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TOYOTA
Technical Service Bulletin

Intermittent MIL "ON" DTC P0335

Service Category Vehicle Interior

Section Meter/Gauge/Display **Market** USA

Toyota Supports ASE Certification

Applicability

YEAR(S)	MODEL(S)	ADDITIONAL INFORMATION
2007 – 2011	Camry HV	Engine(s): 2AZ VDS(s): BB3EK, BB46K
2007 – 2009	Camry	Engine(s): 2AZ VDS(s): BE46K
2009 – 2010	Corolla	Engine(s): 2AZ VDS(s): BE40E, BE4EE
2009 – 2012	Matrix	Engine(s): 2AZ VDS(s): GE40E, KE40E, KE4EE, LE40E, LE4EE, ME4EE
2006 – 2008	RAV4	Engine(s): 2AZ VDS(s): BD31V, BD32V, BD33V, BD34V, BD35V, ZD31V, ZD32V, ZD33V, ZD34V, ZD35V
2007 – 2008	Solara	Engine(s): 2AZ VDS(s): CE30P

Introduction

Some 2006 – 2012 model year vehicles equipped with the 2AZ engine may exhibit an intermittent MIL "ON" condition with Diagnostic Trouble Code (DTC) P0335 (Crankshaft Position Sensor "A" Circuit) stored. The intake camshaft gear assembly has been improved to help prevent this condition.

Warranty Information

OP CODE	DESCRIPTION	MODEL YEAR	MODEL	TIME	OFP	T1	T2
EG1211	R & R Camshaft Timing Gear	2007–2009	Camry	1.8	13050-0H010 13050-28020	8A	99
		2007–2011	Camry HV	1.8			
		2009–2010	Corolla	1.9			
		2009–2012	Matrix	1.9			
		2006–2008	RAV4	1.9			
		2007–2008	Solara	1.9			

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Warranty Information (Continued)

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.**

Parts Information

PREVIOUS PART NUMBER	CURRENT PART NUMBER	PART NAME	QTY
13050-0H010 13050-28020	13050-28021	Camshaft Timing Gear Assembly	1

Repair Procedure

1. Using Techstream, review the Freeze Frame Data for DTC P0335.

   Does the FFD indicate the engine was at operating temperature and near idle speed when the DTC was stored?

   HINT

   - **Coolant temperature is approximately 185°F (85°C) or more.**
   - **Engine RPM is less than 1000 RPM.**

   YES – Proceed to step 2.

   NO – This bulletin does NOT apply.

   Refer to the applicable Repair Manual for diagnostic information.

   - 2007 / 2008 / 2009 Camry:
     Engine/Hybrid System – Engine Control – "2AZ-FE Engine Control System: SFI System: P0335, P0339: Crankshaft Position Sensor "A" Circuit"
   - 2007 / 2008 / 2009 / 2010 / 2011 Camry HV:
     Engine/Hybrid System – Engine Control – "2AZ-FXE Engine Control System: SFI System: P0335, P0339: Crankshaft Position Sensor "A" Circuit"
   - 2009 / 2010 Corolla:
     Engine/Hybrid System – Engine Control – "2AZ-FE Engine Control System: SFI System: P0335, P0339: Crankshaft Position Sensor "A" Circuit"
   - 2009 / 2010 / 2011 / 2012 Matrix:
     Engine/Hybrid System – Engine Control – "2AZ-FE Engine Control System: SFI System: P0335, P0339: Crankshaft Position Sensor "A" Circuit"

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Repair Procedure (Continued)

- 2006 / 2007 / 2008 RAV4:
  Engine/Hybrid System – Engine Control – "2AZ-FE Engine Control System: SFI System: P0335, P0339: Crankshaft Position Sensor "A" Circuit"
- 2007 / 2008 Solara:
  Engine/Hybrid System – Engine Control – "2AZ-FE Engine Control System: SFI System: P0335, P0339: Crankshaft Position Sensor "A" Circuit"

