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1996 MAZDA MX-3 OEM Service and Repair Workshop Manual

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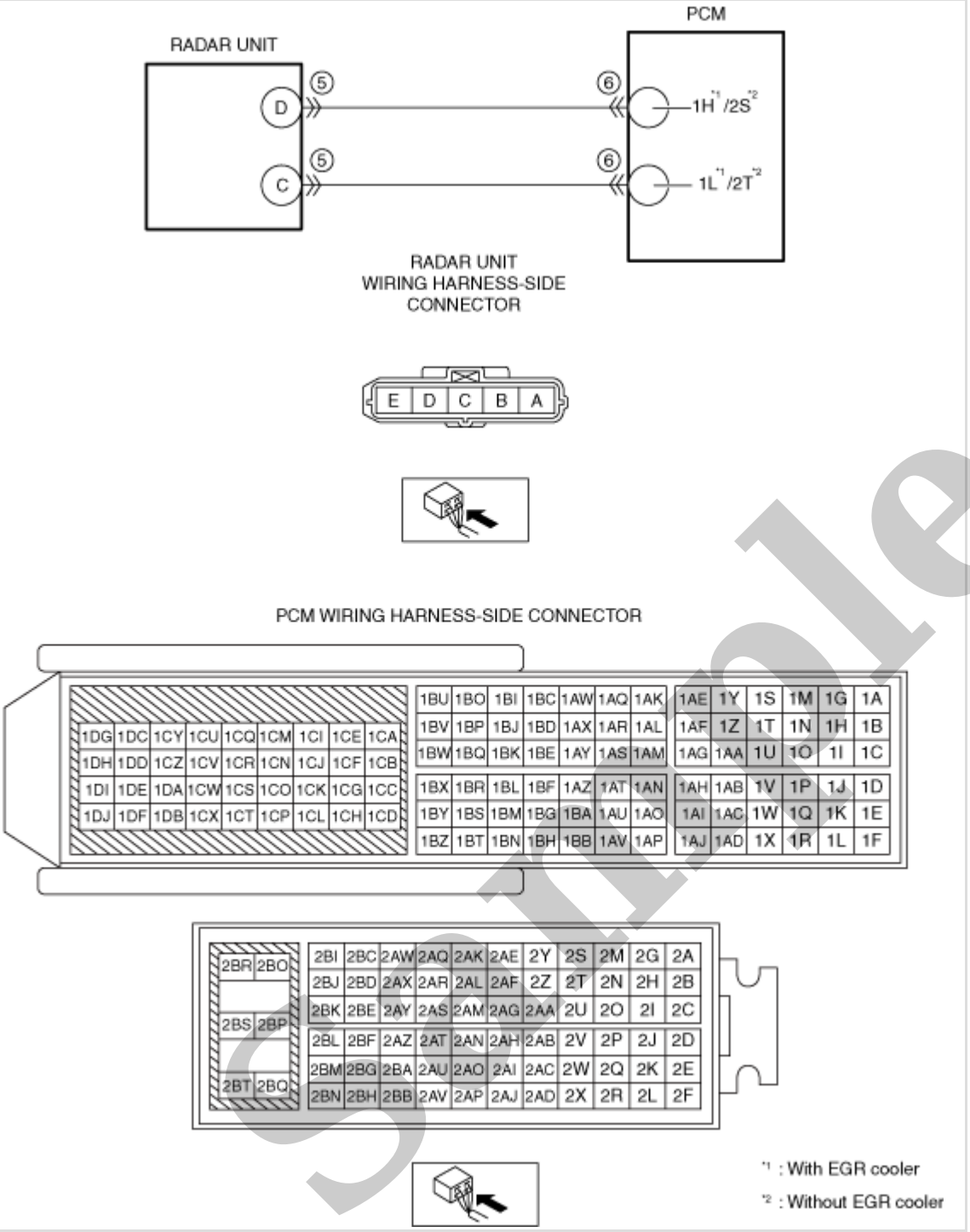
DTC U0305:00	Radar unit error

