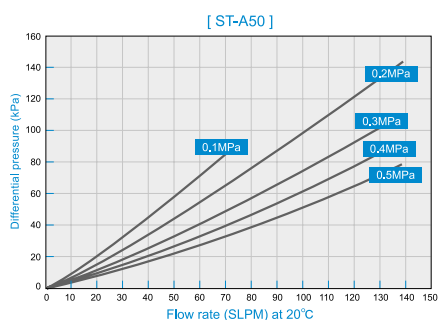
Removal Rating	≥ 0.0025μm		
Retention	Greater than 99.999999% Removal of all particles down to 0.0025μm		
Rated Flow @ 10 <sup>9</sup>	50 SLPM		
	100 SLPM		
Materials	Filter element / Support / O-ring	PTFE / PFA / PTFE	
	Electropolished housing	316L Stainless steel / 316L Stainless steel VAR	
Operating Conditions	Maximum inlet pressure	0.98 MPa (10kgf/cm <sup>2</sup> ) at 20°C	
	Maximum differential pressure	0.4 MPa (4.2kgf/cm <sup>2</sup> ) at 20°C	
	Maximum operating temperature	120°C (Inert gas)	
Helium Leak Rating	1 x 10 <sup>-9</sup> atm-cc/sec		
Surface Finish Interior	≤ Ra 5μinch		

## DIMENSIONS



Part No.	A/mm	B/mm	C/mm	D/mm	E/mm	F/mm	H/mm
ST-A50-4VM	15.5	53	15.5	21.5	23.5	22	84
ST-A50-4SW	10.4	52.2	10.4	21.5	23.5	22	73
ST-A100-4VM	15.5	96	15.5	26.5	30	27	127
ST-A100-4SW	10.4	95.2	10.4	26.5	30	27	116
ST-A100-6(8)VM	19	96	19	26.5	30	27	134
ST-A100-6(8)SW	12	96	12	26.5	30	27	120
ST-A150-4VM	15.5	96	15.5	26.5	30	27	127
ST-A150-4SW	10.4	95.2	10.4	26.5	30	27	116
ST-A150-6(8)VM	19	96	19	26.5	30	27	134
ST-A150-6(8)SW	12	96	12	26.5	30	27	120

## PERFORMANCE DATA



# PTFE GAS FILTER

## ST-B SERIES

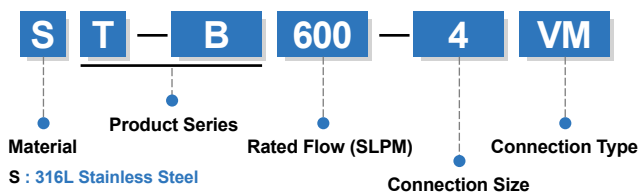
- Ultra-high purity in-line gas filter
- All fluoropolymer filter element
- Electropolished 316L stainless steel housing



### PRODUCT FEATURES

- PTFE element with superior corrosion resistance and excellent compatibility for most high purity semiconductor process gases
- 3 Nanometer particle filtering capability keeps up high flow efficiency with minimum pressure drop
- 5Ra electro-polished surface prevents internal contaminations
- Baked with hot nitrogen after DI water cleaning to meet semiconductor process standards
- Class 100 manufacturing, cleaning and packaging environment
- 100% helium leak tested

## ORDERING INFORMATION

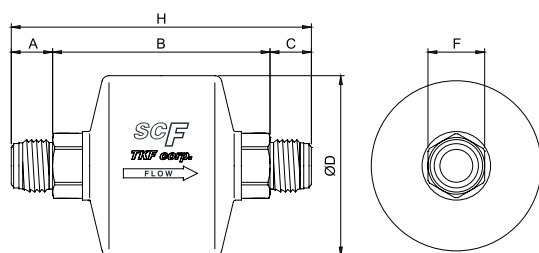


Size		Connection	
4	1/4"	VM	MFS male type
6	3/8"	SW	Lok type
8	1/2"		

