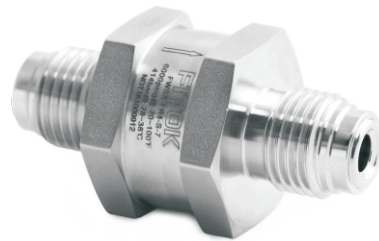


# Filters

FT, FB, FI and FW Series



Filters

## Filtration Definitions

- ⊙ Sintered element: metal powder (alloys are available) is pressed in a die at sufficient pressure that the powder particles adhere at their contact points.
- ⊙ Strainer element: the strainer is cup-shaped and includes an inner cup-shaped support structure having staggered perforations extending through the surfaces thereof, an outer cup-shaped strainer structure constructed of wire mesh is closely received over the support structure.
- ⊙ Element nominal pore size: the element nominal pore size is normally calculated from the pressure required to cause air to bubble from the largest pore in the filter element when submerged in a test liquid.

## Features

### Tee-type Filters

#### FT Series

- ⊙ Filtration area type: 2, 4 and 8
- ⊙ Filter element replaceable without removing body from system
- ⊙ Union bonnet design
- ⊙ Element nominal pore size: 0.5, 2, 7, 15, 40, 60, 80, 100, 150, 250 and 450  $\mu\text{m}$
- ⊙ Working pressure up to: 6000 psig (414 bar)
- ⊙ Working temperature: -20°F to 900°F (-28°C to 482°C)
- ⊙ Body materials: 316 SS, 316L SS, 304 SS, 304L SS, 904L SS and Brass
- ⊙ Variety of end connections available
- ⊙ ECE R110 type approved filters available

### Bypass Filters

#### FB Series

- ⊙ Filtration area type: 2, 4 and 8
- ⊙ Bypass port at filter bottom for the ease of sampling or purging
- ⊙ Union bonnet design
- ⊙ Element nominal pore size: 0.5, 2, 7, 15, 40, 60, 80, 100, 150, 250 and 450  $\mu\text{m}$
- ⊙ Working pressure up to: 6000 psig (414 bar)
- ⊙ Working temperature: -20°F to 900°F (-28°C to 482°C)
- ⊙ Body materials: 316 SS, 316L SS, 304 SS, 304L SS, 904L SS and Brass
- ⊙ Variety of end connections available

### In-line Filters

#### FI Series

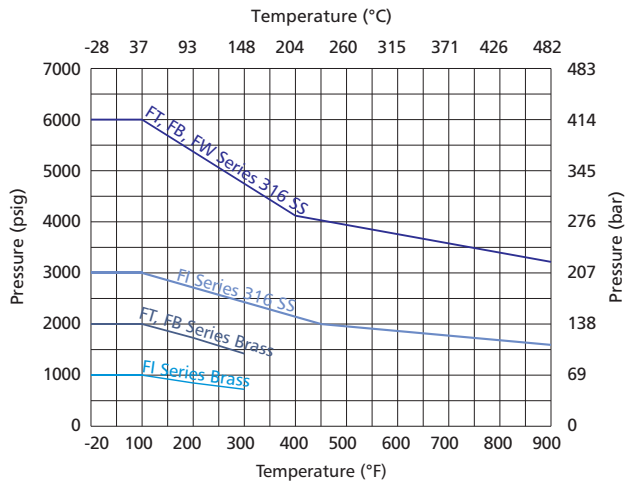
- ⊙ Filtration area type: 2, 4 and 8
- ⊙ Compact and space-saving design
- ⊙ Element nominal pore size: 0.5, 2, 7, 15, 40, 60, 80, 100, 150, 250 and 450  $\mu\text{m}$
- ⊙ Working pressure up to: 3000 psig (207 bar)
- ⊙ Working temperature: -20°F to 900°F (-28°C to 482°C)
- ⊙ Body materials: 316 SS, 316L SS, 304 SS, 304L SS, 321 SS, 904L SS and Brass
- ⊙ Variety of end connections available

