



Service Bulletin

PRELIMINARY INFORMATION

Subject: Cold Start Misfires

Models: 2012-2014 Buick LaCrosse
2013-2014 Cadillac ATS
2012-2014 Cadillac CTS
2012-2014 Cadillac SRX
2013-2014 Cadillac XTS
2012-2014 Chevrolet Camaro
2012-2014 Chevrolet Caprice PPV
2012-2014 Chevrolet Captiva Sport
2012-2014 Chevrolet Equinox
2012-2014 Chevrolet Impala
2012-2014 GMC Terrain
with 3.0 LF1 or LFW and 3.6 LFX

This PI was superseded to update diagnosis and add model years. Please discard PIP4959C.

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

Condition/Concern

A customer may complain of misfires or roughness on cold start up. There may also be a P0300 code. For this PI to apply the misfires will be limited to 1 or 2 cylinders.

Recommendation/Instructions

Misfires on start up only with high miss fire rates always on one cylinder can be suspect for coolant entry at the liner to deck face casting.

To inspect for this concern, add coolant dye to the system, run engine through warm up, pressurize the cooling system on a cold soak engine (after being warmed up to operating temperature) and inspect the suspect cylinder with a borescope for coolant dye evidence.

At times it may be necessary to remove the head for inspection.

It is hard to see the actual source (pin hole) but it usually streams down the liner so that you can see it with a borescope.

Do not confuse residual fuel on the piston crown / surface as coolant.

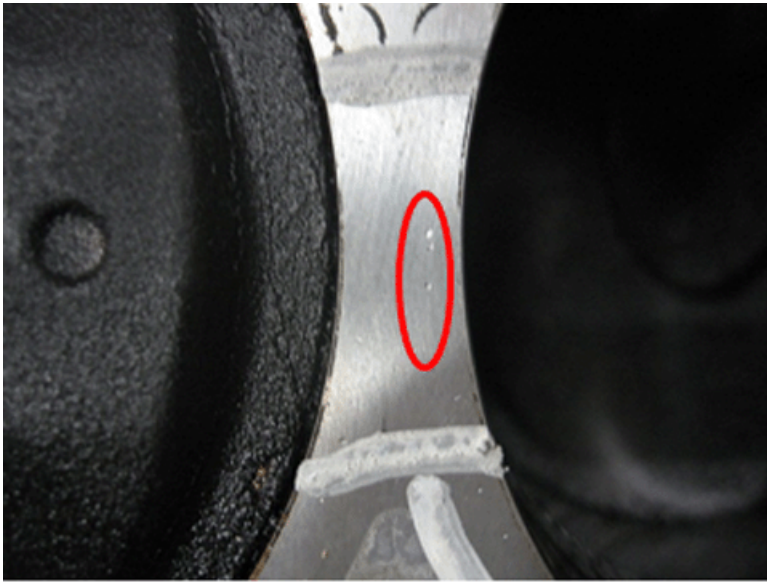
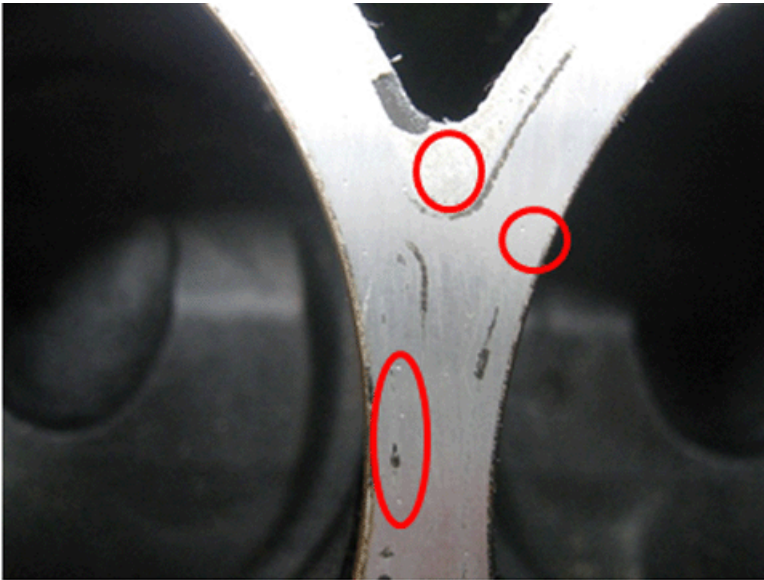
Some fuel residue may be present and can be mistaken as coolant (reason for the cooling system Dye to be added).

