ELECTRICAL SYSTEM

SECTION EL

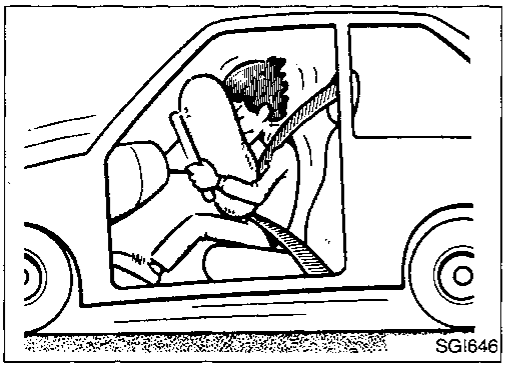
CONTENTS

CONTENTS (Cont'd.)

CONTENTS (Cont'd.)

When you read wiring diagrams:
• Read GI section, "HOW TO READ WIRING DIAGRAMS".
When you perform trouble diagnoses, read GI section, "HOW TO FOLLOW FLOW CHART IN TROUBLE DIAGNOSES".

WIRING DIAGRAM REFERENCE CHART



Precautions for Supplemental Restraint System Supplemental "AIR BAG"

The Supplemental Restraint System Supplemental "Air Bag", used along with seat belts, helps to reduce the risk or severity of injury to the driver in a frontal collision. The Supplemental Restraint System consists of a supplemental air bag module (located in the center of the steering wheel), sensors, a diagnosis (control) unit, warning lamp, wiring harness and spiral cables. Information necessary to service the system safely is included in the **BF section** of this Service Manual.

WARNING:

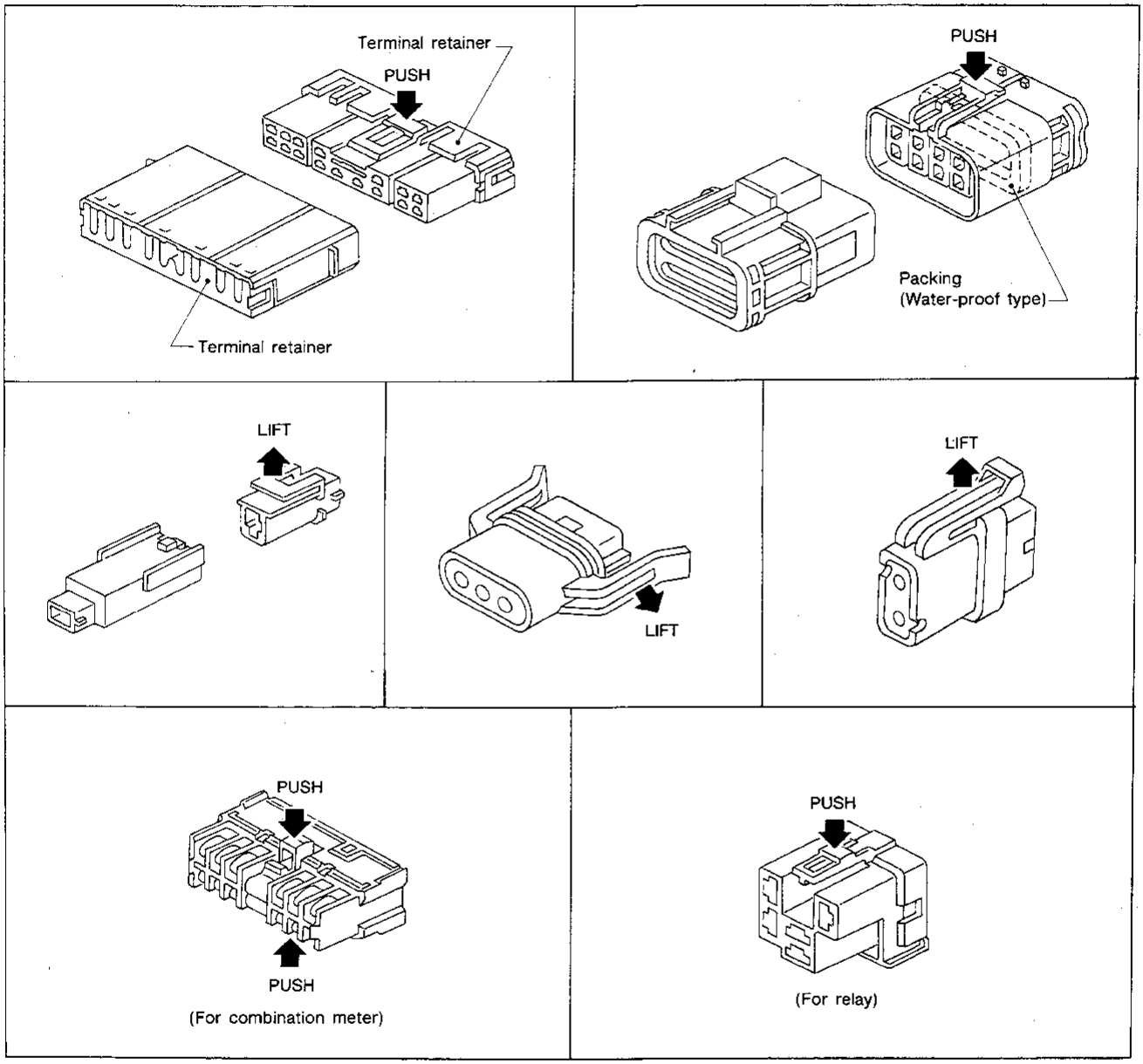
- **To avoid rendering the SRS inoperative, which could lead to personal injury or death in the event of a severe frontal collision, all maintenance must be performed by an authorized NISSAN dealer.**
- **Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal 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 Supplemental "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]

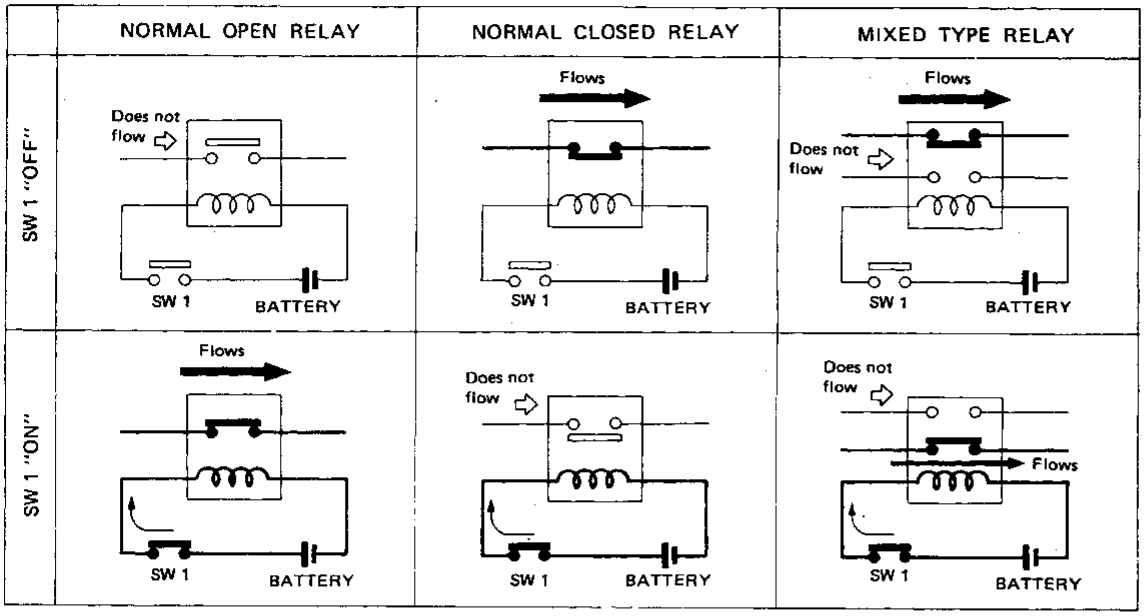


AEL050

Description

NORMAL OPEN, NORMAL CLOSED AND MIXED TYPE RELAYS

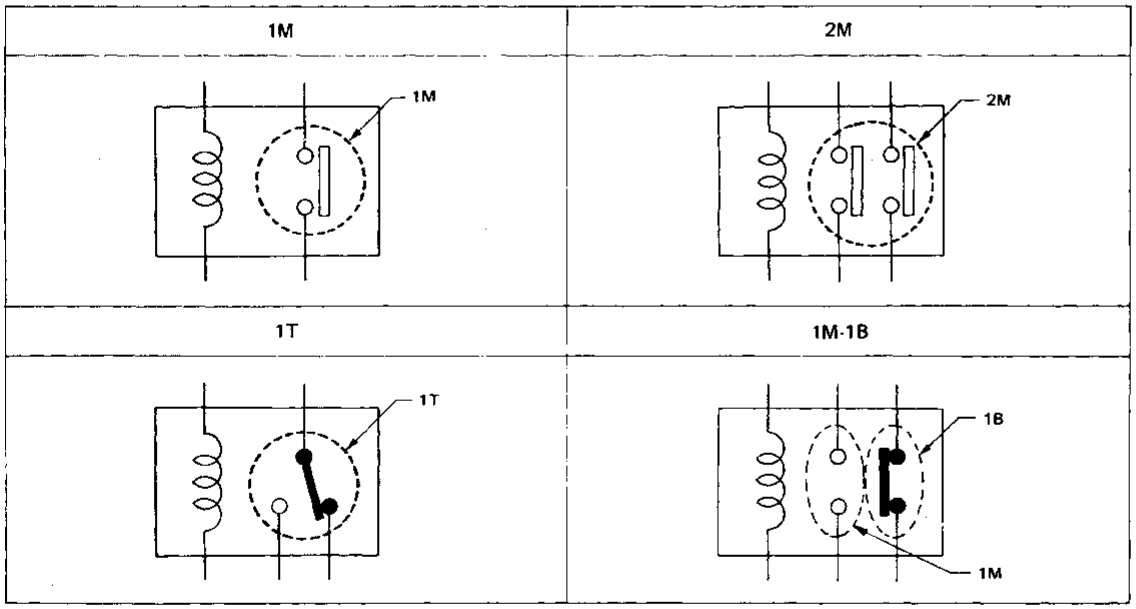
Relays can mainly be divided into three types: normal open, normal closed and mixed type relays.



SEL881H

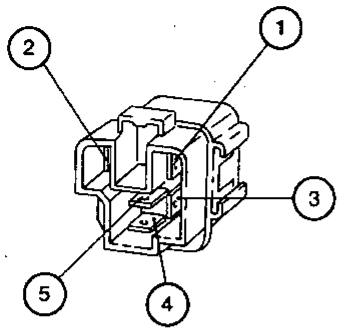
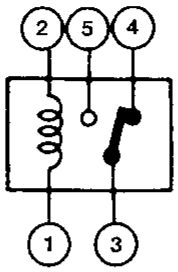
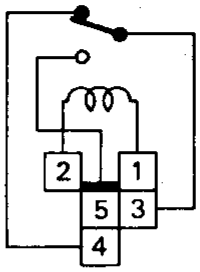
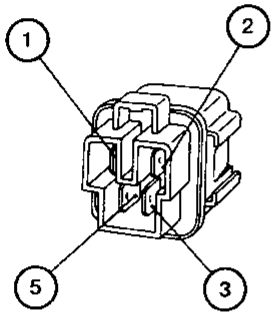
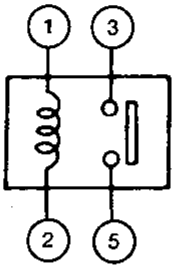
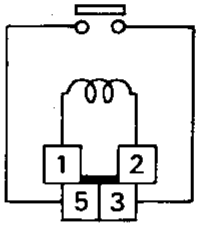
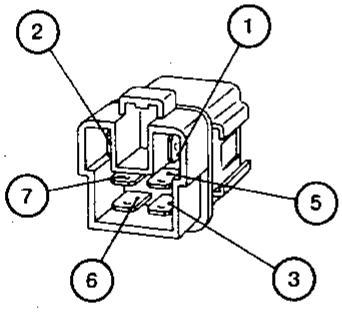
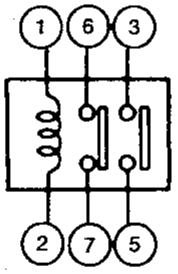
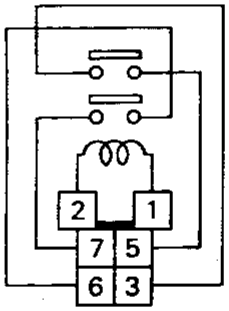
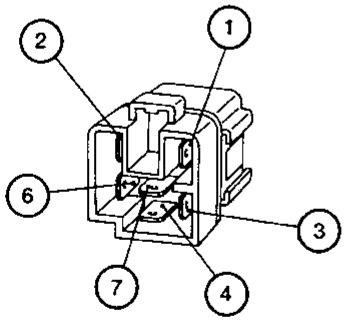
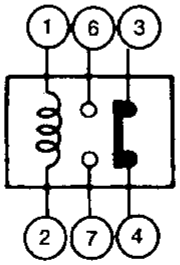
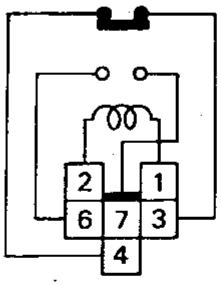
TYPE OF STANDARDIZED RELAYS

1M .... 1 Make 2M .... 2 Make
1T .... 1 Transfer 1M-1B 1 Make 1 Brake



SEL882H

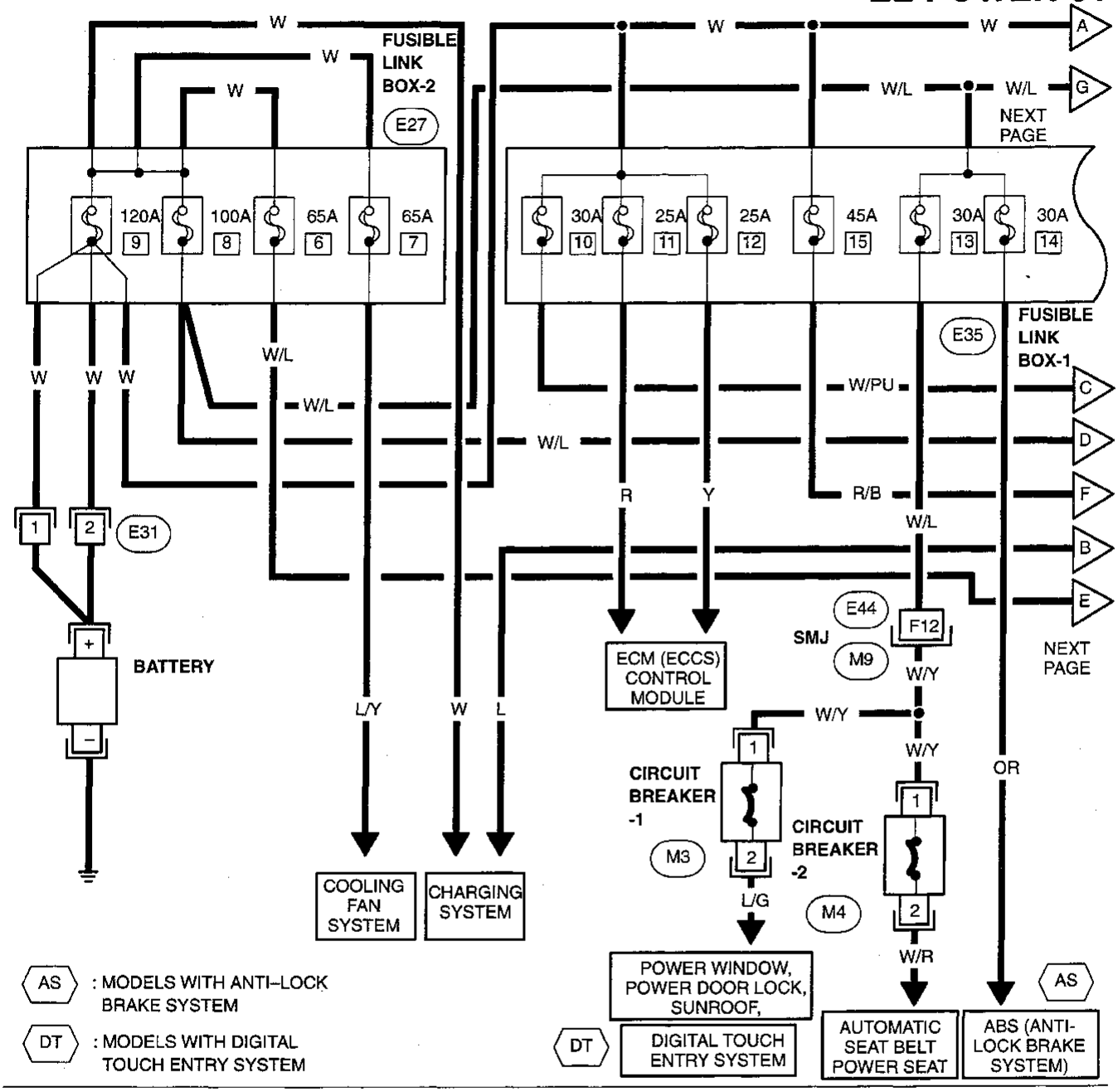
Description (Cont'd)

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

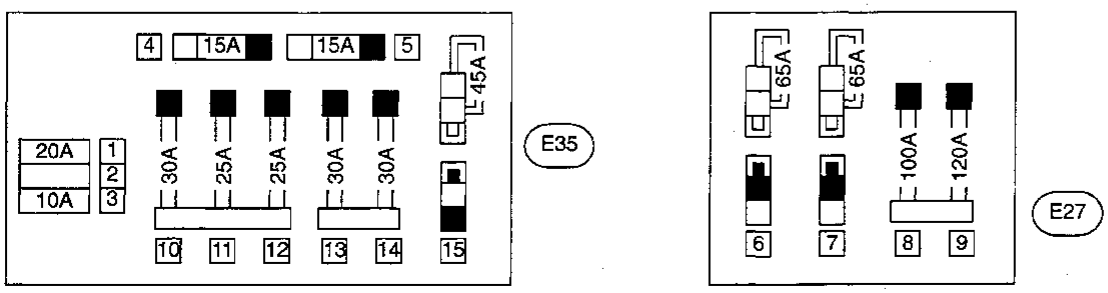
AEL051

Wiring Diagram –POWER–

EL-POWER-01

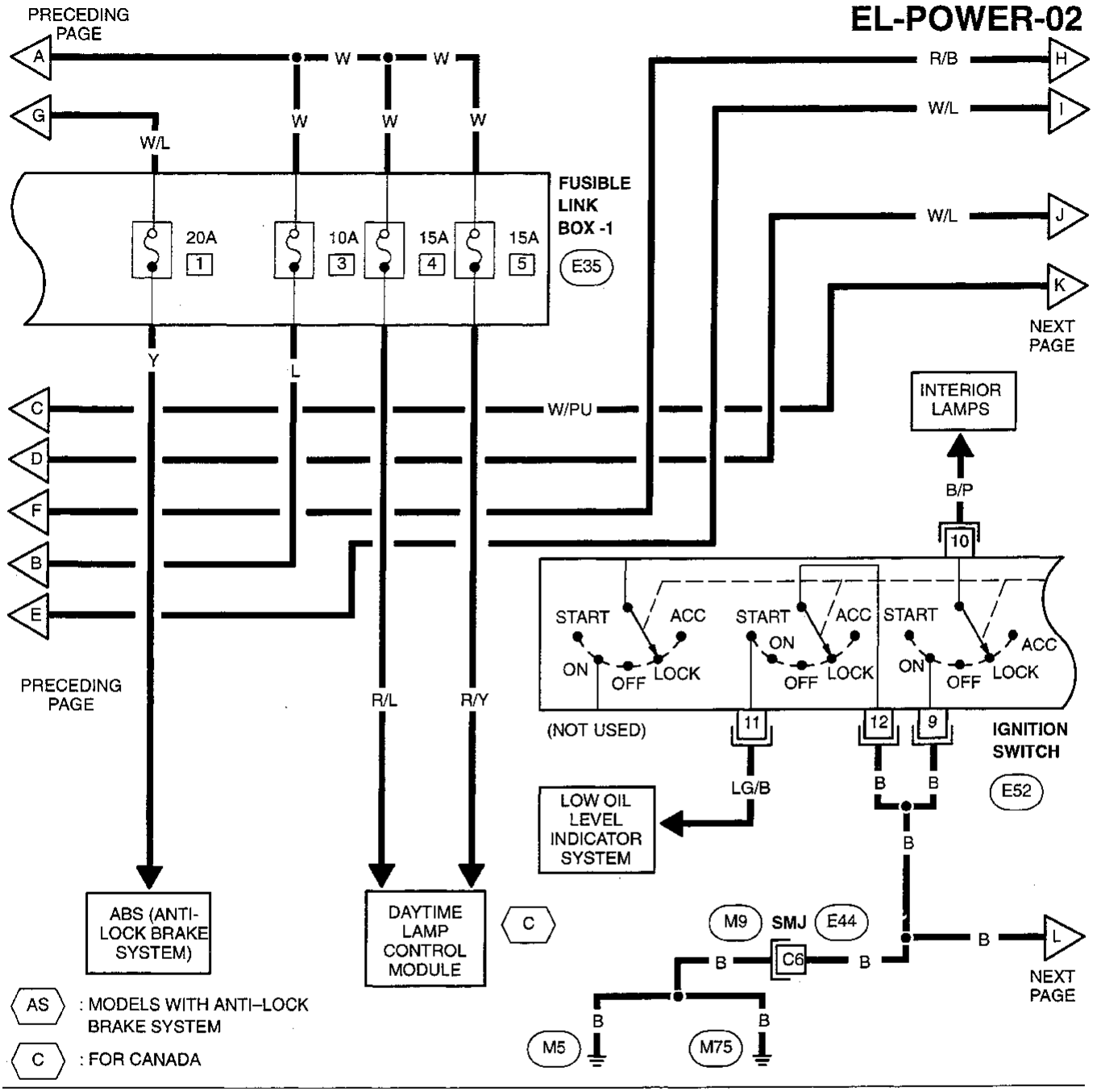


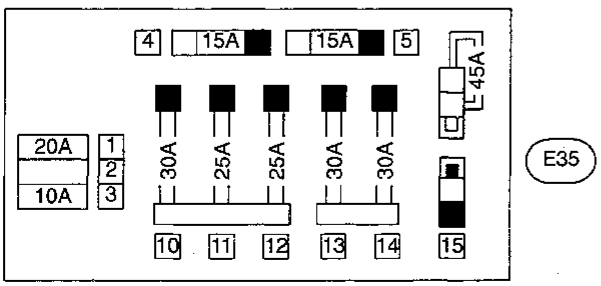
Refer to Foldout Page in EL Section for details.



AEL317-A

Wiring Diagram –POWER– (Cont'd)



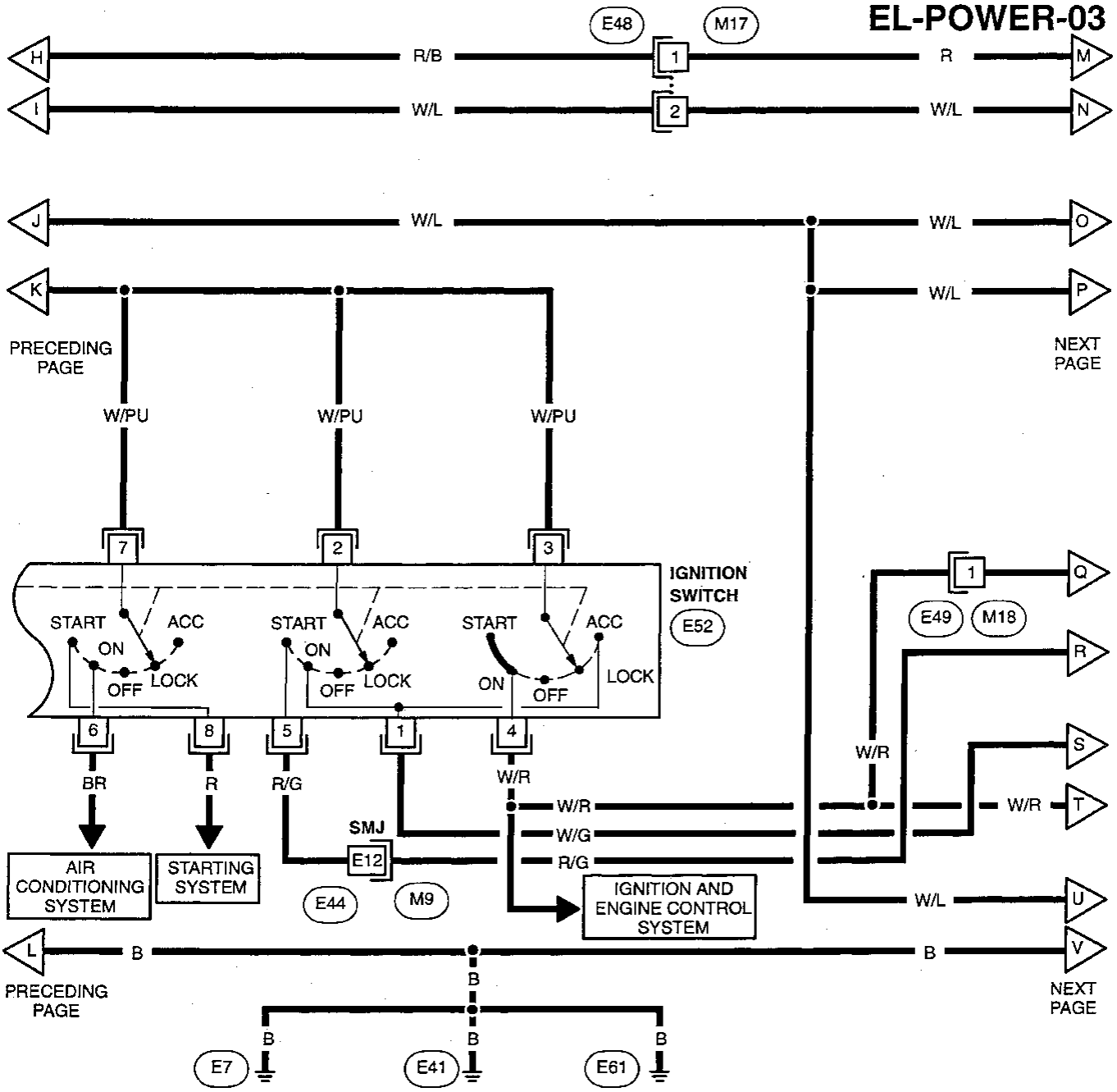


Refer to Foldout Page in EL Section for details. E52

Refer to Foldout Page in EL Section for details. E44 M9

AEL317-B

Wiring Diagram –POWER– (Cont'd)



Refer to Foldout Page in EL Section for details. E52

E48

E49

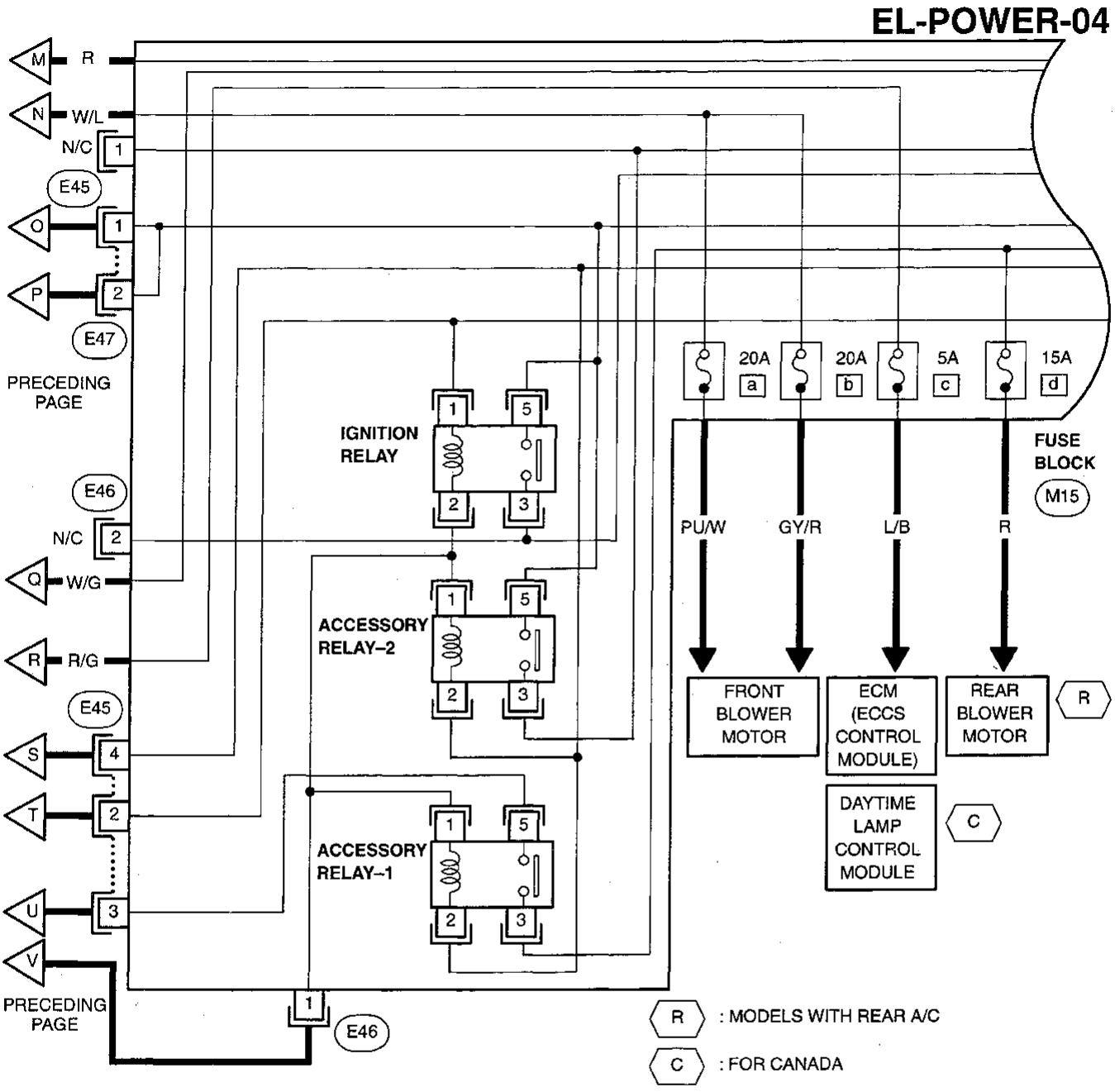
Refer to Foldout Page in EL Section for details. E44 M9

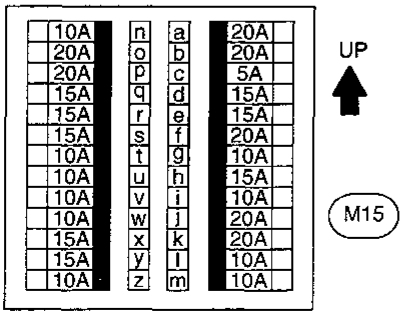
M17

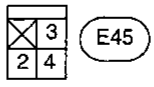
M18

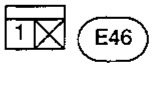
AEL317-C

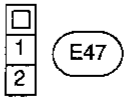
Wiring Diagram –POWER– (Cont'd)







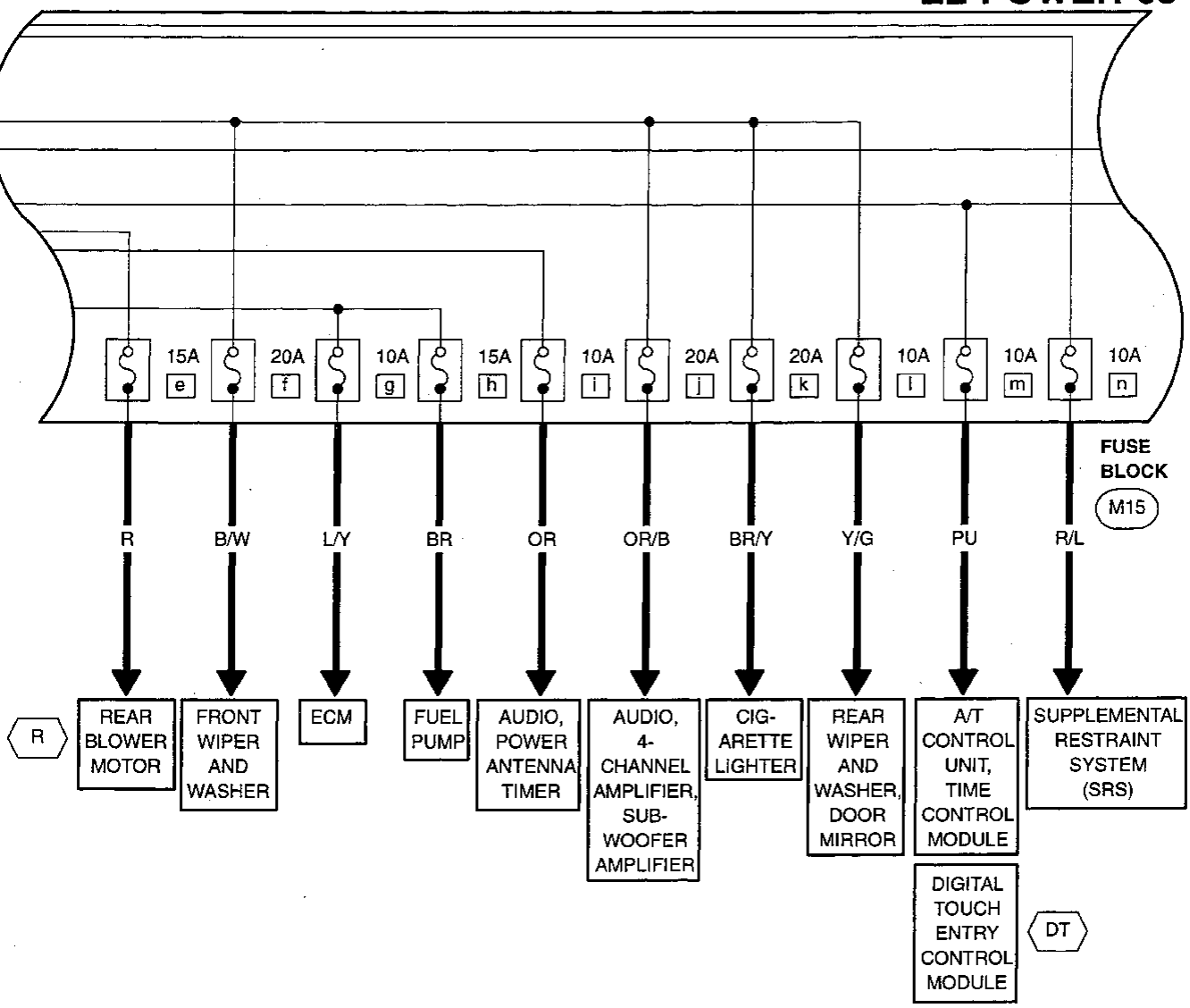




AEL317-D

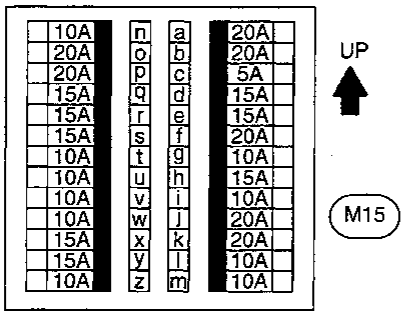
Wiring Diagram –POWER– (Cont'd)

EL-POWER-05



R : MODELS WITH REAR A/C

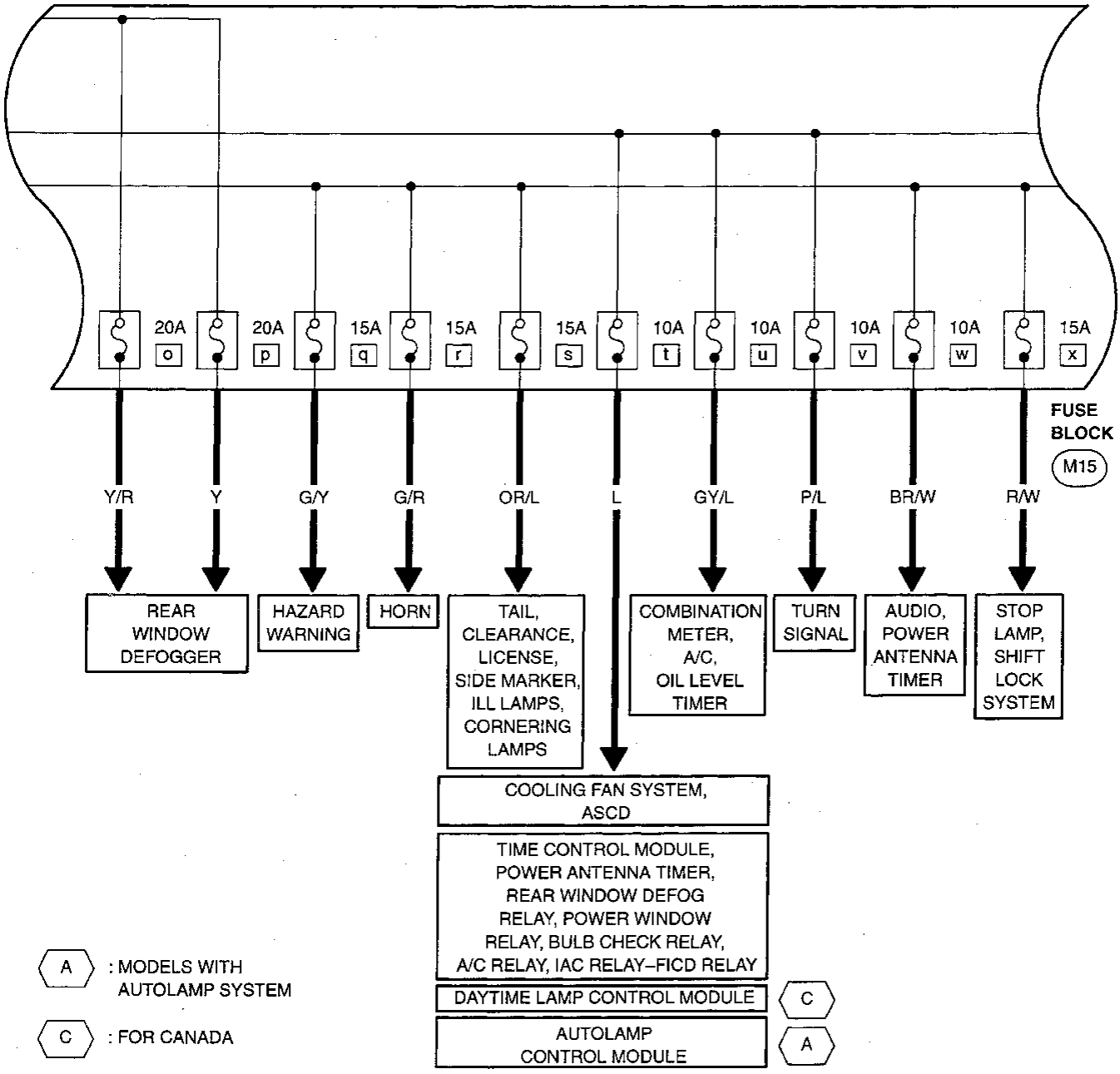
DT : MODELS WITH DIGITAL TOUCH ENTRY SYSTEM

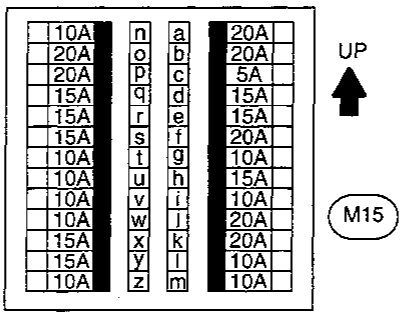


AEL317-E

Wiring Diagram –POWER– (Cont'd)

EL-POWER-06

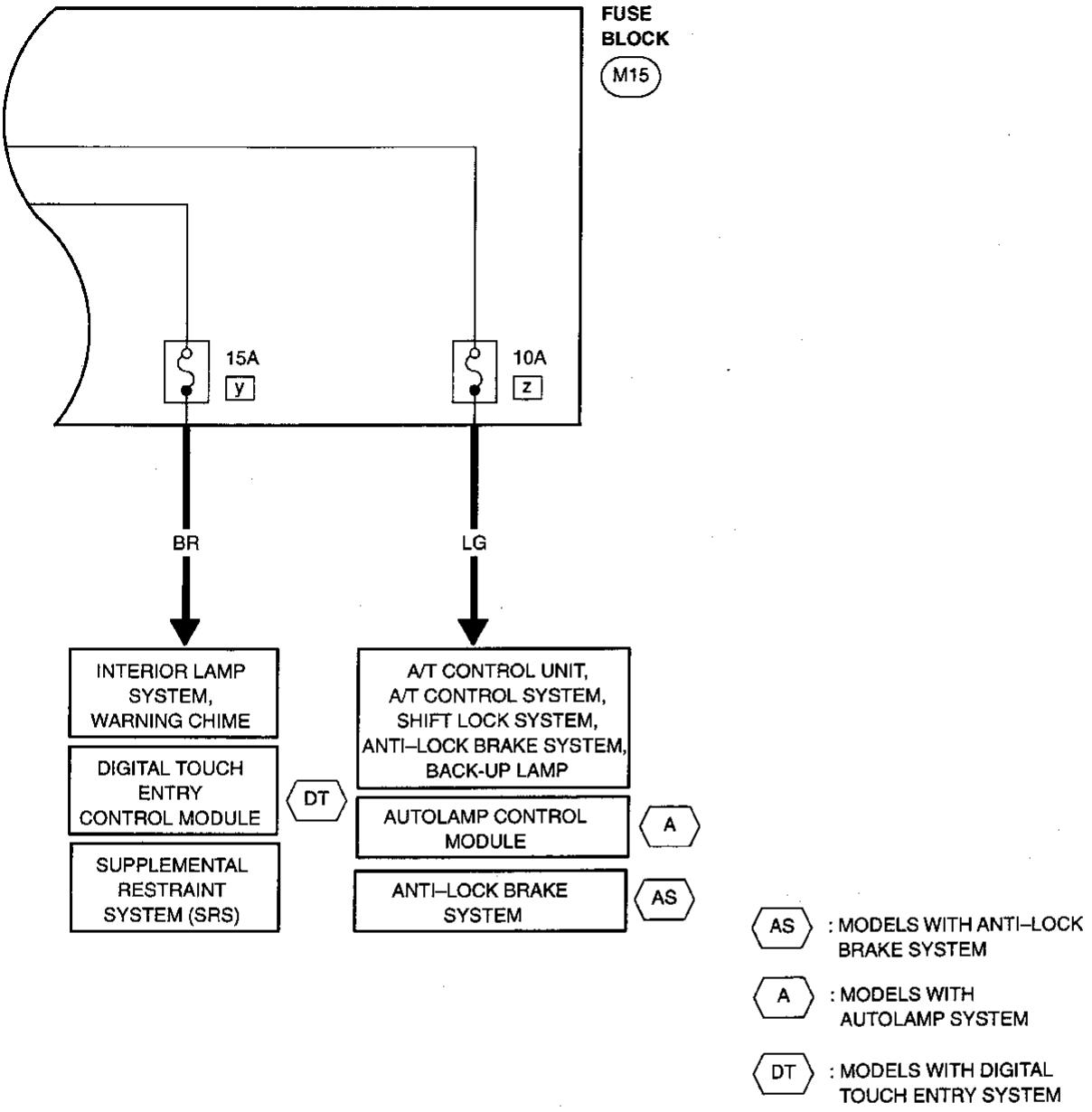


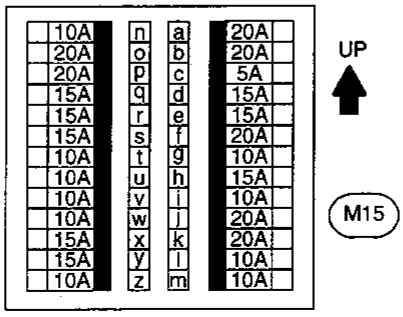


AEL317-F

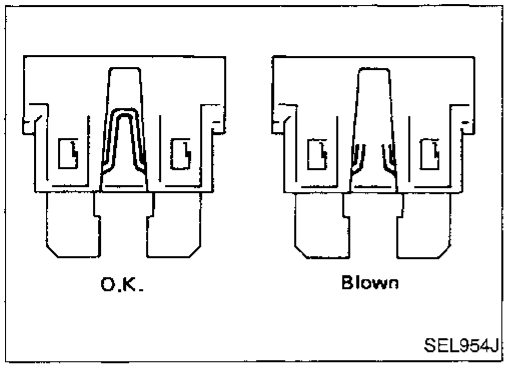
Wiring Diagram –POWER– (Cont'd)

EL-POWER-07



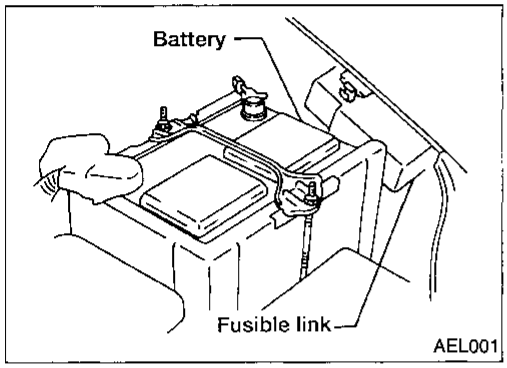


AEL317-G



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

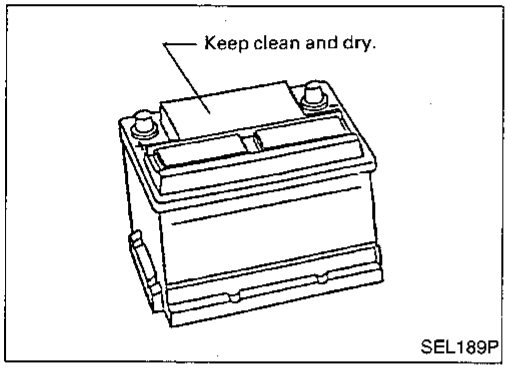
A melted fusible link can be detected either by visual inspection or by feeling with finger tip. If its condition is questionable, use circuit tester or test lamp.

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.**

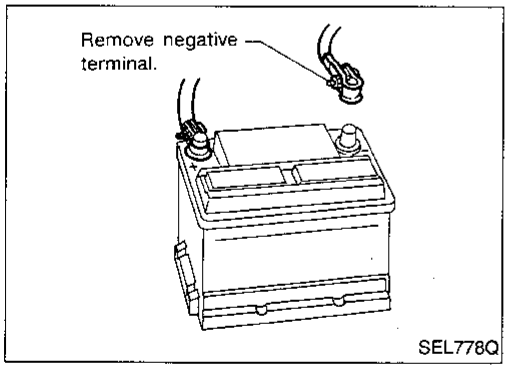


How to Handle Battery

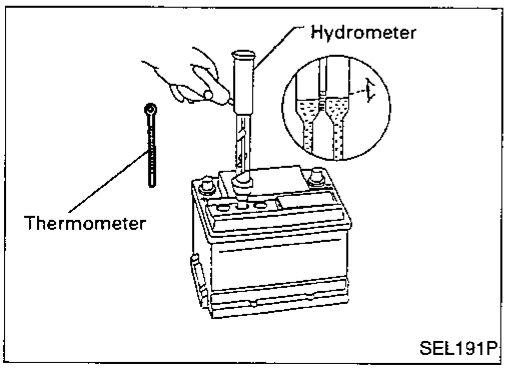
METHODS OF PREVENTING BATTERY DISCHARGE

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 applies also 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. Refer to EL-15.

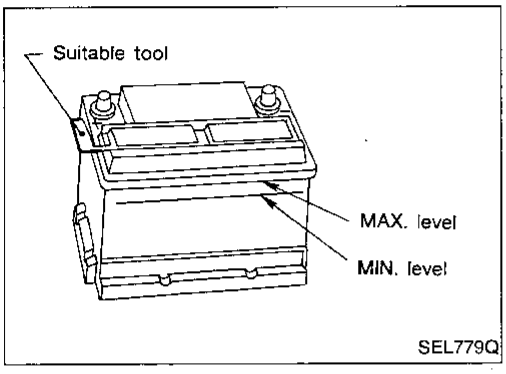
How to Handle Battery (Cont'd)

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.



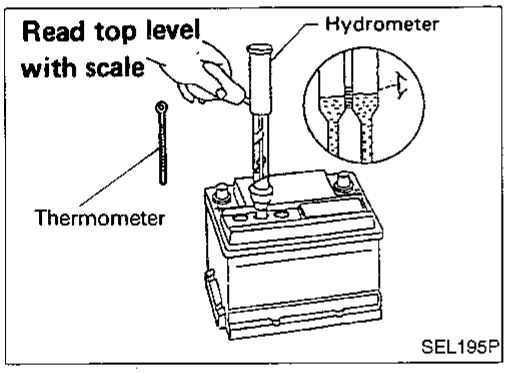
- Remove the vent cap with a suitable tool.
- Add distilled water up to the MAX. level.

SULPHATION

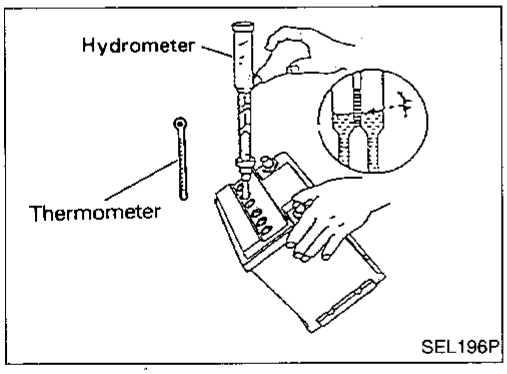
If a battery is left unattended for a long period of time and has a specific gravity of less that 1.100, it will be completely discharged, resulting in sulphation on the cell plates. A sulphated battery may sometimes be brought back into service by means of a long, slow charge, 12 hours or more, followed by a battery capacity test.

SPECIFIC GRAVITY CHECK

1. Read hydrometer and thermometer indications at eye level.



- When electrolyte level is too low, tilt battery case to raise it 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
1.270 - 1.290	Fully charged
1.240 - 1.260	3/4 charged
1.210 - 1.230	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:

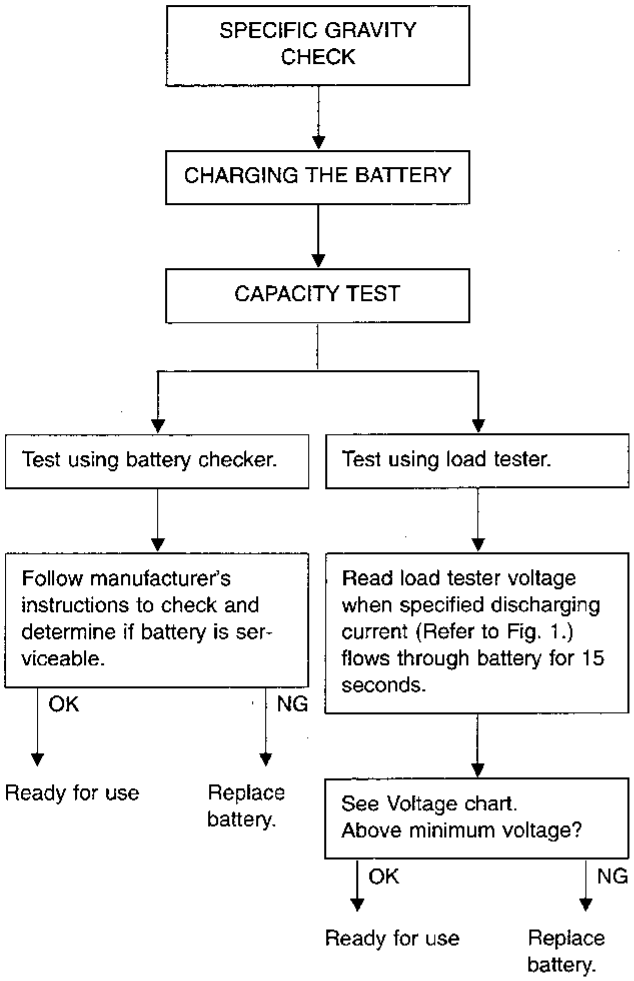
Amps	Time
50	1 hour
25	2 hours
10	5 hours
5	10 hours

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 refer to **initial** charge rate.

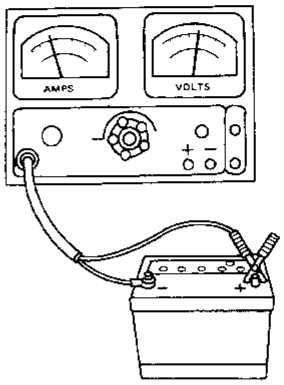
- If, after charging, the specific gravity of any two cells varies more than 0.050, the battery should be replaced.
- After the battery is charged, always perform a "capacity test" as follows, to assure that the battery is serviceable.



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

Fig. 1 DISCHARGING CURRENT (Load tester)

Type	Current (A)
35	180
24R	195



SEL008Z

Voltage chart

Estimated electrolyte temperature °C (°F)	Minimum voltage under 15 second load
21 (70) or above	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	12-60	12-65

NOTE

System Description

Power is supplied at all times:
- to ignition switch terminal ⑦
- through 30A fusible link (No. 10, located in the fusible link box-1).

With the ignition switch in the START position, power is supplied:
- through terminal ⑧ of the ignition switch
- to inhibitor relay terminal ⑦.

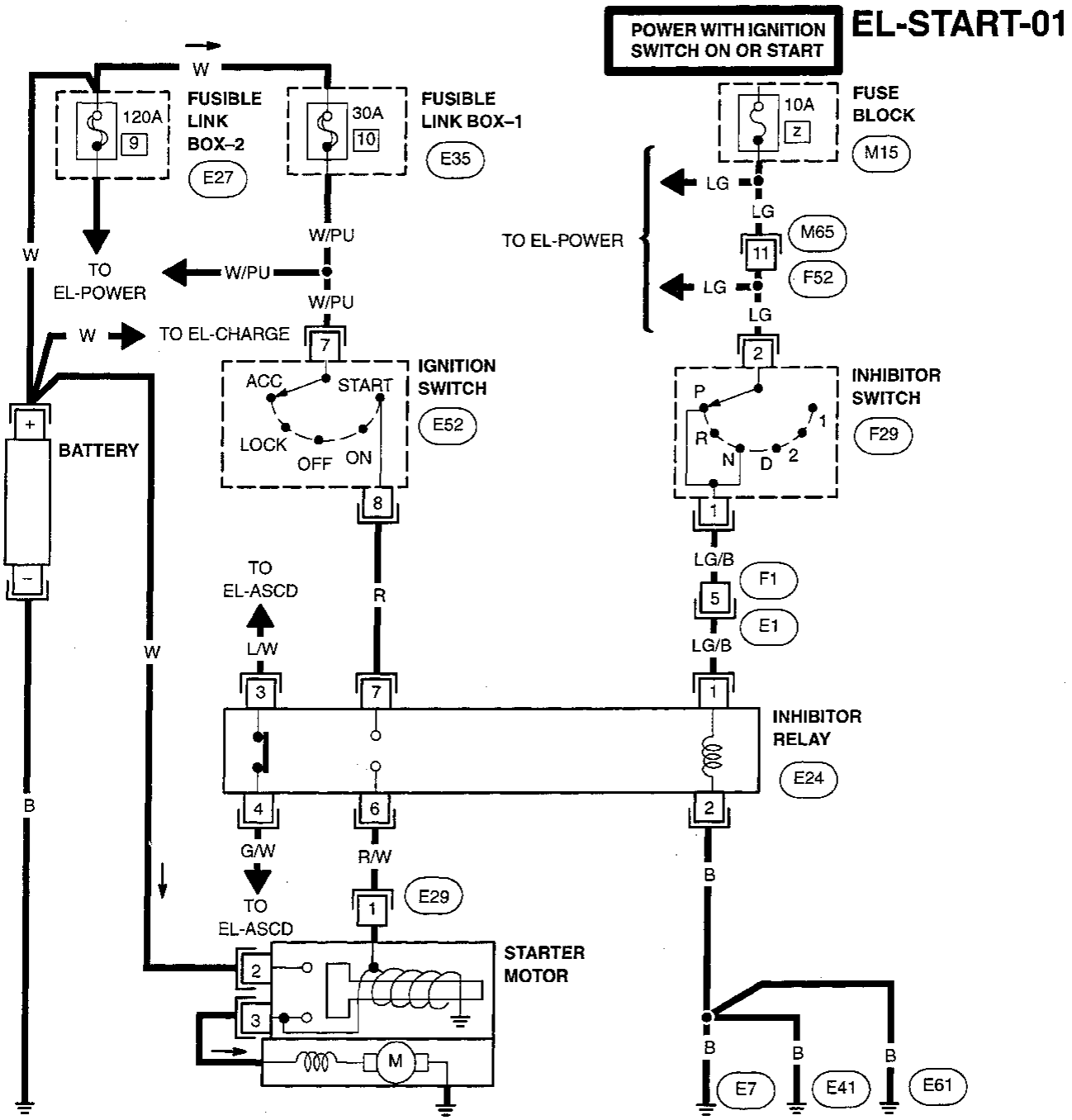
With the ignition switch in the ON or START position, power is supplied:
- through 10A fuse (Letter Z, located in the fuse block)
- to terminal ② of the inhibitor switch
- through terminal ① of the inhibitor switch, with the selector lever in the P or N position
- to terminal ① of the inhibitor relay.

Ground is supplied:
- to inhibitor relay terminal ②
- through body grounds E7, E41, and E61.

With power and ground supplied, the inhibitor relay is energized, and power is supplied:
- from terminal ⑥ of the inhibitor relay
- to 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 –START–

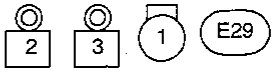


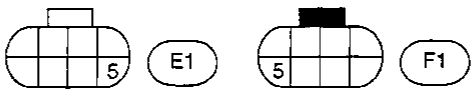
Refer to POWER SUPPLY ROUTING in EL Section. M15

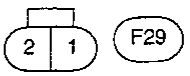
Refer to Foldout Page in EL Section for details. E52

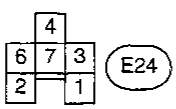
Refer to POWER SUPPLY ROUTING in EL Section. E27

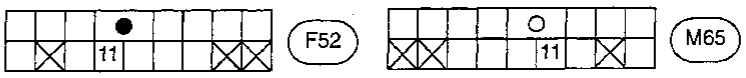
Refer to POWER SUPPLY ROUTING in EL Section. E35







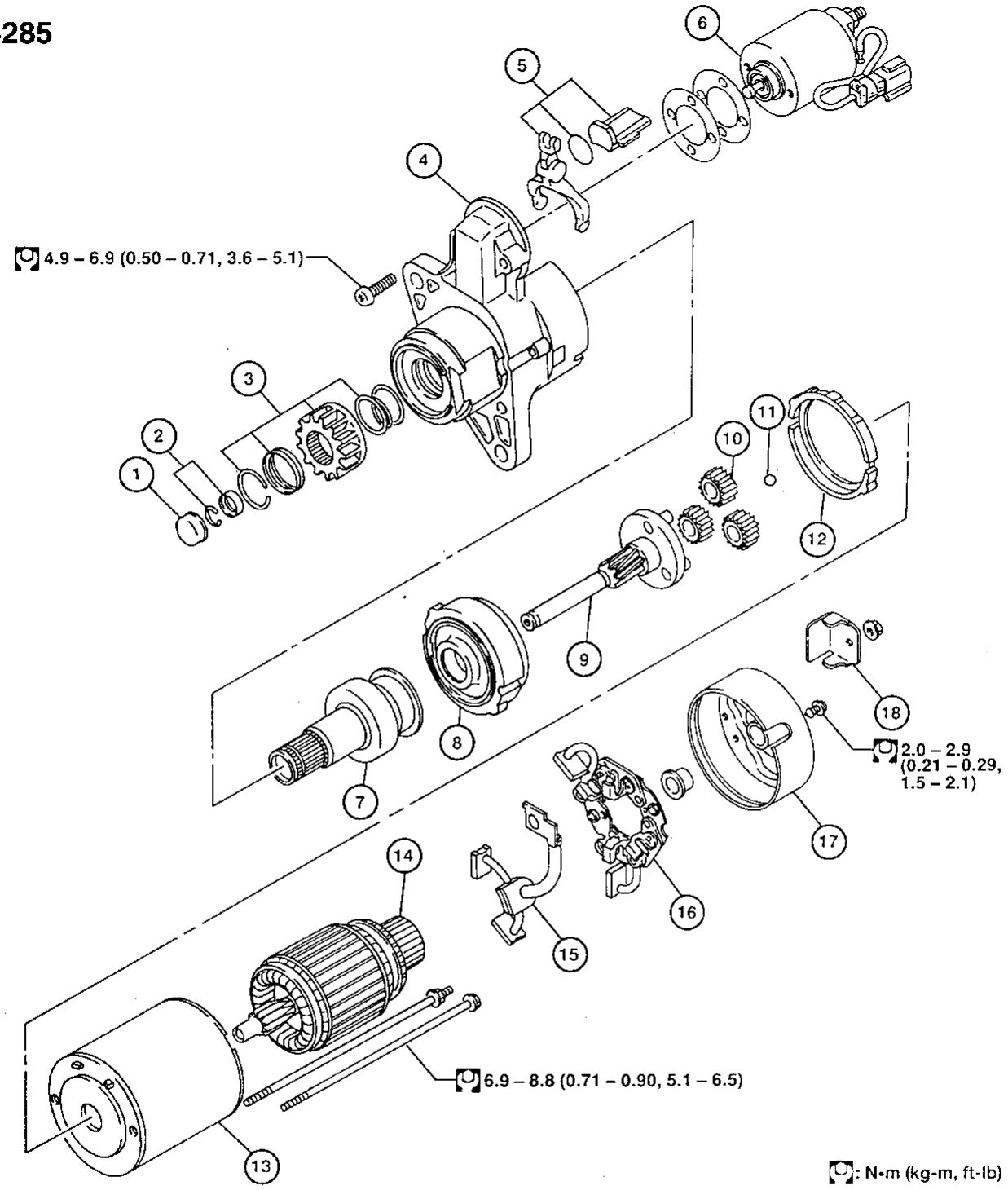




AEL318

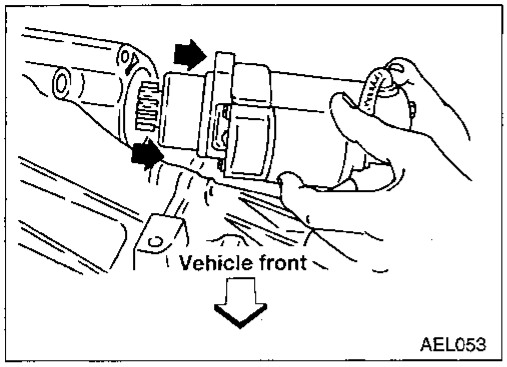
Construction

M1T64285



AEL433

① Cap
② Stopper set
③ Pinion set
④ Front bracket
⑤ Lever set
⑥ Magnetic switch assembly
⑦ Clutch gear
⑧ Internal gear
⑨ Gear shaft
⑩ Planetary gear
⑪ Ball
⑫ Center bracket
⑬ Yoke assembly
⑭ Armature
⑮ Brush assembly
⑯ Brush holder
⑰ Rear bracket
⑱ Support



Removal and Installation

1. Remove battery negative cable from battery.
2. Remove intake air duct.
3. Remove battery cable from starter motor.
4. Remove brush cable from magnetic switch assembly.
5. Disconnect starter motor harness connector.
6. Remove starter motor mounting bolts.
7. Remove starter motor.

When installing, tighten starter motor mounting bolts.

: 23 - 26 N·m (2.35 - 2.7 kg-m, 17.0 - 19.2 ft-lb)

Pinion/Clutch Check

1. Inspect pinion teeth.
- Replace pinion gear 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		M001T64285
System voltage	V	12
No-load		
Terminal voltage	V	11.0
Current	A	Less than 90
Revolution	rpm	More than 2,900
Minimum diameter of commutator	mm (in)	28.8 (1.134)
Minimum length of brush	mm (in)	11.0 (0.433)
Brush spring tension	N (kg, lb)	17.7 - 21.6 (1.8 - 2.2, 4.0 - 4.9)
Clearance of bearing metal and armature shaft	mm (in)	0.01 - 0.20 (0.0004 - 0.0079)
Clearance "ℓ" between pinion front edge and pinion stopper	mm (in)	0.05 - 1.5 (0.0020 - 0.0591)
Installed current	A	150

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:
- 10A fuse (No. 3, located in the fusible link box-1).

Voltage output through generator terminal Ⓑ, to charge the battery and operate the vehicle's electrical system, is controlled by the amount of field voltage detected by the IC voltage regulator at terminal Ⓢ. The charging circuit is protected by the 120A fusible link (No. 9, located in the fusible link box-2).

Terminal Ⓔ of the generator supplies ground through a body ground.

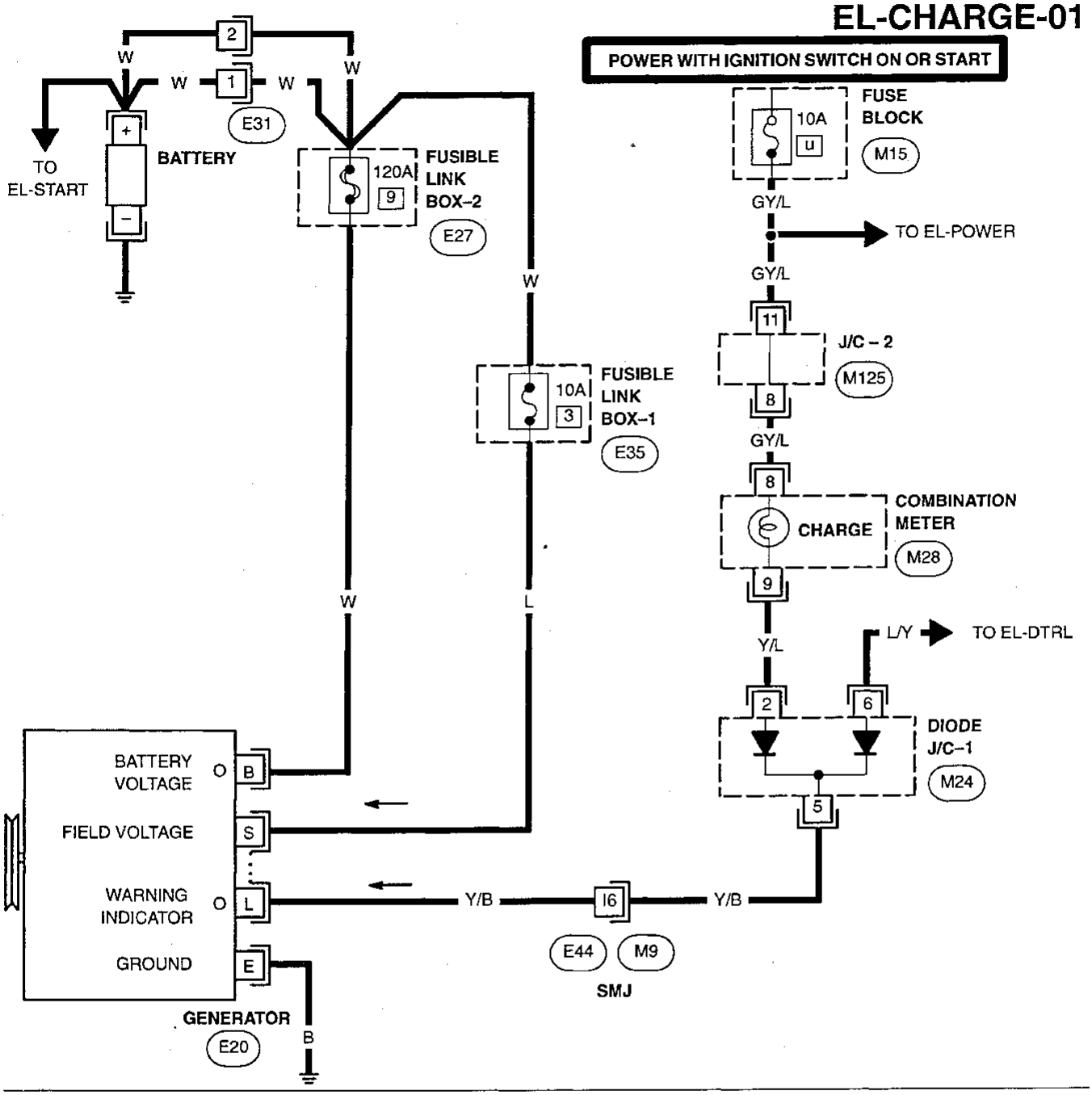
With the ignition switch in the ON or START position, power is supplied:
- through 10A fuse (Letter u, located in the fuse block)
- to combination meter terminal ⑧ for the charge indicator.

Ground is supplied:
- to terminal ⑨ 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-27).

Wiring Diagram –CHARGE–

EL-CHARGE-01



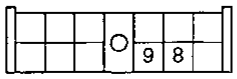
Refer to Foldout Page in EL Section for details. M24

Refer to POWER SUPPLY ROUTING in EL Section. E27

Refer to POWER SUPPLY ROUTING in EL Section. M15

Refer to Foldout Page in EL Section for details. M9 E44

Refer to POWER SUPPLY ROUTING in EL Section. E35



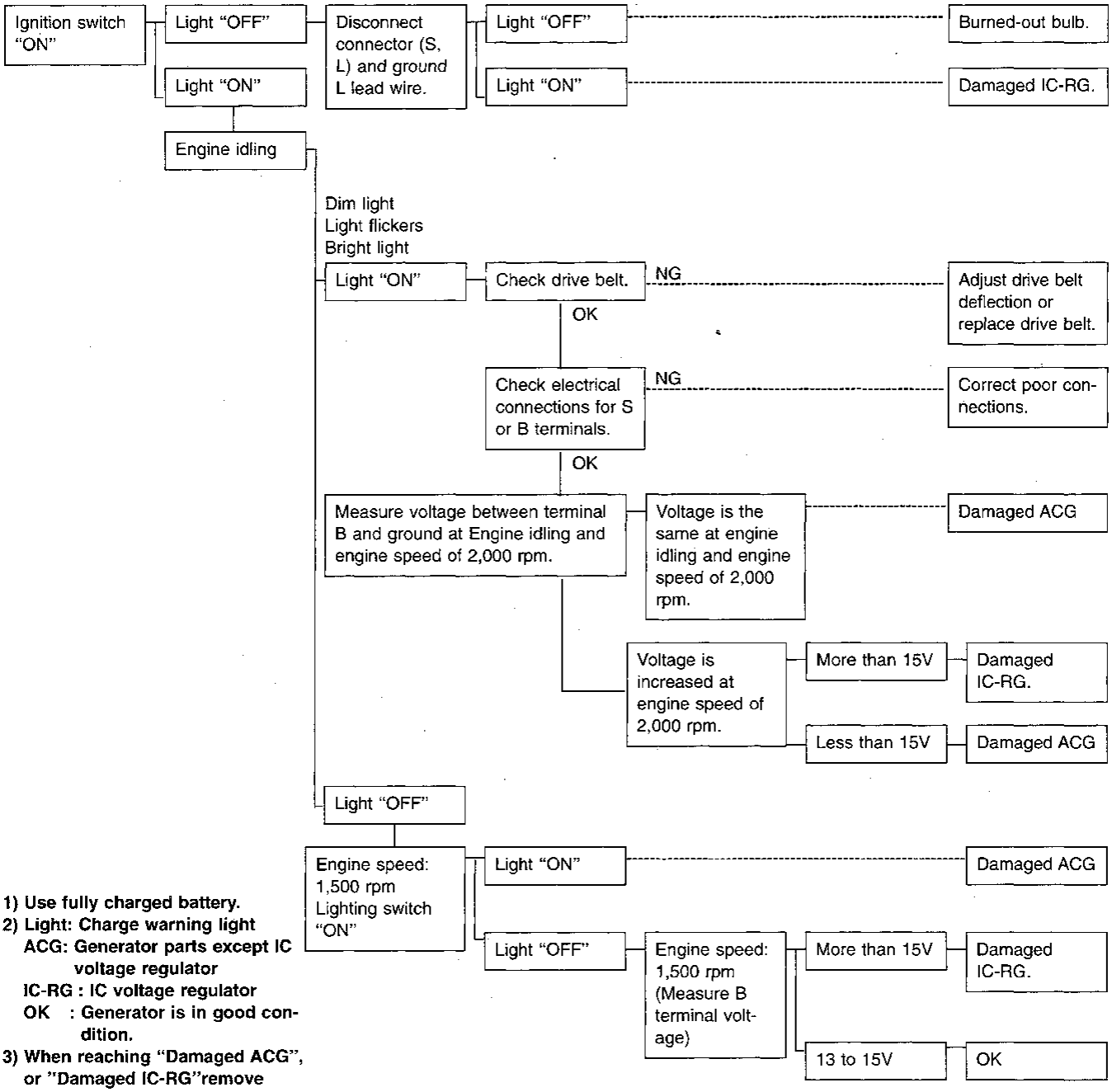
Refer to Foldout Page in EL Section for details. M125

AEL319

Trouble Diagnoses

Before conducting a 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.

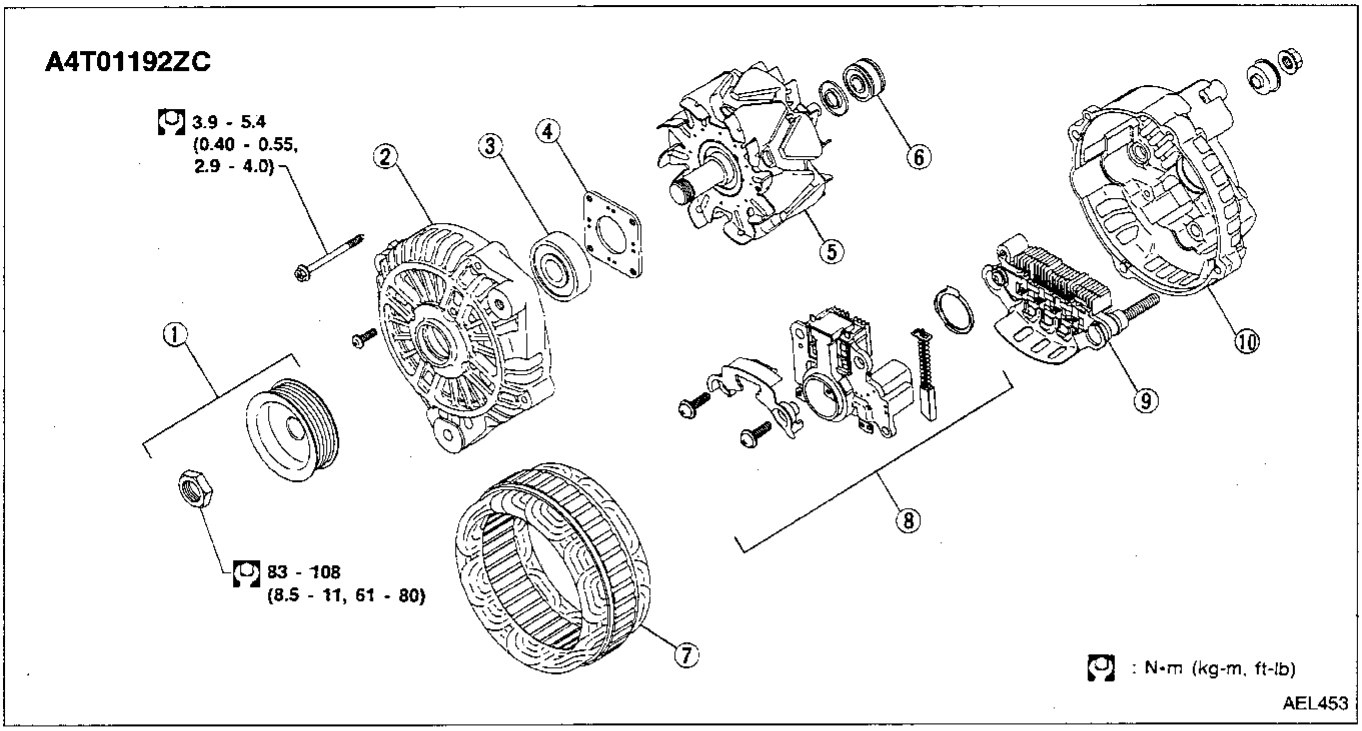
Before starting diagnosis, inspect the fusible link.



Make sure connector (S, L) is connected correctly.

1) Use fully charged battery.
2) Light: Charge warning light
ACG: Generator parts except IC voltage regulator
IC-RG : IC voltage regulator
OK : Generator is in good condition.
3) When reaching "Damaged ACG", or "Damaged IC-RG" remove generator from vehicle and disassemble, inspect and correct or replace faulty parts.
4) Terminals "S", "L" and "B" are marked on rear cover of generator.

Construction



① Pulley assembly
② Front cover
③ Front bearing
④ Bearing retainer
⑤ Rotor
⑥ Rear bearing
⑦ Stator
⑧ IC voltage regulator assembly
⑨ Diode assembly
⑩ Rear cover

Removal and Installation

1. Disconnect battery cable.
2. Loosen idler pulley adjusting bolt.
3. Remove A/C compressor belt.
4. Remove engine undercover.
5. Remove generator harness and bracket.
6. Loosen generator mounting bolt.
7. Remove drive belt.
8. Remove generator.

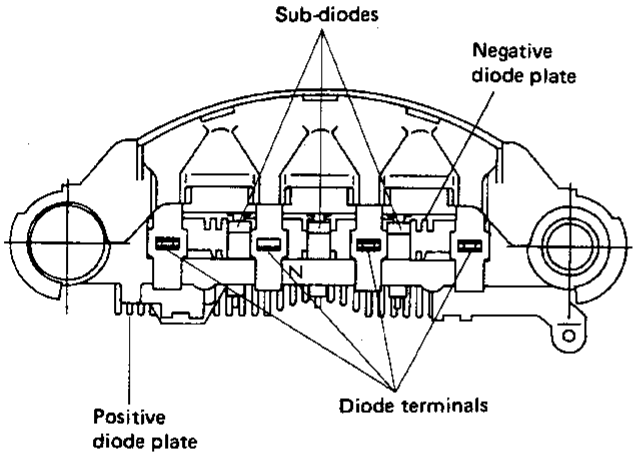
- Install in the reverse order of removal.