### All-welded In-line Filters

#### FW Series

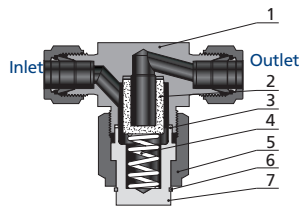
- ⊙ Large filtration area and high flow coefficient
- ⊙ All-welded construction for elimination of leakage
- ⊙ Easy cleaning of filters by backflushing
- ⊙ Full-penetration weld between body and filter element
- ⊙ Element nominal pore size: 0.5, 2, 7, 15 and 40  $\mu\text{m}$
- ⊙ Working pressure up to: 6000 psig (414 bar)
- ⊙ Working temperature: -20°F to 900°F (-28°C to 482°C)
- ⊙ Body materials: 316 SS, 316L SS, 304 SS, 304L SS and 904L SS
- ⊙ Variety of end connections available

## Pressure vs. Temperature

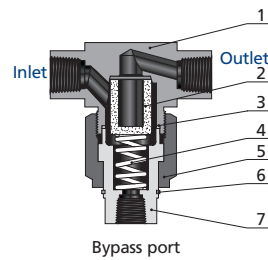


Contact FITOK Group or our authorized distributors for curve graph of other materials.

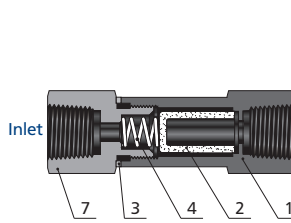
FT Series



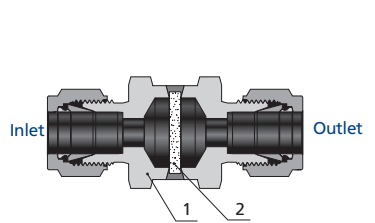
FB Series



FI Series



FW Series



## Standard Materials of Construction

Component		Material Grade/ASTM Specification	
		316 SS	Brass
1	Body	F316 SS/A182 (FT, FB Series), 316 SS/A479 (FI, FW Series)	Brass C37700/B283 (FT, FB Series) Brass C36000/B16 (FI Series)
2	Element	Sintered 316 SS or strainer 316 SS	Sintered 316 SS or strainer 316 SS
3	Gasket	316 SS/A479 with PTFE/D1710 coating or silver-plated	PTFE/D1710 or aluminum/B209
4	Spring	302 SS/A313	302 SS/A313
5	Bonnet Nut	316 SS/A479	C36000/B16
6	Backup Ring	Stainless steel	
7	Bonnet	316 SS/A479	C36000/B16

1. FW Series filters not available in brass
2. Lubricants: molybdenum disulfide-based and silicone-based

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

Series	Maximum Differential Pressure psig (bar)										
	0.5 micron	2 micron	7 micron	15 micron	40 micron	60 micron	80 micron	100 micron	150 micron	250 micron	450 micron
FT, FB, FI	1000 (69.0)										
FW	600 (41.4)	100 (6.9)		—							

## Filter Elements

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

Sintered		Strainer	
Element Nominal Pore Size $\mu\text{m}$	Pore Size Range $\mu\text{m}$	Nominal Pore Size $\mu\text{m}$	Mesh
0.5	0.5 to 2	2	6250
2	1 to 4	7	3500
7	5 to 10	15	800
15	11 to 25	40	400
40	35 to 53	60	230
60	50 to 75	80	200
80	70 to 95	100	140
—	—	150	100
—	—	250	60
—	—	450	40

## Filtration Area

Series	Filtration Area Type	Filtration Area, in. <sup>2</sup> (mm <sup>2</sup> )	
		Sintered	Strainer
FT/FB	2	1.30 (830)	1.00 (640)
	4	1.30 (830)	1.00 (640)
	8	2.00 (1280)	1.70 (1090)
FI	2	0.55 (350)	*
	4	1.30 (830)	1.00 (640)
	8	2.00 (1280)	1.70 (1090)
FW*	—	0.39 (254)	0.39 (254)

\*Note: No strainer element option for FI series filtration area type 2. Sintered element available for FW series 0.5  $\mu\text{m}$  nominal pore size only, and strainer element option for the other nominal pore sizes.

