

Subject: VARIABLE VALVE TIMING (VVT) NOISE WHEN STARTING ENGINE	Bulletin No: 01-010/11
	Last Issued: 02/23/2011

BULLETIN NOTE

- This bulletin supersedes the previous bulletins 01-043/07 issued on 11/29/07, 01-002/08 issued on 01/16/08 and 10/01/08, 01-026/09 issued on 06/30/09 and 08/28/09, and 01-028/10 issued on 05/14/10 and 08/20/10. The REPAIR PROCEDURE and PART(S) INFORMATION have been revised.
- Changes are noted below in Red beside the change bar.

APPLICABLE MODEL(S)/VINS

2003-08 Mazda6 (2.3L) vehicles

2004-08 Mazda3 vehicles with VINs lower than JM1BK*****864673 (produced before December 1, 2007)

2006-08 Mazda5 vehicles with VINs lower than JM1CR*****306808 (produced before December 1, 2007)

2006-08 MX-5 vehicles with VINs lower than JM1NC*****146287 (produced before December 1, 2007)

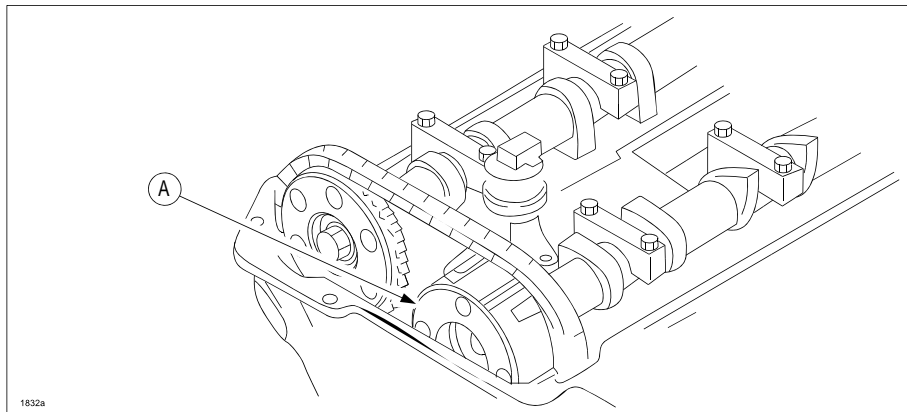
2007 Mazdaspeed3 vehicles with VINs lower than JM1BK*****742222 (produced before April 1, 2007)

2006-07 Mazdaspeed6 vehicles with VINs lower than JM1 GG*****109660 (produced before April 1, 2007)

2007 Mazda CX-7 vehicles with VINs lower than JM3ER*****166945 (produced before April 1, 2007)

DESCRIPTION

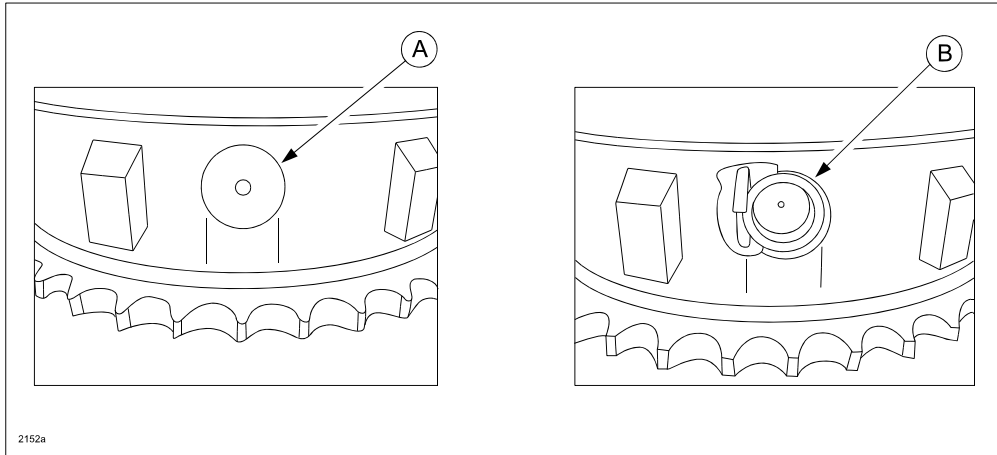
When the engine is first started, some vehicles may exhibit a loud ticking noise from the variable valve timing (VVT) (A). This is caused by the lock pin of the variable valve timing actuator not fully engaging or from a worn lock pin hole. Heat treatment has now been added around the hole of the variable valve timing rotor lock pin to prevent this from happening.



