

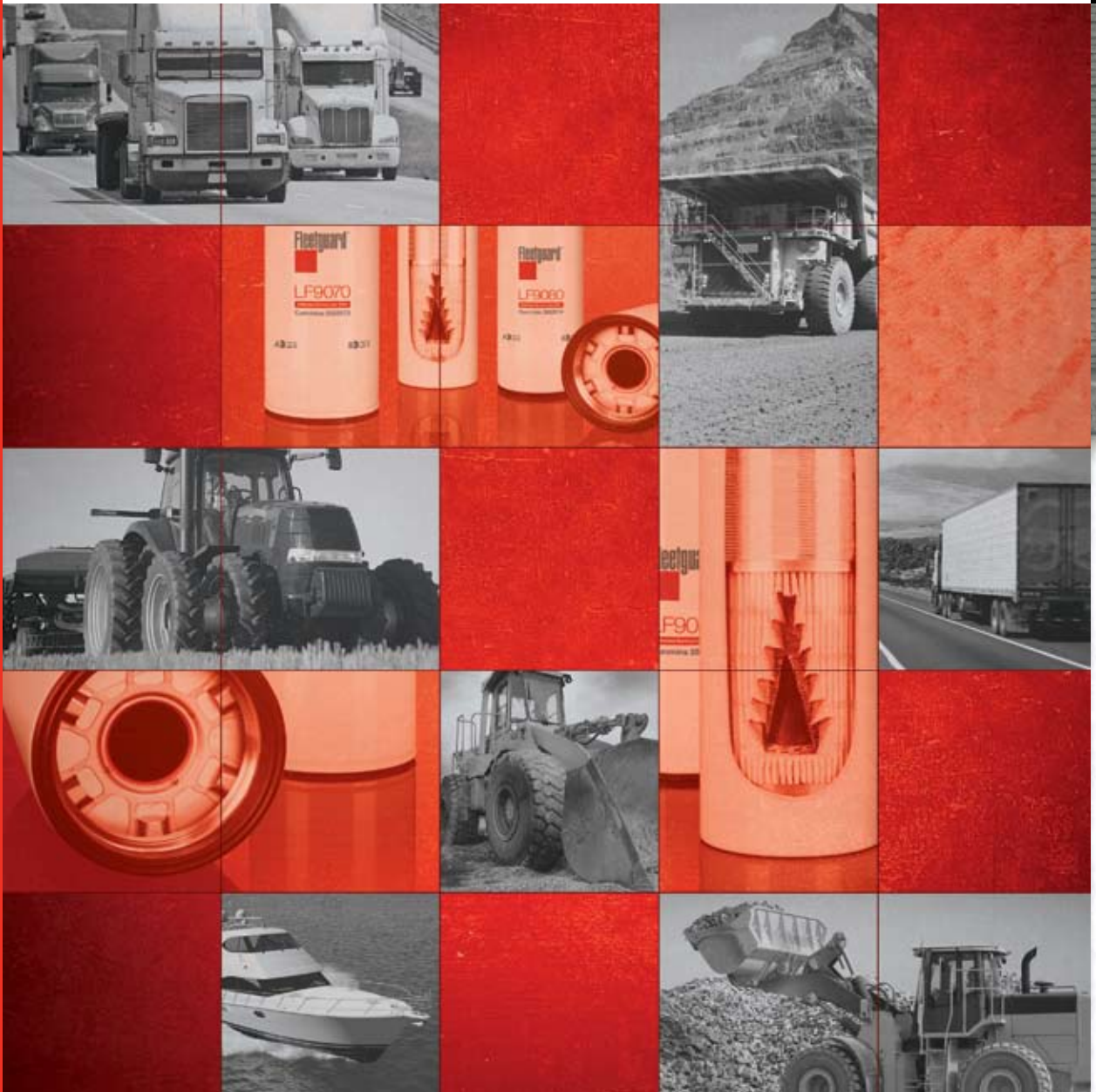
Fleetguard[®]



Lube Filtration Solutions

Genuine Filtration for Today's Engines

LUBE



Depend on Cummins Filtration to Deliver the Leading Technology for 2010

The 2010 Challenge

Evolving global emissions standards are principal drivers for changing engine technology. The new technology poses several demanding challenges for lube oil systems, including conditions that can seriously affect engine performance and equipment life:

