Flex Fuel Extended Crank due to Alcohol Density Calculation

Service Category Engine/Hybrid System

Section Engine Control **Market** USA

Toyota Supports ASE Certification

Applicability

YEAR(S)	MODEL(S)	ADDITIONAL INFORMATION
2012 – 2013	Sequoia	
2012 – 2013	Tundra	

Introduction

Some 2012 – 2013 model year Sequoia and Tundra vehicles with the 3UR-FBE engine may exhibit a MIL "ON" condition with Diagnostic Trouble Codes (DTCs) P0171/P0174 (*System too Lean Bank 1/ Bank 2*), P0172/P0175 (*System too Rich Bank 1/Bank 2*), P1604 (*Startability Malfunction*), and/or P1605 (*Rough Idling*) after attempting to start the engine. Alcohol Density Estimate values may be high even though the vehicle was fueled with regular fuel (E0/E10). The Engine Control Module/ECM (SAE term: Powertrain Control Module/PCM) logic has been modified to reduce the possibility of this condition occurring. Use the following repair procedure to reprogram the ECM (PCM).

Warranty Information

OP CODE	DESCRIPTION	TIME	MODEL	ENGINE	TOWING OPTION	OFP	T1	T2
EG1308	Reprogram ECM (PCM) Engine	0.4	Sequoia	3UR-FBE	Std	89661-0CN20 89661-0CN21 89661-0CN22 89661-0CN23	8A	99
					Tow	89661-0CN30 89661-0CN31 89661-0CN32 89661-0CN33		
			Tundra		Std	89661-0CM60 89661-0CM61 89661-0CM62 89661-0CM63		
					Tow	89661-0CM70 89661-0CM71 89661-0CM72 89661-0CM73		

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Warranty Information (Continued)

APPLICABLE WARRANTY

- This repair is covered under the Toyota 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.
- Warranty application is limited to occurrence of the specified condition described in this bulletin.

Parts Information

MODEL	ENGINE	TOWING OPTION	PREVIOUS PART NUMBER	CURRENT PART NUMBER	PART NAME	QTY
Sequoia	3UR-FBE	Standard	89661-0CN20 89661-0CN21 89661-0CN22 89661-0CN23	89661-0CN24	Computer, Engine Control (ECM/PCM)	–
		Tow	89661-0CN30 89661-0CN31 89661-0CN32 89661-0CN33	89661-0CN34		–
Tundra		Standard	89661-0CM60 89661-0CM61 89661-0CM62 89661-0CM63	89661-0CM64		–
		Tow	89661-0CM70 89661-0CM71 89661-0CM72 89661-0CM73	89661-0CM74		–

PREVIOUS PART NUMBER	CURRENT PART NUMBER	PART NAME	QTY
00451-00001-LBL	Same	Authorized Modification Labels	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.

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Calibration Information

MODEL	ENGINE	DRIVETRAIN	TOWING OPTION	PREVIOUS CALIBRATION ID	NEW CALIBRATION ID
Sequoia	3UR-FBE	4WD	Std	30CK5000 30CK5100 30CK5200 30CK5300	30CK5400
			Tow	30CK6000 30CK6100 30CK6200 30CK6300	30CK6400
Tundra			Std	30CJ9000 30CJ9100 30CJ9200 30CJ9300	30CJ9400
			Tow	30CK0000 30CK0100 30CK0200 30CK0300	30CK0400

Required Tools & Equipment

REQUIRED EQUIPMENT	SUPPLIER	PART NUMBER	QTY
Techstream 2.0*	ADE	TS2UNIT	1
TIS Techstream		TSPKG1	
Techstream Lite		TSLITEDLR01	

SPECIAL SERVICE TOOLS (SST)	PART NUMBER	QTY
GR8 Battery Diagnostic Station*	00002-MCGR8	1

NOTE

- **Only ONE of the Techstream units listed above is required.**
- **Software version 8.10.021 or later is required.**
- **Additional Techstream units may be ordered by calling Approved Dealer Equipment (ADE) at 1-800-368-6787.**
- **Additional SSTs may be ordered by calling 1-800-933-8335.**
- **The Diagnostic Tester is NOT recommended for flash reprogramming. Please use Techstream or an approved J2534 interface to perform flash reprogramming updates. Visit techinfo.toyota.com for more information regarding J2534 reprogramming.**

* Essential SST.

