

FORD:

2009-2010 Expedition, F-150, F-250, F-350

LINCOLN:

2009-2010 Navigator

This article supersedes TSB **09-23-7** to update the vehicle model lines, Service Procedure and Service Labor Time Standards.

ISSUE

Some 2009-2010 F-150 and F-Super Duty vehicles equipped with a 4.6L 3V or 5.4L 3V engine, Expedition and Navigator vehicles may exhibit a low frequency knocking noise from the engine at hot idle only. The noise is predominately heard from the right front wheel well area and/or the right hand (RH) engine cam cover. This noise may be generated from the RH variable camshaft timing (VCT) phaser assembly. This procedure was created to diagnose the RH VCT phaser assembly.

ACTION

Follow the Service Procedure steps to correct the condition.

SERVICE PROCEDURE

The Integrated Diagnostic System (IDS) tests were developed specifically for the vehicles and Power Control Module (PCM) strategies for these vehicles.

Per Workshop Manual (WSM), Powertrain Controls and Emissions Diagnostics (PC/ED) and Scheduled Maintenance Guide, review customer service history for use of any aftermarket oil filters.

1. Check for possible diagnostic trouble codes (DTCs).
 - a. No DTCs present, proceed to Step 2.
 - b. If DTCs are present, do not continue with this procedure and refer to the PC/ED manual for diagnostics.
2. Engine must be at full operating temperature over 190 °F (88 °C) cylinder head temperature (CHT).

3. Connect IDS diagnostics tool and verify software version is at the latest level (63 or later required).
4. Begin a new vehicle session.
5. Open Tool Box selection.
6. Open Data Logger.
7. Select Powertrain Engine.
8. Select PCM Data Logger.
9. Clear the preselected items by clicking the eraser icon button.
10. Select variable cam timing desired angle number (VCT_DSD).
11. Go to live display and press the tick mark.
12. Make sure the parameter identification (PID) is highlighted with the dark lines above and below the data being displayed.
13. Press number symbol: (output state control mode) of the VCT_DSD number PID.
14. Press the Control Item Activate (finger on the button) icon to enable manual control of the PID.
15. Use the plus button to command to 4 degrees. (One click is equal to 1 degree) When commanding the advance, both banks will normally adjust.
16. Listen carefully to the low frequency knock noise while commanding the VCT_DSD from 0 to 4 degrees. Some higher frequency clatter is normal at or above the 5 degree advance. What is being pursued is for the level of the low frequency knock noise to be noticeably reduced when advanced from 4 to 5 degrees.

NOTE: The information in Technical Service Bulletins is intended for use by trained, professional technicians with the knowledge, tools, and equipment to do the job properly and safely. It informs these technicians of conditions that may occur on some vehicles, or provides information that could assist in proper vehicle service. The procedures should not be performed by "do-it-yourselfers". Do not assume that a condition described affects your car or truck. Contact a Ford, Lincoln, or Mercury dealership to determine whether the Bulletin applies to your vehicle. Warranty Policy and Extended Service Plan documentation determine Warranty and/or Extended Service Plan coverage unless stated otherwise in the TSB article. The information in this Technical Service Bulletin (TSB) was current at the time of printing. Ford Motor Company reserves the right to supersede this information with updates. The most recent information is available through Ford Motor Company's on-line technical resources.

TSB 10-18-4 (Continued)

- a. If noise level is noticeably reduced as the VCT desired angle is commanded from 3 to 4 degrees, the noise source is the RH VCT phaser assembly. Proceed to Step 17.
 - b. If the low frequency knock noise is not noticeably reduced at 4 degrees, refer to WSM, Section 303-00 for engine noise diagnostics.
17. Due to normal engine dynamics, the VCT phaser knock noise is produced by the RH VCT phaser assembly. Replace only the RH VCT phaser assembly. Refer to WSM, Section 303-01.

PART NUMBER	PART NAME
3R2Z-6A257-DA	VCT Phaser Kit

WARRANTY STATUS: Eligible Under Provisions Of New Vehicle Limited Warranty Coverage And Emissions Warranty Coverage
IMPORTANT: Warranty coverage limits/policies are not altered by a TSB. Warranty coverage limits are determined by the identified causal part.

OPERATION	DESCRIPTION	TIME
101804A	2009-2010 Expedition, Navigator 5.4L 3V: Replace The RH VCT Phaser Assembly Includes Time To Diagnose (Do Not Use With Any Other Labor Operations)	2.3 Hrs
101804A	2009-2010 F-150 4.6L 3V: Replace The RH VCT Phaser Assembly Includes Time To Diagnose (Do Not Use With Any Other Labor Operations)	1.8 Hrs.
101804A	2009-2010 F-150, F-Super Duty 5.4L 3V: Replace The RH VCT Phaser Assembly Includes Time To Diagnose (Do Not Use With Any Other Labor Operations)	2.1 Hrs.

DEALER CODING

BASIC PART NO.	CONDITION CODE
6A257	42