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2012 MAZDA CX-9 OEM Service and Repair Workshop Manual

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DTC P0872:00 [TCM (FW6A-EL, FW6AX-EL)]

SM2898283

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DTC P0872:00	Oil pressure switch No.3 (Oil pressure switch A) stuck on
DETECTION CONDITION	• Under the following conditions, oil pressure switch No.3 stuck-on detected by combination of gear ratio malfunction and oil pressure switch pattern malfunction: — Engine is running. — ATF temperature is 20 °C {68 °F} or more. — There is no difference between vehicle speed signal from DSC HU/CM and output shaft speed sensor signal. — Turbine/input shaft speed sensor and output shaft speed sensor DTC is not recorded.
FAIL-SAFE FUNCTION	• Limits engine torque. • Inhibits learning control. • Inhibits manual mode. • Inhibits neutral idle control. • Inhibits AAS.
POSSIBLE CAUSE	• Oil pressure switch No.3 malfunction • TCM malfunction
SYSTEM WIRING DIAGRAM	Not applicable

Diagnostic procedure

STEP	INSPECTION		ACTION
1	VERIFY DTC OUTPUT STATUS • Is the DTC P1738:00 also present?	Yes	Go to the applicable DTC inspection. (See DTC P1738:00 [TCM (FW6A-EL, FW6AX-EL)].)
		No	Go to the next step.
2	RECORD VEHICLE STATUS WHEN DTC WAS DETECTED TO UTILIZE WITH REPEATABILITY VERIFICATION Note • Recording can be facilitated using the screen capture of the PC function. • Record the freeze frame data/snap shot data.	–	Go to the next step.
3	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	VERIFY THAT DTC IS PRESENT • Clear the DTC using the M-MDS. (See ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [TCM (FW6A-EL, FW6AX-EL)].) • Perform the following procedure to ensure that the DTC has been resolved: 1. Start the engine. 2. Verify that the ATF temperature is 20 °C {68 °F} or more. • Perform the DTC inspection using the M-MDS. (See ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [TCM (FW6A-EL, FW6AX-EL)].) • Is the DTC P0873:00 present?	Yes	Replace the oil pressure switch A, then go to the next step. (See OIL PRESSURE SWITCH REMOVAL/INSTALLATION [FW6A-EL, FW6AX-EL].)
		No	DTC troubleshooting completed.
5	RE-PERFORM ON-BOARD DIAGNOSTIC TEST • Perform the following procedure to ensure that the DTC has been resolved: 1. Start the engine. 2. Verify that the ATF temperature is 20 °C {68 °F} or more. • Perform the on-board diagnostic test. (See ON-BOARD DIAGNOSTIC TEST MODE [TCM (FW6A-EL, FW6AX-EL)].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See ON-BOARD DIAGNOSTIC SYSTEM DTC TABLE [TCM (FW6A-EL, FW6AX-EL)].)
		No	DTC troubleshooting completed.

DTC P0878:00 [TCM (FW6A-EL, FW6AX-EL)]

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DTC P0878:00	Oil pressure switch No.4 (Oil pressure switch B) stuck off
DETECTION CONDITION	• Under the following conditions, oil pressure switch No.4 stuck-off detected by combination of gear ratio malfunction and oil pressure switch pattern malfunction: — Engine is running. — ATF temperature is 20 °C {68 °F} or more. — There is no difference between vehicle speed signal from DSC HU/CM and output shaft speed sensor signal. — Turbine/input shaft speed sensor and output shaft speed sensor DTC is not recorded.
FAIL-SAFE FUNCTION	• Inhibits malfunctioning gear. • Limits engine torque. • Inhibits learning control. • Inhibits manual mode. • Inhibits neutral idle control. • Inhibits AAS.
POSSIBLE CAUSE	• Oil pressure switch No.4 malfunction • TCM malfunction
SYSTEM WIRING DIAGRAM	Not applicable

