Tank-Mounted Filter

Features and Benefits
- Low pressure tank-mounted filter
- Designed for high return line flows
- Dual inlet porting
- Top, side or bottom mounting
- Optional check valve prevents reservoir siphoning
- Special filter element design provides aftermarket benefits
- Also available with DirtCatcher® element (BBD)
- Cast iron head available

Flow Rating: Up to 300 gpm (1135 L/min) for 150 SUS (32 cSt) fluids
Max. Operating Pressure: 100 psi (7 bar)
Min. Yield Pressure: 250 psi (17 bar), per NFPA T2.6.1
Rated Fatigue Pressure: Contact factory, per NFPA T2.6.1
Temp. Range: -20°F to 225°F (-29°C to 107°C)
Bypass Setting: Cracking: 25 psi (1.7 bar)
- Full Flow: 52 psi (3.6 bar)
Porting Head & Cap: Aluminum
Element Case: Steel
Weight of BFT-1BB: 36.7 lbs. (16.6 kg)
Element Change Clearance: 14.75" (375 mm)

Fluid Compatibility

<table>
<thead>
<tr>
<th>Type Fluid</th>
<th>Appropriate Schroeder Media</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petroleum Based Fluids</td>
<td>All E media (cellulose) and Z-Media® (synthetic)</td>
</tr>
<tr>
<td>High Water Content</td>
<td>All Z-Media® (synthetic)</td>
</tr>
<tr>
<td>Invert Emulsions</td>
<td>10 and 25 µ Z-Media® (synthetic)</td>
</tr>
<tr>
<td>Water Glycols</td>
<td>3, 5, 10 and 25 µ Z-Media® (synthetic)</td>
</tr>
<tr>
<td>Phosphate Esters</td>
<td>All Z-Media® (synthetic) with H (EPR) seal designation</td>
</tr>
<tr>
<td>Skydrol®</td>
<td>3, 5, 10 and 25 µ Z-Media® (synthetic) with H.5 seal designation</td>
</tr>
</tbody>
</table>

Filter Housing Specifications

300 gpm
1135 L/min
100 psi
7 bar

Model No. of filter in photograph is BFT1BBZ5F.
### Element Performance Information & Dirt Holding Capacity

#### Filtration Ratio Per ISO 4572/NFPA T3.10.8.8
Using automated particle counter (APC) calibrated per ISO 4402

<table>
<thead>
<tr>
<th>Element</th>
<th>( \beta_x \geq 75 )</th>
<th>( \beta_x \geq 100 )</th>
<th>( \beta_x \geq 200 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>BB/BLZ1</td>
<td>&lt;1.0</td>
<td>&lt;1.0</td>
<td>&lt;1.0</td>
</tr>
<tr>
<td>BB/BLZ3</td>
<td>&lt;1.0</td>
<td>&lt;1.0</td>
<td>&lt;2.0</td>
</tr>
<tr>
<td>BB/BLZ5</td>
<td>2.5</td>
<td>3.0</td>
<td>4.0</td>
</tr>
<tr>
<td>BB/BLZ10</td>
<td>7.4</td>
<td>8.2</td>
<td>10.0</td>
</tr>
<tr>
<td>BB/BLZ25</td>
<td>18.0</td>
<td>20.0</td>
<td>22.5</td>
</tr>
</tbody>
</table>

#### Filtration Ratio per ISO 16889
Using APC calibrated per ISO 11171

<table>
<thead>
<tr>
<th>Element</th>
<th>( \beta_{x(a)} \geq 200 )</th>
<th>( \beta_{x(a)} \geq 1000 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>BB/BLZ1</td>
<td>&lt;4.0</td>
<td>4.2</td>
</tr>
<tr>
<td>BB/BLZ3</td>
<td>&lt;4.0</td>
<td>4.8</td>
</tr>
<tr>
<td>BB/BLZ5</td>
<td>4.8</td>
<td>6.3</td>
</tr>
<tr>
<td>BB/BLZ10</td>
<td>8.0</td>
<td>10.0</td>
</tr>
<tr>
<td>BB/BLZ25</td>
<td>19.0</td>
<td>24.0</td>
</tr>
</tbody>
</table>

#### Element Nominal Dimensions:
- **BB**: 5.0” (125 mm) O.D. x 18.0” (460 mm) long
- **BL**: 5.0” (125 mm) O.D. x 36.0” (920 mm) long

### Flow Direction:
- **Outside In**

### Element Collapse Rating:
- 150 psid (10 bar)
Pressure Drop Information Based on Flow Rate and Viscosity

**Exercise:**
Determine $\Delta P_{\text{filter}}$ at 200 gpm (758 L/min) for BFT1BBZ10PY2 using 160 SUS (34 cSt) fluid.

Use the housing pressure curve to determine $\Delta P_{\text{housing}}$ at 200 gpm. In this case, $\Delta P_{\text{housing}}$ is 1.5 psi (.10 bar) on the graph for the BFT housing.

