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" and "HOW TO PERFORM EFFICIENT DIAGNOSIS FOR AN ELECTRICAL INCIDENT".

WIRING DIAGRAM REFERENCE CHART

Supplemental Restraint System (SRS) "AIR BAG"

The Supplemental Restraint System "AIR BAG", used along with a seat belt, helps to reduce the risk or severity of injury to the driver and front passenger in a frontal collision. The Supplemental Restraint System consists of air bag modules (located in the center of the steering wheel and in the instrument panel on the passenger side), a diagnosis sensor unit, warning lamp, wiring harness and spiral cable. Information necessary to service the system safely is included in the **RS section** of this Service Manual.

WARNING:

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

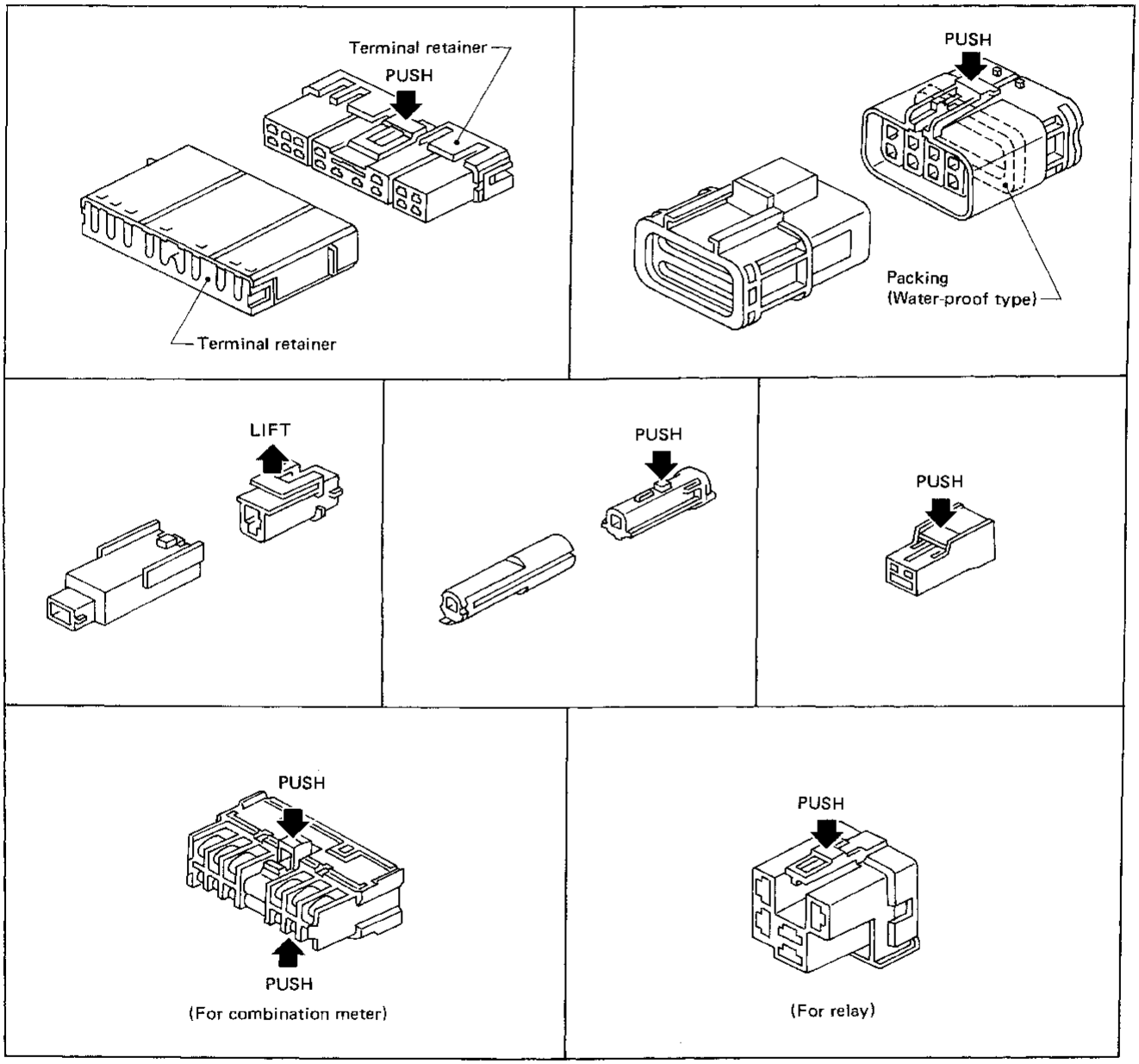
Description

HARNESS CONNECTOR

- All harness connectors have been designed to prevent accidental looseness or disconnection.
- The connector can be disconnected by pushing or lifting the locking section.

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

[Example]

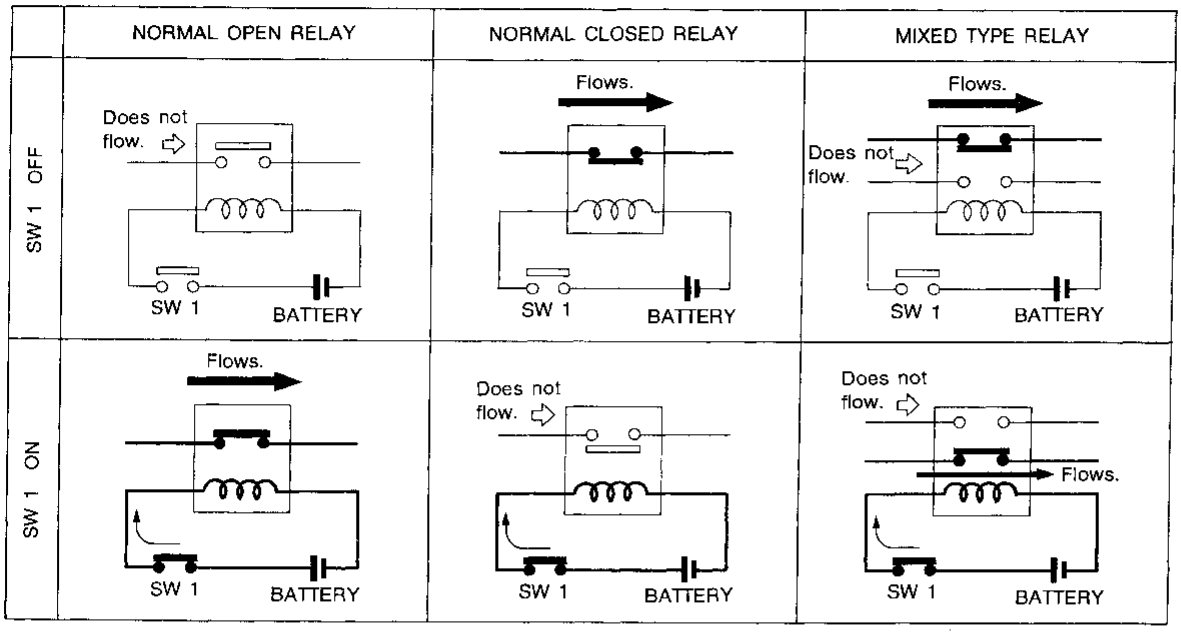


SEL769D

Description

NORMAL OPEN, NORMAL CLOSED AND MIXED TYPE RELAYS

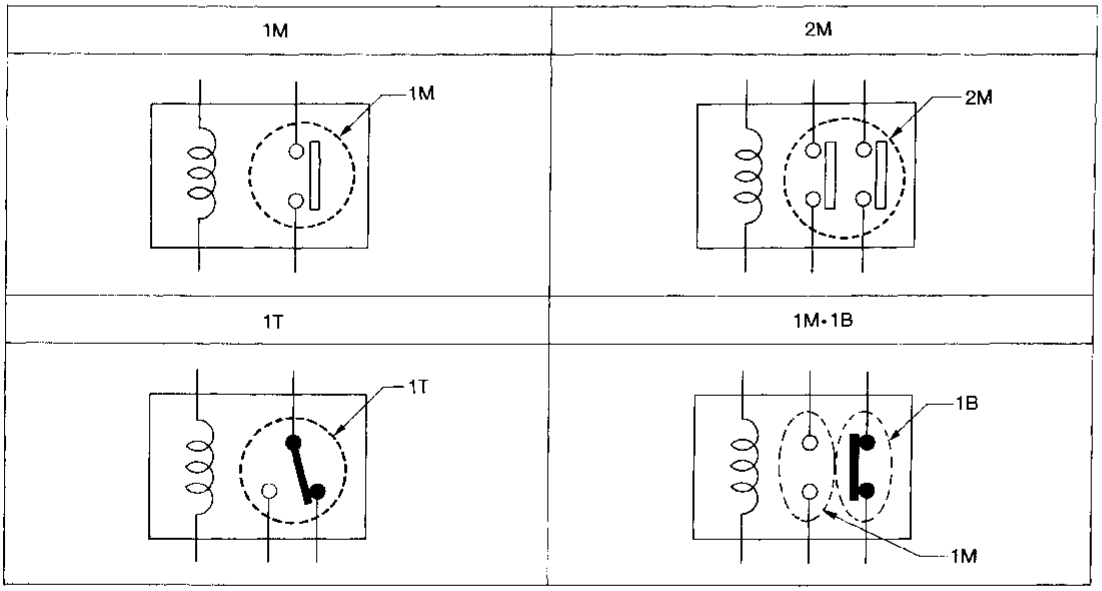
Relays can be divided into three main types: normal open, normal closed and mixed type relays.



AEL669A

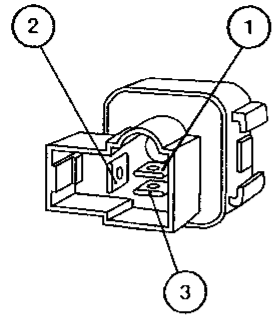
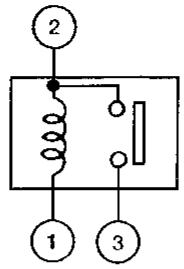
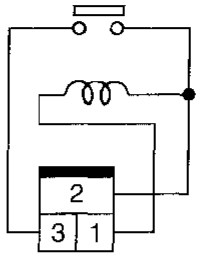
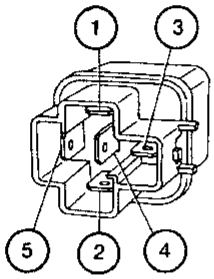
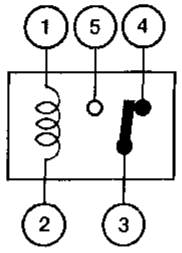
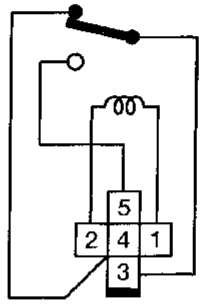
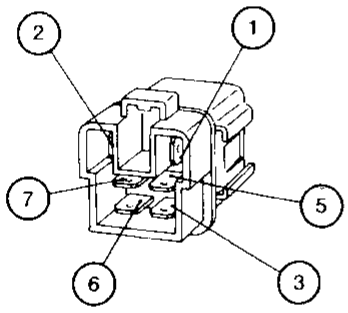
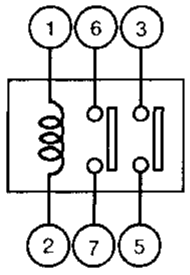
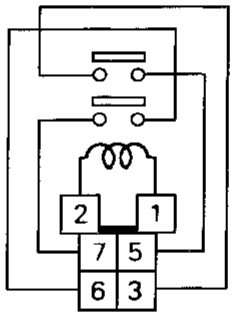
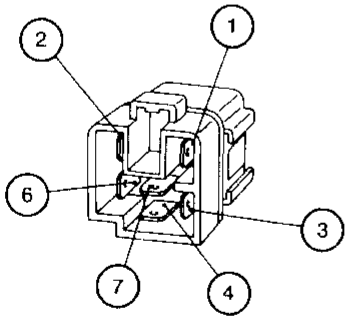
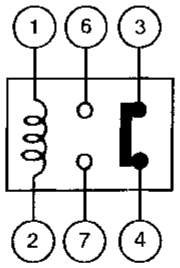
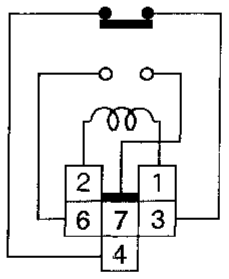
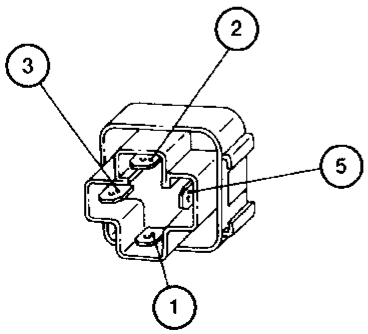
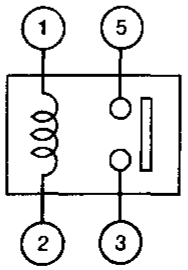
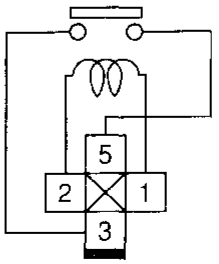
TYPE OF STANDARDIZED RELAYS

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



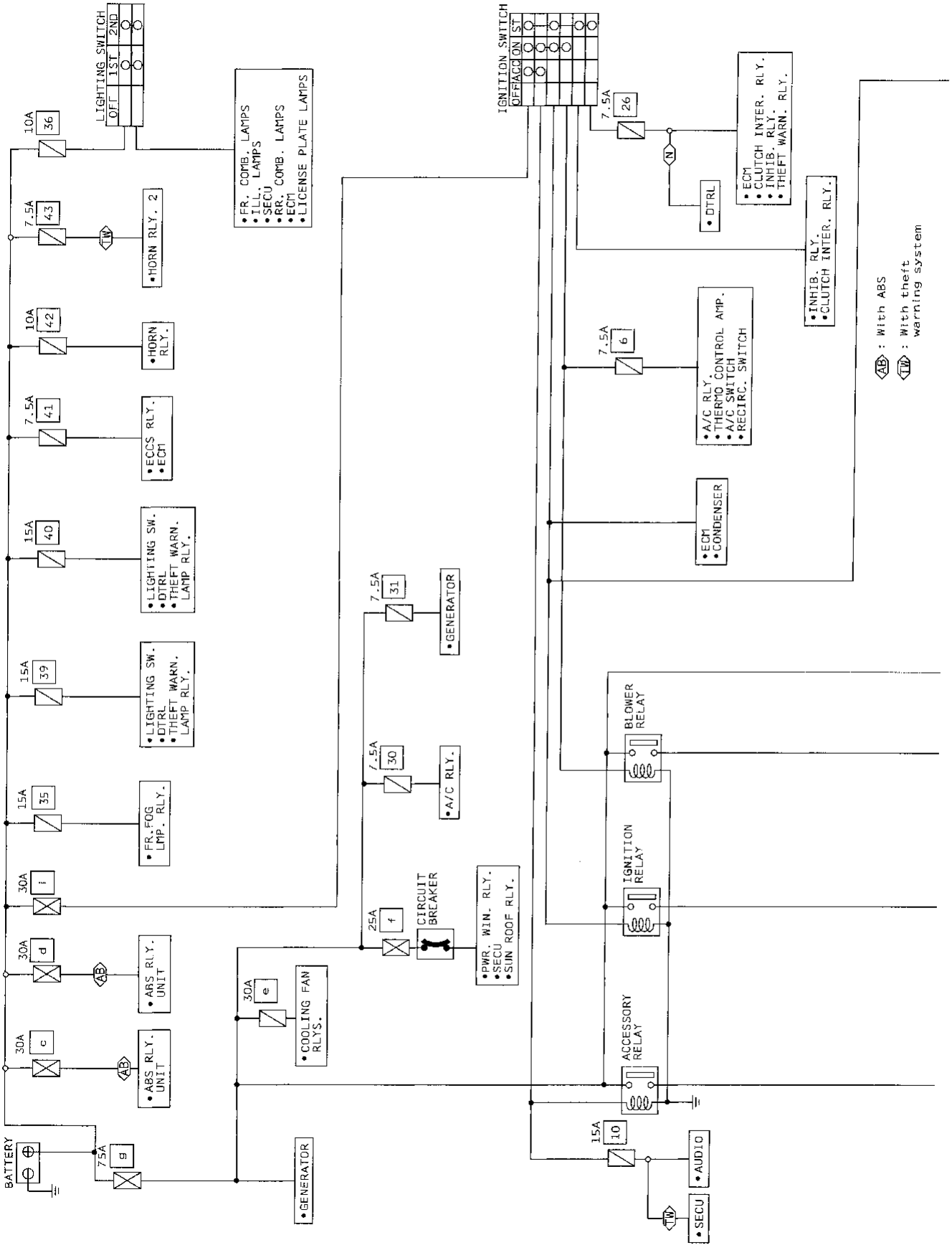
SEL882H

Description (Cont'd)

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

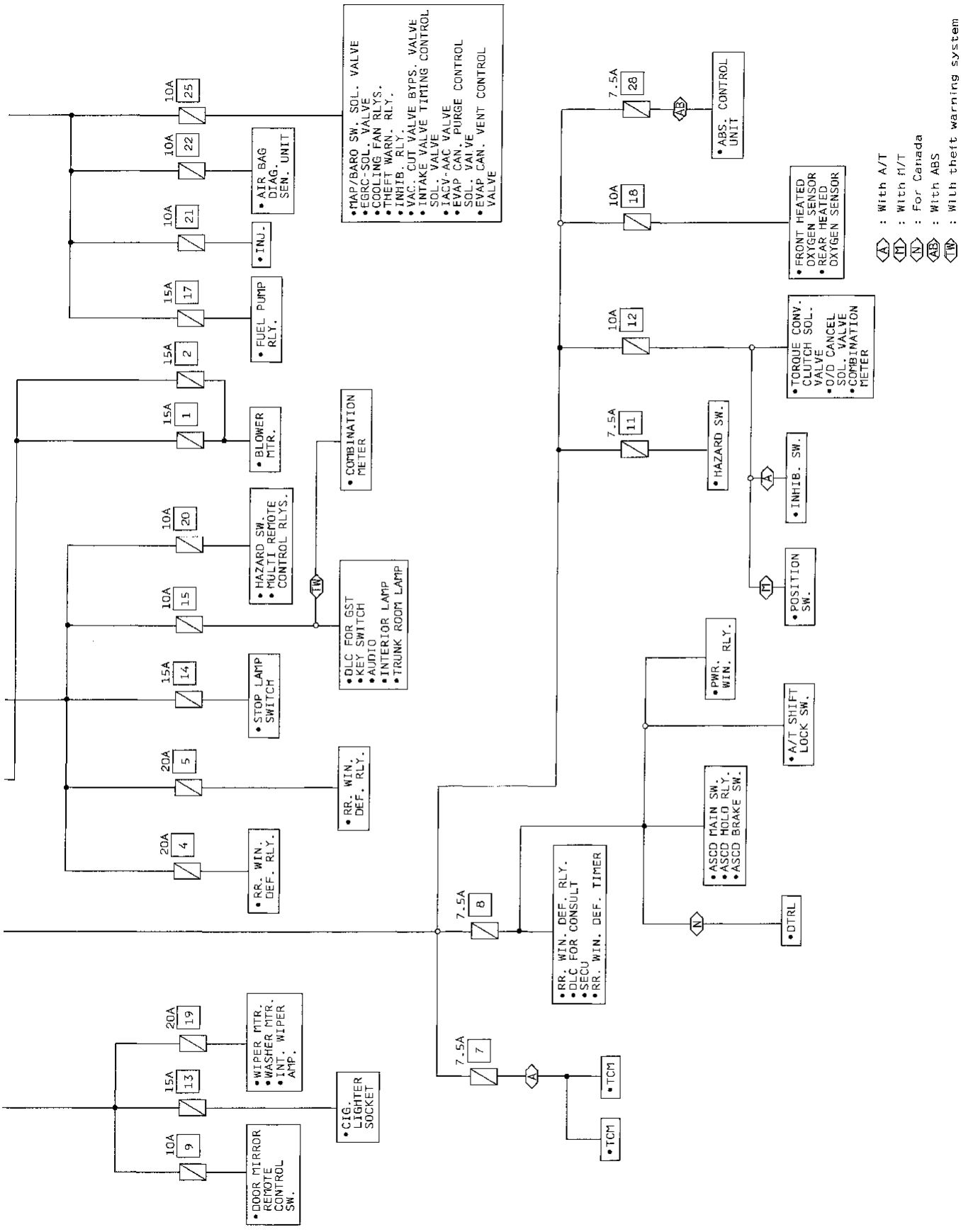
AEL684B

Schematic



AEL667B

Schematic (Cont'd)

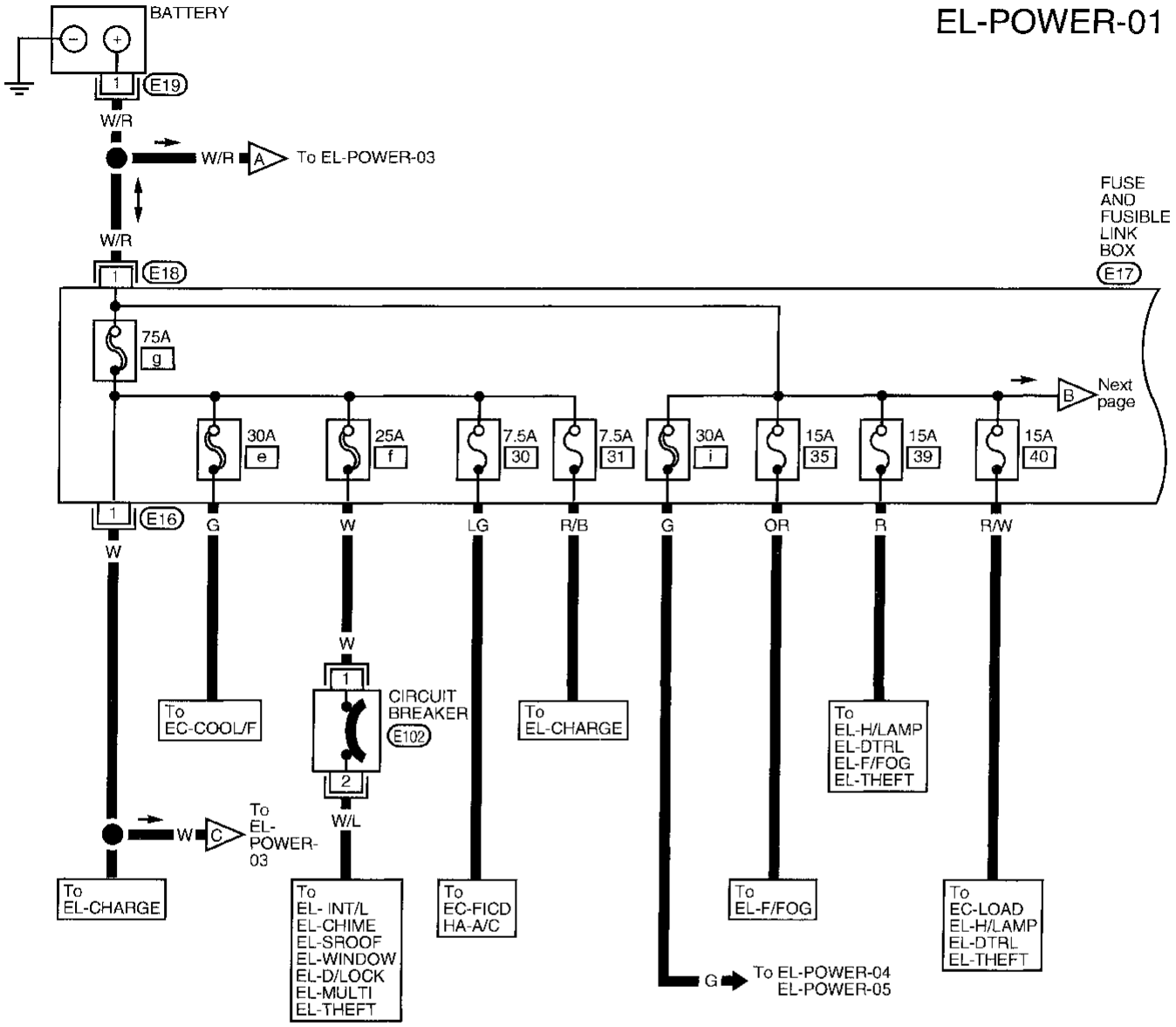


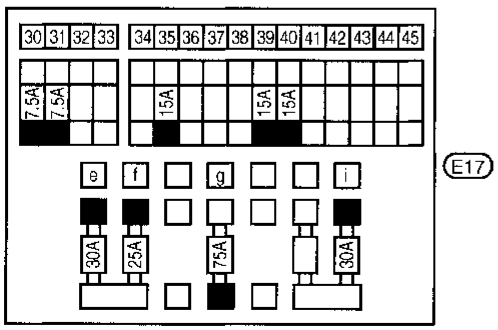
AEL632B

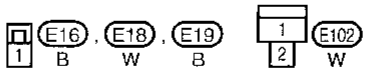
Wiring Diagram –POWER–

BATTERY POWER SUPPLY – IGNITION SW. IN ANY POSITION

EL-POWER-01



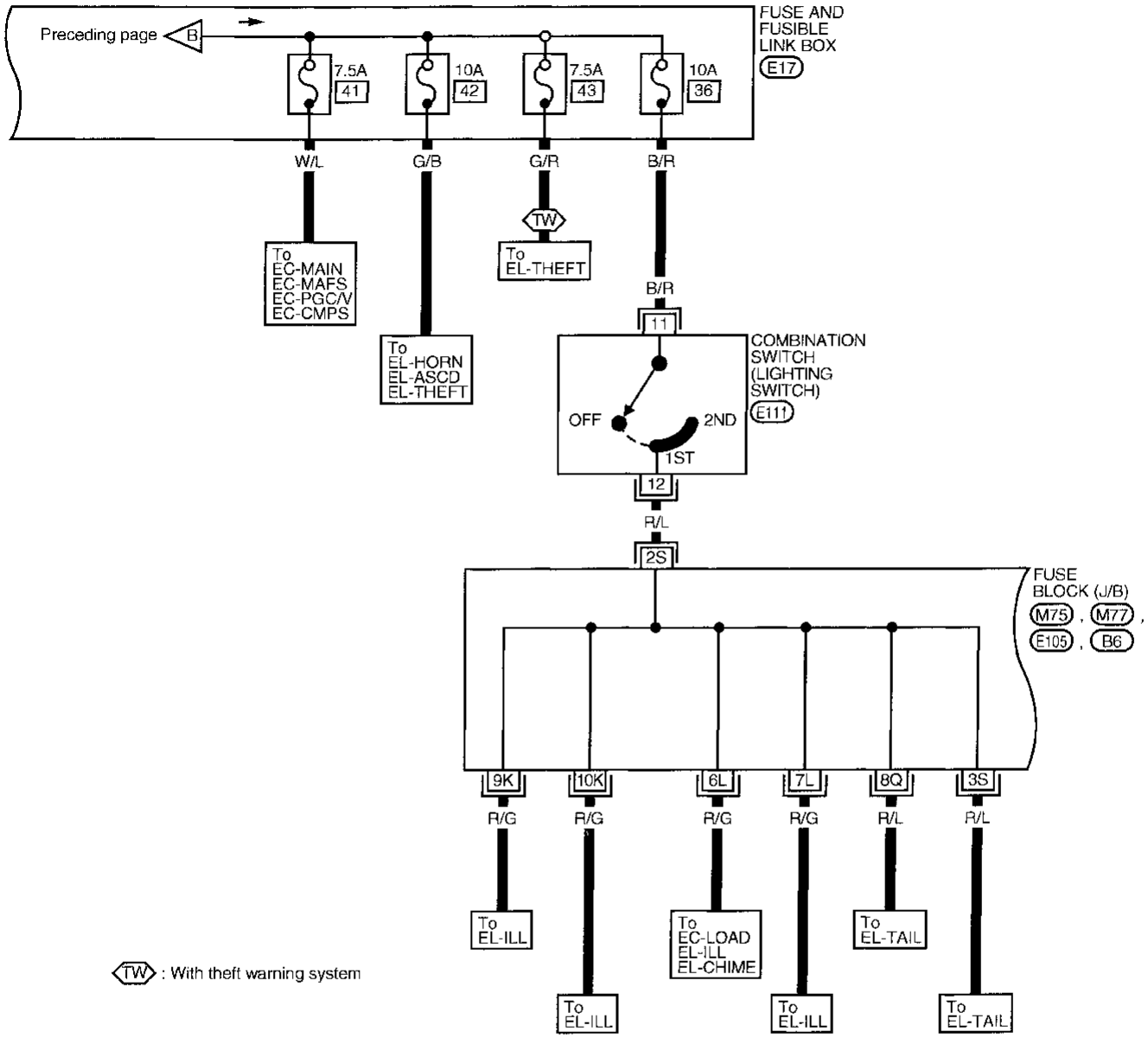


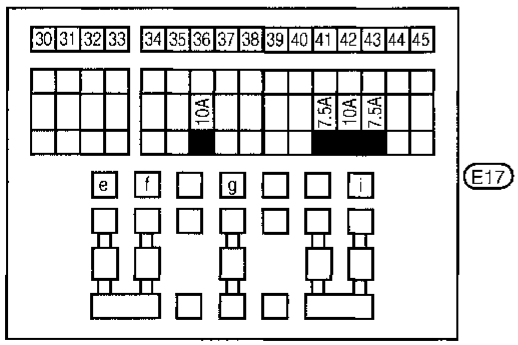


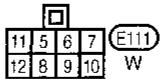
AEL330B

Wiring Diagram –POWER– (Cont'd)

EL-POWER-02







Refer to last page (Foldout page).

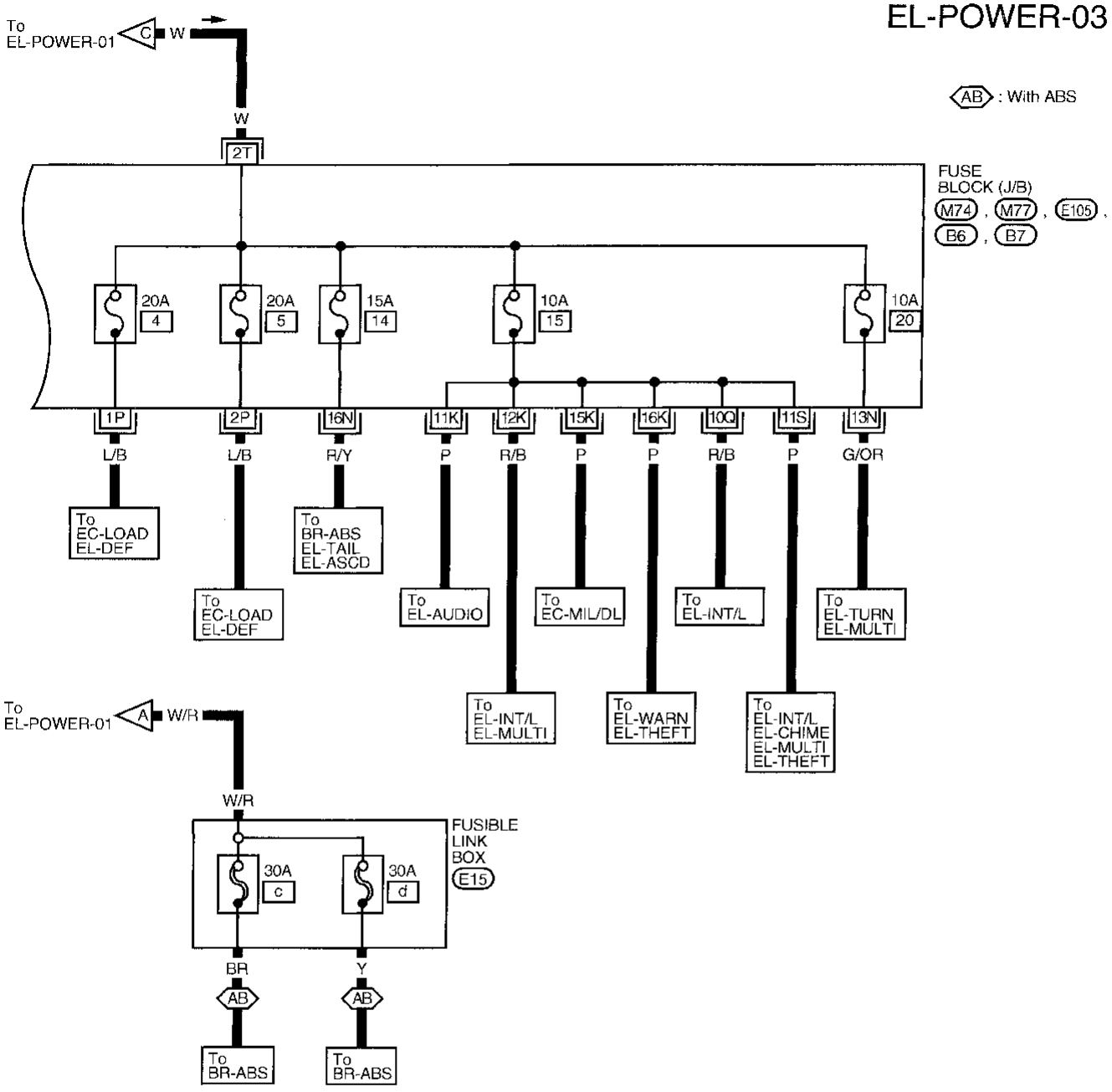
M74 , M77 , E105 , B6

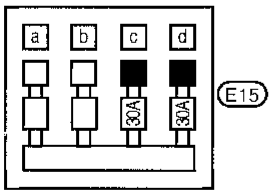
1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20
21	22	23		
24	25	26		
27	28	29		

AEL613B

Wiring Diagram –POWER– (Cont'd)

EL-POWER-03





Refer to last page (Foldout page).

M74 , M77 , E105 , B6 , B7

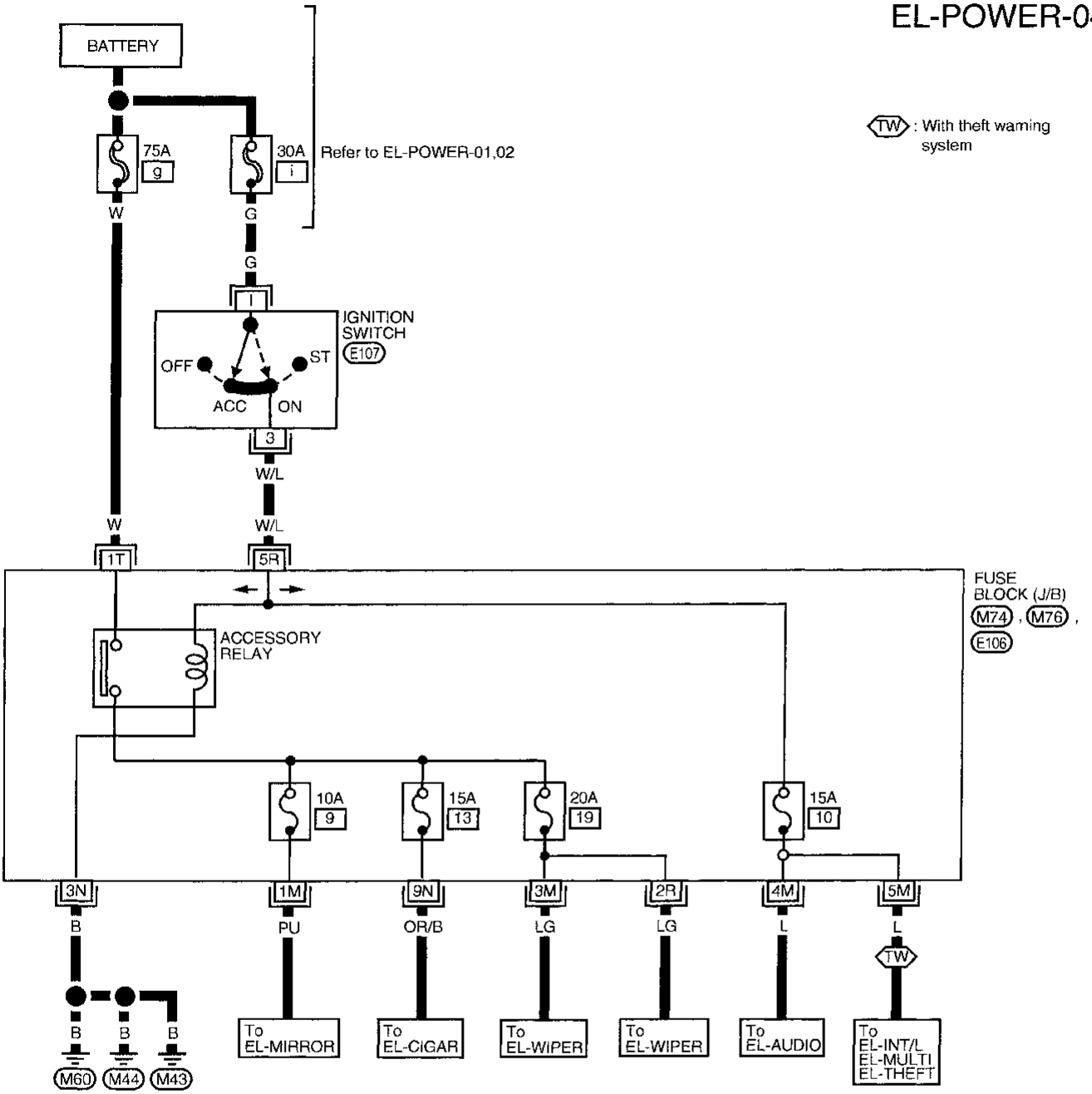
1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20
21	22	23		
24	25	26		
27	28	29		

AEL332B

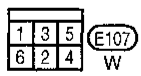
Wiring Diagram –POWER– (Cont'd)

ACCESSORY POWER SUPPLY – IGNITION SW. IN "ACC" OR "ON"

EL-POWER-04



TW : With theft warning system



Refer to last page (Foldout page).

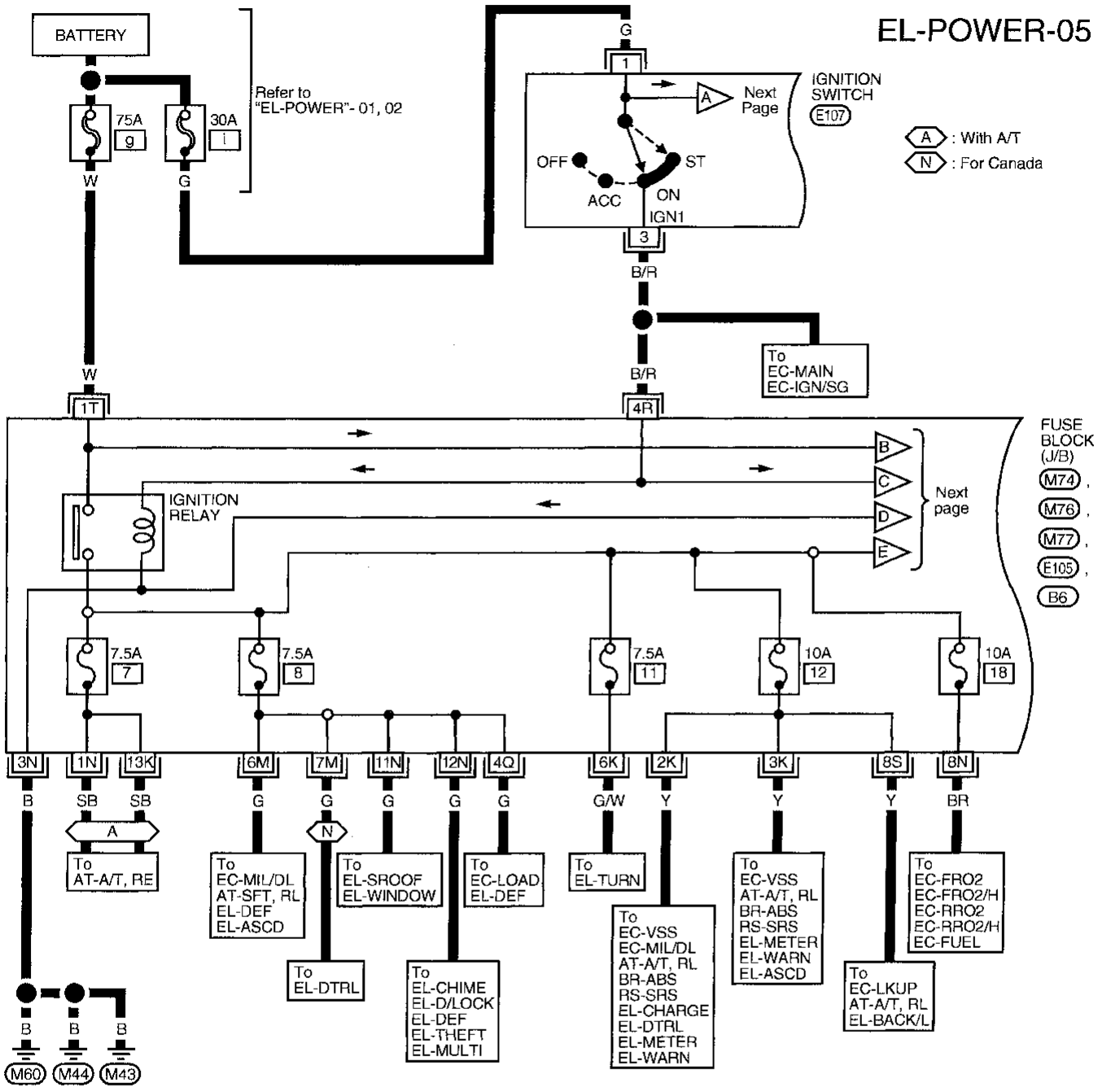
M74, M76, E106

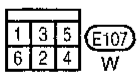
1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20
21	22	23		
24	25	26		
27	28	29		

AEL333B

Wiring Diagram –POWER– (Cont'd)

IGNITION POWER SUPPLY – IGNITION SW. IN "ON" AND/OR "START"





Refer to last page (Foldout page).

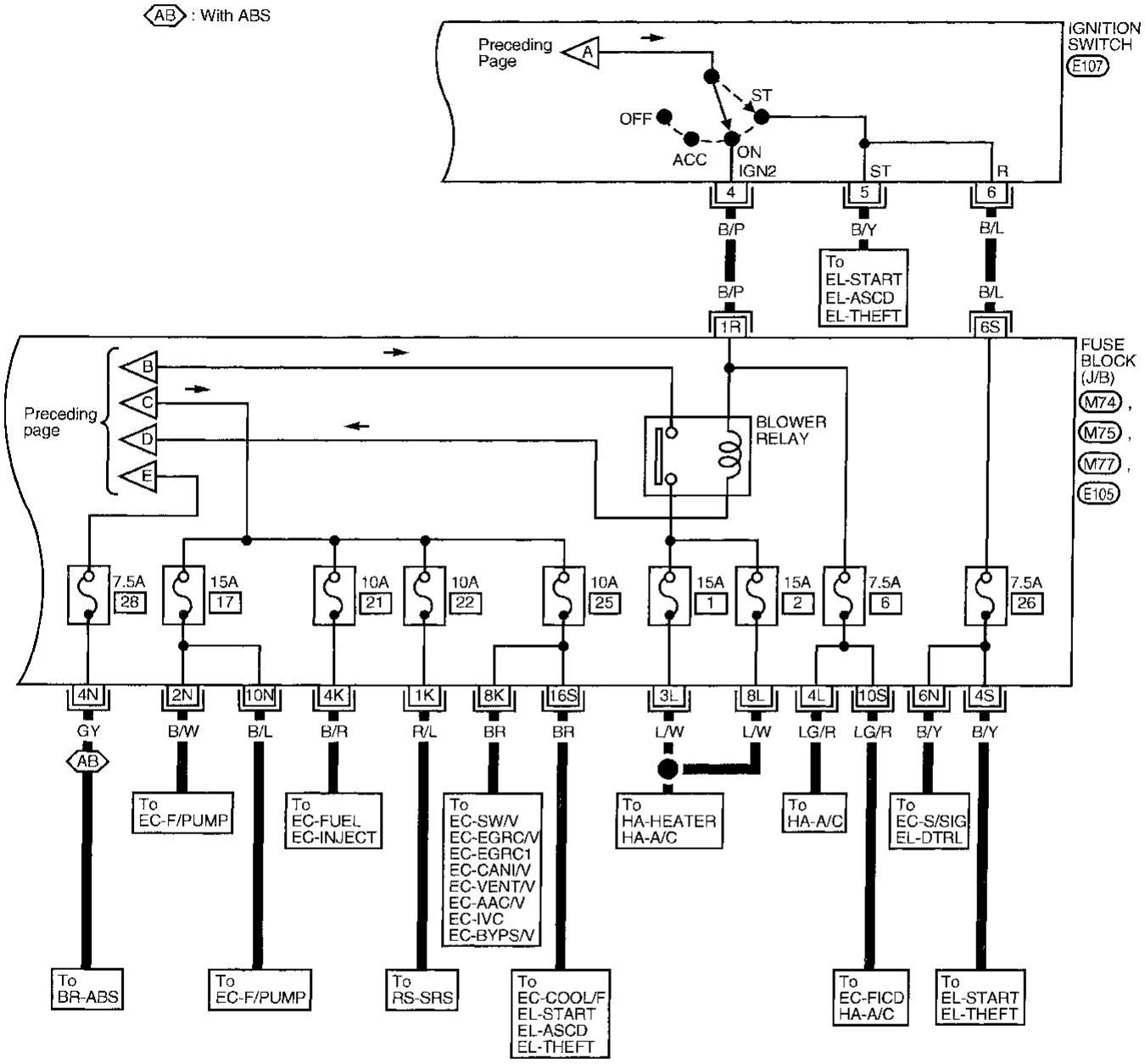
M74 , M76 , M77 , E105
B6

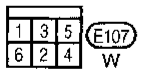
1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20
21	22	23		
24	25	26		
27	28	29		

AEL614B

Wiring Diagram –POWER– (Cont'd)

EL-POWER-06





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M74 , M75 , M77 , E105

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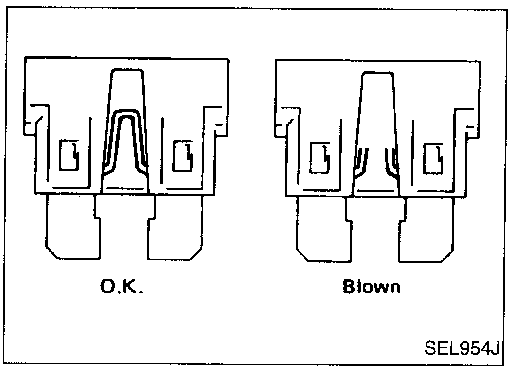
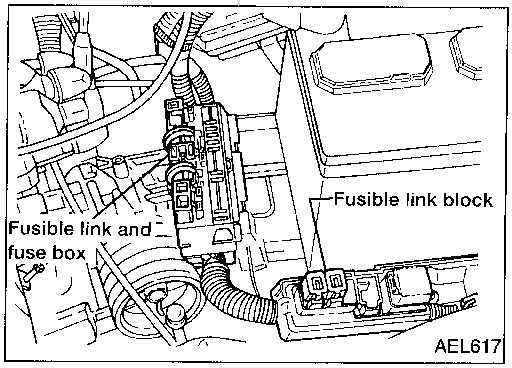
11	12	13	14	15
16	17	18	19	20
21	22	23		
24	25	26		
27	28	29		

AEL335B



Fuse

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



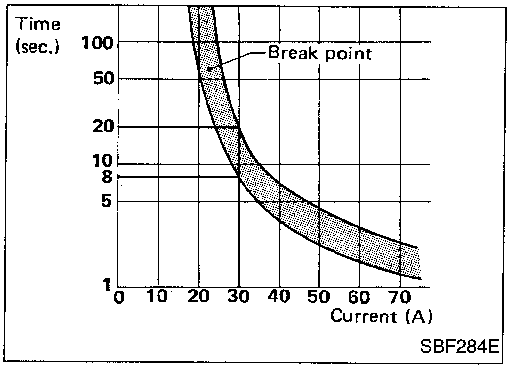
Fusible Link

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:

- **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.**
- **Never wrap outside of fusible link with vinyl tape.**

Important: Never let fusible link touch any other wiring harness, vinyl or rubber parts.



Circuit Breaker Inspection

For example, when current is 30A, the circuit is broken within 8 to 20 seconds.

Circuit breakers are used in the following systems:

- Interior and trunk room lamps
- Warning chime
- Power window & power door lock
- Power sunroof
- Multi-remote control system
- Theft warning system

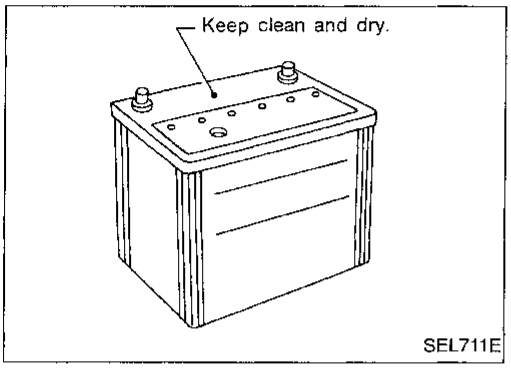
GROUND	CONNECT TO	CONN. NO.	CELL CODE
M43/M44/M60	ACCESSORY RELAY	M74	EL-POWER
	ASCD CONTROL UNIT	M26	EL-ASCD
	ASCD HOLD RELAY	M24	EL-ASCD
	ASCD MAIN SWITCH	M6	EL-ASCD
	A/T DEVICE	M36	AT-SFT, RL
	A/T DEVICE (OVERDRIVE CONTROL SWITCH)	M36	AT-A/T, RL
	BLOWER RELAY	M74	EL-POWER
	CIGARETTE LIGHTER SOCKET	M35	EL-CIGAR
	CLUTCH INTERLOCK SWITCH	M21	EL-START, EL-THEFT
	COMBINATION FLASHER UNIT	M40	EL-TURN
	COMBINATION METER (AIR BAG WARNING LAMP)	M66	RS-SRS, EL-WARN
	COMBINATION METER (CRUISE INDICATOR LAMP)	M66	EL-ASCD
	COMBINATION METER (FUEL GAUGE)	M66	EL-METER
	COMBINATION METER (HIGH BEAM INDICATOR)	M65	EL-H/LAMP, EL-DTRL
	COMBINATION METER (SPEEDOMETER)	M66	EC-VSS, EL-METER, EL-ASCD
	COMBINATION METER (TACHOMETER)	M66	EL-METER
	COMBINATION METER (TURN SIGNAL LAMP)	M66	EL-TURN
	COMBINATION METER (WATER TEMP. GAUGE)	M66	EL-METER
	DATA LINK CONNECTOR FOR CONSULT	M4	EC-MIL/DL
	DATA LINK CONNECTOR FOR GST	M25	EC-MIL/DL
	DAYTIME LIGHT CONTROL UNIT	M73	EL-DTRL
	DOOR MIRROR REMOTE CONTROL SWITCH	M5	EL-MIRROR
	FAN SWITCH	M48	HA-HEATER, HA-A/C, EC-LOAD
	IGNITION RELAY	M74	EL-POWER
	ILLUMINATION CONTROL SWITCH	M7	EL-ILL
	INTERMITTENT WIPER AMPLIFIER	M64	EL-WIPER
	POWER WINDOW RELAY	M1	EL-WINDOW, EL-SROOF
	REAR WINDOW DEFOGGER SWITCH	M28	EL-DEF
	REAR WINDOW DEFOGGER TIMER	M38	EL-DEF
	RECIRCULATION SWITCH	M49	HA-A/C
	SMART ENTRANCE CONTROL UNIT	M37	EL-INT/L, EL-CHIME, EL-D/LOCK, EL-DEF, EL-MULTI, EL-THEFT
	SUNROOF RELAY	M2	EL-SROOF
	WIPER MOTOR (Without ABS)	M61	EL-WIPER
	WIPER MOTOR (With ABS)	B101	EL-WIPER
	DOOR LOCK/UNLOCK SWITCH RH	D15	EL-D/LOCK
	FRONT DOOR LOCK ACTUATOR LH	D8	EL-D/LOCK
	FRONT DOOR LOCK ACTUATOR RH	D17	EL-D/LOCK
	FRONT DOOR LOCK ACTUATOR LH (DOOR UNLOCK SENSOR)	D8	EL-MULTI, EL-THEFT
	FRONT DOOR LOCK ACTUATOR RH (DOOR UNLOCK SENSOR)	D17	EL-MULTI, EL-THEFT
	DOOR KEY CYLINDER SWITCH LH	D7	EL-THEFT
	DOOR KEY CYLINDER SWITCH RH	D16	EL-THEFT
	MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH	D6	EL-D/LOCK, EL-WINDOW
	AIR BAG DIAGNOSIS SENSOR UNIT	Z4	RS-SRS

GROUND	CONNECT TO	CONN. NO.	CELL CODE
E13/E25	BRAKE FLUID LEVEL SWITCH	E1	EL-WARN
	COMBINATION SWITCH (FRONT FOG LAMP SWITCH)	E112	EL-F/FOG
	COOLING FAN MOTOR-1	E50:A/T	EC-COOL/F
		E21:M/T	
	COOLING FAN MOTOR-2	E24:A/T	EC-COOL/F
		E23:M/T	
	COOLING FAN RELAY-3 (HI-RELAY)	E46	EC-COOL/F
	FRONT FOG LAMP LH	E11	EL-F/FOG
	FRONT FOG LAMP RH	E26	EL-F/FOG
	FRONT SIDE MARKER LAMP LH	E9	EL-TAIL/L
	FRONT SIDE MARKER LAMP RH	E28	EL-TAIL/L
	FRONT TURN SIGNAL LAMP LH	E9	EL-TURN
	FRONT TURN SIGNAL LAMP RH	E28	EL-TURN
	HEADLAMP LH	E10	EL-H/LAMP, EL-THEFT
	HEADLAMP RH	E27	EL-H/LAMP, EL-DTRL, EL-THEFT
	HOOD SWITCH	E35	EL-THEFT
	HORN RELAY-2	E45	EL-THEFT
	INHIBITOR SWITCH	E213	EC-PNP/SW, AT-A/T, RL, EL-START EL-ASCD, EL-THEFT
	NEUTRAL POSITION SWITCH	E205	EC-PNP/SW
	WASHER FLUID LEVEL SWITCH	E32	EL-WARN
	WIPER SWITCH	E109	EL-WIPER
F12/F23	DISTRIBUTOR (CAMSHAFT POSITION SENSOR)	F4	EC-CMPS
	DISTRIBUTOR (POWER TRANSISTOR)	F4	EC-IGN/SG
	ECM	F24	EC-FRO2/H, EC-FRO2, EC-FUEL, EC-MAIN, EC-AP/SEN, EC-RR02, EC-RRO2/H
	IACV-FICD SOLENOID VALVE	F9	EC-FICD, HA-A/C
	SHIELD WIRE DISTRIBUTOR (CAMSHAFT POSITION SENSOR)	F4	EC-CMPS
	SHIELD WIRE (CRANKSHAFT POSITION SENSOR)	F3	EC-CKPS
	SHIELD WIRE [FRONT HEATED OXYGEN SENSOR (O2SF)]	F1	EC-FRO2, EC-FRO2/H, EC-FUEL
	SHIELD WIRE (KNOCK SENSOR)	F102	EC-KS
	SHIELD WIRE (MASS AIR FLOW SENSOR)	F7	EC-MAFS
	SHIELD WIRE [REAR HEATED OXYGEN SENSOR (O2SR)]	F25	EC-RRO2, EC-RRO2/H
	SHIELD WIRE (RESISTOR)	F6	EC-IGN/SG
	SHIELD WIRE [THROTTLE POSITION SENSOR (TV01)]	F10	EC-TPS, AT-A/T, RL
	DATA LINK CONNECTOR FOR GST	M25	EC-MIL/DL
	POWER STEERING OIL PRESSURE SWITCH	M62	EC-PST/SW
	SHIELD WIRE [ABSOLUTE PRESSURE SENSOR] (Without ABS)	M72	EC-AP/SEN
	SHIELD WIRE [ABSOLUTE PRESSURE SENSOR] (With ABS)	B112	EC-AP/SEN
	SHIELD WIRE (EVAP CONTROL SYSTEM PRESSURE SENSOR)	T13	EC-PRE/SE
A4	GENERATOR	A5	EL-CHARGE

GROUND	CONNECT TO	CONN. NO.	CELL CODE
B14/B17	FRONT DOOR SWITCH LH (DRIVER'S SIDE)	B13	RS-SRS, EL-CHIME, EL-INT/L, EL-MULTI, EL-THEFT
	FUEL PUMP	B16	EC-F/PUMP
	FUEL TANK GAUGE UNIT	B15	EL-METER, EL-WARN
	FUEL TANK GAUAGE UNIT (TANK FUEL TEMPERATURE SENSOR)	B15	EC-TFTS
	SEAT BELT BUCKLE SWITCH	B12	EL-CHIME, EL-WARN
	REAR DOOR LOCK ACTUATOR LH	D25	EL-D/LOCK
	REAR DOOR LOCK ACTUATOR RH	D21	EL-D/LOCK
	REAR DOOR LOCK ACTUATOR LH (DOOR UNLOCK SENSOR)	D25	EL-MULTI, EL-THEFT
	REAR DOOR LOCK ACTUATOR RH (DOOR UNLOCK SENSOR)	D21	EL-MULTI, EL-THEFT
B106	ABS CONTROL UNIT	B107	BR-ABS
	ABS RELAY UNIT	B113	BR-ABS
B108	SHIELD WIRE (FRONT WHEEL SENSOR LH)	E3	BR-ABS
	SHIELD WIRE (FRONT WHEEL SENSOR RH)	B104	BR-ABS
	SHIELD WIRE (REAR WHEEL SENSOR LH)	B109	BR-ABS
	SHIELD WIRE (REAR WHEEL SENSOR RH)	B110	BR-ABS
B202	REAR WINDOW DEFOGGER	B201	EL-DEF
T9/T10	BACK-UP LAMP LH	T2	EL-BACK/L
	BACK-UP LAMP RH	T7	EL-BACK/L
	HIGH-MOUNTED STOP LAMP	T5	EL-TAIL/L
	LICENSE PLATE LAMP LH	T3	EL-TAIL/L
	LICENSE PLATE LAMP RH	T3	EL-TAIL/L
	REAR COMBINATION LAMP LH (STOP)	T8	EL-TAIL/L
	REAR COMBINATION LAMP RH (STOP)	T11	EL-TAIL/L
	REAR COMBINATION LAMP LH (TAIL)	T8	EL-TAIL/L
	REAR COMBINATION LAMP RH (TAIL)	T11	EL-TAIL/L
	REAR COMBINATION LAMP LH (TURN SIGNAL)	T8	EL-TURN
	REAR COMBINATION LAMP RH (TURN SIGNAL)	T11	EL-TURN
	TRUNK LID KEY CYLINDER SWITCH (UNLOCK SWITCH)	T6	EL-THEFT
	TRUNK ROOM LAMP SWITCH	T4	EL-INT/L, EL-THEFT

CAUTION:

- **If it becomes necessary to start engine with booster battery and jumper cables:**
- **Use a 12-volt booster battery.**
- **After connecting battery cables, ensure that they are tightly clamped to battery terminals for good contact.**
- **Never add distilled water through the hole used to check specific gravity.**

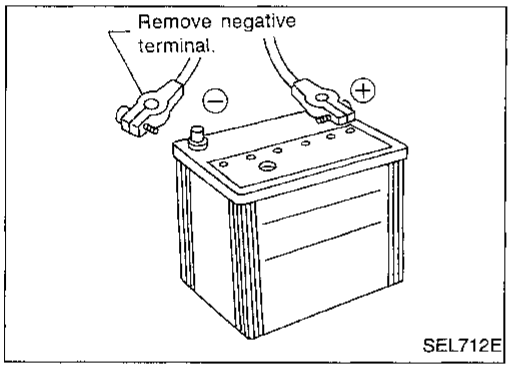


How to Handle Battery

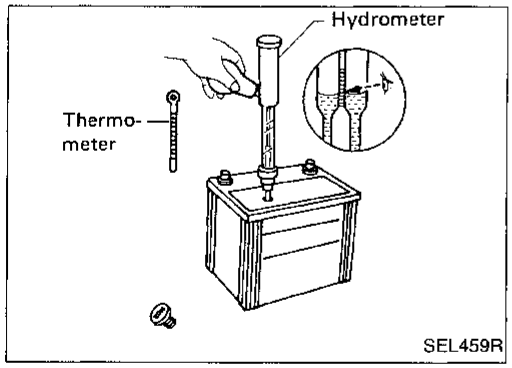
METHODS OF PREVENTING OVER-DISCHARGE

The following precautions must be taken to prevent over-discharging a battery.

- The battery surface (particularly its top) should always be kept clean and dry.
- The terminal connections should be clean and tight.
- At every routine maintenance, check the electrolyte level.



- When the vehicle is not going to be used over a long period of time, disconnect the negative battery terminal. (If the vehicle has an extended storage switch, turn it off.)



- Check the condition of the battery.
  Periodically check the specific gravity of the electrolyte. Keep a close check on charge condition to prevent over-discharge.

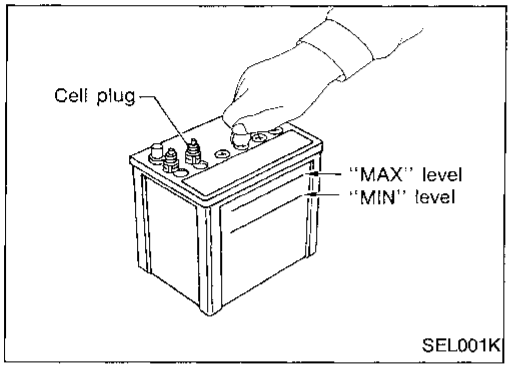
How to Handle Battery (Cont'd)

CHECKING ELECTROLYTE LEVEL

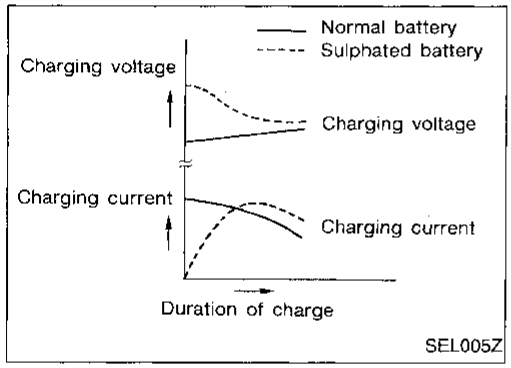
WARNING:

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 cell plug using a suitable tool.
- Add distilled water up to the MAX level.

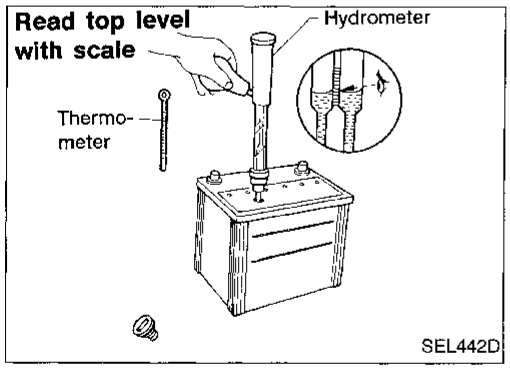


SULPHATION

A battery will be completely discharged if it is left unattended for a long time and the specific gravity becomes less than 1.100. This may result in sulphation on the cell plates.

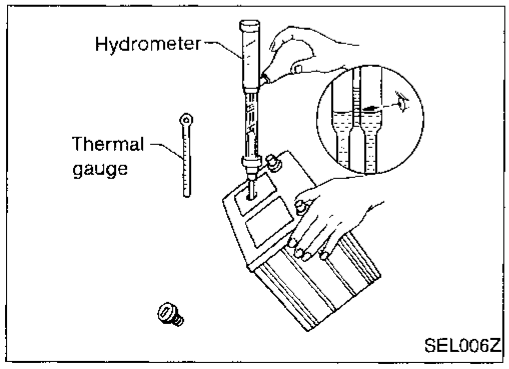
To determine if a battery has been "sulphated", note its voltage and current when charging it. As shown in the figure, less current and higher voltage are observed in the initial stage of charging sulphated batteries.

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)

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

Hydrometer temperature correction

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

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

How to Handle Battery (Cont'd)

CHARGING THE BATTERY

CAUTION:

- **Do not "quick charge" a fully discharged battery.**
- **Keep the battery away from open flame while it is being charged.**
- **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.**
- **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

Do not charge at more than 50 ampere rate.

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

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

Service Data and Specifications (SDS)

Applied area		USA	Canada
Group size		21F	24F
Capacity	V-AH	12-60	12-65
Cold cranking current (For reference value)	A	490	550
Reserve capacity	Minutes	88	113

NOTES

System Description

M/T MODELS

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

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

For models with theft warning system

With the ignition switch in the ON or START position, power is supplied:
- through 10A fuse (No. [25], located in the fuse block [J/B])
- to theft warning relay terminal ①.

With the ignition switch in the START position, power is supplied:
- through 7.5A fuse (No. [26], located in the fuse block [J/B])
- to theft warning relay terminal ③

If the theft warning system is triggered, terminal ② of the theft warning relay is grounded through terminal ㉜ of the smart entrance control unit and power to the clutch interlock relay is interrupted.

When the theft warning system is not operating, power is supplied:
- through theft warning relay terminal ④
- to clutch interlock relay terminal ①.

For models without theft warning system

With the ignition switch in the START position, power is supplied:
- through 7.5A fuse (No. [26], located in the fuse block [J/B])
- to clutch interlock relay terminal ①.

Ground is supplied to clutch interlock relay terminal ②, when the clutch pedal is depressed through the clutch interlock switch and body grounds (M43), (M44) and (M60).

The clutch interlock relay is energized and power is supplied:
- from terminal ⑤ of the clutch interlock relay
- to terminal ① of the starter motor windings.

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

System Description (Cont'd)

A/T MODELS

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

For models with theft warning system

With the ignition switch in the ON or START position, power is supplied:
- through 10A fuse (No. [25], located in the fuse block [J/B])
- to theft warning relay terminal ①
- to theft warning relay terminal ③
- through theft warning relay terminal ④
- to inhibitor relay terminal ①.

If the theft warning system is triggered, terminal ② of the theft warning relay is grounded through smart entrance control unit terminal ㉜ and power to the inhibitor relay is interrupted.
When the theft warning system is not triggered and the ignition switch is in the START position, power is supplied:
- from ignition switch terminal ⑤
- to inhibitor relay terminal ⑥.

With the selector lever in the "P" or "N" position, ground is supplied:
- from inhibitor switch terminal ①
- to inhibitor relay terminal ②
- through inhibitor switch terminal ②
- to body grounds (E13) and (E25).

The inhibitor relay is energized, and power is supplied:
- from inhibitor relay terminal ⑦
- to terminal ① of the starter motor windings.

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

For models without theft warning system

With the ignition switch in the ON or START position, power is supplied:
- through 10A fuse (No. [25], located in the fuse block [J/B])
- to inhibitor relay terminal ①.

With the ignition switch in the START position, power is supplied:
- from ignition switch terminal ⑤
- to inhibitor relay terminal ⑥.

With the selector lever in the "P" or "N" position, ground is supplied:
- from inhibitor switch terminal ①
- to inhibitor relay terminal ②
- through inhibitor switch terminal ②
- to body grounds (E13) and (E25).

The inhibitor relay is energized and power is supplied:
- from inhibitor relay terminal ⑦
- to terminal ① of the starter motor windings.

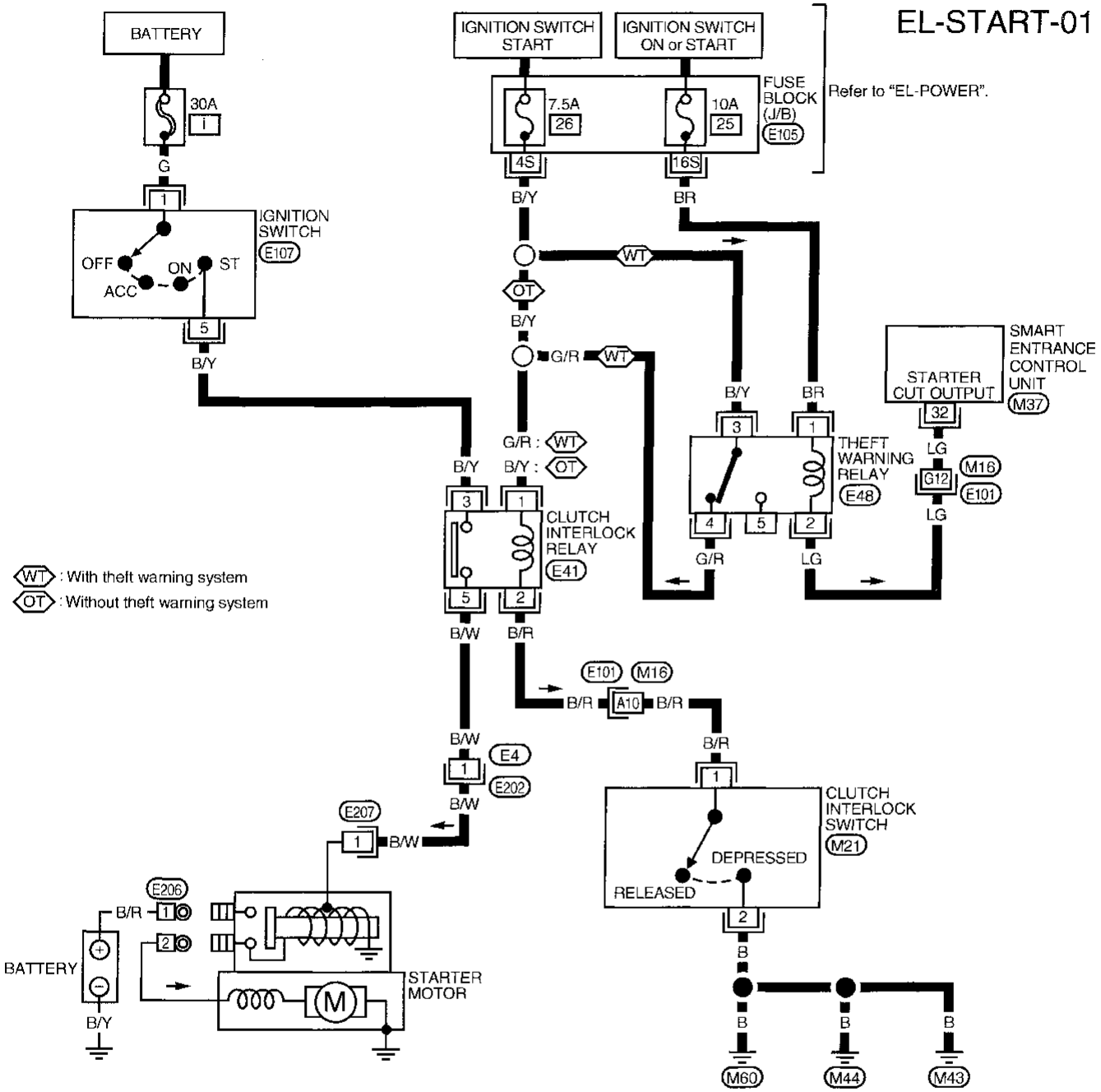
The starter motor plunger closes and provides a closed circuit between the battery and starter motor. The starter motor is grounded to the engine block. With power and ground supplied, cranking occurs and the engine starts.

THEFT WARNING SYSTEM

The theft warning system will interrupt power supply to clutch interlock relay (M/T models) or inhibitor relay (A/T models) if the system is triggered. The starter motor will then not crank, and the engine will not start. Refer to "THEFT WARNING SYSTEM" (EL-179).

Wiring Diagram –START–

M/T MODELS

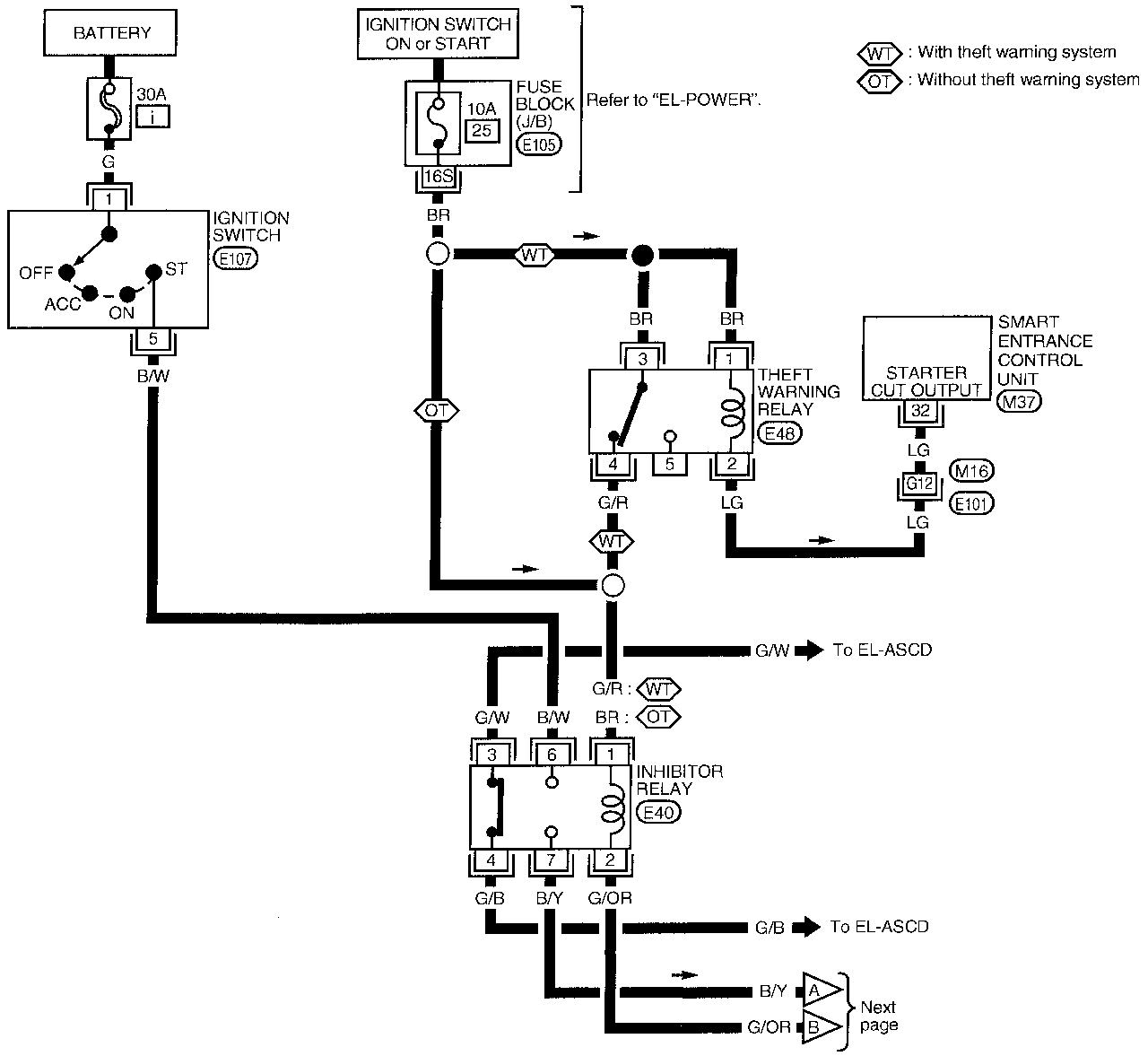


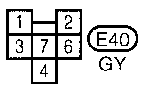
AEL624B

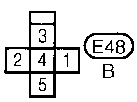
Wiring Diagram –START– (Cont'd)

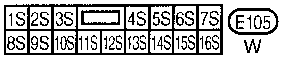
A/T MODELS

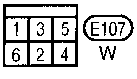
EL-START-02







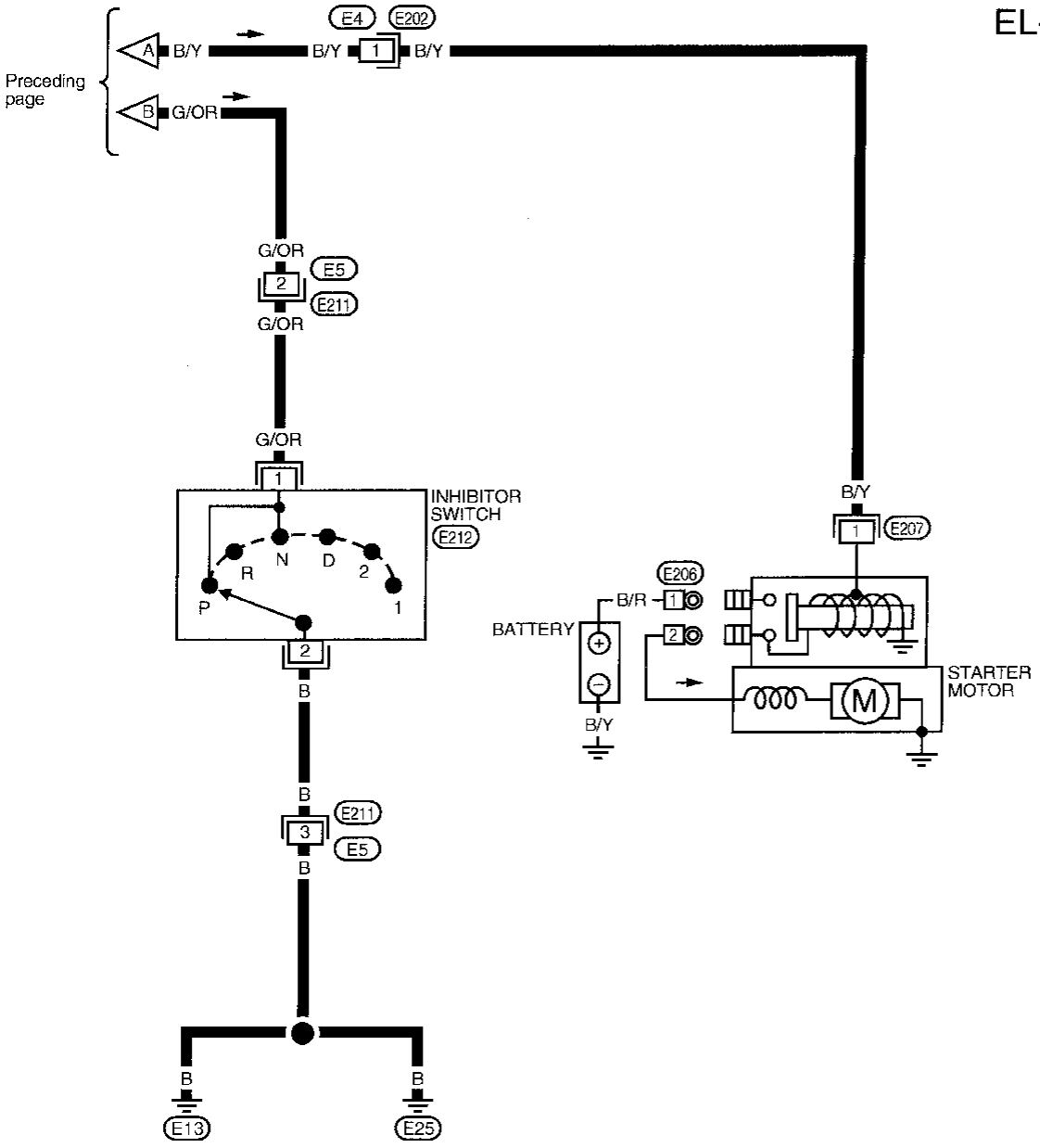




AEL633B

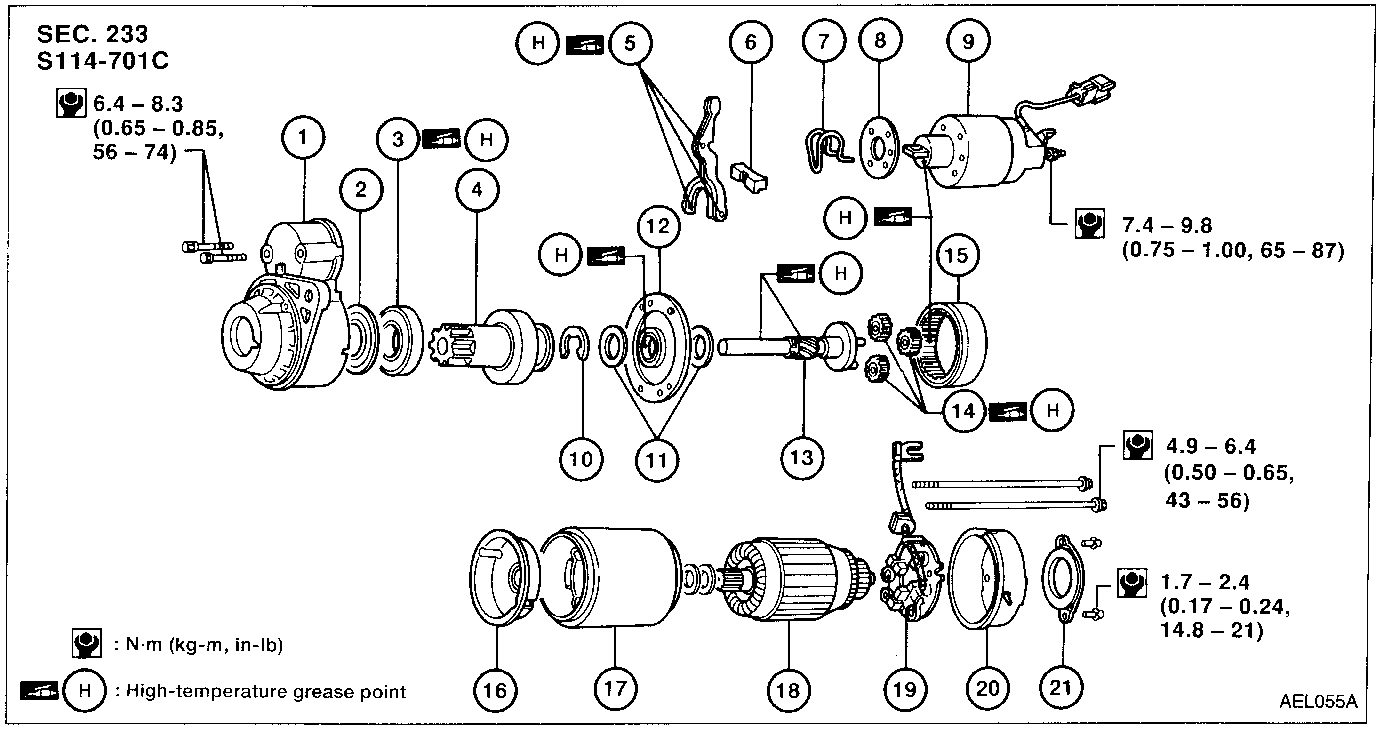
Wiring Diagram –START– (Cont'd)

EL-START-03



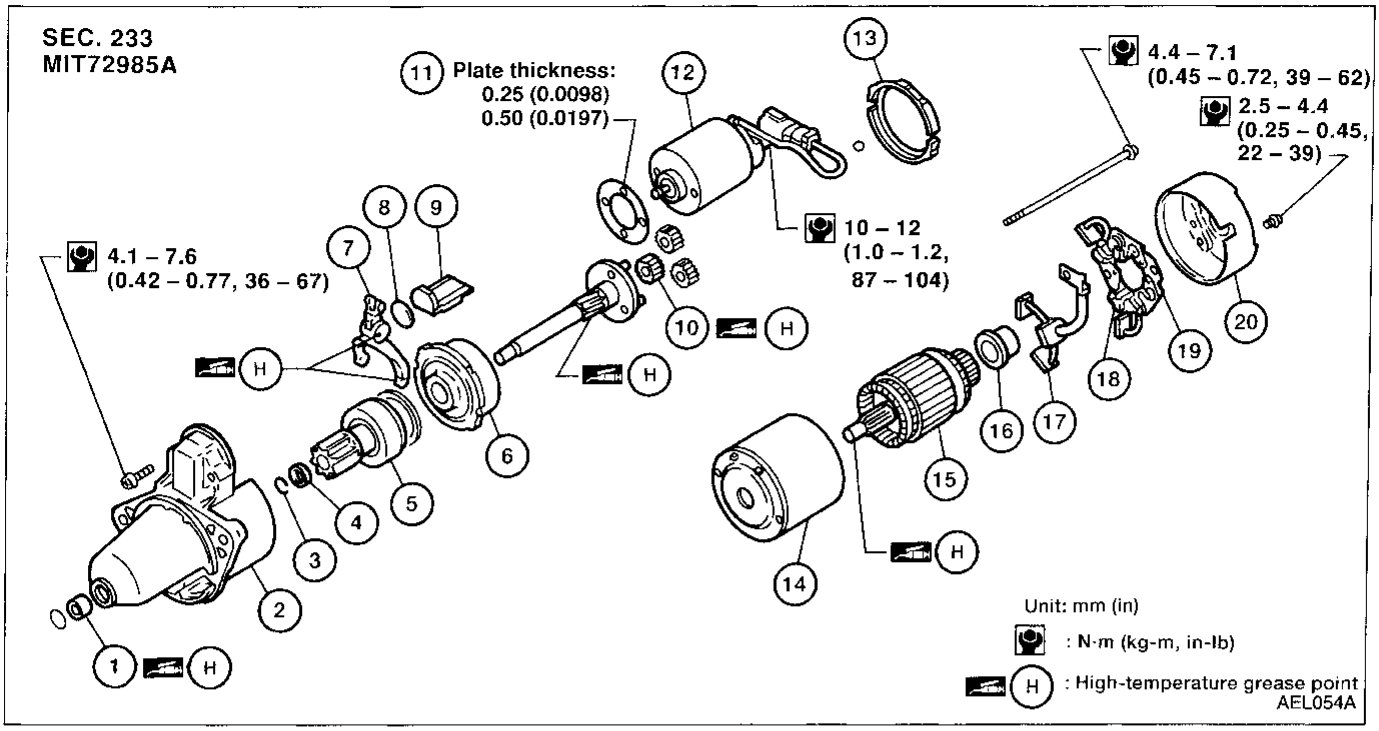
AEL625B

Construction



① Gear case
② Bearing cover
③ Ball bearing
④ Pinion assembly
⑤ Shift lever
⑥ Dust cover
⑦ Torsion spring
⑧ Adjusting plate
⑨ Magnetic switch assembly
⑩ E-ring
⑪ Thrust washer
⑫ Center bracket
⑬ Pinion shaft
⑭ Planetary gear
⑮ Internal gear
⑯ Center bracket
⑰ Yoke assembly
⑱ Armature
⑲ Brush holder assembly
⑳ Rear cover
㉑ Dust cover

Construction (Cont'd)



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

Pinion/Clutch Check

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

Service Data and Specifications (SDS)

STARTER

Type		M1T72985A	S114-701C
		MITSUBISHI	HITACHI
		Reduction	Reduction
System voltage	V	12	12
No-load			
Terminal voltage	V	11.0	11.0
Current	A	90 Max.	90 Max.
Motor revolution	rpm	3000 Min.	2950 Min.
Minimum diameter of commutator	mm (in)	28.8 (1.134)	32.0 (1.260)
Minimum length of brush	mm (in)	12.0 (0.472)	11.0 (0.433)
Brush spring tension	N (kg, lb)	13.7 - 25.5 (1.4 - 2.6, 3.1 - 5.7)	17.7 - 21.6 (1.8 - 2.2, 4.0 - 4.9)
Clearance of bearing metal and armature shaft	mm (in)	0.2 (0.0078) Max.	0.03 - 0.3 (0.0012 - 0.0118)
Clearance between Pinion front edge and Pinion stopper	mm (in)	0.5 - 2.0 (0.019 - 0.079)	0.05 - 1.5 (0.0020 - 0.0591)

System Description

The generator provides DC voltage to operate the vehicle's electrical system and to keep the battery charged. The voltage output is controlled by the IC regulator.