Diode Check

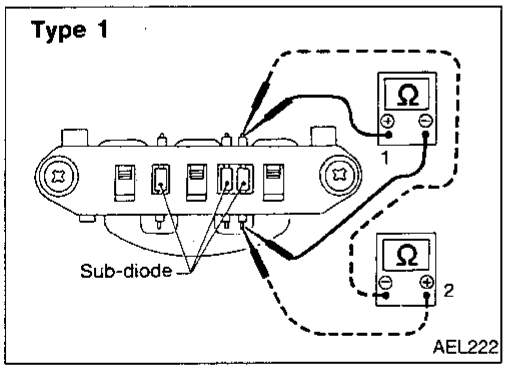
MAIN DIODES

- In order to check diodes, they must first 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	



SEL385L



SUB-DIODES

- Attach ohmmeter's probe to each end of diode to check for continuity.
  Continuity:
  Diode conducts in only one direction.
- Continuity is NG ... Replace diode assembly.

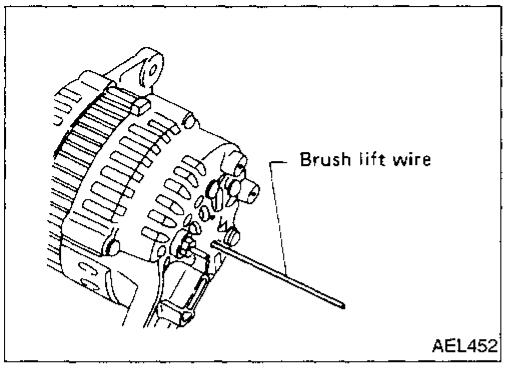
Assembly

Carefully observe the following instructions.

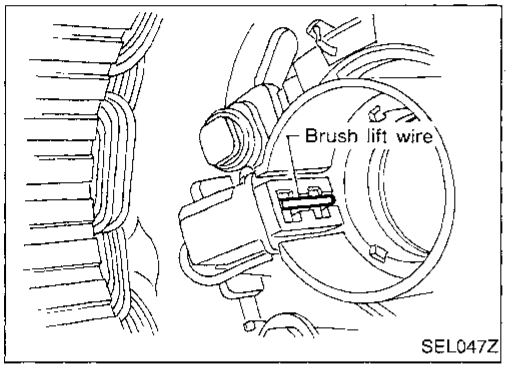
- When soldering each stator coil lead wire to diode assembly terminal, carry out the operation as fast as possible.

Assembly (Cont'd)

REAR COVER INSTALLATION



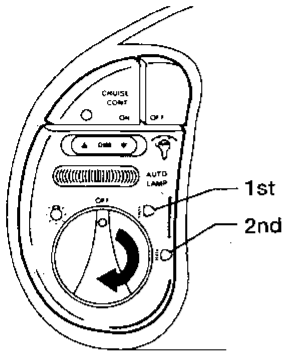
(1) Before installing front cover with pulley and rotor with rear cover, push brush up with fingers and retain brush by inserting brush lift wire into brush lift hole from outside.
(2) After installing front and rear sides of generator, pull out brush lift wire.



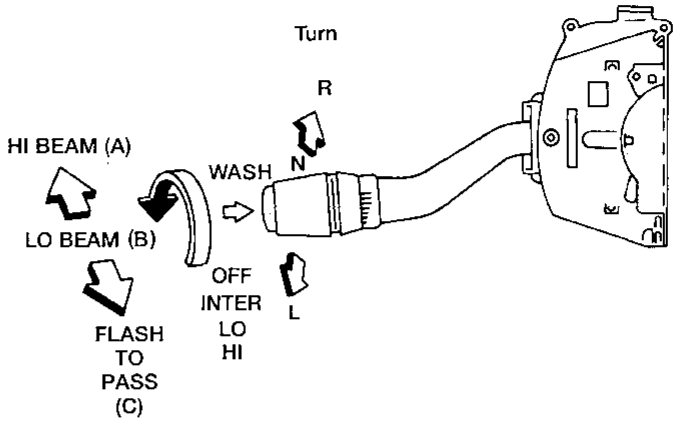
Service Data and Specifications (SDS)

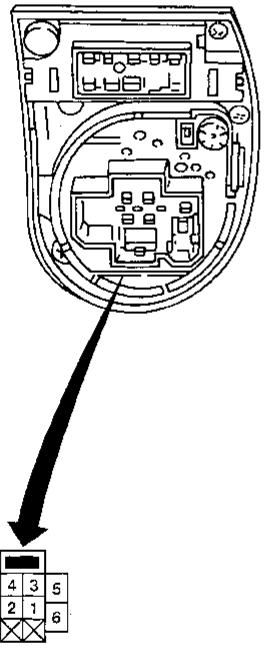
Type		A4T02591ZC
Nominal rating	V-A	12-110
Ground polarity		Negative
Minimum revolution under no-load (When 13.5 volts is applied)	rpm	1,300
Hot output current	A/rpm	More than 33/1,300 More than 85/2,500
Regulated output voltage	V	14.1 - 14.7
Minimum length of brush	mm (in)	8.0 (0.315)
Brush spring pressure	N (g, oz)	3.138 - 4.315 (320 - 440, 11.29 - 15.52)
Slip ring minimum outer diameter	mm (in)	More than 22.1 (0.870)
Rotor (Field coil) resistance	Ω	2.3 - 2.7

Combination Switch/Check



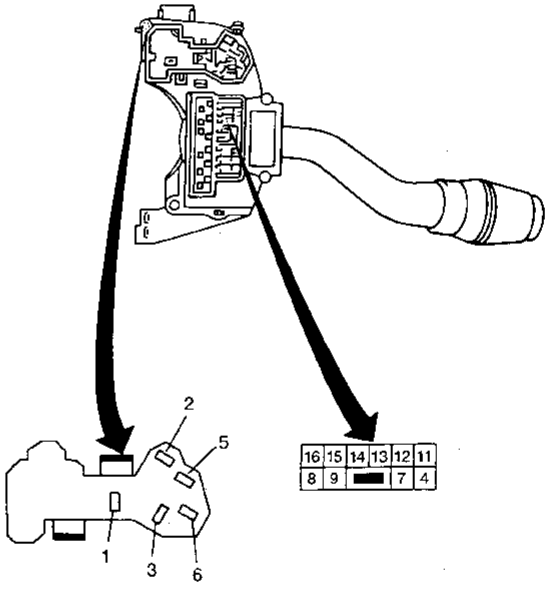
Light switch





Lighting switch

	Off	1st	2nd
1			○
2			○
3			○
4			○
5		○	○
6		○	○
7		○	
		⑨	
8		○	



Turn signal and cornering lamp switch

	L	N	R
1	○		○
2	○		
3			○
4	○		○
5	○		
6			○

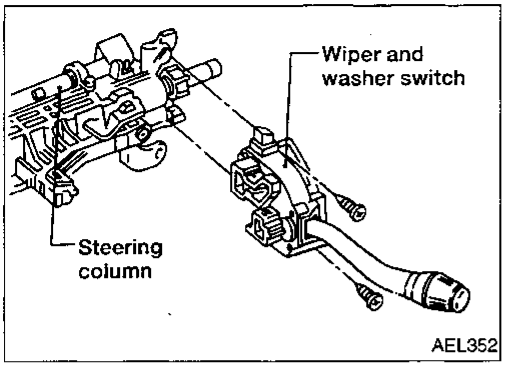
Lighting switch – 2

	A	B	C
11	○		○
12	○		○
13			○
14			○
15			○
16			○

Wiper switch

	Off	Int Max	Int Min	LO	HI	Wash
7	○	○	○	○	○	
8	○	○	○	○	○	○
9	○ 47.6 kΩ ○ 103.3 kΩ	○ 11.3 kΩ ○ 103.3 kΩ	○ 11.3 kΩ ○ 3.3 kΩ	○ 4.08 kΩ ○ 3.3 kΩ	○ 3.3 kΩ ○	○

AEL351



Combination Switch/Replacement

- To remove combination switch, remove attaching screws.

NOTE

System Description (For USA)

The headlamps are controlled by the lighting switch.
Power is supplied at all times:
- to lighting switch terminal ③, and
- to combination switch terminal ⑭
- through 15A fuse (No. 4, located in the fusible link box-1), and
- to lighting switch terminal ①, and
- to combination switch terminal ⑯
- through 15A fuse (No. 5, located in the fusible link box-1).

LOW BEAM OPERATION

When the lighting switch is turned to the HEAD position, power is supplied:
- from the lighting switch terminal ②
- to the LH headlamp relay terminal ③
- through the LH headlamp relay terminal ④
- to the LH headlamp terminal ①, and
- from lighting switch terminal ④
- to the RH headlamp relay terminal ③
- through the RH headlamp relay terminal ④
- to the RH headlamp terminal ①.

Terminal ③ of each headlamp supplies ground through body grounds: (E7), (E41), (E61), (M5), and (M75).
With power and ground supplied, the headlamps will illuminate.

HIGH BEAM OPERATION

When the combination switch is placed in the HI BEAM position, with the lighting switch in the HEAD position, power is supplied:
- to the combination switch terminal ⑫
- through the combination switch terminal ⑪
- to the LH headlamp relay terminal ①, and
- to the RH headlamp relay terminal ①.

Ground is supplied to the LH headlamp relay terminal ② and the RH headlamp relay terminal ② through body grounds: (E7), (E41), (E61), (M5), and (M75).

With power and ground supplied, the headlamp relays energize, and power is supplied:
- through the LH headlamp relay terminal ⑤
- to the LH headlamp terminal ②, and
- through the RH headlamp relay terminal ⑤
- to RH headlamp terminal ②, and
- to the combination meter terminal ⑥ for the hi beam indicator.

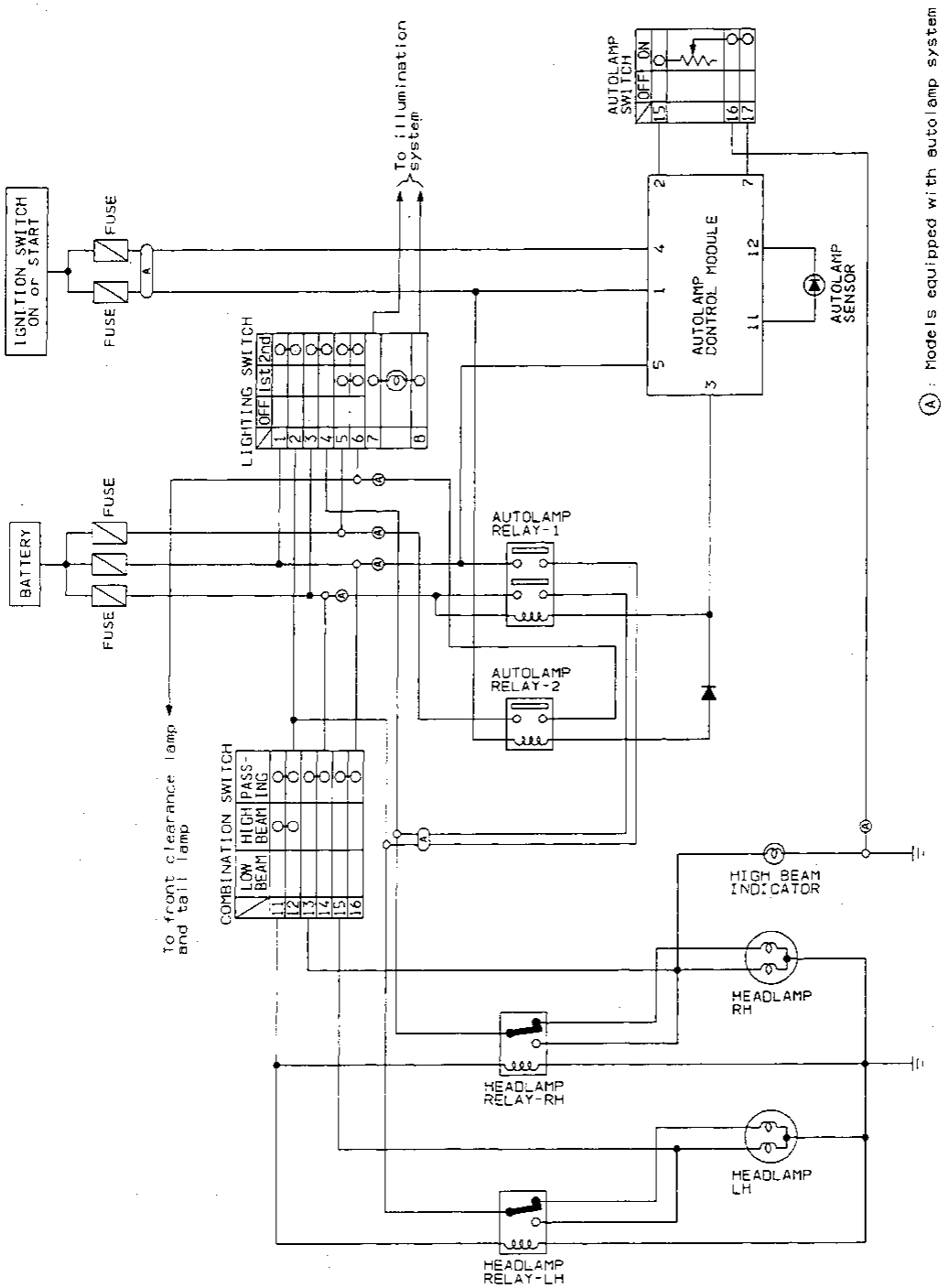
Terminal ③ of each headlamp, and terminal ⑫ of the combination meter supplies ground through body grounds: (E7), (E41), (E61), (M5), and (M75). With power and ground supplied, the high beams, and the hi beam indicator will illuminate.

FLASH-TO-PASS OPERATION

When the combination switch is placed in the FLASH-TO-PASS position, power is supplied:
- to the LH headlamp terminal ②
- through the combination switch terminal ⑮, and
- to the RH headlamp terminal ②, and
- to the combination meter terminal ⑥ for the hi beam indicator,
- through the combination switch terminal ⑬.

With ground supplied through body grounds: (E7), (E41), (E61), (M5), and (M75), the high beams, and the hi beam indicator will illuminate until the combination switch is released from the FLASH-TO-PASS position.

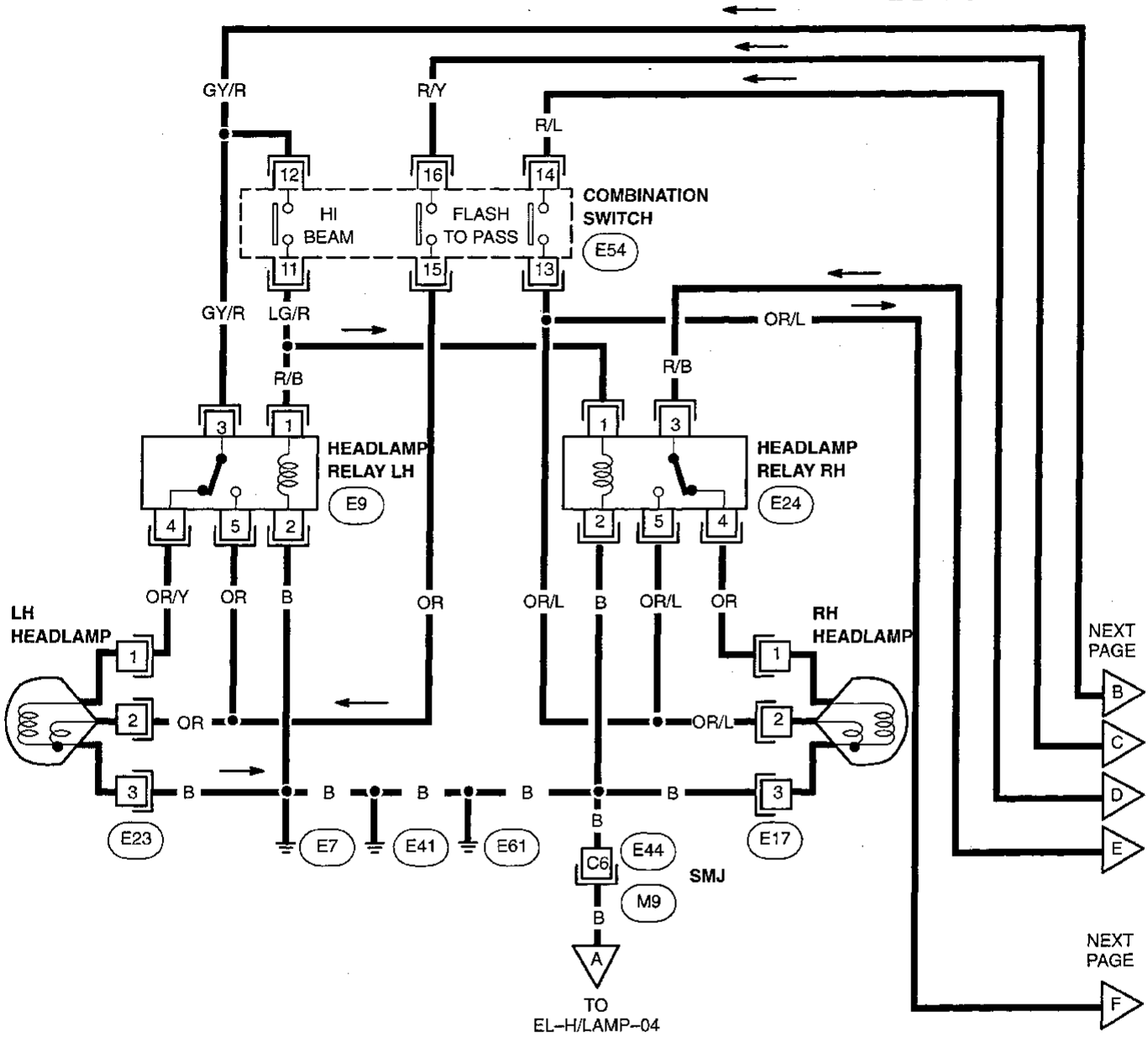
Schematic (For USA)

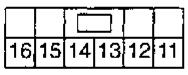


AEL343

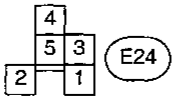
Wiring Diagram (For USA) –H/LAMP–

EL-H/LAMP-01



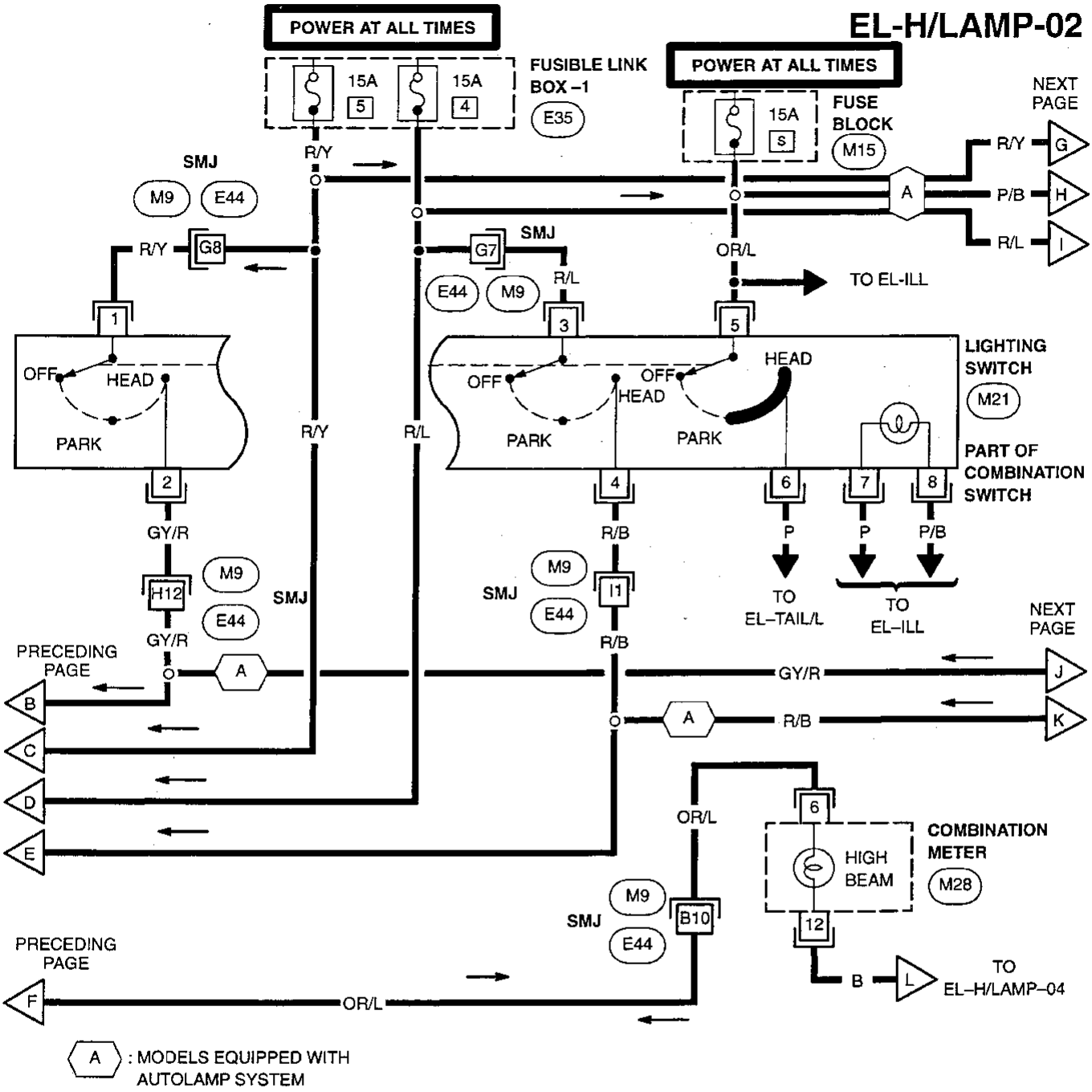


Refer to Foldout Page in EL Section for details. M9 E44



AEL320-A

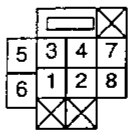
Wiring Diagram (For USA) –H/LAMP– (Cont'd)



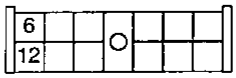
Refer to POWER SUPPLY ROUTING in EL Section. E35

Refer to POWER SUPPLY ROUTING in EL Section. M15

Refer to Foldout Page in EL Section for details. E44 M9



M21

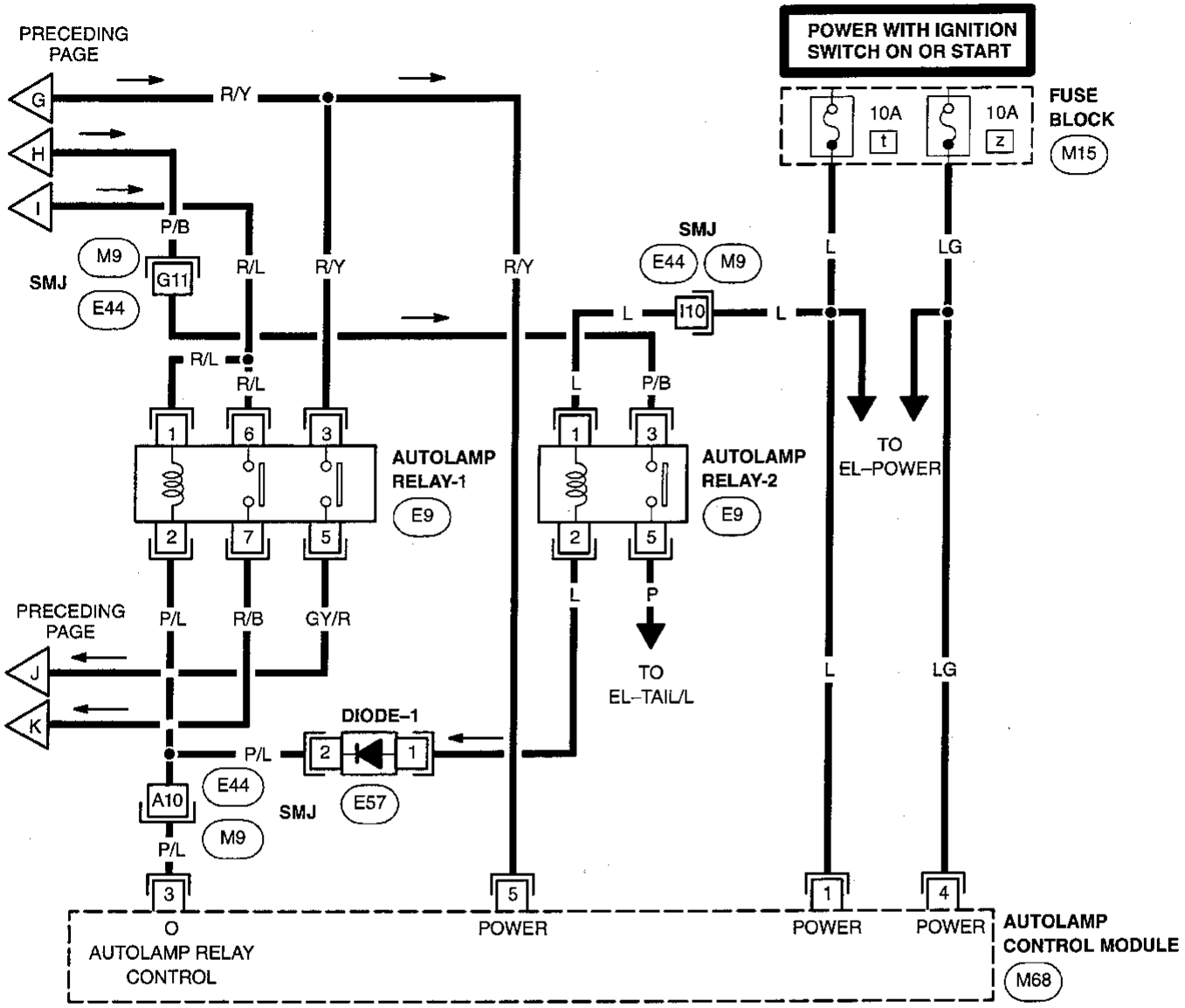


M28

AEL320-B

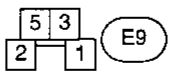
Wiring Diagram (For USA) –H/LAMP– (Cont'd)

EL-H/LAMP-03



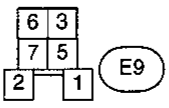
Refer to Foldout Page in EL Section for details. M9 E44

Refer to POWER SUPPLY ROUTING in EL Section. M15

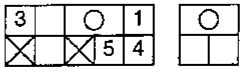


E9

E57



E9

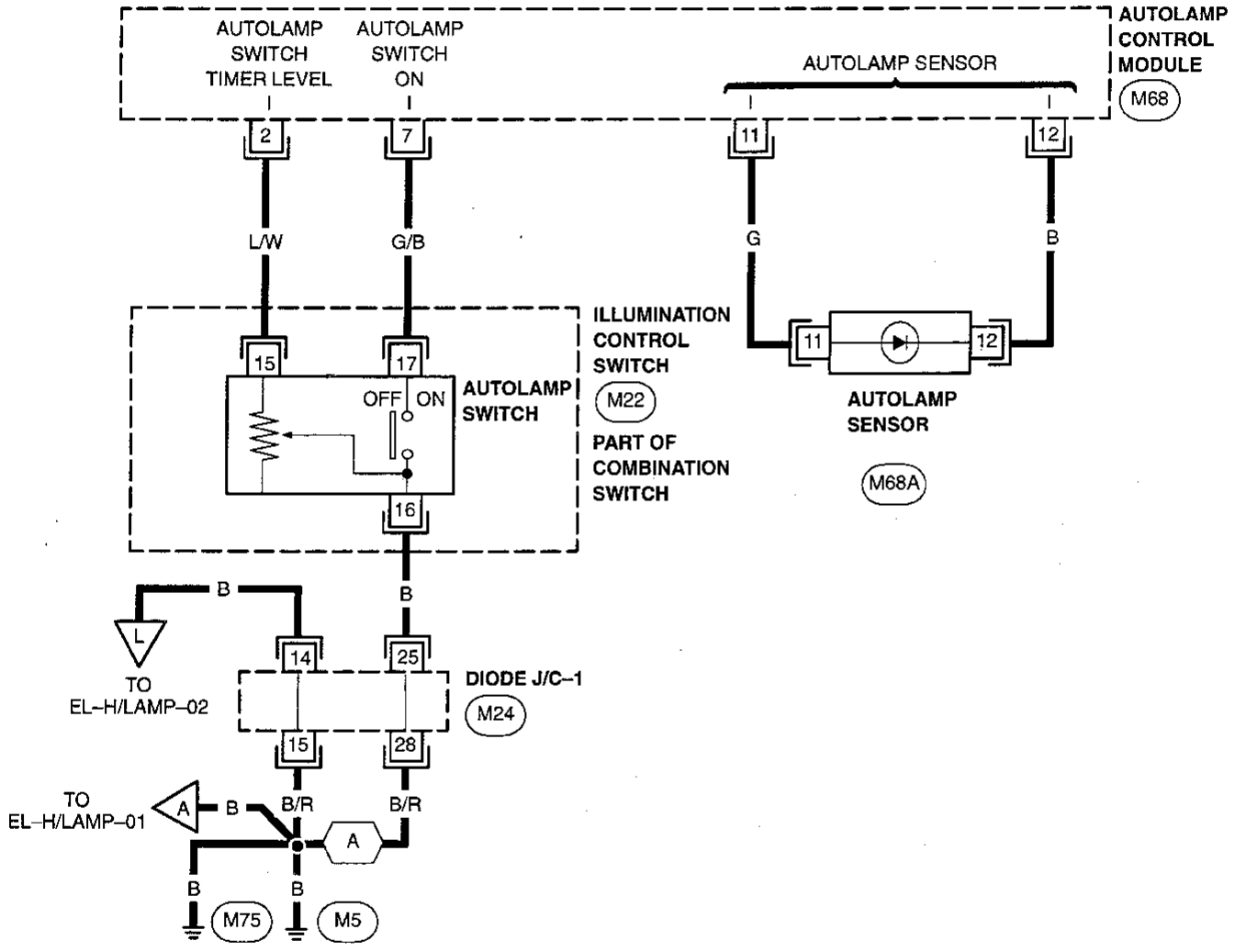


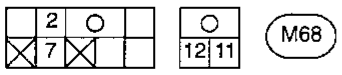
M68

AEL320-C

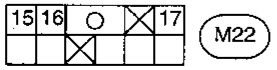
(A) : MODELS WITH AUTOLAMP SYSTEM

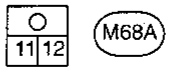
EL-H/LAMP-04





Refer to Foldout Page in EL Section for details. M24





AEL320-D

Trouble Diagnoses (For USA)

Symptom	Possible cause	Repair order
Headlamps do not operate.	1. Bulb	1. Check bulbs.
	2. Grounds (E7), (E41), (E61), (M5), (M75)	2. Check grounds (E7), (E41), (E61), (M5), (M75).
	3. 15A fuses	3. Check 15A fuses (No. 4 and 5 located in fusible link box-1). Verify that battery positive voltage is present at terminals ① and ③ of lighting switch.
	4. Headlamp relays	4. Check relays (LH headlamp relay located in RH engine compartment relay block; RH headlamp relay located in LH engine compartment relay block). Verify that battery positive voltage is present at terminal ③ of the LH and RH headlamp relays with the lighting switch in the HEAD position.
	5. Lighting switch	5. Check lighting switch.
LH headlamps do not operate.	1. Bulb	1. Check bulb.
	2. Grounds (E7), (E41), (E61), (M5), (M75)	2. Check grounds (E7), (E41), (E61), (M5), (M75).
	3. 15A fuse	3. Check 15A fuse (No. 5 located in fusible link box-1). Verify that battery positive voltage is present at terminal ① of lighting switch.
	4. LH headlamp relay	4. Check relay (located in RH engine compartment relay block). Verify that battery positive voltage is present at terminal ③ of the LH headlamp relay with the lighting switch in the HEAD position.
	5. Lighting switch	5. Check lighting switch.
RH headlamps do not operate.	1. Bulb	1. Check bulb.
	2. Grounds (E7), (E41), (E61), (M5), (M75)	2. Check grounds (E7), (E41), (E61), (M5), (M75).
	3. 15A fuse	3. Check 15A fuse (No. 4 located in fusible link box-1). Verify that battery positive voltage is present at terminal ③ of lighting switch.
	4. RH headlamp relay	4. Check relay (located in LH engine compartment relay block). Verify that battery positive voltage is present at terminal ③ of the RH headlamp relay with the lighting switch in the HEAD position.
	5. Lighting switch	5. Check lighting switch.
LH low beam headlamp does not operate, but LH high beam operates.	1. Bulb	1. Check bulb.
	2. LH headlamp relay	2. Check relay (located in RH engine compartment relay block).
	3. Open in LH low beam circuit	3. Check OR/Y wire between LH headlamp relay and LH headlamp for an open circuit.

Trouble Diagnoses (For USA) (Cont'd)

Symptom	Possible cause	Repair order
LH high beam headlamp does not operate, but LH low beam operates.	1. Bulb 2. LH headlamp relay 3. Combination switch 4. Open in LH high beam circuit	1. Check bulb. 2. Check relay (located in RH engine compartment relay block). Verify that battery positive voltage is present at terminal ① of relay with lighting switch in HEAD position and combination switch in HI BEAM position. 3. Check combination switch. Verify that battery positve voltage is present at terminal ⑫ of the combination switch with the lighting switch in the HEAD position. 4. Check OR wire between LH headlamp relay and LH headlamp for an open circuit.
RH low beam headlamp does not operate, but RH high beam operates.	1. Bulb 2. RH headlamp relay 3. Open in RH low beam circuit	1. Check bulb. 2. Check relay (located in LH engine compartment relay block). 3. Check OR wire between RH headlamp relay and RH headlamp for an open circuit.
RH high beam headlamp does not operate, but RH low beam operates.	1. Bulb 2. RH headlamp relay 3. Combination switch 4. Open in RH high beam circuit	1. Check bulb. 2. Check relay (located in LH engine compartment relay block). Verify that battery positive voltage is present at terminal ① of relay with lighting switch in HEAD position and combination switch in HI BEAM position. 3. Check combination switch. Verify that battery positve voltage is present at terminal ⑫ of the combination switch with the lighting switch in the HEAD position. 4. Check OR/L wire between RH headlamp relay and RH headlamp for an open circuit.
Flash-to-pass switch does not work.	1. Combination switch 2. Open in flash-to-pass circuit	1. Check combination switch. Verify that battery positive voltage is present at terminals ⑭ and ⑯ of the combination switch. 2. Check wires between combination switch and headlamps for an open circuit.
High beam indicator does not work.	1. Bulb 2. Open in high beam indicator circuit	1. Check bulb in combination meter. 2. Check OR/L wire for an open circuit.

System Description (For Canada)

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

Power is supplied at all times:

- to lighting switch terminal ③
- to combination switch terminal ⑭
- to daytime lamp control module terminal ③
- through 15A fuse (No. 4, located in the fusible link box-1), and
- to lighting switch terminal ①
- to combination switch terminal ⑯
- to daytime lamp control module terminal ④
- through 15A fuse (No. 5, located in the fusible link box-1).

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

- to the daytime lamp control module terminal ⑤
- through 10A fuse (Letter t, located in the fuse block).

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

- to the daytime lamp control module terminal ①
- through 5A fuse (Letter c, located in the fuse block).

Ground is supplied to the daytime lamp control module terminal ⑩ through body grounds: E7, E41, E61, M5, and M75.

LOW BEAM OPERATION

When the lighting switch is turned to the HEAD position, power is supplied:

- from the lighting switch terminal ②
- to the LH headlamp relay terminal ③
- through the LH headlamp relay terminal ④
- to the LH headlamp terminal ①, and
- from the lighting switch terminal ④
- to the RH headlamp relay terminal ③
- through the RH headlamp relay terminal ④
- to RH headlamp terminal ①.

Terminal ③ of the LH headlamp supplies ground through body grounds: E7, E41, E61, M5, and M75.

Terminal ③ of the RH headlamp supplies ground:

- through terminal ⑧ of the daytime lamp control module
- to terminal ⑩ of the daytime lamp control module
- through body grounds: E7, E41, E61, M5, and M75.

With power and ground supplied, the headlamps will illuminate.

HIGH BEAM OPERATION

When the combination switch is placed in the HI BEAM position, and the lighting switch is the HEAD position, power is supplied:

- to the combination switch terminal ⑫
- through the combination switch terminal ⑪
- to the LH headlamp relay terminal ①, and
- to the RH headlamp relay terminal ①.

Ground is supplied to the LH headlamp relay terminal ②, and the RH headlamp relay terminal ② through body grounds: E7, E41, E61, M5, and M75.

With power and ground supplied, the headlamp relays energize, and power is supplied:

- through the LH headlamp relay terminal ⑤
- to the LH headlamp terminal ②, and
- through the RH headlamp relay terminal ⑤

System Description (For Canada) (Cont'd)

- to the combination meter terminal ⑥ for the hi beam indicator, and
- to the daytime lamp control module terminal ⑥
- through the daytime lamp control module terminal ⑦
- to the RH headlamp terminal ②.

Terminal ③ of the LH headlamp, and terminal ⑫ of the combination meter supply ground through body grounds: (E7), (E41), (E61), (M5), and (M75).
Terminal ③ of the RH headlamp supplies ground:

- through terminal ⑧ of the daytime lamp control module
- to terminal ⑩ of the daytime lamp control module
- through body grounds: (E7), (E41), (E61), (M5), and (M75).

With power and ground supplied, the high beams, and the hi beam indicator illuminate.

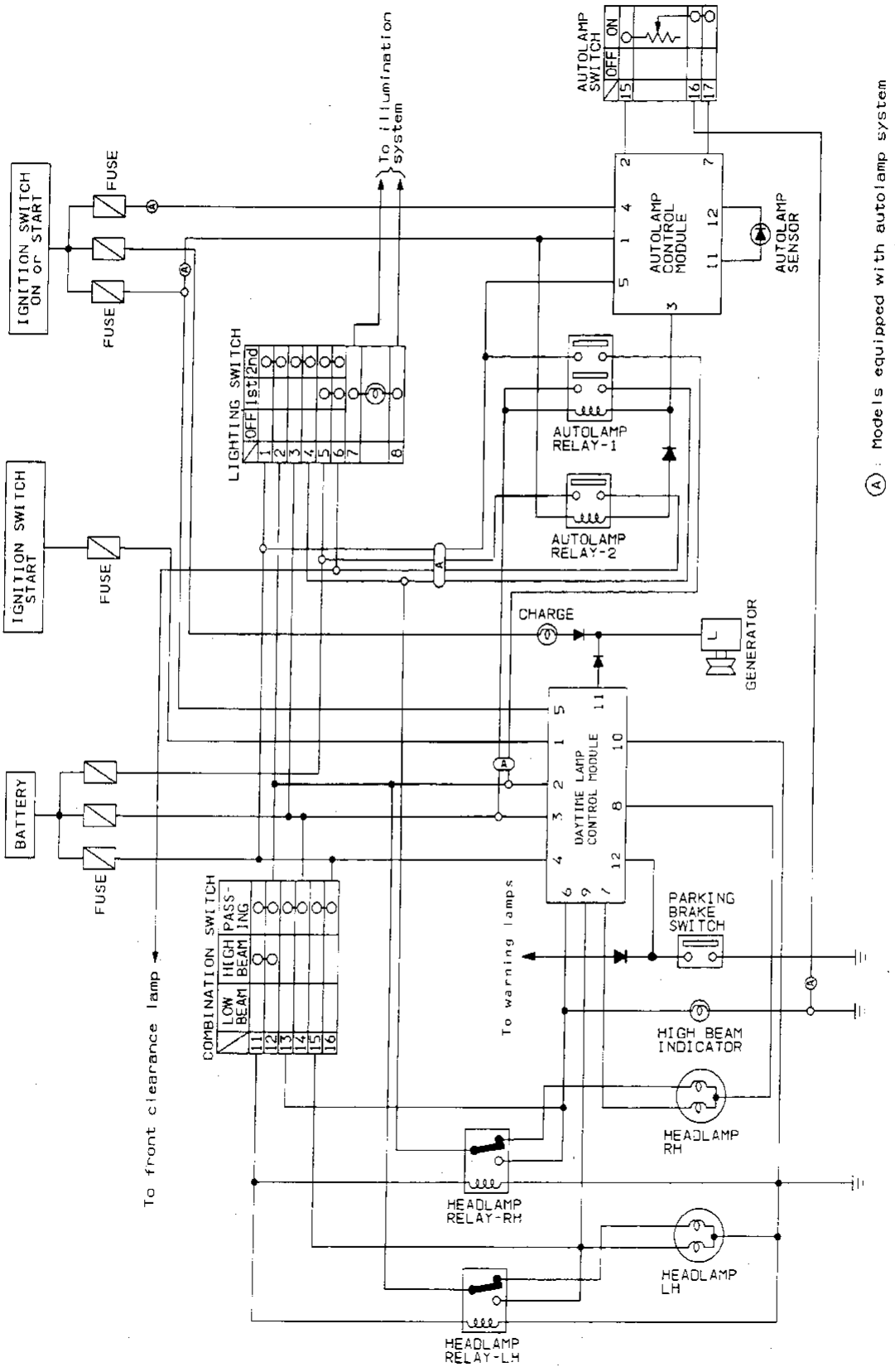
DAYTIME LAMP OPERATION

With the engine running and the lighting switch in the OFF position, and the parking brake released, power is supplied:

- to the daytime lamp control module terminal ④
- through the daytime lamp control module terminal ⑦
- to the RH headlamp terminal ②
- through the RH headlamp terminal ③
- to the daytime lamp control module terminal ⑧
- through the daytime lamp control module terminal ⑨
- to the LH headlamp terminal ②.

Ground is supplied to the LH headlamp terminal ③ through body grounds: (E7), (E41), (E61), (M5), and (M75). Because the high beams are now wired in series, they operate at half illumination.

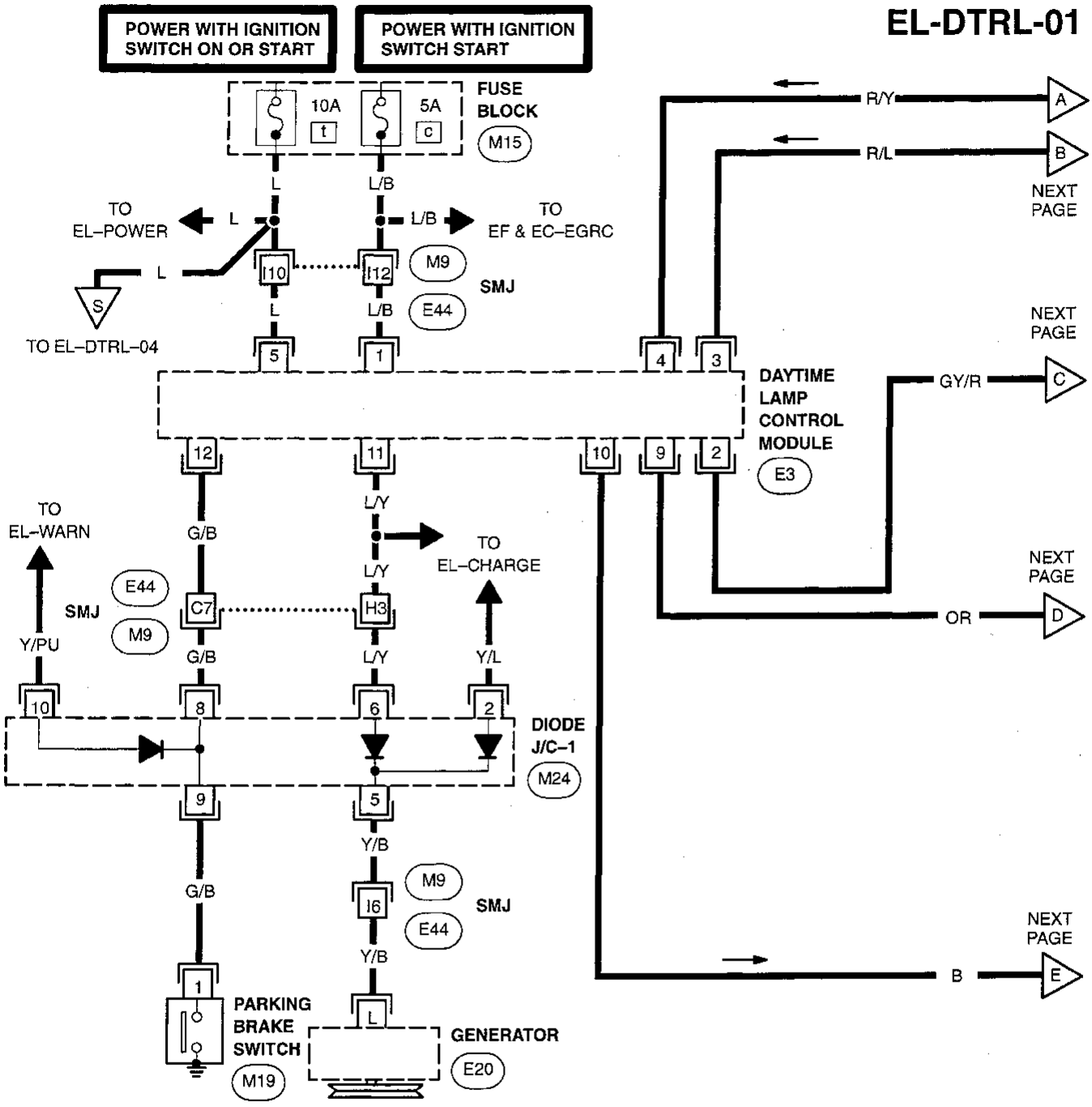
Schematic (For Canada)



AEL344

Wiring Diagram (For Canada) –DTRL–

EL-DTRL-01



Refer to POWER SUPPLY ROUTING in EL Section. M15

Refer to Foldout Page in EL Section for details. M9 E44

Refer to Foldout Page in EL Section for details. M24

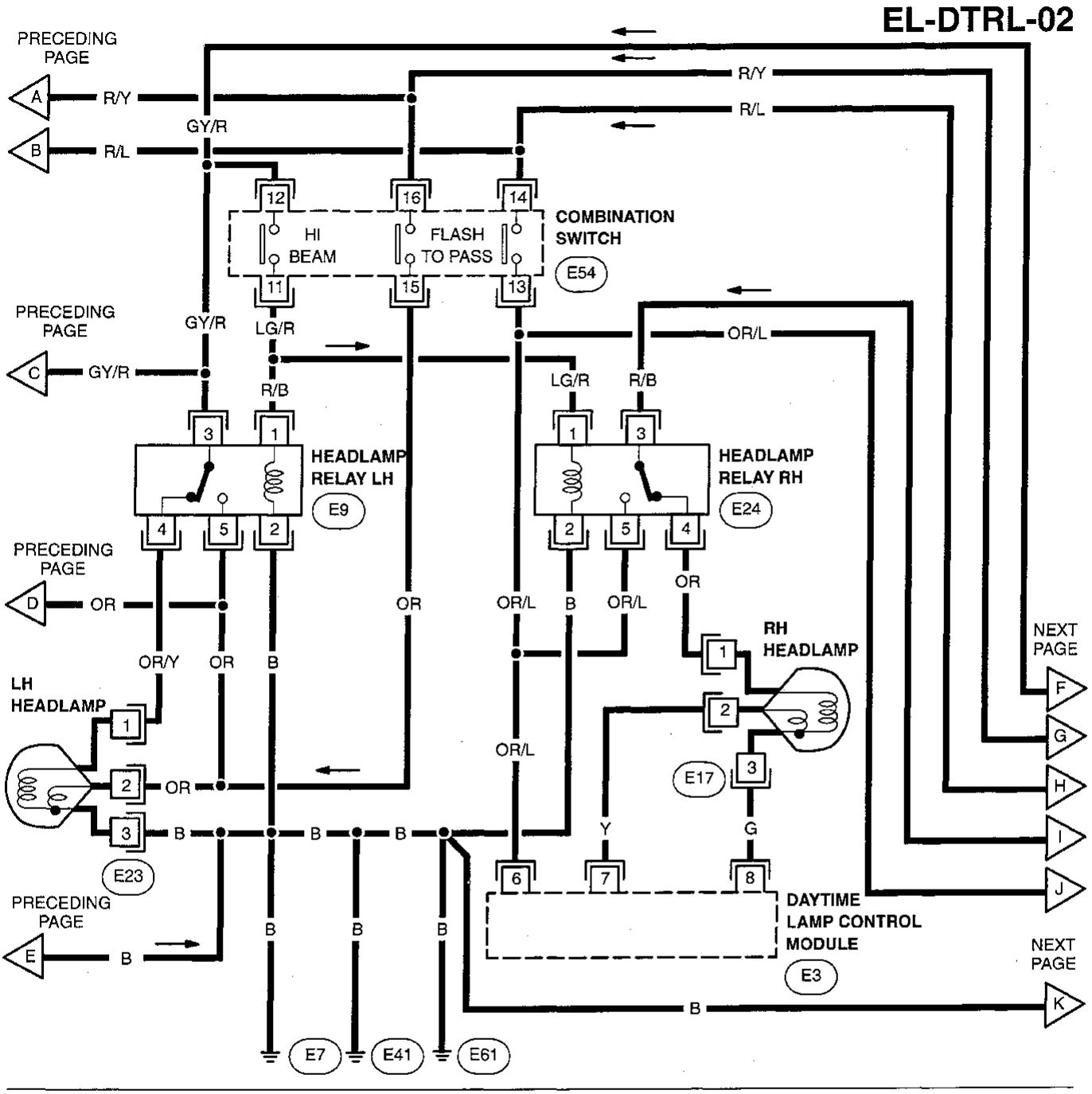
1 M19

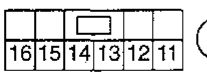
E3

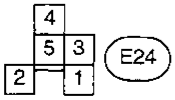
L E20

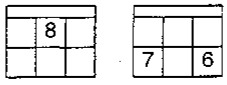
AEL321-A

Wiring Diagram (For Canada) –DTRL– (Cont'd)



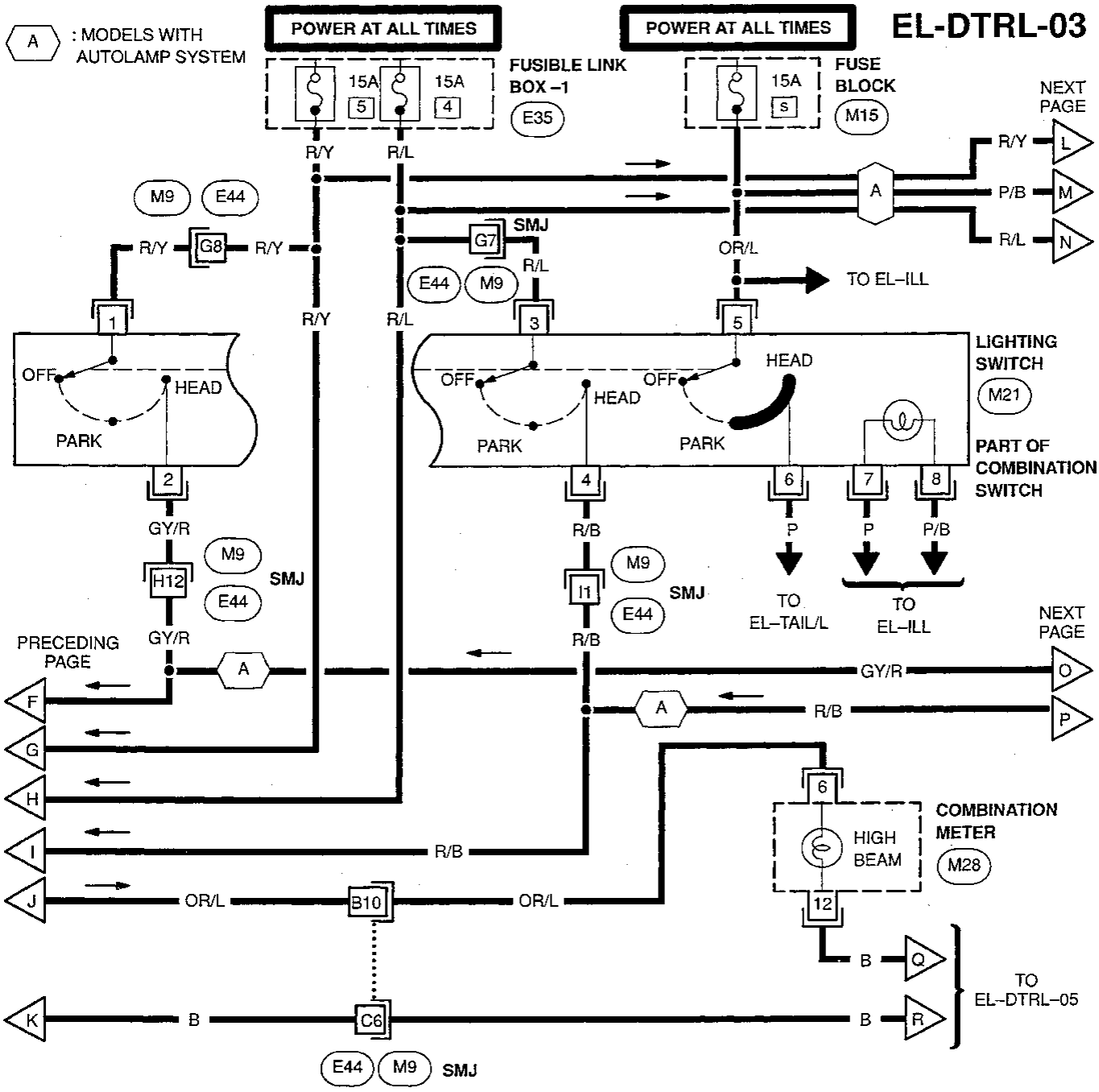






AEL321-B

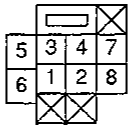
Wiring Diagram (For Canada) –DTRL– (Cont'd)



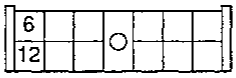
Refer to POWER SUPPLY ROUTING in EL Section. E35

Refer to POWER SUPPLY ROUTING in EL Section. M15

Refer to Foldout Page in EL Section for details. E44 M9



M21

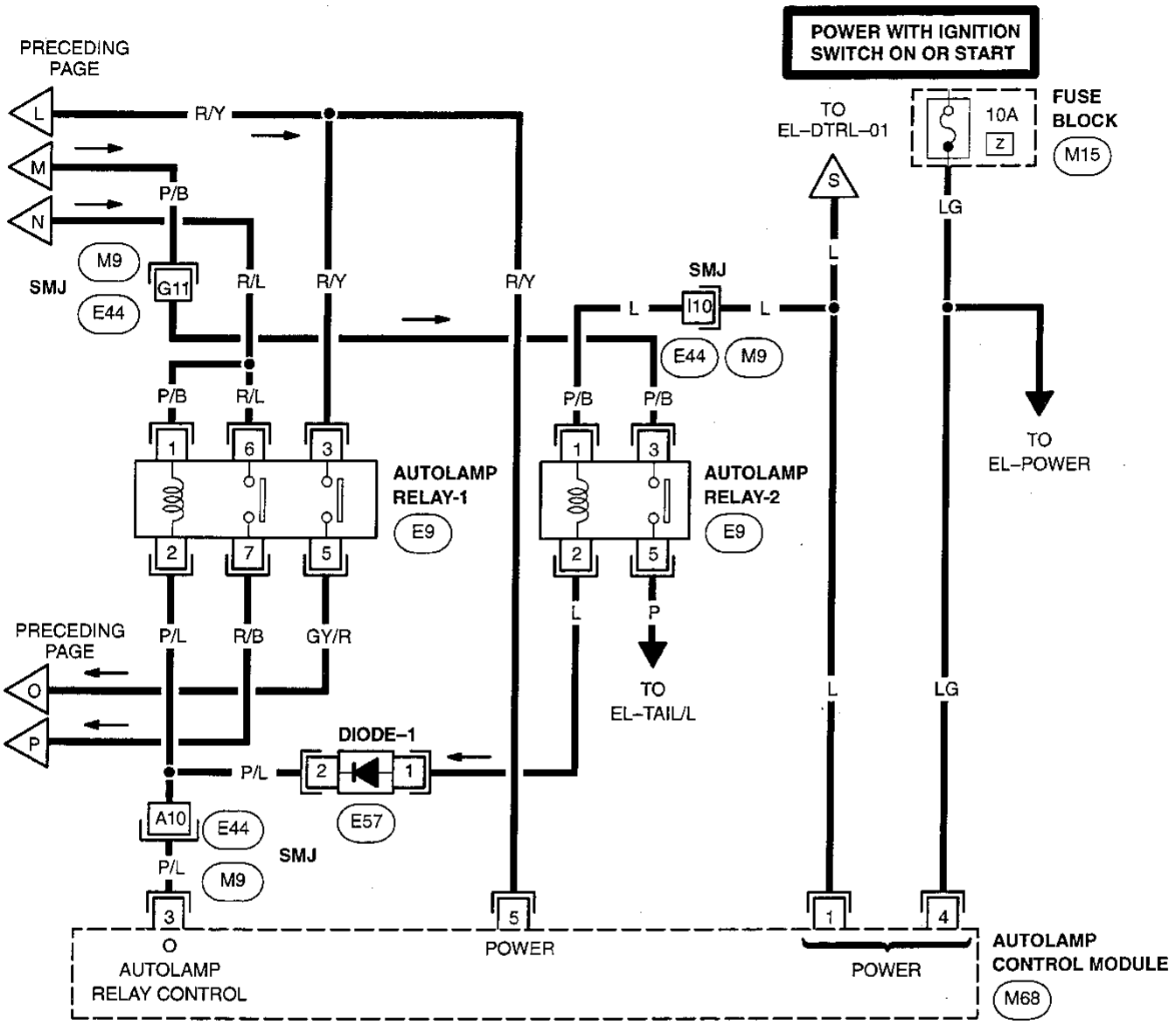


M28

AEL321-C

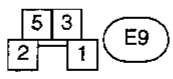
Wiring Diagram (For Canada) –DTRL– (Cont'd)

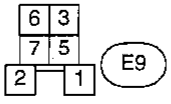
EL-DTRL-04

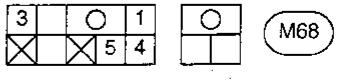


Refer to Foldout Page in EL Section for details. M9 E44

Refer to POWER SUPPLY ROUTING in EL Section. M15



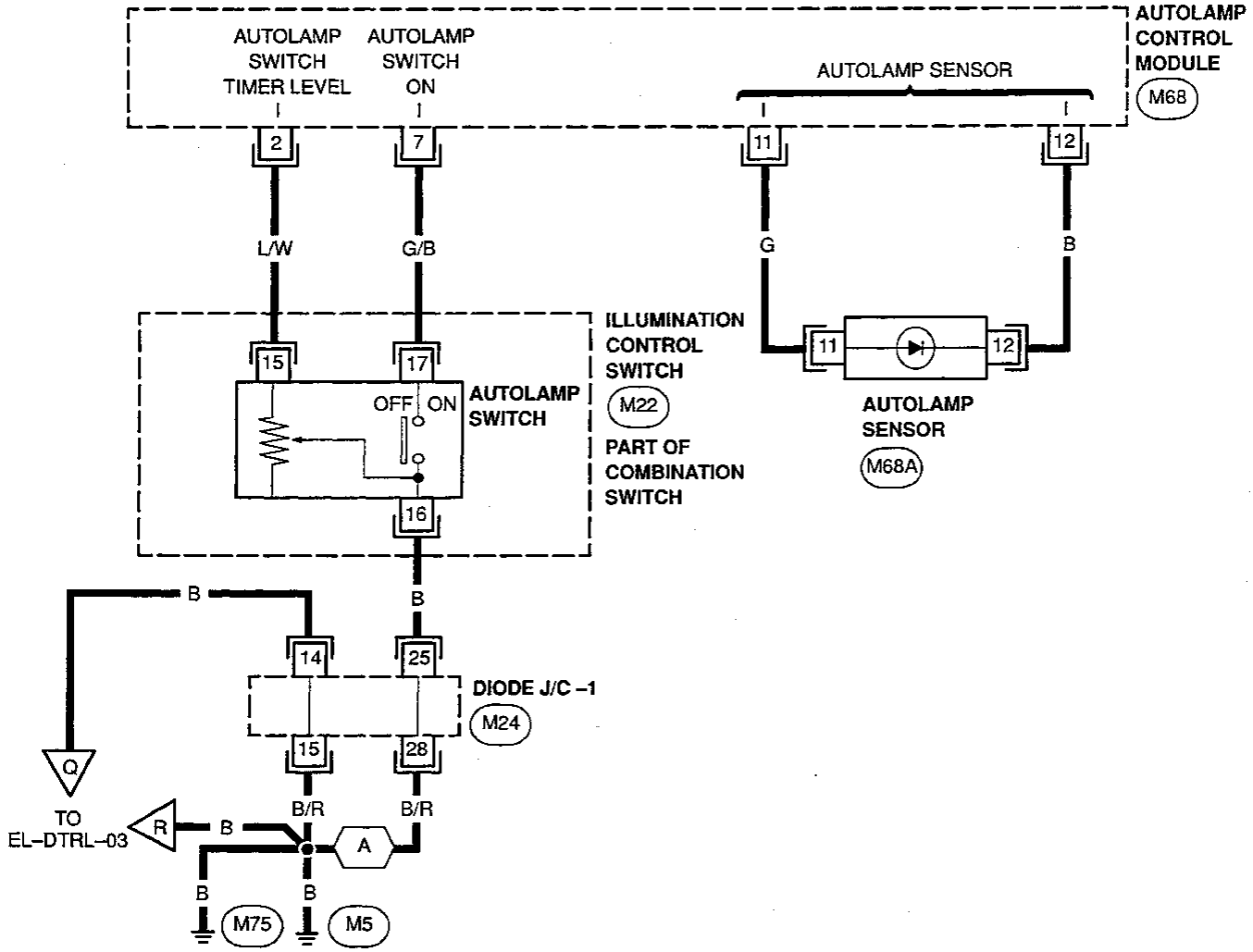


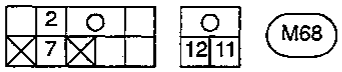


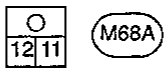
AEL321-D

Wiring Diagram (For Canada) –DTRL– (Cont'd)

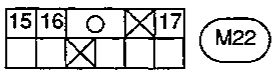
(A) : MODELS WITH AUTOLAMP SYSTEM







Refer to Foldout Page in EL Section for details. (M24)



AEL321-E

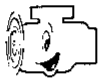
Trouble Diagnoses (For Canada)

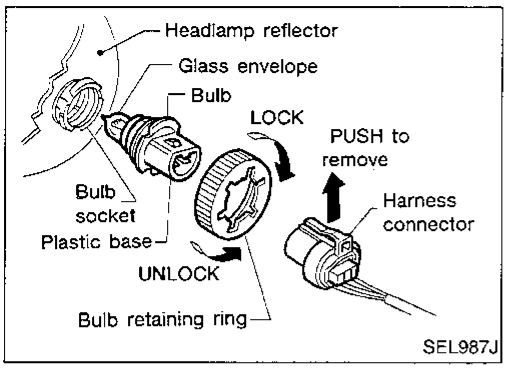
DAYTIME LAMP CONTROL MODULE INSPECTION TABLE

(Data are reference values)

Terminal No.	Item	Condition		Judgement standard
1	Start signal		When turning ignition switch to "ST".	Battery positive voltage
			When turning ignition switch to "ON".	1V or less
			When turning ignition switch to "OFF".	1V or less
2	Lighting switch (Low 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 ignition switch to "OFF".	1V or less
6	Combination switch (High beam)		When placing combination switch to "HI BEAM" with lighting switch in "HEAD" position.	Battery positive voltage
			When placing combination switch to "FLASH TO PASS".	Battery positive voltage
7	RH headlamp control (power)		When placing combination switch to "HI BEAM" with lighting switch in "HEAD" position.	Battery positive voltage
			When releasing parking brake with engine running and turning lighting switch to "OFF" (daytime lamp operation). **CAUTION: Block wheels and ensure selector lever is in N or P position.**	Battery positive voltage
8	RH 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 lamp operation). **CAUTION: Block wheels and ensure selector lever is in N or P position.**	Approx. half battery voltage

Trouble Diagnoses (For Canada) (Cont'd)

Terminal No.	Item	Condition		Judgement standard
9	Daytime lamp control		When placing combination switch to "HI BEAM".	Battery positive voltage
			When releasing parking brake with engine running and turning lighting switch to "OFF" (daytime lamp 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".	4.6V or less
			When engine is running.	Battery positive voltage
			When turning ignition switch to "OFF".	1V or less
12	Parking brake switch		When parking brake is released.	Battery positive voltage
			When parking brake is set.	1.5V or less



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. Remove the headlamp bulb carefully. Do not shake or rotate the bulb when removing it.
5. 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.**

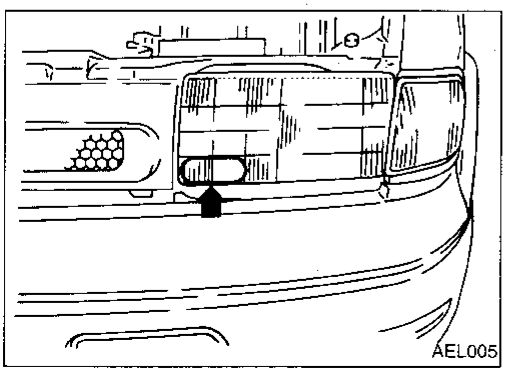
Aiming Adjustment

When performing headlamp aiming adjustment, use an aiming machine, aiming wall screen or headlamp tester. Before operating any aimer, it should be in good repair, calibrated and used according to respective operation manuals supplied with the unit.

If an aimer is not available, aiming adjustment can be done as follows:

For details, refer to the regulations in your own country.

a. Keep all tires inflated to correct pressures.
b. Place vehicle and tester on one and same flat surface.
c. See that there is no-load in vehicle (coolant, engine oil filled up to correct level and full fuel tank) other than the driver (or equivalent weight placed in driver's position).



AIMER ADJUSTMENT MARK

When using a mechanical aimer, adjust adapter legs to the data marked on the headlamps.

Example:

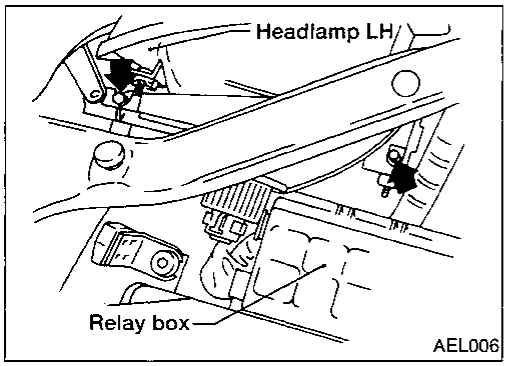
4H2V

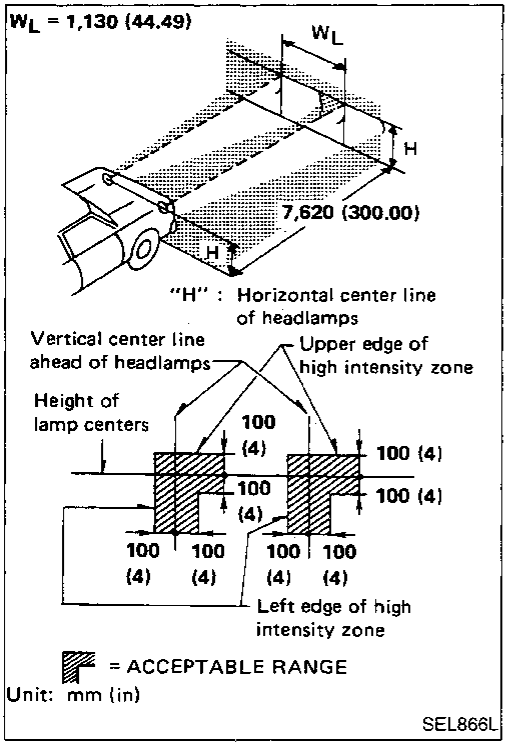
Horizontal side: 4
Vertical side: 2

Aiming Adjustment (Cont'd)

LOW BEAM

1. Turn headlamp low beam "ON".
2. Use adjusting screws to perform aiming adjustment.





- **Adjust headlamps so that upper edge and left edge of high intensity zone are within the acceptable range as shown at left.**
- **Dotted lines in illustration show center of headlamp.**

"H": Horizontal center line of headlamp.
"W_L": Distance between each headlamp center

System Description

The autolamps are controlled by the autolamp switch and the autolamp control module. Power is supplied at all times:

- to the autolamp control module terminal ⑤, and
- to the autolamp relay-1 terminal ③
- through 15A fuse (No. 5, located in the fusible link box-1), and
- to autolamp relay-1 terminals ① and ⑥
- through 15A fuse (No. 4, located in the fusible link box-1), and
- to autolamp relay-2 terminal ③
- through 15A fuse (Letter s , located in the fuse block).

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

- to the autolamp relay-2 terminal ①, and
- to the autolamp control module terminal ①
- through 10A fuse (Letter t, located in the fuse block), and
- to the autolamp control module terminal ④
- through 10A fuse (Letter z, located in the fuse block).

AUTOMATIC ILLUMINATION

With the autolamp switch turned to the ON position, ground is supplied to the autolamp control module terminal ⑦:

- through the autolamp switch terminal ⑰
- to the autolamp switch terminal ⑯
- through body grounds: E7, E41, E61, M5, and M75.

With power at terminals ①, ④, and ⑤; and ground supplied, the autolamp control module will measure the ambient light intensity through terminals ⑪ and ⑫. If the autolamp sensor does not detect sufficient light, then ground is supplied:

- through autolamp control module terminal ③
- to terminal ② of the autolamp relays.

With power and ground supplied, the autolamp relays energize and power is supplied:

- through autolamp relay-1 terminal ⑤
- to LH headlamp relay terminal ③
- through LH headlamp relay terminal ④
- to LH headlamp terminal ①, and
- through autolamp relay-1 terminal ⑦
- to RH headlamp relay terminal ③
- through RH headlamp relay terminal ④
- to RH headlamp terminal ①, and
- through autolamp relay-2 terminal ⑤
- to the parking lamps.

Ground is supplied to terminal ③ of the headlamps and to the parking lamps through body grounds: E7, E41, E61, M5, and M75.

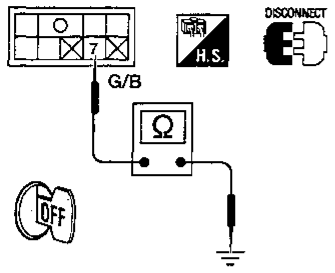
With power and ground supplied, the headlamps and parking lamps illuminate.

DELAYED EXIT

With the autolamp switch turned to the ON position, and both the lighting switch and the ignition switch turned from the ON position to the OFF position, the autolamp control module will not read a voltage signal at terminals ① and ④. This will start the autolamp control module's internal timer. The timer is set based on the resistance value at terminal ② of the autolamp control module. With the timer running, the headlamps and parking lamps illuminate. When the timer reaches the end of its cycle, the headlamps and parking lamps will turn off.

A

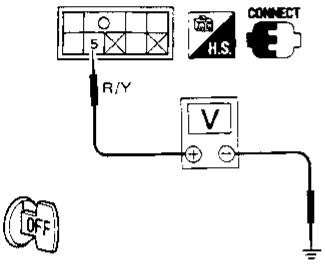
Autolamp control module connector (M68)



AEL398

B

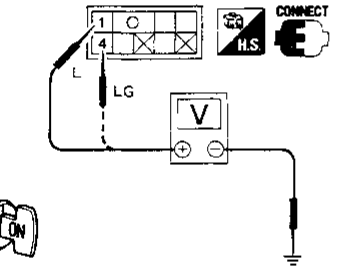
Autolamp control module connector (M68)



AEL434

C

Autolamp control module connector (M68)



AEL435

Trouble Diagnoses

DIAGNOSTIC PROCEDURE 1

SYMPTOM: Lamps do not turn on or off with environmental light levels.

A

AUTOLAMP SWITCH AND GROUND CHECK
1) Turn ignition switch to "OFF".
2) Check continuity between autolamp control module harness terminal ⑦ and body ground.

Condition of autolamp switch	Continuity
Off	No
On	Yes

NG → Check harness and autolamp switch.

OK ↓

B

BATTERY INPUT CHECK
1) Keep ignition switch "OFF".
2) Measure voltage between control module harness terminal ⑤ and body ground.
Battery positive voltage should exist.

NG → Check battery, fuses and harness.

OK ↓

C

IGNITION POWER CHECK
1) Turn ignition switch to "ON".
2) Measure voltage between control module harness terminals ①, ④ and body ground.
Battery positive voltage should exist.

NG → Check battery, fuses and harness.

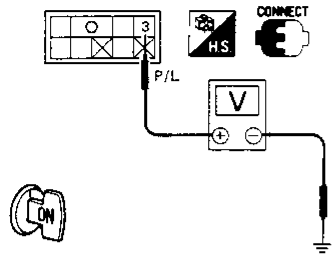
OK ↓

Ⓐ

Trouble Diagnoses (Cont'd)

D

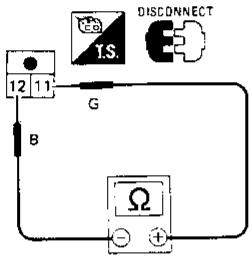
Autolamp control module connector (M68)



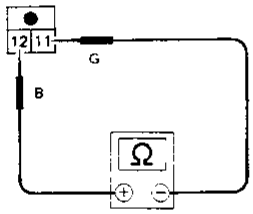
AEL436

E

Autolamp sensor connector



Continuity should exist.



Continuity should not exist.

SEL800Q

Ⓐ

D

AUTOLAMP SENSOR OUTPUT CHECK
1) Keep ignition switch "ON".
2) Turn autolamp switch to ON position.
3) Block autolamp sensor to environmental light. Wait at least 4 seconds.
4) Measure voltage between control module harness terminal ③ and body ground with autolamp switch "ON".
Voltage should be less than 2V.

OK → Check harness and headlamp and taillamp relays.

NG ↓

E

AUTOLAMP SENSOR CONTINUITY CHECK
1) Remove autolamp sensor.
2) Check continuity between autolamp sensor connector terminals ⑪ and ⑫ with positive lead on pin ⑪ and negative lead on pin ⑫.
Continuity should exist.
3) Reverse leads.
Continuity should not exist.
NOTE: Specifications may vary depending on the type of tester. Before performing this inspection, be sure to refer to the instruction manual for your tester.

NG → Replace autolamp sensor.

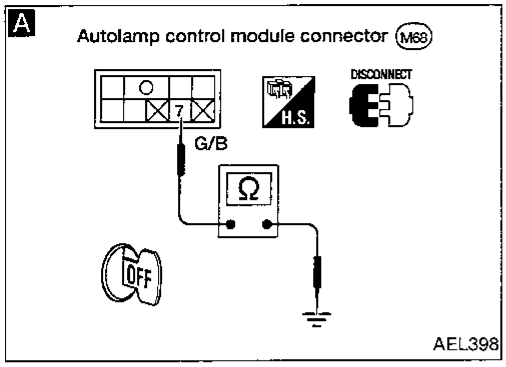
OK ↓

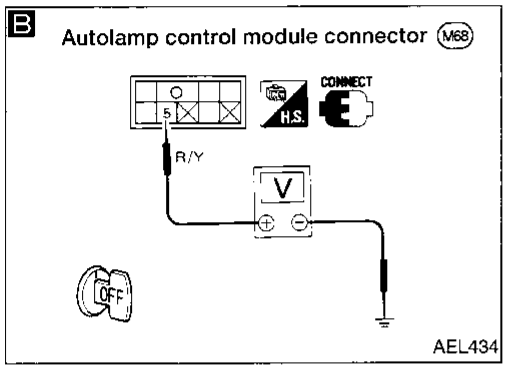
Replace autolamp control module.

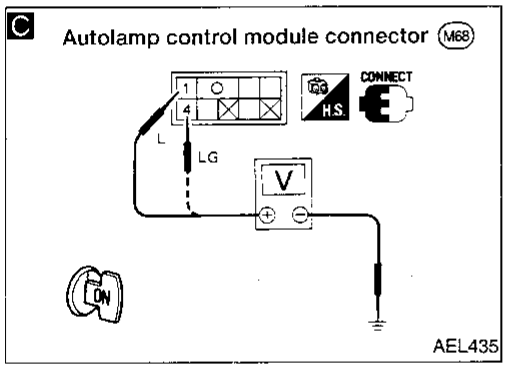
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 2

SYMPTOM: Headlamp shutoff delay does not work properly.







A

AUTOLAMP SWITCH AND GROUND CHECK
1) Turn ignition switch to "OFF".
2) Check continuity between autolamp control module harness terminal ⑦ and body ground.

Condition of autolamp switch	Continuity
Off	No
On	Yes

NG → Check harness and autolamp switch.

OK ↓

B

BATTERY INPUT CHECK
1) Keep ignition switch "OFF".
2) Measure voltage between control module harness terminal ⑤ and body ground.
Battery positive voltage should exist.

NG → Check battery, fuses and harness.

OK ↓

C

IGNITION POWER CHECK
1) Turn ignition switch to "ON".
2) Measure voltage between control module harness terminals ①, ④ and body ground.
Battery positive voltage should exist.

NG → Check battery, fuses and harness.

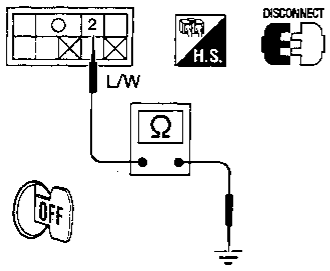
OK ↓

Ⓐ

Trouble Diagnoses (Cont'd)

D

Autolamp control module connector (M68)



AEL399

Ⓐ

D

DELAY RESISTANCE CHECK

1) Turn ignition switch to "OFF".
2) Measure resistance between control module harness terminal ② and body ground.
3) Verify that resistance steadily increases as autolamp switch is turned from minimum to maximum.

