Filters

FT, FB, FI, FW and FH Series

Contents

Tee-Type Filters

FT Series

Introduction

Tee-Type Filters trap fine particle contaminants in pipelines. With easy-to-replace filter elements, these filters apply to gas and liquid services. Having been ECE R110 certified, they are also suitable for CNG/NGV applications.

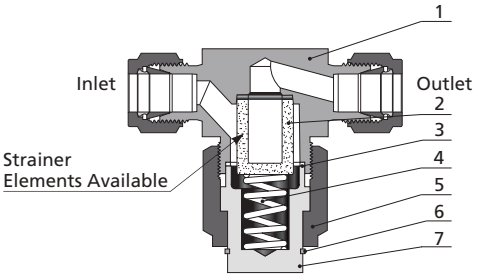
Features

◎ Filtration area type: 4 and 8
◎ Union bonnet design to prevent lock nut from falling off and offer added safety
◎ Working pressure up to 6000 psig (414 bar)
◎ Working temperature: -20°F to 900°F (-28°C to 482°C)
◎ Variety of end connections available

Standard Materials of Construction

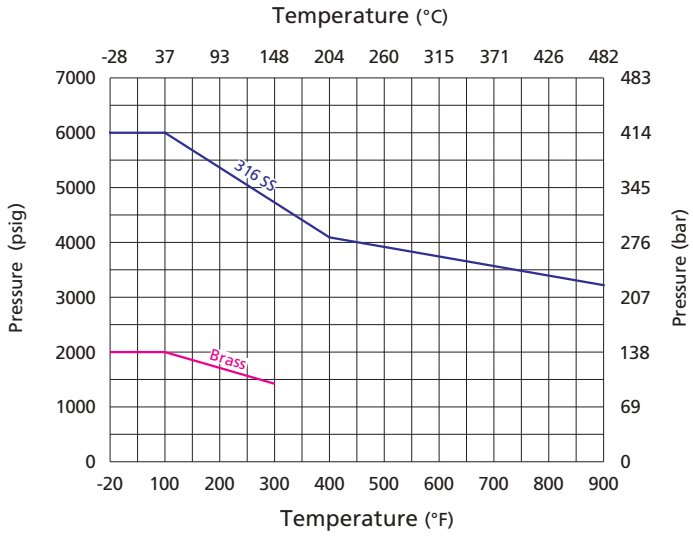
Item	Component	Body Material	
		316 SS	Brass
		Material Grade/ASTM Specification	
1	Body	F316 SS/A182	C37700/B283
		316 SS/A479	C36000/B16
2	Element	Sintered 316 SS or strainer 316 SS	
3	Gasket	Silver-plated 316 SS	Aluminum/B209
4	Spring	302 SS/A313	
5	Bonnet Nut	316 SS/A479	Brass C36000/B16
6	Backup Ring	Stainless steel	
7	Bonnet	316 SS/A479	Brass C36000/B16

Lubricants: molybdenum disulfide-based and silicone-based



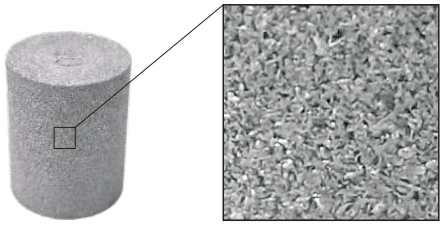
FT Series Sintered Filter Shown

Pressure vs. Temperature



Filter Elements

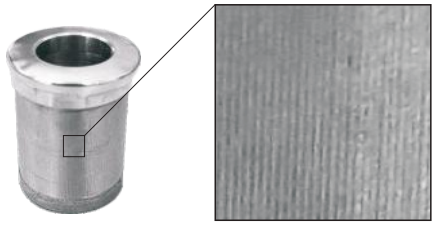
Sintered



Magnified 10×

◎ 316 SS powder metallurgy
◎ Irregular pores to trap impurity ions with smaller diameters

Strainer



Magnified 10×

◎ 316 SS wire mesh
◎ Uniform mesh pores to trap impurity ions with larger diameters

Nominal Pore Size of Filter Elements

	Nominal Pore Size	Pore Size Range	Element Designator
Sintered	0.5 µm	0.5 to 2 µm	05
	2 µm	1 to 4 µm	2
	7 µm	5 to 10 µm	7
	15 µm	11 to 25 µm	15
	40 µm	35 to 53 µm	40
	60 µm	50 to 75 µm	60
	80 µm	70 to 95 µm	80
Strainer	100 µm	140 mesh	100
	150 µm	100 mesh	150
	250 µm	60 mesh	250
	450 µm	40 mesh	450

Note: Filter elements remove 95% of particles larger than the nominal pore size.

Filtration Area

Filtration Area Type	Filtration Area, in.^{2} (mm^2)	
	Sintered	Strainer
4	1.30 (830)	1.00 (640)
8	2.00 (1280)	1.70 (1090)

Maximum Differential Pressure of Clean Filter at 70°F (20°C)

Maximum Differential Pressure psig (bar)										
0.5 µm	2 µm	7 µm	15 µm	40 µm	60 µm	80 µm	100 µm	150 µm	250 µm	450 µm
1000 (69.0)										

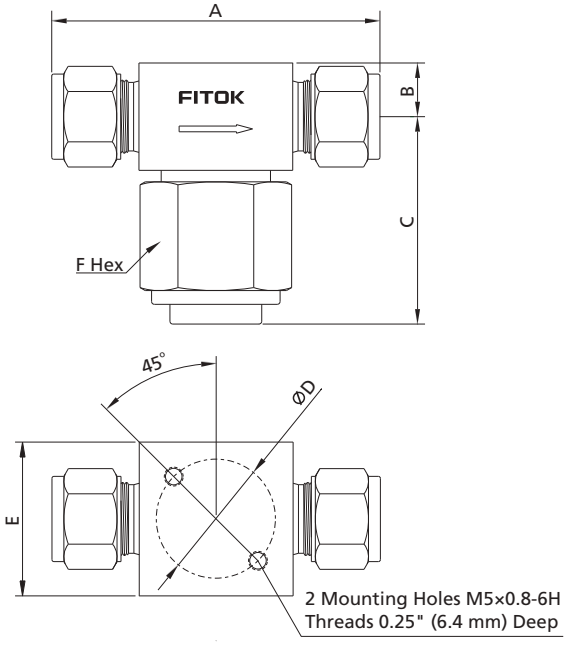
Flow Data

Filtration Area Type	Element Nominal Pore Size µm	Element Type	Inlet Pressure, psig (bar)			Pressure Drop, psig (bar)		
			5 (0.34)	10 (0.68)	15 (1.0)	10 (0.68)	50 (3.4)	100 (6.8)
			Air Flow, std ft^3/min (L/min)			Water Flow, U.S. gal/min (L/min)		
4	0.5	Sintered	0.12 (3.4)	0.26 (7.3)	0.48 (13)	0.04 (0.15)	0.17 (0.64)	0.29 (1.0)
	2	Sintered	0.60 (17)	1.4 (39)	2.3 (65)	0.24 (0.90)	0.86 (3.2)	1.3 (4.9)
	7	Sintered	1.4 (39)	2.9 (82)	4.7 (130)	0.40 (1.5)	1.3 (4.9)	2.0 (7.5)
	15	Sintered	1.2 (34)	2.9 (82)	4.7 (130)	0.50 (1.8)	1.3 (4.9)	2.1 (7.9)
	60	Sintered	3.1 (87)	5.9 (160)	8.5 (240)	0.80 (3.0)	2.7 (10)	3.9 (14)
	80	Sintered	4.1 (110)	7.5 (210)	10 (280)	1.1 (4.1)	3.4 (12)	4.9 (18)
	40, 60, 80, 100, 150, 250, 450	Strainer	4.7 (130)	8.8 (250)	12 (340)	1.2 (4.5)	4.2 (15)	5.6 (21)
8	0.5	Sintered	0.36 (10)	0.86 (24)	1.6 (45)	0.09 (0.34)	0.40 (1.5)	0.76 (2.8)
	2	Sintered	1.4 (39)	2.8 (79)	4.0 (110)	0.26 (0.98)	1.1 (4.1)	1.6 (6.0)
	7	Sintered	1.8 (51)	4.2 (119)	6.8 (190)	0.64 (2.4)	2.2 (8.3)	3.5 (13)
	15	Sintered	1.8 (51)	4.9 (130)	7.9 (220)	0.84 (3.1)	2.6 (9.8)	4.1 (15)
	60	Sintered	5.1 (140)	10 (280)	15 (420)	1.5 (5.6)	4.8 (18)	6.7 (25)
	80	Sintered	6.1 (170)	11 (310)	16 (450)	1.7 (6.4)	5.5 (20)	7.6 (28)
	40, 60, 80, 100, 150, 250, 450	Strainer	7.2 (200)	14 (390)	20 (560)	2.4 (9.0)	7.2 (27)	10 (37)

Note: Outlet is discharged to the atmosphere.

