

Air Injection Pump With Water Intrusion: MIL "ON" DTC P244#

Service Category Engine/Hybrid System

Section Engine Control

Market USA

Toyota Supports
 ASE Certification 

Applicability

YEAR(S)	MODEL(S)	ADDITIONAL INFORMATION
2010	Tundra	

Introduction

Some 2010 model year Tundra vehicles built in the Texas plant may exhibit a MIL "ON" condition with Diagnostic Trouble Code (DTC) P2440, P2441, P2442, P2443, P2446, and/or P2447. This concern may be caused by water intrusion into the air injection pump assembly. Use the following procedure to address this condition.

Warranty Information

OP CODE	DESCRIPTION	TIME	OFF	T1	T2
EG9029	R & R Air Pump Assembly	1.5	17610-0S010	8A	99
EG9023	R & R Emission Control Valve Set	2.5	257##-3###0		
EG9024	R & R Air Pump Assembly and Emission Control Valve Set	4.0	17610-0S010		

APPLICABLE WARRANTY

- This repair is covered under the Toyota Federal Emission Warranty. This warranty is in effect for 36 months or 36,000 miles, whichever occurs first, from the vehicle's in-service date.
- Op Code EG9023: For California specification vehicles sold, registered, and operated in California, Connecticut, Maine, Massachusetts, New Jersey, Oregon, Pennsylvania, Rhode Island, Vermont, and Washington, this repair is covered under the California Emission Warranty. This warranty is in effect for 36 months or 50,000 miles, whichever occurs first, from the vehicle's in-service date.
- Op Code EG9029 or EG9024: For California specification vehicles sold, registered, and operated in California, Connecticut, Maine, Massachusetts, New Jersey, Oregon, Pennsylvania, Rhode Island, Vermont, and Washington, this repair is covered under the California Emission Warranty. This warranty is in effect for 84 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.

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Production Change Information

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

MODEL	PLANT	ENGINE	DRIVETRAIN	WHEELBASE	PRODUCTION CHANGE EFFECTIVE VIN
Tundra	TMMTX	1GR-FE	2WD	3220 mm (126.8 in.)	5TFJU5F1#AX004335
				3700 mm (145.7 in.)	5TF#U5F1#AX021570
				3220 mm (126.8 in.)	5TFJM5F1#AX001074
				3700 mm (145.7 in.)	5TF#M5F1#AX001074
				4180 mm (164.6 in.)	5TFTM5F1#AX001032
		1UR-FE	4WD	3220 mm (126.8 in.)	5TFKM5F1#AX001137
				3700 mm (145.7 in.)	5TF#M5F1#AX003840
				4180 mm (164.6 in.)	5TFM5F1#AX001105
				3220 mm (126.8 in.)	5TFJY5F1#AX003286
				3700 mm (145.7 in.)	5TF#Y5F1#AX078440
		3UR-FE	2WD	4180 mm (164.6 in.)	5TFTY5F1#AX006447
				3220 mm (126.8 in.)	5TFK#5F1#AX003692
				3700 mm (145.7 in.)	5TF##5F1#AX103916
				4180 mm (164.6 in.)	5TFC#5F1#AX009634

Wheel Base:

3220 mm = Regular Cab

3700 mm = Double Cab (Regular Bed), CrewMax

4180 mm = Double Cab (Long Bed)

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Parts Information

ENGINE	PREVIOUS PART NUMBER	CURRENT PART NUMBER	PART NAME	QTY
-	17610-0S010	Same	Pump Assembly, Air	1 or 2
1GR-FE	25710-31010*	Same	Valve Set, Emission Control	1
1UR-FE	25701-38100*	Same	Valve Set, Emission Control - Bank 1	1
	25702-38050*	Same	Valve Set, Emission Control - Bank 2	1
3UR-FE	25701-38060*	Same	Valve Set, Emission Control	1

* Replacement of the Emission Control Valve Set is ONLY necessary if verified through diagnosis.

Required Tools & Equipment

REQUIRED EQUIPMENT	SUPPLIER	PART NUMBER	QTY
TIS Techstream** NOTE: Software version 4.20.018 or later is required.	ADE	TSPKG1	1

** Essential SST.

NOTE

Additional TIS Techstream units may be ordered by calling Approved Dealer Equipment (ADE) at 1-800-368-6787.

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Repair Procedure

1. Using TIS Techstream, check if DTC P2440, P2441, P2442, P2443, P2446, and/or P2447 are present.
2. Using Techstream, perform the manual Air Injection Test (options 1 and 2) to verify if the signal from the air injection control driver is reaching the air pumps.
 - The pumps should be heard turning on at this point and there should be battery voltage on pin 2 of the pumps during this test.
 - If there is NO voltage refer to the Repair Manual for air injection control driver diagnosis.

Refer to the Technical Information System (TIS), 2010 model year Tundra Repair Manual:

- **P2440 – P2443:**

Engine/Hybrid System – Engine Control – [“3UR-FE / 3UR-FBE / 1UR-FE / 1GR-FE Engine Control System: SFI System: P2440-P2443: Secondary Air Injection System Switching Valve Stuck Open Bank 1”](#)

- **P2444 – P2447:**

Engine/Hybrid System – Engine Control – [“3UR-FE / 3UR-FBE / 1UR-FE / 1GR-FE Engine Control System: SFI System: P2444-P2447: Secondary Air Injection System Pump Stuck On Bank1”](#)

3. If during the test, voltage is present at the pump and the pump is NOT running, or the Air Pressure (gauge) value did NOT increase from 0 to 1 psi on TIS Techstream with the pump running, remove the air pump assemblies for inspection.

Refer to TIS, 2010 model year Tundra Repair Manual:

Engine/Hybrid System – Emission Control – [“3UR-FE / 3UR-FBE / 1UR-FE / 1GR-FE Emission Control: Air Pump: Removal”](#)

4. With the pumps removed from the vehicle, verify if there is liquid or evidence that liquid entered the pumps.
 - **YES** — If there is liquid evidence, go to step 5.
 - **NO** — If there is NO evidence of liquid, go to step 7.
5. If liquid is present, replace the affected pump assembly.

Refer to TIS, 2010 model year Tundra Repair Manual:

Engine/Hybrid System – Emission Control – [“3UR-FE / 3UR-FBE / 1UR-FE / 1GR-FE Emission Control: Air Pump: Installation”](#)

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Repair Procedure (Continued)

6. In some instances where water has entered the system, DTCs P2440/P2441/P2442/P2443 may set.

Refer to TIS, 2010 model year Tundra Repair Manual to diagnose and inspect the emission control valves, if necessary:

- **P2440 – P2443:**

Engine/Hybrid System – Engine Control – [“3UR-FE / 3UR-FBE / 1UR-FE / 1GR-FE Engine Control System: SFI System: P2440-P2443: Secondary Air Injection System Switching Valve Stuck Open Bank 1”](#)

7. If there is NO liquid found in the air pump assemblies, or the DTC is still present after replacement, inspect the air injection system.

Refer to TIS, 2010 model year Tundra Repair Manual:

- **P2444 – P2447:**

Engine/Hybrid System – Engine Control – [“3UR-FE / 3UR-FBE / 1UR-FE / 1GR-FE Engine Control System: SFI System: P2444-P2447: Secondary Air Injection System Pump Stuck On Bank1”](#)

8. Clear the DTC and road test the vehicle to confirm the condition has been corrected.