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2014 Mazda 3 Service and Repair Manual

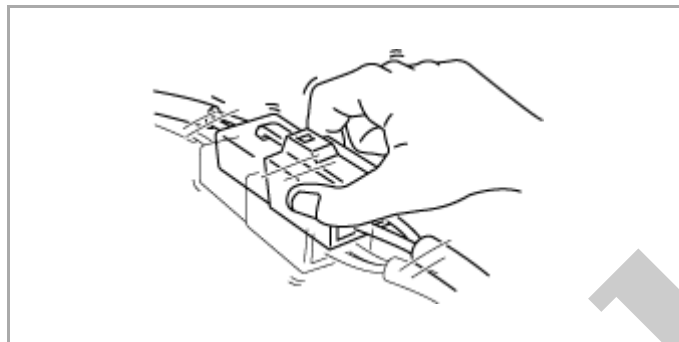
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Step	Inspection	Action
6	VERIFY THAT SAME DTC IS NOT OUTPUT AGAIN • Reconnect the disconnected connectors. • Connect the negative battery terminal. (See NEGATIVE BATTERY TERMINAL DISCONNECTION/CONNECTION.) • Clear the DTC from the climate control unit memory using the M-MDS. (See CLEARING DTC [CLIMATE CONTROL UNIT (FULL-AUTO AIR CONDITIONER)].) • Perform the DTC inspection for the climate control unit using the M-MDS. (See DTC DISPLAY [CLIMATE CONTROL UNIT (FULL-AUTO AIR CONDITIONER)].) • Is the same DTC displayed?	Repeat the inspection from Step 1. • If the malfunction recurs, replace the climate control unit. (See CLIMATE CONTROL UNIT REMOVAL/INSTALLATION [FULL-AUTO AIR CONDITIONER].) Go to the next step.
		Go to the next step.
7	VERIFY THAT NO OTHER DTCs ARE PRESENT • Verify other DTCs displayed. • Are any other DTCs displayed?	Repair or replace the malfunctioning part according to the applicable DTC troubleshooting. (See DTC TABLE [CLIMATE CONTROL UNIT (FULL-AUTO AIR CONDITIONER)] .)
		DTC troubleshooting completed.

Step	Inspection		Action
1	INSPECT AIR MIX ACTUATOR CONNECTOR • Switch the ignition off. • Disconnect the negative battery terminal. (See NEGATIVE BATTERY TERMINAL DISCONNECTION/CONNECTION.) • Disconnect the air mix actuator connector. (See AIR MIX ACTUATOR REMOVAL/INSTALLATION [FULL-AUTO AIR CONDITIONER].) • Inspect the connector and terminals (corrosion, damage, pin disconnection). • Are the connector and terminals normal?	Yes	Go to the next step.
		No	Repair/replace the connector or terminal. After repair procedure, go to Step 6.
2	INSPECT AIR MIX ACTUATOR • Inspect the air mix actuator. (See AIR MIX ACTUATOR INSPECTION [FULL-AUTO AIR CONDITIONER].) • Is it normal?	Yes	Go to the next step.
		No	Replace the air mix actuator. (See AIR MIX ACTUATOR REMOVAL/INSTALLATION [FULL-AUTO AIR CONDITIONER].) Go to Step 6.
3	VERIFY CLIMATE CONTROL UNIT CONNECTOR CONDITION • Disconnect the climate control unit connector. (See CLIMATE CONTROL UNIT REMOVAL/INSTALLATION [FULL-AUTO AIR CONDITIONER].) • Inspect the connector and terminals (corrosion, damage, pin disconnection). • Are the connector and terminals normal?	Yes	Go to the next step.
		No	Repair/replace the connector or terminal. After repair procedure, go to step 6.
4	INSPECT AIR MIX ACTUATOR (POTENTIOMETER) CIRCUIT FOR OPEN CIRCUIT • Climate control unit and air mix actuator connectors are disconnected. • Inspect for continuity between the following terminals (wiring harness-side): Driver-side — Climate control unit terminal 1C — Air mix actuator terminal G — Climate control unit terminal 2K– - Air mix actuator terminal F — Climate control unit terminal 1Q — Air mix actuator terminal E Passenger-side — Climate control unit terminal 1C — Air mix actuator terminal E — Climate control unit terminal 2I– - Air mix actuator terminal F — Climate control unit terminal 1Q — Air mix actuator terminal G • Is there continuity?	Yes	Go to the next step.
		No	Refer to the wiring diagram and verify whether or not there is a common connector between climate control unit terminal and air mix actuator terminal. If there is a common connector: • Determine the malfunctioning part by inspecting the common connector and the terminal for corrosion, damage, or pin disconnection, and the common wiring harness for an open circuit. • Repair or replace the malfunctioning part. If there is no common connector: • Repair or replace the wiring harness which has an open circuit. Go to Step 6.

