SECTION EL

CONTENTS

CONTENTS (Cont'd.)

CONTENTS (Cont'd.)

When you read wiring diagrams:
- **Read GI section, "HOW TO READ WIRING DIAGRAMS — Except EF & EC section".**

WIRING DIAGRAM REFERENCE CHART

Precautions for Supplemental Restraint System "AIR BAG"

The Supplemental Restraint System "Air Bag" helps to reduce the risk or severity of injury to the driver and front passenger in a frontal collision. The Supplemental Restraint System consists of air bags (located in the center of the steering wheel and on the instrument panel on the passenger side), sensors, a control module, warning lamp, wiring harness and spiral cable. Information necessary to service the system safely is included in the **BF section** of this Service Manual.

WARNING:

- **To avoid rendering the SRS inoperative, which could lead to personal injury or death in the event of a severe frontal collision, 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.**
- **All SRS electrical wiring harnesses and connectors are covered with yellow outer insulation. Do not use electrical test equipment on any circuit related to the SRS "Air Bag".**

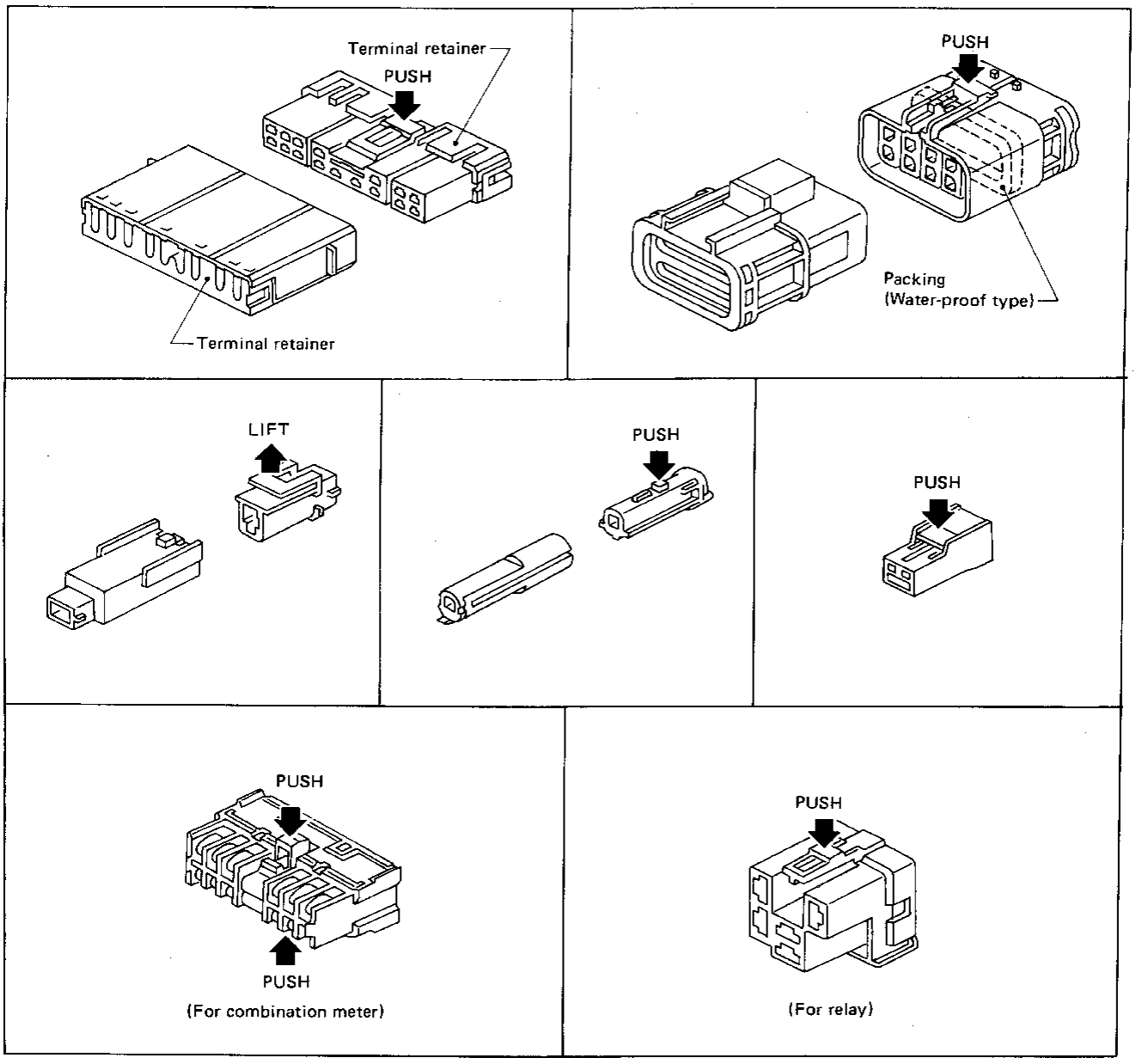
Description

HARNESS CONNECTOR

- The connector can be disconnected by pushing or lifting the locking section.

CAUTION:
Do not pull the harness when disconnecting the connector.

[Example]

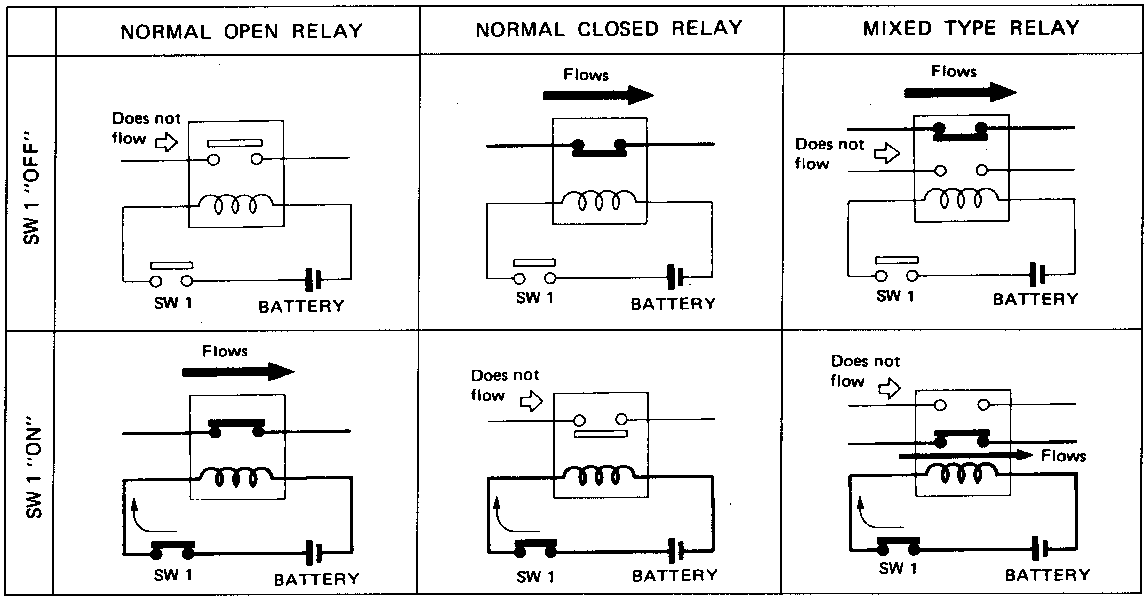


SEL769D

Description

NORMAL OPEN, NORMAL CLOSED AND MIXED TYPE RELAYS

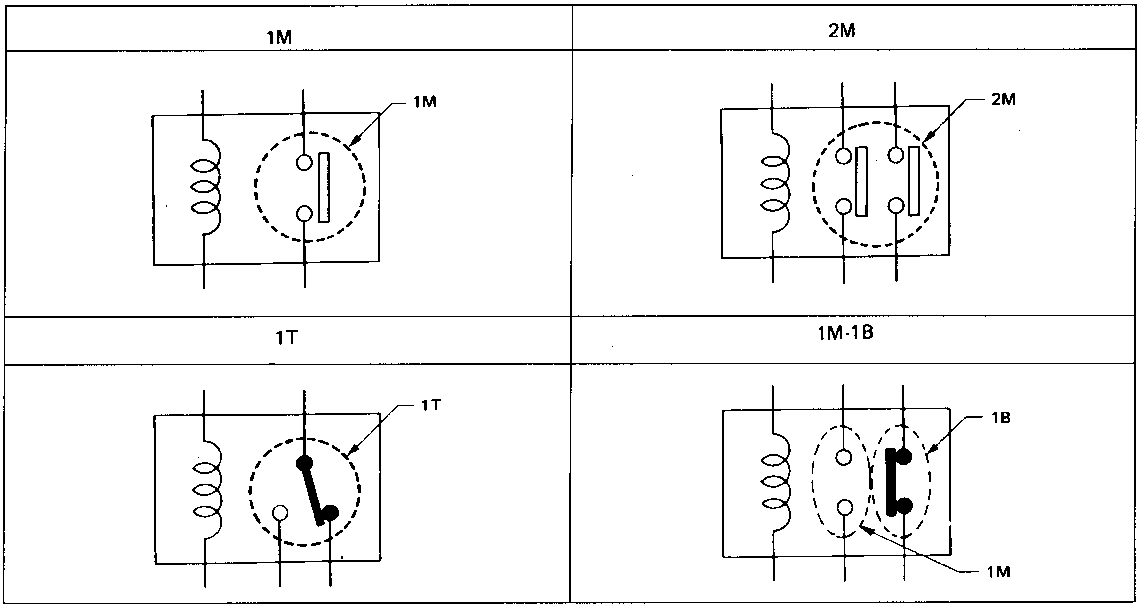
Relays can mainly be divided into three types: normal open, normal closed and mixed type relays.



SEL881H

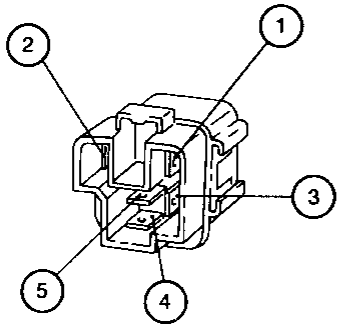
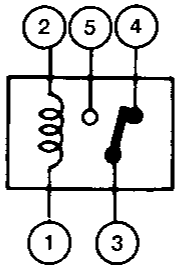
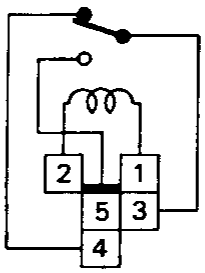
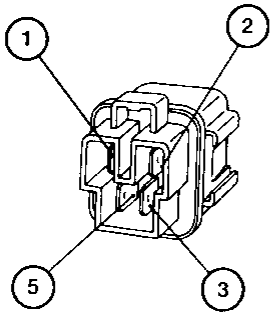
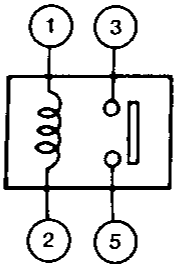
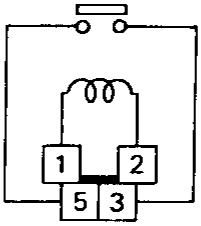
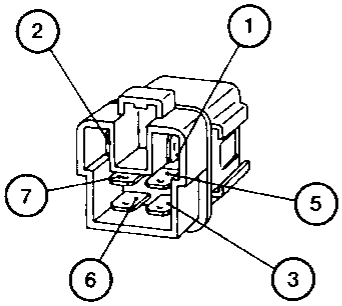
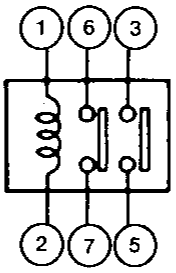
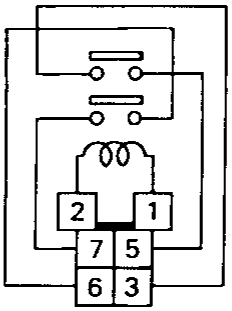
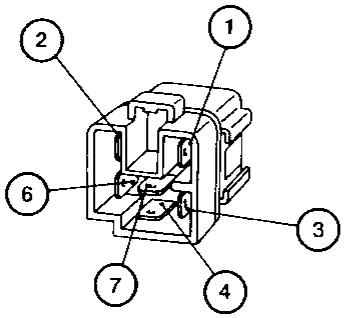
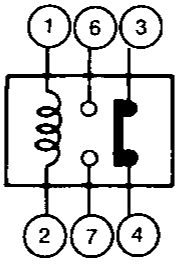
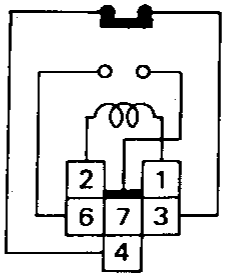
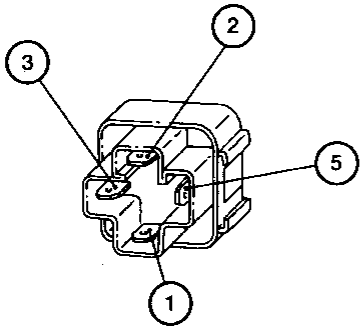
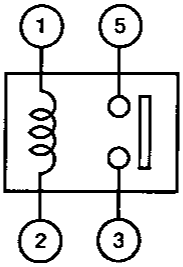
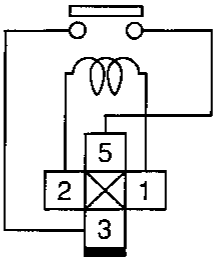
TYPE OF STANDARDIZED RELAYS

1M	..... 1 Make	2M	..... 2 Make
1T	..... 1 Transfer	1M•1B	..... 1 Make 1 Break



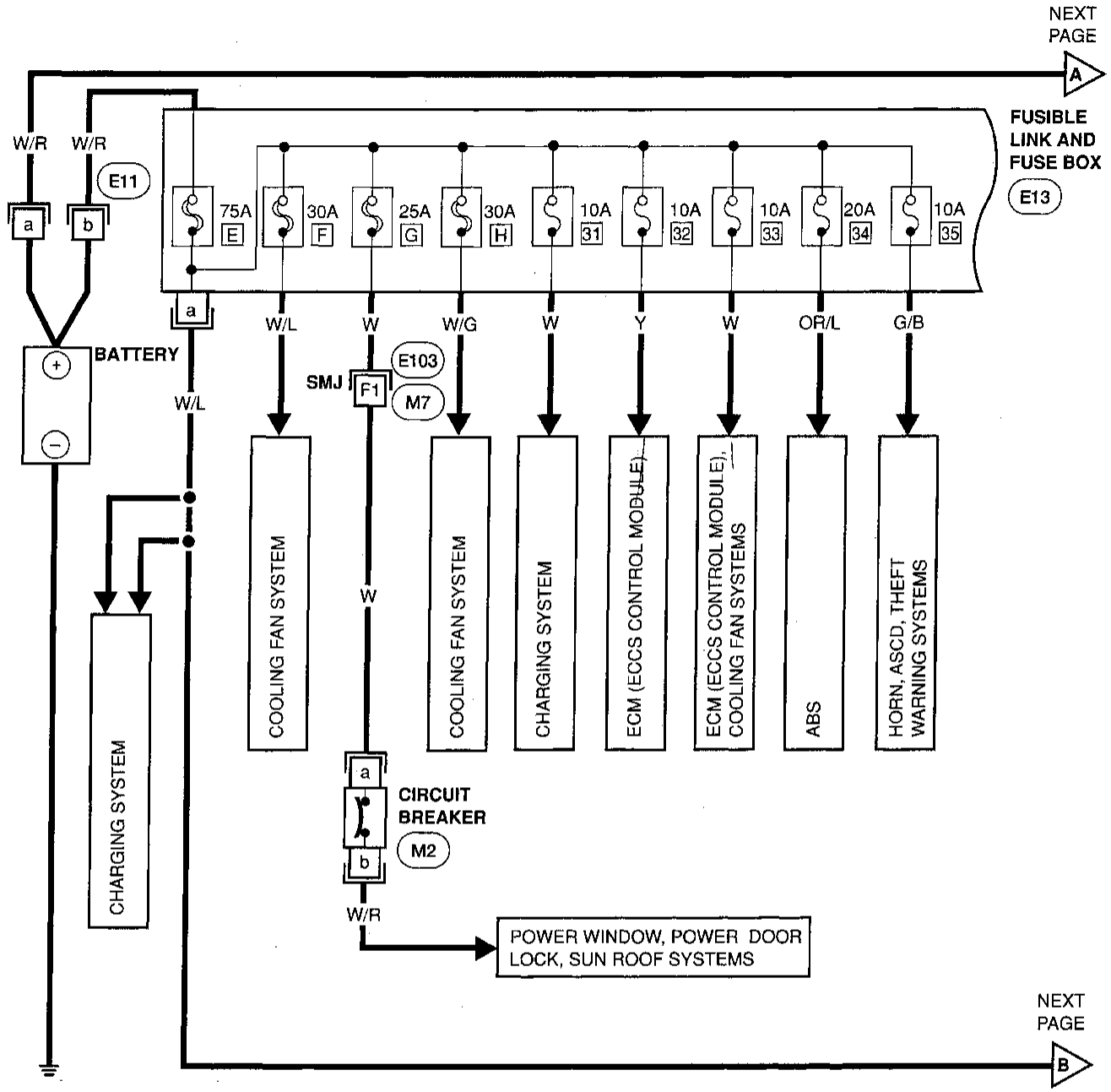
SEL882H

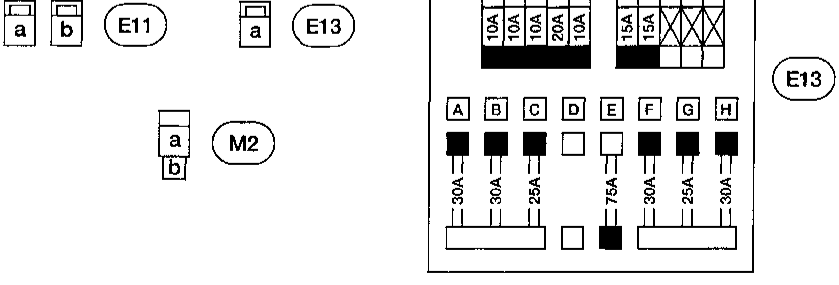
Description (Cont'd)

Type	Outer view	Circuit	Connector symbol and connection	Case color
1T				BLACK
1M				BLUE, GREEN or YELLOW
2M				BROWN
1M·1B				GRAY
1M				BLUE

AEL227

Wiring Diagram

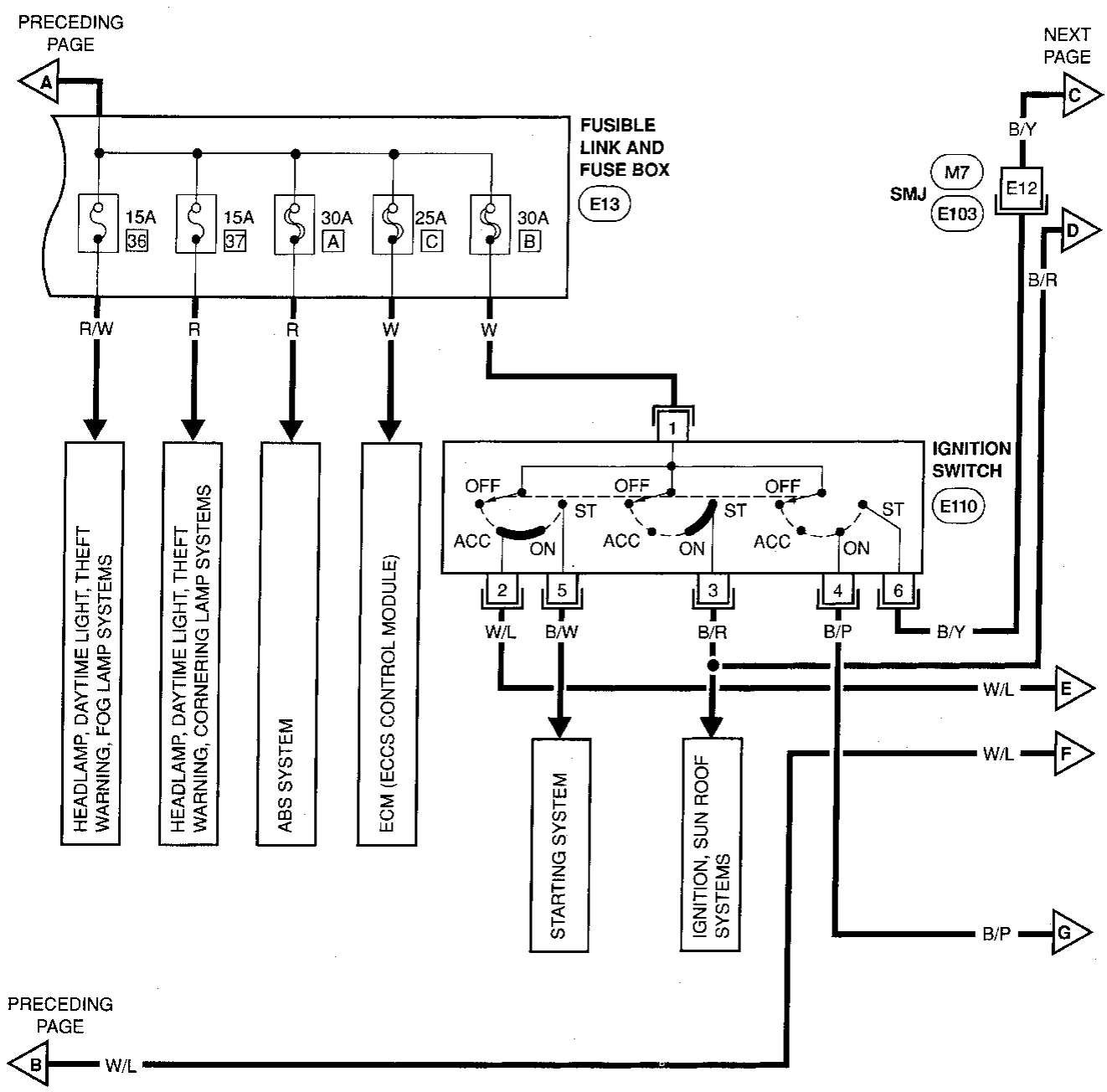


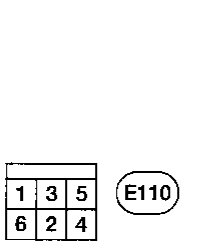


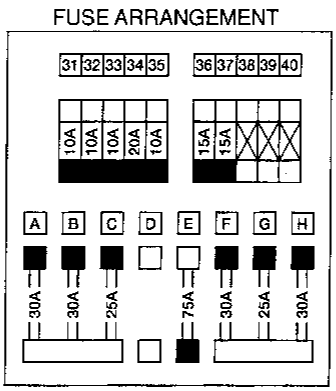
Refer to Foldout Page for details. E103 M7

AEL244-A

Wiring Diagram (Cont'd)



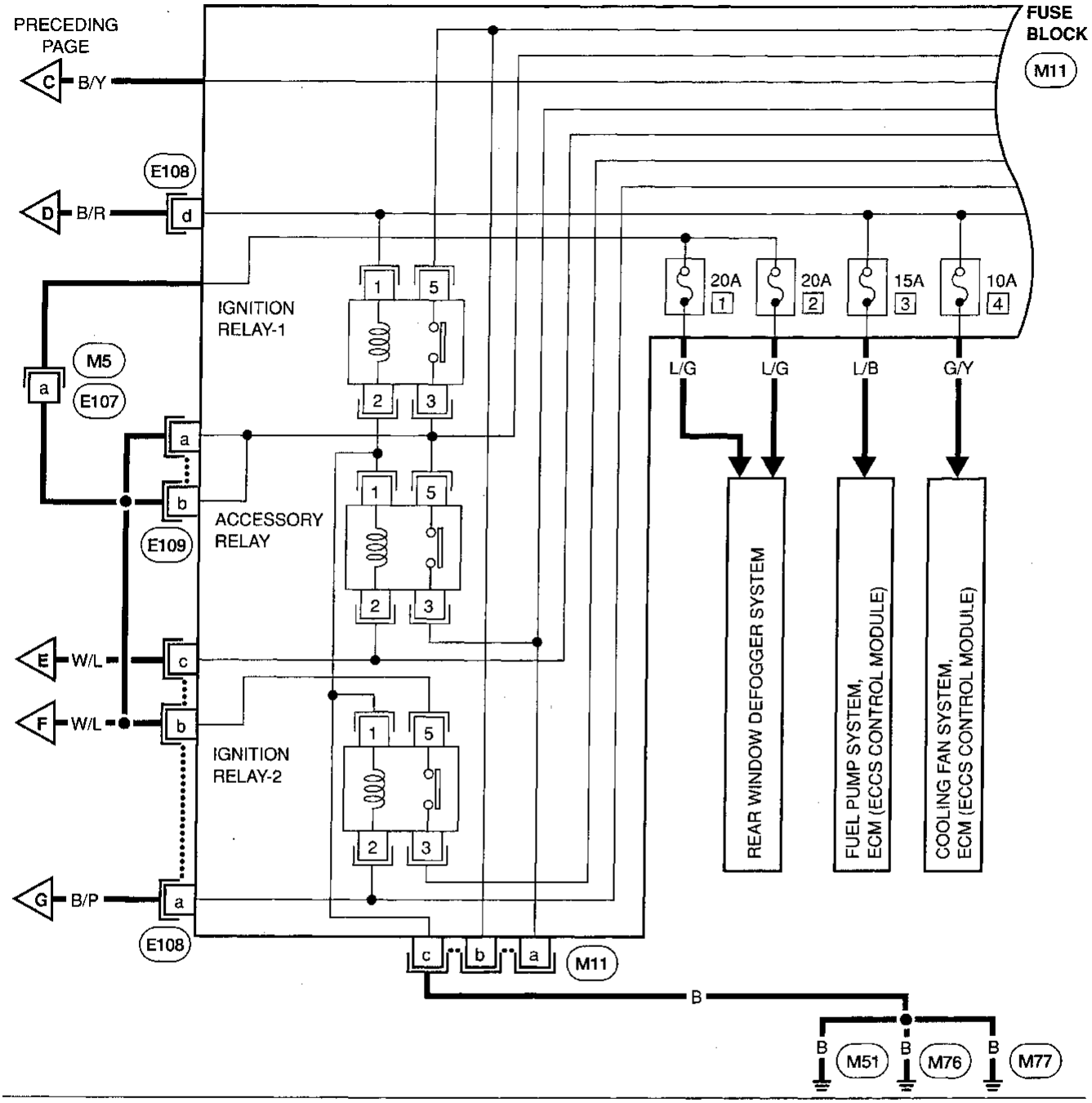


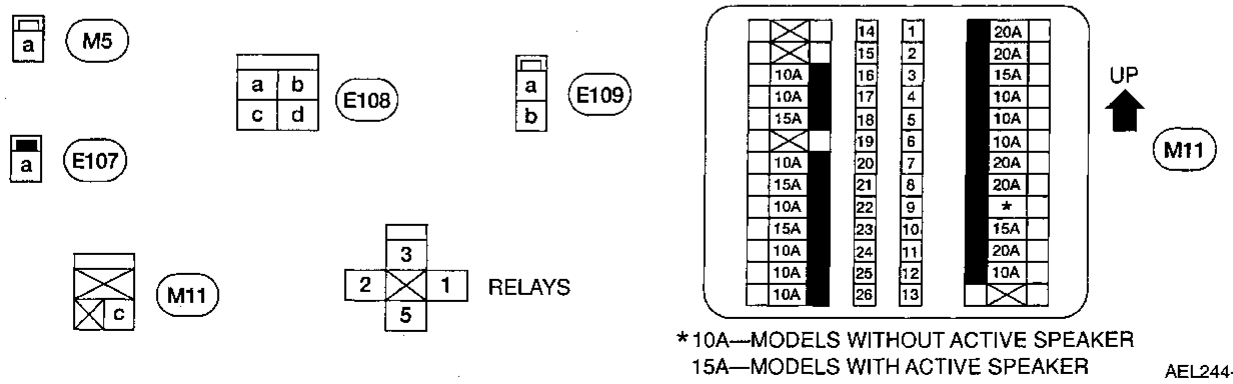


Refer to Foldout Page for details. E103 M7

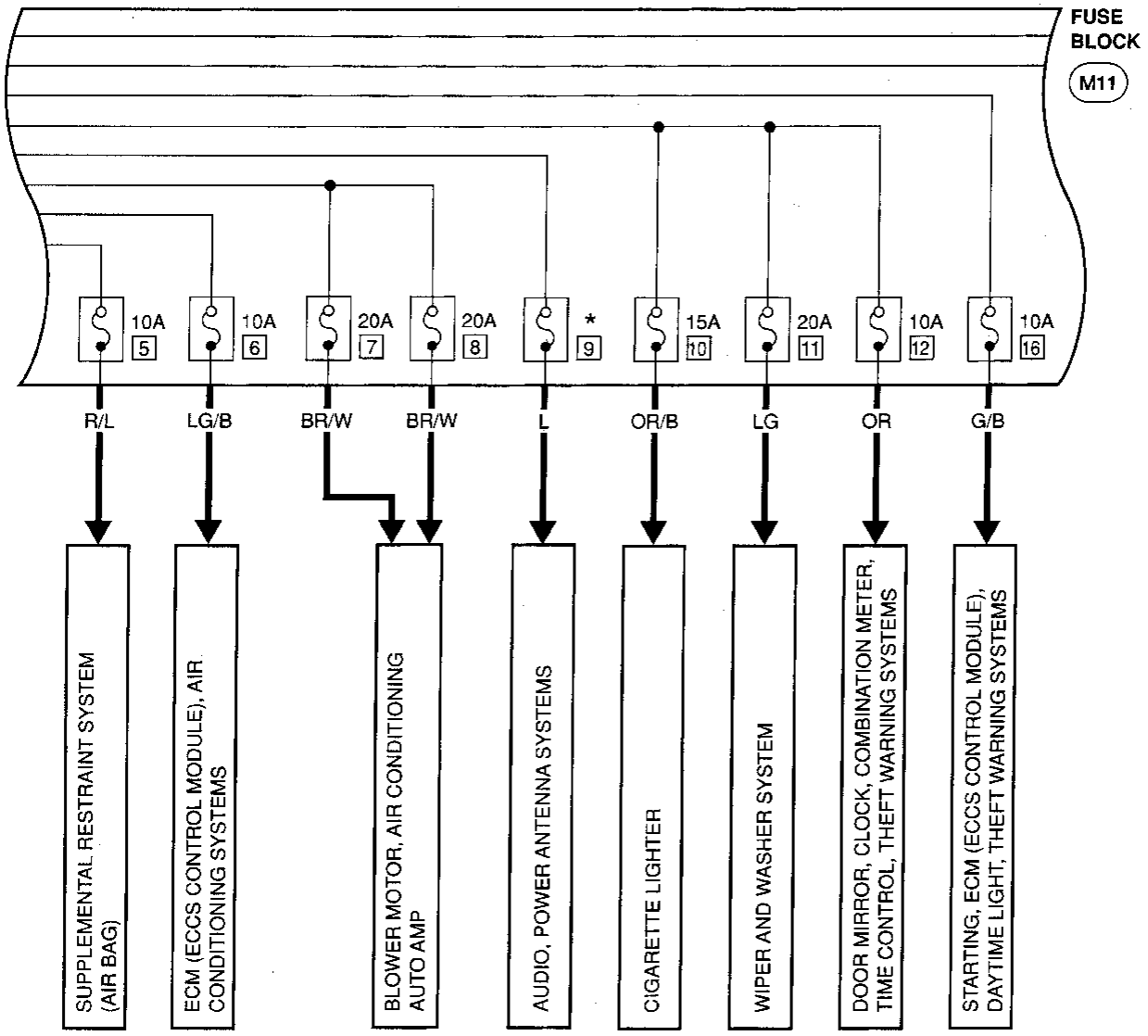
AEL244-B

Wiring Diagram (Cont'd)



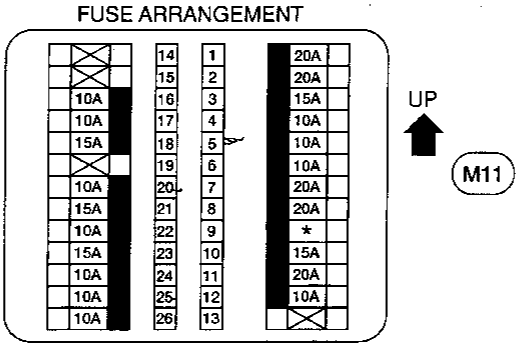


Wiring Diagram (Cont'd)



* 10A—MODELS WITHOUT ACTIVE SPEAKER
15A—MODELS WITH ACTIVE SPEAKER

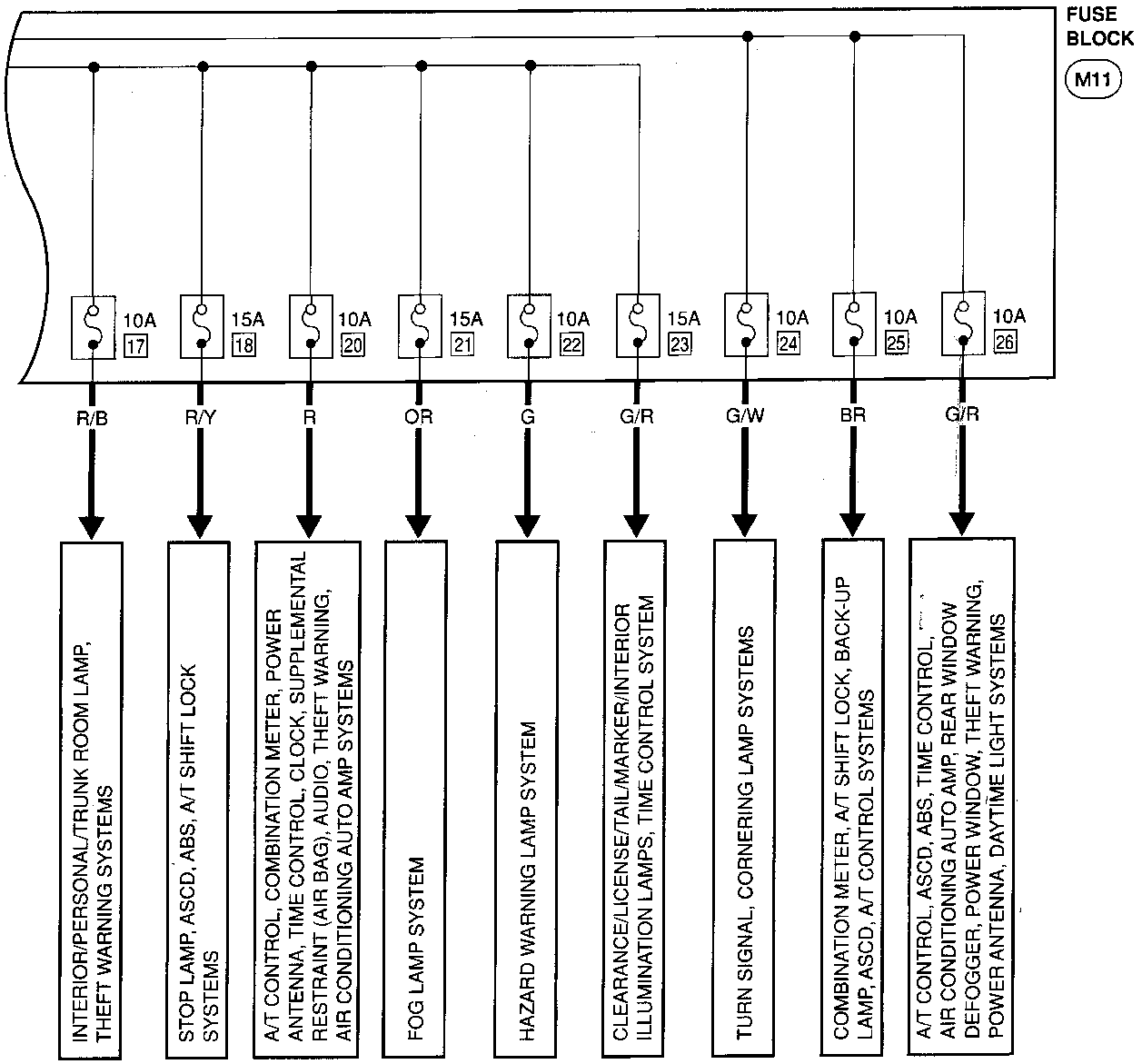
FUSE ARRANGEMENT



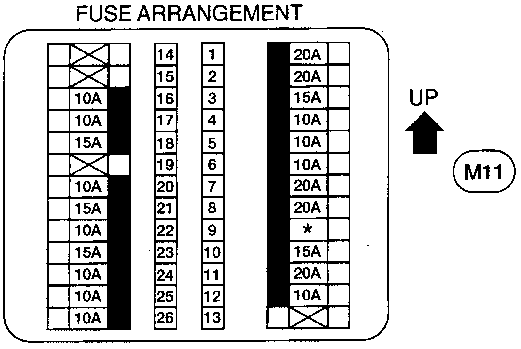
* 10A—MODELS WITHOUT ACTIVE SPEAKER
15A—MODELS WITH ACTIVE SPEAKER

AEL244-D

Wiring Diagram (Cont'd)

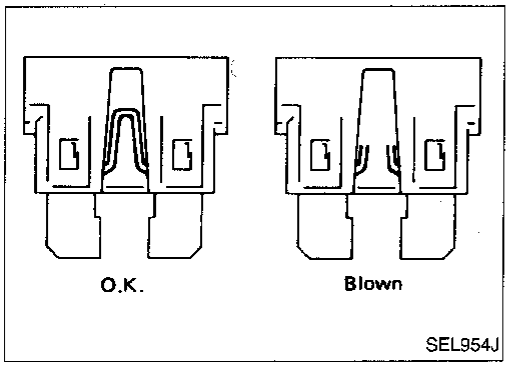


FUSE ARRANGEMENT



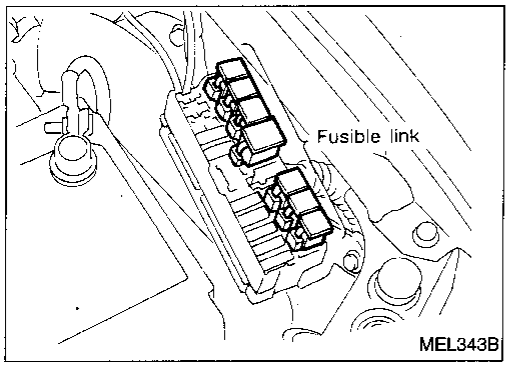
*10A—MODELS WITHOUT ACTIVE SPEAKER
15A—MODELS WITH ACTIVE SPEAKER

AEL244-E



Fuse

a. **If fuse is blown, be sure to eliminate cause of problem before installing new fuse.**
b. **Use fuse of specified rating. Never use fuse of more than specified rating.**
c. **Do not partially install fuse; always insert it into fuse holder properly.**
d. **Remove fuse for clock if vehicle is not used for a long period of time.**



Fusible Link

A melted fusible link can be detected either by visual inspection or by feeling with finger tip. If its condition is questionable, use circuit tester or test lamp.

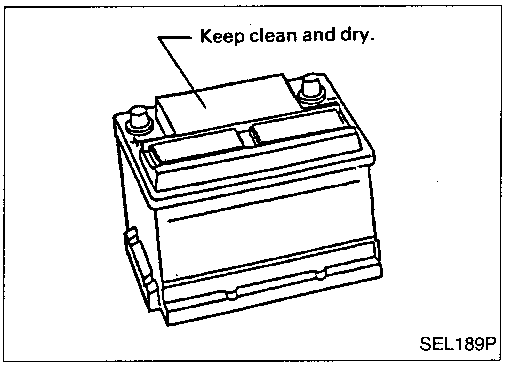
CAUTION:

a. **If fusible link should melt, it is possible that a critical circuit (power supply or large current carrying circuit) is shorted. In such a case, carefully check these circuits and eliminate cause of problem.**
b. **Never wrap outside of fusible link with vinyl tape. Extreme care should be taken with this link to ensure that it does not come into contact with any other wiring harness, or vinyl or rubber parts.**

CAUTION:

a. If it becomes necessary to start the engine with a booster battery and jumper cables, use a 12-volt booster battery.

b. After connecting battery cables, ensure that they are tightly clamped to battery terminals for good contact.

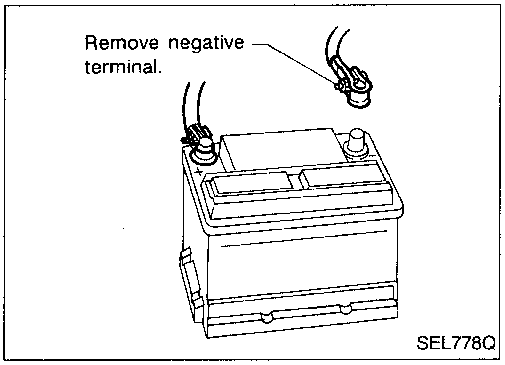


How to Handle Battery

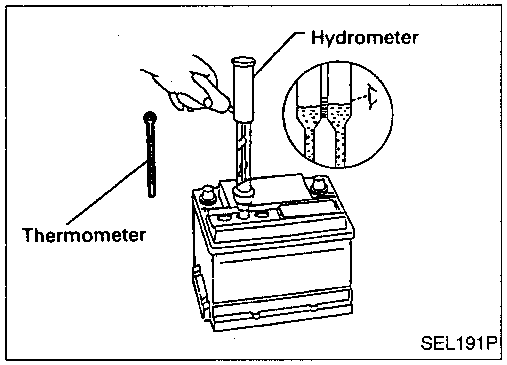
METHODS OF PREVENTING DISCHARGE

The following precautions must be taken to prevent battery discharge.

- The battery surface (particularly its top) should always be kept clean and dry.
- The terminal connections should be clean and tight.
- **During every routine maintenance, check the electrolyte level.**
  This also applies to batteries designated as "low maintenance" and "maintenance-free".



- When the vehicle is not going to be used over a long period of time, disconnect the negative battery terminal.



- Check the condition of the battery by checking the specific gravity of the electrolyte.

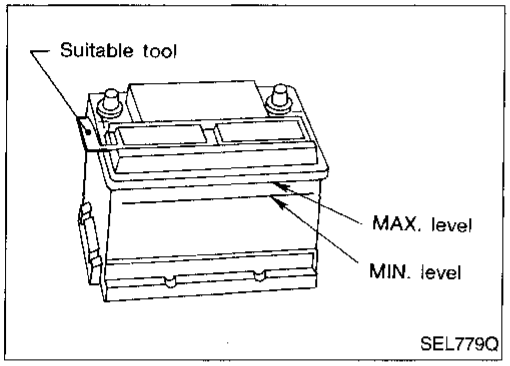
How to Handle Battery (Cont'd)

CHECKING ELECTROLYTE LEVEL

WARNING:

Do not allow battery fluid to come in contact with skin, eyes, fabrics, or painted surfaces. After touching a battery, do not touch or rub your eyes until you have thoroughly washed your hands. If the acid contacts the eyes, skin or clothing, immediately flush with water for 15 minutes and seek medical attention.

Normally the battery does not require additional water. However, when the battery is used under severe conditions, adding distilled water may be necessary during the battery life.

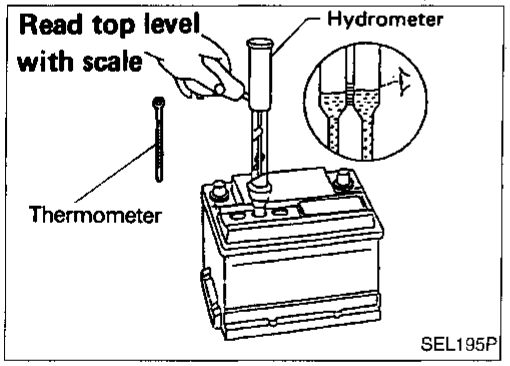


- Remove the vent cap using a suitable tool.
- Add distilled water up to the MAX level.

SULPHATION

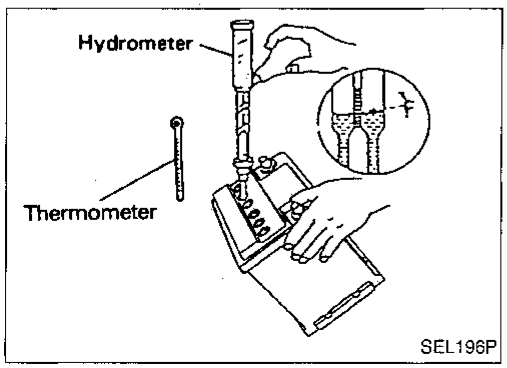
When a battery has been left unattended for a long period of time and has a specific gravity of less than 1.100, it will be completely discharged, resulting in sulphation on the cell plates.

A sulphated battery may sometimes be brought back into service by means of a long, slow charge, 12 hours or more, followed by a battery capacity test.



SPECIFIC GRAVITY CHECK

1. Read hydrometer and thermometer readings at eye level.



- When electrolyte level is too low, tilt battery case for easy measurement.

How to Handle Battery (Cont'd)

- Use the chart below to correct your hydrometer reading according to electrolyte temperature.

Hydrometer temperature correction

Battery electrolyte temperature °C (°F)	Add to specific gravity reading
71 (160)	0.032
66 (150)	0.028
60 (140)	0.024
54 (129)	0.020
49 (120)	0.016
43 (110)	0.012
38 (100)	0.008
32 (90)	0.004
27 (80)	0
21 (70)	−0.004
16 (60)	−0.008
10 (50)	−0.012
4 (39)	−0.016
−1 (30)	−0.020
−7 (20)	−0.024
−12 (10)	−0.028
−18 (0)	−0.032

Corrected specific gravity	Approximate charge condition
1.260 - 1.280	Fully charged
1.230 - 1.250	3/4 charged
1.200 - 1.220	1/2 charged
1.170 - 1.190	1/4 charged
1.140 - 1.160	Almost discharged
1.110 - 1.130	Completely discharged

CHARGING THE BATTERY

CAUTION:

a. Do not "quick charge" a fully discharged battery.

b. Keep the battery away from open flame while it is being charged.

c. When connecting the charger, connect the leads first, then turn on the charger. Do not turn on the charger first, as this may cause a spark.

d. If battery electrolyte temperature rises above 60°C (140°F), stop charging. Always charge battery at a temperature below 60°C (140°F).

Charging rates:

Amps	Time
50	1 hour
25	2 hours
10	5 hours
5	10 hours

How to Handle Battery (Cont'd)

Do not charge at more than 50 ampere rate.

Note: The ammeter reading on your battery charger will automatically decrease as the battery charges. This indicates that the voltage of the battery is increasing normally as the state of charge improves. The charging amps indicated above are referred to as **initial** charge rate.

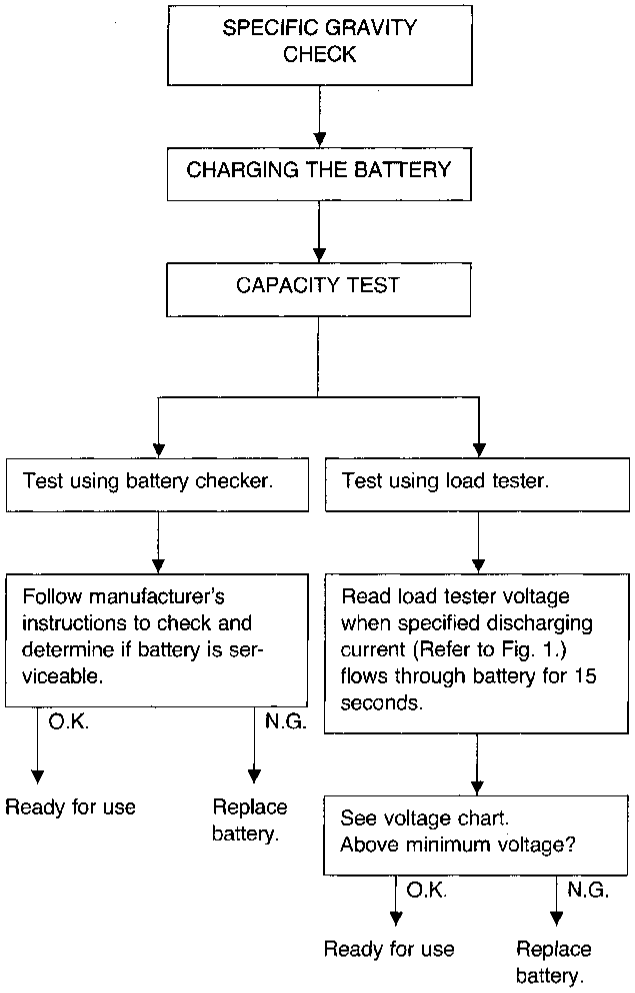
- If, after charging, the specific gravity of any two cells varies more than .050, the battery should be replaced.
- After the battery is charged, always perform a "capacity test" as follows, to assure that the battery is serviceable.

MEMORY RESET

If the battery is disconnected or goes dead the following items must be reset:

- Radio AM and FM preset
- Clock
- AUTO temperature setting trimmer

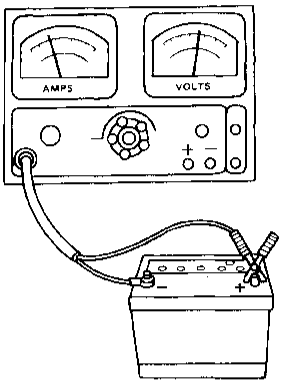
How to Handle Battery (Cont'd)



- Check battery type and determine the specified current using the following table.

Fig. 1 DISCHARGING CURRENT (Load tester)

Type	Current (A)
35	225
24R	260



SEL008Z

Voltage chart

Estimated electrolyte temperature °C (°F)	Minimum voltage under 15 second load
21 (70)	9.6
16 (60)	9.5
10 (50)	9.4
4 (40)	9.3
−1 (30)	9.1
−7 (20)	8.9
−12 (10)	8.7
−18 (0)	8.5

Service Data and Specifications (SDS)

Applied model		USA	USA option and Canada
Type		35	24R
Capacity	V-AH	12-48	12-55

System Description

M/T models for USA

Power is supplied at all times
- to ignition switch terminal ①
- through 30A fusible link (letter [B] , located in the fusible link and fuse box).

With the ignition switch in the START position, power is supplied
- through terminal ⑤ of the ignition switch
- to clutch interlock relay terminal ③.

Power is also supplied
- through terminal ⑥ of the ignition switch
- to the 10A fuse (No. [16] , located in the fuse block).

For models with theft warning system

With the ignition switch in the ON or START position, power is supplied
- through 10A fuse (No. [26] , located in the fuse block)
- to theft warning relay-1 terminal ①

With the ignition switch in the START position, power is supplied
- through 10A fuse (No. [16] , located in the fuse block)
- to theft warning relay-1 terminal ③
- through theft warning relay-1 terminal ④
- to clutch interlock relay terminal ①.

If the theft warning system is triggered, terminal ② of the theft warning relay-1 is grounded and power to the clutch interlock relay is interrupted.

For models without theft warning system

With the ignition switch in the START position, power is supplied
- through 10A fuse (No. [16] , located in the fuse block)
- to clutch interlock relay terminal ①.

Ground is supplied to clutch interlock relay terminal ②, when the clutch pedal is depressed through the clutch pedal position switch and body grounds (M51), (M76), and (M77).

The clutch interlock relay is energized and power is supplied
- from terminal ⑤ of the clutch interlock relay
- to terminal ⓐ of the starter motor windings.

The starter motor plunger closes and provides a closed circuit between the battery and the starter motor. The starter motor is grounded to the engine block. With power and ground supplied, cranking occurs and the engine starts.

A/T models and CANADA M/T models

Power is supplied at all times
- to ignition switch terminal ①
- through 30A fusible link (letter [B] , located in the fusible link and fuse box).

For USA models with theft warning system

With the ignition switch in the ON or START position, power is supplied
- through 10A fuse (No. [26] , located in the fuse block)
- to theft warning relay-1 terminal ①.

With the ignition switch in the START position, power is supplied
- from ignition switch terminal ⑤
- to theft warning relay-1 terminal ③
- through theft warning relay-1 terminal ④
- to inhibitor switch terminal ②
- through inhibitor switch terminal ①, with the selector lever in the P or N position
- to terminal ⓐ of the starter motor windings.

If the theft warning system is triggered, terminal ② of the theft warning relay-1 is grounded and power to the inhibitor switch is interrupted.

System Description (Cont'd)

For USA models without theft warning system

With the ignition switch in the START position, power is supplied

- from ignition switch terminal ⑤
- to inhibitor switch terminal ②
- through inhibitor switch terminal ①, with the selector lever in the P or N position
- to terminal ⓐ of the starter motor windings.

For Canada M/T models (not available with theft warning system)

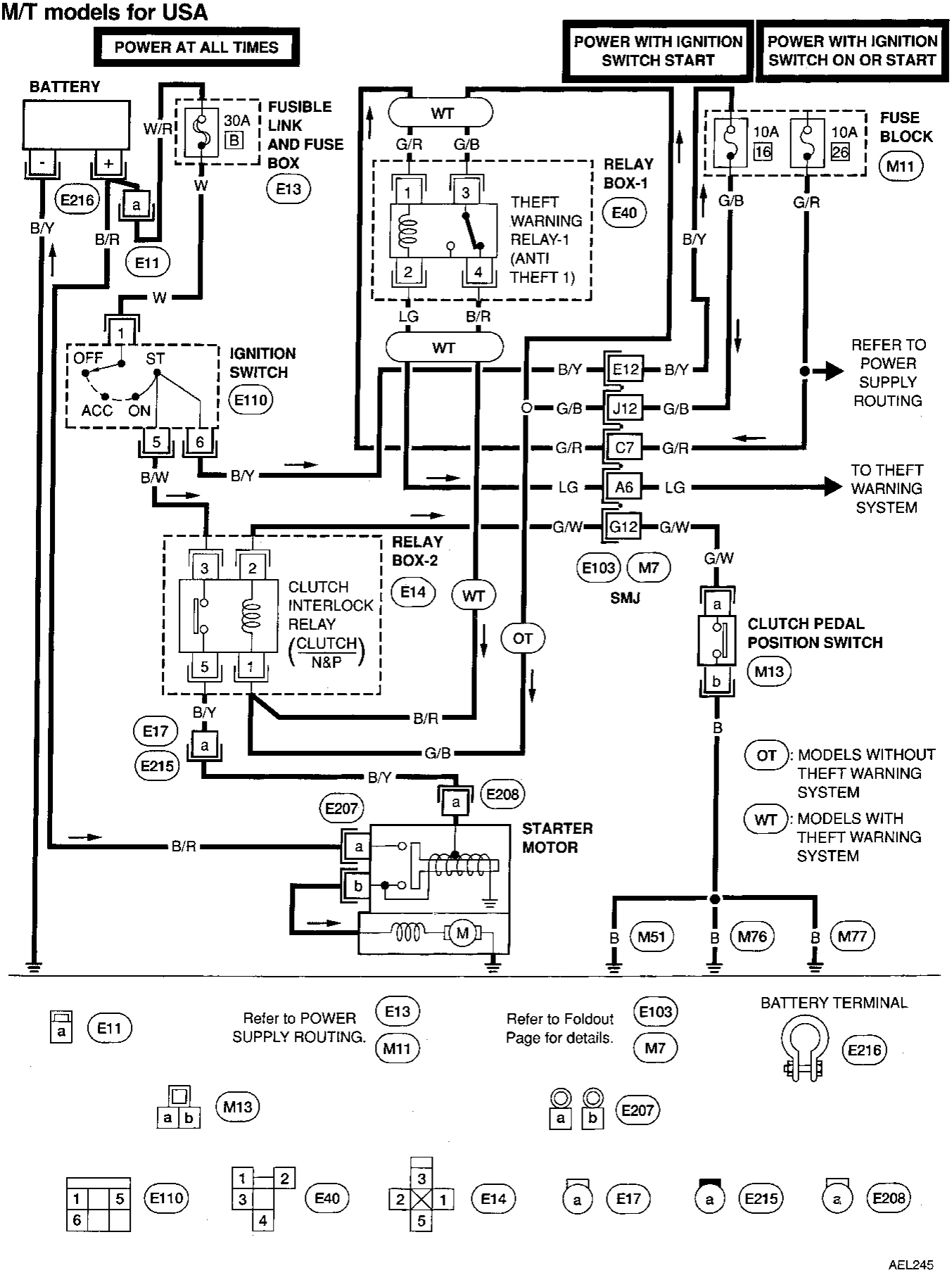
With the ignition switch in the START position, power is supplied

- from ignition switch terminal ⑤
- directly to terminal ⓐ of the starter motor windings.

The starter motor plunger closes and provides a closed circuit between the battery and the starter motor. The starter motor is grounded to the engine block. With power and ground supplied, cranking occurs and the engine starts.

Wiring Diagram

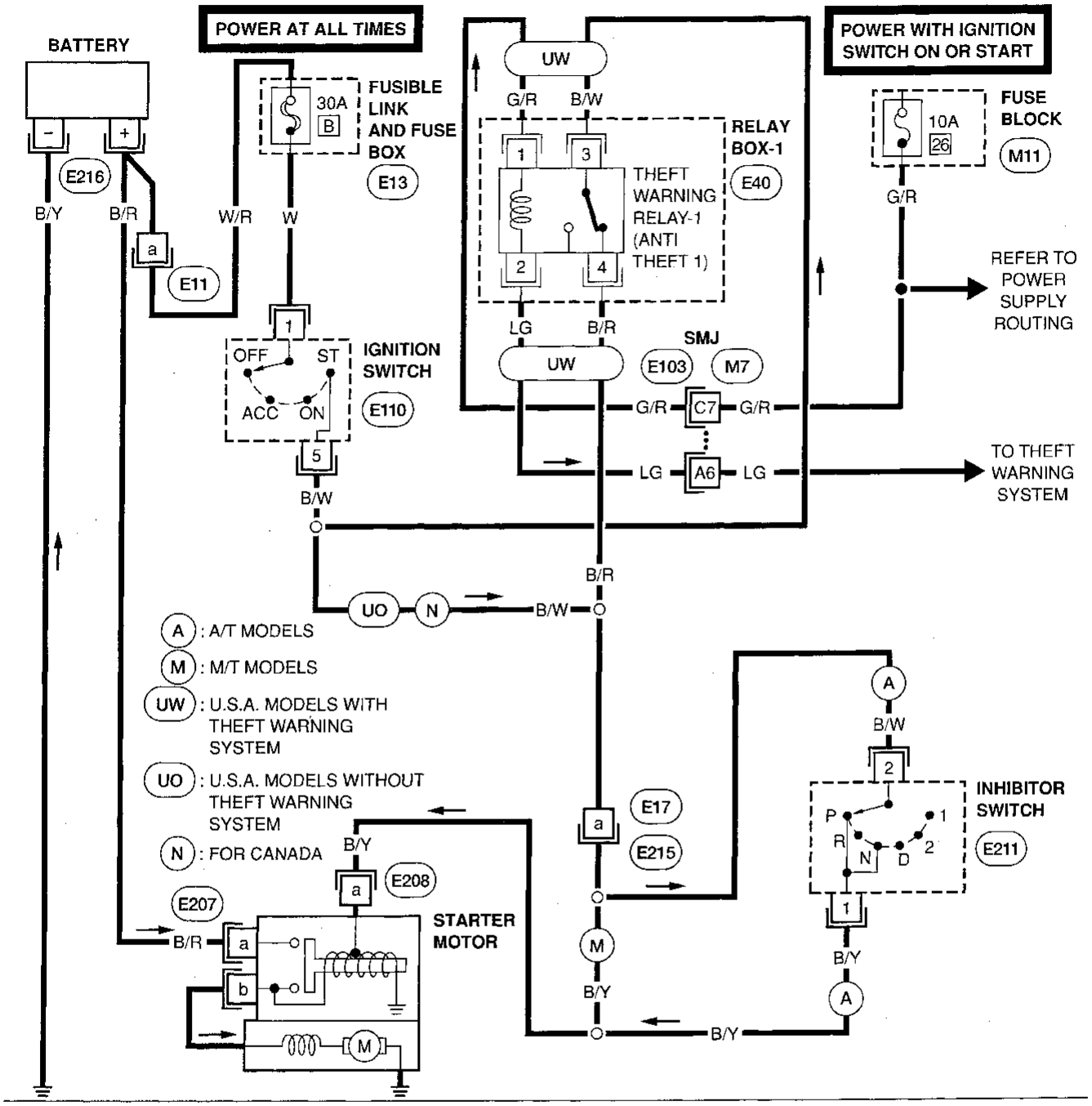
M/T models for USA

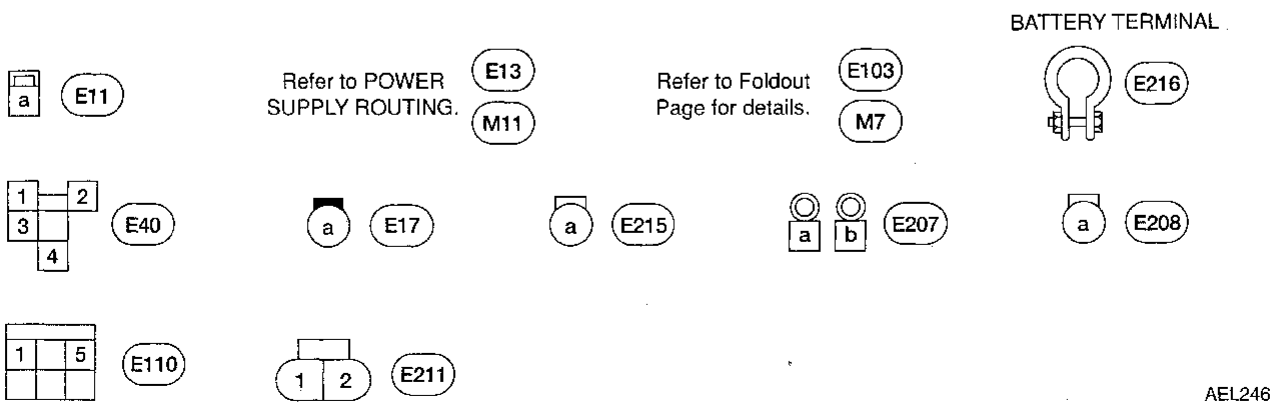


AEL245

Wiring Diagram (Cont'd)

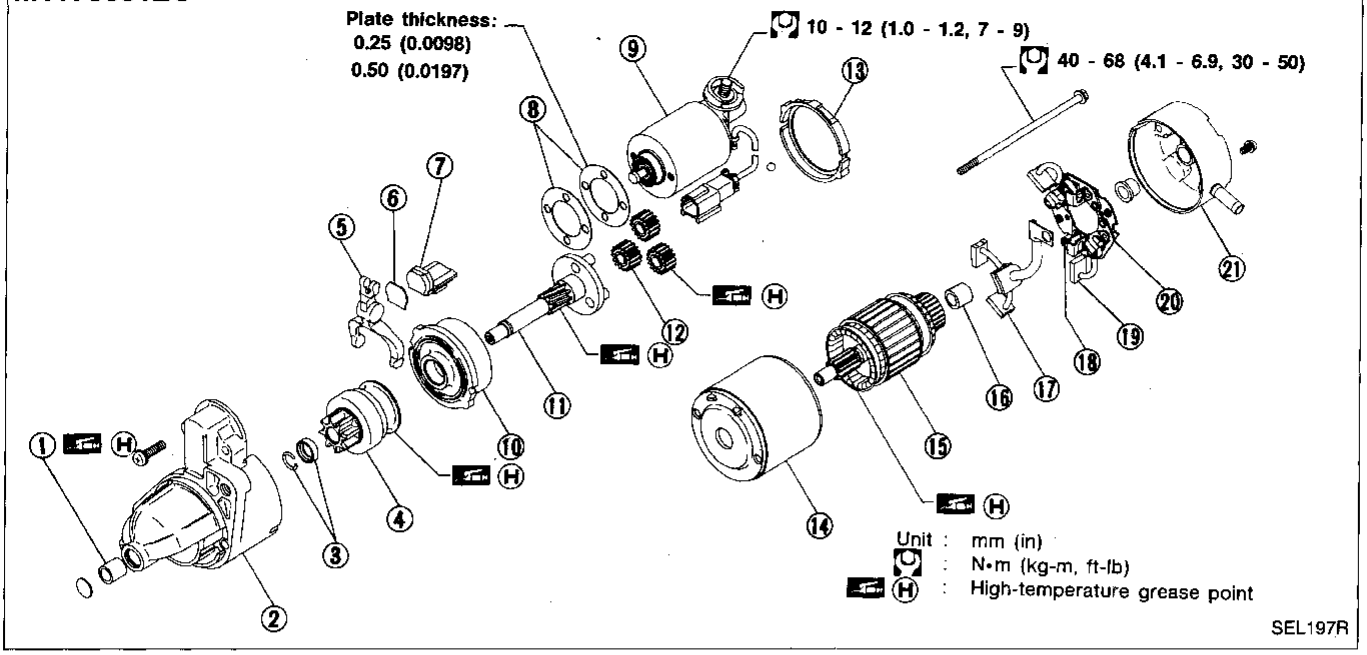
A/T models and CANADA M/T models





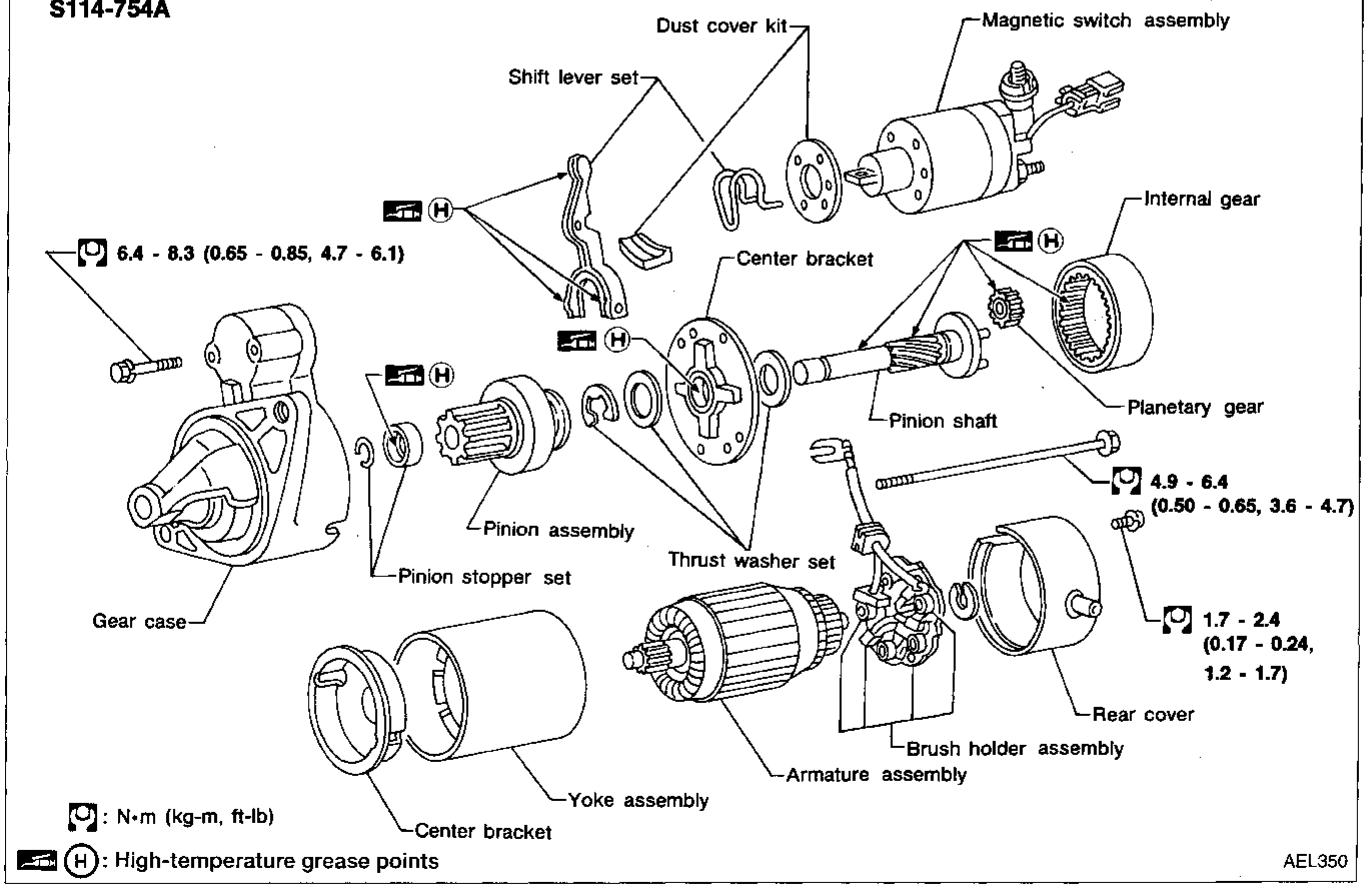
AEL246

M1T73881ZC



① Sleeve bearing
② Gear case
③ Pinion stopper
④ Pinion assembly
⑤ Shift lever
⑥ Plate
⑦ Packing
⑧ Adjusting plate
⑨ Magnetic switch assembly
⑩ Internal gear
⑪ Shaft
⑫ Planetary gear
⑬ Packing
⑭ Yoke
⑮ Armature
⑯ Sleeve bearing
⑰ Brush (+)
⑱ Brush spring
⑲ Brush (−)
⑳ Brush holder
㉑ Rear cover

S114-754A



Pinion/Clutch Check

1. Inspect pinion teeth.
- Replace pinion if teeth are worn or damaged. (Also check condition of ring gear teeth.)
2. Inspect reduction gear teeth.
- Replace reduction gear if teeth are worn or damaged. (Also check condition of armature shaft gear teeth.)
3. Check to see if pinion locks in one direction and rotates smoothly in the opposite direction.
- If it locks or rotates in both directions, or unusual resistance is evident. ... Replace.

Service Data and Specifications (SDS)

STARTER

Type		M1T73881ZC	S114-754A
		MELMAC	HAP
		Reduction gear type	
Applied model		A/T	M/T
System voltage	V	12	
No-load			
Terminal voltage	V	11.0	
Current	A	Less than 88	Less than 85
Revolution	rpm	More than 3,000	More than 2,950
Minimum diameter of commutator	mm (in)	28.8 (1.134)	28.0 (1.102)
Minimum length of brush	mm (in)	12.0 (0.472)	10.5 (0.413)
Brush spring tension	N (kg, lb)	13.7 - 25.5 (1.4 - 2.6, 3.1 - 5.7)	14.7 - 17.7 (1.5 - 1.8, 3.3 - 4.0)
Clearance of bearing metal and armature shaft	mm (in)	—	0.03 - 0.3 (0.0012 - 0.0118)
Clearance "ℓ" between pinion front edge and pinion stopper	mm (in)	0.5 - 2.0 (0.020 - 0.079)	0.05 - 1.5 (0.0020 - 0.0591)
Installed current	A	140	120

System Description

The generator provides DC voltage to operate the vehicle's electrical system and to keep the battery charged. The voltage output is controlled by the IC regulator.
Power is supplied at all times to generator terminal Ⓢ through:

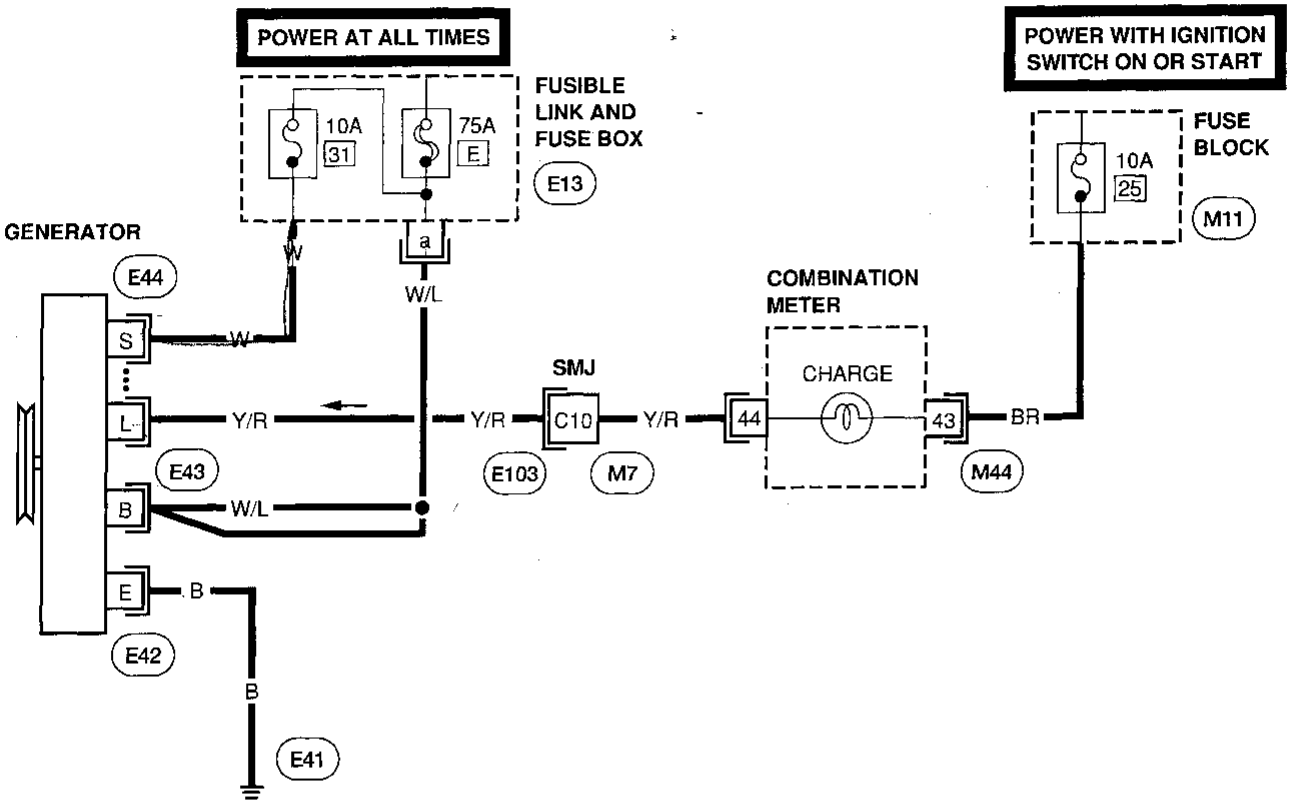
- 75A fusible link (letter E , located in the fusible link and fuse box), and
- 10A fuse (No. 31 , located in the fusible link and fuse box).

Voltage output through generator terminal Ⓑ, to charge the battery and operate the vehicle's electrical system, is controlled by the amount of voltage detected by the IC regulator at terminal Ⓢ. The charging circuit is protected by the 75A fusible link.
Terminal Ⓔ of the generator supplies ground through body ground (E41).
With the ignition switch in the ON or START position, power is supplied

- through 10A fuse (No. 25 , located in the fuse block)
- to combination meter terminal ㊸ for the charge indicator.

Ground is supplied to terminal ㊹ of the combination meter through terminal Ⓛ of the generator. With power and ground supplied, the charge indicator will illuminate. When the generator is providing sufficient voltage with the engine running, the ground is opened and the charge indicator will go off.
If the charge indicator illuminates with the engine running, a fault is indicated. Refer to "Trouble Diagnoses", "CHARGING SYSTEM" (EL-25).

Wiring Diagram

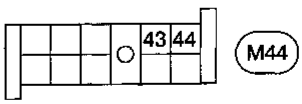


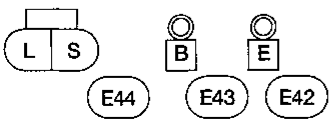
E13 M11

Refer to POWER SUPPLY ROUTING.

E103 M7

Refer to Foldout Page for details.





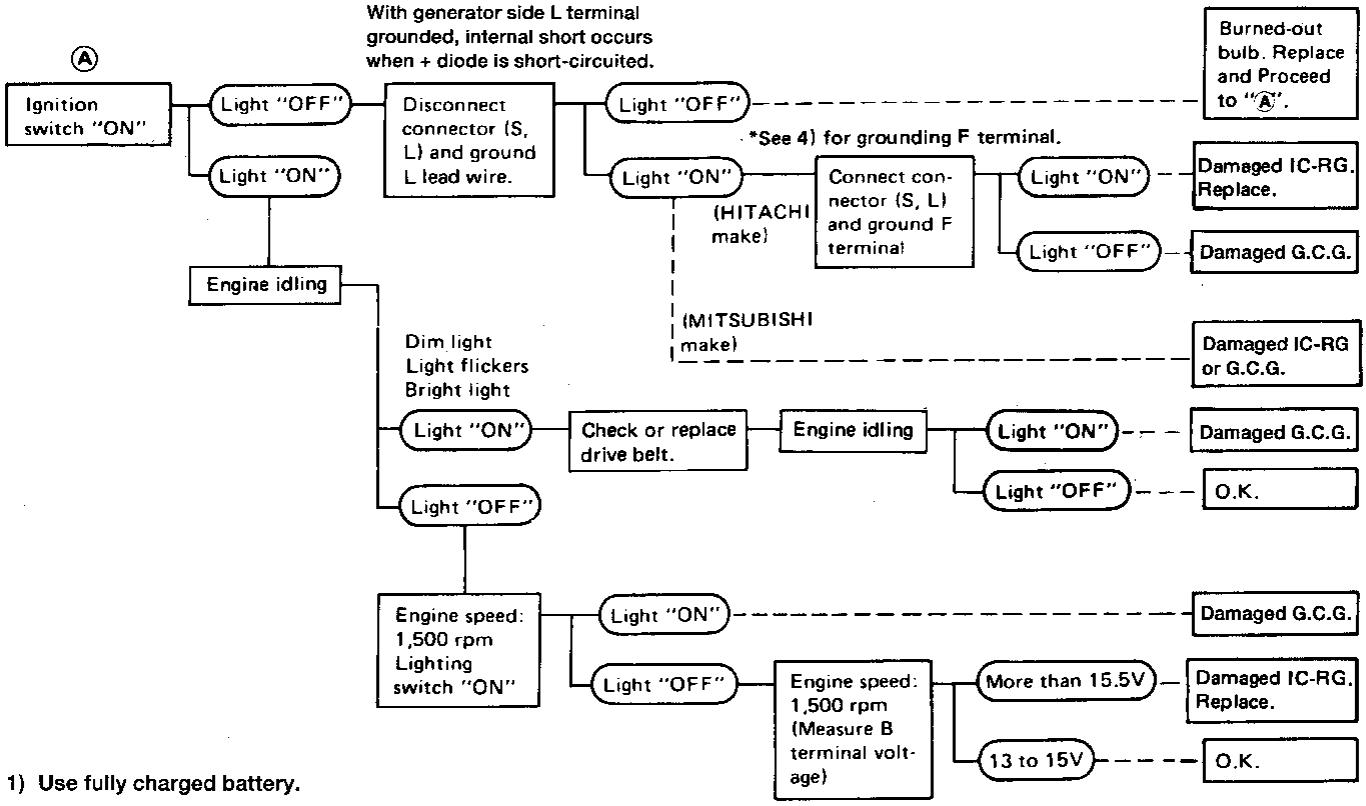
AEL247

Trouble Diagnoses

Before conducting an generator test, make sure that the battery is fully charged. A 30-volt voltmeter and suitable test probes are necessary for the test. The generator can be checked easily by referring to the Inspection Table.

Before starting diagnosis, inspect the fusible link.

