A/C-HEATER SYSTEM - MANUAL

1995 Nissan Altima

1995-96 Manual A/C-Heater Systems

Altima

* PLEASE READ THIS FIRST *

WARNING: To avoid injury from accidental air bag deployment, read and carefully follow all SERVICE PRECAUTIONS and DISABLING & ACTIVATING AIR BAG SYSTEM procedures in appropriate AIR BAG RESTRAINT SYSTEM article in ACCESSORIES/SAFETY EQUIPMENT SECTION.

A/C SYSTEM SPECIFICATIONS

MANUAL A/C SYSTEM SPECIFICATIONS TABLE

Application	Specification
Compressor Type	Zexel DKV-14C Rotary Vane
Compressor Belt Deflection	
New Belt	5/64-9/32" (6-7 mm)
Used Belt	9/32-5/16" (7-8 mm)
System Oil Capacity	(1) 6.8 ozs.
Refrigerant Capacity (R-134a)	24.7-28.2 ozs.
System Operating Pressures (2)	
High Side	152-198 psi (10.7-13.9 kg/cm^2)
Low Side	20-26 psi (1.4-1.9 kg/cm^2)

(1) - Use Type "R" Oil (Part No. KLH00-PAGR0).
(2) - Specification is w/ ambient temperature at 77°F (25°C), relative humidity at 50-70 percent and engine speed at 1500 RPM.

DESCRIPTION

A separate evaporator housing assembly is combined with a standard heater core assembly to create an integrated A/C-heating unit. Blower motor directs airflow through evaporator and then heater core, to ducting and outlets.

OPERATION

CONTROL PANEL

Desired air control mode is achieved by push buttons on A/C-heater control panel. See Fig. 1. A/C switch and fan controls are independent of mode controls. Slide lever controls temperature setting, and A/C button controls air conditioner operation. Pressing air recirculation button will stop fresh air intake and recirculate inside air. Fan speed is controlled by a dial.

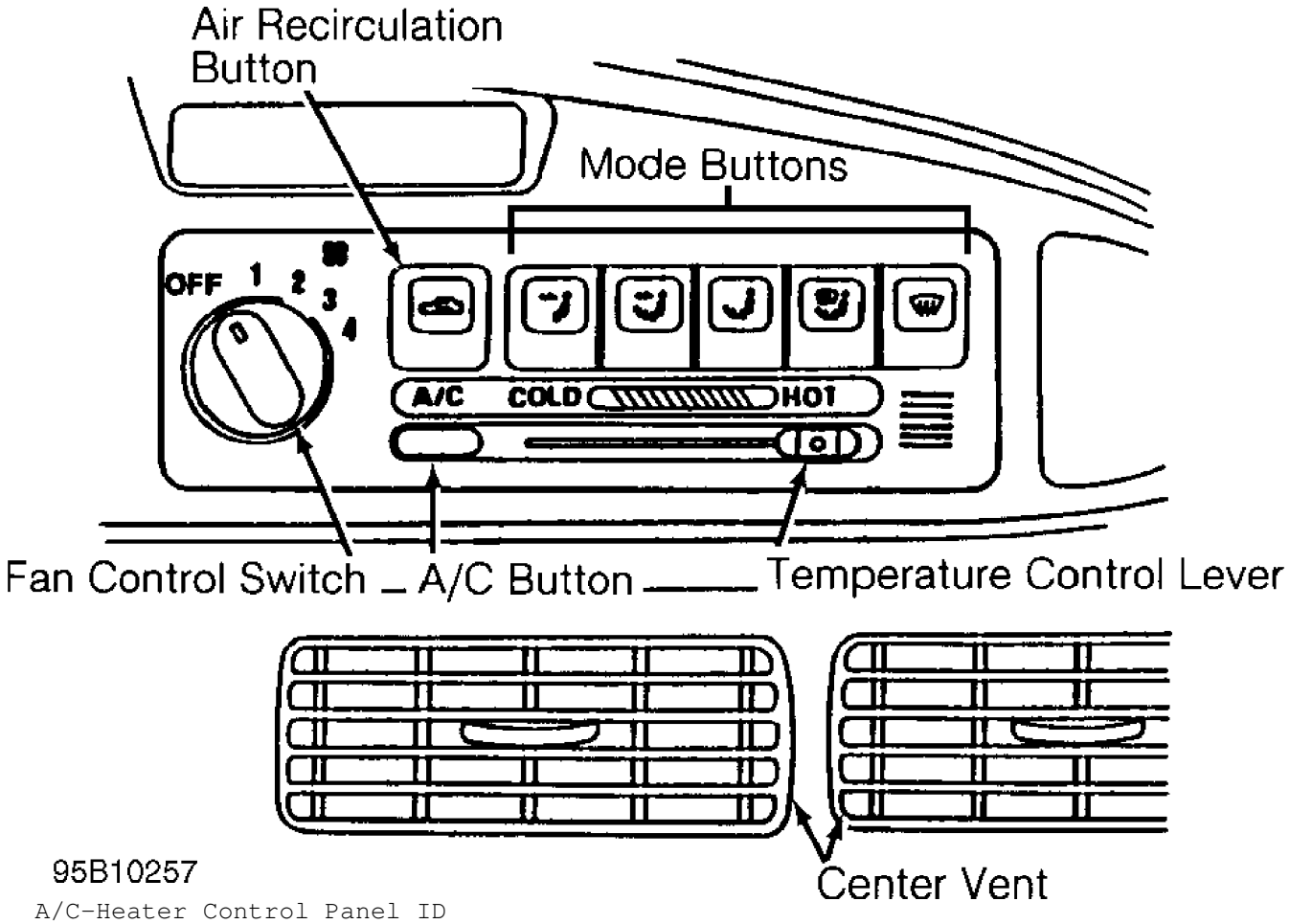


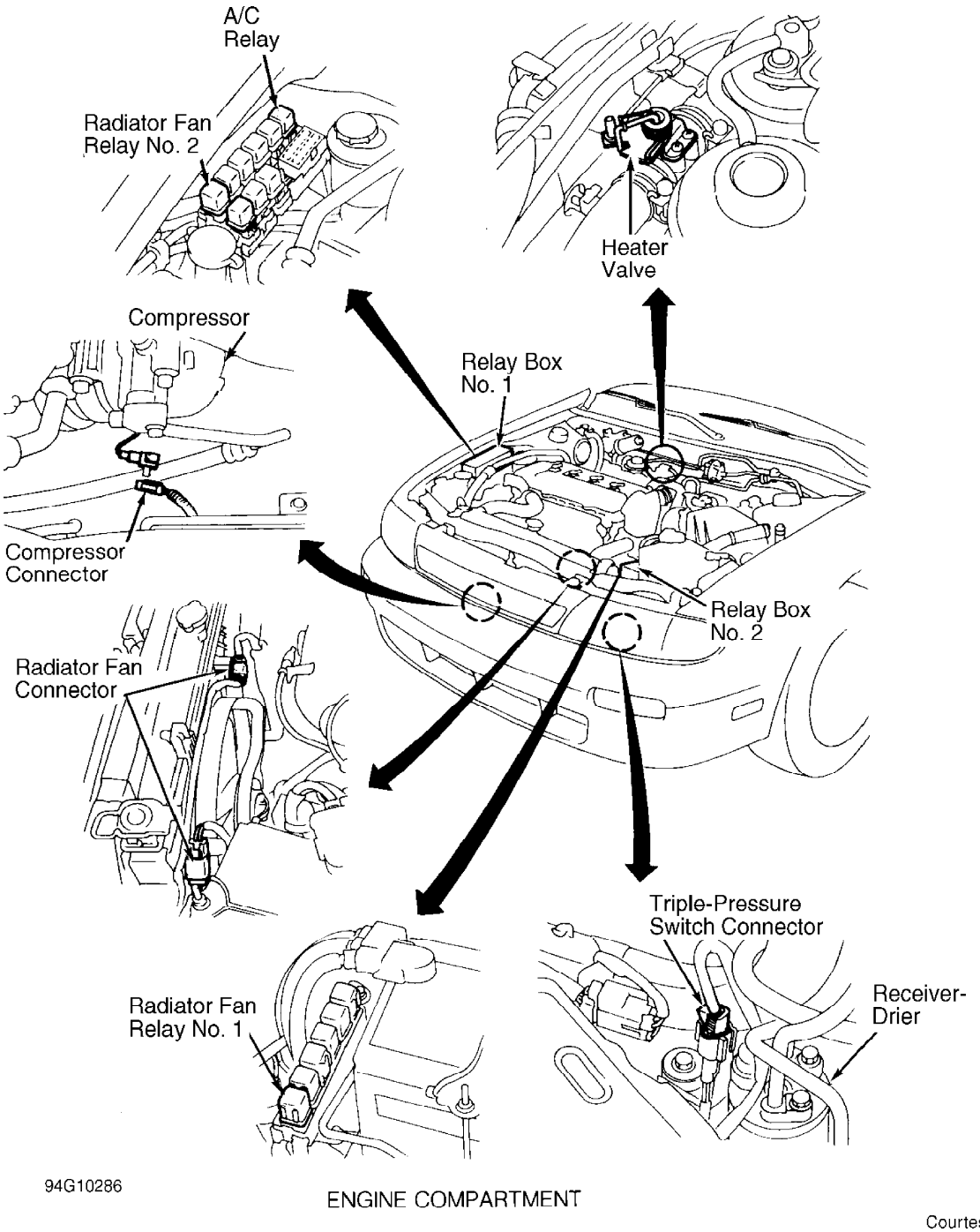
Fig. 1: A/C-Heater Control Panel ID
Courtesy of Nissan Motor Co., U.S.A.

FAST IDLE CONTROL DEVICE (FICD)

When A/C system is energized, the engine control module signals FICD to adjust Auxiliary Air Control (AAC) valve to by-pass additional air and increase idle speed. This higher idle speed allows engine to idle smoothly during compressor operation.

TRIPLE-PRESSURE SWITCH

The triple-pressure switch is mounted on receiver-drier. See Fig. 2. Triple-pressure switch protects A/C system from high pressure b build-up due to restriction, overcharge or compressor malfunction. If excessively low or high system pressure is sensed, the switch stops compressor clutch operation. Switch is also used to activate radiator fan motors.



Courtesy of Nissan Motor Co., U.S.A

Fig. 2: Electrical Components & Connectors (Engine Compartment) Courtesy of Nissan Motor Co., U.S.A.

THERMAL PROTECTOR SWITCH

Thermal protector switch is located in compressor housing. If high compressor temperature is sensed, the switch stops compressor clutch operation.

THERMO CONTROL AMPLIFIER

Thermo control amplifier is mounted on evaporator housing. See Fig. 3. A temperature sensor (thermistor), inside evaporator housing, senses air temperature and sends signal to thermo control amplifier. Thermo control amplifier then cycles compressor clutch on and off according to temperature setting on control panel.

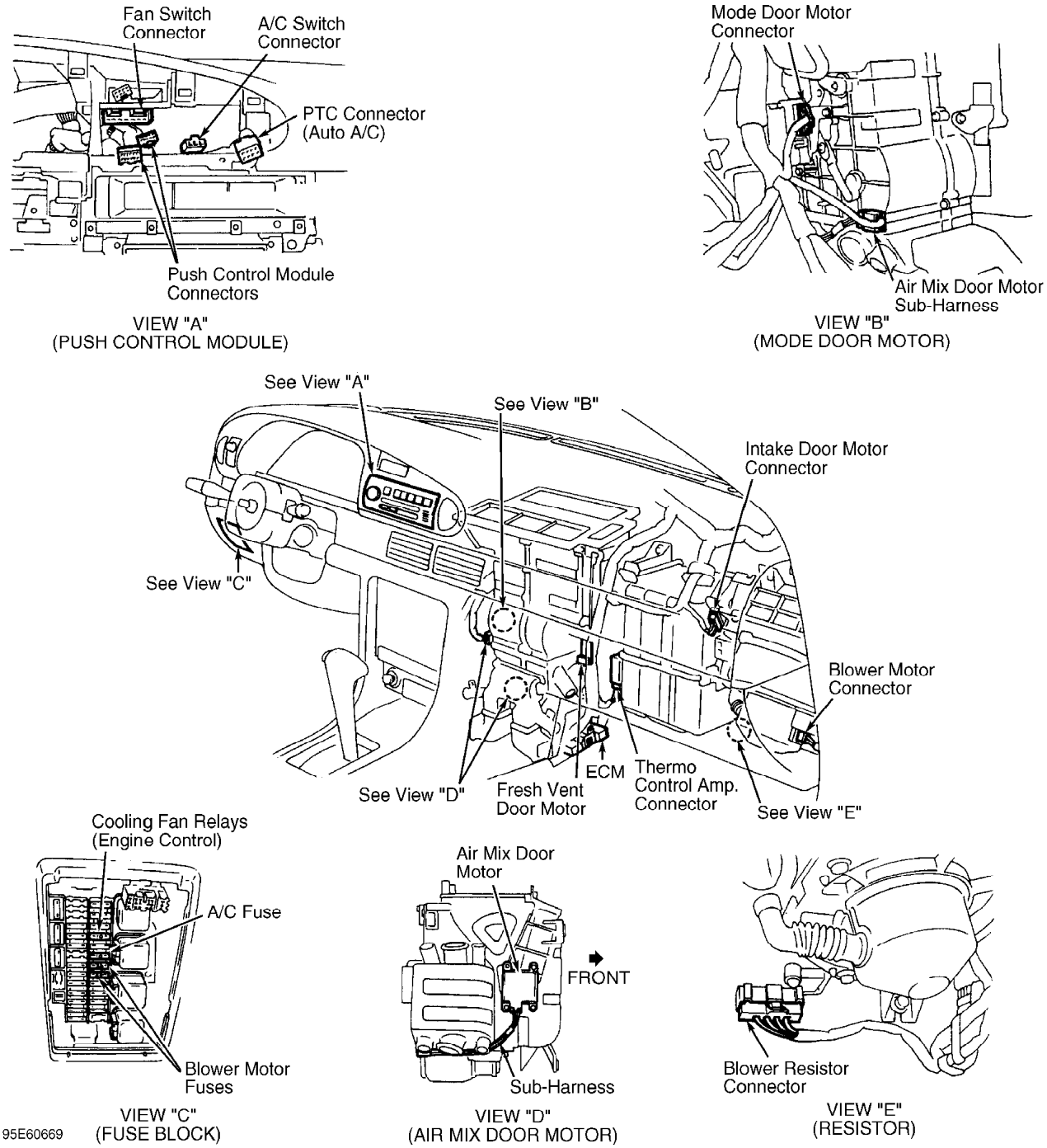


Fig. 3: Electrical Components & Connectors (Passenger Compartment) Courtesy of Nissan Motor Co., U.S.A.

