

SECTION HA

MODIFICATION NOTICE:

- Wiring Diagrams have been changed.
- Thermo switch has been abolished.
- A/C cycle for YD engine has been added. (For Europe)

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MANUAL AND AUTO

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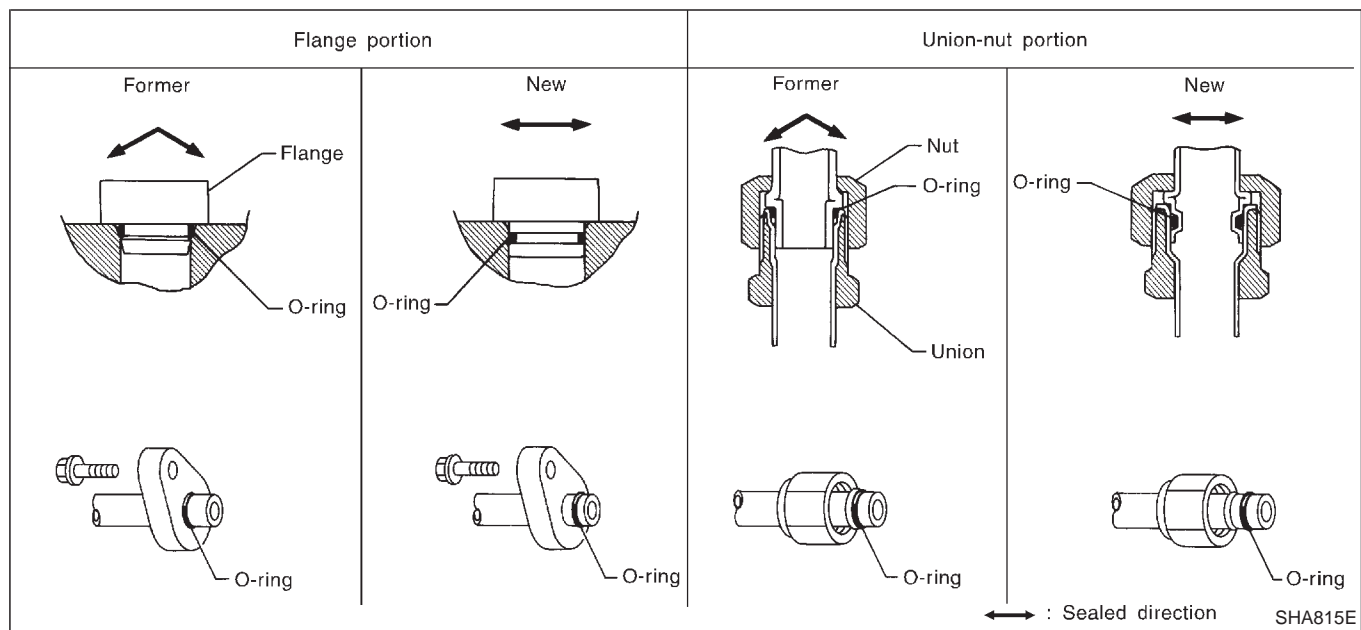
Precautions for Refrigerant Connection

A new type refrigerant connection has been introduced to all refrigerant lines except the following location.

- Expansion valve to cooling unit

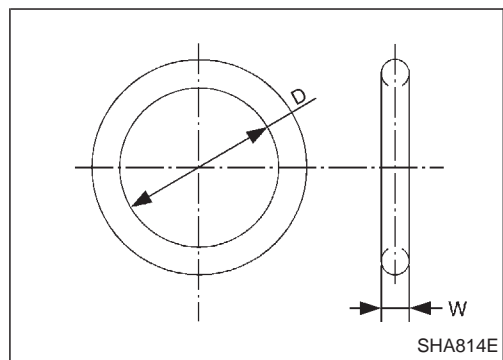
FEATURES OF NEW TYPE REFRIGERANT CONNECTION

- The O-ring has been relocated. It has also been provided with a groove for proper installation. This eliminates the chance of the O-ring being caught in, or damaged by, the mating part. The sealing direction of the O-ring is now set vertically in relation to the contacting surface of the mating part to improve sealing characteristics.
- The reaction force of the O-ring will not occur in the direction that causes the joint to pull out, thereby facilitating piping connections.



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.



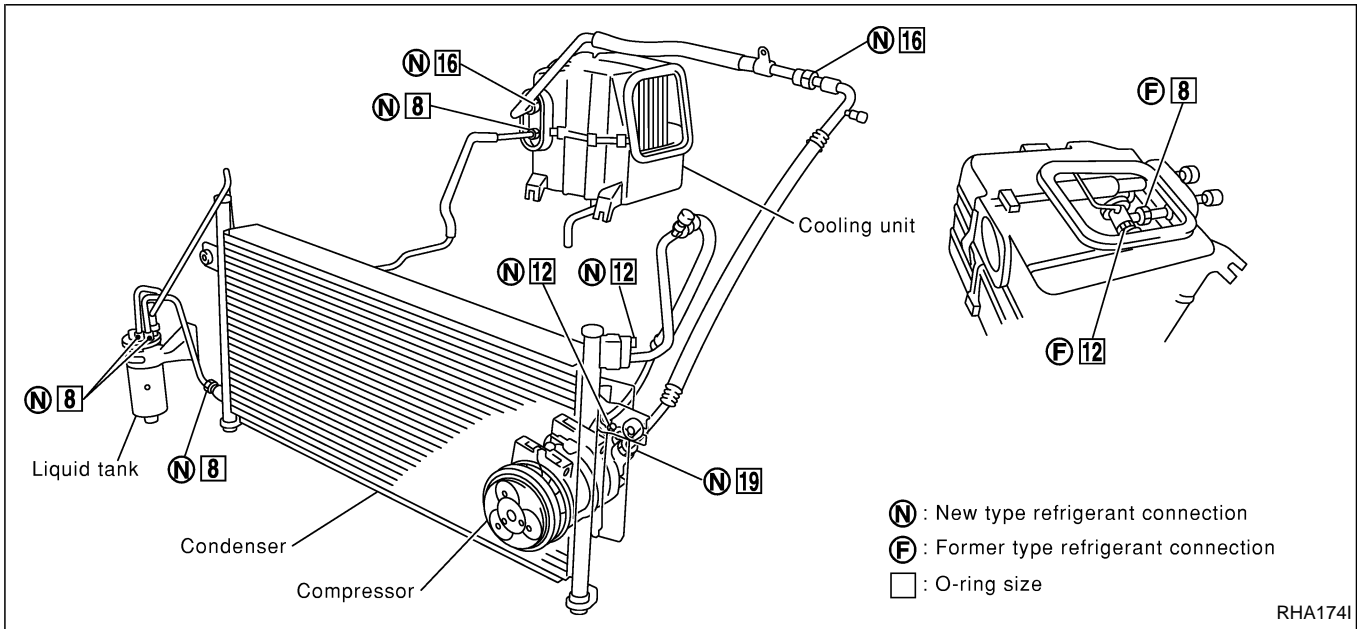
O-ring part numbers and specifications

| Connection type | O-ring size | Part number | D mm (in) | W mm (in) |
|-----------------|-------------|-------------|----------------|---------------|
| New | 8 | 92471 N8210 | 6.8 (0.268) | 1.87 (0.0736) |
| 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) |

Precautions for Refrigerant Connection
(Cont'd)

O-RING AND REFRIGERANT CONNECTION

YD engine for Europe

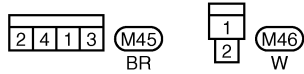
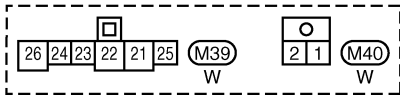
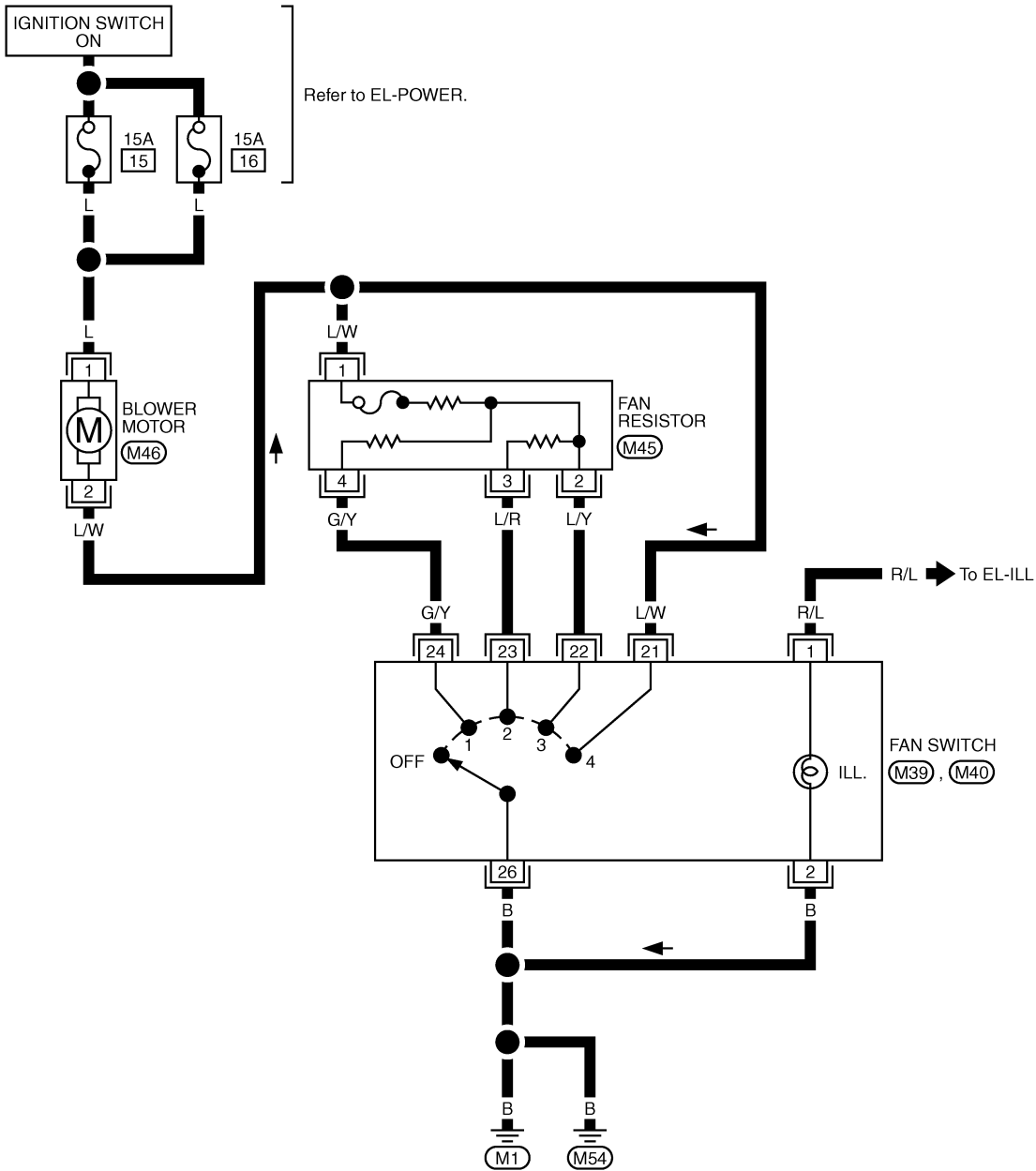


NOTE:
This illustration is for LHD models. For RHD models, cooling unit location and routing of A/C piping are different.

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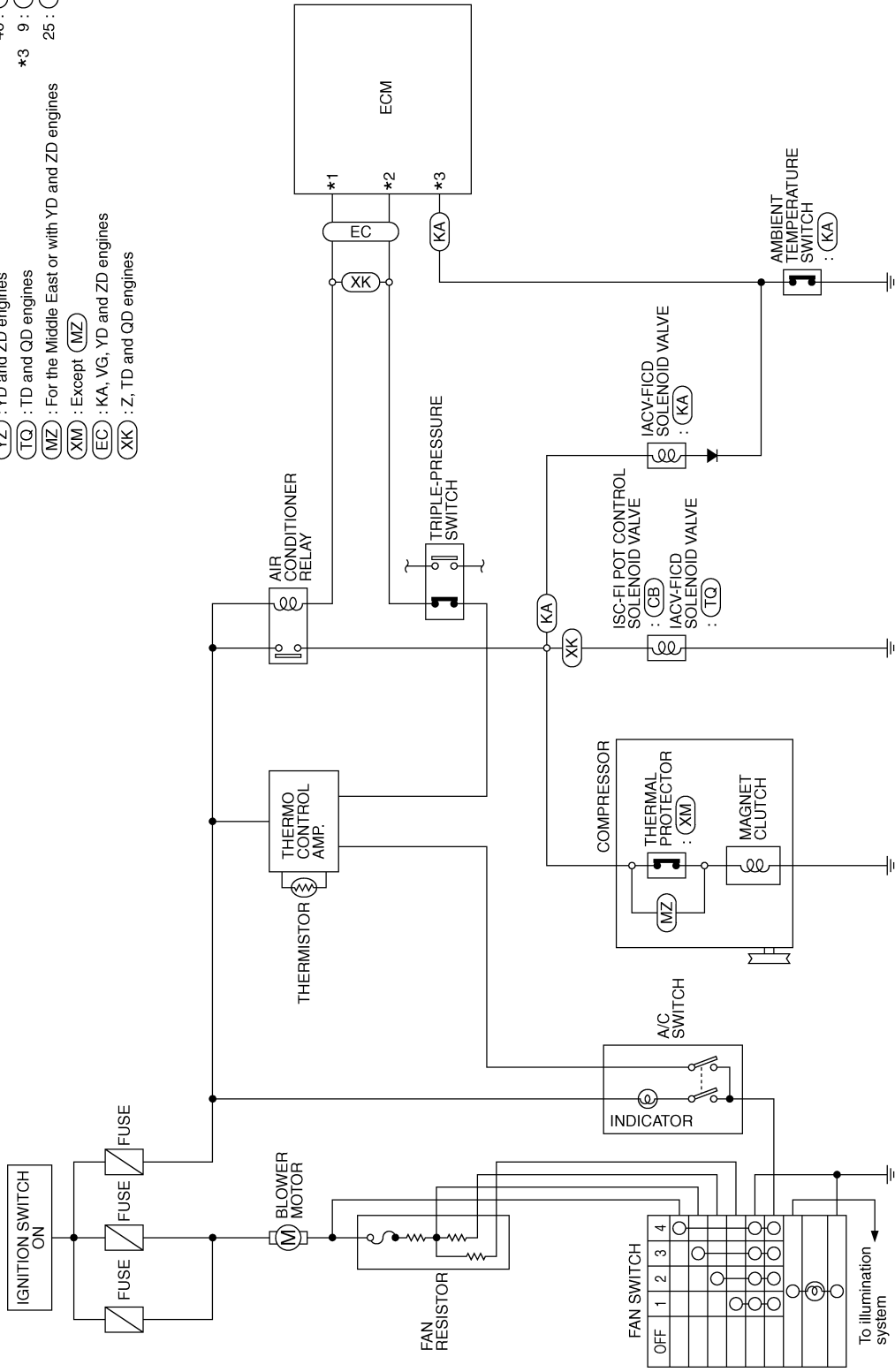
Wiring Diagram — HEATER —

HA-HEATER-01



Circuit Diagram — A/C, M —

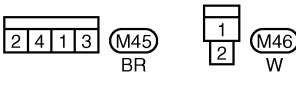
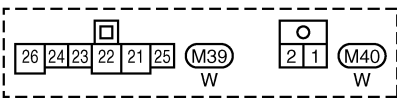
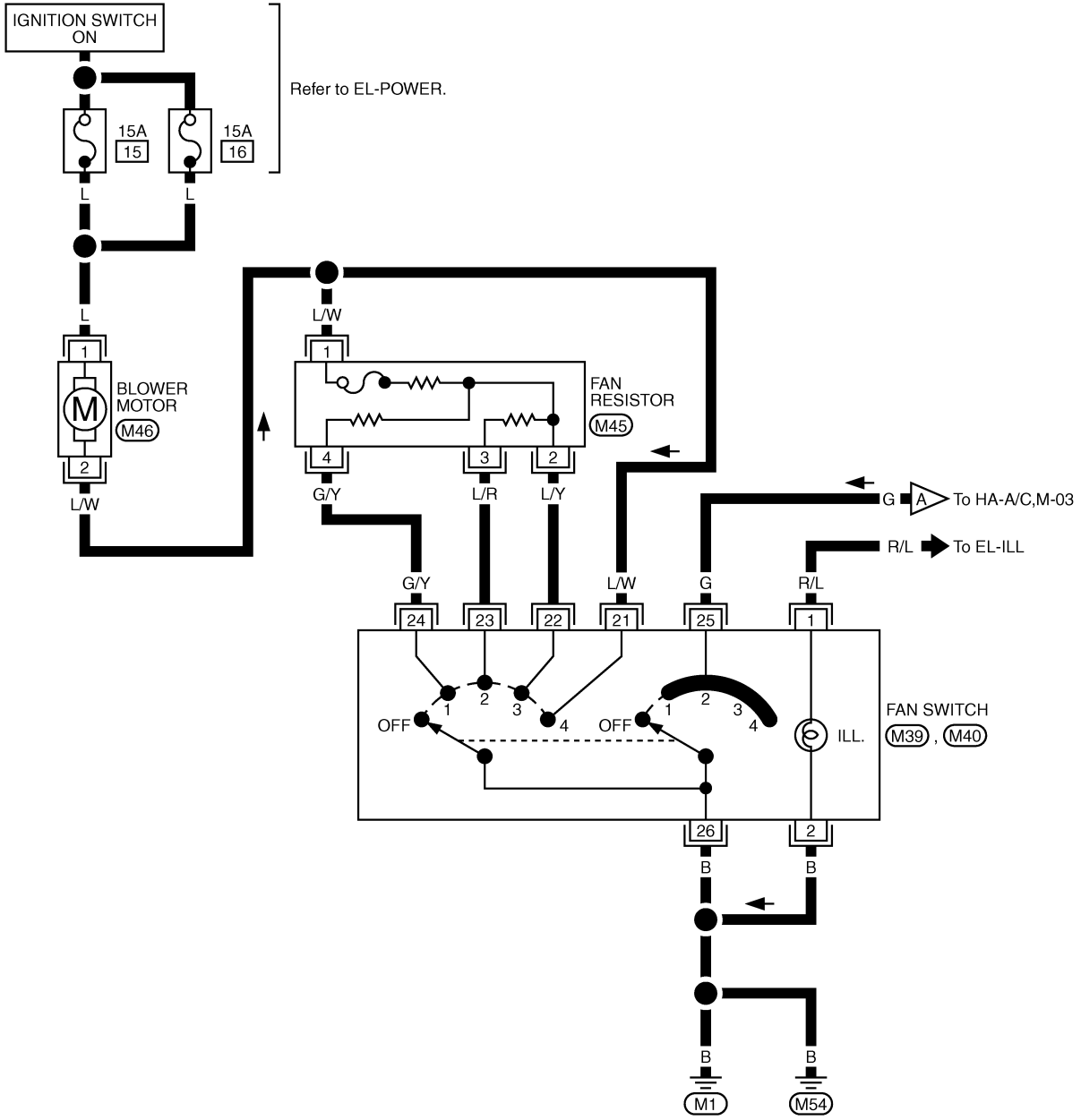
- (CB) : Z24S engine
 - (VG) : VG engine
 - (KA) : KA engine
 - (KU) : KA engine for Europe
 - (KN) : KA engine except for Europe
 - (YZ) : YD and ZD engines
 - (TQ) : TD and QD engines
 - (MZ) : For the Middle East or with YD and ZD engines
 - (XM) : Except (MZ)
 - (EC) : KA, VG, YD and ZD engines
 - (XK) : Z, TD and QD engines
- *1 12 : (KU)
 - 23 : (KN)
 - 9 : (VG)
 - 15 : (YZ)
 - *2 21 : (KU), (YZ)
 - 46 : (KN), (VG)
 - *3 9 : (KU)
 - 25 : (KN)



