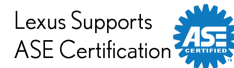


# Hesitation on Acceleration

**Service Category** Engine/Hybrid System

**Section** Engine Control

**Market** USA



## Applicability

YEAR(S)	MODEL(S)	ADDITIONAL INFORMATION
2007 – 2012	LS460	
2008 – 2012	LS600H	

### REVISION NOTICE

#### July 18, 2012 Rev2:

- Applicability has been updated to include 2009–2012 LS 460 and 2008–2012 LS 600h vehicles.
- Warranty Information, Parts Information, and Repair Procedure have been updated.
- 2nd & 3rd VIN in Production Change Information and Exhaust Clearance in step 3 of Diagnostic Procedure corrected on July 25, 2012.

#### December 23, 2008 Rev1:

- The Production Change Information table has been updated.
- Part numbers have been updated in the Parts Information table.
- Calibration IDs and ECM part numbers have been updated in the Calibration Information table.

Any previous printed versions of this service bulletin should be discarded.

## Introduction

Some vehicles may exhibit a hesitation on acceleration and in some cases set Diagnostic Trouble Code (DTC) P2119 (Throttle Actuator Control Throttle Body Range/Performance). To enhance the smoothness of acceleration, the Engine Control Module/ECM (SAE term: Powertrain Control Module/PCM) calibration has been revised. In some instances, replacement of the cylinder heads may also be required. Use the following repair procedure to address this condition.

## Hesitation on Acceleration

### Production Change Information

This bulletin applies to vehicles produced **BEFORE** the Production Change Effective VINs shown below.

MODEL	DRIVETRAIN	PRODUCTION CHANGE EFFECTIVE VIN
LS 460	2WD	JTHBL5EF#C5112283
		JTHGL5EF#C5046385
LS 460L	4WD	JTHCL5EF#C5014570
		JTHDL5EF#C5004680
LS 600h	N/A	JTHDU1EF#C5015340

### Warranty Information

OP CODE	DESCRIPTION	MODEL	DRIVE-TRAIN	TIME	OFF	T1	T2
EG8017	Recalibrate ECM (PCM)	-	-	0.4	89661-50A10 89661-50A11 89661-50A12 89661-50C00 89661-50C01 89661-50C02 89661-50C03	04	99
110011	R & R Cylinder Head (One Side)	LS 460	2WD	17.7	11101-39655 11102-39185		50
		LS 460/ LS 460L	4WD	26.2			
		LS 600hL	-	28.1			
Combo A	R & R Cylinder Head (Other Side)	LS 460	2WD	8.2			
		LS 460/ LS 460L	4WD	8.4			
		LS 600hL	-	8.2			

#### APPLICABLE WARRANTY

- **Op Code EG8017:** This repair is covered under the Lexus Federal Emission Warranty. This warranty is in effect for 96 months or 80,000 miles, whichever occurs first, from the vehicle's in-service date.
- **Op Code 110011:** This repair is covered under the Lexus Powertrain Warranty. This warranty is in effect for 72 months or 70,000 miles, whichever occurs first, from the vehicle's in-service date.
- **Warranty application is limited to occurrence of the specified condition described in this bulletin.**

## Hesitation on Acceleration

### Calibration Information

MODEL	MODEL YEAR	ECM (PCM) PART NUMBER	PREVIOUS CALIBRATION ID	NEW CALIBRATION ID	VDS
LS 460/460L	2007–2008	89661-50A10 89661-50A11 89661-50A12 89661-50C00 89661-50C01	35036000 35036100 35036200 35055000 35055100	<a href="#">35055200</a>	BL46F GL46F

### Parts Information

MODEL	PREVIOUS PART NUMBER	CURRENT PART NUMBER	PART NAME	QTY
All	11101-39655	11101-39656	Head Sub-assembly, Cylinder, RH	1
	11102-39185	11102-39186	Head Sub-assembly, Cylinder, LH	1
	11201-38050	11201-38051	Cover Sub-assy, Cylinder Head RH	1
	11202-38020	11202-38021	Cover Sub-assy, Cylinder Head LH	1
	13715-31120 13715-31150 13715-0P010	13715-0P030	Valve, Exhaust	16
	13711-38030	Same	Valve, Intake	16
	13734-62020	13734-0P010	Seat, Valve Spring	32
	89661-50A10 89661-50A11 89661-50A12 89661-50C00 89661-50C01 89661-50C02 89661-50C03	89661-50C04	Computer, Engine Control (ECM)	–
LS 460 (2WD)	04111-38080 04111-38081	04111-38082	Gasket Kit, Engine Overhaul	1
LS 460 (AWD)	04111-38170 04111-38171	04111-38172		1
LS 600h	04111-38110	04111-38111		1
All	–	00451-00001-LBL	Authorized Modifications Label	1

