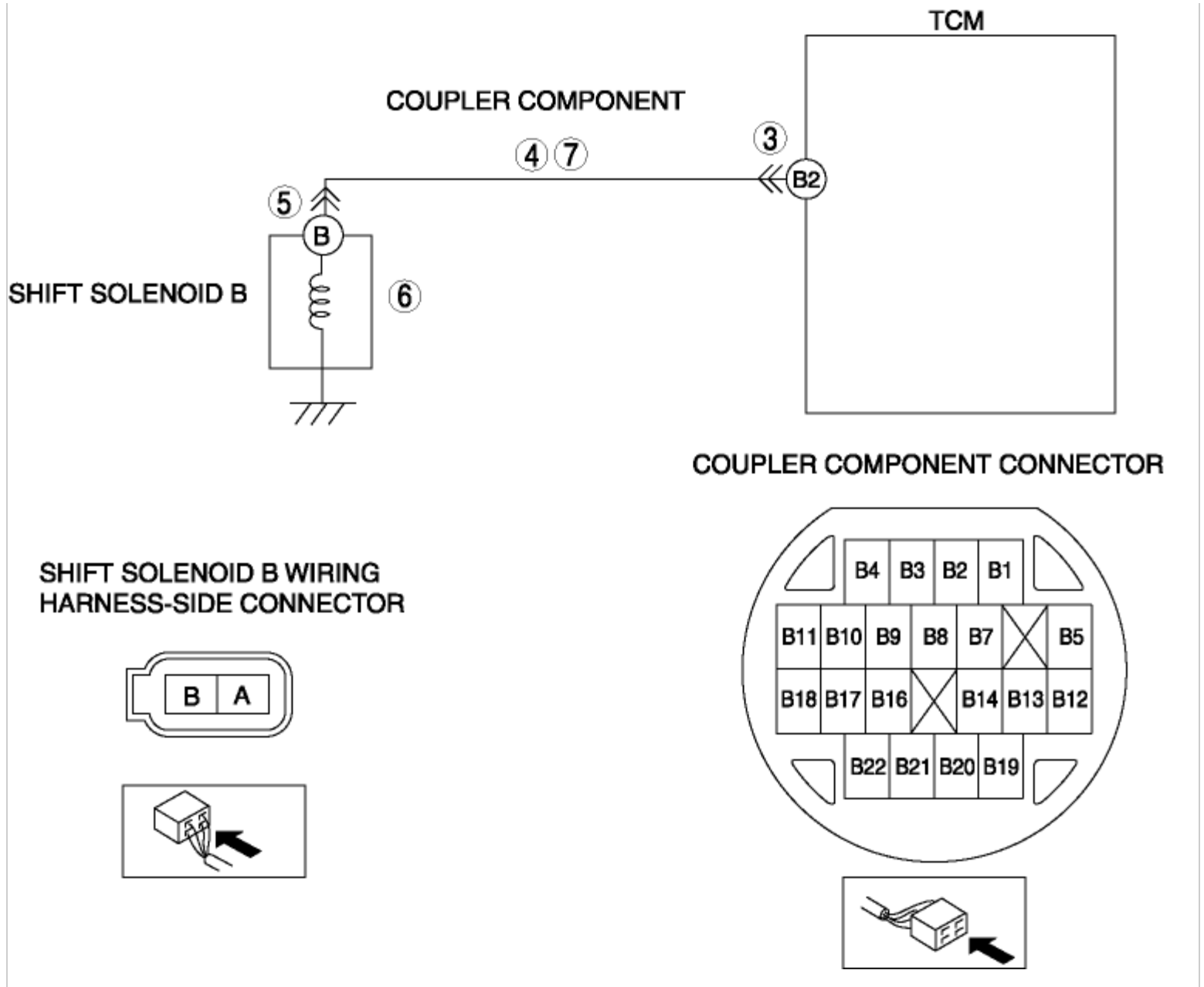


2012 - Mazda6 - Transmission/ Transaxle

DTC P0977:00 [AY6A-EL]

DTC P0977:00	Shift solenoid B circuit high
DETECTION CONDITION	• Conditions: TCM communication normal • Circumstances: Shift solenoid B system disconnection or short circuit detected • Time period: Determined after 5 times lasting 0.1 or more seconds Diagnostic support note: • The MIL illuminates if the TCM detects the above malfunction condition during the first drive cycle. • 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 learning control • Inhibits 1GR (M position)
POSSIBLE CAUSE	• Coupler component connector or terminal malfunction • Short to power supply in wiring harness between shift solenoid B terminal B and TCM terminal B2 • Open circuit between shift solenoid B terminal B and TCM terminal B2 • Shift solenoid B connector or terminal malfunction • Solenoid valve malfunction ▪ Shift solenoid B • TCM malfunction



