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2012 MAZDA 6/Atenza Wagon OEM Service and Repair Workshop Manual

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TCS OFF SWITCH REMOVAL/INSTALLATION [2WD]

SM2898218

id0415008030a

Note

- The TCS OFF switch is integrated with the cluster switch.
- For the TCS OFF switch removal/installation, refer to the cluster switch removal/installation. (See **CLUSTER SWITCH REMOVAL/INSTALLATION**.)

Sample

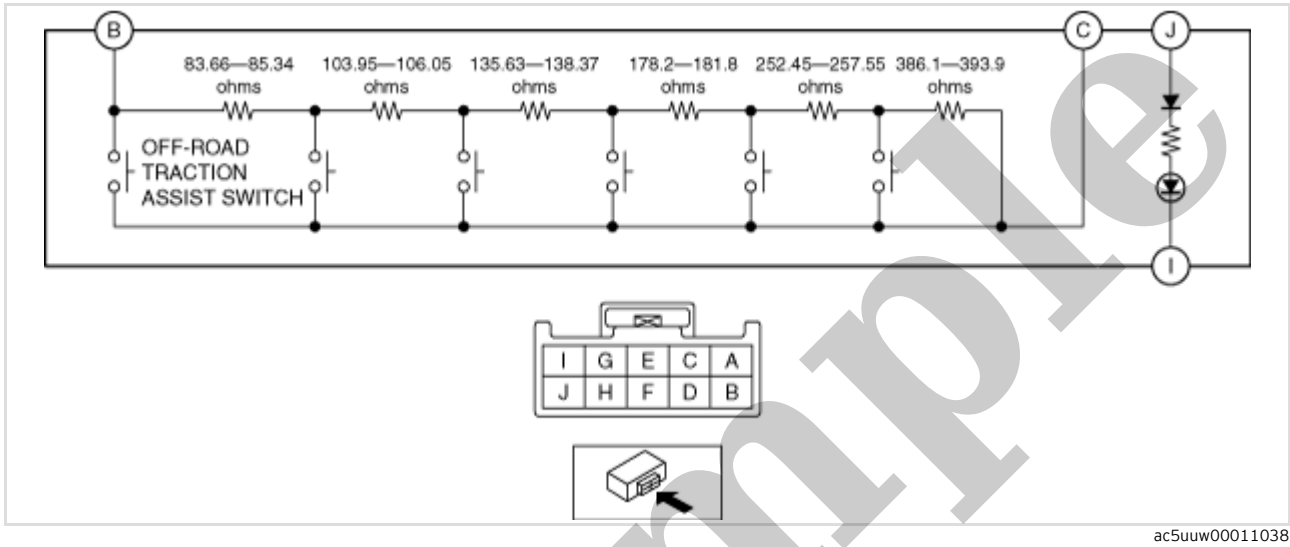
OFF-ROAD TRACTION ASSIST SWITCH INSPECTION [AWD]

SM2898221

id0415008039a

- 1.Remove the OFF-ROAD TRACTION ASSIST switch. (See [OFF-ROAD TRACTION ASSIST SWITCH REMOVAL/INSTALLATION \[AWD\].](#))
- 2.Verify that the resistance between the OFF-ROAD TRACTION ASSIST switch terminals B and C is as indicated in the table.

• If not as indicated in the table, replace the OFF-ROAD TRACTION ASSIST switch.



OFF-ROAD TRACTION ASSIST switch specification

Terminal	Test condition	Resistance (ohms)
B-C	Switch pressed	0
	Switch released	1139.99-1163.01

- 3.Apply battery voltage to OFF-ROAD TRACTION ASSIST switch terminal J, and connect terminal I to ground.
- 4.Verify that the LED illuminates.

• If there is any malfunction, replace the OFF-ROAD TRACTION ASSIST switch.

5. Release your foot from the brake pedal.

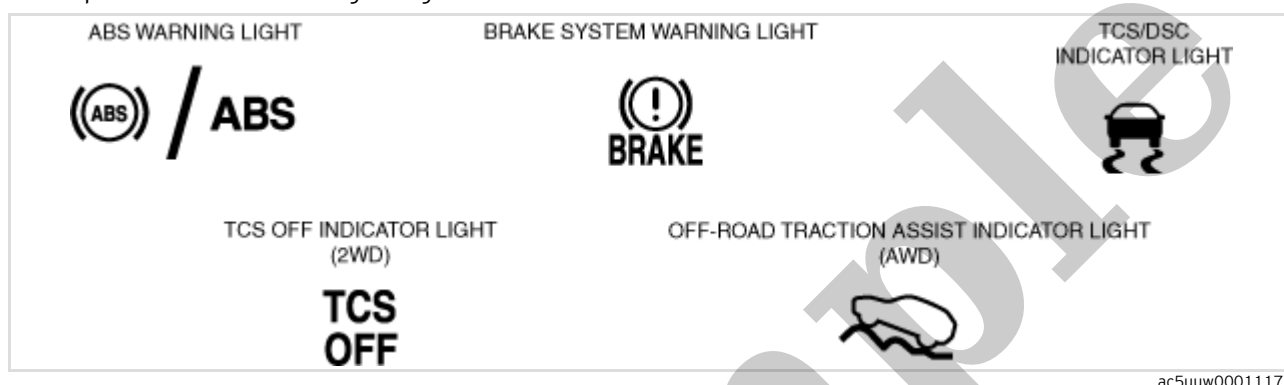
Note

- Depending on the nature of the work performed prior to implementing the initialization, a warning light may be illuminated.