**NOTE**

- The ECM (PCM) should NOT be replaced as part of the repair procedure.
- Authorized Modification Labels may be ordered in packages of 25 from the Materials Distribution Center (MDC) through Dealer Daily – Dealer Support Materials Orders.

## Hesitation on Acceleration

### Required Tools & Equipment

REQUIRED EQUIPMENT	SUPPLIER	PART NUMBER	QTY
TIS Techstream* or Techstream Lite  NOTE: Software version 7.10.030 or later is required.	ADE	TSPKG1 or TSLITEDLR01	1

**NOTE**

- Additional Techstream units may be ordered by calling Approved Dealer Equipment (ADE) at 1-800-368-6787.
- The Diagnostic Tester is NOT recommended for flash reprogramming with this calibration file. Please use TIS Techstream or an approved J2534 interface to perform this update. Visit [techinfo.toyota.com](http://techinfo.toyota.com) for more information regarding J2534 reprogramming.



SPECIAL SERVICE TOOLS (SST)	PART NUMBER	QTY
GR8 Battery Diagnostic Station*	<a href="#">00002-MCGR8</a>	1
Valve Service Tool Set (Valve Spring Compressor)	<a href="#">00002-53464C-02</a> (09202-70020)	1
Starter Armature Bearing Replacer	<a href="#">09201-41020</a>	1
Crankshaft Pulley Holding Tool* (Bolt)	<a href="#">09213-54015-02</a> (90119-08216-01)	1
Companion Flange Holding Tool*	<a href="#">09330-00021</a>	1
Universal Puller Set "C"*	<a href="#">09950-50013-01</a>	1

TOOLS & MATERIAL	QUANTITY
Toyota Genuine Seal Packing Black, Three Bond 1207B, or equivalent	As needed

**NOTE**

Additional SSTs may be ordered by calling 1-800-933-8335.

\* Essential SST.

## Hesitation on Acceleration

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### Diagnostic Procedure

1. Connect Techstream unit and test drive the vehicle. Record all data duplicating the concern. Review the Knock Correct Learn Value, and the Ignition (IGN) Advance.
2. If the Knock Correct Learn Value drops from 17.0 CA to below 12.0 CA, and the IGN Advance goes to a negative degree value while duplicating the concern, continue to step 3.  
  
If the values are comparable to a known good vehicle, the concern may NOT be related to this bulletin — diagnose per the Technical Information System (TIS) depending upon symptoms.
3. Check the condition of the spark plugs and valve guides.
  - If one or more of the spark plugs has a brown residue on the porcelain and electrode, continue to the Repair Procedure.
  - If the spark plugs appear normal, confirm the valve stem oil clearance is within specification.  
**Maximum Oil Clearance:**  
**Intake: 0.08 mm (0.0031 in.)**  
**Exhaust: 0.1 mm (0.0039 in.)**  
  
If greater than specification, continue to the Repair Procedure.
  - If neither of these conditions are abnormal, the condition may NOT be related to this bulletin — diagnose per TIS depending upon symptoms.