Power is supplied at all times to generator terminal Ⓢ through:
- 75A fusible link (letter [g], located in the fuse and fusible link box), and
- 7.5A fuse (No. [31], located in the fuse and fusible link box).

Terminal Ⓑ of the generator supplies power to charge the battery and operate the vehicle's electrical system. Output voltage is controlled by the IC regulator at terminal Ⓢ detecting the input voltage. The charging circuit is protected by the 75A fusible link.

Terminal Ⓔ of the generator supplies ground through body ground (A4).

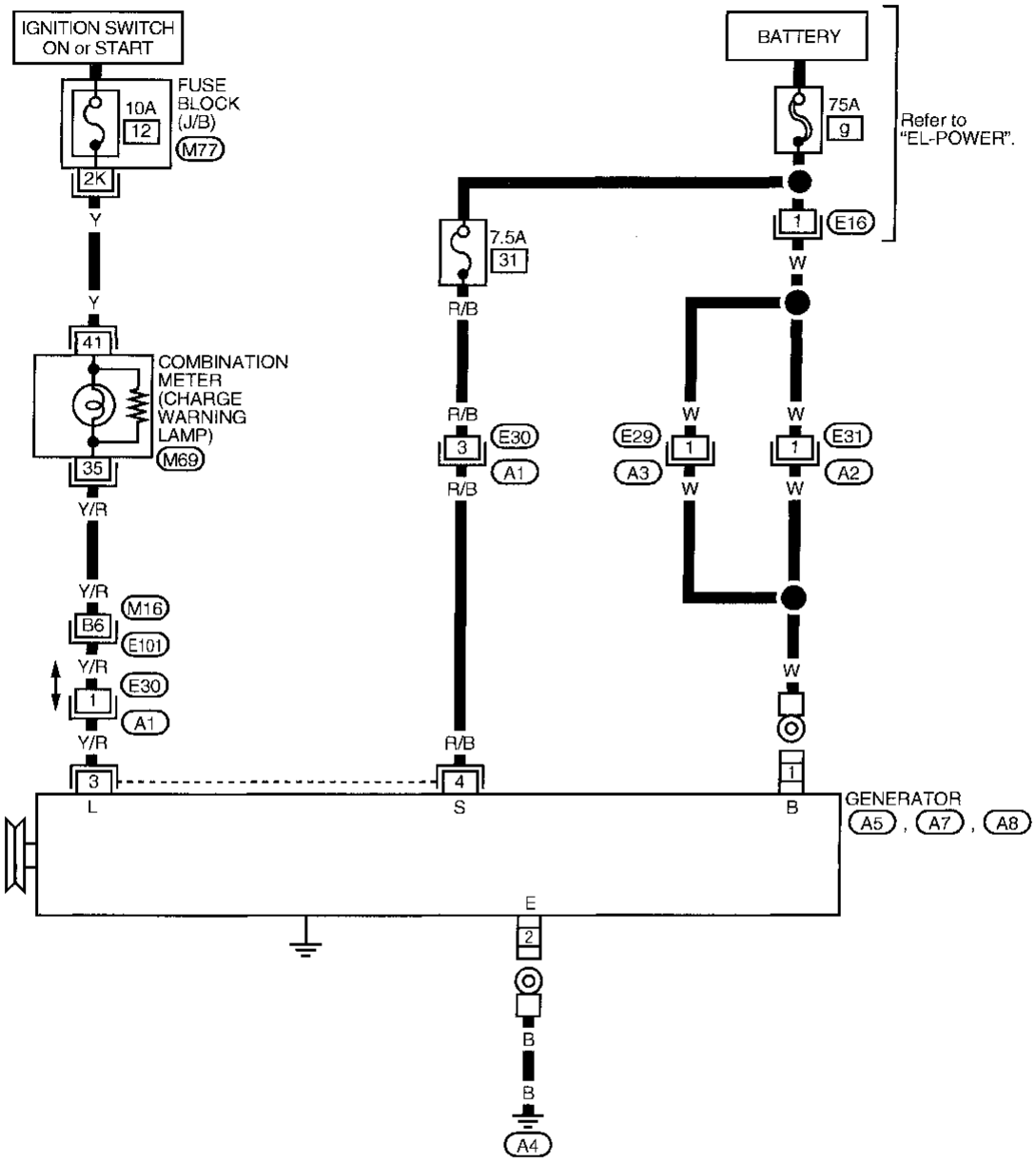
With the ignition switch in the ON or START position, power is supplied:
- through 10A fuse (No. [12], located in the fuse block [J/B])
- to combination meter terminal ㊶ for the charge warning lamp.

Ground is supplied to terminal ㉟ of the combination meter through terminal Ⓛ of the generator. With power and ground supplied, the charge warning lamp will illuminate. When the generator is providing sufficient voltage with the engine running, the ground is opened and the charge warning lamp will go off.

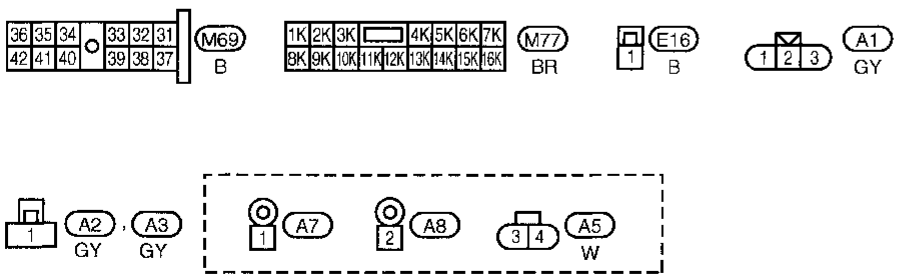
If the charge warning lamp illuminates with the engine running, a fault is indicated.

Wiring Diagram –CHARGE–

EL-CHARGE-01



Refer to last page (Foldout page).
M16, E101



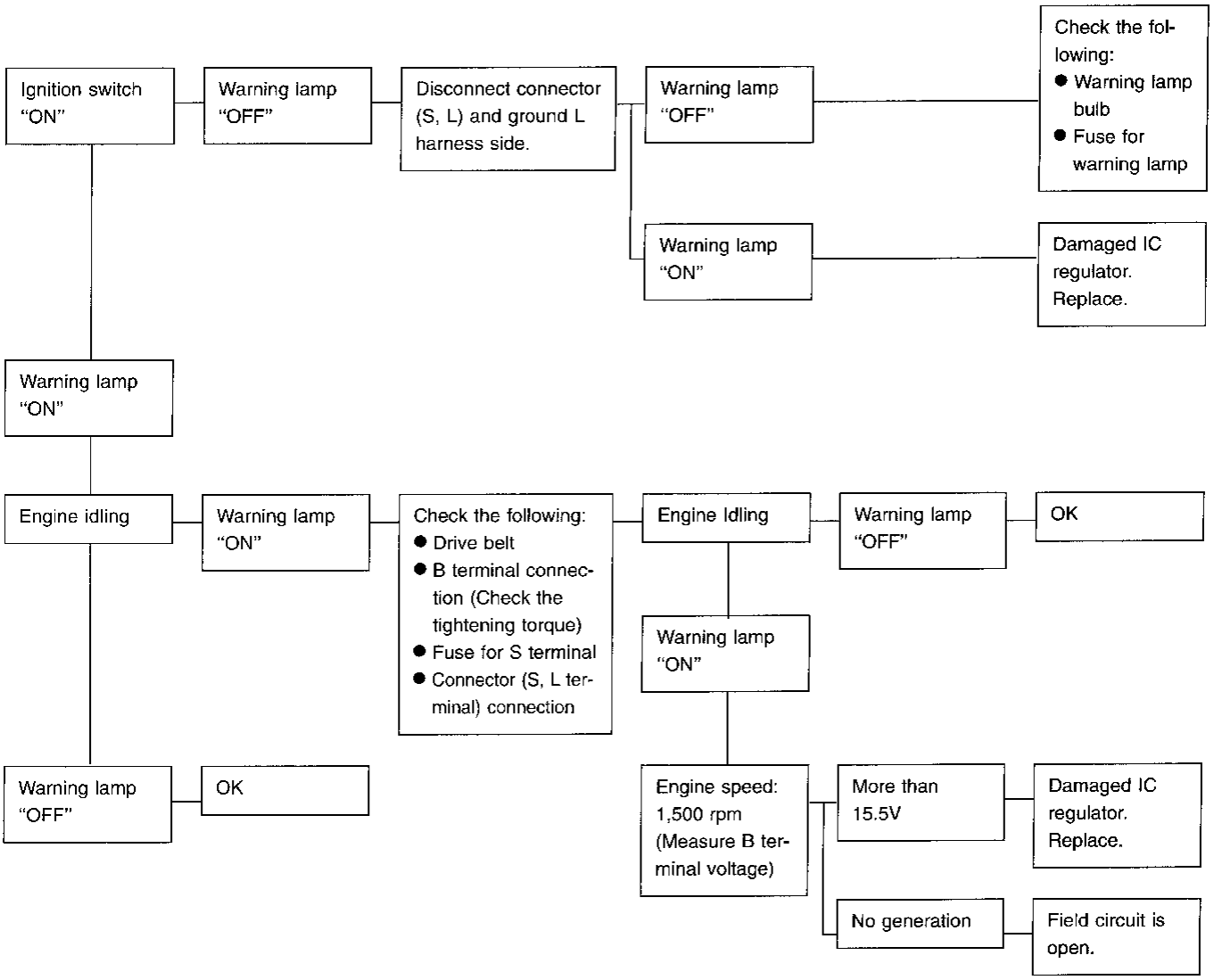
AEL626B

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, inspect the fusible link.**
- **Use fully charged battery.**

WITH IC REGULATOR



Warning lamp: "CHARGE" warning lamp in combination meter

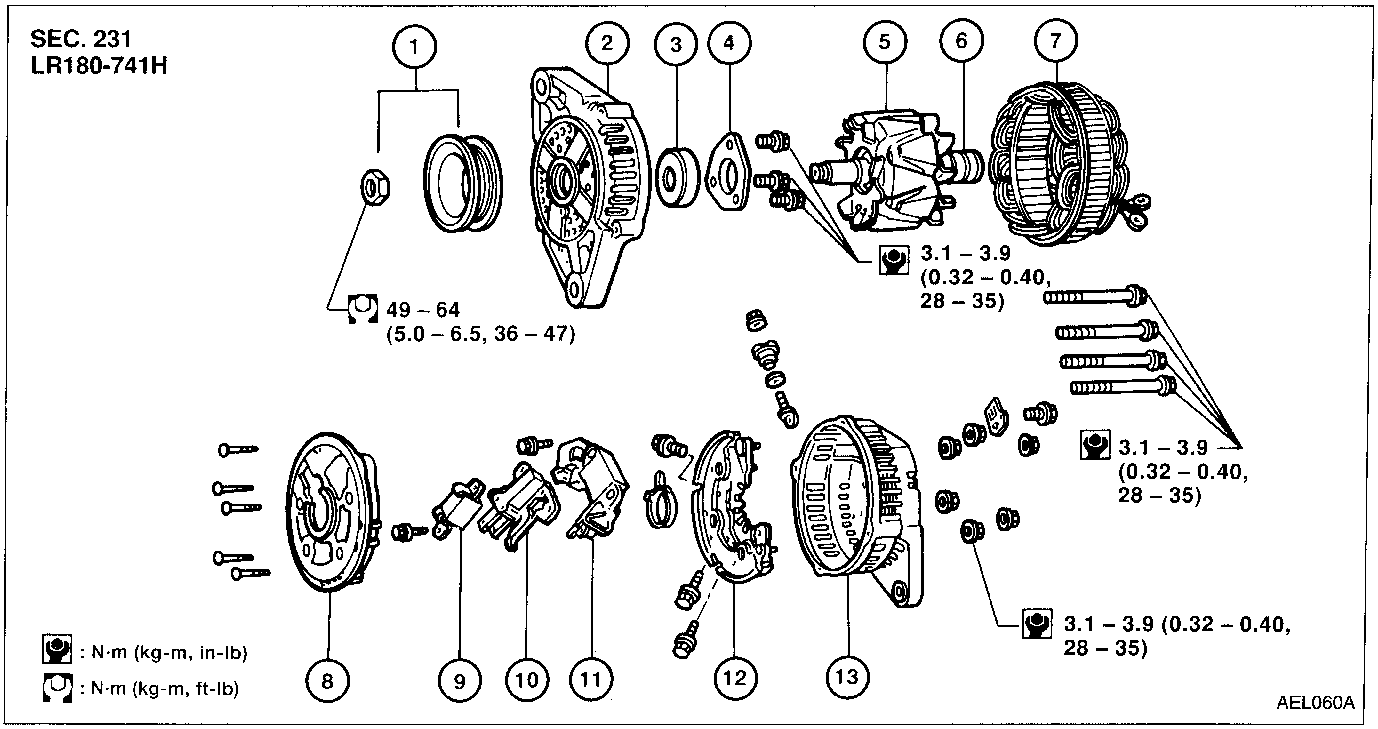
★: **When field circuit is open, check condition of rotor coil, rotor slip ring and brush. If necessary, replace faulty parts with new ones.**

MALFUNCTION INDICATOR

The IC regulator warning function activates to illuminate "CHARGE" warning lamp, if any of the following symptoms occur while generator is operating:

- B terminal is disconnected.
- S terminal is disconnected or related circuit is open.
- Field circuit is open.
- Excessive voltage is produced.

Construction



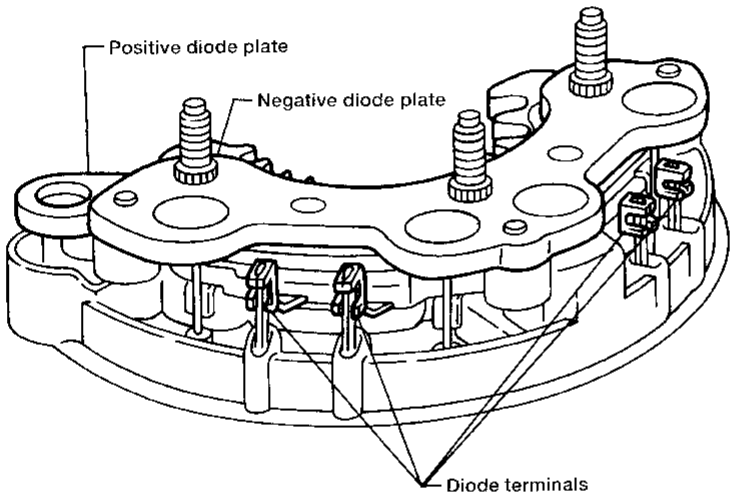
① Pulley assembly
② Front cover
③ Front bearing
④ Retainer
⑤ Rotor
⑥ Slip ring
⑦ Stator
⑧ Fan guide
⑨ Condenser
⑩ Brush assembly
⑪ IC regulator assembly
⑫ Diode assembly
⑬ Rear cover

Diode Check

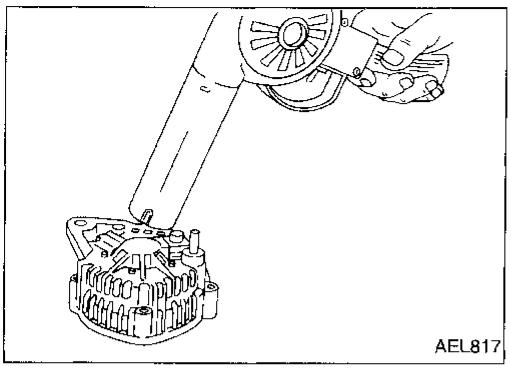
MAIN DIODES

- In order to check diodes, they must be unsoldered from the stator.
- Use an ohmmeter to check condition of diodes as indicated in chart below.
- If any of the test results are 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	

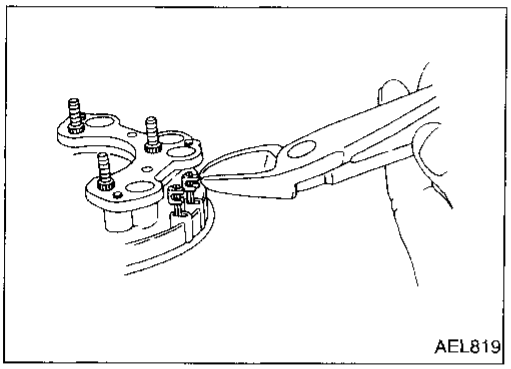


AEL818


AEL817

Disassembly and Assembly

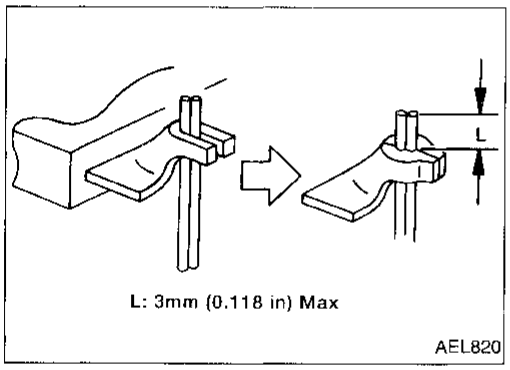
1. Remove rear cover.
- Heat rear cover, using heat gun, to 50°C (90°F) above room temperature to prevent bearing damage.


AEL819

2. Disconnect stator/diode.
- Cut diode terminals.
- Unsolder stator coil leads.

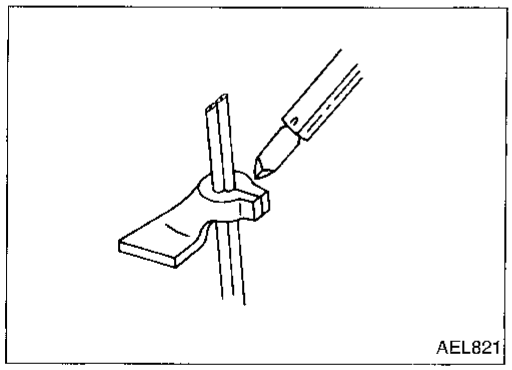
CAUTION:
Unsolder stator coil leads as fast as possible to avoid damaging diodes.

3. Remove stator and rotor.
4. Remove bearing retainer and bearing.
5. Assemble in reverse of disassembly.



L: 3mm (0.118 in) Max
AEL820

- Insert stator coil lead into lower portion of diode terminal.
- Using pliers, crimp diode terminal around stator coil lead.
- Be sure stator coil leads do not protrude more than 3 mm (0.118 in.) past diode terminal.


AEL821

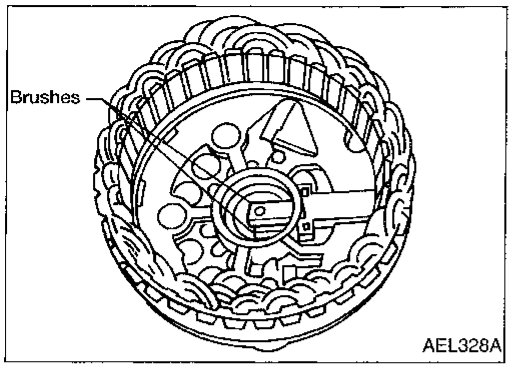
- Solder stator coil lead and diode terminals.

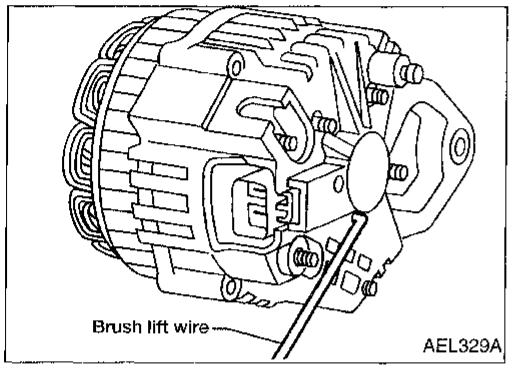
CAUTION:
Solder stator coil leads and diode terminals as fast as possible to avoid damaging diodes. Use 9/1 Pb/Sn solder in assembly.

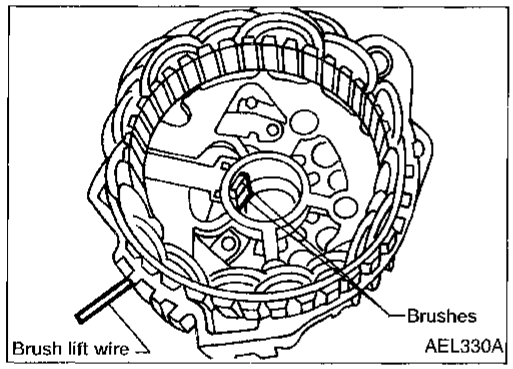
Disassembly and Assembly (Cont'd)

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.





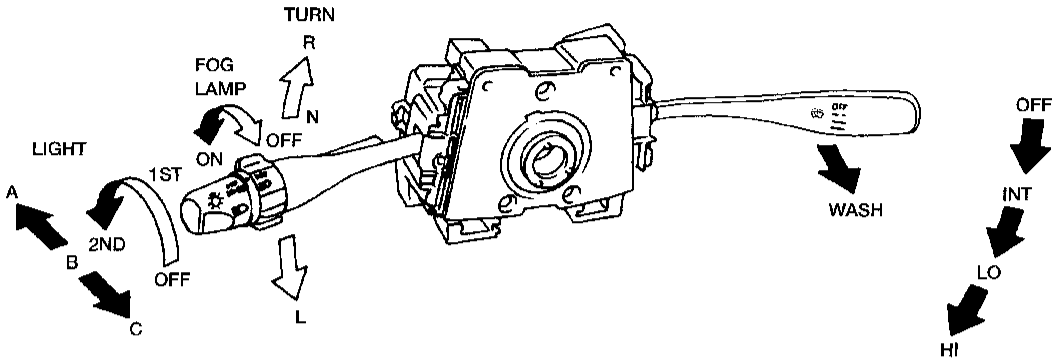


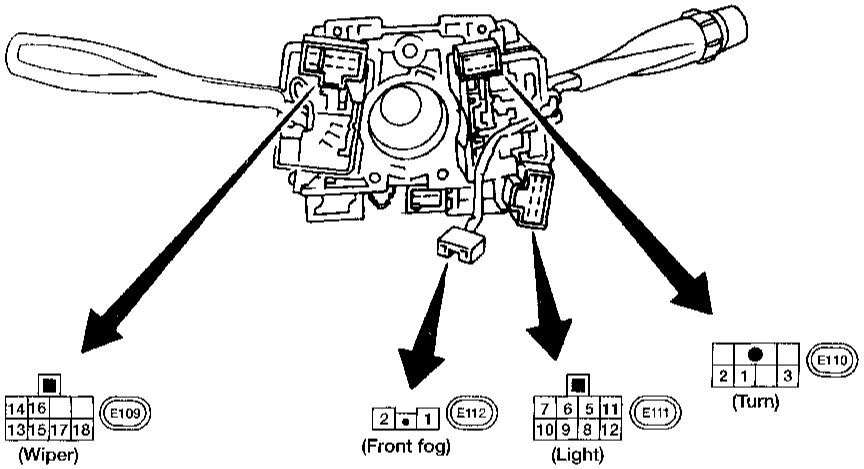
Service Data and Specifications (SDS)

GENERATOR

Type		LR180-741H
		HITACHI
Nominal rating	V-A	12-80
Ground polarity		Negative
Minimum revolution under no-load (When 13.5 volts is applied)	rpm	Less than 1,000
Hot output current	A/rpm	More than 23/1,300 More than 63/2,500 More than 77/5,000
Regulated output voltage	V	14.1 - 14.7
Minimum length of brush	mm (in)	6.0 (0.236)
Brush spring pressure	N (g, oz)	1.000 - 3.432 (102 - 350, 3.60 - 12.34)
Slip ring minimum outer diameter	mm (in)	More than 26.0 (1.024)
Rotor (Field coil) resistance	Ω	2.6 - 2.7

Check





LIGHTING SWITCH

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

WIPER SWITCH

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

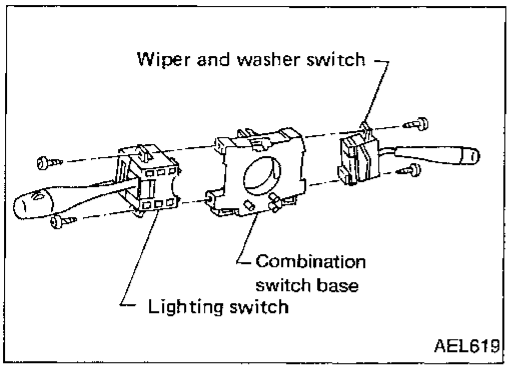
TURN SIGNAL SWITCH

	R	N	L
1	○		○
2	○		
3			○

FRONT FOG LAMP SWITCH

	OFF	ON
2		○
1		○

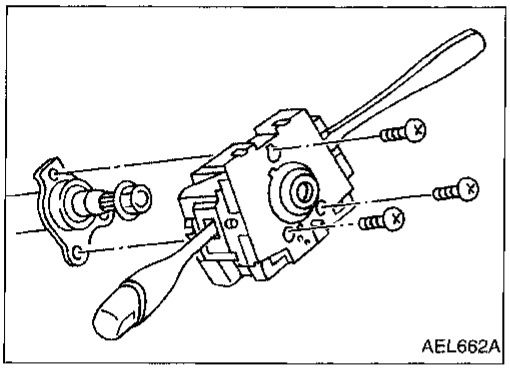
AEL767A



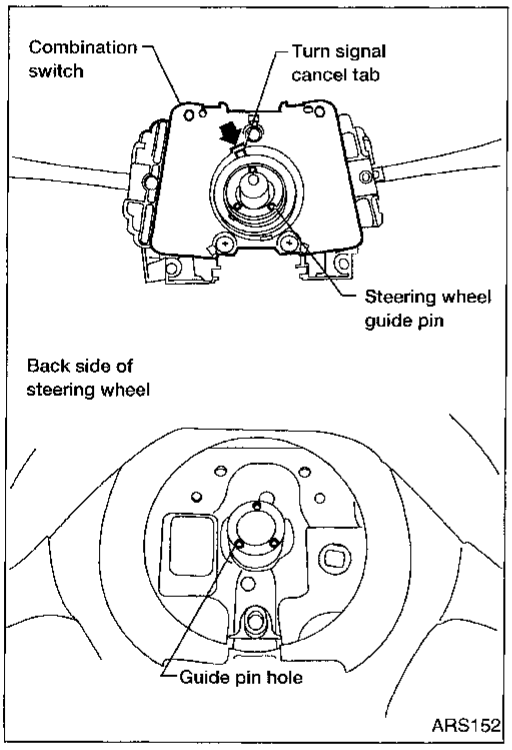
Replacement

For removal and installation of spiral cable, refer to RS section ["Driver Air Bag Module and Spiral Cable", "SUPPLEMENTAL RESTRAINT SYSTEM (SRS)"]

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

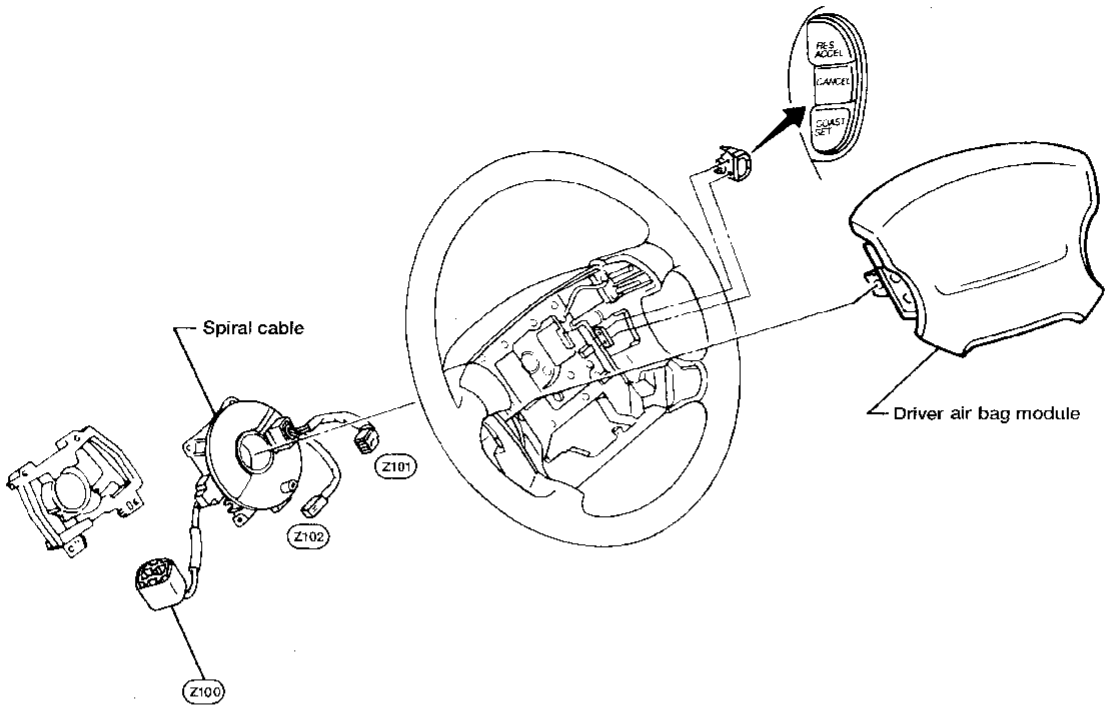


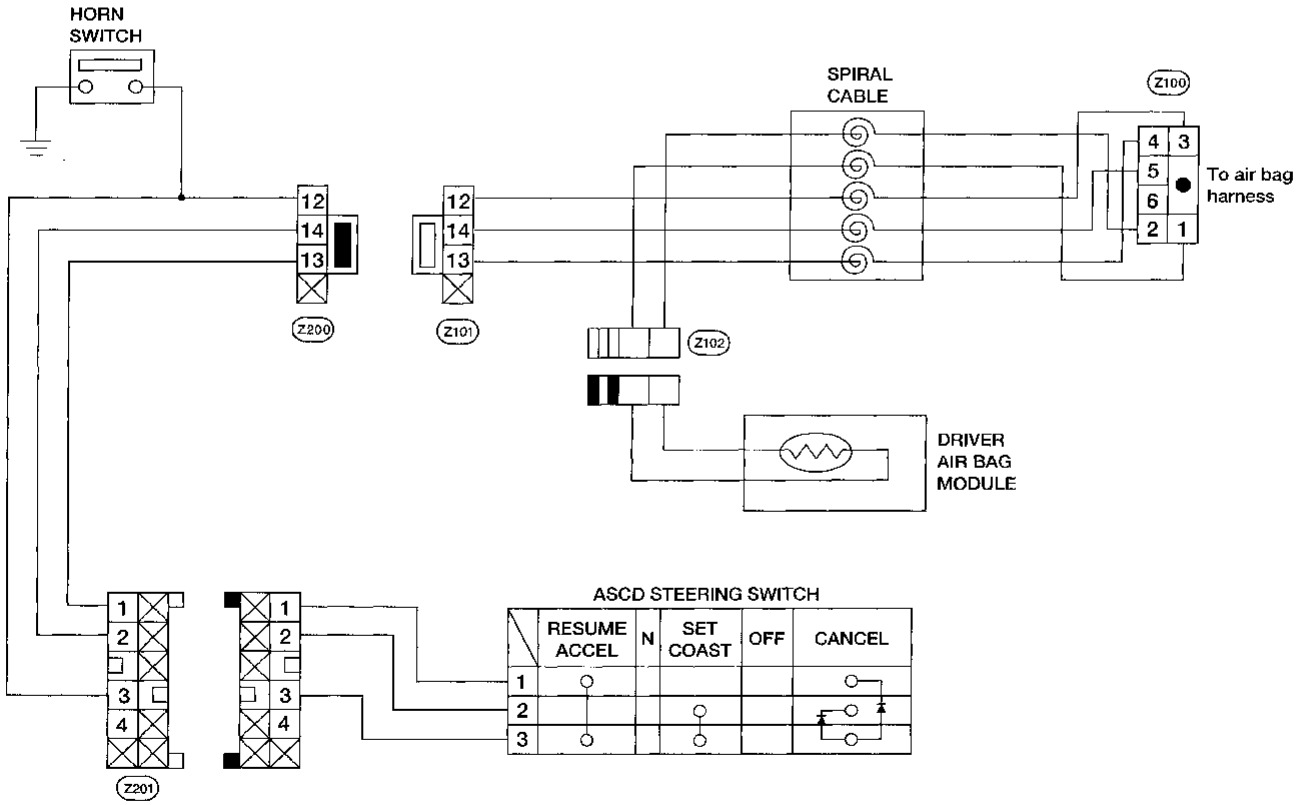
- To remove combination switch base, remove base attaching screws.



- Before installing the steering wheel, align the turn signal cancel tab with the notch of combination switch. Refer to RS section ("INSTALLATION", Driver Air Bag Module and Spiral Cable").

Check





AEL281B

System Description (For USA)

The headlamps are controlled by the lighting switch which is built into the combination switch.
Power is supplied at all times:

- to lighting switch terminal ⑤
- through 15A fuse (No. 39, located in the fuse and fusible link box), and
- to lighting switch terminal ⑧
- through 15A fuse (No. 40, located in the fuse and fusible link box).

Low beam operation

When the lighting switch is turned to headlamp "ON" (2ND) position, "LOW BEAM" (B), power is supplied:

- from lighting switch terminal ⑩
- to terminal ③ of the LH headlamp (with 2-doors)
- to terminal ② of the LH headlamp (with 4-doors), and
- from lighting switch terminal ⑦
- to terminal ③ of the RH headlamp (with 2-doors)
- to terminal ② of the RH headlamp (with 4-doors).

Ground is supplied:

- to RH and LH headlamp terminal ② (with 2-doors)
- to RH and LH headlamp terminal ③ (with 4-doors)
- through body grounds (E13) and (E25).

With power and ground supplied, the headlamp(s) will illuminate.

High beam operation/flash-to-pass operation

When the lighting switch is turned to headlamp "ON" (2ND) position, "HIGH BEAM" (A) or "FLASH TO PASS" (C) position, power is supplied:

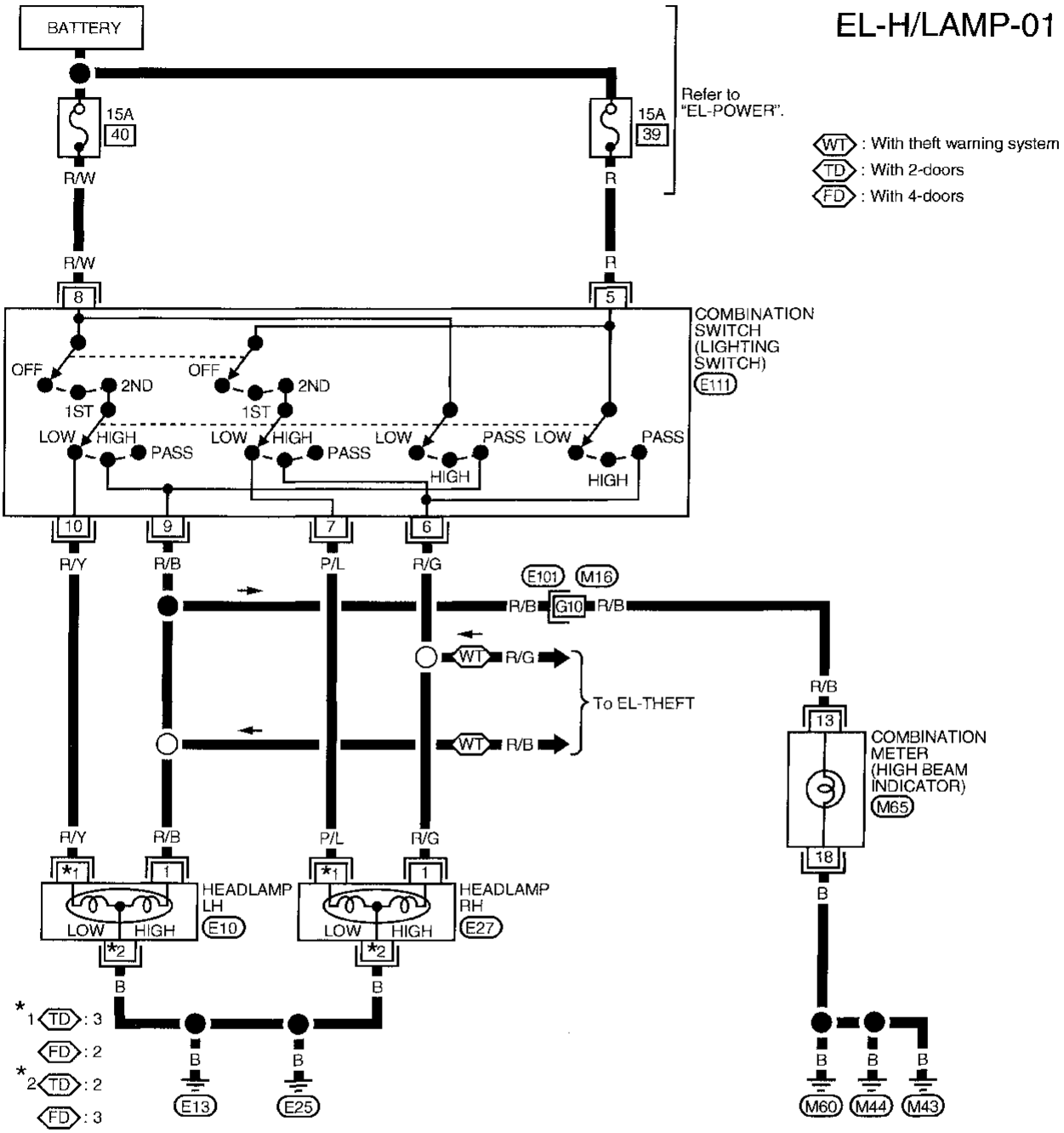
- from lighting switch terminal ⑥
- to terminal ① of the RH headlamp, and
- from lighting switch terminal ⑨
- to terminal ① of the LH headlamp, and
- to combination meter terminal ⑬ for the hi beam indicator.

Ground is supplied to terminal ⑱ of the combination meter through body grounds (M43), (M44) and (M60).
With power and ground supplied, the high beams and the high beam indicator illuminate.

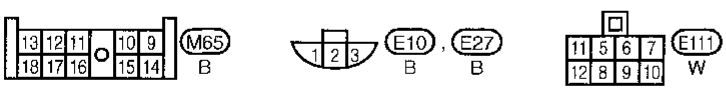
Theft warning system

The theft warning system will flash the high beams if the system is triggered. Refer to "THEFT WARNING SYSTEM", EL-179.

Wiring Diagram –H/LAMP–



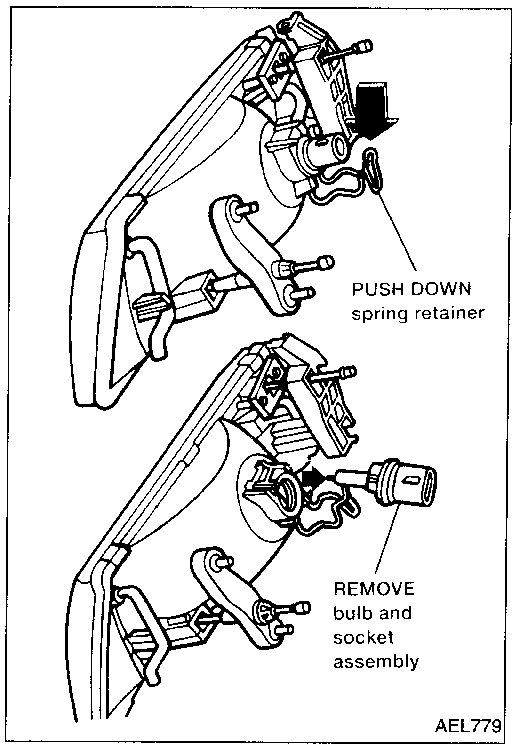
Refer to last page (Foldout page).
M16 , E101



AEL634B

Trouble Diagnoses (For USA)

Symptom	Possible cause	Repair order
LH headlamps do not operate.	1. Bulb 2. Grounds (E13) and (E25) 3. 15A fuse 4. Lighting switch	1. Check bulb. 2. Check grounds (E13) and (E25). 3. Check 15A fuse (No. 40, located in fuse and fusible link box). Verify battery positive voltage is present at terminal (8) of lighting switch. 4. Check lighting switch.
RH headlamps do not operate.	1. Bulb 2. Grounds (E13) and (E25) 3. 15A fuse 4. Lighting switch	1. Check bulb. 2. Check grounds (E13) and (E25). 3. Check 15A fuse (No. 39, located in fuse and fusible link box). Verify battery positive voltage is present at terminal (5) of lighting switch. 4. Check lighting switch.
LH high beam does not operate, but LH low beam operates.	1. Bulb 2. Open in LH high beam circuit 3. Lighting switch	1. Check bulb. 2. Check R/B wire between lighting switch and LH headlamp for an open circuit. 3. Check lighting switch.
LH low beam does not operate, but LH high beam operates.	1. Bulb 2. Open in LH low beam circuit 3. Lighting switch	1. Check bulb. 2. Check R/Y wire between lighting switch and LH headlamp for an open circuit. 3. Check lighting switch.
RH high beam does not operate, but RH low beam operates.	1. Bulb. 2. Open in RH high beam circuit 3. Lighting switch.	1. Check bulb. 2. Check R/G wire between lighting switch and RH headlamp for an open circuit. 3. Check lighting switch.
RH low beam does not operate, but RH high beam operates.	1. Bulb 2. Open in RH low beam circuit 3. Lighting switch	1. Check bulb. 2. Check P/L wire between lighting switch and RH headlamp for an open circuit. 3. Check lighting switch.
High beam indicator does not work.	1. Bulb 2. Grounds (M43), (M44) and (M60) 3. Open in high beam circuit	1. Check bulb in combination meter. 2. Check grounds (M43), (M44) and (M60). 3. Check R/B wire between lighting switch and combination meter for an open circuit.



Bulb Replacement

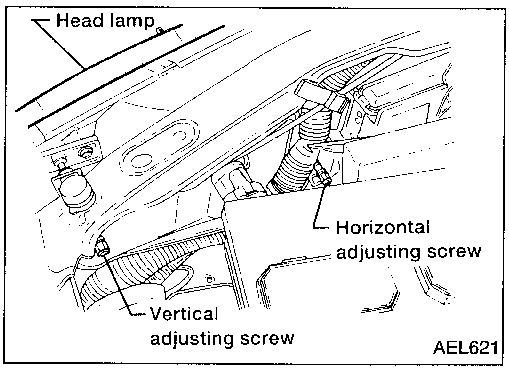
The headlamp is a semi-sealed beam type which uses a replaceable halogen bulb. The bulb can be replaced from the engine compartment side without removing the headlamp body.

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

1. Disconnect the battery cable.
2. If removing the right-hand (passenger side) headlamp bulb, it is necessary to first reposition the engine coolant reservoir.
3. Disconnect the electrical connector from the bulb.
4. Push down spring retainer.
5. Pull out the headlamp bulb and socket as an assembly. Do not shake or rotate the bulb when removing it. Do not handle the glass envelope.

CAUTION:

Do not leave headlamp reflector without bulb for a long period of time. Dust, moisture, smoke, etc. entering headlamp body may affect the performance of the headlamp. Remove headlamp bulb from the headlamp reflector just before a replacement bulb is installed.



Aiming Adjustment

When performing headlamp aiming adjustment, use an aiming machine, aiming wall screen or headlamp tester. Aimers should be in good condition, calibrated and operated according to their operation manuals. Before performing aiming adjustment, make sure of the following:

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

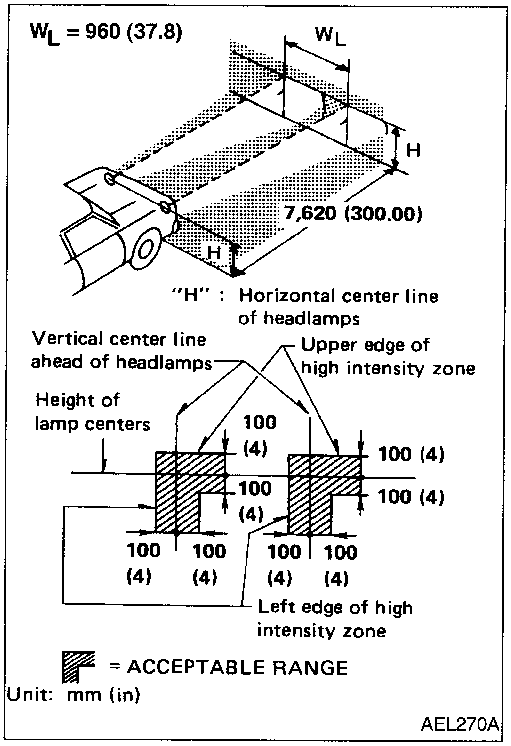
LOW BEAM

1. 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 (For Canada)

The headlamp system for Canada vehicles contains a daytime light control unit. This unit activates the high beam headlamps at approximately half illumination whenever the engine is running. If the parking brake is applied before the engine is started, daytime lights will not be illuminated. The daytime lights will illuminate once the parking brake is released. Thereafter, the daytime lights will continue to operate when the parking brake is applied. If the daytime light control unit receives a ground signal from the generator the daytime lights will not be illuminated. The daytime lights will illuminate once a battery positive voltage signal is sent to the daytime light control unit from the generator.

Power is supplied at all times:
- through 15A fuse (No. 39, located in the fuse and fusible link box)
- to daytime light control unit terminal ②) and
- to lighting switch terminal ⑤.

Power is also supplied at all times:
- through 15A fuse (No. 40, located in the fuse and fusible link box)
- to daytime light control unit terminal ③) and
- to lighting switch terminal ⑧.

With the ignition switch in the ON or START position, power is supplied:
- through 7.5A fuse (No. 8, located in the fuse block [J/B])
- to daytime light control unit terminal ⑫.

With the ignition switch in the START position, power is supplied:
- through 7.5A fuse (No. 26, located in the fuse block [J/B])
- to daytime light control unit terminal ①.

Ground is supplied to daytime light control unit terminal ⑨ through body grounds (M43), (M44) and (M60).

HEADLAMP OPERATION

Low beam operation

When the lighting switch is turned to headlamp "ON" (2ND) position, "LOW BEAM" (B) position, power is supplied:
- from lighting switch terminal ⑦
- to RH headlamp terminal ③ (with 2-doors)
- to RH headlamp terminal ② (with 4-doors).

Ground is supplied:
- to RH headlamp terminal ② (with 2-doors)
- to RH headlamp terminal ③ (with 4-doors)
- through body grounds (E13) and (E25).

Also, when the lighting switch is moved to headlamp "ON" (2ND) position, "LOW BEAM" (B) position, power is supplied:
- from lighting switch terminal ⑩
- to LH headlamp terminal ③ (with 2-doors)
- to LH headlamp terminal ② (with 4-doors).

Ground is supplied:
- to LH headlamp terminal ② (with 2-doors)
- to LH headlamp terminal ③ (with 4-doors)
- from daytime light control unit terminal ⑦
- through daytime light control unit terminal ⑨
- through body grounds (M43), (M44) and (M60).

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

System Description (For Canada) (Cont'd)

High beam operation/Flash-to-pass operation

When the lighting switch is moved to headlamp "ON" (2ND) position, "HIGH BEAM" (A) or "FLASH TO PASS" (C) position, power is supplied:

- from lighting switch terminal ⑥
- to RH headlamp terminal ①, and
- from lighting switch terminal ⑨
- to daytime light control unit terminal ⑤, and
- to combination meter terminal ⑬ for the hi beam indicator
- through daytime light control unit terminal ⑥
- to LH headlamp terminal ①.

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

Ground is supplied to terminal ⑱ of the combination meter through body grounds (M43), (M44) and (M60).

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

DAYTIME LIGHT OPERATION

With the engine running and the lighting switch in the "OFF" or parking lamp (1ST) position and parking brake released, power is supplied:

- to daytime light control unit terminal ③
- through daytime light control unit terminal ⑥
- to LH headlamp terminal ①
- through LH headlamp terminal ③ (with 2-doors)
- through LH headlamp terminal ② (with 4-doors)
- to daytime light control unit terminal ⑦
- through daytime light control unit terminal ⑧
- to RH headlamp terminal ①.

Ground is supplied:

- to RH headlamp terminal ② (with 2-doors)
- to RH headlamp terminal ③ (with 4-doors)
- through body grounds (E13) and (E25).

Because the high beam headlamps are now wired in series, they operate at half illumination.

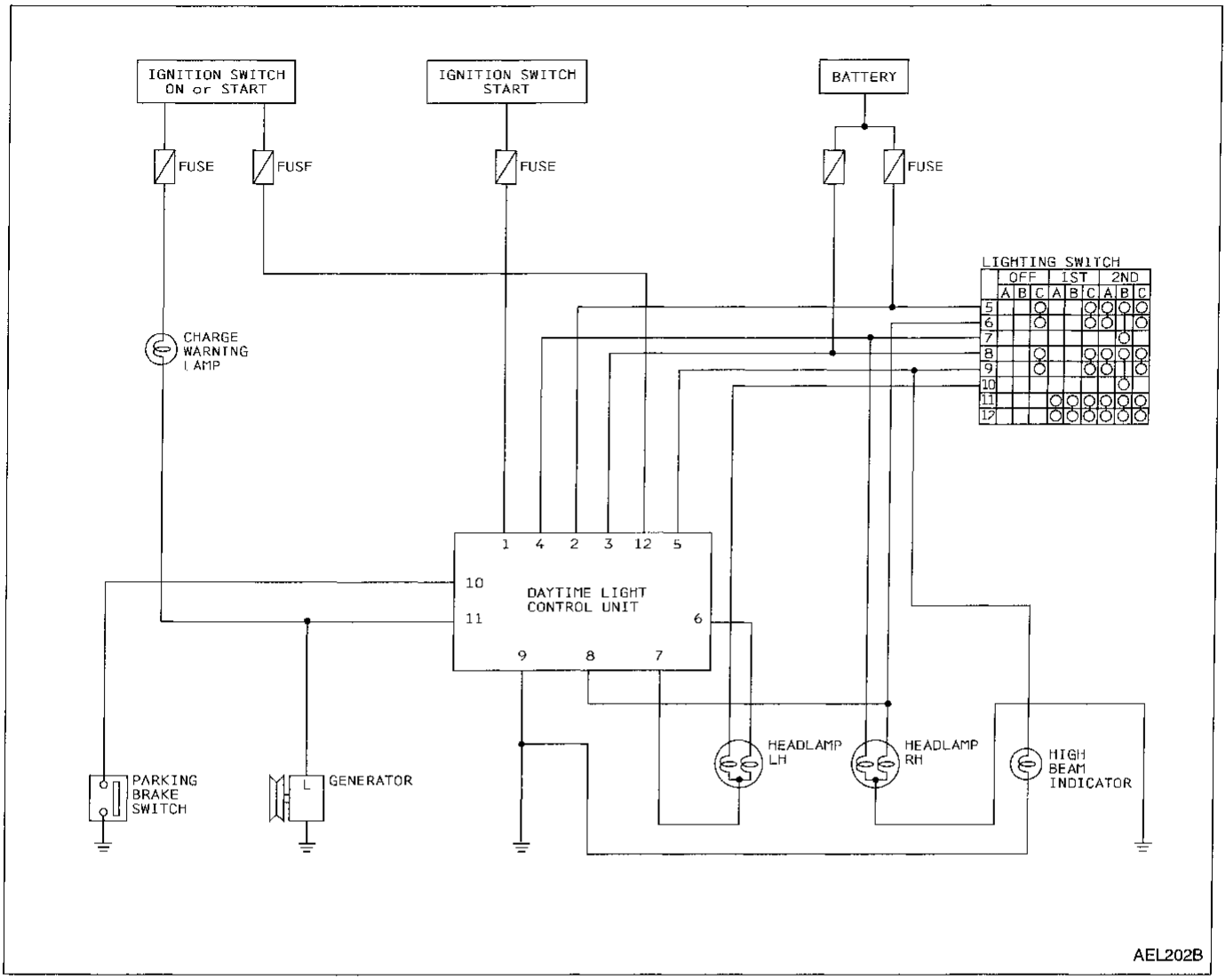
Operation (For Canada)

The headlamps' high beams automatically turn on after starting the engine with the lighting switch in the "OFF" or parking lamp (1st) position. Lighting switch operations other than the above are the same as conventional light systems.

Engine		With engine stopped									With engine running								
Lighting switch		OFF			1ST			2ND			OFF			1ST			2ND		
		A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
Headlamp	High beam	X	X	○	X	X	○	○	X	○	△*	△*	○	△*	△*	○	○	X	○
	Low beam	X	X	X	X	X	X	X	○	X	X	X	X	X	X	X	X	○	X
Front side marker and tail lamp		X	X	X	○	○	○	○	○	○	X	X	X	○	○	○	○	○	○
License and instrument illumination lamp		X	X	X	○	○	○	○	○	○	X	X	X	○	○	○	○	○	○

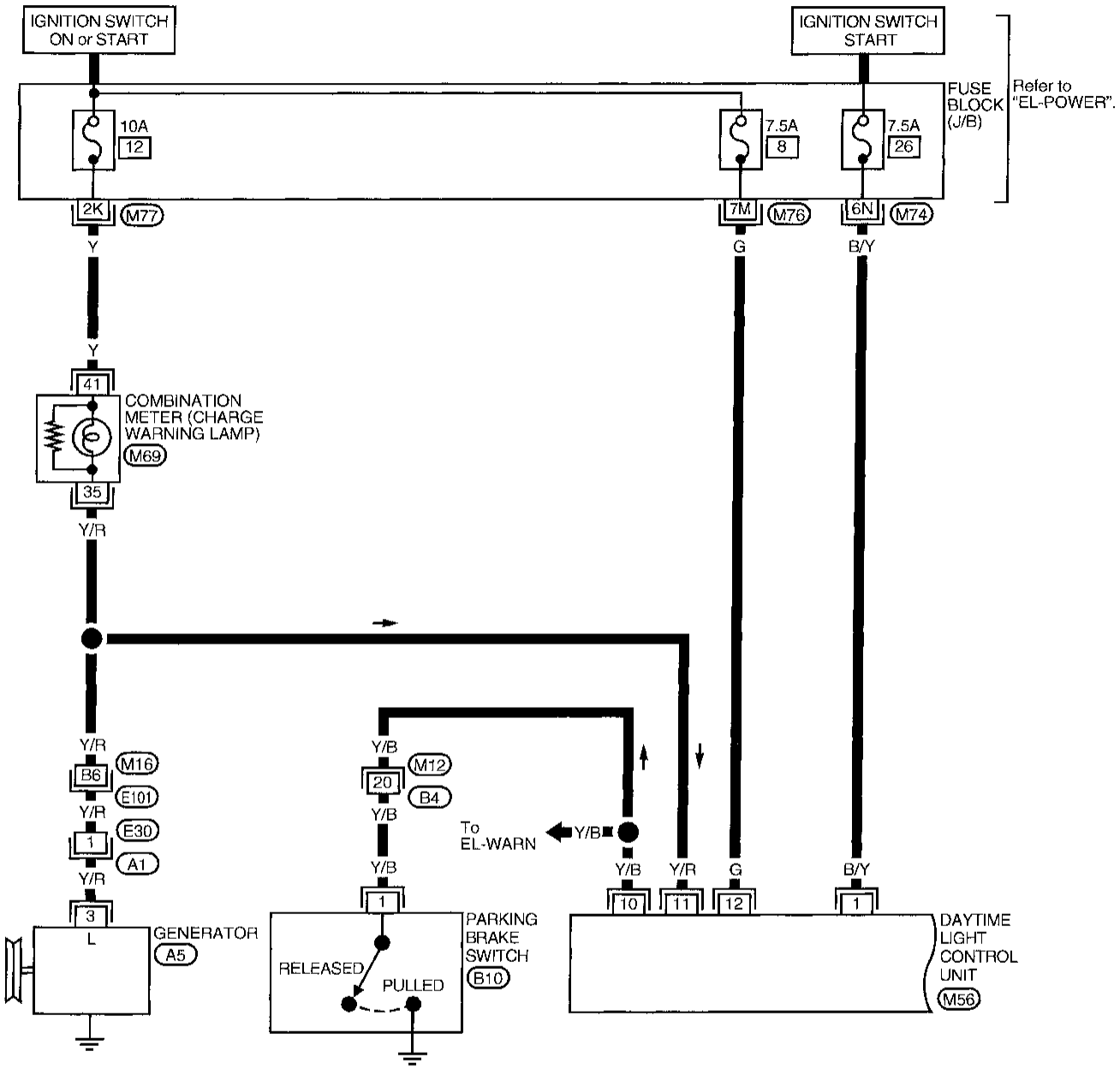
A: "HIGH BEAM" position
B: "LOW BEAM" position
C: "FLASH TO PASS" position
○: Lamp ON
X: Lamp OFF
△: Lamp on at half brightness
□: Added functions
*: When starting the engine with the parking brake released, the daytime light will come ON.
When starting the engine with the parking brake applied, the daytime light will not come ON.

Schematic (For Canada)

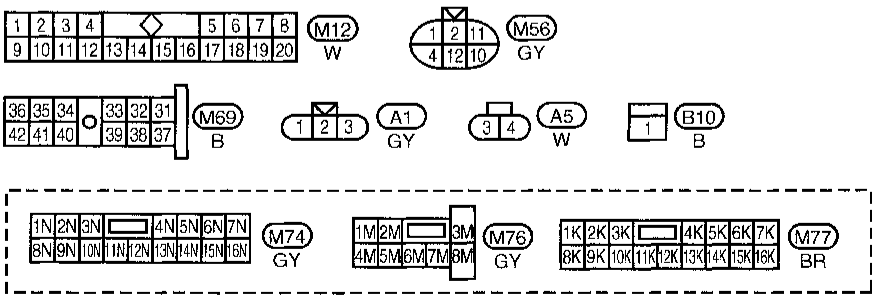


Wiring Diagram (For Canada) –DTRL–

EL-DTRL-01



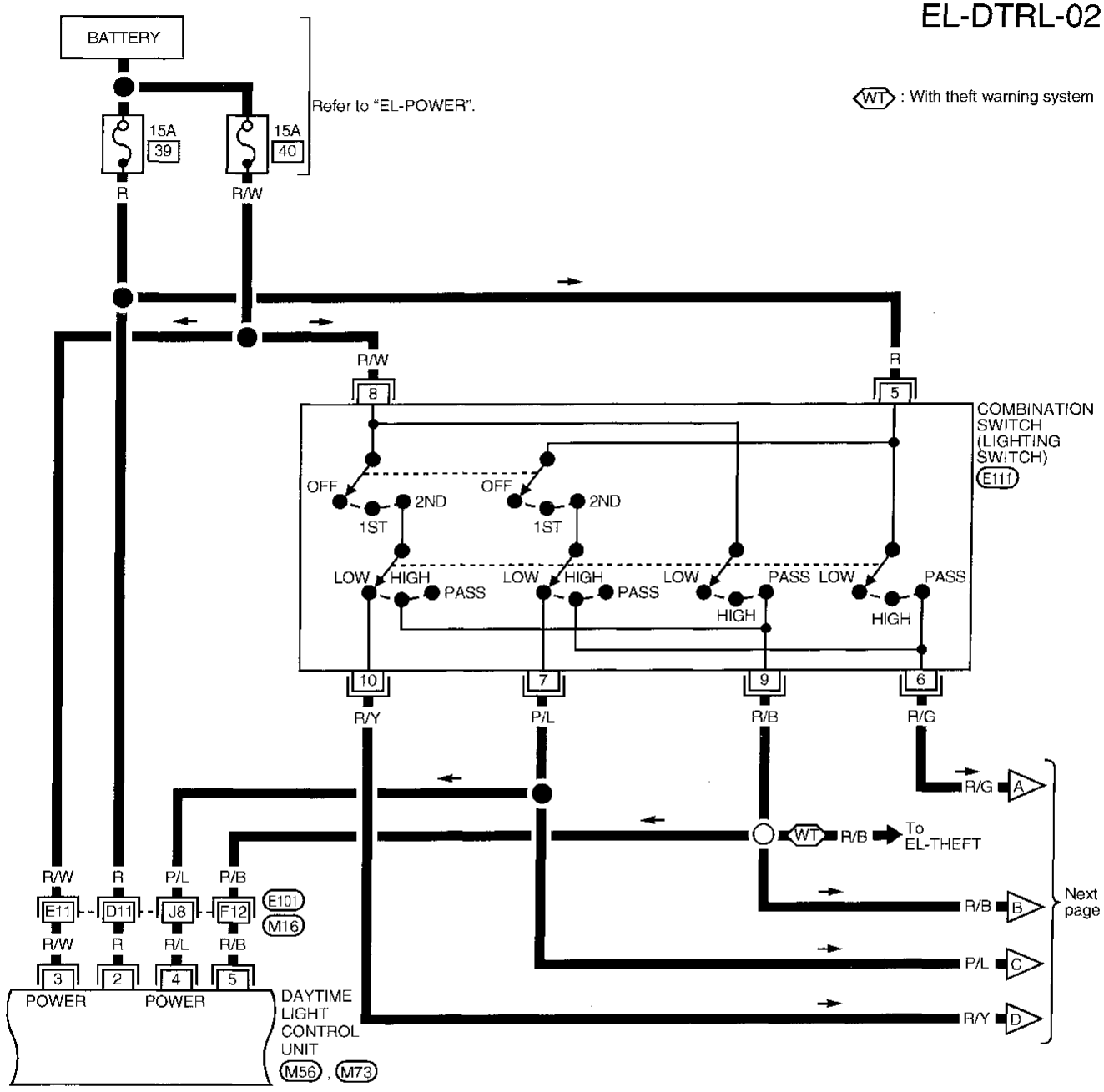
Refer to last page (Foldout page).
M16, E101

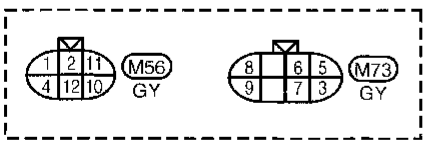


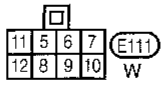
AEL627B

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

EL-DTRL-02







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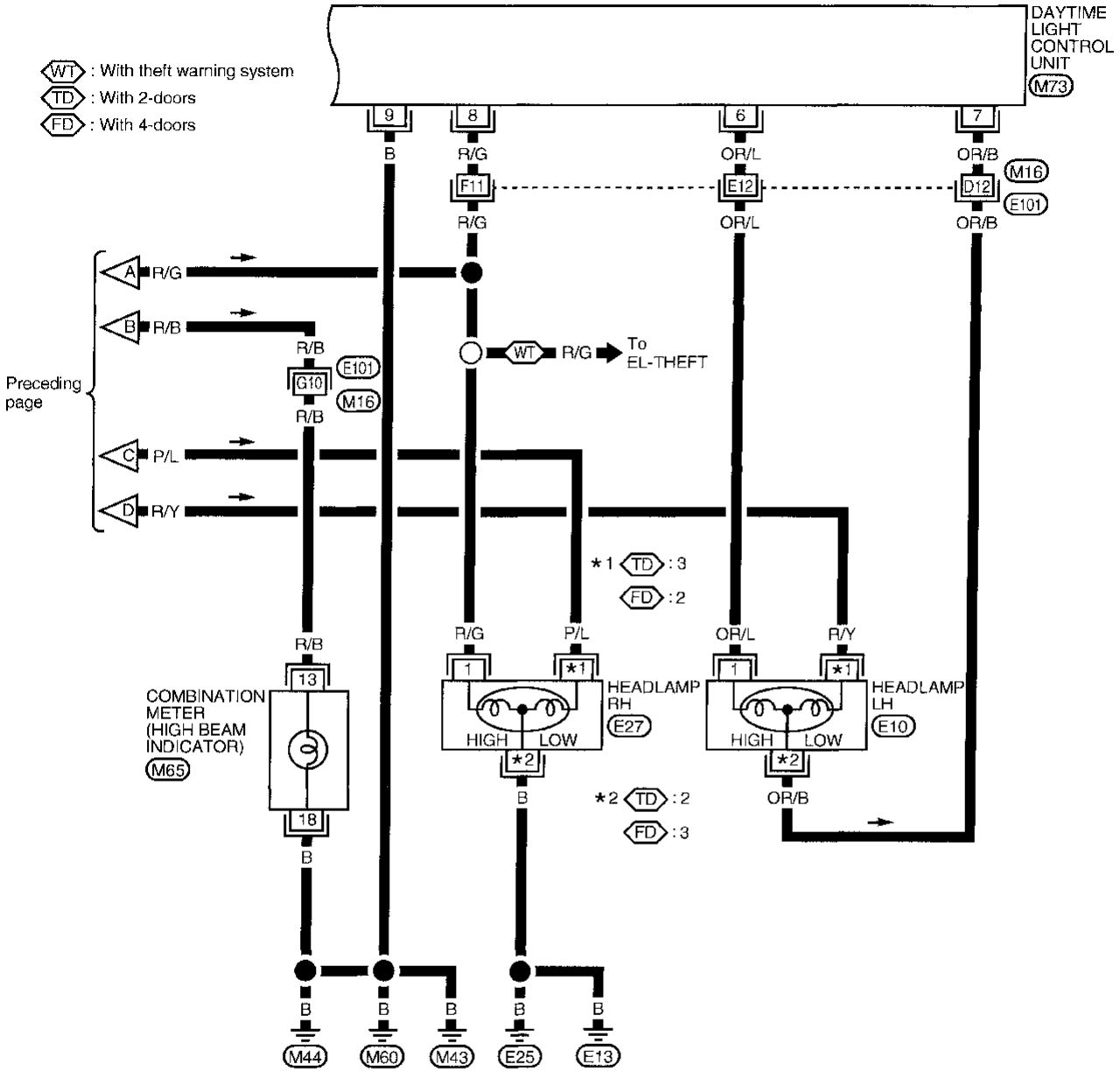
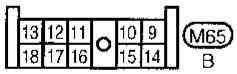
M16 , E101

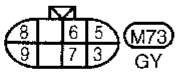
AEL597A

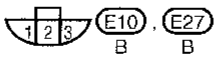
Wiring Diagram (For Canada) –DTRL– (Cont'd)

EL-DTRL-03









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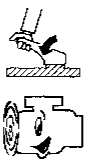
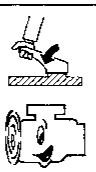
M16 , E101

AEL628B

Trouble Diagnoses (For Canada)

DAYTIME LIGHT CONTROL UNIT INSPECTION TABLE

Terminal No.	Item	Condition		Voltage (Approximate values)
1	Start signal		When turning ignition switch to ST	Battery positive voltage
			When turning ignition switch ON from ST	1V or less
			When turning ignition switch OFF	1V or less
2	Power source		When turning ignition switch ON	Battery positive voltage
			When turning ignition switch OFF	Battery positive voltage
3	Power source		When turning ignition switch ON	Battery positive voltage
			When turning ignition switch OFF	Battery positive voltage
4	Lighting switch (Lo beam)		When turning lighting switch to headlamp ON (2ND) position, LOW BEAM	Battery positive voltage
5	Lighting switch (Hi beam)		When turning lighting switch to HI BEAM	Battery positive voltage
			When turning lighting switch to FLASH TO PASS	Battery positive voltage
6	LH hi beam		When turning lighting switch to HI BEAM	Battery positive voltage
			When releasing parking brake with engine running and turning lighting switch OFF (daytime light operation) **CAUTION: Block wheels and ensure selector lever is in "N" or "P" position.**	Battery positive voltage
7	LH headlamp control (ground)		When lighting switch is turned to headlamp ON (2ND) postion, LOW BEAM	1V or less
			When releasing parking brake with engine running and turning lighting switch OFF (daytime light operation) **CAUTION: Block wheels and ensure that selector lever is in "N" or "P" position.**	Approx. half battery voltage
8	RH hi beam		When turning lighting switch to HI BEAM	Battery positive voltage
			When releasing parking brake with engine running and turning lighting switch to OFF (daytime light operation) **CAUTION: Block wheels and ensure selector lever is in "N" or "P" position.**	Approx. half battery voltage

Trouble Diagnoses (For Canada) (Cont'd)

Terminal No.	Item	Condition		Voltage (Approximate values)
9	Ground		—	—
10	Parking brake switch		When parking brake is released	Battery positive voltage
			When parking brake is set	1.5V or less
11	Generator		When turning ignition switch ON	4.6V or less
			When engine is running	Battery positive voltage
			When turning ignition switch OFF	1V or less
12	Power source		When turning ignition switch ON	Battery positive voltage
			When turning ignition switch to ST	Battery positive voltage
			When turning ignition switch OFF	1V or less

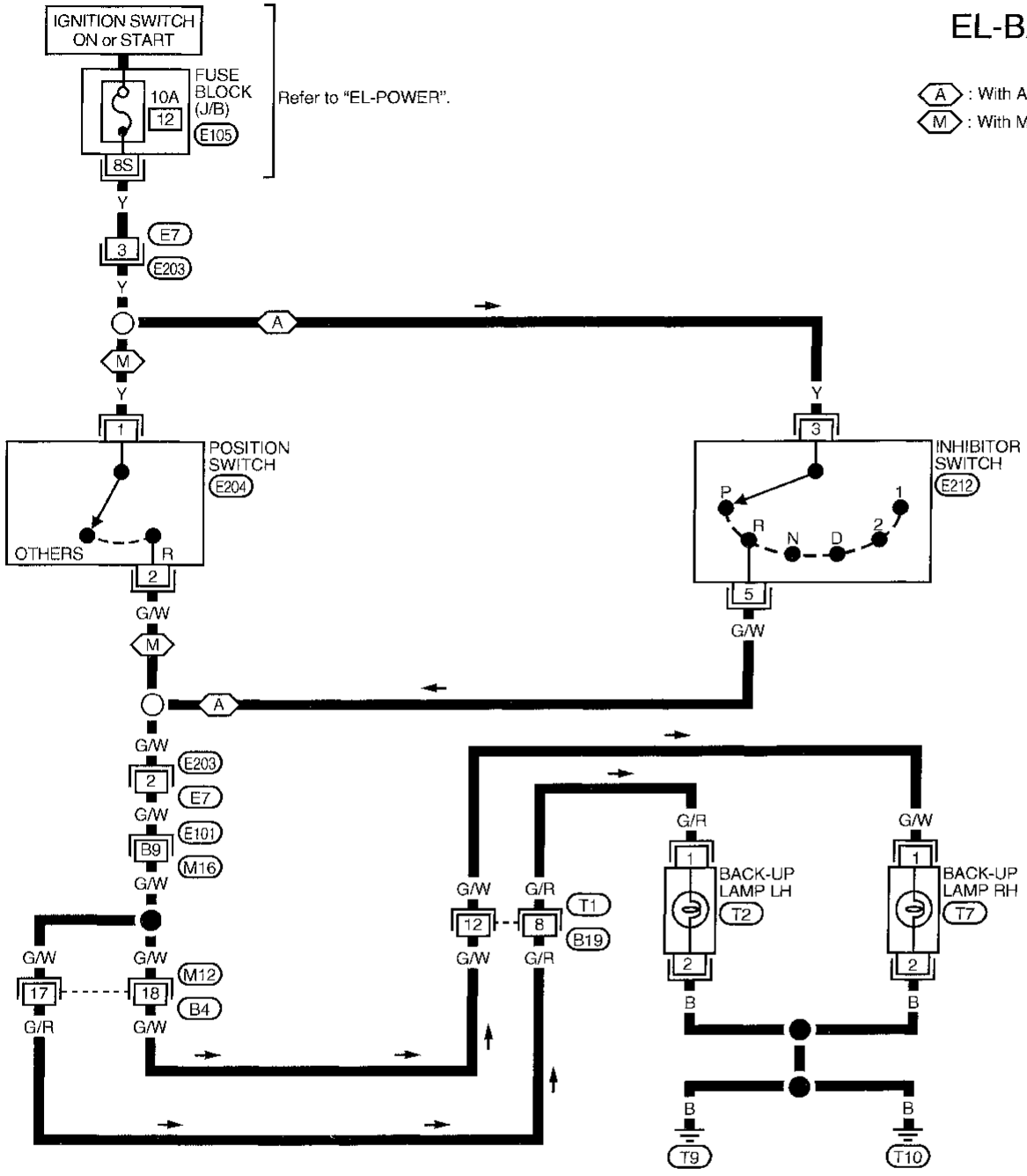
Bulb Replacement

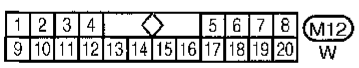
Refer to "HEADLAMP", EL-44

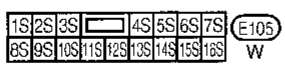
Aiming Adjustment

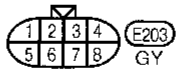
Refer to "HEADLAMP", EL-44

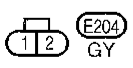
Wiring Diagram –BACK/L–

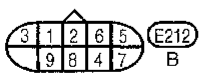


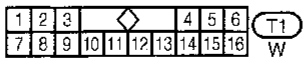


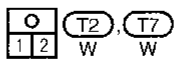










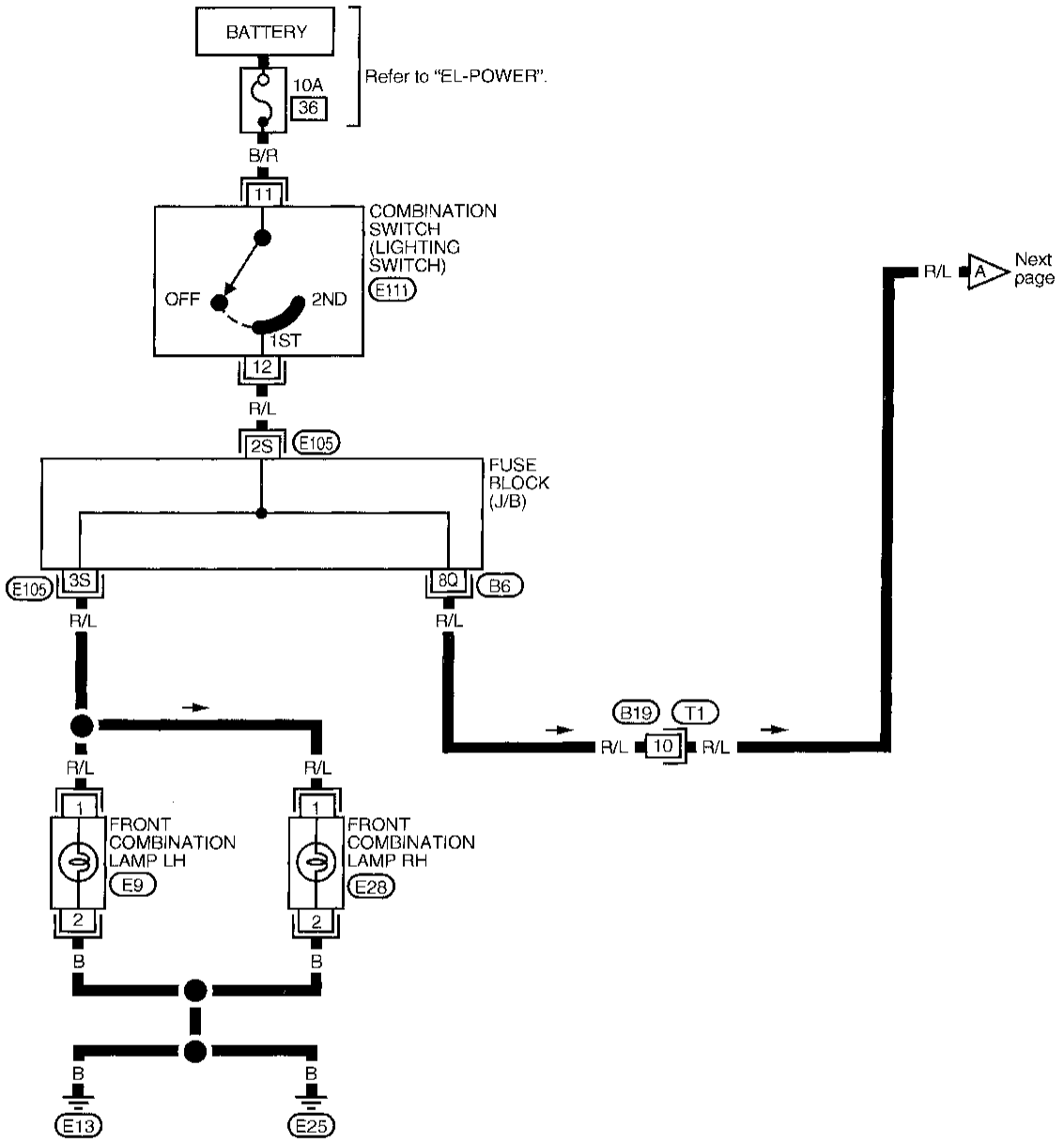


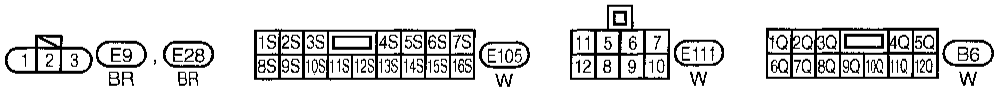
Refer to last page (Foldout page).
M16, E101

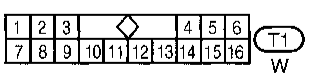
AEL629B

Wiring Diagram –TAIL/L–

EL-TAIL/L-01



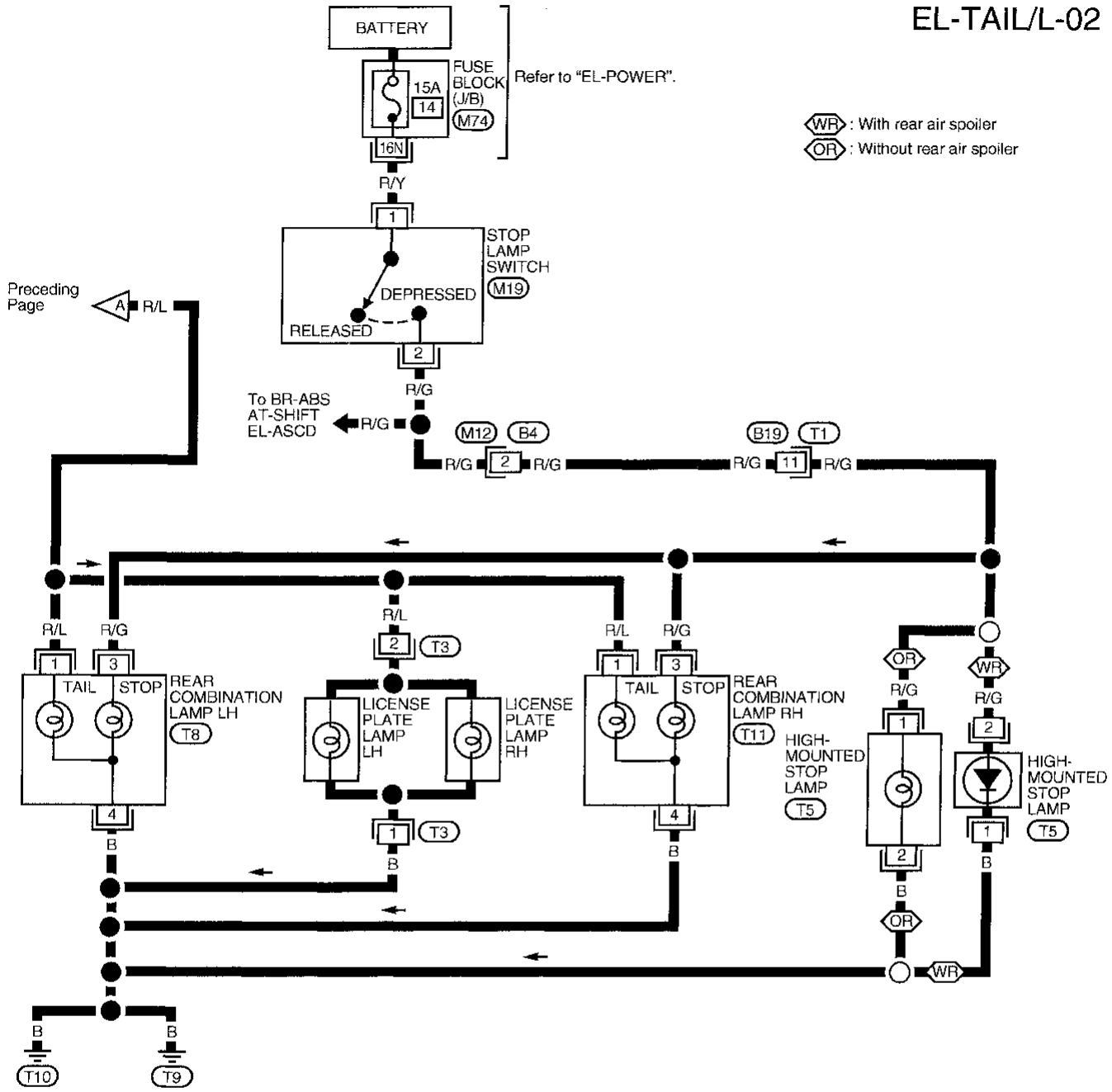


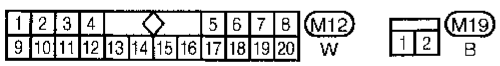


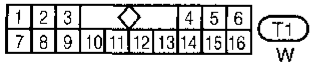
AEL206B

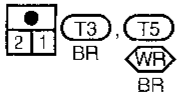
Wiring Diagram –TAIL/L– (Cont'd)

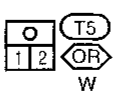
EL-TAIL/L-02

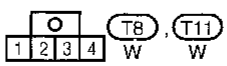












AEL207B

System Description

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

- 15A fuse (No. 35, located in the fuse and fusible link box).

