

# AMSOIL<sup>®</sup>

MAGAZINE

APRIL 2021





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Printed by Arrowhead Printing  
Duluth, MN USA.

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# From the President

We are entering the final quarter of our fiscal year, and I am very pleased with our current growth trajectory. Last year, we set a goal to achieve 8 percent year-over-year growth. If not for the massive blow to the economy delivered by COVID-19 last spring, we would have easily surpassed that goal. We kicked off this fiscal year in July with a fair amount of uncertainty about the pandemic's effects still lingering, but stood firm with a bold goal of 8 percent annual growth once again.

We are currently on track to smash that goal. As of this writing, we are exceeding 10 percent year-over-year growth and marching toward a strong close to the 2021 fiscal year. That isn't to say we are without obstacles. In fact, the raw-materials market is extremely volatile. We have experienced multiple price increases from our base oil and additive suppliers since December, and those increases have come with increased frequency in the past few weeks. According to *Jobber's World*, base oil prices are up around \$1 per gallon across the board, steel drums have increased by close to \$10 per drum and the resin used to produce plastic bottles has shot up three times in the first quarter of 2021. And

with fuel prices climbing, distribution costs are rising as well. The freezing weather that hit Texas in February compounded the issue by damaging several chemical plants that supply raw materials to the lubricants market and making it impossible for them to meet demand.

AMSOIL products remain the benchmark for quality and performance, and we offer high-value programs for every customer type.

The best products, great value and excellent service combine to create an experience none of our competitors can match. We are confident this combination puts you in the best position for success and will keep us on track to exceed our growth goals. Growth builds strength, and a strong company is good for everyone involved. It boosts our negotiating power with suppliers, it increases our ability to market to consumers and it is key for meeting our two main goals: helping you be successful and ensuring AMSOIL is strong for years to come.

A handwritten signature in black ink that reads 'Dean P. Alexander'.

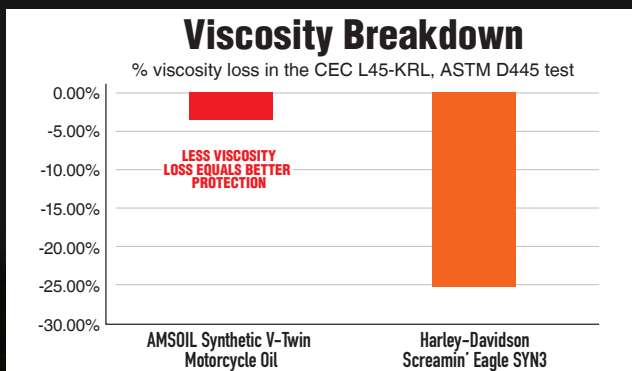
**Dean Alexander**  
Board Chair & Interim President

# EVERYTHING YOUR HARLEY NEEDS, INCLUDING BETTER PROTECTION

Dealers and customers asked for more V-twin oil-change kits, and we've delivered. Four kits are now available, including kits with an extra quart of oil for larger Milwaukee-Eight\* engines or a black oil filter instead of chrome. And, as always, Synthetic V-Twin Motorcycle Oil delivers **excellent protection against extreme heat** so you have **peace of mind your bike is protected**.

## AMSOIL Resists Viscosity Breakdown

AMSOIL resists viscosity breakdown **6X better** than Harley-Davidson\* SYN3\* for **improved protection** against compensator and transmission gear wear.<sup>BB</sup>



<sup>BB</sup>Based on testing of AMSOIL 20W-50 Synthetic V-Twin Motorcycle Oil purchased on 3/19/19 and Harley-Davidson Screamin' Eagle SYN3 purchased on 3/19/19 in the CEC L45-KRL, ASTM D445 test.

## AMSOIL V-Twin Oil Change Kits include...

- 4-5 quarts of 20W-50 Synthetic V-Twin Motorcycle Oil (MCV)
- 1 chrome or black AMSOIL Motorcycle Oil Filter (EAOM103/EAOM103C)
- 1 drain-plug O-ring



Check out the Motorcycle Product Guide at [AMSOIL.com](https://www.amsoil.com) to find the right kit for your Harley-Davidson.



# LETTERS TO THE EDITOR

## BASE OILS AND SUPPLIERS

I recently watched the AMSOIL virtual tour and was wondering where does AMSOIL buy their base stock? I took this question to a Dealer Facebook forum and was amazed at the comments from “ancient Chinese secret” to “I’m totally missing the point; it doesn’t matter” to it’s “proprietary information.” First of all, as someone who has been in manufacturing my 34-plus-year career, I can tell you that where supplies are sourced from is a big deal as it establishes the overall quality of the product being made. And I believe that the base stock makes up 80% of the oil, correct? So this would be important to understanding just what makes AMSOIL such a quality product. Can you please clarify the following: Is the supplier of AMSOIL base stocks a “trade secret” and is this important to the overall quality of the product we are selling? If so, it may be good to educate AMSOIL Dealers on this fact.