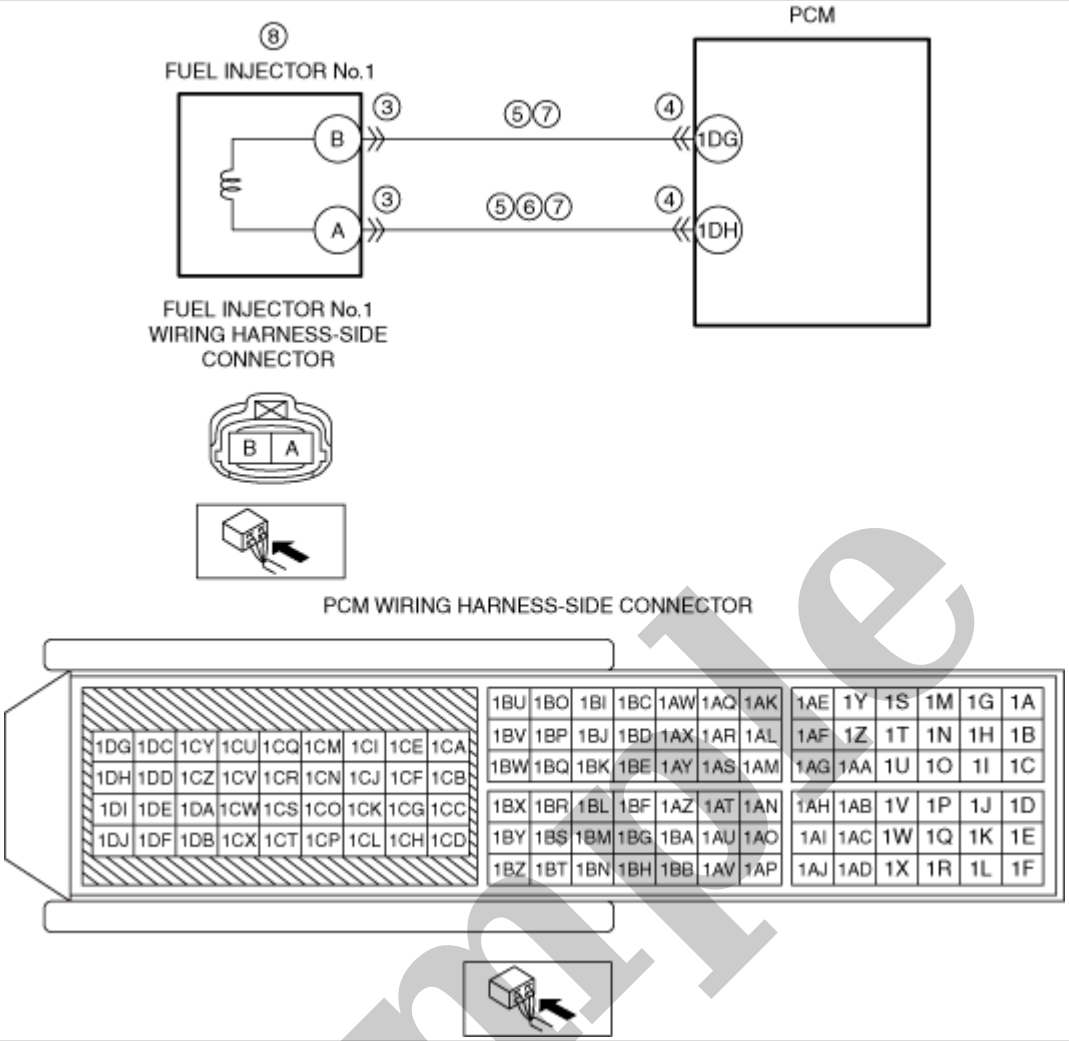


Repeatability Verification Procedure

1. Clear the DTC from the PCM memory using the M-MDS. (See CLEARING DTC [PCM (SKYACTIV-G 2.5 (WITH CYLINDER DEACTIVATION))].)
2. Start the engine.

Diagnostic Procedure

DTC P0201:00	Fuel injector circuit/open cylinder No.1



Diagnostic Procedure

STEP	INSPECTION	RESULTS	ACTION
1	RECORD VEHICLE STATUS AT TIME OF DTC DETECTION 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 on the repair order.	–	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.

DTC P0202:00 [PCM (SKYACTIV-G 2.5 (WITH CYLINDER DEACTIVATION))]

