

2012 - Mazda6 - Engine

DTC P050A:00 [MZI 3.7 V6]

DTC P050A:00	Cold start idle air control system performance
DETECTION CONDITION	The monitor compares the actual measured engine speed to the engine speed requested by the powertrain control module (PCM). When the difference between desired and actual engine speed exceeds the calibrated threshold, the DTC sets.
POSSIBLE CAUSE	- Intake air restriction - Exhaust restriction - Mechanical concern with engine - Damaged or slugged electronic throttle body (ETB) - Vacuum leakage - PCM malfunction

Diagnostic procedure

STEP	INSPECTION	ACTION
1	VERIFY FREEZE FRAME DATA HAS BEEN RECORDED Has FREEZE FRAME DATA been recorded?	Yes Go to the next step.
		No Record FREEZE FRAME 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 Service Bulletins available?	Yes Perform repair or diagnosis according to the available Service Bulletins. If the vehicle is not repaired, go to the next step.
		No Go to the next step.
3	VERIFY RELATED PENDING CODE OR STORED DTCs Switch the ignition to off, then to ON	Yes Go to the appropriate DTC troubleshooting.

	(engine off). • Verify related pending code or stored DTCs. • Are other DTCs present?		(See DTC TABLE [MZI 3.7 V6] .)
			No Go to the next step.
4	INSPECT AIR CLEANER ELEMENT • Remove air cleaner element with the engine running. • Is the engine speed increased?	Yes	Replace the air cleaner element, then go to Step 10.
		No	Go to the next step.
5	PERFORM VISUAL INSPECTION ON INTAKE AIR SYSTEM AND ALL VACUUM HOSES • Switch the ignition to off. • Check the intake air system for leaks, obstructions, and damage. • Inspect the entire length of all the vacuum hoses for: ▪ In correct connections ▪ Damage or cracks ▪ Damaged or cracked vacuum hose joint ▪ Improperly seated engine oil dipstick, tube or oil fill cap • Is a concern present?	Yes	Repair if necessary. Then go to Step 10.
		No	Go to the next step.
6	VERIFY DRIVE-BY-WIRE CONTROL SYSTEM OPERATION • Perform the Drive-by-Wire Control System Inspection. (See ENGINE CONTROL SYSTEM OPERATION INSPECTION [MZI 3.7 V6] .) • Is there any malfunction?	Yes	Repair or replace the malfunctioning part according to the inspection results, then go to Step 10.
		No	Go to the next step.
7	INSPECT THROTTLE VALVE • Switch the ignition to off. • Remove the throttle valve with connector connected. • Access the ETC_DSD PID using the M-MDS. (See ON-BOARD DIAGNOSTIC TEST [MZI 3.7 V6] .)	Yes	Go to the next step.
		No	Clean or replace the throttle valve and retest, then go to Step 10. (See INTAKE-AIR SYSTEM REMOVAL/ INSTALLATION [MZI 3.7 V6] .)

	- Move the throttle valve using the ETC_DSD PID simulation function. - Does the throttle valve move smoothly?		
8	INSPECT ENGINE COMPRESSION - Inspect the engine compression. (See COMPRESSION INSPECTION [MZI 3.7 V6].) - Is the engine compression normal?	Yes	Go to the next step.
		No	Overhaul the engine, then go to Step 10.
9	INSPECT FOR RESTRICTION IN EXHAUST SYSTEM AND TWC Is there any restriction?	Yes	Replace malfunctioning part, then go to the next step.
		No	Go to the next step.
10	VERIFY TROUBLESHOOTING OF DTC P050A:00 HAS BEEN COMPLETED - Verify that all disconnected connectors are reconnected. - Switch the ignition ON (Engine off). - Clear the DTC from the PCM memory using the M-MDS. CAUTION: - While performing this step, always operate the vehicle in a safe and lawful manner. - When the M-MDS is used to observe monitor system status while driving, be sure to have another technician with you, or record the data in the M-MDS using the PID/DATA MONITOR AND RECORD capturing function and inspect later. - Drive the vehicle under the FREEZE FRAME DATA condition. - Retrieve the DTCs using the M-MDS. (See ON-BOARD DIAGNOSTIC TEST [MZI 3.7 V6].) - Is the PENDING CODE for this DTC present?	Yes	Repeat the inspection from Step 1. If the malfunction recurs, replace the PCM. (See PCM REMOVAL/ INSTALLATION [MZI 3.7 V6].) Go to the next step.
		No	Go to the next step.
11	VERIFY AFTER REPAIR PROCEDURE Perform the "AFTER REPAIR PROCEDURE".	Yes	Go to the applicable DTC inspection. (See DTC TABLE [MZI 3.7 V6] .)

	(See AFTER REPAIR PROCEDURE [MZI 3.7 V6] .)		No Troubleshooting completed.
	• Are any DTCs present?		