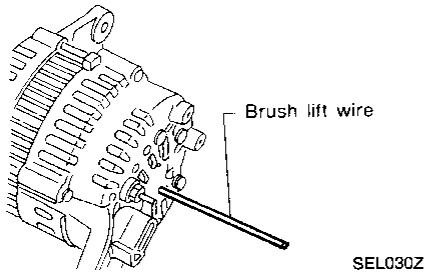
WITH IC REGULATOR



1) Use fully charged battery.
2) Light : Charge warning light
   G.C.G. : Generator parts except IC regulator
   IC-RG : IC regulator
   O.K. : IC-generator is in good condition.
3) When reaching "Damaged G.C.G.", remove generator from vehicle and disassemble, inspect and correct or replace faulty parts.
4) *Method of grounding F terminal (HITACHI make only)

Gasoline engine model

Contact tip of wire with brush and attach wire to generator body.



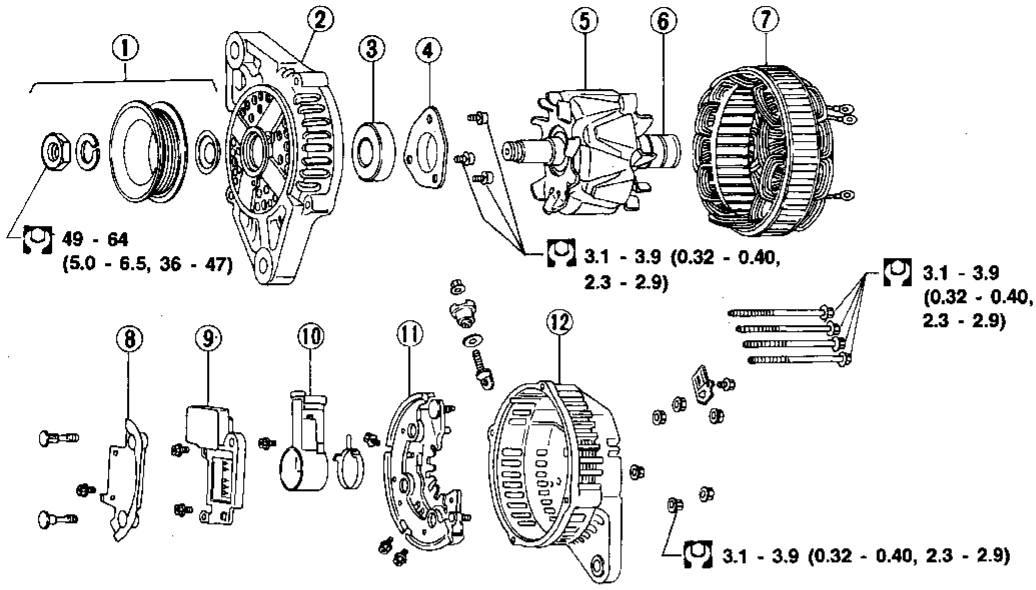
SEL030Z

5) Terminals "S", "L", "B" and "E" are marked on rear cover of generator.

AEL215

Construction

LR180-736B



① Pulley assembly
② Front cover
③ Front bearing
④ Retainer
⑤ Rotor
⑥ Slip ring
⑦ Stator
⑧ Condenser
⑨ IC regulator assembly
⑩ Brush holder
⑪ Diode assembly
⑫ Rear cover

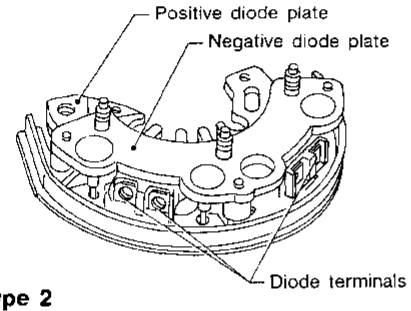
Diode Check

MAIN DIODES

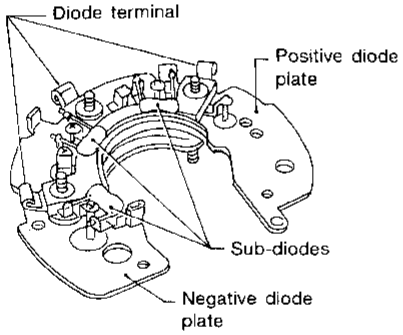
- In order to check diodes, they must be unsoldered from the stator.
- Use an ohmmeter to check condition of diodes as indicated in chart below.
- If any of the test results is not satisfactory, replace diode assembly.

	Ohmmeter probes		Judgement
	Positive ⊕	Negative ⊖	
Diodes check (Positive side)	Positive diode plate	Diode terminals	Diode conducts in only one direction.
	Diode terminals	Positive diode plate	
Diodes check (Negative side)	Negative diode plate	Diode terminals	Diode conducts in only one direction.
	Diode terminals	Negative diode plate	

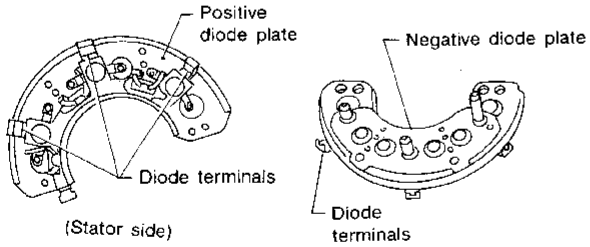
Type 1



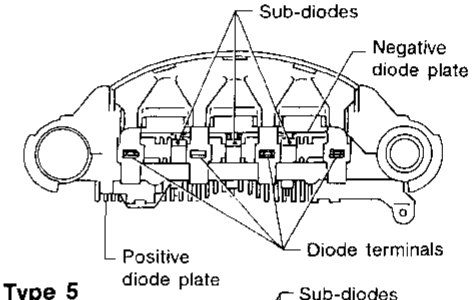
Type 2



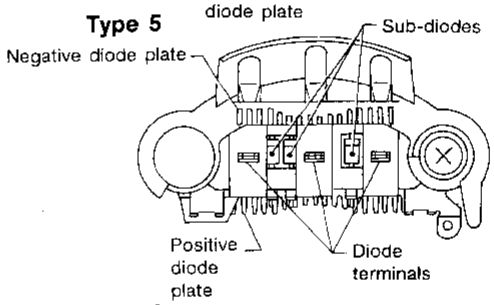
Type 3



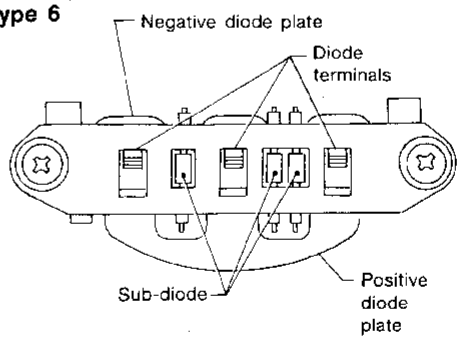
Type 4



Type 5



Type 6

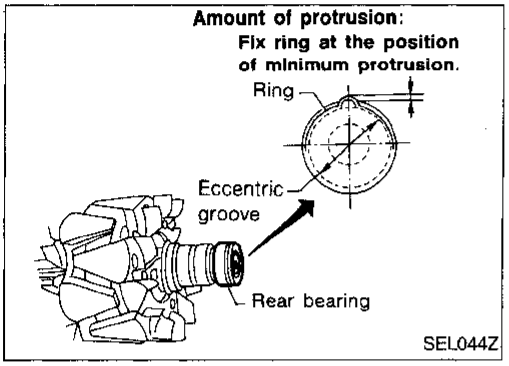


SEL039Z

Assembly

Carefully observe the following instructions.

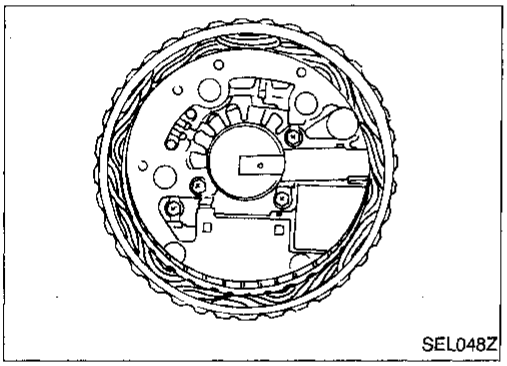
- When soldering each stator coil lead wire to diode assembly terminal, carry out the operation as fast as possible.



RING FITTING IN REAR BEARING

- Fix ring into groove in rear bearing so that it is as close to the adjacent area as possible.

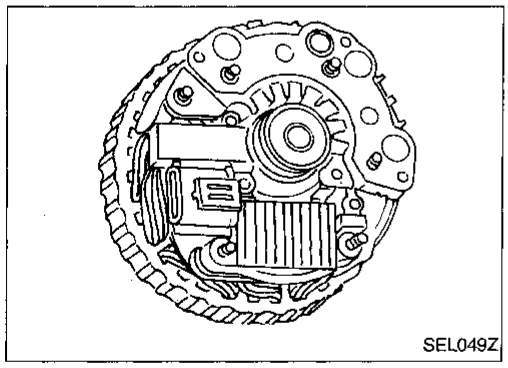
CAUTION:
Do not reuse rear bearing after removal.



REAR COVER INSTALLATION

(1) Fit brush assembly, diode assembly, regulator assembly and stator.
(2) Push brushes up with fingers and install them to rotor.

Take care not to damage slip ring sliding surface.

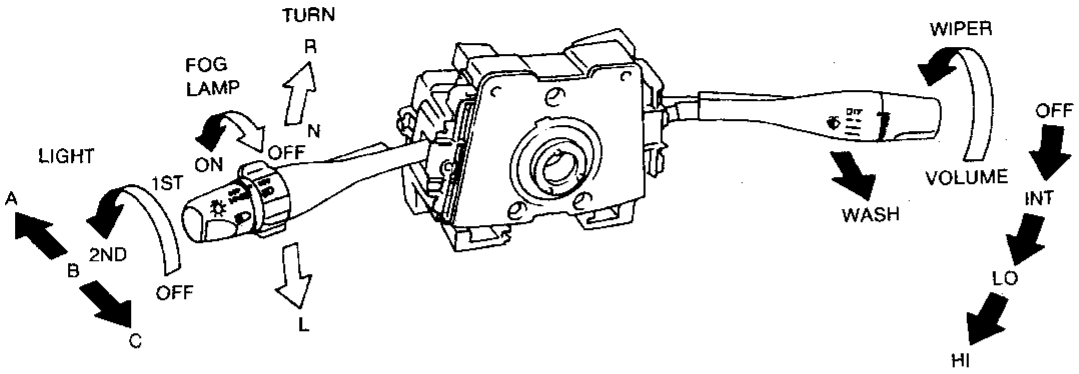


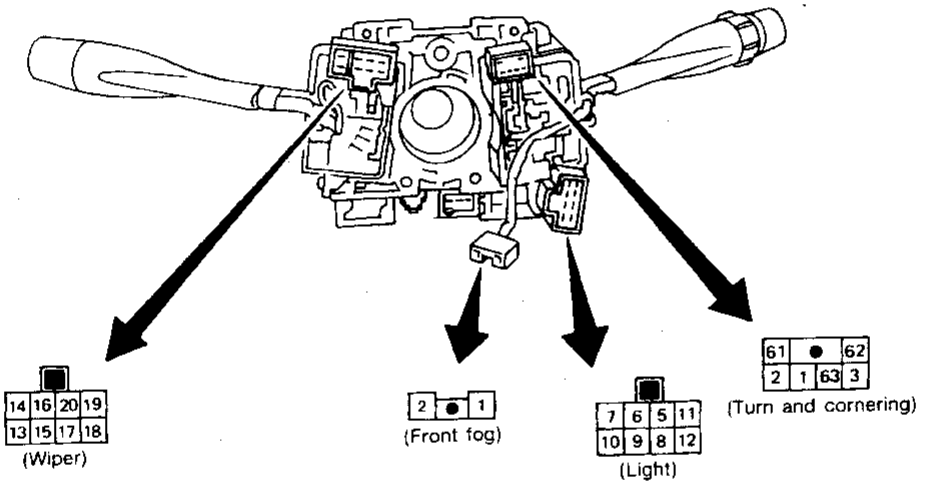
Service Data and Specifications (SDS)

GENERATOR

Type		LR180-736B
		HAP
Nominal rating	V-A	12-80
Ground polarity		Negative
Minimum revolution under no-load (When 13.5 volts is applied)	rpm	Less than 1,000
Hot output current (When 13.5 volts is applied)	A/rpm	More than 23/1,300 More than 63/2,500 More than 77/5,000
Regulated output voltage	V	14.1 - 14.7
Minimum length of brush	mm (in)	6.0 (0.236)
Brush spring pressure	N (g, oz)	1.000 - 2.452 (102 - 250, 3.60 - 8.82)
Slip ring minimum diameter	mm (in)	26.0 (1.024)
Rotor (Field coil) resistance	Ω	2.67

Combination Switch/Check





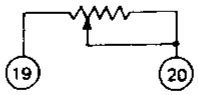
LIGHTING SWITCH

	OFF			1ST			2ND		
	A	B	C	A	B	C	A	B	C
5			○			○	○	○	○
6			○			○	○		○
7								○	
8			○			○	○	○	○
9			○			○	○		○
10								○	
11				○	○	○	○	○	○
12				○	○	○	○	○	○

WIPER SWITCH

	OFF	INT	LO	HI	WASH
13	○	○			
14	○	○	○		
15		○			
16				○	
17		○	○	○	○
18					○

INTERMITTENT WIPER VOLUME



TURN SIGNAL SWITCH

	R	N	L
1	○		○
2	○		
3			○

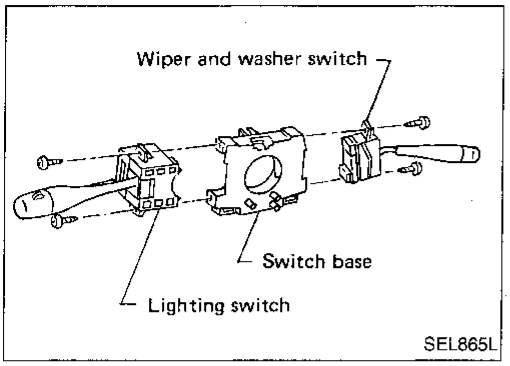
CORNERING LAMP SWITCH

	R	N	L
61	○		○
62	○		
63			○

FRONT FOG LAMP SWITCH

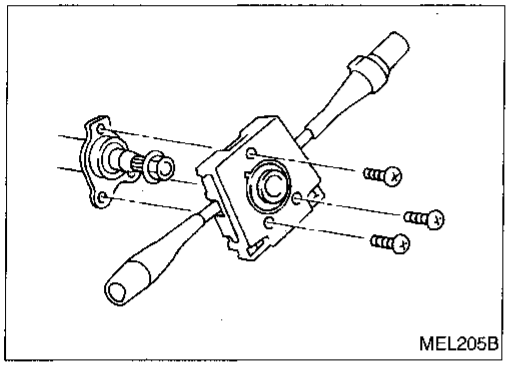
	OFF	ON
2		○
1		○

AEL270



Combination Switch/Replacement

- Each switch can be replaced without removing combination switch base.



- To remove combination switch base, remove base attaching screws.

System Description (For USA)

The headlamps are controlled by the lighting switch which is built into the combination switch.
Power is supplied at all times
- to lighting switch terminal ⑤
- through 15A fuse (No. 36 , located in the fusible link and fuse box), and
- to lighting switch terminal ⑧
- through 15A fuse (No. 37 , located in the fusible link and fuse box).

When the lighting switch is turned to the HEAD position, power is supplied
- from lighting switch terminal ⑩
- to terminal ⓒ of the LH headlamp, and
- from lighting switch terminal ⑦
- to terminal ⓒ of the RH headlamp.

Terminal ⓐ of each headlamp supplies ground through body grounds (E12) and (E37).
With power and ground supplied, the headlamp(s) will illuminate.
When the lighting switch is placed in the HI BEAM position, power is supplied
- from lighting switch terminal ⑥
- to terminal ⓑ of the RH headlamp, and
- from lighting switch terminal ⑨
- to terminal ⓑ of the LH headlamp, and
- to combination meter terminal ⑪ for the HI BEAM indicator.

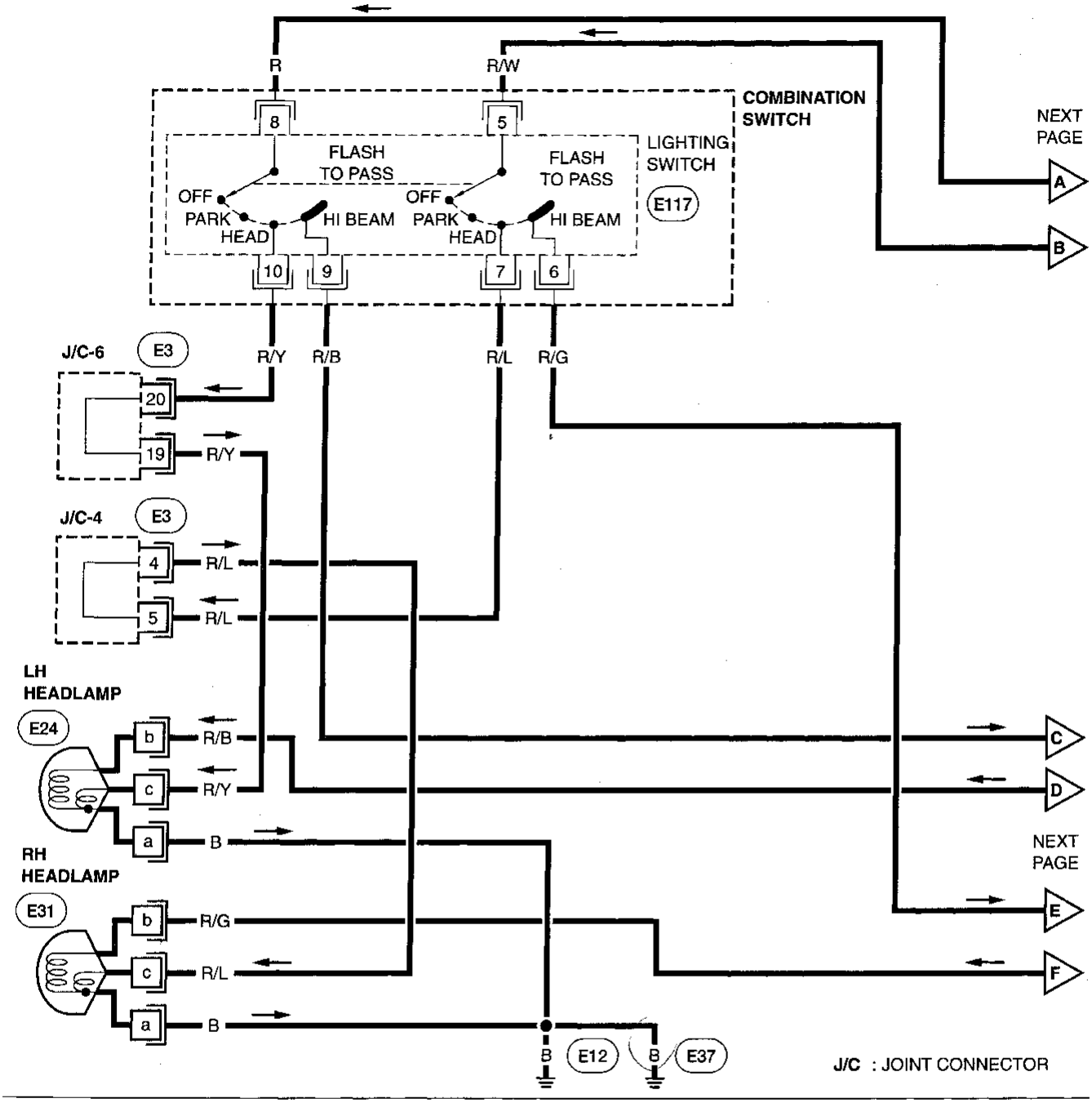
Ground is supplied to terminal ⑩ of the combination meter through body grounds (M51), (M76), and (M77).
With power and ground supplied, the high beams and the HI BEAM indicator illuminate.

With theft warning system

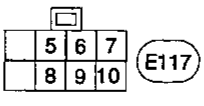
The theft warning system will flash the high beams if the system is triggered. Refer to "THEFT WARNING SYSTEM".

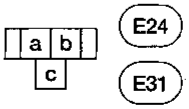
NOTE

Wiring Diagram (For USA)



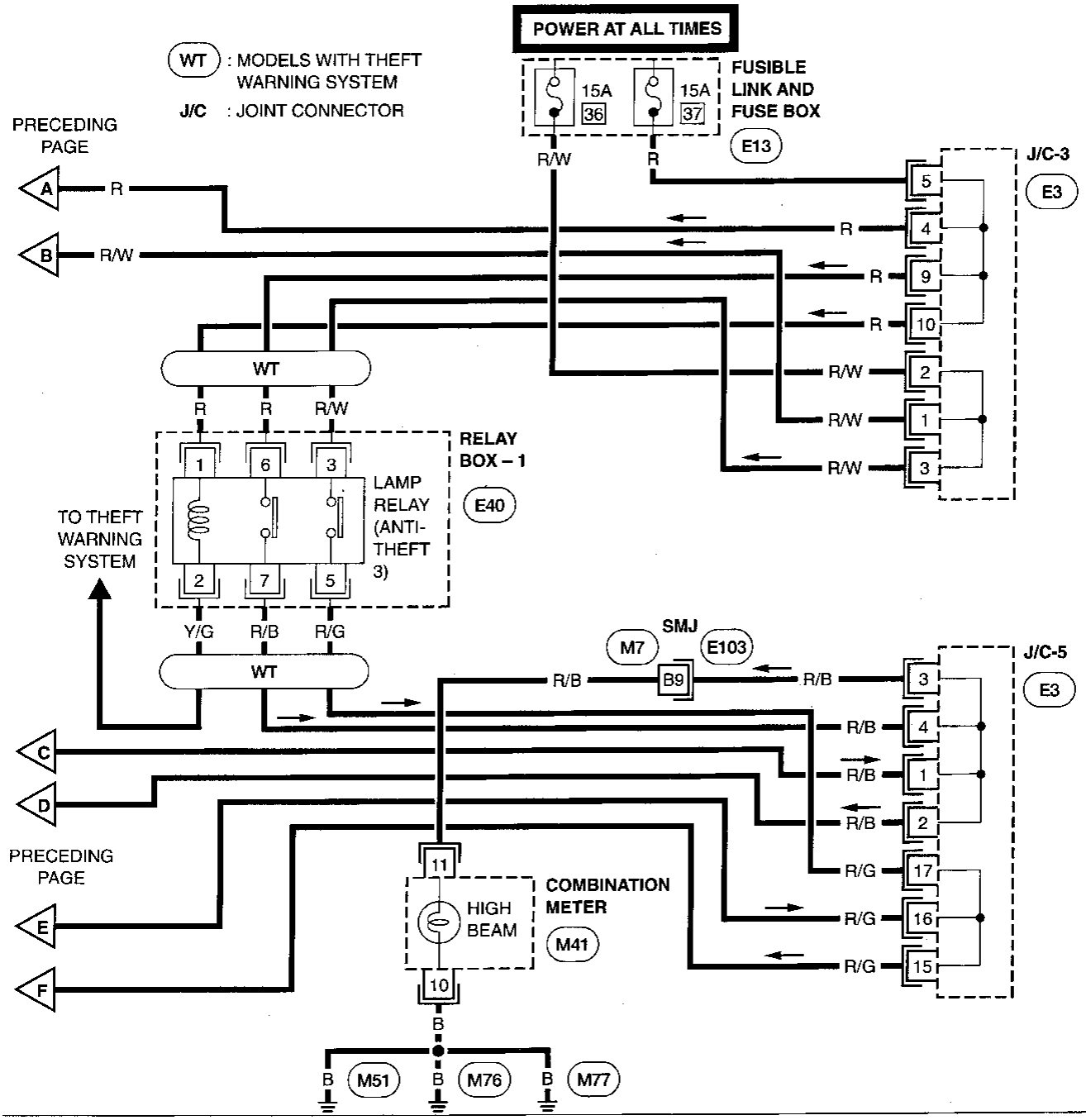
Refer to Foldout Page for details. E3





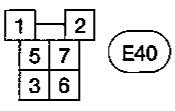
AEL248-A

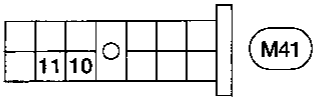
Wiring Diagram (For USA) (Cont'd)



Refer to POWER SUPPLY ROUTING. E13

Refer to Foldout Page for details. E103 M7 E3





AEL248-B

1003

Trouble Diagnoses (For USA)

Symptom	Possible cause	Repair order
LH headlamps do not operate.	1. Bulb 2. Grounds (E12) and (E37) 3. 15A fuse 4. Lighting switch	1. Check bulb. 2. Check grounds (E12) and (E37). 3. Check 15A fuse (No. 37 , located in fusible link and fuse box). Verify battery positive voltage is present at terminal (8) of lighting switch. 4. Check lighting switch.
RH headlamps do not operate.	1. Bulb 2. Grounds (E12) and (E37) 3. 15A fuse 4. Lighting switch	1. Check bulb. 2. Check grounds (E12) and (E37). 3. Check 15A fuse (No. 36 , located in fusible link and fuse box). Verify battery positive voltage is present at terminal (5) of lighting switch. 4. Check lighting switch.
LH high beam does not operate, but LH low beam operates.	1. Bulb 2. Open in LH high beam circuit 3. Lighting switch	1. Check bulb. 2. Check R/B wire between lighting switch and LH headlamp for an open circuit. 3. Check lighting switch.
LH low beam does not operate, but LH high beam operates.	1. Bulb 2. Open in LH low beam circuit 3. Lighting switch	1. Check bulb. 2. Check R/Y wire between lighting switch and LH headlamp for an open circuit. 3. Check lighting switch.
RH high beam does not operate, but RH low beam operates.	1. Bulb. 2. Open in RH high beam circuit 3. Lighting switch.	1. Check bulb. 2. Check R/G wire between lighting switch and RH headlamp for an open circuit. 3. Check lighting switch.
RH low beam does not operate, but RH high beam operates.	1. Bulb 2. Open in RH low beam circuit 3. Lighting switch	1. Check bulb. 2. Check R/L wire between lighting switch and RH headlamp for an open circuit. 3. Check lighting switch.
High beam indicator does not work.	1. Bulb 2. Grounds (M51), (M76) and (M77) 3. Open in high beam circuit	1. Check bulb in combination meter. 2. Check grounds (M51), (M76) and (M77). 3. Check R/B wire between joint connector - 5 and combination meter for an open circuit.

System Description (For Canada)

The headlamp system for Canada vehicles contains a daytime light control module that activates the high beam headlamps at approximately half illumination whenever the engine is running. If the parking brake is applied before the engine is started the daytime lights will not be illuminated. The daytime lights will illuminate once the parking brake is released. Thereafter, the daytime lights will continue to operate when the parking brake is applied.

Power is supplied at all times
- through 15A fuse (No. 36 , located in the fusible link and fuse box)
- to daytime light control module terminal ③ and
- to lighting switch terminal ⑤.

Power is also supplied at all times
- through 15A fuse (No. 37 , located in the fusible link and fuse box)
- to daytime light control module terminal ④,
- to lighting switch terminal ⑧ and
- to headlamp relay terminal ③.

With the ignition switch in the ON or START position, power is supplied
- through 10A fuse (No. 26 , located in the fuse block)
- to daytime light control module terminal ⑤.

Ground is supplied to daytime light control module terminal ⑩ through body grounds (M51), (M76) and (M77).

HEADLAMP OPERATION

Low beam operation

When the lighting switch is moved to the HEAD position (low beam operation), power is supplied
- from lighting switch terminal ⑦
- to RH headlamp terminal ⓒ.

Ground is supplied to RH headlamp terminal ⓐ through body grounds (M51), (M76) and (M77).

Also, when the lighting switch is moved to the HEAD position (low beam operation), power is supplied
- from lighting switch terminal ⑩
- to headlamp relay terminal ①.

Ground is supplied to headlamp relay terminal ② through body grounds (E12) and (E37).

The headlamp relay is energized and power is supplied
- from headlamp relay terminal ⑤
- to LH headlamp terminal ⓒ.

Ground is supplied
- to LH headlamp terminal ⓐ
- from daytime light control module terminal ⑧
- through daytime light control module terminal ⑩
- through body grounds (M51), (M76) and (M77).

With power and ground supplied, the low beam headlamps illuminate.

High beam operation

When the lighting switch is moved to the HI BEAM position, power is supplied
- from lighting switch terminal ⑥
- to RH headlamp terminal ⓑ.

When the lighting switch is moved to the HI BEAM position, power is supplied
- from lighting switch terminal ⑨
- to daytime light control module terminal ⑥
- through daytime light control module terminal ⑦
- to LH headlamp terminal ⓑ.

Ground is supplied in the same manner as low beam operation.

With power and ground supplied, the high beam headlamps illuminate.

System Description (For Canada) (Cont'd)

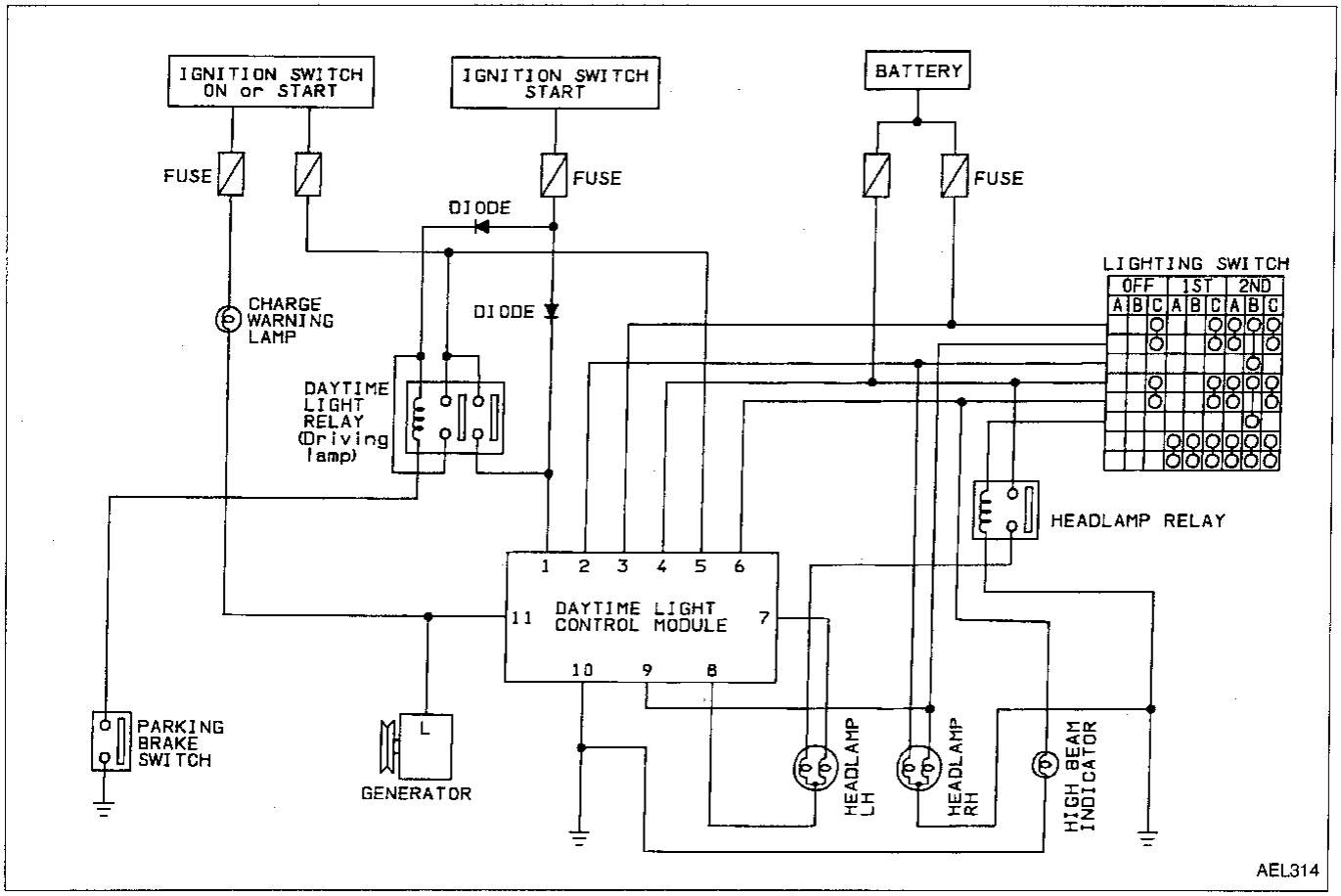
DAYTIME LIGHT OPERATION

With the engine running and the lighting switch in the OFF position, power is supplied

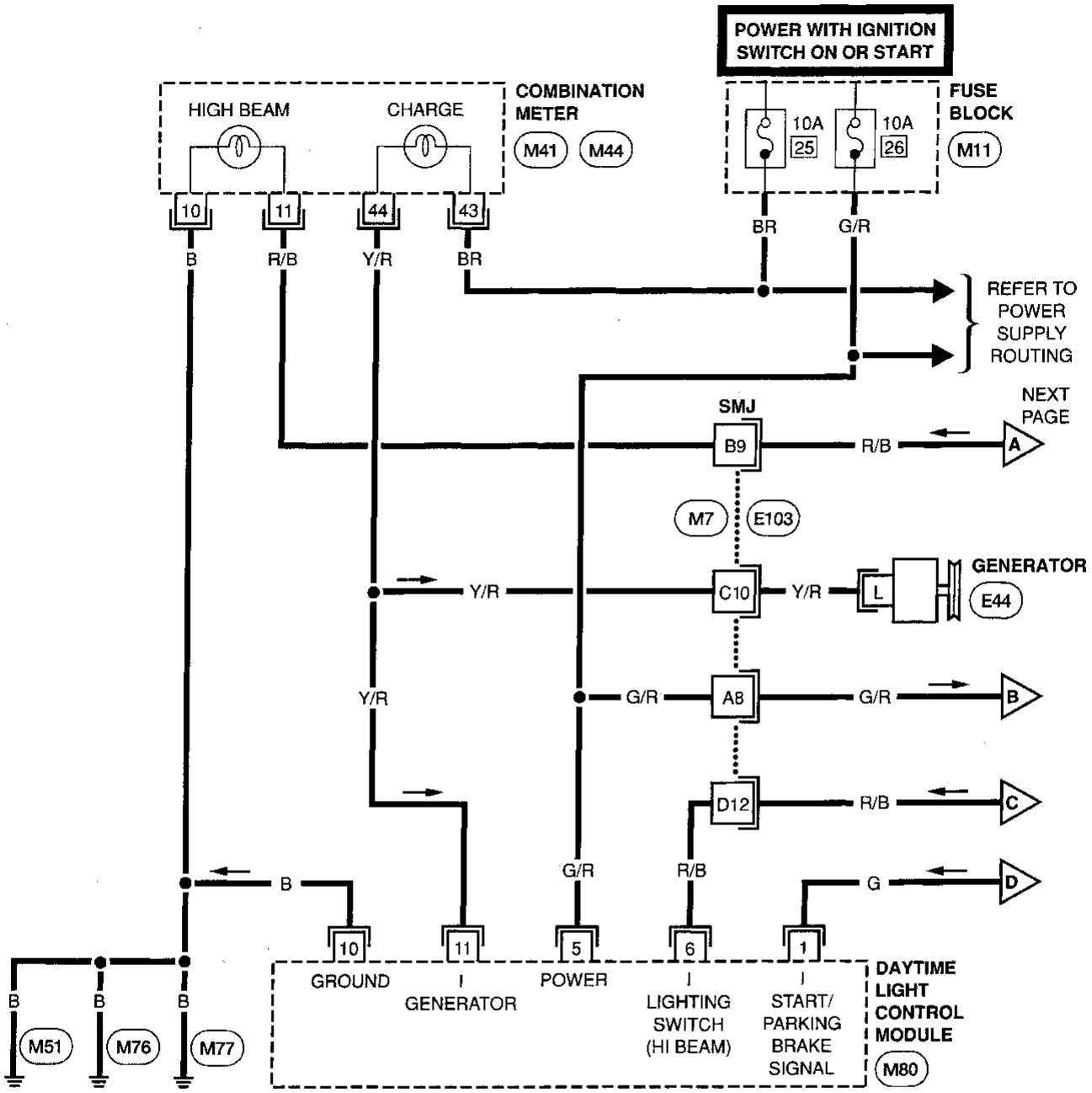
- to daytime light control module terminal ④
- through daytime light control module terminal ⑦
- to LH headlamp terminal ⓑ
- through LH headlamp terminal ⓐ
- to daytime light control module terminal ⑧
- through daytime light control module terminal ⑨
- to RH headlamp terminal ⓑ.

Ground is supplied to RH headlamp terminal ⓐ through body grounds (E12) and (E37).
Because the high beam headlamps are now wired in series, they operate at half illumination.

Schematic (For Canada)



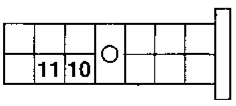
Wiring Diagram (For Canada)

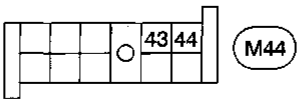


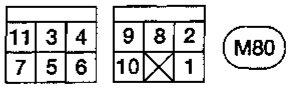
Refer to POWER SUPPLY ROUTING. M11

Refer to Foldout Page for details. E103 M7

L E44

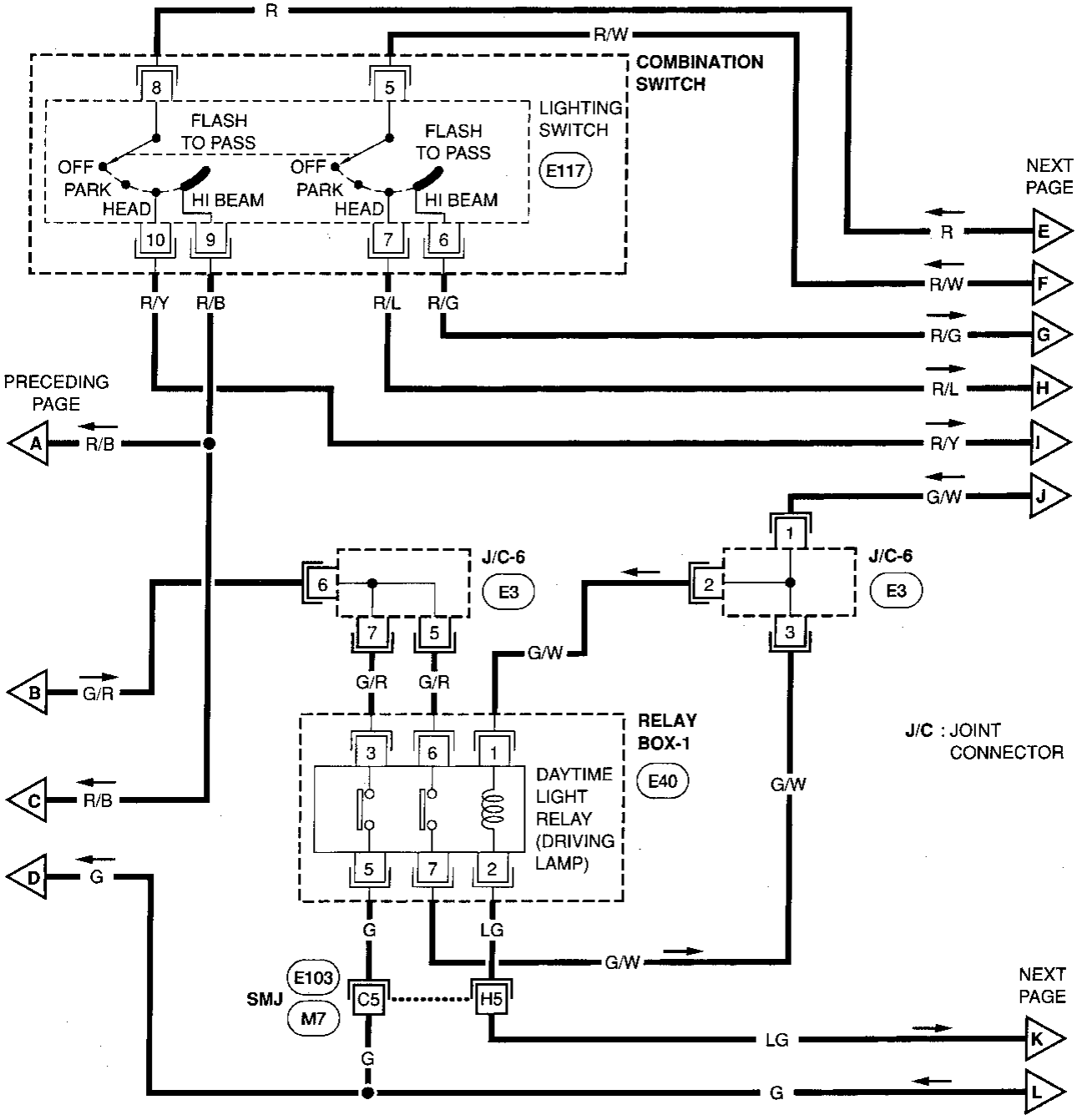




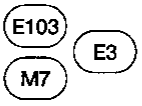


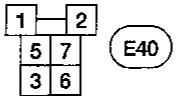
AEL249-A

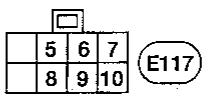
Wiring Diagram (For Canada) (Cont'd)



Refer to Foldout Page for details.



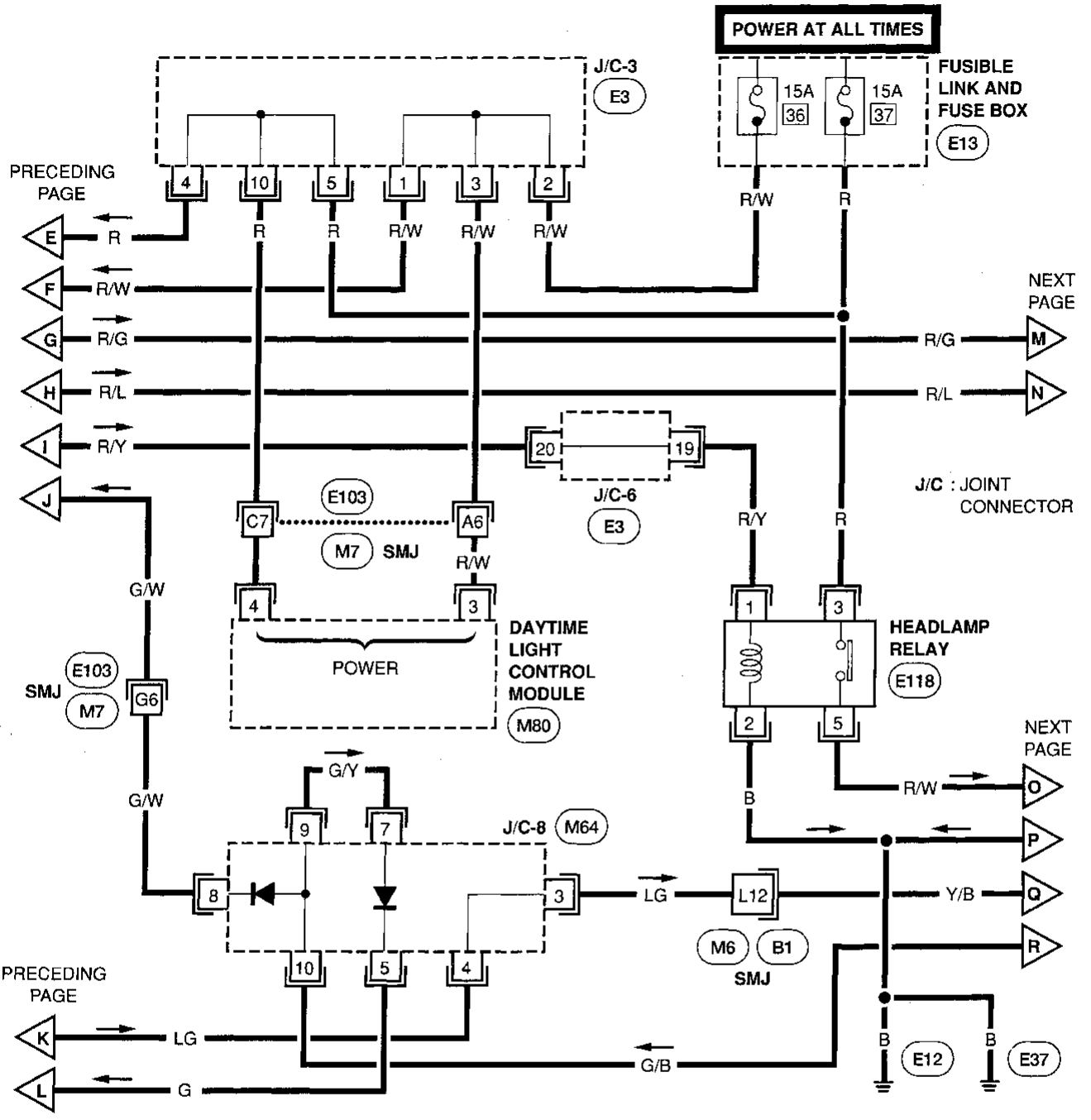




AEL249-B

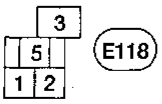
1009

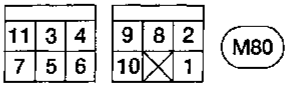
Wiring Diagram (For Canada) (Cont'd)



Refer to POWER SUPPLY ROUTING. E13

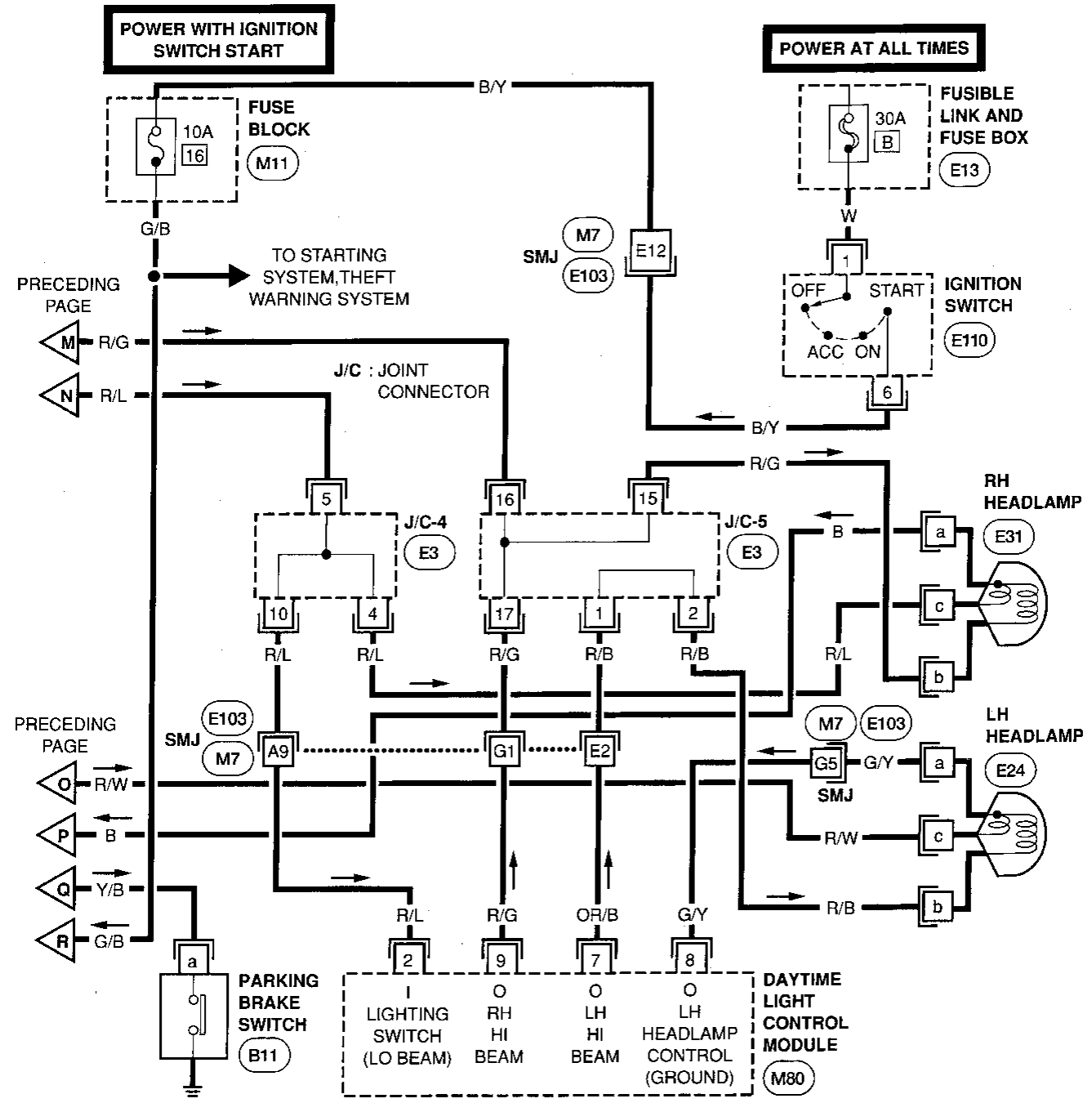
Refer to Foldout Page for details. B1 E103 E3 M6 M7 M64





AEL249-C

Wiring Diagram (For Canada) (Cont'd)



Refer to POWER SUPPLY ROUTING. M11 E13

Refer to Foldout Page for details. E103 M7 E3

a B11

a b c E24 E31

1 6 E110

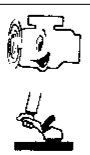
11 3 4 7 5 6 9 8 2 10 1 M80

AEL249-D

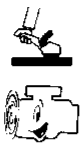
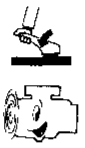
Trouble Diagnoses (For Canada)

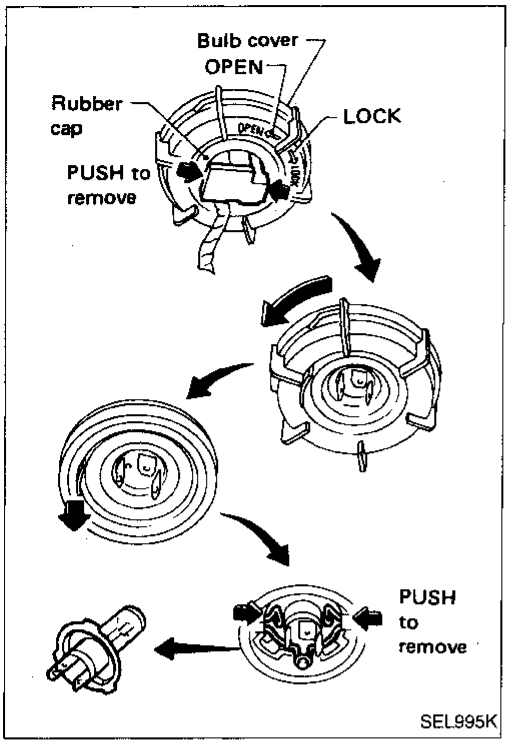
DAYTIME LIGHT CONTROL MODULE INSPECTION TABLE

(Data are reference values)

Terminal No.	Item	Condition		Judgement standard
1	Start/parking brake signal		When turning ignition switch to "ST".	Battery positive voltage
			When turning ignition switch to "ON" from "ST" with parking brake set.	Battery positive voltage
			When releasing parking brake with engine running. **CAUTION: Block wheels and ensure selector lever is in N or P position.**	1V or less
			When turning ignition switch to "OFF".	1V or less
2	Lighting switch (Lo beam)		When turning lighting switch to "HEAD" (2nd position).	Battery positive voltage
3	Power source		When turning ignition switch to "ON".	Battery positive voltage
			When turning ignition switch to "OFF".	Battery positive voltage
4	Power source		When turning ignition switch to "ON".	Battery positive voltage
			When turning ignition switch to "OFF".	Battery positive voltage
5	Power source		When turning ignition switch to "ON".	Battery positive voltage
			When turning ignition switch to "ST".	Battery positive voltage
			When turning ingition switch to "OFF".	1V or less
6	Lighting switch (Hi beam)		When turning lighting switch to "HI BEAM".	Battery positive voltage
			When turning lighting switch to "FLASH TO PASS".	Battery positive voltage
7	LH hi beam		When turning lighting switch to "HI BEAM".	Battery positive voltage
			When releasing parking brake with engine running and turning lighting switch to "OFF" (daytime light operation). **CAUTION: Block wheels and ensure selector lever is in N or P position.**	Battery positive voltage

Trouble Diagnoses (For Canada) (Cont'd)

Terminal No.	Item	Condition		Judgement standard
8	LH headlamp control (ground)		When lighting switch is turned to "HEAD".	1V or less
			When releasing parking brake with engine running and turning lighting switch to "OFF" (daytime light operation). **CAUTION: Block wheels and ensure selector lever is in N or P position.**	Approx. half battery voltage
9	RH hi beam		When turning lighting switch to "HI BEAM".	Battery positive voltage
			When releasing parking brake with engine running and turning lighting switch to "OFF" (daytime light operation). **CAUTION: Block wheels and ensure selector lever is in N or P position.**	Approx. half battery voltage
10	Ground		—	—
11	Generator		When turning ignition switch to "ON".	1V or less
			When engine is running.	Battery positive voltage
			When turning ignition switch to "OFF".	1V or less
12	—		—	—



Bulb Replacement

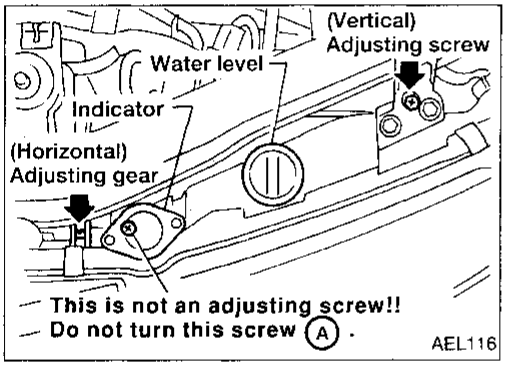
The headlamp is a semi-sealed beam type which uses a replaceable halogen bulb. The bulb can be replaced from the engine compartment side without removing the headlamp body.

- **Grasp only the plastic base when handling the bulb. Never touch the glass envelope.**

1. Disconnect the battery cable.
2. Disconnect the harness connector from the back side of the bulb.
3. Turn the bulb retaining ring counterclockwise until it is free from the headlamp reflector, and then remove it.
4. Pull off the rubber cap.
5. Remove the headlamp bulb carefully. Do not shake or rotate the bulb when removing it.
6. Install in the reverse order of removal.

CAUTION:

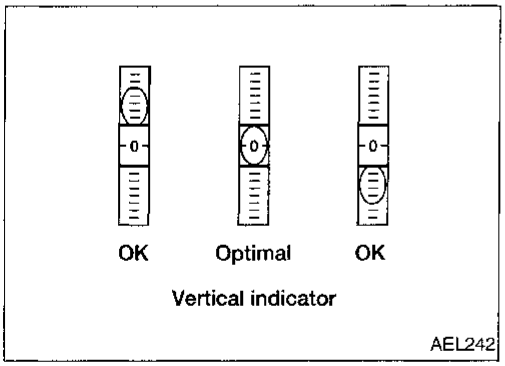
Do not leave the bulb out of the headlamp reflector for a long period of time as dust, moisture, smoke, etc. may enter the headlamp body and affect the performance of the headlamp. Thus, the headlamp bulb should not be removed from the headlamp reflector until just before a replacement bulb is to be installed.



Aiming Adjustment

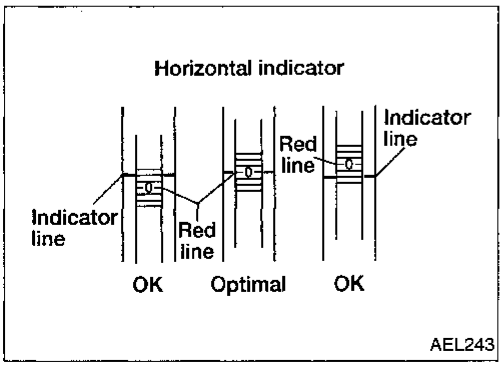
Before performing aiming adjustment, make sure of the following.

a. Keep all tires inflated to correct pressure.
b. Place vehicle on level ground.
c. See that vehicle is unloaded (except for full levels of coolant, engine oil and fuel, and spare tire, jack, and tools). Have the driver or equivalent weight placed in driver's seat.



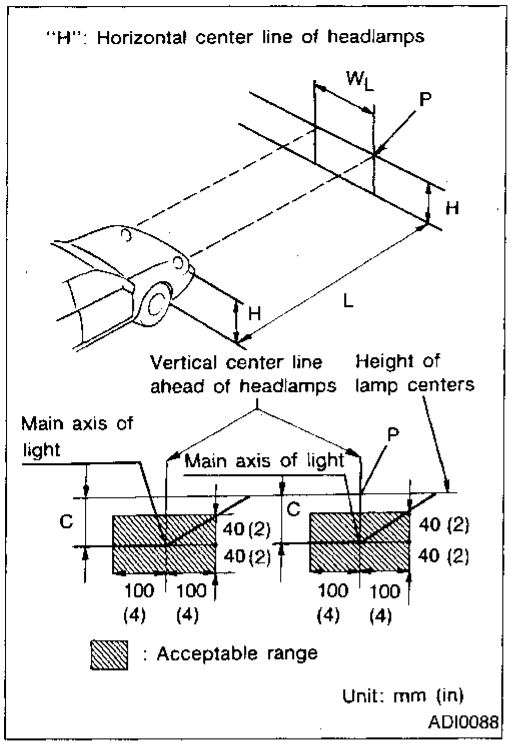
LOW BEAM

1. Open the hood.
2. Adjust the vertical indicator by turning the adjusting screw. The bubble in the gauge should be centered on the "o" mark as shown in the illustration.



3. Adjust the horizontal indicator by turning the adjusting screw with a Philips screwdriver.
   The inner red line with the "o" mark should align with the indicator line.
   Never turn screw (A).

Aiming Adjustment (Cont'd)



ADJUSTMENT AFTER HEADLAMP ASSEMBLY REPLACEMENT

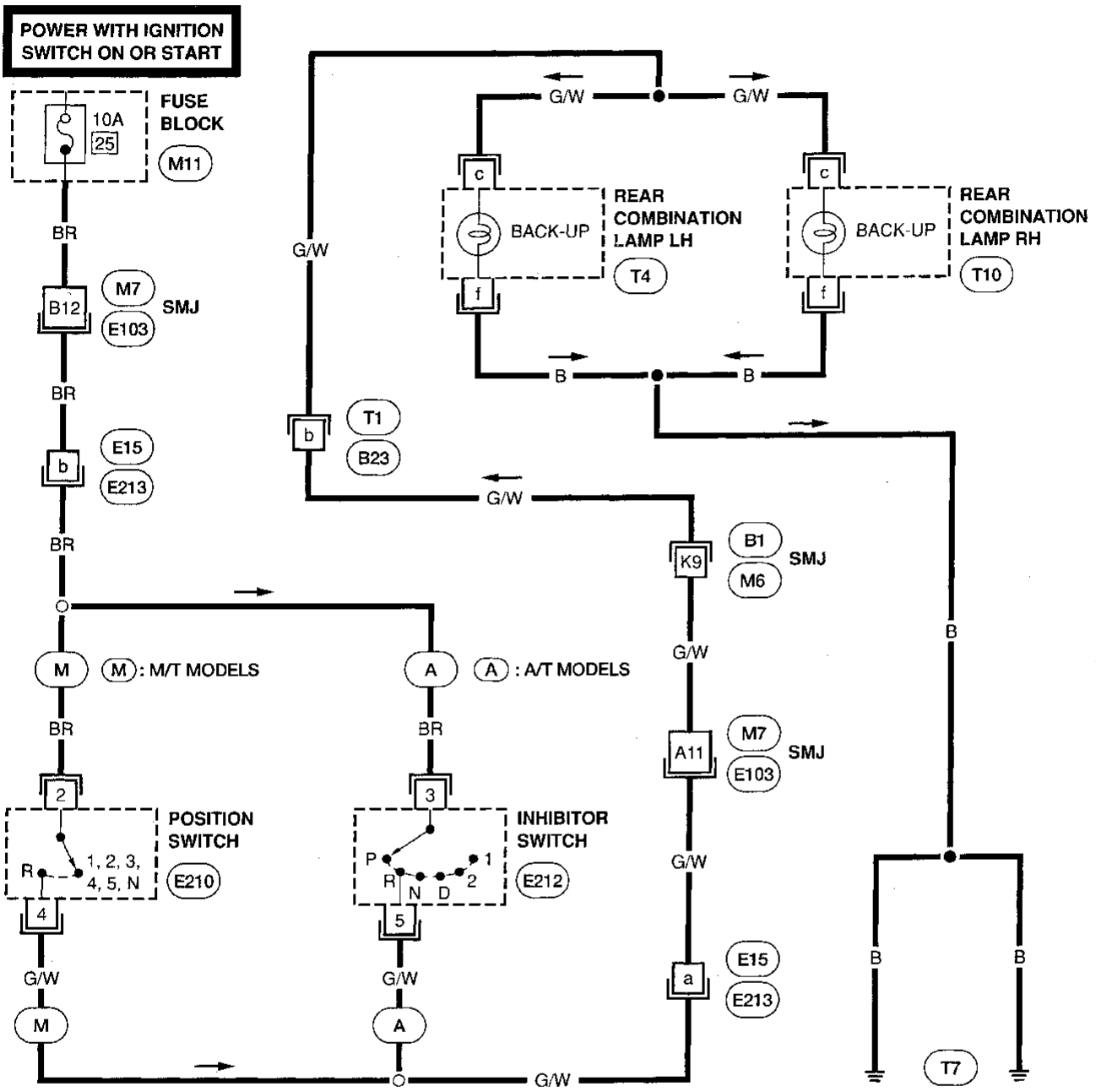
If the vehicle has had front body repair and the headlamp assembly has been replaced, the aiming should be checked using the aiming chart as shown in the illustration.

a. Adjust headlamps so that main axis of light is parallel to center line of body and is aligned with point P shown in the illustration.

b. Dotted lines in illustration show center of headlamp.
- **"H": Horizontal center line of headlamps**
- **"W_L": Distance between each headlamp center**
- **"L": 7,620 mm (300.00 in)**
- **"C": 106 mm (4.17 in)**

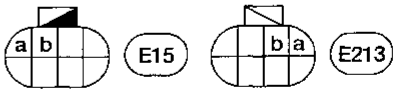
Even if the horizontal indicator does not align with the indicator line or the water level bubble is not centered in the gauge after aiming by the chart, it is acceptable if they are within the O.K. ranges.

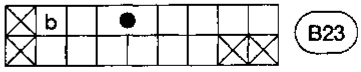
Back-up Lamp/Wiring Diagram

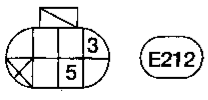


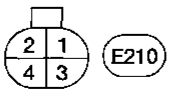
Refer to POWER SUPPLY ROUTING. M11

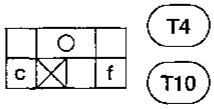
Refer to Foldout Page for details. M7 M6 E103 B1

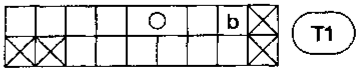








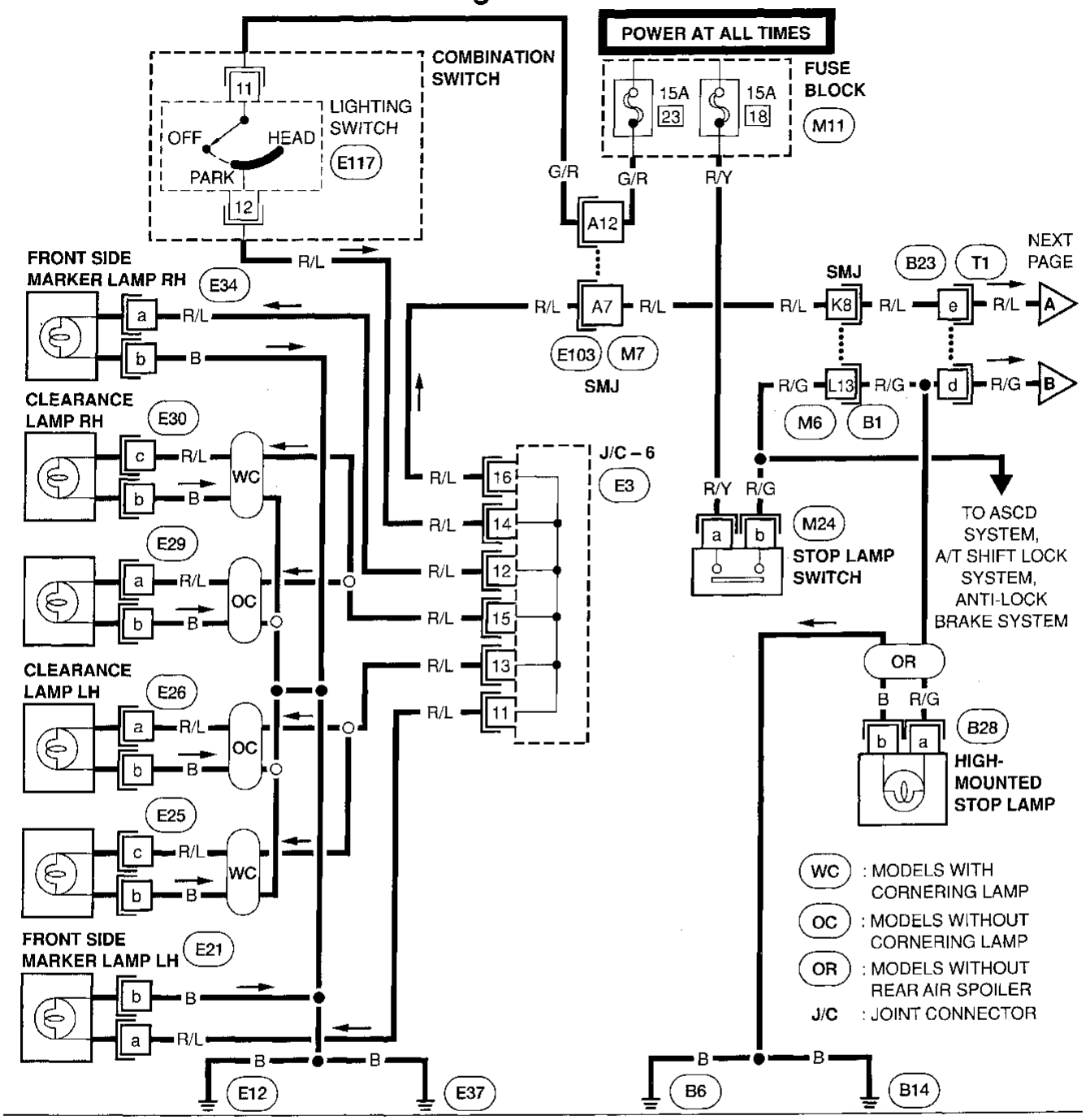




AEL251

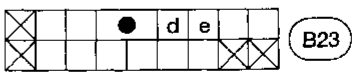
NOTE

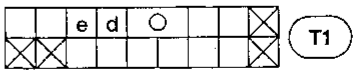
Clearance, License, Tail and Stop Lamps/Wiring Diagram

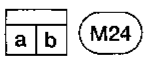


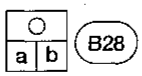
Refer to POWER SUPPLY ROUTING. M11

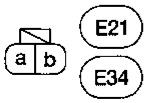
Refer to Foldout Page for details. E103 B1 E3 M7 M6

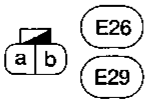


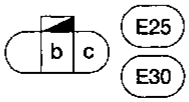


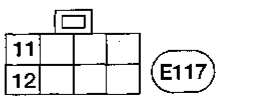






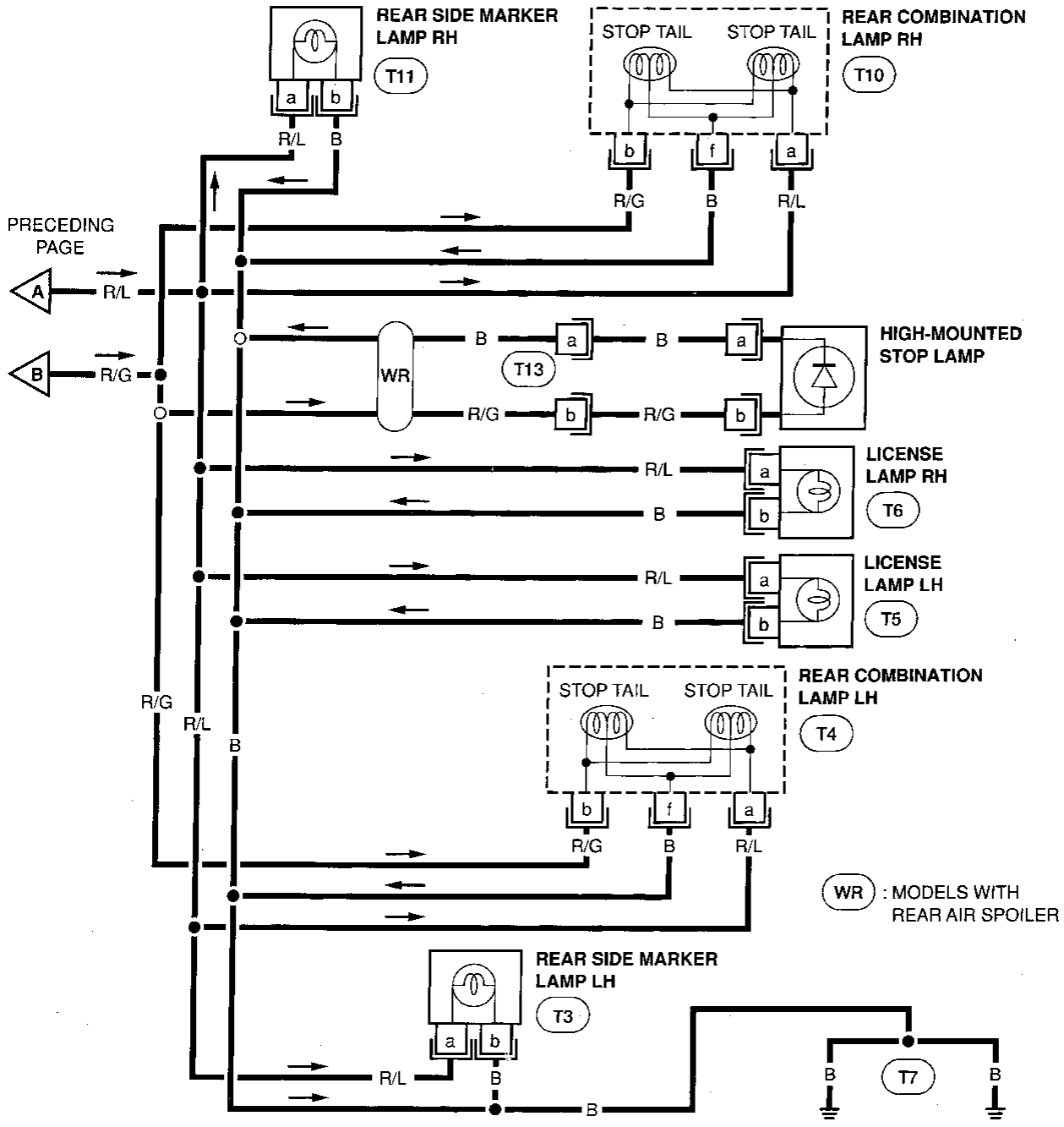


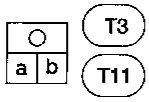


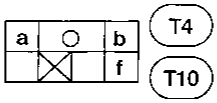


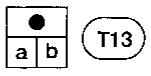
AEL250-A

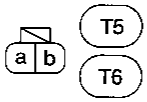
Clearance, License, Tail and Stop Lamps/Wiring Diagram (Cont'd)

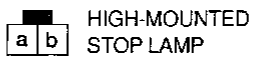












AEL250-B

Front Fog Lamp/System Description

Power is supplied at all times to fog lamp relay terminal ③ through:

- 15A fuse (No. 21 , located in the fuse block).

With the lighting switch in the HEAD position, power is supplied

- through 15A fuse (No. 36 , located in the fusible link and fuse box)
- to lighting switch terminal ⑤
- through terminal ⑦ of the lighting switch
- to fog lamp relay terminal ①.

Fog lamp operation

The fog lamp switch is built into the combination switch. The lighting switch must be in the HEAD position for fog lamp operation.

With the fog lamp switch in the ON position:

- ground is supplied to fog lamp relay terminal ② through the fog lamp switch and body grounds (E12) and (E37).

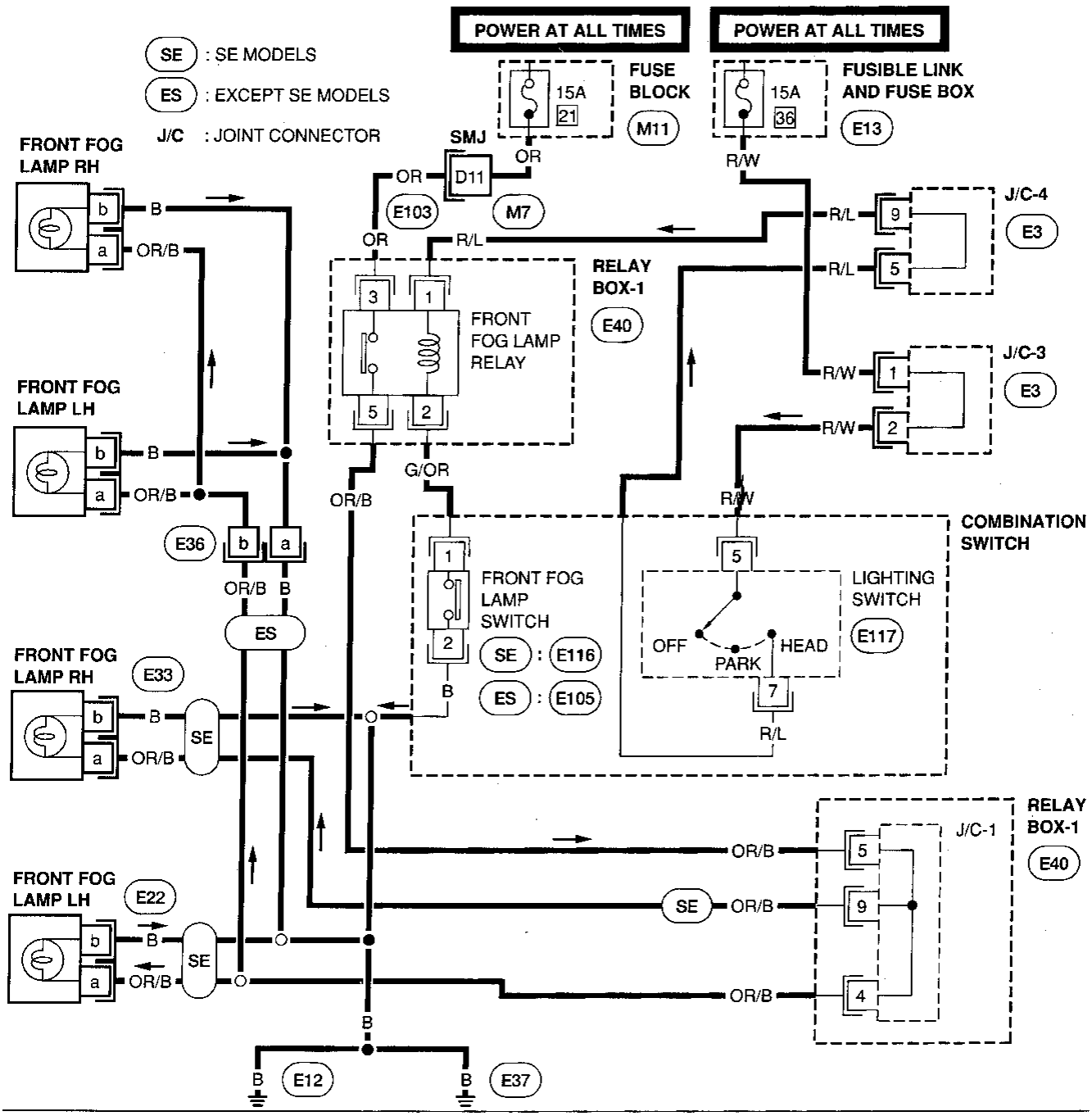
The fog lamp relay is energized and power is supplied

- from fog lamp relay terminal ⑤
- to terminal ⓐ of each fog lamp.

Ground is supplied to terminal ⓑ of each fog lamp through body grounds (E12) and (E37).

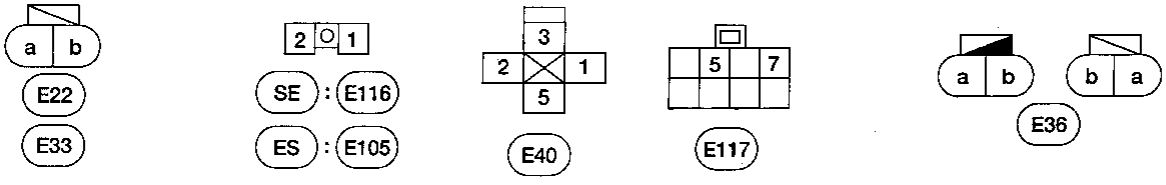
With power and ground supplied, the fog lamps illuminate.

Front Fog Lamp/Wiring Diagram



Refer to POWER SUPPLY ROUTING. E13 M11

Refer to Foldout Page for details. E103 E3 M7 E40



AEL252

1021

Turn Signal and Hazard Warning Lamps/System Description

TURN SIGNAL OPERATION

With the hazard switch in the OFF position and the ignition switch in the ON or START position, power is supplied

- through 10A fuse (No. 24 , located in the fuse block)
- to hazard switch terminal ②
- through terminal ① of the hazard switch
- to flasher module terminal ⓐ
- through terminal ⓒ of the flasher module
- to turn signal switch terminal ①.

Ground is supplied to flasher module terminal ⓑ through body grounds (M51), (M76) and (M77).

LH turn

When the turn signal switch is moved to the LH position, power is supplied from turn signal switch terminal ③ to

- front turn signal lamp LH terminal ⓐ
- rear combination lamp LH terminal ⓔ
- combination meter terminal ㉚, and
- if equipped with head-up display system, combination meter terminal ㊸.

Ground is supplied to the front turn signal lamp LH terminal ⓑ through body grounds (E12) and (E37).
Ground is supplied to the rear combination lamp LH terminal ⓕ through body ground (T7).
Ground is supplied to combination meter terminal ㉗ through body grounds (M51), (M76) and (M77). If equipped with head-up display system, ground is also supplied to combination meter terminal ㊾ through the same body grounds.
With power and grounds supplied, the flasher module controls the flashing of the LH turn signal lamps.

RH turn

When the turn signal switch is moved to the RH position, power is supplied from turn signal switch terminal ② to

- front turn signal lamp RH terminal ⓐ
- rear combination lamp RH terminal ⓔ
- combination meter terminal ㉖, and
- if equipped with head-up display system, combination meter terminal ㊷.

Ground is supplied to the front turn signal lamp RH terminal ⓑ through body grounds (E12) and (E37).
Ground is supplied to the rear combination lamp RH terminal ⓕ through body ground (T7).
Ground is supplied to combination meter terminal ㉗ through body grounds (M51), (M76) and (M77). If equipped with head-up display system, ground is also supplied to combination meter terminal ㊾ through the same body grounds.
With power and grounded supplied, the flasher module controls the flashing of the RH turn signal lamps.

