

Air Injection System - Moisture Intrusion: MIL "ON" DTC P2440/P2442

Service Category Engine/Hybrid System

Section Emission Control

Market USA

Toyota Supports
 ASE Certification 

Applicability

YEAR(S)	MODEL(S)	ADDITIONAL INFORMATION
2012	Tacoma	WMI(s): 3TM, 5TF Body Type(s): Regular Cab, Access Cab, Extra Cab Transmission(s): MANUAL, AUTOMATIC Plant Code(s): -

Introduction

Some 2012 model year Tacoma vehicles equipped with the 1GR-FE engine may exhibit a MIL "ON" condition with Diagnostic Trouble Codes (DTCs) P2440/P2442 (Secondary Air Injection System Switching Valve Stuck Open Bank 1/Bank 2). This condition may be caused by moisture intrusion into the air injection pump. Follow the Repair Procedure in this bulletin to address this condition.

Warranty Information

OP CODE	DESCRIPTION	TIME	OFF	T1	T2
EG1709	R & R Air Pump Assembly, Emission Control Valve Set, and Gaskets, Install Air Pump Cover	0.6	17600-0P040	8A	99

APPLICABLE WARRANTY

- This repair is covered under the Toyota Basic Warranty. This warranty is in effect for 36 months or 36,000 miles, whichever occurs first, from the vehicle's in-service date.
- For California specification 2012 model year vehicles sold, registered, and operated in Arizona, California, Connecticut, Maine, Maryland, Massachusetts, New Jersey, Oregon, Pennsylvania, Rhode Island, Washington, and Vermont, this repair may be covered depending on vehicle model year, under the California Emission Warranty, which is in effect for 36 months or 50,000 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		
25710-31021	25710-31022	Valve Assy, Air Switching	1
N/A	17613-0P010	Cover, Air Pump	1
17610-0W020		Pump Assy, Air	1
17376-50010		Gasket, Air Tube	2
17377-31010		Gasket, Air Tube, No. 2	2

NOTE

- If evidence of water/moisture intrusion is present in the air injection pump and/or air switching valves, it is imperative that the air pump and the air switching valves are replaced.
- **ALL** parts listed in this bulletin **MUST** be replaced to ensure the condition is properly addressed. Failure to replace **ALL** parts may result in comeback repairs.

Required Tools & Equipment

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

* Essential SST.

NOTE

- **ONLY ONE** of the Techstream units listed above is required.
- Software version **12.20.024** or later is required.
- Additional Techstream units may be ordered by calling Approved Dealer Equipment (ADE) at 1-800-368-6787.

Repair Procedure

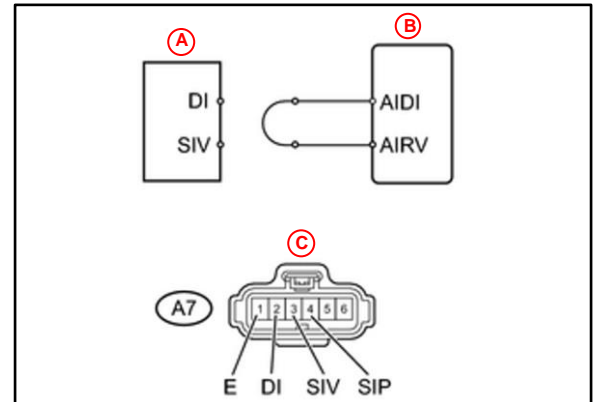
1. Using Techstream, perform a Health Check.
Are either of the following DTCs present?
P2440/P2442 (Secondary Air Injection System Switching Valve Stuck Open Bank 1/Bank 2).
 - **YES** — Continue to step 2.
 - **NO** — This bulletin does NOT apply. Continue diagnosis using the applicable Repair Manual.

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Repair Procedure (Continued)

2. Start the engine and warm it up to operating temperature, then turn the ignition switch OFF.
3. Disconnect the air injection control driver connector.
4. Connect terminals D1 and SIV of the wire harness connector for the air injection control driver.

