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1994 MAZDA MX-6 OEM Service and Repair Workshop Manual

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Sample

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STEP	INSPECTION	RESULTS	ACTION
7	PURPOSE: DETERMINE INTEGRITY OF PURGE SOLENOID VALVE • Inspect the purge solenoid valve. (See PURGE SOLENOID VALVE INSPECTION [SKYACTIV-G 2.5T].) • Is there any malfunction?	Yes	Replace the purge solenoid valve, then go to the next step. (See PURGE SOLENOID VALVE REMOVAL/INSTALLATION [SKYACTIV-G 2.5T].)
		No	Go to the next step.
8	PURPOSE: DETERMINE EJECTOR INTEGRITY • Is there any damage, cracks, or looseness on the ejector?	Yes	Replace the dynamic pressure turbo, then go to Step 9. (See DYNAMIC PRESSURE TURBO REMOVAL/INSTALLATION [SKYACTIV-G 2.5T].)
		No	Go to the next step.
9	PURPOSE: VERIFICATION OF VEHICLE REPAIR COMPLETION • Reconnect all the removed parts. • Clear the DTC from the PCM memory using the M-MDS. (See CLEARING DTC [PCM (SKYACTIV-G 2.5T)].) • Implement the repeatability verification procedure. (See Repeatability Verification Procedure.) • Perform the Pending Trouble Code Access Procedure. (See ON-BOARD DIAGNOSTIC TEST [PCM (SKYACTIV-G 2.5T)].) • Is the same Pending DTC present?	Yes	Repeat the inspection from Step 1 of the troubleshooting diagnostic procedure. • If the malfunction recurs, replace the PCM. (See PCM REMOVAL/INSTALLATION [SKYACTIV-G 2.5T].) Go to the next step.
		No	Go to the next step.
10	PURPOSE: VERIFY IF THERE IS ANY OTHER MALFUNCTION • Is any other DTC or pending code stored?	Yes	Go to the applicable DTC inspection. (See DTC TABLE [PCM (SKYACTIV-G 2.5T)].)
		No	DTC troubleshooting completed.

Sample

STEP	INSPECTION	RESULTS	ACTION
10	VERIFY AFTER REPAIR PROCEDURE • Perform the "AFTER REPAIR PROCEDURE". (See AFTER REPAIR PROCEDURE [PCM (SKYACTIV-G 2.5T)].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See DTC TABLE [PCM (SKYACTIV-G 2.5T)].)
		No	DTC troubleshooting completed.

Sample

DTC P130C:00 [PCM (SKYACTIV-G 2.5T)]

