

Filters

FT, FB, FI, FW and FH Series



Contents

Tee-Type Filters

FT Series



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Bypass Filters

FB Series



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FW Series



B-210

High-Capacity Filters

FH Series



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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.



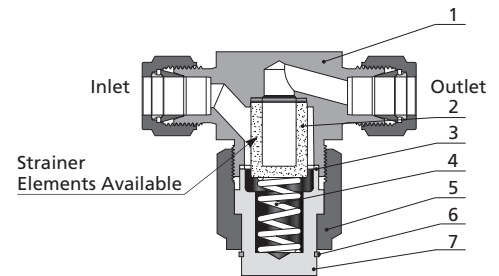
Features

- ⦿ 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

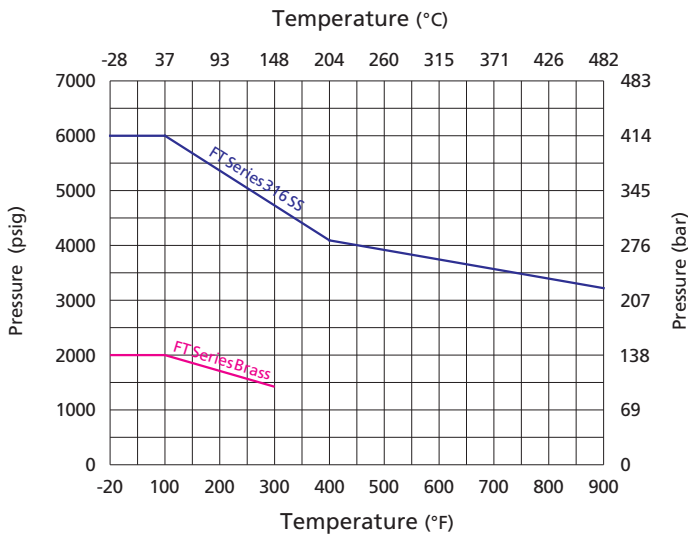
| Item | Component | Body Material | |
|------|-------------|------------------------------------|------------------|
| | | 316 SS | Brass |
| | | Material Grade/ASTM Specification | |
| 1 | Body | F316 SS/A182 | C37700/B283 |
| | | 316 SS/A479 | C36000/B16 |
| 2 | Element | Sintered 316 SS or strainer 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



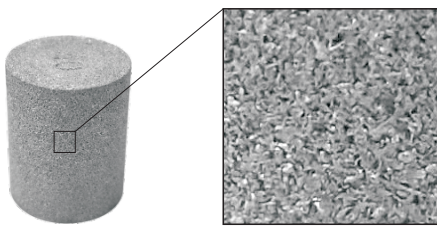
FT Series Sintered Filter Shown

Pressure vs. Temperature



Filter Elements

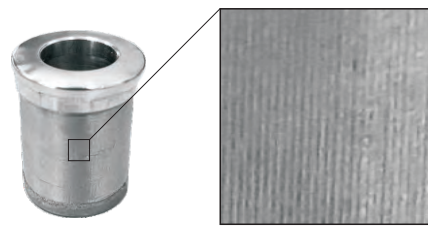
Sintered



Magnified 10x

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

Strainer



Magnified 10x

- ⦿ 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) | | | | | | | | | | |

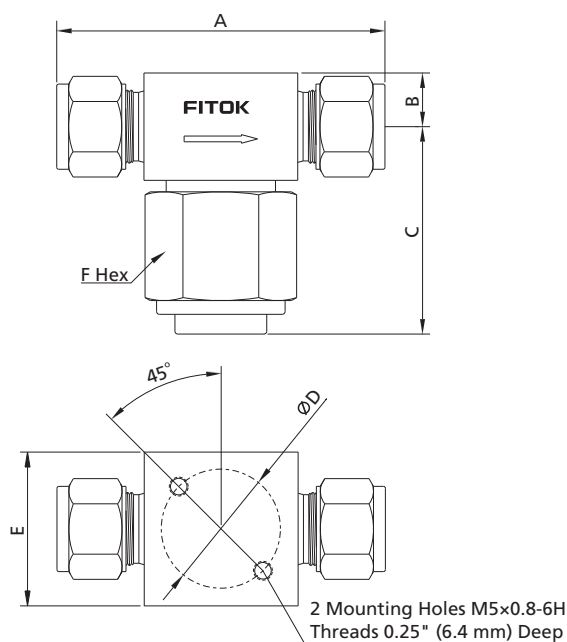
Flow Data

| 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) | | | | | |
| FT□□-ML10- | 10 mm Tube Fitting | 10 mm Tube Fitting | 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 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" x 0.065" Tube Butt Weld | 1/4" x 0.065" Tube Butt Weld | 4 | | | | | | |
| FT□□-TB6- | 3/8" x 0.095" Tube Butt Weld | 3/8" x 0.095" Tube Butt Weld | 4 | | | | | | |
| FT□□-FNS2- | 1/8 Female NPT | 1/8 Female NPT | 4 | 2.00 (50.8) | 0.38 (9.7) | 1.49 (37.8) | 1.00 (25.4) | 1.00 (25.4) | 1 (25.4) |
| 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)