## Flow Data

Series	Filtration Area Type	Element Nominal Pore Size $\mu\text{m}$	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 <sup>3</sup> /min (L/min)			Water Flow, U.S.gal/min (L/min)		
FT/FB	2	0.5	Sintered	0.04 (1.1)	0.06 (1.7)	0.12 (3.4)	0.04 (0.15)	0.17 (0.64)	0.29 (1.0)
		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)
		40, 60, 80, 100, 150, 250, 450	Strainer	1.8 (51)	2.3 (6.5)	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)	0.80 (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)	

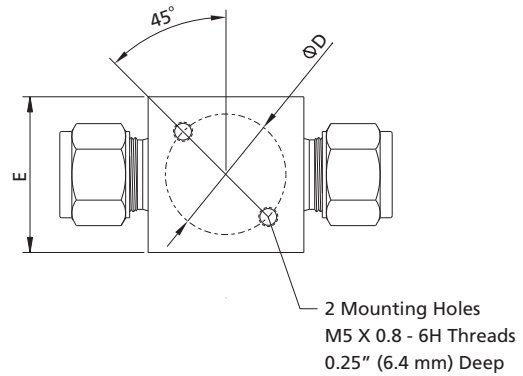
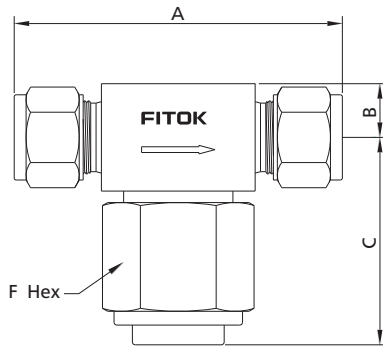
B-180 Filters

Series	Filtration Area Type	Element Nominal Pore Size $\mu\text{m}$	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 $\text{ft}^3/\text{min}$ (L/min)			Water Flow, U.S.gal/min (L/min)		
FI	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)	
FW	-	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)

Note: Outlet is discharged to atmosphere.

# Dimensions

## FT Series

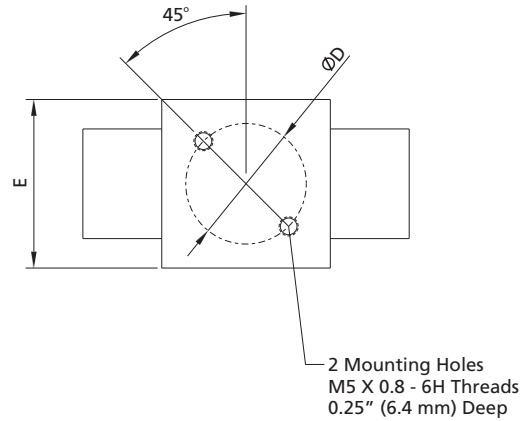
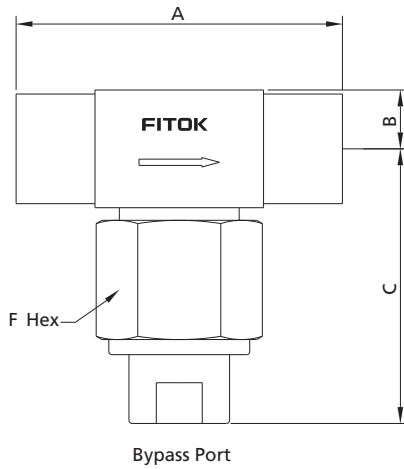