SM2896663

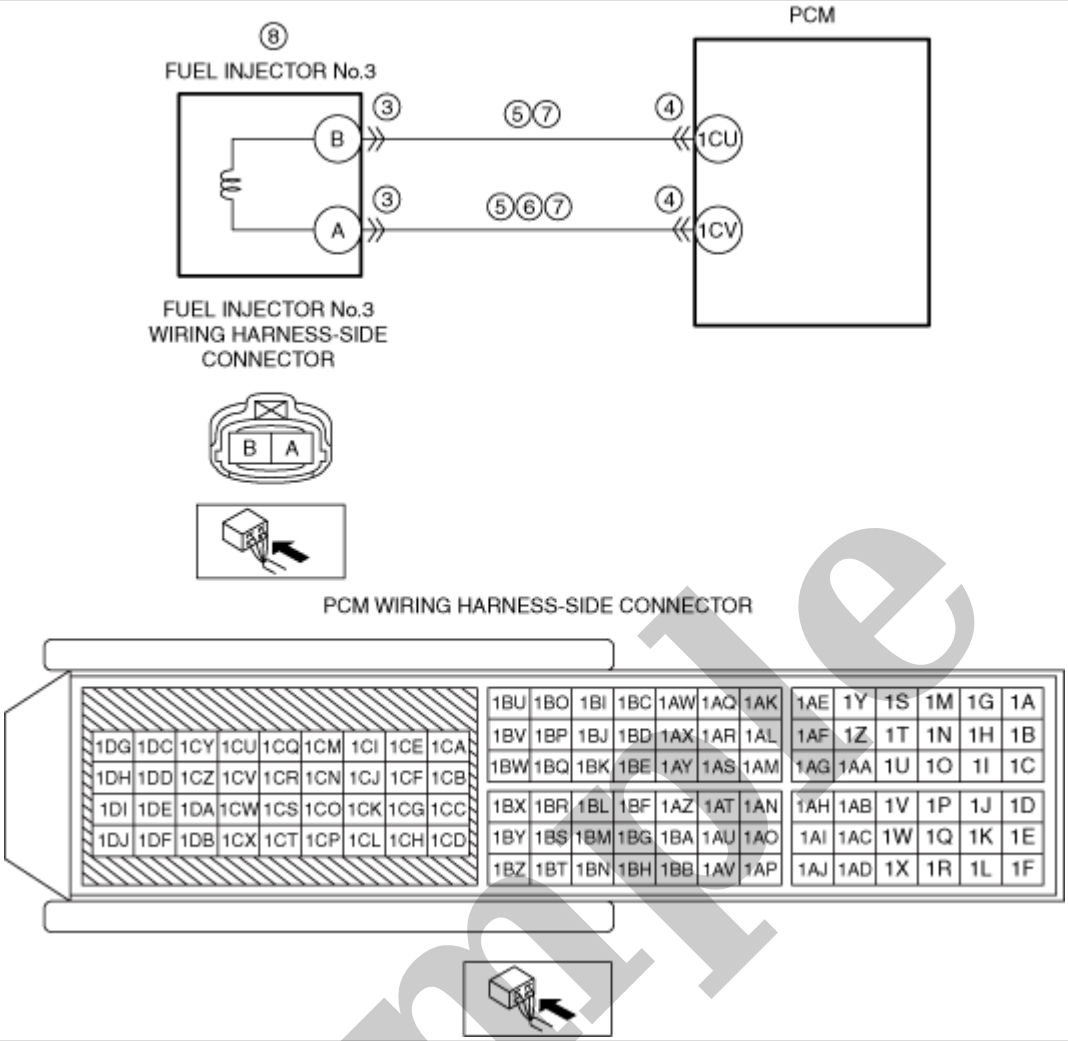
id0102s914800

DTC P0202:00	Fuel injector circuit/open cylinder No.2
DETECTION CONDITION	• If the fuel injection verification signal is not input at 25 times continuously even though the PCM drives the fuel injector No.2, the PCM determines that there is an open circuit in the fuel injector No.2 control circuit. MONITORING CONDITIONS — The following conditions are met: • Battery voltage: 10.5 V or more • Fuel injection control: except during fuel cut 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	• Not applicable
POSSIBLE CAUSE	• Fuel injector No.2 connector or terminals malfunction • PCM connector or terminals malfunction • Short to ground in wiring harness between the following terminals: — Fuel injector No.2 terminal B—PCM terminal 1CY — Fuel injector No.2 terminal A—PCM terminal 1CZ • Short to power supply in wiring harness between fuel injector No.2 terminal A and PCM terminal 1CZ • Open circuit in wiring harness between the following terminals: — Fuel injector No.2 terminal B—PCM terminal 1CY — Fuel injector No.2 terminal A—PCM terminal 1CZ • Fuel injector No.2 malfunction • PCM malfunction

