HEATER & AIR CONDITIONER

SECTION HA

MODIFICATION NOTICE:

- Compressor has been changed. (KA engine models)
- Refrigerant amount has been changed.
- Fusible plug attached to liquid tank has been deleted.
- Pressure relief valve has been added to compressor.
- Wiring diagrams have been changed.
- Thermo control amp. of auto A/C has been abolished and trouble diagnosis of magnet clutch has been changed.
- Pressure relief valve has been added to compressor. (KA24DE and YD25DDT engine models)
- Refrigerant amount has been changed. (YD25DDT engine models) Refer to SDS.

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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 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.

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.
- Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow harness connector.

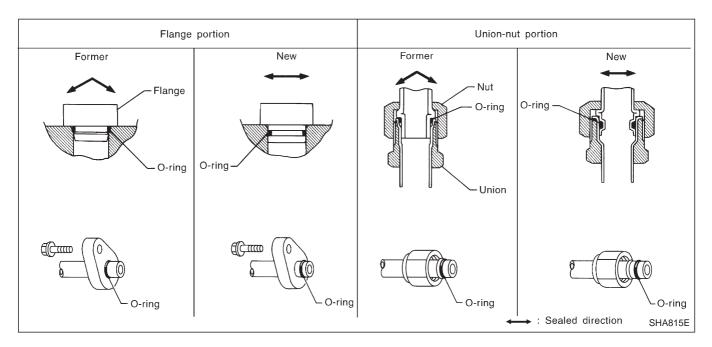
Precautions for Refrigerant Connection

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

Expansion valve to cooling unit

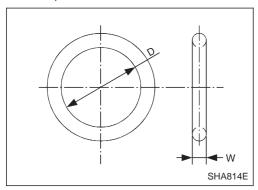
FEATURES OF NEW TYPE REFRIGERANT CONNECTION

- 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.



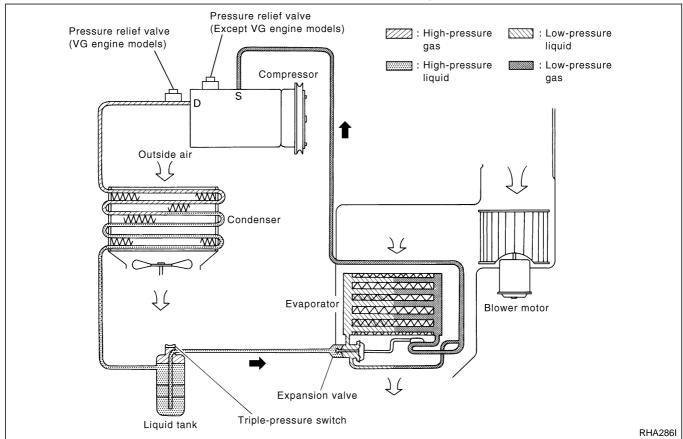
O-ring part numbers and specifications

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	0	92470 N8200	6.07 (0.2390)	1.78 (0.0701)
New	12	92472 N8210	10.9 (0.429)	2.43 (0.0957)
Former	IZ	92475 71L00	11.0 (0.433)	2.4 (0.094)
New	16	92473 N8210	13.6 (0.535)	2.43 (0.0957)
Former	10	92475 72L00	14.3 (0.563)	2.3 (0.091)
New	19	92474 N8210	16.5 (0.650)	2.43 (0.0957)
Former	13	92477 N8200	17.12 (0.6740)	1.78 (0.0701)

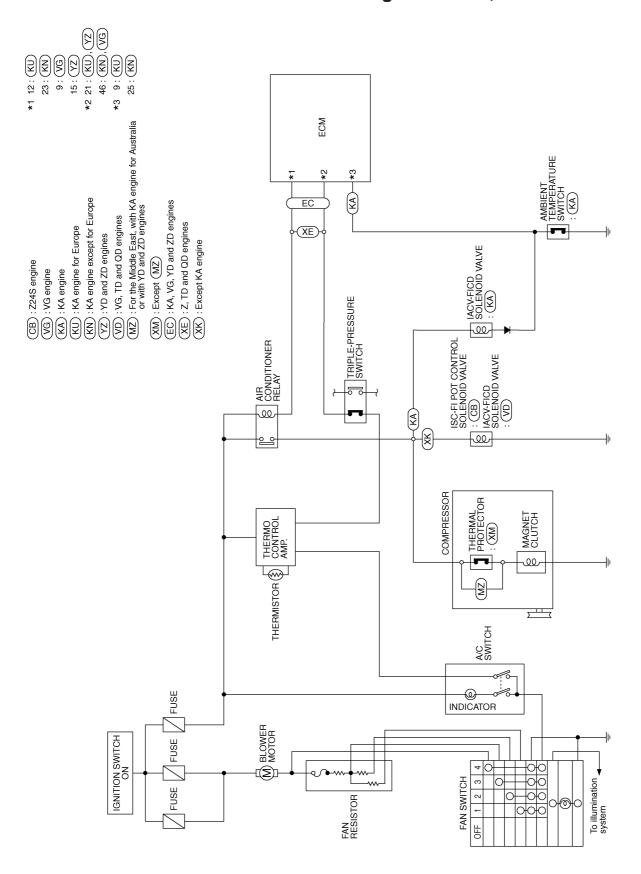
Refrigeration Cycle

REFRIGERANT SYSTEM PROTECTION

The refrigerant system is also protected by a pressure relief valve located on the compressor (Except VG engine models) or high-pressure flexible hose (VG engine models). When the pressure of refrigerant in the system increases to an unusual level [more than 3,727 kPa (37.3 bar, 38 kg/cm², 540 psi)], the release port on the pressure relief valve automatically opens and releases refrigerant into the atmosphere.

