Section 4:
up to 1500 psi
### Medium Pressure Filters Selection Guide

#### Medium Pressure Filters (up to 1500 psi)

<table>
<thead>
<tr>
<th>Top-Ported Medium Pressure Return Line Filters</th>
<th>Pressure psi (bar)</th>
<th>Flow gpm (L/min)</th>
<th>Element Length/Size</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GH</strong></td>
<td>725 (50)</td>
<td>35 (130)</td>
<td>6G, 9G</td>
<td>161</td>
</tr>
<tr>
<td><strong>RLT</strong></td>
<td>1400 (97)</td>
<td>70 (265)</td>
<td>9V, 14V</td>
<td>167</td>
</tr>
<tr>
<td><strong>KF5</strong></td>
<td>500 (35)</td>
<td>100 (380)</td>
<td>K</td>
<td>171</td>
</tr>
<tr>
<td><strong>SRLT</strong></td>
<td>1400 (100)</td>
<td>25 (100)</td>
<td>6R</td>
<td>175</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Base-Ported Medium Pressure Filters</th>
<th>Pressure psi (bar)</th>
<th>Flow gpm (L/min)</th>
<th>Element Length/Size</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>K9</strong></td>
<td>900 (60)</td>
<td>100 (380)</td>
<td>K, KK, 27K</td>
<td>179</td>
</tr>
<tr>
<td><strong>2K9</strong></td>
<td>900 (60)</td>
<td>100 (380)</td>
<td>K, KK, 27K</td>
<td>183</td>
</tr>
<tr>
<td><strong>3K9</strong></td>
<td>900 (60)</td>
<td>100 (380)</td>
<td>K, KK, 27K</td>
<td>183</td>
</tr>
<tr>
<td><strong>QF5</strong></td>
<td>500 (35)</td>
<td>300 (1135)</td>
<td>16Q, 16QCLQF, 16QPML, 39Q, 39QCLQF, 39QPML</td>
<td>187</td>
</tr>
<tr>
<td><strong>QF5i</strong></td>
<td>500 (35)</td>
<td>120 (454)</td>
<td>16QCLQF, 39QCLQF</td>
<td>191</td>
</tr>
<tr>
<td><strong>2QF5</strong></td>
<td>500 (35)</td>
<td>300 (1135)</td>
<td>16Q, 16QCLQF, 16QPML, 39Q, 39QCLQF, 39QPML</td>
<td>195</td>
</tr>
<tr>
<td><strong>3QF5</strong></td>
<td>500 (35)</td>
<td>300 (1135)</td>
<td>16Q, 16QCLQF, 16QPML, 39Q, 39QCLQF, 39QPML</td>
<td>195</td>
</tr>
<tr>
<td><strong>QFD5</strong></td>
<td>500 (35)</td>
<td>350 (1325)</td>
<td>16Q, 16QCLQF, 16QPML, 39Q, 39QCLQF, 39QPML</td>
<td>199</td>
</tr>
<tr>
<td><strong>QF15</strong></td>
<td>1500 (100)</td>
<td>450 (1700)</td>
<td>16Q, 16QCLQF, 16QPML, 39Q, 39QCLQF, 39QPML</td>
<td>203</td>
</tr>
<tr>
<td><strong>QLF15</strong></td>
<td>1500 (100)</td>
<td>500 (1900)</td>
<td>16Q, 16QCLQF, 16QPML, 39Q, 39QCLQF, 39QPML</td>
<td>207</td>
</tr>
<tr>
<td><strong>SSQLF15</strong></td>
<td>1500 (100)</td>
<td>500 (1900)</td>
<td>16Q, 16QPML, 39Q, 39QPML</td>
<td>211</td>
</tr>
</tbody>
</table>
HydraSPIN Filter Series

Features and Benefits

- Variety of differential indicator port options (visual and electrical indicators)
- Leak proof bar indicator, rugged visual indicator with protective aluminum shield is standard
- Proprietary bowl to element seal - minimizes potential leakage point by use of one seal on element
- Cartridge style element (non spin-on) that is proprietary and patented with integrated bypass valve features
- Wide variety of media grades that can be application specific
- Light weight variety of media grades that can be choice specific
- Mounting interchangeability with competitor’s filter head
- The inherent capability to pre-print the perforated outer element wrap provides a branding solution that helps to capture after-market replacement element sales

- GH6 – Bolt up cartridge element replacement for the Donaldson DURAMAX HMK04 w/ 5.9” Spin-On Can
- GH9 – Bolt up cartridge element replacement for the Donaldson DURAMAX HMK04 w/ 9.4” Spin-On Can
- GH11 – Bolt up cartridge element replacement for the Donaldson DURAMAX HMK05 w/ 11.6” Spin-On Can
- GH14 – Bolt up cartridge element replacement for the Donaldson DURAMAX HMK05 w/ 14.3” Spin-On Can
- Same day shipment model available (GH6 & GH9)

Part of Schroeder Industries Energy Savings Initiative

<table>
<thead>
<tr>
<th>Flow Rating: (150 SUS (32 cSt) fluids)</th>
<th>GH6</th>
<th>GH9</th>
<th>GH11</th>
<th>GH14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. Operating Pressure:</td>
<td>725 psi (50 bar)</td>
<td>725 psi (50 bar)</td>
<td>500 psi (35 bar)</td>
<td>500 psi (35 bar)</td>
</tr>
<tr>
<td>Min. Yield Pressure:</td>
<td>2600 psi (179 bar)</td>
<td>2600 psi (179 bar)</td>
<td>2700 psi (186 bar)</td>
<td>2700 psi (186 bar)</td>
</tr>
<tr>
<td>Rated Fatigue Pressure:</td>
<td>725 psi (50 bar)</td>
<td>725 psi (50 bar)</td>
<td>500 psi (35 bar)</td>
<td>500 psi (35 bar)</td>
</tr>
<tr>
<td>Temp. Range:</td>
<td>-20°F to 225°F (-29°C to 107°C)</td>
<td>-20°F to 225°F (-29°C to 107°C)</td>
<td>-22°F to 212°F (-30°C to 100°C)</td>
<td>-22°F to 212°F (-30°C to 100°C)</td>
</tr>
<tr>
<td>Bypass Setting:</td>
<td>25 psi (1.7 bar) standard 50 psi (3.5 bar) optional Non-Bypassing</td>
<td>25 psi (1.7 bar) standard 50 psi (3.5 bar) optional Non-Bypassing</td>
<td>43 psi (3 bar) standard 87 psi (6 bar) optional Non-Bypassing</td>
<td>43 psi (3 bar) standard 87 psi (6 bar) optional Non-Bypassing</td>
</tr>
<tr>
<td>Porting Head:</td>
<td>Cast Aluminum</td>
<td>Cast Aluminum</td>
<td>Cast Aluminum</td>
<td>Cast Aluminum</td>
</tr>
<tr>
<td>Element Case:</td>
<td>Aluminum</td>
<td>Aluminum</td>
<td>Aluminum</td>
<td>Aluminum</td>
</tr>
<tr>
<td>Weight:</td>
<td>3.2 lbs (1.4 kg)</td>
<td>3.8 lbs (1.7 kg)</td>
<td>8.0 lbs (3.6 kg)</td>
<td>10.0 lbs (4.5 kg)</td>
</tr>
<tr>
<td>Element Change Clearance:</td>
<td>2” (50 mm)</td>
<td>2” (50 mm)</td>
<td>7.4” (187 mm)</td>
<td>7.4” (187 mm)</td>
</tr>
</tbody>
</table>

Type Fluid | Appropriate Schroeder Media
---|---
Petroleum Based Fluids | All media (synthetic) and H media (Hydraspin)
HydraSPIN Filter Series

Dimensions (GH6 & GH9)

Element Performance Information & Dirt Holding Capacity

<table>
<thead>
<tr>
<th>Media Type</th>
<th>Element</th>
<th>Filtration Ratio Per ISO 4572/NFPA T3.10.8.8</th>
<th>Filtration Ratio per ISO 16889</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Using automated particle counter (APC) calibrated per ISO 4402</td>
<td>Using APC calibrated per ISO 11171</td>
</tr>
<tr>
<td>Resin Impregnated Cellulose Media</td>
<td>6G3/9G3</td>
<td>$\beta_x \geq 75$</td>
<td>$\beta_x \geq 100$</td>
</tr>
<tr>
<td></td>
<td>6G10/9G10</td>
<td>6.8</td>
<td>7.5</td>
</tr>
<tr>
<td>Traditional Excellement® Z-Media®</td>
<td>6GZ3 / 9GZ3</td>
<td>15.5</td>
<td>16.2</td>
</tr>
<tr>
<td></td>
<td>6GZ5 / 9GZ5</td>
<td>&lt;1.0</td>
<td>&lt;1.0</td>
</tr>
<tr>
<td></td>
<td>6GZ10 / 9GZ10</td>
<td>2.5</td>
<td>3.0</td>
</tr>
<tr>
<td></td>
<td>6GZ25 / 9GZ25</td>
<td>7.4</td>
<td>8.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>18.0</td>
<td>20.0</td>
</tr>
<tr>
<td>Hydraspin H Media, designed to specifically reduce filter pressure drop</td>
<td>6GH10/9GH10</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Media Type</th>
<th>Element</th>
<th>DHC (gm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resin Impregnated Cellulose Media</td>
<td>6G3/9G3</td>
<td>18/30</td>
</tr>
<tr>
<td></td>
<td>6G10/9G10</td>
<td>15/25</td>
</tr>
<tr>
<td>Traditional Excellement® Z-Media®</td>
<td>6GZ3 / 9GZ3</td>
<td>30/51</td>
</tr>
<tr>
<td></td>
<td>6GZ5 / 9GZ5</td>
<td>24.5/42</td>
</tr>
<tr>
<td></td>
<td>6GZ10 / 9GZ10</td>
<td>31/49</td>
</tr>
<tr>
<td></td>
<td>6GZ25 / 9GZ25</td>
<td>34/58</td>
</tr>
<tr>
<td>Hydraspin H Media, designed to specifically reduce filter pressure drop</td>
<td>6GH10/9GH10</td>
<td>12/20</td>
</tr>
</tbody>
</table>

Element Collapse Rating: 250 psid (17.2 bar) for standard and non-bypassing elements

Flow Direction: Outside In

Element Nominal: 6G: 3.25" (82 mm) O.D. x 5.7" (144 mm) long
Dimensions: 9G: 3.25" (82 mm) O.D. x 9.0" (229 mm) long
**HydraSPIN Filter Series**

**Dimensions (GH11 & GH14)**

Metric dimensions in ( ).

<table>
<thead>
<tr>
<th>Media Type</th>
<th>Element</th>
<th>$\beta_x \geq 75$</th>
<th>$\beta_x \geq 100$</th>
<th>$\beta_x \geq 200$</th>
<th>$\beta_x(c) \geq 200$</th>
<th>$\beta_x(c) \geq 1000$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional</td>
<td>11GZ3/14GZ3</td>
<td>&lt;1.0</td>
<td>&lt;1.0</td>
<td>&lt;2.0</td>
<td>&lt;4.0</td>
<td>4.8</td>
</tr>
<tr>
<td>Excellement®</td>
<td>11GZ5/14GZ5</td>
<td>2.5</td>
<td>3.0</td>
<td>4.0</td>
<td>4.8</td>
<td>6.3</td>
</tr>
<tr>
<td>Z-Media®</td>
<td>11GZ10/14GZ10</td>
<td>7.4</td>
<td>8.2</td>
<td>10.0</td>
<td>8.0</td>
<td>10.0</td>
</tr>
<tr>
<td></td>
<td>11GZ25/14GZ25</td>
<td>18.0</td>
<td>20.0</td>
<td>22.5</td>
<td>19.0</td>
<td>24.0</td>
</tr>
</tbody>
</table>

**Filtration Ratio per ISO 4572/NFPA T3.10.8.8**

Using automated particle counter (APC) calibrated per ISO 4402

**Filtration Ratio per ISO 16889**

Using APC calibrated per ISO 11171

<table>
<thead>
<tr>
<th>Media Type</th>
<th>Element</th>
<th>DHC (gm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional</td>
<td>11GZ3/14GZ3</td>
<td>53/75</td>
</tr>
<tr>
<td>Excellement®</td>
<td>11GZ5/14GZ5</td>
<td>75/105</td>
</tr>
<tr>
<td>Z-Media®</td>
<td>11GZ10/14GZ10</td>
<td>60/84</td>
</tr>
<tr>
<td></td>
<td>11GZ25/14GZ25</td>
<td>61/85</td>
</tr>
</tbody>
</table>

Element Collapse Rating: 290 psid (17.2 bar) for standard and non-bypassing elements

Flow Direction: Outside In

Element Nominal
- 11G: 3.7" (94 mm) O.D. x 7.6" (193 mm) long
- Dimensions: 14G: 3.7" (94 mm) O.D. x 11.1" (282 mm) long
HydraSPIN Filter Series

Pressure Drop Information (GH6 & GH9)
Based on Flow Rate and Viscosity

\[ \Delta P_{housing} \]

GH \( \Delta P_{housing} \) for fluids with sp gr (specific gravity) = 0.86:

\[ \Delta P_{element} \]

6GZ
Element Pressure Drop versus Flow Rate at 32 cSt (150 SUS)

\[ \Delta P_{filter} = \Delta P_{housing} + (\Delta P_{element} \times V_f) \]

Exercise:

Determine \( \Delta P_{filter} \) at 15 gpm (57 L/min) for GH6G10S12L using 160 SUS (34 cSt) fluid.

Use the housing pressure curve to determine \( \Delta P_{housing} \) at 15 gpm. In this case, \( \Delta P_{housing} \) is 1.5 psi (0.10 bar) on the graph for the GH housing.

Use the element pressure curve to determine \( \Delta P_{element} \) at 15 gpm. In this case, \( \Delta P_{element} \) is 4 psi (0.27 bar) according to the graph for the 6G10 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, \( \Delta P_{filter} \), is calculated by adding \( \Delta P_{housing} \) with the true element pressure differential, \( (\Delta P_{element} \times V_f) \). The \( \Delta P_{element} \) from the graph has to be multiplied by the viscosity factor to get the true pressure differential across the element.

Solution:

\[ \Delta P_{housing} = 1.5 \text{ psi} \ (0.10 \text{ bar}) \ |
\Delta P_{element} = 4 \text{ psi} \ (0.27 \text{ bar}) \]

\[ V_f = \frac{160 \text{ SUS (34 cSt)}}{150 \text{ SUS (32 cSt)}} = 1.1 \]

\[ \Delta P_{filter} = 1.5 \text{ psi} + (4 \text{ psi} \times 1.1) = 5.9 \text{ psi} \]

OR

\[ \Delta P_{filter} = 0.10 \text{ bar} + (0.27 \text{ bar} \times 1.1) = 0.40 \text{ bar} \]
**Exercise:**

Determine $\Delta P_{\text{filter}}$ at 60 gpm (227.4 L/min) for GH11GZ10S24VA using 160 SUS (34 cSt) fluid.

Use the housing pressure curve to determine $\Delta P_{\text{housing}}$ at 60 gpm. In this case, $\Delta P_{\text{housing}}$ is 3 psi (0.21 bar) on the graph for the GH housing.