Condition of autolamp switch	Resistance [kΩ]
Minimum	3.5
Maximum	196

NG → Replace autolamp switch.

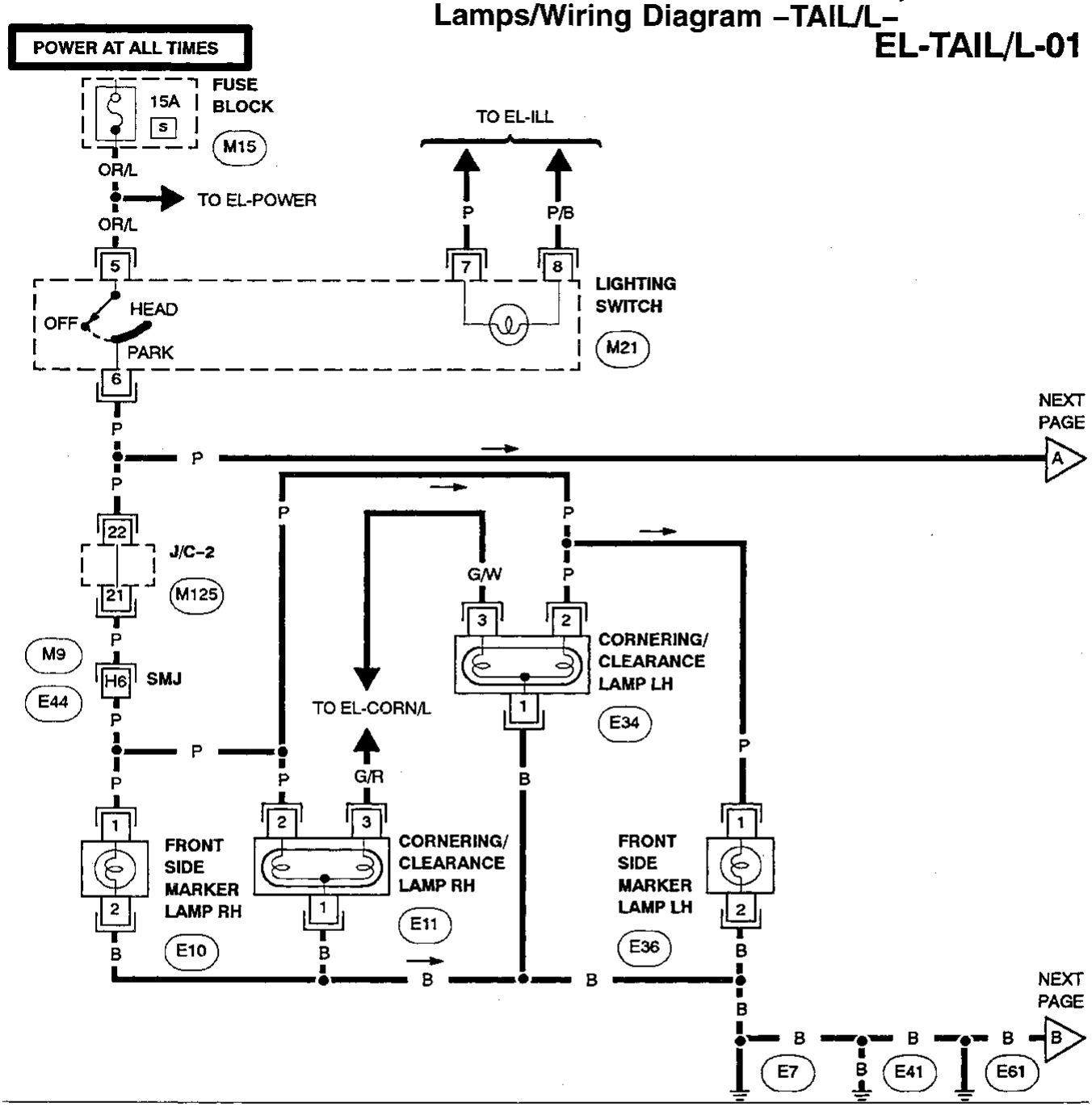
OK

Replace autolamp control module.

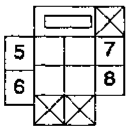
NOTE

Clearance, License, Tail and Stop Lamps/Wiring Diagram –TAIL/L–

EL-TAIL/L-01



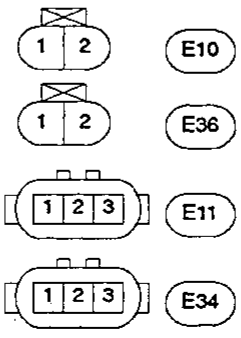
Refer to POWER SUPPLY ROUTING in EL Section. M15

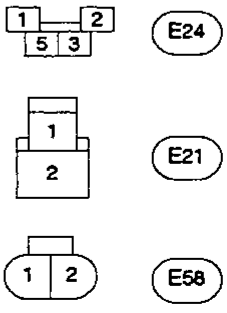


M21

Refer to Foldout Page in EL Section for details. M125

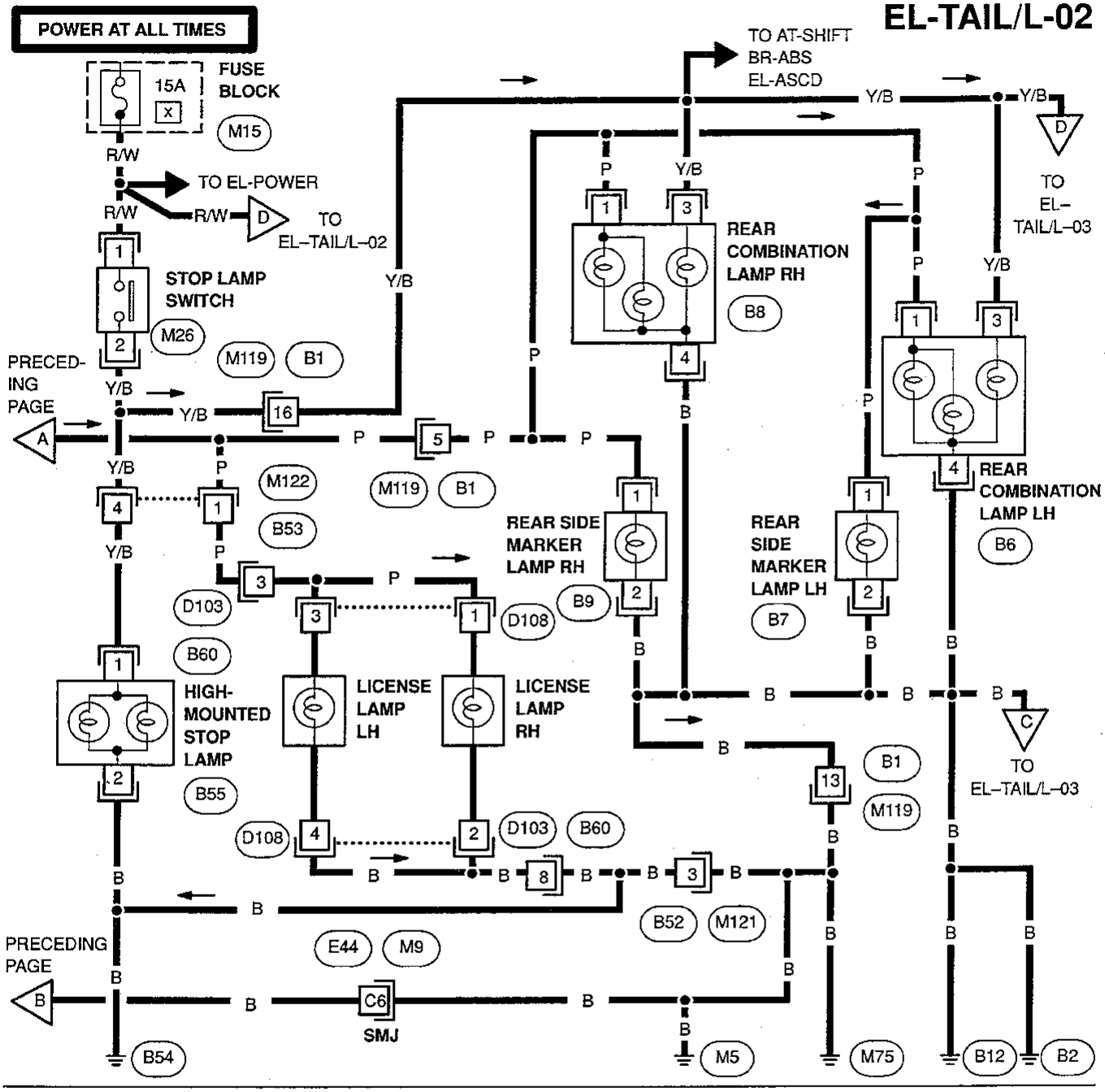
Refer to Foldout Page in EL Section for details. M9 E44



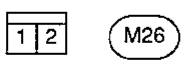


AEL322-A

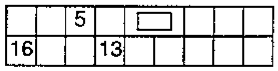
Clearance, License, Tail and Stop Lamps/Wiring Diagram –TAIL/L– (Cont'd)

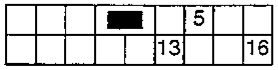


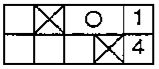
Refer to POWER SUPPLY ROUTING in EL Section. M15

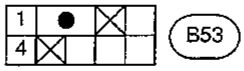

M26

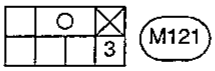

B55

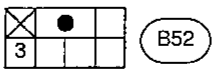

M119

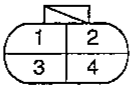

B1

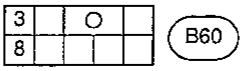

M122

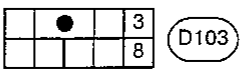

B53

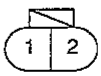

M121

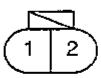

B52

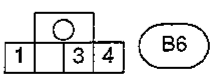

D108

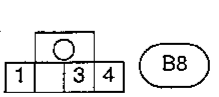

B60


D103


B9


B7


B6

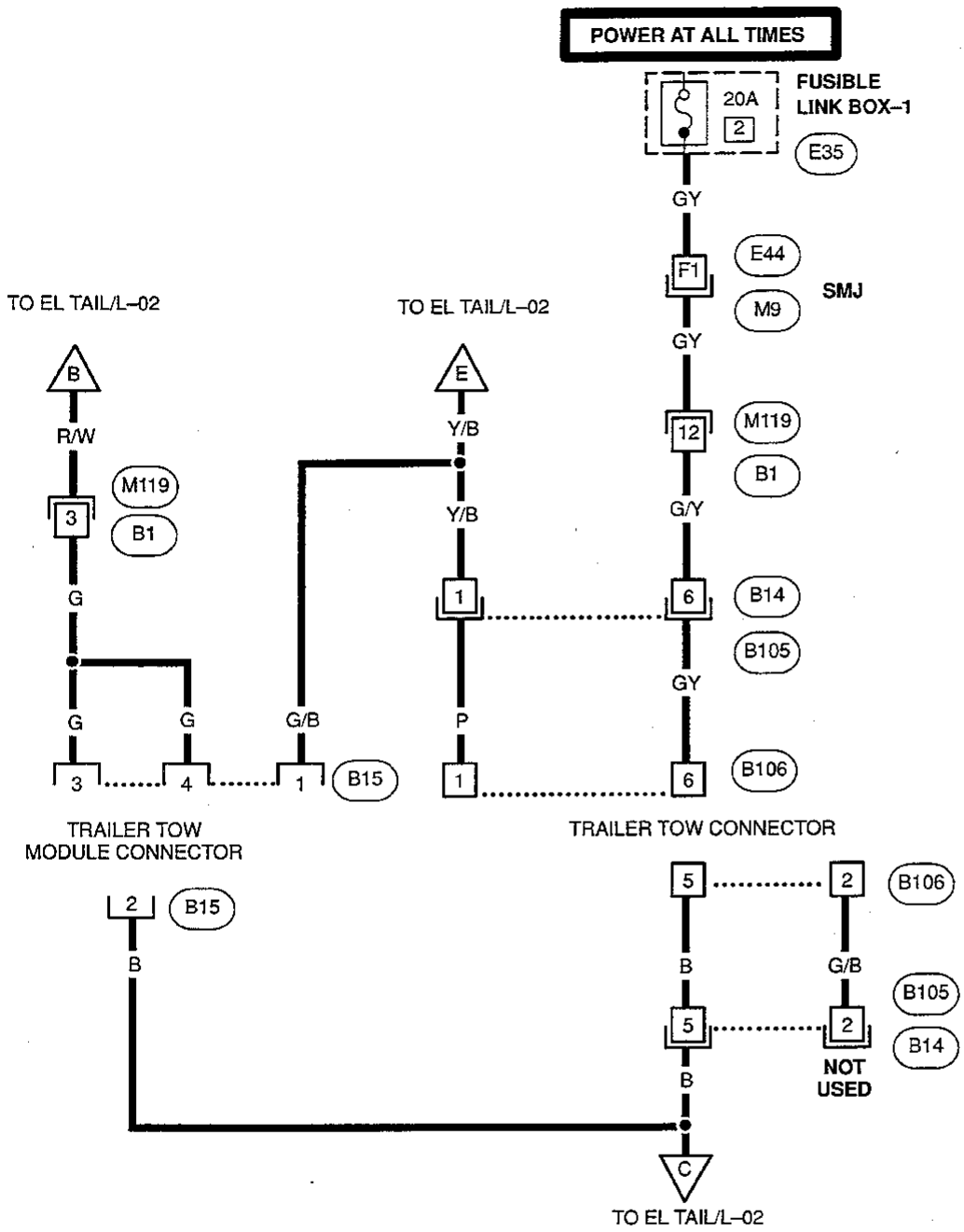

B8

Refer to Foldout Page in EL Section for details. M9 E44

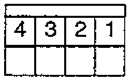
AEL322-B

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

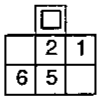
EL-TAIL/L-03



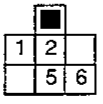
Refer to POWER SUPPLY ROUTING in EL Section. E35



B15

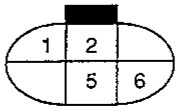


B105

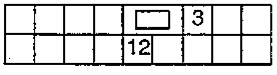


B14

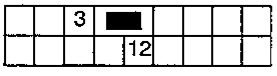
Refer to Foldout Page in EL Section for details. M9 E44



B106



M119

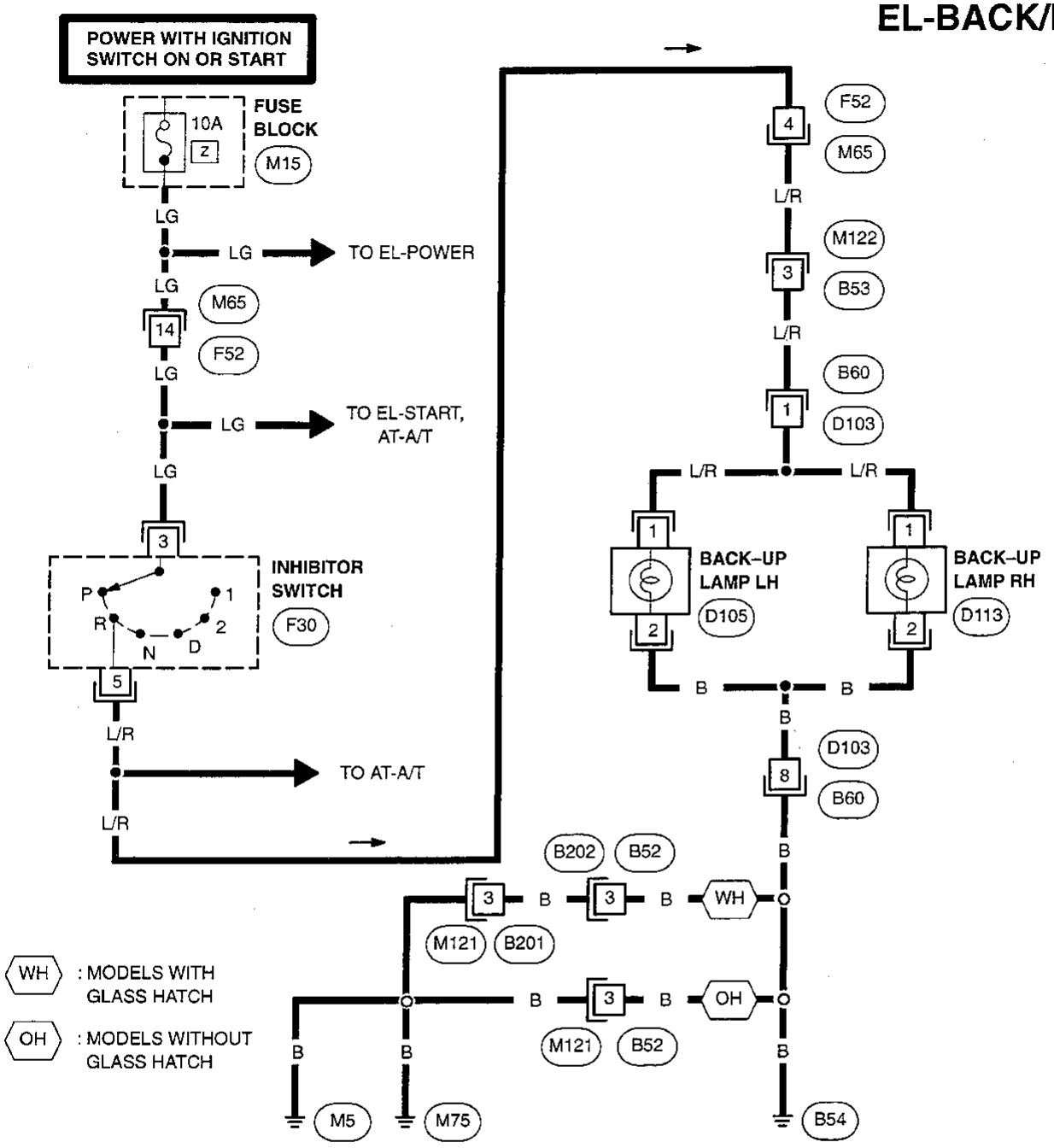


B1

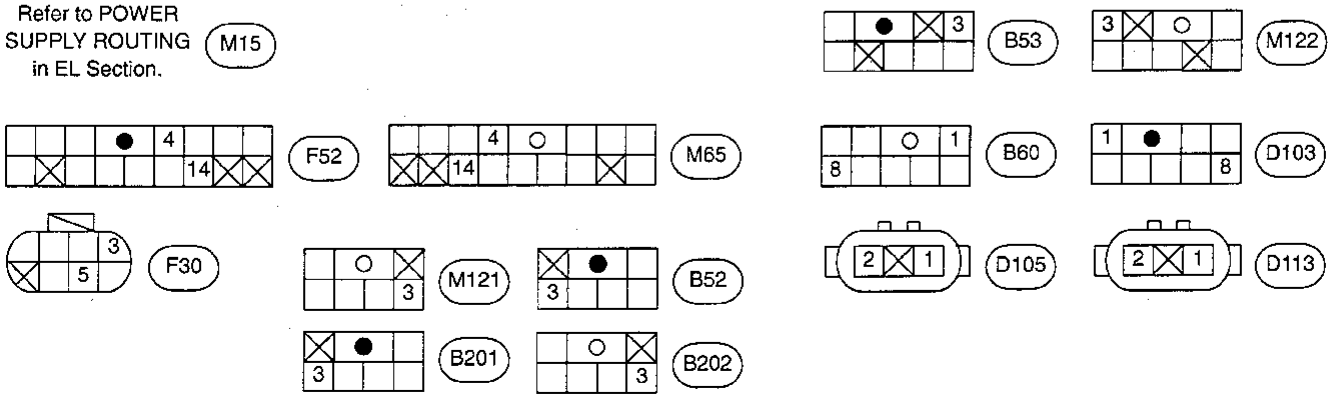
AEL322-C

Back-up Lamp/Wiring Diagram –BACK/L–

EL-BACK/L-01



Refer to POWER SUPPLY ROUTING in EL Section. M15



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 (Letter [v], located in the fuse block)
- to hazard switch terminal ②
- through terminal ① of the hazard switch
- to combination flasher unit terminal ①
- through terminal ③ of the combination flasher unit
- to turn signal switch terminal ①.

Ground is supplied to combination flasher unit terminal ② through body grounds (B2), (M5), and (M75).

LH turn

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

- front turn signal lamp LH terminal ③
- rear combination lamp LH terminal ②, and
- combination meter terminal ⑮.

Ground is supplied to the front turn signal lamp LH terminal ① through body grounds (E7), (E41), and (E61).
Ground is supplied to the rear combination lamp LH terminal ④ through body grounds (B2), (M5), and (M75).
Ground is supplied to combination meter terminal ㉒ through body grounds (B2), (M5), and (M75).
With power and ground supplied, the combination flasher unit 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 ③ to:

- front turn signal lamp RH terminal ③
- rear combination lamp RH terminal ②, and
- combination meter terminal ㉑.

Ground is supplied to the front turn signal lamp RH terminal ① through body grounds (E7), (E41), and (E61).
Ground is supplied to the rear combination lamp RH terminal ④ through body grounds (B2), (M5), and (M75).
Ground is supplied to combination meter terminal ㉒ through body grounds (B2), (M5), and (M75).
With power and ground supplied, the combination flasher unit controls the flashing of the RH turn signal lamps.

HAZARD LAMP OPERATION

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

- 15A fuse (Letter [q], located in the fuse block).

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

- through terminal ① of the hazard switch
- to combination flasher unit terminal ①
- through terminal ③ of the combination flasher unit
- to hazard switch terminal ⑤.

Ground is supplied to combination flasher unit terminal ② through body grounds (B2), (M5), and (M75).

Power is supplied through terminal ④ of the hazard switch to:

- front turn signal lamp LH terminal ③
- rear combination lamp LH terminal ②, and
- combination meter terminal ⑮.

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

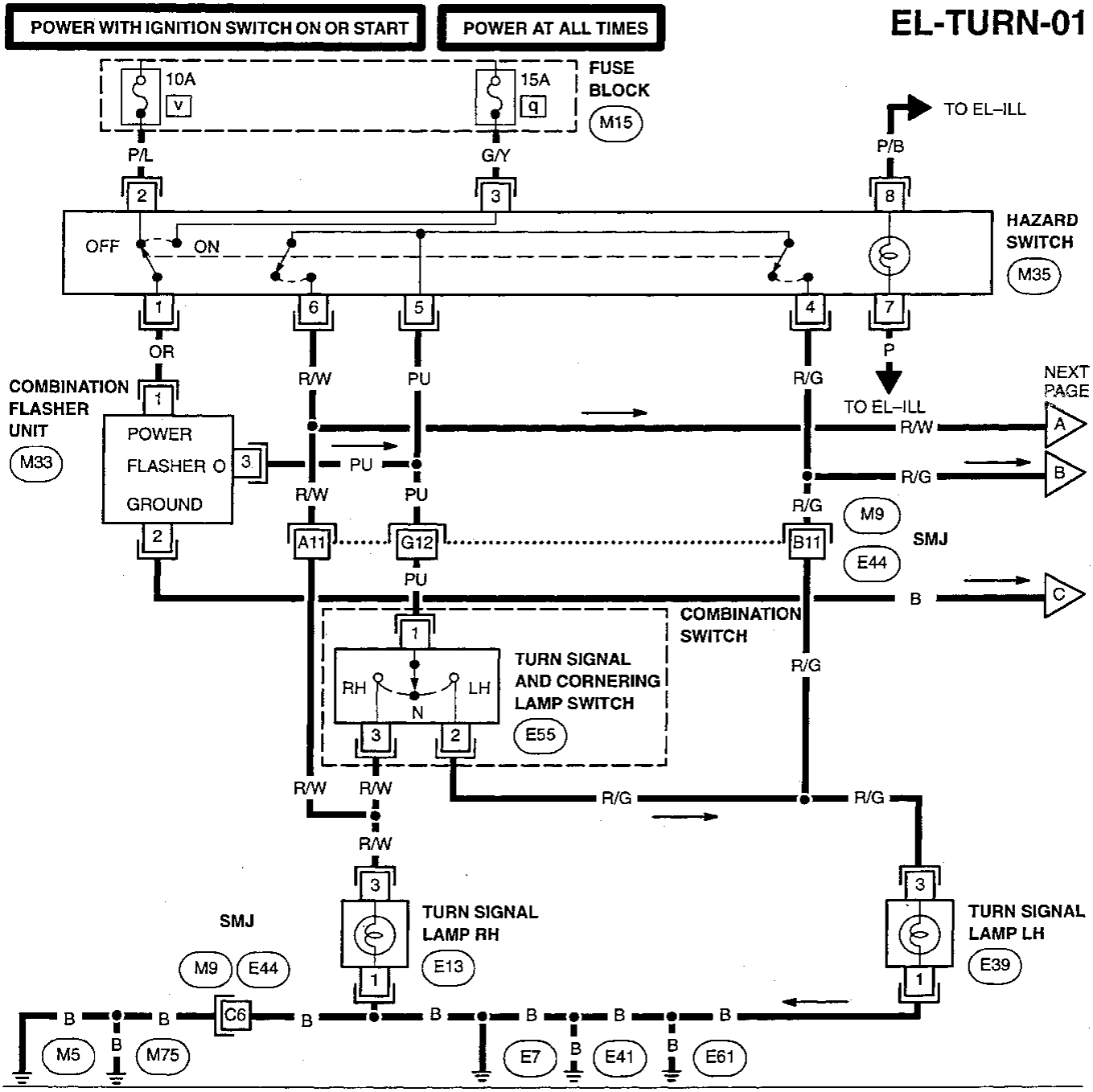
Power is supplied through terminal ⑥ of the hazard switch to:

- front turn signal lamp RH terminal ③
- rear combination lamp RH terminal ②, and
- combination meter terminal ㉑.

Ground is supplied to terminal ① of the front turn signal lamps through body grounds (E7), (E41), and (E61).
Ground is supplied to terminal ④ of the rear combination lamps through body grounds (B2), (M5), and (M75).
Ground is supplied to combination meter terminal ㉒ through body grounds (B2), (M5), and (M75).
With power and ground supplied, the combination flasher unit controls the flashing of the hazard warning lamps.

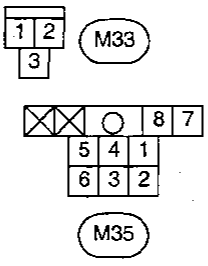
Turn Signal and Hazard Warning Lamps/Wiring Diagram –TURN–

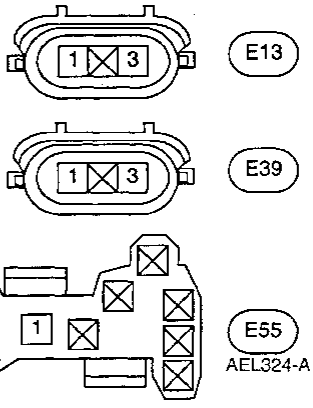
EL-TURN-01



Refer to POWER SUPPLY ROUTING in EL Section. M15

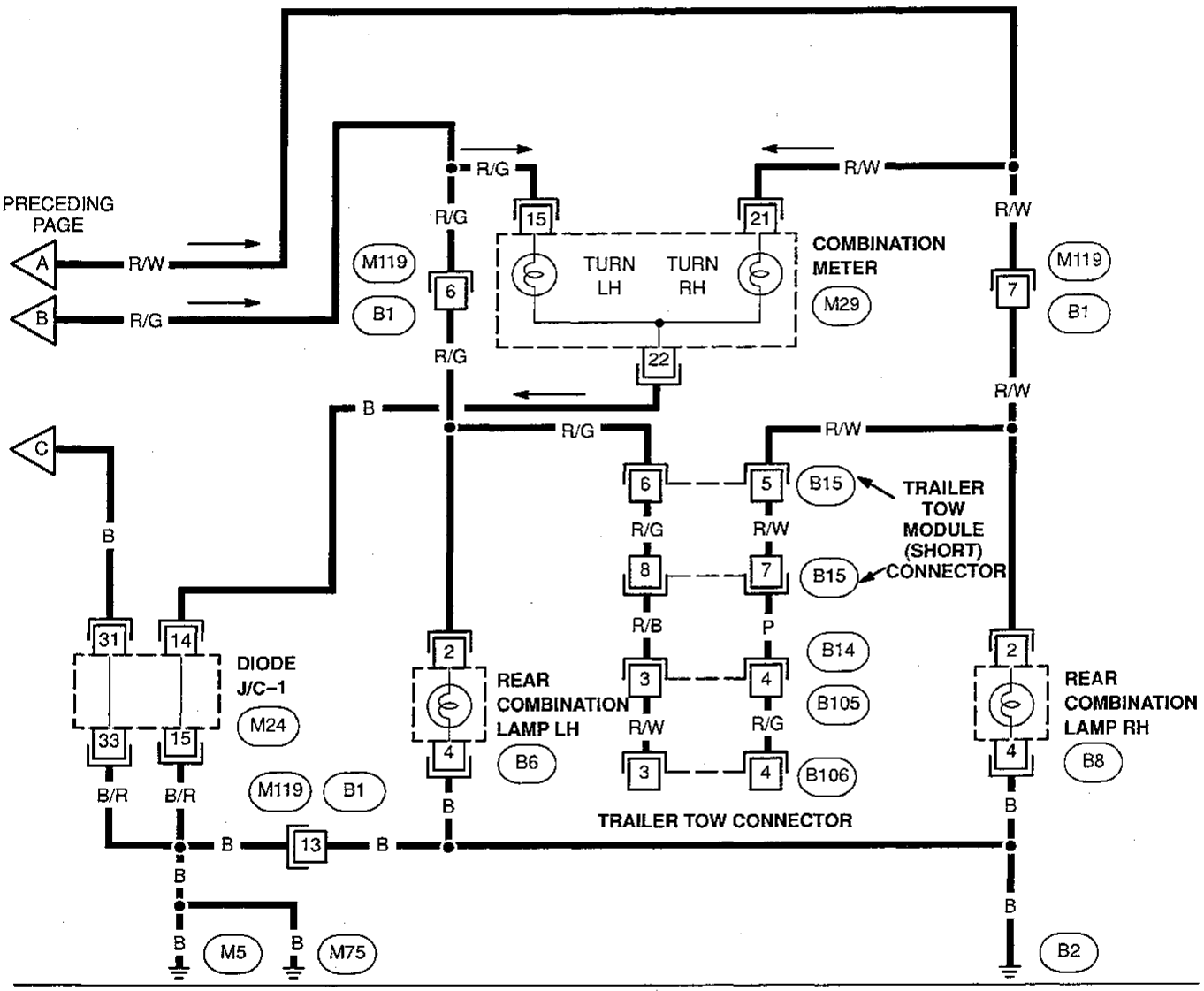
Refer to Foldout Page in EL Section for details. M9 E44

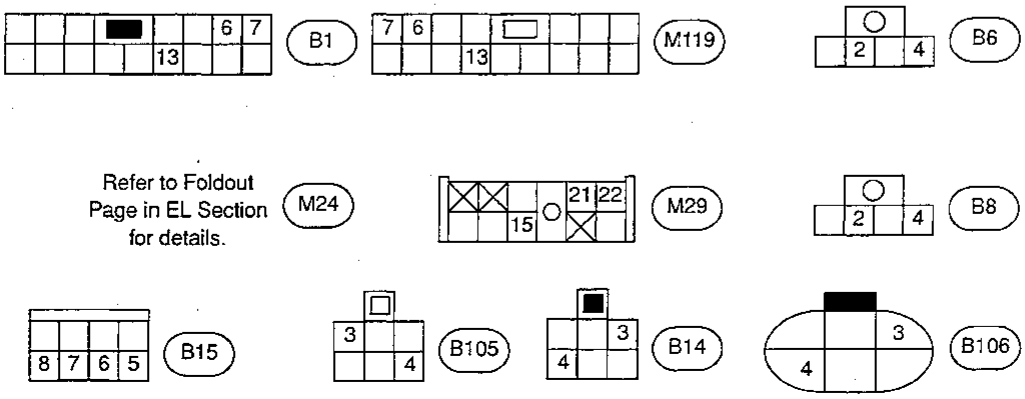




Turn Signal and Hazard Warning Lamps/Wiring Diagram –TURN– (Cont'd)

EL-TURN-02





AEL324-B

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. Combination flasher unit 3. Open in combination flasher unit circuit	1. Check hazard switch. 2. Refer to combination flasher unit check. 3. Check wiring to combination flasher unit 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 (Letter [V], 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 PU wire between combination flasher unit and turn signal switch for open circuit.
Hazard warning lamps do not operate but turn signal lamps operate.	1. 15A fuse 2. Hazard switch 3. Open in hazard switch circuit	1. Check 15A fuse (Letter [q], located in fuse block). Verify battery positive voltage is present at terminal ③ of hazard switch. 2. Check hazard switch. 3. Check PU wire between combination flasher unit and hazard switch for open circuit.
Front turn signal lamp LH or RH does not operate.	1. Bulb 2. Grounds (E7), (E41), and (E61)	1. Check bulb. 2. Check grounds (E7), (E41), and (E61).
Rear turn signal lamp LH or RH does not operate.	1. Bulb 2. Grounds (B2), (M5), and (M75)	1. Check bulb. 2. Check grounds (B2), (M5), and (M75).
LH and RH turn indicators do not operate.	1. Ground	1. Check grounds (B2), (M5) and (M75).
LH or RH turn indicator does not operate.	1. Bulb	1. Check bulb in combination meter.

NOTE

Cornering Lamp/System Description

The lighting switch must be in PARK or HEAD position for the cornering lamps to operate. The cornering lamp switch is 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 ⑤ of the lighting switch through:
- 15A fuse (Letter [S], located in the fuse block).

With the lighting switch in the PARK or HEAD position, power is supplied:
- from terminal ⑥ of the lighting switch
- to cornering lamp switch terminal ④.

RH turn

When the turn signal lever is moved to the RH position, power is supplied:
- from terminal ④ of the cornering lamp switch
- through terminal ⑥ of the cornering lamp switch
- to cornering lamp RH terminal ③.

Ground is supplied to terminal ① of cornering lamp RH through body grounds (E7), (E41), (E61), (M5), and (M75). The RH cornering lamp illuminates until the turn is completed.

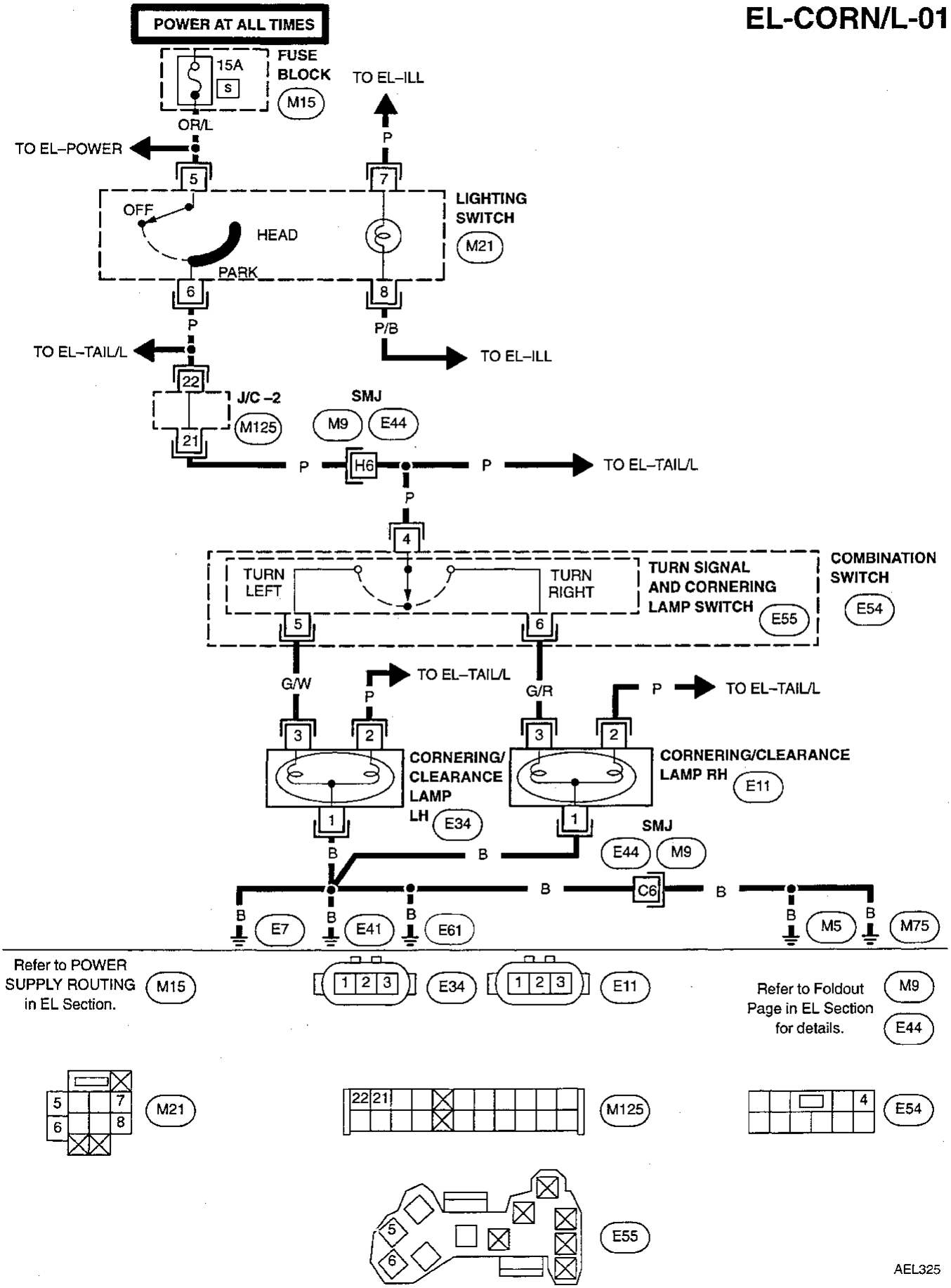
LH turn

When the turn signal lever is moved to the LH position, power is supplied:
- from terminal ④ of the cornering lamp switch
- through terminal ⑤ of the cornering lamp switch
- to cornering lamp LH terminal ③.

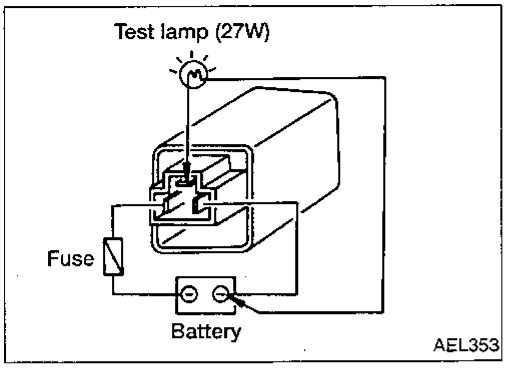
Ground is supplied to terminal ① of cornering lamp LH through body grounds (E7), (E41), (E61), (M5), and (M75). The LH cornering lamp illuminates until the turn is completed.

Cornering Lamp/Wiring Diagram –CORN/L–

EL-CORN/L-01



AEL325



Combination Flasher Unit Check

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

Bulb Specifications

Item	Wattage (W)	Bulb No.
Headlamp (Semi-sealed beam)		
High/Low	65/45	9004
Front combination lamp		
Front side marker	3.8	194
Clearance/Cornering	8.25/27	3157
Front turn signal lamp	27	3156
Rear combination lamp		
Turn signal	27	2057
Stop/Tail	27	2057
Back-up	27	3156
Rear side marker lamp	3.8	194
License plate lamp	3.8	194
High-mounted stop lamp	12.8	912
Interior lamp	12	211-2
Tailgate lamp	12	211-2
Step lamp	3.8	194
Map lamp	10	—

Illumination/System Description

Power is supplied at all times:
- through 15A fuse (Letter [S], located in the fuse block)
- to the lighting switch terminal ⑤.

With the lighting switch in the PARK or HEAD position, power is supplied:
- from lighting switch terminal ⑥
- to time control module terminal ⑩, and
- to the power terminal on all the illuminated components.

Ground is supplied:
- to the illumination control switch terminal ⑪
- through body grounds (M5) and (M75).

The illumination control switch and the time control module control the amount of current flow through the illumination system.

When the illumination control switch is pressed in the LIGHTEN position, ground is supplied:
- to the time control module terminal ㉒
- through the illumination control switch terminal ⑬. The time control module reduces the voltage on terminal ⑬, increasing the illumination.

When the illumination control switch is pressed in the DARKEN position, ground is supplied:
- to the time control module terminal ㉓
- through the illumination control switch terminal ⑫. The time control module increases the voltage on terminal ⑬, reducing the illumination.

The rear A/C control module illumination and the rear remote control module illumination, if equipped, are not controlled by the illumination control switch. The intensity of these lamps does not change. The rear A/C control module terminal ④ and the rear remote control module terminal ⑦ are both grounded directly through body grounds (M5) and (M75).

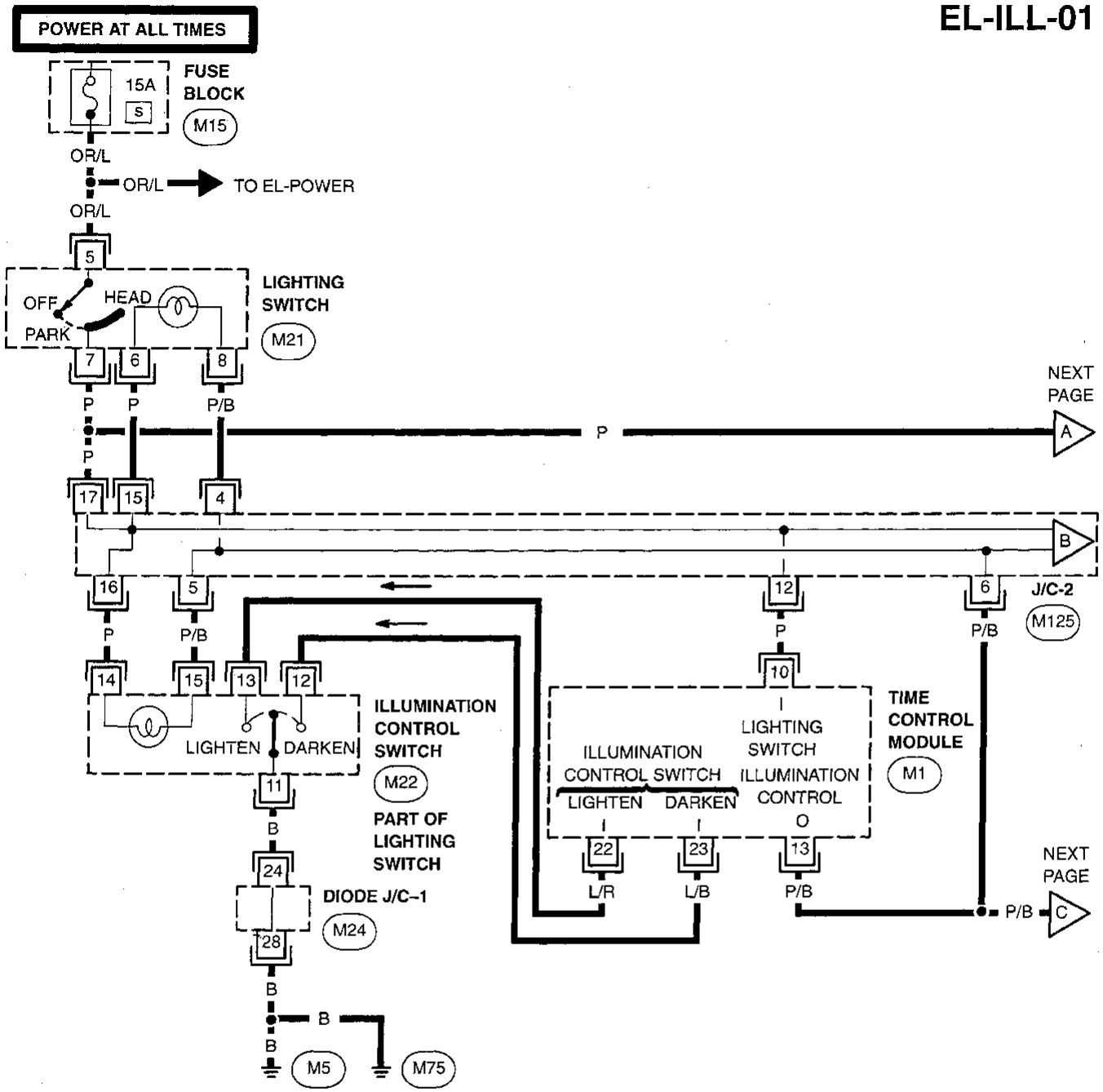
The following chart shows the power and ground terminals for the components included in the illumination system.

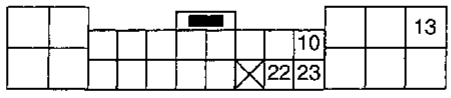
Component	Power terminal	Ground terminal
Radio	④	②
C/D player*	③	①
Rear wiper switch	④	⑤
A/C control module	㉕	㉖
Rear fan switch (front)*	㉗	㉘
Power mode switch	⑥	⑦
Hazard switch	⑦	⑧
Rear A/C control module*	⑪	④
Cigarette lighter	①	②
Rear remote control module*	⑧	⑦
Combination meter	㉓ and ⑩	㉔ and ⑪
ASCD main switch	⑤	⑥
Rear window defogger switch	⑤	⑥
Lighting switch	⑦	⑧
Illumination control switch	⑭	⑮

* If equipped.

Illumination/Wiring Diagram –ILL–

EL-ILL-01

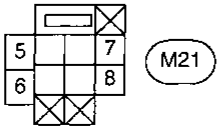


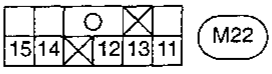


Refer to POWER SUPPLY ROUTING in EL Section. (M15)

Refer to Foldout Page in EL Section for details. (M24)

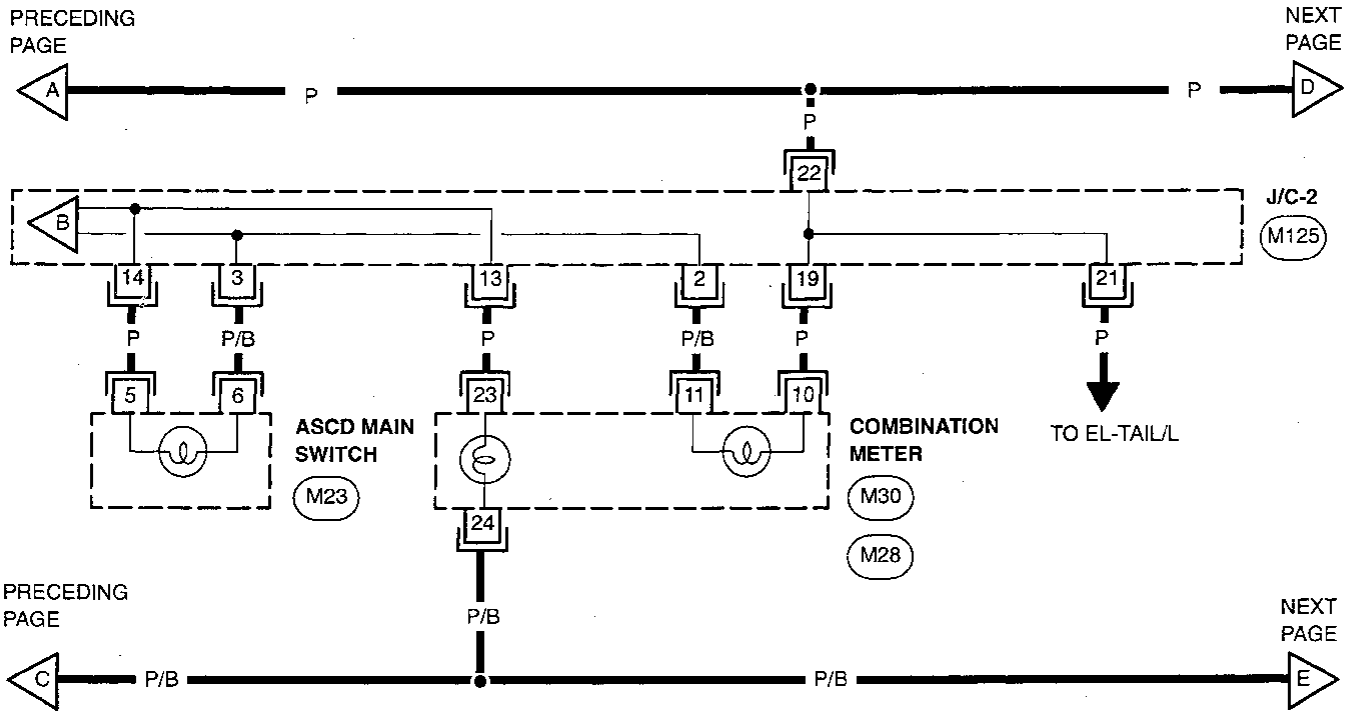
Refer to Foldout Page in EL Section for details. (M125)

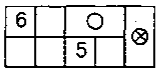




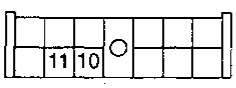
AEL326-A

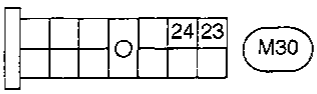
EL-ILL-02





Refer to Foldout Page in EL Section for details. M125



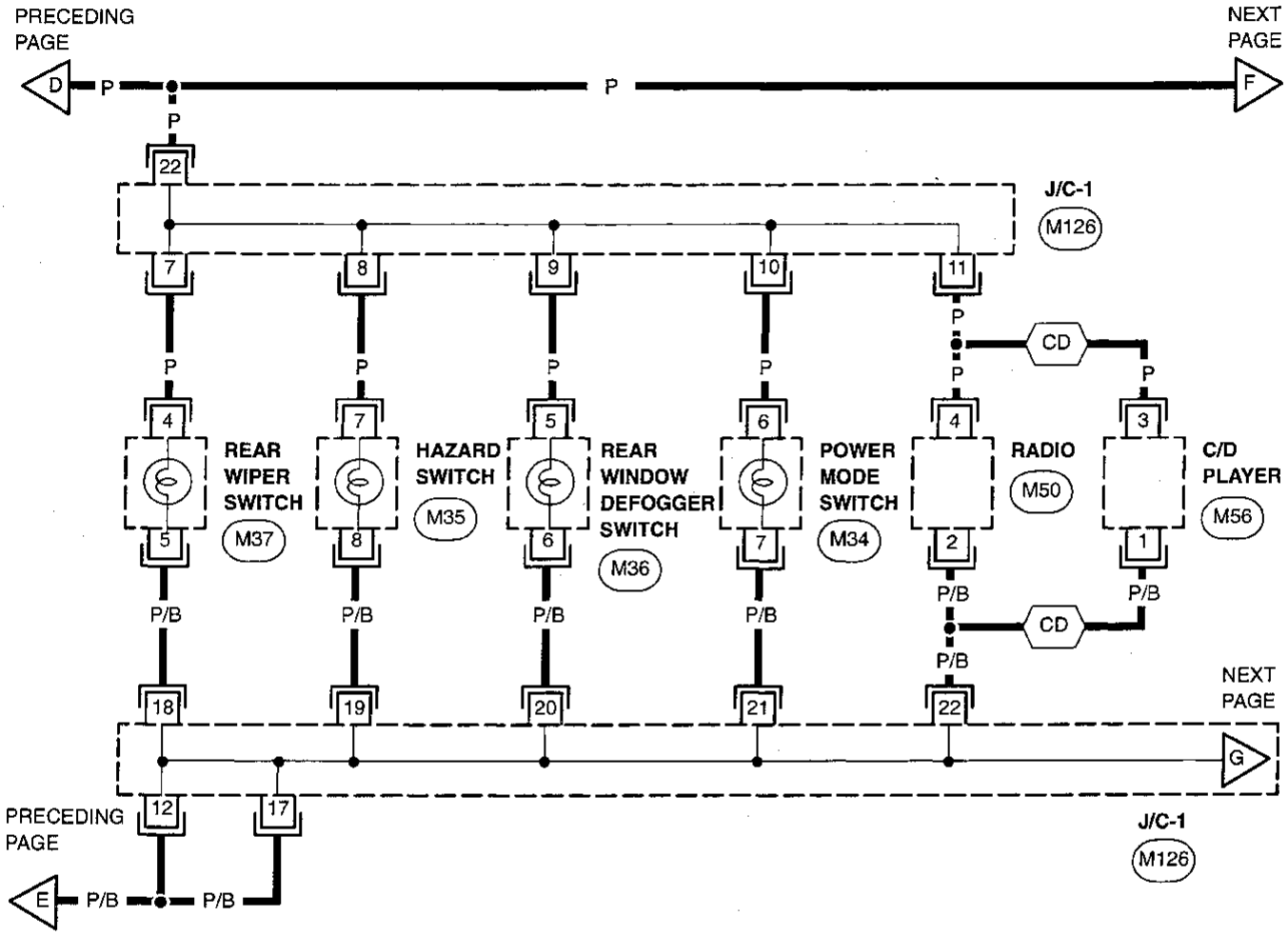


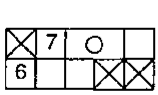
AEL326-B

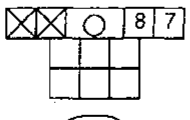
Illumination/Wiring Diagram –ILL– (Cont'd)

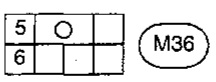
EL-ILL-03

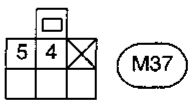
CD : MODELS WITH C/D PLAYER

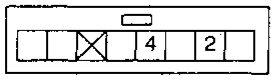


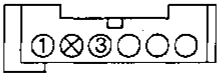

M34


M35


M36


M37


M50

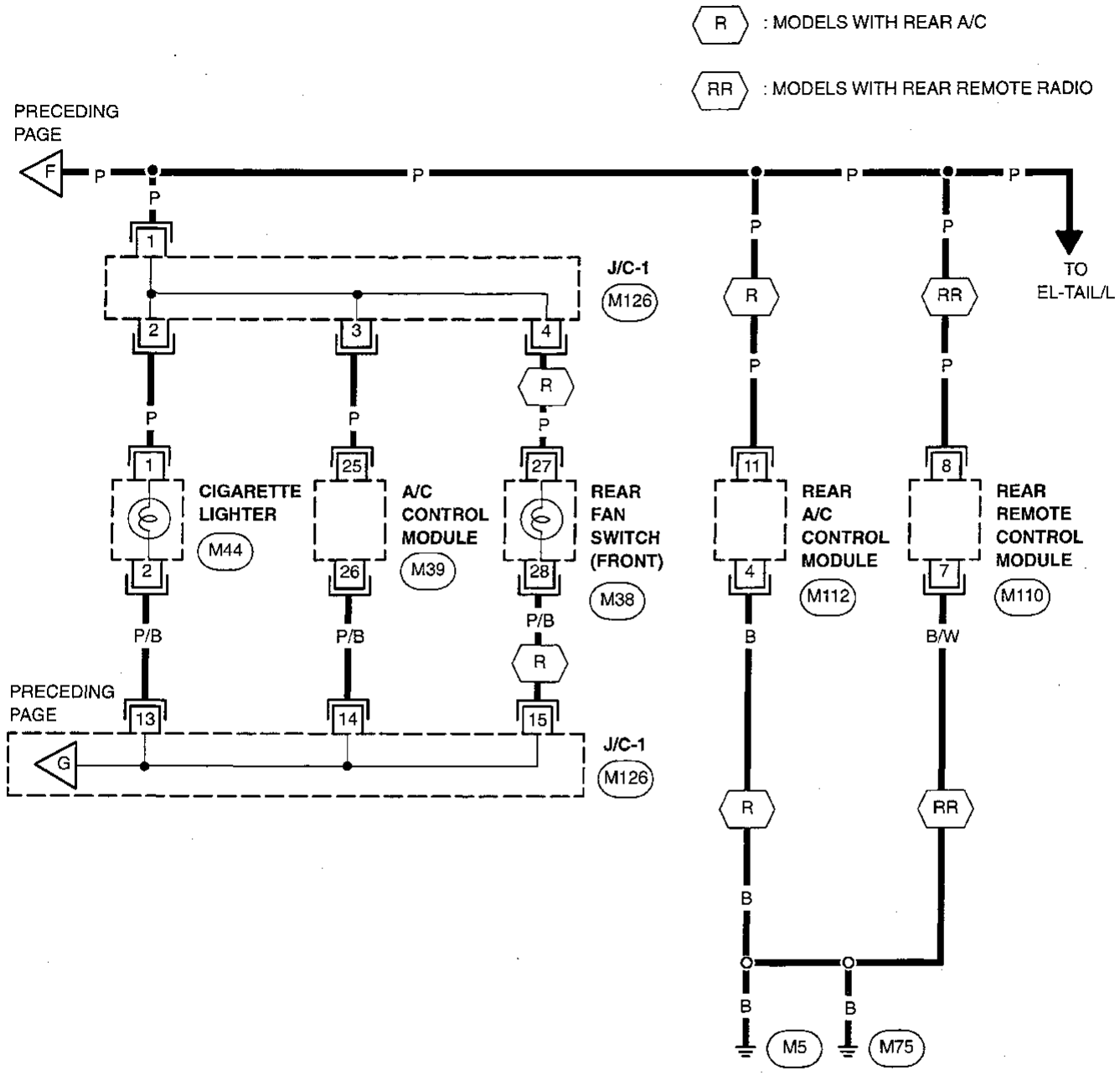

M56

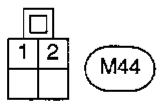
Refer to Foldout Page in EL Section for details. M126

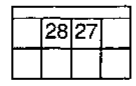
AEL326-C

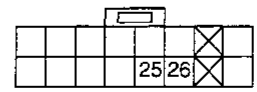
Illumination/Wiring Diagram –ILL– (Cont'd)

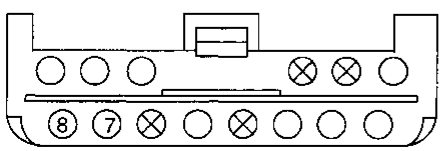
EL-ILL-04

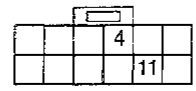










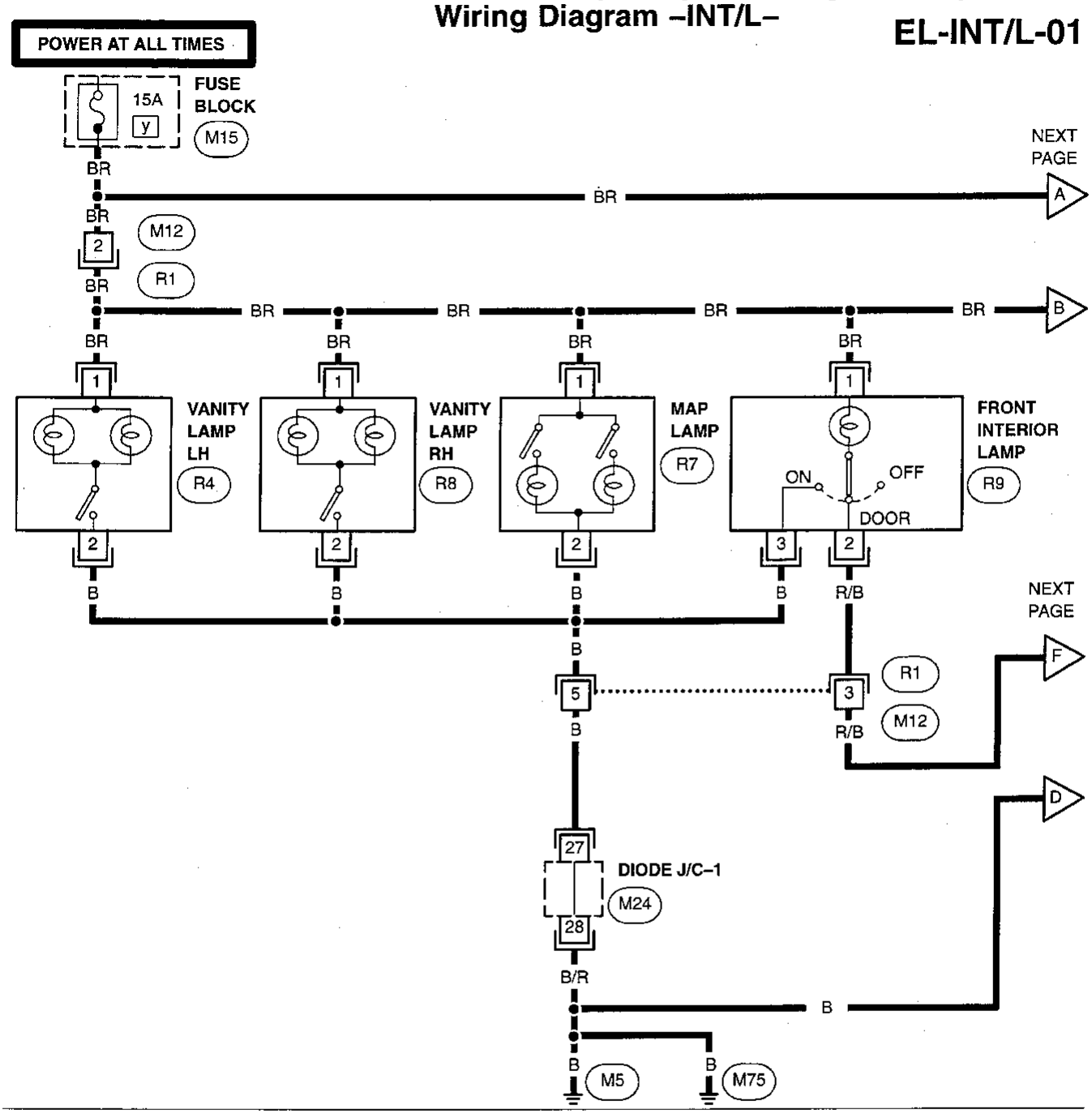


Refer to Foldout Page in EL Section for details. M126

AEL326-D

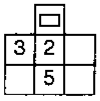
Interior, Map, Step and Tailgate Lamps/ Wiring Diagram –INT/L–

EL-INT/L-01



Refer to POWER SUPPLY ROUTING in EL Section. (M15)

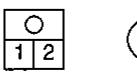
Refer to Foldout Page in EL Section for details. (M24)


(R1)


(M12)


(R4)


(R8)

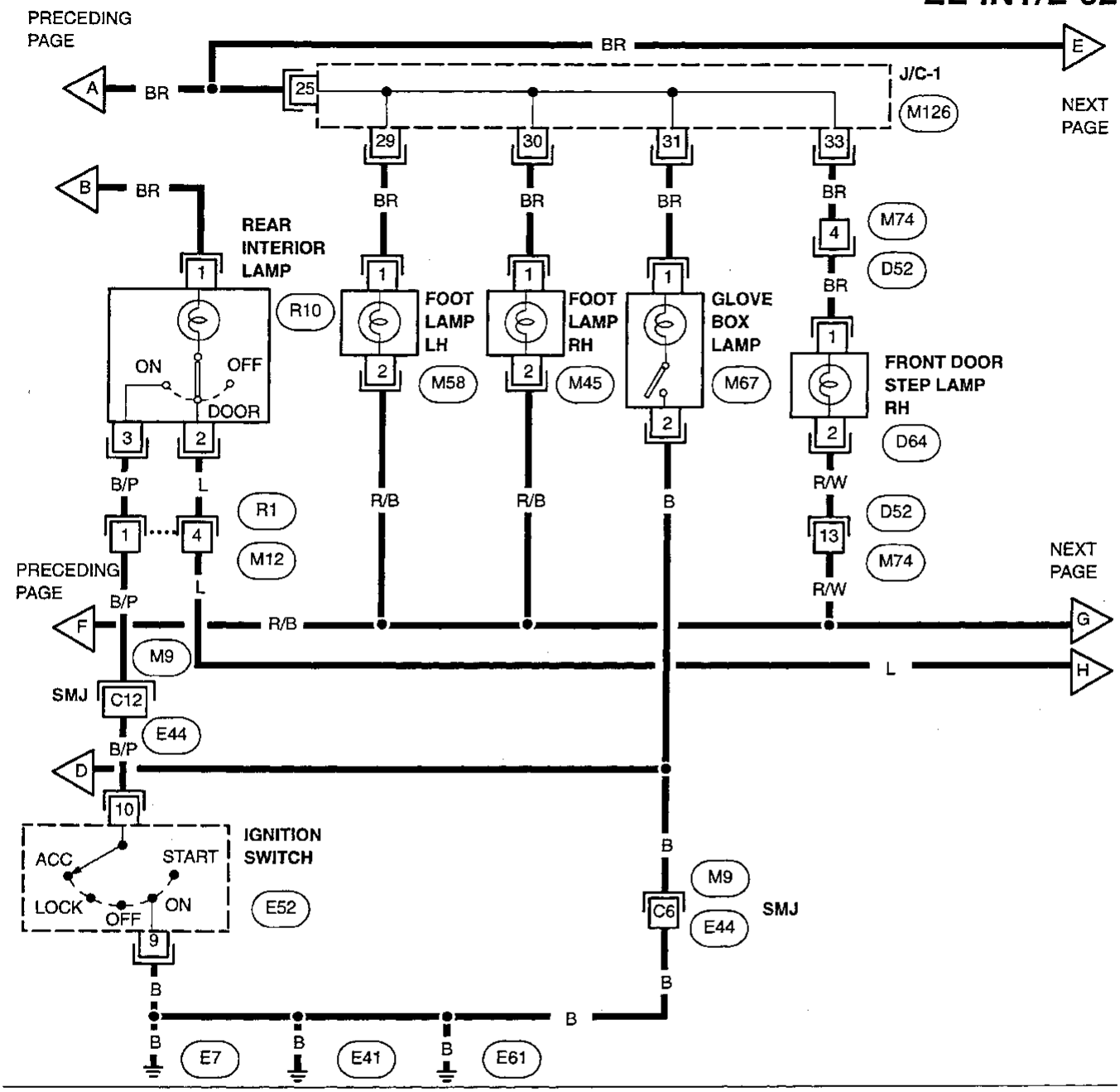

(R7)


(R9)

AEL327-A

Interior, Map, Step and Tailgate Lamps/ Wiring Diagram –INT/L– (Cont'd)

EL-INT/L-02



Refer to Foldout Page in EL Section for details. M126

R10

Refer to Foldout Page in EL Section for details. E52

Refer to Foldout Page in EL Section for details. M9, E44

M12

R1

M45

M58

M67

D64

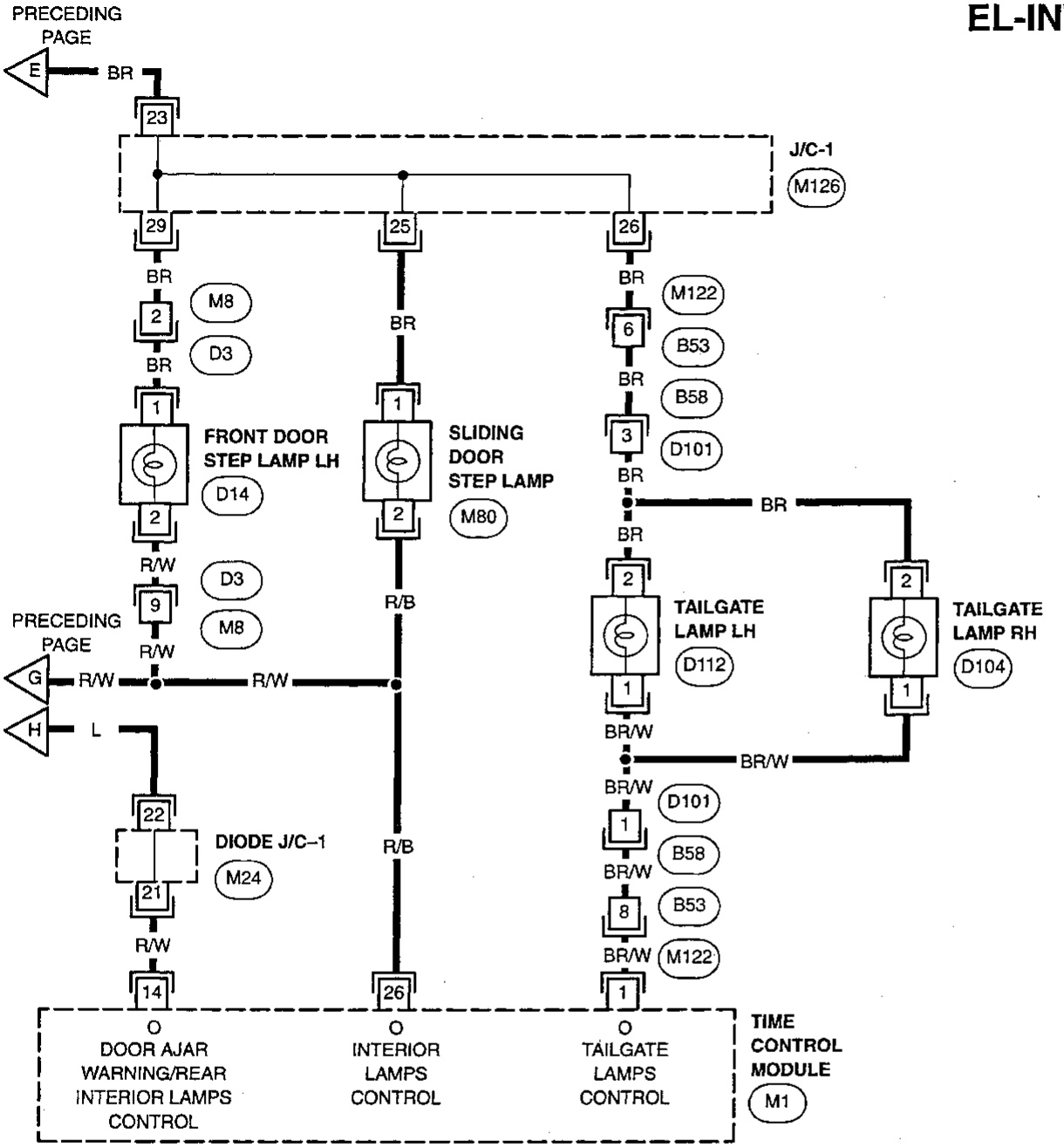
M74

D52

AEL327-B

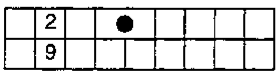
Interior, Map, Step and Tailgate Lamps/ Wiring Diagram –INT/L– (Cont'd)

EL-INT/L-03

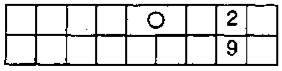


Refer to Foldout Page in EL Section for details. M126

Refer to Foldout Page in EL Section for details. M24

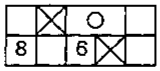


M8

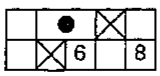


D3

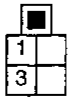
D14



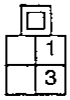
M122



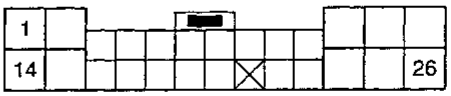
B53



D101



B58



M1

D112

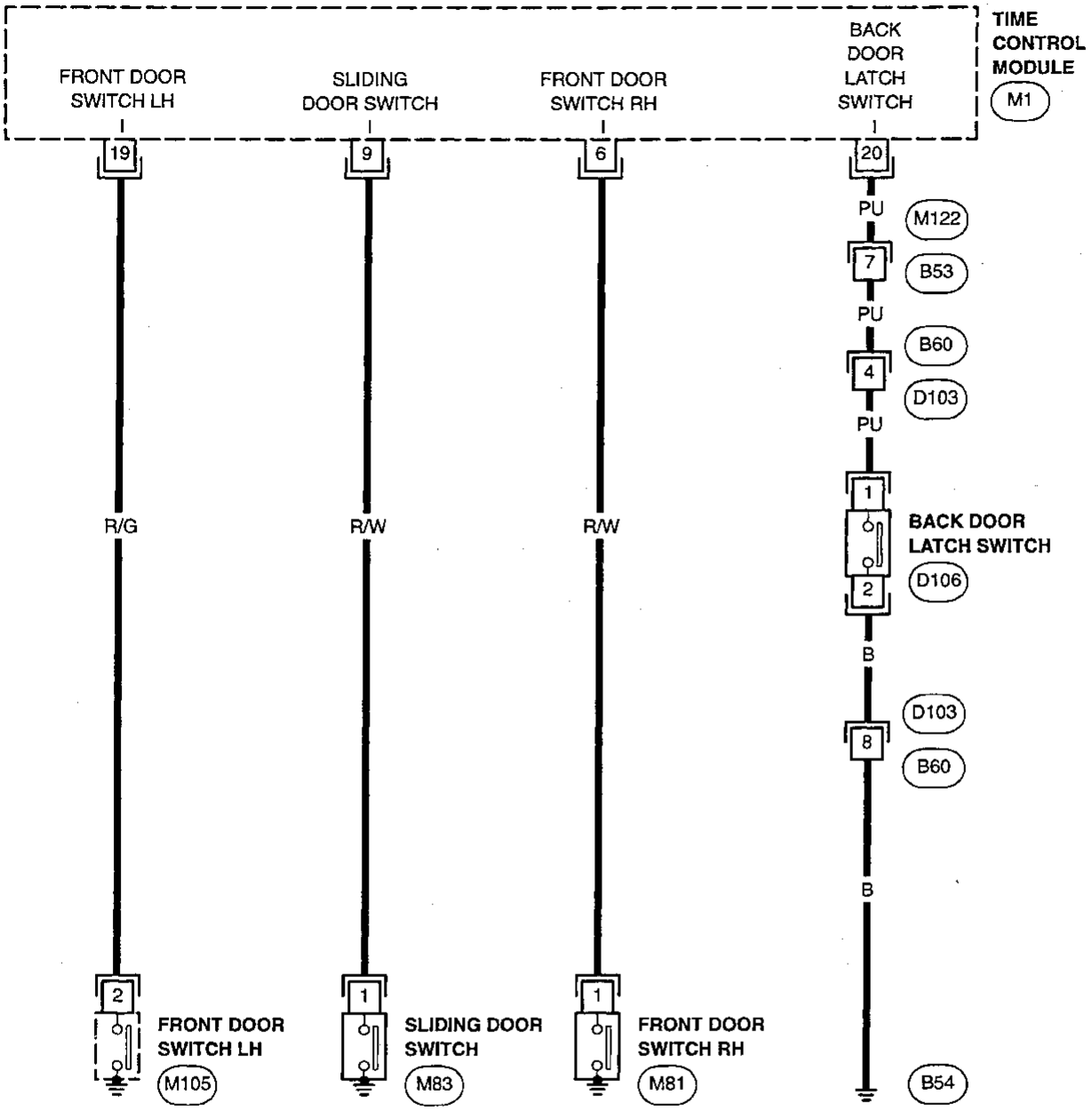
D104

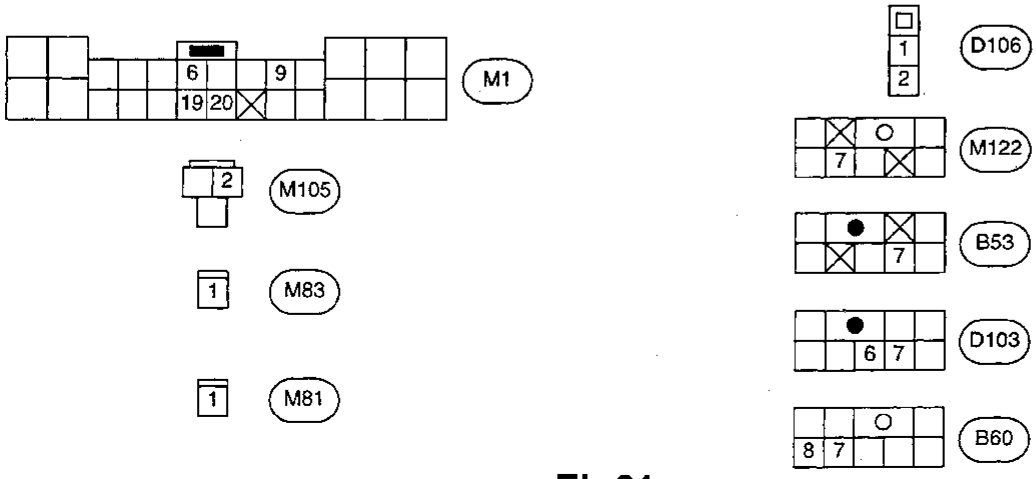
M80

AEL327-C

Interior, Map, Step and Tailgate Lamps/ Wiring Diagram –INT/L– (Cont'd)

EL-INT/L-04





AEL327-D

977

System Description

With the ignition switch in the ON or START position, power is supplied:
- through 10A fuse (Letter [u], located in the fuse block)
- to combination meter terminals ⑭ and ㉝; and
- through ignition switch terminal ④
- to ignition coil terminal ①, and
- to resistor and condenser terminal ③.

Ground is supplied:
- to combination meter terminals ⑰ and ㉚
- through body ground (M60).

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 ⑬ of the combination meter for the water temperature gauge. The needle on the gauge moves from C to H.

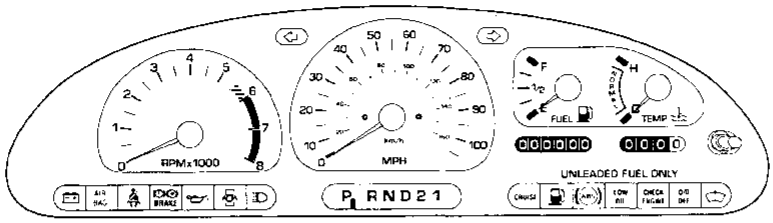
The tachometer indicates engine speed in revolutions per minute (rpm).
The tachometer is regulated by a signal:
- from terminal ② of the ECM (ECCS control module)
- to combination meter terminal ㉙ for the tachometer.

