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2012 MAZDA Flairwagon OEM Service and Repair Workshop Manual

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Step	Inspection	Results	Action
2	INSPECT TCM CONNECTOR AND TERMINALS • Disconnect the TCM connector. • Visually inspect the TCM connector and terminals. • Is there any malfunction?	Yes	Repair or replace the connector and/or terminals, then go to repair completion verification.
		No	Go to the next step.
3	INSPECT ELECTRIC AT OIL PUMP CONTROL CIRCUIT FOR SHORT TO GROUND • Inspect the applicable circuit for a short to ground. (See CIRCUIT INSPECTION.) • Is the circuit normal?	Yes	Go to the next step.
		No	Repair or replace the malfunctioning location and perform the repair completion verification.
4	INSPECT ELECTRIC AT OIL PUMP CONTROL CIRCUIT FOR SHORT TO POWER SUPPLY • Inspect the applicable circuit for a short to power supply. (See CIRCUIT INSPECTION.) • Is the circuit normal?	Yes	Go to the next step.
		No	Repair or replace the malfunctioning location and perform the repair completion verification.
5	INSPECT ELECTRIC AT OIL PUMP CONTROL CIRCUIT FOR OPEN CIRCUIT • Inspect the applicable circuit for open circuit. (See CIRCUIT INSPECTION.) • Is the circuit normal?	Yes	Go to the next step.
		No	Repair or replace the malfunctioning location and perform the repair completion verification.
6	INSPECT ELECTRIC AT OIL PUMP GROUND CIRCUIT FOR OPEN CIRCUIT • Inspect the applicable circuit for open circuit. (See CIRCUIT INSPECTION.) • Is the circuit normal?	Yes	Go to the next step.
		No	Repair or replace the malfunctioning location and perform the repair completion verification.
7	INSPECT ELECTRIC AT OIL PUMP • Remove the electric AT oil pump. (See ELECTRIC AT OIL PUMP REMOVAL/INSTALLATION [FW6A-EL, FW6AX-EL].) • Verify that the resistance at the electric AT oil pump is as follows: — Between terminals D and A: approx. 18.2 kohm — Between terminals C and A: approx. 21.5 kohm • Is the resistance normal?	Yes	Install the electric AT oil pump and perform the repair completion verification. (See ELECTRIC AT OIL PUMP REMOVAL/INSTALLATION [FW6A-EL, FW6AX-EL] .)
		No	Replace the electric AT oil pump and perform the repair completion verification. (See ELECTRIC AT OIL PUMP REMOVAL/INSTALLATION [FW6A-EL, FW6AX-EL] .)
Repair completion verification	VERIFY DTC TROUBLESHOOTING COMPLETED • Always reconnect all disconnected connectors. • Replace the fuse if it is blown. • Reconnect the negative battery terminal. (See NEGATIVE BATTERY TERMINAL DISCONNECTION/CONNECTION.) • Clear the DTC using the M-MDS. (See CLEARING DTC.) • Perform the following procedure to ensure that the DTC has been resolved: 1. Operate i-stop for 10 s or more. • Perform the DTC inspection using the M-MDS. (See DTC INSPECTION.) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See ON-BOARD DIAGNOSTIC SYSTEM DTC TABLE [TCM (FW6A-EL, FW6AX-EL)] .)
		No	DTC troubleshooting completed.

DTC P2855:00 [TCM (FW6A-EL, FW6AX-EL)]

SM2898233

id0502o657860

DTC P2855:00	Low clutch hydraulic circuit/sealing malfunction
DETECTION CONDITION	• Slow engaging after operating selector lever from N to D position.
FAIL-SAFE FUNCTION	Not applicable
POSSIBLE CAUSE	• Low clutch piston sealing malfunction • Seal ring poor functioning • ATF is less than specified value
SYSTEM WIRING DIAGRAM	Not applicable

Diagnostic procedure

STEP	INSPECTION		ACTION
1	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	Replace the automatic transaxle. (See AUTOMATIC TRANSAXLE REMOVAL/INSTALLATION [FW6A-EL].) (See AUTOMATIC TRANSAXLE REMOVAL/INSTALLATION [FW6AX-EL].)
2	VERIFY DTC TROUBLESHOOTING COMPLETED • Perform the following procedure to ensure that the DTC has been resolved: 1. Verify that the ATF temperature is 30 °C {86 °F} or more. 2. Perform the following operation 20 times. — Operate the selector lever from N to D position and wait for 5 s or more. — Operate the selector lever from D to N position and wait for 5 s or more. • Clear the DTC using the M-MDS. (See ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [TCM (FW6A-EL, FW6AX-EL)].) • Perform the DTC inspection using the M-MDS. (See ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [TCM (FW6A-EL, FW6AX-EL)].) • Is the DTC P2855:00 also present?	Yes	Replace the automatic transaxle. (See AUTOMATIC TRANSAXLE REMOVAL/INSTALLATION [FW6A-EL].) (See AUTOMATIC TRANSAXLE REMOVAL/INSTALLATION [FW6AX-EL].)
		No	DTC troubleshooting completed.

