

WIX[®]

FILTERS

Fuel filters
for truck, buses and heavy duty vehicles



WIXtreme protection

State of Heavy Duty Filtration

New demands being placed on vehicle manufacturers are changing the state of Heavy Duty filtration. Here are examples of some of the changes and challenges in the world of Heavy Duty filtration:

Hydraulic unit injectors require cleaner lube oil used by hydraulic pressure pumps.

High-pressure injectors are less tolerant of both fine solid particles and water that reduce fuel lubricity.

Increased cylinder combustion pressures required for improved economy and emission control demand cleaner intake air and fuel, and better lubrication of internal engine parts.

Tightened emission standards are reducing fuel sulfur content and lubricity.

Exhaust Gas Recirculation reduces NOx emissions, but EGR coolers place additional demands on the cooling system. EGR also reintroduces soot to the combustion process that can compromise lube oil.

Additional accessory loads continue to increase the amount of heat that must be handled and transferred by the cooling system.

New cooling system chemistries are being developed to reduce traditional cooling system problems while extending service intervals with less maintenance.

Waste disposal costs and environmental regulations encourage operators to extend the service life of oil and coolant, and promote the use of filters that can be fully incinerated.

Imaginative use of new technologies and improved filter materials will play an increasingly important role in solving new filtration problems.

Glossary of Terms

The world of Heavy Duty fuel filtration is changing rapidly – here are a few things WIX would like you to keep in mind:

Asphaltenes

Hard, abrasive contaminants that settle out of diesel fuel.

Biocide

A diesel fuel additive designed to kill bacteria.

Cloud Point

The temperature at which the wax in fuel begins to thicken and take on a cloudy appearance.

Humbugs

A slang term for fungus and bacteria that live in water and feed off diesel fuel hydrocarbons, creating a slime that can plug fuel filters.

Pour Point

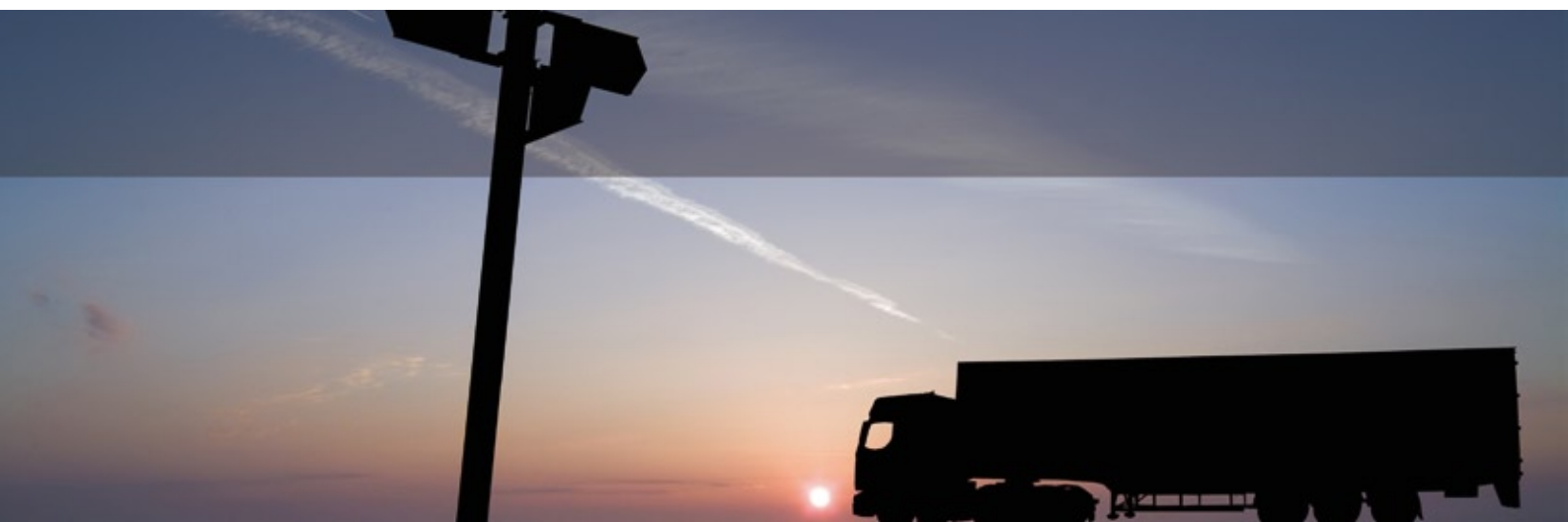
The temperature of the diesel fuel at which it is so cold that it will no longer pour.

Wax

Paraffin in diesel oil that can form wax crystals in cold diesel fuel. To prevent wax-crystal formation, the fuel cloud point should be 10 degrees Fahrenheit lower than the lowest ambient temperature experienced during cold weather operation.