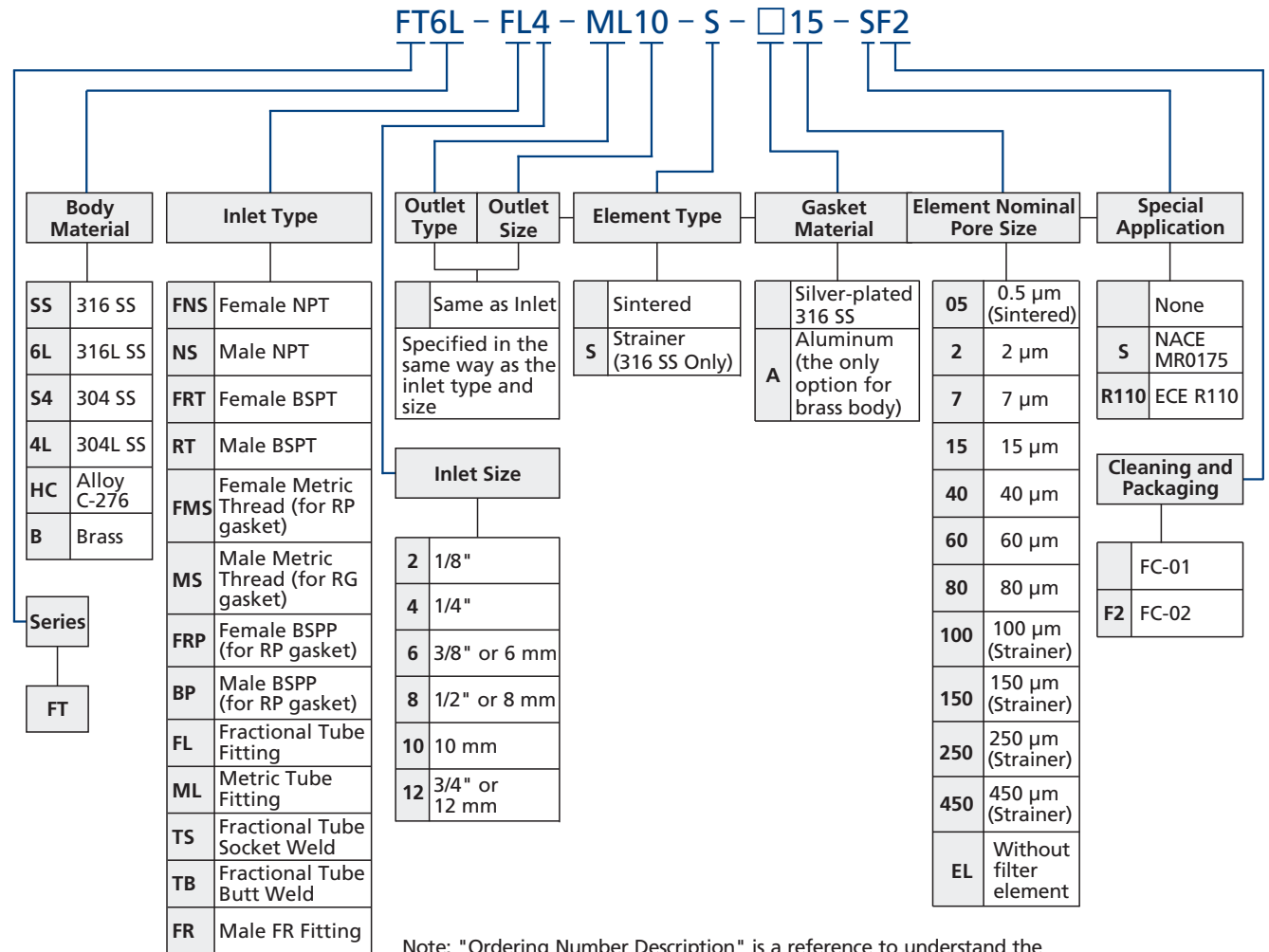
To order, add the suffix -R110 to the standard FT series filter ordering number.

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

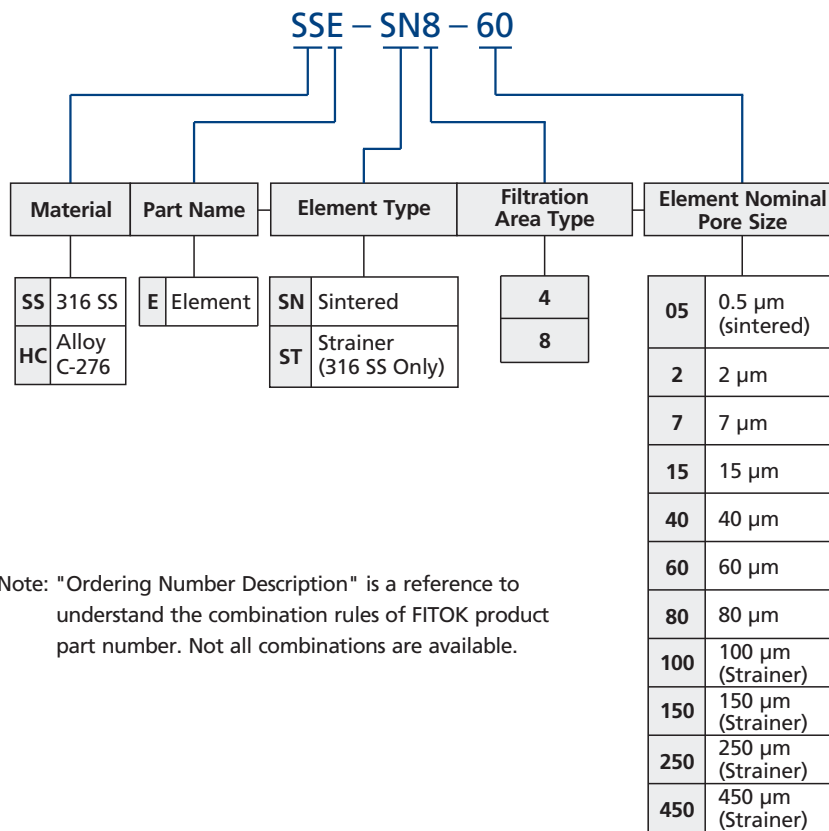


Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

- 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.
- 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



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.



