

2012 - Mazda6 - Engine

DTC P0011:00 [MZR 2.5]

DTC P0011:00	CMP timing over-advanced
DETECTION CONDITION	- The actual valve timing is over-advanced by 15 ° from the target valve timing for specified period when the OCV is controlled in the maximum valve timing retard condition. MONITORING CONDITIONS - Engine speed: below 4,000 rpm - Engine coolant temperature: 60—110 °C { 140—230 °F} Diagnostic support note - This is a continuous monitor (CCM). - The MIL illuminates if the PCM detects the above malfunction condition in two consecutive drive cycles or in one drive cycle while the DTC for the same malfunction has been stored in the PCM. - PENDING CODE is available if the PCM detects the above malfunction condition during the first drive cycle. - FREEZE FRAME DATA (Mode 2)/Snapshot data is available. - The DTC is stored in the PCM memory.
POSSIBLE CAUSE	- OCV malfunction - Spool valve in OCV is stuck in advanced position - Variable valve timing mechanism misinstallation - Loose timing chain or improper valve timing due to timing chain slippage - Stopper pin mechanism malfunction - Variable valve timing mechanism is stuck in advanced position - PCM malfunction

Diagnostic procedure

STEP	INSPECTION	ACTION
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1	VERIFY FREEZE FRAME DATA (MODE 2)/ SNAPSHOT DATA HAS BEEN RECORDED Has the FREEZE FRAME DATA (Mode 2)/snapshot data been recorded?	Yes	Go to the next step.
		No	Record the FREEZE FRAME DATA (Mode 2)/snapshot data on the repair order, then go to the next step.
2	VERIFY RELATED REPAIR INFORMATION AVAILABILITY - Verify related Service Bulletins and/or on-line repair information availability. - Is any related repair information available?	Yes	Perform repair or diagnosis according to the available repair information. If the vehicle is not repaired, go to the next step.
		No	Go to the next step.
3	INSPECT OCV - Remove the OCV. (See OIL CONTROL VALVE (OCV) REMOVAL/ INSTALLATION [MZR 2.5].) - Inspect the position of the spool valve in the OCV. (See OIL CONTROL VALVE (OCV) INSPECTION [MZR 2.5].) - Is the spool valve located at the valve advanced position?	Yes	Reinstall or replace the OCV, then go to Step 7. (See OIL CONTROL VALVE (OCV) REMOVAL/ INSTALLATION [MZR 2.5].)
		No	Go to the next step.
4	VERIFY VALVE TIMING MECHANISM INSTALLATION - Verify the valve timing mechanism installation for the following parts: - Timing chain - Camshaft sprocket lock bolt - Crankshaft pulley lock bolt - Is there any malfunction?	Yes	Reinstall the misinstallation or loose parts correctly, then go to Step 7. (See VARIABLE VALVE TIMING ACTUATOR REMOVAL/ INSTALLATION [MZR 2.5].)
		No	Go to the next step.
	INSPECT STOPPER PIN MECHANISM		

5	- Remove the timing chain. (See TIMING CHAIN REMOVAL/ INSTALLATION [MZR 2.5].) - Inspect the stopper pin mechanism. (See VARIABLE VALVE TIMING ACTUATOR INSPECTION [MZR 2.5].) - Is there any malfunction?	Yes Replace the variable valve timing actuator, then go to Step 7. (See VARIABLE VALVE TIMING ACTUATOR REMOVAL/ INSTALLATION [MZR 2.5].)	No Go to the next step.
6	INSPECT ROTOR POSITION - Remove the variable valve timing actuator. (See VARIABLE VALVE TIMING ACTUATOR REMOVAL/ INSTALLATION [MZR 2.5].) - Is the rotor at the maximum valve timing advanced position?	Yes Reinstall or replace the variable valve timing actuator, then go to the next step. (See VARIABLE VALVE TIMING ACTUATOR REMOVAL/ INSTALLATION [MZR 2.5].)	No VARIABLE VALVE TIMING MECHANISM IS NORMAL NOTE: - This DTC is detected as an intermittent concern. - An intermittent concern might be removed using the cleaning mode of the variable valve timing control function. Go to the next step.
7	VERIFY DTC TROUBLESHOOTING COMPLETED - Make sure to reconnect all disconnected connectors. - Clear the DTC from the PCM memory using the M-MDS. (See AFTER REPAIR PROCEDURE [MZR 2.5].) - Switch the ignition to off. - Start the engine and warm it up completely. - Perform the KOER self test. (See KOEO/ KOER SELF TEST [MZR 2.5].) - Is the PENDING CODE for	Yes Repeat the inspection from Step 1. If the malfunction recurs, replace the PCM. (See PCM REMOVAL/ INSTALLATION [MZR 2.5].) Go to the next step.	No Go to the next step.

	this DTC present?		
8	VERI FY AFTER REPAI R PROCEDURE Perform the “AFTER REPAIR PROCEDURE”. (See AFTER REPAI R PROCEDURE [MZR 2.5] .)	Yes	Go to the applicable DTC inspection. (See DTC TABLE [MZR 2.5] .)
		No	DTC troubleshooting completed.
	Are any DTCs present?		

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2	VERIFY RELATED REPAIR INFORMATION AVAILABILITY - Verify related Service Bulletins and/or on-line repair information availability. - Is any related repair information available?	Yes	Perform repair or diagnosis according to the available repair information. If the vehicle is not repaired, go to the next step.
3	INSPECT OCV - Remove the OCV. (See OIL CONTROL VALVE (OCV) REMOVAL/ INSTALLATION [MZR 2.5].) - Inspect the position of the spool valve in the OCV. (See OIL CONTROL VALVE (OCV) INSPECTION [MZR 2.5].) - Is the spool valve located at the valve advanced position?	Yes	Reinstall or replace the OCV, then go to Step 7. (See OIL CONTROL VALVE (OCV) REMOVAL/ INSTALLATION [MZR 2.5].)
4	VERIFY VALVE TIMING MECHANISM INSTALLATION - Verify the valve timing mechanism installation for the following parts: - Timing chain - Camshaft sprocket lock bolt - Crankshaft pulley lock bolt - Is there any malfunction?	Yes	Reinstall the misinstallation or loose parts correctly, then go to Step 7. (See VARIABLE VALVE TIMING ACTUATOR REMOVAL/ INSTALLATION [MZR 2.5].)
	INSPECT STOPPER PIN MECHANISM		

5	- Remove the timing chain. (See TIMING CHAIN REMOVAL/ INSTALLATION [MZR 2.5].) - Inspect the stopper pin mechanism. (See VARIABLE VALVE TIMING ACTUATOR INSPECTION [MZR 2.5].) - Is there any malfunction?	Yes Replace the variable valve timing actuator, then go to Step 7. (See VARIABLE VALVE TIMING ACTUATOR REMOVAL/ INSTALLATION [MZR 2.5] .)	No Go to the next step.
6	INSPECT ROTOR POSITION - Remove the variable valve timing actuator. (See VARIABLE VALVE TIMING ACTUATOR REMOVAL/ INSTALLATION [MZR 2.5].) - Is the rotor at the maximum valve timing advanced position?	Yes Reinstall or replace the variable valve timing actuator, then go to the next step. (See VARIABLE VALVE TIMING ACTUATOR REMOVAL/ INSTALLATION [MZR 2.5] .)	No VARIABLE VALVE TIMING MECHANISM IS NORMAL NOTE: - This DTC is detected as an intermittent concern. - An intermittent concern might be removed using the cleaning mode of the variable valve timing control function. Go to the next step.
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