SCHEDULED MAINTENANCE

Can Prevent Costly Engine Repairs

Timely vehicle maintenance makes good business sense, especially when compared to costly engine repairs or an engine replacement.

The extended service intervals have created a major concern for the old school generation, and especially technicians that have serviced vehicles for thirty-plus years. Our early driving and maintenance experience encompassed less fuel efficient and higher emission output vehicles. We were accustomed to vehicles being serviced every 2,500 miles. It is a proven fact that the new technology has made the internal combustion engine more fuel efficient and less polluting. For the younger generation, the extended service intervals are normal. Without a warning indicator or maintenance required message, many would not give second thought to driving a vehicle ten thousand miles before having the oil and filter changed. And when the service reminder light illuminates, they may continue operating the vehicle for an extended period of time before having the vehicle serviced. During this time the oil filter bypass valve would most likely be open allowing contaminated oil to be pumped throughout the engine. Extended service intervals have certainly enhanced vehicle sales, as the new car dealers promote low maintenance required as a plus for purchasing the vehicle. Some accept this marketing strategy while others question the extended service intervals and instead compromise on the mileage in which to have the lube service performed. While we all agree that the vehicles can be driven for extended mileage intervals…it's the mileage interval that creates much controversy. Identifying severe vs. normal service is the key. Most think they drive under normal service conditions. Some of the vehicle manufacturers have made adjustments in the recommended service intervals due to contamination issues resulting in high warranty claims. This has been documented in factory service bulletins and letters to the vehicle owners to have their vehicles returned to the dealer for a software update to increase the maintenance frequency.

OIL LIFE MONITOR UPDATE

High engine warranty claims have prompted GM to update the software for the oil life monitoring system, which will result in more frequent oil changes. Certain applications built prior to the production change will receive a software update from GM. Those applications include 2010-2011 Buick LaCrosse, 2011-2012 Buick Regal, 2010-2012 Chevrolet Equinox or GMC Terrain, equipped with a 2.4L engine and are identified by VIN number. This engine has been plagued with premature balance chain wear.

GM OIL LIFE MONITOR OPERATION CALCULATION

GM vehicles have been equipped with an Oil Life Monitoring (OLM) system since 2010. According to GM the system calculates the percent of oil life remaining on three pathways:

1) ***Engine revolutions...*** The oil life starts with a fixed number of engine revolutions and will decrease with each revolution. Cold and hot coolant temperature readings have multipliers that reduce the engine revolutions pathway quicker, depending on how far from the normal oil temperature the engine is operating. Note: If the coolant temperature gets above 260°F, the oil life will go to 0%.
2) ***Mileage from last reset…*** Starting with the 2013 model year, the OLM is capped at 7,500 miles for all GM powertrains operating under normal service conditions, except the Volt. In perfect conditions a vehicle would reach 7,500 miles from the last reset and the oil life left would be 0%. Based on driving conditions (severe service), the recommended service interval may be much less.
3) ***Time…*** This function provides a fixed decrease in oil life for a given time once the OLM is reset. The oil life will drop to 0% after one year, regardless of the amount of engine revolutions or how many miles since the last reset. Exception: The Volt uses a two year timer instead of the one year and the engine revolution counter. It does not use the mileage pathway to count down.

NISSAN SERVICE INTERVAL

We just added a Nissan Murano to our fleet. The standard maintenance under normal and severe

service calls for an oil and filter change every 5,000 miles or 6 months with the exception of Flex Fuel vehicles and Taxi, which calls for service at 3,750 miles or 3 months. Most of our driving would qualify the vehicle under a taxi use category.

IDENTIFYING NORMAL VS. SEVERE SERVICE

When should the vehicle be serviced? There is a misconception when identifying vehicles being operated in severe or normal service conditions. Let's consider the difference:

Normal Service…is a vehicle that is continuously driven on the highway at constant speeds. These operating conditions are easy on the lubricant as the engine is operating efficiently.

Severe Service…is a category that many of your customers operate their vehicle in. Most are surprised to learn that their vehicle should be maintained at a severe service level. Let's consider some conditions that qualify the vehicle under severe service:

1) Short trip driven vehicles (5 miles or less) promotes an accumulation of sludge and other deposits due to the oil not reaching its normal operating temperature, which can burn off condensation and other contaminates. The engine is not operating efficiently resulting in crankcase dilution.
2) Vehicles driven during extreme hot weather conditions, especially in heavy traffic.
3) Short trip driven vehicles (10 miles or less) in ambient temperatures below freezing.
4) Delivery vehicles, taxis or any slow speed driving for long distances such as that encountered during heavy traffic conditions. Vehicles that are allowed to idle for extended periods of time.
5) Vehicles driven off-road in dusty conditions.
6) Rough, muddy, sandy or salt spread road conditions.
7) Driving continuously while exceeding normal highway speeds.
8) Pulling a trailer, boat or camper.
9) Frequent starts and stops.

ENGINE SLUDGE VOIDS VEHICLE MANUFACTURERS WARRANTY

Regular scheduled maintenance is necessary to prevent the formation of sludge build-up that can affect engine lubrication, which can promote engine or component failure. The formation of engine deposits and excessive warranty returns has resulted in some vehicle manufacturers adjusting their recommended maintenance service intervals, requiring a more frequent service. Neglecting scheduled maintenance may result in the vehicle manufacturer denying warranty coverage, in addition to reducing the performance, reliability, and safety of your vehicle.

GM states that engine damage resulting from sludge and contamination conditions will not be covered by the vehicle manufacturer's warranty. Following are some conditions resulting from improper maintenance and the formation of sludge:

1) The oil filter element pleats blocked due to an accumulation of sludge and debris.
2) Inspect the oil filter cap and filter housing for the presence of sludge and the filter element for splits or tears and improper installation; to include missing, torn or damaged seals/O-rings.
3) Debris accumulated in the oil pan, blocking the pick-up tube (minor screen debris is acceptable).
4) Valve cover breather ports or oil return ports blocked with sludge.
5) Rocker arms and valve covers coated with sludge.
6) Sludge accumulation on the camshaft and related hold-down caps.
7) Camshaft actuator solenoids coated with sludge.
8) Inoperative active fuel management valve lifters/solenoids due to sludge deposits (see Mighty Tech Tip #185 LOW OIL PRESSURE MESSAGE…Locating the Mystery Filter.
9) Air filter by-pass due to a damaged housing/ducts or filter seal, promoting bearing and cylinder wall damage.
10) Contamination due to the use of sanding disk to remove gasket material.

Maintenance cost is pennies on the dollar compared to the cost of mechanical failures due to poor lubrication resulting from improper maintenance. Some claim that their lubricant will last for a year and I am certain their research will support that claim. The concern is how long will the filter last before going into by-pass mode, resulting in unfiltered lubricant flowing to and through the vital engine components. Identify your customer's vehicle operating category and service accordingly. You will be surprised how many will require severe service maintenance.

LARRY HAMMER, Technical Services
Mighty Distributing System of America