

# Consumer Education Reduces Fuel-Related Service Issues

*Customers need to know about fuel concerns when operating and storing equipment*

BY J.D. FERNSTROM

One of the greatest challenges facing both dealers and manufacturers is educating customers regarding the importance of using fresh, quality fuel. Every salesperson should warn customers about the damage that can occur if old or poor quality fuel is used in their equipment. The instruction manual covers fuel recommendations in depth. However, it seems that every

spring dealerships are inundated with customers with “no-start” complaints about their lawn and garden equipment. In many cases complaints are related to bad fuel problems, either from letting the unit sit all winter with fuel in it or using fuel from a storage container.

Fuel-related failures are possibly the number one reason for customer dissatisfaction with a small engine product. It is very frustrating to have to explain why a customer must spend \$75 or more to repair a product that is still under warranty. The purpose of this article is to offer information that will assist dealers in helping customers understand not only the importance of using fresh, quality fuel but why the repair cannot be covered under a manufacturer’s limited warranty policy.

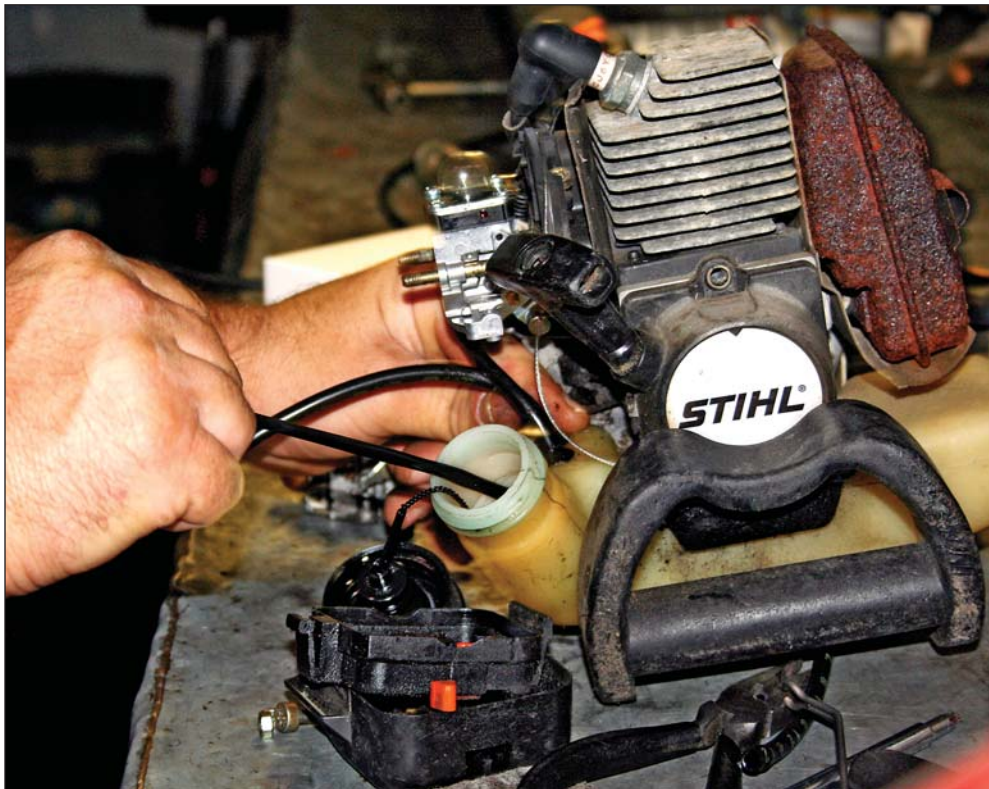
If you read a manufacturer’s warranty policy, and you should, be familiar with all of your manufacturer’s policies. Most, if not all, are called “Limited Warranty Policy.” Just stating it’s a warranty can make it more difficult to resolve these types of issues with customers.

## Gasoline Basics

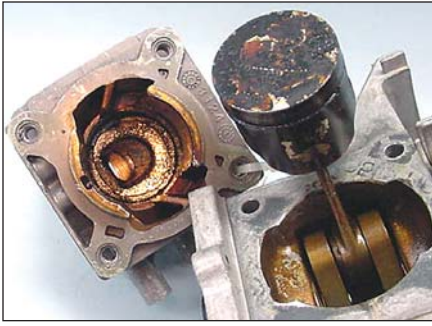
At its most basic level, gasoline is made up of carbon and hydrogen molecules. It is believed that organic material mixed with mud under extreme pressure without oxygen created crude oil. Crude oil is pumped out of the ground and then processed by refineries into various petroleum products from heavy material such as lubricating oils to

lighter products such as gasoline. The highest quality gasoline with the longest shelf life is a product the refineries are able to make from crude oil in one refining process. Additional refining steps or chemicals added to the fuel may decrease the quality and therefore useable life of the gasoline.