Use the element pressure curve to determine $\Delta P_{\text{element}}$ at 60 gpm. In this case, $\Delta P_{\text{element}}$ is 5 psi (0.34 bar) according to the graph for the 11GZ10 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:**

$\Delta P_{\text{housing}} = 3 \text{ psi} \ [0.21 \text{ bar}] \ |
\Delta P_{\text{element}} = 5 \text{ psi} \ [0.34 \text{ bar}]$

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

$\Delta P_{\text{filter}} = 3 \text{ psi} \ + \ (5 \text{ psi} \ * \ 1.1) = 8.5 \text{ psi}$

OR

$\Delta P_{\text{filter}} = 0.21 \text{ bar} \ + \ (0.34 \text{ bar} \ * \ 1.1) = 0.58 \text{ bar}$
# HydraSPIN Filter Series

## Filter Model Number Selection (GH6 & GH9)

**How to Build a Valid Model Number for a Schroeder GH6/GH9:**

<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>GH</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Example:** NOTE: One option per box

GH 6 GZ10 S16 L = GH6GZ10S16L

<table>
<thead>
<tr>
<th>Filter Series</th>
<th>Element Length (in)</th>
<th>Element Part Number</th>
<th>Bypass Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>GH</td>
<td>6</td>
<td>G3 = 3 µ E media (cellulose)</td>
<td>Omit = 25 psid</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>G10 = 10 µ E media (cellulose)</td>
<td>50 = 50 psid</td>
</tr>
<tr>
<td></td>
<td></td>
<td>G25 = 25 µ E media (cellulose)</td>
<td>N = Non-bypassing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>GZ3 = 3 µ Excellement® Z-Media® (synthetic)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>GZ5 = 5 µ Excellement® Z-Media® (synthetic)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>GZ10 = 10 µ Excellement® Z-Media® (synthetic)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>GZ25 = 25 µ Excellement® Z-Media® (synthetic)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>GH10 = 10 µ Excellement® Hydraspin media</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Element Seal Material</th>
<th>Inlet Port</th>
<th>Dirt Alarm® Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Omit = Buna N</td>
<td>S12 = SAE-12</td>
<td>Omit = None</td>
</tr>
<tr>
<td></td>
<td>S16 = SAE-16</td>
<td>L = Bar indicator, left side std</td>
</tr>
<tr>
<td></td>
<td>B12 = ISO 228 G-1/4&quot;</td>
<td>R = Bar indicator, right side std</td>
</tr>
<tr>
<td></td>
<td>B16 = ISO 228 G-1&quot;</td>
<td>B = Bar indicators, left and right side</td>
</tr>
<tr>
<td></td>
<td></td>
<td>VA = Visual pop-up w/auto reset</td>
</tr>
<tr>
<td></td>
<td></td>
<td>VM = Visual pop-up w/manual reset</td>
</tr>
</tbody>
</table>

Box 2. Replacement element part numbers are a combination of Boxes 2, 3 and 4. Replacement elements contain bypass. For 50 psid setting or non-bypassing version, element part number includes suffix. Examples: 11GZ1050, 14GZ10N.

Box 7. VA and VM indicators are available with 50 psid bypass element only.

## Filter Model Number Selection (GH11 & GH14)

**How to Build a Valid Model Number for a Schroeder GH11/GH14:**

<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>GH</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Example:** NOTE: One option per box

GH 11 GZ10 87 S24 VA = GH11GZ1087S24VA

<table>
<thead>
<tr>
<th>Filter Series</th>
<th>Element Length (in)</th>
<th>Element Part Number</th>
<th>Bypass Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>GH</td>
<td>11</td>
<td>GZ3 = 3 µ Excellement® Z-Media® (synthetic)</td>
<td>Omit = 47 psid</td>
</tr>
<tr>
<td></td>
<td>14</td>
<td>GZ5 = 5 µ Excellement® Z-Media® (synthetic)</td>
<td>87 = 87 psid</td>
</tr>
<tr>
<td></td>
<td></td>
<td>GZ10 = 10 µ Excellement® Z-Media® (synthetic)</td>
<td>N = Non-bypassing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>GZ25 = 25 µ Excellement® Z-Media® (synthetic)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Element Seal Material</th>
<th>Inlet Port</th>
<th>Dirt Alarm® Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Omit = Buna N</td>
<td>B24 = ISO 228 G-11/2&quot;</td>
<td>Omit = None</td>
</tr>
<tr>
<td>V = Viton</td>
<td>S24 = SAE 24 Straight Thread Ports</td>
<td>VA = Visual pop-up w/auto reset</td>
</tr>
<tr>
<td></td>
<td></td>
<td>VM = Visual pop-up w/manual reset</td>
</tr>
<tr>
<td></td>
<td></td>
<td>VF = Visual analog</td>
</tr>
<tr>
<td></td>
<td></td>
<td>EC = Electrical switch - SPDT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ED = Electrical switch and LED light - SPDT</td>
</tr>
</tbody>
</table>

NOTES:

Box 2. Replacement element part numbers are a combination of Boxes 2, 3 and 4. Replacement elements contain bypass. For 50 psid setting or non-bypassing version, element part number includes suffix. Examples: 11GZ1050, 14GZ10N.

Box 7. VA and VM indicators are available with 50 psid bypass element only.
Medium Pressure Filter

### Features and Benefits

- Durable, compact design
- Quick and easy cartridge element changeouts
- Available in 9" and 14" element lengths
- Lightweight at 8 pounds
- Offered in pipe, SAE straight thread, flange and ISO 228 porting
- Available with NPTF inlet and outlet female test ports
- Various Dirt Alarm® options
- Same day shipment model available

### Filter Housing Specifications

<table>
<thead>
<tr>
<th>Fluid Compatibility</th>
<th>Features and Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Flow Rating</strong></td>
<td>Up to 70 gpm (265 L/min) for 150 SUS (32 cSt) fluids for P20, S20, &amp; B20 porting</td>
</tr>
<tr>
<td>Max. Operating Pressure:</td>
<td>1400 psi (97 bar)</td>
</tr>
<tr>
<td>Min. Yield Pressure:</td>
<td>4200 psi (290 bar), per NFPA T2.6.1</td>
</tr>
<tr>
<td>Rated Fatigue Pressure:</td>
<td>415 psi (29 bar), per NFPA T2.6.1-R1-2005</td>
</tr>
<tr>
<td>Temp. Range:</td>
<td>-20°F to 225°F (-29°C to 107°C)</td>
</tr>
<tr>
<td>Bypass Setting:</td>
<td>Cracking: 40 psi (2.8 bar) for all porting</td>
</tr>
<tr>
<td></td>
<td>Full Flow: 57 psi (3.9 bar) for P20 &amp; S20 porting</td>
</tr>
<tr>
<td></td>
<td>Full Flow: 75 psi (5.2 bar) for P16, S16, F16 &amp; F20 porting</td>
</tr>
<tr>
<td>Porting Head:</td>
<td>Aluminum</td>
</tr>
<tr>
<td>Element Case:</td>
<td>Aluminum</td>
</tr>
<tr>
<td>Weight of RLT-9V:</td>
<td>6.7 lbs. (3.0 kg)</td>
</tr>
<tr>
<td>Weight of RLT-14V:</td>
<td>8.0 lbs. (3.6 kg)</td>
</tr>
<tr>
<td>Element Change Clearance:</td>
<td>9V &amp; 14V: 2.75&quot; (70 mm)</td>
</tr>
</tbody>
</table>

### 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 (EPR seals and stainless steel wire mesh in element, and light oil coating on housing exterior)</td>
</tr>
</tbody>
</table>
### Medium Pressure Filter

<table>
<thead>
<tr>
<th>Element</th>
<th>Performance Information &amp; Dirt Holding Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Filtration Ratio Per ISO 4572/NFPA T3.10.8.8 Using automated particle counter (APC) calibrated per ISO 4402</td>
</tr>
<tr>
<td>9VZ1/14VZ1</td>
<td>$\theta_x \geq 75$</td>
</tr>
<tr>
<td>9VZ3/14VZ3</td>
<td>$&lt;1.0$</td>
</tr>
<tr>
<td>9VZ5/14VZ5</td>
<td>$2.5$</td>
</tr>
<tr>
<td>9VZ10/14VZ10</td>
<td>$7.4$</td>
</tr>
<tr>
<td>9VZ25/14VZ25</td>
<td>$18.0$</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Element</th>
<th>DHC (gm)</th>
<th>Element</th>
<th>DHC (gm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>9VZ1</td>
<td>55</td>
<td>14VZ1</td>
<td>102</td>
</tr>
<tr>
<td>9VZ3</td>
<td>57</td>
<td>14VZ3</td>
<td>105</td>
</tr>
<tr>
<td>9VZ5</td>
<td>62</td>
<td>14VZ5</td>
<td>115</td>
</tr>
<tr>
<td>9VZ10</td>
<td>52</td>
<td>14VZ10</td>
<td>104</td>
</tr>
<tr>
<td>9VZ25</td>
<td>48</td>
<td>14VZ25</td>
<td>94</td>
</tr>
</tbody>
</table>

**Element Collapse Rating:**
- 150 psid (10 bar) for medium pressure filter (9VZ5 and 14VZ5)
- 500 psid (34.5 bar) for hydrostatic high collapse (9VZ5 and 14VZ5) version

**Flow Direction:** Outside In

**Element Nominal Dimensions:**
- 9V: 3.0" (75 mm) O.D. x 9.5" (240 mm) long
- 14V: 3.0" (75 mm) O.D. x 14.5" (370 mm) long

---

Metric dimensions in ().
Dimensions shown are inches (millimeters) for general information and overall envelope size only.
For complete dimensions please contact Schroeder Industries to request a certified print.
Pressure Drop Information
Based on Flow Rate and Viscosity

\[ \Delta P_{\text{housing}} \]

RLT \( \Delta P_{\text{housing}} \) for fluids with sp gr (specific gravity) = 0.86:

\[ \Delta P_{\text{filter}} = \Delta P_{\text{housing}} + (\Delta P_{\text{element}} \times V_f) \]

Exercise:
Determine \( \Delta P_{\text{filter}} \) at 40 gpm (151.6 L/min) for RLT9VZ10S20D5 using 175 SUS (37.2 cSt) fluid.

Use the housing pressure curve to determine \( \Delta P_{\text{housing}} \) at 40 gpm. In this case, \( \Delta P_{\text{housing}} \) is 4.5 psi (.31 bar) on the graph for the RLT housing.

Use the element pressure curve to determine \( \Delta P_{\text{element}} \) at 40 gpm. In this case, \( \Delta P_{\text{element}} \) is 6 psi (.415 bar) according to the graph for the 9VZ10 element.

Because the viscosity in this sample is 175 SUS (37.2 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:
\( \Delta P_{\text{housing}} = 4.5 \text{ psi (.31 bar)} \) \( \Delta P_{\text{element}} = 4 \text{ psi (.27 bar)} \)

\( V_f = 175 \text{ SUS (37.2 cSt)} / 150 \text{ SUS (32 cSt)} = 1.2 \)
\( \Delta P_{\text{filter}} = 4.5 \text{ psi} + (4 \text{ psi} \times 1.2) = 9.3 \text{ psi} \)

OR
\( \Delta P_{\text{filter}} = 0.31 \text{ bar} + (0.27 \text{ bar} \times 1.2) = 0.63 \text{ bar} \)

<table>
<thead>
<tr>
<th>Ele.</th>
<th>( \Delta P )</th>
<th>Ele.</th>
<th>( \Delta P )</th>
</tr>
</thead>
<tbody>
<tr>
<td>9V3</td>
<td>0.32</td>
<td>14V3</td>
<td>0.19</td>
</tr>
<tr>
<td>9V10</td>
<td>0.24</td>
<td>14V10</td>
<td>0.15</td>
</tr>
</tbody>
</table>
### Medium Pressure Filter

#### How to Build a Valid Model Number for a Schroeder RLT:

<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>
<th>BOX 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>RLT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Example:** ONE option per box

<table>
<thead>
<tr>
<th>BOX 1</th>
<th>BOX 2</th>
<th>BOX 3</th>
<th>BOX 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>RLT</td>
<td>9</td>
<td>VZ10</td>
<td>S20</td>
</tr>
</tbody>
</table>

= RLT9VZ10S20

- **Filter Series**
  - RLT
  - RLTN (Non-bypassing; requires V52 high collapse elements)
  - WRTL (Water)

- **Element Size and Media**
  - VZ1 = V size 1 µm Excellement® Z-Media® (synthetic)
  - VZ3 = V size 3 µm Excellement® Z-Media® (synthetic)
  - VZ5 = V size 5 µm Excellement® Z-Media® (synthetic)
  - VZ10 = V size 10 µm Excellement® Z-Media® (synthetic)
  - VZ25 = V size 25 µm Excellement® Z-Media® (synthetic)
  - VW = V size W media (water removal)
  - V5Z3 = V size 3 µm Excellement® media, 500 psid collapse
  - V5Z5 = V size 5 µm Excellement® media, 500 psid collapse
  - V5Z10 = V size 10 µm Excellement® media, 500 psid collapse
  - V5Z25 = V size 25 µm Excellement® media, 500 psid collapse

- **Water Service Element Options**
  - VM60 = V size 60 µm media (reusable metal)
  - VM150 = V size 150 µm media (reusable metal)
  - VM260 = V size 260 µm media (reusable metal)

- **Seal Material**
  - Omit = Buna N
  - H = EPR
  - V = Viton®
  - H.S = Skyrad®

- **Compatibility**

#### NOTES:

- **Box 2**: Replacement element part numbers are a combination of Boxes 2, 3, and 4. Example: 9VZ10

- **Box 3**: E media elements are only available with Buna N seals. V5Z10 and V5Z25 are only available with RLTN 918.

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

- **Box 5**: B porting supplied with metric mounting holes.

- **Box 6**: When X is paired with a standard filter series, a standard bushing and spring plate will be used.
### Features and Benefits
- Meets HF4 automotive standard
- Offered in pipe, SAE straight thread, flange and ISO 228 porting
- Available with NPTF inlet and outlet female test ports
- KFN5 non-bypass version with high collapse elements also available
- Various Dirt Alarm® options
- Allows consolidation of inventoried replacement elements by using K-size elements
- Also available with DirtCatcher® elements (KD & KKD)
- Available with quality-protected GeoSeal® Elements (GKF5)

### 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), Z-Media® and ASP® media (synthetic)</td>
</tr>
<tr>
<td>High Water Content</td>
<td>All Z-Media® (synthetic), 3, 5 and 10 µ ASP® media (synthetic)</td>
</tr>
<tr>
<td>Invert Emulsions</td>
<td>10 and 25 µ Z-Media® (synthetic), 10 µ ASP® media (synthetic)</td>
</tr>
<tr>
<td>Water Glycols</td>
<td>3, 5, 10 and 25 µ Z-Media® (synthetic), 3, 5 and 10 µ ASP® media (synthetic)</td>
</tr>
<tr>
<td>Phosphate Esters</td>
<td>All Z-Media® (synthetic) with H (EPR) seal designation and 3 and 10 µ E media (cellulose) with H (EPR) seal designation, 3, 5 and 10 µ ASP® media (synthetic)</td>
</tr>
<tr>
<td>Skydrol®</td>
<td>3, 5, 10 and 25 µ Z-Media® (synthetic) with H.5 seal designation (EPR seals &amp; stainless steel wire mesh in element, and light oil coating on housing exterior), 3, 5 and 10 µ ASP® media (synthetic)</td>
</tr>
</tbody>
</table>

### Filter Housing Specifications
- Flow Rating: Up to 100 gpm (380 L/min) for 150 SUS (32 cSt) fluids
- Max. Operating Pressure: 500 psi (35 bar)
- Min. Yield Pressure: 1500 psi (100 bar), per NFPA T2.6.1
- Rated Fatigue Pressure: 300 psi (35 bar), per NFPA T2.6.1-2005
- Temp. Range: -20°F to 225°F (-29°C to 107°C)
- Bypass Setting: Cracking: 40 psi (2.8 bar), Full Flow: 61 psi (4.2 bar)
- Porting Head: Grey Cast Iron
- Element Case: Steel
- Weight of KF5-1K: 23.2 lbs. (10.5 kg)
- Element Change Clearance: 2.0” (51 mm)
Medium Pressure Filter

