



Service Bulletin

File in Section: 06 - Engine
Bulletin No.: 13-06-01-003E
Date: April, 2014

TECHNICAL

Subject: Excessive Oil Consumption – Perform Oil Consumption Test and/or Install Piston and Piston Ring Kit

Models: 2010-2013 Buick LaCrosse
2011-2013 Buick Regal
2012-2013 Buick Verano
2010-2013 Chevrolet Equinox
2012-2013 Chevrolet Captiva
2012-2013 Chevrolet Orlando (Canada Only)
2010-2013 GMC Terrain
Equipped with 2.4L Engine (RPOs LAF, LEA)

This bulletin has been revised to add the Verano and Captiva models, a Note to the Correction information and add photos to the Acceptable Cylinder that Does Not Appear Uniform (Zebra Stripes) section. Please discard Corporate Bulletin Number 13-06-01-003D.

Condition

Some customers may comment on excessive oil consumption and/or that they have to add oil between oil changes.

Correction

For this condition, technicians should perform an oil consumption test by following the latest version of Corporate Bulletin Number 01-06-01-011. Before starting the oil consumption test, verify the ECM has latest TIS2web calibrations to adjust the engine oil life monitor to a maximum of 7,500 miles (12,070 km) — Refer to the latest version of Customer Satisfaction Bulletin #12312.

Inspect for any obvious oil leaks that may explain the oil consumption concern and repair as necessary.

Important: When checking the oil level with the oil dipstick design shown below, please note that the oil volume per notch is not linear due to the shape of the block. The upper notches (relative to the top of the handle) equal 0.24 quart (0.227 L) between each notch while the lower notches only equal 0.14 quart (0.132 L) between each notch. As a result, no oil will appear on the dipstick if it is low on oil by approximately 1.25 quarts (1.18 L) or more. When determining the oil consumption rate, the oil volume added to return it to the starting location is the total amount of oil consumed. The consumption rate must be documented on a repair order.

Notice: Do not add too much oil. An overfill can lead to burn off of the excess oil. Advise the customer to wait until the oil is below the cross-hatched area at the tip of the dipstick before adding oil.



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If the oil consumption test indicates that the rate of consumption is greater than 1 quart (0.946 L) of oil every 2,000 miles (3,200 km), note the oil consumption rate, the date that the ECM was reprogrammed and any repairs/diagnosis that you have performed.

The repair is to replace the pistons and rings. In some cases the bore surface may not have a uniform look to the finish (zebra stripes) as shown below. As a result, some technicians may question whether the engine should be repaired or replaced. After careful evaluation, GM Powertrain has determined that the new pistons and rings will perform correctly in bores that have this appearance so engine replacement should not be necessary. The cylinder bores do not need any machine or honing work performed on them. Refer to the picture below for acceptable surface finishes.

Note: Use Piston Ring Compressor EN-47836 when installing rings.

Important: DO NOT use any abrasive wheels/materials to clean any mating surfaces. Only Plastic scrapers should be used. Please refer to the latest version of Corporate Bulletin Number 00-06-01-012.

Acceptable Cylinder that Does Not Appear Uniform (Zebra Stripes)

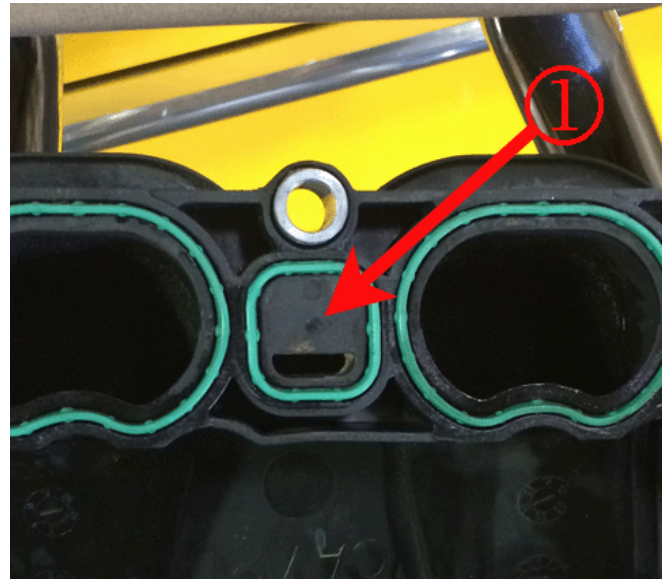


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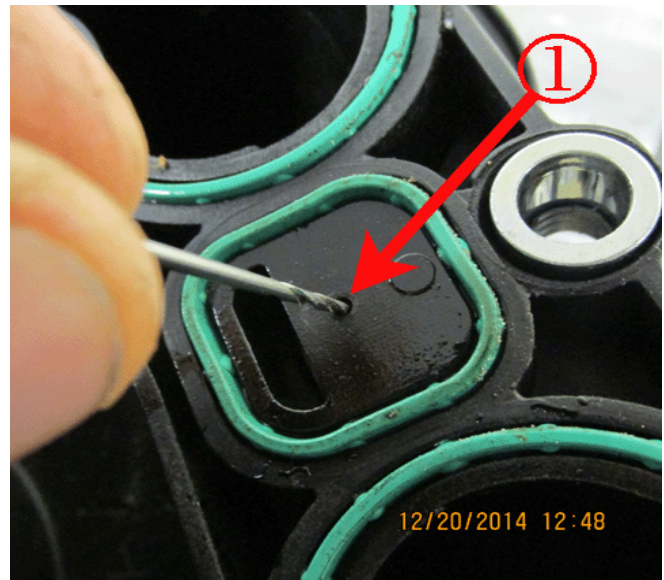
While performing this repair on 2010 and 2011 vehicles built before March of 2011, it should be verified that the high pressure fuel pump (P/N 12641847), balance chain (P/N 12645237), balance chain tensioner (P/N 12649233), and timing chain kit (P/N 12635447) have been installed in this engine in a previous repair. Refer to IVH and check the parts listed in the prior repairs. If these parts have not been installed, they should be replaced at the time that the piston and rings are replaced. If they have been replaced, do not replace them again. Engines in 2012 and 2013 vehicles do not need the balance chain or fuel pump inspected.

