



# SERVICE LINE

NEWS AND IDEAS FROM AMSOIL

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## Cleaner. Faster. Easier.

Seven more AMSOIL products are available in the award-winning easy-pack, bringing the benefits of less waste, less mess and less frustration to more applications.

**Signature Series Synthetic Automatic Transmission Fluid (ATF, ATL)** continues to provide the same great performance.

- **Protects** against thermal breakdown
- **Outstanding** wear protection
- **Cold-temperature** fluidity
- **Durable** easy-pack makes the job cleaner and faster

## Why Upgrade to AMSOIL Performance?

Transmissions in commercial vehicles, SUVs, trucks and vans – particularly those used for hauling or towing – are subjected to severe-service operation and increased heat. Elevated temperatures cause fluids to break down, allowing damaging metal-to-metal contact and the formation of sludge and deposits. The problem is worse in modern transmissions with more gears, clutch packs and narrow oil passages that require clean, high-quality fluid to achieve maximum performance and life.

AMSOIL Signature Series Synthetic Automatic Transmission Fluid is specifically formulated to withstand the rigors of heavy towing, elevated temperatures and challenging terrain. It remains fluid in sub-zero temperatures and provides reserve protection during heavy use and abuse.



### THE OLD WAY:

• More Mess • More Waste • More Frustration



### THE NEW EASY-PACK:

• Less Mess • Less Waste • Less Frustration

**SEVERE GEAR® 75W-110 100% Synthetic Gear Lube (SVT)** continues to provide the same great performance, and **80W-90 Synthetic Gear Lube (AGL)** has been added to the SEVERE GEAR family.

- **Superior** film strength
- **Controls** thermal runaway
- **Helps** reduce operating temperatures
- **Durable** easy-pack makes the job cleaner and faster



### Why Upgrade to AMSOIL Performance?

SEVERE GEAR® 100% Synthetic Gear Lube is a premium-grade gear oil specifically engineered for maximum performance in severe-duty applications. It maintains its viscosity for long-lasting protection against metal-to-metal contact. The proprietary AMSOIL additives form an iron-sulfide barrier coating on gear surfaces, providing the ultimate line of defense against wear, pitting and scoring. SEVERE GEAR helps prevent "thermal runaway" – a phenomenon caused by a lubricant's inability to control friction and increased heat under high-stress conditions. By controlling thermal runaway, it inhibits rapid lubricant degradation and component damage – helping equipment run better and last longer.

**Manual Transmission & Transaxle Gear Lube (MTG)** continues to provide the same great performance.

- **Protects** against increased heat and pressure
- **Outstanding** cold-flow properties
- **Protects** brass synchronizers
- **Long** service life
- **Durable** easy-pack makes the job cleaner and faster

### Why Upgrade to AMSOIL Performance?

Towing, heavy hauling and performance driving create shock-loading conditions and elevated heat that threaten the performance and life of manual transmissions and transaxles. Making matters worse, horsepower, torque and towing capacities seem to increase with each new vehicle model year, increasing severity. Synthetic Manual Transmission & Transaxle Gear Lube is specifically formulated to reduce friction and maintain viscosity for long component and fluid life. It is designed to excel in severe-service conditions that exceed the limitations of conventional fluids.



## AMSOIL Synthetic Marine Gear Lube ([AGM](#)) continues to provide the same great performance.

- **Protects** components, even when contaminated with 10% water
- **Reduces** friction and wear
- **Helps** prevent rust and corrosion
- **Durable** easy-pack makes the job cleaner and faster

### Why Change Marine Gear Lube?

Marine motors are constantly exposed to water. If water infiltrates the lower unit and contaminates the gear lube, it can cause foam, which weakens the fluid film and leads to wear. Water contamination also invites corrosion, which acts like sandpaper and scours bearing and gear surfaces. Frequent throttle bursts, meanwhile, concentrate tremendous pressure on the pinion gear and the forward and reverse gears. The gear lube film can rupture, especially if it's been weakened due to water contamination, leading to metal-to-metal contact. To avoid breakdowns and get the most out of your time on the water, service marine lower units seasonally.



## AMSOIL Synthetic ATV/UTV Transmission & Differential Fluid ([AUDT](#)) continues to provide the same great performance.

- **Protection** for demanding chores and tough terrain
- **Reserve** protection for heavily loaded gears
- **Durable** easy-pack makes the job cleaner and faster

### Why Upgrade to AMSOIL Performance?

ATV and UTV owners invest thousands of dollars in their machines and accessories to improve utility and performance. Owners, particularly UTV owners, often purchase expensive upgrades, including roof panels, doors, winches, skid plates and snow plows. These upgrades improve UTV utility and safety and maximize ATV performance, but increased weight and severity of service are side effects directly affecting lubricants. Elevated heat can break down lubricants while increasing the likelihood that heavily loaded, high-torque gears and bearings will fail. In addition, while accessories increase performance and versatility, the added weight and the propensity of these machines to be used for towing or hauling increase harmful heat and stress on gears and bearings. The negative effects of severe-service riding increase the importance of high-quality lubricants for increased protection. AMSOIL Synthetic ATV/UTV Transmission & Differential Fluid provides another performance upgrade that helps owners safely and confidently push their machines to the limit. After spending thousands of dollars on a new UTV or ATV and equipping it with expensive upgrades, it makes sense to upgrade to AMSOIL performance.