SM2896525

id0102s859930

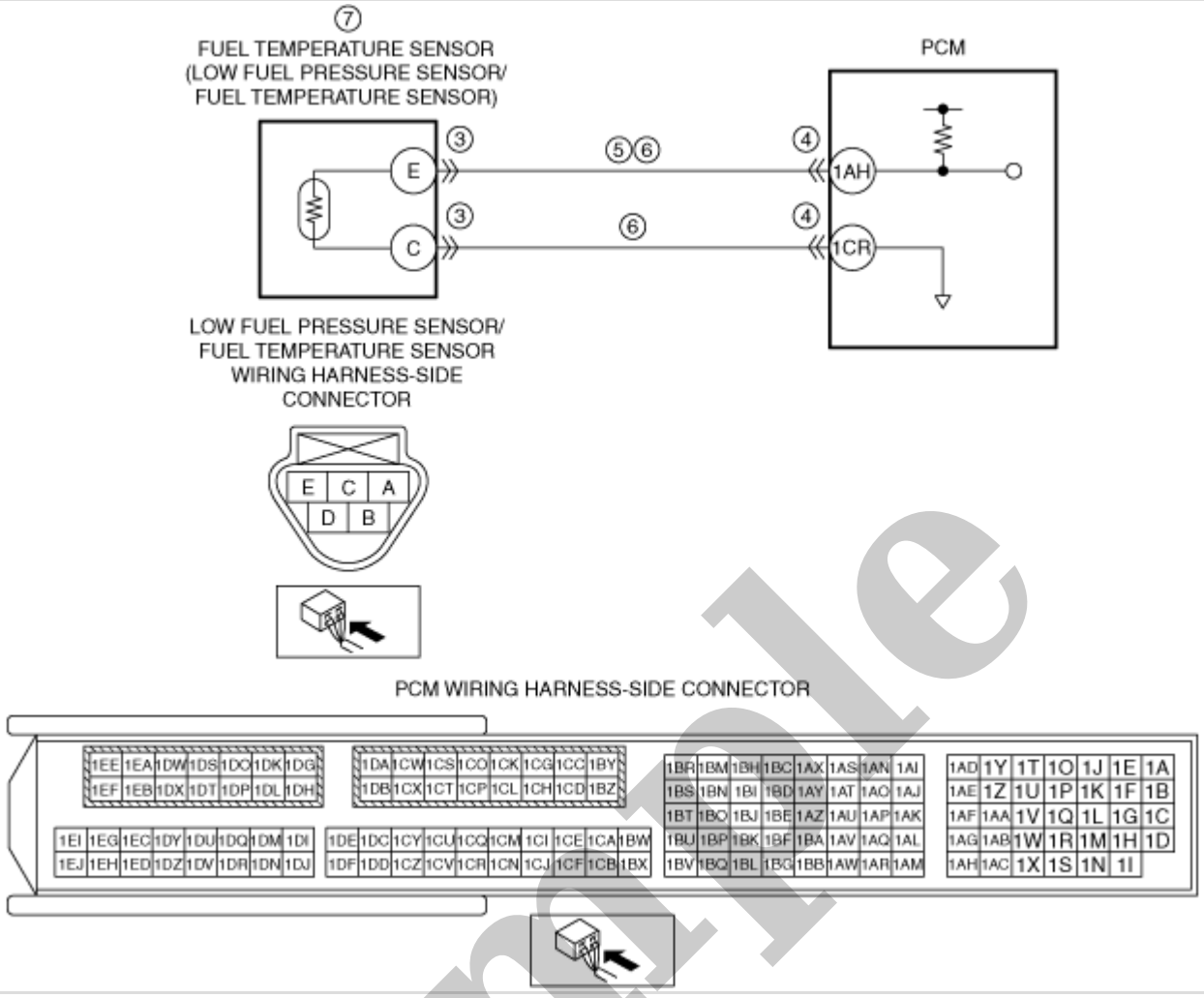
DTC P130C:00	Pre-ignition detected
DETECTION CONDITION	• Pre-ignition is detected a few times continuously. Diagnostic support note • This is a continuous monitor (other). • The PCM turns the master warning light on in the first drive cycle, and turns the master warning light and check engine light on in the second drive cycle. • FREEZE FRAME DATA/Snapshot data is available. • DTC is stored in the PCM memory.
FAIL-SAFE FUNCTION	• The PCM performs fuel cut or restricts the engine torque.
POSSIBLE CAUSE	• Fuel having octane rating lower than specified fuel is used • Carbon accumulated in combustion chamber • PCM 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	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 2.5T)].) • 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 2.5T)].)
		No	Go to the next step.
4	VERIFY IF MALFUNCTION CAUSED BY ABNORMAL FUEL • Switch the ignition off. • Drain the fuel and add the specified fuel. (See FUEL DRAINING PROCEDURE [SKYACTIV-G 2.5T].)	–	Go to the next step.

Sample

DTC P0183:00	Fuel temperature sensor 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.
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.

Sample

DTC P0192:00 [PCM (SKYACTIV-G 2.5T)]

SM2896450

id0102s814770

DTC P0192:00	High fuel pressure sensor circuit low input
DETECTION CONDITION	• If the input voltage at the PCM terminal 1BO is less than 0.74 V for 5 s, the PCM determines that the high fuel pressure sensor circuit is low. (U.S.A., CANADA and Israel) • If the input voltage at the PCM terminal 1BO is less than 0.16 V for 5 s, the PCM determines that the high fuel pressure sensor circuit is low. (Except U.S.A., CANADA and Israel) 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 high pressure fuel pump control • Limits intake air amount
POSSIBLE CAUSE	• High fuel pressure sensor connector or terminals malfunction • PCM connector or terminals malfunction • Short to ground in wiring harness between the following terminals: — High fuel pressure sensor terminal E—PCM terminal 1CI — High fuel pressure sensor terminal C—PCM terminal 1BO • High fuel pressure sensor signal circuit and ground circuit are shorted to each other • High fuel pressure sensor malfunction • High pressure fuel pump malfunction • PCM malfunction

