

Quality Tractor Hydraulic Fluids Ensure Performance and Durability

by Christina Thomas

There are multiple reasons for tractor equipment failures. One of the most common is that moving parts are not lubricated properly. Inadequate lubrication makes tractors vulnerable to oxidation, wear, brake chatter, erosion, corrosion and the effects of cold temperatures. However, quality lubricants with advanced additive packages are available to help prevent these conditions, protecting equipment, improving performance and extending tractor life.

Chemical additive packages are specifically formulated to meet the lubricant requirements for Universal Tractor Transmission Oil (UTTO). UTTO products are used to protect transmissions, hydraulic systems, brakes, clutches, pumps and other moving parts on vehicles from tractors and bulldozers to forklifts and other off-road equipment. Because UTTO products are often used for multiple applications, users can simplify maintenance and reduce the number of lubricants kept in inventory.

However, selecting the best UTTO product is an important decision, as they are not all created equal. Some UTTO products are on the market with low-performing additive packages or contain lower than optimal treat levels. This can result in mechanical problems that lead to increased downtime and shorter equipment life. The discounted price is attractive to some buyers, but the long-term maintenance and

repair costs attributed to low-quality lubricants can significantly outweigh that initial lower cost.

Quality UTTO products are higher in price, but they are the preferred choice for engaged farmers who recognize the value and benefits that quality fluids provide. ILMA is currently evaluating UTTO products for performance certifications to help maintain industry-wide quality standards.

“Tests to assess the performance properties of a range of available tractor hydraulic fluids illustrate the shortcomings of lower-tiered fluids,” says William D. Abraham, Ph.D., a Lubrizol driveline technology manager. “Many of the lower-tiered fluids failed in oxidation and gear wear performance tests required by OEMs. All the lower-tiered fluids failed the Brookfield temperature performance indicator of viscosity. Conversely, lubricants with the right chemical additives at appropriate treat levels performed higher and met OEM standards in every test.”

Protection: Quality Lubricants Have What It Takes

High-performance UTTO products contain the right chemical additive packages to effectively protect gears, clutches and pumps by providing oxidation resistance, anti-wear protection, water tolerance and enhanced performance in temperature extremes and harsh conditions.

Oxidation

Oxidation causes the formation of sludge deposits and the thickening of fluids, which reduces performance and shortens the life of any tractor. Oxidation protection characteristics provided by the additives in high-performance tractor hydraulic fluids keep parts cleaner. Eliminating sludge means better overall performance, gear protection and reduced brake noise. And, clean fluids don't have to be replaced as often.

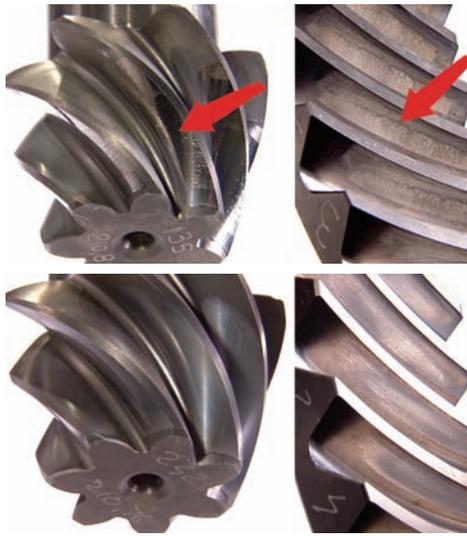


A dramatic difference when comparing a housing with oxidation build-up and a clean part protected with quality tractor hydraulic fluid.

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Excessive Wear

High-performance fluids provide a dual excessive wear protection system for gears, bearings and the soft, yellow metals in hydraulic pumps. Without the right additives, a lubricant's load carrying, anti-wear and extreme pressure characteristics fail and result in severe ridging, visible wear and scoring on gear parts.



Serious damage to pinion and ring gear surfaces results if not protected by high-performance fluids with protective additives.

Corrosion

Water is harmful to a tractor's seals, valves and yellow metal components in pumps and valves. High-quality tractor fluids prevent the water contamination that results in corrosion and erosion. Corrosion often leads to sluggish tractor performance and potential hydraulic pump failure. Water that mixes with lower quality UTTO products to form a corrosive mixture erodes the yellow metal on hydraulic pumps, causing deep scratches on the pump's brass piston shoes.

