

SECTION

HA

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EM

MODIFICATION NOTICE:

- A/C cycle for VG30E engine has been added. (For Australia)
 - Wiring Diagram has been changed.
 - Precautions for leak detection dye and service procedures for fluorescent dye have been added.
- LC
- EC
- FE

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CL

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When you read wiring diagrams:

- Read GI section, "HOW TO READ WIRING DIAGRAMS".
- See EL section, "POWER SUPPLY ROUTING" for power distribution circuit.

When you perform trouble diagnoses, read GI section, "HOW TO FOLLOW FLOW CHART IN TROUBLE DIAGNOSES" and "HOW TO PERFORM EFFICIENT DIAGNOSIS FOR AN ELECTRICAL INCIDENT".

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Supplemental Restraint System (SRS) “AIR BAG” and “SEAT BELT PRE-TENSIONER”

The Supplemental Restraint System such as “AIR BAG” and “SEAT BELT PRE-TENSIONER” used along with a seat belt, helps to reduce the risk or severity of injury to the driver and front passenger in a frontal collision. The SRS system composition which is available to NISSAN MODEL D22 is as follows (The composition varies according to the destination and optional equipment.):

Driver air bag module (located in the center of the steering wheel), front passenger air bag module (located on the instrument panel on passenger side), seat belt pre-tensioner, a diagnosis sensor unit, warning lamp, wiring harness and spiral cable.

Information necessary to service the system safely is included in the **RS section** of this Service Manual.

WARNING:

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the RS section.
- Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. Spiral Cable and wiring harnesses (except “SEAT BELT PRE-TENSIONER”) covered with yellow insulation either just before the harness connectors or for the complete harness are related to the SRS.

Precautions for Leak Detection Dye

- The A/C system contains a fluorescent leak detection dye used for locating refrigerant leaks. An ultraviolet (UV) lamp is required to illuminate the dye when inspecting for leaks.
- Always wear fluorescence enhancing UV safety glasses to protect your eyes and enhance the visibility of the fluorescent dye.
- The fluorescent dye leak detector is not a replacement for an electronic refrigerant leak detector. The fluorescent dye leak detector should be used in conjunction with an electronic refrigerant leak detector to (J-41995) pin-point refrigerant leaks.
- For your safety and your Customer's satisfaction, read and follow all manufacture's operating instructions and precautions prior to performing the work.
- A compressor shaft seal should not be repaired because of dye seepage. The compressor shaft seal should only be repaired after confirming the leak with an electronic refrigerant leak detector (J-41995).
- Always remove any dye from the leak area after repairs are complete to avoid a misdiagnosis during a future service.
- Do not allow dye to come into contact with painted body panels or interior components. If dye is spilled, clean immediately with the approved dye cleaner. Fluorescent dye left on a surface for an extended period of time cannot be removed.
- Do not spray the fluorescent dye cleaning agent on hot surfaces (engine exhaust manifold, etc.).
- Do not use more than one refrigerant dye bottle (1/4 ounce / 7.4 cc) per A/C system.
- Leak detection dyes for R-134a and R12 A/C systems are different. Do not use R-134a leak detection dye in R-12 A/C system or R-12 leak detection dye in R-134a A/C systems or A/C system damage may result.
- The fluorescent properties of the dye will remain for over three (3) years unless a compressor failure occurs.

AIR CONDITIONER NISSAN		
	REFRIGERANT	COMPRESSOR LUBRICANT
TYPE (PART NO.)	HFC134a (R134a)	Nissan UV Luminous Oil Type S [KLHOO-PAGSO]
AMOUNT		
CAUTION PRECAUTION <ul style="list-style-type: none"> • REFRIGERANT UNDER HIGH PRESSURE. • SYSTEM TO BE SERVICED BY QUALIFIED PERSONNEL. • IMPROPER SERVICE METHODS MAY CAUSE PERSONAL INJURY. • CONSULT SERVICE MANUAL. • THIS AIR CONDITIONER SYSTEM COMPLIES WITH SAE J-639. <p>Nissan Motor Co., Ltd., TOKYO, Japan</p> <p>27090 6P102</p> <p>SHA436FA</p>		

Identification

IDENTIFICATION LABEL FOR VEHICLE

Vehicles with factory installed fluorescent dye have this identification label on the under side of hood.

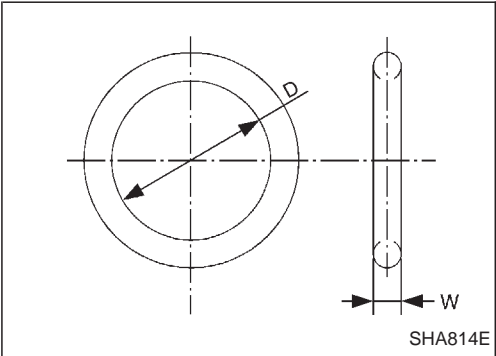
NOTE:

Vehicles with factory installed fluorescent dye have a green label.
Vehicles without factory installed fluorescent dye have a blue label.

Precautions for Refrigerant Connection

CAUTION:

The new and former refrigerant connections use different O-ring configurations. Do not confuse O-rings since they are not interchangeable. If a wrong O-ring is installed, refrigerant will leak at, or around, the connection.

