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**: Filter element replaceable without removing body from system
- **Union bonnet design**
- **Nominal pore sizes for sintered element**: 0.5, 2, 7, 15, 40, 60 and 80 μm
- **Nominal pore sizes for strainer element**: 100, 150, 250 and 450 μm
- **Maximum working pressure**: 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

**Bypass Filters**

- **FB Series**: Bypass port at filter bottom for the ease of sampling or purging
- **Union bonnet design**
- **Nominal pore sizes for sintered element**: 0.5, 2, 7, 15, 40, 60 and 80 μm
- **Nominal pore sizes for strainer element**: 100, 150, 250 and 450 μm
- **Maximum working pressure**: 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**: Compact and space-saving design
- **Nominal pore sizes for sintered element**: 0.5, 2, 7, 15, 40, 60 and 80 μm
- **Nominal pore sizes for strainer element**: 100, 150, 250 and 450 μm
- **Maximum working pressure**: 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 element**
- **Nominal pore sizes for sintered element**: 0.5, 2, 7, 15, 40, 60 and 80 μm
- **Maximum working pressure**: 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

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

### Flow Data at 70°F (20°C)

- **FT, FB Series**

### Elements

<table>
<thead>
<tr>
<th>Nominal Pore Size (μm)</th>
<th>Pore Size Range (μm)</th>
<th>Element Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5</td>
<td>0.5 micron</td>
<td>Sintered</td>
</tr>
<tr>
<td>2</td>
<td>2 micron</td>
<td>Sintered</td>
</tr>
<tr>
<td>7</td>
<td>7 micron</td>
<td>Sintered</td>
</tr>
<tr>
<td>15</td>
<td>15 micron</td>
<td>Strainer</td>
</tr>
<tr>
<td>40</td>
<td>40 micron</td>
<td>Strainer</td>
</tr>
<tr>
<td>60</td>
<td>60 micron</td>
<td>Strainer</td>
</tr>
<tr>
<td>80</td>
<td>80 micron</td>
<td>Strainer</td>
</tr>
<tr>
<td>100</td>
<td>100 micron</td>
<td>Strainer</td>
</tr>
<tr>
<td>250</td>
<td>250 micron</td>
<td>Strainer</td>
</tr>
<tr>
<td>450</td>
<td>450 micron</td>
<td>Strainer</td>
</tr>
</tbody>
</table>

- **Flow Rate**

### Standard Materials of Construction

<table>
<thead>
<tr>
<th>Component</th>
<th>Material Grade/ASTM Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body</td>
<td>316 SS/A182 Brass C83000/B16</td>
</tr>
<tr>
<td>Element</td>
<td>Sintered 316 SS or strainer 316 SS</td>
</tr>
<tr>
<td>Gasket</td>
<td>316 SS/A479 with PTFE/F710 coating or silver-plated Aluminum/B209</td>
</tr>
<tr>
<td>Spring</td>
<td>302 SS/A313 302 SS/A313</td>
</tr>
<tr>
<td>Bonnet Nut</td>
<td>C36000/A276 C36000/B16</td>
</tr>
<tr>
<td>Backup Ring</td>
<td>316 SS/A477 C36000/B16</td>
</tr>
</tbody>
</table>

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)

<table>
<thead>
<tr>
<th>Series</th>
<th>Maximum Differential Pressure psig (Bar)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FT, FB, FW</td>
<td>0.5 micron: 0.5 to 2, 2 to 4</td>
</tr>
<tr>
<td></td>
<td>4 to 7: 7 to 10, 10 to 15</td>
</tr>
<tr>
<td></td>
<td>15 to 25: 25 to 50</td>
</tr>
<tr>
<td></td>
<td>50 to 75: 75 to 100</td>
</tr>
<tr>
<td></td>
<td>100 to 250: 100 to 250</td>
</tr>
<tr>
<td></td>
<td>250 to 450: 250 to 450</td>
</tr>
</tbody>
</table>

### Contact Information

Contact the authorized representative or FITOK Group for curve graph of other materials.
### FT Series