With the lighting switch in headlamp "ON" (2ND) position, "LOW BEAM" (B) position, power is supplied:

- through 15A fuse (No. 39, located in the fuse and fusible link box)
- to lighting switch terminal ⑤
- through terminal ⑦ of the lighting switch
- to front fog lamp relay terminal ①.

Fog lamp operation

The front fog lamp switch is built into the combination switch. The lighting switch must be in headlamp "ON" (2ND) position and "LOW BEAM" (B) position for fog lamp operation.

With the front fog lamp switch in the ON position ground is supplied:

- to front fog lamp relay terminal ②
- through the front fog lamp switch, and
- body grounds (E13) and (E25).

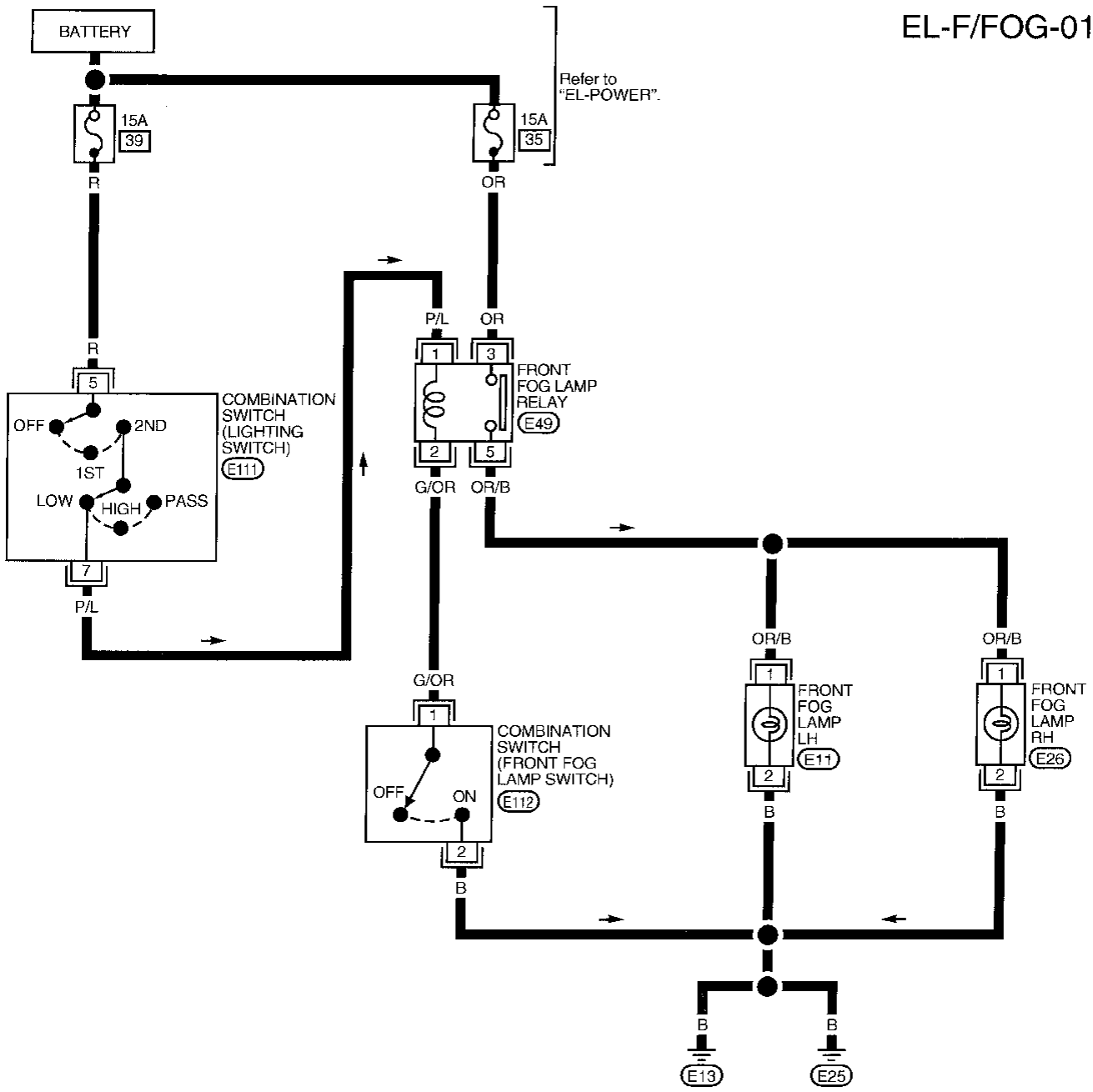
The front fog lamp relay is energized and power is supplied:

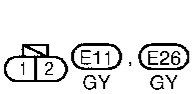
- from front fog lamp relay terminal ⑤
- to terminal ① of each front fog lamp.

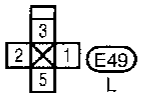
Ground is supplied to terminal ② of each front fog lamp through body grounds (E13) and (E25).

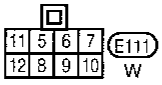
With power and ground supplied, the front fog lamps illuminate.

Wiring Diagram –F/FOG–

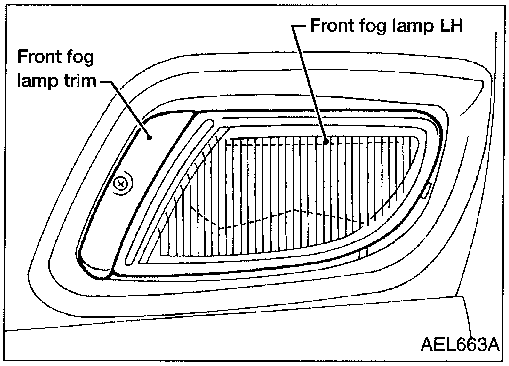








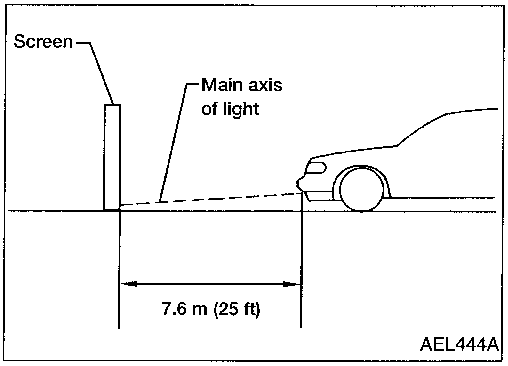
AEL602A



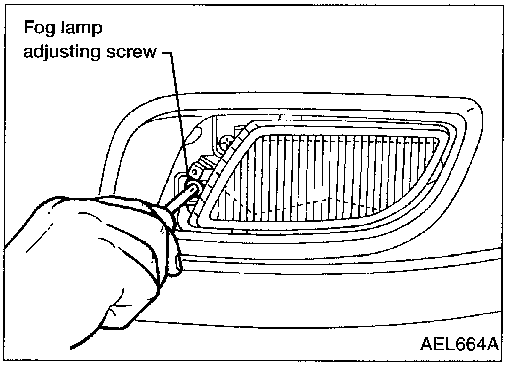
Aiming Adjustment

Before performing aiming adjustment, make sure of the following.

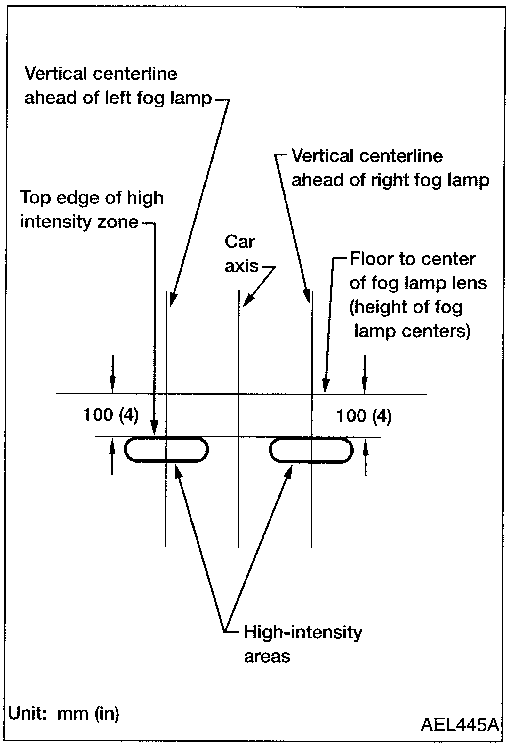
a. Keep all tires inflated to correct pressure.
b. Place vehicle on lever ground.
c. Check that vehicle is unloaded (except for full levels of coolant, engine oil and fuel, and spare tire, jack, and tools). Have the driver or equivalent weight placed in driver's seat.
d. Remove front fog lamp trim.



1. Set distance between screen and center of the fog lamp lens as shown at left.
2. Turn front fog lamps ON.



3. Adjust vertical aiming using the fog lamp adjusting screw, as shown at left.



4. Adjust front fog lamps so that the top edge of the high intensity zone is 100 mm (4 in) below the height of the fog lamp centers, as shown at left.

- **When performing adjustment, if necessary, cover the headlamps, and opposite fog lamp.**

5. Reinstall front fog lamp trim.

NOTES

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 7.5A fuse (No. 11, located in the fuse block [J/B])
- 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 M43, M44 and M60.

LH turn

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

- front turn signal lamp LH terminal ③
- rear combination lamp LH terminal ②, and
- combination meter terminal ⑯.

Ground is supplied to the front turn signal lamp LH terminal ② through body grounds E13 and E25.
Ground is supplied to the rear combination lamp LH terminal ④ through body grounds T9 and T10.
Ground is supplied to combination meter terminal ㉗ through body grounds M43, M44 and M60.
With power and grounds 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 ② to:

- front turn signal lamp RH terminal ③
- rear combination lamp RH terminal ②, and
- combination meter terminal ㉖.

Ground is supplied to the front turn signal lamp RH terminal ② through body grounds E13 and E25.
Ground is supplied to the rear combination lamp RH terminal ④ through body grounds T9 and T10.
Ground is supplied to combination meter terminal ㉗ through body grounds M43, M44 and M60.
With power and grounds 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:

- 10A fuse (No. 20, located in the fuse block [J/B]).

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 ④.

Ground is supplied to combination flasher unit terminal ② through body grounds M43, M44 and M60.
Power is supplied through terminal ⑤ of the hazard switch to:

- front turn signal lamp LH terminal ③
- rear combination lamp LH terminal ②, and
- combination meter terminal ⑯.

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 ㉖.

Ground is supplied to terminal ② of the front turn signal lamps through body grounds E13 and E25.
Ground is supplied to terminal ④ of the rear combination lamps through body grounds T9 and T10.
Ground is supplied to combination meter terminal ㉗ through body grounds M43, M44 and M60.

System Description (Cont'd)

With power and ground supplied, the combination flasher unit controls the flashing of the hazard warning lamps.

WITH MULTI-REMOTE CONTROL SYSTEM

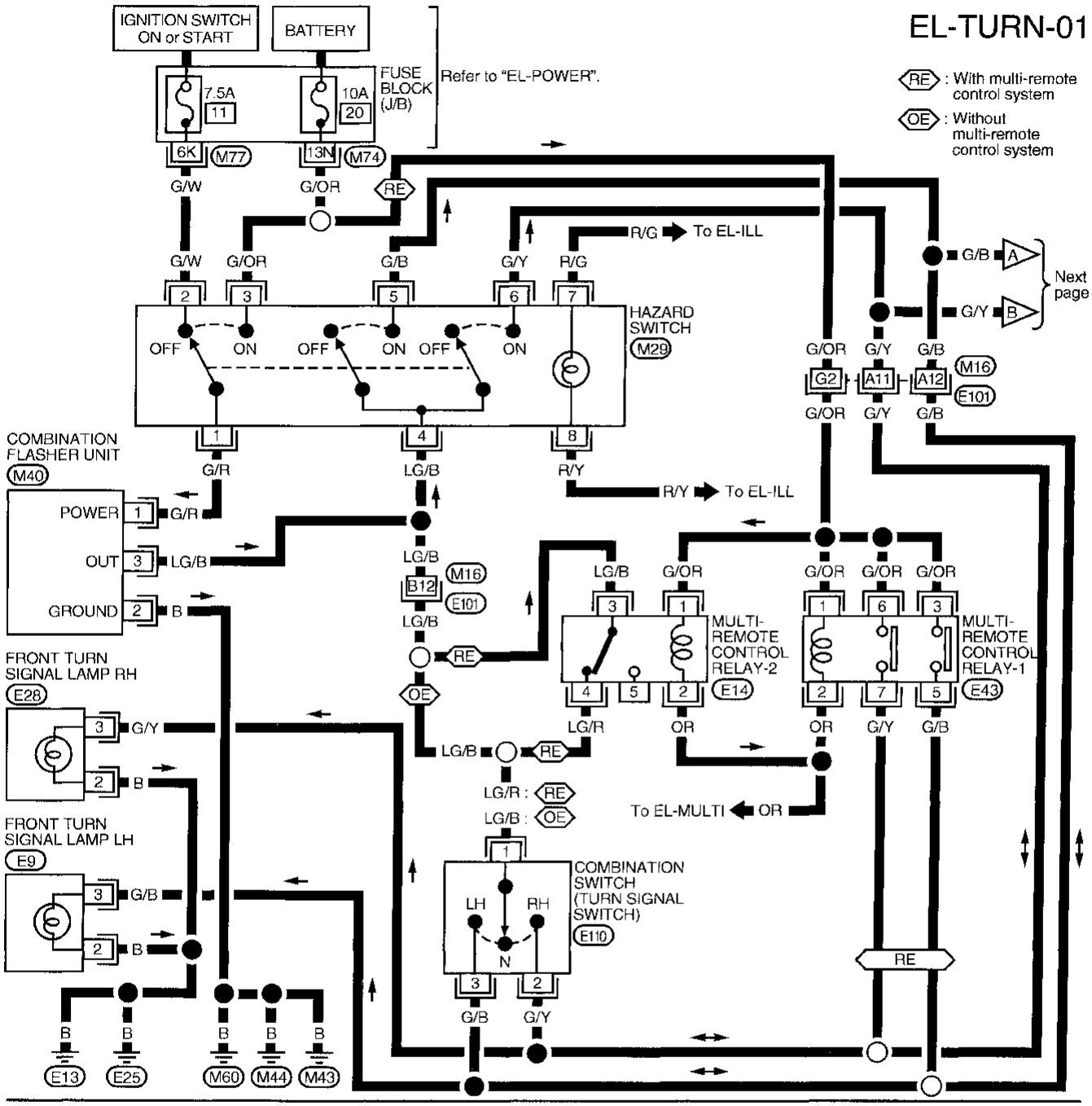
Power is supplied at all times:
- through 10A fuse (No. 20, located in the fuse block [J/B])
- to multi-remote control relay-1 terminals ①, ⑥ and ③
- to multi-remote control relay-2 terminal ①.

Ground is supplied to multi-remote control relays-1, -2 terminal ②, when the multi-remote control system is triggered, through the smart entrance control unit.
Refer to EL-165, "MULTI-REMOTE CONTROL SYSTEM".
The multi-remote control relays-1, -2 are energized.
Power is connected to the turn signal switch.
Power is supplied through terminal ⑤ of the multi-remote control relay-1:
- to front turn signal lamp LH terminal ③
- to rear combination lamp LH terminal ②
- to combination meter terminal ⑯.

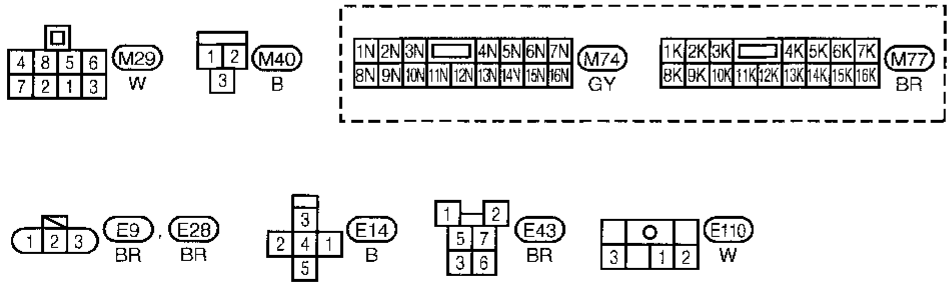
Power is supplied through terminal ⑦ of the multi-remote control relay-1:
- to front turn signal lamp RH terminal ③
- to rear combination lamp RH terminal ②
- to combination meter terminal ㉖.

Ground is supplied to terminal ② of the front turn signal lamps through body grounds (E13) and (E25).
Ground is supplied to terminal ④ of the rear combination lamps through body grounds (T9) and (T10).
Ground is supplied to combination meter terminal ㉗ through body grounds (M43), (M44) and (M60).
With power and ground supplied, the smart entrance control unit controls the flashing of the hazard warning lamps.

Wiring Diagram –TURN–



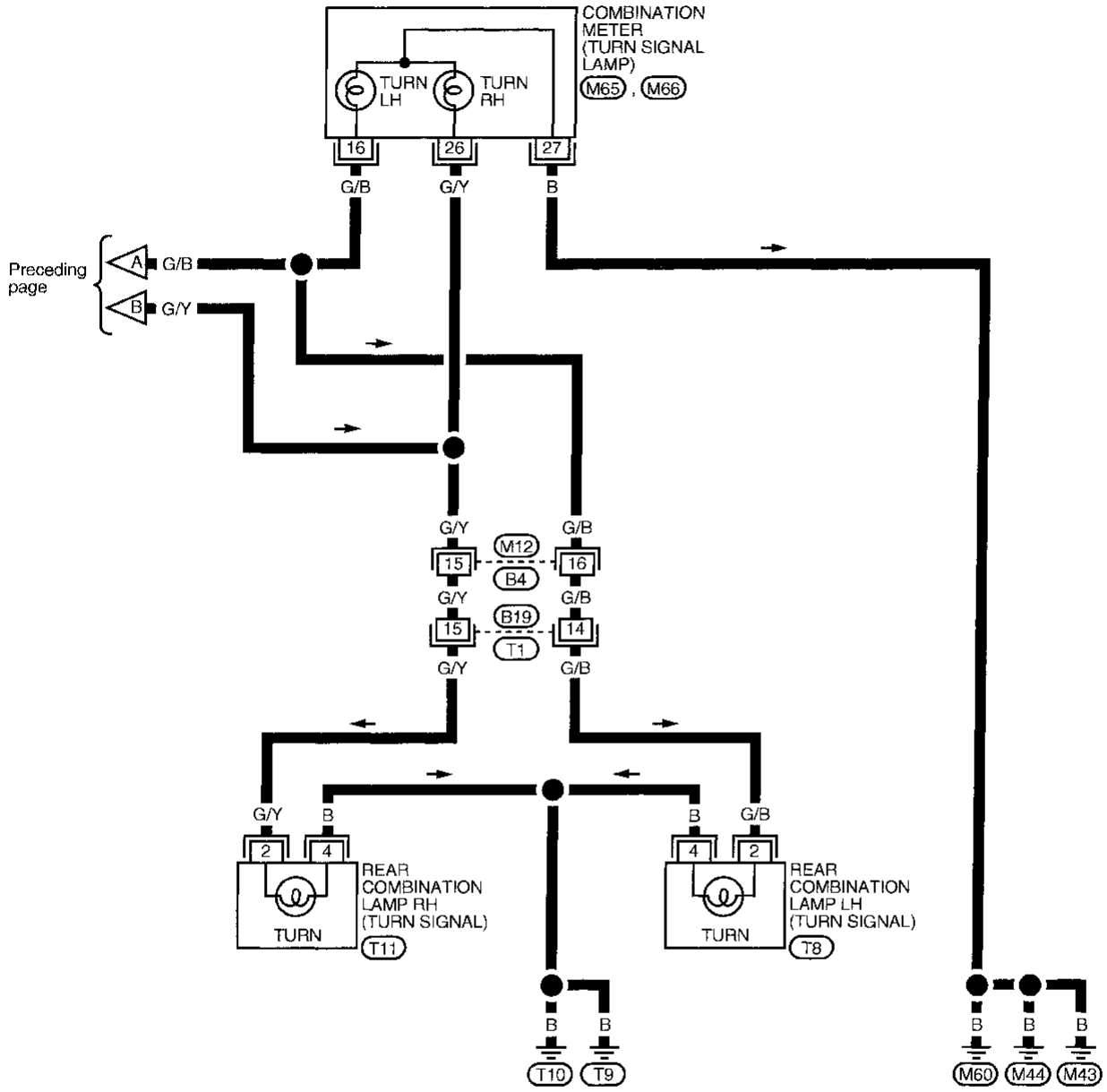
Refer to last page (Foldout page).
M16 , E101

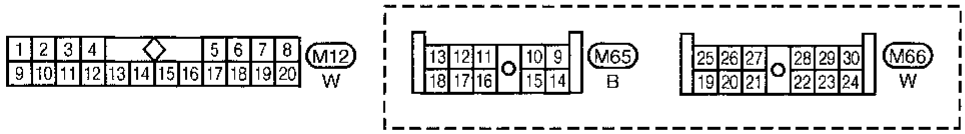


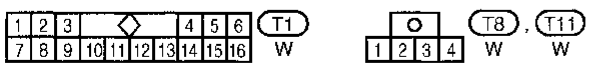
AEL233B

Wiring Diagram –TURN– (Cont'd)

EL-TURN-02



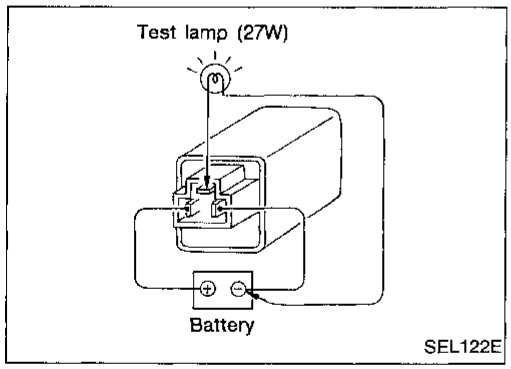




AEL623B

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. 7.5A fuse 2. Hazard switch 3. Turn signal switch 4. Open in turn signal switch circuit	1. Check 7.5A fuse (No. 11, located in fuse block [J/B]). 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 LG/B wire between combination flasher unit and turn signal switch for open circuit.
Hazard warning lamps do not operate but turn signal lamps operate.	1. 10A fuse 2. Hazard switch 3. Open in hazard switch circuit	1. Check 10A fuse (No. 20, located in fuse block [J/B]). Verify battery positive voltage is present at terminal ③ of hazard switch. 2. Check hazard switch. 3. Check LG/B 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 (E13) and (E25)	1. Check bulb. 2. Check grounds (E13) and (E25).
Rear turn signal lamp LH or RH does not operate.	1. Bulb 2. Grounds (T9) and (T10)	1. Check bulb. 2. Check grounds (T9) and (T10).
LH and RH turn indicators do not operate.	Ground	Check grounds (M43), (M44) and (M60).
LH or RH turn indicator does not operate.	Bulb	Check bulb in combination meter.



Electrical Component Inspection

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.

System Description

Power is supplied at all times:

- through 10A fuse (No. 36, located in the fuse and fusible link box)
- to lighting switch terminal ⑪.

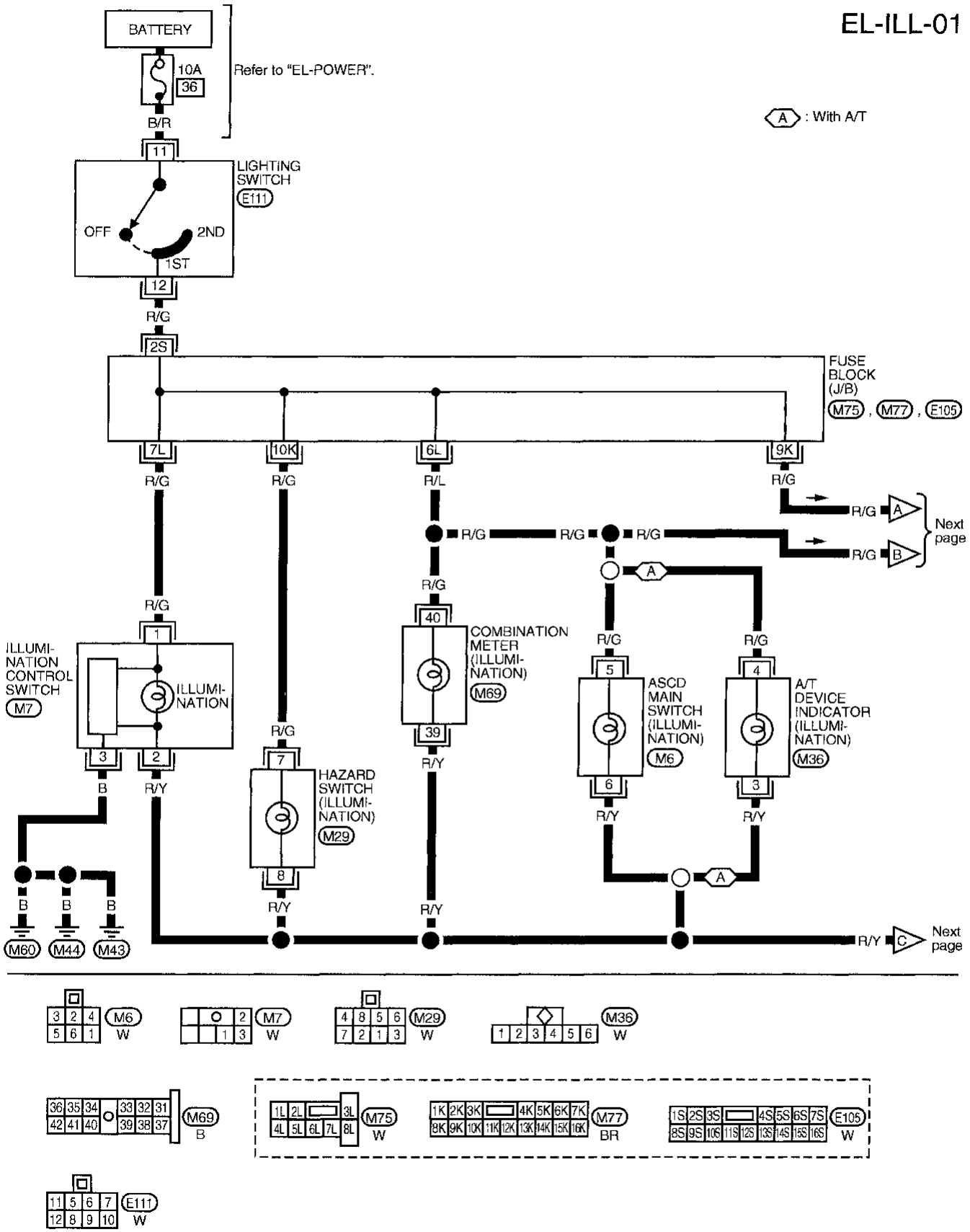
The lighting switch must be in parking lamp (1ST) or headlamp "ON" (2ND) position for illumination.
The illumination control switch controls the amount of current to the illumination system. As the amount of current increases, the illumination becomes brighter.
The following chart shows the power and ground connector terminals for the components included in the illumination system.

Component	Connector No.	Power terminal	Ground terminal
Illumination control switch	M7	①	② and ③
Combination meter	M69	㊵	㊴
Hazard switch	M29	⑦	⑧
ASCD main switch	M6	⑤	⑥
A/T device indicator*	M36	④	③
Fan switch	M47	①	②
Rear window defogger switch	M28	⑤	⑥
Main power window and door lock/unlock switch	D6	⑪	⑤
Audio	M30	⑧	⑦

* If equipped.

The ground for all of the components is controlled through terminals ② and ③ of the illumination control switch and body grounds (M43), (M44) and (M60).

Wiring Diagram –ILL–

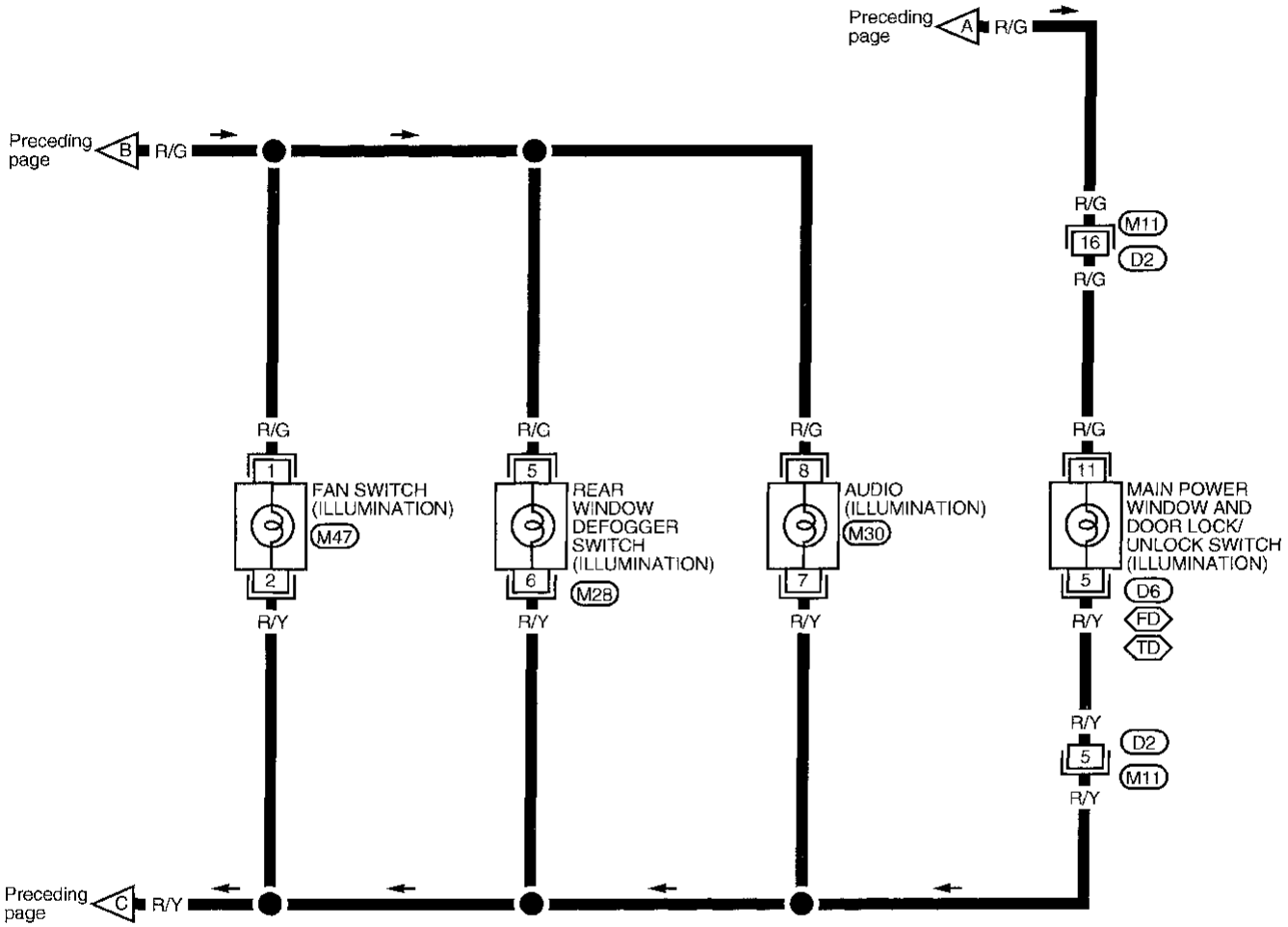


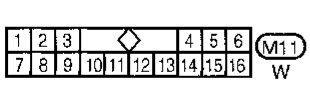
AEL622B

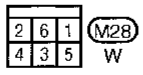
Wiring Diagram –ILL– (Cont'd)

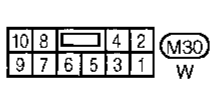
EL-ILL-02

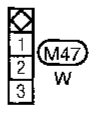
TD : With 2-doors
FD : With 4-doors

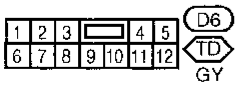


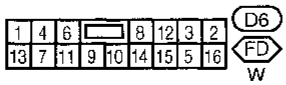












AEL704B

System Description

POWER SUPPLY AND GROUND

Power is supplied at all times:
- through 25A fusible link (Letter [f], located in the fuse and fusible link box)
- to circuit breaker terminal ①
- through circuit breaker terminal ②
- to smart entrance control unit terminal ①.

Power is supplied at all times:
- through 10A fuse (No. [15], located in the fuse block [J/B])
- to key switch terminal ① and
- to interior lamp terminal ①
- to trunk room lamp terminal ①.

When the key is removed from ignition key cylinder, power is interrupted:
- through terminal key switch ②
- to smart entrance control unit terminal ㉔.

With the ignition key switch in the ACC or ON position, power is supplied:
- through 15A fuse (No. [10], located in the fuse block [J/B])
- to smart entrance control unit terminal ⑰.

Ground is supplied:
- to smart entrance control unit terminal ⑩
- through body grounds (M43), (M44) and (M60).

When the front LH door is opened, ground is supplied:
- from front door switch LH terminal ②
- to smart entrance control unit terminal ⑮.

When any other door is opened ground is supplied to smart entrance control unit terminal ⑯ or ㉟ in the same manner as the front door switch LH.

When a signal, or combination of signals is received by the smart entrance control unit, ground is supplied:
- through smart entrance control unit terminal ⑨
- to interior lamp terminal ②.

With power and ground supplied, the interior lamp illuminates.

OPERATION

Switch

When the interior lamp switch is ON, ground is supplied:
- to interior lamp
- through case ground of interior lamp.

With power and ground supplied, the interior lamp turns ON.

Interior lamp timer

When the interior lamp switch is in the "DOOR" position, the smart entrance control unit keeps the interior lamp illuminated for about 30 seconds when:
- unlock signal is supplied from multi-remote controller (Models with multi-remote control system)
- key is removed from ignition key cylinder while driver's door is closed
- driver's door is opened and then closed while ignition switch is not in the ON position.

The timer is canceled, and interior lamp turns off when:
- driver's door is locked with remote controller, or
- ignition switch is turned ON.

The smart entrance control unit will shut off the interior light if left on for 30 minutes.

ON-OFF control

When the driver side door, front passenger door, rear LH or RH door is opened, the interior lamp turns on while the interior lamp switch is in the "DOOR" position.

When any door is opened and then closed while the ignition switch is not in the ON position, the interior lamp timer operates.

System Description (Cont'd)

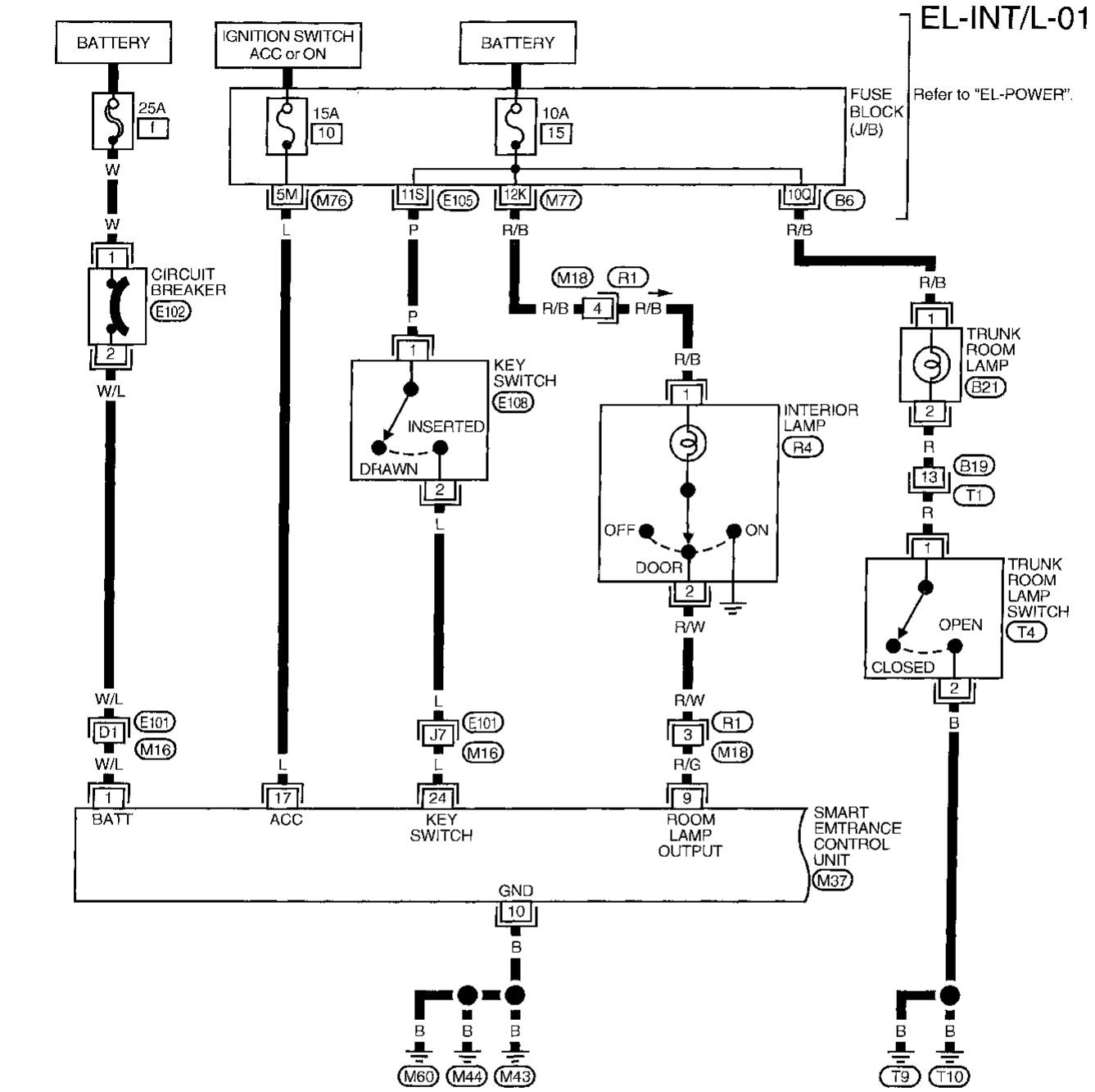
TRUNK ROOM LAMP

When the trunk room lamp switch is set to OPEN (trunk is opened), ground is supplied:

- to trunk room lamp terminal ②
- through trunk room switch terminal ①
- through trunk room lamp switch terminal ② and
- through body ground (T9) and (T10.)

With power and ground supplied, the trunk room lamp turns ON.

Wiring Diagram —INT/L—



Refer to last page (Foldout page).

M16, E101

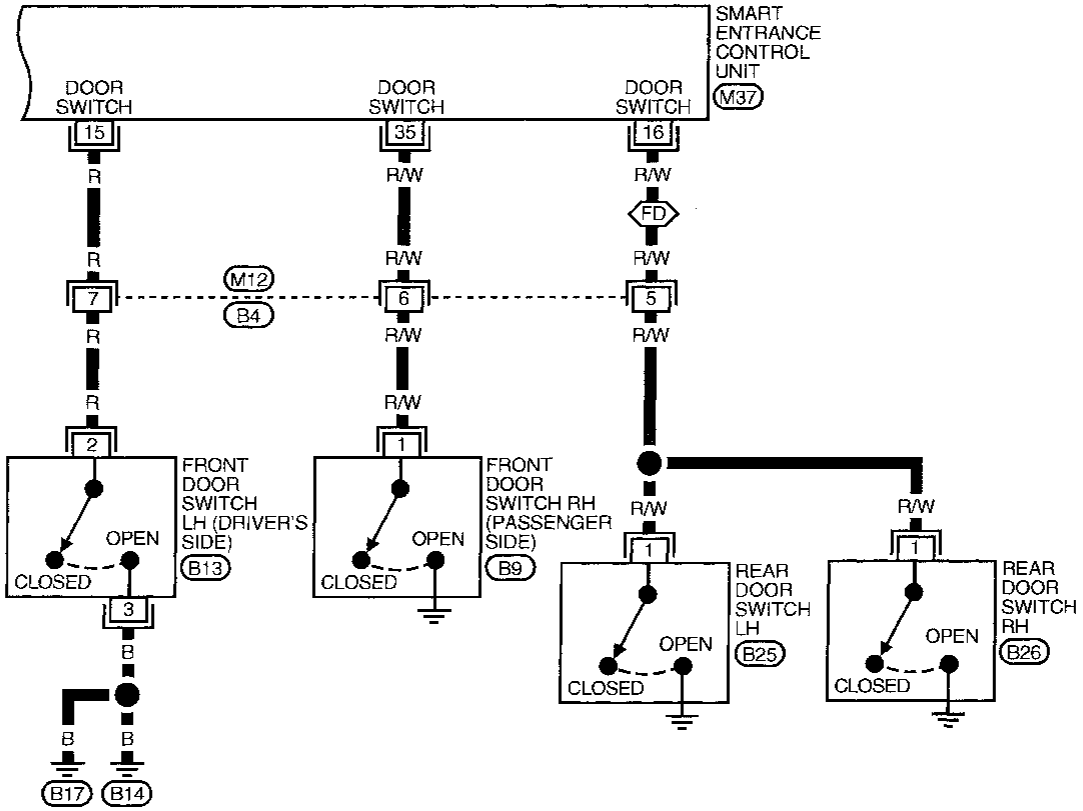
M37

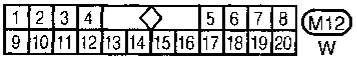
AEL640B

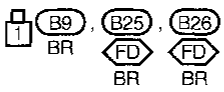
Wiring Diagram —INT/L— (Cont'd)

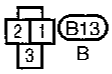
EL-INT/L-02

FD : With 4-doors









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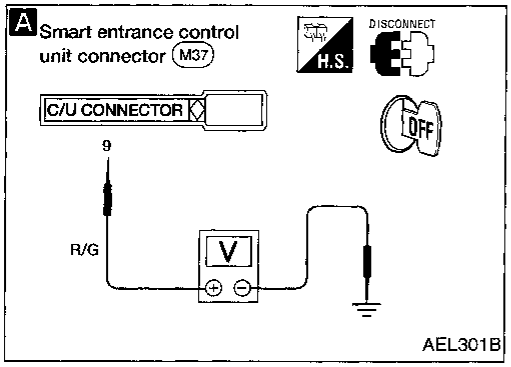
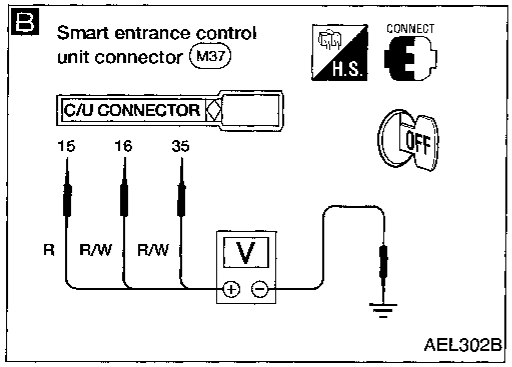
M37

AEL641B





Trouble Diagnoses

DIAGNOSTIC PROCEDURE

SYMPTOM: Interior lamp does not turn on when any door is opened, or timer does not operate properly.

Does interior lamp turn on when interior lamp switch is in "ON" position?

No → Check the following.
- Bulb
- 10A fuse [No. 15, located in the fuse block (J/B)]
- Harness for open or short between fuse and interior lamp
- Interior lamp ground condition

Yes ↓

Does key warning chime operate properly?

No → Check "WARNING CHIME" system. (Refer to EL-90.)

Yes ↓

Does power door lock operate using driver side knob lock switch?

No → Check "POWER DOOR LOCK" system. (Refer to EL-149.)

Yes ↓

A

CHECK INTERIOR LAMP OUTPUT SIGNAL.
1. Turn interior lamp switch to "DOOR" position.
2. Disconnect control unit connector.
3. Check voltage between control unit terminal (9) and ground.
   Battery voltage should exist.

NG → Check harness for open or short between interior lamp and control unit.

OK ↓

B

CHECK DOOR SWITCH INPUT SIGNAL.
1. Connect control unit connector.
2. Check voltage between control unit terminal (15), ((16)), (35) and ground.

	Terminals ⊕	Terminals ⊖	Condition	Voltage [V]
Front LH door switch	(15)	Ground	Open	0
			Closed	12
Front RH door switch	(35)	Ground	Open	0
			Closed	12
Rear door switches	((16))	Ground	Open	0
			Closed	12

Terminal numbers in ( ) are for models with 4 doors.

NG → Check the following.
- Door switch
- Door switch ground circuit (Front LH) or door switch ground condition
- Harness for open or short between control unit and door switch

OK ↓

Replace control unit.

System Description

With the ignition switch in the ON or START position, power is supplied:
- through 10A fuse (No. 12, located in the fuse block [J/B])
- to combination meter terminal ㊶ for the water temperature gauge,
- to combination meter terminal ㉒ for the tachometer and speedometer
- to combination meter terminal ⑩ for the fuel gauge.

Ground is supplied:
- to combination meter terminal ㉘
- through body grounds (M43), (M44) and (M60).

WATER TEMPERATURE GAUGE

The water temperature gauge indicates the engine coolant temperature. The reading on the gauge is based on the resistance of the the thermal transmitter.
As the temperature of the coolant increases, the resistance of the thermal transmitter decreases. A variable ground is supplied to terminal ㊷ of the combination meter for the water temperature gauge. The needle on the gauge moves from "C" to "H".

TACHOMETER

The tachometer indicates engine speed in revolutions per minute (rpm).
The tachometer is regulated by a signal:
- from terminal ③ of the ECM
- to combination meter terminal ㉙ for the tachometer.

FUEL GAUGE

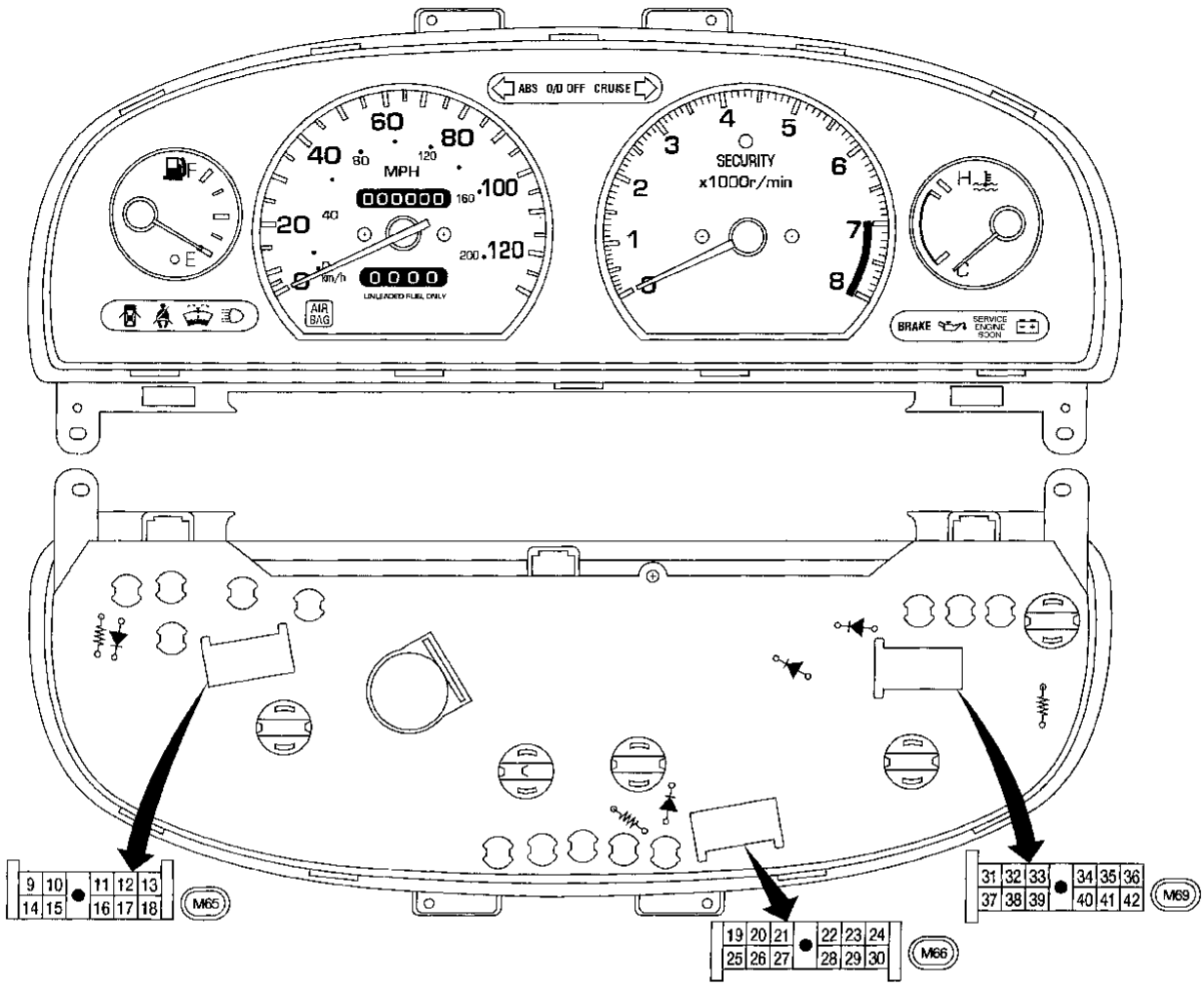
The fuel gauge indicates the approximate fuel level in the fuel tank.
The fuel gauge is regulated by a variable ground signal supplied:
- to combination meter terminal ⑭ for the fuel gauge
- from terminal ③ of the fuel tank gauge unit
- through terminal ② of the fuel tank gauge unit
- through body grounds (B14) and (B17).

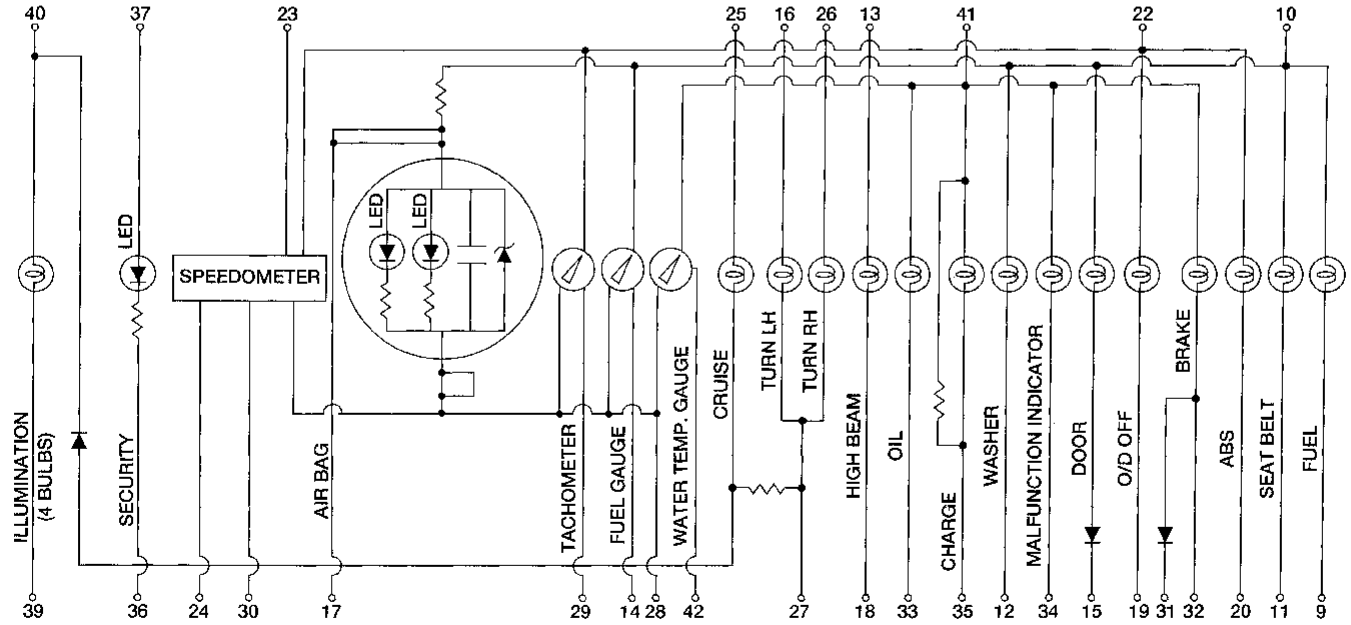
SPEEDOMETER

The vehicle speed sensor provides a voltage signal to the combination meter for the speedometer.
The voltage is supplied:
- to combination meter terminals ㉚ and ㉔ for the speedometer
- from terminals ② and ① of the vehicle speed sensor.

The speedometer converts the voltage into the vehicle speed displayed.

Combination Meter

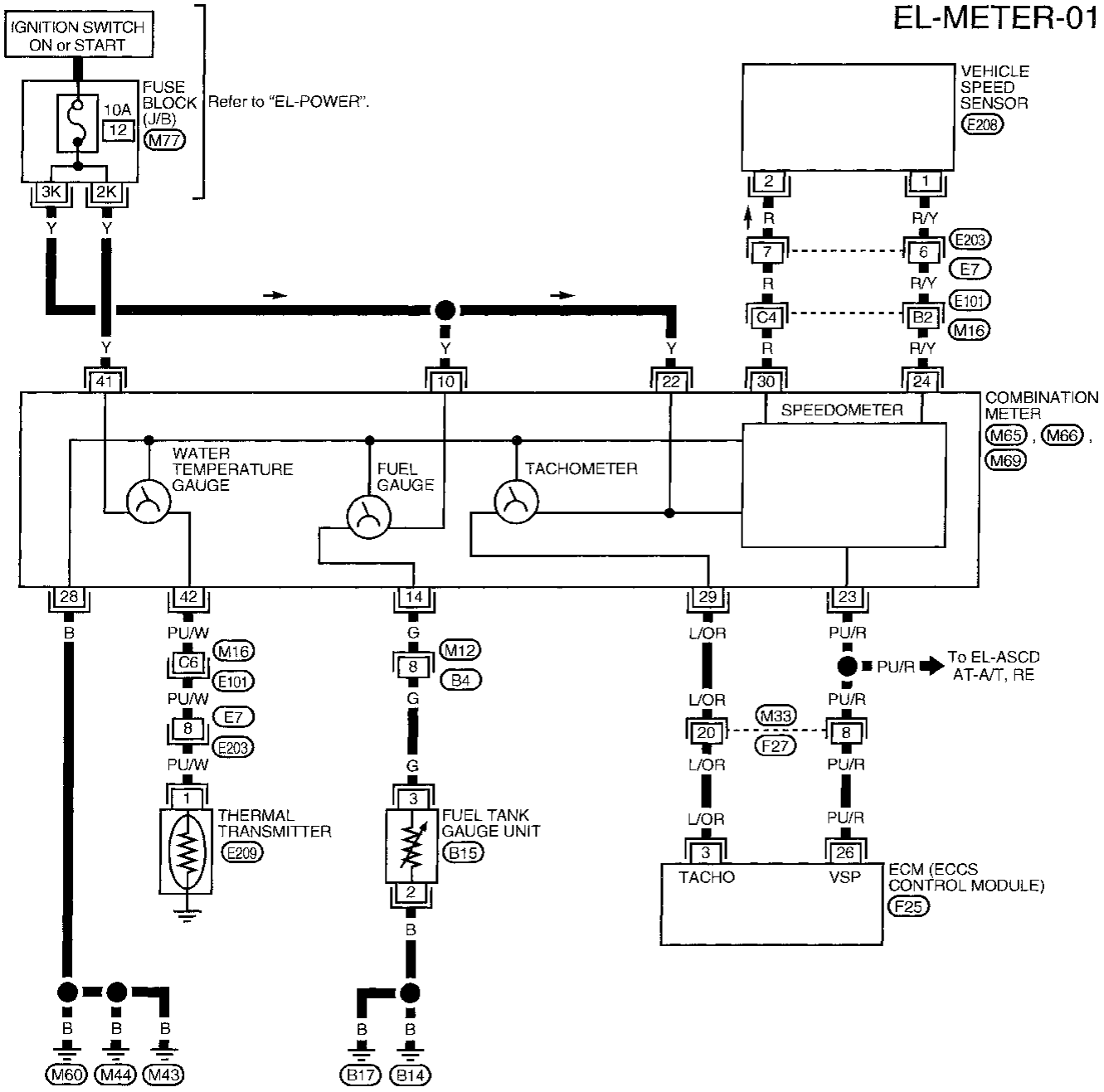


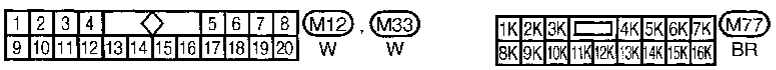


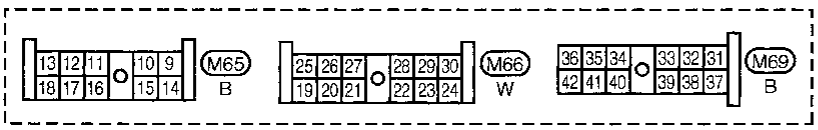
AEL236B

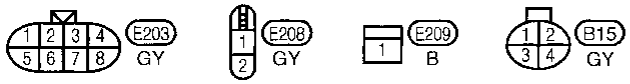
Wiring Diagram –METER–

EL-METER-01







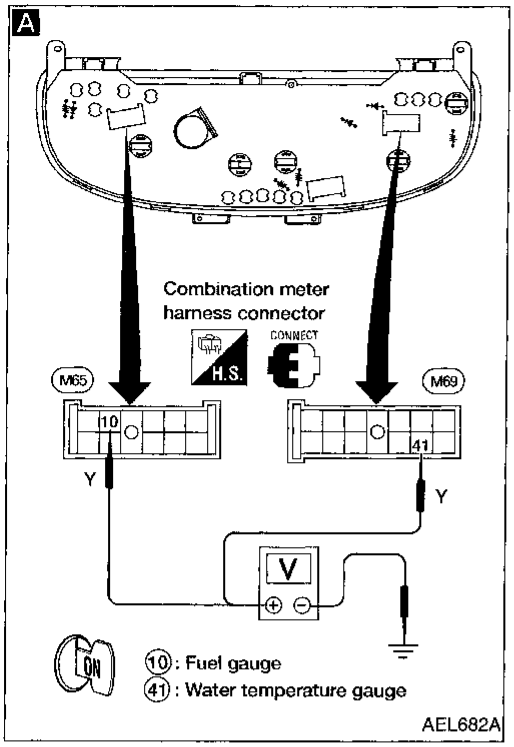


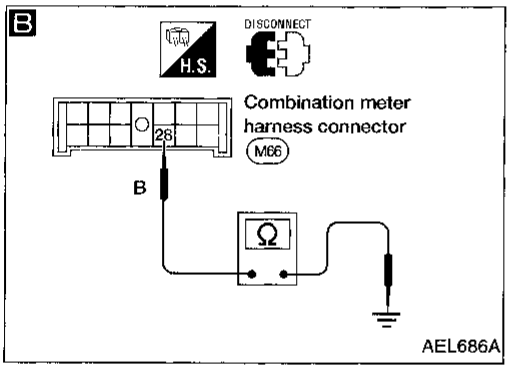
Refer to last page (Foldout page).
M16, E101
F25

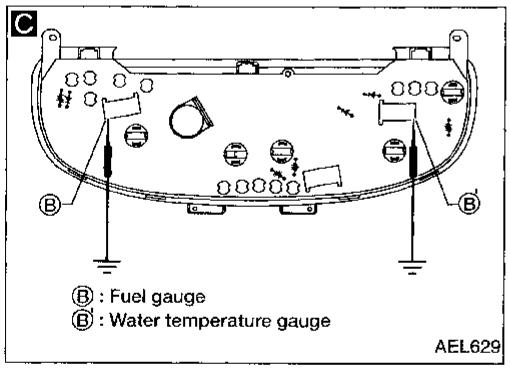
AEL705B

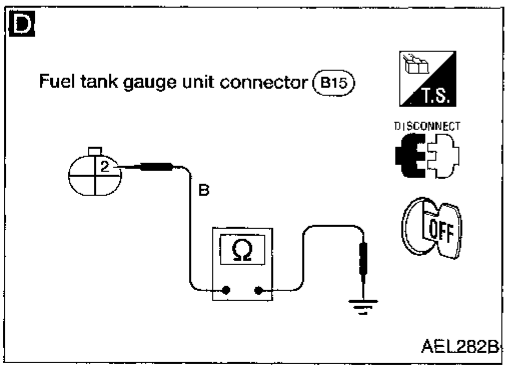
Trouble Diagnoses

INSPECTION/FUEL GAUGE AND/OR WATER TEMPERATURE GAUGE









A

CHECK POWER SUPPLY CIRCUIT.
1. Turn ignition switch ON.
2. Check voltage between combination meter terminals ⑩, ㊶ and ground.
Battery voltage should exist.

NG → Check the following.
- 10A fuse [No. 12], located in the fuse block (J/B)]
- Harness for open or short between fuse and combination meter

OK ↓

B

CHECK GROUND CIRCUIT FOR GAUGES.
Check continuity between combination meter terminal ㉘ and ground.
Continuity should exist.

NG → Repair harness or connector.

OK ↓

C

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

NG → Repair or replace gauge.

OK ↓

D

CHECK GROUND CIRCUIT FOR FUEL TANK GAUGE UNIT.
Check harness continuity between fuel tank gauge unit terminal ② and ground.
Continuity should exist.

NG → Repair harness or connector.

OK ↓

CHECK COMPONENT.
Check gauge units.
Refer to "FUEL TANK GAUGE UNIT CHECK" (EL-81) or "THERMAL TRANSMITTER CHECK" (EL-81).

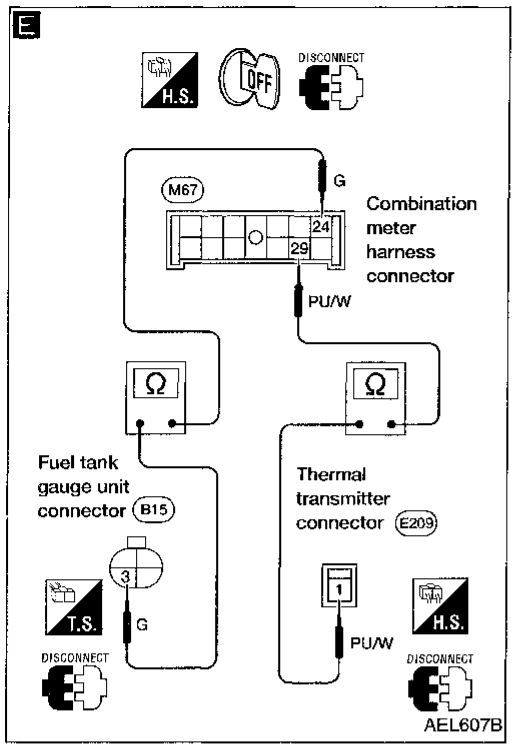
NG → Repair or replace.
Refer to FE section (Fuel gauge).

OK ↓

Ⓐ

(Go to next page.)

Trouble Diagnoses (Cont'd)



Ⓐ

E

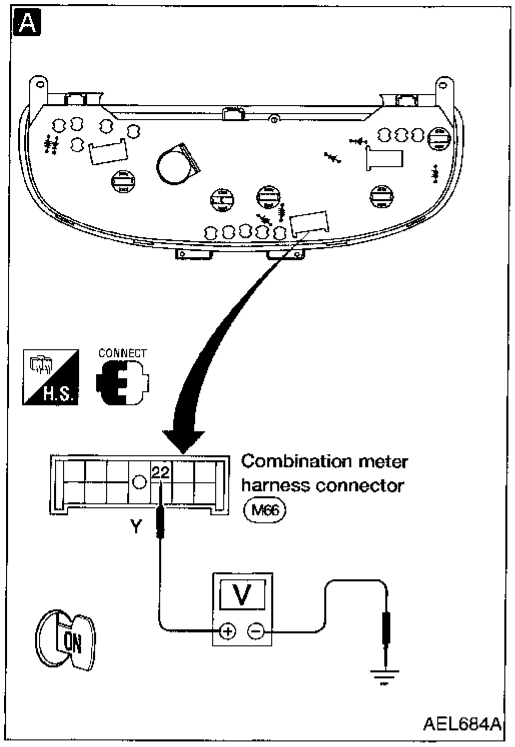
CHECK HARNESS.

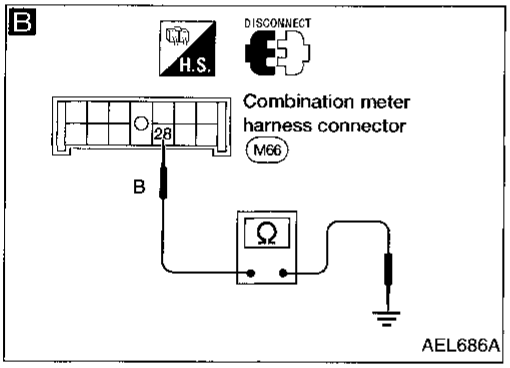
Check harness for open or short between terminals.

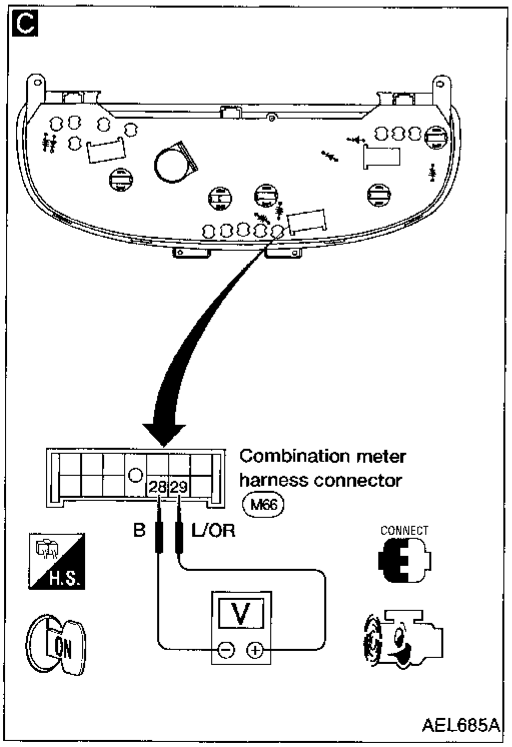
Terminals	
Combination meter connector	Component
⑭	Fuel tank gauge unit connector ③
㊷	Thermal transmitter connector ①

Trouble Diagnoses (Cont'd)

INSPECTION/TACHOMETER







A

CHECK POWER SUPPLY CIRCUIT.
1. Turn ignition switch ON.
2. Check voltage between combination meter terminal (22) and ground.
   Battery voltage should exist.

NG → Check the following.
- 10A fuse [No. 12, located in the fuse block (J/B)]
- Harness for open or short between fuse and combination meter

OK ↓

B

CHECK GROUND CIRCUIT FOR TACHOMETER.
Check continuity between combination meter terminal (28) and ground.
Continuity should exist.

NG → Repair harness or connector.

OK ↓

C

CHECK ECM OUTPUT.
1. Start engine.
2. Check voltage between combination meter terminals (29) and (28) at idle and 2,000 rpm.
   Higher rpm = Higher voltage
   Lower rpm = Lower voltage
   Voltage should change with rpm.

NG → Check harness for open or short between ECM and combination meter.

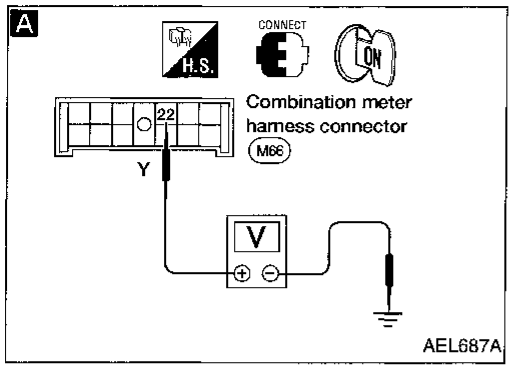
OK ↓

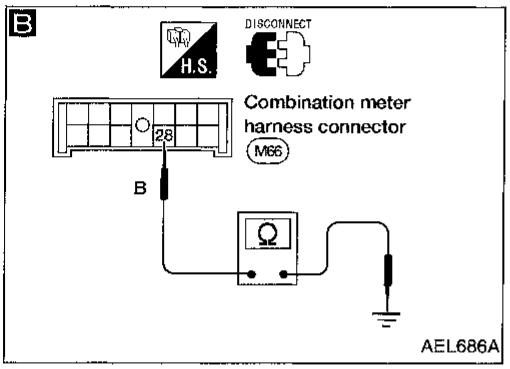
Replace tachometer.

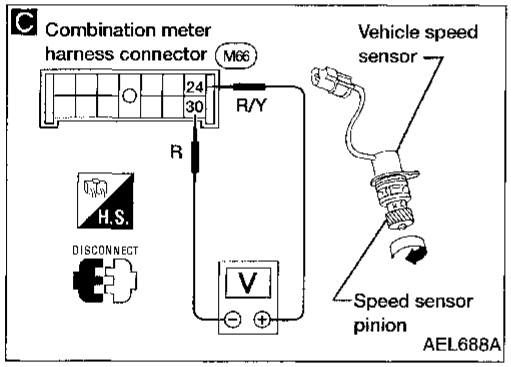
Trouble Diagnoses (Cont'd)

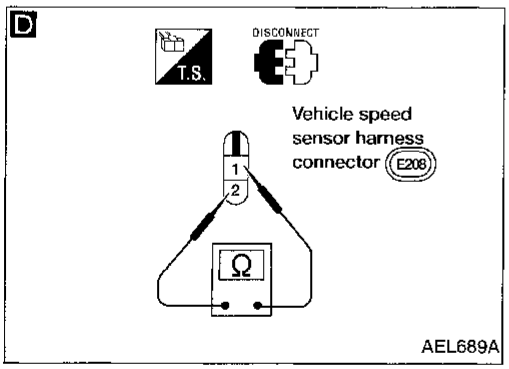
INSPECTION/SPEEDOMETER AND VEHICLE SPEED SENSOR

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









A

CHECK POWER SUPPLY CIRCUIT.
1. Turn ignition switch ON.
2. Check voltage between combination meter terminal (22) and ground.
   Battery voltage should exist.

NG → Check the following:
- 10A fuse [No. 12, located in the fuse block (J/B)]
- Harness for open or short between fuse and combination meter

OK ↓

B

CHECK GROUND CIRCUIT FOR SPEEDOMETER.
Check continuity between combination meter terminal (28) and ground.
Continuity should exist.

NG → Repair harness or connector.

OK ↓

C

CHECK VEHICLE SPEED SENSOR OUTPUT.
1. Remove vehicle speed sensor from transaxle and leave vehicle speed sensor connector connected.
2. Check voltage between combination meter terminals (24) and (30) while quickly turning speed sensor pinion.
   Voltage: Approx. 0.5V [Alternating current (AC)]

OK → Replace speedometer.

NG ↓

D

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

NG → Replace vehicle speed sensor.

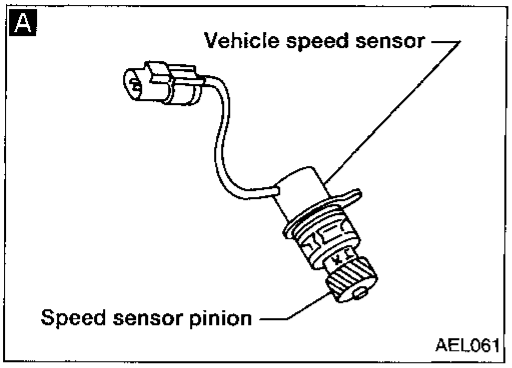
OK ↓

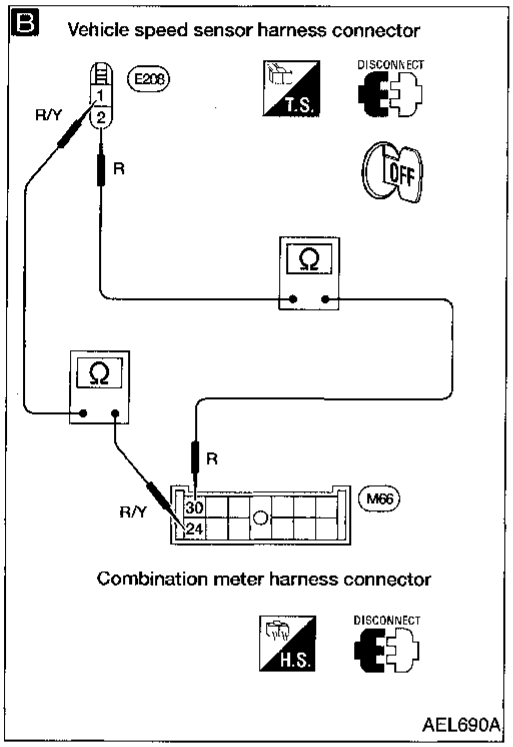
Check harness for open or short between vehicle speed sensor and combination meter.

Trouble Diagnoses (Cont'd)

INSPECTION/SPEEDOMETER AND VEHICLE SPEED SENSOR

SYMPTOM: Speedometer indication flutters.





INSPECTION START

↓

Is vehicle speed sensor installed properly? Check for looseness. — NG → Install vehicle speed sensor properly.

↓ OK

A

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

↓ Yes

B

CHECK HARNESS CONTINUITY. Check continuity between speedometer terminal (30) and vehicle speed sensor terminal (2), and between (24) 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.

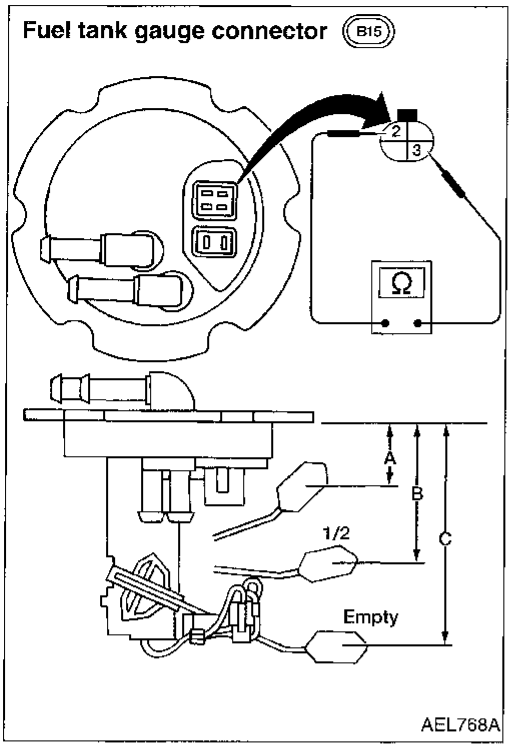
↓ OK

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

↓ NG

Replace speedometer.

Trouble Diagnoses (Cont'd)

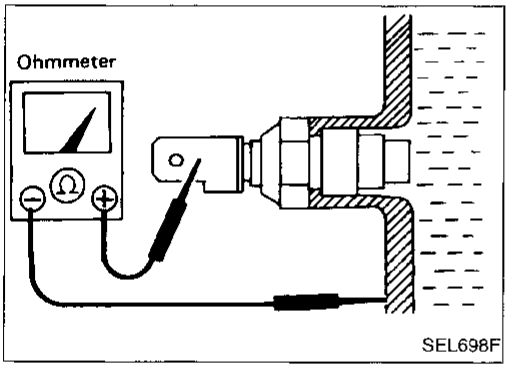


FUEL TANK GAUGE UNIT CHECK

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

Check the resistance between terminals ③ and ②.

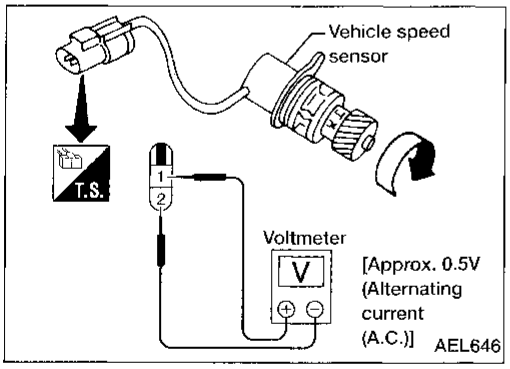
Ohmmeter (+)	Ohmmeter (−)	Float position mm (in)			Resistance value (Ω)
③	②	A	Full	38.4 (1.512)	Approx. 4.5 - 5.5
		B	1/2	86.2 (3.394)	Approx. 31.5 - 33.5
		C	Empty	129.1 (5.083)	Approx. 80.0 - 83.0



THERMAL TRANSMITTER CHECK

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

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



VEHICLE SPEED SENSOR SIGNAL CHECK

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

System Description

If equipped with theft warning system, power is supplied at all times:
- through 10A fuse (No. 15, located in the fuse block [J/B])
- to combination meter terminal ㊲ for the security lamp.

With the ignition switch in the ON or START position, power is supplied:
- through 10A fuse (No. 12, located in the fuse block [J/B])
- to combination meter terminal ⑩ for the air bag warning lamp
- to combination meter terminal ㉒ and
- to combination meter terminal ㊶.

Ground is supplied:
- to combination meter terminal ㉘,
- through body grounds (M43), (M44) and (M60).

Ground is supplied:
- to fuel tank gauge unit terminal ② and
- seat belt buckle switch terminal ②
- through body grounds (B14) and (B17).

Ground is supplied:
- to brake fluid level switch terminal ② and
- washer fluid level switch terminal ② (For Canada models only)
- through body grounds (E13) and (E25).

AIR BAG WARNING LAMP

During prove out or when an air bag malfunction occurs, the ground path is interrupted:
- from the air bag diagnosis sensor unit terminal ⑮
- to combination meter terminal ⑰.

Ground is supplied:
- through combination meter terminal ㉘.

With power and ground supplied, the air bag warning lamp (LEDs) illuminate.
For further information, refer to RS section ("TROUBLE DIAGNOSES").

DOOR AJAR WARNING LAMP

When a door is open, ground is supplied:
- to combination meter terminal ⑮
- from smart entrance control unit terminal ⑯.

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

SEAT BELT WARNING LAMP

When the driver's seat belt is unfastened, ground is supplied:
- to combination meter terminal ⑪
- from seat belt buckle switch terminal ①.

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

LOW FUEL LEVEL WARNING LAMP

The amount of fuel in the fuel tank is determined by the fuel level sensor in the fuel tank. A signal is sent from fuel tank gauge unit terminal ④ to combination meter terminal ⑨. The fuel level sensor will illuminate the low fuel level warning lamp when the fuel level is low.
With power and ground supplied, the low fuel level warning lamp illuminates.

LOW WASHER FLUID LEVEL WARNING LAMP (For Canada models only)

When the washer fluid level is low, ground is supplied:
- to combination meter terminal ⑫
- from washer fluid level switch terminal ①.

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

SECURITY INDICATOR LAMP

Under certain conditions, ground is supplied:
- to combination meter terminal ㊱
- from smart entrance control unit terminal ㉝.

With power and ground supplied, the security indicator lamp will illuminate.
For further information, refer to "System Description", "THEFT WARNING SYSTEM", EL-179.

ABS WARNING LAMP

During prove out or when an ABS malfunction occurs, ground is supplied:
- to combination meter terminal ⑳
- from ABS control unit terminal ㉚.

With power and ground supplied, the ABS warning lamp illuminates.
For further information, refer to BR section ("Self-diagnosis", "TROUBLE DIAGNOSES").

MALFUNCTION INDICATOR LAMP

During prove out or when an engine control malfunction occurs, ground is supplied:
- to combination meter terminal ㉞
- from ECM terminal ⑱.

With power and ground supplied, the malfunction indicator lamp illuminates.
For further information, refer to EC section ["Malfunction Indicator Lamp (MIL)", "ON-BOARD DIAGNOSTIC SYSTEM DESCRIPTION"].

LOW OIL PRESSURE WARNING LAMP

Low oil pressure causes oil pressure switch terminal ① to provide ground to combination meter terminal ㉝.
With power and ground supplied, the low oil pressure warning lamp illuminates.

CHARGE WARNING LAMP

During prove out or when a generator malfunction occurs, ground is supplied:
- to combination meter terminals ㉟ and ㉛
- from generator terminal ③.

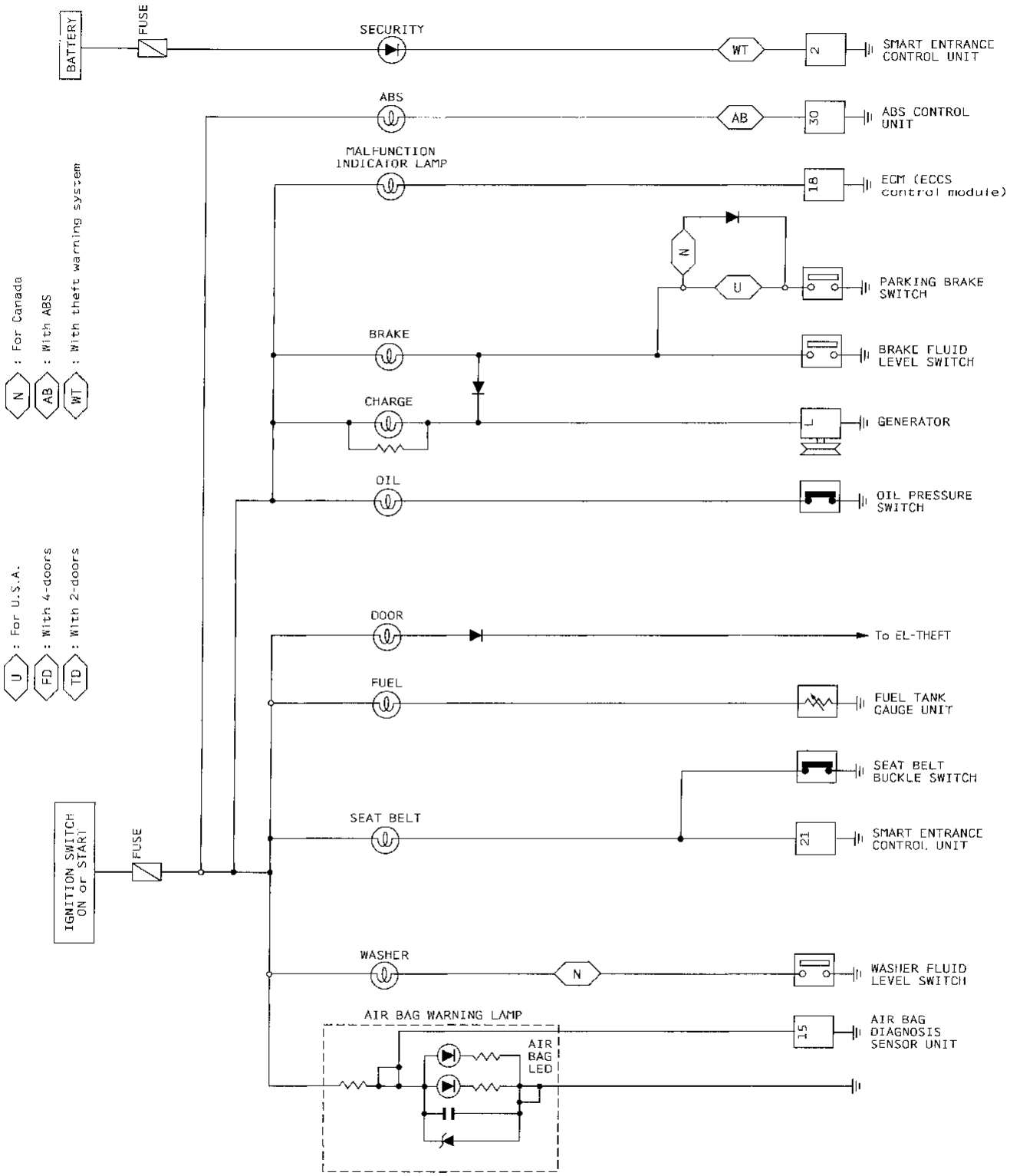
With power and ground supplied, the charge warning lamp and brake lamp illuminate.

BRAKE WARNING LAMP

When the parking brake is applied, or the brake fluid level is low, ground is supplied:
- to combination meter terminal ㉜
- from parking brake switch terminal ①, or
- brake fluid level switch terminal ①.

