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1996 MAZDA 323 C (BH) OEM Service and Repair Workshop Manual

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DTC P0335:00 [PCM (SKYACTIV-G 2.5 (WITH CYLINDER DEACTIVATION))]

SM2896759

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DTC P0335:00	CKP sensor circuit problem
DETECTION CONDITION	• There is no CKP sensor signal input while the exhaust camshaft rotates 5 times. • The CKP sensor input signal pattern, received while the crankshaft rotates 10 times, is incorrect. Diagnostic support note • This is a continuous monitor (CCM). • The check engine light illuminates if the PCM detects the above malfunction condition during the first drive cycle. • FREEZE FRAME DATA/Snapshot data is available. • DTC is stored in the PCM memory.
FAIL-SAFE FUNCTION	• Stops fuel injection • Stops ignition
POSSIBLE CAUSE	• CKP sensor connector or terminals malfunction • Short to ground in wiring harness between the following terminals: — CKP sensor terminal A–PCM terminal 1E — CKP sensor terminal C–PCM terminal 1F • PCM connector or terminals malfunction • Short to power supply in wiring harness between CKP sensor terminal C and PCM terminal 1F • CKP sensor circuits are shorted to each other • Open circuit in wiring harness between the following terminals: — CKP sensor terminal A–PCM terminal 1E — CKP sensor terminal C–PCM terminal 1F — CKP sensor terminal B–PCM terminal 1AP • CKP sensor malfunction — CKP sensor is dirty — CKP sensor pulse wheel malfunction • PCM malfunction

STEP	INSPECTION	RESULTS	ACTION
8	**INSPECT CKP SENSOR CIRCUIT FOR OPEN CIRCUIT** • Verify that the CKP sensor and PCM connectors are disconnected. • Inspect for continuity between the following terminals (wiring harness-side): — CKP sensor terminal A—PCM terminal 1E — CKP sensor terminal C—PCM terminal 1F — CKP sensor terminal B—PCM terminal 1AP • Is there continuity?	Yes	Go to the next step.
		No	Refer to the wiring diagram and verify whether or not there is a common connector between the following terminals: • CKP sensor terminal A—PCM terminal 1E • CKP sensor terminal C—PCM terminal 1F • CKP sensor terminal B—PCM terminal 1AP **If there is a common connector:** • Determine the malfunctioning part by inspecting the common connector and the terminal for corrosion, damage, or pin disconnection, and the common wiring harness for an open circuit. • Repair or replace the malfunctioning part. **If there is no common connector:** • Repair or replace the wiring harness which has an open circuit. Go to Step 10.
9	**INSPECT CKP SENSOR** • Inspect the CKP sensor. (See CRANKSHAFT POSITION (CKP) SENSOR INSPECTION [SKYACTIV-G 2.5 (WITH CYLINDER DEACTIVATION)].) • Is there any malfunction?	Yes	Replace the CKP sensor, then go to the next step. (See CRANKSHAFT POSITION (CKP) SENSOR REMOVAL/INSTALLATION [SKYACTIV-G 2.5 (WITH CYLINDER DEACTIVATION)].)
		No	Go to the next step.
10	**VERIFY DTC TROUBLESHOOTING COMPLETED** • Always reconnect all disconnected connectors. • Clear the DTC from the PCM memory using the M-MDS. (See CLEARING DTC [PCM (SKYACTIV-G 2.5 (WITH CYLINDER DEACTIVATION))].) • Start the engine and race it. • Perform the KOER self test. (See KOEO/KOER SELF TEST [PCM (SKYACTIV-G 2.5 (WITH CYLINDER DEACTIVATION))].) • Is the same Pending DTC present?	Yes	Repeat the inspection from Step 1. • If the malfunction recurs, replace the PCM. (See PCM REMOVAL/INSTALLATION [SKYACTIV-G 2.5 (WITH CYLINDER DEACTIVATION)].) Go to the next step.
		No	Go to the next step.
11	**VERIFY AFTER REPAIR PROCEDURE** • Perform the "AFTER REPAIR PROCEDURE". (See AFTER REPAIR PROCEDURE [PCM (SKYACTIV-G 2.5 (WITH CYLINDER DEACTIVATION))].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See DTC TABLE [PCM (SKYACTIV-G 2.5 (WITH CYLINDER DEACTIVATION))].)
		No	DTC troubleshooting completed.

