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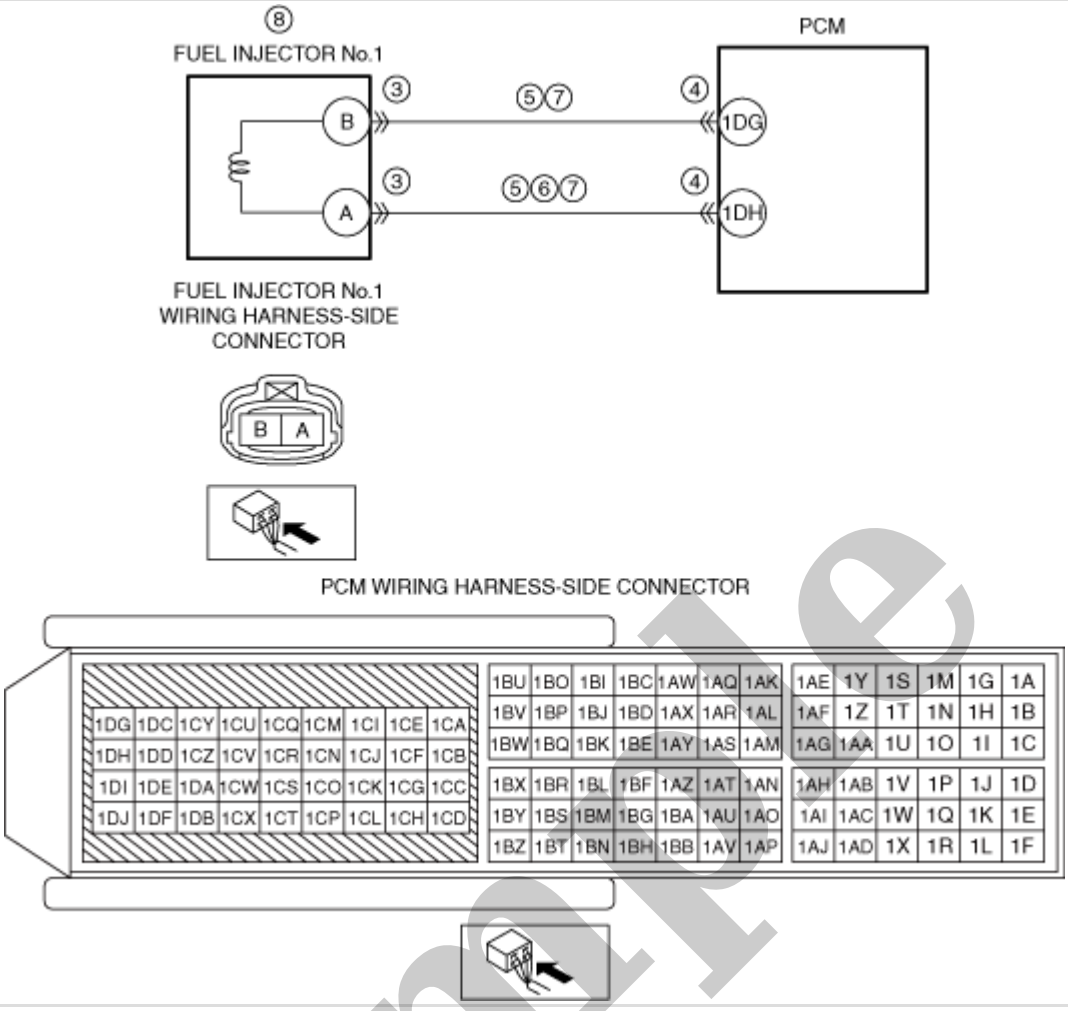
2000 MAZDA Xedos 9 OEM Service and Repair Workshop Manual

Go to manual page

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 (WITHOUT CYLINDER DEACTIVATION))]

SM2896869

id0102t314800

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 (WITHOUT 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 (WITHOUT 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 (WITHOUT CYLINDER DEACTIVATION))].) • Perform the KOEO or KOER self test. (See KOEO/KOER SELF TEST [PCM (SKYACTIV-G 2.5 (WITHOUT 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 (WITHOUT 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 (WITHOUT CYLINDER DEACTIVATION))].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See DTC TABLE [PCM (SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION))].)
		No	DTC troubleshooting completed.