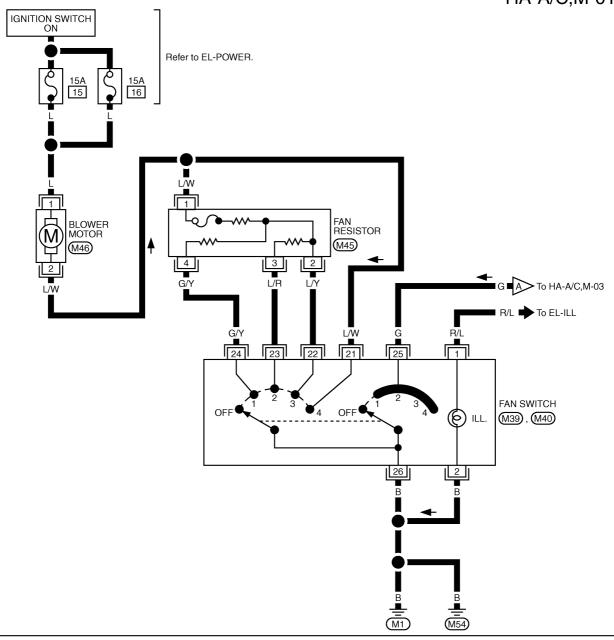


Circuit Diagram — A/C, M —



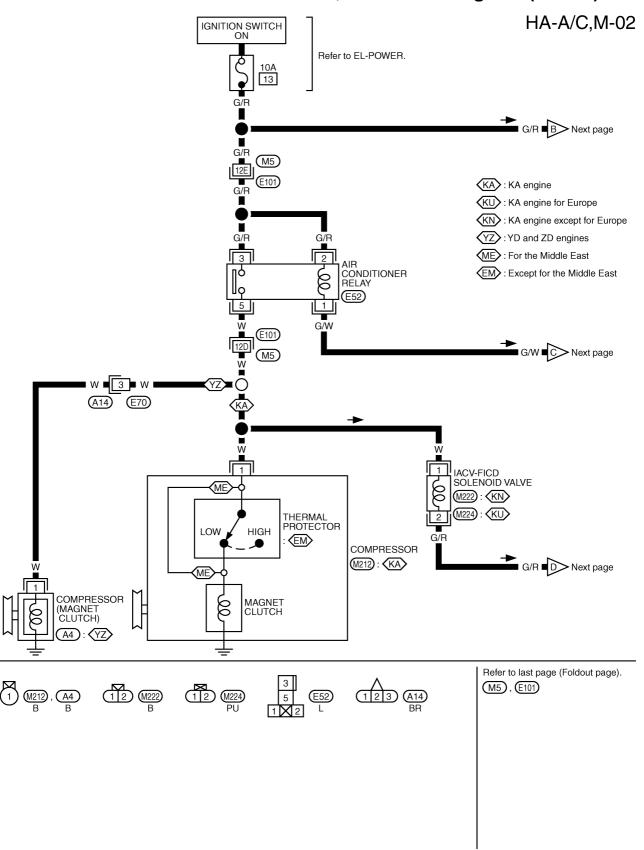
Wiring Diagram — A/C, M —/LHD Models with KA, YD and ZD Engines

