

MIL "ON" DTC P0012 and/or P0022

Service Category Engine/Hybrid System

Section Engine Control

Market USA

Toyota Supports
 ASE Certification 

Applicability

YEAR(S)	MODEL(S)	ADDITIONAL INFORMATION
2010	Sequoia, Tundra	Engine(s): 1UR, 3UR

Introduction

Some 2010 model year Sequoia and Tundra vehicles may exhibit a MIL "ON" condition for Diagnostic Trouble Code (DTC) P0012 and/or P0022 (Camshaft Position "A" – Timing Over-Retarded Bank 1/2). Please refer to the following repair procedure to address this condition.

Warranty Information

OP CODE	DESCRIPTION	MODEL	TIME	OFF	T1	T2
EG9042	R & R Intake Camshaft Timing Pulley Assembly	Sequoia	9.5	13050-0S020	8A	83
		Tundra	9.2			

APPLICABLE WARRANTY

- This repair is covered under the Toyota Powertrain Warranty. This warranty is in effect for 60 months or 60,000 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.

Production Change Information

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

Sequoia

PLANT	ENGINE	DRIVETRAIN	PRODUCTION CHANGE EFFECTIVE VIN
TMMI	1UR-FE	2WD	5TD*M5#1*AS001929
		4WD	5TD*M5#1*AS001186
	3UR-FE	2WD	5TD*Y5#1*AS026856
		4WD	5TD*Y5#1*AS031440
	3UR-FBE	4WD	5TD*W5#1*AS031441

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Production Change Information (Continued)

Tundra

PLANT	ENGINE	DRIVE-TRAIN	WHEEL BASE	CAB	BED	PRODUCTION CHANGE EFFECTIVE VIN
TMMTX	1UR-FE	2WD	3220 mm (126.8 in.)	Regular	Standard	5TF*M5#1*AX001114
			3700 mm (145.7 in.)	Double, CrewMax		5TF*M5#1*AX011968
			4180 mm (164.6 in.)	Double	8.0'	5TF*M5#1*AX001123
		4WD	3220 mm (126.8 in.)	Regular	Standard	5TF*M5#1*AX001239
			3700 mm (145.7 in.)	Double, CrewMax		5TF*M5#1*AX008508
			4180 mm (164.6 in.)	Double	8.0'	5TF*M5#1*AX001181
	3UR-FE	2WD	3220 mm (126.8 in.)	Regular	Standard	5TF*Y5#1*AX003300
			3700 mm (145.7 in.)	Double, CrewMax		5TF*Y5#1*AX087077
			4180 mm (164.6 in.)	Double	8.0'	5TF*Y5#1*AX006744
		4WD	3220 mm (126.8 in.)	Regular	Standard	5TF*Y5#1*AX004038
			3700 mm (145.7 in.)	Double, CrewMax		5TF*Y5#1*AX125564
			4180 mm (164.6 in.)	Double	8.0'	5TF*Y5#1*AX010329
	3UR-FBE	4WD	3220 mm (126.8 in.)	Regular	Standard	5TF*W5#1*AX004040
			3700 mm (145.7 in.)	Double, CrewMax		5TF*W5#1*AX125616
			4180 mm (164.6 in.)	Double	8.0'	5TF*W5#1*AX010329

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Parts Information

PREVIOUS PART NUMBER	CURRENT PART NUMBER	PART NAME	QTY
13050-0S020	13050-0S010	Pulley Assembly, Camshaft Timing (Intake VVTi Gear)	2
11193-70010	Same	Gasket, Spark Plug Tube	8
11159-0P010	Same	Gasket, Camshaft Bearing Cap Oil Hole	4
11159-0S010	Same		2
90430-A0001	Same	Gasket	2
17376-38020	Same	Gasket Air Tube	2
17377-38010	Same		2
11328-38030	Same	Gasket, Timing Gear or Chain Cover	2
90311-A0005	Same	Seal, Oil	1
16271-0S010	Same	Gasket, Water Pump (1UR)	1
16271-38020	Same	Gasket, Water Pump (3UR)	1
16325-38010	Same	Gasket, Water Inlet Housing, No. 1	1
16341-38030	Same	Gasket, Water Outlet	2
96761-35035	Same	Ring, O	2
96721-24025	Same	Ring, O	2