Thank you,  
**Greg Cope**

I read the interesting letter regarding base oils in the October 2020 *AMSOIL Magazine*. I recognize the need to keep proprietary information restricted. I was drawn to AMSOIL three decades ago by the promises of the properties of the PAO lubricants then being sold. My experience with AMSOIL lubricants in my vehicles and outdoor equipment has been good. Everything runs as it should, no noticeable wear and no need to add oil between changes.

The letter response has caused me to think a little harder about which lubricants I may promote in the future. If AMSOIL has shifted away from the use of PAOs and is utilizing the more refined group III base oils as other “synthetic” lubricant producers are doing, it becomes harder for me to justify the added expense.

For example, Heavy-Duty Synthetic Diesel Oil 5W-40 is \$33.35/gallon, but I can buy Shell\* Rotella T6\* Full Synthetic 5W-40 for \$22.99/gallon (and an additional \$7 mail-in rebate = \$15.99) or Mobil\* Delvac ESP\* 5W-40 for \$26.99/gallon (and an additional \$10 mail-in rebate = \$16.99) in the ads found in today’s newspaper. Yes, these are sale prices, but nearly everyone who does their own maintenance is going to buy ahead when the products are at a reduced price.

At no time am I saying AMSOIL has lessened the quality of its products, but it seems the rest of the producers may have caught up to AMSOIL. I plan to stick with a known product, but if I’m going to extol the virtues of AMSOIL lubricants to customers, I may need more information to support my product recommendations. Sometimes published testing results are not enough to convince a person that the differences seen in the results justify the (greatly) added expense for a product.

Sincerely,

**Patrick Hansen**

***AMSOIL:** Thank you for sharing your concerns, Greg and Patrick. Our formulations are indeed secret. We hold formulation details as proprietary and do not divulge base-oil or supplier details. We can tell you that we purchase a variety of synthetic base oils from a variety of suppliers. Our independence is one of our strengths – we are not tied to a single supplier like many other companies. Instead, we can source raw materials from all available suppliers. There are two nonnegotiable points when we source base oils and any other raw materials: they must possess the performance characteristics we desire, and they must be of excellent quality. We do not entertain low-quality materials. That is our reputation within the industry. In fact, suppliers sometimes bring chemistry to us that they will not present to others because they know we formulate up to a standard and not down to a price.*

*We have also learned through the years that focusing on base oils is ineffective for most customers. We have been much more successful talking to customers about what they care most about: protection. Our focus on protection has led to developing claims against leading industry standards and OEM specifications to help differentiate our oils from others who just meet the bare minimums. Patrick, the Heavy-Duty Synthetic Diesel Oil you referenced focuses on a robust wear claim that delivers 4X more wear protection than required by the Detroit Diesel DD13 scuffing test for Specification DFS 93K222. This claim shows we went above and beyond the standards for this oil. Additional claims can be found on our data sheets, Dealer Sales Briefs and webpages.*

*We strongly encourage you to focus on what our products can do for your customers, not what they are made from. We employ a variety of technologies to design our lubricants, and we view base oils the same way we view additives, with each having its own set of unique properties. We choose whichever synthetic base oil or combination of base oils delivers the desired result and tailor our lubricants to be the best on the market.*

*We also offer a variety of programs (P.C. Program, Commercial Program, Retail Program) that offer wholesale prices, volume discounts, reduced or free shipping and promotional offers, helping ensure our prices are competitive in all markets.*

## PRODUCT COVERAGE

I would like to say thank you for the superior AMSOIL products that we at Hall Motorsports use in everything we run, from our Jeep\* Rubicon,\* 3500 Ram\* dually to our top dragster. AMSOIL has us covered in every way and that is what I push to my AMSOIL customers. Our vehicles are proof that AMSOIL really works. If you have a chance, check out our race page on Facebook, Honoring Hero’s Racing, honoring vets, first responders and those families that are fighting cancer. Thank you again for the great products and the family atmosphere that you provide all of us that are independent Dealers.

Thank You,

**Donald Hall**

***AMSOIL:** Thank you for your letter, Donald. We’re happy to hear AMSOIL products are keeping your vehicles well-protected, and we wish you luck in your racing endeavors.*

Email letters to:  
[letters@amsoil.com](mailto:letters@amsoil.com)

Or, mail them to:  
**AMSOIL INC.**  
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**Superior, WI 54880**

Letters are subject to editing for length and clarity; please include your name, address and phone number. Unsigned letters will not be published.