DTC P0707:00 [TCM (FW6A-EL, FW6AX-EL)]

SM2898235

id0502o681710

DTC P0707:00	Transaxle range sensor circuit low input
DETECTION CONDITION	- Under the following condition, incorrect voltage in any one of transaxle range sensors 1 to 4: - Battery voltage is 8 V or more.
FAIL-SAFE FUNCTION	- Inhibits learning control. - Inhibits manual mode. - Inhibits neutral idle control. - Inhibits AAS.
POSSIBLE CAUSE	Transaxle range sensor (built-into TCM) malfunction
SYSTEM WIRING DIAGRAM	Not applicable

Diagnostic procedure

STEP	INSPECTION		ACTION
1	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.
2	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, replace the control valve body. (See CONTROL VALVE BODY REMOVAL/INSTALLATION [FW6A-EL, FW6AX-EL].) Go to the next step. No Replace the control valve body, then go to the next step. (See CONTROL VALVE BODY REMOVAL/INSTALLATION [FW6A-EL, FW6AX-EL].)

STEP	INSPECTION	ACTION	
3	VERIFY DTC TROUBLESHOOTING COMPLETED • Clear the DTC using the M-MDS. (See ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [TCM (FW6A-EL, FW6AX-EL)].) • Perform the following procedure to ensure that the DTC has been resolved: 1. Switch the ignition ON (engine off or on). • Perform the DTC inspection using the M-MDS. (See ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [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	DTC troubleshooting completed.

Sample

DTC P0712:00 [TCM (FW6A-EL, FW6AX-EL)]

SM2898238

id0502o681740

DTC P0712:00	TFT sensor circuit low input
DETECTION CONDITION	- Under the following condition, the TFT sensor voltage is 0.12 V or less for 5 s: - Battery voltage is 8 V or more.
FAIL-SAFE FUNCTION	- Inhibits learning control. - Inhibits neutral idle control.
POSSIBLE CAUSE	- TFT sensor malfunction - Coupler component malfunction - TCM malfunction
SYSTEM WIRING DIAGRAM	Not applicable

Diagnostic procedure

STEP	INSPECTION	ACTION	
1	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.
	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, replace the control valve body. (See CONTROL VALVE BODY REMOVAL/INSTALLATION [FW6A-EL, FW6AX-EL].) Go to the next step.
No		Replace the control valve body, then go to the next step. (See CONTROL VALVE BODY REMOVAL/INSTALLATION [FW6A-EL, FW6AX-EL].)	

STEP	INSPECTION		ACTION
3	VERIFY DTC TROUBLESHOOTING COMPLETED • Clear the DTC using the M-MDS. (See ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [TCM (FW6A-EL, FW6AX-EL)].) • Perform the following procedure to ensure that the DTC has been resolved: 1. Switch the ignition ON (engine off or on) and wait for 5 s or more. 2. Inspect the value at the following TCM PIDs using the M-MDS. (See ON-BOARD DIAGNOSTIC SYSTEM PID/DATA MONITOR INSPECTION [TCM (FW6A-EL, FW6AX-EL)].) — ECU_A — ECU_B — ECU_C 3. Verify that the average temperature of ECU_A, ECU_B, and ECU_C is 0 °C {32 °F} or more. • Perform the DTC inspection using the M-MDS. (See ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [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	DTC troubleshooting completed.

DTC U0442:00 [TCM (FW6A-EL, FW6AX-EL)]

SM2898289

id0502o690530

DTC U0442:00	Invalid data received from PCM (local CAN between TCM and PCM)
DETECTION CONDITION	- Under the following condition, the TCM detects the invalid PCM signal for 0.5 s: - Battery voltage is 10 V or more.
FAIL-SAFE FUNCTION	- Set to TCC control. - Inhibits learning control. - Inhibits manual mode. - Inhibits neutral idle control. - Inhibits 5GR and 6GR. - Inhibits shift down when the accelerator pedal is depressed.
POSSIBLE CAUSE	PCM DTC is stored.
SYSTEM WIRING DIAGRAM	Not applicable

Diagnostic procedure

STEP	INSPECTION		ACTION
1	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.
2	VERIFY PCM DTC - Perform the PCM DTC inspection using the M-MDS. (See ON-BOARD DIAGNOSTIC TEST [PCM (SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION))].) (See ON-BOARD DIAGNOSTIC TEST [PCM (SKYACTIV-G 2.5 (WITH CYLINDER DEACTIVATION))].) - Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See DTC TABLE [PCM (SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION))] .) (See DTC TABLE [PCM (SKYACTIV-G 2.5 (WITH CYLINDER DEACTIVATION))] .)
		No	Go to the next step.
3	VERIFY DTC TROUBLESHOOTING COMPLETED - Clear the DTC using the M-MDS. (See ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [TCM (FW6A-EL, FW6AX-EL)].) - Perform the following procedure to ensure that the DTC has been resolved: - Start the engine and warm it up completely. - Drive the vehicle for a while under the following conditions: - Selector lever position: D position - Perform the DTC inspection using the M-MDS. (See ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [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	DTC troubleshooting completed.

