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
Bulk Diesel Multi-Skid

Specifications

**Flow Rating:** Up to 140 gpm to 210 gpm (530 to 795 L/min) for ULSD15

**Inlet/Outlet Connection:** -32 (ORB) SAE J1926

**Drain Connection Upper:** 1/4” NPT Ball Valve

**Drain Connection Lower:** 1/4” NPT Ball Valve

**Max. Operating Pressure:** 100 psi (7 bar)

**Min. Yield Pressure:** 400 psi (27.6 bar) without sight gauge

Contact factory for yield pressure rating with sight gauge

**Bypass Indication:** (Lower indication options available)

**Bypass Valve Cracking:**
- Particulate Filter: 15 psi (1.03 bar)
- Coalescing Filter: 25 psi (1.7 bar)
- Particulate Filter: 20 psi (1.37 bar)
- Coalescing Filter: 30 psi (2 bar)

**Materials of Construction:**

- Particulate Filter:
  - Porting Base: Anodized Aluminum
  - Element Bowl: Epoxy Paint w/ High-phos Electroless Nickel Plating
  - Cap: Plated Steel

- Coalescing Filter:
  - Porting Base: Anodized Aluminum
  - Element Bowl: Epoxy Paint w/ High-phos Electroless Nickel Plating
  - Cap: Plated Steel

**Weight:** 596 Lbs. (270 kg)

**Element Change Clearance:** 33.8” (858 mm)

**Temperature range:**
- -20°F to 165°F (-29°C to 74°C) sump heater option
- 32°F to 165°F (0°C to 74°C) standard or AWD option

**NOTES:**

Elements are sold with the housing

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Metric dimensions in ( ).
Bulk Diesel Multi-Skid

Particulate Elements | DHC | Βₜ (c) ≥ 200 | Βₜ (c) ≥ 1000
---|---|---|---
39QPMLZ1V | 1485 grams | <4.0 | 4.2
39QPMLZ3V | 1525 grams | <4.0 | 4.8

Coalescing Element

Pressure Side Coalescing

<table>
<thead>
<tr>
<th>Element</th>
<th>Flow Rate</th>
<th>Single Pass Water Removal Efficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>C396Z5V</td>
<td>70 gpm</td>
<td>≥ 99.5%</td>
</tr>
</tbody>
</table>

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

Notes

Exercise: Determine ΔP at 70 gpm (265 L/min) for BDS239QPMLZ3VVM

Solution:

ΔP_housing = 3.0 psi = [0.21 bar]
ΔP_element (39QPML1V) = 70 x 0.01 = 0.7 psi [0.05 bar]
ΔP_element (C396) = 70 x 0.17 = 11.9 psi [0.82 bar]
ΔP_total = 3.0 + 0.7 + 11.9 = 15.6 psi [1.07 bar]
How to Build a Valid Model Number for a Schroeder BDS Housing Supplied with Element:

**BOX 1**
- Filter Series
  - BDS

**BOX 2**
- No. of Coalescing Filters
  - 3 = 210gpm

**BOX 3**
- Particulate Filter Micron Rating
  - 39QPMLZ1 = 1μm
  - 39QPMLZ3 = 3μm

**BOX 4**
- Housing Seal Material
  - V = Viton®

**BOX 5**
- Dirt Alarm®
  - VM = Visual Pop-Up w/ Manual Reset

**BOX 6**
- Sump Options
  - Omit = None (standard)
  - H = Sump Heater
  - S = Sight Gauge
  - AWDS = Auto water drain 5 gal tank w/ failsafe
  - AWD20 = Auto water drain 20 gal tank w/ failsafe
  - C = Cla-Val® Flow Control Valve (2" ANSI 150# flange)

**Example:**

<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>
</tr>
</thead>
<tbody>
<tr>
<td>BDS</td>
<td>3</td>
<td>39QPMLZ3</td>
<td>V</td>
<td>VM</td>
<td>= BDS339QPMLZ3VVM</td>
</tr>
</tbody>
</table>

**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

<table>
<thead>
<tr>
<th>Particulate Elements</th>
<th>DHC</th>
<th>( \beta_x (c) \geq 200 )</th>
<th>( \beta_x (c) \geq 1000 )</th>
</tr>
</thead>
<tbody>
<tr>
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<td>1485 grams</td>
<td>&lt;4.0</td>
<td>4.2</td>
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<tr>
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<td>1525 grams</td>
<td>&lt;4.0</td>
<td>4.8</td>
</tr>
</tbody>
</table>

**Coalescing Element**

**Pressure Side Coalescing**

<table>
<thead>
<tr>
<th>C3962ZV</th>
<th>Max Flow</th>
<th>Single Pass Water Removal Efficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>70 gpm</td>
<td>≥ 99.5%</td>
<td></td>
</tr>
</tbody>
</table>

**Note:**

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

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**Coalescing Element**

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

**Fuel Oils**

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