


# Engine Ticking Noise and / or MIL ON P0014, P0015, P0024, P0025, P0017, or P0018

**Service Category** Engine/Hybrid System

**Section** Engine Mechanical

**Market** USA

Lexus Supports  
ASE Certification 

## Applicability

YEAR(S)	MODEL(S)	ADDITIONAL INFORMATION
2007 – 2009	ES350	
2007 – 2009	RX350	

## Introduction

Some 2007 – 2009 model year ES 350 and RX 350 vehicles may exhibit a ticking/clicking type noise from the cylinder head cover area that may be accompanied by a M.I.L. “ON” and one or more VVT-i related Diagnostic Trouble Codes (DTCs). Please use the following repair procedure to address customer concerns.

## Warranty Information

MODEL		DESCRIPTION	DRIVE-TRAIN	OP CODE	TIME	OFP	T1	T2			
ES 350	–	R & R Exhaust VVT-I Gear, Camshaft, Camshaft Housing	2WD	EG8055	13.5	13080-31030 13080-0P020	91	99			
RX 350	–		2WD		14.1						
	–		AWD		14.6						
–	Combo A	Add R & R Intake VVT-I Gear	–	–	0.2				13080-31030 13080-0P020	91	99
–	Combo B	Add R & R Exhaust VVT-I Gear, Camshaft & Camshaft Housing (Opposite Bank)	–	–	1.2						
–	Combo C	Add R & R Exhaust & Intake VVT-I Gear, Camshaft, & Camshaft Housing (Opposite Bank)	–	–	1.4						

### APPLICABLE WARRANTY

- This repair is covered under the Lexus Powertrain Warranty. This warranty is in effect for 72 months or 70,000 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.

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**Parts Information**

PREVIOUS PART NUMBER	CURRENT PART NUMBER	PART NAME	QUANTITY		
			BANK 1 REPAIR ONLY	BANK 2 REPAIR ONLY	BOTH BANKS REPAIR
11103-3102# 11103-0P01#	11103-0P014	Housing Sub-assembly, Camshaft, RH	1	0	1
13502-31040 13502-0P020	13502-0P021	Camshaft Sub-assembly No.2	1	0	1
11104-3102# 11104-0P010	11104-0P011	Housing Sub-assembly, Camshaft, LH	0	1	1
13054-31030 13054-0P020	13054-0P021	Camshaft Sub-assembly No.4	0	1	1
13080-31030 13080-0P020	13080-0P040	Gear Assembly, Camshaft Timing, Exhaust, LH	1	1	2
13050-0P#### 13050-31####	13050-0P070	Gear Assembly, Camshaft Timing	1*	1*	2*
17176-0P020	Same	Gasket, Air Surge Tank to Intake Manifold	3	3	3
17177-0P020	Same	Gasket, Intake Manifold to Head, No.1	1	1	1
17178-0P020	Same	Gasket, Intake Manifold to Head, No.2	1	1	1
11159-0P010	Same	Gasket, Camshaft Bearing Cap Oil Hole	4	4	4
90430-A0001	Same	O-ring (standard part)	2	2	2
90430-12031	Same	Gasket, Oil Pan Drain Plug	1	1	1
15147-0P020	Same	Gasket, Oil Strainer	1	1	1
12151-0P010	Same	Gasket, Oil Pan	2	2	2
96721-19010	Same	O-ring, for Oil Level Gauge Guide, No. 2	1	1	1
90301-12018	Same	O-ring, for Oil Level Gauge Guide	1	1	1
15193-0P010	Same	Gasket Oil Pump	1	1	1
11213-0P010	Same	Gasket, Cylinder Head Cover	1	1	1
11214-0P040	Same	Gasket, Cylinder Head Cover No. 2	1	1	1
90430-16016	Same	Gasket, Oil Pipe No. 2	2	2	2

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### Parts Information (Continued)

PREVIOUS PART NUMBER	CURRENT PART NUMBER	PART NAME	QUANTITY		
			BANK 1 REPAIR ONLY	BANK 2 REPAIR ONLY	BOTH BANKS REPAIR
90430-16012	90430-16017	Gasket, Oil Pipe No. 1	4	4	4
90311-A0005	Same	Seal, Oil, for Timing Gear Case	1	1	1
11328-0P010	Same	Gasket, Timing Gear Cover	1	1	1
96761-24021	Same	O-ring (standard part), Coolant Pipe	1	1	1
90301-79006	Same	O-ring (for Oil Filter Cap)	1	1	1
96723-35028	Same	O-ring (for Oil Filter Cap Drain Plug)	1	1	1
16325-31010	Same	Gasket, Water Inlet Housing No. 2	1	1	1
90080-43036	Same	Gasket, Exhaust Pipe	1	1	1
04152-31090	Same	Element Kit, Oil Filter	1	1	1
16271-0P010	Same	Gasket, Water Pump	1	1	1

\* Part may not be needed based on inspection.