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

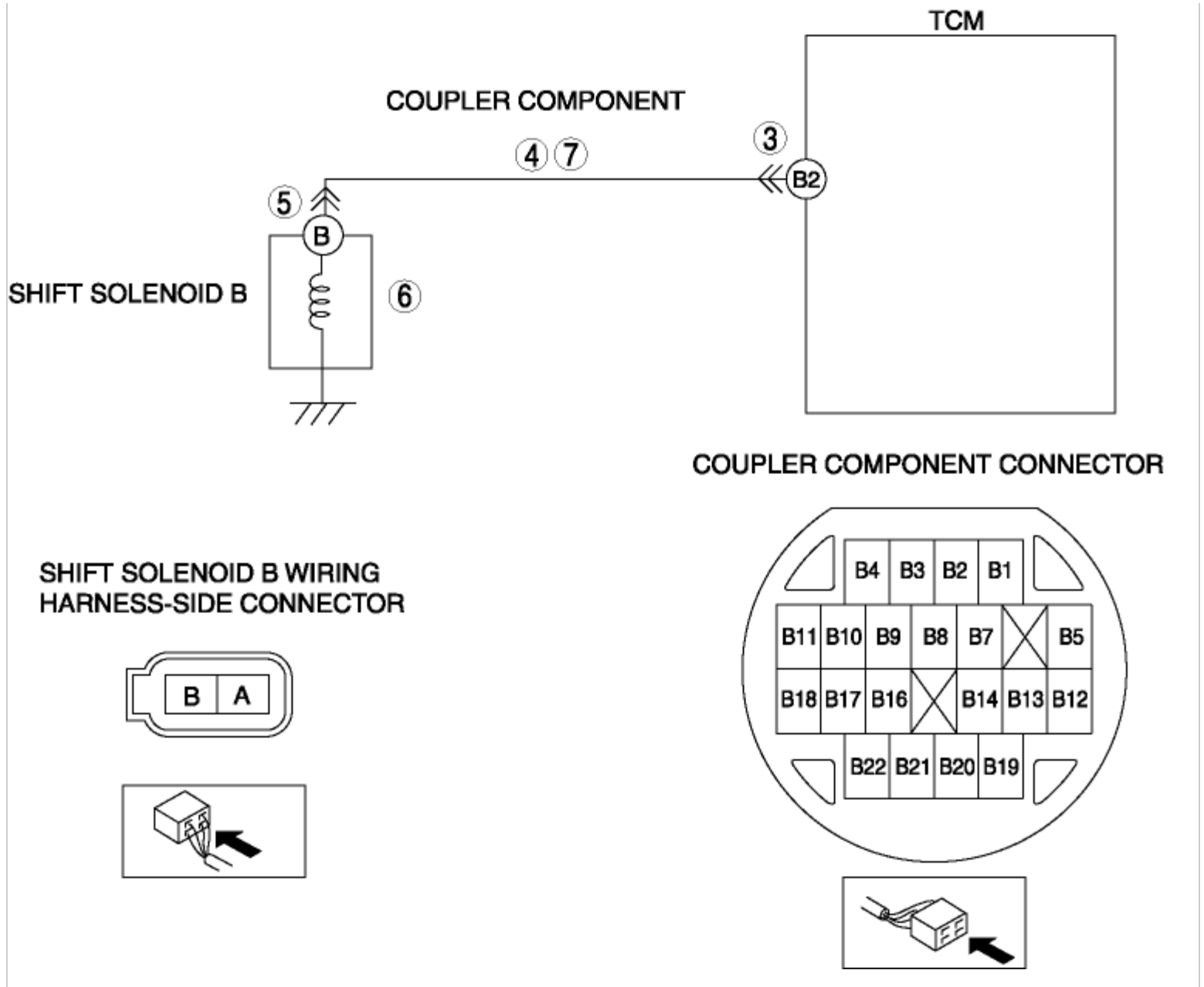
			the next step.
		No	Go to the next step.
3	INSPECT COUPLER COMPONENT CONNECTOR FOR POOR CONNECTION - Switch the ignition OFF (LOCK). - Remove the TCM. (See TCM REMOVAL/ INSTALLATION [AY6A-EL].) - Inspect for poor connection (such as damaged/pulled-out pins, corrosion). - Is there any malfunction?	Yes	Repair or replace the terminal, then go to Step 8.
		No	Go to the next step.
4	INSPECT SHIFT SOLENOID B CIRCUIT FOR SHORT TO POWER SUPPLY - Switch the ignition OFF (LOCK). - Inspect for continuity between coupler component terminal B2 (wiring harness-side) and all terminals except B2 (wiring harness-side). - Is there continuity?	Yes	Repair or replace the wiring harness for a possible short to power supply, then go to Step 8.
		No	Go to the next step.
5	INSPECT SHIFT SOLENOID B CONNECTOR FOR POOR CONNECTION - Switch the ignition OFF (LOCK). - Disconnect the shift solenoid B connector. - Inspect for poor connection (such as damaged/pulled-out pins, corrosion). - Is there any malfunction?	Yes	Repair or replace the terminal, then go to Step 8.
		No	Go to the next step.
6	INSPECT SHIFT SOLENOID B - Inspect the shift solenoid B. (See SHIFT SOLENOID B INSPECTION [AY6A-EL].) - Is there any malfunction?	Yes	Replace the shift solenoid B, then go to Step 8. (See SHIFT SOLENOID B REMOVAL/ INSTALLATION [AY6A-EL] .)
		No	Go to the next step.
7	INSPECT SHIFT SOLENOID B CIRCUIT FOR OPEN CIRCUIT - Switch the ignition OFF (LOCK). - Inspect for continuity between shift solenoid B terminal B (wiring harness-side) and coupler	Yes	Go to the next step.
		No	Repair or replace the wiring harness for a possible open circuit, then go to the next step.