STEP	INSPECTION	RESULTS	ACTION
3	VERIFY RELATED PENDING CODE AND/OR DTC • Switch the ignition off, then ON (engine off). • Perform the Pending Trouble Code Access Procedure and DTC Reading Procedure. (See ON-BOARD DIAGNOSTIC TEST [PCM (SKYACTIV-G 2.5 (WITH CYLINDER DEACTIVATION))].) • Are any other PENDING CODEs and/or DTCs present?	Yes	Go to the applicable PENDING CODE or DTC inspection. (See DTC TABLE [PCM (SKYACTIV-G 2.5 (WITH CYLINDER DEACTIVATION))].)
		No	Go to the next step.
4	INSPECT INTAKE CMP SENSOR CONNECTOR CONDITION • Switch the ignition off. • Disconnect the intake CMP sensor connector. • Inspect for poor connection (such as damaged/pulled-out pins, corrosion). • Is there any malfunction?	Yes	Repair or replace the connector and/or terminals, then go to Step 14.
		No	Go to the next step.

STEP	INSPECTION	RESULTS	ACTION
6	**INSPECT PCM CONNECTOR CONDITION** • Disconnect the PCM connector. • Inspect for poor connection (such as damaged/pulled-out pins, corrosion). • Is there any malfunction?	Yes	Repair or replace the connector and/or terminals, then go to Step 14.
		No	Go to the next step.
7	**INSPECT INTAKE CMP SENSOR SIGNAL CIRCUIT FOR SHORT TO GROUND** • Verify that the intake CMP sensor and PCM connectors are disconnected. • Switch the ignition off. • Inspect for continuity between intake CMP sensor terminal A (wiring harness-side) and body ground. • Is there continuity?	Yes	Refer to the wiring diagram and verify whether or not there is a common connector between intake CMP sensor terminal A and PCM terminal 1BT. **If there is a common connector:** • Determine the malfunctioning part by inspecting the common connector and the terminal for corrosion, damage, or pin disconnection, and the common wiring harness for a short to ground. • Repair or replace the malfunctioning part. **If there is no common connector:** • Repair or replace the wiring harness which has a short to ground. Go to Step 14.
		No	Go to the next step.
8	**INSPECT INTAKE CMP SENSOR SIGNAL CIRCUIT FOR SHORT TO POWER SUPPLY** • Verify that the intake CMP sensor and PCM connectors are disconnected. • Switch the ignition ON (engine off). **Note** **• Another DTC may be stored by the PCM detecting an open circuit.** • Measure the voltage at the intake CMP sensor terminal A (wiring harness-side). • Is the voltage 0 V?	Yes	Go to the next step.
		No	Refer to the wiring diagram and verify whether or not there is a common connector between intake CMP sensor terminal A and PCM terminal 1BT. **If there is a common connector:** • Determine the malfunctioning part by inspecting the common connector and the terminal for corrosion, damage, or pin disconnection, and the common wiring harness for a short to power supply. • Repair or replace the malfunctioning part. **If there is no common connector:** • Repair or replace the wiring harness which has a short to power supply. Go to Step 14.
9	**INSPECT INTAKE CMP SENSOR SIGNAL CIRCUIT AND GROUND CIRCUIT FOR SHORT TO EACH OTHER** • Verify that the intake CMP sensor and PCM connectors are disconnected. • Switch the ignition off. • Inspect for continuity between intake CMP sensor terminals A and B (wiring harness-side). • Is there continuity?	Yes	Refer to the wiring diagram and verify whether or not there is a common connector between the following terminals: • Intake CMP sensor terminal A—PCM terminal 1BT • Intake CMP sensor terminal B—PCM terminal 1AI **If there is a common connector:** • Determine the malfunctioning part by inspecting the common connector and the terminal for corrosion, damage, or pin disconnection, and the common wiring harness for a short to each other. • Repair or replace the malfunctioning part. **If there is no common connector:** • Repair or replace the wiring harness which has a short to each other. Go to Step 14.
		No	Go to the next step.