# Hesitation on Acceleration

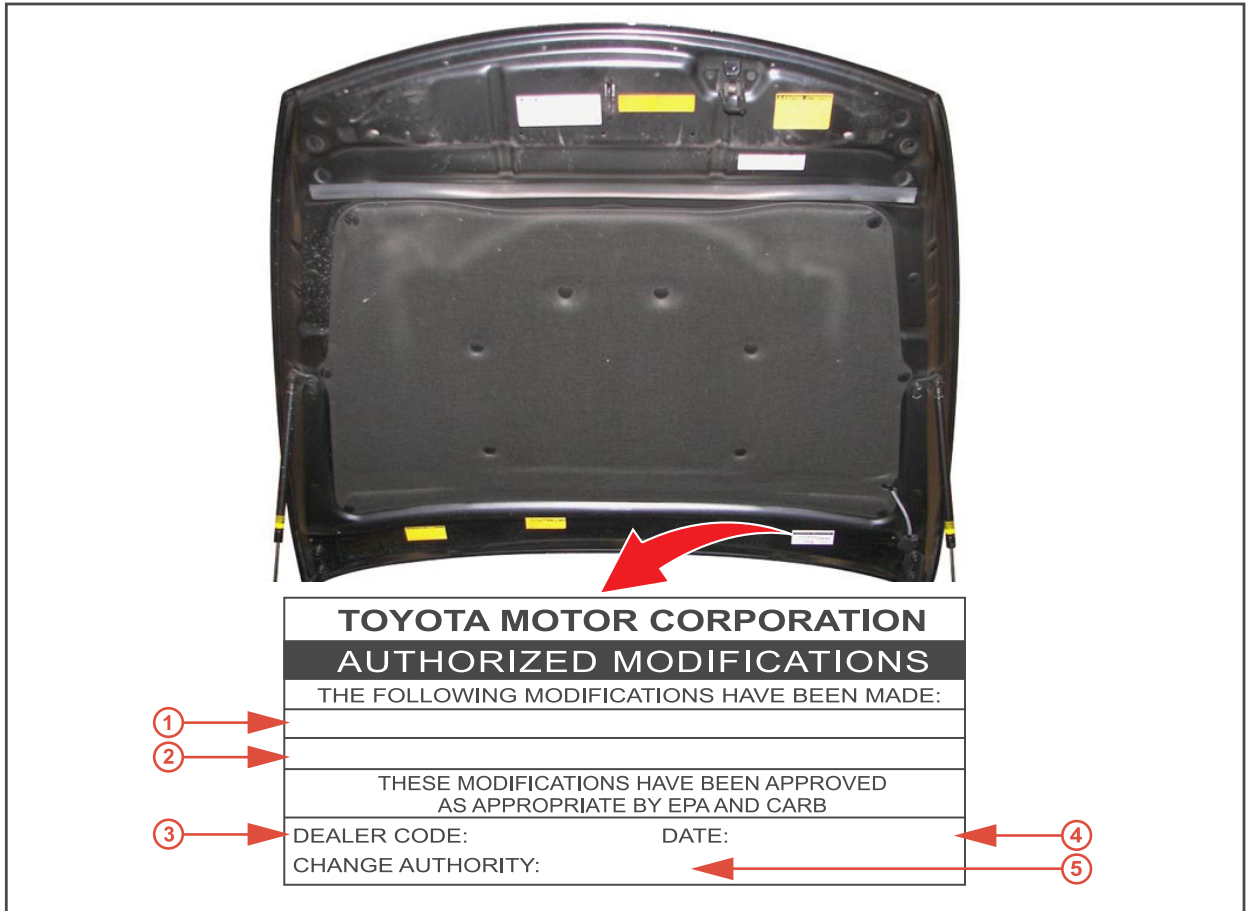
## Repair Procedure

**NOTE**

- For 2007 – 2008 MY LS 460 and LS 460L vehicles **ONLY**: Begin at step 1.
- For 2009 – 2012 MY LS 460, LS 460L, and LS 600h vehicles: Begin at step 4.

1. Check for the Authorized Modifications Label affixed to the vehicle in the location shown in Figure 1. Confirm if the ECM (PCM) calibration has been updated.
  - If the calibration ID listed is NOT the latest ECM (PCM) calibration — go to step 2.
  - If the vehicle has the latest calibration — go to step 4.

**Figure 1. Location of Authorized Modifications Label on 2007 – 2008 LS 460**



1	Replacement ECM (PCM) Part Number (i.e., 89661-50C04)
2	New Calibration ID(s) (i.e., 35055200)
3	Dealer Code

4	Date Completed
5	This SB Number

## Hesitation on Acceleration

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### Repair Procedure (Continued)

2. Flash Reprogram the ECM (PCM).

**NOTE**

- The GR8 Battery Diagnostic Station **MUST** be used in Power Supply Mode to maintain battery voltage at 13.5 volts while flash reprogramming the vehicle.
- For details on how to use the GR8 Battery Diagnostic Station, refer to the [GR8 Instruction Manual](#) located on the Technical Information System (TIS), *Diagnostics – Tools & Equipment – Battery Diagnostics*.

