

2012 - Mazda6 - Engine

DTC P0507:00 [MZR 2.5]

DTC P0507:00	Idle air control system RPM higher than expected
DETECTION CONDITION	- The actual idle speed is higher than expected by 200 rpm for 14 s, when brake pedal is depressed (brake switch is ON) and steering wheel is held straight ahead (power steering pressure switch is off). NOTE: - If intake air temperature is below –10 °C {14 °F}, the PCM cancels diagnosis of P0507:00. Diagnostic support note - This is a continuous monitor (CCM). - The MIL illuminates if the PCM detects the above malfunction conditions 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 first drive cycle. - FREEZE FRAME DATA (Mode 2)/Snapshot data is available. - The DTC is stored in the PCM memory.
POSSIBLE CAUSE	- Vacuum hose misinstallation - Electronic throttle control system malfunction - APP sensor malfunction - TP sensor malfunction - PCM malfunction

Diagnostic procedure

STEP	INSPECTION	ACTION
1	VERIFY FREEZE FRAME DATA (MODE 2)/ SNAPSHOT DATA HAS BEEN RECORDED	YesGo to the next step.

	Has the FREEZE FRAME DATA (Mode 2)/snapshot data been recorded?	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	VERIFY RELATED PENDING AND STORED DTC - Switch the ignition to off, then to ON (engine off). - Verify pending and stored DTCs using the M-MDS. (See ON-BOARD DIAGNOSTIC TEST [MZR 2.5].) - Are any other DTCs present?	Yes	Go to the applicable DTC inspection. (See DTC TABLE [MZR 2.5] .)
		No	Go to the next step.
4	INSPECT VACUUM HOSE CONNECTION - Visually inspect the vacuum hoses for connecting? - Is there any malfunction?	Yes	Reconnect the vacuum hose accurately, then go to Step 6.
		No	Go to the next step.
5	INSPECT ELECTRONIC THROTTLE CONTROL SYSTEM MALFUNCTION - Inspect the following parts: - APP sensor (See ACCELERATOR PEDAL POSITION (APP) SENSOR INSPECTION [MZR 2.5].) - TP sensor (See THROTTLE POSITION (TP) SENSOR INSPECTION [MZR 2.5].) - Is there any malfunction?	Yes	Replace the malfunctioning parts, then go to the next step. (See ACCELERATOR PEDAL REMOVAL/ INSTALLATION [MZR 2.5] .) (See INTAKE-AIR SYSTEM REMOVAL/ INSTALLATION [MZR 2.5] .)
		No	Go to the next step.
6	VERIFY DTC TROUBLESHOOTING COMPLETED Clear the DTC from the PCM	Yes	Repeat the inspection from Step 1.

	memory using the M-MDS. (See AFTER REPAIR PROCEDURE [MZR 2.5].) • Start the engine and warm it up completely. • Depress the brake pedal for more than 14 s. • Perform the Pending Trouble Code Access Procedure. (See ON-BOARD DIAGNOSTIC TEST [MZR 2.5].) • Is the PENDING CODE for this DTC present?		• 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.
7	VERIFY AFTER REPAIR PROCEDURE • Perform the "AFTER REPAIR PROCEDURE". (See AFTER REPAIR PROCEDURE [MZR 2.5].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection.
		No	DTC troubleshooting completed.

2012 - Mazda6 - Engine

DTC P0507:00 [MZR 2.5]

DTC P0507:00	Idle air control system RPM higher than expected
DETECTION CONDITION	- The actual idle speed is higher than expected by 200 rpm for 14 s, when brake pedal is depressed (brake switch is ON) and steering wheel is held straight ahead (power steering pressure switch is off). NOTE: - If intake air temperature is below –10 °C {14 °F}, the PCM cancels diagnosis of P0507:00. Diagnostic support note - This is a continuous monitor (CCM). - The MIL illuminates if the PCM detects the above malfunction conditions 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 first drive cycle. - FREEZE FRAME DATA (Mode 2)/Snapshot data is available. - The DTC is stored in the PCM memory.
POSSIBLE CAUSE	- Vacuum hose misinstallation - Electronic throttle control system malfunction - APP sensor malfunction - TP sensor malfunction - PCM malfunction

Diagnostic procedure

STEP	INSPECTION	ACTION
1	VERIFY FREEZE FRAME DATA (MODE 2)/ SNAPSHOT DATA HAS BEEN RECORDED	YesGo to the next step.

	Has the FREEZE FRAME DATA (Mode 2)/snapshot data been recorded?	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	VERIFY RELATED PENDING AND STORED DTC - Switch the ignition to off, then to ON (engine off). - Verify pending and stored DTCs using the M-MDS. (See ON-BOARD DIAGNOSTIC TEST [MZR 2.5].) - Are any other DTCs present?	Yes	Go to the applicable DTC inspection. (See DTC TABLE [MZR 2.5] .)
		No	Go to the next step.
4	INSPECT VACUUM HOSE CONNECTION - Visually inspect the vacuum hoses for connecting? - Is there any malfunction?	Yes	Reconnect the vacuum hose accurately, then go to Step 6.
		No	Go to the next step.
5	INSPECT ELECTRONIC THROTTLE CONTROL SYSTEM MALFUNCTION - Inspect the following parts: - APP sensor (See ACCELERATOR PEDAL POSITION (APP) SENSOR INSPECTION [MZR 2.5].) - TP sensor (See THROTTLE POSITION (TP) SENSOR INSPECTION [MZR 2.5].) - Is there any malfunction?	Yes	Replace the malfunctioning parts, then go to the next step. (See ACCELERATOR PEDAL REMOVAL/ INSTALLATION [MZR 2.5] .) (See INTAKE-AIR SYSTEM REMOVAL/ INSTALLATION [MZR 2.5] .)
		No	Go to the next step.
6	VERIFY DTC TROUBLESHOOTING COMPLETED Clear the DTC from the PCM	Yes	Repeat the inspection from Step 1.

	memory using the M-MDS. (See AFTER REPAIR PROCEDURE [MZR 2.5].) - Start the engine and warm it up completely. - Depress the brake pedal for more than 14 s. - Perform the Pending Trouble Code Access Procedure. (See ON-BOARD DIAGNOSTIC TEST [MZR 2.5].) - Is the PENDING CODE for this DTC present?		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.
7	VERIFY AFTER REPAIR PROCEDURE - Perform the "AFTER REPAIR PROCEDURE". (See AFTER REPAIR PROCEDURE [MZR 2.5].) - Are any DTCs present?	Yes	Go to the applicable DTC inspection.
		No	DTC troubleshooting completed.