

2012 - Mazda6 - Transmission/ Transaxle

NO.12 TORQUE CONVERTER CLUTCH (TCC) NON-OPERATION [FS5A-EL]

12	Torque converter clutch (TCC) non-operation
DESCRIPTION	TCC does not operate when vehicle reaches TCC operation range.
POSSIBLE CAUSE	- Basically, the TCC does not operate when the fail-safe is operating. Verify the DTC first. 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. 1. TCC burnt (1) Input sensor system malfunction - TFT sensor - VSS - Input/turbine speed sensor - Sensor GND (2) Output solenoid valve system malfunction (Sticking) - Shift solenoid E malfunction - Shift solenoid A malfunction (3) Control valve body malfunction system (Poor operation, stuck) - TCC hydraulic pressure system 2. APP sensor malfunction (Not operating linear) 3. CKP sensor malfunction 4. Input/turbine speed sensor or vehicle speed sensor malfunction 5. Brake switch malfunction (Always ON) 6. ECT sensor malfunction 7. Excessive amount of ATF

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 SELECTOR LEVER POSITION SIGNAL FOR MALFUNCTION • With the ignition at the ON, does the gear position indicator light indication correspond to the selector lever position?	Yes	Go to the next step.
		No	Go to No.27 "GEAR POSITION INDICATOR LIGHT DOES NOT ILLUMINATE IN M POSITION" or No.28 "GEAR POSITION INDICATOR LIGHT ILLUMINATES IN P, R, N AND D POSITION"
2	INSPECT INPUT SIGNAL FOR MALFUNCTION • 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 ▪ OSS ▪ TSS • Are the PID values normal?	Yes	Go to the next step.
		No	Repair or replace any malfunctioning parts.
3	INSPECT TCM FOR POOR GND • Disconnect the TCM connector. • Is the resistance between the ground terminal at the TCM connector and the	Yes	Go to the next step.
		No	Repair the open ground circuit.

	body ground less than 5.0 ohms?		
4	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 resistance between shift solenoid A and 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 or E control circuit. Reconnect the TCM connector.
5	VERIFY IF MALFUNCTION CAUSE IS SHIFT SOLENOID A OR E OR TCM CONTROL - Inspect the shift solenoid A and E. (See SOLENOID VALVE INSPECTION [FS5A-EL].) - Are the shift solenoids operating properly?	Yes	Replace the TCM.
		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.)
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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		No	Repair or replace any malfunctioning parts.
3	INSPECT TCM FOR POOR GND • Disconnect the TCM connector. • Is the resistance between the ground terminal at the TCM connector and the	Yes	Go to the next step.
		No	Repair the open ground circuit.

	body ground less than 5.0 ohms?		
4	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 resistance between shift solenoid A and 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 or E control circuit. Reconnect the TCM connector.
5	VERIFY IF MALFUNCTION CAUSE IS SHIFT SOLENOID A OR E OR TCM CONTROL - Inspect the shift solenoid A and E. (See SOLENOID VALVE INSPECTION [FS5A-EL].) - Are the shift solenoids operating properly?	Yes	Replace the TCM.
		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.)
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.		