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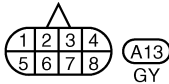
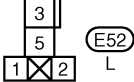
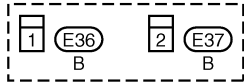
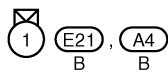
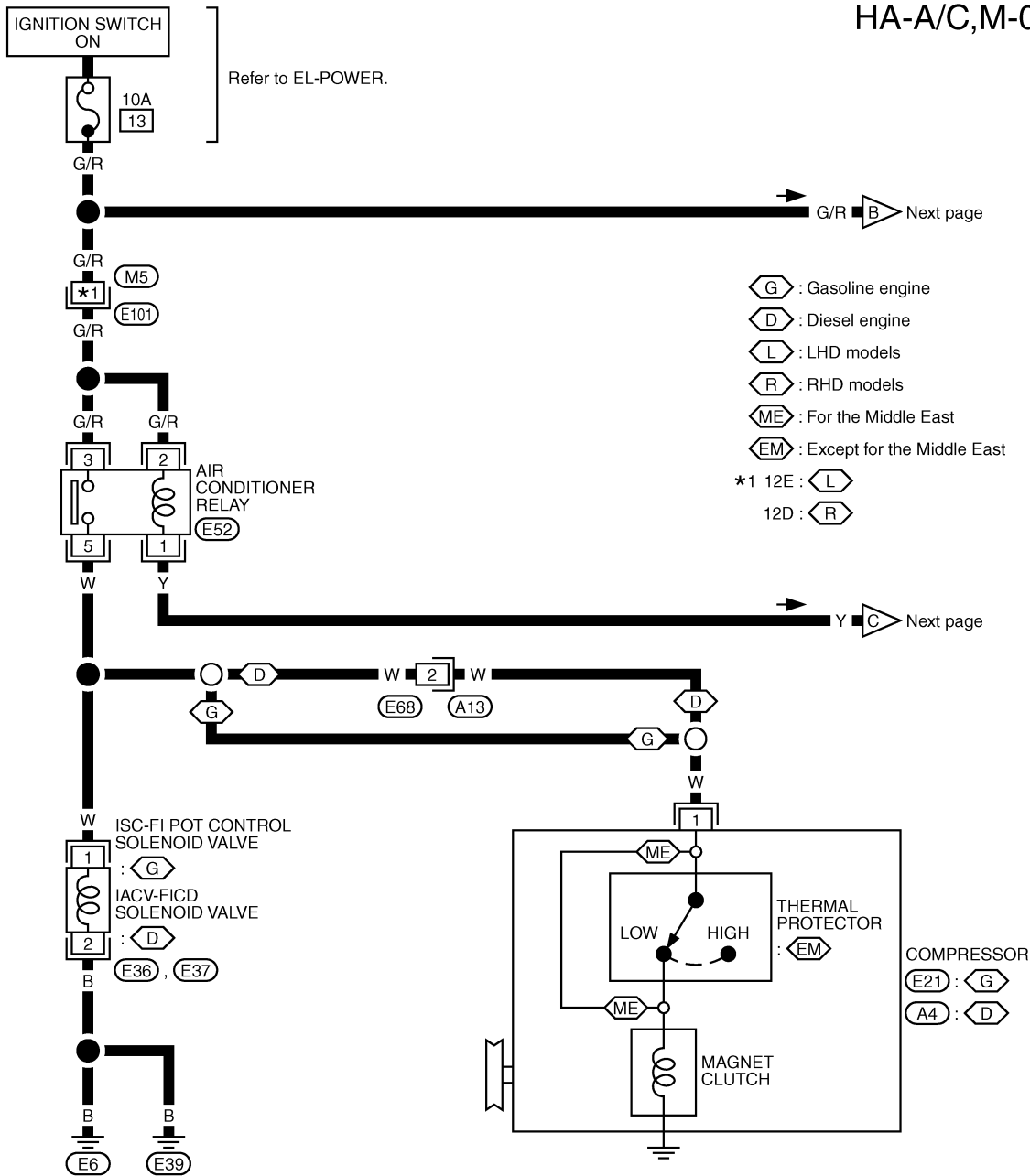
Wiring Diagram — A/C, M —/Z, TD, QD Engine Models

HA-A/C,M-01



Wiring Diagram — A/C, M —/Z, TD, QD Engine Models (Cont'd)

HA-A/C,M-02



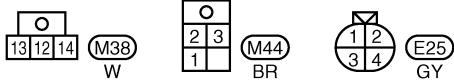
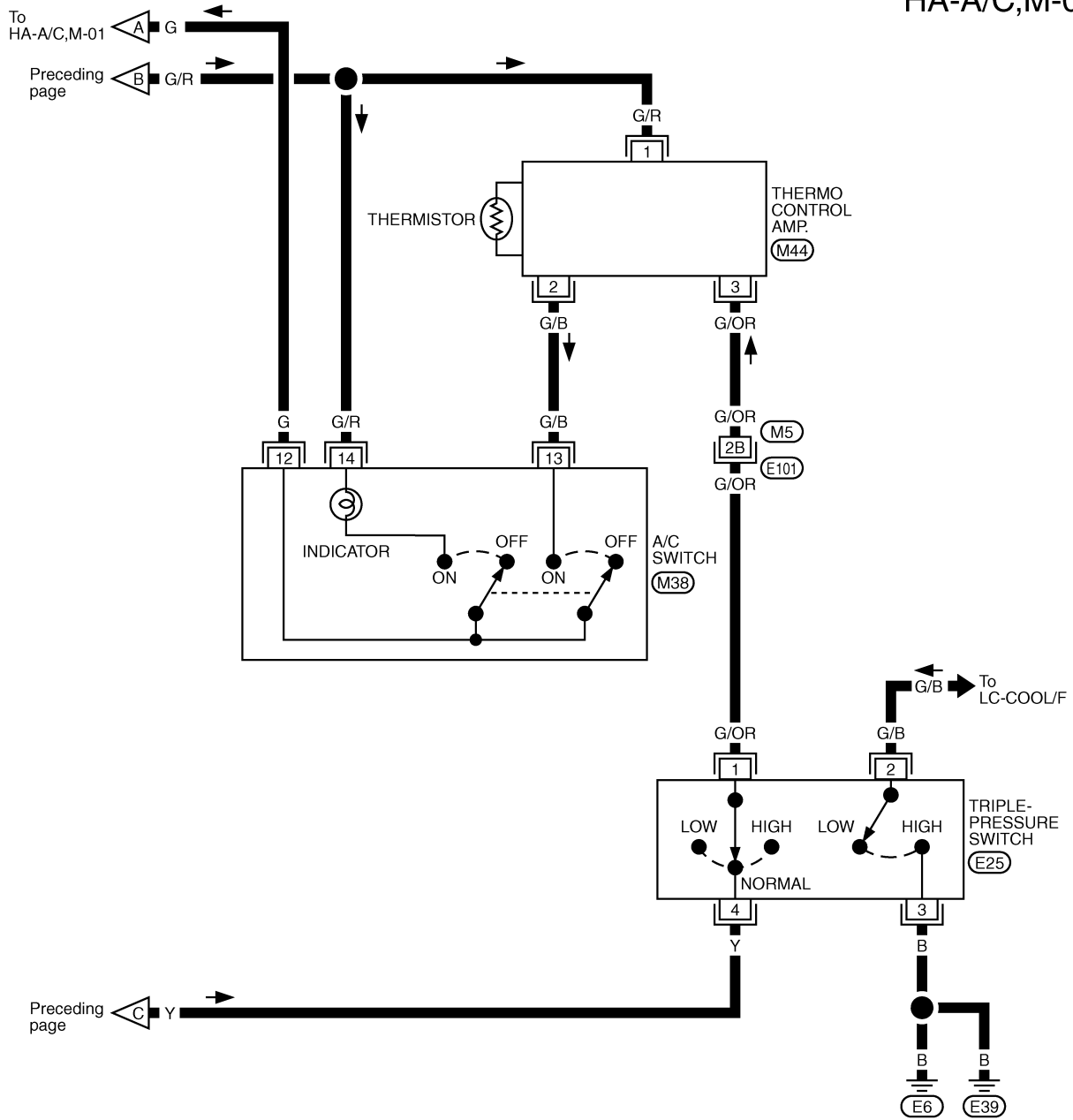
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M5, E101

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Wiring Diagram — A/C, M —/Z, TD, QD Engine Models (Cont'd)

HA-A/C,M-03

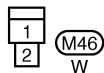
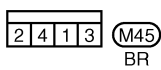
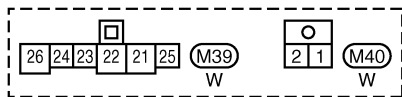
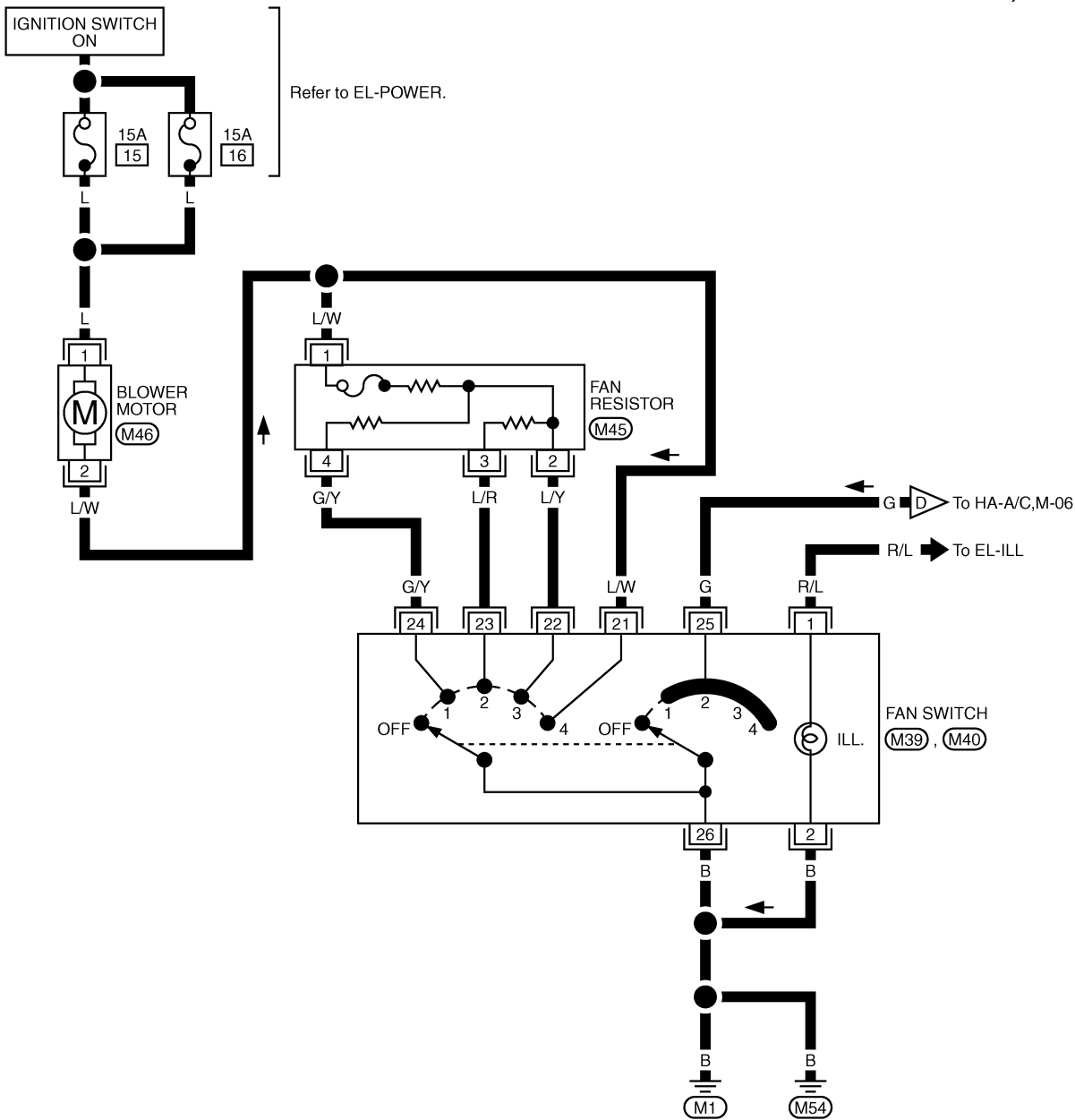


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(M5), (E101)

Wiring Diagram — A/C, M —/LHD Models with KA, YD, ZD Engine

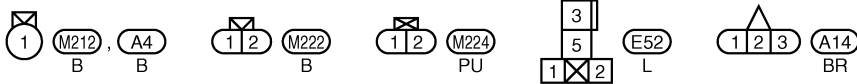
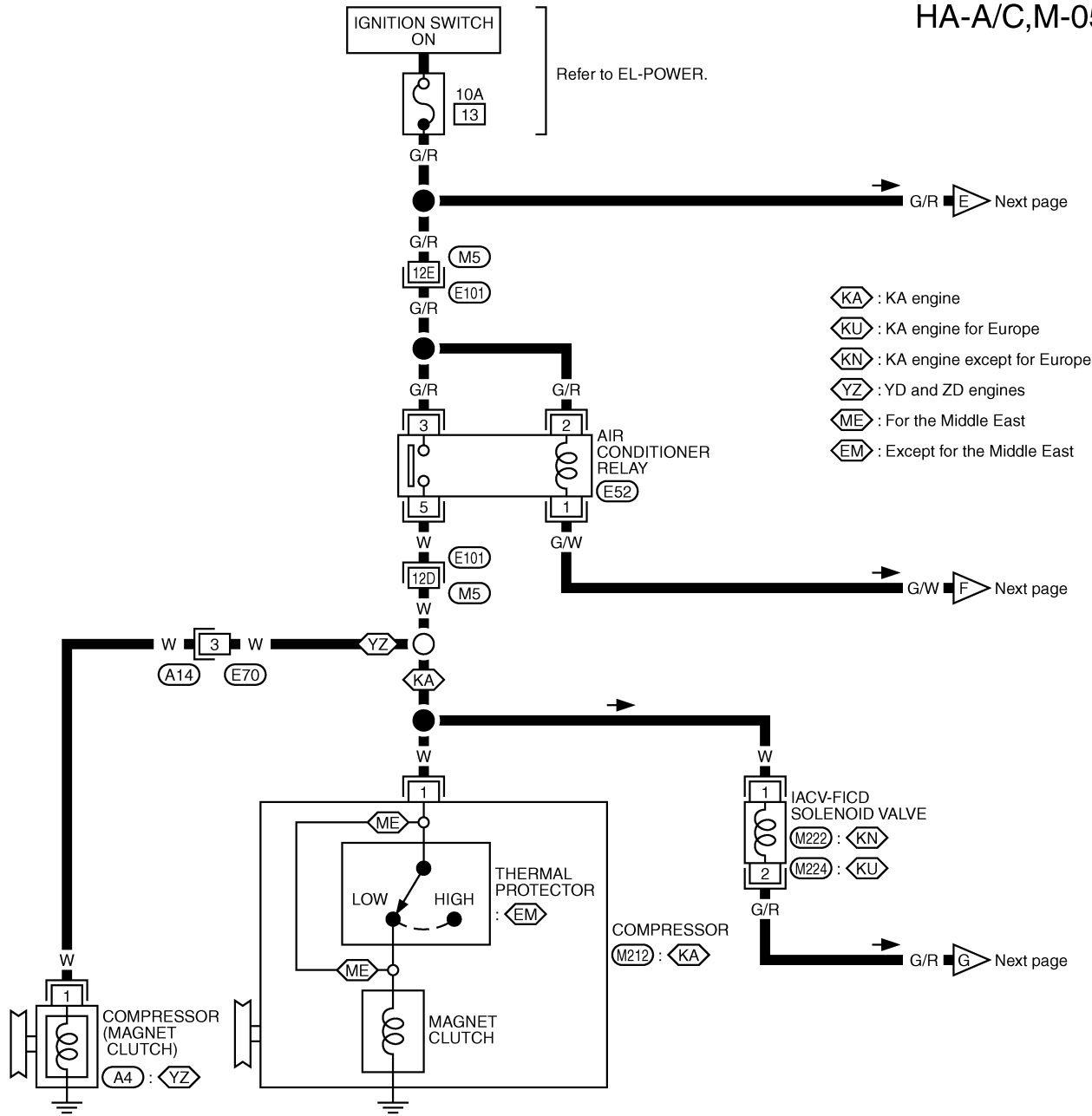
HA-A/C,M-04



