LUBE SERVICE TIPS

Identifying Inherent Problems

Identifying problems that are inherent with a vehicle can save your credibility with the vehicle owner and the shop some unnecessary expense. When servicing a vehicle, many times we get blamed for a condition that may have been inherent in the vehicle, or a condition that plagued the vehicle prior to our service. For example: When performing a lube service and there is evidence of oil leakage, now is the time to make the customer aware, not after the service has been performed. Make certain this condition is documented on the repair order. If not, they may return in a few days convinced that you caused the problem and expect you to make the necessary repairs at your expense. How many times have you heard the statement, "It wasn't doing it before you serviced it."

Having access to Factory Service Bulletins can identify problems that should be the responsibility of the vehicle manufacturer, providing the vehicle is still under warranty. They can identify vehicles that have been recalled for a given condition. The information can save much time and frustration in dealing with a customer who may be convinced that you created the problem. Let's consider some examples of symptoms that could create problems for us following a lube or repair service that would not be of our making.

ENGINE KNOCK

Owners of 2009–2014 Nissan Maximas may complain of an engine knocking noise that may be evident at idle RPMs once the engine reaches normal engine operating temperature. The knocking symptoms cannot be heard during highway speeds or with the engine idling and the radio on. The noise is more pronounced while sitting in the passenger side front seat with the doors closed, the windows rolled up and the radio off.

For the technician making the diagnosis…the noise is best heard with the vehicle positioned on a lift and the technician listening with a stethoscope. The noise can usually be isolated to the lower front of the engine near #1 or #2 main bearings. For test purposes, tightening or loosening the accessory drive belt may quieten the engine knock. Changing the oil or oil viscosity will have no effect on the noise condition… so be assured that your service had nothing to do with these symptoms. The noise has been there all along, but just now noticed by the vehicle owner.

To eliminate the symptoms, obtain a copy of Nissan's service bulletin #NTB12-071a. The bulletin will illustrate bearing housing grades based on letters, numbers or Roman numerals obtained from the engine block. The diameter grade of the crankshaft journal is referenced as letters, numbers or Roman numerals stamped on the No. 1 journal of the crankshaft. The proper bearing clearance and bearing selection can be obtained by the charts that accompany the mentioned Nissan service bulletin.

EXTENDED SERVICE INTERVAL PROMOTES TURBOCHARGER FAILURE

Subaru cautions that a high incidence of turbocharger failure is due to poor lubrication, resulting from insufficient maintenance and possibly the improper lubricant being installed in the engine. Subaru recommends synthetic motor oil in the designated oil viscosity in all their turbocharged engines, and the recommended lube service intervals must be adhered to in order to prevent damage to the system. The vehicle manufacturer currently recommends that 2010 and prior turbocharged engines should have the oil and filter changed every 3,750 miles or 3.75 months, and 2011 and newer turbocharged engines must have the oil and filter changed every 7,500 miles or 7.5 months.

When the lube service is not performed at the proper interval, deterioration of the oil results in gelling and the formation of sludge, resulting in clogging of the oil passages. Insufficient lubrication promotes excessive wear on the engine components. If the filter mesh screen located inside the banjo bolt that secures the turbocharger oil supply pipe to the back of the right cylinder head becomes plugged, the turbocharger will fail. Lack of lubrication to the turbocharger will result in damage to the turbine center shaft bearing. The worn bearing causes radial movement of the shaft, allowing the compressor impellers to make contact with the housing. Subaru advises that an oil system flush should be performed prior to replacing the turbocharger, especially if there is evidence that the engine has not been properly maintained. Always replace the banjo bolt and mesh filter screen when replacing the turbocharger.

In addition to turbocharger failure, damage to the Active Valve Control System (AVCS) will also occur due to poor lubrication service intervals. The AVCS system utilizes variable valve timing technology to control the timing of the intake valves. The system functions via hydraulic oil pressure and is not kind to contaminated oil or the improper oil viscosity. Subaru is not the only vehicle manufacturer to encounter these failures. GM and Nissan have documented similar issues due to oil contamination and improper oil viscosity, which

affected their Variable Valve Timing Systems. One viscosity oil will not fit all engines and if you wait until the oil turns to sludge before servicing the vehicle…it is most likely too late. The damage has been done.

SOFTWARE CHANGE TO CORRECT EXCESSIVE OIL CONSUMPTION

Owners of 2008–2011 Honda vehicles equipped with a 3.5L engine may encounter increased oil consumption. The condition has nothing to do with your services or the type and viscosity of oil that you installed in their vehicle, even though some dealership technicians have made that claim.