**Matt Erickson** | VP, PRODUCT DEVELOPMENT

Horsepower has never been more accessible. The 2021 Dodge\* Charger\* SRT\* Hellcat\* Redeye\* makes a ridiculous 797 horsepower. Ford\* and Chevrolet\* loyalists have the 760-hp Shelby\* GT500\* and 650-hp Camaro\* to sate their appetites.

Along with all that power comes added engine stress. These engines place incredible pressure on the crankshaft, bearings and other components. As you know, the motor oil's viscosity plays a crucial role in protecting components from wear. One interesting feature of these powerful muscle-car engines is the oil viscosity they require. Dodge and Chevrolet often specify 0W-40, while Ford requires 5W-50 in certain late-model Mustangs.\*

There's a good reason for designing these engines to use an oil with a higher 40- or 50-weight viscosity. Once the engine reaches operating temperature, the oil has to withstand extreme heat and help prevent metal-to-metal contact despite all the power they make. Higher-viscosity oil stays thicker at operating temperature. This helps form a strong, consistent lubricating film between the crank journals and bearings to ensure the engine lasts as designed and continues to put out all that power you crave.

That sounds easy enough, but it's difficult to properly formulate an oil that performs like an SAE 5W at startup and an SAE 50 at operating temperature without sacrificing performance. Powerful engines tend to shear the oil, causing it to lose viscosity. Shear, which can be thermal or mechanical in nature, literally tears oil molecules

## Powerful engines need powerful protection

Today's muscle cars require oil that covers a wide viscosity range.

apart. Once this happens, the 40- or 50-weight oil you put in your engine prior to track day can become a 40- or even 30-weight oil after several laps. This inability to maintain sufficient viscosity results in compromised wear protection.

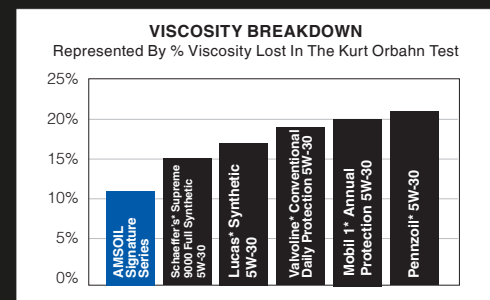
The key to maintaining the performance of these engines is to use a high-quality synthetic oil that retains its viscosity despite intense heat and stress. To achieve such wide viscosity ranges, formulators often use viscosity modifiers, which are polymers that expand as the temperature increases, increasing the oil's viscosity.

Think of them like springs. At startup, they are contracted and short, which reduces internal fluid friction between molecules. As the oil heats up, the springs stretch and bump into each other, increasing fluid friction and viscosity. This allows the oil to perform like an SAE 5W at startup and an SAE 50 at operating temperature.

Like anything, viscosity modifiers come in a range of qualities, and low-quality viscosity modifiers readily shear. Once they shear, it's like cutting the springs in half. While they still contract and stretch as designed, they cannot stretch as long as before, reducing the oil's ability to return to the designed operating viscosity and protect against wear.

The key is to formulate oil using the highest-quality synthetic base oil possible, which reduces reliance on viscosity modifiers. High-quality synthetic base oils, like those we use

**Signature Series Fights Viscosity Breakdown**  
AMSOIL fights viscosity breakdown **better than the competition**,<sup>o</sup> providing superior protection of pistons, cams and bearings.



<sup>o</sup>Based upon independent testing of Mobil 1 Annual Protection Full Synthetic 5W-30, Schaeffler's Supreme 9000 5W-50, Lucas Synthetic 5W-30, Valvoline Conventional Daily Protection 5W-30, Pennzoil 5W-30 and AMSOIL Signature Series 5W-30 in the Kurt Orbach test. Oils purchased on 05/03/18. All trademarks names and images are the property of their respective owners and may be registered marks in some countries. No affiliation or endorsement claim, expressed or implied, is made by their use.

in AMSOIL Signature Series Synthetic Motor Oil, naturally flow well at startup because they don't contain waxes that thicken in the cold. We also use only the highest-quality additives, which results in more resistance to shear and better viscosity control. Combine that with the highest quality viscosity modifiers, and the result is an exceptionally strong product that resists shear and controls viscosity.

In fact, the proof is shown in the graph. In the industry-standard Kurt Orbach Test, which measures viscosity loss, Signature Series outperformed the competition for better protection of pistons, cams and bearings.

If you or your customers own one of today's advanced muscle cars, upgrade engine protection to AMSOIL to ensure their high-powered engines receive the protection they need.

# AMSOIL SYNTHETIC GEAR LUBES: Advanced Protection and Sales Opportunities

Although vehicles continue advancing to produce more horsepower, torque and towing capacity, the gears and bearings responsible for converting this increased power into wheel rotation have remained largely unchanged. In some vehicles, the volume of gear lube available to cool and protect has also been reduced to improve fuel economy and reduce drag. Synthetic gear lubes are increasingly relied upon to meet these higher demands, and they present Dealers with great sales opportunities.