Use the element pressure curve to determine $\Delta P_{\text{element}}$ at 200 gpm. In this case, $\Delta P_{\text{element}}$ is 6 psi (.41 bar) according to the graph for the BBZ10 element.

Because the viscosity in this sample is 160 SUS (34 cSt), we determine the Viscosity Factor ($V_f$) by dividing the Operating Fluid Viscosity with the Standard Viscosity of 150 SUS (32 cSt). To best determine your Operating Fluid Viscosity, please reference the chart in Appendix D.

Finally, the overall filter pressure differential, $\Delta P_{\text{filter}}$, is calculated by adding $\Delta P_{\text{housing}}$ with the true element pressure differential, $(\Delta P_{\text{element}} \times V_f)$. The $\Delta P_{\text{element}}$ from the graph has to be multiplied by the viscosity factor to get the true pressure differential across the element.

**Solution:**

$\Delta P_{\text{housing}} = 1.5 \text{ psi } .10 \text{ bar}$  
$\Delta P_{\text{element}} = 6 \text{ psi } .41 \text{ bar}$

$V_f = 160 \text{ SUS (34 cSt)} / 150 \text{ SUS (32 cSt)} = 1.1$

$\Delta P_{\text{filter}} = 1.5 \text{ psi } + (6 \text{ psi } \times 1.1) = 8.1 \text{ psi}$

OR

$\Delta P_{\text{filter}} = .10 \text{ bar } + ( .41 \text{ bar } \times 1.1) = .55 \text{ bar}$
## Tank-Mounted Filter

**How to Build a Valid Model Number for a Schroeder KF3:**

<table>
<thead>
<tr>
<th>Filter Series</th>
<th>Number of Elements</th>
<th>Element Size and Media</th>
<th>Seal Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>BFT</td>
<td>1</td>
<td>BB Length = 3 µ E media (cellulose)</td>
<td>Omit = Buna N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>BL Length = 10 µ E media (cellulose)</td>
<td>H = EPR</td>
</tr>
<tr>
<td></td>
<td></td>
<td>BB25 = 25 µ E media (cellulose)</td>
<td>= Anodized</td>
</tr>
<tr>
<td></td>
<td></td>
<td>BB1 = BL1 = 1 µ Excellement® Z-Media® (synthetic)</td>
<td>W = Aluminum Parts</td>
</tr>
<tr>
<td></td>
<td></td>
<td>BB2 = BL2 = 3 µ Excellement® Z-Media® (synthetic)</td>
<td>H.5 = Skydrol® compatibility</td>
</tr>
<tr>
<td></td>
<td></td>
<td>BB5 = BL5 = 5 µ Excellement® Z-Media® (synthetic)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>BB10 = BL10 = 10 µ Excellement® Z-Media® (synthetic)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>BBZ25 = BLZ25 = 25 µ Excellement® Z-Media® (synthetic)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>BBDZ1 = BB size DirtCatcher® 1 µ Excellement® Z-Media®</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>BBDZ3 = BB size DirtCatcher® 3 µ Excellement® Z-Media®</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>BBDZ5 = BB size DirtCatcher® 5 µ Excellement® Z-Media®</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>BBDZ10 = BB size DirtCatcher® 10 µ Excellement® Z-Media®</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>BBDZ25 = BB size DirtCatcher® 25 µ Excellement® Z-Media®</td>
<td></td>
</tr>
</tbody>
</table>

**BOX 5**

**Porting**
- P = 2½" NPTF
- PP = Dual 2½" NPTF
- S = SAE-32
- SS = Dual SAE-32
- F = 2½" SAE 4-bolt flange Code 61
- FF = Dual 2½" SAE 4-bolt flange Code 61

**BOX 6**

**Bypass Setting**
- Omit = 25 psi cracking
- 40 = 40 psi cracking

**BOX 7**

**Outlet Porting**
- Omit = 3" NPT male
- T = 13" Tube extension

**BOX 8**

**Optional Check Valve**
- Omit = None
- C = Check valve

**BOX 9**

**Dirt Alarm® Options**
- Omit = None
- Y2 = Back-mounted tri-color gauge
- Y2R = Back-mounted gauge mounted on opposite side of standard location
- ES = Electric switch
- ESR = Electric switch mounted on opposite side of standard location
- ES1 = Heavy-duty electric switch with conduit connector
- ES1R = Heavy-duty electric switch with conduit connector mounted on opposite side of standard location

**BOX 10**

**Additional Options**
- Omit = None
- G547 = Two ½" gauge ports
- G1476 = Three-terminal electric switch
- M = Metric thread for SAE 4-bolt flange mounting holes (specify after each port designation)
- 40 = 40 psi bypass setting

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**NOTES:**

Box 3. Replacement element part numbers are identical to contents of Boxes 3 and 4. E media elements are only available with Buna N seals.

Box 4. For options H, W, and H.5 all aluminum parts are anodized. H.5 seal designation includes the following: EPR seals, stainless steel wire mesh on elements, and light oil coating on housing exterior. Skydrol® is a registered trademark of Solutia Inc.

Box 8. See also “Accessories for Tank-Mounted Filters,” page 307.