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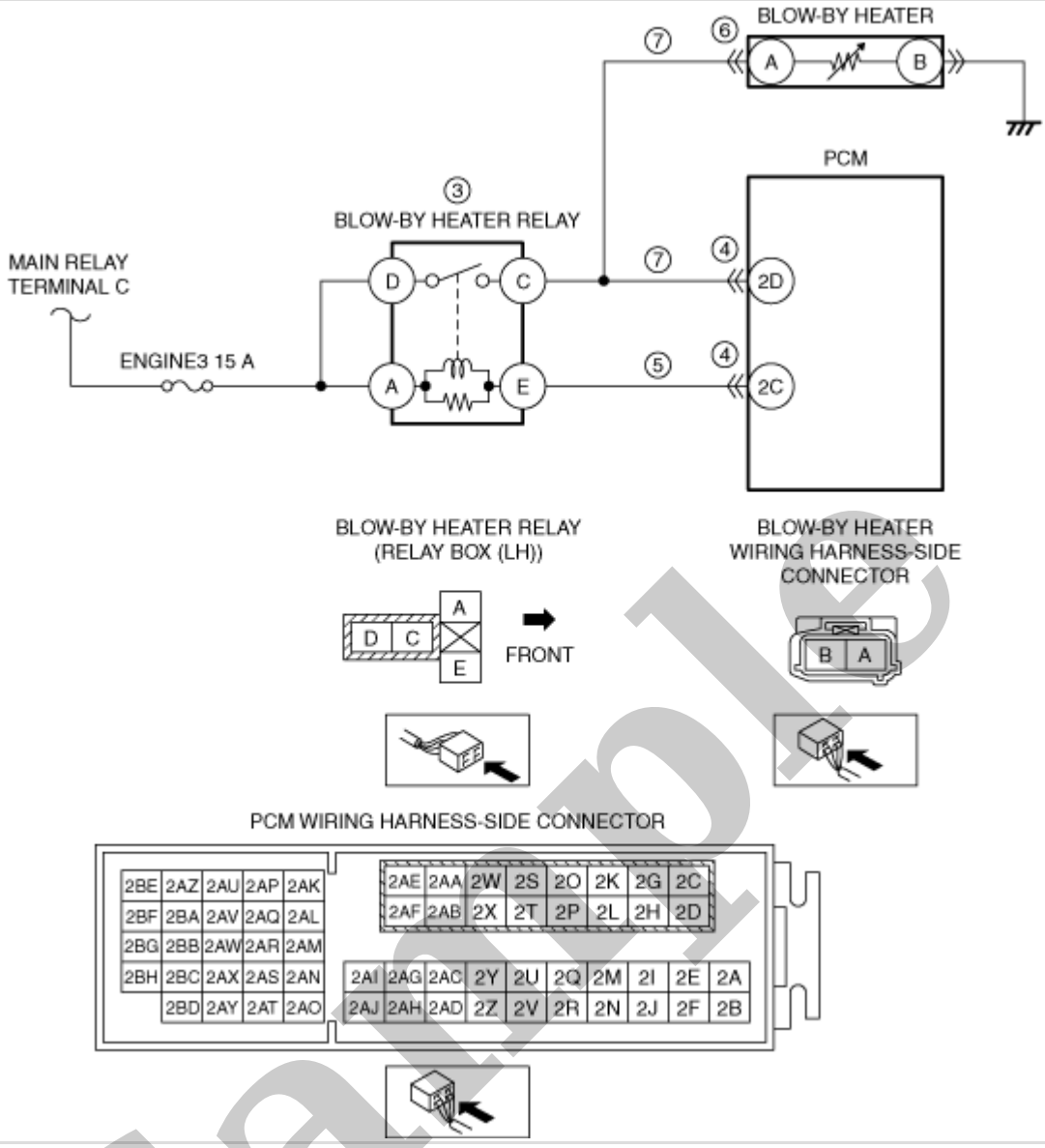
1991 MAZDA 626 (Mk.3) Station Wagon OEM Service and Repair Workshop Manual

