

2012 - Mazda6 - Transmission/ Transaxle

NO.16 JUDDER UPON TORQUE CONVERTER CLUTCH (TCC) OPERATION [FS5A-EL]

16	Judder upon torque converter clutch (TCC) operation
DESCRIPTION	Vehicle jolts when TCC is engaged.
POSSIBLE CAUSE	- Poor TCC engagement due to either slippage because the TCC is stuck or the line pressure is low CAUTION: - If the TCC is stuck, inspect it. In addition, inspect the oil cooler for foreign particles which may have mixed in with the ATF. - Torque converter clutch piston slippage, burnt - Line pressure low - Shift solenoid A malfunction - Shift solenoid E malfunction - Control valve body malfunction - Body GND malfunction - Pressure control solenoid A malfunction - Signal malfunction - VSS malfunction - Sensor GND malfunction - TFT sensor malfunction - APP sensor malfunction - Input/turbine speed sensor malfunction - CKP sensor malfunction - Torque converter malfunction 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	INSPECT INPUT/ TURBINE SPEED 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].) - TSS - Is the PID value normal?	YesGo to the next step.
		NoRepair or replace any malfunctioning parts.
2	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?	YesGo to the next step.
		NoRepair the open ground circuit.
3	INSPECT SHIFT SOLENOID A OR E CONTROL SIGNAL CIRCUIT FOR MALFUNCTION - Inspect the resistance between shift solenoid A and E control circuit at the TCM connector and control valve body connector. - Inspect the resistance between shift solenoid A/E circuit at the TCM connector and control valve body connector. - Are the resistances less than 5.0 ohms?	YesGo to the next step.
		NoRepair the shift solenoid A and/or E circuit.
4	INSPECT SHIFT SOLENOID A OR E FOR MALFUNCTION - Inspect the shift solenoid A and E. (See SOLENOID VALVE INSPECTION [FS5A-EL].) - Is the solenoid valve operating properly?	YesGo to the next step.
		NoOverhaul 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.)

5	VERIFY IF MALFUNCTION CAUSE IS TCM CONTROL 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	Replace the TCM.
6	- 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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are conducted.

Diagnostic procedure

STEP	INSPECTION	ACTION	
1	INSPECT INPUT/ TURBINE SPEED 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].) - TSS - Is the PID value normal?	Yes	Go to the next step.
		No	Repair or replace any malfunctioning parts.
2	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.
3	INSPECT SHIFT SOLENOID A OR E CONTROL SIGNAL CIRCUIT FOR MALFUNCTION - Inspect the resistance between shift solenoid A and E control circuit at the TCM connector and control valve body connector. - Inspect the resistance between shift solenoid A/E circuit at the TCM connector and control valve body connector. - Are the resistances less than 5.0 ohms?	Yes	Go to the next step.
		No	Repair the shift solenoid A and/or E circuit.
4	INSPECT SHIFT SOLENOID A OR E FOR MALFUNCTION - Inspect the shift solenoid A and E. (See SOLENOID VALVE INSPECTION [FS5A-EL].) - Is the solenoid valve operating properly?	Yes	Go to the next step.
		No	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.)

5	VERIFY IF MALFUNCTION CAUSE IS TCM CONTROL 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	Replace the TCM.
6	- 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.		