Flex Fuel Extended Crank due to Alcohol Density Calculation

Repair Procedure

1. Confirm the difficult-to-start condition.
2. Using Techstream, confirm one or more of the following DTCs is present:
   - P1604: *Startability Malfunction*
   - P1605: *Rough Idling*
   - P0171: *System Too Lean (Bank 1)*
   - P0172: *System Too Rich (Bank 1)*
   - P0174: *System Too Lean (Bank 2)*
   - P0175: *System Too Rich (Bank 2)*
3. If any of the DTCs listed above is present, confirm the Alcohol Density Estimate and fuel trim values.

   Is the Alcohol Density Estimate value 15% or greater and are the fuel trim values negative?

   - **YES** — Reprogram the ECM (PCM). Go to step 4.
   - **NO** — This bulletin does NOT apply. Continue diagnosis using the applicable Repair Manual.

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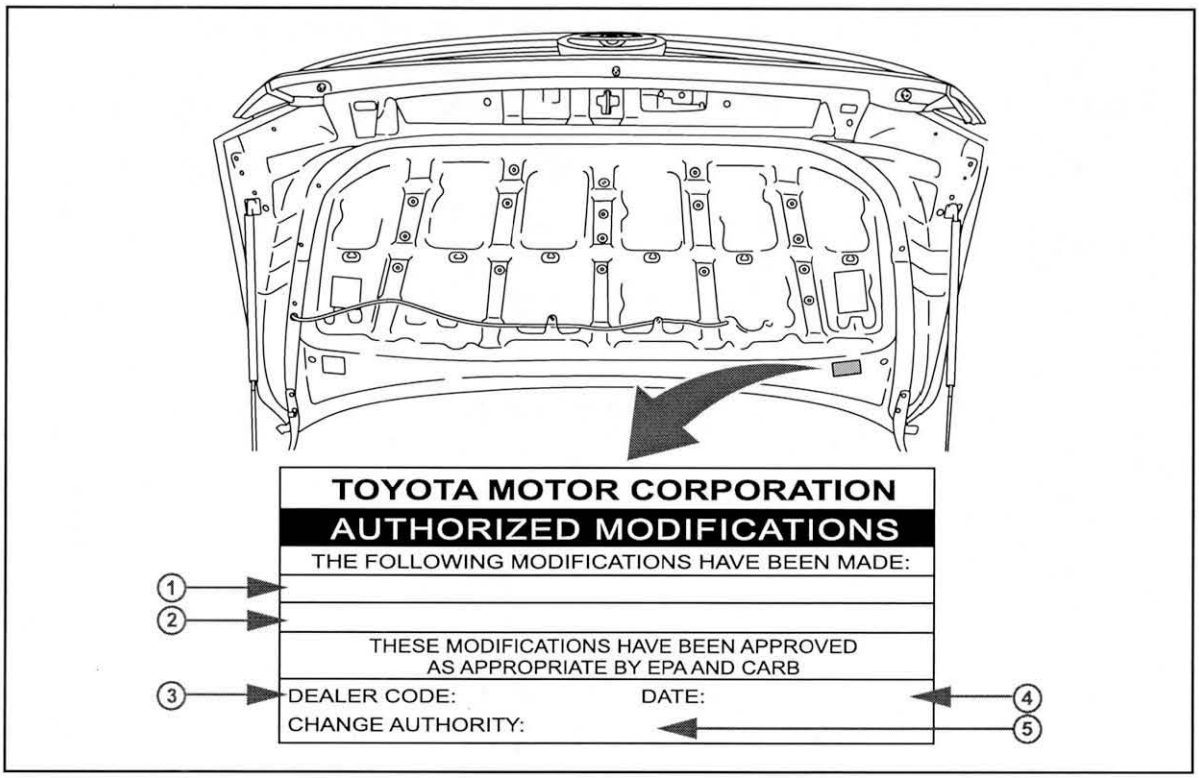
Repair Procedure (Continued)

4. 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 5.

Figure 1. Location of Authorized Modifications Label on 2012 – 2013 Sequoia and Tundra



1	Replacement ECM (PCM) Part Number (i.e., 89661-0CN24)
2	New Calibration ID(s) (i.e., 30CK5400)
3	Dealer Code

4	Date Completed
5	This SB Number

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Repair Procedure (Continued)

5. 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 No. T-SB-0012-13, *"Techstream ECU Flash Reprogramming Procedure"*, and flash the ECM (PCM) with the NEW calibration file update.

6. 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.

7. Test drive the vehicle to confirm proper vehicle operation.