Go to manual page

STEP	INSPECTION		ACTION
6	INSPECT EXHAUST GAS TEMPERATURE SENSOR CIRCUIT FOR SHORT TO POWER SUPPLY • Verify that the exhaust gas temperature sensor No.1, exhaust gas temperature sensor No.2, exhaust gas temperature sensor No.3, exhaust gas temperature sensor No.4, exhaust gas temperature sensor No.5 and PCM connectors are disconnected. • Switch the ignition ON (engine off). • Measure the voltage at the following terminals (wiring harness-side): — Exhaust gas temperature sensor No.1 terminal A — Exhaust gas temperature sensor No.2 terminal A — Exhaust gas temperature sensor No.3 terminal A — Exhaust gas temperature sensor No.4 terminal A — Exhaust gas temperature sensor No.5 terminal A • 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 the following terminals: • Exhaust gas temperature sensor No.1 terminal A—PCM terminal 1CI • Exhaust gas temperature sensor No.2 terminal A—PCM terminal 1CA • Exhaust gas temperature sensor No.3 terminal A—PCM terminal 1BW • Exhaust gas temperature sensor No.4 terminal A—PCM terminal 1DU • Exhaust gas temperature sensor No.5 terminal A—PCM terminal 1DQ **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 EXHAUST GAS TEMPERATURE SENSOR CIRCUIT FOR OPEN CIRCUIT • Verify that the exhaust gas temperature sensor No.1, exhaust gas temperature sensor No.2, exhaust gas temperature sensor No.3, exhaust gas temperature sensor No.4, exhaust gas temperature sensor No.5 and PCM connectors are disconnected. • Inspect for continuity between the following terminals (wiring harness-side): — Exhaust gas temperature sensor No.1 terminal A—PCM terminal 1CI — Exhaust gas temperature sensor No.1 terminal B—PCM terminal 1AC — Exhaust gas temperature sensor No.2 terminal A—PCM terminal 1CA — Exhaust gas temperature sensor No.2 terminal B—PCM terminal 1CB — Exhaust gas temperature sensor No.3 terminal A—PCM terminal 1BW — Exhaust gas temperature sensor No.3 terminal B—PCM terminal 1BS — Exhaust gas temperature sensor No.4 terminal A—PCM terminal 1DU — Exhaust gas temperature sensor No.4 terminal B—PCM terminal 1DR — Exhaust gas temperature sensor No.5 terminal A—PCM terminal 1DQ — Exhaust gas temperature sensor No.5 terminal B—PCM terminal 1DZ • 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: • Exhaust gas temperature sensor No.1 terminal A—PCM terminal 1CI • Exhaust gas temperature sensor No.1 terminal B—PCM terminal 1AC • Exhaust gas temperature sensor No.2 terminal A—PCM terminal 1CA • Exhaust gas temperature sensor No.2 terminal B—PCM terminal 1CB • Exhaust gas temperature sensor No.3 terminal A—PCM terminal 1BW • Exhaust gas temperature sensor No.3 terminal B—PCM terminal 1BS • Exhaust gas temperature sensor No.4 terminal A—PCM terminal 1DU • Exhaust gas temperature sensor No.4 terminal B—PCM terminal 1DR • Exhaust gas temperature sensor No.5 terminal A—PCM terminal 1DQ • Exhaust gas temperature sensor No.5 terminal B—PCM terminal 1DZ **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 P053C:00	Blow-by heater relay control circuit high input



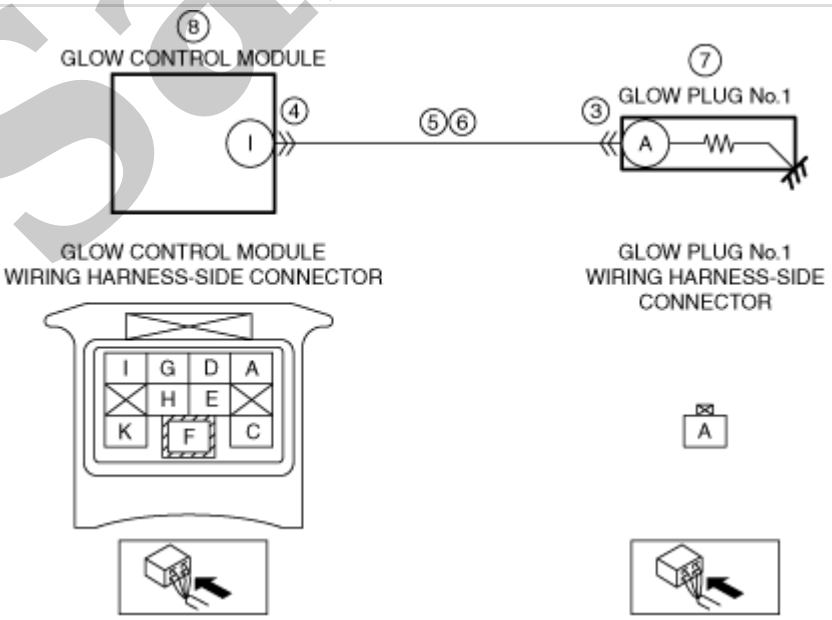
Diagnostic Procedure

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 snapshot data on the repair order.	–	Go to the next step.