High-performing tractor fluids with additives provide high water tolerance, enabling the fluid to protect parts from corrosion and erosion in

the presence of water. This optimizes tractor performance and reliability.



High performing fluid protects the yellow piston shoes from erosion on this hydraulic pump. The brass piston shoes are completely scratch and erosion free.

Brake Chatter

Lower-quality fluids do not interact with friction materials as effectively as UTTO oils with chemical additive packages designed to ensure optimal friction performance. Lack of friction protection causes a screeching noise in wet brakes and reduces brake performance. High-performance fluids improve braking capacity and prevent brake chatter for greater operator safety and comfort.

Cold Temperature Failure

Quality UTTO products provide excellent viscosity control over a wide operating temperature range. Additive packages keep fluids from becoming thicker after being exposed to high temperatures for prolonged periods of time. Thicker fluids contribute to increased pump wear in a farm tractor.

High-performance fluids are important to operation in cold temperatures as well. Without additives, some fluids take longer to provide an adequate lubricant film to protect metal parts within the hydraulic system from grinding against each other. Superior fluids are formulated for performing in temperatures below freezing and assuring instant lubrication of moving parts for the tractor's transmission, steering, braking and hydraulic pump functions.

The Price of Performance

Many farmers rely on their local tractor dealership, regional co-op or petroleum supplier to guide their tractor fluids purchase decisions. Even though there is a growing demand for lower-tiered UTTO products, most engaged farmers are averse to using them in their tractors. Instead, they are willing to pay a little more for quality lubricants with high-performance reputations.

"Many oil marketers are promoting the benefits of using lubricants with quality additives to improve tractor performance and protect equipment," Bill Dominick, a Lubrizol product manager explains. "They are working with tractor dealerships and co-ops to make sure these outlets continue to alert farmers about the risks of using sub-standard hydraulic fluids in their tractors."

Low-quality tractor fluids now represent 25 percent of the North American market. While it may seem like a bargain to some farmers, the use of sub-standard hydraulic fluid often backfires, resulting in damaged equipment, disrupted work schedules and needless repair bills. The majority of farmers understand that the difference between lower-quality and high-performance tractor fluids shouldn't be judged on price alone.

High-performance tractor fluid is the best way for farmers to maximize years of reliable, trouble-free tractor life, increased productivity and profit. Tractors, combines and other agricultural equipment are designed and built to perform in harsh conditions, and quality tractor fluids protect the hydraulic systems that power them.

Farmers expect peak performance and understand that quality lubricants are needed to ensure dependable

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operation of their tractors. The protection provided by high-performance lubricants and fluids minimizes slow hydraulics, leaking cylinders and valves, chattering brakes and driveline failures that can cost many thousands of dollars for repair. They are willing to pay for quality UTTO products because sluggish operation, downtime and costly repairs cut into efficiency, productivity and profit.

Why High Quality Fluids Matter

Proven additive packages enable the development of tractor hydraulic fluids that provide oxidation resistance, anti-wear protection, water tolerance and performance in temperature extremes. Because these protective features are so important to farmers, most oil companies and OEMs identify these attributes right on the product's label. A quality tractor fluid is:

- Specifically designed for farm tractors and other off-highway equipment and should list OEM specifications;
- Multi-purpose, enabling lubrication of a tractor's transmission, final drives, clutches, wet brakes and hydraulic systems;
- An excellent wear-protection fluid that provides anti-wear properties for clutches, gears and hydraulic pumps;
- Designed to prevent brake chatter;
- A high water tolerance product that protects parts from corrosion and erosion when contaminated with water;
- Suitable for year-round use in extreme hot and cold temperature ranges.

Bargain-priced tractor hydraulic fluids are often missing the anti-wear

additives, detergents, friction modifiers and viscosity index improvers that protect tractor hydraulic systems and moving parts. These low-quality fluids often fail oxidation, gear wear, cold temperature and viscosity tests. If they can't perform in the laboratory, they certainly won't deliver on the farm.

A tractor is a major capital investment for a farmer. Oil marketers can help farmers protect that investment by offering high quality UTTO products. 



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