Base-Ported Pressure Filter

Features and Benefits

- Base-ported high pressure filter
- Patented dirt-tolerant cap design
- Can be installed in vertical or horizontal position
- Meets HF4 automotive standard
- Element changeout from top minimizes oil spillage
- Offered in pipe, SAE straight thread, flanged and ISO 228 porting
- No-Element indicator option available
- Available with non-bypass option with high collapse element
- Integral inlet and outlet female test points option available
- Offered in conventional subplate porting
- Double and triple stacking of K-size elements can be replaced by single KK or 27K-size elements

Model No. of filter in photograph is KC501K10PD.

Applications

- Industrial
- Mining Technology
- Machine Tool
- Steel Making
- Waste Water Treatment
- Pulp & Paper
- Agriculture
- Mobile Vehicles
- Railroad

Flow Rating: Up to 100 gpm (380 L/min) for 150 SUS (32 cSt) fluids

Max. Operating Pressure: 5000 psi (345 bar)

Min. Yield Pressure: 15,000 psi (1035 bar), per NFPA T2.6.1

Rated Fatigue Pressure: 3500 psi (240 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)
- Optional Cracking: 50 psi (3.5 bar)
- Full Flow: 61 psi (4.2 bar)
Non-bypassing model has a blocked bypass.

Porting Base & Cap: Ductile Iron
Element Case: Steel

Weight of KC50-1K: 66.8 lbs. (30.3 kg)
Weight of KC50-2K: 87.8 lbs. (39.8 kg)
Weight of KC50-3K: 109.6 lbs. (49.7 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

- NF30
- NF530
- YF30
- CFX30
- PLD
- DF40
- CF40
- PF40
- RFS50
- RF60
- CF60
- CTF60
- NOF30-05
- NOF50-760
- VF60
- LW60
- KF30
- TF50
- PF40
- KF50
- MKF50
- KC65
- NOF50-760
- FOF60-03
- NMF30
- RMF60
- Cartridge Elements
- HS60
- MHS60
- KFH50
# Base-Ported Pressure Filter

**Metric dimensions in ( ).**

## Element Performance Information

<table>
<thead>
<tr>
<th>Element</th>
<th>Performance Information</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dirt Holding Capacity</strong></td>
<td></td>
</tr>
</tbody>
</table>

## 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>Filtration Ratio Per ISO 4572/NFPA T3.10.8.8</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dirt Holding Capacity</strong></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Element</th>
<th>Filtration Ratio Per ISO 16889</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dirt Holding Capacity</strong></td>
<td></td>
</tr>
</tbody>
</table>

## Element Collapse Rating:

- **Base-Ported**
- **Back-Up**
- **Standard**
- **High Collapse**

**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>
<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>KZX3</td>
<td>149</td>
<td>KZX3</td>
<td>149</td>
<td>KZX3</td>
<td>149</td>
<td>KZX3</td>
<td>149</td>
<td>KZX3</td>
<td>149</td>
<td>KZX3</td>
<td>149</td>
</tr>
<tr>
<td>KZX10</td>
<td>149</td>
<td>KZX10</td>
<td>149</td>
<td>KZX10</td>
<td>149</td>
<td>KZX10</td>
<td>149</td>
<td>KZX10</td>
<td>149</td>
<td>KZX10</td>
<td>149</td>
</tr>
</tbody>
</table>

**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>
<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>KZX3</td>
<td>149</td>
<td>KZX3</td>
<td>149</td>
<td>KZX3</td>
<td>149</td>
<td>KZX3</td>
<td>149</td>
<td>KZX3</td>
<td>149</td>
<td>KZX3</td>
<td>149</td>
</tr>
<tr>
<td>KZX10</td>
<td>149</td>
<td>KZX10</td>
<td>149</td>
<td>KZX10</td>
<td>149</td>
<td>KZX10</td>
<td>149</td>
<td>KZX10</td>
<td>149</td>
<td>KZX10</td>
<td>149</td>
</tr>
</tbody>
</table>

**Element Collapse Rating:**

- **3000 psid (210 bar) for high collapse (ZX) versions**

**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

---

*Based on 100 psi terminal pressure*
### Base-Ported Pressure Filter

#### 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® (synthetic), 10 µ ASP Media (synthetic)
- **Water Glycols**
  - 3, 5, 10 and 25 µ Z-Media® (synthetic) and all ASP Media (synthetic)
- **Phosphate Esters**
  - All Z-Media® and ASP Media (synthetic) with H (EPR) seal designation and 3 and 10 µ E media (cellulose) with H (EPR) seal designation