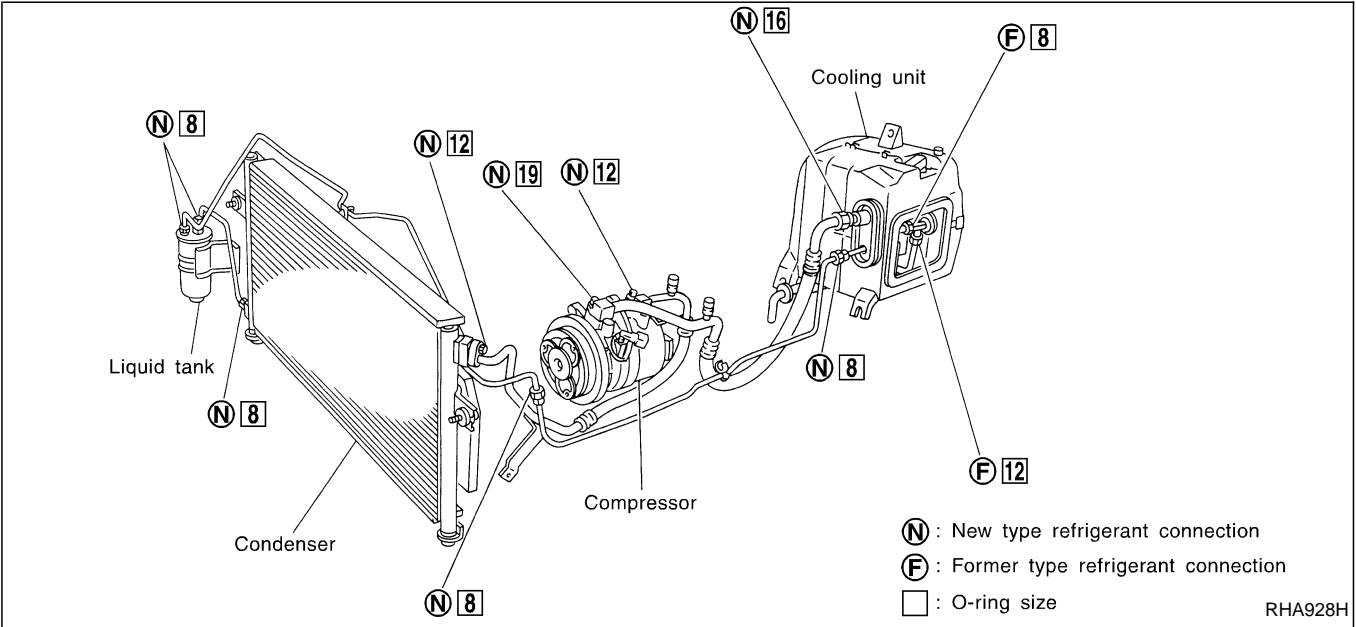


O-ring part numbers and specifications

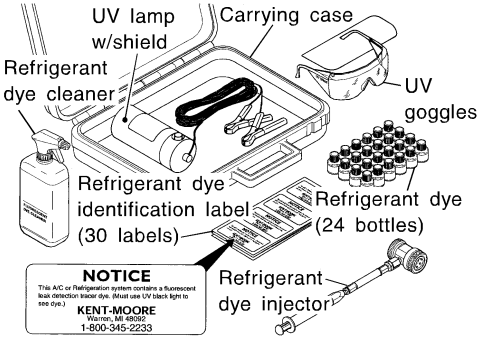
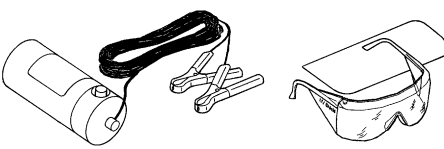
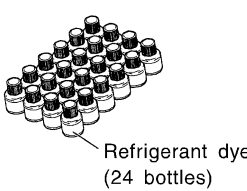
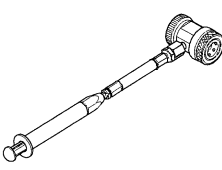

Connection type	O-ring size	Part number	D mm (in)	W mm (in)
New	8	92471 N8210	6.8 (0.268)	1.85 (0.0728)
Former		92470 N8200	6.07 (0.2390)	1.78 (0.0701)
New	12	92472 N8210	10.9 (0.429)	2.43 (0.0957)
Former		92475 71L00	11.0 (0.433)	2.4 (0.094)
New	16	92473 N8210	13.6 (0.535)	2.43 (0.0957)
Former		92475 72L00	14.3 (0.563)	2.3 (0.091)
New	19	92474 N8210	16.5 (0.650)	2.43 (0.0957)
Former		92477 N8200	17.12 (0.6740)	1.78 (0.0701)

O-RING AND REFRIGERANT CONNECTION

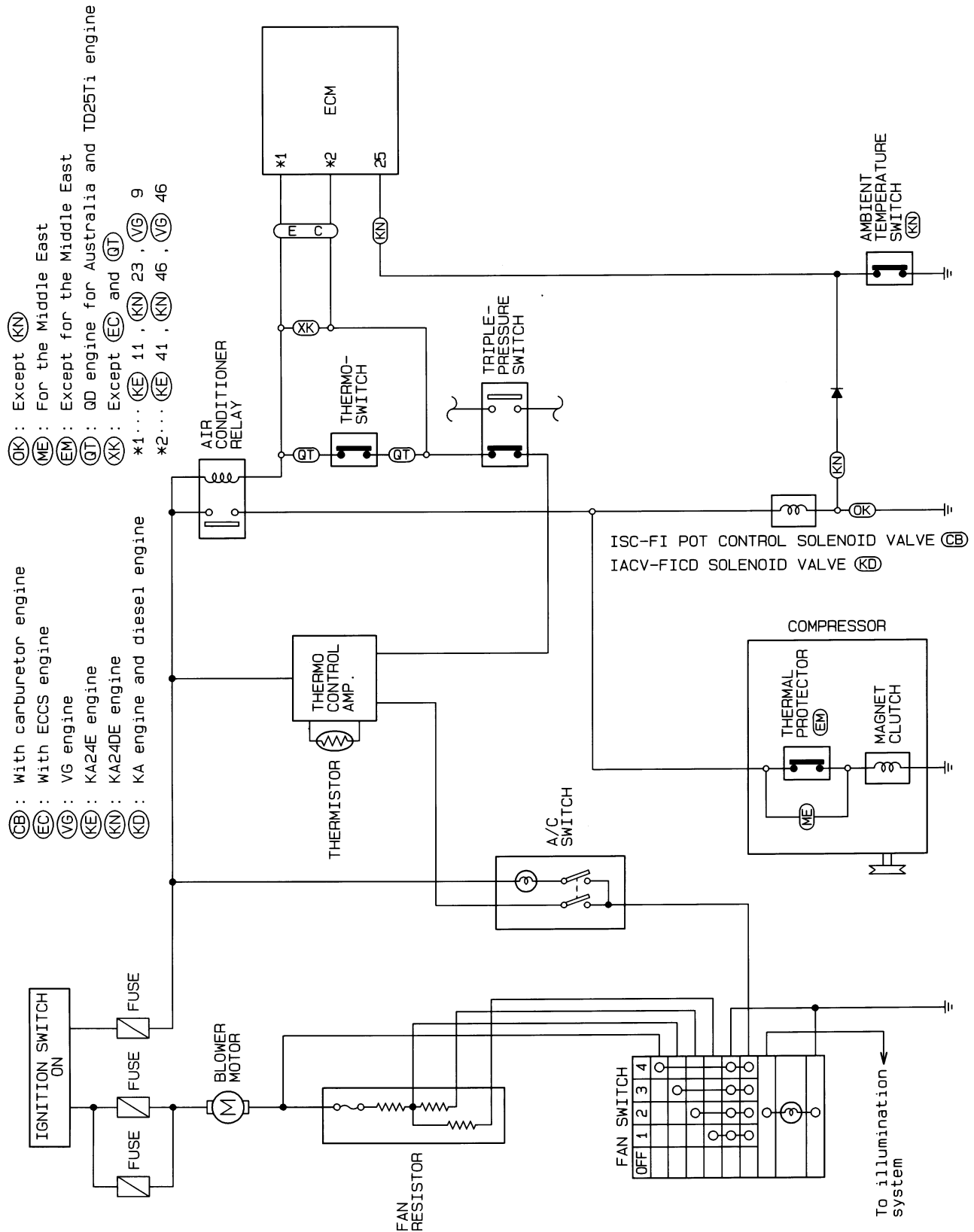
VG engine



HFC-134a (R-134a) Service Tools and Equipment

Tool number (Kent-Moore No.) Tool name	Description
(J-43926) Refrigerant dye leak detection kit Kit includes: (J-42220) UV lamp and UV safety glasses (J-41459) Refrigerant dye injector (J-41447) qty. 24 R-134a refrigerant dye (J-43872) Refrigerant dye cleaner	 <p>Power supply: DC 12V (Battery terminal)</p> <p>SHA437F</p>
(J-42220) Fluorescent dye leak detector	 <p>Power supply: DC 12V (Battery terminal) For checking refrigerant leak when fluorescent dye is installed in A/C system. Includes: UV lamp and UV safety glasses</p> <p>SHA438F</p>
(J-41447) R134a Fluorescent Leak Detection Dye (Box of 24, 1/4 ounce bottles)	 <p>Application: For R-134a PAG oil Container: 1/4 ounce (7.4 cc) bottle (Includes self-adhesive dye identification labels for affixing to vehicle after charging system with dye.)</p> <p>SHA439F</p>
(J-41459) R134a Dye Injector Use with J-41447, 1/4 ounce bottle	 <p>For injecting 1/4 ounce of Fluorescent Leak Detection Dye into A/C system.</p> <p>SHA440F</p>
(J-43872) Dye cleaner	 <p>For cleaning dye spills.</p> <p>SHA441F</p>