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	**DETERMINE IF FUEL PRESSURE SENSOR OR WIRING HARNESS MALFUNCTION** • Access the FUEL_PRES PID using the M-MDS. (See ON-BOARD DIAGNOSTIC TEST [PCM (SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION))].) • Verify the FUEL_PRES PID value. • Is the FUEL_PRES PID value 5 V or B+?	Yes	Go to Step 7.
		No	Go to the next step.
4	**INSPECT FUEL PRESSURE SENSOR CONNECTOR CONDITION** • Switch the ignition off. • Disconnect the fuel pressure 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 10.
		No	Go to the next step.
5	**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 10.
		No	Go to the next step.
6	**INSPECT FUEL PRESSURE SENSOR** • Reconnect all disconnected connectors. • Inspect the fuel pressure sensor. (See FUEL PRESSURE SENSOR INSPECTION [SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION)].) • Is there any malfunction ?	Yes	Replace the fuel distributor, then go to Step 10. (See FUEL INJECTOR REMOVAL/INSTALLATION [SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION)].)
		No	Go to Step 10.
7	**DETERMINE IF FUEL PRESSURE SENSOR SIGNAL CIRCUIT OR FUEL PRESSURE SENSOR GROUND CIRCUIT MALFUNCTION** • Switch the ignition off. • Disconnect the fuel pressure sensor connector. • Access the FUEL_PRES PID using the M-MDS. (See ON-BOARD DIAGNOSTIC TEST [PCM (SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION))].) • Verify the FUEL_PRES PID value. • Is the FUEL_PRES PID value 5 V or B+?	Yes	Go to the next step.
		No	Go to Step 9.

DTC P0203:00 [PCM (SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION))]

SM2896870

id0102t314810

DTC P0203:00	Fuel injector circuit/open cylinder No.3
DETECTION CONDITION	• If the fuel injection verification signal is not input at 25 times continuously even though the PCM drives the fuel injector No.3, the PCM determines that there is an open circuit in the fuel injector No.3 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.3 connector or terminals malfunction • PCM connector or terminals malfunction • Short to ground in wiring harness between the following terminals: — Fuel injector No.3 terminal B—PCM terminal 1CU — Fuel injector No.3 terminal A—PCM terminal 1CV • Short to power supply in wiring harness between fuel injector No.3 terminal A and PCM terminal 1CV • Open circuit in wiring harness between the following terminals: — Fuel injector No.3 terminal B—PCM terminal 1CU — Fuel injector No.3 terminal A—PCM terminal 1CV • Fuel injector No.3 malfunction • PCM malfunction

STEP	INSPECTION	RESULTS	ACTION
8	**INSPECT FUEL INJECTOR No.3** • Inspect the fuel injector No.3. (See FUEL INJECTOR INSPECTION [SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION)].) • Is there any malfunction?	Yes	Replace the fuel injector No.3, then go to the next step. (See FUEL INJECTOR REMOVAL/INSTALLATION [SKYACTIV-G 2.5 (WITHOUT 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 (WITHOUT CYLINDER DEACTIVATION))].) • Perform the KOEO or KOER self test. (See KOEO/KOER SELF TEST [PCM (SKYACTIV-G 2.5 (WITHOUT 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 (WITHOUT 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 (WITHOUT CYLINDER DEACTIVATION))].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See DTC TABLE [PCM (SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION))].)
		No	DTC troubleshooting completed.

STEP	INSPECTION	RESULTS	ACTION
3	**INSPECT FUEL GAUGE SENDER UNIT (MAIN) CONNECTOR CONDITION** • Switch the ignition off. • Disconnect the fuel gauge sender unit (main) 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 13.
		No	**2WD:** • Go to Step 5. **AWD:** • Go to the next step.
4	**INSPECT FUEL GAUGE SENDER UNIT (SUB) CONNECTOR CONDITION** • Switch the ignition off. • Disconnect the fuel gauge sender unit (sub) 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 13.
		No	Go to the next step.
5	**INSPECT REAR BODY CONTROL MODULE (RBCM) CONNECTOR CONDITION** • Disconnect the rear body control module (RBCM) 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 13.
		No	Go to the next step.
6	**INSPECT FUEL GAUGE SENDER UNIT (MAIN) SIGNAL CIRCUIT FOR SHORT TO POWER SUPPLY** • Verify that the fuel gauge sender unit (main) and rear body control module (RBCM) 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 gauge sender unit (main) terminal D (wiring harness-side). • Is the voltage 0 V?	Yes	**2WD:** • Go to Step 8. **AWD:** • Go to the next step.
		No	Refer to the wiring diagram and verify whether or not there is a common connector between fuel gauge sender unit (main) terminal D and rear body control module (RBCM) terminal 3I. **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 13.
7	**INSPECT FUEL GAUGE SENDER UNIT (SUB) SIGNAL CIRCUIT FOR SHORT TO POWER SUPPLY** • Verify that the fuel gauge sender unit (sub) and rear body control module (RBCM) 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 gauge sender unit (sub) 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 gauge sender unit (sub) terminal A and rear body control module (RBCM) terminal 3K. **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 13.

