

# On the Line

## Oil Leaks Can Be Challenging Take Time to Make an Accurate Diagnosis

Looking for the quick fix almost always results in a return, and is sometimes accompanied by a customer whose patience is wearing thin. It started with a basic lube, oil and filter change. A thorough vehicle inspection resulted in the replacement of the air filter and a cabin air filter. Impressed with the service and cleanliness of the shop and how careful they had been to protect her vehicle from grease and oil, she pays the invoice and leaves.

### OIL LEAKAGE

A few days later a droplet of oil appears on her carport floor. Concerned, she returns to the lube shop complaining about the leakage condition. The inspection reveals the presence of oil around the oil filter. Assuming a defective oil filter gasket was the culprit, they replace the filter and send the lady on her way. Failure to thoroughly clean the oil residue and accurately diagnose the leak resulted in another return, as the leakage continued. With two failed attempts to correct the problem, she takes the vehicle to a repair shop.

### POTENTIAL COOLER LEAKAGE

Familiar with the Maxima and its history of oil cooler leakage, the technician at the repair shop recommends and replaces the oil cooler O-ring seal and installs a new oil filter. Mighty Tech Tip #171 LUBE SERVICE TIPS identifies Nissan applications from 2000–2006 that are susceptible to oil cooler leakage, requiring a revised O-ring from Nissan (#B1304-43U00). Also, it identifies 2011–2012 Nissan applications that require a revised oil cooler connector bolt due to breakage during an oil filter installation.

Following the installation of the oil cooler O-ring, they thoroughly clean the oily residue from the engine and allow the engine to run for several minutes, with no evidence of leakage. Seemingly, the problem is resolved. Unfortunately, the droplets of oil reappear on the lady's carport floor. She returns to the repair shop and the technician observes an accumulation of oil on the filter, oil cooler and sub frame.

### POWER STEERING LEAK

Another clean-up is performed and the technician allows the engine to run for several minutes before observing

a drop of fluid oozing from the power steering pressure switch and dropping directly on the oil filter and cooler. Had this been the problem all along? Replacing the switch at a cost of \$110.87 was not the solution. Within two days the lady was back in the shop with fluid dripping from the new switch. Her patience was being challenged to the point she was considering trading the vehicle, and this was becoming an embarrassment for the shop owner. Two technicians were assigned to the vehicle with instructions to determine the source of the leak at any cost, as the shop's reputation was at stake. After much cleaning and test driving, the cause of the leak was determined to be coming from a power steering hose.

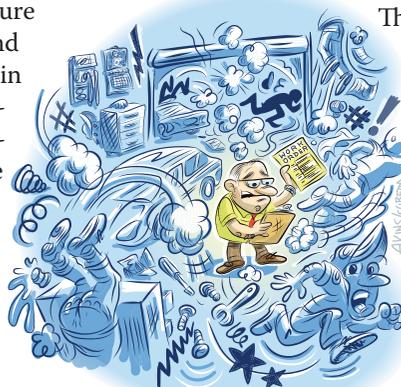
The high pressure power steering hose was seeping fluid during high steering load conditions, but would not leak with the vehicle on the shop's lift with the engine idling and turning the steering wheel from lock to lock. This is why the leakage condition evaded the diagnosis. The high pressure hose was wrapped in a heat shield, looped in the shape of a horseshoe and positioned between the engine and firewall, which made a visual inspection of the hose difficult. The seeping hose allowed the fluid to travel down the heat shield and drip onto the pressure switch and the oil filter and cooler. This gave

the appearance that the mentioned components were the source of the leak. The high pressure hose is now available without the pressure switch attached, but the cost is still in the \$200 range. As a gesture of goodwill, the shop owner offered to install the hose at no labor cost. This would prove to be a costly expense for the shop. If you have never replaced a high pressure power steering hose on a Maxima, allow yourself about three hours of pure misery and two weeks for all your wounds to heal. While you are in the area...replace the spring clamp on the low pressure hose attached to the power steering pump with a worm (screw) style clamp. The spring clamps are known to allow fluid leakage due to inadequate tension.

Taking the time to make an accurate diagnosis is imperative. Too often we get into such a hurry to get the job done that we make assumptions. This can be a costly endeavor, in addition to turning a normal, patient customer into a hostile one.



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"WHO WANTS TO INSTALL THE POWER STEERING HOSE ON THE MAXIMA???"