NO.6 AIR FROM VENTS NOT COLD ENOUGH [MANUAL AIR CONDITIONER]

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6	Air from vents not cold enough
DESCRIPTION	• Magnetic clutch operates but A/C system malfunctions
POSSIBLE CAUSE	**Note** • If the engine coolant temperature increases due to a cooling system malfunction, the fail-safe function disables the A/C operation. • Drive belt malfunction • Refrigerant pressure sensor malfunction • Malfunction in blower unit or condenser • Cooling fan system malfunction • Condenser or related part malfunction • A/C unit or condenser malfunction • Receiver/drier or expansion valve malfunction (valve closes too much) • A/C compressor system malfunction, insufficient compressor oil • Over filling of compressor oil, malfunction in expansion valve or A/C unit air mix link system • Evaporative temperature sensor malfunction

Diagnostic procedure

STEP	INSPECTION		ACTION
1	**CHECK MALFUNCTION SYMPTOMS** **Note** • Without i-stop, go to the next step. • Is malfunctions occur in only when operating the i-stop?	Yes	Perform the i-stop troubleshooting. (See FOREWORD [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) (See FOREWORD [SKYACTIV-D 2.2].)
		No	Go to the next step.
2	**INSPECT REFRIGERANT PRESSURE TO LOCATE MALFUNCTION** • Perform refrigerant pressure check. (See REFRIGERANT PRESSURE CHECK.) • Is the refrigerant pressure normal?	Yes	Go to the next step.
		No	Record the inspection result. • If the refrigerant high-pressure and low-pressure values are both high, go to Step 6. • If the refrigerant high-pressure and low-pressure values are approximately the same, go to Step 9. • If the refrigerant high-pressure and low-pressure values are both low, go to Step 11. • If there is a vacuum on the low pressure side and extremely low pressure on the high pressure side, go to Step 17. • If there is low pressure on the high pressure side and high pressure on the low pressure side, replace the A/C compressor, then go to Step 21. (See A/C COMPRESSOR REMOVAL/INSTALLATION.) • If the refrigerant pressure is other than above condition, go to Step 19.
3	**INSPECT REFRIGERANT SYSTEM PERFORMANCE** • Perform refrigerant system performance test. (See REFRIGERANT SYSTEM PERFORMANCE TEST.) • Is the operation normal?	Yes	Operation is normal. (Recheck malfunction symptoms.)
		No	Go to the next step.
4	**INSPECT DRIVE BELT** • Inspect the drive belt. (See DRIVE BELT INSPECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) (See DRIVE BELT INSPECTION [SKYACTIV-D 2.2].) • Is it normal?	Yes	Go to the next step.
		No	Adjust or replace the drive belt, then the next step. (See DRIVE BELT REMOVAL/INSTALLATION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) (See DRIVE BELT REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)
5	**INSPECT REFRIGERANT PRESSURE SENSOR** • Inspect the refrigerant pressure sensor. (See REFRIGERANT PRESSURE SENSOR INSPECTION [MANUAL AIR CONDITIONER].) • Is it normal?	Yes	Go to the next step.
		No	Repair or replace malfunctioning part according to inspection result, then go to Step 21.

STEP	INSPECTION		ACTION
6	**INSPECT COOLING FAN OPERATION** • Verify the cooling fan operation. (See COOLING FAN MOTOR REMOVAL/ INSTALLATION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) (See COOLING FAN MOTOR INSPECTION [SKYACTIV-D 2.2].) • Is the cooling fan operation normal?	Yes	Go to the next step.
		No	Repair or replace the malfunctioning location according to the inspection results. Then go to Step 21.
7	**VISUALLY INSPECT CONDENSER** • Is the condenser fin clogged or obstructed by foreign material?	Yes	Remove the foreign material. Repair the condenser fin. Then go to Step 21.
		No	Go to the next step.
8	**CHECK REFRIGERATION SYSTEM FOR OVERCHARGE OR AIR CONTAMINATION** • Is the low side line hot to the touch?	Yes	Recover refrigerant. Evacuate system for one hour. Refill with correct amount of refrigerant, and go to step 21.
		No	Recover refrigerant, evacuate for 15 minutes, refill with correct amount and go to step 21.
9	**CHECK TO SEE WHETHER MALFUNCTION IS IN EXPANSION VALVE OR ELSEWHERE** • Compare the refrigerant pressure of the low pressure side with the high pressure side at Step 3. • Is there little difference between the high pressure side and low pressure side readings (refer to graph in REFRIGERANT PRESSURE CHECK procedure)? (See REFRIGERANT PRESSURE CHECK.)	Yes	Replace the expansion valve. After performing the following servicing, go to Step 21. • Adjust the compressor oil to the specified level. • After discharging, charge with new refrigerant to the specified level.
		No	Go to the next step.
10	**INSPECT AIR MIX DOOR RELATED PART INSTALLATION** • Remove the A/C unit. (See A/C UNIT REMOVAL/INSTALLATION.) • Are the air mix link, air mix crank, air mix wire and air mix rod of the A/C unit correctly and securely installed to their positions?	Yes	Adjust the compressor oil to the specified amount, then go to Step 21. (See A/C COMPRESSOR REMOVAL/ INSTALLATION.)
		No	Inspect the air mix link, air mix crank, and air mix rod of the A/C unit correctly and securely installed to their positions. (See A/C UNIT REMOVAL/INSTALLATION.) • Repair or install correctly for suspect part according to inspection result, then go to Step 21.
11	**INSPECT BLOWER UNIT FOR BLOCKAGE** • Is the blower unit intake and air filter clogged?	Yes	Remove the cause of the clogging.Replace the air filter if it is clogged. (See AIR FILTER REMOVAL/INSTALLATION.) Then go to Step 21.
		No	Go to the next step.
12	**CHECK TO SEE WHETHER MALFUNCTION IS REFRIGERANT LINE LEAKAGE OR ELSEWHERE** • Verify if there is gas leakage from the system hoses using the gas leak tester. • Is there gas leakage?	Yes	If there is leakage from a system hose connection area, go to Step 14. If there is leakage other than from a system hose connection area, go to Step 16.
		No	Go to the next step.
13	**VISUALLY INSPECT REFRIGERANT LINE** • Is a system hose crushed?	Yes	Replace the crushed system hose. (See REFRIGERANT LINE REMOVAL/INSTALLATION.) After performing the following servicing, go to Step 21. • Adjust the compressor oil to the specified level. • After discharging, charge with new refrigerant to the specified level.
		No	Go to Step 21.
14	**CHECK TO SEE WHETHER MALFUNCTION IS IN REFRIGERANT LINE JOINT LOOSE OR O-RING** • Tighten the system hose connection area to the specified torque. (See REFRIGERANT LINE REMOVAL/INSTALLATION.) • Has the leakage stopped?	Yes	Go to the next step.
		No	Go to Step 16.