HA-A/C,M-01

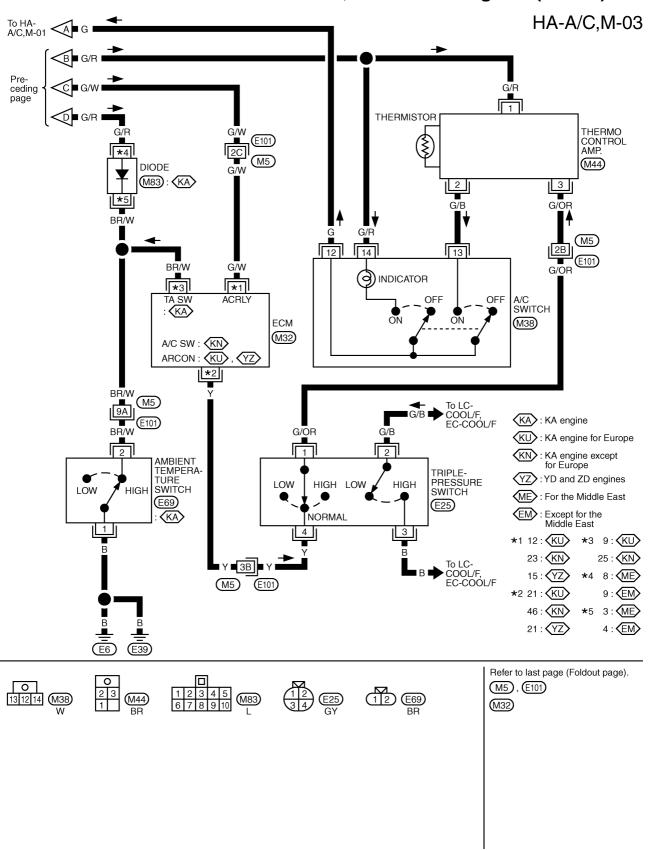




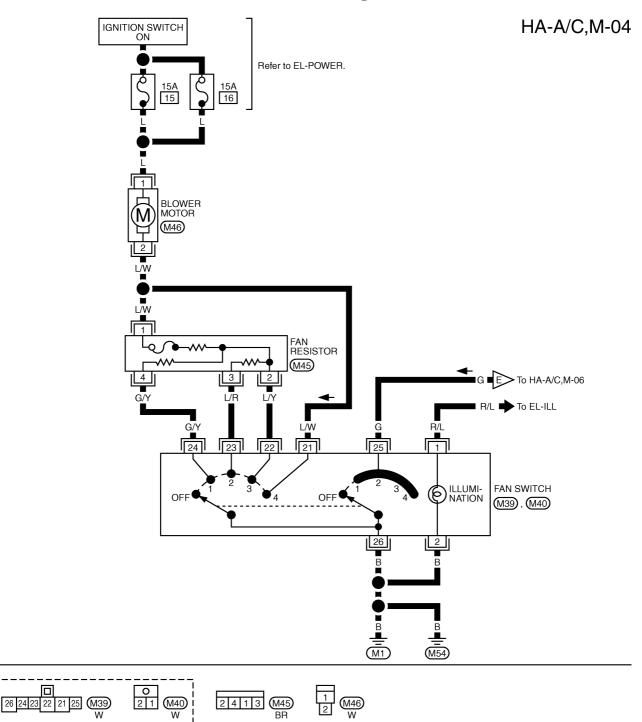
Wiring Diagram — A/C, M —/LHD Models with KA, YD and ZD Engines (Cont'd)



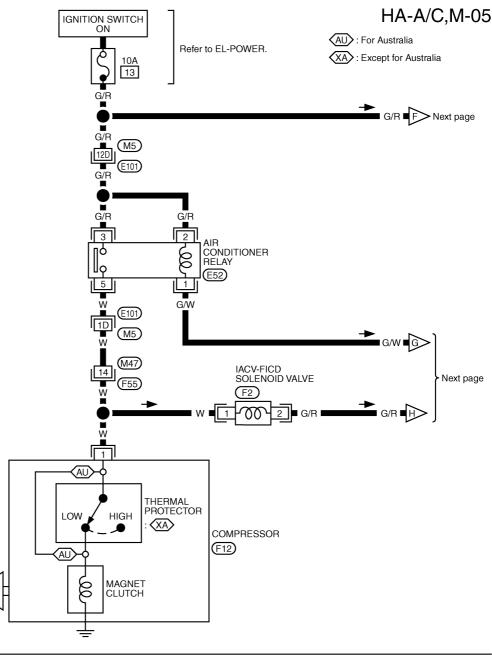
Wiring Diagram — A/C, M —/LHD Models with KA, YD and ZD Engines (Cont'd)

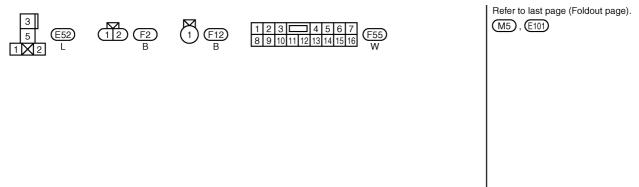


Wiring Diagram — A/C, M —/RHD Models with KA Engine

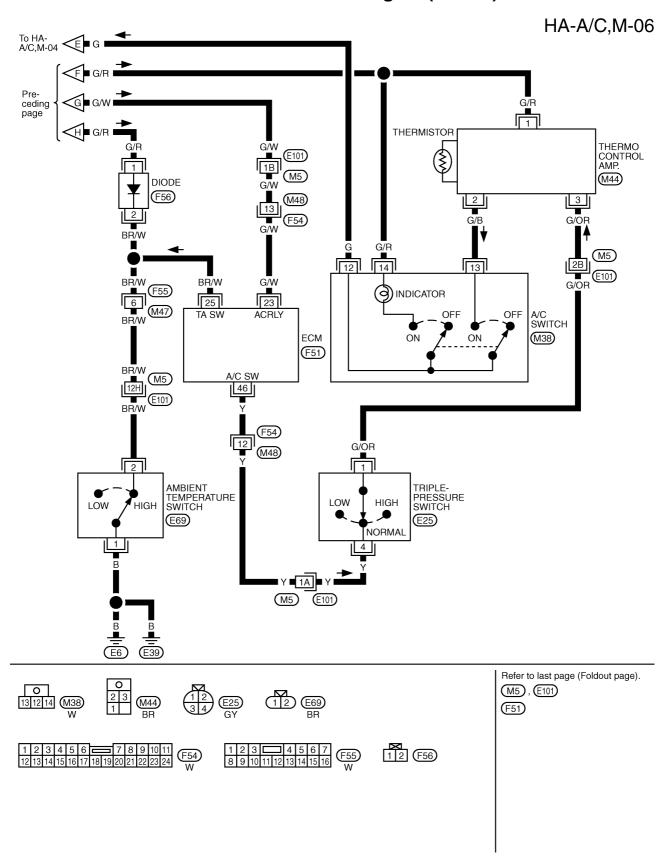


Wiring Diagram — A/C, M —/RHD Models with KA Engine (Cont'd)

