



SYSTEM AVAILABILITY

Mobile Dispensing Fuel Filter Assembly For MOW Equipment

Technical Application Bulletin

PROJECT BACKGROUND

DISCOVER

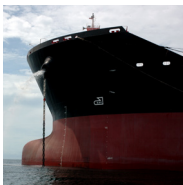


DIAGNOSE

- A Class 1 Rail Carrier was experiencing in-field failures of their MOW (Maintenance-of-Way) equipment.
- This was due to poor fuel quality.
- The equipment consisted of MOW Fuel & Lube Trucks.

- No fuel quality control in-field:
 - Using any retail location.
- Equipment downtime and costs:
 - Parts & Labor: \$3,000 USD
 - Downtime: \$40,000 USD
 - Lost Revenue: \$1M USD
- Quality Dispensing Filtration:
 - Using Competitive Solution:
 - ISO 4406: 21/20/17
 - Water: 181 ppm
- Schroeder's Diagnosis: BDF2:
 - ISO 4406: 14/11/7
 - Water: 148 ppm

INDUSTRIES



DESIGN

What We Did: We offered a version of our BDF2 | Bulk Diesel Filter for the railway to conduct in-field comparisons to.

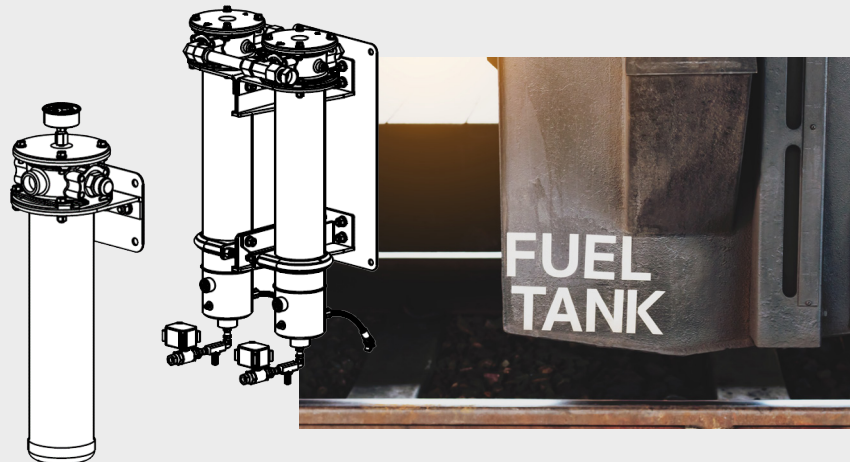
This 32 gpm dispensing filter, with a high capacity for dispensing, could:

- Reduce operator maintenance with an included automatic water drain
- Operate in cold weather with the included DC Sump Heater
- Qualify system performance with included TCM-FC monitor

During one (1) trial, the fuel was initially measured at an ISO code 21/20/17 with an absolute water content of 181 ppm on average.

The BDF2 provided a 57% increase over the particulate filtration efficiency of the original filter during the test, providing downstream particle counts of 14/11/7 (per ISO 4406: 1999).

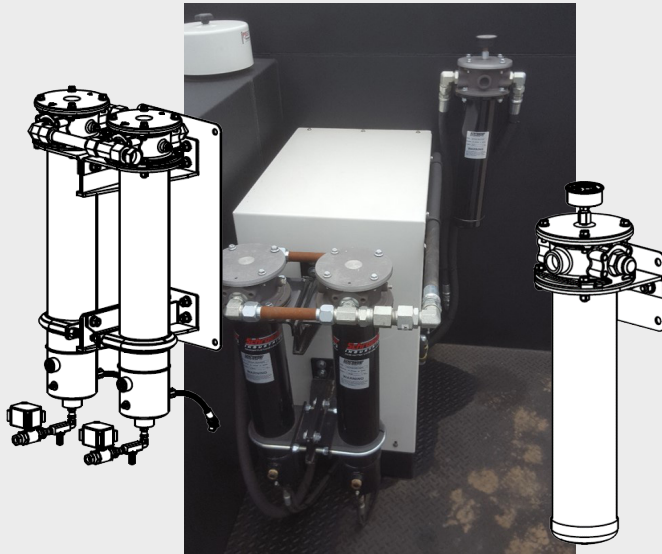
With the initial water content of 181 ppm already below the 200 ppm water content recommendation from the World Wide Fuel Charter, the BDF2 was able to remove additional emulsified water down to an absolute water content of 148 ppm.



DELIVER

- Schroeder coordinated with the rail lines to deliver 26 BDF2 solutions to retrofit onto their in-service Fuel & Lube Trucks.
- On-track failures due to fuel quality were eliminated in all the areas the BDF2 assembly was retrofit to.
- Impressed by Schroeder's quality, the customer is interested in further fuel cleanliness solutions throughout the organization (ex. on-board equipment filtration, truck bed and site tank filtration).

MOW Downtime	Without BDF2	With BDF2	Savings
Rail/Tie Gang	\$40,000 / day	\$0 / day	-\$40,000 / day
Equipment Removal	\$75,000 / day	\$0 / day	-\$75,000 / day
Lost Revenue (150 Car)	\$300,000 / day	\$0 / day	-\$300,000 / day



CUSTOMER BENEFITS

- Routine element change is only needed on KL3 particulate filter, which saves time and money.
- Element is designed for the highest single-pass water and particulate removal efficiencies in today's Ultra-Low Sulfur Diesel (ULSD) fluids.

FURTHER APPLICATION AREAS

- Fleet Fuel/Service Trucks:
- Mining
- Construction
- Aggregate
- Concrete
- Equipment Dealership/Rental

ROI

Rail/Tie Gang Savings



\$40K

Revenue Savings Per Day



\$300K

Underlying values:

Rail/Tie Gang = \$40,000 of 1 Day of no productivity.

\$75,000 for a crew to remove equipment from the rail and to repair

\$300,000+ for lost revenue for a 150 car freight train

PRODUCT SPECS

BDF2 | Bulk Diesel Filter

Flow Rating: up to 32 gpm

Inlet/Outlet Connection:

-16 (ORB) SAE J1926

Max. Operating Pressure:

150 psi (10 bar)

Temperature Range:

-20°F to 165°F (sump heater)

-32°F to 165°F (standard)

Element Change:

Particulate: 2.50"

Coalescing: w/ mounting bracket

18"; w/o mounting bracket 2.5"