HAZARD LAMP OPERATION

Power is supplied at all times to hazard switch terminal ③ through:

- 10A fuse (No. 22 , located in the fuse block).

With the hazard switch in the ON position, power is supplied

- through terminal ① of the hazard switch
- to flasher module terminal ⓐ
- through terminal ⓒ of the flasher module
- to hazard switch terminal ④.

Ground is supplied to flasher module terminal ⓑ through body grounds (M51), (M76) and (M77).
Power is supplied through terminal ⑤ of the hazard switch to

- front turn signal lamp LH terminal ⓐ
- rear combination lamp LH terminal ⓔ
- combination meter terminal ㉚, and
- if equipped with head-up display system, combination meter terminal ㊸.

Power is supplied through terminal ⑥ of the hazard switch to

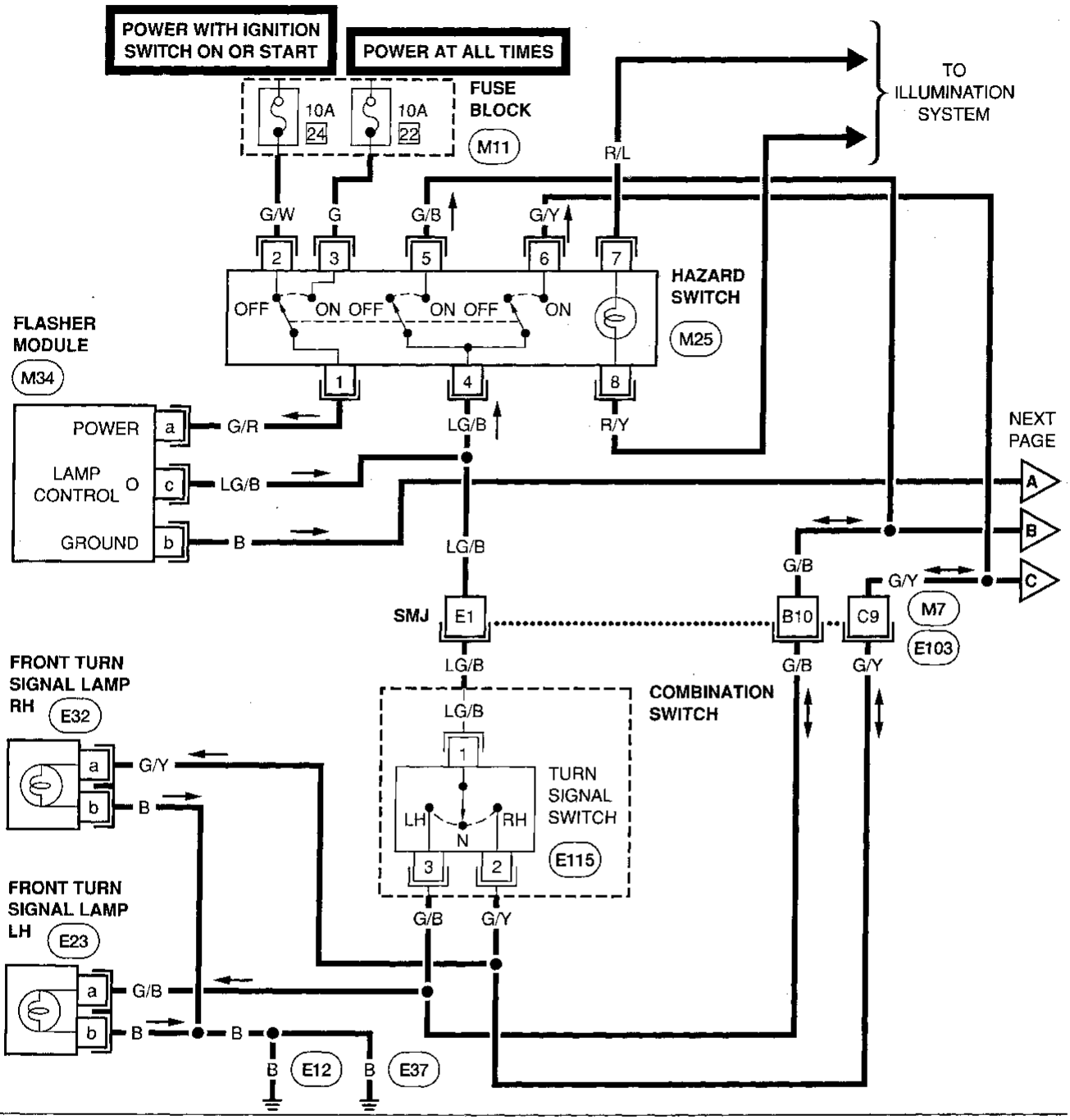
- front turn signal lamp RH terminal ⓐ
- rear combination lamp RH terminal ⓔ

Turn Signal and Hazard Warning Lamps/System Description (Cont'd)

- combination meter terminal ㉖, and
- if equipped with head-up display system, combination meter terminal ㊷.

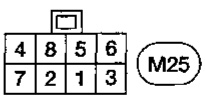
Ground is supplied to terminal ⓑ of the front turn signal lamps through body grounds (E12) and (E37).
Ground is supplied to terminal ⓕ of the rear combination lamps through body ground (T7).
Ground is supplied to combination meter terminal ㉗ through body grounds (M51), (M76) and (M77). If equipped with head-up display system, ground is also supplied to combination meter terminal ㊾ through the same body grounds.
With power and ground supplied, the flasher module controls the flashing of the hazard warning lamps.

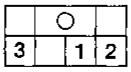
Turn Signal and Hazard Warning Lamps/Wiring Diagram

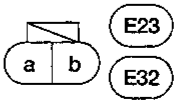


Refer to POWER SUPPLY ROUTING. (M11)

Refer to Foldout Page for details. (E103) (M7)







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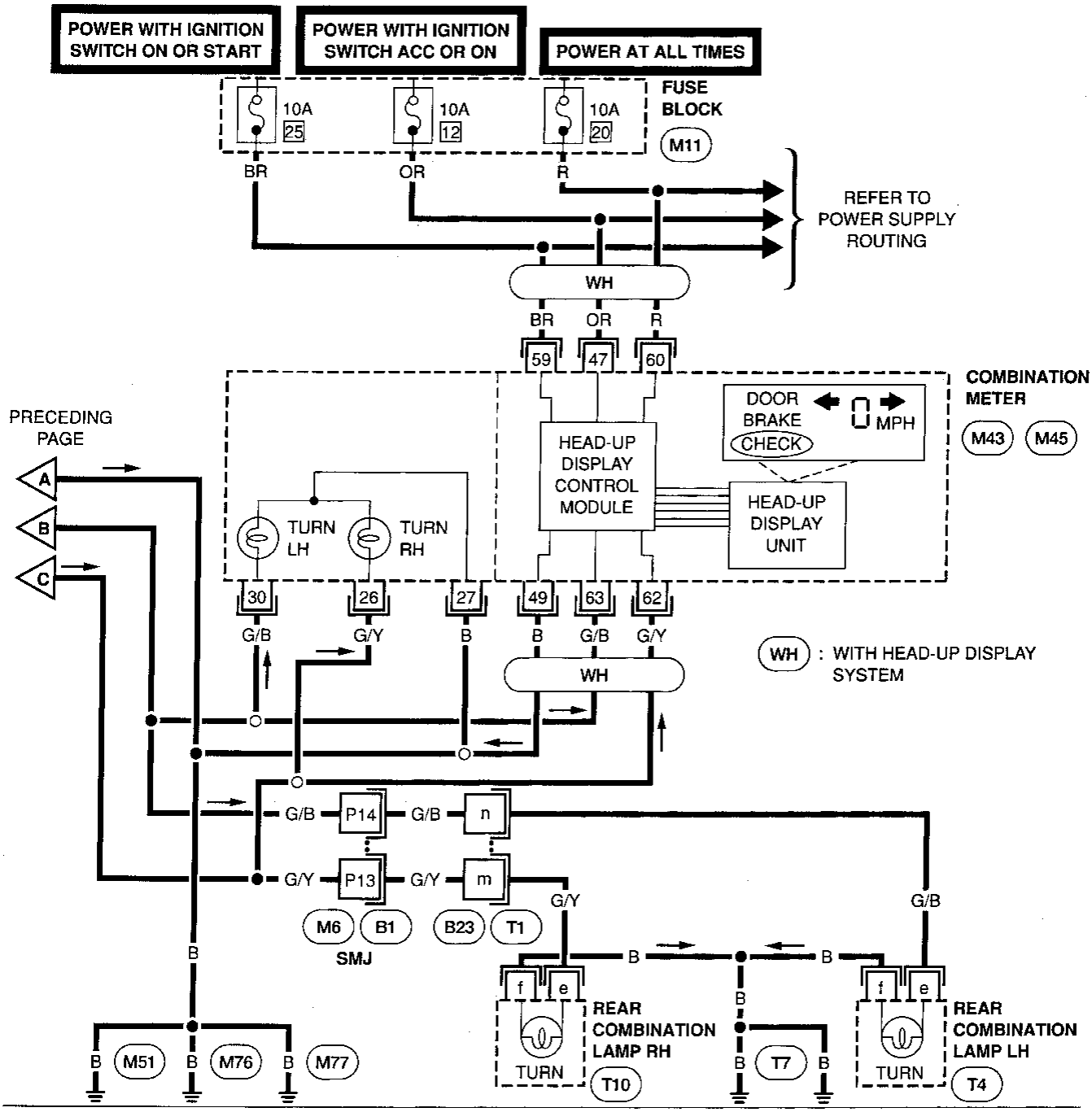
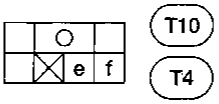
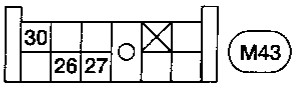
Turn Signal and Hazard Warning Lamps/Wiring Diagram (Cont'd)

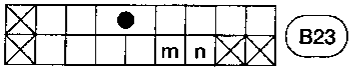


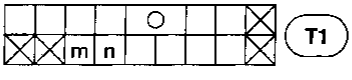
Refer to POWER SUPPLY ROUTING. M11

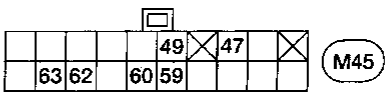
Refer to Foldout Page for details. B1 M6











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Turn Signal and Hazard Warning Lamps/Trouble Diagnoses

Symptom	Possible cause	Repair order
Turn signal and hazard warning lamps do not operate.	1. Hazard switch 2. Flasher module 3. Open in flasher module circuit	1. Check hazard switch. 2. Refer to flasher module check. 3. Check wiring to flasher module for open circuit.
Turn signal lamps do not operate but hazard warning lamps operate.	1. 10A fuse 2. Hazard switch 3. Turn signal switch 4. Open in turn signal switch circuit	1. Check 10A fuse (No. 24 , located in fuse block). Turn ignition switch ON and verify battery positive voltage is present at terminal ② of hazard switch. 2. Check hazard switch. 3. Check turn signal switch. 4 Check LB/G wire between flasher module and turn signal switch for open circuit.
Hazard warning lamps do not operate but turn signal lamps operate.	1. 10A fuse 2. Hazard switch 3. Open in hazard switch circuit	1. Check 10A fuse (No. 22 , located in fuse block). Verify battery positive voltage is present at terminal ③ of hazard switch. 2. Check hazard switch. 3. Check LG/B wire between flasher module and hazard switch for open circuit.
Front turn signal lamp LH or RH does not operate.	1. Bulb 2. Grounds (E12) and (E37)	1. Check bulb. 2. Check grounds (E12) and (E37).
Rear turn signal lamp LH or RH does not operate.	1. Bulb 2. Ground (T7)	1. Check bulb. 2. Check ground (T7).
LH and RH turn indicators do not operate.	1. Ground	1. Check grounds (M51), (M76) and (M77).
LH and RH turn indicators do not operate (with head-up display system).	1. 10A fuses 2. Ground	1. Check 10A fuses (No. 12 , No. 20 and No. 25 , located in fuse block). Turn ignition switch ON and verify battery positive voltage is present at terminal ⑲, terminal ㊼ and terminal ㊿ of combination meter. 2. Check grounds (M51), (M76) and (M77).
LH or RH turn indicator does not operate.	1. Bulb	1. Check bulb in combination meter.

Turn Signal and Hazard Warning Lamps/Trouble Diagnoses (Cont'd)

NOTE

Cornering Lamp/System Description

The lighting switch must be in the HEAD or HI BEAM position for the cornering lamps to operate. The cornering lamp switch is a part of the combination switch and is controlled by the turn signal lever. The cornering lamps provide additional lighting in the direction of the turn.
Power is supplied at all times to terminal ⑧ of the lighting switch through:
- 15A fuse (No. 37 , located in the fusible link and fuse box).

With the ignition switch in the ON or START position, power is supplied to cornering lamp relay terminal ③ through:
- 10A fuse (No. 24 , located in the fuse block).

Power is supplied to cornering lamp relay terminal ①
- through terminal ⑩ of the lighting switch in the HEAD position or
- through terminal ⑨ of the lighting switch in the HI BEAM position.

Ground is supplied to cornering lamp relay terminal ② through body grounds (E12) and (E37).
With power and ground supplied, the cornering lamp relay is energized.
Power is supplied
- from terminal ⑤ of the cornering lamp relay
- to cornering lamp switch terminal ⑥①.

RH turn

When the turn signal lever is moved to the RH position, power is supplied
- from terminal ⑥① of the cornering lamp switch
- through terminal ⑥② of the cornering lamp switch
- to cornering lamp RH terminal ⓐ.

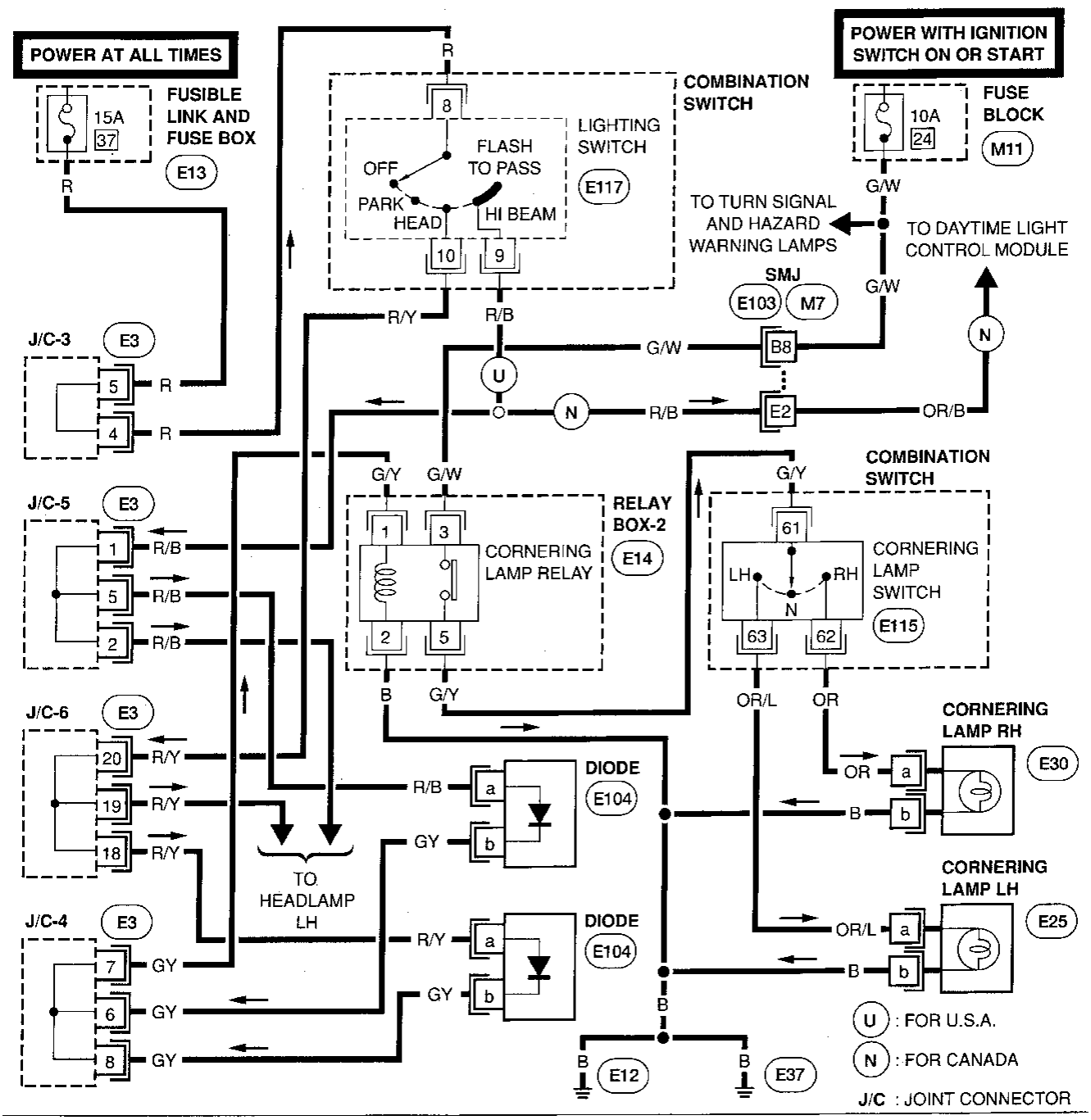
Ground is supplied to terminal ⓑ of cornering lamp RH through body grounds (E12) and (E37).
The RH cornering lamp illuminates until the turn is completed.

LH turn

When the turn signal lever is moved to the LH position, power is supplied
- from terminal ⑥① of the cornering lamp switch
- through terminal ⑥③ of the cornering lamp switch
- to cornering lamp LH terminal ⓐ.

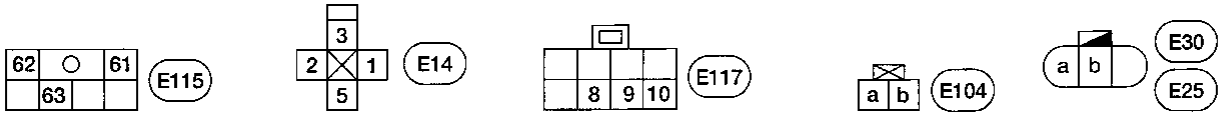
Ground is supplied to terminal ⓑ of cornering lamp LH through body grounds (E12) and (E37).
The LH cornering lamp illuminates until the turn is completed.

Cornering Lamp/Wiring Diagram



Refer to POWER SUPPLY ROUTING. E13 M11

Refer to Foldout Page for details. E103 M7 E3



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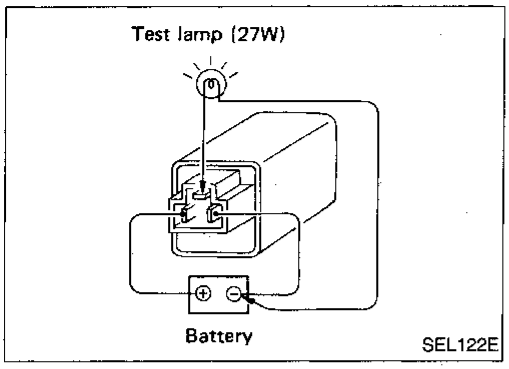


Flasher Module Check

- Before checking, ensure that bulbs meet specifications.
- Connect a battery and test lamp to the flasher module, as shown. Flasher module is properly functioning if it blinks when power is supplied to the circuit.

Bulb Specifications

	Wattage (12 volt)	Bulb No.
Headlamp (Semi-sealed beam)		
High/Low	60/55	HB2
Front turn signal lamp	27	1156NA
Cornering lamp/Front clearance lamp	27/5	1157
Front side marker lamp	3.8	194
Front fog lamp	55	
Rear combination lamp		
Turn signal	27	1156
Stop/Tail	27/8	1157
Back-up	27	1156
Rear side marker lamp	3.8	194
License plate lamp	5	168
High-mounted stop lamp	13	912
Interior lamp	10	
Front personal lamp	10	
Trunk room lamp	3.4	158

Illumination/System Description

Power is supplied at all times
- through 15A fuse (No. 23 , located in the fuse block)
- to lighting switch terminal ⑪.

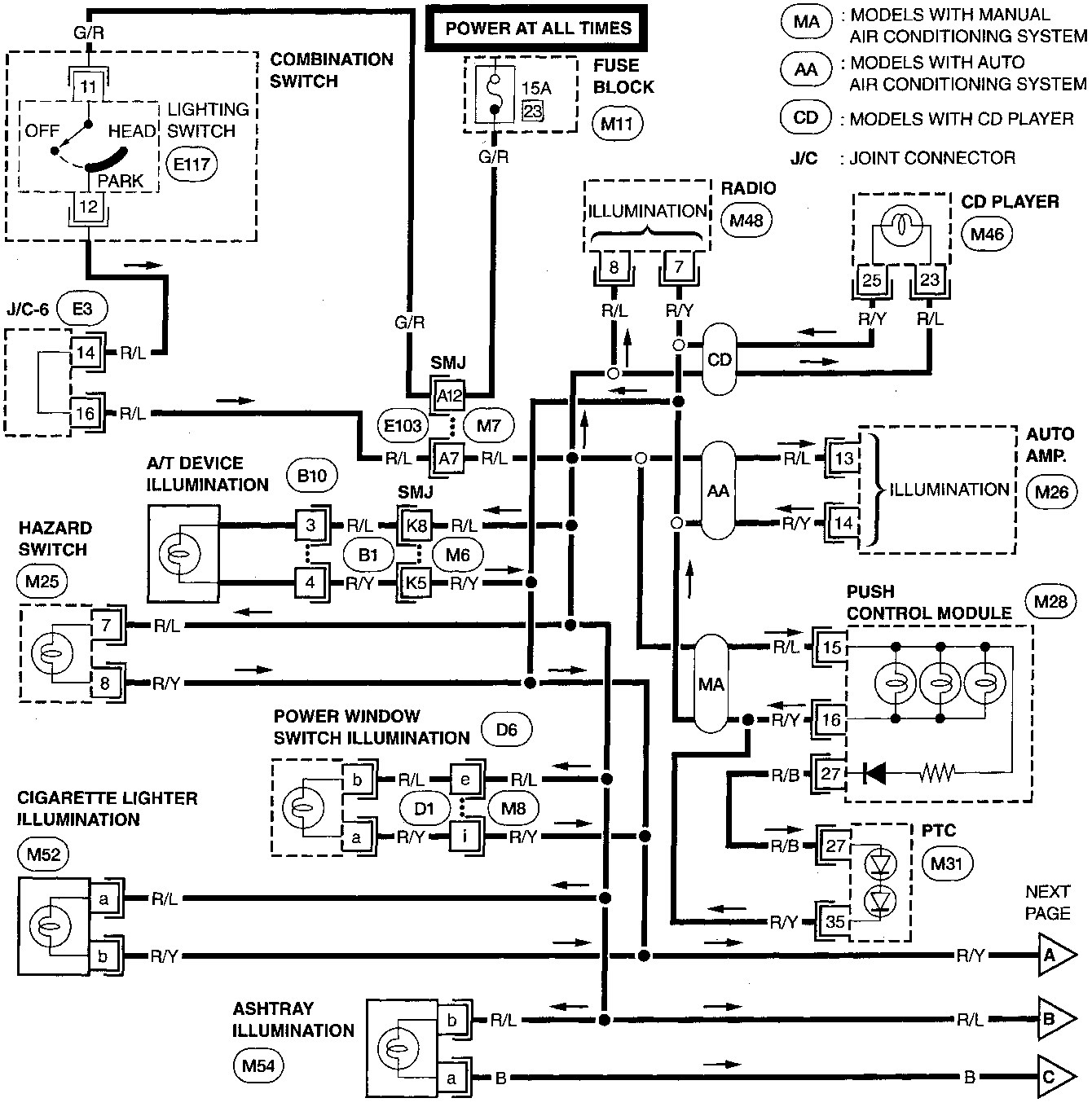
The lighting switch must be in the PARK or HEAD position for illumination.
The illumination control switch is a thumbwheel that controls the amount of current to the illumination system. As the amount of current increases, the illumination becomes brighter.
The ashtray illumination and the glove box lamp are not controlled by the illumination control switch. The intensity of these lamps does not change.
The following chart shows the power and ground connector terminals for the components included in the illumination system.

Component	Power terminal	Ground terminal
Radio	⑧	⑦
CD player*	㉓	㉕
Auto amplifier*	⑬	⑭
Push control module*	⑮	⑯
PTC*	㉗**	㉟
A/T device*	③	④
Hazard switch	⑦	⑧
Power window switch	ⓑ	ⓐ
Cigarette lighter	ⓐ	ⓑ
Ashtray	ⓑ	ⓐ
Combination meter	㊶	㊵
Clock	ⓔ	ⓒ
ASCD switch*	⑤	⑥
Rear window defogger switch	⑤	⑥
Glove box lamp	ⓑ	ⓐ
Illumination control switch	①	③

* If equipped.
** Power supplied to PTC terminal ㉗ is supplied through terminal ㉗ of the push control module.

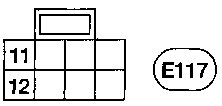
With the exception of the glove box lamp and the ashtray illumination, the ground for all of the components are controlled through terminals ④ and ⑤ of the illumination control switch and body grounds (M51), (M76) and (M77).
When the glove box is open, glove box lamp terminal ⓐ is grounded through the glove box lamp switch and body grounds (M51), (M76) and (M77).
The ashtray illumination terminal ⓐ is grounded directly through body grounds (M51), (M76) and (M77).

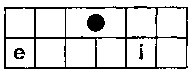
Illumination/Wiring Diagram

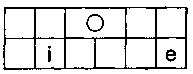


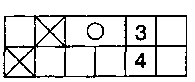
Refer to POWER SUPPLY ROUTING. M11

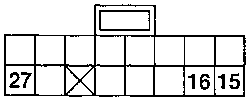
Refer to Foldout Page for details. E103 B1 E3 M7 M6

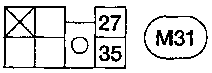


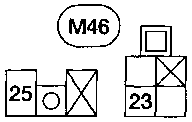


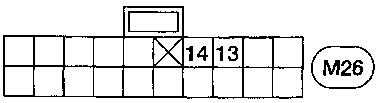


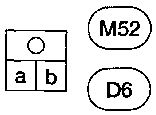


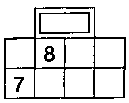


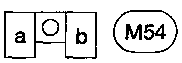


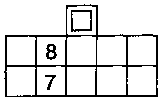






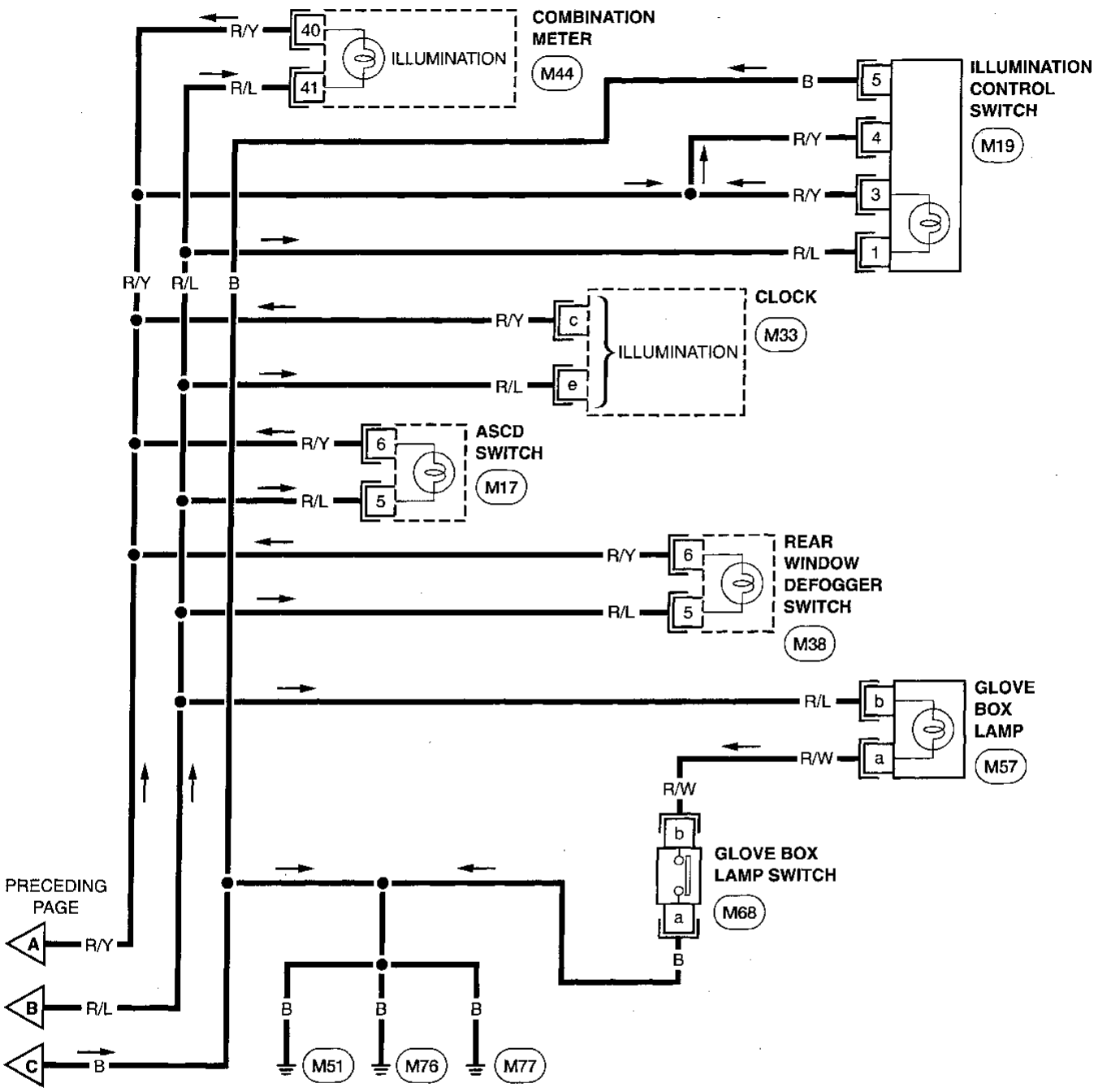


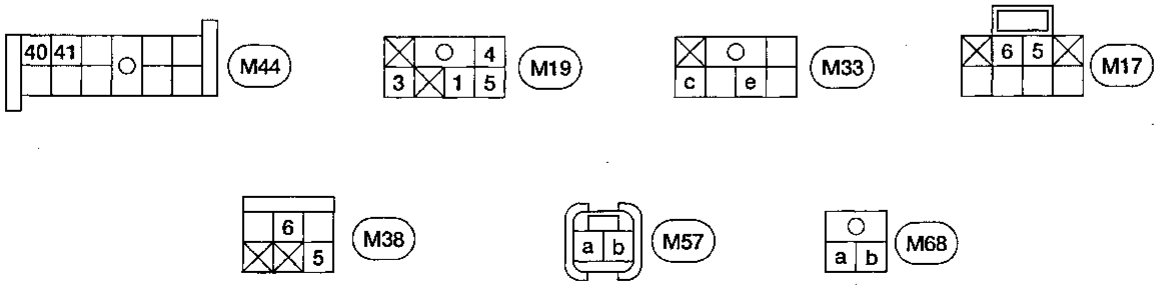




AEL255-A

Illumination/Wiring Diagram (Cont'd)

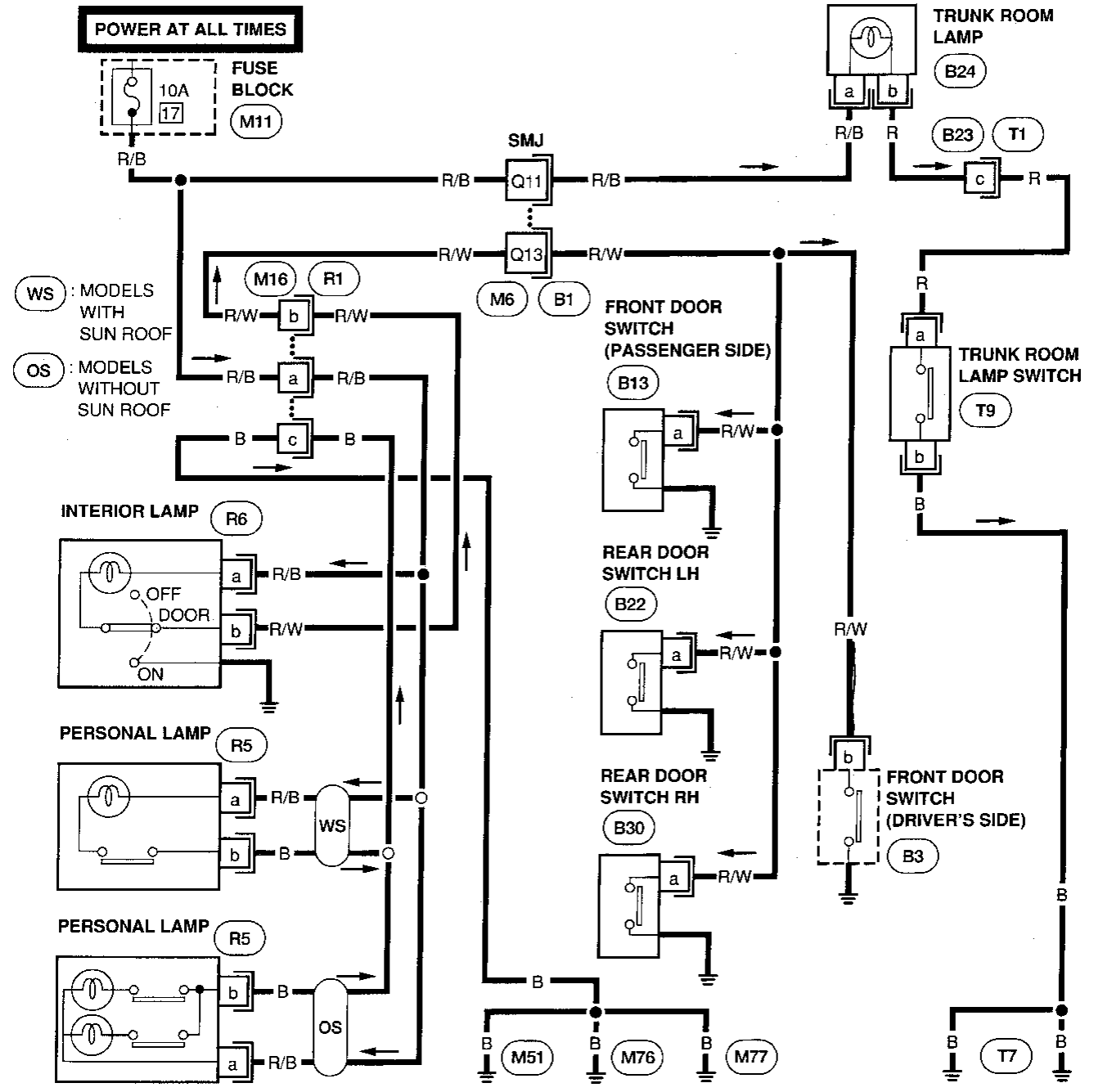




AEL255-B

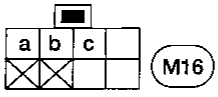
NOTE

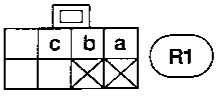
Interior, Personal and Trunk Room Lamps/Wiring Diagram

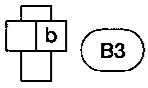


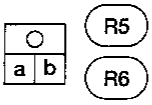
Refer to POWER SUPPLY ROUTING. M11

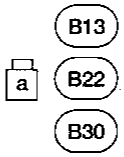
Refer to Foldout Page for details. B1 M6

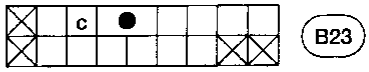


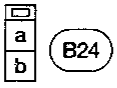


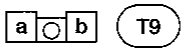


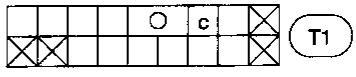












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System Description

If equipped with head-up display, the combination meter includes the head-up display control module and head-up display unit.

With the ignition switch in the ON or START position, power is supplied

- through 10A fuse (No. 25 , located in the fuse block)
- to combination meter terminal ㊸ for the water temperature gauge,
- combination meter terminal ㉒ for the tachometer and
- combination meter terminal ② for the fuel gauge and speedometer.

If equipped with head-up display, power is also supplied

- to combination meter terminal ㊾ for the head-up display control module.

Ground is supplied

- to combination meter terminal ㊳ and
- terminal ㊾ (for head-up display only)
- through body grounds (M51), (M76) and (M77).

The water temperature gauge indicates the engine coolant temperature. The reading on the gauge is based on the resistance of the thermal transmitter.

As the temperature of the coolant increases, the resistance of the thermal transmitter decreases. A variable ground is supplied to terminal ㊲ of the combination meter for the water temperature gauge. The needle on the gauge moves from "C" to "H".

The tachometer indicates engine speed in revolutions per minute (rpm).

The tachometer is regulated by a signal

- from terminal ② of the ECM (ECCS control module)
- to combination meter terminal ㉟ for the tachometer.

The fuel gauge indicates the approximate fuel level in the fuel tank.

The fuel gauge is regulated by a variable ground signal supplied

- to combination meter terminal ④ for the fuel gauge
- from terminal ⓐ of the fuel tank gauge unit
- through terminal ⓒ of the fuel tank gauge unit and
- through body grounds (B6) and (B14).

The vehicle speed sensor provides a voltage signal to the combination meter for the speedometer.

Without head-up display, the voltage is supplied

- to combination meter terminals ③ and ⑲ for the speedometer
- from terminals ② and ① of the vehicle speed sensor.

The speedometer converts the voltage into the vehicle speed displayed.

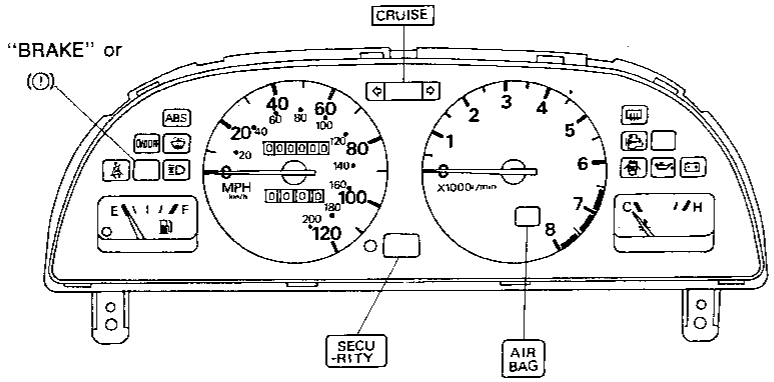
With head-up display, the voltage is supplied

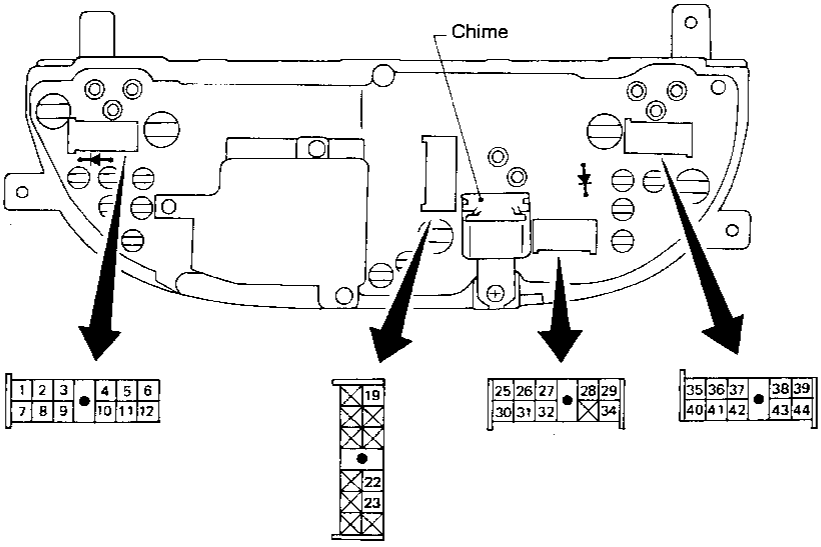
- to combination meter terminals ㊺ and ㊶ for the head-up display control module
- from terminals ② and ① of the vehicle speed sensor.

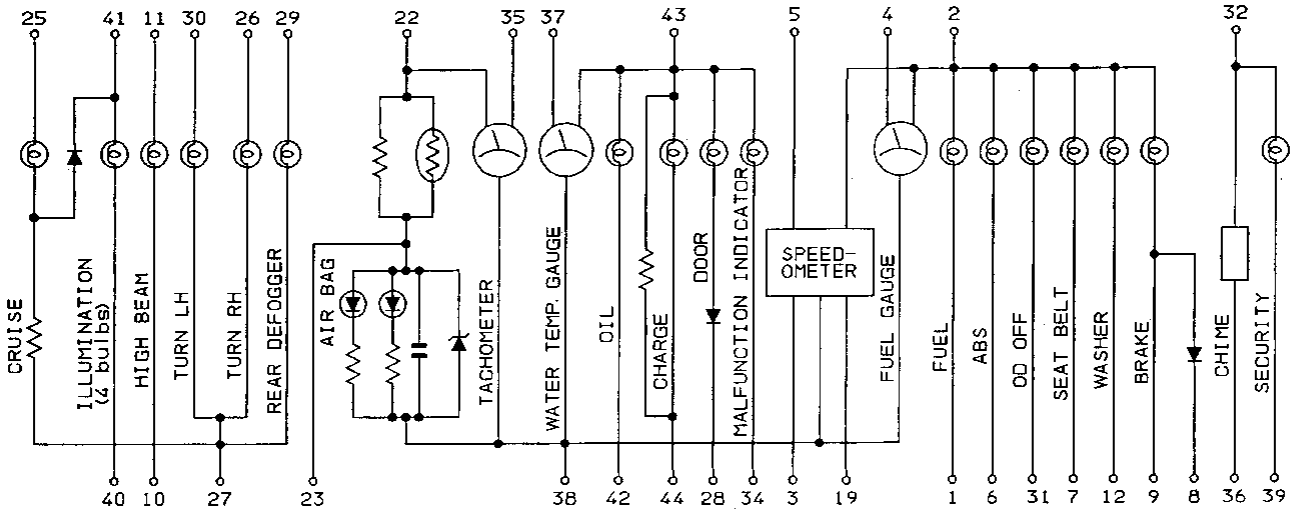
The head-up display control module converts the frequency for the vehicle speed to be displayed on the speedometer and the head-up display.

Combination Meter

WITHOUT HEAD-UP DISPLAY



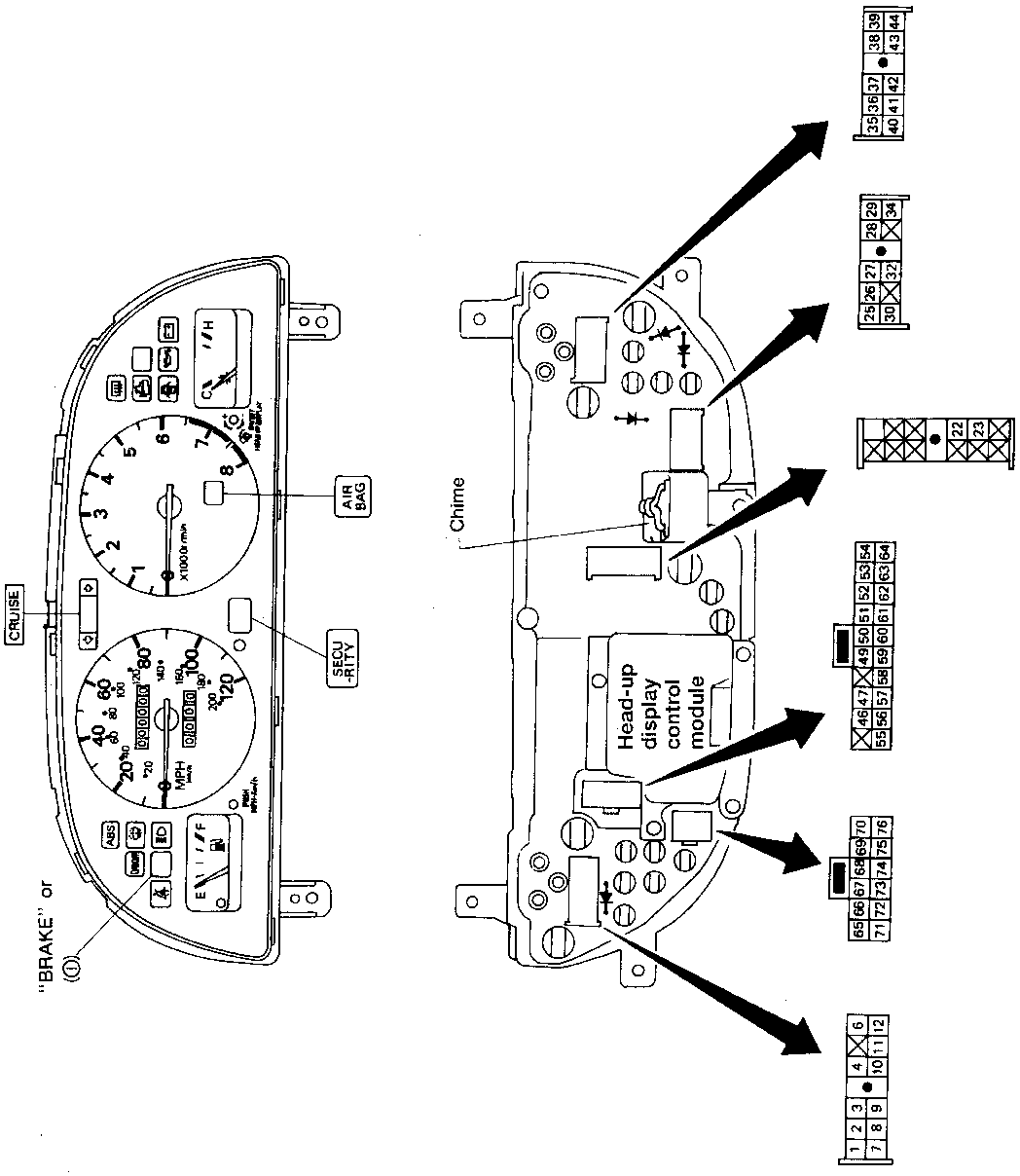




AEL271

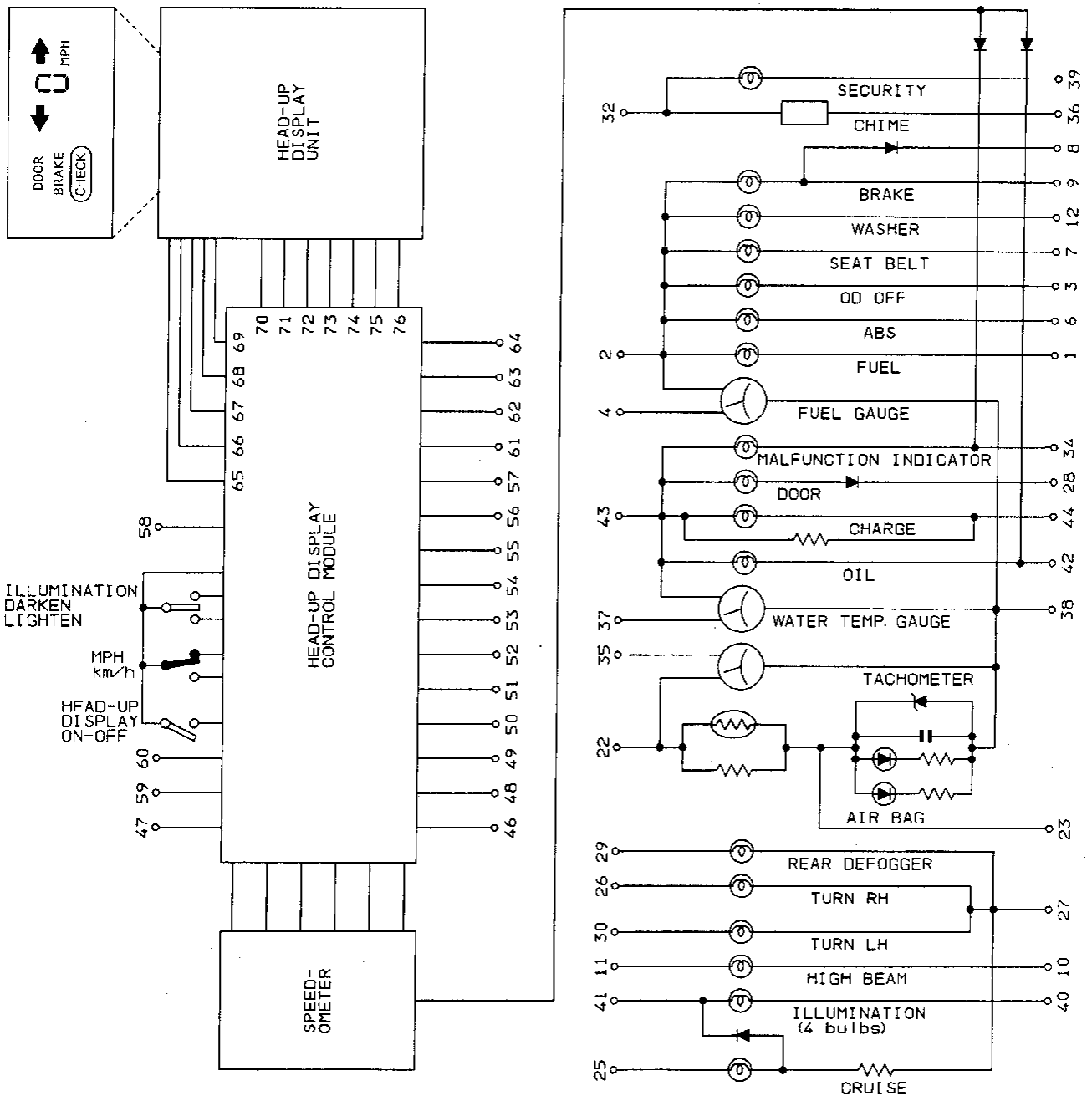
Combination Meter (Cont'd)

WITH HEAD-UP DISPLAY



AEL120A

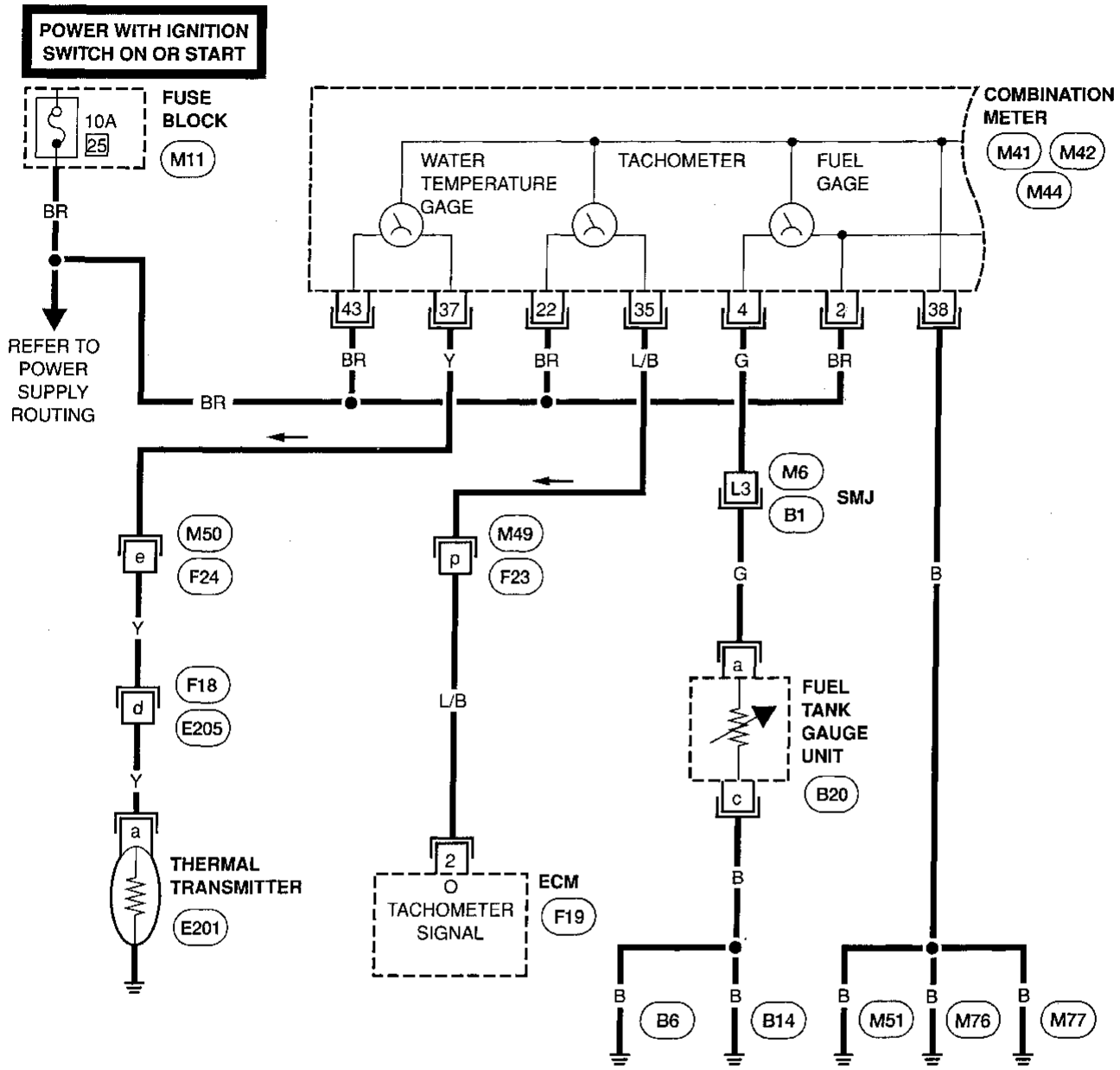
Combination Meter (Cont'd)

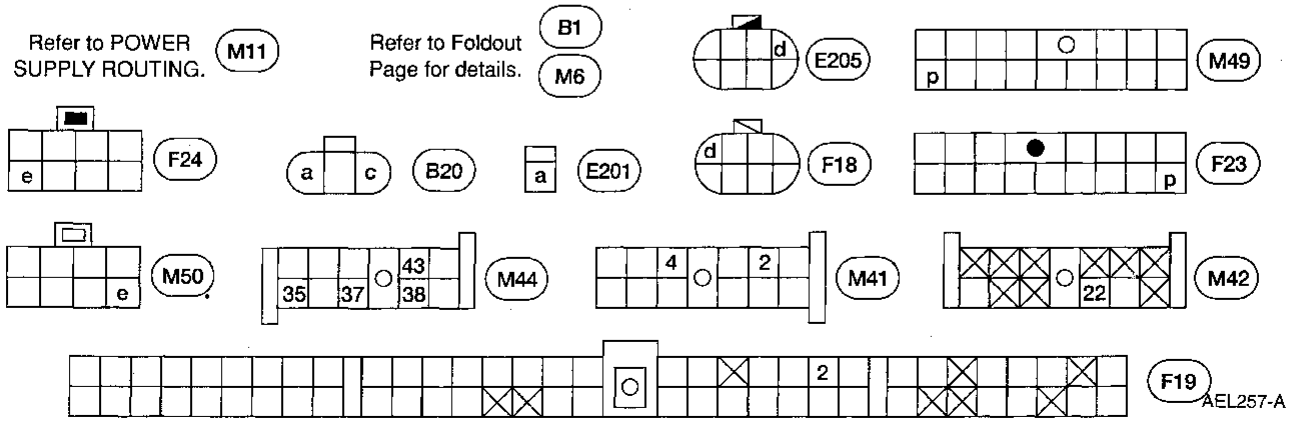


AEL272

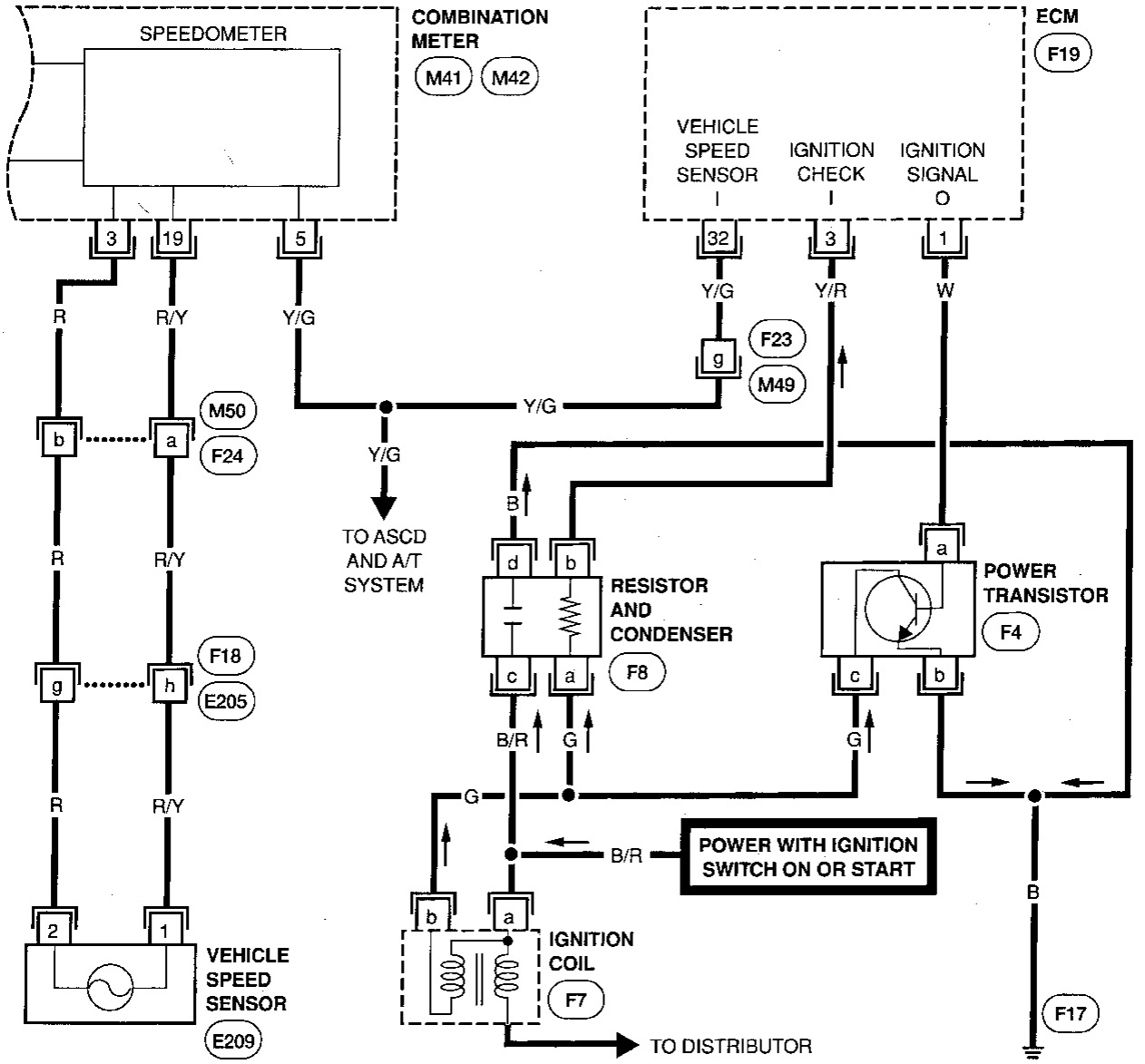
Speedometer, Tachometer, Temp. and Fuel Gauges/Wiring Diagram

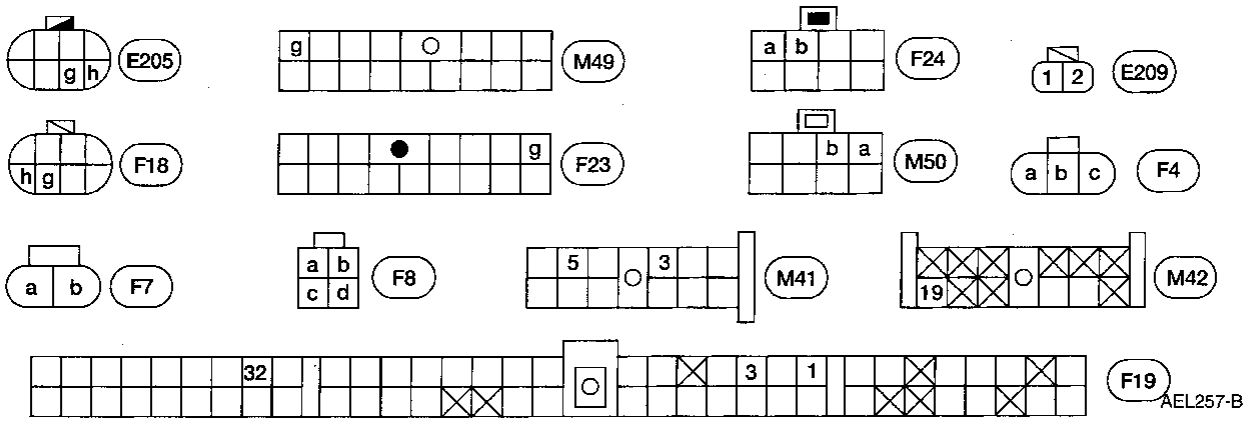
WITHOUT HEAD-UP DISPLAY





Speedometer, Tachometer, Temp. and Fuel Gauges/Wiring Diagram (Cont'd)

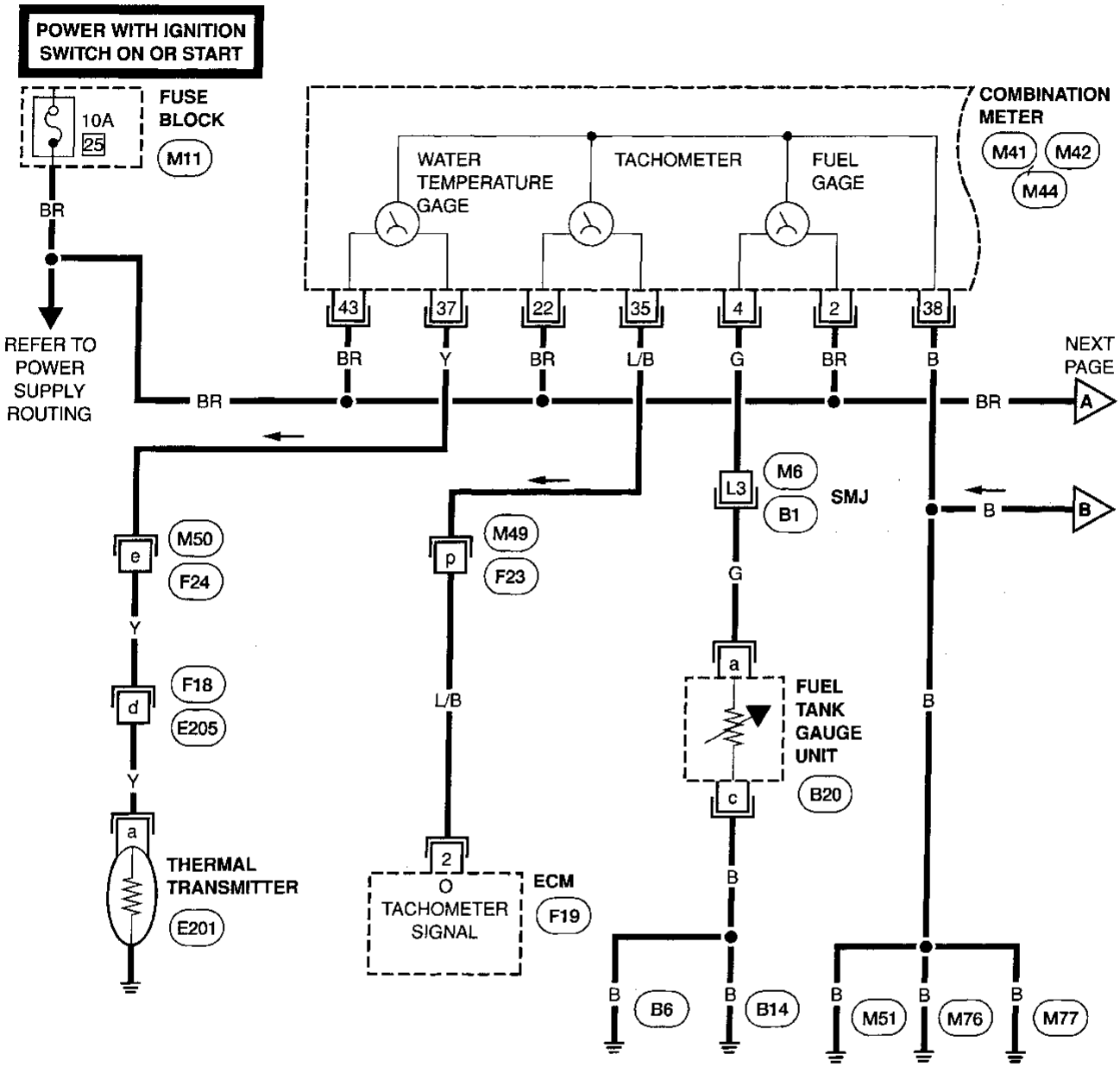


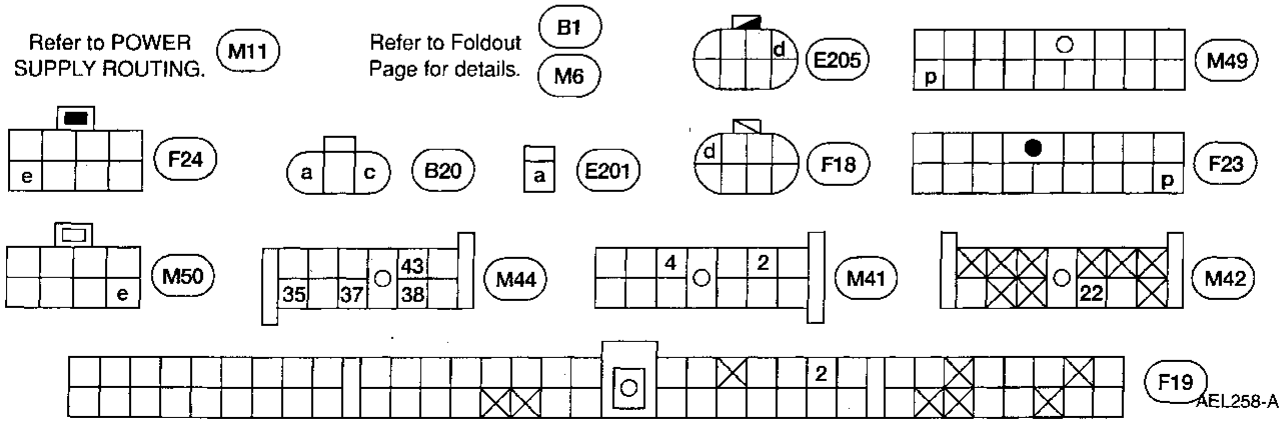


AEL257-B

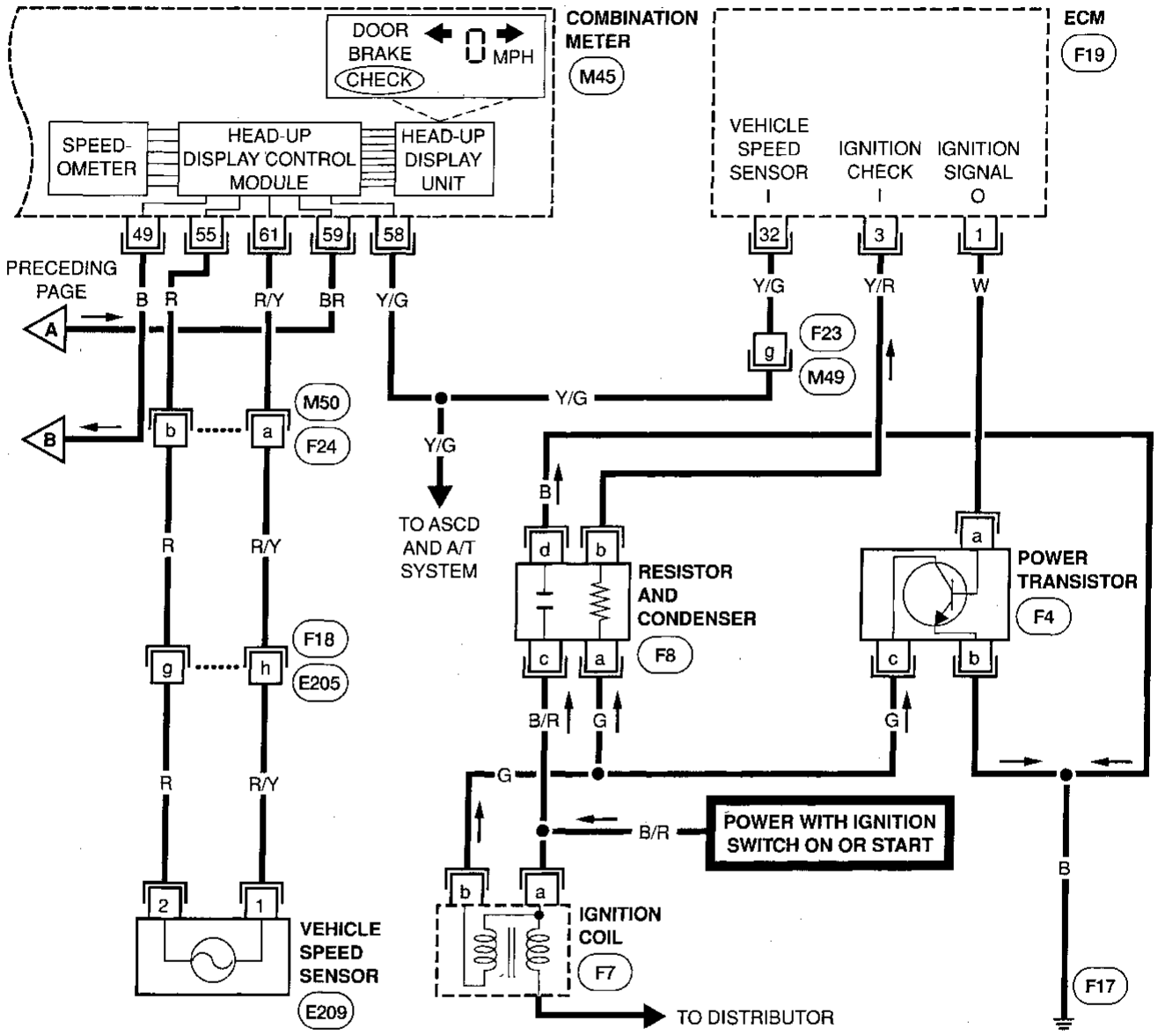
Speedometer, Tachometer, Temp. and Fuel Gauges/Wiring Diagram (Cont'd)

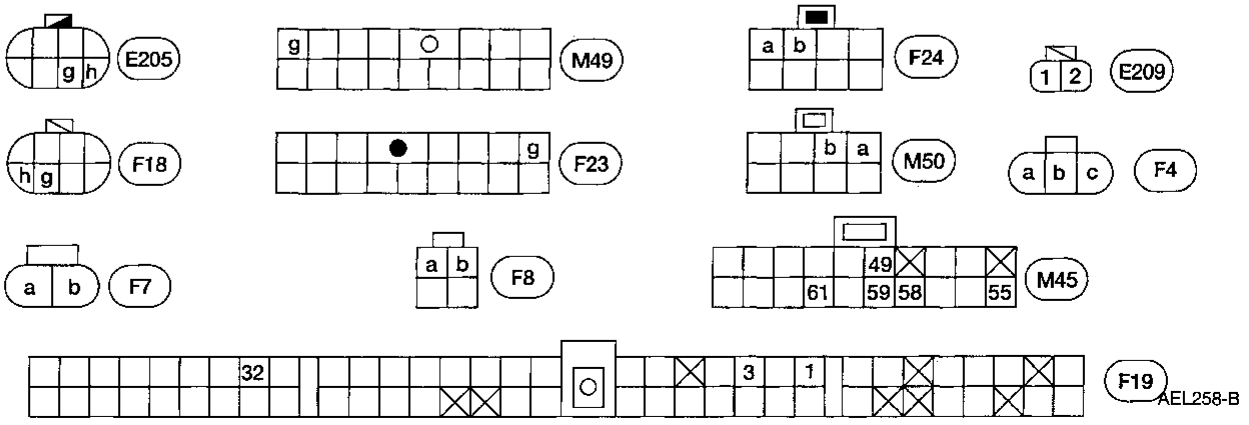
WITH HEAD-UP DISPLAY



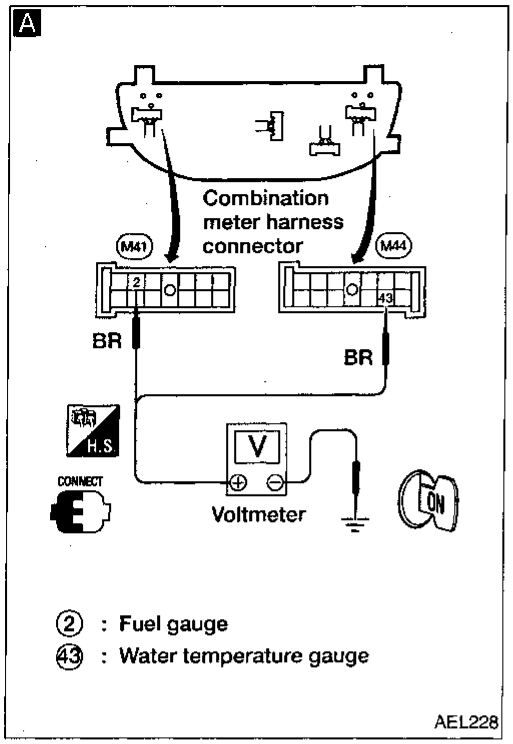


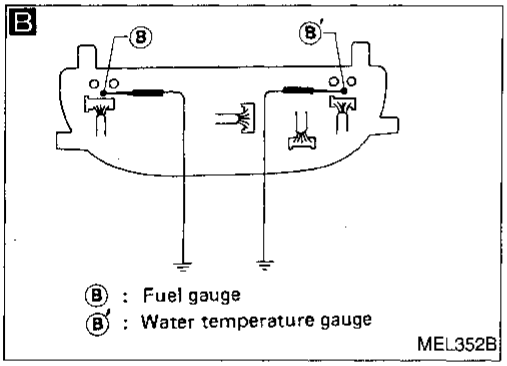
Speedometer, Tachometer, Temp. and Fuel Gauges/Wiring Diagram (Cont'd)

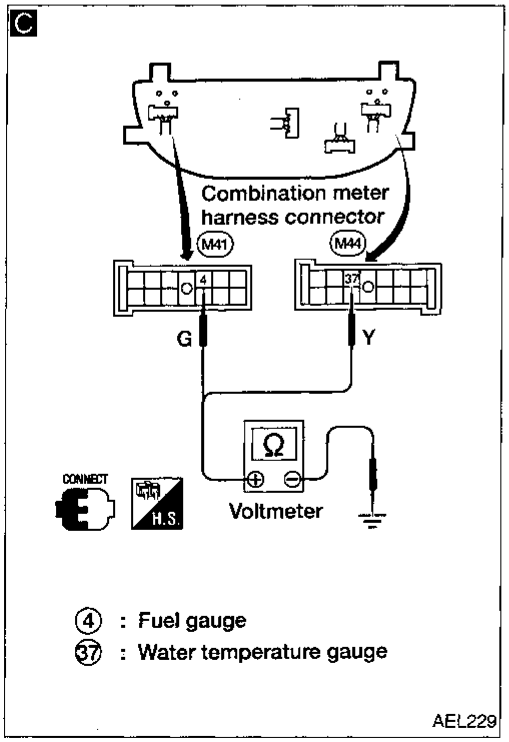




Inspection/Fuel Gauge and Water Temperature Gauge







INSPECTION START

A

CHECK POWER SOURCE.
1) Turn ignition switch "ON".
2) Check voltage between terminal ②, ㊸ and ground.
Battery positive voltage should exist.

N.G. → Check the following items.
1) Harness continuity between battery terminal and combination meter
2) Ignition relay
3) Fusible link and fuse
4) Ignition switch

O.K.

B

CHECK GAUGE OPERATION.
1) Turn ignition switch "ON".
2) Connect terminal Ⓑ, Ⓑ' and ground with wire for **less than 10 seconds.**
3) Check operation of gauge.
Gauge should move smoothly to full scale.

N.G. → Repair or replace gauge.

O.K.

C

Check harness continuity between component and combination meter ④, ㊲.

N.G. → Repair or replace.

O.K.

CHECK COMPONENT.
Check gauge units and harness.
Perform "Fuel Tank Gauge Unit Check" and "Thermal Transmitter Check".
Refer to EL-80.

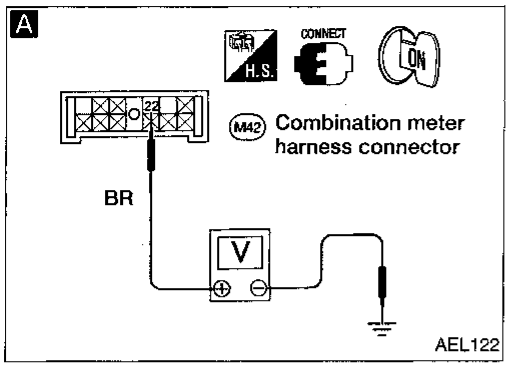
N.G. → Repair or replace.
Refer to FE section ("Fuel Pump and Gauge", "FUEL SYSTEM").

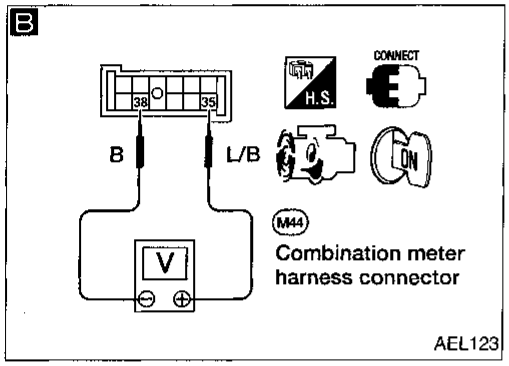
O.K.

Reinstall any part removed.

INSPECTION END

Inspection/Tachometer





INSPECTION START

A

CHECK POWER SOURCE.
1) Turn ignition switch "ON".
2) Check voltage between terminal (22) and ground.
Battery voltage should exist.

N.G. → Check the following items.
1) Harness continuity between battery terminal and combination meter
2) Ignition relay
3) Fusible link and fuse
4) Ignition switch

O.K. ↓

B

CHECK ECM OUTPUT.
1) Start engine.
2) Check voltage between terminals (35) and (38) at idle and 2,000 rpm.
Higher rpm = Higher voltage
Lower rpm = Lower voltage
Voltage should change with rpm.

N.G. → Check harness and connector between ECM and combination meter, or check ground.

O.K. ↓

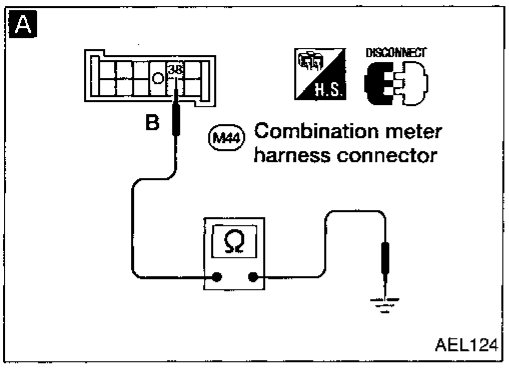
Replace tachometer.