## SPECIFICATIONS

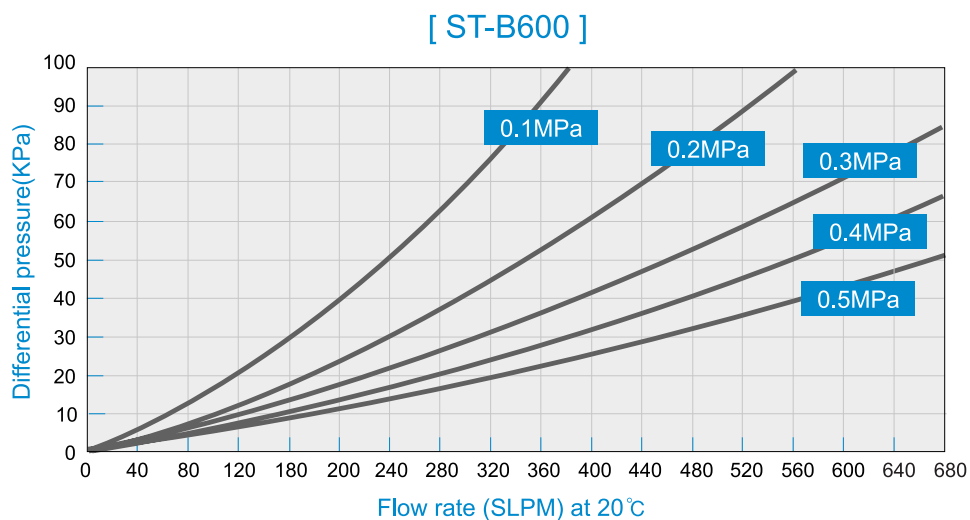
Removal Rating	≥ 0.0025μm		
Retention	Greater than 99.9999999% Removal of all particles down to 0.0025μm		
Rated Flow @ 10 <sup>9</sup>	600 SLPM (MAX 1000SLPM)		
Materials	Filter element / Support / O-ring	PTFE / PFA / FKM	
	Electropolished housing	316L Stainless steel / 316L Stainless steel VAR	
Operating Conditions	Maximum inlet pressure	0.98 MPa (10kgf/cm <sup>2</sup> ) at 20°C	
	Maximum differential pressure	0.4 MPa (4.2kgf/cm <sup>2</sup> ) at 20°C	
	Maximum operating temperature	120°C (Inert gas)	
Helium Leak Rating	1 x 10 <sup>-9</sup> atm·cc/sec		
Surface Finish Interior	≤ Ra 5μinch		

## DIMENSIONS



Part No.	A/mm	B/mm	C/mm	D/mm	F/mm	H/mm
ST-B600-4VM	15.5	96	15.5	76.3	24	127
ST-B600-4SW	10.4	92.2	10.4	76.3	24	113
ST-B600-6(8)VM	19	89	19	76.3	24	127
ST-B600-6(8)SW	12	89	19	76.3	24	113
ST-B600-12VM	25.5	82	25.5	76.3	36	133
ST-B600-12SW	17	82	17	76.3	36	116

## PERFORMANCE DATA



# PTFE GAS FILTER

## ST-C SERIES

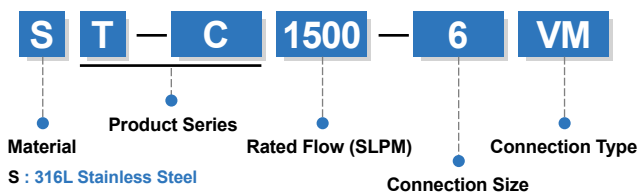
- Ultra-high purity in-line gas filter
- All fluoropolymer filter element
- Electropolished 316L stainless steel housing



### PRODUCT FEATURES

- PTFE element with superior corrosion resistance and excellent compatibility for most high purity semiconductor process gases
- 3 Nanometer particle filtering capability keeps up high flow efficiency with minimum pressure drop
- 5Ra electro-polished surface prevents internal contaminations
- Baked with hot nitrogen after DI water cleaning to meet semiconductor process standards
- Class 100 manufacturing, cleaning and packaging environment
- 100% helium leak tested

## ORDERING INFORMATION

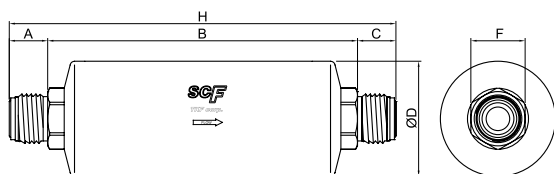


Size		Connection	
6	3/8"	VM	MFS male type
8	1/2"	SW	Lok type
		A	Tube size
		TW	Butt Weld type

## SPECIFICATIONS

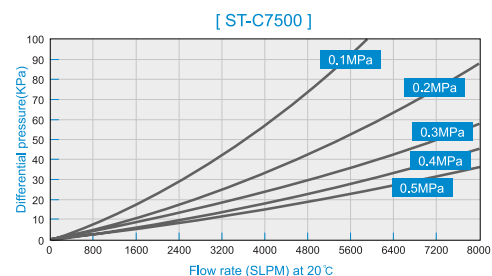
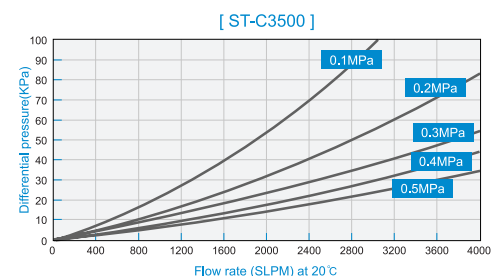
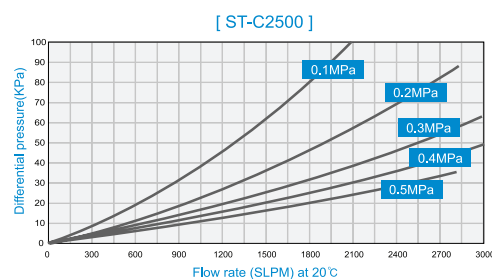
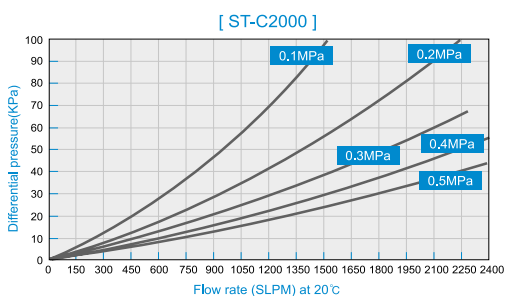
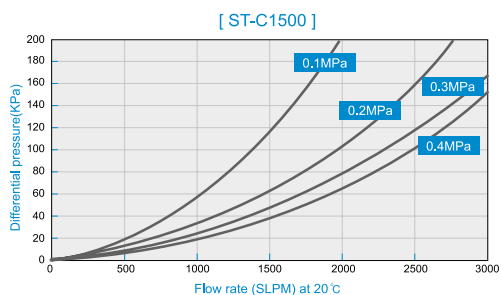
Removal Rating	≥ 0.0025μm		
Retention	Greater than 99.9999999% Removal of all particles down to 0.0025μm		
Rated Flow @ 10 <sup>9</sup>	1500 SLPM, 2000 SLPM, 2500 SLPM, 3500 SLPM, 7500 SLPM		
Materials	Filter element / Support / O-ring	PTFE / PP / FKM	
	Electropolished housing	316L Stainless steel / 316L Stainless steel VAR	
Operating Conditions	Maximum inlet pressure	0.98 MPa (10kgf/cm <sup>2</sup> ) at 20°C	
	Maximum differential pressure	0.4 MPa (4.2kgf/cm <sup>2</sup> ) at 20°C	
	Maximum operating temperature	100°C (Inert gas)	
Helium Leak Rating	1 x 10 <sup>-9</sup> atm-cc/sec		
Surface Finish Interior	≤ Ra 5μinch		