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

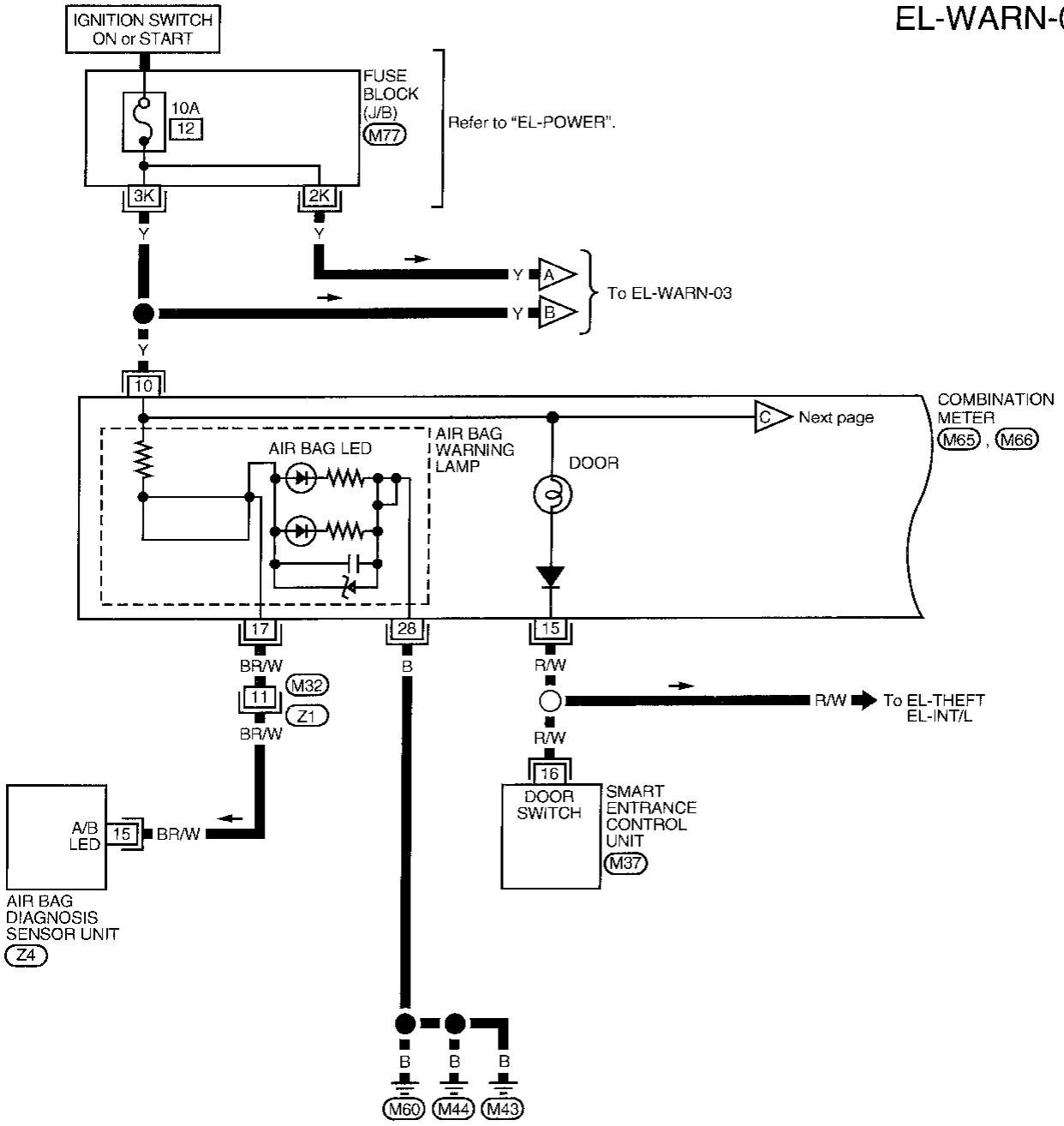
Schematic

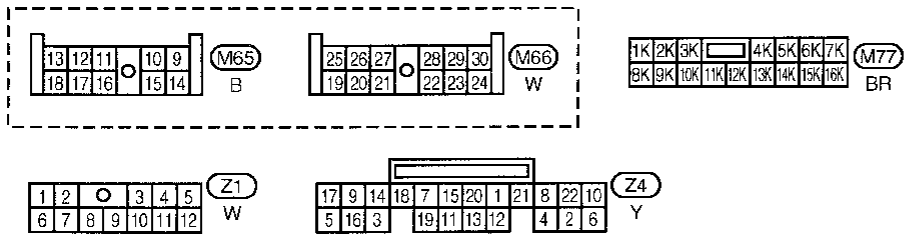


AEL635B

Wiring Diagram –WARN–

EL-WARN-01



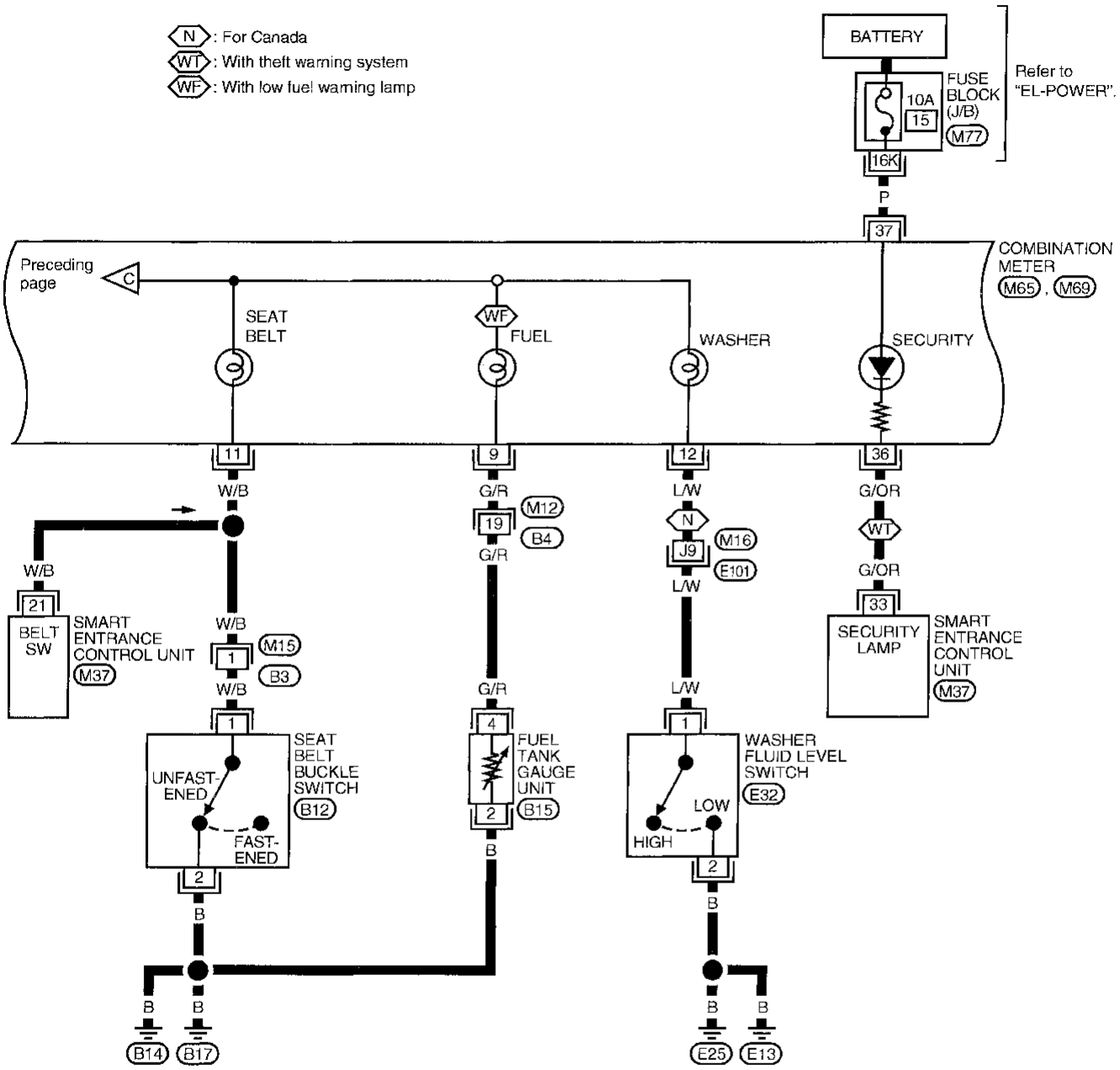


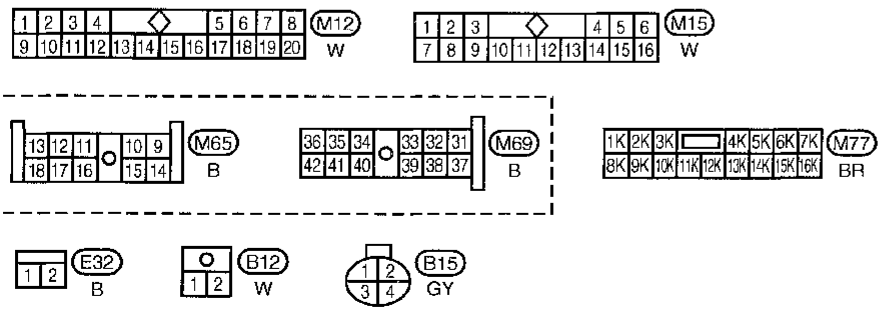
Refer to last page (Foldout page).
M37

AEL677B

Wiring Diagram –WARN– (Cont'd)

EL-WARN-02



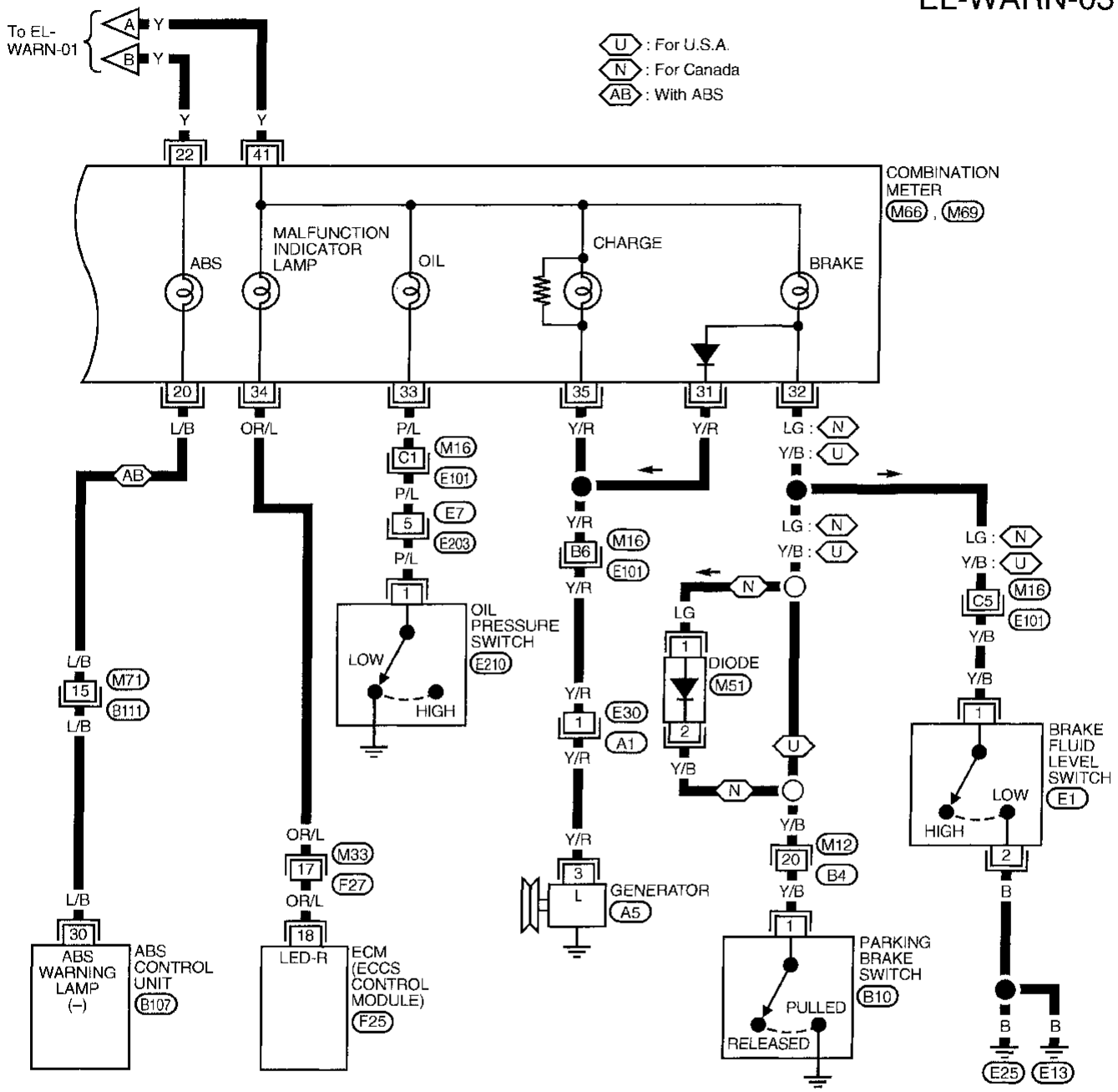


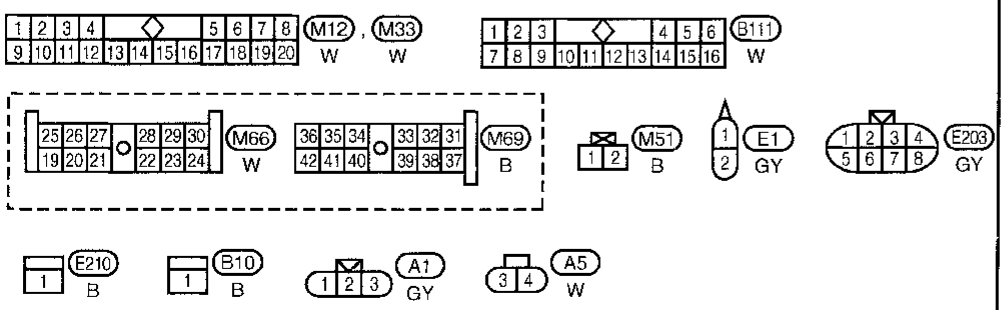
Refer to last page (Foldout page).
M16, E101
M37

AEL666B

Wiring Diagram –WARN– (Cont'd)

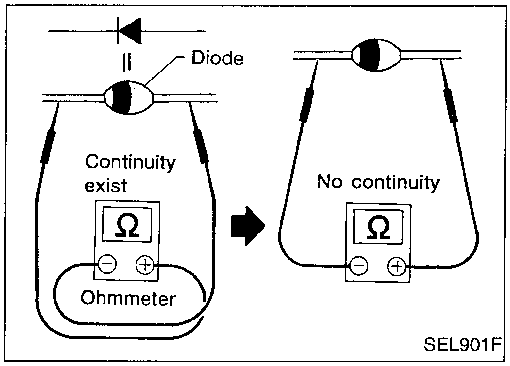
EL-WARN-03





Refer to last page (Foldout page).
M16 , E101
F25
B107

AEL708B

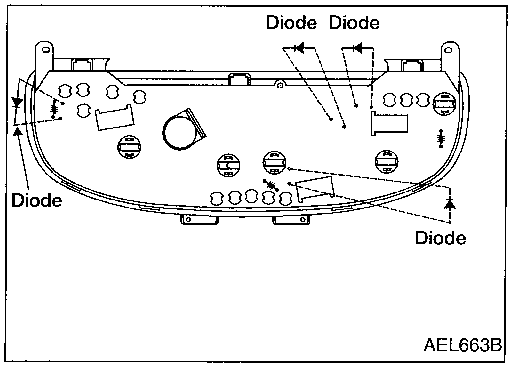


Electrical Component Inspection

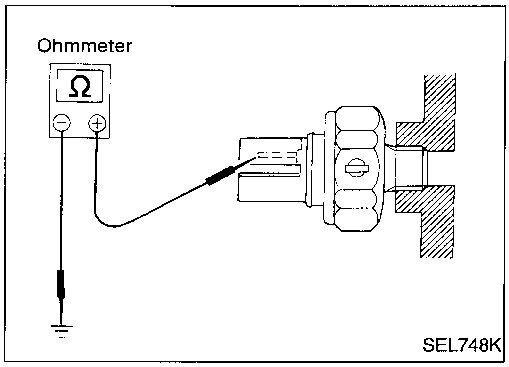
DIODE CHECK

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

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



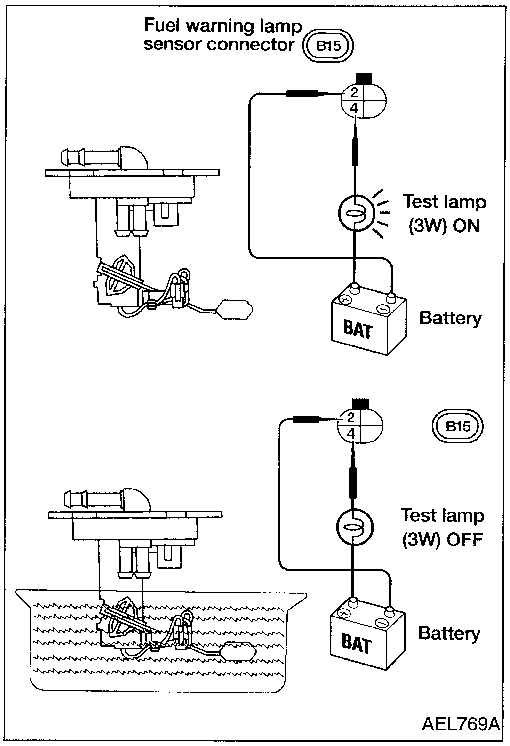
- Diodes for warning lamps are built into the combination meter printed circuit.



OIL PRESSURE SWITCH CHECK

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

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



FUEL WARNING LAMP SENSOR CHECK

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

NOTES

System Description

The warning chime is integral with the smart entrance control unit, which controls its operation.
Power is supplied at all times:
- through 10A fuse (No. 15, located in the fuse block [J/B])
- to key switch terminal ①.

Power is supplied at all times:
- through 10A fuse (No. 36, located in the fuse and fusible link box)
- to lighting switch terminal ⑪.

Power is supplied at all times:
- through 25A fusible link (letter f, located in the fuse and fusible link box)
- to circuit breaker terminal ①
- through circuit breaker terminal ②
- to smart entrance control unit terminal ①.

With the ignition switch in the ON or START position, power is supplied:
- through 7.5A fuse (No. 8, located in the fuse block [J/B])
- to smart entrance control unit terminal ⑪.

Ground is supplied to smart entrance control unit terminal ⑩ through body grounds (M43), (M44) and (M60).
When a signal, or combination of signals, is received by the smart entrance control unit, the warning chime will sound.

IGNITION KEY WARNING CHIME

When the key switch is ON (ignition key is inserted in key cylinder), the ignition switch is in the OFF or ACC position, and the driver's door is open, the warning chime will sound. A battery positive voltage is supplied:
- from key switch terminal ②
- to smart entrance control unit terminal ㉔.

Ground is supplied:
- to smart entrance control unit terminal ⑮
- from front door switch LH terminal ②.

Front door switch LH terminal ③ is grounded through body grounds (B14) and (B17).

LIGHT WARNING CHIME

With ignition switch OFF or ACC postion, driver's door open, and lighting switch in parking lamp (1ST) position or headlamp "ON" (2ND) position, the warning chime will sound. A battery positive voltage is supplied:
- from lighting switch terminal ⑫
- to smart entrance control unit terminal ㉕

Ground is supplied:
- to smart entrance control unit terminal ⑮
- from front door switch LH terminal ②.

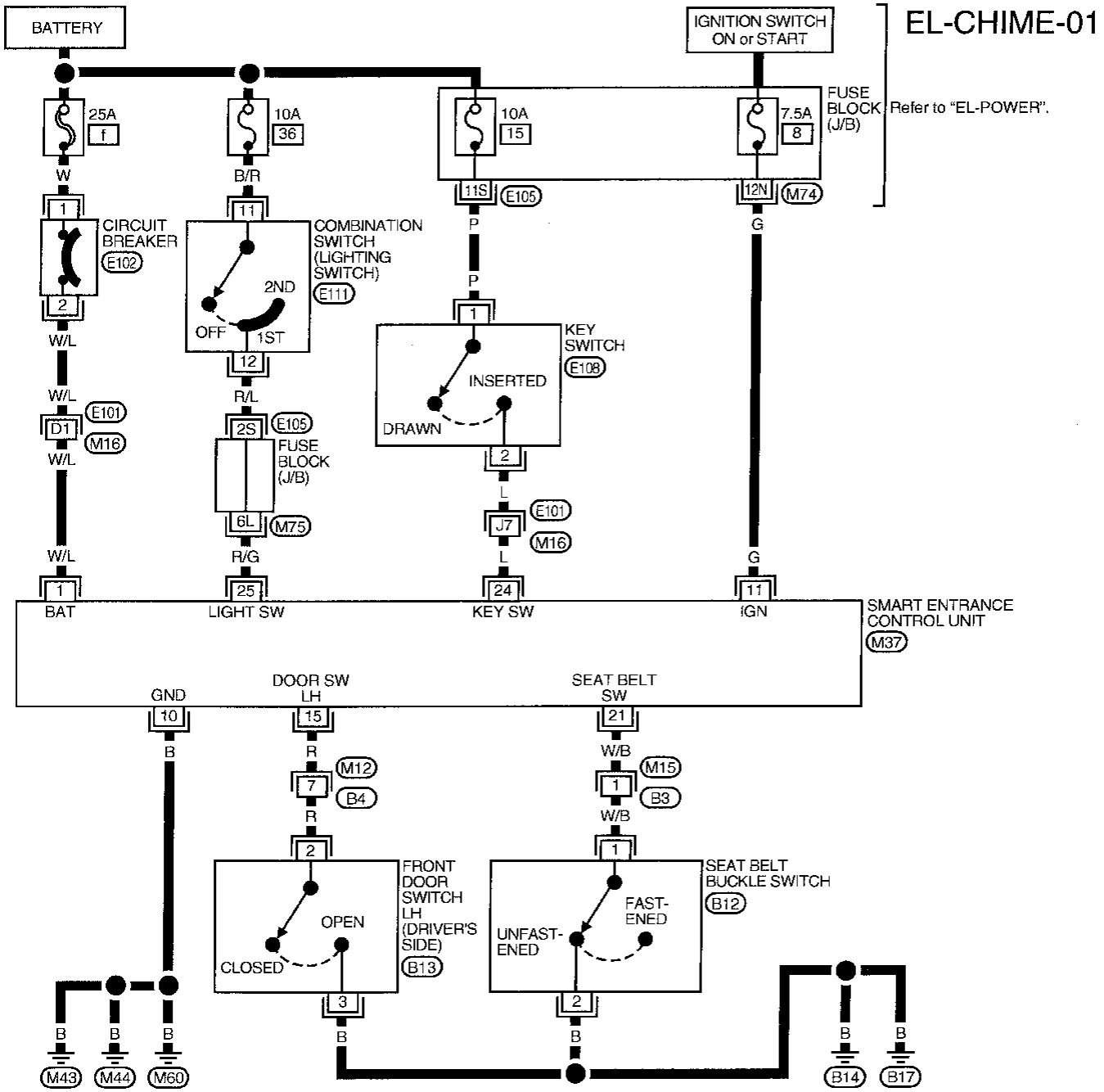
Front door switch LH terminal ③ is grounded through body grounds (B14) and (B17).

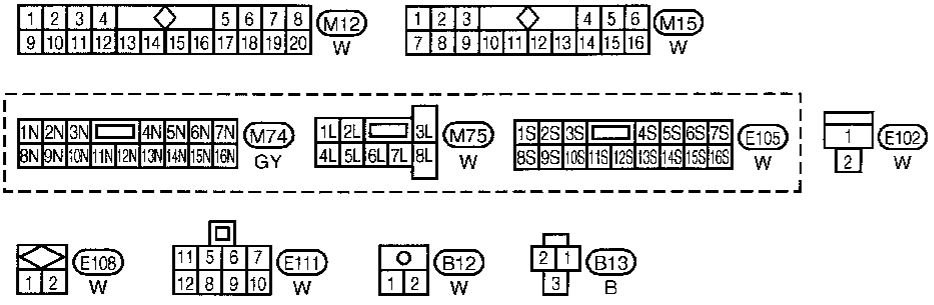
SEAT BELT WARNING CHIME

The warning chime sounds for approximately 6 seconds when ignition switch is turned from OFF to ON or START and driver's seat belt is unfastened.
Ground is supplied:
- to smart entrance control unit terminal ㉑
- from seat belt switch terminal ①.

Seat belt switch terminal ② is grounded through body grounds (B14) and (B17).

Wiring Diagram –CHIME–





Refer to last page (Foldout page).
M16 , E101
M37

AEL208B

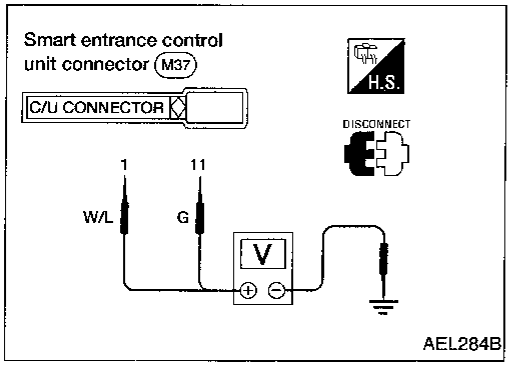
Trouble Diagnoses

SYMPTOM CHART

REFERENCE PAGE	EL-93	EL-93	EL-94	EL-94	EL-95
SYMPTOM	POWER SUPPLY AND GROUND CIRCUIT CHECK	DIAGNOSTIC PROCEDURE 1 (Lighting switch input signal check)	DIAGNOSTIC PROCEDURE 2 (Key switch input signal check)	DIAGNOSTIC PROCEDURE 3 (Seat belt buckle switch input signal check)	DIAGNOSTIC PROCEDURE 4 (Driver side door switch input signal check)
Light warning chime does not activate.	X	X			X
Ignition key warning chime does not activate.	X		X		X
Seat belt warning chime does not activate.	X			X	X
All warning chimes do not activate.	X				X

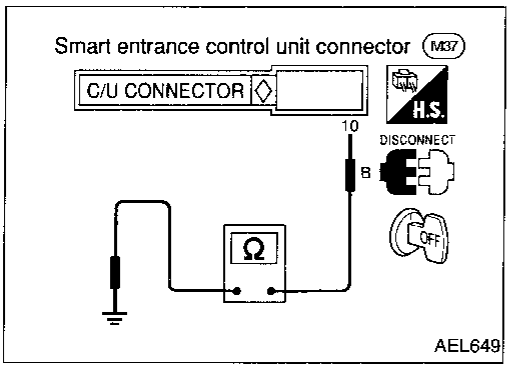
Trouble Diagnoses (Cont'd)

MAIN POWER SUPPLY AND GROUND CIRCUIT CHECK



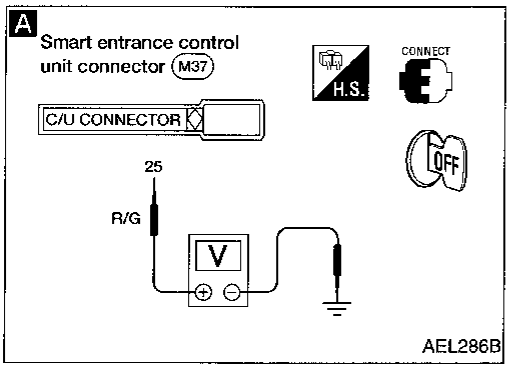
Main power supply circuit check

Terminals		Ignition switch position		
⊕	⊖	OFF	ACC	ON
①	Ground	Battery voltage	Battery voltage	Battery voltage
⑪	Ground	0V	0V	Battery voltage



Ground circuit check

Terminals	Continuity
⑩ - Ground	Yes



DIAGNOSTIC PROCEDURE 1

(Lighting switch input signal check)

A

CHECK LIGHTING SWITCH INPUT SIGNAL.

Check voltage between control unit terminal ㉕ and ground.

Condition of lighting switch	Voltage [V]
1ST or 2ND	Approx. 12
OFF	0

NG → Check the following.
- 10A fuse (No. 36, located in the fuse and fusible link box)
- Harness for open or short between control unit and lighting switch

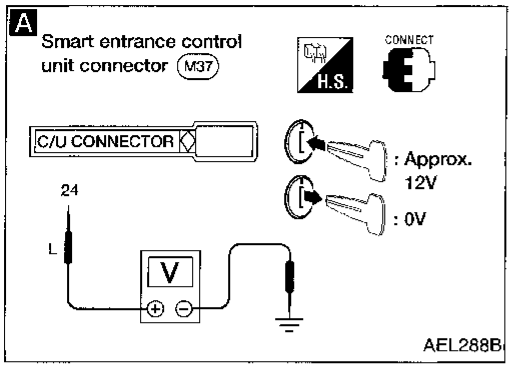
OK ↓

Go to Diagnostic Procedure 4, EL-95.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 2

(Key switch input signal check)



A

CHECK KEY SWITCH INPUT SIGNAL.
Check voltage between control unit terminal (24) and ground.

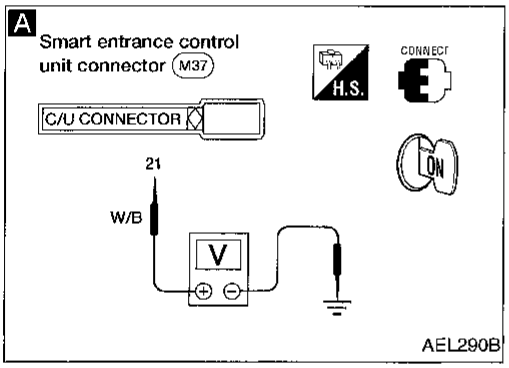
Condition of key switch	Voltage [V]
Key is inserted.	Approx. 12
Key is withdrawn.	0

NG → Check the following.
- Key switch
  Refer to "Electrical Components Inspection" (EL-95).
- 7.5A fuse [No. 15, located in fuse block (J/B)]
- Harness for open or short between key switch and fuse
- Harness for open or short between control unit and key switch

OK → Go to Diagnostic Procedure 4, EL-95.

DIAGNOSTIC PROCEDURE 3

(Seat belt buckle switch input signal check)



A

CHECK SEAT BELT BUCKLE SWITCH INPUT SIGNAL.
1. Turn ignition switch ON.
2. Check voltage between control unit terminal (21) and ground.

Condition of seat belt buckle switch	Voltage [V]
Fastened	Approx. 12
Unfastened	0

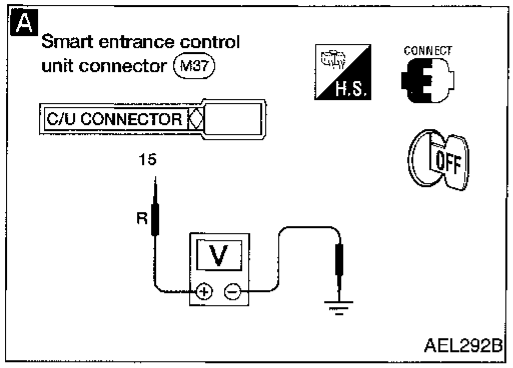
NG → Check the following.
- Seat belt buckle switch
  Refer to "Electrical Components Inspection" (EL-95).
- Seat belt buckle switch ground circuit
- Harness for open or short between control unit and seat belt buckle switch

OK → Go to Diagnostic Procedure 4, EL-95.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 4

(Driver side door switch input signal check)



A

CHECK DOOR SWITCH INPUT SIGNAL.
Check voltage between control unit terminal (15) and ground.

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

NG → Check the following.
- Driver side door switch Refer to "Electrical Components Inspection" (EL-95).
- Door switch ground condition
- Harness for open or short between control unit and door switch

OK ↓

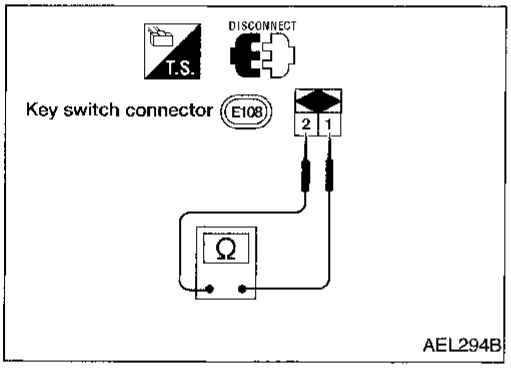
Replace smart entrance control unit.

GI MA EM LC EC FE CL MT AT FA RA BR ST RS BT HA EL IDX

Electrical Component Inspection

KEY SWITCH (insert)

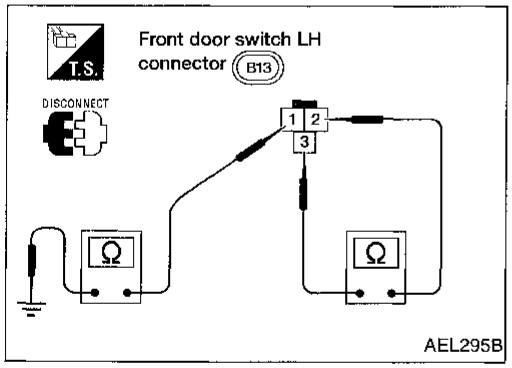
Check continuity between terminals when key is inserted in ignition key cylinder and key is removed from ignition key cylinder.



Terminal No.	Condition	Continuity
① - ②	Key is inserted.	Yes
	Key is withdrawn.	No

DRIVER SIDE DOOR SWITCH

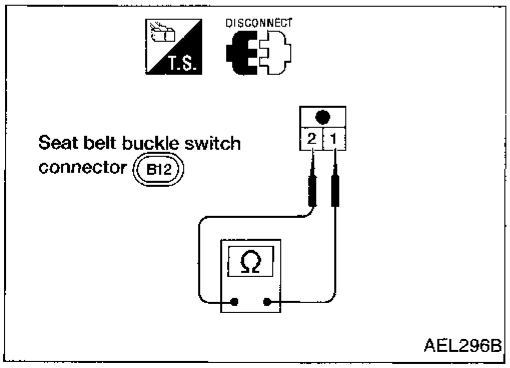
Check continuity between terminals when door switch is pushed and released.



Terminal No.	Condition	Continuity
① - ground, ② - ③	Door switch is pushed.	No
	Door switch is released.	Yes

SEAT BELT BUCKLE SWITCH

Check continuity between terminals when seat belt is fastened and unfastened.



Terminal No.	Condition	Continuity
① - ②	Seat belt is fastened.	No
	Seat belt is unfastened.	Yes

System Description

WIPER OPERATION

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

- LO speed
- HI speed
- INT (with Intermittent)

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

- through 20A fuse (No. 19, located in the fuse block [J/B])
- to wiper motor terminal ⑥
- to wiper amplifier terminal ⑤ (with intermittent).

Ground is supplied to intermittent wiper amplifier terminal ③ through body grounds (M43), (M44) and (M60) (with intermittent).

Low and high speed wiper operation

Ground is supplied to wiper switch terminal ⑰ through body grounds (E13) and (E25).
When the wiper switch is placed in the LO position, ground is supplied:

- through terminal ⑭ of the wiper switch
- to wiper motor terminal ②.

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

- through terminal ⑯ of the wiper switch
- to wiper motor terminal ①.

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

Auto stop operation (with intermittent)

With wiper switch turned OFF, wiper motor will continue to operate until wiper arms reach windshield base.
When wiper arms are not located at base of windshield with wiper switch OFF, ground is provided:

- from terminal ⑭ of the wiper switch
- to wiper motor terminal ②, in order to continue wiper motor operation at low speed.

Ground is also supplied:

- through terminal ⑬ of the wiper switch
- to wiper amplifier terminal ②
- through terminal ⑦ of the wiper amplifier
- to wiper motor terminal ⑤
- through terminal ④ of the wiper motor, and
- through body grounds (M43), (M44) and (M60).

When wiper arms reach base of windshield, wiper motor terminals ⑤ and ⑥ are connected instead of terminals ⑤ and ④. Wiper motor will then stop wiper arms at the PARK position.

Auto stop operation (without intermittent)

With wiper switch turned OFF, wiper motor will continue to operate until wiper arms reach windshield base.
When wiper arms are not located at base of windshield with wiper switch OFF, ground is provided:

- from terminal ⑭ of the wiper switch
- to wiper motor terminal ②, in order to continue wiper motor operation at low speed.

Ground is also supplied:

- through terminal ⑬ of the wiper switch
- to wiper motor terminal ⑤
- through terminal ④ of the wiper motor, and
- through body grounds (M43), (M44) and (M60).

When wiper arms reach base of windshield, wiper motor terminals ⑤ and ⑥ are connected instead of terminals ⑤ and ④. Wiper motor will then stop wiper arms at the PARK position.

Intermittent operation

The wiper motor operates the wiper arms one time at low speed at an interval of approximately 7 seconds. This feature is controlled by the intermittent wiper amplifier.
When the wiper switch is placed in the INT position, ground is supplied:

- to wiper amplifier terminal ①

System Description (Cont'd)

- from wiper switch terminal ⑮
- through body grounds E13 and E25, and
- to wiper motor terminal ②
- through the wiper switch terminal ⑭
- to wiper switch terminal ⑬
- through wiper amplifier terminal ②
- to wiper amplifier terminal ③
- through body grounds M43, M44 and M60.

WASHER OPERATION

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

- through 20A fuse (No. 19, located in the fuse block [J/B])
- to washer motor terminal ①.

When the lever is pulled to the WASH position, ground is supplied:

- to washer motor terminal ②, and
- to wiper amplifier terminal ⑥ (with intermittent)
- from terminal ⑱ of the wiper switch
- through terminal ⑰ of the wiper switch, and
- through body grounds E13 and E25.

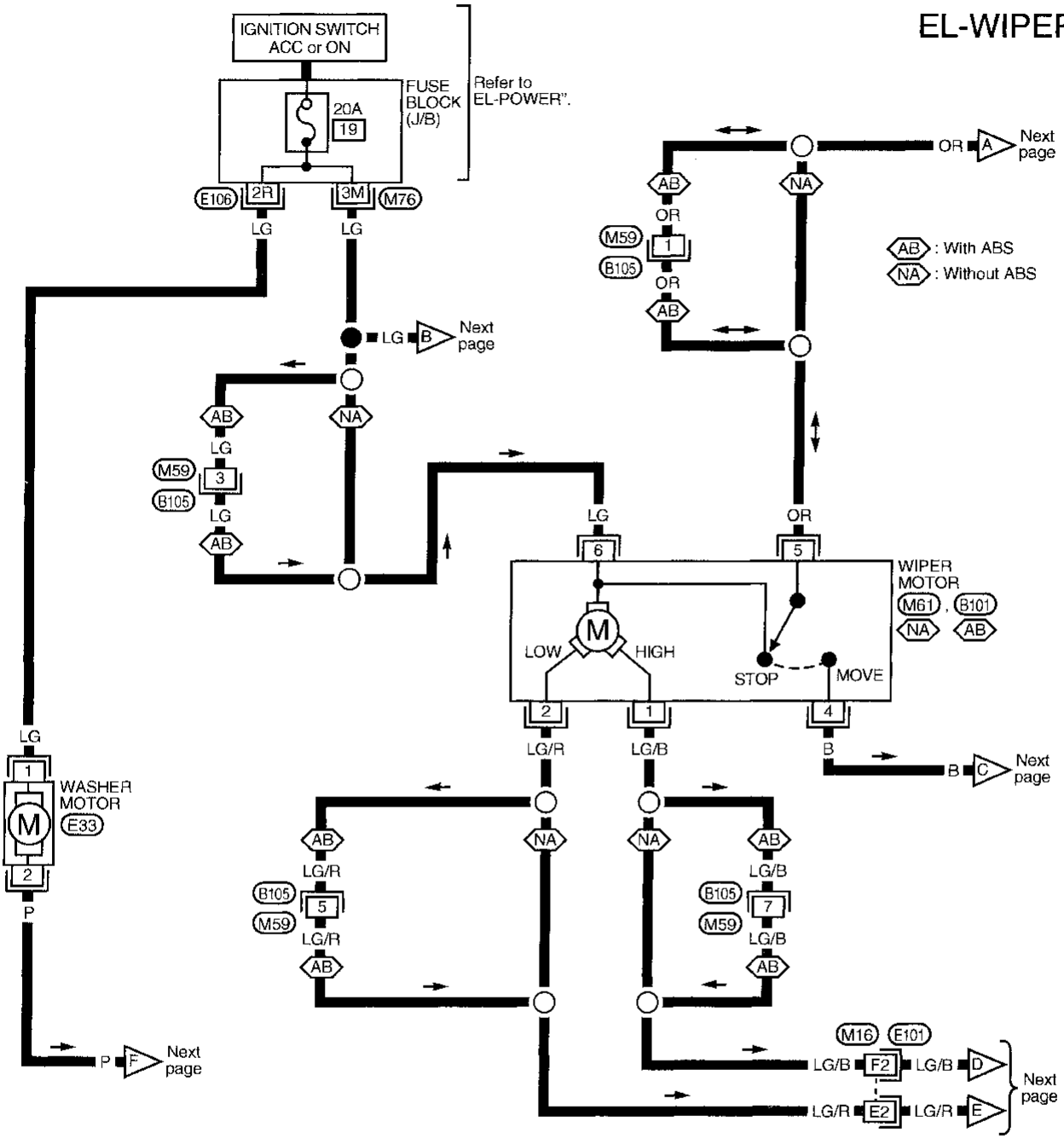
With power and ground supplied, the washer motor operates.

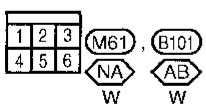
If equipped with intermittent wipers, when the lever is pulled to the WASH position for one second or more, the wiper motor operates at low speed for approximately 3 seconds to clean windshield. The motor operates at low for approximately 3 seconds. This feature is controlled by the intermittent wiper amplifier in the same manner as the intermittent operation.

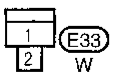
Wiring Diagram –WIPER–

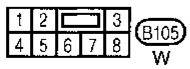
MODELS WITH INTERMITTENT WIPERS

EL-WIPER-01









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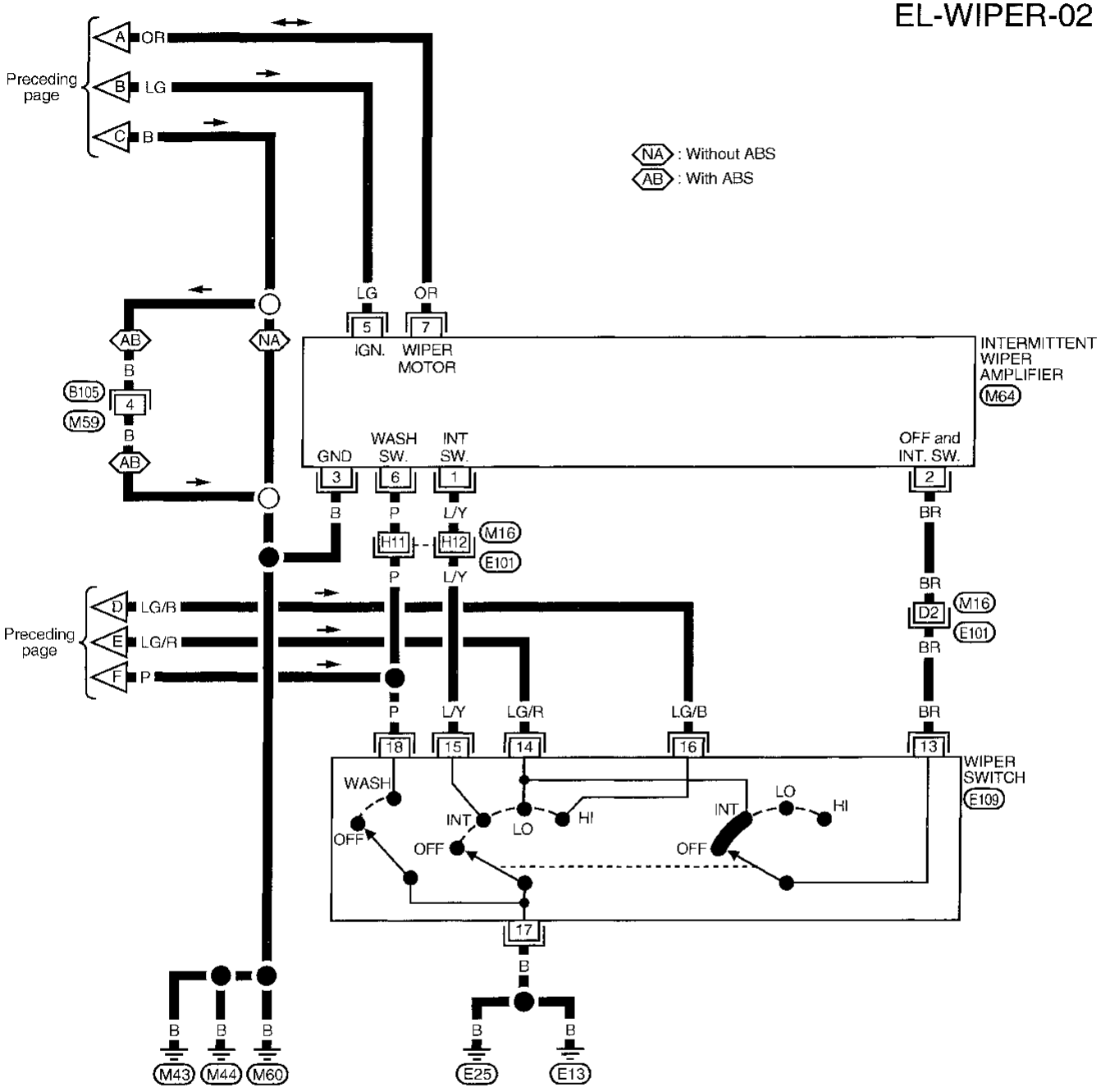
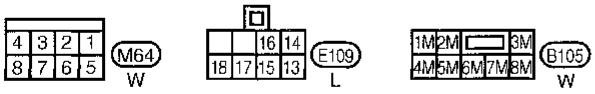
M16 , E101

AEL210B

Wiring Diagram –WIPER– (Cont'd)

EL-WIPER-02





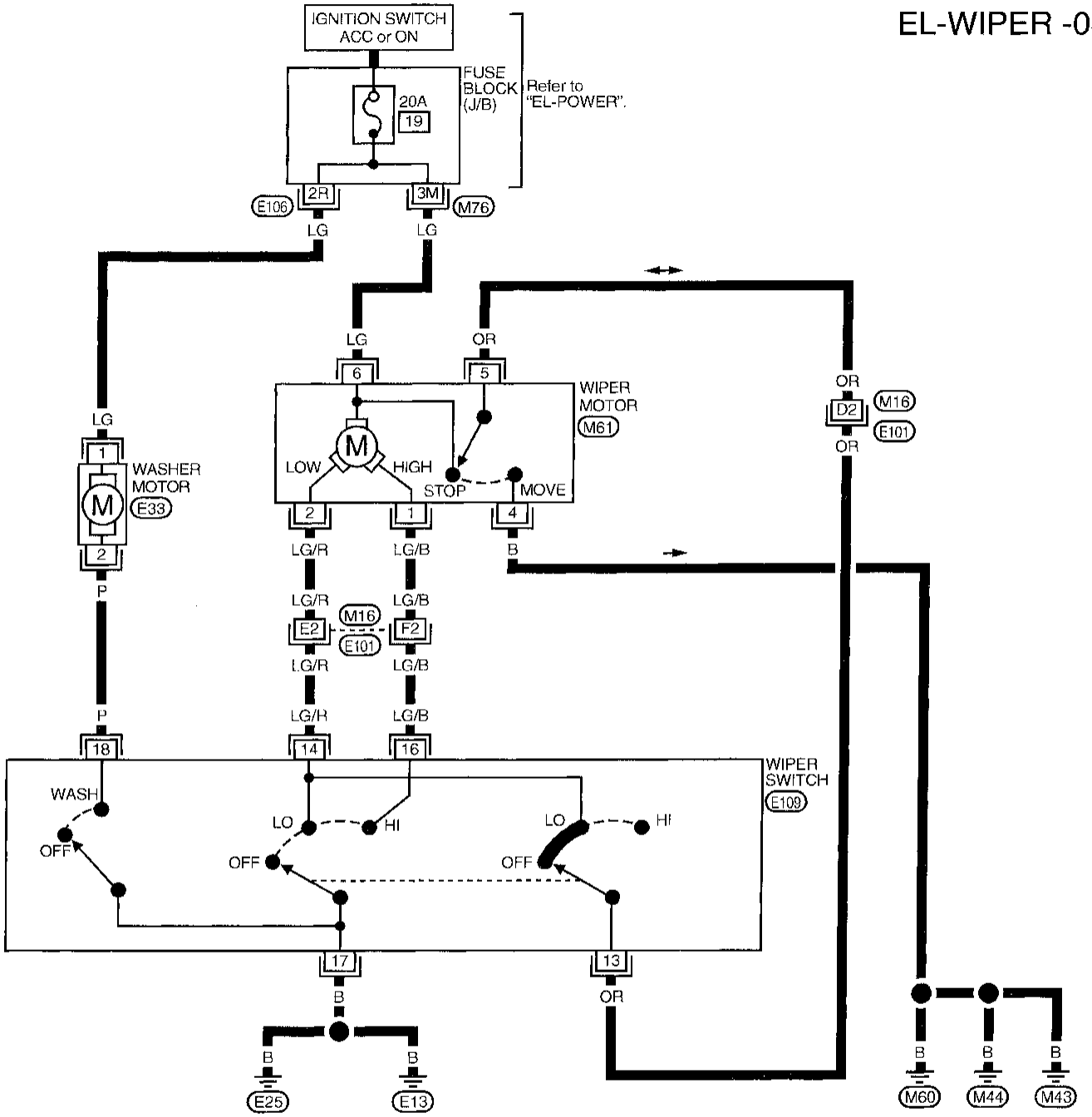
Refer to last page (Foldout page).
M16, E101

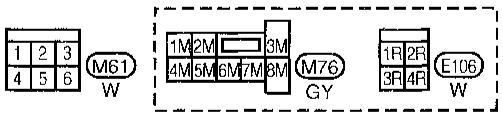
AEL211B

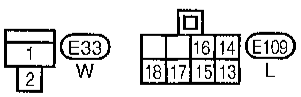
Wiring Diagram –WIPER– (Cont'd)

MODELS WITHOUT INTERMITTENT WIPERS

EL-WIPER -03







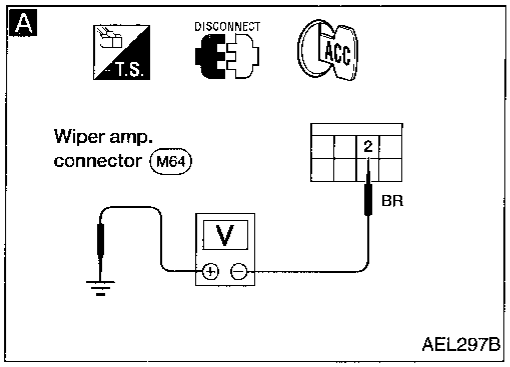
Refer to last page (Foldout page).
M16 , E101

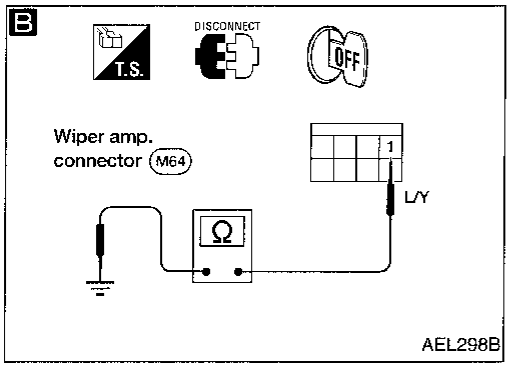
AEL212B

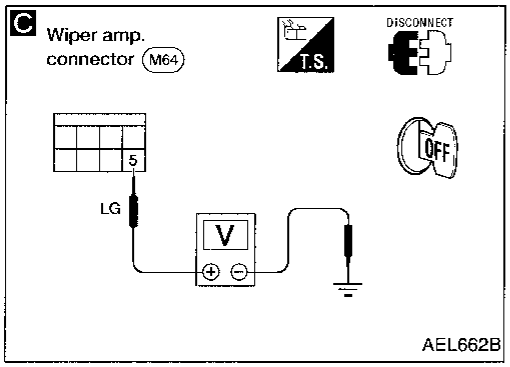
Trouble Diagnoses

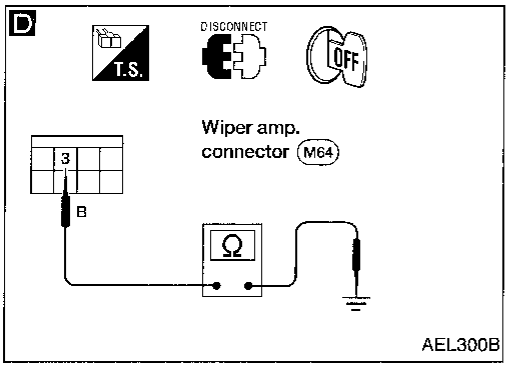
DIAGNOSTIC PROCEDURE 1

SYMPTOM: Intermittent wiper does not operate.









Check whether wiper operates with the wiper switch at LO position.

NG → Check the following.
- 20A fuse [No. 19, located in fuse block (J/B)]
- Wiper motor
- Wiper switch
- Harness for open or short

OK ↓

A

1. Turn front wiper switch to OFF.
2. Disconnect wiper amp. connector.
3. Check voltage between wiper amp. terminal ② and ground.

Battery voltage should exist.

NG → Check the following.
- Wiper switch
- Harness for open or short between wiper amp. terminal ② and wiper switch terminal ⑬

OK ↓

B

CHECK INTERMITTENT SWITCH INPUT SIGNAL.

Check harness continuity between wiper amp. terminal ① and ground.

Condition of wiper switch	Continuity
OFF	No
INT	Yes

NG → Check the following.
- Wiper switch
- Harness for open or short between wiper amp. terminal ① and wiper switch terminal ⑮
- Ground circuit for front wiper switch terminal ⑰

OK ↓

C

CHECK WIPER AMP. POWER SUPPLY CIRCUIT.

Check voltage between wiper amp. terminal ⑤ and ground while ignition switch is in ACC.

Battery voltage should exist.

NG → Check the following.
- Harness for open or short between wiper amp. and fuse

OK ↓

D

CHECK WIPER AMP. GROUND CIRCUIT.

Check harness continuity between wiper amp. terminal ③ and body ground.

Continuity should exist.

NG → Repair harness or connector.

OK ↓

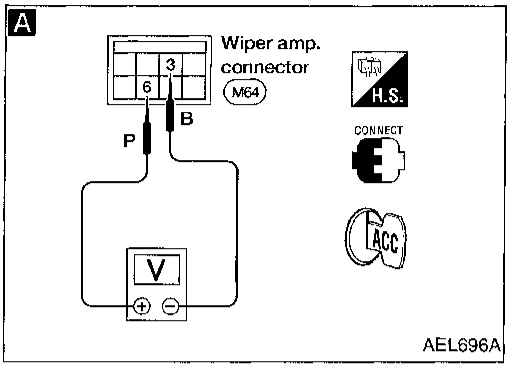
Replace wiper amp.

Trouble Diagnoses (Cont'd)

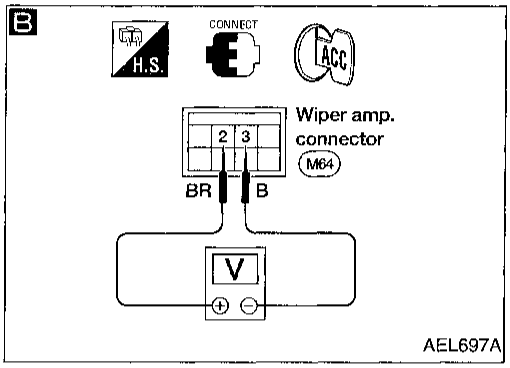
DIAGNOSTIC PROCEDURE 2

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

A



B



A

WASHER SWITCH INPUT SIGNAL CHECK.

1. Turn ignition switch to ACC.
2. Measure voltage between wiper amp. harness terminals ⑥ and ③.

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

NG → Check harness continuity between wiper amp. harness terminal ⑥ and wiper switch harness terminal ⑱.

OK ↓

B

WIPER AMP. OUTPUT SIGNAL CHECK.

Measure voltage between wiper amp. harness terminals ② and ③ after operating washer switch.

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

NG → Check wiper switch.

OK ↓

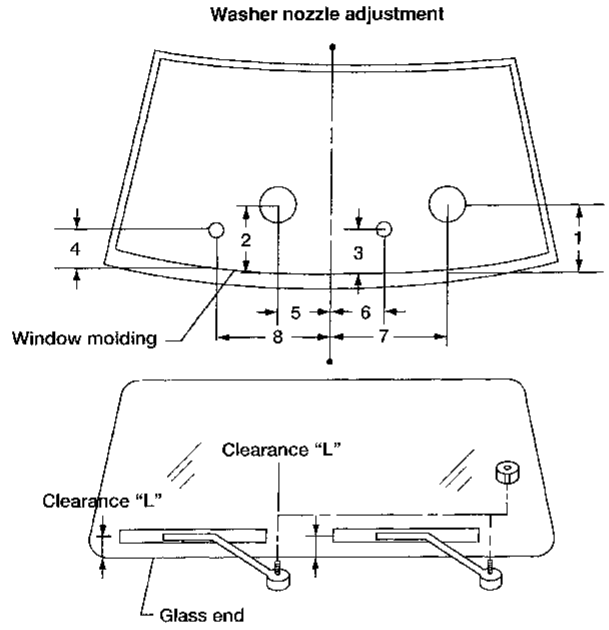
Replace wiper amp.

Wiper Installation and Adjustment

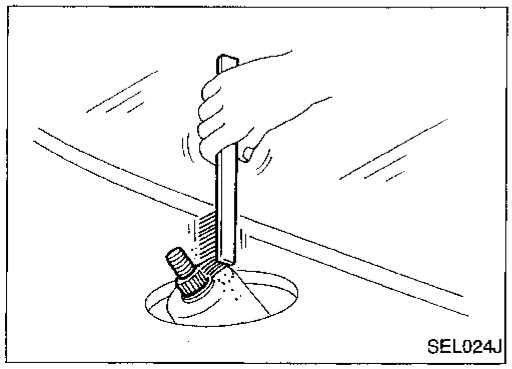
1. Turn ignition ON.
2. Prior to wiper arm installation, turn on wiper switch and then turn it OFF. Allow wiper to operate until its Auto Stop position is reached before turning ignition OFF.
3. Lift the blade up and then set it down onto glass surface. Set the blade center to clearance "L" just before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

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

Windshield wiper and washer

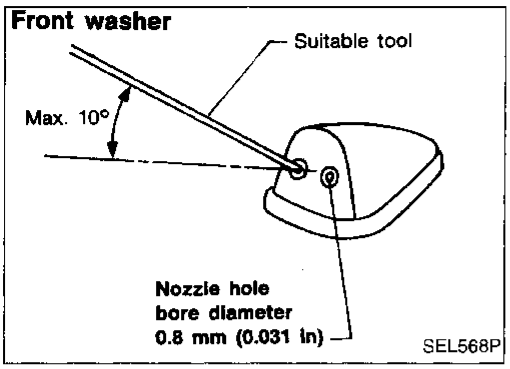


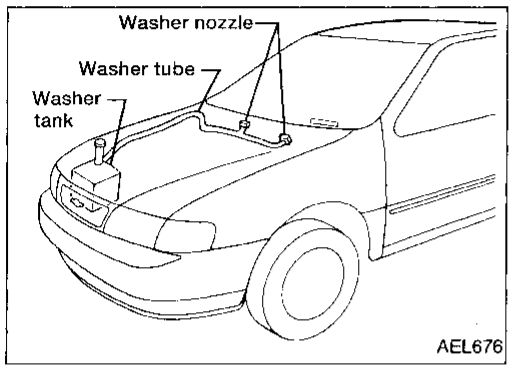
AEL624



SEL024J

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





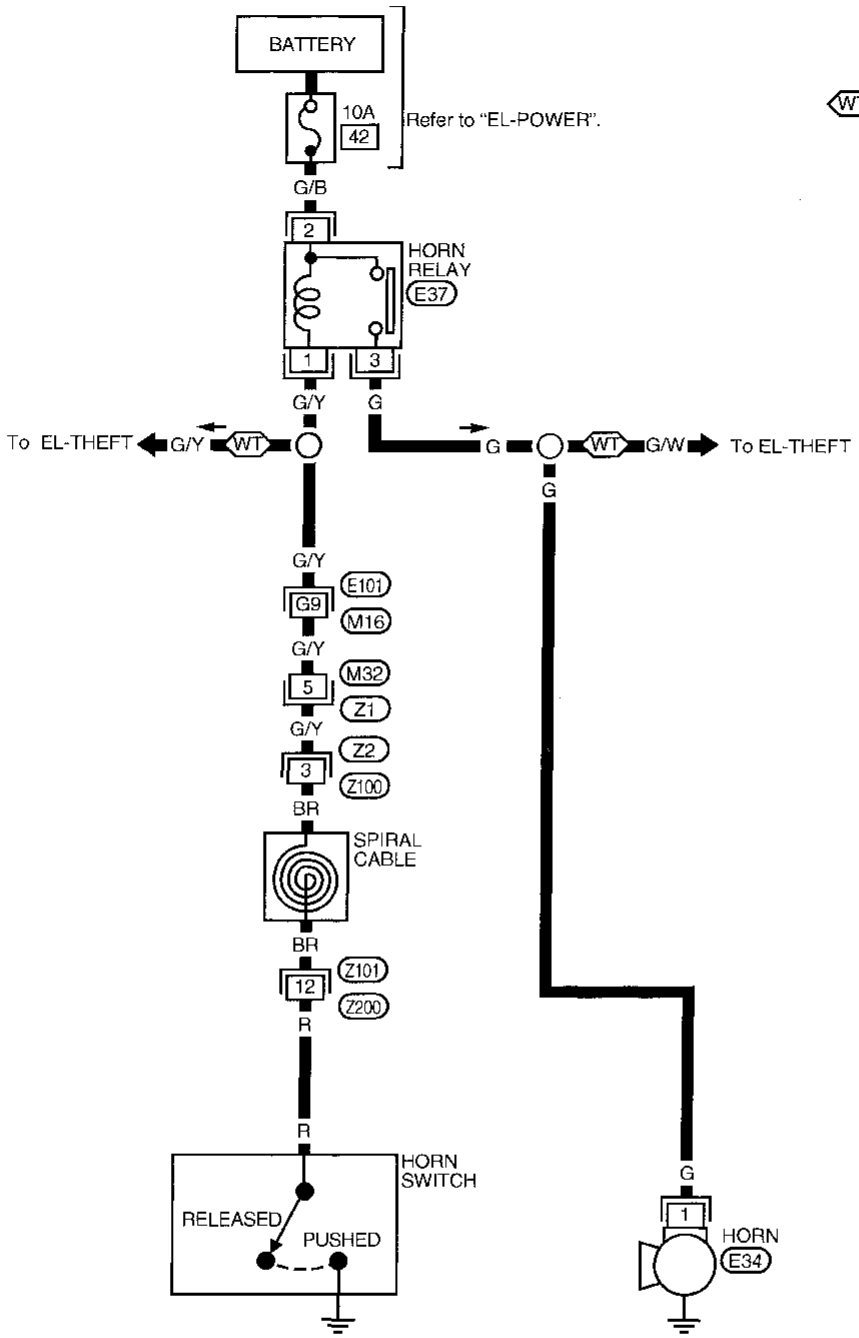
Washer Nozzle Adjustment

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

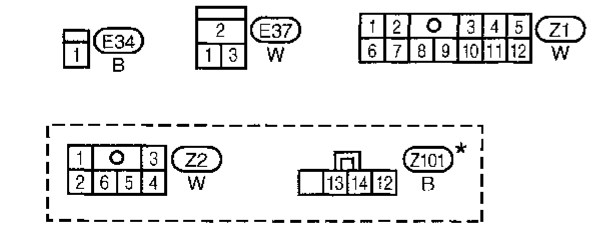
Wiring Diagram –HORN–

EL-HORN-01

WT : With theft warning system



Refer to last page (Foldout page).
M16, E101

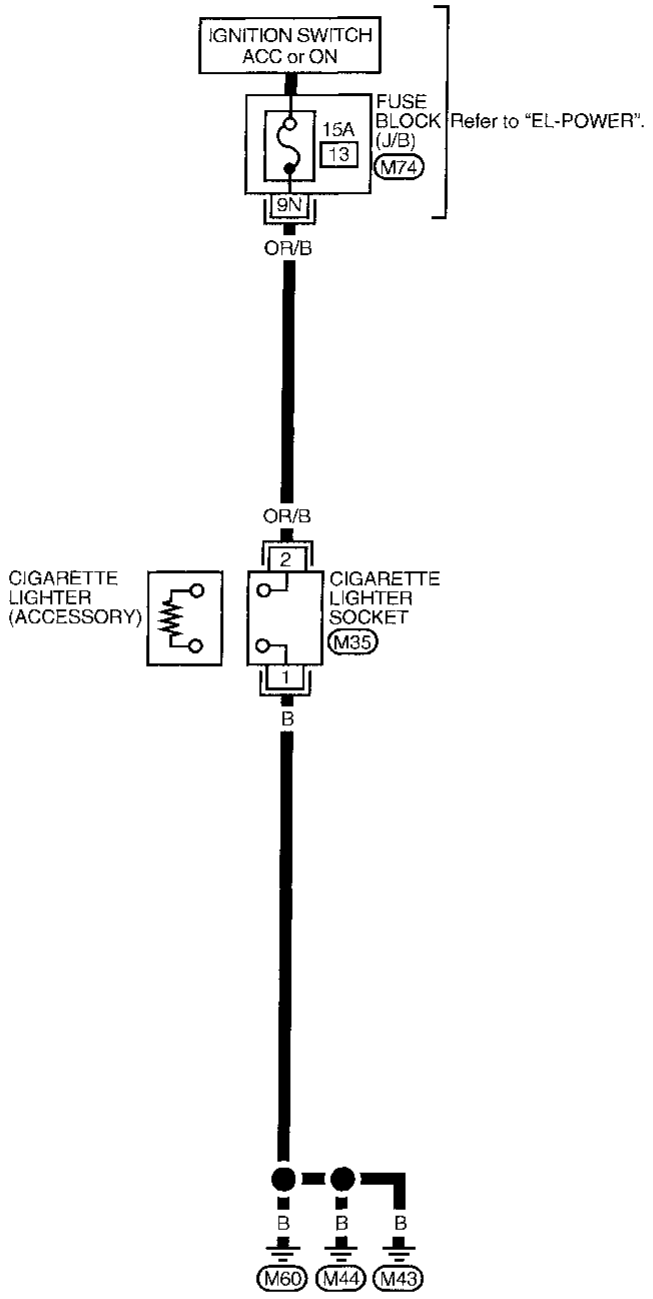


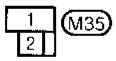
*: This connector is not shown in "HARNESS LAYOUT" of EL section.

AEL219B

Wiring Diagram –CIGAR–

EL-CIGAR-01





AEL220B

System Description

The rear defogger system is controlled by the smart entrance control unit. The rear window defogger operates for approximately 15 minutes.
Power is supplied at all times:
- through 20A fuse (No. 4, located in the fuse block [J/B])
- to rear window defogger relay terminal ③ and
- through 20A fuse (No. 5, located in the fuse block [J/B])
- to rear window defogger relay terminal ⑥.

With the ignition switch in the ON or START position, power is supplied:
- through 7.5A fuse (No. 8, located in the fuse block [J/B])
- to rear window defogger relay terminal ① and
- to smart entrance control unit terminal ⑪

Ground is supplied to terminal ② of the rear window defogger switch through body grounds (M43), (M44) and (M60).
When the rear window defogger switch is turned ON, ground is supplied:
- through terminal ① of the rear window defogger switch
- to smart entrance control unit terminal ⑳.

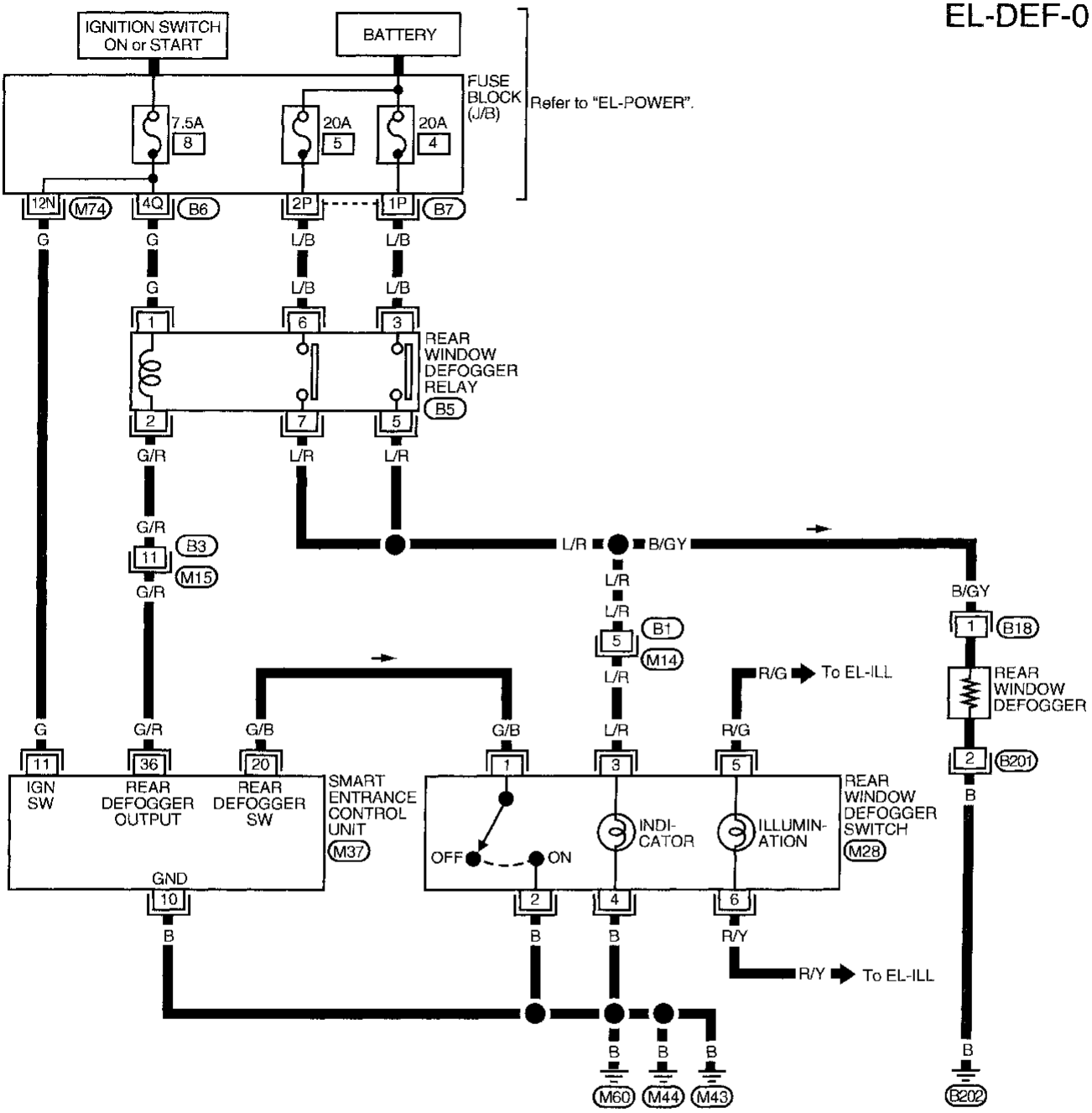
Terminal ㊱ of the smart entrance control unit then supplies ground to the rear window defogger relay terminal ②.
With power and ground supplied, the rear window defogger relay is energized.
Power is supplied:
- through terminals ⑤ and ⑦ of the rear window defogger relay
- to rear window defogger terminal ①.

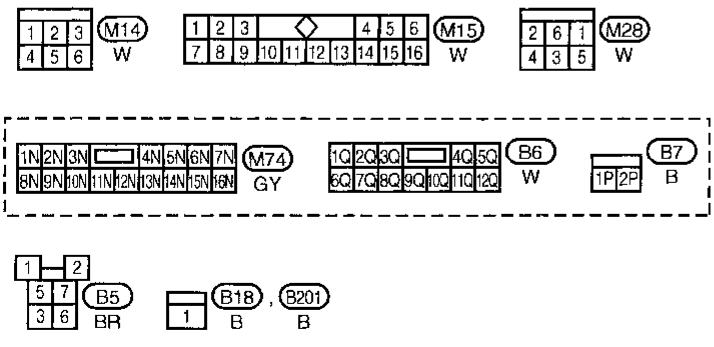
Ground is supplied to terminal ② of rear window defogger through body ground (B202).
With power and ground supplied, the rear window defogger filaments heat and defog the rear window.
When the system is activated, the rear window defogger indicator illuminates in the rear window defogger switch.
Power is supplied:
- to terminal ③ of the rear window defogger switch
- from terminals ⑤ and ⑦ of the rear window defogger relay.

Terminal ④ of the rear window defogger switch is grounded through body grounds (M43), (M44) and (M60).

Wiring Diagram –DEF–

EL-DEF-01



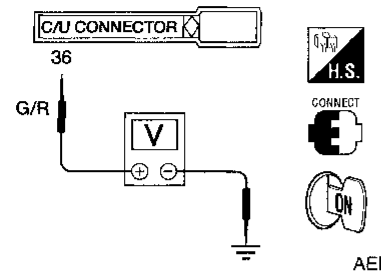


Refer to last page (Foldout page).
M37

AEL637B

A

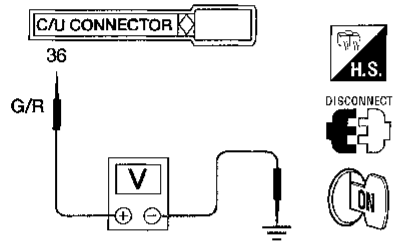
Smart entrance control unit connector (M37)



AEL707A

B

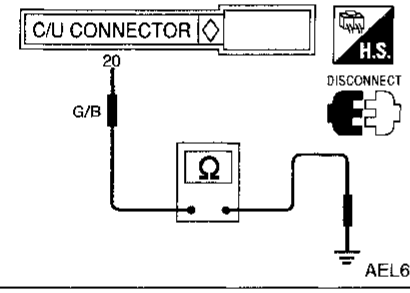
Smart entrance control unit connector (M37)



AEL661B

C

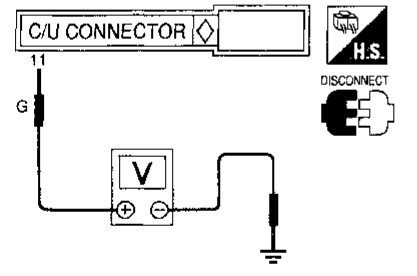
Smart entrance control unit connector (M37)



AEL692

D

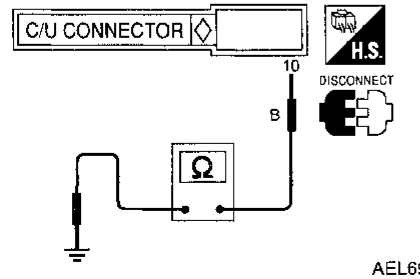
Smart entrance control unit connector (M37)



AEL693

E

Smart entrance control unit connector (M37)



AEL694

Trouble Diagnoses

DIAGNOSTIC PROCEDURE

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

A

REAR WINDOW DEFOGGER OUTPUT SIGNAL CHECK.

1. Turn ignition switch ON.
2. Measure voltage between control unit harness terminal (36) and body ground.

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

OK → ● Check rear window defogger relay. Refer to EL-110.
● Check rear window defogger circuit.
● Check rear window defogger filament. Refer to EL-110.

NG ↓

B

1. Disconnect control unit connector.
2. Turn ignition switch ON.
3. Check voltage between control unit harness terminal (36) and body ground. **Battery voltage should exist.**

NG → Check the following.
● 7.5A fuse [No. 8 , located in the fuse block (J/B)]
● Rear window defogger relay.
● Harness for open or short

OK ↓

C

REAR WINDOW DEFOGGER SWITCH INPUT SIGNAL CHECK.

Check continuity between control unit harness terminal (20) and body ground.

Condition of defogger switch	Continuity
Rear defogger switch is pushed (ON).	Yes
Rear defogger switch is released (OFF).	No

NG → ● Check rear window defogger switch. Refer to EL-110.
● Check continuity between control unit harness terminal (20) and rear window defogger switch harness terminal (1). **Continuity should exist.**
● Check continuity between rear window defogger switch harness terminal (2) and body ground. **Continuity should exist.**

OK ↓

D

IGNITION INPUT SIGNAL CHECK.

Check voltage between control unit harness terminal (11) and body ground.

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

NG → Repair harness or connectors.

OK ↓

E

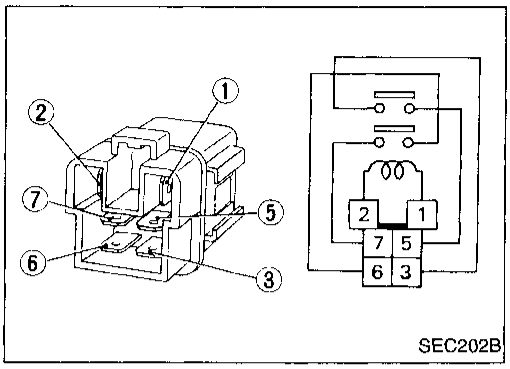
CONTROL UNIT GROUND CIRCUIT CHECK.

Check continuity between control unit harness terminal (10) and body ground. **Continuity should exist.**

NG → Repair harness or connectors.

OK ↓

Replace control unit.

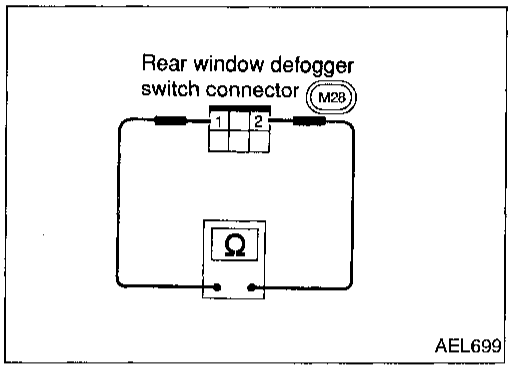


Electrical Component Inspection

Rear window defogger relay

Check continuity between terminals ③ and ⑤, ⑥ and ⑦.

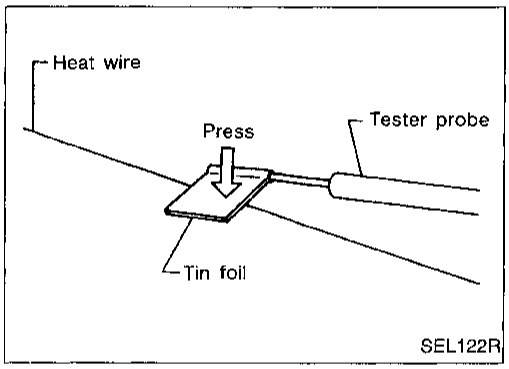
Condition	Continuity
12V direct current supply between terminals ① and ②	Yes
No current supply	No



Rear window defogger switch

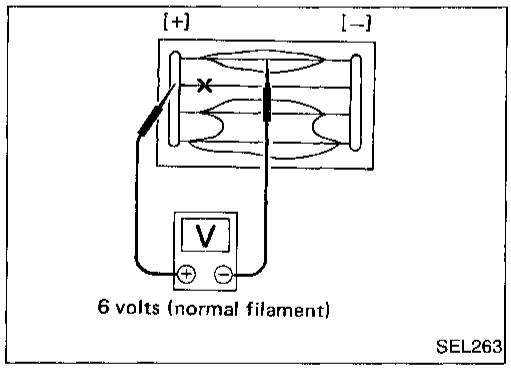
Check continuity between terminals when rear window defogger switch is pushed and released.

Terminals	Condition	Continuity
① - ②	Rear window defogger switch is pushed (ON).	Yes
	Rear window defogger switch is released (OFF).	No



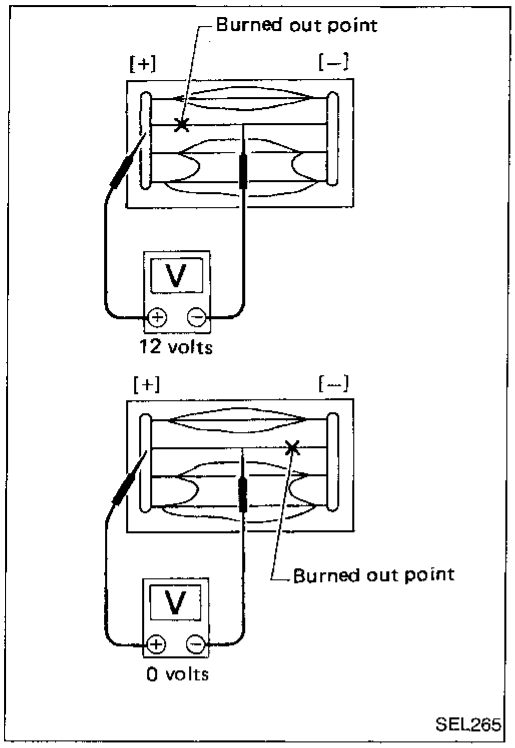
Filament Check

- **When measuring voltage, wrap tin foil around the top of the negative probe. Press the foil against the wire with your finger. This action will prevent damage to the element.**

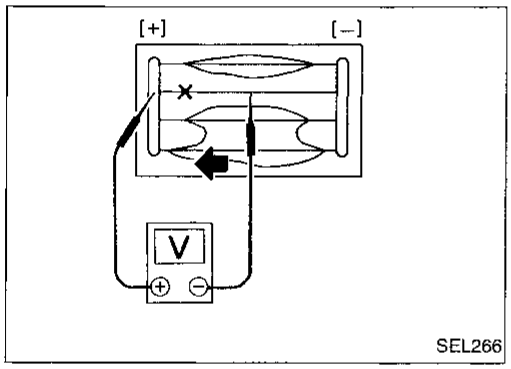


1. Attach probe circuit tester (in volt range) to middle portion of each filament.

Filament Check (Cont'd)



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

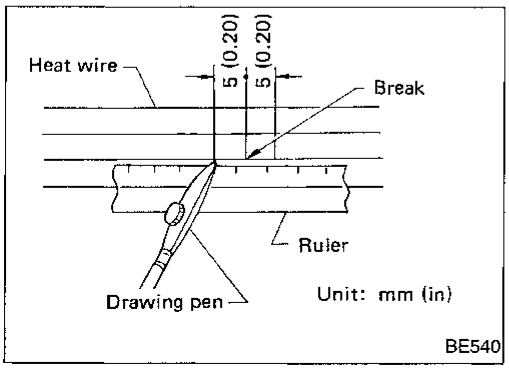


3. To locate burned out point, move probe to left and right along filament. Tester needle will swing abruptly when probe passes the point.

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



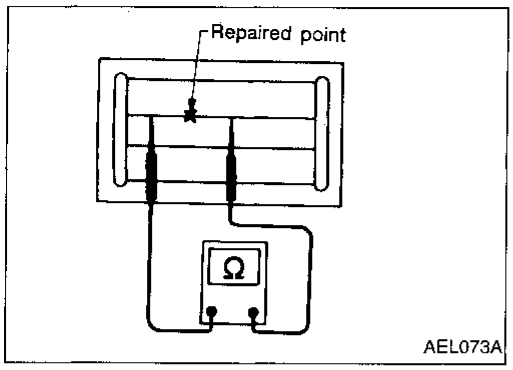
REPAIR PROCEDURE

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.

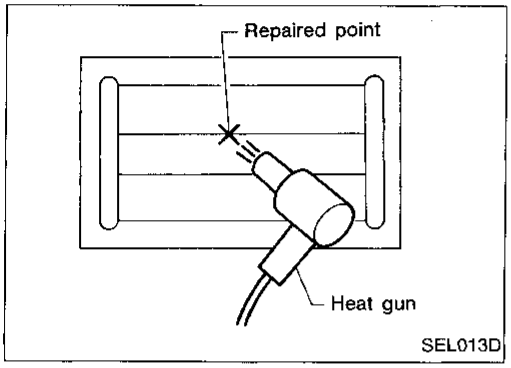
3. Place ruler on glass along broken line. Deposit conductive silver composition on break with drawing pen. Slightly overlap existing heat wire on both sides (preferably 5 mm [0.20 in]) of the break.