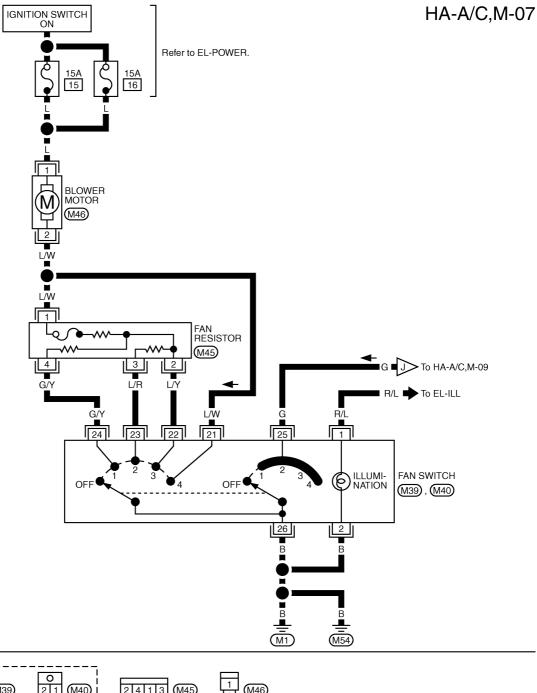




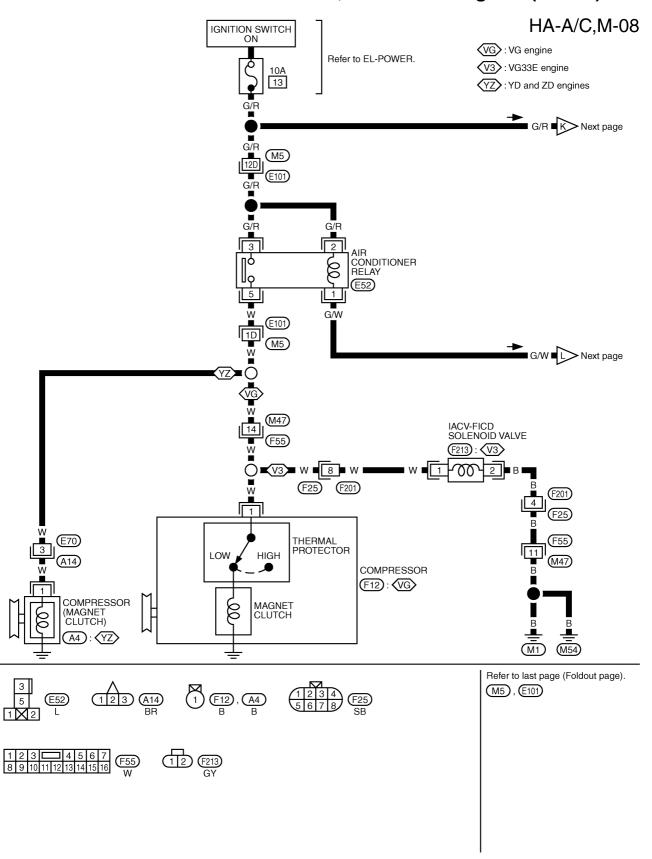
Wiring Diagram — A/C, M —/RHD Models with KA Engine (Cont'd)