- **Heat:** Most equipment manufacturers have to deal with additional heat rejection requirements to make emissions certified engines. The power density, EGR coolers and minimal opportunity for additional vehicle cooling result in increased oil sump temperatures. Higher oil temperatures can increase oil oxidation rates, adversely affecting oil life.
- **Oil Chemistry:** Lower ash content in the latest CJ-4 grade oils has resulted in oil chemistry changes. The interaction of oils with fuel dilution, unburned hydrocarbons and moisture or coolant exposure has led to formations of carboxylates and other complex compounds that affect engine life and oil drain intervals.
- **Oil Contaminants:** Under normal conditions, the influence of external contaminants (dust, dirt) is minimal on the engine oil system. Approximately 75% of the contaminants collected in a used filter are due to heat and chemical interactions within the engine. These organic contaminants are commonly referred to as SLUDGE.

You need a partner that fully understands your engine lube filtration requirements. As a first-fit supplier to OEMs, Cummins Filtration develops products in conjunction with new engine technology.

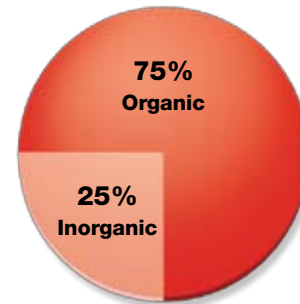
We Understand Contamination

As the industry leader, Cummins Filtration understands how to protect your engine components to increase equipment uptime and decrease operating costs.

Typical contaminants in engine oil are categorized as:

- Organic (SLUDGE) – from blow-by, unburned hydrocarbons, soot, moisture and fuel dilution
- Inorganic (DUST) – from dirt and wear materials, etc.
- Harmful Acids – from by-products, depletion of oil chemistry

Typical distribution of lube filter contaminants



Average of all field returns

Cummins Recommends Bypass Filtration

Sludge is the biggest enemy of your engine. With density similar to that of oil, sludge makes up about 75% of the total contaminant in a used oil filter. Increased levels of sludge result in poor cold flow ability due to increased viscosity that can increase wear rate, lower fuel economy, and impact restriction to the oil flow through the filter affecting service intervals.

The typical full flow filter does not have the capacity to hold sludge. Most commonly, sludge is contained by adding a bypass lube filter to the engine, thus protecting the full flow filter from receiving the sludge – so it can perform to desired service intervals. By design, bypass filters have a very high efficiency rate for removing smaller micron sized particles that can cause serious component wear. Absence of such high efficiency sludge-protecting systems can pose a threat to the engine components and be detrimental to the dependable service expected from your equipment.

With years of experience in developing best-in-class engines, Cummins recommends the use of bypass filtration to provide the best protection for heavy duty engines and endorses Fleetguard® lube filters as the genuine OEM product.



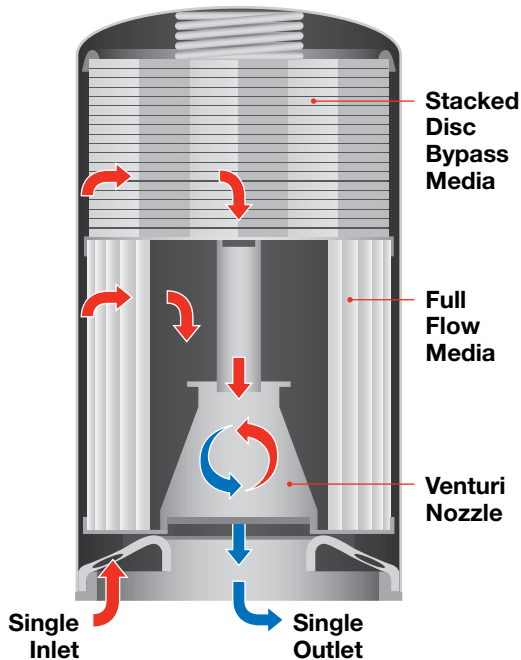
Venturi™ Combo

Designed for Today's Engines

Venturi Combo Design: Best Protection for Equipment

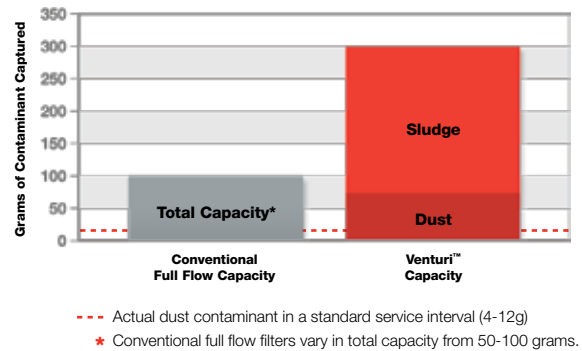
To ensure high performance and lower operating costs, the Fleetguard® Venturi Combo provides the right technology for diesel engines with these competitive benefits:

