Base-Ported Pressure Filter

Features and Benefits
- Base-ported high pressure dual filter manifold mounted
- Meets HF4 automotive standard
- Element changeout from top minimizes oil spillage
- Offered in pipe porting (contact factory for other porting options)
- No-Element indicator option available
- Available with non-bypass option with high collapse element
- Integral inlet and outlet female test points option available
- 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 MKF504K10PD5.

Applications

Flow Rating: Up to 200 gpm (760 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 MKF50-2K: 214.0 lbs. (97.3 kg)
Weight of MKF50-4K: 243.0 lbs. (110.2 kg)
Weight of MKF50-6K: 284.4 lbs. (129.0 kg)
Element Change Clearance: 8.50” (215 mm) for 1K; 17.50” (445 mm) for KK; 26.5” (673 mm) for 27K

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### Element Performance Information

<table>
<thead>
<tr>
<th>Element</th>
<th>Performance Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>K3/KK3/27K</td>
<td>6.8</td>
</tr>
<tr>
<td>K10/KK10/27K10</td>
<td>15.5</td>
</tr>
<tr>
<td>KZ1/KKZ1/27KZ1</td>
<td>&lt;1.0</td>
</tr>
<tr>
<td>KZ3/KKZ3/27KZ3/KAS3/KKAS3/27KAS3</td>
<td>&lt;1.0</td>
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<tr>
<td>KZ5/KKZ5/27KZ5/KAS5/KKAS5/27KAS5</td>
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</tr>
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<td>KZ10/KKZ10/27KZ10/KAS10/KKAS10/27KAS10</td>
<td>7.4</td>
</tr>
<tr>
<td>KZ25/KKZ25/27KZ25</td>
<td>18.0</td>
</tr>
<tr>
<td>KZW1</td>
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</tr>
<tr>
<td>KZW3/KKZW3</td>
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</tr>
<tr>
<td>KZW5/KKZW5</td>
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<tr>
<td>KZX10/KKZX10/27KZX10</td>
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</tr>
</tbody>
</table>

### Filtration Ratio Per ISO 4572/NFPA T3.18.8

- Using automated particle counter (APC) calibrated per ISO 4402
- Filtration Ratio wrt ISO 16889

<table>
<thead>
<tr>
<th>Element</th>
<th>Filtration Ratio Per ISO 4572/NFPA T3.18.8</th>
<th>Filtration Ratio wrt ISO 16889</th>
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</thead>
<tbody>
<tr>
<td>K3/KK3/27K</td>
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<td>$\beta_x \geq 100$</td>
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<td>20.0</td>
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<td>KZX10/KKZX10/27KZX10</td>
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### 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>
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<tbody>
<tr>
<td>K3</td>
<td>54</td>
<td>KK3</td>
<td>108</td>
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<td>162</td>
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<tr>
<td>K10</td>
<td>44</td>
<td>KK10</td>
<td>88</td>
<td>27K10</td>
<td>132</td>
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<td></td>
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<tr>
<td>KZ1</td>
<td>115</td>
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<td>224</td>
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<tr>
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<td>115</td>
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<td>224</td>
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</tr>
<tr>
<td>K5/KK5</td>
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<tr>
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<td>KK10</td>
<td>216</td>
<td>27K10</td>
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<td>KKW10</td>
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<td>KKW25</td>
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<tr>
<td>KZX3</td>
<td>40*</td>
<td>KKZ3</td>
<td>80</td>
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<tr>
<td>KZX10</td>
<td>49*</td>
<td>KKZ10</td>
<td>98</td>
<td>27KZ10</td>
<td>147</td>
<td>*Based on 100 psi terminal pressure</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Element Collapse Rating: 150 psid (10 bar) for standard elements
- 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
Base-Ported Pressure Filter

**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® (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 all ASP Media (synthetic) with H (EPR) seal designation and 3 and 10 µ E media (cellulose) with H (EPR) seal designation

Skydrol® | 3, 5, 10 and 25 µ Z-Media® (synthetic) and all ASP Media (synthetic) with H (EPR) seal designation and W media (water removal) with H.5 seal designation (EPR seals and stainless steel wire mesh in element, and light oil coating on housing exterior)

