

MIL ON With DTCs P0087 and/or P107A2A at High Altitude and With High Temperatures

Service Category Engine/Hybrid System

Section Fuel System

Market USA

Toyota Supports
ASE Certification 

Applicability

YEAR(S)	MODEL(S)	ADDITIONAL INFORMATION
2020 - 2022	Highlander, Highlander HV	
2021 - 2022	Sienna HV	

REVISION NOTICE

December 09, 2022 Rev1:

- **Applicability has been updated to include 2022 model year Highlander, Highlander Hybrid, and Sienna Hybrid vehicles.**
- **The Production Change Information, Parts Information, and Calibration Information sections have been updated.**

Any previous printed versions of this bulletin should be discarded.

Introduction

Some 2020 – 2022 Highlander and Highlander Hybrid and 2021 – 2022 Sienna Hybrid vehicles may exhibit a MIL ON condition with Diagnostic Trouble Codes (DTCs) P0087 (Fuel Rail/System Pressure – Too Low) and/or P107A2A (Fuel Rail Pressure Sensor (Low) Signal Stuck in Range) present. This condition may occur when the vehicle is operated at high altitude and high temperature; typically, above 3,300 feet (1,000 meters) and ambient temperature above 85°F (30°C). The Engine Control Module (ECM) (SAE term: Powertrain Control Module/PCM) logic has been modified to reduce the possibility of this condition occurring. Follow the Repair Procedure in this bulletin to address this condition.

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Production Change Information

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

MODEL	PLANT	PRODUCTION CHANGE EFFECTIVE VIN
Highlander	TMMI (West)	5TDYZRAH#N127216 5TDFZRAH#N127216 5TDHZRAH#N127216 5TDGZRAH#N127216 5TDCZRAH#N127216 5TDZZRAH#N127216 5TDLZRAH#N127216 5TDJZRAH#N127216 5TDLZ3AH#N127216 5TDFZRBH#N229664 5TDDZRBH#N229664 5TDLZ3BH#N229664 5TDGZRBH#N229664 5TDHZRBH#N229664 5TDBZRBH#N229664 5TDCZRBH#N229664 5TDLZRBH#N229664 5TDJZRBH#N229664
	TMMI (East)	5TDYZRAH#N553137 5TDHZRAH#N553137 5TDGZRAH#N553137 5TDZZRAH#N553137 5TDCZRAH#N553137 5TDDZRBH#N582995 5TDHZRBH#N582995 5TDGZRBH#N582995 5TDCZRBH#N582995 5TDBZRBH#N582995

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Production Change Information (continued)

MODEL	PLANT	PRODUCTION CHANGE EFFECTIVE VIN
Highlander HV	TMMI (West)	5TDFARAH#N99159 5TDYARAH#N99159 5TDLA3AH#N99159 5TDGARAH#N99159 5TDAARAH#N99159 5TDHARAH#N99159 5TDZARAH#N99159 5TDEBRCH#N99159 5TDXBRCH#N99159 5TDFBRCH#N99159 5TDDBRCH#N99159 5TDLB3CH#N99159 5TDGBRCH#N99159 5TDHBRCH#N99159 5TDABRCH#N99159 5TDL3CH#N99159 5TDBBRCH#N99159
	TMMI (East)	5TDYARAH#N516162 5TDAARAH#N516162 5TDGARAH#N516162 5TDHARAH#N516162 5TDZARAH#N516162 5TDDBRCH#N516162 5TDXBRCH#N516162 5TDHBRCH#N516162 5TDGBRCH#N516162 5TDABRCH#N516162 5TDBBRCH#N516162

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Production Change Information (continued)

MODEL	PLANT	PRODUCTION CHANGE EFFECTIVE VIN
Sienna HV	TMMI (East)	5TDGSKFC#NS68445
		5TDZSKFC#NS68445
		5TDESKFC#NS68445
		5TDXSKFC#NS68445
		5TDDSKFC#NS68445
		5TDYSKFC#NS68445
		5TDJSKFC#NS68445
		5TDASKFC#NS68445
		5TDBSKFC#NS68445
		5TDKSKFC#NS68445
		5TDZRKEC#NS68445
		5TDERKEC#NS68445
		5TDGRKEC#NS68445
		5TDDRKEC#NS68445
		5TDXRKEC#NS68445
		5TDYRKEC#NS68445
		5TDJRKEC#NS68445
		5TDKRKEC#NS68445
		5TDBRKEC#NS68445

Warranty Information

OP CODE	DESCRIPTION	TIME	OFP	T1	T2
800269	Reprogram Engine ECM (PCM)	0.7	89661-#####*	8A	74

*Warranty claim MUST be submitted with the correct 10-digit OFP. Choose the correct OFP for the vehicle being repaired by searching for the parts in the Electronic Parts Catalog using the VIN filter.