Basic Ordering Number	Connection Type and Size		Filtration Area Type	Dimensions, in. (mm)					
	Inlet	Outlet		A	B	C	$\phi D$	E	F
FT□□-FL2-	1/8" FITOK	1/8" FITOK	2	2.27 (57.7)	0.38 (9.7)	1.49 (37.8)	1.00 (25.4)	1.00 (25.4)	1 (25.4)
FT□□-FL4-	1/4" FITOK	1/4" FITOK	4	2.47 (62.7)					
FT□□-FL6-	3/8" FITOK	3/8" FITOK	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" FITOK	1/2" FITOK	8	3.04 (77.2)					
FT□□-ML6-	6 mm FITOK	6 mm FITOK	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 FITOK	8 mm FITOK	8	2.84 (72.1)					
FT□□-ML10-	10 mm FITOK	10 mm FITOK	8	2.86 (72.6)	0.46 (11.7)	1.74 (44.2)	1.13 (28.7)	1.13 (28.7)	1 1/8 (28.6)
FT□□-ML12-	12 mm FITOK	12 mm FITOK	8	3.04 (77.2)					
FT□□-TS4-	1/4" TS	1/4" TS	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" TS	3/8" TS	4						
FT□□-TB4-	1/4" TB	1/4" TB	4						
FT□□-TB6-	3/8" TB	3/8" TB	4						
FT□□-FNS2-	1/8 Female NPT	1/8 Female NPT	2	2.00 (50.8)	0.46 (11.7)	1.74 (44.2)	1.13 (28.7)	1.13 (28.7)	1 1/8 (28.6)
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)					
FT□□-NS8-	1/2 Male NPT	1/2 Male NPT	8	2.75 (69.9)	0.38 (9.7)	1.49 (37.8)	1.00 (25.4)	1.00 (25.4)	1 (25.4)
FT□□-FR4-	1/4 Male FR	1/4 Male FR	4	2.30 (58.4)					
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)

Mounting holes not available with 1/4 female NPT end connections

# B-182 Filters

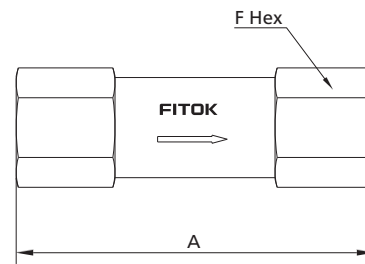
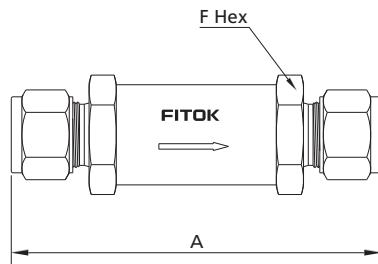
## FB Series



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" FITOK	1/8" FITOK	2	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" FITOK	1/4" FITOK	4	2.47 (62.7)		2.44 (61.9)				FL4
FB□□-FL6-	3/8" FITOK	3/8" FITOK	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" FITOK	1/2" FITOK	8	3.04 (77.2)		2.96 (74.2)				FL8
FB□□-ML6-	6 mm FITOK	6 mm FITOK	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 FITOK	8 mm FITOK	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 FITOK	10 mm FITOK	8	2.86 (72.6)		2.96 (74.2)				FL8
FB□□-ML12-	12 mm FITOK	12 mm FITOK	8	3.04 (77.2)						
FB□□-TS4-	1/4" TS	1/4" TS	4	1.68 (42.7)	0.38 (9.7)	1.83 (56.4)	1.00 (25.4)	1.00 (25.4)	1 (25.4)	TB4
FB□□-TS6-	3/8" TS	3/8" TS	4							
FB□□-TB4-	1/4" TB	1/4" TB	4							
FB□□-TB6-	3/8" TB	3/8" TB	4							
FB□□-FNS2-	1/8 Female NPT	1/8 Female NPT	2	2.00 (50.8)	0.38 (9.7)	1.71 (43.4)	1.00 (25.4)	1.00 (25.4)	1 (25.4)	FNS2
FB□□-FNS4-	1/4 Female NPT	1/4 Female NPT	4	2.13 (54.1)						
FB□□-NS4-	1/4 Male NPT	1/4 Male NPT	4							
FB□□-NS6-	3/8 Male NPT	3/8 Male 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□□-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

