

MIL ON With DTCs P0087, P008700 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
2019 - 2022	RAV4	

REVISION NOTICE

February 27, 2023 Rev1:

- The Parts Information and Repair Procedure sections have been updated.
- Any previous printed versions of this bulletin should be discarded.

Introduction

Some 2019 – 2022 model year RAV4 vehicles may exhibit a MIL ON condition with one or more of the following Diagnostic Trouble Codes (DTCs) present:

- P0087/P008700 – Fuel Rail/System Pressure – Too Low
- P107A2A – Fuel Rail Pressure Sensor (Low) Signal Stuck in Range

This condition may occur when the vehicle is operated at high altitudes and temperatures, typically above 3,300 feet (1,000 meters) and at ambient temperatures above 85°F (30°C). The Engine Control Module (ECM) (SAE term: Powertrain Control Module/PCM) and the fuel suction tube assembly have been improved to reduce the possibility of this condition. 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	DRIVETRAIN	PRODUCTION CHANGE EFFECTIVE VIN
RAV4	TMMC No. 2	2WD	2T3Y1RFV#NC173062 2T3W1RFV#NC173062 2T3C1RFV#NC173062 2T3H1RFV#NC173062 2T3Z1RFV#NC173062
		AWD	2T3N1RFV#NC256499 2T3D1RFV#NC256499 2T3P1RFV#NC256499 2T3R1RFV#NC256499 2T3F1RFV#NC256499 2T3B1RFV#NC256499
	TMMC No. 3	2WD	2T3Y1RFV#NC185477 2T3W1RFV#NC185477 2T3C1RFV#NC185477 2T3H1RFV#NC185477 2T3Z1RFV#NC185477
		AWD	2T3N1RFV#NC248367 2T3D1RFV#NC248367 2T3P1RFV#NC248367 2T3R1RFV#NC248367 2T3J1RFV#NC248367 2T3F1RFV#NC248367 2T3B1RFV#NC248367
	Syokki No. 1	2WD	JTMY1RFV#ND523568 JTMW1RFV#ND523568 JTMK1RFV#ND523568 JTMH1RFV#ND523568
		AWD	JTMN1RFV#ND532721 JTMP1RFV#ND532721 JTMA1RFV#ND532721 JTMF1RFV#ND532721 JTMG1RFV#ND532721

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Production Change Information (continued)

MODEL	PLANT	DRIVETRAIN	PRODUCTION CHANGE EFFECTIVE VIN
RAV4	Syokki No. 2	2WD	JTMY1RFV#ND085692
			JTMC1RFV#ND085692
			JTMW1RFV#ND085692
			JTMK1RFV#ND085692
			JTMH1RFV#ND085692
		AWD	JTMN1RFV#ND085047
			JTMA1RFV#ND085047
			JTMP1RFV#ND085047
			JTMJ1RFV#ND085047
	Takaoka No.2	2WD	JTMF1RFV#ND085047
			JTMG1RFV#ND085047
			JTMY1RFV#NJ023729
			JTMW1RFV#NJ023729
		AWD	JTMC1RFV#NJ023729
			JTMN1RFV#NJ040196
			JTMA1RFV#NJ040196
			JTMP1RFV#NJ040196
			JTMJ1RFV#NJ040196

Warranty Information

OP CODE	DESCRIPTION	TIME	OFP	T1	T2
EL9069	R & R the Engine ECM (PCM) and Write the VIN	0.5	89661-#####*	8A	74
Combo Code A	R & R Tube Assy, Fuel Suction W/Pump & Gauge	0.7			

*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 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.

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Parts Information

PART NUMBER		PART NAME	QTY
PREVIOUS	NEW		
89661-42Y82	89661-42Y83	Computer, Engine Control (ECM/PCM)	1
89661-42Y81			
89661-42Y80			
89661-4A630			
89661-42Y92	89661-42Y93		
89661-42Y91			
89661-42Y90			
89661-42Z70			
89661-42Z22	89661-42Z23		
89661-42Z21			
89661-42Z20			
89661-42Z90			
89661-42Z02	89661-42Z03		
89661-42Z01			
89661-42Z00			
89661-4A680			
89661-42Z12	89661-42Z13		
89661-42Z11			
89661-42Z10			
89661-4A530			
89661-4AA22	89661-4AA23		
89661-4AA21			
89661-4AA20			
89661-0R582	89661-0R583		
89661-0R581			
89661-0R430			
89661-0R612	89661-0R613		
89661-0R611			
89661-0R610			
89661-0R700			

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Parts Information (continued)