ADJUSTMENTS

NOTE: For control cable and door rod adjustments, see appropriate HEATER SYSTEM article.

TROUBLE SHOOTING

Perform PRELIMINARY CHECKS prior to using TROUBLE SHOOTING charts in this article.

Preliminary Information

The Engine Control Module (ECM) may be referred to as Engine Concentrated Control System (ECCS) control unit and the A/C-heater control panel may also be referred to as push control module in the trouble shooting charts.

PRELIMINARY CHECK 1

Intake Door Is Not Set At Fresh In Defrost Or Foot/Defrost Mode

1) Turn ignition on. Place blower motor on speed 4. Select vent mode. Turn intake (fresh/recirculated air) switch off. While in vent mode, turn intake (fresh/recirculated air) switch on. If intake door changes from fresh to recirculate position, go to next step. If intake door does not change from fresh to recirculate position, go to DIAGNOSTIC PROCEDURE 3.

2) With intake door in recirculated air position, select defrost or foot/defrost mode. If intake door changes to fresh position, no problem is indicated at this time. If intake door does not change to fresh position, replace control panel (push control module).

PRELIMINARY CHECK 2

A/C Does Not Blow Cold Air

1) Turn ignition on. Turn on A/C and blower motor. Select vent mode. Move temperature control lever to full cold position. If air does not flow from vents, go to step 6). If air flows from vents, check compressor operation.

2) If compressor is operating properly, go to step 4). If compressor is not operating properly, check belt tension. Adjust or replace as necessary. See MANUAL A/C SYSTEM SPECIFICATIONS table at beginning of article. If belt is okay, connect gauge set.

3) Check refrigerant system pressures. See MANUAL A/C SYSTEM SPECIFICATIONS table at beginning of article. If refrigerant pressure is okay, go to DIAGNOSTIC PROCEDURE 6. If refrigerant pressure is not okay, check for refrigerant leaks. Repair as necessary and recharge system.

4) Connect gauge set. Check refrigerant system pressures. See MANUAL A/C SYSTEM SPECIFICATIONS table at beginning of article. If system pressures are not as specified, service refrigerant system. If system pressures are as specified, go to next step.

5) Check evaporator air temperature. See information in A/C SYSTEM PERFORMANCE under TESTING. If temperature is as specified, visually check air mix door linkage and motor operation. If air mix door linkage and motor do not operate properly, go to steps listed in DIAGNOSTIC PROCEDURE 4. If air mix door linkage and motor operate properly, check water valve operation and air mix door operation. Repair or adjust as necessary.

6) If air did not flow from vents in step 1), check blower motor operation. If blower motor does not operate, go to steps listed in DIAGNOSTIC PROCEDURE 1. If blower motor operates, check evaporator for freezing. If evaporator is frozen, check thermo control amplifier.

See THERMO CONTROL AMPLIFIER under TESTING. Replace amplifier if necessary. If evaporator is not frozen, check for leaks in ducting. Repair ducting as necessary.

PRELIMINARY CHECK 3

Compressor Clutch Does Not Operate In Defrost Mode

Start engine. Turn on A/C and blower motor. If compressor clutch does not engage, go to DIAGNOSTIC PROCEDURE 6. If compressor clutch engages, turn off A/C. Ensure compressor clutch disengages. Leave engine and blower motor running. Select defrost mode. If compressor clutch does not engage, replace control panel (push control module). If compressor clutch engages, no problem is indicated at this time.

PRELIMINARY CHECK 4

Air Outlet (Mode) Does Not Change

Turn ignition on. If air does not come out of correct duct, or if air distribution ratio is not as specified, go to steps listed in DIAGNOSTIC PROCEDURE 2. See AIR DISTRIBUTION RATIOS table. If air comes out of correct duct and air distribution ratio is as specified, no problem is indicated at this time.

AIR DISTRIBUTION RATIOS TABLE

Switch Position	Distribution
Vent	100% Vent
Bi-Level	60% Vent; 40% Foot
Foot	78% Foot; 22% Defrost
Foot/Defrost	55% Foot; 45% Defrost
Defrost	100% Defrost

PRELIMINARY CHECK 5

Noisy Blower Motor

Replace blower motor.

Noisy Expansion Valve

Replace expansion valve.

Noisy Compressor

Replace compressor.

Noisy Refrigerant Line

Ensure line is secured. If necessary, attach rubber or other vibration-absorbing material to line.

Noisy Belt

If belt vibration is intense, adjust belt tension. If side of belt is worn, align pulleys. Replace belt if necessary.

PRELIMINARY CHECK 6

Insufficient Heating

1) Turn ignition on. Turn on blower motor. Select foot mode. Move temperature control lever to full hot position. If air does not flow from vents, go to DIAGNOSTIC PROCEDURE 1. If air flows from vents, check for proper coolant level, kinked or leaking hoses, faulty radiator cap or air in cooling system. Repair or replace as necessary.

2) Check air mix door adjustment. Check water valve operation. Adjust or replace as necessary. Check by feel inlet and outlet heater hoses. If both heater hoses are warm, go to next step. If both hoses are cold, check thermostat installation and operation. Replace if necessary.

3) Ensure heater hoses are properly installed. Backflush heater core and refill system with coolant. Recheck heater hoses by feel. If both hoses are warm, replace heater core. If inlet hose is hot and outlet hose is warm, heating system is good.

PRELIMINARY CHECK 7

NOTE: For connector and terminal ID, see WIRING DIAGRAMS.

A/C-Heater Control Panel Power Supply Check

Ensure ignition is off. Disconnect A/C-heater control panel connector. Turn ignition on. Connect voltmeter between ground and A/C-heater control panel connector terminal No. 14 (Light Green/Black wire). Voltage should be 12 volts. Repair if necessary. If malfunction still exists after performing proper trouble shooting procedures and ensuring voltage readings are okay, replace A/C-heater control panel.

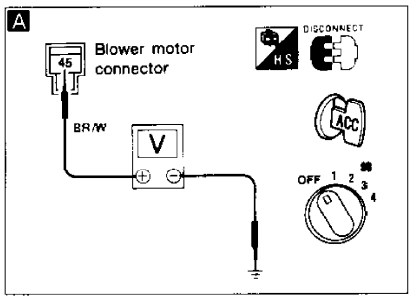
A/C-Heater Control Panel Ground Circuit Check

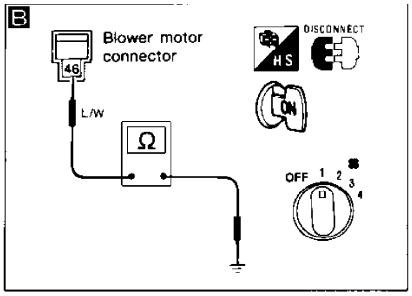
Ensure ignition is off. Disconnect A/C-heater control panel connector. Connect an ohmmeter between A/C-heater control panel connector terminal No. 17 (Black wire) and ground. Continuity should exist. Repair if necessary.

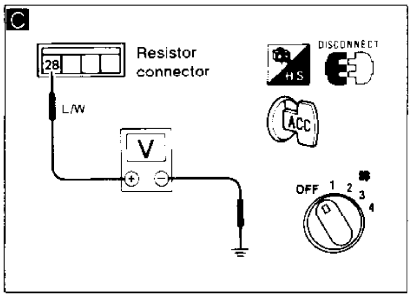
DIAGNOSTIC PROCEDURE 1 - BLOWER MOTOR DOES NOT ROTATE

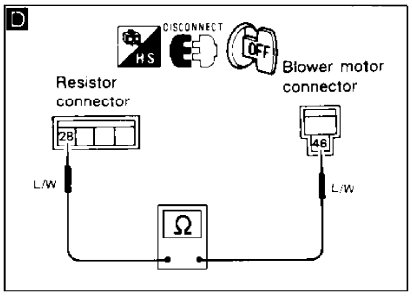
NOTE: The following procedures are courtesy of Nissan Motor Co., U.S.A.

	INCIDENT	Flow chart No.
1	Fan fails to rotate.	1
2	Fan does not rotate at 1-speed.	2
3	Fan does not rotate at 2-speed.	3
4	Fan does not rotate at 3-speed.	4
5	Fan does not rotate at 4-speed.	5









- **Perform PRELIMINARY CHECK 2 before referring to the following flow chart.**

Check if blower motor rotates properly at each fan speed.
2 3 4 5 → Go To Next Figure (B)

1

A
CHECK POWER SUPPLY FOR BLOWER MOTOR.
Disconnect blower motor harness connector.
Do approx. 12 volts exist between blower motor harness terminal No. (45) and body ground?
NG → Check 20A fuses at fuse block.
O.K.

B
Check circuit continuity between blower motor harness terminal No. (46) and body ground.
NG → Reconnect blower motor harness connector.
O.K.

CHECK BLOWER MOTOR.
NG
Replace blower motor.

C
CHECK BLOWER MOTOR CIRCUIT BETWEEN BLOWER MOTOR AND RESISTOR.
Do approx. 12 volts exist between resistor harness terminal No. (28) and body ground?
NG → Disconnect blower motor and resistor harness connectors.
O.K.

D
Note
Check circuit continuity between blower motor harness terminal No. (46) and resistor harness terminal No. (28).

(A) Go To Next Figure

NOTE: If the result is no good (NG) after checking circuit continuity, repair harness or connector.

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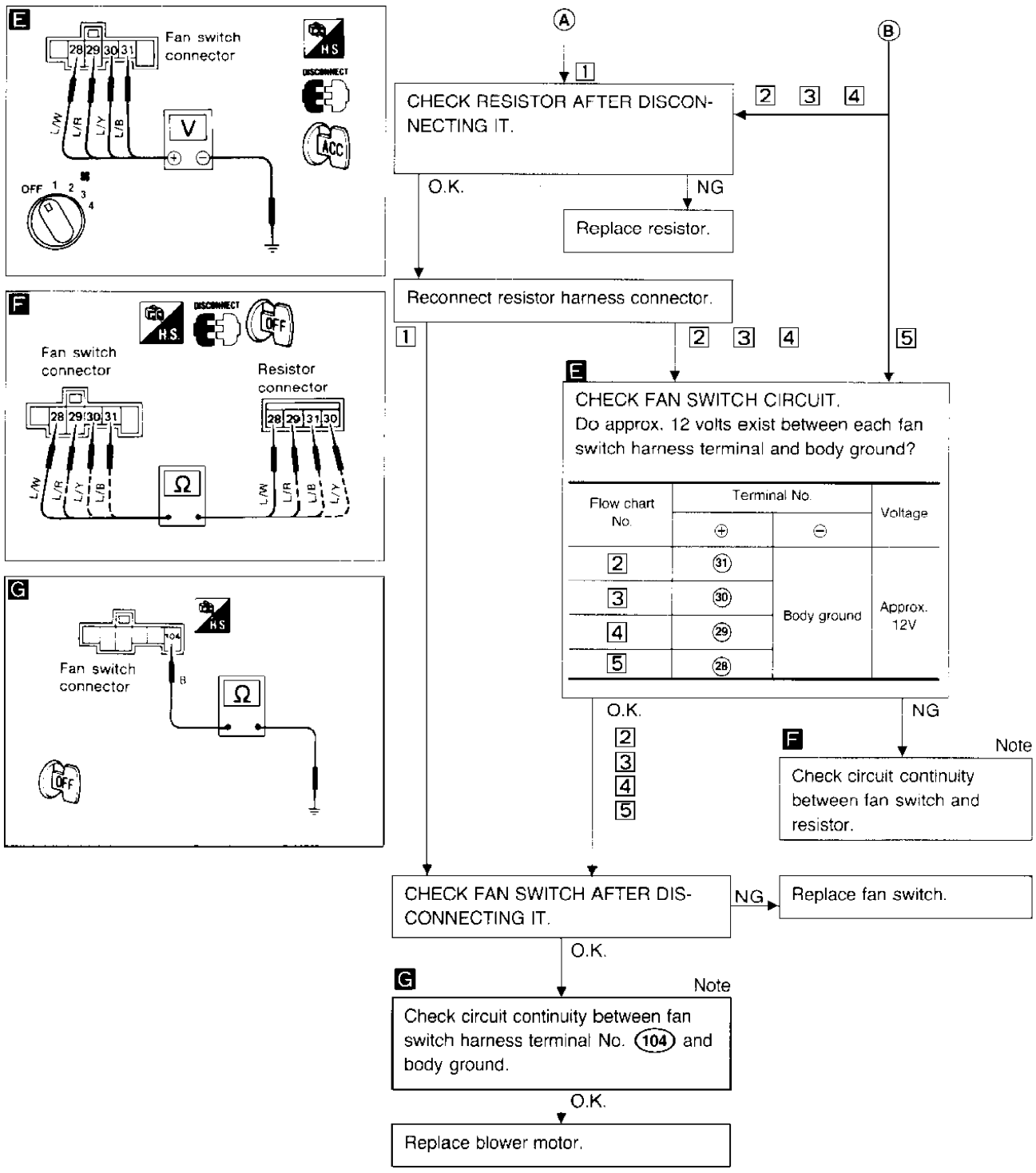
Fig. 4: Diagnostic Procedure 1 Trouble Shooting Chart (1 Of 2)



