

2012 - Mazda6 - Transmission/ Transaxle

DTC P1738:00 [AY6A-EL]

DTC P1738:00	Shift control solenoid component malfunction
DETECTION CONDITION	• Conditions: ATF temperature -20 °C {68 °F} or more, TCM communication normal, driving in D position, output VSS rotation 300 rpm or more (wheel not spinning) • Circumstances: Abnormal shifting detected • Time period: Determined after 5 times Diagnostic support note: • The MIL does not illuminate. • The AT warning light illuminates. • PENDING CODE is not available. • FREEZE FRAME DATA is available. • The DTC is stored in the TCM memory.
FAIL-SAFE FUNCTION	• Inhibits adaptive shift control
POSSIBLE CAUSE	• Deteriorated ATF • ATF level low • Line pressure malfunction • Solenoid valve malfunction ▪ Line pressure control solenoid ▪ Shift solenoid A ▪ Shift solenoid B ▪ Shift solenoid C ▪ Shift solenoid D ▪ Shift solenoid E ▪ Shift solenoid F

	• ATX malfunction • Control valve body malfunction • TCM malfunction
SYSTEM WIRING DIAGRAM	—

Diagnostic procedure

STEP	INSPECTION	ACTION
1	VERIFY FREEZE FRAME DATA HAS BEEN RECORDED • Has the FREEZE FRAME DATA been recorded on the repair order?	Yes Go to the next step.
		No Record the FREEZE FRAME DATA on the repair order, then 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 FOR ATF LEAKAGE • Verify that there is no ATF leaking from the transaxle case, and the connecting surfaces of the transaxle and the engine. • Is any ATF leakage verified?	Yes After repairing the spot where there is ATF leakage, adjust the ATF level, then go to Step 7. (See AUTOMATIC TRANSAXLE FLUID (ATF) LEVEL ADJUSTMENT [AY6A-EL] .)
		No Go to the next step.
4	INSPECT ATF CONDITION • Inspect the ATF condition. (See AUTOMATIC TRANSAXLE FLUID (ATF) INSPECTION [AY6A-EL] .) • Is it normal?	Yes Go to the next step.
		No Replace the ATF, then go to Step 7. (See AUTOMATIC TRANSAXLE FLUID (ATF) REPLACEMENT [AY6A-EL] .)
5	INSPECT LINE PRESSURE • Perform the "Line Pressures Test". (See MECHANICAL SYSTEM TEST [AY6A-EL] .)	Yes Repair or replace malfunctioning part according to test result, then go to Step 7.
		No Go to the next step.

	Is there any malfunction?		
6	INSPECT SOLENOID VALVE - Inspect the following solenoid valves: - Line pressure control solenoid (See LINE PRESSURE CONTROL SOLENOID INSPECTION [AY6A-EL] .) - Shift solenoid A (See SHIFT SOLENOID A INSPECTION [AY6A-EL] .) - Shift solenoid B (See SHIFT SOLENOID B INSPECTION [AY6A-EL] .) - Shift solenoid C (See SHIFT SOLENOID C INSPECTION [AY6A-EL] .) - Shift solenoid D (See SHIFT SOLENOID D INSPECTION [AY6A-EL] .) - Shift solenoid E (See SHIFT SOLENOID E INSPECTION [AY6A-EL] .) - Shift solenoid F (See SHIFT SOLENOID F INSPECTION [AY6A-EL] .) - Is there any malfunction?	Yes	Replace malfunctioning part according to test result, then go to the next step.
		No	Go to the next step.
7	VERIFY DTC TROUBLESHOOTING COMPLETED - Make sure to reconnect all the disconnected connectors. - Clear the DTC using the M-MDS. - Perform the following procedure to ensure that the DTC has been resolved: - Start the engine. - Warm up the engine and transaxle. - Drive the vehicle in D	Yes	Replace the TCM, then go to the next step. (See TCM REMOVAL/ INSTALLATION [AY6A-EL] .)
		No	Go to the next step.

	position and make sure that the gears shift smoothly from 1GR to 6GR. • Is the same DTC present?		
8	VERIFY NO DTCs ARE PRESENT • Perform the "Reading DTCs Procedure". (See ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [AY6A-EL].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See ON-BOARD DIAGNOSTIC SYSTEM DTC TABLE [AY6A-EL] .)
		No	DTC troubleshooting completed.

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		No	Go to the next step.
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