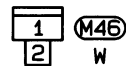
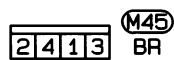
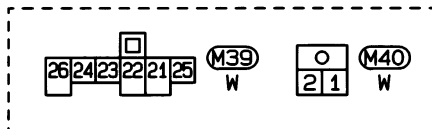
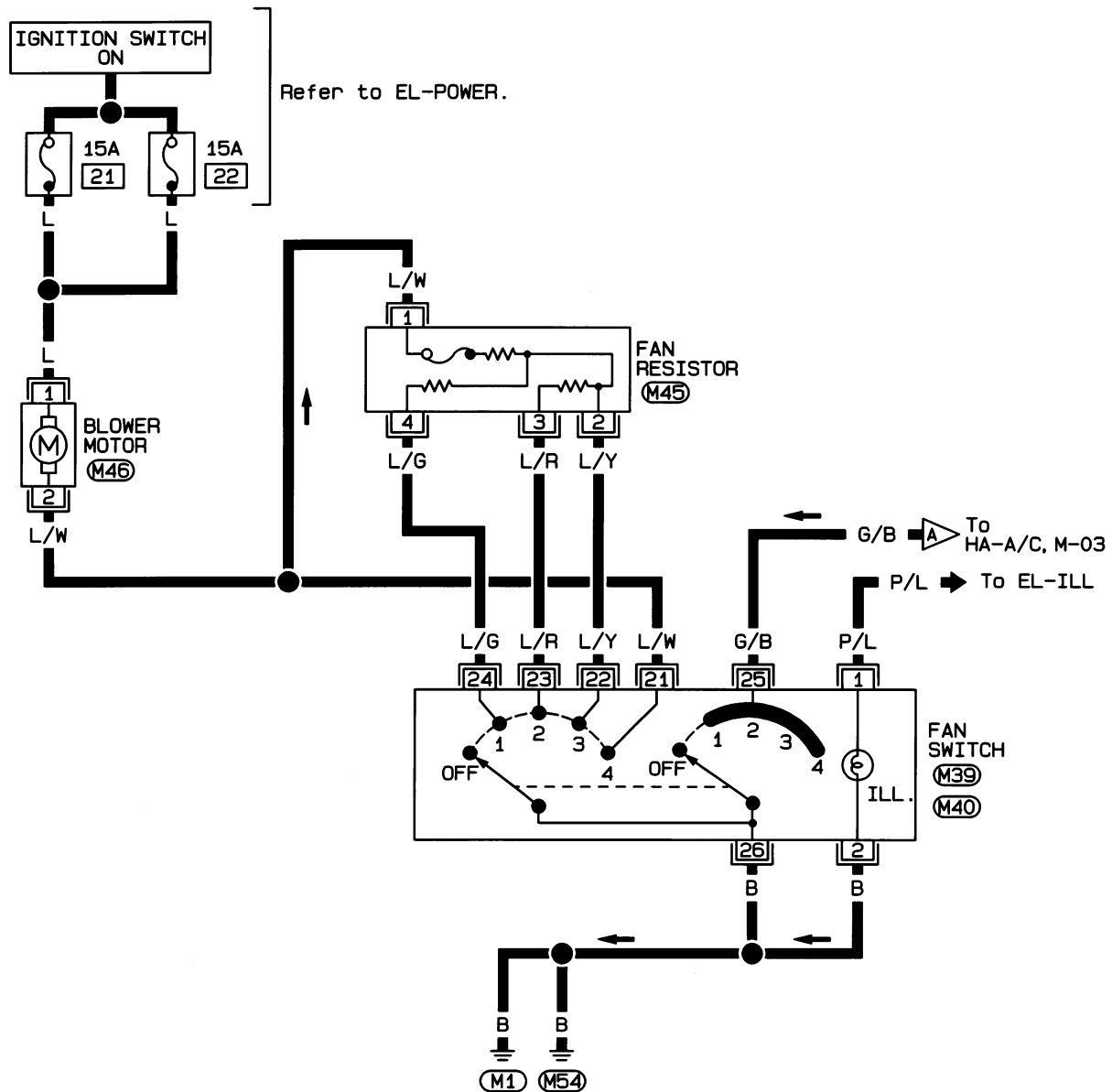
Circuit Diagram — Air Conditioner



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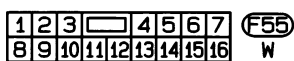
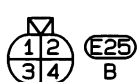
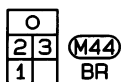
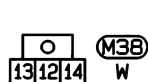
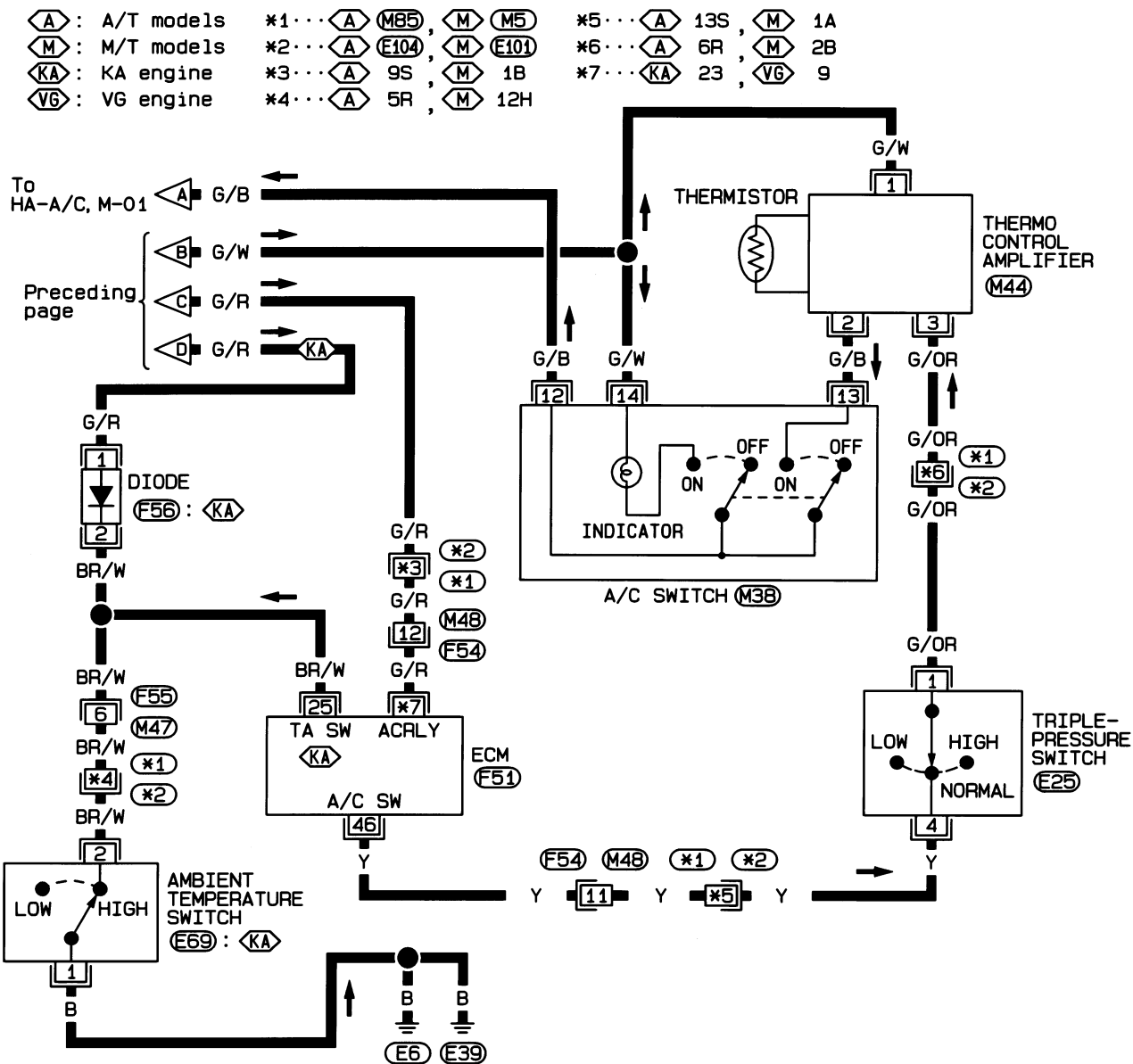
Wiring Diagram — A/C, M —/KA, VG Engine RHD Models