Filament Repair (Cont'd)



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.

System Description

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

- through 10A fuse (No. 15, located in the fuse block [J/B])
- to audio terminal ⑥.

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

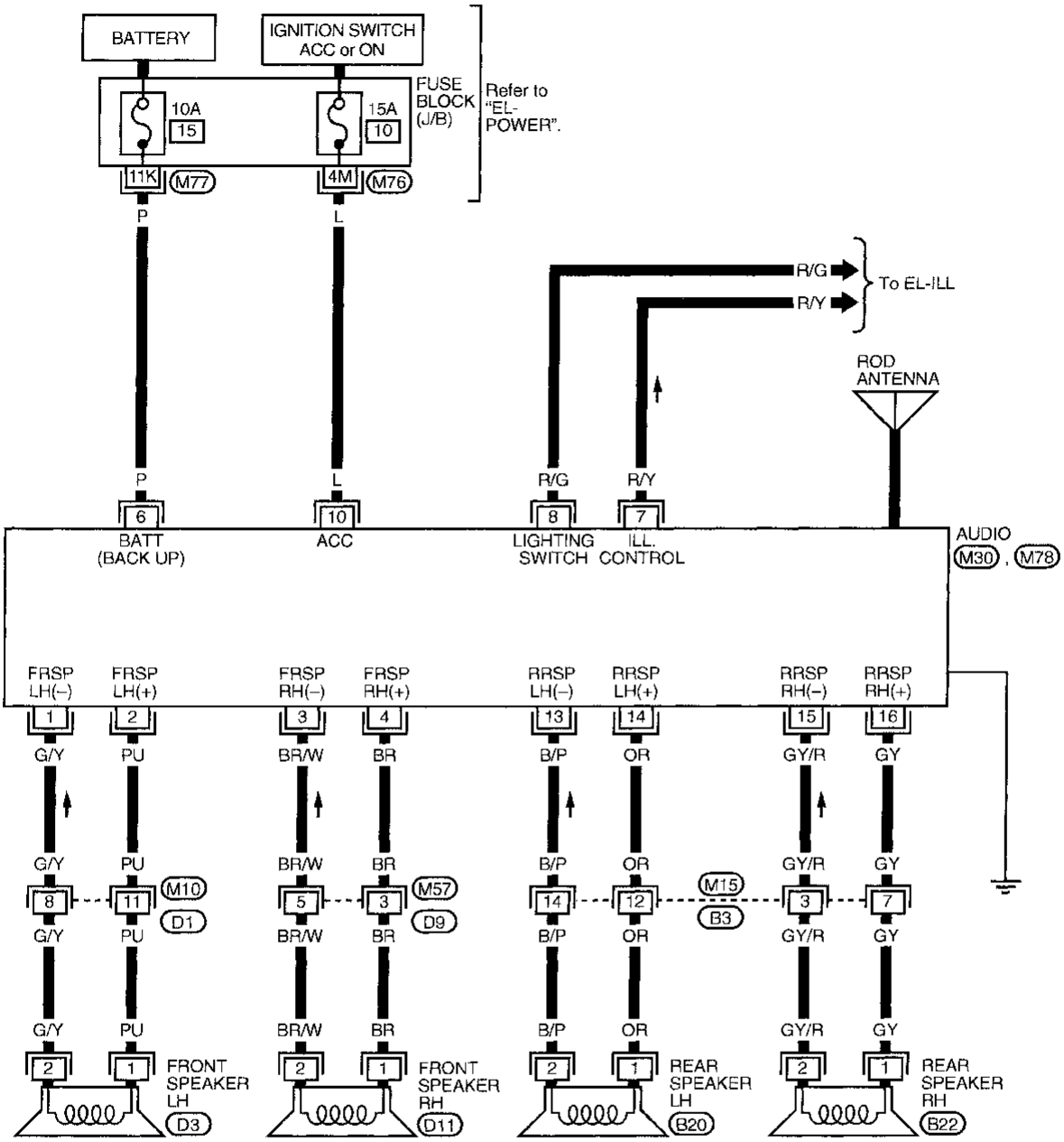
- through 15A fuse (No. 10, located in the fuse block [J/B])
- to audio terminal ⑩.

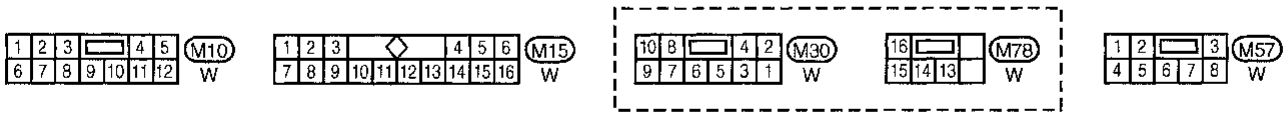
Ground is supplied through the case of the radio CD/radio cassette and CD player.
When the system is on, audio signals are supplied:

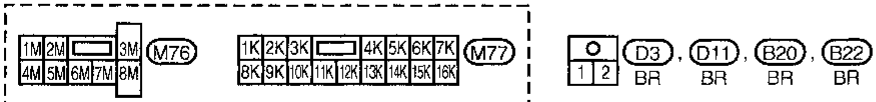
- through audio terminals ①, ②, ③, ④, ⑬, ⑭, ⑮ and ⑯
- to the front and rear speakers.

Wiring Diagram –AUDIO–

EL-AUDIO-01







AEL665B

Trouble Diagnoses

RADIO

Symptom	Possible causes	Repair order
Radio inoperative (no digital display and no sound from speakers).	1. 15A fuse 2. Poor radio case ground 3. Radio	1. Check 15A fuse (No. 10, located in fuse block [J/B]). Turn ignition switch ON and verify battery positive voltage is present at terminal ⑩ of radio. 2. Check radio case ground. 3. Remove radio for repair.
Radio controls are operational, but no sound is heard from any speaker.	1. Radio output 2. Radio	1. Check radio output voltages. 2. Remove radio for repair.
Radio presets are lost when ignition switch is turned OFF.	1. 10A fuse 2. Radio	1. Check 10A fuse (No. 15, located in fuse block [J/B]) and verify battery positive voltage is present at terminal ⑥ of radio. 2. Remove radio for repair.
Rear speakers are inoperative.	1. Radio output 2. Radio	1. Check radio output voltages. 2. Remove radio for repair.
Front speakers are inoperative.	1. Radio output 2. Radio	1. Check radio ouput voltages. 2. Remove radio for repair.
Individual speaker is noisy or inoperative.	1. Speaker 2. Radio output 3. Speaker circuit 4. Radio	1. Check speaker. 2. Check radio output voltages. 3. Check wires for open or short between radio and speaker. 4. Remove radio for repair.
AM stations are weak or noisy (FM stations OK).	1. Antenna 2. Poor radio ground 3. Radio	1. Check antenna. 2. Check radio ground. 3. Remove radio for repair.
FM stations are weak or noisy (AM stations OK).	1. Antenna 2. Radio	1. Check antenna. 2. Remove radio for repair.
Radio generates noise in AM and FM modes with engine running.	1. Poor radio ground 2. Loose or missing ground bonding straps. 3. Ignition condenser 4. Generator 5. Ignition coil or secondary wiring 6. Radio	1. Check radio ground. 2. Check ground bonding straps. 3. Replace ignition condenser. 4. Check generator. 5. Check ignition coil and secondary wiring. 6. Remove radio for repair.
Radio generates noise in AM and FM modes with accessories on (switch pops and motor noise).	1. Poor radio ground 2. Antenna 3. Accessory ground 4. Faulty accessory	1. Check radio ground. 2. Check antenna. 3. Check accessory ground. 4. Replace accessory.

Inspection

SPEAKER

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

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

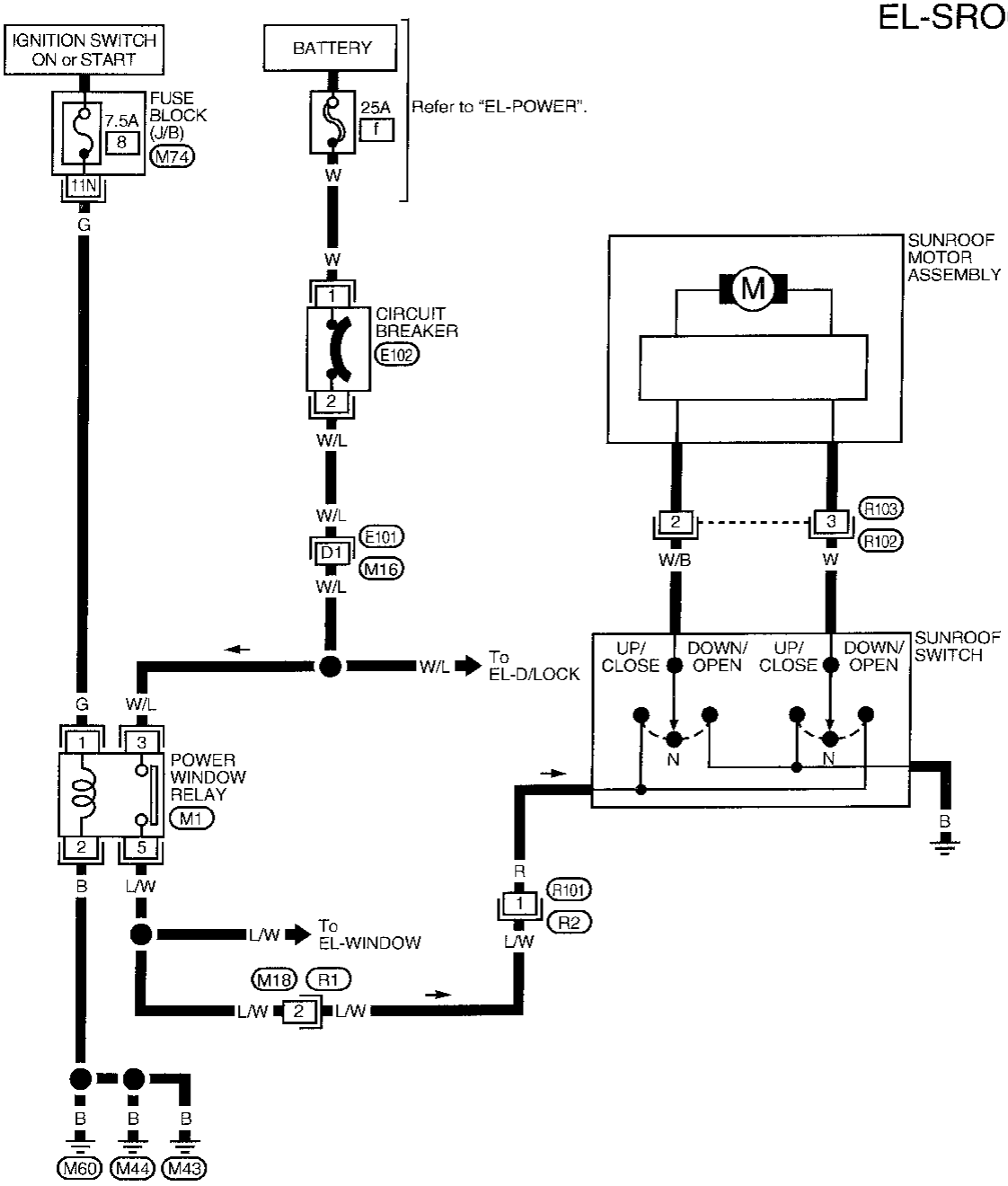
All voltage inspections are made with:
- Ignition switch ON or ACC
- Radio ON
- Radio connected (If removed for inspection, supply a ground to the case using a jumper wire.)

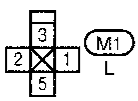
Radio voltages

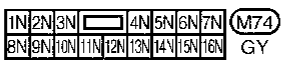
Terminal	Voltage (V)
1	5 - 7.5
2	5 - 7.5
3	5 - 7.5
4	5 - 7.5
6	10.8 - 15.6
7	—
8	—
9	—
10	10.8 - 15.6
11	—
12	—
13	5 - 7.5
14	5 - 7.5
15	5 - 7.5
16	5 - 7.5

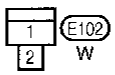
Wiring Diagram –SROOF–

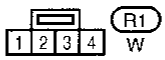
EL-SROOF-01

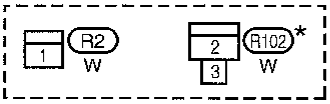












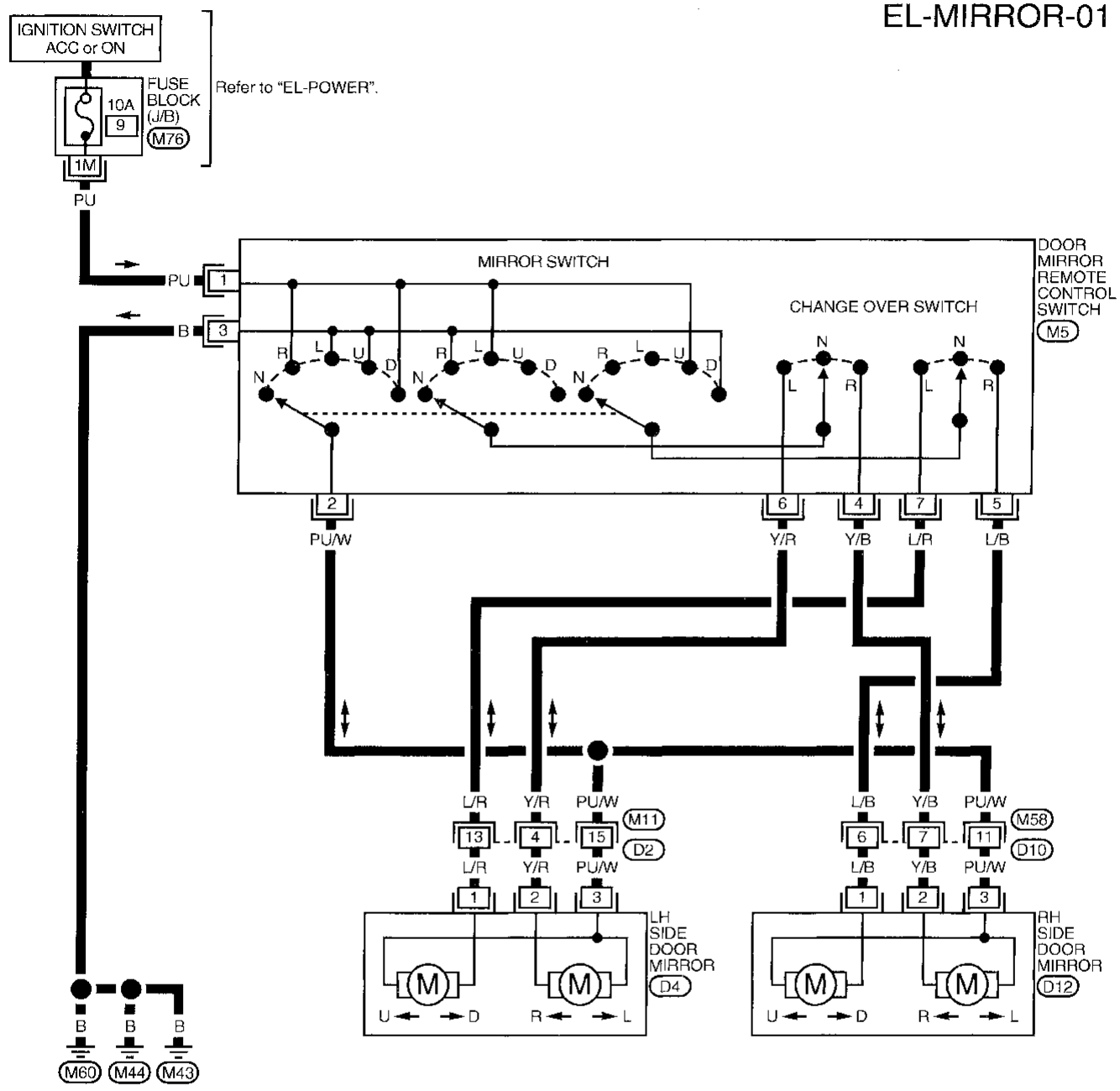
*: This connector is not shown in "HARNESS LAYOUT" of EL section.

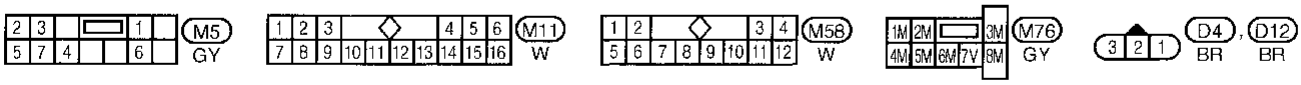
Refer to last page (Foldout page).
M16, E101

AEL639B

Wiring Diagram –MIRROR–

EL-MIRROR-01

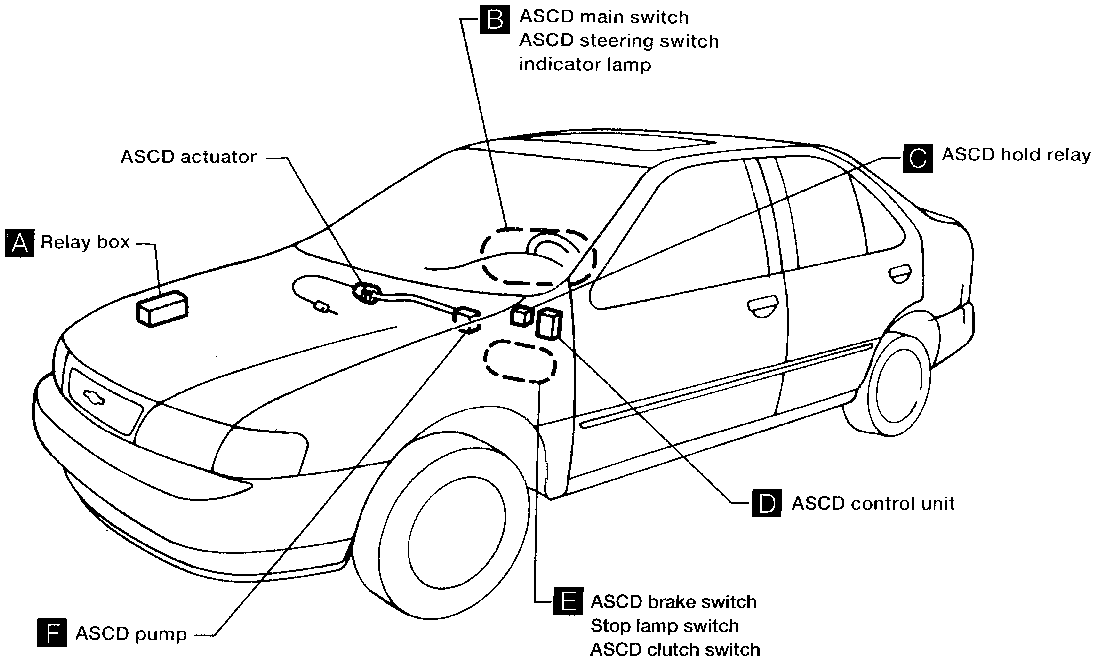


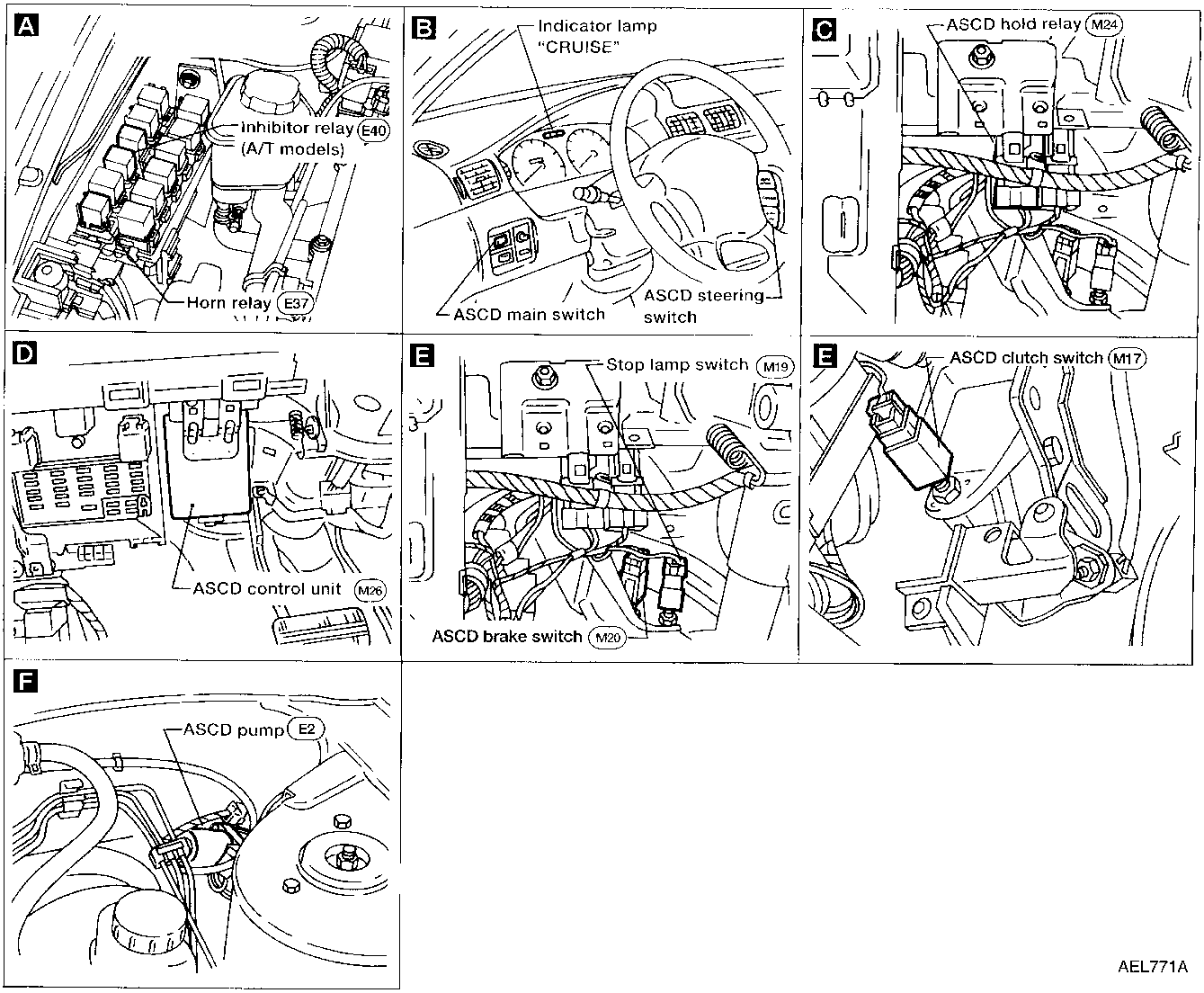


AEL217B

NOTES

Component Parts and Harness Connector Location





AEL771A

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 7.5A fuse (No. 8, located in the fuse block [J/B])
- to ASCD main switch terminal ① and
- to ASCD brake switch terminal ① (with A/T)
- to ASCD hold relay terminal ⑤ (with M/T), ⑦ (with A/T).

When ASCD main switch is in the ON position, power is supplied:
- from ASCD main switch terminal ③
- to ASCD hold relay terminal ①.

Ground is supplied:
- to ASCD hold relay terminal ②
- through body grounds (M43), (M44) and (M60).

With power and ground supplied, ASCD hold relay is energized. And then power is supplied:
- from ASCD hold relay terminal ③ (with M/T), ⑥ (with A/T)
- to ASCD control unit terminal ④
- to ASCD main switch terminal ② and
- to ASCD clutch switch terminal ① (with M/T).

After the ASCD main switch is released, power remains supplied:
- to the coil circuit of ASCD hold relay
- through ASCD main switch terminals ② and ③.

This power supply is kept until one of following conditions exists.
- Ignition switch is returned to the ACC or OFF position.
- ASCD main switch is turned to OFF position.

When ASCD hold relay is energized, power is also supplied to ASCD control unit terminal ⑤
- through ASCD clutch switch and ASCD brake switch (with M/T) or
- through ASCD brake switch, ASCD hold relay and inhibitor relay (with A/T).

Ground is supplied:
- to ASCD control unit terminal ③
- through body grounds (M43), (M44) and (M60).

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 (with A/T)
- ASCD clutch switch (with M/T)
- ASCD brake switch.

A vehicle speed input is supplied:
- to ASCD control unit terminal ⑦
- from terminal ㉓ of the combination meter.

Power is supplied at all times:
- through 15A fuse (No. 14, located in the fuse block [J/B])
- to stop lamp switch terminal ①.

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

Power is supplied at all times:
- through 10A fuse (No. 42, located in the fuse and fusible link box)
- to horn relay terminal ②
- through terminal ① of the horn relay
- to ASCD steering switch terminal ③.

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

System Description (Cont'd)

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

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

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

Power is interrupted when:
- the selector lever is placed in "P" or "N" (with A/T)
- the clutch pedal is depressed (with M/T) or
- the brake pedal is depressed.

Outputs

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

Power is supplied:
- from terminal ⑧ of the ASCD control unit
- to ASCD pump terminal ①.

Ground is supplied to the vacuum motor:
- from terminal ⑨ of the ASCD control unit
- to ASCD pump terminal ④.

Ground is supplied to the air valve:
- from terminal ⑩ of the ASCD control unit
- to ASCD pump terminal ②.

Ground is supplied to the release valve:
- from terminal ⑭ of the ASCD control unit
- to ASCD pump terminal ③.

When the system is activated, power is supplied:
- from terminal ⑬ of the ASCD control unit
- to combination meter terminal ㉕.

Ground is supplied:
- to combination meter terminal ㉗
- through body grounds (M43), (M44) and (M60).

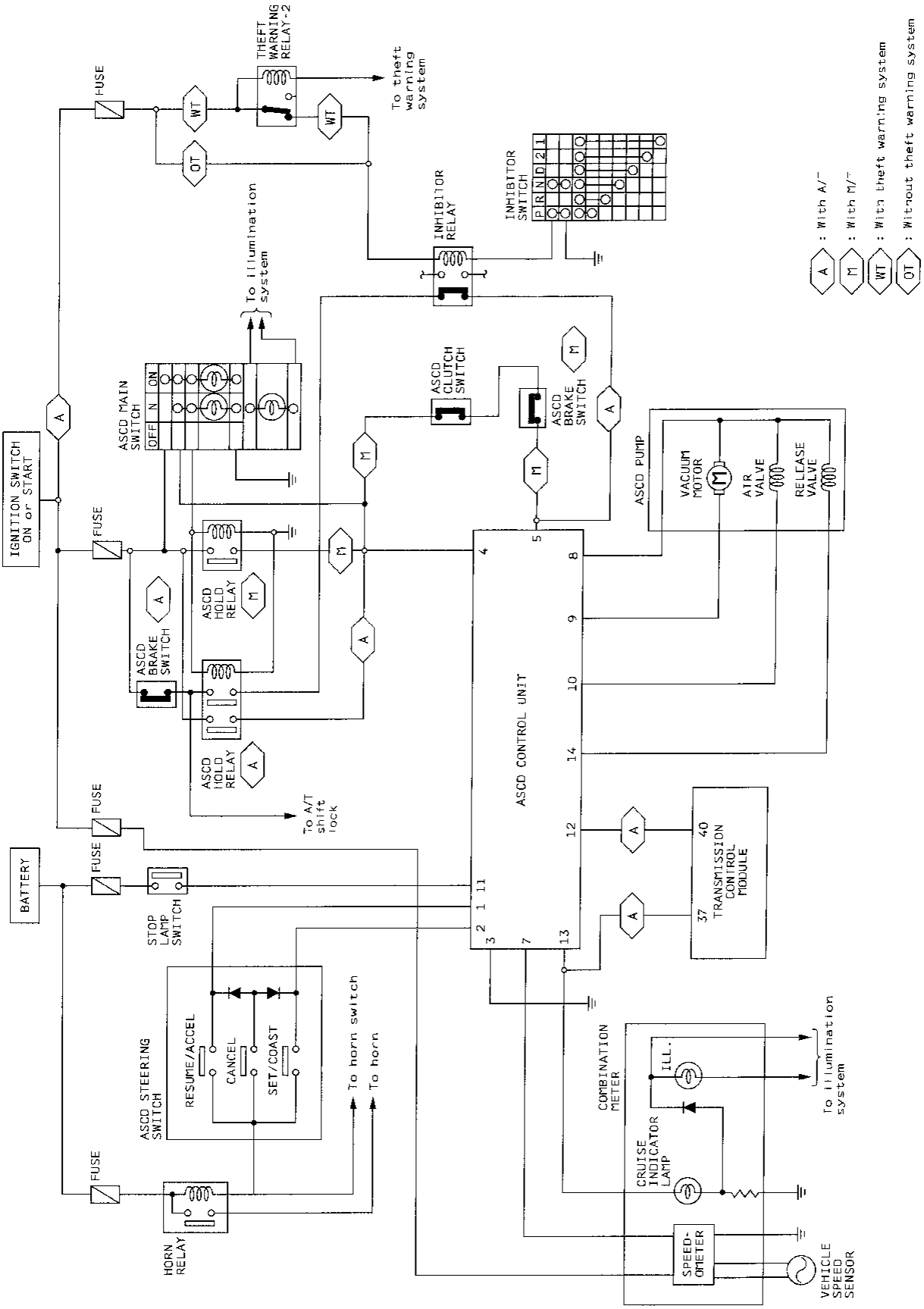
With power and ground supplied, the CRUISE indicator illuminates.

When vehicle speed is approximately 8 km/h (5 MPH) below set speed on A/T models, a signal is sent:
- from terminal ⑫ of the ASCD control unit
- to transmission control module (TCM) terminal ㊵ (with A/T).

When this occurs, the transmission control module cancels overdrive.

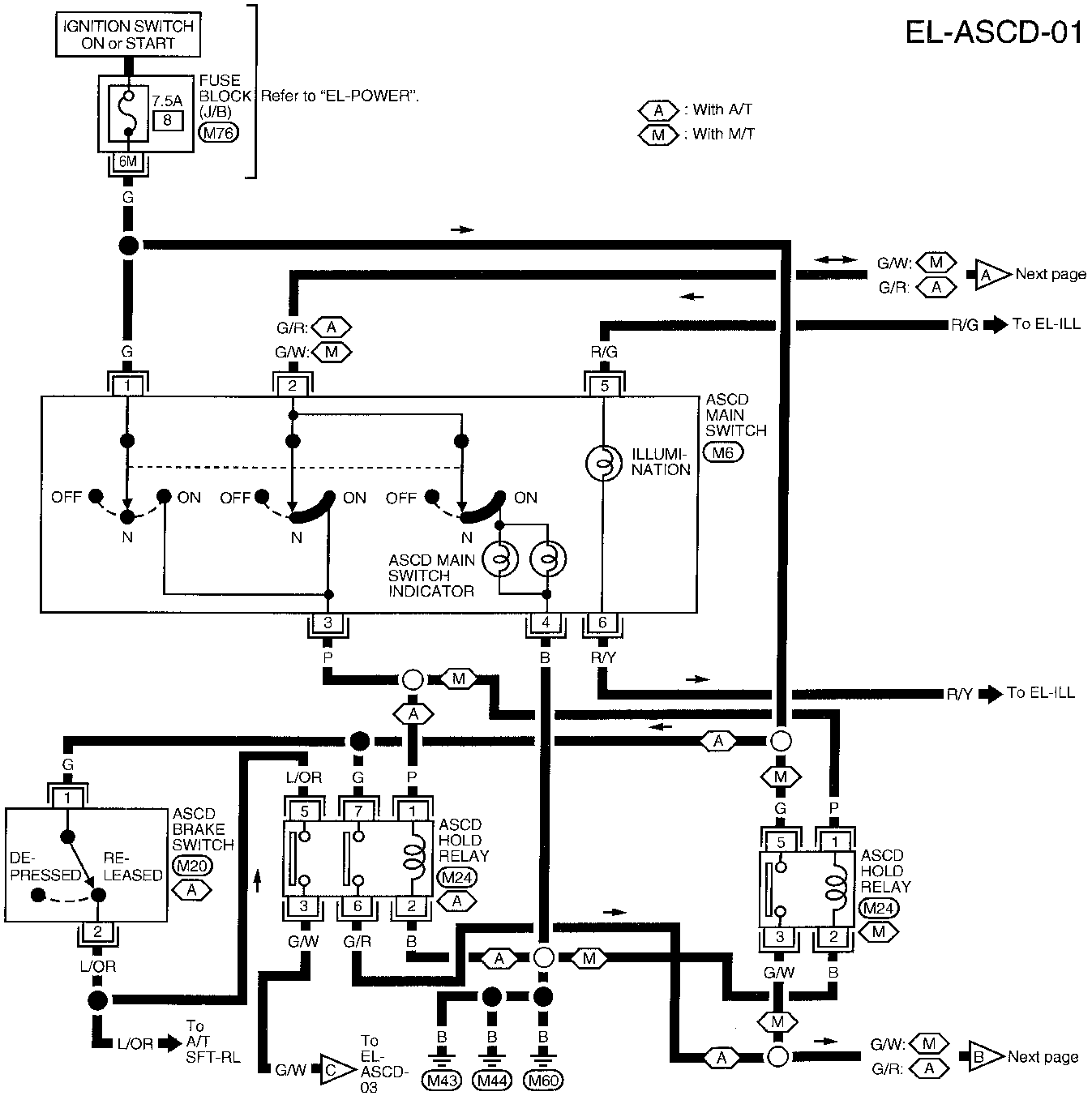
After vehicle speed is approximately 3 km/h (2 MPH) above set speed, overdrive is reactivated.

Schematic



AEL706B

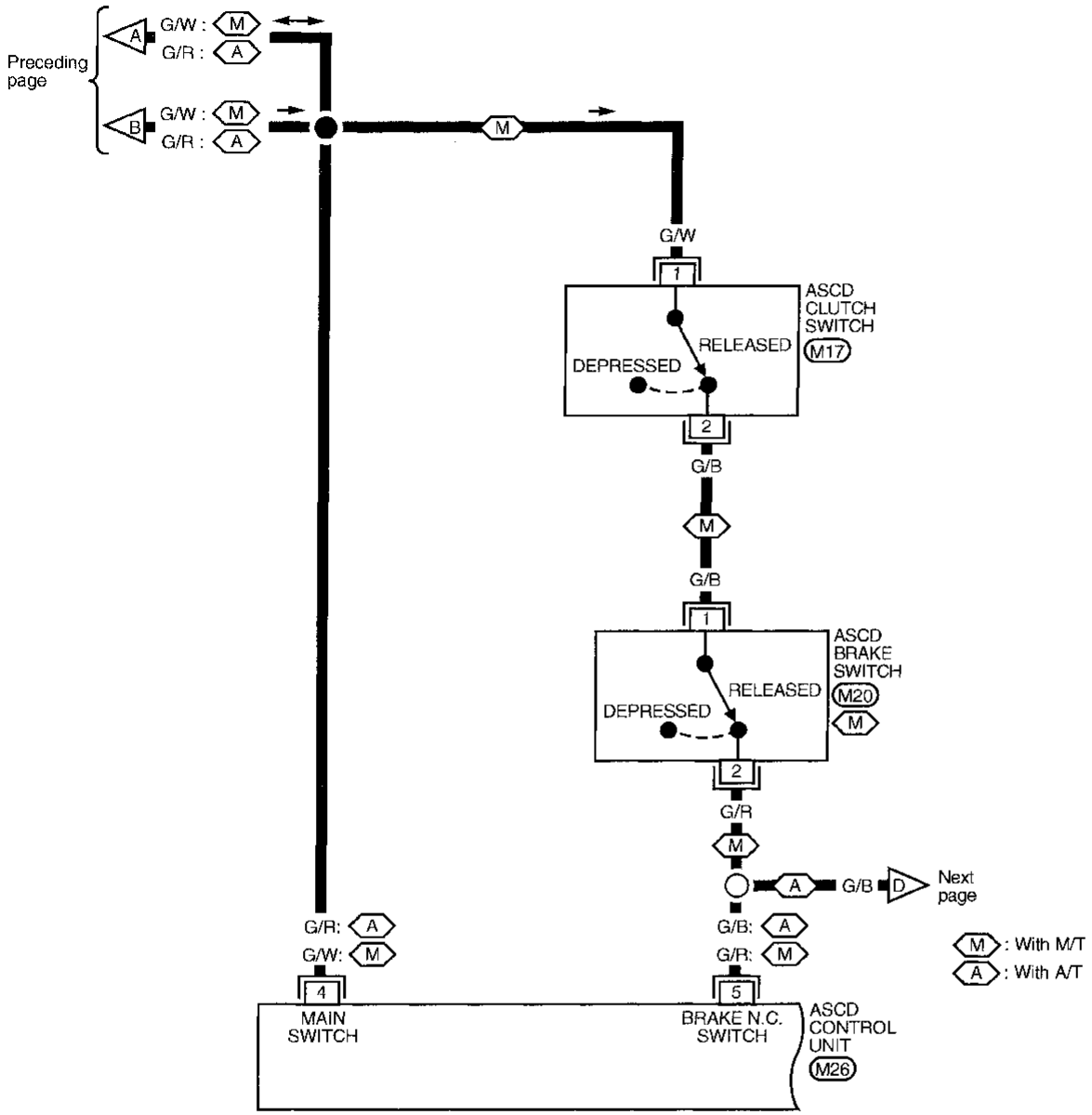
Wiring Diagram –ASCD–

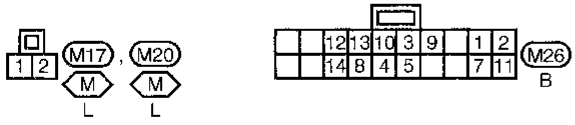


AEL223B

Wiring Diagram –ASCD– (Cont'd)

EL-ASCD-02

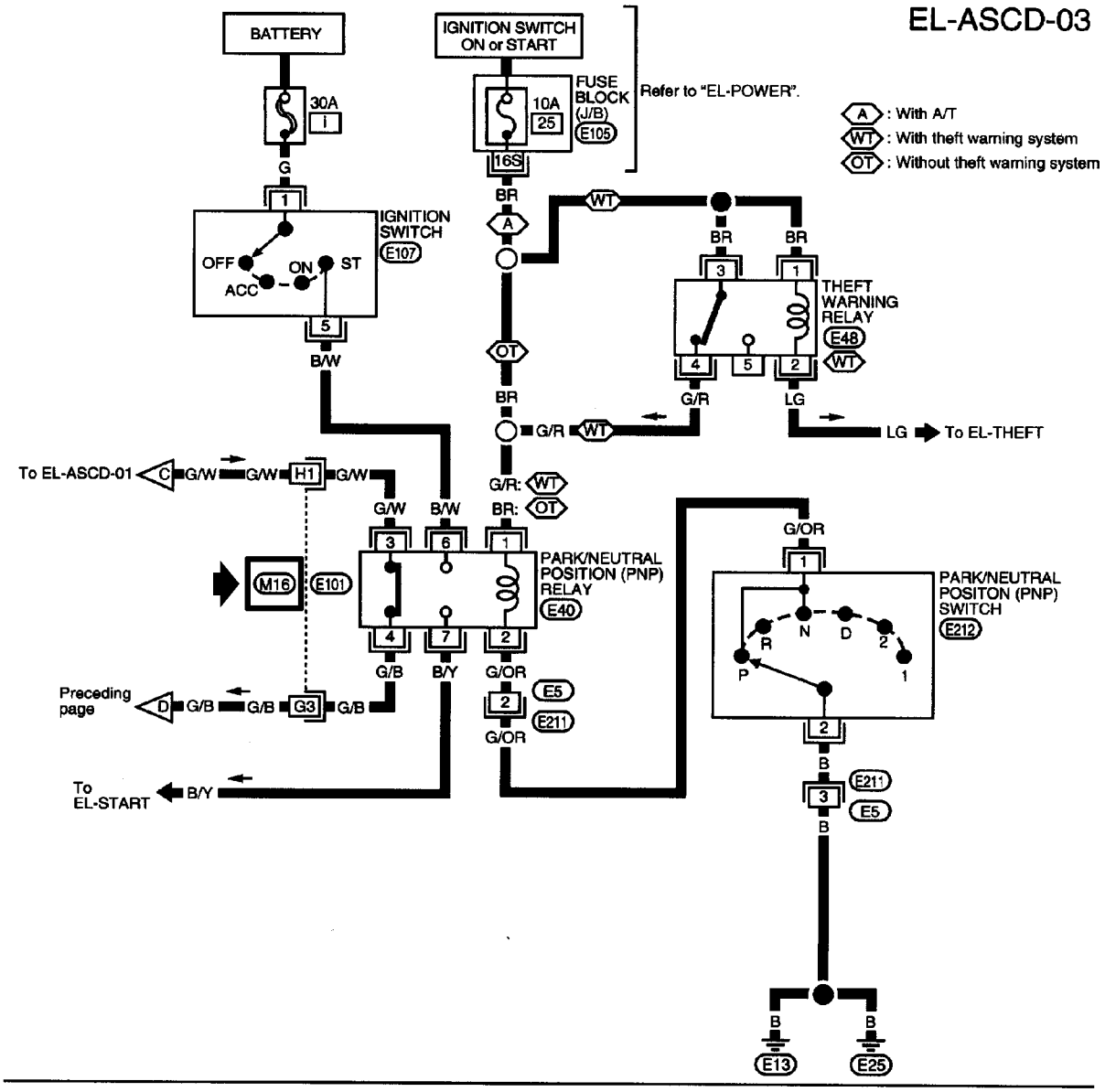




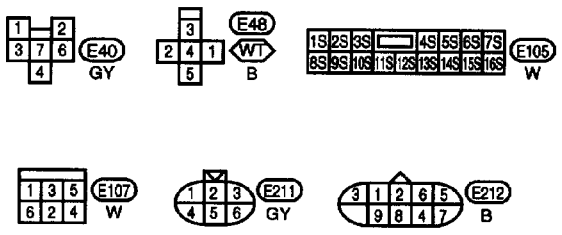
AEL224B

Wiring Diagram –ASCD– (Cont'd)

EL-ASCD-03



Refer to last page (Foldout page).
M16 , E101

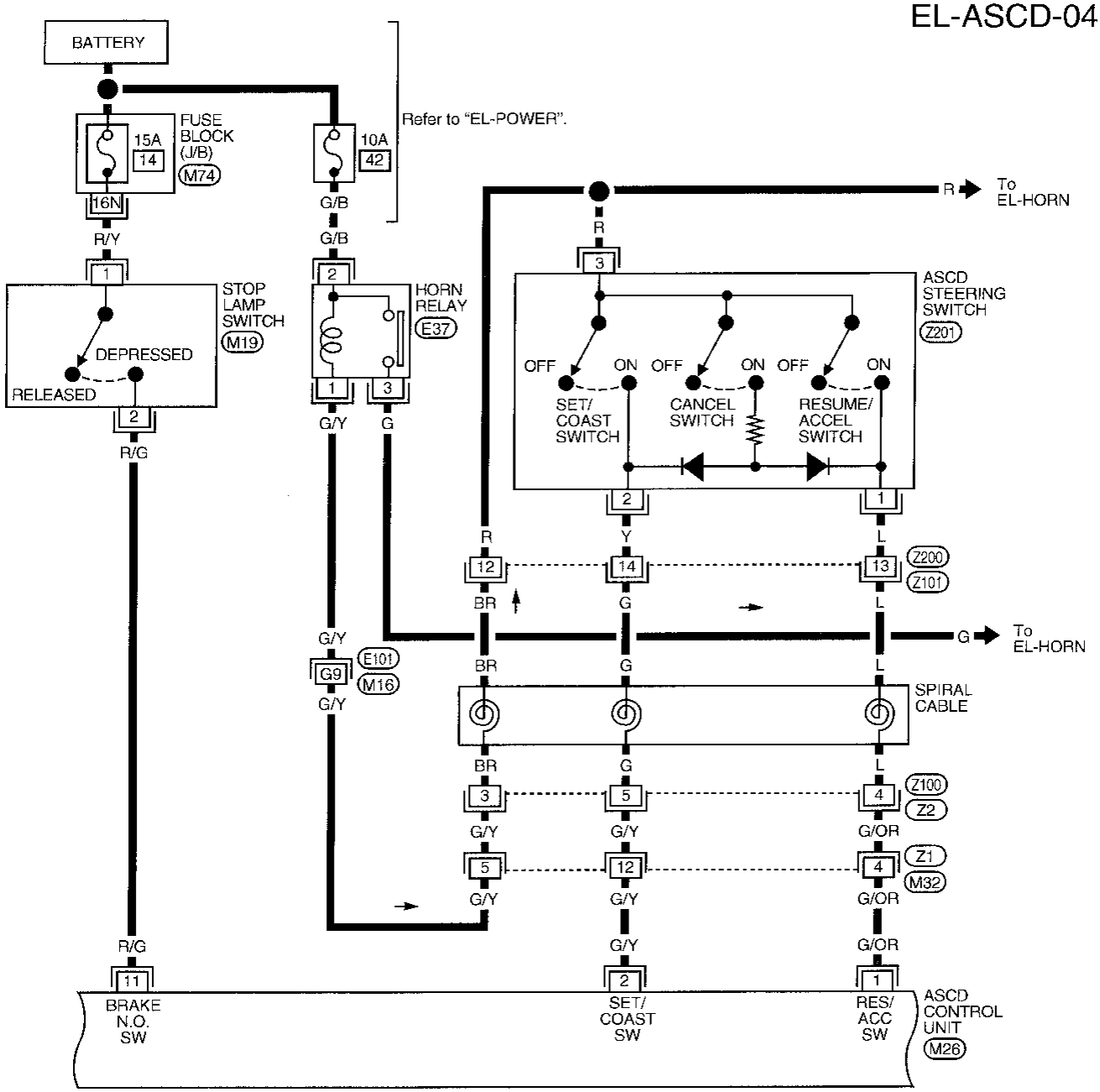


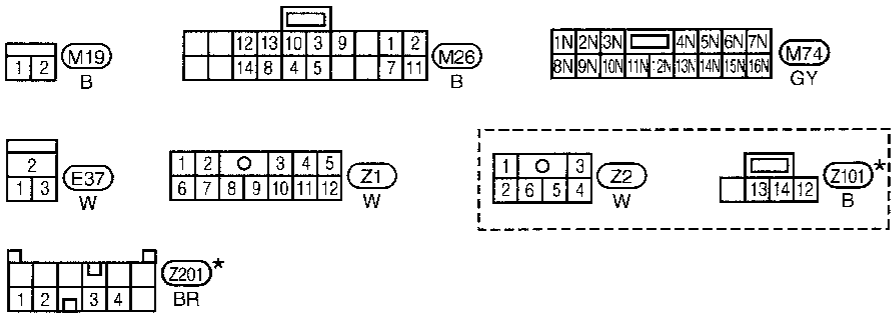
SMA98-068	'98 SENTRA/200SX	OCTOBER 1997 (06)	SM8E-OB14U1
◀ ARROW INDICATES AMENDED INFORMATION			

TP980420

Wiring Diagram –ASCD– (Cont'd)

EL-ASCD-04





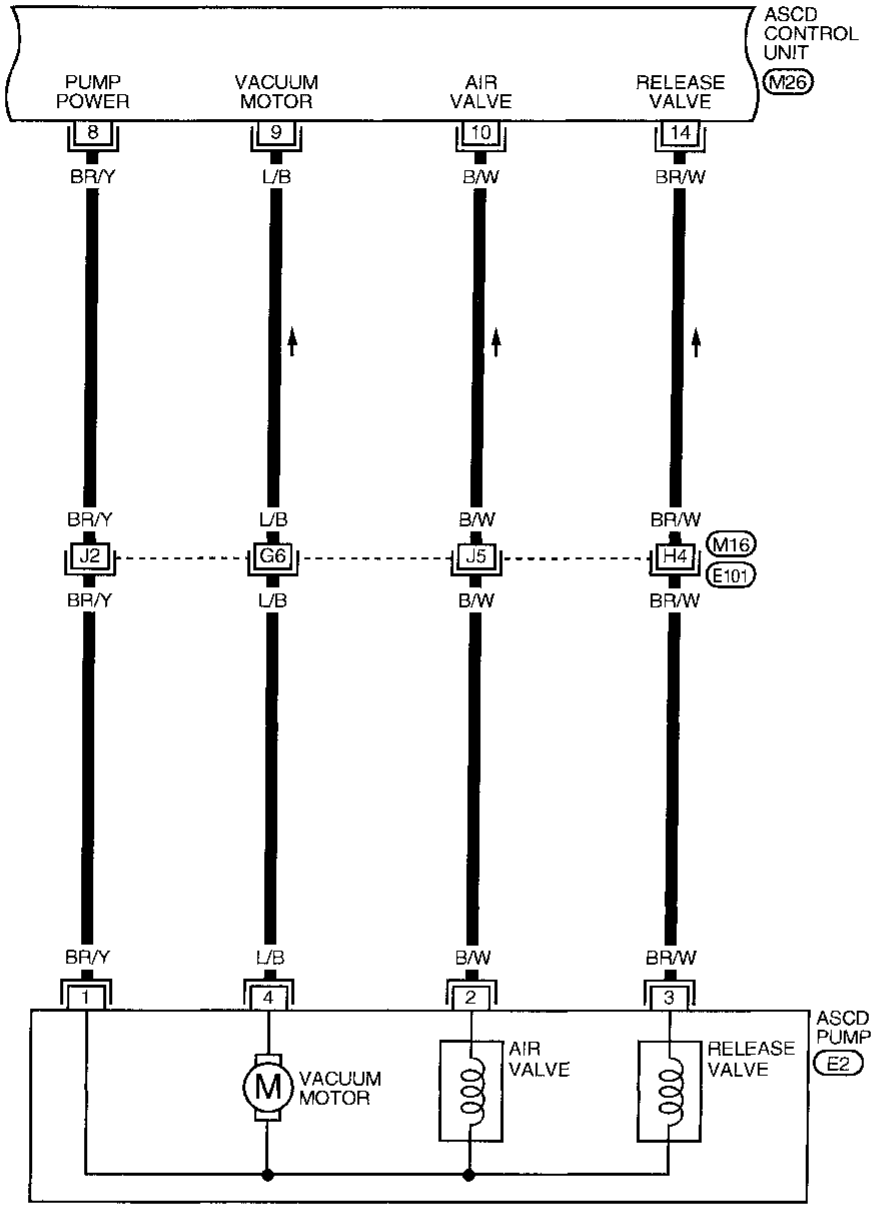
*: This connector is not shown in "HARNESS LAYOUT" of EL section.

Refer to last page (Foldout page).
M16, E101

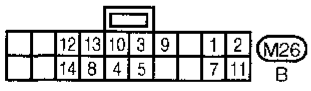
AEL226B

Wiring Diagram –ASCD– (Cont'd)

EL-ASCD-05



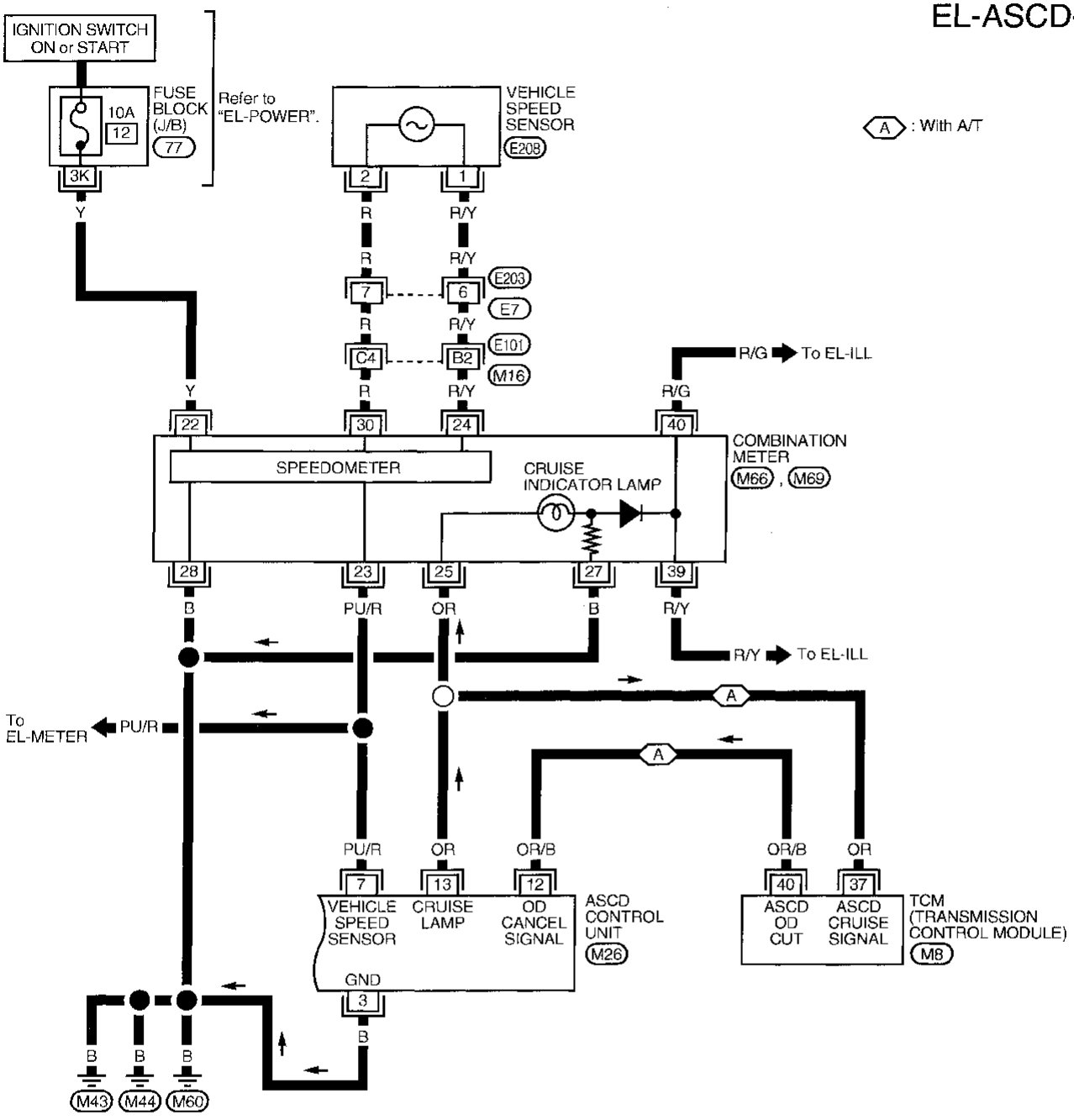
Refer to last page (Foldout page).
M16, E101

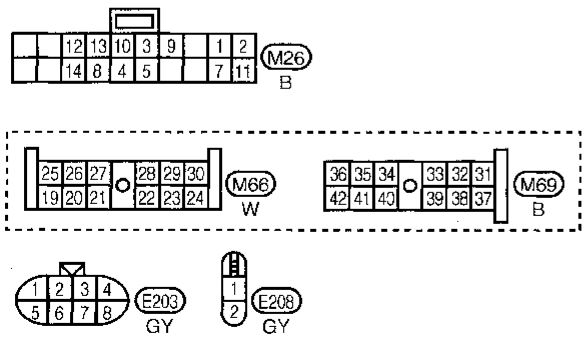


AEL648A

Wiring Diagram –ASCD– (Cont'd)

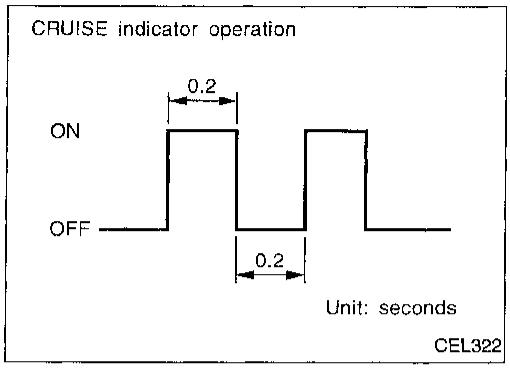
EL-ASCD-06





Refer to last page (Foldout page).
M8
M16, E101

AEL631B

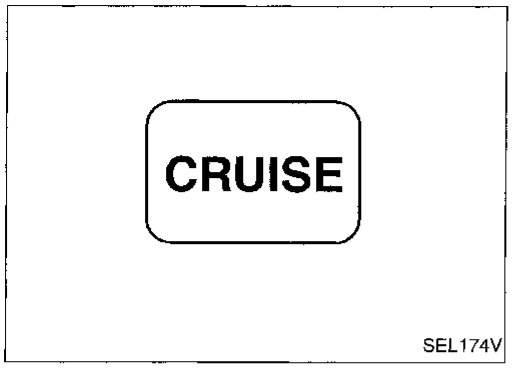


Fail-safe System Description

When the fail-safe system senses a malfunction, it deactivates ASCD operation. The CRUISE indicator in the combination meter will then flash.

MALFUNCTION DETECTION CONDITIONS

Detection conditions	ASCD operation during malfunction detection
● ASCD steering (RESUME/ACCEL, CANCEL, SET/COAST) switch is stuck. ● Vacuum motor ground circuit or power circuit is open or shorted. ● Air valve ground circuit or power circuit is open or shorted. ● Release valve ground circuit or power circuit is open or shorted. ● Vehicle speed sensor is faulty. ● ASCD control unit internal circuit is malfunctioning.	● ASCD is deactivated. ● Vehicle speed memory is canceled.
● ASCD brake switch or clutch switch is faulty. ● ASCD stop lamp switch is faulty.	● ASCD is deactivated. ● Vehicle speed memory is not canceled.

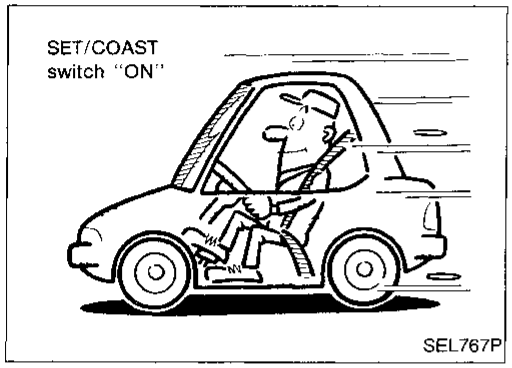


Fail-Safe System Check

1. Turn ignition switch ON.
2. Turn ASCD main switch to ON position and check if the "cruise indicator" blinks.

   If the indicator lamp blinks, check the following.

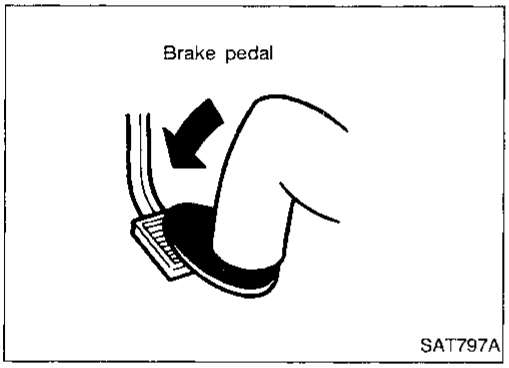
- ASCD steering switch. Refer to "DIAGNOSTIC PROCEDURE 5" (EL-136).



3. Drive the vehicle at more than 48 km/h (30 MPH) and push SET/COAST switch.

   If the indicator lamp blinks, check the following:

- Vehicle speed sensor. Refer to "DIAGNOSTIC PROCEDURE 6" (EL-137).
- ASCD pump circuit. Refer to "DIAGNOSTIC PROCEDURE 7" (EL-138).
- Replace control unit.



4. Depress brake pedal slowly (brake pedal should be depressed more than 5 seconds).

   If the indicator lamp blinks, check the following:

- ASCD clutch switch and ASCD brake/stop lamp switch. Refer to "DIAGNOSTIC PROCEDURE 4" (EL-135).

5. END. (System is OK.)

Trouble Diagnoses

SYMPTOM CHART

PROCEDURE	—	Diagnostic procedure							
REFERENCE PAGE	EL-131	EL-133	EL-133	EL-134	EL-135	EL-136	EL-137	EL-138	EL-139
SYMPTOM	Fail-safe system check	DIAGNOSTIC PROCEDURE 1 (POWER SUPPLY AND GROUND CIRCUIT CHECK)	DIAGNOSTIC PROCEDURE 2 (ASCD MAIN SWITCH CHECK)	DIAGNOSTIC PROCEDURE 3 (ASCD HOLD RELAY CHECK)	DIAGNOSTIC PROCEDURE 4 (ASCD CLUTCH AND BRAKE/STOP LAMP SWITCH CHECK)	DIAGNOSTIC PROCEDURE 5 (ASCD STEERING SWITCH CHECK)	DIAGNOSTIC PROCEDURE 6 (VEHICLE SPEED SENSOR CHECK)	DIAGNOSTIC PROCEDURE 7 (ASCD PUMP CIRCUIT CHECK)	DIAGNOSTIC PROCEDURE 8 (ASCD ACTUATOR/PUMP CHECK)
ASCD cannot be set. ("CRUISE" indicator lamp does not blink.)		X	X	X		X	X		
ASCD cannot to be set. ("CRUISE" indicator lamp blinks.*1)	X				X	X	X	X	
Vehicle speed does not decrease after SET/COAST switch has been pressed.						X			X
Vehicle speed does not return to the set speed after RESUME/ACCEL switch has been pressed.*2						X			X
Vehicle speed does not increase after RESUME/ACCEL switch has been pressed.						X			X
System is not released after CANCEL switch (steering) has been pressed.						X			X
Large difference between set speed and actual vehicle speed.									X
Deceleration is greatest immediately after ASCD has been set.									X

X: Applicable

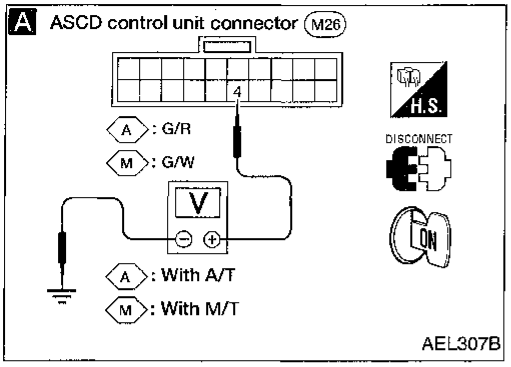
*1: It indicates that system is in fail-safe. After completing diagnostic procedures, perform "Fail-Safe System Check" (EL-131) to verify repairs.

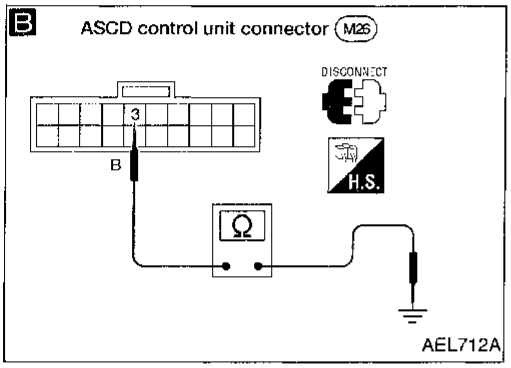
*2: If vehicle speed is greater than 48 km/h (30 MPH) after system has been released, pressing RESUME/ACCEL switch returns vehicle speed to the set speed previously achieved. However, doing so when the ASCD main switch is turned to "OFF", vehicle speed will not return to the set speed since the memory is canceled.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 1

(POWER SUPPLY AND GROUND CIRCUIT CHECK)





1. Turn ignition switch ON.
2. Turn ASCD main switch ON to make sure indicators illuminate.

NG → Go to DIAGNOSTIC PROCEDURE 2 (ASCD MAIN SWITCH CHECK) below.

OK ↓

A

CHECK POWER SUPPLY CIRCUIT FOR ASCD CONTROL UNIT.

1. Disconnect ASCD control unit connector.
2. Turn ignition switch ON.
3. Turn ASCD main switch ON.
4. Check voltage between ASCD control unit terminal ④ and body ground.
   Battery voltage should exist.
   Refer to wiring diagram, EL-124.

NG → Go to DIAGNOSTIC PROCEDURE 3 (ASCD HOLD RELAY CIRCUIT CHECK), EL-134.

OK ↓

B

CHECK GROUND CIRCUIT FOR ASCD CONTROL UNIT.

Check continuity between ASCD control unit terminal ③ and body ground.
Refer to wiring diagram, EL-129.

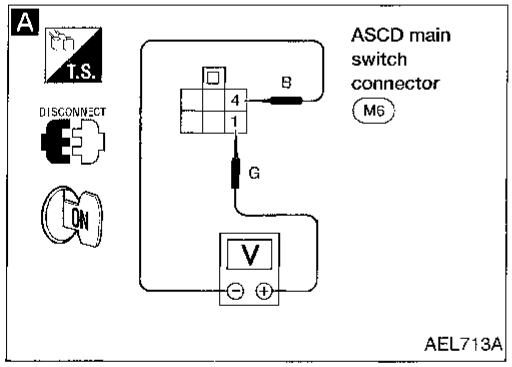
NG → Repair harness.

OK ↓

Power supply and ground circuit is OK.

DIAGNOSTIC PROCEDURE 2

(ASCD MAIN SWITCH CHECK)



A

CHECK POWER SUPPLY FOR ASCD MAIN SWITCH.

1. Disconnect ASCD main switch connector.
2. Measure voltage between main switch terminals ① and ④.
   Battery voltage should exist.
   Refer to wiring diagram, EL-124.

NG → Check the following.
- 7.5A fuse [(No. 8), located in the fuse block (J/B)]
- Harness for open or short between fuse and ASCD main switch.
- Ground circuit for ASCD main switch

OK ↓

Check ASCD main switch. Refer to EL-141.

NG → Replace ASCD main switch.

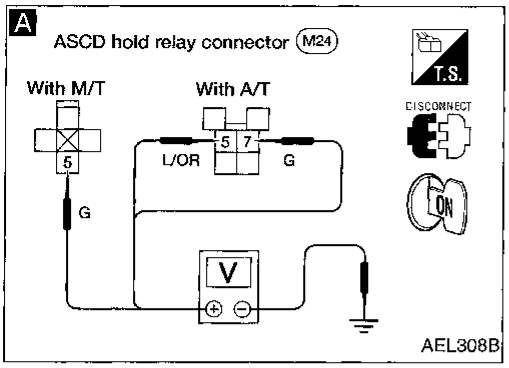
OK ↓

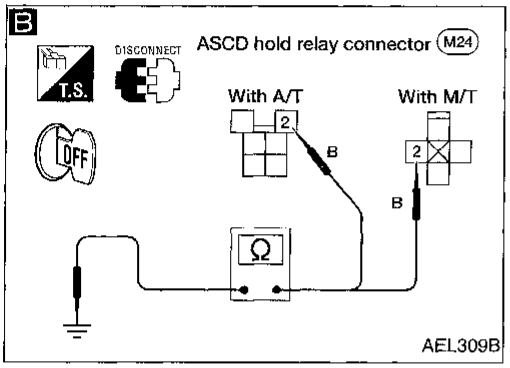
Go to DIAGNOSTIC PROCEDURE 3 (ASCD HOLD RELAY CIRCUIT CHECK). Refer to EL-134.

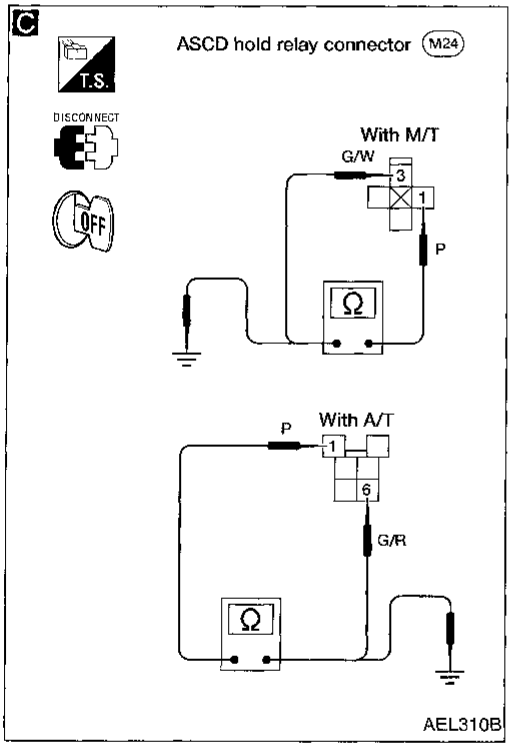
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 3

(ASCD HOLD RELAY CHECK)







A

CHECK POWER SUPPLY CIRCUIT FOR ASCD HOLD RELAY.
1. Disconnect ASCD hold relay.
2. Turn ignition switch ON.
3. Do approx. 12 volts exist between ASCD hold relay terminals ⑤, ⑦ and body ground?
   Refer to wiring diagram, EL-124.

No → Check the following.
- 7.5A fuse [No. 8], located in the fuse block (J/B)]
- Harness for open or short between fuse and ASCD hold relay
- ASCD brake switch (With A/T)

Yes ↓

B

CHECK GROUND CIRCUIT FOR ASCD HOLD RELAY.
1. Turn ignition switch OFF.
2. Does continuity exist between ASCD hold relay terminal ② and body ground?

No → Repair harness.

Yes ↓

CHECK ASCD MAIN SWITCH.
Refer to "Electrical Component Inspection", EL-141.

NG → Replace ASCD main switch.

OK ↓

C

CHECK ASCD HOLD RELAY CIRCUIT.
1. Check continuity between ASCD hold relay terminals ① and ③ (with M/T), ① and ⑥ (with A/T).
   Continuity should exist.
2. Check continuity between ASCD hold relay terminal ① and ground.
   Continuity should not exist.

NG → Repair harness.

OK ↓

CHECK ASCD HOLD RELAY.

NG → Replace ASCD hold relay.

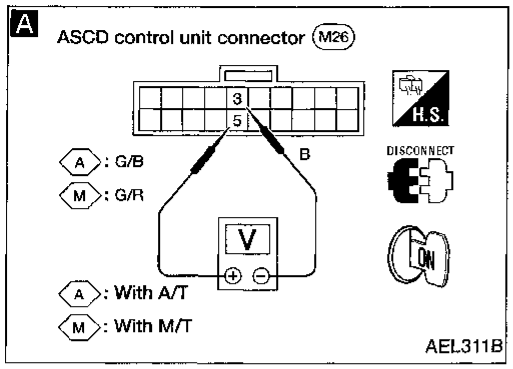
OK ↓

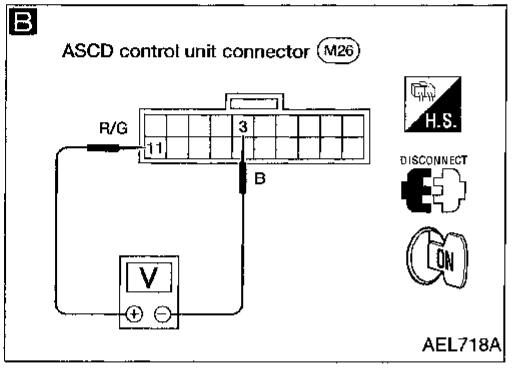
ASCD hold relay circuit is OK.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 4

(ASCD CLUTCH AND BRAKE/STOP LAMP SWITCH CHECK)





A

CHECK ASCD BRAKE SWITCH CIRCUIT.

1. Disconnect ASCD control unit connector.
2. Turn ignition switch ON.
3. Turn ASCD main switch ON.
4. Measure voltage between ASCD control unit connector terminals ⑤ and ③.
   When brake pedal or clutch pedal (M/T) is depressed or A/T selector lever is in "N" or "P" position:
   Approx. 0V
   When brake pedal and clutch pedal (M/T) are released or A/T selector lever is in any position other than "N" or "P":
   Battery voltage should exist.
   Refer to wiring diagram, EL-125.

NG →

Check the following.
- 7.5A fuse [No. 8], located in the fuse block (J/B)]
- ASCD brake switch
  Refer to EL-141
- ASCD clutch switch (M/T models)
  Refer to EL-141
- Inhibitor switch (A/T models)
  Refer to EL-142
- ASCD hold relay
  Refer to EL-5
- Inhibitor relay (A/T models)
  Refer to EL-5
- Harness for open or short.

OK ↓

B

CHECK STOP LAMP SWITCH CIRCUIT.

1. Disconnect ASCD control unit connector.
2. Check voltage between ASCD control unit terminals ⑪ and ③.

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

Refer to wiring diagram, EL-127.

NG →

Check the following.
- 15A fuse (No. 14), located in the fuse block [J/B])
- Harness for open or short between ASCD control unit and stop lamp switch
- Stop lamp switch
  Refer to EL-141.

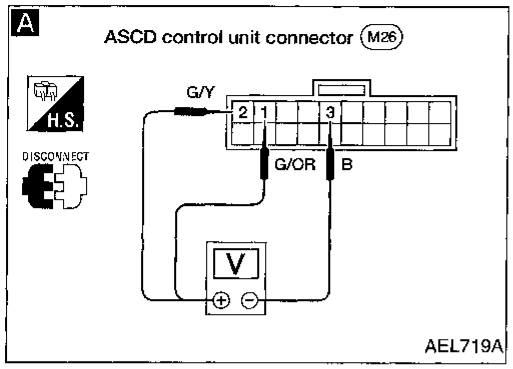
OK ↓

ASCD clutch and brake/stop lamp switch circuit is OK.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 5

(ASCD STEERING SWITCH CHECK)



A

CHECK ASCD STEERING SWITCH CIRCUIT FOR ASCD CONTROL UNIT.

1. Disconnect ASCD control unit connector.
2. Check voltage between ASCD control unit harness terminals.

	Terminal No.		Switch condition	
	⊕	⊖	Pressed	Released
SET/ COAST SW	②	③	12V	0V
RESUME/ ACC SW	①	③	12V	0V
CANCEL SW	②	③	12V	0V
	①	③	12V	0V

Refer to wiring diagram, EL-127.

OK → ASCD steering switch is OK.

NG ↓

CHECK POWER SUPPLY FOR ASCD STEERING SWITCH.
Does horn work?

No → Check the following.
- 10A fuse (No. 42, located in the fuse and fusible link box
- Horn relay
- Harness for open or short between horn and fuse

Yes ↓

CHECK ASCD STEERING SWITCH.
Refer to "Electrical Component Inspection", EL-141.

NG → Replace ASCD steering switch.

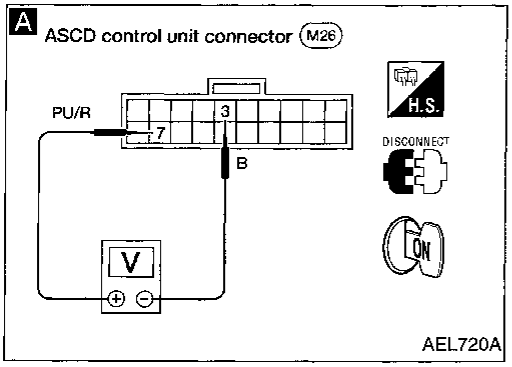
OK ↓

Check harness for open or short between ASCD steering switch and ASCD control unit.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 6

(VEHICLE SPEED SENSOR CHECK)



A

CHECK VEHICLE SPEED SENSOR CIRCUIT.

1. Place wheel chocks and jack up front of vehicle.
2. Disconnect ASCD control unit connector.
3. Connect voltmeter between ASCD control unit terminals ⑦ and ③.
4. Slowly turn front wheel.
5. Check deflection of voltmeter pointer.
   Refer to wiring diagram, EL-129.

OK → Vehicle speed sensor is OK.

NG ↓

Does speedometer operate normally?

No → Check speedometer and vehicle speed sensor circuit. Refer to EL-129.

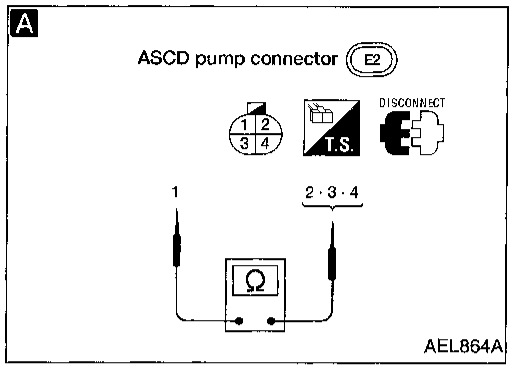
Yes ↓

Check harness for open or short between ASCD control unit terminal ⑦ and combination meter terminal ㉓.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 7

(ASCD PUMP CIRCUIT CHECK)



A

CHECK ASCD PUMP.

1. Disconnect ASCD pump connector.
2. Measure resistance between ASCD pump terminals ① and ②, ③, ④.

Terminals		Resistance [Ω]
①	④	Approx. 3
	②	Approx. 65
	③	Approx. 65

Refer to wiring diagram, EL-128.

NG → Replace ASCD pump.

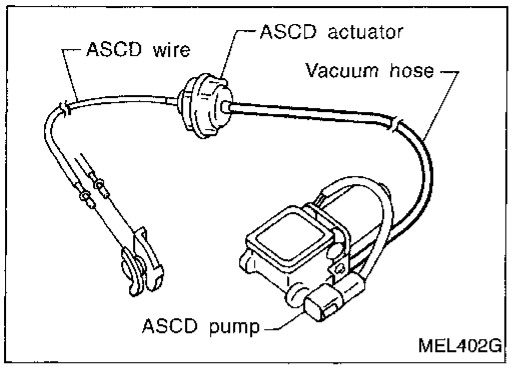
OK ↓

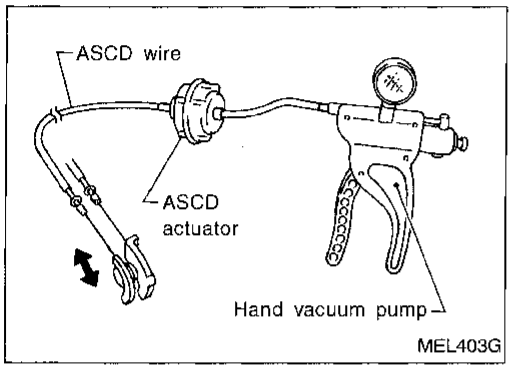
Check harness for open or short between ASCD pump and ASCD control unit.

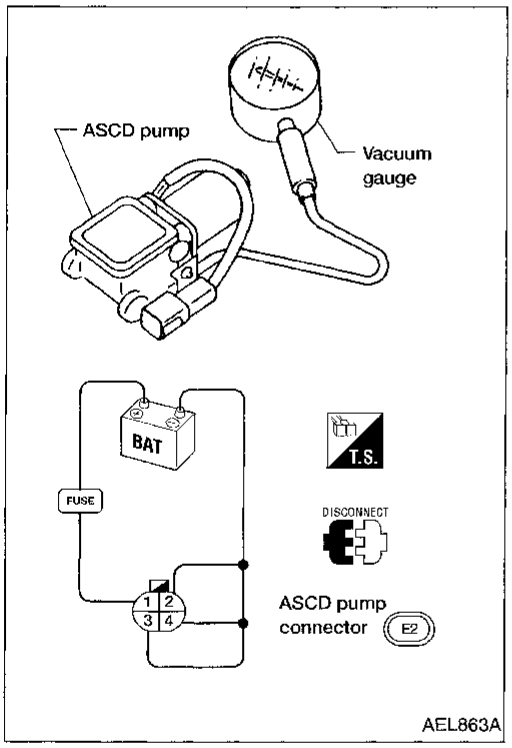
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 8

(ASCD ACTUATOR/PUMP CHECK)







A

CHECK VACUUM HOSE.
Check vacuum hose (between ASCD actuator and ASCD pump) for breakage, cracks or fracture.

NG → Repair or replace hose.

OK ↓

CHECK ASCD WIRE.
Check wire for improper installation, rust formation or breaks.

NG → Repair or replace wire. Refer to "ASCD Wire Adjustment", EL-140.

OK ↓

B

CHECK ASCD ACTUATOR.
1. Disconnect vacuum hose from ASCD actuator.
2. Apply -40 kPa (-0.400 bar, -0.41 kg/cm^2, -5.8 psi) vacuum to ASCD actuator with hand vacuum pump.

ASCD wire should move to pull throttle drum.

3. Wait 10 seconds and check for decrease in vacuum pressure.

Vacuum pressure decrease:
Less than 2.7 kPa (0.0270 bar, 0.028 kg/cm^2, 0.39 psi)

NG → Replace ASCD actuator.

OK ↓

C

CHECK ASCD PUMP.
1. Disconnect vacuum hose from ASCD pump and ASCD pump connector.
2. If necessary remove ASCD pump.
3. Connect vacuum gauge to ASCD pump.
4. Apply 12V direct current to ASCD pump and check operation.

	12V direct current supply terminals		Operation
	⊕	⊖	
Air valve	①	②	Close
Release valve		③	Close
Vacuum motor		④	Operate

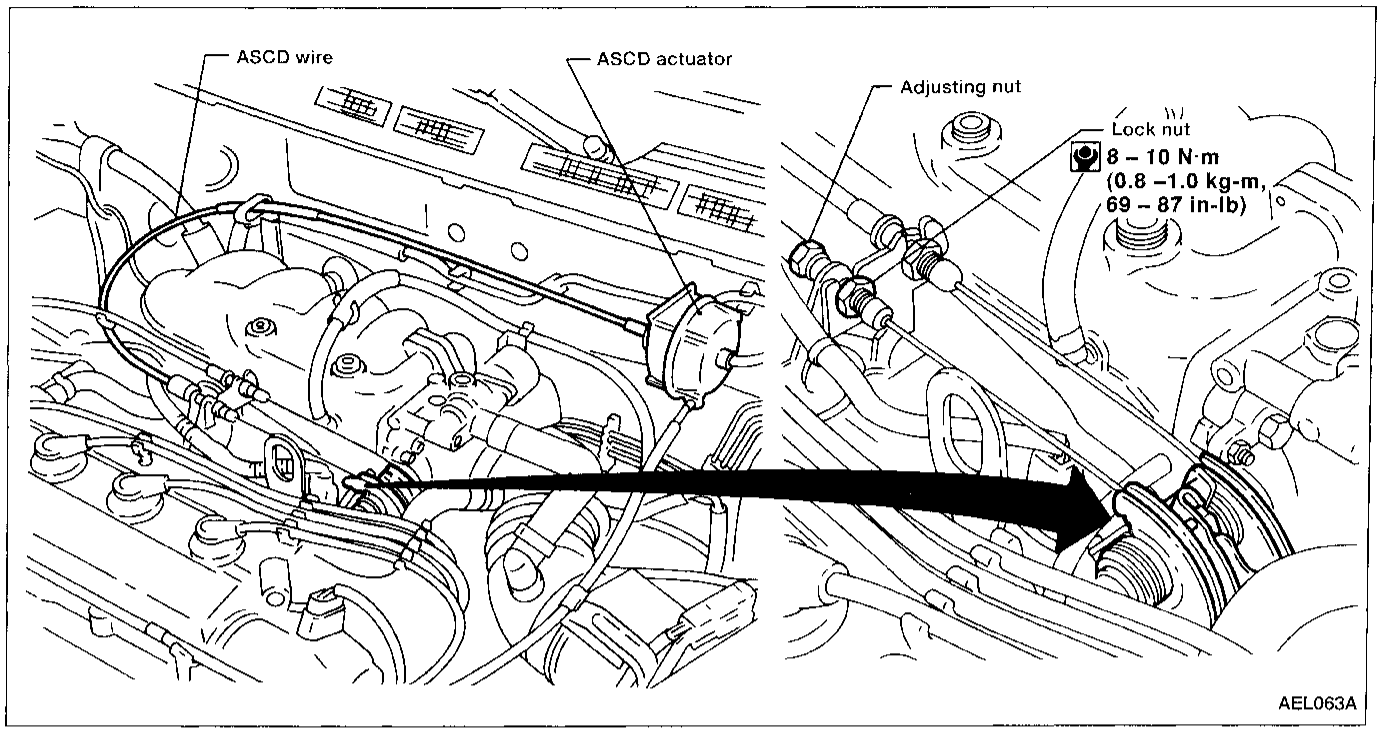
A vacuum pressure of at least -35 kPa (-0.350 bar, -0.36 kg/cm^2, -5.1 psi) should be generated.

NG → Replace ASCD pump.

OK ↓

ASCD actuator/pump is OK.

ASCD Wire Adjustment



CAUTION:

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

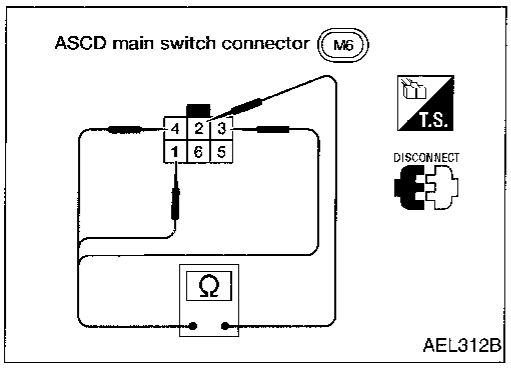
Confirm that accelerator wire is properly adjusted.