Water Separator

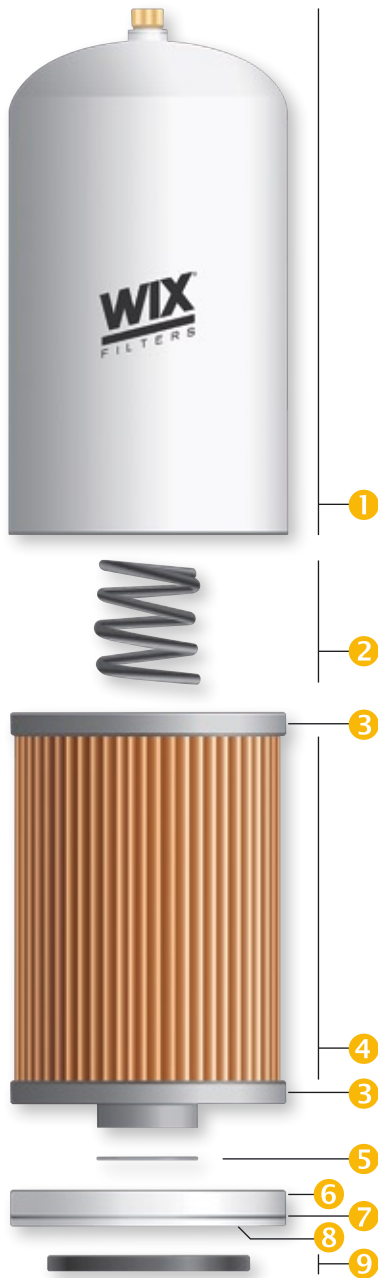
A precipitator built into some diesel fuel filters to remove water.



WIX Heavy Duty Fuel Filter

There are several reasons why diesel fuel becomes contaminated. The quality of diesel No. 2 (DF2), the most-common diesel fuel grade, is not predictable, and diesel fuel quality varies widely depending on the source. Acceptable limits for initial fuel quality are fairly loose, which accounts for wide variations in diesel fuel ingredients. Additionally, the more often fuel is handled and transferred, the greater likelihood that fuel contamination will occur. Prolonged storage in tanks is also a common source of contamination and causes fuel to breakdown.

Because of its complete understanding of the Heavy Duty industry, you can rely on WIX Filters' line of Heavy Duty diesel fuel filters to help you protect your fleet of vehicles.



- 1 The Filter Can is specially designed to withstand high static pressures and is coated with a baked-enamel finish to prevent rust and corrosion. WIX's Benchmark Study showed that fuel filters from the five leading competitors all experienced ruptured cans between 32,000 and 85,000 test cycles. WIX fuel filters remained intact well past 100,000 cycles.
- 2 The Coil Spring has specially rounded ends to prevent can and element damage. This "kicked-and-tucked" spring design reduces the possibility of bypass, keeps the filter element seated against the base plate and prevents unfiltered fuel from going to the injectors.
- 3 Metal End Caps provide added support for the filter media and prevent leaks.
- 4 Prescription Media® is specially coated in fuel/water separator filters and is designed to resist water. The media is also bonded to the end caps with plastisol adhesive to create a strong, leak-free element. The Spiral Center Tube design improves fuel flow and provides increased strength and crush resistance compared to lock-seam or welded center tube designs.
- 5 A Nitrile Rubber Seal at the base of the threaded hole prevents fuel bypass that could allow unfiltered fuel to enter the fuel supply.
- 6 A Double-Lock Seam secures the can and cover plate assembly. WIX Heavy Duty fuel filters use an added sealing compound to ensure a leak-free seal. The base plate and cover plate are joined by spot welds.
- 7 WIX Heavy Duty fuel filter Base Plates are full feature base plates – not chopped plates that are preferred by the competition. This design fully supports the filter's seam and provides consistent loading during pulsations and vibrations on the base plate and filter.
- 8 The Base Plate Threaded Neck is stronger than the design favored by competitors. The added strength comes from placing additional base-plate metal near the threaded hole opening. This design also gives added strength to withstand metal fatigue and vibration.
- 9 The Sealing Gasket is lathe cut nitrile to withstand hardening and cracking and provides a leak-free seal. The "Torque-Right" can markings take the guesswork out of tightening a filter.



If you think that all the Heavy Duty oil filters on the market are the same – think again!

The diesel fuel that powers your Heavy Duty engine can be filled with contaminants like dirt and ash, and of course, water. This contamination can rob your engine of power and even cause fuel system failures.



WIXtreme protection



Extreme temperatures, special fuels and lubes, tens of cubic metres of air being sucked into the engine to produce average speeds of 300kph... This is the world where Wix Filters, the only filters officially licensed in the NASCAR series has to work. Check out our offer for European and American passenger cars on www.wixeuropa.com



fuel filtered elements



clean fuel

Did You Know?

When installing a new Heavy Duty fuel filter, do not fill the filter with fuel. This will introduce unfiltered fuel into the system. Bleeding the system is not always needed following filter replacement, as in many cases there will be enough fuel remaining in the system to start the engine and purge the lines.

By 2006, the sulfur content in diesel fuel is mandated to drop from its current allowable maximum rate of 500 parts per million (ppm) to 15 ppm. The use of low-sulfur diesel fuel coupled with advanced vehicle control technologies is recommended to reduce both particulate matter and nitrous oxide.

A clogged filter will reduce transfer pump supply pressure and could starve unit injectors of fuel. This results in cavitation erosion that damages injector plungers – increasing plunger-bore clearances. Transfer pump pressure should be tested periodically. Insufficient supply pressure slows fuel flow through the injector body, even before the restriction affects engine performance adversely.

Water should be drained from the fuel tanks and fuel/water separator filters regularly – ideally after a vehicle sits overnight and prior to refueling. Clean motor oil, not diesel fuel, should be used to lubricate WIX Heavy Duty fuel filters before installation.

For the industrial and agricultural applications please visit www.wixfilters.com



European Distribution Center
Wix-Filtron sp. z o.o.
ul. Wroclawska 145, 63-800 Gostyń
tel.: +48 65 572 89 00, fax: +48 65 572 89 22
www.wixeuropa.com

Wix Filtration Corporation
P.O. BOX 1967
Gastonia, North Carolina, USA 28053-1967
Phone: (704) 864-6748
www.wixfilters.com