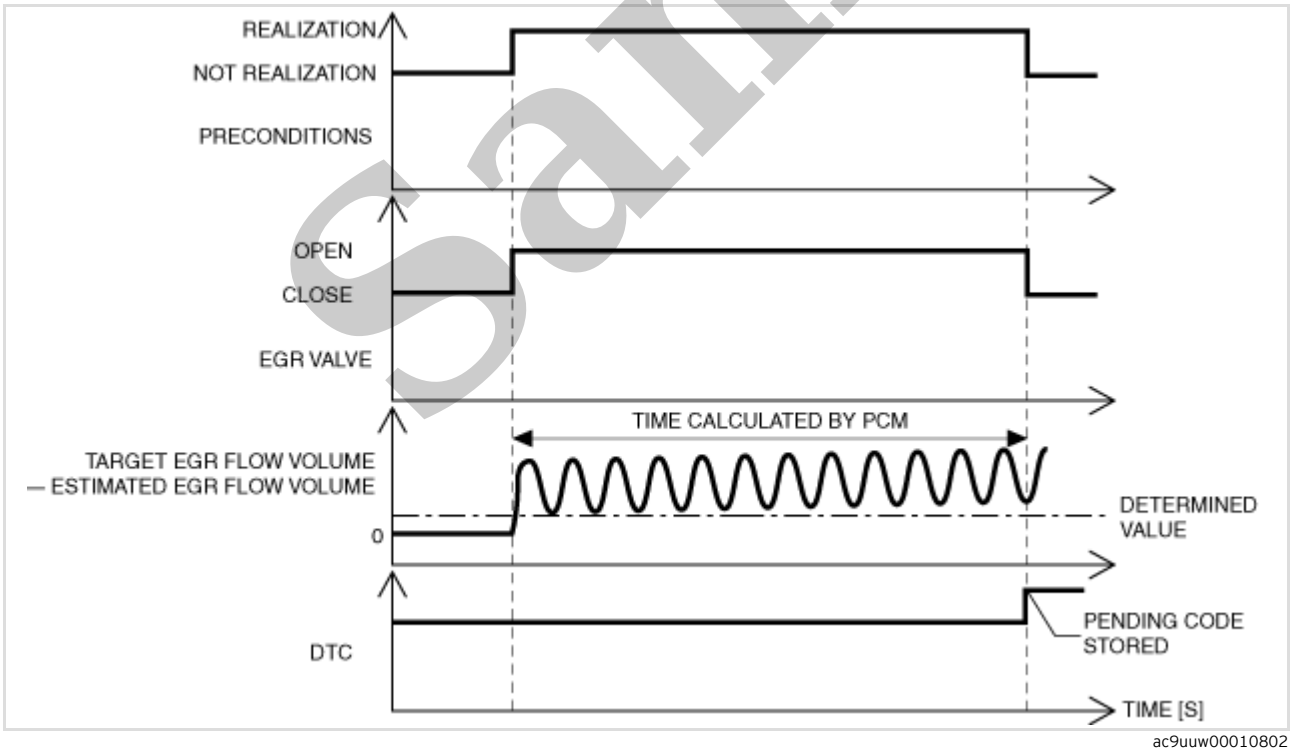
DESCRIPTION	EGR flow insufficient detected
POSSIBLE CAUSE	• Erratic signal to PCM — MAF sensor signal malfunction — MAP sensor signal malfunction — Input signal part connector or terminals malfunction — Input signal part related circuit malfunction • EGR valve malfunction (stuck close) • Air suction in intake air system between throttle body and intake manifold • EGR system passage malfunction (restriction) • PCM malfunction

