

Lube Filtration FACT SHEET



! The Importance of Lube Filtration

Lubricating Oil is the 'life blood' of an engine, without which it would rapidly stop working. Lube Filters remove impurities and the wear-causing contaminants from the engine's oil, rather like kidneys purify the blood. If the Lube Filters are not doing an effective job, engine life can be radically shortened. Lube Oil not only allows the internal components of an engine to move by keeping the various parts separate from each other, it also carries out a number of other very important tasks:

- Removing Heat
- Forming a seal between the cylinder wall and the piston rings
- Cleaning internal surfaces
- Transporting debris to the Filter

Contamination through Combustion

It may appear that this is a 'closed loop' system, where a fixed quantity of Oil is pumped around the same circuit and should be relatively easy to keep clean. However the combustion process, where the fuel and air mixture is burned to generate power, creates a break in this loop. Combustion inevitably generates a number of contaminants which pollute the Oil. By-products include:

- Carbon
- Partially Burned Fuel
- Water
- Acids
- Varnish, Lacquers

The Fleetguard Product Solution

High pressure fuel injection systems in modern diesel engines result in much lower exhaust emissions than before. However, they can retain more soot in the Lubricating Oil. This will tend to create what we call sludge, a black, almost gelatinous, sticky material which can be abrasive, resulting in increased wear rates that can quickly block a filter. In this case, the bypass valve will open, sending abrasive, unfiltered oil to the moving parts of the engine.

There are three common types of filtration technique used in modern engines:

- **Full Flow Filtration** – where all of the oil pump output is filtered before going to the engine
- **Bypass Filtration** – where a proportion of the oil flow is filtered to a much finer degree than in a Full Flow system, before being put back into the oil sump
- **Combined Filtration** – where both full flow and bypass systems are utilized in the filter

Many different types of filtration medium are used, depending on the specific circumstance:

- Wire Mesh Strainers
- Stacked Disc
- Pleated Paper
- Depth (tightly packed shredded paper, cloth & wood chips)
- Pleated Synthetic

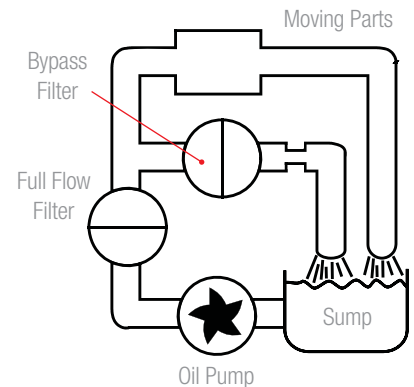
! Advanced Lube Oil Filtration

Synthetic media provides higher capacity, greater efficiency and less restriction than traditional cellulose. Fleetguard developed its own in-house production of synthetic, multi-layered medium called Stratapore™. The very wide range of Fleetguard replacement Oil filters meet or exceed OEM specifications for the huge range of diesel engines in operation today. In addition to this, we offer a range of high performance filters:

- Upgrades of standard filters incorporating synthetic media, to provide superior engine protection - Venturi™ Lube Oil Filters using Stratapore™ Full Flow medium combined with Stacked Disc Bypass Filter technology.
- Centrifugal Bypass oil filters called CentriGuard™ which employ our patented Spiratec™ technology.
- These products can be used as part of an Extended Service Interval program to help operators reduce their overall operating costs.



The Lubrication System



The Real World



Sludge: 75% to 90% of contaminant in Lube Oil is organic (= sludge)



The Solution



State-of-the Art:

Venturi™ Combined Full-Flow Bypass Filtration is capable of at least 3 times more contaminants compared to conventional Full Flow only filters

Check your knowledge about Lube Filtration

1 What are the three types of filtration technique used for Lube Oil?

- a) Venturi, Centrifuge and Stacked Disc
- b) Full flow, bypass and combination filtration
- c) Closed loop, open loop and scheduled service program

2 Name the five types of filtration media generally used in Lube Oil filtration

- a) Long life, water repellent, biodegradable, moisture absorbent and high capacity
- b) Spiratec, Venturi, CentriGuard, standard and ultra fine
- c) Wire mesh strainers, stacked disc, pleated paper, depth and pleated synthetic media

3 What is Cummins Filtration's own multi-layer synthetic medium called?

- a) Stratapore™
- b) Spiratec
- c) Stacked disc

4 What is the name of Fleetguard's high performance combination filter range?

- a) Bypass
- b) Stratapore™
- c) Venturi

Answers:
1 b
2 c
3 a
4 c

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