

Section 2: BULK DIESEL MOBILE FILTRATION UNITS

Bulk Diesel Mobile Filtration Units

Bulk Diesel Mobile Filtration Units

Mobile units provide a fuel filtration solution that address the particulate contamination and water removal in an easy to use package. Because of its mobility, it can be deployed in remote sites or moved between different bulk diesel storage tanks on a facility site.

Bulk Diesel Tanks where contaminated diesel fuel is left in a tank, can jeopardize all of the effort that were put in cleaning the fuel prior to filling up the tank. Over time, fuel in bulk diesel storage tanks can ingress particulate and water contamination from the environment.

Water, over time, results in organic growth such as bacteria and/or fungus. Bacteria or fungus can cause effects similar to free water on fuel systems. This includes rust, corrosion or emissions problems. The effects can be accelerated as the fuel ages and the level of acidity and oxidation can be shown with the Total Acid Number TAN (mg KOH/g) Acid Number. These contaminants may also coat the water in fuel sensors in a system and prevent the proper detection of water.



Natural Gas Drilling Site Example

A bulk diesel fuel storage tank on a remote Natural Gas Drilling site, used to fuel the generator was found with heavy sludge buildup. The sludge and dirt caused loss of production (generator not running) and damage to diesel engine components totaling over \$100,000 in lost production in one hour.

Due to the severe contamination, the fuel was pumped into another, clean tank by the BDC bulk diesel filter cart and cleaned in a single pass. With

this single pass. Particulate and free water were removed in one step. The first stage Bag Filter on the BDC was ideal for the gross removal of microbial bloom/growth, rust and large particulates from the fuel. With the addition of a bag housing, the BDC can handle the high dirt loads often found in on-site service tanks.

After the original tank was emptied, the sludge at the bottom of the tank (pictured) was removed and the tank was throughly cleaned to have it ready for the next delivery of fuel. To maintain a clean tank and clean fuel, the BDC is ideal as a kidney loop system that polishes the fuel on a regular basis or can be permanently installed.



BDC

Contamination Type:	Sources	Effects	Solutions
Particulates:	 Contaminated fuel delivery Missing tank breather Tank corrosion Dirt left from tank installation 	Wear and tear of diesel engine componentsPremature failure	 Fuel Filtration Periodic tank cleaning/fuel polishing Add desiccant breathers Filtration at each stage of fuel movement
Water:	 Contaminated fuel delivery Condensation Leaks and outside influences 	 Engine combustion and/or injector problems Corrosion Clogged/saturated filters Organic/Biological growth 	 Fuel Filtration Close any openings on tank Periodic tank cleaning/fuel polishing
Organic Growth:	 Generated by presents of water and air 	 Clogs filters, engine parts Increased TAN number (corrosive effect) 	 Periodic tank cleaning/fuel polishing Prevent water from entering tank Use desiccant breathers

Fuel Contamination types:

Bulk Diesel Filter Cart

*Coalescing Elements Patent-Pending

Applications











PROTECTION FOR HIGH-FLOW FUEL INJECTION SYSTEMS



RECIRCULATION



Model no. of filter in photograph is: BDFC11GGZ3CG5VD525

Application Introduction:

The BDFC is ideal for those wanting to maintain clean fuel in their bulk storage tanks. The new BDFC provides exceptional particulate filtration and continuous water removal with higher flow rates. The GHPF particulate pre-filter and GHCF coalescing water removal filters feature Schroeder Industries' GeoSeal® patented aftermarket solution, ensuring guality replacement elements are used with every element change. These elements use the fully synthetic Excellement Z-Media[®] and revolutionary coalescing media to fully protect vital diesel engine components from debris and water.

