

VVT or Timing Chain Noise on 2006-2010 Mazda 2.3L Engines

The AERA Technical Committee offers the following information regarding a VVT (Variable Valve Timing) or timing chain noise on certain 2006-2010 Mazda 2.3L engines. Mazda has updated previously published information to include the following vehicles.

APPLICABLE MODEL(S)/VINS:

- 2006-2007 Mazdaspeed6
- 2007-2009 Mazdaspeed3
- 2007-2010 CX-7 2.3L Turbo vehicles with VINs lower than JM3ER*****327444 (produced before Feb. 26, 2010)
- 2010 Mazdaspeed3 vehicles with VINs lower than JM1BL*****295247 (produced before Feb. 27, 2010)

VVT Noise:



Figure 1. Identifying VVT Unit

When the engine is first started, some vehicles may exhibit a loud ticking noise from the variable valve timing (VVT) actuator (A). This is caused by the lock pin of the variable valve timing actuator not fully engaging or from a worn lock pin hole.

Timing Chain Noise:

With the engine warmed up, some vehicles may exhibit a knocking/rattle type noise from the front timing cover and/or valve (cylinder head) cover below 2,000 rpm. The noise is caused by excessive stretching of the timing chain.

Customers having this concern should have their vehicle repaired using the following repair procedure shown below in the flow chart.

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REPAIR PROCEDURE FLOW CHART



VIN Cutoff for Modified Timing Chain

Model	Year	VIN/Date of Timing Chain Modification	
MAZDASPEED3	2007-2009	No Modification	
MAZDASPEED3	2010	JM1BL ****** 152985 (May 1, 2009)	
MAZDASPEED6	2006-2007	No Modification	
CX-7	2007-2009	JM3ER ****** 300119 (May 1, 2009)	

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COMPARISON PICTURES



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Variable Valve Timing (VVT) Actuator Replacement Only:

Part Number	Description	Qty.	Notes
L3K9-12-4X0C	Variable Valve Timing Actuator	1	
L3K9-10-230	Seal Cover	1	
LFBL-10-237	Sealing Head Cover Washer	14	
L3K9-12-429	Washer	2	
0000-77-5W30-QT	Engine Oil (5W-30)	6 qts	
9XG0-99-667L	Blind Plug	1	
L3K9-10-193	High Pressure Fuel Pump Gasket	1	
L3K9-13-ZE5	High Pressure Fuel Pump O-ring	1	

VVT Actuator and Timing Chain Replacement:

Part Number	Description	Qty.	Notes
L3K9-12-201A	Timing Chain	1	
L3K9-10-230	Seal Cover	1	
LFBL-10-237	Sealing Head Cover Washer	14	
LF01-11-406	Crankshaft Pulley Lock Bolt	1	
L3G6-10-602	Oil Seal	1	
L3K9-11-407	Lock Washer	3	
0000-77-1217-ES	RTV Sealer	1	1 tube = 1 repair
L3K9-12-4X0C	Variable Valve Timing Actuator	1	
L3K9-12-429	Washer	2	
0000-77-5W30-QT	Engine Oil (5W-30)	6 qts	
9XG0-99-667L	Blind Plug	1	
L3K9-10-193	High Pressure Fuel Pump Gasket	1	
L3K9-13-ZE5	High Pressure Fuel Pump O-ring	1	

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