

Applications



POINT OF USE
FUEL DISPENSING



FLEET FILL / BULK FUEL
TRANSFER



BULK FUEL
UNLOADING



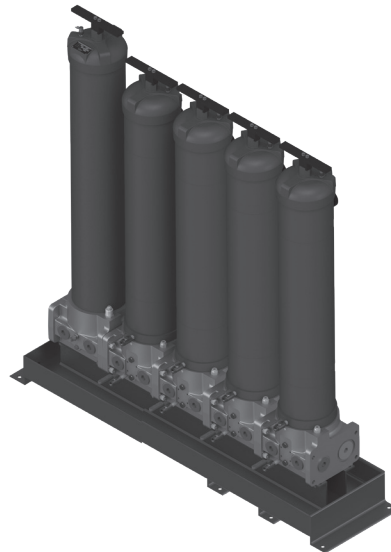
PROTECTION FOR
HIGH-FLOW FUEL
INJECTION SYSTEMS



BULK TANK
KIDNEY LOOP /
RECIRCULATION

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



Model no. of filter in photograph is:
BDS439QPMLZ3VD5

Markets



INDUSTRIAL



MOBILE
VEHICLES



MARINE



MINING
TECHNOLOGY



AGRICULTURE



POWER
GENERATION



COMMON RAIL
INJECTOR SYSTEMS



FLEET



RAILROAD



BULK FUEL
FILTRATION

210-280 gpm^{ICF}

795-1060 L/min^{BDF}

150 psi^{BDA}

10.3 bar^{GHPF}

GHPF

GHCF

QCF

BDS

BDS2

BDS3

BDS4

LVH-F

LVH-C

BDFC

BDFP

BDC

HDP

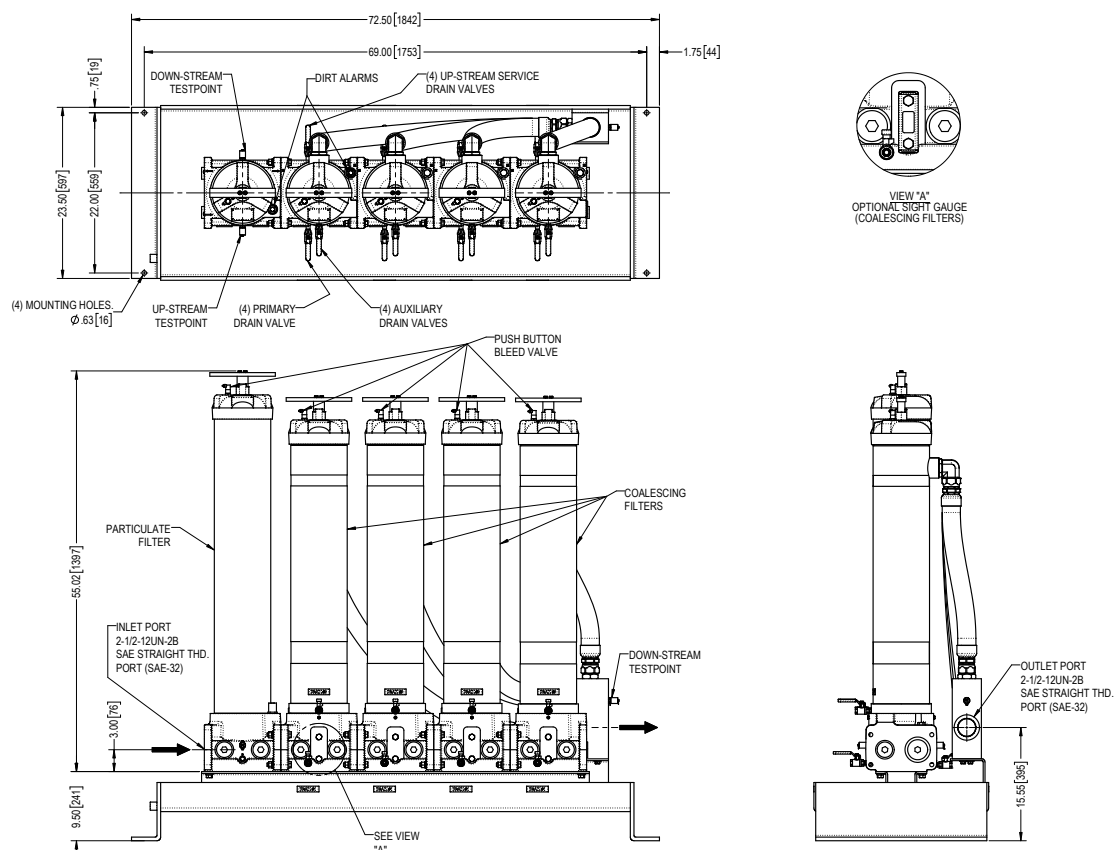
HDPD

BCC

Flow Rating:	From 210 gpm to 280 gpm (795 to 1060 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:	150 psi (10.3 bar)	
Min. Yield Pressure:	400 psi (27.6 bar) without sight gauge Contact factory for yield pressure rating with sight gauge	
Rated Fatigue Pressure:	Contact Factory	
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	
Bypass Indication:	<u>Particulate Filter</u> (Lower indication options available) Particulate: 15 psi (1.03 bar)	<u>Coalescing Filter</u> Coalescing: 25 psi (1.7 bar)
Bypass Valve Cracking:	<u>Particulate Filter</u> Particulate: 20 psi (1.37 bar)	<u>Coalescing Filter</u> Coalescing: 30 psi (2 bar)
Materials of Construction:	<u>Particulate Filter</u> Porting Base: Anodized Aluminum Element Bowl: Epoxy Paint w/ High-phos Electroless Nickel Plating (Standard) Cap: Plated Steel	<u>Coalescing Filter</u> Porting Base: Anodized Aluminum Element Bowl: Epoxy Paint w/ High-phos Electroless Nickel Plating (Standard) Cap: Plated Steel
Weight:	904 Lbs. (410 kg)	
Element Change Clearance:	33.8" (858 mm)	

NOTES:

Elements are sold with the housing



Metric dimensions in ().
Dimensions shown are inches for general information and overall envelope size only.
For complete dimensions please contact Schroeder Industries to request a certified print.

Filtration Ratio per ISO 16889
Using APC calibrated per ISO 11171

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	$\geq 99.5\%$

Note:

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

Particulate Element