Action for non-repeatable malfunction

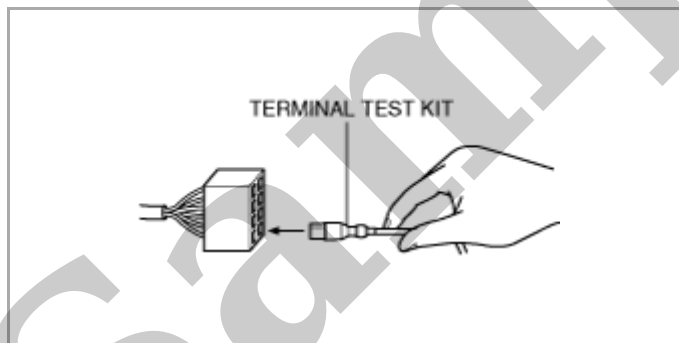
- If the malfunction does not recur, verify the malfunction cause by performing the following actions:
 - Based on the repair order form, attempt to drive the vehicle or perform tests to replicate the malfunction, record the data at that time, and detect the malfunction cause.
 - Shake the wiring harness or connector of the electrical component which is suspected to be the cause of the malfunction, and inspect for occurrence of any malfunction or DTCs.



- Inspect the female terminals on the connector of the electric component which is suspected to be the cause of the malfunction for poor connection. (See **ELECTRICAL SYSTEM**.)

Note

- Tool used (Reference): terminal test kit (49US-15-KIT)



MAZDA CONNECT (Type-B)

Note

- Refer to the [TROUBLESHOOTING PROCEDURE] for the detailed troubleshooting procedure. (See **TROUBLESHOOTING PROCEDURE**.)

DTC B11F5:86, B1A69:86, U210A:86 [CLIMATE CONTROL UNIT (FULL-AUTO AIR CONDITIONER)]

SM2898567

id0702k290070

System malfunction location	• B11F5:86: Invalid data (humidity sensor temperature) received from humidity sensor • B1A69:86: Invalid data (relative humidity) received from humidity sensor • U210A:86: Invalid data (windshield temperature) received from humidity sensor
Detection condition	• Climate control unit receives the invalid data from the front body control module (FBCM).
Fail-safe function	B11F5:86 • Humidity sensor input value (temperature) is fixed at -40 °C {-40 °F}. However, control is performed without humidity sensor. B1A69:86 • Humidity sensor input value (humidity) is fixed at 100 %. However, control is performed without humidity sensor. U210A:86 • Humidity sensor input value (windshield temperature) is fixed at -40 °C {-40 °F}. However, control is performed without humidity sensor.
Possible cause	• Connector or terminal malfunction • Malfunction in the wiring harness between the humidity sensor and front body control module (FBCM) • Malfunction in the wiring harness between the front body control module (FBCM) and instrument cluster • Malfunction in the wiring harness between the instrument cluster and climate control unit • Humidity sensor malfunction • Instrument cluster malfunction • Front body control module malfunction • Climate control unit malfunction
System wiring diagram	Not applicable