Mounting holes not available with 1/4 female NPT end connections

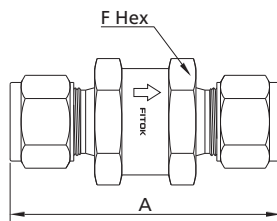
FI Series



Basic Ordering Number	Connection Type and Size		Filtration Area Type	Dimensions in. (mm)	
	Inlet	Outlet		A	F
FI□□-FL2-	1/8" FITOK	1/8" FITOK	2	2.35 (59.7)	9/16 (14.3)
FI□□-FL4-	1/4" FITOK	1/4" FITOK	4	2.95 (74.9)	3/4 (19.1)
FI□□-FL6-	3/8" FITOK	3/8" FITOK	8	3.21 (81.5)	1 (25.4)
FI□□-FL8-	1/2" FITOK	1/2" FITOK	8	3.49 (88.6)	
FI□□-ML3-	3 mm FITOK	3 mm FITOK	2	2.38 (60.5)	9/16 (14.3)
FI□□-ML6-	6 mm FITOK	6 mm FITOK	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	2.79 (70.8)	
FI□□-FR4-	1/4 Male FR	1/4 Male FR	4		
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)



## FW Series



Basic Ordering Number	Connection Type and Size		Dimensions in. (mm)	
	Inlet	Outlet	A	F
FW□□-FL4-	1/4" FITOK	1/4" FITOK	2.15 (54.6)	
FW□□-ML6-	6 mm FITOK	6 mm FITOK		
FW□□-FNS4-	1/4 Female NPT	1/4 Female NPT	1.57 (39.9)	1 (25.4)
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. Sintered element available for FW series 0.5  $\mu\text{m}$  nominal pore size only, and strainer element option for the other nominal pore sizes.
2. FITOK means FITOK double ferrule tube fittings, FR means metal gasket seal fittings, TS means fractional tube socket weld, TB means fractional tube butt weld.
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.

Temperature: -40 to 248°F (-40 to 120°C)

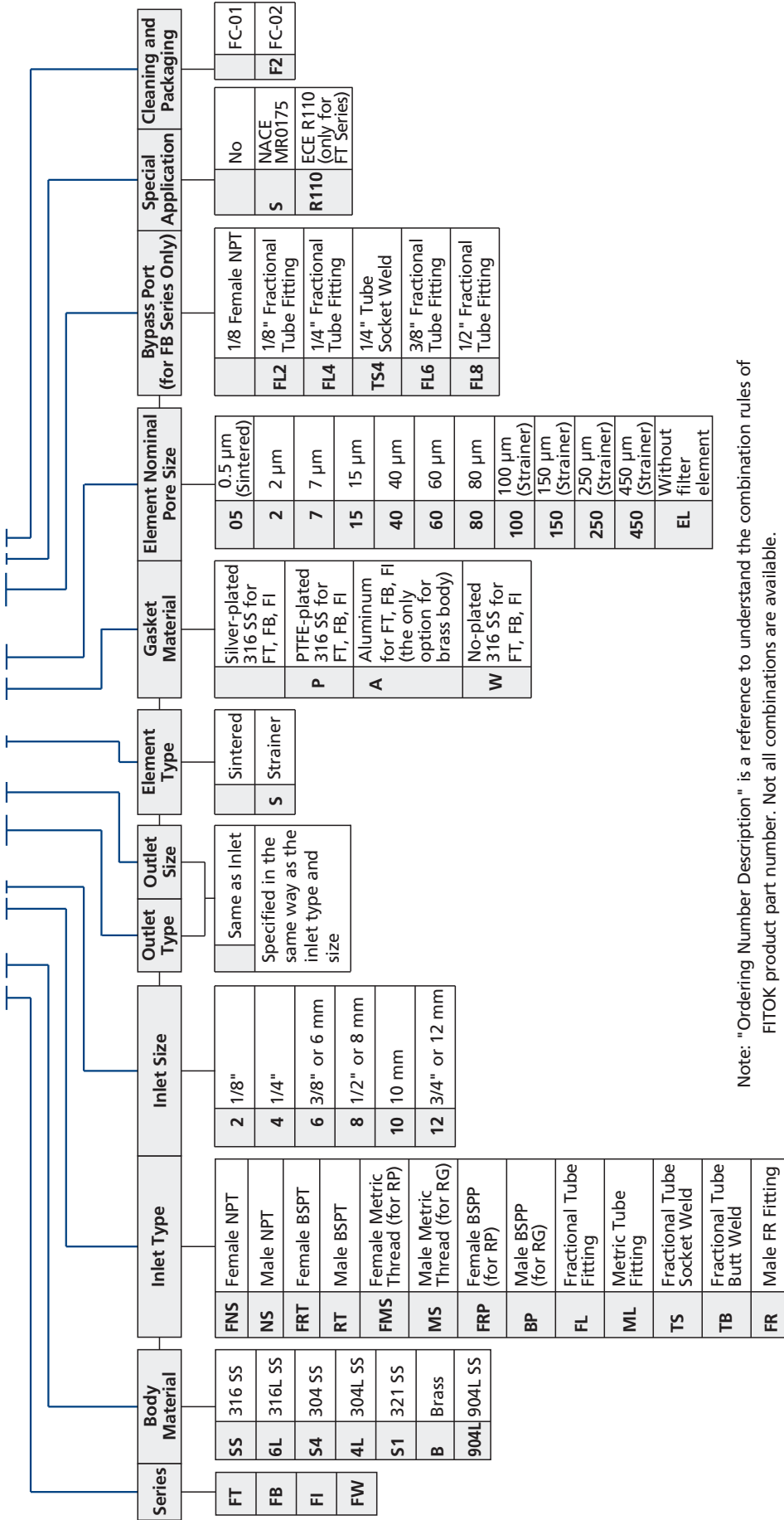
Pressure: 3370 psig (260 bar)