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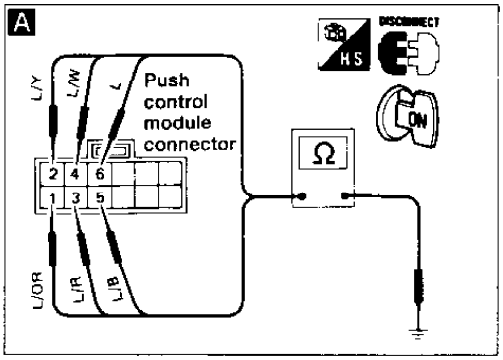
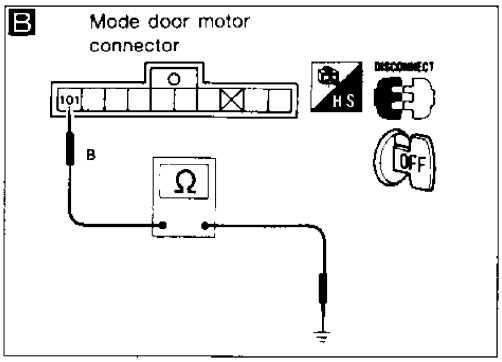
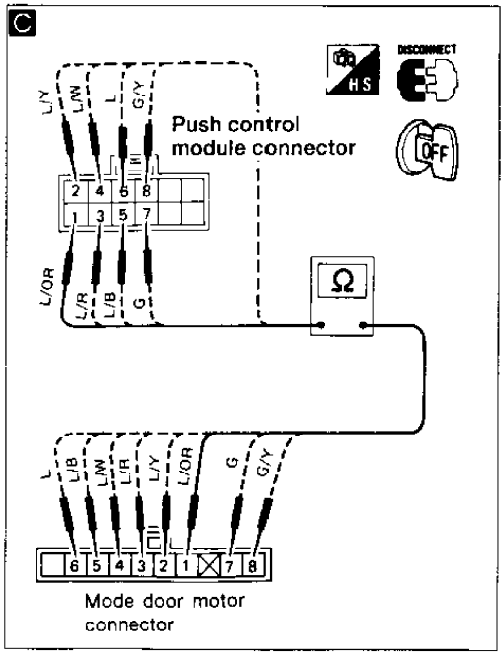
NOTE: If the result is no good (NG) after checking circuit continuity, repair harness or connector.

Fig. 5: Diagnostic Procedure 1 Trouble Shooting Chart (2 Of 2)

DIAGNOSTIC PROCEDURE 2 - AIR OUTLET DOES NOT CHANGE







- Perform PRELIMINARY CHECK 4 & 7 before referring to the following flowchart.

A

CHECK MODE DOOR MOTOR POSITION SWITCH.

1. Turn VENT switch ON with ignition switch at ON position.
2. Turn ignition switch OFF. Disconnect push control module connector.
3. Turn ignition switch ON. Check if continuity exists between terminal No. ① or ② of push control module harness connector and body ground.
4. Using above procedures, check for continuity in any other mode, as indicated in chart.

Mode switch	Terminal No. ⊕	Terminal No. ⊖	Continuity
VENT	① or ②	Body ground	Yes
B/L	② or ③		
FOOT	③ or ④		
F/D	④ or ⑤		
DEF	⑤ or ⑥		

NG → Disconnect mode door motor harness connector.

O.K. ↓

CHECK SIDE LINK.

B Note

CHECK BODY GROUND CIRCUIT FOR MODE DOOR MOTOR.
Does continuity exist between mode door motor harness terminal No. (101) and body ground?

O.K. ↓

C Note

Check circuit continuity between each terminal on push control module and on mode door motor.

Terminal No. ⊕ Push control module	Terminal No. ⊖ Mode door motor	Continuity
①	①	Yes
②	②	
③	③	
④	④	
⑤	⑤	
⑥	⑥	
⑦	⑦	
⑧	⑧	

O.K. ↓

Ⓐ Go To Next Figure

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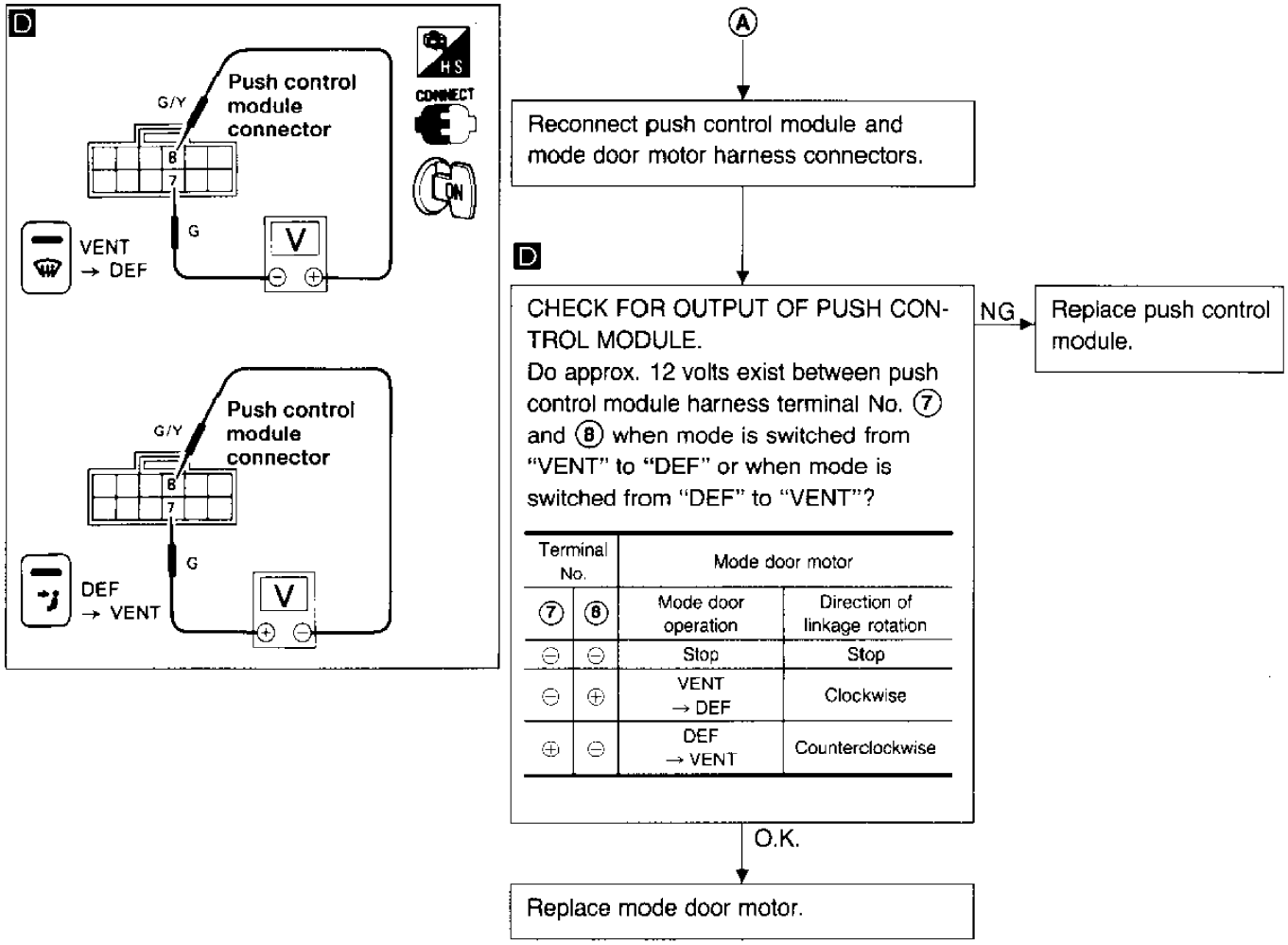
NOTE: If the result is no good (NG) after checking circuit continuity, repair harness or connector.

Fig. 6: Diagnostic Procedure 2 Trouble Shooting Chart (1 Of 2)



NOTE: If the result is no good (NG) after checking circuit continuity, repair harness or connector.

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Fig. 7: Diagnostic Procedure 2 Trouble Shooting Chart (1 Of 2)

