

# Reduce Costs and Maximize Cold-Weather Reliability with AMSOIL Diesel Fuel Additives

Motorists favor diesels for their towing capacity, fuel efficiency and excellent durability. But cost of ownership and cold weather can pose challenges. In the final part of a three-part series, *AMSOIL Magazine* explains how AMSOIL diesel fuel additives help reduce overall costs and combat the negative effects of cold temperatures.

## Cost of Ownership

Whether gasoline or diesel, vehicles can be expensive to own. One costly problem associated with diesels that has become more prevalent recently is diesel injector deposits, particularly in newer high-pressure common-rail (HPCR) engines (see the September issue of *AMSOIL Magazine* for details). Deposits reduce engine power and efficiency and, if left untreated, can require injector replacements that can range from \$5,000 to \$10,000, depending on the vehicle and the number of injectors involved. Some diesel owners erroneously believe injector replacements are simply a necessary cost of ownership. But accepting injector replacement as necessary maintenance comes with a host of unknowns, such as when the injector will fail, loss of power and fuel economy, tow-truck bills, additional engine damage due to a failing injector and more. A second, less-expensive option is protecting injectors through continuous use of AMSOIL Diesel Injector Clean (ADF) or Diesel Injector Clean + Cold Flow (DFC), which helps eliminate expensive repairs at a much more reasonable cost.

A comparison illustrates the savings available. The cost to replace the injectors in a Chevrolet 6.6L Duramax can add up to approximately \$7,000, not to mention the other risks of injector failures, like being stranded on the side of the road and paying for a tow truck.

Using AMSOIL Diesel Injector Clean or Diesel Injector Clean + Cold Flow and following the maintenance dosage instructions is far less costly. Both products clean dirty injectors and add lubricity to help reduce fuel-pump and injector wear, helping injectors maintain efficiency and last longer. If the average person keeps his or her diesel vehicle for 140,000 miles, using Diesel Injector Clean would cost approximately \$768 over the life of the pickup. The savings speak for themselves. The peace-of-mind of being protected against being stranded on the side of the road and having to pay an expensive tow bill only adds to the value of routinely using AMSOIL Diesel Injector Clean or Diesel Injector Clean + Cold Flow.

## Seasonality

Diesel fuel suffers from the effects of cold weather. Diesel naturally contains wax. Many states have adopted regulations to require biodiesel, which contains even higher wax content. In cold ambient temperatures, wax can crystallize and turn into gel, which can plug fuel lines, fuel filters, fuel pumps and injectors, shutting down an engine or preventing it from starting altogether.

For much of the year, refineries produce what's known as #2 diesel fuel, which flows readily at temperatures above 40°F. For use in cold weather, refineries produce a winter-grade diesel fuel known as #1 diesel. It provides increased cold-flow properties, but is more costly to manufacture and has reduced energy density compared

to #2 diesel. As a result, diesel owners end up paying more through higher fuel costs and reduced fuel economy. Many refineries have changed fuel manufacturing strategies and now blend together #1 and #2 diesel, depending on the temperature. They normally call this their "winter blend" or a "polar diesel." If the refinery blends and distributes a large batch of fuel with specific cold-weather properties, however, a sudden drop in temperature can reduce the fuel's effectiveness in cold weather, increasing the risk of gelling. Diesel owners must add additional fuel additives or risk their equipment not starting or stranding them on the side of the road.

AMSOIL Diesel Injector Clean + Cold Flow and AMSOIL Diesel Cold Flow (ACF) combat cold-weather performance issues and variations in diesel fuel quality. They modify the cloud point – the point at which waxes form – to help prevent fuel from gelling. They also help control ice formation by dispersing water in the fuel, helping keep fuel flowing to the engine. AMSOIL Diesel Injector Clean + Cold Flow and AMSOIL Diesel Cold Flow help protect equipment by keeping it running through cold winter months. ■