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

HA-A/C,M-05

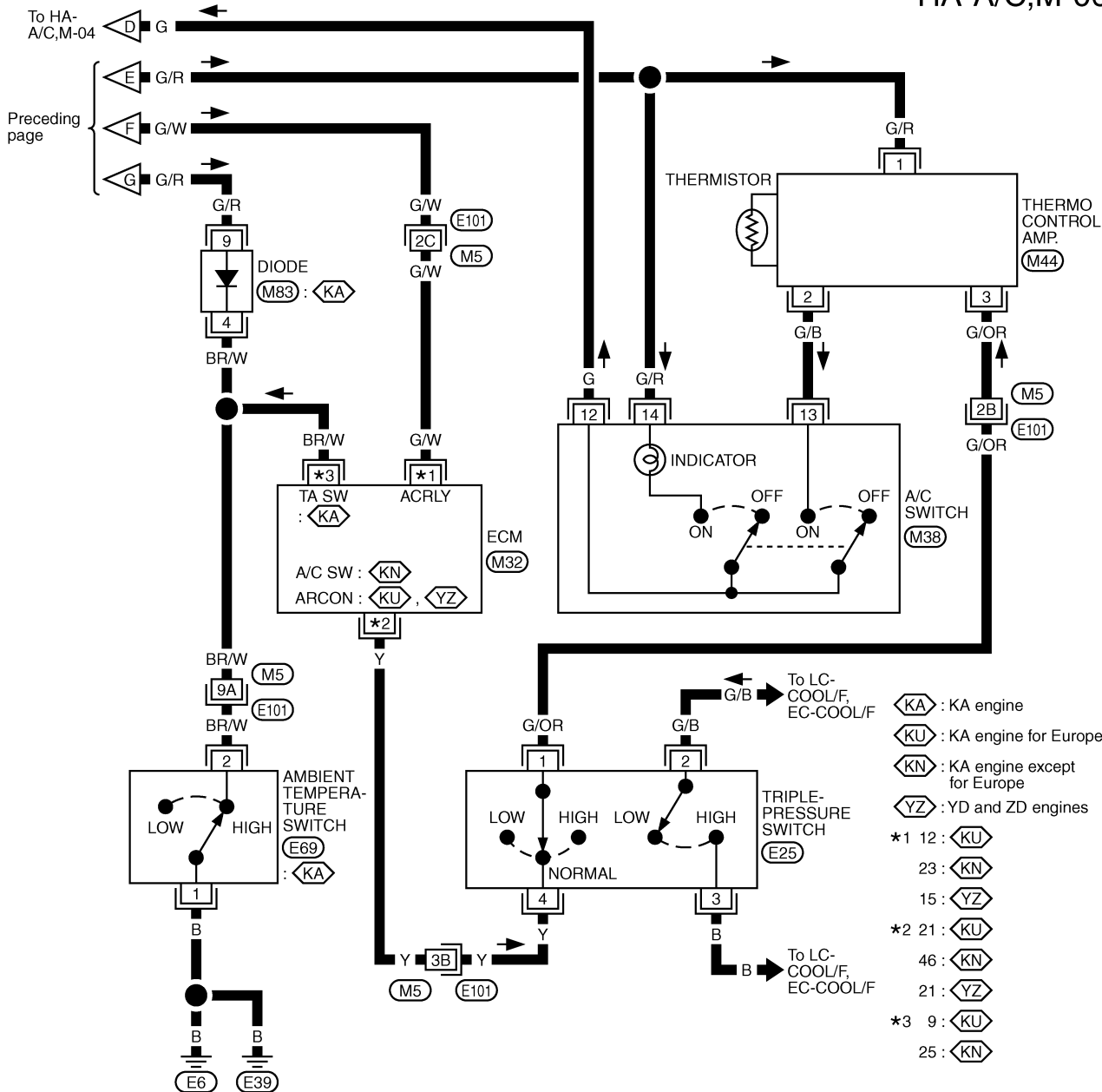


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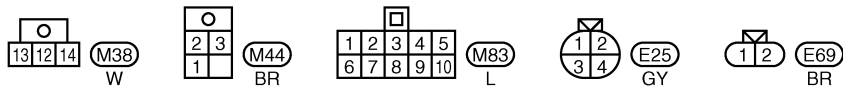
M5, E101

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

HA-A/C,M-06



- ⬡ KA : KA engine
- ⬡ KU : KA engine for Europe
- ⬡ KN : KA engine except for Europe
- ⬡ YZ : YD and ZD engines
- *1 12: ⬡ KU
- 23: ⬡ KN
- 15: ⬡ YZ
- *2 21: ⬡ KU
- 46: ⬡ KN
- 21: ⬡ YZ
- *3 9: ⬡ KU
- 25: ⬡ KN



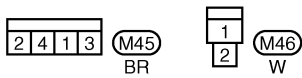
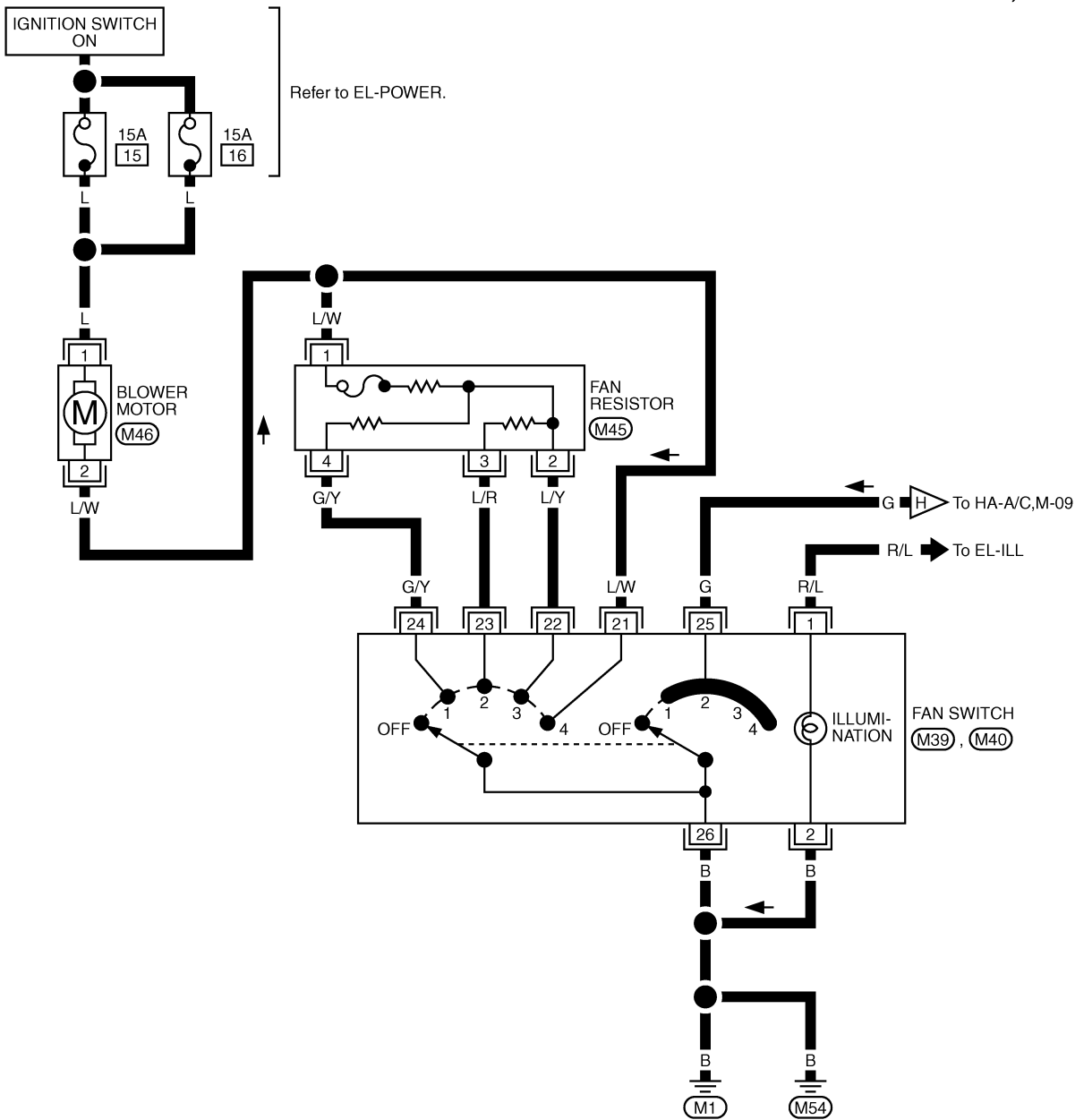
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- ⬡ (circle) : M5, E101
- ⬡ (circle) : M32

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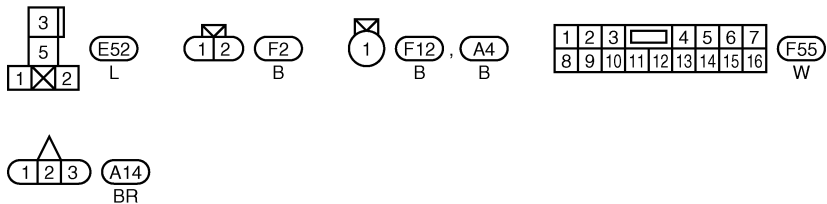
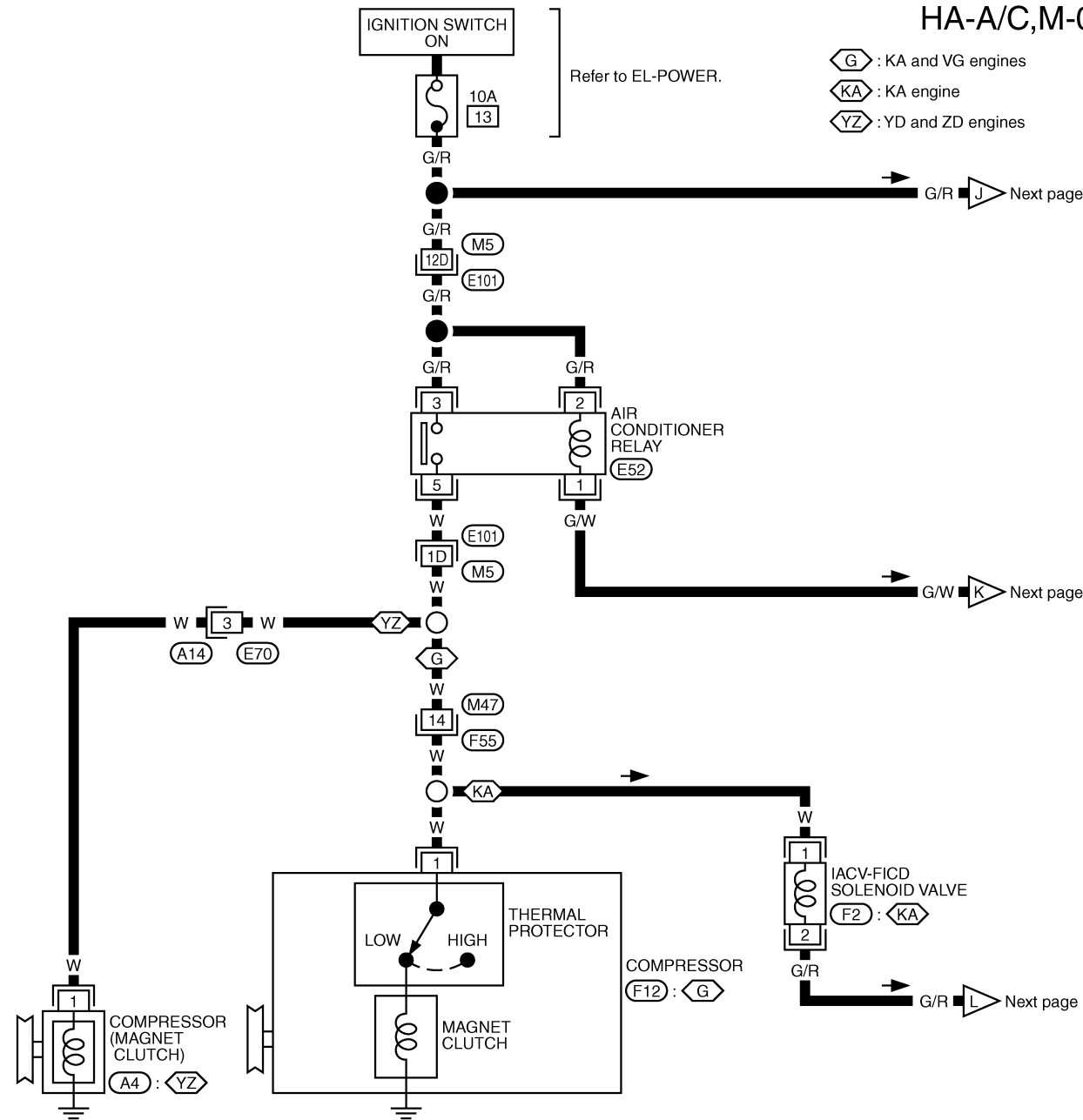
Wiring Diagram — A/C, M —/RHD Models with KA, VG, YD, ZD Engine

HA-A/C,M-07



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

HA-A/C,M-08



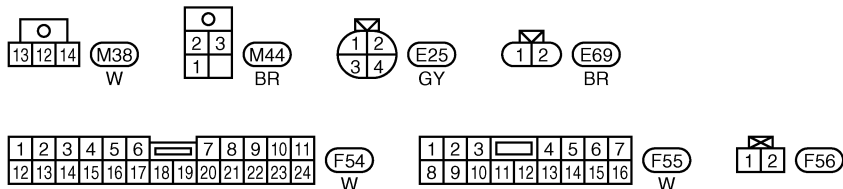
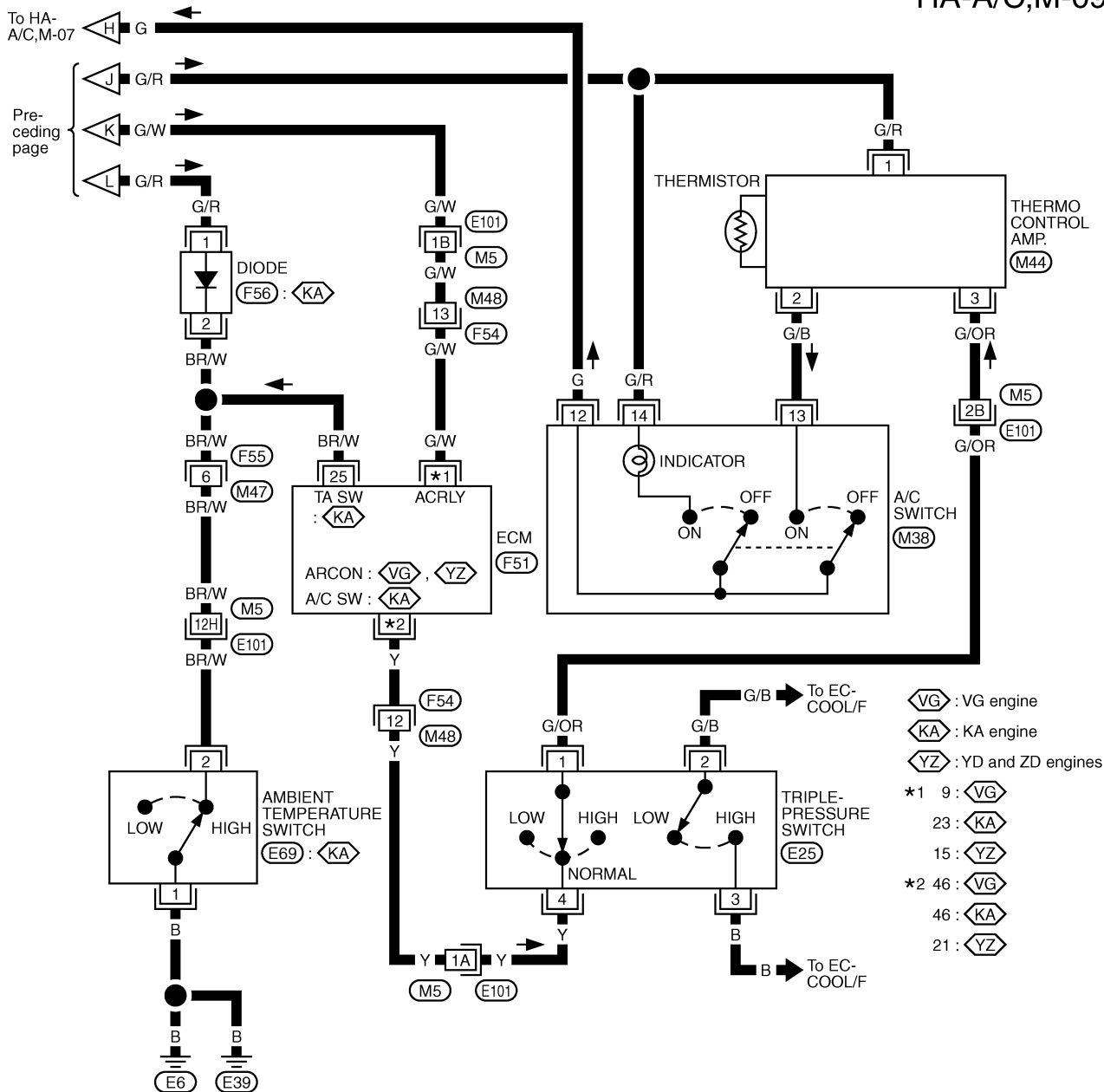
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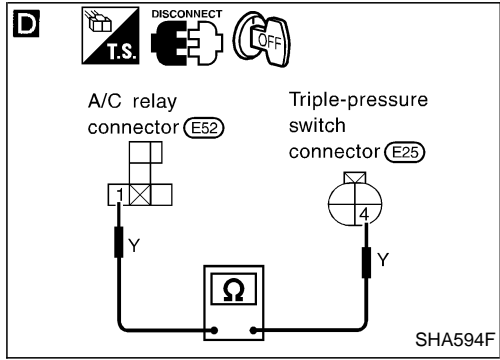
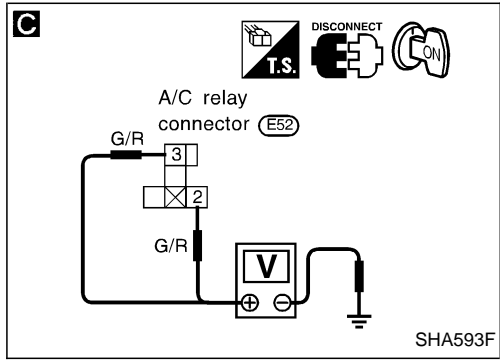
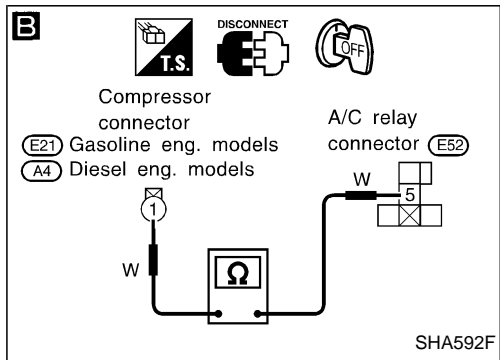
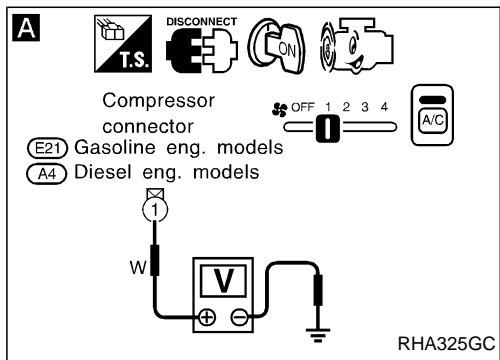
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Wiring Diagram — A/C, M —/RHD Models with KA, VG, YD, ZD Engine (Cont'd)

HA-A/C,M-09



Refer to last page (Foldout page).
 (M5), (E101)
 (F51)



Magnet Clutch

DIAGNOSTIC PROCEDURE

Z, TD, QD engine models

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

A

CHECK POWER SUPPLY FOR COMPRESSOR.
 Disconnect compressor harness connector. Do approx. 12 volts exist between compressor harness terminal No. ① and body ground?

Yes → Check the following.
 • Magnet clutch coil
 • Thermal protector (Except for the Middle East)

NG → Replace magnet clutch. Refer to HA-69 in D22 SERVICE MANUAL, Publication No. SM7E-0D22G1.

No →

B Note

Check circuit continuity between A/C relay harness terminal No. ⑤ and compressor harness terminal No. ①. **Continuity should exist.** If OK, check harness for short.