Diagnostic procedure

STEP	INSPECTION		ACTION
1	VERIFY DTC OUTPUT STATUS • Is the DTC P1738:00 also present?	Yes	Go to the applicable DTC inspection. (See DTC P1738:00 [TCM (FW6A-EL, FW6AX-EL)].)
		No	Go to the next step.
2	RECORD VEHICLE STATUS WHEN DTC WAS DETECTED TO UTILIZE WITH REPEATABILITY VERIFICATION Note • Recording can be facilitated using the screen capture of the PC function. • Record the freeze frame data/snap shot data.	–	Go to the next step.
3	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
3	VERIFY DTC TROUBLESHOOTING COMPLETED • Clear the DTC using the M-MDS. (See ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [TCM (FW6A-EL, FW6AX-EL)].) • Perform the following procedure to ensure that the DTC has been resolved: 1. Drive the vehicle without shifting for 20 min or more under the following conditions: • Vehicle speed: 5 km/h {3 mph} or more • Selector lever position: D position • Perform the DTC inspection using the M-MDS. (See ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [TCM (FW6A-EL, FW6AX-EL)].) • Are any DTCs present?	Yes	ATF amount in Step 2 is correct • Go to the applicable DTC inspection. (See ON-BOARD DIAGNOSTIC SYSTEM DTC TABLE [TCM (FW6A-EL, FW6AX-EL)].) ATF amount adjusted in Step 2: • Replace the automatic transaxle, then drive the vehicle to check it, and if there is no problem then the DTC troubleshooting is complete. (See AUTOMATIC TRANSAXLE REMOVAL/INSTALLATION [FW6A-EL].) (See AUTOMATIC TRANSAXLE REMOVAL/INSTALLATION [FW6AX-EL].)
		No	DTC troubleshooting completed.

DTC U0131:00	Communication error to EPS control module
POSSIBLE CAUSE	• CAN communication line malfunction between TCM and EPS control module • TCM malfunction
SYSTEM WIRING DIAGRAM	Not applicable

DTC U0155:00	Communication error to instrument cluster
DETECTION CONDITION	• Under the following condition, the TCM cannot receive the signal from instrument cluster: — Battery voltage is 10 V or more.
FAIL-SAFE FUNCTION	• Inhibits learning control. • Inhibits manual mode. • Inhibits neutral idle control.
POSSIBLE CAUSE	• CAN communication line malfunction between TCM and instrument cluster • TCM malfunction
SYSTEM WIRING DIAGRAM	Not applicable

DTC U0214:00	Communication error to start stop unit
DETECTION CONDITION	• Under the following condition, the TCM cannot receive the signal from start stop unit: — Battery voltage is 10 V or more.
FAIL-SAFE FUNCTION	• Inhibits direct mode.
POSSIBLE CAUSE	• CAN communication line malfunction between TCM and start stop unit • TCM malfunction
SYSTEM WIRING DIAGRAM	Not applicable

Diagnostic Procedure

• Inspect according to the diagnostic procedure in ON-BOARD DIAGNOSTIC [MULTIPLEX COMMUNICATION SYSTEM]. (See CONTROLLER AREA NETWORK (CAN) MALFUNCTION DIAGNOSIS FLOW [TYPE-A (SKYACTIV-G 2.5)].) (See CONTROLLER AREA NETWORK (CAN) MALFUNCTION DIAGNOSIS FLOW [TYPE-B].)