6. After 2 s, verify that the following warning lights/indicator lights turn off after approx. 3 s.

- Brake system warning light
- ABS warning light
- TCS/DSC indicator light
- TCS OFF indicator light (2WD)
- Off-Road Traction Assist indicator light (AWD)

— If each warning light/indicator light is not illuminated/does not turn off, switch the ignition off and repeat the procedure from the beginning.



7. Switch the ignition off.

8. Drive the vehicle.

9. After 5 min or more of driving, verify that the DSC system is normal.

Measurement condition				Maximum value
Engine rotation speed	Brake pedal	Measurement-start vacuum	Measurement-stop vacuum	
While idling (See ENGINE TUNE-UP [SKYACTIV-D 2.2] .)	Depressed	0 kPa {0 mmHg, 0 inHg}	67 kPa {503 mmHg, 20 inHg}	15 s + Engine completely warmed up

DTC P0720:00 [TCM (FW6A-EL, FW6AX-EL)]

SM2898241

id0502o681770

DTC P0720:00	Output shaft speed sensor range/performance problem
DETECTION CONDITION	• Under the following conditions, there is difference between vehicle speed signal from DSC HU/CM and output shaft speed sensor signal: — Engine is running. — The vehicle is driven at the specified speed or more. — Vehicle speed signal related DTC is not recorded. — There is no difference between vehicle speed signal from DSC HU/CM and turbine/input shaft speed sensor signal. — DTC P0721:00 and P0722:00 are not recorded.
FAIL-SAFE FUNCTION	• Inhibits learning control. • Inhibits manual mode. • Inhibits neutral idle control. • Inhibits AAS.
POSSIBLE CAUSE	• Output shaft speed sensor malfunction
SYSTEM WIRING DIAGRAM	Not applicable

Diagnostic procedure

STEP	INSPECTION		ACTION
1	VERIFY DSC HU/CM DTC • Perform the DSC HU/CM DTC inspection using the M-MDS. (See DTC INSPECTION [DSC HU/CM].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See DTC TABLE [DSC HU/CM] .)
		No	Go to the next step.
2	VERIFY INSTRUMENT CLUSTER REPAIR HISTORY • Does the instrument cluster have a record of replacement?	Yes	Perform the instrument cluster configuration, then go to Step 6. (See INSTRUMENT CLUSTER CONFIGURATION (USING AS-BUILT DATA) .)
		No	Go to the next step.
3	VERIFY AUTOMATIC TRANSAXLE REPAIR HISTORY • Does the automatic transaxle (with control valve body) have a record of replacement?	Yes	Perform the TCM configuration. (See TCM CONFIGURATION [FW6A-EL, FW6AX-EL] .)
		No	Go to the next step.
4	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.

STEP	INSPECTION		ACTION
3	PERFORM ON-BOARD DIAGNOSTIC TEST TO SPECIFY MALFUNCTIONING PART • 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	ATF amount in Step 2 is correct: • Replace the automatic transaxle. (See AUTOMATIC TRANSAXLE REMOVAL/INSTALLATION [FW6A-EL].) (See AUTOMATIC TRANSAXLE REMOVAL/INSTALLATION [FW6AX-EL].) ATF amount adjusted in Step 2: • Drive the vehicle to check it, and if there is no problem then the DTC troubleshooting is complete.

Sample

DTC P0733:00 [TCM (FW6A-EL, FW6AX-EL)]

SM2898244

id0502o681800

DTC P0733:00	3GR incorrect ratio
DETECTION CONDITION	• In D position, 3GR, the following phenomenon occurs: — There is difference between turbine/input shaft speed and output shaft speed sensor speed for 230 to 1,980 ms (varies with ATF temperature and ECT) during shift-up. — There is difference between turbine/input shaft speed and output shaft speed sensor speed for 1,500 to 3,900 ms (varies with ATF temperature) while driving without shifting.
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 • Clutch burnt • Shift solenoid malfunction • ATF leakage from clutch circuit • Control valve body malfunction
SYSTEM WIRING DIAGRAM	Not applicable

Diagnostic procedure

STEP	INSPECTION	ACTION
1	VERIFY DTC OUTPUT STATUS • Are any the following DTCs displayed? — P0746:00, P0751:00, P0752:00, P0756:00, P0757:00, P0761:00, P0762:00, P0766:00, P0767:00, P0771:00, P0772:00, P1738:00, P1784:00	Yes Go to the applicable DTC inspection. (See ON-BOARD DIAGNOSTIC SYSTEM DTC TABLE [TCM (FW6A-EL, FW6AX-EL)] .)
		No Go to the next step.
2	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 Go to the next step.

STEP	INSPECTION		ACTION
3	PERFORM ON-BOARD DIAGNOSTIC TEST TO SPECIFY MALFUNCTIONING PART • 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	ATF amount in Step 2 is correct: • Replace the automatic transaxle. (See AUTOMATIC TRANSAXLE REMOVAL/INSTALLATION [FW6A-EL].) (See AUTOMATIC TRANSAXLE REMOVAL/INSTALLATION [FW6AX-EL].) ATF amount adjusted in Step 2: • Drive the vehicle to check it, and if there is no problem then the DTC troubleshooting is complete.

Sample

DTC P0751:00 [TCM (FW6A-EL, FW6AX-EL)]

SM2898247

id0502o681860

DTC P0751:00	Shift solenoid No.1 stuck off
DETECTION CONDITION	• Under the following conditions, shift solenoid No.1 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.1 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.