Features and Benefits

- Designed with integrated particulate removal pre-filtration for maximum coalescing filter element life in the downstream housing
- Routine element change only needed on GHPF particulate filter, keeping operating costs low
- Patented GeoSeal[®] elements designed to provide consistent guality with the highest single-pass water and particulate removal efficiencies in today's ultra-low sulfur diesel (ULSD) fuels
- All-aluminum filter housings and plumbing components are fully compatible with diesel and biodiesel
- Sight glass, Y-strainer, and upstream/downstream test points included
- 15' clear suction hose and rubber discharge hose with cam-and-groove connections and 3' wands
- At just under 28" wide, this cart will fit through standard doorways
- Electric motor includes 120VAC with resettable overload and 7' power cord
- Latching, resettable pressure indicators trip at 5 psi before bypass valve cracking, providing early warning to the operator of when to change the filter element







POWER GENERATION



MOBILE VEHICLES



COMMON RAIL INJECTOR SYSTEMS



MARINE

FLEET

MINING TECHNOLOGY



RAILROAD





BDFC



14 or 25 gpm

53 or 95 L/min BDF



Filter Housing Specifications	Flow Rating:	Electric Motor Option: 14 gpm or 25 gpm (53 L/min or 95 L/min) Air Operated Option: 16 gpm or 25 gpm (61 L/min or 95 L/min)		
	Ambient Environment Temperature Range:	-20°F to 104°F (-29°C to 40°C)		
	Bypass Indication:	<u>Particulate Filter</u> Electric Motor: 35 psi (2.4 bar) Air Operated: 25 psi (1.7 bar)	<u>Coalescing Filter</u> Electric Motor: 35 psi (2.4 bar) Air Operated: 15 psi (1.0 bar)	
	Bypass Valve Cracking:	<u>Particulate Filter</u> Electric Motor: 40 psi (2.8 bar) Air Operated: 30 psi (2.1 bar)	<u>Coalescing Filter</u> Electric Motor: 40 psi (2.8 bar) Air Operated: 20 psi (1.4 bar)	
	Materials of Construction:	<u>Particulate Filter</u> Head: Cast Aluminum, Anodized Element Case: Aluminum, Anodized	<u>Coalescing Filter</u> Head: Cast Aluminum, Anodized Element Case: Aluminum, Anodized Sump: Cast Aluminum, Anodized	
	Weight:	131 lbs. (59.4 kg)		
	Standard Operating Frequency & Phase:	60 Hz, Single Phase		
	Full Load Amperage @ Operating Voltage:	13.4 A @ 115 VAC 7.2-6.7 A @ 208-230 VAC		
	Service Factor Amperage @ Operating Voltage:	15.2 A @ 115 VAC 8.1-7.6 A @ 208-230 VAC		

Dimensions







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 Filter Cart BDFC

	Filtration Ratio per ISO 16889 Using APC calibrated per ISO 11171				Element	ICF
Particulate Elements	DHC	β _x (c) ≥ 200	β _x (c) ≥ 1	1000	Partormance	BDF
11GGZ1V	172 grams	<4.0	4.5		Information	C
11GGZ3V	148 grams	4.6	5.8		mornation	
Coalescing Element		Pressure Sid	e Coalescing		Element	
	Max Flo	w	Single Pass Water Removal E	fficiency	Water	
C125GZ5V	25 gp	m	≥ 95%		Coalescing	
					Performance	5
bte: Based on ULSD15 with 2	7 Dynes/cm surface tensio	on and 0.25% (2500 ppm) water injection		Information Particulate and	
Particulate Eler	ment				Coalescing Elements Sold	
Element Nominal Dimens	ions: 5.0" (27 mm) O.D	. x 11" (279 mm) long			with Cart	
Coalescing Eler	ment				Highlighted	
Flow Direc	tion: Inside Out ions: 5.0" (27 mm) O.D	. x 12" (305 mm) long			product eligible for	LVH-I
						LVH-C
						BDFC
lotes						
						HDF
						HDPD

BDFC Bulk Diesel Filter Cart



Bulk Diesel Filtration Panel

BDFP

14 or 25 gpm

App	lications
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BULK FUEL



INJECTION SYSTEMS

RULK TANK KIDNEY LOOP RECIRCULATIO



A simple turn-key stationary fuel filtration system

The BDFP provides a simple turn-key stationary fuel filtration system for exceptional fuel transfer, polishing, and dispensing applications. Both filters combine Schroeder's fully synthetic Z-Media[®] in a particulate pre-filter, the GHPF, with our patent-pending coalescing water removal filter, the GHCF, to fully protect vital diesel engine components from dirt and water. The BDFP provides premium filtration in a simple system which can easily be integrated into new and existing fuel storage systems.

