



# SERVICE LINE

NEWS AND IDEAS FROM AMSOIL

## AMSOIL is the Cost Effective Choice

### NOTES

#### AMSOIL Official Oil of Laconia Bike Week

First the Sturgis Motorcycle Rally, then Daytona Bike Week and now Laconia Bike Week. AMSOIL exposure in the motorcycle market continues to rise with AMSOIL signing on as the Exclusive Official Oil of Laconia Bike Week. The Laconia, N.H. rally draws 400,000 bikers annually, making it the third-largest rally in the country behind Sturgis and Daytona. As the oldest motorcycle rally in the country, Laconia Bike Week has a special place in history and is an annual event for many motorcycle enthusiasts.

#### Customers Pay More Attention to Vehicle Maintenance

According to The NPD Group, consumers increased their vehicle maintenance behaviors in 2009. In addition, 30 percent indicated they will perform more vehicle maintenance in 2010 and 64 percent indicated they will perform the same amount of maintenance in 2010. These findings correlate with industry research that shows an increasing number of people delaying new vehicle purchases and deciding to keep their current vehicles on the road longer.



AMSOIL synthetic motor oils provide superior protection and performance for expensive vehicle investments, while their extended drain capabilities provide cost effectiveness that translates into immediate savings. Although a 3,000-mile oil change using conventional motor oil is initially less expensive than an AMSOIL oil change, AMSOIL synthetic motor oils save money in the long run. As motorists struggle with high vehicle expenses and gasoline prices, they can effectively cut the expense of 3,000-mile standard oil changes from their budgets by extending their drain intervals with AMSOIL synthetic motor oils.

#### Saving Money at the Quick Lube

The following examples illustrate how quick lube customers save money by using AMSOIL products:

##### Quick Lube Example 1

A quick lube customer who drives 15,000 miles per year and purchases 3,000-mile oil changes must visit the quick lube five times per year:

**Conventional Oil Change Price:**  
**\$32.49 x 5 = \$162.45**

The quick lube customer pays \$32.49 per 3,000 miles.

A quick lube customer who drives 15,000 miles per year and purchases 7,500-mile AMSOIL XL Synthetic Motor Oil changes must visit the quick lube twice per year:

**AMSOIL XL Oil Change Price:**  
**\$64.95 x 2 = \$129.90**

The quick lube customer pays \$25.98 per 3,000 miles and saves \$32.55 per year by purchasing AMSOIL XL Synthetic Motor Oil changes, while also saving the time associated with visiting the quick lube an additional three times per year.

##### Quick Lube Example 2

A quick lube customer who drives 30,000 miles per year and purchases 3,000-mile oil changes must visit the quick lube 10 times per year:

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**Conventional Oil Change Price:**  
**\$32.49 x 10 = \$324.90**

The quick lube customer pays \$32.49 per 3,000 miles.

A quick lube customer who drives 30,000 miles per year and purchases 7,500-mile AMSOIL XL Synthetic Motor Oil changes must visit the quick lube four times per year:

**AMSOIL XL Oil Change Price:**  
**\$64.95 x 4 = \$259.80**

The quick lube customer pays \$25.98 per 3,000 miles and saves \$65.10 per year by purchasing AMSOIL XL Synthetic Motor Oil changes, while also saving the time associated with visiting the quick lube an additional six times per year.

**Saving Money as a Do-It-Yourselfer**

The following examples illustrate how do-it-yourself customers save money by using AMSOIL products:

**Do-It-Yourself Example 1**

A do-it-yourself customer who drives 25,000 miles per year and uses conventional motor oil and filters for 3,000-mile drain intervals must change his or her oil eight times per year (\*comparisons based on a five-quart oil capacity):

**Conventional 5W-30 Motor Oil**

40 quarts needed for  
25,000 miles\* @ \$3/qt. x 40 = \$120  
8 Standard  
Oil Filters @ \$6 per filter x 8 = \$48  
**TOTAL = \$168**

The do-it-yourself customer pays \$21 per 3,000 miles.

A do-it-yourself customer who drives 25,000 miles per year and uses AMSOIL synthetic motor oil and high-performance Ea Oil Filters for 25,000-mile drain intervals must only change his or her oil once per year (Note: AMSOIL synthetic motor oils may be used for 25,000 miles with conventional oil filters, but filters must be changed at filter manufacturer's recommended change interval):

**AMSOIL 5W-30 Synthetic Motor Oil - Suggested Retail**

5 quarts needed for  
25,000 miles\* @ \$8.75/qt. x 5 = \$43.75  
1 AMSOIL Ea Oil Filter @ \$18.30  
**TOTAL = \$62.05**

The do-it-yourself customer pays \$7.45 per 3,000 miles and saves \$105.95 per year using AMSOIL synthetic motor oil and Ea Filters, while also saving the time and work associated with changing oil an additional seven times per year.