2012 - Mazda6 - Engine

DTC P050A:00 [MZI 3.7 V6]

DTC P050A:00	Cold start idle air control system performance
DETECTION CONDITION	The monitor compares the actual measured engine speed to the engine speed requested by the powertrain control module (PCM). When the difference between desired and actual engine speed exceeds the calibrated threshold, the DTC sets.
POSSIBLE CAUSE	- Intake air restriction - Exhaust restriction - Mechanical concern with engine - Damaged or slugged electronic throttle body (ETB) - Vacuum leakage - PCM malfunction

Diagnostic procedure

STEP	INSPECTION	ACTION
1	VERIFY FREEZE FRAME DATA HAS BEEN RECORDED Has FREEZE FRAME DATA been recorded?	Yes Go to the next step.
		No Record FREEZE FRAME 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 Service Bulletins available?	Yes Perform repair or diagnosis according to the available Service Bulletins. If the vehicle is not repaired, go to the next step.
		No Go to the next step.
3	VERIFY RELATED PENDING CODE OR STORED DTCs Switch the ignition to off, then to ON	Yes Go to the appropriate DTC troubleshooting.

	(engine off). • Verify related pending code or stored DTCs. • Are other DTCs present?		(See DTC TABLE [MZI 3.7 V6] .)
		No	Go to the next step.
4	INSPECT AIR CLEANER ELEMENT • Remove air cleaner element with the engine running. • Is the engine speed increased?	Yes	Replace the air cleaner element, then go to Step 10.
		No	Go to the next step.
5	PERFORM VISUAL INSPECTION ON INTAKE AIR SYSTEM AND ALL VACUUM HOSES • Switch the ignition to off. • Check the intake air system for leaks, obstructions, and damage. • Inspect the entire length of all the vacuum hoses for: ▪ In correct connections ▪ Damage or cracks ▪ Damaged or cracked vacuum hose joint ▪ Improperly seated engine oil dipstick, tube or oil fill cap • Is a concern present?	Yes	Repair if necessary. Then go to Step 10.
		No	Go to the next step.
6	VERIFY DRIVE-BY-WIRE CONTROL SYSTEM OPERATION • Perform the Drive-by-Wire Control System Inspection. (See ENGINE CONTROL SYSTEM OPERATION INSPECTION [MZI 3.7 V6] .) • Is there any malfunction?	Yes	Repair or replace the malfunctioning part according to the inspection results, then go to Step 10.
		No	Go to the next step.
7	INSPECT THROTTLE VALVE • Switch the ignition to off. • Remove the throttle valve with connector connected. • Access the ETC_DSD PID using the M-MDS. (See ON-BOARD DIAGNOSTIC TEST [MZI 3.7 V6] .)	Yes	Go to the next step.
		No	Clean or replace the throttle valve and retest, then go to Step 10. (See INTAKE-AIR SYSTEM REMOVAL/ INSTALLATION [MZI 3.7 V6] .)

	• Move the throttle valve using the ETC_DSD PID simulation function. • Does the throttle valve move smoothly?		
8	INSPECT ENGINE COMPRESSION • Inspect the engine compression. (See COMPRESSION INSPECTION [MZI 3.7 V6].) • Is the engine compression normal?	Yes	Go to the next step.
		No	Overhaul the engine, then go to Step 10.
9	INSPECT FOR RESTRICTION IN EXHAUST SYSTEM AND TWC • Is there any restriction?	Yes	Replace malfunctioning part, then go to the next step.
		No	Go to the next step.
10	VERIFY TROUBLESHOOTING OF DTC P050A:00 HAS BEEN COMPLETED • Verify that all disconnected connectors are reconnected. • Switch the ignition ON (Engine off). • Clear the DTC from the PCM memory using the M-MDS. CAUTION: • While performing this step, always operate the vehicle in a safe and lawful manner. • When the M-MDS is used to observe monitor system status while driving, be sure to have another technician with you, or record the data in the M-MDS using the PID/DATA MONITOR AND RECORD capturing function and inspect later. • Drive the vehicle under the FREEZE FRAME DATA condition. • Retrieve the DTCs using the M-MDS. (See ON-BOARD DIAGNOSTIC TEST [MZI 3.7 V6].) • Is the PENDING CODE for this DTC present?	Yes	Repeat the inspection from Step 1. • If the malfunction recurs, replace the PCM. (See PCM REMOVAL/ INSTALLATION [MZI 3.7 V6].) Go to the next step.
		No	Go to the next step.
11	VERIFY AFTER REPAIR PROCEDURE • Perform the "AFTER REPAIR PROCEDURE".	Yes	Go to the applicable DTC inspection. (See DTC TABLE [MZI 3.7 V6] .)

	(See AFTER REPAIR PROCEDURE [MZI 3.7 V6] .) • Are any DTCs present?	No	Troubleshooting completed.
--	---	----	----------------------------