Wiring Diagram — A/C, M —/RHD Models with VG, YD and ZD Engines

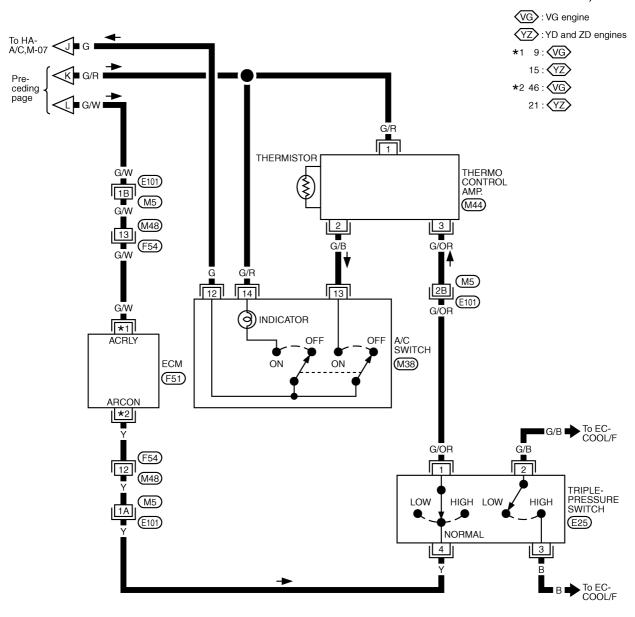


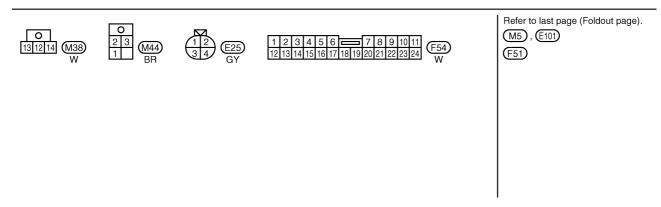
Wiring Diagram — A/C, M —/RHD Models with VG, YD and ZD Engines (Cont'd)



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







SERVICE DATA AND SPECIFICATIONS (SDS)

General Specifications

COMPRESSOR

Model	ZEXEL VALEO CLIMATE CONTROL make DKS-17CH
Туре	Swash plate
Displacement cm ³ (cu in)	168 (10.25)
Cylinder bore x stroke mm (in)	38.0 x 24.7 (1.50 x 0.972)
Direction of rotation	Clockwise (Viewed from drive belt)
Drive belt	Type A

LUBRICANT

Model		ZEXEL VALEO CLIMATE CONTROL make DKS-17CH	
Туре		KLH00-PAGS0	
	Total in system	200 (7.0)	
Capacity mℓ (Imp fl oz)	Compressor (Service parts) charging amount	200 (7.0)	

Inspection and Adjustment

REFRIGERANT

		YD engine	Except YD engine	
Туре		HFC-134a (R-134a)		
Capacity	kg (lb)	0.55 (1.21)	0.65 (1.43)	

ENGINE IDLING SPEED (When A/C is ON)

• Refer to EC section.

BELT TENSION

 Refer to MA section ("Checking Drive Belts").

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

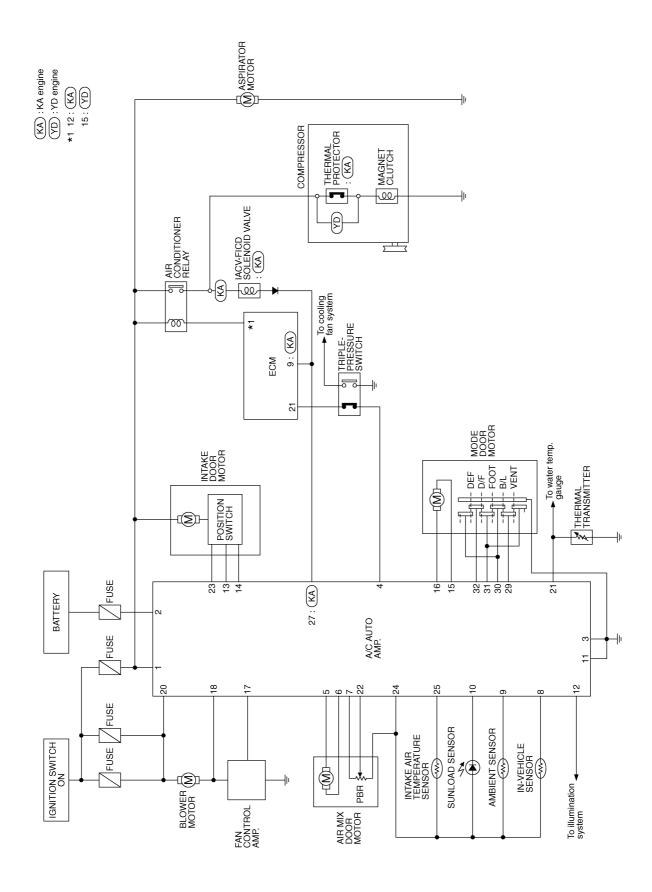
The Supplemental Restraint System such as "AIR BAG" and "SEAT BELT PRE-TENSIONER" used along with a seat belt, helps to reduce the risk or severity of injury to the driver and front passenger in a frontal collision. The SRS composition which is available to NISSAN MODEL D22 is as follows (The composition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

WARNING:

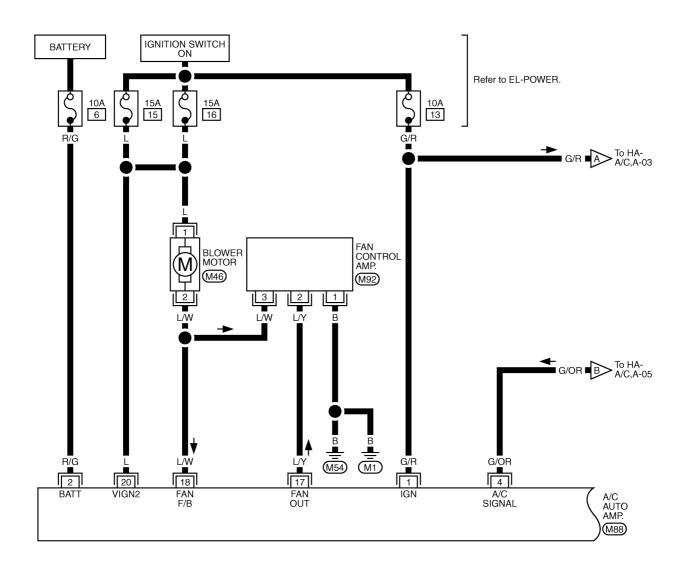
- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system.
- Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow harness connector.