STEP	INSPECTION	RESULTS	ACTION
8	**INSPECT FUEL INJECTOR No.2** • Inspect the fuel injector No.2. (See FUEL INJECTOR INSPECTION [SKYACTIV-G 2.5 (WITH CYLINDER DEACTIVATION)].) • Is there any malfunction?	Yes	Replace the fuel injector No.2, then go to the next step. (See FUEL INJECTOR REMOVAL/INSTALLATION [SKYACTIV-G 2.5 (WITH CYLINDER DEACTIVATION)].)
		No	Go to the next step.
9	**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))].) • Perform the KOEO or 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.
10	**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	**INSPECT FUEL INJECTOR No.4 CONNECTOR CONDITION** • Switch the ignition off. • Disconnect the fuel injector No.4 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 9.
		No	Go to the next step.
4	**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 9.
		No	Go to the next step.
5	**INSPECT FUEL INJECTOR No.4 CIRCUIT FOR SHORT TO GROUND** • Verify that the fuel injector No.4 and PCM connectors are disconnected. • Inspect for continuity between the following terminals (wiring harness-side) and body ground: — Fuel injector No.4 terminal B — Fuel injector No.4 terminal A • Is there continuity?	Yes	Refer to the wiring diagram and verify whether or not there is a common connector between the following terminals: • Fuel injector No.4 terminal B–PCM terminal 1DC • Fuel injector No.4 terminal A–PCM terminal 1DD **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 9.
		No	Go to the next step.
6	**INSPECT FUEL INJECTOR No.4 CIRCUIT FOR SHORT TO POWER SUPPLY** • Verify that the fuel injector No.4 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 fuel injector No.4 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 fuel injector No.4 terminal A and PCM terminal 1DD. **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 9.
7	**INSPECT FUEL INJECTOR No.4 CIRCUIT FOR OPEN CIRCUIT** • Verify that the fuel injector No.4 and PCM connectors are disconnected. • Switch the ignition off. • Inspect for continuity between the following terminals (wiring harness-side): — Fuel injector No.4 terminal B–PCM terminal 1DC — Fuel injector No.4 terminal A–PCM terminal 1DD • 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: • Fuel injector No.4 terminal B–PCM terminal 1DC • Fuel injector No.4 terminal A–PCM terminal 1DD **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 9.

DTC P0203:00	Fuel injector circuit/open cylinder No.3



Diagnostic Procedure

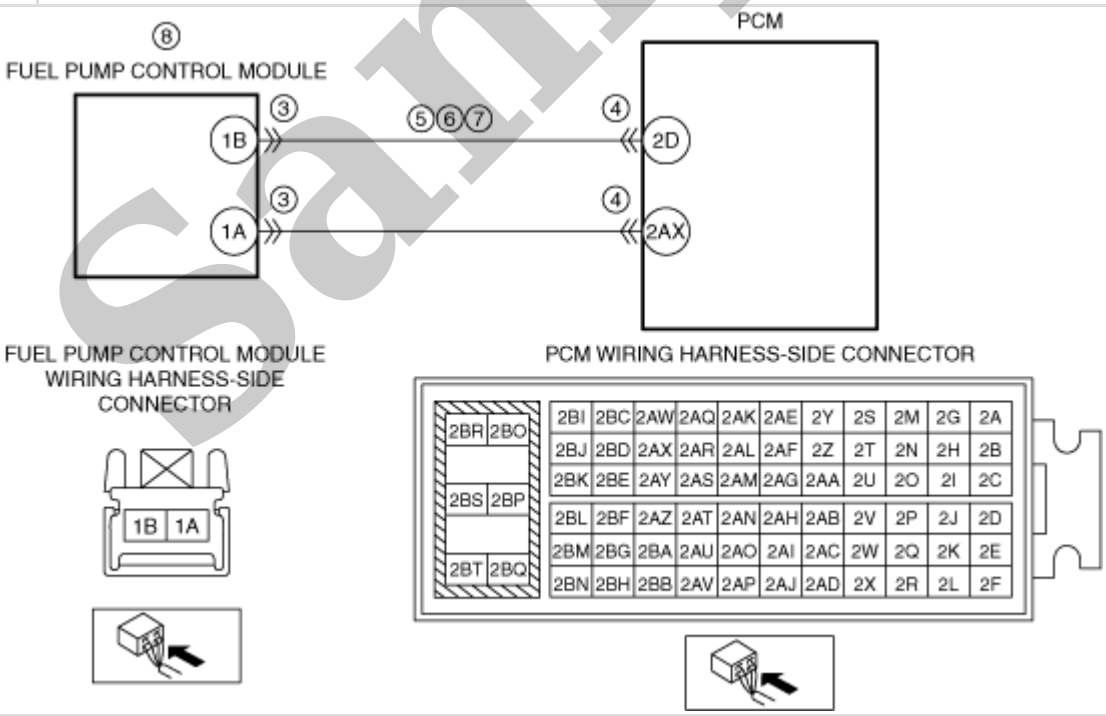
STEP	INSPECTION	RESULTS	ACTION
1	RECORD VEHICLE STATUS AT TIME OF DTC DETECTION TO UTILIZE WITH REPEATABILITY VERIFICATION Note • Recording can be facilitated using the screen capture function of the PC. • Record the FREEZE FRAME DATA/snapshot data on the repair order.	–	Go to the next step.
2	VERIFY 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.