DIAGNOSTIC PROCEDURE 3 - INTAKE DOOR DOES NOT CHANGE IN VENT, BI-LEVEL OR FOOT MODE

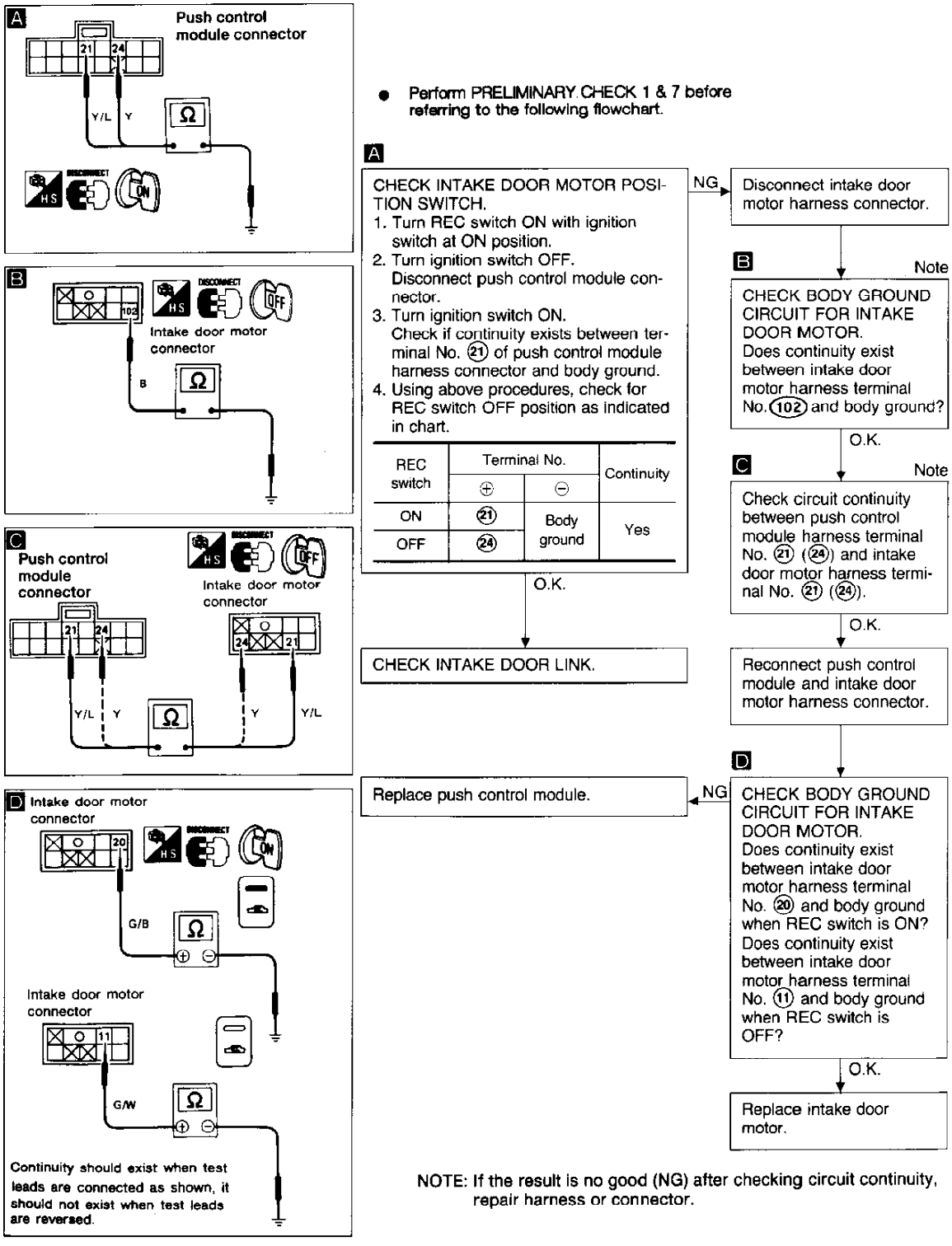

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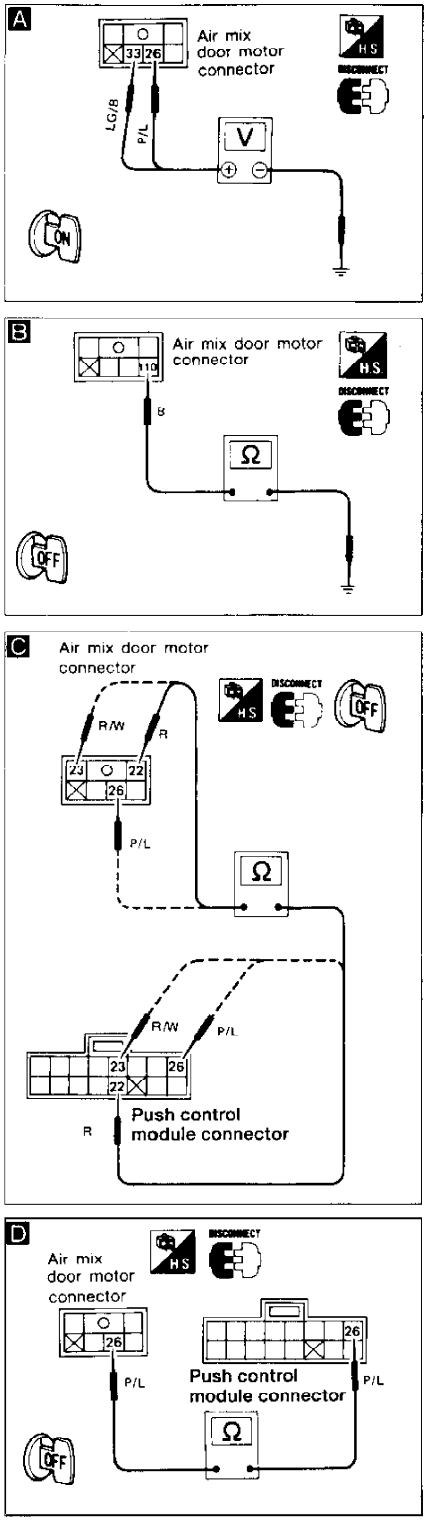
Fig. 8: Diagnostic Procedure 3 Trouble Shooting Chart

DIAGNOSTIC PROCEDURE 4 - AIR MIX DOOR DOES NOT OPERATE



- Perform PRELIMINARY CHECK 7 before referring to the following flowchart.

A

CHECK POWER SUPPLY FOR AIR MIX DOOR MOTOR.
Disconnect air mix door motor harness connector.
Do approx. 12V exist between air mix door motor harness terminal No. 26 (33) and body ground?

NG → Disconnect push control module harness connector.

D Note

Check circuit continuity between push control module harness terminal No. 26 and air mix door motor harness terminal No. 26.

O.K. → Replace push control module.

O.K.

B Note

Check circuit continuity between air mix door motor harness terminal No. 110 and body ground.

O.K.

Disconnect push control module harness connector.

C Note

Check circuit continuity between each terminal on push control module and air mix door motor.

O.K.

Reconnect push control module and air mix door motor harness connector.

Ⓐ

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NOTE: If the result is no good (NG) after checking circuit continuity, repair harness or connector.

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Fig. 9: Diagnostic Procedure 4 Trouble Shooting Chart (1 Of 2)

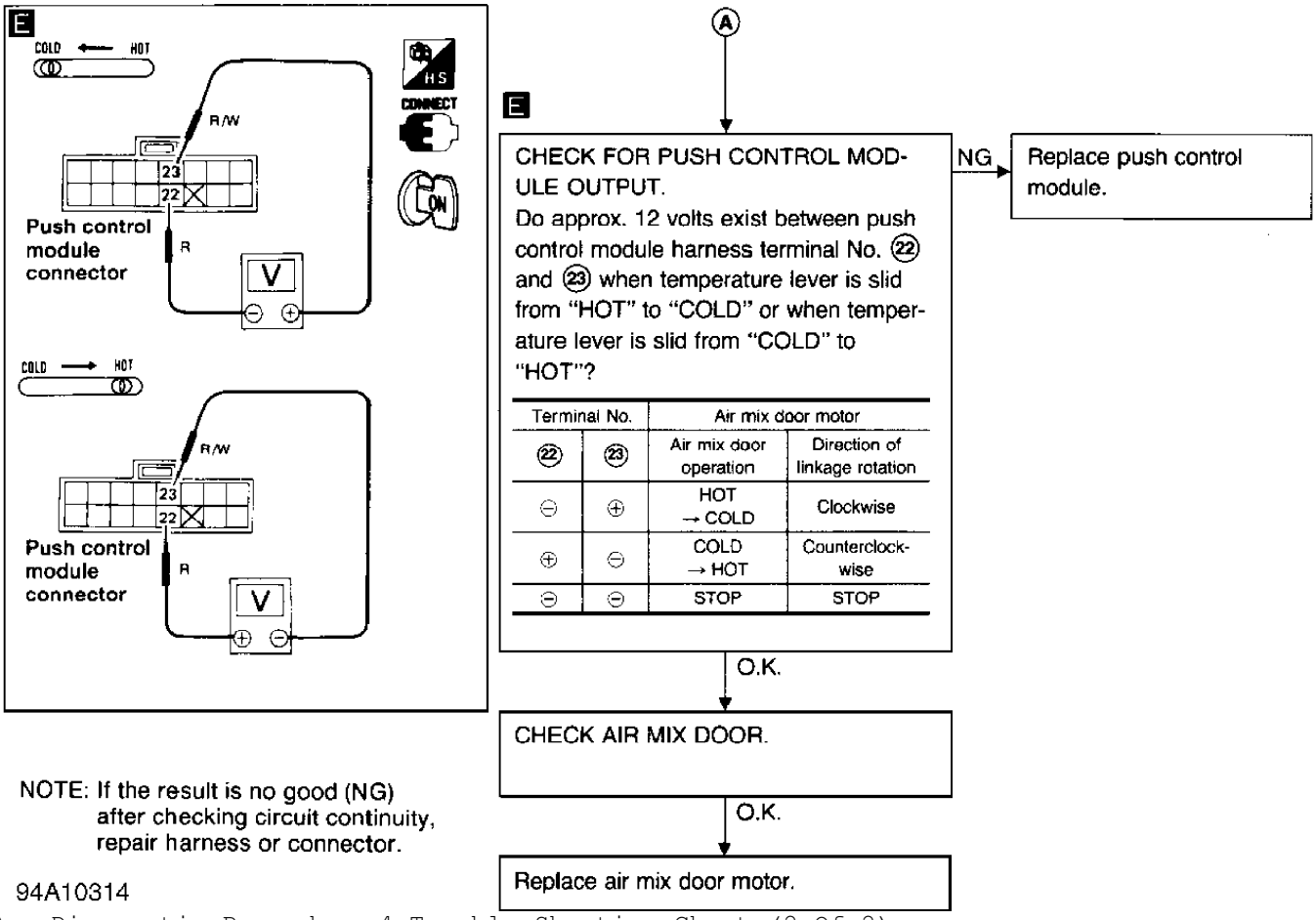


Fig. 10: Diagnostic Procedure 4 Trouble Shooting Chart (2 Of 2)

DIAGNOSTIC PROCEDURE 5 - FRESH VENT DOOR DOES NOT OPERATE

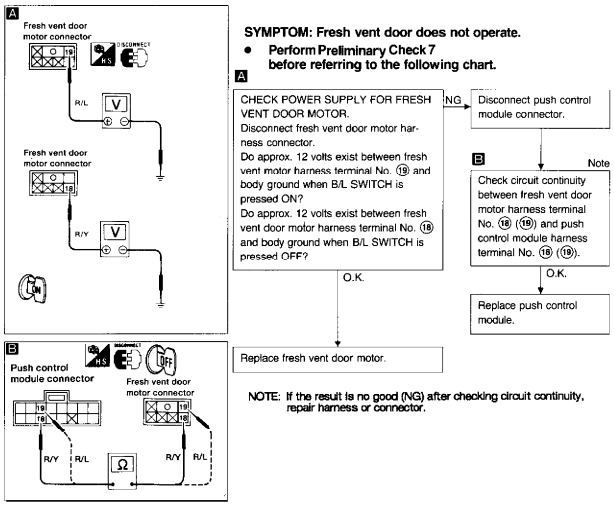
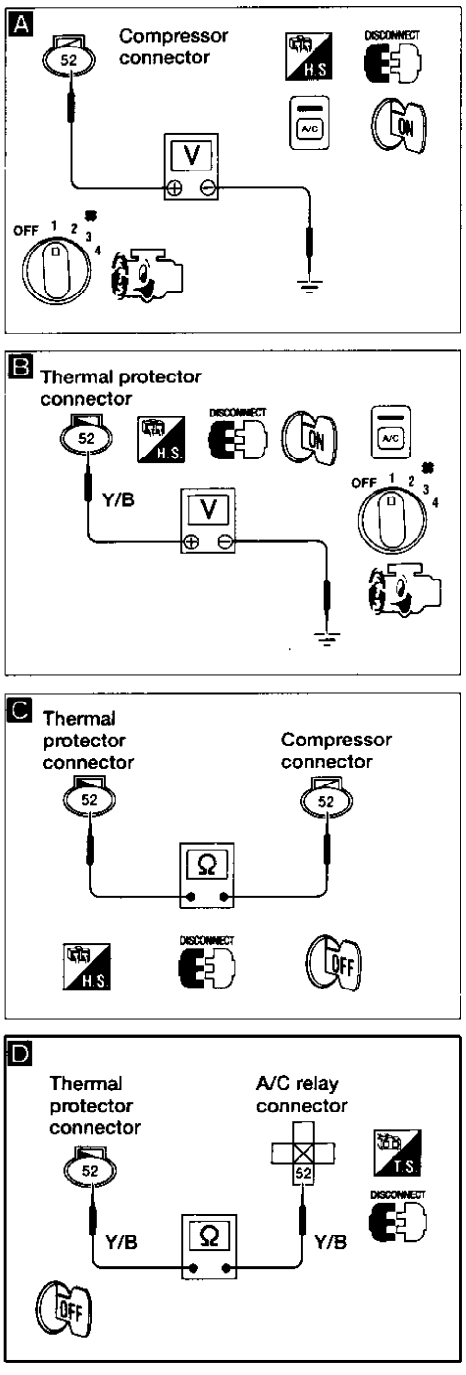


Fig. 11: Diagnostic Procedure 5 Trouble Shooting Chart

DIAGNOSTIC PROCEDURE 6 - COMPRESSOR (MAGNET) CLUTCH DOES NOT ENGAGE WITH A/C & FAN SWITCHES



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SYMPTOM: Magnet clutch does not engage when A/C switch and fan switch are ON.

- **Perform PRELIMINARY CHECK 2 before referring to the following chart.**

A

CHECK POWER SUPPLY FOR COMPRESSOR.
Disconnect compressor harness connector.
Do approx. 12 volts exist between compressor harness terminal No. (52) and body ground?

NG → **B**

CHECK POWER SUPPLY FOR THERMAL PROTECTOR.
Disconnect thermal protector harness connector.
Do approx. 12V exist between thermal protector harness terminal No. (52) and body ground?

O.K. → **C**

CHECK THERMAL PROTECTOR.
Check circuit continuity between thermal protector harness terminal No. (52) and compressor harness terminal No. (52).

NG → Replace thermal protector.

NG → (A)

O.K. → Check magnet clutch coil.

O.K. → Replace magnet clutch.

(A) → Disconnect A/C relay harness connector.

D

Note

Check circuit continuity between A/C relay harness terminal No. (52) and thermal protector harness terminal No. (52).

O.K. → (B)

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NOTE: If the result is no good (NG) after checking circuit continuity, repair harness or connector.