## DIMENSIONS



Part No.	A/mm	B/mm	C/mm	D/mm	F/mm	H/mm
ST-C1500-6(8)VM	19	198	19	76.3	24	236
ST-C1500-8SW	12	198	12	76.3	24	223
ST-C1500-12VM	25.5	205.6	25.5	76.3	36	256.6
ST-C1500-12SW	17	205.6	17	76.3	36	239.6
ST-C1500-8TW	56.2	183	56.2	76	-	295
ST-C1500-15A	48.5	184	48.5	76.6	-	281
ST-C2000-15A	48.5	184	48.5	76.2	-	281
ST-C2500-20A	70	303.5	70	89.1	-	443.5
ST-C3500-25A	70	310	70	89.1	-	450
ST-C7500-40A	70	551	70	89.1	-	691

## PERFORMANCE DATA



# PTFE GAS FILTER

## ST-H MAX SERIES

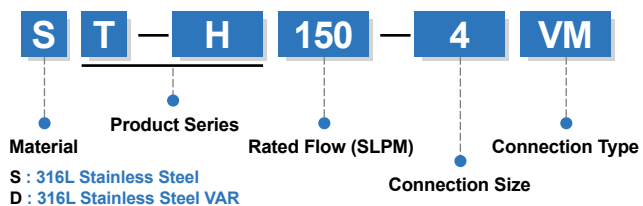
- Ultra-high purity max in-line gas filter
- All fluoropolymer filter element
- Electropolished 316L stainless steel housing



### PRODUCT FEATURES

- PTFE element with superior corrosion resistance and excellent compatibility for most high purity semiconductor process gases
- 3 Nanometer particle filtering capability keeps up high flow efficiency with Low pressure drop
- 5Ra electro-polished surface prevents internal contaminations
- Baked with hot nitrogen after DI water cleaning to meet semiconductor process standards
- Class 100 manufacturing, cleaning and packaging environment
- 100% helium leak tested

## ORDERING INFORMATION

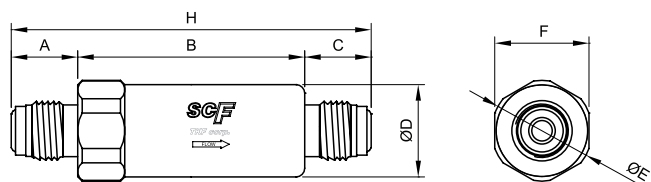


Size		Connection	
4	1/4"	VM	MFS male type
6	3/8"	SW	Lok type
8	1/2"		