DTC P0462:00 [PCM (SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION))]

SM2896903

id0102t330160

DTC P0462:00	Fuel gauge sender unit circuit low input
DETECTION CONDITION	• The PCM monitors the fuel level signal and fuel gauge sender unit output voltage from the instrument cluster. If the PCM detects that the fuel level, fuel gauge sender unit output voltage is too low, the PCM determines that the fuel gauge sender unit circuit has a malfunction. Diagnostic support note • This is a continuous monitor (CCM). • The check engine light illuminates if the PCM detects the above malfunction condition in two consecutive drive cycles or in one drive cycle while the DTC for the same malfunction has been stored in the PCM. (The check engine light may be illuminated depending on the malfunction conditions.) • PENDING CODE is available if the PCM detects the above malfunction condition during 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 gauge sender unit (main) connector or terminals malfunction • Fuel gauge sender unit (sub) connector or terminals malfunction (AWD) • Rear body control module (RBCM) connector or terminals malfunction • Short to ground in wiring harness between the following terminals: — Fuel gauge sender unit (main) terminal D—Rear body control module (RBCM) terminal 3I — Fuel gauge sender unit (sub) terminal A—Rear body control module (RBCM) terminal 3K (AWD) • Fuel gauge sender unit (main) signal circuit and ground circuit are shorted to each other • Fuel gauge sender unit (sub) signal circuit and ground circuit are shorted to each other (AWD) • Fuel gauge sender unit (main) malfunction • Fuel gauge sender unit (sub) malfunction (AWD) • Rear body control module (RBCM) malfunction • Instrument cluster malfunction • PCM malfunction

STEP	INSPECTION	RESULTS	ACTION
8	**INSPECT FUEL GAUGE SENDER UNIT (MAIN) SIGNAL CIRCUIT AND GROUND CIRCUIT FOR SHORT TO EACH OTHER** • Verify that the fuel gauge sender unit (main) and rear body control module (RBCM) connectors are disconnected. • Inspect for continuity between fuel gauge sender unit (main) terminals D and C (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: • Fuel gauge sender unit (main) terminal D–Rear body control module (RBCM) terminal 3I • Fuel gauge sender unit (main) terminal C–Rear body control module (RBCM) terminal 3C **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 13.
		No	**2WD:** • Go to Step 10. **AWD:** • Go to the next step.
9	**INSPECT FUEL GAUGE SENDER UNIT (SUB) SIGNAL CIRCUIT AND GROUND CIRCUIT FOR SHORT TO EACH OTHER** • Verify that the fuel gauge sender unit (sub) and rear body control module (RBCM) connectors are disconnected. • Inspect for continuity between fuel gauge sender unit (sub) 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: • Fuel gauge sender unit (sub) terminal A–Rear body control module (RBCM) terminal 3K • Fuel gauge sender unit (sub) terminal B–Rear body control module (RBCM) terminal 3C **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 13.
		No	Go to the next step.
10	**INSPECT FUEL GAUGE SENDER UNIT** • Inspect the fuel gauge sender unit (main) or fuel gauge sender unit (sub) (AWD). (See FUEL GAUGE SENDER UNIT INSPECTION [2WD].) (See FUEL GAUGE SENDER UNIT INSPECTION [AWD].) • Is there any malfunction?	Yes	Replace the fuel gauge sender unit (main) or fuel gauge sender unit (sub) (AWD), then go to Step 13. (See FUEL GAUGE SENDER UNIT REMOVAL/INSTALLATION [2WD].) (See FUEL GAUGE SENDER UNIT REMOVAL/INSTALLATION [AWD].)
		No	Go to the next step.
11	**INSPECT REAR BODY CONTROL MODULE (RBCM)** • Inspect the rear body control module (RBCM). (See REAR BODY CONTROL MODULE (RBCM) INSPECTION.) • Is there any malfunction?	Yes	Replace the rear body control module (RBCM), then go to Step 13. (See REAR BODY CONTROL MODULE (RBCM) REMOVAL/INSTALLATION.)
		No	Go to the next step.
12	**INSPECT INSTRUMENT CLUSTER** • Inspect the instrument cluster. (See INSTRUMENT CLUSTER INSPECTION.) • Is there any malfunction?	Yes	Replace the instrument cluster, then go to the next step. (See INSTRUMENT CLUSTER REMOVAL/INSTALLATION.)
		No	Go to the next step.