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

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DTC P0610:00 [PCM (SKYACTIV-D 2.2)]

SM2896229

id0102j570600

DTC P0610:00	PCM Vehicle Options Error
DETECTION CONDITION	• With the following conditions met, the PCM check sum is incorrect for a continuous 1 s. **MONITORING CONDITIONS** • When all of the following conditions are met: — Ignition switched ON (engine off or on) — DTC P0602:00 not detected **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	• Configuration has not been completed • PCM connector or terminals malfunction • PCM malfunction
SYSTEM WIRING DIAGRAM	Not applicable

Diagnostic Procedure

STEP	INSPECTION		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.

STEP	INSPECTION		ACTION
4	**INSPECT BRAKE SWITCH No.1 POWER SUPPLY CIRCUIT FOR SHORT TO GROUND OR OPEN CIRCUIT** • Verify that the brake switch connector is disconnected. • Measure the voltage at the brake switch terminal A (wiring harness-side). • Is the voltage B+?	Yes	Go to the next step.
		No	Inspect the MAIN 200 A fuse and STOP 10 A fuse. • If the fuse is blown: — Refer to the wiring diagram and verify whether or not there is a common connector between MAIN 200 A fuse and brake switch terminal A. **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. • Replace the malfunctioning fuse. • If the fuse is damaged: — Replace the malfunctioning fuse. • If all fuses are normal: — Refer to the wiring diagram and verify whether or not there is a common connector between battery positive terminal and brake switch terminal A. **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.

DTC U0302:00 [PCM (SKYACTIV-D 2.2)]

SM2896310

id0102j590100

DTC U0302:00	TCM processor error
DETECTION CONDITION	• With the battery voltage 10 V or more, any of the following conditions is continuously met for 3.5 s. — Check sum error in signal from TCM — Counter error in signal from TCM **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	• TCM connector or terminals malfunction • PCM connector or terminals malfunction • CAN communication line malfunction between PCM and TCM (local CAN between PCM and TCM) — TCM terminal G–PCM terminal 1AD — TCM terminal H–PCM terminal 1Y • TCM DTC is stored. • CAN drive error (TCM or PCM) • PCM malfunction • TCM malfunction

STEP	INSPECTION		ACTION
7	VERIFY DTC TROUBLESHOOTING COMPLETED • Always reconnect all disconnected connectors. • Clear the DTC from the PCM memory using the M-MDS. (See AFTER REPAIR PROCEDURE [PCM (SKYACTIV-D 2.2)].) • Perform the DTC Reading Procedure. (See ON-BOARD DIAGNOSTIC TEST [PCM (SKYACTIV-D 2.2)].) • Is the same DTC present?	Yes	Repeat the inspection from Step 1. • If the malfunction recurs, replace the control valve body. (See CONTROL VALVE BODY REMOVAL/INSTALLATION [GW6A-EL, GW6AX-EL].) Go to the next step.
		No	Go to the next step.
8	VERIFY AFTER REPAIR PROCEDURE • Perform the "AFTER REPAIR PROCEDURE". (See AFTER REPAIR PROCEDURE [PCM (SKYACTIV-D 2.2)].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See DTC TABLE [PCM (SKYACTIV-D 2.2)].)
		No	DTC troubleshooting completed.