HA-A/C, M-01

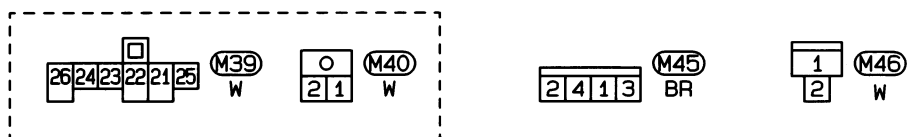


Wiring Diagram — A/C, M —/KA, VG Engine
RHD Models (Cont'd)

HA-A/C, M-03

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 (M5), (E101)
 (M85), (E104)
 (F51)

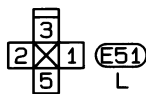
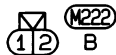
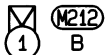
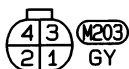
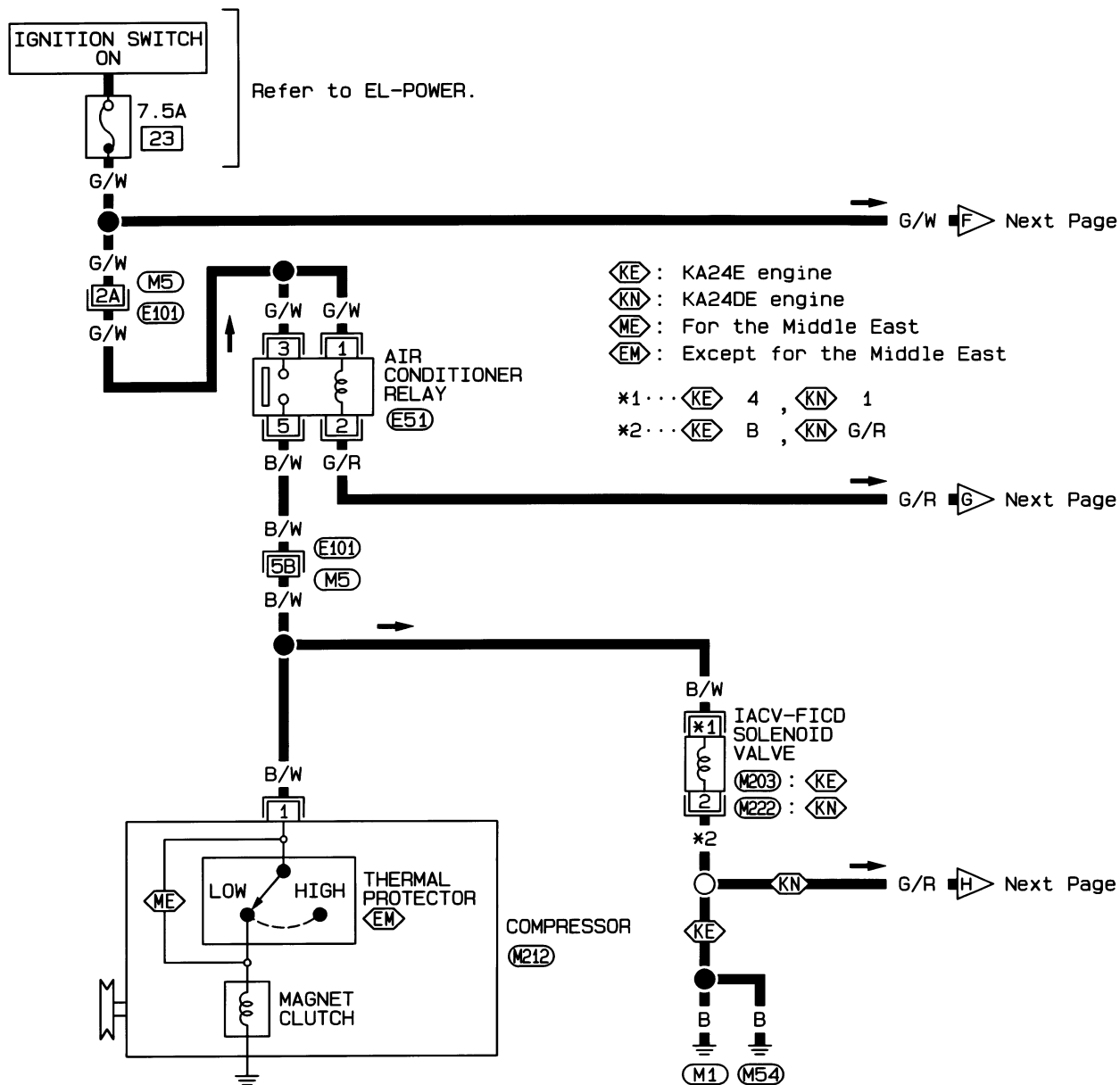
HA-A/C, M-04



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Wiring Diagram — A/C, M —/KA Engine LHD Models (Cont'd)

HA-A/C, M-05

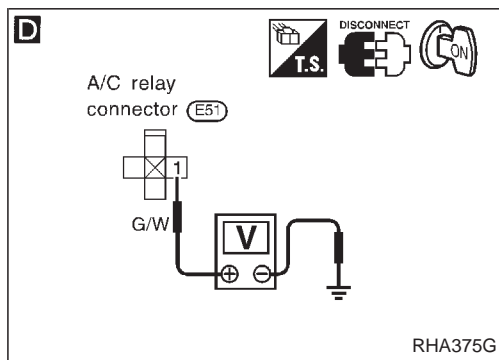
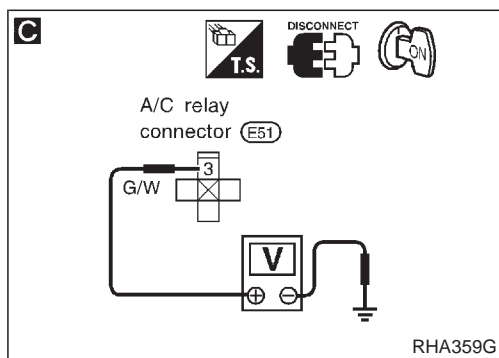
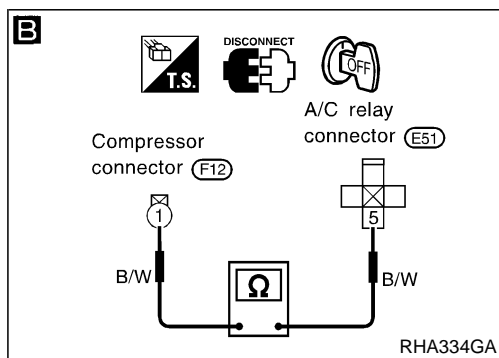
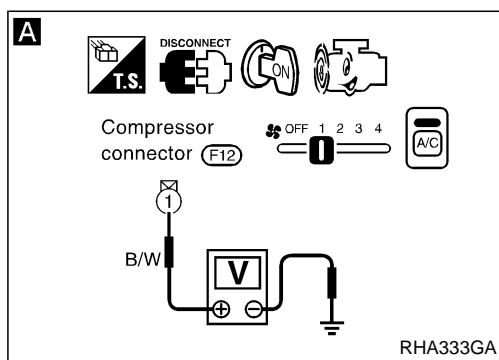