# Which Small-Engine Oil Would You Choose?

Your customers typically understand the importance of maintaining their vehicles and other expensive equipment. But maintenance of mowers, generators, snowblowers and other small-engine-powered equipment can sometimes be neglected. This is due in no small part to a common misconception that small equals simple when it comes to engines.

The opposite, however, is often true.

## **Compared to liquid-cooled automotive engines, air-cooled small engines...**

- Run hotter
- Operate under constant load
- Generate more contaminants (with many not using a filter)
- Are exposed to mud, dirt and rain

Plus, as noted, they're often overlooked when it comes to maintenance.

Most small-engine oils are just re-labeled automotive oils, which are formulated with fuel economy in mind, not engine durability.

[\*\*AMSOIL Synthetic Small-Engine Oil\*\*](#), in contrast, isn't merely a re-labeled automotive oil – it's designed specifically for the unique demands of small engines. It contains a heavy dose of zinc anti-wear additives to protect against wear for maximum power and engine life. It also contains potent detergency additives to fight harmful deposits.

Look at the bottom image of the valve-guide area in a Honda\* 5-hp engine tested in the AMSOIL mechanical lab. A competitor's oil resulted in heavy deposits that caused the valve to stick. In fact, the technician who tore down the engine couldn't remove the valve due to excessive deposits. Had this engine been in the field, it would have been a matter of time before it failed, leading to a costly repair or replacement. [\*\*AMSOIL 10W-30 Synthetic Small-Engine Oil\*\*](#), on the other hand, minimized deposits and kept the engine running strong.

Encourage your customers to upgrade their equipment to [\*\*AMSOIL Synthetic Small-Engine Oil\*\*](#) to maximize performance and life, ultimately helping them work more efficiently and save money.



**AMSOIL 10W-30 Synthetic  
Small-Engine Oil  
125 hours**



*"Easier starts in cold weather and the ultimate in protection at any temperature. Zero wear on my small engines and most are over 10 yrs old."*

**Bobby**  
Savannah, Ga.



**Leading Oil Brand  
125 hours**



\*All trademarked names are the property of their respective owners and may be registered marks in some countries. No affiliation or endorsement claim, express or implied, is made by their use.

# Signature Series Fights Volatility Better than the Competition

Signature Series Synthetic Motor Oil limits oil consumption and stays where it's needed most – protecting your engine.

Modern engines, particularly those equipped with performance-enhancing technologies like direct fuel injection and turbochargers, generate increased heat compared to their predecessors. At elevated temperatures, such as during severe service or when driving in hot summer weather, the oil's lighter-weight molecules can volatilize, or "boil off." The more volatile a lubricant, the lower the temperature at which it will begin to evaporate. The more it evaporates, the less oil is left to protect equipment and the faster a user must replace the lost oil. You may have experienced this phenomenon if you've owned an automobile that "uses" motor oil in irregular intervals.

When light elements in oil evaporate from heat, the oil's viscosity increases. This thicker oil forces the engine to work harder, resulting in several problems, including the following:

- **Reduced** performance
- **Reduced** fuel economy
- **Poor** cold-temperature starting
- **Increased** engine deposits
- **Out-of-balance** oil formulation,

potentially leading to a higher concentration of additives than designed

## The Test

In the NOACK Volatility Test (ASTM D5800), an oil sample is weighed and heated to 250°C (482°F) for one hour. Dry air is passed over the sample, carrying the oil vapors that have boiled off and depositing them in a beaker. The original sample is removed and re-weighed. Any reduction in weight is reported as a percentage lost of the original weight. A lower number indicates a better resistance to evaporation.

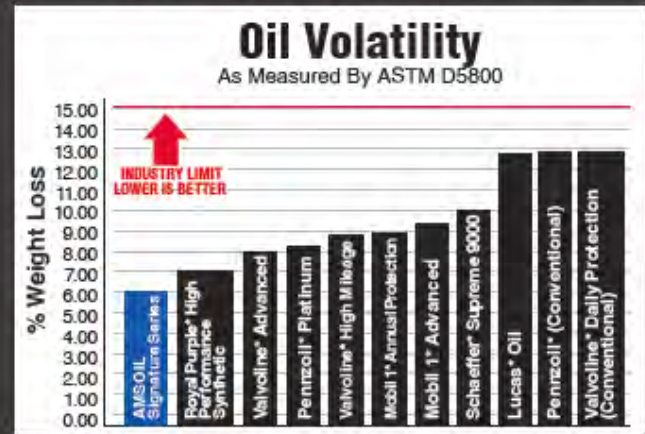
### Keeping Volatility in Check

Signature Series has a uniform molecular structure that limits evaporation and keeps the oil where it's needed most – protecting your engine. AMSOIL fights volatility<sup>U</sup> **38% better than Mobil 1** and **17% better than Royal Purple**, helping reduce oil consumption and keep valves clean.