#### Basic Ordering Number

<table>
<thead>
<tr>
<th>Connection Type and Size</th>
<th>Filter Series</th>
<th>Filter</th>
<th>Filters</th>
</tr>
</thead>
<tbody>
<tr>
<td>FT</td>
<td>FL-2</td>
<td>1/8&quot; FITOK</td>
<td>FL-2</td>
</tr>
<tr>
<td>FT</td>
<td>FL-4</td>
<td>1/4&quot; FITOK</td>
<td>FL-4</td>
</tr>
<tr>
<td>FT</td>
<td>FL-6</td>
<td>3/8&quot;FITOK</td>
<td>FL-6</td>
</tr>
<tr>
<td>FT</td>
<td>FL-8</td>
<td>1/2&quot;FITOK</td>
<td>FL-8</td>
</tr>
<tr>
<td>FT</td>
<td>FL-M6</td>
<td>6 mm FITOK</td>
<td>FL-M6</td>
</tr>
<tr>
<td>FT</td>
<td>FL-M10</td>
<td>10 mm FITOK</td>
<td>FL-M10</td>
</tr>
<tr>
<td>FT</td>
<td>FL-M12</td>
<td>12 mm FITOK</td>
<td>FL-M12</td>
</tr>
<tr>
<td>FT</td>
<td>TS-4</td>
<td>1/4&quot; TS</td>
<td>TS-4</td>
</tr>
<tr>
<td>FT</td>
<td>TS-6</td>
<td>3/8&quot; TS</td>
<td>TS-6</td>
</tr>
<tr>
<td>FT</td>
<td>TS-14</td>
<td>1/2&quot; TS</td>
<td>TS-14</td>
</tr>
<tr>
<td>FT</td>
<td>TS-B6</td>
<td>3/8&quot; TB</td>
<td>TS-B6</td>
</tr>
<tr>
<td>FT</td>
<td>FN-62</td>
<td>1/8 Female NPT</td>
<td>FN-62</td>
</tr>
<tr>
<td>FT</td>
<td>FN-64</td>
<td>1/4 Female NPT</td>
<td>FN-64</td>
</tr>
<tr>
<td>FT</td>
<td>NS-4</td>
<td>1/8 Male NPT</td>
<td>NS-4</td>
</tr>
<tr>
<td>FT</td>
<td>NS-6</td>
<td>3/8 Male NPT</td>
<td>NS-6</td>
</tr>
<tr>
<td>FT</td>
<td>NS-8</td>
<td>1/2 Male NPT</td>
<td>NS-8</td>
</tr>
<tr>
<td>FT</td>
<td>FR-4</td>
<td>1/4 Male FR</td>
<td>FR-4</td>
</tr>
<tr>
<td>FT</td>
<td>FR-6</td>
<td>1/2 Male FR</td>
<td>FR-6</td>
</tr>
</tbody>
</table>

### Dimensions

- **FT Series**: Male FR 0.25" (6.4 mm) Deep
- **FW Series**: Female NPT 0.375" (9.6 mm) Deep
- **Mounting holes not available with 1/4 female NPT and connections**