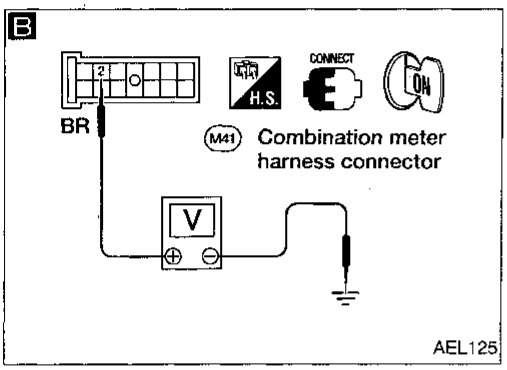
↓

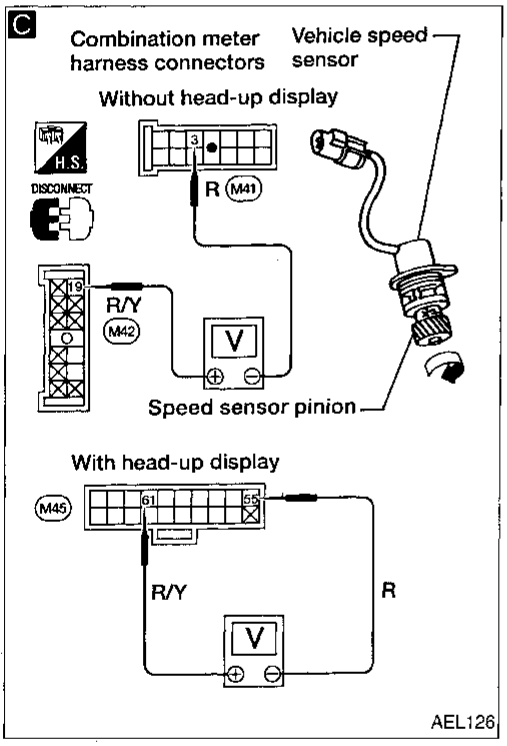
INSPECTION END

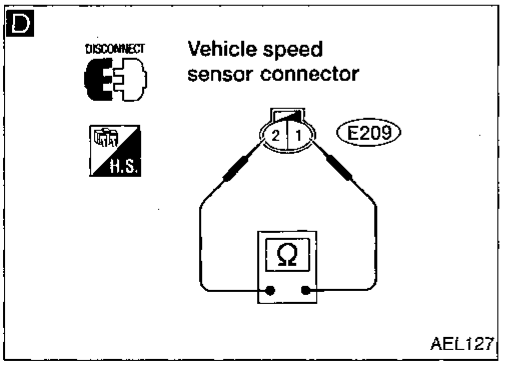
Inspection/Speedometer and Vehicle Speed Sensor

SYMPTOM: Speedometer stays at 0 km/h (0 MPH).









INSPECTION START

A

CHECK GROUND CIRCUIT OF SPEEDOMETER.
Check continuity between terminal (38) and body ground.
Continuity should exist.

N.G. → Repair harness or connector.

O.K.

B

CHECK SPEEDOMETER CIRCUIT.
1) Turn ignition switch "ON".
2) Check voltage between terminal (2) and body ground.
Battery voltage should exist.

N.G. → Repair harness or connector.

O.K.

C

CHECK VEHICLE SPEED SENSOR OUTPUT.
1) Remove vehicle speed sensor from transaxle.
2) (Without head-up display)
Check voltage between terminal (3) and (19) while quickly turning vehicle speed sensor pinion.
(With head-up display)
Check voltage between terminal (55) and (61) while quickly turning vehicle speed sensor pinion.
Voltage: Approx. 0.5V

O.K. → Replace speedometer.

N.G.

D

CHECK VEHICLE SPEED SENSOR.
Check resistance between terminals (1) and (2).
Resistance: Approx. 250Ω.

N.G. → Replace vehicle speed sensor.

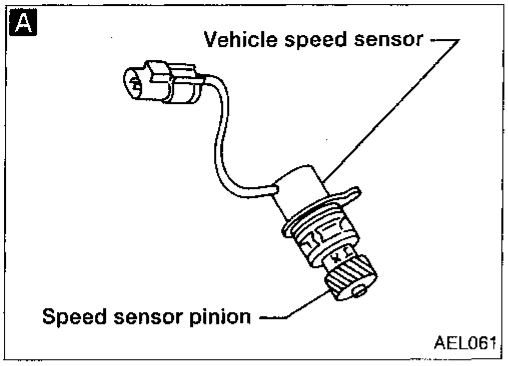
O.K.

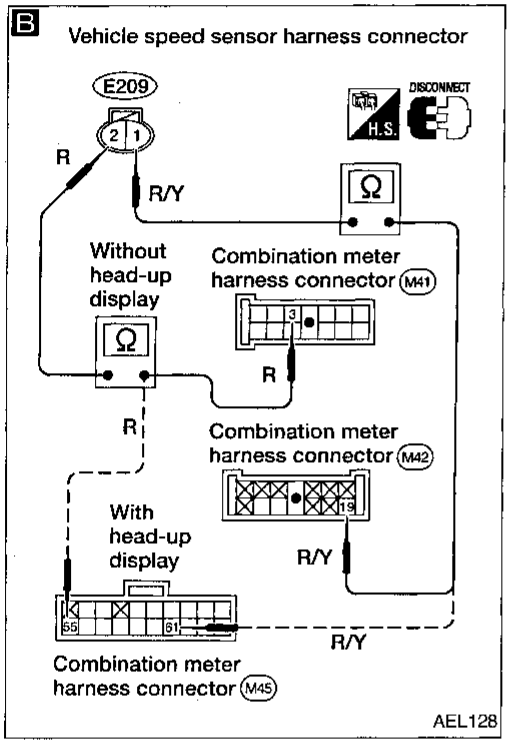
Repair harness or connector between speedometer and vehicle speed sensor.

INSPECTION END

Inspection/Speedometer and Vehicle Speed Sensor (Cont'd)

SYMPTOM: Speedometer indication flutters.





INSPECTION START

↓

Is vehicle speed sensor installed properly? Check looseness and so on. — N.G. → Install vehicle speed sensor properly.

↓ O.K.

A

Do you feel resistance when turning vehicle speed sensor pinion? — No → Replace vehicle speed sensor.

↓ Yes

B

(Without head-up display)
Check continuity between speedometer terminal (19) and vehicle speed sensor terminal (1), and between (3) and (2).
(With head-up display)
Check continuity between speedometer terminal (61) and vehicle speed sensor terminal (1), and between (55) and (2).
Continuity should exist. — N.G. → Repair harness and connector.

↓ O.K.

Replace speedometer.

Inspection/Speedometer and Fuse

SYMPTOM: Speedometer does not go back to 0 km/h (0 MPH).

INSPECTION START

↓

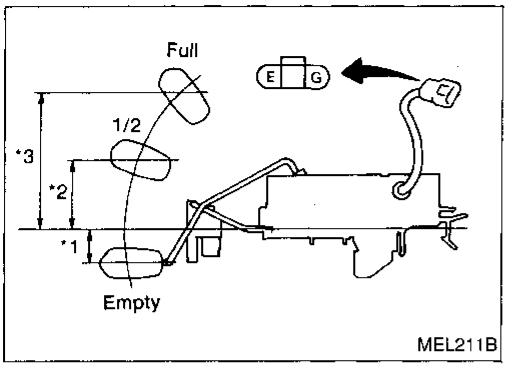
Check fuse related to speedometer. — N.G. → Replace fuse.

↓ O.K.

Drive at over 80 km/h (50 MPH).

↓ N.G.

Replace speedometer.

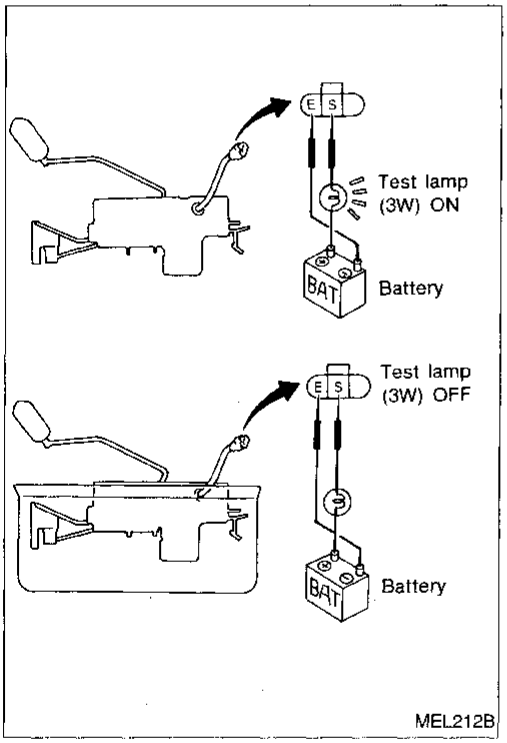


Fuel Tank Gauge Unit Check

- For removal, refer to FE section ("Fuel Pump and Gauge", "FUEL SYSTEM").

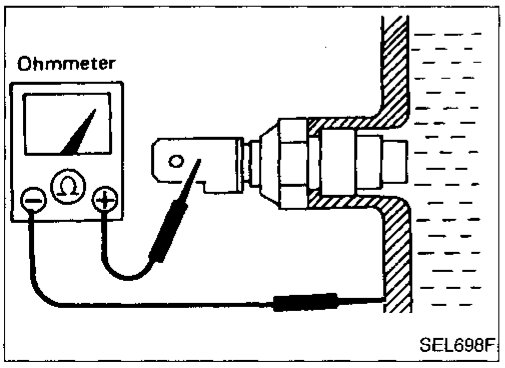
Check the resistance between terminals (G) and (E).

Ohmmeter (+)	Ohmmeter (−)	Float position		mm (in)	Resistance value (Ω)
G	E	*3	Full	80.5 (3.169)	Approx. 4.5 - 6
		*2	1/2	29.4 (1.157)	Approx. 31.5 - 33.5
		*1	Empty	19.0 (0.748)	Approx. 80 - 83



Fuel Warning Lamp Sensor Check

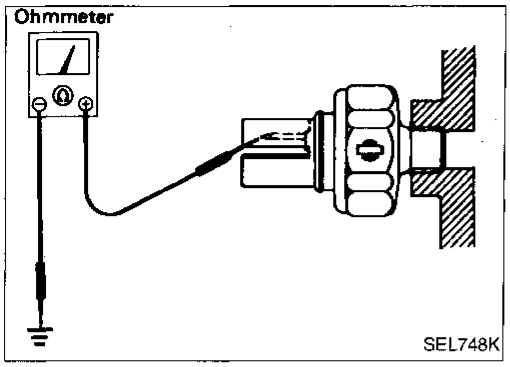
- It will take a short time for the bulb to light.

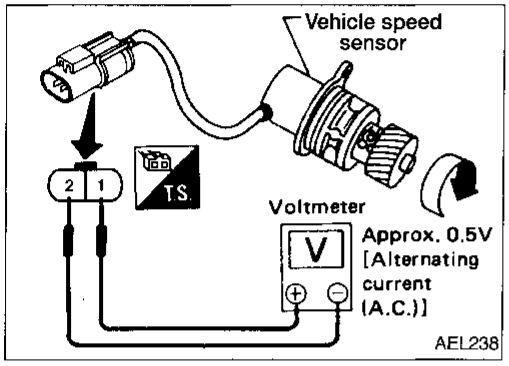


Thermal Transmitter Check

Check the resistance between the terminals of thermal transmitter and body ground.

Water temperature	Resistance
60°C (140°F)	Approx. 70 - 90Ω
100°C (212°F)	Approx. 21 - 24Ω





Oil Pressure Switch Check

	Oil pressure kPa (kg/cm^2, psi)	Continuity
Engine start	More than 10 - 20 (0.1 - 0.2, 1.4 - 2.8)	NO
Engine stop	Less than 10 - 20 (0.1 - 0.2, 1.4 - 2.8)	YES

Check the continuity between the terminals of oil pressure switch and body ground.

Vehicle Speed Sensor Signal Check

1. Remove vehicle speed sensor from transaxle.
2. Turn vehicle speed sensor pinion quickly and measure voltage across ① and ②.

Warning Lamps/System Description

Power is supplied at all times
- through 10A fuse (No. 20 , located in the fuse block)
- to combination meter terminal ㉜ for the security lamp.

If equipped with head-up display, power is also supplied
- to combination meter terminal ㊿ for the head-up display control module.

If equipped with theft warning system, ground for the security lamp is supplied when the system is activated
- to combination meter terminal ㊴
- from terminal ② of the theft warning control module
- through terminal ⑯ of the theft warning control module and
- through body grounds (M51), (M76) and (M77).

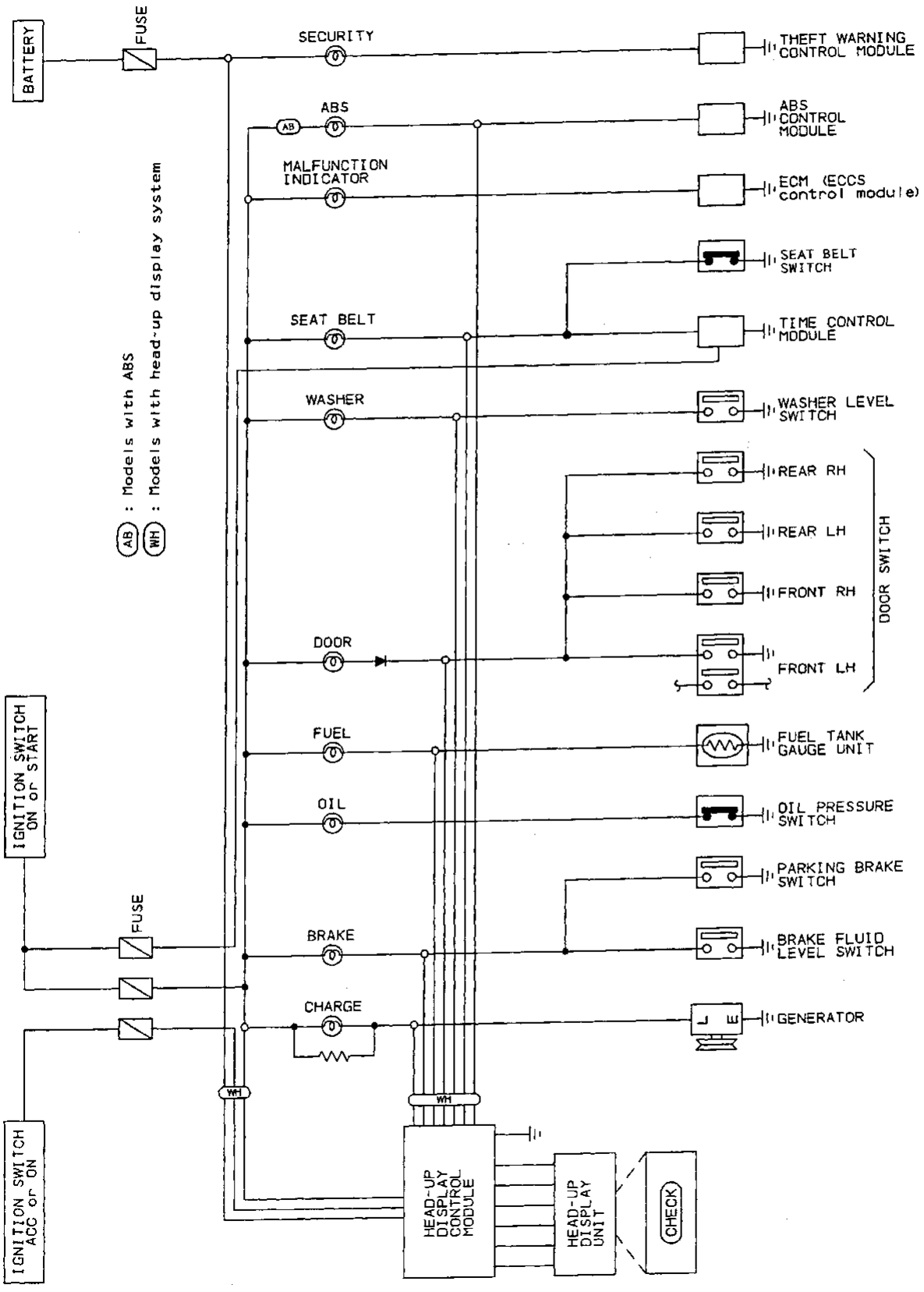
If equipped with head-up display, with the ignition switch in the ACC or ON position, power is supplied
- through 10A fuse (No. 12 , located in the fuse block)
- to combination meter terminal ㊼ for the head-up display control module.

With the ignition switch in the ON or START position, power is supplied
- through 10A fuse (No. 25 , located in the fuse block)
- to combination meter terminal ㊾ (for head-up display only) and
- to combination meter terminal ㊸ and
- to combination meter terminal ②.

Ground is supplied for each of the warning lamps through different terminals of the combination meter.
For details of power and ground terminals for the warning lamps in the combination meter and head-up display control module, refer to "Combination Meter", "METERS AND GAUGES".
Some ground signals from the switches or modules are also received by the head-up display control module (if equipped). If one of the following warning lamps is illuminated on the combination meter, the CHECK lamp on the head-up display unit will illuminate.
- Charge warning lamp
- Engine oil pressure warning lamp
- Malfunction indicator lamp
- Anti-lock brake system warning lamp
- Seat belt warning lamp
- Air bag warning lamp
- Low washer fluid warning lamp
- Fuel indicator lamp.

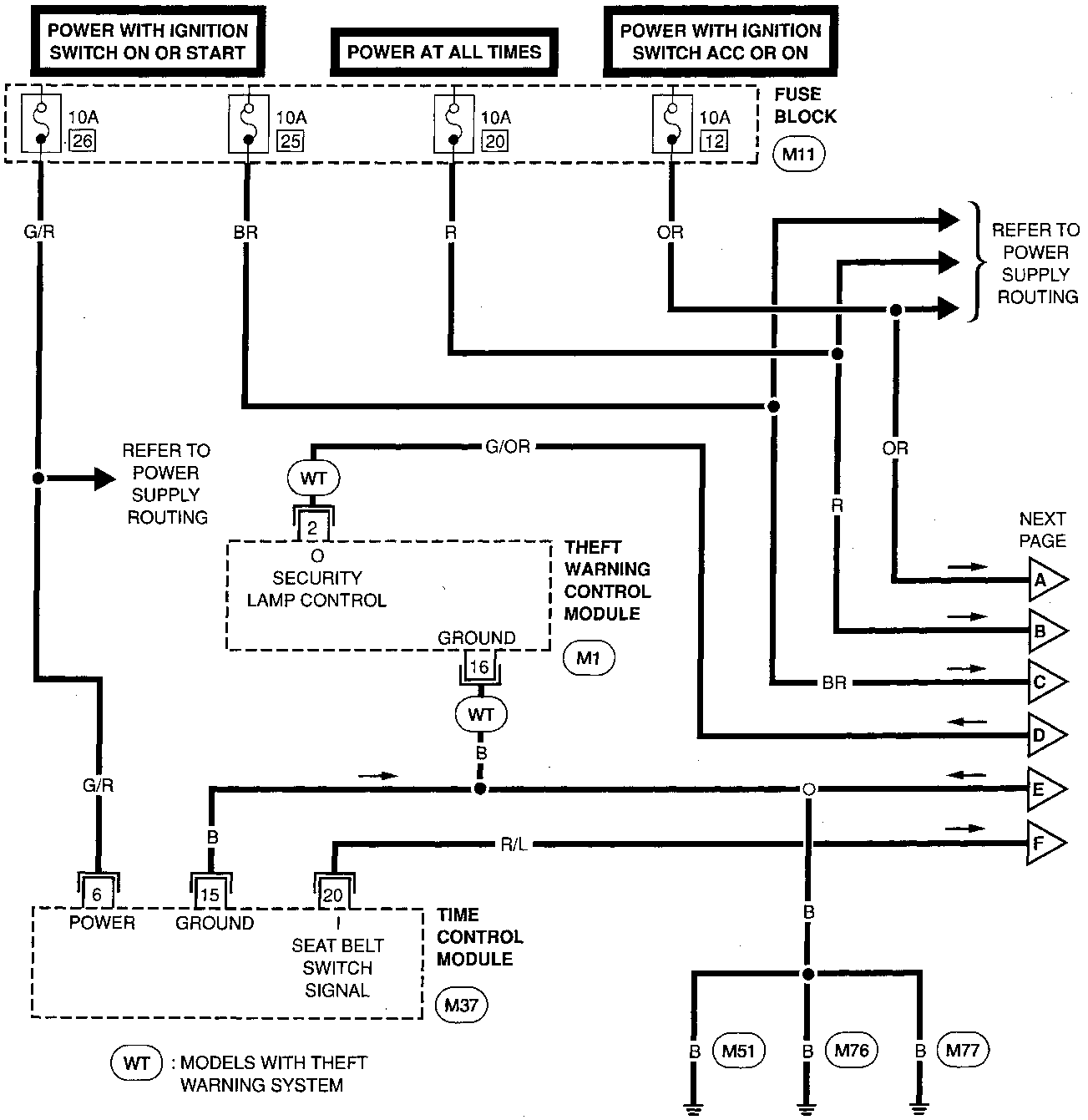
If one of the doors is open, the DOOR lamp will illuminate on the head-up display unit.
If the parking brake is set, or the brake fluid level is low, the BRAKE lamp will illuminate on the head-up display unit.

Warning Lamps/Schematic

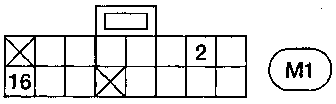


AEL316

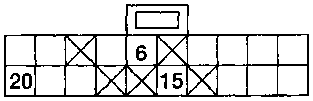
Warning Lamps/Wiring Diagram



Refer to POWER SUPPLY ROUTING. M11



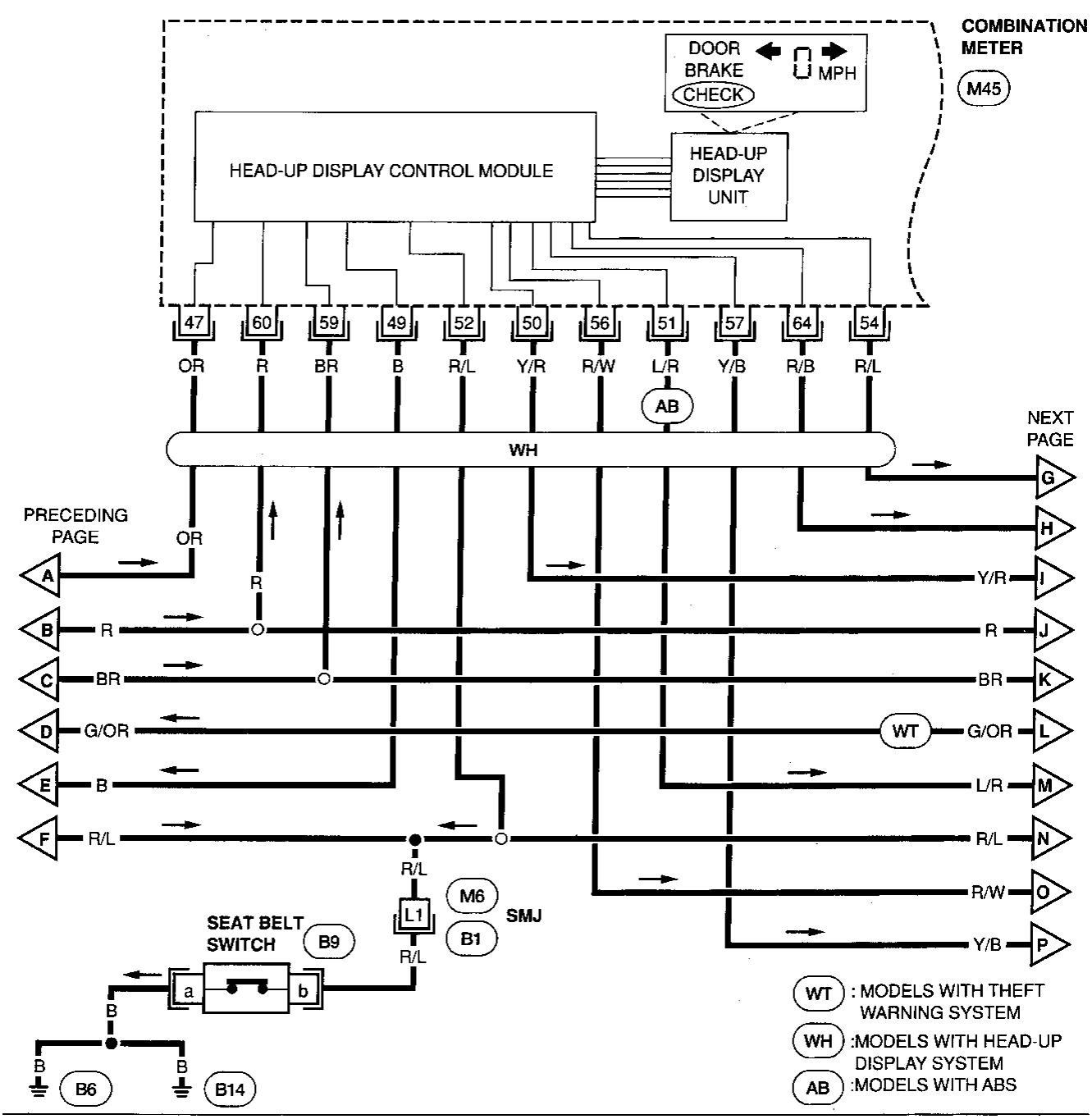
Refer to THEFT WARNING SYSTEM.

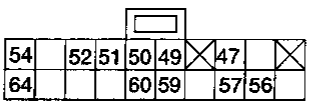


Refer to TIME CONTROL SYSTEM.

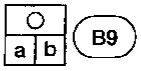
AEL259-A

Warning Lamps/Wiring Diagram (Cont'd)



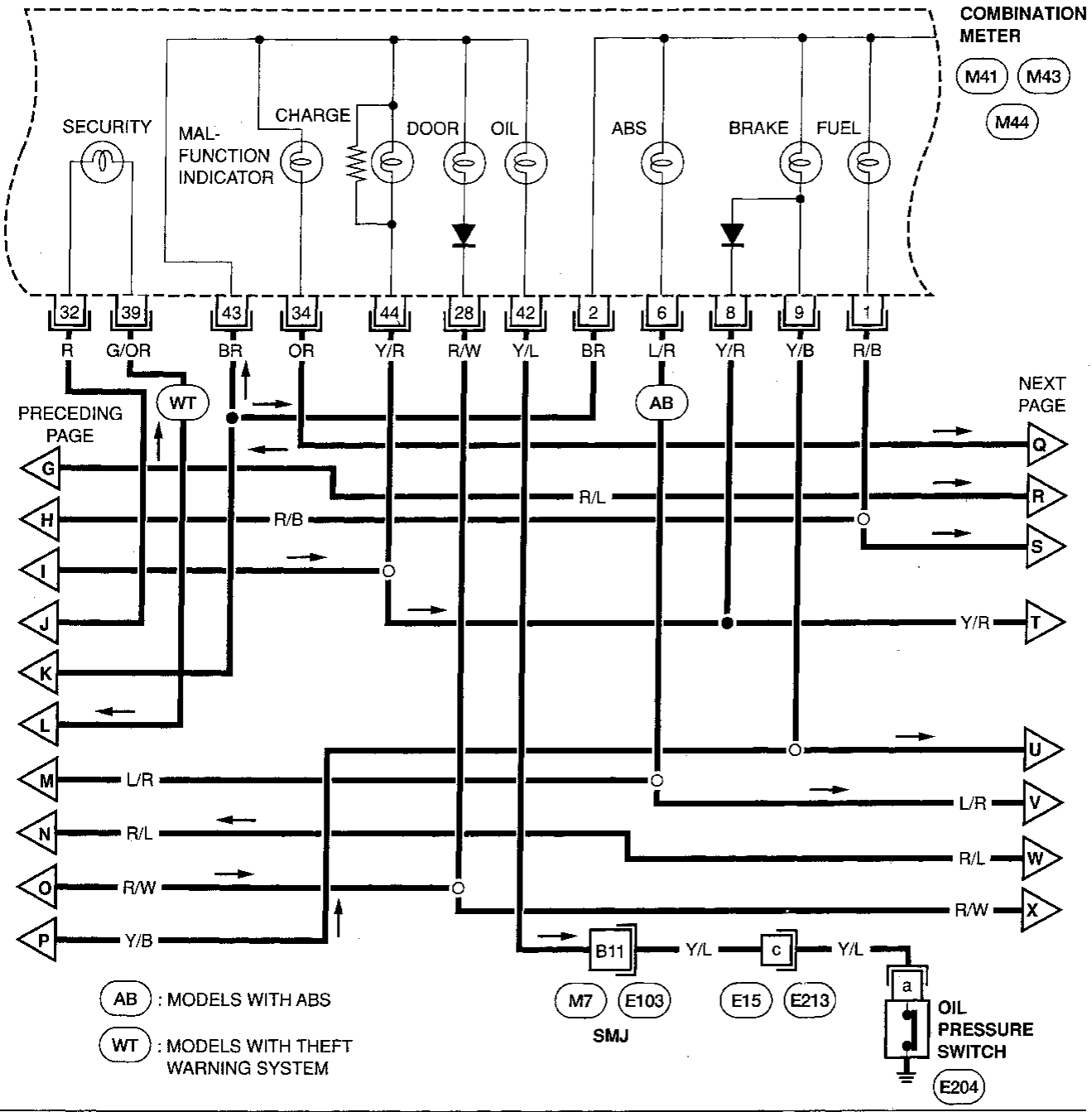


Refer to Foldout Page for details. M6 B1

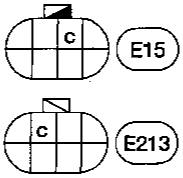


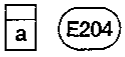
AEL259-B

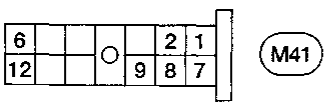
Warning Lamps/Wiring Diagram (Cont'd)

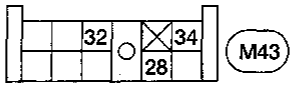


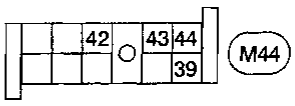
Refer to Foldout Page for details.





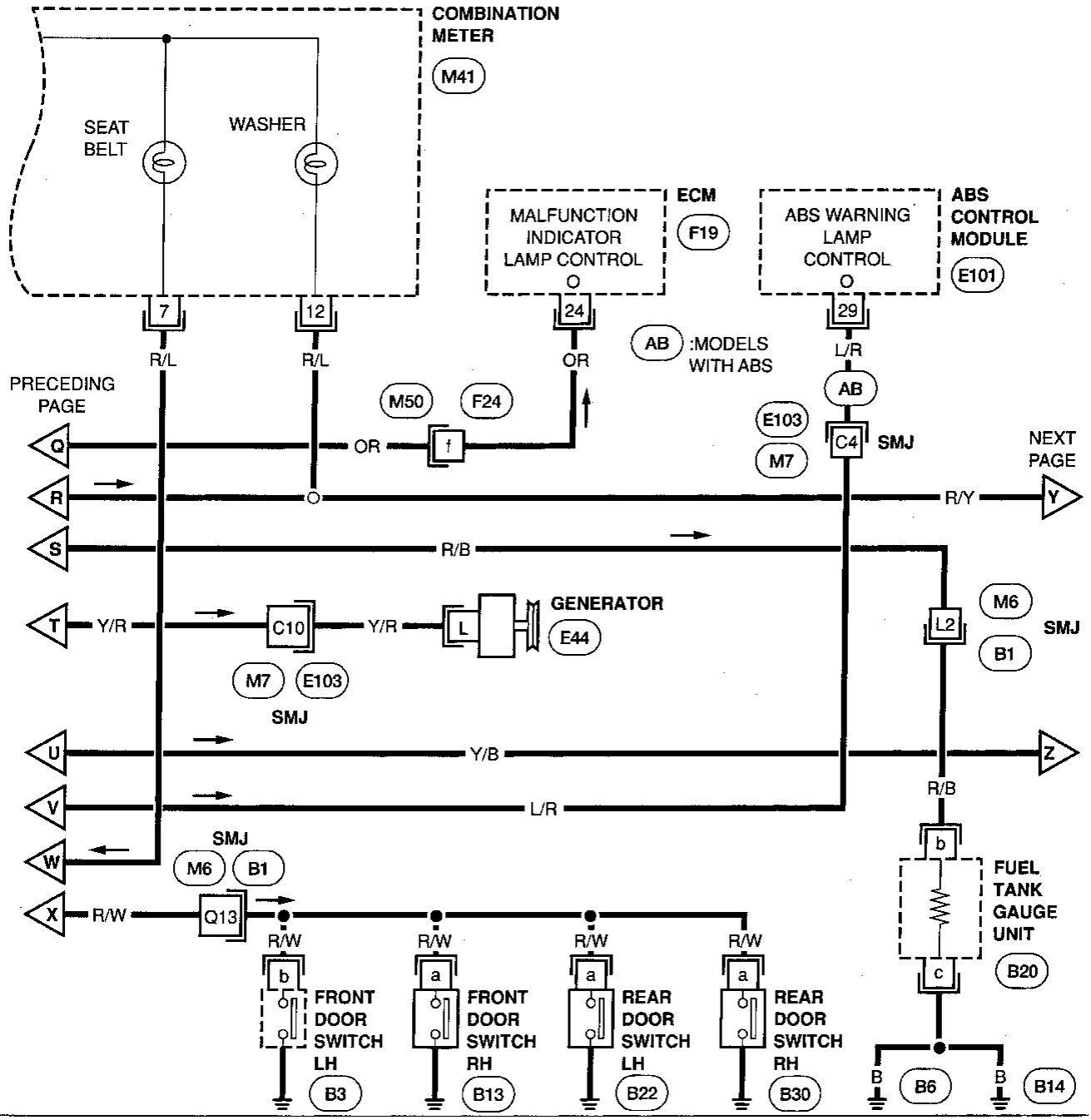




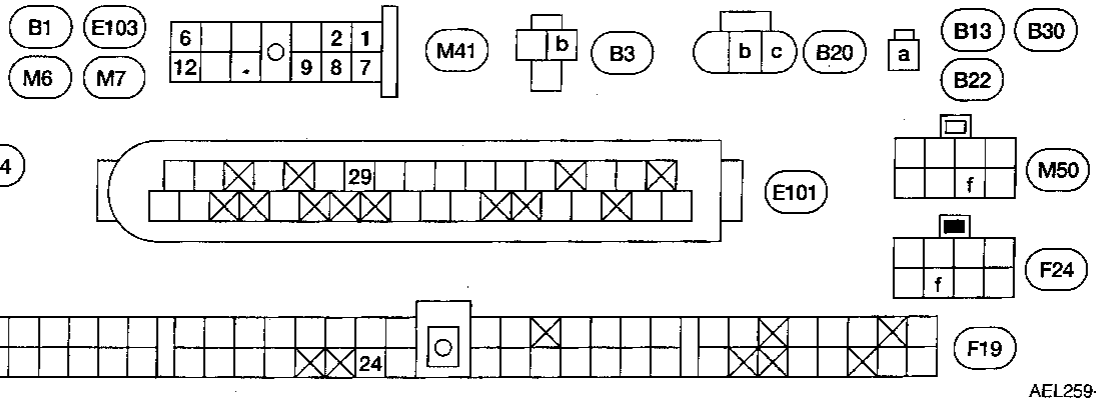


AEL259-C

Warning Lamps/Wiring Diagram (Cont'd)

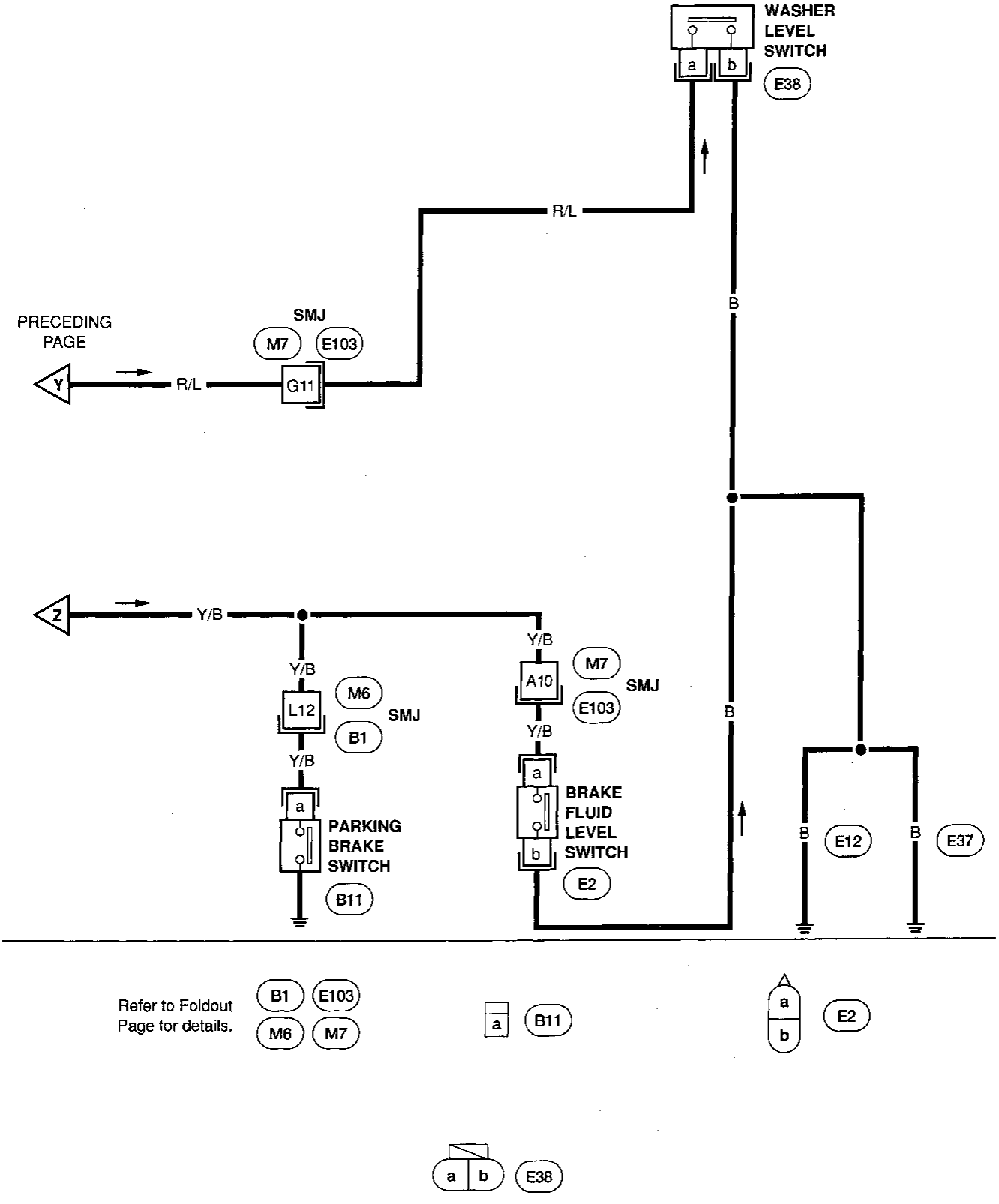


Refer to Foldout Page for details.



AEL259-D

Warning Lamps/Wiring Diagram (Cont'd)



AEL259-E

Warning Chime/System Description

The warning chime is a part of the combination meter and is controlled by the Time Control System.
Power is supplied at all times
- through 10A fuse (No. 20 , located in the fuse block)
- to time control module terminal ⑨,
- combination meter terminal ㉜, and
- key switch terminal ⓐ.

Power is supplied at all times
- through 15A fuse (No. 23 , located in the fuse block)
- to lighting switch terminal ⑪.

With the ignition switch in the ON or START position, power is supplied
- through 10A fuse (No. 26 located in the fuse block)
- to time control module terminal ⑥.

Ground is supplied to time control module terminal ⑮ through body grounds (M51), (M76) and (M77).
When a signal, or combination of signals, is received by the time control module, ground is supplied
- through time control module terminal ⑱
- to combination meter terminal ㊱.

With power and ground supplied, the warning chime will sound.

Ignition key warning chime

With the key in the ignition switch in the OFF position, and the driver's door open, the warning chime will sound. A battery positive voltage signal is sent
- from key switch terminal ⓑ
- to time control module terminal ⑲.

Ground is supplied
- from front door switch LH terminal ⓐ
- to time control module terminal ⑩.

Front door switch LH terminal ⓒ is grounded through body grounds (B6) and (B14).

Light warning chime

With the ignition switch in the OFF position, the driver's door open, and the lighting switch in the PARK or HEAD position, the warning chime will sound. A battery positive voltage signal is sent
- from lighting switch terminal ⑫
- to time control module terminal ⑦.

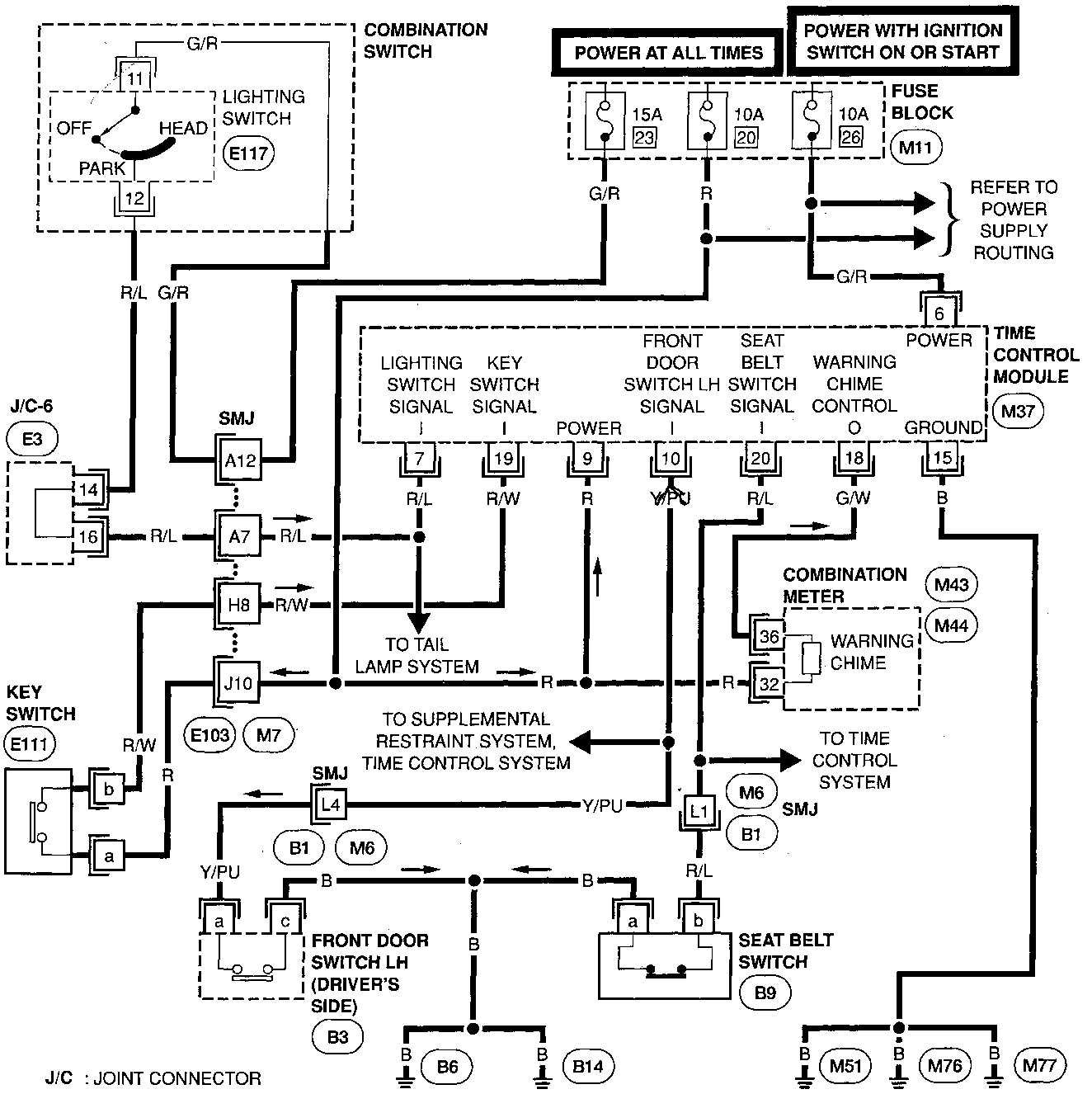
Ground is supplied
- from front door switch LH terminal ⓐ
- to time control module terminal ⑩.

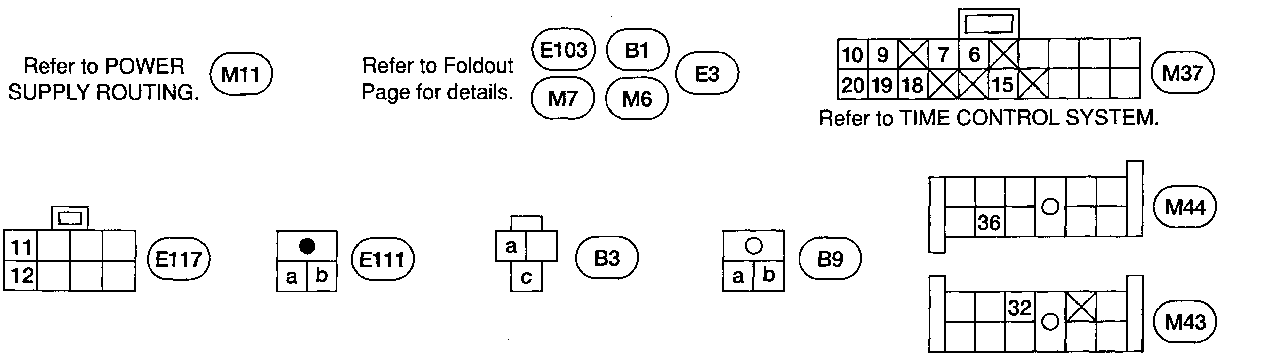
Seat belt warning chime

With the ignition switch turned from the OFF position to the ON position, and the seat belt unfastened (seat belt switch ON), the warning chime will sound for approximately 7 seconds.
Ground is supplied
- from seat belt switch terminal ⓑ
- to time control module terminal ⑳.

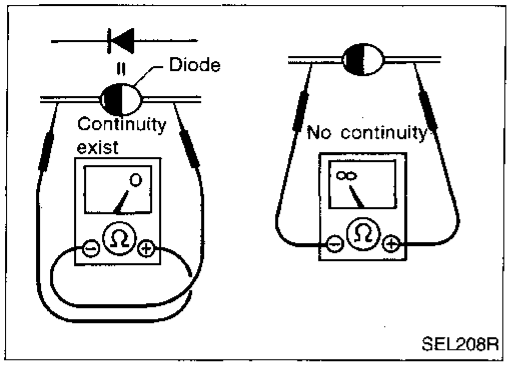
Seat belt switch terminal ⓐ is grounded through body grounds (B6) and (B14).
For diagnosis, refer to "TIME CONTROL SYSTEM".

Warning Chime/Wiring Diagram



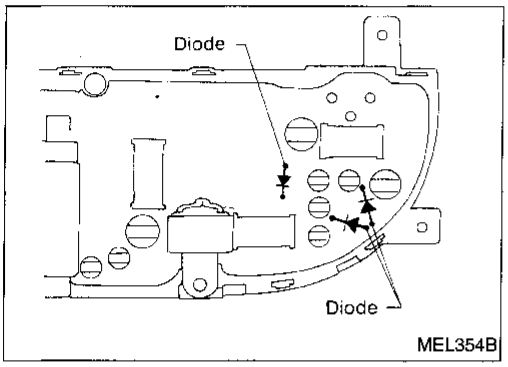


AEL260



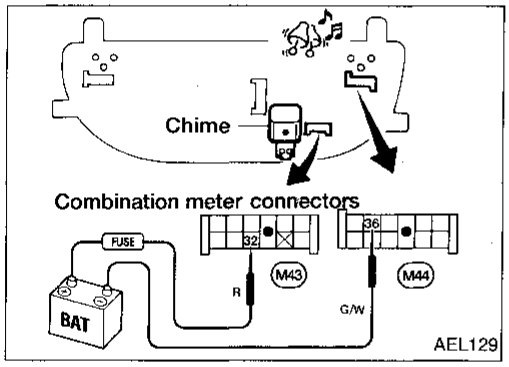
Diode Check

- Check continuity using an ohmmeter.
- Diode is functioning properly if test results are as shown in the figure at left.



- Diodes for warning lamps are built into the combination meter printed circuit.

Refer to EL-69 and EL-70.



Warning Chime Check

System Description

Power is supplied at all times
- to time control module terminal ⑨
- through 10A fuse (No. 20 , located in the fuse block).

With the ignition switch in the ACC or ON position, power is supplied
- to time control module terminal ⑪
- through 10A fuse (No. 12 , located in the fuse block).

With the ignition switch in the ON or START position, power is supplied
- to time control module terminal ⑥
- through 10A fuse (No. 26 , located in the fuse block).

Terminal ⑮ of the time control module is grounded through body grounds (M51), (M76) and (M77).
The time control system controls operation of the
- rear window defogger,
- warning chime and
- front wiper and washer.

Rear Window Defogger

The time control module will operate the rear window defogger for 15 minutes as long as the rear window defogger switch is in the ON position. For detailed description, refer to REAR WINDOW DEFOGGER.

Warning Chime

The time control system will operate the warning chime located on the combination meter under the following conditions:
- key in ignition, ignition switch in OFF position, and driver's door open.
- ignition switch in the OFF position, driver's door open, and lighting switch in the PARK or HEAD position.
- ignition switch turned from the OFF position to the ON position, and the seat belt unfastened.

For detailed description, refer to WARNING LAMPS AND CHIME.

Front Wiper and Washer

The time control system controls operation of the intermittent feature for the front wiper. It also controls wiper motor for the washer operation.
For detailed description, refer to FRONT WIPER AND WASHER.

System Description (Cont'd)

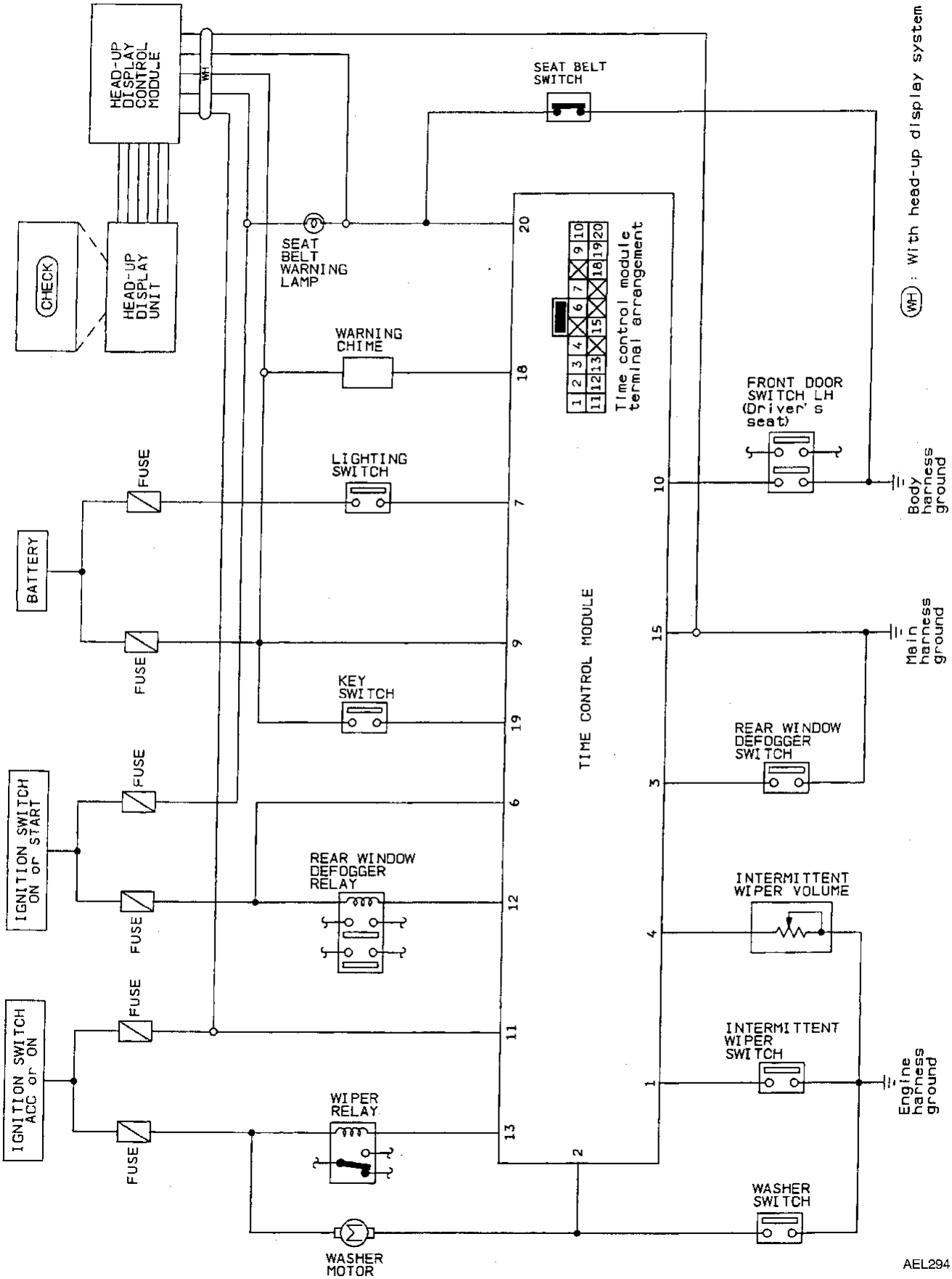
FUNCTION

- Time control module has the following functions.

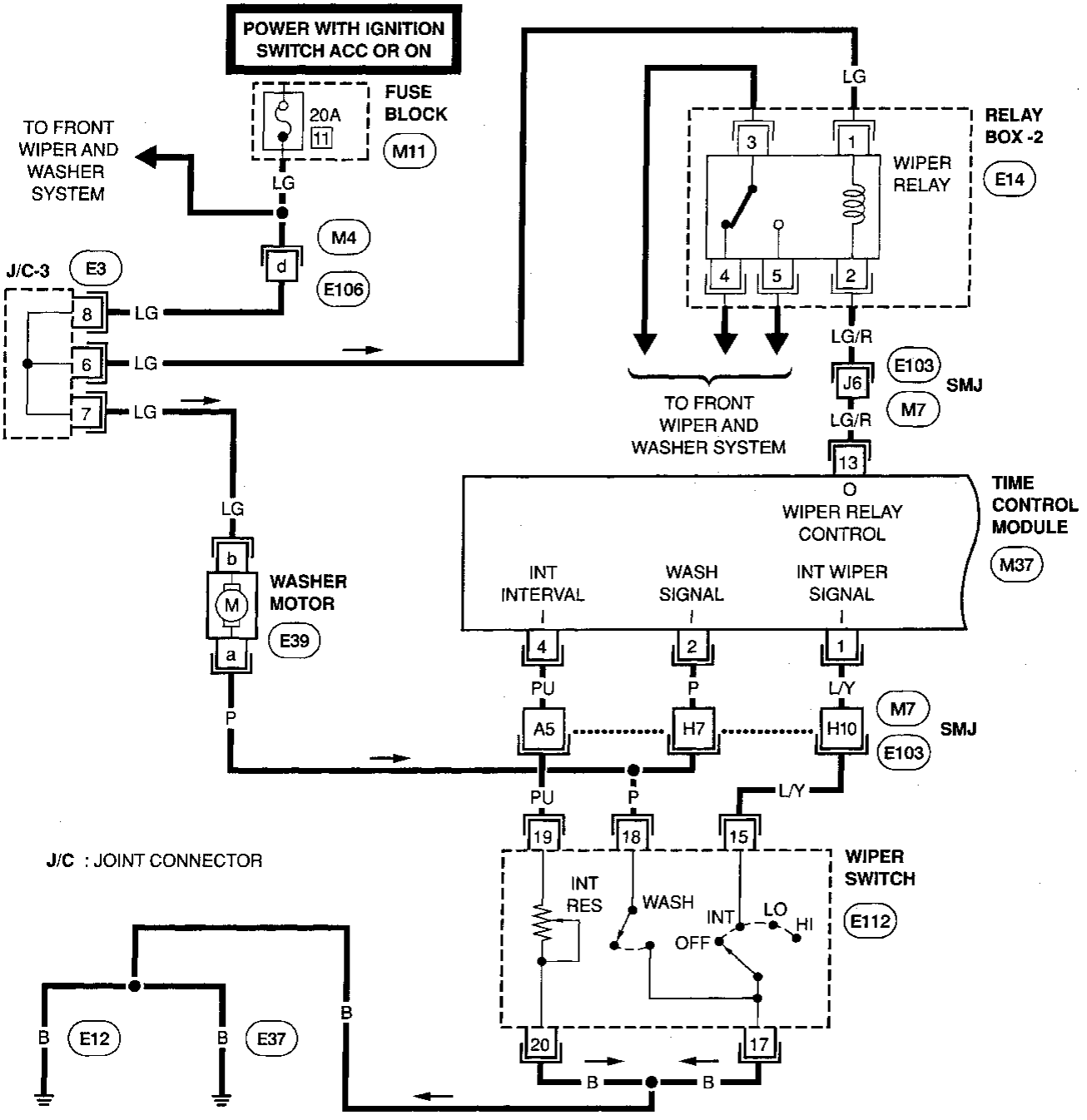
Item	Details of control
Intermittent wiper control	Regulates intermittent time from approximately 1 to 20 seconds depending on the intermittent wiper volume setting.
Washer and wiper combination control	Wiper is operated in conjunction with washer switch.
Light warning chime timer	When driver's door is opened with lighting switch ON and ignition switch OFF, warning chime sounds.
Ignition key warning chime timer	When driver's door is opened with the key in the ignition and the ignition switch OFF, warning chime sounds.
Seat belt warning chime timer	Sounds warning chime for about 7 seconds if ignition switch is turned "ON" when seat belt switch is "ON" (seat belt is unfastened).
Rear defogger timer	Rear defogger operates for about 15 minutes when defogger switch is ON.

NOTE

Circuit Diagram for Quick Pinpoint Check

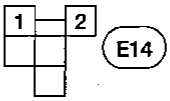


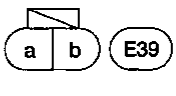
Wiring Diagram

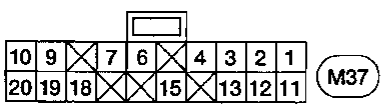


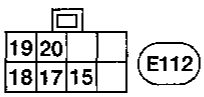
Refer to POWER SUPPLY ROUTING. M11

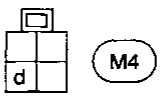
Refer to Foldout Page for details. E103 M7 E3

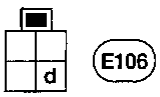






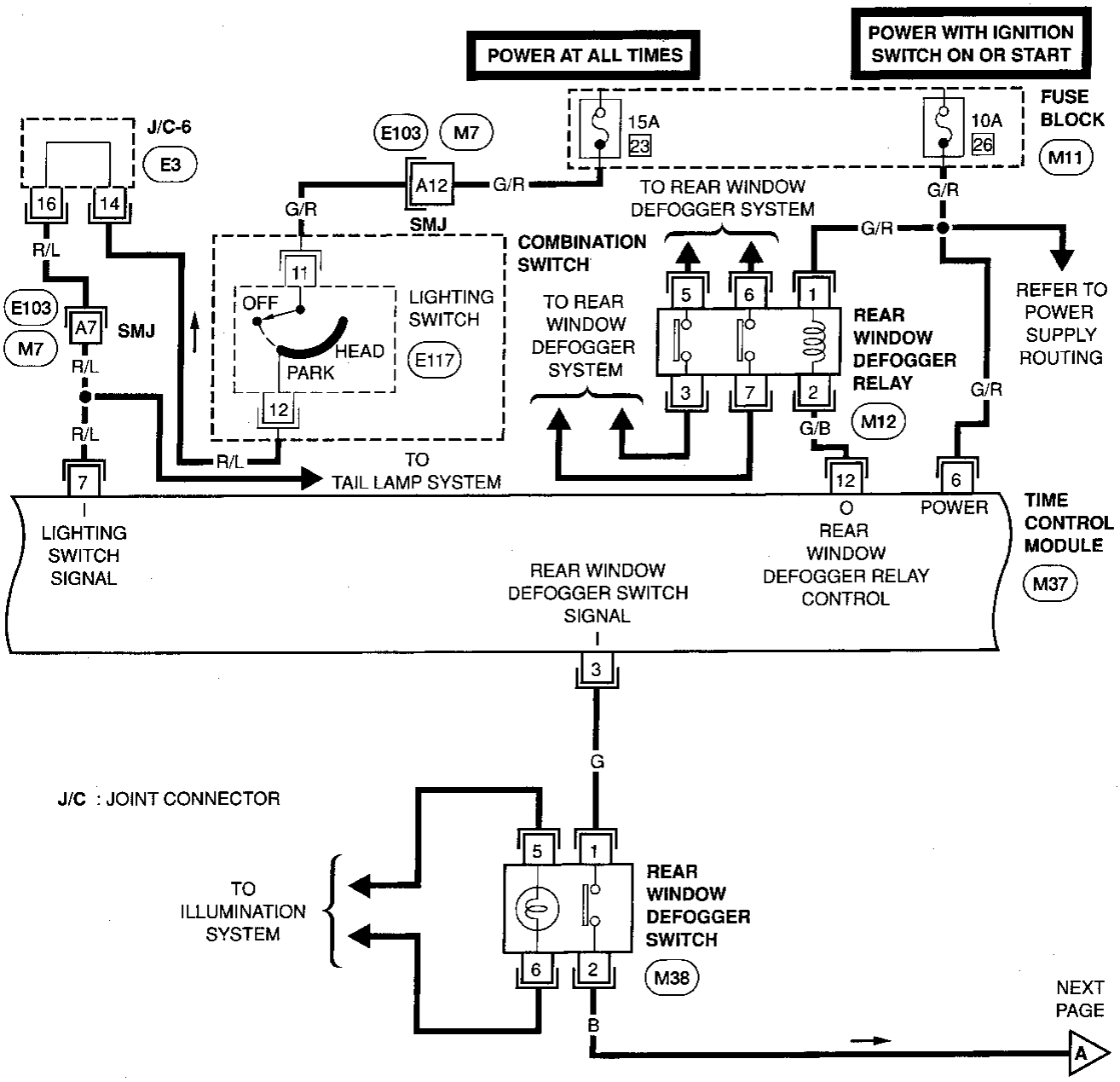


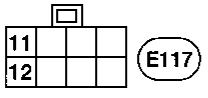




AEL261-A

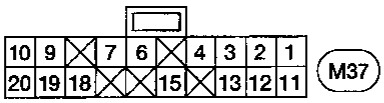
Wiring Diagram (Cont'd)

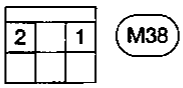


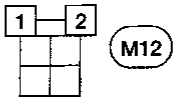


Refer to POWER SUPPLY ROUTING. M11

Refer to Foldout Page for details. E103 M7 E3 B1 M6

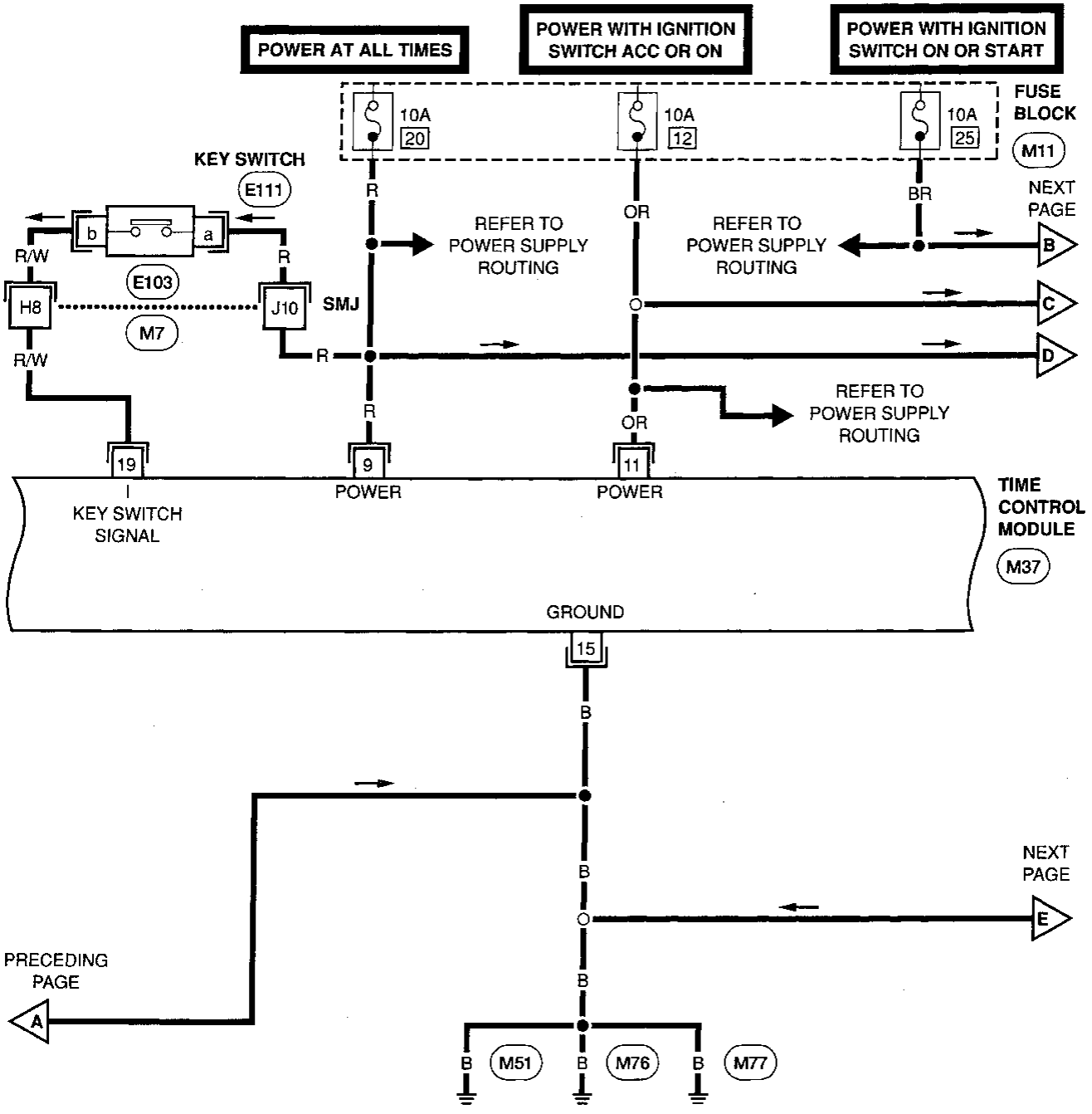






AEL261-B

Wiring Diagram (Cont'd)



a b E111

Refer to POWER SUPPLY ROUTING. M11

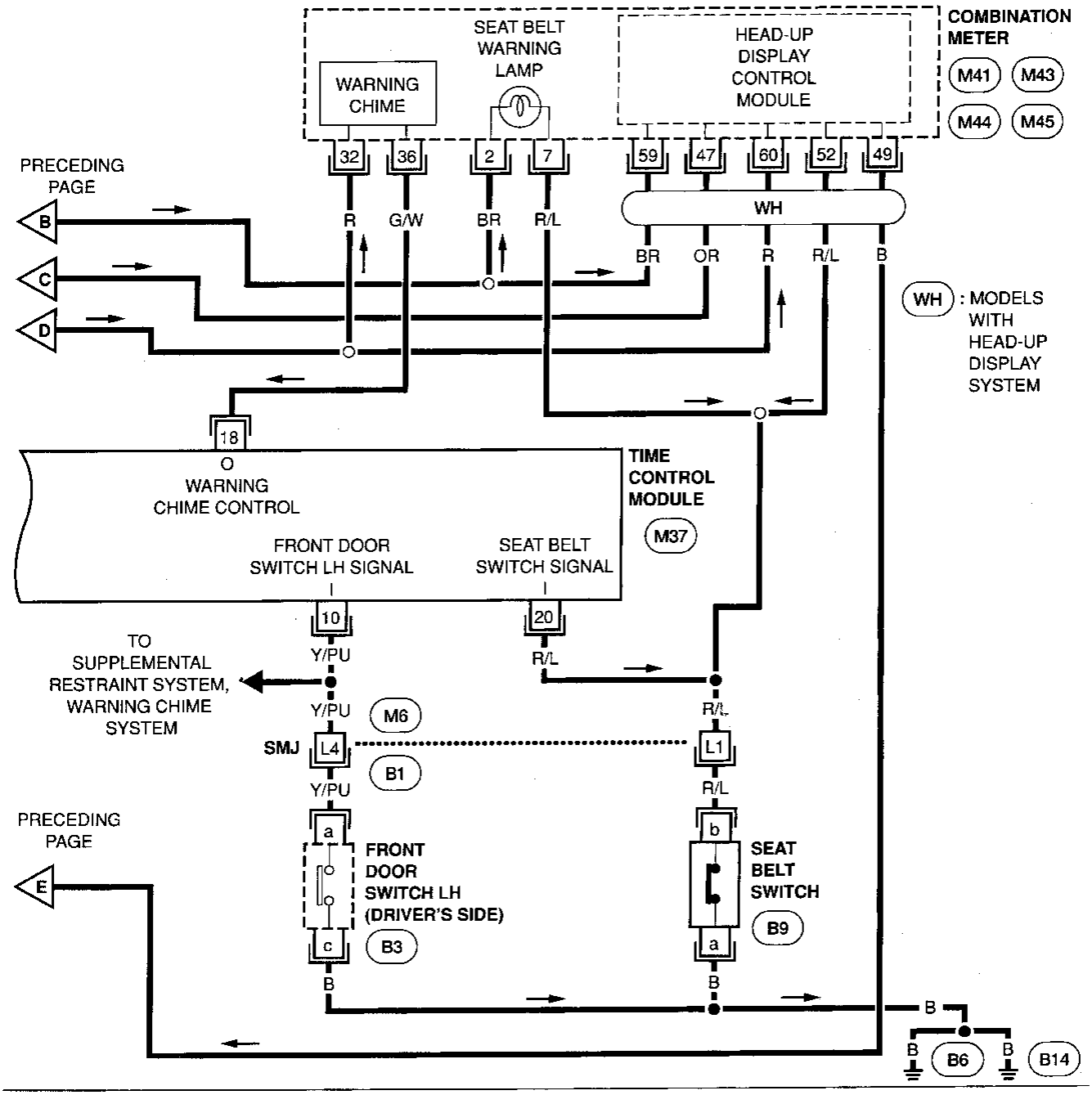
Refer to Foldout Page for details. E103 M7

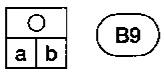
10	9		7	6		4	3	2	1
20	19	18			15		13	12	11

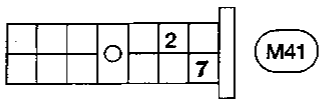
M37

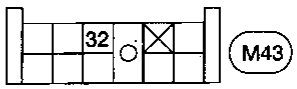
AEL261-C

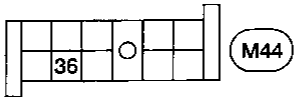
Wiring Diagram (Cont'd)

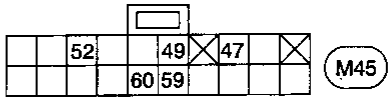








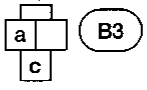




Refer to Foldout Page for details.

B1

M6



AEL261-D

Trouble Diagnoses

SYMPTOM CHART

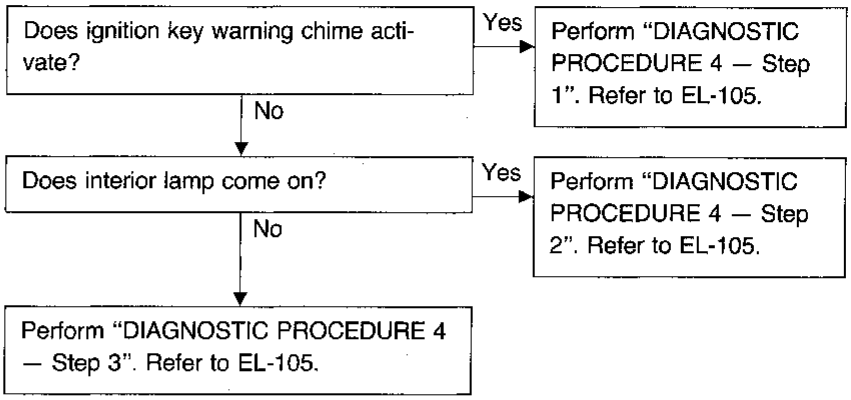
PROCEDURE		Preliminary Check			Main Power Supply and Ground Circuit Check	Diagnostic Procedure						
REFERENCE PAGE		EL-101	EL-101	EL-101	EL-102	EL-103	EL-104	EL-104	EL-105	EL-106	EL-107	EL-108
SYMPTOM		Preliminary check 1	Preliminary check 2	Preliminary check 3	Main power supply and Ground circuit check	Diagnostic Procedure 1	Diagnostic Procedure 2	Diagnostic Procedure 3	Diagnostic Procedure 4	Diagnostic Procedure 5	Diagnostic Procedure 6	Diagnostic Procedure 7
Wiper & washer	Intermittent wiper does not operate.				○	○						
	Intermittent time of wiper cannot be adjusted.						○					
	Wiper and washer activate individually but not in combination.							○				
Warning	Light warning chime does not activate.	○			○				○			
	Ignition key warning chime does not activate.		○		○					○		
	Seat belt warning chime does not activate.			○	○						○	
Rear defogger	Rear defogger does not activate, or go off after activating.				○							○

Trouble Diagnoses (Cont'd)

PRELIMINARY CHECK

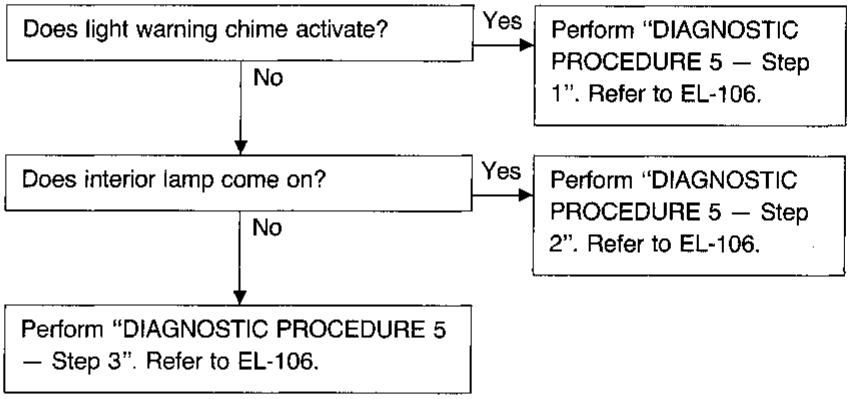
Preliminary check 1

- **Light warning chime does not activate.**



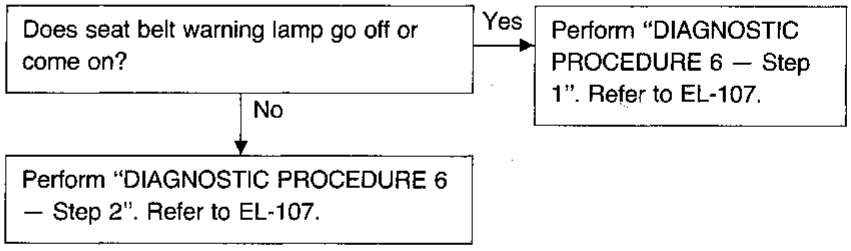
Preliminary check 2

- **Ignition key warning chime does not activate.**



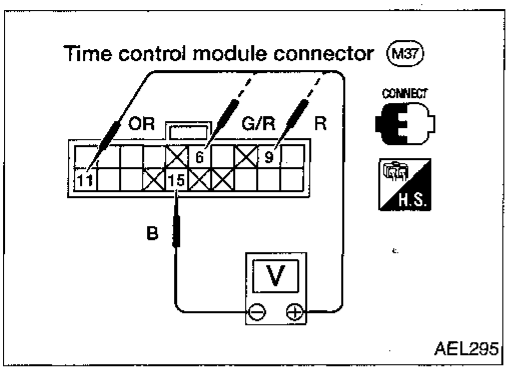
Preliminary check 3

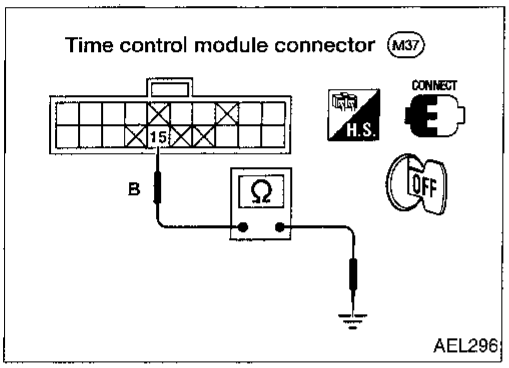
- **Seat belt warning chime does not activate.**



Trouble Diagnoses (Cont'd)

MAIN POWER SUPPLY AND GROUND CIRCUIT CHECK





Main power supply

Terminals	Battery positive voltage existence condition		
	Ignition switch position		
	OFF	ACC	ON
⑨ - ⑮	Yes	Yes	Yes
⑥ - ⑮	No	No	Yes
⑪ - ⑮	No	Yes	Yes

Ground circuit

Terminals	Continuity
⑮ - Ground	Yes

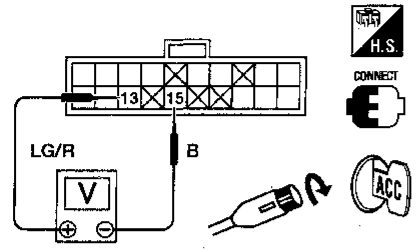
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 1

SYMPTOM: Intermittent wiper does not operate.

A

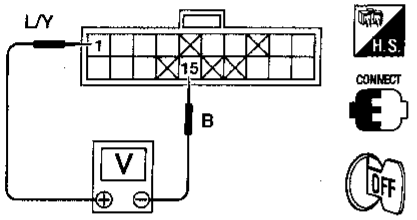
Time control module connector (M37)



AEL297

B

Time control module connector (M37)



AEL298

A

WIPER RELAY OUTPUT SIGNAL CHECK

1) Turn ignition switch to "ACC".
2) Turn wiper switch to "INT" or "OFF".
3) Measure voltage between control module harness terminals (13) and (15).

Condition of wiper switch	Voltage [V]
OFF	Approx. 12
INT	Pointer swings from 0 to 12 every 3 to 23 seconds

O.K. → Check wiper relay. Refer to EL-109.

- O.K. → Check wiper relay circuit.
- N.G. → Replace wiper relay.

N.G.

B

INTERMITTENT SWITCH INPUT SIGNAL CHECK

Measure voltage between control module harness terminals (1) and (15).

Condition of wiper switch	Voltage [V]
OFF	Approx. 12
INT	0

N.G. → Check wiper switch. Check harness continuity between control module and wiper switch.

