High-Pressure Sandwich Filter

Features and Benefits
- Sandwich filter configured for D03 subplate pattern
- Withstands high pressure surges, high static pressure loads
- 3000 psi collapse elements

Applications
- INDUSTRIAL
- AUTOMOTIVE MANUFACTURING
- MACHINE TOOL
- MINING TECHNOLOGY
- MOBILE VEHICLES
- PULP & PAPER

Specifications

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow Rating</td>
<td>Up to 12 gpm (45 L/min) for 150 SUS (32 cSt) fluids</td>
</tr>
<tr>
<td>Max. Operating Pressure</td>
<td>6000 psi (415 bar)</td>
</tr>
<tr>
<td>Min. Yield Pressure</td>
<td>26,000 psi (1790 bar), per NFPA T2.6.1</td>
</tr>
<tr>
<td>Rated Fatigue Pressure</td>
<td>4000 psi (275 bar), per NFPA T2.6.1</td>
</tr>
<tr>
<td>Temp. Range</td>
<td>-20°F to 225°F (-29°C to 107°C)</td>
</tr>
<tr>
<td>Non-Bypass Model</td>
<td>Available with high collapse elements</td>
</tr>
<tr>
<td>Porting Head</td>
<td>Steel</td>
</tr>
<tr>
<td>Element Case</td>
<td>Steel</td>
</tr>
<tr>
<td>Weight</td>
<td>7.3 lbs. (3.3 kg)</td>
</tr>
<tr>
<td>Element Change Clearance</td>
<td>4.50&quot; (115 mm)</td>
</tr>
</tbody>
</table>

Model No. of filter in photograph is FOF601FZX303D5.
High-Pressure Sandwich Filter

**Element Performance Information**

<table>
<thead>
<tr>
<th>Element</th>
<th>Filtration Ratio Per ISO 4572/NFPA T3.10.8.8</th>
<th>Filtration Ratio wrt ISO 16889</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Using automated particle counter (APC) calibrated per ISO 4402</td>
<td>Using APC calibrated per ISO 11171</td>
</tr>
<tr>
<td>FZX3</td>
<td>$\beta_x \geq 75$</td>
<td>$\beta_x \geq 200$</td>
</tr>
<tr>
<td></td>
<td>$&lt;1.0$</td>
<td>$&lt;1.0$</td>
</tr>
<tr>
<td>FZX10</td>
<td>$7.4$</td>
<td>$8.0$</td>
</tr>
<tr>
<td></td>
<td>$8.2$</td>
<td>$8.2$</td>
</tr>
<tr>
<td></td>
<td>$10.0$</td>
<td>$9.8$</td>
</tr>
<tr>
<td></td>
<td>$4.7$</td>
<td>$9.8$</td>
</tr>
</tbody>
</table>

**Dirt Holding Capacity**

<table>
<thead>
<tr>
<th>Element</th>
<th>DHC (gm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FZX3</td>
<td>3*</td>
</tr>
<tr>
<td>FZX10</td>
<td>5.1</td>
</tr>
</tbody>
</table>

**Element Collapse Rating:**
3000 psid (210 bar) for high collapse (ZX) versions

**Flow Direction:**
Outside In

**Element Nominal Dimensions:**
1.25" (30 mm) O.D. x 3.25" (85 mm) long

*Based on 100 psi terminal pressure

Metric dimensions in ( ).
High-Pressure Sandwich Filter

FOF60-03

Element Selection Based on Flow Rate

<table>
<thead>
<tr>
<th>Pressure</th>
<th>Element</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>To 6000 psi (415 bar)</td>
<td>Z-Media®</td>
<td>FZX3</td>
</tr>
<tr>
<td>6000 psi (415 bar)</td>
<td>FZX10</td>
<td>FZX10</td>
</tr>
</tbody>
</table>

Flow

<table>
<thead>
<tr>
<th>gpm</th>
<th>0</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>(L/min)</td>
<td>0</td>
<td>20</td>
</tr>
</tbody>
</table>

Element selections are predicated on the use of 150 SUS (32 cSt) petroleum based fluid.

Exercise:
Determine $\Delta P$ at 4 gpm (19 L/min) for FOF601FZX1003 using 200 SUS (44 cSt) fluid.

