NewsStand - The Importance of Cleanliness

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Clean is good. It's good to eat with clean hands and wise to wash (clean) your vegetables before you stew them. We brush our teeth after meals and floss routinely in order to keep teeth free of deposits and the build-up of plaque. Clean clothes smell fresh and make us more presentable. Clean air is fresher, and healthier, to breathe. When we get a cut or abrasion, we clean it to keep the wound from becoming infected. Clean is very good.

The whole rationale for the existence of quick lubes has to do, in part, with cleanliness. A basic analysis of what lube shops are doing is this: remove dirty oil, fill with clean oil. This basic procedure helps cars last longer.

It's *your* job to change the oil. Here's a short list of the jobs that the motor oil must perform:

1.Lubricate engine parts and prevent wear
2.Permit easy starting
3.Reduce friction
4.Keep engine parts clean
5.Minimize combustion chamber deposits
6.Cool engine parts
7.Seal combustion chamber for more effective compression/power
8.Resist foaming

The sum of these functions adds up to another benefit: more efficient energy production which the motorist experiences as better fuel economy.

The Basic Problem

Although motor oil quality has improved, new technologies put this improvement to the test and sometimes expect too much. The ramifications of new engine designs and technologies are not immediately apparent. Improvements often run cross current with the law of unintended circumstances.

For example, the decision to reduce zinc and phos in motor oils for the purpose of saving catalytic converters and keeping emissions lower resulted in an unexpected side effect. Undue amounts of wear began to show up on older vehicles with flat tappet cams. That high ZDDP content had been there for a reason.

Low Tension Rings

Engine wear from sludge and crud, which is abrasive to a degree, has always been an issue because internal combustion engines by their very nature create heat. But that is a smaller factor compared to these two things that didn't exist 15 years ago and that most motorists are not aware of or think about. They are low tension piston rings and variable valve timing systems.

The move to low tension rings is a product of the relentless pursuit of improved fuel economy by reducing friction. It is spring tension that causes rings to expand outward to stay tight and form a seal in the cylinder. These thinner rings exert less pressure against cylinder walls. The problem is that almost any amount of sludge can result in piston ring sticking,

which leads to higher oil consumption. According to one mechanic I know, this problem is becoming a common breakfast discussion in cafes across America, much the same way flat tappet cam wear was being observed before mechanics understood the physics involved.

Variable Valve Timing

Though motor oil quality has improved dramatically over the past 30 years, this progress is also offset by the re-circulation of exhaust gas and other emission-reduction strategies, including things like variable valve timing (VVT), which strangles the engine a little tighter and makes it run hotter.

The average motorist has never even heard of variable valve timing, but it's a critical component in the operation of a vehicle. Almost every manufacturer has published a bulletin stating that the number one cause of that intricate variable valve timing system not working right is small amounts of residue and sludge. In other words, cleanliness in the system is absolutely essential. Here's why.

In the old days, the engine's intake and exhaust valves were set up to open and shut at specific points in the four-stroke cycle for a set amount of time. With variable valve timing, many engines can adjust the timing on how these valves open and shut as well as their duration. To do this they rely on a combination of sensors mechanical systems, many of them critically located on the camshaft and crankshaft. When these components get gummed up with sludge or deposits there are consequences for the engine.

Because premium synthetics resist oxidation in high heat, and resist breakdown, they are less prone to produce the varnish and sludge that fouls up these critical sensors.

CLOSING THOUGHTS

Keeping engines clean using premium synthetic motor oils will help them last longer. This cleanliness reduces wear, reduces ring sticking and reduces emissions while helping to ensure that all these components operate in harmony as they were designed to.

Premium synthetic motor oils unquestionably reduce vehicle maintenance costs over the long haul. Sticking rings and VVT issues are far more expensive to resolve than upgrading your customers' oil selection. There's no valid reason for not encouraging your customers with expensive new vehicles to install premium synthetics.

If you're not promoting a premium synthetic motor oil for all your customers with newer vehicles, I believe you are doing them a disservice. I urge you to re-evaluate the way you present synthetic motor oils to your customers. Teach them what is really going on inside their engines, and they'll happily pay more for the clean performance today's high tech engines need.