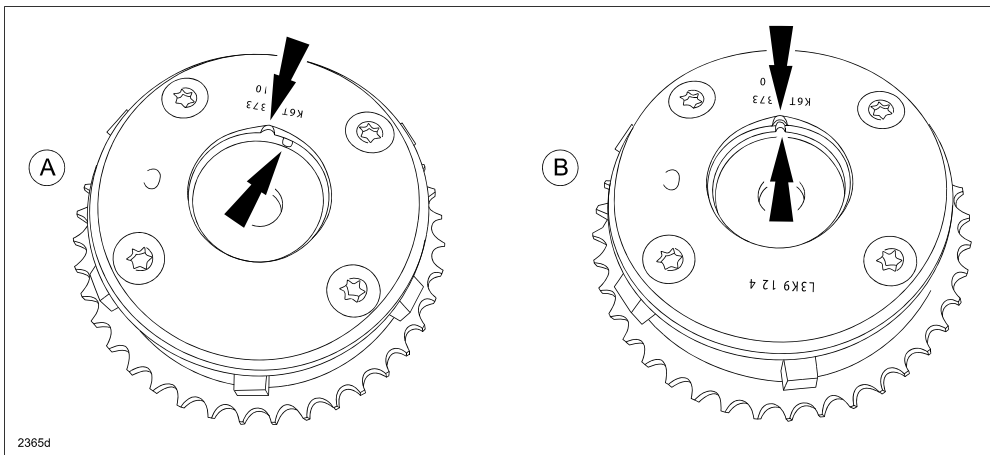
Customers having this concern should have their vehicle repaired using the following repair procedure.

REPAIR PROCEDURE

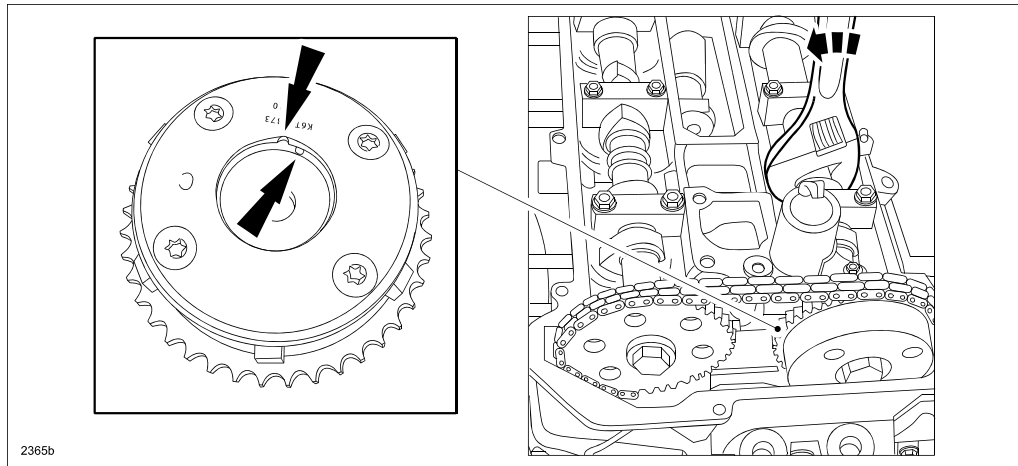
1. Verify customer concern.
2. Write down the customer's radio station presets.
3. After the engine cools down, disconnect the negative battery cable (to prevent DTCs from being stored).
4. Remove the cylinder head cover. Refer to MS3 online instruction.
5. For vehicles with turbo engines (L3T), inspect the variable valve timing actuator for damage around the stopper pin cap (A) or a missing stopper pin cap (B), spring and stopper.