### Pressure Drop to Atmosphere (p together bar)

<table>
<thead>
<tr>
<th>Pressure Drop</th>
<th>Water Flow, U.S. gal (L/min)</th>
<th>Air Flow, std ft/min (std L/min)</th>
<th>Water Flow, U.S. gal (L/min)</th>
<th>Air Flow, std ft/min (std L/min)</th>
<th>Water Flow, U.S. gal (L/min)</th>
<th>Air Flow, std ft/min (std L/min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 (0.34)</td>
<td>0.01 (2.0)</td>
<td>0.09 (2.6)</td>
<td>0.08 (3.0)</td>
<td>0.01 (2.0)</td>
<td>0.09 (2.6)</td>
<td>0.08 (3.0)</td>
</tr>
<tr>
<td>10 (0.69)</td>
<td>0.02 (2.0)</td>
<td>0.11 (3.1)</td>
<td>0.12 (3.9)</td>
<td>0.02 (2.0)</td>
<td>0.11 (3.1)</td>
<td>0.12 (3.9)</td>
</tr>
<tr>
<td>20 (1.38)</td>
<td>0.05 (2.0)</td>
<td>0.18 (5.2)</td>
<td>0.20 (5.6)</td>
<td>0.05 (2.0)</td>
<td>0.18 (5.2)</td>
<td>0.20 (5.6)</td>
</tr>
<tr>
<td>50 (3.45)</td>
<td>0.10 (2.0)</td>
<td>0.31 (8.7)</td>
<td>0.42 (11.1)</td>
<td>0.10 (2.0)</td>
<td>0.31 (8.7)</td>
<td>0.42 (11.1)</td>
</tr>
<tr>
<td>100 (6.9)</td>
<td>0.24 (2.0)</td>
<td>0.40 (11.5)</td>
<td>0.80 (21.8)</td>
<td>0.24 (2.0)</td>
<td>0.40 (11.5)</td>
<td>0.80 (21.8)</td>
</tr>
<tr>
<td>200 (13.8)</td>
<td>0.62 (2.0)</td>
<td>0.75 (21.2)</td>
<td>1.50 (40.2)</td>
<td>0.62 (2.0)</td>
<td>0.75 (21.2)</td>
<td>1.50 (40.2)</td>
</tr>
<tr>
<td>500 (34.5)</td>
<td>1.55 (2.0)</td>
<td>1.86 (50.5)</td>
<td>3.75 (99.8)</td>
<td>1.55 (2.0)</td>
<td>1.86 (50.5)</td>
<td>3.75 (99.8)</td>
</tr>
</tbody>
</table>

### Fabrication Series

- **FW Series**: 1/8" Female NPT, 1/4" Male NPT
- **FT Series**: 1/8" Female NPT, 1/4" Male NPT
- **Mounting holes not available with 1/4 female NPT and connections**
Mounting holes not available with 1/4 female NPT end connections

FB Series

FB-FL□□

FR8  FR4

M4 M4

NS4 TS6

76 108 8

3/8” FITOK 1/4” FITOK

1/8” FITOK 3/8” FITOK

1/4” FITOK 1/2” FITOK

8 mm FITOK 6 mm FITOK

1/8 Female NPT 1/8 Female NPT

1/4 Female NPT 1/4 Female NPT

1/8 Male NPT 1/8 Male NPT

1/4 Male NPT 1/4 Male NPT

1/4 Female NPT 1/4 Male NPT

1/4 Male FR 1/4 Male FR

Inlet Outlet

Bypass Port

Ordering Number

Connection Type and Size

Element Series

Filter Series

Dimension, in. (mm)

Orifice in. (mm)

- Dimension in. (mm)

Basic Ordering Number

Connection Type and Size

Element Series

Filter Series

Inlet Outlet

Orifice in. (mm)

Dimension, in. (mm)

1. 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.

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 the authorized representative or RTDK Group.
### Filters Part Number Description