## Increased Wear Resistance

Differential designs come with inherent suffering points. In a traditional automotive differential, the input pinion gear concentrates intense pressure on the ring gear, forcing it to turn the side and spider gears. As all the gear teeth mesh, they slide against one another repeatedly, separated only by a microscopic film of lubricant. The constant stress the lubricant film bears can shear lesser gear lubes, causing permanent viscosity loss. Once sheared, the fluid film weakens, ruptures and allows metal-to-metal contact, leading to increased friction, accelerated wear and eventual gear and bearing failure.

It's here that synthetics prove their worth. Conventional lubes formulated with viscosity index (VI) improvers shear more readily under stress. AMSOIL synthetic gear lubes, however, maintain viscosity better than conventional and other synthetic gear lubes despite rigorous use and contain advanced anti-wear additives for further protection.

## Temperature Extremes

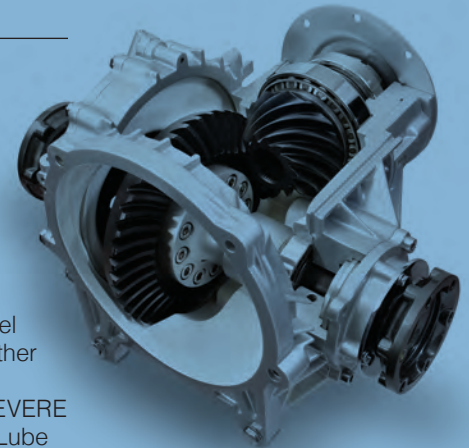
Differentials have always run hot, but increases in power and torque coupled with reduced fluid volume and reduced airflow due to improvements in vehicle aerodynamics only worsen the problem. As temperatures in the differential climb, conventional gear lubes tend to lose viscosity. Extreme loads and pressures can break the lubricant film, causing increased metal-to-metal contact and heat. This increased friction and heat cause the lubricant to lose even more viscosity, further increasing friction and heat. This friction/heat cycle continues spiraling upward in a vicious cycle known as thermal runaway, which eventually leads to higher wear and irreparable equipment damage.

Conventional gear lubes also tend to leave behind deposits that coat gears and bearings, inhibiting heat transfer and shortening their life spans. What's more, they tend to thicken and increase internal drag and reduce fuel economy.

AMSOIL synthetic gear lubes, however, are engineered in a lab and contain only uniform molecules less prone to volatilizing at high temperatures. By design, they resist breakdown from

high heat to provide better cooling and protection against acids and carbon/varnish formation.

Their wax-free construction also improves cold-flow properties, improving fuel economy and cold-weather shifting. As the graph at right shows, AMSOIL SEVERE GEAR® Synthetic Gear Lube delivers 20 percent more cold-temperature protection than required by the industry standard.



## Extreme-Pressure Additives

Many drivers operate under severe-service conditions without even knowing it. Towing, hauling, steep-hill driving, commercial use, plowing, racing, off-road use, rapid acceleration, frequent stop-and-go operation and high ambient temperatures all can place even greater stress on gears and bearings. The sliding motion and pressure on gears can wipe the lubricant away, particularly in spiral-cut hypoid gears. AMSOIL SEVERE GEAR contains extreme-pressure (EP) additives that form a durable iron sulfide barrier on gear and bearing surfaces to guard against metal-to-metal contact and defend against pitting and scoring in even the harshest driving conditions.

	Normal Service	Severe Service
<b>Cars, SUVs, Light Trucks</b>	Drain at <b>100,000</b> miles (160,934 km) of service or according to the owner's manual, whichever is longer	Drain at <b>50,000</b> miles (80,467 km) of service or according to the owner's manual, whichever is longer
<b>Heavy-Duty Class 8 Line Haul</b>	Follow the OEM drain interval (miles or hours) for synthetic oil up to <b>250,000</b> miles (402,336 km) or three years, whichever comes first.	
<b>Vocational/Delivery</b>	Follow the OEM drain interval (miles or hours) for synthetic oil up to <b>120,000</b> miles (193,121 km) or three years, whichever comes first.	
<b>Heavy-Duty Off-Road</b>	Follow the OEM drain interval (miles or hours) for synthetic oil up to <b>100,000</b> miles or two years, whichever comes first.	



### Extended Drain Intervals

Following the original equipment manufacturer (OEM)-recommended differential drain interval using the OEM-recommended fluid can get very expensive. Plus, the synthetic gear lubes recommended by OEMs are often more costly themselves. AMSOIL SEVERE GEAR® is recommended for 50,000 miles (80,467 km) in severe service. The extended-drain capabilities and superior performance and protection of AMSOIL synthetic gear lubes make them a prime choice for customers looking to add to their bottom line.

