



# Service Bulletin

## PRELIMINARY INFORMATION

**Subject:** Cold Start Misfires

**Models:** 2015-2016 Cadillac Escalade  
2014-2016 Chevrolet Corvette  
2014-2016 Chevrolet Silverado 1500 Suburban, Tahoe  
2014-2016 GMC Sierra 1500 Yukon Yukon XL  
Built with engine RPO's 4.3L, 5.3L, 6.2L, L83, L86, LT1, LT4, LV3

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.

White smoke and/or coolant odor may come from exhaust for an extended period of time at cold start as well.

Also could be an oil consumption concern.

### 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: Could be any cylinder and location at the top of the cylinder.

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.



The above picture is a porous pit in the cylinder liner that will cause engine oil consumption.

This also warrants engine replacement.

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.

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.

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