- **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 clutch and brake switch adjustment, refer to BR and CL sections "Adjustment", "BRAKE PEDAL AND BRACKET" and "Adjusting Clutch Pedal", "INSPECTION AND ADJUSTMENT".

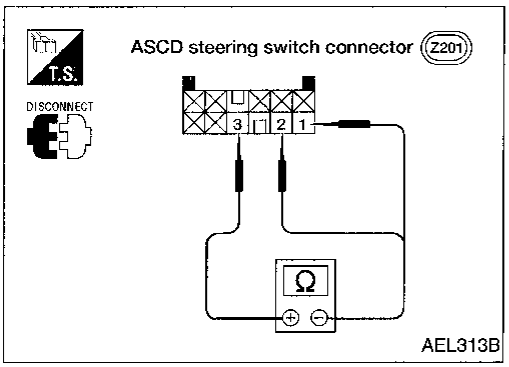


Electrical Component Inspection

ASCD MAIN SWITCH

Check continuity between terminals by pushing switch to each position.

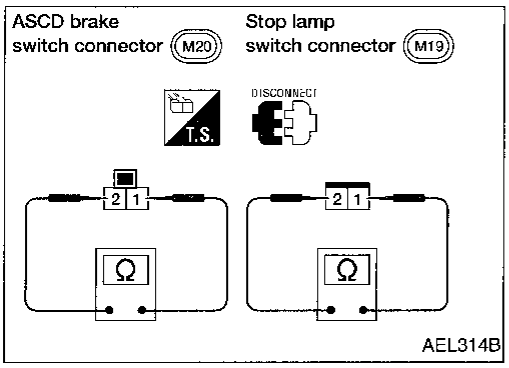
Switch position	Terminal 1	2	3	4	5	6
ON	○	○	○	○		
N		○	○	○	ILL. ○ ○ ○	
OFF						



ASCD STEERING SWITCH

Check continuity between terminals by pushing each button.

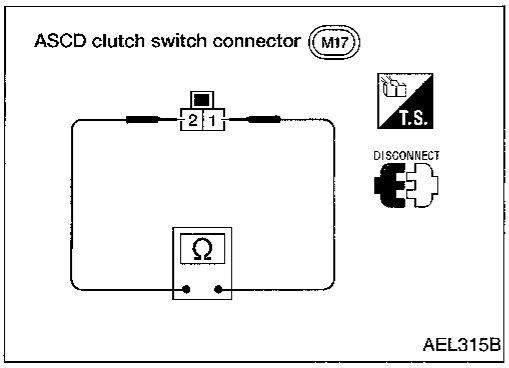
Button	Terminal ③	②	①
SET/COAST	○	○	
RESUME/ACCEL	○		○
CANCEL	○	▶ ○	
	○	▶	○



ASCD BRAKE SWITCH AND STOP LAMP SWITCH

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

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



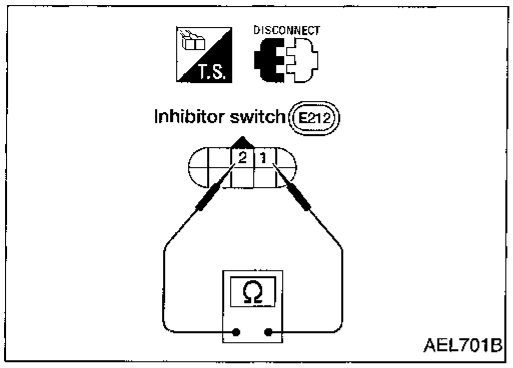
ASCD CLUTCH SWITCH (FOR M/T MODELS)

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

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

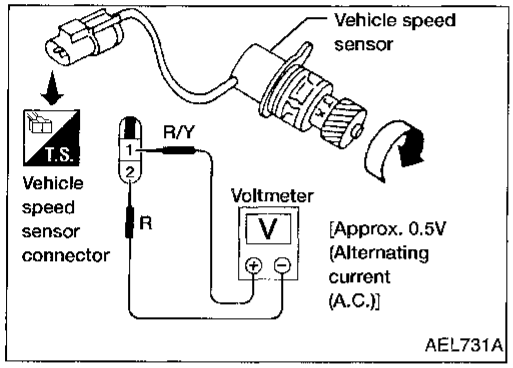
Electrical Component Inspection (Cont'd)

INHIBITOR SWITCH (FOR A/T MODELS)



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

VEHICLE SPEED SENSOR



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

System Description

Power is supplied at all times:
- from 25A fusible link (letter [f], located in the fuse and fusible link box)
- to circuit breaker terminal ①
- through circuit breaker terminal ②
- to power window relay terminal ③.

With the ignition switch in ON or START position, power is supplied:
- from 7.5A fuse (No. [8], located in the fuse block [J/B])
- to power window relay terminal ①.

Ground is supplied to power window relay terminal ②:
- through body grounds (M43), (M44) and (M60).

The power window relay is energized and power is supplied:
- through terminal ⑤ of the power window relay
- to main power window and door lock/unlock switch terminal ⑦
- to power window switch (front RH) terminal ④
- to power window switch (rear LH) terminal ④, and
- to power window switch (rear RH) terminal ④.

MANUAL OPERATION

Front door LH

Ground is supplied:
- to main power window and door lock/unlock switch terminal ①
- through body grounds (M43), (M44) and (M60).

WINDOW UP

When the main power window switch front LH is pressed in the UP position, power is supplied:
- to front power window regulator LH terminal ②
- through main power window and door lock/unlock switch terminal ⑥.

Ground is supplied:
- to front power window regulator LH terminal ①
- through main power window and door lock/unlock switch terminal ②.

Then, the motor raises the window until the switch is released.

WINDOW DOWN

When the main power window switch front LH is pressed in the DOWN position, power is supplied:
- to front power window regulator LH terminal ①
- through main power window and door lock/unlock switch terminal ②.

Ground is supplied:
- to front power window regulator LH terminal ②
- through main power window and door lock/unlock switch terminal ⑥.

Then, the motor lowers the window until the switch is released.

Front door RH

Ground is supplied:
- to main power window and door lock/unlock switch terminal ①
- through body grounds (M43), (M44) (M60).

NOTE:

Numbers in parentheses are terminal numbers, when power window switch is pressed in the UP and DOWN positions respectively.

MAIN SWITCH OPERATION

Power is supplied:
- through main power window and door lock/unlock switch terminal (⑫, ⑧)
- to power window switch (front RH) terminal (⑤, ②).

The subsequent operation is the same as the power window switch operation.

POWER WINDOW SWITCH OPERATION

Power is supplied:
- through power window switch (front RH) terminal (⑥, ③)
- to power window regulator (front RH) terminal (②, ①).

System Description (Cont'd)

Ground is supplied:
- to power window regulator (front RH) terminal (①, ②)
- through power window switch (front RH) terminal (③, ⑥)
- to power window switch (front RH) terminal (②, ⑤)
- through main power window and door lock/unlock switch terminal (⑧, ⑫).

Then, the motor raises or lowers the window until the switch is released.

Rear door LH

Ground is supplied:
- to main power window and door lock/unlock switch terminal ①
- through body grounds (M43), (M44) and (M60).

NOTE:
Numbers in parentheses are terminal numbers, when power window switch is pressed in the UP and DOWN positions respectively.

MAIN SWITCH OPERATION

Power is supplied:
- through main power window and door lock/unlock switch terminal (⑭, ⑬)
- to power window switch (rear LH) terminal (⑤, ②).

The subsequent operation is the same as the power window switch operation.

POWER WINDOW SWITCH OPERATION

Power is supplied:
- through power window switch (rear LH) terminal (⑥, ③)
- to power window regulator (rear LH) terminal (②, ①).

Ground is supplied:
- to front power window regulator (rear LH) terminal (①, ②)
- through power window switch (rear LH) terminal (③, ⑥)
- to power window switch (rear LH) terminal (②, ⑤)
- through main power window and door lock/unlock switch terminal (⑬, ⑭).

Then, the motor raises or lowers the window until the switch is released.

Rear door RH

Ground is supplied:
- to main power window and door lock/unlock switch terminal ①
- through body grounds (M43), (M44) and (M60).

NOTE:
Numbers in parentheses are terminal numbers, when power window switch is pressed in the UP and DOWN positions respectively.

MAIN SWITCH OPERATION

Power is supplied:
- through main power window and door lock/unlock switch terminal (⑯, ⑮)
- to power window switch (rear RH) terminal (⑤, ②).

The subsequent operation is the same as the power window switch operation.

POWER WINDOW SWITCH OPERATION

Power is supplied:
- through power window switch (rear RH) terminal (⑥, ③)
- to power window regulator (rear RH) terminal (②, ①).

Ground is supplied:
- to front power window regulator (rear RH) terminal (①, ②)
- through power window switch (rear RH) terminal (③, ⑥)
- to power window switch (rear RH) terminal (②, ⑤)
- through main power window and door lock/unlock switch terminal (⑮, ⑯)

Then, the motor raises or lowers the window until the switch is released.

System Description (Cont'd)

AUTO OPERATION

The AUTO feature enables the driver to lower the driver's window without holding the window switch down.

The AUTO feature only operates on the driver's window downward movement.

When the main power window switch (front LH) is pressed and released in the AUTO position, ground signal is supplied:

- to front power window regulator LH terminal ②
- through main power window and door lock/unlock switch terminal ⑥.

Power is supplied:

- to front power window regulator LH terminal ①
- through main power window and door lock/unlock switch terminal ②.

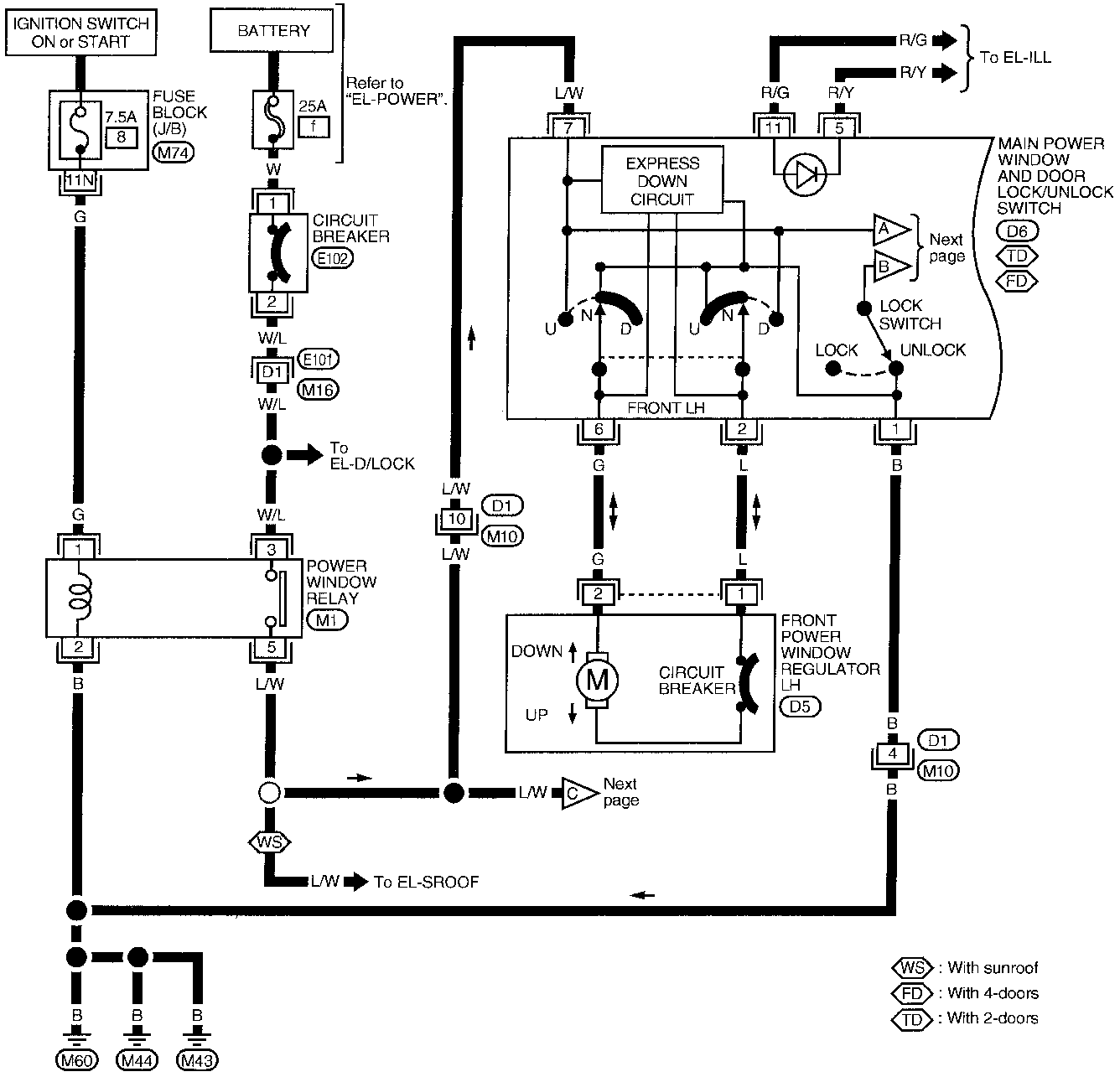
Then, the front door LH window will travel to the fully open position.

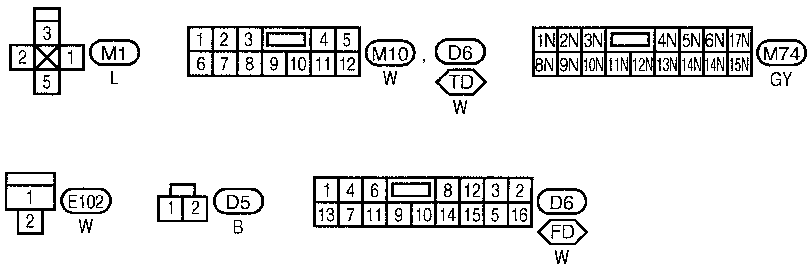
POWER WINDOW LOCK

The power window lock is designed to lock operation of all windows except the driver's door window. When the lock switch is pressed to the lock position, ground for the power window switches is disconnected in the main power window and door lock/unlock switch. This prevents the power window motors from operating.

Wiring Diagram –WINDOW–

EL-WINDOW-01



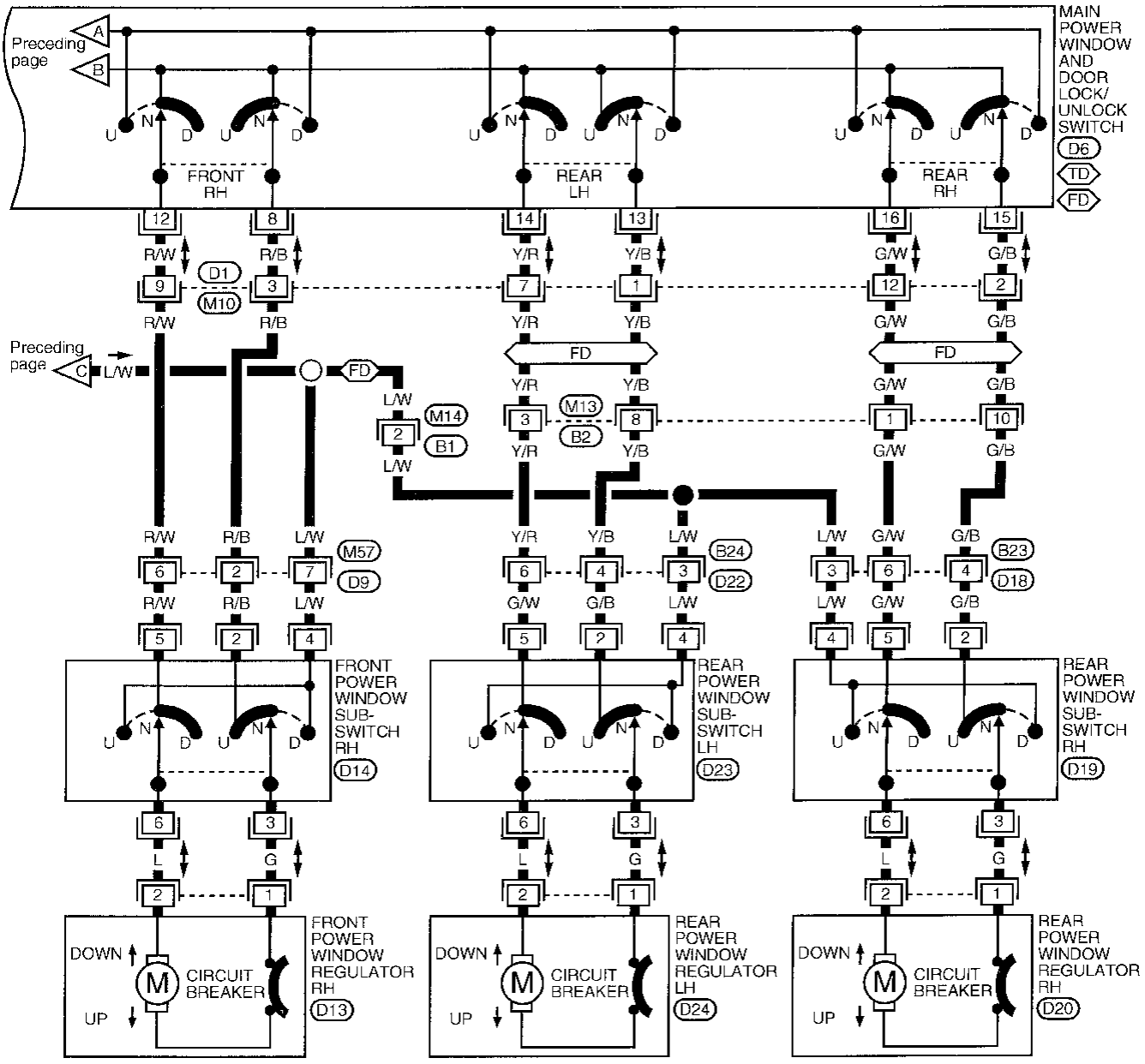


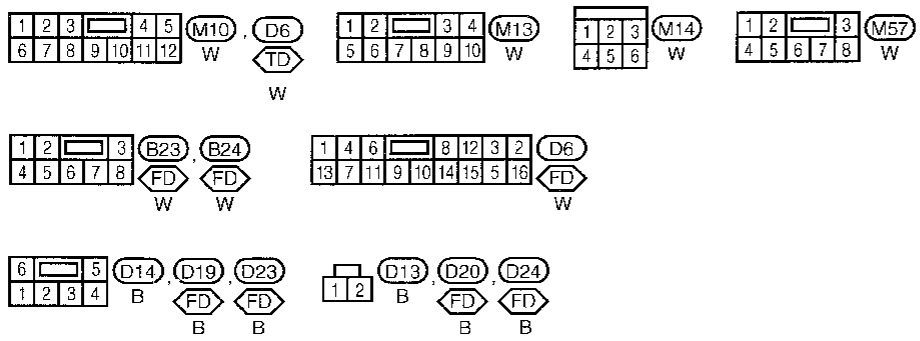
Refer to last page (Foldout page).
M16, E101

AEL213B

FD : With 4-doors
TD : With 2-doors

EL-WINDOW-02





AEL214B

Trouble Diagnoses

Symptom	Possible causes	Repair order
None of the power windows can be operated from any switch.	1. 7.5A fuse and 25A fusible link and circuit breaker.	1. Check 7.5A fuse (No. 8, located in fuse block [J/B]) and 25A fusible link (letter f, located in the fuse and fusible link box) and the circuit breaker. Turn ignition switch ON and verify battery positive voltage is present at terminal ⑦ of main power window switch and terminal ④ of any other switches.
	2. Grounds (M43), (M44) and (M60).	2. Check grounds (M43), (M44) and (M60).
	3. Power window relay.	3. Check power window relay.
	4. Open/short in main power window and door lock/unlock switch circuit.	4. Check L/W wire between power window relay and main power window door lock/unlock switch for open/short circuit.
Driver side power window cannot be operated but other windows can be operated.	1. Driver side (front LH) power window motor circuit.	1. Check harness between main power window switch and front power window regulator LH for open or short.
	2. Driver side (front LH) power window motor.	2. Check driver side (front LH) power window regulator.
One or more passenger power windows cannot be operated.	1. Power window switches (front RH, rear LH and RH).	1. Check power window switches (front RH, rear LH and RH).
	2. Power window motors (front RH, rear LH and RH).	2. Check power window regulators (front RH, rear LH and RH).
	3. Main power window and door lock/unlock switch.	3. Check main power window and door lock/unlock switch.
	4. Power window circuits.	4. Check harnesses between main power window and door lock/unlock switch and power window switches and regulators for open/short circuits.
One or more passenger power windows cannot be operated by main switch but can be operated by passenger's switches.	Main power window and door lock/unlock switch.	Check main power window and door lock/unlock switch.

System Description

Power is supplied at all times:
- through 25A fusible link (Letter [f], located in the fuse and fusible link box)
- to circuit breaker terminal ①
- through circuit breaker terminal ②
- to smart entrance control unit terminal ①.

Power is supplied:
- through 10A fuse [No. [15], located in the fuse block (J/B)]
- to key switch terminal ①.

Ground is supplied:
- to smart entrance control unit terminal ⑩
- through body grounds (M43), (M44) and (M60).

INPUT

Power is supplied through key switch terminal ② to smart entrance control unit terminal ㉔ when the key switch is ON (ignition key is inserted in key cylinder).

Ground is supplied:
- through front RH door switch terminal ① when front RH door is open
- to smart entrance control unit terminal ㉟.

Ground is supplied:
- through body grounds (B14) and (B17)
- to front LH door switch terminal ③
- through front LH door switch terminal ② when front LH door is open
- to smart entrance control unit terminal ⑮.

Ground is supplied:
- through body grounds (M43), (M44) and (M60)
- through front LH or RH door key cylinder switch terminal ④ when door key cylinder is BETWEEN FULL STROKE AND N (to unlock position)
- from front LH door key cylinder switch terminal ② or front RH door key cylinder switch terminal ①
- to smart entrance control unit terminal ㉛.

Ground is supplied:
- through body grounds (M43), (M44) and (M60)
- through front LH or RH door key cylinder switch terminal ④ when door key cylinder is BETWEEN FULL STROKE AND N (to lock position)
- from front LH door key cylinder switch terminal ① or front RH door key cylinder switch terminal ②
- to smart entrance control unit terminal ㉚.

Ground is supplied:
- through body grounds (M43), (M44) and (M60)
- through door unlock sensor (in the front LH or RH door lock actuator) terminal ② when door lock is in UNLOCKED position
- from door unlock sensor (in the front LH or RH door lock actuator) terminal ④
- to smart entrance control unit terminal ⑫ or ⑬.

Ground is supplied:
- through body grounds (M43), (M44) and (M60)
- through main power window and door lock/unlock switch terminal ① (when switch is pressed in lock or unlock position)
- from main power window and door lock/unlock switch terminal ③ or ④
- to smart entrance control unit terminal ⑱ or ⑲.

Ground is also supplied from door lock/unlock switch RH in the same manner as main power window and door lock/unlock switch.

OUTPUT

Unlock

Power is supplied:
- from smart entrance control unit terminal ③
- to front door lock actuator LH terminal ①.

Power is supplied:
- from smart entrance control unit terminal ②

System Description (Cont'd)

- to all other door lock actuators terminal ①.

Ground is supplied:

- from smart entrance control unit terminal ④
- to all door lock actuators terminal ③.

With power and ground supplied, the door lock actuators move to the unlocked position.

Lock

Power is supplied:

- from smart entrance control unit terminal ④
- to all door lock actuators terminal ③.

Ground is supplied:

- from smart entrance control unit terminal ③
- to front door lock actuator LH terminal ①.

Ground is supplied:

- from smart entrance control unit terminal ②
- to all other door lock actuators terminal ①.

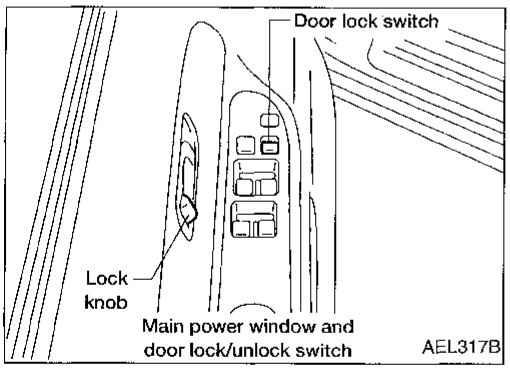
With power and ground supplied, the door lock actuators move to the locked position.

Models with multi-remote control system

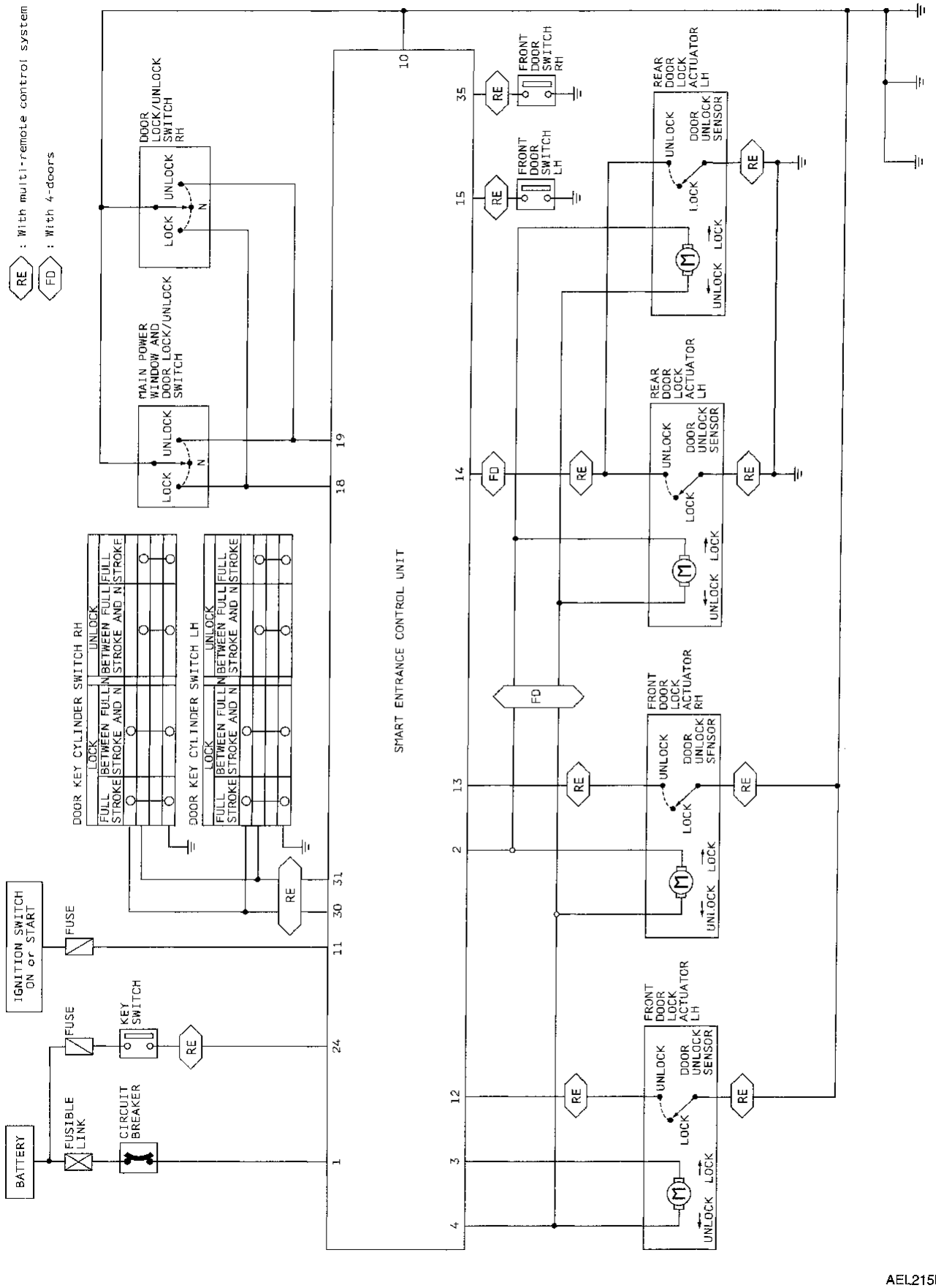
OPERATION

- The lock and unlock switch on driver's door trim can lock and unlock all doors.
- With the lock knob on front LH or RH door set to LOCKED, all doors are locked (signal from door unlock sensor).
- With the door key inserted in the key cylinder on front LH or RH door, turning it to LOCK will lock all doors; turning it to UNLOCK once unlocks the corresponding door; turning it to UNLOCK again within 5 seconds after the first unlock operation unlocks all of the other doors (signal from front door key cylinder switch).

However, if the ignition key is in the ignition key cylinder and one or more of the front doors are open, setting the lock and unlock switch, lock knob, or the door key to LOCK locks the doors once but then immediately unlocks them (combination signals from key switch, front LH or RH door switch and front LH or RH door unlock sensor). — (KEY REMINDER DOOR SYSTEM)

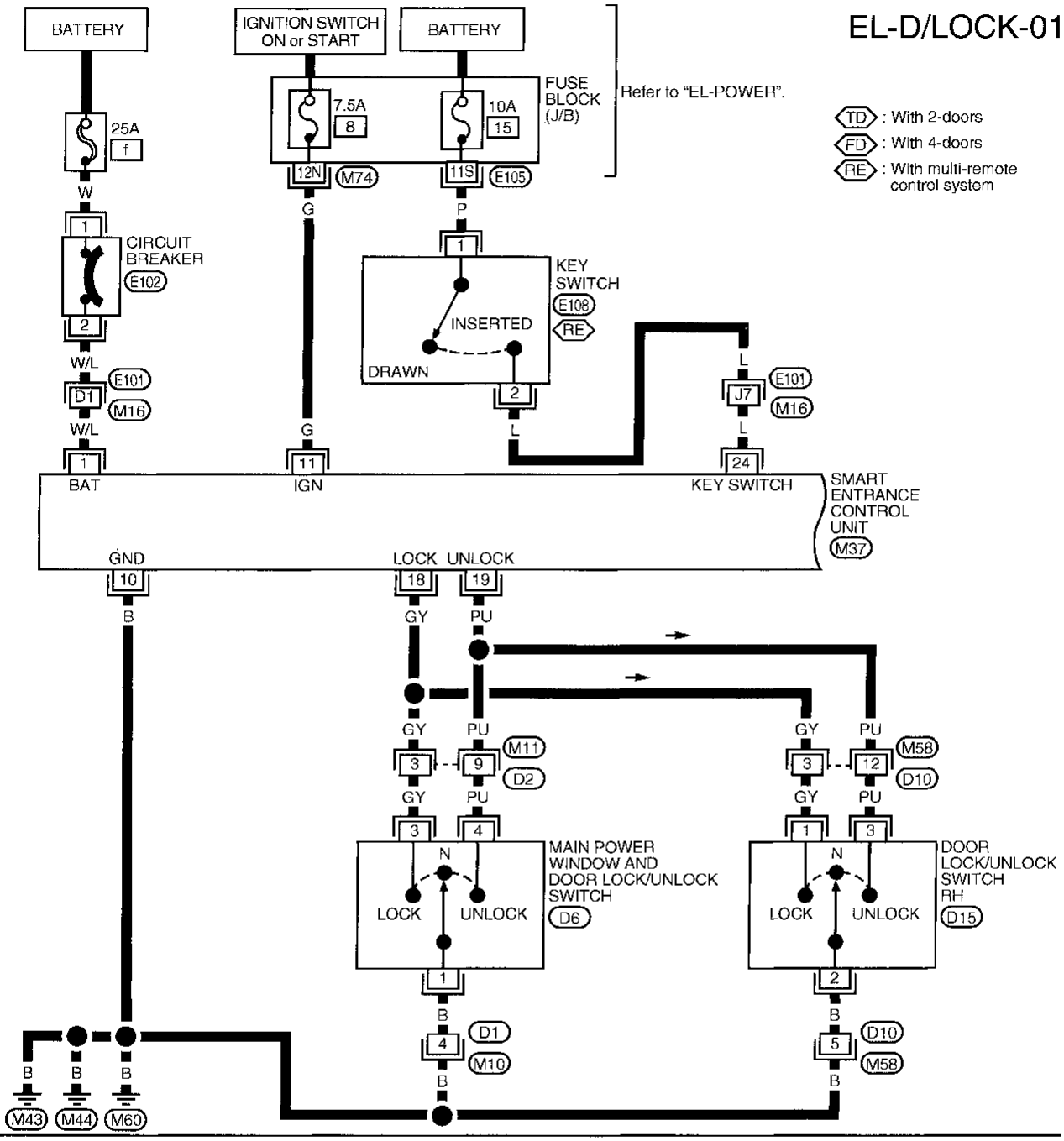


Schematic

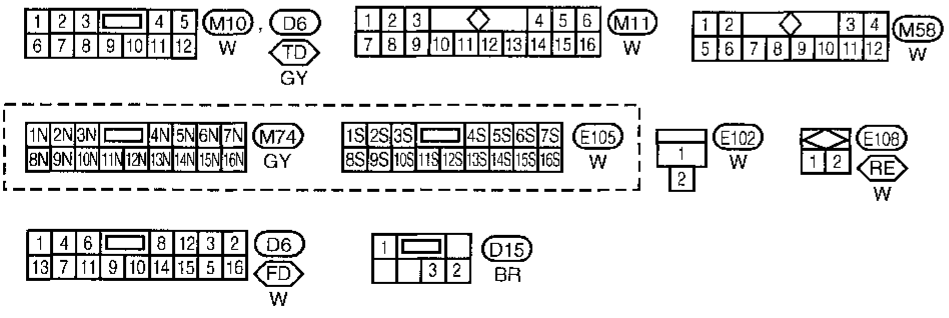


AEL215B

Wiring Diagram –D/LOCK–



Refer to last page (Foldout page).
M16 , E101
M37

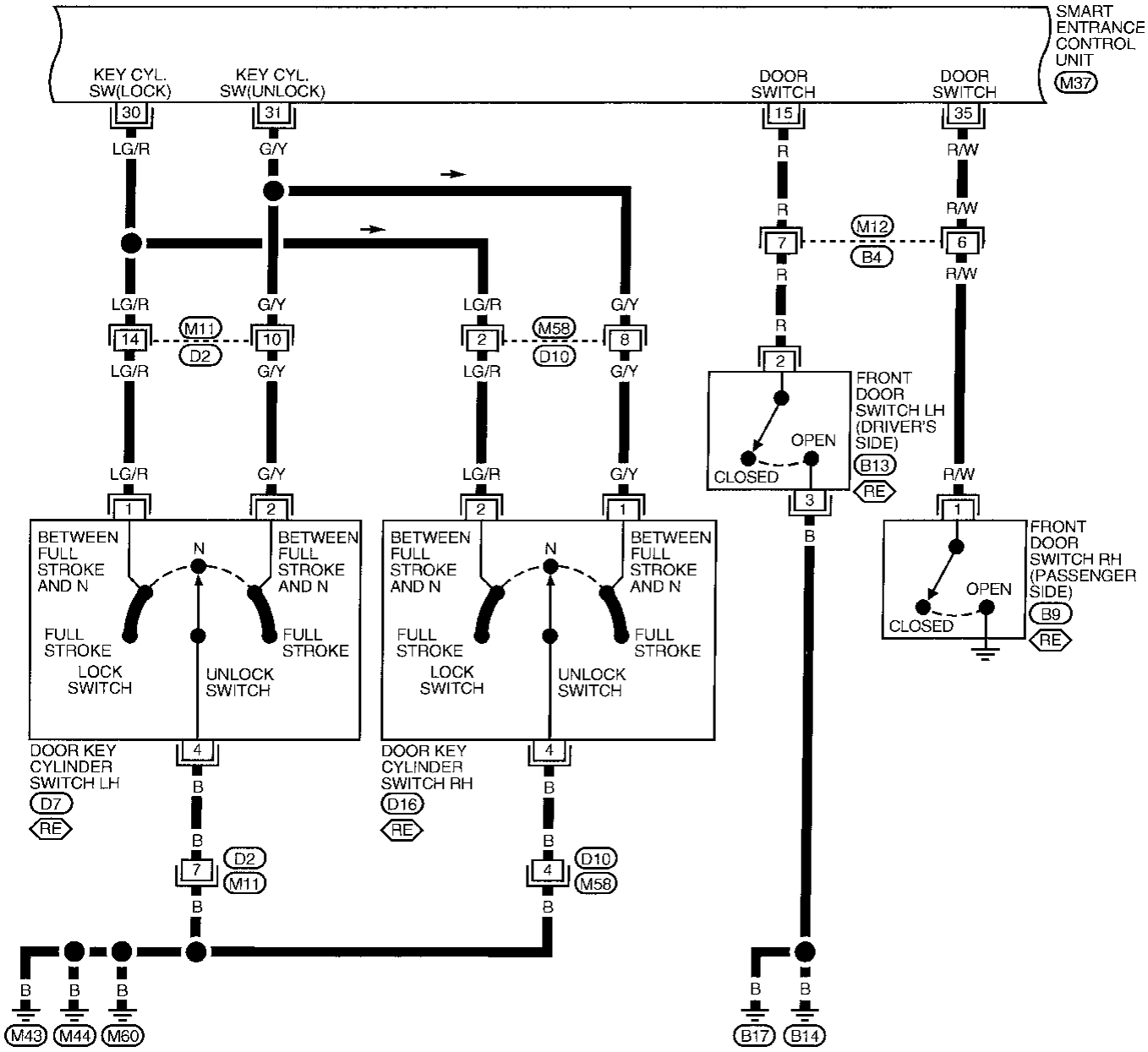


AEL216B

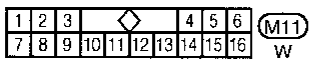
Wiring Diagram –D/LOCK– (Cont'd)

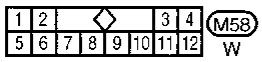
RE : With multi-remote control system

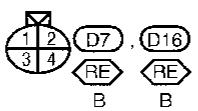
EL-D/LOCK-02

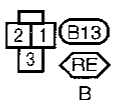


Refer to last page (Foldout page).
M37







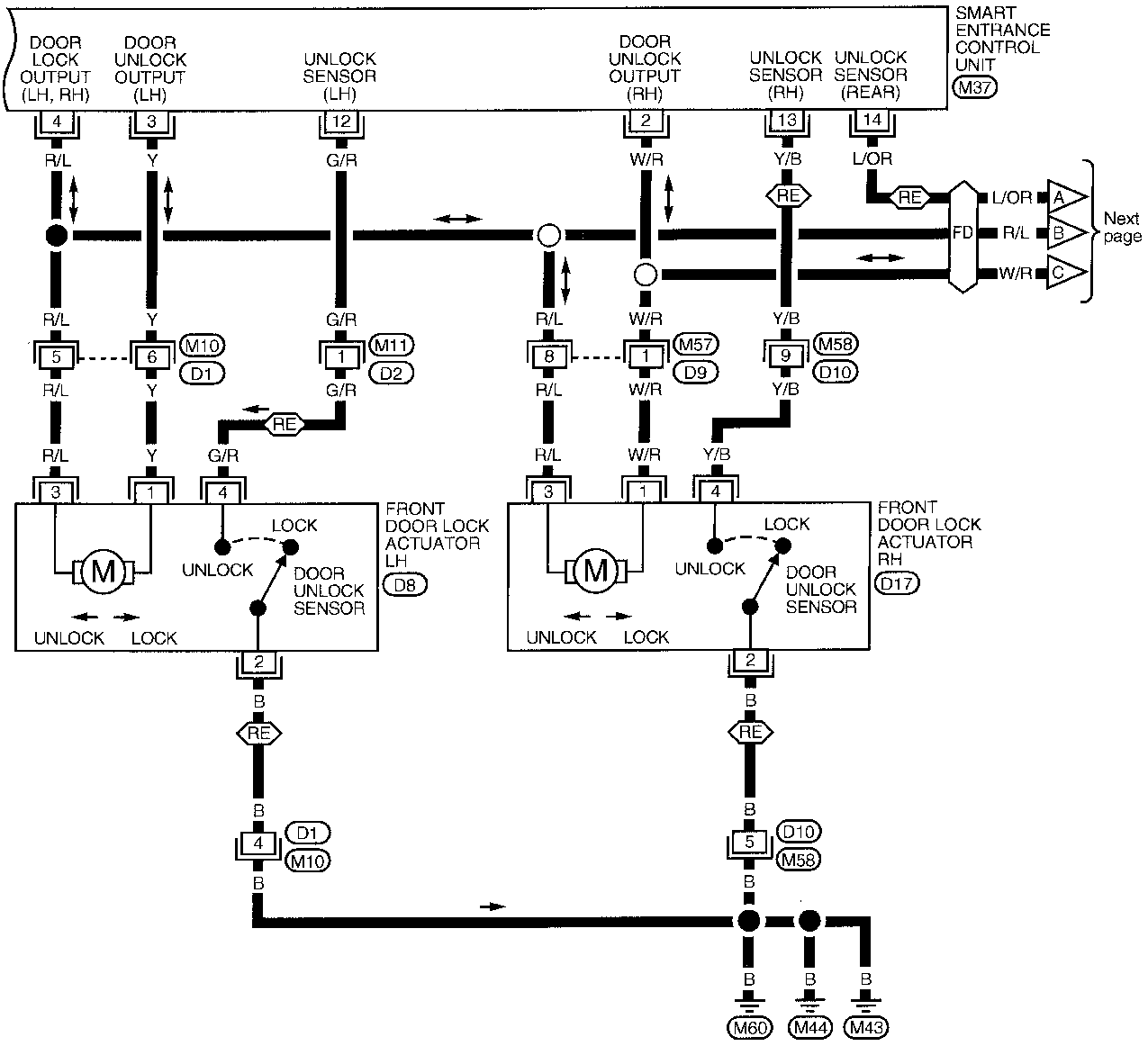


AEL558B

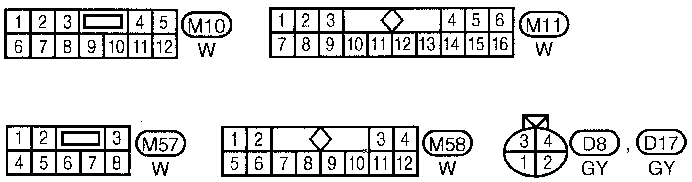
Wiring Diagram –D/LOCK– (Cont'd)

EL-D/LOCK-03

RE: With multi-remote control system
FD: With 4-doors



Refer to last page (Foldout page).
M37

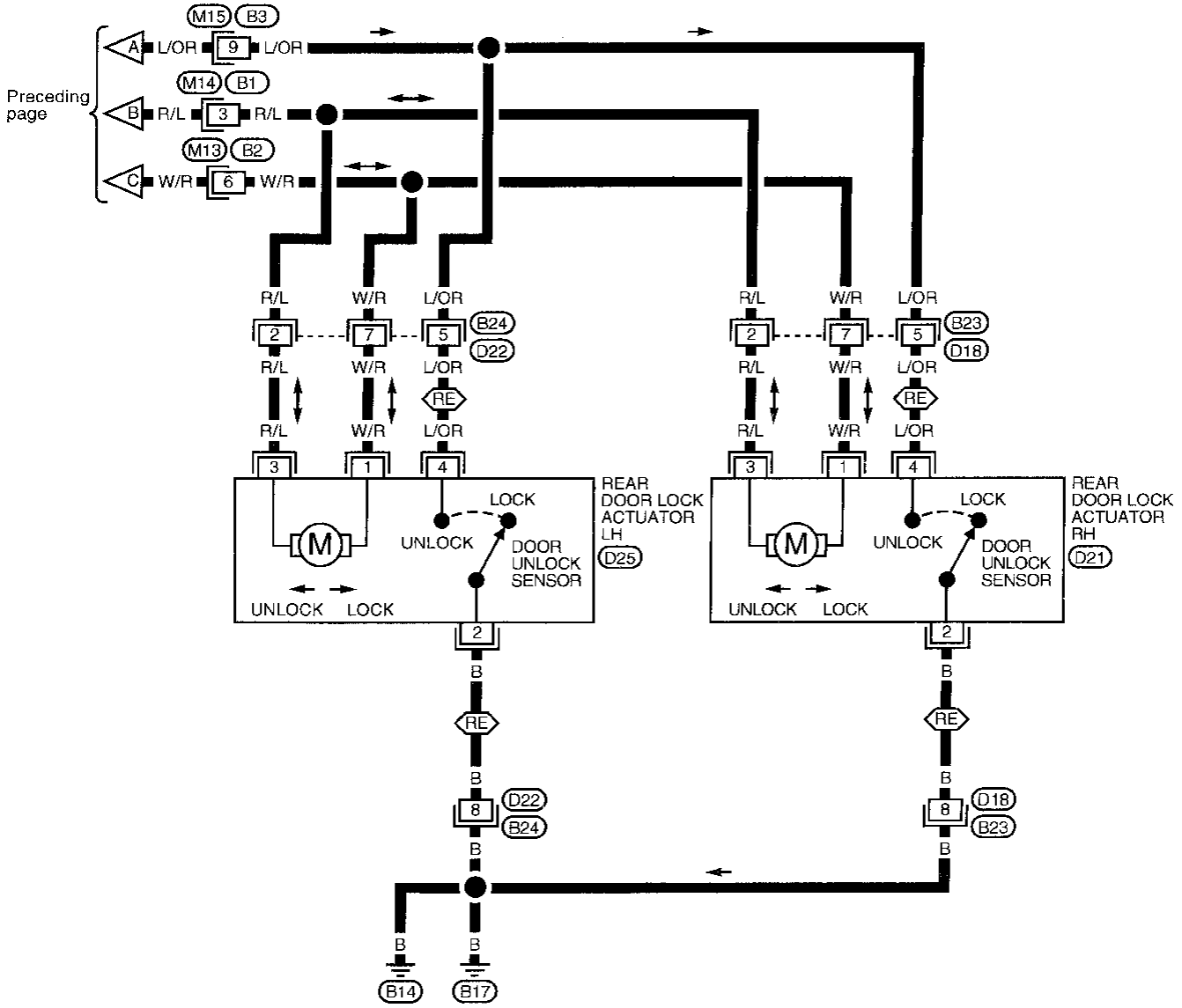


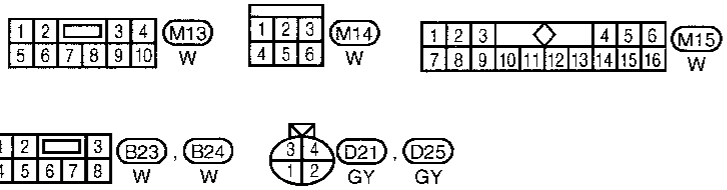
AEL559B

Wiring Diagram –D/LOCK– (Cont'd)

EL-D/LOCK-04

RE: With multi-remote control system





AEL560B

Trouble Diagnoses

SYMPTOM CHART

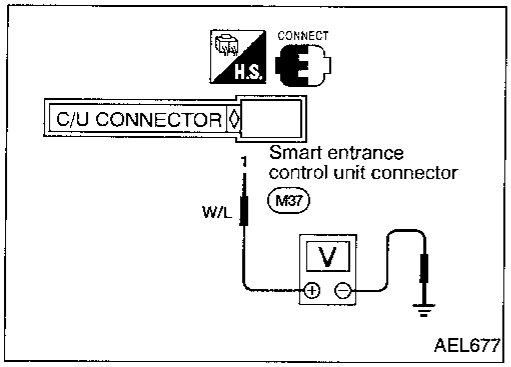
PROCEDURE	Main power supply and ground circuit check		Diagnostic procedure					
REFERENCE PAGE	EL-157	EL-157	EL-158	EL-159	EL-160	EL-161	EL-162	EL-163
SYMPTOM	Main power supply for smart entrance control unit	Ground circuit for smart entrance control unit	Procedure 1 (Front door switch check)	Procedure 2 [Key switch (insert) check]	Procedure 3 (Door lock/unlock switch check)	Procedure 4 (Front door key cylinder switch check)	Procedure 5 (Front door unlock sensor check)	Procedure 6 (Door lock actuator check)
Key reminder door system does not operate properly (with multi-remote control system).	X	X	X	X			X	X
One or more doors are not locked and/or unlocked.	X	X					X	X
Lock & unlock switch does not operate.	X	X			X			
None of the doors unlock when operating front door key cylinder switch (with multi-remote control system).	X	X				X	X	
None of the doors lock when operating front door knob lock switch (with multi-remote control system).	X	X					X	

X: Applicable

Perform "Main Power Supply and Ground Circuit Check" before starting with power door lock diagnostic procedure.

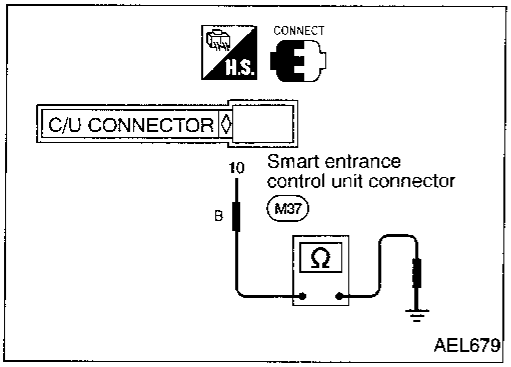
Trouble Diagnoses (Cont'd)

MAIN POWER SUPPLY AND GROUND CIRCUIT CHECK



Main power supply circuit check

Terminal		Ignition switch		
⊕	⊖	OFF	ACC	ON
①	Ground	Battery voltage	Battery voltage	Battery voltage

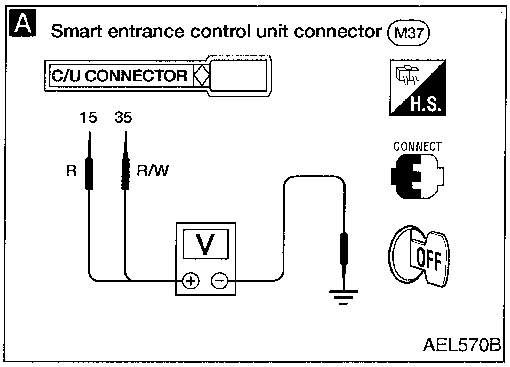


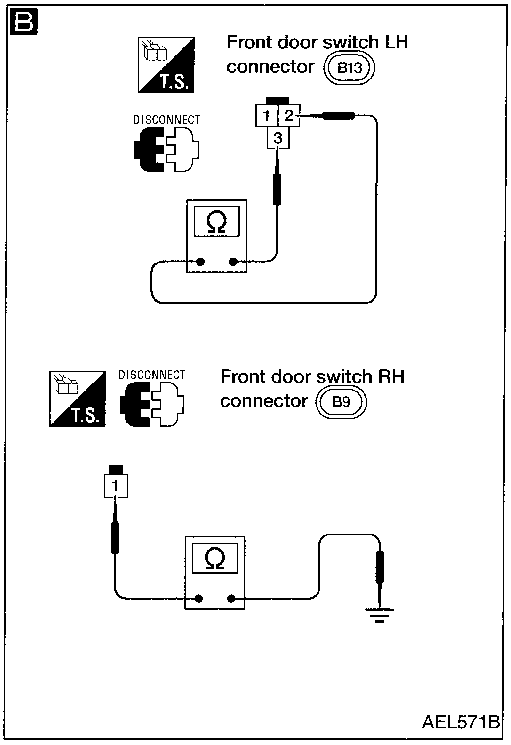
Ground circuit check

Terminals	Continuity
⑩ - Ground	Yes

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 1
(Front door switch check)





A

CHECK DOOR SWITCH INPUT SIGNAL.

Check voltage between control unit terminals ⑮ or ㉟ and ground.

	Terminals ⊕	Terminals ⊖	Condition	Voltage [V]
Door switch LH	⑮	Ground	Open	0
			Closed	Approx. 12
Door switch RH	㉟	Ground	Open	0
			Closed	Approx. 12

Refer to wiring diagram in EL-153.

OK → Door switch is OK.

NG ↓

B

CHECK DOOR SWITCH.

1. Disconnect door switch connector.
2. Check continuity between door switch terminals.

	Terminals	Condition	Continuity
Door switch LH	② - ③	Closed	No
		Open	Yes
Door switch RH	① - Ground	Closed	No
		Open	Yes

NG → Replace door switch.

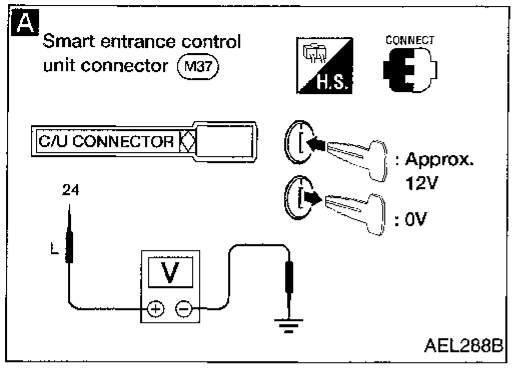
OK ↓

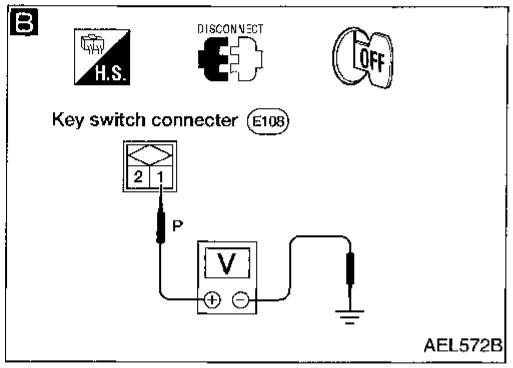
Check the following.

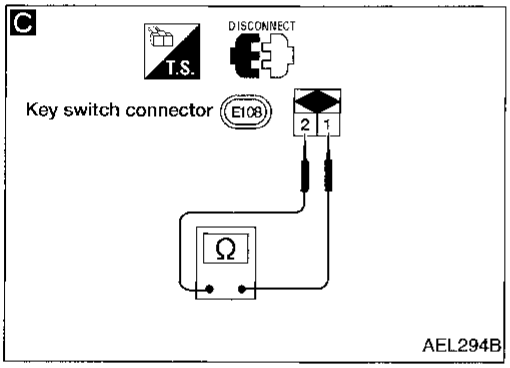
- Door switch ground circuit (LH) or door switch ground condition
- Harness for open or short between control unit and door switch

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 2
[Key switch (insert) check]







A

CHECK KEY SWITCH INPUT SIGNAL.
Check voltage between control unit terminal (24) and ground.

Condition of key switch	Voltage [V]
Key is inserted.	Approx. 12
Key is drawn.	0

Refer to wiring diagram in EL-152.

OK → Key switch (insert) is ok.

NG ↓

B

CHECK KEY SWITCH POWER SUPPLY.
1. Disconnect key switch connector.
2. Check voltage between key switch harness terminal (1) and ground.
Battery voltage should exist.

NG → Check the following.
- 10A fuse [No. 15, located in fuse block (J/B)]
- Harness for open or short between key switch and fuse

OK ↓

C

CHECK KEY SWITCH.
Check continuity between key switch terminals.

Terminals	Condition	Continuity
(1) - (2)	Key is inserted.	Yes
	Key is drawn.	No

NG → Replace key switch.

OK ↓

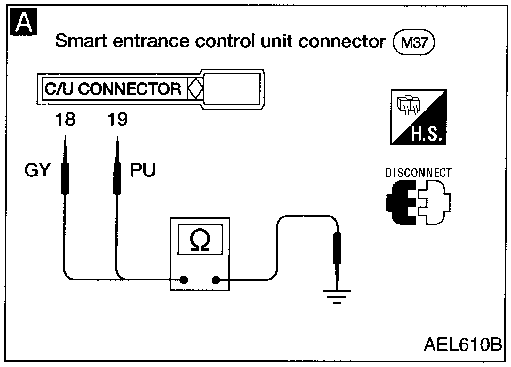
Check harness for open or short between control unit and key switch.

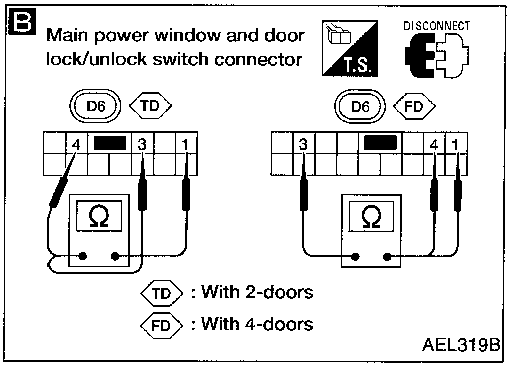
Trouble Diagnoses (Cont'd)

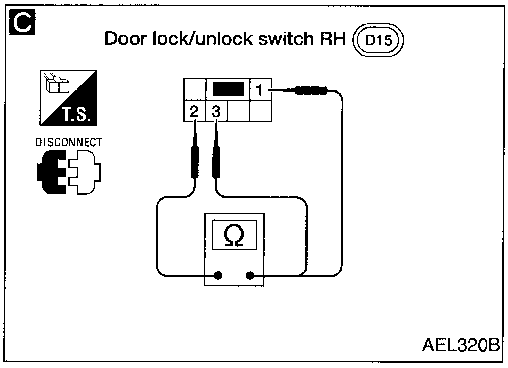
DIAGNOSTIC PROCEDURE 3

(Door lock/unlock switch check)

A







A

CHECK DOOR LOCK/UNLOCK SWITCH INPUT SIGNAL.

1. Disconnect control unit connector.
2. Check continuity between control unit terminal ⑱ or ⑲ and ground.

Terminals	Door lock/unlock switch (LH or RH) condition	Continuity
⑱ - Ground	Lock	Yes
	N and Unlock	No
⑲ - Ground	Unlock	Yes
	N and Lock	No

Refer to wiring diagram in EL-152.

OK → Door lock/unlock switch is OK.

NG ↓

B C

CHECK DOOR LOCK/UNLOCK SWITCH.

1. Disconnect main power window and door lock/unlock switch or door lock/unlock switch RH connector.
2. Check continuity between main power window and door lock/unlock switch or door lock/unlock switch RH terminals.

NG → Replace main power window and door lock/unlock switch or door lock/unlock switch RH.

B Driver side

Condition	Terminals ①	③	④
Unlock	○		○
N	No continuity		
Lock	○	○	

C Passenger side

Condition	Terminals ①	②	③
Unlock		○	○
N	No continuity		
Lock	○	○	

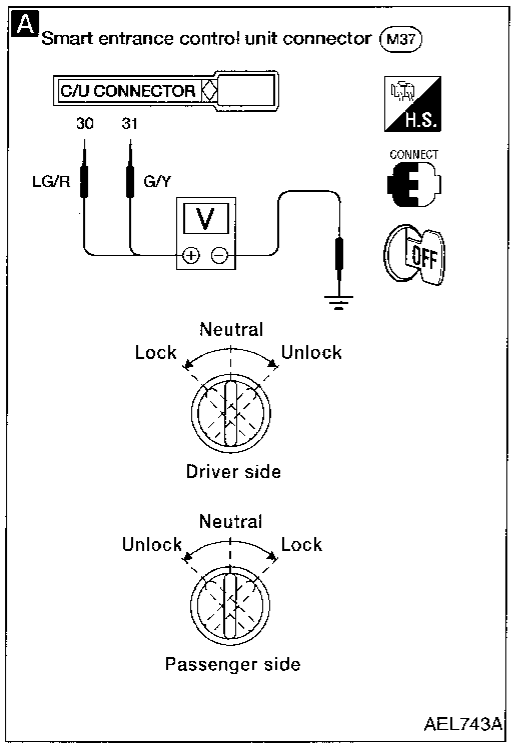
OK ↓

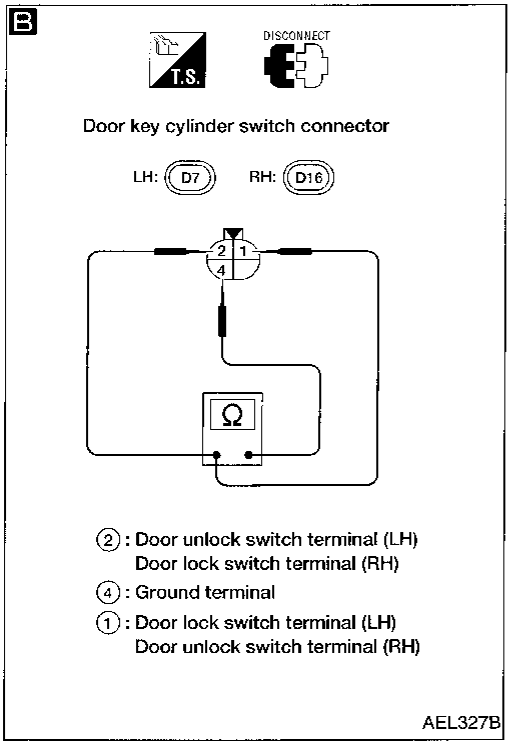
Check the following.

- Ground circuit for door lock/unlock switch
- Harness for open or short between door lock/unlock switch and control unit connector

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 4
(Front door key cylinder switch check)





② : Door unlock switch terminal (LH)
Door lock switch terminal (RH)
④ : Ground terminal
① : Door lock switch terminal (LH)
Door unlock switch terminal (RH)

A

CHECK DOOR KEY CYLINDER SWITCH INPUT SIGNAL (LOCK/UNLOCK SIGNAL).

Check voltage between control unit terminals ㉚, ㉛ and ground.

Terminals ⊕	Terminals ⊖	Key position	Voltage [V]
㉛	Ground	Neutral	Approx. 12
		Unlock	0
㉚	Ground	Neutral	Approx. 12
		Lock	0

Refer to wiring diagram in EL-153.

OK → Door key cylinder switch is OK.

NG ↓

B

CHECK DOOR KEY CYLINDER SWITCH.

1. Disconnect door key cylinder switch connector.
2. Check continuity between door key cylinder switch terminals.

Terminals	Key position	Continuity
LH: ① - ④	Neutral	No
RH: ② - ④	Lock	Yes
LH: ② - ④	Neutral	No
RH: ① - ④	Lock	Yes

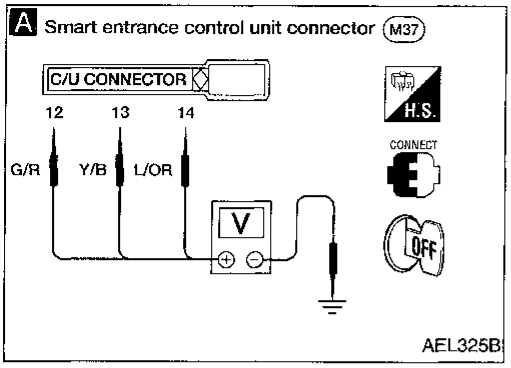
NG → Replace door key cylinder switch.

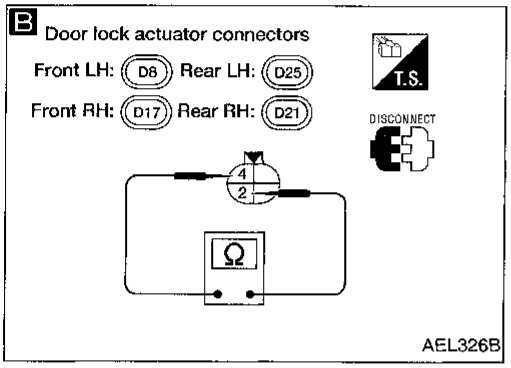
OK ↓

Check the following.
- Door key cylinder switch ground circuit
- Harness for open or short between control unit and door key cylinder switch

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 5
(Front door unlock sensor check)





A

CHECK DOOR UNLOCK SENSOR INPUT SIGNAL.

Check voltage between control unit terminals ⑫, ⑬, ⑭ and ground.

	Terminals ⊕	Terminals ⊖	Condition	Voltage [V]
LH door	⑫	Ground	Locked	Approx. 12
			Unlocked	0
RH door	⑬	Ground	Locked	Approx. 12
			Unlocked	0
Rear doors	⑭	Ground	Locked	Approx. 12
			Unlocked	0

Refer to wiring diagram in EL-154 or 155.

OK → Door unlock sensor is OK.

NG ↓

B

CHECK DOOR UNLOCK SENSOR.

1. Disconnect door unlock sensor connector.
2. Check continuity between door unlock sensor terminals.

Terminals	Condition	Continuity
④ - ②	Locked	No
	Unlocked	Yes

NG → Replace door unlock sensor.

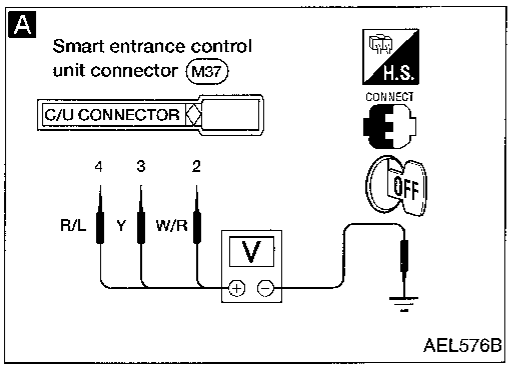
OK ↓

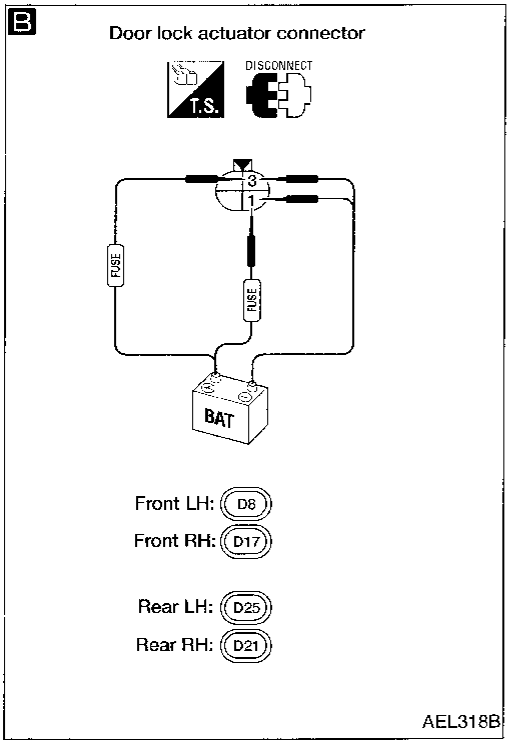
Check the following.
- Door unlock sensor ground circuit
- Harness for open or short between control unit and door unlock sensor

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 6

(Door lock actuator check)





A B

CHECK DOOR LOCK ACTUATOR OUTPUT.

Check voltage for door lock actuator.

A

Door lock/unlock switch condition	Terminals ⊕	Terminals ⊖	Voltage (V)
Lock	④	Ground	Battery voltage
Unlock	③, ②	Ground	

Refer to wiring diagram in EL-154 or EL-155.

NG → Replace smart entrance control unit. (Before replacing control unit, perform other procedures following SYMPTOM CHART.)

OK ↓

C

CHECK DOOR LOCK ACTUATOR.

1. Disconnect door lock actuator connector.
2. Apply 12V direct current to door lock actuator and check operation.

Door lock actuator operation	Terminals ⊕	Terminals ⊖
Unlocked → Locked	③	①
Locked → Unlocked	①	③

NG → Replace door lock actuator.

OK ↓

Check harness for open or short between control unit connector and door lock actuator.

NOTES

System Description

Power is supplied at all times:
- from 25A fusible link (letter [f], located in the fuse and fusible link box)
- to circuit breaker terminal ①
- through circuit breaker terminal ②
- to smart entrance control unit terminal ①.

Power is supplied at all times:
- from 10A fuse (No. [15], located in the fuse block [J/B])
- to interior lamp terminal ① and
- to key switch terminal ①.

Power is supplied at all times:
- from 10A fuse (No. [20], located in the fuse block [J/B])
- to multi-remote control relay-1 terminal ①
- to multi-remote control relay-1 terminal ⑥
- to multi-remote control relay-1 terminal ③
- to multi-remote control relay-2 terminal ①.

With the ignition switch in the ACC or ON position, power is supplied:
- from 15A fuse (No. [10], located in the fuse block [J/B])
- to smart entrance control unit terminal ⑰.

With the ignition switch in the ON or START position, power is supplied:
- from 7.5A fuse (No. [8], located in the fuse block [J/B])
- to smart entrance control unit terminal ⑪.

Terminal ⑩ of the smart entrance control unit is grounded through body grounds (M43), (M44) and (M60).

INPUTS

When the key switch is ON (ignition key is inserted in key cylinder), power is supplied:
- through key switch terminal ②
- to smart entrance control unit terminal ㉔.

When any door switch is OPEN, ground is supplied:
- to smart entrance control unit terminals ⑮, ⑯ and ㉟
- through front door switch LH terminal ②
- through any other door switch terminal ①.

When the front door lock actuator LH (door unlock sensor) is UNLOCKED, ground is supplied:
- to smart entrance control unit terminal ⑫
- through front door lock actuator LH (door unlock sensor) terminal ④
- to front door lock actuator LH (door unlock sensor) terminal ②
- through body grounds (M43), (M44) and (M60).

When the front door lock actuator RH (door unlock sensor) is UNLOCKED, ground is supplied:
- to smart entrance control unit terminal ⑬
- through front door lock actuator RH (door unlock sensor) terminal ④
- to front door lock actuator RH (door unlock sensor) terminal ②
- through body grounds (M43), (M44) and (M60).

When either rear door lock actuator (door unlock sensor) is UNLOCKED, ground is supplied:
- to smart entrance control unit terminal ⑭
- through either rear door lock actuator (door unlock sensor) terminal ④
- to either rear door lock actuator (door unlock sensor) terminal ②
- through body grounds (B14) and (B17).

Remote controller signal input:
- through internal antenna.

System Description (Cont'd)

The multi-remote control system controls operation of the:
- power door lock
- interior lamp
- panic alarm
- hazard lamp
- ID code entry.

OPERATING PROCEDURE

Power door lock operation

When the following input signals are both supplied:
- key switch OFF (when ignition key is not inserted in key cylinder);
- door switches CLOSED (when all the doors are closed).

The above two signals are already input into the smart entrance control unit. At this point, smart entrance control unit receives a LOCK signal from the remote controller. The smart entrance control unit locks all doors with input of the LOCK signal from the remote controller.
And then ground is supplied:
- to multi-remote control relay-1 and -2 terminal ②
- through smart entrance control unit terminal ⑦.

Multi-remote control relay-1 and -2 are now energized, and the hazard warning lamps flash twice as a reminder—**HAZARD REMINDER**. For detailed description, refer to "TURN SIGNAL AND HAZARD WARNING LAMPS", EL-60.
When an UNLOCK signal is sent from the remote controller once, the driver's door will be unlocked. Then, if an UNLOCK signal is sent from the remote controller again within 5 seconds, the passenger doors will be unlocked.
To deactivate the horn chirp when using the remote controller, press both unlock and lock buttons for two seconds. With the horn deactivated, the exterior lights do not flash when the unlock button is pressed. To activate the horn chirp, press both unlock and lock buttons for two seconds.

Interior lamp operation

When the following input signals are both supplied:
- key switch OFF (when ignition key is not inserted in key cylinder);
- door switches CLOSED (when all the doors are closed); multi-remote control system turns on interior lamp (for 30 seconds) with input of UNLOCK signal from remote controller. For detailed description, refer to "System Description", "INTERIOR AND TRUNK ROOM LAMPS", EL-68.

Panic alarm operation

When key switch is OFF (when ignition key is not inserted in key cylinder), the multi-remote control system turns on and off horn and headlamps intermittently with the input of a PANIC ALARM signal from the remote controller.
For detailed description, refer to "System Description", "THEFT WARNING SYSTEM", EL-180.

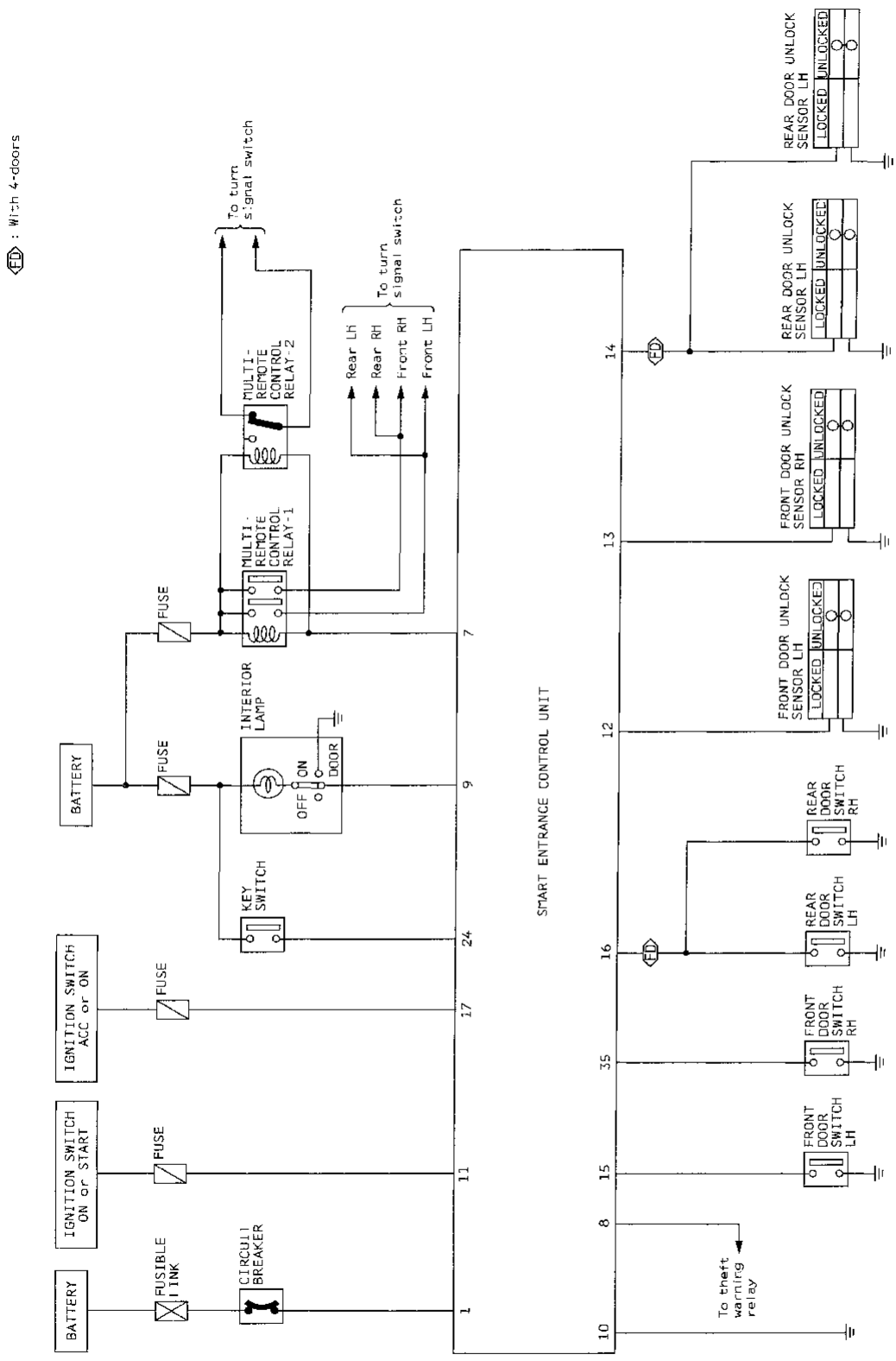
Hazard lamp operation

When the following input signals are all supplied:
- key switch OFF (when ignition key is not inserted in key cylinder);
- door switches CLOSED (when all the doors are closed)
- door lock actuator (door unlock sensor) LOCKED (when all the doors are locked);

multi-remote control system outputs the following ground signals with input of LOCK signal from remote controller:
- to multi-remote control relay-1 terminal ②
- to multi-remote control relay-2 terminal ②
- through smart entrance control unit terminal ⑦.

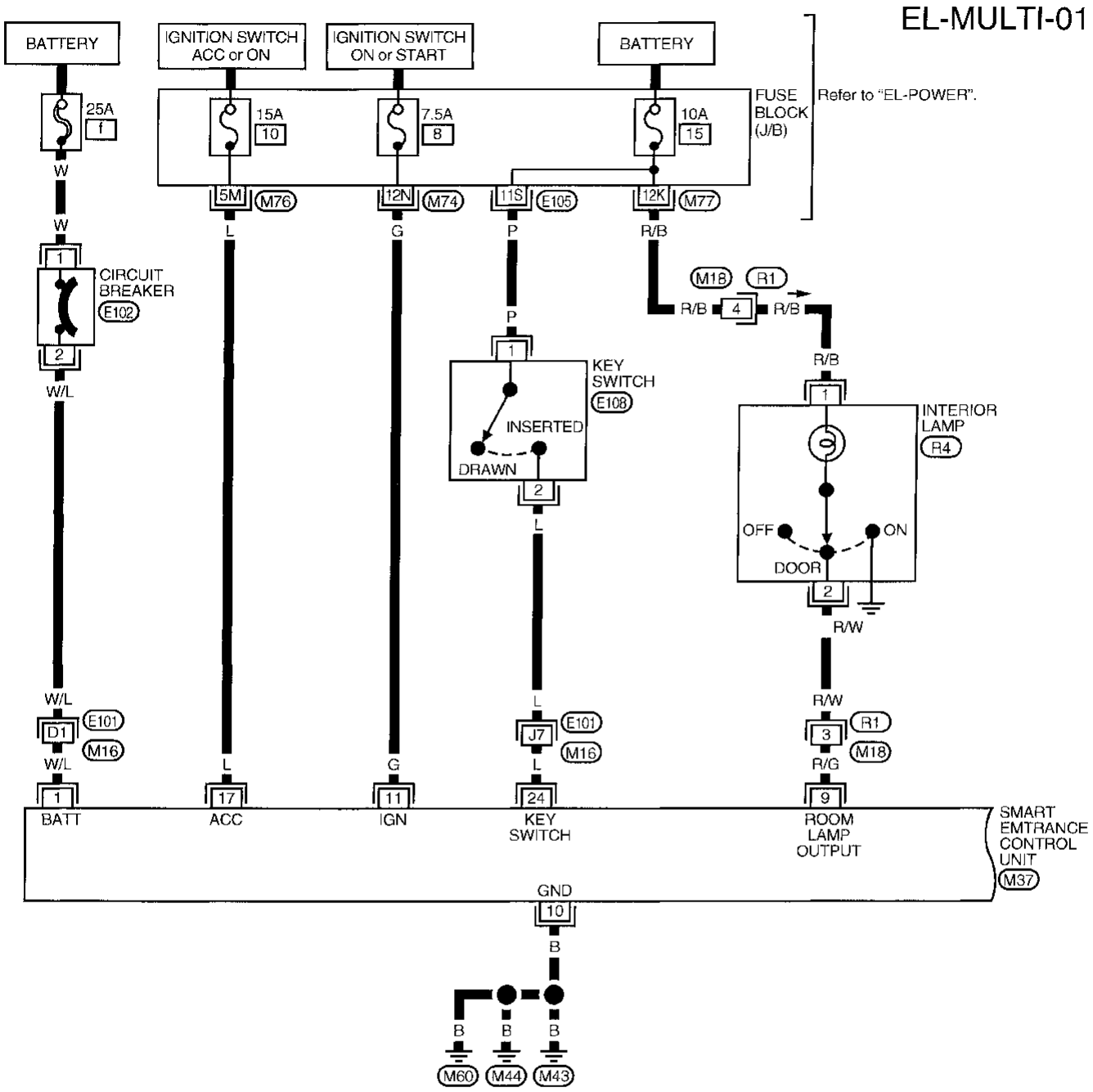
As a result, multi-remote control relay-1 and multi-remote control relay-2 are energized and hazard warning lamps flash on and off.
For detailed description refer to "System Description", "TURN SIGNAL AND HAZARD WARNING LAMPS", EL-60.