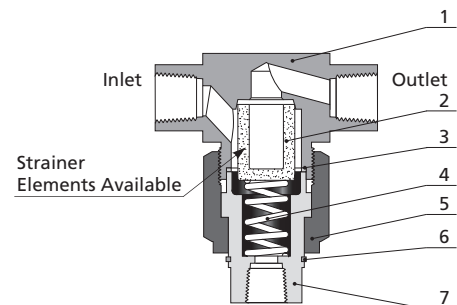
Features

- ⦿ 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

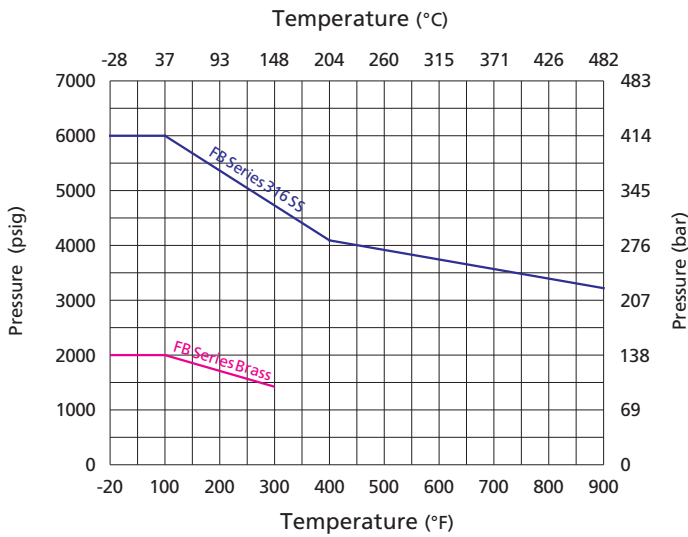
| Item | Component | Body Material | |
|-----------------------------------|-------------|------------------------------------|------------------|
| | | 316 SS | Brass |
| Material Grade/ASTM Specification | | | |
| 1 | Body | F316 SS/A182 | C37700/B283 |
| | | 316 SS/A479 | C36000/B16 |
| 2 | Element | 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



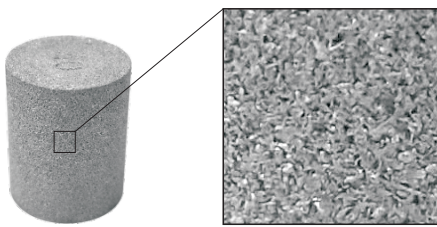
FB Series Sintered Filter Shown

Pressure vs. Temperature



Filter Elements

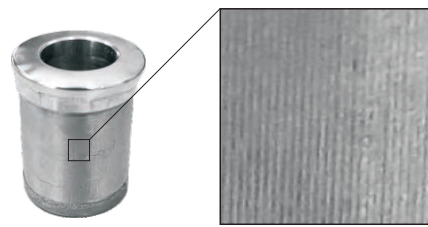
Sintered



Magnified 10x

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

Strainer



Magnified 10x

- ⦿ 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) | | | | | | | | | | |

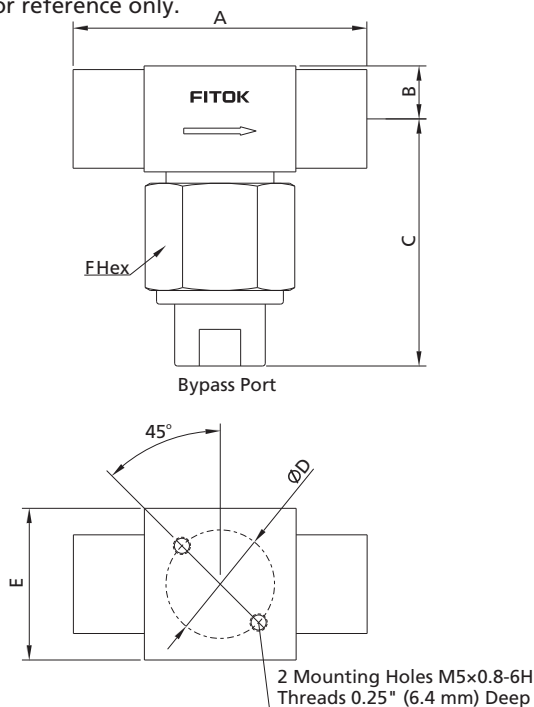
Flow Data

| 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.