## SPECIFICATIONS

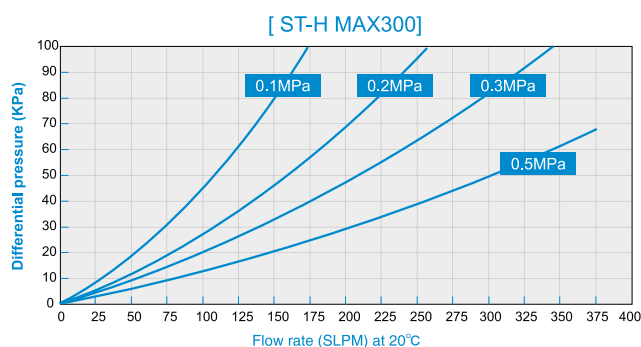
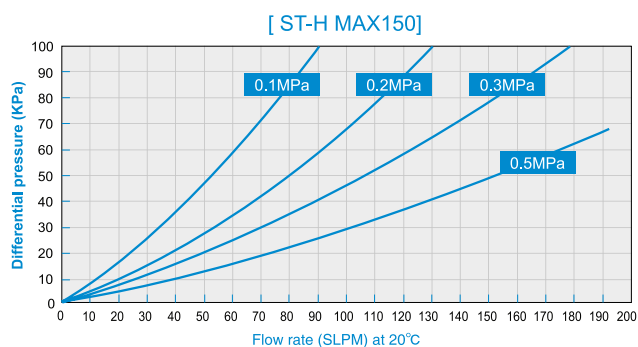
Removal Rating	≥ 0.0025μm		
Retention	Greater than 99.9999999% Removal of all particles down to 0.0025μm		
Rated Flow @ 10 <sup>9</sup>	150 SLPM (Max 200 SLPM)		
	300 SLPM (Max 400 SLPM)		
Materials	Filter element / Support / O-ring	PTFE / PFA / PTFE	
	Electropolished housing	316L Stainless steel / 316L Stainless steel VAR	
Operating Conditions	Maximum inlet pressure	0.98 MPa (10kgf/cm <sup>2</sup> ) at 20°C	
	Maximum differential pressure	0.4 MPa (4.2kgf/cm <sup>2</sup> ) at 20°C	
	Maximum operating temperature	120°C (Inert gas)	
Helium Leak Rating	1 x 10 <sup>-9</sup> atm-cc/sec		
Surface Finish Interior	≤ Ra 5μinch		

## DIMENSIONS



Part No.	A/mm	B/mm	C/mm	D/mm	E/mm	F/mm	H/mm
ST-H150-4VM	15.5	53	15.5	21.5	23.5	22	84
ST-H150-4SW	10.4	52.2	10.4	21.5	23.5	22	73
ST-H300-6(8)VM	19	96	19	26.5	30	27	134
ST-H300-6(8)SW	12	96	12	26.5	30	27	120

## PERFORMANCE DATA



# IGS GAS FILTER

## METAL SERIES

- Ultra-high purity Metal Mini gas filter
- All 316L stainless steel constructions
- High temperature and dynamic pressure applications
- Compact size and high reliability on shock or vibration

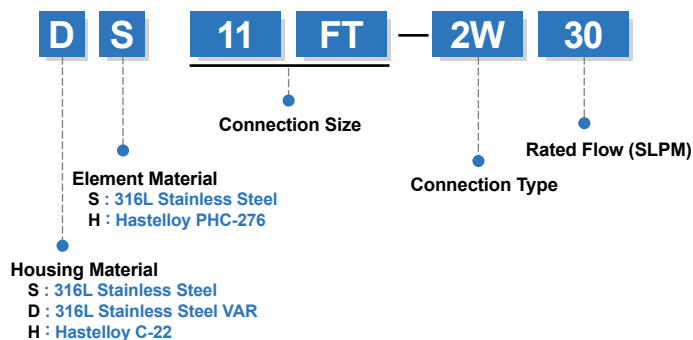


### PRODUCT FEATURES

- Wide range flow rate from 30 to 120 SLPM
- Excellent compatibility with most high purity semiconductor process gases
- 3 Nanometer particle filtering capability keeps up high flow efficiency with minimum pressure drop
- 5Ra electro-polished surface prevents internal contaminations
- Baked with hot nitrogen after DI water cleaning to meet semiconductor process standards
- Class 100 manufacturing, cleaning and packaging environment
- 100% helium leak tested



## ORDERING INFORMATION

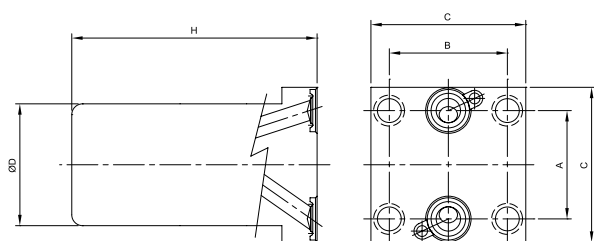


Size		Connection	
11	1.125"	W, WS	W-Seal
15	1.5"	C	C-Seal
159	1.59"		

