2012 - Mazda6 - HVAC

NO.6 WINDSHIELD FOGGED [FULL-AUTO AIR CONDITIONER]

6	**Windshield fogged.**
DESCRIPTION	• A/C compressor does not operate while airflow mode is in DEFROSTER or HEAT/DEF modes. • Air intake mode does not change to FRESH while airflow mode is in DEFROSTER or HEAT/DEF modes.
POSSIBLE CAUSE	• Climate control unit (B+ signal) system malfunction • Air intake actuator malfunction • Climate control unit (RECIRCULATE, FRESH signal) system malfunction • A/C unit air intake door malfunction

- When performing an asterisked (*) troubleshooting inspection, shake the wiring harness and connectors while doing the inspection to discover whether poor contact points are the cause of any intermittent malfunctions. If there is a problem, inspect to make sure connectors, terminals and wiring harness are connected correctly and undamaged.

Diagnostic procedure

STEP	INSPECTION		ACTION
1	**COOL AIR BLOW OUT INSPECTION** • When both the A/C and fan switch in the climate control unit are on, does cool air blow out from the front vent?	Yes	Go to the next step.
		No	Go to Step 1 of troubleshooting index No.8.
2	**INSPECT CLIMATE CONTROL UNIT POWER SUPPLY FUSE FOR B+ SIGNAL** • Is the climate control unit power supply fuse for B+ signal normal?	Yes	Go to the next step.
		No	Inspect for a short to ground on blown fuse circuit. • Repair or replace if necessary. Install appropriate amperage fuse.

3	**INSPECT AIR INTAKE ACTUATOR** • Inspect the air intake actuator. ▪ Is there grease on the link? ▪ Is the link securely and properly positioned? ▪ Is the link free of obstructions? • Are the above items normal?	Yes	Go to the next step.
		No	Apply grease or install the link properly and securely, remove obstruction, then go to Step 14.
*4	**INSPECT WIRING HARNESS BETWEEN FUSE BLOCK AND CLIMATE CONTROL UNIT FOR CONTINUITY** • Disconnect the climate control unit connector (24-pin). • Switch the ignition to ON. • Measure the voltage at climate control unit terminal 1E (B+ signal). • Is the voltage **approx. 12 V**?	Yes	Go to the next step.
		No	Repair the wiring harness between the fuse block and climate control unit, then go to Step 14.
*5	**INSPECT WIRING HARNESS BETWEEN CLIMATE CONTROL UNIT AND GROUND FOR VOLTAGE** • Measure the voltage at climate control unit terminal 1D (Ground). • Is the voltage **approx. 0V**?	Yes	Go to the next step.
		No	Repair the wiring harness between the climate control unit and ground, then go to Step 14.
6	**VERIFY WHETHER MALFUNCTION IS IN A/C UNIT AIR INTAKE DOOR OR ELSEWHERE** • Switch the ignition to off. • Connect the climate control unit connector (24-pin). • Remove the air intake actuator. • Switch the ignition to ON. • Set the fan switch to MAX position. • Does the air intake mode (RECIRCULATE, FRESH) change smoothly when the air intake link is operated by hand?	Yes	Go to the next step.
		No	Go to Step 12.
7	**INSPECT AIR INTAKE ACTUATOR**	Yes	Go to the next step.