Features and Benefits

- Turn-key coalescing and filtration system, for use as a fuel transfer, polishing, and dispensing solution
- Incorporates high-efficiency particulate and water removal filtration into a stationary mounted system with pump
- Available with either electrical or air operated pump options for more system flexibility
- GHPF and GHCF filter housings use patented GeoSeal[®] elements
- All-aluminum filter housings are fully compatible with diesel and biodiesel
- Minimal clearance needed for element service, ideal for enclosure installations
- Routine element change only needed on GHPF particulate filter, reducing operating cost
- Patent-pending, three-phase particulate, coalescing 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 III and Tier IV engine components against failures caused by particulate and water transferred from the fuel storage tanks to the equipment
- Allows users to achieve or exceed the particulate and water removal specifications of the injection system OEMs

Markets









GENERATION





COMMON RAIL INJECTOR SYSTEMS

MARINE

FLEET



MINING TECHNOLOGY



BULK FUEL FILTRATION





BDFP

Bulk Diesel Filtration Panel



Bulk Diesel Filtration Panel BDFP

	Filtration Ratio per ISO 16889 Using APC calibrated per ISO 11171			Element ICF	
Particulate Elements	DHC(g)	$\boldsymbol{\beta}_{x}(c) \geq 200$		$β_{x}$ (c) ≥ 1000	Performance ^{BDF}
11GGZ1V	172	<4.0		4.2	Information
11GGZ3V	148	<4.0		4.8	BDA
Coalescing Element		Pressure Sic	de Coalescing		Element
	Max F	low	Single Pass Water	Removal Efficiency	Water _{GHCF}
C125GZ5V	25 g	pm	≥ 9	95%	Coalescing
Note: Based on ULSD15 with Particulate E Flow Di	h 27 Dynes/cm surface tens Element rection: Outside In	ion and 0.25% (2500 ppm	n) water injection		Performance QCF Information Particulate and BDS Coalescing Elements Sold with System BDS2
	ensions: 5.0" (27 mm) O.	D. x 11" (279 mm) long			
Flow Di Element Nominal Dime	rection: Inside Out ensions: 5.0" (27 mm) O.	D. x 12″ (305 mm) long			Highlighted product eligible for QuickDelivery
					BDS4
					LVH-F
					LVH-C
					BDFC
					BDFP
					BDC
Notes					HDP
					HDPD
					ВСС

Bulk Diesel Filtration Panel

BDFP



Bulk Diesel Cart

*Coalescing Elements Patent-Pending



25 or 70 gpm

95 or 275 L/minde



Application Introduction:

Applications

oint of Use Fue

Dispensing

The Reason for Better Bulk Fuel Filtration

The BDC provides exceptional single pass or kidney loop diesel particulate filtration and continuous water removal. All 3 filters combine Schroeder's fully synthetic media and patent-pending fuel water separation technology. The BDC is ideal for fuel maintenance operations.

FLEET FILL / BULK FUEL TRANSFER BULK FUEL

Features and Benefits

- Great for kidney loop clean-up and single pass transfer of diesel fuel in larger storage tanks
- Incorporates a bag element pre-filter, available from 1 to 200 micron, for gross removal of microbial bloom contamination and rust
- Fuel and water separation media technology in a three-phase element construction for high efficiency, single-pass removal of emulsified and free-water in Ultra-low Sulfur Diesel (ULSD) and biodiesel fuels
- Designed because prior generation coalescing methods no longer provide high-efficiency separation in ULSD and biodiesel
- Real time fuel condition monitoring can be achieved while using the supplied test points and one of our contamination sensing products
- Pump motor is 115VAC with re-settable overload and 7' power cord for 25 gpm models and available as 220V Single Phase, 230V Three Phase, or 460V Three Phase for 70 gpm models
- Helps protect expensive, vital engine components against failures caused by contaminated fuel