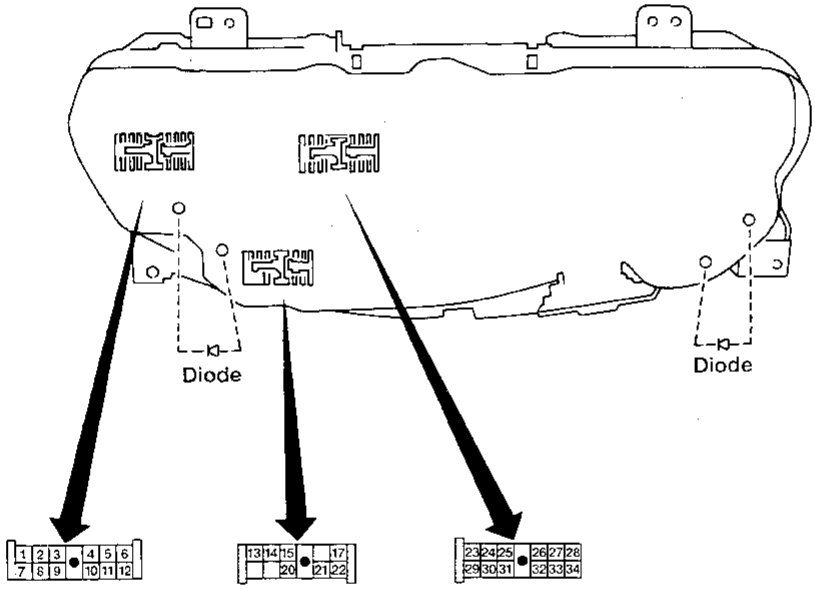
The fuel gauge indicates the approximate fuel level in the fuel tank. The fuel gauge is regulated by a variable ground signal supplied:
- to combination meter terminal ⑳
- from terminal ④ of the fuel tank gauge unit
- through terminal ③ of the fuel tank gauge unit
- through body grounds (M5) and (M75).

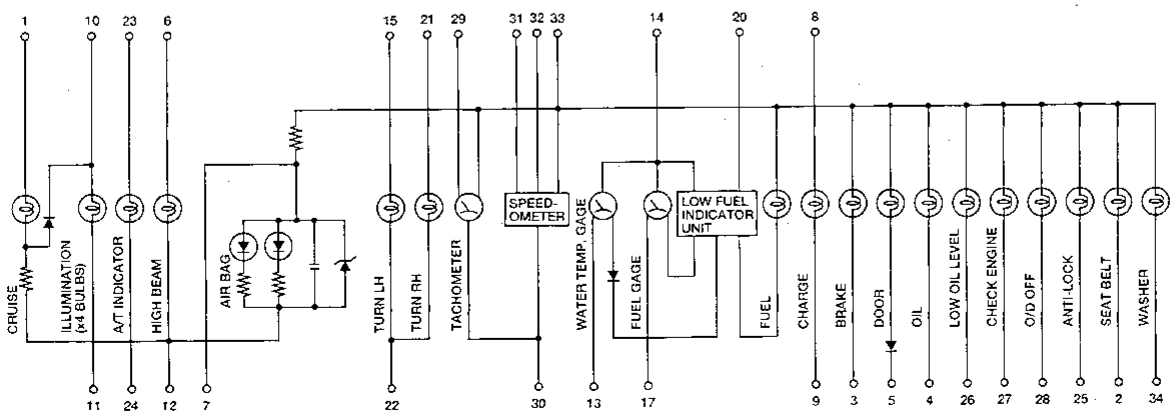
The vehicle speed sensor provides a voltage signal to the combination meter for the speedometer.
Voltage is supplied:
- to combination meter terminals ㉚ and ㉜
- from terminals ① and ② of the vehicle speed sensor.

The speedometer converts the voltage into the vehicle speed displayed.

Combination Meter



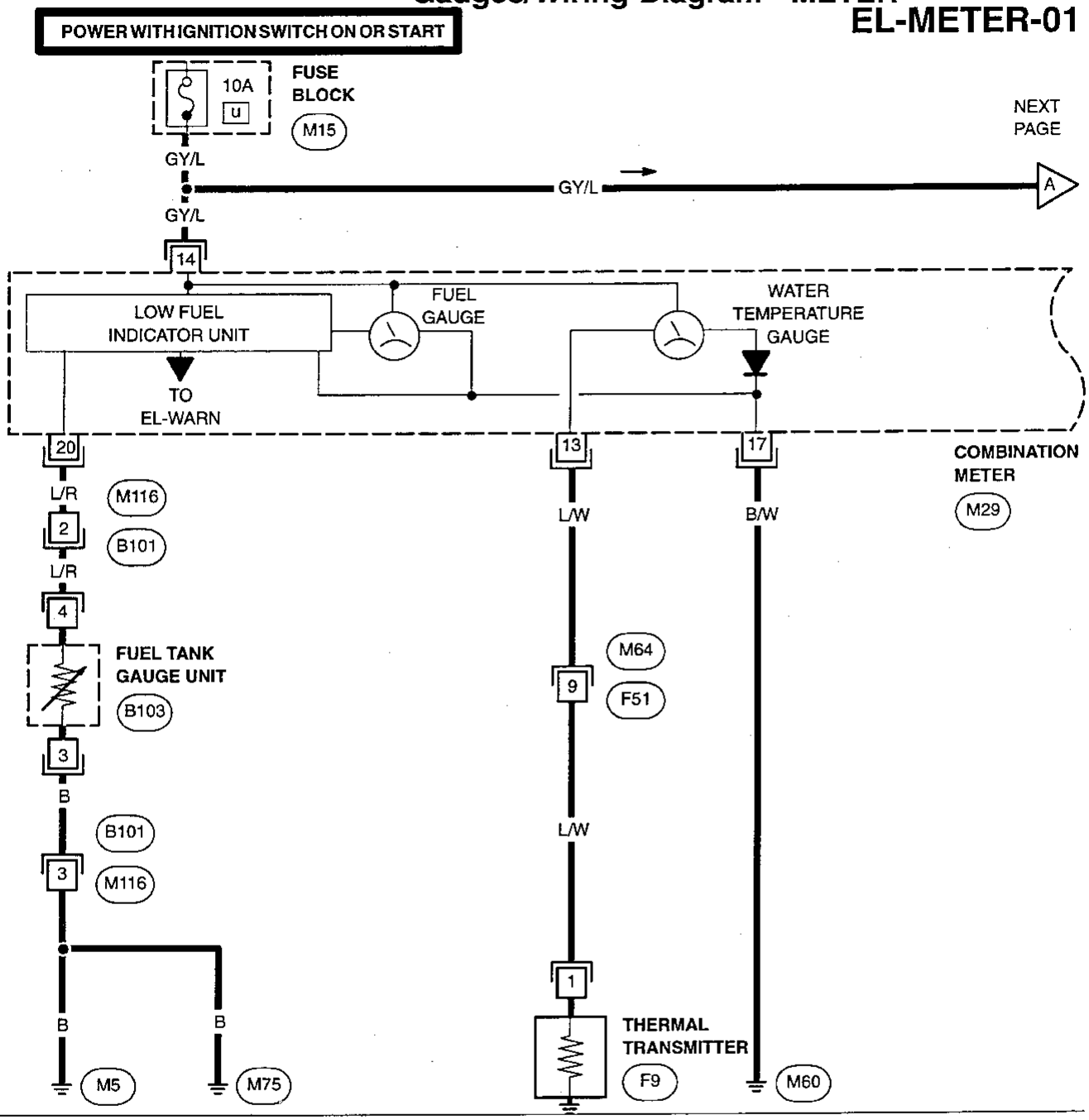




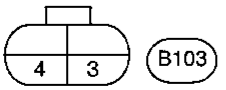
AEL354

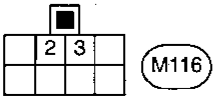
Speedometer, Tachometer, Temp. and Fuel Gauges/Wiring Diagram –METER–

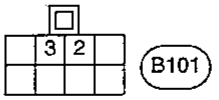
EL-METER-01

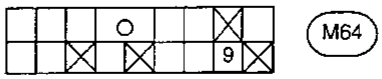


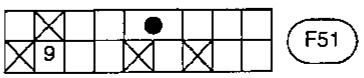
Refer to POWER SUPPLY ROUTING in EL Section. M15

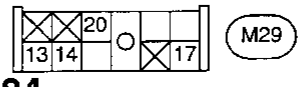








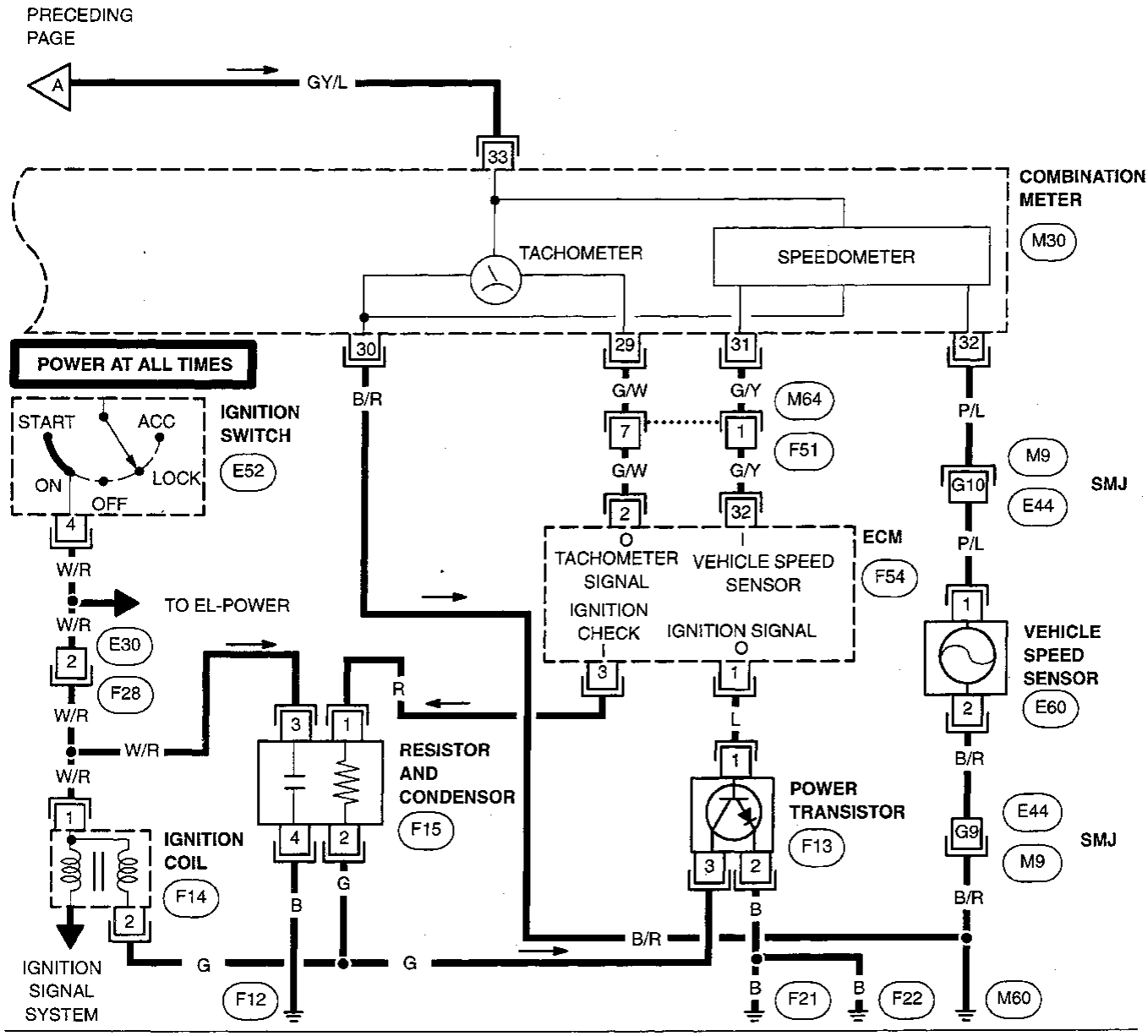


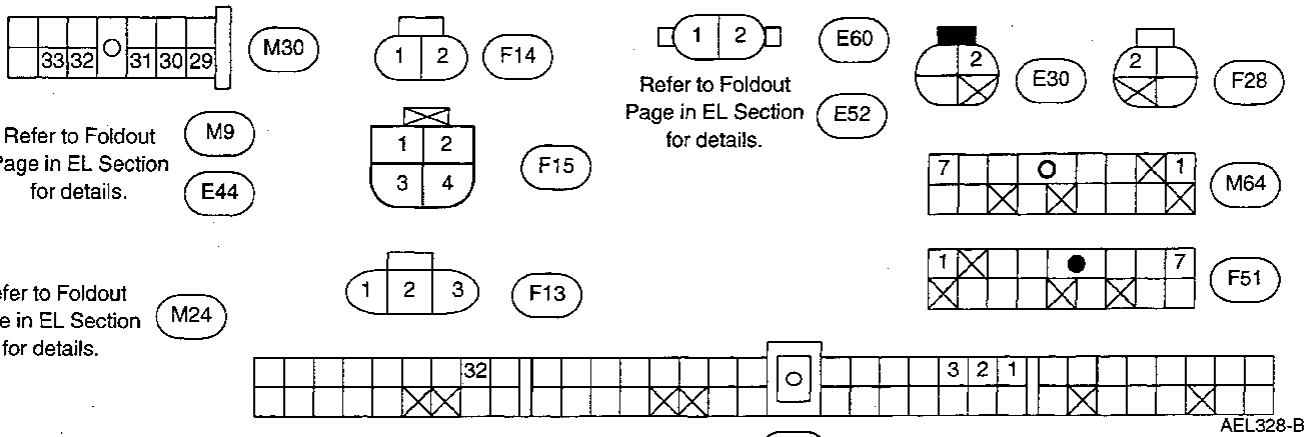


AEL328-A

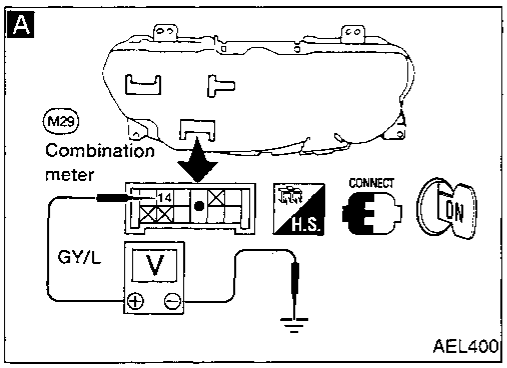
Speedometer, Tachometer, Temp. and Fuel Gauges/Wiring Diagram –METER– (Cont'd)

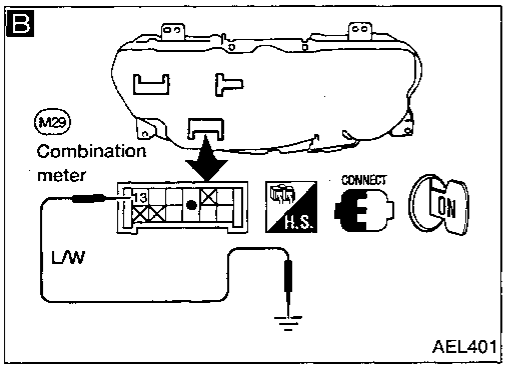
EL-METER-02

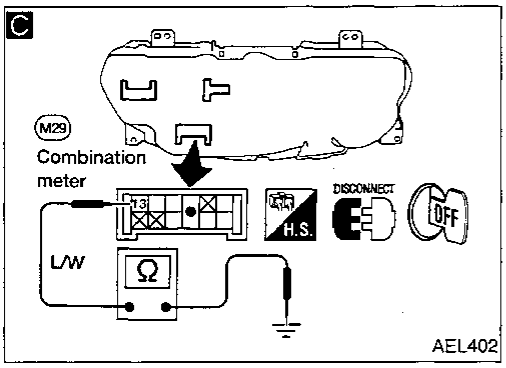




Inspection/Water Temperature Gauge







INSPECTION START

OK

A

CHECK POWER SOURCE.
1) Turn ignition switch "ON".
2) Check voltage between terminal ⑭ and ground.
Battery positive voltage should exist.

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

OK

B

CHECK GAUGE OPERATION.
1) Turn ignition switch "ON".
2) Connect terminal ⑬ to ground with wire for less than one second.
3) Check operation of gauge.
Gauge should move smoothly to full scale.

NG → Repair or replace gauge.

OK

C

Check harness continuity between terminal ⑬ and ground. Refer to EL-91.

NG → Repair harness and connector.

OK

CHECK COMPONENT.
Check thermal transmitter and harness.
Refer to EL-91.

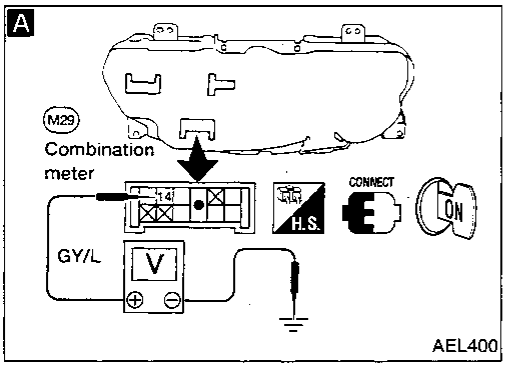
NG → Repair or replace thermal transmitter.

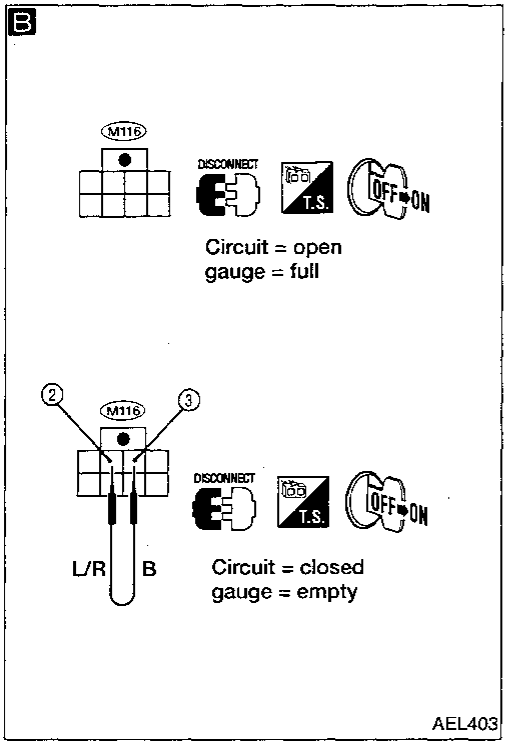
OK

Reinstall any part removed.

INSPECTION END

Inspection/Fuel Gauge





INSPECTION START

OK

A

CHECK POWER SOURCE.
1) Turn ignition switch "ON".
2) Check voltage between terminal (14) and ground.
Battery positive voltage should exist.

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

OK

B

CHECK GAUGE OPERATION.
1) Disconnect fuel tank gauge unit connector (M116).
2) Turn ignition switch "ON".
3) Check operation of gauge.
Gauge should move smoothly to full scale.

OR

1) Disconnect fuel tank gauge unit connector (M116).
2) Connect terminals (2) and (3) with wire.
3) Turn ignition switch "ON".
Gauge should move smoothly to empty scale.

NG → Repair or replace gauge.

OK

CHECK COMPONENT.
Check gauge unit and harness.
Refer to EL-91.

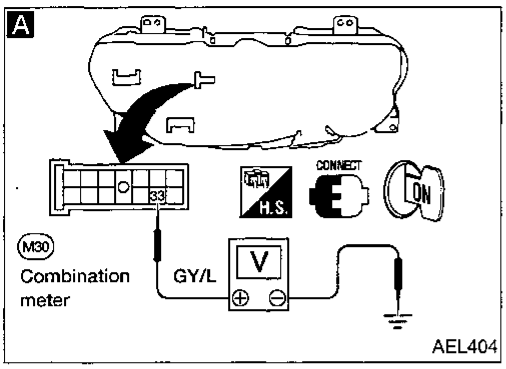
NG → Repair or replace.
Refer to FE section ("Fuel Pump and Gauge", "FUEL SYSTEM").

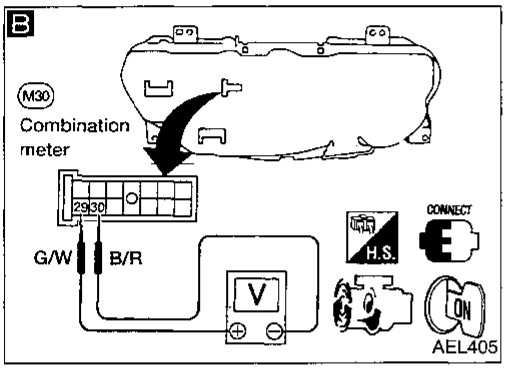
OK

Reinstall any part removed.

INSPECTION END

Inspection/Tachometer





INSPECTION START

A

CHECK POWER SOURCE.
1) Turn ignition switch "ON".
2) Check voltage between terminal (33) and ground.
Battery positive voltage should exist.

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

OK

B

CHECK ECM OUTPUT.
1) Start engine.
2) Check voltage between terminal (29) and (30) at idle and 2,000 rpm.
Lower RPM = Lower voltage
Higher RPM = Higher voltage
Voltage should change with RPM.

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

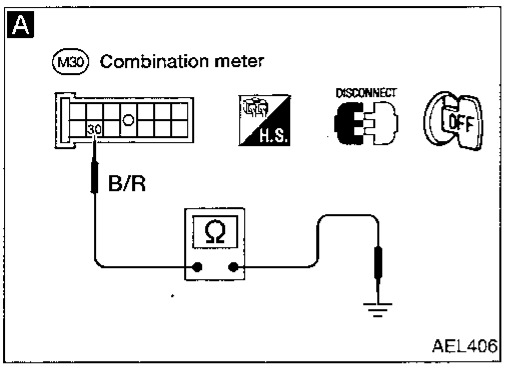
OK

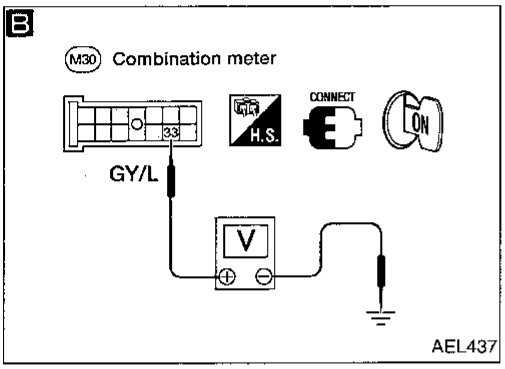
Replace tachometer.

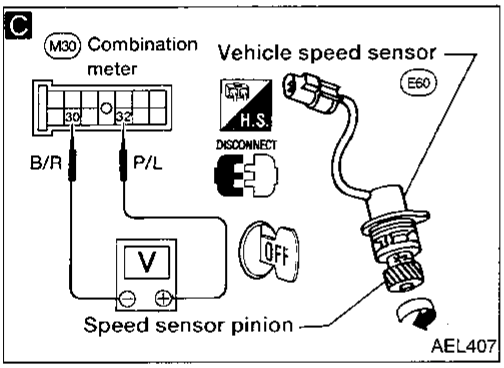
INSPECTION END

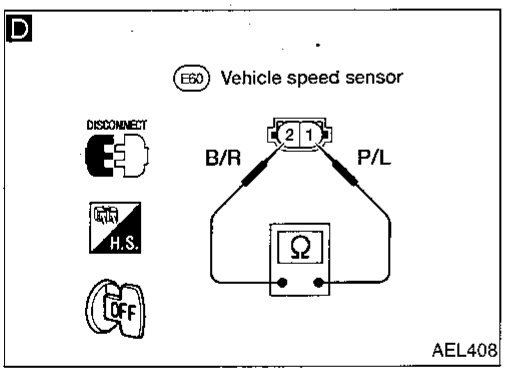
Inspection/Speedometer and Vehicle Speed Sensor

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









INSPECTION START

A

CHECK GROUND CIRCUIT OF SPEEDOMETER.
Check continuity between terminal (30) and body ground.
Continuity should exist.

NG → Repair harness or connector.

OK

B

CHECK SPEEDOMETER CIRCUIT.
1) Turn ignition switch "ON".
2) Check voltage between terminal (33) and body ground.
Battery voltage should exist.

NG → Repair harness or connector.

OK

C

CHECK VEHICLE SPEED SENSOR OUTPUT.
1) Remove vehicle speed sensor from transaxle. Keep (E60) connected to the wiring harness.
2) Check voltage between terminal (30) and (32) while quickly turning vehicle speed sensor pinion.
Voltage: Approx. 0.5V

OK → Replace speedometer.

NG

D

CHECK VEHICLE SPEED SENSOR.
Check resistance between terminals (1) and (2).
Resistance: Approx. 200Ω.

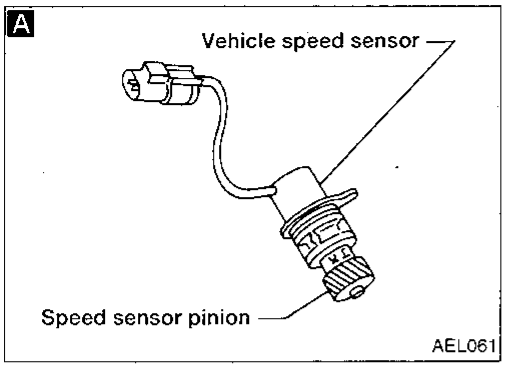
NG → Replace vehicle speed sensor.

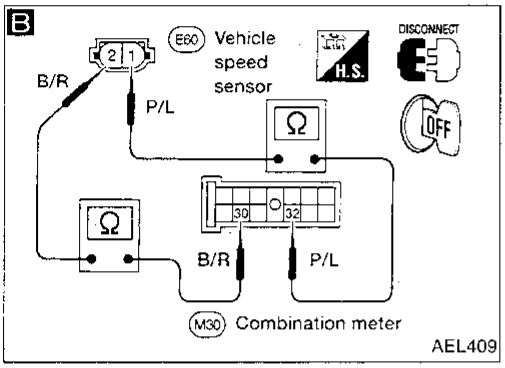
OK

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. — NG → Install vehicle speed sensor properly.

↓ OK

A

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

↓ Yes

B

Check continuity between combination meter terminal (30) and vehicle speed sensor terminal (2), and between (32) and (1).
Continuity should exist. — NG → Repair harness and connector.

↓ OK

Replace speedometer.

Inspection/Speedometer and Fuse

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

INSPECTION START

↓

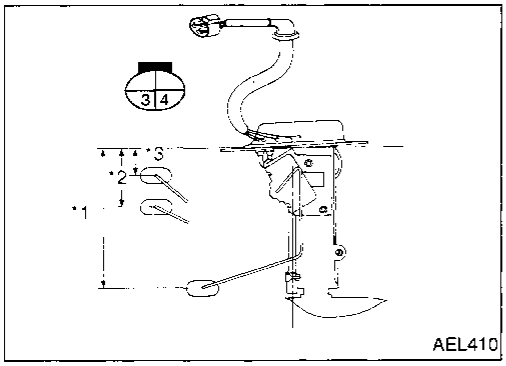
Check fuse related to speedometer. — NG → Replace fuse.

↓ OK

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

↓ NG

Replace speedometer.



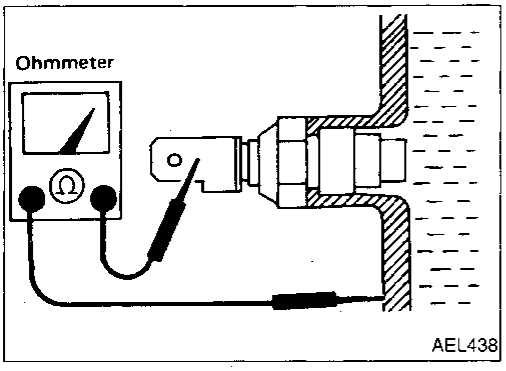
AEL410

Fuel Tank Gauge Unit Check

Ohmmeter (+)	Ohmmeter (−)	Float position mm (in)			Resistance value (Ω)
④	③	*3	Full	23 (0.91)	Approx. 160
		*2	1/2	93 (3.66)	78
		*1	Empty	151 (5.94)	15

- For removal, refer to FE section ("Removal", "FUEL PUMP AND GAUGE").

Check the resistance between terminals ④ and ③.

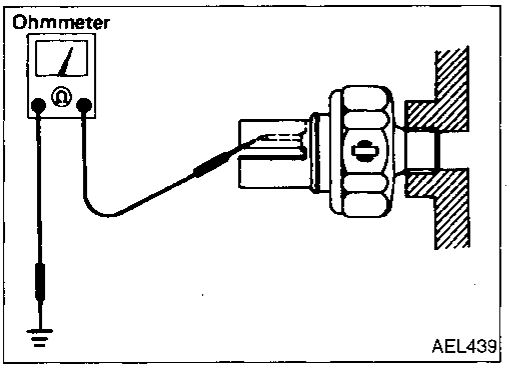


AEL438

Thermal Transmitter Check

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

Water temperature	Resistance
75°C (167°F)	Approx. 179 - 219Ω
100°C (212°F)	Approx. 60 - 72Ω

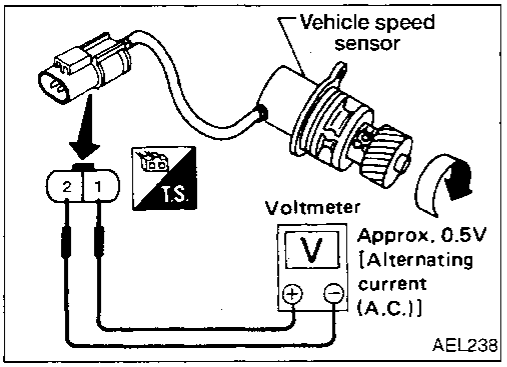


AEL439

Oil Pressure Switch Check

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

	Oil pressure kPa (kg/cm², 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



AEL238

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

With the ignition switch in the ON or START position, power is supplied:
- through 10A fuse (Letter [u], located in the fuse block)
- to combination meter terminals ⑧, ⑭, ㉝
- to oil level timer terminal ⑤, and
- through 10A fuse (Letter [t], located in the fuse block)
- to time control module terminal ③, and
- to bulb check relay terminal ②.

Ground is supplied:
- to combination meter terminal ⑫
- to oil level timer terminal ①
- to fuel tank gauge unit terminal ③, and
- to automatic seat belt control module terminals ⑥ and ⑲
- through body grounds (M5) and (M75).

Ground is supplied to combination meter terminal ⑰ through body ground (M60).

Ground is supplied to ABS control module terminal ⑩ through body ground (M61).

Ground is supplied:
- to bulb check relay terminal ⑤
- to brake fluid level switch terminal ②
- to washer level switch terminal ①, and
- to ignition switch terminal ⑫
- through body grounds (E7), (E41) and (E61).

Ground is supplied to back door latch switch terminal ② through body ground (B54).

SUPPLEMENTAL AIR BAG WARNING LAMP

During prove out or when a supplemental air bag malfunction occurs, the ground path is interrupted:
- from the diagnosis (control) unit terminal ⑰
- to combination meter terminal ⑦

Ground is then supplied:
- through combination meter terminal ⑫.

With power and ground supplied, the supplemental air bag warning lamp (LEDs) illuminate.

LOW FUEL LEVEL WARNING LAMP

The amount of fuel in the fuel tank is determined by a float in the tank. A signal is sent from fuel tank gauge unit terminal ④ to combination meter terminal ⑳. The low fuel indicator unit will illuminate the low fuel level lamp when the fuel level is low.

LOW OIL LEVEL WARNING LAMP

When a low oil level causes the oil level sensor to provide a ground signal to the oil level timer terminal ②, ground is supplied:
- to combination meter terminal ㉖
- from the oil level timer terminal ④.

With power and ground supplied, the low oil level lamp illuminates.

LOW OIL PRESSURE WARNING LAMP

Low oil pressure causes the oil pressure switch terminal ① to provide ground to combination meter terminal ④.
With power and ground supplied, the low oil pressure lamp illuminates.

DOOR AJAR WARNING LAMP

When a door is open, a ground signal is received by the time control module at terminals ⑥, ⑨, ⑲, or ⑳. Ground is then supplied:
- to combination meter terminal ⑤
- from time control module terminal ⑭.

With power and ground supplied, the door ajar lamp illuminates.

Warning Lamps/System Description (Cont'd)

LOW WASHER FLUID LEVEL WARNING LAMP

When the washer fluid level is low, ground is supplied:
- to combination meter terminal ㉞
- from washer level switch terminal ②.

With power and ground supplied, the low washer fluid level lamp illuminates.

SEAT BELT WARNING LAMP

When the automatic seat belt control module receives a signal indicating the shoulder belts are not fastened, ground is supplied:
- to combination meter terminal ②
- from automatic seat belt control module terminal ⑯.

When the time control module receives a signal indicating the LH lap belt is not fastened, ground is supplied:
- to combination meter terminal ②
- from time control module terminal ㉔.

With power and ground supplied, the seat belt warning lamp illuminates.

MALFUNCTION INDICATOR LAMP

During prove out or when an engine control malfunction occurs, ground is supplied:
- to combination meter terminal ㉗
- from ECM terminal ㉔.

With power and ground supplied, the malfunction indicator lamp illuminates.

ABS WARNING LAMP

During prove out or when an ABS malfunction occurs, ground is supplied:
- to combination meter terminal ㉕
- from ABS control module terminal ㉙.

With power and ground supplied, the ABS warning lamp illuminates.

BRAKE WARNING LAMP

When the parking brake is set, or the brake fluid level is low, ground is supplied:
- to combination meter terminal ③
- from parking brake switch terminal ①, or
- from brake fluid level switch terminal ①.

With power and ground supplied, the brake warning lamp illuminates.

BULB CHECK RELAY (brake warning lamp prove out)

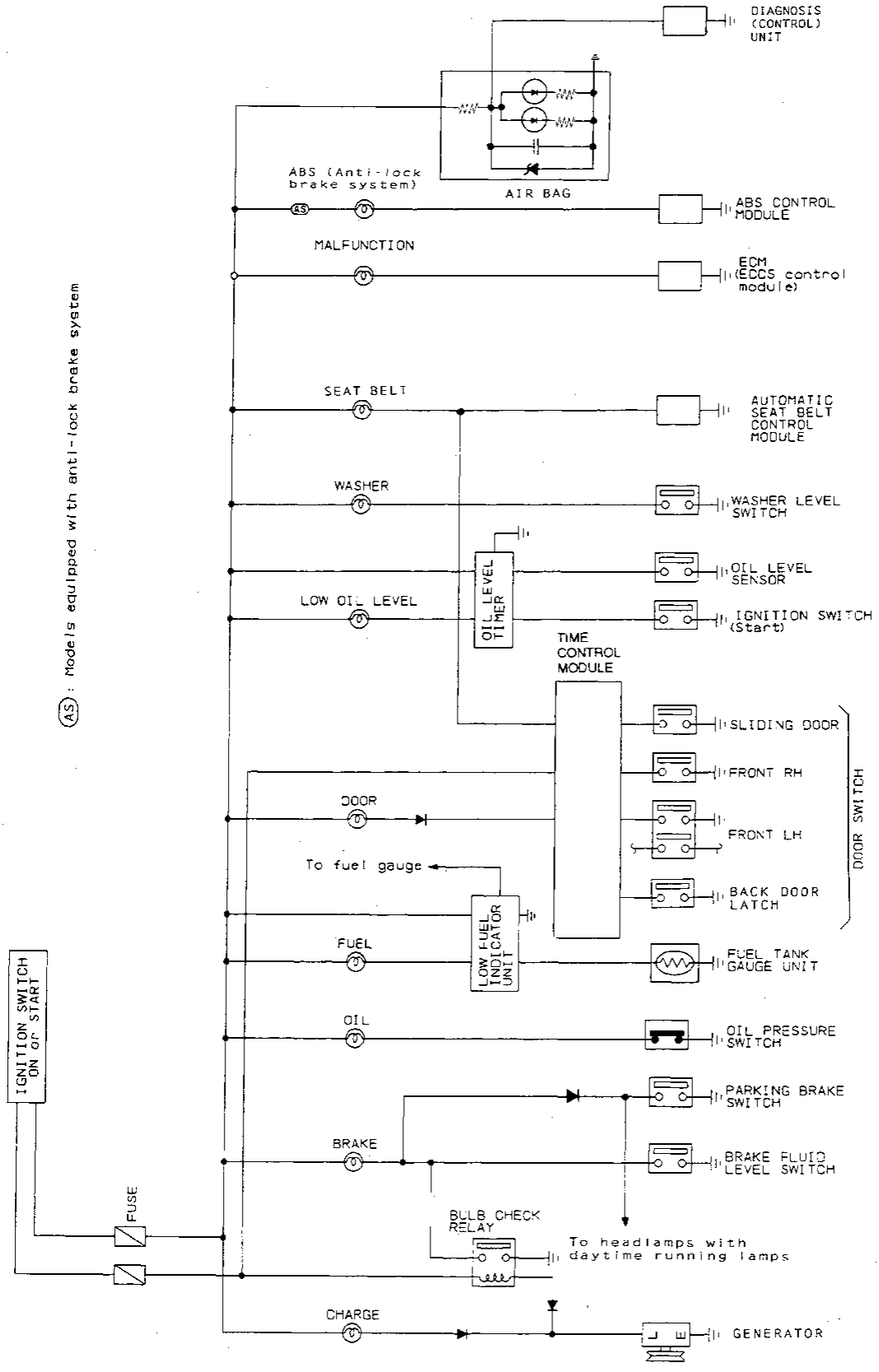
When the ignition switch is in the ON or START position, and the generator grounds terminal Ⓛ, ground is supplied to the bulb check relay terminal ①. With power and ground supplied, the bulb check relay is energized, providing a ground path for the brake warning lamp.
With power and ground supplied, the brake warning lamp illuminates.

CHARGE WARNING LAMP

During prove out or when a generator malfunction occurs, ground is supplied:
- to combination meter terminal ⑨
- from generator terminal Ⓛ

With power and ground supplied, the charge warning lamp illuminates.

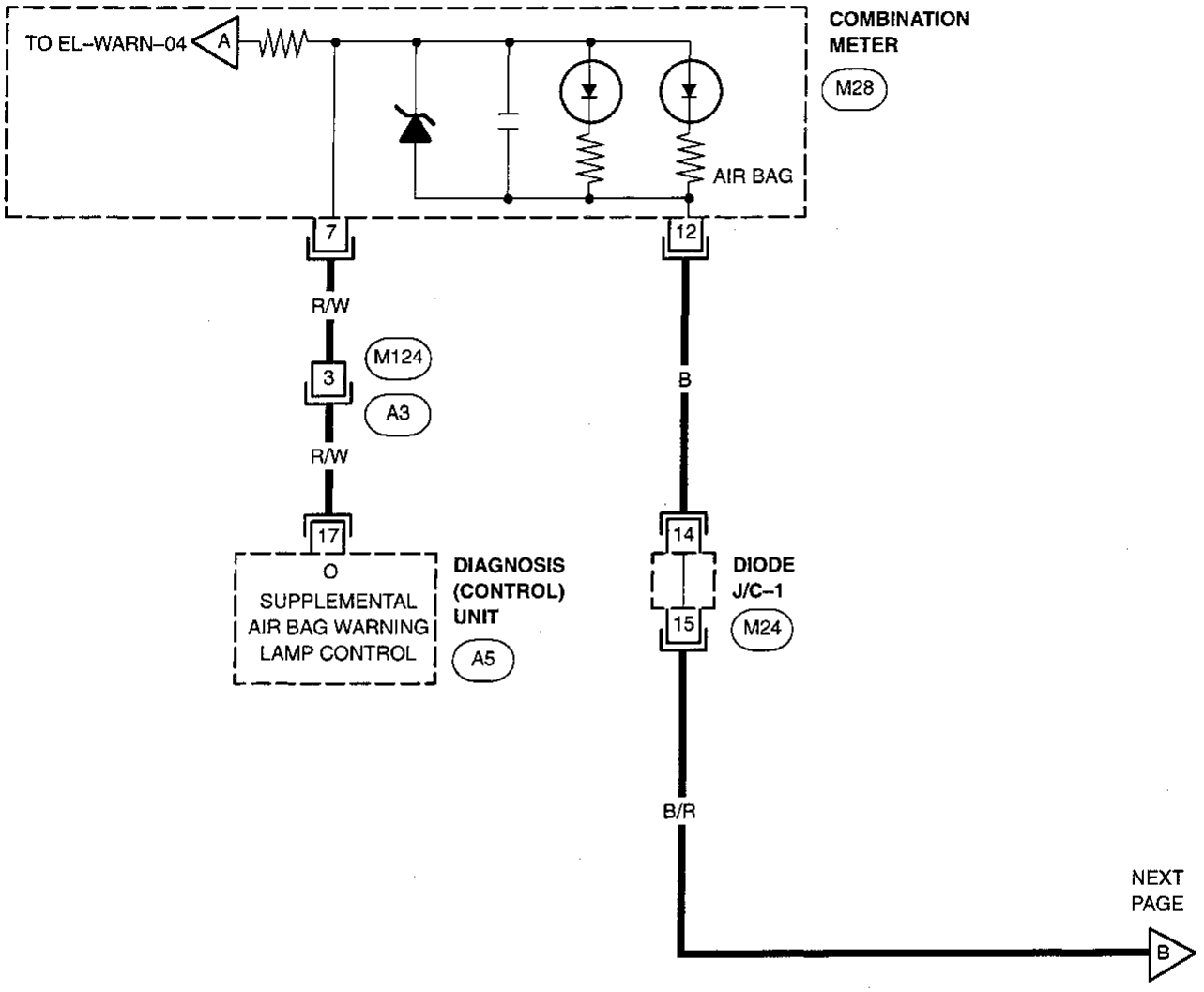
Warning Lamps/Schematic

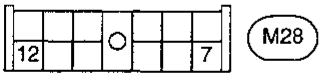


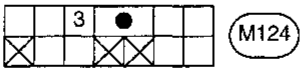
AEL346

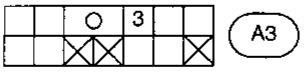
Warning Lamps/Wiring Diagram –WARN–

EL-WARN-01

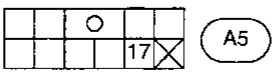






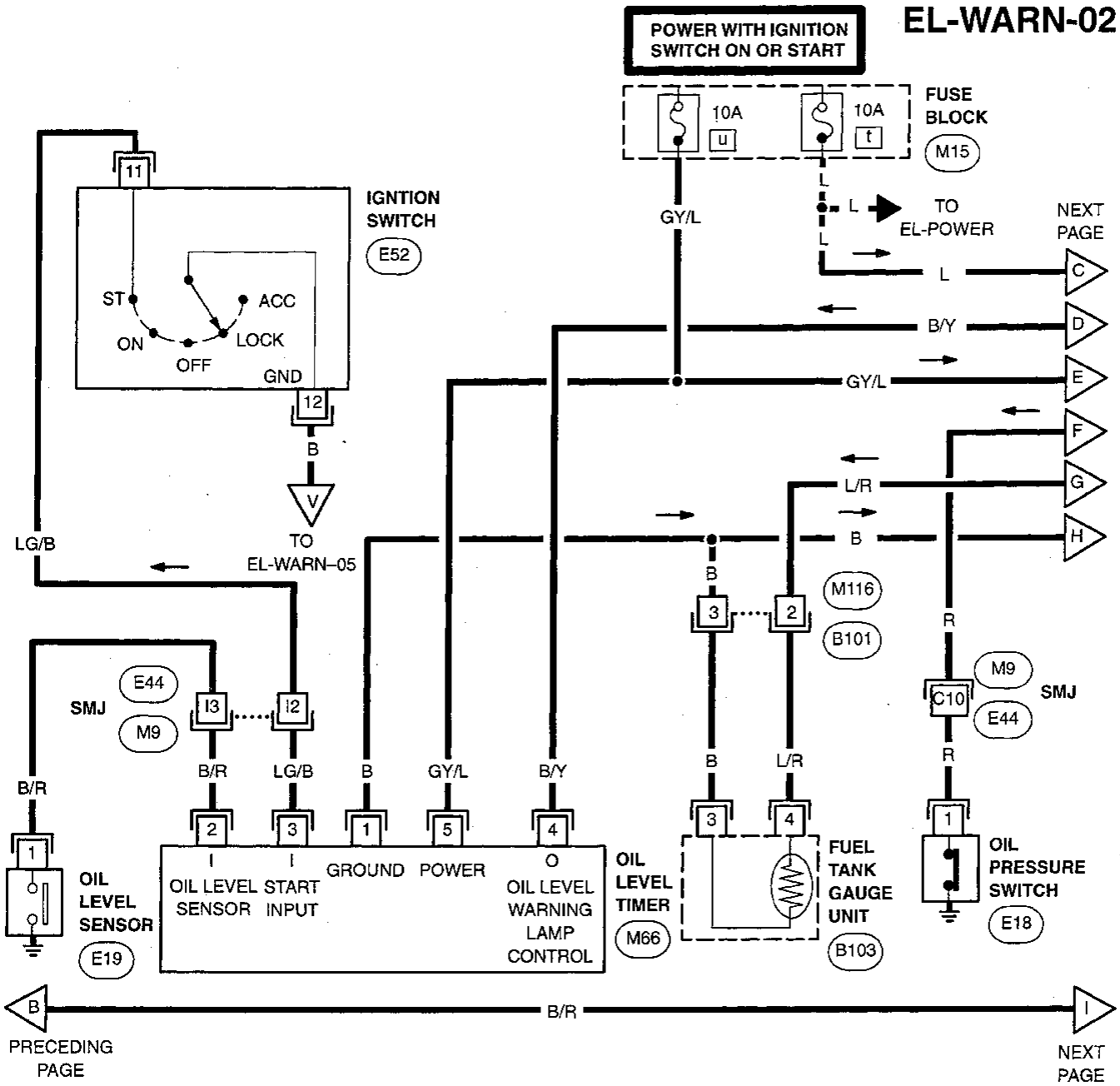


Refer to Foldout Page in EL Section for details. M24



AEL329-A

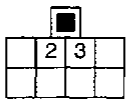
Warning Lamps/Wiring Diagram –WARN– (Cont'd)

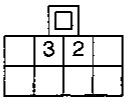


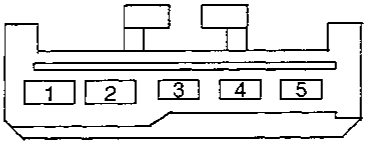
Refer to POWER SUPPLY ROUTING in EL Section. M15

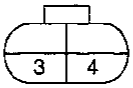
Refer to Foldout Page in EL Section for details. E52

Refer to Foldout Page in EL Section for details. M9 E44





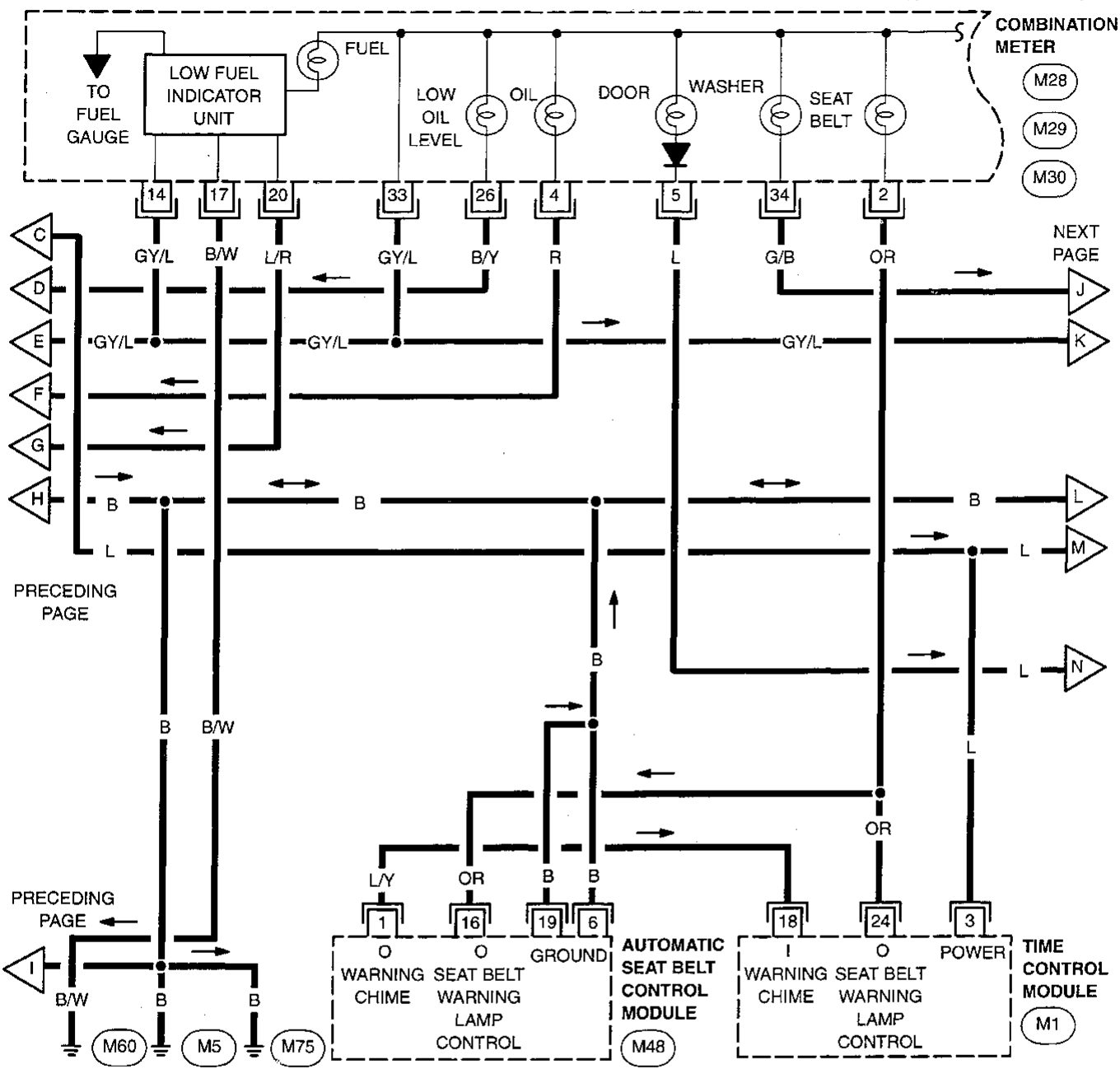


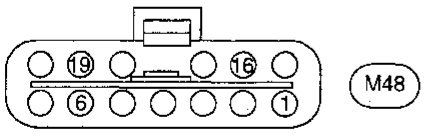


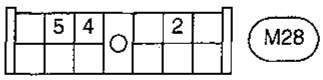
AEL329-B

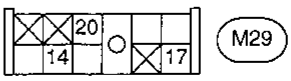
Warning Lamps/Wiring Diagram –WARN– (Cont'd)

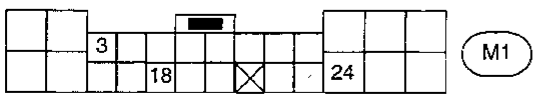
EL-WARN-03

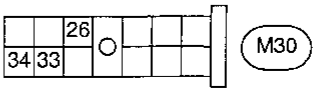








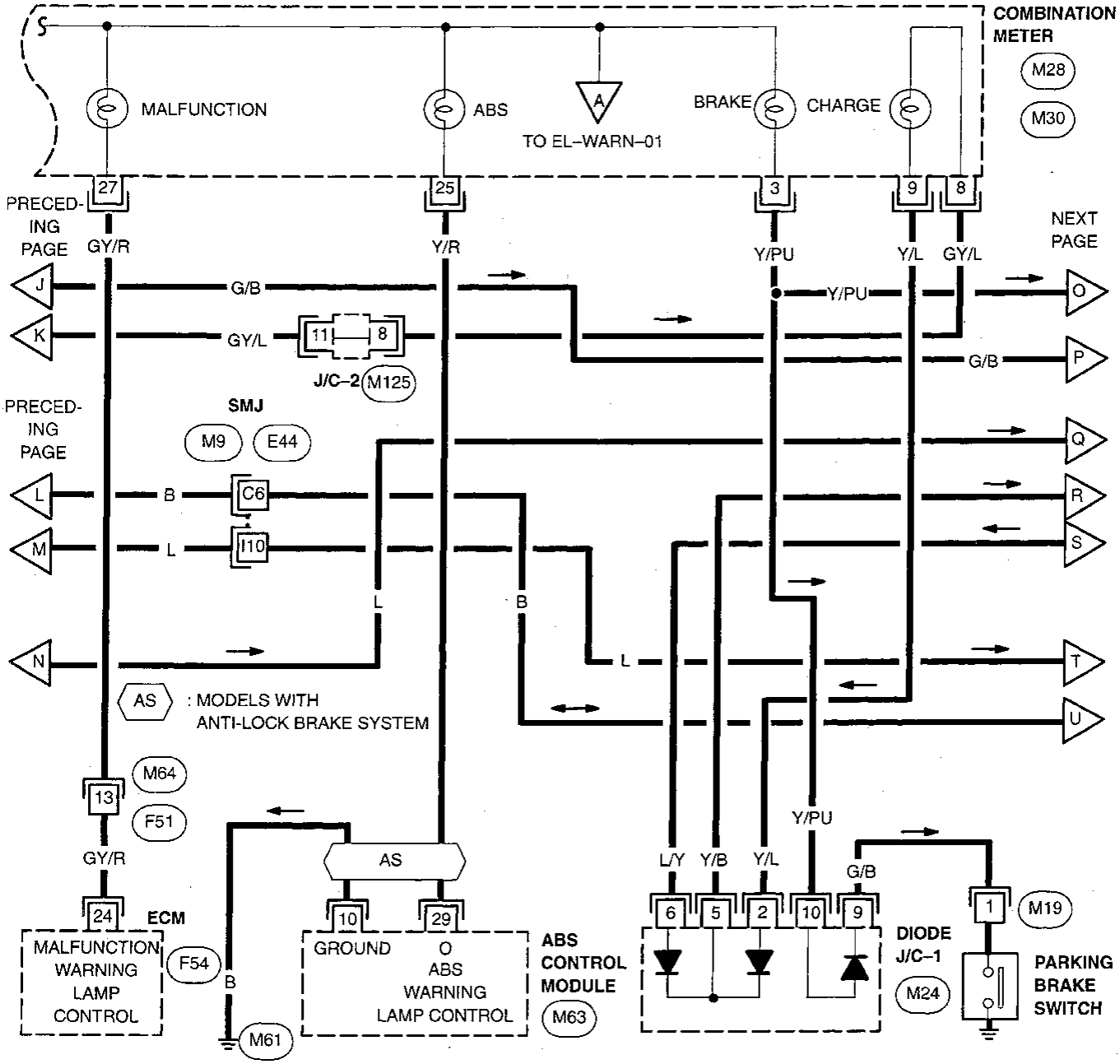


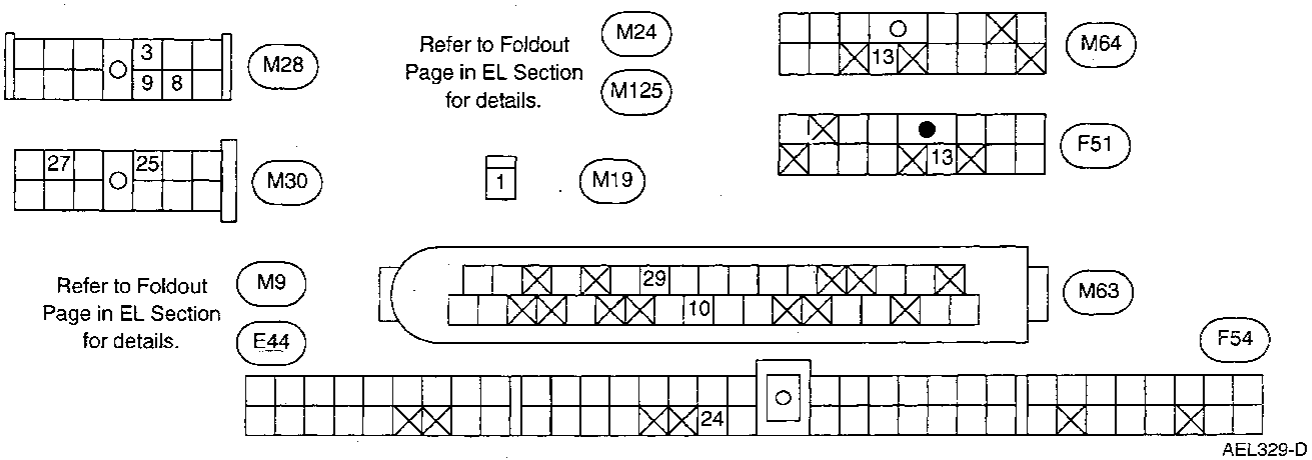


AEL329-C

Warning Lamps/Wiring Diagram –WARN– (Cont'd)

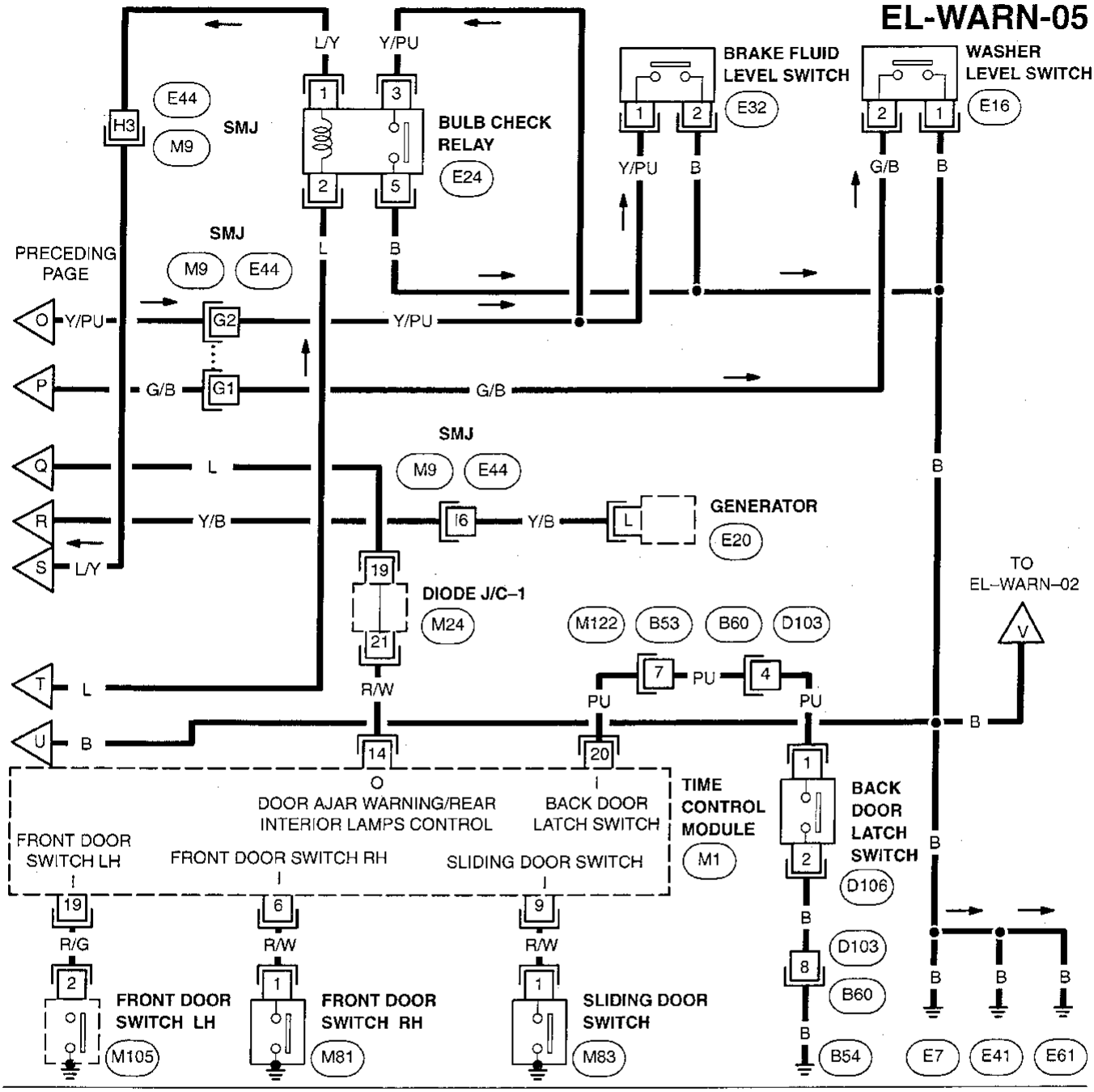
EL-WARN-04

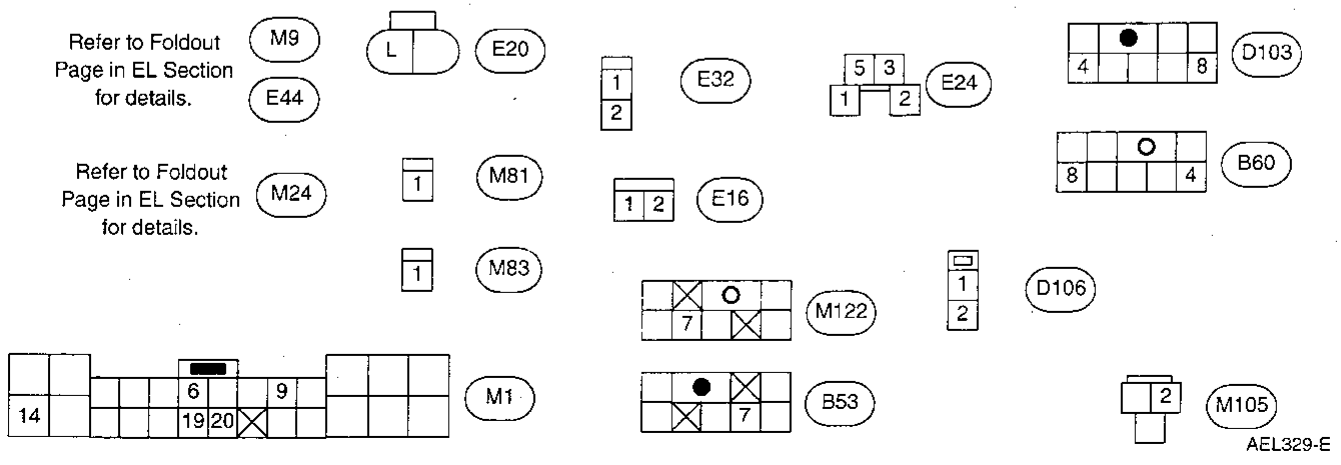




AEL329-D

Warning Lamps/Wiring Diagram –WARN– (Cont'd)





Warning Chime/System Description

The warning chime is controlled by the Time Control System.

Power is supplied at all times:
- through 15A fuse (Letter [y], located in the fuse block)
- to warning chime terminal ①, and
- through 15A fuse (Letter [s], located in the fuse block)
- to lighting switch terminal ⑤.

Ground is supplied to the LH lap belt buckle switch terminal ⑫ through body grounds (M5), and (M75).
Ground is supplied to the key switch terminal ⑤ through body grounds (E7), (E41) and (E61).
The LH front door switch is internally grounded to the body.

When a signal, or combination of signals is received by the time control module, ground is supplied:
- through time control module terminal ⑫
- to warning chime terminal ②.

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 door open, the warning chime will sound.

Ground is supplied:
- to time control module terminal ⑧
- from key switch terminal ④, and
- to time control module terminal ⑲
- from LH front door switch terminal ②.

LIGHT WARNING CHIME

With the ignition switch in the OFF position, driver door open, and the lighting switch in the PARK or HEAD position, the warning chime will sound.

Power is supplied:
- to time control module terminal ⑩
- from the lighting switch terminal ⑦.

Ground is supplied:
- to time control module terminal ⑲
- from LH front door switch terminal ②.

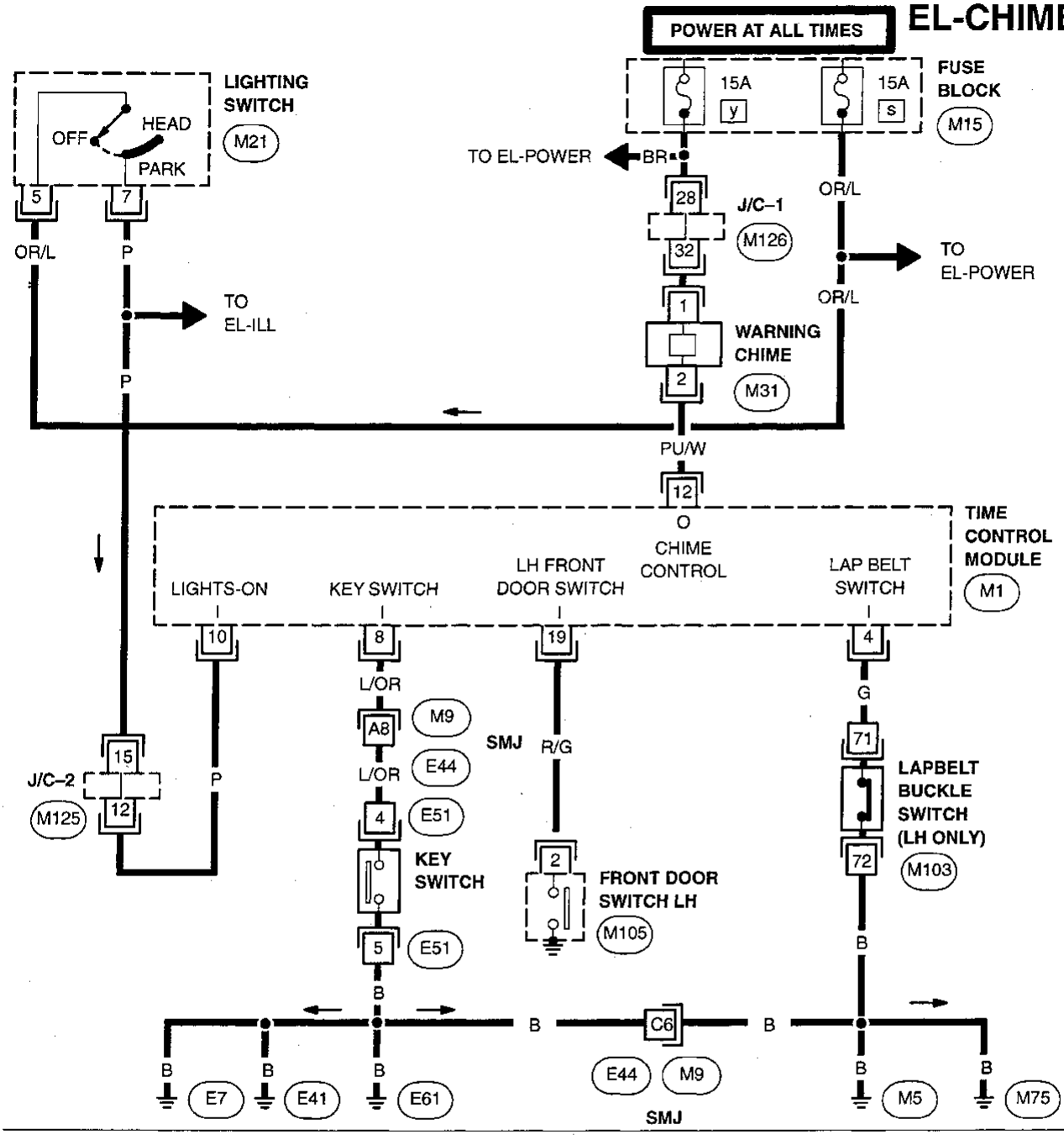
SEAT BELT WARNING CHIME

With the ignition switch turned from the OFF position to the ON position, and the seat belt unfastened (LH lap belt buckle switch ON), the warning chime will sound for approximately 6 seconds.
Ground is supplied:
- to time control module terminal ④
- from LH lap belt buckle switch terminal ⑦.

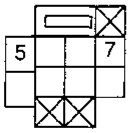
For diagnosis, refer to "Trouble Diagnoses", "TIME CONTROL SYSTEM" (EL-112).

Warning Chime/Wiring Diagram –CHIME–

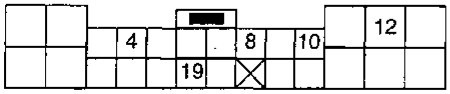
EL-CHIME-01



Refer to POWER SUPPLY ROUTING in EL Section. M15



M21



M1

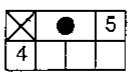
Refer to Foldout Page in EL Section for details. M9 E44

Refer to Foldout Page in EL Section for details. M24

M31

Refer to Foldout Page in EL Section for details. M125 M126

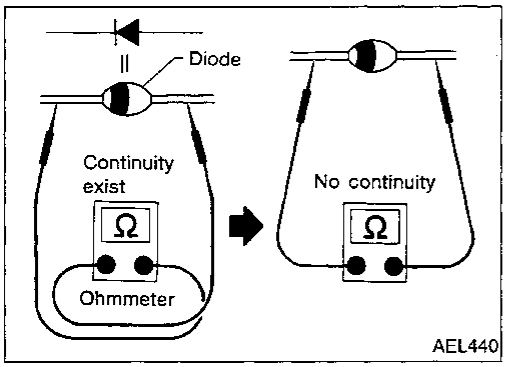
M103



E51

M105

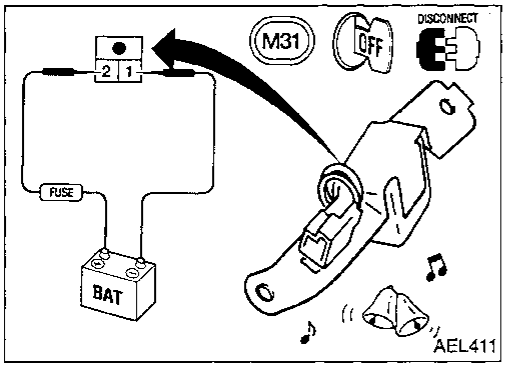
AEL330



Diode Check

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

NOTE: Specifications may vary depending on the type of tester. Before performing this inspection, be sure to refer to the instruction manual for your tester.

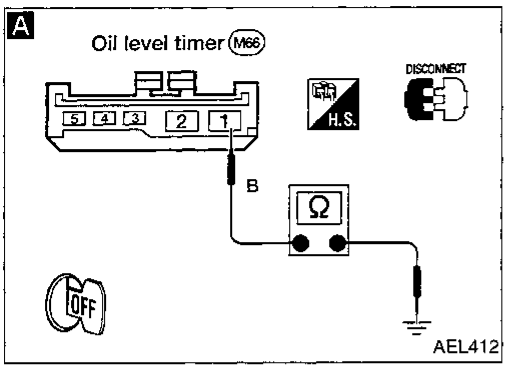


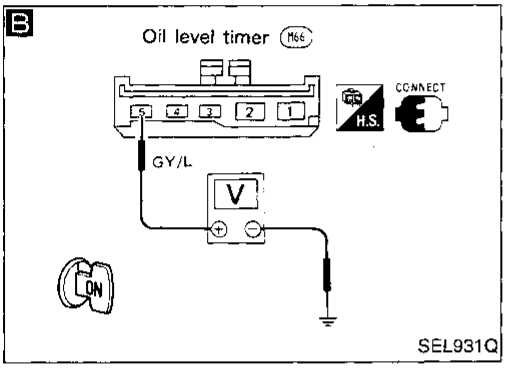
Warning Chime Check

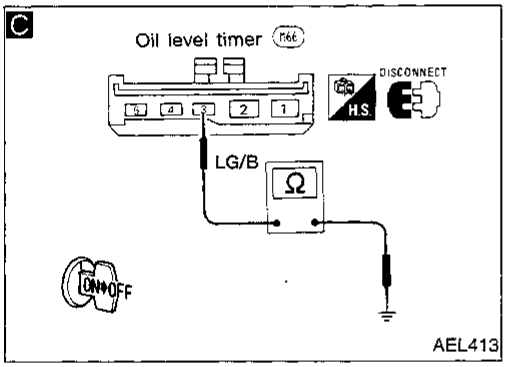
Oil Level Timer/Trouble Diagnoses

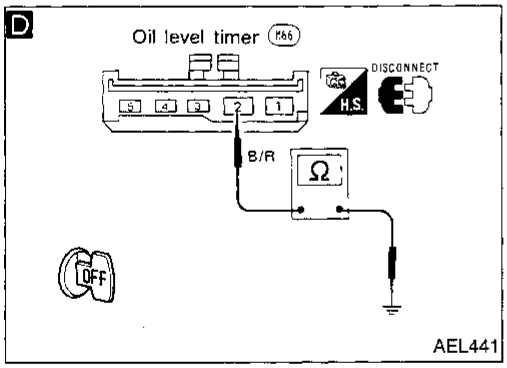
DIAGNOSTIC PROCEDURE

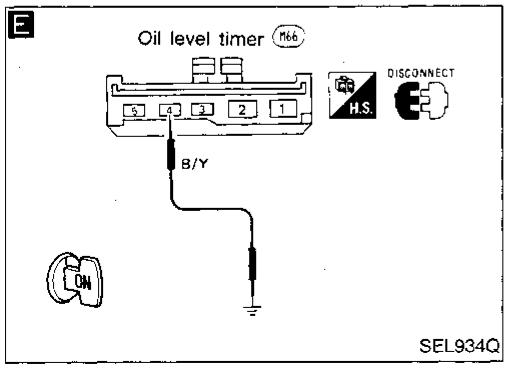
Oil level warning does not operate properly.











Check oil level with vehicle stayed on flat ground.
- LOW → Add oil properly.
- OK ↓

A Check continuity between ① and ground.
Continuity should exist.
- NG → Repair harness.
- OK ↓

B Check voltage between oil level timer terminal ⑤ and ground with ignition on.
Battery positive voltage should exist.
- NG → Repair harness and ignition switch.
- OK ↓

C Check continuity between oil level timer terminal ③ and ground when ignition operated.

Ignition	Continuity
START	Yes
OFF	No

- NG → Repair harness and proof switch
- OK ↓

D Check continuity between oil level timer terminal ② and ground.
Continuity should not exist.
- NG → Replace oil level sensor.
- OK ↓

E Remove connector from oil level timer and connect terminal ④ and ground with ignition on.
Warning lamp should light.
- NG → Repair harness or warning lamp.
- OK ↓

Replace oil level timer.

System Description

Power is supplied at all times:
- to time control module terminal ⑯
- through 10A fuse (Letter m, located in the fuse block).

With the ignition switch in the ON or START position, power is supplied:
- to time control module terminal ③
- through 10A fuse (Letter t, located in the fuse block).

Terminals ②, ⑤, and ⑮ of the time control module are grounded through body grounds (E7), (E41), (E61), (M5), and (M75).

The time control system controls operation of the
- rear window defogger,
- warning chime,
- illumination control,
- seat belt warning lamp, and
- interior illumination.

REAR WINDOW DEFOGGER

The time control module will operate the rear window defogger for 12 to 17 minutes as long as the rear window defogger switch is in the ON position. For detailed description, refer to "System Description", "REAR WINDOW DEFOGGER" (EL-130).

WARNING CHIME

The time control system will operate the warning chime 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 belts unfastened.

For detailed description, refer to "Warning Chime/System Description", "WARNING LAMPS AND CHIME" (EL-100).

ILLUMINATION CONTROL

The time control system controls the instrument illumination level when the lighting switch is in the PARK or HEAD position. For detailed description refer to "Illumination/System Description", "INTERIOR LAMP" (EL-73).

SEAT BELT WARNING LAMP

The time control system controls the operation of the seat belt warning lamp. The warning lamp will remain illuminated until the driver's lap belt and both shoulder belts are buckled. If all the belts are buckled before the ignition switch is in the ON or START position, the warning lamp will illuminate for 6 seconds, then go out.

INTERIOR ILLUMINATION

The time control system controls the operation of the following lamps:
- front interior lamp
- step lamps
- rear interior lamp
- tailgate lamps.

The lamps remain illuminated or fade out based on inputs from the following:
- digital touch entry system (if equipped)
- door switches.

System Description (Cont'd)

FUNCTION

- Time control module has the following functions.