	• Inspect the air intake actuator. (See **AIR INTAKE ACTUATOR INSPECTION [FULL-AUTO AIR CONDITIONER]**.) • Is it normal?	No	Replace the air intake actuator, go to Step 14.
8	**INSPECT AIR INTAKE SELECTOR SWITCH AND DEFROSTER SWITCH IN CLIMATE CONTROL UNIT** • Measure the voltage at climate control unit connector (24-pin) terminals 1N and 1L. • Is it normal?	Yes	Go to the next step.
		No	Replace the climate control unit, then go to Step 14.
*9	**INSPECT WIRING HARNESS BETWEEN CLIMATE CONTROL UNIT AND AIR INTAKE ACTUATOR FOR CONTINUITY** • Switch the ignition off. • Is there continuity between the following climate control unit terminals and air intake actuator terminals? ▪ Terminal 1N —Terminal A (FRESH signal) ▪ Terminal 1L —Terminal B (RECIRCULATE signal)	Yes	Go to the next step.
		No	Repair the wiring harness between the climate control unit and air intake actuator, then go to Step 14.
*10	**INSPECT WIRING HARNESS BETWEEN CLIMATE CONTROL UNIT AND AIR INTAKE ACTUATOR FOR SHORT TO GROUND** • Is there continuity between the following climate control unit terminals and ground? ▪ Terminal 1N (FRESH signal) ▪ Terminal 1L (RECIRCULATE signal)	Yes	Repair the wiring harness between the climate control unit and air intake actuator, then go to Step 14.
		No	Go to the next step.
*11	**INSPECT WIRING HARNESS BETWEEN CLIMATE CONTROL UNIT AND AIR INTAKE ACTUATOR FOR SHORT TO B+** • Switch the ignition to ON. • Measure the voltage at the following climate control unit terminals. ▪ Terminal 1N (FRESH	Yes	Repair the wiring harness between the climate control unit and air intake actuator, then go to Step 14.
		No	Replace the climate control unit, then go to Step 14.

	signal) ▪ Terminal 1L (RECIRCULATE signal) • Is the voltage **approx. 12 V**?		
12	**INSPECT A/C UNIT AIR INTAKE DOOR** • Is there any foreign material or obstruction in the A/C unit air intake door?	Yes	Remove obstruction, then go to Step 14.
		No	Go to the next step.
13	**VERIFY THAT A/C UNIT AIR INTAKE DOOR IS POSITIONED SECURELY AND PROPERLY** • Is the A/C unit air intake door securely and properly positioned?	Yes	Inspect the air intake door for cracks or damage, then go to the next step.
		No	Install the air intake door securely in the proper position, then go to the next step.
14	**VERIFY THAT MALFUNCTION SYMPTOM OCCURS AFTER REPAIR** • Does the malfunction disappear?	Yes	Troubleshooting completed. Explain repairs to customer.
		No	Recheck malfunction symptoms, then repeat from Step 1 if the malfunction recurs.

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POSSIBLE CAUSE	• Climate control unit (B+ signal) system malfunction • Air intake actuator malfunction • Climate control unit (RECIRCULATE, FRESH signal) system malfunction • A/C unit air intake door malfunction

- When performing an asterisked (*) troubleshooting inspection, shake the wiring harness and connectors while doing the inspection to discover whether poor contact points are the cause of any intermittent malfunctions. If there is a problem, inspect to make sure connectors, terminals and wiring harness are connected correctly and undamaged.

Diagnostic procedure

STEP	INSPECTION		ACTION
1	**COOL AIR BLOW OUT INSPECTION** • When both the A/C and fan switch in the climate control unit are on, does cool air blow out from the front vent?	Yes	Go to the next step.
		No	Go to Step 1 of troubleshooting index No.8.
2	**INSPECT CLIMATE CONTROL UNIT POWER SUPPLY FUSE FOR B+ SIGNAL** • Is the climate control unit power supply fuse for B+ signal normal?	Yes	Go to the next step.
		No	Inspect for a short to ground on blown fuse circuit. • Repair or replace if necessary. Install appropriate amperage fuse.

