

Thicker Is Better: Fact or Friction

by Mike Maddox



After several years of certain car manufacturers discontinuing their recommendations of heavy-viscosity grade oils, there is still some misconception by installers that thicker motor oils, such as SAE 10W-40 and SAE 20W-50, will provide better engine protection than SAE 5W-30 and SAE 5W-20 viscosity grades, especially during hotter summer temperatures. In a large majority of the cars, this simply is not true.

The domestic engine manufacturers (Ford, General Motors and Chrysler), as well as several imports such as Honda and Nissan, prefer the use of SAE 5W-30 or lower viscosity grade motor oils. They no longer recommend the heavier-viscosity motor oils. In fact, some owners manuals specifically recommend against using SAE 10W-40 and SAE 20W-50 motor oils. For example, it has been almost 25 years since General Motors recommended an SAE 10W-40 or SAE 20W-50 viscosity grade for their engines.

You, as an installer, likely have customers requesting viscosity grades not recommended or preferred by their vehicle manufacturer. Therefore, as a professional installer, it is your responsibility to educate those consumers. There are at least three reasons why lighter-viscosity motor oils are preferred by the manufacturers over the heavier-viscosity motor oils: better fuel economy due to less frictional drag on the engine, correct film thickness to separate internal components and faster flow at startup.

Fuel economy is a major concern for the engine manufacturers. They are striving to meet the government-mandated Corporate Average Fuel Economy, or CAFE, requirements. Lighter-viscosity motor oils, such as SAE 5W-30 and SAE 5W-20, help provide lower fluid friction so that engine drag is reduced between the moving parts of the

engine. Heavier-viscosity multi-grade and straight grade motor oils generally have a relatively high level of fluid friction.

As well, an additional benefit of the lowered engine drag provided by lighter-viscosity motor oil is the potential to free horsepower. Some consumers consider themselves automotive enthusiasts and would like to know that they are able to get the most performance from their vehicle. Using the automotive manufacturers' recommended lighter-viscosity motor oil may reduce the energy that would normally be used to circulate the heavier-viscosity motor oil throughout the engine.

The engine manufacturers also recommend these lighter-viscosity grades of motor oil because they provide the manufacturers' desired film thickness of oil on the internal components. This lubrication film helps prevent metal-to-metal contact by keeping moving parts in the engine separated and thus reducing engine wear.

SAE 5W-30 and SAE 5W-20 motor oils provide more than enough oil film thickness to protect the engine, since the engines for which these oils are recommended were designed for the lighter-viscosity grades. Using an SAE 10W-40 or SAE 20W-50 motor oil in these engines could result in excessive oil film thickness between the moving components, leading to an increase in internal friction, which may cause a reduction in fuel economy.

Another reason to use lighter-viscosity motor oils is faster flow at startup. Many of today's vehicles are equipped with small displacement, high-output, high-performance engines designed with an overhead camshaft or two, multiple valves per cylinder and high-tech valve train geometry. As a result, many moving components are located in the top of these engines, which is the last area to be lubricated when an

engine is started. Immediate oil flow at startup helps get oil to where it is needed more quickly. Lighter-viscosity motor oils such as SAE 5W-30 and SAE 5W-20 flow quickly for proper lubrication.

In freezing winter conditions, lighter-viscosity motor oils provide much faster flow at startup. Heavier-viscosity motor oils may become excessively thick at low temperatures and require extra time to flow to the engine.

Even in summer conditions, ambient startup temperatures of 60° F to 80° F are far below optimal engine operating temperatures. Regardless of the temperature, lighter-viscosity motor oils provide faster flow.

If these three reasons are not enough to conquer the "thicker is better" mentality, consider Ford's current viscosity requirements. Beginning with the 1999 model year, many Ford gasoline engines prefer an SAE 5W-20 motor oil. In addition, Ford published a bulletin indicating certain gasoline engines back to 1989 could use SAE 5W-20 motor oil. Any other viscosity grade, including SAE 10W-30, may interfere with the vehicle warranty coverage.

If customers continue to demand to use these heavier, non-recommended grades, always suggest that they consult their owners manual to be sure they are using the correct viscosity grade of oil. ♦

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