APPLICABLE WARRANTY

- This repair is covered under the Toyota Federal 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.

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Parts Information

MODEL	PART NUMBER		PART NAME	QTY
	PREVIOUS	NEW		
Highlander	89661-0EB63 89661-0EB64	89661-0EB65	Computer, Engine Control (ECM/PCM)	–
	89661-0EB72 89661-0EB73	89661-0EB74		
	89661-0EB83 89661-0EB84	89661-0EB85		
	89661-0EG01 89661-0EG02	89661-0EG03		
	89661-0EG11 89661-0EG12	89661-0EG13		
	89661-0EG21 89661-0EG22	89661-0EG23		
	89661-0EK70	89661-0EK71		
	89661-0EK90	89661-0EK91		
Highlander HV	89661-0EC00-D 89661-0EC01	89661-0EC02		
	89661-0EG30-A 89661-0EG31	89661-0EG32		
	89661-0EE60	89661-0EE61		
Sienna HV	89661-08650 89661-08651	89661-08652		
	89661-08700	89661-08701		
All	00451-00001-LBL		Authorized Modifications Labels	1

NOTE

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

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Required Tools & Equipment

REQUIRED EQUIPMENT	SUPPLIER	PART NUMBER	QTY
Techstream ADVI*	ADE	TSADVUNIT	1
Techstream 2.0		TS2UNIT	
Techstream Lite		TSLITEPDLR01	
Techstream Lite (Green Cable)		TSLP2DLR01	

*Essential SST.

NOTE

- Only ONE of the Techstream units listed above is required.
- Software version 17.20.013 or later is required.
- Additional Techstream units may be ordered by calling Approved Dealer Equipment (ADE) at 1-800-368-6787.
- Use Techstream or an approved J2534 interface to perform flash reprogramming updates. Visit techinfo.toyota.com for more information regarding J2534 reprogramming.

SPECIAL SERVICE TOOLS (SST)	PART NUMBER	QTY
Battery Diagnostic Tool*	DCA-8000P I	1

*Essential SST.

NOTE

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

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Calibration Information

MODEL	MODEL YEAR	ENGINE	CALIBRATION ID			
			PREVIOUS	NEW		
Highlander	2020	2GR-FKS	896630E62000 896630E62100 896630E62200 896630E62300 896630E62400	896630E62500		
			896630E63000 896630E63100 896630E63200	896630E63300		
			896630E64000 896630E64100 896630E64200 896630E64300 896630E64400	896630E64500		
	2021		896630EB1000 896630EB1100 896630EB1200	896630EB1300		
			896630E53000 896630E53100	896630E53200		
			896630EB2000 896630EB2100 896630EB2200	896630EB2300		
	2022		896630ED9000	896630ED9100		
			896630EE1000	896630EE1100		
	Highlander HV		2020	A25A-FXS	896630E66000 896630E66100	896630E66200
			2021		896630EB3000 896630EB3100	896630EB3200
2022		896630EE4000	896630EE4100			
Sienna HV	2021	896630857001 896630857101	896630857201			
	2022	896630841000	896630841100			

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Repair Procedure

1. Confirm the condition exists.

Using Techstream, check for the following stored DTCs:

- P0087 – Fuel Rail/System Pressure – Too Low
- P107A2A – Fuel Rail Pressure Sensor (Low) Signal Stuck in Range

Are ANY of the DTCs listed above present?

- **YES** — Continue to step 2.
- **NO** — This bulletin does NOT apply. Continue diagnosis using the applicable Repair Manual

2. Confirm the freeze frame data for DTCs P0087 and/or P107A2A.

A. Is the ambient temperature above 85°F (30°C)?

- **YES** — Continue to substep B.
- **NO** — This bulletin does NOT apply. Continue diagnosis using the applicable Repair Manual.

B. Is the atmospheric pressure at or below 12.7 psi gauge (-2 atm)?

- **YES** — Continue to substep C.
- **NO** — This bulletin does NOT apply. Continue diagnosis using the applicable Repair Manual.

C. Confirm remaining fuel volume. Is the remaining fuel volume above 15%?

- **YES** — Continue to step 3.
- **NO** — This bulletin does NOT apply. Continue diagnosis using the applicable Repair Manual.