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M5, E101

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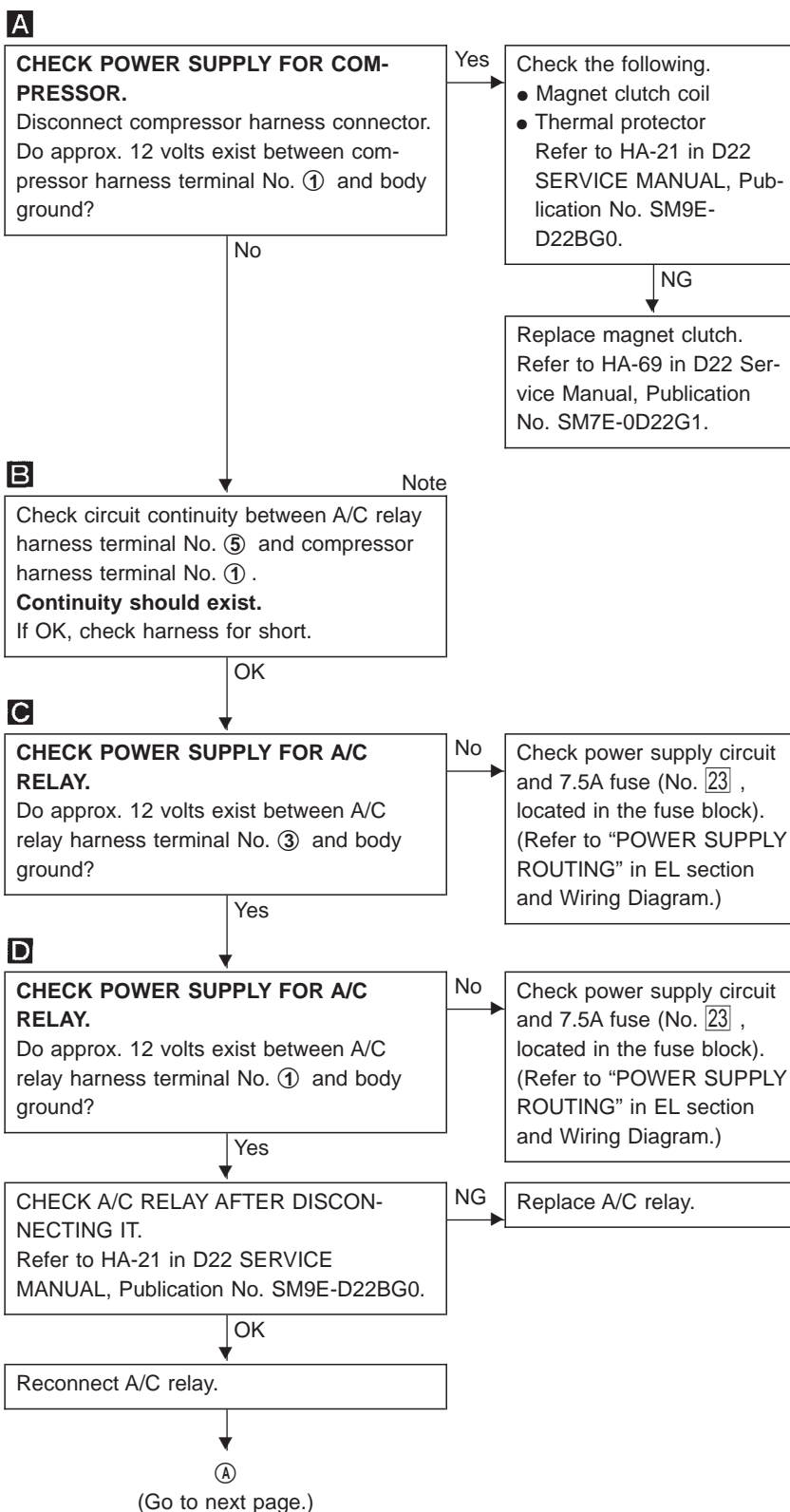