Dimensions and Ordering Information

Dimensions, in inches (millimeters), are for reference only.



Basic Ordering Number	Connection Type and Size		Filtration Area Type	Dimensions, in. (mm)					
	Inlet	Outlet		A	B	C	ØD	E	F
FT□□-FL2-	1/8" Tube Fitting	1/8" Tube Fitting	4	2.27 (57.7)	0.38 (9.7)	1.49 (37.8)	1.00 (25.4)	1.00 (25.4)	1 (25.4)
FT□□-FL4-	1/4" Tube Fitting	1/4" Tube Fitting	4	2.47 (62.7)					
FT□□-FL6-	3/8" Tube Fitting	3/8" Tube Fitting	8	2.84 (72.1)	0.46 (11.7)	1.74 (44.2)	1.13 (28.7)	1.13 (28.7)	1 1/8 (28.6)
FT□□-FL8-	1/2" Tube Fitting	1/2" Tube Fitting	8	3.04 (77.2)					
FT□□-ML6-	6 mm Tube Fitting	6 mm Tube Fitting	4	2.46 (62.5)	0.38 (9.7)	1.49 (37.8)	1.00 (25.4)	1.00 (25.4)	1 (25.4)
FT□□-ML8-	8 mm Tube Fitting	8 mm Tube Fitting	8	2.84 (72.1)	0.46 (11.7)	1.74 (44.2)	1.13 (28.7)	1.13 (28.7)	1 1/8 (28.6)
FT□□-ML10-	10 mm Tube Fitting	10 mm Tube Fitting	8	2.86 (72.6)					
FT□□-ML12-	12 mm Tube Fitting	12 mm Tube Fitting	8	3.04 (77.2)					
FT□□-TS4-	1/4" Tube Socket Weld	1/4" Tube Socket Weld	4	1.68 (42.7)	0.38 (9.7)	1.49 (37.8)	1.00 (25.4)	1.00 (25.4)	1 (25.4)
FT□□-TS6-	3/8" Tube Socket Weld	3/8" Tube Socket Weld	4						
FT□□-TB4-	1/4"×0.065" Tube Butt Weld	1/4"×0.065" Tube Butt Weld	4						
FT□□-TB6-	3/8"×0.095" Tube Butt Weld	3/8"×0.095" Tube Butt Weld	4						
FT□□-FNS2-	1/8 Female NPT	1/8 Female NPT	4	2.00 (50.8)					
FT□□-FNS4-	1/4 Female NPT	1/4 Female NPT	4	2.13 (54.1)					
FT□□-NS4-	1/4 Male NPT	1/4 Male NPT	4						
FT□□-NS6-	3/8 Male NPT	3/8 Male NPT	8	2.38 (60.5)	0.46 (11.7)	1.74 (44.2)	1.13 (28.7)	1.13 (28.7)	1 1/8 (28.6)
FT□□-NS8-	1/2 Male NPT	1/2 Male NPT	8	2.75 (69.9)					
FT□□-FR4-	1/4 Male FR	1/4 Male FR	4	2.30 (58.4)	0.38 (9.7)	1.49 (37.8)	1.00 (25.4)	1.00 (25.4)	1 (25.4)
FT□□-FR8-	1/2 Male FR	1/2 Male FR	8	2.55 (64.8)	0.46 (11.7)	1.74 (44.2)	1.13 (28.7)	1.13 (28.7)	1 1/8 (28.6)

1. Mounting holes not available with 1/4 female NPT end connections
2. FR means metal gasket seal fittings.
3. Sizes and types listed are standard. Other sizes and types are available upon request.
4. Dimensions are shown with FITOK nuts finger-tightened. All dimensions are for reference only and are subject to change. For dimensions not shown above, please contact FITOK Group or our authorized distributors.

CNG/NGV Application

FT Series Filters with ECE R110 Type Approval (Class 0) are available.
Rated temperatures: -40°F to 248°F (-40°C to 120°C)
Rated pressure within the temperature range: 3370 psig (260 bar)
To order, add the suffix -R110 to the standard FT series filter ordering number.
Example: FTSS-FL4-15-R110

Special Alloys

Alloy filters are available, featuring sintered filter elements made from Alloy C-276. For details, please contact FITOK.

Filters Ordering Number Description

FT6L – FL4 – ML10 – S – □15 – SF2

Series

FT	

Body Material

SS	316 SS
6L	316L SS
S4	304 SS
4L	304L SS
HC	Alloy C-276
B	Brass

Inlet Type

FNS	Female NPT
NS	Male NPT
FRT	Female BSPT
RT	Male BSPT
FMS	Female Metric Thread (for RP gasket)
MS	Male Metric Thread (for RG gasket)
FRP	Female BSPP (for RP gasket)
BP	Male BSPP (for RP gasket)
FL	Fractional Tube Fitting
ML	Metric Tube Fitting
TS	Fractional Tube Socket Weld
TB	Fractional Tube Butt Weld
FR	Male FR Fitting

Outlet Type

	Same as Inlet
Specified in the same way as the inlet type and size	

Outlet Size / Inlet Size

2	1/8"
4	1/4"
6	3/8" or 6 mm
8	1/2" or 8 mm
10	10 mm
12	3/4" or 12 mm

Element Type

	Sintered
S	Strainer (316 SS Only)

Gasket Material

	Silver-plated 316 SS
A	Aluminum (the only option for brass body)

Element Nominal Pore Size

05	0.5 μm (Sintered)
2	2 μm
7	7 μm
15	15 μm
40	40 μm
60	60 μm
80	80 μm
100	100 μm (Strainer)
150	150 μm (Strainer)
250	250 μm (Strainer)
450	450 μm (Strainer)
EL	Without filter element

Special Application

	None
S	NACE MR0175
R110	ECE R110

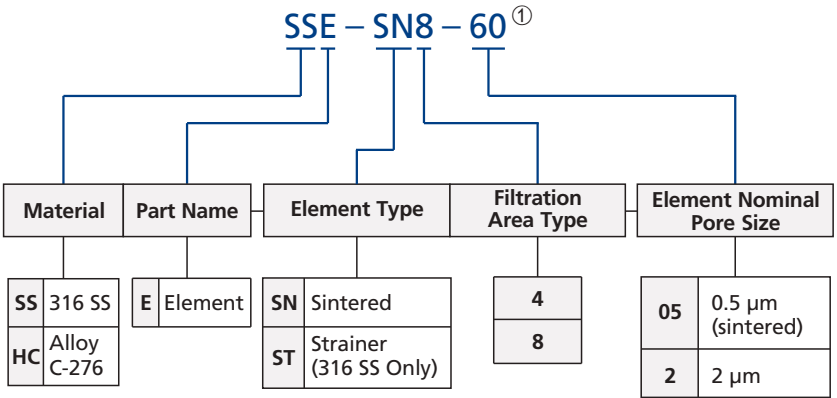
Cleaning and Packaging

	FC-01
F2	FC-02

Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

1. Cleaning and Packaging:
   FC-01: Standard cleaning and packaging for basic industrial procedures.
   FC-02: Special cleaning and packaging for wetted system components to ensure compliance requirement as stated in ASTM G93 Level C.
2. Standard thread pitch for metric threads are as follows:
   M10 and below: 1 mm
   M12 to M24: 1.5 mm
   M27 and above: 2 mm
   Standard thread pitch should be ignored in the ordering number, others should be specified.

Elements Ordering Number Description



Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

① The FT and FB series filters share identical filter element models, while some filter element models for the FI series filters are also same with the FT and FB series. A filter element model represents a single, consistent filter product, meaning one filter element can be used across multiple filter series.

Bypass Filters

FB Series

Introduction

Bypass Filters can be used for medium sampling and element cleaning. Filter elements are available in multiple types of filtration accuracy and are easy to replace, making them suitable for use in gas and fluid service.