	component terminal B2 (wiring harness-side). • Is there continuity?		
8	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 position and make sure that the gears shift smoothly from 1GR to 6GR. • Is the same DTC present?	Yes	Replace the TCM, then go to the next step. (See TCM REMOVAL/ INSTALLATION [AY6A-EL] .)
		No	Go to the next step.
9	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.

2012 - Mazda6 - Transmission/ Transaxle

DTC P0977:00 [AY6A-EL]

DTC P0977:00	Shift solenoid B circuit high
DETECTION CONDITION	• Conditions: TCM communication normal • Circumstances: Shift solenoid B system disconnection or short circuit detected • Time period: Determined after 5 times lasting 0.1 or more seconds Diagnostic support note: • The MIL illuminates if the TCM detects the above malfunction condition during the first drive cycle. • 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 learning control • Inhibits 1GR (M position)
POSSIBLE CAUSE	• Coupler component connector or terminal malfunction • Short to power supply in wiring harness between shift solenoid B terminal B and TCM terminal B2 • Open circuit between shift solenoid B terminal B and TCM terminal B2 • Shift solenoid B connector or terminal malfunction • Solenoid valve malfunction ▪ Shift solenoid B • TCM malfunction



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 COUPLER COMPONENT CONNECTOR FOR POOR CONNECTION - Switch the ignition OFF (LOCK). - Remove the TCM. (See TCM REMOVAL/ INSTALLATION [AY6A-EL].) - Inspect for poor connection (such as damaged/pulled-out pins, corrosion). - Is there any malfunction?	Yes	Repair or replace the terminal, then go to Step 8.
		No	Go to the next step.
4	INSPECT SHIFT SOLENOID B CIRCUIT FOR SHORT TO POWER SUPPLY - Switch the ignition OFF (LOCK). - Inspect for continuity between coupler component terminal B2 (wiring harness-side) and all terminals except B2 (wiring harness-side). - Is there continuity?	Yes	Repair or replace the wiring harness for a possible short to power supply, then go to Step 8.
		No	Go to the next step.
5	INSPECT SHIFT SOLENOID B CONNECTOR FOR POOR CONNECTION - Switch the ignition OFF (LOCK). - Disconnect the shift solenoid B connector. - Inspect for poor connection (such as damaged/pulled-out pins, corrosion). - Is there any malfunction?	Yes	Repair or replace the terminal, then go to Step 8.
		No	Go to the next step.
6	INSPECT SHIFT SOLENOID B - Inspect the shift solenoid B. (See SHIFT SOLENOID B INSPECTION [AY6A-EL].) - Is there any malfunction?	Yes	Replace the shift solenoid B, then go to Step 8. (See SHIFT SOLENOID B REMOVAL/ INSTALLATION [AY6A-EL] .)
		No	Go to the next step.
7	INSPECT SHIFT SOLENOID B CIRCUIT FOR OPEN CIRCUIT - Switch the ignition OFF (LOCK). - Inspect for continuity between shift solenoid B terminal B (wiring harness-side) and coupler	Yes	Go to the next step.
		No	Repair or replace the wiring harness for a possible open circuit, then go to the next step.

	component terminal B2 (wiring harness-side). • Is there continuity?		
8	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 position and make sure that the gears shift smoothly from 1GR to 6GR. • Is the same DTC present?	Yes	Replace the TCM, then go to the next step. (See TCM REMOVAL/ INSTALLATION [AY6A-EL] .)
		No	Go to the next step.
9	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.