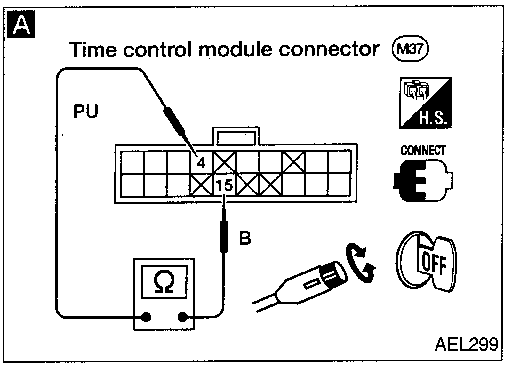
O.K.

Replace control module.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 2

SYMPTOM: Intermittent time of wiper cannot be adjusted.



A

INTERMITTENT WIPER VOLUME INPUT SIGNAL CHECK

Measure resistance between control module harness terminals ④ and ⑮ while turning intermittent wiper volume.

Position of wiper knob	Resistance [Ω]
S	0
L	Approx. 1 k

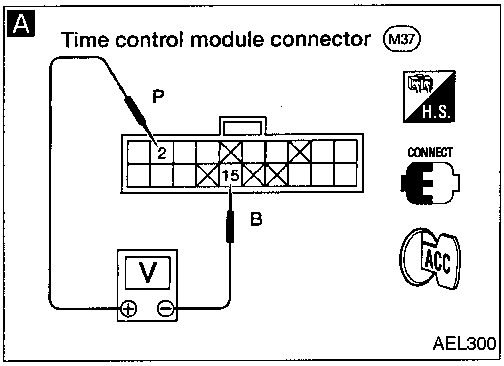
O.K. → **TRY A KNOWN GOOD CONTROL MODULE.***

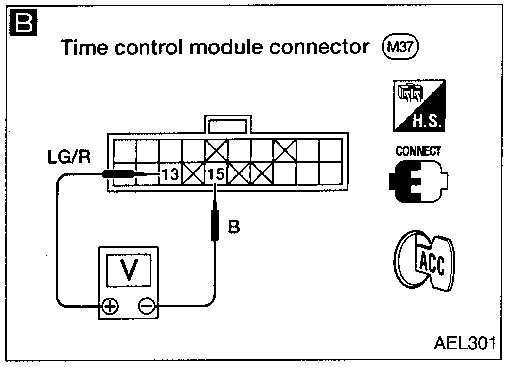
N.G. →

Check intermittent wiper volume.
Check harness continuity between control module and wiper switch.

DIAGNOSTIC PROCEDURE 3

SYMPTOM: Wiper and washer activate individually but not in combination.





A

WASHER SWITCH INPUT SIGNAL CHECK

1) Turn ignition switch to "ACC".
2) Measure voltage between control module harness terminals ② and ⑮.

Condition of washer switch	Voltage [V]
OFF	Approx. 12
ON	0

N.G. → Check harness continuity between control module and washer switch.

O.K. ↓

B

TIME CONTROL MODULE SIGNAL CHECK

Measure voltage between control module harness terminals ⑬ and ⑮ after operating washer switch.

0V for approx. 3 seconds after washer has operated.

N.G. → **TRY A KNOWN GOOD CONTROL MODULE.***

O.K. ↓

Check wiper relay and circuit.

N.G. → Repair wiper circuit or replace wiper relay.

*: Time control module may be the cause of a problem, but this is rarely the case.

Trouble Diagnoses (Cont'd)

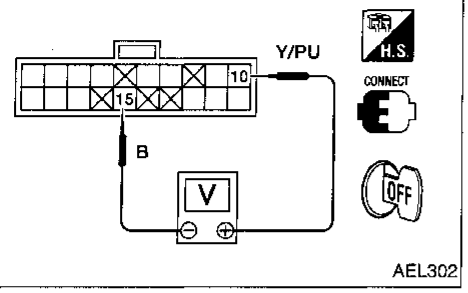
DIAGNOSTIC PROCEDURE 4

SYMPTOM: Light warning chime does not activate.

- Perform "PRELIMINARY CHECK — Procedure 1" before referring to the following flow chart.

A

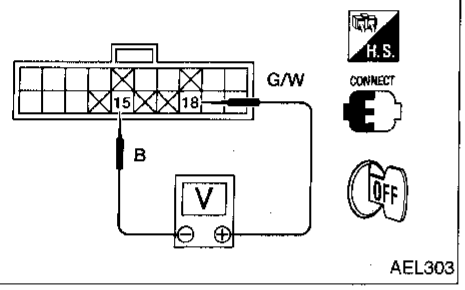
Time control module connector (M37)



AEL302

B

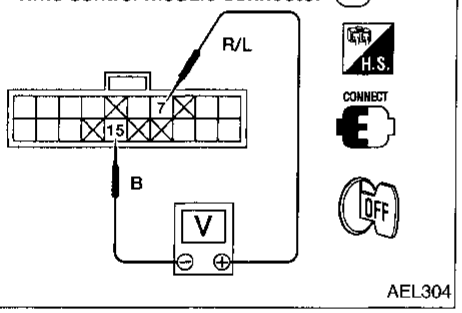
Time control module connector (M37)



AEL303

C

Time control module connector (M37)



AEL304

A — Step 3

DOOR SWITCH INPUT SIGNAL CHECK
Measure voltage between control module harness terminals (10) and (15).

Condition of driver's door	Voltage [V]
Door is closed	Approx. 12
Door is open	0

N.G. → Check door switch. Check harness continuity between control module and door switch.

O.K. ↓

B — Step 2

CHIME OUTPUT SIGNAL CHECK
Measure voltage between control module harness terminals (18) and (15).

Condition of driver's door	Voltage [V]
Door is closed	Approx. 12
Door is open	Pointer deflects intermittently

O.K. → Check chime. Check harness continuity between control module and chime.

N.G. ↓

C — Step 1

LIGHTING SWITCH INPUT SIGNAL CHECK
Measure voltage between control module harness terminals (7) and (15).

Condition	Voltage [V]
Lighting switch is ON	Approx. 12
Lighting switch is OFF	0

N.G. → Check lighting switch. Check harness continuity between control module and lighting switch.

O.K. ↓

TRY A KNOWN GOOD CONTROL MODULE.*

*: Time control module may be the cause of a problem, but this is rarely the case.

Trouble Diagnoses (Cont'd)

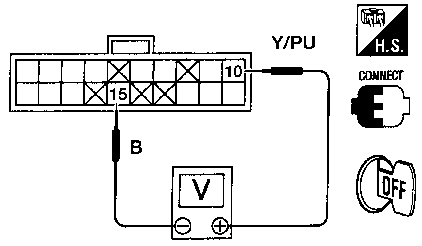
DIAGNOSTIC PROCEDURE 5

SYMPTOM: Ignition key warning chime does not activate.

- Perform "PRELIMINARY CHECK — Procedure 2" before referring to the following flow chart.

A

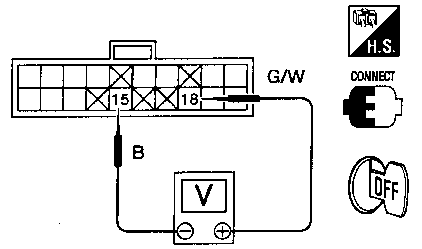
Time control module connector (M37)



AEL305

B

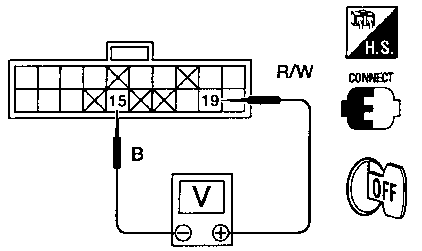
Time control module connector (M37)



AEL306

C

Time control module connector (M37)



AEL307

A — Step 3

DOOR SWITCH INPUT SIGNAL CHECK
Measure voltage between control module harness terminals (10) and (15).

Condition of driver's door	Voltage [V]
Door is closed	Approx. 12
Door is open	0

N.G. → Check door switch. Check harness continuity between control module and door switch.

O.K. ↓

B — Step 2

CHIME OUTPUT SIGNAL CHECK
Measure voltage between control module harness terminals (18) and (15).

Condition of driver's door	Voltage [V]
Door is closed	Approx. 12
Door is open	Pointer deflects intermittently

O.K. → Check chime. Check harness continuity between control module and chime.

N.G. ↓

C — Step 1

IGNITION KEY SWITCH INPUT SIGNAL CHECK
Measure voltage between control module harness terminals (19) and (15).

Condition	Voltage [V]
Key is inserted	Approx. 12
Key is pulled	0

N.G. → Check ignition key switch. Check harness continuity between control module and ignition key switch.

O.K. ↓

TRY A KNOWN GOOD CONTROL MODULE.*

*: Time control module may be the cause of a problem, but this is rarely the case.

Trouble Diagnoses (Cont'd)

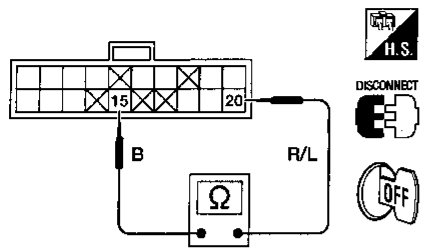
DIAGNOSTIC PROCEDURE 6

SYMPTOM: Seat belt warning chime does not activate.

- Perform "PRELIMINARY CHECK — Procedure 3" before referring to the following flow chart.

A

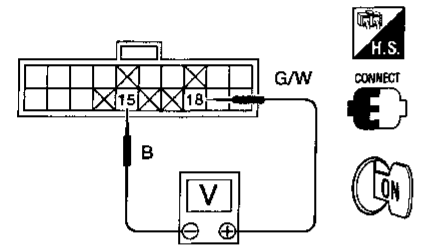
Time control module connector (M37)



AEL308

B

Time control module connector (M37)



AEL309

A — Step 2

SEAT BELT SWITCH INPUT SIGNAL CHECK

Check continuity between control module harness terminals (20) and (15).

Condition	Continuity
Unfastened	Yes
Fastened	No

N.G. → Check seat belt switch. Check harness continuity between control module and seat belt switch.

O.K. ↓

B — Step 1

CHIME OUTPUT SIGNAL CHECK

1) Connect control module harness connector.
2) Turn ignition switch "ON".
3) Measure voltage between control module harness terminals (18) and (15).

Condition of seat belt	Voltage [V]
Unfastened	Pointer deflects intermittently
Fastened	Approx. 12

O.K. → Check chime. Check harness continuity between control module and chime.

N.G. ↓

TRY A KNOWN GOOD CONTROL MODULE.*

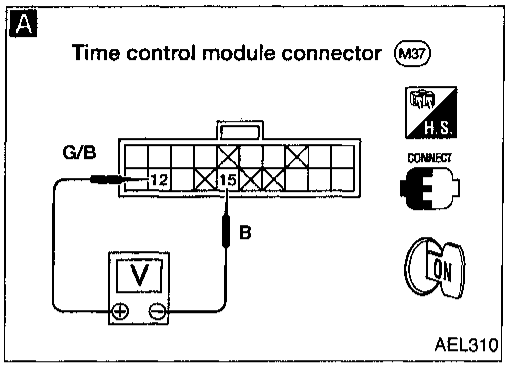
*: Time control module may be the cause of a problem, but this is rarely the case.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 7

SYMPTOM: Rear defogger does not activate, or does not go off after activating.

A



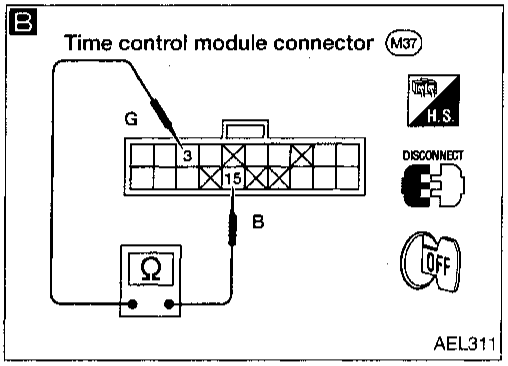
REAR WINDOW DEFOGGER OUTPUT SIGNAL CHECK
Measure voltage between control module harness terminals ⑫ and ⑮.

Condition of defogger switch	Voltage [V]
Defogger switch is "OFF"	Approx. 12
Defogger switch is "ON"	0

O.K. → Check rear window defogger relay.
Check rear window defogger circuit.

N.G. ↓

B



REAR WINDOW DEFOGGER SWITCH INPUT SIGNAL CHECK
1) Disconnect control module harness connector.
2) Check continuity between control module harness terminals ③ and ⑮.

Condition of defogger switch	Continuity
Defogger switch is "OFF"	No
Defogger switch is "ON"	Yes

N.G. → Check rear window defogger switch.
Check harness continuity between control module and rear window defogger switch.

O.K. ↓

TRY A KNOWN GOOD CONTROL MODULE.*

*: Time control module may be the cause of a problem, but this is rarely the case.

System Description

WIPER OPERATION

The wiper switch is controlled by a lever built into the combination switch.
There are three wiper switch positions:

- LO speed
- HI speed
- INT (Intermittent)

With the ignition switch in the ACC or ON position, power is supplied

- through 20A fuse (No. 11 , located in the fuse block)
- to wiper motor terminal ⓓ.

Low and high speed wiper operation

Ground is supplied to wiper switch terminal ⑰ through body grounds (E12) and (E37).
When the wiper switch is placed in the LO position, ground is supplied

- through terminal ⑭ of the wiper switch
- to wiper motor terminal ⓑ.

With power and ground supplied, the wiper motor operates at low speed.
When the wiper switch is placed in the HI position, ground is supplied

- through terminal ⑯ of the wiper switch
- to wiper motor terminal ⓒ.

With power and ground supplied, the wiper motor operates at high speed.

Auto stop operation

When the wiper switch is placed in the OFF position, the wiper motor will continue to operate until the wiper arms reach the base of the windshield.
When the wiper switch is placed in the OFF position, ground is supplied

- from terminal ⑭ of the wiper switch
- to wiper motor terminal ⓑ, in order to continue wiper motor operation at low speed.

Ground is also supplied

- through terminal ⑬ of the wiper switch
- to wiper relay terminal ③
- through terminal ④ of the wiper relay
- to wiper motor terminal ⓔ
- through terminal ⓕ of the wiper motor, and
- through body grounds (M51), (M76) and (M77).

The ground path is interrupted and the wiper motor stops when the wiper arms reach the base of the windshield.

Intermittent operation

Intermittent operation can be set or variable depending on the model option. The wiper motor operates the wiper arms one time at low speed at a set interval of approximately 1 to 20 seconds. This feature is controlled by the time control module.
When the wiper switch is placed in the INT position, ground is supplied

- to time control module terminal ①
- from wiper switch terminal ⑮
- through body grounds (E12) and (E37).

The desired interval time is input

- to time control module terminal ④
- from wiper switch terminal ⑲.

Based on these two inputs, an intermittent ground is supplied

- to wiper relay terminal ②
- from time control module terminal ⑬.

With power and ground supplied, the wiper relay is activated.
When activated, an intermittent ground is supplied

- to wiper motor terminal ⓑ
- through the wiper switch and wiper relay, and
- through body grounds (E12) and (E37).

The wiper motor operates at low speed at the desired time interval.
For further diagnosis, refer to "TIME CONTROL SYSTEM".

System Description (Cont'd)

WASHER OPERATION

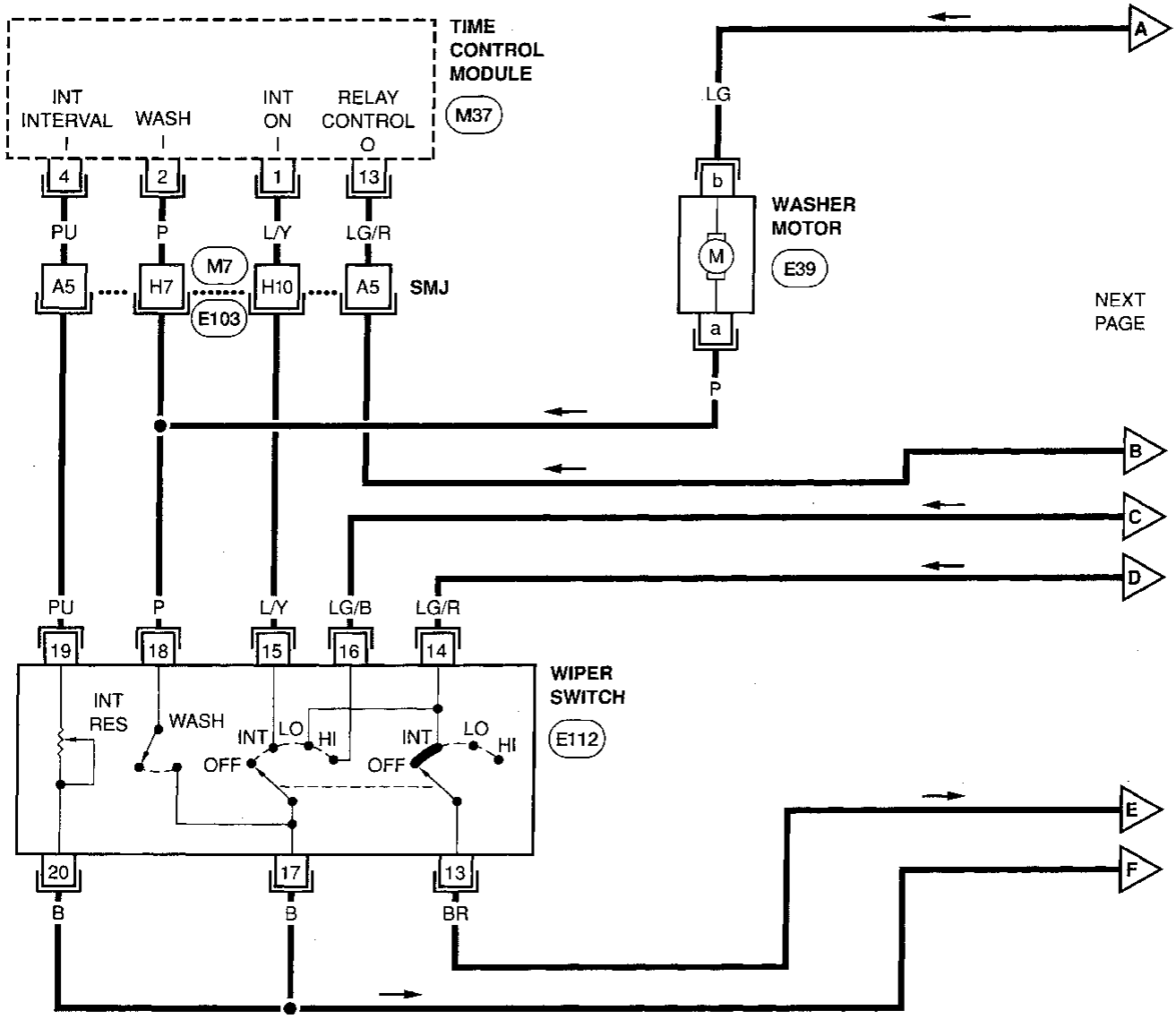
With the ignition switch in the ACC or ON position, power is supplied
- through 20A fuse (No. 11 , located in the fuse block)
- to washer motor terminal ⓑ.

When the lever is pulled to the WASH position, ground is supplied
- to washer motor terminal ⓐ, and
- to time control module terminal ②
- from terminal ⑱ of the wiper switch
- through terminal ⑰ of the wiper switch, and
- through body grounds (E12) and (E37).

With power and ground supplied, the washer motor operates.
The wiper motor operates at low speed for approximately 3 seconds to clean the windshield. This feature is controlled by the time control module in the same manner as the intermittent operation.
For further diagnosis, refer to "TIME CONTROL SYSTEM".

NOTE

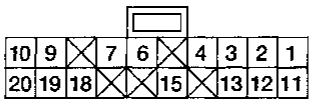
Front Wiper and Washer/Wiring Diagram



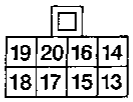
Refer to Foldout Page for details. M7 E103

a b E39

Refer to TIME CONTROL SYSTEM.



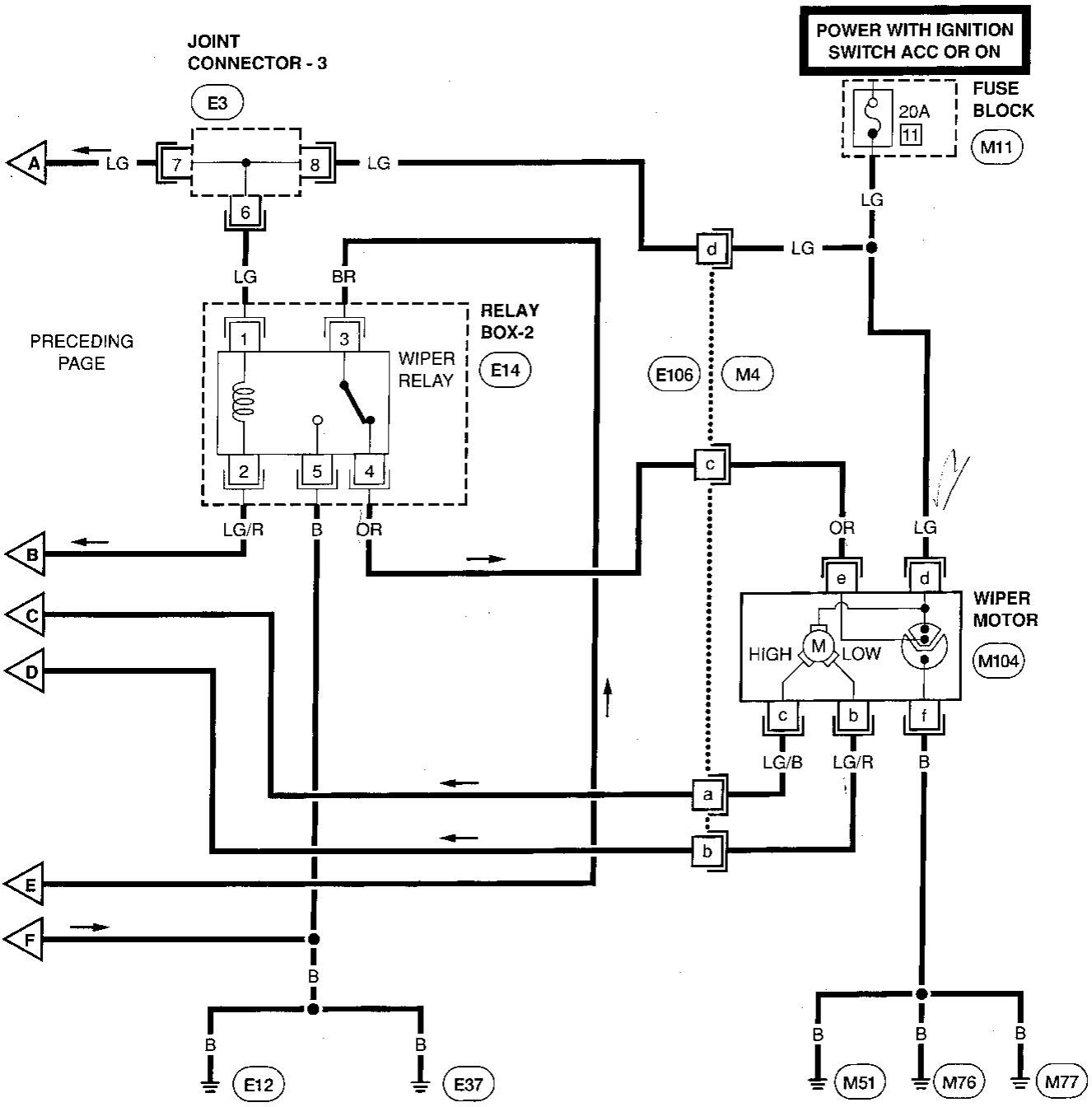
M37



E112

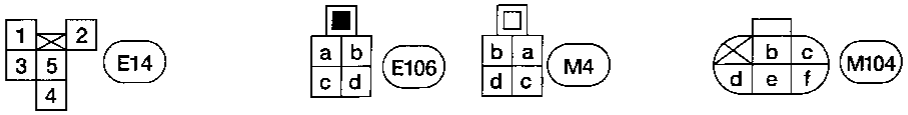
AEL262-A

Front Wiper and Washer/Wiring Diagram (Cont'd)



Refer to Foldout Page for details. E3

Refer to POWER SUPPLY ROUTING. M11



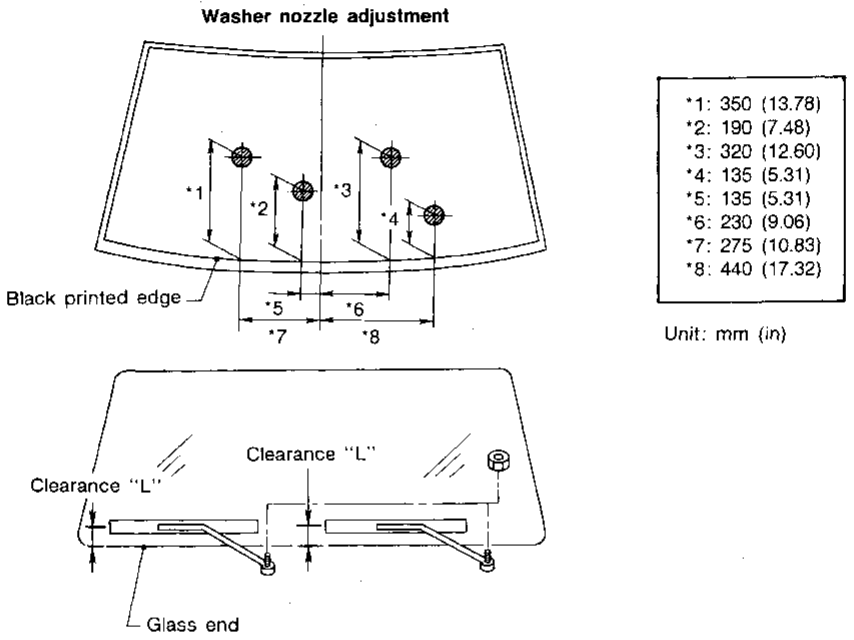
AEL262-B

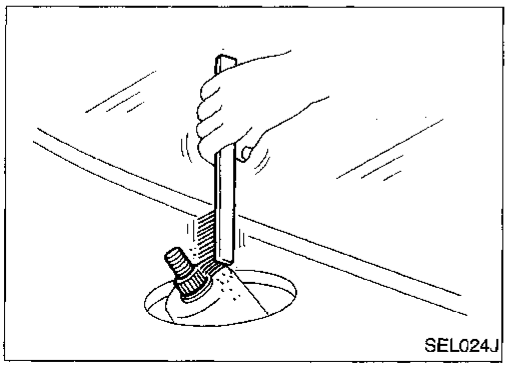
Installation

1. Prior to wiper arm installation, turn on wiper switch to operate wiper motor and then turn it "OFF" (Auto Stop).
2. Lift the blade up and then set it down onto glass surface to set the blade center to clearance "L" immediately before tightening nut.
3. Eject washer fluid. Turn on wiper switch to operate wiper motor and then turn it "OFF".
4. Ensure that wiper blades stop within clearance "L".
   Clearance "L": 27 - 41 mm (1.06 - 1.61 in)

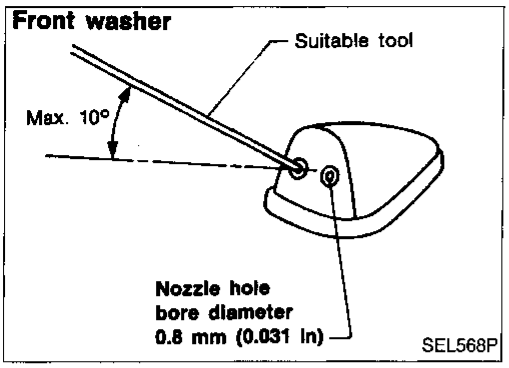
- Tighten windshield wiper arm nuts to specified torque.
  Windshield wiper:
  21 - 26 N·m (2.1 - 2.7 kg-m, 15 - 20 ft-lb)

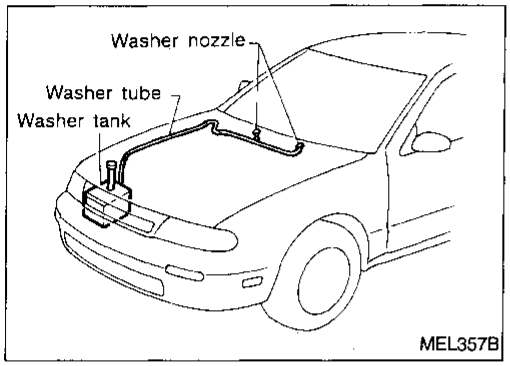
Windshield wiper and washer





- **Before reinstalling wiper arm, clean up the pivot area as illustrated. This will reduce possibility of wiper arm looseness.**

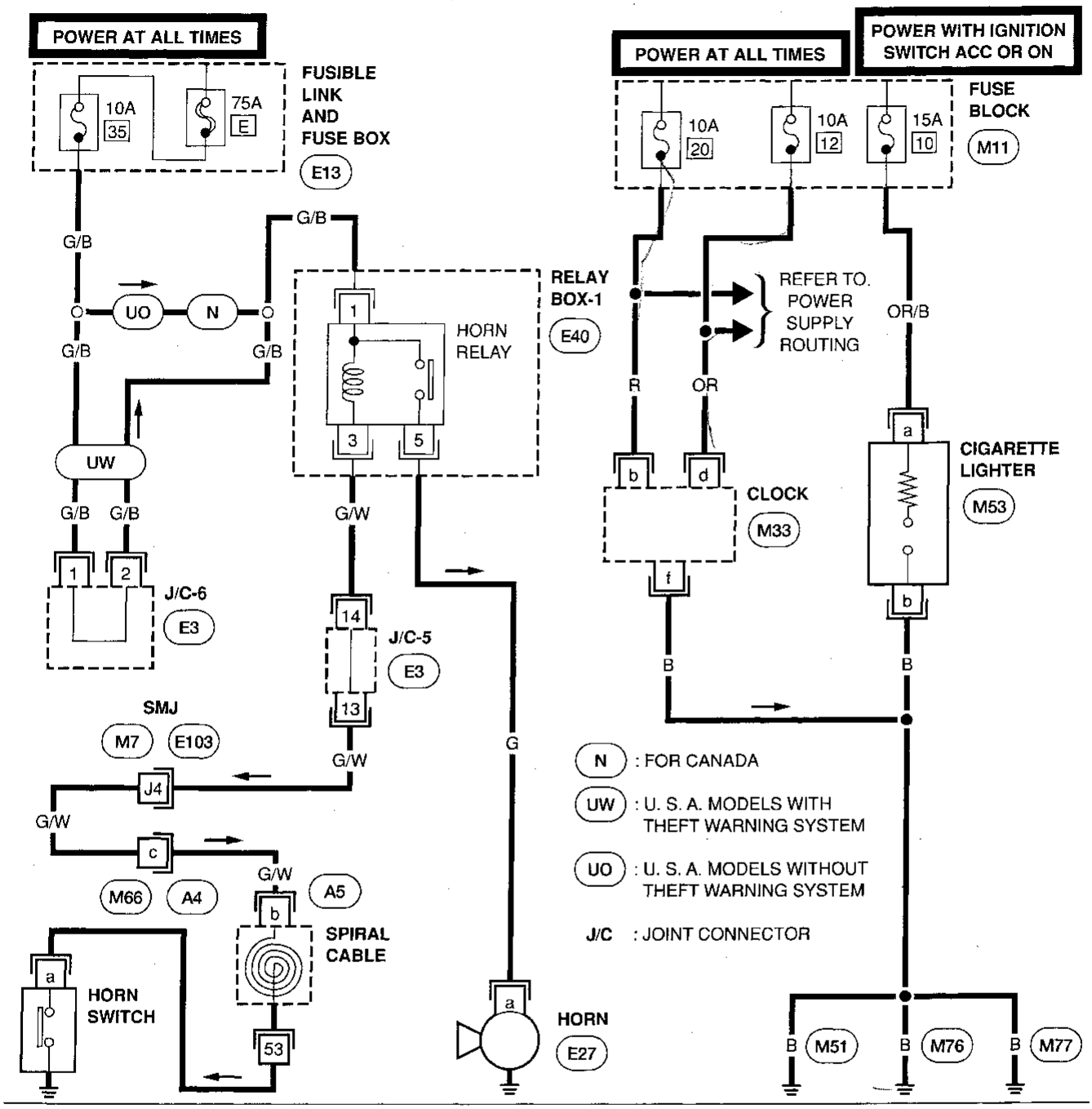




Washer Nozzle Adjustment

- Adjust washer nozzle with suitable tool as shown in the figure at left.
  Adjustable range: ±10°

Wiring Diagram

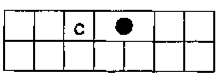


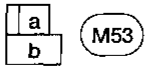
Refer to POWER SUPPLY ROUTING. E13 M11

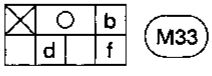
Refer to Foldout Page for details. M7 E3 E103

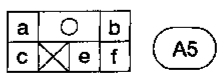
a E27

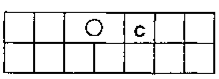
1 3 5 E40











AEL263

System Description

The rear window defogger system is controlled by the time control module. The rear window defogger operates only for approximately 15 minutes.
Power is supplied at all times
- to rear window defogger relay terminal ③
- through 20A fuse (No. 1 , located in the fuse block) and
- to rear window defogger relay terminal ⑥
- through 20A fuse (No. 2 , located in the fuse block).

With the ignition switch in the ON or START position, power is supplied
- to the rear window defogger relay terminal ①.

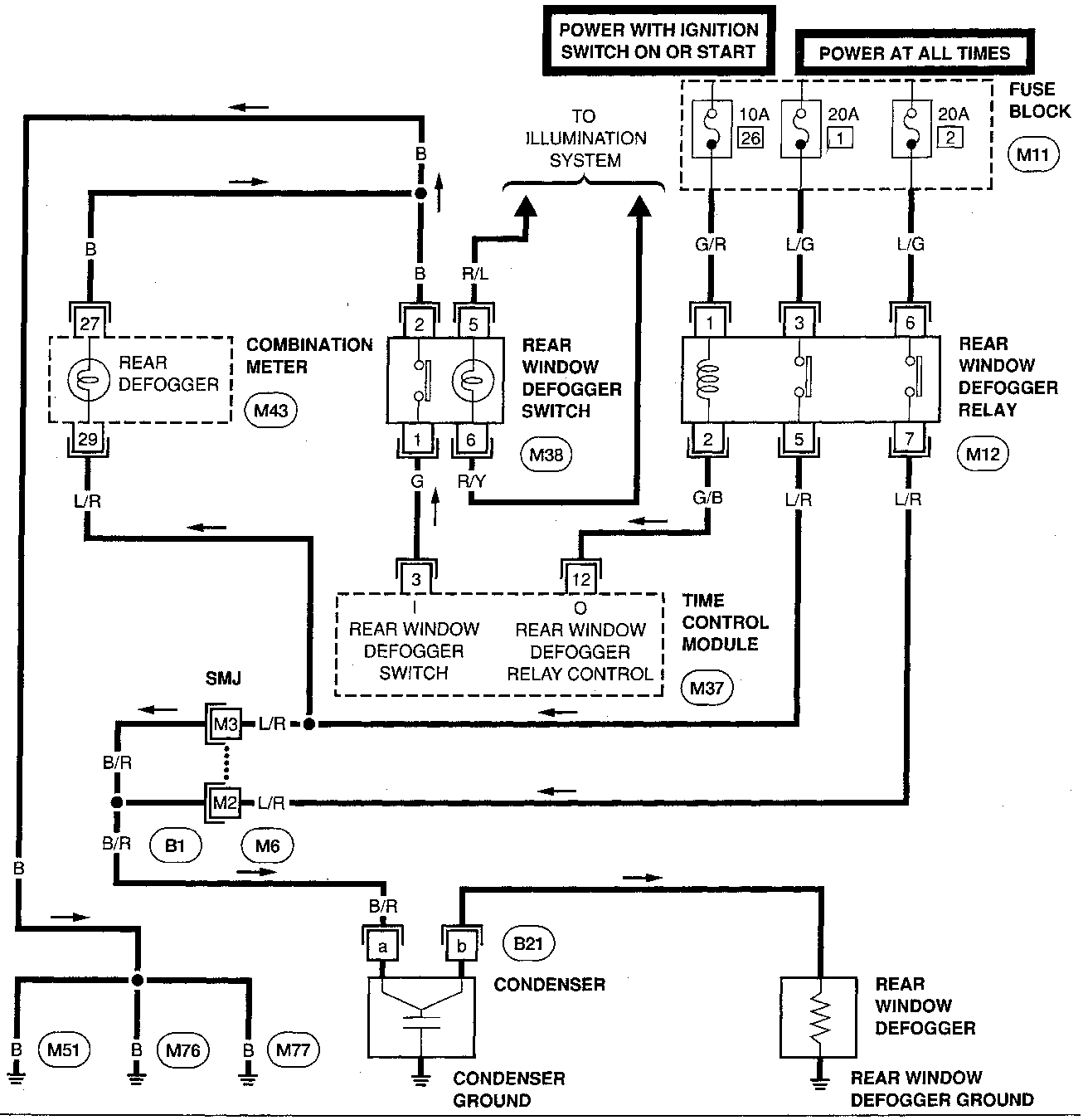
Ground is supplied to terminal ② of the rear window defogger switch through body grounds (M51), (M76) and (M77).
When the rear window defogger switch is activated, ground is supplied
- through terminal ① of the rear window defogger switch
- to time control module terminal ③.

Terminal ⑫ of the time control module then supplies ground to the rear window defogger relay terminal ②.
With power and ground supplied, the rear window defogger relay is energized.
Power is supplied
- through terminals ⑤ and ⑦ of the rear window defogger relay
- to condenser terminal ⓐ
- through terminal ⓑ of the condenser
- to the rear window defogger.

The rear window defogger has an independent ground.
With power and ground supplied, the rear window defogger filaments heat and defog the rear window.
When the system is activated, the rear window defogger indicator illuminates in the combination meter.
Power is supplied
- to terminal ㉙ of the combination meter
- from terminal ⑤ of the rear window defogger relay.

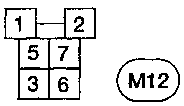
Terminal ㉗ of the combination meter is grounded through body grounds (M51), (M76) and (M77).
For diagnosis, refer to "TIME CONTROL SYSTEM".

Wiring Diagram

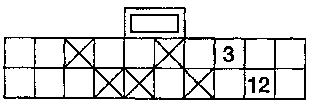


Refer to POWER SUPPLY ROUTING. M11

Refer to Foldout Page for Details. B1 M6

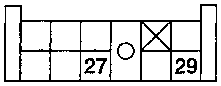


M12



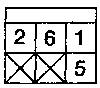
M37

Refer to TIME CONTROL SYSTEM.



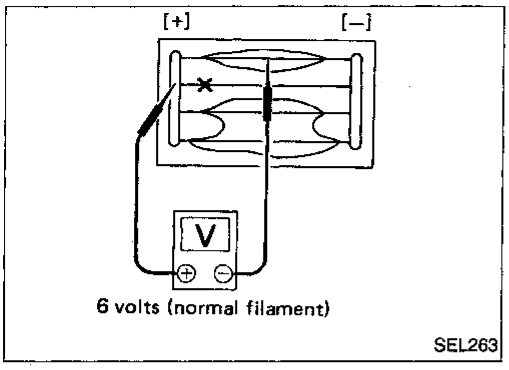
M43

B21



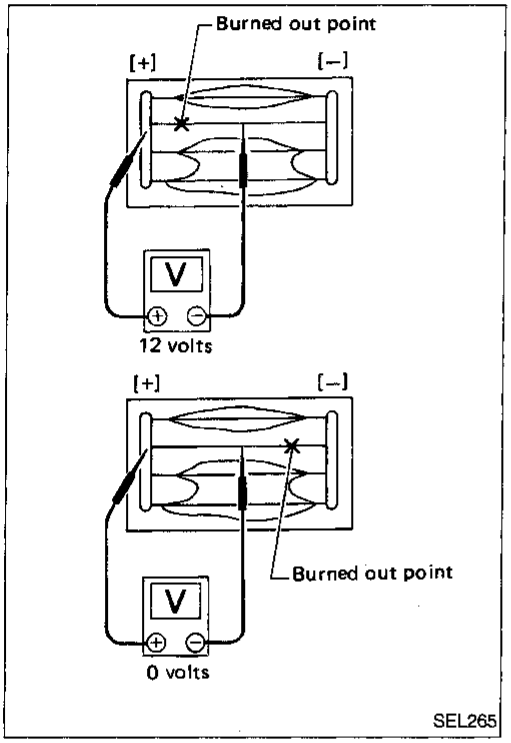
M38

AEL264

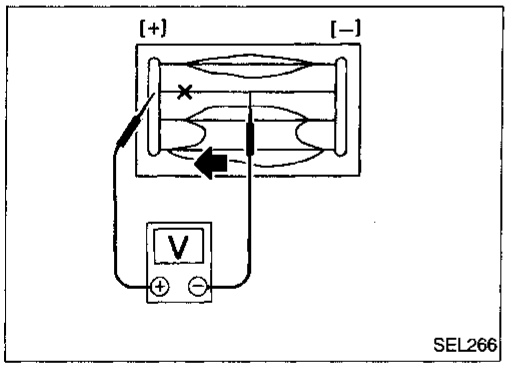


Filament Check

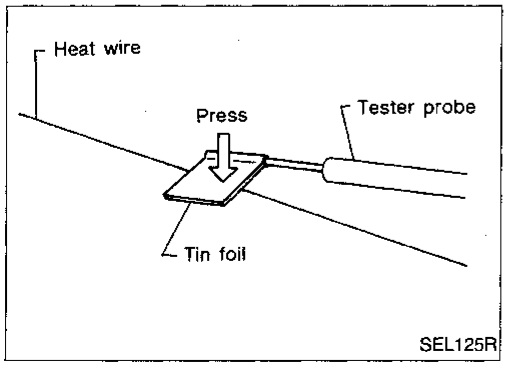
1. Attach probe circuit tester (in volt range) to middle portion of each filament.



2. If a filament is burned out, circuit tester registers 0 or 12 volts.



3. To locate burned out point, move probe to left and right along filament to determine point where tester needle swings abruptly.

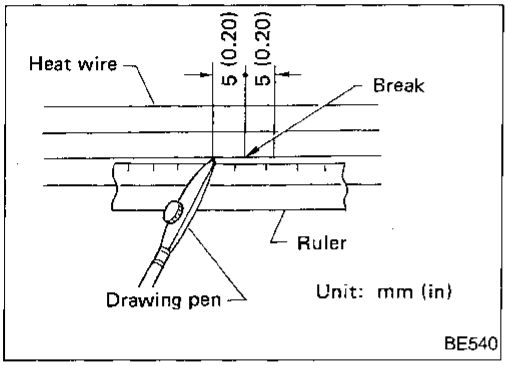


- **When measuring voltage, wind a piece of tin foil around the top of the negative probe and press the foil against the wire with your finger.**

Filament Repair

REPAIR EQUIPMENT

1. Conductive silver composition (Dupont No. 4817 or equivalent)
2. Ruler 30 cm (11.8 in) long
3. Drawing pen
4. Heat gun
5. Alcohol
6. Cloth



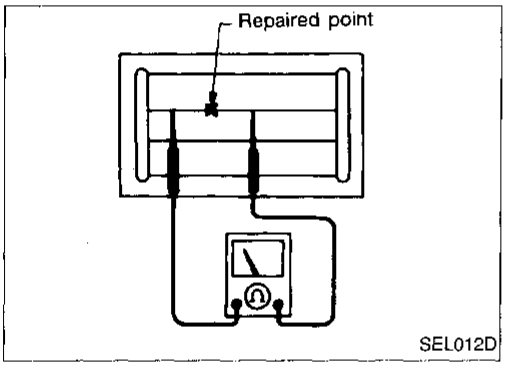
REPAIRING PROCEDURE

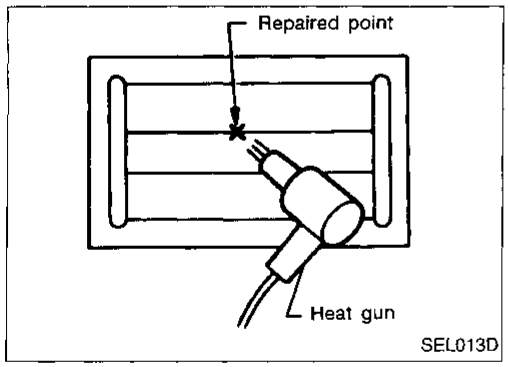
1. Wipe broken heat wire and its surrounding area clean with a cloth dampened in alcohol.
2. Apply a small amount of conductive silver composition to tip of drawing pen.

Shake silver composition container before use.

3. Place ruler on glass along broken line. Deposit conductive silver composition on break with drawing pen. Slightly overlap existing heat wire on both sides [preferably 5 mm (0.20 in)] of the break.
4. After repair has been completed, check repaired wire for continuity. This check should be conducted 10 minutes after silver composition is deposited.

Do not touch repaired area while test is being conducted.





5. Apply a constant stream of hot air directly to the repaired area for approximately 20 minutes with a heat gun. A minimum distance of 3 cm (1.2 in) should be kept between repaired area and hot air outlet. If a heat gun is not available, let the repaired area dry for 24 hours.

Audio/System Description

Refer to Owner's Manual for audio system operating instructions.

WITH ACTIVE SPEAKER SYSTEM

Power is supplied at all times
- through 10A fuse (No. 20 , located in the fuse block)
- to radio terminal ⑥.

With the ignition switch in the ACC or ON position, power is supplied
- through 15A fuse (No. 9 , located in the fuse block)
- to radio terminal ⑩
- to front speaker amp. terminal ㊱, and
- to rear speaker amp. terminal ⑯.

Ground is supplied through the case of the radio.
When the radio POWER button is pressed, audio signals are supplied
- through radio terminals 1, 2, 3, 4, 13, 14, 15 and 16
- to terminals 7, 8, 9 and 10 of the rear speaker amp. and terminals 27, 28, 29 and 30 of the front speaker amp.
- to tweeters and the front and rear speakers through terminals 31, 32, 33 and 34 of the front speaker amp. and terminals 11, 12, 13 and 14 of the rear speaker amp.

EXCEPT ACTIVE SPEAKER SYSTEM

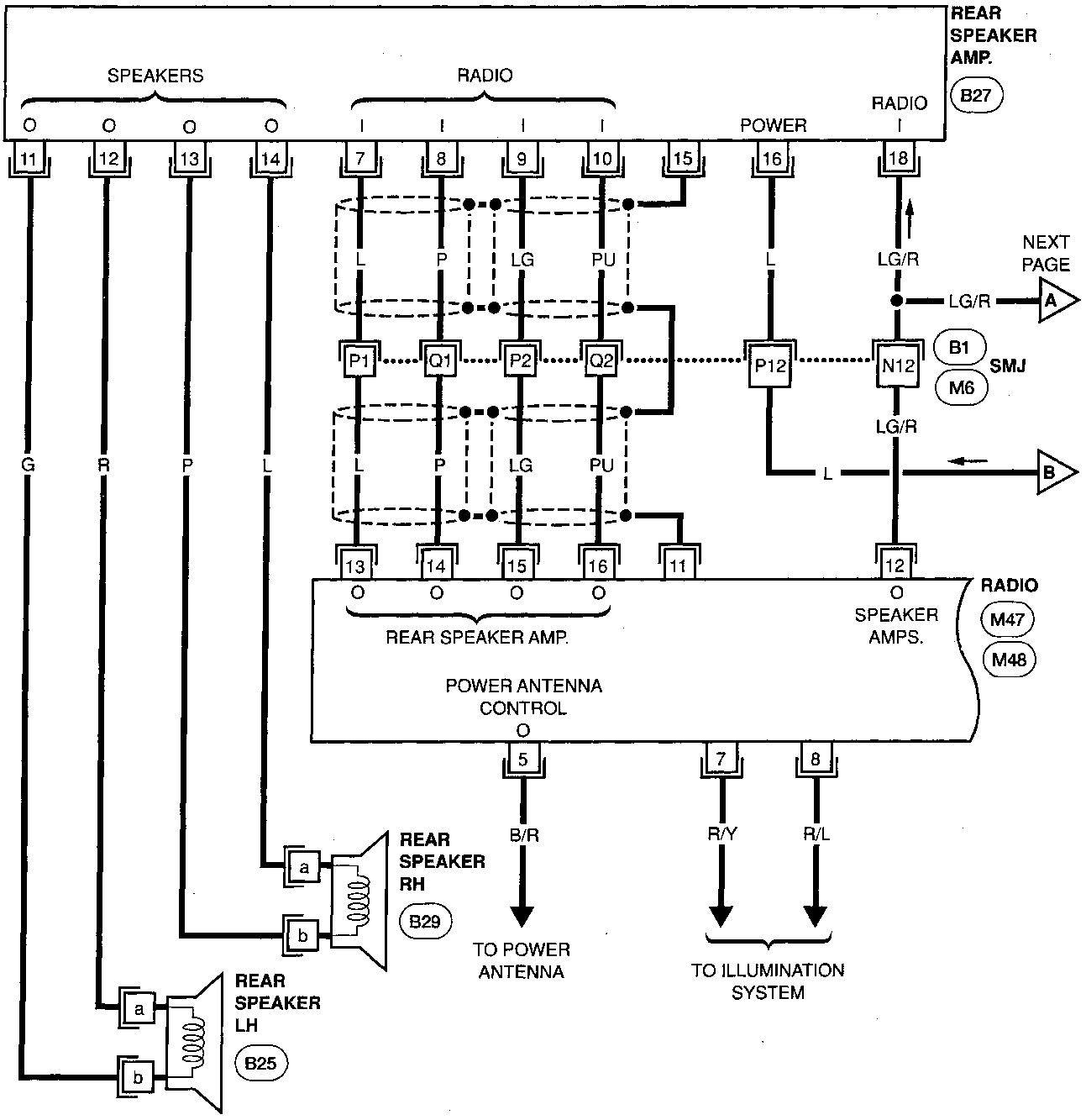
Power is supplied at all times
- through 10A fuse (No. 20 , located in the fuse block)
- to radio terminal ⑥.

With the ignition switch in the ACC or ON position, power is supplied
- through 10A fuse (No. 9 , located in the fuse block)
- to radio terminal ⑩.

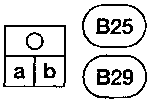
Ground is supplied through the case of the radio.
When the radio power knob is pushed to the ON position, audio signals are supplied
- through radio terminals 1, 2, 3, 4, 13, 14, 15 and 16
- to the front and rear speakers.

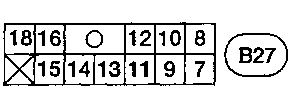
Audio/Wiring Diagram

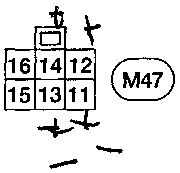
ACTIVE SPEAKER SYSTEM

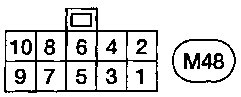


Refer to Foldout Page for details. B1 M6



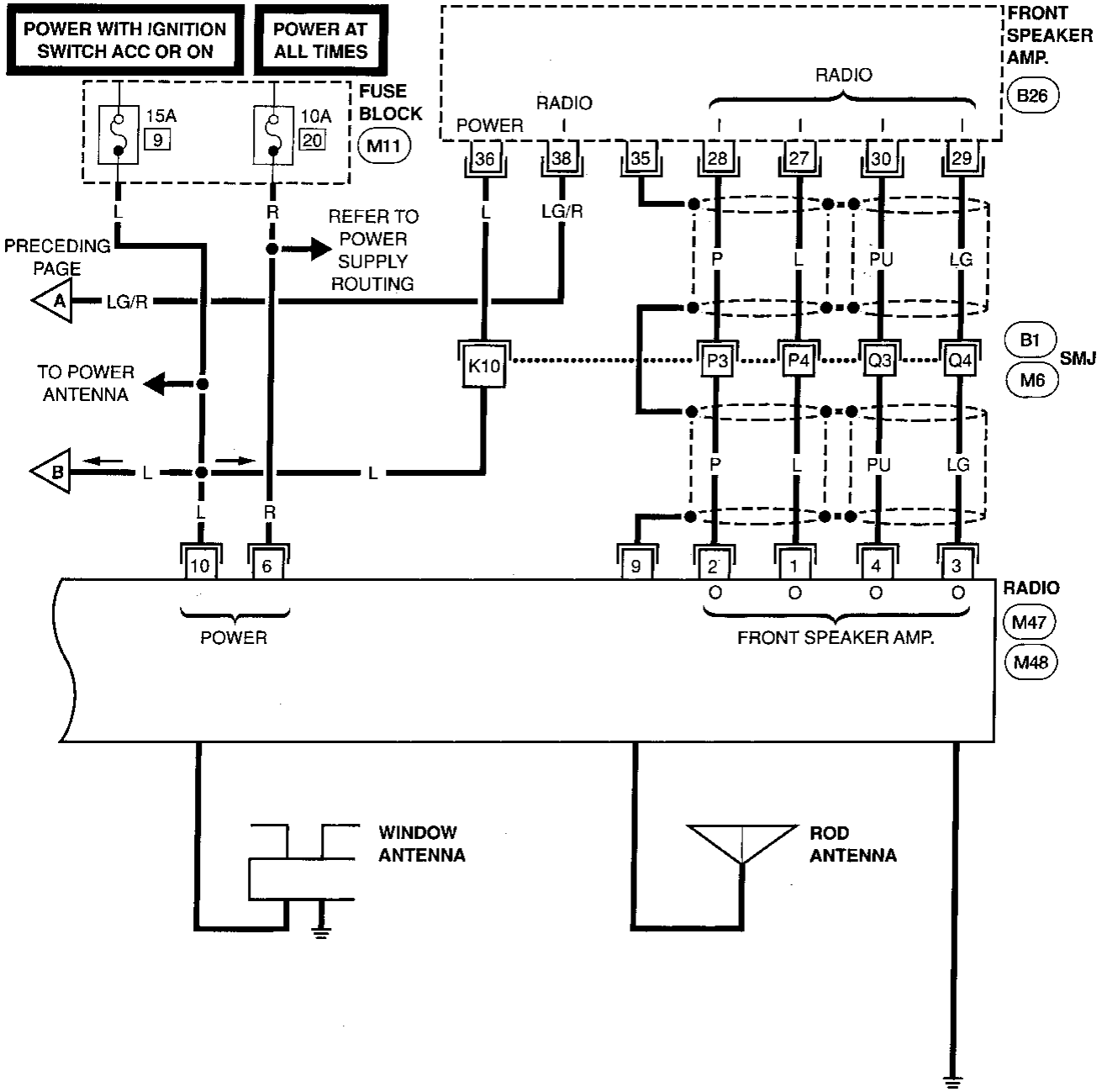






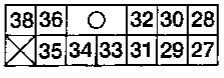
AEL265-A

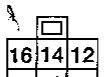
Audio/Wiring Diagram (Cont'd)

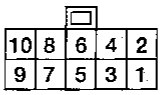


Refer to POWER SUPPLY ROUTING. M11

Refer to Foldout Page for details. B1 M6

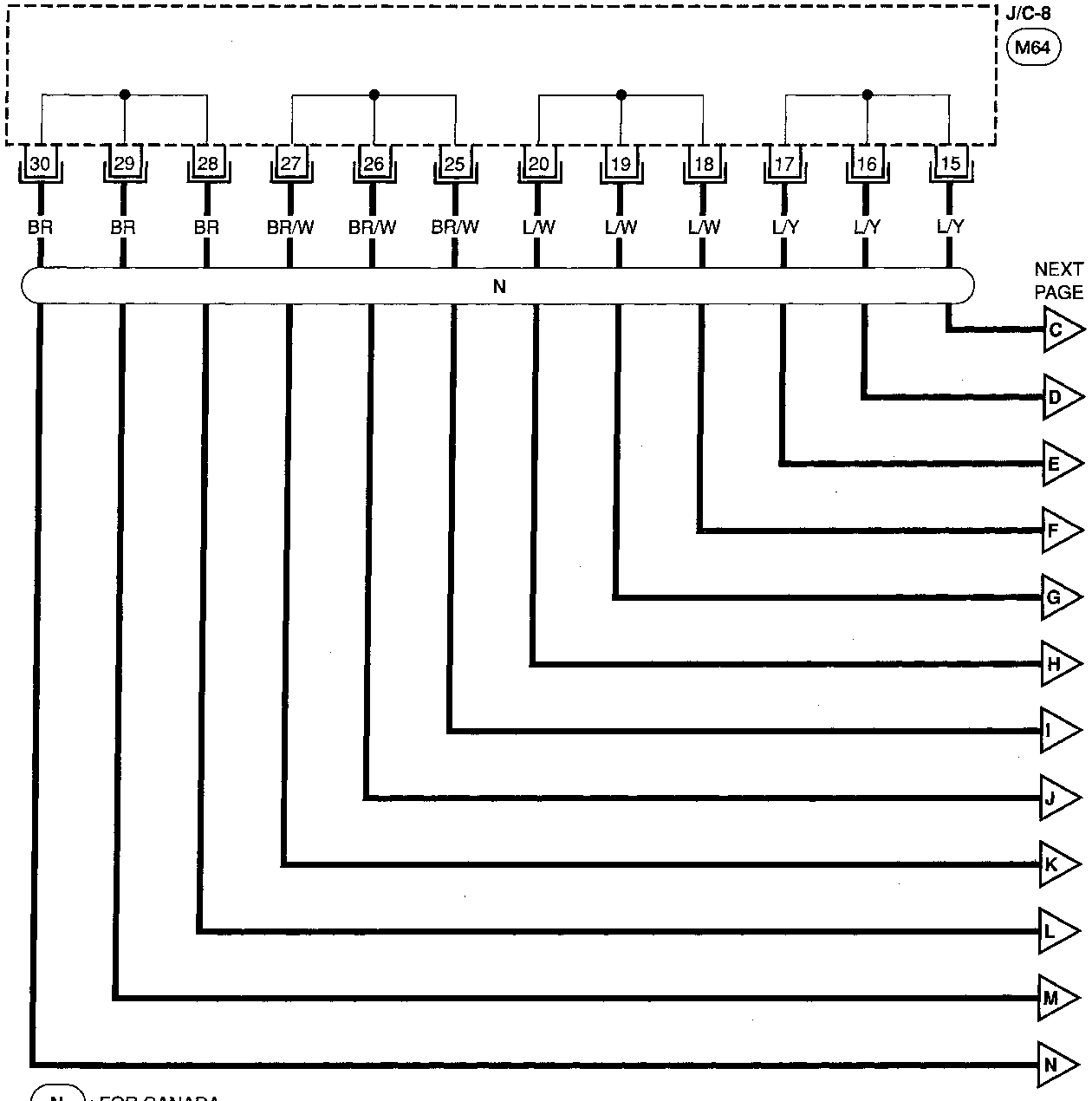






AEL265-B

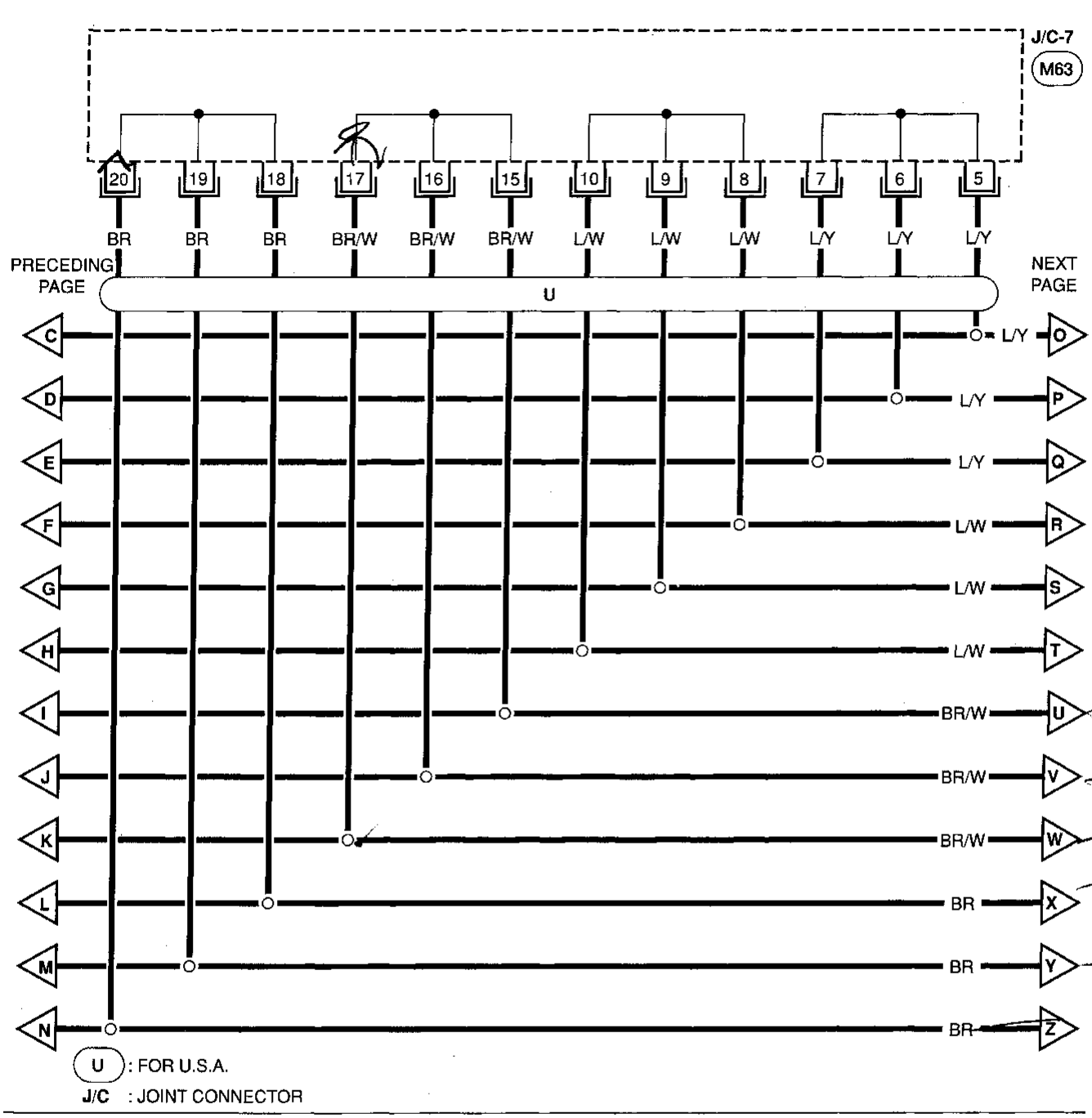
Audio/Wiring Diagram (Cont'd)



Refer to Foldout Page for details. M64

AEL265-C

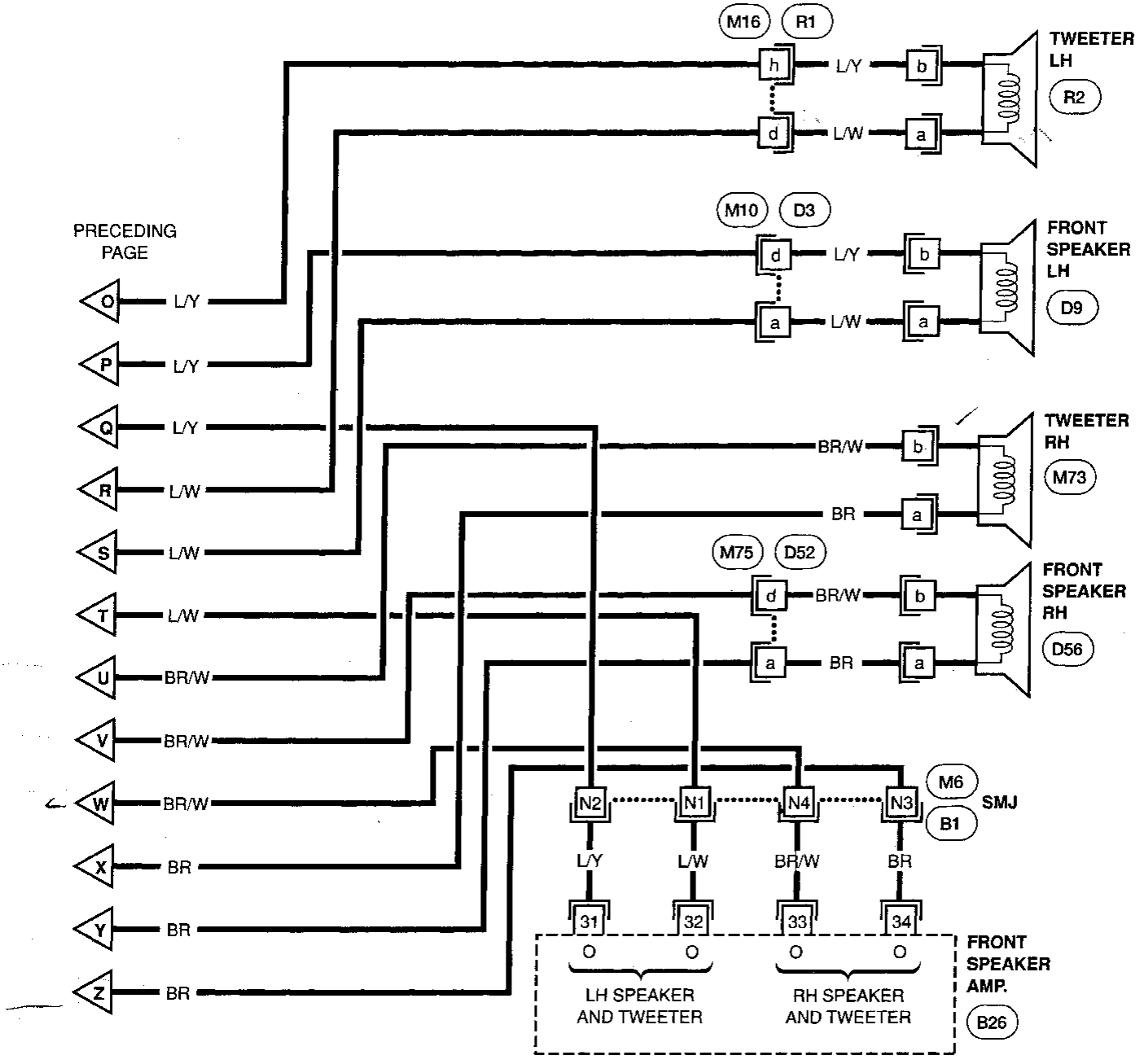
Audio/Wiring Diagram (Cont'd)



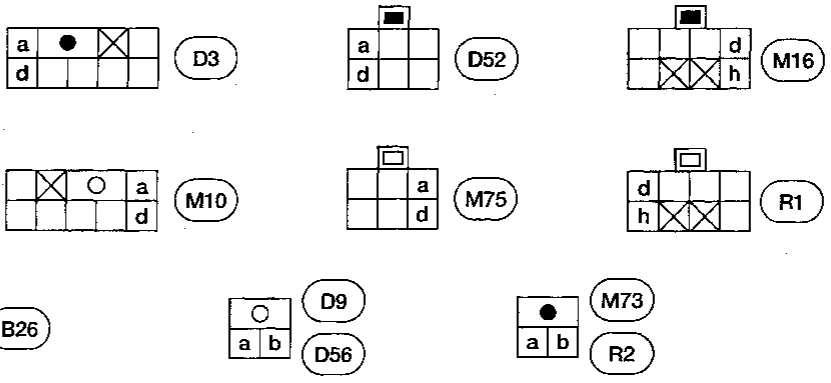
Refer to Foldout Page for details. M63

AEL265-D

Audio/Wiring Diagram (Cont'd)



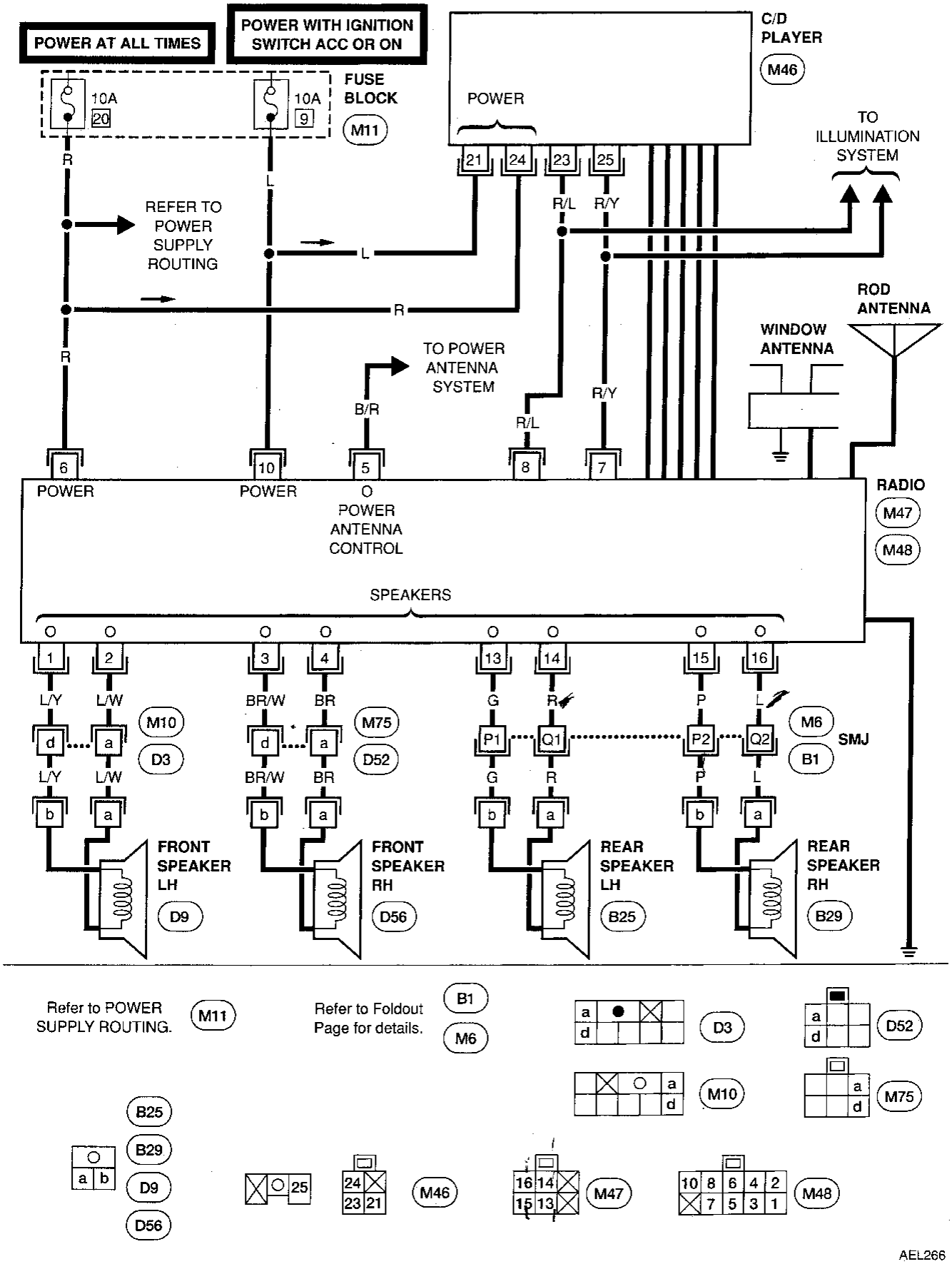
Refer to Foldout Page for details. B1 M6



AEL265-E

Audio/Wiring Diagram (Cont'd)

EXCEPT ACTIVE SPEAKER SYSTEM



Power Antenna/System Description

Power is supplied at all times
- through 10A fuse (No. 20 , located in the fuse block)
- to power antenna terminal ⑥.

With the ignition switch in the ACC or ON position, power is supplied
- through 10A (except active speaker system) or 15A (with active speaker system) fuse (No. 9 , located in the fuse block)
- to power antenna terminal ①.

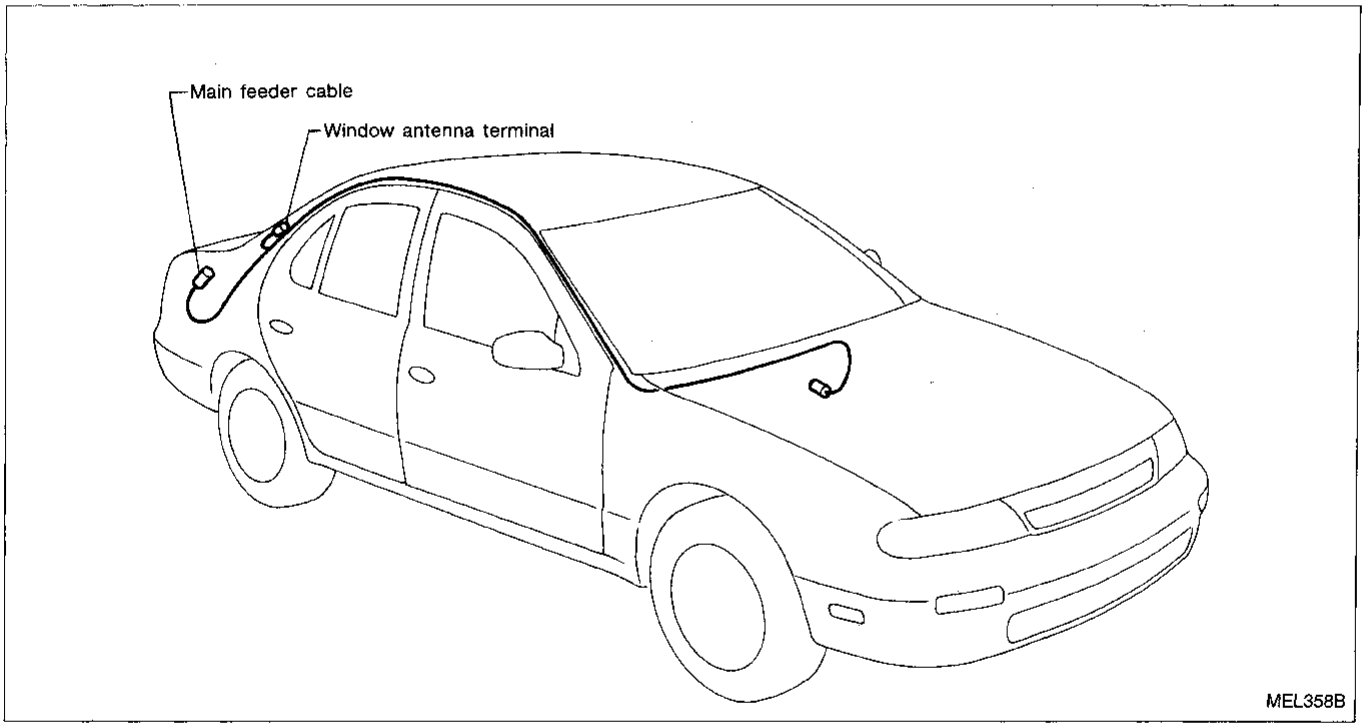
With the ignition switch in the ON or START position, power is supplied
- through 10A fuse (No. 26 , located in the fuse block)
- to power antenna terminal ③.

Ground is supplied to the power antenna through body ground (T7).
When the radio is turned to the ON position, battery positive voltage is supplied
- through radio terminal ⑤
- to power antenna terminal ④.

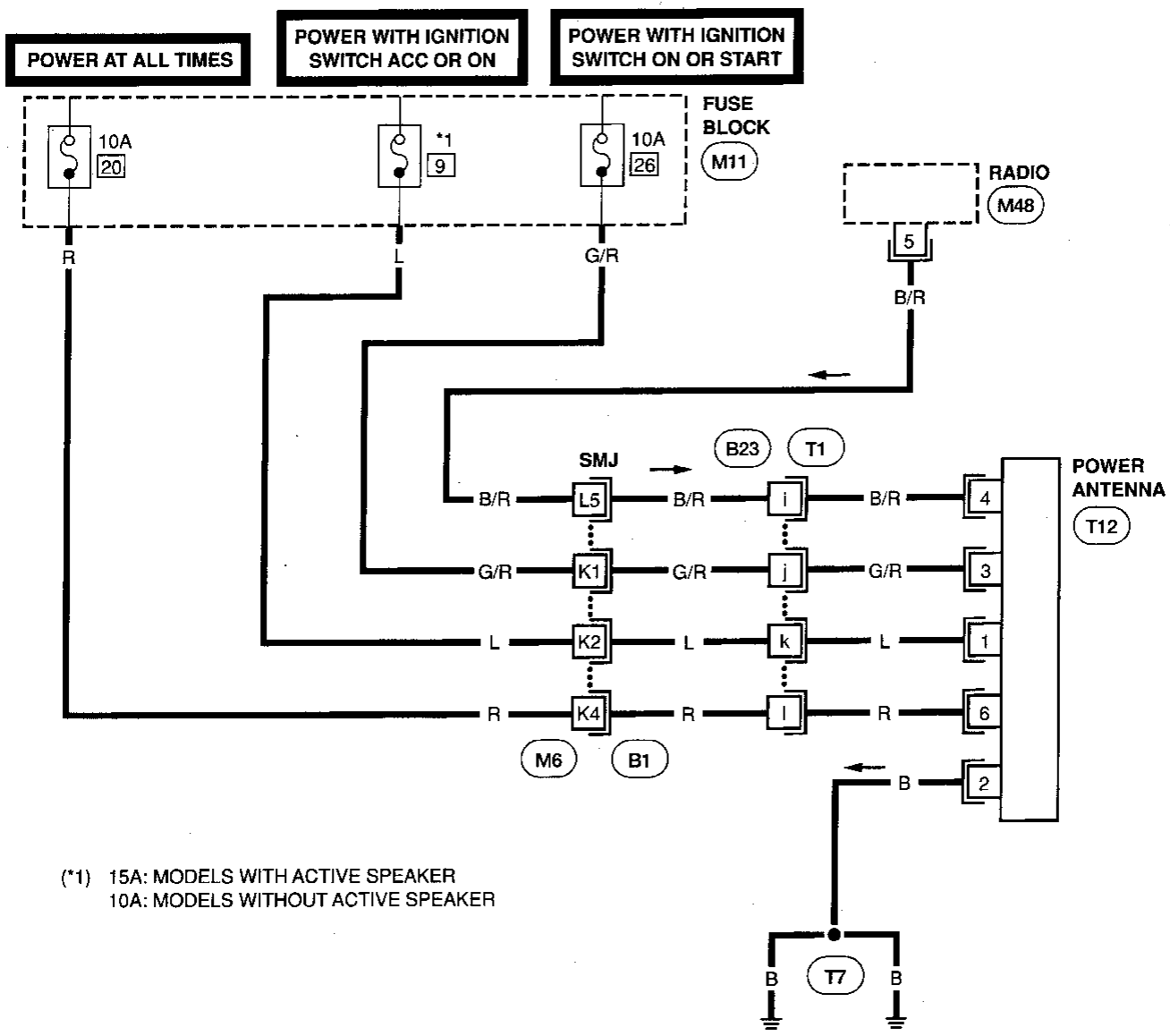
The antenna raises and is held in the extended position.
When the radio is turned to the OFF position, battery positive voltage is interrupted
- from radio terminal ⑤
- to power antenna terminal ④.

The antenna retracts.