PART NUMBER		PART NAME	QTY
PREVIOUS	NEW		
89661-0R622	89661-0R623	Computer, Engine Control (ECM/PCM)	1
89661-0R621			
89661-0R620			
89661-0R730			
89661-0R602	89661-0R603		
89661-0R601			
89661-0R600			
89661-0R820			
89661-0R632	89661-0R633		
89661-0R631			
89661-0R630			
89661-0R410			
89661-0R642	89661-0R643		
89661-0R641			
89661-0R640			
89661-4AA12	89661-4AA13		
89661-4AA11			
89661-4AA10			
89661-4AA02	89661-4AA03		
89661-4AA01			
89661-4AA00			
89661-42M02	89661-42M03		
89661-42M01			
89661-42M00			
89661-42L92	89661-42L93		
89661-42L91			
89661-42L90			
89661-4AB02	89661-4AB03		
89661-4AB01			
89661-4AB00			
89661-0RA62	89661-0RA63		
89661-0RA61			
89661-0RA60			

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Parts Information (continued)

PART NUMBER		PART NAME	QTY
PREVIOUS	NEW		
89661-0RA52	89661-0RA53	Computer, Engine Control (ECM/PCM)	1
89661-0RA51			
89661-0RA50			
89661-0RA22	89661-0RA23		
89661-0RA21			
89661-0RA20			
89661-0RA42	89661-0RA43		
89661-0RA41			
89661-0RA40			
89661-0RA32	89661-0RA33		
89661-0RA31			
89661-0RA30			
89661-0RA72	89661-0RA73		
89661-0RA71			
89661-0RA70			
89661-4AA91	89661-4AA92		
89661-4AA90			
89661-4AB51	89661-4AB52		
89661-4AB50			
89661-4AB71	89661-4AB72		
89661-4AB70			
89661-4AB81	89661-4AB82		
89661-4AB80			
89661-4AB61	89661-4AB62		
89661-4AB60			
89661-0RA11	89661-0RA12		
89661-0RA10			
89661-0RA91	89661-0RA92		
89661-0RA90			

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Parts Information (continued)

PART NUMBER		PART NAME	QTY
PREVIOUS	NEW		
89661-0RB11	89661-0RB12	Computer, Engine Control (ECM/PCM)	1
89661-0RB10			
89661-0RB21	89661-0RB22		
89661-0RB20			
89661-0RB01	89661-0RB02		
89661-0RB00			
89661-4AG60	89661-4AG61		
89661-4AG70	89661-4AG71		
89661-4AG90	89661-4AG91		
89661-4AJ00	89661-4AJ01		
89661-4AG80	89661-4AG81		
89661-0RC10	89661-0RC11		
89661-0RC20	89661-0RC21		
89661-0RC30	89661-0RC31		
89661-0RC40	89661-0RC41		
89661-0RC50	89661-0RC51		
77020-0R050	77020-0R051	Tube Assy, Fuel Suction W/Pump & Gauge	1
77020-0R060			
77020-42230			
77020-42250			
77169-06060		Gasket, Fuel Suction	1

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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 17.30.011 or later is required.
- Additional Techstream units may be ordered by calling Approved Dealer Equipment (ADE) at 1-800-368-6787.

SPECIAL SERVICE TOOLS (SST)	PART NUMBER	QTY
Battery Diagnostic Tool*	DCA-8000P T	1
Fuel Sender Lock Nut Wrench Set*	09808-14031-KIT	1

*Essential SST.

NOTE

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

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Repair Procedure

1. Confirm the condition exists.

Using Techstream, check for the following stored DTCs:

- P0087/P008700: 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/P008700 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 sub step C.
- **NO** — This bulletin does NOT apply. Continue diagnosis using the applicable Repair Manual.

C. 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.

3. Confirm vehicle service history to determine if the fuel suction tube assembly (P/N 77020-0R051) has been installed on the vehicle during prior service.

Has the fuel suction tube assembly (P/N 77020-0R051) been installed on the vehicle during prior service?

- **YES** — Go to step 6.
- **NO** — Continue to step 4.

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Repair Procedure (continued)

4. Remove the fuel suction tube assembly.

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

- [2019](#) / [2020](#) / [2021](#) / [2022](#) RAV4:
Engine/Hybrid System – Fuel System – “A25A-FKS (Fuel): Fuel Pump (W/ Canister Pump Module): Removal”

5. Install the NEW fuel suction tube assembly.

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

- [2019](#) / [2020](#) / [2021](#) / [2022](#) RAV4:
Engine/Hybrid System – Fuel System – “A25A-FKS (Fuel): Fuel Pump (W/ Canister Pump Module): Installation”

6. Remove the ECM (PCM).

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

- [2019](#) / [2020](#) / [2021](#) / [2022](#) RAV4:
Engine/Hybrid System – Engine Control – “A25A-FKS (Engine Control): ECM: Removal”

7. Install the NEW ECM (PCM).

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

- [2019](#) / [2020](#) / [2021](#) / [2022](#) RAV4:
Engine/Hybrid System – Engine Control – “A25A-FKS (Engine Control): ECM: Installation”

8. Clear ALL DTCs and confirm the condition is no longer present.