Fig. 12: Diagnostic Procedure 6 Trouble Shooting Chart (1 Of 4)

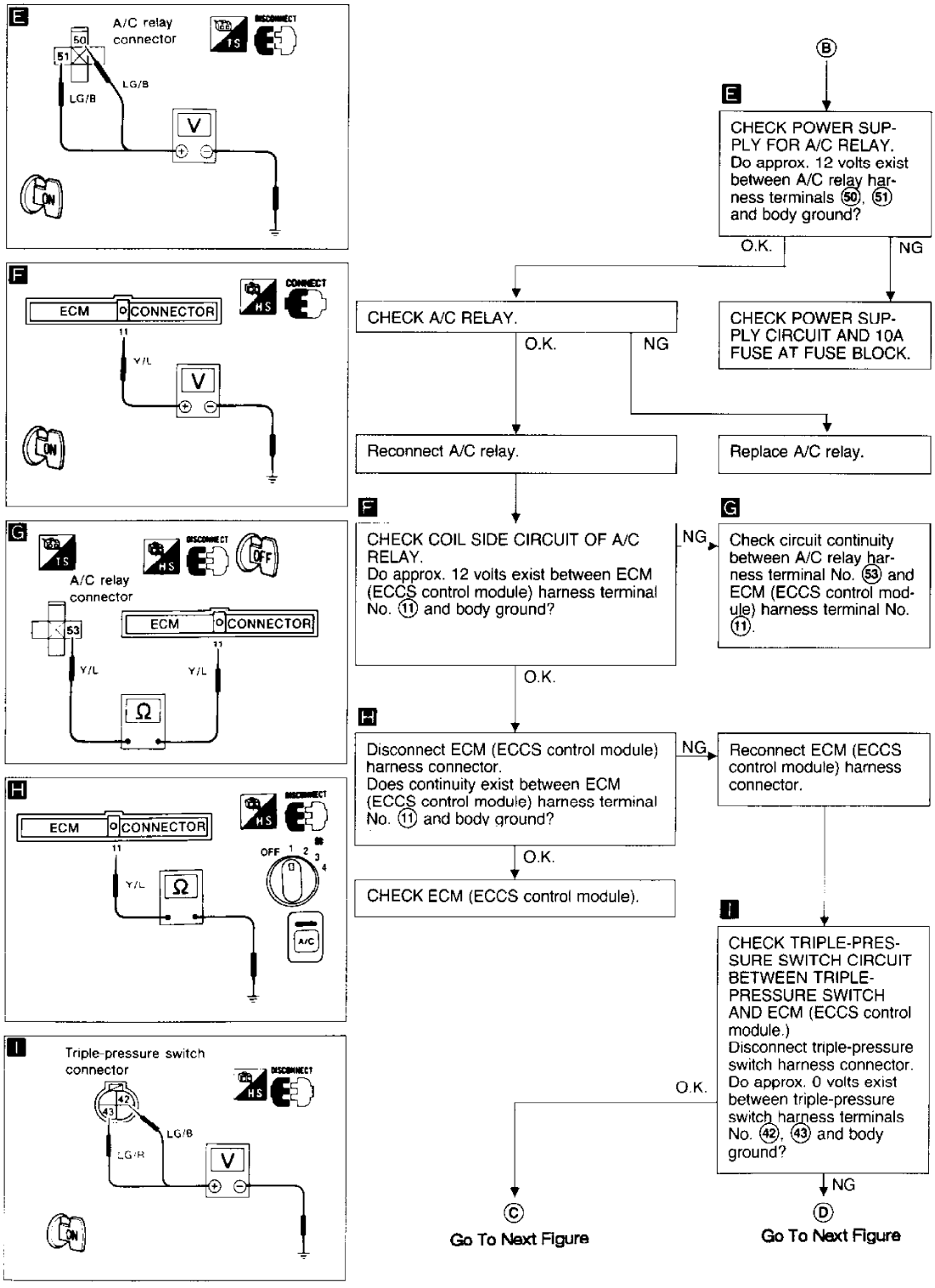

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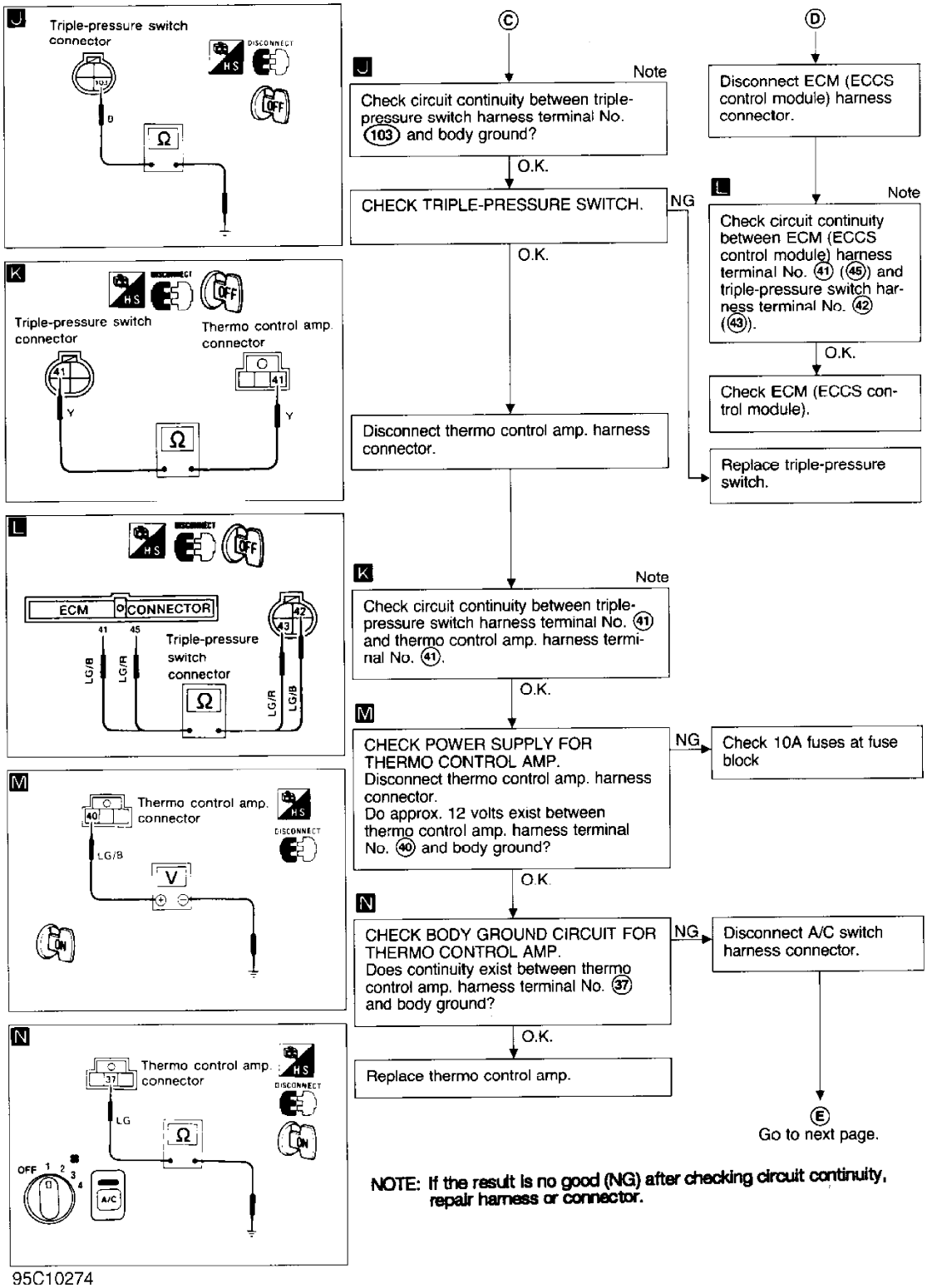
Fig. 13: Diagnostic Procedure 6 Trouble Shooting Chart (2 Of 4)



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J Note

Check circuit continuity between triple-pressure switch harness terminal No. (103) and body ground?

O.K.

CHECK TRIPLE-PRESSURE SWITCH. NG → Replace triple-pressure switch.

O.K.

Disconnect thermo control amp. harness connector.

K Note

Check circuit continuity between triple-pressure switch harness terminal No. (41) and thermo control amp. harness terminal No. (41).

O.K.

M

CHECK POWER SUPPLY FOR THERMO CONTROL AMP.
Disconnect thermo control amp. harness connector.
Do approx. 12 volts exist between thermo control amp. harness terminal No. (40) and body ground?

NG → Check 10A fuses at fuse block

O.K.

N

CHECK BODY GROUND CIRCUIT FOR THERMO CONTROL AMP.
Does continuity exist between thermo control amp. harness terminal No. (37) and body ground?

NG → Disconnect A/C switch harness connector.

O.K.

Replace thermo control amp.

Ⓓ

Disconnect ECM (ECCS control module) harness connector.

L Note

Check circuit continuity between ECM (ECCS control module) harness terminal No. (41) ((45)) and triple-pressure switch harness terminal No. (42) ((43)).

O.K.

Check ECM (ECCS control module).

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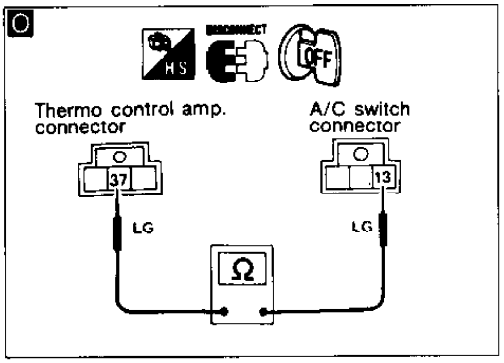
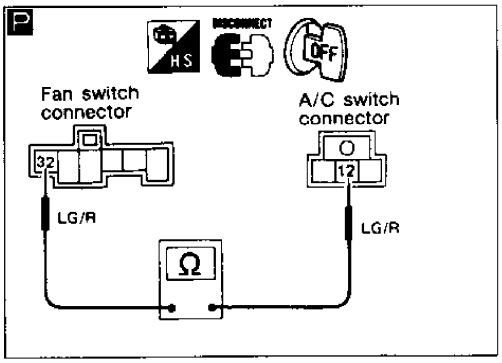
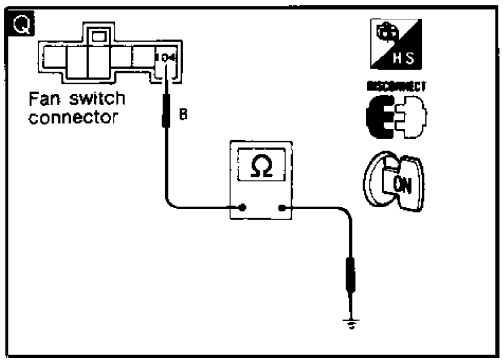
NOTE: If the result is no good (NG) after checking circuit continuity, repair harness or connector.

Fig. 14: Diagnostic Procedure 6 Trouble Shooting Chart (3 Of 4)







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Q Note

Check circuit continuity between thermo control amp. harness terminal No. (37) and A/C switch harness terminal No. (13).

O.K.

CHECK A/C SWITCH. NG → Replace A/C switch.

O.K.

Disconnect fan switch harness connector.

O.K.

P Note

Check circuit continuity between A/C switch harness terminal No. (12) and fan switch harness terminal No. (32).

O.K.

Q Note

CHECK BODY GROUND CIRCUIT FOR FAN SWITCH.
Does continuity exist between fan switch harness terminal No. (104) and body ground?

O.K.

CHECK FAN SWITCH. NG → Replace fan switch.

NOTE: If the result is no good (NG) after checking circuit continuity, repair harness or connector.

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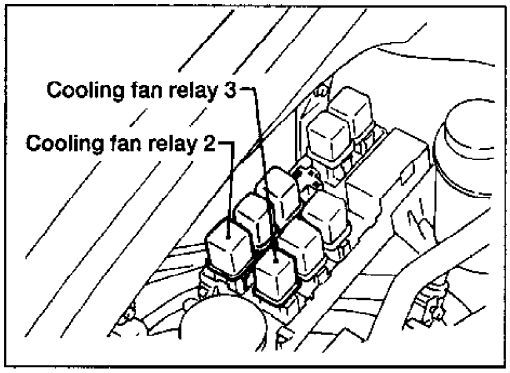
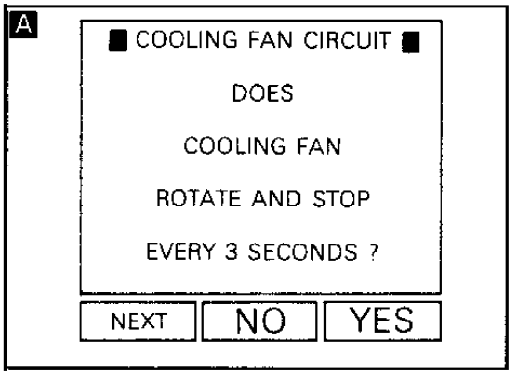
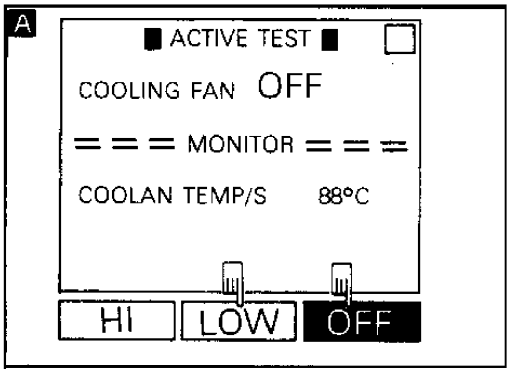
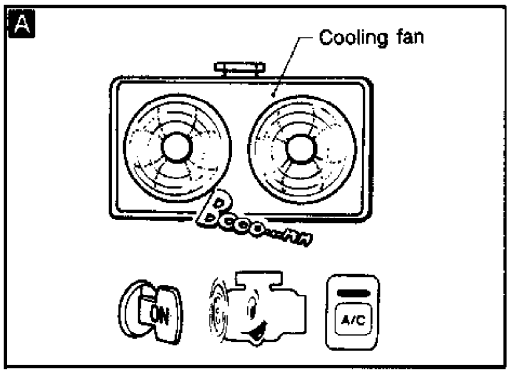
Fig. 15: Diagnostic Procedure 6 Trouble Shooting Chart (4 Of 4)

DIAGNOSTIC PROCEDURE 7 - RADIATOR FAN LOW SPEED OPERATION









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INSPECTION START

A

CHECK COOLING FAN LOW SPEED OPERATION.