Location of Antenna



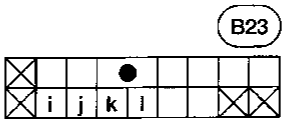
Power Antenna/Wiring Diagram

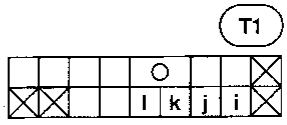


(*1) 15A: MODELS WITH ACTIVE SPEAKER
10A: MODELS WITHOUT ACTIVE SPEAKER

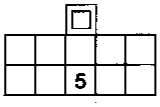
Refer to POWER SUPPLY ROUTING. (M11)

Refer to Foldout Page for details. (M6) (B1)





T12



M48

AEL267

Trouble Diagnoses

Sympton	Possible causes	Repair order
Radio inoperative (no digital display and no sound from speakers).	1. 10A fuse (without active speaker system) 15A fuse (with active speaker system) 2. Poor radio case ground 3. Radio	1. Check 10A (without active speaker system) or 15A (with active speaker system) fuse (No. 9 , located in fuse block). Turn ignition switch ON and verify battery positive voltage is present at terminal ⑩ of radio (and terminal ⑯ of rear speaker amp. and terminal ㊱ of front speaker amp. with active speakers). 2. Check radio case ground. 3. Remove radio for repair.
Radio controls are operational, but no sound is heard from any speaker.	1. Radio output 2. Radio	1. Check radio output voltages. 2. Remove radio for repair.
Radio presets are lost when ignition switch is turned OFF.	1. 10A fuse 2. Radio	1. Check 10A fuse (No. 20 , located in fuse block) and verify battery positive voltage is present at terminal ⑥ of radio. 2. Remove radio for repair.
Rear speakers are inoperative.	WITH ACTIVE SPEAKER SYSTEM 1. Rear speaker amp. 10A fuse 2. Poor rear amp. case ground 3. Rear speaker amp. 4. Rear speaker amp. circuit 5. Radio WITHOUT ACTIVE SPEAKER SYSTEM 1. Radio output 2. Radio	WITH ACTIVE SPEAKER SYSTEM 1. Check 10A fuse on amp. 2. Check rear amp. case ground. 3. Check rear speaker amp. voltages. 4. Check wires for open or short between radio, rear speaker amp. and rear speakers. 5. Remove radio for repair. WITHOUT ACTIVE SPEAKER SYSTEM 1. Check radio output voltages. 2. Remove radio for repair.
Front speakers are inoperative.	WITH ACTIVE SPEAKER SYSTEM 1. Front speaker amp. 10A fuse 2. Poor front amp. case ground 3. Front speaker amp. 4. Front speaker amp. circuit. 5. Radio WITHOUT ACTIVE SPEAKER SYSTEM 1. Radio output 2. Radio	WITH ACTIVE SPEAKER SYSTEM 1. Check 10A fuse on amp. 2. Check front amp. case ground. 3. Check front speaker amp. voltages. 4. Check wires for open or short between radio, front speaker amp. and front speakers. 5. Remove radio for repair. WITHOUT ACTIVE SPEAKER SYSTEM 1. Check radio ouput voltages. 2. Remove radio for repair.
Individual speaker is noisy or inoperative.	1. Speaker 2. Radio/amp. output 3. Speaker circuit 4. Radio	1. Check speaker. 2. Check radio/amp. output voltages. 3. Check wires for open or short between radio/amp. and speaker. 4. Remove radio for repair.
AM stations are weak or noisy (FM stations OK).	1. Antenna 2. Poor radio ground 3. Radio	1. Check antenna. 2. Check radio ground. 3. Remove radio for repair.
FM stations are weak or noisy (AM stations OK).	1. Window antenna 2. Radio	1. Check window antenna. 2. Remove radio for repair.
Radio generates noise in AM and FM modes with engine running.	1. Poor radio ground 2. Loose or missing ground bonding straps. 3. Ignition condenser or rear window defogger noise suppressor condenser 4. Generator 5. Ignition coil or secondary wiring 6. Radio	1. Check radio ground. 2. Check ground bonding straps. 3. Replace ignition condenser or rear window defogger noise suppressor condenser. 4. Check generator. 5. Check ignition coil and secondary wiring. 6. Remove radio for repair.
Radio generates noise in AM and FM modes with accessories on (switch pops and motor noise).	1. Poor radio ground 2. Antenna 3. Accessory ground 4. Faulty accessory	1. Check radio ground. 2. Check antenna. 3. Check accessory ground. 4. Replace accessory.

Trouble Diagnoses (Cont'd)

Sympton	Possible causes	Repair order
Power antenna does not operate.	1. 10A fuse	1. Check 10A fuse (No. 20 , located in fuse block). Verify battery positive voltage is present at terminal ⑥ of power antenna.
	2. 10A fuse	2. Check 10A fuse (No. 26 , located in fuse block). Turn ignition switch ON and verify battery positive voltage is present at terminal ③ of power antenna.
	3. 10A fuse (without active speaker system) 15A fuse (with active speaker system)	3. Check 10A (without active speaker system) or 15A (with active speaker system) fuse (No. 9 , located in fuse block). Turn ignition switch ON and verify battery positive voltage is present at terminal ① of power antenna.
	4. Radio signal	4. Turn radio ON and verify battery positive voltage is present at terminal ④ of power antenna.
	5. Poor power antenna ground	5. Check power antenna ground.

SPEAKER INSPECTION

1. Disconnect speaker harness connector.
2. Measure the resistance between speaker terminals ⓐ and ⓑ.
- The resistance should be 2-4 Ω
3. Using jumper wires, momentarily connect a 9V battery between speaker terminals ⓐ and ⓑ.
- A momentary hum or pop should be heard

ANTENNA INSPECTION

1. Using a jumper wire, clip an auxiliary ground between antenna and body.
- If reception improves, check antenna ground (at body surface)
- If reception does not improve, check main feeder cable for short circuit or open circuit.

RADIO AND AMP INSPECTION

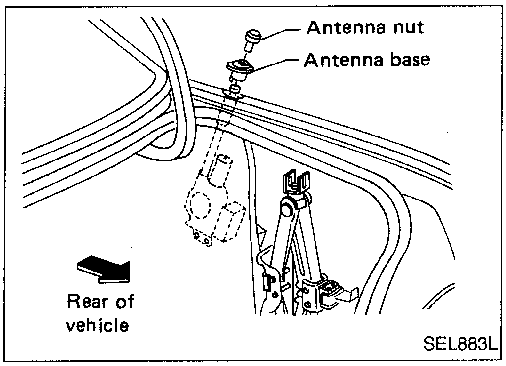
All voltage inspections are made with:
- Ignition switch ON or ACC
- Radio ON
- Radio and amps. connected (If the radio or amp. is removed from the mounting bracket to make the inspection, supply a ground to the case using a jumper wire.)

RADIO VOLTAGES

Terminal	Voltage (V)	
	Except Active Speaker System	With Active Speaker System
1	5 - 7.5	2.5 - 6.5
2	5 - 7.5	2.5 - 6.5
3	5 - 7.5	2.5 - 6.5
4	5 - 7.5	2.5 - 6.5
5	10 - 15 (0 when tape is playing)	9 - 15 (0 when tape is playing)
6	10.8 - 15.6	10.8 - 15.6
7	—	—
8	—	—
9	0	0
10	10.8 - 15.6	10.8 - 15.6
11	—	0
12	—	9 - 15
13	5 - 7.5	2.5 - 6.5
14	5 - 7.5	2.5 - 6.5
15	5 - 7.5	2.5 - 6.5
16	5 - 7.5	2.5 - 6.5

AMP. VOLTAGES

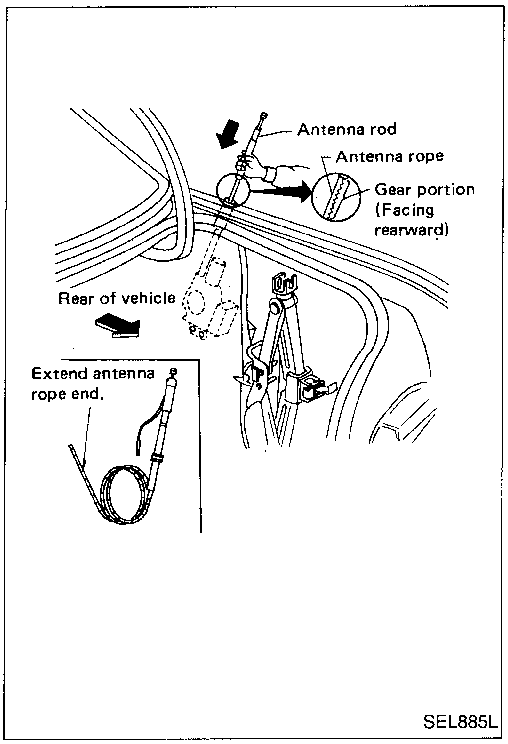
Terminal		Voltages (V)
Front Amp.	Rear Amp.	
27	7	2.5 - 6.5
28	8	2.5 - 6.5
29	9	2.5 - 6.5
30	10	2.5 - 6.5
31	11	4.5 - 8.5
32	12	4.5 - 8.5
33	13	4.5 - 8.5
34	14	4.5 - 8.5
35	15	0
36	16	10.8 - 15.6
37	17	—
38	18	9 -15



Antenna Rod Replacement

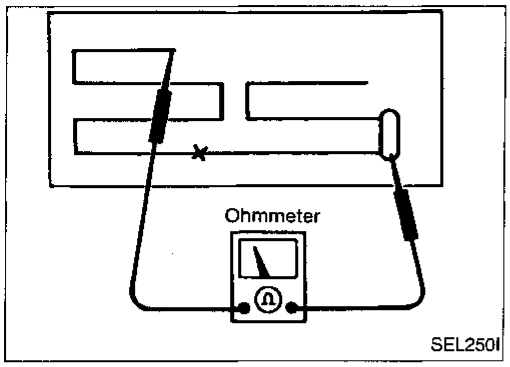
REMOVAL

1. Remove antenna nut and antenna base.
2. Withdraw antenna rod while raising it by operating antenna motor.



INSTALLATION

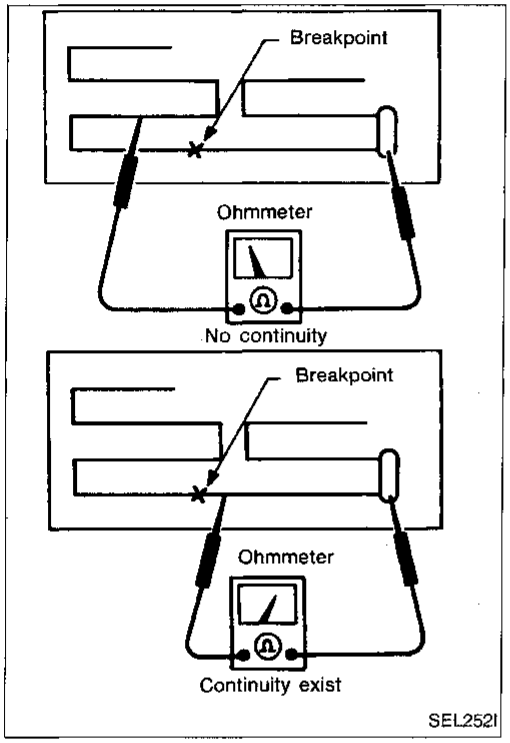
1. Lower antenna rod by operating antenna motor.
2. Insert gear section of antenna rope into place with it facing toward antenna motor.
3. As soon as antenna rope is wound on antenna motor, stop antenna motor. Insert antenna rod lower end into antenna motor pipe.
4. Retract antenna rod completely by operating antenna motor.
5. Install antenna nut and base.



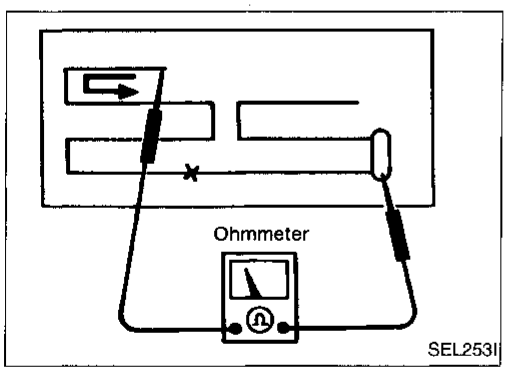
Window Antenna Repair

ELEMENT CHECK

1. Attach probe circuit tester (in ohm range) to antenna terminal on each side.



2. If an element is broken, no continuity will exist.



3. To locate broken point, move probe to left and right along element to determine point where tester needle swings abruptly.

ELEMENT REPAIR

Refer to EL-120.

System Description

Refer to Owner's Manual for ASCD operating instructions.
When the ignition switch is in the ON or START position, power is supplied
- through 10A fuse (No. 26 , located in the fuse block)
- to ASCD switch terminal ① and
- to ASCD hold relay terminal ⑤.

When ASCD switch is in the ON position, power is supplied
- from terminal ② of the ASCD switch
- to ASCD control module terminal ④ and
- from terminal ③ of the ASCD switch
- to ASCD hold relay terminal ①.

Ground is supplied
- to ASCD hold relay terminal ②
- through body grounds (E12) and (E37).

With power and ground supplied, the ASCD hold relay is activated, and power is supplied
- from terminal ③ of the ASCD hold relay
- to ASCD control module terminal ④ and
- to ASCD clutch pedal position switch terminal ⓐ (M/T models) or
- to inhibitor relay terminal ③ (A/T models).

Power remains supplied to ASCD control module terminal ④ when the ASCD switch is released to the N (neutral) position.
Ground is supplied
- to ASCD control module terminal ③
- through body grounds (M51), (M76) and (M77).

Inputs

At this point, the system is ready to activate or deactivate, based on inputs from the following:
- speedometer in the combination meter
- stop lamp switch
- ASCD steering switch
- inhibitor relay (A/T models)
- ASCD clutch pedal position switch (M/T models)
- ASCD cancel switch.

A vehicle speed input is supplied
- to ASCD control module terminal ⑦
- from terminal ⑤ of the combination meter (without head-up display), or
- from terminal ⑱ of the combination meter (with head-up display).

Power is supplied at all times
- to stop lamp switch terminal ⓐ
- through 15A fuse (No. 18 , located in the fuse block).

When the brake pedal is depressed, power is supplied
- from terminal ⓑ of the stop lamp switch
- to ASCD control module terminal ⑪.

Power is supplied at all times
- through 10A fuse (No. 35 , located in the fusible link and fuse box)
- to horn relay terminal ①
- through terminal ③ of the horn relay
- to ASCD steering switch terminal ⑬.

When the SET/COAST button is depressed, power is supplied
- from terminal ⑫ of the ASCD steering switch
- to ASCD control module terminal ②.

When the RESUME/ACCEL button is depressed, power is supplied
- from terminal ⑪ of the ASCD steering switch
- to ASCD control module terminal ①.

When the CANCEL button is depressed, power is supplied
- to ASCD control module terminals ① and ②.

When the system is activated, power is supplied
- to ASCD control module terminal ⑤.

System Description (Cont'd)

Power is interrupted when
- the shift lever is placed in P or N (A/T models)
- the clutch pedal is depressed (M/T models) or
- the brake pedal is depressed.

Outputs

The ASCD actuator controls the throttle drum via the ASCD wire based on inputs from the ASCD control module. The ASCD actuator consists of a vacuum motor, an air valve, and a release valve.

Power is supplied
- from terminal ① of the ASCD control module
- to ASCD actuator terminal ①.

Ground is supplied to the vacuum motor
- from terminal ⑨ of the ASCD control module
- to ASCD actuator terminal ④.

Ground is supplied to the air valve
- from terminal ⑩ of the ASCD control module
- to ASCD actuator terminal ②.

Ground is supplied to the release valve
- from terminal ⑭ of the ASCD control module
- to ASCD actuator terminal ③.

When the system is activated, power is supplied
- from terminal ⑬ of the ASCD control module
- to combination meter terminal ㉕ and
- to A/T control unit terminal ㊲ (A/T models).

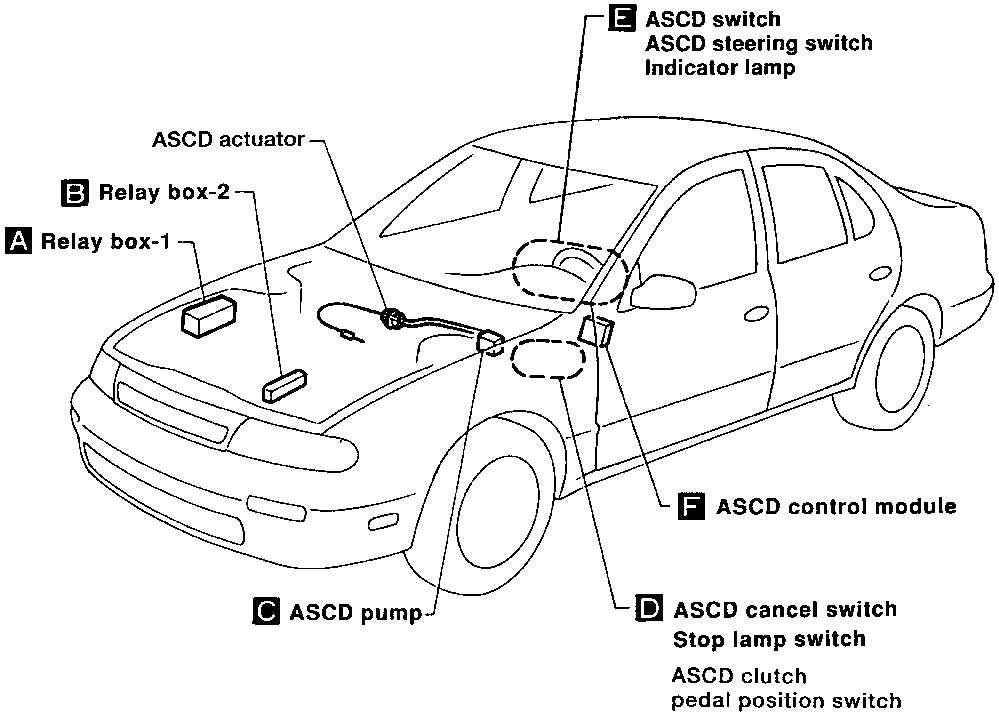
Ground is supplied
- to combination meter terminal ㉗
- through body grounds (M51), (M76) and (M77).

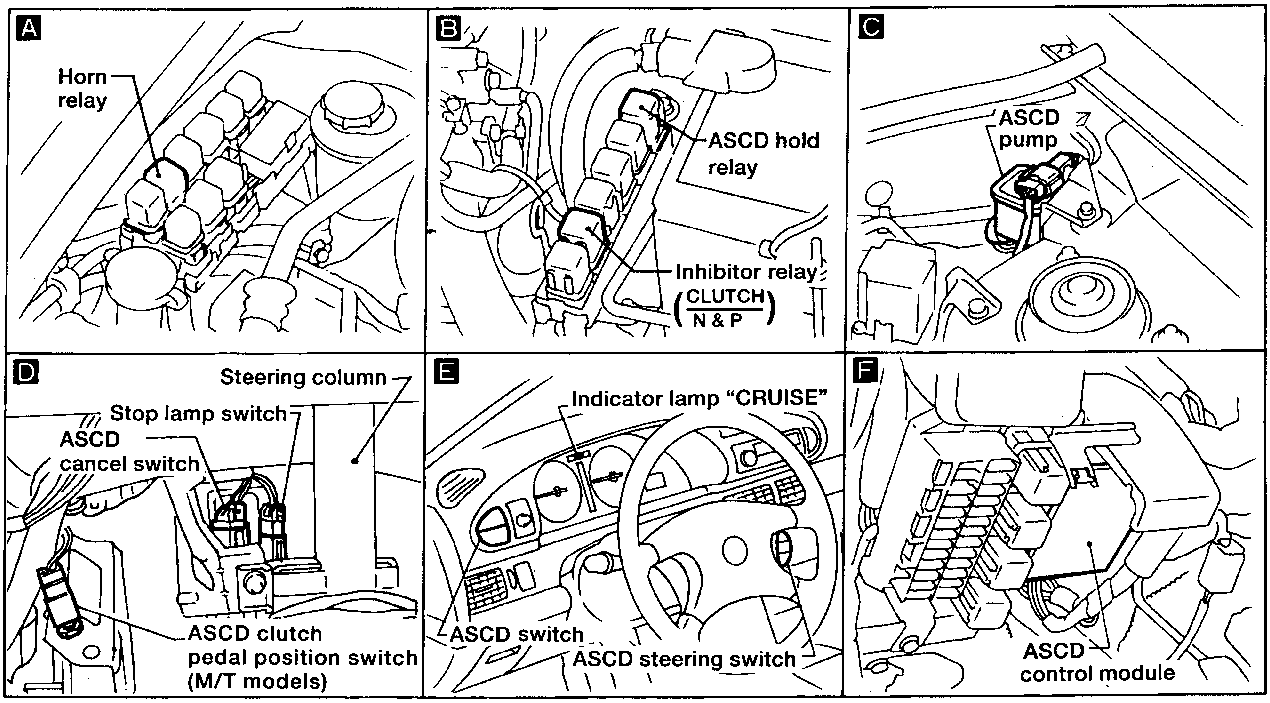
With power and ground supplied, the CRUISE indicator illuminates.

When the RESUME/ACCEL button is depressed on A/T models, a signal is sent
- from terminal ⑫ of the ASCD control module
- to A/T control unit terminal ㊵.

When this occurs, the A/T control unit cancels overdrive.

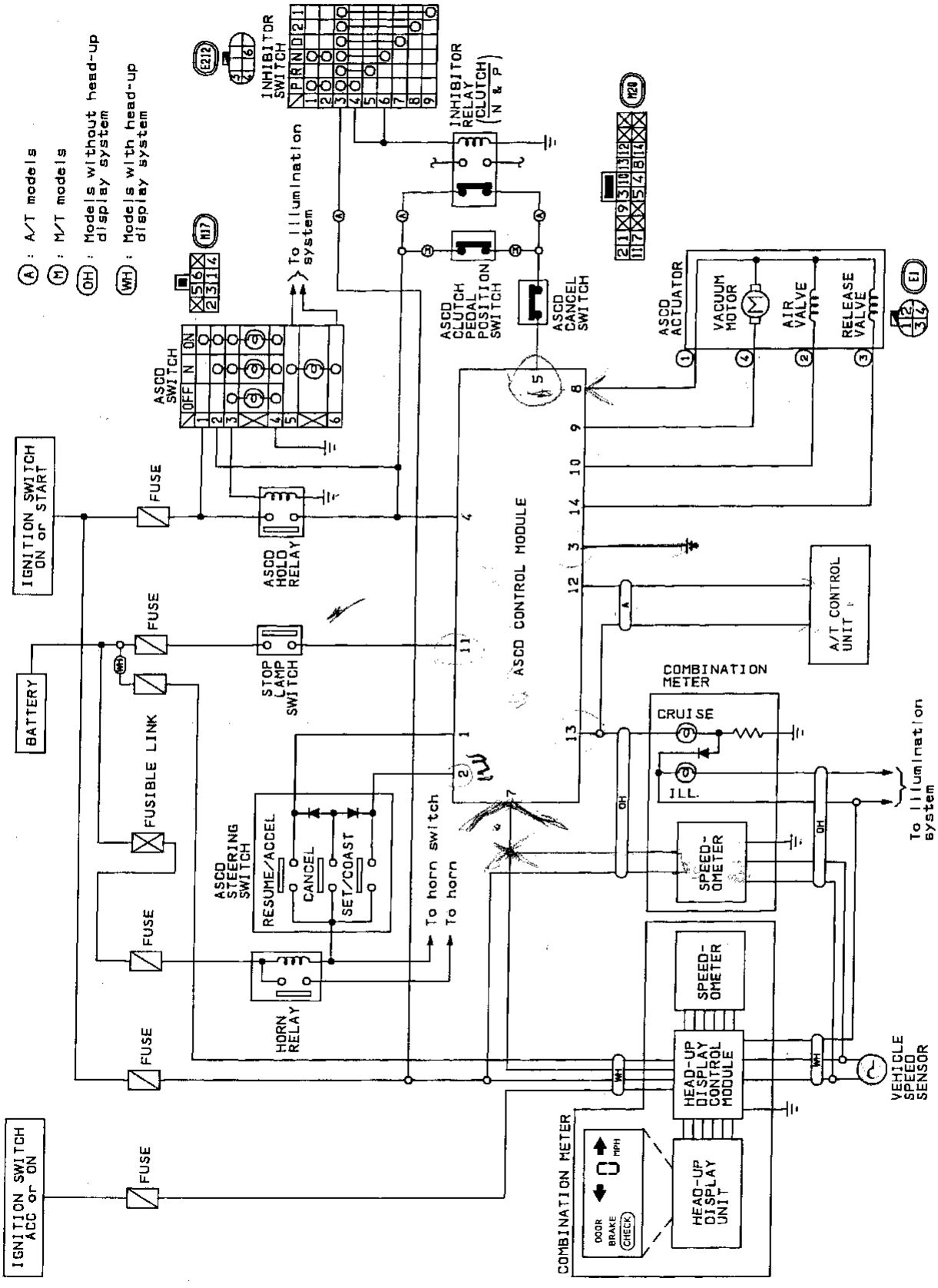
Component Parts and Harness Connector Location





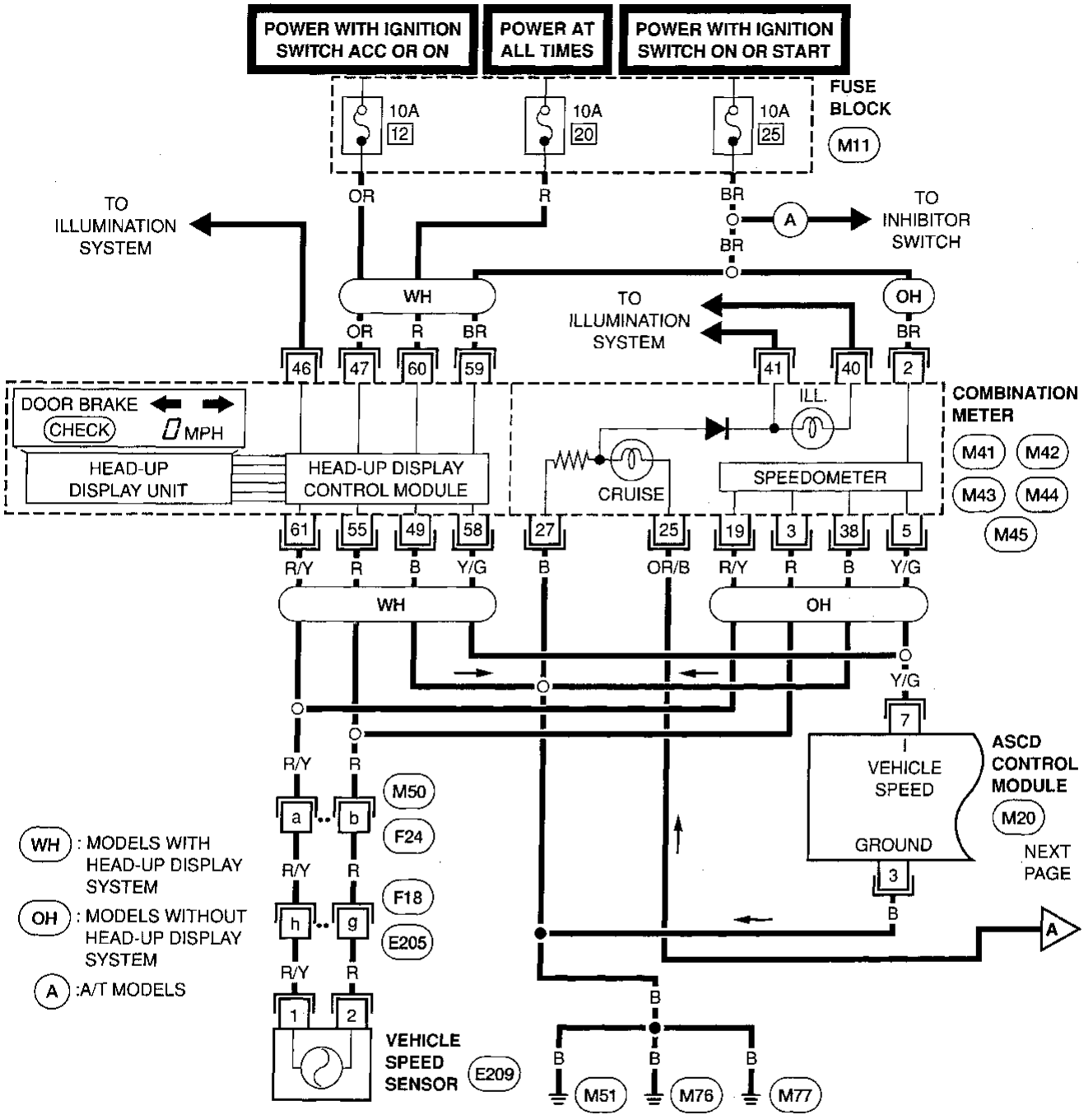
AEL148

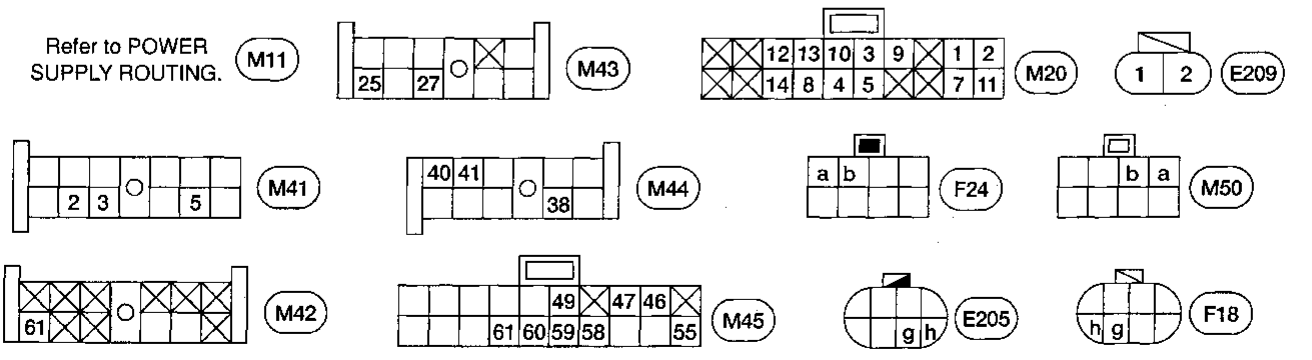
Schematic



AEL315

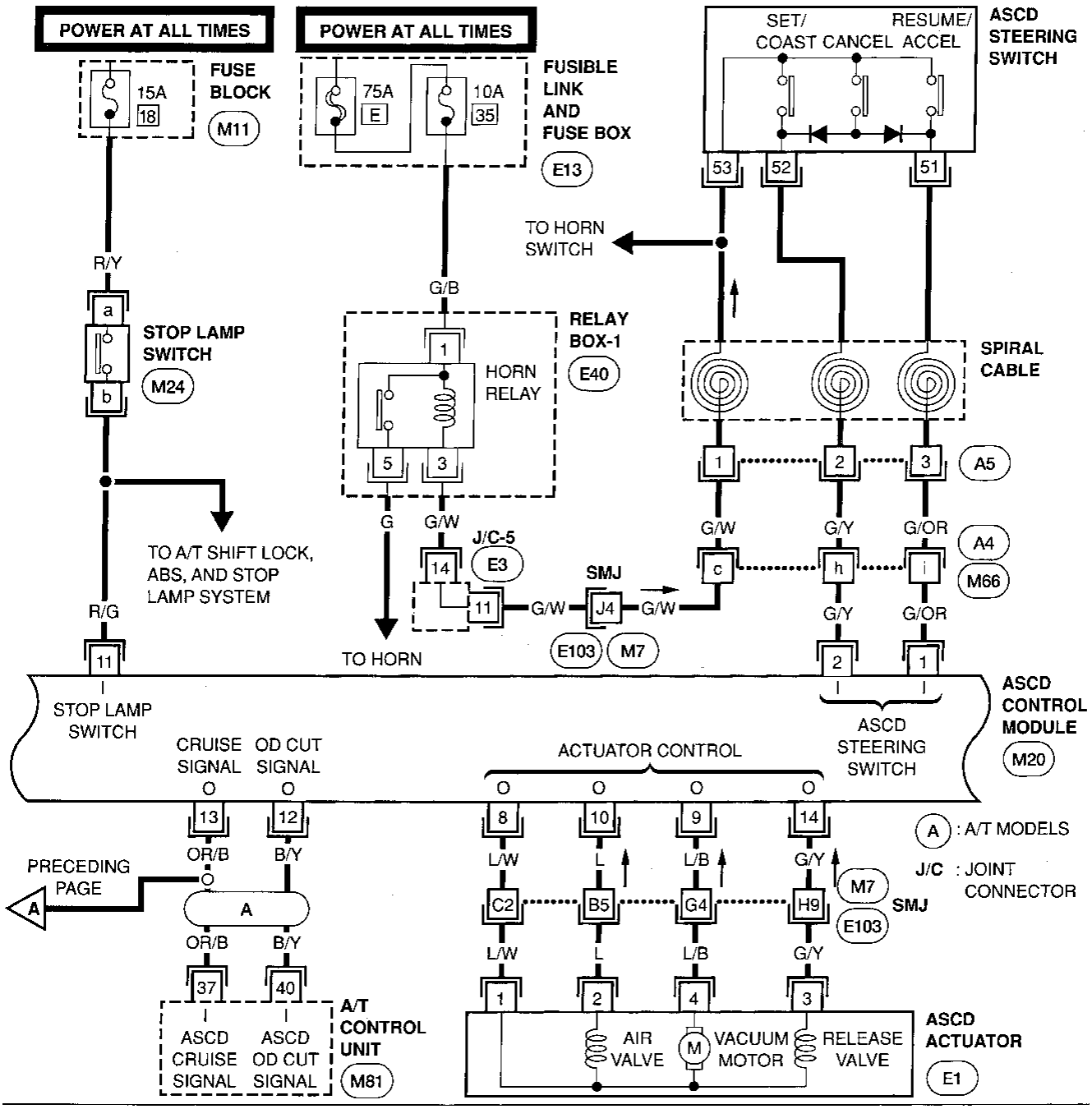
Wiring Diagram





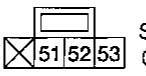
AEL268-A

Wiring Diagram (Cont'd)



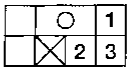
Refer to POWER SUPPLY ROUTING. M11 E13

Refer to Foldout Page for details. M7 E103 E3

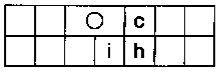


SPIRAL CABLE

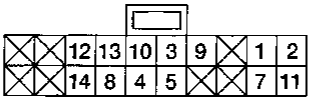
E40



A5



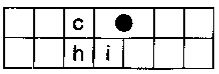
A4



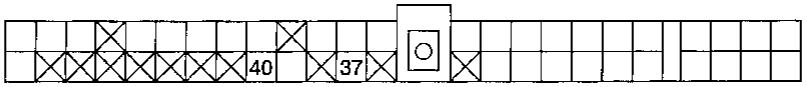
M20

M24

E1



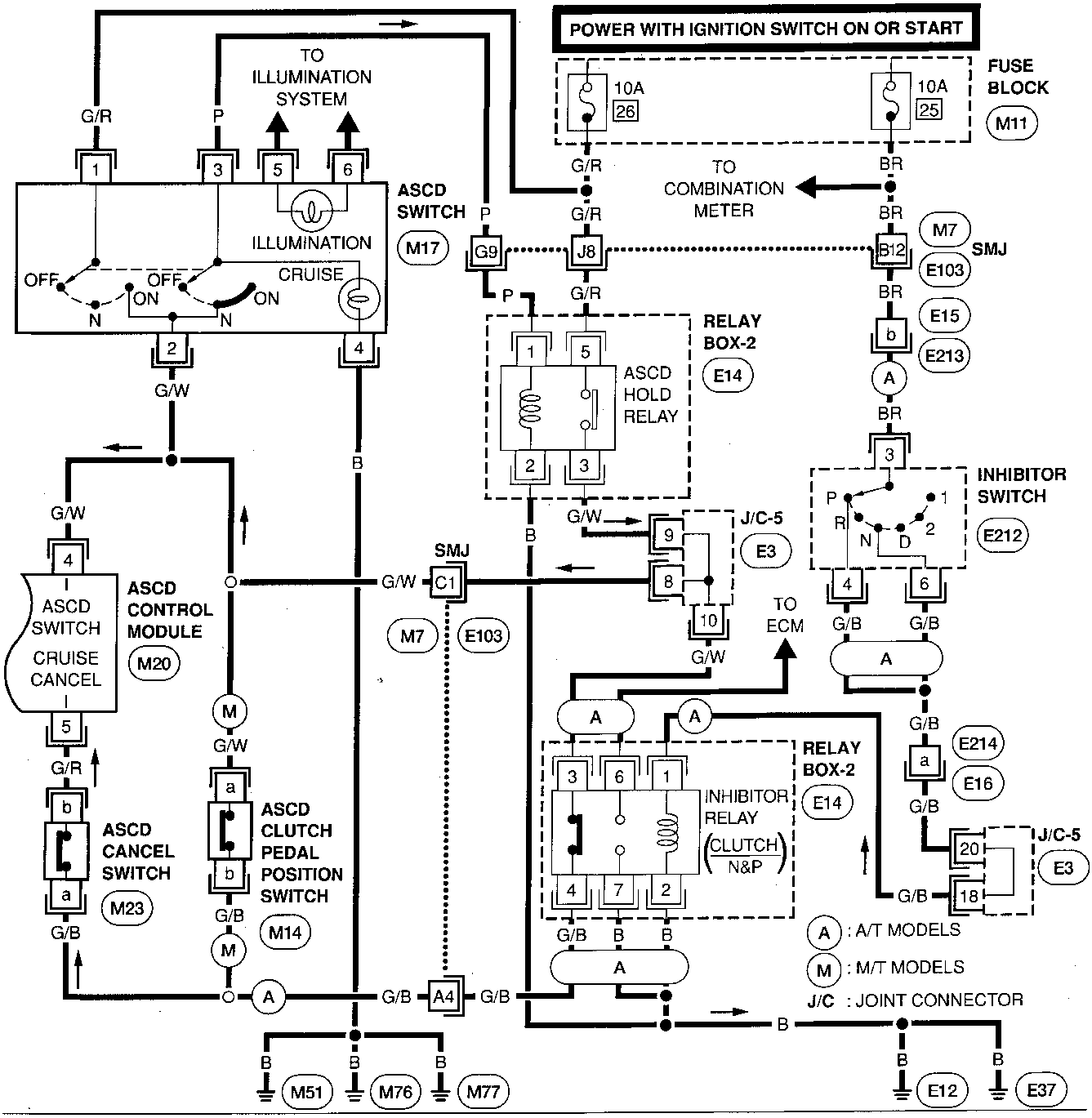
M66



M81

AEL268-B

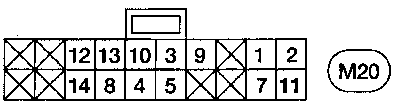
Wiring Diagram (Cont'd)

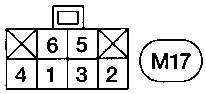


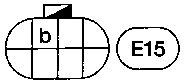
Refer to POWER SUPPLY ROUTING. M11

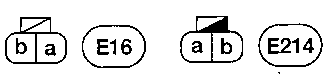
Refer to Foldout Page for details. M7 E3 E103

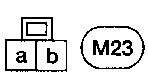
E212

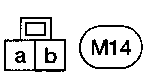


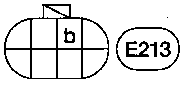


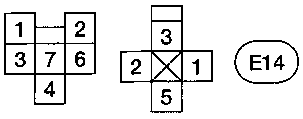












AEL268-C

Trouble Diagnoses

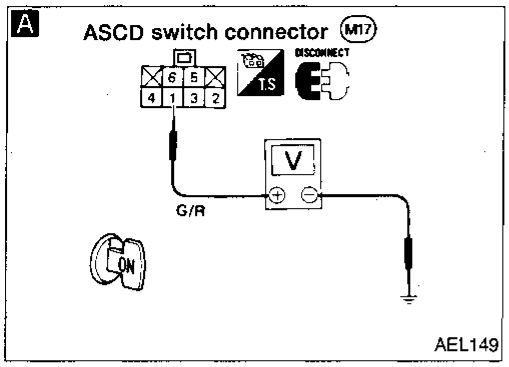
SYMPTOM CHART

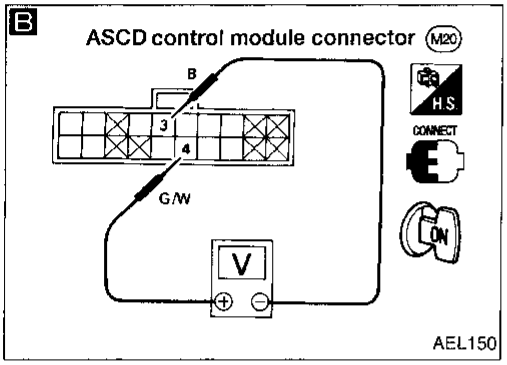
PROCEDURE	Diagnostic Procedure								—	Electrical Components Inspection						
REFERENCE PAGE	EL-142	EL-144	EL-144	EL-144	EL-145	EL-146	EL-147	EL-148	EL-149	EL-150	EL-151	EL-151	EL-151	EL-151	EL-152	EL-152
SYMPTOM	Diagnostic Procedure 1	Diagnostic Procedure 2	Diagnostic Procedure 3	Diagnostic Procedure 4	Diagnostic Procedure 5	Diagnostic Procedure 6	Diagnostic Procedure 7	Diagnostic Procedure 8	ASCD Wire Adjustment	ASCD actuator/ASCD pump	ASCD switch	ASCD steering switch	ASCD cancel switch and stop lamp switch	Clutch pedal position switch (M/T models)	Inhibitor switch (A/T models)	Vehicle speed sensor
ASCD control module cannot be set properly.	○									○	○	○	○	○	○	○
Engine hunts.		○							○	○						
Large difference between set speed and actual vehicle speed.			○						○	○						
Deceleration is greatest immediately after ASCD has been set.				○					○	○						
ACCEL switch will not operate.	○				○							○				
RESUME switch will not operate.	○					○						○	○	○		
Set speed cannot be cancelled.							○		○	○			○	○		
"CRUISE" indicator lamp blinks.								○		○		○	○			

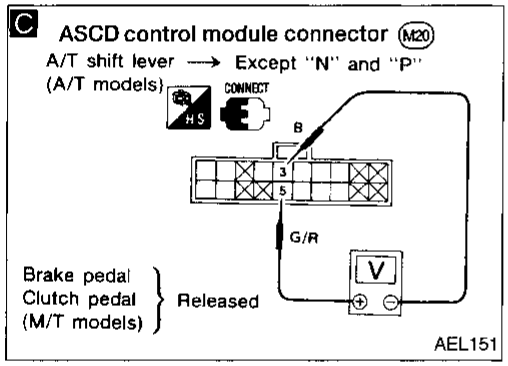
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 1

SYMPTOM: ASCD control cannot be set.







Turn ASCD switch "OFF" and "ON" to make sure indicator illuminates.

N.G. → A

O.K.

A

CHECK POWER SUPPLY FOR ASCD SWITCH.

1. Disconnect switch harness connector.
2. Do approx. 12 volts exist between switch harness terminal ① and body ground?

No → Check fuse and harness.

Yes → CHECK ASCD SWITCH. Refer to EL-151. CHECK ASCD HOLD RELAY.

B

CHECK POWER SUPPLY CIRCUIT FOR ASCD CONTROL MODULE.

1. Turn ASCD switch "ON".
2. Check voltage between control module harness terminals ④ and ③.

Battery positive voltage should exist.

N.G. → Check continuity between control module harness terminal ④ and ASCD hold relay.

O.K.

C

CHECK CUT-OFF CIRCUIT FOR ASCD CONTROL MODULE.

Check voltage between control module harness terminals ⑤ and ③.

Battery positive voltage should exist.

N.G. → CHECK ASCD CANCEL SWITCH, ASCD CLUTCH PEDAL POSITION SWITCH (M/T models) AND INHIBITOR SWITCH (A/T models). Refer to EL-151. CHECK INHIBITOR RELAY (A/T models).

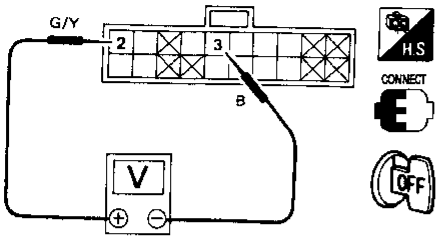
O.K.

Ⓐ (Next page)

Trouble Diagnoses (Cont'd)

D

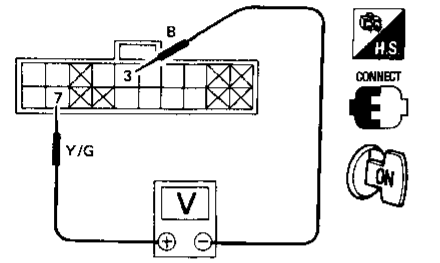
ASCD control module connector (M20)



AEL152

E

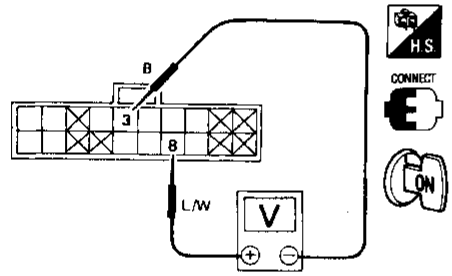
ASCD control module connector (M20)



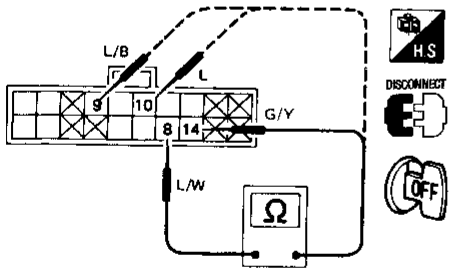
AEL153

F

ASCD control module connector (M20)



ASCD control module connector (M20)



AEL154

Ⓐ

D

CHECK SET/COAST SWITCH CIRCUIT FOR ASCD CONTROL MODULE.

1. Turn and keep on SET/COAST switch of ASCD steering switch.
2. Check voltage between control module harness terminals ② and ③.

Battery positive voltage should exist.

N.G. → Does horn work?

- No → Check fuse and horn relay.
- Yes → CHECK ASCD STEERING SWITCH. Refer to EL-151.

O.K. ↓

E

CHECK VEHICLE SPEED SENSOR CIRCUIT.

1. Apply wheel chocks and jack up front of vehicle.
2. Connect voltmeter between control module harness terminals ⑦ and ③.
3. Slowly turn front wheel.
4. Check deflection of voltmeter pointer.

N.G. → CHECK VEHICLE SPEED SENSOR. Refer to EL-152.

O.K. ↓

CHECK ASCD ACTUATOR/ASCD PUMP. Refer to EL-150.

N.G. → Replace ASCD actuator assembly.

O.K. ↓

F

CHECK ASCD ACTUATOR/ASCD PUMP CIRCUIT.

1. Check voltage between control module harness terminals ⑧ and ③.

Voltage is 0V.

2 Disconnect ASCD control module connector.

3 Measure resistance between control module harness terminals ⑧ and ⑨, ⑩, ⑭.

Terminals		Resistance [Ω]
⑧	⑨	Approx. 8 - 45
	⑩	Approx. 65
	⑭	Approx. 65

N.G. → Repair short or open circuit in ASCD actuator/ASCD pump harness.

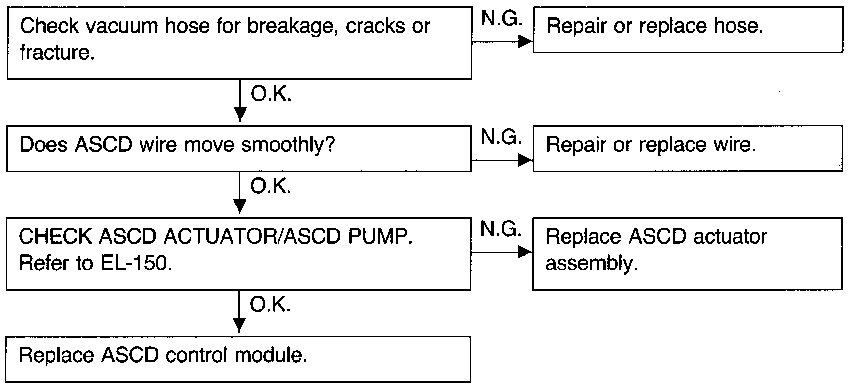
O.K. ↓

Replace ASCD control module.

Trouble Diagnoses (Cont'd)

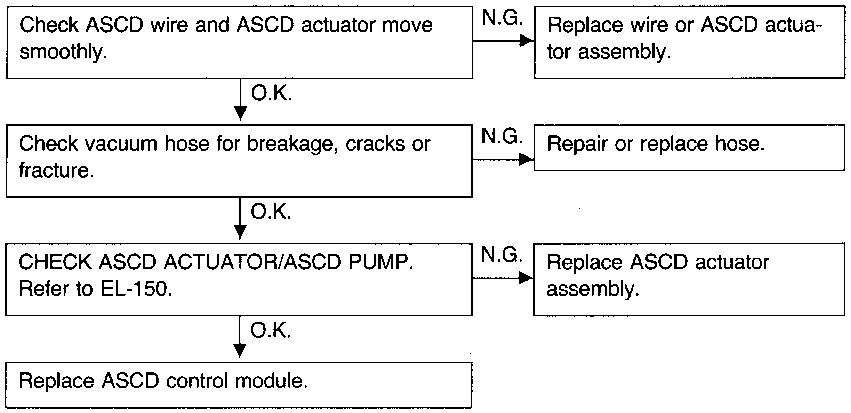
DIAGNOSTIC PROCEDURE 2

SYMPTOM: Engine hunts.



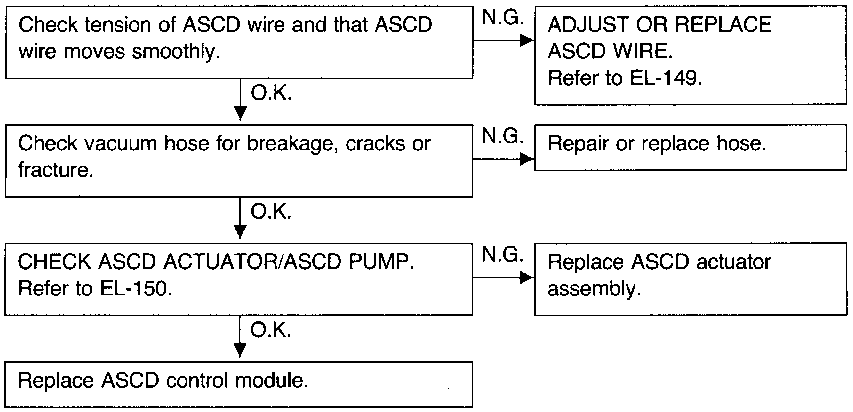
DIAGNOSTIC PROCEDURE 3

SYMPTOM: Large difference between set vehicle speed and actual speed.



DIAGNOSTIC PROCEDURE 4

SYMPTOM: Deceleration is greatest immediately after ASCD has been set.

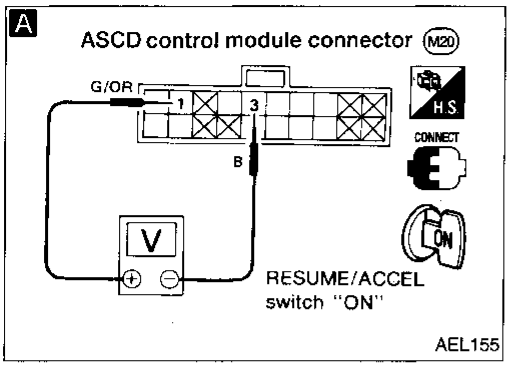


Trouble Diagnoses (Cont'd)

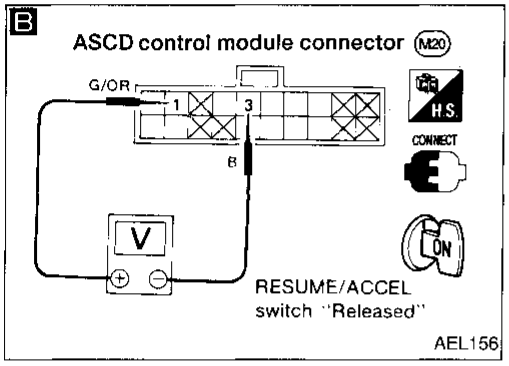
DIAGNOSTIC PROCEDURE 5

SYMPTOM: ACCEL switch will not operate.

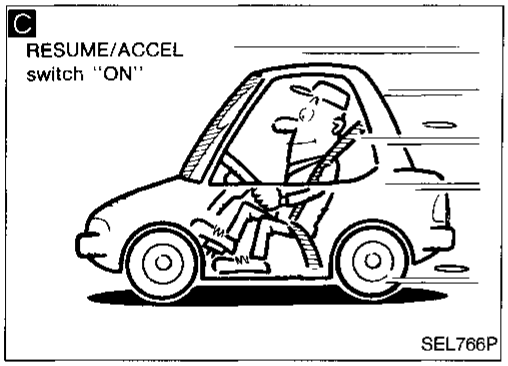
A



B



C



Check constant-speed function for operating using SET/COAST switch.
- N.G. → Peform "DIAGNOSTIC PROCEDURE 1". Refer to EL-142.
- O.K. ↓

A

Check voltage between control module harness terminals ① and ③ after turning on and holding RESUME/ACCEL switch.
Battery positive voltage should exist.
- N.G. → CHECK ASCD STEERING SWITCH. Refer to EL-151.
- O.K. ↓

B

Check voltage between control module harness terminals ① and ③ after releasing RESUME/ACCEL switch.
Voltage is 0V.
- N.G. → CHECK ASCD STEERING SWITCH. Refer to EL-151.
- O.K. ↓

C

Does vehicle accelerate when RESUME/ACCEL switch is turned on?
- No → Replace control module.
- Yes ↓

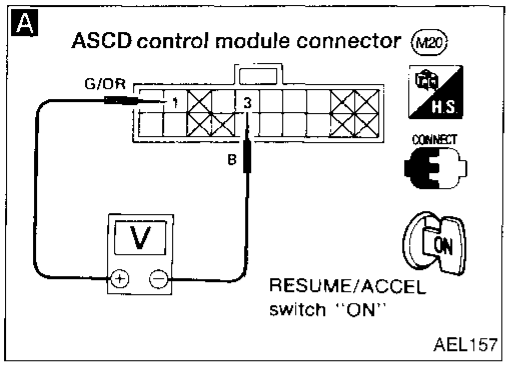
Does vehicle maintain the new (faster) speed when RESUME/ACCEL switch is released?
- No → Replace control module.
- Yes ↓

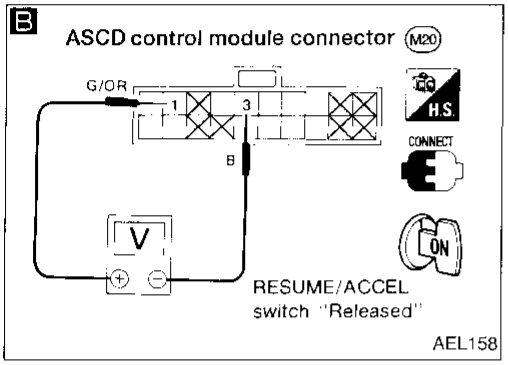
System is O.K.

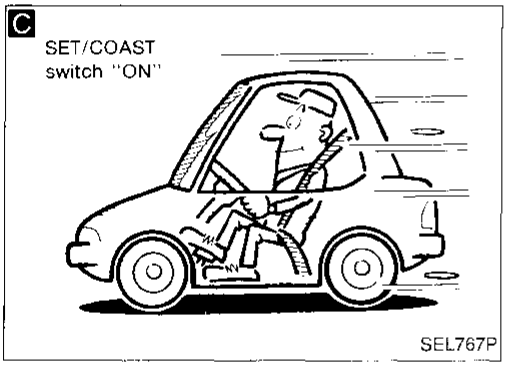
Trouble Diagnoses (Cont'd)

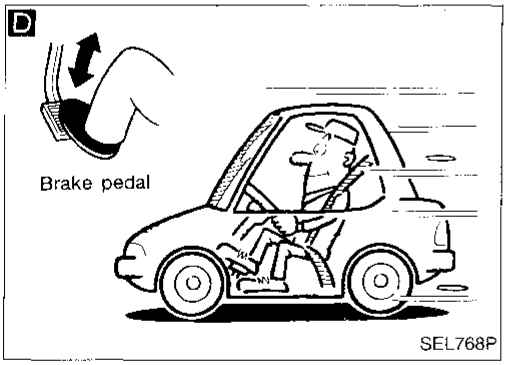
DIAGNOSTIC PROCEDURE 6

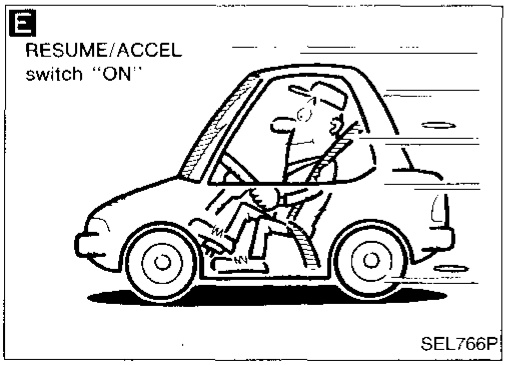
SYMPTOM: RESUME switch will not operate.











Check constant-speed function for operation using SET/COAST switch.
- N.G. → Perform "DIAGNOSTIC PROCEDURE 1". Refer to EL-142.
- O.K. ↓

A

Check voltage between control module harness terminals ① and ③ after turning on and holding RESUME/ACCEL switch.
Battery positive voltage should exist.
- N.G. → CHECK ASCD STEERING SWITCH. Refer to EL-151.
- O.K. ↓

B

Check voltage between control module harness terminals ① and ③ after releasing RESUME/ACCEL switch.
Voltage is 0V.
- N.G. → CHECK ASCD STEERING SWITCH. Refer to EL-151.
- O.K. ↓

C

Set vehicle speed at 80 km/h (50 MPH) by turning on SET/COAST switch.
- O.K. ↓

D

While cruising at set speed, depress and release brake pedal.
- O.K. ↓

Does speed control disengage and "CRUISE" lamp turn off?
- No → CHECK STOP LAMP SWITCH, ASCD CANCEL SWITCH AND ASCD CLUTCH PEDAL POSITION SWITCH (M/T models). Refer to EL-151.
- Yes ↓

E

Above 48 km/h (30 MPH), press and release "RESUME/ACCEL switch.
- O.K. ↓

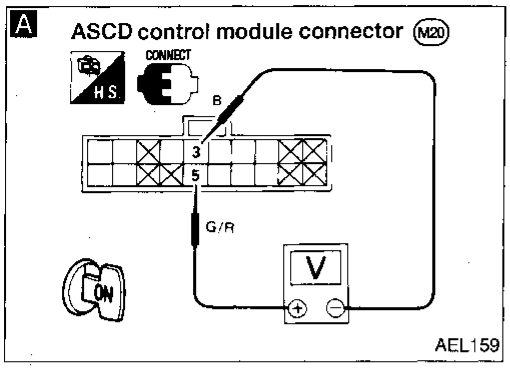
Does vehicle return to previously set speed [80 km/h (50 MPH)]?
- No → Replace control module.
- Yes ↓

System is O.K.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 7

SYMPTOM: Set speed cannot be cancelled.



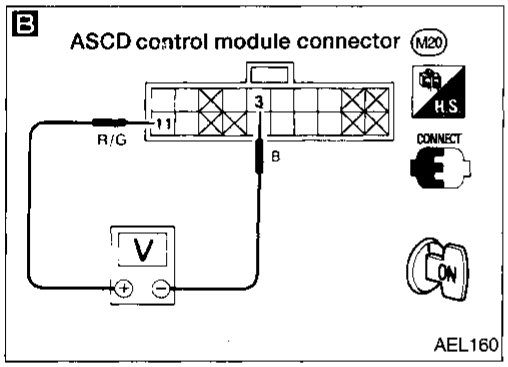
A

CHECK ASCD CANCEL, CLUTCH PEDAL POSITION, INHIBITOR SWITCH CIRCUIT.
1. Turn ASCD switch on.
2. Check voltage between control module harness terminals ⑤ and ③.

N.G. → CHECK ASCD CANCEL, CLUTCH PEDAL POSITION, and INHIBITOR SWITCH. Refer to EL-151.

Conditions			Voltage [V]
M/T	ASCD cancel switch	Depressed	0
		Released	Approx. 12
	ASCD clutch pedal position switch	Depressed	0
		Released	Approx. 12
A/T	A/T shift lever position is at any position except N or P.		Approx. 12
	A/T shift lever position is at N or P.		0

O.K. ↓



B

CHECK STOP LAMP SWITCH CIRCUIT.
Check voltage between control module harness terminals ⑪ and ③.

N.G. → CHECK STOP LAMP SWITCH. Refer to EL-151.

Condition		Voltage [V]
Stop lamp switch	Depressed	Approx. 12
	Released	0

O.K. ↓

Check ASCD wire moves smoothly.

N.G. → Replace ASCD wire.

O.K. ↓

CHECK ASCD ACTUATOR/ASCD PUMP.
Refer to EL-150.

N.G. → Replace ASCD actuator assembly.

O.K. ↓

Replace ASCD control module.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 8

SYMPTOM: "CRUISE" indicator lamp blinks.

Does indicator lamp blink when ASCD main switch is turned to "ON" again?

Yes → Does indicator lamp blink when brake pedal is depressed slowly?

- No → Adjust installation of stop lamp switch and ASCD cancel switch. Refer to BR section ("Adjustment", "BRAKE PEDAL AND BRACKET").
- Yes

No → CHECK ASCD ACTUATOR/ASCD PUMP. Refer to EL-150.

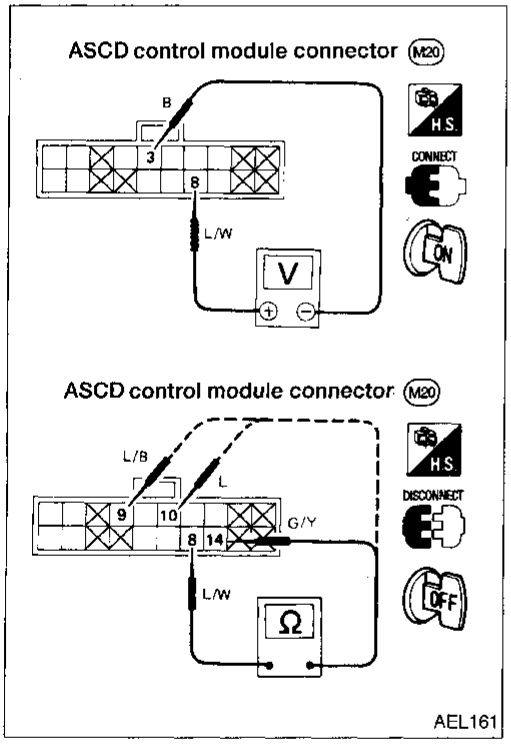
- N.G. → Replace ASCD actuator assembly.
- O.K. → CHECK ASCD ACTUATOR/ASCD PUMP CIRCUIT.
  1. Check voltage between control module harness terminals ⑧ and ③. **Voltage is 0V.**
  2. Disconnect ASCD control module connector.
  3. Measure resistance between control module harness terminals ⑧ and ⑨, ⑩, ⑭.

  - N.G. → Repair short or open circuit in ASCD actuator/ ASCD pump harness.
  - O.K. → Replace ASCD control module.

CHECK ASCD STEERING SWITCH. Refer to EL-151.

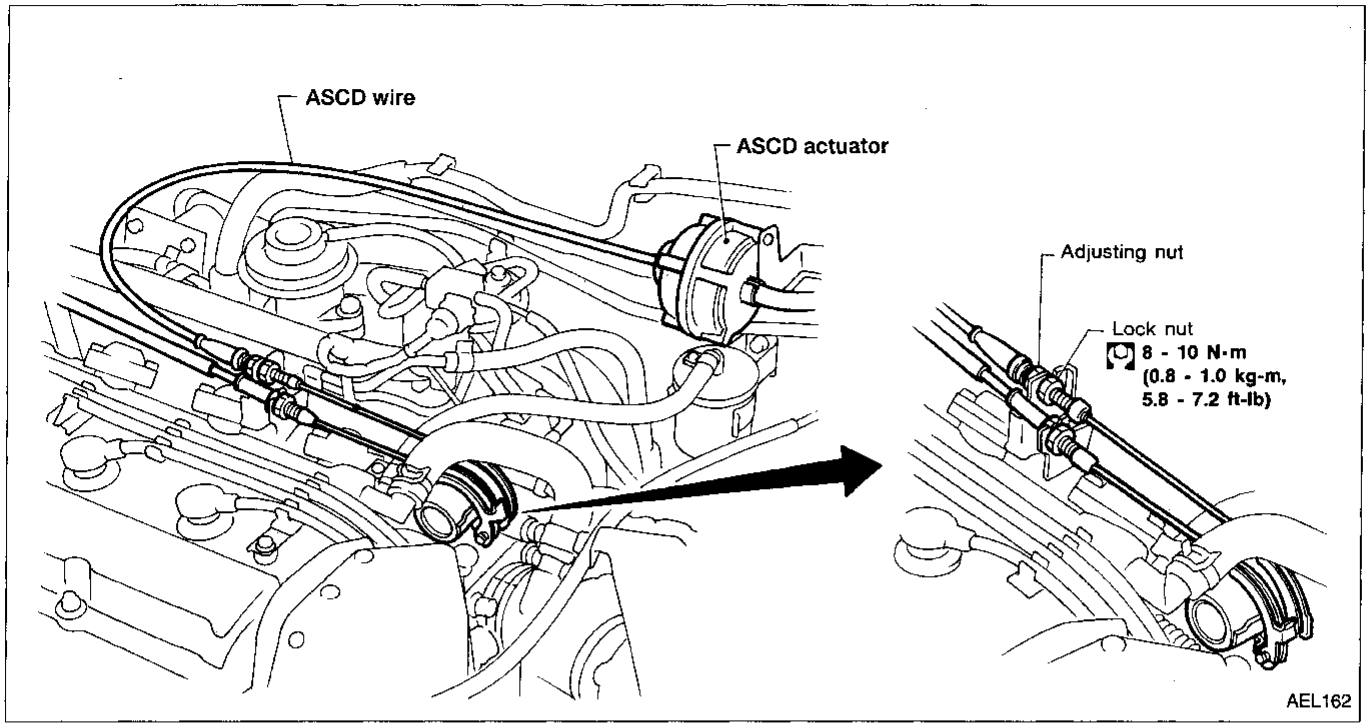
- N.G. → Replace ASCD steering switch.
- O.K. → Replace control module.

Terminals		Resistance [Ω]
⑧	⑨	Approx. 8 - 45
	⑩	Approx. 65
	⑭	Approx. 65



Trouble Diagnoses (Cont'd)

ASCD WIRE ADJUSTMENT



CAUTION:

- **Be careful not to twist ASCD wire when removing it.**
- **Do not overly tighten ASCD wire during adjustment.**

Confirm that accelerator wire is properly adjusted.

- **For accelerator cable adjustment, refer to FE section ("Adjusting Accelerator Cable", "ACCELERATOR CONTROL SYSTEM").**

Adjust the ASCD wire as follows.

(1) Loosen lock nut and tighten adjusting nut until throttle drum starts to move.

(2) From that position turn back adjusting nut 0.5 to 1 turn, and secure lock nut.
(This prevents a delay in the operation of the ASCD.)

- For ASCD cancel switch and clutch pedal position switch adjustment, refer to BR and CL sections ("Adjustment", "BRAKE PEDAL AND BRACKET" and "Adjusting Clutch Pedal", "INSPECTION AND ADJUSTMENT", respectively).

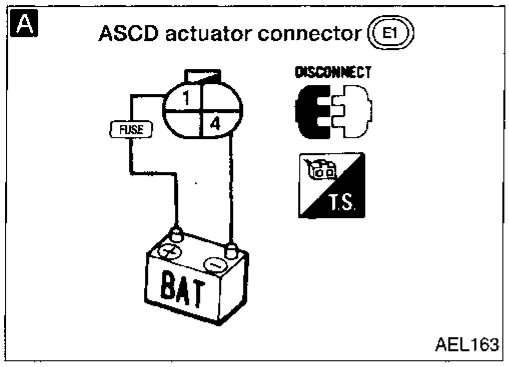
Trouble Diagnoses (Cont'd)

ELECTRICAL COMPONENTS INSPECTION

ASCD actuator/ASCD pump

1. Disconnect ASCD actuator/ASCD pump connector.
2. Check ASCD actuator/ASCD pump operations as shown.

A

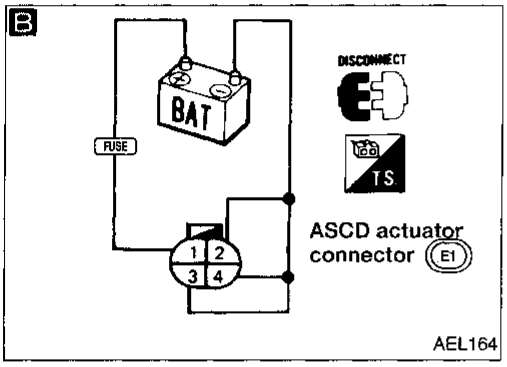


Check to see if motor starts when 12V D.C. is applied across ① and ④.

N.G. → Replace ASCD actuator assembly.

O.K. ↓

B

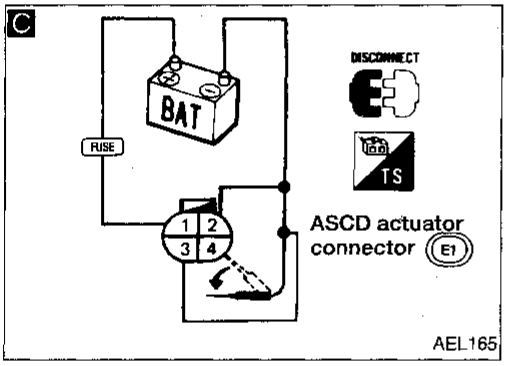


Check to see if ASCD wire is pulled when 12V D.C. is applied across ①, ②, ③ and ④.

N.G. → Replace ASCD actuator assembly.

O.K. (Wire is pulled.) ↓

C

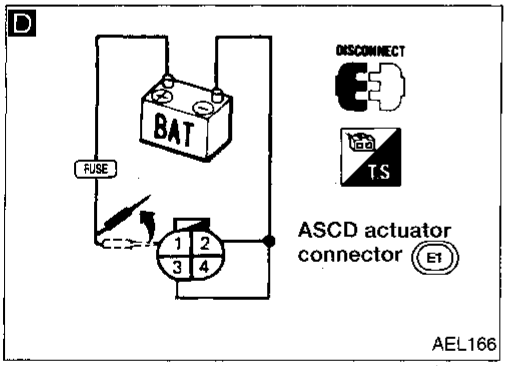


Check to see if ASCD wire returns to original position 50 to 60 seconds after disconnecting lead from ④.

N.G. → Replace ASCD actuator assembly.

O.K. (Wire does not return.) ↓

D



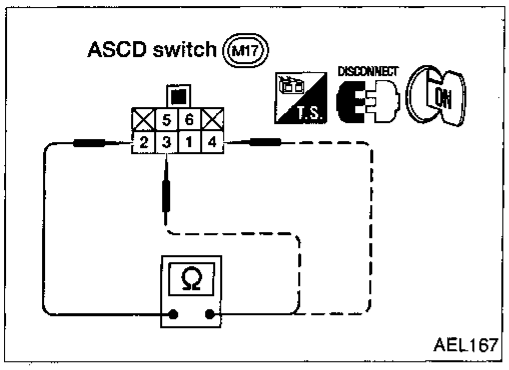
Disconnect lead from ① to see if ASCD wire returns immediately.

N.G. → Replace ASCD actuator assembly.

O.K. (Wire returns.) ↓

ASCD actuator/ASCD pump are O.K.

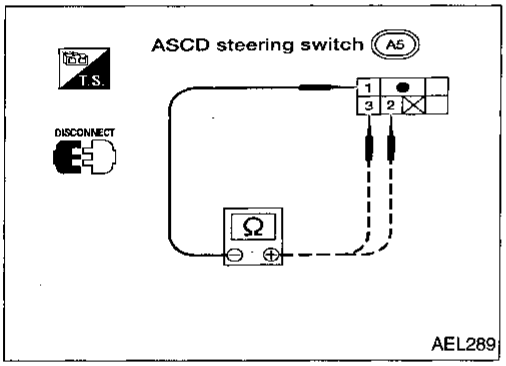
Trouble Diagnoses (Cont'd)



ASCD main switch

Check continuity between terminals by pushing switch to each position.

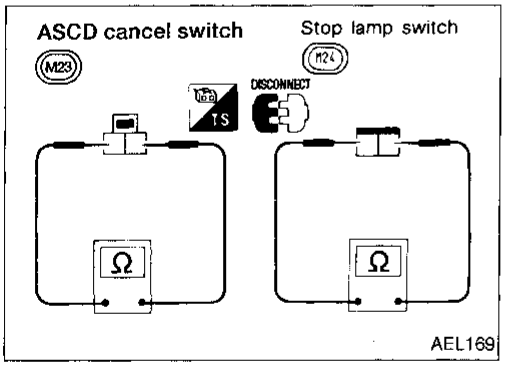
Switch position	Terminal					
	1	2	3	4	5	6
ON	○	○	○	○		
N		○	○	○	ILL. ○	○
OFF						



ASCD steering switch

Check continuity between terminals by pushing each button.

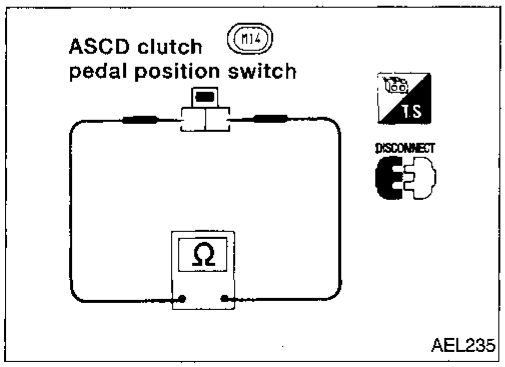
Button	Terminal		
	1	2	3
SET/COAST	○	○	
RESUME/ACCEL	○		○
CANCEL	○	▶ ○	
	○	▶	○



ASCD cancel switch and stop lamp switch

Condition	Continuity	
	ASCD cancel switch	Stop lamp switch
When brake pedal is depressed	No	Yes
When brake pedal is released	Yes	No

Check each switch after adjusting brake pedal — refer to BR section ("Adjustment", "BRAKE PEDAL AND BRACKET").

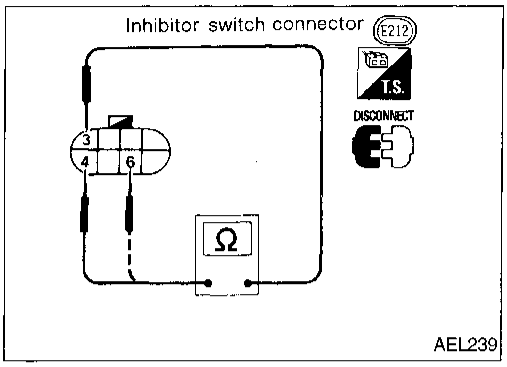


ASCD clutch pedal position switch (For M/T models)

Condition	Continuity
When clutch pedal is depressed	No
When clutch pedal is released	Yes

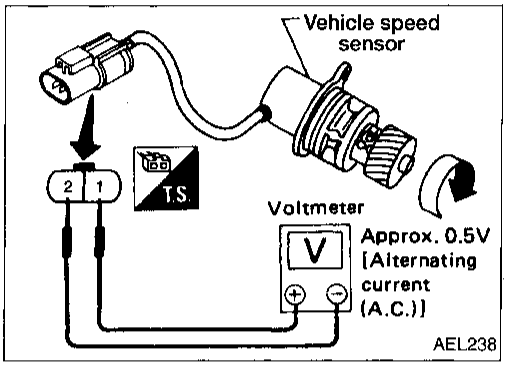
Check switch after adjusting clutch pedal — refer to CL section ("Adjusting Clutch Pedal", "INSPECTION AND ADJUSTMENT").

Trouble Diagnoses (Cont'd)



Inhibitor switch (For A/T models)

Shift lever position	Terminal		
	3	4	6
"P"	○	○	
"N"	○		○
Except "N" or "P"			



Vehicle speed sensor

1 Remove vehicle speed sensor from transaxle.
2. Turn vehicle speed sensor pinion quickly and measure voltage across ② and ①.

System Description

Refer to Owner's Manual for theft warning system operating instructions.

Power is supplied at all times
- through 30A fusible link (letter B , located in the fusible link and fuse box)
- to ignition switch terminal ①.

With the ignition switch in the START position, power is supplied
- from terminal ⑤ of the ignition switch
- to clutch interlock relay terminal ③ (M/T models) or
- to theft warning relay-1 terminal ③ (A/T models).

With the ignition switch in the START position, power is supplied
- from terminal ⑥ of the ignition switch (M/T models)
- through 10A fuse (No. 16 , located in the fuse block)
- to theft warning relay-1 terminal ③.

With the ignition switch in the ON or START position, power is supplied
- through 10A fuse (No. 26 , located in the fuse block)
- to theft warning relay-1 terminal ①.

Power is supplied at all times
- through 10A fuse (No. 20 , located in the fuse block)
- to theft warning control module terminal ① and
- to combination meter terminal ㉜.

Power is supplied at all times
- through 10A fuse (No. 17 , located in the fuse block)
- to trunk room lamp switch terminal ⓐ.

With the ignition switch in the ACC or ON position, power is supplied
- through 10A fuse (No. 12 , located in the fuse block)
- to theft warning control module terminal ③.

Ground is supplied
- to theft warning control module terminal ⑯
- through body grounds (M51), (M76) and (M77).

THEFT WARNING SYSTEM ACTIVATION (Without key used to lock front doors)

The operation of the theft warning system is controlled by the doors, hood and trunk lid.

To activate the theft warning system, the key must be removed from the ignition switch and the theft warning control module must receive signals indicating the doors, hood and trunk are closed and the doors are locked.

When a door is open, theft warning control module terminal ⑤ receives a ground signal from each door switch.

When a door is unlocked, theft warning control module terminal ⑨ receives a ground signal
- from terminal ② of the door unlock sensor
- through body grounds (M51), (M76) and (M77) for the front doors and
- through body grounds (B6) and (B14) for the rear doors.

When the hood is open, theft warning control module terminal ⑮ receives a ground signal
- from terminal ① of the hood switch
- through body grounds (E12) and (E37).

When the trunk lid is open, theft warning control module terminal ⑭ receives a ground signal
- from terminal ① of the trunk room lamp switch
- through body ground (T7).

If none of the described conditions exist, the theft warning system will activate automatically.

THEFT WARNING SYSTEM ACTIVATION (With key used to lock doors)

If the rear doors are locked and the key is used to lock either front door, theft warning control module terminal ⑦ receives a ground signal
- from terminal ① of the front LH or RH key cylinder switch
- through body grounds (M51), (M76) and (M77).

If this signal is received by the theft warning control module, the theft warning system will activate automatically.

System Description (Cont'd)

Once the theft warning system has been activated, theft warning control module terminal ② supplies ground to combination meter terminal ㊴ for the security lamp.
The security lamp will illuminate for approximately 30 seconds and then go out.

THEFT WARNING SYSTEM OPERATION

The theft warning system is triggered by
- opening a door or the trunk lid without using the key
- opening the hood
- tampering with the key cylinder in the door or trunk lid.