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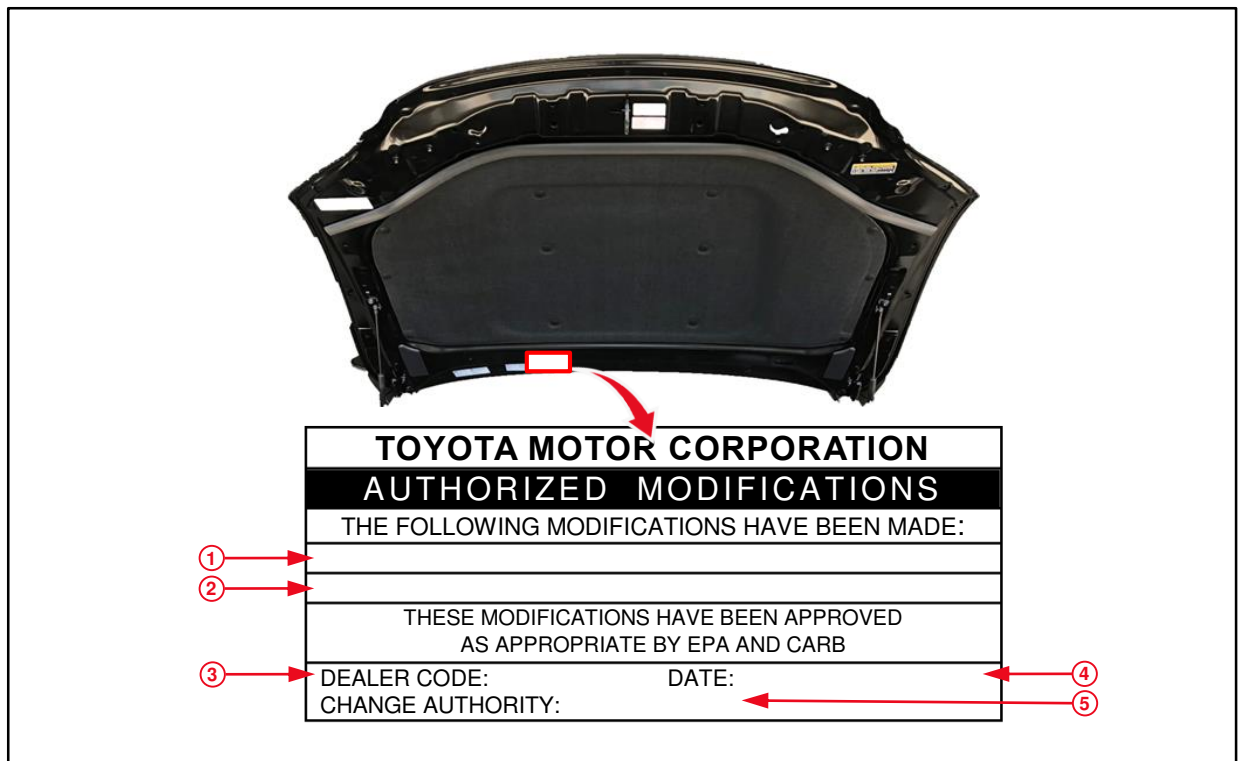
Repair Procedure (continued)

3. Use Techstream to confirm if the ECM (PCM) calibration has been updated and check for the Authorized Modifications Label affixed to the vehicle in the locations shown below.

Is the calibration ID listed in Techstream and on the label the latest ECM (PCM) calibration?

- **YES** — This bulletin does NOT apply. Continue diagnosis using the applicable Repair Manual.
- **NO** — Continue to step 4.

Figure 1. Location of Authorized Modifications Label on 2020 – 2022 Highlander and Highlander HV