DTC P0671:00 [PCM (SKYACTIV-D 2.2)]

SM2896075

id0102j521330

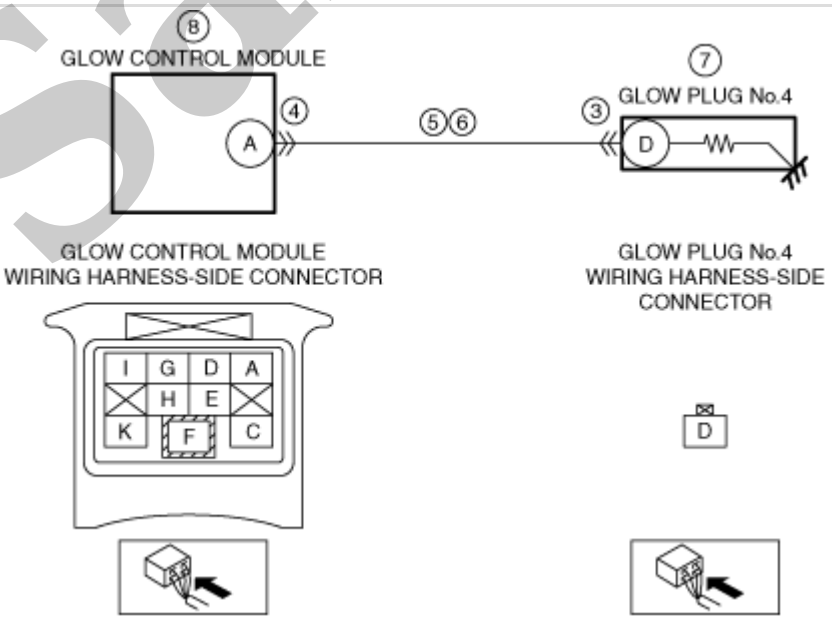
DTC P0671:00	Glow plug No.1 control circuit problem
DETECTION CONDITION	• If the PCM detects that the glow plug No.1 control circuit current is below 0.4 A for 5 s, the PCM determines that the glow plug No.1 control circuit has a malfunction. MONITORING CONDITIONS — Ignition switched ON (engine off or on) — Battery voltage: 8 V or more — 0.2 s have elapsed since power supply voltage of 6 V or more is supplied to glow plug — The following DTC is not detected: • LIN communication system: U0106:00 • Glow plug control module: P052F:00 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. • 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	• Glow plug No.1 connector or terminals malfunction • Glow control module connector or terminals malfunction • Short to ground in wiring harness between glow plug No.1 terminal A and glow control module terminal I • Open circuit in wiring harness between glow plug No.1 terminal A and glow control module terminal I • Glow plug No.1 malfunction • Glow control module malfunction • PCM malfunction
	

Diagnostic Procedure

DTC P0674:00 [PCM (SKYACTIV-D 2.2)]