OK →

C

CHECK POWER SUPPLY FOR A/C RELAY.
 Do approx. 12 volts exist between A/C relay harness terminal Nos. ②, ③ and body ground?

No → Check power supply circuit and 10A fuse (No. 13), located in the fuse block. (Refer to "POWER SUPPLY ROUTING" in EL section and Wiring Diagram.)

Yes →

CHECK A/C RELAY AFTER DISCONNECTING IT. Refer to HA-25.

NG → Replace A/C relay.

OK →

Reconnect A/C relay.

D Note

Check circuit continuity between A/C relay harness terminal No. ① and triple-pressure switch harness terminal No. ④. **Continuity should exist.** If OK, check harness for short.

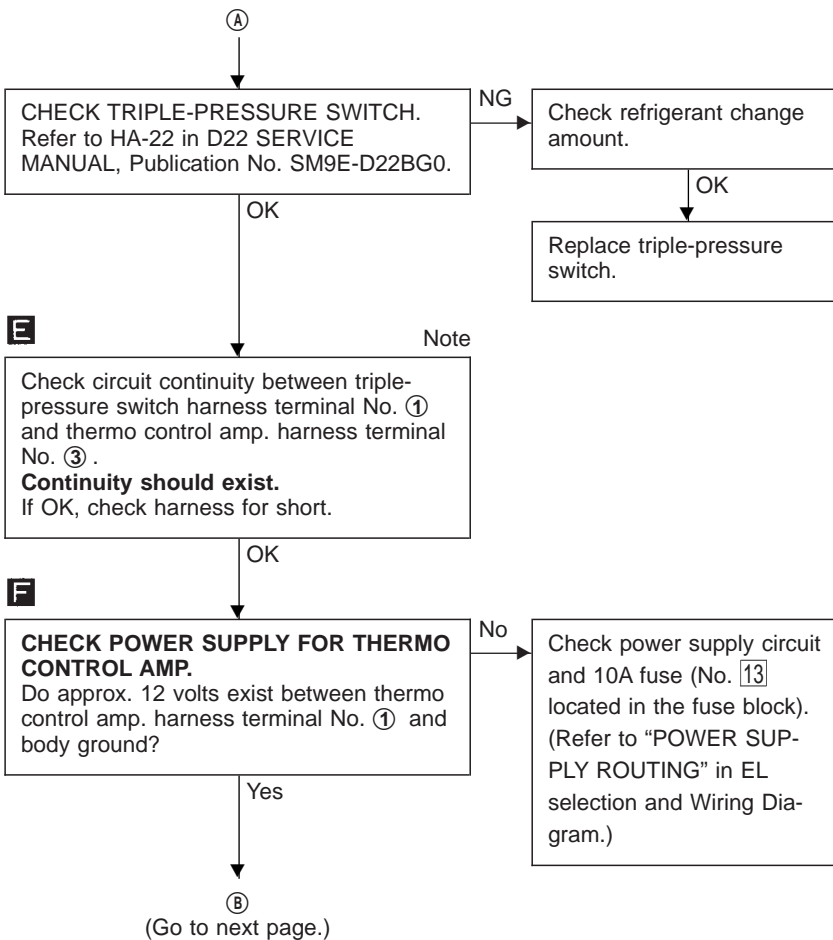
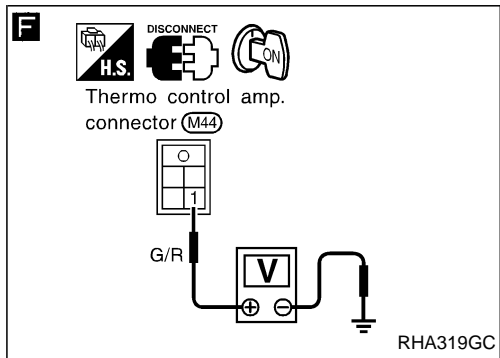
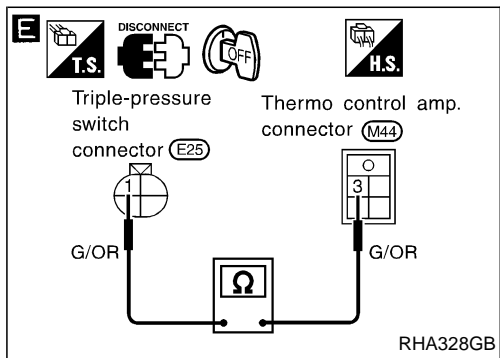
OK →

(Go to next page.)

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

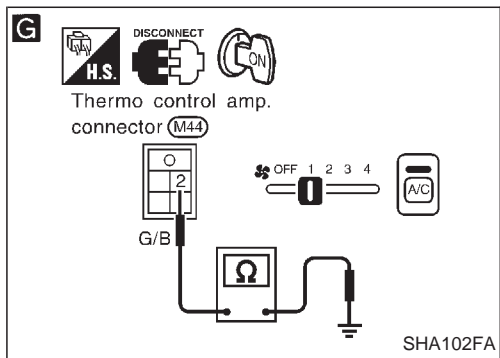
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Magnet Clutch (Cont'd)



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

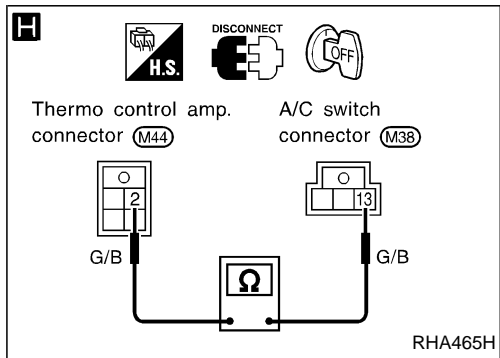
Magnet Clutch (Cont'd)



G

Check circuit continuity between thermo control amp. harness terminal No. ② and body ground.
Continuity should exist.
 If OK, check harness for short.

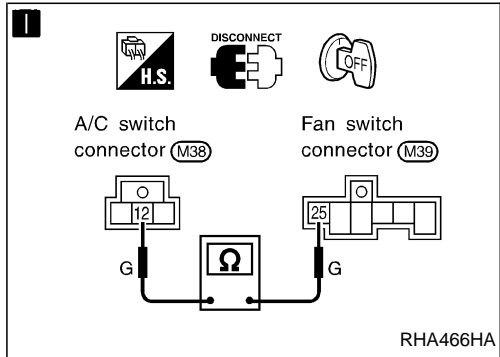
OK → Replace thermo control amp.



H

Check circuit continuity between thermo control amp. harness terminal No. ② and A/C switch harness terminal No. ⑬.
Continuity should exist.
 If OK, check harness for short.

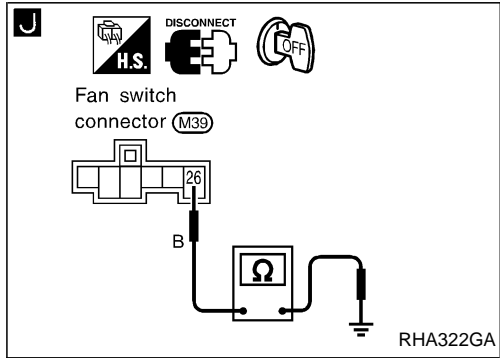
OK → CHECK A/C SWITCH. Refer to HA-21 in D22 SERVICE MANUAL, Publication No. SM9E-D22BG0.



I

Check circuit continuity between A/C switch harness terminal No. ⑫ and fan switch harness terminal No. ⑫.
Continuity should exist.
 If OK, check harness for short.

OK → CHECK FAN SWITCH. Refer to HA-21 in D22 SERVICE MANUAL, Publication No. SM9E-D22BG0.



J

Check circuit continuity between fan switch harness terminal No. ⑫ and body ground.
Continuity should exist.
 If OK, check harness for short.

OK → Replace fan switch.

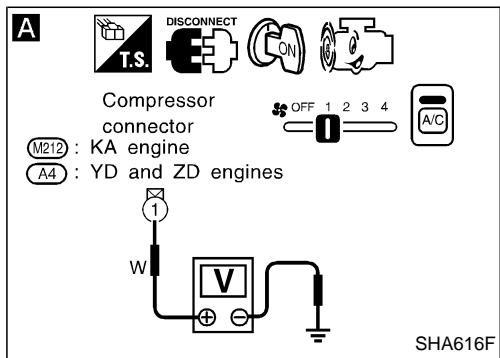
Note:
 If the result is NG or No after checking circuit continuity, repair harness or connector.

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Magnet Clutch (Cont'd)

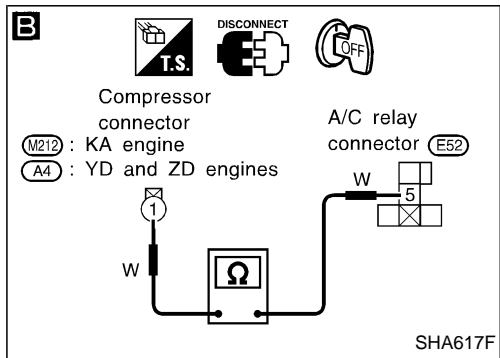
LHD models with KA, YD, ZD engine

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



A
CHECK POWER SUPPLY FOR COMPRESSOR.
 Disconnect compressor harness connector. Do approx. 12 volts exist between compressor harness terminal No. ① and body ground?

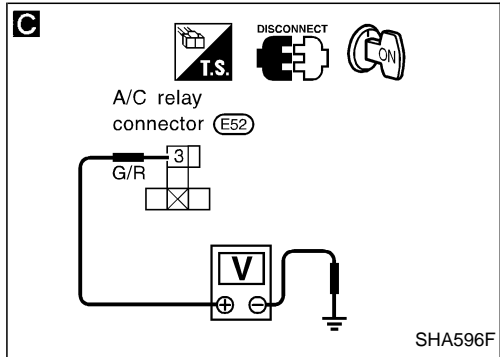
Yes → Check the following.
 • Magnet clutch coil
 • Thermal protector (KA engine except for the Middle East)
 Refer to HA-25.



No →

B
 Note
 Check circuit continuity between A/C relay harness terminal No. ⑤ and compressor harness terminal No. ① .
Continuity should exist.
 If OK, check harness for short.

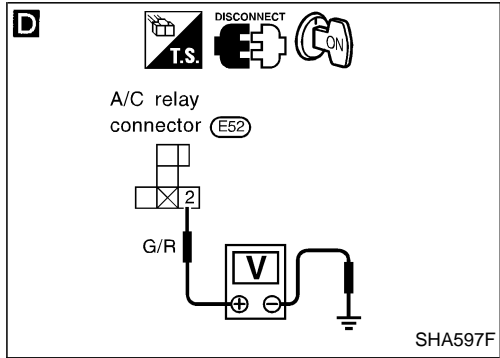
NG → Replace magnet clutch. Refer to HA-69 in D22 Service Manual, Publication No. SM7E-0D22G1.



OK →

C
CHECK POWER SUPPLY FOR A/C RELAY.
 Do approx. 12 volts exist between A/C relay harness terminal No. ③ and body ground?

No → Check power supply circuit and 10A fuse (No. 13), located in the fuse block. (Refer to "POWER SUPPLY ROUTING" in EL section and Wiring Diagram.)



Yes →

D
CHECK POWER SUPPLY FOR A/C RELAY.
 Do approx. 12 volts exist between A/C relay harness terminal No. ② and body ground?

No → Check power supply circuit and 10A fuse (No. 13), located in the fuse block. (Refer to "POWER SUPPLY ROUTING" in EL section and Wiring Diagram.)

Yes →

CHECK A/C RELAY AFTER DISCONNECTING IT.
 Refer to HA-25 .

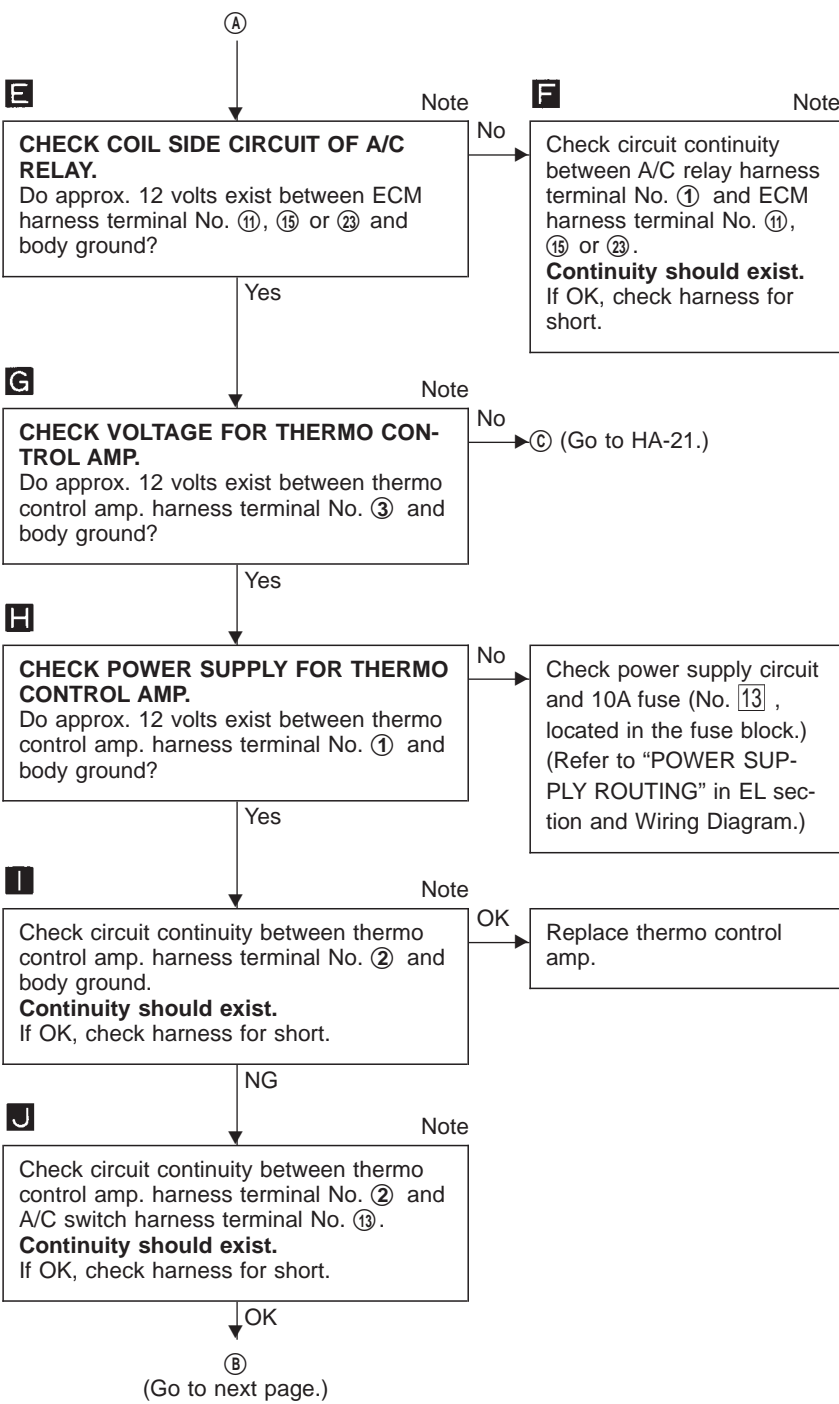
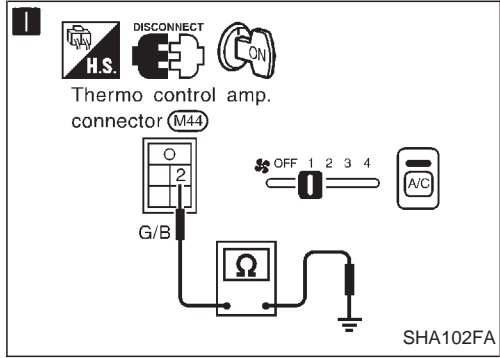
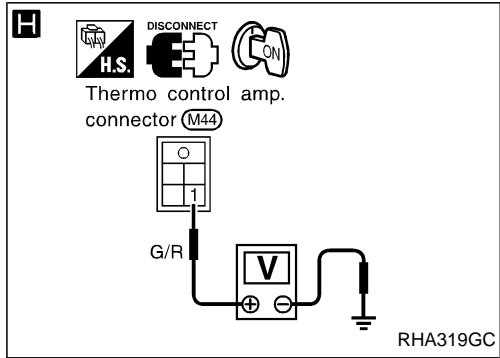
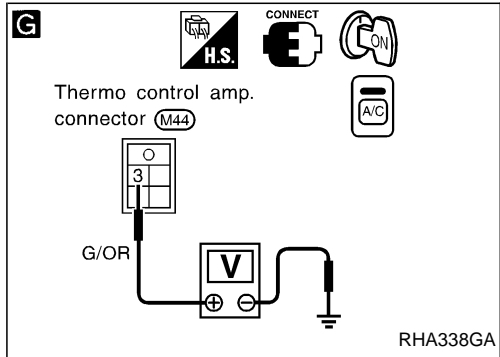
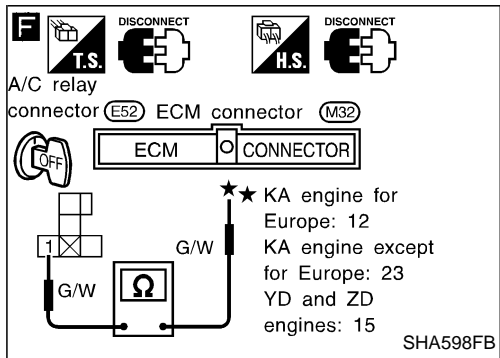
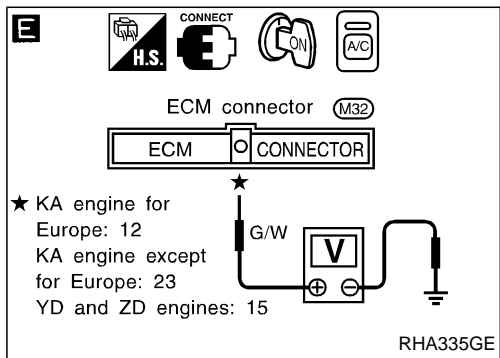
NG → Replace A/C relay.

OK → Reconnect A/C relay.

Ⓐ
 (Go to next page.)