To order, add **-R110** to the filter ordering number.

Example: FTSS-FL4-15-**R110**

# Filters Ordering Number Description

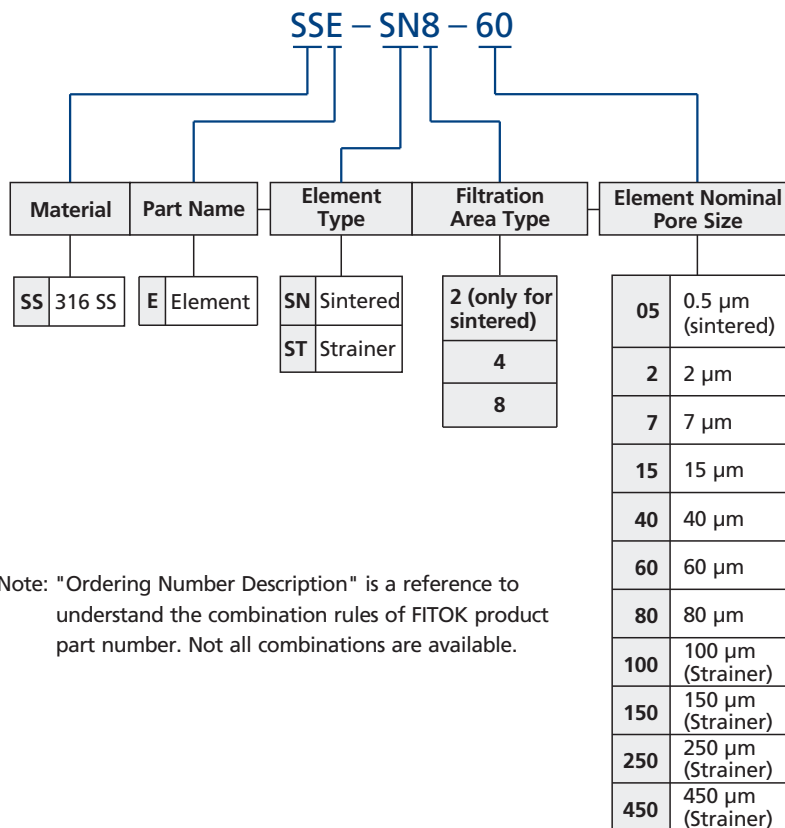
## FBSS – FL8 – ML10 – S – P150 – FL4SF2



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

- 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.
- 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.

## 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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[www.fitokgroup.com](http://www.fitokgroup.com)

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