Circuit Diagram — A/C, A —

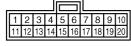


Wiring Diagram — A/C, A —

HA-A/C,A-01





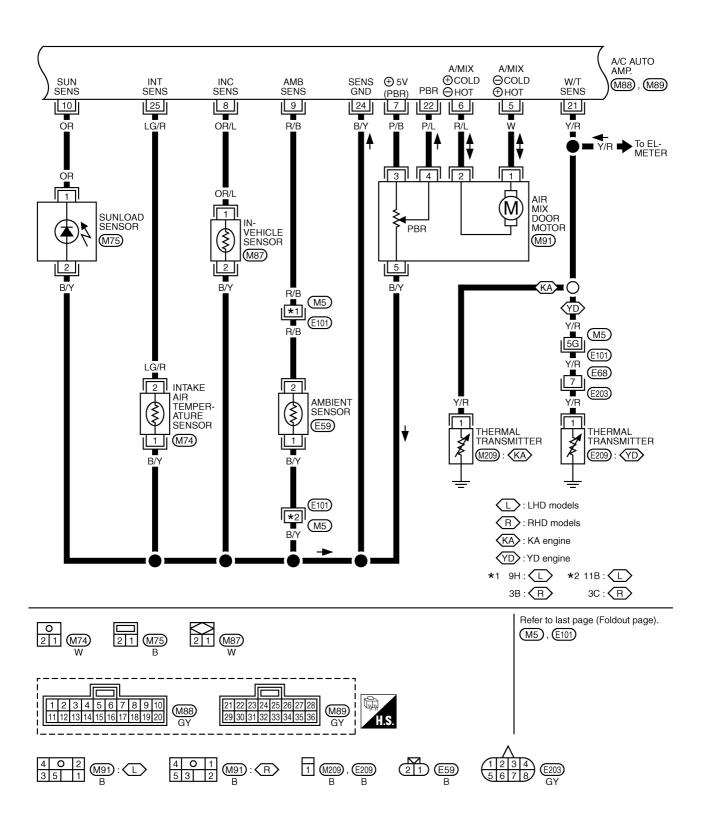


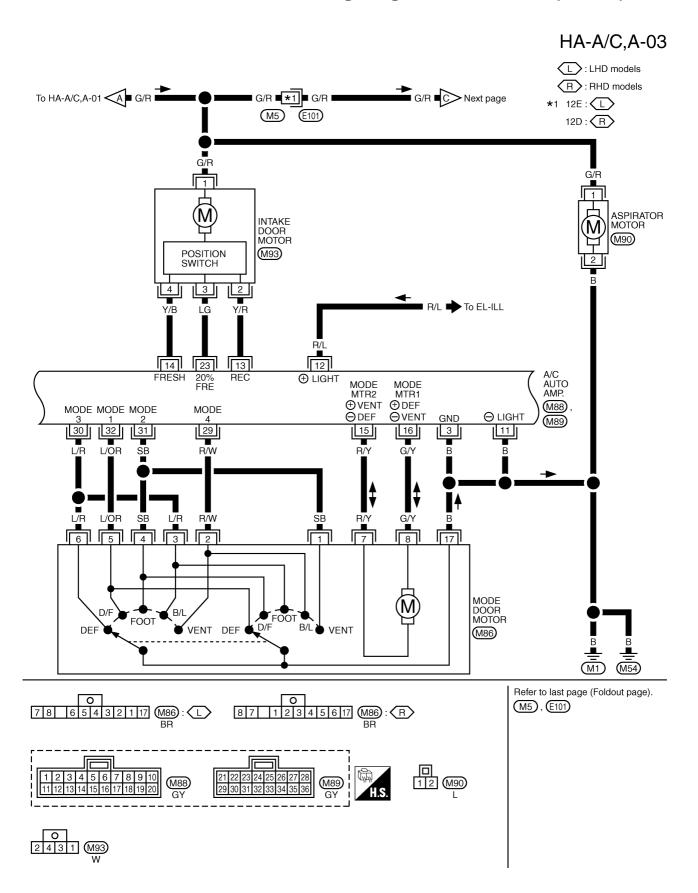




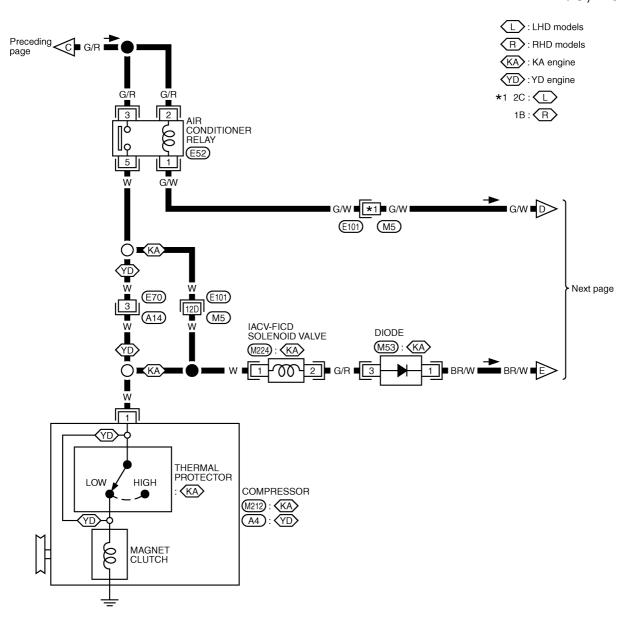


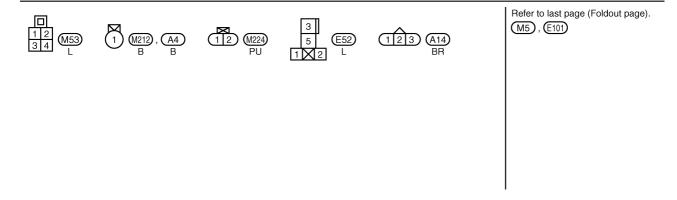
HA-A/C,A-02

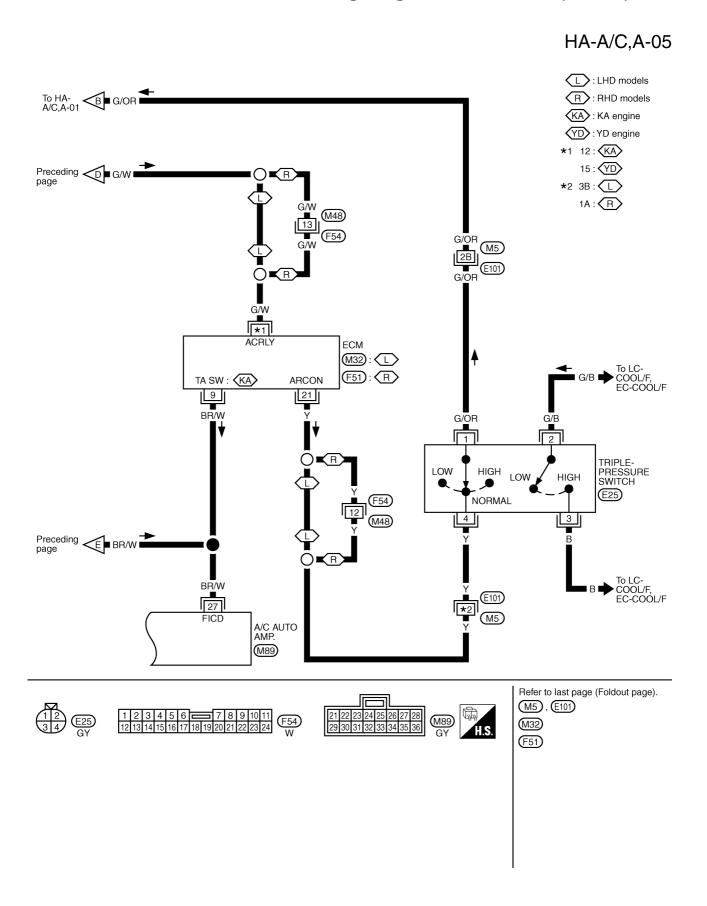




HA-A/C,A-04





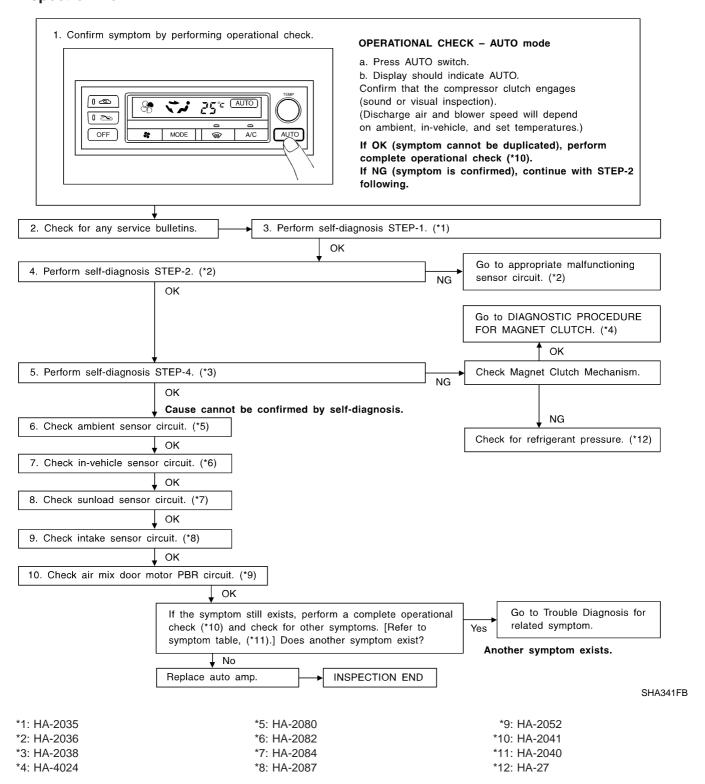


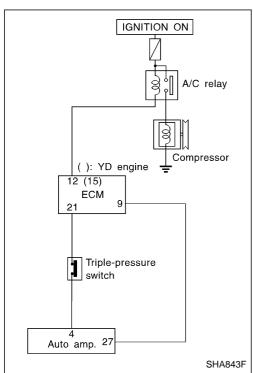
Magnet Clutch

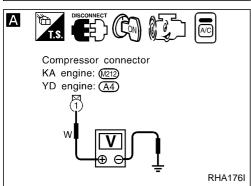
TROUBLE DIAGNOSIS PROCEDURE FOR MAGNET CLUTCH SYMPTOM:

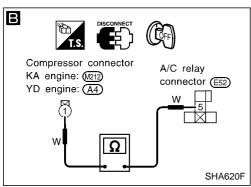
Magnet clutch does not engage.

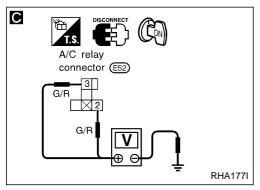
Inspection flow