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

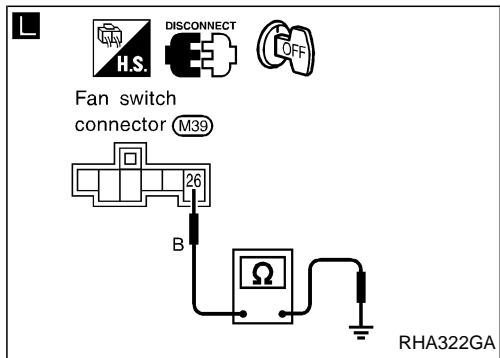
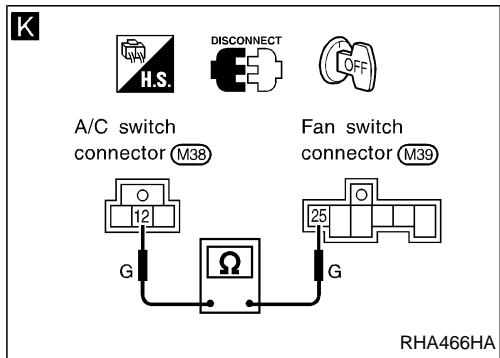
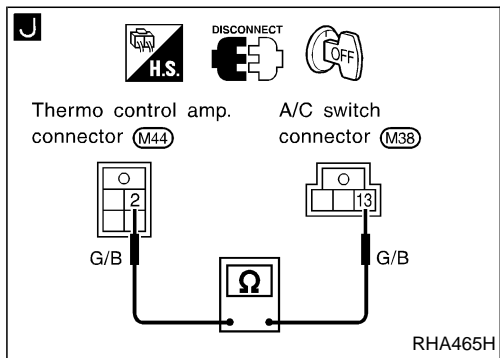
Magnet Clutch (Cont'd)



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

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Magnet Clutch (Cont'd)



Ⓑ

CHECK A/C SWITCH.
Refer to HA-21 in D22 SERVICE MANUAL, Publication No. SM9E-D22BG0.

NG → Replace A/C switch.

OK ↓

K Note

Check circuit continuity between A/C switch harness terminal No. ⑫ and fan switch harness terminal No. ⑳.
Continuity should exist.
If OK, check harness for short.

OK ↓

CHECK FAN SWITCH
Refer to HA-21 in D22 SERVICE MANUAL, Publication No. SM9E-D22BG0.

NG → Replace fan switch.

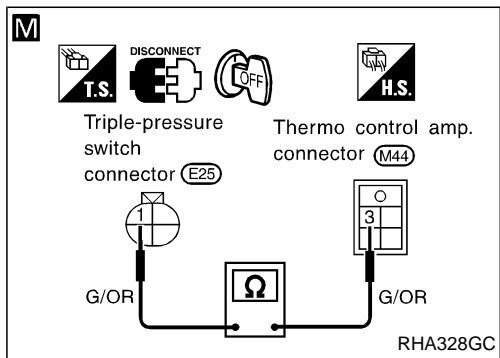
OK ↓

L Note

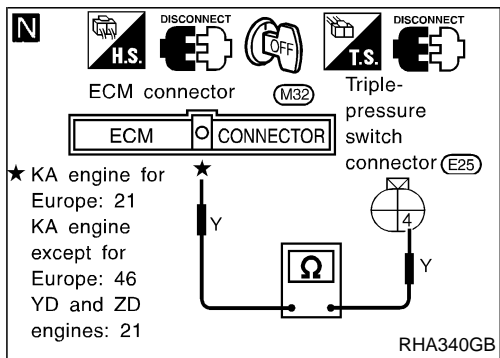
Check circuit continuity between fan switch harness terminal No. ㉑ and body ground.
Continuity should exist.
If OK, check harness for short.

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

Magnet Clutch (Cont'd)



M Note
 Check circuit continuity between thermo control amp. harness terminal No. ③ and triple-pressure switch harness terminal No. ①.
Continuity should exist.
 If OK, check harness for short.



OK
NG Replace triple-pressure switch.

N Note
 Check circuit continuity between triple-pressure switch harness terminal No. ④ and ECM harness terminal No. ⑳ or ㉔.
Continuity should exist.
 If OK, check harness for short.

OK
 Replace ECM.

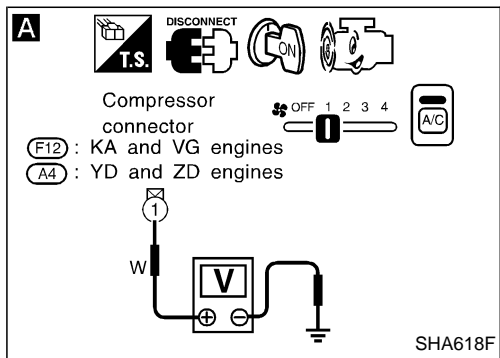
Note:
 If the result is NG or No after checking circuit continuity, repair harness or connector.

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Magnet Clutch (Cont'd)

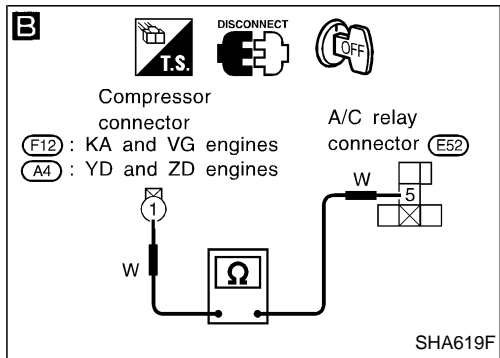
RHD models with KA, VG, YD, ZD engine

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



A
CHECK POWER SUPPLY FOR COMPRESSOR.
 Disconnect compressor harness connector. Do approx. 12 volts exist between compressor harness terminal No. ① and body ground?

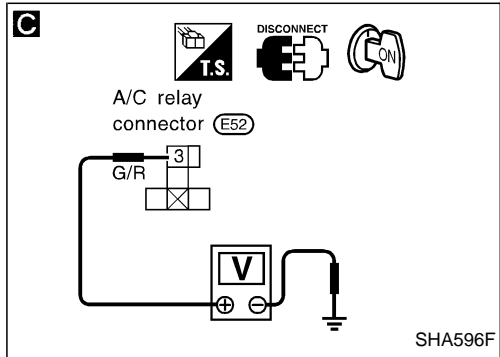
Yes → Check the following.
 • Magnet clutch coil
 • Thermal protector (KA and VG engines)
 Refer to HA-21 in D22 SERVICE MANUAL, Publication No. SM9E-D22BG0.



No →

B
 Check circuit continuity between A/C relay harness terminal No. ⑤ and compressor harness terminal No. ①. **Continuity should exist.** If OK, check harness for short.

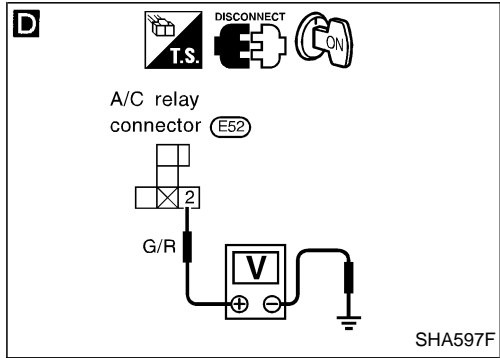
NG → Replace magnet clutch. Refer to HA-69 in D22 Service Manual, Publication No. SM7E-0D22G1.



OK →

C
CHECK POWER SUPPLY FOR A/C RELAY.
 Do approx. 12 volts exist between A/C relay harness terminal No. ③ and body ground?

No → Check power supply circuit and 10A fuse (No. 13, located in the fuse block). (Refer to "POWER SUPPLY ROUTING" in EL section and Wiring Diagram.)



Yes →

D
CHECK POWER SUPPLY FOR A/C RELAY.
 Do approx. 12 volts exist between A/C relay harness terminal No. ② and body ground?

No → Check power supply circuit and 10A fuse (No. 13, located in the fuse block). (Refer to "POWER SUPPLY ROUTING" in EL section and Wiring Diagram.)

Yes →

CHECK A/C RELAY AFTER DISCONNECTING IT. Refer to HA-25.

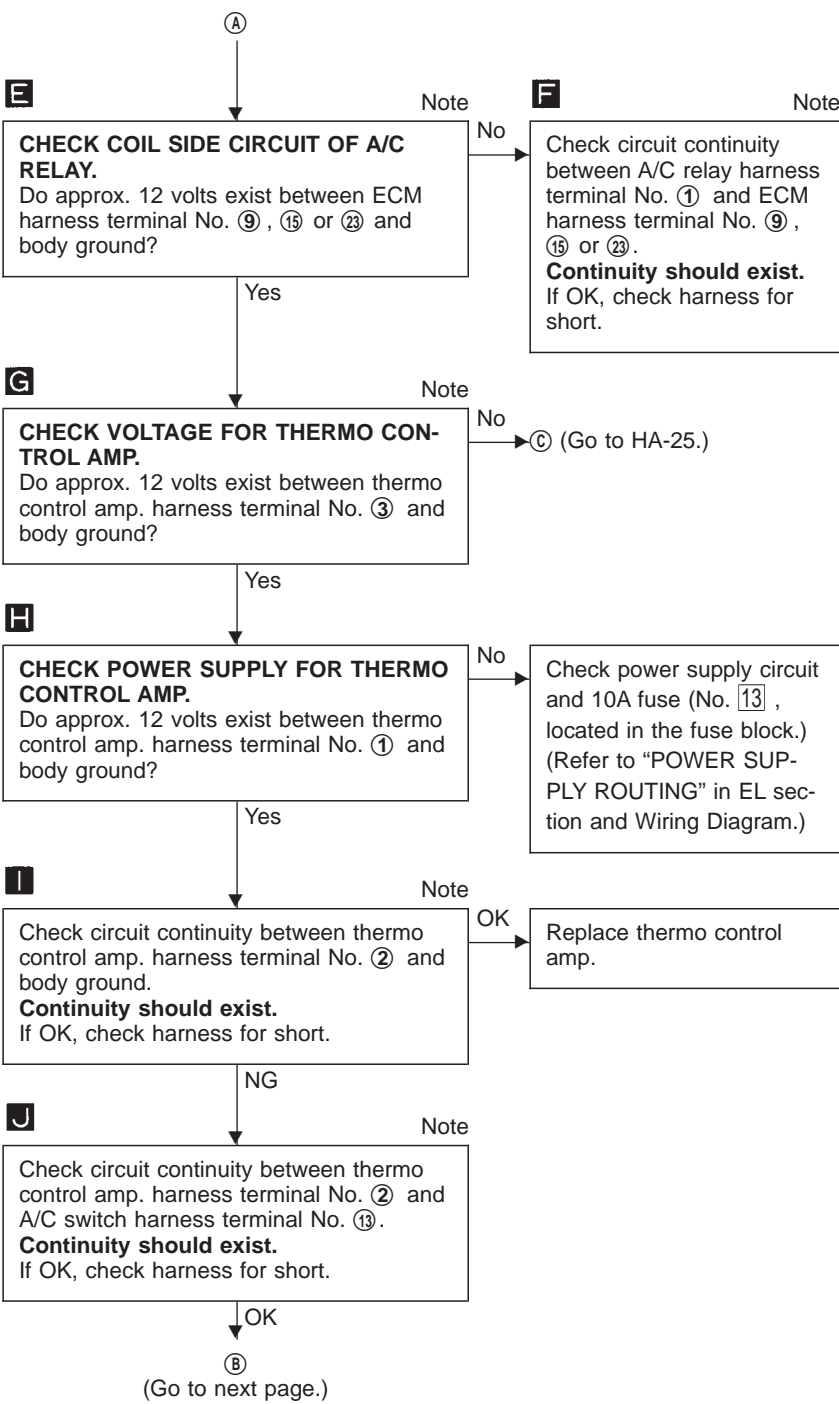
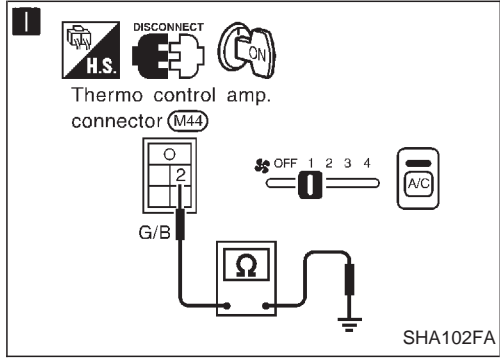
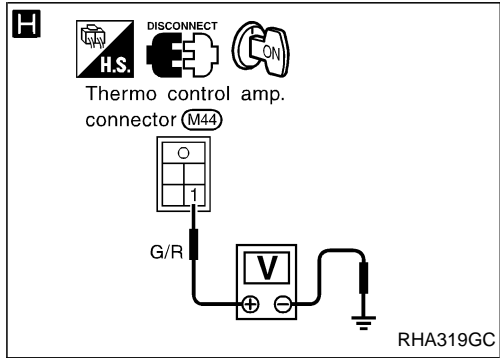
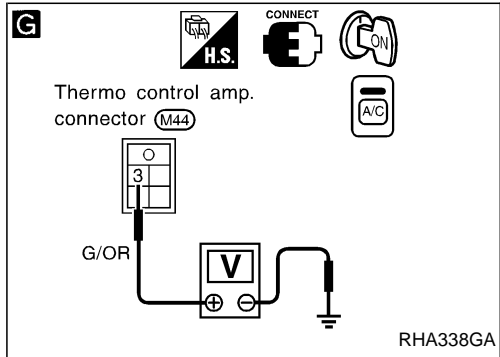
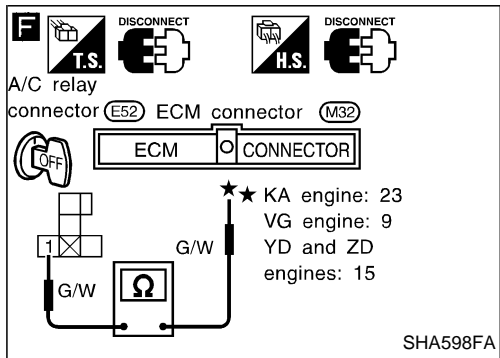
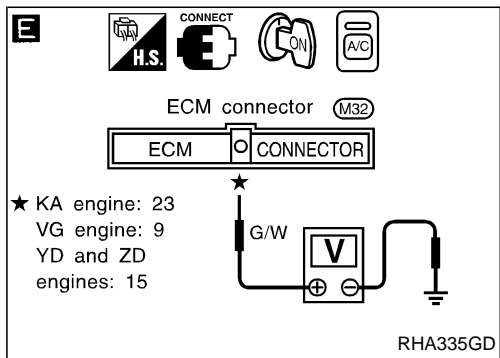
NG → Replace A/C relay.

OK → Reconnect A/C relay.

Ⓐ
 (Go to next page.)

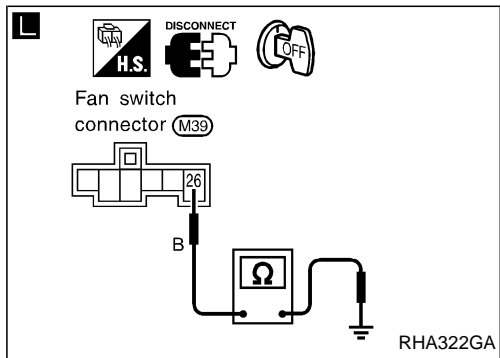
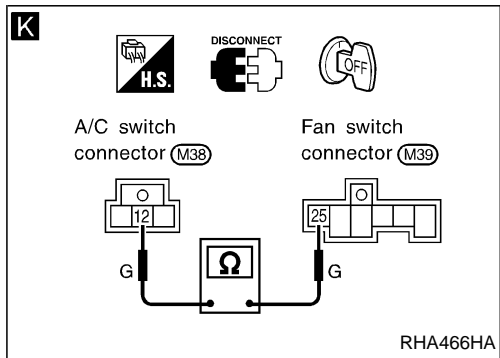
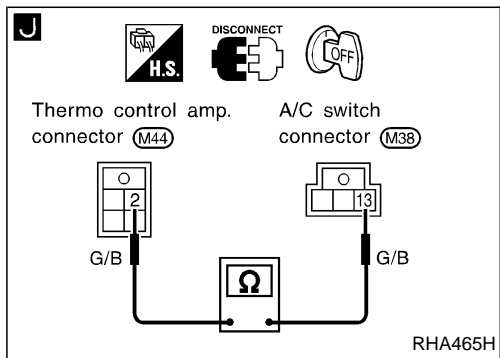
Note:
 If the result is NG or No after checking circuit continuity, repair harness or connector.

Magnet Clutch (Cont'd)



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Magnet Clutch (Cont'd)



Ⓑ

↓

CHECK A/C SWITCH.
Refer to HA-21 in D22 SERVICE MANUAL, Publication No. SM9E-D22BG0.

NG → Replace A/C switch.

OK ↓

K Note

Check circuit continuity between A/C switch harness terminal No. ⑫ and fan switch harness terminal No. ⑳.
Continuity should exist.
If OK, check harness for short.

OK ↓

CHECK FAN SWITCH
Refer to HA-21 in D22 SERVICE MANUAL, Publication No. SM9E-D22BG0.

NG → Replace fan switch.

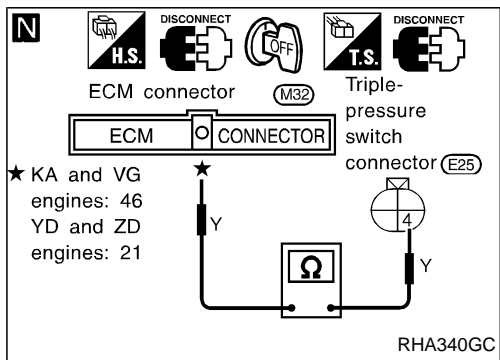
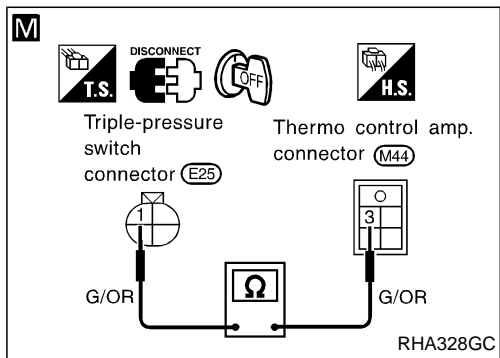
OK ↓

L Note

Check circuit continuity between fan switch harness terminal No. ㉑ and body ground.
Continuity should exist.
If OK, check harness for short.

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

Magnet Clutch (Cont'd)



M Note

Check circuit continuity between thermo control amp. harness terminal No. ③ and triple-pressure switch harness terminal No. ①.
Continuity should exist.
If OK, check harness for short.

OK

CHECK TRIPLE-PRESSURE SWITCH. Refer to HA-22 in D22 SERVICE MANUAL, Publication No. SM9E-D22BG0.

NG → Replace triple-pressure switch.

OK

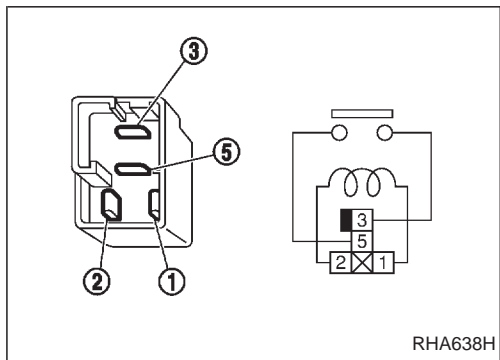
N Note

Check circuit continuity between triple-pressure switch harness terminal No. ④ and ECM harness terminal No. ⑳ or ④⑥.
Continuity should exist.
If OK, check harness for short.

OK

Replace ECM.

