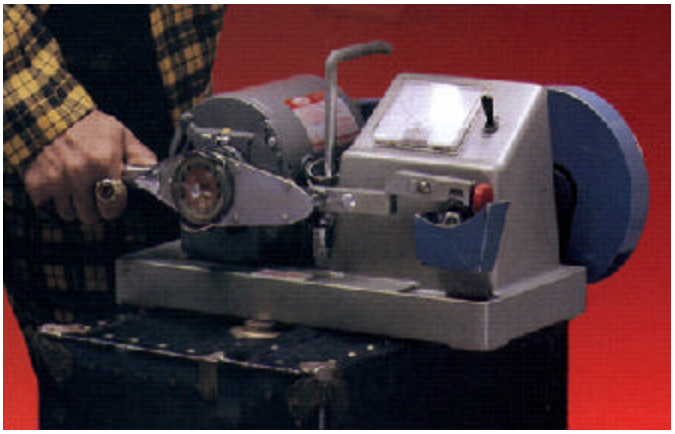
TSB: MO-2008-10-01

Technical Service Bulletin

Date: 10/1/2008
Product Description: All AMSOIL Motor Oils
Subject: Inadequate Demonstration Using Hand-Held Tests and Aftermarket Oil Additives



OBJECTIVE:

Inform AMSOIL Dealers and customers of the potential hazards of aftermarket oil additives and how they are used in non-ASTM recognized, hand-operated test machines to manipulate potential customer buying decisions.

ISSUES:

Aftermarket oil additives have been marketed using an extreme pressure demonstration tool to showcase the properties of extreme pressure (EP) additives, attempting to create a need for their performance benefits in fully formulated engine oils.

Due to the unrestricted language and marketing claims used by aftermarket additive manufacturers, consumers are susceptible to false product claims. The Federal Trade Commission (FTC) has issued charges of false and deceptive advertising against many aftermarket oil additive manufacturers[2,3,4,5,6,7].

TECHNICAL DISCUSSION:

The Falex-manufactured extreme pressure demonstration tool, also known as the "One-Arm Bandit," consists of a steel cup filled with lubricant, a tapered roller bearing mounted on the torque wrench arm and a rotating steel race powered by an electric motor. Pressure is applied to the arm to induce contact between the bearing and spinning race. Metal-to-metal contact occurs when the lubricant film breaks, causing scoring on the bearing.

The One-Arm Bandit has been used to show the extreme pressure benefits of some aftermarket oil additives by highlighting increased lubricant film strength and less scoring on the bearing. Additives demonstrated in the One-Arm Bandit can give the illusion that EP properties are desirable in motor oil. The concern with this attempt to link EP performance with long-term engine wear is that engines typically do not experience exceedingly high levels of pressure.

Although this demonstration tool may be used at trade shows to showcase the performance of lubricants and aftermarket additives, it is not an accepted test by the American Society for Testing and Materials (ASTM) and can be manipulated with different operating parameters to significantly change the output, making one believe an engine oil or oil additive is required for maximum engine protection.

Aftermarket oil additives are not necessary in fully-formulated oils. Fully-formulated, high-quality engine oils are blended with additives that are carefully balanced to be synergistic, performing well together. Tampering with the balance by adding other chemicals can adversely affect overall oil performance, sometimes dramatically.

Some aftermarket oil additives contain EP agents that can be harmful to engine components. Oxidation inhibitor, detergent and corrosion inhibitor performance is sacrificed when EP additives are added to fully formulated oil, leading to sludge formation and engine corrosion.

Some oil additives use chlorine in the form of chlorinated paraffin (chlorinated wax), which, when united with hydrogen and water, can form hydrochloric acid (HCl). Because HCl can lead to severe corrosion in the engine, chlorine additives are not considered a viable option for modern lubricants[1].

The FTC has accused multiple aftermarket additive manufacturers with misleading consumers into believing their products can offer extra protection when added to motor oils. The list of companies includes Prolong[2], Slick 50[3], ZMax[4], Duralube[5], Shell Castrol[6] and Valvoline[7]. In the Prolong case, the FTC specifically pointed out the use of "Friction Test Machine Demonstration" as a deceptive act[2].

Submitted By: MB **Reviewed By: DP/AA** **Approved By: Alan Amatuzio** **Approval Date: 10/13/08**

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RECOMMENDATION:

As noted, the One-Arm Bandit is not an accepted test by the ASTM and is too variable to differentiate between samples. Instead, the Standard Test Method for Wear Preventive Characteristics of Lubricating Fluid (Four-Ball Method), designation ASTM D-4172, is recognized by the ASTM and is used to evaluate the anti-wear performance of lubricants[1].

AMSOIL firmly recommends against using any aftermarket additives unless they are recommended by AMSOIL for AMSOIL products. Don't be misled by non-ASTM certified testing demonstrations to sell oil additives that focus exclusively on EP performance in crankcase environments.

REFERENCES:

1. Rudnick, Leslie R. Lubricant Additives Chemistry and Applications. New York: Marcel Dekker, Inc., 2003.
2. http://www.ftc.gov/opa/1999/09/prolong.htm
3. http://www.ftc.gov/opa/1997/07/slick.htm
4. http://www.ftc.gov/opa/2001/02/zmax1.htm
5. http://www.ftc.gov/os/1999/05/duralubecmp.pdf
6. http://www.ftc.gov/opa/1999/09/shellcastrol.htm
7. http://www.ftc.gov/os/1997/10/ashland.htm

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