Tank-Mounted Filter

Features and Benefits
- Low pressure tank-mounted filter
- Multiple inlet/outlet porting options
- Top, side or bottom mounting
- Optional check valve prevents reservoir siphoning
- Can also be used in return line application (contact factory)
- Visual gauge or electrical switch dirt alarms
- Offered in pipe, SAE straight thread, flanged and ISO 228 porting
- Same day shipment model available
- Also available with DirtCatcher® elements (18LD)
- Available with quality-protected GeoSeal® Elements (GLRT)

Model No. of filter in photograph is LRT18LZ10524NP16Y2.

Flow Rating: Up to 150 gpm (570 L/min) for 150 SUS (32 cSt) fluids
Max. Operating Pressure: 100 psi (7 bar)
Min. Yield Pressure: 400 psi (28 bar), per NFPA T2.6.1
Rated Fatigue Pressure: 90 psi (6 bar), per NFPA T2.6.1-2005
Temp. Range: -20°F to 225°F (-29°C to 107°C)
Bypass Setting: Cracking: 25 psi (1.7 bar)
Full Flow: 34 psi (2.3 bar)
Porting Head & Cap: Die Cast Aluminum
Element Case: Steel
Weight of LRT-18L: 14.6 lbs. (6.6 kg)
Element Change Clearance: 17.0” (432 mm)

Fluid Compatibility
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)

Filter Housing Specifications

Accessories For Tank-Mounted Filters
PAF1
MAF1
MF2

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Tank-Mounted 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

<table>
<thead>
<tr>
<th>Element</th>
<th>Filtration Ratio Per ISO 16889</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Using APC calibrated per ISO 11171</td>
</tr>
<tr>
<td></td>
<td>( \beta_x \geq 75 )</td>
</tr>
<tr>
<td>18LZ1</td>
<td>(&lt; 1.0)</td>
</tr>
<tr>
<td>18LZ3</td>
<td>(&lt; 1.0)</td>
</tr>
<tr>
<td>18LZ5</td>
<td>(2.5)</td>
</tr>
<tr>
<td>18LZ10</td>
<td>(7.4)</td>
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<tr>
<td>18LZ25</td>
<td>(18.0)</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Element</th>
<th>DHC (gm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>18LZ1</td>
<td>224</td>
</tr>
<tr>
<td>18LZ3</td>
<td>230</td>
</tr>
<tr>
<td>18LZ5</td>
<td>238</td>
</tr>
<tr>
<td>18LZ10</td>
<td>216</td>
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<tr>
<td>18LZ25</td>
<td>186</td>
</tr>
</tbody>
</table>

Element Collapse Rating: 150 psid (10 bar)
Flow Direction: Outside In
Element Nominal Dimensions: 4.0” (100 mm) O.D. x 18.5” (470 mm) long

Optional mounting ring available to weld to tank.

Metric dimensions in ( ).
\[ \Delta P_{\text{housing}} \]

LRT \( \Delta P_{\text{housing}} \) 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 120 gpm (379 L/min) for LRT 18LZ10S24S24NY2 using 160 SUS (34 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 LRT housing.

Use the element pressure curve to determine \( \Delta P_{\text{element}} \) at 120 gpm. In this case, \( \Delta P_{\text{element}} \) is 4 psi (.27 bar) according to the graph for the 18LZ10 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:**
\[ \Delta P_{\text{housing}} = 8 \text{ psi} \times .55 \text{ bar} \mid \Delta P_{\text{element}} = 4 \text{ psi} \times .27 \text{ bar} \]

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

\[ \Delta P_{\text{filter}} = 3 \text{ psi} + (4 \text{ psi} \times 1.1) = 7.4 \text{ psi} \]

**OR**
\[ \Delta P_{\text{filter}} = .21 \text{ bar} + (.27 \text{ bar} \times 1.1) = .51 \text{ bar} \]

**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.

<table>
<thead>
<tr>
<th>Ele.</th>
<th>( \Delta P )</th>
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<tbody>
<tr>
<td>18LDZ1</td>
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<tr>
<td>18LDZ25</td>
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</table>

**Diagram:**
- **Diagram 1:** Housing Pressure Drop versus Flow Rate at 32 cSt (150 SUS)
- **Diagram 2:** Element Pressure Drop versus Flow Rate at 32 cSt (150 SUS)
How to Build a Valid Model Number for a Schroeder LRT:

**BOX 1**
LRT

**BOX 2**
18  LZ10

**BOX 3**
S24  S24  N

**BOX 5**
S24  S24

**BOX 6**
N  Y2

**BOX 7**
= LRT18LZ10S24S24NY2

**NOTES:**

Box 2. Replacement element part numbers are a combination of Boxes 2, 3, and 4.

Example: 18LZ10

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

Box 5. If using Port B, Port A & B must always be the same type and size. Example: (A) P20 (B) P20 (C) P16

Box 6. See also “Accessories for Tank-Mounted Filters,” page 307.