

Bulk Diesel Fuel Coalescing Filter

QCF

*Coalescing Elements Patent-Pending

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

Application Introduction:

The Reason for Better Bulk Fuel Filtration

Advances in diesel engine fuel injection systems have been instrumental in complying with future emission standards. Higher pressure fuel injectors produce a finer mist of fuel, which burns cleaner. Common rail injection systems run at higher pressures and allow more injections per combustion cycle improving fuel economy, engine performance with lower noise. Higher pressure fuel injector systems have tighter tolerances and require the highest efficiency, single-pass particulate and water removal to minimize wear related failures.

Features and Benefits

- 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 fuels tanks 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
- Complete automation is achievable with fail-safe auto-drain feature using a remote 5 gallon (18L) or 20 gallon (75L) sump with alarm and auto shutdown in application above 32°F (0°C)



Model no. of filter in photograph is: QCF5VS24VM

Markets



INDUSTRIAL



MOBILE VEHICLES



MARINE



MINING TECHNOLOGY



AGRICULTURE



POWER GENERATION



COMMON RAIL INJECTOR SYSTEMS



FLEET



RAILROAD



BULK FUEL FILTRATION

70 gpm ICF
265 L/min BDF

100 psi BDA
7 bar GHPF

GHPF

GHCF

QCF

BDS

BDS2

BDS3

BDS4

LVH-F

LVH-C

BDFC

BDFP

BDC

HDP

HDPD

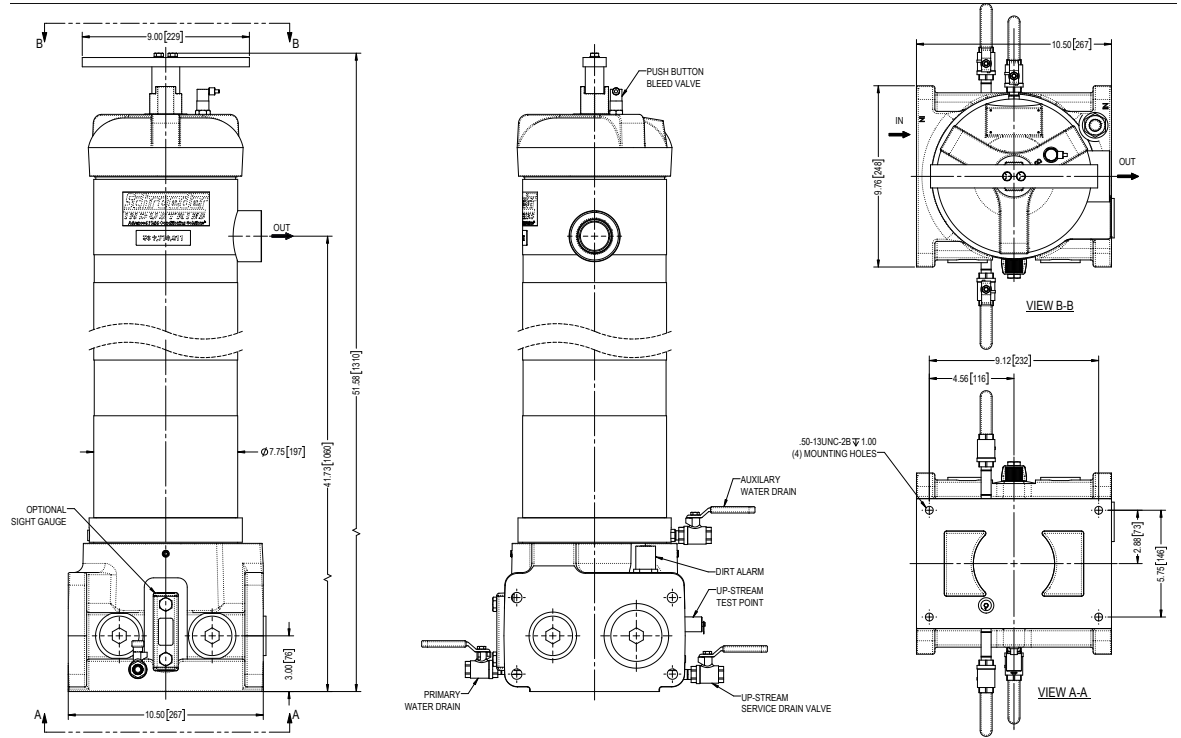
BCC

Filter Housing Specifications

Flow Rating:	Up to 70 gpm (265 L/min) for ULSD15
Inlet/Outlet Connection:	-24 (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
Rated Fatigue Pressure:	Contact Factory
Temperature range:	-20°F to 165°F (-29°C to 74°C) Standard 32°F to 165°F (0°C to 74°C) with optional sight gauge
Bypass Indication:	25 psi (1.7 bar) (Lower indication options available)
Bypass Valve Cracking:	30 psi (2 bar)
Materials of Construction:	Porting Base: Anodized Aluminum Element Bowl: Epoxy Paint w/ High-phos Electroless Nickel Plating (Standard) Cap: Nickel Coated Ductile Iron
Weight:	155 Lbs. (77 kg)
Element Change Clearance:	33.8" (858 mm)

NOTES:

Element is sold with housing