2. Remove and replace the camshaft timing gear assembly.

> HINT
>
> **For RAV4 repairs refer to the Repair Manual procedure for 2007 Camry to simplify the repair instructions for camshaft removal instead of cylinder head removal.**

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

- 2007 / 2008 / 2009 Camry:
  Engine/Hybrid System – Engine Mechanical – "2AZ-FE Engine Mechanical: Camshaft: Removal"
- 2007 / 2008 / 2009 Camry:
  Engine/Hybrid System – Engine Mechanical – "2AZ-FE Engine Mechanical: Camshaft: Installation"
- 2007 (from 10/2006) / 2007 (to 10/2006) / 2008 / 2009 / 2010 / 2011 Camry HV:
  Engine/Hybrid System – Engine Mechanical – "2AZ-FXE Engine Mechanical: Camshaft: Removal"
- 2007 (from 10/2006) / 2007 (to 10/2006) / 2008 / 2009 / 2010 / 2011 Camry HV:
  Engine/Hybrid System – Engine Mechanical – "2AZ-FXE Engine Mechanical: Camshaft: Installation"
- 2009 / 2010 Corolla:
  Engine/Hybrid System – Engine Mechanical – "2AZ-FE Engine Mechanical: Camshaft: Removal"
- 2009 / 2010 Corolla:
  Engine/Hybrid System – Engine Mechanical – "2AZ-FE Engine Mechanical: Camshaft: Installation"
- 2009 / 2010 / 2011 / 2012 Matrix:
  Engine/Hybrid System – Engine Mechanical – "2AZ-FE Engine Mechanical: Camshaft: Removal"
- 2009 / 2010 / 2011 / 2012 Matrix:
  Engine/Hybrid System – Engine Mechanical – "2AZ-FE Engine Mechanical: Camshaft: Installation"

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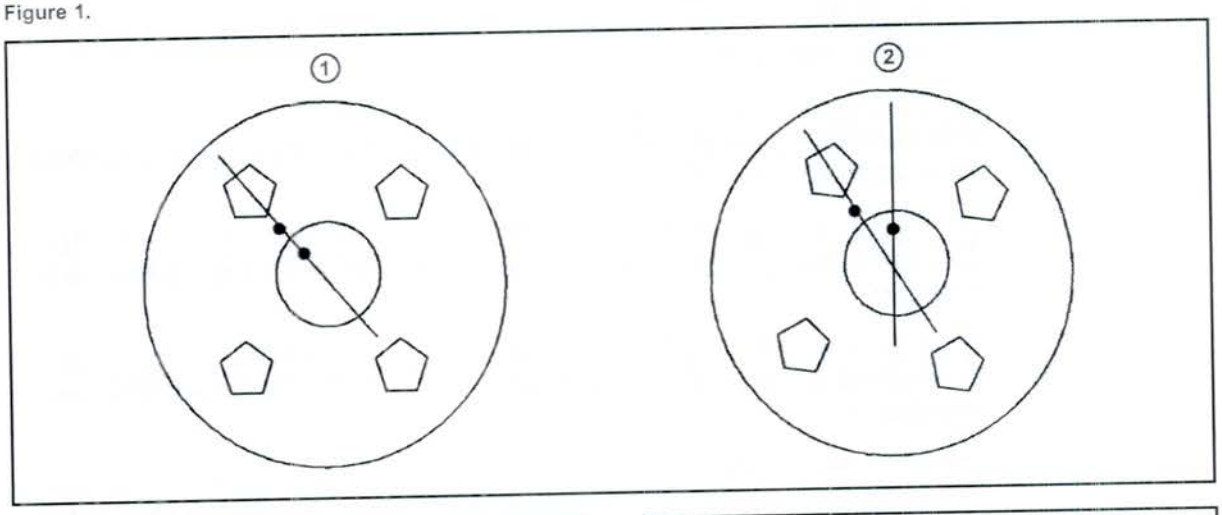
Repair Procedure (Continued)