#### Fluid Compatibility
- Skydrol® is a registered trademark of Solutia Inc.

#### Element Selection Based on Flow Rate

<table>
<thead>
<tr>
<th>Pressure (psi)</th>
<th>Element</th>
<th>Part No.</th>
<th>Element selections are predicated on the use of 150 SUS (32 cSt) petroleum based fluid and a 40 psi (2.8 bar) bypass valve.</th>
</tr>
</thead>
<tbody>
<tr>
<td>5000 psi</td>
<td>K3</td>
<td>1K3</td>
<td>2K3t</td>
</tr>
<tr>
<td></td>
<td>K10</td>
<td>1K10</td>
<td>2K10t 3K10t 3K10t 3K10t 3K10t See MKF50</td>
</tr>
<tr>
<td></td>
<td>K25</td>
<td>1K25</td>
<td>2K25t</td>
</tr>
<tr>
<td></td>
<td>KZ1</td>
<td>1KZ1</td>
<td>2K1Z1t 3K1Z1t</td>
</tr>
<tr>
<td></td>
<td>KZ3</td>
<td>1KZ3/KAS3/KKAS3/27KAS3</td>
<td>2KZ3t 3KZ3t</td>
</tr>
<tr>
<td></td>
<td>KZ5</td>
<td>1KZ5/KAS5/KKAS5/27KAS5</td>
<td>2KZ5t 3KZ5t</td>
</tr>
<tr>
<td></td>
<td>KZ10</td>
<td>1KZ10/KAS10/KKAS10/27KAS10</td>
<td>2KZ10t 3KZ10t</td>
</tr>
<tr>
<td></td>
<td>KZ25</td>
<td>1KZ25</td>
<td>2KZ25t</td>
</tr>
</tbody>
</table>

†Double and triple stacking of K-size elements can be replaced by single KK & 27K elements, respectively.

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

#### Pressure Drop Information Based on Flow Rate and Viscosity

<table>
<thead>
<tr>
<th>Flow (gpm)</th>
<th>sp gr = specific gravity</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>25</td>
</tr>
<tr>
<td>50</td>
<td>75</td>
</tr>
<tr>
<td>100</td>
<td>125</td>
</tr>
<tr>
<td>150</td>
<td>150</td>
</tr>
</tbody>
</table>

\[ \Delta P_{\text{housing}} = \Delta P_{\text{housing}} \text{ for fluids with sp gr } = 0.86: \]

\[ \Delta P_{\text{filter}} = \Delta P_{\text{housing}} + \Delta P_{\text{element}} \]

**Exercise:**
Determine \( \Delta P \) at 50 gpm (190 L/min) for KF501KZ3PDS using 200 SUS (44 cSt) fluid.

**Solution:**
\[ \Delta P_{\text{housing}} = 3.0 \text{ psi [0.20 bar]} \]
\[ \Delta P_{\text{element}} = 50 \times 0.1 \times (200+150) = 6.7 \text{ psi} \]
\[ \Delta P_{\text{total}} = 3.0 + 6.7 = 9.7 \text{ psi} \]

If working in units of bars & L/min, divide above factor by 54.9.

**Viscosity factor:** Divide viscosity by 150 SUS (32 cSt).
### How to Build a Valid Model Number for a Schroeder KF50:

<table>
<thead>
<tr>
<th>Filter Series</th>
<th>Number &amp; Size of Elements</th>
<th>E Media (Cellulose)</th>
<th>ZW Aqua-Excellment® ZW Media</th>
<th>ZX Excelllement® ZX Media® (High Collapse centertube)</th>
<th>W Media (water removal)</th>
<th>M Media (reusable metal mesh)</th>
<th>Micron Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>KC50</td>
<td>1 K, KK, 2K7</td>
<td>Omit</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1 = 1 Micron</td>
</tr>
<tr>
<td>KCN50</td>
<td>2 K</td>
<td>Z</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2 = 2 Micron</td>
</tr>
<tr>
<td></td>
<td>3 K</td>
<td>Z</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3 = 3 Micron</td>
</tr>
</tbody>
</table>

**Notes:**
- **Box 2**: Number of elements must equal 1 when using KK or 2K7 elements. Replacement element part numbers are identical to contents of Boxes 2, 3, 4 and 5. Double and triple stacking of K-size elements can be replaced by single KK and 2K7 elements, respectively. ZW media not available in 27K length.
- **Box 5**: 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 7**: For option F, bolt depth .75" (19 mm). For option O, O-rings included; hardware not included.
- **Box 8**: X and 50 options are not available with KCN50.
- **Box 9**: Standard indicator setting for non-bypassing model is 50 psi unless otherwise specified.
- **Box 10**: Options N, G509 and G588 are not available with KCN50. N option should be used in conjunction with dirt alarm.