System Wiring Diagram

• Not applicable

Function Explanation (DTC Detection Outline)

• The PCM compares the target EGR flow volume with the estimated EGR flow volume and performs diagnosis of the EGR system.
• The PCM opens the EGR valve when all of the preconditions are met. The PCM compares the target EGR flow volume with the estimated EGR flow volume at that time, if the estimated EGR flow volume is smaller than the target EGR flow volume, a malfunction i determined.
• The PCM performs diagnosis when each of the preconditions during drive cycle is met. If a malfunction is detected, the malfunction detection counter begins counting up. The value of the malfunction detection counter is maintained while the preconditions are not being met. If the cumulative value of the malfunction detection counter exceeds the threshold during the first drive cycle, a malfunction is determined and a pending code is stored.
• If the calculated value of the malfunction detection counter during one drive cycle exceeds the threshold, the PCM determines a malfunction, stores a DTC and turns on the check engine light.



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Repeatability Verification Procedure

Caution

STEP	INSPECTION		ACTION
1	PURPOSE: INSPECT INTAKE AIR SYSTEM FOR AIR SUCTION • Inspect for air leakage at the following: — Around connection of throttle body and intake manifold Note • Engine speed may change when rust penetrating agent is sprayed on the air suction area. • Is there any malfunction?	Yes	Repair or replace the malfunctioning part according to the inspection results, then go to Step 3.
		No	Go to the next step.
2	PURPOSE: INSPECT FOR RESTRICTION OR CLOGGED IN EGR PASSAGE • Switch the ignition off. • Remove the EGR valve. (See EGR VALVE REMOVAL/INSTALLATION [SKYACTIV-G (WITH EGR COOLER)].) • Visually inspect the EGR passage for clogging and the gasket correctly installed. • Is there any malfunction?	Yes	Repair or replace the malfunctioning part according to the inspection results, then go to the next step. (If there is clogging caused by soot in the EGR valve, inspect around the EGR piping and clean or replace it.)
		No	Go to the next step.
3	PURPOSE: PERFORM DTC INSPECTION AND VERIFY IF MALFUNCTIONING PART IS PCM • Always reconnect all disconnected connectors. • Clear the DTC from the PCM memory using the M-MDS. (See CLEARING DTC [PCM (SKYACTIV-G 2.5 (WITH CYLINDER DEACTIVATION))].) • Implement the repeatability verification procedure. (See Repeatability Verification Procedure.) • Perform the Pending Trouble Code Access Procedure. (See ON-BOARD DIAGNOSTIC TEST [PCM (SKYACTIV-G 2.5 (WITH CYLINDER DEACTIVATION))].) • Is the same Pending DTC present?	Yes	Repeat the inspection from Step 1. • If the malfunction recurs, replace the PCM. (See PCM REMOVAL/INSTALLATION [SKYACTIV-G 2.5 (WITH CYLINDER DEACTIVATION)].) Go to the next step.
		No	Go to the next step.
4	PURPOSE: VERIFY AFTER REPAIR PROCEDURE • Perform the "AFTER REPAIR PROCEDURE". (See AFTER REPAIR PROCEDURE [PCM (SKYACTIV-G 2.5 (WITH CYLINDER DEACTIVATION))].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See DTC TABLE [PCM (SKYACTIV-G 2.5 (WITH CYLINDER DEACTIVATION))].)
		No	DTC troubleshooting completed.