Element Collapse Rating: 150 psid (10 bar) for standard elements
Flow Direction: Outside In
Element Nominal Dimensions: 3.9" (99 mm) O.D. x 9.0" (230 mm) long

| Element | Filtration Ratio Per ISO 4572/NFPA T3.10.8.8
Using automated particle counter (APC) calibrated per ISO 4402 | Filtration Ratio per ISO 16889
Using APC calibrated per ISO 11171 |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>KZ1</td>
<td>$\beta_x \geq 75$</td>
<td>$\beta_x \geq 100$</td>
</tr>
<tr>
<td>KZ3</td>
<td>$\leq 1.0$</td>
<td>$\leq 1.0$</td>
</tr>
<tr>
<td>KZ5</td>
<td>$\leq 2.5$</td>
<td>$\leq 3.0$</td>
</tr>
<tr>
<td>KZ10</td>
<td>$\leq 7.4$</td>
<td>$\leq 8.2$</td>
</tr>
<tr>
<td>KZ25</td>
<td>$\leq 18.0$</td>
<td>$\leq 20.0$</td>
</tr>
<tr>
<td>KZW1</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>KZW3</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>KZW5</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>KZW10</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>KZW25</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Element</th>
<th>DHC (gm)</th>
<th>Element</th>
<th>DHC (gm)</th>
<th>Element</th>
<th>DHC (gm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>KZ1</td>
<td>112</td>
<td>KZW1</td>
<td>61</td>
<td>KDZ1</td>
<td>89</td>
</tr>
<tr>
<td>KZ3/KAS3</td>
<td>115</td>
<td>KZW3</td>
<td>64</td>
<td>KDZ3</td>
<td>71</td>
</tr>
<tr>
<td>KZ5/KAS5</td>
<td>119</td>
<td>KZW5</td>
<td>63</td>
<td>KDZ5</td>
<td>100</td>
</tr>
<tr>
<td>KZ10/KAS10</td>
<td>108</td>
<td>KZW10</td>
<td>67</td>
<td>KDZ10</td>
<td>80</td>
</tr>
<tr>
<td>KZ25</td>
<td>93</td>
<td>KZW25</td>
<td>79</td>
<td>KDZ25</td>
<td>81</td>
</tr>
</tbody>
</table>

Filtration Ratio Per ISO 4572/NFPA T3.10.8.8
Using automated particle counter (APC) calibrated per ISO 4402
Filtration Ratio per ISO 16889
Using APC calibrated per ISO 11171

<table>
<thead>
<tr>
<th>Element</th>
<th>DHC (gm)</th>
<th>Element</th>
<th>DHC (gm)</th>
<th>Element</th>
<th>DHC (gm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>KZ1</td>
<td>112</td>
<td>KZW1</td>
<td>61</td>
<td>KDZ1</td>
<td>89</td>
</tr>
<tr>
<td>KZ3/KAS3</td>
<td>115</td>
<td>KZW3</td>
<td>64</td>
<td>KDZ3</td>
<td>71</td>
</tr>
<tr>
<td>KZ5/KAS5</td>
<td>119</td>
<td>KZW5</td>
<td>63</td>
<td>KDZ5</td>
<td>100</td>
</tr>
<tr>
<td>KZ10/KAS10</td>
<td>108</td>
<td>KZW10</td>
<td>67</td>
<td>KDZ10</td>
<td>80</td>
</tr>
<tr>
<td>KZ25</td>
<td>93</td>
<td>KZW25</td>
<td>79</td>
<td>KDZ25</td>
<td>81</td>
</tr>
</tbody>
</table>
**Exercise:**

Determine $\Delta P_{\text{filter}}$ at 50 gpm (189.5 L/min) for KF51KZ10S24D5 using 200 SUS (42.6 cSt) fluid.

Use the housing pressure curve to determine $\Delta P_{\text{housing}}$ at 50 gpm. In this case, $\Delta P_{\text{housing}}$ is 3 psi (.21 bar) on the graph for the KF5 housing.

Use the element pressure curve to determine $\Delta P_{\text{element}}$ at 50 gpm. In this case, $\Delta P_{\text{element}}$ is 2 psi (.14 bar) according to the graph for the KZ10 element.

Because the viscosity in this sample is 200 SUS (42.6 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:**

$\Delta P_{\text{housing}} = 3 \text{ psi} \times .21 \text{ bar}$ | $\Delta P_{\text{element}} = 2 \text{ psi} \times .14 \text{ bar}$

$V_f = 200 \text{ SUS (42.6 cSt)} / 150 \text{ SUS (32 cSt)} = 1.3$

$\Delta P_{\text{filter}} = 3 \text{ psi} + (2 \text{ psi} \times 1.3) = 5.6 \text{ psi}$

OR

$\Delta P_{\text{filter}} = .21 \text{ bar} + (.14 \text{ bar} \times 1.3) = .40 \text{ bar}$

Note:

If your element is not graphed, use the following equation:

$\Delta P_{\text{element}} = \text{Flow Rate} \times \Delta P_f$

Plug this variable into the overall pressure drop equation.
# Medium Pressure Filter

## How to Build a Valid Model Number for a Schroeder KF5:

<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>
<th>BOX 8</th>
<th>BOX 9</th>
<th>BOX 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>KF5</td>
<td>K</td>
<td>Z</td>
<td>P32</td>
<td>D5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Example:** NOTE: One option per box

Example: KF51KZ10P32D5

### Filter Series
- **KF5**
- **KFNS** (Non-bypass; req. ZW/XX for high collapse elements)
- **WKF5** (Water)
- **WKFN5** (Water)
- **GKF5** (GeoSeal)

### Media Type
- **Media Type**
  - Omit = E media (Cellulose)
  - AS = Anti-Static Pleated media
  - Z = Excellement® Z-Media® (Synthetic)
  - ZW = Aqua-Excellement® 2W media
  - ZX = Excellement® Z-Media® (High Collapse Centertube)
  - W = Water Removal media
  - M = M media (Reusable Metal)
  - MXX = M media (Reusable metal mesh; high collapse centertube)
  - DZ = DirtCatcher® Excellement® Z-Media®

### Micron Rating
- **1 = 1 μ** (Z, ZW and DZ media)
- **3 = 3 μ** (E, AS, Z, ZW and DZ media)
- **5 = 5 μ** (E, AS, Z, ZW and DZ media)
- **10 = 10 μ** (E, AS, Z, ZW, ZX and DZ media)
- **25 = 25 μ** (E, AS, Z, ZW, ZX, M and DZ media)
- **60 = 60 μ** (M media)

### Media Type Options
- **P24 = 1½” NPTF**
- **P32 = 2” NPTF**
- **S24 = SAE-24**
- **S32 = SAE-32**
- **F24 = 1½” SAE split 4-bolt flange Code 61**
- **B24 = ISO 228 G-1½”**

### Test Port Options
- **Test Port Options**
  - Omit = None
  - L = Two ¼” NPTF inlet and outlet female test ports

### Test Port Options
- **Box 9**
  - **Test Port Options**
    - Omit = None
    - L = Two ¼” NPTF inlet and outlet female test ports

### Test Port Options
- **Box 10**
  - **Dirt Alarm® Options**
    - Omit = None
    - D = Pointer
    - D5 = Visual pop-up

### Test Port Options
- **Box 11**
  - **Electrical**
    - MSS = Electrical w/ 12 in. 18 gauge 4-conductor cable
    - MSSLC = 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
    - MS16LC = Low current MS16
    - MS17 = Electrical w/ weather-packed sealed connector
    - MS17LC = Electrical w/ 4 pin Brad Harrison male connector

### Test Port Options
- **Electrical with Thermal Lockout**
  - MS5 = Electrical w/ thermal lockout
  - MS5LC = Low current MS5
  - MS10 = Electrical w/ thermal lockout
  - MS10LC = Low current MS10
  - MS12 = Electrical w/ thermal lockout
  - MS12LC = Low current MS12
  - MS16 = Electrical w/ thermal lockout
  - MS16LC = Low current MS16
  - MS17 = Electrical w/ thermal lockout
  - MS17LC = Low current MS17

### Test Port Options
- **Electrical Visual**
  - MS = Cam operated switch w/ ½” conduit female connection
  - MS13 = Supplied w/ threaded connector & light
  - MS14 = Supplied w/ 5 pin Brad Harrison connector & light (male end)

### Test Port Options
- **Electrical Visual with Thermal Lockout**
  - MS13 = Electrical w/ thermal lockout
  - MS13LC = Low current MS13DCT
  - MS14 = Electrical w/ thermal lockout
  - MS14DCT = Low current MS14DCT

---

**NOTES:**
- Box 2. Replacement element part numbers are a combination of Boxes 2, 3, 4 and 5. Example: KZ10V
- High collapse media only available with KFNS.
- Box 5. For options H, V, 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. Viton® is a registered trademark of DuPont Dow Elastomers. Skydrol® is a registered trademark of Soluta Inc.
- Box 7. B porting supplied with metric mounting holes.
Medium Pressure Filter

Features and Benefits
- Smaller, compact version of the RLT
- Quick and easy cartridge element changeouts
- Lightweight at 3 pounds
- Offered in pipe, SAE straight thread and ISO 228 porting
- Available with NPTF inlet and outlet female test ports
- Various Dirt Alarm® options
- Same day shipment model available

Flow Rating: Up to 25 gpm (100 L/min) for 150 SUS (32 cSt) fluids
Max. Operating Pressure: 1400 psi (100 bar)
Min. Yield Pressure: 4000 psi (276 bar), per NFPA T2.6.1
Rated Fatigue Pressure: 750 psi (52 bar) per NFPA T2.6.1-R1-2005
Temp. Range: -20°F to 225°F (-29°C to 107°C)
Bypass Setting: Cracking: 40 psi (2.8 bar)
               Full Flow: 55 psi (3.8 bar)
Porting Head: Aluminum
Element Case: Aluminum
Weight of SRLT-6R: 3.0 lbs. (1.4 kg)
Weight of SRLT-12R: 4.5 lbs. (2 kg)
Element Change Clearance: 2.75" (70 mm)

Type Fluid | Appropriate Schroeder Media
---|---
Petroleum Based Fluids | All E media (cellulose) and Z-Media® (synthetic)
High Water Content | All Z-Media® (synthetic)
Invert Emulsions | 10 and 25 µ Z-Media® (synthetic)
Water Glycols | 3, 5, 10 and 25 µ Z-Media® (synthetic)
Phosphate Esters | All Z-Media® (synthetic) with H (EPR) seal designation
Skydrol® | 3, 5, 10 and 25 µ Z-Media® (synthetic) with H.5 seal designation (EPR seals and stainless steel wire mesh in element, and light oil coating on housing exterior)

Model No. of filter in photograph is SRLT6RZ10S12D5.
**Filtration Ratio Per ISO 4572/NFPA T3.10.8.8**

Using automated particle counter (APC) calibrated per ISO 4402

**Filtration Ratio per ISO 16889**

Using APC calibrated per ISO 11171

<table>
<thead>
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<th>$\beta_x \geq 100$</th>
<th>$\beta_x \geq 200$</th>
<th>$\beta_{x(c)} \geq 200$</th>
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<td>6RZ1</td>
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<tr>
<td>6RZ5</td>
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<td>6RZ10</td>
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<td>19.0</td>
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</tbody>
</table>

**Element DHC (gm)**

<table>
<thead>
<tr>
<th>Element</th>
<th>DHC (gm)</th>
<th>Element</th>
<th>DHC (gm)</th>
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<tr>
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<td>6RZ3</td>
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<td>12RZ3</td>
<td>30</td>
</tr>
<tr>
<td>6RZ5</td>
<td>17</td>
<td>12RZ5</td>
<td>34</td>
</tr>
<tr>
<td>6RZ10</td>
<td>14</td>
<td>12RZ10</td>
<td>28</td>
</tr>
<tr>
<td>6RZ25</td>
<td>25</td>
<td>12RZ25</td>
<td>50</td>
</tr>
</tbody>
</table>

**Element Collapse Rating:** 150 psid (10 bar)

**Flow Direction:** Outside In

**Element Nominal Dimensions:** 2.0" (50 mm) O.D. x 6.0" (150 mm) long

Metric dimensions in ( ).
Dimensions shown are inches (millimeters) for general information and overall envelope size only.
For complete dimensions please contact Schroeder Industries to request a certified print.

**Medium Pressure Filter**

**Element Performance Information & Dirt Holding Capacity**

**Optional Dirt Alarm or Electric Switch**

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Depth</th>
<th>Diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>6R = 0.089 (39)</td>
<td>12R = 0.153 (32) (389)</td>
<td></td>
</tr>
</tbody>
</table>

**Bowl Installation Torque = 40 FT-LBS.**
ΔP_{housing}

SRLT ΔP_{housing} for fluids with sp gr (specific gravity) = 0.86:

ΔP_{filter} = ΔP_{housing} + (ΔP_{element} * V_f)

Exercise:
Determine ΔP_{filter} at 15 gpm (57 L/min) for SRLT6RZ10S12D5 using 100 SUS (21.3 cSt) fluid.

Use the housing pressure curve to determine ΔP_{housing} at 15 gpm. In this case, ΔP_{housing} is 5 psi (.34 bar) on the graph for the SRLT housing.

Use the element pressure curve to determine ΔP_{element} at 15 gpm. In this case, ΔP_{element} is 7 psi (.48 bar) according to the graph for the 6RZ10 element.

Because the viscosity in this sample is 100 SUS (21.3 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, ΔP_{filter}, is calculated by adding ΔP_{housing} with the true element pressure differential, (ΔP_{element} * V_f). The ΔP_{element} from the graph has to be multiplied by the viscosity factor to get the true pressure differential across the element.

Solution:
ΔP_{housing} = 5 psi (.34 bar) | ΔP_{element} = 7 psi (.48 bar)

V_f = 100 SUS (21.3 cSt) / 150 SUS (32 cSt) = .67
ΔP_{filter} = 5 psi + (7 psi * .67) = 9.7 psi
OR
ΔP_{filter} = .34 bar + (.48 bar * .67) = .66 bar
How to Build a Valid Model Number for a Schroeder SRLT:

<table>
<thead>
<tr>
<th>Filter Model Number Selection</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOX 1</td>
</tr>
<tr>
<td>SRLT</td>
</tr>
</tbody>
</table>

Example: NOTE: One option per box

| BOX 1 | BOX 2 | BOX 3 | BOX 4 | BOX 5 | BOX 6 | BOX 7 | BOX 8 |
| SRLT | 6 | RZ10 | S12 | D5 |

BOX 1

- **Filter Series**
  - SRLT (requires RZ elements only)
  - SRLTN (Non-bypassing requires RS2 elements only)

BOX 2

- **Length of Element (in)**
  - RZ1 = R size 1 µ Eoxellement® Z-Media® (synthetic)
  - RZ3 = R size 3 µ Eoxellement® Z-Media® (synthetic)
  - RZ5 = R size 5 µ Eoxellement® Z-Media® (synthetic)
  - RZ10 = R size 10 µ Eoxellement® Z-Media® (synthetic)
  - RW = R size W media (water removal)
  - RS21 = R size 1 µ Eoxellement® Z-Media® 500 psid collapse
  - RS23 = R size 3 µ Eoxellement® Z-Media® 500 psid collapse
  - RS25 = R size 5 µ Eoxellement® Z-Media® 500 psid collapse
  - RS225 = R size 25 µ Eoxellement® Z-Media® 500 psid collapse

BOX 3

- **Element Size and Media**
  - RV = R size V media (water removal)
  - RS5 = R size 5 µ Eoxellement® Z-Media® 500 psid collapse
  - RS5L = R size 5 µ Eoxellement® Z-Media® 500 psid collapse
  - RS5LC = Low current RS5

BOX 4

- **Seal Material**
  - Omit = Buna N
  - H = EPR
  - V = Vitol®
  - H.5 = Skydrol® Compatibility

BOX 5

- **Porting**
  - P12 = ½” NPTF
  - S12 = SAE-12
  - B12 = ISO 228 G-¾*

BOX 6

- **Bypass**
  - Omit = 40 psi bypass setting
  - 30 = 30 psi bypass setting
  - 50 = 50 psi bypass setting
  - 60 = 60 psi bypass setting

BOX 7

- **Test Points**
  - Omit = None
  - L = Two ¼” NPTF inlet and outlet female test ports

BOX 8

- **Dirt Alarm® Options**
  - Omit = None
  - Visual: D5 = Visual pop-up
  - Visual with Thermal Lockout: D8 = Visual w/ thermal lockout

- **Electrical with Thermal Lockout**
  - MS5 = Electrical w/ 12 in. 18 gauge 4-conductor cable
  - MS5LC = Low current MS5
  - 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)
  - MS16 = Electrical w/ weather packed sealed connector
  - MS16LC = Low current MS16
  - MS17 = Electrical w/ 4 pin Brad Harrison male connector
  - MS17LC = Low current MS17

- **Electrical Visual with Thermal Lockout**
  - MS13 = Supplied w/ threaded connector & light
  - MS14 = Supplied w/ 5 pin Brad Harrison connector & light (male end)

