Bulletin No.: PIP5498C
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Preliminary Information

PIP5498C SES Lamp P050D P0300 Setting On A Cold Start And/Or a Run Rough Warm with No codes

Models

Brand:	Model:	Model Years:	VIN:		Engine:	Transmissions:
			from	to		
Cadillac	CTS-V	2016 - 2017	All	All	6.2L LT4	All
Cadillac	Escalade	2015 - 2017	All	All	6.2L L86	All
Chevrolet	Camaro	2016 - 2017	All	All	6.2L LT1 LT4	All
Chevrolet	Corvette	2016 - 2017	All	All	6.2L LT1 LT4	All
Chevrolet	Silverado 1500	2014 - 2017	All	All	4.3L, 5.3L, 6.2L L83, L86, LV1, LV3	All
Chevrolet	Suburban	2015 - 2017	All	All	5.3L L83	All
Chevrolet	Tahoe	2015 - 2017	All	All	5.3L L83	All
GMC	Sierra 1500	2014 - 2017	All	All	4.3L, 5.3L, 6.2L L83, L86, LV1, LV3	All
GMC	Yukon Models	2015 - 2017	All	All	5.3L, 6.2L L83, L86	All

Attention: GM Technical Assistance continues to receive Dealer calls on a concern of DTC P050D and P0300 ,with the engine disassembled with a no trouble found.

Involved Region or Country	North America
Condition	A vehicle may have a concern of DTC P050D setting along with a P0300 after a cold start up. White smoke and/or coolant odor may come from exhaust for an extended period of time at cold start as well. It may also Run rough when warm, slight knock, no codes setting.
Cause	Coolant getting into the cylinders

Correction:

Technical assistance is currently receiving calls after the engine has been disassembled with no trouble found before completing -SI diagnostics for DTC P050D,

PLEASE BE SURE TO FIRST FOLLOW SI. DIAGNOSTICS THEN, IF DTC P050D FLOWCHART DOES NOT ISOLATE THE CONCERN, THEN THE FOLLOWING MAY BE HELPFUL.

- **When completing the flow P050D chart, be sure you are checking the injector balance rates while the engine is cold.**
- **Be sure to record the injector balance rates and attach to the work order.**

Note: This will need to be done before the engine is disassembled

Code P050D Description

During a cold start, the engine control module (ECM) commands dual-pulse mode during Open Loop operation to improve cold start emissions. In dual-pulse mode, the fuel injectors are energized twice during each injection event. As with misfire diagnosis, in dual-pulse mode the ECM monitors the crankshaft position sensor and the camshaft position sensor to calculate crankshaft rotation speed.

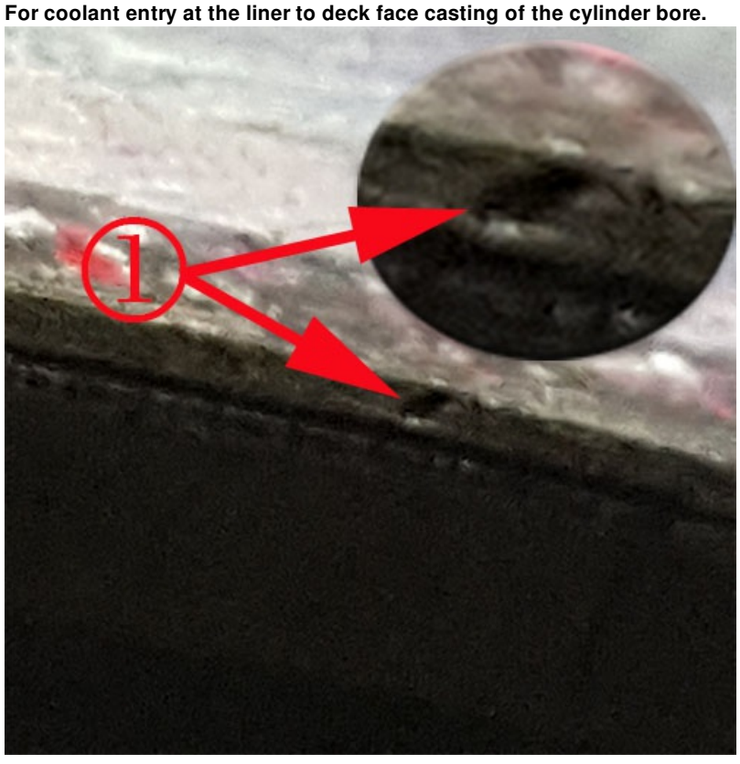
In normal operation, optimum fuel delivery during dual-pulse mode produces a steady crankshaft rotation speed. If the variations of crankshaft rotation speed exceed a calibrated value, the code P050D will be set.
Misfires on start up only, with high rates always on one cylinder, can be suspect for coolant entry at the liner to deck face casting or the casting line in the intake port of the cylinder head.
To inspect for this concern, add coolant dye to the system, run engine through warm up, pressurize the cooling system after warming the engine to operating temperature (let the engine cool overnight) and inspect the suspect cylinder with a borescope for coolant dye

evidence.

At times it may be necessary to remove the head for inspection.
If the head casting line is the concern the intake port will be wet with a coolant oil mix.
This could be the cause of a running rough warn concern with or without codes.
The location of where the coolant is running down in the port will also look washed down.

If this is found the cylinder head will need to be replaced.

For coolant entry at the liner to deck face casting of the cylinder bore.



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.(Sometimes)
The top of the piston will be steam cleaned.
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 black light 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 16-NA-338, if required, reference this PI and replace the engine.
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
Engines replaced for light / shallow pitting conditions will be returned to the dealership as non-defective.

Version History

Version	4
	6/14/2017 Updated Concern Information

Modified	**8/8/2017 Updated Correction Information** **10/31/2017 Updated Correction Information**