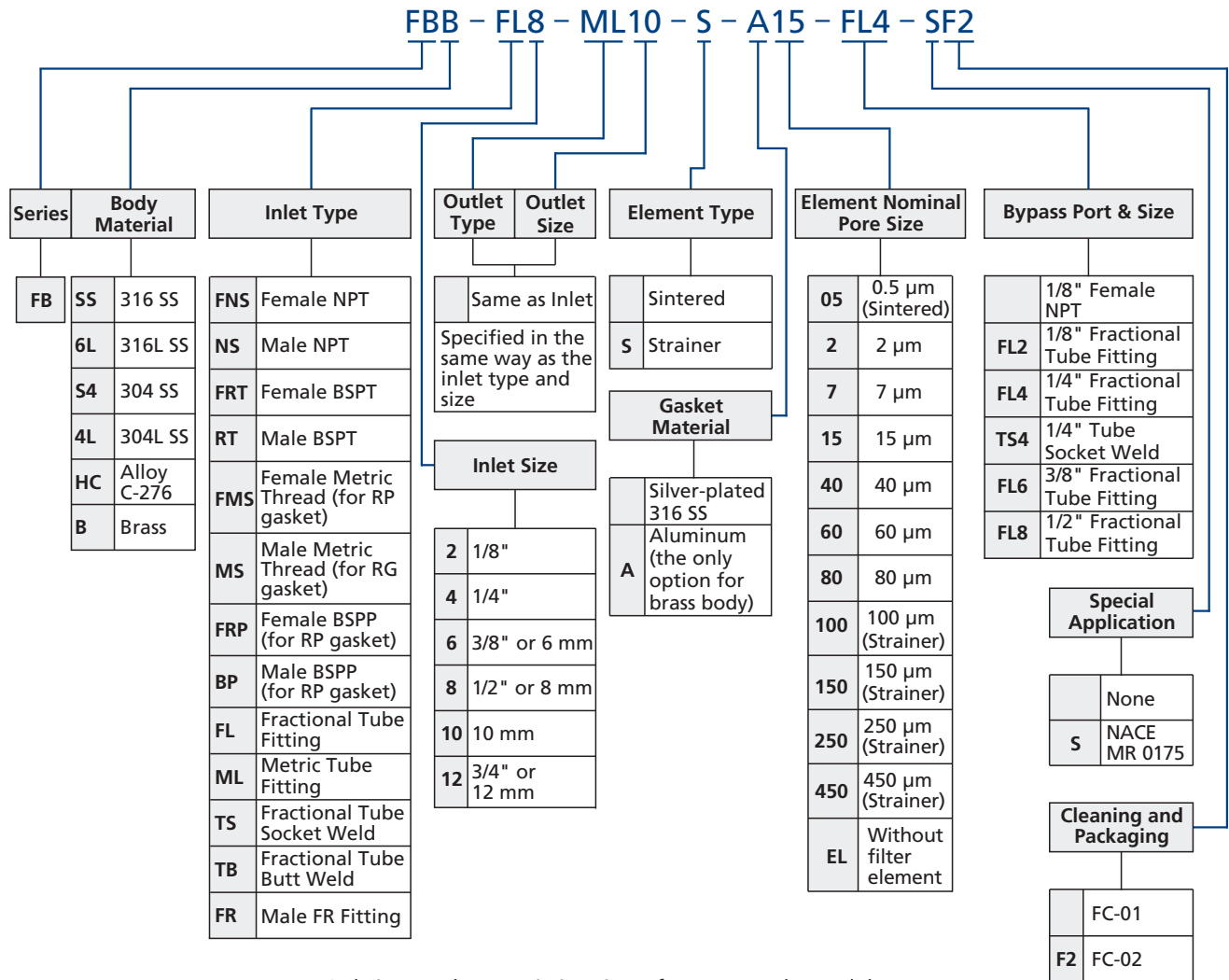
| Basic Ordering Number | Connection Type and Size | | Filtration Area Type | Dimensions, in. (mm) | | | | | | |
|-----------------------|------------------------------|------------------------------|----------------------|----------------------|-------------|-------------|-------------|-------------|--------------|-------------|
| | 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" x 0.065" Tube Butt Weld | 1/4" x 0.065" Tube Butt Weld | 4 | | | | | | | |
| FB□□-TB4- | 3/8" x 0.095" Tube Butt Weld | 3/8" x 0.095" Tube Butt Weld | 4 | | | | | | | |
| FB□□-FNS2- | 1/8 Female NPT | 1/8 Female NPT | 4 | 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 |

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



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:

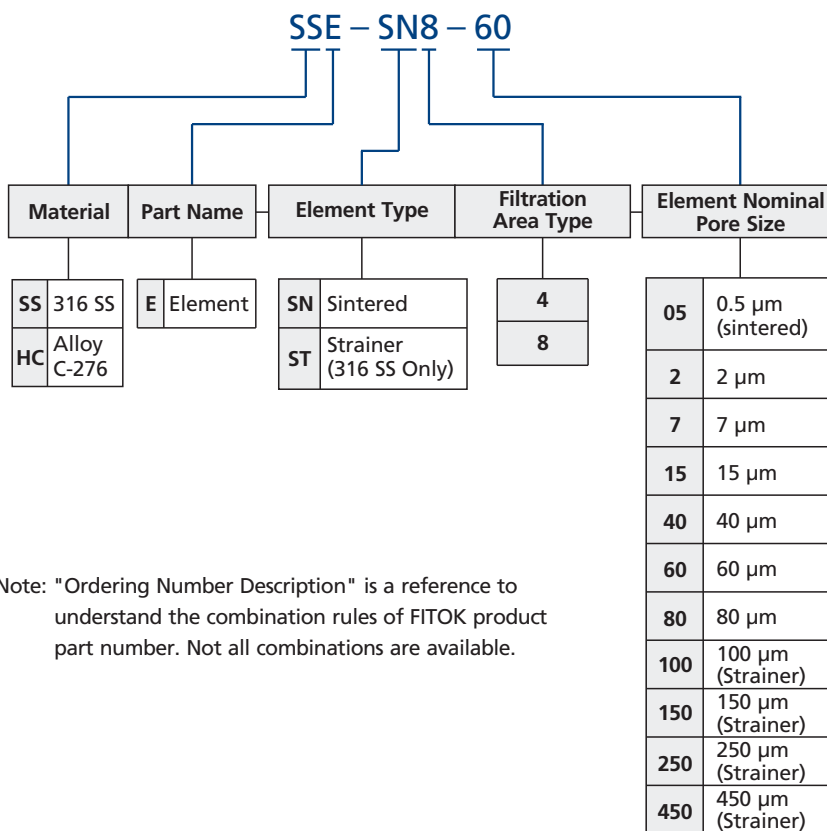
- FC-01: Standard cleaning and packaging for basic industrial procedures.
- FC-02: Special cleaning and packaging for wetted system components to ensure compliance requirement as stated in ASTM G93 Level C.

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



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

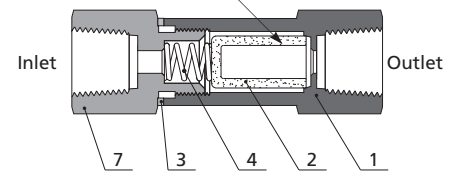
- ⦿ Filtration area type: 2, 4 and 8
- ⦿ Compact and space-saving design
- ⦿ Working pressure up to 3000 psig (207 bar)
- ⦿ Working temperature: -20°F to 900°F (-28°C to 482°C)
- ⦿ Variety of end connections available