The oil consumption may have clogged/ reduced PCV flow. The PCV system should be serviced.

Clean any ice/sludge/water/carbon out of the PCV pipes/hoses, the PCV nipple on the cam cover, the PCV orifice between the #2 and #3 intake runners (use a 1/16 inch drill bit as illustrated below).



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Legend

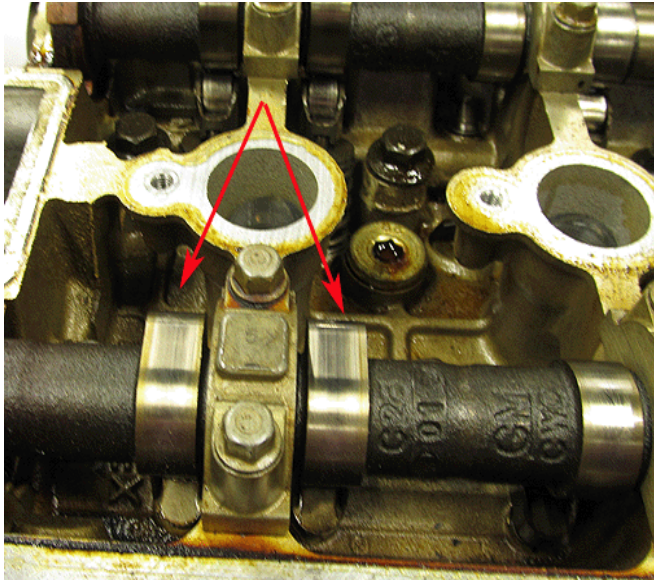
(1) PCV orifice in the intake manifold

Also when performing this repair, several other parts should be inspected for excessive wear and/or damage and replaced if necessary:

- Balance chain guides
- Timing chain guides

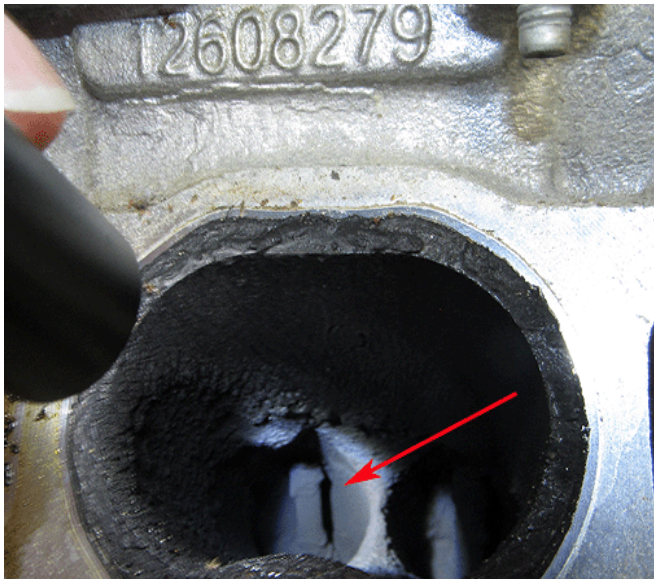
Important: DO NOT use any abrasive wheels/materials to clean any mating surfaces. Only Plastic scrapers should be used. Please refer to the latest version of Corporate Bulletin Number 00-06-01-012.

Note: Returned oil consumption engines have been reviewed at engine tear down. It has been determined that these components do not need to be replaced:



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- Camshafts and roller follower will have wear markings. This is normal and do not need to be replaced (refer to picture above).



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- Valves stems may have deposits build up on them. These deposits are characteristic of a direct inject engine. The valves stems do not need to be cleaned as they are not affecting engine performance (Refer to picture above).

- The oil pump does not need to be replaced as the low oil level operation did not damage the pump.
- The camshaft actuators do not need to be replaced at this time. The vehicle may have arrived with the engine knocking. If the oil level was 1 1/2 - 2 quarts low, it was the lack of oil causing the actuator noise.
- Rod bearings can be reused if there is not any excessive scoring. Some light wear marks are acceptable.

Important: Rod bearings must be marked to identify the proper location to ensure bearings are returned to their original positions.

The final step is to verify that ECM OLM calibration has been installed before the vehicle is returned to the customer.

Important: DO NOT use any abrasive wheels/ materials to clean any mating surfaces. Only Plastic scrapers should be used. Please refer to the latest version of Corporate Bulletin Number 00-06-01-012.

Parts Information

Part Number	Description
12646457	PISTON KIT, ENG
12659419	RING KIT, PSTN
12637166	GASKET KIT, CYL HD
12609291	SEAL, CM/SHF

Warranty Information

For vehicles repaired under warranty, use:

Labor Operation	Description	Labor Time
4080008*	Oil Consumption Test Setup	0.2 hr
4080178*	Piston, Connecting Rod and Bearing Replacement (Includes Oil Consumption Test)	9.5 hrs
Add	To Replace Fuel Pump (2010-2011 Models Built Prior to March 2011 Only)	0.7 hr
Add	To Replace Balance Shaft Chain and Tensioner (2010-2011 Models Built Prior to March 2011 Only)	0.8 hr
Add	To Replace Timing Chain (2010-2011 Models Built Prior to March 2011 Only)	0.5 hr

*This is a unique Labor Operation for Bulletin use only. It will not be published in the Labor Time Guide.