Diagnostic procedure

Step	Inspection		Action
1	PERFORM CLIMATE CONTROL UNIT DTC INSPECTION • Clear the DTC from the climate control unit memory using the M-MDS. (See CLEARING DTC [CLIMATE CONTROL UNIT (FULL-AUTO AIR CONDITIONER)] .) • Perform the DTC inspection for the climate control unit using the M-MDS. (See DTC DISPLAY [CLIMATE CONTROL UNIT (FULL-AUTO AIR CONDITIONER)] .) • Is DTC U0155:00 or U0423:68 displayed?	Yes	Repair or replace the malfunctioning part according to the applicable DTC troubleshooting. (See DTC U0010:88, U0155:00 [CLIMATE CONTROL UNIT (FULL-AUTO AIR CONDITIONER)] .) (See DTC U0423:68 [CLIMATE CONTROL UNIT (FULL-AUTO AIR CONDITIONER)] .)
		No	Go to the next step.
2	PERFORM FRONT BODY CONTROL MODULE (FBCM) DTC INSPECTION • Perform the front body control module (FBCM) DTC inspection using the M-MDS. (See DTC INSPECTION [FRONT BODY CONTROL MODULE (FBCM)] .) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See DTC TABLE [FRONT BODY CONTROL MODULE (FBCM)] .)
		No	Go to the next step.

Step	Air mix actuator	Airflow mode actuator	Blower speed	Magnet clutch	Air intake actuator
1	0 %	VENT	5th	ON	FRESH
2	100 %				

Display

Step	Temperature (°C {°F})	Airflow mode	Blower volume	A/C	Recirculate switch indicator light	Fresh switch indicator light	Defroster switch indicator light	Rear window defogger switch indicator light
1	20.0 {68}			Displayed	Not illuminated	Illuminated	Not illuminated	Not illuminated
2	21.0 {70}							

Note

- After approx. 22 s have elapsed, the operation step moves to the next step.
- When the last step is finished, the operation is repeated from Step 1.
- To prevent super-cooling, the magnetic clutch turns off despite the A/C forced override.

A/C compressor

- 1.Connect the M-MDS to the DLC-2.
- 2.Switch the ignition ON (engine off).
- 3.After the vehicle is identified, select the following items from the initial screen of the M-MDS.

(1)Select the “Body”.

(2)Select the “EATC Operation Check”.
- 4.Select the “Air conditioning compressor” from the screen menu.
- 5.Verify the A/C operation check mode according to the directions on the screen.
- 6.Select “Stop” to stop the A/C operation check. (See [A/C operation check stop](#).)

Operation

Step	Air mix actuator	Airflow mode actuator	Blower speed	Magnet clutch	Air intake actuator
1	0 %	VENT	5th	ON	FRESH
2				OFF	

- Verify the A/C operation check mode according to the directions on the screen.
- Select “Stop” to stop the A/C operation check. (See **A/C operation check stop**A/C operation check stop.)

Operation

Step	Air mix actuator	Airflow mode actuator	Blower speed	Magnet clutch	Air intake actuator
1	50 %	VENT	OFF	OFF	FRESH
2			1st	ON	
3			3rd		
4			5th		
5			7th		

Display

Step	Temperature (°C {°F})	Airflow mode	Blower volume	A/C	Recirculate switch indicator light	Fresh switch indicator light	Defroster switch indicator light	Rear window defogger switch indicator light				
1	1 {34}		Not displayed	Not displayed	Not illuminated	Illuminated	Not illuminated	Not illuminated				
2				Displayed								
3												
4												
5												

