2012 - Mazda6 - HVAC

NO.2 AMOUNT OF AIR BLOWN FROM VENTS DOES NOT CHANGE [FULL-AUTO AIR CONDITIONER]

2	**Amount of air blown from vents does not change.**
DESCRIPTION	• Malfunction in blower system
POSSIBLE CAUSE	• A/C unit malfunction • Blower motor malfunction • Malfunction in power MOS FET system • Climate control unit malfunction

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

Diagnostic procedure

STEP	INSPECTION		ACTION
1	**INSPECT BLOWER 40 A FUSE** • Inspect the BLOWER 40 A fuse. • Is it normal?	Yes	Go to the next step.
		No	Replace the fuse, then go to Step 15. If the fuse burns out immediately, go to the next step.
2	**INSPECT TO SEE WHETHER MALFUNCTION IS IN A/C UNIT OR ELSEWHERE** • Switch the ignition to ON. • Turn the fan switch to ON position. • Recirculate air inside the vehicle. • Does the blower motor rotate smoothly?	Yes	Go to Step 4.
		No	Go to the next step.
3	**INSPECT A/C UNIT INTAKE VENT**	Yes	Remove obstruction, then go to Step

	• Is A/C unit intake vent clogged?		15.
		No	Inspect if there are any obstruction in the A/C unit passage, then go to Step 15.
4*	**INSPECT TO SEE WHETHER MALFUNCTION IS IN BLOWER RELAY SYSTEM OR POWER MOS FET SYSTEM** • Switch the ignition to ON. • Turn the fan switch to OFF position. • Measure the voltage at the following blower motor terminal. ▪ Terminal B (blower motor operation signal) • Is voltage **approx. 12 V**?	Yes	Go to Step 8.
		No	Go to the next step.
5*	**INSPECT TO SEE WHETHER MALFUNCTION IS IN WIRING HARNESS (LACK OF CONTINUITY BETWEEN FUSE BLOCK AND BLOWER RELAY) OR ELSEWHERE** • Measure the voltage at the following blower relay terminals. ▪ Terminal D (IG2 signal) ▪ Terminal C (B+ signal) • Is the voltage **approx. 12 V**?	Yes	Go to the next step.
		No	Repair the wiring harness between the blower relay and BLOWER 40 A fuse, then go to Step 15.
6*	**INSPECT TO SEE WHETHER MALFUNCTION IS IN WIRING HARNESS (LACK OF CONTINUITY BETWEEN BLOWER RELAY AND GROUND) OR ELSEWHERE** • Measure the voltage at the following blower relay terminal. ▪ Terminal B (GND signal) • Is the voltage **approx. 0 V**?	Yes	Go to the next step.
		No	Repair the wiring harness between the blower relay and ground, then go to Step 15.
7*	**INSPECT TO SEE WHETHER MALFUNCTION IS IN WIRING HARNESS (LACK OF CONTINUITY BETWEEN BLOWER RELAY AND BLOWER MOTOR) OR BLOWER RELAY** • Switch the ignition to ON.	Yes	Repair the wiring harness between the blower relay and blower motor, then go to Step 15.
		No	Replace the blower relay, then go to Step 15.

	• Measure the voltage at the following blower relay terminal. ▪ Terminal A (blower motor operation signal) • Is the voltage **approx. 12 V**?		
8*	**INSPECT TO SEE WHETHER MALFUNCTION IS IN BLOWER MOTOR OR ELSEWHERE** • Measure the voltage at the following blower motor terminal. ▪ Terminal A (blower motor operation signal) • Is the voltage **approx. 12 V**?	Yes	Go to the next step.
		No	Inspect the blower motor, then go to Step 15. (See **FRONT BLOWER MOTOR INSPECTION [FULL-AUTO AIR CONDITIONER]**.)
9*	**INSPECT TO SEE WHETHER MALFUNCTION IS IN WIRING HARNESS (LACK OF CONTINUITY BETWEEN BLOWER MOTOR AND POWER MOS FET) OR ELSEWHERE** • Measure the voltage at the following terminal of power MOS FET. ▪ Terminal A (blower motor operation signal) • Is voltage **approx. 12 V**?	Yes	Go to the next step.
		No	Repair the wiring harness between the blower motor and power MOS FET, then go to Step 15.
10*	**INSPECT TO SEE WHETHER MALFUNCTION IS IN WIRING HARNESS (LACK OF CONTINUITY BETWEEN POWER MOS FET AND GROUND) OR ELSEWHERE** • Measure the voltage at the following power MOS FET terminal. ▪ Terminal F (GND) • Is the voltage **approx. 0 V**?	Yes	Go to the next step.
		No	Repair the wiring harness between the power MOS FET and ground, then go to Step 15.
11	**INSPECT A/C UNIT** • Inspect the fan in A/C unit. ▪ Is the fan free of interference with the A/C unit case? ▪ Is the fan free of foreign material and obstruction?	Yes	Go to the next step.
		No	Remove obstruction, repair or replace the fan and A/C unit case, then go to Step 15.