Solution:

$$\Delta P_{\text{housing}} = 40.0 \text{ psi } [2.75 \text{ bar}]$$

$$\Delta P_{\text{element}} = 5 \times 4.45 \times (200\div150) = 29.7 \text{ psi}$$

or

$$\Delta P_{\text{element}} = 19 \times (4.45+54.9) \times (44\div32) = 2.12 \text{ bar}$$

$$\Delta P_{\text{total}} = 40.0 + 29.7 = 69.7 \text{ psi}$$

or

$$\Delta P_{\text{total}} = 2.75 + 2.12 = 4.87 \text{ bar}$$

$\Delta P_{\text{housing}}$ and $\Delta P_{\text{element}}$ for fluids with sp gr = 0.86:

$\Delta P_{\text{filter}} = \Delta P_{\text{housing}} + \Delta P_{\text{element}}$

Notes

Sizing of elements should be based on element flow information provided in the Element Selection chart above.

**Fluid Compatibility**

Petroleum Based Fluids
- All Z-Media® (synthetic)

High Water Content
- 3 and 10 µ Z-Media® (synthetic)

Pressure Drop Information Based on Flow Rate and Viscosity

Sizing of elements should be based on element flow information provided in the Element Selection chart above.

Notes

Sizing of elements should be based on element flow information provided in the Element Selection chart above.

**Type Fluid**
- Petroleum Based Fluids

**Appropriate Schroeder Media**
- All Z-Media® (synthetic)

**Notes**

Contact factory regarding use of E Media in High Water Content, Invert Emulsion and Water Glycol Applications. For more information, refer to Fluid Compatibility: Fire Resistant Fluids, pages 19 and 20.

sp gr = specific gravity

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sp gr = specific gravity

Sizing of elements should be based on element flow information provided in the Element Selection chart above.
# High-Pressure Sandwich Filter

## How to Build a Valid Model Number for a Schroeder FOF60-03:

<table>
<thead>
<tr>
<th>BOX 1</th>
<th>BOX 2</th>
<th>BOX 3</th>
<th>BOX 4</th>
<th>BOX 5</th>
<th>BOX 6</th>
<th>BOX 7</th>
</tr>
</thead>
<tbody>
<tr>
<td>FOF60</td>
<td>1</td>
<td>FZX3</td>
<td>03</td>
<td>A</td>
<td>D5</td>
<td></td>
</tr>
</tbody>
</table>

Example: NOTE: One option per box

= FOF601FZX303AD5

<table>
<thead>
<tr>
<th>Filter Series</th>
<th>Number of Elements</th>
<th>Element Part Number</th>
<th>Seal Material</th>
<th>Porting</th>
</tr>
</thead>
<tbody>
<tr>
<td>FOF60</td>
<td>1</td>
<td>FZX3 = F size 3 µ high collapse media</td>
<td>Omit = Buna N</td>
<td>03 = D03 subplate pattern</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FZX10 = F size 10 µ high collapse media</td>
<td>V = Viton®</td>
<td></td>
</tr>
</tbody>
</table>

## Notes:

- **Box 3**: Replacement element part numbers are identical to contents of Boxes 3 and 4.
- **Box 4**: Viton® is a registered trademark of DuPont Dow Elastomers.
- **Box 7**: Dirt Alarm® cannot be used beyond 4 gpm. Filters ordered without a Dirt Alarm do not include a machined indicator port. Therefore, one cannot be added at a later date.

**Electrical**

- MSS = Electrical w/ 12 in. 18 gauge 4-conductor cable
- M5SLC = Low current MSS
- MS10 = Electrical w/ DIN connector (male end only)
- MS10LC = Low current MS10
- MS11 = Electrical w/ 12 ft. 4-conductor wire
- MS12 = Electrical w/ 5 pin Brad Harrison connector (male end only)
- MS12LC = Low current MS12
- MS16 = Electrical w/ weather-packed sealed connector
- MS16LC = Low current MS16
- MS17LC = Electrical w/ 4 pin Brad Harrison male connector

**Electrical with Thermal Lockout**

- MS5T = MSS (see above) w/ thermal lockout
- M55LCT = Low current MS5T
- MS10T = MS10 (see above) w/ thermal lockout
- MS10LCT = Low current MS10T
- MS12T = MS12 (see above) w/ thermal lockout
- MS12LCT = Low current MS12T
- MS16T = MS16 (see above) w/ thermal lockout
- MS16LCT = Low current MS16T
- MS17LCT = Low current MS17T

**Electrical Visual**

- MS13 = Supplied w/ threaded connector & light
- MS14 = Supplied w/ 5 pin Brad Harrison connector & light (male end)

**Electrical Visual with Thermal Lockout**

- MS13DCT = MS13 (see above), direct current, w/ thermal lockout
- MS13DCLCT = Low current MS13DCT
- MS14DCT = MS14 (see above), direct current, w/ thermal lockout
- MS14DCLCT = Low current MS14DCT

**Dirt Alarm® Options**

- Omit = None
- Visual = D5 = Visual pop-up
- Visual with Thermal Lockout = D8 = Visual w/ thermal lockout