SM2896078

id0102j521360

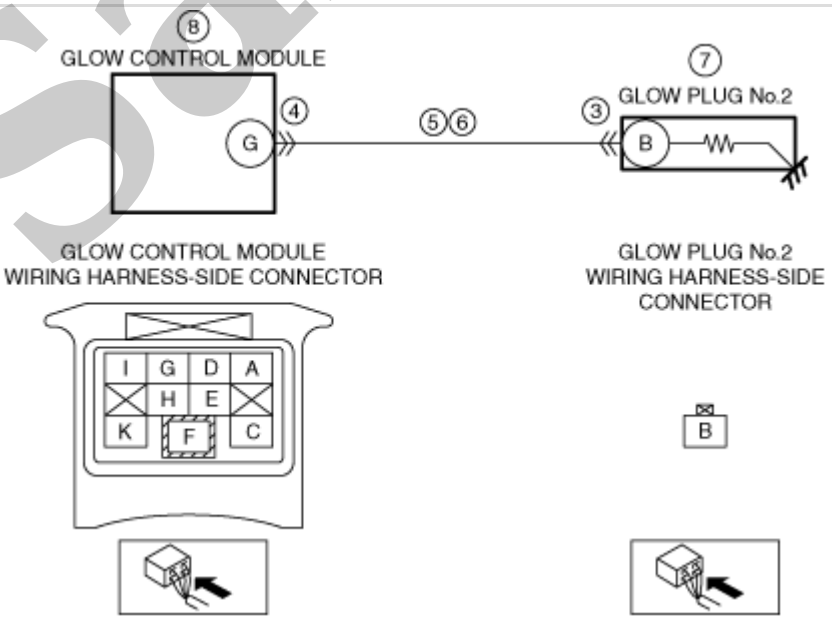
DTC P0674:00	Glow plug No.4 control circuit problem
DETECTION CONDITION	• If the PCM detects that the glow plug No.4 control circuit current is below 0.4 A for 5 s, the PCM determines that the glow plug No.4 control circuit has a malfunction. MONITORING CONDITIONS — Ignition switched ON (engine off or on) — Battery voltage: 8 V or more — 0.2 s have elapsed since power supply voltage of 6 V or more is supplied to glow plug — The following DTC is not detected: • LIN communication system: U0106:00 • Glow plug control module: P052F:00 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. • 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	• Glow plug No.4 connector or terminals malfunction • Glow control module connector or terminals malfunction • Short to ground in wiring harness between glow plug No.4 terminal D and glow control module terminal A • Open circuit in wiring harness between glow plug No.4 terminal D and glow control module terminal A • Glow plug No.4 malfunction • Glow control module malfunction • PCM malfunction
	

Diagnostic Procedure

DTC P0672:00 [PCM (SKYACTIV-D 2.2)]

SM2896076

id0102j521340

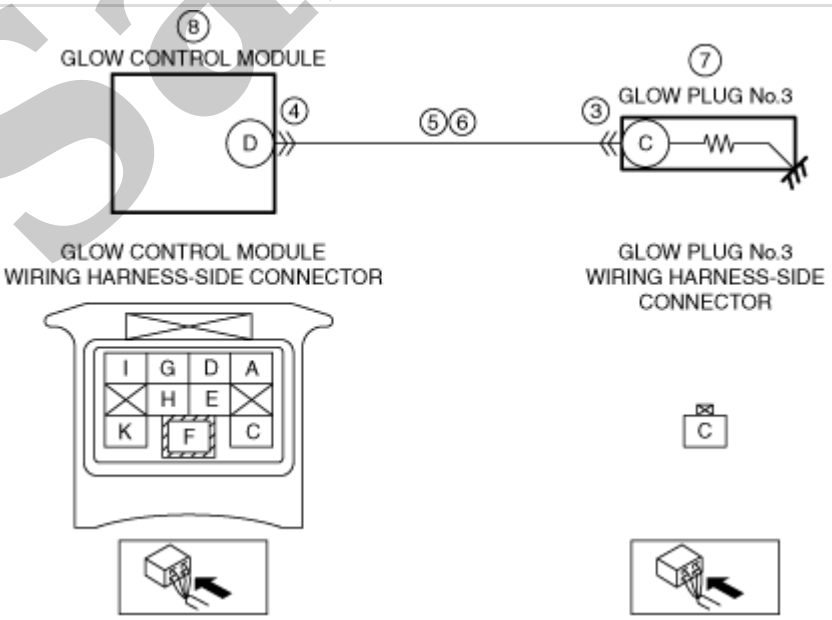
DTC P0672:00	Glow plug No.2 control circuit problem
DETECTION CONDITION	• If the PCM detects that the glow plug No.2 control circuit current is below 0.4 A for 5 s, the PCM determines that the glow plug No.2 control circuit has a malfunction. MONITORING CONDITIONS — Ignition switched ON (engine off or on) — Battery voltage: 8 V or more — 0.2 s have elapsed since power supply voltage of 6 V or more is supplied to glow plug — The following DTC is not detected: • LIN communication system: U0106:00 • Glow plug control module: P052F:00 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. • 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	• Glow plug No.2 connector or terminals malfunction • Glow control module connector or terminals malfunction • Short to ground in wiring harness between glow plug No.2 terminal B and glow control module terminal G • Open circuit in wiring harness between glow plug No.2 terminal B and glow control module terminal G • Glow plug No.2 malfunction • Glow control module malfunction • PCM malfunction
	

Diagnostic Procedure

DTC P0673:00 [PCM (SKYACTIV-D 2.2)]