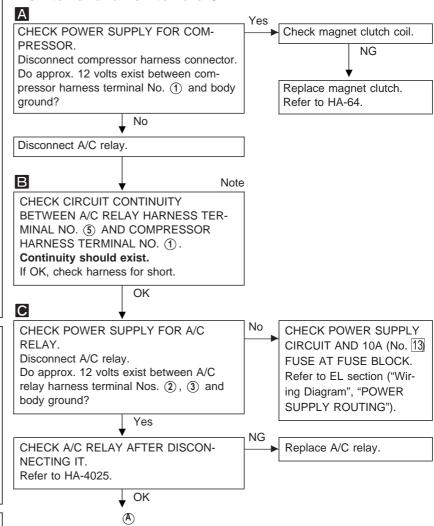






Magnet Clutch (Cont'd) DIAGNOSTIC PROCEDURE

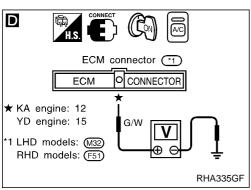
SYMPTOM: Magnet clutch does not engage when A/C switch and fan switch are ON.

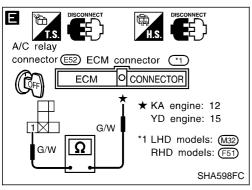


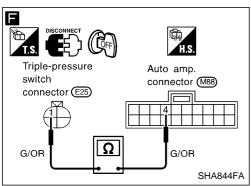
Note:

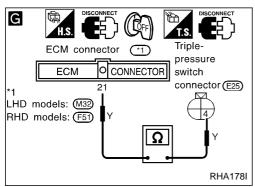
(Go to next page.)

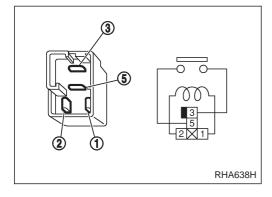
If the result is NG or No after checking circuit continuity, repair harness or connector.



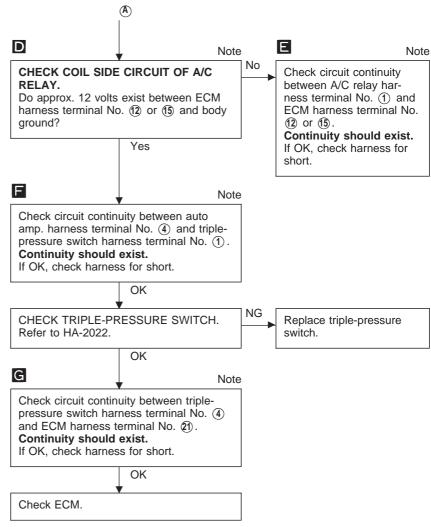








Magnet Clutch (Cont'd)



Note:

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

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.

General Specifications

COMPRESSOR

Model	ZEXEL VALEO CLIMATE CONTROL make DKS-17CH
Туре	Swash plate
Displacement cm ³ (cu in)	168 (10.25)
Cylinder bore x stroke mm (in)	38.0 x 24.7 (1.50 x 0.972)
Direction of rotation	Clockwise (Viewed from drive belt)
Drive belt	Type A

LUBRICANT

Model		ZEXEL VALEO CLIMATE CONTROL make DKS-17CH	
Туре		KLH00-PAGS0	
	Total in system	200 (7.0)	
Capacity mℓ (Imp fl oz)	Compressor (Service parts) charging amount	200 (7.0)	

Inspection and Adjustment

REFRIGERANT

		YD engine	Except YD engine	
Туре		HFC-134a (R-134a)		
Capacity	kg (lb)	0.55 (1.21)	0.65 (1.43)	

ENGINE IDLING SPEED (When A/C is ON)

• Refer to EC section.

BELT TENSION

 Refer to MA section ("Checking Drive Belts").