- **Electrical with Thermal Lockout**
  - MS13T = Low current MS13T
  - 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

**NOTES:**

- Box 2. Replacement element part numbers are a combination of Boxes 2, 3, and 4. Example: 6R3V
- Box 3. E media elements are only available with Buna N seals.
- Box 4. For options H, V, 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. Viton® is a registered trademark of DuPont Dow Elastomers. Skydrol® is a registered trademark of Solutia Inc.
- Box 5. B porting option supplied with metric mounting holes.
Medium Pressure Filter

**K9**

**Features and Benefits (K9)**
- Extremely versatile multiple inlet and outlet ports; can be used alone or in series with another K9
- Top loading for easy access for element change-out
- Allows consolidation of inventoried replacement elements by using K-size elements
- Multiple inlet and outlet porting options reduce the need for additional adaptors on installation
- Can be fitted with test ports for oil sampling
- Small profile allows filter to be mounted in tight areas
- Various Dirt Alarm® options
- Meets HF4 automotive standard

**Flow Rating:** Up to 100 gpm (380 L/min) for 150 SUS (32 cSt) fluids
**Max. Operating Pressure:** 900 psi (60 bar)
**Min. Yield Pressure:** 3200 psi (220 bar), per NFPA T2.6.1
**Rated Fatigue Pressure:** 750 psi (52 bar) per NFPA T2.6.1-R1-2005
**Temp. Range:** -20°F to 225°F (-29°C to 107°C)
**Bypass Setting:**
  - Cracking: 40 psi (2.8 bar)
  - Full Flow: 80 psi (5.5 bar)
**Porting Head & Cap:** Cast Aluminum
**Element Case:** Steel
**Weight of K9-1K:** 19 lbs. (8.6 kg)
**Weight of K9-2K:** 30 lbs. (13.6 kg)
**Weight of K9-3K:** 41 lbs. (18.6 kg)
**Element Change Clearance:** 8.50” (215 mm) for 1K; 17.50” (445 mm) for KK; 26.5” (673 mm) for 27K

**Filter Housing Specifications**

<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), Z-Media® and ASP® media (synthetic)</td>
</tr>
<tr>
<td>High Water Content</td>
<td>All Z-Media® (synthetic), 3, 5 and 10 µ ASP® media (synthetic)</td>
</tr>
<tr>
<td>Invert Emulsions</td>
<td>10 and 25 µ Z-Media® (synthetic), 10 µ ASP® media (synthetic)</td>
</tr>
<tr>
<td>Water Glycols</td>
<td>3, 5, 10 and 25 µ Z-Media® (synthetic), 3, 5 and 10 µ ASP® media (synthetic)</td>
</tr>
<tr>
<td>Phosphate Esters</td>
<td>All Z-Media® (synthetic) with H (EPR) seal designation and 3 and 10 µ E media (cellulose) with H (EPR) seal designation, 3, 5 and 10 µ ASP® media (synthetic)</td>
</tr>
<tr>
<td>Skydrol®</td>
<td>3, 5, 10 and 25 µ Z-Media® (synthetic) with H.5 seal designation (EPR seals and stainless steel wire mesh in element, and light oil coating on housing exterior), 3, 5 and 10 µ ASP® Media (synthetic)</td>
</tr>
</tbody>
</table>

Part of Schroeder Industries Energy Savings Initiative

Model No. of filter in photograph is K91KZ5BP20NP20NDSC.
### Medium Pressure Filter

#### Element Performance Information & Dirt Holding Capacity

<table>
<thead>
<tr>
<th>Element</th>
<th>Filtration Ratio Per ISO 4572/NFPA T3.10.8.8</th>
<th>Filtration Ratio per 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>KZ1/KKZ1/27KZ1</td>
<td>$\beta_x \geq 75$ $\beta_x \geq 100$ $\beta_x \geq 200$</td>
<td>$\beta_x(c) \geq 1000$</td>
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<td>KZ3/KAS3/KKZ3</td>
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<td>$&lt;4.0$</td>
</tr>
<tr>
<td>KZ5/KAS5/KKZ5</td>
<td>2.5 3.0 4.0</td>
<td>4.8 6.3</td>
</tr>
<tr>
<td>KZ10/KAS10/KKZ10</td>
<td>7.4 8.2 10.0</td>
<td>8.0 10.0</td>
</tr>
<tr>
<td>KZ25/KKZ25/27KZ25</td>
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<td>19.0 24.0</td>
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<td>$&lt;4.0$</td>
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<td>4.0 4.8</td>
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<tr>
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<td>5.1 6.4</td>
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<td>KZW25/KKZW25</td>
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<td>15.4 18.5</td>
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#### Dirt Holding Capacity

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<th>Element</th>
<th>DHC (gm)</th>
<th>Element</th>
<th>DHC (gm)</th>
<th>Element</th>
<th>DHC (gm)</th>
<th>Element</th>
<th>DHC (gm)</th>
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<th>DHC (gm)</th>
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<tbody>
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<td>KZW25</td>
<td>79</td>
<td>KKZW25</td>
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</tr>
</tbody>
</table>

Element Collapse Rating: 150 psid (10 bar) for standard elements

Flow Direction: Outside In

Element Nominal Dimensions:
- K: 3.9" (99 mm) O.D. x 9.0" (230 mm) long
- KK: 3.9" (99 mm) O.D. x 18.0" (460 mm) long
- 27K: 3.9" (99 mm) O.D. x 27.0" (690 mm) long

Dimensions shown are inches (millimeters) for general information and overall envelope size only. For complete dimensions please contact Schroeder Industries to request a certified print.

For standard elements, this filter is available in additional porting options not explicitly shown here. Contact factory for details.
Exercise:
Determine $\Delta P_{\text{filter}}$ at 50 gpm (189.5 L/min) for K91KZ10BP16NP16ND5 using 160 SUS (34 cSt) fluid.

Use the housing pressure curve to determine $\Delta P_{\text{housing}}$ at 50 gpm. In this case, $\Delta P_{\text{housing}}$ is 8 psi (.55 bar) on the graph for the K9 housing.

Use the element pressure curve to determine $\Delta P_{\text{element}}$ at 50 gpm. In this case, $\Delta P_{\text{element}}$ is 2 psi (.14 bar) according to the graph for the KZ10 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, $(\Delta P_{\text{element}} * V_f)$. 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:
$\Delta P_{\text{housing}} = 8 \text{ psi} [.55 \text{ bar}]$ | $\Delta P_{\text{element}} = 2 \text{ psi} [.14 \text{ bar}]$

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

$\Delta P_{\text{filter}} = 8 \text{ psi} + (2 \text{ psi} * 1.1) = 10.2 \text{ psi}$

OR

$\Delta P_{\text{filter}} = .55 \text{ bar} + (.14 \text{ bar} * 1.1) = .70 \text{ bar}$
Medium Pressure Filter

How to Build a Valid Model Number for a Schroeder K9:

**BOX 1** BOX 2  BOX 3  BOX 4  BOX 5  BOX 6  BOX 7  BOX 8  BOX 9

**K9**

**Example:** NOTED: One option per box

<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>
<th>BOX 8</th>
<th>BOX 9</th>
</tr>
</thead>
<tbody>
<tr>
<td>K9</td>
<td>1K</td>
<td>Z</td>
<td>10</td>
<td>P16</td>
<td>P16</td>
<td>N</td>
<td>0</td>
<td>D5</td>
</tr>
</tbody>
</table>

= K91KZ10BP16NP16ND5

**Box 1**: Double and triple stacking of K-size elements can be replaced by KK and 2KK elements, respectively. Number of elements must equal 1 when using KK or 2KK elements. Replacement element part numbers are identical to contents of Boxes 2, 3, 4, and 5.

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

**Box 7**: When X is paired with a standard filter series, a standard bushing and spring plate will be used.

**Box 9**: If location 1 is used as inlet port, dirt alarm will occupy location 2. If location 2 is used as inlet port, dirt alarm will occupy location 1. If dual inlet ports are specified, the only dirt alarm option is pop-up indicator in cap (DSC).

### NOTES:

- Box 2: Double and triple stacking of K-size elements can be replaced by KK and 2KK elements, respectively. Number of elements must equal 1 when using KK or 2KK elements. Replacement element part numbers are identical to contents of Boxes 2, 3, 4, and 5.

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

- Box 7: When X is paired with a standard filter series, a standard bushing and spring plate will be used.

- Box 9: If location 1 is used as inlet port, dirt alarm will occupy location 2. If location 2 is used as inlet port, dirt alarm will occupy location 1. If dual inlet ports are specified, the only dirt alarm option is pop-up indicator in cap (DSC).
Single Pass Filter Kit

Features and Benefits

- Two or three patented pending K9 filters supplied in series as a single filter assembly providing in-line single pass particulate and water filtration
- Meets HF4 automotive standard
- 900 psi rating covers almost all transfer line pressure specs including air driven transfer systems
- Top loading for easy access for element change out
- Allows consolidation of inventoried elements by using K-size elements
- Can be fitted with test points for oil sampling

Model No. of filters in photograph are 3K9127EDB8P20P20UUD5C and Custom 2K9.

Flow Rating: Up to 100 gpm (380 L/min) for 150 SUS (32 cSt) fluids
Max. Operating Pressure: 900 psi (60 bar)
Min. Yield Pressure: 3200 psi (220 bar), per NFPA T2.6.1
Rated Fatigue Pressure: 750 psi (52 bar) per NFPA T2.6.1-R1-2005
Temp. Range: -20°F to 225°F (-29°C to 107°C)
Bypass Setting: Cracking: 40 psi (2.8 bar) each filter housing
Porting Base & Cap: Cast Aluminum
Element Case: Steel
Element Change Clearance: 8.50" (215 mm) for 1K; 17.5" (445 mm) for KK; 26.5" (673 mm) for 27K

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 Z-Media® and ASP® media (synthetic)</td>
</tr>
<tr>
<td>High Water Content</td>
<td>All Z-Media® and ASP® media (synthetic)</td>
</tr>
<tr>
<td>Invert Emulsions</td>
<td>10 and 25 µ Z-Media® and 10 µ ASP® media (synthetic)</td>
</tr>
<tr>
<td>Water Glycols</td>
<td>3, 5, 10 and 25 µ Z-Media®, 3, 5 and 10 µ ASP® media (synthetic)</td>
</tr>
<tr>
<td>Phosphate Esters</td>
<td>All Z-Media® (synthetic) with H (EPR) seal designation and 3 and 10 µ E media (cellulose) 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 (EPR seals and stainless steel wire mesh in element, and light oil coating on housing exterior), 3, 5 and 10 µ ASP® Media (synthetic)</td>
</tr>
</tbody>
</table>
Single Pass Filter Kit

Element Performance Information & Dirt Holding Capacity

<table>
<thead>
<tr>
<th>Element</th>
<th>Performance Information &amp; Dirt Holding Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>KZ1/KKZ1/27KZ1</td>
<td>B_1_0 ≥ 75</td>
</tr>
<tr>
<td>KZ3/KKZ3/27KZ3</td>
<td>B_1_0 ≥ 100</td>
</tr>
<tr>
<td>KZ5/KKZ5/27KZ5</td>
<td>B_1_0 ≥ 200</td>
</tr>
<tr>
<td>KZ10/KKZ10/27KZ10</td>
<td>B_1_0(c) ≥ 200</td>
</tr>
<tr>
<td>KZ25/KKZ25/27KZ25</td>
<td>B_1_0(c) ≥ 1000</td>
</tr>
<tr>
<td>KZW1</td>
<td>N/A</td>
</tr>
<tr>
<td>KZW3/KKZW3</td>
<td>N/A</td>
</tr>
<tr>
<td>KZW5/KKZW5</td>
<td>N/A</td>
</tr>
<tr>
<td>KZW10/KKZW10</td>
<td>N/A</td>
</tr>
<tr>
<td>KZW25/KKZW25</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Element Collapse Rating: 150 psid (10 bar) for standard elements

Flow Direction: Outside In

Element Nominal Dimensions:
- K: 3.9" (99 mm) O.D. x 9.0" (230 mm) long
- KK: 3.9" (99 mm) O.D. x 18.0" (460 mm) long
- 27K: 3.9" (99 mm) O.D. x 27.0" (690 mm) long
**Exercise:**

Determine $\Delta P_{filter}$ at 50 gpm (189.5 L/min) for 2K9109DBBP16P16D5 using 160 SUS (34 cSt) fluid.

Use the housing pressure curve to determine $\Delta P_{housing}$ at 50 gpm. In this case, $\Delta P_{housing}$ is 16 psi (1.1 bar) according to the graph for the 2K9 housing.

Use the element pressure curve to determine $\Delta P_{element}$ at 50 gpm for the first element. In this case, $\Delta P_{element}$ is 2 psi (.14 bar) according to the graph for the KZ10 element.

Use the element pressure curve to determine $\Delta P_{element}$ at 50 gpm for the first element. In this case, $\Delta P_{element}$ is 5 psi (.34 bar) according to the graph for the KZ3 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, $\Delta P_{filter}$, is calculated by adding $\Delta P_{housing}$ with the true element pressure differential, $(\Delta P_{element} \times V_f)$. The $\Delta P_{element}$ from the graph has to be multiplied by the viscosity factor to get the true pressure differential across the element.

**Solution:**

$\Delta P_{housing} = 16 \text{ psi } (1.1 \text{ bar})$ | $\Delta P_{element} = 2 \text{ psi } (.14 \text{ bar})$ | $\Delta P_{element} = 5 \text{ psi } (.34 \text{ bar})$

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

$\Delta P_{filter} = 16 \text{ psi} + (2 \text{ psi } \times 1.1) + (5 \text{ psi } \times 1.1) = 23.7 \text{ psi}$

OR

$\Delta P_{filter} = 1.1 \text{ bar} + (.14 \text{ bar } \times 1.1) + (.34 \text{ bar } \times 1.1) = 1.6 \text{ bar}$
## Single Pass Filter Kit

### How to Build a Valid Model Number for a Schroeder 2K9:

<table>
<thead>
<tr>
<th>Filter</th>
<th>Number of Elements</th>
<th>Length of Elements</th>
<th>First Housing Element Micron Rating</th>
<th>Second Housing Element Micron Rating</th>
<th>Third Housing</th>
</tr>
</thead>
</table>

### Replacement Element Part Numbers

- K-Size Elements: Use K9 numbers.
- KK Size Elements: Use 2K9 numbers.
- ZW Size Elements: Use 3K9 numbers.

### NOTES:

- Box 2: Double and triple stacking of K-size elements can be replaced by KK and 27K elements, respectively. Number of elements must equal 1 when using KK or 27K elements. ZW media not available in 27K length.
- Box 4 & 5: Replacement element part numbers are identical to K9 replacement parts. Please reference page 184.
- Box 6: For options H, V, and H.S, all aluminum parts are anodized. H.S seal designation includes the following: EPR seals, stainless steel wire mesh on elements, and light oil coating on housing exterior. Viton® is a registered trademark of DuPont Dow Elastomers. Skydrol® is a registered trademark of Solutia Inc.
- Box 12: Option UU not available in combination with indicator in block.