#### Series Body Part Number Description

<table>
<thead>
<tr>
<th>Series</th>
<th>Body</th>
<th>Material</th>
<th>Inlet Type</th>
<th>Inlet Size</th>
<th>Outlet Type</th>
<th>Outlet Size</th>
<th>Element Type</th>
<th>Element Nominal Pore Size</th>
<th>Bypass Port (for FB Series Only)</th>
<th>Special Application</th>
<th>Cleaning and Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>FT</td>
<td>SS</td>
<td>316 SS</td>
<td>Female NPT</td>
<td>0.5 μm</td>
<td>2</td>
<td>1/8&quot;</td>
<td>Sintered</td>
<td>0.5 μm</td>
<td>1/8 Female NPT</td>
<td>No</td>
<td>FC-01</td>
</tr>
<tr>
<td>FB</td>
<td>6L</td>
<td>316L SS</td>
<td>Male NPT</td>
<td>2 μm</td>
<td>2</td>
<td>1/4&quot;</td>
<td>Stainless</td>
<td>2 μm</td>
<td>1/4&quot; Fractional Tube Fitting</td>
<td>SAE</td>
<td>FC-02</td>
</tr>
<tr>
<td>R</td>
<td>54</td>
<td>304 SS</td>
<td>Female 304</td>
<td>7 μm</td>
<td>7</td>
<td>1/4&quot; or 10 mm</td>
<td>Stainless</td>
<td>7 μm</td>
<td>1/4&quot; Fractional Tube Fitting</td>
<td>SAE</td>
<td>FC-02</td>
</tr>
<tr>
<td>RW</td>
<td>6L</td>
<td>304L SS</td>
<td>Male 304</td>
<td>15 μm</td>
<td>15</td>
<td>3/8&quot; or 6 mm</td>
<td>Stainless</td>
<td>15 μm</td>
<td>1/4&quot; Fractional Tube Fitting</td>
<td>SAE</td>
<td>FC-02</td>
</tr>
<tr>
<td>MS</td>
<td>MA</td>
<td>316 SS</td>
<td>Female 316</td>
<td>40 μm</td>
<td>40</td>
<td>10 mm</td>
<td>Stainless</td>
<td>40 μm</td>
<td>1/4&quot; Fractional Tube Fitting</td>
<td>SAE</td>
<td>FC-02</td>
</tr>
<tr>
<td>M5</td>
<td>RS</td>
<td>316 SS</td>
<td>Male 316</td>
<td>60 μm</td>
<td>60</td>
<td>16 mm</td>
<td>Stainless</td>
<td>60 μm</td>
<td>1/4&quot; Fractional Tube Fitting</td>
<td>SAE</td>
<td>FC-02</td>
</tr>
<tr>
<td>M6</td>
<td>RS</td>
<td>316 SS</td>
<td>Female 316</td>
<td>80 μm</td>
<td>80</td>
<td>22 mm</td>
<td>Stainless</td>
<td>80 μm</td>
<td>1/4&quot; Fractional Tube Fitting</td>
<td>SAE</td>
<td>FC-02</td>
</tr>
<tr>
<td>M7</td>
<td>RS</td>
<td>316 SS</td>
<td>Male 316</td>
<td>100 μm</td>
<td>100</td>
<td>25 mm</td>
<td>Stainless</td>
<td>100 μm</td>
<td>1/4&quot; Fractional Tube Fitting</td>
<td>SAE</td>
<td>FC-02</td>
</tr>
<tr>
<td>M8</td>
<td>RS</td>
<td>316 SS</td>
<td>Female 316</td>
<td>150 μm</td>
<td>150</td>
<td>1&quot; or 16 mm</td>
<td>Stainless</td>
<td>150 μm</td>
<td>1/4&quot; Fractional Tube Fitting</td>
<td>SAE</td>
<td>FC-02</td>
</tr>
<tr>
<td>M9</td>
<td>RS</td>
<td>316 SS</td>
<td>Male 316</td>
<td>250 μm</td>
<td>250</td>
<td>1/2&quot; or 8 mm</td>
<td>Stainless</td>
<td>250 μm</td>
<td>1/4&quot; Fractional Tube Fitting</td>
<td>SAE</td>
<td>FC-02</td>
</tr>
<tr>
<td>M10</td>
<td>RS</td>
<td>316 SS</td>
<td>Female 316</td>
<td>450 μm</td>
<td>450</td>
<td>1 1/4&quot; or 20 mm</td>
<td>Stainless</td>
<td>450 μm</td>
<td>1/4&quot; Fractional Tube Fitting</td>
<td>SAE</td>
<td>FC-02</td>
</tr>
</tbody>
</table>

#### Elements Part Number Description

<table>
<thead>
<tr>
<th>Element Type</th>
<th>Element Nominal Pore Size</th>
<th>Element Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>ST Strainer</td>
<td>0.5 μm</td>
<td>2</td>
</tr>
<tr>
<td>SN Sintered</td>
<td>2 μm</td>
<td>2</td>
</tr>
<tr>
<td>ST Strainer</td>
<td>7 μm</td>
<td>7</td>
</tr>
<tr>
<td>SN Sintered</td>
<td>15 μm</td>
<td>15</td>
</tr>
<tr>
<td>ST Strainer</td>
<td>40 μm</td>
<td>40</td>
</tr>
<tr>
<td>SN Sintered</td>
<td>60 μm</td>
<td>60</td>
</tr>
<tr>
<td>ST Strainer</td>
<td>80 μm</td>
<td>80</td>
</tr>
<tr>
<td>SN Sintered</td>
<td>100 μm</td>
<td>100</td>
</tr>
</tbody>
</table>

---

1. **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.

2. **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.