



# Service Bulletin

File in Section: -

Bulletin No.: PIP5197

Date: May, 2014

## PRELIMINARY INFORMATION

**Subject:** Possible Oil Consumption - Oil Leaks - Blue Smoke From The Exhaust - MIL - Or Fuel Trim Codes

**Models:** 2012 - 2014 Chevrolet Cruze  
2013 - 2014 Buick Encore  
2013 - 2014 Chevrolet Sonic  
2013 - 2014 Chevrolet Trax (Canada Only)  
Equipped with 1.4L (RPO LUJ or LUV)

The following diagnosis might be helpful if the vehicle exhibits the symptom(s) described in this PI.

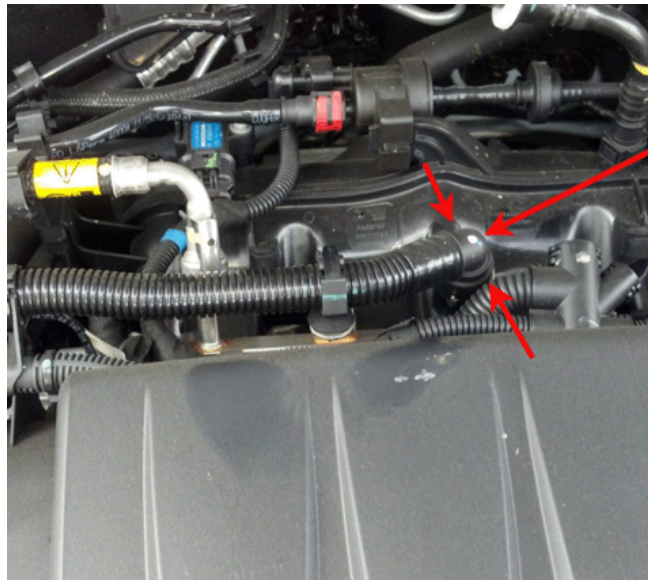
### Condition/Concern

You may encounter a customer concern of oil consumption, oil leaks, and blue smoke from the exhaust, MIL or fuel trim codes.

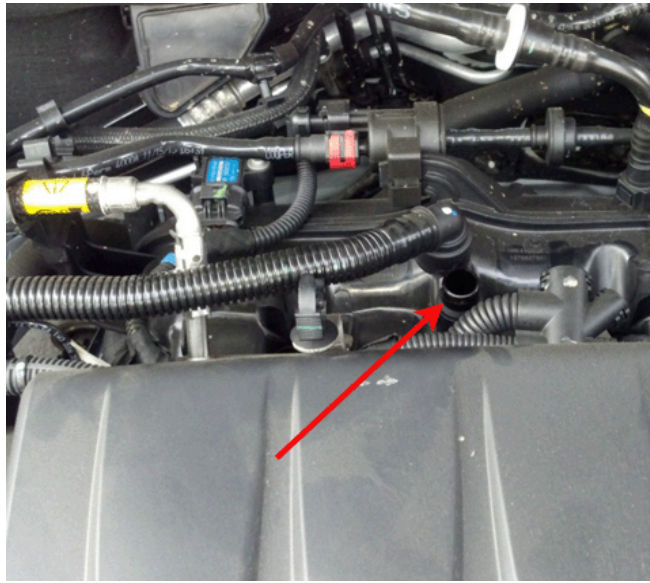
Any or all of the following DTCs may be current or set in history: P0106 P0171 P0299 P0507 P1101 P2096

### Recommendation/Instructions

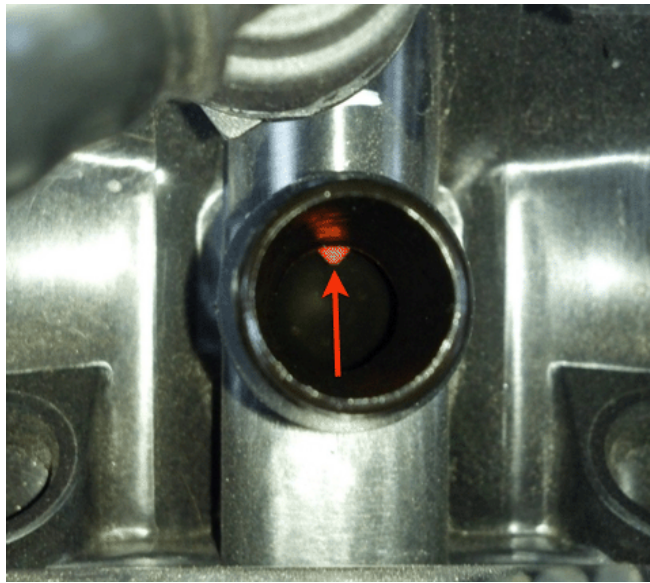
Check for a missing or improperly seated intake manifold Non Return Valve that may have damaged the PCV orifice diaphragm. (See pictures below for inspection procedure).



