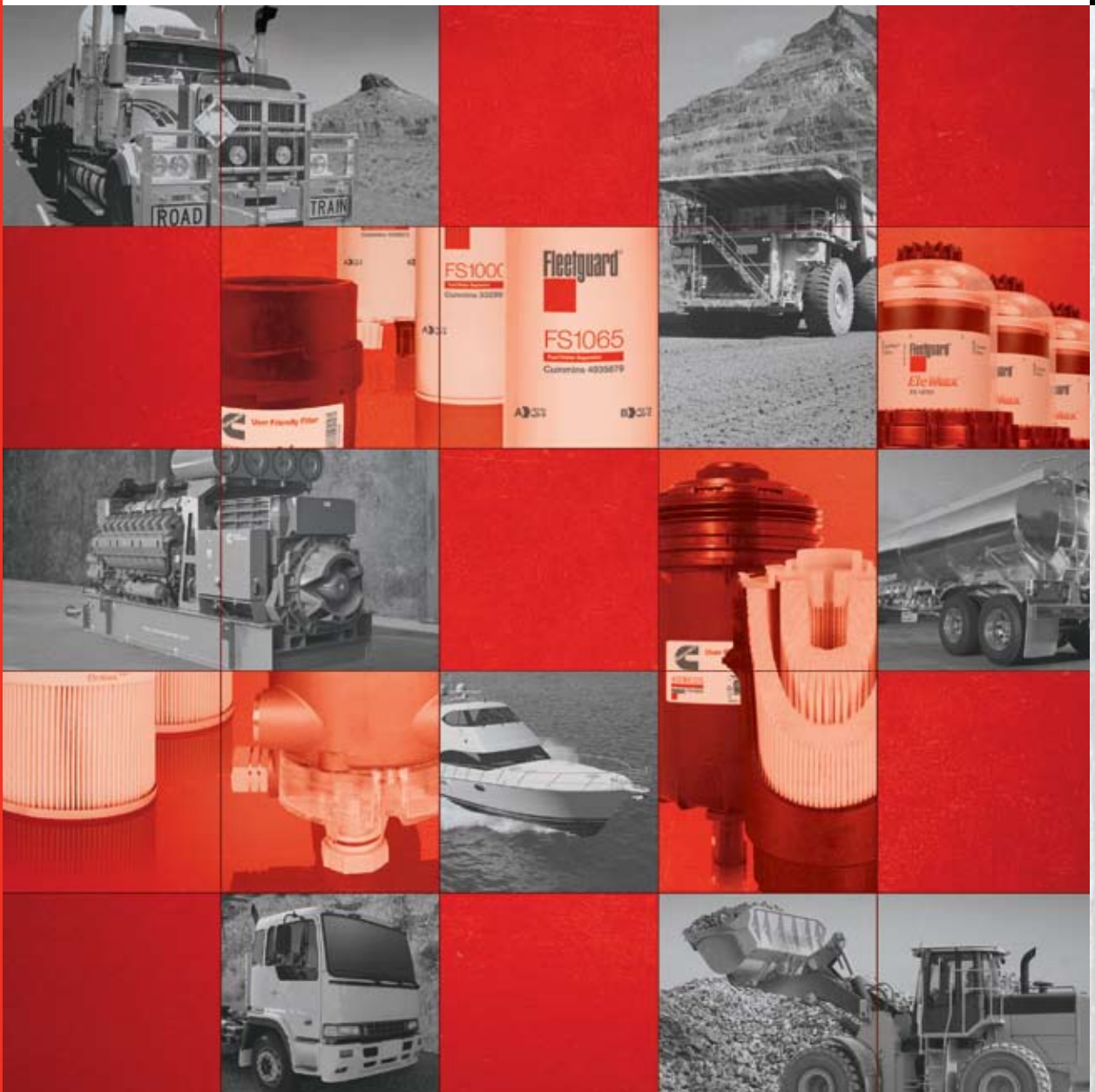


Fleetguard®



Fuel Filtration Capabilities

FUEL



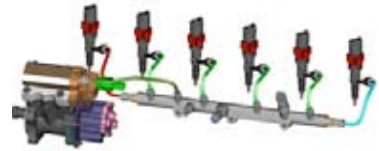


Across the world, fuel cleanliness problems are causing costly damage to engines and components.

Evolution of the Modern Diesel Engine



Diesel engines have changed dramatically over recent decades in order to provide higher power density, better fuel efficiency, and greater reliability. This progression in technology has resulted in engine architecture that utilizes High Pressure Common Rail Fuel Systems (HPCR). These fuel systems require increased injection pressure up to 30,000 psi (2000 bar) and tighter clearances. Fuel system component degradation can occur when organic and inorganic contamination, including water, enters the fuel. Protection against these potential threats is vital to maintain engine uptime and decrease maintenance costs.



Global Emission Regulations Impact Operating Conditions

The introduction of global clean air standards that focused on reduced emissions (NOx & Particulate) also increased the challenges for diesel engine fuel systems. Changing emissions regulations and increasing fuel costs established the use of ultra low sulphur diesel (ULSD) and biodiesel blends which created unique maintenance challenges for the fuel system. In most HPCR systems, particulate filtration efficiency requirements are more stringent, making finer filtration a critical requirement for modern diesel engines.