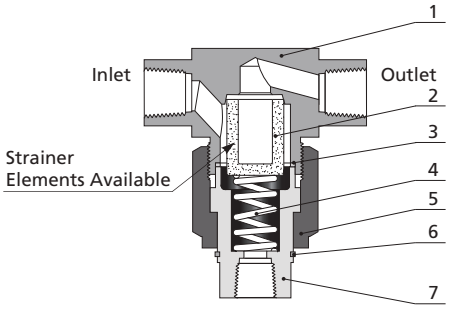
Features

- Filtration area type: 4 and 8
- Union bonnet design to prevent lock nut from falling off and offer added safety
- Working pressure up to 6000 psig (414 bar)
- Working temperature: -20°F to 900°F (-28°C to 482°C)
- Variety of end connections available

Standard Materials of Construction

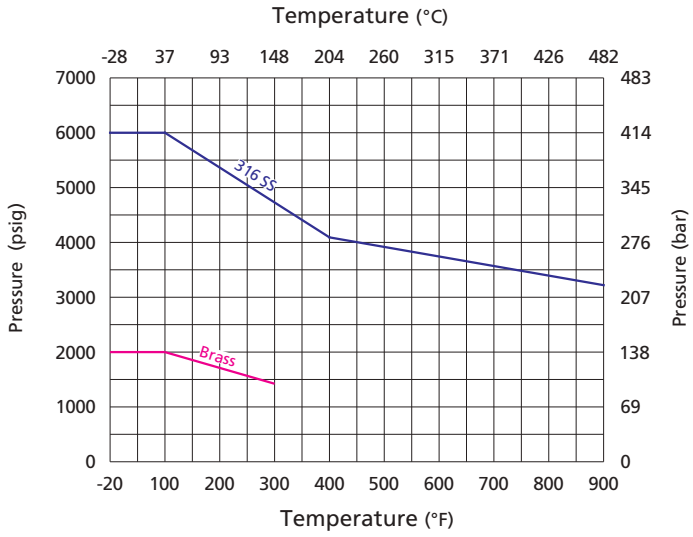
Item	Component	Body Material	
		316 SS	Brass
		Material Grade/ASTM Specification	
1	Body	F316 SS/A182	C37700/B283
		316 SS/A479	C36000/B16
2	Element	Sintered 316 SS or strainer 316 SS	
3	Gasket	Silver-plated 316 SS	Aluminum/B209
4	Spring	302 SS/A313	
5	Bonnet Nut	316 SS/A479	Brass C36000/B16
6	Backup Ring	Stainless steel	
7	Bonnet	316 SS/A479	Brass C36000/B16

Lubricants: molybdenum disulfide-based and silicone-based



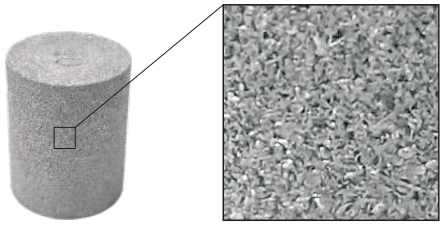
FB Series Sintered Filter Shown

Pressure vs. Temperature



Filter Elements

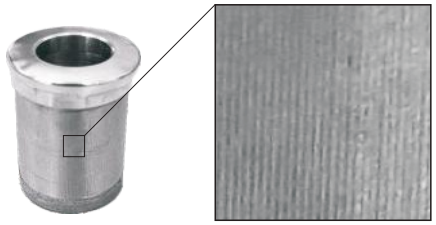
Sintered



Magnified 10×

◎ 316 SS powder metallurgy
◎ Irregular pores to trap impurity ions with smaller diameters

Strainer



Magnified 10×

◎ 316 SS wire mesh
◎ Uniform mesh pores to trap impurity ions with larger diameters

Nominal Pore Size of Filter Elements

	Nominal Pore Size	Pore Size Range	Element Designator
Sintered	0.5 µm	0.5 to 2 µm	05
	2 µm	1 to 4 µm	2
	7 µm	5 to 10 µm	7
	15 µm	11 to 25 µm	15
	40 µm	35 to 53 µm	40
	60 µm	50 to 75 µm	60
	80 µm	70 to 95 µm	80
Strainer	100 µm	140 mesh	100
	150 µm	100 mesh	150
	250 µm	60 mesh	250
	450 µm	40 mesh	450

Note: Filter elements remove 95% of particles larger than the nominal pore size.

Filtration Area

Filtration Area Type	Filtration Area, in.^{2} (mm^2)	
	Sintered	Strainer
4	1.30 (830)	1.00 (640)
8	2.00 (1280)	1.70 (1090)

Maximum Differential Pressure of Clean Filter at 70°F (20°C)

Maximum Differential Pressure psig (bar)										
0.5 µm	2 µm	7 µm	15 µm	40 µm	60 µm	80 µm	100 µm	150 µm	250 µm	450 µm
1000 (69.0)										

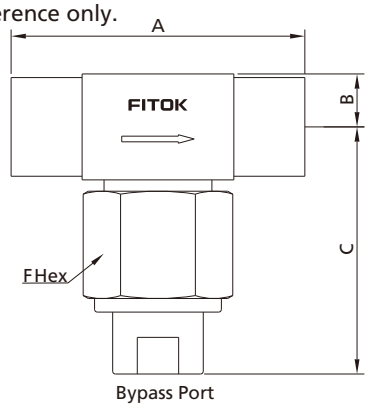
Flow Data

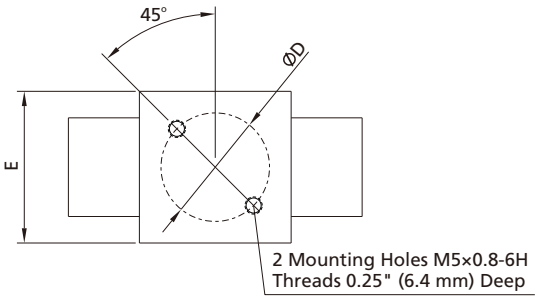
Filtration Area Type	Element Nominal Pore Size µm	Element Type	Inlet Pressure, psig (bar)			Pressure Drop, psig (bar)		
			5 (0.34)	10 (0.68)	15 (1.0)	10 (0.68)	50 (3.4)	100 (6.8)
			Air Flow, std ft^3/min (L/min)			Water Flow, U.S. gal/min (L/min)		
4	0.5	Sintered	0.12 (3.4)	0.26 (7.3)	0.48 (13)	0.04 (0.15)	0.17 (0.64)	0.29 (1.0)
	2	Sintered	0.60 (17)	1.4 (39)	2.3 (65)	0.24 (0.90)	0.86 (3.2)	1.3 (4.9)
	7	Sintered	1.4 (39)	2.9 (82)	4.7 (130)	0.40 (1.5)	1.3 (4.9)	2.0 (7.5)
	15	Sintered	1.2 (34)	2.9 (82)	4.7 (130)	0.50 (1.8)	1.3 (4.9)	2.1 (7.9)
	60	Sintered	3.1 (87)	5.9 (160)	8.5 (240)	0.80 (3.0)	2.7 (10)	3.9 (14)
	80	Sintered	4.1 (110)	7.5 (210)	10 (280)	1.1 (4.1)	3.4 (12)	4.9 (18)
	40, 60, 80, 100, 150, 250, 450	Strainer	4.7 (130)	8.8 (250)	12 (340)	1.2 (4.5)	4.2 (15)	5.6 (21)
8	0.5	Sintered	0.36 (10)	0.86 (24)	1.6 (45)	0.09 (0.34)	0.40 (1.5)	0.76 (2.8)
	2	Sintered	1.4 (39)	2.8 (79)	4.0 (110)	0.26 (0.98)	1.1 (4.1)	1.6 (6.0)
	7	Sintered	1.8 (51)	4.2 (119)	6.8 (190)	0.64 (2.4)	2.2 (8.3)	3.5 (13)
	15	Sintered	1.8 (51)	4.9 (130)	7.9 (220)	0.84 (3.1)	2.6 (9.8)	4.1 (15)
	60	Sintered	5.1 (140)	10 (280)	15 (420)	1.5 (5.6)	4.8 (18)	6.7 (25)
	80	Sintered	6.1 (170)	11 (310)	16 (450)	1.7 (6.4)	5.5 (20)	7.6 (28)
	40, 60, 80, 100, 150, 250, 450	Strainer	7.2 (200)	14 (390)	20 (560)	2.4 (9.0)	7.2 (27)	10 (37)

Note: Outlet is discharged to the atmosphere.

Dimensions and Ordering Information

Dimensions, in inches (millimeters), are for reference only.