### AMSOIL SYNTHETIC GEAR LUBES

#### SEVERE GEAR 100% Synthetic Extreme-Pressure (EP) Gear Lube

- Formulated for the severe operating conditions of today's pick-up trucks, SUVs, heavy equipment and other hard-working vehicles
- Advanced protection against wear, even with up to 15 percent water contamination<sup>1</sup>
- Controls thermal runaway
- Protects against rust and corrosion
- Helps reduce operating temperatures
- Maximum efficiency
- Long oil, seal & equipment life
- Flexible easy-pack for clean, fast installation

#### SEVERE GEAR SAE 250

- Premium-grade, extreme-pressure gear lube engineered specifically for high-load demands
- Shear stable in extreme temperatures
- Provides cushion between metal surfaces that absorbs impact to prevent pitting, scoring and wear
- Excellent for severe racing applications subject to shock loading, steep angles, high pinions, G-forces and lubricant sling-off

#### 75W-90 Long Life Synthetic Gear Lube

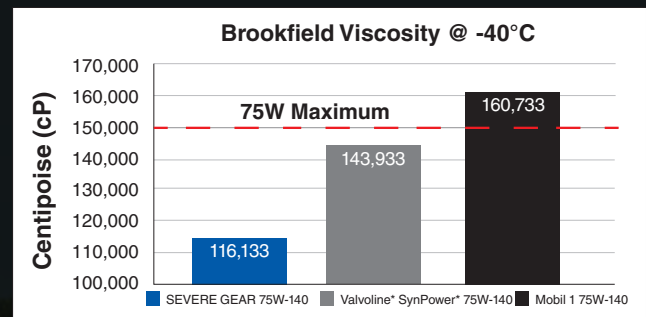
- Specifically engineered for 500,000-mile (805,000-km) service life in over-the-road trucks
- High-load gear and bearing protection
- Protection against rust and corrosion
- Better cold-weather shifting
- Improved efficiency
- Improved seal life

### Action Plan

- Keep your customers informed about the importance of differential maintenance and recommend gear oil changes. AMSOIL SEVERE GEAR Synthetic Gear Lube is multi-functional and formulated for the applications your customers use every day.
- Follow the vehicle owner's manual recommendations for initial (break-in) gear oil change. Consult the AMSOIL product guides to find the proper viscosity.
- Bring SEVERE GEAR easy-pack samples to sales calls to help gain prospects' attention. Use the videos on our YouTube channel ([youtube.com/amsoilinc](https://youtube.com/amsoilinc)) to demonstrate its ease of use and durability.

### Some gear lubes fail to meet basic low-temperature requirements.

Mobil 1\* 75W-140 Gear Oil, for example, failed to meet the requirements of the industry standard.<sup>§</sup> AMSOIL SEVERE GEAR, on the other hand, delivers **20% more** cold-temperature protection than the standard requires.



<sup>§</sup>Based upon results of samples of Mobil 1 75W-140 and Valvoline SynPower 75W-140 purchased in 2018 and tested in ASTM D2983 by an independent testing facility in May 2018. Samples sent blind to eliminate bias.



# Focus on Fuel Problems to Enhance Marine Sales

Ethanol is always a hot-button topic in the marine market. A quick YouTube search reveals dozens of videos about its negative effects on outboard-motor fuel systems, including cracked fuel lines and deposits that can cause the engine to quit running. Meanwhile, unstabilized fuel that has fouled the carburetor or fuel system also poses problems for anglers and other marine enthusiasts. Fortunately, AMSOIL fuel additives offer proven answers, providing a great conversation starter when servicing marine customers and prospects this season.

## Why add ethanol to gasoline?

Ethanol is an alcohol fuel that's derived from plant materials, such as corn, barley or wheat. It's mixed with gasoline at different ratios (E10, E15 or E85) to produce the fuel you buy at the pump.

Years ago, formulators added lead to gasoline to boost octane and help prevent engine knock, which can damage the engine. However, lead poisons catalytic converters and harms the environment, so it was replaced by methyl tert-butyl ether (MTBE) until it, too, was shown to damage the environment if leaked or spilled. Today, ethanol has replaced MTBE as a more environmentally friendly means of boosting octane.

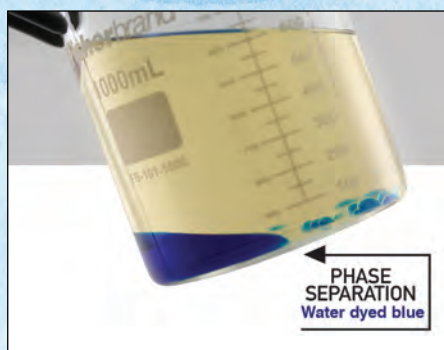
## Ethanol's downside

Because it's an alcohol, ethanol can...