	• Is the fan normal?		
12*	**INSPECT TO SEE WHETHER MALFUNCTION IS IN POWER MOS FET OR ELSEWHERE** • Disconnect power MOS FET connector. • Turn the fun switch to 1st position from off. • Measure the voltage at the following power MOS FET terminal. ▪ Terminal E (blower motor speed control signal) • Is voltage **approx. 10 V**?	Yes	Replace the power MOS FET, then go to Step 15. (See **FRONT POWER METAL OXIDE SEMICONDUCTOR FIELD EFFECT TRANSISTOR (POWER MOS FET) REMOVAL/ INSTALLATION [FULL-AUTO AIR CONDITIONER]**.)
		No	Go to the next step.
13*	**INSPECT TO SEE WHETHER MALFUNCTION IS IN WIRING HARNESS (LACK OF CONTINUITY BETWEEN POWER MOS FET AND CLIMATE CONTROL UNIT) OR ELSEWHERE** • Switch the ignition to off. • Disconnect climate control unit connector. • Inspect for continuity at the following terminals between the power MOS FET and climate control unit. ▪ Terminal E—1I(blower motor speed control signal) • Is there continuity?	Yes	Go to the next step.
		No	Repair the wiring harness between the power MOS FET and climate control unit, then go to Step 15.
14*	**INSPECT TO SEE WHETHER MALFUNCTION IS IN CLIMATE CONTROL UNIT OR WIRING HARNESS (SHORT TO GROUND IN WIRING HARNESS BETWEEN POWER MOS FET AND CLIMATE CONTROL UNIT)** • Inspect for continuity at the following terminal between the power MOS FET and ground. ▪ Terminal E (blower motor control signal)—ground • Is there continuity?	Yes	Repair the wiring harness between the power MOS FET and ground, then go to the next step.
		No	Replace the climate control unit, then go to the next step.
15	**CONFIRM THAT MALFUNCTION SYMPTOM DOES NOT RECUR AFTER REPAIR** • Is air discharged from vent?	Yes	Troubleshooting completed. Explain repairs to customer.

		No	Recheck malfunction symptoms, then repeat from Step 1 if the malfunction recurs.

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NO.2 AMOUNT OF AIR BLOWN FROM VENTS DOES NOT CHANGE [FULL-AUTO AIR CONDITIONER]

2	**Amount of air blown from vents does not change.**
DESCRIPTION	• Malfunction in blower system
POSSIBLE CAUSE	• A/C unit malfunction • Blower motor malfunction • Malfunction in power MOS FET system • Climate control unit malfunction

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

Diagnostic procedure

STEP	INSPECTION		ACTION
1	**INSPECT BLOWER 40 A FUSE** • Inspect the BLOWER 40 A fuse. • Is it normal?	Yes	Go to the next step.
		No	Replace the fuse, then go to Step 15. If the fuse burns out immediately, go to the next step.
2	**INSPECT TO SEE WHETHER MALFUNCTION IS IN A/C UNIT OR ELSEWHERE** • Switch the ignition to ON. • Turn the fan switch to ON position. • Recirculate air inside the vehicle. • Does the blower motor rotate smoothly?	Yes	Go to Step 4.
		No	Go to the next step.
3	**INSPECT A/C UNIT INTAKE VENT**	Yes	Remove obstruction, then go to Step

	• Is A/C unit intake vent clogged?		15.
		No	Inspect if there are any obstruction in the A/C unit passage, then go to Step 15.
4*	**INSPECT TO SEE WHETHER MALFUNCTION IS IN BLOWER RELAY SYSTEM OR POWER MOS FET SYSTEM** • Switch the ignition to ON. • Turn the fan switch to OFF position. • Measure the voltage at the following blower motor terminal. ▪ Terminal B (blower motor operation signal) • Is voltage **approx. 12 V**?	Yes	Go to Step 8.
		No	Go to the next step.
5*	**INSPECT TO SEE WHETHER MALFUNCTION IS IN WIRING HARNESS (LACK OF CONTINUITY BETWEEN FUSE BLOCK AND BLOWER RELAY) OR ELSEWHERE** • Measure the voltage at the following blower relay terminals. ▪ Terminal D (IG2 signal) ▪ Terminal C (B+ signal) • Is the voltage **approx. 12 V**?	Yes	Go to the next step.
		No	Repair the wiring harness between the blower relay and BLOWER 40 A fuse, then go to Step 15.
6*	**INSPECT TO SEE WHETHER MALFUNCTION IS IN WIRING HARNESS (LACK OF CONTINUITY BETWEEN BLOWER RELAY AND GROUND) OR ELSEWHERE** • Measure the voltage at the following blower relay terminal. ▪ Terminal B (GND signal) • Is the voltage **approx. 0 V**?	Yes	Go to the next step.
		No	Repair the wiring harness between the blower relay and ground, then go to Step 15.
7*	**INSPECT TO SEE WHETHER MALFUNCTION IS IN WIRING HARNESS (LACK OF CONTINUITY BETWEEN BLOWER RELAY AND BLOWER MOTOR) OR BLOWER RELAY** • Switch the ignition to ON.	Yes	Repair the wiring harness between the blower relay and blower motor, then go to Step 15.
		No	Replace the blower relay, then go to Step 15.