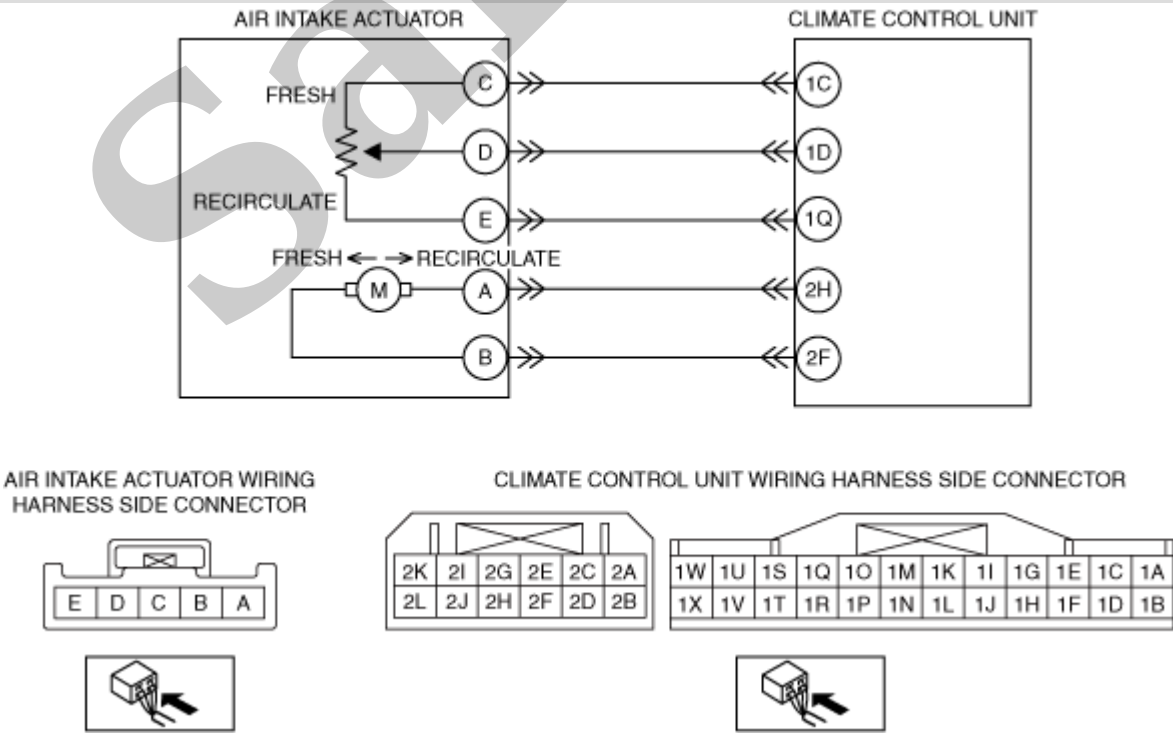
Note

- After approx. 4 s have elapsed, the operation step moves to the next step.
- When the last step is finished, the operation is repeated from Step 1.
- To prevent super-cooling, the magnetic clutch turns off despite the A/C forced override.

Airflow mode actuator

- Connect the M-MDS to the DLC-2.
- Switch the ignition ON (engine off).
- After the vehicle is identified, select the following items from the initial screen of the M-MDS.
 - Select the “Body”.
 - Select the “EATC Operation Check”.

System malfunction location	• B11F0:12: Air intake actuator (potentiometer) circuit short to power supply • B11F0:13: Air intake actuator (potentiometer) circuit open
Detection condition	• Malfunction in wiring harness between air intake actuator and climate control unit
Fail-safe function	Malfunction determined when ignition switched ON • The air intake actuator is operated in the fresh air side for 7 s after a malfunction is determined and then the drive signal is stopped. — Manual operation using REC switch/FRESH switch is not available. Malfunction already exists when ignition switched ON • Air intake actuator drive signal is stopped. — Manual operation using REC switch/FRESH switch is not available.
Possible cause	• Connector or terminal malfunction • Air intake actuator malfunction • Open circuit in wiring harness between the following terminals: — Climate control unit terminal 1C–air intake actuator terminal C — Climate control unit terminal 1D–air intake actuator terminal D — Climate control unit terminal 1Q–air intake actuator terminal E • Short to power supply in wiring harness between the following terminals: — Climate control unit terminal 1C–air intake actuator terminal C — Climate control unit terminal 1D–air intake actuator terminal D — Climate control unit terminal 1Q–air intake actuator terminal E • Climate control unit malfunction



PID/DATA MONITOR TABLE [CLIMATE CONTROL UNIT (MANUAL AIR CONDITIONER)]