Use blacklight to confirm the liquid is coolant.

If this concern is present, do not replace the cylinder head because that will not repair this concern.

Call PQC per the latest version of 02-07-30-029, if required, reference this PI and replace the engine.

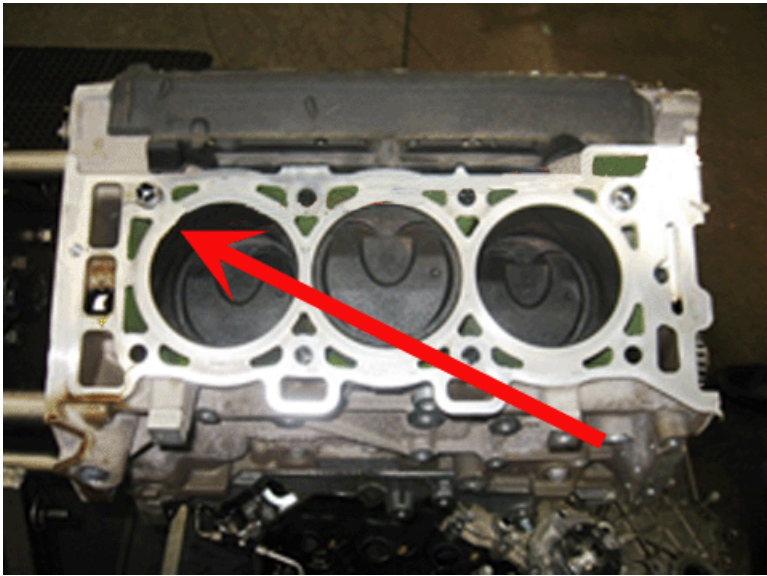
See pictures below for examples of deck pitting and actual porosity with leak path.



Small surface pock marks or pitting appearance on the deck surface is normal and engines should not be replaced for such appearance as they do not connect to coolant passages and cause a leak path that generate engine misfires.

During engine warranty analysis studies, engines are being replaced for small pitting in the deck face as described above, when the subject cylinder / piston is saturated with fuel and not coolant.

Engine replaced for subject pitting conditions will be returned to the dealership as non defective.



The photo above is an example of what true porosity is.

Location: # 5 at the 10:00 o'clock position.

Cylinder deck face to cylinder liner interface location can cause a leak path into the cylinder for rapid large counts of misfires when cold.

Such Porosity is rare, therefore technicians should inspect the subject cylinder and look for a break in the carbon ring.

Usually if porosity is present there will be a break in the carbon ring.

Coolant present in a cylinder cleans the area of entry and can be found by wiping the carbon ring dry with a clean soft towel, exposing the leak path.

Only if true porosity is found would engine replacement become necessary.

Call PQC per the latest version of 02-07-30-029, if required, reference this PI and replace the engine, ONLY in cases where porosity has been found to be the cause.

Warranty Information

For vehicles repaired under warranty use:

Labor Operation	Description	Labor Time
4067490	Engine Replacement	Use Published Labor Operation 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.

GM bulletins are intended for use by professional technicians, NOT a "do-it-yourselfer". They are written to inform these technicians of conditions that may

occur on some vehicles, or to provide information that could assist in the proper service of a vehicle. Properly trained technicians have the equipment, tools, safety instructions, and know-how to do a job properly and safely. If a condition is described, DO NOT assume that the bulletin applies to your vehicle, or that your vehicle will have that condition. See your GM dealer for information on whether your vehicle may benefit from the information.



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