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



ELECTRICAL COMPONENT INSPECTION

A/C Relay

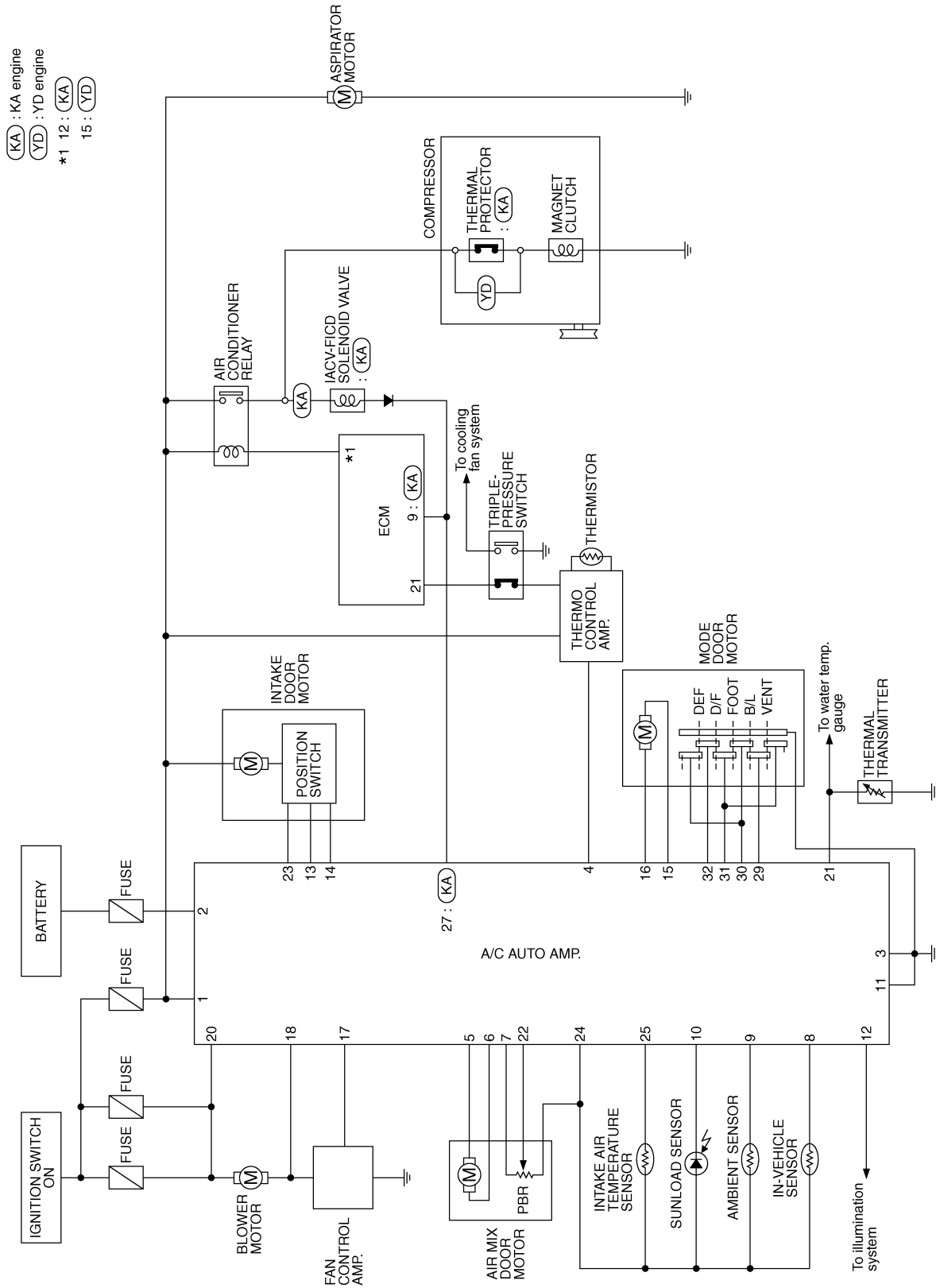
Check continuity between terminal Nos. 3 and 5.

| Conditions | Continuity |
|---|------------|
| 12V direct current supply between terminal Nos. 1 and 2 | Yes |
| No current supply | No |

If NG, replace relay.

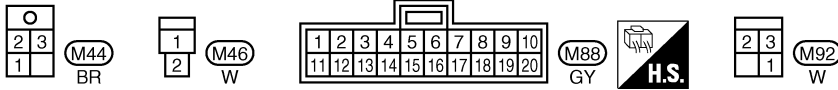
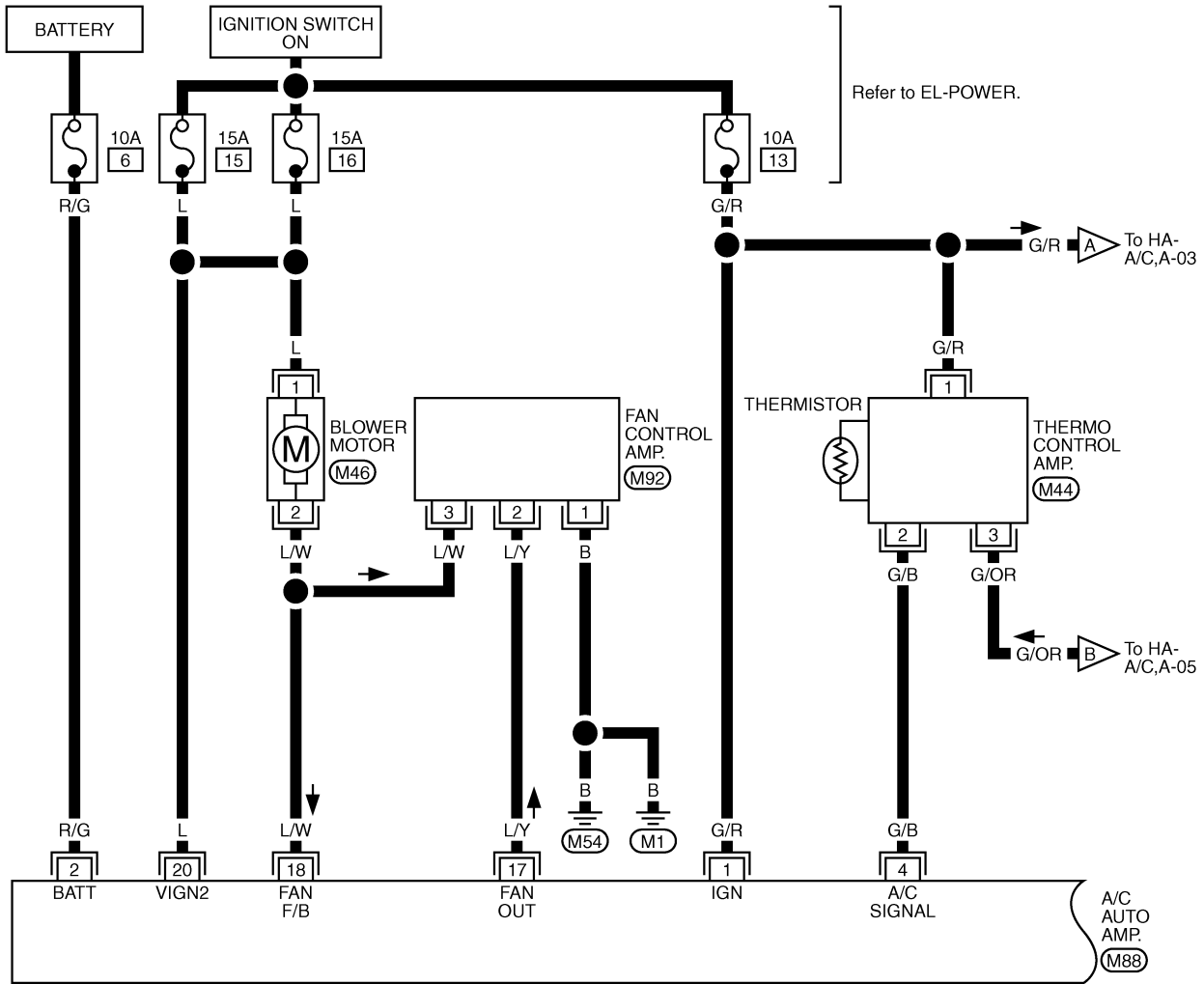
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Circuit Diagram — A/C, A —



Wiring Diagram — A/C, A —

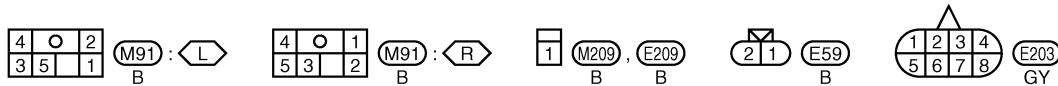
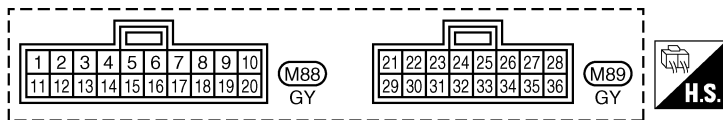
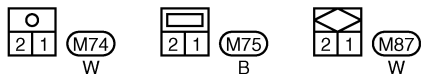
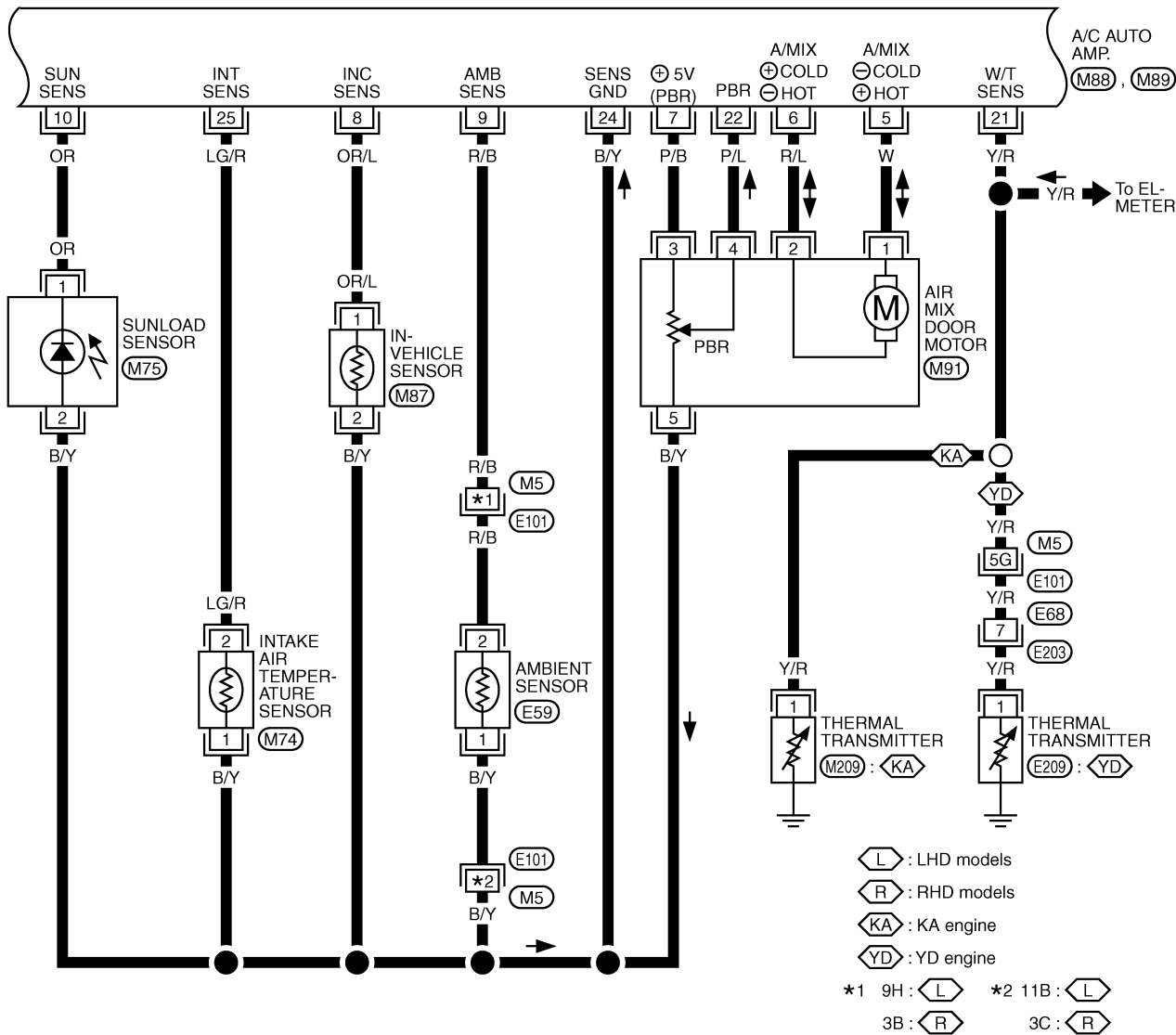
HA-A/C,A-01



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Wiring Diagram — A/C, A — (Cont'd)

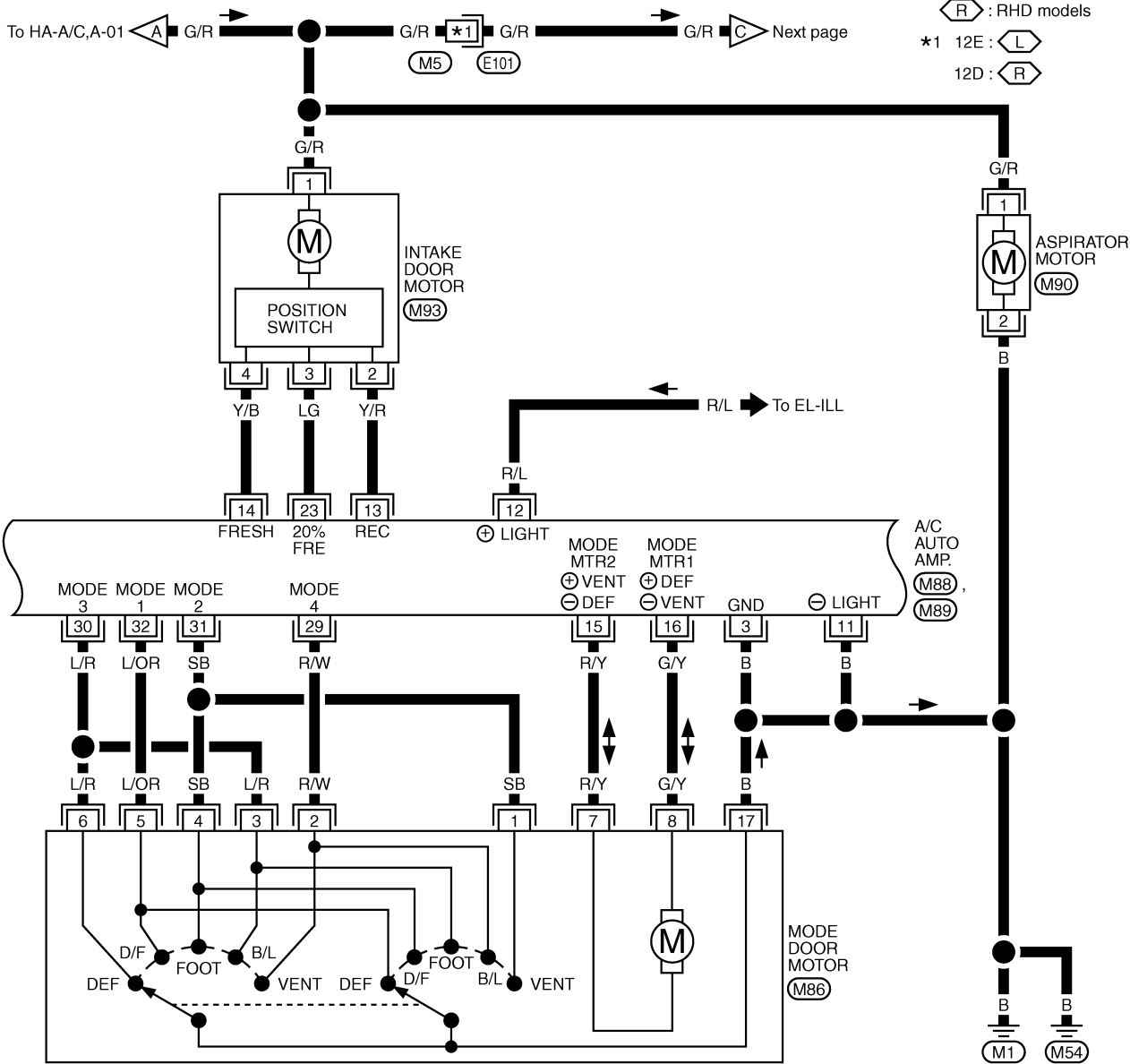
HA-A/C,A-02



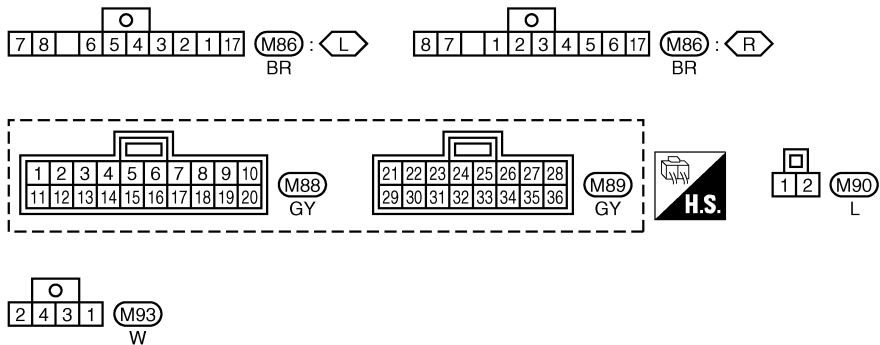
Refer to last page (Foldout page).
M5, E101

Wiring Diagram — A/C, A — (Cont'd)

