

NO.7 AIR FROM VENTS NOT COLD ENOUGH

B3E070301038W09

7	Air from vents not cold enough.
DESCRIPTION	• Magnetic clutch operates but A/C system malfunctions.
POSSIBLE CAUSE	<ul style="list-style-type: none"> • Drive belt malfunction (Step 2) • A/C unit or condenser malfunction (Steps 4, 5) • Receiver/drier or expansion valve malfunction (valve closes too much) (Steps 8, 9) • Malfunction in refrigerant lines (Steps 10, 11) • A/C compressor system malfunction, insufficient compressor oil (Steps 15, 16) • Over filling of compressor oil, malfunction in expansion valve or A/C unit air mix link system (Steps 17-19)

Diagnostic procedure

STEP	INSPECTION		ACTION
1	INSPECT DRIVE BELT <ul style="list-style-type: none"> • Inspect the drive belt. (See DRIVE BELT INSPECTION [ZJ, Z6].) (See DRIVE BELT INSPECTION [LF].) • Is it normal? 	Yes	Go to the next step.
		No	Adjust or replace the drive belt, then go to Step 20. (See DRIVE BELT REPLACEMENT [ZJ, Z6].) (See DRIVE BELT REPLACEMENT [LF].)
2	INSPECT REFRIGERANT SYSTEM PERFORMANCE <ul style="list-style-type: none"> • 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.
3	INSPECT TO SEE WHETHER MALFUNCTION IS IN A/C UNIT INTAKE AND CONDENSER OR ELSEWHERE <ul style="list-style-type: none"> • Are the refrigerant high-pressure and low-pressure values both high? 	Yes	Go to the next step.
		No	Go to Step 6.
4	INSPECT A/C UNIT INTAKE <ul style="list-style-type: none"> • Is the A/C unit intake clogged? 	Yes	Remove obstruction, then go to Step 20. (If air does not reach the evaporator in the A/C unit, heat exchange does not occur and refrigerant pressure becomes high. Therefore, removal of obstruction is necessary.)
		No	Go to the next step.
5	INSPECT CONDENSER <ul style="list-style-type: none"> • Inspect the condenser. (See CONDENSER INSPECTION.) • Is it normal? 	Yes	Adjust refrigerant to the specified amount, then go to Step 20. (Excessive amount of refrigerant.)
		No	Replace the condenser, or repair and clean the condenser fins, then go to Step 20.
6	INSPECT TO SEE WHETHER MALFUNCTION IS IN EXPANSION VALVE, RECEIVER/DRIER AND REFRIGERANT LINES OR ELSEWHERE <ul style="list-style-type: none"> • Are the refrigerant high-pressure and low- 	Yes	Go to the next step.
		No	Go to Step 14.

	pressure values low?		
7	INSPECT TO SEE WHETHER MALFUNCTION IS IN EXPANSION VALVE AND RECEIVER/DRIER OR ELSEWHERE • Immediately after the A/C compressor operates, does the refrigerant high-pressure value momentarily rise to correct value, then fall and stay below it? (Is there negative pressure on low-pressure side?)	Yes	Go to the next step.
		No	Go to Step 10.
8	INSPECT TO SEE WHETHER MALFUNCTION IS IN EXPANSION VALVE OR RECEIVER/DRIER • Turn the A/C switch off and let the air conditioner stop for 10 min. • Start the engine. • Turn the both A/C switch and fan switch on. • Does the malfunction occur after the A/C compressor turns on?	Yes	Go to the next step.
		No	Replace the condenser and vacuum the refrigerant line more than 30 min by the vacuum pump, add refrigerant to the specified level, then go to Step 20. (Since water has intermixed in the receiver/drier and it is saturated, replacement is necessary.)
9	VERIFY THAT EXPANSION VALVE HEAT-SENSING TUBE WITHIN A/C UNIT IS POSITIONED SECURELY AND CORRECTLY • Is the expansion valve heat-sensing tube in the A/C unit securely installed in the proper position?	Yes	Replace the expansion valve, then go to Step 20. (Since the valve closes too much, replacement is necessary.)
		No	Install the heat-sensing tube securely in the proper position, then go to Step 20.
10	INSPECT REFRIGERANT LINE • Inspect the refrigerant lines. - Is the piping free of damage and cracks? - Are the piping connections free of oil grime? (Visual inspection) - Are the piping connections free of gas leakage? - Are the piping installation points on the condenser free of gas leakage? - Are the piping installation points on the receiver/drier free of gas leakage? - Are the piping installation points on the A/C compressor free of gas leakage? - Are the piping installation points on the A/C unit free of gas leakage? - Perform gas leakage inspection using a gas leak tester. • Are the above items normal?	Yes	Go to the next step.
		No	If the piping or A/C component (s) are damaged or cracked, replace them. Then go to Step 20. If there is no damage, go to Step 13.
11	INSPECT EVAPORATOR PIPING CONNECTION IN A/C UNIT FOR GAS LEAKAGE • Are piping the connections for the evaporator in the A/C unit free of gas leakage?	Yes	If the vane makes a noise, add 10 ml {10 cc, 0.34 fl oz} of compressor oil to the A/C compressor. Verify that the noise is no longer heard. Adjust refrigerant to the specified amount, then go to Step 20.
		No	If the piping is damaged or cracked, replace it. Then go to Step 20. If there is no damage, go to the next step.
			Tighten the connections to the specified torque,