Once the theft warning system has been activated, if the theft warning control module receives a ground signal at terminal ⑤, terminal ⑭ or terminal ⑮ (as described under THEFT WARNING SYSTEM ACTIVATION), the theft warning system will be triggered. Also, when one of the following signals is received at the theft warning control module, the system will be triggered. The headlamps flash and the horn sounds intermittently, and the starting system is interrupted.
When a door key cylinder switch has been tampered with, theft warning control module terminal ⑥ receives a ground signal
- from terminal ③ of the front LH or RH key cylinder switch
- through body grounds (M51), (M76) and (M77).

When the trunk key cylinder switch has been tampered with, theft warning control module terminal ⑥ receives a ground signal
- from terminal ② of the trunk key cylinder switch
- through body ground (T7).

If the theft warning system is triggered, ground is supplied
- from terminal ④ of the theft warning control module
- to theft warning relay-1 terminal ②.

With power and ground supplied, power to the clutch interlock relay (M/T models) or inhibitor switch (A/T models) is interrupted. The starter motor will not crank and the engine will not start.
Power is supplied at all times
- through 75A fusible link (letter E , located in fusible link and fuse box), and
- through 10A fuse (No. 35 , located in fusible link and fuse box)
- to theft warning relay-2 terminals ① and ③, and
- to theft warning relay-3 terminal ①.

Power is supplied at all times
- through 15A fuse (No. 37 , located in fusible link and fuse box)
- to theft warning relay-3 terminal ⑥.

Power is supplied at all times
- through 15A fuse (No. 36 , located in the fusible link and fuse box)
- to theft warning relay-3 terminal ③.

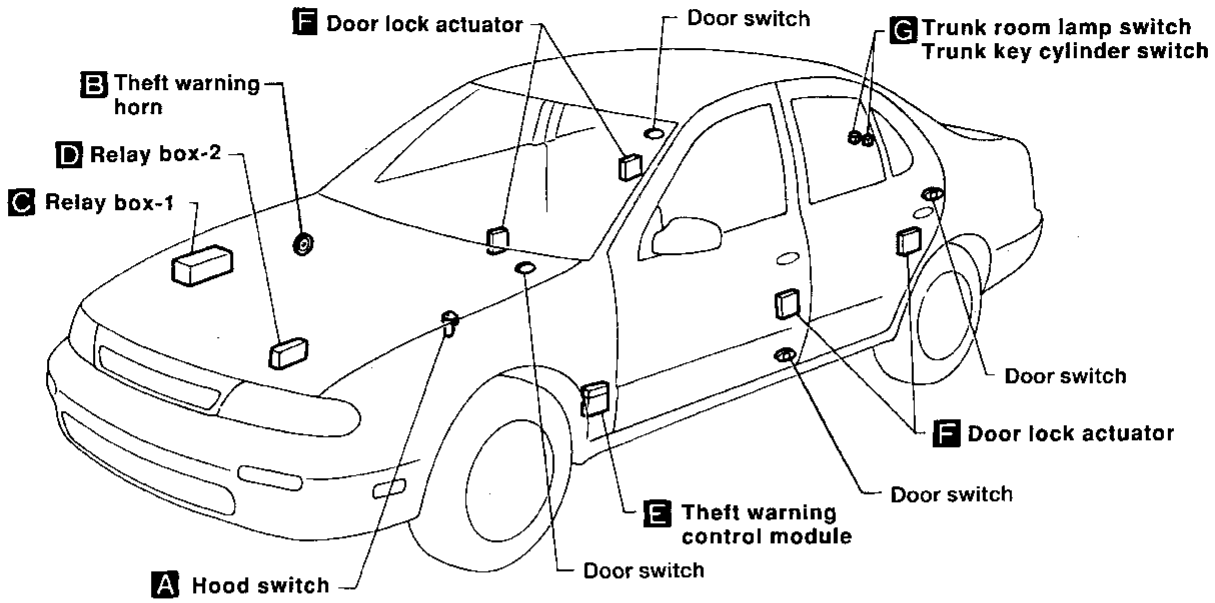
When the theft warning system is triggered, ground is supplied intermittently
- from terminal ⑫ of the theft warning control module
- to theft warning relay-2 terminal ② and
- to theft warning relay-3 terminal ②.

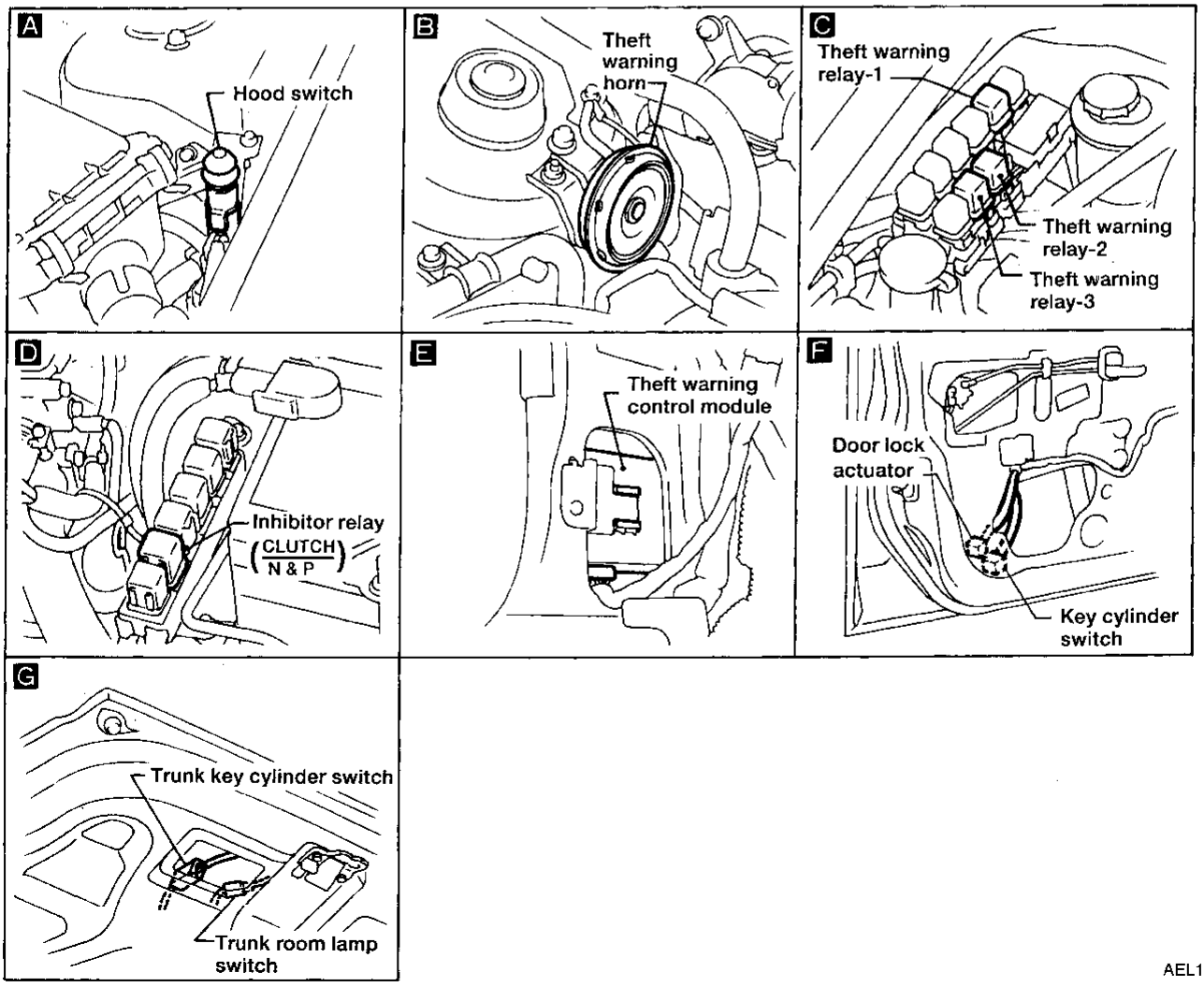
The headlamps flash and the horn sounds intermittently.
The alarm automatically turns off after 2 or 3 minutes but will reactivate if the vehicle is tampered with again.

THEFT WARNING SYSTEM DEACTIVATION

To deactivate the theft warning system, a door or the trunk lid must be unlocked with the key.
When the key is used to unlock a door, theft warning control module terminal ⑪ receives a ground signal from terminal ② of the front LH or RH key cylinder switch.
When the key is used to unlock the trunk lid, theft warning control module terminal ⑩ receives a ground signal from terminal ① of the trunk key cylinder switch.
When the theft warning control module receives either one of these signals, the theft warning system is deactivated.

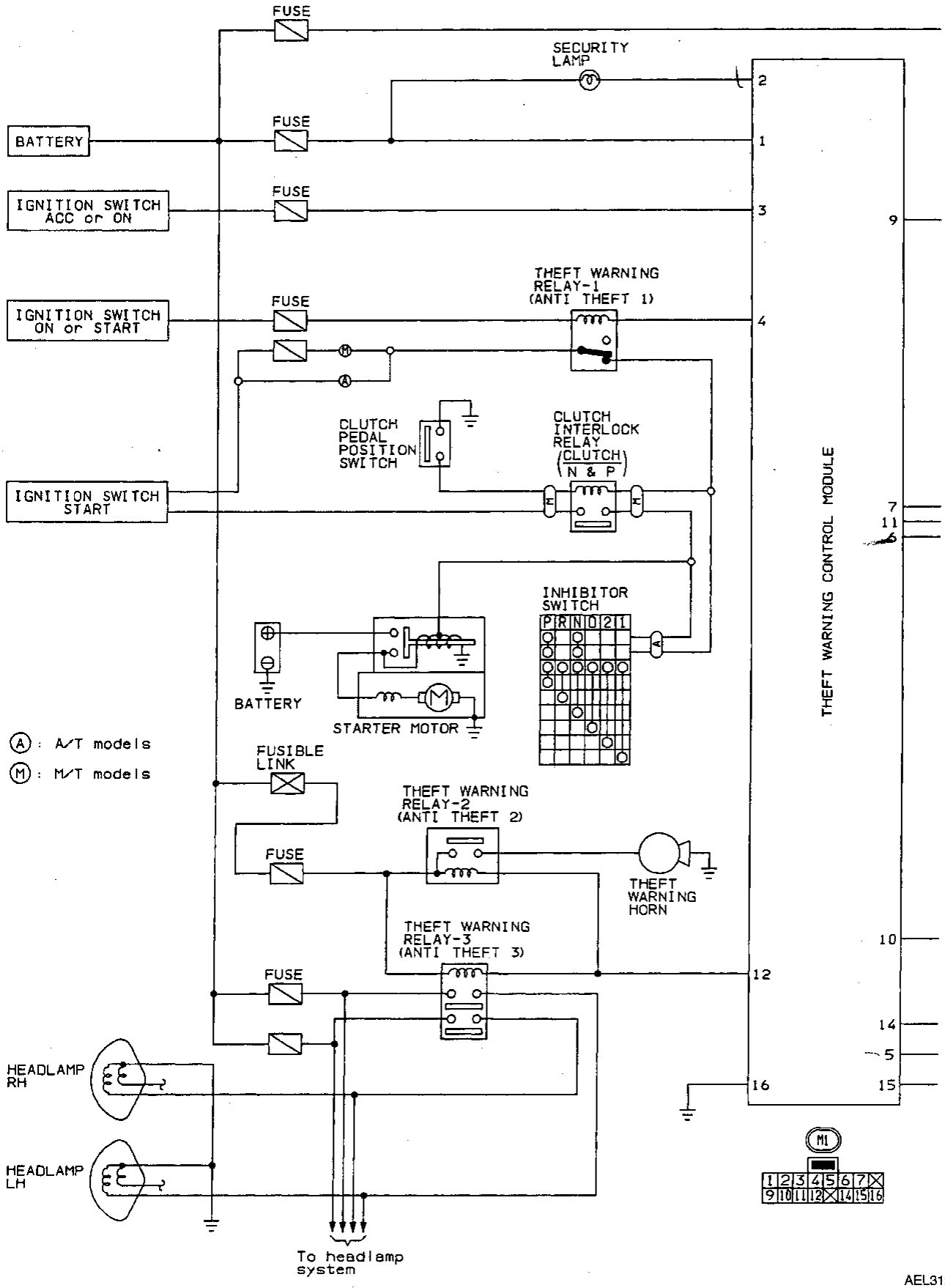
Component Parts and Harness Connector Location





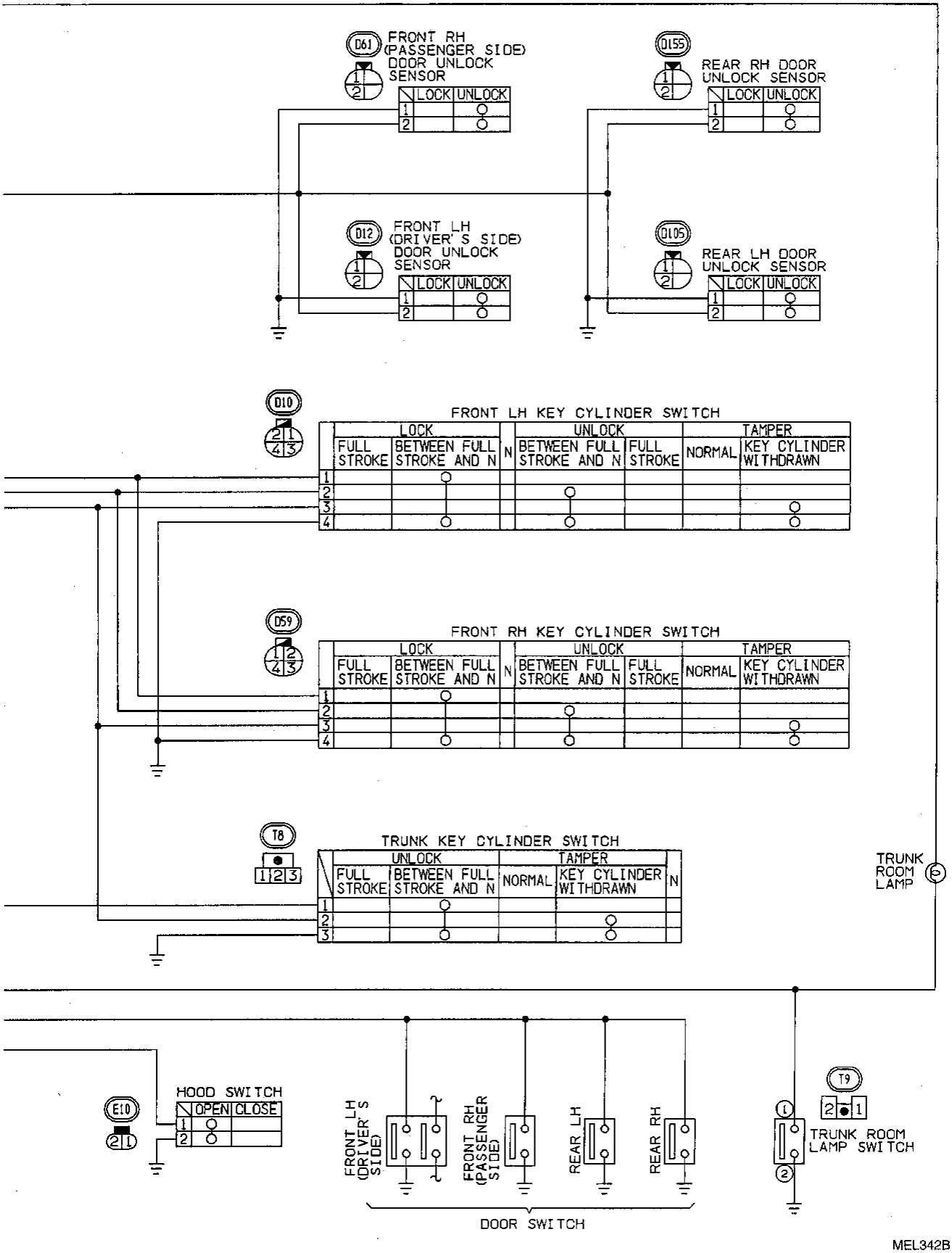
AEL170

Circuit Diagram for Quick Pinpoint Check



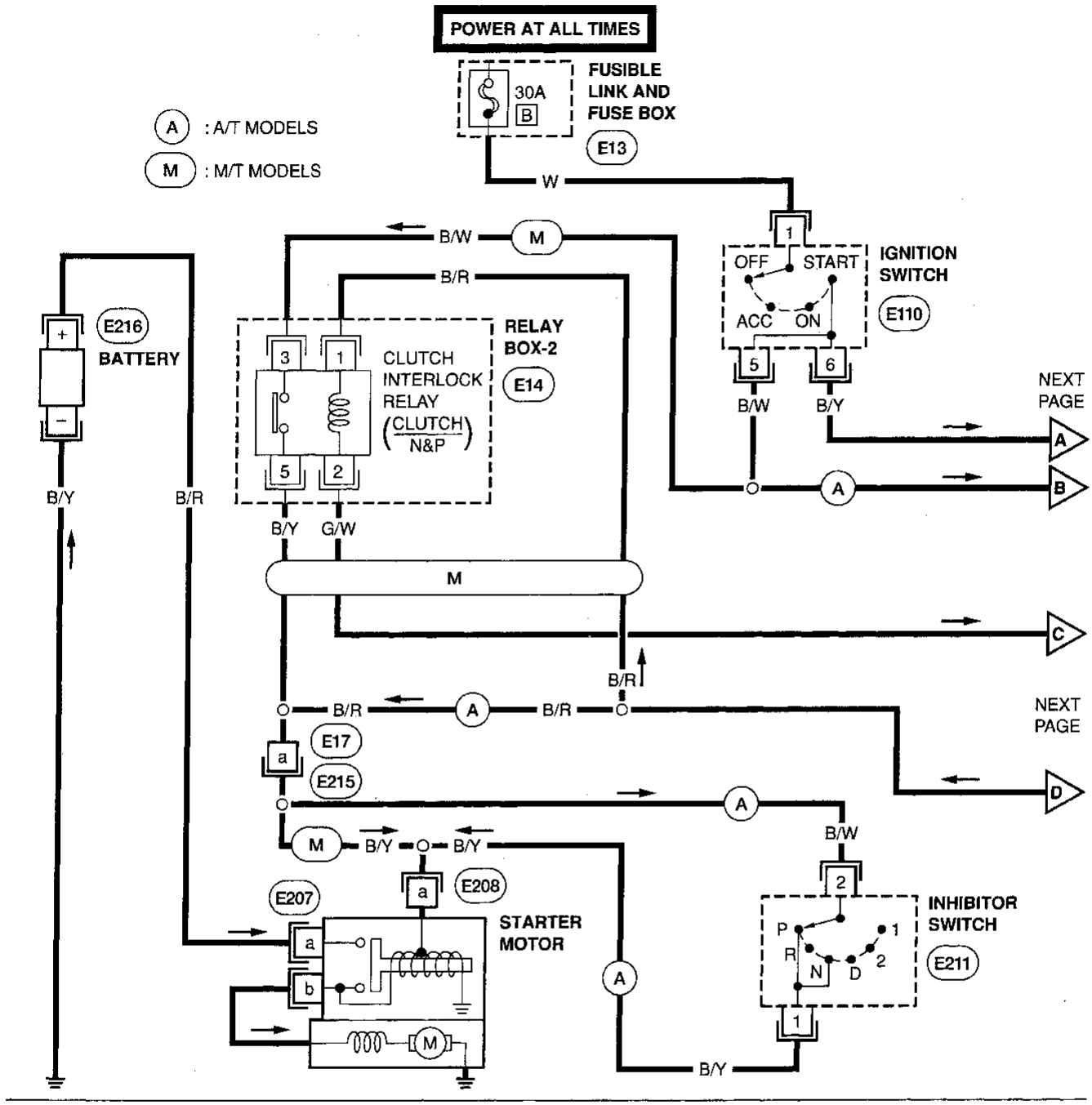
AEL312

Circuit Diagram for Quick Pinpoint Check (Cont'd)

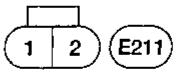


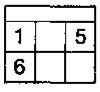
MEL342B

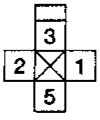
Wiring Diagram

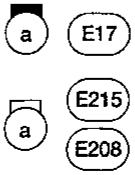


Refer to POWER SUPPLY ROUTING. E13





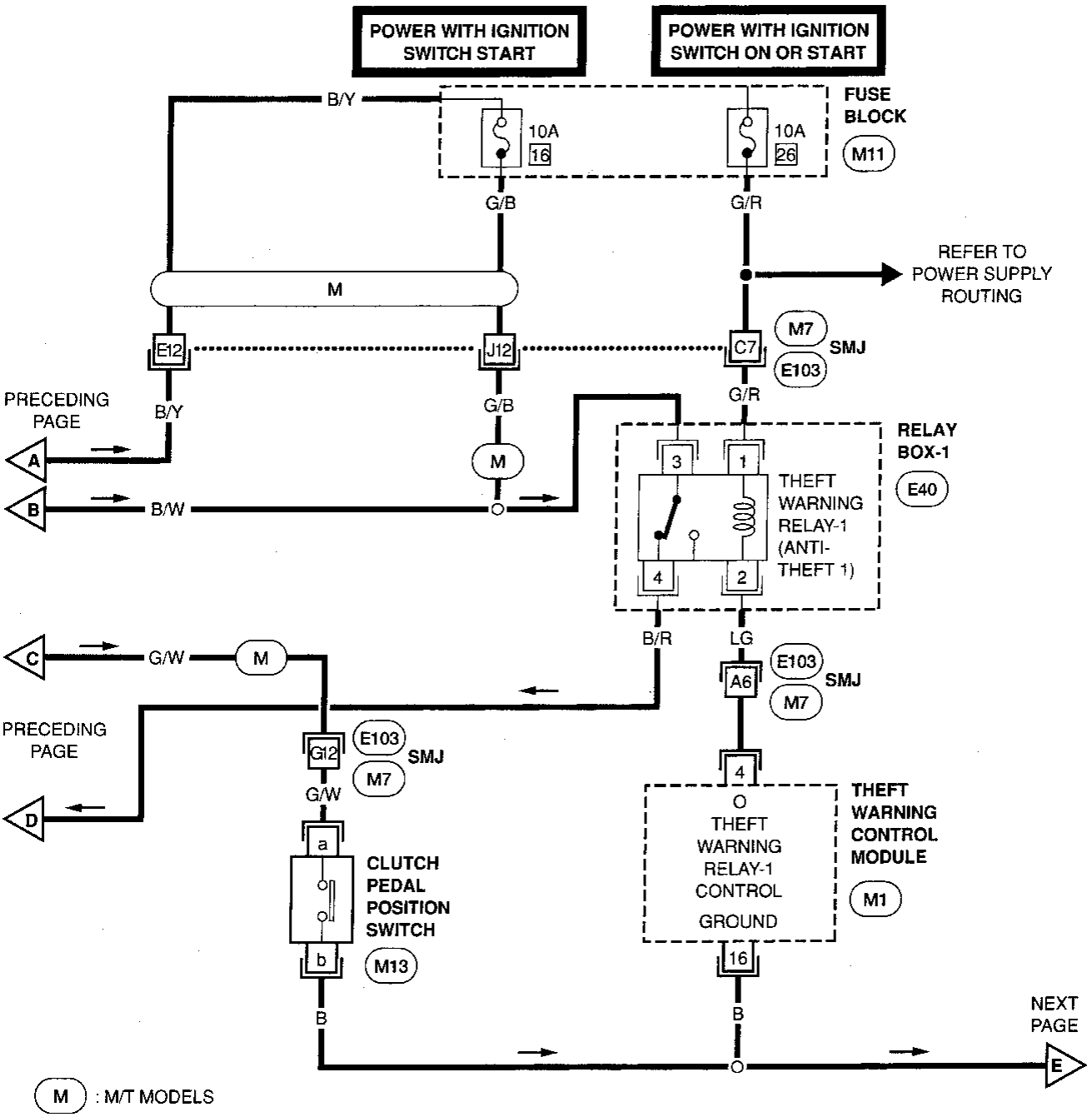




BATTERY TERMINAL

AEL269-A

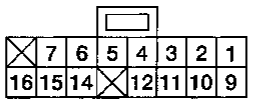
Wiring Diagram (Cont'd)

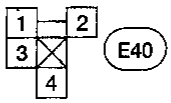


Refer to POWER SUPPLY ROUTING. M11

Refer to Foldout Page for details. E103 M7

a b M13

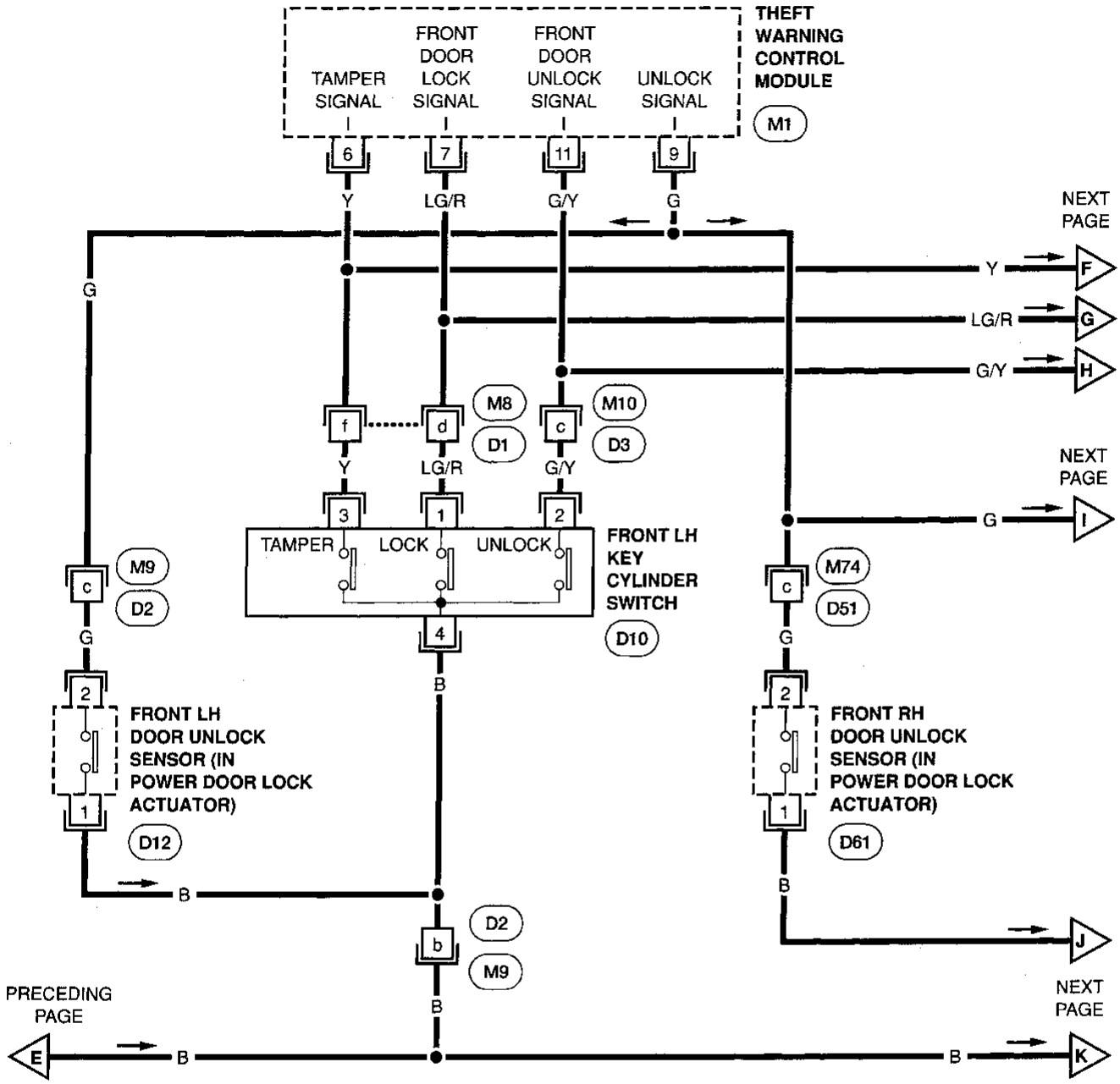


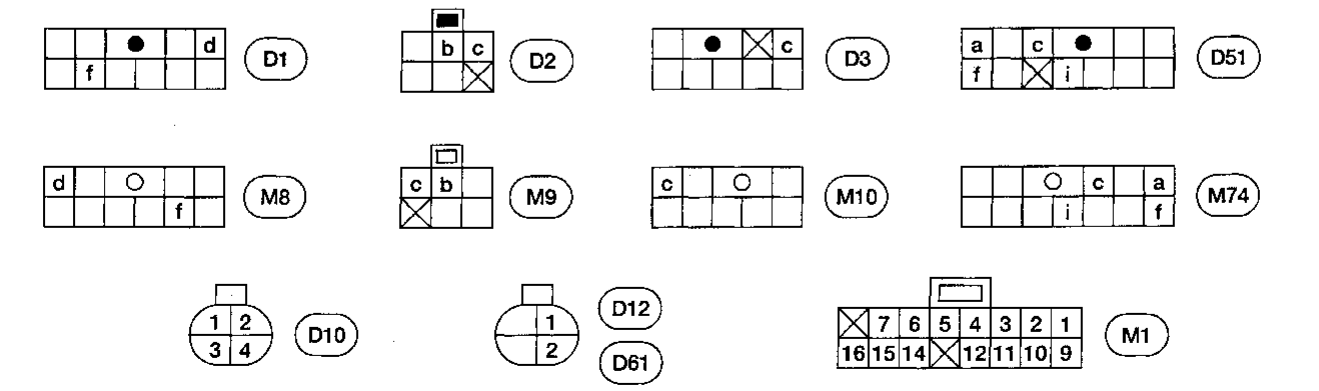


AEL269-B

1127

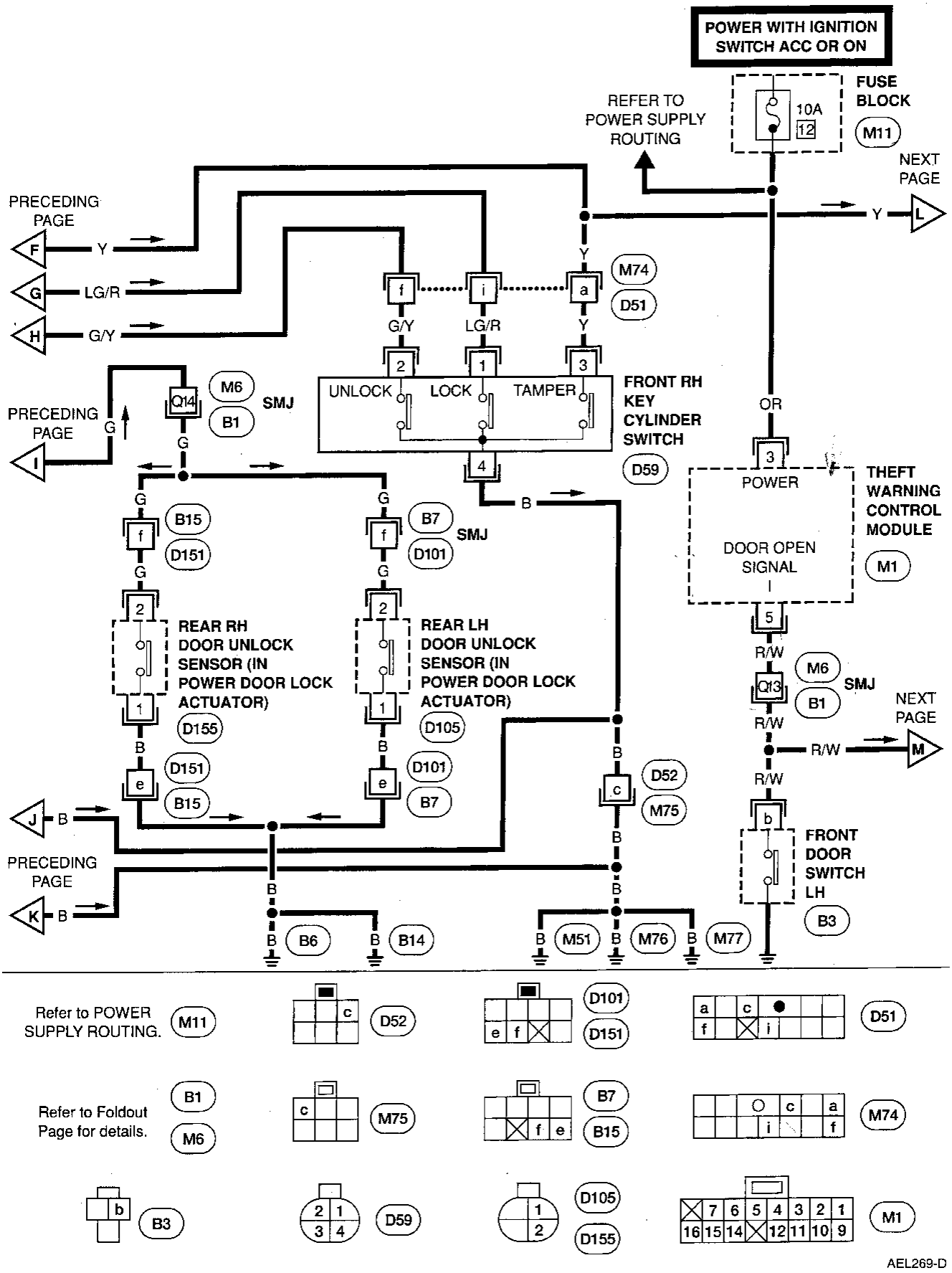
Wiring Diagram (Cont'd)





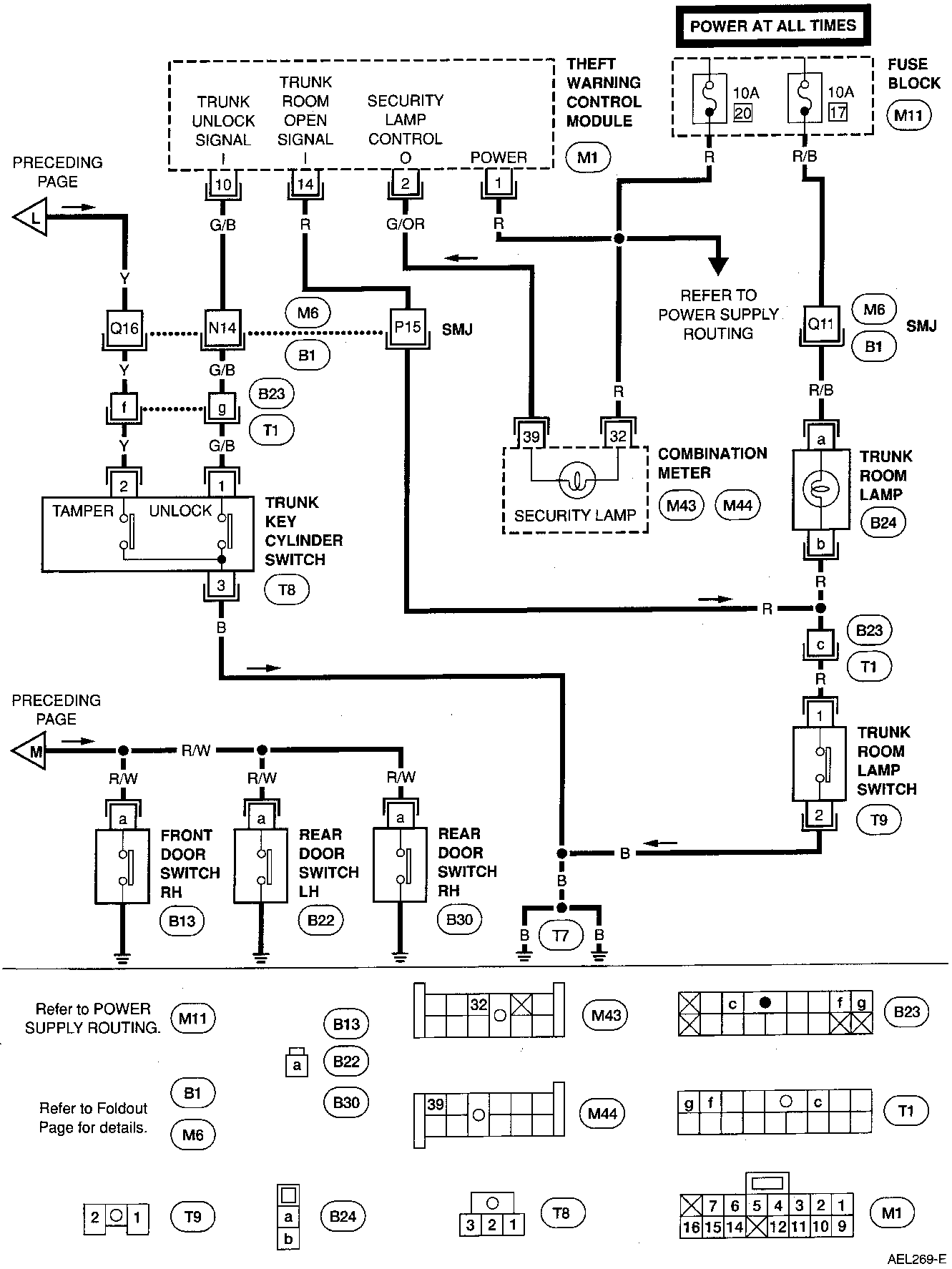
AEL269-C

Wiring Diagram (Cont'd)

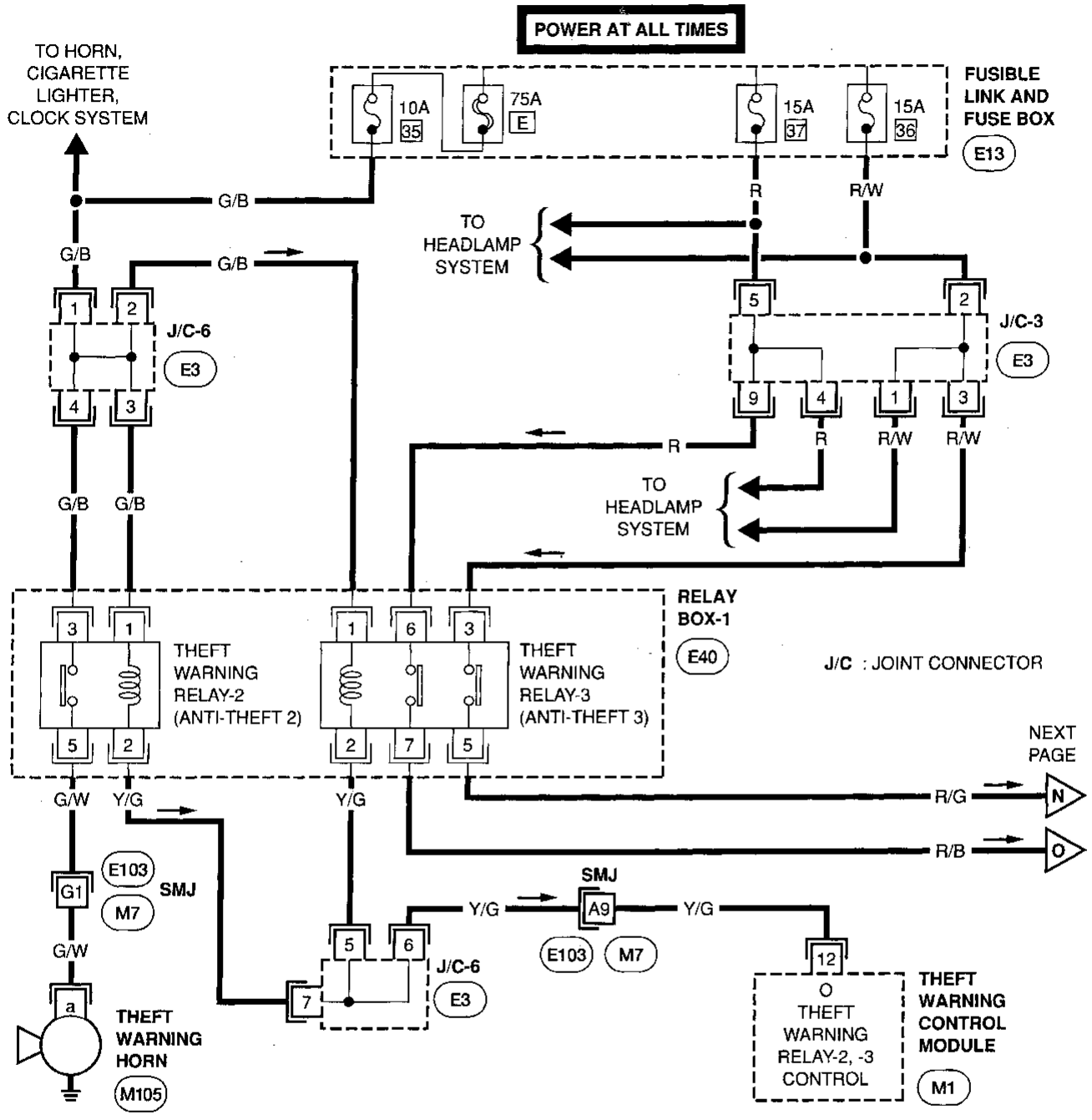


AEL269-D

Wiring Diagram (Cont'd)



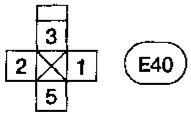
Wiring Diagram (Cont'd)

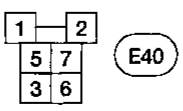


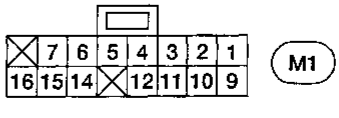
Refer to POWER SUPPLY ROUTING. E13

Refer to Foldout Page for details. E103 M7 E3

a M105

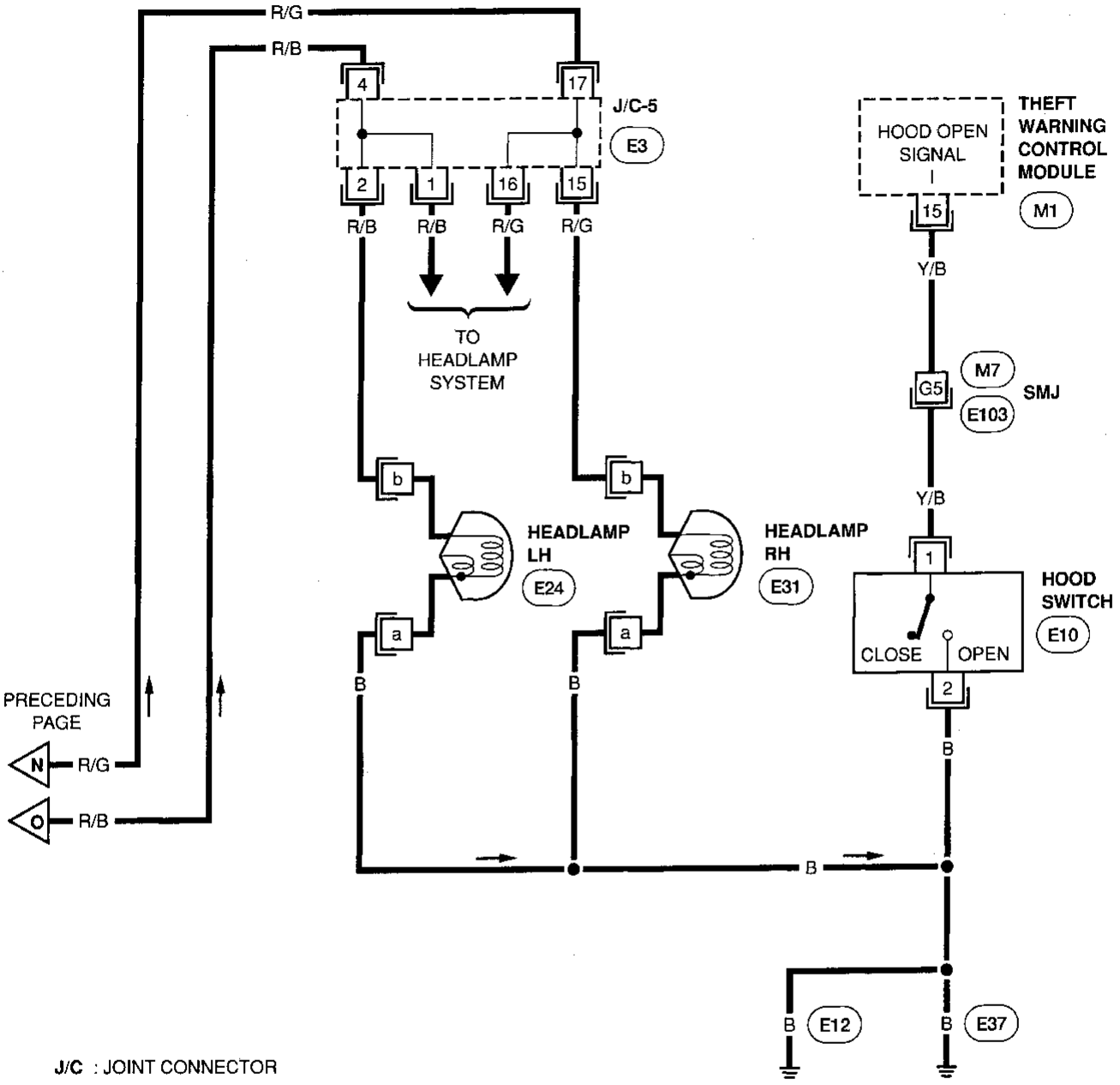


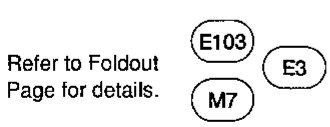


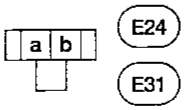


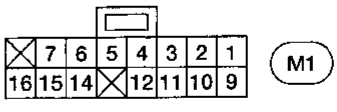
AEL269-F

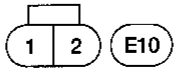
Wiring Diagram (Cont'd)









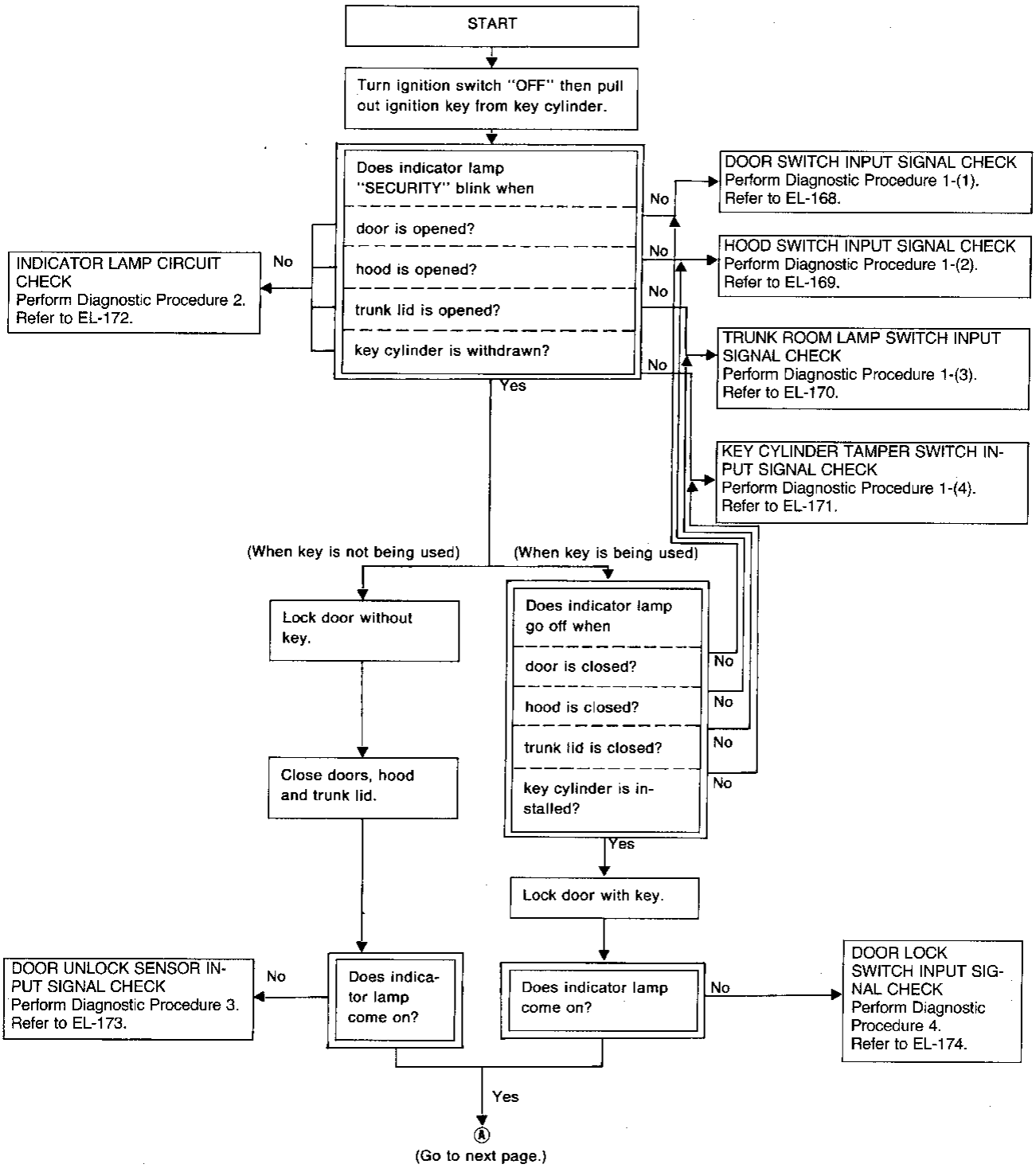


AEL269-G

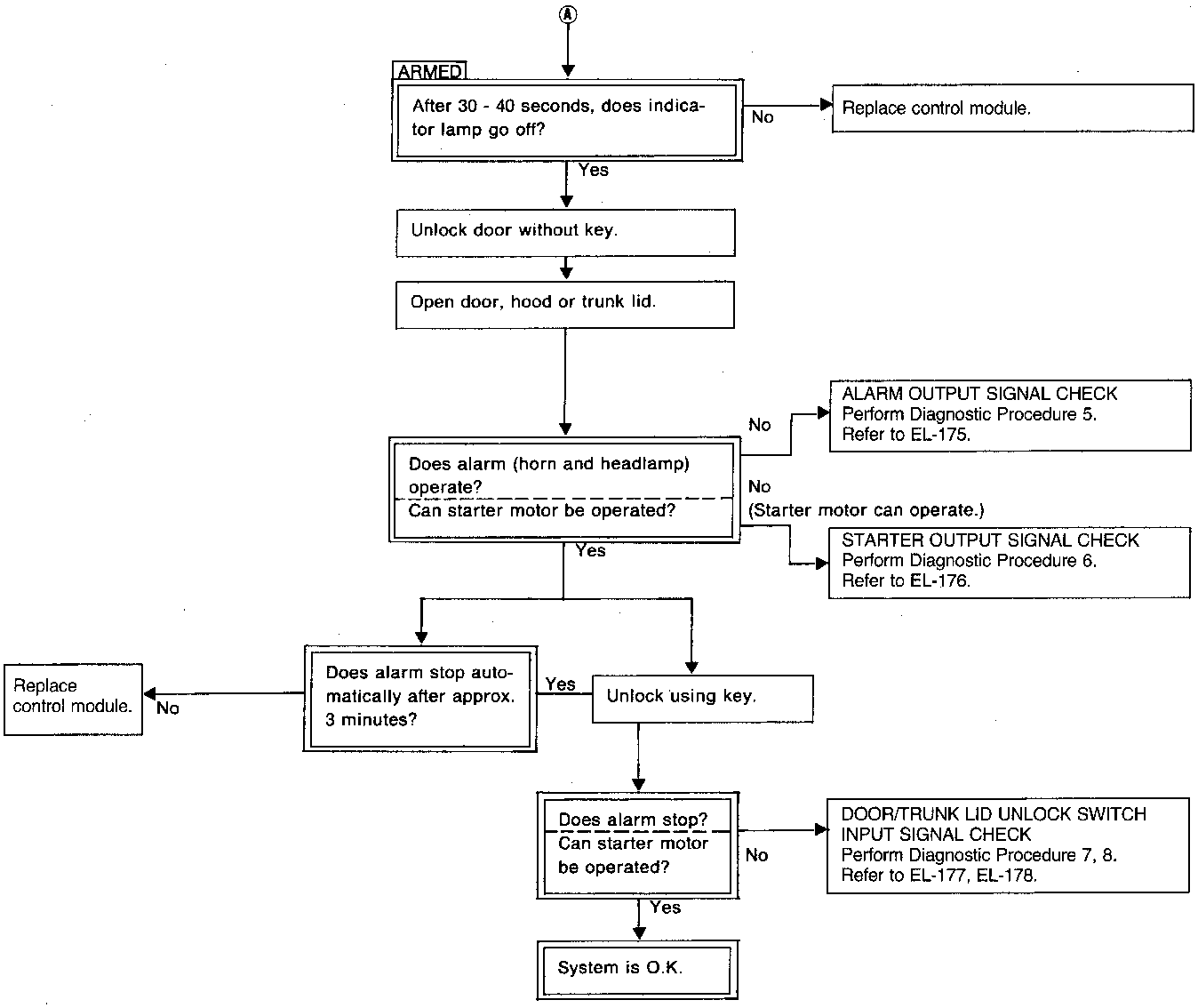
Trouble Diagnoses

SYSTEM OPERATION CHECK

If ignition switch is set in the "ACC" position in the step of START to ARMED or in the ARMED state shown in this flow chart, the system operation is canceled.

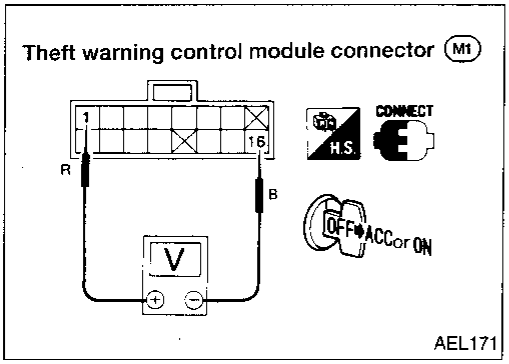


Trouble Diagnoses (Cont'd)



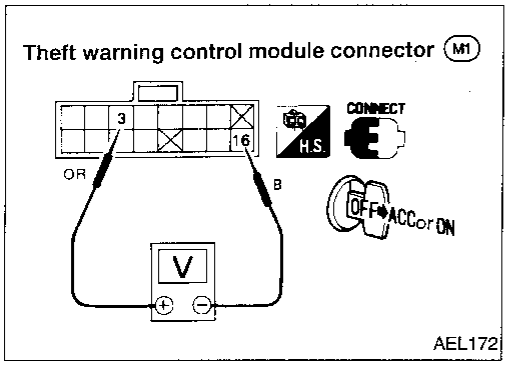
Trouble Diagnoses (Cont'd)

POWER SUPPLY AND GROUND CIRCUIT CHECK



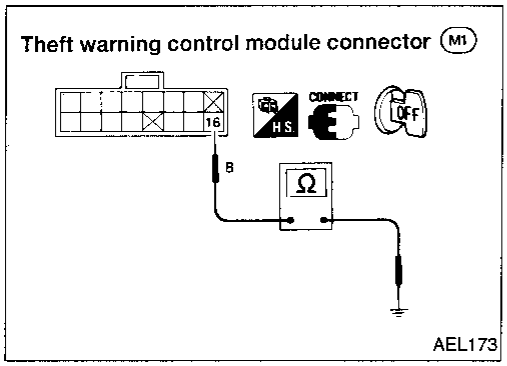
Main power supply circuit check

Terminals	Ignition switch position		
	OFF	ACC	ON
① - ⑯	Battery positive voltage	Battery positive voltage	Battery positive voltage



Power supply circuit check for system cancel

Terminals	Ignition switch position		
	OFF	ACC	ON
③ - ⑯	0V	Battery positive voltage	Battery positive voltage



Ground circuit check

Terminals	Continuity
⑯ - Ground	Yes

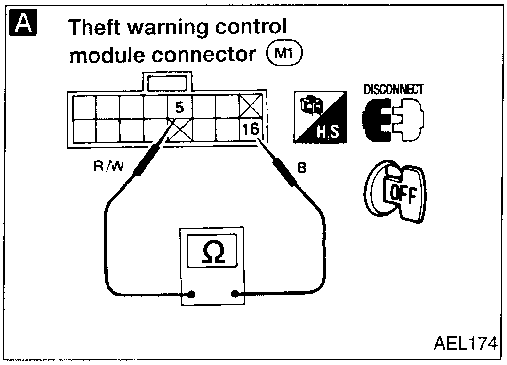
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 1

SYMPTOM: ● Indicator lamp does not blink.
● Indicator lamp remains blinking.

Diagnostic procedure 1-(1)

A



DOOR SWITCH INPUT SIGNAL CHECK
Check continuity between control module harness terminals ⑤ and ⑯.

Condition	Continuity
All doors are closed	No
At least one door is open	Yes

O.K. → Peform Diagnostic Procedure 2. Refer to EL-172.

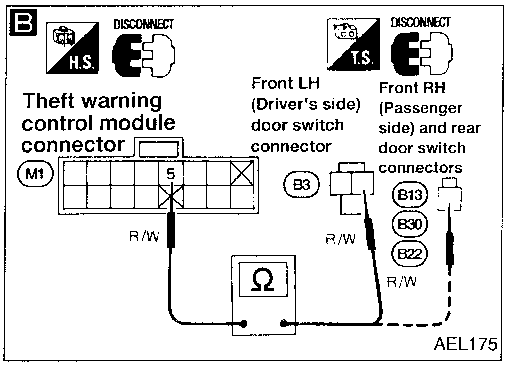
N.G.

DOOR SWITCH CHECK
Refer to EL-179.

N.G. → Replace door switch.

O.K.

B



DOOR SWITCH CIRCUIT CHECK
Check harness continuity between control module harness terminal ⑤ and door switch harness terminal.
Continuity should exist.

N.G. → Repair harness or connectors.

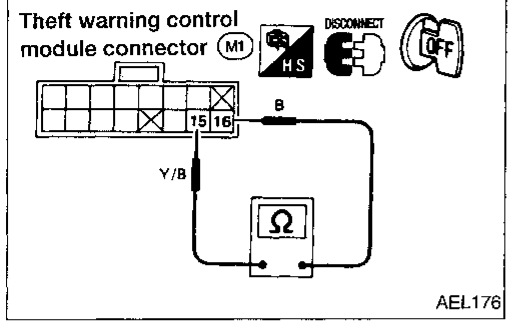
O.K.

CHECK THE CONNECTIONS AT EACH CONNECTOR.

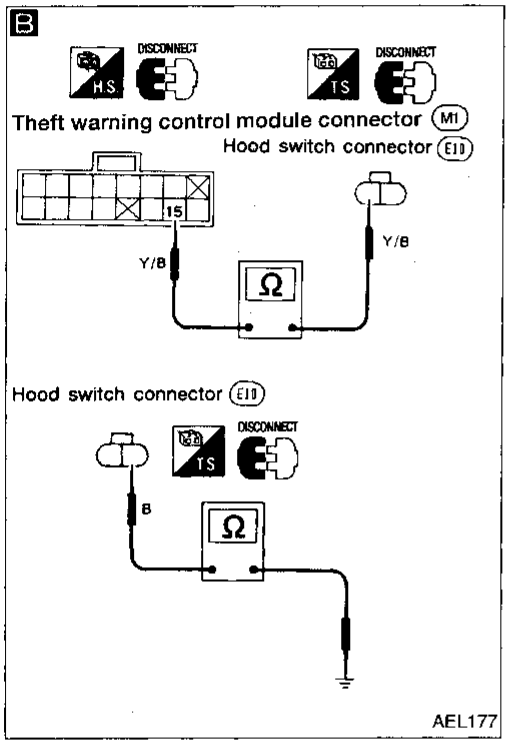
Trouble Diagnoses (Cont'd)

Diagnostic procedure 1-(2)

A



B



A

HOOD SWITCH INPUT SIGNAL CHECK
Check continuity between control module harness terminals (15) and (16).

Condition	Continuity
Hood is open	Yes
Hood is closed	No

O.K. → Perform Diagnostic Procedure 2. Refer to EL-172.

N.G.

Check hood switch and hood fitting condition.

N.G. → Adjust installation of hood switch or hood.

O.K.

HOOD SWITCH CHECK
Refer to EL-179.

N.G. → Replace hood switch.

O.K.

B

HOOD SWITCH CIRCUIT CHECK
- Check harness continuity between control module harness terminal (15) and hood switch harness terminal.
- Check harness continuity between hood switch terminal and body ground.

Continuity should exist.

N.G. → Repair harness or connectors.

O.K.

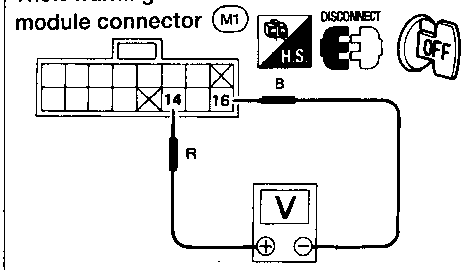
CHECK THE CONNECTIONS AT EACH CONNECTOR.

Trouble Diagnoses (Cont'd)

Diagnostic procedure 1-(3)

A

Theft warning control module connector (M1)

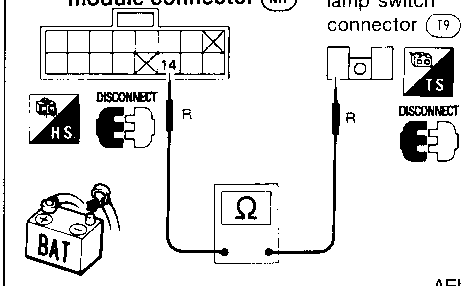


AEL178

B

Theft warning control module connector (M1)

Trunk room lamp switch connector (T9)



AEL179

A

TRUNK ROOM LAMP SWITCH INPUT SIGNAL CHECK
Check voltage between control module harness terminals (14) and (16).

Condition	Voltage
Trunk lid is open	Approx. 0V
Trunk lid is closed	Approx. 12V

O.K. → Perform Diagnostic Procedure 2. Refer to EL-172.

N.G.

Does trunk room lamp come on?

Yes → B

No

TRUNK ROOM LAMP SWITCH CHECK
Refer to EL-179.

O.K. → B

N.G.

Replace trunk room lamp switch.

B

TRUNK ROOM LAMP SWITCH CIRCUIT CHECK
Check harness continuity between control module harness terminals (14) and trunk room lamp harness terminal.

O.K.

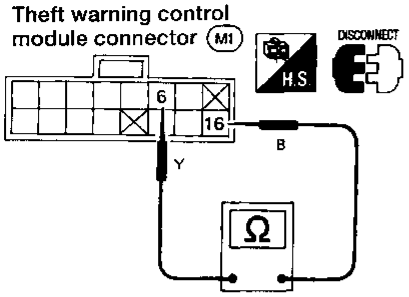
CHECK THE CONNECTIONS AT EACH CONNECTORS.

Trouble Diagnoses (Cont'd)

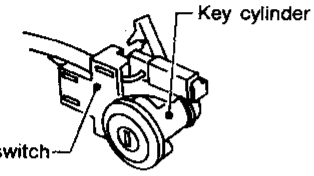
Diagnostic procedure 1-(4)

A

Theft warning control module connector (M1)

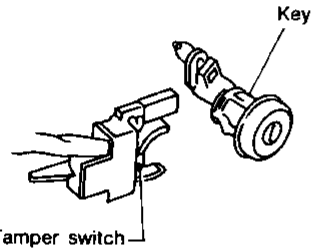


[Example]



No continuity ... O.K.

[Example]



Read switch turns on when key cylinder is removed.

Continuity exists ... O.K.

AEL180

B

Theft warning control module connector (M1)

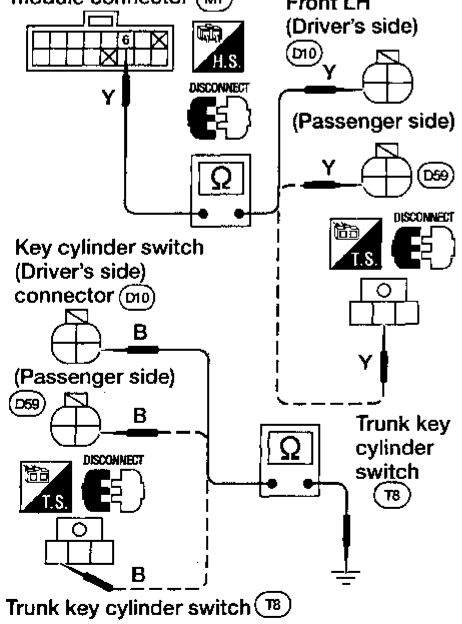
Key cylinder switch connector Front LH (Driver's side) (D10)

(Passenger side) (D59)

Key cylinder switch (Driver's side) connector (D10)

(Passenger side) (D59)

Trunk key cylinder switch (T8)



AEL181

A

KEY CYLINDER TAMPER SWITCH INPUT SIGNAL CHECK Check continuity between control module harness terminals (6) and (16).		O.K.	Perform Diagnostic Procedure 2. Refer to EL-172.
Condition	Continuity		
Tamper switch is			
Normal	No		
Removed	Yes		

N.G.

KEY CYLINDER SWITCH CHECK Refer to EL-180.	N.G.	Replace key cylinder switch.

O.K.

B

KEY CYLINDER SWITCH CIRCUIT CHECK • Check harness continuity between control module harness terminal (6) and key cylinder switch harness terminal. • Check harness continuity between key cylinder switch terminal and body ground. **Continuity should exist.**	N.G.	Repair harness and connectors.

O.K.

CHECK THE CONNECTIONS AT EACH CONNECTOR.

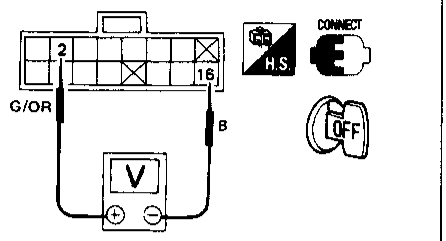
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 2

SYMPTOM: Indicator lamp does not blink.

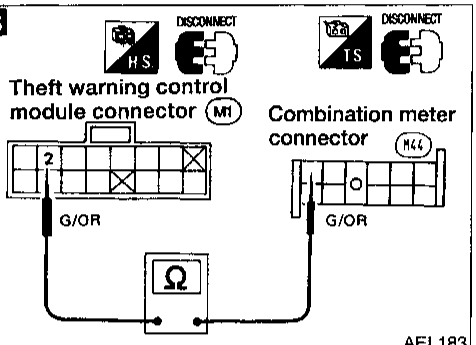
A

Theft warning control module connector (M1)



AEL182

B



AEL183

A

INDICATOR LAMP OUTPUT SIGNAL CHECK
Check voltage between control module harness terminals ② and ⑯.
Pointer of voltmeter should deflect intermittently.

N.G. → Replace control module.

O.K. ↓

INDICATOR LAMP CHECK
Refer to EL-180.

N.G. → Replace indicator lamp.

O.K. ↓

B

INDICATOR LAMP CIRCUIT CHECK
Check harness continuity between control module harness terminal ② and indicator lamp harness terminal.
Continuity should exist.

N.G. → Repair harness or connectors.

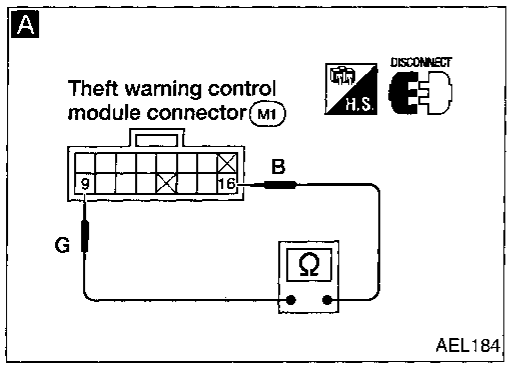
O.K. ↓

CHECK THE CONNECTIONS AT EACH CONNECTOR.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 3

SYMPTOM: Indicator lamp does not come on.



A

DOOR UNLOCK SENSOR INPUT SIGNAL CHECK

Check continuity between control module harness terminals (9) and (16).

Condition	Continuity
Driver's door	
Locked	No
Unlocked	Yes
Except driver's door	
All locked	No
At least one is unlocked	Yes

O.K. → Perform Diagnostic Procedure 4. Refer to EL-174.

O.K. → Replace control module.

N.G.

DOOR UNLOCK SENSOR CHECK

Refer to EL-180.

N.G. → Replace door lock actuator.

O.K.

B

DOOR UNLOCK SENSOR CIRCUIT CHECK

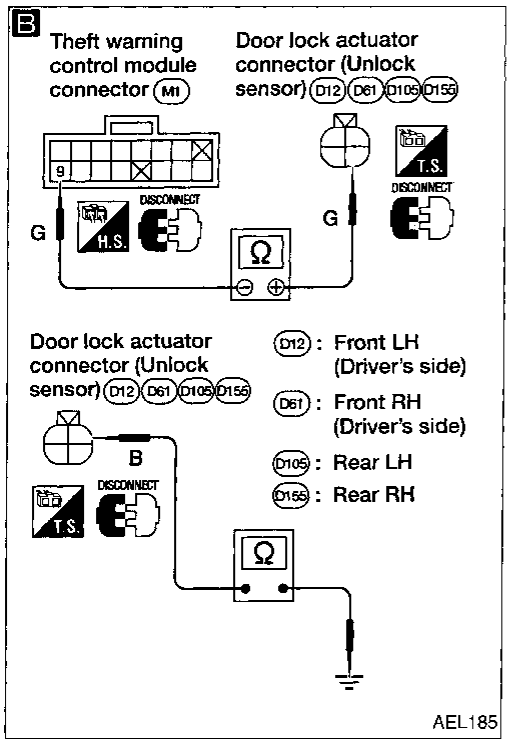
- Check harness continuity between control module harness terminal (9) and door lock actuator terminal.
- Check harness continuity between door lock actuator terminal and body ground.

Continuity should exist.

N.G. → Repair harness or connectors.

O.K.

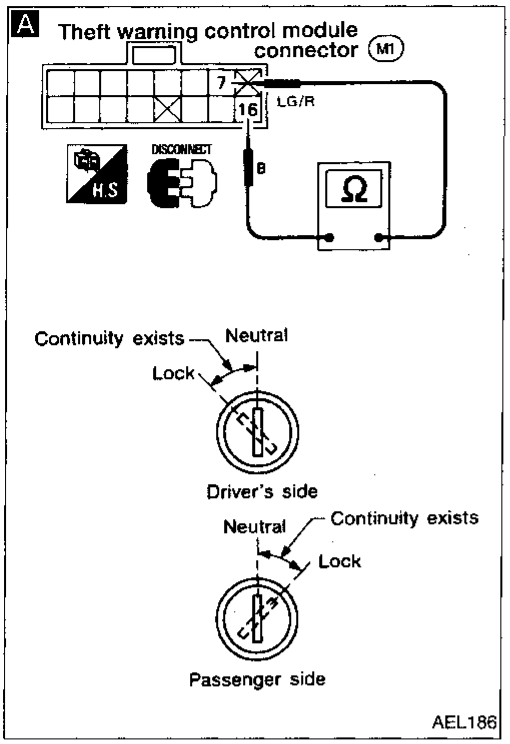
CHECK THE CONNECTIONS AT EACH CONNECTOR.

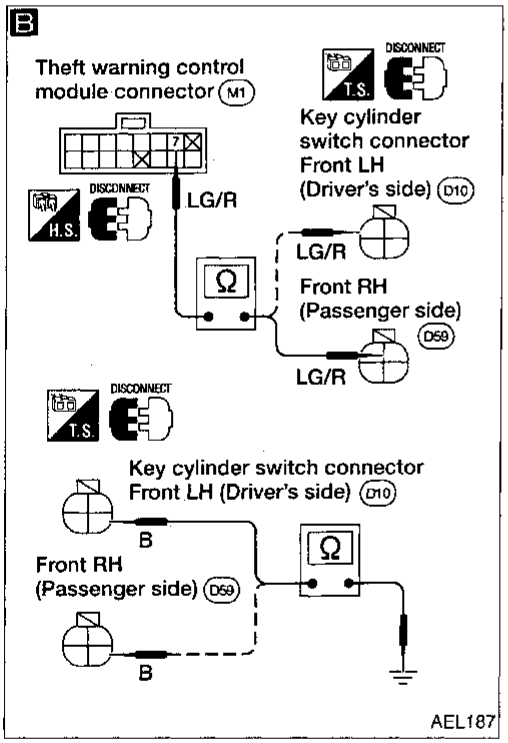


Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 4

SYMPTOM: Indicator lamp does not come on.





A

KEY CYLINDER SWITCH INPUT SIGNAL CHECK (LOCK SIGNAL)
Check continuity between control module harness terminals ⑦ and ⑯.

Key position	Continuity
Neutral/Lock	No
Between neutral and lock	Yes

O.K. → Perform Diagnostic Procedure 3. Refer to EL-173.

O.K. → Replace control module.

N.G. →

KEY CYLINDER SWITCH CHECK
Refer to EL-180.

N.G. → Replace key cylinder switch.

O.K. →

B

KEY CYLINDER SWITCH CIRCUIT CHECK
- Check harness continuity between control module harness terminal ⑦ and key cylinder switch terminal.
- Check harness continuity between key cylinder switch terminal and body ground.

Continuity should exist.

N.G. → Repair harness or connectors.

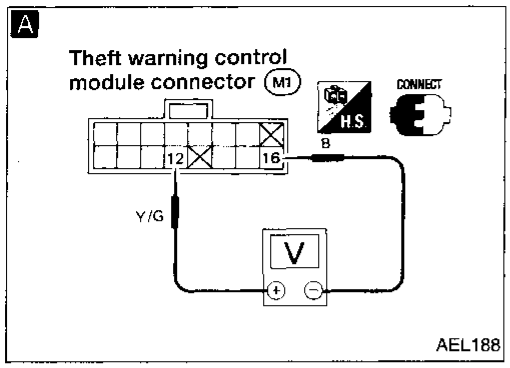
O.K. →

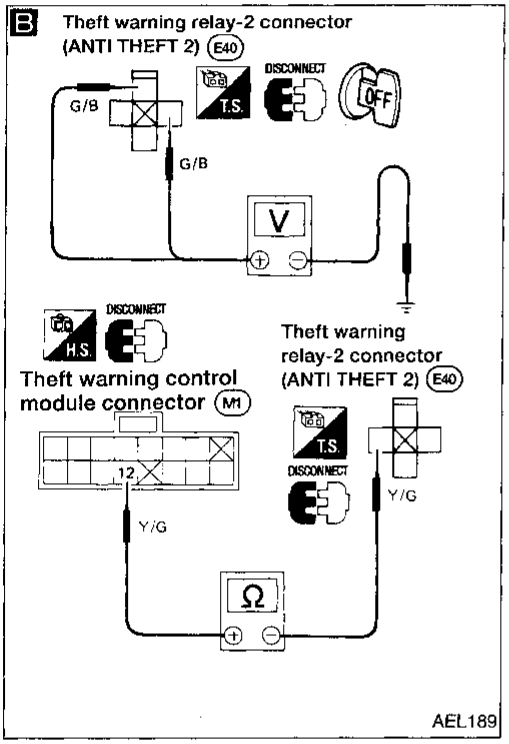
CHECK THE CONNECTIONS AT EACH CONNECTOR.

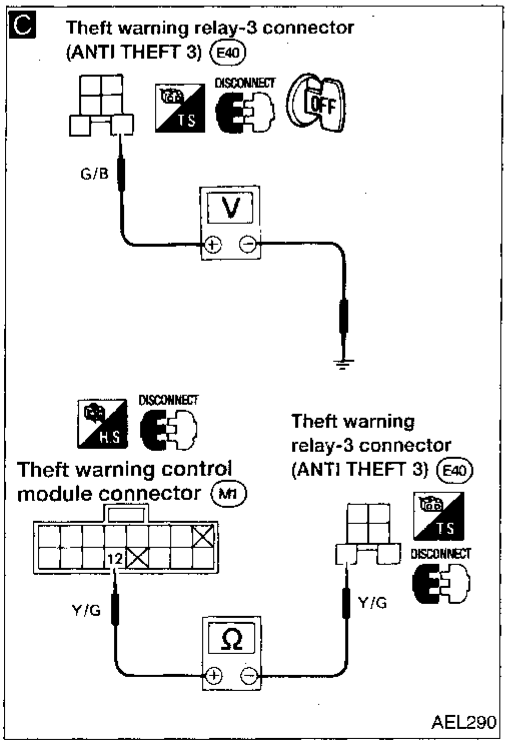
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 5

SYMPTOM: Alarm does not operate.







A

ALARM SIGNAL OUTPUT CHECK
Check voltage between control module harness terminals (12) and (16).

Condition	Voltmeter
Except alarm phase	12V
Alarm phase	Pointer deflects intermittently

N.G. → Replace control module.

O.K. ↓

Check theft warning relay-2. → N.G. → Replace theft warning relay-2.

O.K. ↓

B

THEFT WARNING HORN CIRCUIT CHECK
Check if voltage across theft warning relay-2 harness terminal and body is 12V.
Check continuity between theft warning relay-2 terminal and control module harness terminal (12).
Continuity should exist.

N.G. → Repair harness, fuse and connectors.

O.K. ↓

Check theft warning relay-3. → N.G. → Replace theft warning relay-3.

O.K. ↓

C

THEFT WARNING HEADLAMP CIRCUIT CHECK
Check if voltage across theft warning relay-3 harness terminal and body is 12V.
Check continuity between theft warning relay-3 terminal and control module harness terminal (12).

N.G. → Repair harness, fuse and connectors.

O.K. ↓

Does headlamp come on when turning ignition switch "ON"? → No → Check headlamp system. Refer to EL-32.

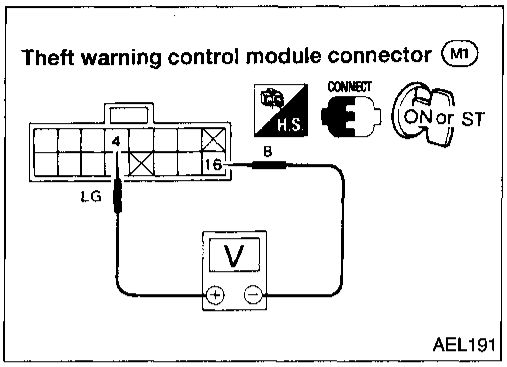
Yes ↓

Repair harness and connectors between lamp relay and headlamp.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 6

SYMPTOM: STARTER MOTOR can be operated. (Starter killed phase)



Approx. 12V

STARTER MOTOR KILL OUTPUT SIGNAL CHECK
Check voltage between control module harness terminals ④ and ⑯ when ignition switch is turned to ON or "START".

→ Replace control module.

↓ Approx. 0 volt

Check theft warning relay-1 and circuit.

→ N.G. Replace theft warning relay-1.

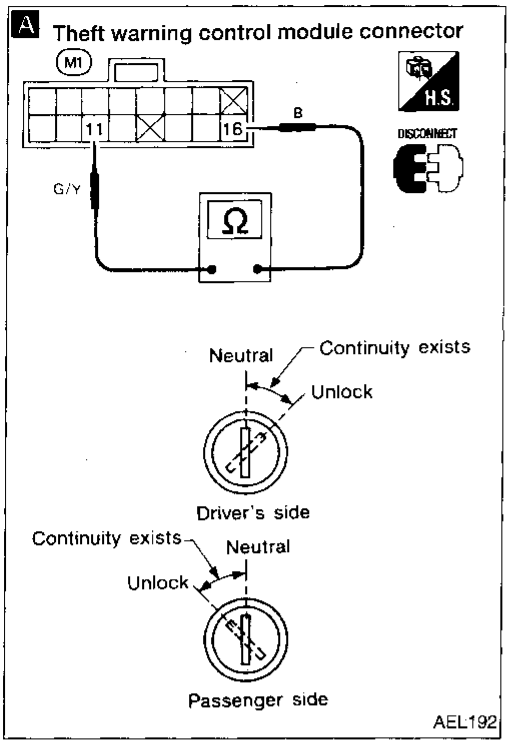
↓ O.K.