STEP	INSPECTION	RESULTS	ACTION
1	**PURPOSE: 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.
2	**PURPOSE: IDENTIFY TRIGGER DTC FOR FREEZE FRAME DATA** • Is the DTC P0421:00 on FREEZE FRAME DATA?	Yes	Go to the next step.
		No	Go to the troubleshooting procedure for DTC on FREEZE FRAME DATA. (See DTC TABLE [PCM (SKYACTIV-G 2.5 (WITH CYLINDER DEACTIVATION))].)
3	**PURPOSE: RECORD FREEZE FRAME DATA/SNAPSHOT DATA AND DIAGNOSTIC MONITORING TEST RESULTS TO UTILIZE WITH REPEATABILITY VERIFICATION** **Note** **• Recording can be facilitated using the screen capture function of the PC.** • Record the FREEZE FRAME DATA/snapshot data and DIAGNOSTIC MONITORING TEST RESULTS (catalyst related) on the repair order.	–	Go to the next step.
4	**PURPOSE: VERIFY RELATED PENDING CODE AND/OR DTC** • Switch the ignition off, then ON (engine off). • Perform the Pending Trouble Code Access Procedure and DTC Reading Procedure. (See ON-BOARD DIAGNOSTIC TEST [PCM (SKYACTIV-G 2.5 (WITH CYLINDER DEACTIVATION))].) • Are any other PENDING CODEs and/or DTCs present?	Yes	Go to the applicable PENDING CODE or DTC inspection. (See DTC TABLE [PCM (SKYACTIV-G 2.5 (WITH CYLINDER DEACTIVATION))].) Go to the next step.
		No	Go to the next step.
5	**PURPOSE: VERIFY A/F SENSOR AND HO2S INPUT SIGNAL** • Start the engine and warm it up completely. • Access the following PIDs using the M-MDS: (See ON-BOARD DIAGNOSTIC TEST [PCM (SKYACTIV-G 2.5 (WITH CYLINDER DEACTIVATION))].) — O2S11 — O2S12 • Drive the vehicle under the following conditions. **Warning** **• 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.** **• While performing this step, always operate the vehicle in a safe and lawful manner.** — After increasing the engine speed to 3,000 rpm, decelerate using engine braking. • Is the displayed PID value as follows? — O2S11: 0.25 mA or more — O2S12: 0.3 V or less	Yes	Go to Troubleshooting Diagnostic Procedure to perform the procedure from Step 3.
		No	Go to the next step.

DTC U1007:00 [PCM (SKYACTIV-G 2.5 (WITH CYLINDER DEACTIVATION))]

SM3511176

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DTC U1007:00	**CAN/LIN communication system: current sensor information communication error with front body control module (FBCM)**
DETECTION CONDITION	• PCM detects a current sensor information communication error from front body control module (FBCM). **Diagnostic support note** • This is a continuous monitor (other). • The check engine light does not illuminate. • FREEZE FRAME DATA is not available. • Snapshot data is available. • DTC is stored in the PCM memory.
FAIL-SAFE FUNCTION	• Inhibits engine-stop by operating the i-stop function. • Inhibits a part of the generator output control.
POSSIBLE CAUSE	• Communication line malfunction between current sensor and front body control module (FBCM) • Communication line malfunction between front body control module (FBCM) and PCM • Current sensor connector or terminals malfunction • Short to ground or open circuit in current sensor power supply circuit — Short to ground in wiring harness between MAIN 200 A fuse and current sensor terminal A — MAIN 200 A fuse and/or ENG.+B 7.5 A fuse malfunction — Open circuit in wiring harness between battery positive terminal and current sensor terminal A • Front body control module (FBCM) connector or terminals malfunction • Short to ground in wiring harness between current sensor terminal B and front body control module (FBCM) terminal 2E • Open circuit in wiring harness between current sensor terminal B and front body control module (FBCM) terminal 2E • Current sensor malfunction • Front body control module (FBCM) malfunction

STEP	INSPECTION	RESULTS	ACTION
5	**INSPECT CURRENT SENSOR POWER SUPPLY CIRCUIT FOR SHORT TO GROUND OR OPEN CIRCUIT** • Verify that the current sensor connector is disconnected. • Measure the voltage at the current sensor terminal A (wiring harness-side). • Is the voltage B+?	Yes	Go to the next step.