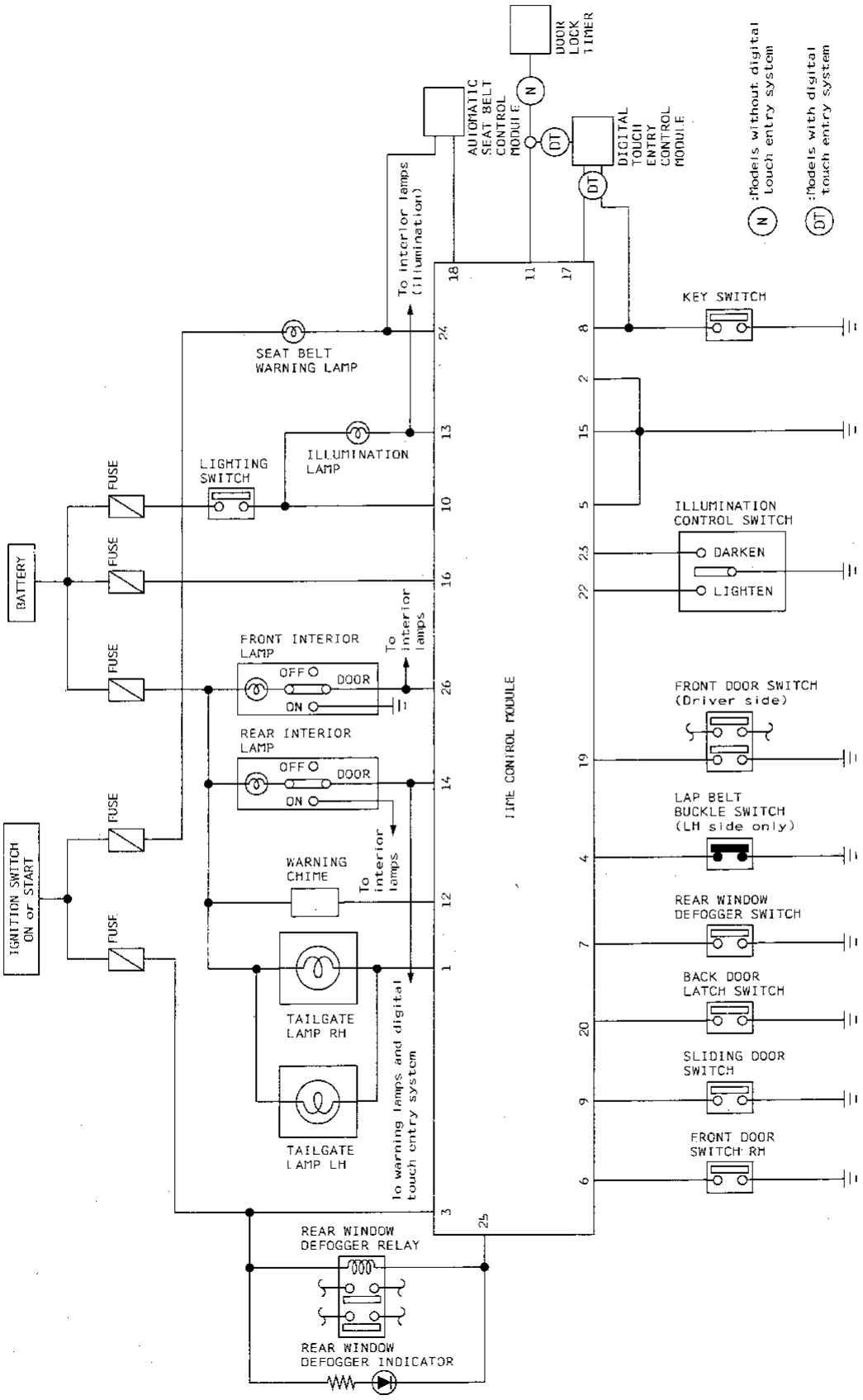
	Item	Details of control
1	Illumination control	Regulates brightness of illumination depending on the illumination control switch setting.
2	Light warning chime timer	When driver's door is opened with light switch "ON" and ignition switch "OFF", warning chime sounds.
3	Seat belt warning chime timer	Sounds warning chime for about 6 seconds if ignition switch is turned "ON" when seat belt switch is "ON" (seat belt is unfastened).
4*	Seat belt warning lamp timer	Seat belt warning lamp illuminates when ignition switch is turned to "ON".
5	Rear defogger timer	Operates rear defogger for about 12 to 17 minutes when rear defogger switch is turned to "ON".
6	Ignition key warning chime	Sounds warning chime while opening driver's door if ignition key is in ignition switch.
7	Illuminated entry system Interior lamp	Illuminates for about 10 seconds then fades out when key pad of digital touch entry system is pressed.
8	Interior lamp timer	Fades out front interior lamp and step lamps when driver's, passenger's, or siding door is opened and closed when ignition is "OFF".
9	Battery saver	Interior lamps shut off in 30 minutes when driver's, passenger's, or sliding door is left open, or in 60 minutes if back door is left open when ignition switch is "OFF". The battery saver will reset if the ignition switch is cycled or any door is opened or closed.

* Seat belt warning lamp always illuminates unless driver's lab belt and both shoulder belts are buckled.

Item & Output terminal		Input signal & Input terminal												
		Power source from battery	Ignition switch	Light switch	Driver's door switch*1	Seat belt switch*2	Illumination control switch	Rear window defogger switch	Key switch	Digital touch entry keyboard*3	Passenger's door switch*1	Sliding door switch*1	Back door switch*1	Select
		⑯	③	⑩	⑲	④	㉓ or ㉒	⑦	⑧	⑰	⑥	⑨	⑳	⑤
Illumination control	⑬	ON		ON			ON							
Light warning chime timer	⑫	ON	OFF or ACC	ON	ON									
Seat belt warning chime timer	⑫	ON	OFF or ACC → ON			ON								
Seat belt warning lamp timer	㉔	ON	OFF or ACC → ON			ON								*4
Rear defogger timer	㉕	ON	ON or START					ON						
Ignition key warning chime	⑫	ON	OFF		ON				ON					
Front interior lamp, step lamps – Digital touch entry system	㉖	ON								ON → OFF				
Front interior lamp, step lamps – Interior lamp timer	㉖	ON			ON → OFF						ON → OFF	ON → OFF		
Front interior lamp, step lamps	㉖	ON			ON						ON	ON		
Rear interior lamp	⑭	ON			ON						ON	ON	ON	
Tailgate lamps	①	ON											ON	
Isolated sliding door	⑪	ON												

*1: Door switch is turned "ON" when door is opened.
*2: Seat belt switch is turned "ON" when driver's lap belt is unfastened.
*3: Digital touch entry keyboard is turned "ON" when keyboard is pressed.
*4: Ground — continuous if seat belt switch "ON".

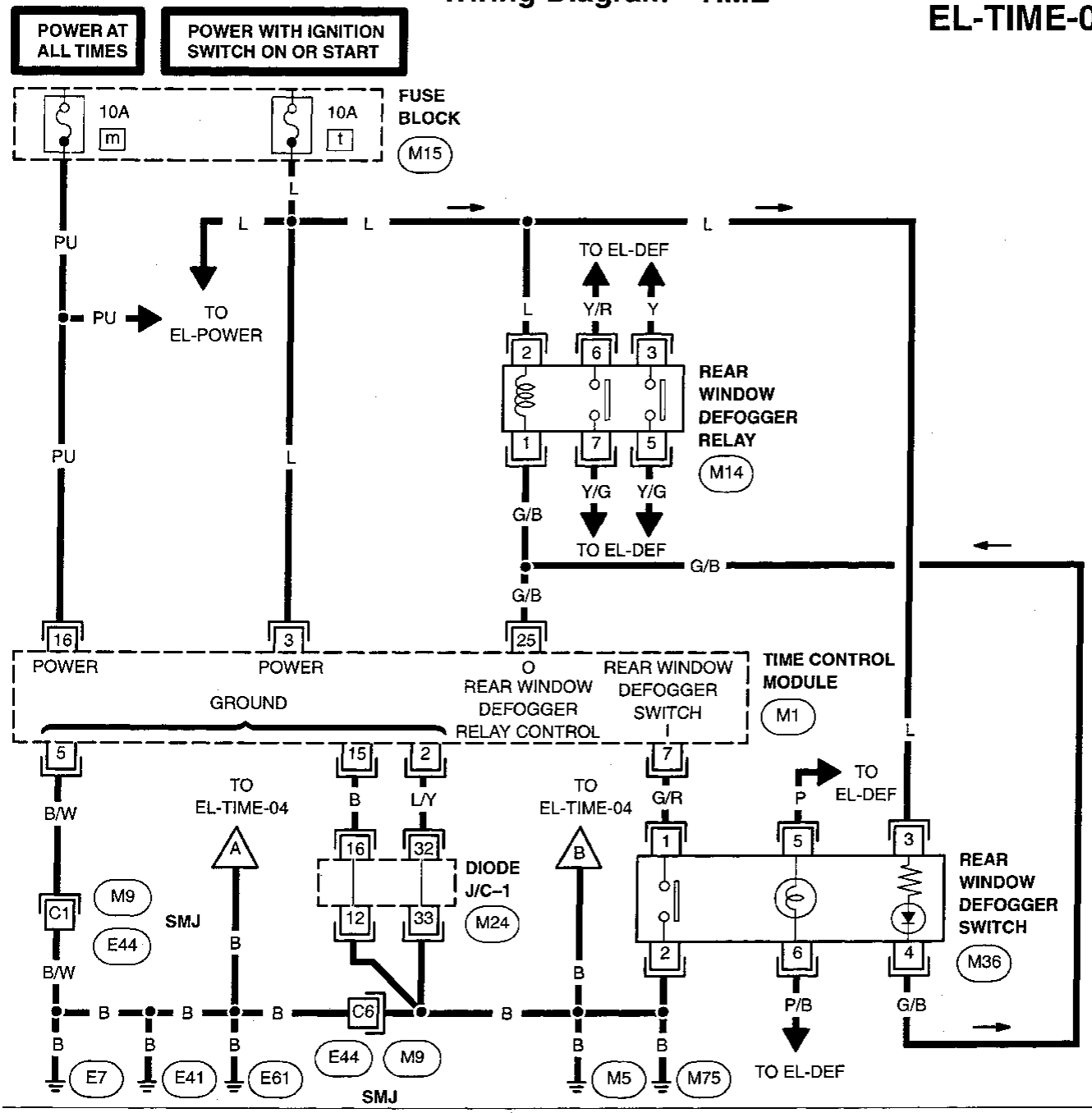
Schematic



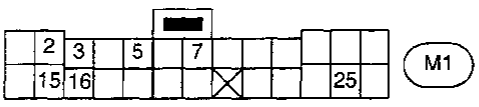
AEL347

Wiring Diagram –TIME–

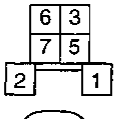
EL-TIME-01



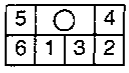
Refer to POWER SUPPLY ROUTING in EL Section. M15



Refer to Foldout Page in EL Section for details. M24



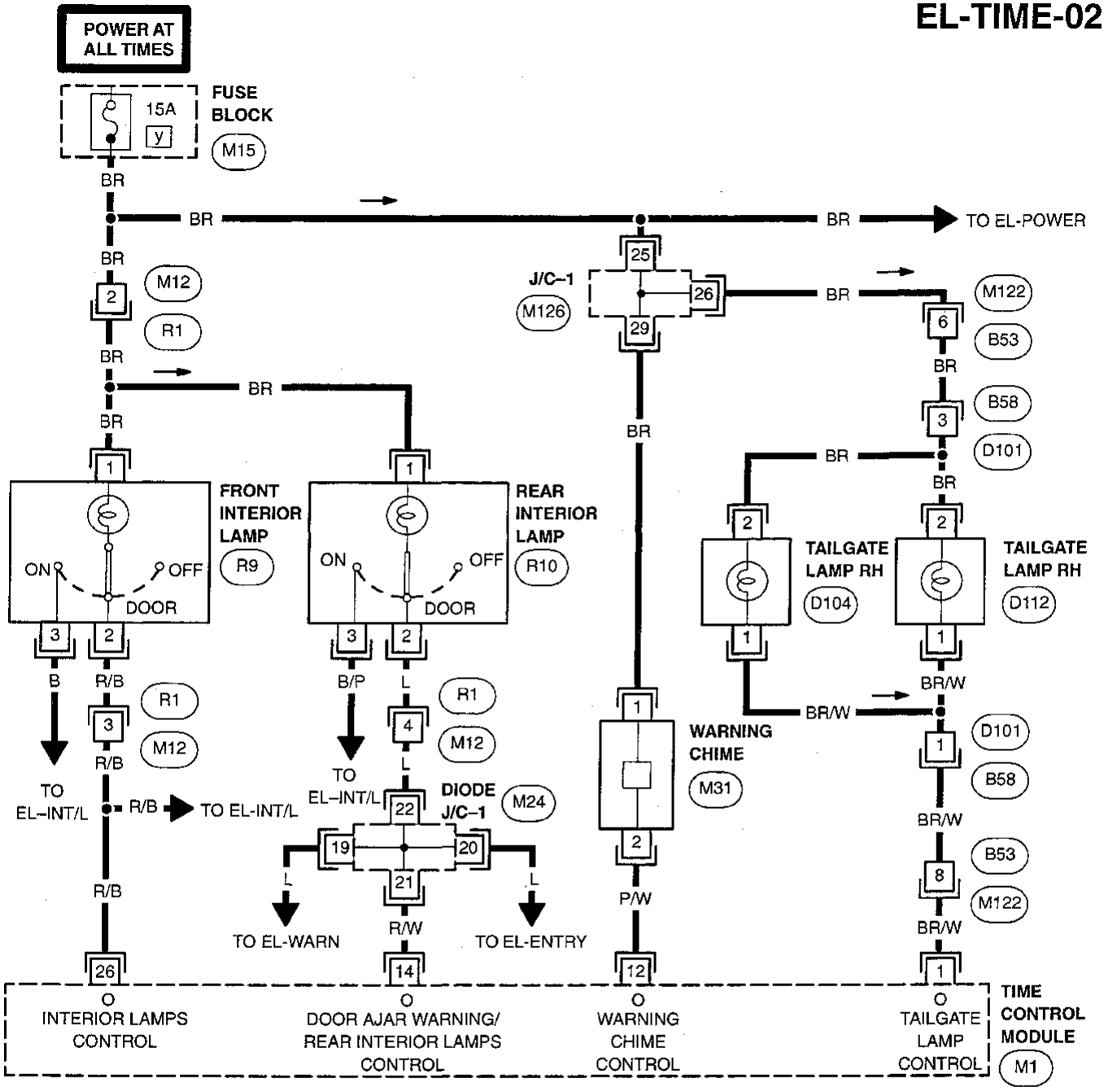
Refer to Foldout Page in EL Section for details. M9 E44



AEL331-A

Wiring Diagram –TIME– (Cont'd)

EL-TIME-02



Refer to POWER SUPPLY ROUTING in EL Section. M15

M31

B58 D101

M12 R1

D104

M1

R9

D112

Refer to Foldout Page in EL Section for details. M126

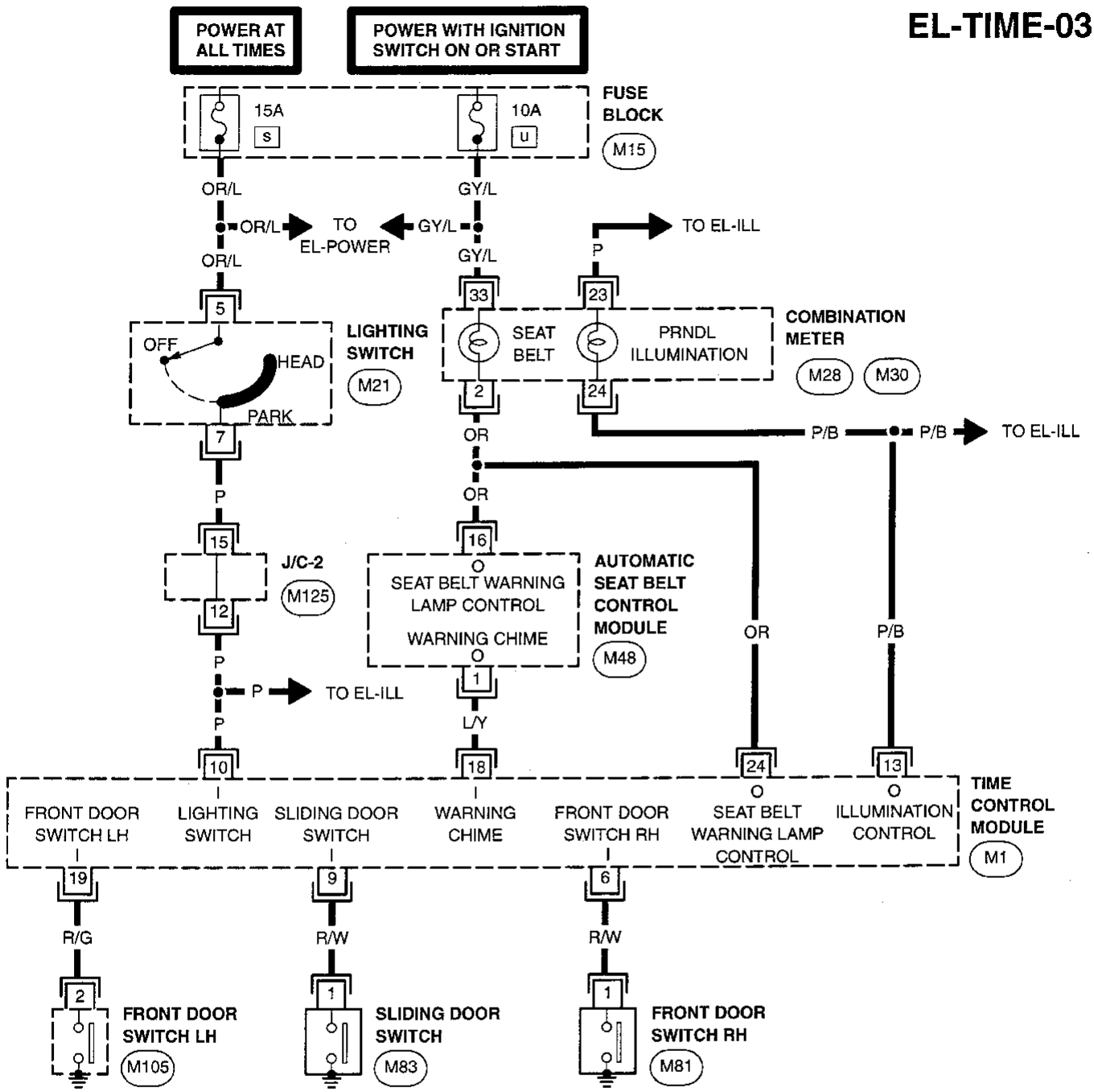
R10 B53 M122

Refer to Foldout Page in EL Section for details. M24

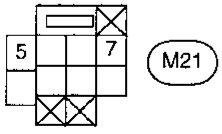
AEL331-B

Wiring Diagram –TIME– (Cont'd)

EL-TIME-03

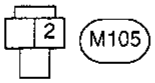


Refer to POWER SUPPLY ROUTING in EL Section. M15



M21

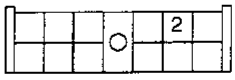
Refer to Foldout Page in EL Section for details. M125



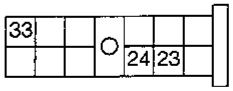
M105

M83

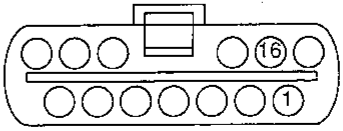
M81



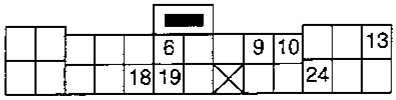
M28



M30



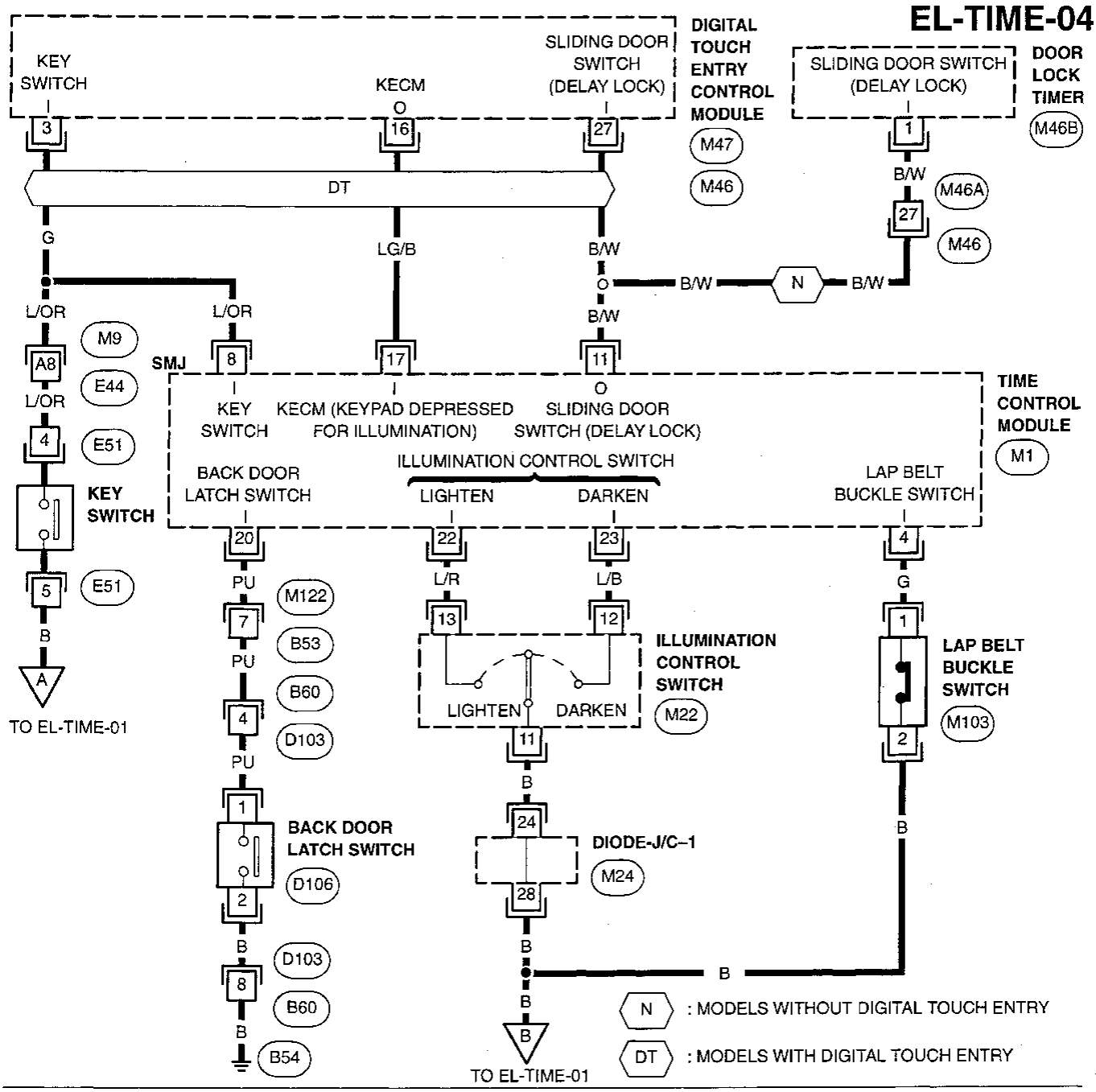
M48

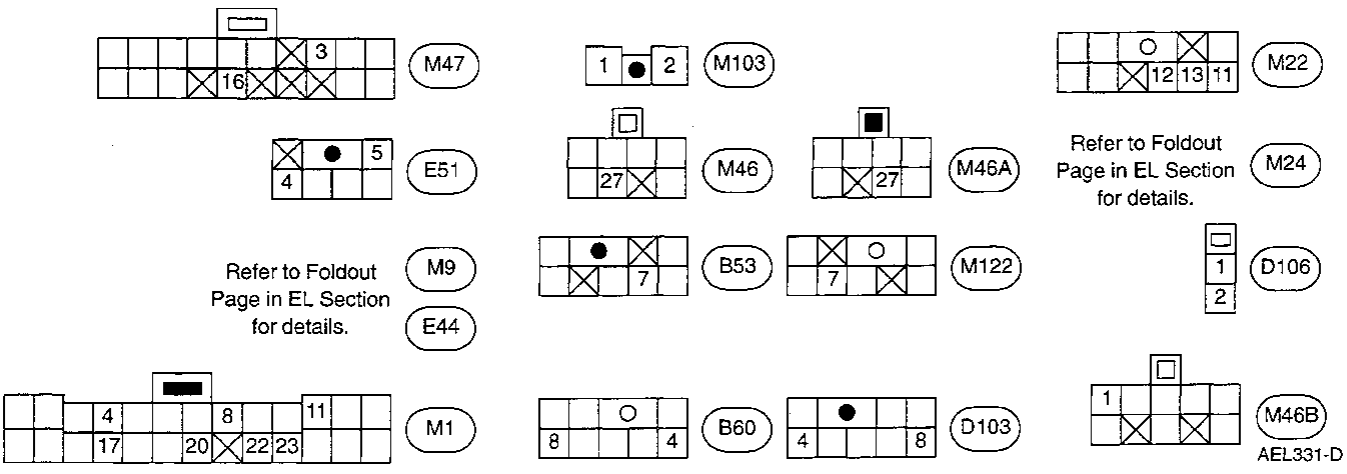


M1

AEL331-C

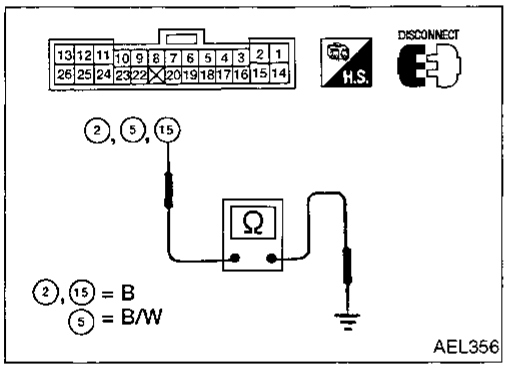
Wiring Diagram –TIME– (Cont'd)





Trouble Diagnoses

Symptom		DIAGNOSTIC PROCEDURE
Illumination	Illumination control system does not actuate.	1
Warning	Light warning chime does not activate.	2
	Set belt warning chime does not activate.	3
	Seat belt warning lamp does not go off nor come on.	4
	Ignition key warning chime does not activate.	5
Rear defogger	Rear defogger does not activate or does not go off.	6
Illuminated entry system	• Interior lamp does not come on or fade out. • Battery saver does not work.	7



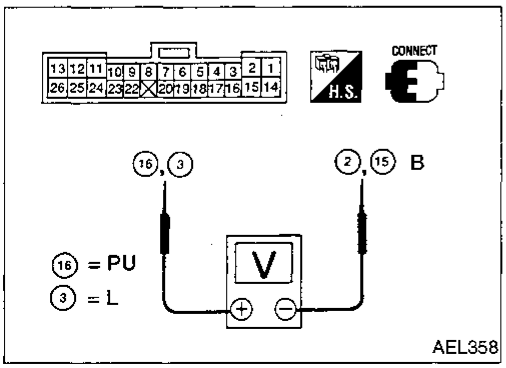
PREPARATION FOR TROUBLE DIAGNOSIS

1. Remove LH A-pillar lower trim.
2. Remove time control module with harness connected.

POWER SUPPLY CIRCUIT CHECK

1. Disconnect the harness connector from the control module.
2. Connect ohmmeter from harness side.
3. Check continuity between terminals ②, ⑤, ⑮ and body ground.

Ohmmeter terminals		Continuity
(+)	(−)	
②, ⑤, ⑮	Body ground	Yes



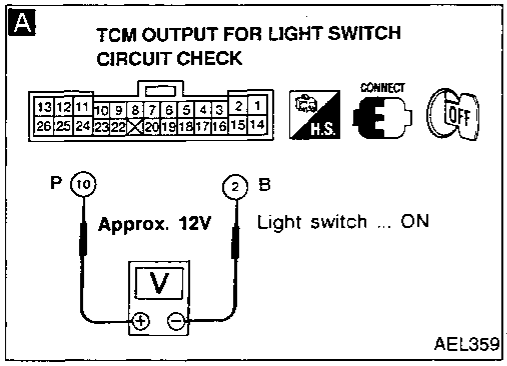
4. Connect the harness connector to the control module.
5. Connect voltmeter from harness side.
6. Measure voltage across terminal ② or ⑮ and terminals ⑯, ③.

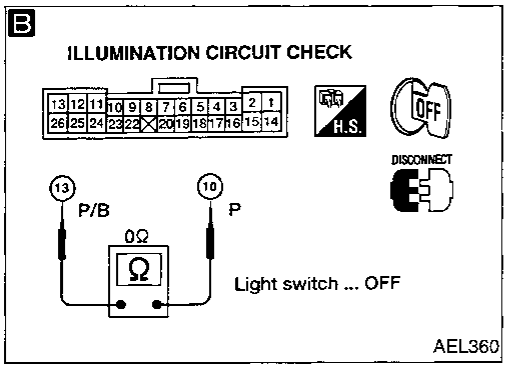
Voltmeter terminals		Ignition switch position		
(+)	(−)	OFF	ACC	ON
⑯	② or ⑮	Approx. 12V	Approx. 12V	Approx. 12V
③	② or ⑮	0V	0V	Approx. 12V

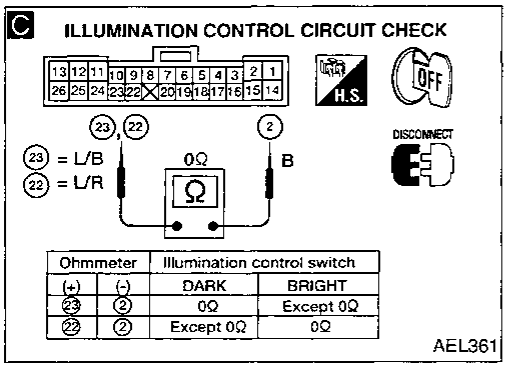
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE-1

Illumination control system does not actuate.







Ohmmeter		Illumination control switch	
(+)	(-)	DARK	BRIGHT
23	2	0Ω	Except 0Ω
22	2	Except 0Ω	0Ω

A

Check time control module output for light switch circuit. — NG → Check harness between time control module and light switch.

OK ↓

B

Check illumination circuit. — NG → Check for loose harness connector.

OK ↓

C

Check illumination control circuit. — NG → Check illumination control switch.

OK ↓

Replace time control module.

Trouble Diagnoses (Cont'd)

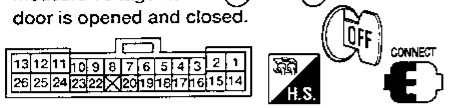
DIAGNOSTIC PROCEDURE-2

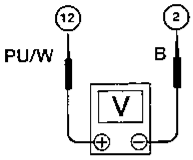
Light warning chime does not activate.

A

TCM OUTPUT FOR CHIME CIRCUIT CHECK

Measure voltage across (12) and (2) when driver's door is opened and closed.



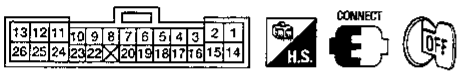


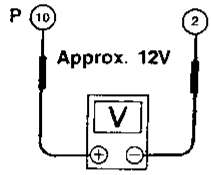
Light switch ... 1ST
- Approx. 12V when driver's door is closed.
- Voltmeter needle swings (0 – 12V) when driver's door is opened.

AEL362

B

TCM OUTPUT FOR LIGHT SWITCH CIRCUIT CHECK





Light switch ... ON

AEL363

Do other warning chimes activate? — OK → B

NG ↓

Perform "POWER SUPPLY CIRCUIT CHECK". Refer to EL-112. — NG → Check harness for time control module power supply circuit.

OK ↓

A

Check time control module output for chime circuit. — OK → Check chime, and harness between time control module and chime.

NG ↓

B

Check time control module output for light switch circuit check. — NG → Check harness between time control module and light switch.

OK ↓

Replace time control module.

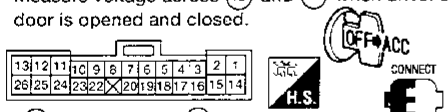
DIAGNOSTIC PROCEDURE-3

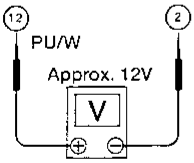
Seat belt warning chime does not activate.

A

TCM OUTPUT FOR CHIME CIRCUIT CHECK

Measure voltage across (12) and (2) when driver's door is opened and closed.





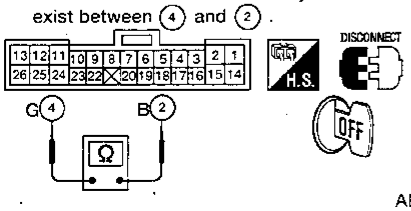
- Driver's lap belt is unfastened.

AEL364

B

LAP BELT BUCKLE SWITCH CIRCUIT CHECK

1. Unfasten driver's lap belt.
2. Check continuity between (4) and (2).
3. Fasten driver's lap belt.
4. Check to determine if continuity does not exist between (4) and (2).



AEL365

Perform "POWER SUPPLY CIRCUIT CHECK". Refer to EL-112. — NG → Check harness for time control module power supply circuit.

OK ↓

A

Check time control module output for chime circuit. — OK → Check chime, and harness between time control module and chime.

NG ↓

B

Check seat belt switch circuit. — NG → Check harness between time control module and seat belt switch.

OK ↓

Replace time control module.

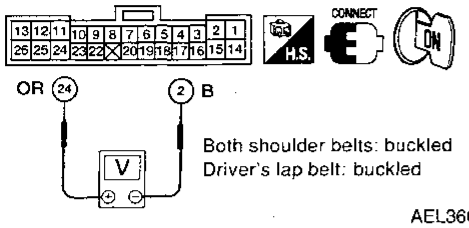
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE-4

Seat belt warning lamp does not go cff nor comes on.

A **TCM OUTPUT FOR SEAT BELT WARNING LAMP CIRCUIT CHECK**

Measure voltage across (2) and (24) when ignition switch is "ON".



AEL366

Perform "POWER SUPPLY CIRCUIT CHECK". Refer to EL-112. — NG → Check harness for time control module power supply circuit.

OK ↓

A

Check time control module output for belt warning lamp circuit. — NG → Replace time control module.

Voltmeter needle remains at approx. 0V for about 4 to 8 seconds after ignition switch is turned "ON". Then voltmeter swings to 12V.

OK ↓

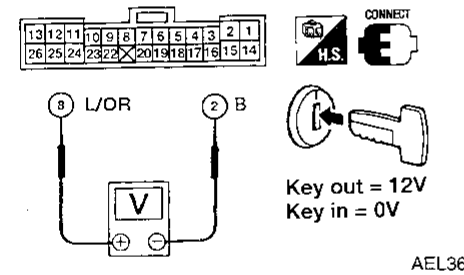
Check warning lamp, and harness between time control module and warning lamp.

DIAGNOSTIC PROCEDURE-5

Ignition key warning chime does not activate.

A **KEY SWITCH CIRCUIT CHECK**

Measure voltage across (8) and (2).



AEL367

Perform "POWER SUPPLY CIRCUIT CHECK". Refer to EL-112. — NG → Check harness for time control module power supply circuit.

OK ↓

A

Check key switch circuit. — NG → Check key switch or harness.

OK ↓

B

Check time control module output for chime circuit. — OK → Check chime and harness between time control module and chime.

NG ↓

C

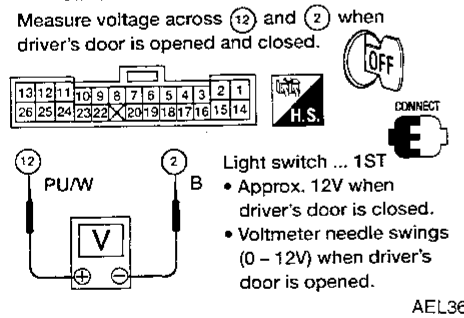
Check driver's door switch circuit. — NG → Check harness between time control module and seat belt switch.

OK ↓

Replace time control module.

B **TCM OUTPUT FOR CHIME CIRCUIT CHECK**

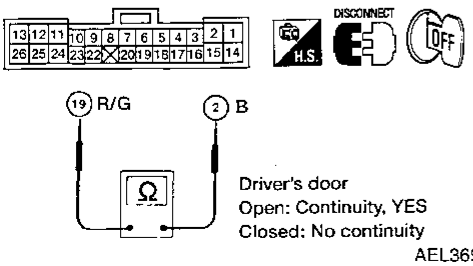
Measure voltage across (12) and (2) when driver's door is opened and closed.



AEL368

C **DRIVER'S DOOR SWITCH CIRCUIT CHECK**

Check continuity between (19) and (2).



AEL369

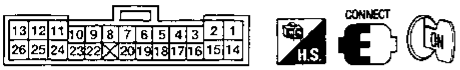
Trouble Diagnoses (Cont'd)

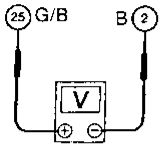
DIAGNOSTIC PROCEDURE-6

Rear defogger does not activate, or does not go off.

A **TCM OUTPUT FOR REAR DEFOGGER CIRCUIT CHECK**

Measure voltage across (25) and (2) while operating rear defogger switch.

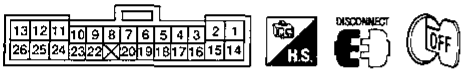


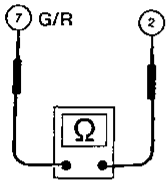


Rear defogger switch → ON
- Rear defogger switch "OFF": Approx. 12V
- Rear defogger switch "ON": Approx. 0V

AEL370

B **DEFOGGER SWITCH CIRCUIT CHECK**





- Rear defogger switch is depressed: continuity exists
- Rear defogger switch is released: no continuity

AEL371

Perform "POWER SUPPLY CIRCUIT CHECK". Refer to EL-112.
- NG → Check harness for time control module power supply circuit.
- OK ↓

A

Check time control module output for rear defogger circuit.
- OK → Check rear defogger relay, and harness between time control module and rear defogger relay.
- NG ↓

B

Check defogger switch circuit.
- NG → Check defogger switch and harness between time control module and defogger switch.
- OK ↓

Replace time control module.

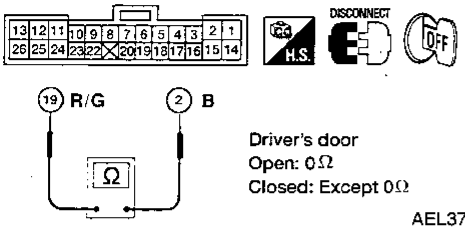
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE-7

- **Interior lamp does not come on, or fade out.**
- **Battery saver does not work.**

A DRIVER'S DOOR SWITCH CIRCUIT CHECK

Check continuity between (19) and (2) when driver's door is opened and closed.

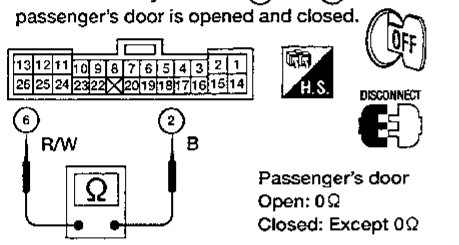


Driver's door
Open: 0Ω
Closed: Except 0Ω

AEL372

B PASSENGER'S DOOR SWITCH CIRCUIT CHECK

Check continuity between (6) and (2) when passenger's door is opened and closed.

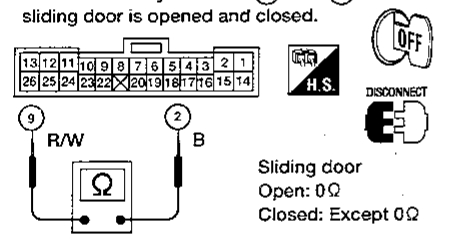


Passenger's door
Open: 0Ω
Closed: Except 0Ω

AEL373

C SLIDING DOOR SWITCH CIRCUIT CHECK

Check continuity between (9) and (2) when sliding door is opened and closed.

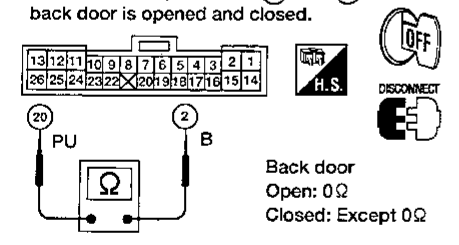


Sliding door
Open: 0Ω
Closed: Except 0Ω

AEL374

D BACK DOOR SWITCH CIRCUIT CHECK

Check continuity between (20) and (2) when back door is opened and closed.



Back door
Open: 0Ω
Closed: Except 0Ω

AEL375

Perform "PREPARATION FOR TROUBLE DIAGNOSIS." Refer to EL-112.

NG

A

Check continuity between terminals (19) and (2) when driver's door is opened and closed.

Driver's door	Continuity
Open	Yes
Closed	No

NG → Repair door switch and harness.

OK

B

Check continuity between terminals (6) and (2) when passenger's door is opened and closed.

Passenger's door	Continuity
Open	Yes
Closed	No

NG → Repair door switch and harness.

OK

C

Check continuity between terminals (9) and (2) when siding door is opened and closed.

Sliding door	Continuity
Open	Yes
Closed	No

NG → Repair door switch and harness.

OK

D

Check continuity between terminals (20) and (2) when back door is opened and closed.

Back door	Continuity
Open	Yes
Closed	No

NG → Repair door switch and harness.

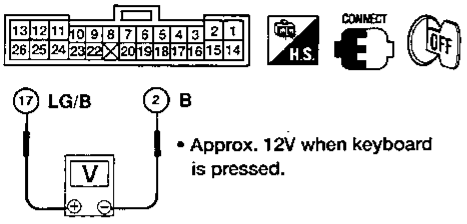
OK

Ⓐ

Trouble Diagnoses (Cont'd)

E KEYBOARD INPUT CHECK

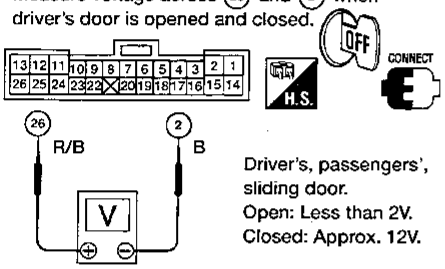
Measure voltage across ⑰ and ② when keyboard is operated.



AEL376

F FRONT INTERIOR LAMP CIRCUIT CHECK

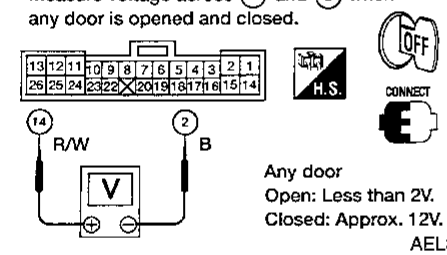
Measure voltage across ㉖ and ② when driver's door is opened and closed.



AEL377

G REAR INTERIOR LAMP CIRCUIT CHECK

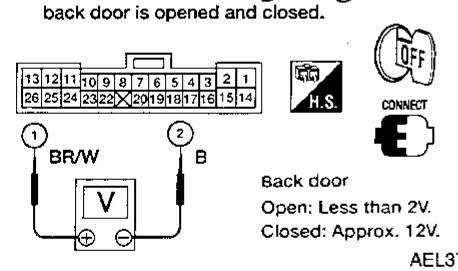
Measure voltage across ⑭ and ② when any door is opened and closed.



AEL378

H TAILGATE LAMP CIRCUIT CHECK

Measure voltage across ① and ② when back door is opened and closed.



AEL379

Ⓐ

E

Keyboard input check		NG → Check keyboard and harness. Refer to EL-178.

Check voltage between terminals ⑰ and ② when keyboard is operated.

Keyboard	pressed	released
Battery positive voltage	Exists	Does not exist

OK ↓

Lamp check	NG → Check switch and bulb.

Switch front interior lamp to "ON".

OK ↓

F

Switch front interior lamp to "DOOR" position. Check the voltage between ㉖ and ②.

Door open	Door closed	
Ⓘ Less than 2V. light "ON"	Ⓘ Approx. 12V. light "OFF" after fade out.	Ⓘ NG → Replace time control module.
		Ⓘ NG → Check harness.

OK ↓

G

Switch rear interior lamp to "DOOR" position. Check the voltage between ⑭ and ②.

Door open	Door closed	
Ⓘ Less than 2V. light "ON"	Ⓘ Approx. 12V. light "OFF"	Ⓘ NG → Replace time control module.
		Ⓘ NG → Check harness.

OK ↓

H

Tailgate lamp check	NG → Check harness.

Check the voltage between ① and ②.

Door open	Door closed	
Ⓘ Less than 2V. light "ON"	Ⓘ Approx. 12V. light "OFF"	Ⓘ NG → Replace time control module.
		Ⓘ NG → Check harness.

OK ↓

Replace time control module.

NOTE

Front Wiper and Washer/System Description

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

- LO speed
- HI speed
- Intermittent

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

- through 20A fuse (Letter [f], located in the fuse block)
- to the wiper motor terminal ⓓ
- to the washer motor terminal ①, and
- to the wiper amplifier assembly terminal ②.

Ground is supplied:

- to the wiper motor terminal ⓕ, and
- to the wiper amplifier assembly terminals ③ and ⑨
- through body grounds (E7), (E41), (E61), (M5) and (M75).

LOW SPEED OPERATION

With the wiper switch in the LO position, ground is supplied:

- to wiper motor terminal ⓑ
- from terminal ⑥ of the wiper amplifier assembly.

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

HIGH SPEED OPERATION

With the wiper switch in the HI position, ground is supplied:

- to wiper motor terminal ⓒ
- from terminal ④ of the wiper amplifier assembly.

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

INTERMITTENT OPERATION

When the wiper switch is set to intermittent operation, the wiper motor operates the wiper arms one time at low speed at an interval of approximately one to fourteen seconds. This feature is controlled by the wiper amplifier assembly.

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, the wiper amplifier assembly no longer supplies a ground circuit to the wiper motor. The ground circuit is now routed through the wiper motor terminal ⓕ. This allows the wiper motor to operate until the wiper arms reach the base of the windshield. The wiper motor ground is interrupted when the wiper arms reach the base of the windshield, and the wiper motor stops.

WASHER OPERATION

When the end of the combination switch is pushed in, ground is supplied:

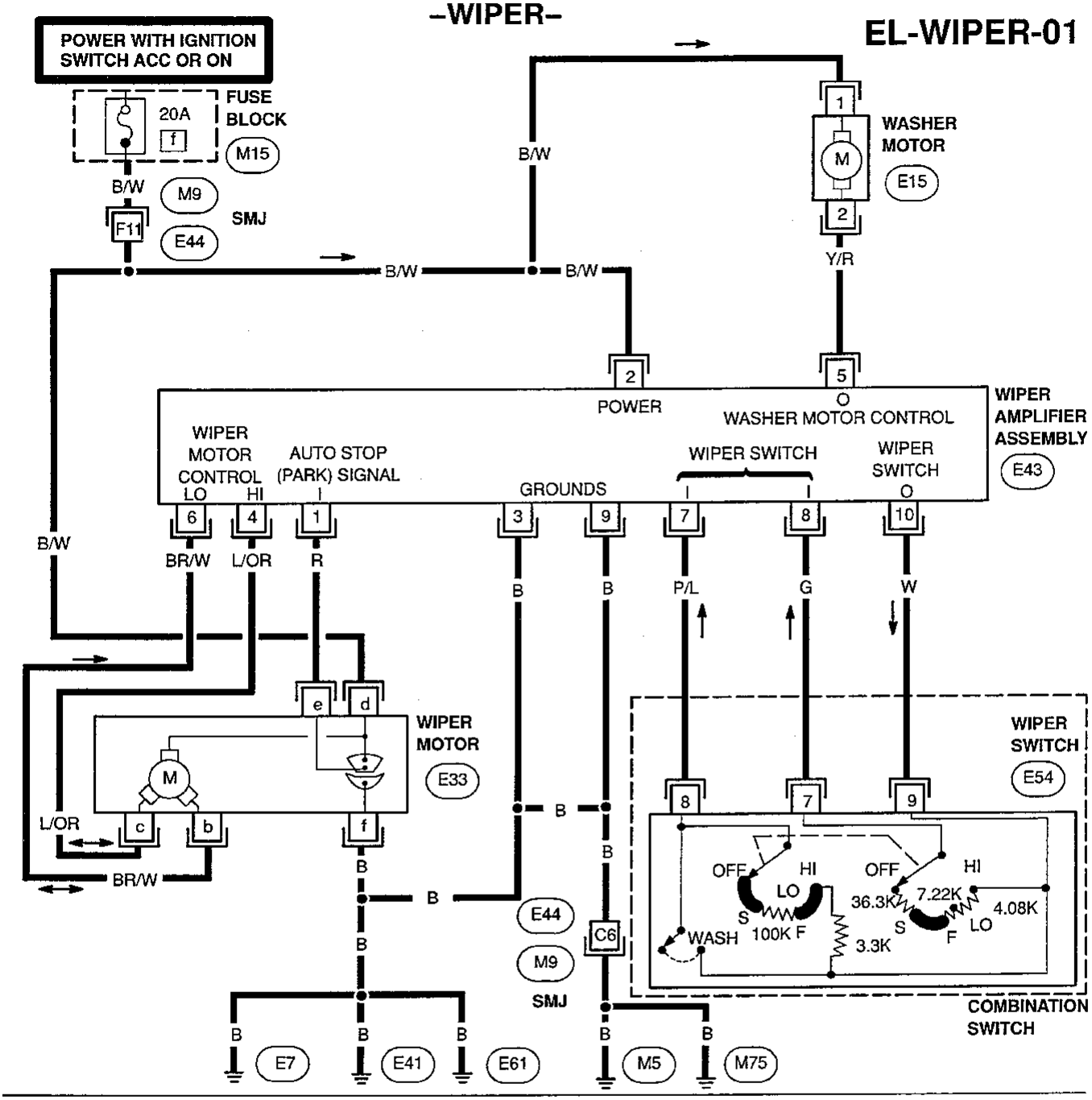
- to the washer motor terminal ②
- from terminal ⑤ of the wiper amplifier assembly.

With power and ground supplied, the washer motor operates.

The washer motor will continue to operate as the end of the combination switch is held in. The wiper will operate at low speed to clean the windshield.

Front Wiper and Washer/Wiring Diagram –WIPER–

EL-WIPER-01



Refer to POWER SUPPLY ROUTING in EL Section. M15

Refer to Foldout Page in EL Section for details. M9 E44

AEL333

Rear Wiper and Washer (Except for Glass Hatch Model)/System Description

With the ignition switch in the ACC or ON position, power is supplied:
- through 10A fuse (Letter [I], located in the fuse block)
- to rear wiper amplifier terminal ⑦
- to rear wiper motor terminal ②, and
- to rear washer motor terminal ①.

Ground is supplied:
- to rear wiper amplifier terminal ⑥
- to rear wiper motor terminal ①, and
- to rear wiper switch terminal ③
- through body grounds (B54), (M5) and (M75).

WIPER OPERATION

When the rear wiper switch is in the WIPER position, ground is supplied:
- to the rear wiper amplifier terminal ①
- through the rear wiper switch terminal ①.

An intermittent ground is then supplied:
- to the rear wiper motor terminal ④
- through terminal ④ of the rear wiper amplifier.

With power and ground supplied, the rear wiper motor operates intermittently, with approximately a 15 second interval between cycles.

WASHER OPERATION

When the rear wiper switch is in the WASH position, ground is supplied:
- to the rear washer motor terminal ②, and
- to the rear wiper amplifier terminal ⑤
- through the rear wiper switch terminal ②.

With power and ground supplied, the rear washer motor operates. The rear wiper amplifier then operates the rear wiper motor to clean the glass.

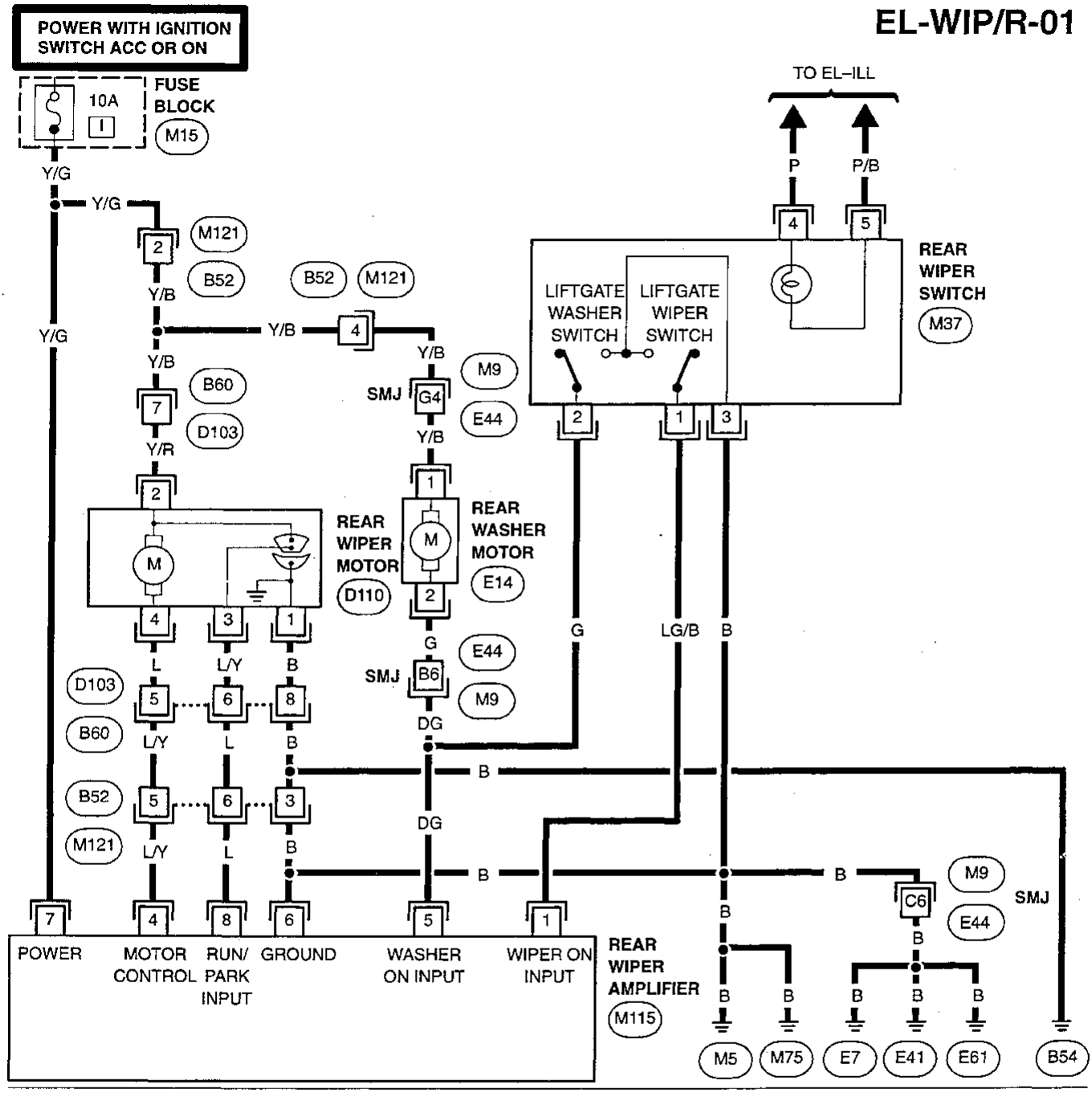
AUTO STOP OPERATION

When the rear wiper switch is placed in the OFF position, the rear wiper motor will continue to operate until the rear wiper arm reaches the base of the glass.

When the rear wiper switch is placed in the OFF position, the rear wiper amplifier no longer supplies a ground circuit to the rear wiper motor. The ground circuit is now routed through the rear wiper motor terminal ①. This allows the wiper motor to operate until the rear wiper arm reaches the base of the glass. The rear wiper motor ground is interrupted when the wiper arm reaches the base of the glass, and the rear wiper motor stops.

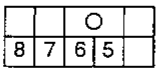
Rear Wiper and Washer (Except for Glass Hatch Model)/Wiring Diagram –WIP/R–

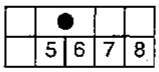
EL-WIP/R-01

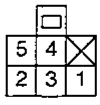


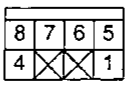
Refer to POWER SUPPLY ROUTING in EL Section. M15

Refer to Foldout Page in EL Section for details. M9 E44

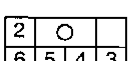

B60

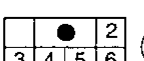

D103

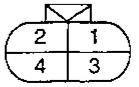

M37


M115


E14


M121


B52


D110

AEL334

Rear Wiper and Washer (For Glass Hatch Model)/System Description

With the ignition switch in the ACC or ON position, power is supplied:
- through 10A fuse (Letter [I], located in the fuse block)
- through the diode junction connector-2
- to the rear wiper relay terminals ① and ④.

With the glass hatch switch open (glass hatch closed), power is supplied:
- through the rear wiper relay terminal ③
- to the rear wiper motor terminal ②, and
- to the rear washer motor terminal ①.

Ground is supplied:
- to the rear wiper motor terminal ①
- to the rear wiper switch terminal ③, and
- to the glass hatch switch terminal ②
- through body grounds (B54), (M5) and (M75).

With the glass hatch switch closed (glass hatch open), ground is supplied:
- to the rear wiper relay terminals ② and ⑥
- through the glass hatch switch terminal ①.

With power and ground supplied, the rear wiper relay is energized, and power is removed:
- from the rear washer motor terminal ①, and
- from the rear wiper motor terminal ②.

With power removed, the rear wiper motor and rear washer motor become inoperative for as long as the glass hatch is open.

WIPER OPERATION

When the rear wiper switch is in the WIPER position, ground is supplied:
- to the rear wiper motor terminal ④
- through the diode junction connector-2
- from the rear wiper switch terminal ①.

With power and ground supplied, the rear wiper motor operates intermittently, with approximately a 15 second interval between cycles.

WASHER OPERATION

When the rear wiper switch is in the WASH position, ground is supplied:
- to the rear washer motor terminal ②, and
- to the rear wiper motor terminal ③
- through the diode junction connector-2
- from the rear wiper switch terminal ②.

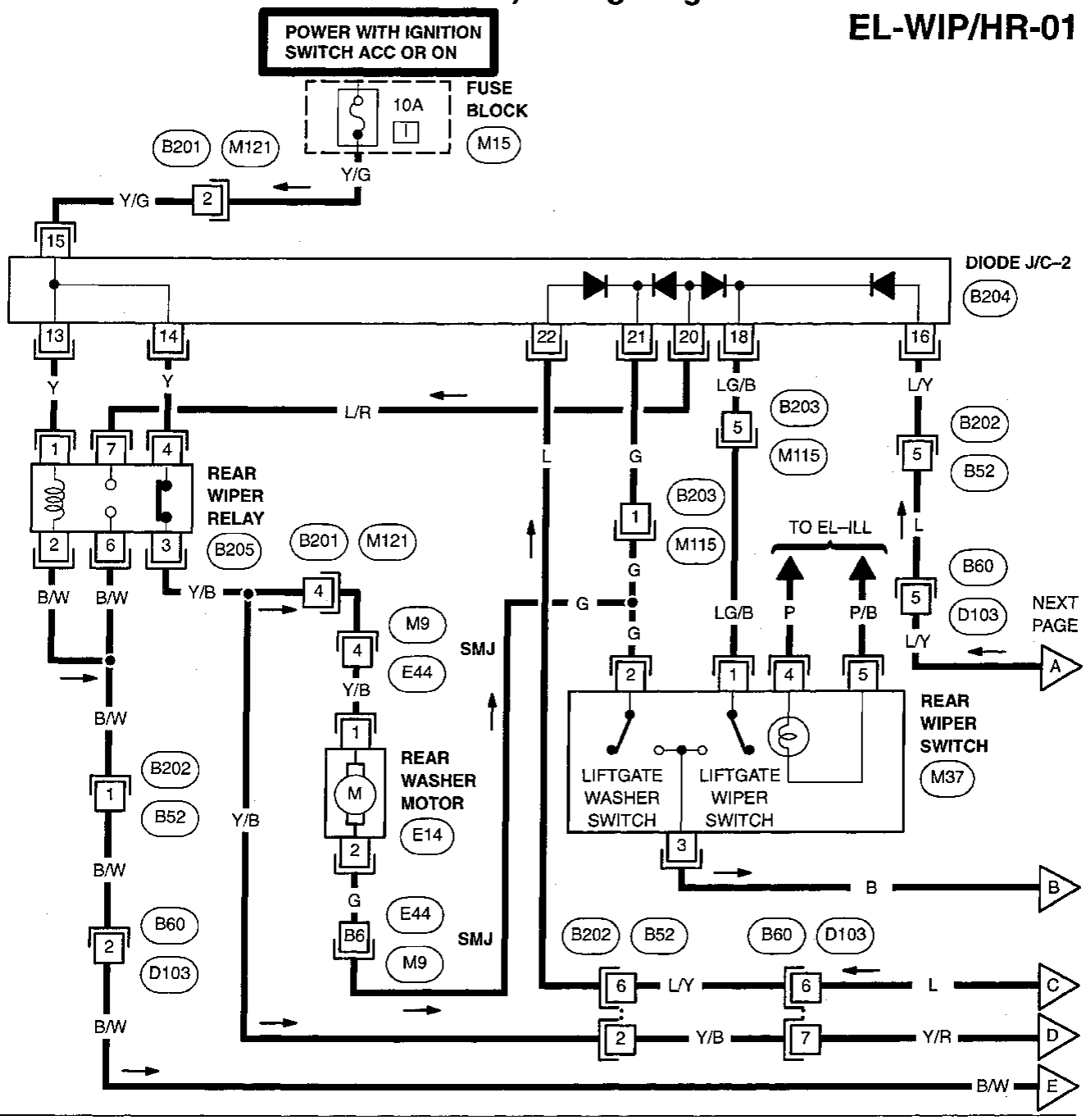
With power and ground supplied, to the rear washer motor and rear wiper motor, both motors operate until the rear wiper switch is taken out of the WASH position. If the switch is momentarily pressed the rear wiper motor will only cycle one time.

AUTO STOP OPERATION

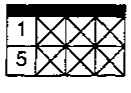
When the rear wiper switch is placed in the OFF position, the rear wiper motor will continue to operate until the rear wiper arm reaches the stop position.

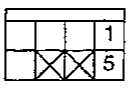
Rear Wiper and Washer (For Glass Hatch Model)/Wiring Diagram –WIP/HR–

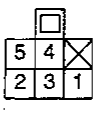
EL-WIP/HR-01

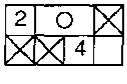


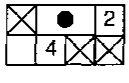
Refer to POWER SUPPLY ROUTING in EL Section. M15

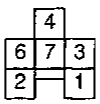

B203


M115


M37


M121

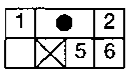

B201

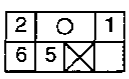

B205

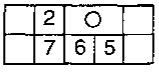
Refer to Foldout Page in EL Section for details.

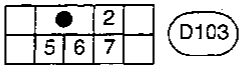
B204
E44
M9


E14


B52


B202

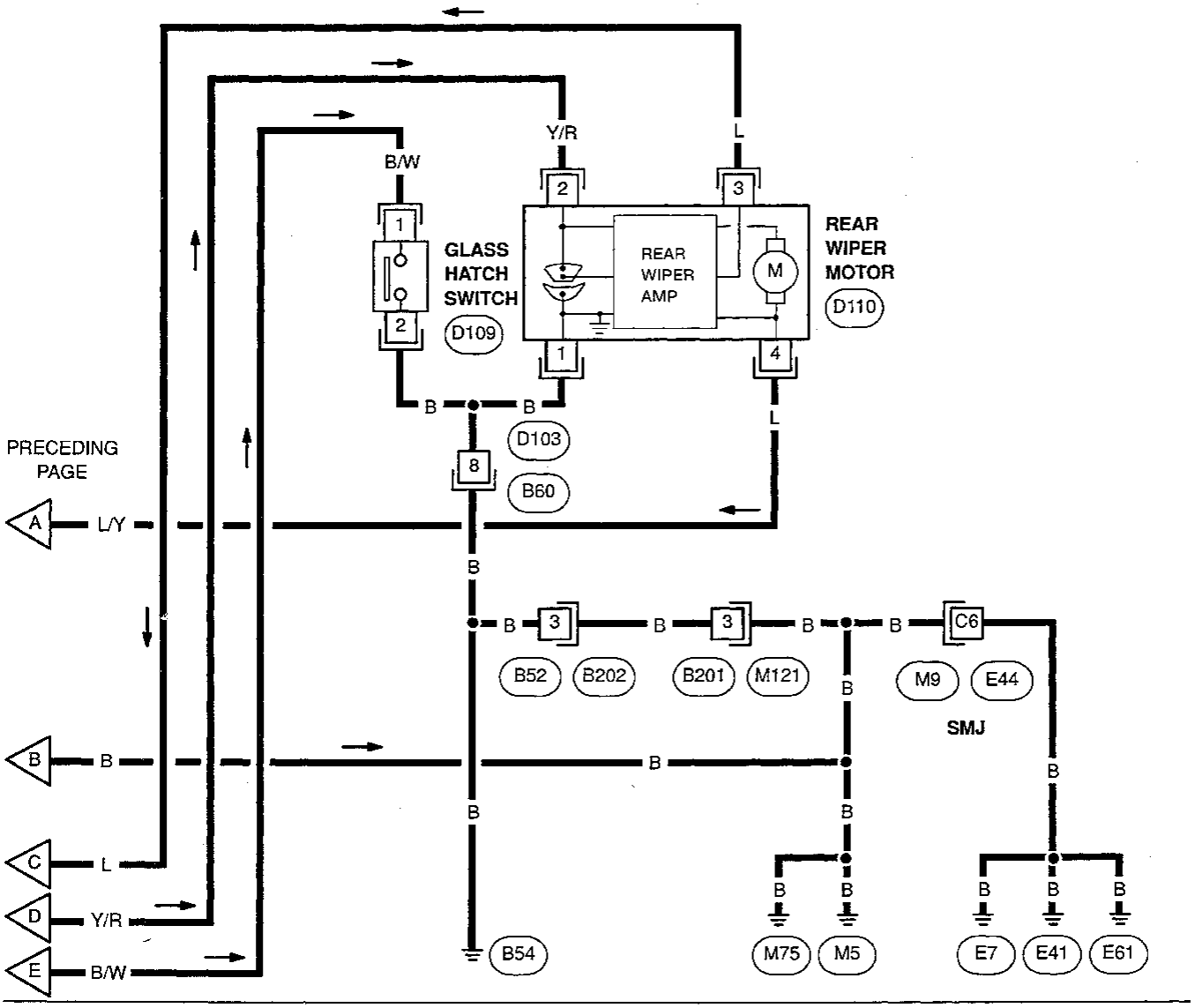

B60


D103

AEL335-A

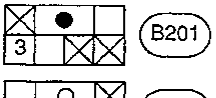
Rear Wiper and Washer (For Glass Hatch Model)/Wiring Diagram –WIP/HR– (Cont'd)

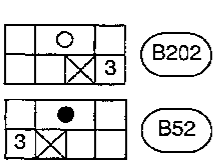
EL-WIP/HR-02

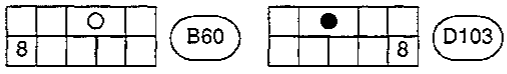


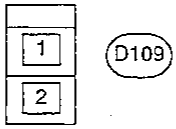
Refer to Foldout Page in EL Section for details.

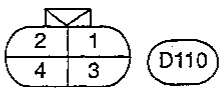
M9 E44











AEL335-B

Removal and Installation — Windshield Wiper

1. Tilt wiper arm to upright position.
2. Pull out and hold locking lever at base of wiper arm.
3. Pull wiper arm off pivot shaft.

- Installation is the reverse order of removal.

Adjustment — Wiper arm

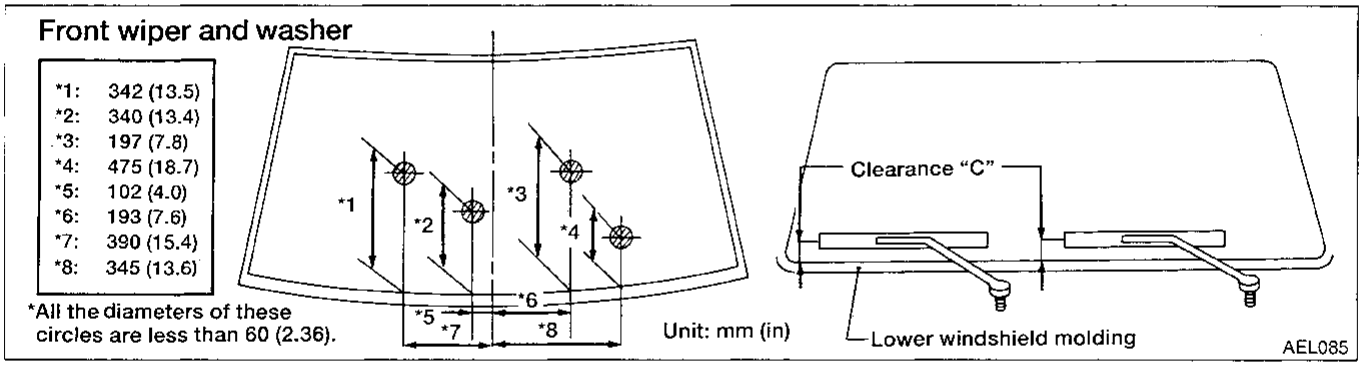
1. With wiper arm removed, turn wipers on and allow them to cycle two or three times and then turn wiper switch to OFF so that wipers will return to "park" position.
2. Install wiper arm and align splines so that wiper blade rests within clearance "C".
3. Operate wipers and ensure that wipers "park" within clearance "C". Readjust if necessary.
   Clearance "C": 47 - 87 mm (1.85 - 3.43 in)

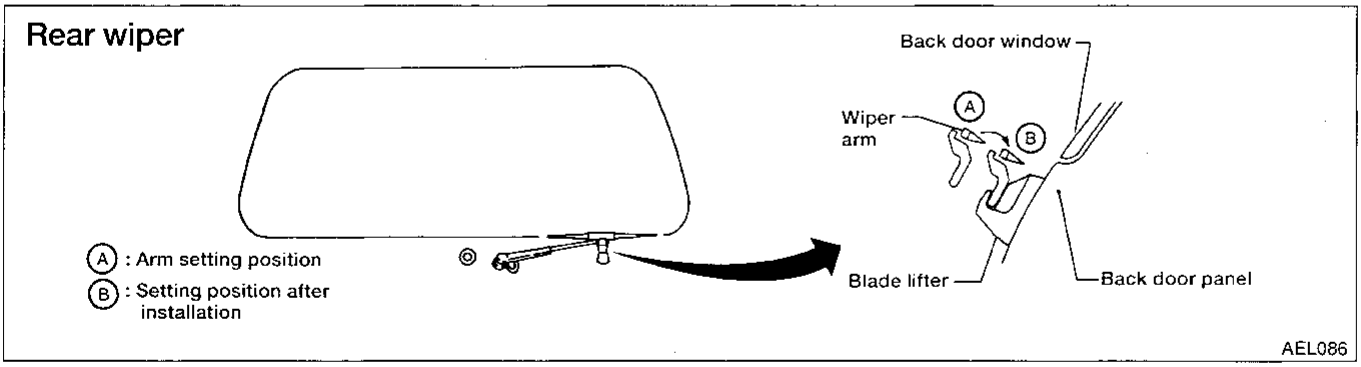
Adjustment — Washer nozzle

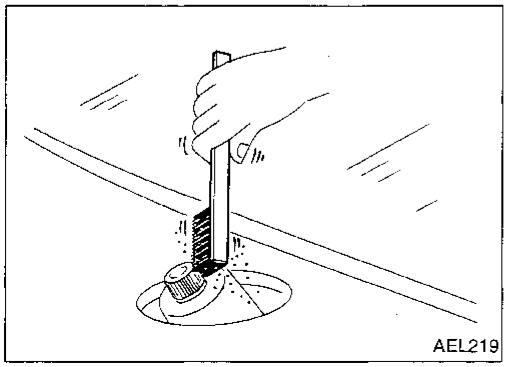
1. Operate washers and ensure that spray patterns fall within target areas illustrated.
2. Adjust washer nozzle spray pattern by inserting a suitable tool (needle) into nozzle and pivoting the nozzle until spray is within target area.

Installation

- Push windshield wiper arm onto wiper motor shaft.



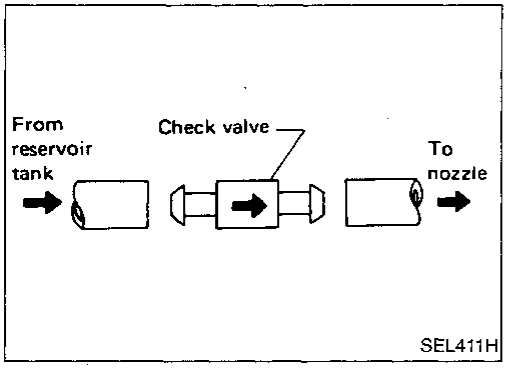




- **Before reinstalling wiper arm, clean up the pivot area as illustrated. This will reduce possibility of wiper arm looseness.**

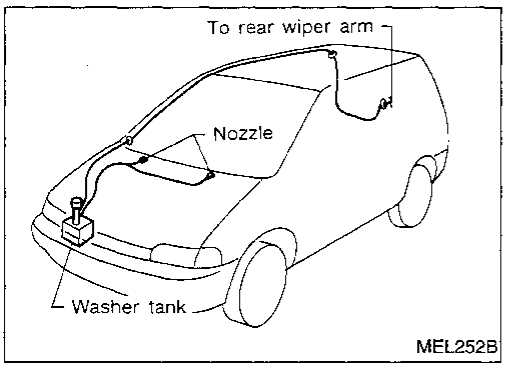
Washer Nozzle Adjustment

- Adjust washer nozzle by inserting a suitable tool (needle) into nozzle and pivot until spray pattern is at proper target area.

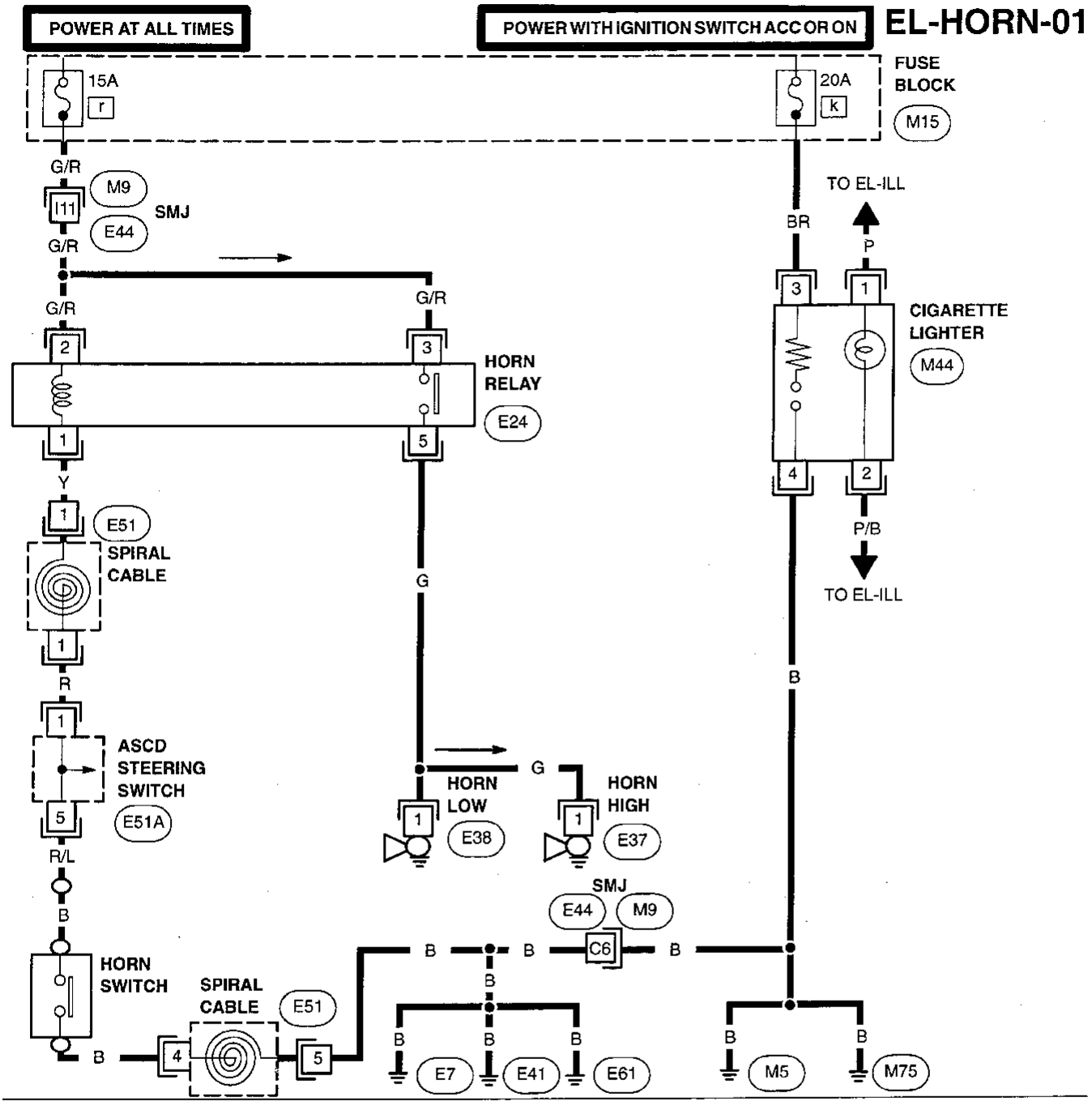


Check Valve

- A check valve is provided in the washer fluid line. Be careful not to connect check valve to washer tube in the wrong direction.

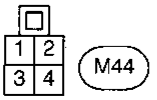


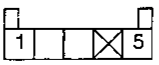
Wiring Diagram –HORN–

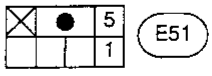


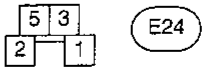
Refer to POWER SUPPLY ROUTING in EL Section. M15

Refer to Foldout Page in EL Section for details. M9 E44









AEL336

System Description

The rear window defogger is controlled by the time control module. The rear window defogger operates only for approximately 12 to 17 minutes.

Power is supplied at all times:
- to rear window defogger relay terminal ⑥
- through 20A fuse (Letter [o], located in the fuse block) and
- to rear window defogger relay terminal ③
- through 20A fuse (Letter [p], 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 ②
- through 10A fuse (Letter [t], located in the fuse block).

Ground is supplied to terminal ② of the rear window defogger switch through body grounds (M5) and (M75).

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 ⑦.

Terminal ㉕ of the time control module then supplies ground to the rear window defogger relay terminal ①.
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 the rear window defogger.