3	**INSPECT AIR INTAKE ACTUATOR** • Inspect the air intake actuator. ▪ Is there grease on the link? ▪ Is the link securely and properly positioned? ▪ Is the link free of obstructions? • Are the above items normal?	Yes	Go to the next step.
		No	Apply grease or install the link properly and securely, remove obstruction, then go to Step 14.
*4	**INSPECT WIRING HARNESS BETWEEN FUSE BLOCK AND CLIMATE CONTROL UNIT FOR CONTINUITY** • Disconnect the climate control unit connector (24-pin). • Switch the ignition to ON. • Measure the voltage at climate control unit terminal 1E (B+ signal). • Is the voltage **approx. 12 V**?	Yes	Go to the next step.
		No	Repair the wiring harness between the fuse block and climate control unit, then go to Step 14.
*5	**INSPECT WIRING HARNESS BETWEEN CLIMATE CONTROL UNIT AND GROUND FOR VOLTAGE** • Measure the voltage at climate control unit terminal 1D (Ground). • Is the voltage **approx. 0V**?	Yes	Go to the next step.
		No	Repair the wiring harness between the climate control unit and ground, then go to Step 14.
6	**VERIFY WHETHER MALFUNCTION IS IN A/C UNIT AIR INTAKE DOOR OR ELSEWHERE** • Switch the ignition to off. • Connect the climate control unit connector (24-pin). • Remove the air intake actuator. • Switch the ignition to ON. • Set the fan switch to MAX position. • Does the air intake mode (RECIRCULATE, FRESH) change smoothly when the air intake link is operated by hand?	Yes	Go to the next step.
		No	Go to Step 12.
7	**INSPECT AIR INTAKE ACTUATOR**	Yes	Go to the next step.

	• Inspect the air intake actuator. (See **AIR INTAKE ACTUATOR INSPECTION [FULL-AUTO AIR CONDITIONER]**.) • Is it normal?	No	Replace the air intake actuator, go to Step 14.
8	**INSPECT AIR INTAKE SELECTOR SWITCH AND DEFROSTER SWITCH IN CLIMATE CONTROL UNIT** • Measure the voltage at climate control unit connector (24-pin) terminals 1N and 1L. • Is it normal?	Yes	Go to the next step.
		No	Replace the climate control unit, then go to Step 14.
*9	**INSPECT WIRING HARNESS BETWEEN CLIMATE CONTROL UNIT AND AIR INTAKE ACTUATOR FOR CONTINUITY** • Switch the ignition off. • Is there continuity between the following climate control unit terminals and air intake actuator terminals? ▪ Terminal 1N —Terminal A (FRESH signal) ▪ Terminal 1L —Terminal B (RECIRCULATE signal)	Yes	Go to the next step.
		No	Repair the wiring harness between the climate control unit and air intake actuator, then go to Step 14.
*10	**INSPECT WIRING HARNESS BETWEEN CLIMATE CONTROL UNIT AND AIR INTAKE ACTUATOR FOR SHORT TO GROUND** • Is there continuity between the following climate control unit terminals and ground? ▪ Terminal 1N (FRESH signal) ▪ Terminal 1L (RECIRCULATE signal)	Yes	Repair the wiring harness between the climate control unit and air intake actuator, then go to Step 14.
		No	Go to the next step.
*11	**INSPECT WIRING HARNESS BETWEEN CLIMATE CONTROL UNIT AND AIR INTAKE ACTUATOR FOR SHORT TO B+** • Switch the ignition to ON. • Measure the voltage at the following climate control unit terminals. ▪ Terminal 1N (FRESH	Yes	Repair the wiring harness between the climate control unit and air intake actuator, then go to Step 14.
		No	Replace the climate control unit, then go to Step 14.

	signal) ▪ Terminal 1L (RECIRCULATE signal) • Is the voltage **approx. 12 V**?		
12	**INSPECT A/C UNIT AIR INTAKE DOOR** • Is there any foreign material or obstruction in the A/C unit air intake door?	Yes	Remove obstruction, then go to Step 14.
		No	Go to the next step.
13	**VERIFY THAT A/C UNIT AIR INTAKE DOOR IS POSITIONED SECURELY AND PROPERLY** • Is the A/C unit air intake door securely and properly positioned?	Yes	Inspect the air intake door for cracks or damage, then go to the next step.
		No	Install the air intake door securely in the proper position, then go to the next step.
14	**VERIFY THAT MALFUNCTION SYMPTOM OCCURS AFTER REPAIR** • Does the malfunction disappear?	Yes	Troubleshooting completed. Explain repairs to customer.
		No	Recheck malfunction symptoms, then repeat from Step 1 if the malfunction recurs.

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