

Air Injection System MIL "ON"

Service Category Engine/Hybrid System

Section Engine Control

Market USA

Toyota Supports
ASE Certification 

Applicability

YEAR(S)	MODEL(S)	ADDITIONAL INFORMATION
2005 – 2009	4Runner	VDS(s): BT14R, BT17R, ZT14R, ZT17R
2005 – 2007	Sequoia	VDS(s): BT44A, BT48A, ZT34A, ZT38A
2005 – 2006	Tundra	VDS(s): BT441, BT481, DT441, DT481, ET341, ET381, JT321, KT421, RT341, RT381

Introduction

Some 2005 – 2009 model year 4Runner, 2005 – 2007 model year Sequoia, and 2005 – 2006 model year Tundra vehicles equipped with the 2UZ-FE (4.7 L) engine may exhibit a MIL "ON" condition for the following Diagnostic Trouble Codes (DTCs):

- P0412 – Secondary Air Injection System Switching Valve "A" Circuit
- P0418 – Secondary Air Injection System Relay "A" Circuit
- P1440/P1443 – Secondary Air Injection System Control Valve Circuit Bank 1 / Bank 2
- P1441/P1444 – Secondary Air Injection System Switching Valve No. 2 Bank 1 / Bank 2 Stuck Open
- P2440 – Secondary Air Injection System Switching Valve Stuck Open Bank 1
- P1442/P1445 – Secondary Air Injection System Switching Valve No. 2 Bank 1 / Bank 2 Stuck Close
- P2441 – Secondary Air Injection System Switching Valve Stuck Close Bank 1

This condition may be caused by debris passing through the air injection pump assembly and contaminating various components in the system. Use the following procedure to address this condition.

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Warranty Information

OP CODE	DESCRIPTION	MODEL	TIME	OFP	T1	T2
EG1215	R & R Air Pump Assy	4Runner	1.6	17600-0F010	8A	99
		Sequoia	2.2			
		Tundra				
Combo A	R & R Valve Assy, Air Switching*	All	+0.3			
Combo B	R & R Valve Assy, Air Switching, No. 1 and/or No. 2*		+0.5			

* Replace ONLY If damaged by debris. Reuse parts when possible.

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 vehicles sold and operated in California, Connecticut (starting with '08 MY), Maine, Massachusetts, New Jersey (starting with '09 MY), Oregon (starting with '09 MY), Pennsylvania (starting with '08 MY), Rhode Island (starting with '08 MY), Vermont, and Washington (starting with '09 MY), this repair is covered under the California Emission Warranty, which is 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.

Parts Information

PREVIOUS PART NUMBER	CURRENT PART NUMBER	PART NAME	QTY
17600-0F010	Same	Pump Assembly, Air	1
17171-50030	Same	Gasket, Intake Manifold to Head No. 1	2
25710-50020	25710-50021	Valve Assy, Air Switching	1*
25720-50010	25720-50011	Valve Assy, Air Switching, No. 1	1*
25720-50020	Same	Valve Assy, Air Switching, No. 2	1*
17377-50010	Same	Gasket, Air Tube	4**

* Replace ONLY If damaged by debris. Reuse parts when possible.

** 2 per valve.

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Required Tools & Equipment

REQUIRED EQUIPMENT	SUPPLIER	PART NUMBER	QTY
TIS Techstream* or Techstream Lite NOTE: Software version 7.31.003 or later is required.	ADE	TSPKG1 or TSLITEDLR01	1

NOTE

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

* Essential SST.

Repair Procedure

1. Using Techstream, check if DTCs P0412, P0418, P1440/P1443, P1441/P1444, P1442/P1445, P2440, or P2441 are present.

Refer to the Technical Information System (TIS), applicable model and model year Repair Manual:

4Runner:

- [2005](#) 4Runner:
*Engine/Hybrid System – Engine Control – “SFI System (2UZ-FE): **P0412** Secondary Air Injection System Switching Valve “A” Circuit”*
- [2006](#) / [2007](#) / [2008](#) / [2009](#) 4Runner:
*Engine/Hybrid System – Engine Control – “2UZ-FE Engine Control System: SFI System: **P0412**: Secondary Air Injection System Switching Valve “A” Circuit”*
- [2005](#) 4Runner:
*Engine/Hybrid System – Engine Control – “SFI System (2UZ-FE): **P0418** Air Injection System Relay “A” Circuit”*
- [2006](#) / [2007](#) / [2008](#) / [2009](#) 4Runner:
*Engine/Hybrid System – Engine Control – “2UZ-FE Engine Control System: SFI System: **P0418**: Secondary Air Injection System Control “A” Circuit”*
- [2005](#) 4Runner:
*Engine/Hybrid System – Engine Control – “SFI System (2UZ-FE): **P1440, P1443** Secondary Air Injection System Control Valve Circuit Bank 2”*
- [2006](#) / [2007](#) / [2008](#) / [2009](#) 4Runner:
*Engine/Hybrid System – Engine Control – “2UZ-FE Engine Control System: SFI System: **P1440, P1443**: Secondary Air Injection Vacuum Switching Valve Circuit Malfunction Bank 1”*

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Repair Procedure (Continued)