Model no. of filter in photograph is: BDC39QPMLZ3VD5

BDS2 BDS3 BDS4

LVH-F

LVH-C

BDFC

BDFP

BDC

HDF

HDPD

BCC

Markets



M

POWER GENERATION



MOBILE VEHICLES



COMMON RAIL



MARINE

FLEET

MINING TECHNOLOGY











BDC Bulk Diesel Cart

Filter	Flow Rating:	Up to 25 gpm (95 L/min) or 70 gpm (265 L/min) for ULSD15 & biodiesel blends			
Housing	Temperature Range:	e: 32°F to 150°F (0°C to 66°C) standard and with AWD option -20°F to 150°F (-29°C to 66°C) with heater option			
specifications	Bypass Indication:	<u>Particulate Filter</u> 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:	Porting Base: Anodized Aluminum Cap: Plated Steel Bag Housing: 304 Stainless Steel Particulate Filter Housing: Epoxy Paint w/ (Standard) Coalescing Filter Housing: Epoxy Paint w/ (Standard)	High-phos Electroless Nickel Plating High-phos Electroless Nickel Plating		
	Weight:	25 gpm model - 785 lbs. (356 kg), 70 gpm	model - contact factory		
	Element Change Clearance:	33.8″ (858 mm)			
	Operating Frequency*:	60 Hz			
	Operating Phase*:	Single			
	Full Load Amperage @ Operating Voltage*:	13.4 A @ 115 VAC 7.2-6.7 A @ 208-230 VAC			
	Service Factor Amperage @ Operating Voltage*:	15.2 A @ 115 VAC 8.1-7.6 A @ 208-230 VAC			
AWD Version	Metric dimensions in (). Dimensions shown are inches [millimeters] f For complete dimensions please contact Sch	For e	For 25 gpm models only. electrical on 70 gpm models, Contact Factory.		
	For complete dimensions please contact Sch	nroeder Industries to request a certified print.			

Bulk Diesel Cart BDC

	Filtration Ratio per ISO 16889 Using APC calibrated per ISO 11171			
Particulate Elements	DHC	$\boldsymbol{\beta}_{x}(c) \geq 200$	$\boldsymbol{\beta}_{x}(c) \geq 1000$	Particulate
39QPMLZ1V	1485 grams	<4.0	4.2	Performance
39QPMLZ3V	1525 grams	<4.0	4.8	Information _{BDA}
Coolessing Element		Pressure Side Coalescing		GHPF Element GHCE
	Max Flow	Cinal	o Pass Water Permoval Efficiency	Wator
C20675V	MidX FIOW	Singi		Coolossing OCE
C390Z3V	70 gpm		≥ 99.5%	Coalescing
Note: Based on ULSD15 with	n 27 Dynes/cm surface tension and 0.25	5% (2500 ppm) water injectic	n	Performance Information Particulate and Coalescing BDS2
				Elements Sold with Cart
Coalescing El Flow Dir	lement rection: Inside Out			
Element Nominal Dime	ensions: 6.4" (163 mm) O.D. x 39.4" (1001 mm) long		product eligible for BDS4
Particulate E	lement Outside In			QuickDelivery
Flow Dir Element Nominal Dime	rection: Outside in ensions: 6.0" (150 mm) O.D. x 37.8" (960 mm) long		LVH-F
				LVH-C
				BDFC
				BDFP
				BDC
				HDP
				HDPD
Part Number	Description	Micron Rating	Elements Per Case	Optional
C396Z5V	Coalescing Element	5 μm	1	Replacement BCC
39QPMLZ1V	Particulate Element	1 µm	1	Elements
39QPMLZ3V	Particulate Element	3 µm	1	
PEF5P2PH	Bag Element	5 μm	50	Highlighted
PEF25P2PH	Bag Element	25 μm	50	QuickDelivery
PEF50P2PH	Bag Element	50 µm	50	· · · · · · · · · · · · · · · · · · ·
PEF100P2PH	Bag Element	100 µm	50	

Bulk Diesel Cart

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