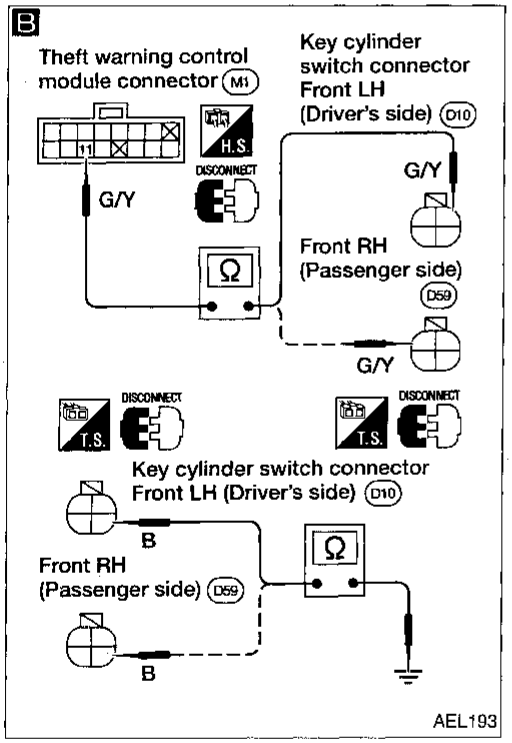
Repair harness between control module and clutch interlock relay (M/T models) or inhibitor switch (A/T models).

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 7

SYMPTOM: Alarm does not stop even if stop signal is given.





A

KEY CYLINDER SWITCH INPUT SIGNAL CHECK (UNLOCK SIGNAL)
Check continuity between control module harness terminals (11) and (16).

Key position	Continuity
Neutral/Unlock	No
Between neutral and unlock	Yes

O.K. → Replace control module.

N.G.

KEY CYLINDER SWITCH CHECK
Refer to EL-180.

N.G. → Replace key cylinder switch.

O.K.

B

KEY CYLINDER SWITCH CIRCUIT CHECK

- Check harness continuity between control module harness terminal (11) and key cylinder switch terminal.
- Check harness continuity between key cylinder switch terminal and body ground.

Continuity should exist.

N.G. → Repair harness or connectors.

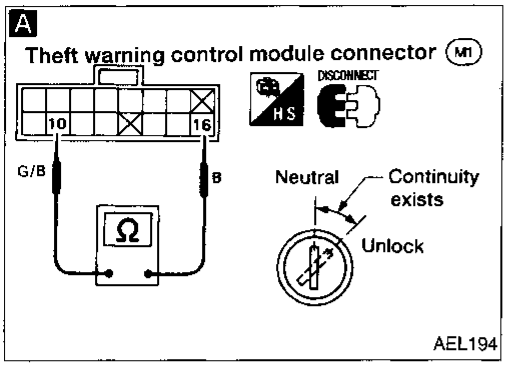
O.K.

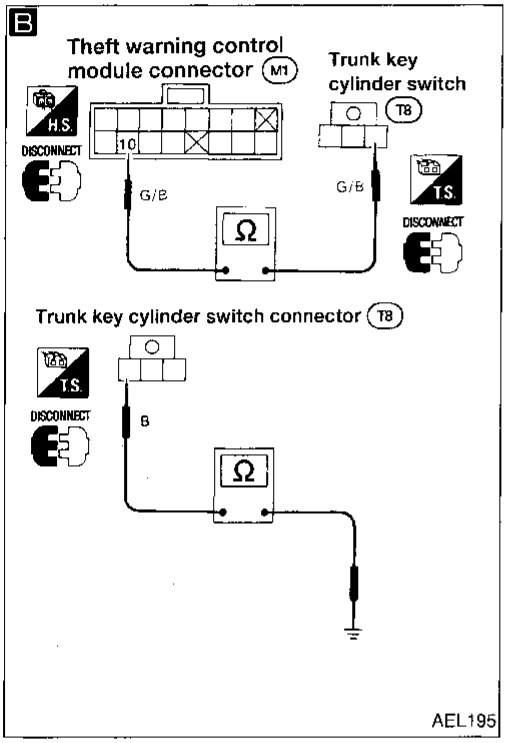
CHECK THE CONNECTIONS AT EACH CONNECTOR.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 8

SYMPTOM: Alarm does not stop even if stop signal is given.





A

TRUNK KEY CYLINDER SWITCH INPUT SIGNAL CHECK (UNLOCK SIGNAL)
Check continuity between control module harness terminals ⑩ and ⑯.

Key position	Continuity
Neutral/Unlock	No
Between neutral and unlock	Yes

O.K. → Replace control module.

N.G.

TRUNK KEY CYLINDER SWITCH CHECK
Refer to EL-180.

N.G. → Replace trunk key cylinder switch.

O.K.

B

TRUNK KEY CYLINDER SWITCH CIRCUIT CHECK
- Check harness continuity between control module harness terminal ⑩ and trunk key cylinder switch terminal.
- Check harness continuity between trunk key cylinder switch terminal and body ground.

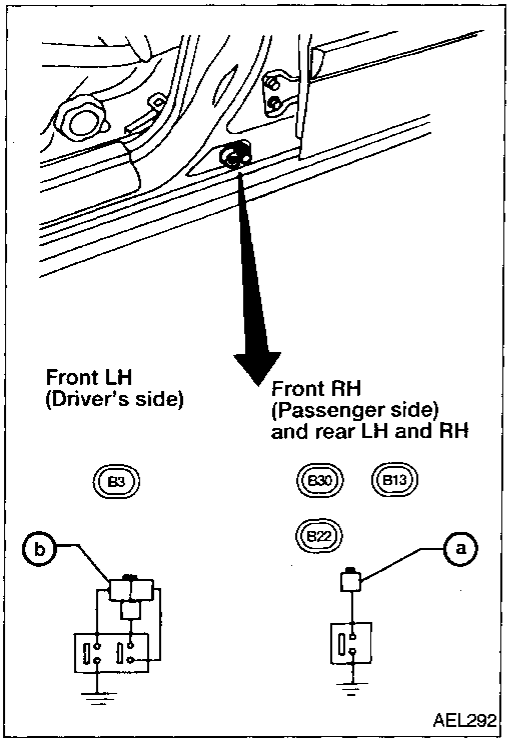
N.G. → Repair harness or connectors.

O.K.

CHECK THE CONNECTIONS AT EACH CONNECTOR.

Trouble Diagnoses (Cont'd)

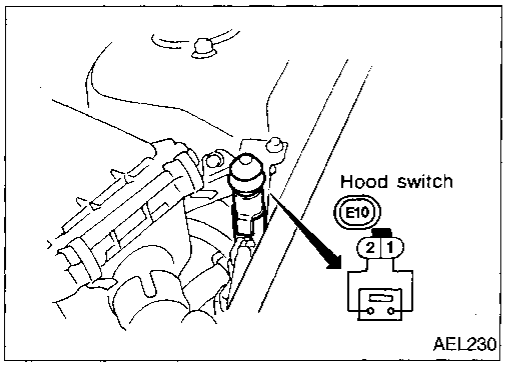
ELECTRICAL COMPONENTS INSPECTION



Door switches

Check continuity between terminal ⓐ, ⓑ and switch body.

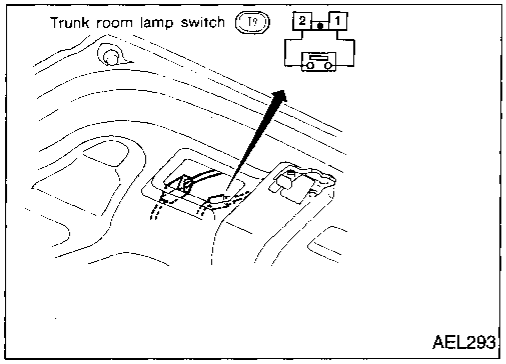
Terminal	Pushed	Released
a, b		○
switch body		○



Hood switch

Check continuity between terminals when hood switch is pushed and released.

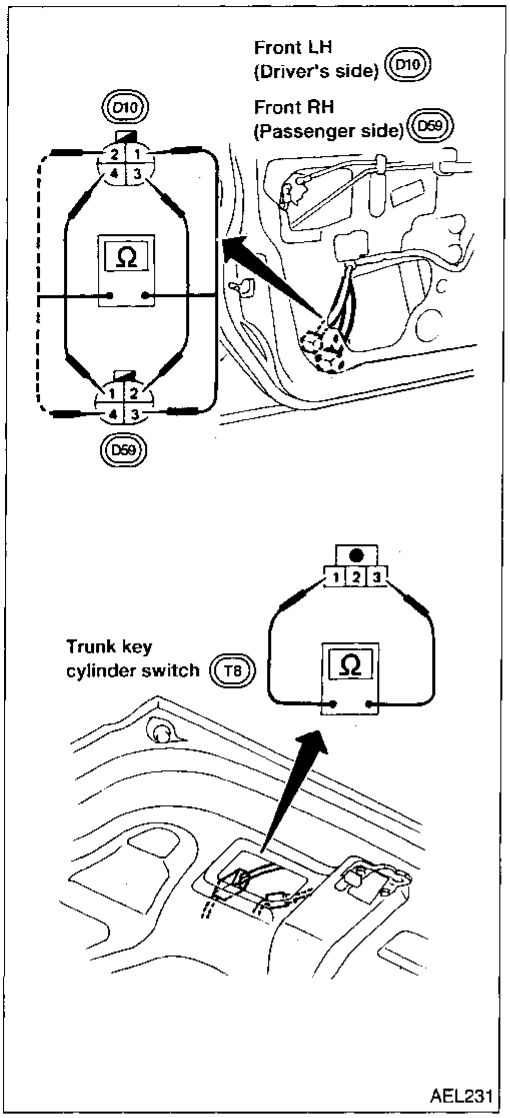
Terminal	Pushed	Released
1		○
2		○



Trunk room lamp switch

Terminal	Trunk lid	
	Closed	Open
1		○
2		○

Trouble Diagnoses (Cont'd)



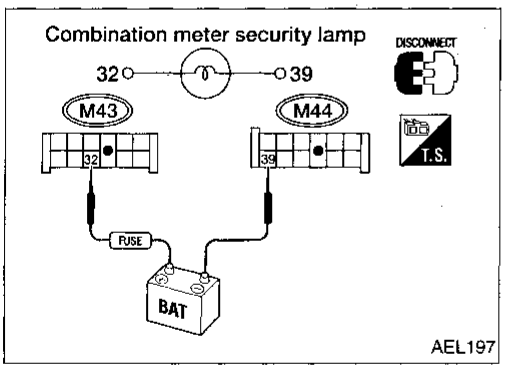
Key cylinder switch

Door

	TAMPER SWITCH		DOOR LOCK SWITCH			DOOR UNLOCK SWITCH	
	Key cylinder is installed	Key cylinder is removed	Full stroke	Between full stroke and neutral	Neutral	Between full stroke and neutral	Full stroke
1				○			
2						○	
3		○					
4		○		○		○	

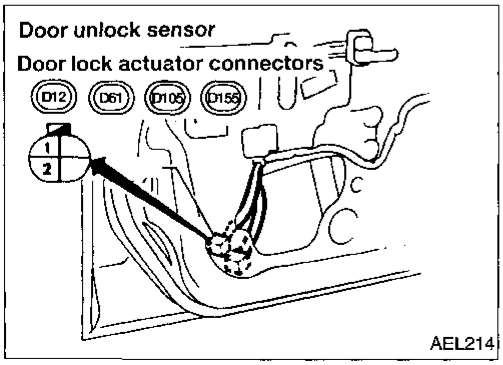
Trunk

	TAMPER SWITCH		Trunk lid unlock switch		
	Key cylinder is installed	Key cylinder is removed	Full stroke	Between full stroke and neutral	Neutral
1				○	
2		○			
3		○		○	



Indicator lamp (security lamp)

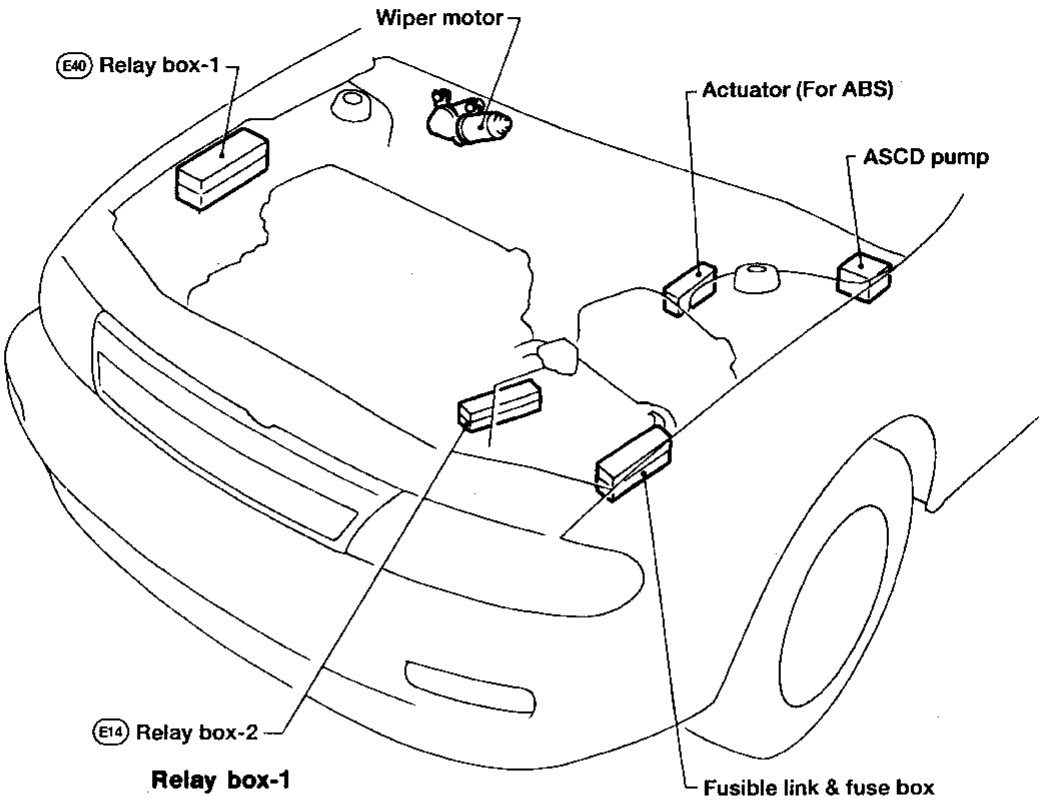
Check if it lights when 12V is supplied.



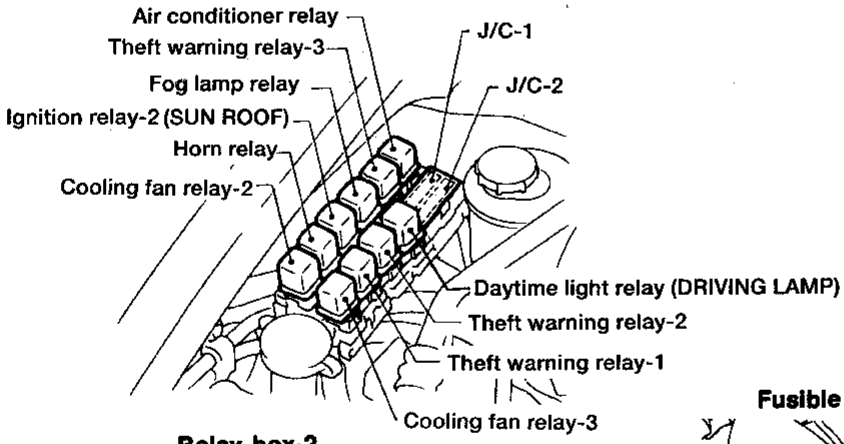
Door unlock sensor

	LOCK	UNLOCK
1		○
2		○

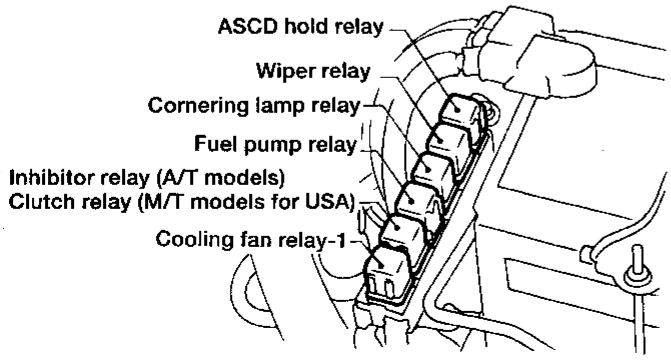
Engine Compartment



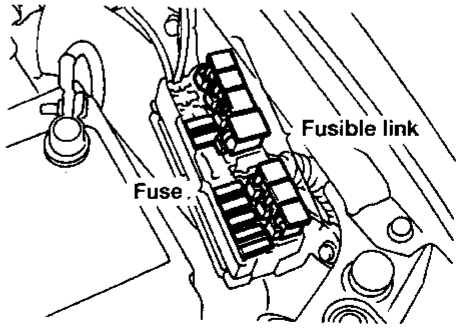
Relay box-1



Relay box-2



Fusible link & fuse box



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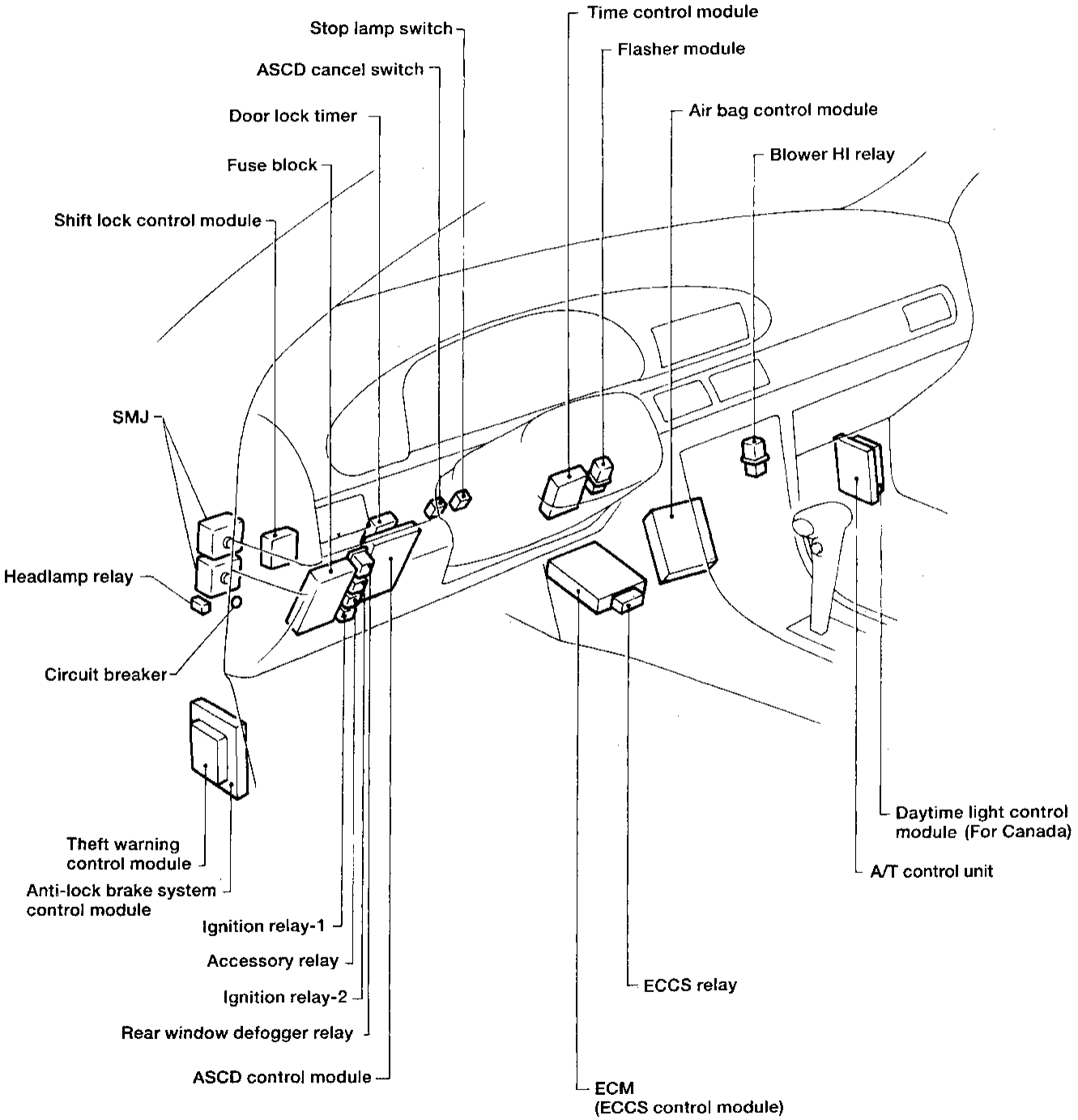
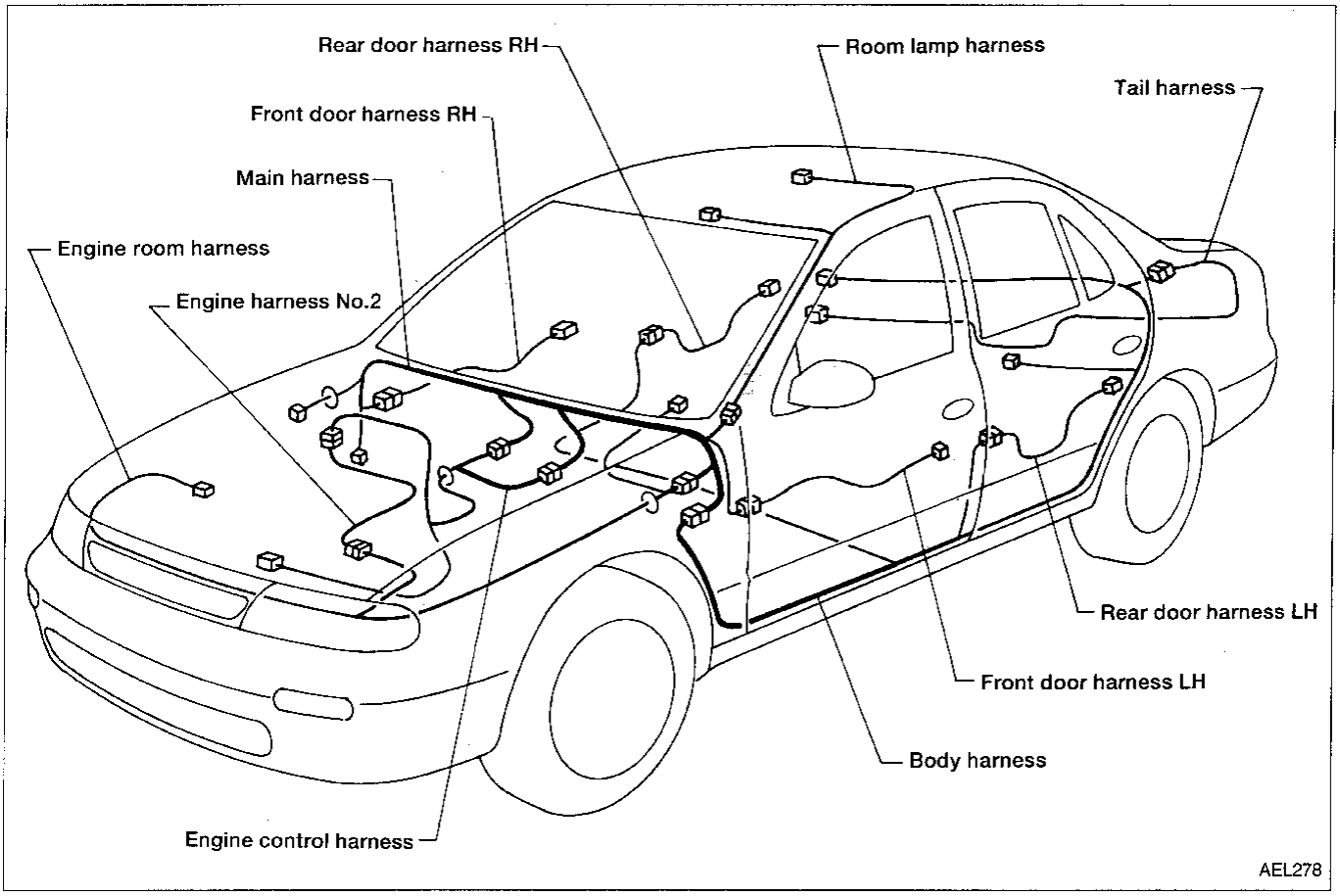
Passenger Compartment



AEL277

Outline



The following Harness Layouts use a map style grid to help locate connectors on the drawings:

- Engine Room Harness (Engine Compartment)
- Main Harness
- Body Harness

The grid reference is placed on the page where connectors are listed in number order.
To the left of the connector number code there is a grid reference.
Example:
G2 (E1): ASCD actuator
└ grid reference

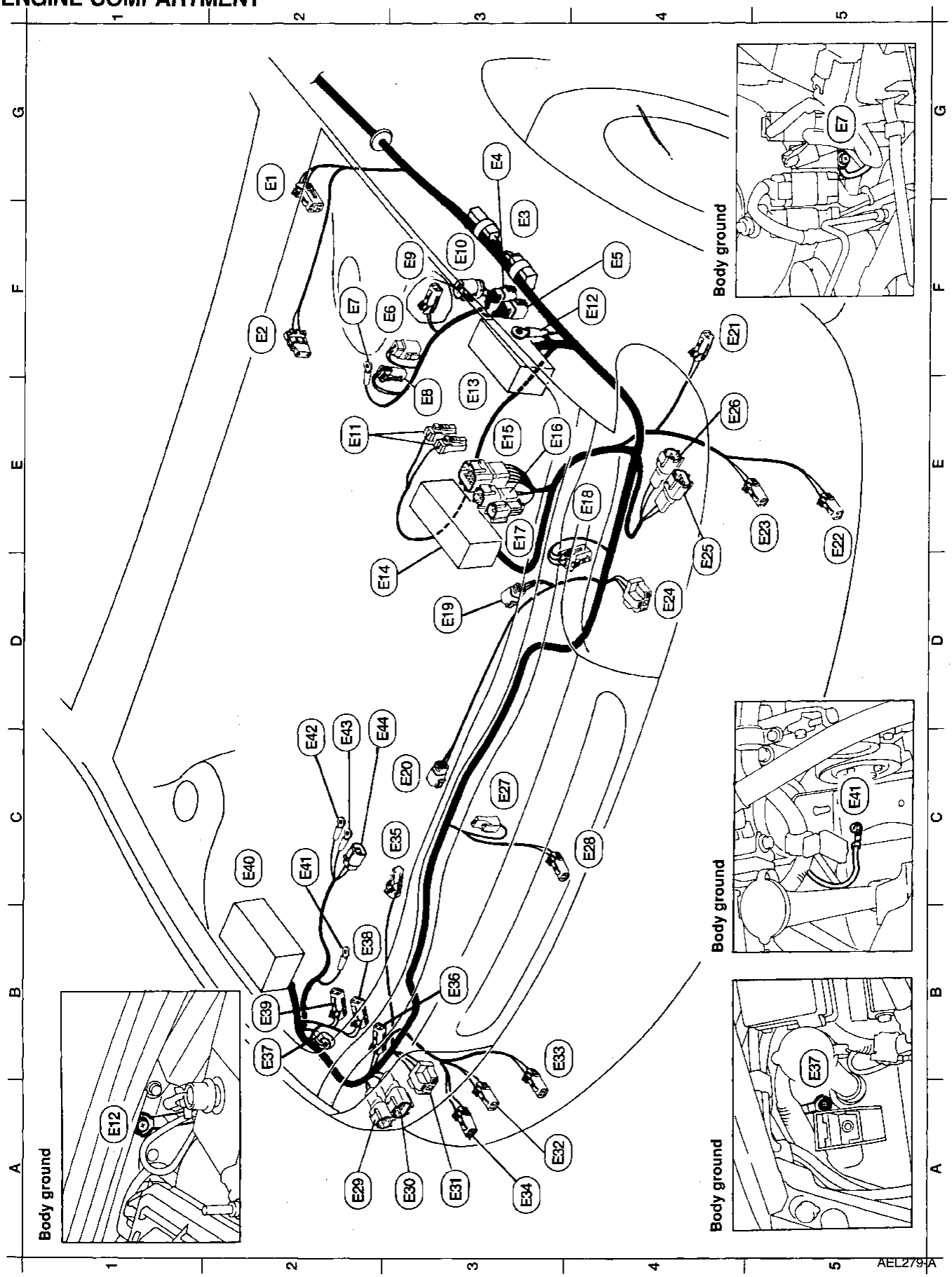
To use the grid reference

1) Find the desired connector number on the connector list.
2) Find the grid reference.
3) On the drawing, find the crossing of the grid reference letter column and number row.
4) Find the connector number in the crossing zone.
5) Follow the line (if used) to the connector.

The approximate on-vehicle location of the connector has been found.

Engine Room Harness

ENGINE COMPARTMENT



Engine Room Harness (Cont'd)

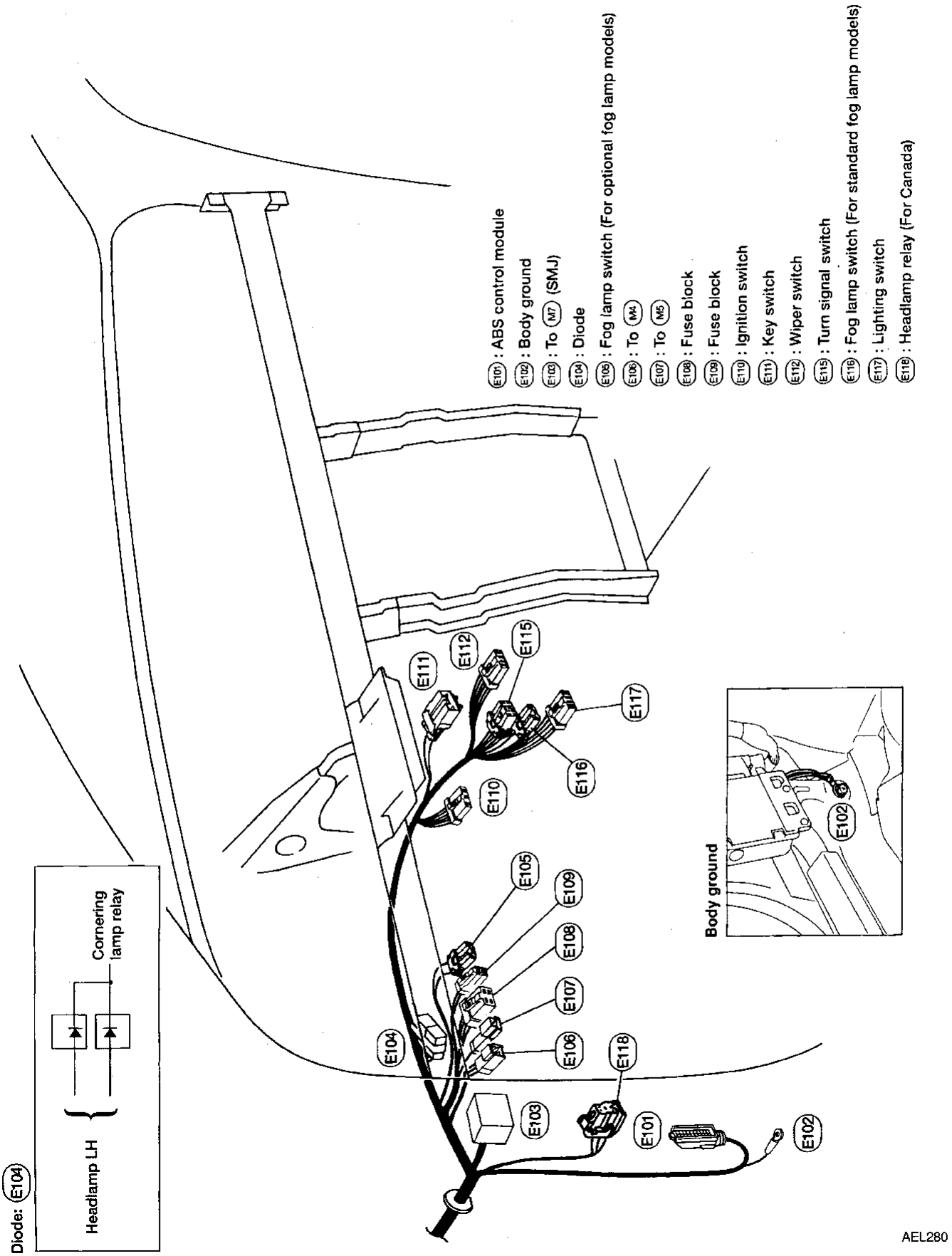
Engine room harness

G2 (E1) : ASCD actuator
F2 (E2) : Brake fluid level switch
F3 (E3) : Joint connectors 3-6
G3 (E4) : Actuator (For ABS)
F4 (E5) : Actuator (For ABS)
F3 (E6) : Actuator (For ABS)
F2 (E7) : Body ground (For ABS)
E3 (E8) : Front sensor LH (For ABS)
F3 (E9) : Dropping resistor (A/T models)
F3 (E10) : Hood switch (For theft warning system)
E2 (E11) : Battery
F4 (E12) : Body ground
E3 (E13) : Fusible link and fuse box
D3 (E14) : Relay box-2
E3 (E15) : To (E213)
E3 (E16) : To (E214)
E3 (E17) : To (E215)
E4 (E18) : Air conditioning triple-pressure switch
D3 (E19) : Cooling fan motor-1
C3 (E20) : Cooling fan motor-2
F4 (E21) : Front side marker lamp LH
E5 (E22) : Front fog lamp LH (For standard fog lamp models)
E5 (E23) : Front turn signal lamp LH
D4 (E24) : Headlamp LH
D4 (E25) : Clearance and cornering lamp LH
E4 (E26) : Clearance lamp LH
C3 (E27) : Horn
C4 (E28) : Ambient sensor
A2 (E29) : Clearance lamp RH
A3 (E30) : Clearance and cornering lamp RH
A3 (E31) : Headlamp RH
A3 (E32) : Front turn signal lamp RH
B3 (E33) : Front fog lamp RH (For standard fog lamp models)
A3 (E34) : Front side marker RH
C3 (E35) : Compressor
B3 (E36) : Front fog lamp sub-harness (For optional fog lamp models)
B2 (E37) : Body ground
B2 (E38) : Washer level switch
B2 (E39) : Washer motor
C2 (E40) : Relay box-1
C2 (E41) : Body ground
C2 (E42) : Generator
D2 (E43) : Generator
D2 (E44) : Generator

AEL279-B

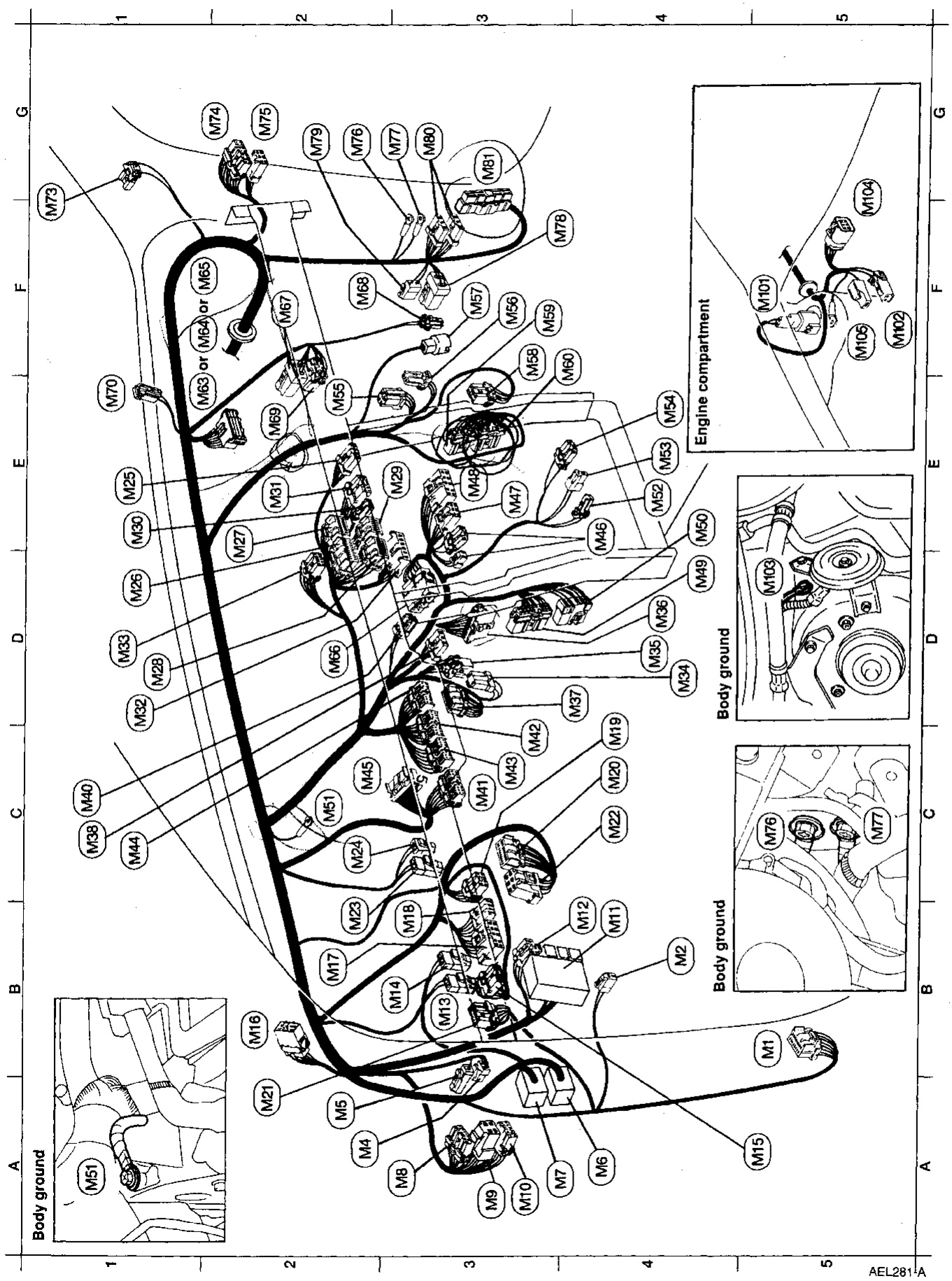
Engine Room Harness (Cont'd)

PASSENGER COMPARTMENT



NOTE

Main Harness



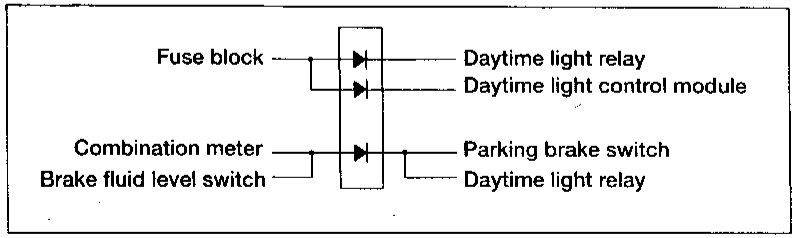
Main harness

B5 (M1) : Theft warning control module (For theft warning system)
B4 (M2) : Circuit breaker
A2 (M4) : To (E106)
A2 (M5) : To (E107)
A4 (M6) : To (B1) (SMJ)
A4 (M7) : To (E103) (SMJ)
A3 (M8) : To (D1)
A3 (M9) : To (D2)
A3 (M10) : To (D3)
B4 (M11) : Fuse block
B4 (M12) : Rear window defogger relay
B3 (M13) : Clutch pedal position switch (M/T models for USA)
B3 (M14) : ASCD clutch pedal position switch (M/T models)
A5 (M15) : Data link connector for CONSULT
B2 (M16) : To (R1)
B2 (M17) : ASCD switch
B3 (M18) : Mirror switch
C4 (M19) : Illumination control switch
C4 (M20) : ASCD control module
A2 (M21) : Shift lock control module (A/T models)
C4 (M22) : Door lock timer
B2 (M23) : ASCD cancel switch
C2 (M24) : Stop lamp switch
E1 (M25) : Hazard switch
D1 (M26) : Auto air conditioning unit
E2 (M27) : Auto air conditioning unit
D1 (M28) : Push control module
E3 (M29) : Push control module
E1 (M30) : Air conditioner switch
E2 (M31) : Potentio temperature control
D1 (M32) : Fan switch
D1 (M33) : Clock
D4 (M34) : Flasher module
D4 (M35) : Air mix door motor
D4 (M36) : Mode door motor
D4 (M37) : Time control module
C1 (M38) : Rear window defogger switch
C1 (M40) : In-vehicle sensor
C3 (M41) : Combination meter
C3 (M42) : Combination meter
C3 (M43) : Combination meter
C1 (M44) : Combination meter
C2 (M45) : Head-up display control module
E4 (M46) : CD player
E3 (M47) : Radio
E3 (M48) : Radio
D4 (M49) : To (F23)
E4 (M50) : To (F24)
C2 (M51) : Body Ground
E4 (M52) : Cigarette lighter illumination
E4 (M53) : Cigarette lighter
E4 (M54) : Ashtray illumination
E2 (M55) : Blower HI-relay
F3 (M56) : Thermo control amp.
F3 (M57) : Glove box lamp
F3 (M58) : Fresh vent door motor
F3 (M59) : To (F21)
F4 (M60) : To (F22)
E1 (M63) : Joint connector-7 (With audio amp. for USA)
F1 (M64) : Joint connector-8 (With audio amp. for Canada)
F1 (M65) : Joint connector-9 (With audio amp. for Canada)
D2 (M66) : To (A4)
F2 (M67) : Fan control amp.
F2 (M68) : Glove box lamp switch
E2 (M69) : Intake door motor
E1 (M70) : Sunload sensor
F1 (M73) : Tweeter RH
G2 (M74) : To (D51)
G2 (M75) : To (D52)
G2 (M76) : Body ground
G3 (M77) : Body ground
F3 (M78) : Fan resistor
G2 (M79) : Blower motor
G3 (M80) : Daytime light control module (For Canada)
G3 (M81) : A/T control unit

Engine Compartment

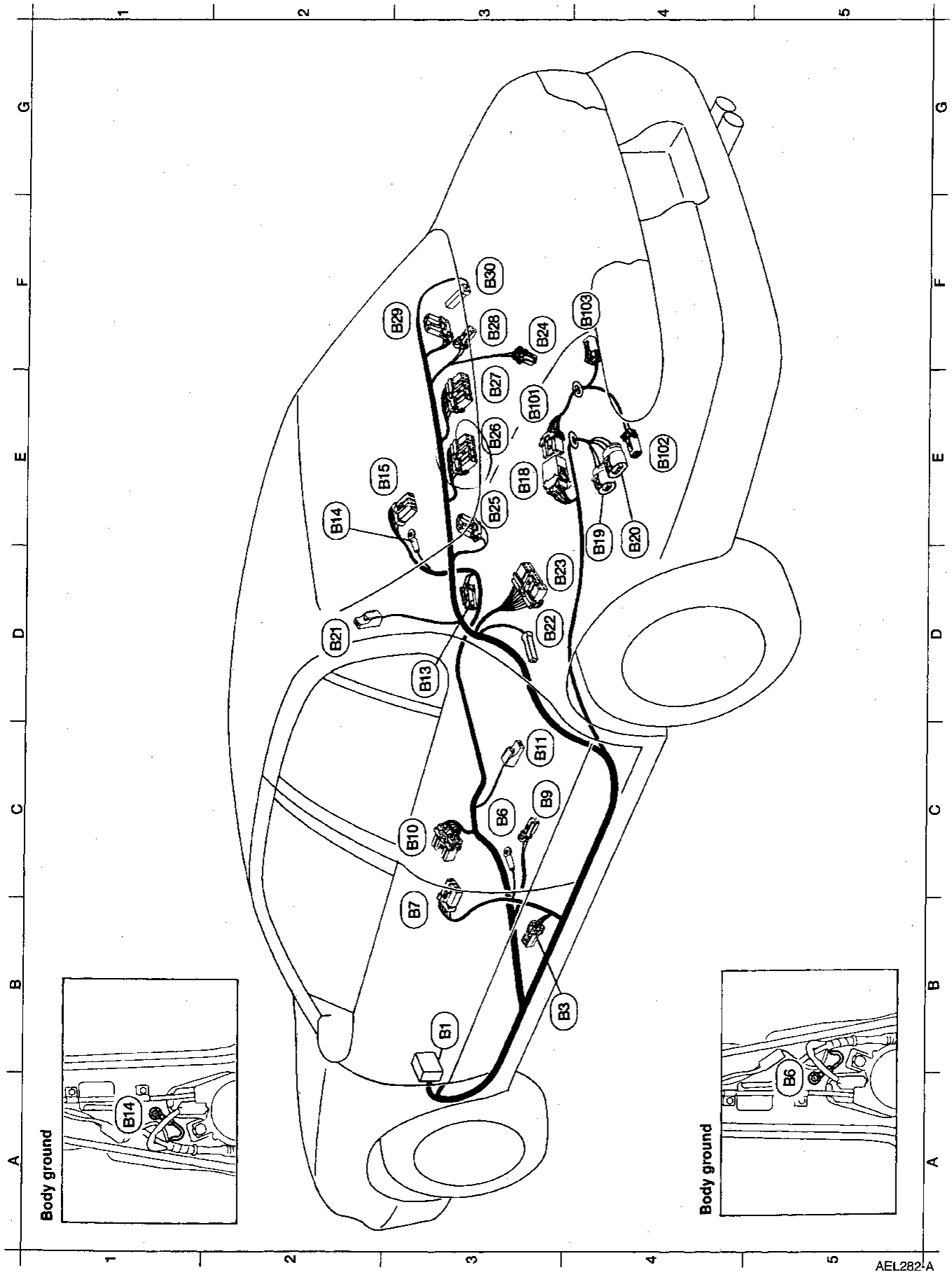
F5 (M101) : Power steering pressure switch
F5 (M102) : Front sensor RH (For ABS)
D5 (M103) : Body ground (For ABS)
G5 (M104) : Wiper motor
F5 (M105) : Horn (For theft warning system)

Diode (In joint connector-8 (M64) / In joint connector-9 (M65))



AEL281-B

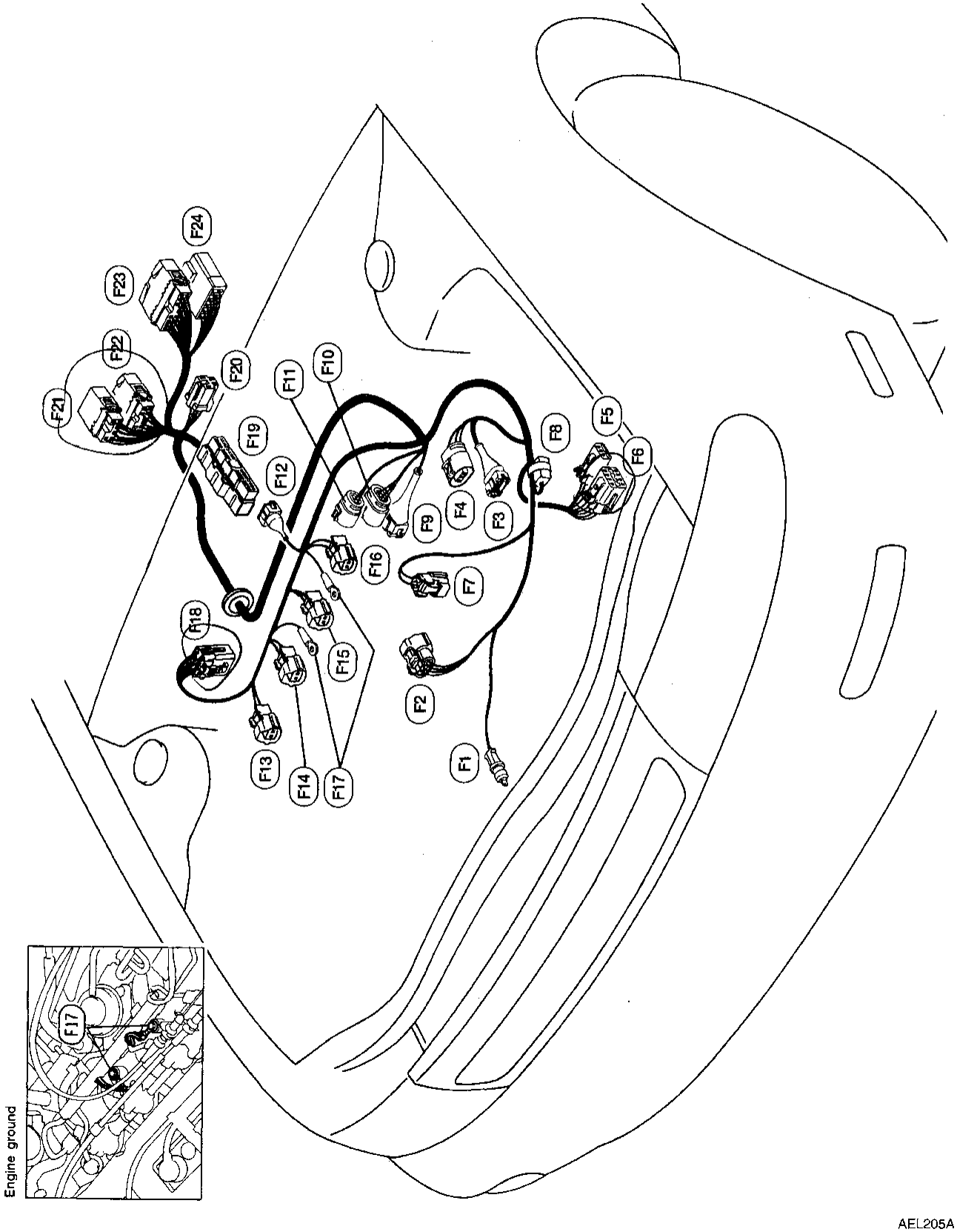
Body Harness



B3 (B1) : To (M6) (SMJ)
B4 (B3) : Front door switch LH (Driver's side)
C3 (B6) : Body ground
B3 (B7) : To (E101)
C3 (B9) : Seat belt switch
C3 (B10) : Shift lock solenoid detention switch and A/T illumination (A/T models)
C3 (B11) : Parking brake switch
D3 (B13) : Front door switch RH (Passenger side)
E2 (B14) : Body ground
E2 (B15) : To (C15)
E3 (B18) : To (E101)
E4 (B19) : Fuel pump
E4 (B20) : Fuel tank gauge unit
D2 (B21) : Rear window defogger condenser
D3 (B22) : Rear door switch LH
D3 (B23) : To (T1)
F3 (B24) : Trunk room lamp
E3 (B25) : Rear speaker LH
E3 (B26) : Front speaker amp.
E3 (B27) : Rear speaker amp.
F3 (B28) : High-mounted stop lamp (Without rear air spoiler)
F3 (B29) : Rear speaker RH
F3 (B30) : Rear door switch RH
E3 (E110) : To (B18)
E4 (E102) : Rear sensor LH (For ABS)
F4 (E103) : Rear sensor RH (For ABS)

AEL282-B

Engine Control Harness



AEL205A

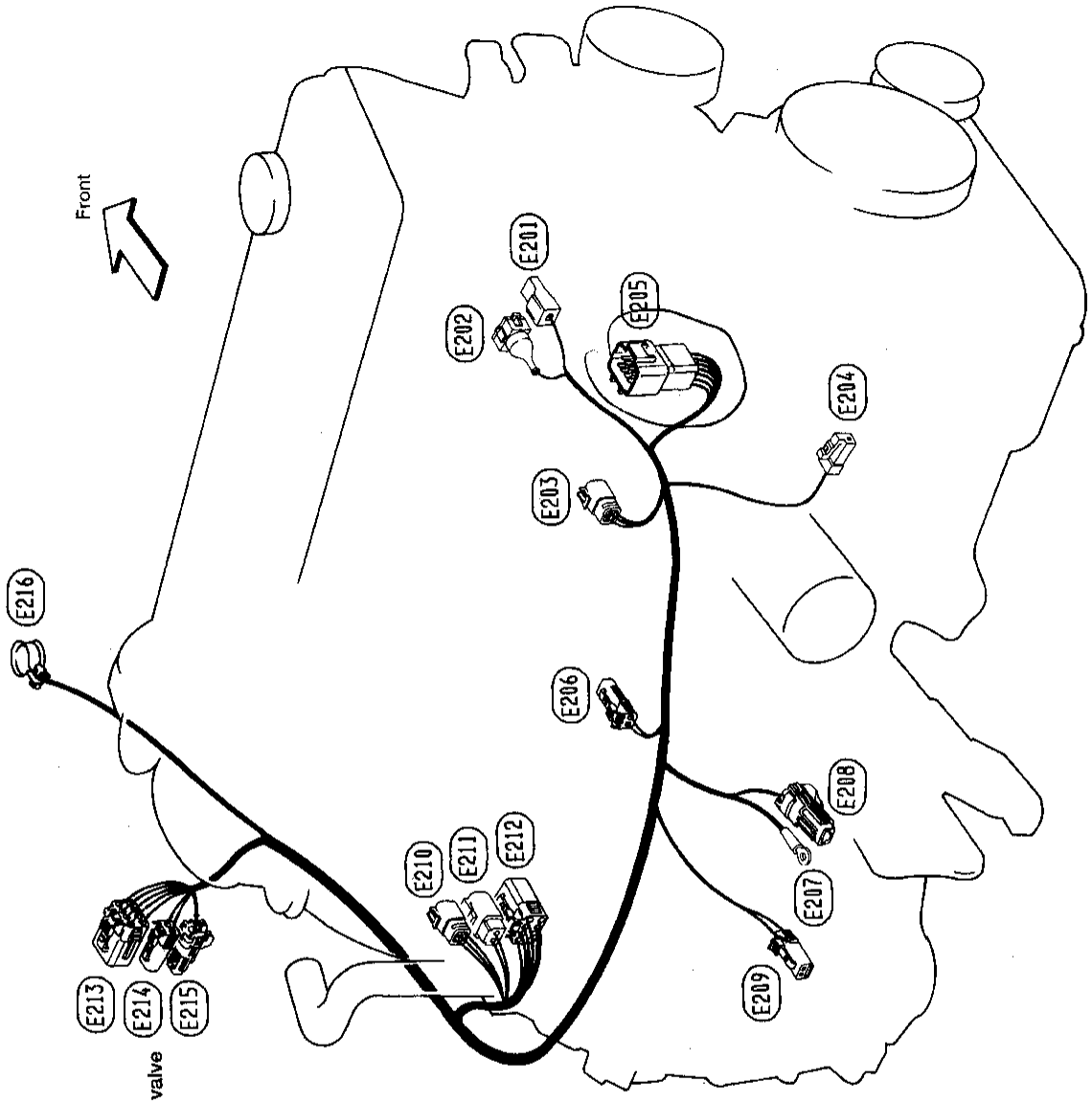
Engine Control Harness (Cont'd)

Engine control harness

(F1) : Oxygen sensor
(F2) : Camshaft position sensor
(F3) : Mass air flow sensor
(F4) : Power transistor
(F5) : Revolution sensor (A/T models)
(F6) : To terminal cord assembly (A/T models)
(F7) : Ignition coil
(F8) : Resistor & condenser
(F9) : Throttle position switch
(F10) : Throttle position sensor
(F11) : EGR temperature sensor
(F12) : EGR control-solenoid valve
(F13) : Injector No. 1
(F14) : Injector No. 2
(F15) : Injector No. 3
(F16) : Injector No. 4
(F17) : Engine ground
(F18) : To (E205)
(F19) : ECM (ECCS control module)
(F20) : ECM relay
(F21) : To (M65)
(F22) : To (M60)
(F23) : To (M49)
(F24) : To (M50)

AEL283

Engine Harness No. 2

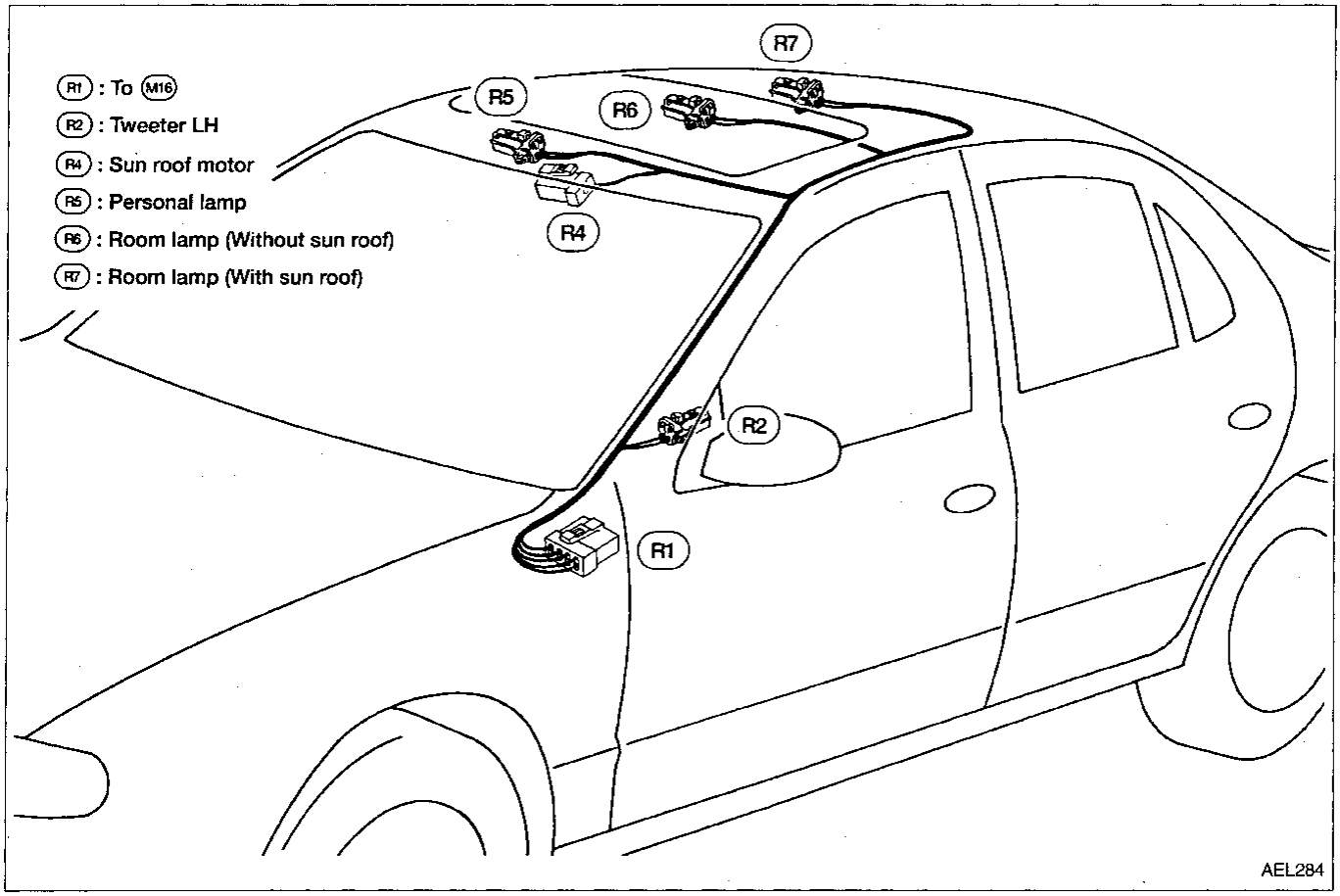


Engine harness No. 2

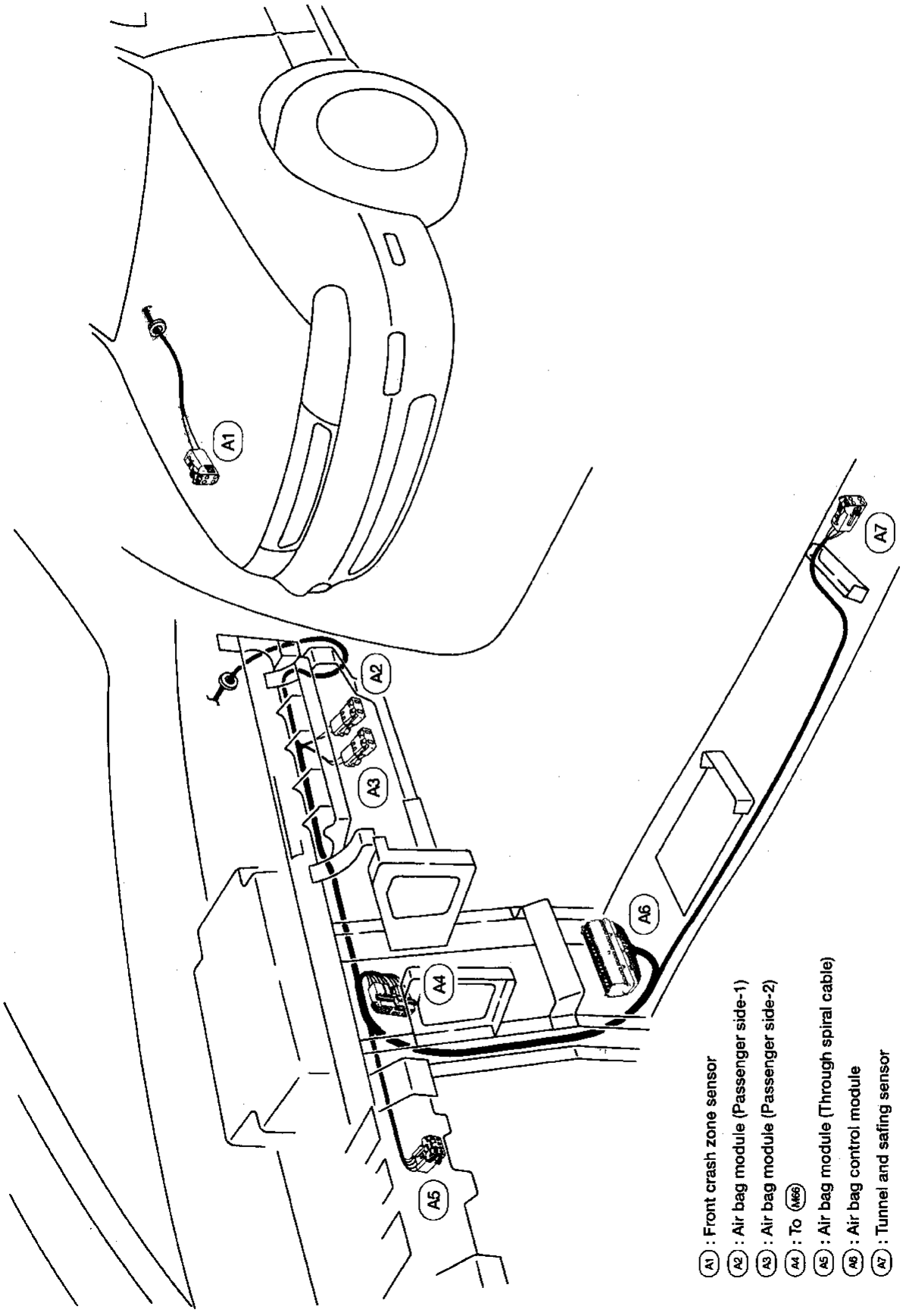
- E201 : Thermal transmitter
- E202 : Engine coolant temperature sensor
- E203 : IAC valve-FICD solenoid valve & IAC valve-AAC valve
- E204 : Oil pressure switch
- E205 : To F18
- E206 : Knock sensor
- E207 : Starter motor
- E208 : Starter motor
- E209 : Vehicle speed sensor
- E210 : Position switch (M/T models)
- E211 : Inhibitor switch (A/T models)
- E212 : Inhibitor switch (A/T models)
- E213 : To E15
- E214 : To E16
- E215 : To E17
- E216 : Battery

AEL206

Room Lamp Harness

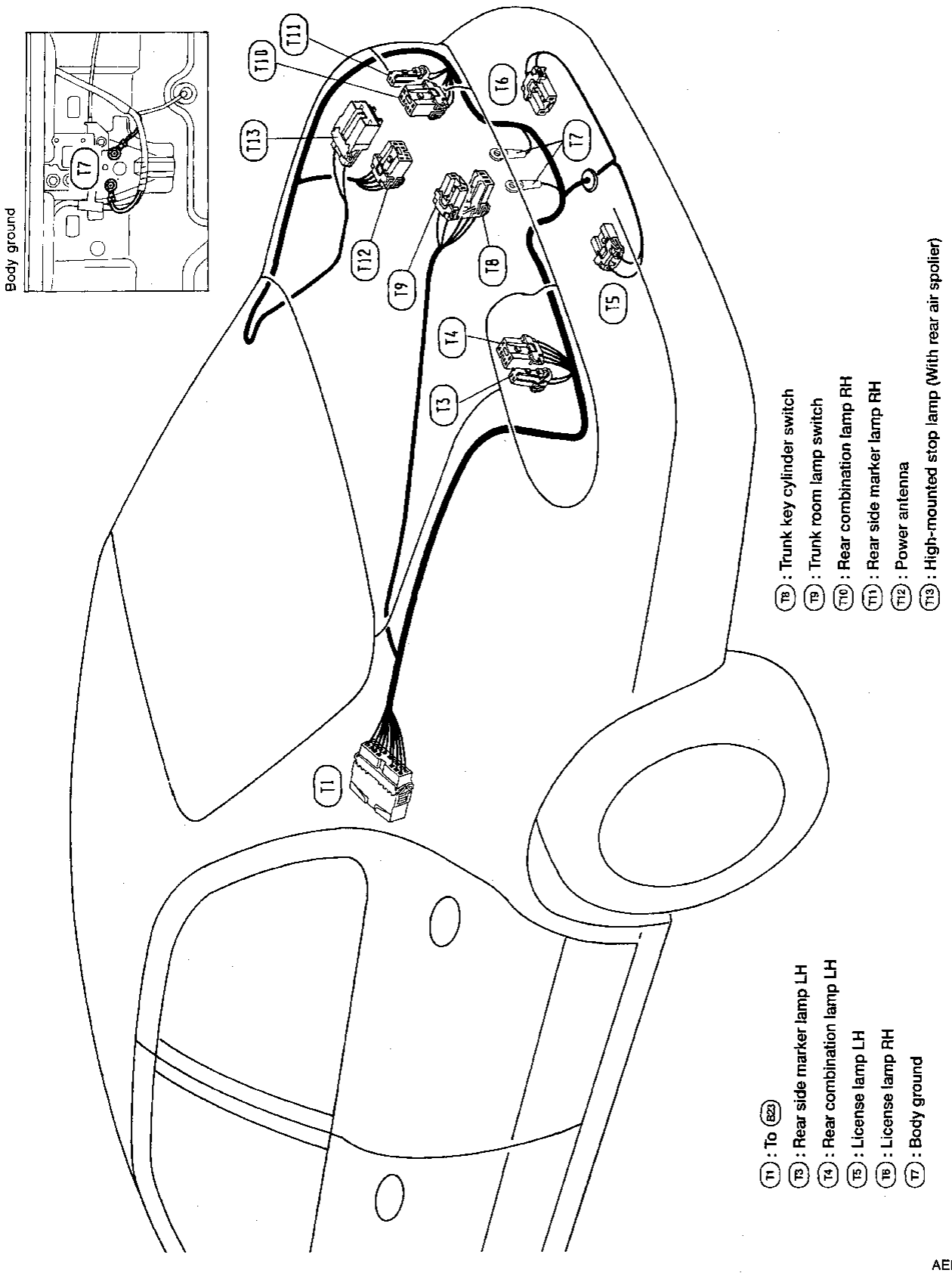


Air Bag Harness



AEL285

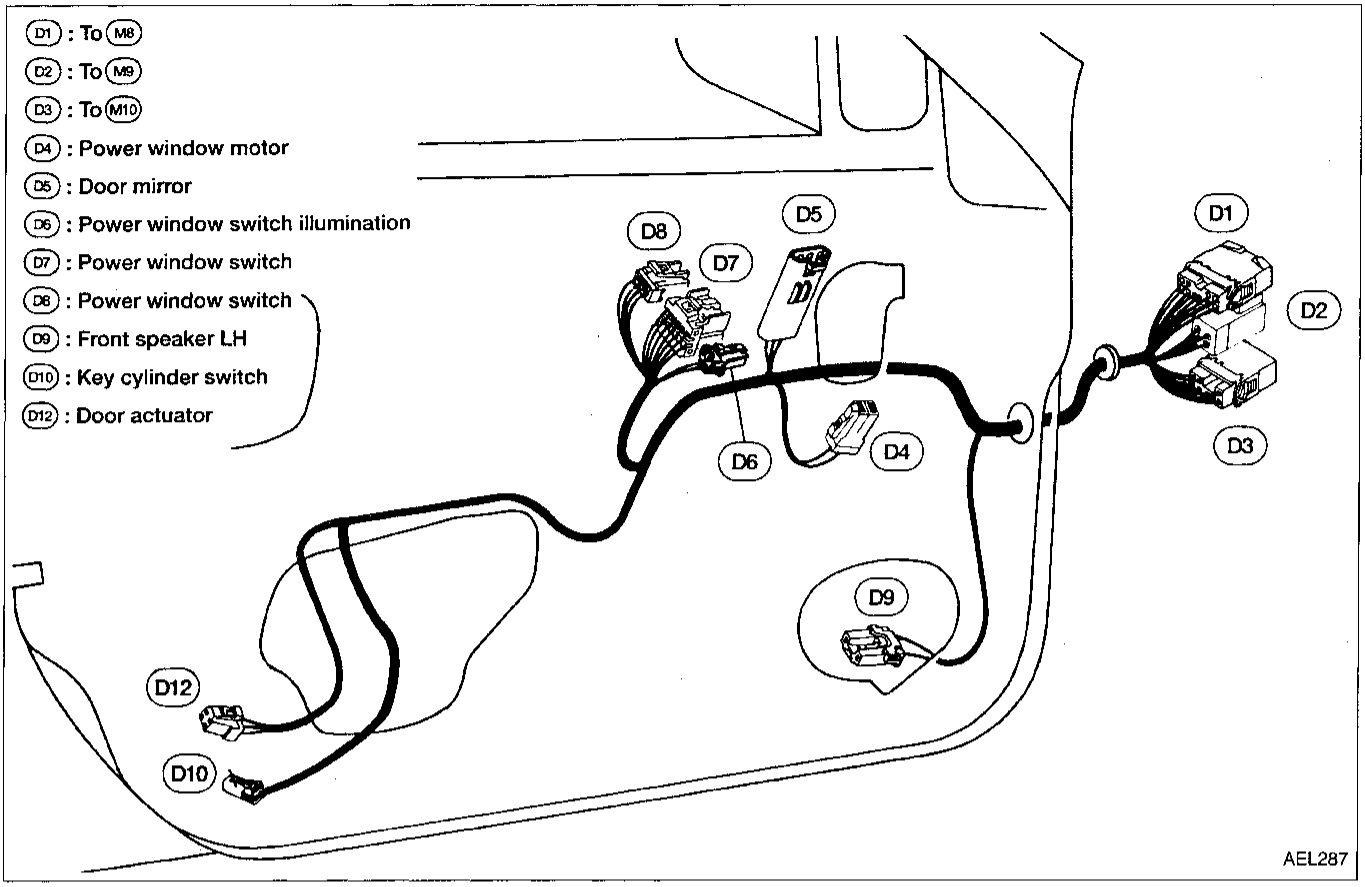
Tail Harness



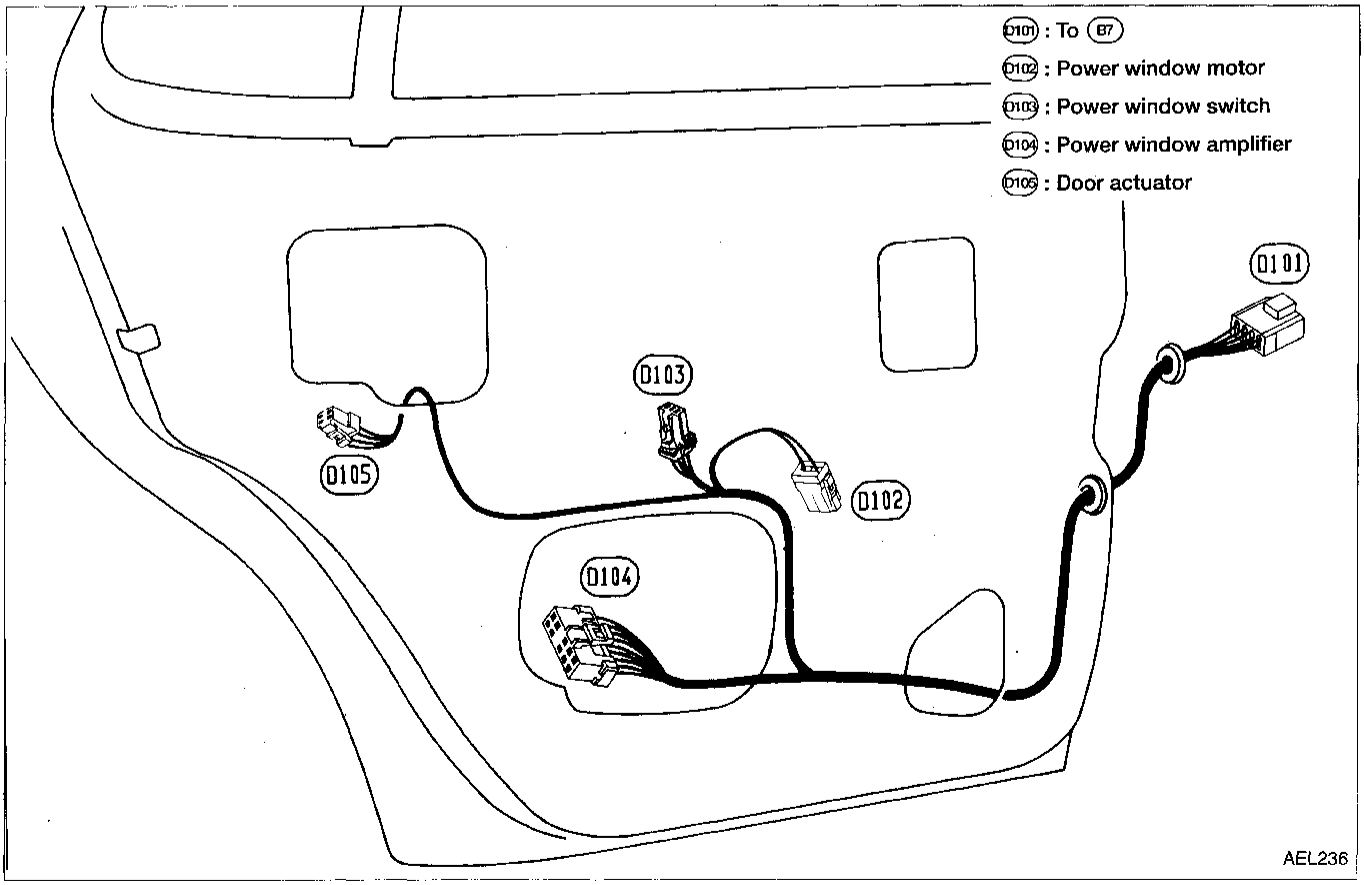
AEL286

Door Harness (LH side)

FRONT

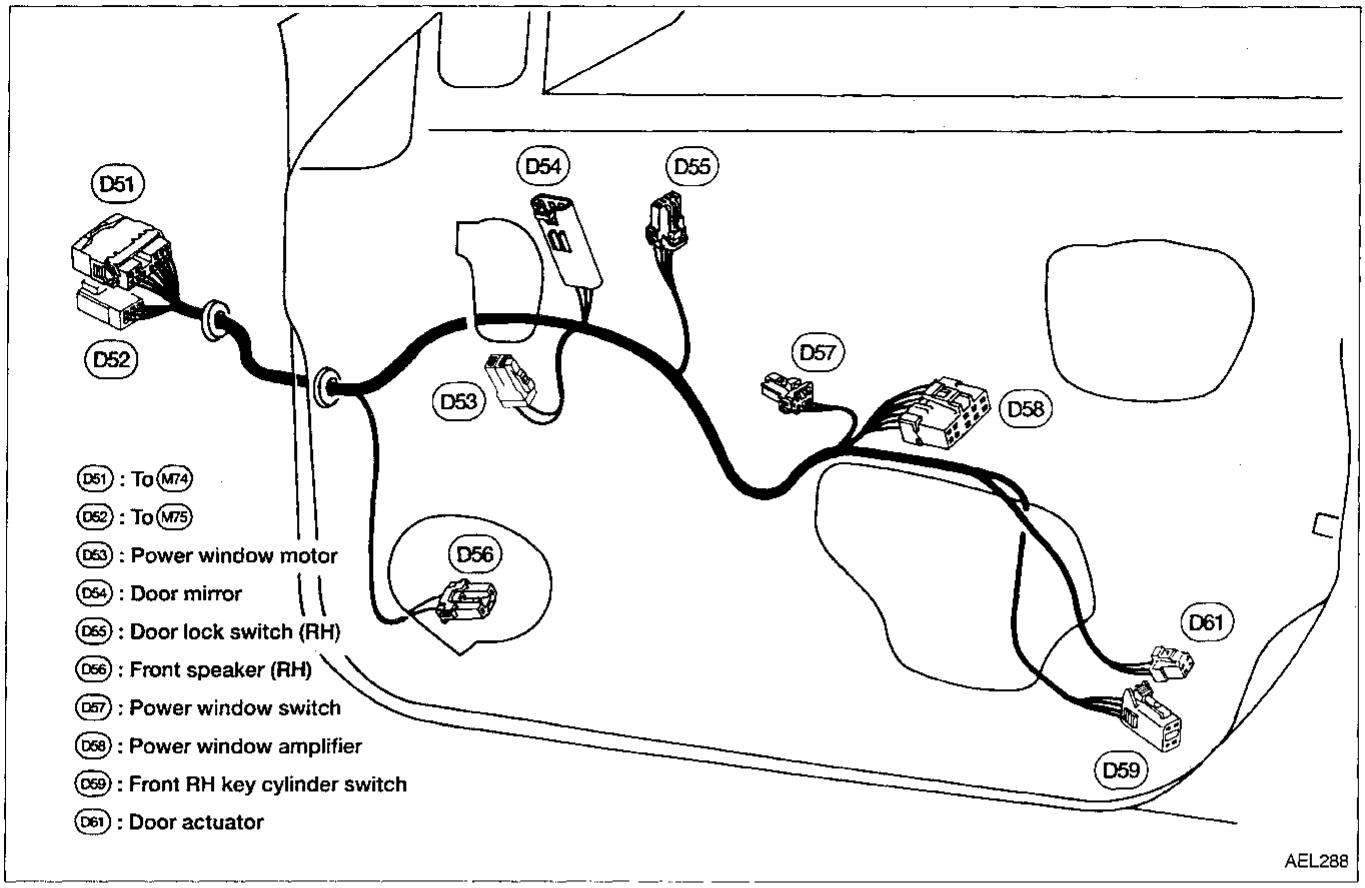


REAR



Door Harness (RH side)

FRONT



REAR