Sample

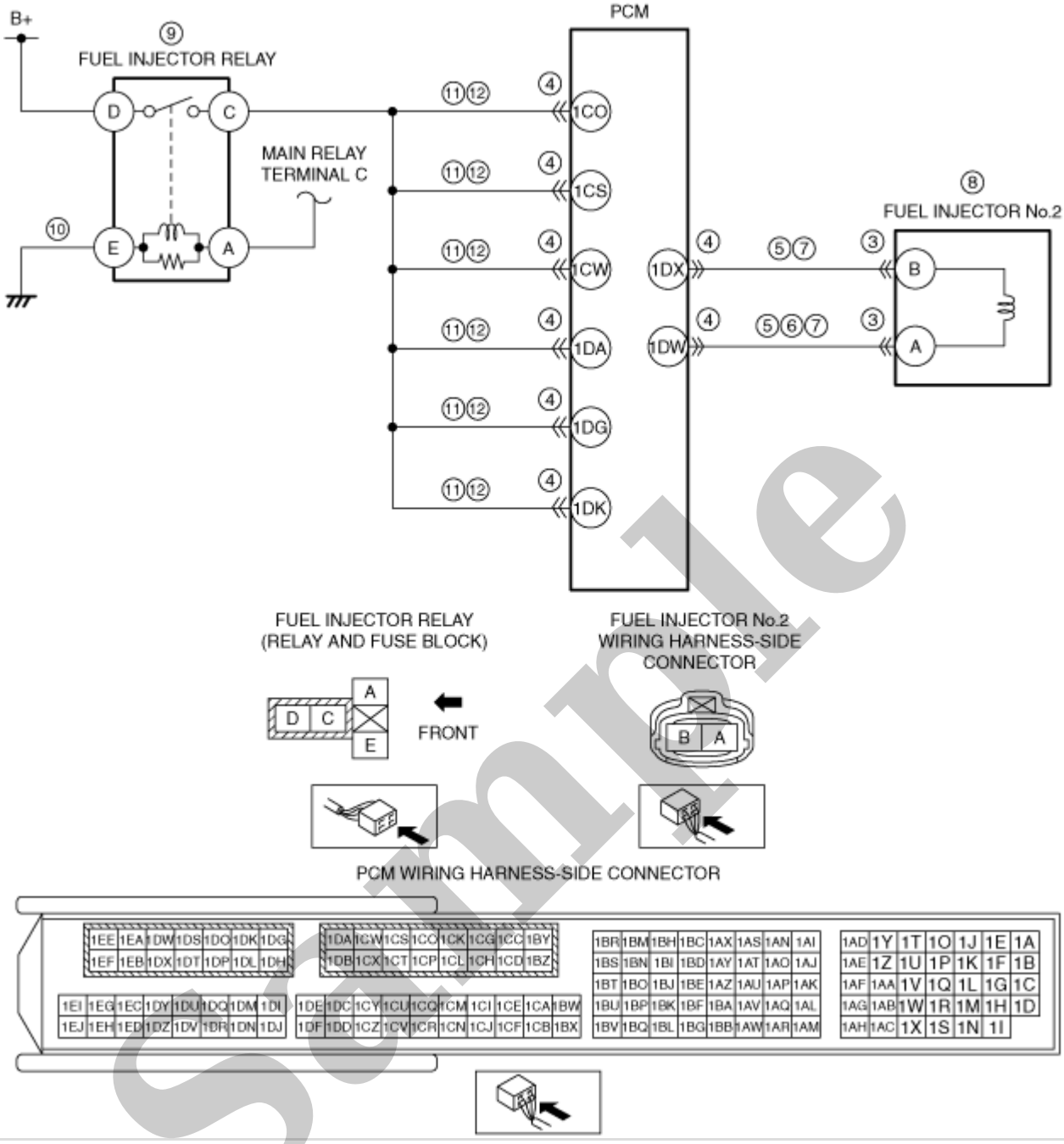
STEP	INSPECTION	RESULTS	ACTION
6	**INSPECT HIGH FUEL PRESSURE SENSOR SIGNAL CIRCUIT AND GROUND CIRCUIT FOR SHORT TO EACH OTHER** • Verify that the high fuel pressure sensor and PCM connectors are disconnected. • Inspect for continuity between high fuel pressure sensor terminals C and A (wiring harness-side). • Is there continuity?	Yes	Refer to the wiring diagram and verify whether or not there is a common connector between the following terminals: • High fuel pressure sensor terminal C—PCM terminal 1BO • High fuel pressure sensor terminal A—PCM terminal 1CN **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 9.
		No	Go to the next step.
7	**INSPECT HIGH FUEL PRESSURE SENSOR** • Bleed the remaining pressure in the fuel line using the following procedure. 1. Switch the ignition off. 2. Disconnect the high pressure fuel pump connector. 3. Start the engine and leave it idling for 1 min. • Display PID FUEL_PRES and simulation item FP using the M-MDS. (See ON-BOARD DIAGNOSTIC TEST [PCM (SKYACTIV-G 2.5T)].) • Turn simulation item FP on. • Is the FUEL_PRES PID value approx. 0.56 V?	Yes	Go to the next step.
		No	Replace the fuel distributor, then go to the next step. (See FUEL INJECTOR REMOVAL/INSTALLATION [SKYACTIV-G 2.5T].)
8	**INSPECT HIGH PRESSURE FUEL PUMP** • Inspect the high pressure fuel pump. (See HIGH PRESSURE FUEL PUMP INSPECTION [SKYACTIV-G 2.5T].) • Is there any malfunction ?	Yes	Replace the high pressure fuel pump, then go to the next step. (See HIGH PRESSURE FUEL PUMP REMOVAL/INSTALLATION [SKYACTIV-G 2.5T].)
		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 2.5T)].) • Perform the KOEO or KOER self test. (See KOEO/KOER SELF TEST [PCM (SKYACTIV-G 2.5T)].) • 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 2.5T].) 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 2.5T)].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See DTC TABLE [PCM (SKYACTIV-G 2.5T)].)
		No	DTC troubleshooting completed.