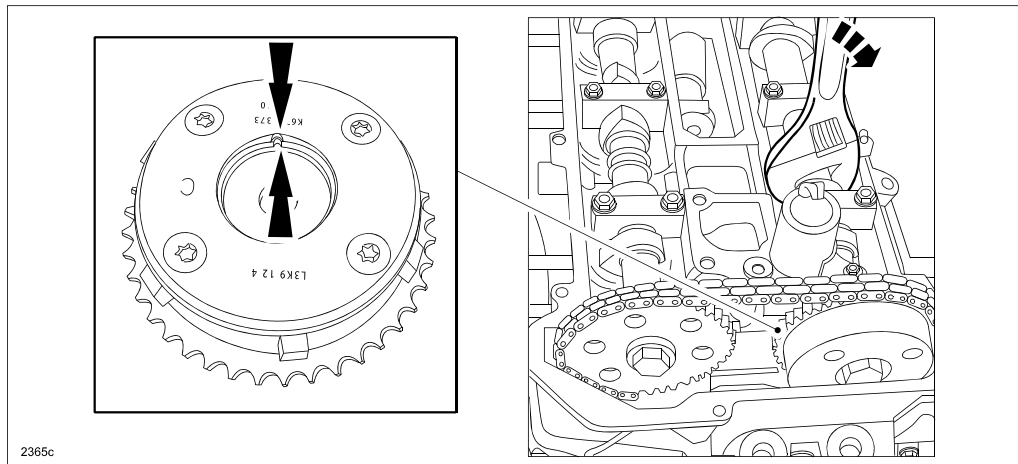
- If no parts are damaged or missing, go to step 6.
 - If any parts are damaged or missing, go to step 10.
6. Turn the crankshaft clockwise so that the notches on the variable valve timing actuator can be checked.
 - A. If the notches are NOT aligned, go to the next step.
 - B. If the notches are aligned, there is no problem with the variable valve timing actuator and this information is not applicable. Refer to MS3 online instructions for troubleshooting.



7. Turn the camshaft counterclockwise to align the notches on the variable valve timing actuator.



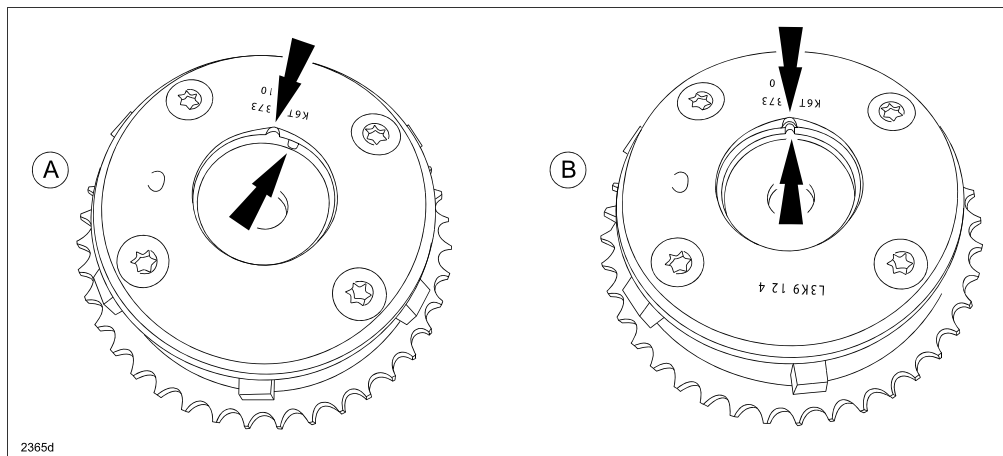
8. With the notches aligned, turn the camshaft clockwise 90 degrees.



9. Check the notches again.

A. If the notches are NOT aligned, go to the next step.

B. If the notches are aligned, there is no problem with the variable valve timing actuator and this information is not applicable. Refer to MS3 online instruction.