- High-efficiency, patented stacked disc media removes sludge to protect engine components and maximize service intervals
- Venturi nozzle directs an optimized flow of oil through the high efficiency stacked disc section
- Full flow section contains patented StrataPore™ media for superior contaminant removal and cold flow ability, yielding longer engine life
- The engine receives the super-cleaned oil from the stacked disc section straight to its components where it is needed most, rather than being sent back to the oil sump



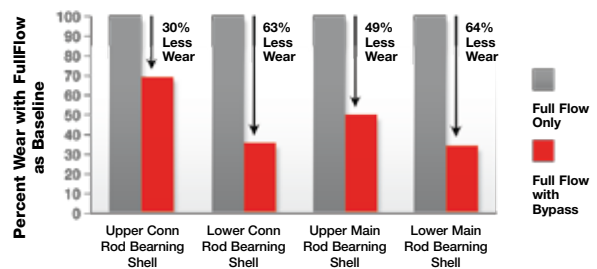
Stacked Disc Bypass Media

- 3-4x more total capacity than full flow only
- Up to 5x more dust capacity than in a standard field service interval



Patented Venturi Nozzle

- The Venturi Nozzle assures the maximum cold start oil flow, protecting valve train engine components such as cam lobes, cam followers and valve guides
- The Venturi Nozzle optimizes oil flow through the high capacity stacked disc media – proven to remove wear-causing sludge



Venturi Combo: the Right Technology

Fleetguard Venturi Combo lube filters have stood the test of time by delivering unprecedented engine protection for engines meeting previous emissions regulations and now confirmed for the latest 2010 emissions certified engines:

- Proven technology and design
 - Efficiency
 - Cold flow ability
 - Capacity
- Higher efficiency
- Lower cold flow restriction

Genuine Protection

Performance and Coverage You Can Depend On

Lube filters that meet or exceed OEM Specifications

Cummins is one of the pioneers to receive certification in the development of new engine technology to meet the latest global emissions standards. Cummins has **8 million** miles of field test experience on 2010 engines. As first-fit supplier, Cummins Filtration provides lube products that meet and exceed OE performance requirements and the new challenges of modern engine technology.

With such extensive 2010 engine field tests using Fleetguard® products, no other competitive product can guarantee this kind of protection on the latest engines. Only Fleetguard products are backed by the technology, quality and dependability you expect. Our real world testing proves that Fleetguard filters provide genuine protection for your equipment.

"Cummins engines are designed to deliver exceptional dependability, reliability and productivity for its users. Put that together with high quality filtration, heavy-duty components and Six Sigma design practices and you have an engine you can depend on for years to come. Cummins recommends the use of genuine Fleetguard Venturi™ combo filters. The effect of clean lube, fuel and air filtration can have a significant influence on the life of your engine and lower your total cost of operation in the long run."

– Steve J. Charlton
Vice-President – Cummins Heavy Duty Engineering

Warranty coverage that goes beyond the competition

Providing customers the best warranty coverage in the industry is Cummins Filtration's ongoing promise as we partner to be your filtration supplier for life. As the only filtration manufacturer with a non-prorated warranty, Cummins Filtration guarantees to always be there after the sale. For detailed information on the Cummins Filtration Warranty, refer to the Cummins Filtration warranty brochure and statement, available online at cumminsfiltration.com.

Aftermarket Venturi Combo Models:

LF9070	Cummins	LF9034	Cummins
LF9080	Cummins	LF9035	International
LF9008	Hitachi	LF9039	Cummins
LF9009	Cummins	LF9325	Cummins
LF9010	John Deere	LF9333	Detroit Diesel
LF9018	Komatsu	LF9548	Case
LF9050	Cummins & Komatsu	LF9620	Detroit Diesel
LF9025	International	LF9667	Caterpillar & Mack
LF9027	Ford Powerstroke	LF9691	Caterpillar
LF9028	Kubota	LF9747	Komatsu
LF9031	Cummins	LF9691A	Caterpillar
LF9032	John Deere	LF9026	International
		LF9931	GMC

For specific engine applications refer to the cumminsfiltration.com online catalog.



For more information, visit
cumminsfiltration.com

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