Follow the procedures outlined in Service Bulletin [L-SB-0015-10](#), “Techstream ECU Flash Reprogramming Procedure”, and flash the ECM (PCM) with the NEW calibration file update.

3. Install the Authorized Modifications Label.
  - A. Using a permanent marker, enter the following information on the label:
    - ECM part number [Refer to the **Parts Information** section for the **CURRENT PART NUMBER**]
    - Calibration ID(s) [Refer to the **Calibration Identification Chart** for the **NEW CALIBRATION ID**]
    - Dealer Code
    - Repair Date
    - Change Authority [**This SB** number]
  - B. Affix the Authorized Modifications Label to the vehicle at the location shown in Figure 1. The Authorized Modifications Label is available through the MDC, P/N 00451-00001-LBL.
4. Replace both valve cover assemblies, both cylinder heads, all intake and exhaust valves for the left and right cylinder banks.

Refer to TIS, applicable model and model year Repair Manual:

**2007 LS 460:**

- Engine/Hybrid System – Engine Mechanical – “1UR-FSE Engine Mechanical: Cylinder Head Gasket ([for Bank 1](#)) / ([for Bank 2](#)): Removal”
- Engine/Hybrid System – Engine Mechanical – “1UR-FSE Engine Mechanical: Cylinder Head: [Disassembly](#) / [Reassembly](#)”
- Engine/Hybrid System – Engine Mechanical – “1UR-FSE Engine Mechanical: Cylinder Head Gasket ([for Bank 1](#)) / ([for Bank 2](#)): Installation”

## Hesitation on Acceleration

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### Repair Procedure (Continued)

#### 2008 LS 460:

- Engine/Hybrid System – Engine Mechanical – “1UR-FSE Engine Mechanical: Cylinder Head Gasket ([for Bank 1](#)) / ([for Bank 2](#)): Removal”
- Engine/Hybrid System – Engine Mechanical – “1UR-FSE Engine Mechanical: Cylinder Head: [Disassembly](#) / [Reassembly](#)”
- Engine/Hybrid System – Engine Mechanical – “1UR-FSE Engine Mechanical: Cylinder Head Gasket ([for Bank 1](#)) / ([for Bank 2](#)): Installation”

#### 2009 LS 460:

- Engine/Hybrid System – Engine Mechanical – “1UR-FSE Engine Mechanical: Cylinder Head Gasket ([for Bank 1](#)) / ([for Bank 2](#)): Removal”
- Engine/Hybrid System – Engine Mechanical – “1UR-FSE Engine Mechanical: Cylinder Head: [Disassembly](#) / [Reassembly](#)”
- Engine/Hybrid System – Engine Mechanical – “1UR-FSE Engine Mechanical: Cylinder Head Gasket ([for Bank 1](#)) / ([for Bank 2](#)): Installation”

#### 2010 LS 460:

- Engine/Hybrid System – Engine Mechanical – “1UR-FSE Engine Mechanical: Cylinder Head Gasket ([for Bank 1](#)) / ([for Bank 2](#)): Removal”
- Engine/Hybrid System – Engine Mechanical – “1UR-FSE Engine Mechanical: Cylinder Head: [Disassembly](#) / [Reassembly](#)”
- Engine/Hybrid System – Engine Mechanical – “1UR-FSE Engine Mechanical: Cylinder Head Gasket ([for Bank 1](#)) / ([for Bank 2](#)): Installation”

#### 2011 LS 460:

- Engine/Hybrid System – Engine Mechanical – “1UR-FSE Engine Mechanical: Cylinder Head Gasket ([for Bank 1](#)) / ([for Bank 2](#)): Removal”
- Engine/Hybrid System – Engine Mechanical – “1UR-FSE Engine Mechanical: Cylinder Head: [Disassembly](#) / [Reassembly](#)”
- Engine/Hybrid System – Engine Mechanical – “1UR-FSE Engine Mechanical: Cylinder Head Gasket ([for Bank 1](#)) / ([for Bank 2](#)): Installation”



## Hesitation on Acceleration

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### Repair Procedure (Continued)