DTC U0115:00 [TCM (FW6A-EL, FW6AX-EL)]

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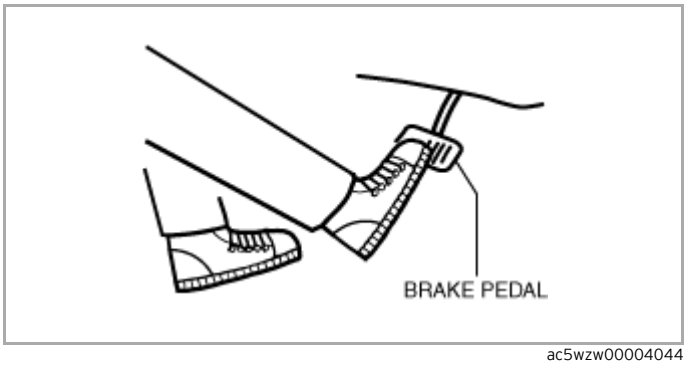
DTC U0115:00	Communication error to PCM (local CAN between TCM and PCM)
DETECTION CONDITION	• Under the following condition, the TCM cannot receive the signal from PCM (local CAN between TCM and PCM): — Battery voltage is 10 V or more.
FAIL-SAFE FUNCTION	• Set to TCC control. • Inhibits learning control. • Inhibits manual mode. • Inhibits neutral idle control. • Inhibits AAS. • Inhibits 5GR and 6GR. • Inhibits shift down when the accelerator pedal is depressed.
POSSIBLE CAUSE	• PCM DTC is stored. • PCM malfunction • TCM malfunction
SYSTEM WIRING DIAGRAM	Not applicable

Diagnostic procedure

STEP	INSPECTION		ACTION
1	RECORD VEHICLE STATUS WHEN DTC WAS DETECTED TO UTILIZE WITH REPEATABILITY VERIFICATION Note • Recording can be facilitated using the screen capture of the PC function. • Record the freeze frame data/snap shot data.	–	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 PCM DTC • Perform the PCM DTC inspection using the M-MDS. (See ON-BOARD DIAGNOSTIC TEST [PCM (SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION))].) (See ON-BOARD DIAGNOSTIC TEST [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 (WITHOUT CYLINDER DEACTIVATION))].) (See DTC TABLE [PCM (SKYACTIV-G 2.5 (WITH CYLINDER DEACTIVATION))].)
		No	PCM can be considered the cause. • Replace the PCM, then go to the next step. (See PCM REMOVAL/INSTALLATION [SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION)].) (See PCM REMOVAL/INSTALLATION [SKYACTIV-G 2.5 (WITH CYLINDER DEACTIVATION)].)

9.Perform the following steps (1) to (5) with the brake pedal depressed.



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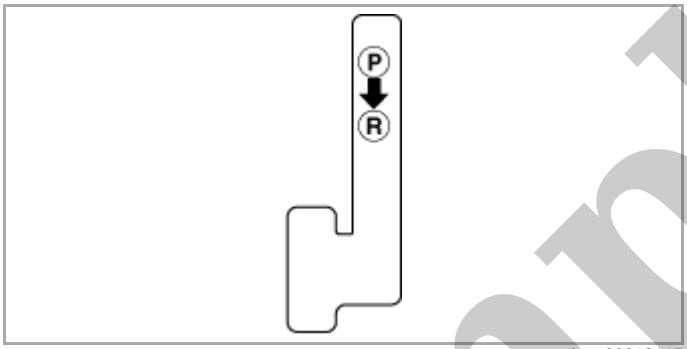
Note

• If the on-board diagnosis test is shut down (shift position indication flashes 5 times), resume the procedure from Step 1.

(1)Shift the selector lever to the R position.



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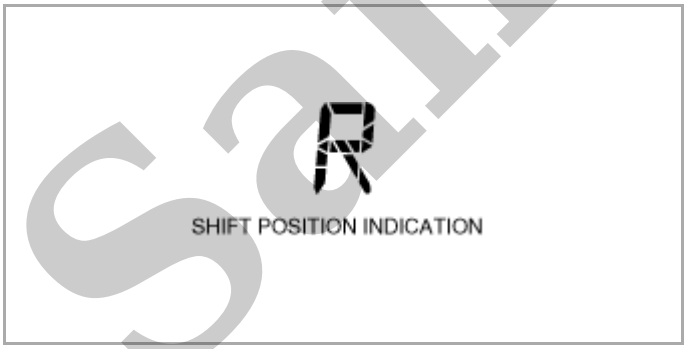
(2)Clear DTCs using the M-MDS and verify that the shift position indication flashes 2 times. (See ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [TCM (FW6A-EL, FW6AX-EL)].)