## SPECIFICATIONS

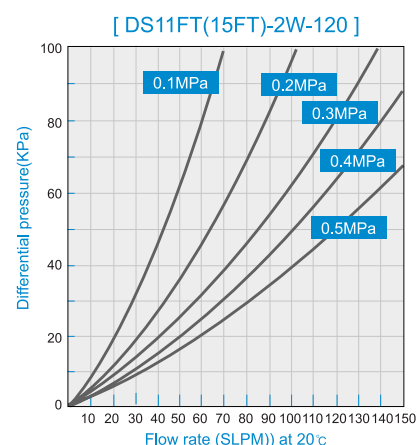
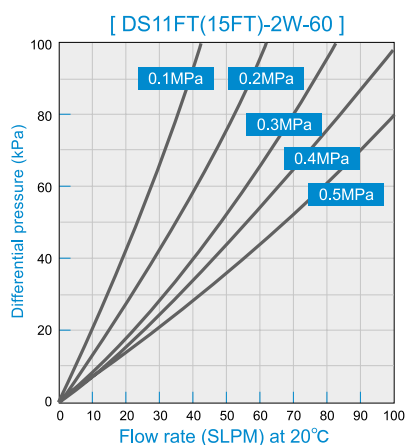
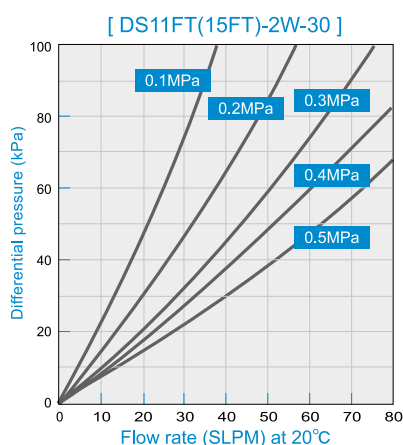
Removal Rating	≥ 0.0025μm		
Retention	Greater than 99.9999999% Removal of all particles down to 0.0025μm		
Rated Flow @ 10 <sup>9</sup>	30 SLPM		
	60 SLPM		
	120 SLPM		
Materials	Filter element	316L Stainless steel, Hastelloy C276	
	Electropolished housing	316L Stainless steel / 316L Stainless steel VAR, Hastelloy C22	
Operating Conditions	Maximum inlet pressure	0.98 MPa (10kgf/cm <sup>2</sup> ) at 20°C	
	Maximum differential pressure	0.7 MPa (7kgf/cm <sup>2</sup> ) at 20°C	
	Maximum operating temperature	460°C (Inert gas)	
Helium Leak Rating	1 x 10 <sup>-9</sup> atm-cc/sec		
Surface Finish Interior	≤ Ra 5μinch		

## DIMENSIONS



Size	Seal Type	Part Number	A/mm	B/mm	C/mm	D/mm	H/mm
1.125"	W-Seal	DS11FT-2W-30	20	21.8	28.6	21.5	45.5
		DS11FT-2W-60	20	21.8	28.6	21.5	58.5
		DS11FT-2W-120	20	21.8	28.6	27.5	109
	C-Seal	DS11FT-2C-30	21.8	21.8	28.6	21.5	45.5
		DS11FT-2C-60	21.8	21.8	28.6	21.5	58.5
		DS11FT-2C-120	21.8	21.8	28.6	21.5	58.5
1.5"	W-Seal	DS15FT-2W-30	26	30	39	27.5	51
		DS15FT-2W-60	26	30	39	27.5	62
		DS15FT-2W-120	26	30	39	27.5	97.5
	C-Seal	DH15FT-2W-120	26	30	39	27.5	97.5
		DS15FT-2C-30	30.2	30.2	39	27.5	62
		DS15FT-2C-60	30.2	30.2	39	27.5	97.5
1.59"	W-Seal	DH159FT-2WS-120	18	42	37 x 55	27.5	97.5

## PERFORMANCE DATA



# 1.125" SANDWICH GAS FILTER

## SDF SERIES

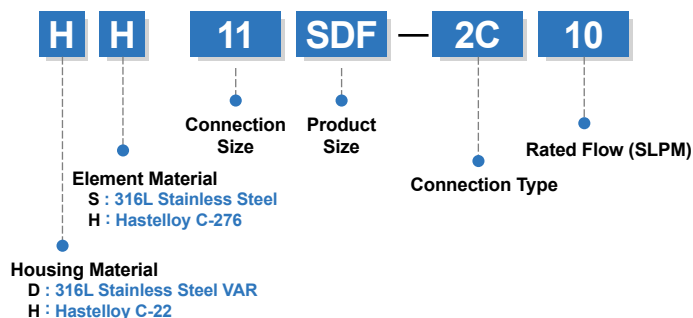
- Ultra-high purity IGS gas filter
- All 316L stainless steel or Hastelloy construction
- High temperature and dynamic pressure applications



## PRODUCT FEATURES

- Excellent compatibility with most high purity semiconductor process gases
- 3 Nanometer particle filtering capability keeps up high flow efficiency with minimum pressure drop
- 5Ra electro-polished surface prevents internal contaminations
- Baked with hot nitrogen after DI water cleaning to meet semiconductor process standards
- 100%helium leak tested
- 1.125" C-Seal Surface Mount Sandwich filter design provides a feedthrough for incoming gas to the device mounted above.
- Gas filtration is provided as the gas is returning from the above mounted device to allow for the maximum protection for any downstream components.