### Test Points

<table>
<thead>
<tr>
<th>Test Points</th>
<th>Omit = None</th>
<th>U = Test point in cap (upstream and downstream)</th>
<th>UU = Test points in block (upstream and downstream)</th>
</tr>
</thead>
</table>

### Dirt Alarm® Options

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visual</td>
<td>Test Point in Cap</td>
</tr>
<tr>
<td>Visual with Thermal Lockout</td>
<td>Test Point in Cap</td>
</tr>
<tr>
<td>Electrical</td>
<td>Test Point in Cap</td>
</tr>
<tr>
<td>Electrical with Thermal Lockout</td>
<td>Test Point in Cap</td>
</tr>
<tr>
<td>Electrical Visual</td>
<td>Test Point in Cap</td>
</tr>
</tbody>
</table>

### Dirt Alarm® Options

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visual</td>
<td>Test Point in Cap</td>
</tr>
<tr>
<td>Visual with Thermal Lockout</td>
<td>Test Point in Cap</td>
</tr>
</tbody>
</table>

### Bypass

<table>
<thead>
<tr>
<th>PSI</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>30 psi bypass</td>
</tr>
<tr>
<td>50</td>
<td>50 psi bypass</td>
</tr>
</tbody>
</table>

### Test Points

<table>
<thead>
<tr>
<th>Test Points</th>
<th>Omit = None</th>
<th>U = Test point in cap (upstream and downstream)</th>
<th>UU = Test points in block (upstream and downstream)</th>
</tr>
</thead>
</table>

**Example:**

<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>
<th>Box 8</th>
<th>Box 9</th>
<th>Box 10</th>
<th>Box 11</th>
<th>Box 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>2K9</td>
<td>1</td>
<td>09</td>
<td>D</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>P16</td>
<td>P16</td>
<td>D5</td>
<td></td>
<td>= 2K9109DBBB16P16D5</td>
</tr>
</tbody>
</table>

**Note:** One option per box.
In-Line Filter

Features and Benefits
- Element changeout from the top minimizes oil spillage
- Available with optional core assembly to accommodate coreless elements
- Offered with standard Q, QPML deep-pleated and QCLQF coreless elements in 16” and 39” lengths with standard Viton® seals
- Offered in pipe, SAE straight thread, and flange porting
- Optional inlet and outlet test points
- WQF5 model for water service also available
- Various Dirt Alarm® options

Type Fluid | Appropriate Schroeder Media
--- | ---
Petroleum Based Fluids | All Z-Media® and ASP® media (synthetic)
High Water Content | All Z-Media® and ASP® media (synthetic)
Invert Emulsions | 10 and 25 μ Z-Media® and 10 μ ASP® media (synthetic)
Water Glycols | 3, 5, 10 and 25 μ Z-Media® and all ASP® Media (synthetic)
Phosphate Esters | All Z-Media® (synthetic) with H (EPR) seal designation and all ASP® media (synthetic)
Skydrol® | 3, 5, 10 and 25 μ Z-Media® (synthetic) with H.5 seal designation (EPR seals and stainless steel wire mesh in element, and light oil coating on housing exterior) and all ASP® media (synthetic)

Flow Rating: Up to 300 gpm (1135 L/min) for 150 SUS (32 cSt) fluids
Max. Operating Pressure: 500 psi (35 bar)
Min. Yield Pressure: 2500 psi (172 bar), per NFPA T2.6.1-R1-2005
Rated Fatigue Pressure: Contact Factory
Temp. Range: -20°F to 225°F (-29°C to 107°C)
Bypass Setting: Cracking: 30 psi (2.1 bar)
Full Flow: 55 psi (3.8 bar)
Porting Base: Cast Aluminum
Element Case: Steel
Cap: Ductile Iron
Weight of QF516: 85 lbs. (39 kg)
Weight of QF539: 120 lbs. (55 kg)
Element Change Clearance: 16Q 12.0” (205 mm)
39Q 33.8” (859 mm)
### 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

**Filtration Ratio per ISO 16889**
- Using APC calibrated per ISO 11171

<table>
<thead>
<tr>
<th>Element</th>
<th>DHC (gm)</th>
<th>Element</th>
<th>DHC (gm)</th>
<th>Element</th>
<th>DHC (gm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z1/CLQFZ1/PMLZ1</td>
<td>180</td>
<td>Z1/CLQFZ1/PMLZ1</td>
<td>180</td>
<td>Z1/CLQFZ1/PMLZ1</td>
<td>180</td>
</tr>
<tr>
<td>Z1/CLQFZ1/PMLZ1</td>
<td>180</td>
<td>Z1/CLQFZ1/PMLZ1</td>
<td>180</td>
<td>Z1/CLQFZ1/PMLZ1</td>
<td>180</td>
</tr>
<tr>
<td>Z10/CLQFZ10/PMLZ10</td>
<td>180</td>
<td>Z10/CLQFZ10/PMLZ10</td>
<td>180</td>
<td>Z10/CLQFZ10/PMLZ10</td>
<td>180</td>
</tr>
</tbody>
</table>

**Element Collapse Rating:** Q and QPML: 150 psid (10 bar), QCLQF: 100 psid (7 bar)

**Flow Direction:** Outside In

**Element Nominal Dimensions:**
- 16Q: 6.0” (150 mm) O.D. x 16.85” (430 mm) long
- 16QCLQF: 6.0” (150 mm) O.D. x 18.21” (463 mm) long
- 16QPML: 6.0” (150 mm) O.D. x 16.00” (405 mm) long
- 39QCLQF: 6.0” (150 mm) O.D. x 40.01” (1016 mm) long
- 39QPML: 6.0” (150 mm) O.D. x 37.80” (960 mm) long

---

**In-Line Filter**

- **Element:**
  - **DHC (gm):**
    - Z1: 276
    - Z3: 283
    - Z5: 351
    - Z10: 280
    - Z25: 254
    - Z1: 974
    - Z3: 1001
    - Z5: 954
    - Z10: 940
    - Z25: 853

- **Dimensions:**
  - **Metric dimensions in ( ).**
  - **Dimensions shown are inches (millimeters) for general information and overall envelope size only.**
  - **For complete dimensions please contact Schroeder Industries to request a certified print.**

---

**Flow Directions:**
- Outside In

**Dimensional Information:**
- **QF5:**
  - **In-Line Filter:**
    - **Dimensions:**
      - **16Q:** 6.0” (150 mm) O.D. x 16.85” (430 mm) long
      - **16QCLQF:** 6.0” (150 mm) O.D. x 18.21” (463 mm) long
      - **16QPML:** 6.0” (150 mm) O.D. x 16.00” (405 mm) long
      - **39QCLQF:** 6.0” (150 mm) O.D. x 40.01” (1016 mm) long
      - **39QPML:** 6.0” (150 mm) O.D. x 37.80” (960 mm) long

---

**Schroeder Industries**

188

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\[
\Delta P_{\text{housing}} = 189 \quad \text{for fluids with sp gr (specific gravity) = 0.86:}
\]

\[
\Delta P_{\text{filter}} = \Delta P_{\text{housing}} + (\Delta P_{\text{element}} \times V_f)
\]

**Exercise:**
Determine \(\Delta P_{\text{filter}}\) at 100 gpm (379 L/min) for QF539QZ3P32UDPG using 160 SUS (34 cSt) fluid.

Use the housing pressure curve to determine \(\Delta P_{\text{housing}}\) at 100 gpm. In this case, \(\Delta P_{\text{housing}}\) is 2 psi (.14 bar) according to the graph for the QF5 housing.

Use the element pressure curve to determine \(\Delta P_{\text{element}}\) at 100 gpm. In this case, \(\Delta P_{\text{element}}\) is 1 psi (.07 bar) according to the graph for the 39QZ3 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:**
\[
\Delta P_{\text{housing}} = 2 \text{ psi} \ (0.14 \text{ bar}) \quad \Delta P_{\text{element}} = 1 \text{ psi} \ (0.07 \text{ bar})
\]

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

\[
\Delta P_{\text{filter}} = 2 \text{ psi} + (1 \text{ psi} \times 1.1) = 3.1 \text{ psi}
\]

\[
\Delta P_{\text{filter}} = 0.14 \text{ bar} \times (0.07 \text{ bar} \times 1.1) = 0.22 \text{ bar}
\]

**Note:**
If your element is not graphed, use the following equation:

\[
\Delta P_{\text{element}} = \text{Flow Rate} \times \Delta P_f
\]

**Plug this variable into the overall pressure drop equation.**
# In-Line Filter

**Filter Model Number Selection**

<table>
<thead>
<tr>
<th>Filter Series</th>
<th>Element Length (In)</th>
<th>Element Style</th>
<th>Micron Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>QF5</td>
<td>16</td>
<td>Q</td>
<td>1 = 1 µ Z-Media*</td>
</tr>
<tr>
<td>QF5</td>
<td>39</td>
<td>Z</td>
<td>3 = 3 µ AS and Z-Media*</td>
</tr>
<tr>
<td>QF5</td>
<td>39</td>
<td>Z-Media®</td>
<td>5 = 5 µ AS and Z-Media*</td>
</tr>
<tr>
<td>QF5</td>
<td>39</td>
<td>AS</td>
<td>10 = 10 µ AS and Z-Media*</td>
</tr>
<tr>
<td>QF5</td>
<td>39</td>
<td>W</td>
<td>25 = 25 µ Z-Media*</td>
</tr>
</tbody>
</table>

**Water System Element Options**

- **QM25** = Q size 25 µ M media (resuable metal)
- **QM60** = Q size 60 µ M media (resuable metal)
- **QM150** = Q size 150 µ M media (resuable metal)

(Omit box 3 and 5 if water system element is used)

**Housing Seal Material**

- Omit = Buna N
- H = EPR
- V = Viton®

**Porting**

- **P32** = 2” NPTF
- **F32** = 2” SAE
- **P40** = 2 1/2” NPTF
- **F40** = 2 1/2” SAE
- **P48** = 3” NPTF
- **F48** = 3” SAE
- **S32** = SAE-32

**Bypass Setting**

- Omit = 30 psi cracking
- 50 = 50 psi cracking
- X = Blocked bypass

**Test Points**

- Omit = None
- U = Test point in cap (upstream)
- UU = Test points in block (upstream and downstream)

**Dirt Alarm® Options**

- None
- Visual
- Visual with Thermal Lockout
- Electrical
- Electrical with Thermal Lockout

**NOTES:**

- Box 2: Replacement element part numbers are a combination of Boxes 2, 3, 4 and 5 plus the letter V. Example: 39QZ10V
- Box 3: QCLQF are CoreCentric® coreless elements – housing includes rigid metal core. QPML are deep-pleated elements with more media and higher dirt holding capacity.
- Box 4: For option W, Box 3 must equal Q.
- Box 6: All elements for this filter are supplied with Viton® seals. Seal designation in Box 6 applies to housing only. Viton® is a registered trademark of DuPont Dow Elastomers.
- Box 8: When X is paired with a standard filter series, a standard bushing and spring plate will be used.
Cold Start Protection Inside-Out Flow Filter

**Features and Benefits (QF5i)**

- Magnetic filtration protection while filter is in cold start bypass
- Coreless QCL element with inside-out flow for eco-friendly easy disposal
- Efficient means to remove both ferromagnetic and non-ferromagnetic parts from the fluid
- Designed for inside-out flow
- Element changeout from the top minimizes oil spillage
- Offered in pipe, SAE straight thread, and flange porting
- Optional inlet and outlet test points
- Various Dirt Alarm® options

**Flow Rating:** Up to 120 gpm (454 L/min) for 150 SUS (32 cSt) fluids

<table>
<thead>
<tr>
<th>Filter Housing Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Flow Rate:</strong> 120 gpm (454 L/min)</td>
</tr>
<tr>
<td><strong>Pressure:</strong> 500 psi (35 bar)</td>
</tr>
</tbody>
</table>

| **Max. Operating Pressure:** 500 psi (35 bar) |
| **Min. Yield Pressure:** 2500 psi (172 bar), per NFPA T2.6.1-R1-2005 |

**Rated Fatigue Pressure:** Contact Factory

**Temp. Range:** -20°F to 225°F (-29°C to 107°C)

**Bypass Setting:**
- Cracking: 60 psi (4.1 bar)
- Full Flow: 95 psi (6.6 bar)

**Porting Base:** Cast Aluminum

**Element Case:** Steel

**Cap:** Ductile Iron

**Weight of QF5i16:** 85 lbs. (39 kg)

**Weight of QF5i39:** 120 lbs. (55 kg)

**Element Change Clearance:** 16QCLI 16.0" (407 mm)

**Type Fluid** | **Appropriate Schroeder Media**
---|---
Petroleum Based Fluids | All Z-Media® and ASP® media (synthetic)
High Water Content | All Z-Media® and ASP® media (synthetic)
Invert Emulsions | 10 and 25 µ Z-Media® and 10 µ ASP® media (synthetic)
Water Glycols | 3, 5, 10 and 25 µ Z-Media® and all ASP® Media (synthetic)

Model No. of filter in photograph is QF5i16QCLI10F3260M.
Element Performance Information & Dirt Holding Capacity

<table>
<thead>
<tr>
<th>Element</th>
<th>Filtration Ratio Per ISO 4572/NFPA T3.10.8.8</th>
<th>Filtration Ratio per ISO 16889</th>
<th>Dirt Holding Capacity</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>
<td>Element DHC (gm)</td>
</tr>
<tr>
<td></td>
<td>βx ≥ 75</td>
<td>βx ≥ 100</td>
<td>βx ≥ 200</td>
</tr>
<tr>
<td>CLIZ1</td>
<td>&lt;1.0</td>
<td>&lt;1.0</td>
<td>&lt;1.0</td>
</tr>
<tr>
<td>CLIZ3</td>
<td>&lt;1.0</td>
<td>&lt;1.0</td>
<td>&lt;2.0</td>
</tr>
<tr>
<td>CLIZ5</td>
<td>2.5</td>
<td>3.0</td>
<td>4.0</td>
</tr>
<tr>
<td>CLIZ10</td>
<td>7.4</td>
<td>8.2</td>
<td>10.0</td>
</tr>
<tr>
<td>CLIZ25</td>
<td>18.0</td>
<td>20.0</td>
<td>22.5</td>
</tr>
</tbody>
</table>

Flow Direction: Inside-Out

Element Nominal Dimensions: 16QCLI: 6.0” (150 mm) O.D. x 17.81” (452 mm) long

Cold Start Protection Inside-Out Flow Filter

Metric dimensions in ( ).
Exercise:
Determine \( \Delta P_{\text{filter}} \) at 120 gpm (455 L/min) for QF5i16QCLIZ3P32 using 200 SUS (44 cSt) fluid.

Use the housing pressure curve to determine \( \Delta P_{\text{housing}} \) at 120 gpm. In this case, \( \Delta P_{\text{housing}} \) is 3 psi (.21 bar) on the graph for the QF5i housing.

Use the element pressure curve to determine \( \Delta P_{\text{element}} \) at 120 gpm. In this case, \( \Delta P_{\text{element}} \) is 6 psi (.415 bar) according to the graph for the 16QCLIZ3 element.