- Degrade rubber and plastic fuel hoses and carburetor components
- Cause gaskets and fuel lines to harden, crack and leak
- Corrode aluminum and brass fuel-system components and form white, flaky residue that clogs fuel passages

The problem becomes worse the longer the fuel sits, which can be months in a marine motor during seasonal storage.

During that time, the fuel can absorb moisture since ethanol has an affinity for water. That's why ethanol-related problems are so common in marine applications. Water can break the molecular bond between gasoline and ethanol, causing the water/ethanol mixture to separate from the gasoline and fall to the bottom of the tank. This is known as "phase separation," and you can see an example in the image.



## Problems due to phase separation

Phase separation causes a number of problems.

1. The engine can draw the ethanol/water mixture into the carburetor or injectors, leading to a lean-burn situation that can increase heat and damage the engine.
2. The gasoline left behind no longer offers adequate resistance to engine knock since the ethanol that provides the increased octane the engine needs has separated from the gasoline.
3. If the boat sits unused, the water/ethanol mixture can slowly corrode aluminum and brass fuel-system components, not to mention rubber and plastic fuel lines and gaskets. Eventually those components fail and require replacement.

## Prevention is the best solution

Although some fuel additives on the market claim to reverse the effects of phase separation, there's no way to re-integrate gasoline and ethanol once they've separated. Instead, it's best to prevent it. One solution is to use non-oxygenated, ethanol-free gas in marine motors. It costs a little more, but it eliminates problems associated with ethanol.

Another solution is to treat every tank of fuel and container of gas with AMSOIL Quickshot® (AQS). It helps keep water molecules dispersed in the fuel to prevent phase separation. It also cleans varnish, gums and insoluble debris while stabilizing fuel during short-term storage up to six months.

## Always stabilize gasoline

To ensure marine motors start up in the spring and run properly, it's vital to stabilize the gas. Over time, gasoline changes, leaving behind gums, varnish and other solids that foul the fuel system and prevent gas from flowing into the combustion chamber. In severe cases, gasoline can change so dramatically that it no longer ignites. Anglers and boaters are left with motors that start hard, if at all, and run poorly.

AMSOIL Gasoline Stabilizer (AST) offers a solution. It fights oxidation, varnish and corrosion for up to 12 months to keep fuel systems clean and properly working.

AMSOIL fuel additives are excellent door-openers for prospects and add-on products for existing customers. Ask your prospects and customers if they've had ethanol issues or problems due to bad gasoline. Provide Quickshot and Gasoline Stabilizer as solutions. And don't forget our full line of marine products.

## Four-Stroke Marine Oil

- Excellent wear protection
- Protects against corrosion
- NMMA FC-W Catalyst Compatible



Formulated specifically for Mercury\* motors, like the popular Verado,\* that specify synthetic-blend oil. Because Mercury is the market leader and most Mercury owners won't stray from these guidelines, we developed 25W-40 Synthetic-Blend Marine Engine Oil to help you reach these customers.

## Two-Stroke Marine Oil

## Lower-Unit Gear Lube



- Excels in normal and lean factory settings
- Maximizes engine life
- Low aquatic toxicity

### PERFECT FOR RETAIL ACCOUNTS

- Protects against rust and wear
- Helps control engine deposits
- Ideal for direct-injection outboard motors

- Helps improve throttle response
- Reduces smoke
- Premium protection at 100:1 mix ratio

### EASY-PACK REDUCES MESS & HASSLE

- Delivers advanced outboard protection against power loss and gear wear, even with up to 15 percent water contamination<sup>v</sup>
- Helps prevent rust and corrosion

## Fuel Additives

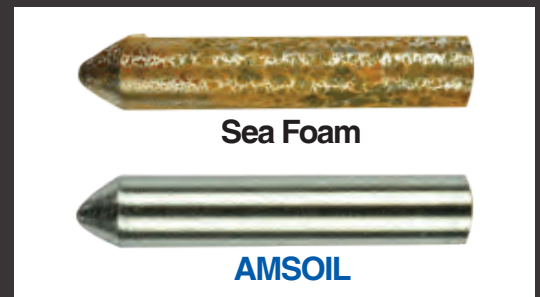


- Cleans fuel systems
- Addresses ethanol-related performance issues
- Stabilizes fuel up to six months

- Helps keep fuel from deteriorating
- Protects against varnish and gum buildup
- Fights ethanol corrosion
- Stabilizes fuel up to 12 months

### AMSOIL Fights Corrosion

AMSOIL provides corrosion protection Sea Foam® Motor Treatment can't match, helping maintain power and performance and keeping metal looking like new even when subjected to salt water.<sup>x</sup>



<sup>x</sup>Based upon independent testing of AMSOIL Gasoline Stabilizer obtained Nov. 8, 2018 and Sea Foam Motor Treatment purchased Oct. 25, 2018 in a modified NACE TM0172 using synthetic sea water per ASTM D665 part B.