## ORDERING INFORMATION

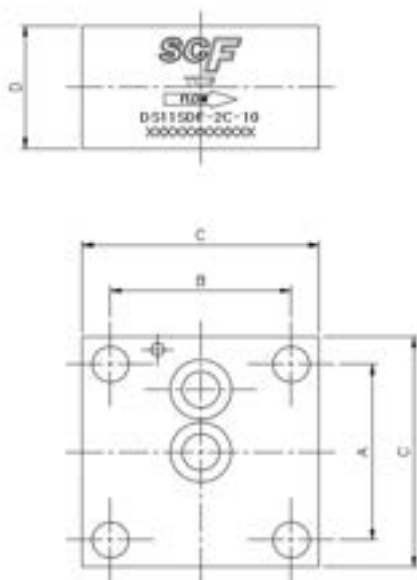


Size		Connection	
11	1.125"	C	C-Seal

## SPECIFICATIONS

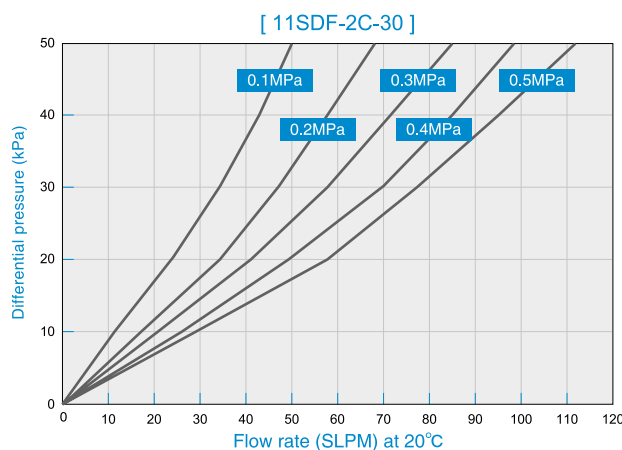
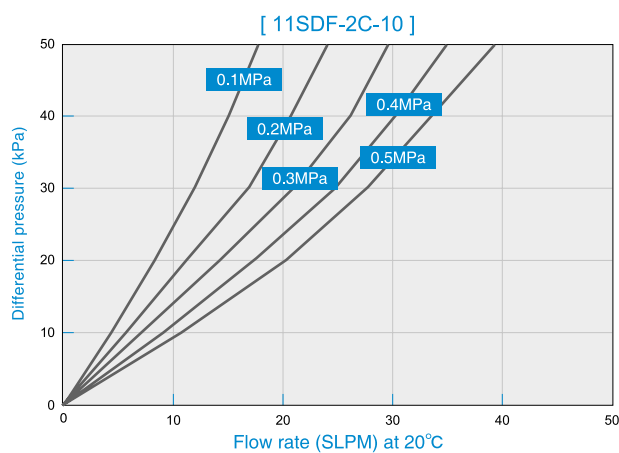
Removal Rating	≥ 0.0025μm		
Retention	Greater than 99.9999999% Removal of all particles down to 0.0025μm		
Rated Flow @ 10 <sup>9</sup>	10 SLPM		
	30 SLPM		
Materials	Filter element	316L Stainless Steel / Hastelloy C-276	
	Housing	316L VAR Stainless Steel / Hastelloy C-22	
Element operating conditions	Maximum inlet pressure	5 MPa (50.98kgf/cm <sup>2</sup> ) at 20°C	
	Maximum differential pressure	0.7 MPa (7kgf/cm <sup>2</sup> ) at 20°C	
	Maximum operating temperature	460°C	
Helium Leak Rating	1 x 10 <sup>-9</sup> atm·cc/sec		
Surface Finish Interior	≤ Ra 5μinch		

## DIMENSIONS



Series	Size	Part Number	A/mm	B/mm	C/mm	D/mm
11SDF	1.125" C-Seal Type	DS11SDF-2C-10	21.8	21.8	28.5	15.2
11SDF	1.125" C-Seal Type	DS11SDF-2C-30	21.8	21.8	28.5	22.9
11SDF	1.125" C-Seal Type	HH11SDF-2C-10	21.8	21.8	28.5	15.2
11SDF	1.125" C-Seal Type	HH11SDF-2C-30	21.8	21.8	28.5	22.9

## PERFORMANCE DATA



# GAS DIFFUSER

## METAL SERIES

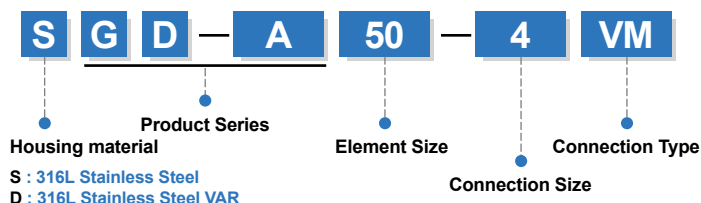
- Ultra-high purity Metal Gas Diffuser
- 316L Stainless steel element
- High temperature applications
- Compact size and high reliability on shock or vibration



## PRODUCT FEATURES

- Wide range flow rate from 60 to 300 SLPM
- Excellent compatibility with most high purity semiconductor process gases
- 3 Nanometer particle filtering capability keeps up high flow efficiency with minimum pressure drop
- 5Ra electro-polished surface prevents internal contaminations
- Baked with hot nitrogen after DI water cleaning to meet semiconductor process standards
- 100%helium leak tested

## ORDERING INFORMATION

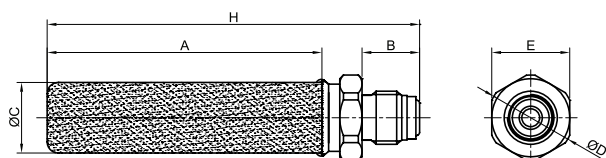


Size		Connection	
4	1/4"	VM	MFS male type
6	3/8"	NW25X8VM	NW25 flange type
8	1/2"		