10. Replace the variable valve timing actuator.

CAUTION:

- If any parts are damaged or missing, remove the front cover to inspect the timing and oil pump chains and all related components for damage as a result of the loose parts. Replace components as necessary.
- If the loose parts cannot be located in the timing chain area, it will be necessary to remove the oil pan to remove them.

NOTE:

- **Refer to VARIABLE VALVE TIMING ACTUATOR REMOVAL INSTALLATION [L3 WITH TC] on MS3. Do not use the printed WSM. The procedure has been updated online.**
- In some rare cases, the timing chain tensioner ratchet lock may get stuck, which will require the removal of the engine front cover. **For L3T engines, refer to Service Bulletin 01-055/10 Oil Seepage from Engine Front Cover.**

11. Set the customer's radio station presets.

12. Start the engine and make sure there is no fuel leakage around the high pressure fuel pump.

13. After the engine cools down, change the engine oil.

14. Verify repair.

PART(S) INFORMATION

Part Number	Description	Qty.	Notes
LF94-12-4X0C	Variable Valve Timing Actuator	1	All 2.0L (LF) 2007 Mazda3 2.3L (L3) with VINs 060902- 2008 Mazda5
			2006 Mazda6 2.3L (L3) M/T produced from 1/2/06-2/1/06 2007 Mazda6 2.3L (L3) M/T produced from 9/1/06-12/3/07 2007 Mazda6 2.3L (L3) A/T produced from 9/4/06-12/3/07 NOTE: For 2006-2007 Mazda6, use EPC VIN search function to CONFIRM correct VVT part number.
L372-12-4X0C	Variable Valve Timing Actuator	1	2004-2006 Mazda3 2.3L (L3) 2007 Mazda3 2.3L (L3) with VINs 100001-060901 2006-2007 Mazda5
			2003-2006 Mazda6 2.3L (L3) M/T produced to 1/2/06 2003-2006 Mazda6 2.3L (L3) A/T produced to 9/4/06 2006 Mazda6 2.3L (L3) M/T produced from 2/1/06-9/1/06 NOTE: For 2006-2007 Mazda6, use EPC VIN search function to CONFIRM correct VVT part number.
L3K9-12-4X0C	Variable Valve Timing Actuator	1	Turbo (L3T)
L3K9-12-429	Washer	2	All engines
0000-77-5W30-QT	Engine Oil (5W-30)	6 (Quarts)	L3T engine
0000-77-5W20-QT	Engine Oil (5W-20)	6 (Quarts)	LF/L3 engine
LF01-11-406	Bolt, Lock - Shaft Pulley	1	All engines
9XG0-99-667L	Plug, Blind	1	All engines

WARRANTY INFORMATION

NOTE:

- This warranty information applies only to verified customer complaints on vehicles eligible for warranty repair.
- This repair will be covered under Mazda's New Vehicle Limited Warranty and under Powertrain or PZEV Partial Zero Emission Warranty where applicable.
- Additional diagnostic time cannot be claimed for this repair.

	NORMAL WARRANTY CLAIM	On rare occasion for L3T engines, use this warranty claim when NOT ABLE to release the tension of the timing chain due to stuck timing chain tensioner ratchet lock, and engine front cover removal is necessary.
Warranty Type	A	A
Symptom Code	82	82
Damage Code	9C	9C
Part Number Main Cause	LF94-12-4X0B, L372-12-4X0C, or L3K9-12-4X0B	L3K9-12-4X0B
Quantity	1	1
Operation Number/ Labor Hours:	XXE1SXRX / 3.0 Hrs. (CX-7) XXE1SBRX / 3.1 Hrs. (Mazdaspeed3) XXE1SCRX / 3.4 Hrs. (Mazdaspeed6) XXF31XRX / 2.0 Hrs. (Mazda3) XXF31XRX / 2.5 Hrs. (Mazda5 M/T, Mazda6) XXF31XRX / 2.7 Hrs. (Mazda5 A/T) XXF31XRX / 2.4 Hrs. (MX-5)	XXC0YXRX / 4.4 Hrs. (CX-7) XXC0YCRX / 4.3 Hrs. (Mazdaspeed3) XXC0YBRX / 4.6 Hrs. (Mazdaspeed6)