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FILTRATION SOLUTIONS

TECH TALK

Harmful Contaminants Found in Fuel Systems.

If you were to look deeply into what makes up your fuel, you would be likely to find a range of contaminants potentially causing harm to your engine. Contaminated fuel can lead to vehicle downtime and costly repairs, especially to expensive common rail systems and components. Modern engines are increasingly requiring better fuel filtration technology to ensure you are delivering the cleanest fuel to your vehicles fuel system. The most common contaminants found in fuel include:

Particulate & Debris



Enters when the fuel is transferred between storage tanks, and when exposed to the atmosphere. Particulate in the fuel can disrupt engine combustion, block the fuel system and cause wear on injectors.

Water



Water in fuel causes corrosion and will erode injector nozzles. It can negatively affect the combustion process, reduce the lubricity of the fuel and consequently damage system components. Water enters fuel from storage tanks, and from condensation caused by cooling temperatures.

Wax/Paraffin

Often a component of the fuel, it can drop out in cold conditions (also known as gelling).

Microbes (Bacteria)

Can grow in any free water in the fuel tank.

Fuel Degradation Products

Fuel by-products result from the thermal and oxidative instability of fuel prior to combustion.

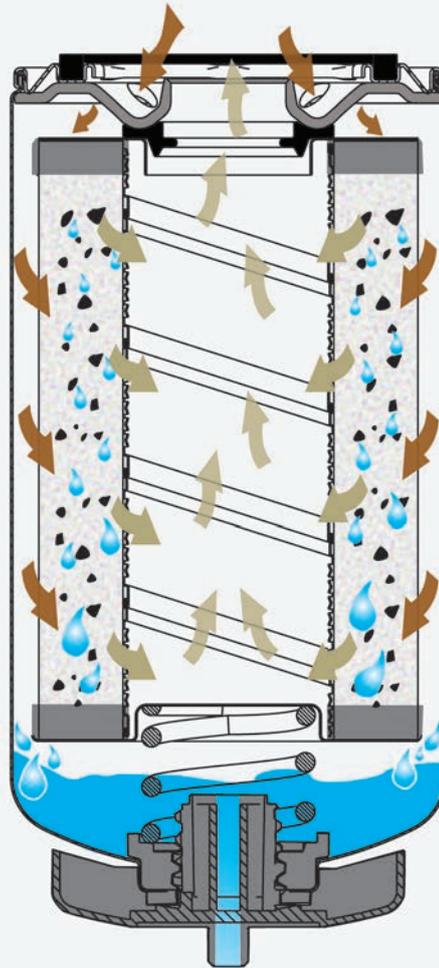
Asphaltenes

Found naturally in crude oil, this can often be found in refined fuel.

Air

Enters the system from leaks in fuel lines or system connections.

How Particulate and Water are Removed.



Incoming fuel enters the filter through holes in baffle/thread plate.

Contaminants and debris are removed from the fuel as they pass through the filter.

Filtered fuel leaves the filter through the threaded centre hole in the baffle/thread plate.

Specialised filter media in the cartridge removes water from the fuel.

Water coalesces into large drops that drain into a lower cavity of the spin-on unit or drain bowl.

Water requires daily draining by the operator. Donaldson supply a range of manual or water-in-fuel (WIF) sensors to notify the driver of trapped water. A clear bowl with drain can also be added any time. See image below.



Did You Know?

Water in fuel storage tanks is a major contaminant to engine fuel systems.

Did You Know?

Using a fuel water separator will help filter out contaminant and water from fuel before reaching the transfer pump.

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