DTC P025B:00 [PCM (SKYACTIV-G 2.5 (WITH CYLINDER DEACTIVATION))]

SM2896712

id0102s931260

DTC P025B:00	Fuel pump control module circuit range/performance problem
DETECTION CONDITION	• When any of the following conditions is met: — PCM detects overheating in fuel pump control module. — Output duty ratio signal received from PCM is in error. — Temperature detection thermistor in fuel pump control module is malfunctioning. — Output signal from fuel pump control module is erratic (noise overlap). **Diagnostic support note** • This is a continuous monitor (CCM). • 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	• Stops fuel pump control. (If overheating is detected in fuel pump control module)
POSSIBLE CAUSE	• Fuel pump control module connector or terminals malfunction • PCM connector or terminals malfunction • Short to ground in wiring harness between fuel pump control module terminal 1B and PCM terminal 2D • Short to power supply in wiring harness between fuel pump control module terminal 1B and PCM terminal 2D • Open circuit in wiring harness between fuel pump control module terminal 1B and PCM terminal 2D • Fuel pump control module malfunction • PCM malfunction



Diagnostic Procedure

DTC P06B8:00 [PCM (SKYACTIV-G 2.5 (WITH CYLINDER DEACTIVATION))]

SM2896713

id0102s931620

DTC P06B8:00	Internal control module non-volatile RAM error
DETECTION CONDITION	• PCM internal EEPROM malfunction. Diagnostic support note • This is a continuous monitor (other). • 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	• Not applicable
POSSIBLE CAUSE	• PCM connector or terminals malfunction • PCM internal EEPROM malfunction
SYSTEM WIRING DIAGRAM	• Not applicable

Diagnostic Procedure

STEP	INSPECTION	RESULTS	ACTION
1	RECORD VEHICLE STATUS AT TIME OF DTC DETECTION 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 on the repair order.	–	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 PCM CONNECTOR CONDITION • Switch the ignition off. • 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 the next step.
		No	Go to the next step.
4	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))].) • Perform the KOEO or KOER self test. (See KOEO/KOER SELF TEST [PCM (SKYACTIV-G 2.5 (WITH CYLINDER DEACTIVATION))].) • Is the same Pending DTC present?	Yes	Replace the PCM, then go to the next step. (See PCM REMOVAL/INSTALLATION [SKYACTIV-G 2.5 (WITH CYLINDER DEACTIVATION)].)
		No	Go to the next step.

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))].) • Is the PENDING CODE/DTC P0335:00, P059F:00, P05A0:00, P05A3:00, P05C0:00 or U0284:00 also present?	Yes	Go to the applicable PENDING CODE or DTC inspection. (See DTC P0335:00 [PCM (SKYACTIV-G 2.5 (WITH CYLINDER DEACTIVATION))].) (See DTC P059F:00 [PCM (SKYACTIV-G 2.5 (WITH CYLINDER DEACTIVATION))].) (See DTC P05A0:00 [PCM (SKYACTIV-G 2.5 (WITH CYLINDER DEACTIVATION))].) (See DTC P05A3:00 [PCM (SKYACTIV-G 2.5 (WITH CYLINDER DEACTIVATION))].) (See DTC P05C0:00 [PCM (SKYACTIV-G 2.5 (WITH CYLINDER DEACTIVATION))].) (See DTC U0284:00 [PCM (SKYACTIV-G 2.5 (WITH CYLINDER DEACTIVATION))].)
		No	Go to the next step.
4	INSPECT VEHICLE CONDITION FOR EFFECT ON MALFUNCTION • Verify how the customer drives the vehicle by asking the customer the following: • Does the engine speed exceed 5,800 rpm for 6 min or more while driving in 5th gear or lower gear?	Yes	Explain to the customer that the vehicle is normal. (performs control to protect the engine due to continuous engine speed exceeding 5,800 rpm for 6 min or more while in 5th gear or lower gear) If there is a concern with customer's driving, provide the customer some pertinent advice (such as gear selection, how to use manual mode). Go to the next step.
		No	Go to the next step.
5	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 warm it up completely. • Drive the vehicle. • Perform the DTC Reading 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.
6	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.