# Pristine Ford\* Flex\* Tops 350,000 Miles With AMSOIL

Tom Weiland of Richfield, Minn. has a broken oil pan to thank for his loyalty to AMSOIL products.

Weiland's father grew up on a farm, and one of his jobs was driving a diesel truck out in the fields. "They used AMSOIL in their trucks, and one day he ran over something in the field that knocked off the oil pan," Weiland said. "And he drove the thing – a big, heavy-duty truck – all the way back to the plant with no oil." Even after driving 20 miles without the oil pan, the engine was still running. Weiland was sold on AMSOIL protection.

*"The engine has been fine; absolutely perfect."*

## AMSOIL tested in city driving conditions

Today, he uses AMSOIL Signature Series 5W-20 Synthetic Motor Oil (ALM) in his 2014 Ford Flex, which recently hit 350,000 miles (563,000 km). Weiland's primary job as a mechanical engineer and secondary gig as a Lyft\* driver require him to drive about 75,000 miles (120,700 km) annually in the Twin Cities metro area of Minneapolis/St. Paul. "This year because of COVID, they have me working from home, so I've been driving for Lyft more to stay busy, and it's more like 100,000 miles (160,900 km)," he said.

After using another oil for the first few oil changes when the car was new, Weiland switched to AMSOIL synthetic motor oil and hasn't looked back. The engine hasn't required any repairs to anything the oil touches. "The engine has been fine; absolutely perfect," he said.

## Signature Series keeps engine 'ridiculously clean'

A recent water-pump-seal failure caused Weiland to visit his mechanic at Leighton's Garage of Eden Prairie, Minn. When he opened the front of the engine to access the water pump, what he saw surprised him. "He took pictures to show me and said, 'This thing is ridiculously clean,'" said Weiland.

As the images show, the 3.5L six-cylinder engine contains virtually no deposits despite 350,000 miles (563,000 km) of severe-service city driving. The valvetrain area is clean and appears in excellent condition.

## Timing chain still like new

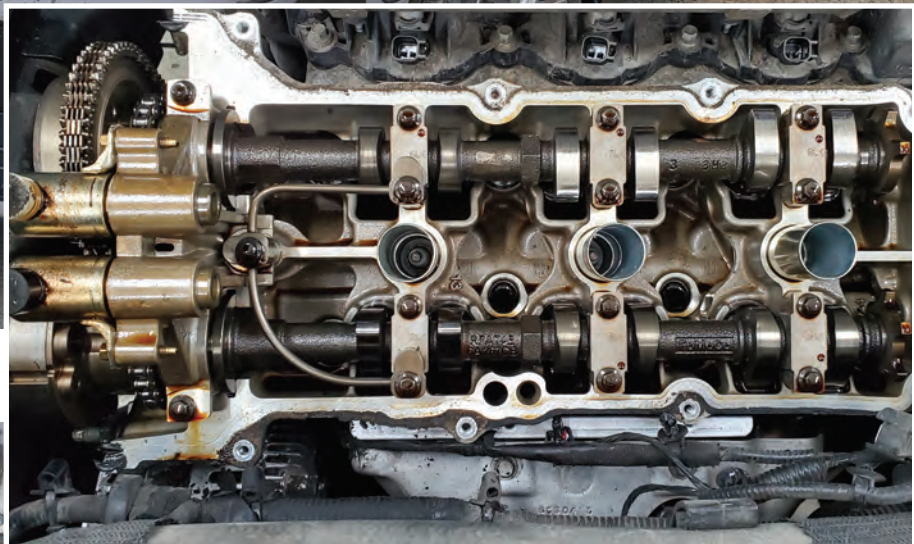
The engine was in such good shape that Weiland and his mechanic debated whether to change the timing chain. "Generally, any time you open up the engine like that, you replace the timing chain due to the labor involved," said Weiland. "We ended up doing that, but we talked about it for a while because, if you look at the chain up close, it looks brand new."