### Required Tools & Equipment

REQUIRED EQUIPMENT	PART NUMBER	QTY
Three Bond 1324 or Equivalent	–	As Needed
FIPG Sealant or Equivalent	08826-00080	As Needed
Toyota Genuine Seal Packing Black, Three Bond 1207B, or Equivalent	–	As Needed
Toyota Genuine Seal Packing Black, Three Bond 1282B, or Equivalent	–	As Needed
Toyota Genuine Adhesive 1344, Three Bond 1344, or Equivalent	–	As Needed
ILSAC GF-4 Multi-grade SAE 5W-30	–	As Needed
ILSAC GF-4 Multi-grade SAE 5W-30	00279-1QT5W-01	6.0 U.S. qts. (5.7 liters)
Super Long Life Coolant (SLLC)	00272-SLLC2	9.5 U.S. qts. (9.0 liters)

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### Required Tools & Equipment

SPECIAL SERVICE TOOLS (SST'S)	PART NUMBER	QTY
R134-a Refrigerant Recovery/Recycling Machine	Robinair ROB34200* (or equivalent)	1
Oil Filter Wrench*	<a href="#">09228-06500-02</a>	1
Companion Flange Holding Tool* NOTE: All Components from this kit/set are required.	<a href="#">09330-00021</a>	1
Universal Puller Set "C" NOTE: All Components from this kit/set are required.	<a href="#">09950-50013-01</a>	1
Gasket Seal Cutter*	<a href="#">09032-00100</a>	1

\* Essential SST.

**NOTE**

Additional SSTs may be ordered by calling 1-800-933-8335.

### Inspection Procedure

1. Start the engine and listen for any ticking/clicking type noises coming from the VVT-i gear area of the engine.

**NOTE**

This condition may or may not be accompanied by one or more of the following DTCs stored in the Engine Control Module (ECM) (SAE term: Powertrain Control Module/PCM).

- P0014: Camshaft Position "B" – Timing Advanced or System Performance (Bank 1)
  - P0015: Camshaft Position "B" Timing Over Retarded (Bank 1)
  - P0017: Crankshaft Position Camshaft Position Correlation (Bank 1 Sensor B)
  - P0018: Crankshaft Position Camshaft Position Correlation (Bank 2 Sensor A)
  - P0024: Camshaft Position "B" – Timing Over-Advanced or System Performance (Bank 2)
  - P0025: Camshaft Position "B" – Timing Over-Retarded (Bank 2)
2. Remove the cylinder head cover and inspect the Exhaust VVT-i Gear Assembly on the affected cylinder bank.

**NOTE**

If no concerns are found with the VVT-i gear actuator bolts, the actuator center section alignment or actuator body this TSIB does not apply. Refer to Repair Manual procedures for further diagnosis.

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### Repair Procedure

1. If any concerns are noted with the Exhaust VVT-i gear bolts or actuator follow the four steps below:
  - A. Replace the camshaft housing sub-assembly, exhaust camshaft, and exhaust VVT-i gear assembly on the **affected** bank.
  - B. Inspect the intake VVT-i gear assembly and bolts on the **affected** bank. Replace the Intake VVT-i gear assembly if necessary.
  - C. Inspect the **opposite** bank exhaust VVT-i gear actuator and bolts. If any concerns are noted replace the opposite bank camshaft housing sub-assembly, exhaust camshaft, and exhaust VVT-i gear assembly.
  - D. Inspect the **opposite** bank intake VVT-i gear actuator assembly and bolts. Replace the intake VVT-i gear assembly if necessary.

For complete disassembly procedures refer to the Technical Information System (TIS), applicable model and model year Repair Manual:

- [2007/2008/2009](#) model year RX 350 Repair Manual, *Engine/Hybrid System, "2GR-FE Engine Mechanical: Engine Unit: Disassembly"*
- [2007/2008/2009](#) model year ES 350 Repair Manual, *Engine/Hybrid System, "2GR-FE Engine Mechanical: Engine Unit: Disassembly"*

For complete reassembly procedures refer to the TIS, if applicable etc.

- [2007/2008/2009](#) model year RX 350 Repair Manual, *Engine/Hybrid System, "2GR-FE Engine Mechanical: Engine Unit: Reassembly"*
- [2007/2008/2009](#) model year ES 350 Repair Manual, *Engine/Hybrid System, "2GR-FE Engine Mechanical: Engine Unit: Reassembly"*

2. Start engine and test drive to verify the repair.