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## # PIP5038B: SES Light, Engine Misfire, and/ or Shudder - Inspect Ignition Coils - (Jun 4, 2013)

Subject: SES Light, Engine Misfire, and/ or Shudder - Inspect Ignition Coils

Models: 2009 Buick Enclave  
2008-2009 Cadillac CTS, STS  
2009 Chevrolet Traverse  
2009 GMC Acadia  
2009 Saturn Outlook  
With Direct Injected 3.6L V6 Engine (RPO LLT)



This PI was superseded to update diagnosis and repair directions. Please discard PIP5038A.

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

### Condition/ Concern

Some customers may experience a SES light, misfire and/or a shudder on acceleration. Upon inspection, any of the following DTCs may be present: P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0351, P0352, P0353, P0354, P0355, P0356

This may be the result of a heat stressed/damaged ignition coil.

The coil damage could be due to the ECM latching "ON" the associated coil EST (dwell) line.

Dwell times greater than 50msec will result in coil damage (see photos)



**Note:** The cylinder with the damaged coil may not be the cylinder causing the issue (coil damage).

ECM EST latchup is caused by an Electromagnetic Interference (EMI) that is conducted from the ignition coil to the ECM on one of the EST lines (wire to wire coupling of this electrical transient is not the issue). The ignition coil/cylinder that is producing this EMI may not be the one that is damaged. Eliminating the source of this issue, not just replacing the damaged ignition coil is key to having customers not return with the same condition.

Events/conditions that can produce EMI transient include:



Spark plugs that are cracked, wrong plug gap, worn plugs, carbon fouling, and top post contact issues.

Corrosion - all prevents the coil charge to produce a healthy spark, which could reflect EMI transient back to the ECM.

Battery Connections – Improperly installed, loose or corroded battery cables can cause intermittent conditions. Top clamp battery cables should be clean, fully seated and alignment from making contact with the battery case, then hand tighten.

Ignition Coil Grounds dirty and not properly torqued.

System grounds - corroded, loose, open, intermittent

In some cases the related ignition coil fuse in the UBEC may be open as well.

Ignition Coils - Shorted – Ignition coil grounds must be cleaned both sides of the terminal, along with the ground bolt and properly torqued.

Acadia, Traverse, Enclaves and Outlook: G112, G114

CTS: G130 and G131

STS: G109 and G0112

Using a torque wrench, tighten the fastener to 20 NM (15 lb-ft).

Do NOT over-tighten the fastener.

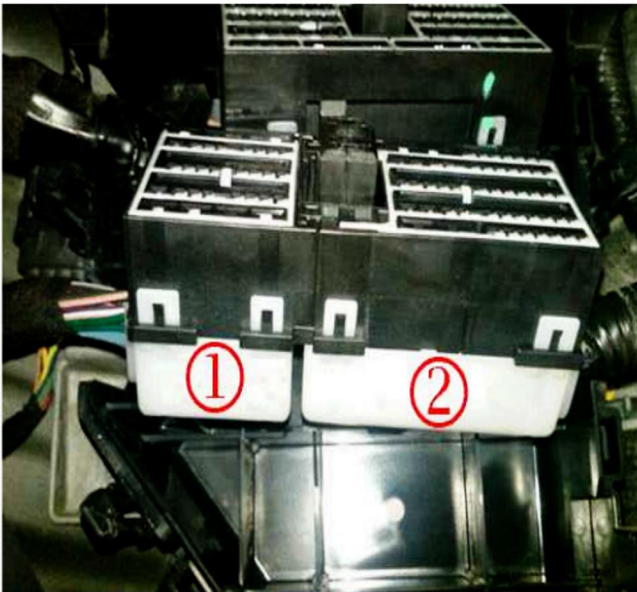
Has the engine or engine wiring harness or UBEC ever been removed from a previous repair, IE: Timing chains, front cover reseal?

Incomplete connector engagement into the base of the UBEC can cause intermittent conditions for many engine circuits.

U BEC (Under Hood Body Electrical Center) - Poor connector engagement on bottom of the UBEC, loose terminal fits and low pin drag can cause intermittent transient.



X1 and X3 Connectors slide together. Connectors must be fully seated.



1) Connector 1 2) connector 3

Check Coil terminal cavities for proper pin drag and fit.

Connections: Cavity 47-Even bank and 51 Odd Bank Ignition Coil – All Models