- 2006 / 2007 / 2008 RAV4:
  Engine/Hybrid System – Engine Mechanical – "2AZ-FE Engine Mechanical: Cylinder Head: Removal"
- 2006 / 2007 / 2008 RAV4:
  Engine/Hybrid System – Engine Mechanical – "2AZ-FE Engine Mechanical: Cylinder Head: Installation"
- 2007 / 2008 Solara:
  Engine/Hybrid System – Engine Mechanical – "2AZ-FE Engine Mechanical: Camshaft: Removal"
- 2007 / 2008 Solara:
  Engine/Hybrid System – Engine Mechanical – "2AZ-FE Engine Mechanical: Camshaft: Installation"

3. Identify whether the camshaft timing gear is unlocked or locked. (See Figure 1).

Figure 1.



1	Dots Aligned – Locked (Must Unlock Before Installing)
2	Dots Misaligned – Unlocked (OK to Install and Tighten Camshaft Bolt)

- If the camshaft timing gear is unlocked, it is ready to install.
- If it is LOCKED, follow the steps below to unlock the camshaft timing gear **before** installing.

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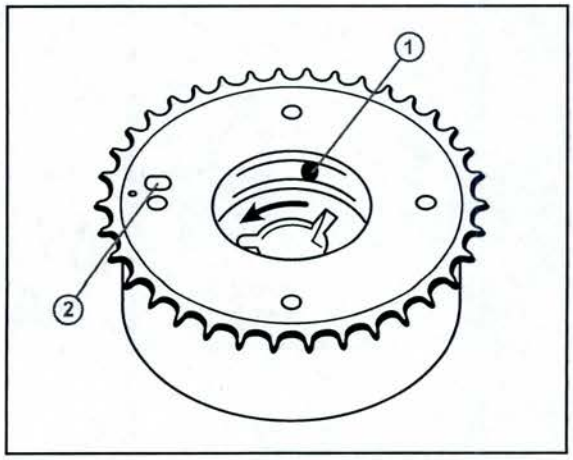
Repair Procedure (Continued)

A. To disengage the camshaft timing gear lock pin, apply and hold approximately 21 psi of air pressure at the oil feed hole located 90 degrees clockwise of the oval slot. (See Figure 2.)

> NOTE
> **The lock pin is inside the gear, NOT the one located in the oval slot.**

Figure 2.

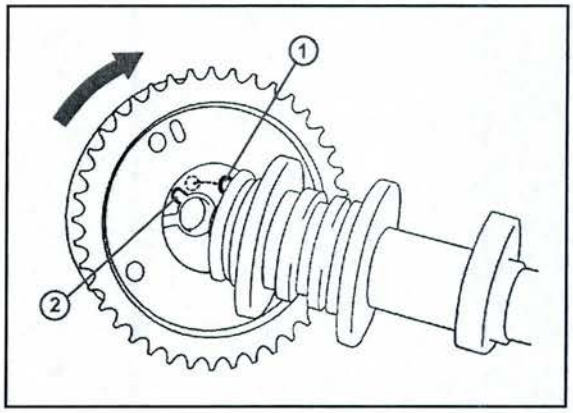


1	Oil Feed Hole
2	Oval Slot

B. With the 21 psi of air still applied to the gear, turn the interior assembly counterclockwise. (See black arrow in Figure 2.)

C. Install the timing gear assembly onto the camshaft with the straight pin slightly to the right of the key groove as shown in Figure 3.

Figure 3.



1	Straight Pin
2	Key Groove

D. Turn the camshaft timing gear assembly while pushing it lightly against the camshaft until the straight pin engages the key slot.