Required Tools & Equipment

REQUIRED EQUIPMENT	SUPPLIER	PART NUMBER	QTY
TIS Techstream* NOTE: Software version 4.21.002 or later is required.	ADE	TSPKG1	1

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

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Required Tools & Equipment (Continued)

REQUIRED MATERIALS	PART NUMBER	MODEL DETAIL	QUANTITY
FIPG Sealant: Toyota Genuine Seal Packing Black, Three Bond 1207B or Equivalent	–	–	As Needed
ILSAC GF-4 Multi-grade (SAE 0W-20)	–	–	7.9 U.S. qts (7.5 liters)
Super Long Life Coolant (SLLC)	00272-SLLC2	1UR-FE (w/Towing Package)	13.9 U.S. qts (13.2 liters)
		1UR-FE (w/out Towing Package)	12.8 U.S. qts (12.1 liters)
		3UR-FE/FBE (w/Towing Package)	13.7 U.S. qts (13.0 liters)
		3UR-FE/FBE (w/out Towing Package)	12.8 U.S. qts (12.7 liters)

TSB Overview

1. Confirm that DTC P0012 and/or P0022 is stored in the ECM.
2. Diagnose the Oil Control Valves (OCVs) for proper operation.
3. If the OCVs operate correctly, replace both intake VVTi gear assemblies following the Repair Manual.

Diagnostic Procedure

1. Using TIS Techstream, confirm that DTC P0012 and/or P0022 is stored in the ECM.
2. Remove the affected Oil Control Valve (OCV) and inspect for debris in the valve or evidence that the valve is stuck.
3. Check valve operation by applying positive (+) battery voltage to terminal 1 and negative (–) battery voltage to terminal 2. Valve should move quickly when voltage is applied. If NOT, valve should be replaced.
4. Reinstall the OCVs, warm up the engine to over 167°F (75°C) and perform an Active Test using Techstream.
Powertrain / Engine and ECT / Active Test / Control the VVT System (Bank 1) or (Bank2)
5. If there is NO debris, and the OCV moves with battery voltage, and Active Test functions — Replace both intake VVTi gears following the repair procedure below.

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Repair Procedure

1. Replace both intake VVTi gears.

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

Removal:

2010 Sequoia:

- *Engine/Hybrid System – Engine Mechanical – “1UR-FE Engine Mechanical: Camshaft [\(for Bank 1\)](#) / [\(for Bank 2\)](#): Removal”*
- *Engine/Hybrid System – Engine Mechanical – “[3UR-FE](#) / [3UR-FBE](#) Engine Mechanical: Camshaft: Removal”*

2010 Tundra:

- *Engine/Hybrid System – Engine Mechanical – “1UR-FE Engine Mechanical: Camshaft [\(for Bank 1\)](#) / [\(for Bank 2\)](#): Removal”*
- *Engine/Hybrid System – Engine Mechanical – “3UR-FE Engine Mechanical: Camshaft [\(for Bank 1\)](#) / [\(for Bank 2\)](#): Removal”*
- *Engine/Hybrid System – Engine Mechanical – “3UR-FBE Engine Mechanical: Camshaft [\(for Bank 1\)](#) / [\(for Bank 2\)](#): Removal”*

Installation:

2010 Sequoia:

- *Engine/Hybrid System – Engine Mechanical – “1UR-FE Engine Mechanical: Camshaft [\(for Bank 1\)](#) / [\(for Bank 2\)](#): Installation”*
- *Engine/Hybrid System – Engine Mechanical – “[3UR-FE](#) / [3UR-FBE](#) Engine Mechanical: Camshaft: Installation”*

2010 Tundra:

- *Engine/Hybrid System – Engine Mechanical – “1UR-FE Engine Mechanical: Camshaft [\(for Bank 1\)](#) / [\(for Bank 2\)](#): Installation”*
- *Engine/Hybrid System – Engine Mechanical – “3UR-FE Engine Mechanical: Camshaft [\(for Bank 1\)](#) / [\(for Bank 2\)](#): Installation”*
- *Engine/Hybrid System – Engine Mechanical – “3UR-FBE Engine Mechanical: Camshaft [\(for Bank 1\)](#) / [\(for Bank 2\)](#): Installation”*

2. Verify the vehicle has the proper coolant and oil levels.
3. Clear all DTCs and confirm the condition has been corrected.