



COMMERCIAL POWER

Enhancing winter startability

Most small engines are relatively easy to start in the summer, but for some engines, startability suffers as the mercury drops in the winter months. By paying attention to the little things, including ignition system service, fuel selection and oil weight, you can significantly improve your success in lighting the fire in your equipment this winter.

A problem in any of the engine's major systems can perpetuate issues, but in the winter, the majority of startability problems stem from an issue with the fuel and/or ignition systems. To increase the winter startability of your engines, focus on these areas:

Spark – An old, dirty or improperly gapped spark plug can significantly affect starting performance. Installing a new, properly gapped spark plug, and verifying (with a spark tester) the ignition coil is good will help ensure the ignition's ability to light off the fuel/air mixture.

Fresh fuel – The fuels at your local station are often blended for optimized performance within a certain temperature range, depending on season. The gasoline you purchase in July has a different vaporization rate than gas purchased in January. Startability is enhanced with fuel blended for the season and climate you're in. Plus, fresh fuel is less likely to contain water or other contaminants that can magnify starting issues. Regardless of season, avoid using fuel more than 30-60 days old. If you have fuel that may be too old to use safely in equipment, you can mix it with a three-quarters full tank of gasoline in a vehicle you drive often. The old fuel will mix with the new fuel and burn, no problem.

Oil weight – Consult your owners manual for the proper engine oil SAE weight and API classification. For engines used in climates lower than 40-degrees (F), you'll get easier starting with a multi-weight mineral oil such as SAE 5w-30 or 10w-30. Or you could use full synthetic oil all year long.



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From the Shop

TECHNOLOGY FUEL FOR THOUGHT

Most small engine manufacturers get nervous when there is more than 10% ethanol in the fuel.



Know your fuels

BY HARRY SMITH

Fuel prices and alternative fuels have been in the news for months. Gasoline and diesel prices have a direct effect on our bottom lines. Just about everything we operate needs one fuel or the other. Careful routing of our fleets, reducing the time our equipment spends idling instead of working and keeping our equipment tuned can save us fuel dollars. But what is the effect of some of the additives and alternate fuels we're getting at the pump?

In many places we can buy biodiesel, 10% ethanol gasoline (E10) and even E85 fuel that is 85% ethanol and a mere 15% gasoline. What are some of the cautions and hazards associated with these fuels?

Ethanol is hydrophilic; it loves water. There is frequently a small amount of water residing in the bottom of most gas tanks. This comes from high humidity and/or poor housekeeping. This water is heavier than gasoline, stays on the bottom of the tank and causes few problems. Ethanol, on the other hand, can absorb this water, which can produce service issues.

Because of ethanol's affinity for water better housekeeping is required. Cleaning

fuel cans and tanks more often is a necessity. Ethanol has less energy per gallon than gasoline and evaporates more readily. Faster evaporation is helpful in the winter when cold fuel is reluctant to turn to vapor but not desirable in the summer when too rapid evaporation causes vapor lock. Most small engine manufacturers get nervous when there is more than 10% ethanol in the fuel. Concentrations of ethanol above 10% can have a corrosive effect on metals, plastics and soft parts within the fuel system.

What is the bottom line in all this discussion? Ethanol concentrations above 10% can cause problems in small gasoline engines. If you use E10 and a lot of water is present in your tanks and cans, you can end up with a mix that will not run your engine, but will corrode your carburetor and fuel system. Don't attempt to use biodiesel unless you have verified from the engine manufacturer that your engine will run on it. In many states you cannot avoid E10 gasoline. Every station and brand has it. Keep your storage tanks and cans clean and avoid the problems these fuels can support.

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