Because the viscosity in this sample is 200 SUS (44 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, \( \Delta P_{\text{element}} \ast V_f \). 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:
\( \Delta P_{\text{housing}} = 3 \text{ psi} \) [.21 bar]  \( \Delta P_{\text{element}} = 6 \text{ psi} \) [.415 bar]

\( V_f = 200 \text{ SUS} \) (42.4 cSt) / 150 SUS (32 cSt) = 1.333

\( \Delta P_{\text{filter}} = 3 \text{ psi} + (6 \text{ psi} \ast 1.333) = 11 \text{ psi} \)

OR

\( \Delta P_{\text{filter}} = .21 \text{ bar} + (.415 \text{ bar} \ast 1.333) = .76 \text{ bar} \)
### How to Build a Valid Model Number for a Schroeder QF5i:

<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>
<th>BOX 8</th>
<th>BOX 9</th>
<th>BOX 10</th>
<th>BOX 11</th>
</tr>
</thead>
<tbody>
<tr>
<td>QF5i</td>
<td>16</td>
<td>QCLI</td>
<td>Z</td>
<td>3</td>
<td>P32</td>
<td>60</td>
<td>M</td>
<td>U</td>
<td>DPG</td>
<td>=QF5i16QCLI3-Z-P3260MUDPG</td>
</tr>
</tbody>
</table>

**Filter Series**
- QF5i

**Element Length (in)**
- 16

**Element Style**
- QCLI

**Media Type**
- Z = Excellement® Z-Media® (synthetic)

**Micron Rating**
- 1 = 1 µm Z-Media®
- 3 = 3 µm Z-Media®
- 5 = 5 µm Z-Media®
- 10 = 10 µm Z-Media®
- 25 = 25 µm Z-Media®

**Porting**
- P32 = 2" NPTF
- F32 = 2" SAE 4-bolt flange Code 61

**Bypass Setting**
- 60 = 60 psi cracking

**Magnet**
- Omit = No Magnet
- M = Magnetic Filter Rod

### Housing Seal Material
- Omit = Buna N
- V = Viton®

**Material Porting Bypass Setting**
- P32 = 2" NPTF
- F32 = 2" SAE 4-bolt flange Code 61
- F40 = 2½" NPTF
- F48 = 3" NPTF
- S32 = SAE-32

**Housing Code**
- 61

**Dirt Alarm® Options**
- Omit = None

**Electrical**
- MSS = Electrical w/ 12 in. 18 gauge 4-conductor cable
- MSSLC = 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 = MS5 (see above) w/ thermal lockout
- MS5TLC = Low current MS5T
- MS10T = MS10 (see above) w/ thermal lockout
- MS10TLC = Low current MS10T
- MS12T = MS12 (see above) w/ thermal lockout
- MS12TLC = Low current MS12T
- MS16T = MS16 (see above) w/ thermal lockout
- MS16TLC = Low current MS16T
- MS17TLC = Low current MS17T

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

**Electrical 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

**NOTES:**

- Box 2: Replacement element part numbers are a combination of Boxes 2, 3, 4 and 5 plus the letter V.
  - Example: 16QCLI3Z
- Box 6: All elements for this filter are supplied with Viton® seals. Seal designation in Box 6 applies to housing only.
  - Viton® is a registered trademark of DuPont Dow Elastomers.
In-Line Filter

**Flow Rating:** Up to 300 gpm (1135 L/min) for 150 SUS (32 cSt) fluids

**Max. Operating Pressure:** 500 psi (35 bar)

**Min. Yield Pressure:** 2500 psi (172 bar), per NFPA T2.6.1-R1-2005

**Rated Fatigue Pressure:** Contact Factory

**Temp. Range:** -20°F to 225°F (-29°C to 107°C)

**Bypass Setting:**
- Cracking: 30 psi (2.1 bar)
- Full Flow: 55 psi (3.8 bar)

**Porting Base:** Cast Aluminum

**Element Case:** Steel

**Cap:** Ductile Iron

**Element Change Clearance:** 33.8" (859 mm)

---

**Features and Benefits**

- Two or three QF5 filters supplied in series as a single filter assembly providing in-line single pass particulate and water filtration
- Element changeout from the top minimizes oil spillage
- Available with optional core assembly to accommodate coreless elements
- Offered with standard Q, QPML deep-plated and QCLQF coreless elements in 16" and 39" lengths with standard Viton® seals
- Offered in pipe, SAE straight thread, and flange porting
- Inlet and outlet test points
- Various Dirt Alarm® options

---

**Type Fluid** | **Appropriate Schroeder Media**
---|---
Petroleum Based Fluids | All Z-Media® and ASP® media (synthetic)
High Water Content | All Z-Media® and ASP® media (synthetic)
Invert Emulsions | 10 and 25 µ Z-Media® and 10 µ ASP® media (synthetic)
Water Glycols | 3, 5, 10 and 25 µ Z-Media® and all ASP® Media (synthetic)
Phosphate Esters | All Z-Media® (synthetic) with H (EPR) seal designation and all ASP® media (synthetic)
Skydrol® | 3, 5, 10 and 25 µ Z-Media® (synthetic) with H.5 seal designation (EPR seals and stainless steel wire mesh in element, and light oil coating on housing exterior) and all ASP® media (synthetic)
**In-Line Filter**

**Element Performance Information & Dirt Holding Capacity**

<table>
<thead>
<tr>
<th>Element</th>
<th>DHC (gm)</th>
<th>Element</th>
<th>DHC (gm)</th>
<th>Element</th>
<th>DHC (gm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z1</td>
<td>974</td>
<td>CLQFZ1</td>
<td>1259</td>
<td>PMLZ1</td>
<td>1485</td>
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<tr>
<td>Z3</td>
<td>1001</td>
<td>CLQFZ3</td>
<td>1293</td>
<td>PMLZ3</td>
<td>1525</td>
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<td>Z5</td>
<td>954</td>
<td>CLQFZ5</td>
<td>1302</td>
<td>PMLZ5</td>
<td>1235</td>
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<td>Z10</td>
<td>940</td>
<td>CLQFZ10</td>
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<td>PMLZ10</td>
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<tr>
<td>Z25</td>
<td>853</td>
<td>CLQFZ25</td>
<td>1102</td>
<td>PMLZ25</td>
<td>1299</td>
</tr>
</tbody>
</table>

**Filtration Ratio Per ISO 4572/NFPA T3.10.8.8**
- Using automated particle counter (APC) calibrated per ISO 4402
  - \( \beta_x \geq 75 \), \( \beta_x \geq 100 \), \( \beta_x \geq 200 \)

**Filtration Ratio per ISO 16889**
- Using APC calibrated per ISO 11171
  - \( \beta_x(c) \geq 200 \), \( \beta_x(c) \geq 1000 \)

**Element Collapse Rating:**
- Q and QPML: 150 psid (10 bar), QCLQF: 100 psid (7 bar)

**Flow Direction:**
- Outside In

**Element Nominal Dimensions:**
- 39Q: 6.0" (150 mm) O.D. x 38.70" (985 mm) long
- 39QCLQF: 6.0" (150 mm) O.D. x 40.01" (1016 mm) long
- 39QPML: 6.0" (150 mm) O.D. x 37.80" (960 mm) long

Metric dimensions in ( ).
Dimensions shown are inches (millimeters) for general information and overall envelope size only.
For complete dimensions please contact Schroeder Industries to request a certified print.
### Pressure Drop Information

Based on Flow Rate and Viscosity

#### 2QF5/3QF5

For each individual housing pressure, place the singular QF5 housing pressure curve indicated here.

### In-Line Filter

#### Element Pressure Drop versus Flow Rate at 32 cSt (150 SUS)

#### 16QCLQF

<table>
<thead>
<tr>
<th>Flow Rate [GPM]</th>
<th>0</th>
<th>5</th>
<th>10</th>
<th>25</th>
<th>50</th>
<th>75</th>
<th>100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pressure Drop [PSID]</td>
<td>0.00</td>
<td>0.10</td>
<td>0.20</td>
<td>0.30</td>
<td>0.40</td>
<td>0.50</td>
<td>0.60</td>
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</table>

#### 39QCLQF

<table>
<thead>
<tr>
<th>Flow Rate [GPM]</th>
<th>0</th>
<th>5</th>
<th>10</th>
<th>25</th>
<th>50</th>
<th>75</th>
<th>100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pressure Drop [PSID]</td>
<td>0.00</td>
<td>0.10</td>
<td>0.20</td>
<td>0.30</td>
<td>0.40</td>
<td>0.50</td>
<td>0.60</td>
</tr>
</tbody>
</table>

#### Example:

Determine $\Delta P_{\text{filter}}$ at 100 gpm (379 L/min) for 3QF5 39QEDBVP 32P3250DPG using 160 SUS (34 cSt) fluid.

1. Use the housing pressure curve to determine $\Delta P_{\text{housing}}$ at 100 gpm. In this case, $\Delta P_{\text{housing}}$ is 5.5 psi (.39 bar) on the graph for the 3QF5 housing.
2. Use the element pressure curve to determine $\Delta P_{\text{element}}$ at 100 gpm for the first element. In this case, $\Delta P_{\text{element}}$ is 1 psi (.07 bar) according to the graph for the 39QZ25 element.
3. Use the element pressure curve to determine $\Delta P_{\text{element}}$ at 100 gpm for the first element. In this case, $\Delta P_{\text{element}}$ is 1 psi (.07 bar) according to the graph for the 39QZ10 element.
4. Use the element pressure curve to determine $\Delta P_{\text{element}}$ at 100 gpm for the first element. In this case, $\Delta P_{\text{element}}$ is 1 psi (.07 bar) according to the graph for the 39QZ3 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:

$$\Delta P_{\text{filter}} = \Delta P_{\text{housing}} + (\Delta P_{\text{element}} \times V_f)$$

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

$\Delta P_{\text{filter}} = 5.5 \text{ psi} + (1 \text{ psi} \times 1.1) + (1 \text{ psi} \times 1.1) + (1 \text{ psi} \times 1.1) = 8.8 \text{ psi}$

OR

$\Delta P_{\text{filter}} = 5.5 \text{ psi} + (0.7 \text{ bar} \times 1.1) + (0.7 \text{ bar} \times 1.1) + (0.7 \text{ bar} \times 1.1) = 6.2 \text{ bar}$

Note:

If your element is not graphed, use the following equation:

$\Delta P_{\text{element}} = \text{Flow Rate} \times \Delta P_f$. Plug this variable into the overall pressure drop equation.
# In-Line Filter

## Filter Model Number Selection

### How to Build a Valid Model Number for a Schroeder 2QF5:

<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>
<th>Box 8</th>
<th>Box 9</th>
<th>Box 10</th>
<th>Box 11</th>
<th>Box 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Filter Series</td>
<td>Element Length (in)</td>
<td>Element Style</td>
<td>1st Housing Element Media</td>
<td>2nd Housing Element Media (2QF5 &amp; 3QF5)</td>
<td>3rd Housing Element Media (3QF5 only)</td>
<td></td>
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<tr>
<td>2QF5/3QF5</td>
<td>2QF5</td>
<td>3QF5</td>
<td>16</td>
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<td>QCLQF</td>
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<td>A = Z1</td>
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<td>39</td>
<td>Q</td>
<td>QPML</td>
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<td>C = Z5</td>
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<td>J = AS10</td>
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</tr>
</tbody>
</table>

### Housing Seal Material

- Omit = Buna N
- H = EPR
- V = Viton®

### “IN” Porting

- P32 = 2” NPTF
- P40 = 2½” NPTF
- P48 = 3” NPTF
- S32 = SAE-32
- F32 = 2” SAE 4-bolt flange Code 61
- F40 = 2½” SAE 4-bolt flange Code 61
- F48 = 3” SAE 4-bolt flange Code 61

### “OUT” Porting

- P32 = 2” NPTF
- P40 = 2½” NPTF
- P48 = 3” NPTF
- S32 = SAE-32
- F32 = 2” SAE 4-bolt flange Code 61
- F40 = 2½” SAE 4-bolt flange Code 61
- F48 = 3” SAE 4-bolt flange Code 61

### Bypass Setting

- Omit = 30 psi cracking
- 50 = 50 psi cracking
- X = Blocked bypass

### Test Points

- Omit = None
- U = Test point in cap (upstream)

### Dirt Alarm® Options

- None
- Visual
- Visual with Thermal Lockout
- Electrical
- Electrical with Thermal Lockout

**NOTES:**

- **Box 2.** Replacement element part numbers are a combination of Boxes 2, 3, and 4, plus the letter V. Example: 39QZ10V
- **Box 3.** QCLQF are CoreCentric® coreless elements – housing includes rigid metal core. QPML are deep-pleated elements with more media and higher dirt holding capacity.
- **Box 4.** For option F, Box 3 must equal Q.
- **Box 7.** All elements for this filter are supplied with Viton® seals. Seal designation in Box 5 applies to housing only. Viton® is a registered trademark of DuPont Dow Elastomers.
- **Box 10.** When X is paired with a standard filter series, a standard bushing and spring plate will be used.

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*SCHROEDER INDUSTRIES*
In-Line Filter

**QFD5**

**Features and Benefits**
- Duplex filter design
- Approved for API SL use
- Element changeout from the top minimizes oil spillage
- Available with optional core assembly to accommodate coreless elements
- Offered with standard Q, QPMR deep-pleated and QCLQF coreless elements in 16” and 39” lengths with Viton® seals as the standard
- Offered in 2” and 3” SAE J518 4-bolt flange Code 61 and ANSI 300# flange porting
- Integral inlet and outlet test points are standard on all models
- Various Dirt Alarm® options
- Also available in 4, 6 or 8 housing modular designs (contact factory)

**Flow Rating:**
- Up to 175 gpm (675 L/min) for 2”
- 350 gpm (1325 L/min) for 3” for 150 SUS (32 cSt) fluids

**Max. Operating Pressure:**
- 500 psi (35 bar)

**Min. Yield Pressure:**
- Contact Factory

**Temp. Range:**
- -15°F to 200°F (-26°C to 93°C)

**Bypass Setting:**
- Cracking: 30 psi (2.1 bar)
- Full Flow: 33 psi (2.3 bar) for 2”; 38 psi (2.6 bar) for 3”

**Porting Base & Cap:**
- Ductile Iron

**Element Case & Transfer Valve:**
- Steel

**Weight of QFD5-16Q:**
- 410.0 lbs. (186.0 kg) for 2”
- 455.0 lbs. (206.0 kg) for 3”

**Weight of QFD5-39Q:**
- 562.0 lbs. (255.0 kg) for 2”
- 607.0 lbs. (275.0 kg) for 3”

**Element Change Clearance:**
- 16Q 12.00” (305 mm)
- 39Q 33.80” (859 mm)

**Type Fluid**
- Petroleum Based Fluids: All E media (cellulose), Z-Media® and ASP® media (synthetic)
- High Water Content: All Z-Media® and ASP® media (synthetic)
- Invert Emulsions: 10 and 25 µ Z-Media® and 10 µ ASP® media (synthetic)
- Water Glycols: 3, 5, 10 and 25 µ Z-Media® and all ASP® media (synthetic)
- Phosphate Esters: All Z-Media® (synthetic) with H (EPR) seal designation and all ASP® media (synthetic)
**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>Performance Information &amp; Dirt Holding Capacity</th>
<th>Filtration Ratio Per ISO 4572/NFPA T3.10.8.8 Using automated particle counter (APC) calibrated per ISO 4402</th>
<th>Filtration Ratio per ISO 16889 Using APC calibrated per ISO 11171</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>$\beta_x \geq 75$ $\beta_x \geq 100$ $\beta_x \geq 200$ $\beta_x(c) \geq 200$ $\beta_x(c) \geq 1000$</td>
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</tr>
<tr>
<td>Z1</td>
<td></td>
<td>&lt;1.0 &lt;1.0 &lt;1.0 &lt;4.0 4.2</td>
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</tr>
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<td>Z5</td>
<td></td>
<td>2.5 3.0 4.0 8.0 10.0</td>
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<td>Z10</td>
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<td>7.4 8.2 10.0 8.0 10.0</td>
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</tr>
<tr>
<td>Z25</td>
<td></td>
<td>18.0 20.0 22.5 19.0 24.0</td>
<td></td>
</tr>
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<td>Z1</td>
<td></td>
<td>&lt;1.0 &lt;1.0 &lt;1.0 &lt;4.0 4.2</td>
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<td>Z10</td>
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<td>7.4 8.2 10.0 8.0 10.0</td>
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<tr>
<td>Z25</td>
<td></td>
<td>18.0 20.0 22.5 19.0 24.0</td>
<td></td>
</tr>
</tbody>
</table>

**Element Collapse Rating:**
Q and QPML: 150 psid (10 bar), QCLQF: 100 psid (7 bar)

**Flow Direction:** Outside In

**Element Nominal Dimensions:**
39Q: 6.0" (150 mm) O.D. x 38.70" (985 mm) long
39QCLQF: 6.0" (150 mm) O.D. x 40.01" (1016 mm) long
39QPML: 6.0" (150 mm) O.D. x 37.80" (960 mm) long
In-Line Filter

ΔP_housing

QFD5 ΔP_housing for fluids with sp gr (specific gravity) = 0.86:

ΔP_{filter} = \Delta P_{housing} + (\Delta P_{element} \cdot V_f)

Exercise:

Determine ΔP_{filter} at 200 gpm (758 L/min) for QFD516QZ3F48D5C using 100 SUS (21.3 cSt) fluid.

Use the housing pressure curve to determine ΔP_{housing} at 200 gpm. In this case, ΔP_{housing} is 5 psi (.34 bar) according to the graph for the QFD5 housing.

Use the element pressure curve to determine ΔP_{element} at 200 gpm. In this case, ΔP_{element} is 7 psi (.48 bar) according to the graph for the 16QCZ3 element.

Because the viscosity in this sample is 100 SUS (21.3 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, ΔP_{filter}, is calculated by adding ΔP_{housing} with the true element pressure differential, (ΔP_{element} \cdot V_f). The ΔP_{element} from the graph has to be multiplied by the viscosity factor to get the true pressure differential across the element.