**Element Selection**

**Based on Flow Rate**

<table>
<thead>
<tr>
<th>Pressure Series</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>E Media</td>
<td>4K3†</td>
<td>6K3</td>
</tr>
<tr>
<td></td>
<td>4K10† &amp; 6K10†</td>
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</tr>
<tr>
<td></td>
<td>4K25†</td>
<td></td>
</tr>
<tr>
<td>Z-Media®</td>
<td>4KZ1†</td>
<td>6KZ1†</td>
</tr>
<tr>
<td></td>
<td>4KZ3†</td>
<td>6KZ3†</td>
</tr>
<tr>
<td></td>
<td>4KZ5†</td>
<td>6KZ5†</td>
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<tr>
<td></td>
<td>4KZ10†</td>
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</tr>
<tr>
<td></td>
<td>4KZ25†</td>
<td>6KZ25†</td>
</tr>
</tbody>
</table>

**Flow**

<table>
<thead>
<tr>
<th>Flow (gpm)</th>
<th>Pressure Drop Information Based on Flow Rate and Viscosity</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>0</td>
<td>400</td>
</tr>
</tbody>
</table>

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

Shown above are the elements most commonly used in this housing.

**Viscosity Factor:**

- Divide viscosity by 150 SUS (32 cSt).

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

**ΔP**

- **ΔP**housing for fluids with *sp gr = 0.86*:

  - **ΔP**housing = **ΔP**element + **ΔP**housing
  
  
  **ΔP**element = flow x element **ΔP** factor x viscosity factor

  
  **El. ΔP factors @ 150 SUS (32 cSt):**

  - 2K
  - 4K
  - 6K

  
  - K3: .12
  - K10: .05
  - K25: .01
  - KZ1: .10
  - KZ3: .05
  - KZ5: .04
  - KZ10: .03
  - KZ25: .02

  
  - 1K
  - 2K

  
  - KZW1: .43
  - KZW3: .32
  - KZW5: .28
  - KZW10: .23
  - KZW25: .14

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

**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.**
### How to Build a Valid Model Number for a Schroeder MKF50

<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>MKF50</td>
<td>2K</td>
<td>Z</td>
<td>10</td>
<td>P</td>
<td>D5</td>
<td></td>
<td></td>
<td></td>
<td>MKF502KZ10PD5</td>
</tr>
</tbody>
</table>

#### Filter Series
- **MKF50** (Non-bypassing: requires ZK high collapse elements)
- **MKFN50** (Non-bypassing: requires ZK high collapse elements)

#### Number & Size of Elements
- **2K**: 2, KK, ZK
- **2K**: 6, K

#### Media Type
- **E**: Media (Cellulose)
- **AS**: Anti-Stat Media (synthetic)
- **ZW**: Aqua-Excellement™ ZW Media
- **ZX**: Excellement® Z-Media® (High Collapse center tube)
- **W**: W Media (water removal)
- **M**: Media (reusable metal mesh)

#### Micron Rating
- **1**: 1 Micron
- **3**: 3 Micron
- **5**: 5 Micron
- **10**: 10 Micron
- **25**: 25 Micron
- **60**: 60 Micron
- **150**: 150 Micron
- **260**: 260 Micron

#### Seal Material
- **Omit**: Buna N
- **V**: Viton®
- **H**: EPR
- **H.5**: Skydrol® compatibility

#### Porting
- **P = 2½” NPTF**
- **Contact factory for other porting options**

#### Dirt Alarm® Options
- **Omit = None**
- **D = Pointer**
- **DS = Visual pop-up**
- **DSC = DS in cap**
- **D9 = All stainless D5**
- **D8 = Visual w/ thermal lockout**
- **D8C = D8 in cap**
- **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
- **MS5T = MSS (see above) w/ thermal lockout**
- **MS5LCT = Low current MS5T**
- **MS10T = MS10 (see above) w/ thermal lockout**
- **MS10LCT = Low current MS10T**
- **MS12T = MS12 (see above) w/ thermal lockout**
- **MS12LCT = Low current MS12T**
- **MS16T = MS16 (see above) w/ thermal lockout**
- **MS16LCT = Low current MS16T**
- **MS17LCT = Low current MS17T**

#### Visual
- **MS = Cam operated switch w/ ¼” conduit female connection**
- **M13 = Supplied w/ threaded connector & light**
- **M14 = Supplied w/ 5 pin Brad Harrison connector & light (male end)**

#### Electrical with
- **MS13DCT = MS13 (see above), direct current, w/ thermal lockout**
- **MS13DLC = Low current MS13DCT**
- **MS14DCT = MS14 (see above), direct current, w/ thermal lockout**
- **MS14DLC = Low current MS14DCT**

### NOTES:
- **Box 2**: Number of elements must equal 2 when using KK or 27K 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 27K 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**: 50 option is not available with MKFN50.
- **Box 8**: Standard indicator setting for non-bypassing model is 50 psi unless otherwise specified.
- **Box 9**: N option should be used in conjunction with dirt alarm.