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 |

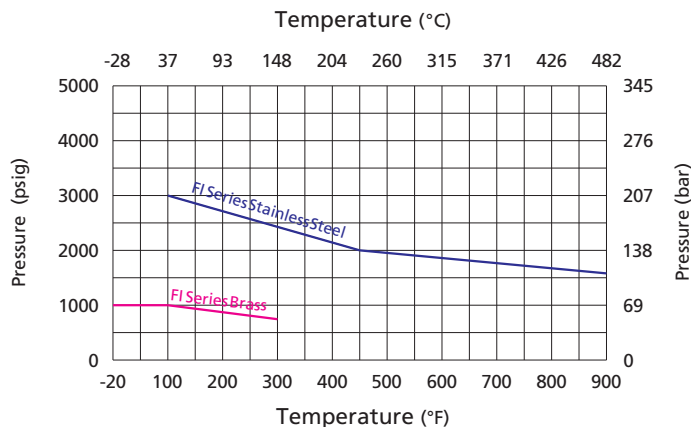
Lubricants: molybdenum disulfide-based and silicone-based

Strainer Elements Available



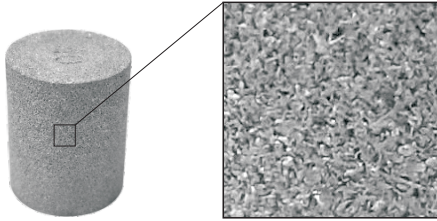
FI Series Sintered Filter Shown

Pressure vs. Temperature



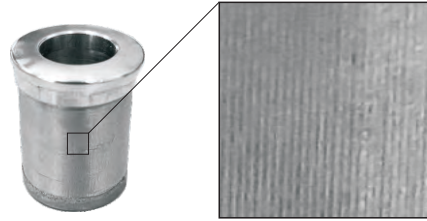
Filter Elements

Sintered



Magnified 10x

Strainer



Magnified 10x

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

- ⦿ 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) | | | | | | | | | | |

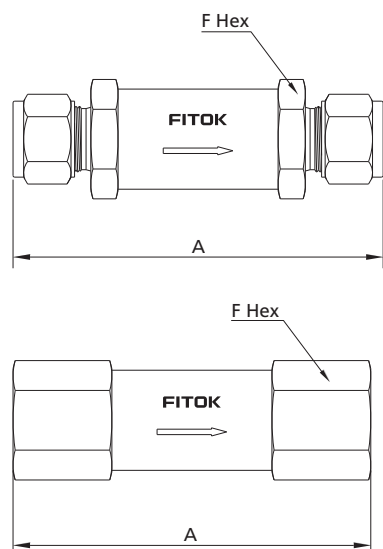
Flow Data

| 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.



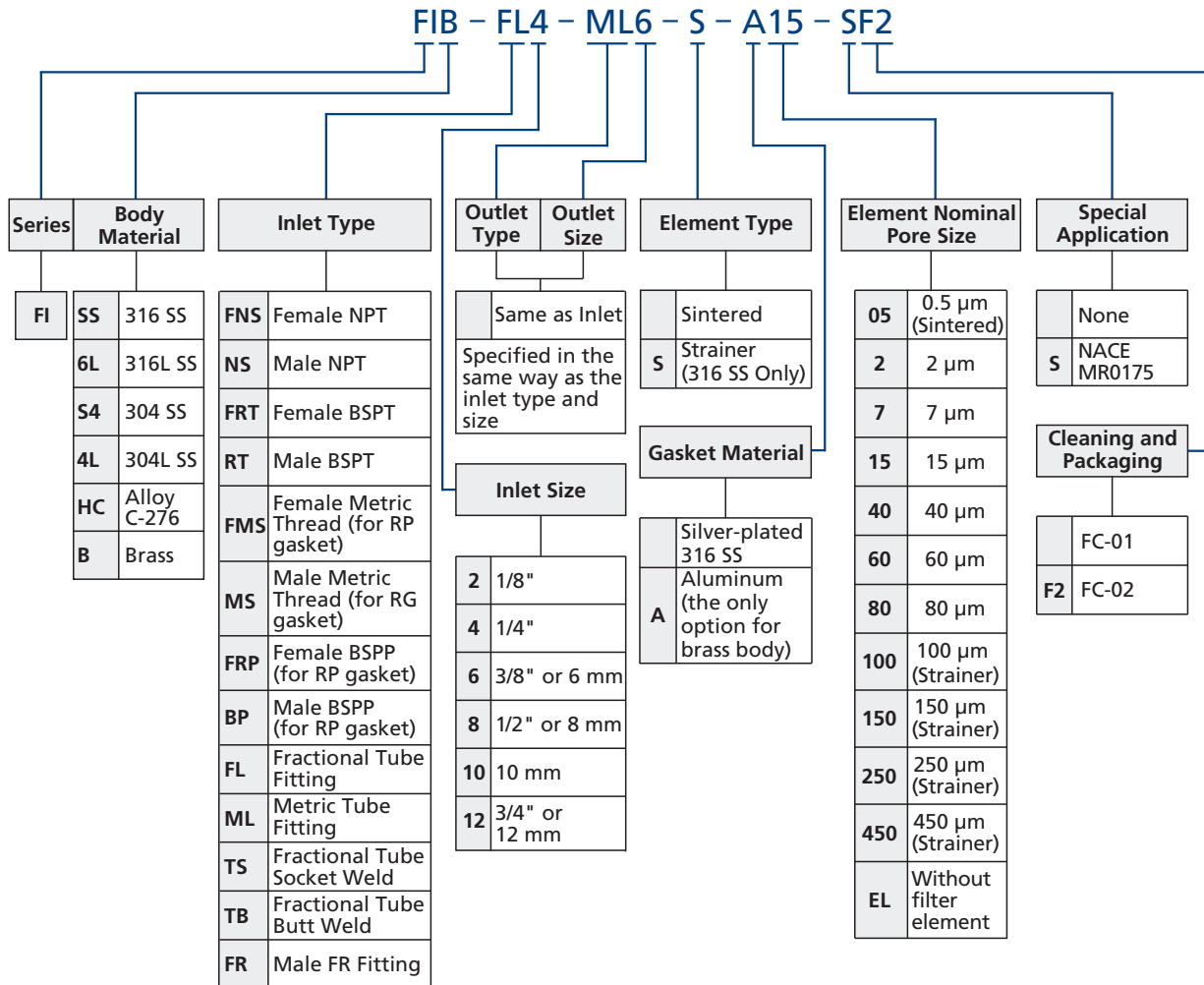
| Basic Ordering Number | Connection Type and Size | | Filtration Area Type | Dimensions in. (mm) | |
|-----------------------|--------------------------|-------------------|----------------------|---------------------|-------------|
| | Inlet | Outlet | | A | F |
| FI□□-FL2- | 1/8" Tube Fitting | 1/8" 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 | 2.79 (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) |