Basic Ordering Number	Connection Type and Size		Filtration Area Type	Dimensions, in. (mm)						
	Inlet	Outlet		A	B	C	ØD	E	F	Bypass Port
FB□□-FL2-	1/8" Tube Fitting	1/8" Tube Fitting	4	2.27 (57.7)	0.38 (9.7)	1.98 (50.2)	1.00 (25.4)	1.00 (25.4)	1 (25.4)	FL2
FB□□-FL4-	1/4"Tube Fitting	1/4" Tube Fitting	4	2.47 (62.7)		2.44 (61.9)				FL4
FB□□-FL6-	3/8"Tube Fitting	3/8" Tube Fitting	8	2.84 (72.1)	0.46 (11.7)	2.74 (69.1)	1.13 (28.7)	1.13 (28.7)	1 1/8 (28.6)	FL6
FB□□-FL8-	1/2" Tube Fitting	1/2" Tube Fitting	8	3.04 (77.2)		2.96 (74.2)				FL8
FB□□-ML6-	6 mm Tube Fitting	6 mm Tube Fitting	4	2.46 (62.5)	0.38 (9.7)	2.44 (61.9)	1.00 (25.4)	1.00 (25.4)	1 (25.4)	FL4
FB□□-ML8-	8 mm Tube Fitting	8 mm Tube Fitting	8	2.84 (72.1)	0.46 (11.7)	2.74 (69.1)	1.13 (28.7)	1.13 (28.7)	1 1/8 (28.6)	FL6
FB□□-ML10-	10 mm Tube Fitting	10 mm Tube Fitting	8	2.86 (72.6)		2.96 (74.2)				FL8
FB□□-ML12-	12 mm Tube Fitting	12 mm Tube Fitting	8	3.04 (77.2)						
FB□□-TS4-	1/4" Tube Socket Weld	1/4" Tube Socket Weld	4	1.68 (42.7)	0.38 (9.7)	1.83 (56.4)	1.00 (25.4)	1.00 (25.4)	1 (25.4)	TS4
FB□□-TS6-	3/8" Tube Socket Weld	3/8" Tube Socket Weld	4							
FB□□-TB4-	1/4"×0.065" Tube Butt Weld	1/4"×0.065" Tube Butt Weld	4							
FB□□-TB4-	3/8"×0.095" Tube Butt Weld	3/8"×0.095" Tube Butt Weld	4							
FB□□-FNS2-	1/8 Female NPT	1/8 Female NPT	4	2.00 (50.8)		1.71 (43.4)				FNS2
FB□□-NS4-	1/4 Male NPT	1/4 Male NPT	4	2.13 (54.1)						
FB□□-FNS4-	1/4 Female NPT	1/4 Female NPT	8	2.38 (60.5)	0.46 (11.7)	2.00 (50.8)	1.13 (28.7)	1.13 (28.7)	1 1/8 (28.6)	
FB□□-NS6-	3/8 Male NPT	3/8 Male NPT	8							
FB□□-NS8-	1/2 Male NPT	1/2 Male NPT	8	2.75 (69.9)						
FB□□-FR4-	1/4 Male FR	1/4 Male FR	4	2.38 (60.5)	0.38 (9.7)	2.44 (61.9)	1.00 (25.4)	1.00 (25.4)	1 (25.4)	FL4
FB□□-FR8-	1/2 Male FR	1/2 Male FR	8	2.75 (69.9)	0.46 (11.7)	2.96 (74.2)	1.13 (28.7)	1.13 (28.7)	1 1/8 (28.6)	FL8

1. Mounting holes not available with 1/4 female NPT end connections.
2. FR means metal gasket seal fittings.
3. Sizes and types listed are standard. Other sizes and types are available upon request.
4. Dimensions are shown with FITOK nuts finger-tightened. All dimensions are for reference only and are subject to change. For dimensions not shown above, please contact FITOK Group or our authorized distributors.

Special Alloys

Alloy filters are available, featuring sintered filter elements made from Alloy C-276. For details, please contact FITOK.

Filters Ordering Number Description

FBB – FL8 – ML10 – S – A15 – FL4 – SF2

Series
FB

Body Material	
SS	316 SS
6L	316L SS
S4	304 SS
4L	304L SS
HC	Alloy C-276
B	Brass

Inlet Type	
FNS	Female NPT
NS	Male NPT
FRT	Female BSPT
RT	Male BSPT
FMS	Female Metric Thread (for RP gasket)
MS	Male Metric Thread (for RG gasket)
FRP	Female BSPP (for RP gasket)
BP	Male BSPP (for RP gasket)
FL	Fractional Tube Fitting
ML	Metric Tube Fitting
TS	Fractional Tube Socket Weld
TB	Fractional Tube Butt Weld
FR	Male FR Fitting

Outlet Type / Outlet Size	
	Same as Inlet
Specified in the same way as the inlet type and size	

Inlet Size	
2	1/8"
4	1/4"
6	3/8" or 6 mm
8	1/2" or 8 mm
10	10 mm
12	3/4" or 12 mm

Element Type	
	Sintered
S	Strainer

Gasket Material	
	Silver-plated 316 SS
A	Aluminum (the only option for brass body)

Element Nominal Pore Size	
05	0.5 μm (Sintered)
2	2 μm
7	7 μm
15	15 μm
40	40 μm
60	60 μm
80	80 μm
100	100 μm (Strainer)
150	150 μm (Strainer)
250	250 μm (Strainer)
450	450 μm (Strainer)
EL	Without filter element

Bypass Port & Size	
	1/8" Female NPT
FL2	1/8" Fractional Tube Fitting
FL4	1/4" Fractional Tube Fitting
TS4	1/4" Tube Socket Weld
FL6	3/8" Fractional Tube Fitting
FL8	1/2" Fractional Tube Fitting

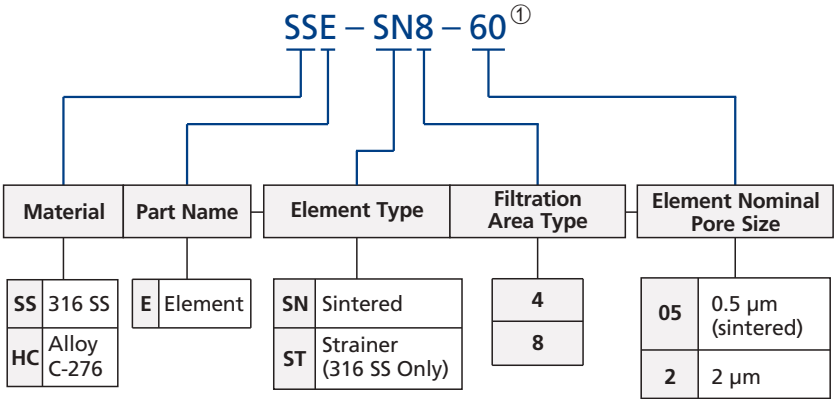
Special Application	
	None
S	NACE MR 0175

Cleaning and Packaging	
	FC-01
F2	FC-02

Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

1. Cleaning and Packaging:
   FC-01: Standard cleaning and packaging for basic industrial procedures.
   FC-02: Special cleaning and packaging for wetted system components to ensure compliance requirement as stated in ASTM G93 Level C.
2. Standard thread pitch for metric threads are as follows:
   M10 and below: 1 mm
   M12 to M24: 1.5 mm
   M27 and above: 2 mm
   Standard thread pitch should be ignored in the ordering number, others should be specified.

Elements Ordering Number Description



Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

① The FT and FB series filters share identical filter element models, while some filter element models for the FI series filters are also same with the FT and FB series. A filter element model represents a single, consistent filter product, meaning one filter element can be used across multiple filter series.

In-Line Filters

FI Series

Introduction

In-Line Filters are compact-designed to trap particle contaminants in gas or liquid service in limited space. Filter elements are available in multiple types of filtration accuracy to meet filtration needs of various pipelines.