## SPECIFICATIONS

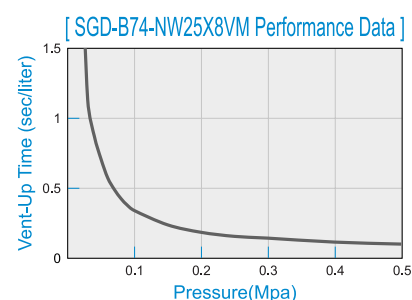
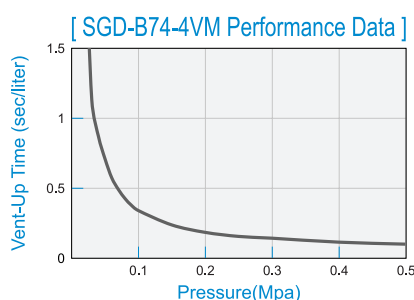
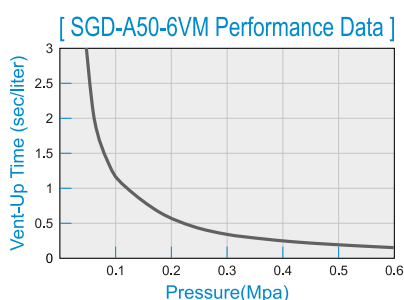
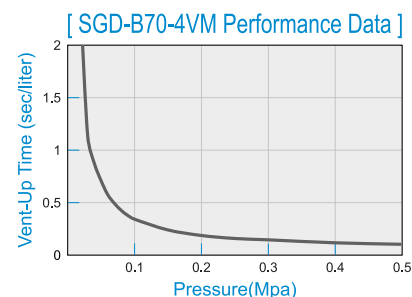
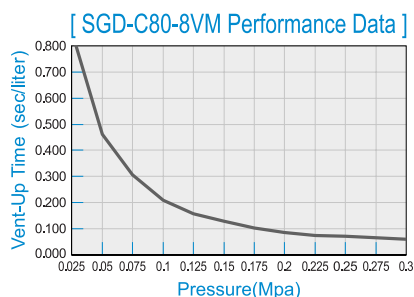
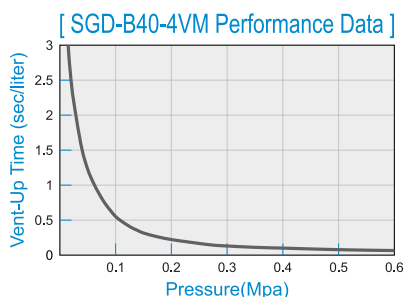
<b>Removal Rating</b>	≥ 0.0025μm	
<b>Retention</b>	Greater than 99.9999999% Removal of all particles down to 0.0025μm	
<b>Rated Flow @ 10<sup>9</sup></b>	70SLPM (A50)	
	60SLPM (B40)	
	80SLPM (B70)	
	90SLPM (B74)	
	300SLPM (C80)	
	100SLPM (NW25X8VM)	
<b>Materials</b>	<b>Filter Element</b>	316L Stainless Steel
	<b>Housing</b>	316L Stainless Steel / 316L VAR Stainless Steel
<b>Element Operating Conditions</b>	<b>Maximum inlet pressure</b>	1Mpa
	<b>Maximum Operating Temperature</b>	460°C
<b>Surface Finish Interior</b>	≤ Ra 10μin(BA) / ≤ Ra 5μin(EP)	

## DIMENSIONS



Series	Size	Part Number	A/mm	B/mm	C/mm	D/mm	E/mm	H/mm
SGD-A	3/8"	GD-A50-6VM	50	19	13	27	24	81.5
		GD-B40-4VM	40	15.5	19	23	21	66.3
SGD-B	1/4"	GD-B70-4VM	70	15.5	19	23	21	96.3
		GD-B74-4VM	74	15.5	19	23	21	100.3
		GD-B74-NW25X8VM	74	39.4	19	40	23.8	123.4
SGD-C	1/2"	GD-C80-8VM	80	19	24	27	24	110.8

## PERFORMANCE DATA



# GASKET FILTER

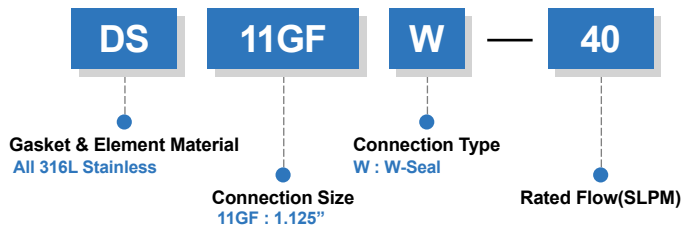
## IGS SERIES



### PRODUCT FEATURES

- 3 Nanometer particle filtering capability keeps up high flow efficiency with minimum pressure drop
- Gasket surface finish on gas wetted surface is 5µm in Ra with electro polishing
- Baked with hot nitrogen after DI water cleaning to meet semiconductor process standards
- Class 100 manufacturing, cleaning and packaging environment