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



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:

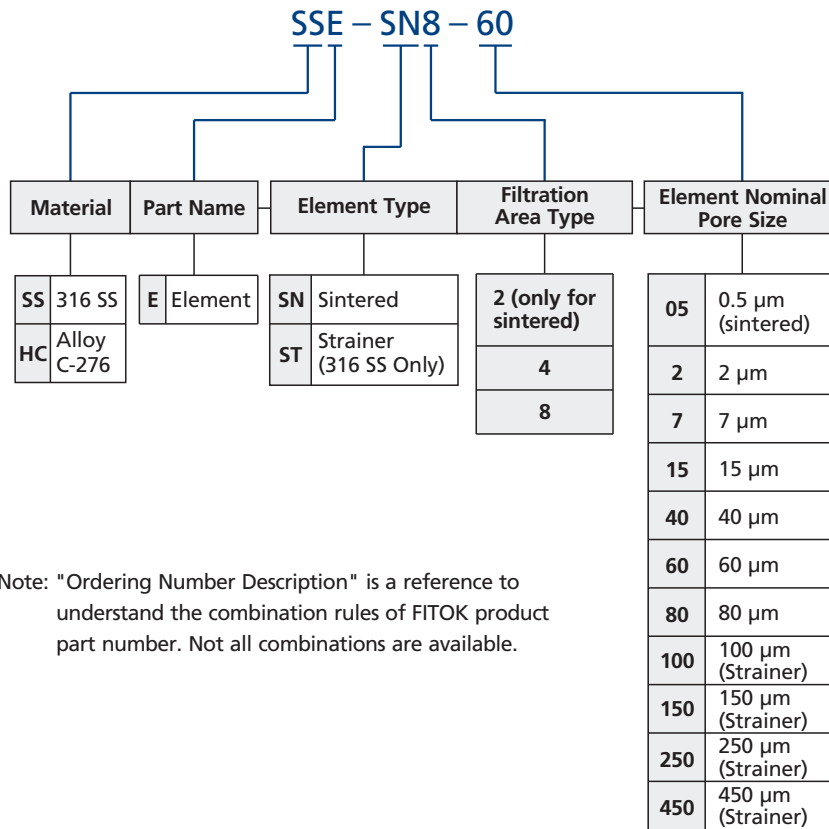
M10 and below: 1 mm

M12 to M24: 1.5 mm

M27 and above: 2 mm

Standard thread pitch should be ignored in the ordering number, others filter 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.

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.

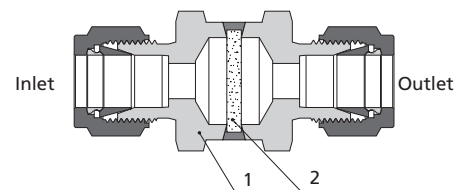


Features

- ⦿ 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

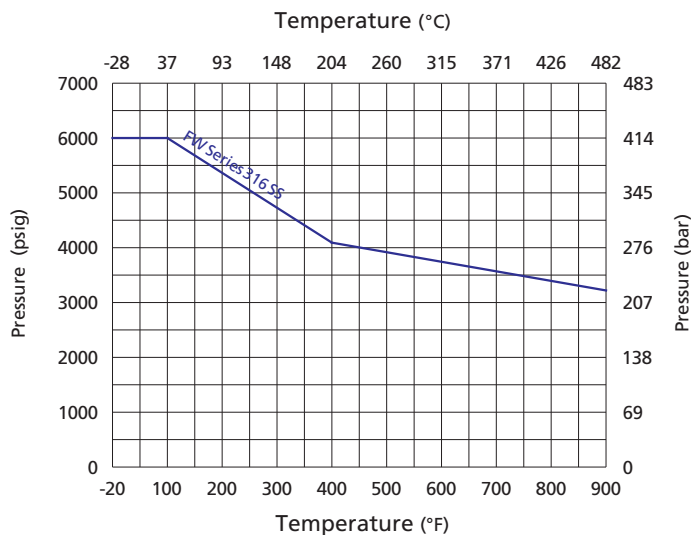
Standard Materials of Construction

| Item | Component | Body Material |
|------|-----------|------------------------------------|
| | | Material Grade/ASTM Specification |
| 1 | Body | 316 SS |
| | | F316 SS/A182 |
| 2 | Element | 316 SS/A479 |
| | | 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) | |