HA-A/C,A-03



◻ L : LHD models
 ◻ R : RHD models
 *1 12E : ◻ L
 12D : ◻ R

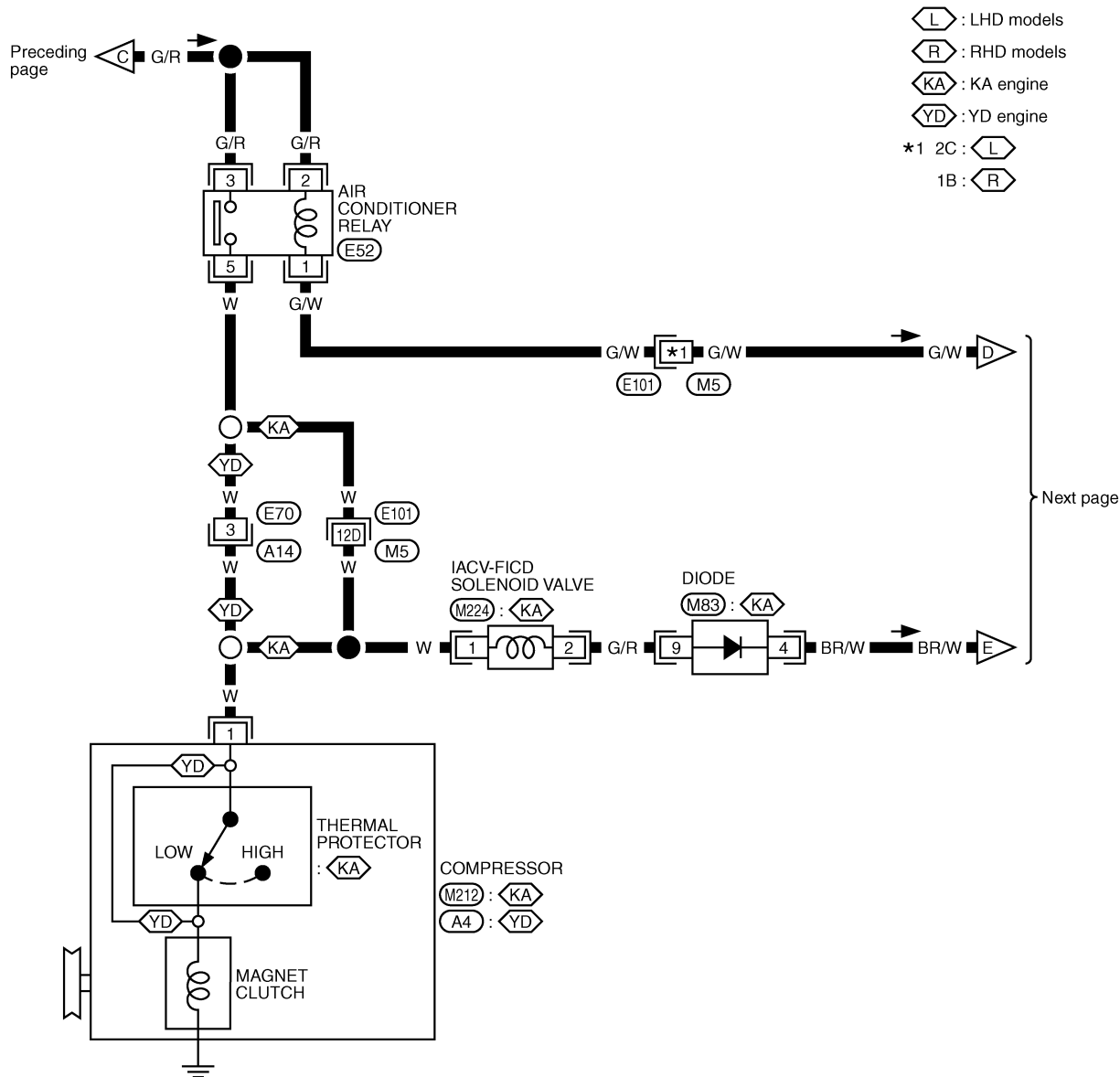


Refer to last page (Foldout page).
 (M5), (E101)

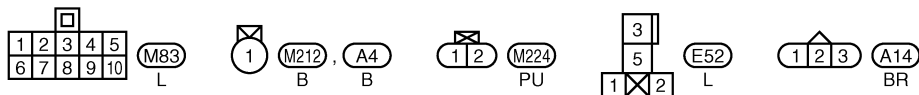
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Wiring Diagram — A/C, A — (Cont'd)

HA-A/C,A-04



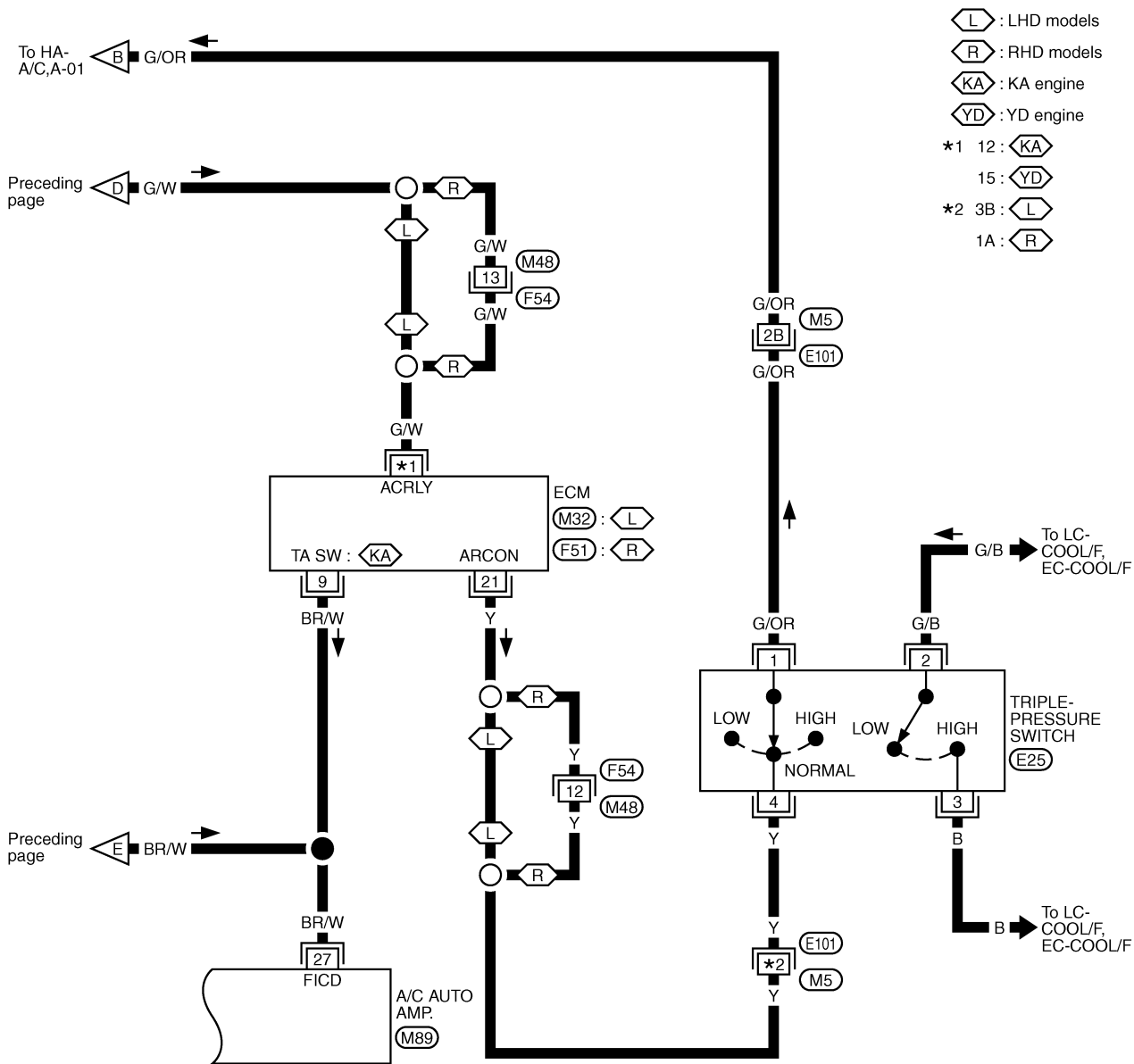
Next page



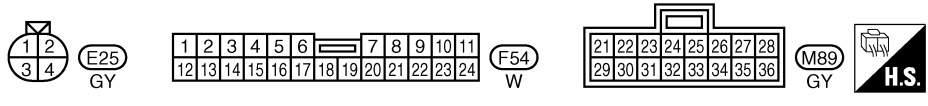
Refer to last page (Foldout page).
 M5, E101

Wiring Diagram — A/C, A — (Cont'd)

HA-A/C,A-05



- ⬡ : LHD models
- ⬢ : RHD models
- ⬤ : KA engine
- ⬥ : YD engine
- *1 12: ⬤
- 15: ⬥
- *2 3B: ⬡
- 1A: ⬢



Refer to last page (Foldout page).
 M5, E101
 M32
 F51

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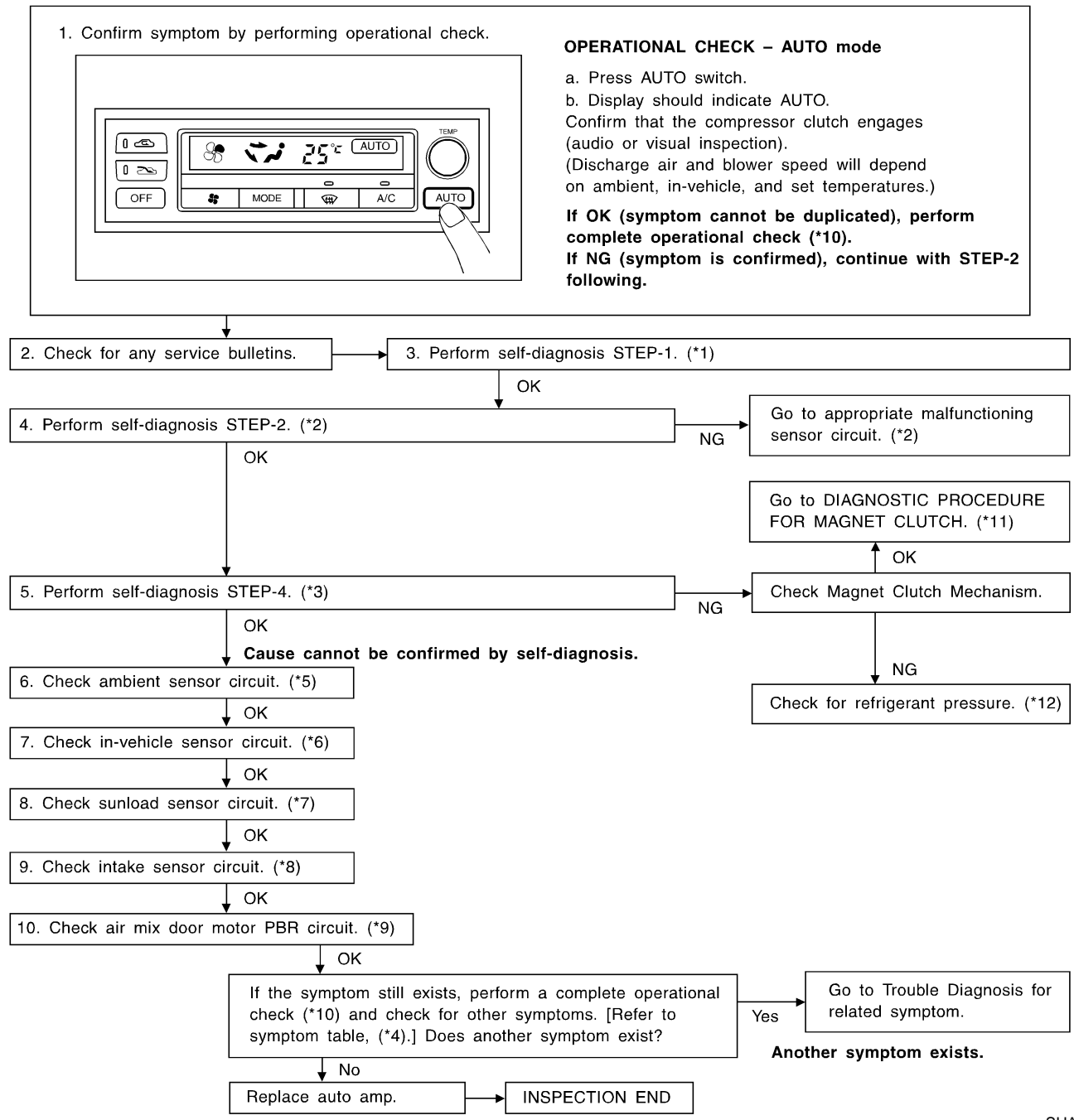
Magnet Clutch

TROUBLE DIAGNOSIS PROCEDURE FOR MAGNET CLUTCH

SYMPTOM:

- Magnet clutch does not engage.

Inspection flow



SHA341FA

- *1: HA-35
- *2: HA-36
- *3: HA-38
- *4: HA-40
- *5: HA-79

- *6: HA-81
- *7: HA-83
- *8: HA-85
- *9: HA-53
- *10: HA-41

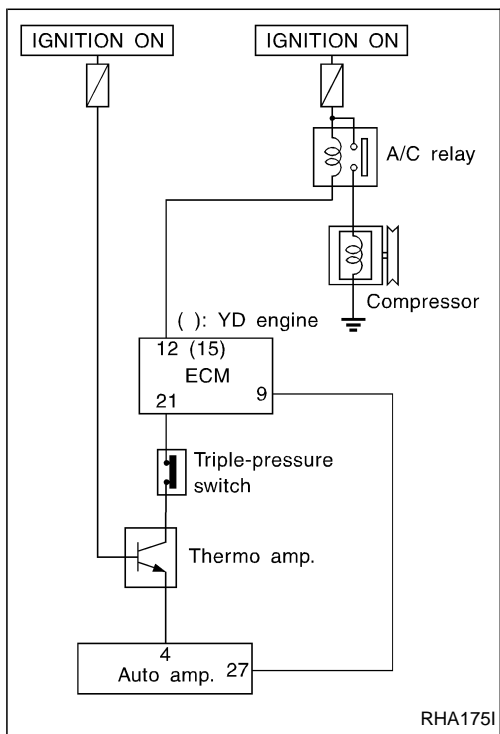
- *11: HA-33
- *12: HA-28 in D22 Service Manual, Publication No. SM7E-0D22G1

Note: *1 - *10: Refer to D22 SERVICE MANUAL, Publication No. SM9E-D22BG0.

Magnet Clutch (Cont'd)

DIAGNOSTIC PROCEDURE

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



A

CHECK POWER SUPPLY FOR COMPRESSOR.
Disconnect compressor harness connector. Do approx. 12 volts exist between compressor harness terminal No. ① and body ground?

Yes → Check magnet clutch coil.

NG → Replace magnet clutch. Refer to HA-69 in D22 SERVICE MANUAL, Publication No. SM7E-0D22G1.

Disconnect A/C relay.

B Note

CHECK CIRCUIT CONTINUITY BETWEEN A/C RELAY HARNESS TERMINAL NO. ⑤ AND COMPRESSOR HARNESS TERMINAL NO. ①.
Continuity should exist.
If OK, check harness for short.

OK →

C

CHECK POWER SUPPLY FOR A/C RELAY.
Disconnect A/C relay. Do approx. 12 volts exist between A/C relay harness terminal Nos. ②, ③ and body ground?

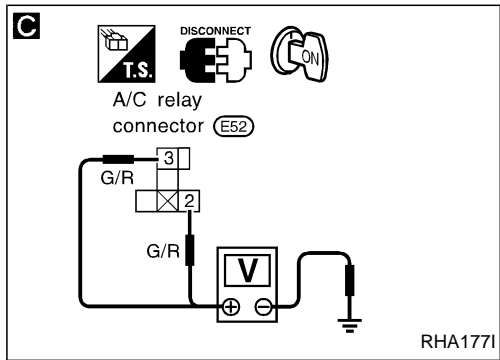
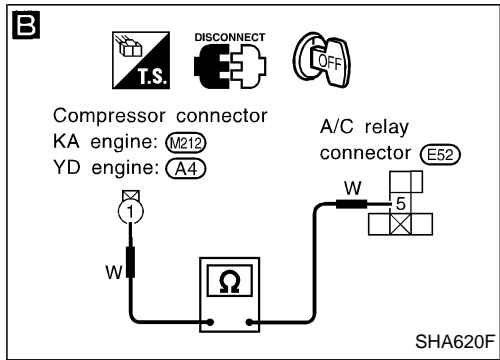
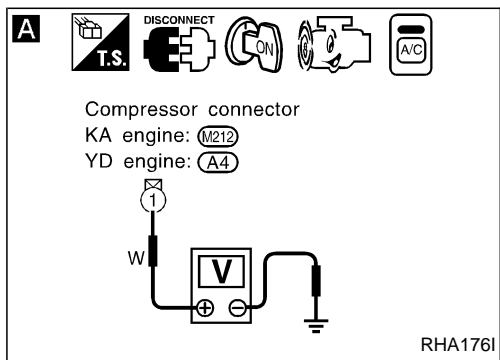
No → CHECK POWER SUPPLY CIRCUIT AND 10A (No. 13) FUSE AT FUSE BLOCK. Refer to EL section ("Wiring Diagram", "POWER SUPPLY ROUTING").

CHECK A/C RELAY AFTER DISCONNECTING IT.
Refer to HA-35.

NG → Replace A/C relay.