#### 2012 LS 460:

- Engine/Hybrid System – Engine Mechanical – “1UR-FSE Engine Mechanical: Cylinder Head Gasket [\(for Bank 1\)](#) / [\(for Bank 2\)](#): Removal”
- Engine/Hybrid System – Engine Mechanical – “1UR-FSE Engine Mechanical: Cylinder Head: [Disassembly](#) / [Reassembly](#)”
- Engine/Hybrid System – Engine Mechanical – “1UR-FSE Engine Mechanical: Cylinder Head Gasket [\(for Bank 1\)](#) / [\(for Bank 2\)](#): Installation”

#### 2008 LS 600h:

- Engine/Hybrid System – Engine Mechanical – “2UR-FSE Engine Mechanical: Cylinder Head Gasket [\(for Bank 1\)](#) / [\(for Bank 2\)](#): Removal”
- Engine/Hybrid System – Engine Mechanical – “2UR-FSE Engine Mechanical: Cylinder Head: [Disassembly](#) / [Reassembly](#)”
- Engine/Hybrid System – Engine Mechanical – “2UR-FSE Engine Mechanical: Cylinder Head Gasket [\(for Bank 1\)](#) / [\(for Bank 2\)](#): Installation”

#### 2009 LS 600h:

- Engine/Hybrid System – Engine Mechanical – “2UR-FSE Engine Mechanical: Cylinder Head Gasket [\(for Bank 1\)](#) / [\(for Bank 2\)](#): Removal”
- Engine/Hybrid System – Engine Mechanical – “2UR-FSE Engine Mechanical: Cylinder Head: [Disassembly](#) / [Reassembly](#)”
- Engine/Hybrid System – Engine Mechanical – “2UR-FSE Engine Mechanical: Cylinder Head Gasket [\(for Bank 1\)](#) / [\(for Bank 2\)](#): Installation”

#### 2010 LS 600h:

- Engine/Hybrid System – Engine Mechanical – “2UR-FSE Engine Mechanical: Cylinder Head Gasket [\(for Bank 1\)](#) / [\(for Bank 2\)](#): Removal”
- Engine/Hybrid System – Engine Mechanical – “2UR-FSE Engine Mechanical: Cylinder Head: [Disassembly](#) / [Reassembly](#)”
- Engine/Hybrid System – Engine Mechanical – “2UR-FSE Engine Mechanical: Cylinder Head Gasket [\(for Bank 1\)](#) / [\(for Bank 2\)](#): Installation”

## Hesitation on Acceleration

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### Repair Procedure (Continued)

#### 2011 LS 600h:

- Engine/Hybrid System – Engine Mechanical – “2UR-FSE Engine Mechanical: Cylinder Head Gasket ([for Bank 1](#)) / ([for Bank 2](#)): Removal”
- Engine/Hybrid System – Engine Mechanical – “2UR-FSE Engine Mechanical: Cylinder Head: [Disassembly](#) / [Reassembly](#)”
- Engine/Hybrid System – Engine Mechanical – “2UR-FSE Engine Mechanical: Cylinder Head Gasket ([for Bank 1](#)) / ([for Bank 2](#)): Installation”

#### 2012 LS 600h:

- Engine/Hybrid System – Engine Mechanical – “2UR-FSE Engine Mechanical: Cylinder Head Gasket ([for Bank 1](#)) / ([for Bank 2](#)): Removal”
- Engine/Hybrid System – Engine Mechanical – “2UR-FSE Engine Mechanical: Cylinder Head: [Disassembly](#) / [Reassembly](#)”
- Engine/Hybrid System – Engine Mechanical – “2UR-FSE Engine Mechanical: Cylinder Head Gasket ([for Bank 1](#)) / ([for Bank 2](#)): Installation”

5. Reconnect the negative (–) battery terminal.
6. Re-initialize any affected power systems.

Refer to TIS, applicable Service Bulletin or Repair Manual:

- 2007 LS 460: Service Bulletin [PD007-07](#), “Power System Initialization During PDS”.
- 2008 LS 460/600h: Service Bulletin [L-SB-0041-08](#), “Power System Initialization During PDS”.
- 2009 – 2012 LS 460/600h: Applicable model and model year Repair Manual:
  - [2009](#) / [2010](#) / [2011](#) / [2012](#) LS 460: General – Introduction – “Introduction: Repair Instruction: Initialization”
  - [2009](#) / [2010](#) / [2011](#) / [2012](#) LS 600h: General – Introduction – “Introduction: Repair Instruction: Initialization”

7. Test drive the vehicle to confirm that the hesitation is NO longer present.