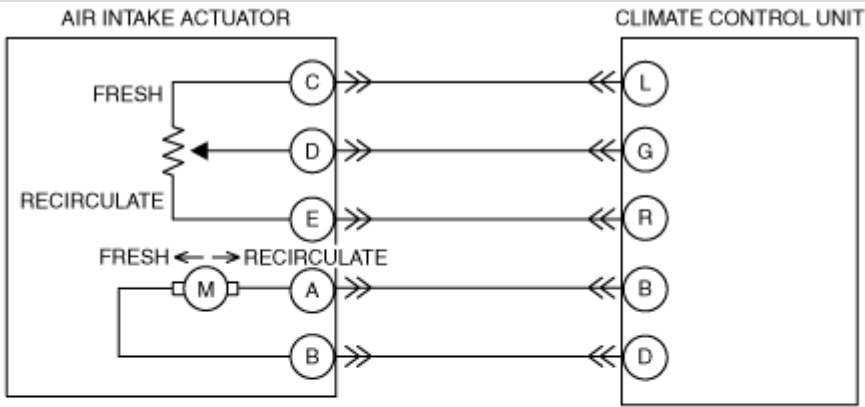
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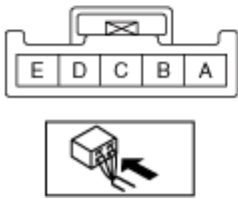
PID	Unit/Condition	Data contents	Climate control unit terminal
A/C_SW	Off/On	• Off: A/C switch is off. • On: A/C switch is on.	—
AUTO_SW	Note • Displays in the M-MDS but it does not operate.		
B_MT_RLY_CS	Off/On	• Off: Blower relay is off. • On: Blower relay is on.	—
DEF_SW	Note • Displays in the M-MDS but it does not operate.		
DUAL_SW	Note • Displays in the M-MDS but it does not operate.		
ENG_C_TMP	°C, °F	Engine coolant temperature is displayed.	—
EVA_TMP_SEN	°C, °F	Evaporator temperature is displayed.	M
F_REC_CS	Off/On	• Off: Forced recirculate control is off. • On: Forced recirculate control is on.	—
F_WIND_TEMP	°C, °F	Windshield temperature is displayed.	—
FRE_SW	Note • Displays in the M-MDS but it does not operate.		
FUEL_TYPE	—	Fuel type is displayed.	—
HC_TMP_SEN	°C, °F	Heater core temperature is displayed.	—
HUMIDITY_SEN	%	Relative humidity is displayed.	—
FAN_DWN_SW	Note • Displays in the M-MDS but it does not operate.		
FAN_UP_SW	Note • Displays in the M-MDS but it does not operate.		
OFF_SW	Note • Displays in the M-MDS but it does not operate.		
OUT_CAR_TMP	°C, °F	Ambient temperature is displayed.	—

System malfunction location

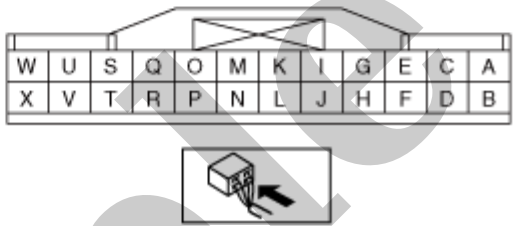
- Air intake actuator motor lock



AIR INTAKE ACTUATOR WIRING HARNESS SIDE CONNECTOR



CLIMATE CONTROL UNIT WIRING HARNESS SIDE CONNECTOR



Diagnostic procedure

Step	Inspection	Action
1	VERIFY RELATED DTC • Switch the ignition off. • Perform the DTC inspection for the climate control unit using the M-MDS. (See DTC DISPLAY [CLIMATE CONTROL UNIT (MANUAL AIR CONDITIONER)].) • Is DTC B11F0:12, B11F0:13 or U200D:11 also present?	Yes Repair or replace the malfunctioning part according to the applicable DTC troubleshooting. (See DTC TABLE [CLIMATE CONTROL UNIT (MANUAL AIR CONDITIONER)] .)
		No Go to the next step.
2	INSPECT AIR INTAKE ACTUATOR CONNECTOR • Switch the ignition off. • Disconnect the negative battery terminal. (See NEGATIVE BATTERY TERMINAL DISCONNECTION/CONNECTION.) • Disconnect the air intake actuator connector. (See AIR INTAKE ACTUATOR REMOVAL/INSTALLATION [MANUAL AIR CONDITIONER].) • Inspect the connector and terminals (corrosion, damage, pin disconnection). • Are the connector and terminals normal?	Yes Go to the next step.
		No Repair/replace the connector or terminal. After repair procedure, go to Step 9.
3	INSPECT AIR INTAKE ACTUATOR • Inspect the air intake actuator. (See AIR INTAKE ACTUATOR INSPECTION [MANUAL AIR CONDITIONER].) • Is it normal?	Yes Go to the next step.
		No Replace the air intake actuator. (See AIR INTAKE ACTUATOR REMOVAL/INSTALLATION [MANUAL AIR CONDITIONER] .) Go to Step 9.