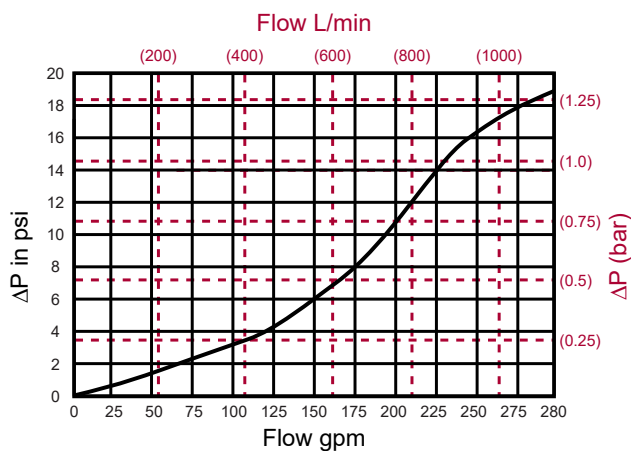
Flow Direction: Outside In
Element Nominal Dimensions: 6.0" (150 mm) O.D. x 37.80" (960 mm) long

Coalescing Element

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

$\Delta P_{\text{housing}}$

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



Notes

$\Delta P_{\text{element}}$

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

El. ΔP factors @ 37 SUS (3 cSt).

C396Z5V = 0.17

39QPMLZ1V = 0.01

39QPMLZ3V = 0.01

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

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

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

Exercise: Determine ΔP at 280 gpm (1060 L/min) for BDS239QPMLZ3VD5

Solution:

$\Delta P_{\text{housing}} = 19 \text{ psi [1.03 bar]}$

$\Delta P_{\text{element (39QPML)}} = 280 \text{ gpm} \times 0.01 = 2.8 \text{ psi [0.19 bar]}$

$\Delta P_{\text{element (C396)}} = 280/4 \text{ gpm} \times 0.17 = 11.9 \text{ psi [0.82 bar]}$

$\Delta P_{\text{total}} = 19 \text{ psi} + 2.8 \text{ psi} + 11.9 \text{ psi} = 33.7 \text{ psi [2.32 bar]}$

Element Particulate Performance Information

Element Coalescing Performance Information

Highlighted product eligible for **QuickDelivery**

Pressure Drop Information Based on Flow Rate and Viscosity

Filter
Model
Number
Selection

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

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	4	39QPMLZ3	V	D5	

= BDS439QPMLZ3VD5

BOX 1	BOX 2	BOX 3	BOX 4
Filter Series	No. of Coalescing Filters	Particulate Filter Micron Rating	Housing Seal Material
BDS	4 = 280gpm	39QPMLZ1 = 1µm 39QPMLZ3 = 3µm	V = Viton®

BOX 5	BOX 6
Dirt Alarm®	Sump Options
D5 = Visual Pop-Up w/ Manual Reset	Omit = None (standard) H = Sump Heater S = Sight Gauge AWD5 = Auto water drain 5 gal tank w/ failsafe AWD20 = Auto water drain 20 gal tank w/ failsafe

NOTES:

Optional AWD for use only >32° F (0°C)

Box 4. Viton® is a registered trademark of DuPont Dow Elastomers

Element
Part Number
Selection

Highlighted
product eligible for
QuickDelivery

Filtration Ratio per ISO 16889 Using APC calibrated per ISO 11171			
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

Fluid
Compatibility

Fuel Oils

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