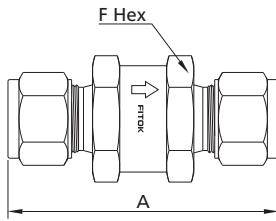
Flow Data

| 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

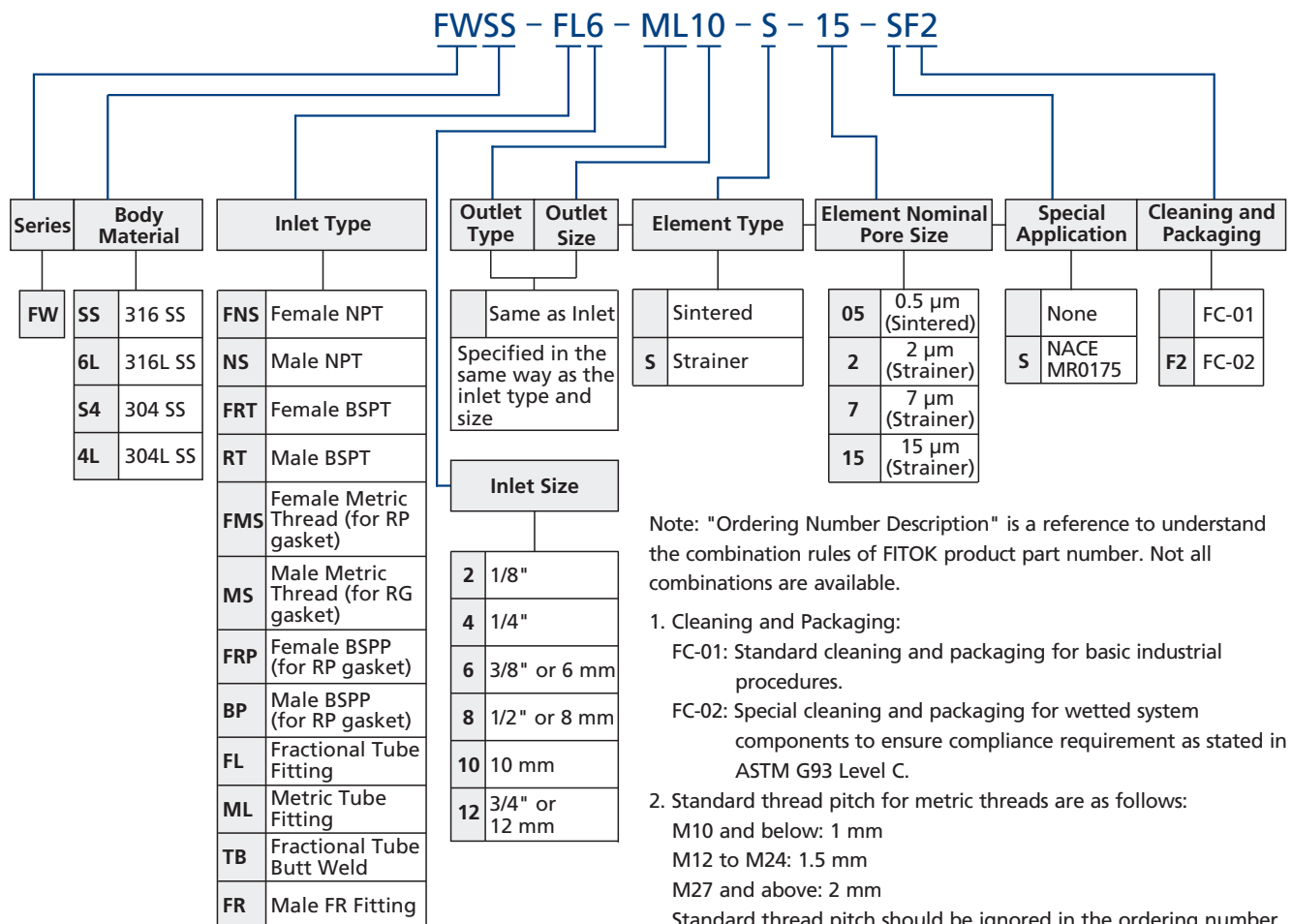
Dimensions, in inches (millimeters), are for reference only.



| 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



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

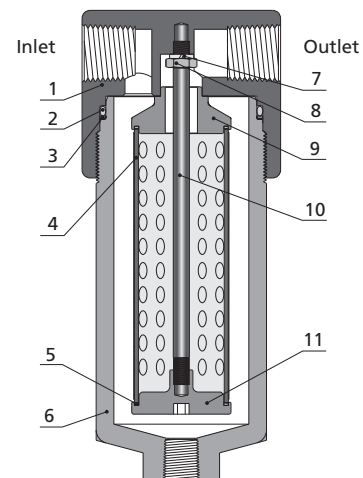
FH Series High-Capacity Filters feature a large filtration area, more efficient filtration, stable flow, wide medium compatibility, etc., making them suitable for high-flow pipeline systems.

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 |
|------|------------------------|-----------------------------------|
| | | Material Grade/ASTM Specification |
| | | 316 SS |
| 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 |

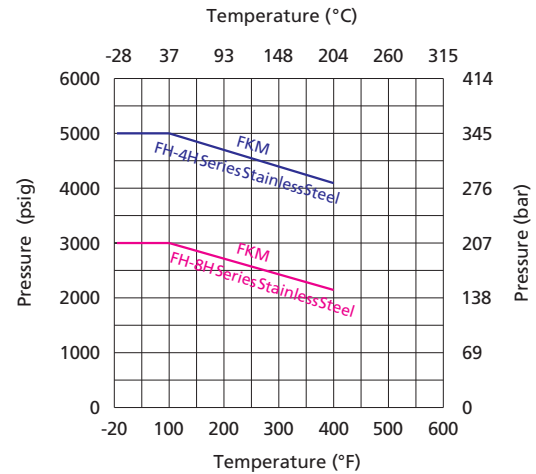


FH Series Strainer Filter Shown

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) | | | | |

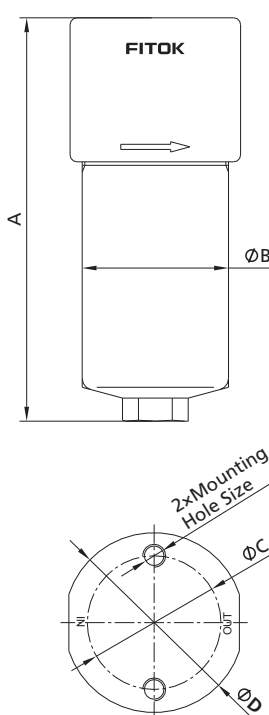
Flow Data

| Filtration Area Type | Element Nominal Pore Size µm | Element Type | Inlet Pressure, psig (bar) | | |
|----------------------|------------------------------|--------------|---------------------------------|----------|----------|
| | | | 0.14 (2) | 0.34 (5) | 0.55 (8) |
| | | | 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