Weiland sometimes talks about the performance of AMSOIL products and his car's impressive mileage with his Lyft riders. "They can't believe it when I tell them. They think it has 70,000-80,000 miles (112,600-128,700 km) on

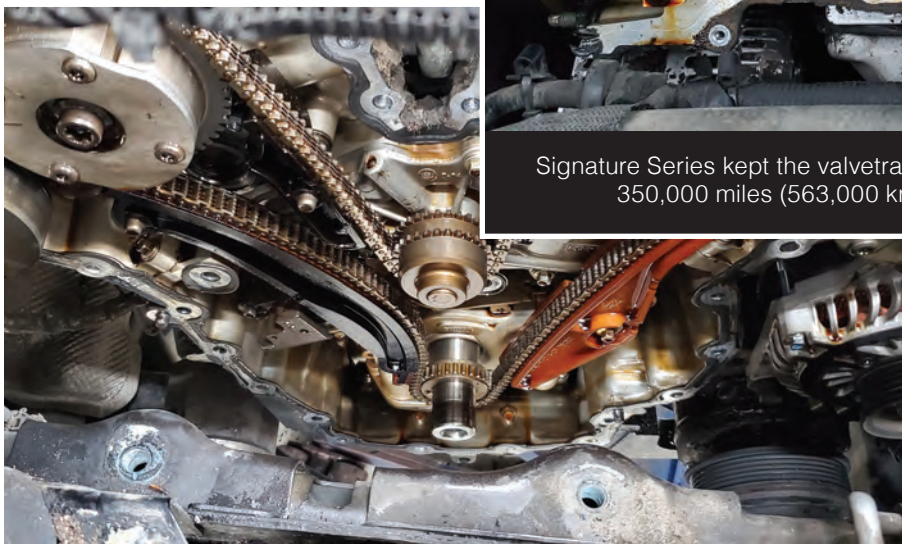


it because I keep it perfectly spotless. But I say, 'Look for yourself; there's the odometer.'"

This is Weiland's fifth car and he's always used AMSOIL synthetic motor oil with great results. "It idles great; it starts up every time. It doesn't sound like it's not brand new. It's not loud or raspy or anything," he said. "I'm really happy with the product; I'll keep on using it."



Signature Series kept the valvetrain area **clean and deposit-free** despite 350,000 miles (563,000 km) of severe-service city driving.



Weiland and his mechanic discussed whether to change the timing chain despite the high miles since it **looked brand-new**.

# NEW AMSOIL ATV/UTV OIL CHANGE KITS FOR CAN-AM VEHICLES NOW AVAILABLE

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## Why Formula 4-Stroke® Powersports 0W-40 Synthetic Motor Oil?

In its owner's manuals, Can-Am recommends 5W-40 synthetic-blend oil for "general-purpose" use. However, it recommends additional viscosities depending on ambient conditions. For example, enthusiasts can opt for 0W-40 in cold temperatures for faster start-up protection, or 10W-50 in warm temperatures for increased resistance to heat. Because AMSOIL

Formula 4-Stroke Powersports 0W-40 delivers exceptional all-weather protection, it's the lone viscosity we offer in our Can-Am Oil Change Kits. Its premium synthetic base oils and 0W rating mean it flows quickly in cold weather for excellent startup protection. In hot conditions, it resists oxidation and forms a durable lubricating film to deliver excellent wear protection. It delivers the best of both worlds all season long.

## Perfect for retailers

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- 4 quarts of Formula 4-Stroke® Powersports 0W-40 Synthetic Motor Oil
- Oil filter
- O-ring & washers

### APPLICATIONS

- Maverick\* X3



- 2.5 quarts of Formula 4-Stroke Powersports 0W-40 Synthetic Motor Oil
- Oil filter
- O-ring & washers

### APPLICATIONS

- Outlander\* 500-1000 • Renegade\* 500-1000 • Commander\* 800-1000
- Defender\* HD8 & HD10 • Maverick 800-1000 • Traxter\* HD8 & HD10



- 3.5 quarts of Formula 4-Stroke Powersports 0W-40 Synthetic Motor Oil
- Oil filter
- O-ring & washers

### APPLICATIONS

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- Traxter HD5

To find the correct AMSOIL ATV/UTV Oil Change Kit for your ATV or UTV, consult the ATV and UTV Product Guides at [AMSOIL.com/guides](http://AMSOIL.com/guides).



# Big Protection for Smaller Diesel Vehicles

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- Helps extend engine life and reduce maintenance costs and downtime
- Helps maintain power and fuel efficiency for superior engine performance
- Outstanding turbocharger and emissions-system protection
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- Meets or exceeds the latest specifications for smaller diesel vehicles

## Applications

Use in diesel pickups, vans, cars and SUVs that require any of the following specifications:

**0W-20 (DP020):** GM dexosD

**5W-30 (DP530):** GM dexosD, dexos2; Chrysler MS-11106; Ford WSS-M2C214-B1; ACEA C3

Not for use in applications that require an API CK-4 (or prior) specification.

<sup>1</sup>Based on third-party testing in the OM646LA cam wear test using 0W-20 as worst-case representation.





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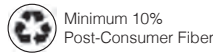


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