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## Signature Series Helps Keep Valves Clean

AMSOIL fights volatility<sup>U</sup> **38% better** than Mobil 1<sup>®</sup> and **17% better** than Royal Purple<sup>®</sup>, helping reduce oil consumption and keep valves clean.



<sup>U</sup>Based on independent testing of AMSOIL Signature Series Synthetic 5W-20, Mobil 1<sup>®</sup> Advanced Synthetic 5W-20, Royal Purple<sup>®</sup> High Performance Synthetic 5W-20 in ASTM D5800. Oils purchased Oct.-Nov. 2018.

**Signature Series remains far below the industry standard limit for volatility, reducing the need for frequent oil top-offs and limiting vehicle emissions.**



## AMSOIL Protects Gears Despite Water Contamination

Water and gear lube don't mix, but in some situations your customers can't help exposing their vehicles to water.

When they launch their boat at the landing, for example, the differential can be submerged for several minutes, depending on how quickly they're able to launch or load the boat. During this time, water can slip past the differential seals and contaminate the gear lube. Water contamination can also be a challenge if they go off-roading or mudding.

And, for obvious reasons, your customers can't avoid submerging their marine motor's lower unit in water, either. Just like an automotive differential, water can breach the seals and contaminate the gear lube in the lower unit.

### **Gear lube contaminated with water can fail to protect**

Water contamination is bad for several reasons.

**Viscosity loss** – A lubricant's viscosity is its most important property. While viscosity is defined as resistance to flow, it's helpful to think of it as the lubricant's thickness. A vehicle's differential and a marine motor's lower unit are designed to use a gear lube of a specific viscosity for optimal wear protection. Water can reduce the gear lube's viscosity below what the manufacturer recommends, reducing wear protection.

**Foam** – A film of gear lube forms on the gear teeth it protects. This fluid film absorbs pressure and prevents metal-to-metal contact. Water contamination, however, invites the formation of foam. As the foam bubbles travel between gear teeth, they rupture under the intense pressure, leaving nothing behind to guard against wear. Eventually, the gears can wear out and require replacement.

**Sludge** – Water produces sludge, which inhibits heat transfer and increases lubricant temperature. Elevated temperatures speed chemical breakdown (known as oxidation). The faster the lubricant breaks down, the sooner it fails to provide adequate protection – and the sooner it must be changed, wasting money.

**Rust formation** – Water contamination invites rust formation on metal surfaces. Rust can flake off and circulate throughout the gear lube, where it acts like sandpaper and scours bearing and gear surfaces.

### **Severe service worsens the problem**

Gear lube contaminated with water is especially problematic in vehicles used for towing or hauling (and if your customers are towing a boat to the lake, their vehicle obviously fits the description). Towing and hauling increase gear and bearing stress while increasing lubricant temperature. These severe driving conditions place even greater demands on the gear lube, underscoring the need to use a high-quality lubricant to maximize differential life.

Marine motors also operate under extreme conditions that further stress the lubricant. Frequent throttle bursts concentrate tremendous pressure on the pinion gear and the forward and reverse gears. The gear lube fluid film can rupture, especially if it's been weakened due to water contamination, leading to metal-to-metal contact.

### **AMSOIL synthetic gear lube offers a solution**

Avoiding contact with water is impossible for some enthusiasts. That's why AMSOIL formulates its synthetic gear lubes to deliver excellent protection despite water contamination.

- [AMSOIL SEVERE GEAR® 75W-90 Synthetic Gear Lube](#) and [AMSOIL Long-Life 75W-90 Gear Lube](#) deliver advanced protection against wear, even with up to 15 percent water contamination.\*
- [AMSOIL Synthetic Marine Gear Lube](#) delivers advanced outboard protection against power loss and gear wear, even with up to 15 percent water contamination.\*\*

With AMSOIL synthetic gear lube, your customers can rest assured their vehicles and marine motors are protected and equipped to handle whatever conditions they throw at them.

\* Based upon AMSOIL testing of AMSOIL Synthetic SEVERE GEAR® 75W-90 and Long-Life 75W-90 Synthetic Gear Lube in ASTM D892

\*\* Based upon AMSOIL testing of AMSOIL Synthetic Marine Gear Lube 75W-90 in ASTM D892

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