Magnet Clutch

DIAGNOSTIC PROCEDURE

KA, VG engine RHD models

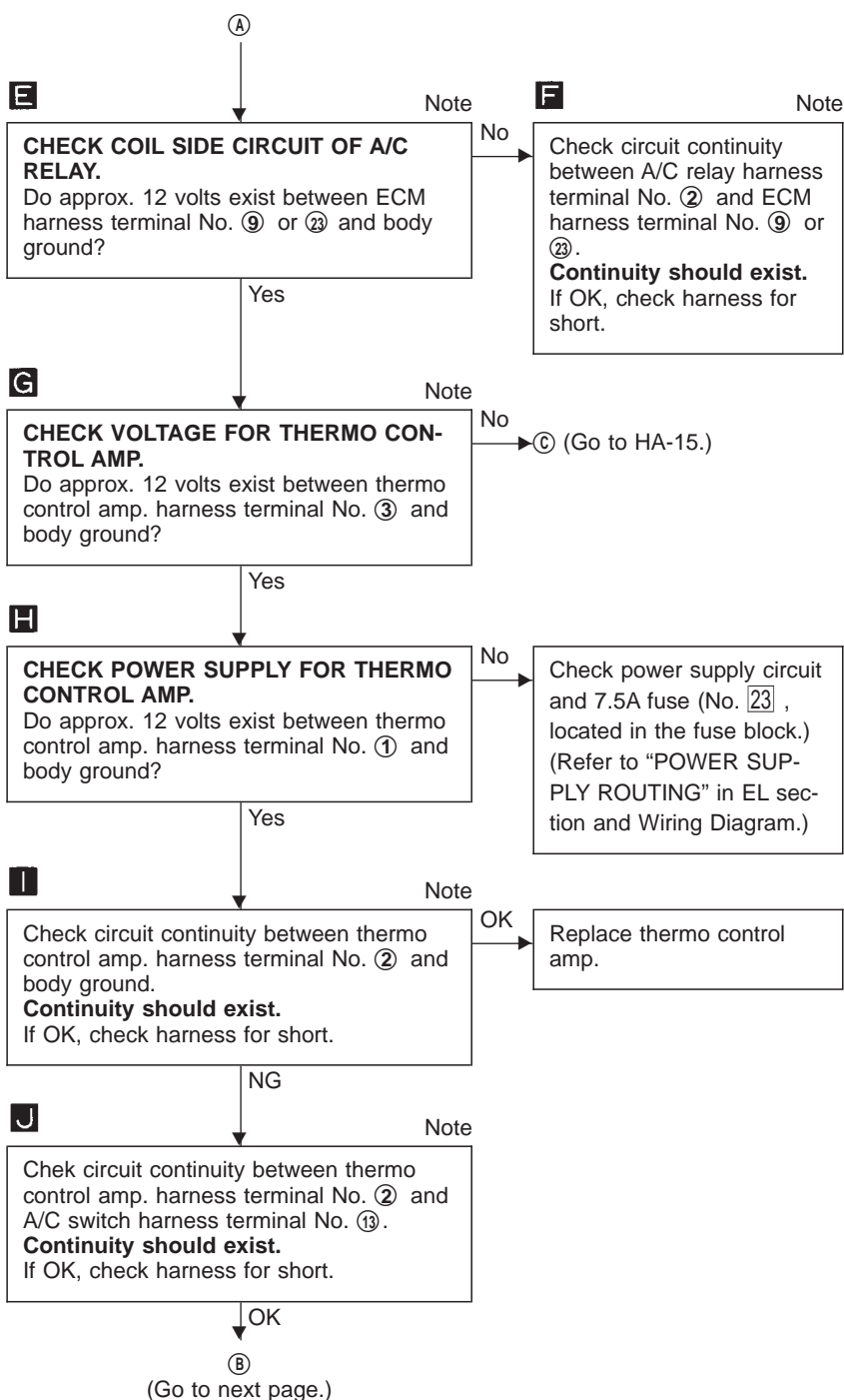
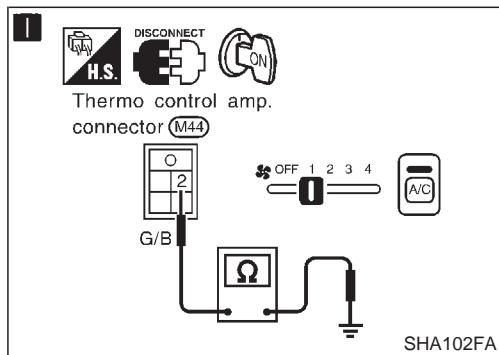
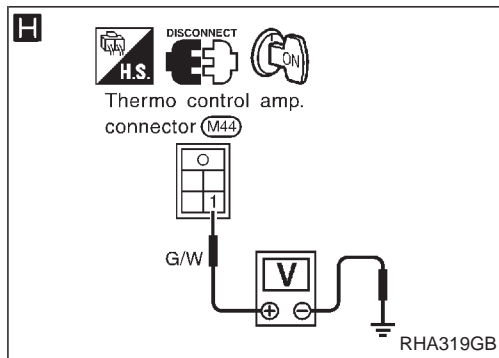
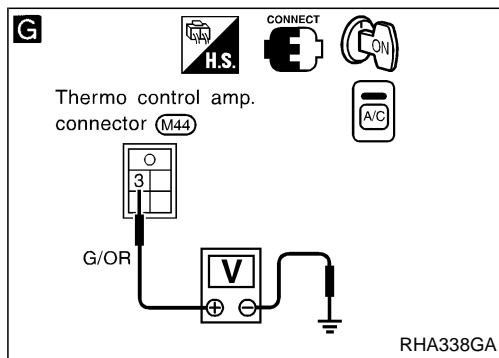
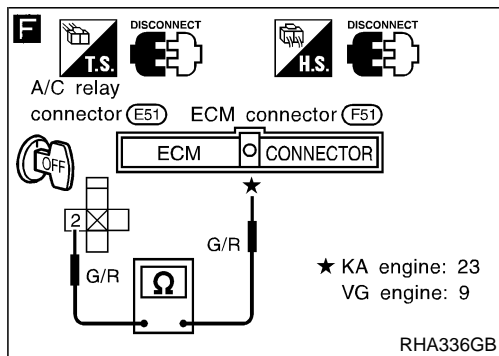
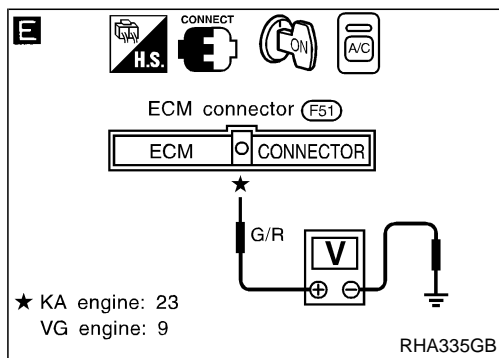
SYMPTOM: Magnet clutch does not engage when A/C switch and fan switch are ON.



Note:

If the result is NG or No after checking circuit continuity, repair harness or connector.

Magnet Clutch (Cont'd)

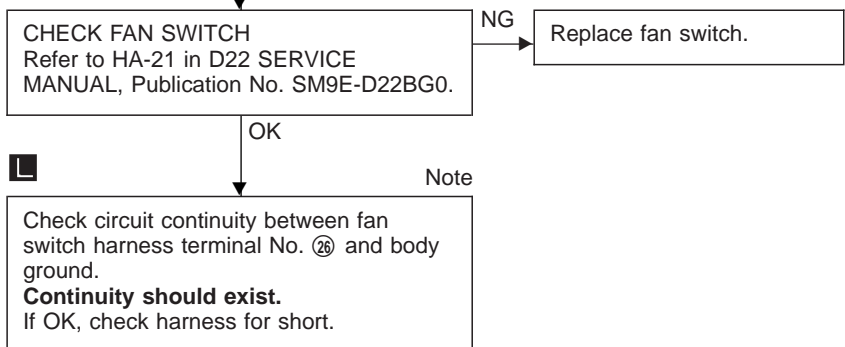
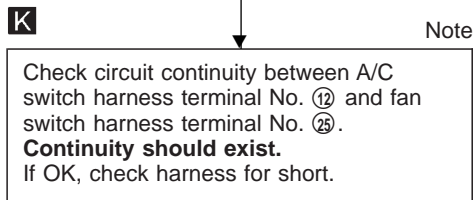
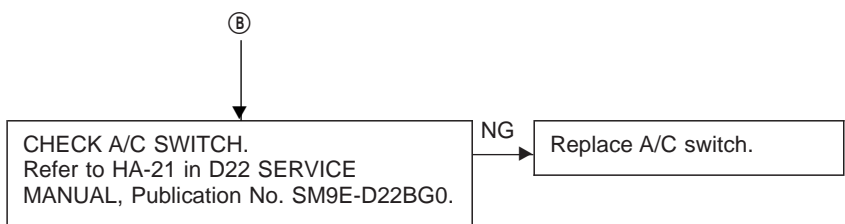
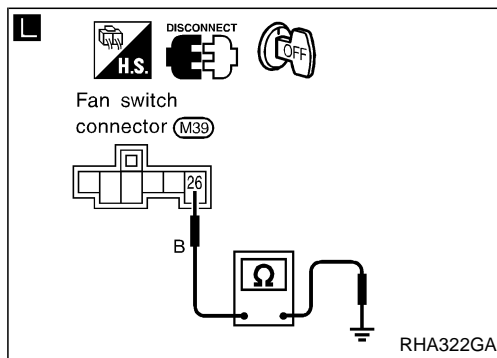
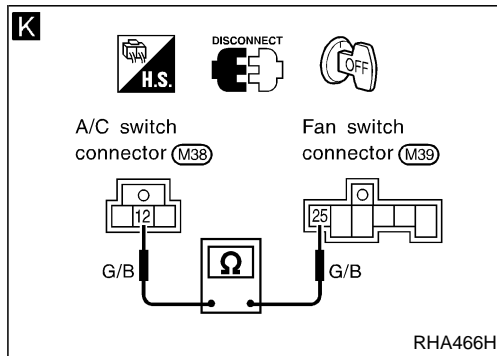
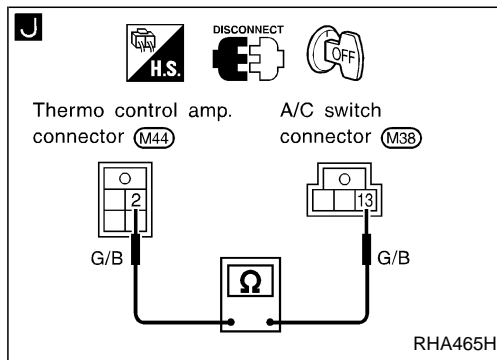


