Tank-Mounted Filter

Features and Benefits
- Low pressure tank-mounted filter
- Designed for high return line flows
- Tank-mounted unit saves space, reduces plumbing
- Cap handles provide for easy element changeout
- Offered with standard Q, QW, and QPML deep-pleated elements in 16" and 39" lengths with Viton® seals as the standard seal option

Applications
- AUTOMOTIVE MANUFACTURING
- MACHINE TOOL
- MINING TECHNOLOGY

Flow Rating: Up to 450 gpm (1700 L/min) for 150 SUS (32 cSt) fluids
Max. Operating Pressure: 100 psi (7 bar)
Min. Yield Pressure: 300 psi (21 bar), per NFPA T2.6.1
Rated Fatigue Pressure: 100 psi (7 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 Head: Steel
Element Case: Steel
Min. Weight of QT-16Q: 100.0 lbs. (46 kg)
Min. Weight of QT-39Q: 158.0 lbs. (72 kg)
Element Change Clearance: 16Q 12.0" (305 mm)  
39Q 33.8" (859 mm)

Viton® is a registered trademark of DuPont Dow Elastomers.

Model No. of filter in photograph is QT39QZ10P48D5C.
**Tank-Mounted Filter**

**Element Performance Information**

<table>
<thead>
<tr>
<th>Element</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 wrt ISO 16889 Using APC calibrated per ISO 11171</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\beta_0 \geq 75$</td>
<td>$\beta_0 \geq 100$</td>
</tr>
<tr>
<td>16Q</td>
<td>&lt;1.0</td>
<td>&lt;1.0</td>
</tr>
<tr>
<td>Z1/PMLZ1</td>
<td>&lt;1.0</td>
<td>&lt;1.0</td>
</tr>
<tr>
<td>Z3/PMLZ3/AS3V/PMLAS3V</td>
<td>&lt;1.0</td>
<td>&lt;1.0</td>
</tr>
<tr>
<td>Z5/PMLZ5/AS5V/PMLAS5V</td>
<td>2.5</td>
<td>3.0</td>
</tr>
<tr>
<td>Z10/PMLZ10/AS10V/PMLAS10V</td>
<td>7.4</td>
<td>8.2</td>
</tr>
<tr>
<td>Z25/PMLZ25</td>
<td>18.0</td>
<td>20.0</td>
</tr>
<tr>
<td>39Q</td>
<td>&lt;1.0</td>
<td>&lt;1.0</td>
</tr>
<tr>
<td>Z1/PMLZ1</td>
<td>&lt;1.0</td>
<td>&lt;1.0</td>
</tr>
<tr>
<td>Z3/PMLZ3/AS3V/PMLAS3V</td>
<td>&lt;1.0</td>
<td>&lt;1.0</td>
</tr>
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<td>Z5/PMLZ5/AS5V/PMLAS5V</td>
<td>2.5</td>
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</tr>
<tr>
<td>Z10/PMLZ10/AS10V/PMLAS10V</td>
<td>7.4</td>
<td>8.2</td>
</tr>
<tr>
<td>Z25/PMLZ25</td>
<td>18.0</td>
<td>20.0</td>
</tr>
</tbody>
</table>

**Dirt Holding Capacity**

<table>
<thead>
<tr>
<th>Element</th>
<th>DHC (gm)</th>
<th>Element</th>
<th>DHC (gm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z1</td>
<td>276</td>
<td>PMLZ1</td>
<td>307</td>
</tr>
<tr>
<td>Z3/AS3V</td>
<td>283</td>
<td>PMLZ3/AS3V</td>
<td>315</td>
</tr>
<tr>
<td>Z5/AS5V</td>
<td>351</td>
<td>PMLZ5/AS5V</td>
<td>364</td>
</tr>
<tr>
<td>Z10/AS10V</td>
<td>280</td>
<td>PMLZ10/AS10V</td>
<td>330</td>
</tr>
<tr>
<td>Z25</td>
<td>254</td>
<td>PMLZ25</td>
<td>299</td>
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<tr>
<td>Z1</td>
<td>974</td>
<td>PMLZ1</td>
<td>1485</td>
</tr>
<tr>
<td>Z3/AS3V</td>
<td>1001</td>
<td>PMLZ3/AS3V</td>
<td>1525</td>
</tr>
<tr>
<td>Z5/AS5V</td>
<td>954</td>
<td>PMLZ5/AS5V</td>
<td>1235</td>
</tr>
<tr>
<td>Z10/AS10V</td>
<td>940</td>
<td>PMLZ10/AS10V</td>
<td>1432</td>
</tr>
<tr>
<td>Z25</td>
<td>853</td>
<td>PMLZ25</td>
<td>1299</td>
</tr>
</tbody>
</table>