Solution:

ΔP_{housing} = 5 psi (.34 bar) | ΔP_{element} = 7 psi (.48 bar)

V_f = 100 SUS (21.3 cSt) / 150 SUS (32 cSt) = .67

ΔP_{filter} = 5 psi + (7 psi \cdot .67) = 9.7 psi

OR

ΔP_{filter} = .34 bar + (.48 bar \cdot .67) = .66 bar

Note:

If your element is not graphed, use the following equation:

ΔP_{element} = \text{Flow Rate} \times \Delta P_f

Plug this variable into the overall pressure drop equation.
How to Build a Valid Model Number for a Schroeder QF5:

Box 1: Filter Series
Box 2: Element Length (in)
Box 3: Element Style
Box 4: Media Type
Box 5: Micron Rating

QFD5 16 Q Z 3 = 1 µm Z-Media®
QFD5 39 QCLQF AS = Anti-Stat Pleat media
QFD5 39 QPML W = W media (water removal)

NOTES:

Box 2. Replacement element part numbers are a combination of Boxes 2, 3, 4 and 5 plus the letter V. Example: 39QZ10V

Box 3. QCLQF are CoreCentric coreless elements – housing includes rigid metal core. QPML are deep-pleated elements with more media and higher dirt holding capacity.

Box 4. For option W, Box 3 must equal Q.

Box 6. All elements for this filter are supplied with Viton® seals. Seal designation in Box 6 applies to housing only. Viton® is a registered trademark of DuPont Dow Elastomers.

Box 8. When X is paired with a standard filter series, a standard bushing and spring plate will be used.

<table>
<thead>
<tr>
<th>Box 6</th>
<th>Box 7</th>
<th>Box 8</th>
<th>Box 9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housing Seal Material</td>
<td>Porting</td>
<td>Bypass Setting</td>
<td>Dirt Alarm® Options</td>
</tr>
<tr>
<td>Omit = Buna N</td>
<td>F32 = 2&quot; SAE 4-bolt flange Code 61</td>
<td>Omit = 30 psi cracking</td>
<td>Omit = None</td>
</tr>
<tr>
<td>V = Viton®</td>
<td>F32M = 2&quot; SAE 4-bolt flange Code 61</td>
<td>50 = 50 psi cracking</td>
<td>Visual</td>
</tr>
<tr>
<td></td>
<td>FA32 = 2&quot; ANSI 300# flange</td>
<td>X = Blocked bypass</td>
<td>DPG = Standard differential pressure gauge</td>
</tr>
<tr>
<td></td>
<td>F48 = 3&quot; SAE 4-bolt flange Code 61</td>
<td></td>
<td>D5 = Visual pop-up</td>
</tr>
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<td></td>
<td>F48M = 3&quot; SAE 4-bolt flange Code 61</td>
<td></td>
<td>D5C = D5 in cap</td>
</tr>
<tr>
<td></td>
<td>FA48 = 3&quot; ANSI 300# flange</td>
<td></td>
<td>Visual with Thermal Lockout</td>
</tr>
<tr>
<td></td>
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<td>D8 = Visual w/ thermal lockout</td>
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<td></td>
<td></td>
<td></td>
<td>D8C = D8 in cap</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Electrical</td>
</tr>
<tr>
<td></td>
<td>MS5 = Electrical w/ 12 in. 18 gauge 4-conductor cable</td>
<td>Electrical with Thermal Lockout</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MS5LC = Low current MS5</td>
<td></td>
<td>MS5T = MS5 (see above) w/ thermal lockout</td>
</tr>
<tr>
<td></td>
<td>MS10LC = Low current MS10</td>
<td></td>
<td>MS5LCT = Low current MS5T</td>
</tr>
<tr>
<td></td>
<td>MS11 = Electrical w/ 12 ft. 4-conductor wire</td>
<td></td>
<td>MS10 = MS10 (see above) w/ thermal lockout</td>
</tr>
<tr>
<td></td>
<td>MS12 = Electrical w/ 5 pin Brad Harrison connector (male end only)</td>
<td></td>
<td>MS10LCT = Low current MS10T</td>
</tr>
<tr>
<td></td>
<td>MS12LC = Low current MS12T</td>
<td></td>
<td>MS12 = MS12 (see above) w/ thermal lockout</td>
</tr>
<tr>
<td></td>
<td>MS16 = Electrical w/ weather-packed sealed connector</td>
<td></td>
<td>MS12LCT = Low current MS12T</td>
</tr>
<tr>
<td></td>
<td>MS16LC = Low current MS16</td>
<td></td>
<td>MS16 = MS16 (see above) w/ thermal lockout</td>
</tr>
<tr>
<td></td>
<td>MS17LC = Low current MS17T</td>
<td></td>
<td>MS16LCT = Low current MS16T</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Electrical with Thermal Lockout</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>MS13 = Supplied w/ threaded connector &amp; light</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>MS14 = Supplied w/ 5 pin Brad Harrison connector &amp; light (male end)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Electrical</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>MS13DCT = MS13 (see above), direct current, w/ thermal lockout</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>MS13DCLCT = Low current MS13DCT</td>
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<tr>
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<td></td>
<td></td>
<td>MS14 = MS14 (see above), direct current, w/ thermal lockout</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>MS14DCT = Low current MS14DCT</td>
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<td></td>
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<td></td>
<td>Electrical with Thermal Lockout</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>MS13DCT = MS13 (see above), direct current, w/ thermal lockout</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>MS13DCLCT = Low current MS13DCT</td>
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<td></td>
<td></td>
<td></td>
<td>MS14DCT = MS14 (see above), direct current, w/ thermal lockout</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>MS14DCLCT = Low current MS14DCT</td>
</tr>
</tbody>
</table>
In-Line Filter

**QF15**

**Features and Benefits**
- Also available in L-ported version
- Element changeout from the top minimizes oil spillage
- Available with optional core assembly to accommodate coreless elements
- Offered with standard Q, QPML deep-pleated and QCLQF coreless elements in 16" and 39" lengths with Viton® seals as the standard
- Offered in pipe, SAE straight thread, and flange porting
- Integral inlet and outlet test points are standard on all models
- Various Dirt Alarm® options

**Type Fluid Appropriate Schroeder Media**

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

**Flow Rating:**
- Up to 450 gpm (1700 L/min) for 150 SUS (32 cSt) fluids

**Max. Operating Pressure:** 1500 psi (100 bar)

**Min. Yield Pressure:** 4900 psi (340 bar), per NFPA T2.6.1

**Rated Fatigue Pressure:** 800 psi (55 bar), per NFPA T2.6.1-R1-2005

**Temp. Range:** -20°F to 225°F (-29°C to 107°C)

**Bypass Setting:**
- Cracking: 30 psi (2.1 bar)
- Full Flow: 55 psi (3.8 bar)

**Porting Base & Cap:** Ductile Iron

**Element Case:** Steel

**Weight of QF15-16Q:** 139.0 lbs. (63.0 kg)

**Weight of QF15-39Q:** 198.0 lbs. (90.0 kg)

**Element Change Clearance:**
- 16Q: 12.0" (305 mm)
- 39Q: 33.8" (859 mm)

Model No. of filter in photograph is QF1516QZ10P24MS10AC.
### 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>
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<tr>
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<td>( \beta_x \geq 100 )</td>
<td>( \beta_x \geq 200 )</td>
<td>( \beta_x(c) \geq 200 )</td>
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<td>QF15</td>
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<tr>
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<td>0.7</td>
<td>1.0</td>
<td>1.5</td>
<td>4.0</td>
<td>6.0</td>
</tr>
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<td>16.0</td>
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<tr>
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<td>25.0</td>
<td>27.5</td>
<td>30.0</td>
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</table>

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

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<th></th>
<th></th>
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<th></th>
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<th></th>
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</thead>
<tbody>
<tr>
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<td>( \beta_x(c) \geq 200 )</td>
<td>( \beta_x(c) \geq 1000 )</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>QF15</td>
<td></td>
<td>0.7</td>
<td>0.7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Z1/CLQFZ1/PMLZ1</td>
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<tr>
<td>Z3/CLQFZ3/PMLZ3</td>
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<td></td>
</tr>
<tr>
<td>Z5/CLQFZ5/PMLZ5</td>
<td>2.5</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Z10/CLQFZ10/PMLZ10</td>
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<td></td>
</tr>
<tr>
<td>Z25/CLQFZ25/PMLZ25</td>
<td>18.0</td>
<td>18.0</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

#### Element Collapse Rating:
Q and QPML: 150 psid (10 bar), QCLQF: 100 psid (7 bar)

#### Flow Direction:
Outside In

#### Element Nominal Dimensions:
16Q: 6.0" (150 mm) O.D. x 16.85" (430 mm) long
16QCLQF: 6.0" (150 mm) O.D. x 18.21" (463 mm) long
16QPML: 6.0" (150 mm) O.D. x 16.00" (405 mm) long
39Q: 6.0" (150 mm) O.D. x 38.70" (985 mm) long
39QCLQF: 6.0" (150 mm) O.D. x 40.01" (1016 mm) long
39QPML: 6.0" (150 mm) O.D. x 37.80" (960 mm) long

---

**Metric dimensions in ( ).**
Exercise:
Determine $\Delta P_{\text{filter}}$ at 200 gpm (758 L/min) for QF15 16QZ3Q using 100 SUS (21.3 cSt) fluid.

Use the housing pressure curve to determine $\Delta P_{\text{housing}}$ at 200 gpm. In this case, $\Delta P_{\text{housing}}$ is 2 psi (.14 bar) according to the graph for the QF15 housing.

Use the element pressure curve to determine $\Delta P_{\text{element}}$ at 200 gpm. In this case, $\Delta P_{\text{element}}$ is 7 psi (.48 bar) according to the graph for the 16QZ3 element.

Because the viscosity in this sample is 100 SUS (21.3 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:
$\Delta P_{\text{housing}} = 3 \text{ psi (}.14 \text{ bar)}$ | $\Delta P_{\text{element}} = 7 \text{ psi (}.48 \text{ bar)}$

$V_f = 100 \text{ SUS (21.3 cSt) / 150 SUS (32 cSt)} = .67$
$\Delta P_{\text{filter}} = 2 \times 7 \times .67 = 6.7 \text{ psi}$

OR
$\Delta P_{\text{filter}} = .14 \text{ bar + (.48 bar} \times .67) = .46 \text{ bar}$
How to Build a Valid Model Number for a Schroeder QF15:

**Example:** NOTE: One option per box

<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>
<th>BOX 8</th>
<th>BOX 9</th>
</tr>
</thead>
<tbody>
<tr>
<td>QF15</td>
<td>16</td>
<td>Q</td>
<td>Z</td>
<td>3</td>
<td></td>
<td>D5C</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

D5C = QF1516QZ3D5C

**NOTES:**

Box 2. Replacement element part numbers are a combination of Boxes 2, 3, 4 and 5, plus the letter V.

Example: 16Q21V

Box 3. QCLQF are CoreCentric® coreless elements – housing includes rigid metal core. QPML are deep-pleated elements with more media and higher dirt holding capacity.

Box 4. For option W, Box 3 must equal Q.

Box 5. All elements for this filter are supplied with Viton® seals. Seal designation in Box 6 applies to housing only. Viton® is a registered trademark of DuPont Dow Elastomers.

Box 7. 24M, 32M, 40M and 48M are supplied with metric flange mounting holes.

Box 8. When X is paired with a standard filter series, a standard bushing and spring plate will be used. Integral inlet and outlet test points are standard on all models.

**Dirt Alarm® Options**

<table>
<thead>
<tr>
<th>Omit = None</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visual</td>
</tr>
<tr>
<td>DPG</td>
</tr>
<tr>
<td>DS</td>
</tr>
<tr>
<td>D5C</td>
</tr>
<tr>
<td>D5R</td>
</tr>
<tr>
<td>Visual with Thermal Lockout</td>
</tr>
<tr>
<td>D8</td>
</tr>
<tr>
<td>D8C</td>
</tr>
<tr>
<td>D8R</td>
</tr>
<tr>
<td>Electrical</td>
</tr>
<tr>
<td>MS5</td>
</tr>
<tr>
<td>MS5LC</td>
</tr>
<tr>
<td>MS510</td>
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<td>MS12LC</td>
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<td>MS16</td>
</tr>
<tr>
<td>MS16LC</td>
</tr>
<tr>
<td>MS17LC</td>
</tr>
<tr>
<td>Electrical with Thermal Lockout</td>
</tr>
<tr>
<td>MS5T</td>
</tr>
<tr>
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<td>MS12CLT</td>
</tr>
<tr>
<td>MS16T</td>
</tr>
<tr>
<td>MS16CLT</td>
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<td>MS17T</td>
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<tr>
<td>Electrical Visual with Thermal Lockout</td>
</tr>
<tr>
<td>MS13</td>
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<td>MS13CLT</td>
</tr>
<tr>
<td>MS14DCT</td>
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<tr>
<td>MS14DCLCT</td>
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</tbody>
</table>
Base-Ported Filter

QLF15

Flow Rating: Up to 500 gpm (1900 L/min) for 150 SUS (32 cSt) fluids
Max. Operating Pressure: 1500 psi (100 bar)
Min. Yield Pressure: 4900 psi (340 bar), per NFPA T2.6.1
Rated Fatigue Pressure: 800 psi (55 bar), per NFPA T2.6.1-R1-2005
Temp. Range: -20°F to 225°F (-29°C to 107°C)
Bypass Setting: Cracking: 30 psi (2 bar)
Full Flow: 55 psi (4 bar)
Porting Base & Cap: Ductile Iron
Element Case: Steel
Weight of QLF15-16Q: 121.0 lbs. (55.0 kg)
Weight of QLF15-39Q: 180.0 lbs. (82.0 kg)
Element Change Clearance: 16Q 12.00" (305 mm)
39Q 33.80" (859 mm)

Features and Benefits
■ In-line version also available
■ Element changeout from the top minimizes oil spillage
■ Available with optional core assembly to accommodate coreless elements
■ Offered with standard Q, QPML deep-pleated and QCLQF coreless elements in 16° and 39° lengths with Viton® seals as the standard
■ Offered in pipe, SAE straight thread, and flange porting
■ Integral inlet and outlet test points are standard on all models
■ Various Dirt Alarm® options

Model No. of filter in photograph is QLF1539Q25F4850D5.
### Element Performance Information & Dirt Holding Capacity