Honda has addressed the increased oil consumption cause as an overactive Variable Cylinder Management (VCM) System. The VCM may repeatedly switch on/off during certain light throttle operation, at cruising speeds and on flat roads. The frequent switching of the VCM system can contribute to increased oil consumption. Honda recommends a PCM software upgrade to resolve the oil consumption condition. Diagnostic trouble codes P3400 and P3497 may be stored in memory when the oil level drops to a level that prevents VCM operation.

With some of the vehicle manufacturers recommending longer lube service intervals, the oil level may drop below the recommended level, prior to the lube service. Regardless of the recommended service interval, the oil must be checked on a regular basis.

Vehicles affected include Honda applications from 2008–2011 equipped with a V6-3.5L engine and VCM. Honda Service Bulletin 11-033 identifies the vehicles affected based on VIN Numbers, Program Identifiers and Program Part Numbers, which will identify the required software. Who would have considered a software change to correct an oil consumption condition?

NISSAN OIL COOLER LEAKS

Oil leakage from the oil cooler has plagued some Nissan vehicles for several production years. The oil filter and the lube service technician often receive the blame for the leakage condition. Being familiar with the problem and the source of the leakage can save you a lot of comebacks and negative publicity. We have seen shops install the second and third oil filter in a futile effort to stop an oil leakage condition. Failure to accurately diagnose the condition can result in the customer losing confidence in our ability to accurately diagnose and service their vehicle. We could lose a customer in the process.

The oil cooler leakage condition is most likely due to a bad oil cooler O-ring seal. The applications that are most susceptible to leakage include: 2004–2006 Quest, 2000–2006 Maxima, 2003–2006 Murano, and 2002–2006 Altima, equipped with the VQ30 (3.0L) and VQ35 (3.5L) engines.

Examine the oil cooler for evidence of leakage. A thorough clean-up may be necessary to pinpoint the source of the leakage. Fluorescent dye and a black light can be beneficial, but seldom necessary. Once the area is clean, run the engine and observe for leakage behind the cooler. If oil is seeping from behind the cooler, a revised O-ring seal (Nissan #B1304-43U00) will be necessary to stop the leakage (see illustration 1). Applications newer than those illustrated are not susceptible to leakage, as they are equipped with the revised O-ring.

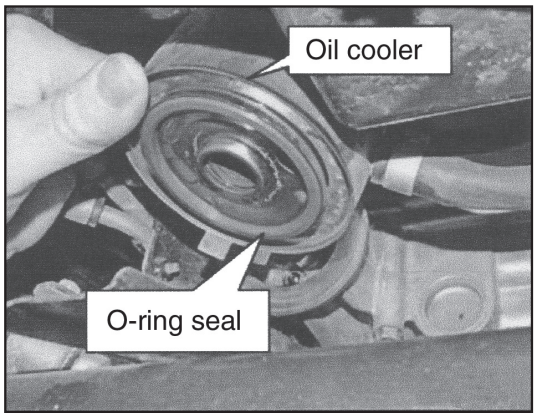

Illustration 1

REVISED OIL COOLER CONNECTOR BOLT

Nissan has recalled certain production vehicles including: 2011–2012 Nissan Frontier, XTerra, Pathfinder and Nissan NV vehicles. They have determined that some of the bolts that secure the oil cooler to the engine were manufactured below specification strength. The bolts may break at the oil filter attachment point, promoting oil leakage (see illustration 2). Dealers and vehicle owners have been notified.

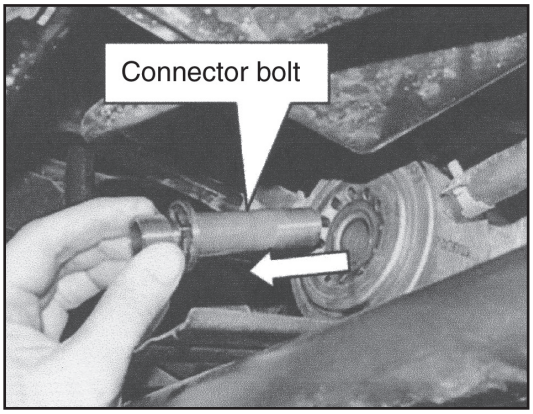

Illustration 2

Be professional in your diagnostics. Take the time to fully evaluate the symptoms before offering a solution. Check for Factory Service Bulletins before spending a lot of unnecessary diagnostic time, as the vehicle manufacturer may have already identified the cause and cure. Your customer will be impressed with the accuracy of your diagnosis.

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