SM2896077

id0102j521350

DTC P0673:00	Glow plug No.3 control circuit problem
DETECTION CONDITION	• If the PCM detects that the glow plug No.3 control circuit current is below 0.4 A for 5 s, the PCM determines that the glow plug No.3 control circuit has a malfunction. MONITORING CONDITIONS — Ignition switched ON (engine off or on) — Battery voltage: 8 V or more — 0.2 s have elapsed since power supply voltage of 6 V or more is supplied to glow plug — The following DTC is not detected: • LIN communication system: U0106:00 • Glow plug control module: P052F:00 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. • 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	• Glow plug No.3 connector or terminals malfunction • Glow control module connector or terminals malfunction • Short to ground in wiring harness between glow plug No.3 terminal C and glow control module terminal D • Open circuit in wiring harness between glow plug No.3 terminal C and glow control module terminal D • Glow plug No.3 malfunction • Glow control module malfunction • PCM malfunction
	

Diagnostic Procedure

DTC P1041:00 [PCM (SKYACTIV-D 2.2)]

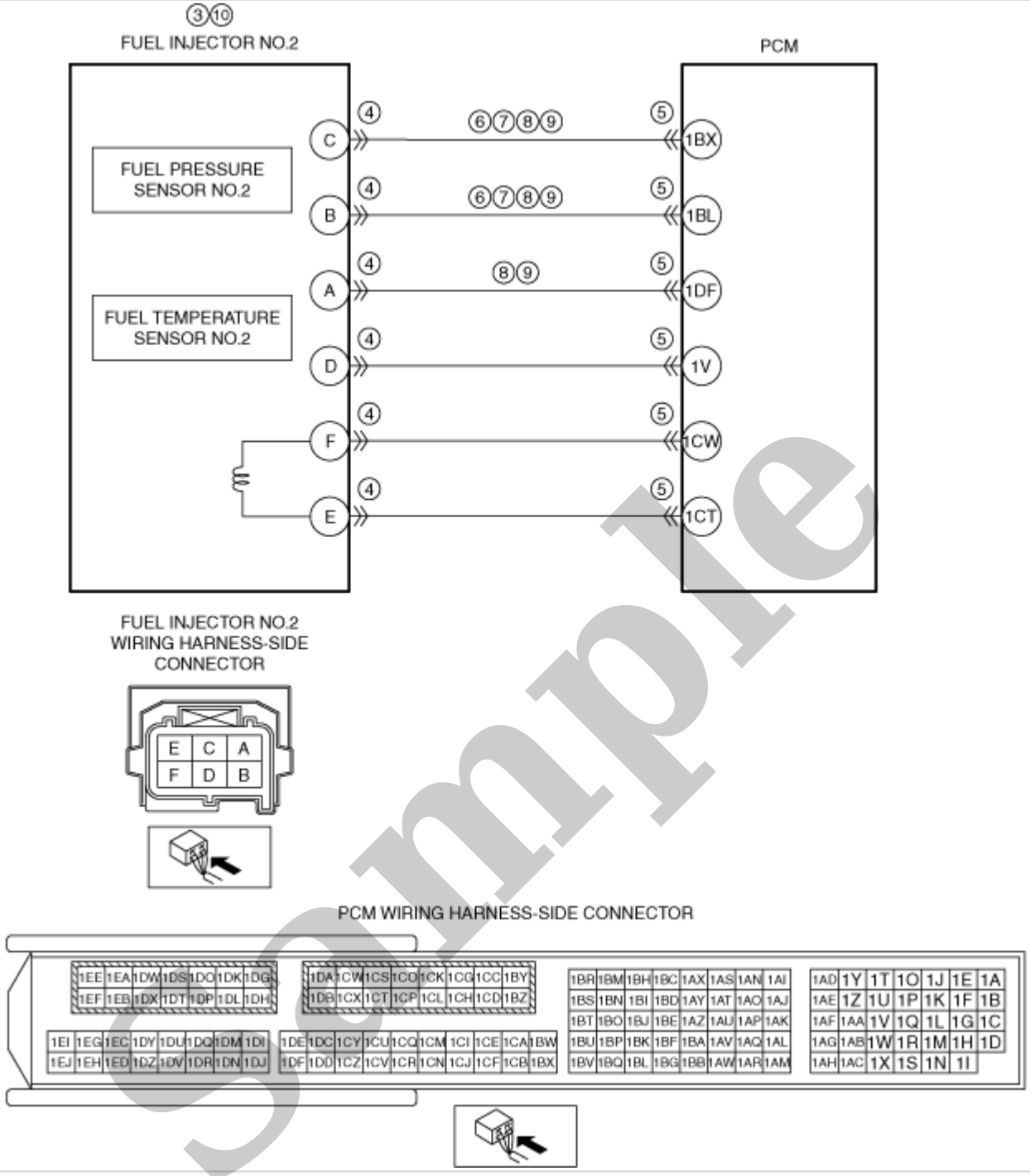
SM2896153

id0102j537660

DTC P1041:00	Fuel injector No.1: Fuel injection system function malfunction
DETECTION CONDITION	• When the following conditions are met, the fuel injection system function (learning value calculation/update) stops during the specified rotation. MONITORING CONDITIONS — Battery voltage: 10.5–18 V — Engine speed: 700–4,000 rpm — Diesel particulate filter regeneration control is not performed — Target pilot fuel injection quantity: 0.8–11.6 mm^3/stroke — Actual fuel pressure is greater than 35 MPa {357 kgf/cm^2, 5077 psi} and less than 217 MPa {2213 kgf/cm^2, 31474 psi} — Engine coolant temperature: 5 °C {41 °F} or more — Fuel temperature: 5 °C {41 °F} or more — Fuel injection interval: 0.2 msec or more — When any of the following condition is met: • DESOx control is not performed. • DESOx control is performed and control status is rich Diagnostic support note • This is an intermittent monitor (Fuel System). • 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 same malfunction with similar condition has been stored in the PCM. • 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 injector No.1 malfunction • Fuel injector No.1 connector or terminals malfunction • PCM connector or terminals malfunction • Short to ground in wiring harness between the following terminals: — Fuel injector No.1 terminal C–PCM terminal 1M — Fuel injector No.1 terminal B–PCM terminal 1AG • Short to power supply in wiring harness between the following terminals: — Fuel injector No.1 terminal C–PCM terminal 1M — Fuel injector No.1 terminal B–PCM terminal 1AG • Fuel pressure sensor No.1 circuits are shorted to each other • Open circuit in wiring harness between the following terminals: — Fuel injector No.1 terminal C–PCM terminal 1M — Fuel injector No.1 terminal B–PCM terminal 1AG — Fuel injector No.1 terminal A–PCM terminal 1R • Fuel pressure sensor No.1 (built-into fuel injector No.1) malfunction • PCM malfunction