It’s also important to keep in mind there is no such thing as a “standard” gasoline. Gasoline is formulated to meet the requirements for air quality and other factors in specific geographic areas. Gasoline is produced with the expectation that it will be used within one or two weeks after it is sold. The fuel available today is different than it was 10 years ago, in order to cause less impact on the environment in regard to pollution and emissions coming from the engine. Nearly all fuel currently sold in the U.S. will have up to 10% ethanol added in an attempt to lessen our dependence on foreign sources of oil. It is formulated for the time of year it will be



*Educating customers about fuel issues can avoid future “won’t start” service hassles.*



*This trimmer engine was damaged due to the use of old, stale fuel mix. As the fuel ages, the lighter molecules combust differently and will interact differently with the mix oil. In this case the combustion of the fuel deposited a heavy layer of carbon and fuel residue throughout the combustion chamber.*

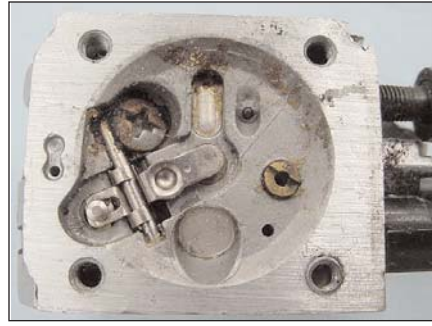
used and is marketed specifically for modern automobiles, which are equipped with fuel injection and computerized engine management systems that can tune the engine as it is running to make the best use of the fuel being burned. Homeowners' lawn and garden power equipment engines generally only see occasional use and, for the most part, are equipped with carburetors and magneto ignitions.

## Aging Fuel

As stated above, gasoline is an organic product. And like any other organic material, gasoline begins to deteriorate once it is exposed to oxygen and sunlight. This may cause the lighter, more volatile molecules to evaporate out of the gasoline, making it harder for the spark plug to ignite the fuel. Once the lighter components evaporate, the chemical properties of the fuel have changed dramatically. The gasoline becomes corrosive, and particles of sticky, gummy residue form. Ethanol further complicates the chemistry of gasoline and causes it to absorb moisture from the air.

## Fuel System Impact

The gummy residue from old gas may coat the fuel filter, making it difficult for gasoline to flow through. These sticky particles may plug the passages within the carburetor itself. At this point, the fuel system is not able to deliver sufficient fuel to the engine, which can then cause engine damage, especially in 2-stroke engines. But even 4-stroke equipment can be damaged when the fuel is not combusting properly, which will leave unusual deposits in the combustion chamber and on the intake and exhaust valves, or even cause damage to internal engine components.



*Here's another example of the residue left in the carburetor metering chamber due to the use of old, stale fuel. Again the inlet needle is stuck and the main nozzle is partially blocked. There is less than a 50/50 chance the carburetor can be cleaned and returned to serviceable condition. Most technicians would consider replacing the carburetor as the more reliable repair.*

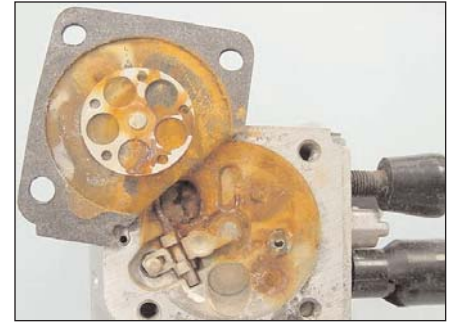
## Service Options

On older small engines without some of the design features implemented to lower emissions, there is a better-than-average chance that a new fuel filter, a new fuel line, carburetor cleaning and a carburetor rebuild kit will bring the fuel system back to working condition. A successful carburetor rebuild is less likely with emission-compliant designs because the passages are smaller and therefore harder to clean; and these carburetors are equipped with accelerator pumps, check valves and other design features that chemical carburetor cleaners may damage. In most cases, the most reliable repair is to replace the carburetor.

## Warranty, Not Warranty

Often, the customer believes that everything that fails within the warranty period should be covered under the warranty policy. It is important that the customer understand what a *limited* warranty is when the unit is purchased. A limited warranty protects the customer from a defect in materials or workmanship. A limited warranty has nothing to do with the brand, age or quality of fuel the customer chooses to use.

Here's a common scenario we've all dealt with; "I just bought this saw nine months ago, and now it won't start." The technician finds old, stale fuel in the unit, replaces the fuel filter, fuel line and carburetor, and the customer is charged for the repair. Unfortunately, this is what may also happen next: the customer comes back an hour or a day later and says, "You just fixed my saw, it ran great for the first tank of gas, and now it won't start again." The technician opens the tank and finds the customer put the same



*This is an example of the damage that occurs when water is present in the fuel. This carburetor cannot be repaired and would require replacement.*

stale fuel from their gas can into the saw after using up the fresh fuel the dealer put in the fuel tank previously.

## Solution: Education

The best solution is getting the message regarding fuel quality to customers in a manner that gets their attention. Here are some methods to try:

Spend extra time to explain the consequences of leaving old, stale fuel in the unit. Give them some examples of the average cost to repair the unit and explain that it will not be covered under the manufacturer's limited warranty policy. Consider having an old, fuel-damaged carburetor on hand to demonstrate the result of using old fuel.

Attach a statement regarding unit storage and fuel quality to the instruction manual.

Many dealers send "thank you" cards to the customer after the sale; here's a great opportunity to reinforce the warning about fuel quality.

When checking the unit into the service department, open the fuel cap in the customer's presence so that they can smell and see that the fuel is spoiled. It might even be worth having a sample of good fuel versus old fuel at the service counter to show the difference between good and bad fuel.

In summary, many times the units entering the service department are there because of fuel-related problems, and the majority of customer complaints happen for the same reason. Educating the customer is the key to reducing these complaints and reducing customer dissatisfaction. Hopefully the information in this article will help you be proactive in educating your customers about the importance of using fresh, quality fuel. **PET**

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