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

Bulk Diesel Fuel Coalescing Filter



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

Flow Direction: Inside Out

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

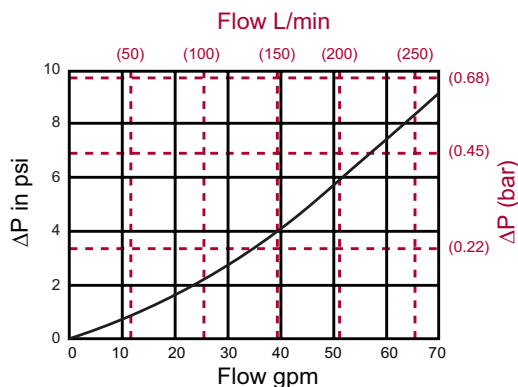
Element Coalescing Performance Information
Element Sold with Housing

Highlighted product eligible for QuickDelivery

ICF
BDF
BDA
GHPF
GHCF
QCF

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

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



sp gr = specific gravity

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

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

El. ΔP factors @ 37 SUS (3 cSt).

C396Z5V = .17

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

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

Pressure Drop Information Based on Flow Rate and Viscosity

BDS
BDS2
BDS3
BDS4
LVH-F
LVH-C
BDFC
BDFP
BDC
HDP
HDPD
BCC

Notes

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

Exercise: Determine ΔP at 70 gpm (265 L/min) for QCFC5V24VM

Solution:

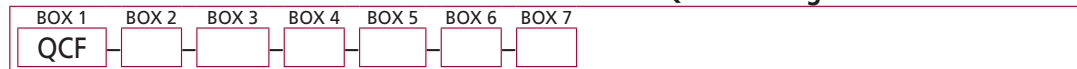
$$\Delta P_{\text{housing}} = 9.2 \text{ psi} = [0.63 \text{ bar}]$$

$$\Delta P_{\text{element}} = 70 \times 0.17 = 11.9 \text{ psi} [0.82 \text{ bar}]$$

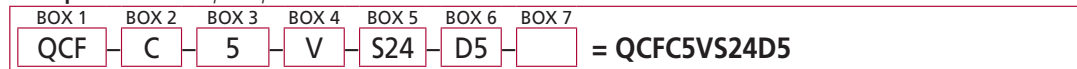
$$\Delta P_{\text{total}} = 9.2 + 11.9 = 21.1 \text{ psi} [1.46 \text{ bar}]$$

Filter Model Number Selection

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



Example: NOTE: One option per box



BOX 1	BOX 2	BOX 3	BOX 4
Filter Series	Coalescing Element Series	Element Media Type	Housing Sealing Material
QCF	C = C396Z5V	5 = 5 µm Coalescing	V = Viton®

BOX 5	BOX 6	BOX 7
Porting	Bypass Indicator Series	Additional Options
S24 = -24 (ORB) SAE J1926	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 sight gauge and AWD's for use only >32° F (0°C)
- Box 4. Viton® is a registered trademark of DuPont Dow Elastomers
- Box 7. For automatic drain option, contact factory

Element Part Number Selection

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

Highlighted product eligible for **QuickDelivery**

Note:

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

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