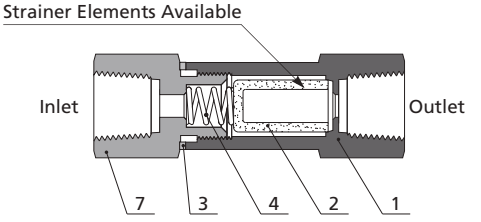
Features

- Filtration area type: 2, 4 and 8
- Compact and space-saving design
- Working pressure up to 3000 psig (207 bar)
- Working temperature: -20°F to 900°F (-28°C to 482°C)
- Variety of end connections available

Standard Materials of Construction

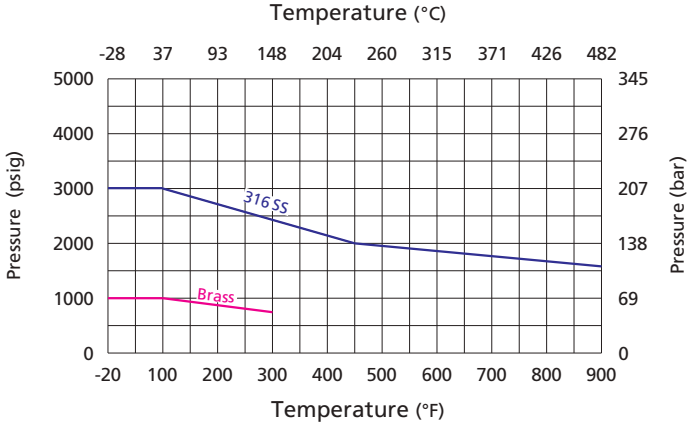
Item	Component	Body Material	
		316 SS	Brass
		Material Grade/ASTM Specification	
1	Body	316 SS/A479	C36000/B16
2	Element	Sintered 316 SS or strainer 316 SS	
3	Gasket	Silver-plated 316 SS	Aluminum/B209
4	Spring	302 SS/A313	
5	Bonnet Nut	316 SS/A479	Brass C36000/B16
6	Backup Ring	Stainless steel	
7	Bonnet	316 SS/A479	Brass C36000/B16

Lubricants: molybdenum disulfide-based and silicone-based



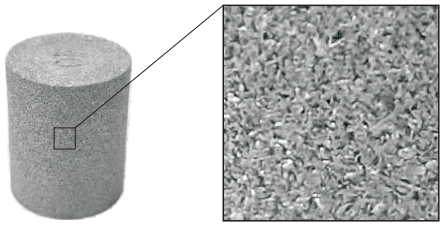
FI Series Sintered Filter Shown

Pressure vs. Temperature



Filter Elements

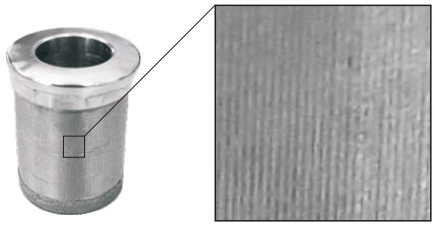
Sintered



Magnified 10×

◎ 316 SS powder metallurgy
◎ Irregular pores to trap impurity ions with smaller diameters

Strainer



Magnified 10×

◎ 316 SS wire mesh
◎ Uniform mesh pores to trap impurity ions with larger diameters

Nominal Pore Size of Filter Elements

	Nominal Pore Size	Pore Size Range	Element Designator
Sintered	0.5 μm	0.5 to 2 μm	05
	2 μm	1 to 4 μm	2
	7 μm	5 to 10 μm	7
	15 μm	11 to 25 μm	15
	40 μm	35 to 53 μm	40
	60 μm	50 to 75 μm	60
	80 μm	70 to 95 μm	80
Strainer	100 μm	140 mesh	100
	150 μm	100 mesh	150
	250 μm	60 mesh	250
	450 μm	40 mesh	450

Note: Filter elements remove 95% of particles larger than the nominal pore size.

Filtration Area

Filtration Area Type	Filtration Area, $in.^2$ (mm^2)	
	Sintered	Strainer
2	0.55 (350)	——
4	1.30 (830)	1.00 (640)
8	2.00 (1280)	1.70 (1090)

Note: No strainer element option for FI series filtration area type.

Maximum Differential Pressure of Clean Filter at 70°F (20°C)

Maximum Differential Pressure psig (bar)										
0.5 μm	2 μm	7 μm	15 μm	40 μm	60 μm	80 μm	100 μm	150 μm	250 μm	450 μm
1000 (69.0)										

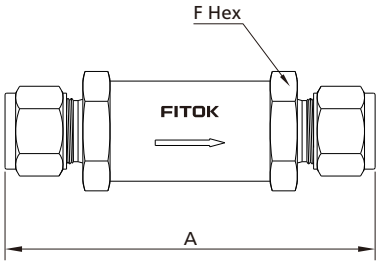
Flow Data

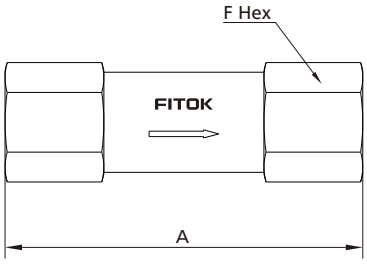
Filtration Area Type	Element Nominal Pore Size µm	Element Type	Inlet Pressure, psig (bar)			Pressure Drop, psig (bar)		
			5 (0.34)	10 (0.68)	15 (1.0)	10 (0.68)	50 (3.4)	100 (6.8)
			Air Flow, std ft^3/min (L/min)			Water Flow, U.S. gal/min (L/min)		
2	0.5	Sintered	0.04 (1.1)	0.06 (1.7)	0.12 (3.4)	0.01 (0.03)	0.04 (0.15)	0.12 (0.45)
	2	Sintered	0.20 (5.6)	0.40 (11)	0.60 (17)	0.08 (0.30)	0.24 (0.91)	0.40 (1.5)
	7	Sintered	0.50 (14)	0.90 (25)	1.2 (34)	0.10 (0.37)	0.30 (1.1)	0.48 (1.8)
	15	Sintered	0.80 (22)	1.3 (36)	1.5 (42)	0.12 (0.45)	0.36 (1.3)	0.58 (2.1)
	60	Sintered	1.7 (48)	2.2 (62)	2.4 (68)	0.15 (0.56)	0.50 (1.8)	0.70 (2.6)
	80	Sintered	1.8 (51)	2.2 (62)	2.6 (73)	0.20 (0.75)	0.50 (1.8)	0.60 (2.2)
4	0.5	Sintered	0.12 (3.4)	0.26 (7.3)	0.48 (13)	0.04 (0.15)	0.17 (0.64)	0.29 (1.0)
	2	Sintered	0.60 (17)	1.4 (39)	2.3 (65)	0.24 (0.90)	0.86 (3.2)	1.3 (4.9)
	7	Sintered	1.4 (39)	2.9 (82)	4.7 (130)	0.40 (1.5)	1.3 (4.9)	2.0 (7.5)
	15	Sintered	1.2 (34)	2.9 (82)	4.7 (130)	0.50 (1.8)	1.3 (4.9)	2.1 (7.9)
	60	Sintered	3.1 (87)	5.9 (160)	8.5 (240)	0.90 (3.4)	3.3 (12)	4.6 (17)
	80	Sintered	4.1 (110)	7.5 (210)	10 (280)	1.2 (4.5)	4.2 (15)	6.1 (23)
	40, 60, 80, 100, 150, 250, 450	Strainer	4.7 (130)	8.8 (250)	12 (340)	1.7 (6.4)	5.6 (21)	7.8 (29)
8	0.5	Sintered	0.36 (10)	0.86 (24)	1.6 (45)	0.09 (0.34)	0.40 (1.5)	0.76 (2.8)
	2	Sintered	1.4 (39)	2.8 (79)	4.0 (110)	0.26 (0.98)	1.1 (4.1)	1.6 (6.0)
	7	Sintered	1.8 (51)	4.2 (119)	6.8 (190)	0.64 (2.4)	2.2 (8.3)	3.5 (13)
	15	Sintered	1.8 (51)	4.9 (130)	7.9 (220)	0.84 (3.1)	2.6 (9.8)	4.1 (15)
	60	Sintered	5.1 (140)	10 (280)	15 (420)	2.0 (7.5)	6.7 (25)	10 (37)
	80	Sintered	6.1 (170)	11 (310)	16 (450)	2.3 (8.7)	7.6 (28)	11 (41)
	40, 60, 80, 100, 150, 250, 450	Strainer	7.2 (200)	14 (390)	20 (560)	4.8 (18)	15 (56)	19 (71)

Note: Outlet is discharged to the atmosphere.

Dimensions and Ordering Information

Dimensions, in inches (millimeters), are for reference only.





