Features and Benefits

- Designed with integrated particulate removal pre-filtration for maximum coalescing filter element life in the downstream housing.
- Sized for higher flows or highly contaminated fluid applications.
- Routine element change is only needed on pre-filter (the particulate filter) which saves time and money.
- Patent-pending, three-phase, particulate and fuel/water separation media technology.
- A revolutionary element designed for the highest single-pass water and particulate removal efficiencies in today’s ultra-low sulfur diesel (ULSD) fluids.
- Protects expensive Tier 3 and Tier 4 engine components against failures caused by particulate and water transferred from the bulk fuel tank to the vehicle.
- Allows users to achieve or exceed the particulate and water removal specifications of the injection system OEMs.
- Previously acceptable industry standard products no longer provide the high-efficiency separation needed in today’s ULSD fluids.
- In applications >32°F (0°C) complete automation is achievable with a water in fuel sensor fail-safe auto-drain feature using a remote 5 gallon (18L) or 20 gallon (75L) sump with alarm and auto shutdown.
- Schroeder Anti-Static Pleat Media (ASP®) is standard for all coalescing elements.

Markets

- INDUSTRIAL
- MOBILE VEHICLES
- MARINE
- MINING TECHNOLOGY
- AGRICULTURE
- POWER GENERATION
- COMMON RAIL INJECTOR SYSTEMS
- FLEET
- RAILROAD
- BULK FUEL FILTRATION

Model no. of filter in photograph is: BDS239QPMLZ3VVM

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**Bulk Diesel Multi-Skid**

<table>
<thead>
<tr>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Flow Rating:</strong></td>
</tr>
<tr>
<td><strong>Inlet/Outlet Connection:</strong></td>
</tr>
<tr>
<td><strong>Drain Connection Upper:</strong></td>
</tr>
<tr>
<td><strong>Drain Connection Lower:</strong></td>
</tr>
<tr>
<td><strong>Max. Operating Pressure:</strong></td>
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<tr>
<td><strong>Min. Yield Pressure:</strong></td>
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<tr>
<td></td>
</tr>
<tr>
<td><strong>Rated Fatigue Pressure:</strong></td>
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<tr>
<td><strong>Temperature range:</strong></td>
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<td></td>
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<tr>
<td><strong>Bypass Indication:</strong></td>
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<tr>
<td>(Lower indication options available)</td>
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<tr>
<td></td>
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<tr>
<td><strong>Bypass Valve Cracking:</strong></td>
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<td></td>
</tr>
<tr>
<td><strong>Materials of Construction:</strong></td>
</tr>
<tr>
<td>Porting Base: Anodized Aluminum</td>
</tr>
<tr>
<td>Element Bowl: Epoxy Paint w/ High-phos Electroless Nickel Plating (Standard)</td>
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<td><strong>Weight:</strong></td>
</tr>
<tr>
<td><strong>Element Change Clearance:</strong></td>
</tr>
</tbody>
</table>

**NOTES:**

Element are sold with the housing

---

**Metric dimensions in ( ).**
Particulate Elements | DHC | $\beta_x (c) \geq 200$ | $\beta_x (c) \geq 1000$
--- | --- | --- | ---
39QPMLZ1V | 1485 grams | <4.0 | 4.2
39QPMLZ3V | 1525 grams | <4.0 | 4.8

Coalescing Element | Pressure Side Coalescing
--- | ---
Max Flow | Single Pass Water Removal Efficiency
C396Z5V | 70 gpm | ≥ 99.5%

Note:
Based on ULSD15 with 27 Dynes/cm surface tension and 0.25% (2500 ppm) water injection

Particulate Element
Flow Direction: Outside In
Element Nominal Dimensions: 6.0” (150 mm) O.D. x 37.80” (960 mm) long

Coalescing Element
Flow Direction: Inside Out
Element Nominal Dimensions: 6.4” (163 mm) O.D. x 39.4” (1001 mm) long

$\Delta P_{housing}$

BDS $\Delta P_{housing}$ for fluids with sp gr= 0.86

Flow gpm | Flow L/min | $\Delta P$ in psi | $\Delta P$ (bar)
--- | --- | --- | ---
0 | 0 | 0.0 | 0.0
20 | 0 | 0.12 | 0.07
40 | 0 | 0.24 | 0.14
60 | 0 | 0.36 | 0.20
80 | 0 | 0.48 | 0.31
100 | 0 | 0.75 | 0.48
120 | 0 | 1.08 | 0.7|4
140 | 0 | 1.4 | 0.92

$\Delta P_{element}$

$\Delta P_{element} = \text{flow} \times \text{element} \times \Delta P \text{ factor} \times \text{viscosity factor}$

El. $\Delta P$ factors @ 37 SUS (3 cSt).
C396Z5V = .17
39QPMLZ1V = .01
39QPMLZ3V = .01

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

Viscosity factor: Divide viscosity by 37 SUS (3 cSt).

$\Delta P_{filter} = \Delta P_{housing} + \Delta P_{element}$

Exercise: Determine $\Delta P$ at 70 gpm (265 L/min) for BDS239QPMLZ3VM

Solution:
$\Delta P_{housing} = 3.0 \text{ psi} = [0.21 \text{ bar}]$
$\Delta P_{element} (39QPMLZ1V) = 70 \times 0.01 = 0.7 \text{ psi} = [0.05 \text{ bar}]$
$\Delta P_{element} (C396) = 70 \times 0.17 = 11.9 \text{ psi} = [0.82 \text{ bar}]$
$\Delta P_{filter} = 3.0 + 0.7 + 11.9 = 15.6 \text{ psi} = [1.07 \text{ bar}]$
How to Build a Valid Model Number for a Schroeder BDS Housing Supplied with Element:

How to Build a Valid Model Number for a Schroeder BDS Housing Supplied with Element:

Example: NOTE: One option per box

BOX 1 BOX 2 BOX 3 BOX 4 BOX 5 BOX 6
BDS – – – – –

Example:

NOTE: One option per box

BOX 1 BOX 2 BOX 3 BOX 4 BOX 5 BOX 6
BDS 2 39QPMLZ3 V VM = BDS239QPMLZ3VVM

BOX 1 BOX 2 BOX 3 BOX 4 BOX 5 BOX 6
Filter Series
Box 1

Particulate Filter Micron Rating
Box 3

Housing Seal Material
Box 5

Dirt Alarm®
Box 5

Sump Options
Box 6

Box 4

\text{V} = \text{Viton®}

NOTES:

Optional AWD for use only >32° F (0°C)
Box 4. Viton® is a registered trademark of DuPont Dow Elastomers

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Filtration Ratio per ISO 16889
Using APC calibrated per ISO 11171

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Fuel Oils

- ULSD15, low sulfur diesel and high sulfur diesel
- Biodiesel blends
- Synthetic diesel and blends
- No. 2 fuel oil and heating oil