STEP	INSPECTION		ACTION
7	**INSPECT FUEL PRESSURE SENSOR NO.1 CIRCUIT FOR SHORT TO POWER SUPPLY** • Verify that the fuel injector No.1 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 following terminals (wiring harness-side): — Fuel injector No.1 terminal C — Fuel injector No.1 terminal B • 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 the following terminals: • Fuel injector No.1 terminal C–PCM terminal 1M • Fuel injector No.1 terminal B–PCM terminal 1AG **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 11.
8	**INSPECT FUEL PRESSURE SENSOR NO.1 CIRCUITS FOR SHORT TO EACH OTHER** • Verify that the fuel injector No.1 and PCM connectors are disconnected. • Switch the ignition off. • Inspect for continuity fuel injector No.1 terminals C, B and A (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 injector No.1 terminal C–PCM terminal 1M • Fuel injector No.1 terminal B–PCM terminal 1AG • Fuel injector No.1 terminal A–PCM terminal 1R **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 11.
		No	Go to the next step.
9	**INSPECT FUEL PRESSURE SENSOR NO.1 CIRCUIT FOR OPEN CIRCUIT** • Verify that the fuel injector No.1 and PCM connectors are disconnected. • Inspect for continuity between the following terminals (wiring harness-side): — Fuel injector No.1 terminal C–PCM terminal 1M — Fuel injector No.1 terminal B–PCM terminal 1AG — Fuel injector No.1 terminal A–PCM terminal 1R • 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.1 terminal C–PCM terminal 1M • Fuel injector No.1 terminal B–PCM terminal 1AG • Fuel injector No.1 terminal A–PCM terminal 1R **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 11.
10	**REPLACE FUEL INJECTOR NO.1** • Replace the fuel injector No.1. (See FUEL INJECTOR REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)	–	Go to the next step.

DTC P1042:00	Fuel injector No.2: Fuel injection system function malfunction



Caution

• If a hand or tool touches a fuel injector terminal or fuel injector connector terminal, the fuel injector might be damaged. To prevent damage to a fuel injector, do not touch the terminals.
• If high-voltage generating parts or components and electronic devices come near a fuel injector, the fuel injector could be damaged. To prevent damage to a fuel injector, always keep high-voltage generating parts or components and electronic devices away from it.

Diagnostic Procedure