Basic Ordering Number	Connection Type and Size		Filtration Area Type	Dimensions in. (mm)	
	Inlet	Outlet		A	F
FI□□-FL2-	1/8" Tube Fitting	1/8" Tube Fitting	2	2.35 (59.7)	9/16 (14.3)
FI□□-FL4-	1/4" Tube Fitting	1/4" Tube Fitting	4	2.95 (74.9)	3/4 (19.1)
FI□□-FL6-	3/8" Tube Fitting	3/8" Tube Fitting	8	3.21 (81.5)	1 (25.4)
FI□□-FL8-	1/2" Tube Fitting	1/2" Tube Fitting	8	3.49 (88.6)	
FI□□-ML3-	3 mm Tube Fitting	3 mm Tube Fitting	2	2.38 (60.5)	9/16 (14.3)
FI□□-ML6-	6 mm Tube Fitting	6 mm Tube Fitting	4	2.96 (75.2)	3/4 (19.1)
FI□□-FNS2-	1/8 Female NPT	1/8 Female NPT	2	2.16 (54.9)	9/16 (14.3)
FI□□-FNS4-	1/4 Female NPT	1/4 Female NPT	4	2.87 (72.9)	3/4 (19.1)
FI□□-NS2-	1/8 Male NPT	1/8 Male NPT	2	1.88 (47.7)	9/16 (14.3)
FI□□-NS4-	1/4 Male NPT	1/4 Male NPT	4	2.69 (68.3)	3/4 (19.1)
FI□□-FR2-	1/8 Male FR	1/8 Male FR	2	2.03 (51.6)	9/16 (14.3)
FI□□-FR4-	1/4 Male FR	1/4 Male FR	4	2.79 (70.8)	3/4 (19.1)
FI□□-FRT2-	1/8 Female BSPT	1/8 Female BSPT	2	2.16 (54.9)	9/16 (14.3)
FI□□-FRT4-	1/4 Female BSPT	1/4 Female BSPT	4	2.87 (72.9)	3/4 (19.1)
FI□□-RT2-	1/8 Male BSPT	1/8 Male BSPT	2	1.88 (47.7)	9/16 (14.3)
FI□□-RT4-	1/4 Male BSPT	1/4 Male BSPT	4	2.69 (68.3)	3/4 (19.1)

1. FR means metal gasket seal fittings.
2. Sizes and types listed are standard. Other sizes and types are available upon request.
3. Dimensions are shown with FITOK nuts finger-tightened. All dimensions are for reference only and are subject to change. For dimensions not shown above, please contact FITOK Group or our authorized distributors.

Special Alloys

Alloy filters in some sizes are available, featuring sintered filter elements made from Alloy C-276. For details, please contact FITOK.

Filters Ordering Number Description

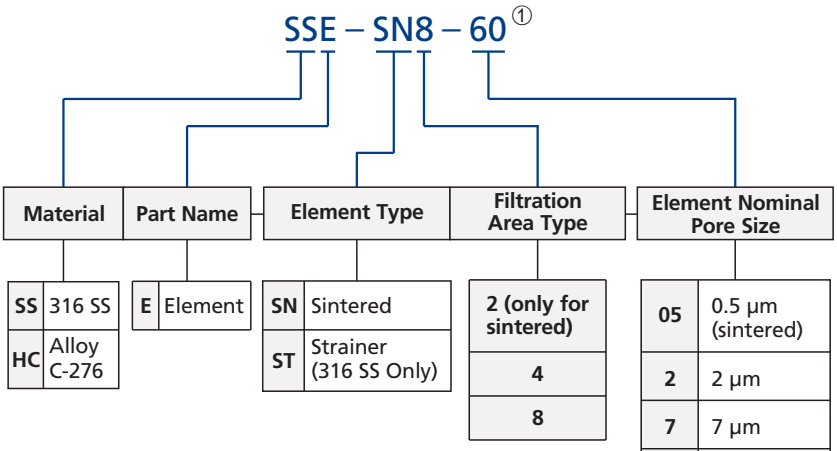
FIB – FL4 – ML6 – S – A15 – SF2

Series	Body Material		Inlet Type		Outlet Type	Outlet Size	Element Type		Element Nominal Pore Size		Special Application		Cleaning and Packaging	
FI	SS	316 SS	FNS	Female NPT		Same as Inlet		Sintered	05	0.5 μm (Sintered)		None		FC-01
	6L	316L SS	NS	Male NPT	Specified in the same way as the inlet type and size		S	Strainer (316 SS Only)	2	2 μm	S	NACE MR0175	F2	FC-02
	S4	304 SS	FRT	Female BSPT			Gasket Material		7	7 μm				
	4L	304L SS	RT	Male BSPT				Silver-plated 316 SS	15	15 μm				
	HC	Alloy C-276	FMS	Female Metric Thread (for RP gasket)	Inlet Size		A	Aluminum (the only option for brass body)	40	40 μm				
	B	Brass	MS	Male Metric Thread (for RG gasket)	2	1/8"			60	60 μm				
			FRP	Female BSPP (for RP gasket)	4	1/4"			80	80 μm				
			BP	Male BSPP (for RP gasket)	6	3/8" or 6 mm			100	100 μm (Strainer)				
			FL	Fractional Tube Fitting	8	1/2" or 8 mm			150	150 μm (Strainer)				
			ML	Metric Tube Fitting	10	10 mm			250	250 μm (Strainer)				
			TS	Fractional Tube Socket Weld	12	3/4" or 12 mm			450	450 μm (Strainer)				
			TB	Fractional Tube Butt Weld					EL	Without filter element				
			FR	Male FR Fitting										

Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

1. Cleaning and Packaging:
   FC-01: Standard cleaning and packaging for basic industrial procedures.
   FC-02: Special cleaning and packaging for wetted system components to ensure compliance requirement as stated in ASTM G93 Level C.
2. Standard thread pitch for metric threads are as follows:
   M10 and below: 1 mm
   M12 to M24: 1.5 mm
   M27 and above: 2 mm
   Standard thread pitch should be ignored in the ordering number, others should be specified.

Elements Ordering Number Description



Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

① The FT and FB series filters share identical filter element models, while some filter element models for the FI series filters are also same with the FT and FB series. A filter element model represents a single, consistent filter product, meaning one filter element can be used across multiple filter series.

All-Welded In-Line Filters

FW Series

Introduction

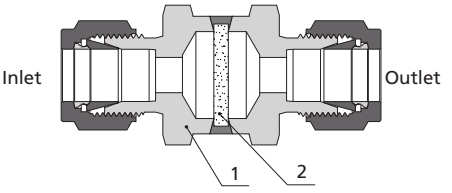
All-Welded In-Line Filters are compact-designed to trap particle contaminants in limited space. Body-to-element weld prevents bypass flow. Filter elements can be easily cleaned by back-flushing.

Features

- Full-penetration weld between body and filter element
- Working pressure up to 6000 psig (414 bar)
- Working temperature: -20°F to 900°F (-28°C to 482°C)
- Variety of end connections available

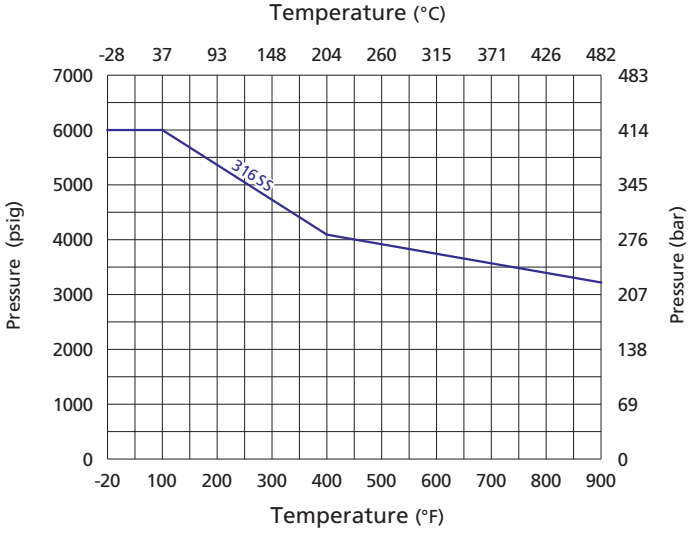
Standard Materials of Construction

Item	Component	Body Material
		316 SS
		Material Grade/ASTM Specification
1	Body	F316 SS/A182
		316 SS/A479
2	Element	Sintered 316 SS or strainer 316 SS



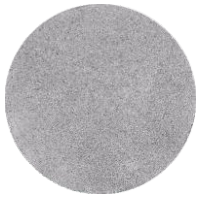
FW Series Sintered Filter Shown

Pressure vs. Temperature



Filter Elements

Sintered



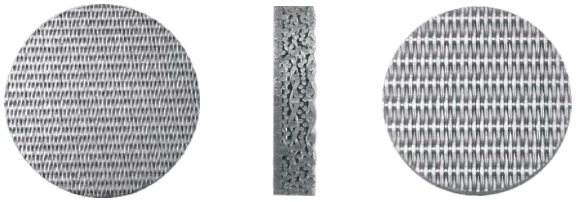
◎ 316 SS powder metallurgy
◎ Sheet-shaped filter cake to trap particles as small as 0.5 μm in diameter

Strainer

Mesh Framework　Filter Element　Mesh Framework

◎ 316 SS wire mesh framework sandwiched filter design
◎ Uniform mesh pores to allow for stable flows

Combination Strainer (Optional)



◎ Multi-layer 316 SS wire meshes overlaid
◎ Uniform mesh pores with high strength to allow for stable flows

Nominal Pore Size of Filter Elements

	Nominal Pore Size	Pore Size Range	Element Designator
Sintered	0.5 μm	0.5 to 2 μm	05
Strainer	2 μm	6250 mesh	2
	7 μm	3500 mesh	7
	15 μm	800 mesh	15

Note: Filter elements remove 95% of particles larger than the nominal pore size.

