

Bob's Diagnostic Tip

COP Trouble Code: Secondary Winding Resistance Problem

Recently, the 2010 XC90 V8 had an OBDII diagnostic trouble code stating Coil Over Plug (COP) secondary winding resistance high. The code did not create a check engine light event.

You'd expect to see a corresponding cylinder misfire code, there were none? A failing COP ignition coil will trigger a misfire code pinpointing cylinder experiencing a problem. Once again, curiosity overcame me and I decided to examine the COPs.

Six spark plug wells were filled with motor oil; both the spark plug and coil stem were submerged in motor oil. The engine management system and COPs adjusted for the unexpected capacitance and electrical resistance provided by the presence of oil. The spark plugs continued to fire; a testimony to the durability and reliability of the ignition system.

The valve cover gasket sealing the spark plug well from the cylinder head valve-camshaft area failed, allowing oil to be pushed into the spark plug wells by higher than normal internal engine pressure (Note: this vehicle is new to me and at 124K miles had 12-18 month interval oil changes.) indicating increased piston blow-by or a clogged PCV/oil recovery system. Diagnosis, remove the valve covers and replace the gaskets.



Three Bank 1 plugs submerged in oil



Oil Soaked COPS

The valve cover gaskets on the 2006 and 2010 V8 XC90s were replaced. New plugs installed and the COPS cleaned and installed and the PCV system restored to negative pressure. No trouble codes after driving 100 miles. Success.



Bob lives in Cary, NC and is co-chairman of the Blue Ridge Chapter of VCOA. Contact Bob at: rfsepe@gmail.com or/ 919-417-5019.

For other tips, check out the Blue Ridge Chapter website.

<http://blueridgevolvnc.org/>