Note:

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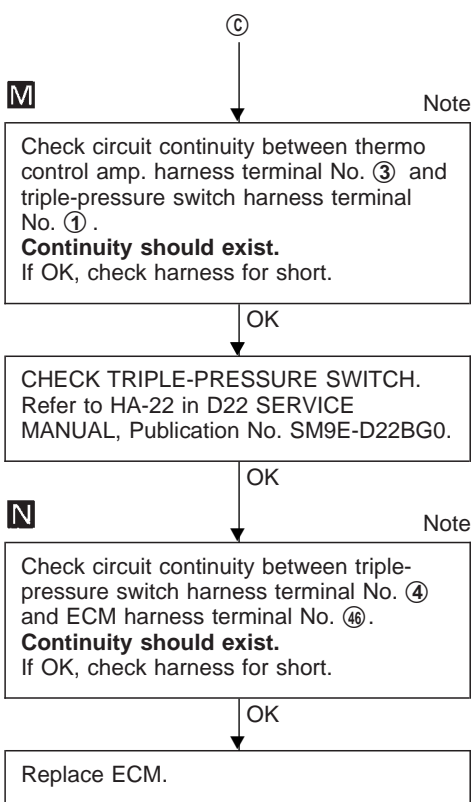
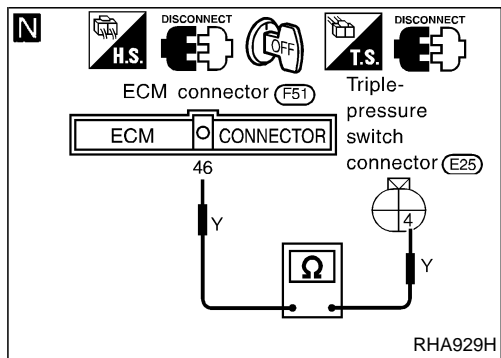
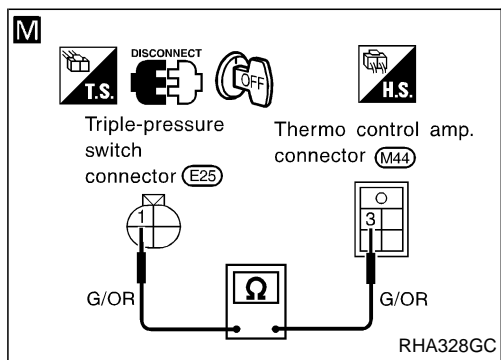
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Magnet Clutch (Cont'd)



Note:
If the result is NG or No after checking circuit continuity, repair
harness or connector.

Magnet Clutch (Cont'd)

**Note:**

If the result is NG or No after checking circuit continuity, repair harness or connector.

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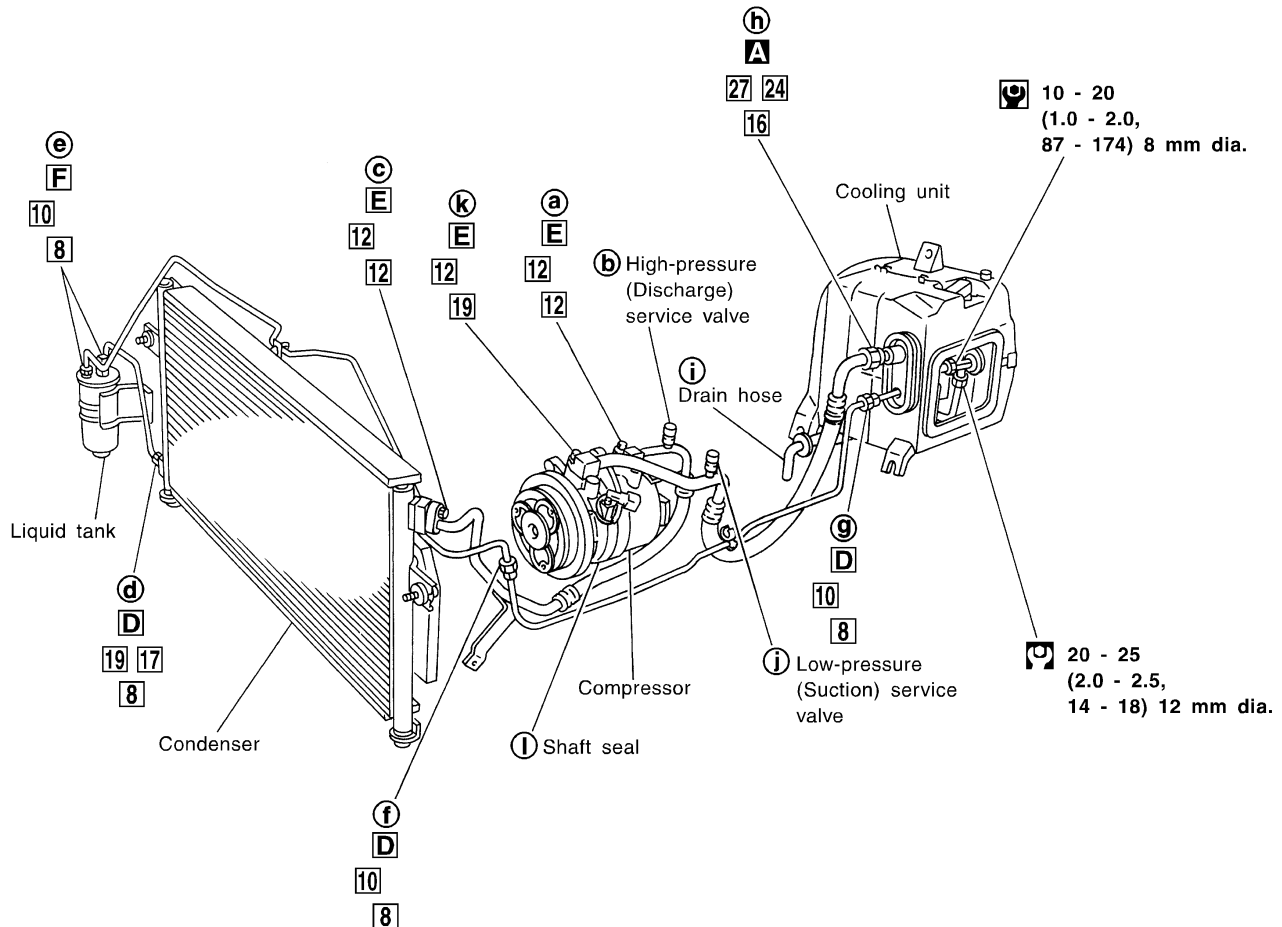
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Refrigerant Lines

- Refer to page HA-3 regarding "Precautions for Refrigerant Connection".

