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2012 MAZDA BT-50 OEM Service and Repair Workshop Manual

[Go to manual page](#)

STEP	INSPECTION		ACTION
4	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 55 °C {131 °F} or more. • Perform the on-board diagnostic test. (See ON-BOARD DIAGNOSTIC TEST MODE [TCM (FW6A-EL, FW6AX-EL)] .) • Are P0752:00 present?	Yes	Replace the control valve body, then go to the next step. (See CONTROL VALVE BODY REMOVAL/INSTALLATION [FW6A-EL, FW6AX-EL])
		No	No DTCs are displayed: • Drive the vehicle to check it, and if there is no problem then the DTC troubleshooting is complete. If a DTC other than the one indicated on the left is displayed: • Go to the applicable DTC inspection. (See ON-BOARD DIAGNOSTIC SYSTEM DTC TABLE [TCM (FW6A-EL, FW6AX-EL)])
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 55 °C {131 °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 P0756:00 [TCM (FW6A-EL, FW6AX-EL)]

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DTC P0756:00	Shift solenoid No.2 stuck off
DETECTION CONDITION	• Under the following conditions, shift solenoid No.2 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	• ATF is less than specified value • Shift solenoid No.2 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	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 55 °C {131 °F} or more. • Perform the on-board diagnostic test. (See ON-BOARD DIAGNOSTIC TEST MODE [TCM (FW6A-EL, FW6AX-EL)] .) • Are P0757:00 present?	Yes	Replace the control valve body, then go to the next step. (See CONTROL VALVE BODY REMOVAL/INSTALLATION [FW6A-EL, FW6AX-EL])
		No	No DTCs are displayed: • Drive the vehicle to check it, and if there is no problem then the DTC troubleshooting is complete. If a DTC other than the one indicated on the left is displayed: • Go to the applicable DTC inspection. (See ON-BOARD DIAGNOSTIC SYSTEM DTC TABLE [TCM (FW6A-EL, FW6AX-EL)])
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 55 °C {131 °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 P0761:00 [TCM (FW6A-EL, FW6AX-EL)]

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DTC P0761:00	Shift solenoid No.3 stuck off
DETECTION CONDITION	• Under the following conditions, shift solenoid No.3 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	• Shift solenoid No.3 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	INSPECT ATF LEVEL - Inspect the ATF level. (See AUTOMATIC TRANSAXLE FLUID (ATF) INSPECTION [FW6A-EL, FW6AX-EL].) - Is there any malfunction?	Yes	Adjust the ATF level to the specification, then go to the next step. (See AUTOMATIC TRANSAXLE FLUID (ATF) ADJUSTMENT [FW6A-EL, FW6AX-EL].)
		No	Replace the control valve body, then go to the next step. (See CONTROL VALVE BODY REMOVAL/INSTALLATION [FW6A-EL, FW6AX-EL].)
5	PERFORM ON-BOARD DIAGNOSTIC TEST - Perform the following procedure to ensure that the DTC has been resolved: - Start the engine. - Verify that the ATF temperature is 55 °C {131 °F} or more. - Perform the on-board diagnostic test. (See ON-BOARD DIAGNOSTIC TEST MODE [TCM (FW6A-EL, FW6AX-EL)].) - Are any the following DTCs displayed? — P0762:00, - P0873:00	Yes	ATF amount in Step 4 is correct: - 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].) ATF amount adjusted in Step 4: - Replace the control valve body, then go to the next step. (See CONTROL VALVE BODY REMOVAL/INSTALLATION [FW6A-EL, FW6AX-EL].)
		No	No DTCs are displayed: - Drive the vehicle to check it, and if there is no problem then the DTC troubleshooting is complete. If a DTC other than the one indicated on the left is displayed: - Go to the applicable DTC inspection. (See ON-BOARD DIAGNOSTIC SYSTEM DTC TABLE [TCM (FW6A-EL, FW6AX-EL)])
6	RE-PERFORM ON-BOARD DIAGNOSTIC TEST - Perform the following procedure to ensure that the DTC has been resolved: - Start the engine. - Verify that the ATF temperature is 55 °C {131 °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 P0766:00 [TCM (FW6A-EL, FW6AX-EL)]

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DTC P0766:00	Shift solenoid No.4 stuck off
DETECTION CONDITION	• Under the following conditions, shift solenoid 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	• Shift solenoid No.4 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	INSPECT ATF LEVEL • Inspect the ATF level. (See AUTOMATIC TRANSAXLE FLUID (ATF) INSPECTION [FW6A-EL, FW6AX-EL].) • Is there any malfunction?	Yes	Adjust the ATF level to the specification, then go to the next step. (See AUTOMATIC TRANSAXLE FLUID (ATF) ADJUSTMENT [FW6A-EL, FW6AX-EL].)
		No	Replace the control valve body, then go to the next step. (See CONTROL VALVE BODY REMOVAL/INSTALLATION [FW6A-EL, FW6AX-EL].)
5	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 55 °C {131 °F} or more. • Perform the on-board diagnostic test. (See ON-BOARD DIAGNOSTIC TEST MODE [TCM (FW6A-EL, FW6AX-EL)].) • Are any the following DTCs displayed? — P0767:00, P0878:00	Yes	ATF amount in Step 4 is correct: • 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].) ATF amount adjusted in Step 4: • Replace the control valve body, then go to the next step. (See CONTROL VALVE BODY REMOVAL/INSTALLATION [FW6A-EL, FW6AX-EL].)
		No	No DTCs are displayed: • Drive the vehicle to check it, and if there is no problem then the DTC troubleshooting is complete. If a DTC other than the one indicated on the left is displayed: • Go to the applicable DTC inspection. (See ON-BOARD DIAGNOSTIC SYSTEM DTC TABLE [TCM (FW6A-EL, FW6AX-EL)])
6	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 55 °C {131 °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 P0771:00 [TCM (FW6A-EL, FW6AX-EL)]

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DTC P0771:00	On/off solenoid stuck off
DETECTION CONDITION	• Under the following conditions, on/off solenoid 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	• On/off solenoid malfunction • Control valve body 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	INSPECT ATF LEVEL - Inspect the ATF level. (See AUTOMATIC TRANSAXLE FLUID (ATF) INSPECTION [FW6A-EL, FW6AX-EL].) - Is there any malfunction?	Yes	Adjust the ATF level to the specification, then go to the next step. (See AUTOMATIC TRANSAXLE FLUID (ATF) ADJUSTMENT [FW6A-EL, FW6AX-EL].)
		No	Replace the on/off solenoid, then go to the next step. (See ON/OFF SOLENOID REMOVAL/INSTALLATION [FW6A-EL, FW6AX-EL].)
5	PERFORM ON-BOARD DIAGNOSTIC TEST - Perform the following procedure to ensure that the DTC has been resolved: - Start the engine. - Verify that the ATF temperature is 55 °C {131 °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	ATF amount in Step 4 is correct: - 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].) ATF amount adjusted in Step 4: - Replace the control valve body, then go to the next step. (See CONTROL VALVE BODY REMOVAL/INSTALLATION [FW6A-EL, FW6AX-EL].)
		No	Drive the vehicle to check it, and if there is no problem then the DTC troubleshooting is complete.
6	RE-PERFORM ON-BOARD DIAGNOSTIC TEST - Perform the following procedure to ensure that the DTC has been resolved: - Start the engine. - Verify that the ATF temperature is 55 °C {131 °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.