Filtration Area

Filtration Area Type	Filtration Area, in.^{2} (mm^2)	
	Sintered	Strainer
——	0.39 (254)	0.39 (254)

Note: For FW series, sintered element available only for 0.5 μm nominal pore size, and strainer element option for the other sizes.

Maximum Differential Pressure of Clean Filter at 70°F (20°C)

Maximum Differential Pressure psig (bar)			
0.5 μm	2 μm	7 μm	15 μm
600 (41.4)	100 (6.9)		

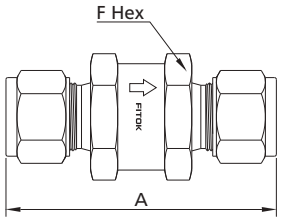
Flow Data

Filtration Area Type	Element Nominal Pore Size μm	Element Type	Inlet Pressure, psig (bar)			Pressure Drop, psig (bar)		
			5 (0.34)	10 (0.68)	15 (1.0)	10 (0.68)	50 (3.4)	100 (6.8)
			Air Flow, std ft^3/min (L/min)			Water Flow, U.S. gal/min (L/min)		
-	0.5	Sintered	0.04 (1.1)	0.06 (1.7)	0.12 (3.4)	0.01 (0.03)	0.04 (0.15)	0.12 (0.45)
	2	Strainer/ Combination Strainer	5.6 (150)	10 (280)	14 (390)	1.7 (6.4)	5.5 (20)	8.3 (31)
	7	Strainer/ Combination Strainer				3.5 (13)	11 (41)	14 (52)
	15	Strainer/ Combination Strainer				4.5 (17)	14 (52)	18 (68)

Note: Outlet is discharged to the atmosphere.

Dimensions and Ordering Information

Dimensions, in inches (millimeters), are for reference only.



Basic Ordering Number	Connection Type and Size		Dimensions in. (mm)	
	Inlet	Outlet	A	F
FW□□-FL4-	1/4" Tube Fitting	1/4" Tube Fitting	2.15 (54.6)	1 (25.4)
FW□□-ML6-	6 mm Tube Fitting	6 mm Tube Fitting		
FW□□-FNS4-	1/4 Female NPT	1/4 Female NPT	1.57 (39.9)	
FW□□-NS4-	1/4 Male NPT	1/4 Male NPT	1.89 (48.0)	
FW□□-FR4-	1/4 Male FR	1/4 Male FR	2.04 (51.8)	

1. For FW series, sintered element available only for 0.5 µm nominal pore size, and strainer element option for the other nominal pore sizes.
2. FR means metal gasket seal fittings.
3. Sizes and types listed are standard. Other sizes and types are available upon request.
4. Dimensions are shown with FITOK nuts finger-tightened. All dimensions are for reference only and are subject to change. For dimensions not shown above, please contact FITOK Group or our authorized distributors.

Filters Ordering Number Description

FWSS – FL6 – ML10 – S – 15 – SF2

Series

FW

Body Material

SS	316 SS
6L	316L SS
S4	304 SS
4L	304L SS

Inlet Type

FNS	Female NPT
NS	Male NPT
FRT	Female BSPT
RT	Male BSPT
FMS	Female Metric Thread (for RP gasket)
MS	Male Metric Thread (for RG gasket)
FRP	Female BSPP (for RP gasket)
BP	Male BSPP (for RP gasket)
FL	Fractional Tube Fitting
ML	Metric Tube Fitting
TB	Fractional Tube Butt Weld
FR	Male FR Fitting

Outlet Type

	Same as Inlet
Specified in the same way as the inlet type and size	

Outlet Size

2	1/8"
4	1/4"
6	3/8" or 6 mm
8	1/2" or 8 mm
10	10 mm
12	3/4" or 12 mm

Element Type

	Sintered
S	Strainer

Element Nominal Pore Size

05	0.5 µm (Sintered)
2	2 µm (Strainer)
7	7 µm (Strainer)
15	15 µm (Strainer)

Special Application

	None
S	NACE MR0175

Cleaning and Packaging

	FC-01
F2	FC-02

Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

1. Cleaning and Packaging:
   FC-01: Standard cleaning and packaging for basic industrial procedures.
   FC-02: Special cleaning and packaging for wetted system components to ensure compliance requirement as stated in ASTM G93 Level C.
2. Standard thread pitch for metric threads are as follows:
   M10 and below: 1 mm
   M12 to M24: 1.5 mm
   M27 and above: 2 mm
   Standard thread pitch should be ignored in the ordering number, others should be specified.

High-Capacity Filters

FH Series

Introduction

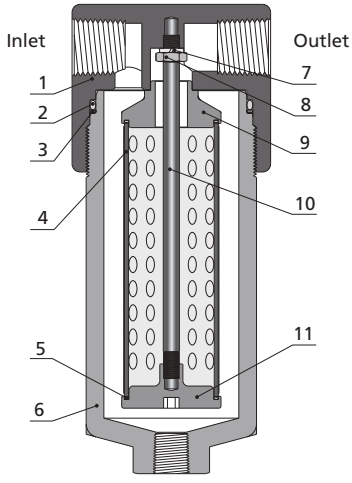
FH Series High-Capacity Filters feature a large filtration area, more efficient filtration, stable flow, wide medium compatibility, etc., making them suitable for high-flow pipeline systems.

Features

- ◎ Filtration area type: 4H and 8H
- ◎ Bypass port at filter bottom optional for the ease of sampling or purging
- ◎ Elements equipped with retention levers for easy disassembling, cleaning and replacement
- ◎ FKM O-ring by default
- ◎ Working pressure up to 5000 psig (345 bar)
- ◎ Variety of end connections optional

Standard Materials of Construction

Item	Component	Body Material
		316 SS
		Material Grade/ASTM Specification
1	Body	F316 SS/A182
2	O-ring	FKM/NBR/EPDM/FFKM
3	Backup Ring	PTFE
4	Element	316 SS
5	Gasket	PTFE
6	Bonnet	316 SS/A479
7	Standard Spring Washer	Stainless Steel
8	Hexagon Thin Nut	Stainless Steel
9	Upper Retainer	316 SS/A479
10	Lever	316 SS/A479
11	Lower Retainer	316 SS/A479

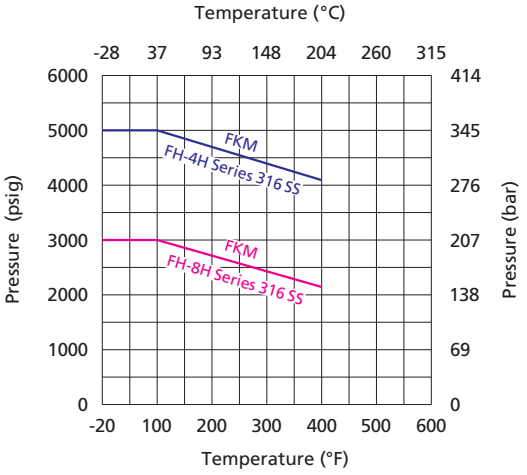


FH Series Strainer Filter Shown

Temperature Range of Sealing Materials

O-ring Material	Temperature Range °F (°C)
FKM	-4 to 400 (-20 to 204)
NBR	-20 to 212 (-28 to 100)
EPDM	-50 to 250 (-45 to 121)
FFKM	30 to 600 (-1 to 315)

Pressure vs. Temperature



Note: For Pressure vs. Temperature curves for other seal materials listed above, please contact FITOK or our authorized distributors.

Filter Elements

Strainer (25 μm)

Strainer (150 μm)

◎ 316 SS wire meshes and metal framework
◎ Uniform mesh pores to provide larger filtration area and more stable flows

Nominal Pore Size of Filter Elements

	Nominal Pore Size	Pore Size Range	Element Designator
Strainer	25 μm	500 mesh	25
	100 μm	140 mesh	100
	150 μm	100 mesh	150
	250 μm	60 mesh	250
	450 μm	40 mesh	450

Note: Filter elements remove 95% of particles larger than the nominal pore size.

Filtration Area

Filtration Area Type	Filtration Area, in.^{2} (mm^2)
	Strainer
4H	10.70 (6908)
8H	17.02 (10980)

Note: Strainer element available for FH series, and sintered or non-metallic element optional upon customers' requests.