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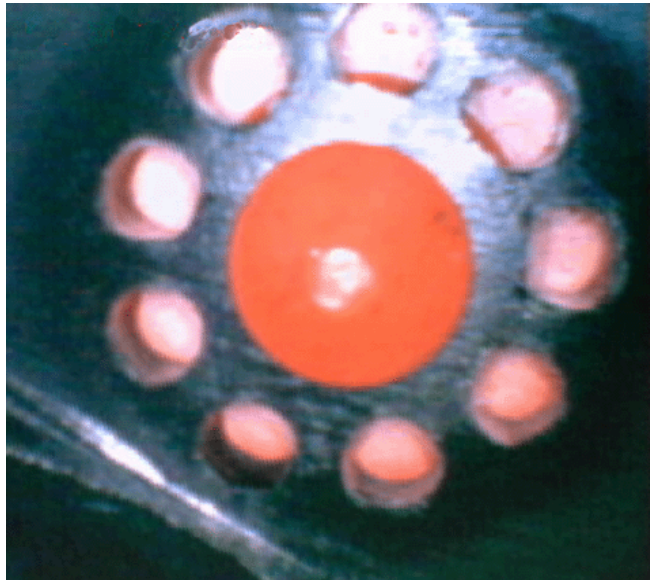


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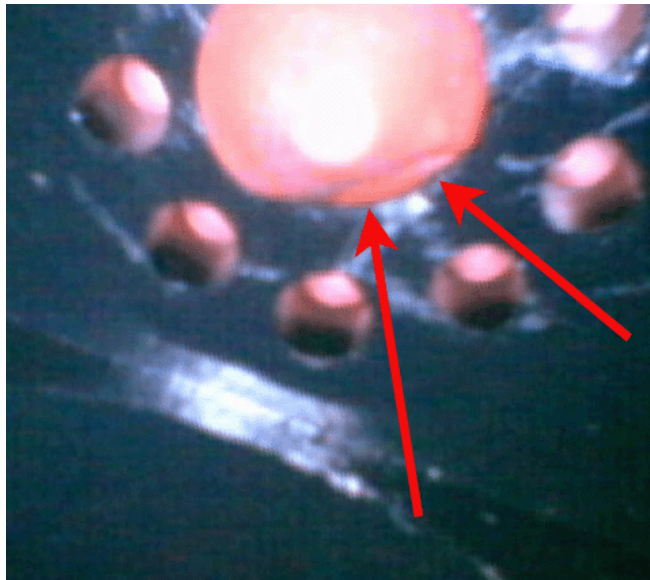
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Properly seated Non Return Valve.



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Improperly seated Non Return Valve.



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If the intake manifold Non Return Valve is missing or not properly seated, then replace the intake manifold assembly, Check the PCV orifice for leaking oil or drawing vacuum at idle thru its external port. (The PCV orifice is an integral part of the camshaft cover). (See picture below).



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If the PCV orifice external port is leaking oil or vacuum, replace the camshaft cover assembly.

If the intake manifold Non Return Valve is seated properly, then perform the following.

Perform PI0552 to check the engine oil dipstick and oil fill cap for proper sealing.

Perform PIP4925 to check for any air leaks to the intake system.

Record the crankcase pressure. (Normal crankcase pressure readings are between -11 & -18 inches of water in park at hot idle) / (ESST gage works best, see pictures below for connection of ESST at the engine oil dipstick hole in the camshaft cover).

**Note:** The connection must be made with the engine off. The engine is then started and the pressure reading is recorded.



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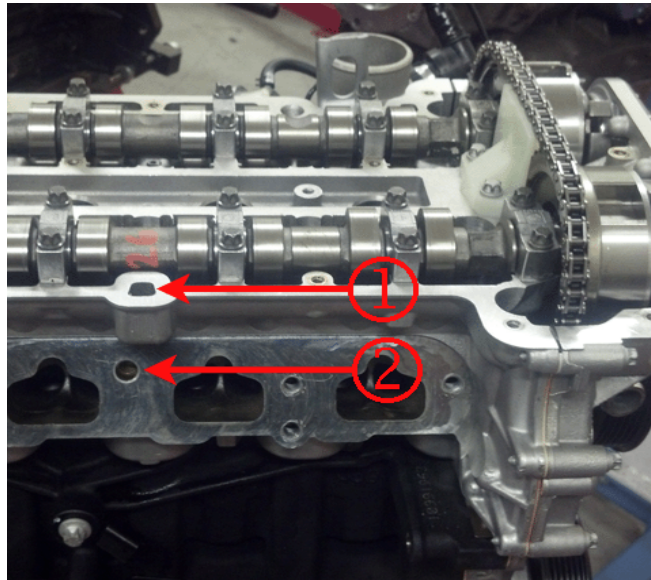
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If the crankcase pressure is in the proper range, then perform SBD on the vehicle symptoms.

If the crankcase pressure is excessively negative, below -30 inches of water (-2 inches of HG / vacuum) the PCV port thru the cylinder head (Shown in the picture below between #1 and #2) may have a porosity issue causing intake vacuum to leak into the crankcase.



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Plug the PCV port on the cylinder head at #2.

Fill the PCV port with a suitable liquid until full at #1.

Monitor the level of the liquid for fluid loss indicating porosity in the port.

If the fluid level drops, replace the cylinder head and retest for proper crankcase pressures.

If the crankcase pressures are within the normal range, clean oil from all induction system components and retest for oil consumption, leaks or DTCs resetting.

### **Warranty Information:**

The correction for this concern may be one of several repairs described above. For vehicles repaired under warranty, please use the appropriate warranty labor operation based on the original cause in addition to well documented straight time.

Please follow this diagnostic or repair process thoroughly and complete each step. If the condition exhibited is resolved without completing every step, the remaining steps do not need to be performed.