

2012 - Mazda6 - Transmission/ Transaxle

NO.17 EXCESSIVE SHIFT SHOCK FROM N TO D OR N TO R POSITION [FS5A-EL]

17	Excessive shift shock from N to D or N to R position
DESCRIPTION	Strong shock felt when shifting from N to D or N to R position.
POSSIBLE CAUSE	- Shift shock may worsen when the fail-safe is operating. If no DTC is output, the shift shock may worsen due to poor operation of the control valve body or sticking of the clutch. - Clutch burnt (N→D: Forward clutch, N→R: Reverse clutch or low and reverse brake) - Line pressure low, high - APP sensor malfunction - CKP sensor malfunction - VSS malfunction - Input/turbine speed sensor malfunction - Shift solenoid B malfunction - Shift solenoid D malfunction - Shift solenoid A malfunction - Shift solenoid C malfunction - Pressure control solenoid A malfunction - Control valve body malfunction - Sensor GND malfunction - Body GND malfunction - Poor hydraulic operation (Malfunction in range change) - Forward accumulator malfunction - Servo apply accumulator malfunction - Oil pressure switch malfunction - Idle speed high - Poor tightening torque of engine mount, exhaust mount

5. Poor operation of mechanical pressure
 - Selector lever position disparity

NOTE:

- Before following the troubleshooting steps, make sure that the Automatic Transaxle On-Board Diagnostic and Automatic Transaxle Basic Inspection are conducted.

Diagnostic procedure

STEP	INSPECTION	ACTION
1	VERIFY MALFUNCTION CONDITION • Does the shift shock occur only when the engine is cold?	Yes Go to the next step.
		No Go to Step 3.
2	VERIFY IF MALFUNCTION CAUSE IS TCM FOR POOR GND OR INPUT SIGNAL • Disconnect the TCM connector. • Is the resistance between the ground terminal at the TCM connector and the body ground less than 5.0 ohms?	Yes Inspect the value at the following PCM and TCM PIDs using the M-MDS. (See PCM INSPECTION [MZR 2.5] .) (See ON-BOARD DIAGNOSTIC SYSTEM PID/ DATA MONITOR INSPECTION [FS5A-EL] .) PCM PID: • APP • RPM TCM PIDs: • THOP • TFT • TFTV Repair or replace any malfunctioning parts.
		No Repair the open ground circuit. Reconnect the TCM connector.
3	DETERMINE IF MALFUNCTION CAUSE IS TRANSAXLE POSITION SIGNAL OR CONTROL SIGNAL • Perform the stall test. (See MECHANICAL SYSTEM TEST [FS5A-EL].) • Is the stall speed normal?	Yes Go to the next step.
		No Go to Step 5.

4	VERIFY IF MALFUNCTION CAUSE IS TRANSAXLE POSITION SIGNAL OR TRANSAXLE (INCLUDING CONTROL VALVE BODY) - Inspect the value at the following TCM PID using the M-MDS. (See ON-BOARD DIAGNOSTIC SYSTEM PID/ DATA MONITOR INSPECTION [FS5A-EL].) - TR - Is the PID value normal?	Yes Overhaul the control valve body and repair or replace any malfunctioning parts. (See Automatic Transaxle Workshop Manual FS5A-EL.) If any problem remains, overhaul the transaxle and repair or replace any malfunctioning parts. (See Automatic Transaxle Workshop Manual FS5A-EL.) No Repair or replace any malfunctioning parts.
5	INSPECT THROTTLE OPENING SIGNAL FOR MALFUNCTION - Inspect the value at the following TCM PID using the M-MDS. (See ON-BOARD DIAGNOSTIC SYSTEM PID/ DATA MONITOR INSPECTION [FS5A-EL].) - THOP - Is the PID value normal?	Yes Go to the next step. No Inspect the PCM PID APP. (See ON-BOARD DIAGNOSTIC TEST [MZR 2.5].) Repair or replace as necessary.
6	INSPECT TCM FOR POOR GND - Disconnect the TCM connector. - Is the resistance between the ground terminal at the TCM connector and the body ground less than 5.0 ohms?	Yes Go to the next step. No Repair the open ground circuit. Reconnect the TCM connector.
7	VERIFY IF MALFUNCTION CAUSE IS LINE PRESSURE CONTROL SIGNAL OR TRANSAXLE (INCLUDING CONTROL VALVE BODY) - Inspect the value at the following TCM PID using the M-MDS. (See ON-BOARD DIAGNOSTIC SYSTEM PID/ DATA MONITOR INSPECTION [FS5A-EL].) - LPS - Is the LPS PID value normal?	Yes Overhaul the control valve body and repair or replace any malfunctioning parts. (See Automatic Transaxle Workshop Manual FS5A-EL.) If any problem remains, overhaul the transaxle and repair or replace any malfunctioning parts. (See Automatic Transaxle Workshop Manual FS5A-EL.) No Repair or replace any malfunctioning parts.

Verify the test results.

- If normal, return to the diagnostic index to service any additional symptoms.
- If the malfunction remains, inspect the related Service Bulletins and/or On-line Repair Information and perform repair or diagnosis.
 - If the vehicle is repaired, troubleshooting is completed.
 - If the vehicle is not repaired or additional diagnostic information is not available, replace the TCM.

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NOTE:

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Diagnostic procedure

STEP	INSPECTION	ACTION
1	VERIFY MALFUNCTION CONDITION • Does the shift shock occur only when the engine is cold?	Yes Go to the next step.
		No Go to Step 3.
2	VERIFY IF MALFUNCTION CAUSE IS TCM FOR POOR GND OR INPUT SIGNAL • Disconnect the TCM connector. • Is the resistance between the ground terminal at the TCM connector and the body ground less than 5.0 ohms?	Yes Inspect the value at the following PCM and TCM PIDs using the M-MDS. (See PCM INSPECTION [MZR 2.5] .) (See ON-BOARD DIAGNOSTIC SYSTEM PID/ DATA MONITOR INSPECTION [FS5A-EL] .) PCM PID: • APP • RPM TCM PIDs: • THOP • TFT • TFTV Repair or replace any malfunctioning parts.
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6	INSPECT TCM FOR POOR GND - Disconnect the TCM connector. - Is the resistance between the ground terminal at the TCM connector and the body ground less than 5.0 ohms?	Yes Go to the next step. No Repair the open ground circuit. Reconnect the TCM connector.
7	VERIFY IF MALFUNCTION CAUSE IS LINE PRESSURE CONTROL SIGNAL OR TRANSAXLE (INCLUDING CONTROL VALVE BODY) - Inspect the value at the following TCM PID using the M-MDS. (See ON-BOARD DIAGNOSTIC SYSTEM PID/ DATA MONITOR INSPECTION [FS5A-EL].) - LPS - Is the LPS PID value normal?	Yes Overhaul the control valve body and repair or replace any malfunctioning parts. (See Automatic Transaxle Workshop Manual FS5A-EL.) If any problem remains, overhaul the transaxle and repair or replace any malfunctioning parts. (See Automatic Transaxle Workshop Manual FS5A-EL.) No Repair or replace any malfunctioning parts.

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