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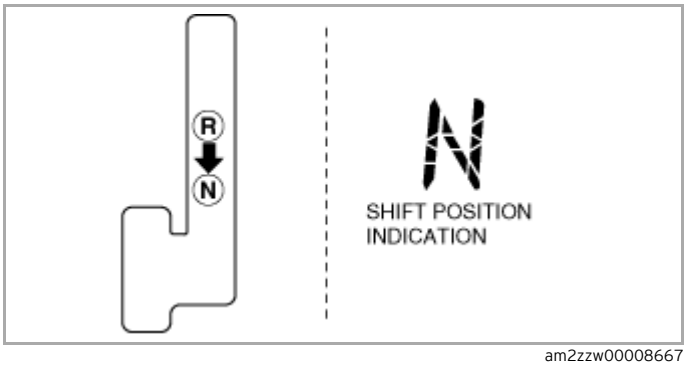
(3)Within 5 s after the shift position indication flashes 2 times, shift the selector lever to the N position and verify that the shift position indication flashes 2 times.



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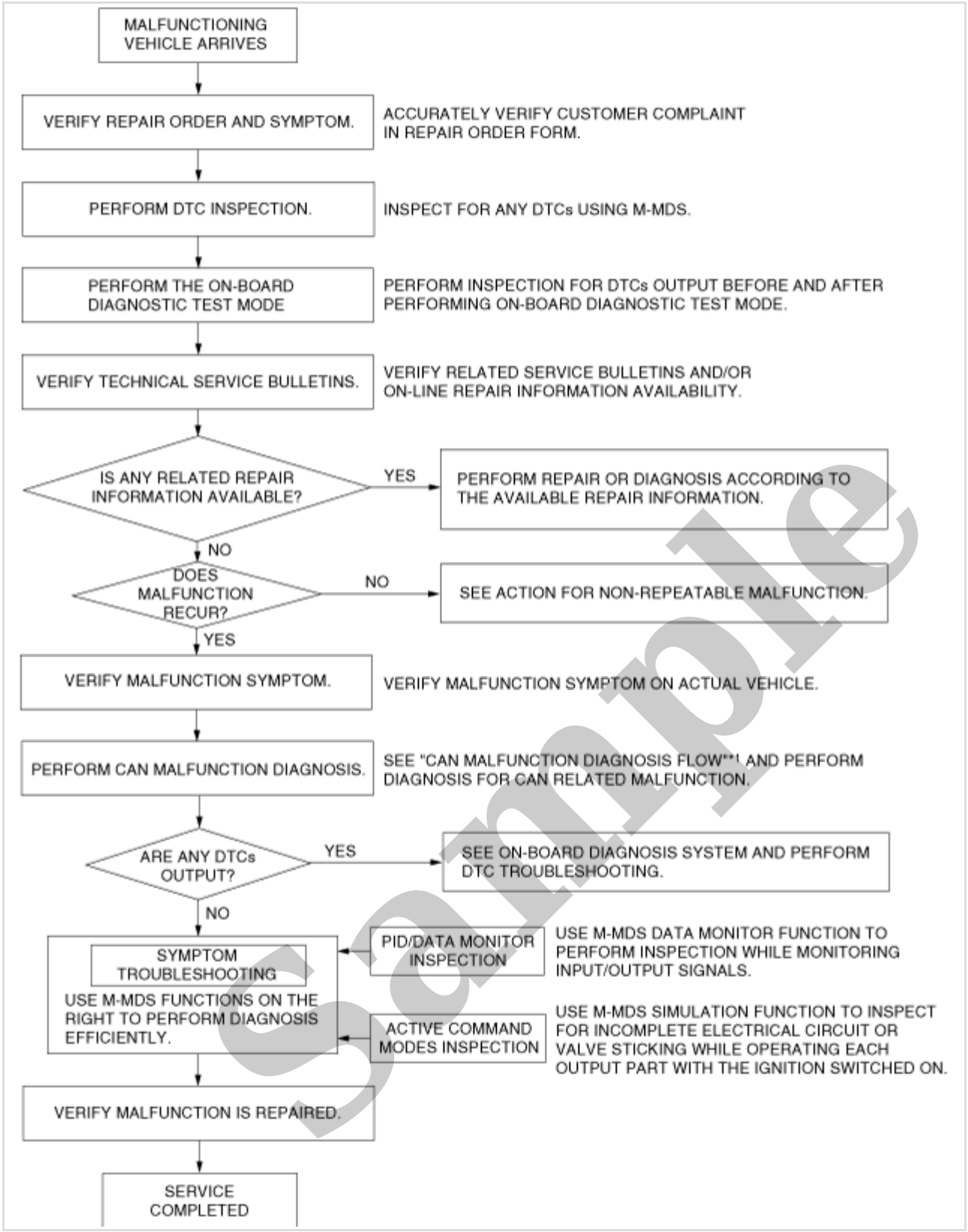
(4)Within 5 s after the shift position indication flashes 2 times, shift the selector lever to the D position and verify that the shift position indication flashes 3 times.



