



## PRELIMINARY INFORMATION

**Subject:** Intermittent Engine Hesitation or Flutter without DTC (Inspect and Correct Camshaft Position Sensor - Bank 1 Exhaust or Camshaft Position Sensor - Bank 1 Intake Harness Connector Terminals for Intermittent Conditions and Poor Connections)

**Models:** 2008-2011 Buick Enclave  
2010-2011 Buick LaCrosse  
2004-2011 Cadillac CTS, SRX  
2006-2011 Cadillac STS  
2008-2011 Chevrolet Equinox  
2009-2011 Chevrolet Malibu, Traverse  
2010-2011 Chevrolet Camaro  
2007-2011 GMC Acadia  
2010-2011 GMC Terrain  
2007-2009 Pontiac G6  
2008-2009 Pontiac G8, Torrent  
2008-2009 Saturn AURA  
2007-2010 Saturn OUTLOOK  
2008-2010 Saturn VUE  
Equipped with 6 Cylinder Engine RPO LAU, LF1, LFW, LLT, LP1 or LY7

This PI is being revised to remove engine RPO LP9, add the 2008-2009 Saturn AURA, and in the Recommendation/Instructions section, add an application table, clarify text and revise the action taken in certain Steps. Please discard PI0090B.

The following diagnosis might be helpful if the vehicle exhibits the symptoms described in this PI.

### Condition/Concern

Some customers may comment on an intermittent engine hesitation or flutter.

This condition may be caused by intermittent conditions and poor connections at the terminals in the harness connector for the Camshaft Position Sensor - Bank 1 Exhaust or Camshaft Position Sensor - Bank 1 Intake.

## Recommendation/Instructions

## Application Table to Determine Which Camshaft Position Sensor - Bank 1 Harness Connector to Inspect

Model	Model Year	Engine RPO and Displacement	Camshaft Position Sensor - Bank 1 Connector to Inspect
Buick Enclave	2008	LY7-3.6L	Camshaft Position Sensor - Bank 1 Exhaust
Buick Enclave	2009-2011	LLT-3.6L	Camshaft Position Sensor - Bank 1 Intake
Buick LaCrosse	2010	LF1-3.0L	Camshaft Position Sensor - Bank 1 Exhaust
Buick LaCrosse	2010-2011	LLT-3.6L	Camshaft Position Sensor - Bank 1 Intake
Cadillac CTS	2004	LY7-3.6L	Camshaft Position Sensor - Bank 1 Intake
Cadillac CTS	2005-2007	LP1-2.8L LY7-3.6L	
Cadillac CTS	2008-2009	LP1-2.8L LLT-3.6L LY7-3.6L	
Cadillac CTS	2010-2011	LLT-3.6L	
Cadillac CTS	2010-2011	LF1-3.0L	Camshaft Position Sensor - Bank 1 Exhaust
Cadillac SRX	2004-2009	LY7-3.6L	Camshaft Position Sensor - Bank 1 Intake
Cadillac SRX	2010-2011	LAU-2.8L	
Cadillac SRX	2010-2011	LF1-3.0L	Camshaft Position Sensor - Bank 1 Exhaust
Cadillac STS	2006-2007	LY7-3.6L	Camshaft Position Sensor - Bank 1 Intake
Cadillac STS	2008-2009	LLT-3.6L LY7-3.6L	
Cadillac STS	2010-2011	LLT-3.6L	
Chevrolet Camaro	2010-2011	LLT-3.6L	
Chevrolet Equinox	2008-2009	LY7-3.6L	Camshaft Position Sensor - Bank 1 Exhaust
Chevrolet Equinox	2010 2011	LF1-3.0L LFW-3.0L	
Chevrolet Malibu	2008-2011	LY7-3.6L	
Chevrolet Traverse	2009-2011	LLT-3.6L	Camshaft Position Sensor - Bank 1 Intake
GMC Acadia	2007-2008	LY7-3.6L	Camshaft Position Sensor - Bank 1 Exhaust
GMC Acadia	2009-2011	LLT-3.6L	Camshaft Position Sensor - Bank 1 Intake
GMC Terrain	2010 2011	LF1-3.0L LFW 3.0L	Camshaft Position Sensor - Bank 1 Exhaust
Pontiac G6	2007-2009	LY7-3.6L	
Pontiac G8	2008-2009	LY7-3.6L	Camshaft Position Sensor - Bank 1 Intake
Pontiac Torrent	2008-2009	LY7-3.6L	
Saturn AURA	2008-2009	LY7-3.6L	Camshaft Position Sensor - Bank 1 Exhaust
Saturn OUTLOOK	2007-2008	LY7-3.6L	
Saturn OUTLOOK	2009-2010	LLT-3.6L	Camshaft Position Sensor - Bank 1 Intake
Saturn VUE	2008-2010	LY7-3.6L	Camshaft Position Sensor - Bank 1 Exhaust