1. Disconnect cooling fan relays-2 and -3.
2. Turn ignition switch "ON".
3. Perform "COOLING FAN CIRCUIT" in "FUNCTION TEST" mode with CONSULT.

NG → Check cooling fan low speed control circuit. (Go to FIGURE 15.)

OR

2. Turn ignition switch "ON".
3. Perform "COOLING FAN" in "ACTIVE TEST" mode with CONSULT.

OR

2. Start engine.
3. Set temperature lever at full cold position.
4. Turn air conditioner switch "ON".
5. Turn blower fan switch "ON".
6. Run engine at idle for a few minutes with air conditioner operating.
7. Make sure that cooling fan operates at low speed.

OK

Go To Ⓐ On Next Figure.

Fig. 16: Diagnostic Procedure 7 Trouble Shooting Chart

DIAGNOSTIC PROCEDURE 8 - RADIATOR FAN HIGH SPEED OPERATION

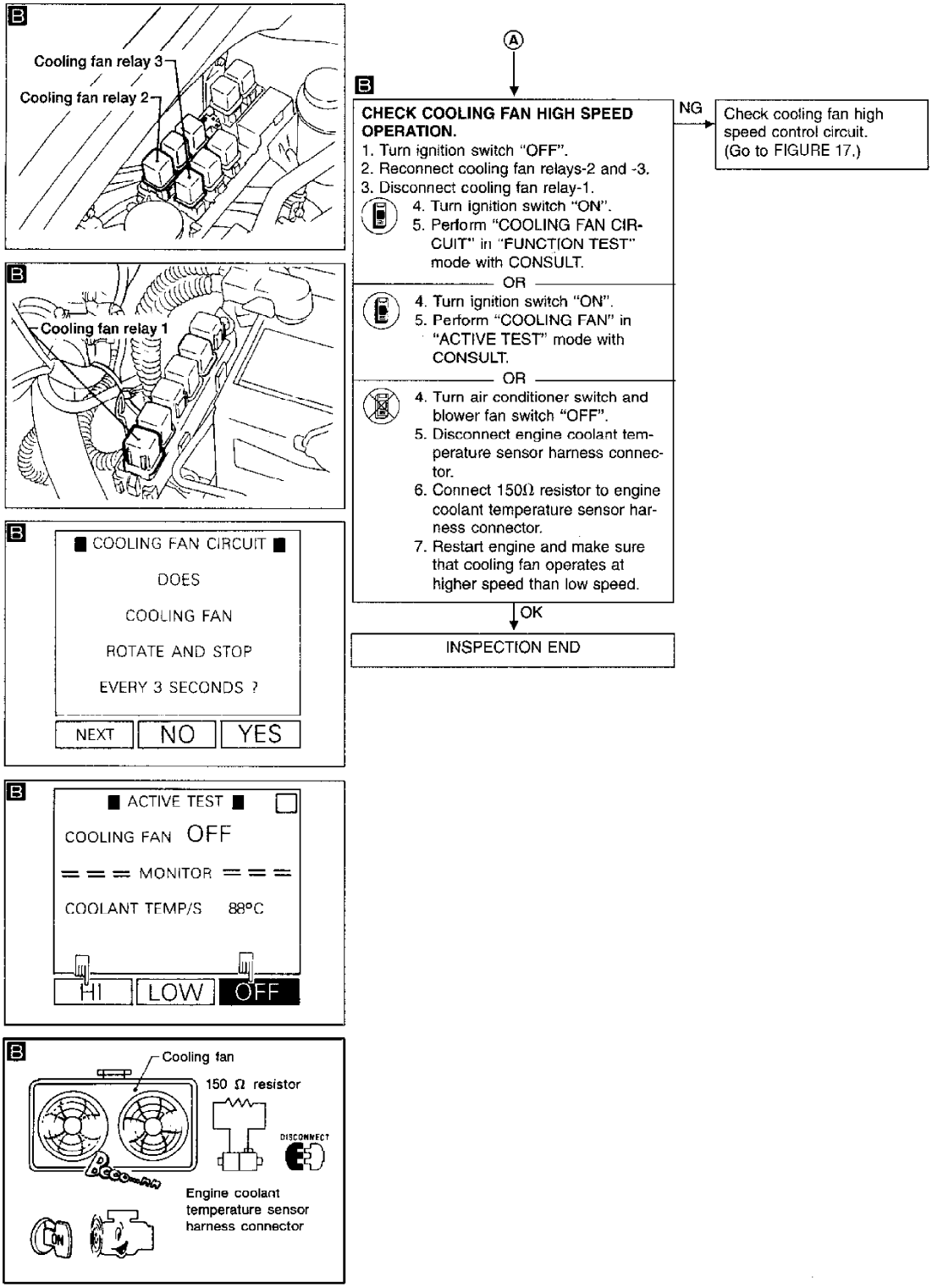

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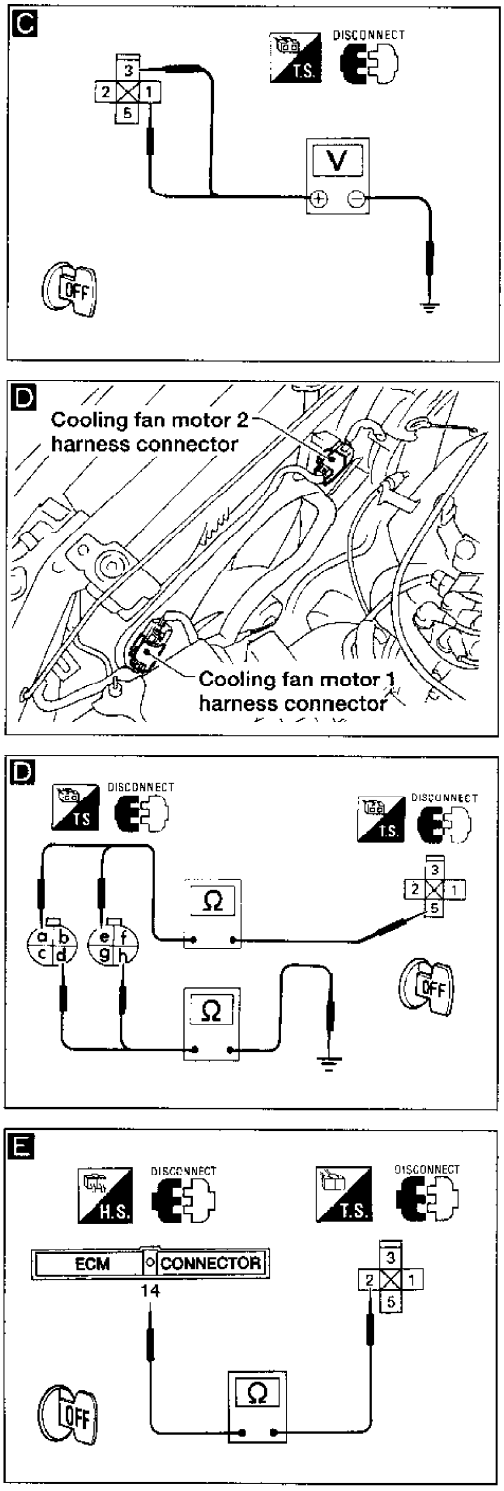
Fig. 17: Diagnostic Procedure 8 Trouble Shooting Chart

DIAGNOSTIC PROCEDURE 9 - RADIATOR FAN LOW SPEED CONTROL CIRCUIT



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INSPECTION START

C

CHECK POWER SUPPLY.
1. Turn ignition switch "OFF".
2. Disconnect cooling fan relay-1.
3. Check voltage between terminals ①, ③ and ground with CONSULT or tester.
   Voltage: Battery voltage

NG → Check the following.
- 10A fuse
- 30A fusible link
- Harness for open or short between cooling fan relay-1 and fuse
- Harness for open or short between cooling fan relay-1 and battery

If NG, repair harness or connectors.

OK ↓

D

CHECK GROUND CIRCUIT.
1. Turn ignition switch "OFF".
2. Disconnect cooling fan motor-1 harness connector and cooling fan motor-2 harness connector.
3. Check harness continuity between terminals ⓐ, ⓔ and terminal ⑤.
   Continuity should exist.
   If OK, check harness for short.
4. Check harness continuity between terminals ⓓ, ⓗ and body ground.
   Continuity should exist.
   If OK, check harness for short.

NG → Repair harness or connectors.

OK ↓

E

CHECK OUTPUT SIGNAL CIRCUIT.
1. Disconnect ECM harness connector.
2. Check harness continuity between ECM terminal ⑭ and terminal ②.
   Continuity should exist.
   If OK, check harness for short.

NG → Check Harness connectors, and Harness for open or short between cooling fan relay-1 and ECM.
If NG, repair harness or connectors.

OK ↓

CHECK COMPONENT
(Cooling fan relay-1).

NG → Replace cooling fan relay.

OK ↓

Go To Ⓒ On Next Figure.

Fig. 18: Diagnostic Procedure 9 Trouble Shooting Chart (1 Of 2)

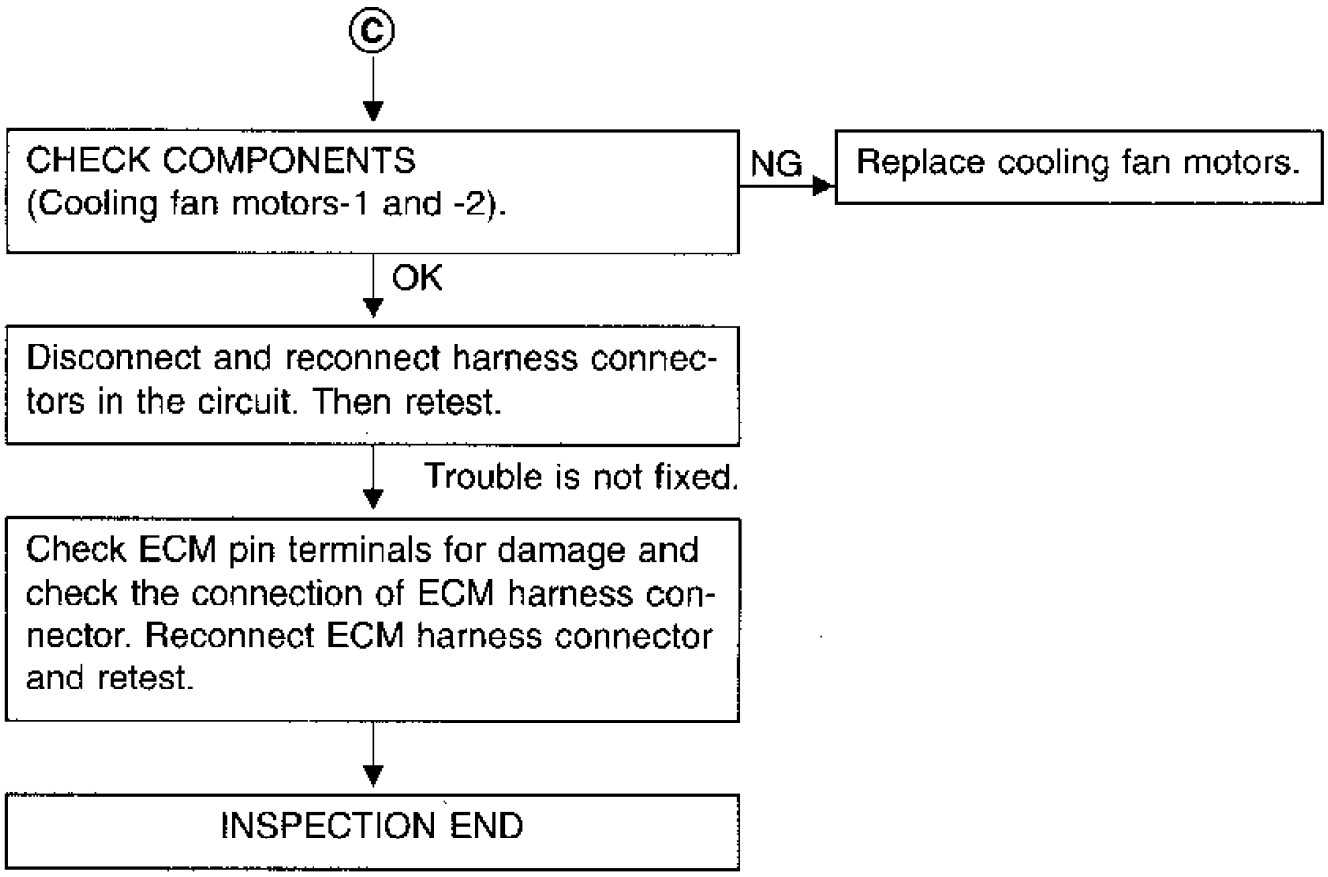

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Fig. 19: Diagnostic Procedure 9 Trouble Shooting Chart (2 Of 2)

