



**Technical Service
BULLETIN**

January 23, 2008

Title:

**M.I.L. "ON" VVTi DTCs — OIL CONTROL
VALVE (OCV)**

Models:

'08 Highlander

ENGINE
EG003-08

Introduction Some 2008 model year Highlander vehicles may exhibit a M.I.L. "ON" condition with one or more VVTi related Diagnostic Trouble Codes (DTCs) stored in the Engine Control Module or ECM (SAE term: Powertrain Control Module/PCM). Please use the repair procedure below to address customer concerns.

- Applicable Vehicles**
- **2008** model year **Highlander** vehicles equipped with the **2GR-FE engine** and produced **BEFORE** the Production Change Effective VINs shown below.

**Production
Change
Information**

MODEL	PLANT	DRIVETRAIN	PRODUCTION CHANGE EFFECTIVE VIN
Highlander	TMK	2WD	JTEDS4#A*82016905
		4WD	JTEES4#A*82025636

**Parts
Information**

PREVIOUS PART NUMBER	CURRENT PART NUMBER	PART NAME	QTY
15330-31020	15330-0P020	Cam Timing Oil Control Valve (LH-IN)	1
		Cam Timing Oil Control Valve (RH-EX)	1
15330-31030	15330-0P030	Cam Timing Oil Control Valve (RH-IN)	1
15340-31020	15340-0P020	Cam Timing Oil Control Valve (LH-EX)	1
17176-31040	17176-0P020	Gasket, Air Surge Tank to Intake Manifold	3

NOTE:

- Replace the affected OCV **ONLY**.
- Air surge tank gaskets are **ONLY** required for replacement of either Bank 1 OCV.

**Warranty
Information**

OP CODE	DESCRIPTION	ENGINE BANK	TIME	OFF	T1	T2
EG7041	R & R Camshaft Timing Oil Control Valve Assembly	Bank 1	1.9	15330-310##	8A	54
EG7039		Bank 2	0.5	15340-31020 15330-31020		


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 correction of a problem based upon a customer's specific complaint.



Required Tools & Equipment

REQUIRED EQUIPMENT	SUPPLIER	PART NUMBER	QTY
<p>TIS techstream*</p> <p>NOTE: Software version 2.20.015 or later is required.</p> 	ADE	TSPKG1	1

* Essential SST.

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

Inspection Procedure

One or more of the following DTCs may be stored:

- P0011 Camshaft Position "A" — Timing Over-Advanced or System Performance (Bank 1)
- P0012 Camshaft Position "A" — Timing Over-Retarded or System Performance (Bank 1)
- P0014 Camshaft Position "B" — Timing Over-Advanced or System Performance (Bank 1)
- P0015 Camshaft Position "B" — Timing Over-Retarded or System Performance (Bank 1)
- P0016 Crankshaft Position — Camshaft Position Correlation (Bank 1 Sensor A)
- P0017 Crankshaft Position — Camshaft Position Correlation (Bank 1 Sensor B)
- P0018 Crankshaft Position — Camshaft Position Correlation (Bank 2 Sensor A)
- P0019 Crankshaft Position — Camshaft Position Correlation (Bank 2 Sensor B)
- P0021 Camshaft Position "A" — Timing Over-Advanced or System Performance (Bank 2)
- P0022 Camshaft Position "A" — Timing Over-Retarded or System Performance (Bank 2)
- P0024 Camshaft Position "B" — Timing Over-Advanced or System Performance (Bank 2)
- P0025 Camshaft Position "B" — Timing Over-Retarded or System Performance (Bank 2)
- P0300 — Random Multiple Cylinder Misfire Detected
- P030# — Cylinder (1 – 6) Misfire Detected

Inspection Procedure
(Continued)

Refer to the chart below for OCV inspection:

STORED DTCs	RELATED OCV	PART NUMBER	REPAIR MANUAL REFERENCE ON TIS (Refer to the Technical Information System, 2008 model year Highlander Repair Manual)
P0011, P0012 and/or P0016	Intake OCV (Bank 1)	15330-0P030	<i>Engine/Hybrid System – Engine Control – “2GR-FE Engine Control System: SFI System: P0011: Camshaft Position “A” – Timing Over-Advanced or System Performance (Bank 1)”</i>
P0021, P0022, and/or P0018	Intake OCV (Bank 2)	15330-0P020	
P0014, P0015, and/or P0017	Exhaust OCV (Bank 1)	15340-0P020	<i>Engine/Hybrid System – Engine Control – “2GR-FE Engine Control System: SFI System: P0014: Camshaft Position “B” – Timing Over-Advanced or System Performance (Bank 1)”</i>
P0024, P0025, and/or P0019	Exhaust OCV (Bank 2)		

If the M.I.L. "ON" condition is diagnosed as an OCV, proceed to the Repair Procedure.

NOTE:
Misfire DTCs (P030#) may be present on the related bank.

Repair Procedure

Remove and replace the affected OCV.

Refer to TIS, 2008 model year Highlander Repair Manual:

- *Engine/Hybrid System – Engine Control – “2GR-FE Engine Control System: Camshaft Timing Oil Control Valve Assembly: Removal”*
- *Engine/Hybrid System – Engine Control – “2GR-FE Engine Control System: Camshaft Timing Oil Control Valve Assembly: Installation”*

NOTE:
Removal of the intake air surge tank is NOT necessary for R & R of either Bank 2 OCV.