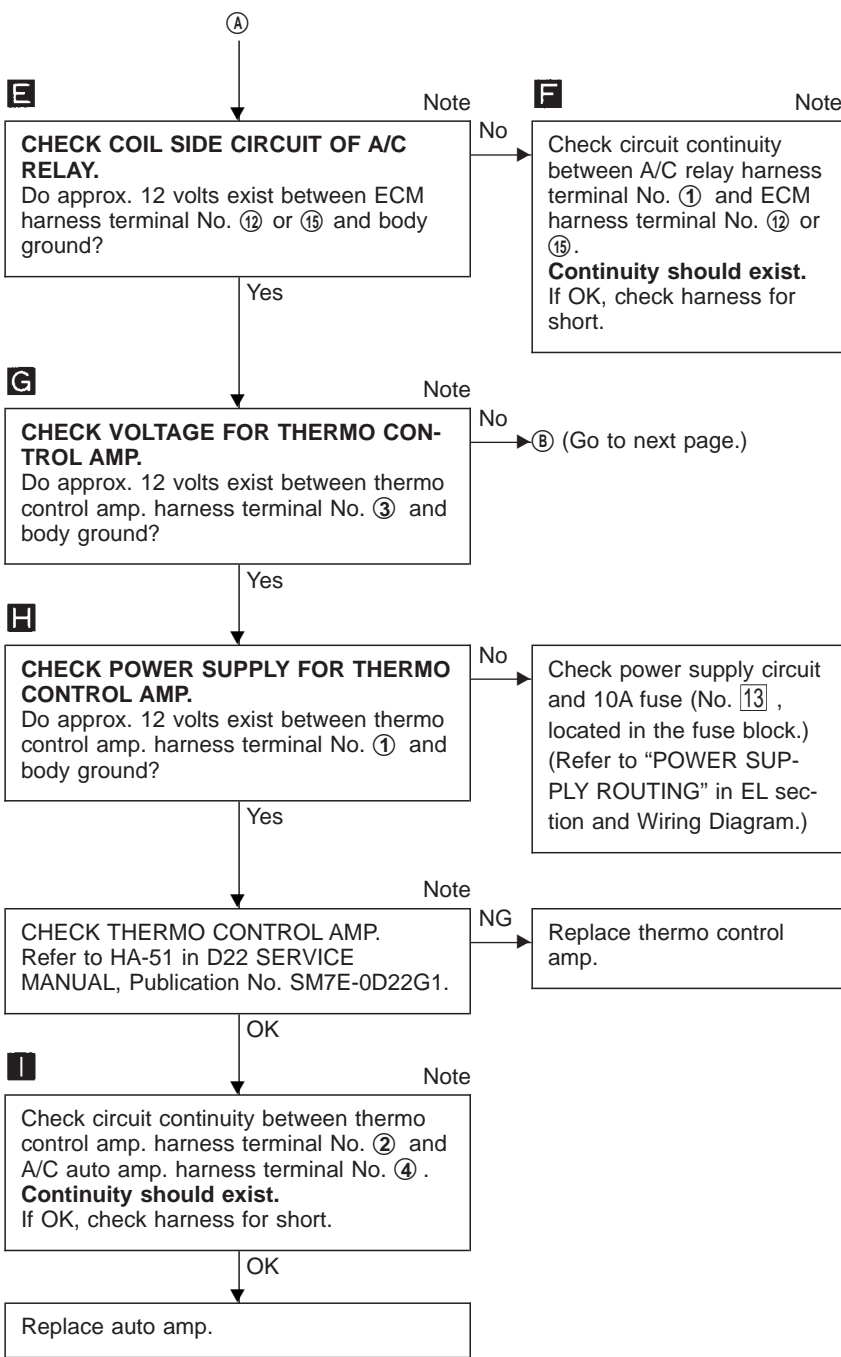
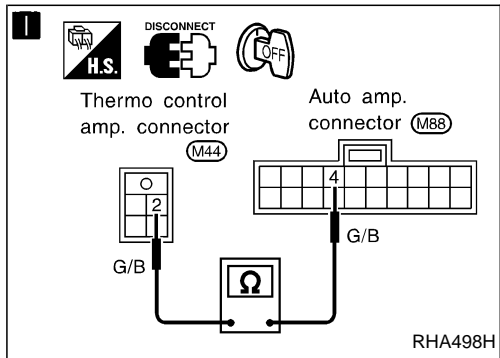
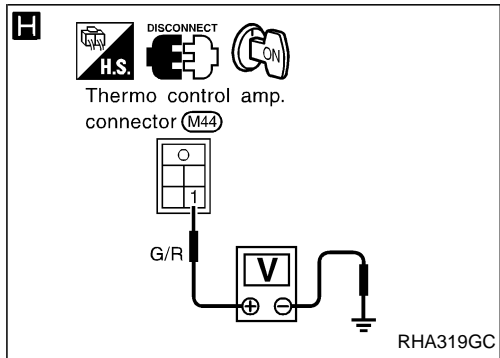
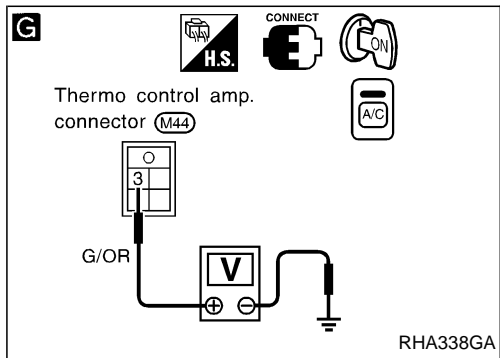
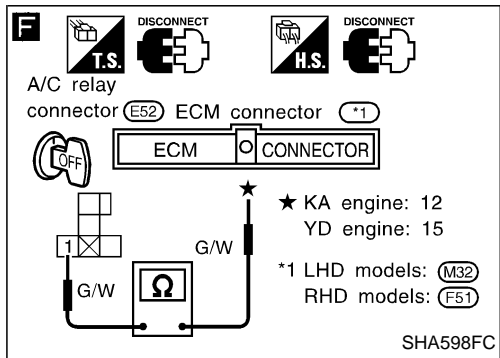
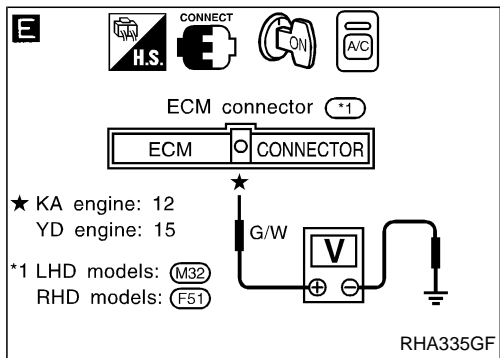
OK
Ⓐ
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Note:
If the result is NG or No after checking circuit continuity, repair harness or connector.



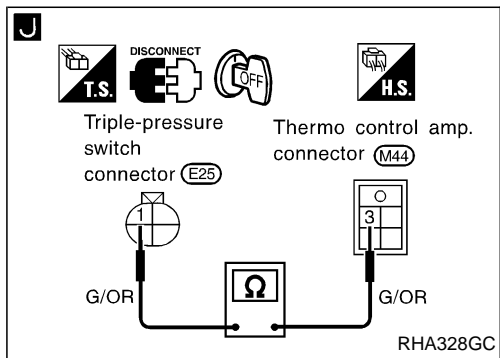
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Magnet Clutch (Cont'd)



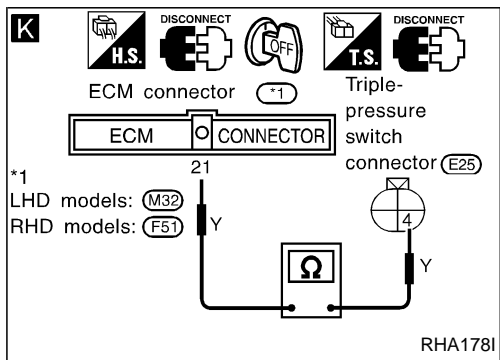
Note:
If the result is NG or No after checking circuit continuity, repair harness or connector.

Magnet Clutch (Cont'd)



J Note
 Check circuit continuity between thermo control amp. harness terminal No. ③ and triple-pressure switch harness terminal No. ①.
Continuity should exist.
 If OK, check harness for short.

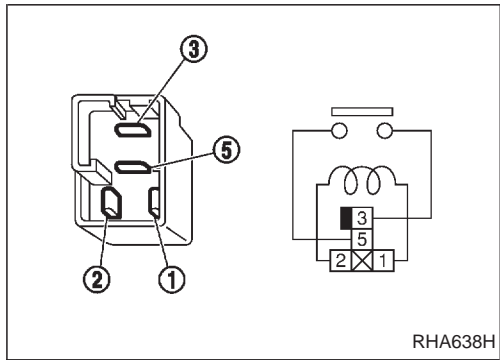
OK
 CHECK TRIPLE-PRESSURE SWITCH. Refer to HA-22 in D22 SERVICE MANUAL, Publication No. SM9E-D22BG0.
 NG → Replace triple-pressure switch.



K Note
 Check circuit continuity between triple-pressure switch harness terminal No. ④ and ECM harness terminal No. ⑳.
Continuity should exist.
 If OK, check harness for short.

OK
 Replace ECM.

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



ELECTRICAL COMPONENT INSPECTION

A/C Relay

Check continuity between terminal Nos. 3 and 5.

| Conditions | Continuity |
|---|------------|
| 12V direct current supply between terminal Nos. 1 and 2 | Yes |
| No current supply | No |

If NG, replace relay.

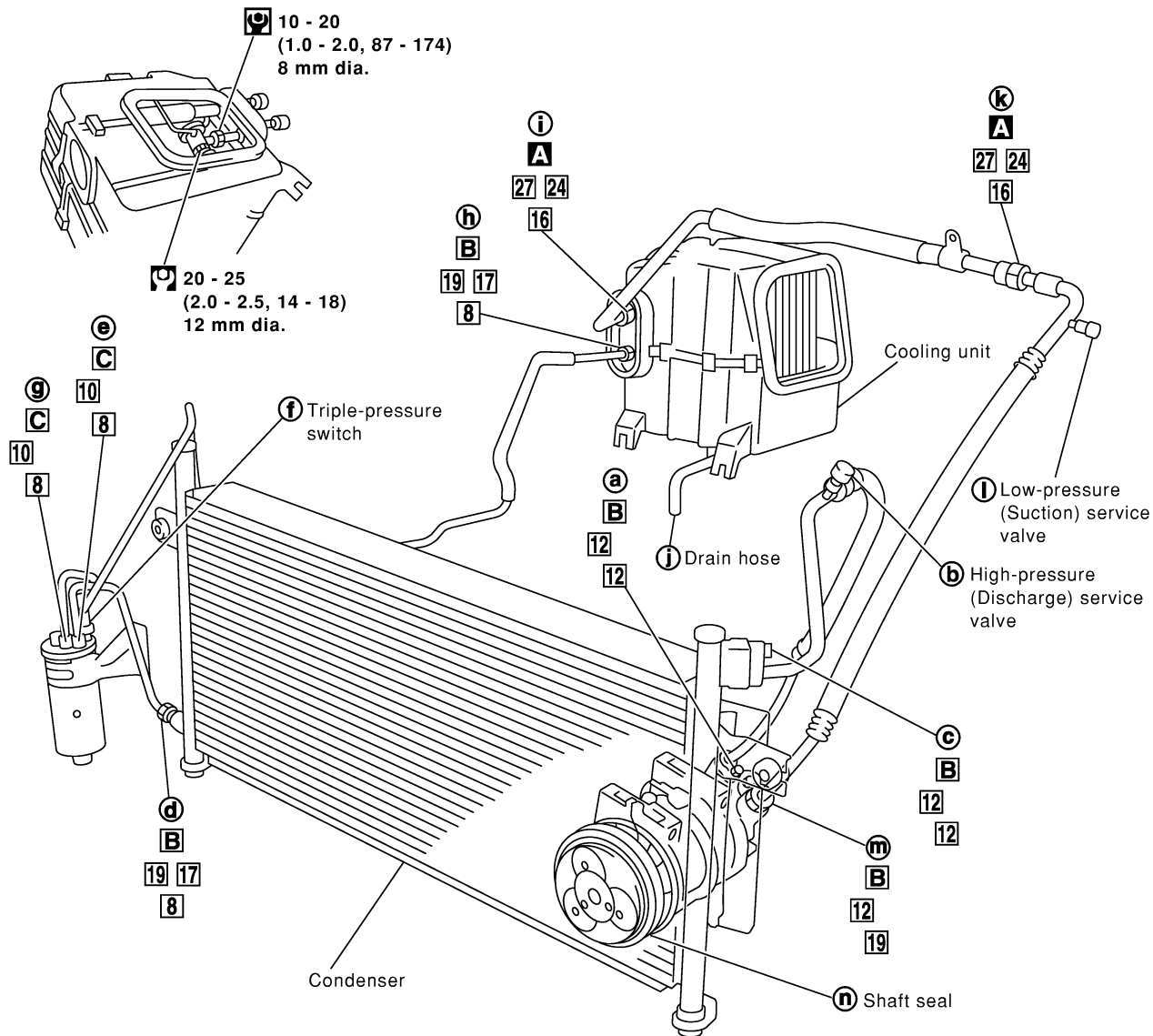
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Refrigerant Lines

- Refer to page HA-2 regarding "Precautions for Refrigerant Connection".

YD ENGINE FOR EUROPE

LHD MODELS WITH DIESEL ENGINE



NOTE:
 This illustration is for LHD models.
 For RHD models, cooling unit location and routing of A/C piping are different.

- : Refrigerant leak checking order
- : (Tightening torque)
- □ : (Wrench size)
- : (O-ring size)
- Ⓜ : N•m (kg-m, ft-lb)
- Ⓐ : 20 - 29 (2.0 - 3.0, 14 - 22)
- Ⓜ : N•m (kg-m, in-lb)
- Ⓑ : 10 - 20 (1.0 - 2.0, 87 - 174)
- Ⓒ : 3.42 - 5.88 (0.35 - 0.59, 31 - 52)

Checking Refrigerant Leaks

CHECKING PROCEDURE

To prevent inaccurate or false readings, make sure there is no refrigerant vapor or tobacco smoke in the vicinity of the vehicle. Perform the leak test in calm area (low air/wind movement) so that the leaking refrigerant is not dispersed.

1. Turn engine off.
2. Connect a suitable A/C manifold gauge set to the A/C service ports.
3. Check if the A/C refrigerant pressure is at least 345 kPa (3.452 bar, 3.52 kg/cm², 50 psi) above 16°C (61°F). If less than specification, evacuate and recharge the system with the specified amount of refrigerant.

NOTE: At temperatures below 16°C (61°F), leaks may not be detected since the system may not reach 345 kPa (3.452 bar, 3.52 kg/cm², 50 psi).

4. Conduct the leak test from the high side to the low side at points Ⓐ through Ⓝ. Refer to HA-36.

Perform a leak check for the following areas carefully. Clean the component to be checked and move the leak detector probe completely around the connection/component.

- **Compressor**
Check the fitting of high and low pressure hoses, relief valve and shaft seal.

- **Liquid tank**
Check the pressure switch, tube fitting, weld seams and the fusible plug mounts.

- **Service valves**
Check all around the service valves. Ensure service valve caps are secured on the service valves (to prevent leaks).

NOTE: After removing A/C manifold gauge set from service valves, wipe any residue from valves to prevent any false readings by leak detector.

- **Cooling unit (Evaporator)**
Turn blower fan on "High" for at least 15 seconds to dissipate any refrigerant trace in the cooling unit. Insert the leak detector probe into the drain hose immediately after stopping the engine. (Keep the probe inserted for at least ten seconds.)

5. If a leak detector detects a leak, verify at least once by blowing compressed air into area of suspected leak, then repeat check.

6. Do not stop when one leak is found. Continue to check for additional leaks at all system components.

7. Start engine.

8. Set the heater A/C control as follows:

- a. A/C switch ON
- b. Face mode
- c. Recirculation switch ON
- d. Max cold temperature
- e. Fan speed high

9. Run engine at 1,500 rpm for at least 2 minutes.

10. Turn engine off and perform leak check again following steps 4 through 6 above.

GI

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EM

LC

EC

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MT

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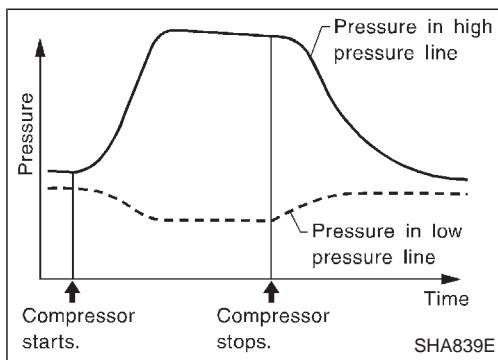
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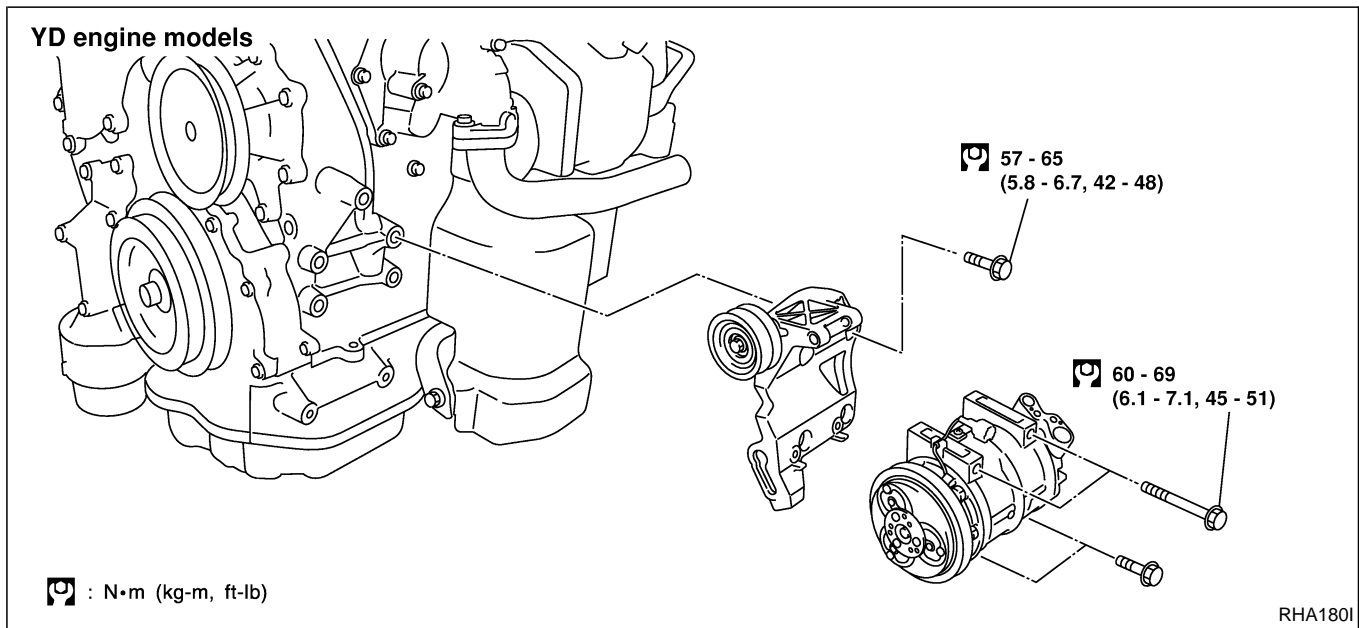
SERVICE PROCEDURES



Refrigerant leaks should be checked immediately after stopping the engine. Begin with the leak detector on the high pressure line. The pressure in the high pressure line will gradually drop after refrigerant circulation stops and pressure in the low pressure line will gradually rise, as shown in the graph. Leaks are more easily detected when pressure is high.

11. Discharge A/C system using approved refrigerant recovery equipment. Repair the leaking fitting or component as necessary.
12. Evacuate and recharge A/C system and perform the leak test to confirm no refrigerant leaks.
13. Conduct A/C performance test to ensure system works properly.

Compressor Mounting



General Specifications

COMPRESSOR

| | | |
|--------------------------------------|--|---|
| Model | For the Middle East and YD engine for Europe | Except for the Middle East and YD engine for Europe |
| | ZEXEL VALEO CLIMATE CONTROL make DKS-17CH | ZEXEL VALEO CLIMATE CONTROL make DKV-14C |
| Type | Swash plate | Vane rotary |
| Displacement cm ³ (cu in) | 168 (10.25) | 140 (8.54) |
| Cylinder bore x stroke mm (in) | 37.0 x 25.8 (1.457 x 1.016) | — |
| Direction of rotation | Clockwise (Viewed from drive belt) | |
| Drive belt | Type A | |

LUBRICANT

| | | |
|-------------------------|--|--|
| Model | For the Middle East/ ZD30 and YD25 engine models | Except for the Middle East/ Except ZD30 and YD25 engine models |
| | ZEXEL VALEO CLIMATE CONTROL make DKS-17CH | ZEXEL VALEO CLIMATE CONTROL make DKV-14C |
| Type | KLH00-PAGS0 | KLH00-PAGR0 |
| Capacity mℓ (Imp fl oz) | Total in system | Except ZD engine models: 200 (7.0) ZD engine models: 300 (10.6) |
| | Compressor (Service parts) charging amount | Except ZD engine models: 200 (7.0) ZD engine models: 300 (10.6) |

Inspection and Adjustment

REFRIGERANT

| | | | |
|------------------|---------------------------|---|--|
| | YD engine for Europe | Except for the Middle East/ ZD30 and YD25 engine models | For the Middle East/ Except YD engine for Europe |
| Type | HFC-134a (R-134a) | | |
| Capacity kg (lb) | 0.55 - 0.65 (1.21 - 1.43) | 0.60 - 0.70 (1.32 - 1.54) | 0.65 - 0.75 (1.43 - 1.65) |

ENGINE IDLING SPEED (When A/C is ON)

- Refer to EC section.

BELT TENSION

- Refer to MA section (“Checking Drive Belts”).

GI
MA
EM
LC
EC
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IDX