**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
- 16Q PML: 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
- 39Q PML: 6.0" (150 mm) O.D. x 37.80" (960 mm) long
Tank-Mounted 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® 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)

**Fluid Compatibility**
- **IRF**
- **TF1**
- **KF3**
- **KL3**
- **LF1–2”**
- **MLF1**
- **RLD**
- **GRTB**
- **MTA**
- **MTB**
- **ZT**
- **KFT**
- **RT**
- **RTI**
- **LRT**
- **ART**
- **BFT**
- **QT**
- **KTK**
- **LTK**
- **MRT**
- **Accessories for Tank-Mounted Filters**
- **PAF1**
- **MAF1**
- **MF2**

**Element Selection Based on Flow Rate**

<table>
<thead>
<tr>
<th>Pressure Series</th>
<th>Element Part No.</th>
<th>Element selections are predicated on the use of 150 SUS (32 cSt) petroleum based fluid and a 30 psi (2.1 bar) bypass valve.</th>
</tr>
</thead>
<tbody>
<tr>
<td>To 100 psi (7 bar)</td>
<td>16 &amp; 39QZ1</td>
<td>16QZ1</td>
</tr>
<tr>
<td></td>
<td>16 &amp; 39QZ3</td>
<td>16QZ3</td>
</tr>
<tr>
<td></td>
<td>16 &amp; 39QZ5</td>
<td>16QZ5</td>
</tr>
<tr>
<td></td>
<td>16 &amp; 39QZ10</td>
<td>16QZ10</td>
</tr>
<tr>
<td></td>
<td>16 &amp; 39QZ25</td>
<td>16QZ25 &amp; 39QZ25</td>
</tr>
<tr>
<td></td>
<td>16 &amp; 39QPMZ1</td>
<td>16QPMZ1</td>
</tr>
<tr>
<td></td>
<td>16 &amp; 39QPMZ3</td>
<td>16QPMZ3</td>
</tr>
<tr>
<td></td>
<td>16 &amp; 39QPMZ5</td>
<td>16QPMZ5</td>
</tr>
<tr>
<td></td>
<td>16 &amp; 39QPMZ10</td>
<td>16QPMZ10</td>
</tr>
<tr>
<td></td>
<td>16 &amp; 39QPMZ25</td>
<td>16QPMZ25</td>
</tr>
</tbody>
</table>

**Flow (gpm) | Flow (L/min)**
--- | ---
0 | 0 |
150 | 500 |
200 | 1000 |
300 | 1500 |
400 | 1700 |
450 | |

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

**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**

**Element ∆P factors @ 150 SUS (32 cSt):**

| 16QZ1 | .09 | 39QZ1 | .03 |
| 16QZ3/ | .04 | 39QZ3/ | .02 |
| 16QPMZ3V | .04 | 39QPMZ3V | .02 |
| 16QPMZV | .04 | 39QPMZV | .02 |
| 16QAS10V | .03 | 39QAS10V | .01 |
| 16QZ5 | .01 | 39QZ5 | .01 |
| 16QPMZ1 | .08 | 39QPMZ1 | .03 |
| 16QPMZ3/ | .05 | 39QPMZ3/ | .02 |
| 16QPMAS3V | .05 | 39QPMAS3V | .02 |
| 16QPMZ5/ | .05 | 39QPMZ5/ | .02 |
| 16QPMAS5V | .05 | 39QPMAS5V | .02 |
| 16QPMZ10/ | .04 | 39QPMZ10/ | .01 |
| 16QPMAS10V | .04 | 39QPMAS10V | .01 |
| 16QPMZ25 | .02 | 39QPMZ25 | .01 |