DTC No.	Check engine light	Automatic transaxle warning light/Automatic transaxle warning indication	Description	Fail-safe function	Drive cycle	Self test type*1	Memory function	Page
P0711:00	Illumination	Illumination/Indication	TFT sensor range/performance problem	×	2	C	×	(See DTC P0711:00 [TCM (FW6A-EL, FW6AX-EL)].)
P0712:00	Illumination	Illumination/Indication	TFT sensor circuit low input	×	1	C, O	×	(See DTC P0712:00 [TCM (FW6A-EL, FW6AX-EL)].)
P0713:00	Illumination	Illumination/Indication	TFT sensor circuit high input	×	2	C	×	(See DTC P0713:00 [TCM (FW6A-EL, FW6AX-EL)].)
P0715:00	Illumination	Illumination/Indication	Turbine/input shaft speed sensor/sensor output range malfunction	×	1	C	×	(See DTC P0715:00 [TCM (FW6A-EL, FW6AX-EL)].)
P0716:00	Illumination	Illumination/Indication	Turbine/input shaft speed sensor range/performance problem	×	1	C	×	(See DTC P0716:00 [TCM (FW6A-EL, FW6AX-EL)].)
P0717:00	Illumination	Illumination/Indication	Open circuit in turbine/input shaft speed sensor circuit	×	1	C	×	(See DTC P0717:00 [TCM (FW6A-EL, FW6AX-EL)].)
P0720:00	Illumination	Illumination/Indication	Output shaft speed sensor range/performance problem	×	1	C	×	(See DTC P0720:00 [TCM (FW6A-EL, FW6AX-EL)].)
P0721:00	Illumination	Illumination/Indication	Output shaft speed sensor/sensor output range malfunction	×	1	C	×	(See DTC P0721:00 [TCM (FW6A-EL, FW6AX-EL)].)
P0722:00	Illumination	Illumination/Indication	Open circuit in output shaft speed sensor circuit	×	2	C	×	(See DTC P0722:00 [TCM (FW6A-EL, FW6AX-EL)].)
P0729:00	—	—	6GR incorrect ratio	×	2	C	×	(See DTC P0729:00 [TCM (FW6A-EL, FW6AX-EL)].)
P0731:00	—	—	1GR incorrect ratio	×	2	C	×	(See DTC P0731:00 [TCM (FW6A-EL, FW6AX-EL)].)

DTC No.	Check engine light	Automatic transaxle warning light/Automatic transaxle warning indication	Description	Fail-safe function	Drive cycle	Self test type*1	Memory function	Page
P0771:00	Illumination	Illumination/Indication	On/off solenoid stuck off	×	2	C	×	(See DTC P0771:00 [TCM (FW6A-EL, FW6AX-EL)].)
P0772:00	Illumination	Illumination/Indication	On/off solenoid stuck on	×	2	C	×	(See DTC P0772:00 [TCM (FW6A-EL, FW6AX-EL)].)
P0773:00	Illumination	Illumination/Indication	On/off solenoid circuit malfunction	×	1	C, O	×	(See DTC P0773:00 [TCM (FW6A-EL, FW6AX-EL)].)
P0780:00	Illumination	Illumination/Indication	Gear shifting malfunction	×	2	C	×	(See DTC P0780:00 [TCM (FW6A-EL, FW6AX-EL)].)
P0819:00	—	—	M position switch/Up switch/Down switch signal error	×	1	C	×	(See DTC P0819:00 [TCM (FW6A-EL, FW6AX-EL)].)
P0842:00	Illumination	Illumination/Indication	Oil pressure switch No.1 (Oil pressure switch B) stuck on	×	2	C	×	(See DTC P0842:00 [TCM (FW6A-EL, FW6AX-EL)].)
P0843:00	Illumination	Illumination/Indication	Oil pressure switch No.1 (Oil pressure switch B) stuck off	×	2	C	×	(See DTC P0843:00 [TCM (FW6A-EL, FW6AX-EL)].)
P0847:00	Illumination	Illumination/Indication	Oil pressure switch No.2 (Oil pressure switch A) stuck on	×	2	C	×	(See DTC P0847:00 [TCM (FW6A-EL, FW6AX-EL)].)
P0848:00	Illumination	Illumination/Indication	Oil pressure switch No.2 (Oil pressure switch A) stuck off	×	2	C	×	(See DTC P0848:00 [TCM (FW6A-EL, FW6AX-EL)].)
P0872:00	Illumination	Illumination/Indication	Oil pressure switch No.3 (Oil pressure switch A) stuck on	×	2	C	×	(See DTC P0872:00 [TCM (FW6A-EL, FW6AX-EL)].)
P0873:00	Illumination	Illumination/Indication	Oil pressure switch No.3 (Oil pressure switch A) stuck off	×	2	C	×	(See DTC P0873:00 [TCM (FW6A-EL, FW6AX-EL)].)