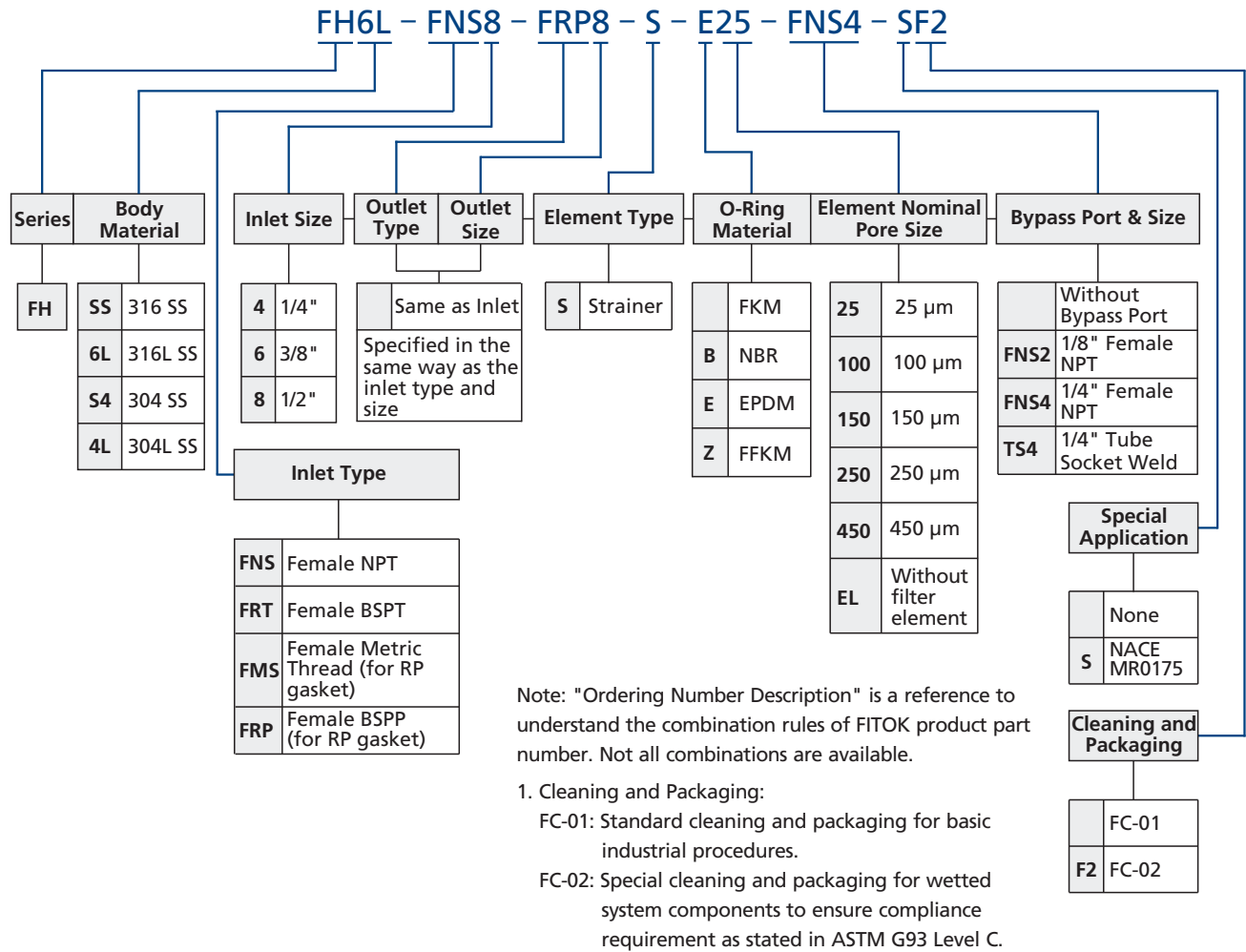
Dimensions, in inches (millimeters), are for reference only.



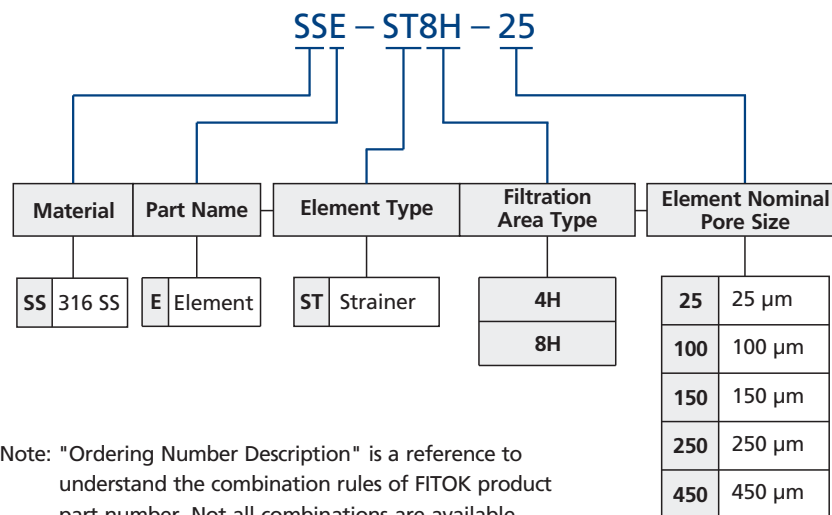
| Basic Ordering Number | Connection Type and Size | | Filtration Area Type | Dimensions in. (mm) | | | | Mounting Hole Size |
|-----------------------|--------------------------|-----------------|----------------------|---------------------|---------------|----------------|----------------|---|
| | Inlet | Outlet | | A | ØB | ØC | ØD | |
| 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 | 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□□-FRT8-S-□□ | 1/2 Female BSPT | 1/2 Female BSPT | | | | | | |
| FH□□-FRP8-S-□□ | 1/2 Female BSPP | 1/2 Female BSPP | | | | | | |

Filters

Filters Ordering Number Description



Elements Ordering Number Description



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