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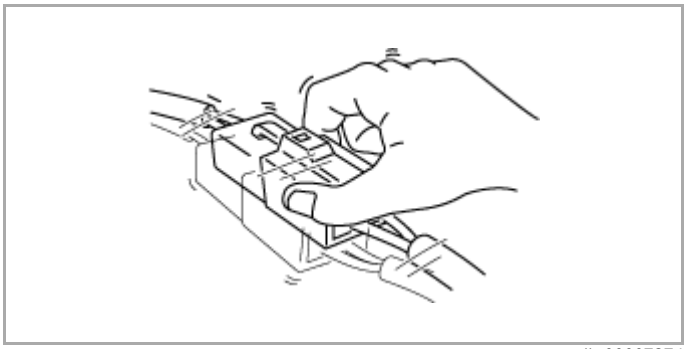
*1:(See CONTROLLER AREA NETWORK (CAN) MALFUNCTION DIAGNOSIS FLOW [TYPE-A (SKYACTIV-G 2.5)].) (See CONTROLLER AREA NETWORK (CAN) MALFUNCTION DIAGNOSIS FLOW [TYPE-B].)

Repair Order Form

—Shake the wiring harness or connector of the electrical component which is suspected to be the cause of the malfunction, and inspect for occurrence of any malfunction or DTCs.



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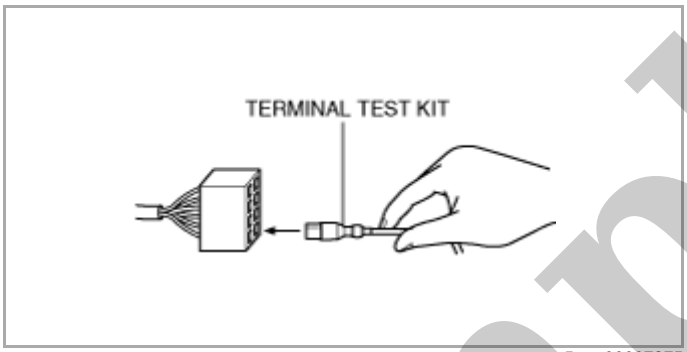
—Inspect the female terminals on the connector of the electric component which is suspected to be the cause of the malfunction for poor connection. (See ELECTRICAL SYSTEM)

Note

•Tool used (Reference): terminal test kit (49US-15-KIT)



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