Sample

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 HIGH FUEL PRESSURE SENSOR OR WIRING HARNESS MALFUNCTION** • Access the FUEL_PRES PID using the M-MDS. (See ON-BOARD DIAGNOSTIC TEST [PCM (SKYACTIV-G 2.5T)].) • 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 HIGH FUEL PRESSURE SENSOR CONNECTOR CONDITION** • Switch the ignition off. • Disconnect the high 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 HIGH FUEL PRESSURE SENSOR** • Reconnect all disconnected connectors. • Inspect the high fuel pressure sensor. (See HIGH FUEL PRESSURE SENSOR INSPECTION [SKYACTIV-G 2.5T].) • Is there any malfunction ?	Yes	Replace the fuel distributor, then go to Step 10. (See FUEL INJECTOR REMOVAL/INSTALLATION [SKYACTIV-G 2.5T].)
		No	Go to Step 10.
7	**DETERMINE IF HIGH FUEL PRESSURE SENSOR SIGNAL CIRCUIT OR HIGH FUEL PRESSURE SENSOR GROUND CIRCUIT MALFUNCTION** • Switch the ignition off. • Disconnect the high fuel pressure sensor connector. • Access the FUEL_PRES PID using the M-MDS. (See ON-BOARD DIAGNOSTIC TEST [PCM (SKYACTIV-G 2.5T)].) • 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.

Sample

DTC P0202:00	Fuel injector circuit/open cylinder No.2



Sample

Diagnostic Procedure

STEP	INSPECTION	RESULTS	ACTION
10	**INSPECT FUEL INJECTOR RELAY GROUND CIRCUIT FOR OPEN CIRCUIT** • Verify that fuel injector relay is removed. • Verify that the fuel injector No.2 and PCM connectors are disconnected. • Inspect for continuity between fuel injector relay terminal E (wiring harness-side) and body ground. • 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 fuel injector relay terminal E and body ground. **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:** • Inspect for the following: — Open circuit between fuel injector relay and body ground — Loose or lifting ground point • Repair or replace the malfunctioning part. Go to Step 13.
11	**INSPECT FUEL INJECTOR RELAY CIRCUIT FOR SHORT TO GROUND** • Verify that fuel injector relay is removed. • Verify that the fuel injector No.2 and PCM connectors are disconnected. • Inspect for continuity between fuel injector relay terminal C (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 the following terminals: • Fuel injector relay terminal C—PCM terminal 1CO • Fuel injector relay terminal C—PCM terminal 1CS • Fuel injector relay terminal C—PCM terminal 1CW • Fuel injector relay terminal C—PCM terminal 1DA • Fuel injector relay terminal C—PCM terminal 1DG • Fuel injector relay terminal C—PCM terminal 1DK **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 13.
		No	Go to the next step.

Sample