Maximum Differential Pressure of Clean Filter at 70°F (20°C)

Maximum Differential Pressure psig (bar)				
25 µm	100 µm	150 µm	250 µm	450 µm
		1000 (69.0)		

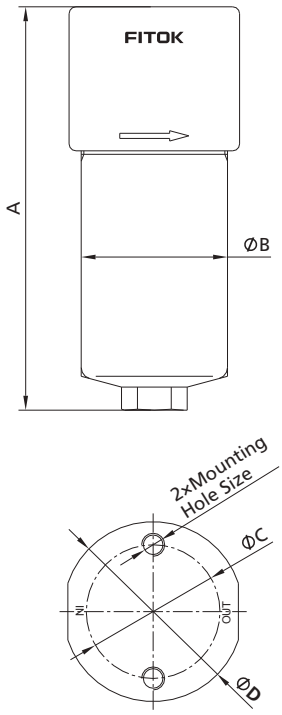
Flow Data

Filtration Area Type	Element Nominal Pore Size µm	Element Type	Inlet Pressure, psig (bar)		
			2 (0.14)	5 (0.34)	8 (0.55)
			Air Flow, std m^3/h		
4H	25, 100, 150, 250, 450	Strainer	5	8.3	10.4
8H	25, 100, 150, 250, 450	Strainer	8.4	14	18.9

Note: Outlet is discharged to the atmosphere.

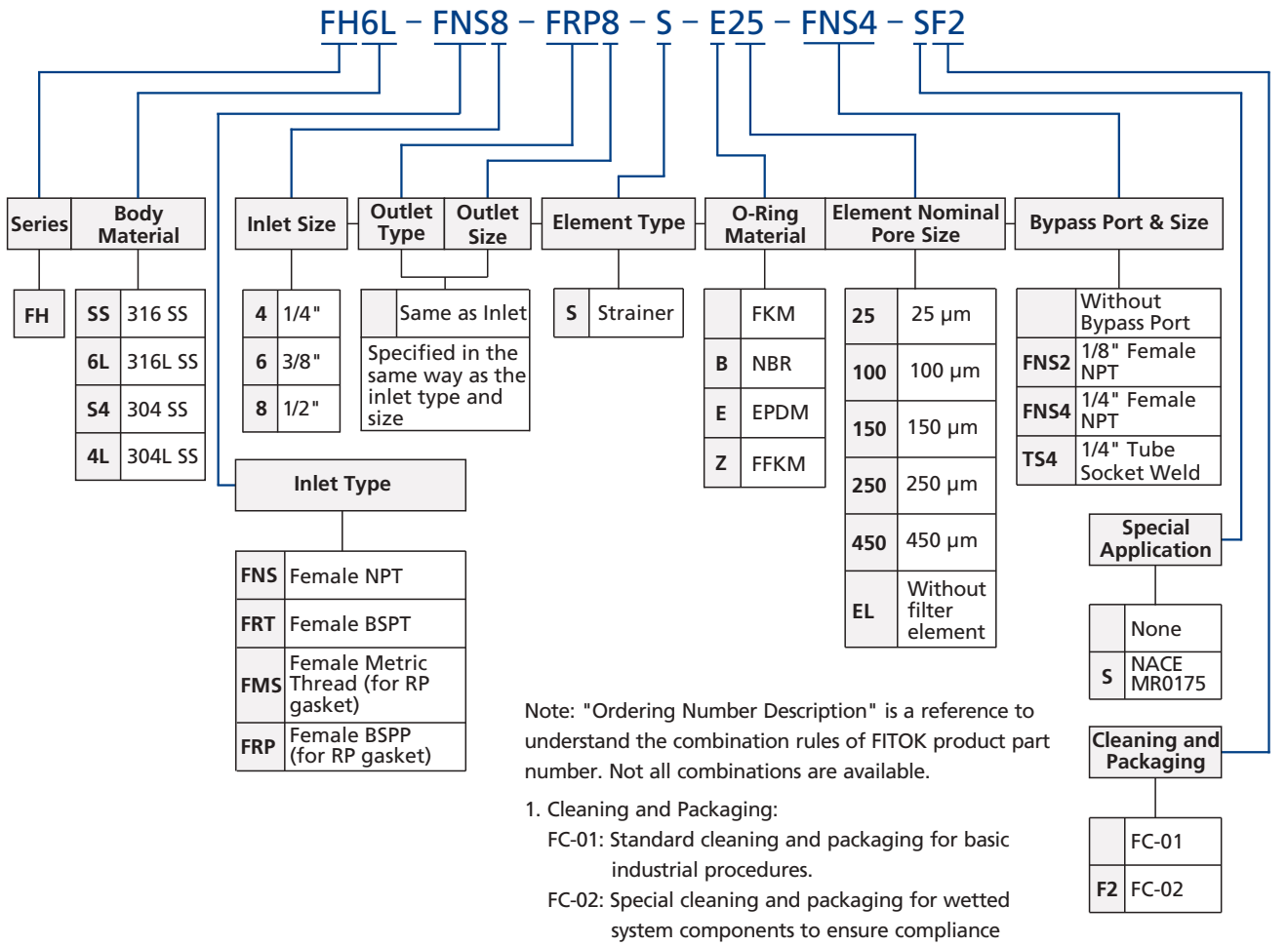
Dimensions and Ordering Information

Dimensions, in inches (millimeters), are for reference only.



Basic Ordering Number	Connection Type and Size		Filtration Area Type	Dimensions in. (mm)				
	Inlet	Outlet		A	ØB	ØC	ØD	Mounting Hole Size
FH□□-FNS4-S-□□	1/4 Female NPT	1/4 Female NPT	4H	2.29 (58.2)	1.61 (41)	1.95 (49.5)	1.94 (49.4)	M8 × 1 - 6H threads 0.47" (12 mm) deep, pores 0.63" (16 mm) deep
FH□□-FRT4-S-□□	1/4 Female BSPT	1/4 Female BSPT						
FH□□-FRP4-S-□□	1/4 Female BSPP	1/4 Female BSPP						
FH□□-FNS6-S-□□	3/8 Female NPT	3/8 Female NPT	8H	6.89 (175)	2.5 (63.5)	2.28 (58)	3.07 (78)	M10 × 1.5 - 6H threads 0.59" (15 mm) deep, pores 0.71" (18 mm) deep
FH□□-FRT6-S-□□	3/8 Female BSPT	3/8 Female BSPT						
FH□□-FRP6-S-□□	3/8 Female BSPP	3/8 Female BSPP						
FH□□-FNS8-S-□□	1/2 Female NPT	1/2 Female NPT		6.89 (175)	2.5 (63.5)	2.28 (58)	3.07 (78)	M10 × 1.5 - 6H threads 0.59" (15 mm) deep, pores 0.71" (18 mm) deep
FH□□-FRT8-S-□□	1/2 Female BSPT	1/2 Female BSPT						
FH□□-FRP8-S-□□	1/2 Female BSPP	1/2 Female BSPP						

Filters Ordering Number Description



Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

1. Cleaning and Packaging:
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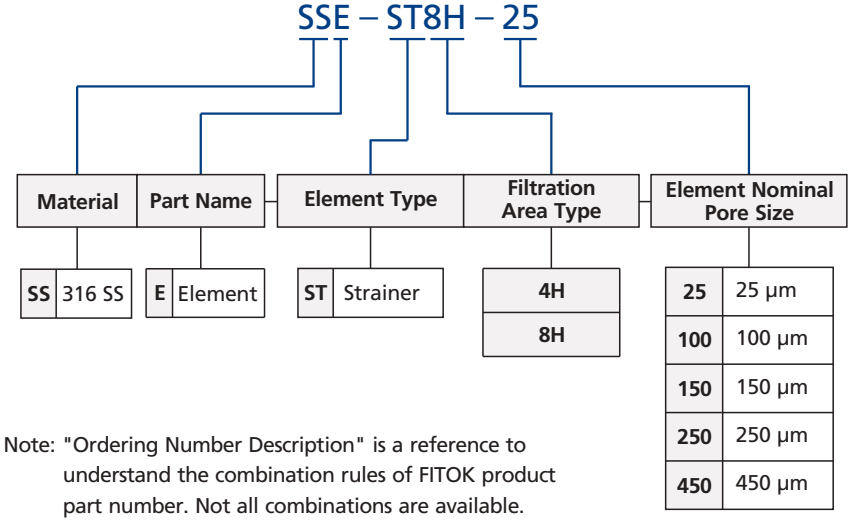
   FC-02: Special cleaning and packaging for wetted system components to ensure compliance requirement as stated in ASTM G93 Level C.

Elements Ordering Number Description



Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

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