STEP	INSPECTION		ACTION
15	**VISUALLY INSPECT REFRIGERANT LINE** • Is a system hose crushed?	Yes	Replace the crushed system hose. (See REFRIGERANT LINE REMOVAL/INSTALLATION.) After performing the following servicing, go to Step 21. • Adjust the compressor oil to the specified level. • After discharging, charge with new refrigerant to the specified level.
		No	Adjust the compressor oil to the specified amount, then go to Step 21. (See A/C COMPRESSOR REMOVAL/ INSTALLATION.)
16	**VISUALLY INSPECT REFRIGERANT LINE** • Is a system hose crushed?	Yes	Replace the O-ring of the leaking area. Replace the crushed system hose. (See REFRIGERANT LINE REMOVAL/INSTALLATION.) After performing the following servicing, go to Step 21. • Adjust the compressor oil to the specified level. • After discharging, charge with new refrigerant to the specified level.
		No	Replace the O-ring of the leaking area. After performing the following servicing, go to Step 21. • Adjust the compressor oil to the specified level. • After discharging, charge with new refrigerant to the specified level.
17	**CHECK TO SEE WHETHER MALFUNCTION IS WATER IN REFRIGERANT SYSTEM OR ELSEWHERE** • Does the refrigerant pressure on the low pressure side vary between the vacuum and normal range?	Yes	Replace the condenser. (Water in refrigerant system) (See CONDENSER REMOVAL/INSTALLATION.) Then go to Step 21.
		No	Go to the next step.
18	**CHECK TO SEE WHETHER MALFUNCTION IS IN RECEIVER DRYER FILTER OR EXPANSION VALVE** • Remove the expansion valve and verify its condition. • Is there refrigerant leakage or valve clogging?	Yes	If there is foreign matter clogging the valve, remove the foreign matter. If there is refrigerant leakage or clogging, replace the expansion valve. Perform discharge, charge with new refrigerant, and then go to Step 21.
		No	Install the expansion valve. Replace the condenser. (Receiver/Dryer filter is clogged.) (See CONDENSER REMOVAL/INSTALLATION.) Then go to Step 21.
19	**INSPECT EVAPORATIVE TEMPERATURE SENSOR** • Inspect the evaporator temperature sensor. (See EVAPORATOR TEMPERATURE SENSOR INSPECTION [FULL-AUTO AIR CONDITIONER].) • Is it normal?	Yes	Verify the evaporator temperature sensor position. (See A/C UNIT DISASSEMBLY/ASSEMBLY.) Then go to Step 21.
		No	Replace the evaporator temperature sensor, then go to Step 21. (See A/C UNIT DISASSEMBLY/ASSEMBLY.)
20	**INSPECT AIR MIX DOOR RELATED PART INSTALLATION** • Remove the A/C unit. (See A/C UNIT REMOVAL/INSTALLATION.) • Are the air mix link, air mix crank, and air mix wire of the A/C unit correctly and securely installed to their positions?	Yes	Go to the next step.
		No	• Inspect the air mix link, and air mix crank of the A/C unit correctly and securely installed to their positions. (See A/C UNIT DISASSEMBLY/ASSEMBLY.) • Repair or install correctly for suspect part according to inspection result. Then go to next step.
21	**VERIFY THAT MALFUNCTION SYMPTOM DOES OCCURS AFTER REPAIR** • If the refrigerant discharged during inspection has not been recharged, discharge and charge with new refrigerant to the specified level. • Does cool air blow out? (Are results of refrigerant system performance test normal?)	Yes	Troubleshooting completed. Explain repairs to customer.
		No	Recheck malfunction symptoms, then repeat from Step 1 if malfunction recurs.