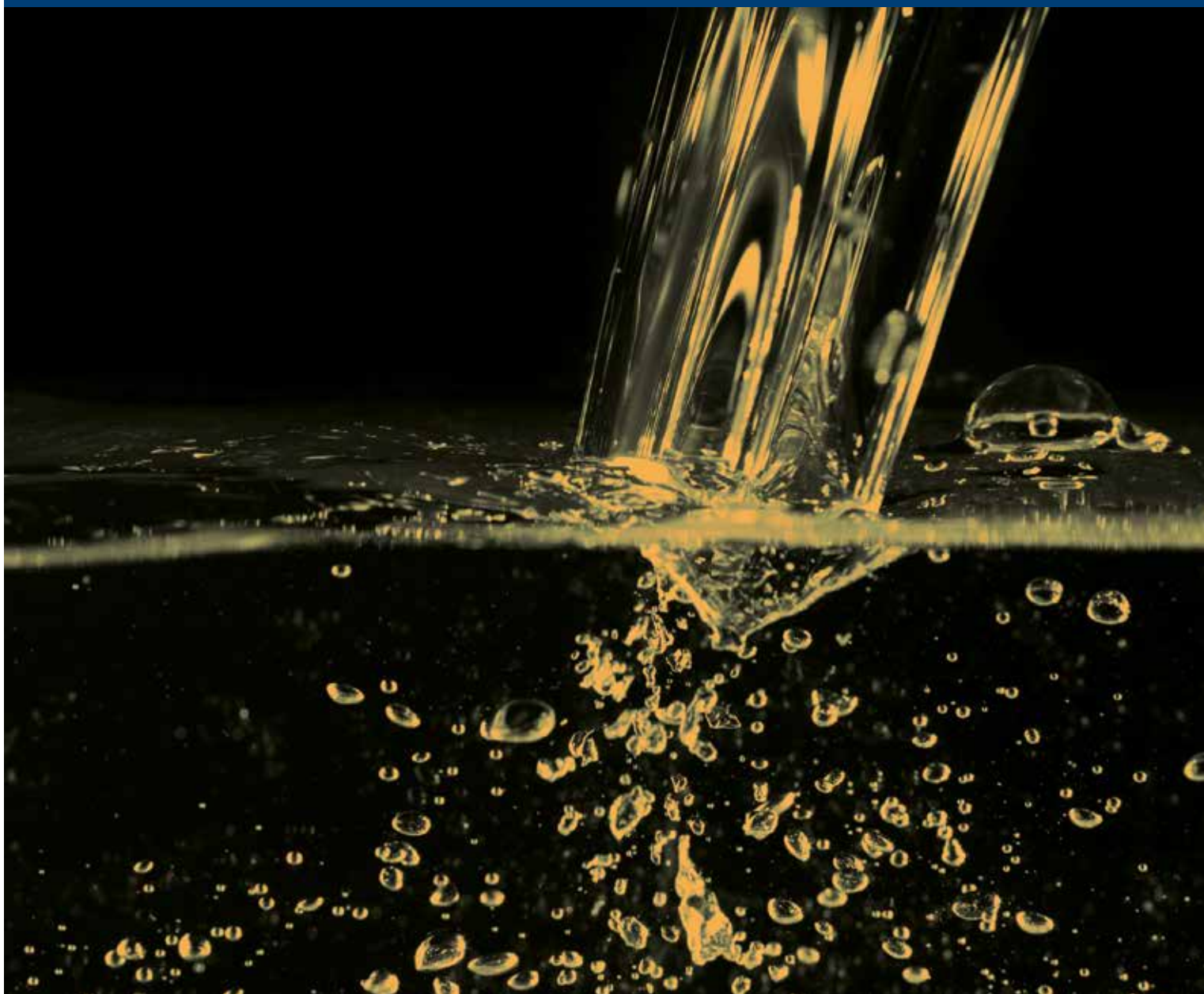


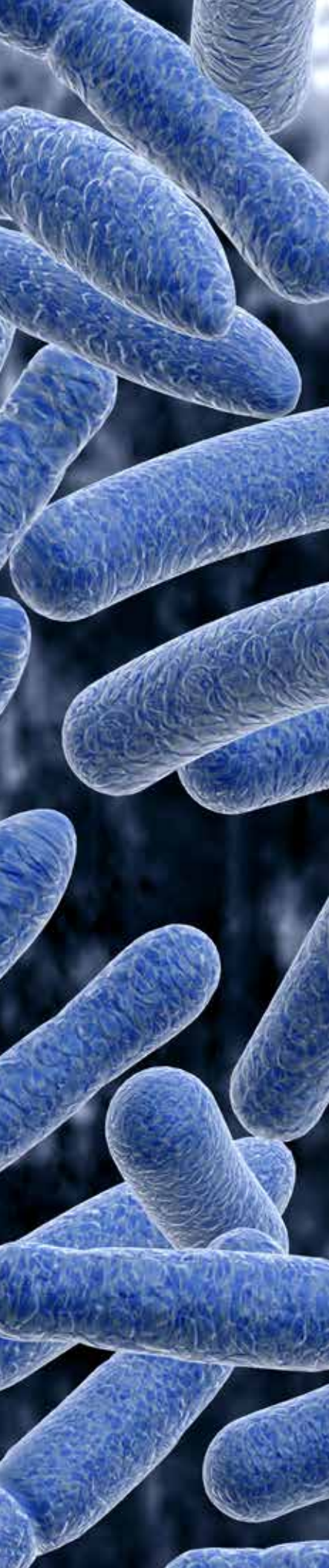


WESTERN BRANCH DIESEL

MAGNETIC FUEL POLISHING

The Complete Solution to Diesel Fuel Deterioration





Diesel fuels are inherently unstable and subject to natural deterioration caused by water, oxidation, microbial growth and chemicals, which contribute to polymerization and stratification. The result is poor fuel quality, sludge and acids that can damage engine components and degrade performance.