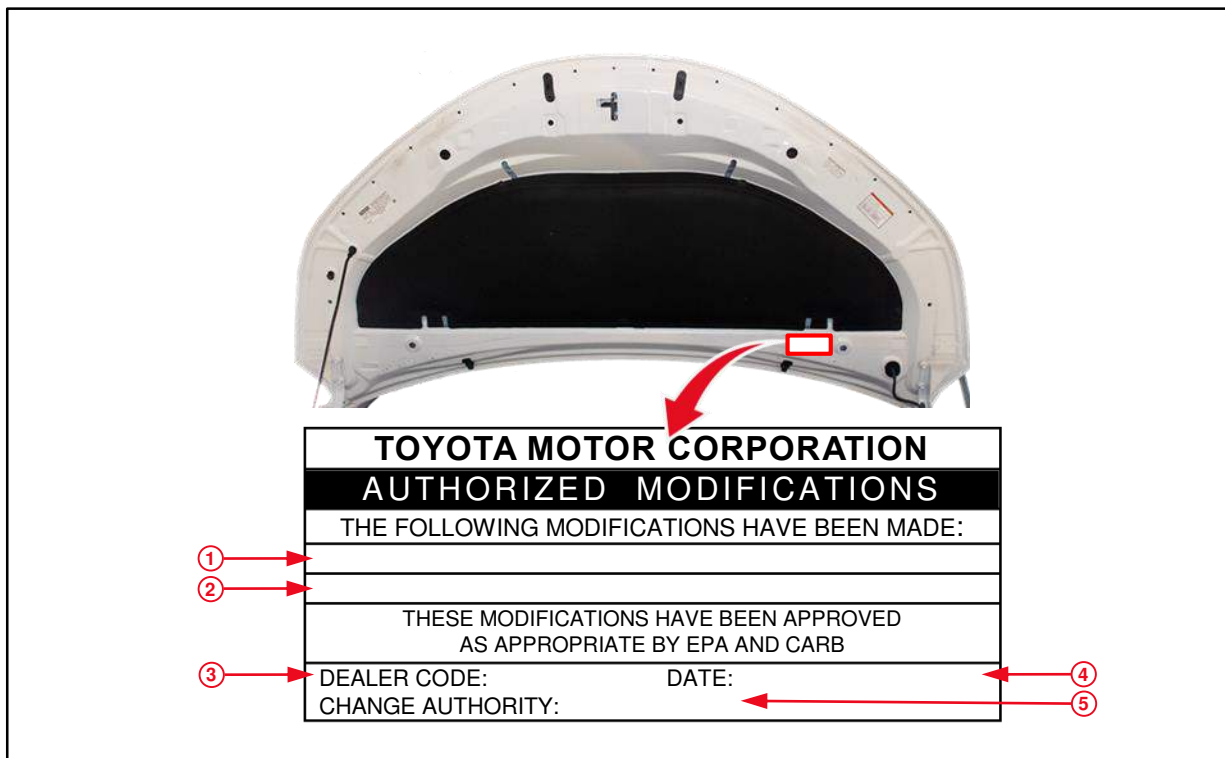
1	Replacement ECM (PCM) Part Number (e.g., 89661-0EB65)
2	New Calibration ID (e.g., 896630E62500)
3	Dealer Code

4	Date Completed
5	This SB Number

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Repair Procedure (continued)

Figure 2. Location of Authorized Modifications Label on 2021 – 2022 Sienna HV



1	Replacement ECM (PCM) Part Number (e.g., 89661-08652)
2	New Calibration ID (e.g., 896630857201)
3	Dealer Code

4	Date Completed
5	This SB Number

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Repair Procedure (continued)

4. Flash reprogram the ECM (PCM).

NOTE

- The battery diagnostic tool MUST be used in Power Supply Mode to maintain battery voltage at 13.5V while flash reprogramming the vehicle.
- For details on how to use the battery diagnostic station, refer to the [DCA-8000 Instruction Manual](#) located at *TIS – Diagnostics – Tools & Equipment – Battery Diagnostics*.

For 2020 – 2022 model year Highlander and Highlander Hybrid vehicles follow the procedures outlined in [T-SB-0134-16](#), *Techstream ECU Flash Reprogramming Procedure*, and flash the ECM (PCM) with the NEW calibration file update.

For 2021 – 2022 model year Sienna Hybrid vehicles follow the procedures outlined in [T-SB-0107-20](#), *ECU Flash Reprogramming With Security Signature*, and flash the ECM (PCM) with the NEW calibration file update.

5. Prepare and install the Authorized Modifications Label.
 - A. Using a permanent marker, enter the following information on the label:
 - ECM (PCM) part number [*Refer to the **Parts Information** section for the **NEW PART NUMBER***]
 - Calibration ID(s) [*Refer to the **Calibration Information** section for the **NEW CALIBRATION ID***]
 - Dealer Code
 - Repair Date
 - Change Authority [***This bulletin number***]
 - B. Install the Authorized Modifications Label onto the vehicle at the locations shown in Figures 1 and 2. The Authorized Modifications Label is available through the MDC, P/N 00451-00001-LBL.
6. Using Techstream, perform a Health Check to confirm that the NEW calibrations updated successfully.
7. Clear DTCs and confirm the condition is no longer present.