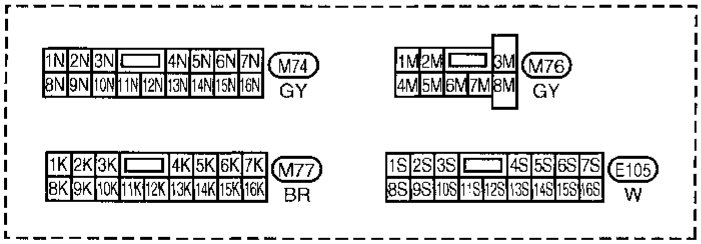
Schematic

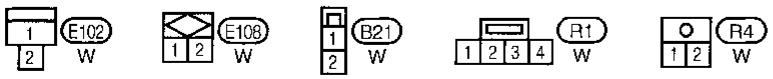


AEL615B

Wiring Diagram –MULTI–







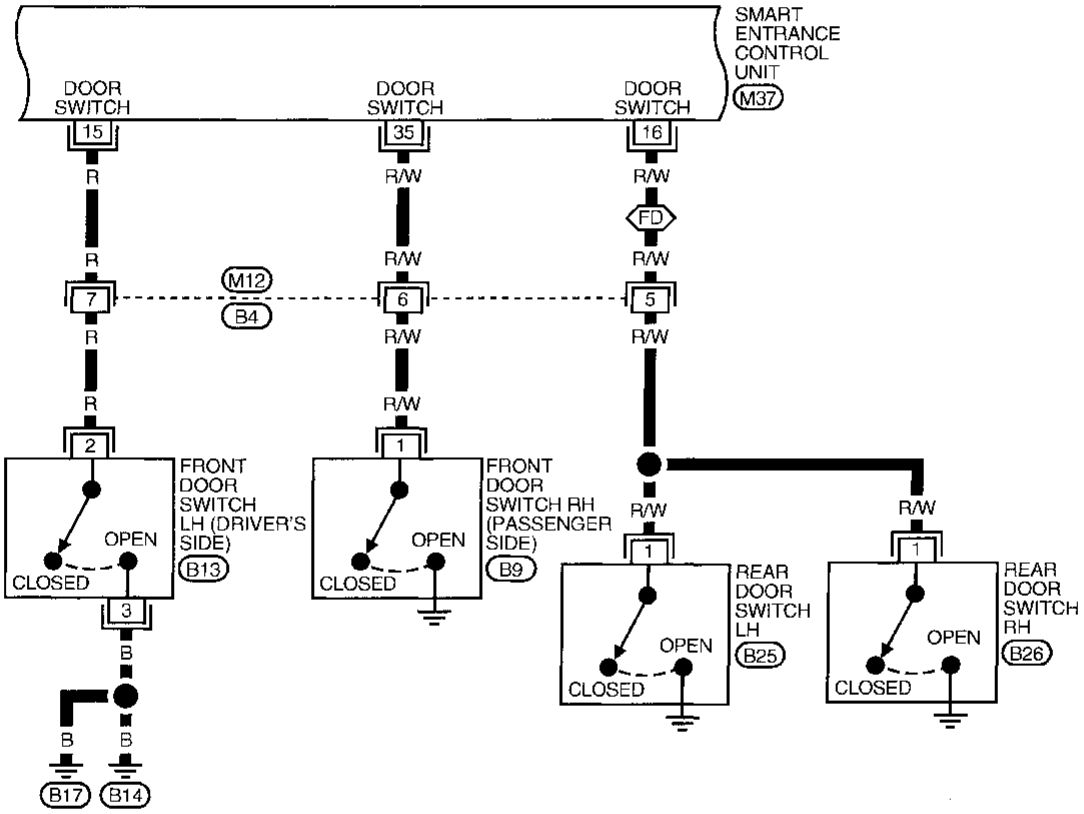
Refer to last page (Foldout page).
M16, E101
M37

AEL252B

Wiring Diagram –MULTI– (Cont'd)

EL-MULTI-02

FD : With 4-doors



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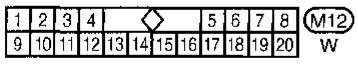
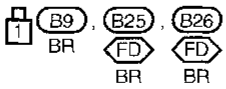
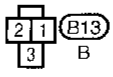
M37



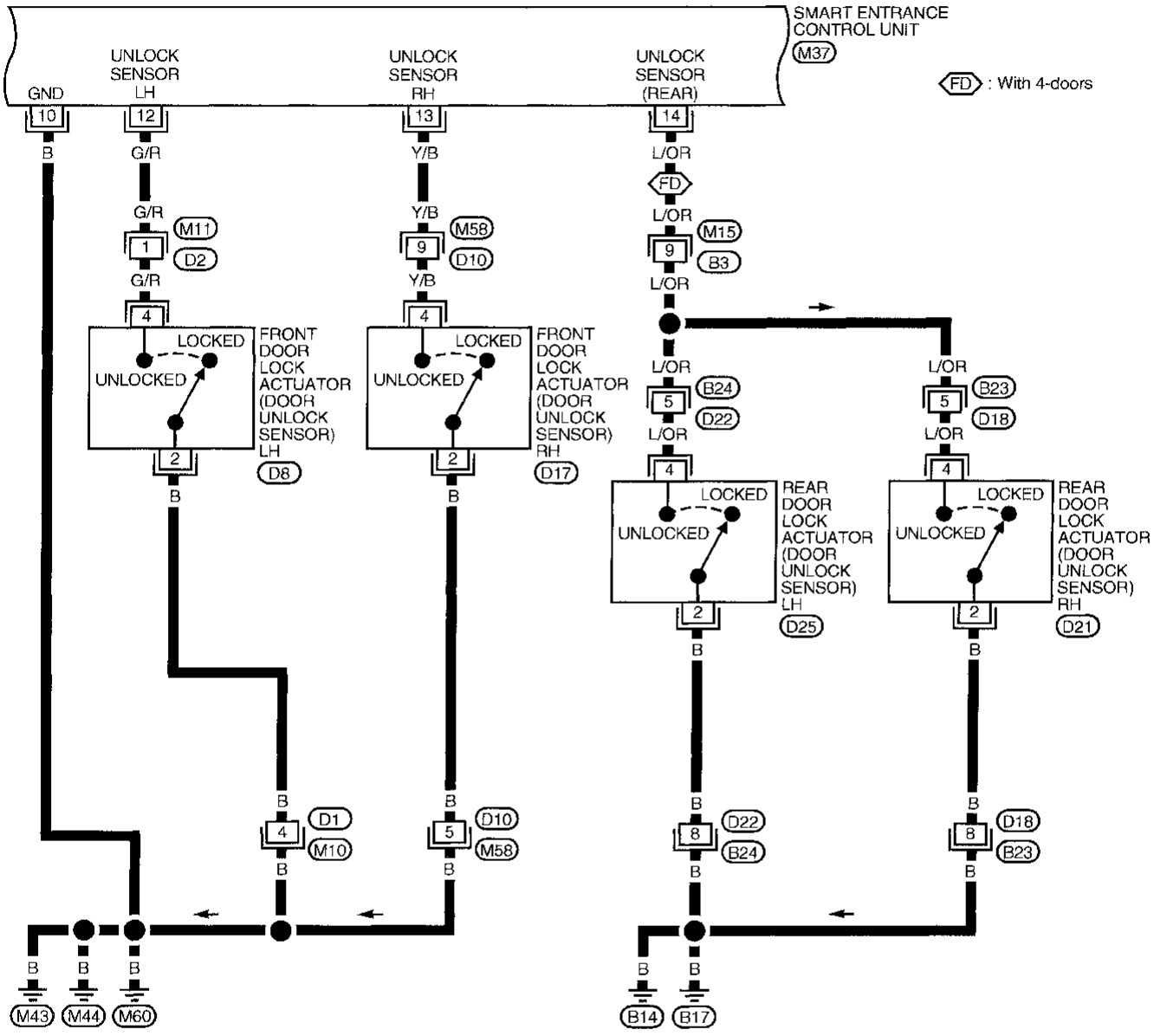




AEL616B

Wiring Diagram –MULTI– (Cont'd)

EL-MULTI-03



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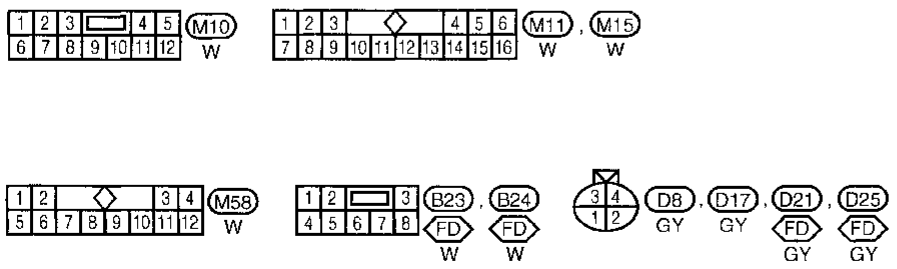
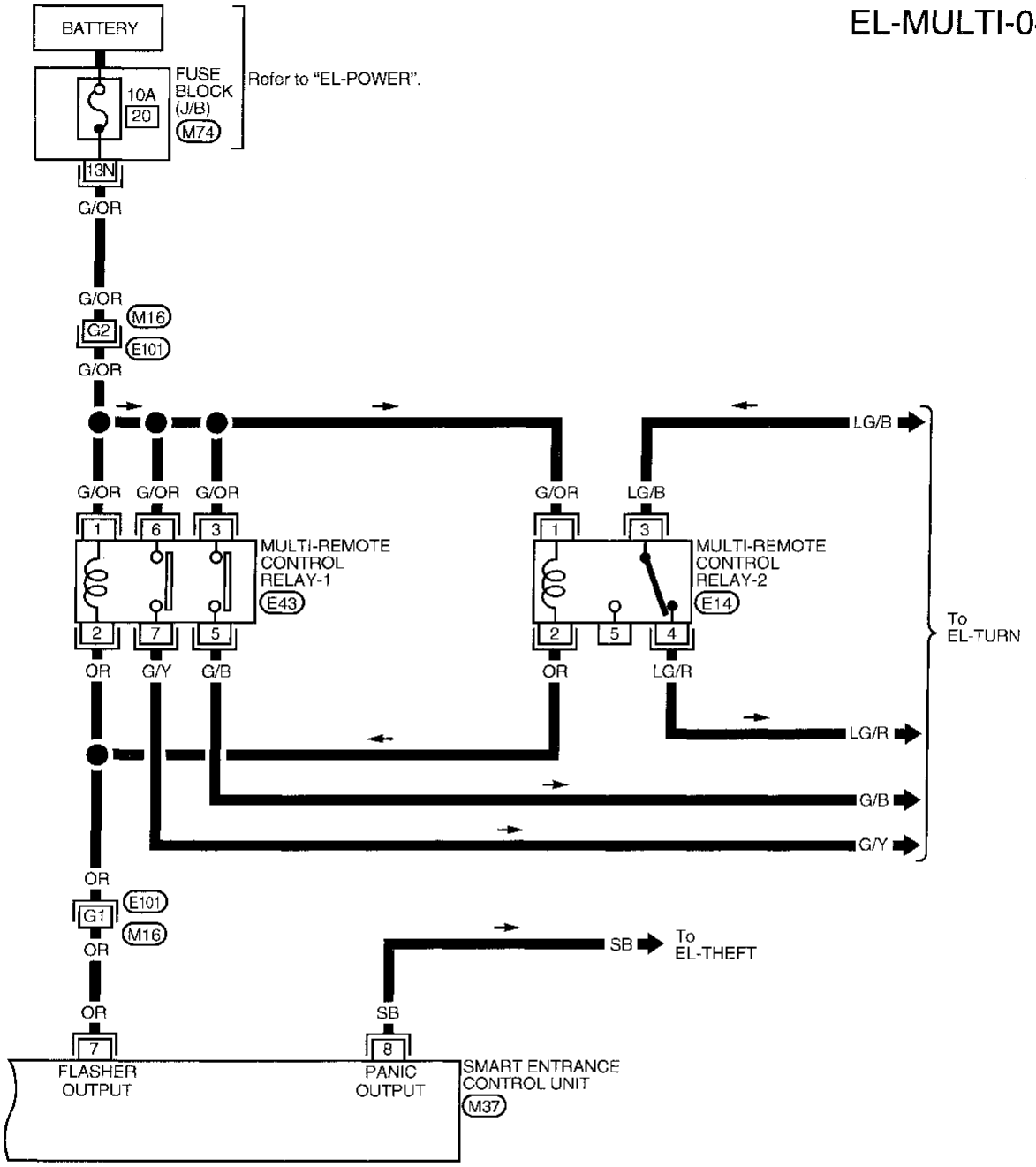
M37

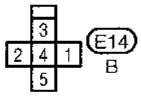


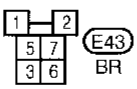
AEL617B

Wiring Diagram –MULTI– (Cont'd)

EL-MULTI-04







Refer to last page (Foldout page).
M16, E101
M37

AEL255B

Trouble Diagnoses

TROUBLE SYMPTOM

- All functions of remote control system do not operate.

CHECK REMOTE CONTROLLER BATTERY.
Refer to DIAGNOSTIC PROCEDURE 1.
→ NG → Replace battery.
↓ OK
Enter the Identity (ID) code of different or new remote controller.
↓ OK
Can the new ID code be entered?
→ No → Go to DIAGNOSTIC PROCEDURE 2.
↓ Yes
Replace with the originally used multi-remote controller.

- Some functions of multi-remote controller do not operate.

① DOOR LOCK OR UNLOCK DOES NOT FUNCTION.
(Pressing lock or unlock button of remote controller normally locks or unlocks all doors.)
- Check if power door lock system functions with door lock & unlock switch.

→ No → Check "POWER DOOR LOCK" system.

OR

② INTERIOR LAMP DOES NOT TURN ON FOR 30 SECONDS WHEN PRESSING UNLOCK BUTTON OF REMOTE CONTROLLER.
- Check if the interior lamp switch is in the "door" position, the lamp illuminates when a door is open.

If check is OK, Go to DIAGNOSTIC PROCEDURE 3.

→ No → Check "Interior lamp" circuit.

OR

③ HAZARD INDICATOR DOES NOT FLASH TWICE WHEN PRESSING LOCK BUTTON OF REMOTE CONTROLLER.
- Check if hazard indicator flashes with hazard switch.

If check is OK, Go to DIAGNOSTIC PROCEDURE 4.

→ No → Check "Hazard indicator lamp" circuit .

OR

④ PANIC ALARM (HORN AND HEADLAMP) DOES NOT ACTIVATE WHEN PANIC ALARM BUTTON IS CONTINUOUSLY PRESSED FOR MORE THAN 1 SECONDS.
- Check if horn and headlamps activate when test is conducted as follows:
  1. Open the driver's window.
  2. Close all doors.
  3. Lock doors with door key inserted into key cylinder.
  4. Wait for about 30 seconds to make sure that the lighted "SECURITY" warning lamp begins to blink.
  5. Manually unlock with driver's door lock knob, then panic alarm should activate. (The alarm will stop when door is locked and unlocked with the key.)

→ No → Check "THEFT WARNING" system.

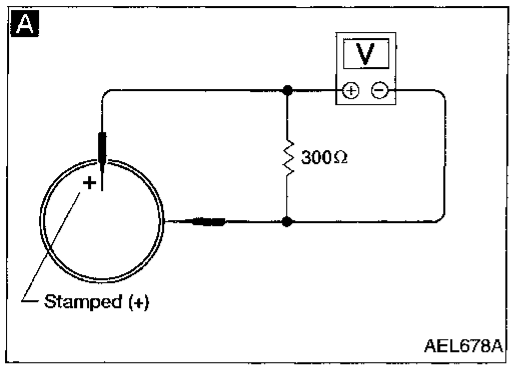
↓ Yes
Enter the identity (ID) code of different or new remote controller and recheck operation to see if the same trouble as indicated above occurs.
→ Yes → Check multi-remote controller operation again.
If necessary, replace smart entrance control unit.
↓ No
Replace the multi-remote controller.

Note:
- **The unlock and panic alarm operation of the multi-remote control system does not activate with the ignition key inserted in the ignition key cylinder.**
- **The lock operation of the multi-remote control system does not activate with the key inserted in the ignition key cylinder.**

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 1

Check remote controller battery.



A

CHECK REMOTE CONTROLLER BATTERY.

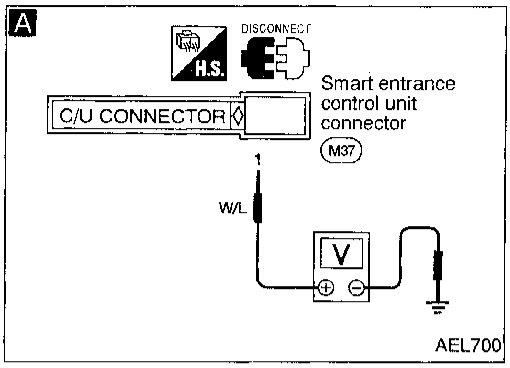
Remove battery and measure voltage across battery positive and negative terminals ⊕ and ⊖.

Measuring terminal		Standard value
⊕	⊖	
Battery positive terminal ⊕	Battery negative terminal ⊖	2.5 - 3.0V

Note:
Remote controller does not function if battery is not set correctly.

Trouble Diagnoses (Cont'd)

A



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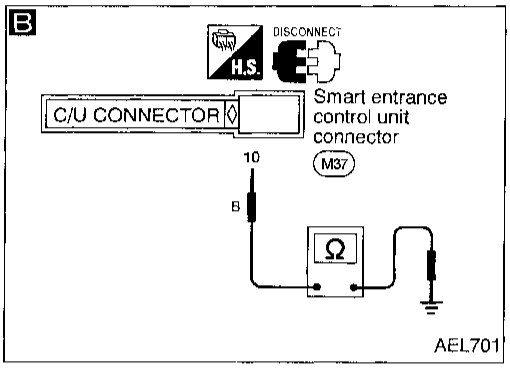

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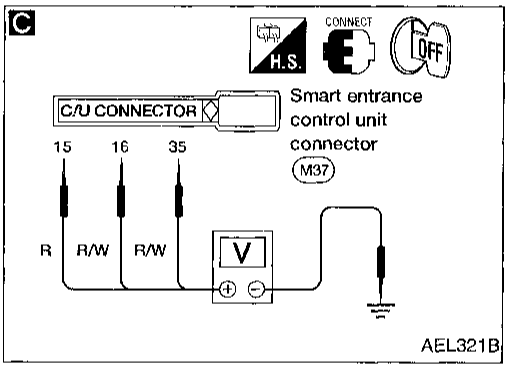

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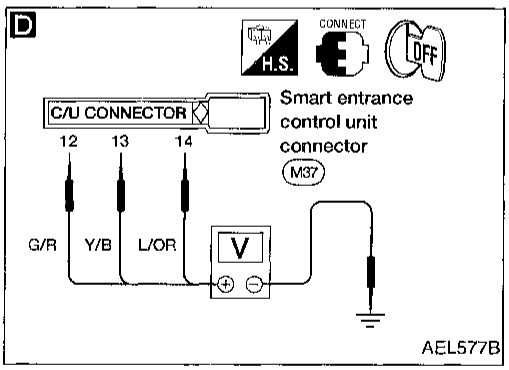


DIAGNOSTIC PROCEDURE 2

All remote controls do not function even if remote controller is operated properly.

A

CHECK MAIN POWER SUPPLY AND GROUND CIRCUIT.

1. Remove key from ignition.
2. Disconnect connector from control unit. Check voltage between control unit terminal ① and GND.
   Battery voltage should exist.
   Refer to wiring diagram, EL-168.

NG → Check the following.
- 25A fusible link (Letter f, located in fuse and fusible link box)
- circuit breaker
- Harness for open or short

OK ↓

B

CHECK GROUND CONTINUITY.

Check continuity between terminal ⑩ and GND.
Continuity should exist.
Refer to wiring diagram, EL-168.

NG → Check GND harness.

OK ↓

C

CHECK DOOR SWITCH CIRCUIT.

Check voltage between control unit terminals ⑮, ⑯, ㉟ and GND.

	Terminals ⊕	Terminals ⊖	Condition	Voltage [V]
Front LH door	⑮	GND	Open	0
Front RH door	㉟	GND	Open	0
Rear doors	(⑯)	GND	Open	0
All door switches	⑮, (⑯) ㉟	GND	Closed	Approx. 12

Terminal numbers in ( ) are for models with 4-doors
Refer to wiring diagram, EL-169.

NG → Check the following:
- Door switch
- Door switch case ground condition
- Harness for open or short

OK ↓

D

CHECK UNLOCK SENSOR CIRCUIT.

Check voltage between control unit terminal ⑫, ⑬, ⑭ and GND.

	Terminals ⊕	Terminals ⊖	Condition	Voltage [V]
Front LH door	⑫	GND	Unlock	0
			Lock	Approx. 12
Front RH door	⑬	GND	Unlock	0
			Lock	Approx. 12
Rear doors	⑭	GND	Unlock	0
			Lock	Approx. 12

Refer to wiring diagram, EL-170.

NG → Check the following:
- Door unlock sensor
- Door unlock sensor ground circuit
- Harness for open or short

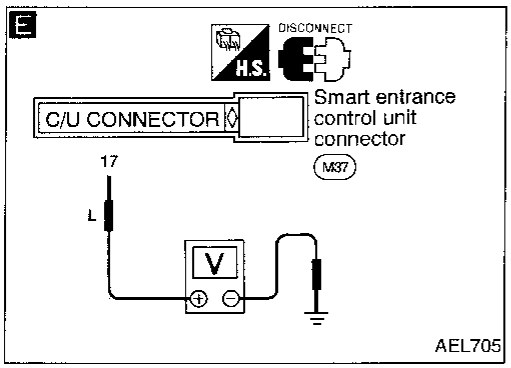
OK ↓

Ⓐ

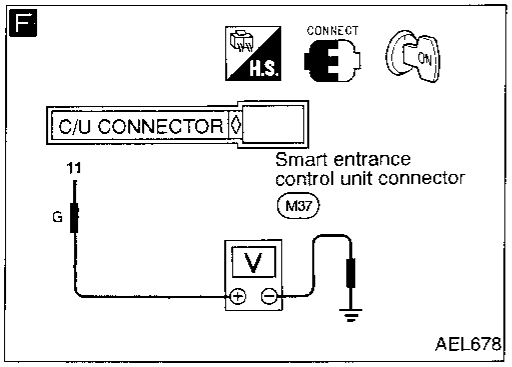
(Go to next page.)

Trouble Diagnoses (Cont'd)

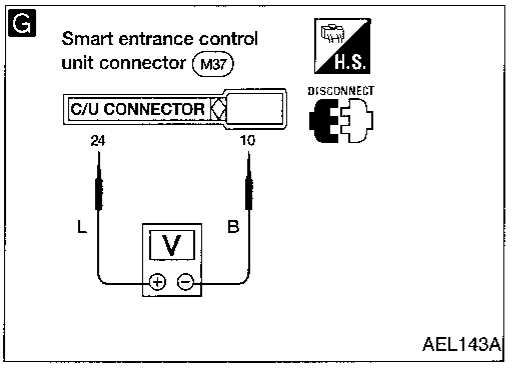
E



F



G



Ⓐ

E

CHECK IGNITION SWITCH ACC CIRCUIT.
Check voltage between control unit terminal ⑰ and GND while ignition switch is in ACC position.
Does battery voltage exist?
Refer to wiring diagram, EL-168.

No → Check the following.
- 15A fuse [No. 10, located in the fuse block (J/B)]
- Harness for open or short

OK ↓

F

CHECK IGNITION SWITCH ON OR START CIRCUIT.
Check voltage between control unit terminal ⑪ and ground while ignition switch is in ON or START position.
Battery voltage exist should exist.
Refer to wiring diagram, EL-168.

NG → Check the following.
- 7.5A fuse [No. 8, located in fuse block (J/B)]
- Harness for open or short between control unit and fuse

OK ↓

G

KEY SWITCH INPUT SIGNAL CHECK.
Check voltage between control unit terminal ㉔ and ⑩.

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

Refer to wiring diagram, EL-168.

NG → Check the following:
- 10A fuse (No. 15, located in fuse block [J/B])
- Key switch
- Harness for open or short

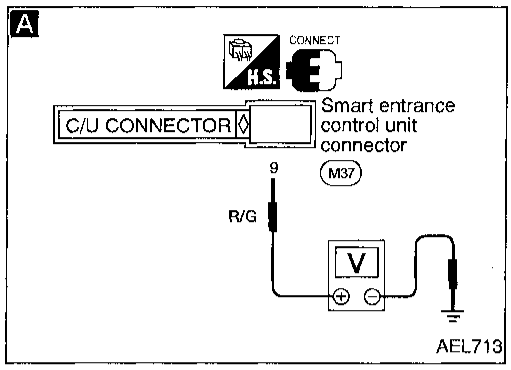
OK ↓

Check operation parts in multi-remote control system for function.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 3

Interior lamp does not turn on for 30 seconds when pressing unlock button of remote controller. Everything else functions.



A

CHECK INTERIOR LAMP CIRCUIT.
When interior lamp switch is in DOOR position, check voltage across control unit terminal (9) and GND.
Does battery voltage exist?
Refer to wiring diagram, EL-168.

No → Repair harness between control unit connector and interior lamp connector.

Yes ↓

A

CHECK VOLTAGE.
Push unlock button of remote controller and check voltage between control unit terminal (9) and ground.

Multi-remote controller button condition	Voltage (v)
Unlock button is pushed.	0
Unlock button is not pushed.	Battery voltage

No → Check harness for open or short between interior lamp and control unit.

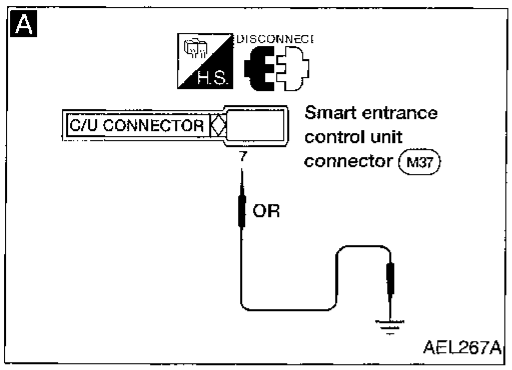
Yes ↓

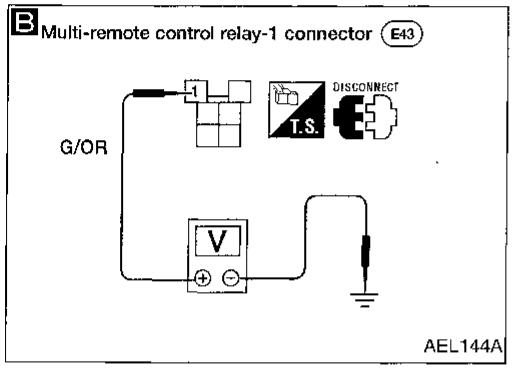
Check system again.

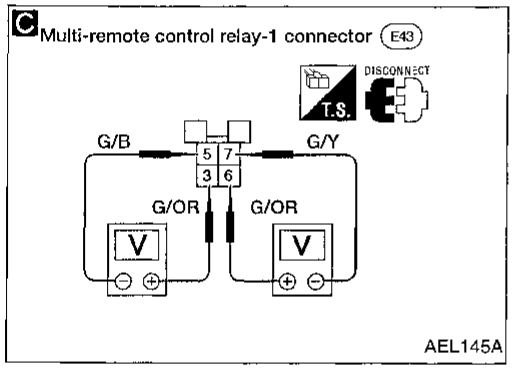
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 4

Hazard indicator does not flash twice when pressing lock button of remote controller. Everything else functions.







A

CHECK HAZARD INDICATOR OPERATION.
1. Disconnect control unit connector.
2. Apply ground to control unit terminal (7).

Does hazard indicator illuminate?

Yes → Check multi-remote controller operation again.

No ↓

Check multi-remote control relay-1. → NG → Replace.

OK ↓

B

CHECK POWER SUPPLY FOR MULTI-REMOTE CONTROL RELAY-1.
1. Disconnect multi-remote control relay-1 connector.
2. Measure voltage between terminal (1) and body ground.

Battery voltage should exist.

NG → Check 10A fuse [No. 20, located in fuse block (J/B)].

OK ↓

C

CHECK MULTI-REMOTE CONTROL RELAY-1 CIRCUIT.
1. Disconnect multi-remote control relay-1 connector.
2. Measure voltage between terminals (3) and (5).

Battery voltage should exist.
3. Measure voltage between terminals (6) and (7).

Battery voltage should exist.

NG → Check harness for open or short.

OK ↓

Check multi-remote control relay-2. → NG → Replace.

OK ↓

Check harness for open or short.

ID Code Entry Procedure

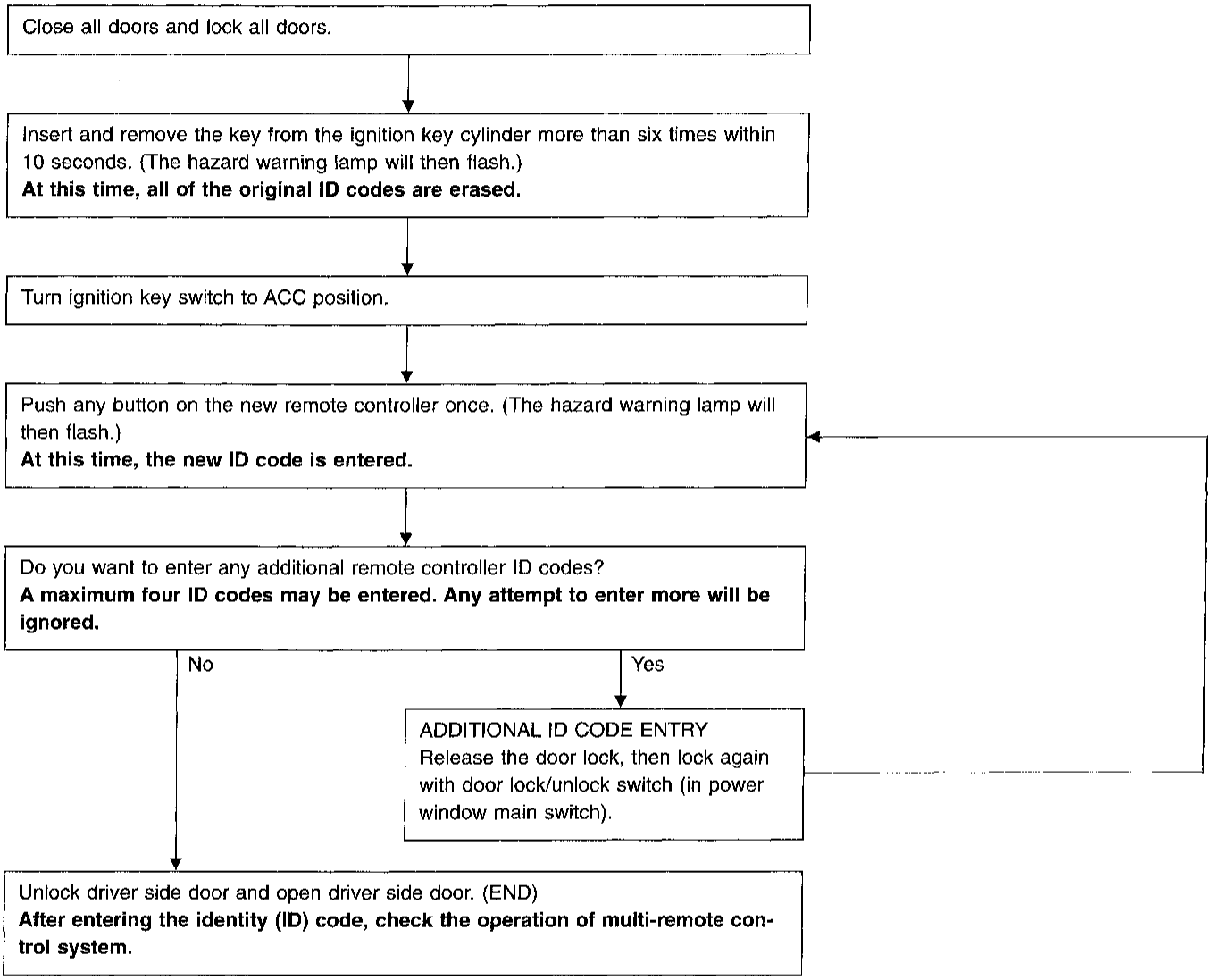
Enter the identity (ID) code manually when:

- **remote controller or control unit is replaced.**
- **an additional remote controller is activated.**

ID Code Entry Procedure

To enter the ID code, follow the procedures below.

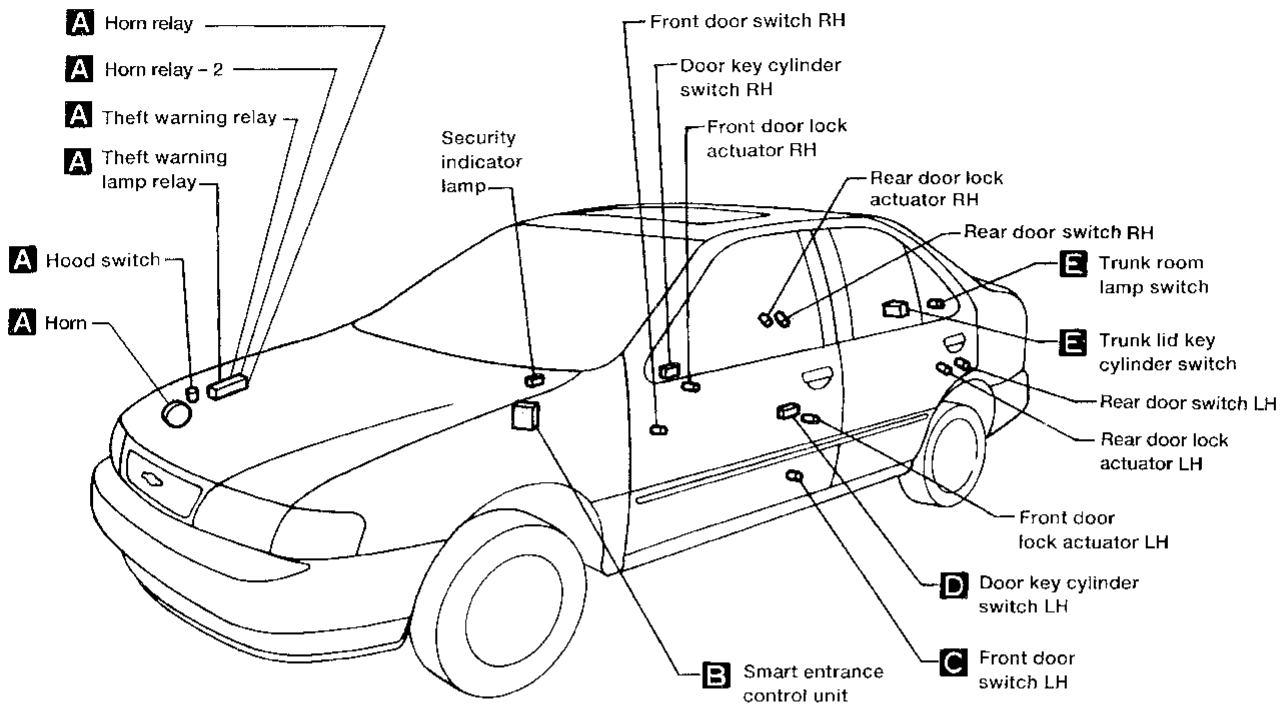
PROCEDURE

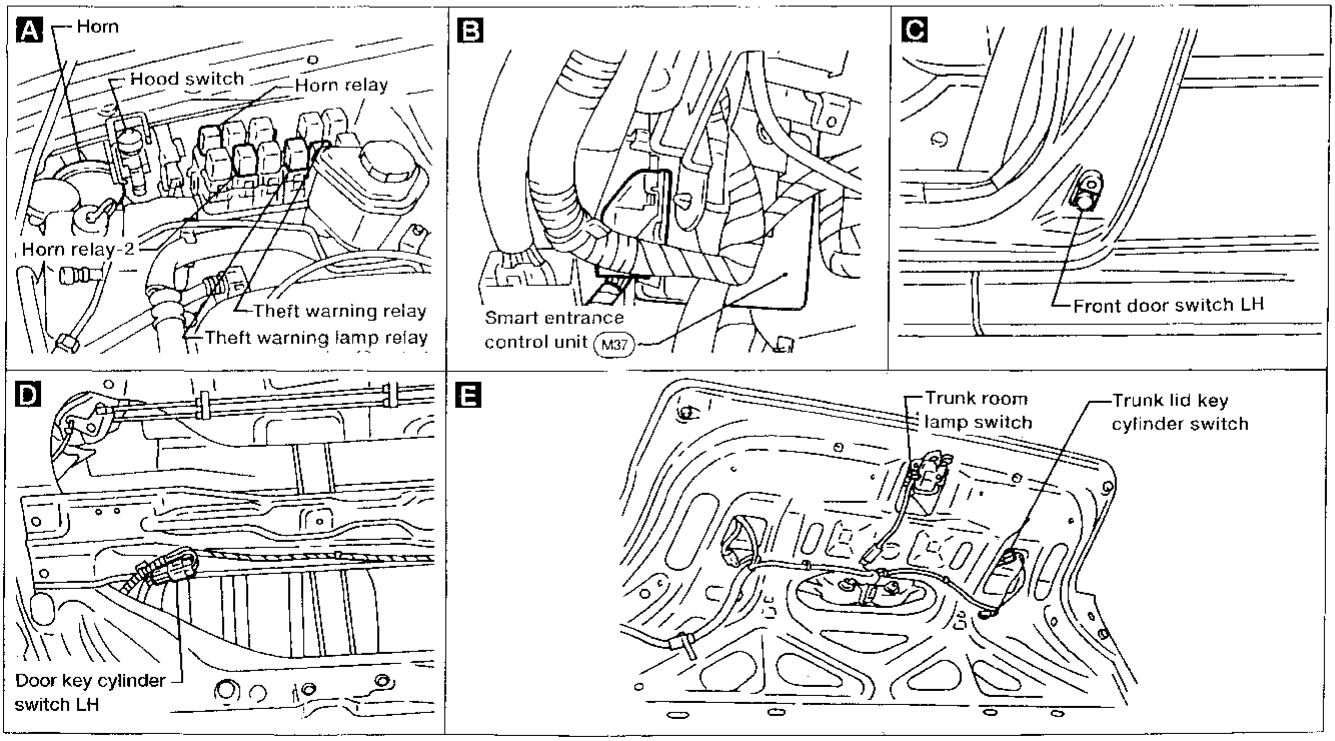


NOTE

- **If you need to activate more than two additional new remote controllers, repeat the procedure "Additional ID code entry" for each new remote controller.**
- **If the same ID code that exists in the memory is input, the entry will be ignored.**
- **Entry of four ID codes maximum is allowed and any attempt to enter more will be ignored.**
- **Any ID codes entered after termination of the "setting mode" will not be accepted. Additional remote control signals will be inhibited if not entered during the "setting" mode.**

Component Parts and Harness Connector Location

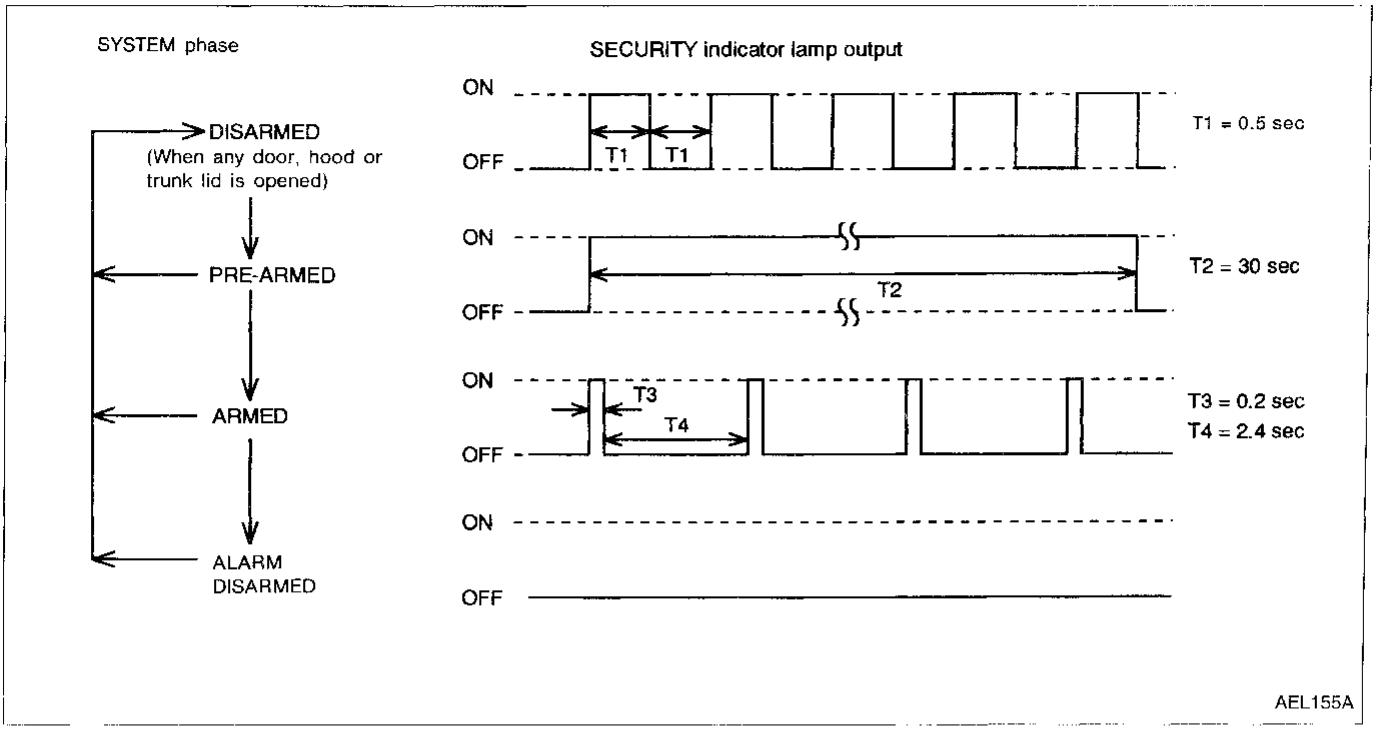




AEL612B

System Description

OPERATION FLOW



SETTING THE THEFT WARNING SYSTEM

Initial condition

(a) Close all doors.
(b) Close hood and trunk lid.
(c) Pull key out of ignition.

Disarmed phase

The theft warning system is in the disarmed phase when any door(s), hood or trunk lid is open and the ignition key is not in the ACC or ON position. The security indicator lamp blinks every 0.5 second. When the ignition key is turned to the ACC or ON position, the security indicator lamp turns off.

Pre-armed phase and armed phase

The theft warning system turns into the "pre-armed" phase when hood, trunk lid and all doors are closed and locked by key or multi-remote controller. (The security indicator lamp illuminates.)
After about 30 seconds, the system automatically shifts into the "armed" phase (the system is set). (The security indicator lamp blinks every 2.6 seconds.)

CANCELLING THE SET THEFT WARNING SYSTEM

When the following (a) or (b) operation is performed, the armed phase is canceled.
(a) Unlock the doors or the trunk lid with the key or multi-remote controller.
(b) Open the trunk lid with the key. When trunk lid is closed after opening the trunk lid with the key, the system returns to the armed phase.

ACTIVATING THE ALARM OPERATION OF THE THEFT WARNING SYTEM

Make sure the system is in the armed phase. (The security indicator lamp blinks every 2.6 seconds.)
When any of the following operations (a), (b) or (c) are performed, the system sounds the horns and flashes the headlamps for about 2.5 minutes. After 2.5 minutes the security indicator lamp will turn off. (At the same time, the system disconnects the starting system circuit.)
The starting system is kept dead even after the alarm turns off.
(a) Engine hood or trunk lid is opened before unlocking door with key or multi-remote controller.
(b) Door is unlocked without using key or multi-remote controller.
(c) Key cylinder is pulled out from either front door or the trunk lid.

POWER SUPPLY AND GROUND CIRCUIT

Power is supplied at all times:
- through 7.5A fuse [No. 15, located in the fuse block (J/B)]
- to security indicator lamp terminal ㊲
- to key switch terminal ①.

When the key switch is ON (ignition key is inserted in key cylinder), power is supplied:
- though key switch terminal ②
- to smart entrance control unit terminal ㉔.

Power is supplied at all times:
- through 25A fusible link (letter f, located in the fuse and fusible link box)
- to circuit breaker terminal ①
- through circuit breaker terminal ②
- to smart entrance control unit terminal ①.

With the ignition switch in the ACC or ON position, power is supplied:
- through 15A fuse [No. 10, located in the fuse block (J/B)]
- to smart entrance control unit terminal ⑰.

With the ignition switch in the ON or START position, power is supplied:
- through 7.5A fuse [No. 8, located in the fuse block (J/B)]
- to smart entrance control unit terminal ⑪.

Ground is supplied:
- to smart entrance control unit terminal ⑩
- through body grounds (M43), (M44) and (M60).

THEFT WARNING SYSTEM ACTIVATION (Without key or remote controller used to lock doors)

The operation of the theft warning system is controlled by the doors, hood and trunk lid.
To activate the theft warning system, the ignition key must be removed, doors, hood and trunk closed, and the doors locked.
When a door is open, smart entrance control unit terminals ⑮, ⑯, or ㉟ receives a ground signal from door switches.
When a door is unlocked, smart entrance control unit terminal ⑫, ⑬ or ⑭ receives a ground signal:
- from terminal ④ of all the door unlock sensors
- through terminal ② of all the door unlock sensors
- through body grounds (M43), (M44) and (M60) for the front doors and
- through body grounds (B14) and (B17) for the rear doors.

When the hood is open, smart entrance control unit terminal ㉙ receives a ground signal:
- from terminal ① of the hood switch
- through body grounds (E13) and (E25).

When the trunk lid is open, smart entrance control unit terminal ㉖ receives a ground signal:
- from terminal ① of the trunk room lamp switch
- through body grounds (T9) and (T10).

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

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

If the key or remote controller is used to lock doors, terminal ㉚ receives a ground signal:
- from terminal ① of the door key cylinder switch LH
- from terminal ② of the door key cylinder switch RH
- through body grounds (M43), (M44) and (M60).

If this signal is received by the smart entrance control unit, the theft warning system will activate automatically.
With the theft warning system activated, smart entrance control unit terminal ㉝ supplies ground to the security indicator lamp.

System Description (Cont'd)

THEFT WARNING SYSTEM OPERATION

The theft warning system is triggered by:

- opening a door or the trunk lid without using the key
- opening the hood
- tampering with the key cylinder in the door.

Once the theft warning system has been activated, it will be triggered if the smart entrance control unit receives a ground signal at terminals ⑮, ⑯, ㉖, ㉙, or ㉟. Also, when a door key tamper signal is received at the smart entrance control unit, the system will be triggered. The headlamps flash, the horn sounds intermittently, and the starting system is interrupted.

When a door key cylinder switch has been tampered with, smart entrance control unit terminal ㉘ receives a ground signal:

- from terminal ③ of the front LH or RH door key cylinder switches
- through body grounds (M43), (M44) and (M60).

If the theft warning system is triggered, ground is supplied:

- from terminal ㉜ of the smart entrance control unit
- to theft warning relay terminal ②.

With power and ground supplied, power to the clutch interlock relay (M/T models) or inhibitor relay (A/T models) is interrupted. The starter motor will not crank and the engine will not start.

When the theft warning system is triggered, ground is supplied intermittently:

- from terminal ⑧ of the smart entrance control unit
- to theft warning lamp relay terminal ② and
- to horn relay-2 terminal ②.

The headlamps flash and the horn sounds intermittently.

The alarm automatically turns off after 2 or 3 minutes but will reactivate if the vehicle is tampered with again.

THEFT WARNING SYSTEM DEACTIVATION

To deactivate the theft warning system, a door or the trunk lid must be unlocked with the key or remote controller.

When the key is used to unlock a door, smart entrance control unit terminal ㉛ receives a ground signal:

- from terminal ② of the door key cylinder switch LH
- from terminal ① of the door key cylinder switch RH.

When the key is used to unlock the trunk lid, smart entrance control unit terminal ㉗ receives a ground signal from terminal ① of the trunk key cylinder switch.

When the smart entrance control unit receives either one of these signals, the theft warning system is deactivated.

PANIC ALARM OPERATION

Multi-remote control system may or may not operate theft warning system (horn and headlamps) as required.

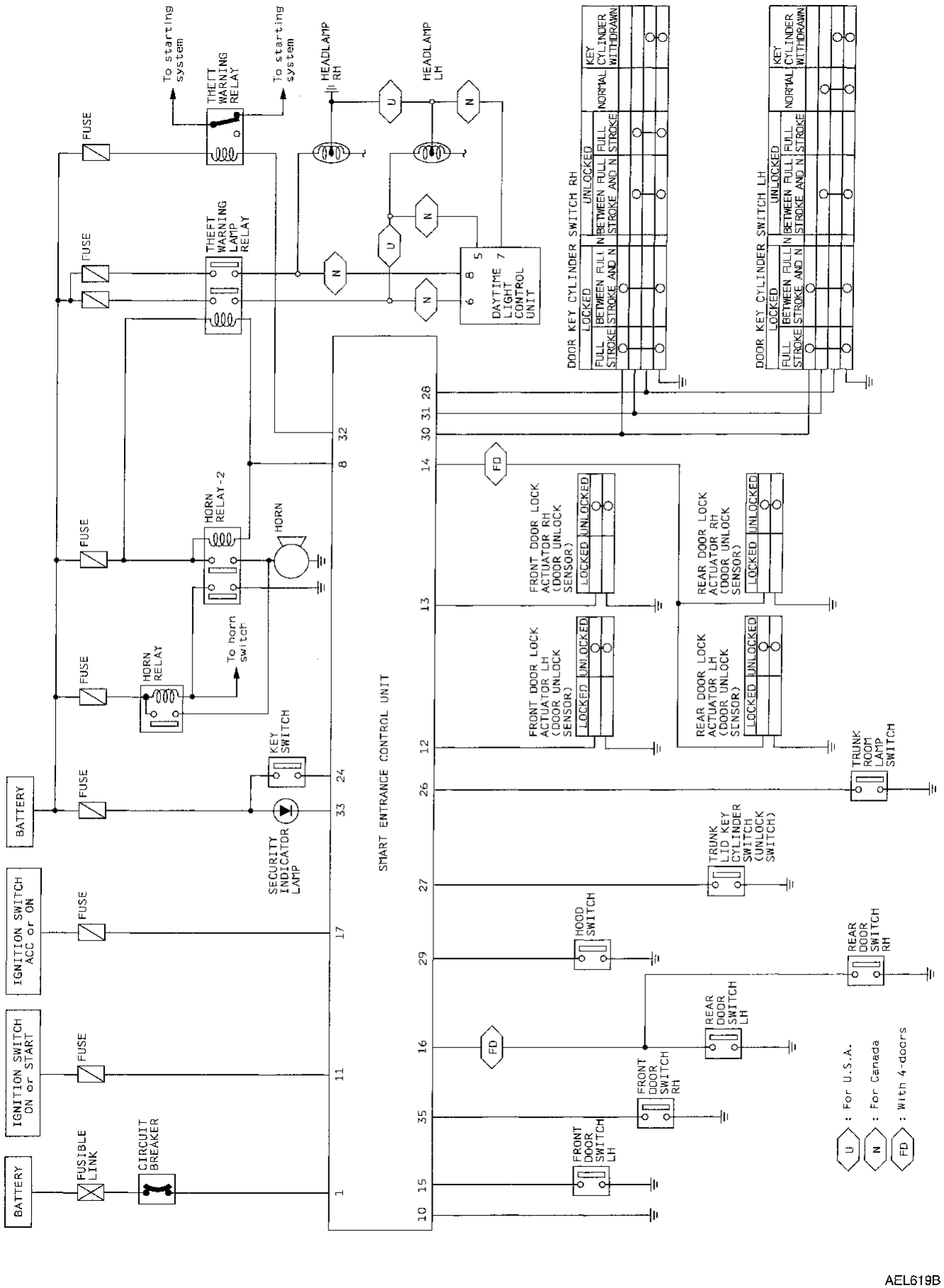
When the multi-remote control system is triggered, ground is supplied intermittently:

- from smart entrance control unit terminal ⑧
- to theft warning lamp relay terminal ② and
- to horn relay-2 terminal ②.

The headlamp flashes and the horn sounds intermittently:

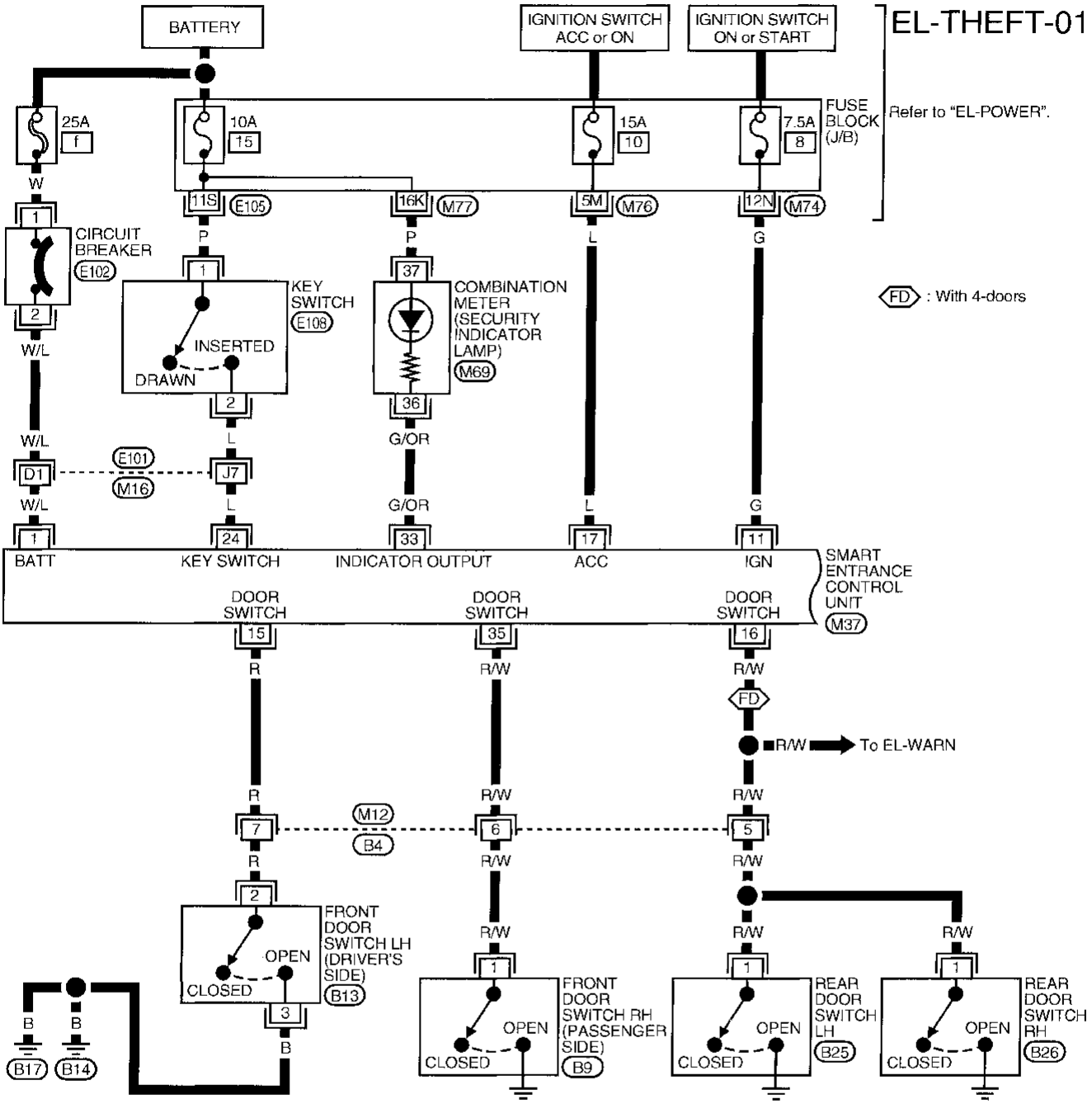
The alarm automatically turns off after 30 seconds or when smart entrance control unit receives any signal from multi-remote controller.

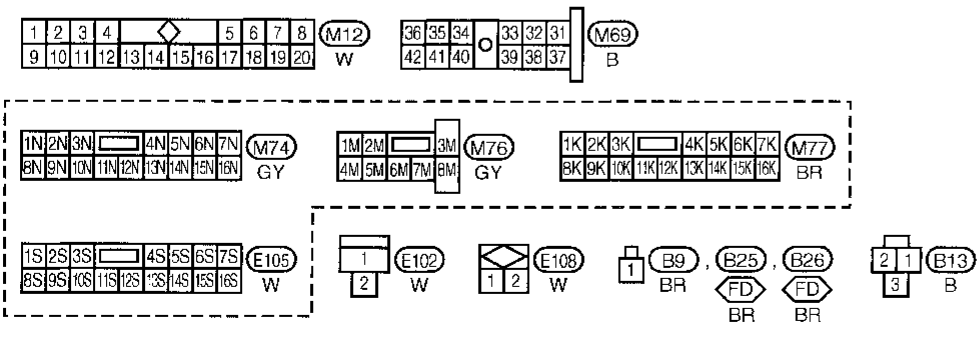
Schematic



AEL619B

Wiring Diagram –THEFT–



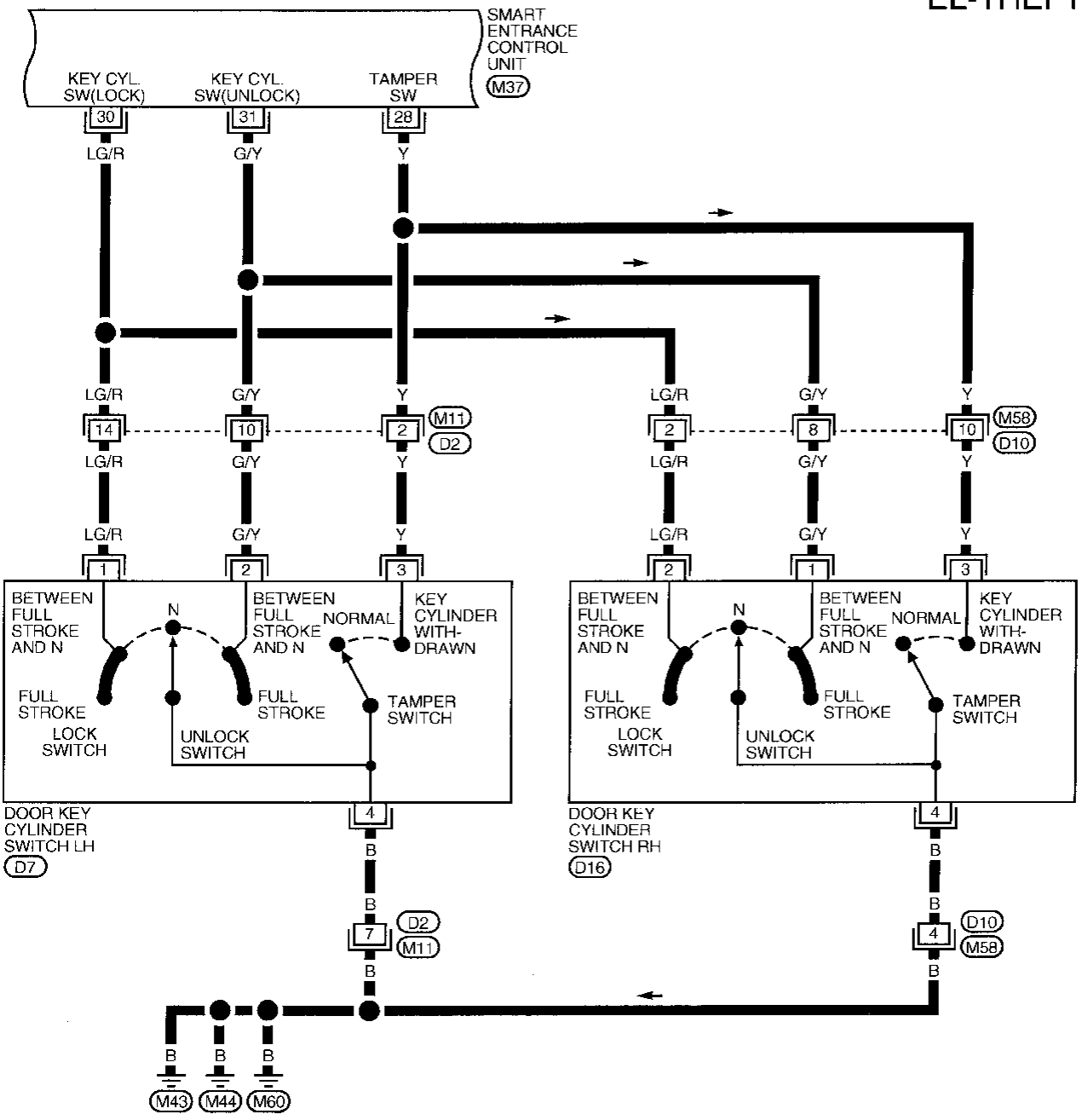


Refer to last page (Foldout page).
M16, E101
M37

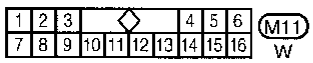
AEL620B

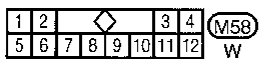
Wiring Diagram –THEFT– (Cont'd)

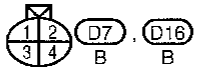
EL-THEFT-02



Refer to last page (Foldout page).
M37



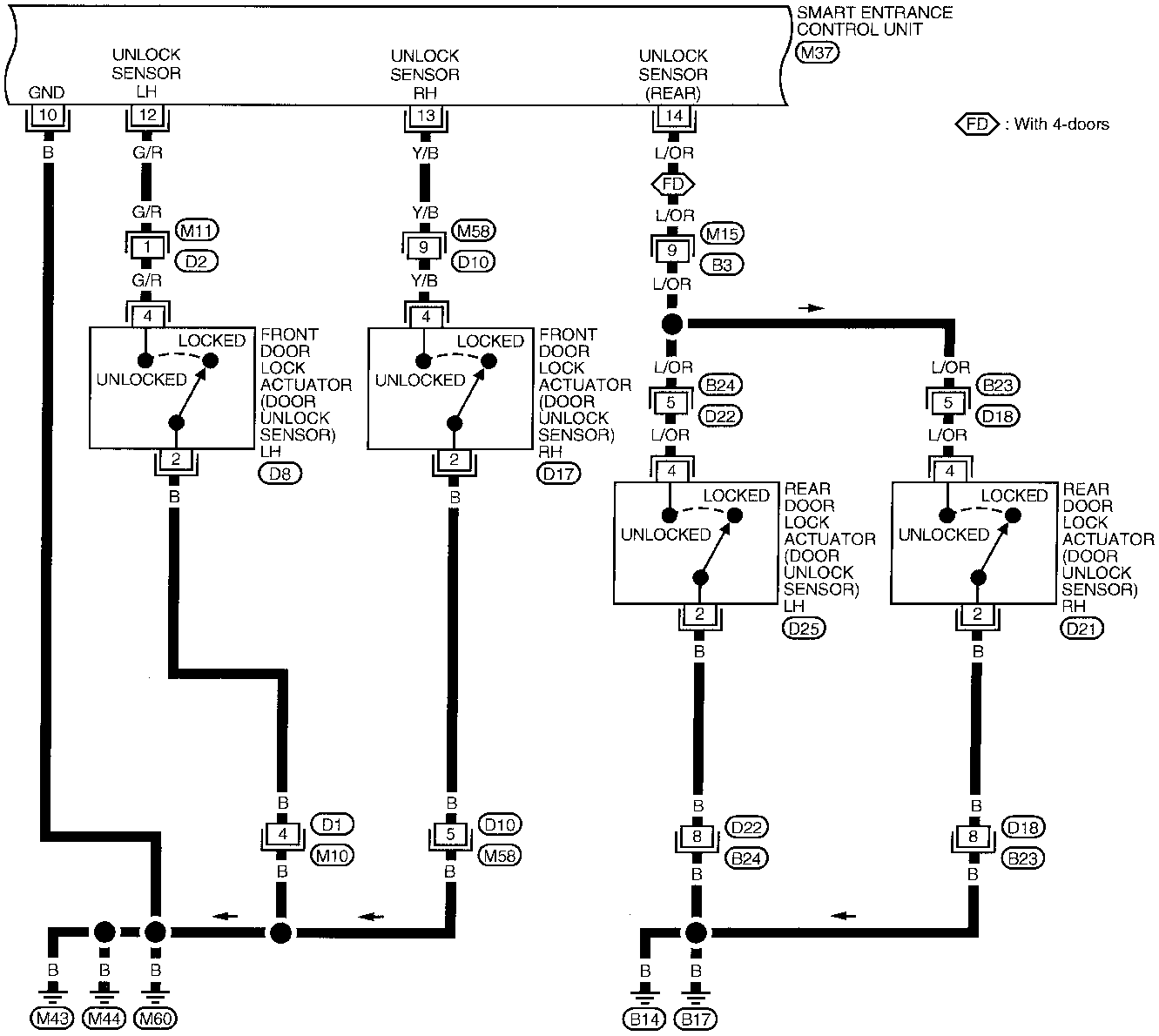




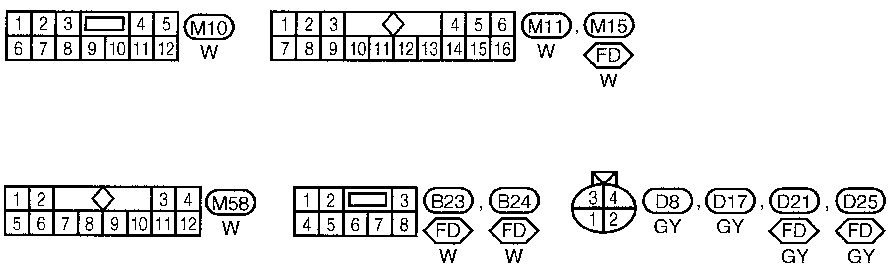
AEL636B

Wiring Diagram –THEFT– (Cont'd)

EL-THEFT-03



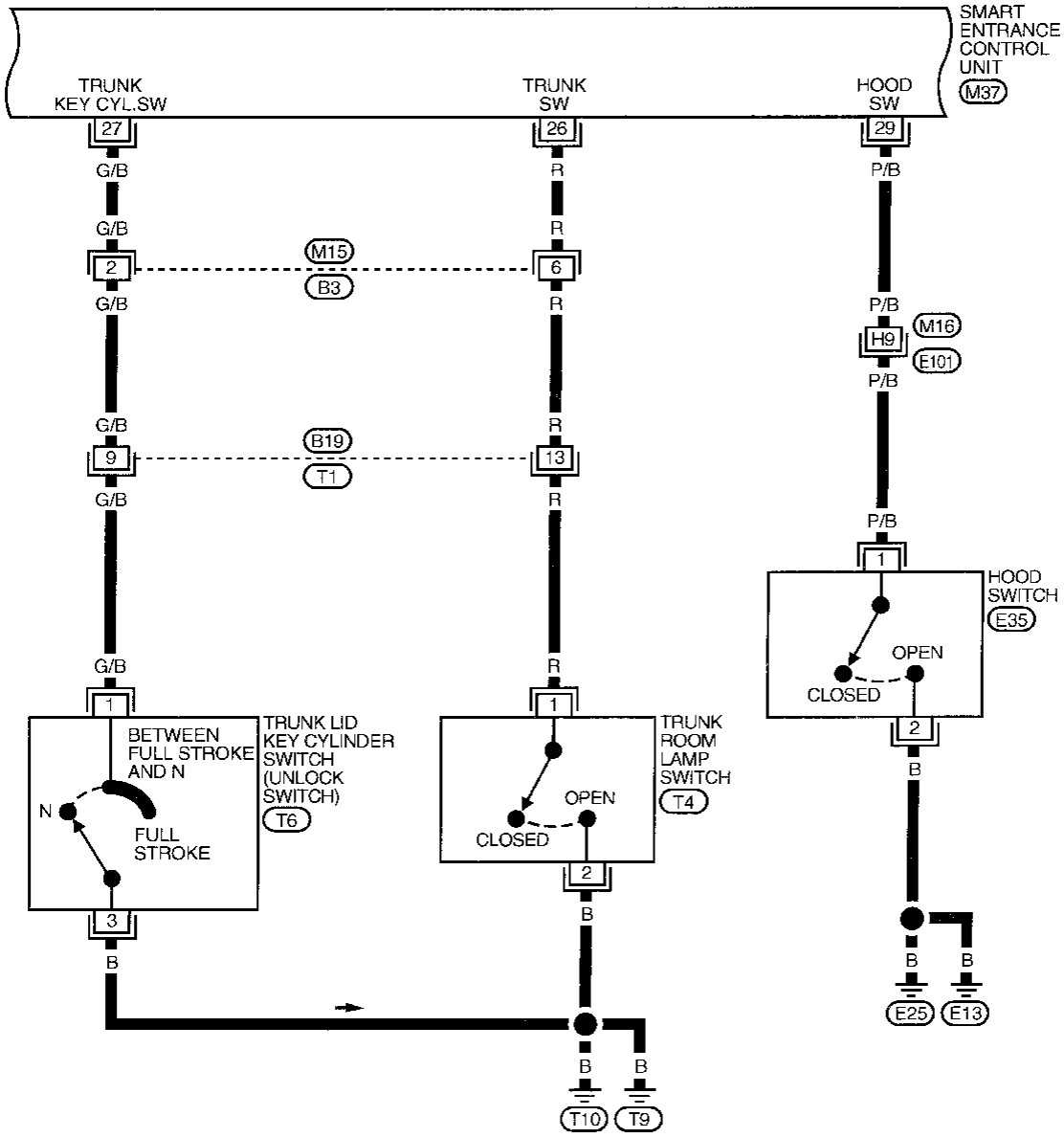
Refer to last page (Foldout page).
M37

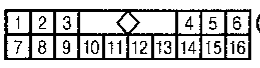


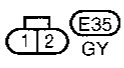
AEL621B

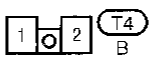
Wiring Diagram –THEFT– (Cont'd)

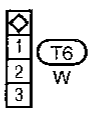
EL-THEFT-04









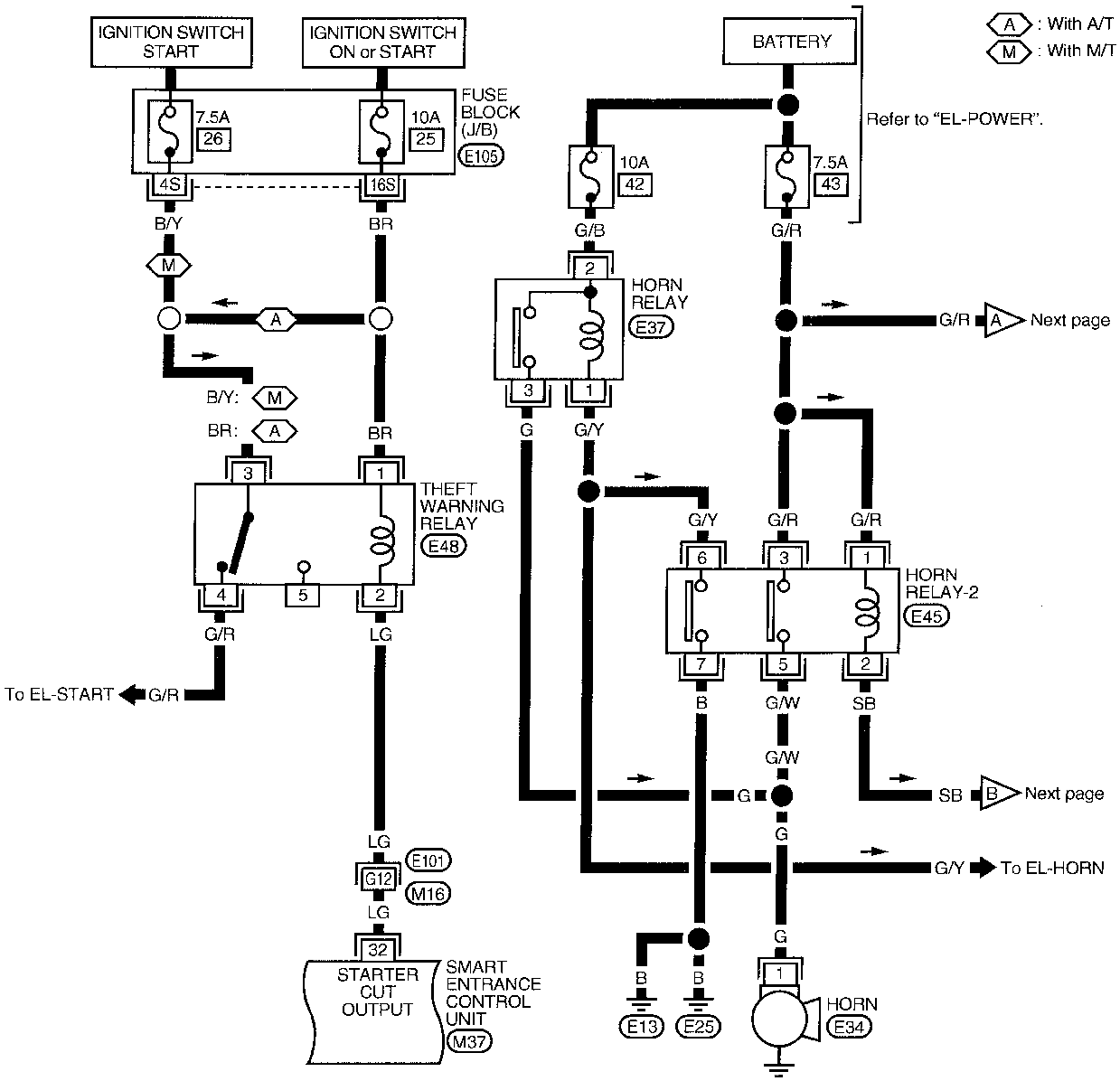


Refer to last page (Foldout page).
M16, E101
M37

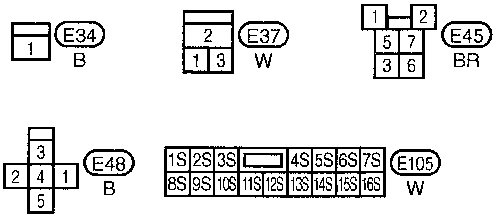
AEL259B

Wiring Diagram –THEFT– (Cont'd)

EL-THEFT-05



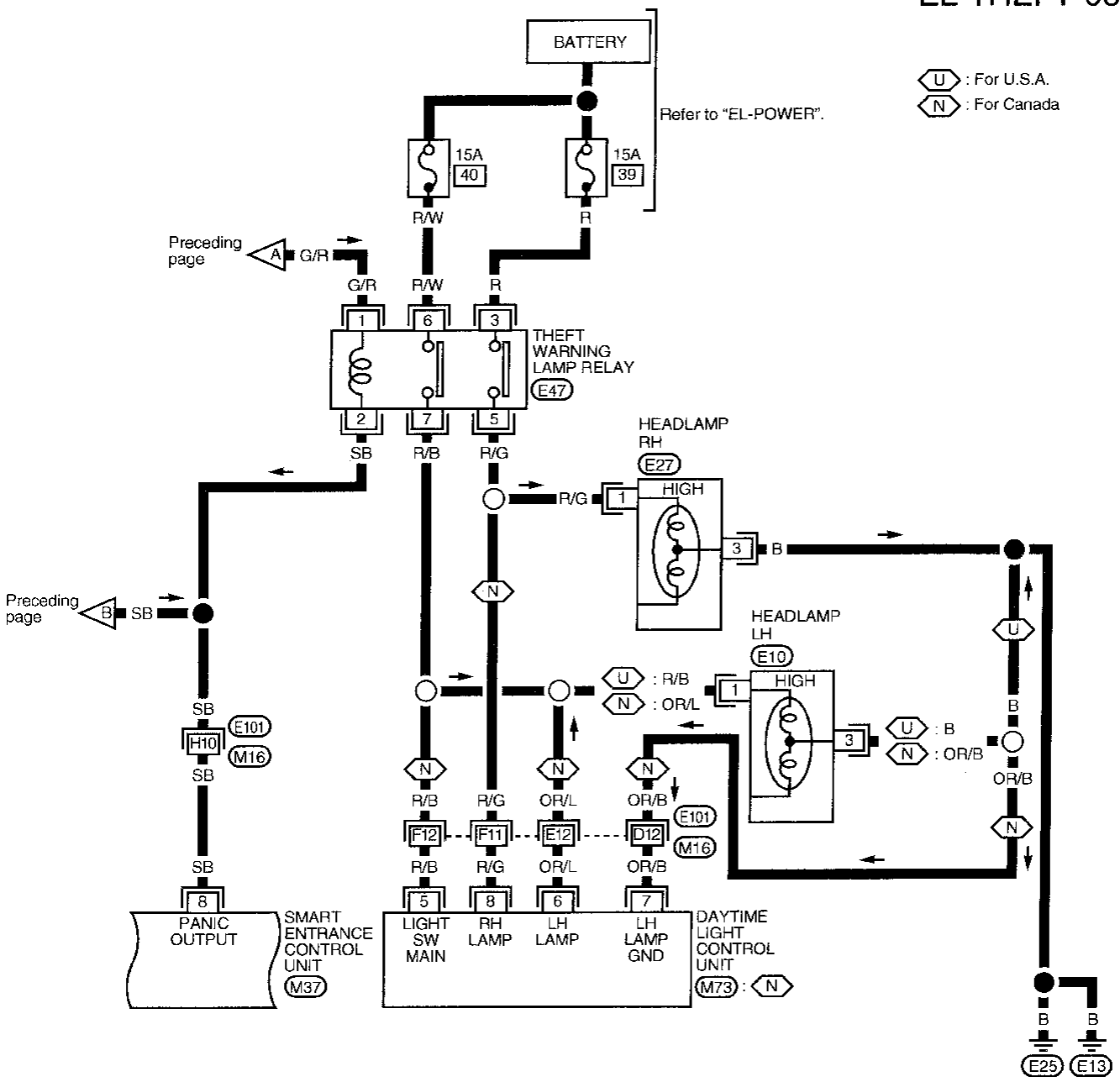
Refer to last page (Foldout page).
M16, E101
M37



AEL260B

Wiring Diagram –THEFT– (Cont'd)

EL-THEFT-06



Refer to last page (Foldout page).
M16, E101
M37

M73 N GY

E10, E27 B B

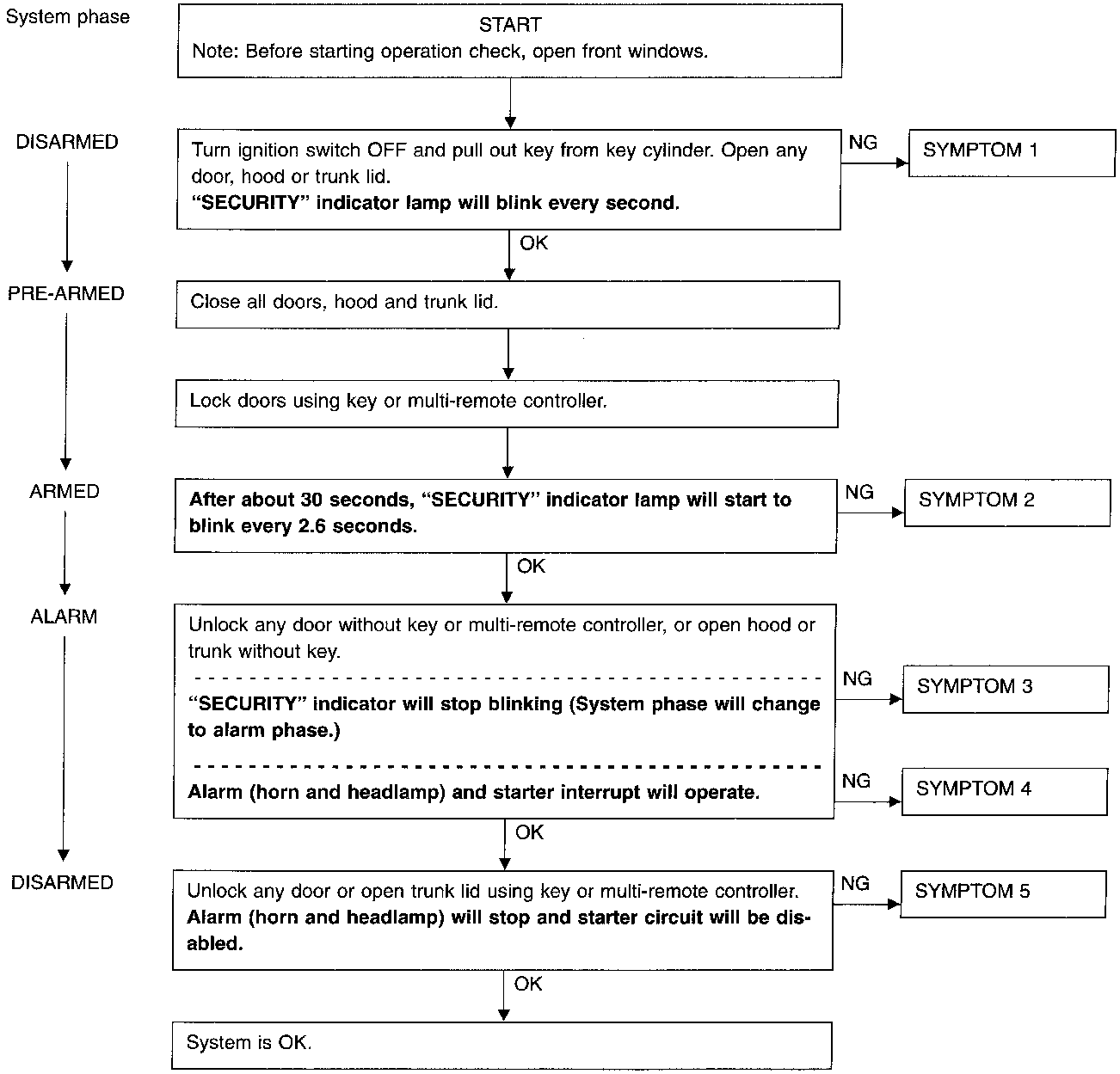
E47 BR

AEL261B

Trouble Diagnoses

PRELIMINARY CHECK

The system operation is canceled by turning ignition switch to ACC at any step between START and ARMED in the following flow chart.



After performing preliminary check go to symptom chart in next page.

Trouble Diagnoses (Cont'd)

Before starting trouble diagnoses, perform preliminary check, EL-190.

Symptom numbers correspond with the preliminary check.

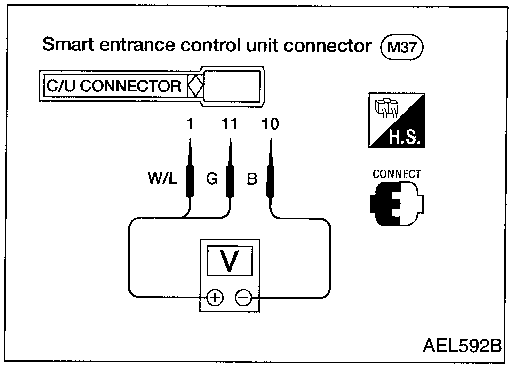
SYMPTOM CHART

PROCEDURE			Power supply and ground circuit check		Diagnostic procedure								—
REFERENCE PAGE			EL-190	EL-192	EL-192	EL-193	EL-197	EL-198	EL-199	EL-200	EL-201	EL-202	EL-203	EL-165
SYMPTOM			Preliminary check	Ground circuit check	Power supply circuit check	Diagnostic Procedure 1 [Door, hood, trunk room lamp and door key cylinder (tamper) switch check]	Diagnostic Procedure 2 (Security indicator lamp check)	Diagnostic Procedure 3 (Door unlock sensor check)	Diagnostic Procedure 4 (Door key cylinder switch check)	Diagnostic Procedure 5 (Trunk lid key cylinder switch check)	Diagnostic Procedure 6 (Theft warning horn alarm check)	Diagnostic Procedure 7 (Theft warning headlamp alarm check)	Diagnostic Procedure 8 (Starter interrupt system check)	Check "MULTI-REMOTE CONTROL" system.
1	Theft warning indicator does not turn ON or blinking.		X	X	X		X							
2	Theft warning system cannot be set by	All items	X	X	X	X		X						
		Door outside key	X	X	X				X					
		Multi-remote control	X	X	X									X
3	*1 Theft warning system does not alarm when ...	Any door is opened.	X	X	X	X								
		Any door is unlocked without using key or multi-remote controller	X	X	X			X						
4	Theft warning system does not activate.	All function	X	X	X	X		X						
		Horn alarm	X	X	X						X			
		Headlamp alarm	X	X	X							X		
		Starter interrupt		X	X								X	
5	Theft warning system cannot be canceled by	Door outside key	X	X	X				X					
		Trunk lid key	X	X	X					X				
		Multi-remote control	X	X	X									X

X : Applicable
*1: Make sure the system is in the armed phase.

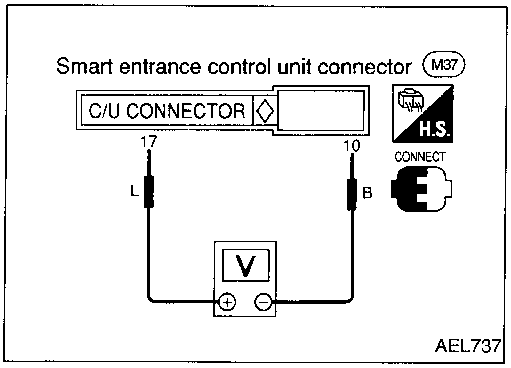
Trouble Diagnoses (Cont'd)

POWER SUPPLY AND GROUND CIRCUIT CHECK



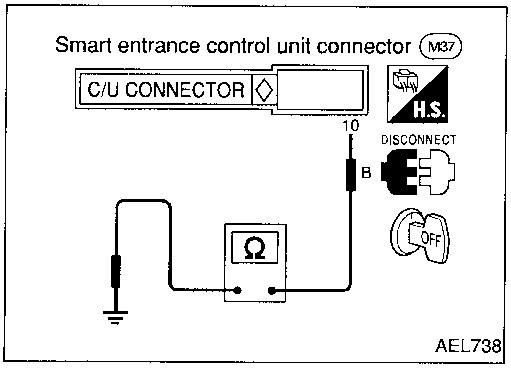
Main power supply circuit check

Terminals	Ignition switch position		
	OFF	ACC	ON
① - ⑩	Battery voltage	Battery voltage	Battery voltage
⑪ - ⑩	0V	0V	Battery voltage



Power supply circuit check for system cancel

Terminals	Ignition switch position		
	OFF	ACC	ON
⑰ - ⑩	0V	Battery voltage	Battery voltage

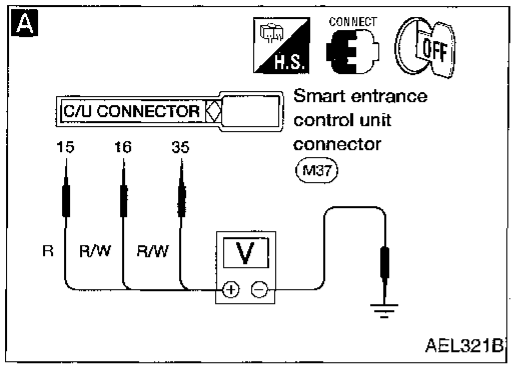


Ground circuit check

Terminals	Continuity
⑩ - Ground	Yes

Trouble Diagnoses (Cont'd)

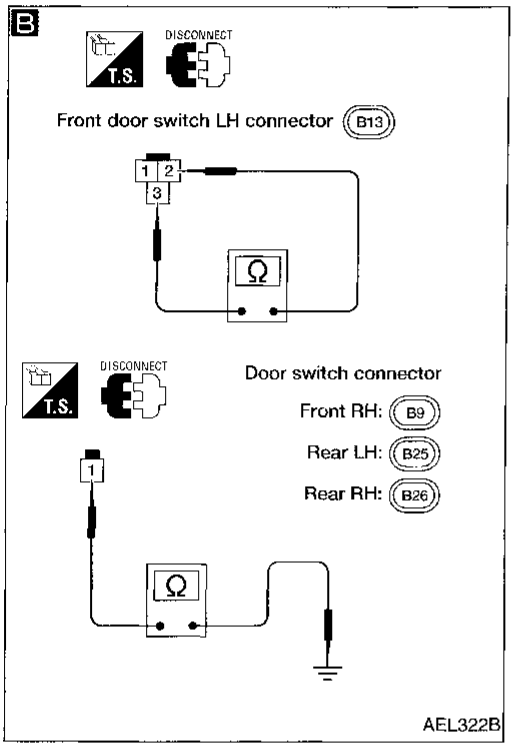
DIAGNOSTIC PROCEDURE 1-(1)
(Door switch check)



1. Turn ignition switch OFF and remove key from key cylinder.
2. Close all doors, hood and trunk lid. **"SECURITY" indicator should turn off.**
3. Open any passenger door. **"SECURITY" indicator should blink every second.**

OK → Door switch is OK.