DIAGNOSTIC PROCEDURE 10 - RADIATOR FAN HIGH SPEED CONTROL CIRCUIT

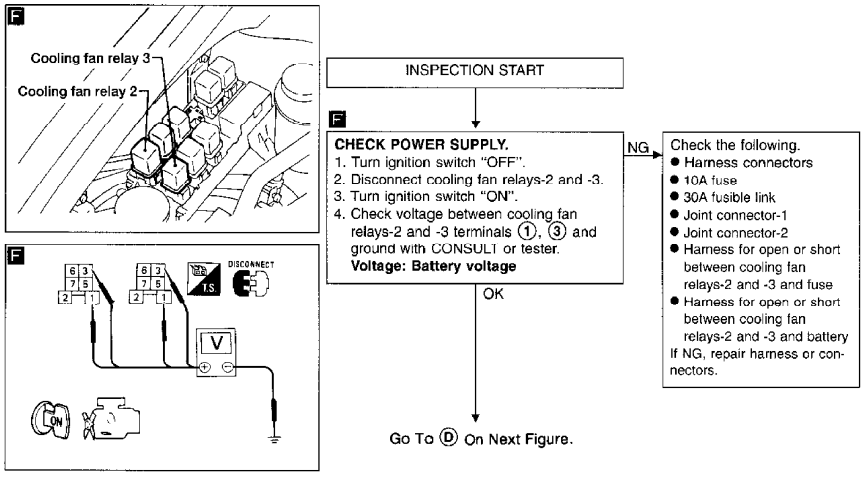

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Fig. 20: Diagnostic Procedure 10 Trouble Shooting Chart (1 Of 2)

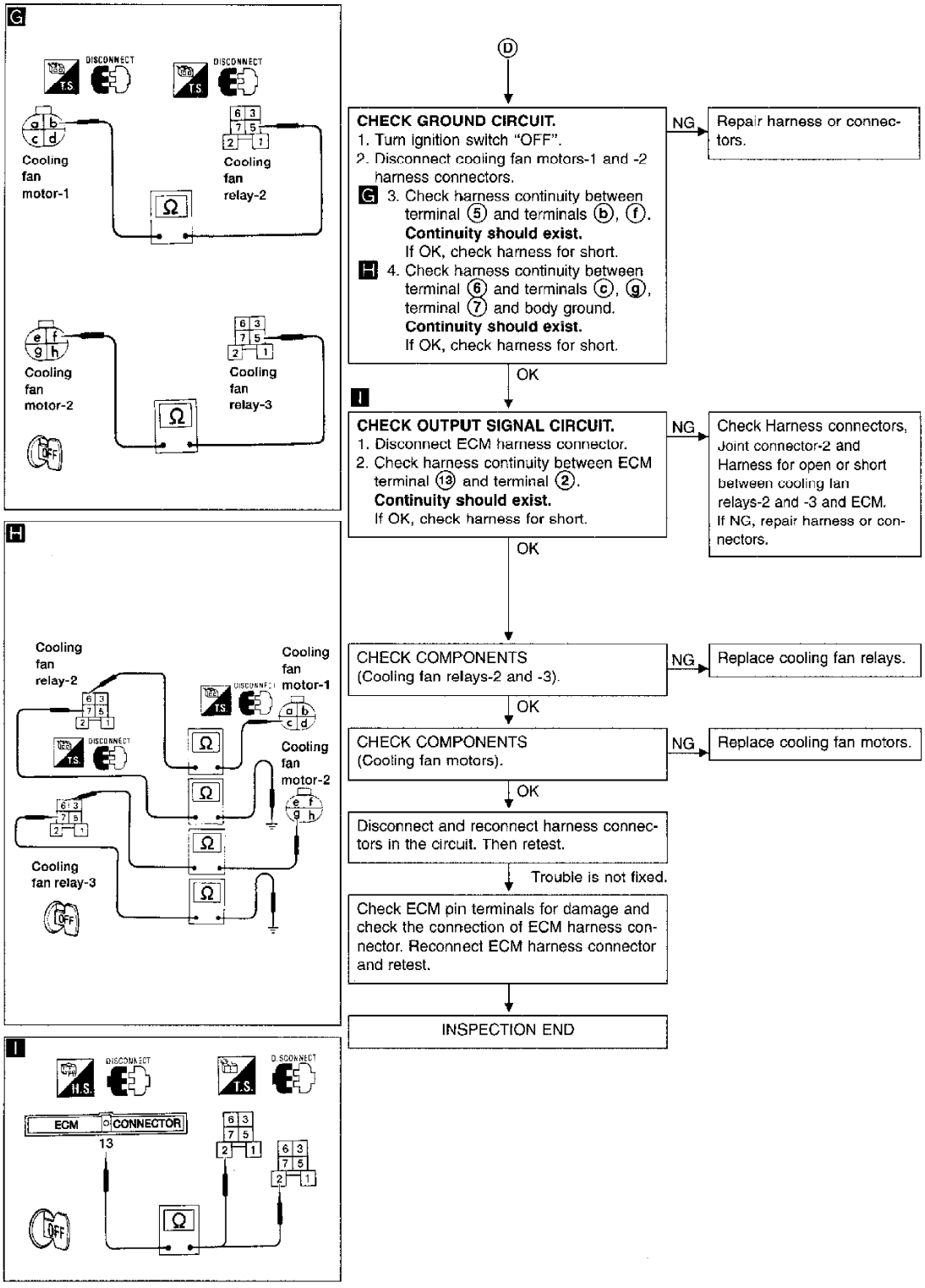

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Fig. 21: Diagnostic Procedure 10 Trouble Shooting Chart (2 Of 2)

TESTING

WARNING: To avoid injury from accidental air bag deployment, read and carefully follow all SERVICE PRECAUTIONS and DISABLING & ACTIVATING AIR BAG SYSTEM procedures in appropriate AIR BAG RESTRAINT SYSTEM article in ACCESSORIES/SAFETY EQUIPMENT SECTION.

A/C SYSTEM PERFORMANCE

1) Park vehicle out of direct sunlight. Close all doors and open engine hood and one window. Connect A/C pressure gauges to the high and low side pressure ports of system. Determine relative humidity and ambient air temperature.

2) Set temperature control to maximum cold, mode control to face vent, and recirculation switch to recirculation position. Turn blower fan switch to highest position. Start and run engine at 1500 RPM.

3) After running A/C for 10 minutes, check high and low side system pressures. See A/C SYSTEM PRESSURES table. Measure air outlet temperature at center vent. See RECIRCULATING-TO-DISCHARGE AIR TEMPERATURE table.

A/C SYSTEM PRESSURES TABLE (1)

Ambient Air Temp. °F (°C)	High Pressure psi (kg/cm²)	Low Pressure psi (kg/cm²)
68 (20)	121-159 (8.5-11.2)	17.8-23.5 (1.3-1.7)
77 (25)	152-198 (10.7-13.9)	19.9-26.3 (1.4-1.9)
86 (30)	178-235 (12.5-16.5)	22.0-29.2 (1.6-2.1)
95 (35)	182-249 (12.8-17.5)	24.2-33.4 (1.7-2.4)
104 (40)	223-294 (15.7-20.7)	29.2-41.9 (2.1-3.0)

(1) - Specification is with relative humidity at 50-70%.

RECIRCULATING-TO-DISCHARGE AIR TEMPERATURE TABLE (1)

Inlet Air Temp. °F (°C) (2)	Outlet Air Temp. °F (°C)
68 (20)	39-44 (4.0-6.8)
77 (25)	40-46 (4.2-8.0)
86 (30)	47-57 (8.5-14.1)
95 (35)	56-69 (13.5-20.3)
104 (40)	65-80 (18.5-26.5)

(1) - Specification is with relative humidity at 50-70%.
(2) - Measure inlet air temperature at blower inlet under right side of instrument panel.

A/C SWITCH

Disconnect negative battery cable. Remove A/C switch from control panel. Turn A/C on. Using an ohmmeter, check continuity between switch terminals. Continuity should exist. If no continuity exists, replace A/C switch.

BLOWER MOTOR

Disconnect wiring harness at blower motor. Apply battery voltage to blower motor terminals. Ensure blower motor operation is smooth. If blower motor operation is rough or not up to speed, replace

blower motor.

BLOWER SPEED CONTROL SWITCH

See TESTING in HEATER SYSTEM article.

BLOWER MOTOR RESISTOR

Disconnect wiring harness connector. See Fig. 3. Check continuity between all resistor terminals. Ensure continuity exists. If continuity does not exist, replace resistor.

TRIPLE-PRESSURE SWITCH

1) Connect gauge set. Start engine and turn A/C system on. Disconnect triple-pressure switch connector. Triple-pressure switch is located on top of receiver-drier. See Fig. 2.

2) Using an ohmmeter, check continuity between terminals of triple-pressure switch connector as indicated. See TRIPLE-PRESSURE SWITCH SPECIFICATIONS table. Replace switch if it does not test as indicated.

TRIPLE-PRESSURE SWITCH SPECIFICATIONS TABLE

Application psi (kg/cm²)	System Operation	Continuity
A/C Control (1)		
Low Pressure		
Decreasing To 22-29 (1.6-2.1)	Off	No
Increasing To 23-33 (1.6-2.3)	On	Yes
High Pressure		
Increasing To 356-412 (25-29)	Off	No
Decreasing To 242-299 (17-21)	On	Yes
Radiator Fan Control (2)		
Increasing To 206-235 (14.5-16.6)	On	Yes
Decreasing To 164-206 (11.5-14.5)	Off	No

(1) - Check continuity between Light Green/Black and Yellow wires.
(2) - Check continuity between Black and Light Green/Red wires.

A/C & BLOWER HI RELAYS

Remove relay to be tested. See Fig. 2 or 3. Apply battery voltage between terminals No. 1 and 3. Check for continuity between remaining relay terminals. See Fig. 22. Continuity should exist. If no continuity exists, replace relay.

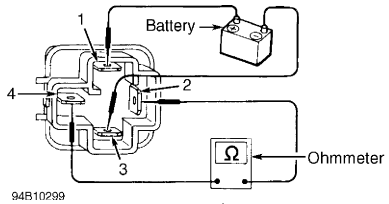

Fig. 22: Testing A/C & Blower Hi Relays
Courtesy of Nissan Motor Co., U.S.A.

THERMAL PROTECTOR SWITCH

Thermal protector switch is located on A/C compressor. Check continuity between thermal protector switch terminals. If compressor temperature is approximately 266-284°F (130-140°C) or less, continuity should exist. If compressor temperature is approximately 293-311°F (145-155°C) or more, continuity should not exist. Replace switch if compressor does not test as specified.

THERMO CONTROL AMPLIFIER

Thermo control amplifier is mounted on cooling unit. See Fig. 3. Start engine and turn A/C system on. Using a DVOM, backprobe th thermo control amplifier connector between terminal No. 41 (Yellow wire) and ground. See Fig. 23. If voltage is not as specified, replace thermo control amplifier. See THERMO CONTROL AMPLIFIER SPECIFICATIONS table.

THERMO CONTROL AMPLIFIER SPECIFICATIONS TABLE

Evaporator Temp. °F (°C)	Thermo Amplifier Operation	Volts
Decreasing To 37-38 (2.5-3.5)	Off	About 12
Increasing To 39-41 (4-5)	On	Zero

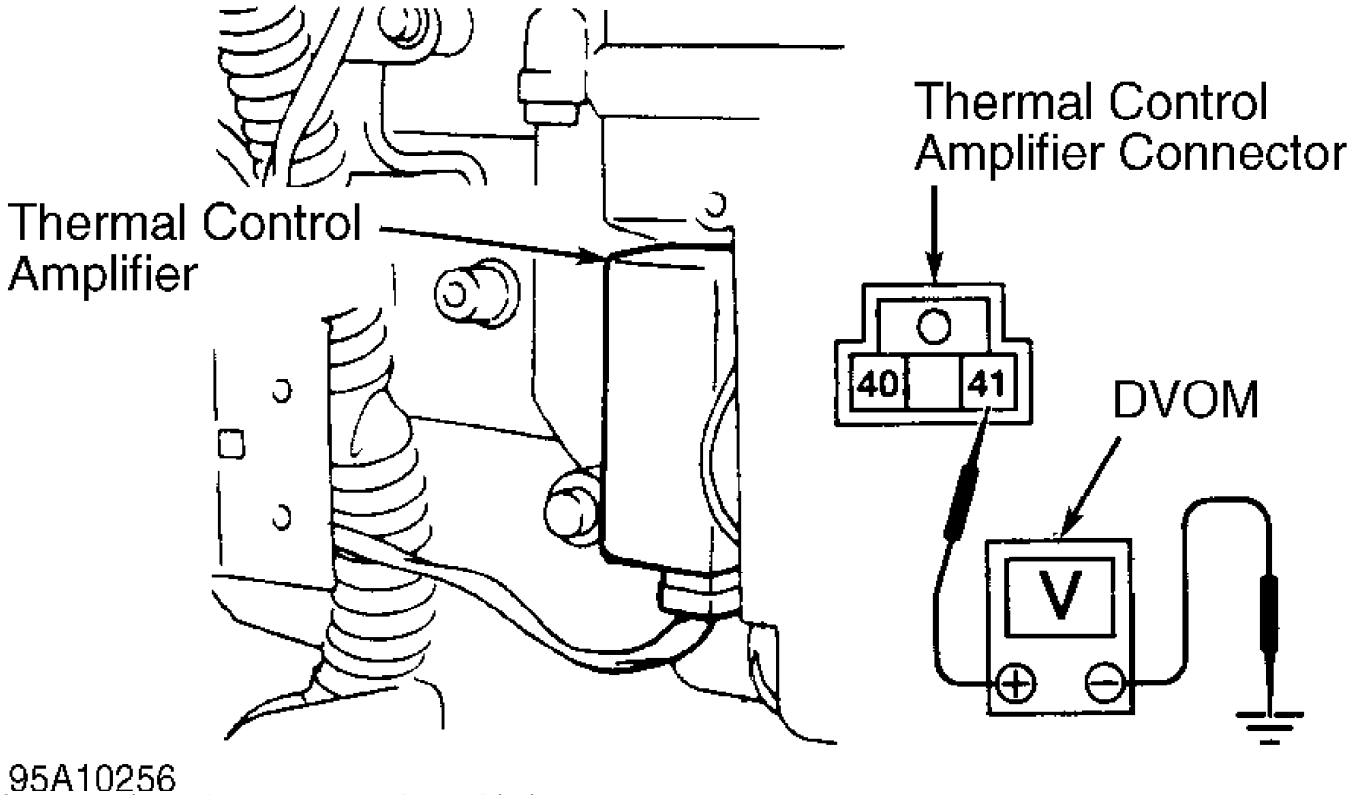

Fig. 23: Testing Thermo Control Amplifier
Courtesy of Nissan Motor Co., U.S.A.