STEP	INSPECTION	RESULTS	ACTION
6	**INSPECT EGR TEMPERATURE SENSOR CIRCUIT FOR OPEN CIRCUIT** • Verify that the EGR temperature sensor and PCM connectors are disconnected. • Switch the ignition off. • Inspect for continuity between the following terminals (wiring harness-side): — EGR temperature sensor terminal A—PCM terminal 1AB — EGR temperature sensor terminal C—PCM terminal 1CZ • 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: • EGR temperature sensor terminal A—PCM terminal 1AB • EGR temperature sensor terminal C—PCM terminal 1CZ **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 8.
7	**INSPECT EGR TEMPERATURE SENSOR** • Inspect the EGR temperature sensor. (See EGR TEMPERATURE SENSOR INSPECTION [SKYACTIV-D 2.2].) • Is there any malfunction?	Yes	Replace the EGR temperature sensor, then go to the next step. (See EGR TEMPERATURE SENSOR REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)
		No	Go to the next step.
8	**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-D 2.2)].) • Perform the KOEO or KOER self test. (See KOEO/KOER SELF TEST [PCM (SKYACTIV-D 2.2)].) • Is the PENDING CODE for this DTC present?	Yes	Repeat the inspection from Step 1. • If the malfunction recurs, replace the PCM. (See PCM REMOVAL/INSTALLATION [SKYACTIV-D 2.2].) Go to the next step.
		No	Go to the next step.
9	**VERIFY AFTER REPAIR PROCEDURE** • Perform the "AFTER REPAIR PROCEDURE". (See AFTER REPAIR PROCEDURE [PCM (SKYACTIV-D 2.2)].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See DTC TABLE [PCM (SKYACTIV-D 2.2)].)
		No	DTC troubleshooting completed.

STEP	INSPECTION	RESULTS	ACTION
3	**INSPECT WASTEGATE SOLENOID VALVE CONNECTOR CONDITION** • Switch the ignition off. • Disconnect the wastegate solenoid valve 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 WASTEGATE SOLENOID VALVE POWER SUPPLY CIRCUIT FOR SHORT TO GROUND OR OPEN CIRCUIT** • Verify that the wastegate solenoid valve connector is 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 wastegate solenoid valve terminal A (wiring harness-side). • Is the voltage B+?	Yes	Go to the next step.
		No	Inspect the ENGINE2 15 A fuse. • If the fuse is blown: — Refer to the wiring diagram and verify whether or not there is a common connector between ENGINE2 15 A fuse and wastegate solenoid valve terminal A. **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. • Replace the fuse. • If the fuse is damaged: — Replace the fuse. • If the fuse is normal: — Refer to the wiring diagram and verify whether or not there is a common connector between main relay terminal C and wastegate solenoid valve terminal A. **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.
5	**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 Step 9.
		No	Go to the next step.

STEP	INSPECTION		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.
3	**VERIFY DTC FOR MODULE COMMUNICATION** • Switch the ignition off, then ON (engine off). • Perform the DTC Reading Procedure. (See ON-BOARD DIAGNOSTIC TEST [PCM (SKYACTIV-D 2.2)].) • Are any other PENDING CODEs and/or DTCs present?	Yes	Go to the applicable PENDING CODE or DTC inspection. (See DTC TABLE [PCM (SKYACTIV-D 2.2)].)
		No	Go to the next step.
4	**CONFIRM RADAR UNIT DTC** • Perform the radar unit DTC inspection using the M-MDS. (See DTC INSPECTION [RADAR UNIT].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See DTC TABLE [RADAR UNIT].)
		No	Go to the next step.
5	**CONFIRM INSTRUMENT CLUSTER DTC** • Perform the instrument cluster DTC inspection using the M-MDS. (See DTC INSPECTION [INSTRUMENT CLUSTER].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See DTC TABLE [INSTRUMENT CLUSTER].)
		No	Go to the next step.
6	**INSPECT RADAR UNIT CONNECTOR CONDITION** • Switch the ignition off. • Disconnect the radar unit 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 8.
		No	Go to the next step.

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 WASTEGATE SOLENOID VALVE CONNECTOR CONDITION • Switch the ignition off. • Disconnect the wastegate solenoid valve 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 7.
		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 7.
		No	Go to the next step.
5	INSPECT WASTEGATE SOLENOID VALVE CONTROL CIRCUIT FOR SHORT TO POWER SUPPLY • Verify that the wastegate solenoid valve 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 wastegate solenoid valve terminal B (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 wastegate solenoid valve terminal B and PCM terminal 1CL. **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 7.
6	INSPECT WASTEGATE SOLENOID VALVE • Inspect the wastegate solenoid valve. (See WASTEGATE SOLENOID VALVE INSPECTION [SKYACTIV-D 2.2].) • Is there any malfunction?	Yes	Replace the wastegate solenoid valve, then go to the next step. (See WASTEGATE SOLENOID VALVE REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)
		No	Go to the next step.