	• Measure the voltage at the following blower relay terminal. ▪ Terminal A (blower motor operation signal) • Is the voltage **approx. 12 V**?		
8*	**INSPECT TO SEE WHETHER MALFUNCTION IS IN BLOWER MOTOR OR ELSEWHERE** • Measure the voltage at the following blower motor terminal. ▪ Terminal A (blower motor operation signal) • Is the voltage **approx. 12 V**?	Yes	Go to the next step.
		No	Inspect the blower motor, then go to Step 15. (See **FRONT BLOWER MOTOR INSPECTION [FULL-AUTO AIR CONDITIONER]**.)
9*	**INSPECT TO SEE WHETHER MALFUNCTION IS IN WIRING HARNESS (LACK OF CONTINUITY BETWEEN BLOWER MOTOR AND POWER MOS FET) OR ELSEWHERE** • Measure the voltage at the following terminal of power MOS FET. ▪ Terminal A (blower motor operation signal) • Is voltage **approx. 12 V**?	Yes	Go to the next step.
		No	Repair the wiring harness between the blower motor and power MOS FET, then go to Step 15.
10*	**INSPECT TO SEE WHETHER MALFUNCTION IS IN WIRING HARNESS (LACK OF CONTINUITY BETWEEN POWER MOS FET AND GROUND) OR ELSEWHERE** • Measure the voltage at the following power MOS FET terminal. ▪ Terminal F (GND) • Is the voltage **approx. 0 V**?	Yes	Go to the next step.
		No	Repair the wiring harness between the power MOS FET and ground, then go to Step 15.
11	**INSPECT A/C UNIT** • Inspect the fan in A/C unit. ▪ Is the fan free of interference with the A/C unit case? ▪ Is the fan free of foreign material and obstruction?	Yes	Go to the next step.
		No	Remove obstruction, repair or replace the fan and A/C unit case, then go to Step 15.

	• Is the fan normal?		
12*	**INSPECT TO SEE WHETHER MALFUNCTION IS IN POWER MOS FET OR ELSEWHERE** • Disconnect power MOS FET connector. • Turn the fun switch to 1st position from off. • Measure the voltage at the following power MOS FET terminal. ▪ Terminal E (blower motor speed control signal) • Is voltage **approx. 10 V**?	Yes	Replace the power MOS FET, then go to Step 15. (See **FRONT POWER METAL OXIDE SEMICONDUCTOR FIELD EFFECT TRANSISTOR (POWER MOS FET) REMOVAL/ INSTALLATION [FULL-AUTO AIR CONDITIONER]**.)
		No	Go to the next step.
13*	**INSPECT TO SEE WHETHER MALFUNCTION IS IN WIRING HARNESS (LACK OF CONTINUITY BETWEEN POWER MOS FET AND CLIMATE CONTROL UNIT) OR ELSEWHERE** • Switch the ignition to off. • Disconnect climate control unit connector. • Inspect for continuity at the following terminals between the power MOS FET and climate control unit. ▪ Terminal E—1I(blower motor speed control signal) • Is there continuity?	Yes	Go to the next step.
		No	Repair the wiring harness between the power MOS FET and climate control unit, then go to Step 15.
14*	**INSPECT TO SEE WHETHER MALFUNCTION IS IN CLIMATE CONTROL UNIT OR WIRING HARNESS (SHORT TO GROUND IN WIRING HARNESS BETWEEN POWER MOS FET AND CLIMATE CONTROL UNIT)** • Inspect for continuity at the following terminal between the power MOS FET and ground. ▪ Terminal E (blower motor control signal)—ground • Is there continuity?	Yes	Repair the wiring harness between the power MOS FET and ground, then go to the next step.
		No	Replace the climate control unit, then go to the next step.
15	**CONFIRM THAT MALFUNCTION SYMPTOM DOES NOT RECUR AFTER REPAIR** • Is air discharged from vent?	Yes	Troubleshooting completed. Explain repairs to customer.

		No	Recheck malfunction symptoms, then repeat from Step 1 if the malfunction recurs.

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