

2012 - Mazda6 - Engine

DTC P0505:00 [MZR 2.5]

DTC P0505:00	IAC system problem
DETECTION CONDITION	- The PCM cannot control idle speed toward target idle speed while KOER self test. Diagnostic support note - This is a continuous monitor (other). - The MIL does not illuminate. - FREEZE FRAME DATA (Mode2)/Snapshot data is not available. - The DTC is not stored in the PCM memory.
POSSIBLE CAUSE	- Improper operation of drive-by-wire control system - A/C magnetic clutch malfunction - Generator control circuit malfunction - Air cleaner element clogged - Throttle body passage clogged - Insufficient engine compression (over capacity of blow-by gas) - PCM malfunction

Diagnostic procedure

STEP	INSPECTION	ACTION
1	VERIFY RELATED REPAIR INFORMATION AVAILABILITY	Yes Perform repair or diagnosis according to the available repair information.
	- Verify related Service Bulletins and/or on-line repair information availability. - Is any related repair information available?	No Go to the next step.
2	VERIFY RELATED PENDING AND STORED DTC	Yes Go to the applicable DTC inspection.

	- 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?		(See DTC TABLE [MZR 2.5] .)
3	INSPECT DRIVE-BY-WIRE CONTROL SYSTEM OPERATION - Perform the throttle position (TP) sweep inspection. (See ENGINE CONTROL SYSTEM OPERATION INSPECTION [MZR 2.5].) - Does the drive-by-wire control system operate properly?	Yes	Go to the next step.
		No	Repair or replace the malfunctioning part according to the inspection results, then go to Step 9.
4	INSPECT A/ C MAGNETIC CLUTCH OPERATION - Turn the fan switch off. - Is the magnetic clutch still on?	Yes	Perform the "NO.24 A/C IS ALWAYS ON OR A/C COMPRESSOR RUNS CONTINUOUSLY".
			(See NO.24 A/ C IS ALWAYS ON OR A/ C COMPRESSOR RUNS CONTINUOUSLY [MZR 2.5] .)
		No	Go to the next step.
5	INSPECT GENERATOR CONTROL CIRCUIT MALFUNCTION - Apply the electrical load. - Is the engine speed increased?	Yes	Go to the next step.
		No	Repair the generator control circuit for short to power supply, then go to Step 9.
6	INSPECT AIR CLEANER ELEMENT - Remove the air cleaner element with the engine running. - Is the engine speed increased?	Yes	Clean or replace the air cleaner element, then go to Step 9.
		No	Go to the next step.
7	INSPECT THROTTLE BODY PASSAGE - Visually inspect the throttle body passage. - Is the throttle body passage clogged?	Yes	Clean or replace the throttle body passage, then go to Step 9.
		No	Go to the next step.
8	INSPECT ENGINE COMPRESSION Inspect the engine compression. (See COMPRESSION INSPECTION	Yes	Overhaul the engine for repairs, then go to the next step.

	[MZR 2.5].) Is there any malfunction?	No	Go to the next step.
9	VERIFY DTC TROUBLESHOOTING COMPLETED - Clear the DTC from the PCM memory using the M-MDS. (See AFTER REPAIR PROCEDURE [MZR 2.5].) - Perform the KOER self test. (See KOE/ KOER SELF TEST [MZR 2.5].) - Is the same DTC present?	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.
10	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. (See DTC TABLE [MZR 2.5].)
		No	DTC troubleshooting completed.

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POSSIBLE CAUSE	- Improper operation of drive-by-wire control system - A/C magnetic clutch malfunction - Generator control circuit malfunction - Air cleaner element clogged - Throttle body passage clogged - Insufficient engine compression (over capacity of blow-by gas) - PCM malfunction

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STEP	INSPECTION	ACTION
1	VERIFY RELATED REPAIR INFORMATION AVAILABILITY	Yes Perform repair or diagnosis according to the available repair information.
	- Verify related Service Bulletins and/or on-line repair information availability. - Is any related repair information available?	No Go to the next step.
2	VERIFY RELATED PENDING AND STORED DTC	Yes Go to the applicable DTC inspection.

	- 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?		(See DTC TABLE [MZR 2.5].)
3	INSPECT DRIVE-BY-WIRE CONTROL SYSTEM OPERATION - Perform the throttle position (TP) sweep inspection. (See ENGINE CONTROL SYSTEM OPERATION INSPECTION [MZR 2.5].) - Does the drive-by-wire control system operate properly?	Yes	Go to the next step.
		No	Repair or replace the malfunctioning part according to the inspection results, then go to Step 9.
4	INSPECT A/ C MAGNETIC CLUTCH OPERATION - Turn the fan switch off. - Is the magnetic clutch still on?	Yes	Perform the "NO.24 A/C IS ALWAYS ON OR A/C COMPRESSOR RUNS CONTINUOUSLY".
			(See NO.24 A/ C IS ALWAYS ON OR A/ C COMPRESSOR RUNS CONTINUOUSLY [MZR 2.5].)
		No	Go to the next step.
5	INSPECT GENERATOR CONTROL CIRCUIT MALFUNCTION - Apply the electrical load. - Is the engine speed increased?	Yes	Go to the next step.
		No	Repair the generator control circuit for short to power supply, then go to Step 9.
6	INSPECT AIR CLEANER ELEMENT - Remove the air cleaner element with the engine running. - Is the engine speed increased?	Yes	Clean or replace the air cleaner element, then go to Step 9.
		No	Go to the next step.
7	INSPECT THROTTLE BODY PASSAGE - Visually inspect the throttle body passage. - Is the throttle body passage clogged?	Yes	Clean or replace the throttle body passage, then go to Step 9.
		No	Go to the next step.
8	INSPECT ENGINE COMPRESSION Inspect the engine compression. (See COMPRESSION INSPECTION	Yes	Overhaul the engine for repairs, then go to the next step.

	[MZR 2.5] .) Is there any malfunction?	No	Go to the next step.
9	VERIFY DTC TROUBLESHOOTING COMPLETED - Clear the DTC from the PCM memory using the M-MDS. (See AFTER REPAIR PROCEDURE [MZR 2.5] .) - Perform the KOER self test. (See KOEO/ KOER SELF TEST [MZR 2.5] .) - Is the same DTC present?	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.
10	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. (See DTC TABLE [MZR 2.5] .)
		No	DTC troubleshooting completed.