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

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

**Exercise:**
Determine ∆P at 200 gpm (757 L/min) for QT39QZ3VP48D5C using 200 SUS (44 cSt) fluid.

**Solution:**

\[
\Delta P_{\text{housing}} = 1.5 \text{ psi} \quad (10 \text{ bar}) \\
\Delta P_{\text{element}} = 200 \times 0.04 \times (200+150) = 10.7 \text{ psi} \\
\text{or} \\
= [757 \times (0.04+54.9) \times (44+32)] = 76 \text{ bar} \\
\Delta P_{\text{total}} = 1.5 + 10.7 = 12.2 \text{ psi} \\
\text{or} \\
= [10 + .76 = .86 \text{ bar}]
\]
# Tank-Mounted Filter

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

<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>QT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Example:**

NOTE: One option per box

<table>
<thead>
<tr>
<th>QT</th>
<th>16</th>
<th>Q</th>
<th>Z</th>
<th>3</th>
<th>P48</th>
<th>D5C</th>
</tr>
</thead>
</table>

**Example:** QT16QZ3P48D5C

### BOX 1: Filter Series
- QT

### BOX 2: Element Length (in)
- Q: 16
- QCLQF: 39

### BOX 3: Element Style
- Q: 16
- QCLQF: 39
- QPML: Wholesale

### BOX 4: Media Type
- Z = Excellement® Z-Media® (synthetic)
- W = W media (water removal)
- AS = Anti-Stat Pleat media (synthetic)

### BOX 5: 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 Z-Media®

### BOX 6: Housing Seal Material
- Omit = Buna N
- H = EPR
- V = Viton®

### BOX 7: Inlet Porting
- P48 = 3" NPTF
- P64 = 4" NPTF

### BOX 8: Bypass Setting
- Omit = 30 psi cracking
- 15 = 15 psi cracking
- 50 = 50 psi cracking
- X = Blocked bypass

### BOX 9: Outlet Porting
- Omit = 3" NPT Male
- C = Check valve
- D = Diffuser
- CD = Check valve and diffuser

### BOX 10: Dirt Alarm® Options

#### Visual
- DSC = Visual pop-up in cap

#### Visual with Thermal Lockout
- D8C = Visual w/ thermal lockout in cap

#### Electrical
- MSSC = Electrical w/ 12 in. 18 gauge 4-conductor cable in cap
- MS5LCC = Low current MSS in cap
- MS10CC = Low current MS10 in cap
- MS11C = Electrical w/ 12 ft. 4-conductor wire in cap
- MS12CC = Low current MS12 in cap
- MS16CC = Low current MS16 in cap
- MS17CC = Electrical w/ 4 pin Brad Harrison male connector in cap

#### Electrical with Thermal Lockout
- M5ST = MSS (see above) w/ thermal lockout in cap
- MS5LCT = Low current MS5T in cap
- MS10TC = MS10 (see above) w/ thermal lockout in cap
- MS10LCT = Low current MS10T in cap
- MS12TC = MS12 (see above) w/ thermal lockout
- MS12LCT = Low current MS12T in cap
- MS16TC = MS16 (see above) w/ thermal lockout
- MS16LCT = Low current MS16T in cap
- MS17LCT = Low current MS17T in cap

#### Electrical Visual
- MS13C = Supplied w/ threaded connector & light in cap
- MS14C = Supplied w/ 5 pin Brad Harrison connector & light (male end) in cap

#### Electrical Visual with Thermal Lockout
- MS13DCTC = MS13 (see above), direct current, w/ thermal lockout in cap
- MS13DCLCTC = Low current MS13DCT in cap
- MS14DCTC = MS14 (see above), direct current, w/ thermal lockout in cap
- MS14DCLCTC = Low current MS14DCT in cap

### 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 element are not available in ASP media.
- Box 4: E media elements are also available for the QT filter housing. Contact factory for more information.
- Box 4: For Option W, Box 3 must equal Q.
- Box 6: Viton® is a registered trademark of DuPont Dow Elastomers. All elements for this filter are supplied with Viton® seals. Seal designation in Box 6 applies to housing only.