Clean Fuel and Finer Filtration

Clean, uncontaminated fuel is key to maximum fuel system performance and longevity for modern diesel engines. Without high quality fuel filtration and regularly scheduled service, fuel contamination can lead to costly repairs and engine downtime. A fuel cleanliness study found that more than 50% of fuel used worldwide does not meet the suggested industry cleanliness levels. Fuel injection system suppliers today require that fuel entering the fuel injection system have ISO cleanliness levels as low as 11/8/3*. Dirt and contaminant removal and effective fuel/water separation with high quality filtration reduces component wear and creates optimized fuel atomization and engine power.

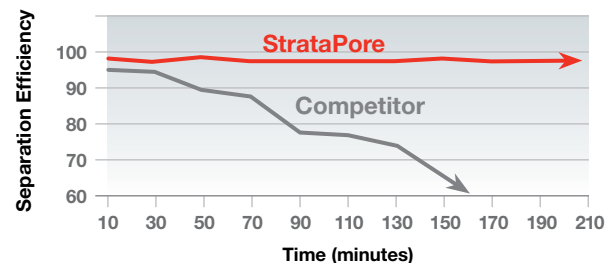
Worldwide Fuel Cleanliness Levels



- Below Industry Cleanliness Standards
- Meets Industry Cleanliness Standards
- Exceeds Industry Cleanliness Standards

Why Fleetguard Pro® Series?

Fuel/Water Separation Efficiency



- StrataPore maintains >95% fuel/water separation
- Best emulsified water removal available
- Holds approximately 3.5x more contaminant
- Supports the use of bio fuels

* Fuel at 4,6 and 14 micron-C sizes respectively



From Prefilter to all-in one Fuel Management Systems, Cummins Filtration offers solutions that protect your equipment.

Fleetguard® Fuel Products for Today's Diesel Engines

As the leading supplier of fuel filtration products to major global OEMs, Cummins Filtration provides fuel filtration products and systems that protect engines, components and equipment. Our wide range of Fleetguard fuel products includes:

■ Off-Engine Fuel Filtration

Because contaminant-free fuel is a prerequisite for higher performance and longer fuel system life, especially with ULSD fuels and biodiesel blends, Cummins Filtration offers a first line of defense at the fuel storage tank to ensure that the cleanest fuel reaches the equipment fuel tank. Fleetguard Fuel Island Filtration uses StrataPore™ synthetic media in a wide range of micron ratings to provide maximum protection. Cleaner fuel means higher fuel economy and saves operating costs. Fleetguard's Fuel Island and Winslow Depth Filters deliver the value our customers have come to expect from an industry leader.



■ On-Chassis, Remote Mount Fuel Filtration

Fleetguard fuel processors are best-in-class at fuel/water separation and particle removal flow capability from 225 to 680 l/hr (60 to 180 gal/hr). With StrataPore media inside, these processors reduce contamination and support longer service intervals.

Each system offers unique features, like Water-in-Fuel sensors to monitor collected water level; fuel heaters to maintain proper temperature; and Seeing Is Believing™ technology that tells users when to change the filter.

The Product range includes Fuel Pro®, Diesel Pro® and Industrial Pro® "All-in-One" single, double (duplex) and triple (triplex) units for On-Highway, Off-Highway and stationary industrial applications and equipment.



■ On-Engine Fuel Filtration

Fleetguard fuel filters deliver best-in-class performance using proprietary StrataPore media which removes harmful contaminants. Each gradient media layer offers unique properties that tailors performance based on specific applications requirements. Use of Fleetguard on-engine filters ensures optimal fuel system protection per demanding OEM specifications.

Product durability is an important factor in diesel engine operation because filter dents or handling damage can lead to short filter life. Fleetguard's User-Friendly Filter is constructed of advanced composite material to resist physical and environmental damage. The lightweight filter provides user-friendly features facilitating easy installation with an integrated hand grip texture and one-way ½" square drive removal. And, StrataPore media provides long life, high performance protection to match the demands of OEM's and equipment owners.





Real Performance.
Dependable Solutions.

■ **Advanced Fuel Filtration and Water Separation**

As the need for cleaner fuel increases, more OEs are specifying the use of fuel/water separators as a critical component of fuel system protection. Cummins Filtration offers several Fleetguard® fuel filters and fuel/water separators constructed of lightweight, composite material with patented StrataPore™ filtration media inside.

The high performance Fleetguard Filter-in-Filter technology for High Pressure Common Rail engines provides optimally designed multilayer filter media to prevent water-related corrosion in modern high pressure fuel systems. The filter features two-stage particle removal and eliminates the hassle of extra filters and fuel plumbing. Its unique design allows reuse of the filter canister and replacement of only the filter cartridge at service time.



Expert Fuel Filtration Solutions

As part of the Cummins family, Cummins Filtration designs and manufactures only Genuine Filtration fuel system products that meet and exceed OE standards for optimum protection, extended service intervals, and reduced operating costs. With extensive experience in integrated system solutions for modern diesel engines, we offer products to support the rigorous requirements of modern high pressure fuel systems.

Combining Fleetguard Fuel Island Filtration, On-Chassis Remote Mount fuel processors, on-engine and/or advanced fuel filtration will ensure the best performance and longer life for your fuel system. Our innovative technologies enable you to clean fuel to suggested ISO contaminant levels and better. You can trust Cummins Filtration as the technology expert for the complete protection of your diesel engine fuel system.

Fuel Island Filtration



On-Chassis – Remote Mount



On-Engine – Spin-On Products



Clean Fuel throughout Fuel Injection System



For more information, visit cumminsfiltration.com

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