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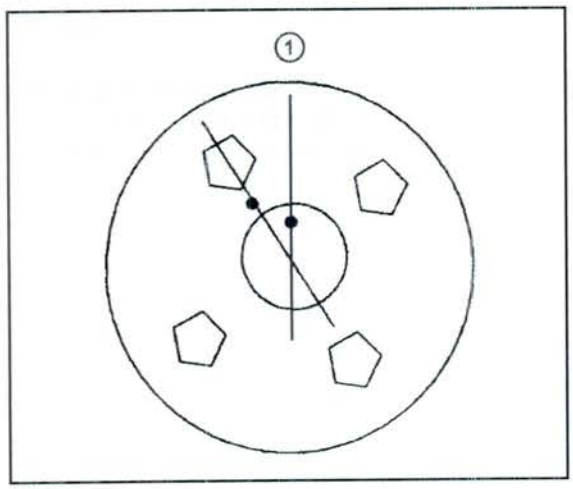
Repair Procedure (Continued)

E. Check that the camshaft timing gear is fully seated on the camshaft and that there is no clearance between the end of the camshaft and the timing gear. Install the camshaft bolt finger tight.

NOTICE

Check to make sure that the camshaft timing gear is still unlocked BEFORE tightening the camshaft bolt. The lock pin MUST be unlocked to prevent damage to the camshaft timing gear lock pin during tightening.

Figure 4.



1	Dots Misaligned – Unlocked (OK to Install and Tighten Camshaft Bolt)

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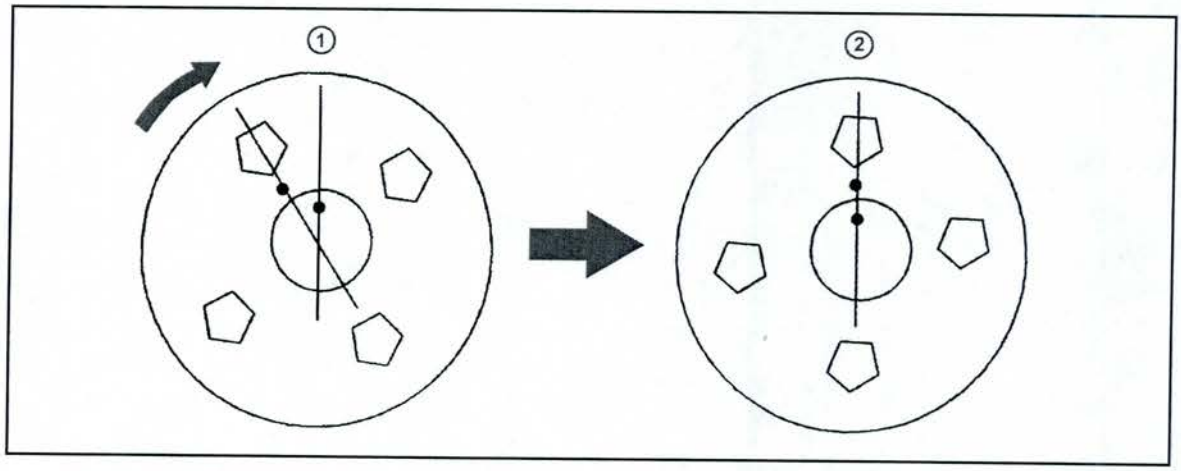
Repair Procedure (Continued)

F. While holding the camshaft with a wrench, torque the camshaft bolt.
Torque: 54 N*m (551 kgf*cm, 40 ft*lbf)

G. After torquing the camshaft bolt, rotate the camshaft timing gear clockwise while holding the camshaft stationary until the dots are aligned, to engage the camshaft timing gear lock pin.

Figure 5.



1	Dots Misaligned – Unlocked
2	Dots Aligned – Locked

H. Install the timing chain.

NOTE
Camshaft timing is performed with the camshaft timing gear in the locked position (dots aligned).

4. Clear DTCs using Techstream
5. Test drive the vehicle to confirm the repair.