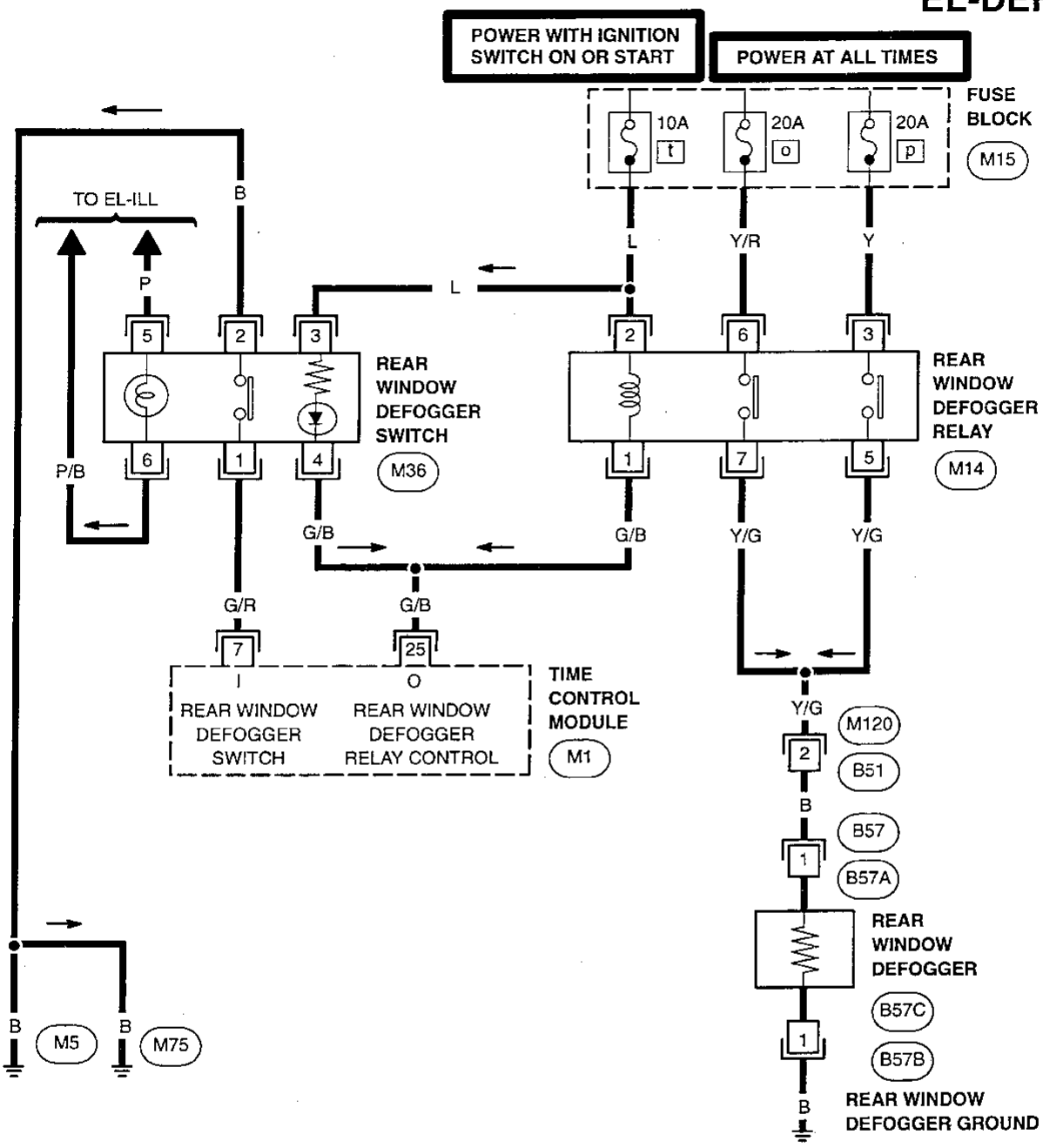
The rear window defogger has an independent ground.

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 on the rear window defogger switch.

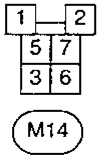
For diagnosis, refer to "Trouble Diagnosis", "TIME CONTROL SYSTEM"(EL-112).

Wiring Diagram –DEF–

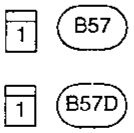
EL-DEF-01



Refer to POWER SUPPLY ROUTING in EL Section. M15

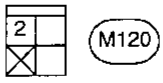


M14

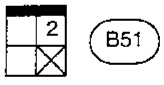


B57

B57A



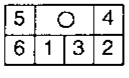
M120



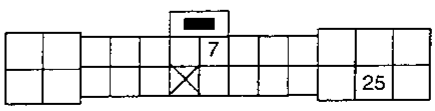
B51

B57D

B57C

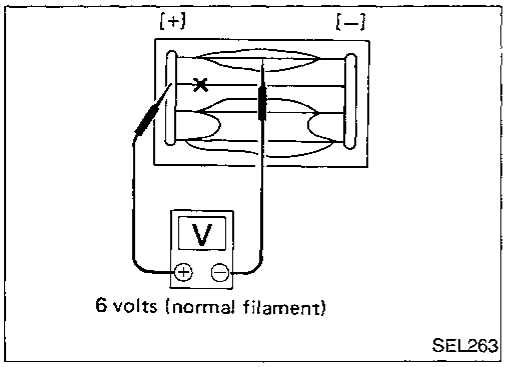


M36



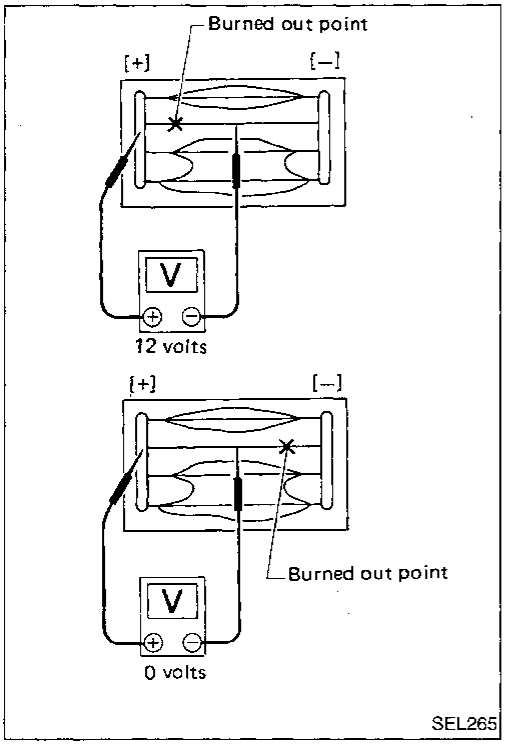
M1

AEL337

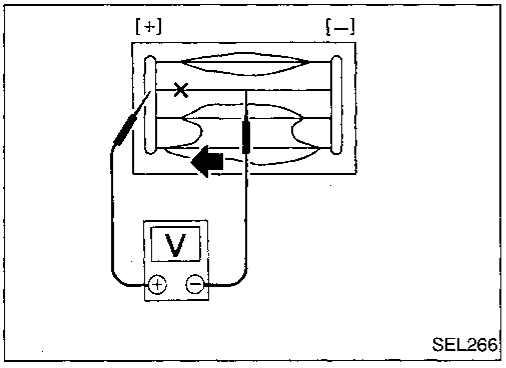


Filament Check

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.

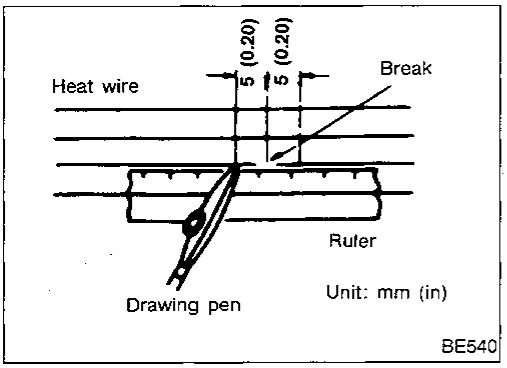


3. To locate burned out point, move probe to left and right along filament to determine point where tester needle swings abruptly.

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

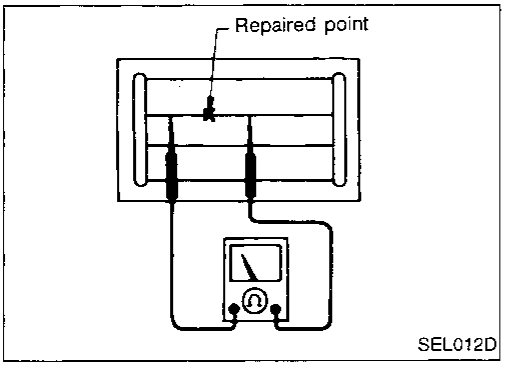


REPAIRING PROCEDURE

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.

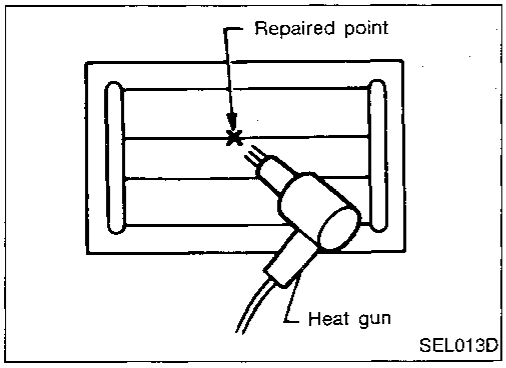
Shake silver composition container before use.

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 the Owner's Manual for audio system operating instructions.
There are four different audio systems available:

- a mid line AM/FM stereo cassette radio with 4-channel amplifier
- a mid line AM/FM stereo cassette radio with 4-channel amplifier and C/D player
- a high line AM/FM stereo cassette radio with 4-channel amplifier and subwoofer, and
- a high line AM/FM stereo cassette radio with 4-channel amplifier, subwoofer and C/D player.

A rear remote control module and power antenna are available with all four audio systems.

Power is supplied at all times:

- through 10A fuse (Letter [w], located in the fuse block)
- to radio terminal ①, and
- to C/D player terminal ⑥.

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

- through 10A fuse (Letter [i], located in the fuse block)
- to radio terminal ③
- to C/D player terminal ④, and
- to rear remote control module terminal ④, and
- through 20A fuse (Letter [j], located in the fuse block)
- to 4-channel amplifier terminal ⑥, and
- to subwoofer amplifier terminal ⑤.

Ground is supplied through the case of the radio and C/D player.

Ground is supplied:

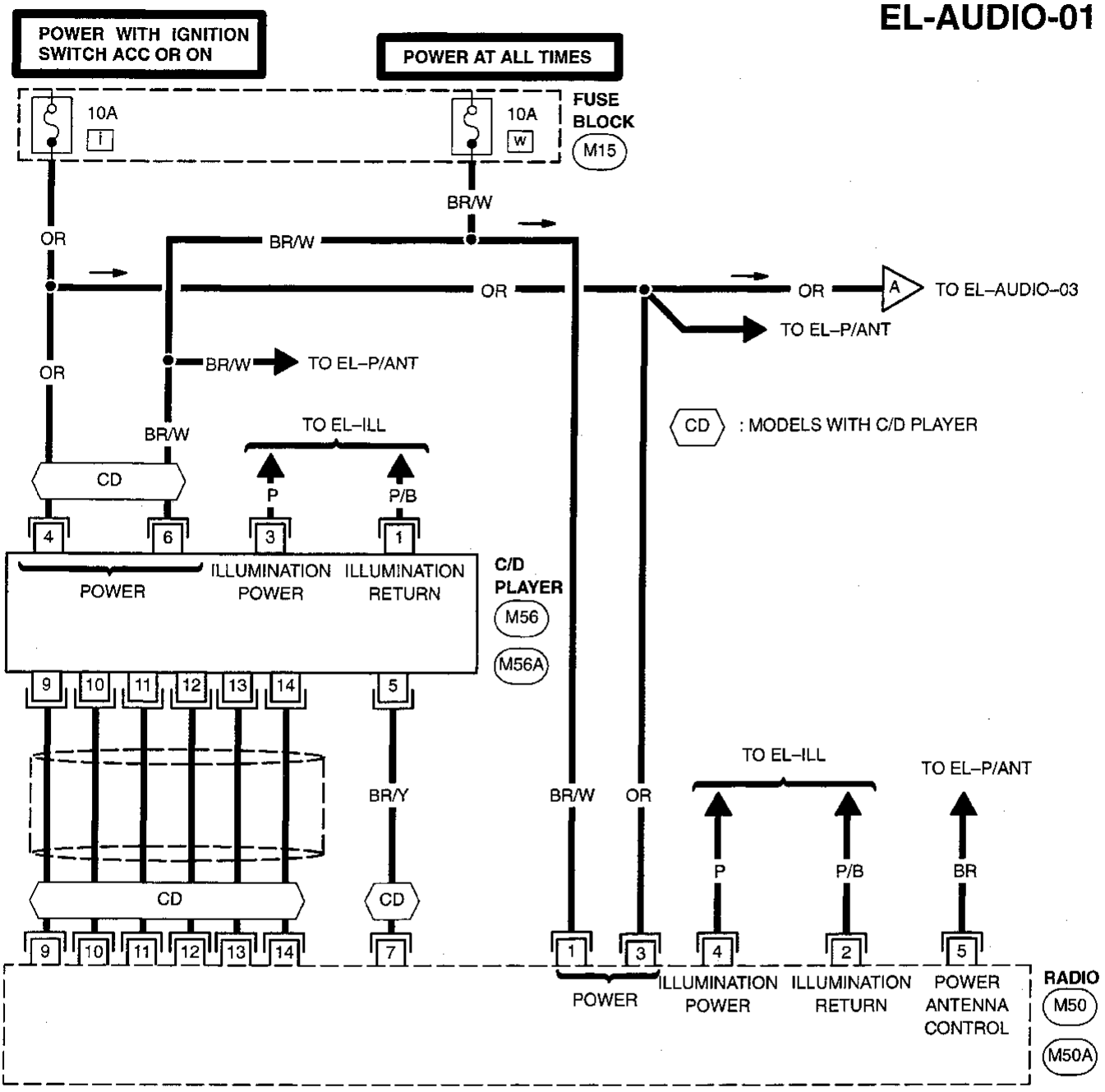
- to 4-channel amplifier terminal ⑤
- to subwoofer amplifier terminal ①, and
- to rear remote control module terminals ⑪ and ⑬
- through body grounds (M5), (M75), (B2) and (B12).

When the radio, rear remote control module or C/D player is operating, audio signals are supplied:

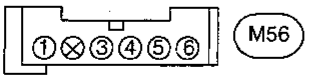
- through radio terminals ⑮, ⑯, ⑰, ⑱, ⑲, ⑳, ㉑ and ㉒
- to 4-channel amplifier terminals ⑮, ⑱, ⑲, ⑳, ㉑, ㉒, ㉓ and ㉔
- through 4-channel amplifier terminals ⑦, ⑧, ⑨, ⑩, ⑪, ⑫, ⑬, ⑭, ㉛, ㉜ and ㉝
- to the door speakers, rear speakers and subwoofer amplifier.

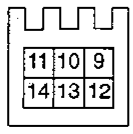
Audio/Wiring Diagram –AUDIO–

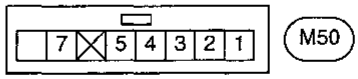
EL-AUDIO-01

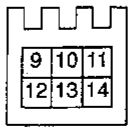


Refer to POWER SUPPLY ROUTING in EL Section. M15





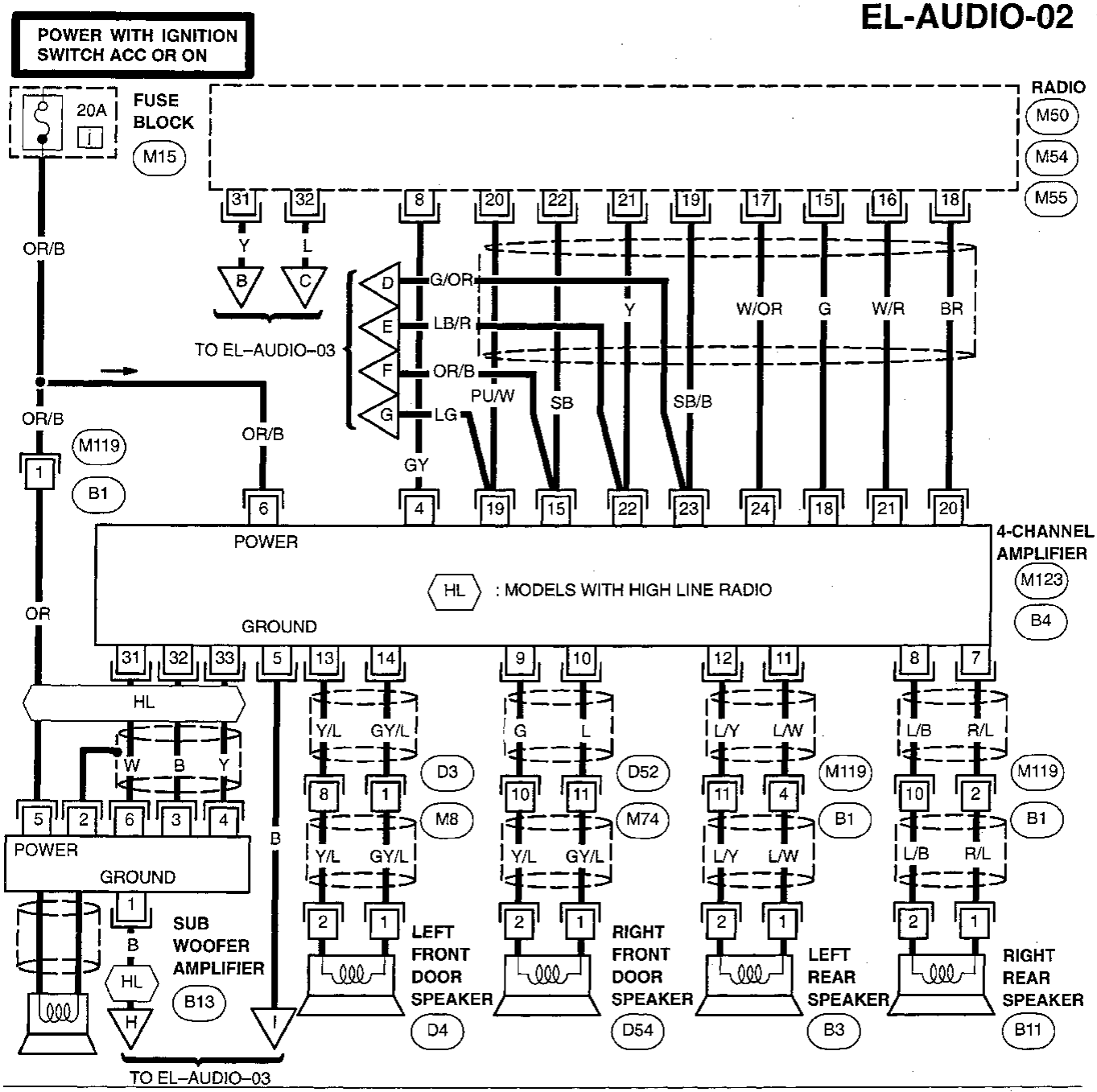


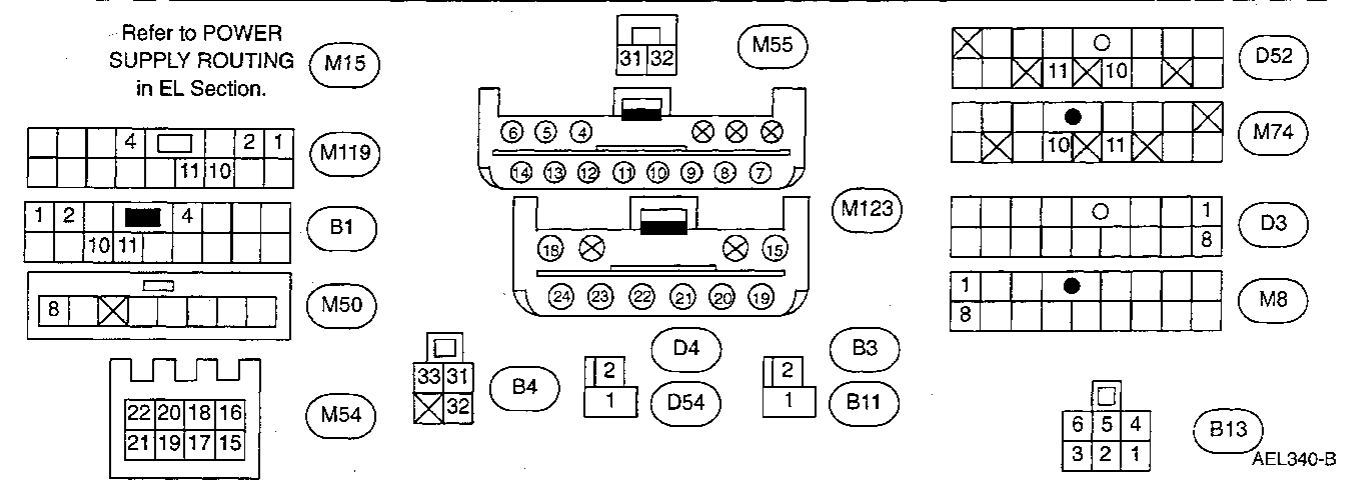


AEL340-A

Audio/Wiring Diagram –AUDIO– (Cont'd)

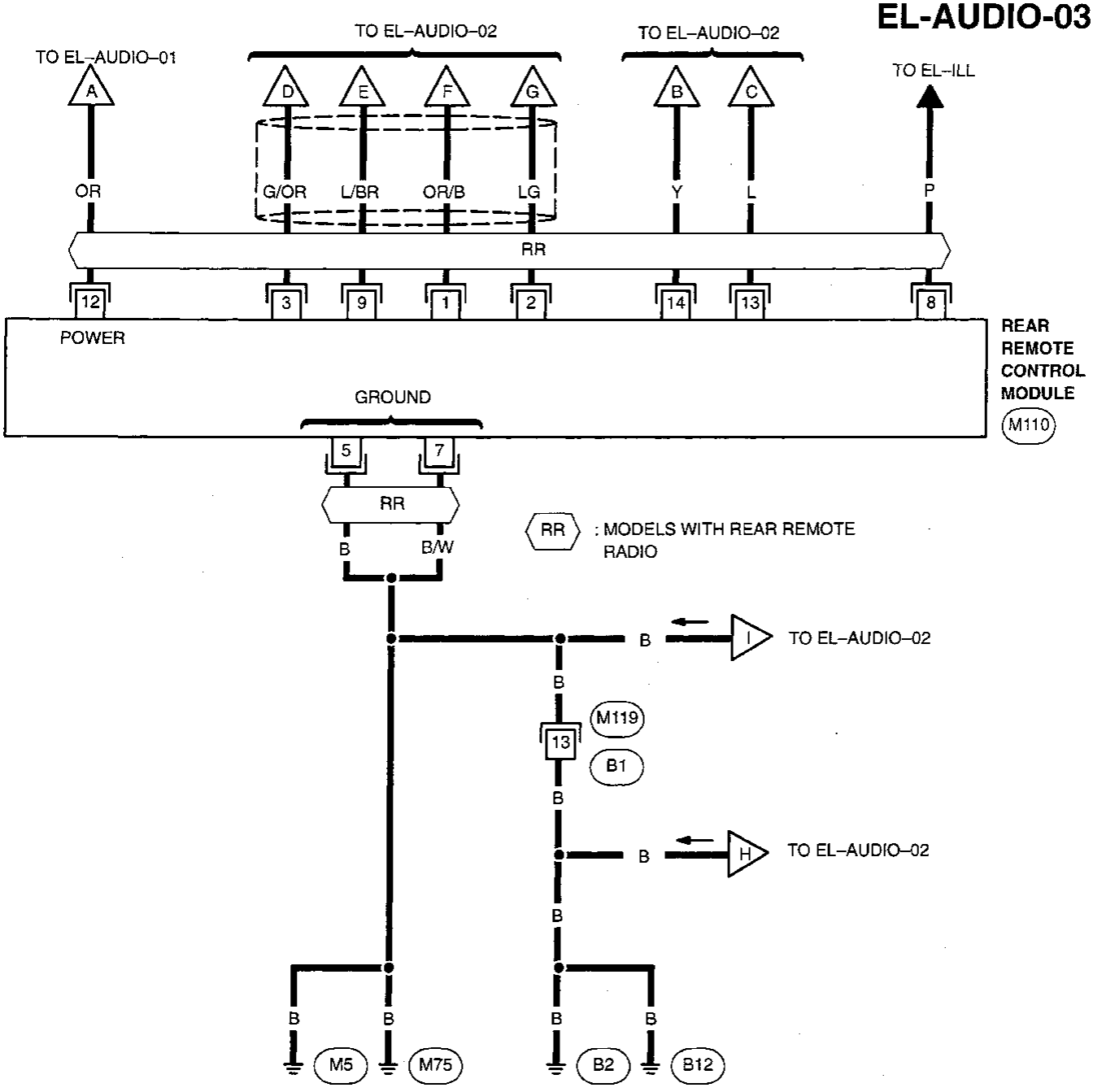
EL-AUDIO-02

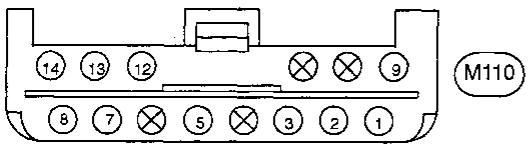


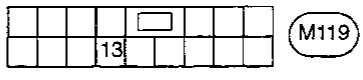


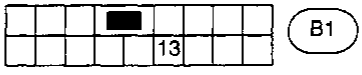
Audio/Wiring Diagram –AUDIO– (Cont'd)

EL-AUDIO-03









AEL340-C

Power Antenna/System Description

Power is supplied at all times:
- through 10A fuse (Letter [w], located in the fuse block)
- to power antenna timer terminal ③, and
- to radio terminal ①.

With the ignition switch in the ACC or ON position, power is supplied:
- through 10A fuse (Letter [i], located in the fuse block)
- to power antenna timer terminal ⑥, and
- to radio terminal ③.

With the ignition switch in the ON or START position, power is supplied:
- through 10A fuse (Letter [t], located in the fuse block)
- to power antenna timer terminal ⑤.

Ground is supplied to the power antenna timer terminal ⑦ through body grounds (M5) and (M75).

When the radio is turned ON, battery positive voltage is supplied:
- through radio terminal ⑤
- to power antenna timer terminal ④.

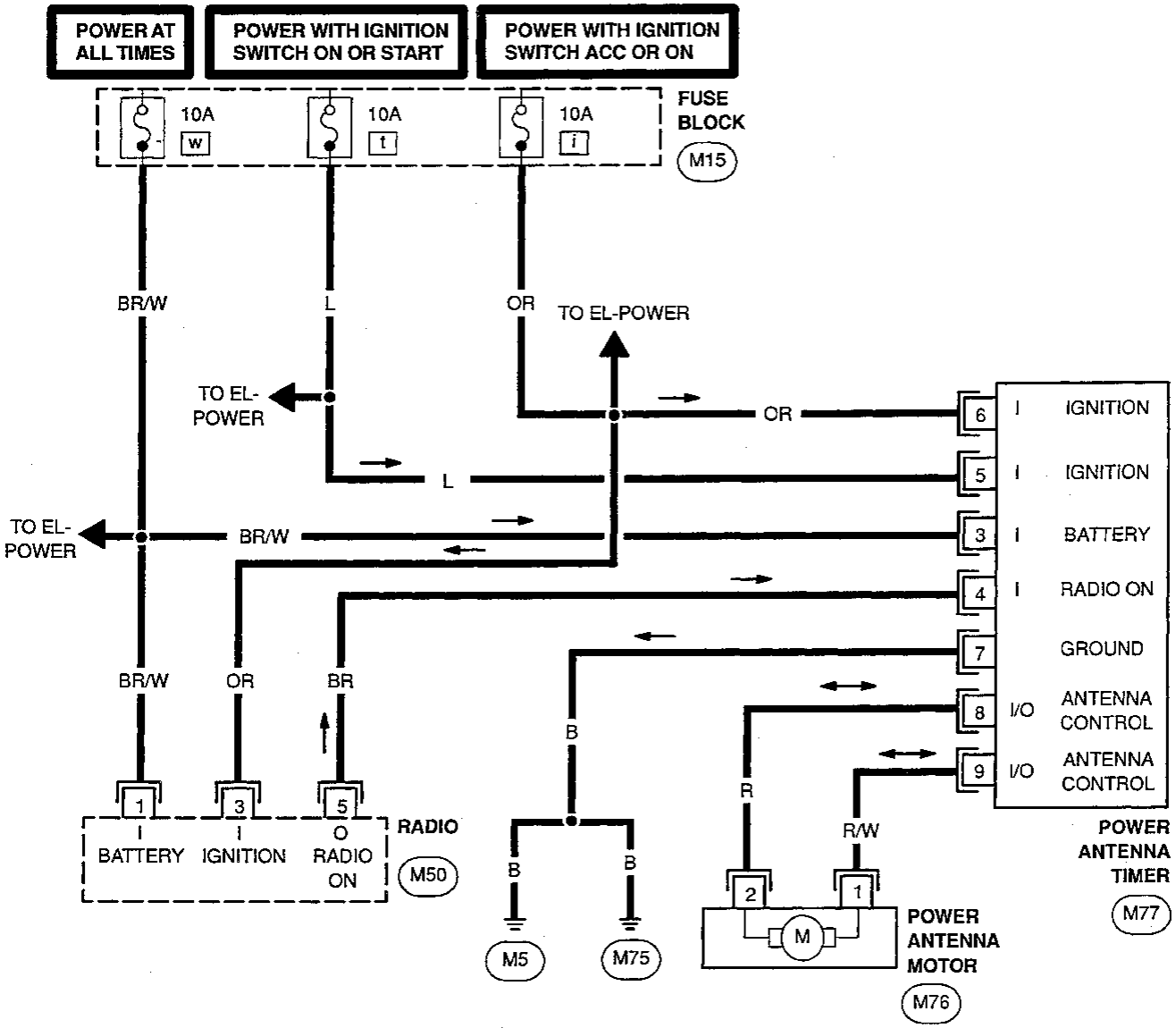
The power antenna timer controls the operation of the power antenna motor through terminal ⑧ and ⑨. The antenna raises and is held in the extended position.

When the radio is turned OFF, or a cassette tape or compact disc is played, battery positive voltage is interrupted:
- from radio terminal ⑤
- to power antenna timer terminal ④.

The antenna retracts.

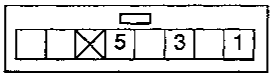
Power Antenna/Wiring Diagram –P/ANT–

EL-P/ANT-01

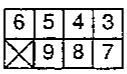


Refer to POWER SUPPLY ROUTING in EL Section. M15

M76



M50



M77

AEL341

Trouble Diagnoses

Symptom	Possible causes	Repair order
Radio, C/D player and/or rear remote control module inoperative (no digital display and no sound from speakers.)	1. 10A fuses	1. Check 10A fuses (Letters [i] and [W], located in the fuse block). Verify battery positive voltage is present at terminal ① of radio and terminal ⑥ of C/D player. Turn ignition switch ON and verify battery positive voltage is present at terminal ③ of radio, terminal ④ of C/D player and terminal ④ of rear remote control module.
	2. Poor radio or C/D player case ground, or rear remote control module body ground.	2. Check radio or C/D player case ground, or rear remote control module body ground.
	3. Radio, C/D player or rear remote control module	3. Remove radio, C/D player, or rear remote control module for repair.
Radio controls are operational, but no sound is heard from any speaker.	1. 20A fuse	1. Check 20A fuse (Letter [j], located in the fuse block). Turn ignition switch ON and verify battery positive voltage is present at terminal ⑥ of 4-channel amplifier and terminal ⑤ of subwoofer amplifier.
	2. Poor 4-channel amplifier and subwoofer amplifier body grounds.	2. Check 4-channel amplifier and subwoofer body grounds.
	3. 4-channel amplifier and subwoofer amplifier.	3. Check 4-channel amplifier and subwoofer amplifier voltages.
	4. 4-channel amplifier circuits	4. Check wires for open or short between radio, 4-channel amplifier, subwoofer amplifier and speakers.
	5. Radio	5. Remove radio for repair.
Individual speaker is noisy or inoperative.	1. Speaker	1. Check speaker.
	2. 4-channel amplifier output	2. Check 4-channel amplifier output voltages.
	3. Speaker circuit	3. Check wires for open or short between 4-channel amplifier and speaker.
	4. Radio	4. Remove radio for repair.
AM stations are weak or noisy (FM stations OK).	1. Antenna	1. Check antenna.
	2. Poor radio case ground	2. Check radio case ground.
	3. Radio	3. Remove radio for repair.
FM stations are weak or noisy (AM stations OK).	1. Diversity antenna	1. Check diversity antenna.
	2. Radio	2. Remove radio for repair.
Radio generates noise in AM and FM modes with engine running.	1. Poor radio case ground	1. Check radio case ground.
	2. Loose or missing ground bonding straps	2. Check ground bonding straps.
	3. Ignition condenser	3. Replace ignition condenser.
	4. Generator	4. Check generator.
	5. Ignition coil or secondary wiring	5. Check ignition coil and secondary wiring.
	6. Radio	6. Remove radio for repair.
Radio generates noise in AM and FM modes with accessories on (switch pops and motor noise).	1. Poor radio case ground	1. Check radio case ground.
	2. Antenna	2. Check antenna.
	3. Accessories ground	3. Check accessory ground.
	4. Faulty accessory	4. Replace accessory.
Power antenna does not operate.	1. 10A fuse	1. Check 10A fuse (Letter [W], located in the fuse block). Verify battery positive voltage is present at terminal ③ of power antenna timer.
	2. 10A fuse	2. Check 10A fuse (Letter [t], located in the fuse block). Turn ignition switch ON and verify battery positive voltage is present at terminal ⑤ of power antenna timer.
	3. 10A fuse	3. Check 10A (Letter [i], located in the fuse block). Turn ignition switch ON and verify battery positive voltage is present at terminal ⑥ of power antenna timer.
	4. Radio signal	4. Turn radio ON and verify battery positive voltage is present at terminal ④ of power antenna timer.
	5. Poor power antenna timer body ground	5. Check power antenna timer body ground.
	6. Power antenna circuit	6. Check wires for open or short between power antenna timer and power antenna motor.

Trouble Diagnoses (Cont'd)

SPEAKER INSPECTION

1. Disconnect speaker harness connector.
2. Measure the resistance between speaker terminals ① and ②.
- The resistance should be 2-4 Ω
3. Using jumper wires, momentarily connect a 9V battery between speaker terminals ① and ②.
- 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, C/D PLAYER, REAR REMOTE CONTROL MODULE, 4-CHANNEL AMPLIFIER AND SUBWOOFER AMPLIFIER INSPECTION

All voltage inspections are made with:
- Ignition switch ON or ACC
- Radio or C/D player ON
- Radio, C/D player, rear remote control module, 4-channel amplifier and subwoofer amplifier connected (If the radio or C/D player is removed from the audio mounting bracket to make the inspection, supply a ground to the case using a jumper wire.)

RADIO VOLTAGES

Terminal	Voltage (V)	
	Mid Line Model	High Line Model
1	10.8 - 15.6V (Battery)	10.8 - 15.6V (Battery)
2	Greater than 3.0V (Illumination on)	Greater than 3.0V (Illumination on)
3	10.8 - 15.6V (Ignition ACC or ON)	10.8 - 15.6V (Ignition ACC or ON)
4	10.8 - 15.6V (Illumination on)	10.8 - 15.6V (Illumination on)
5	10.8 - 15.6V (Radio on)	10.8 - 15.6V (Radio on)
6	—	—
7	10.8 - 15.6V (Radio on)	10.8 - 15.6V (Radio on)
8	10.8 - 15.6V (Radio on)	10.8 - 15.6V (Radio on)
9	Check continuity between radio harness connector (M50A) and C/D player harness connector (M56A).	
10		
11		
12		
13		
14		
15	0 - 2.3V	0 - 5V
16	0 - 2.3V	0 - 5V
17	0 - 2.3V	0 - 5V
18	0 - 2.3V	0 - 5V
19	0 - 2.3V	0 - 5V
20	0 - 2.3V	0 - 5V
21	0 - 2.3V	0 - 5V
22	0 - 2.3V	0 - 5V
31	Data line	Data line
32	Data line	Data line

The radio is case grounded through the audio mounting bracket.

REAR REMOTE CONTROL MODULE VOLTAGES

Terminal	Voltage (V)
1	0 - 5V input
2	—
3	—
4	10.8 - 15.6V (Ignition ACC or ON)
5	Data line
6	Data line
7	0 - 5V input
8	0 - 5V input
9	0 - 5V input
10	—
11	Body ground
12	—
13	Body ground
14	10.8 - 15.6V (Illumination on)

Trouble Diagnoses (Cont'd)

C/D PLAYER VOLTAGES

Terminal	Voltage (V)
1	Greater than 3.0V (Illumination on)
2	—
3	10.8 - 15.6V (Illumination on)
4	10.8 - 15.6V (Ignition ACC or ON)
5	10.8 - 15.6V (Radio on)
6	10.8 - 15.6V
9	Check continuity between C/D player harness connector (M56A) and radio harness connector (M50A).
10	
11	
12	
13	
14	

The C/D player is case grounded through the audio mounting bracket.

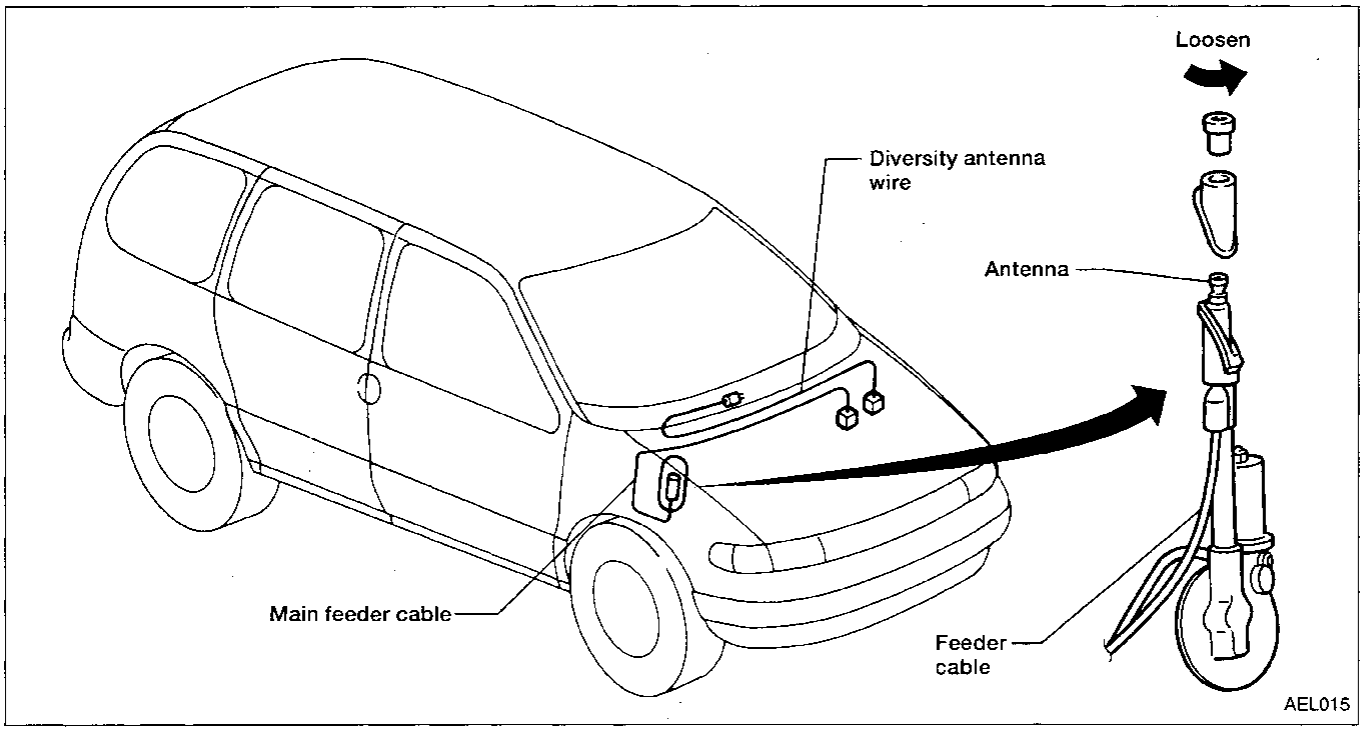
SUB-WOOFER AMP. VOLTAGES

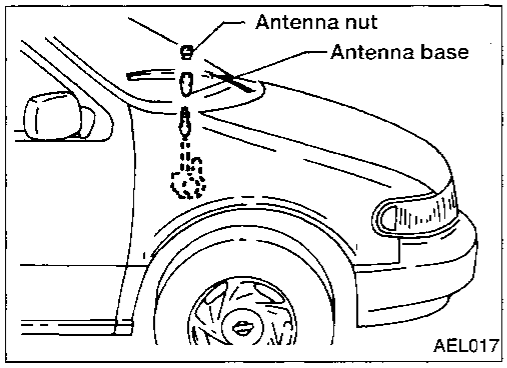
Terminal	Voltage (V)
1	Body ground
2	—
3	0 - 1.5V input
4	0 - 5V
5	10.8 - 15.6V (Ignition ACC or ON)
6	0 - 1.5V input

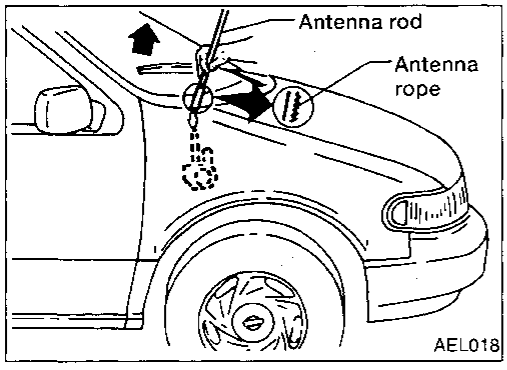
4-CHANNEL AMP. VOLTAGES

Terminal	Voltage (V)	
	Mid Line Model	High Line Model
1	—	—
2	—	—
3	—	—
4	10.8 - 15.6V (Radio on)	10.8 - 15.6V (Radio on)
5	Body ground	Body ground
6	10.8 - 15.6V (Ignition ACC or ON)	10.8 - 15.6V (Ignition ACC or ON)
7	0 - 7.5V	0 - 7.5V
8	0 - 7.5V	0 - 7.5V
9	0 - 7.5V	0 - 7.5V
10	0 - 7.5V	0 - 7.5V
11	0 - 7.5V	0 - 7.5V
12	0 - 7.5V	0 - 7.5V
13	0 - 7.5V	0 - 7.5V
14	0 - 7.5V	0 - 7.5V
15	Check continuity between 4-channel amplifier harness connector (M123) and radio harness connector (M54).	
16	—	—
17	—	–
18	Check continuity between 4-channel amplifier harness connector (M123) and radio harness connector (M54).	
19		
20		
21		
21		
22		
23		
24		
31	—	0 - 1.5V
32	—	0 - 1.5V
33	—	0 - 1.5V
34	—	—

Location of Antenna





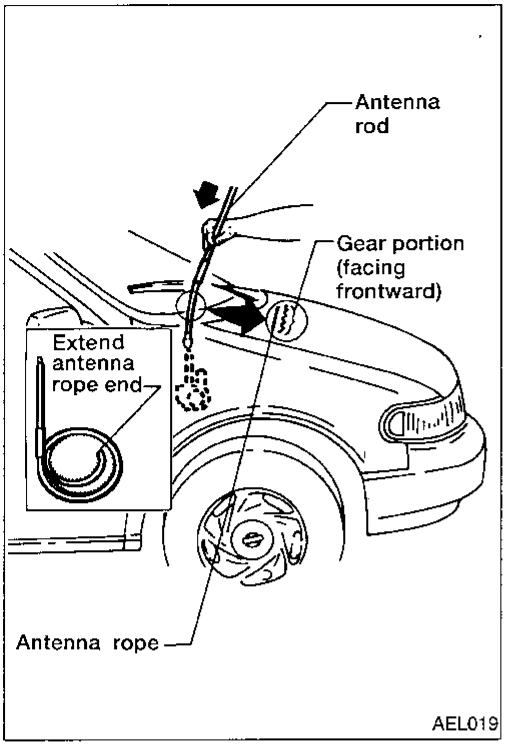


Antenna Rod Replacement

REMOVAL

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

Antenna Rod Replacement (Cont'd)



INSTALLATION

1. Insert gear section of antenna rope into place with it facing toward antenna motor.
2. Lower antenna rod by operating antenna motor.
3. As soon as antenna rope is wound onto 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.

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 (Letter [t], located in the fuse block)
- to the ASCD main switch terminal ①, and
- to the ASCD hold relay terminal ⑤.

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

Ground is supplied:
- to ASCD hold relay terminal ②
- through body grounds (E7), (E41) and (E61).

With power and ground supplied, the ASCD hold relay is energized, and power is supplied:
- from terminal ③ of the ASCD hold relay
- to ASCD control module terminal ④ and
- to inhibitor relay terminal ④.

Power remains supplied to the 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 (M5) and (M75).

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
- ASCD cancel switch.

A vehicle speed input is supplied:
- to ASCD control module terminal ⑦
- from terminal ㉛ of the combination meter.

Power is supplied at all times:
- to stop lamp switch terminal ①
- through 15A fuse (Letter [x], located in the fuse block).

With the brake pedal depressed, power is supplied:
- from terminal ② of the stop lamp switch
- to ASCD control module terminal ⑪.

Power is supplied at all times:
- through 15A fuse (Letter [r], located in the fuse block)
- to horn relay terminal ②
- through terminal ① of the horn relay
- to ASCD steering switch terminal ①.

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

When the RESUME/ACCEL button is depressed, power is supplied:
- from terminal ③ of the ASCD steering switch
- to ASCD control module terminal ①.

When the CANCEL button is depressed, a 5V signal is supplied:
- to ASCD control module terminals ① and ②.

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

Power is interrupted when:
- the shift lever is placed in P or N, 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 ⑧ 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 the combination meter terminal ①, and
- to A/T control unit terminal ㊲.

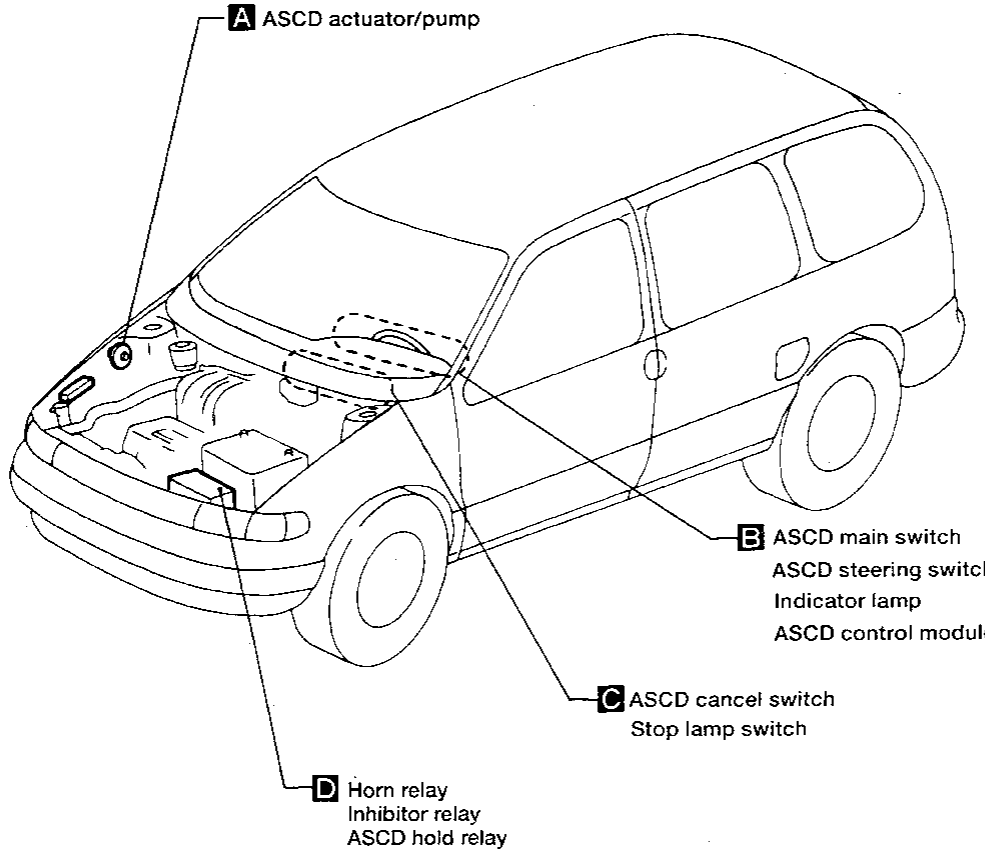
Ground is supplied:
- to combination meter terminal ⑫
- through body grounds (M5) and (M75).

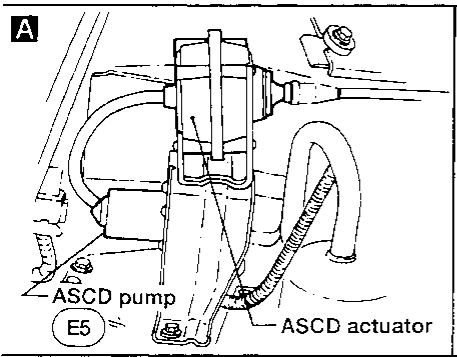
With power and ground supplied, the CRUISE indicator illuminates.

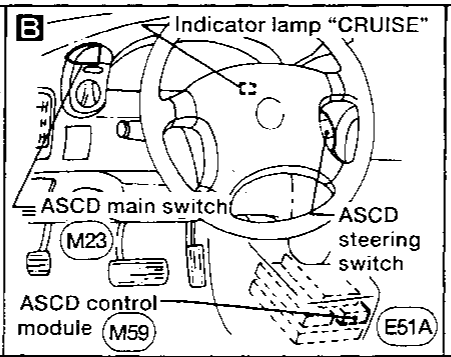
When the RESUME/ACCEL button is depressed, a signal is sent:
- from terminal ⑫ of the ASCD control module
- to A/T control unit terminal ㊵.

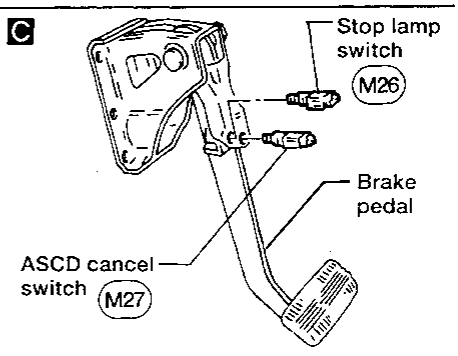
When this occurs, the A/T control unit cancels overdrive.

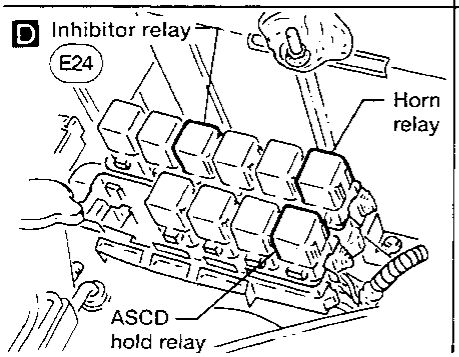
Component Parts and Harness Connector Location





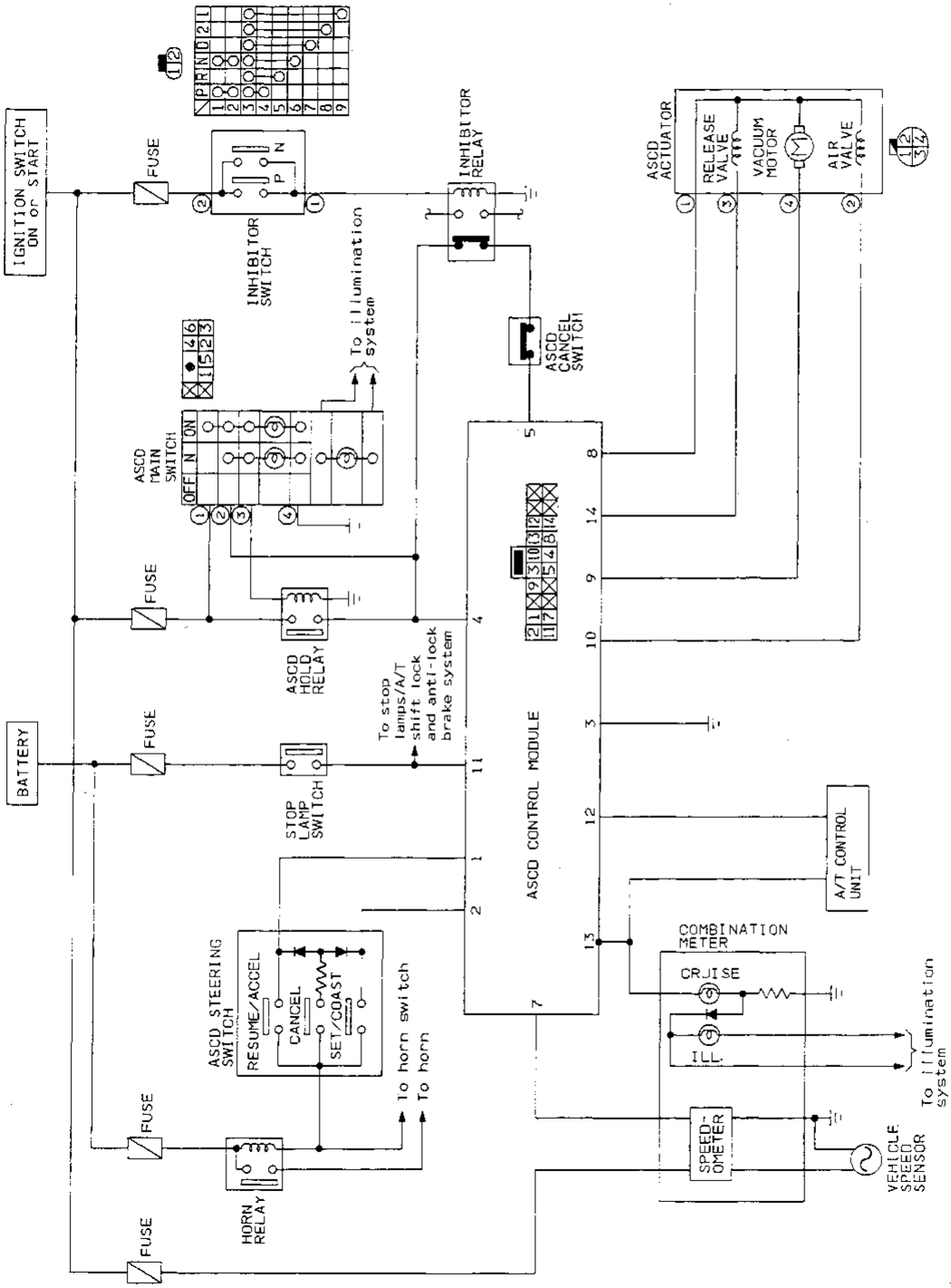






AEL357

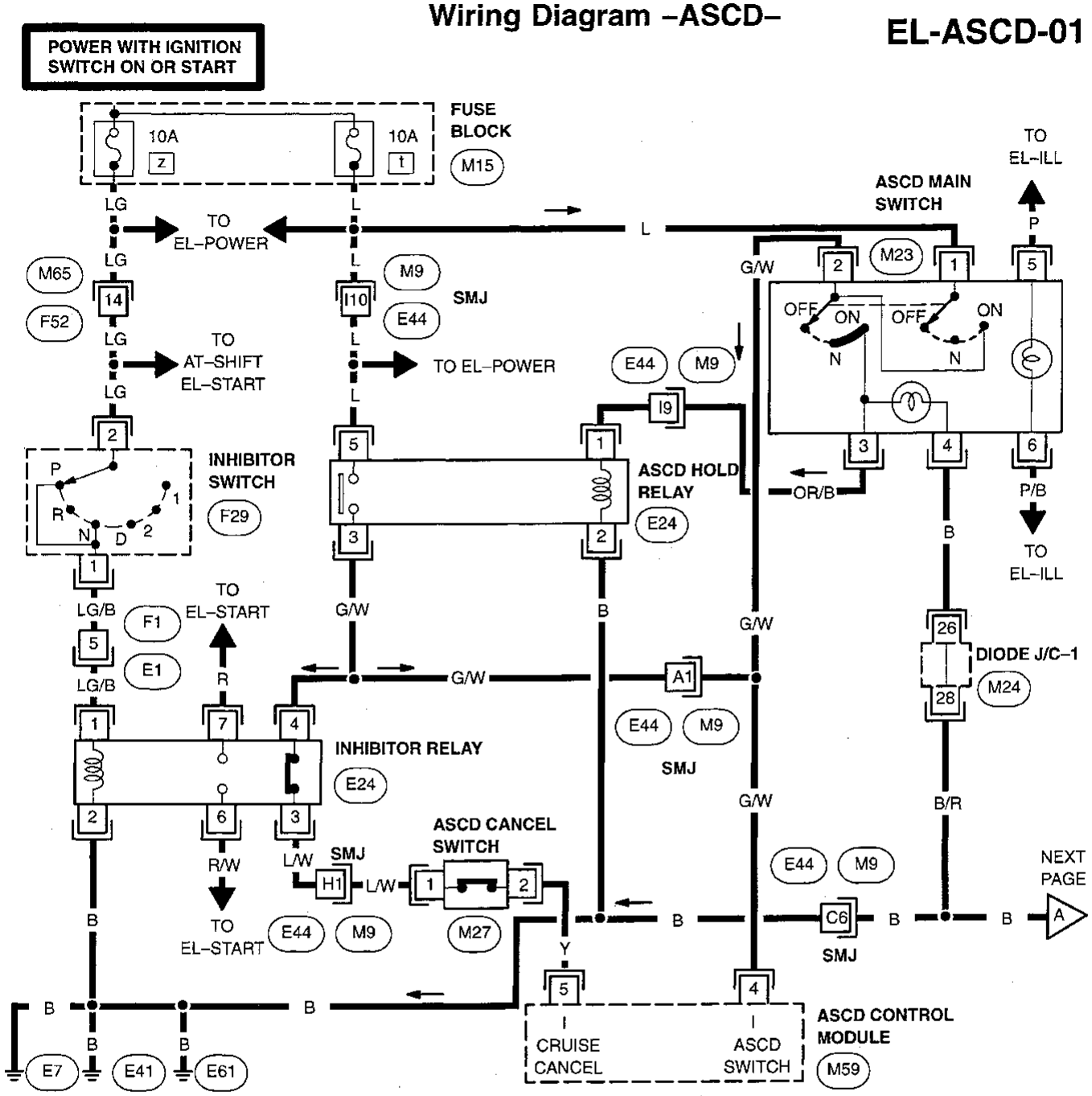
Schematic



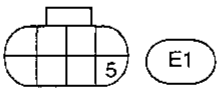
AEL348

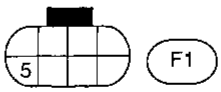
Wiring Diagram –ASCD–

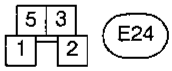
EL-ASCD-01

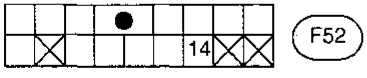


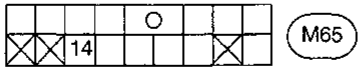
Refer to POWER SUPPLY ROUTING in EL Section. M15





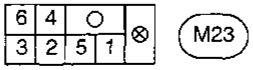


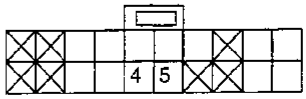


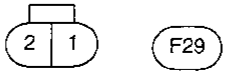


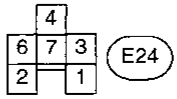
Refer to Foldout Page in EL Section for details. M24

Refer to Foldout Page in EL Section for details. M9 E44





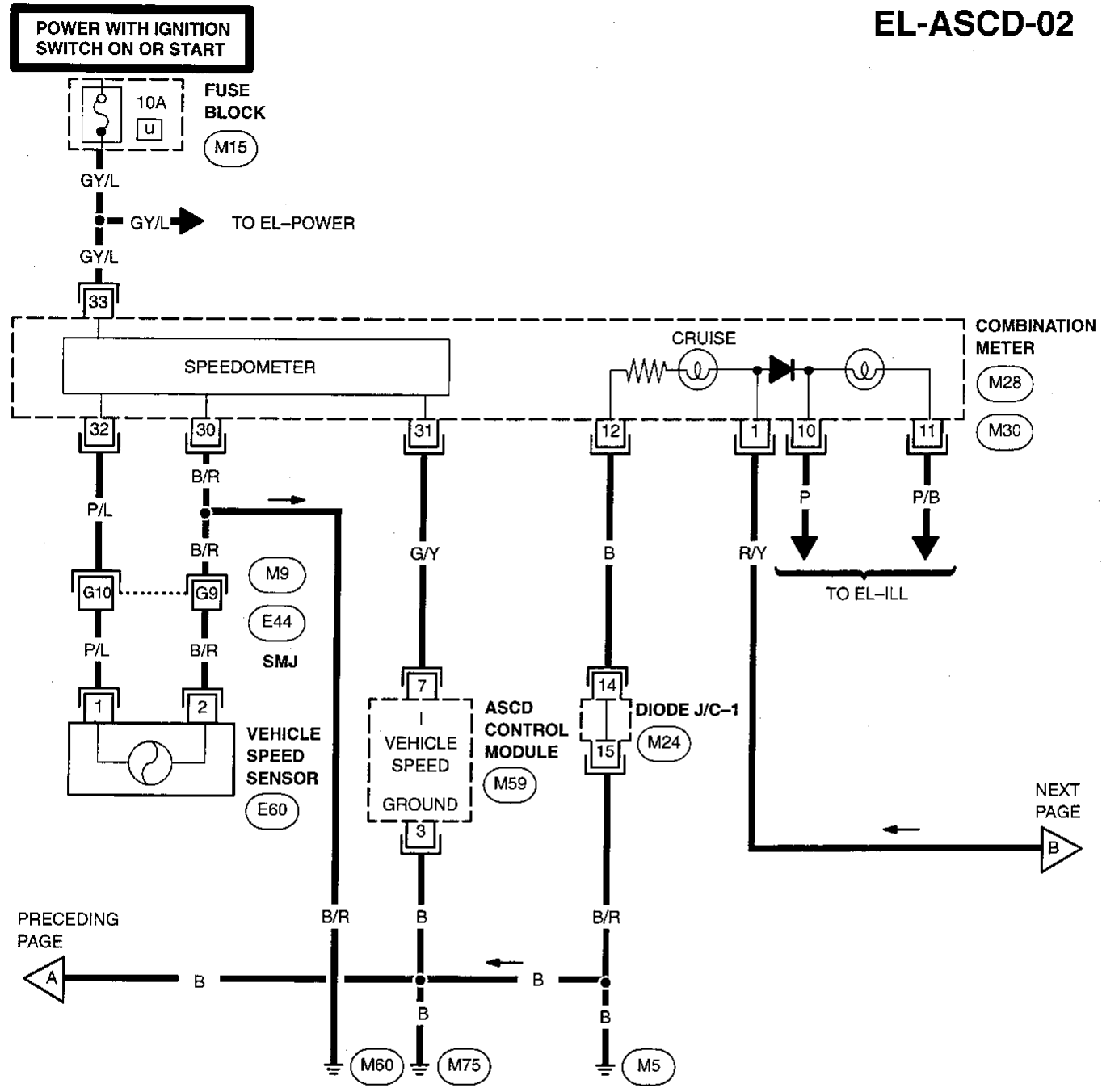




AEL332-A

Wiring Diagram –ASCD– (Cont'd)

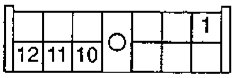
EL-ASCD-02



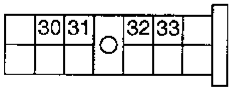
Refer to POWER SUPPLY ROUTING in EL Section. M15

Refer to Foldout Page in EL Section for details. M9 E44

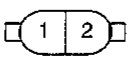
Refer to Foldout Page in EL Section for details. M24



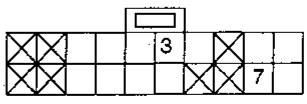
M28



M30



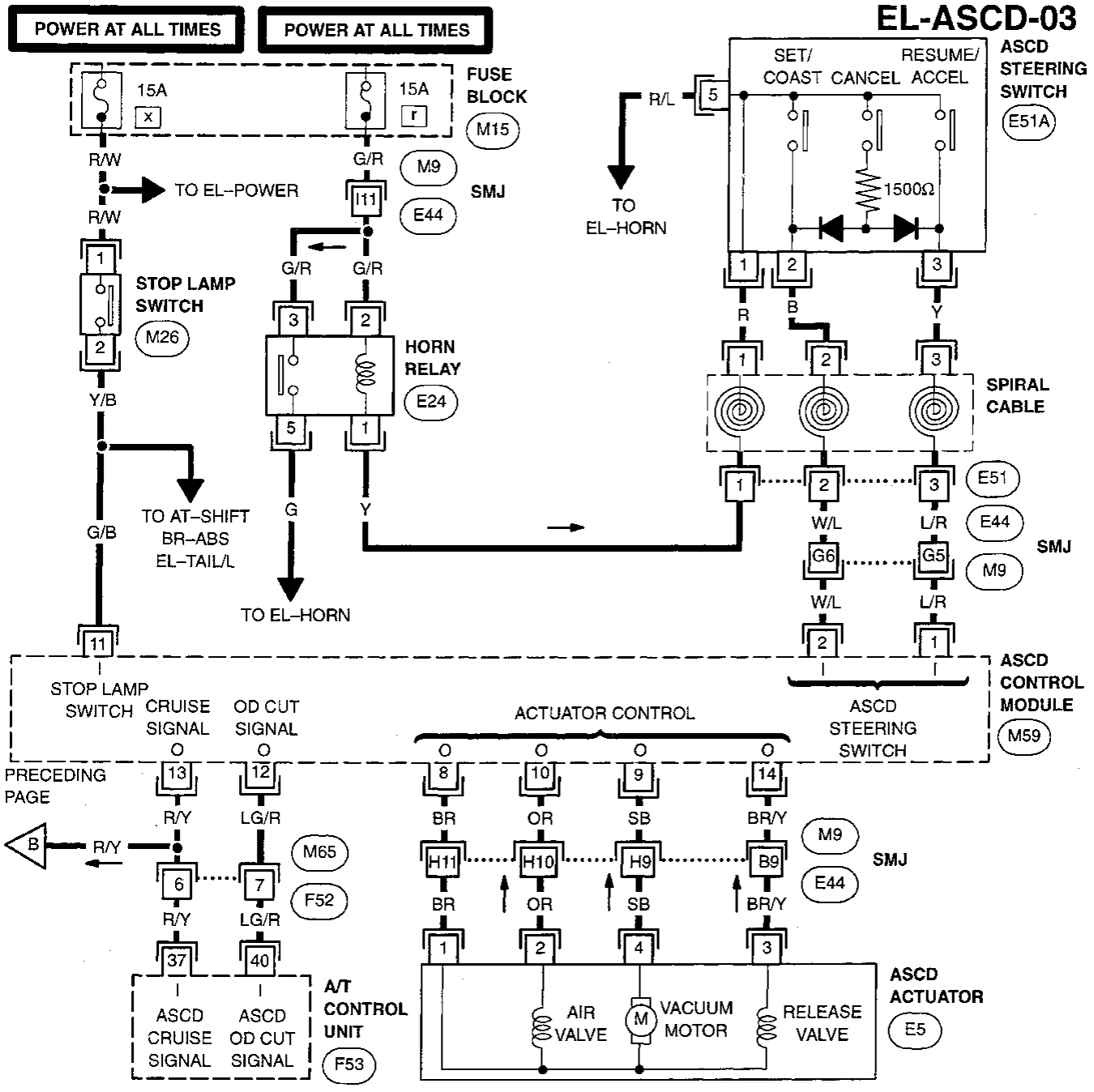
E60



M59

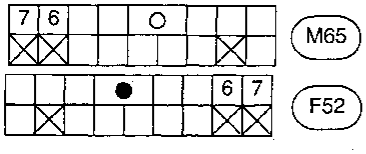
AEL332-B

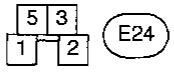
Wiring Diagram –ASCD– (Cont'd)

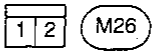


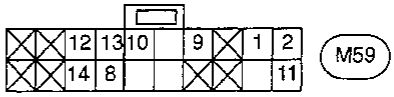
Refer to POWER SUPPLY ROUTING in EL Section. M15

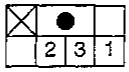
Refer to Foldout Page in EL Section for details. M9 E44

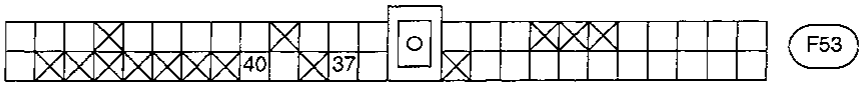


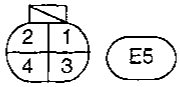


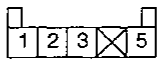












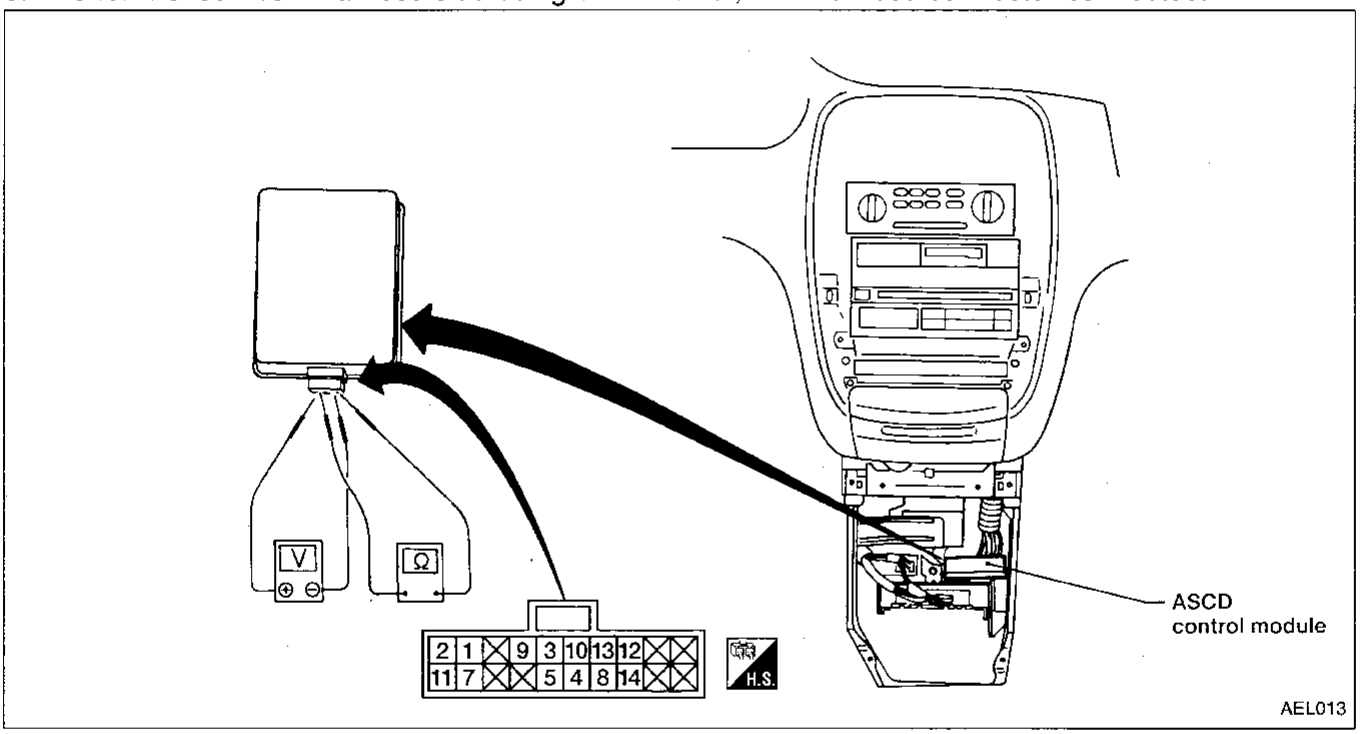
AEL332-C

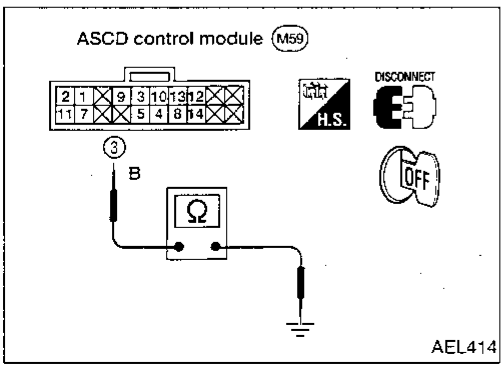
Trouble Diagnoses

Symptom	DIAGNOSTIC PROCEDURE
ASCD control module cannot be set properly.	1
Resume switch will not operate.	2
Cancel switch will not operate.	3
Engine hunts.	4
Large difference between set vehicle speed and actual speed.	5
Set speed cannot be cancelled.	6

PREPARATION FOR TROUBLE-DIAGNOSIS

1. Remove lower trim.
2. Remove ASCD control module with harness connected.
3. Perform check from harness side using circuit tester, with harness connector connected.





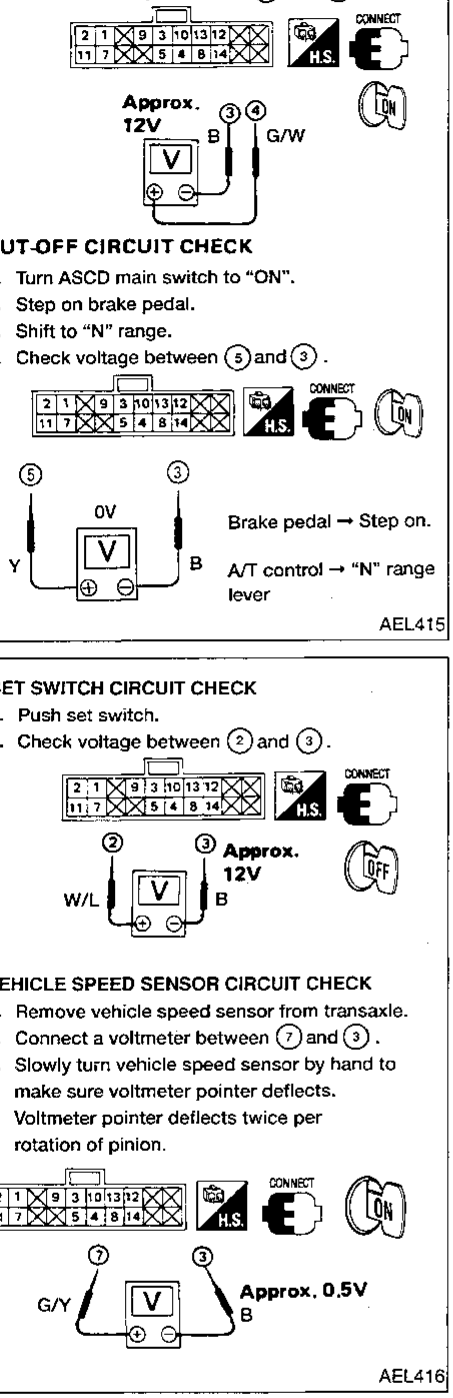
GROUND CIRCUIT CHECK

Check for continuity between ASCD control module harness connector terminal ③ and body ground.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE-1

ASCD control module cannot be set properly.



Turn ASCD main switch "OFF" and then "ON" to make sure indicator illuminates.
- NG → Check indicator bulb, ASCD main switch and ASCD hold relay.
- OK ↓

A Check power supply circuit for ASCD control module.
- NG → Check ASCD power supply harness.
- OK ↓

B Check cut-off circuit for ASCD control module.
- NG → Check ASCD cancel switch, inhibitor relay and inhibitor switch.
- OK ↓

C Check set switch circuit for ASCD control module.
- NG → Check set switch and harness between ASCD control module and set switch.
- OK ↓

D Check vehicle speed sensor circuit.
- NG → Check vehicle speed sensor and harness between ASCD control module and vehicle speed sensor signal output terminal of combination meter.
- OK ↓

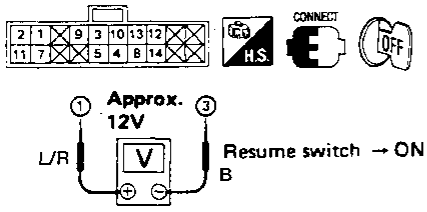
Check actuator. Go to EL-159.
- NG → Replace actuator.
- OK ↓

Replace ASCD control module.

Trouble Diagnoses (Cont'd)

A RESUME SWITCH CIRCUIT CHECK

1. Push resume switch.
2. Check voltage between ① and ③.



AEL417

DIAGNOSTIC PROCEDURE-2

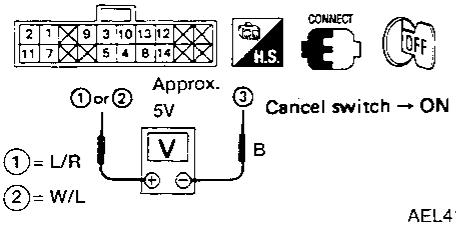
Resume switch will not operate.

A

Check resume switch circuit for ASCD control module.
- NG → Check resume switch and harness between ASCD control module and resume switch.
- OK → Replace ASCD control module.

B CANCEL SWITCH CIRCUIT CHECK

1. Push cancel switch.
2. Check voltage between ② and ③ or ① and ③.



AEL418

DIAGNOSTIC PROCEDURE-3

Cancel switch will not operate.

B

Check cancel switch circuit for ASCD control module.
- NG → Check cancel switch and harness between ASCD control module and cancel switch.
- OK → Replace ASCD control module.

DIAGNOSTIC PROCEDURE-4

Engine hunts.

