



Service Bulletin

File in Section: -

Bulletin No.: PIP4577K

Date: January, 2012

PRELIMINARY INFORMATION

Subject: SES Light With DTCs P0171 And P0174 - Possible Air Leaks

Models: 2007 - 2009 Cadillac SRX, STS, XLR
With 4.6L Engine (RPO Code LH2)

This PI was superseded to update administrative details. Please discard PIP4577J.

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

Condition/Concern:

Some customers may have a complaint of a SES light but it is unlikely that they will complain of any engine performance concerns if this PI applies. Upon inspection, DTCs P0171 and P0174 will be stored and freeze frame data will normally indicate that they set at approximately the same time. This may be the result of a small air leak, distortion or misalignment in the air induction system.

Recommendation/Instructions:

If SI diagnosis does not isolate the cause of this concern, perform the steps below as necessary:

1. Inspect the following areas for potential air/vacuum leaks and repair as necessary:
PCV systems, especially the PCV vacuum pipe connections; oil fill cap and dipstick seals; canister purge line; induction system leaks, such as air induction clamps that are loose or out of position brake booster; an air box that is loose, deformed slightly or a non GM air filter; engine covers, seals and crankcase for obvious oil leaks that could cause unmetered air to be drawn in through the PCV system.
2. Confirm that the Ethanol Content of the gasoline is less than 10%. If it exceeds this limit, re-evaluate the concern using gasoline that has Ethanol Content of less than 10%.
3. Perform SI Fuel System Diagnosis and repair as necessary. Also, turn the engine off after it reaches operating temperature and allow it to hot soak for 10 minutes while monitoring the fuel pressure. If the fuel pressure drops more than 5 PSI after this 10 minute hot soak, determine if it is dropping due to leaking fuel injectors. If they are okay but the pressure is still dropping, replace the in-tank fuel pump module.

Note: Running the engine from the injection cleaning canister on good known fuel from a different source than the vehicle can also help rule out the fuel and fuel pump as a concern.

4. Inspect the air filter to determine if any of the pleats are damaged or if it is an after-market air filter. Replace the air filter if it is after-market or is damaged in any way.
5. With the engine cold, individually loosen and re-torque all of the intake manifold bolts to the SI torque specification.
6. After performing the steps above, use the following test procedure to determine if the vehicle is repaired:

Notice: ALLOW THE ENGINE TO REACH OPERATING TEMPERATURE

Perform and Record the below:

- a. Turn the HVAC system off to prevent the AC compressor from engaging and warm the engine up to "operating temperature" with the hood closed.
- b. Turn the engine off and let it HOT soak with the hood closed for 10 minutes.
- c. Restart the engine and let it idle. After 5 minutes, record the MAF sensor grams and the LT fuel trim values.
- d. Repeat Steps 6a - 6c three times and record the MAF sensor grams and LT fuel trims each time.
- e. If either DTC resets, review the related freeze frame data and record the MAF sensor grams and LT fuel trims that were present when the DTC set.

Note: Graphing the readings in TIS will enable you to see greater detail and a sensor reading that spikes low.

It is not uncommon for the LT fuel trims to increase 2-3% each time step 6 is performed on a known good vehicle. As a result, this will eventually cause the LT fuel trims to go as high as 12% when performing step 6 three times in a row as recommended above. If repairs have been performed and the P0171/P0174 do not reset after performing step 6 three times in a row, the vehicle should be considered repaired.

Tip: MAF readings may look normal cold and may be as high as 6.0 at idle. The MAF readings will usually show a lower reading after reaching operating temperature, dropping to 4.4 and as low as 3.9 or lower.

Note: If the above suggestions and diagnostics did not correct the concern than this may be an air flow issue caused by a previous repair. If the air coming across the MAF may be turbulent and the MAF cannot read it correctly. In some cases simply removing and re-installing the air box or ducting near the MAF is enough to repair the concern the same may be true with an after-market air filter.

Note: If a cause still cannot be identified, a MAF Sensor may be obtained by contacting GM TAC. All of the above data, 1-6 and a-e will be required when calling for this sensor.

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.