**Important:** This procedure is the same for the camshaft position sensor - bank 1 exhaust or camshaft position sensor - bank 1 intake.

**Note:** Depending on the model and model year of the vehicle, the camshaft position (CMP) sensor in the General Motors Service Information may be identified by slightly different name variations.

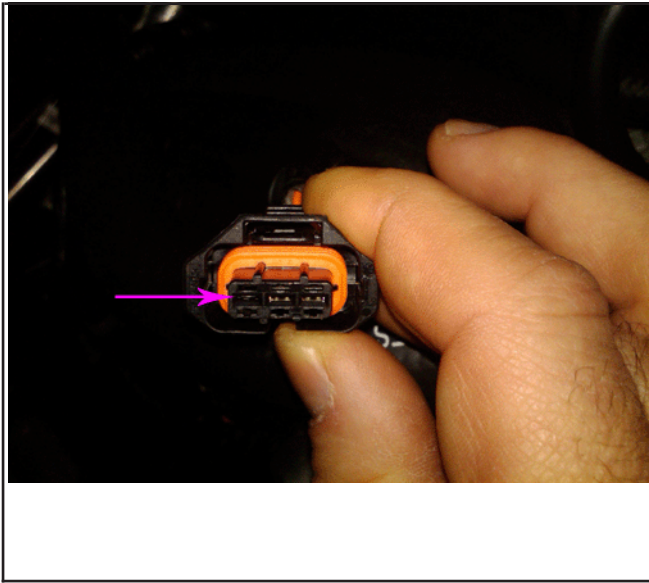
1. Observe the table in order to determine which camshaft position sensor - bank 1 harness connector to inspect.
2. Turn ON the ignition with the engine OFF.
3. Perform the Diagnostic System Check - Vehicle.
  - If DTCs are set, refer to Diagnostic Trouble Code (DTC) List – Vehicle in SI.
4. Turn OFF the ignition.



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**Note:** Perform this visual inspection BEFORE disconnecting the affected camshaft position sensor - bank 1 harness connector.

5. Visually inspect the camshaft position sensor harness connector for backed-out terminals as shown. Any of these circuits can contribute to this condition. Refer to Testing for Intermittent Conditions and Poor connections in SI.
  - If intermittent conditions or poor connections are found, repair as needed. Refer to SI. After completing the repair, proceed to Step 6.
  - If intermittent conditions or poor connections are not found, proceed to Step 6.
6. Disconnect the camshaft position sensor harness connector.



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7. Visually inspect the camshaft position sensor harness connector for damaged or backed-out terminals as shown. Any of these circuits can contribute to this condition. Refer to Testing for Intermittent Conditions and Poor connections in SI.
  - If intermittent conditions or poor connections are found, repair as needed. Refer to SI. After completing the repair, proceed to Step 8.
  - If intermittent conditions or poor connections are not found, proceed to Step 8.
8. Remove the camshaft position sensor. Refer to SI.
9. Inspect for any foreign material, such as metal shavings in the magnet area of the camshaft position sensor and on the reluctor wheel.
  - If any contamination is found, clean or replace the camshaft position sensor as needed.
10. Install the camshaft position sensor.
 

**Tighten**  
Tighten the bolt to 10 N·m (89 lb in).
11. Connect the camshaft position sensor harness connector.
12. Clear any DTCs that may be present.
13. Perform the diagnostic repair verification after completing this procedure. Refer to Diagnostic Repair Verification in SI.

### Warranty Information

For vehicles repaired under warranty, use:

Labor Operation	Description	Labor Time
N6608 (MY 2004-2009)	Emissions System Wiring and/or Connector Repair or Replacement	Use Published Labor Operation Time
N6650 (MY 2010-2011)	Terminal Replacement	
J4364	Camshaft Position Sensor Replacement - Bank 1 (Right Side) Intake	