Check vacuum hose for breakage, cracks or fracture.
- NG → Repair or replace hose.
- OK ↓

Does ASCD wire move smoothly?
- NG → Repair or replace wire.
- OK ↓

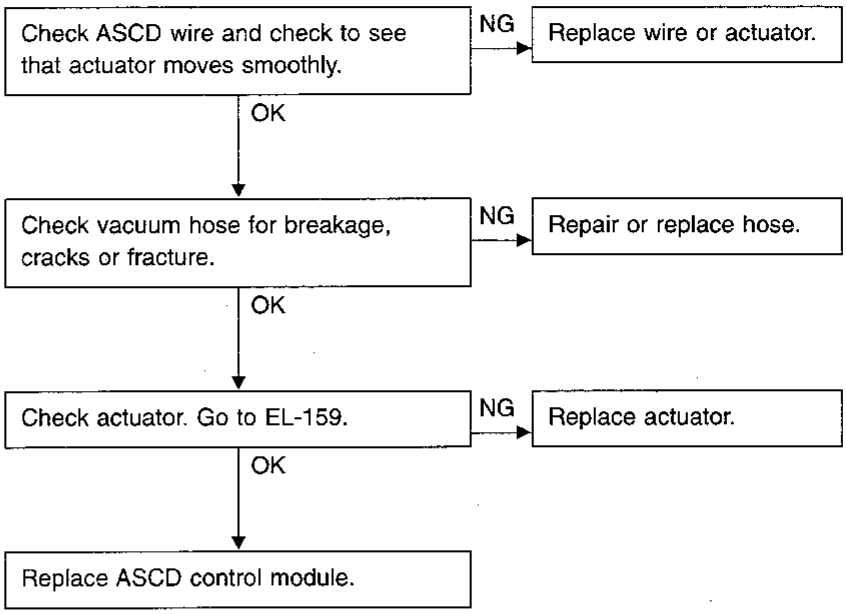
Check actuator. Go to EL-159.
- NG → Replace actuator.
- OK ↓

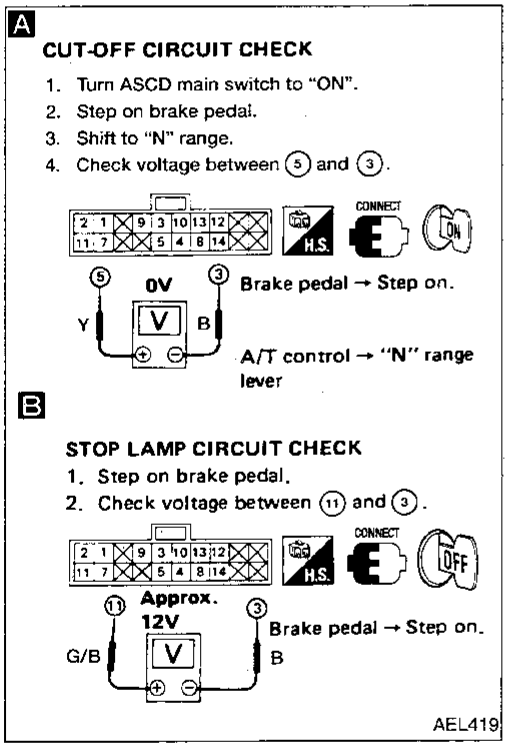
Replace ASCD control module.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE-5

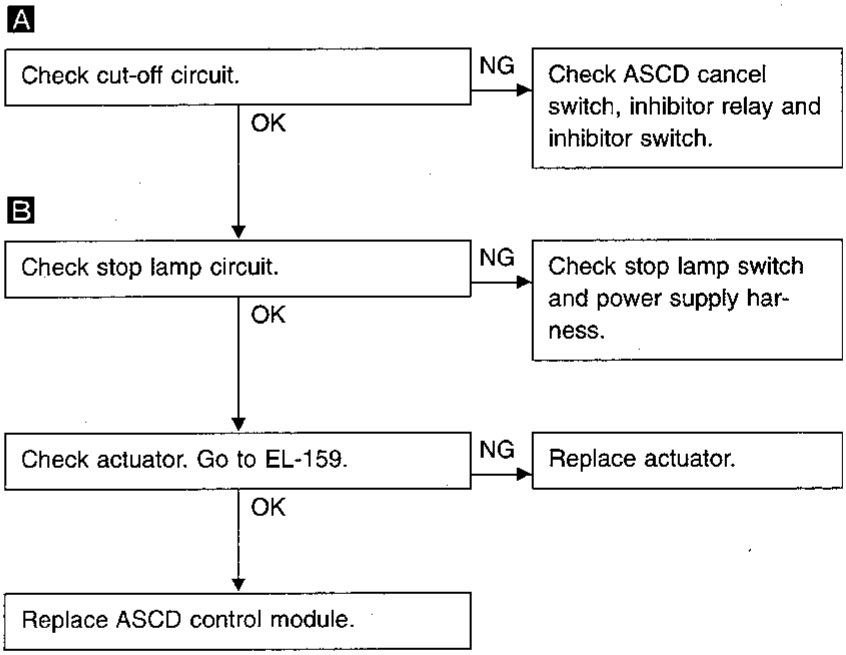
Large difference between set vehicle speed and actual speed.





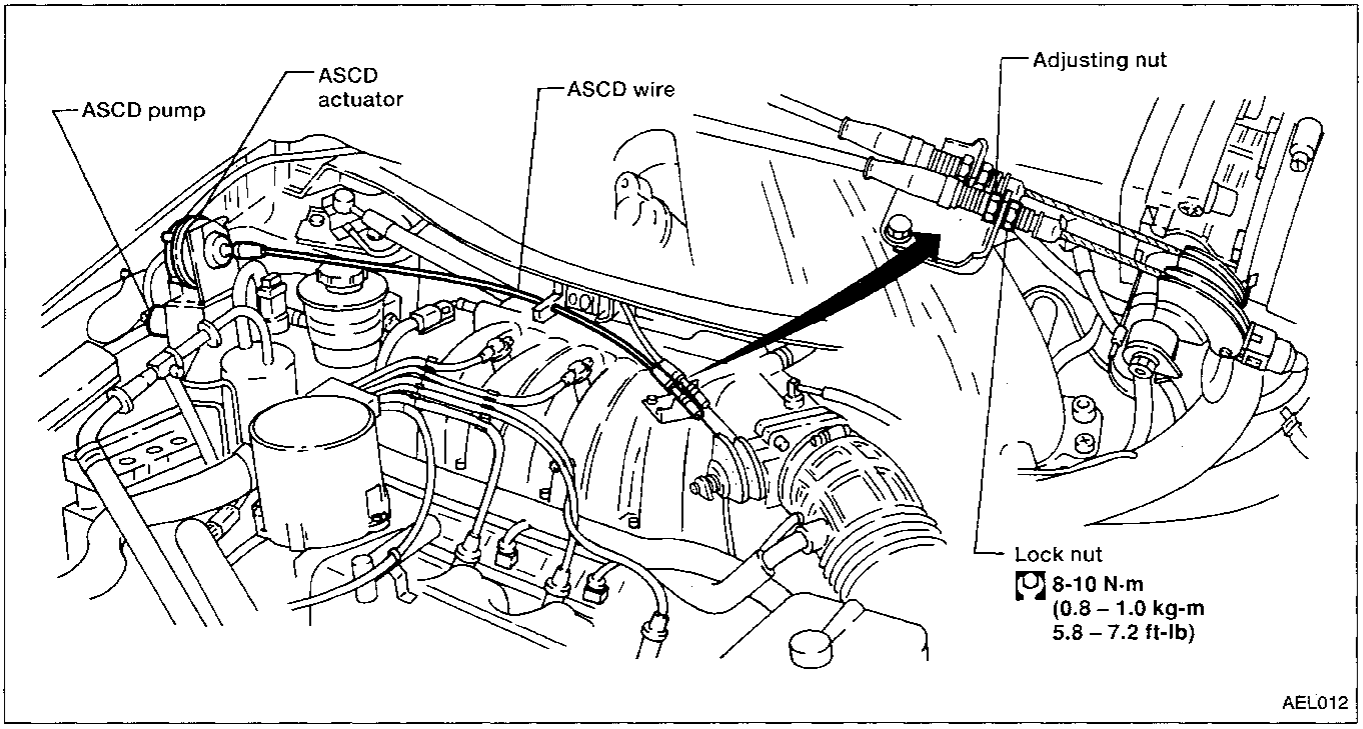
DIAGNOSTIC PROCEDURE-6

Set speed cannot be canceled.



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.

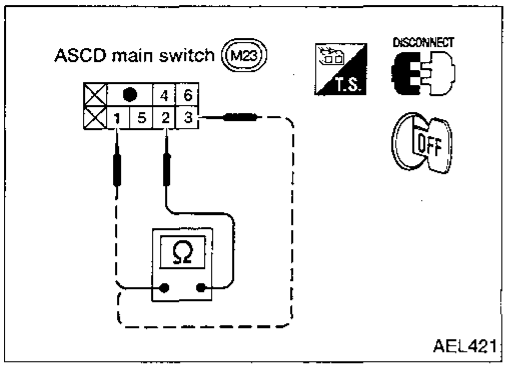
(1) Loosen lock nut and tighten adjusting nut until throttle drum starts to move.

(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 adjustment, refer to BR section ("Adjustment", "BRAKE PEDAL AND BRACKET").**

Trouble Diagnoses (Cont'd)

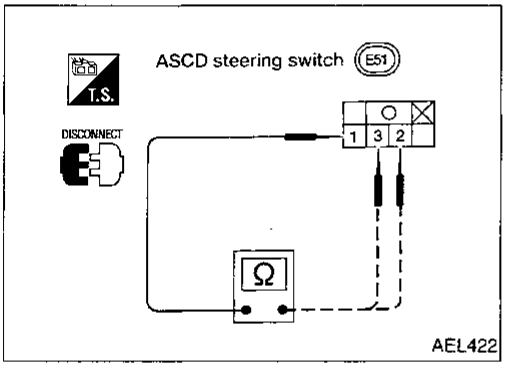
ELECTRICAL COMPONENTS INSPECTION



ASCD main switch

Check continuity between terminals by pushing switch to each position.

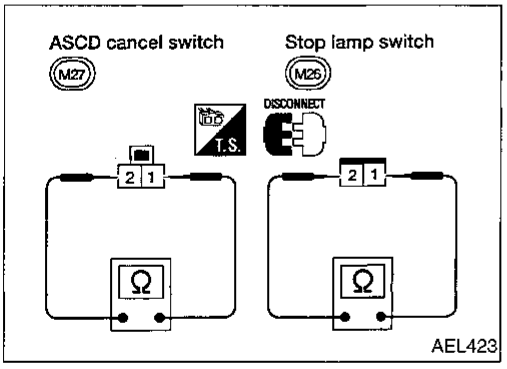
Switch position	Terminal					
	1	2	3	4	5	6
ON	○	○	○	○		
N			○	○	ILL. ○	○
OFF						



ASCD steering switch

Check continuity between terminals by pushing each button.

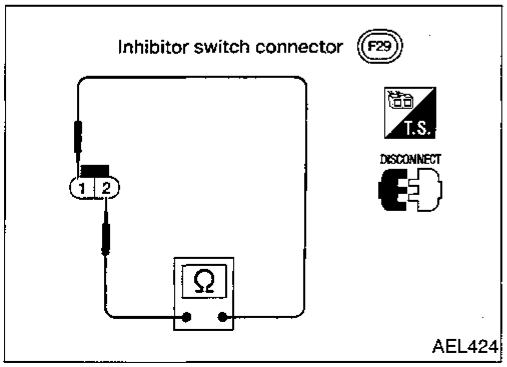
Button	Terminal		
	1	2	3
SET/COAST	○	○	
RESUME/ACCEL	○		○
CANCEL	○	R	
	○	R	○



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

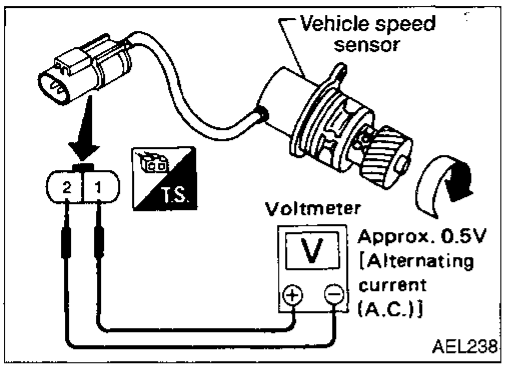
Check each switch after adjusting brake pedal — refer to BR section ("Adjustment", "BRAKE PEDAL AND BRACKET").



Inhibitor switch

Shift lever position	Terminal	
	1	2
"P" or "N"	○	○
Except "N" or "P"		

Trouble Diagnoses (Cont'd)



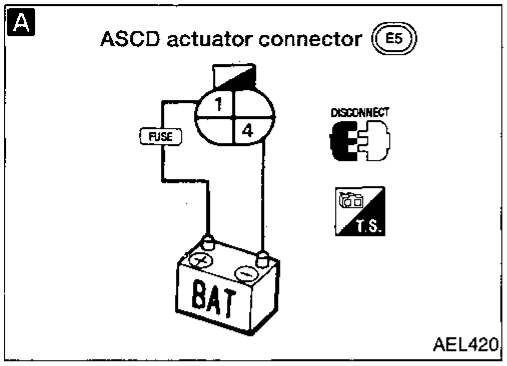
Vehicle speed sensor

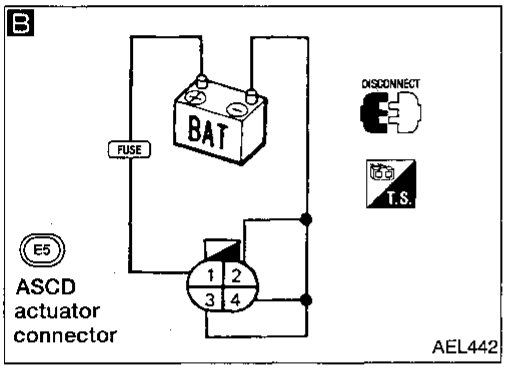
1 Remove vehicle speed sensor from transaxle.
2. Turn vehicle speed sensor pinion quickly and measure voltage across ② and ①.

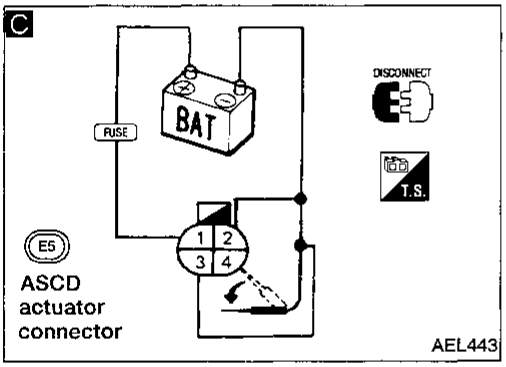
Trouble Diagnoses (Cont'd)

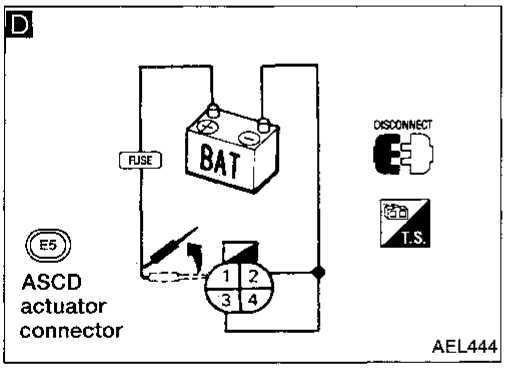
ASCD actuator/ASCD pump

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









A

Does motor operate when 12V DC is applied across ① and ④?

No → Replace ASCD actuator assembly.

Yes ↓

B

Is ASCD wire pulled when 12V DC is applied across ①, ②, ③ and ④?

No → Replace ASCD actuator assembly.

Yes ↓

C

Does ASCD wire return to original position 50 to 60 seconds after disconnecting lead from ④?

Yes → Replace ASCD actuator assembly.

No ↓

D

Disconnect lead from ①. Does ASCD wire return immediately?

No → Replace ASCD actuator assembly.

Yes ↓

ASCD actuator/ASCD pump are OK.

System Description

Refer to Owner's Manual for digital touch entry system operating instructions.
Power is supplied at all times:

- through circuit breaker-1 terminal ②
- to digital touch entry control module terminal ㉔, and
- through 10A fuse (Letter [m], located in the fuse block)
- to digital touch entry control module terminal ②, and
- through 15A fuse (Letter [y], located in the fuse block)
- to digital touch entry system beeper terminal ①.

Ground is supplied:

- to digital touch entry control module terminals ⑫ and ㉓
- through body grounds (M5), and (M75).

KEYBOARD OPERATION

Ground is supplied:

- to keyboard terminal ⑦
- through body grounds (M5) and (M75).

When a keyboard pad is pressed, ground is supplied:

- to digital touch entry control module terminal ⑤, ⑥, ⑦, ⑧ or ⑨.

Power is then supplied:

- from digital touch entry control module terminal ⑳
- to keyboard terminal ⑥ for illumination.

Ground is supplied:

- to beeper terminal ②
- from digital touch entry control module terminal ⑱, causing the beeper to sound each time a keyboard pad is pressed.

UNLOCK

After the vehicle's personal entry code has been entered, power is supplied:

- from digital touch entry control module terminal ㉕
- to the front door actuator terminal ②.

Ground is supplied:

- to the front door actuator terminal ①
- through digital touch entry control module terminal ㉑.

With power and ground supplied, the door actuator operates and unlocks the LH front door.
If terminal ⑥ of the digital touch entry control module is grounded (by pressing the 3/4 keyboard pad) within 5 seconds of the vehicle's personal entry code being entered, power is supplied:

- from digital touch entry control module terminal ㉘
- to the RH front door actuator terminal ②, and
- to the sliding door actuator terminal ②.

Ground is supplied:

- to the RH front door actuator terminal ①, and
- to the sliding door actuator terminal ①
- from digital touch entry control module terminal ㉑.

With power and ground supplied, the door actuators operate and unlock the RH front door and the sliding door.
If terminal ⑦ of the digital touch entry control module is grounded (by pressing the 5/6 keyboard pad) within 5 seconds of the vehicle's personal entry code being entered, power is supplied:

- from digital touch entry control module terminal ㉒
- to the back door actuator terminal ②.

Ground is supplied:

- to the back door actuator terminal ①
- from digital touch entry control module terminal ㉑.

With power and ground supplied, the door actuator operates and unlocks the back door.
When either door lock and unlock switch is pressed to the UNLOCK position, ground is supplied:

- to digital touch entry control module terminal ⑲
- from the lock and unlock switch terminal ②.

System Description (Cont'd)

When the digital touch entry control module receives this ground input, power is supplied:
- from digital touch entry control module terminal ㉕
- to the LH front door actuator terminal ②, and
- from digital touch entry control module terminal ㉘
- to the RH front door actuator terminal ② and
- to sliding door actuator terminal ②, and
- from digital touch entry control module terminal ㉒
- to the back door actuator terminal ②.

Ground is supplied:
- from digital touch entry control module terminal ㉑
- to each door actuator terminal ①.

With power and ground supplied, the door actuators operate and unlock all doors.

LOCK

When ground is supplied to the digital touch entry control module terminals ⑧ and ⑨ simultaneously (by pressing the 7/8 and 9/0 keyboard pads); if the key is out of the ignition switch, and all the doors are closed, power is supplied:
- from digital touch entry control module terminal ㉑
- to each door actuator terminal ①.

Ground is supplied:
- to the LH front door actuator terminal ②
- from digital touch entry control module terminal ㉕, and
- to the RH front door actuator terminal ②, and
- to the sliding door actuator terminal ②
- from digital touch entry control module terminal ㉘, and
- to the back door actuator terminal ②
- from digital touch entry control module terminal ㉒.

With power and ground supplied, the door actuators operate and lock all doors.

When ground is supplied to the digital touch entry control module terminals ⑧ and ⑨ simultaneously; if the key is in the ignition switch, or any door is open, ground is supplied:
- to the beeper terminal ②
- from digital touch entry control module terminal ⑱, causing the beeper to sound for approximately 5 seconds.

When either door lock and unlock switch is pressed to the LOCK position, ground is supplied:
- to digital touch entry control module terminal ⑩
- from the lock and unlock switch terminal ①.

When the door key or lock knob switch is moved to the LOCK position, ground is removed:
- from the digital touch entry control module terminal ⑪
- through the front door actuator LH terminal ③.

When the digital touch entry control module receives either of these inputs, power is supplied:
- from digital touch entry control module terminal ㉑
- to each door actuator terminal ①.

Ground is supplied:
- to the LH front door actuator terminal ②
- from digital touch entry control module terminal ㉕, and
- to the RH front door actuator terminal ②, and
- to the sliding door actuator terminal ②
- from digital touch entry control module terminal ㉘, and
- to the back door actuator terminal ②
- from digital touch entry control module terminal ㉒.

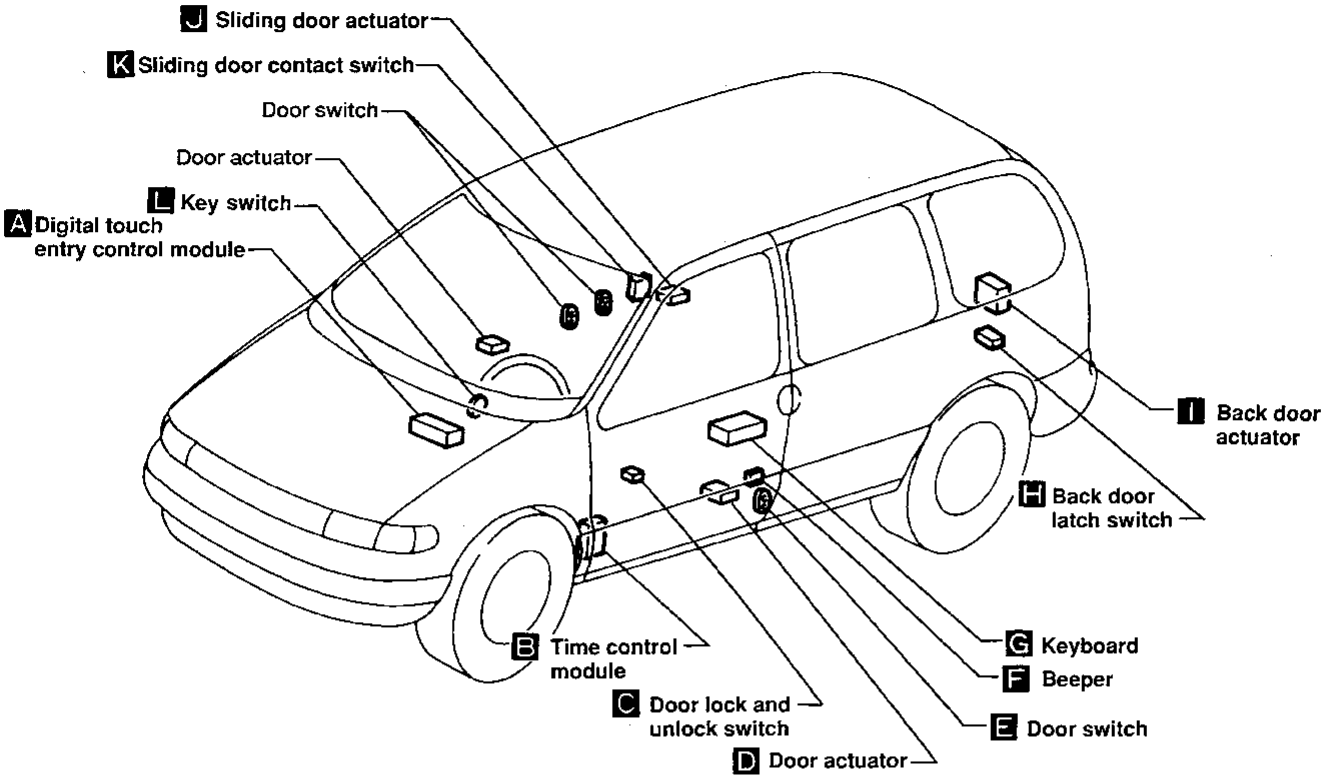
With power and ground supplied, the door actuators operate and lock all doors.

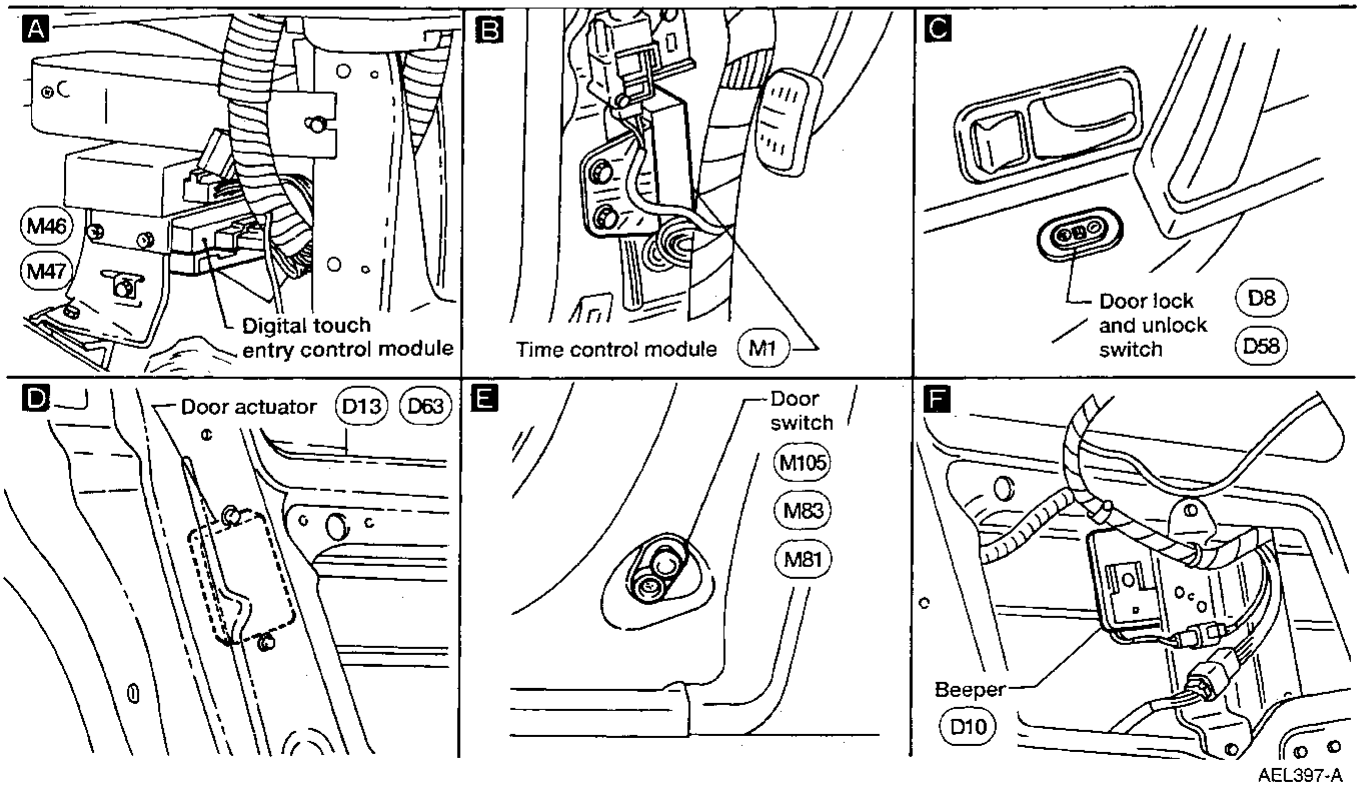
LOCK – sliding door delay

When any door lock switch is pressed to the LOCK position, with the sliding door open, all door lock actuators, except the sliding door lock actuator, move to the LOCK position.

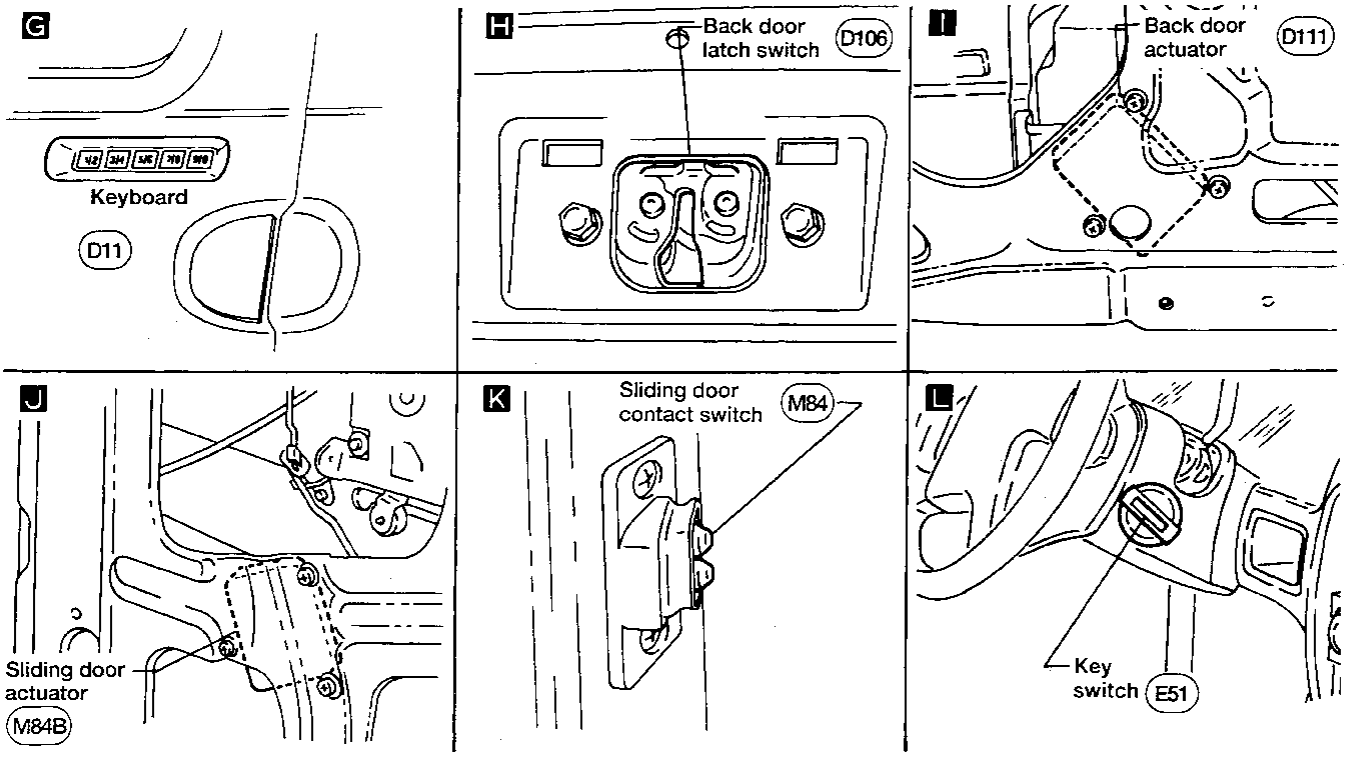
When the sliding door is closed, the time control module sends a signal to the digital touch entry control module terminal ㉗. The digital touch entry control module then operates the sliding door actuator and the sliding door locks.

Location of Electrical Units





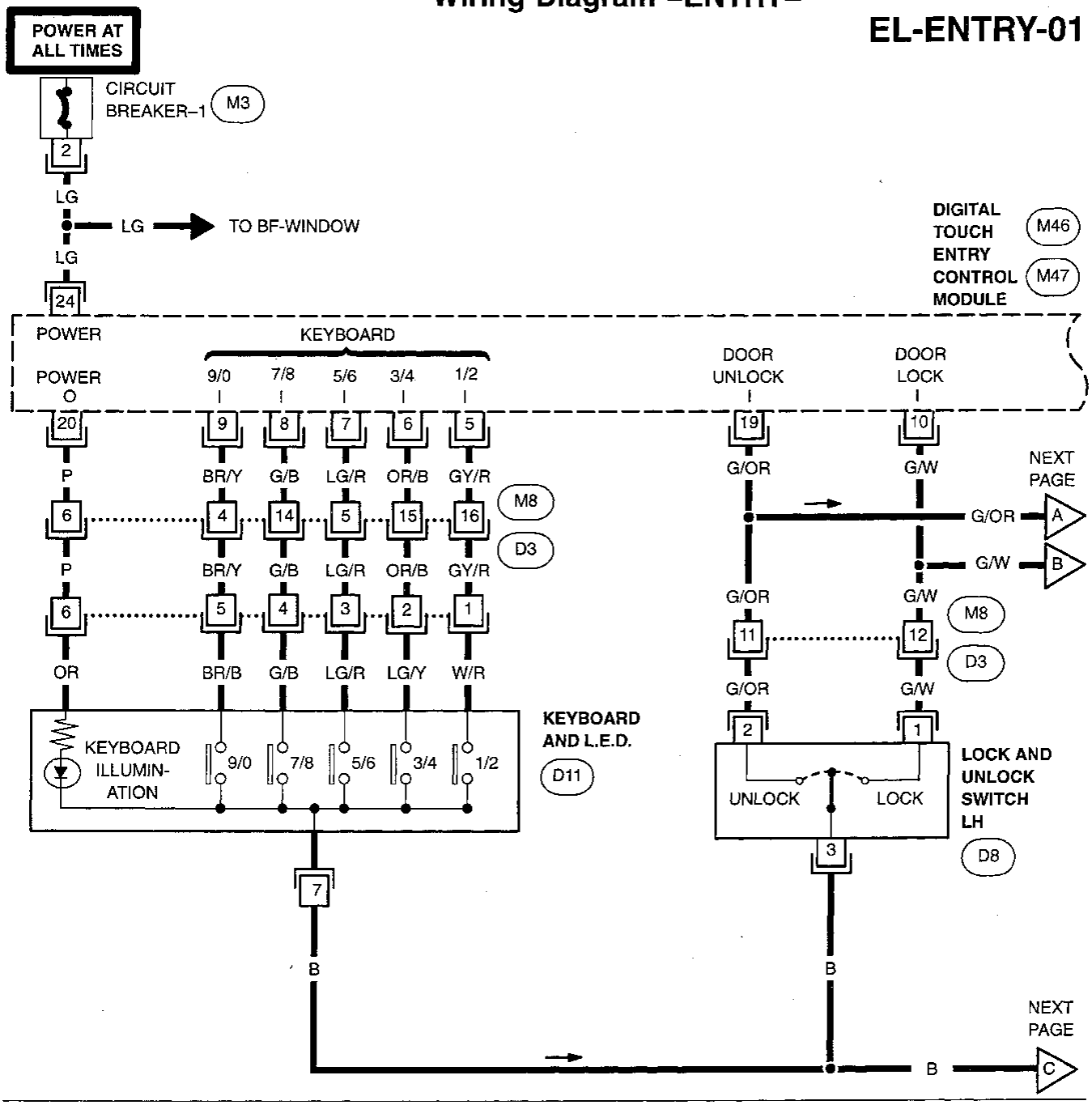
Location of Electrical Units (Cont'd)

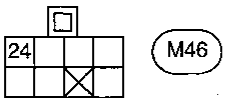


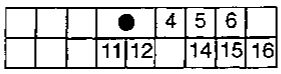
AEL397-B

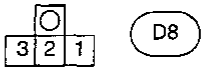
Wiring Diagram –ENTRY–

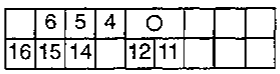
EL-ENTRY-01

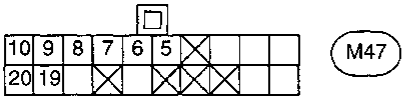


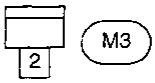


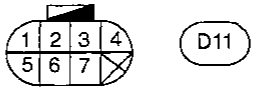






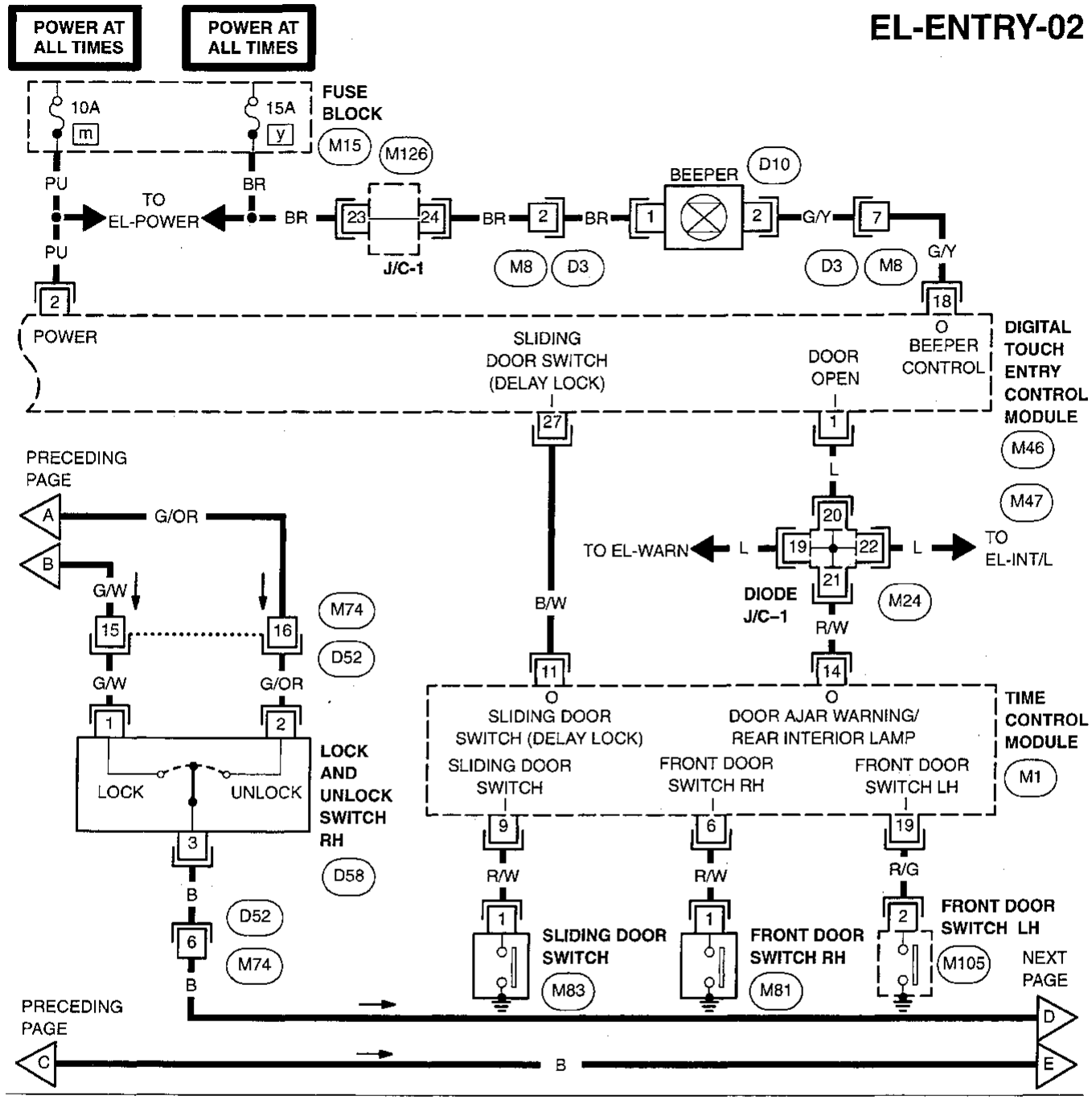






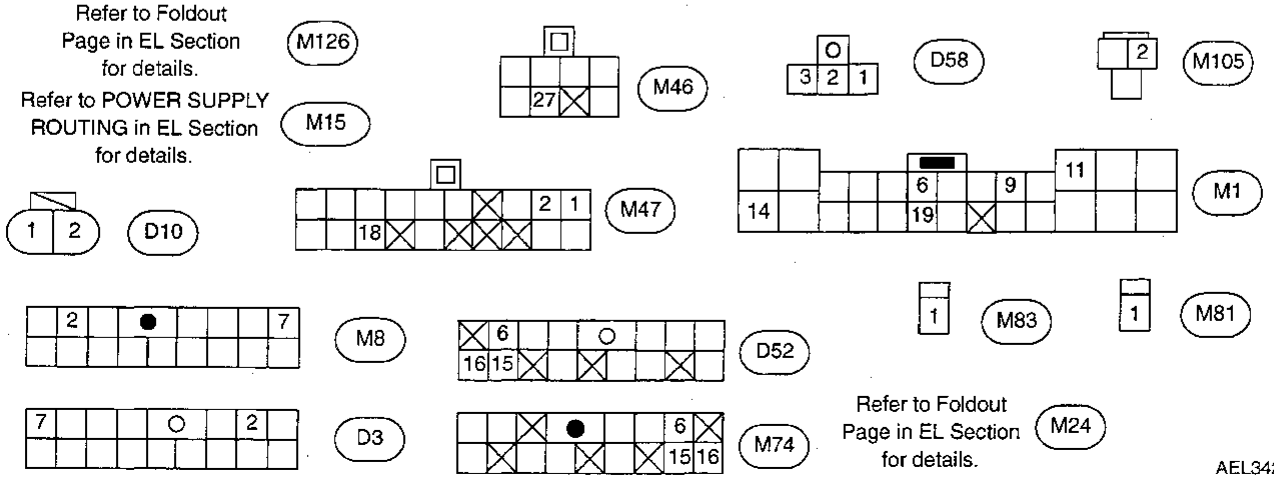
AEL342-A

Wiring Diagram –ENTRY– (Cont'd)



Refer to Foldout Page in EL Section for details.

Refer to POWER SUPPLY ROUTING in EL Section for details.

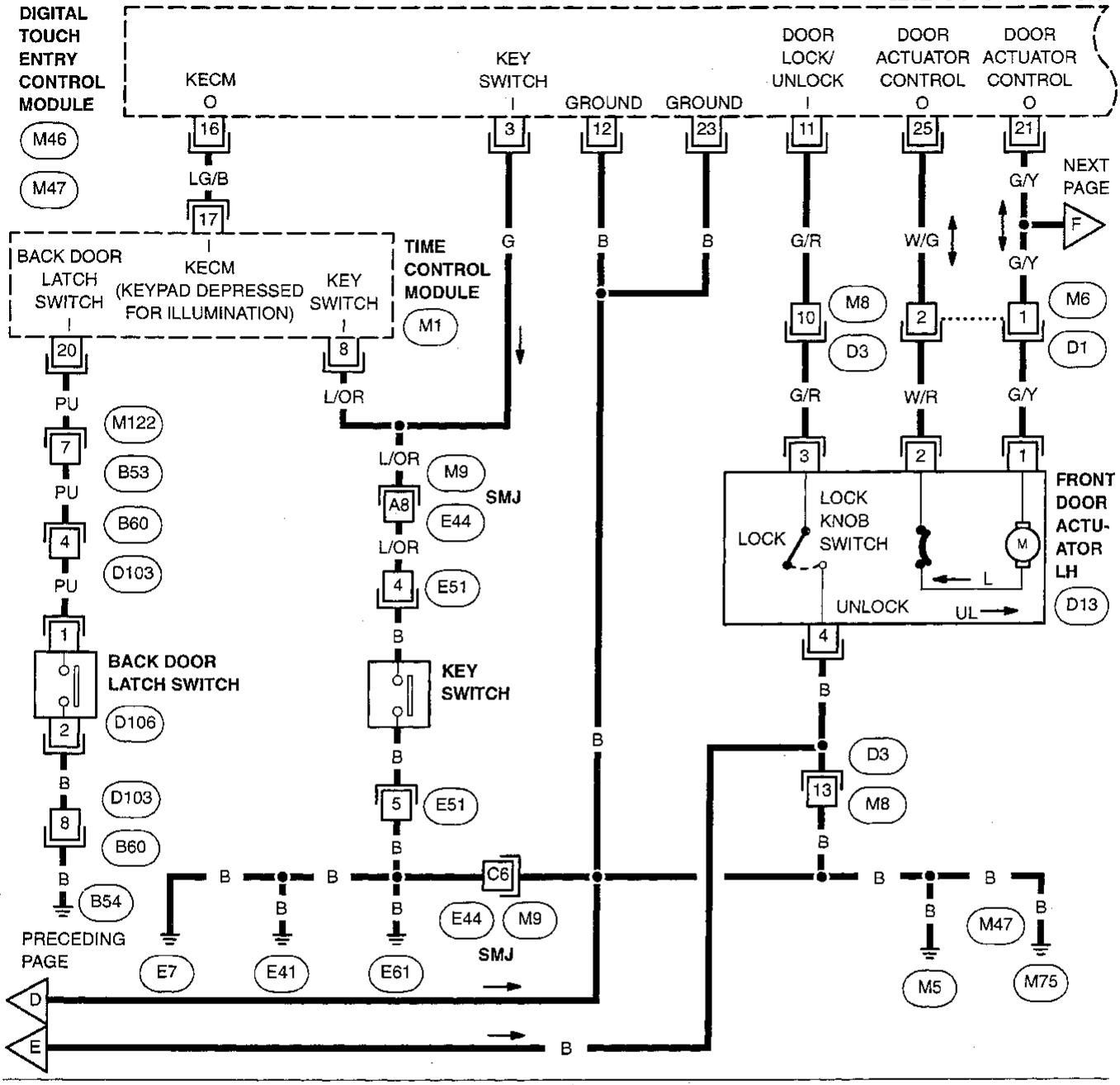


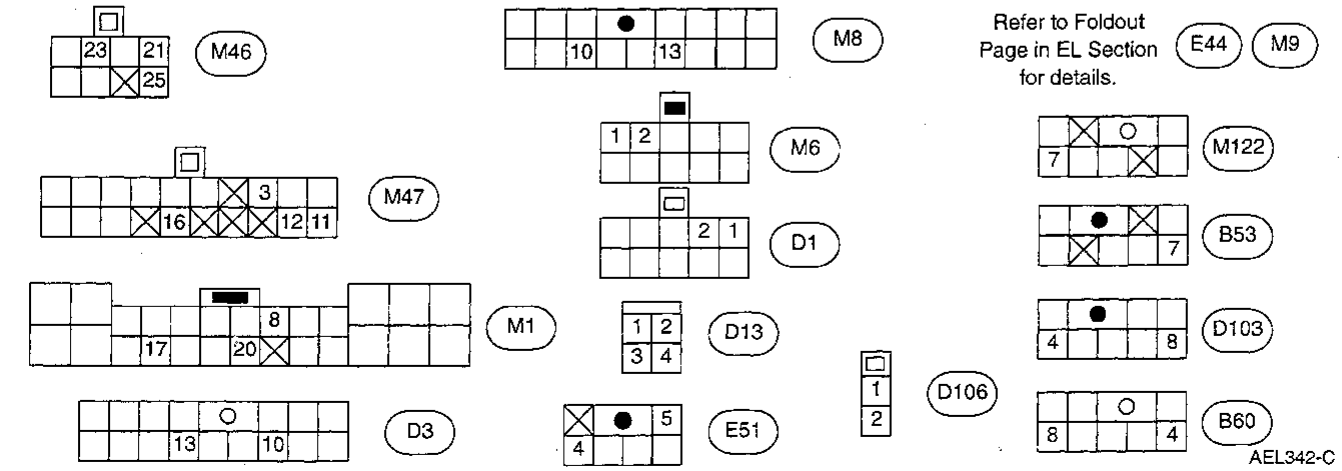
Refer to Foldout Page in EL Section for details.

AEL342-B

Wiring Diagram –ENTRY– (Cont'd)

EL-ENTRY-03

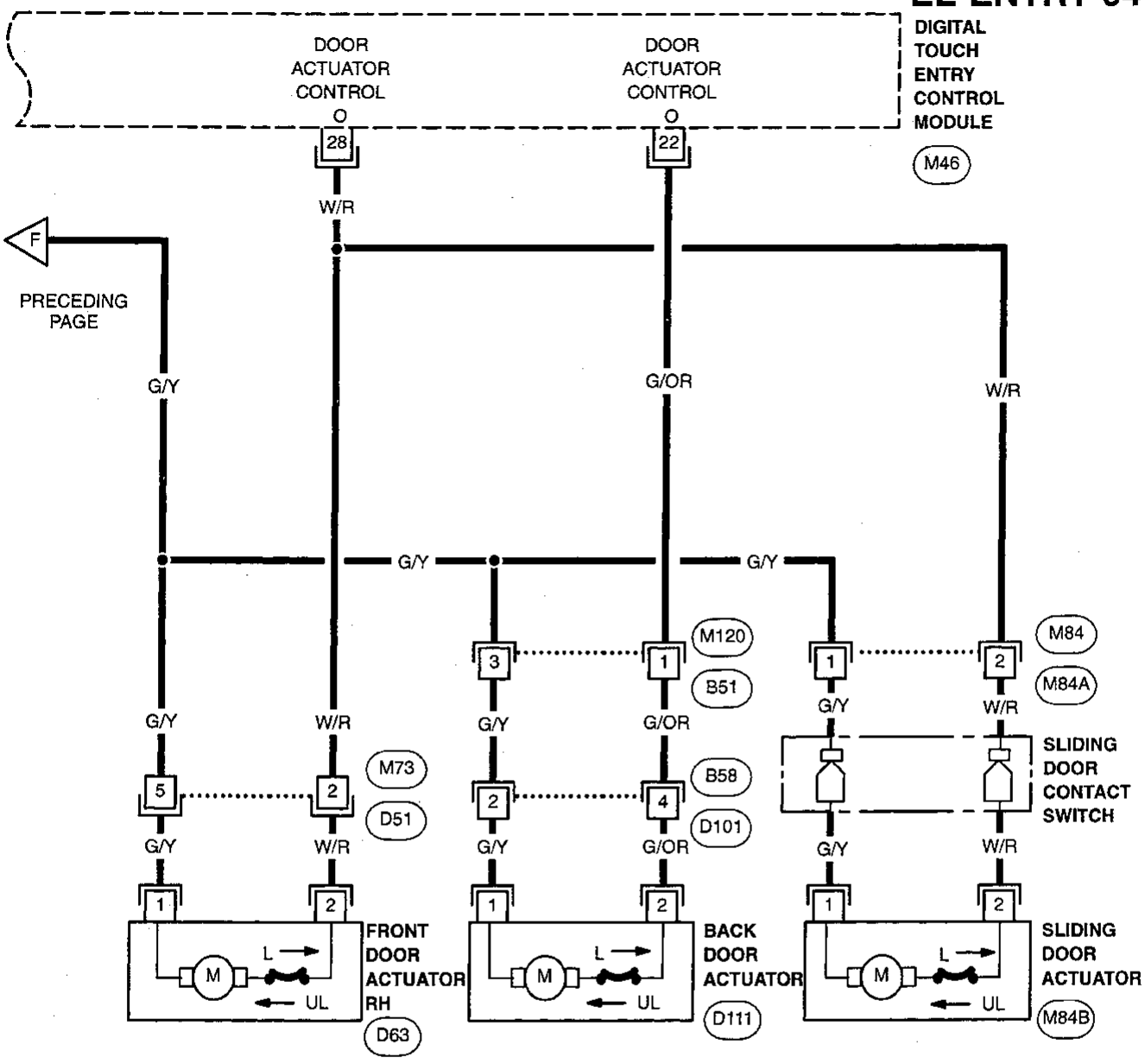


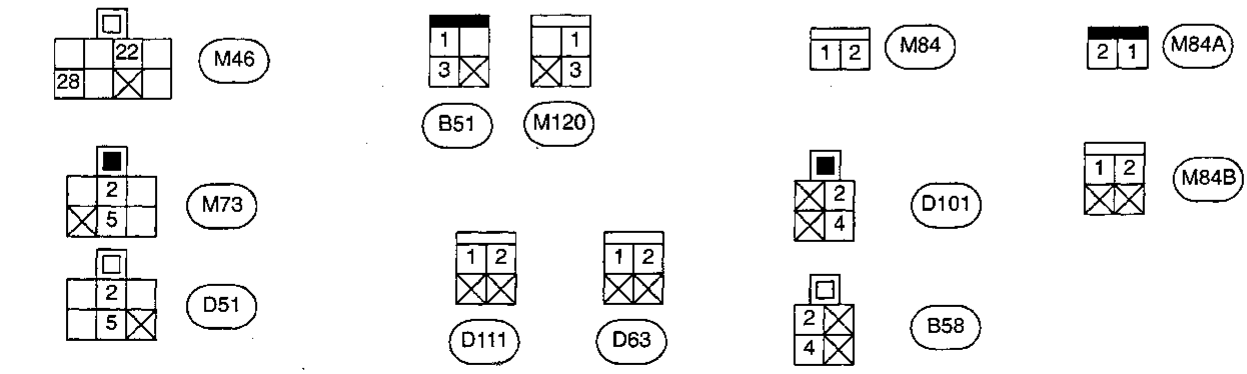


AEL342-C

Wiring Diagram –ENTRY– (Cont'd)

EL-ENTRY-04



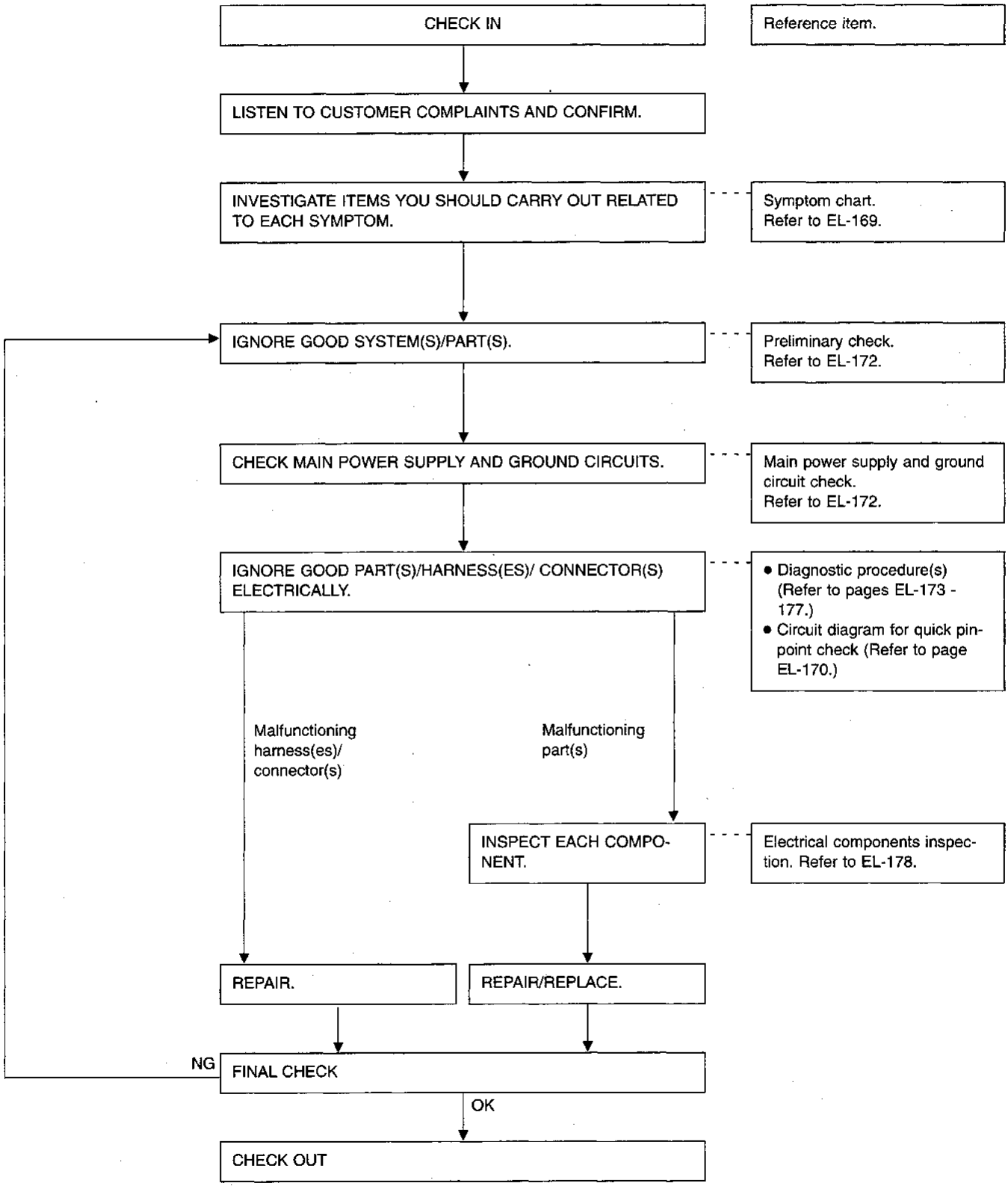


AEL342-D

Trouble Diagnoses

HOW TO PERFORM TROUBLE DIAGNOSES FOR QUICK AND ACCURATE REPAIR

Work flow



Trouble Diagnoses (Cont'd)
SYMPTOM CHART

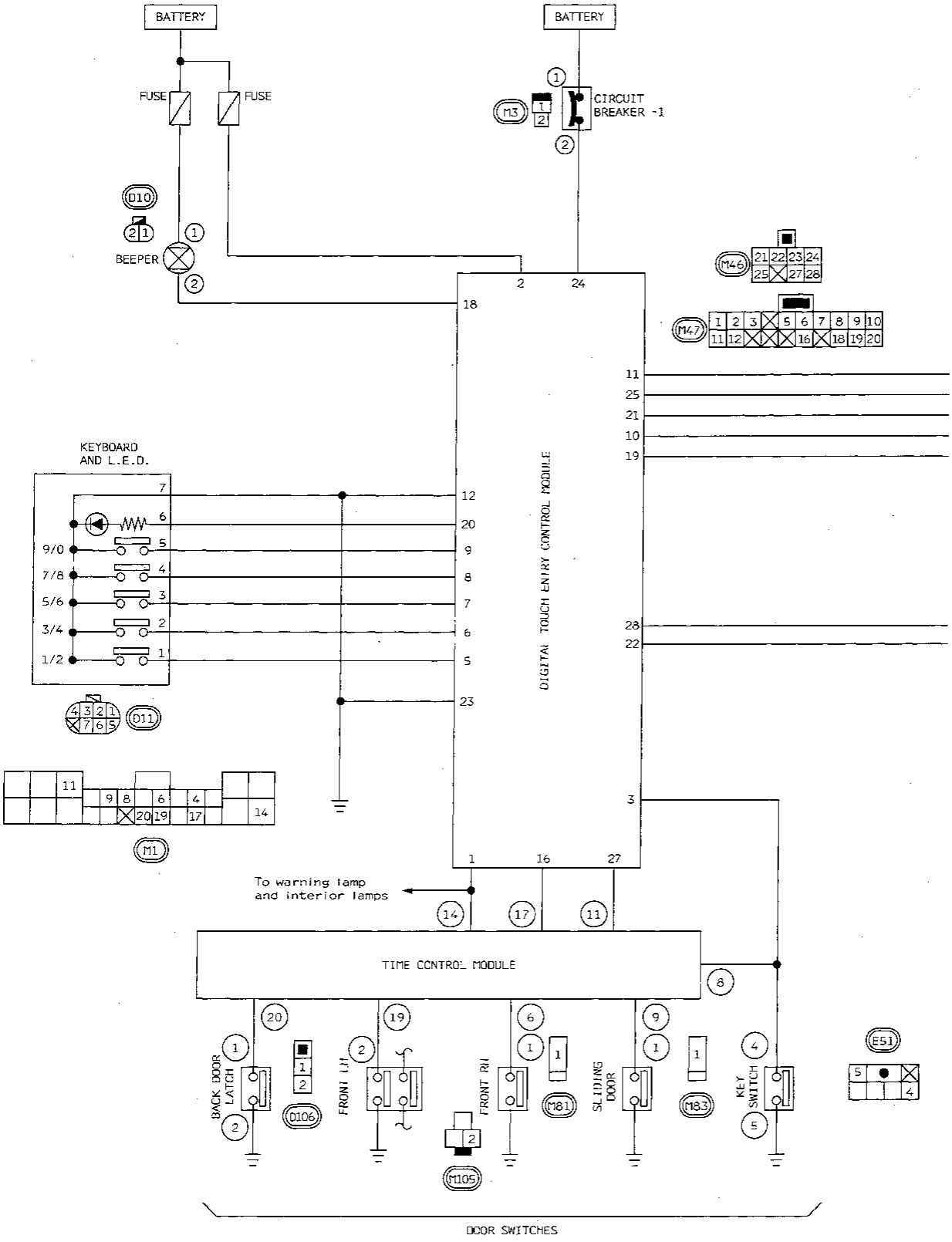
Diagnostic table

PROCEDURE	Preliminary Check		Main Power Supply and Ground Circuit Check		Diagnostic Procedure						Electrical Components Inspection					
REFERENCE PAGE	EL-172	EL-172	EL-172	EL-172	EL-173	EL-174	EL-175	EL-176	EL-176	EL-177	EL-178	EL-178	EL-178	EL-179	EL-179	EL-180
SYMPTOM	Preliminary check 1	Preliminary check 2	Power supply circuit	Ground circuit	Diagnostic procedure 1	Diagnostic procedure 2	Diagnostic procedure 3	Diagnostic procedure 4	Diagnostic procedure 5	Diagnostic procedure 6	Keyboard	Beeper	Key switch	Door switches	Lock & Unlock switches	Digital touch entry control module
When keyboard is pressed, it does not beep and light does not glow.			○	○	○						○	○				
When keyboard is pressed, it beeps but light does not glow.			○			○					○					
When keyboard is pressed, it does not beep but light glows.				○			○				○	○				
When the program code is entered, a long beep is not heard.	○							○			○	○				
After a valid personal code has been entered, registration sound (repeated beeps) is not heard even if code number is entered.	○								○							
Doors do not lock or unlock properly with keyboard operation.	①	②								○			○	○	○	○

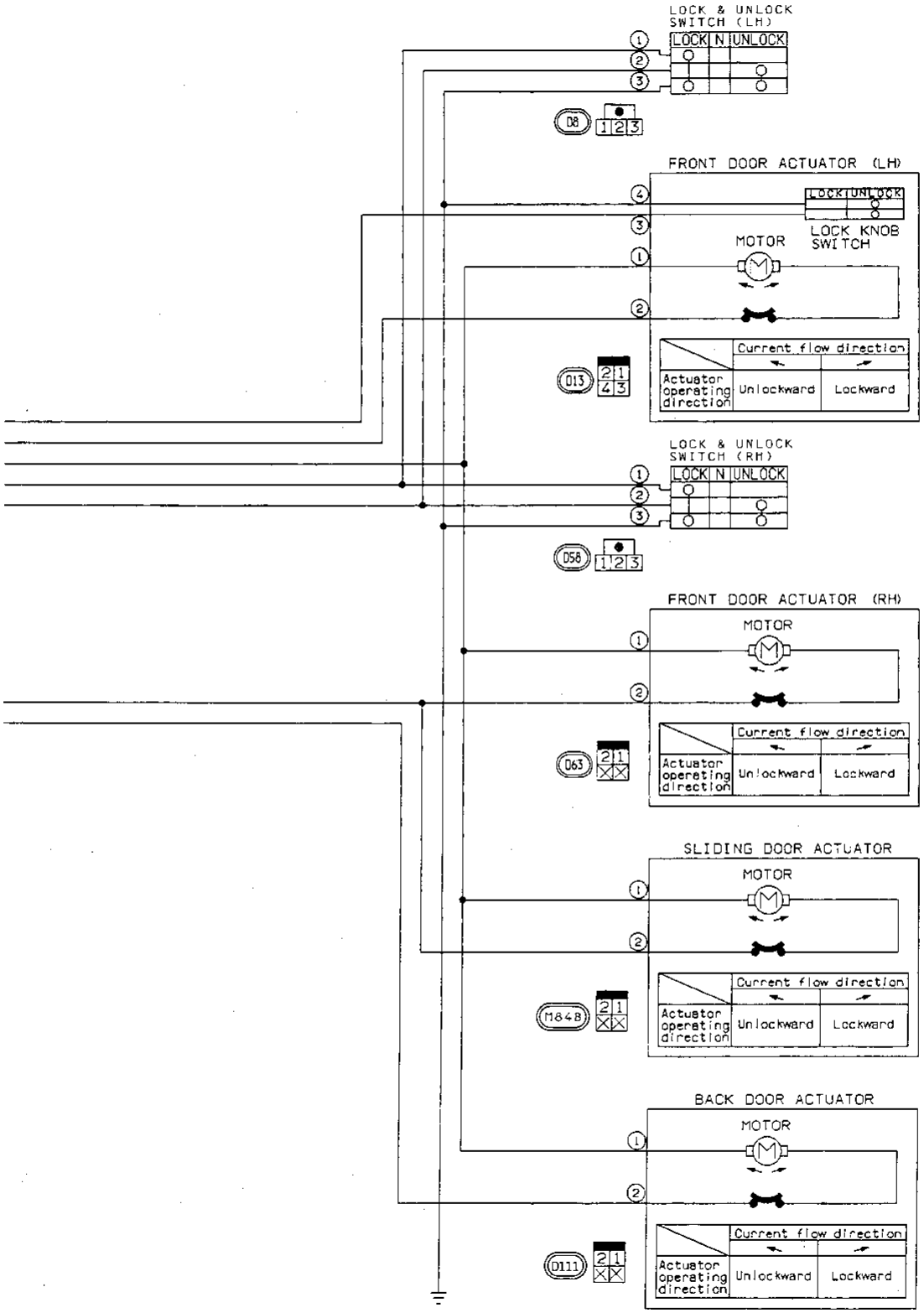
①, ②: The number means checking order.

Trouble Diagnoses (Cont'd)

CIRCUIT DIAGRAM FOR QUICK PINPOINT CHECK



AEL349-1


LOCK & UNLOCK SWITCH (LH)
LOCK
N
UNLOCK
D8
1 2 3
FRONT DOOR ACTUATOR (LH)
LOCK
UNLOCK
LOCK KNOB SWITCH
MOTOR
D13
2 1 4 3
Current flow direction
Actuator operating direction
Unlockward
Lockward
LOCK & UNLOCK SWITCH (RH)
LOCK
N
UNLOCK
D58
1 2 3
FRONT DOOR ACTUATOR (RH)
MOTOR
D63
2 1
Current flow direction
Actuator operating direction
Unlockward
Lockward
SLIDING DOOR ACTUATOR
MOTOR
M84B
2 1
Current flow direction
Actuator operating direction
Unlockward
Lockward
BACK DOOR ACTUATOR
MOTOR
D111
2 1
Current flow direction
Actuator operating direction
Unlockward
Lockward

AEL349-2

Trouble Diagnoses (Cont'd)

PRELIMINARY CHECK

Preliminary check 1

- Door lock system does not work normally with keyboard operation.

Does keyboard beeper and light work normally when keyboard is pressed?

No → Perform Diagnostic procedure 1, 2 or 3 according to the incident. Refer to EL-173, EL-174 or EL-175.

Yes → Perform Diagnostic procedure 4 to 6 according to the incident. Refer to EL-176 or EL-177.

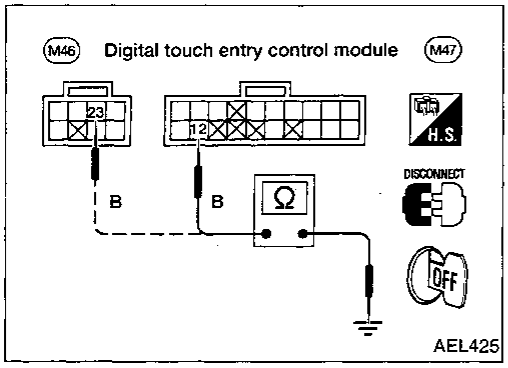
Preliminary check 2

Power door lock system does not work with keyboard operation.

Does power door lock system work with key and power door lock switch operation?

No → Refer to BF section ("Power Door Lock", "DOOR").

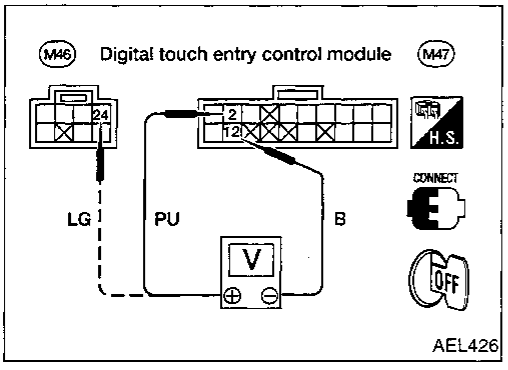
Yes → Perform Diagnostic procedure 6. Refer to EL-177.



MAIN POWER SUPPLY AND GROUND CIRCUIT CHECK

Ground circuit check for digital touch entry control module

Check for continuity between digital touch entry control module harness connector terminals ⑫ and ㉓ and body ground.



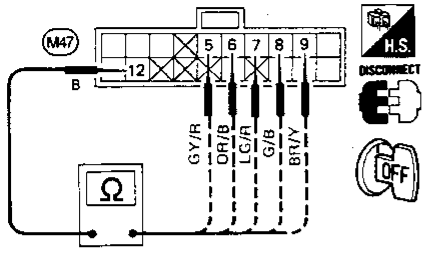
Power supply circuit check for digital touch entry control module

Check if 12V exists across digital touch entry control module harness connector terminals ②, ㉔ and ⑫.

Trouble Diagnoses (Cont'd)

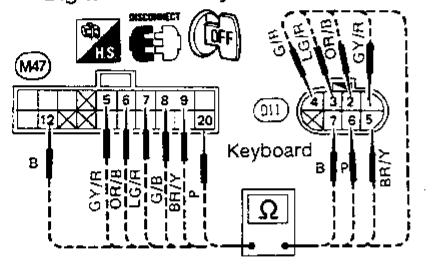
DIAGNOSTIC PROCEDURE

A Digital touch entry control module



AEL445

B Digital touch entry control module



AEL106

Diagnostic procedure 1

SYMPTOM: When keyboard is pressed, it does not beep and light does not glow.

Perform Main Power Supply And Ground Circuit Check before referring to the following flow chart.

A

Keyboard check

Check continuity between terminals No. ⑫ and ⑤, ⑥, ⑦, ⑧ and ⑨.

Pushed keyboard pad	One terminal	Other terminals				
		⑤	⑥	⑦	⑧	⑨
1/2	⑫	○				
3/4			○			
5/6				○		
7/8					○	
9/0						○

OK → Perform Diagnostic procedure 2 and 3. Refer to EL-174 and EL-175.

NG ↓

B

Check circuit continuity between each terminal on keyboard and control module.

Terminal No.		Continuity
Keyboard	control module	
①	⑤	Yes
②	⑥	
③	⑦	
④	⑧	
⑤	⑨	
⑥	⑳	
⑦	⑫	

NG → Repair harness and connector.

OK ↓

Check keyboard. Refer to EL-178.

NG ↓

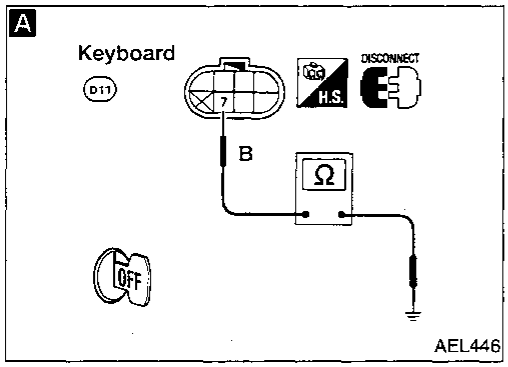
Replace keyboard.

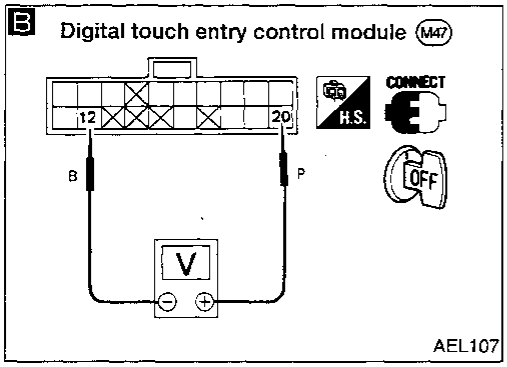
Trouble Diagnoses (Cont'd)

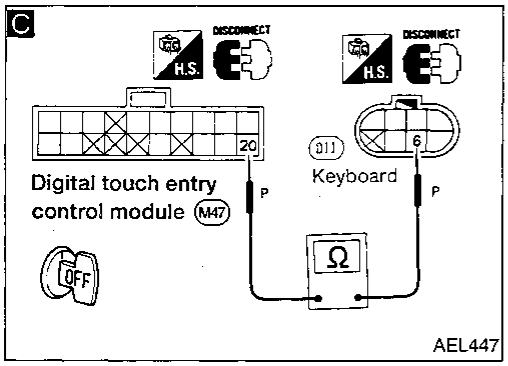
Diagnostic procedure 2

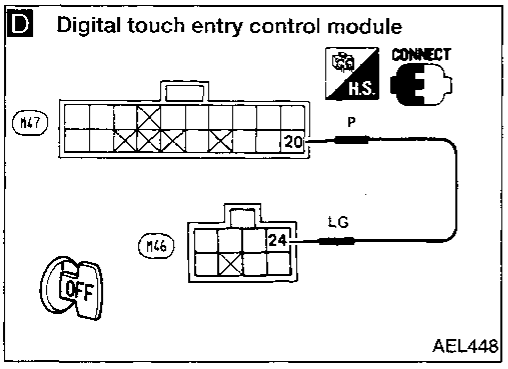
SYMPTOM: When keyboard is pressed, it beeps but light does not glow.

- Perform Main Power Supply Circuit Check before referring to the following flow chart.









A

Keyboard illumination ground circuit check	NG	Repair harness and connector.
Check for continuity between terminal No. ⑦ and body ground.		

OK ↓

B

Illumination power supply circuit check	NG	C: Check circuit continuity between terminal on keyboard and control module.
Check if voltage across terminals No. ⑳ and ⑫ is more than 6V when keyboard is pressed.		

OK ↓

Terminal No.		Continuity
Keyboard	control module	
⑥	⑳	Yes

OK ↓ → Replace control module.

NG → Repair harness and connector.

D

L.E.D. check	NG	Replace keyboard.
Connect terminals No. ㉔ and ⑳ to see if light glows.		

OK ↓

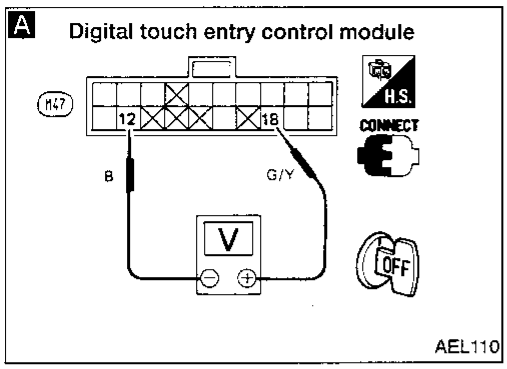
Replace control module.

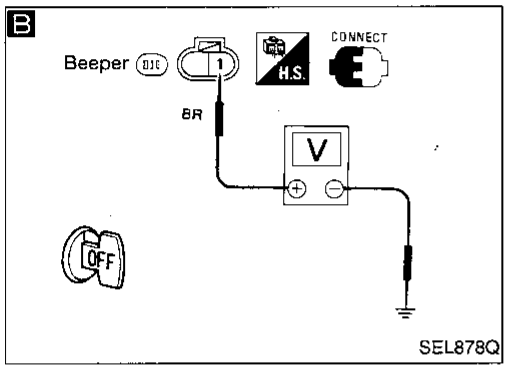
Trouble Diagnoses (Cont'd)

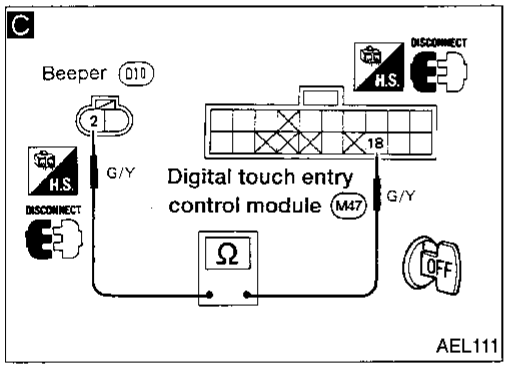
Diagnostic procedure 3

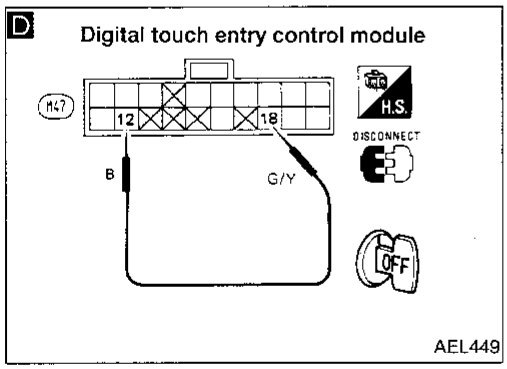
SYMPTOM: When keyboard is pressed, it does not beep but light glows.

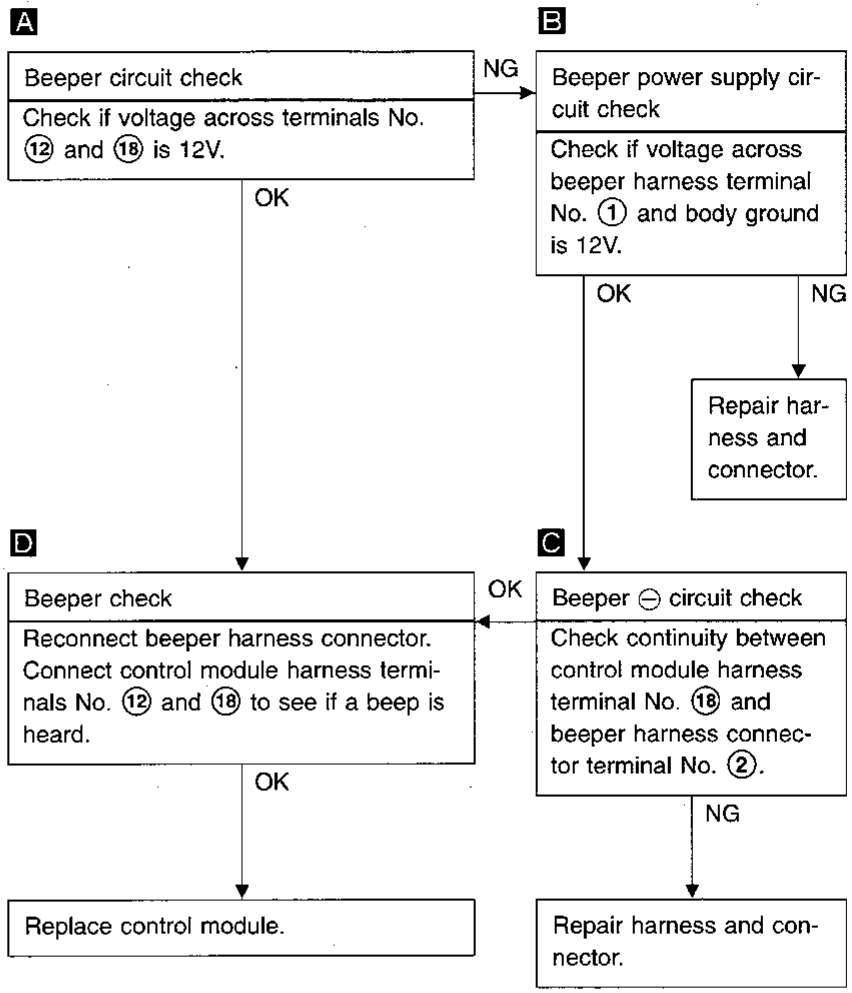
- Perform Ground Circuit Check before referring to the following flow chart.