**Do-It-Yourself Example 2**

Even if a do-it-yourself customer drives only 15,000 miles per year, he or she will still save money by using AMSOIL synthetic motor oil and Ea Oil Filters (\*comparisons based on a five-quart oil capacity):

**Conventional 5W-30 Motor Oil**

25 quarts needed for  
15,000 miles\* @ \$3/qt. x 25 = \$75  
5 Standard  
Oil Filters @ \$6 per filter x 5 = \$30  
**TOTAL = \$105**

The do-it-yourself customer pays \$21 per 3,000 miles.

**AMSOIL 5W-30 Synthetic Motor Oil - Suggested Retail**

5 quarts needed for  
15,000 miles\* @ \$8.75/qt. x 5 = \$43.75  
1 AMSOIL Ea Oil Filter @ \$18.30  
**TOTAL = \$62.05**

The do-it-yourself customer pays \$12.41 per 3,000 miles and saves \$42.95 per year using AMSOIL synthetic motor oil and Ea Filters, while also saving the time and work associated with changing oil an additional four times per year.

In addition to the money-saving benefits of extended drain intervals, AMSOIL synthetic lubricants effectively improve fuel economy by allowing moving parts to move more freely, using less energy and creating less friction than when conventional lubricants are used. In fact, customers can achieve a 2 to 5 percent increase in fuel economy by switching to synthetic lubricants, while many AMSOIL customers report even larger gains.



XLM



XLF



XLT



XLO

# Maximum Viscosity Protection

Hard-working diesel engines present a serious challenge to the lubricants that protect them. Tight clearances and intense pressures can generate enough force to tear apart the molecular structure of the oil, causing permanent viscosity loss. Permanent viscosity loss is termed "shear" and leads to accelerated equipment wear, oil consumption and deposit formation.

Shear stability measures a lubricant's ability to withstand shearing forces without degrading to a lower viscosity. To meet CJ-4 requirements for shear stability, the American Petroleum Institute (API) requires diesel oils to pass the Kurt Orbahn 90-Cycle Shear Stability Test.

## Fuel Dilution

Resisting shear and maintaining protective viscosity in the harsh operating conditions of diesel engines is challenge enough for many diesel oils, but maintaining viscosity in the face of fuel dilution is another challenge altogether. Factors such as frequent starts, excessive engine idling, short trips and cold weather have contributed to moderate levels of fuel dilution in diesel applications for years, while recent issues with emission systems have brought the fuel dilution problem to a whole new level.

For example, AMSOIL has documented increasing fuel dilution levels in 2007-2009 Caterpillar C13 and C15 on-highway engines. There are many possible causes, including problems with a unit injector or leaking seals. Another cause of fuel dilution is new emission systems using in-cylinder post-fuel injection, a process most 2007-2010 light-duty GM, Ford and Dodge diesel pickups use to regenerate the diesel particulate filter.

## Problems Associated with Fuel Dilution

Because diesel fuel is a natural solvent, it causes a multitude of problems when it contaminates the oil, including reduced oil viscosity, reduced oil film strength, increased engine wear (particularly in the cylinder/ring area), increased volatility, weakened lubricant detergency, accelerated lubricant oxidation, varnish formation, acid formation/corrosion and low oil pressure.

The most notable problem associated with increased fuel contamination is reduced viscosity and the corresponding effect it has on oil performance. When combined with shearing conditions, as little as 4 percent fuel dilution is generally enough to reduce an oil's viscosity to less than the specified viscosity grade.

## Shear Stability Testing

AMSOIL sent five competitive synthetic CJ-4 5W-40 diesel oils to an independent laboratory for shear stability testing. Knowing the tough environment that diesels present to lubricating oils, AMSOIL doubled the standard Kurt Orbahn 90-cycle test and had the oils tested for 180 cycles. Samples were then contaminated with 2 and 4 percent ultra low sulfur diesel (ULSD) fuel. As the graph shows, even after being shear tested for twice the industry standard and contaminated with 4 percent fuel dilution, AMSOIL maintained viscosity and was the only oil to stay within an SAE 40 viscosity rating. As other oils lost viscosity due to shearing forces and fuel dilution, their ability to protect against wear was jeopardized.

## Superior Viscosity Control

AMSOIL Premium Diesel Oils are formulated with an ultra shear stable polymer system that maintains viscosity better than inferior products. Testing proves that AMSOIL provides unsurpassed shear stability, offering better viscosity control than competitive oils.

Even though recent fuel dilution issues forced AMSOIL to adjust its Premium API CJ-4 Synthetic Diesel Oil drain interval recommendations in 2007-2010 Dodge 6.7L, Ford 6.4L and GM 6.6L light-duty turbo-diesel pickups and 2007-2009 on-highway Caterpillar C13 and C15 engines to the manufacturer-recommended drain intervals, AMSOIL Premium Diesel Oils remain the premium choice for diesel applications. AMSOIL Premium Diesel Oils resist viscosity loss from both shearing forces and fuel dilution to maintain their protective film strengths, providing superior protection to all diesel engines.



DEO

DME