- [2005](#) 4Runner:
*Engine/Hybrid System – Engine Control – “SFI System (2UZ-FE): **P1441, P1444, P2440** Secondary Air Injection System Switching Valve Stuck Open Bank 1”*
- [2006](#) / [2007](#) / [2008](#) / [2009](#) 4Runner:
*Engine/Hybrid System – Engine Control – “2UZ-FE Engine Control System: SFI System: **P1441, P1444, P2440**: Stuck Open in Secondary Air Injection Vacuum Switching Valve Bank 1”*
- [2005](#) 4Runner:
*Engine/Hybrid System – Engine Control – “SFI System (2UZ-FE): **P1442, P1445, P2441** Secondary Air Injection System Switching Valve Stuck Open Bank 1”*
- [2006](#) / [2007](#) / [2008](#) / [2009](#) 4Runner:
*Engine/Hybrid System – Engine Control – “2UZ-FE Engine Control System: SFI System: **P1442, P1445, P2441**: Stuck Close in Secondary Air Injection Vacuum Switching Valve Bank 1”*

Sequoia:

- [2005](#) Sequoia :
*Engine/Hybrid System – Engine Control – “Engine: **P0412** Secondary Air Injection System Air Switching Valve “A” Circuit”*
- [2006](#) / [2007](#) Sequoia:
*Engine/Hybrid System – Engine Control – “2UZ-FE Engine Control System: SFI System: **P0412**: Secondary Air Injection System Switching Valve “A” Circuit”*
- [2005](#) Sequoia:
*Engine/Hybrid System – Engine Control – “Engine: **P0418** Air Injection System Air Pump Malfunction”*
- [2006](#) / [2007](#) Sequoia:
*Engine/Hybrid System – Engine Control – “2UZ-FE Engine Control System: SFI System: **P0418**: Secondary Air Injection System Control “A” Circuit”*
- [2005](#) Sequoia:
*Engine/Hybrid System – Engine Control – “Engine: **P1440, P1443** Secondary Air Injection System Control Valve Circuit Bank 2”*
- [2006](#) / [2007](#) Sequoia:
*Engine/Hybrid System – Engine Control – “2UZ-FE Engine Control System: SFI System: **P1440, P1443**: Secondary Air Injection Vacuum Switching Valve Circuit Malfunction Bank 1”*
- [2005](#) Sequoia:
*Engine/Hybrid System – Engine Control – “Engine: **P1441, P1444, P2440** Secondary Air Injection System Switching Valve Stuck Open Bank 1”*

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Repair Procedure (Continued)

- [2006](#) / [2007](#) Sequoia:
*Engine/Hybrid System – Engine Control – “2UZ-FE Engine Control System: SFI System: **P1441, P1444, P2440**: Secondary Air Injection Vacuum Switching Valve Circuit Malfunction Bank 1”*

Tundra:

- [2005](#) Tundra:
*Engine/Hybrid System – Engine Control – “Engine (2UZ-FE): **P0412**: Secondary Air Injection System Air Switching Valve “A” Circuit”*
- [2006](#) Tundra:
*Engine/Hybrid System – Engine Control – “2UZ-FE Engine Control System: SFI System: **P0412**: Secondary Air Injection System Switching Valve “A” Circuit”*
- [2005](#) Tundra:
*Engine/Hybrid System – Engine Control – “Engine (2UZ-FE): **P0418** Air Injection System Air Pump Malfunction”*
- [2006](#) Tundra:
*Engine/Hybrid System – Engine Control – “2UZ-FE Engine Control System: SFI System: **P0418**: Secondary Air Injection System Control “A” Circuit”*
- [2005](#) Tundra:
*Engine/Hybrid System – Engine Control – “Engine (2UZ-FE): **P1440, P1443** Secondary Air Injection System Control Valve Circuit Bank 2”*
- [2006](#) Tundra:
*Engine/Hybrid System – Engine Control – “2UZ-FE Engine Control System: SFI System: **P1440, P1443**: Secondary Air Injection Vacuum Switching Valve Circuit Malfunction Bank 1”*
- [2005](#) Tundra:
*Engine/Hybrid System – Engine Control – “Engine (2UZ-FE): **P1441, P1444, P2440** Secondary Air Injection System Switching Valve No. 2 Stuck Open Bank 1”*
- [2006](#) Tundra:
*Engine/Hybrid System – Engine Control – “2UZ-FE Engine Control System: SFI System: **P1441, P1444, P2440**: Secondary Air Injection Vacuum Switching Valve Circuit Malfunction Bank 1”*
- [2005](#) Tundra:
*Engine/Hybrid System – Engine Control – “Engine (2UZ-FE): **P1442, P1445, P2441** Secondary Air Injection System Switching Valve Stuck Close Bank 1”*
- [2006](#) Tundra:
*Engine/Hybrid System – Engine Control – “Engine (2UZ-FE): **P1442, P1445, P2441**: Stuck Close in Secondary Air Injection Vacuum Switching Valve Bank 1”*

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Repair Procedure (Continued)

2. If physical inspection is required through the Repair Manual diagnostic process, look for debris that may have contaminated the air injection system. The debris may consist of air injection pump filter material or fan blade fragments.
3. If such debris is found, replace the air injection pump.
4. Additionally, determine if the debris can be removed from any secondarily affected parts and confirm they operate properly. If they do not operate properly, part replacement is required.
5. Clear the DTC(s) and road test the vehicle to confirm the condition has been corrected.