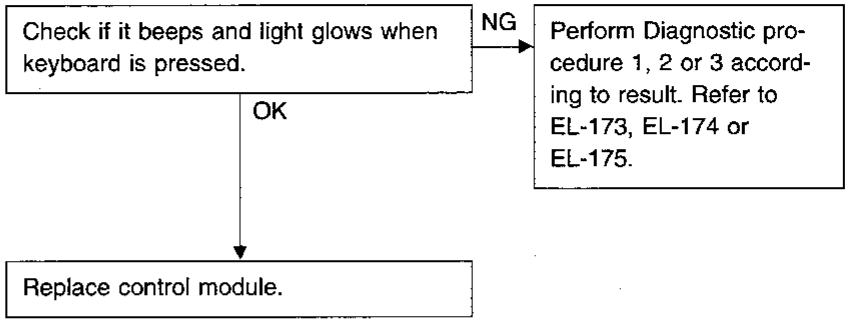


Trouble Diagnoses (Cont'd)

Diagnostic procedure 4

SYMPTOM: When the program code is entered, a long beep is not heard.

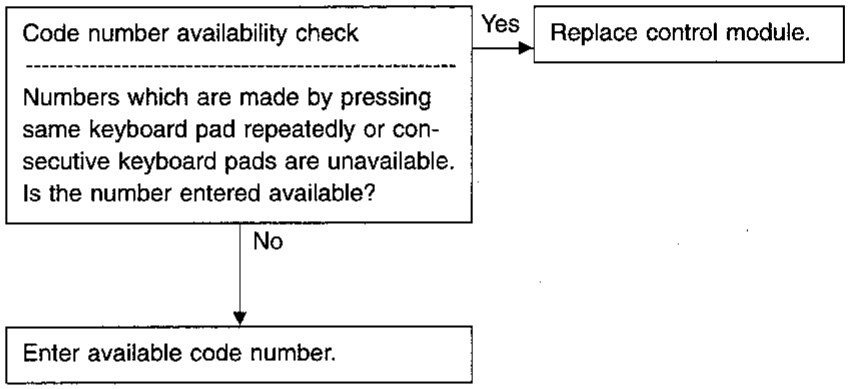
- Perform Preliminary check 1 before referring to the following flow chart.



Diagnostic procedure 5

SYMPTOM: After a valid personal code has been entered, registration sound (repeated beeps) is not heard even if code number is entered.

- Perform Preliminary check 1 before referring to the following flow chart.



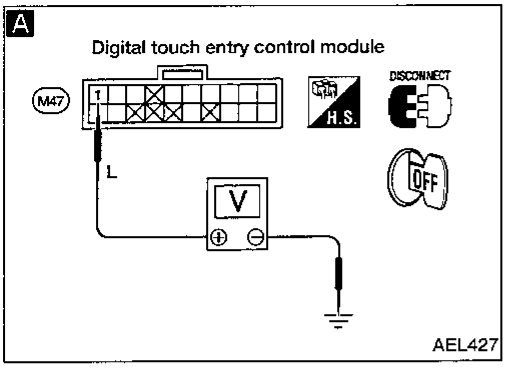
Trouble Diagnoses (Cont'd)

Diagnostic procedure 6

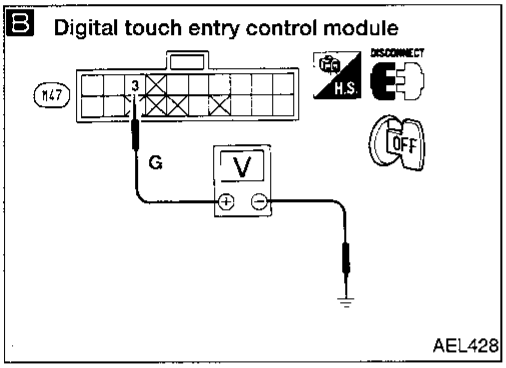
SYMPTOM: Doors do not lock or unlock properly with keyboard operation.

- Perform Preliminary check 1 and 2 before referring to the following flow chart.

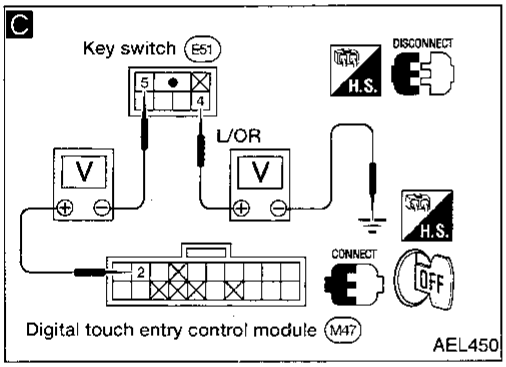
A



B



C



A

Door switch circuit check

1. Place the rear interior lamp switch in the DOOR position.
2. Check voltage across control module harness terminal No. ① and body ground.

Door condition	Driver door	Passenger door	Sliding door	Back door	Voltage
	▲	▲	▲	○	0V
	○	▲	▲	▲	0V
	▲	○	▲	▲	0V
	▲	▲	○	▲	0V
	▲	▲	▲	▲	12V

▲: Closed ○: Open

NG → Refer to Time Control System, EL-104.

OK ↓

B

Key switch circuit check

Check if 12V exists across control module harness terminal No. ③ and body ground, when key is removed from key cylinder.
And it becomes 0V, when key is inserted in key cylinder.

NG → C

C

Harness check

Check if 12V exists across key switch harness terminal No. ④ and body ground. And check if 12V exist across key switch harness terminal No. ⑤ and control module harness terminal No. ②.

OK → Replace key switch.

NG → Repair harness and ground.

OK ↓

Lock & unlock switches check
Refer to EL-179.

NG → Repair harness and switches.

OK ↓

Keyboard check
Refer to EL-178.

NG → Replace keyboard.

OK ↓

Control module check
Refer to EL-180.

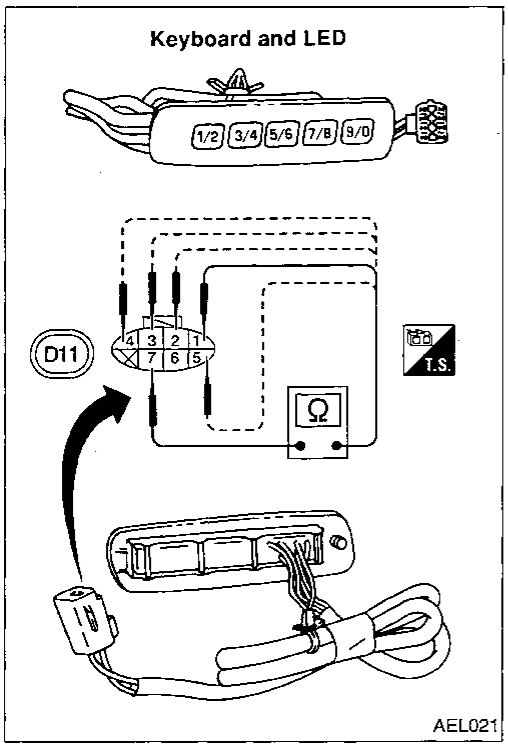
NG → Repair harness and connectors between control module and each door lock actuator.

OK ↓

Replace control module.

Trouble Diagnoses (Cont'd)

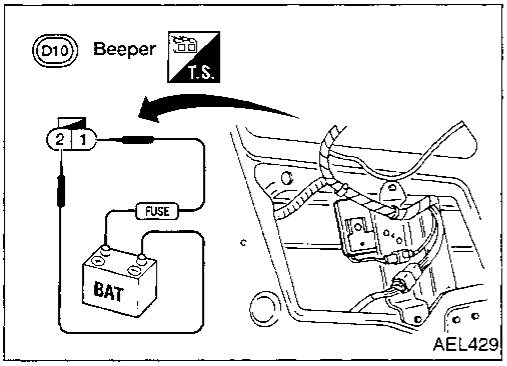
ELECTRICAL COMPONENTS INSPECTION



Keyboard

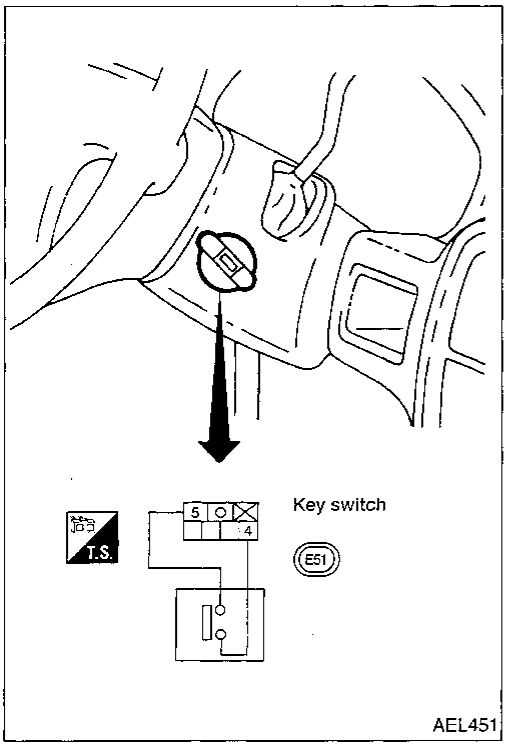
Check continuity between terminals by pushing each keyboard pad.

Pushed keyboard pad	One terminal	Other terminals				
		①	②	③	④	⑤
1/2	⑦	○				
3/4			○			
5/6				○		
7/8					○	
9/0						○



Beeper

Check if it beeps when 12V is supplied.

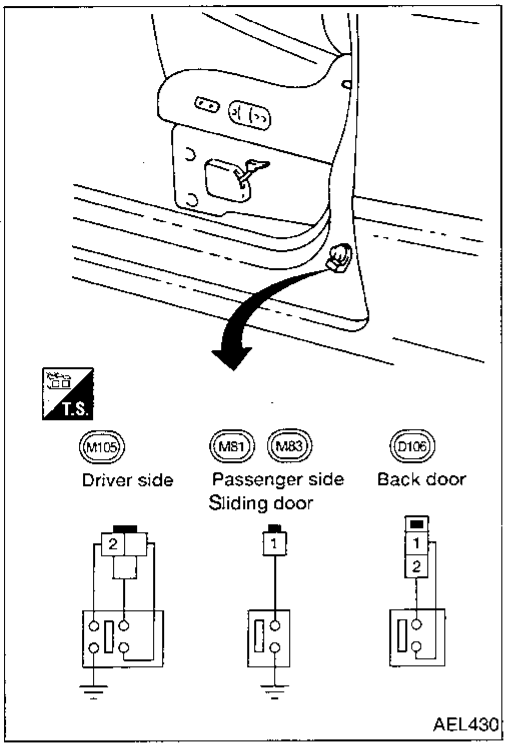


Key switch

Check continuity between terminals when key is inserted in, and removed from key cylinder.

KEY	INSERTED	REMOVED
④	○	
⑤	○	

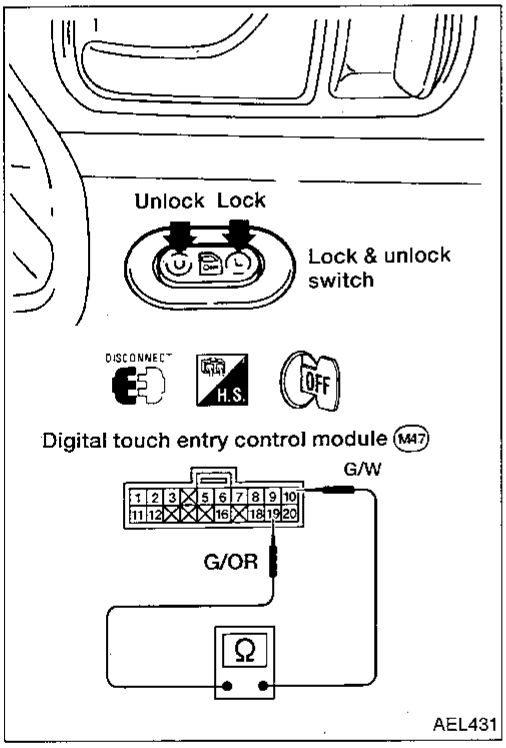
Trouble Diagnoses (Cont'd)



Door switches

Check continuity of switches.

Door switch	Terminals	Switch position	Continuity
Driver side	② and switch body	Door open	Yes
		Door closed	No
Passenger side	① and switch body	Door open	Yes
		Door closed	No
Sliding door	① and switch body	Door open	Yes
		Door closed	No
Back door	① and ②	Door open	Yes
		Door closed	No



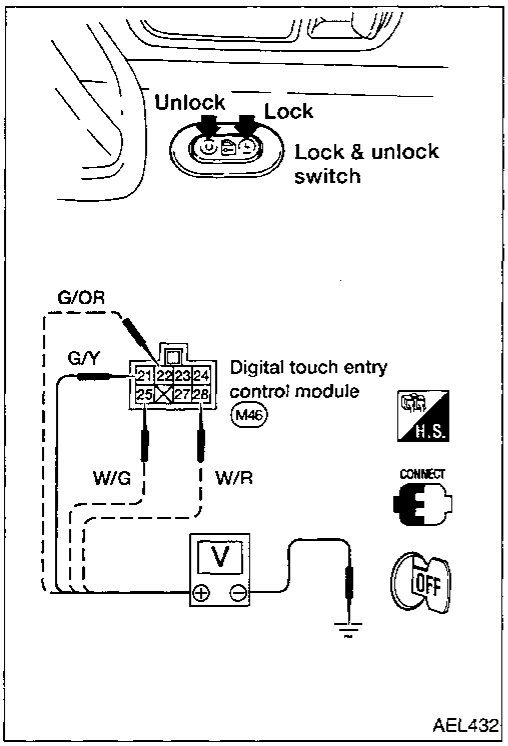
Lock & Unlock switches

Check continuity between control module harness terminal No. ⑩ or ⑲, and body ground with the switch held in lock or unlock position.

Switch position	Lock		Unlock	
Terminal No.	10	19	10	19
Driver side	○	X	X	○
Passenger side	○	X	X	○

Continuity: ○: Yes
X : No

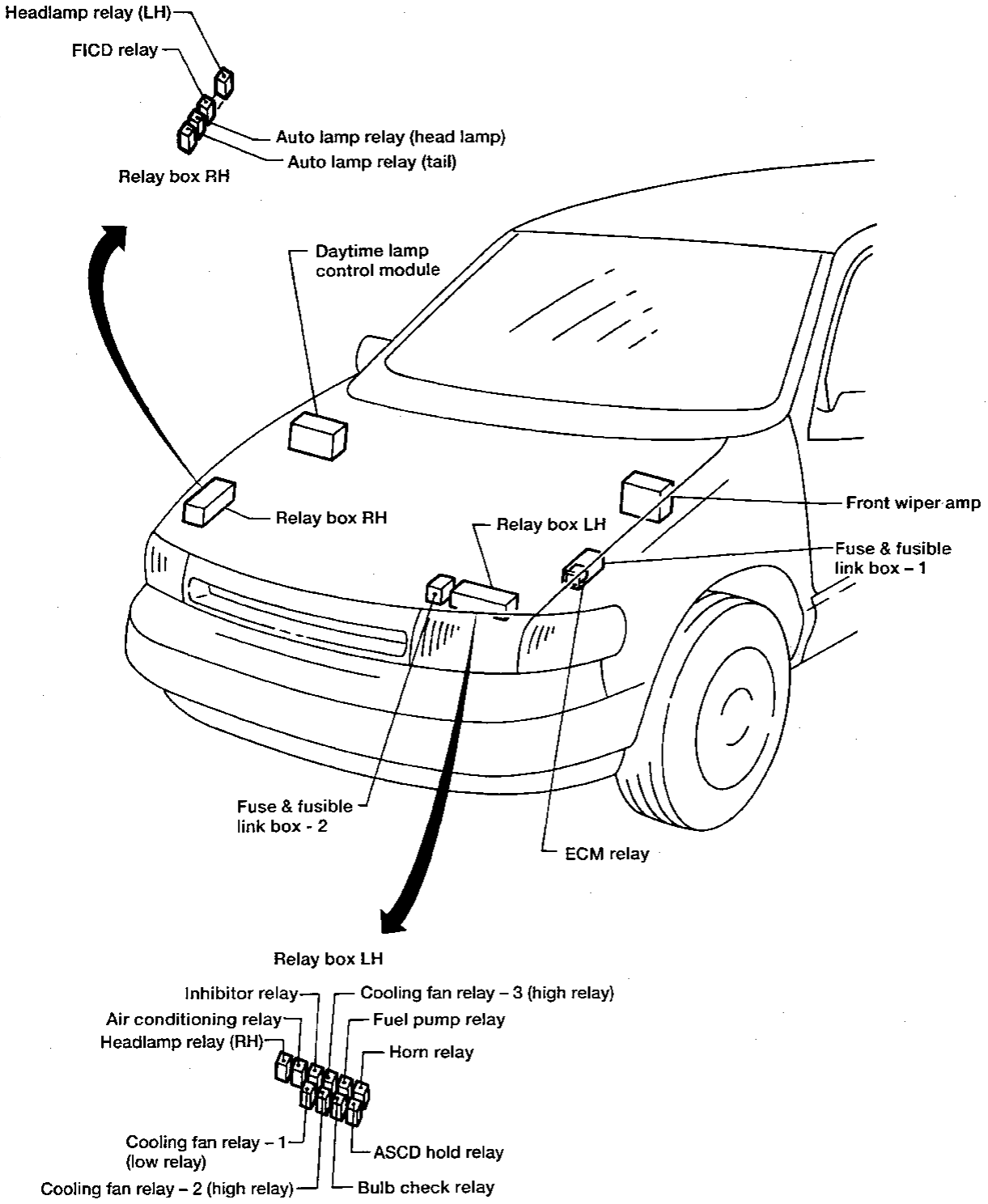
Trouble Diagnoses (Cont'd)



Digital touch entry control module

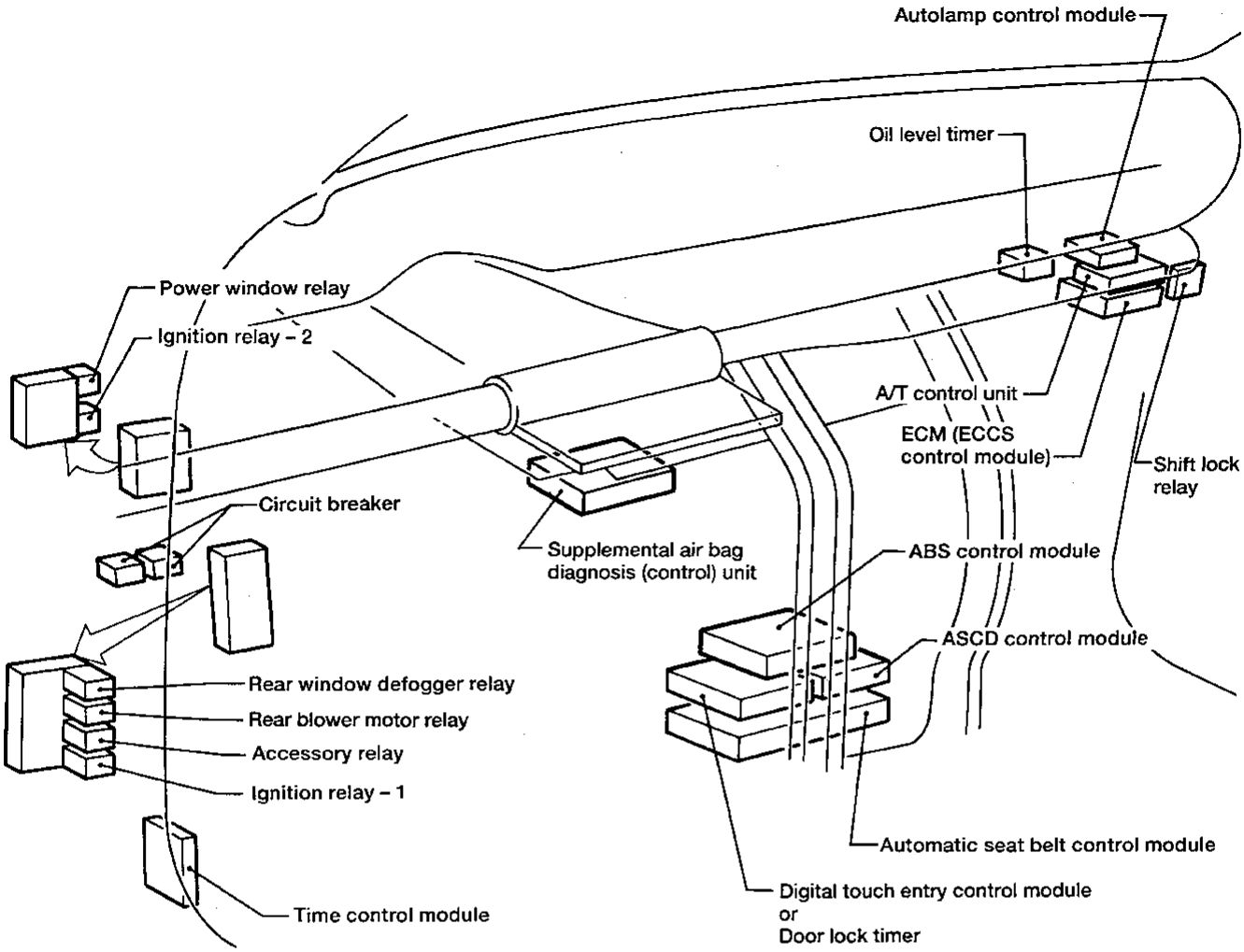
Check the voltage between terminal ㉑, ㉒, ㉕, ㉘ and ground when the driver's Lock & Unlock switch is operated. When the Lock is pressed, battery positive voltage should exist for approximately 0.5 sec between terminal ㉑ and ground. When the Unlock is pressed, battery positive voltage should exist for approximately 0.5 sec between terminal ㉒, ㉕, ㉘ and ground.

Engine Compartment



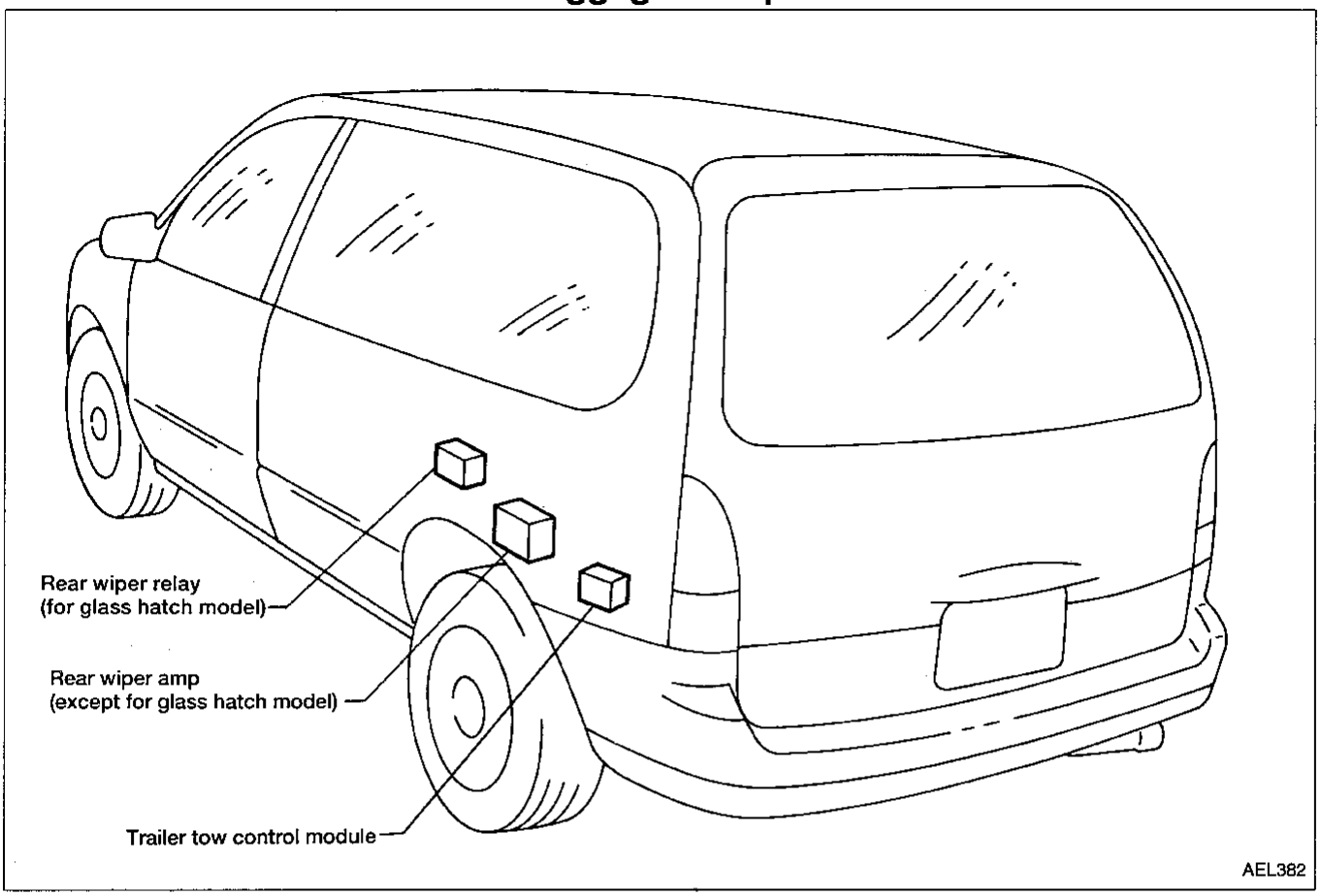
AEL380

Passenger Compartment

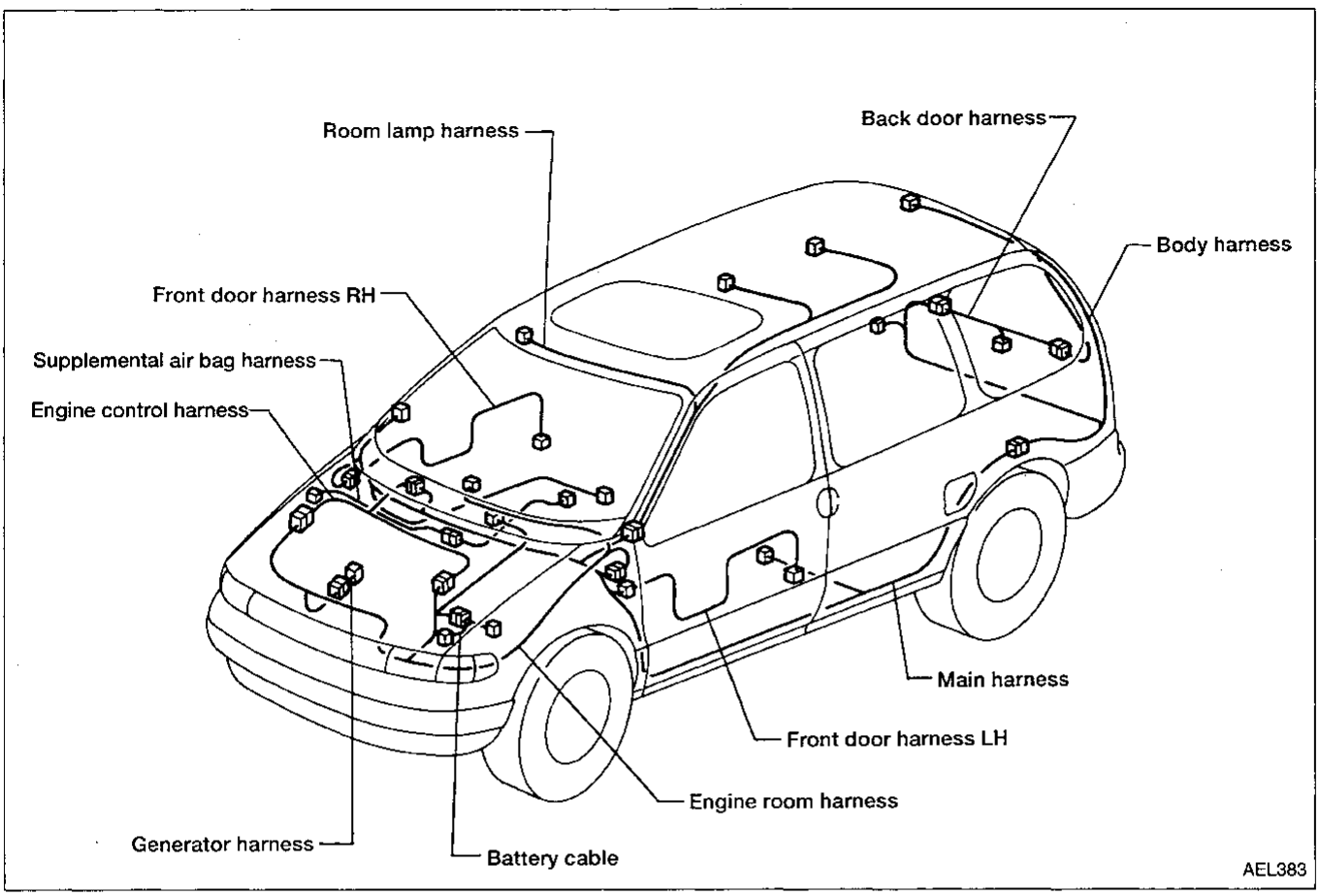


AEL381

Luggage Compartment



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:
C2 (E5): ASCD actuator
└ grid reference

To use the grid reference

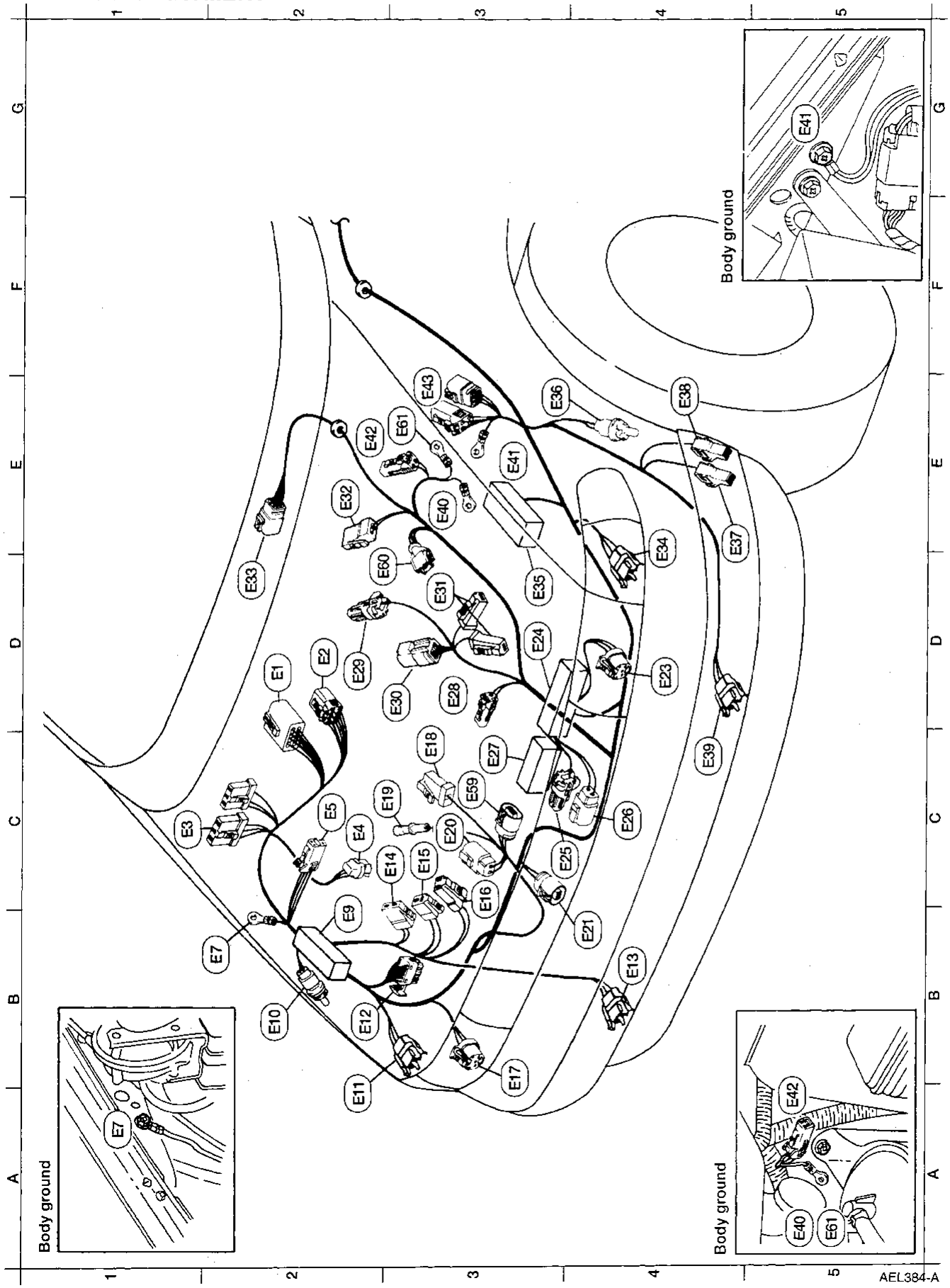
1) Find the desired connector number on the connector list.
2) Find the grid reference.
3) On the drawing, find the crossing of the grid reference letter column and number row.
4) Find the connector number in the crossing zone.
5) Follow the line (if used) to the connector.

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

NOTE

Engine Room Harness

ENGINE COMPARTMENT



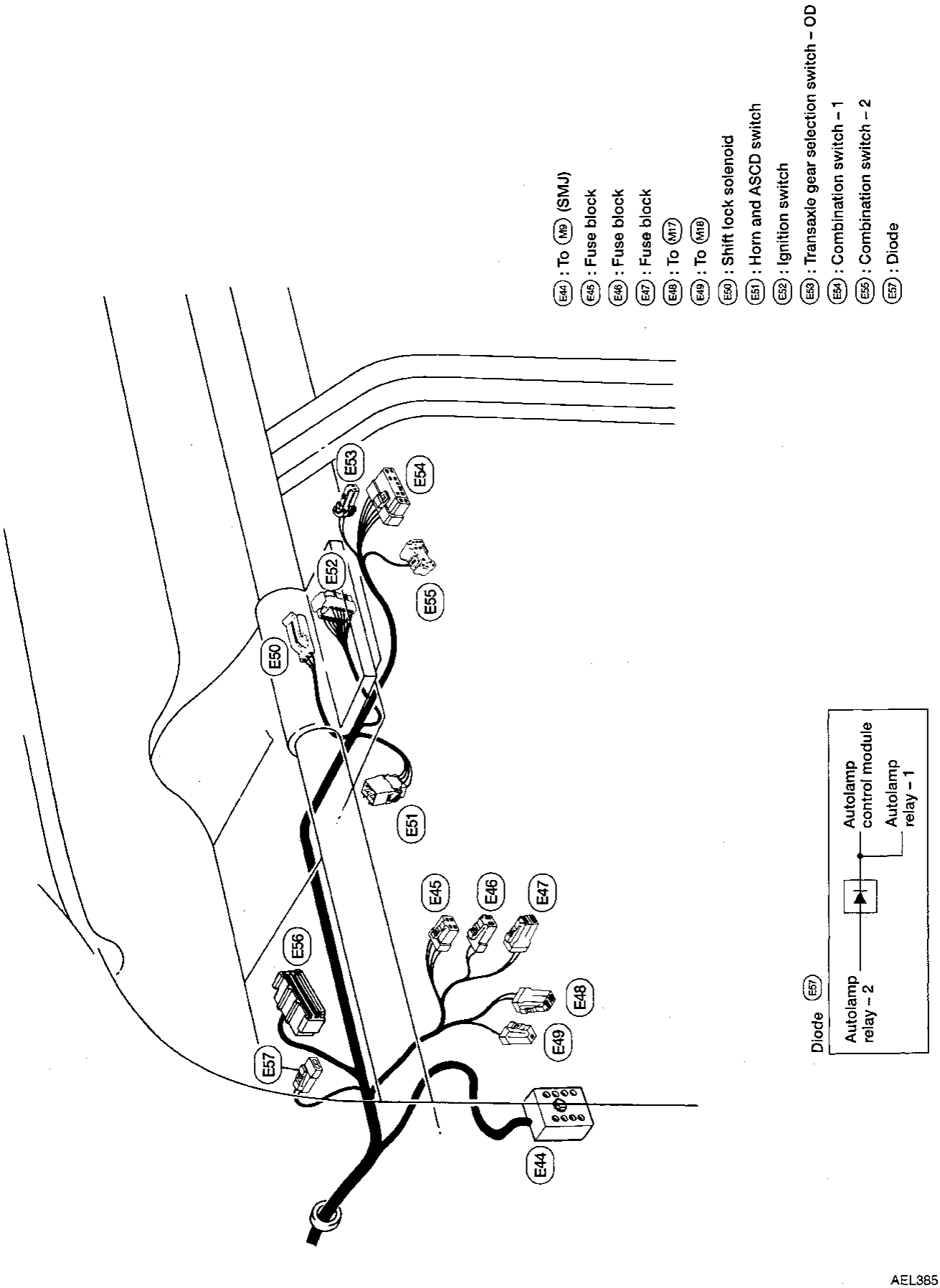
Engine Room Harness (Cont'd)

D2 (E1) : To (F1)
D2 (E2) : To (F2)
C1 (E3) : Daytime lamp control module
C2 (E4) : Low pressure switch
C2 (E5) : ASCD actuator
B2 (E7) : Body ground
B2 (E9) : Relay box RH
B2 (E10) : Front side marker RH
A2 (E11) : Front combination lamp RH
B2 (E12) : Actuator (For ABS)
B4 (E13) : Front turn signal lamp RH
C3 (E14) : Rear washer motor
C3 (E15) : Front washer motor
C3 (E16) : Washer level switch
B3 (E17) : Headlamp RH
C3 (E18) : Oil pressure switch
C3 (E19) : Oil level sensor
C3 (E20) : Generator
D4 (E23) : Headlamp LH
D3 (E24) : Relay box LH
C3 (E25) : Cooling – fan motor
C4 (E26) : Cooling – fan motor
C3 (E27) : Fusible link box – 2
D3 (E28) : Dropping resistor
D2 (E29) : Starter motor
D3 (E30) : To (F28)
D3 (E31) : Battery
E2 (E32) : Brake fluid level switch
D2 (E33) : Front wiper motor
E4 (E34) : Front combination lamp LH
D3 (E35) : Fusible link box – 1
E3 (E36) : Front side marker LH
E4 (E37) : Horn high
E4 (E38) : Horn low
C4 (E39) : Front turn signal lamp LH
E3 (E40) : Body ground (For ABS)
E3 (E41) : Body ground
E2 (E42) : Front sensor LH (For ABS)
E3 (E43) : Front wiper amp
C3 (E59) : Heated oxygen sensor
D3 (E60) : Vehicle speed sensor
E3 (E61) : Body ground

AEL384-B

Engine Room Harness (Cont'd)

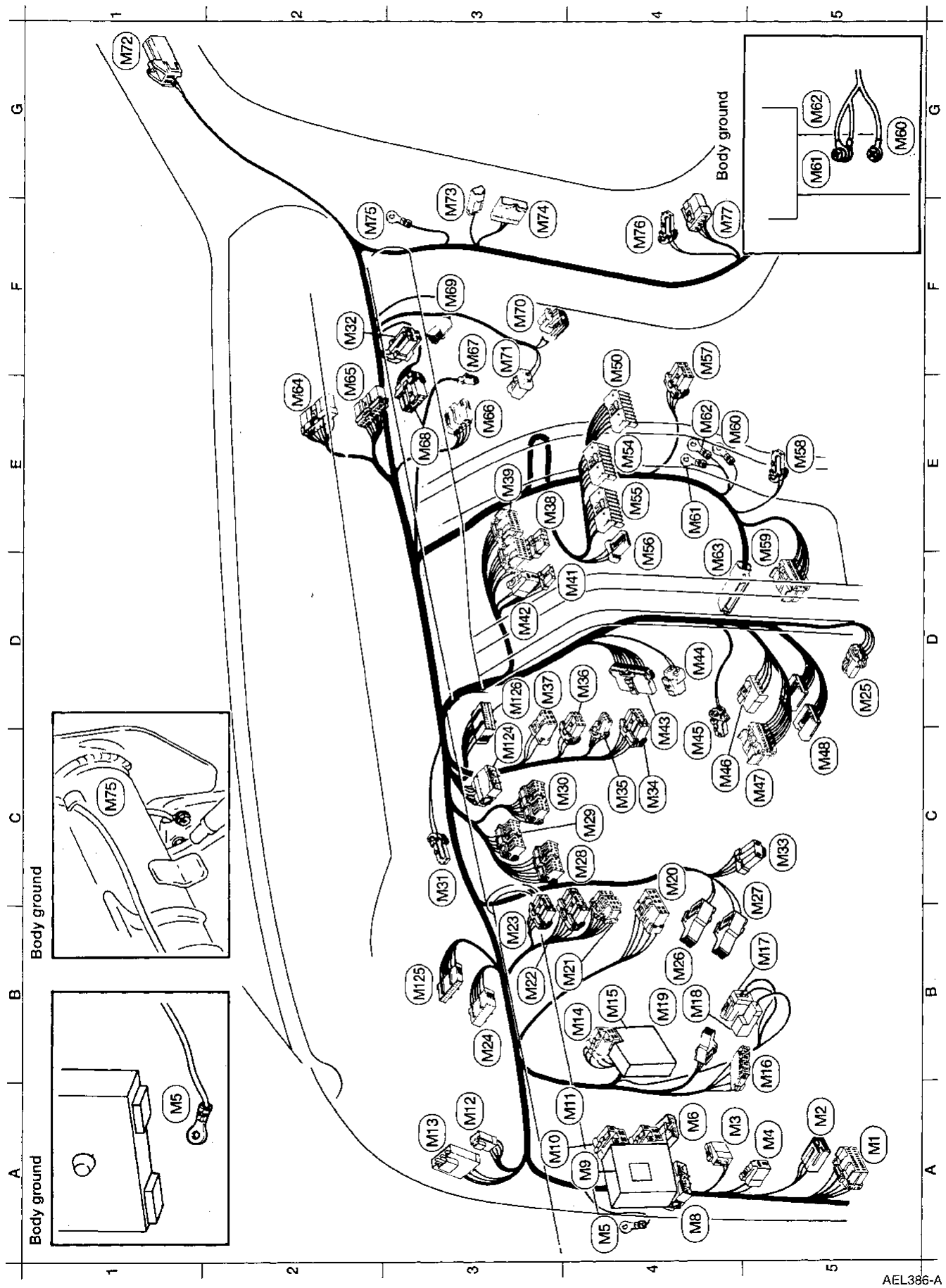
PASSENGER COMPARTMENT



AEL385

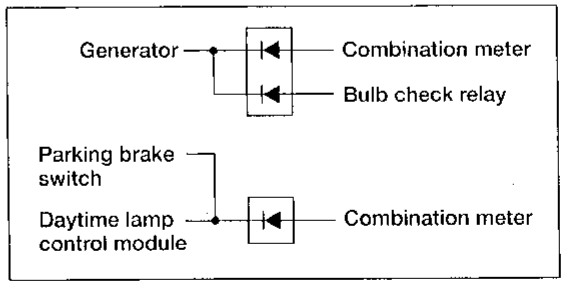
NOTE

Main Harness

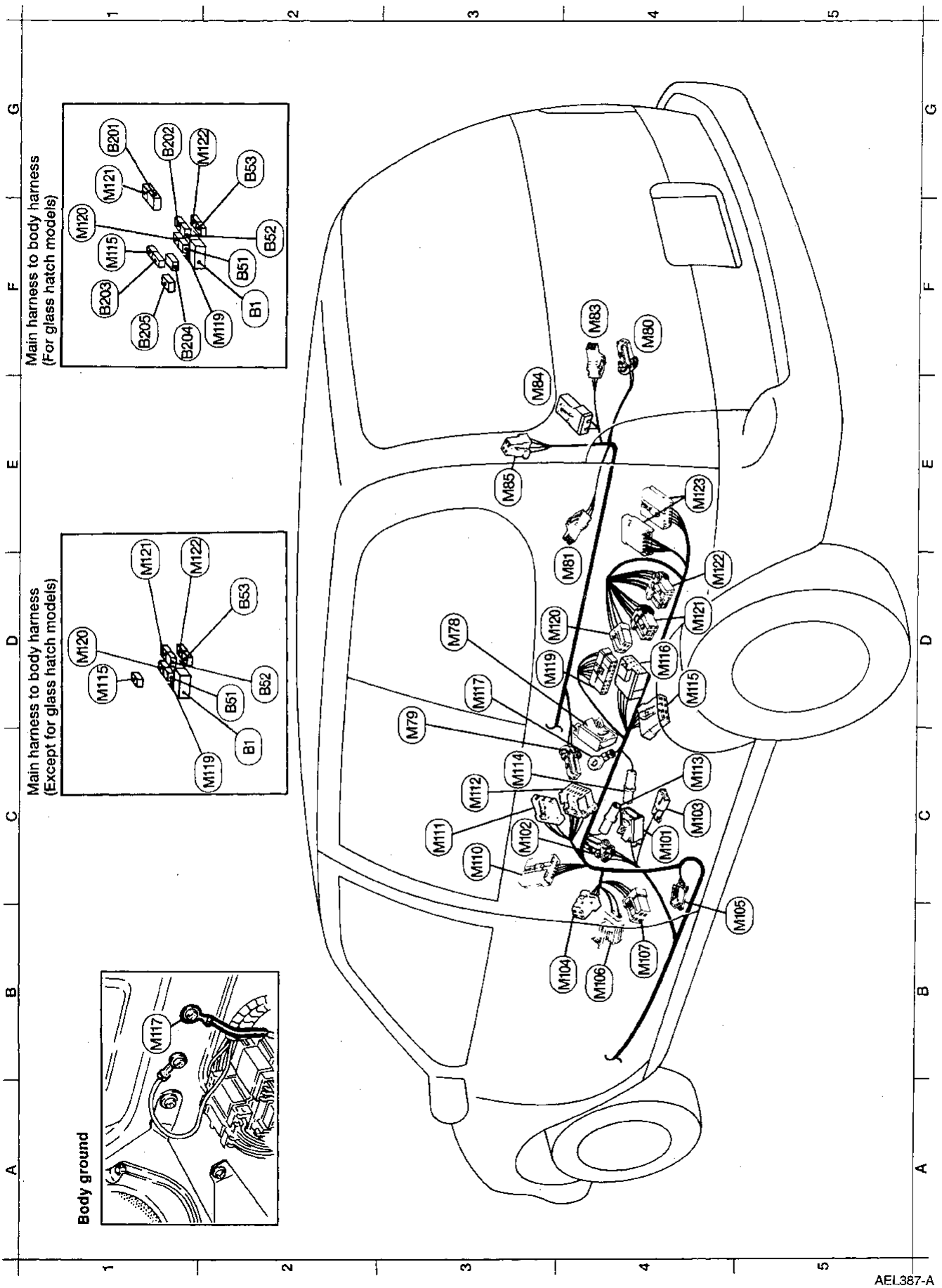


A5 (M1) : Time control module
A5 (M2) : Inertia fuel shutoff switch
A4 (M3) : Circuit breaker – 1
A5 (M4) : Circuit breaker – 2
A4 (M5) : Body ground
A4 (M6) : To (D1)
A4 (M8) : To (D3)
A4 (M9) : To (E44) (SMJ)
A3 (M10) : Power window relay
A4 (M11) : Blower motor relay
A3 (M12) : To (R1)
A3 (M13) : To (R2)
B4 (M14) : Rear window defogger relay
B4 (M15) : Fuse block
B5 (M16) : Data link connector for CONSULT
B5 (M17) : To (E48)
B4 (M18) : To (E49)
B4 (M19) : Parking brake switch
C4 (M20) : Door mirror switch
B4 (M21) : Headlamp switch
B3 M22 : Illumination control switch and autolamp switch
B3 (M23) : ASCD main switch
B3 (M24) : Diode junction connector – 1*
D5 (M25) : To door lock timer sub-harness (Without digital touch entry system models)
B4 (M26) : Stop lamp switch
C5 (M27) : ASCD cancel switch
C4 (M28) : Combination meter
C4 (M29) : Combination meter
C3 (M30) : Combination meter
C3 (M31) : Warning chime
F2 (M32) : Shift lock relay
C5 (M33) : Combination flasher unit
C4 (M34) : A/T power mode switch
C4 (M35) : Hazard switch
D4 (M36) : Rear window defogger switch
D3 (M37) : Rear window wiper switch
E3 (M38) : Rear fan switch (Front)
E3 (M39) : Air conditioning control module
D4 (M41) : Front fan switch
D3 (M42) : Air conditioning control module
D4 (M43) : Mode door motor
D4 (M44) : Cigarette lighter
C4 (M45) : Foot lamp LH
C4 (M46) : Digital touch entry control module (With digital touch entry system models) To door lock timer sub-harness (Without digital touch entry system models)
C5 (M47) : Digital touch entry control module
C5 (M48) : Automatic seat belt control module
E4 (M50) : Radio
E4 (M54) : Radio
E4 (M55) : Radio
E4 (M56) : C/D player
F4 (M57) : Front air mix door motor
E5 (M58) : Foot lamp RH
D5 (M59) : ASCD control module
E4 (M60) : Body ground
E4 (M61) : Body ground
E4 (M62) : Body ground
D4 (M63) : Anti-lock brake system control module
E2 (M64) : To (F51)
E2 (M65) : To (F52)
E3 (M66) : Oil level timer
F3 (M67) : Glove box lamp
E3 (M68) : Auto lamp control module
F3 (M69) : Intake door motor
F3 (M70) : Front blower motor
F3 (M71) : Front fan resistor
G1 (M72) : Front limit switch RH
F3 (M73) : To (D51)
F3 (M74) : To (D52)
F2 (M75) : Body ground
F4 (M76) : Power antenna motor
F4 (M77) : Power antenna amplifier
B3 (M124) : To (A3)
B3 (M125) : Joint connector – 2
D3 (M126) : Joint connector – 1

Diode (In diode junction connector – 1) (M24)



Main Harness (Cont'd)



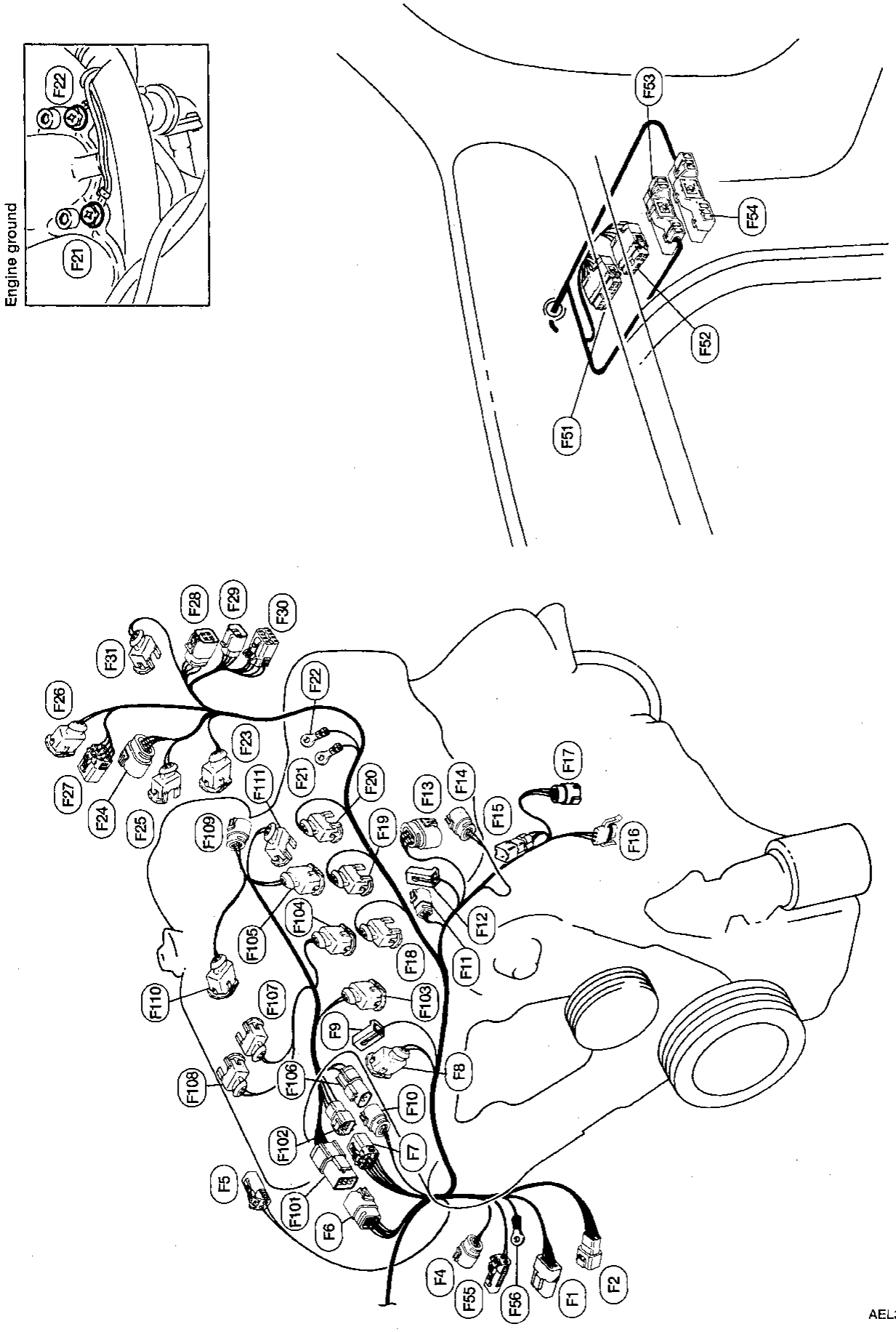
AEL387-A

Main Harness (Cont'd)

D3 (M78) : To power seat harness RH
C3 (M79) : Shoulder belt retractor switch RH
F4 (M80) : Slide door step lamp
E4 (M81) : Door switch RH
F4 (M83) : Door switch (slide door)
E3 (M84) : Sliding door contact switch
E3 (M85) : Rear limit switch and drive motor RH
C4 (M101) : To power seat harness LH
C3 (M102) : Shoulder belt retractor switch LH
C4 (M103) : Lap belt buckle switch
B4 (M104) : Rear limit switch and drive motor LH
B4 (M105) : Door switch LH
B4 (M106) : Rear blower motor
B4 (M107) : Rear fan resistor
C3 (M110) : Rear remote control module
C3 (M111) : Rear fan switch (Rear)
C3 (M112) : Rear air conditioning control module
C4 (M113) : Rear air mix door motor
C3 (M114) : Rear intake door motor
D4 (M115) : To (B200) (For glass hatch models)
: Rear wiper amplifier (Except for glass hatch models)
D4 (M116) : To (B101)
D3 (M117) : Body ground
D4 (M119) : To (B1)
D4 (M120) : To (B51)
D4 (M121) : To (B201) (For glass hatch models)
: To (B52) (Except for glass hatch models)
D4 (M122) : To (B53)
E4 (M123) : 4-channel amplifier

AEL387-B

Engine Control Harness



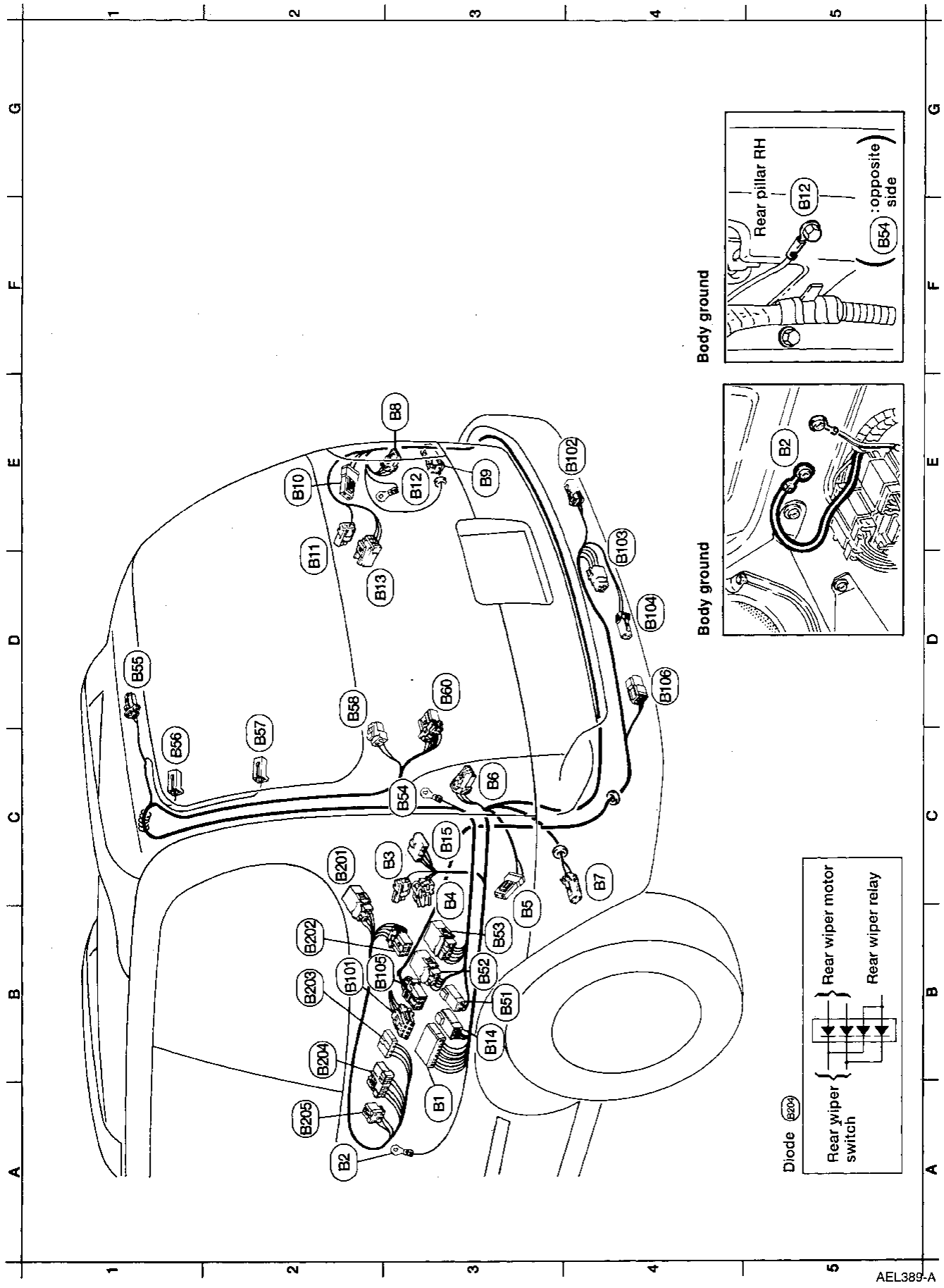
AEL388-A

Engine Control Harness (Cont'd)

(F1) : To (E1)
(F2) : To (E2)
(F4) : Power steering oil pressure switch
(F5) : Water cock solenoid valve
(F6) : To (F101)
(F7) : To (F102)
(F8) : Engine coolant temperature sensor
(F9) : Thermal transmitter
(F10) : To (F106)
(F11) : Camshaft position sensor
(F12) : Camshaft position sensor (ground)
(F13) : Power transistor unit
(F14) : Ignition coil
(F15) : Resistor & condenser
(F16) : Compressor
(F17) : High pressure switch
(F18) : Injector No. 2
(F19) : Injector No. 4
(F20) : Injector No. 6
(F21) : Engine ground
(F22) : Engine ground
(F23) : EGR control – solenoid valve
(F24) : Throttle position sensor
(F25) : Closed throttle position switch
(F26) : Vehicle speed pulse generator
(F27) : Terminal cord assembly
(F28) : To (E30)
(F29) : Inhibitor switch
(F30) : Inhibitor switch
(F31) : Mass air flow sensor
(F51) : To (M64)
(F52) : To (M65)
(F53) : A/T control unit
(F54) : ECM (ECCS control module)
(F55) : Front sensor RH (For ABS)
(F56) : Body ground (For ABS)
(F101) : To (F6)
(F102) : To (F7)
(F103) : Injector No. 1
(F104) : Injector No. 3
(F105) : Injector No. 5
(F106) : To (F10)
(F107) : IAC valve – Air regulator
(F108) : IAC valve – AAC valve
(F109) : EGR temperature sensor
(F110) : IAC valve – FICD solenoid valve
(F111) : Knock sensor

AEL388-B

Body Harness

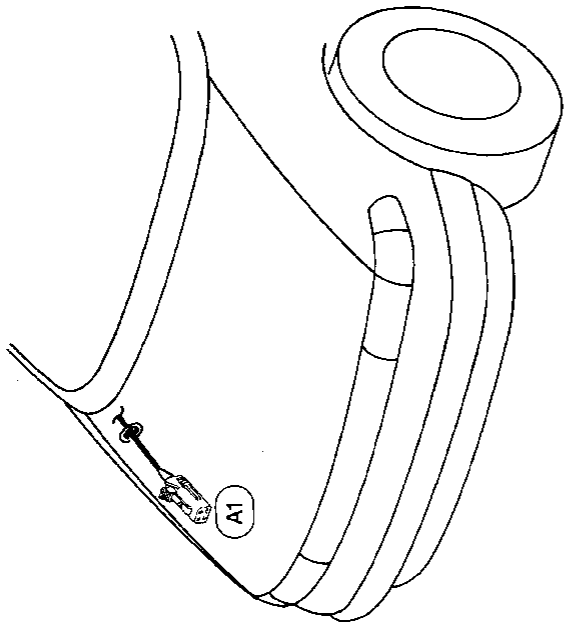


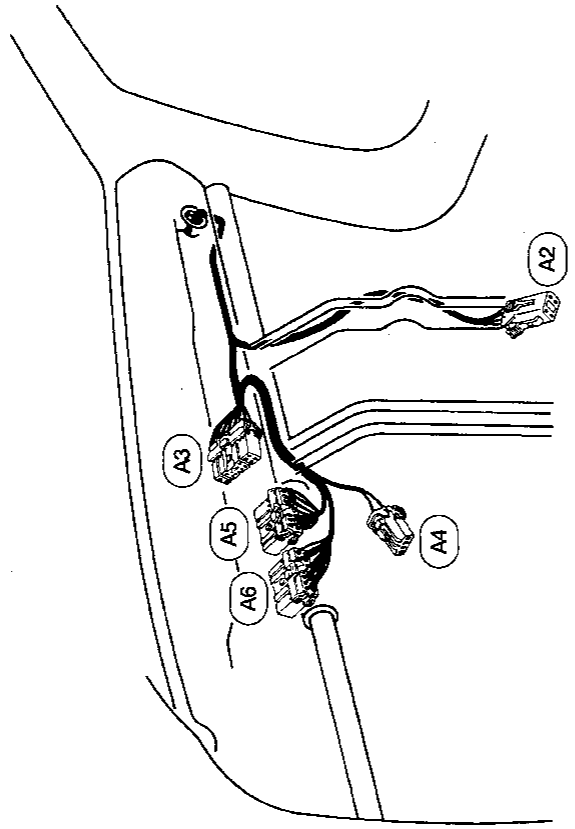
Body Harness (Cont'd)

A3 (B1) : To (M119)
A2 (B2) : Body ground
C3 (B3) : Rear speaker LH
C3 (B4) : 4-Channel amplifier
C3 (B5) : Rear power window regulator LH
C3 (B6) : Rear combination lamp LH
C4 (B7) : Rear side marker LH
E3 (B8) : Rear combination lamp RH
E3 (B9) : Rear side marker RH
E2 (B10) : Rear power window regulator RH
E2 (B11) : Rear speaker RH
E3 (B12) : Body ground
D2 (B13) : Sub woofer amplifier
B3 (B14) : To (B105)
C3 (B15) : Trailer tow control module
B3 (B51) : To (M129)
B3 (B52) : To (B202): (For glass hatch models)
: To (M121): (Except for glass hatch models)
B3 (B53) : To (M122)
C3 (B54) : Body ground
D1 (B55) : High-mounted stop lamp
C1 (B56) : Rear defogger (+) (For glass hatch models)
C2 (B57) : Rear defogger (+) (Except for glass hatch models)
D2 (B58) : To (D101)
D3 (B60) : To (D103)
B2 (B101) : To (M116)
E4 (B102) : Rear sensor RH (For ABS)
D4 (B103) : Fuel pump
D4 (B104) : Rear sensor LH (For ABS)
B3 (B105) : To (B14)
D4 (B106) : Trailer tow connector
C2 (B201) : To (M121) (For glass hatch models)
B2 (B202) : To (B52) (For glass hatch models)
B2 (B203) : To (M115) (For glass hatch models)
B2 (B204) : Diode J/C-2 (For glass hatch models)
A2 (B209) : Rear wiper relay (For glass hatch models)

AEL389-B

Air Bag Harness

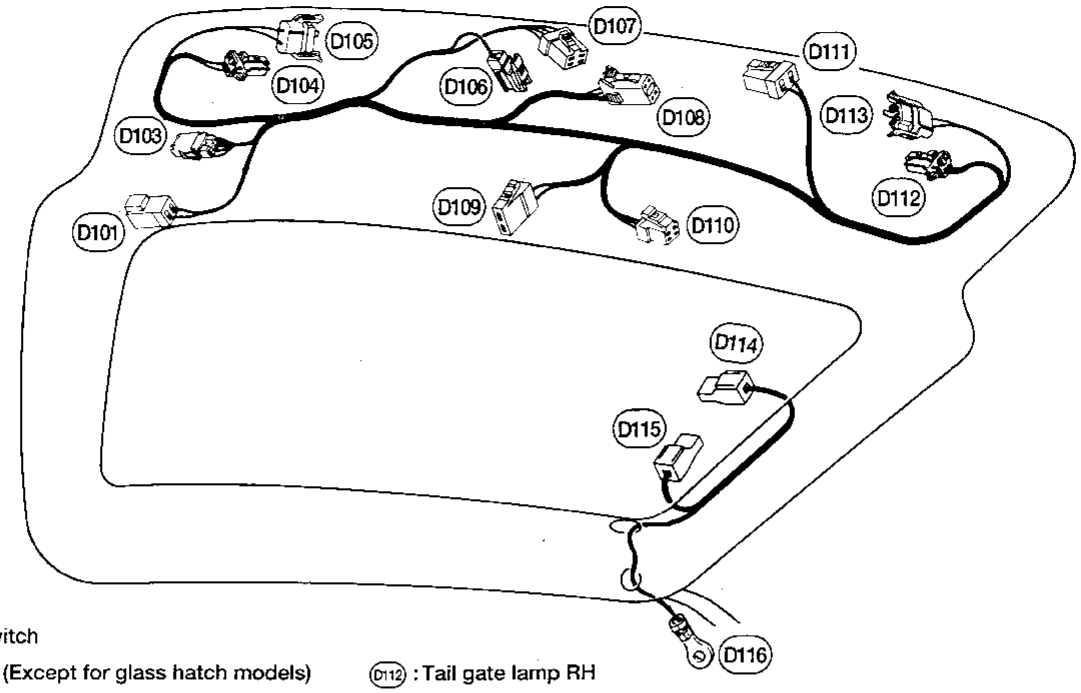




(A1) : Front crash zone sensor
(A2) : Tunnel and safing sensor
(A3) : To (M129)
(A4) : Supplemental air bag module (Through spiral cable)
(A5) : Diagnosis (control) unit
(A6) : Diagnosis (control) unit

AEL390

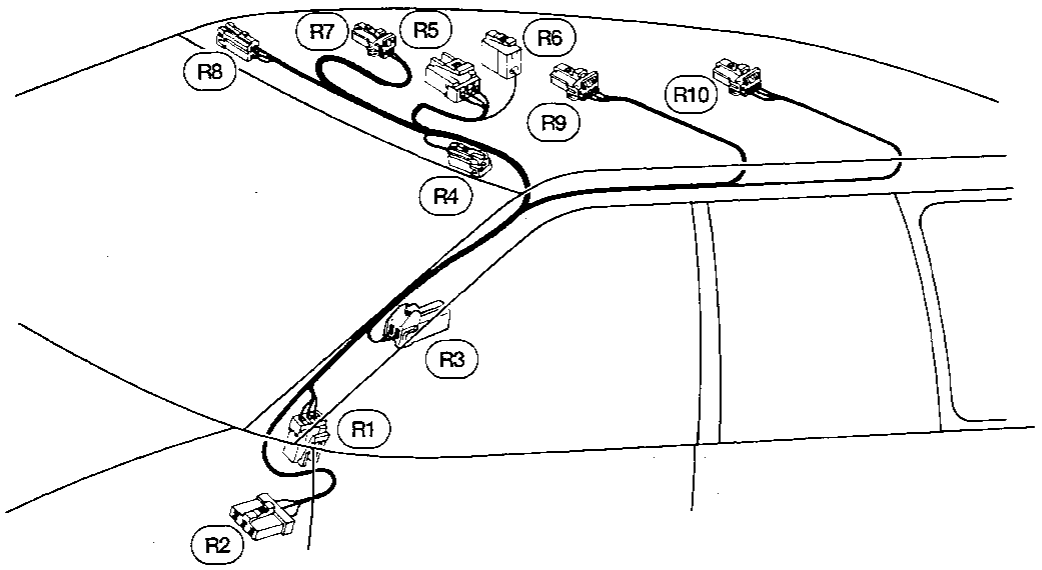
Back Door Harness



D101 : To B58
D103 : To B60
D104 : Tail gate lamp LH
D105 : Back-up lamp LH
D106 : Back door latch switch
D107 : Door lock actuator (Except for glass hatch models)
D108 : License lamp
D109 : Latch switch (For glass hatch models)
D110 : Rear wiper motor
D111 : Door lock actuator (For glass hatch models)
D112 : Tail gate lamp RH
D113 : Back-up lamp RH
D114 : Rear defogger (-) (Except for glass hatch models)
D115 : Rear defogger (-) (For glass hatch models)
D116 : Body ground

AEL391

Room Lamp Harness

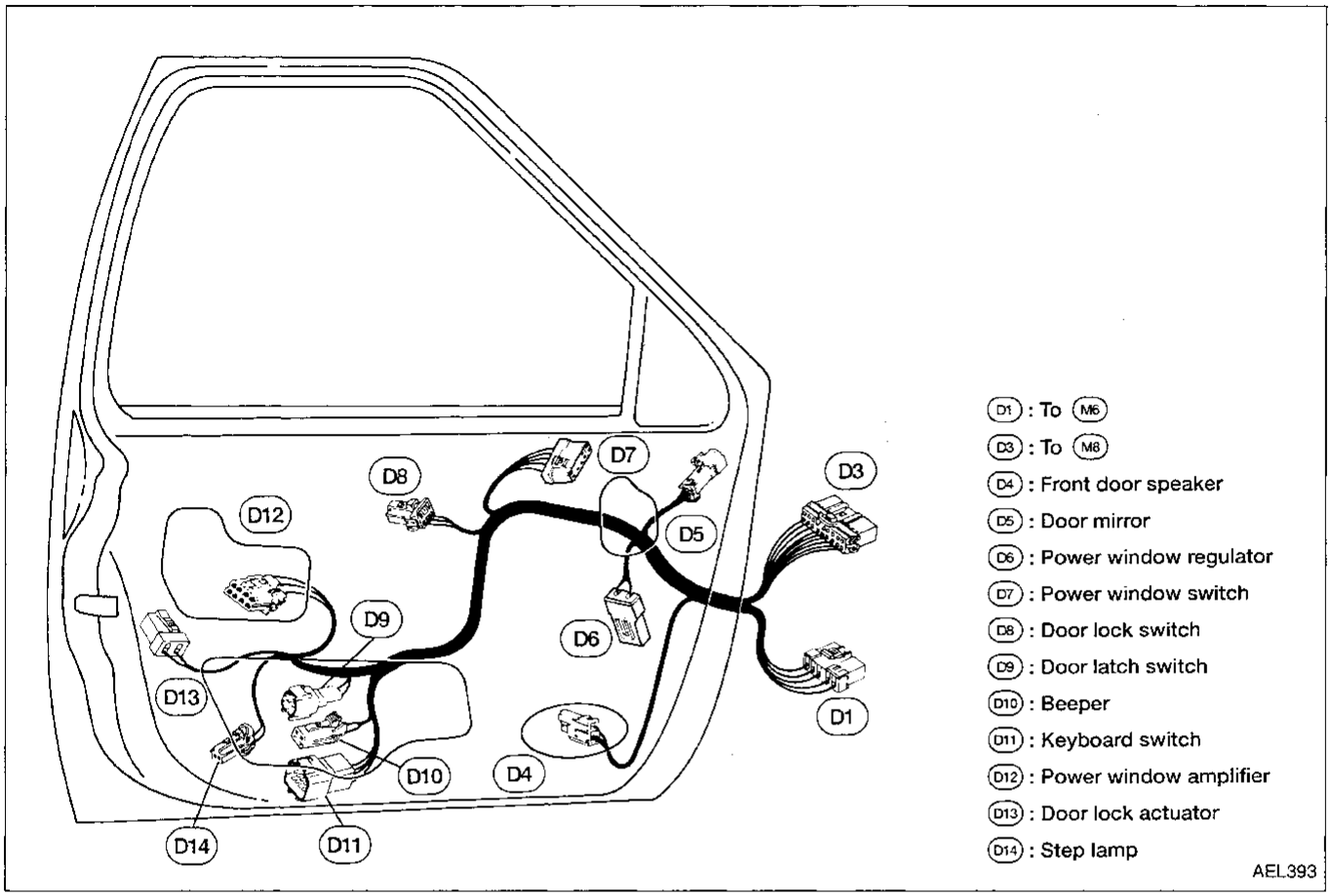


(R1) : To (M12)
(R2) : To (M13)
(R3) : Front limit switch LH
(R4) : Vanity lamp LH
(R5) : Rear window opener switch
(R6) : Sunroof motor
(R7) : Map lamp
(R8) : Vanity lamp RH
(R9) : Front interior lamp
(R10) : Rear interior lamp

AEL392

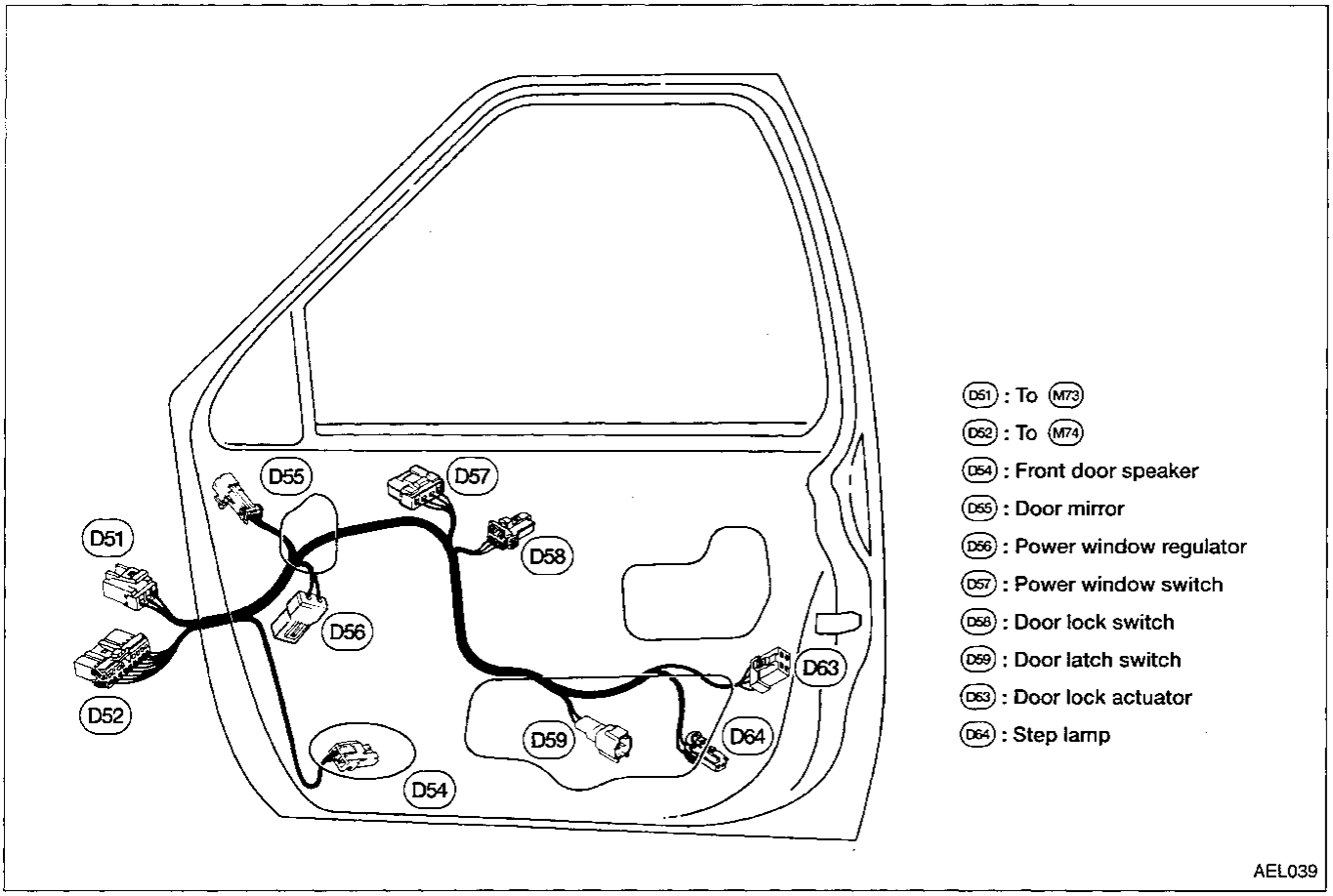
Door Harness

LH SIDE



Door Harness (Cont'd)

RH SIDE



(D51) : To (M73)
(D52) : To (M74)
(D54) : Front door speaker
(D55) : Door mirror
(D56) : Power window regulator
(D57) : Power window switch
(D58) : Door lock switch
(D59) : Door latch switch
(D63) : Door lock actuator
(D64) : Step lamp