<table>
<thead>
<tr>
<th>Element</th>
<th>Filtration Ratio Per ISO 4572/NFPA T3.10.8.8</th>
<th>Filtration Ratio Per 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></td>
<td>( \beta_x \geq 75 ) ( \beta_x \geq 100 ) ( \beta_x \geq 200 )</td>
<td>( \beta_x(c) \geq 200 ) ( \beta_x(c) \geq 1000 )</td>
</tr>
<tr>
<td>16Q</td>
<td>\begin{align*} Z1/CLQFZ1/PMLZ1 &amp; \quad &lt;1.0 \quad &lt;1.0 \quad &lt;1.0 \quad &lt;4.0 \quad 4.2 \ Z3/CLQFZ3/PMLZ3 &amp; \quad &lt;1.0 \quad &lt;1.0 \quad &lt;2.0 \quad &lt;4.0 \quad 4.8 \ Z5/CLQFZ5/PMLZ5 &amp; \quad 2.5 \quad 3.0 \quad 4.0 \quad 4.8 \quad 6.3 \ Z10/CLQFZ10/PMLZ10 &amp; \quad 7.4 \quad 8.2 \quad 10.0 \quad 8.0 \quad 10.0 \ Z25/CLQFZ25/PMLZ25 &amp; \quad 18.0 \quad 20.0 \quad 22.5 \quad 19.0 \quad 24.0 \end{align*}</td>
<td>\begin{align*} Z1/CLQFZ1/PMLZ1 &amp; \quad &lt;1.0 \quad &lt;1.0 \quad &lt;1.0 \quad &lt;4.0 \quad 4.2 \ Z3/CLQFZ3/PMLZ3 &amp; \quad &lt;1.0 \quad &lt;1.0 \quad &lt;2.0 \quad &lt;4.0 \quad 4.8 \ Z5/CLQFZ5/PMLZ5 &amp; \quad 2.5 \quad 3.0 \quad 4.0 \quad 4.8 \quad 6.3 \ Z10/CLQFZ10/PMLZ10 &amp; \quad 7.4 \quad 8.2 \quad 10.0 \quad 8.0 \quad 10.0 \ Z25/CLQFZ25/PMLZ25 &amp; \quad 18.0 \quad 20.0 \quad 22.5 \quad 19.0 \quad 24.0 \end{align*}</td>
</tr>
<tr>
<td>39Q</td>
<td>\begin{align*} Z1/CLQFZ1/PMLZ1 &amp; \quad &lt;1.0 \quad &lt;1.0 \quad &lt;1.0 \quad &lt;4.0 \quad 4.2 \ Z3/CLQFZ3/PMLZ3 &amp; \quad &lt;1.0 \quad &lt;1.0 \quad &lt;2.0 \quad &lt;4.0 \quad 4.8 \ Z5/CLQFZ5/PMLZ5 &amp; \quad 2.5 \quad 3.0 \quad 4.0 \quad 4.8 \quad 6.3 \ Z10/CLQFZ10/PMLZ10 &amp; \quad 7.4 \quad 8.2 \quad 10.0 \quad 8.0 \quad 10.0 \ Z25/CLQFZ25/PMLZ25 &amp; \quad 18.0 \quad 20.0 \quad 22.5 \quad 19.0 \quad 24.0 \end{align*}</td>
<td>\begin{align*} Z1/CLQFZ1/PMLZ1 &amp; \quad &lt;1.0 \quad &lt;1.0 \quad &lt;1.0 \quad &lt;4.0 \quad 4.2 \ Z3/CLQFZ3/PMLZ3 &amp; \quad &lt;1.0 \quad &lt;1.0 \quad &lt;2.0 \quad &lt;4.0 \quad 4.8 \ Z5/CLQFZ5/PMLZ5 &amp; \quad 2.5 \quad 3.0 \quad 4.0 \quad 4.8 \quad 6.3 \ Z10/CLQFZ10/PMLZ10 &amp; \quad 7.4 \quad 8.2 \quad 10.0 \quad 8.0 \quad 10.0 \ Z25/CLQFZ25/PMLZ25 &amp; \quad 18.0 \quad 20.0 \quad 22.5 \quad 19.0 \quad 24.0 \end{align*}</td>
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<table>
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<tr>
<th>Element</th>
<th>DHC (gm)</th>
<th>Element</th>
<th>DHC (gm)</th>
<th>Element</th>
<th>DHC (gm)</th>
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<td>PMLZ25</td>
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</table>

**Element Collapse Rating:**
- Q and QPML: 150 psid (10 bar), QCLQF: 100 psid (7 bar)

**Flow Direction:**
- Outside In

**Element Nominal Dimensions:**
- 16Q: 6.0” (150 mm) O.D. x 16.85” (430 mm) long
- 16QCLQF: 6.0” (150 mm) O.D. x 18.21” (463 mm) long
- 16QPML: 6.0” (150 mm) O.D. x 16.00” (405 mm) long
- 39Q: 6.0” (150 mm) O.D. x 38.70” (985 mm) long
- 39QCLQF: 6.0” (150 mm) O.D. x 40.01” (1016 mm) long
- 39QPML: 6.0” (150 mm) O.D. x 37.80” (960 mm) long

---

**QA Checklist:**
- All dimensions and tolerances are in accordance with the approved drawings.
- All components are manufactured to meet the required specifications.
- The filters are tested in accordance with ISO 4572/NFPA T3.10.8.8 standards.

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**Note:**
- The data provided is subject to change without notice.
- For further details, please contact the manufacturer directly.
Exercise:
Determine $\Delta P_{\text{filter}}$ at 200 gpm (758 L/min) for QLF1516QZ3D5C using 100 SUS (21.3 cSt) fluid.

Use the housing pressure curve to determine $\Delta P_{\text{housing}}$ at 200 gpm. In this case, $\Delta P_{\text{housing}}$ is 2 psi (.14 bar) according to the graph for the QLF15 housing.

Use the element pressure curve to determine $\Delta P_{\text{element}}$ at 200 gpm. In this case, $\Delta P_{\text{element}}$ is 7 psi (.48 bar) according to the graph for the 16QZ3 element.

Because the viscosity in this sample is 100 SUS (21.3 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 $\Delta P_{\text{element}}$ with the true element pressure differential, $(\Delta P_{\text{element}} * V_f)$. 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:

$\Delta P_{\text{housing}}$ = 2 psi (.14 bar)  |  $\Delta P_{\text{element}}$ = 7 psi (.48 bar)

$V_f$ = 100 SUS (21.3 cSt) / 150 SUS (32 cSt) = .67

$\Delta P_{\text{filter}}$ = $\Delta P_{\text{housing}}$ + ($\Delta P_{\text{element}} * V_f$)

$\Delta P_{\text{filter}}$ = 2 psi + (7 psi * .67) = 6.7 psi

OR

$\Delta P_{\text{filter}}$ = 14 bar + (.48 bar * .67) = .46 bar

Note:
If your element is not graphed, use the following equation:

$$\Delta P_{\text{element}} = \text{Flow Rate} \times \Delta P_f$$

Plug this variable into the overall pressure drop equation.
Base-Ported Filter

How to Build a Valid Model Number for a Schroeder QF15:

<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>
<th>BOX 8</th>
<th>BOX 9</th>
</tr>
</thead>
<tbody>
<tr>
<td>QF15</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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</tbody>
</table>

Example: NOTE: One option per box

<table>
<thead>
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<th>BOX 8</th>
<th>BOX 9</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>Q</td>
<td>Z</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td>DSC</td>
<td></td>
</tr>
</tbody>
</table>

= QF1516QZ3DSC

Dirt Alarm® Options

**Omit = None**

**Visual**

- DPG = Standard differential pressure gauge
- D5 = Visual pop-up
- D5C = D5 in cap

**Visual with Thermal Lockout**

- D8 = Visual w/ thermal lockout
- DBC = D8 in cap

**Electrical**

- MS5 = Electrical w/ 12 in. 18 gauge 4-conductor cable
- MS5LC = Low current MS5
- 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 = MS5 (see above) w/ thermal lockout
- MS5LC = Low current MS5T
- MS10CT = Low current MS10T (see above) w/ thermal lockout
- MS10LCT = Low current MS10LCT
- MS12T = MS12 (see above) w/ thermal lockout
- MS12LC = Low current MS12LC
- MS16T = MS16 (see above) w/ thermal lockout
- MS16LCT = Low current MS16LCT
- MS17LCT = Low current MS17LCT

**Electrical Visual**

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

**Electrical Visual with Thermal Lockout**

- MS13C = MS13 (see above) direct current, w/ thermal lockout
- MS13DCLCT = Low current MS13DCLCT
- MS14C = MS14 (see above), direct current, w/ thermal lockout
- MS14DCLCT = Low current MS14DCLCT

NOTES:

Box 2. Replacement element part numbers are a combination of Boxes 2, 3, 4, and 5 plus the letter V. Example: 16QZ1V

Box 3. QCLQF are CoreCentric® coreless elements – housing includes rigid metal core. QPML are deep-pleated elements with more media and higher dirt holding capacity.

Box 4. For option W, Box 3 must equal Q.

Box 6. All elements for this filter are supplied with Viton® seals. Seal designation in Box 6 applies to housing only. Viton® is a registered trademark of DuPont Dow Elastomers.

Box 7. B24, B32 and B40 are supplied with metric mounting holes. F24M, F32M, F40M and F48M are supplied with metric flange mounting holes.

Box 8: When X is paired with a standard filter series, a standard bushing and spring plate will be used. Integral inlet and outlet test points are standard on all models.
Stainless Steel Base-Ported Filter

Features and Benefits
- In-line version also available
- Element changeout from the top minimizes oil spillage
- Offered with standard Q and QPML deep-pleated coreless elements in 16” and 39” lengths with Viton® seals as the standard
- Offered in pipe, SAE straight thread, and flange porting
- Integral inlet and outlet test points are standard on all models
- Various Dirt Alarm® options
- All stainless steel provides compatibility with water-based fluids

Flow Rating: Up to 500 gpm (1900 L/min) for 150 SUS (32 cSt) fluids
Max. Operating Pressure: 1500 psi (100 bar)
Min. Yield Pressure: 4500 psi (310 bar), per NFPA T2.6.1
Rated Fatigue Pressure: Contact Factory
Temp. Range: -20°F to 225°F (-29°C to 107°C)
Bypass Setting: Cracking: 30 psi (2 bar)
Full Flow: 55 psi (4 bar)
Porting Base & Cap: Stainless Steel
Element Case: Stainless Steel

Weight of SSQLF15-16Q: 163.0 lbs. (74.0 kg)
Weight of SSQLF15-39Q: 240.0 lbs. (109.0 kg)
Element Change Clearance: 16Q 12.00” (305 mm)
39Q 33.80” (859 mm)

Fluid Compatibility

Type Fluid | Appropriate Schroeder Media
--- | ---
Petroleum Based Fluids | All E media (cellulose), Z-Media® and ASP® media (synthetic)
High Water Content | All Z-Media® and ASP® media (synthetic)
Invert Emulsions | 10 and 25 µ Z-Media® and 10 µ ASP® media (synthetic)
Water Glycols | 3, 5, 10 and 25 µ Z-Media® and all ASP® media (synthetic)
Phosphate Esters | All Z-Media® (synthetic) with H (EPR) seal designation and all ASP® media (synthetic)
Stainless Steel Base-Ported Filter

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

Filtration Ratio per ISO 16889
Using APC calibrated per ISO 11171

Element | DHC (gm) | Element | DHC (gm)
--- | --- | --- | ---
16Q | | | |
Z1/CLQFZ1/PMLZ1 | 276 | Z1/CLQFZ1/PMLZ1 | 276
Z5/CLQFZ5/PMLZ5 | 351 | Z5/CLQFZ5/PMLZ5 | 351
Z10/CLQFZ10/PMLZ10 | 280 | Z10/CLQFZ10/PMLZ10 | 280

39Q | | | |
Z1/CLQFZ1/PMLZ1 | 974 | Z1/CLQFZ1/PMLZ1 | 974
Z5/CLQFZ5/PMLZ5 | 954 | Z5/CLQFZ5/PMLZ5 | 954
Z10/CLQFZ10/PMLZ10 | 940 | Z10/CLQFZ10/PMLZ10 | 940

Element Collapse Rating: Q and QPML: 150 psid (10 bar)
Flow Direction: Outside In
Element Nominal Dimensions:
16Q: 6.0” (150 mm) O.D. x 16.85” (430 mm) long
16QPML: 6.0” (150 mm) O.D. x 16.00” (405 mm) long
39Q: 6.0” (150 mm) O.D. x 38.70” (985 mm) long
39QPML: 6.0” (150 mm) O.D. x 37.80” (960 mm) long

SSQLF15

DIMENSIONAL DATA

<table>
<thead>
<tr>
<th>PORT SIZE</th>
<th>DIM A</th>
<th>DIM B</th>
</tr>
</thead>
<tbody>
<tr>
<td>1½” (38)</td>
<td>2.00 (51)</td>
<td>4.00 (102)</td>
</tr>
<tr>
<td>2” (51)</td>
<td>2.00 (51)</td>
<td>4.00 (102)</td>
</tr>
<tr>
<td>2½” (64)</td>
<td>2.00 (51)</td>
<td>4.00 (102)</td>
</tr>
<tr>
<td>3” (76)</td>
<td>2.00 (51)</td>
<td>4.00 (102)</td>
</tr>
<tr>
<td>3” (4 bolt port only)</td>
<td>2.50 (64)</td>
<td>5.00 (127)</td>
</tr>
</tbody>
</table>

Metric dimensions in ( ).
Exercise:
Determine $\Delta P_{\text{filter}}$ at 200 gpm (758 L/min) for SSQLF1516QZ3P48D9C using 100 SUS (21.3 cSt) fluid.

Use the housing pressure curve to determine $\Delta P_{\text{housing}}$ at 200 gpm. In this case, $\Delta P_{\text{housing}}$ is 2 psi (.14 bar) according to the graph for the SSQLF housing.

Use the element pressure curve to determine $\Delta P_{\text{element}}$ at 200 gpm. In this case, $\Delta P_{\text{element}}$ is 7 psi (.48 bar) according to the graph for the 16QZ3 element.

Because the viscosity in this sample is 100 SUS (21.3 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:

$\Delta P_{\text{housing}} = 2 \text{ psi} \ (0.14 \text{ bar})$

$\Delta P_{\text{element}} = 7 \text{ psi} \ (0.48 \text{ bar})$

$V_f = 100 \text{ SUS} \ (21.3 \text{ cSt}) / 150 \text{ SUS} \ (32 \text{ cSt}) = 0.67$

$\Delta P_{\text{filter}} = 2 \text{ psi} + (7 \text{ psi} \times .67) = 6.7 \text{ psi}$

OR

$\Delta P_{\text{filter}} = .14 \text{ bar} + (.48 \text{ bar} \times .67) = .46 \text{ bar}$
### Stainless Steel Base-Ported Filter

**How to Build a Valid Model Number for a Schroeder SSQLF15:**

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<th>BOX 7</th>
<th>BOX 8</th>
<th>BOX 9</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSQLF15</td>
<td>16</td>
<td>Q</td>
<td>Z</td>
<td>3</td>
<td>P48</td>
<td>D9C</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Example:**

NOTE: One option per box

- Box 1: SSQLF15
- Box 2: 16
- Box 3: Q
- Box 4: Z
- Box 5: 3
- Box 6: P48
- Box 7: D9C

**Filter Series Element**

- **SSQLF15**

**Element Length (in)**

- **16**
- **39**

**Element Style**

- **Q**
- **QCLQF**
- **QPML**

**Media Type**

- **Z**: Excellement® Z-Media® (synthetic)
- **AS**: Anti-Stat Pleat media (synthetic)
- **M**: M media (reusable metal)
- **W**: W media (water removal)
- **150PSV**: 150 µ nominal synthetic media with plastic outer wrap

**Micron Rating**

- 1 = 1 µ Z-Media®
- 3 = 3 µ AS and Z-Media®
- 5 = 5 µ AS and Z-Media®
- 10 = 10 µ AS and Z-Media®
- 25 = 25 µ M and Z-Media®
- 60 = 60 µ M media
- 150 = 150 µ M-media or 150 PSV
- W = water removal media

**Housing Seal Material**

- Omit = Buna N
- H = EPR
- V = Viton®

**Porting**

- P24 = 1½” NPTF
- P32 = 2” NPTF
- P40 = 2½” NPTF
- P48 = 3” NPTF
- S32 = SAE-32
- B24 = ISO 228 G-1½
- B32 = ISO 228 G-2
- B40 = ISO 228 G-2½
- B48 = ISO 228 G-3
- F24 = 1½” SAE 4-bolt flange Code 61
- F32 = 2” SAE 4-bolt flange Code 61
- F40 = 2½” SAE 4-bolt flange Code 61
- F48 = 3” SAE 4-bolt flange Code 61
- F24M = 1½” SAE 4-bolt flange Code 61
- F32M = 2” SAE 4-bolt flange Code 61
- F40M = 2½” SAE 4-bolt flange Code 61
- F48M = 3” SAE 4-bolt flange Code 61

**Bypass Setting**

- Omit = 30 psi cracking
- 50 = 50 psi cracking
- X = Blocked bypass

**Dirt Alarm® Options**

- Omit = None
- Visual
- **DPG**: Standard differential pressure gauge
- **D9**: Visual pop-up in base (stainless steel)
- **D9C**: D9 in cap (stainless steel)

**NOTES:**

- Box 2: Replacement element part numbers are a combination of Boxes 2, 3, 4 and 5 plus the letter V.
  - Example: 16QZ1V
- Box 4: For options W, 150PSV, M25, M60, and M150, Box 3 must equal Q.
- Box 6: All elements for this filter are supplied with Viton® seals. Seal designation in Box 6 applies to housing only. Viton® is a registered trademark of DuPont Dow Elastomers.
- Box 7: B24, B32 and B40 are supplied with metric mounting holes. F24M, F32M, F40M and F48M are supplied with metric flange mounting holes.
- Box 8: When X is paired with a standard filter series, a standard bushing and spring plate will be used.
- Integral inlet and outlet test points are standard on all models.