REMOVAL & INSTALLATION

WARNING: To avoid injury from accidental air bag deployment, read and carefully follow all SERVICE PRECAUTIONS and DISABLING & ACTIVATING AIR BAG SYSTEM procedures in appropriate AIR BAG RESTRAINT SYSTEM article in ACCESSORIES/SAFETY

EQUIPMENT SECTION.

A/C COMPRESSOR

Removal

Loosen idler pulley bolt, and remove compressor belt. Discharge A/C system, using approved refrigerant recovery/recycling equipment. Disconnect compressor clutch lead. Remove discharge and suction hoses from compressor, and plug hose openings. Remove compressor bolts and compressor.

Installation

To install, reverse removal procedure. Tighten compressor bolts to 33-44 ft. lbs. (45-60 N.m). Coat NEW "O" rings with refrigerant oil when attaching hoses to compressor. Evacuate and recharge system.

A/C-HEATER ASSEMBLY

Removal & Installation

Removal and installation procedures are not available from manufacturer. See illustration to aid in removal and installation. See Fig. 24.

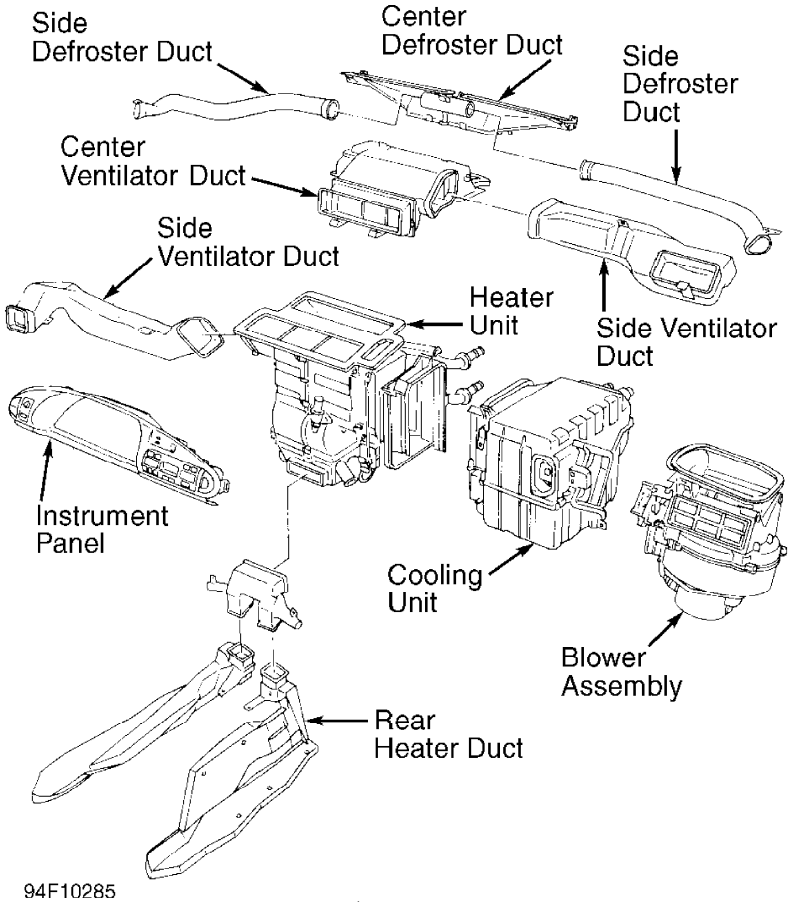

Fig. 24: Exploded View Of A/C-Heater Assembly
Courtesy of Nissan Motor Co., U.S.A.

WIRING DIAGRAMS

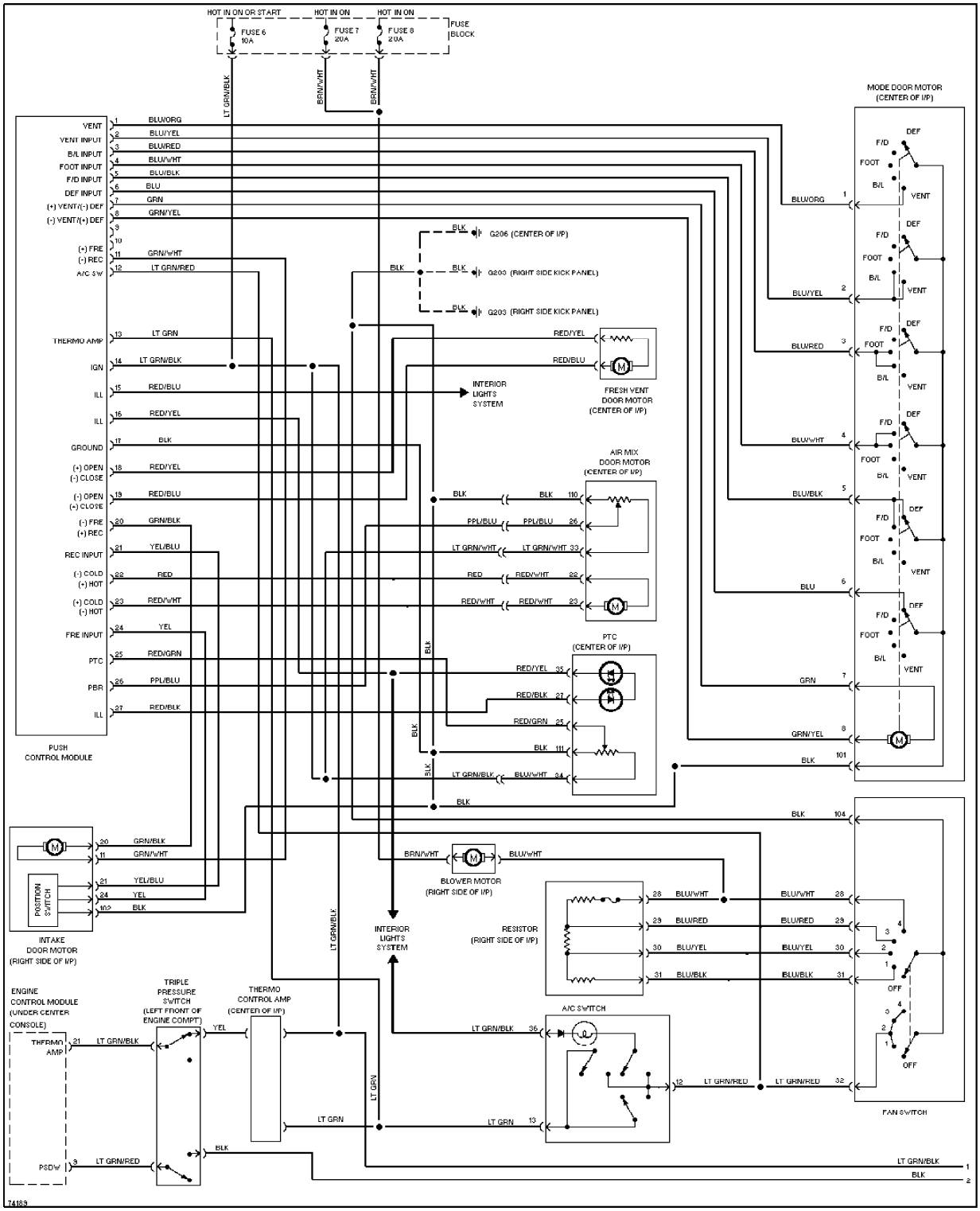

Fig. 25: Manual A/C-Heater System Wiring Diagram (1 Of 2)

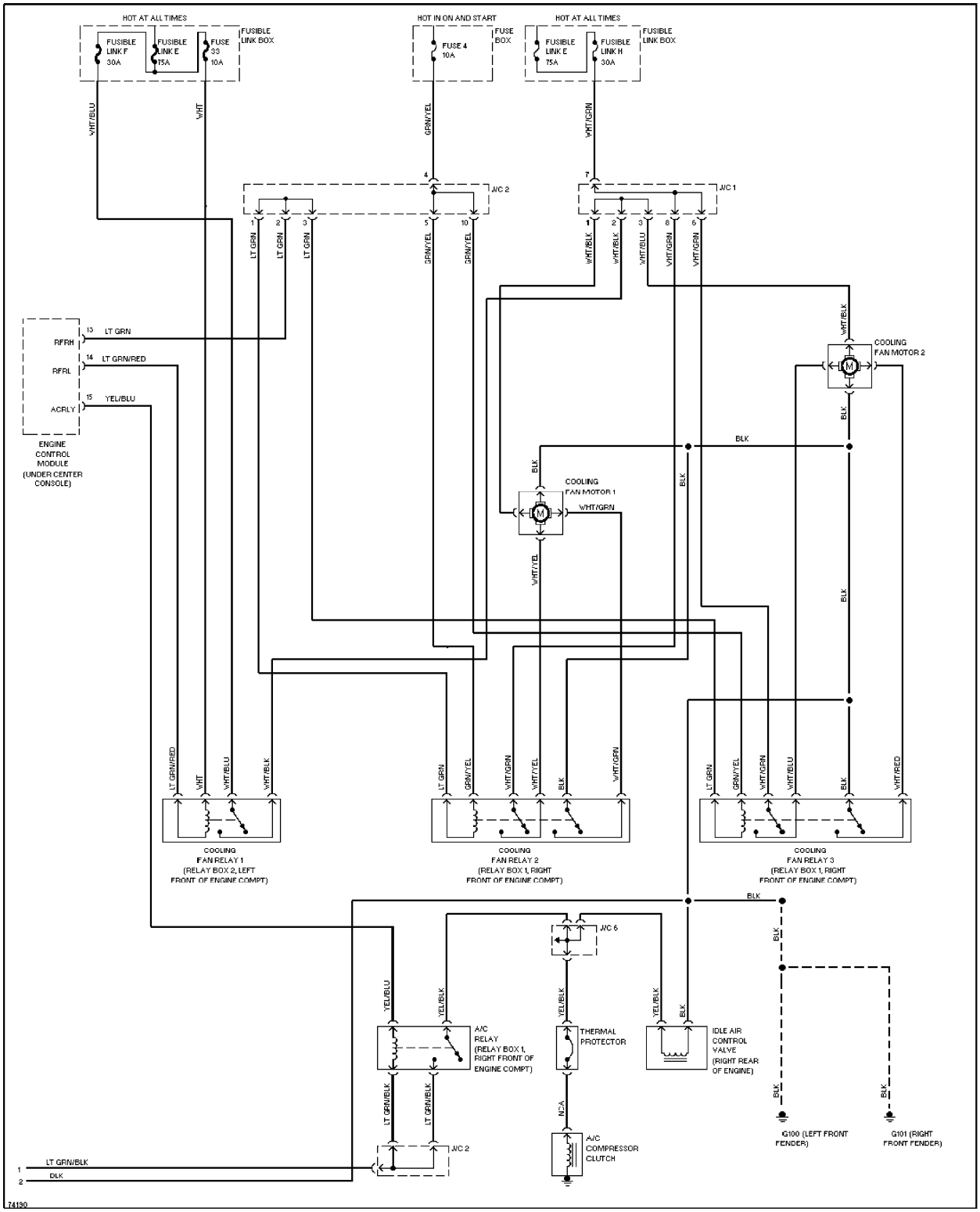

Fig. 26: Manual A/C-Heater System Wiring Diagram (2 Of 2)