**Filter Housing Specifications**

- **Flow Rate:** Up to 300 gpm (1135 L/min) for use with 95/5 fluids
- **Max. Operating Pressure:** 6,000 psi (400 bar)
- **Min. Yield Pressure:** 18,000 psi (1240 bar)
- **Rated Fatigue Pressure:** 4500 psi (310 bar)
- **Temp. Range:** -20°F to 225°F (-29°C to 107°C)
- **Bypass Setting:**
  - Cracking: 50 psi (3.4 bar)
  - LWN60 non-bypassing model available with high crush element
- **Porting Cap & Housing Cap:** Steel
- **Element Change Clearance:** 34.0” (864 mm)
- **Weight:** 550 lb (250 kg)

**Element Performance Information**

<table>
<thead>
<tr>
<th>Element</th>
<th>Abs. Rating wrt ISO 16889 Using APC calibrated per ISO 11171 Bp (c) 1000</th>
<th>Dirt Holding Capacity (gm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>39ZPZ3V</td>
<td>5.1</td>
<td>449</td>
</tr>
<tr>
<td>39ZPZ5V</td>
<td>6.1</td>
<td>359</td>
</tr>
<tr>
<td>39ZPZ10V</td>
<td>12.1</td>
<td>429</td>
</tr>
<tr>
<td>39ZPZ25V</td>
<td>17.7</td>
<td>284</td>
</tr>
</tbody>
</table>

- **Element Collapse Rating:** 150 psi (10 bar)
- **Flow Direction:** Outside In
- **Element Nominal Dimensions:** 50” (127 mm) O.D. x 38” (365 mm) long

**Fluid Compatibility**

Specifically designed for use with 95/5 fluids in mining longwall applications
Longwall Filter

- Horizontal alignment allows straight-through flow, maximizing efficiency and minimizing pressure drop.
- Proprietary synthetic media designed specifically for the mining industry, Excellement®-MD, provides level of filtration not achievable using alternative wire mesh elements because of their lack of absolute ratings.
- Two-inch BSPP ports are easily adaptable to Super Stecko fittings commonly used underground.
- Stainless steel bypass valve that ensures smooth integration with 95/5 fluid.
- Non-bypassing version available with high crush (4500 psid) cleanable metal mesh (25 micron) element.

### Features

**Excellement MD**

**Mining Specific Elements**

### Element Selection Based on Flow Rate

<table>
<thead>
<tr>
<th>Pressure</th>
<th>Series</th>
<th>Element Part No.</th>
<th>Flow (L/min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6000 psi</td>
<td>Z Media</td>
<td>39ZPZ3V</td>
<td>0</td>
</tr>
<tr>
<td>6000 psi</td>
<td>Z Media</td>
<td>39ZPZ5V</td>
<td>0</td>
</tr>
<tr>
<td>6000 psi</td>
<td>Z Media</td>
<td>39ZPZ10V</td>
<td>0</td>
</tr>
<tr>
<td>6000 psi</td>
<td>Z Media</td>
<td>39ZPZ25V</td>
<td>0</td>
</tr>
</tbody>
</table>

Flow selections are predicated on the use of 150 SUS (32 cSt) petroleum based fluid and a 50 psi (3.4 bar) bypass valve.

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

**Exercise:**

Determine \( \Delta P \) at 250 gpm (950 L/min) LW6039ZPZ3V using 150 SUS (32 cSt) fluid.

**Solution:**

\( \Delta P_{\text{housing}} = 0.7 \text{ psi} \ [0.05 \text{ bar}] \)

\( \Delta P_{\text{element}} = 250 \times 0.06 \times (150 - 150) = 150 \text{ psi} \)

or

\( \Delta P_{\text{element}} = (950 \times 0.06 - 54.9) \times (32 - 32) = 1.1 \text{ bar} \)

\( \Delta P_{\text{total}} = 0.7 + 15.0 = 15.7 \text{ psi} \)

or

\( \Delta P_{\text{total}} = 0.05 + 1.1 = 1.15 \text{ bar} \)

\( \Delta P_{\text{sp gr}} = \text{specific gravity} \)

\( \Delta P_{\text{LW60}} \text{ for fluids with sp. gr.} = 0.86 \times \Delta P_{\text{Flow (L/min)}} \)

\( \Delta P_{\text{element}} = \text{flow x element} \times \Delta P \text{ factor} \times \text{viscosity factor} \)

- \( \Delta P_{\text{element}} = 39ZPZ3V \times 0.06 \)
- \( \Delta P_{\text{element}} = 39ZPZ5V \times 0.05 \)
- \( \Delta P_{\text{element}} = 39ZPZ10V \times 0.04 \)
- \( \Delta P_{\text{element}} = 39ZPZ25V \times 0.01 \)

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

Viscosity factor: Divide viscosity by 150 SUS (32 cSt).

Sizing of elements should be based on element flow information provided in the Element Selection chart above. Please note that 95/5 fluid has a lower viscosity than 150 SUS and therefore pressure drops for 95/5 will actually be lower.

### Filter Model Number Selection

<table>
<thead>
<tr>
<th>Filter Series</th>
<th>Element Part Number</th>
<th>Porting</th>
<th>Bypass Setting</th>
<th>Dirt Alarm</th>
</tr>
</thead>
<tbody>
<tr>
<td>LW60</td>
<td>39ZPZ3V</td>
<td>B32=ISO 228 G-2” (2-11 BSPP)</td>
<td>(Omit)= 50 psi Cracking 30 = 30 psi cracking</td>
<td>DPG= Differential Pressure Gauge</td>
</tr>
<tr>
<td></td>
<td>39ZPZ5V</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>39ZPZ10V</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>39ZPZ25V</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LWN60</td>
<td>39ZPMX25V</td>
<td>B32=ISO 228 G-2” (2-11 BSPP)</td>
<td>(Omit)= Blocked</td>
<td>DPG= Differential Pressure Gauge</td>
</tr>
</tbody>
</table>