Figure 1.



A	Air Injection Control Driver
B	ECM
C	Front View of Wire Harness Connector

5. Connect Techstream to the DLC3.
6. Turn the ignition switch and Techstream ON.
7. Enter the following menus: *Powertrain – Engine and ECT – Utility – Secondary Air Injection Check – Manual Mode – AIR PUMP: ON, ASV 1: Open, ASV 2: Open.*

HINT

When Manual Mode is selected, the Techstream initialization (atmospheric pressure measurement) is performed automatically. The initialization takes 10 seconds. AFTER the initialization, AIR PUMP and ASV operation can be selected.

8. Start the engine.
9. Perform secondary air injection system forced operation while the engine is idling.

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Repair Procedure (Continued)

10. Measure the voltage between the SIV and E terminals of the ECM connector when the secondary air injection system is ON and OFF.

NOTICE

- Performing the Secondary Air Injection Check repeatedly may cause damage to the secondary air injection system. If it is necessary to repeat the check, leave an interval of several minutes between System Check operations to prevent the system from overheating.
- When performing the Secondary Air Injection Check operation AFTER the battery cable has been reconnected, wait 7 minutes with the ignition switch ON or the engine running.
- Turn the ignition switch OFF when the Secondary Air Injection Check operation completes.

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
A7-3 (SIV) - A7-1 (E)	AIR PUMP: ON, ASV: OPEN	0.5V to 2V
A7-3 (SIV) - A7-1 (E)	AIR PUMP: OFF, ASV: CLOSE	11V to 14V

11. Is voltage present at the pump?
 - **YES** — Continue to step 12.
 - **NO** — This bulletin does NOT apply. Continue diagnosis using the applicable Repair Manual.

12. Did the air pressure (gauge) value increase from 0 to 1 psi on Techstream while the pump was running during the test?
 - **YES** — This bulletin does NOT apply. Continue diagnosis using the applicable Repair Manual.
 - **NO** — Continue to step 13.

13. Remove the air pump assembly for inspection.
 Refer to the Technical Information System (TIS), applicable model and model year Repair Manual:
 - 2012 Tacoma:
 Engine/Hybrid System – Engine Control – [“1GR-FE Emission Control: Air Pump \(w/ Secondary Air Injection System\): Removal”](#)

14. With the pump removed from the vehicle, verify if there is liquid or evidence of liquid entering the pump.
 Is there liquid or evidence of liquid entering the pump?
 - **YES** — Continue to step 15.
 - **NO** — This bulletin does NOT apply. Continue diagnosis using the applicable Repair Manual.

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Repair Procedure (Continued)

15. Replace the following air injection system components to ensure reliability:

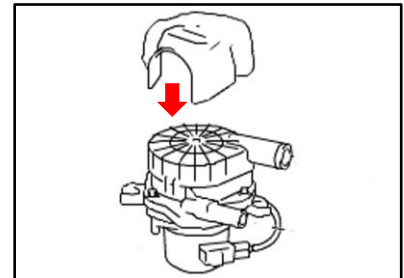
- Air pump
- Air pump cover
- Air switching valve
- Air switching valve gaskets

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

- 2012 Tacoma:
Engine/Hybrid System – Engine Control – “[1GR-FE Emission Control: Air Pump \(w/ Secondary Air Injection System\): Installation](#)”
- 2012 Tacoma:
Engine/Hybrid System – Engine Control – “[1GR-FE Emission Control: Air Switching Valve \(w/ Secondary Air Injection System\): Removal / Installation](#)”

NOTICE

To prevent the possibility of water intrusion in the future, install the air pump cover. To install the air pump cover, place the cover over the air pump, making sure to follow the contours of the air pump. Then, apply downward pressure until a click is heard. Confirm the air pump cover is fully seated when complete.



16. Clear the DTCs and test drive the vehicle to confirm the condition has been addressed.