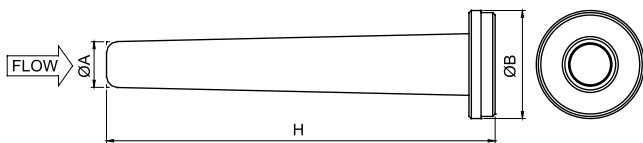
## ORDERING INFORMATION



## SPECIFICATIONS

Removal Rating	≥ 0.0025μm
Retention	Greater than 99.9999999% Removal of all particles down to 0.0025μm
Rated Flow @ 10 <sup>5</sup>	40 SLPM
Max. Operating Temperature	460°C
Surface Finish Interior	≥ Ra 5μinch

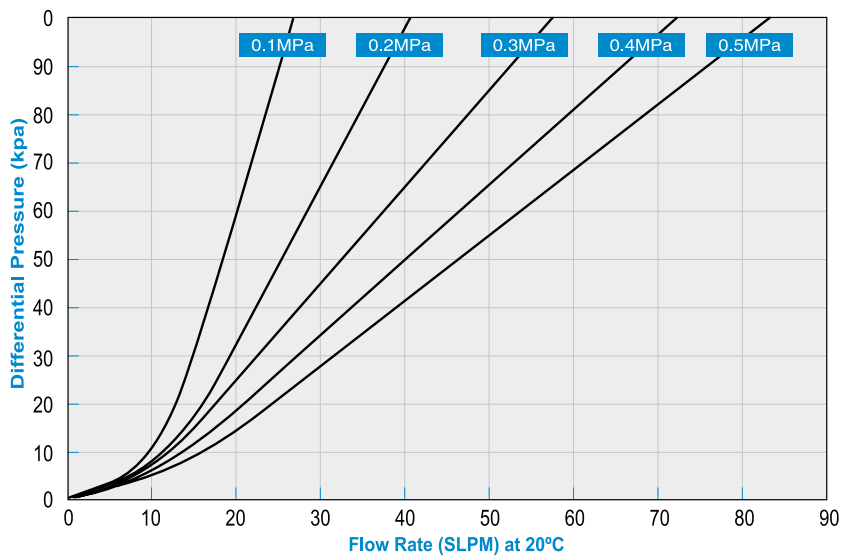
## DIMENSIONS



Size	Seal Type	Part Number	A/mm	B/mm	H/mm
1.125"	W-Seal	DS11GFW-40	(3.25)	7.7	27.6

## PERFORMANCE DATA

GASKET FILTER FLOW CURVE



# GASKET FILTER

## MFS SERIES

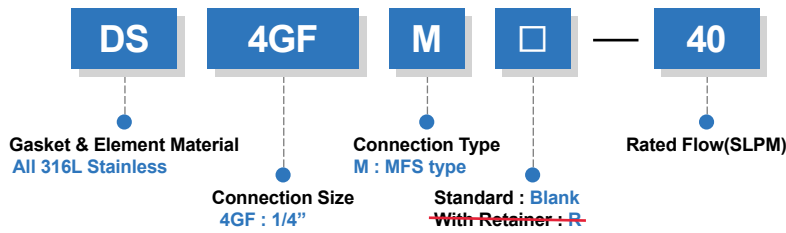


### PRODUCT FEATURES

- 3 Nanometer particle filtering capability keeps up high flow efficiency with minimum pressure drop
- Gasket surface finish on gas wetted surface is 5µm in Ra with electro polishing
- Baked with hot nitrogen after DI water cleaning to meet semiconductor process standards
- Class 100 manufacturing, cleaning and packaging environment



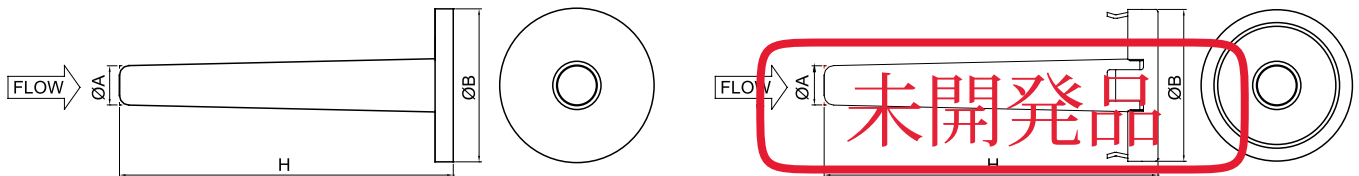
## ORDERING INFORMATION



## SPECIFICATIONS

Removal Rating	≥ 0.0025μm
Retention	Greater than 99.9999999% Removal of all particles down to 0.0025μm
Rated Flow @ 10°	40 SLPM
Max. Operating Temperature	460°C
Surface Finish Interior	≥ Ra 5μinch

## DIMENSIONS



Size	Seal Type	Part Number	A/mm	B/mm	H/mm
1/4"	MFS Type	D4GFM-40	(3.25)	12.7	27.6

Size	Seal Type	Part Number	A/mm	B/mm	H/mm
<del>1/4"</del>	<del>MFS Type</del>	<del>D4CFMR 40</del>	<del>(3.25)</del>	<del>12.6</del>	<del>27.6</del>

## PERFORMANCE DATA

GASKET FILTER FLOW CURVE