12	INSPECT EVAPORATOR PIPING CONNECTION IN A/C UNIT FOR LOOSE • Are the piping connections for the evaporator in the A/C unit loose?	Yes	adjust both compressor oil and refrigerant to the specified amount, then go to Step 20.
		No	If the vane makes a noise, add 10 ml {10 cc, 0.34 fl oz} of compressor oil to the A/C compressor. Verify that the noise is no longer heard. Replace the O-ring on piping, adjust refrigerant to the specified amount, then go to Step 20.
13	INSPECT PIPING CONNECTION FOR LOOSE • Are the piping connections loose?	Yes	Tighten the connections to the specified torque, adjust both compressor oil and refrigerant to the specified amount, then go to Step 20.
		No	If the vane makes a noise, add 10 ml {10 cc, 0.34 fl oz} of compressor oil to the A/C compressor. Verify that the noise is no longer heard. Replace O-ring on piping, adjust refrigerant to specified amount, then go to Step 20.
14	INSPECT TO SEE WHETHER MALFUNCTION IS IN EXPANSION VALVE, AIR MIX ACTUATOR AND COMPRESSOR OIL OR ELSEWHERE • Does the refrigerant high-pressure value hardly increase?	Yes	Go to the next step. (Pressure hardly increases.)
		No	Go to Step 17.
15	INSPECT TO SEE WHETHER MALFUNCTION IS IN COMPRESSOR OIL AMOUNT AND A/C COMPRESSOR OR ELSEWHERE • When the engine is racing, does the high-pressure value increase?	Yes	Return to Step 3.
		No	Go to the next step.
16	INSPECT TO SEE WHETHER MALFUNCTION IS IN COMPRESSOR OIL AMOUNT OR A/C COMPRESSOR • After compressor oil is replenished each 10 ml {10 cc, 0.34 fl oz} , does high-pressure value increase?	Yes	Troubleshooting completed. (Explain to customer that cause was insufficient compressor oil.)
		No	Replace the A/C compressor, then go to Step 20. (Cause is defective A/C compressor.)
17	INSPECT TO SEE WHETHER MALFUNCTION IS IN EXPANSION VALVE OR ELSEWHERE • Is only refrigerant low-pressure value high?	Yes	Go to Step 19.
		No	Go to the next step.
18	VERIFY THAT AIR MIX IS INSTALLED SECURELY AND PROPERLY • Are the A/C unit air mix links, air mix cranks, and air mix rods securely and properly installed?	Yes	Set the fan switch to 4th position. Turn the A/C switch on. Set FRESH mode. Set temperature control to MAX COLD. Set VENT mode. (1)Start and run the engine at 1,500 rpm for 10 min . (2)Run the engine at idle for 1 min . (3)Within 12 s , idle → 4,000 rpm → idle. Perform cycle 5 times . (4) Run the engine at idle for 30 s . (5)Drain the compressor oil completely from the A/C compressor and verify the amount. • If there is approx. 90 ml {90 cc, 3.0 fl oz} of compressor oil, go to Step 20. • If there is more than 90 ml {90 cc, 3.0 fl oz} of compressor oil, remove surplus oil

			and fill the A/C compressor with 90 ml {90 cc, 3.0 fl oz} of compressor oil. Repeat Steps (1) to (5).
			(Cause is excessive amount of compressor oil.)
		No	Repair or install the links, cranks and rods securely in the proper position, then go to Step 20.
19	VERIFY THAT EXPANSION VALVE HEAT-SENSING TUBE WITHIN A/C UNIT IS POSITIONED SECURELY AND CORRECTLY • Is the expansion valve heat-sensing tube in the A/C unit securely installed in the proper position?	Yes	Replace the expansion valve, then go to the next step. (Since the valve opens too much, replacement is necessary.)
		No	Install the heat-sensing tube securely in the proper position, then go to the next step.
20	VERIFY THAT MALFUNCTION SYMPTOM OCCURS AFTER REPAIR • 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 the malfunction recurs.