VG ENGINE



○ : Refrigerant leak checking order

□ : (Tightening torque)

□ □ : (Wrench size)

□ : (O-ring size)

⊙ : N·m (kg-m, ft-lb)

A : 20 - 29 (2.0 - 3.0, 14 - 22)

⊙ : N·m (kg-m, in-lb)

D : 10 - 20 (1.0 - 2.0, 87 - 174)

E : 8 - 11 (0.8 - 1.1, 69 - 95)

F : 3.0 - 3.9 (0.3 - 0.4, 26 - 34)

Refrigerant Lines (Cont'd)**CHECKING FOR REFRIGERANT LEAKS**

- Perform a visual inspection of all refrigeration parts, fittings, hoses and components for signs of A/C lubricant leakage, damage and corrosion. A/C lubricant leakage may indicate an area of refrigerant leakage. Allow extra inspection time in these areas when using either an electronic refrigerant leak detector or fluorescent dye leak detector. GI
MA
- If dye is observed, confirm the leak with an electronic refrigerant leak detector. It is possible a prior leak was repaired and not properly cleaned. EM
- When searching for leaks, do not stop when one leak is found but continue to check for additional leaks at all system components and connections. LC
- When searching for refrigerant leaks using an electronic leak detector, move the probe along the suspected leak area at 25 to 50 mm per second and no further than 1/4 inch from the component. EC
FE

NOTE:

Moving the electronic leak detector probe slower and closer to the suspected leak area will improve the chances of finding a leak. CL
MT

CHECKING SYSTEM FOR LEAKS USING THE FLUORESCENT LEAK DETECTOR

1. Check A/C system for leaks using the UV lamp and safety glasses (J-42220) in a low sunlight area (area without windows preferable). Illuminate all components, fittings and lines. The dye will appear as a bright green/yellow area at the point of leakage. Fluorescent dye observed at the evaporator drain opening indicates an evaporator core assembly (tubes, core or TXV) leak. AT
2. If the suspected area is difficult to see, use an adjustable mirror or wipe the area with a clean shop rag or cloth, then check the cloth with the UV lamp for dye residue. TF
PD
3. Confirm any suspected leaks with an approved electronic refrigerant leak detector. FA
4. After the leak is repaired, remove any residual dye using dye cleaner (J-43872) to prevent future misdiagnosis. RA
5. Perform a system performance check and verify the leak repair with an approved electronic refrigerant leak detector. BR

NOTE:

- **Other gases in the work area or substances on the A/C components, for example, anti-freeze, windshield washer fluid, solvents and lubricants, may falsely trigger the leak detector. Make sure the surfaces to be checked are clean. Clean with a dry cloth or blow off with shop air.** ST
RS
- **Do not allow the sensor tip of the detector to contact with any substance. This can also cause false readings and may damage the detector.** BT

DYE INJECTION

(This procedure is only necessary when re-charging the system or when the compressor has seized and was replaced.) HA
EL

1. Check A/C system static (at rest) Pressure. Pressure must be at least 345 kPa (3.45 bar, 3.52 kg/cm², 50 psi). IDX
2. Pour one bottle (1/4 ounce /7.4 cc) of the A/C refrigerant dye into the injector tool (J-41459).

Refrigerant Lines (Cont'd)

3. Connect the injector tool to the A/C LOW PRESSURE side service fitting.
4. Start engine and switch A/C ON.
5. When the A/C operating (compressor running), inject one bottle (1/4 ounce /7.4 cc) of fluorescent dye through the low-pressure service valve using dye injector tool J-41459 (refer to the manufacturer's operating instructions).
6. With the engine still running, disconnect the injector tool from the service fitting.

CAUTION:

Be careful not to allow dye to spray or drip when disconnecting the injector from the system.

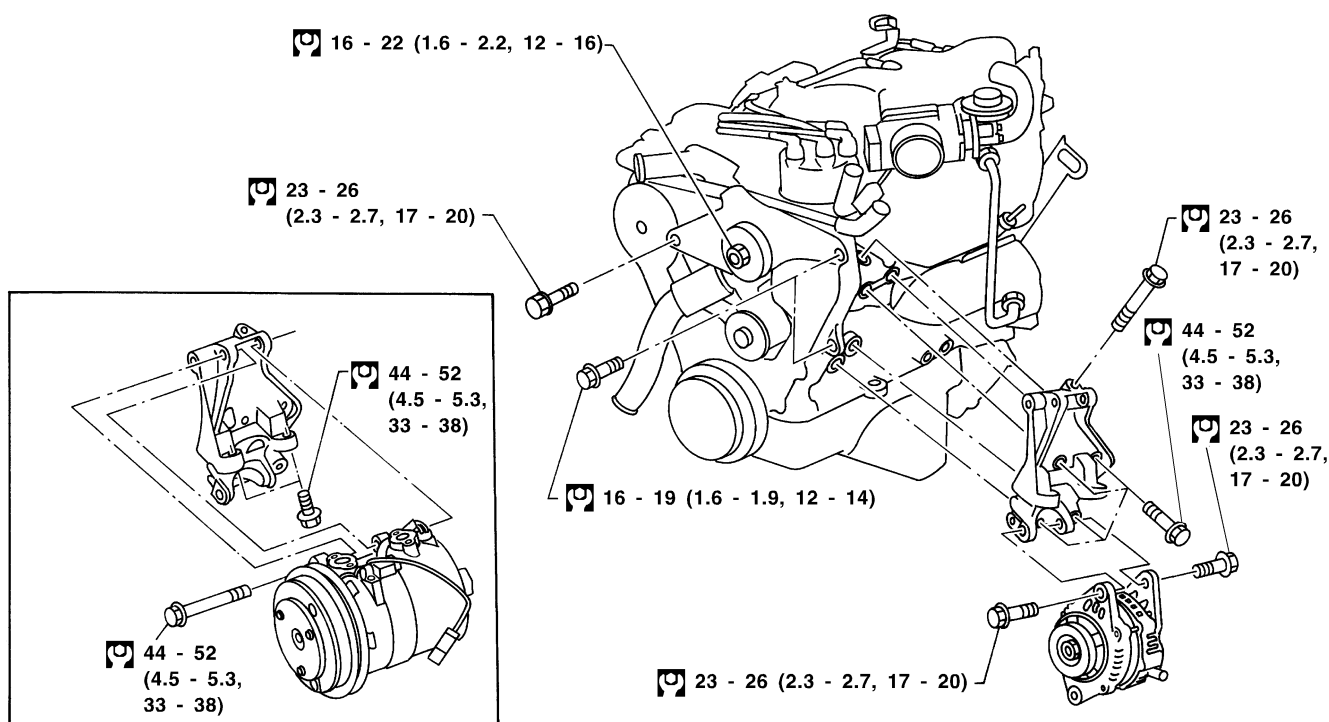
NOTE:


If repairing the A/C system or replacing a component, pour the dye directly into the open system connection and proceed with these service procedures.

7. Operate the A/C system for a minimum of 20 minutes to mix the dye with the system oil. Depending on the leak size, operating conditions and location of the leak, it may take from minutes to days for the dye to penetrate a leak and become visible.

Compressor Mounting

VG engine model



 : N·m (kg-m, ft-lb)

RHA497B