The process begins long before the fuel gets to your fuel tank. It has been shown that diesel fuel typically starts to deteriorate and form solids within 60–90 days after refining.

Causes of Fuel Deterioration

Diesel fuel's natural tendency to degrade over time is aggravated by the high pressure that fuel is subjected to in modern fuel-injector systems. The extreme pressure and heat of these systems causes the agglomeration of asphaltenes, which are dirt and crude oil molecules left over from the refining process. The asphaltene particles are initially in solution as the fuel emerges from the refinery, but they tend to clump into larger and larger clusters. Over time, the asphaltene clusters gain in size and weight and fall to the bottom of the fuel tank and accumulate into a dark mass resembling black roofing tar.

Solid particulate clumps and sludge contribute to clogged filters and incomplete combustion, causing black smoke, carbon build-up on engine components, loss of power and increased fuel consumption.

Filters & Chemicals Inadequate

Traditional approaches to treating poor fuel quality have typically involved filtration, chemicals, tank cleaning or a combination of the three. Filtration alone is insufficient to remove the sludge and sediment in the fuel tank, even when you install two, three or more filters in line, and biocides may in fact exacerbate the problem. The poison kills the microbes, but as they die they settle to the bottom of the tank. If left unattended, this layer of dead microbes will thicken into sludge. Tank cleaning is expensive and causes unnecessary equipment downtime.

Magnetic Fuel Conditioning

A comprehensive solution to fuel degradation is now available in the form of in-line magnetic fuel conditioning devices. These systems use the laws of physics to counteract polymerization—the natural attraction and bonding of fuel molecules, which causes organic matter to form compounds that keep increasing in size and mass. The magnetic treatment device, which installs in the fuel line between the tank and the primary filter, creates a strong induced magnetic field that breaks up the clumps and solids as the fuel passes through the unit. The magnetic conditioner disperses and returns to solution the asphaltene clusters. The dark, cloudy fuel is restored to a clear and bright appearance (often called “fuel polishing”).



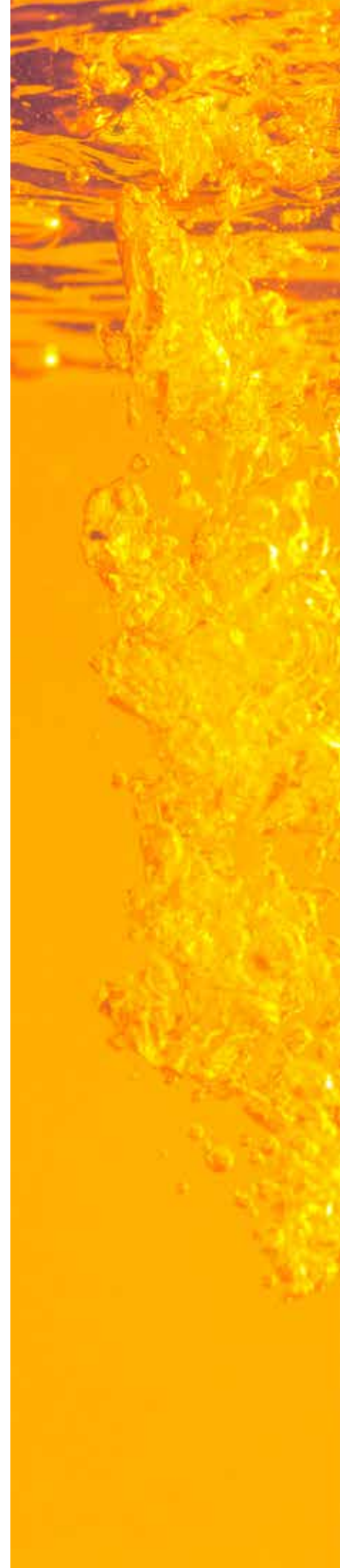
The magnetic process also prevents rust flakes, metal shavings and other ferrous debris from progressing into the fuel filter, where they may pierce the filter medium and allow unfiltered fuel to pass through to the engine.

The magnetic fuel conditioner works whenever the engine is running and drawing fuel from the tank. Since diesel engines are designed to return excess fuel not used for combustion back to the tank, over time it will clean up the sediments, sludge and gummy tars in the tank, as the fuel is constantly recirculated from the tank through the fuel conditioner to the engine and back to the tank.

Magnetic fuel conditioning is ideal for applications in which the equipment is operated on a daily basis, or if it is run at least every couple of weeks. For engines that sit idle for long periods of time, a diesel fuel tank maintenance system will do the job of removing and preventing the buildup of water, sludge and contaminants while eliminating and preventing microbial contamination.

Catalysts & Additives

For best results, the magnetic fuel polishing system may be used in conjunction with a fuel catalyst and tank cleaning additive. Properly formulated compounds will completely reverse the long-term buildup of sludge and degraded organic materials that have accumulated over time in the bottom of the tank. They will also remove carbon buildup from engine components and stop the degradation of fuel injectors caused by acids and poor quality fuel.





WESTERN BRANCH DIESEL

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Roanoke, VA – 540-362-1608
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400 Sensation Weigh, Beaufort, NC 28516

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2011 Cross Beam Drive, Charlotte, NC 28217

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