

2012 - Mazda6 - Transmission/ Transaxle

NO.12 TORQUE CONVERTER CLUTCH (TCC) NON-OPERATION [AY6A-EL]

12	Torque converter clutch (TCC) non-operation
DESCRIPTION	TCC does not operate when vehicle reaches TCC operation range.
POSSIBLE CAUSE	- Basically, TCC does not operate when the fail-safe is operating. Verify the DTC at first. If the TCC operates when driving at high speeds only, the malfunction (improper adjustment) is in the M position switch circuit or TR switch circuit. 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. - TCC slippage, burnt - Line pressure low - Incorrect accelerator opening signal - Input/turbine speed sensor malfunction - VSS malfunction - Output solenoid valve system malfunction (Sticking) - TCC control solenoid malfunction - Control valve body system malfunction (Poor operation, sticking) - TCC hydraulic pressure system malfunction - APP sensor malfunction (Not operating linearly) - Input/turbine speed sensor or VSS malfunction - Brake switch malfunction (always ON) - CKP sensor malfunction - CHT sensor malfunction - Operation of fail-safe function.

- Short to power or ground at TCC control solenoid related circuit.

NOTE:

- Before following the troubleshooting steps, make sure that the Automatic Transaxle On-Board Diagnostic and Automatic Transaxle Basic Inspection are conducted. (See **BASIC INSPECTION [AY6A-EL]** .)

Diagnostic procedure

STEP	INSPECTION	ACTION
1	INSPECT GEAR POSITION INDICATOR LIGHT POSITION • With the ignition at 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 D OR M POSITION", or No.28 "GEAR POSITION INDICATOR LIGHT ILLUMINATE IN P, R OR N POSITION".
2	INSPECT TCM FOR POOR GROUND • Disconnect the TCM. • Is the resistance between the TCM ground terminal A9 and the body ground less than 5.0 ohms?	Yes Go to the next step.
		No Repair open ground circuit.
3	INSPECT PCM AND TCM INPUT SIGNALS FOR MALFUNCTION • Perform the PID/DATA Monitor Record Procedure and access following PCM and TCM PIDs while the vehicle is in TCC operation condition. (See PCM INSPECTION [MZI 3.7 V6] .) (See ON-BOARD DIAGNOSTIC SYSTEM PID/ DATA MONITOR INSPECTION [AY6A-EL] .) PCM PIDs: ▪ APP1 ▪ APP2 ▪ BOO ▪ CHT	Yes Go to the next step.
		No Repair or replace malfunctioning part according to inspection result.

	TCM PIDs: ▪ TCCC ▪ THOP ▪ TSS ▪ OSS • Are they normal?		
4	INSPECT TCC SOLENOID FOR MALFUNCTION • Inspect the TCC solenoid. (See TORQUE CONVERTER CLUTCH (TCC) CONTROL SOLENOID INSPECTION [AY6A-EL].) • Is the TCC solenoid normal?	Yes	Go to the next step.
		No	Inspect the coupler component. If normal, replace the control valve body. (See CONTROL VALVE BODY REMOVAL/ INSTALLATION [AY6A-EL].)
5	VERIFY IF MALFUNCTION CAUSE IS TORQUE CONVERTER OR TRANSAXLE (INCLUDING CONTROL VALVE BODY) • Perform the stall test. (See MECHANICAL SYSTEM TEST [AY6A-EL].) • Is the stall speed within the specified?	Yes	Inspect the ATF condition. If large amount of metal specks are found, replace the transaxle. (See AUTOMATIC TRANSAXLE REMOVAL/ INSTALLATION [AY6A-EL].) If a large amount of metal specks are not found, replace the control valve body. (See CONTROL VALVE BODY REMOVAL/ INSTALLATION [AY6A-EL].)
		No	Replace the torque converter. (See TORQUE CONVERTER REMOVAL/ INSTALLATION [AY6A-EL].)
6	• Verify test results. ▪ If normal, return to the diagnostic index to service any additional symptoms. ▪ If malfunction remains, inspect the related Service Bulletins and/or On-line Repair Information and perform repair or diagnosis. • If the vehicle is repaired, troubleshooting completed. • If the vehicle is not repaired or additional diagnostic information is not available, replace the TCM.		

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		No	Replace the torque converter. (See TORQUE CONVERTER REMOVAL/ INSTALLATION [AY6A-EL].)
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