NG ↓



A

CHECK DOOR SWITCH INPUT SIGNAL.
Check voltage between control unit terminals (15), (16), (35) and ground.

	Terminals ⊕	Terminals ⊖	Condition	Voltage [v]
Front LH door	(15)	GND	Open	0
Front RH door	(35)	GND	Open	0
Rear doors	((16))	GND	Open	0
All door switches	(15), ((16)) (35)	GND	Closed	Approx. 12

Terminal numbers in ( ) are for models with 4-doors.
Refer to wiring diagram, EL-184.

OK → Go to the next procedure.

NG ↓

B

CHECK DOOR SWITCH.
1. Disconnect door switch connector.
2. Check continuity between door switch terminals.

	Terminals	Condition	Continuity
Front door switch LH	②-③	Closed	No
		Open	Yes
Other door switches	① - GND	Closed	No
		Open	Yes

NG → Replace door switch.

OK ↓

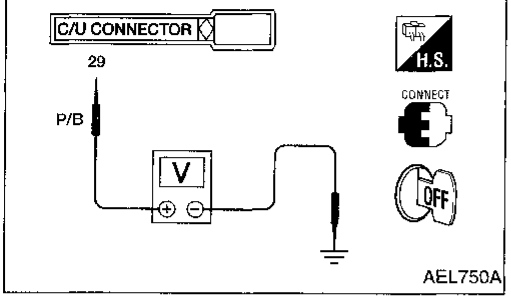
Check the following.
- Door switch ground condition
- Harness for open or short

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 1-(2) (Hood switch check)

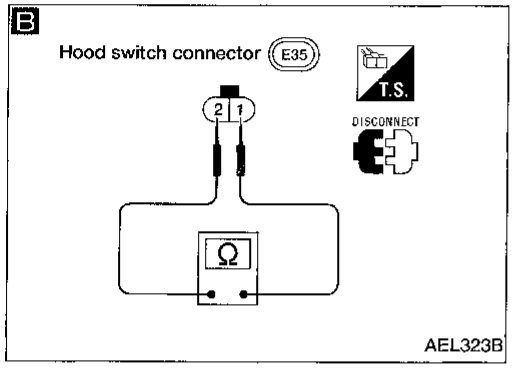
A

Smart entrance control unit connector (M37)



B

Hood switch connector (E35)



1. Turn ignition switch OFF and remove key from key cylinder.
2. Close all doors, hood and trunk lid.
   "SECURITY" indicator should turn off.
3. Open hood.
   "SECURITY" indicator should blink every second.

OK → Hood switch is OK.

NG ↓

Check hood switch and hood fitting condition.

NG → Adjust installation of hood switch or hood.

OK ↓

A

CHECK HOOD SWITCH INPUT SIGNAL.
Check voltage between control unit terminals (29) and ground.

Condition	Voltage [V]
Hood is open.	0
Hood is closed.	Approx. 12

Refer to wiring diagram, EL-187.

OK → Hood switch is OK.

NG ↓

B

CHECK HOOD SWITCH.
1. Disconnect hood switch connector.
2. Check continuity between hood switch terminals.

Terminals	Condition	Continuity
① - ②	Pushed	No
	Released	Yes

NG → Replace hood switch.

OK ↓

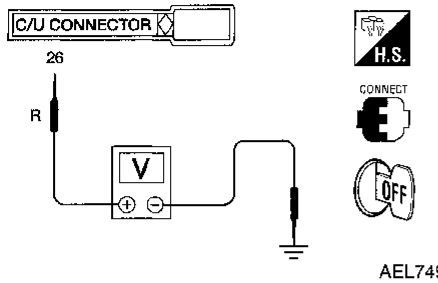
Check the following.
- Hood switch ground circuit
- Harness for open or short

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 1-(3)
(Trunk room lamp switch check)

A

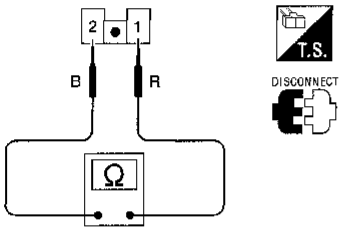
Smart entrance control unit connector (M37)



AEL749A

B

Trunk room lamp switch connector (T4)



AEL748A

1. Turn ignition switch OFF and remove key from key cylinder.
2. Close all doors, hood and trunk lid.
   "SECURITY" indicator should turn off.
3. Open trunk lid.
   "SECURITY" indicator should blink every second.

OK → Trunk room lamp switch is OK.

NG ↓

A

CHECK TRUNK ROOM LAMP SWITCH INPUT SIGNAL.

Check voltage between control unit terminals (26) and ground.

Condition	Voltage [V]
Trunk is open.	0
Trunk is closed.	Approx. 12

Refer to wiring diagram, EL-187.

OK → Trunk room lamp switch is OK.

NG ↓

Check trunk room lamp switch and trunk fitting condition.

NG → Adjust installation of trunk room lamp switch or trunk.

OK ↓

B

CHECK TRUNK ROOM LAMP SWITCH.

1. Disconnect trunk room lamp switch connector.
2. Check continuity between trunk room lamp switch terminals.

Terminals	Condition	Continuity
① - ②	Pushed	No
	Released	Yes

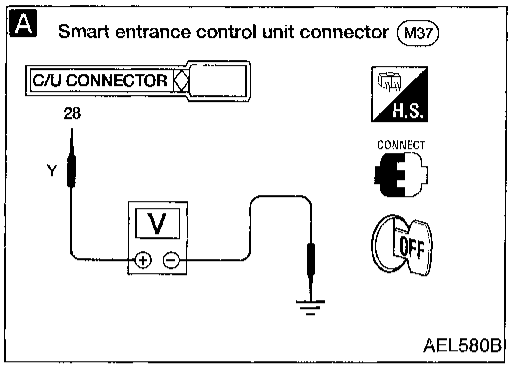
NG → Replace trunk room lamp switch.

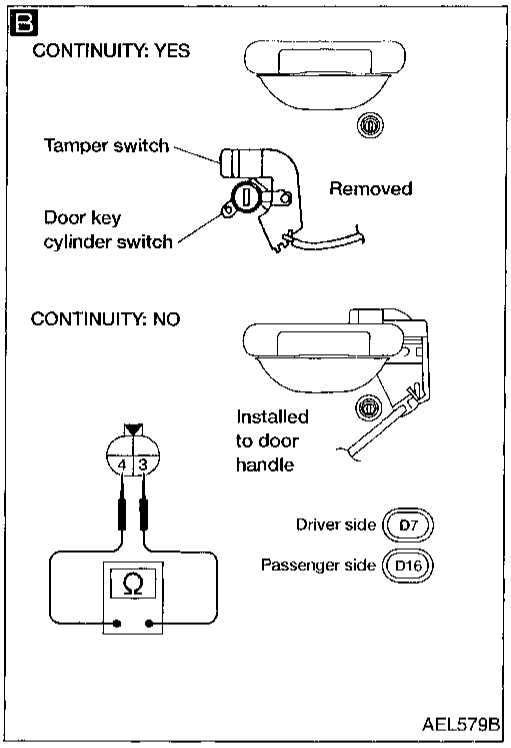
OK ↓

Check the following.
- Trunk room lamp switch ground circuit
- Harness for open or short

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 1-(4)
[Door key cylinder (tamper) switch check]





A

CHECK DOOR KEY CYLINDER (TAMPER) SWITCH INPUT SIGNAL.

Check voltage between control unit terminal (28) and ground.

When both key cylinders are installed:

Approx. 5V

When one door key cylinder is removed:

Approx. 0V

Refer to wiring diagram, EL-185.

NG

Check installation of both door key cylinders. — NG → Reinstall door key cylinder correctly.

OK

B

CHECK DOOR KEY CYLINDER (TAMPER) SWITCH.

1. Disconnect door key cylinder (tamper) switch connector.
2. Check continuity between door key cylinder (tamper) switch terminals.

NG → Replace door key cylinder switch.

OK

Check the following:

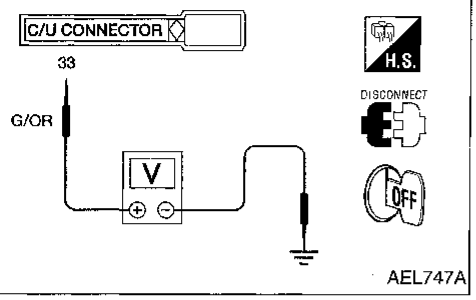
- Harness for open or short between control unit and door key cylinder (tamper) switch
- Tamper switch ground circuit

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 2
(Security indicator lamp check)

A

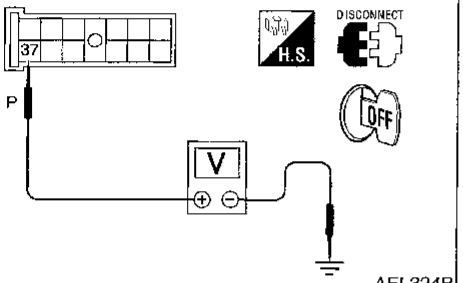
Smart entrance control unit connector (M37)



AEL747A

B

Combination meter (M69) (Security indicator lamp)



AEL324B

A

CHECK INDICATOR LAMP OUTPUT SIGNAL.
1. Disconnect control unit connector.
2. Check voltage between control unit terminals (33) and ground.
   Battery voltage should exist.
   Refer to wiring diagram, EL-184.

OK → Security indicator lamp is OK.

NG ↓

CHECK INDICATOR LAMP. NG → Replace indicator lamp.

OK ↓

B

CHECK INDICATOR LAMP POWER SUPPLY CIRCUIT.
1. Disconnect security lamp connector.
2. Check voltage between indicator lamp terminal (37) and body ground.
   Battery voltage should exist.

NG → CHECK THE FOLLOWING:
- 7.5A fuse [No. 15, located in fuse block (J/B)]
- Harness for open or short

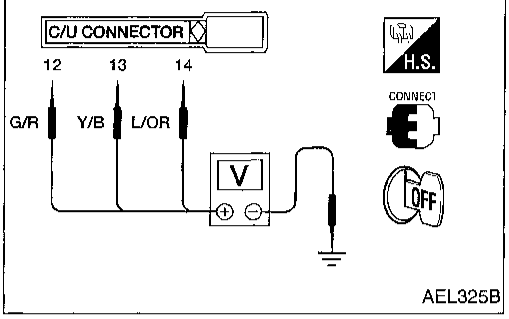
OK ↓

Check harness for open or short between security indicator lamp and control unit.

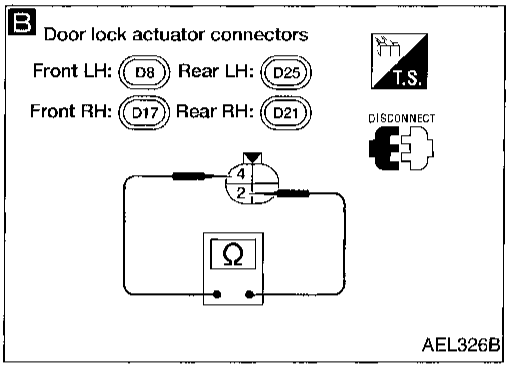
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 3
(Door unlock sensor check)

A Smart entrance control unit connector (M37)



B Door lock actuator connectors
Front LH: (D8) Rear LH: (D25)
Front RH: (D17) Rear RH: (D21)



A

CHECK DOOR UNLOCK SENSOR INPUT SIGNAL.

Check voltage between control unit terminals ⑫, ⑬, ⑭ and ground.

	Terminals ⊕	Terminals ⊖	Condition	Voltage [V]
Front LH door	⑫	GND	Locked	Approx. 12
			Unlocked	0
Front RH door	⑬	GND	Locked	Approx. 12
			Unlocked	0
Rear door	⑭	GND	Locked	Approx. 12
			Unlocked	0

Refer to wiring diagram, EL-186.

OK → Door unlock sensor is OK.

NG

B

CHECK DOOR UNLOCK SENSOR.

1. Disconnect door unlock sensor connector.
2. Check continuity between door unlock sensor terminals.

Terminals	Condition	Continuity
④ - ②	Locked	No
	Unlocked	Yes

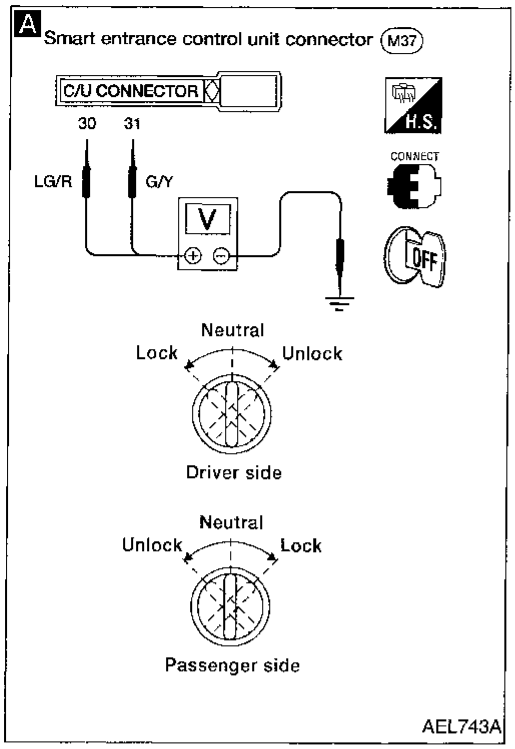
NG → Replace door unlock sensor.

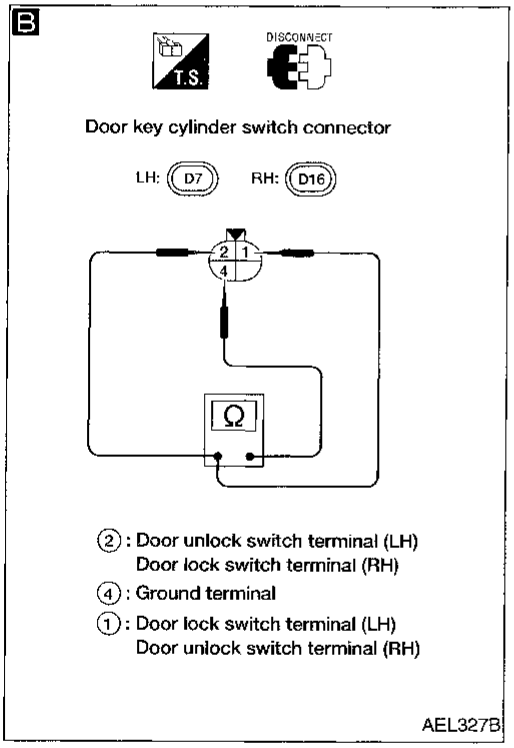
OK

Check the following.
- Door unlock sensor ground circuit
- Harness for open or short

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 4
(Door key cylinder switch check)





② : Door unlock switch terminal (LH)
Door lock switch terminal (RH)
④ : Ground terminal
① : Door lock switch terminal (LH)
Door unlock switch terminal (RH)

A

CHECK DOOR KEY CYLINDER SWITCH INPUT SIGNAL (LOCK/UNLOCK SIGNAL).

Check voltage between control unit terminals ㉚ or ㉛ and ground.

Terminals ⊕	Terminals ⊖	Key position	Voltage [V]
㉚	GND	Neutral	Approx. 12
		Lock	0
㉛	GND	Neutral	Approx. 12
		Unlock	0

Refer to wiring diagram, EL-185.

OK → Door key cylinder switch is OK.

NG ↓

B

CHECK DOOR KEY CYLINDER SWITCH.

1. Disconnect door key cylinder switch connector.
2. Check continuity between door key cylinder switch terminals.

Terminals	Key position	Continuity
LH: ① - ④	Neutral	No
RH: ② - ④	Lock	Yes
LH: ② - ④	Neutral	No
RH: ① - ④	Unlock	Yes

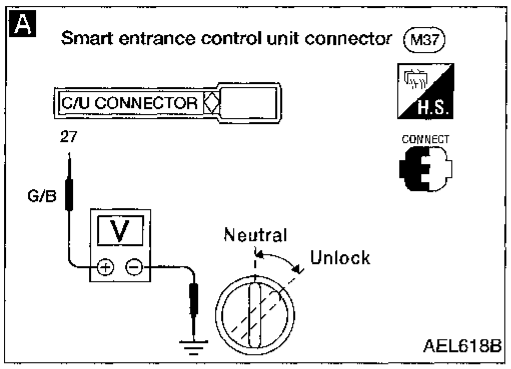
NG → Replace key cylinder switch.

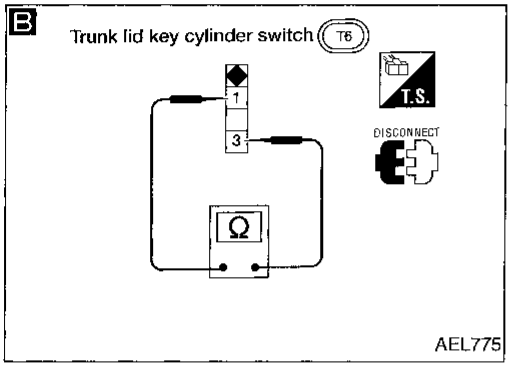
OK ↓

Check the following.
- Door key cylinder switch ground circuit
- Harness for open or short

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 5
(Trunk lid key cylinder switch check)





A

CHECK TRUNK LID KEY CYLINDER SWITCH INPUT SIGNAL (UNLOCK SIGNAL).

Check voltage between control unit terminal (27) and ground.

Terminals		Key position	Voltage [V]
⊕	⊖		
(27)	GND	Neutral	Approx. 12
		Unlock	0

Refer to wiring diagram, EL-187.

OK → Trunk lid key cylinder switch is OK.

NG ↓

B

CHECK TRUNK LID KEY CYLINDER SWITCH

1. Disconnect trunk lid key cylinder switch connector.
2. Check continuity between trunk lid key cylinder switch terminals.

Terminals	Key position	Continuity
(1) - (3)	Neutral	No
	Unlock	Yes

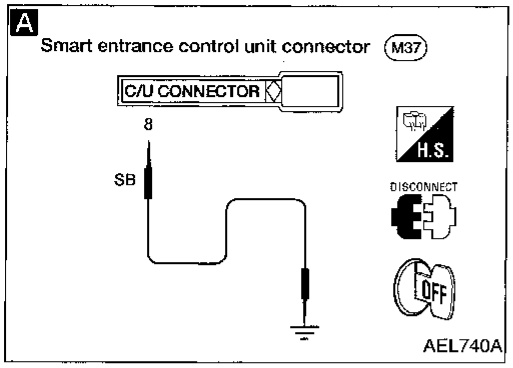
NG → Replace trunk lid key cylinder switch.

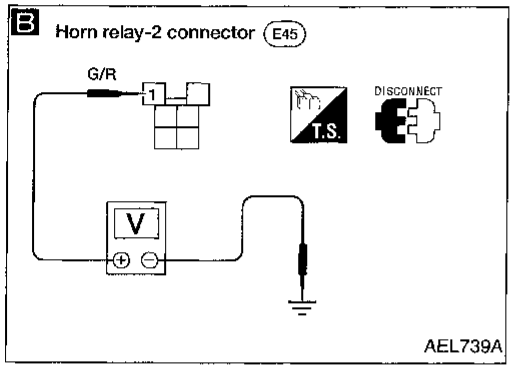
OK ↓

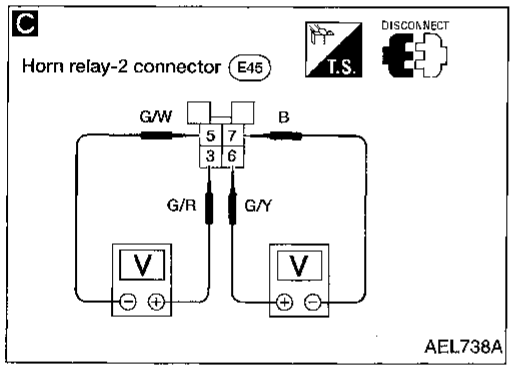
Check the following.
- Trunk lid key cylinder switch ground circuit
- Harness for open or short

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 6
(Theft warning horn alarm check)







A

CHECK THEFT WARNING HORN ALARM OPERATION.
1. Disconnect control unit connector.
2. Apply ground to control unit terminal ⑧.

Does horn alarm activate?
Refer to wiring diagram, EL-189.

Yes → Horn alarm is OK.

No ↓

Check horn relay-2. → NG → Replace.

OK ↓

B

CHECK POWER SUPPLY FOR HORN RELAY-2.
1. Disconnect horn relay-2 connector.
2. Measure voltage between terminal ① and body ground.

Battery voltage should exist.

NG → CHECK THE FOLLOWING.
- 7.5A fuse (No. 43, located in the fuse and fusible link box)

OK ↓

C

CHECK HORN RELAY-2 CIRCUIT.
1. Disconnect horn relay-2 connector.
2. Measure voltage between terminals ③ and ⑤.

Battery voltage should exist.
3. Measure voltage between terminals ⑥ and ⑦.

Battery voltage should exist.

NG → Check harness for open or short.

OK ↓

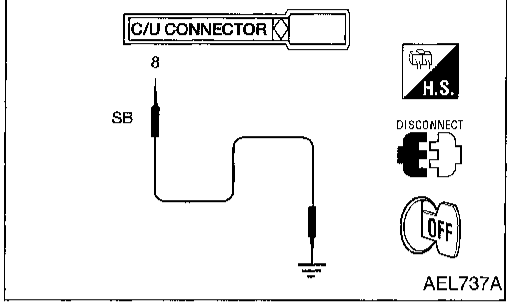
Check harness for open or short between horn relay-2 and smart entrance control unit.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 7
(Theft warning headlamp alarm check)

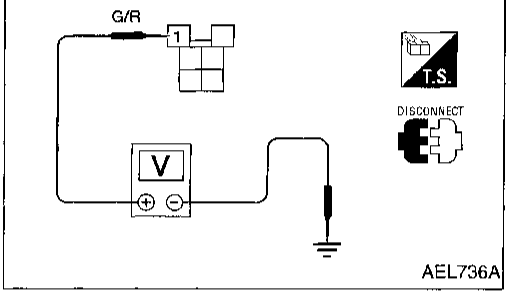
A

Smart entrance control unit connector (M37)



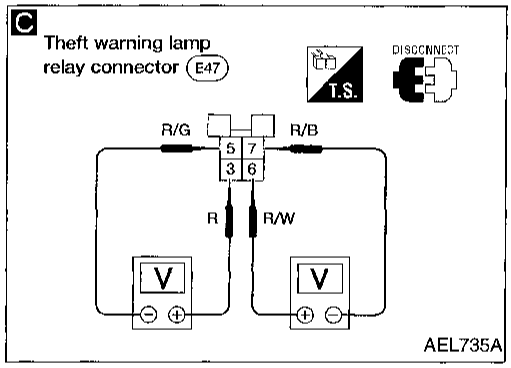
B

Theft warning lamp relay connector (E47)



C

Theft warning lamp relay connector (E47)



A

CHECK THEFT WARNING HEADLAMP ALARM OPERATION.

1. Disconnect control unit connector.
2. Apply ground to control unit terminal (8).

Does headlamp alarm activate?

Refer to wiring diagram, EL-189.

Yes → Headlamp alarm is OK.

No ↓

Does headlamp come on when turning lighting switch ON?

No → Check headlamp system. Refer to "HEADLAMP" (EL-41).

Yes ↓

Check theft warning lamp relay.

NG → Replace.

OK ↓

B

CHECK POWER SUPPLY FOR THEFT WARNING LAMP RELAY.

1. Disconnect theft warning lamp relay connector.
2. Measure voltage between terminal (1) and body ground.

Battery voltage should exist.

NG → CHECK THE FOLLOWING.
- 7.5A fuse (No. 43, located in the fuse and fusible link box)

OK ↓

C

CHECK THEFT WARNING LAMP RELAY CIRCUIT.

1. Disconnect theft warning lamp relay connector.
2. Measure voltage between terminals (3) and (5).

Battery voltage should exist.

3. Measure voltage between terminals (6) and (7).

Battery voltage should exist.

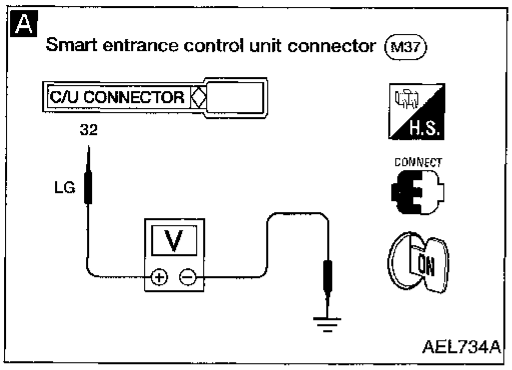
NG → CHECK THE FOLLOWING.
- 15A fuses (No. 39 and 40, located in the fuse and fusible link box)
- Harness for open or short.

OK ↓

Check harness for open or short between theft warning lamp relay and smart entrance control unit.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 8
(Starter interrupt system check)



A

CHECK STARTER MOTOR CUT OUT-PUT SIGNAL.

1. Turn ignition switch ON.
2. Check voltage between control unit terminals (32) and ground.

Condition	Voltage [V]
Except starter killed phase	Approx. 12
Starter killed phase	0

Refer to wiring diagram, EL-25.

NG → Check the following.
- 10A fuse [No. 25, located in fuse block (J/B)]
- Harness continuity between theft warning relay terminal (1) and fuse
- Harness continuity between control unit terminal (32) and theft warning relay terminal (2)

OK ↓

Check theft warning relay.

NG → Replace relay.

OK ↓

Check starting system. Refer to "STARTING SYSTEM", EL-23.

Description

The following systems are controlled by the smart entrance control unit.

- Warning chime
- Rear window defogger timer
- Power door lock
- Multi-remote control system
- Theft warning system.

For detailed description and wiring diagrams, refer to the relevant pages for the each system.
The control unit receives data from the switches and sensors to control their corresponding system relays and actuators.

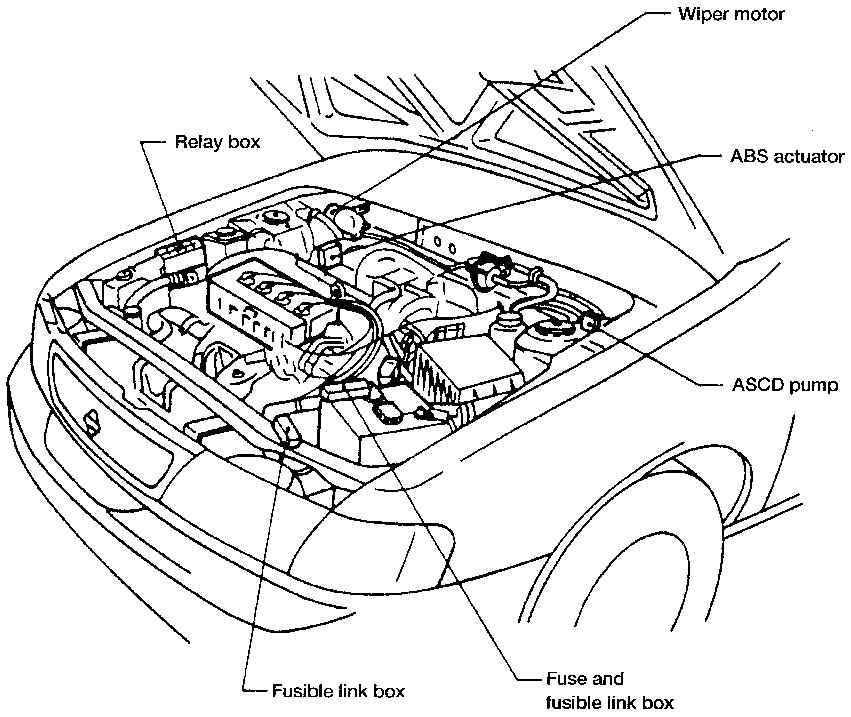
System	Input	Output
Power door lock	Door lock and unlock switches Front door switches Key switch (inserted) Door key cylinder switches (lock/unlock) Front door unlock sensors	Door lock actuators
Multi-remote control	Key switch (inserted) Ignition switch (ACC) Door switch Door unlock sensors Antenna (remote controller signal)	Theft warning horn relay Theft warning lamp relay Interior lamp Multi-remote control relay-1 and 2 Door lock actuators
Warning chime	Key switch (inserted) Ignition switch (ON) Lighting switch (1st) Seat belt buckle switch Front door switch LH	Warning chime
Rear window defogger timer	Ignition switch (ON) Rear window defogger switch	Rear window defogger relay
Theft warning	Ignition switch (ACC, ON) Door switches Hood switch Trunk room lamp switch Door key cylinder switches (lock/unlock) Trunk lid key cylinder switch (unlock) Door unlock sensors	Theft warning horn relay Theft warning lamp relay Theft warning relay (starter interrupt) Security indicator

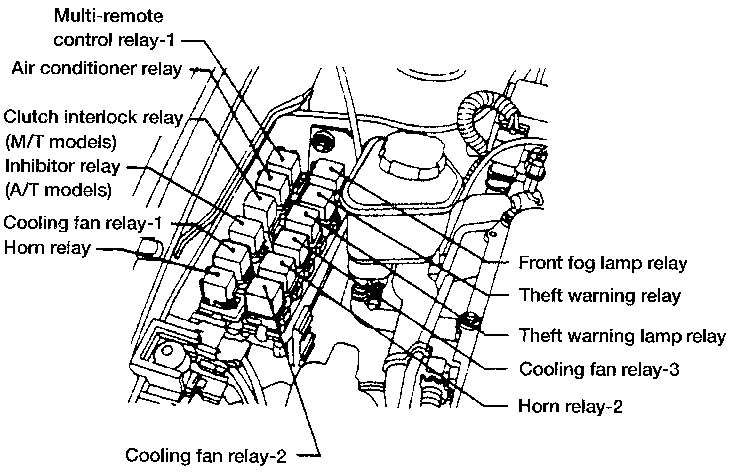
Input/Output Operation Signal

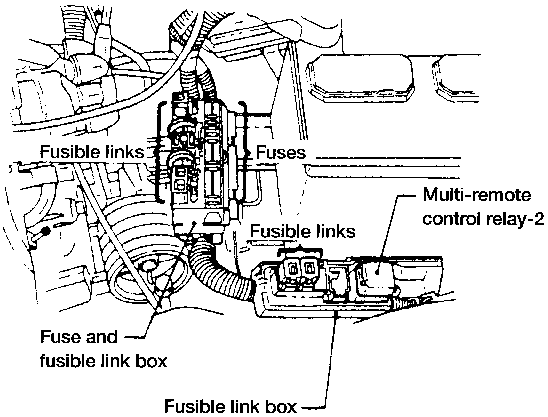
SMART ENTRANCE CONTROL UNIT

Terminal No.	Connections	Operated condition		Voltage (V) (Approximate values)
1	Power source (C/B)	—		12V
2	Passenger and rear door lock actuators	Door lock & unlock switch	Unlocked	12V
3	Driver door lock actuator		Free	0V
4	All door lock actuators	Door lock & unlock switch	Locked	12V
			Free	0V
7	Multi-remote control relay -1, -2	When doors are locked using remote controller		12V → 0V
8	Theft warning lamp relay	When panic alarm is operated using remote controller		12V → 0V
9	Interior lamp	When interior lamp is operated using remote controller. (Lamp switch in "DOOR" position)		12V → 0V
10	Ground	—		—
11	Ignition switch ON	ON position		12V
12	Driver door unlock sensor	Driver door: Locked → Unlocked		12V → 0V
13	Passenger door unlock sensor	Passenger door: Locked → Unlocked		12V → 0V
14	Rear door unlock sensors	Either rear door: Locked → Unlocked		12V → 0V
15	Driver door switch	OFF (Closed) → ON (Open)		12V → 0V
16	Rear door switches	OFF (Closed) → ON (Open)		12V → 0V
17	Ignition switch ACC	ACC position		12V
18	Door lock/unlock switches (lock)	Neutral → Locks		12V → 0V
19	Door lock/unlock switches (unlock)	Neutral → Unlocks		12V → 0V
20	Rear window defogger switch	OFF → ON		12V → 0V
21	Seat belt buckle switch	Unfasten → Fasten		0V → 12V
24	Ignition key switch (Insert)	IGN key inserted → IGN key removed from IGN key cylinder		12V → 0V
25	Lighting switch (1ST)	1ST, 2ND positions: ON → OFF		12V → 0V
26	Trunk room lamp switch	ON (Open) → OFF (Closed)		0V → 12V
27	Trunk lid key cylinder switch (unlock)	OFF (Neutral) → ON (Unlocked)		12V → 0V
28	Tamper switches	OFF (Normal) → ON (Key cylinder withdrawn)		12V → 0V
29	Hood open switch	ON (Open) → OFF (Closed)		0V → 12V
30	Door key cylinder lock switch	OFF (Neutral) → ON (Locked)		12V → 0V
31	Door key cylinder unlock switch	OFF (Neutral) → ON (Unlocked)		12V → 0V
32	Theft warning relay (Starter cut)	OFF → ON		12V → 0V
33	Theft warning indicator	Goes off → Illuminates		12V → 0V
35	Passenger door switch	OFF (Closed) → ON (Open)		12V → 0V
36	Rear defogger relay	OFF → ON		12V → 0V

Engine Compartment







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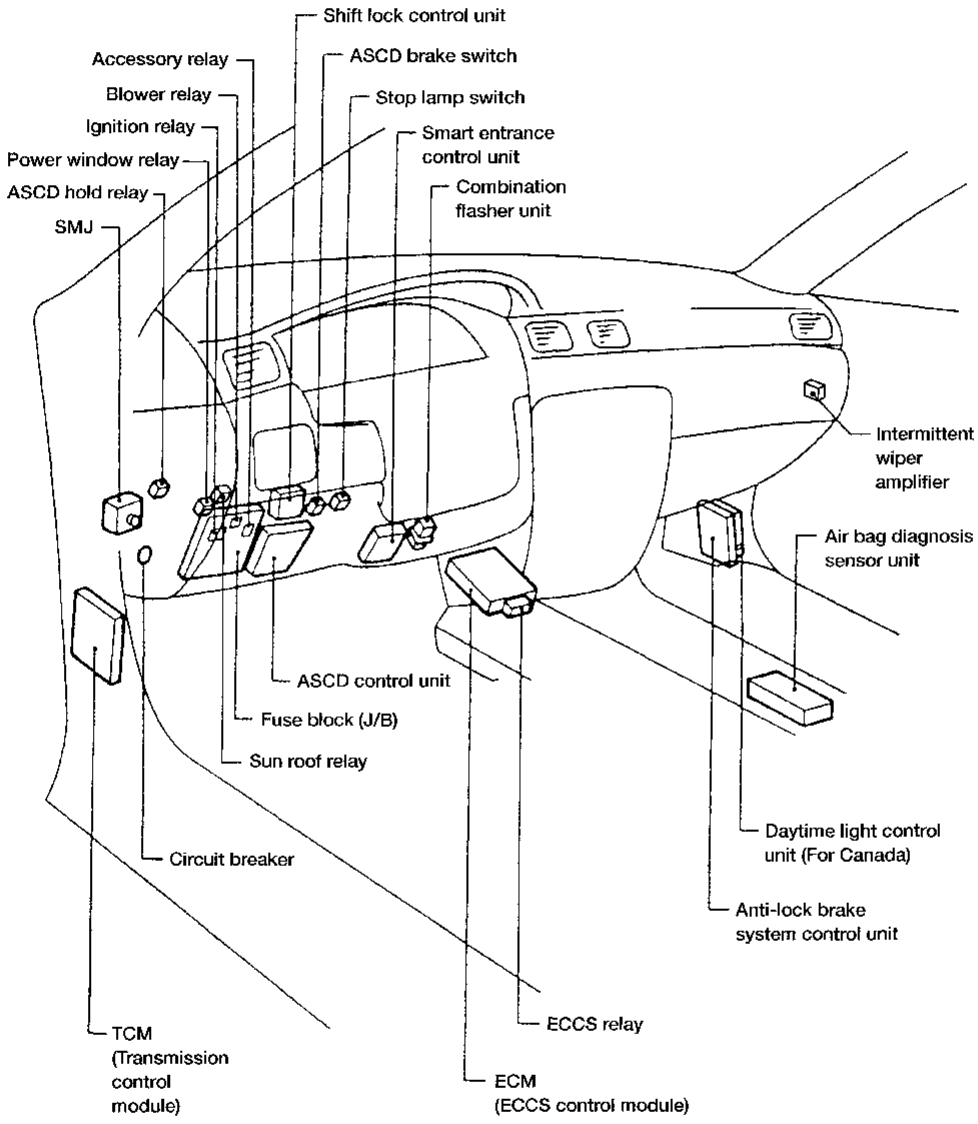
Passenger Compartment



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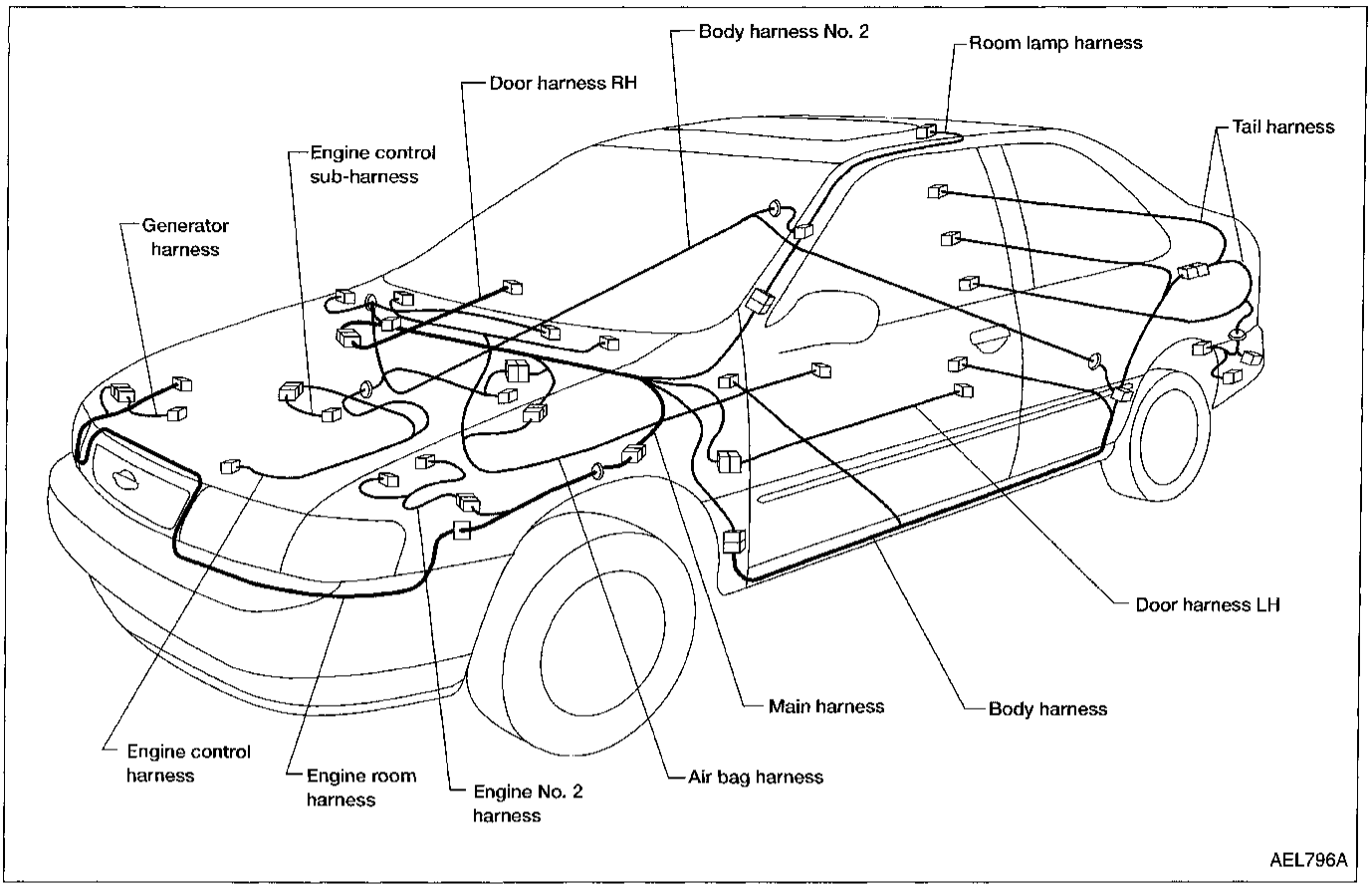
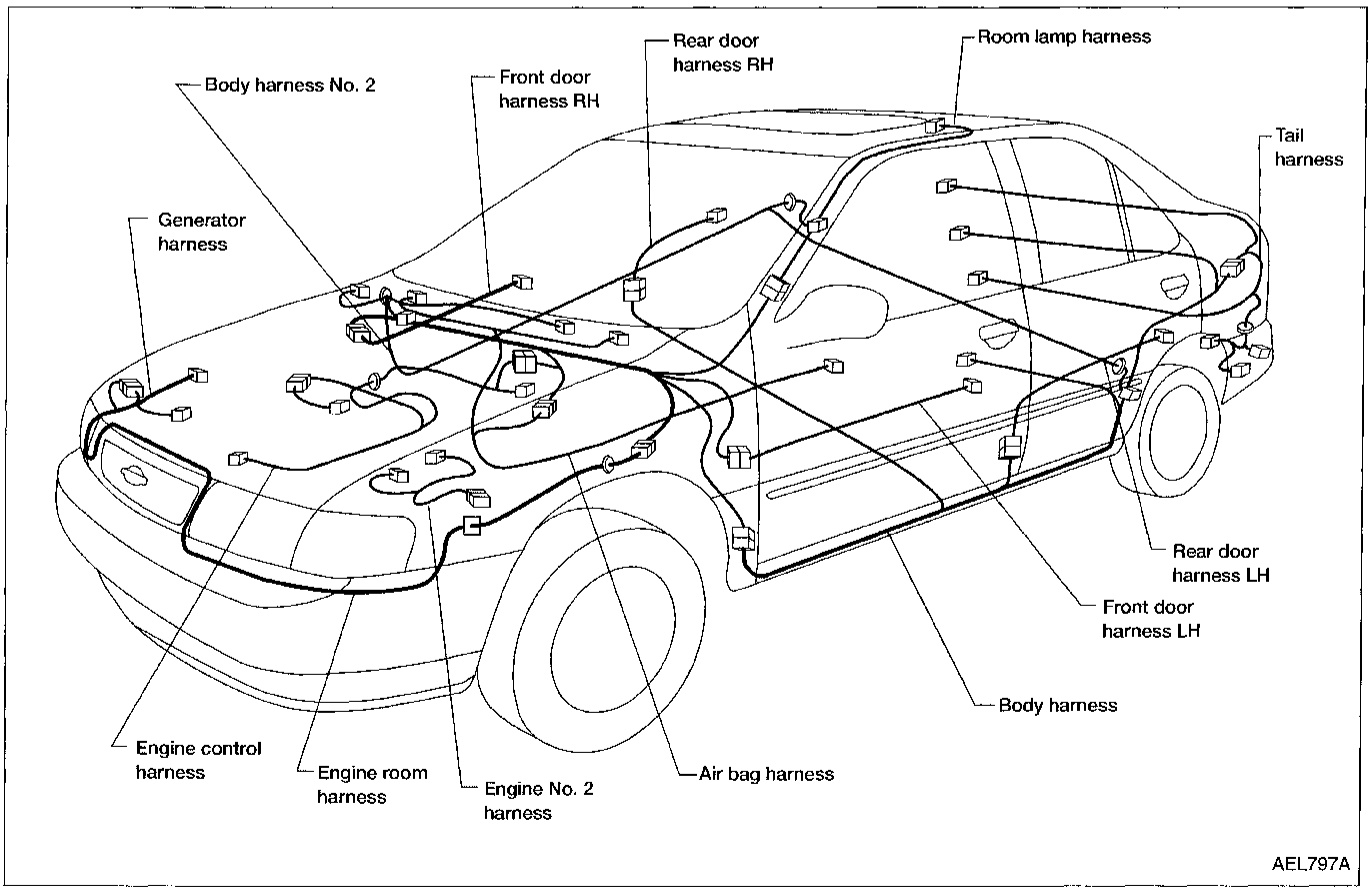
Outline

2-DOOR



4-DOOR



How To Read Harness Layout

Example:

E2 (E1) GY/2: Brake fluid level switch

- GY/2: Connector color/Cavity
- (E1): Connector number
- E2: Grid reference

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

To use the grid reference

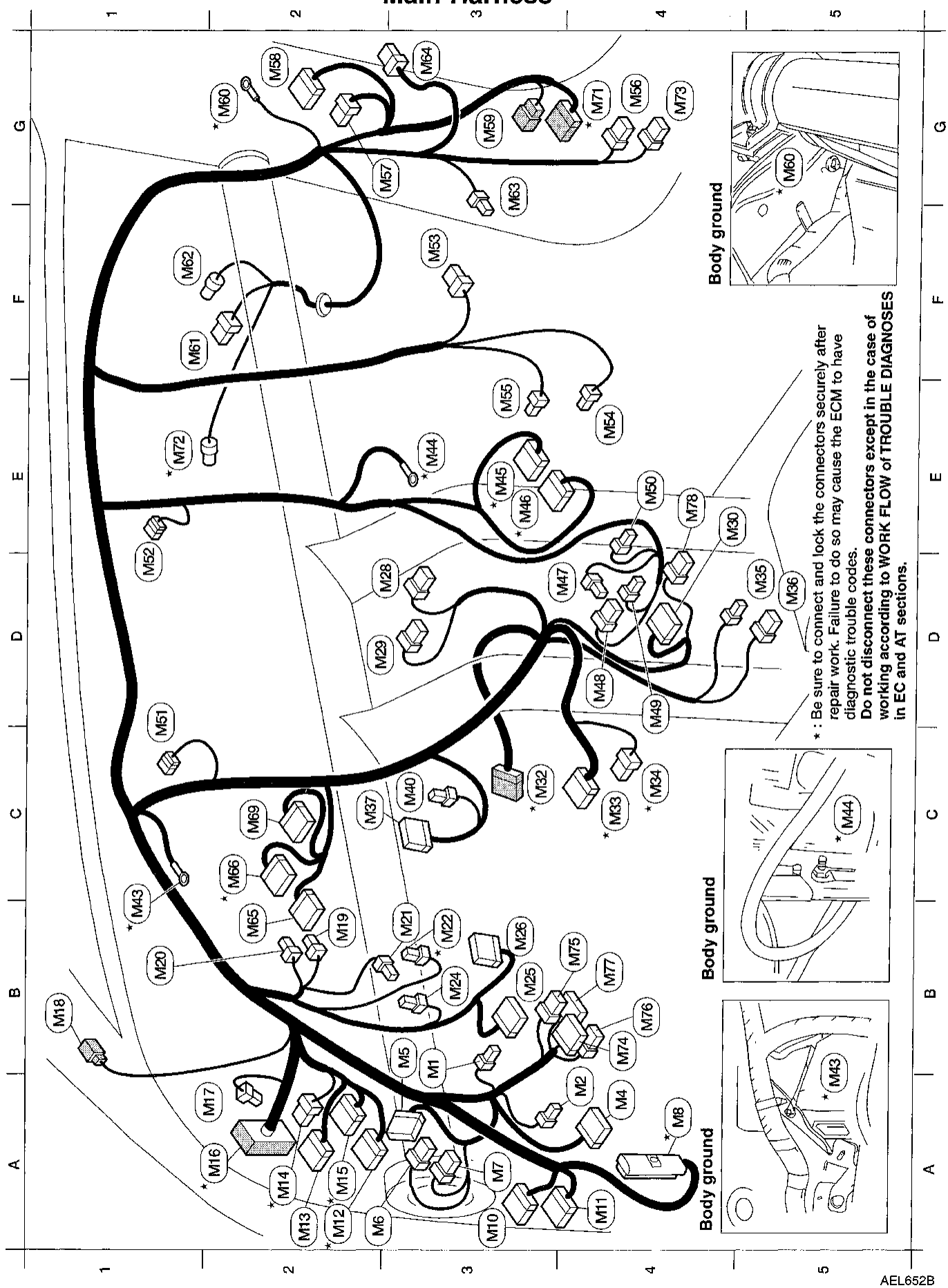
1) Find the desired connector number on the connector list.
2) Find the grid reference.
3) On the drawing, find the crossing of the grid reference letter column and number row.
4) Find the connector number in the crossing zone.
5) Follow the line (if used) to the connector.

CONNECTOR SYMBOL

Main symbol of connector (In Harness Layout) are indicated below.

Connector type	Waterproof type		Standard type	
	Male	Female	Male	Female
• Cavity: Less than 4 • Relay connector				
• Cavity: From 5 to 8				
• Cavity: More than 9				
• Ground: terminal etc.	—			

Main Harness

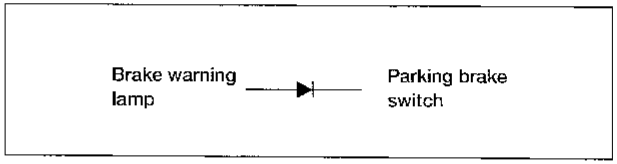


B3 (M1) L/4 : Power window relay
A3 (M2) L/4 : Sun roof relay
A4 (M4) GY/14 : Data link connector for consult
A3 (M5) GY/12 : Remote control mirror switch
A3 (M6) W/6 : ASCD main switch
A3 (M7) W/6 : Illumination control switch
A4 * (M8) L/48 : Transmission control module (with A/T)
A3 (M10) W/12 : To (D1)
A4 (M11) W/16 : To (D2)
A2 * (M12) W/20 : To (B4)
A2 (M13) W/10 : To (B2)
A2 * (M14) W/6 : To (B1)
A2 * (M15) W/16 : To (B3)
A2 * (M16) SMJ : To (E101)
A2 (M17) L/2 : ASCD clutch switch (with M/T)
B1 (M18) W/4 : To (R1)
B2 (M19) B/2 : Stop lamp switch
B2 (M20) L/2 : ASCD brake switch
B3 (M21) L/2 : Clutch interlock switch (with M/T)
B3 * (M22) L/4 : Fuel pump relay
B3 (M24) L/4 : ASCD hold relay (with M/T)
B3 (M24) BR/6 : ASCD hold relay (with A/T)
B3 (M25) GY/16 : Data link connector for GST
B3 (M26) B/20 : ASCD control unit
D3 (M28) W/6 : Rear window defogger switch
D3 (M29) W/8 : Hazard switch
E4 (M30) W/10 : Audio
C3 * (M32) W/12 : To (Z1)
C4 * (M33) W/20 : To (F27)
C4 * (M34) W/8 : To (F26)
D5 (M35) B/2 : Cigarette lighter socket
D5 (M36) W/6 : A/T device

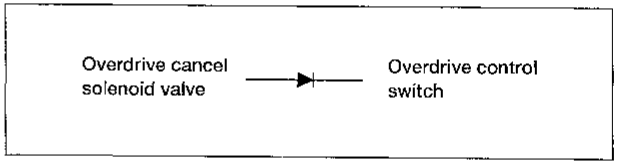
C2 (M37) W/36 : Smart entrance control unit
C3 (M40) B/3 : Combination flasher unit
C1 * (M43) – : Body ground
E3 * (M44) – : Body ground
E3 * (M45) W/20 : To (F34)
E3 * (M46) W/16 : To (F28)
D3 (M47) W/3 : Fan switch illumination
D4 (M48) W/6 : Fan switch
D4 (M49) W/4 : Recirculation switch
E4 (M50) W/3 : Air conditioner switch
C1 (M51) W/2 : Diode (for Canada)
E1 (M52) W/2 : Diode
F3 (M53) B/6 : Intake door motor
E4 (M54) BR/4 : Fan resistor
E3 (M55) W/3 : Thermo control amplifier
G4 (M56) GY/6 : Daytime light control unit
G2 (M57) W/8 : To (D9)
G2 (M58) W/12 : To (D10)
G3 (M59) W/8 : To (B105)
G2 (M60) – : Body ground
F1 (M61) W/6 : Wiper motor
F1 (M62) GY/2 : Power steering oil pressure switch
G3 (M63) W/2 : Blower motor
G3 (M64) W/8 : Intermittent wiper amplifier
B2 (M65) B/10 : Combination meter
C2 * (M66) W/12 : Combination meter
C2 (M69) B/12 : Combination meter
G4 * (M71) W/16 : to (B111)
E1 * (M72) GY/3 : Absolute pressure sensor (without ABS)

G4 (M73) GY/8 : Daytime light control unit
B4 (M74) GY/16 : Fuse block (J/B)
B4 (M75) W/8 : Fuse block (J/B)
B4 (M76) GY/8 : Fuse block (J/B)
B4 (M77) BR/16 : Fuse block (J/B)
E4 (M78) W/6 : Audio

Diode (M51)



Diode (M52)



* : Be sure to connect and lock the connectors securely after repair work. Failure to do so may cause the ECM to have diagnostic trouble codes.
Do not disconnect these connectors except in the case of working according to WORK FLOW of TROUBLE DIAGNOSES in EC and AT sections.

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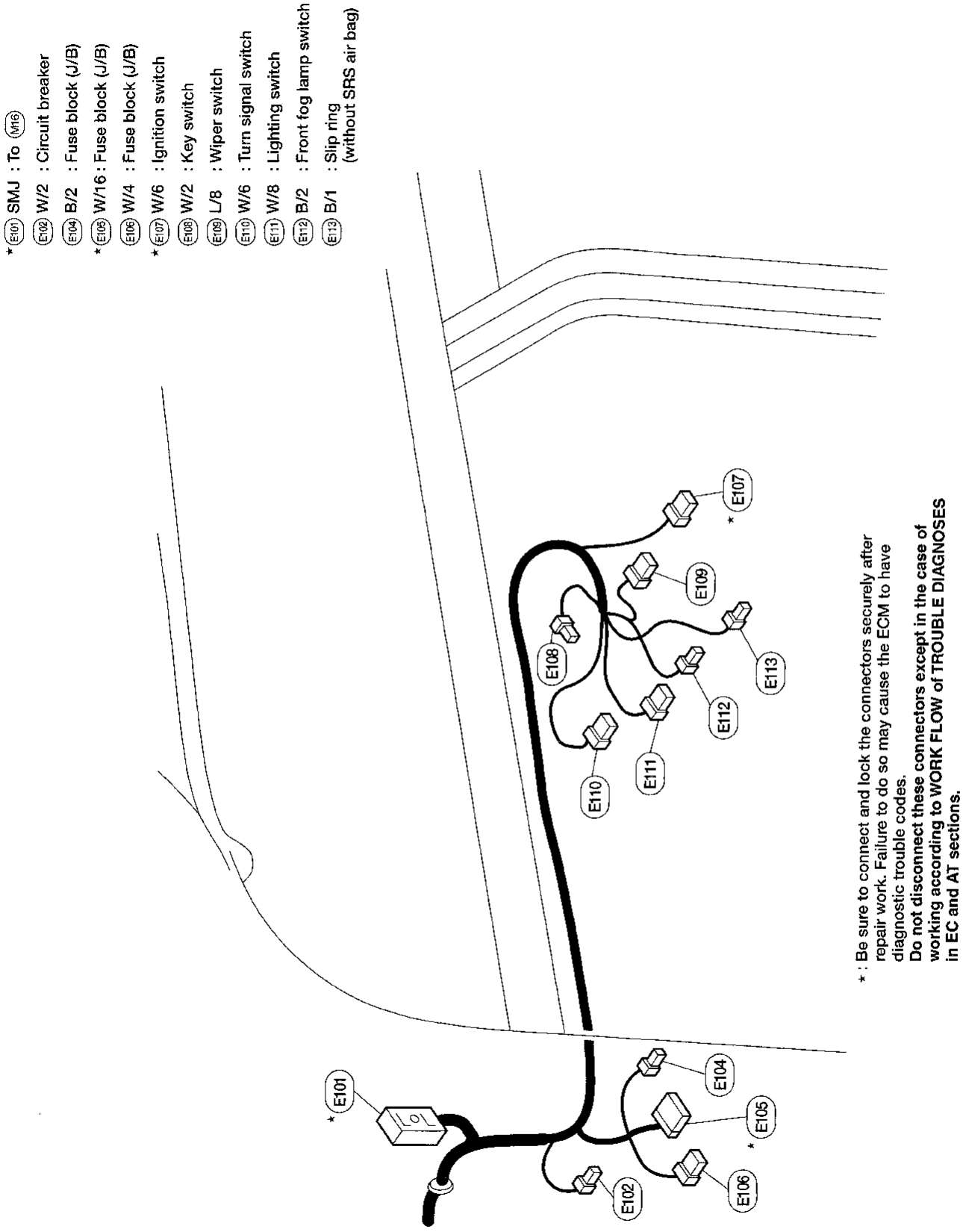
Engine Room Harness

PASSENGER COMPARTMENT



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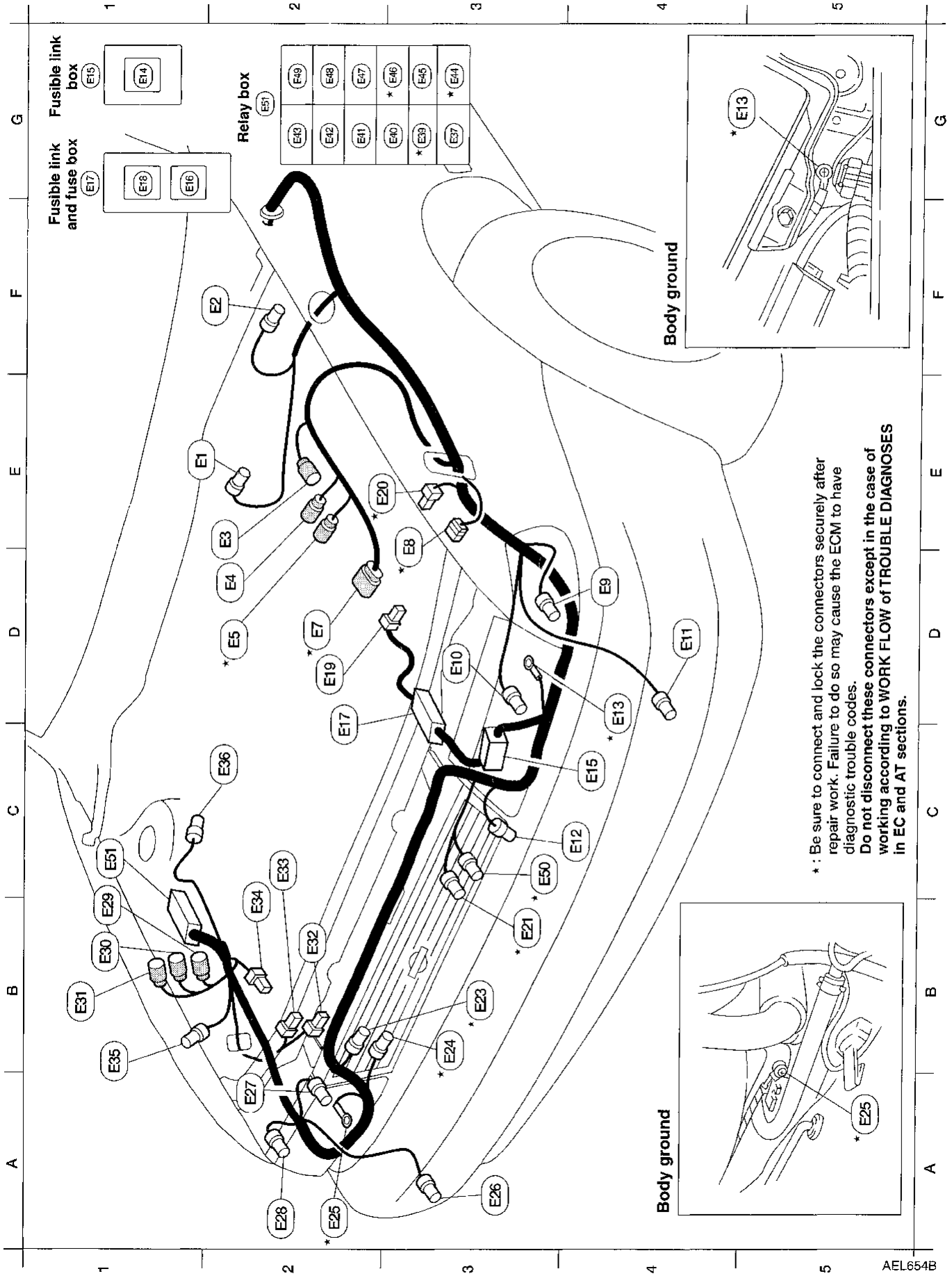
NOTES

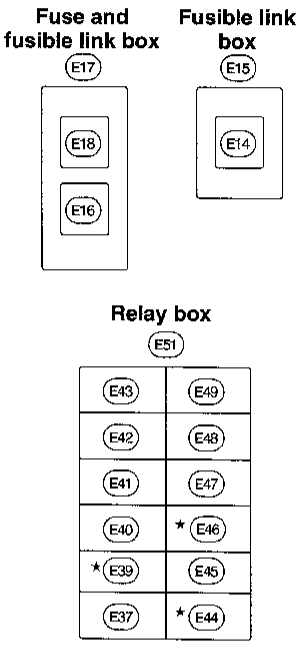
Engine Room Harness (Cont'd)

ENGINE COMPARTMENT



E2 (E1) GY/2 : Brake fluid level switch
F2 (E2) GY/4 : ASCD pump
E2 (E3) BR/2 : Front wheel sensor LH
D2 (E4) W/1 : To (E202)
D2 *(E5) GY/6 : To (E211)
D2 *(E7) GY/8 : To (E203)
E3 *(E8) GY/2 : Dropping Resistor
D4 (E9) BR/3 : Front combination lamp LH
D3 (E10) B/3 : Headlamp LH
D4 (E11) GY/2 : Front fog lamp LH
C4 (E12) B/2 : Dual pressure switch
D4 *(E13) – : Body ground
(E14) B/5 : Multi-remote control relay-2 (in fusible link box)
C4 (E15) FB : Fusible link box
(E16) B/1 : Fusible link holder (in fuse and fusible link box)
C2 (E17) FB : Fuse and fusible link box
(E18) W/1 : Fusible link holder (in fuse and fusible link box)
D2 (E19) B/1 : Battery
E3 *(E20) GY/2 : Intake air temperature sensor
B3 *(E21) GY/2 : Cooling fan motor-1 (with M/T)
B3 *(E23) GY/2 : Cooling fan motor-2 (with M/T and A/C)
B3 *(E24) GY/4 : Cooling fan motor-2 (with A/T and A/C)
B2 *(E25) – : Body ground
A3 (E26) GY/2 : Front fog lamp RH
A2 (E27) B/3 : Headlamp RH

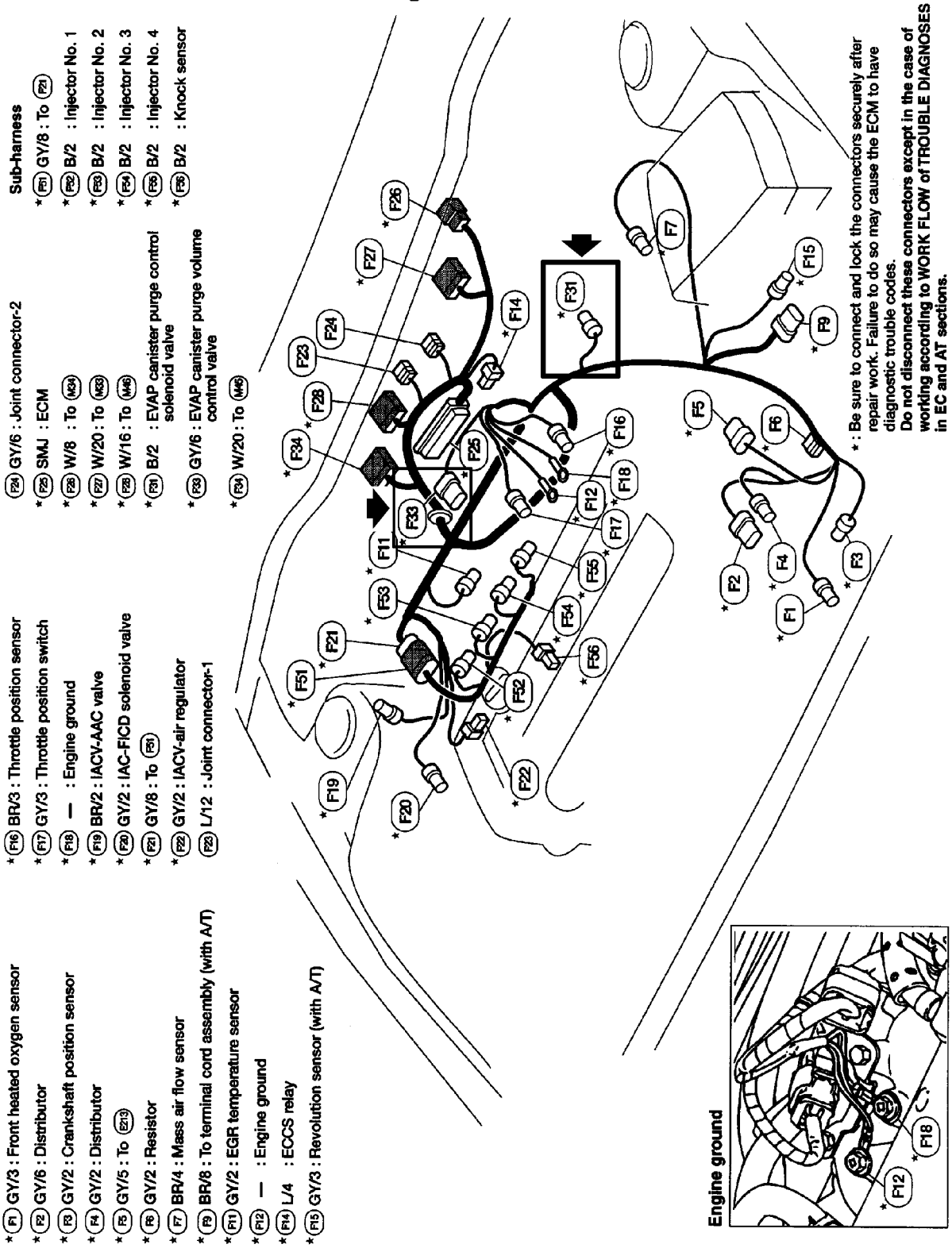
A2 (E28) BR/3 : Front combination lamp RH
B1 (E29) GY/1 : To (A3)
B1 (E30) GY/3 : To (A1)
B1 (E31) GY/1 : To (A2)
B2 (E32) B/2 : Washer fluid level switch
B2 (E33) W/2 : Front washer motor
B2 (E34) B/1 : Horn
B1 (E35) GY/2 : Hood switch
C2 (E36) B/2 : ABS relay box
(E37) W/3 : Horn relay
*(E39) L/4 : Cooling fan relay-1
(E40) L/4 : Inhibitor relay (without ASCD)
GY/6 : Inhibitor relay (with ASCD)
(E41) L/4 : Clutch interlock relay (with M/T)
(E42) BR/6 : Air conditioner relay
(E43) BR/6 : Multi-remote control relay-1
*(E44) L/4 : Cooling fan relay-2 (with A/T)
(E45) BR/6 : Horn relay-2
*(E46) L/4 : Cooling fan relay-3 (with A/T)
(E47) BR/6 : Theft warning lamp relay
(E48) B/5 : Theft warning relay
(E49) L/4 : Front fog lamp relay
C3 *(E50) GY/4 : Cooling fan motor-1 (with A/T)
C1 (E51) FB : Relay box



★ : Be sure to connect and lock the connectors securely after repair work. Failure to do so may cause the ECM to have diagnostic trouble codes.
Do not disconnect these connectors except in the case of working according to WORK FLOW of TROUBLE DIAGNOSES in EC and AT sections.

AEL655B

Engine Control Harness

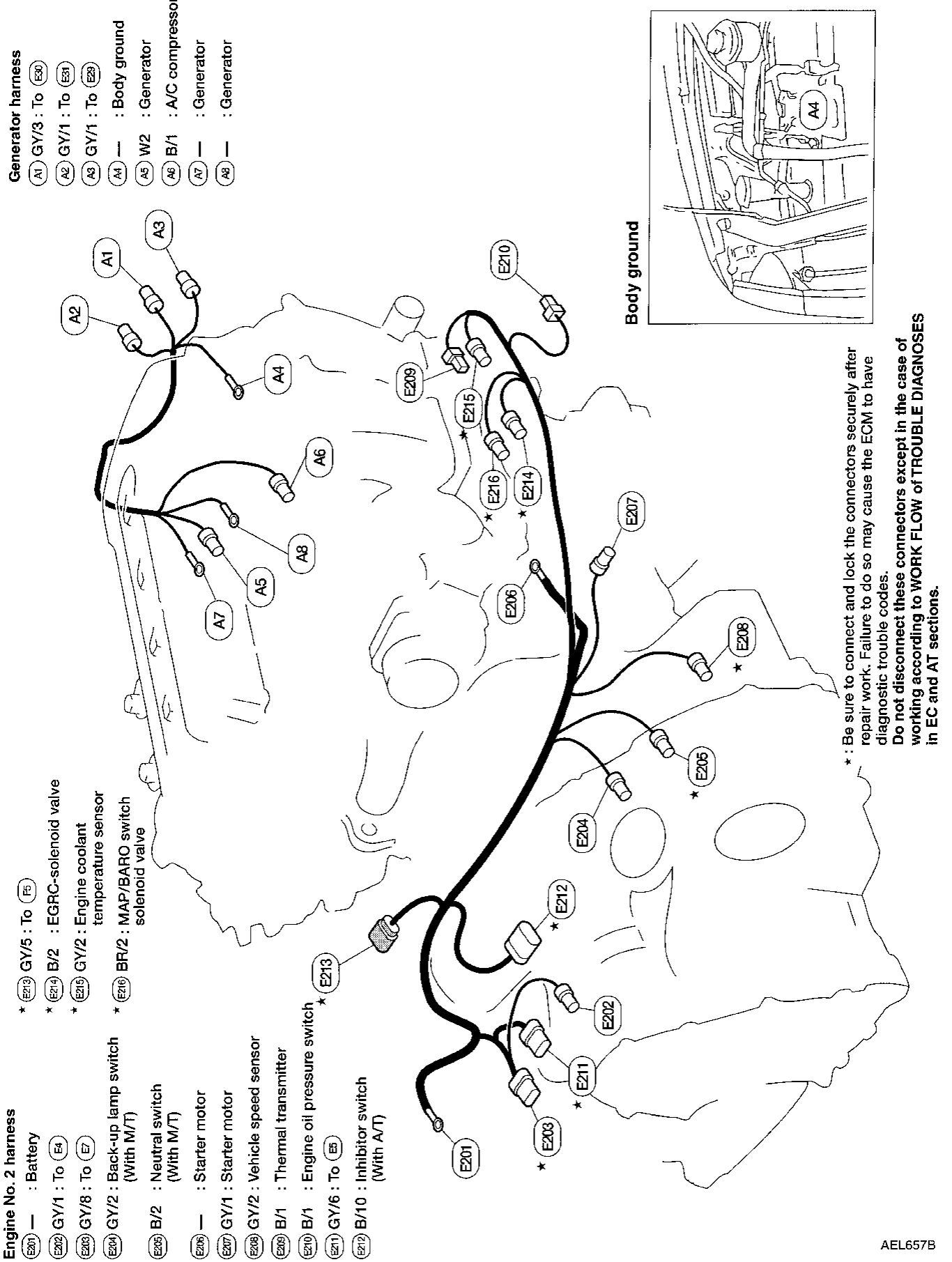


SMA98-070	'98 SENTRA/200SX	OCTOBER 1997 (06)	SM8E-OB14U1

◀ ARROW INDICATES AMENDED INFORMATION

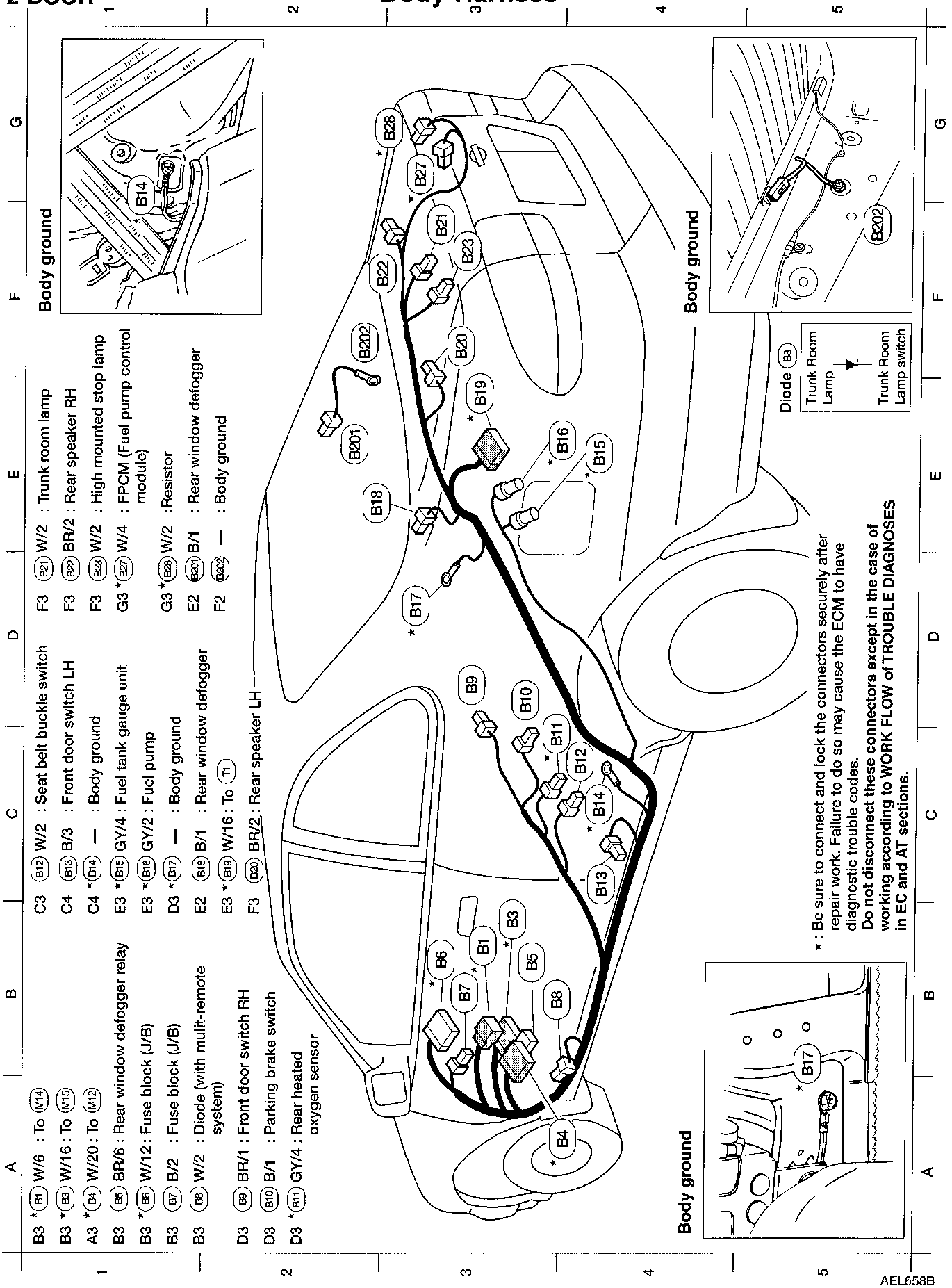
TP980422

Engine Harness No. 2 and Generator Harness



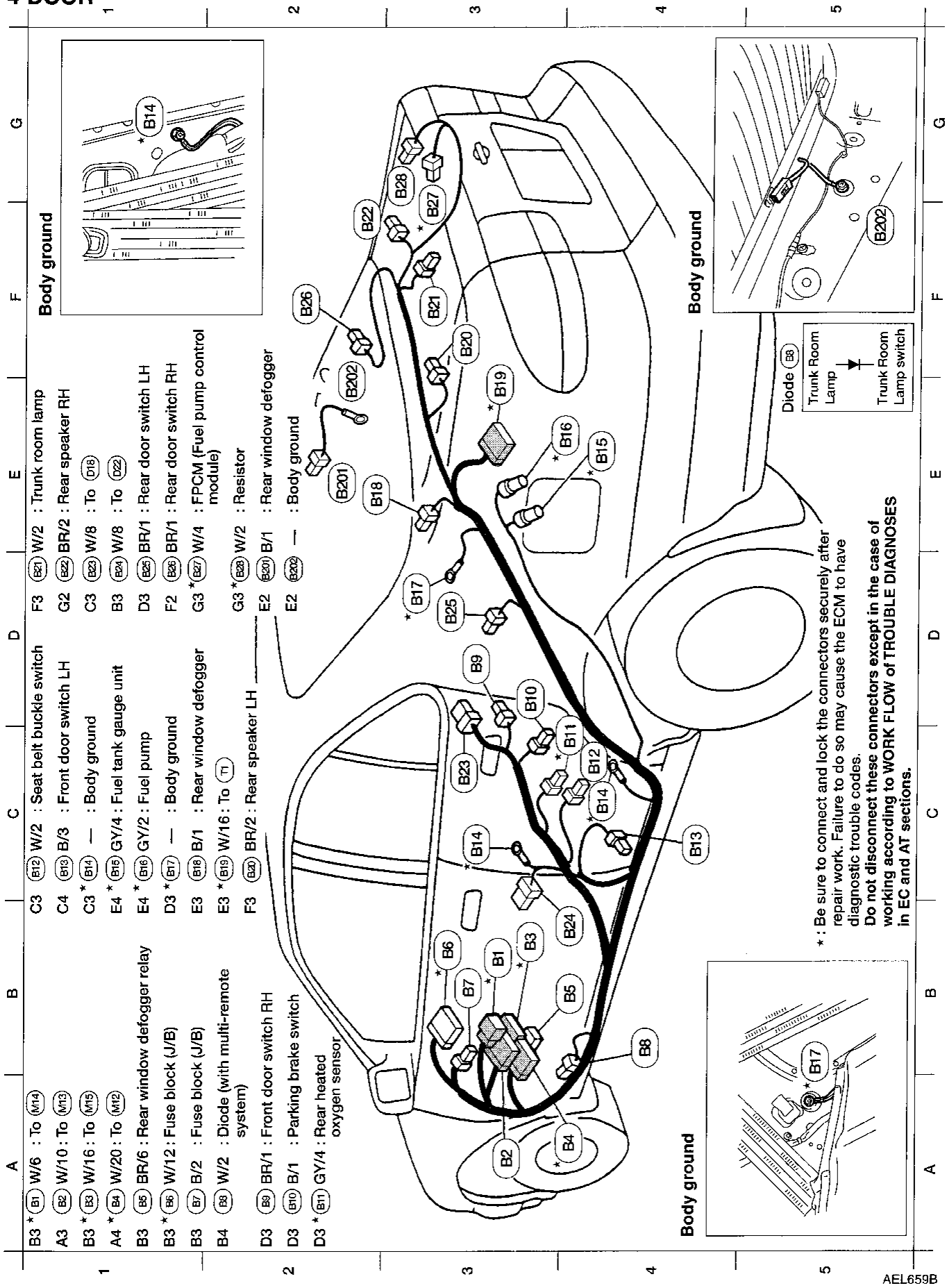
2-DOOR

Body Harness



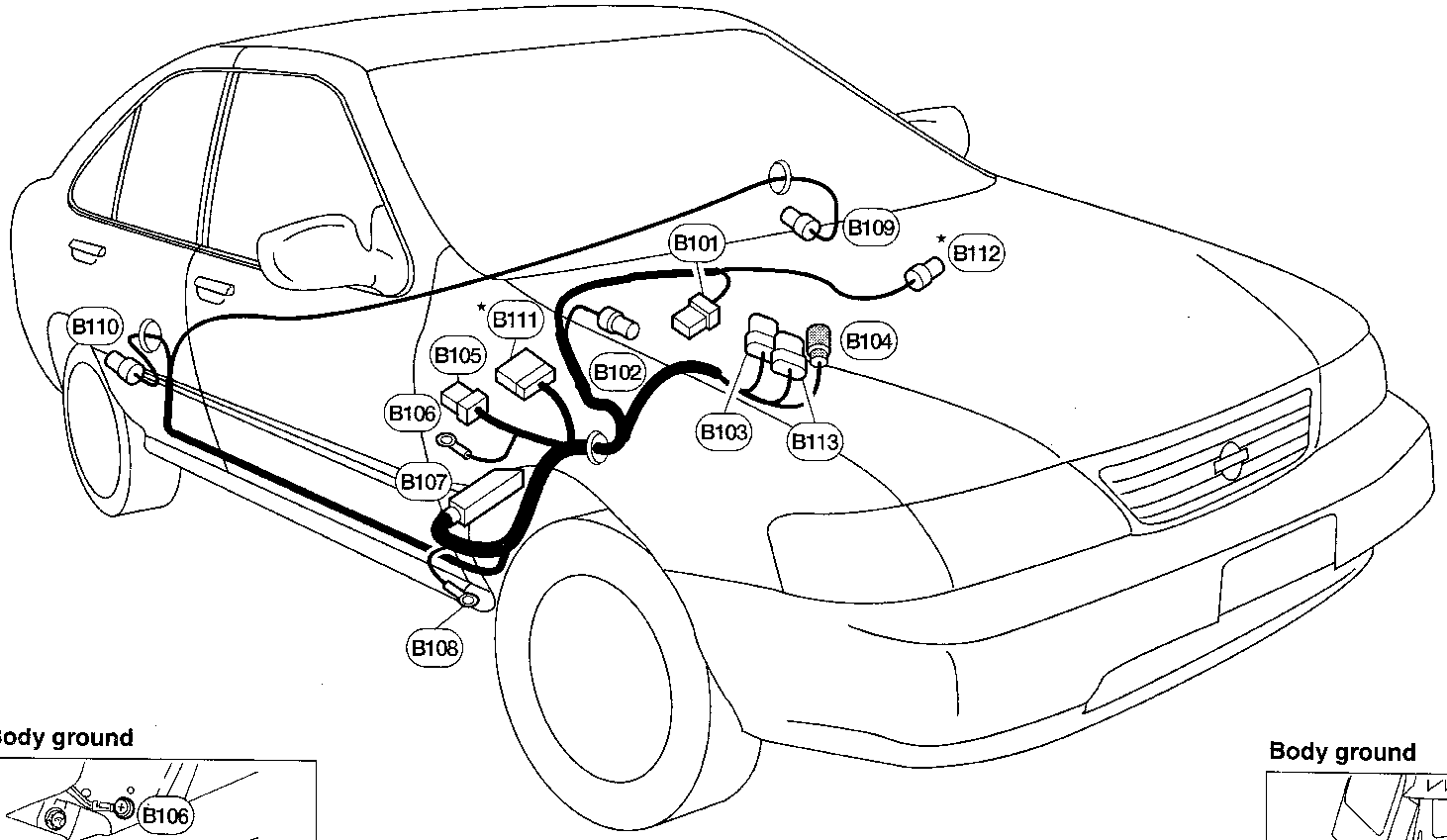
Body Harness (Cont'd)

4-DOOR

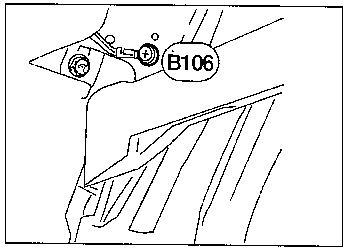


Body Harness No. 2

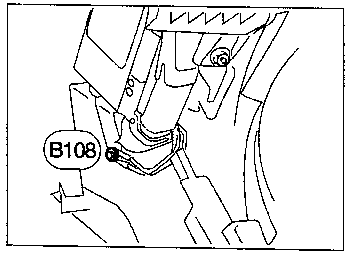
(B101) W/6 : Wiper motor
(B102) GY/2 : Power steering fluid level switch
(B103) GY/8 : ABS control actuator
(B104) GY/2 : Front wheel sensor RH
(B105) W/8 : To (M59)
(B106) — : Body ground
(B107) SMJ : ABS control unit
(B108) — : Body ground
(B109) BR/2 : Rear wheel sensor LH
(B110) GY/2 : Rear wheel sensor RH
*(B111) W/16 : To (M71)
*(B112) GY/3 : Absolute pressure sensor (with ABS)
(B113) B/6 : ABS relay unit



Body ground



Body ground

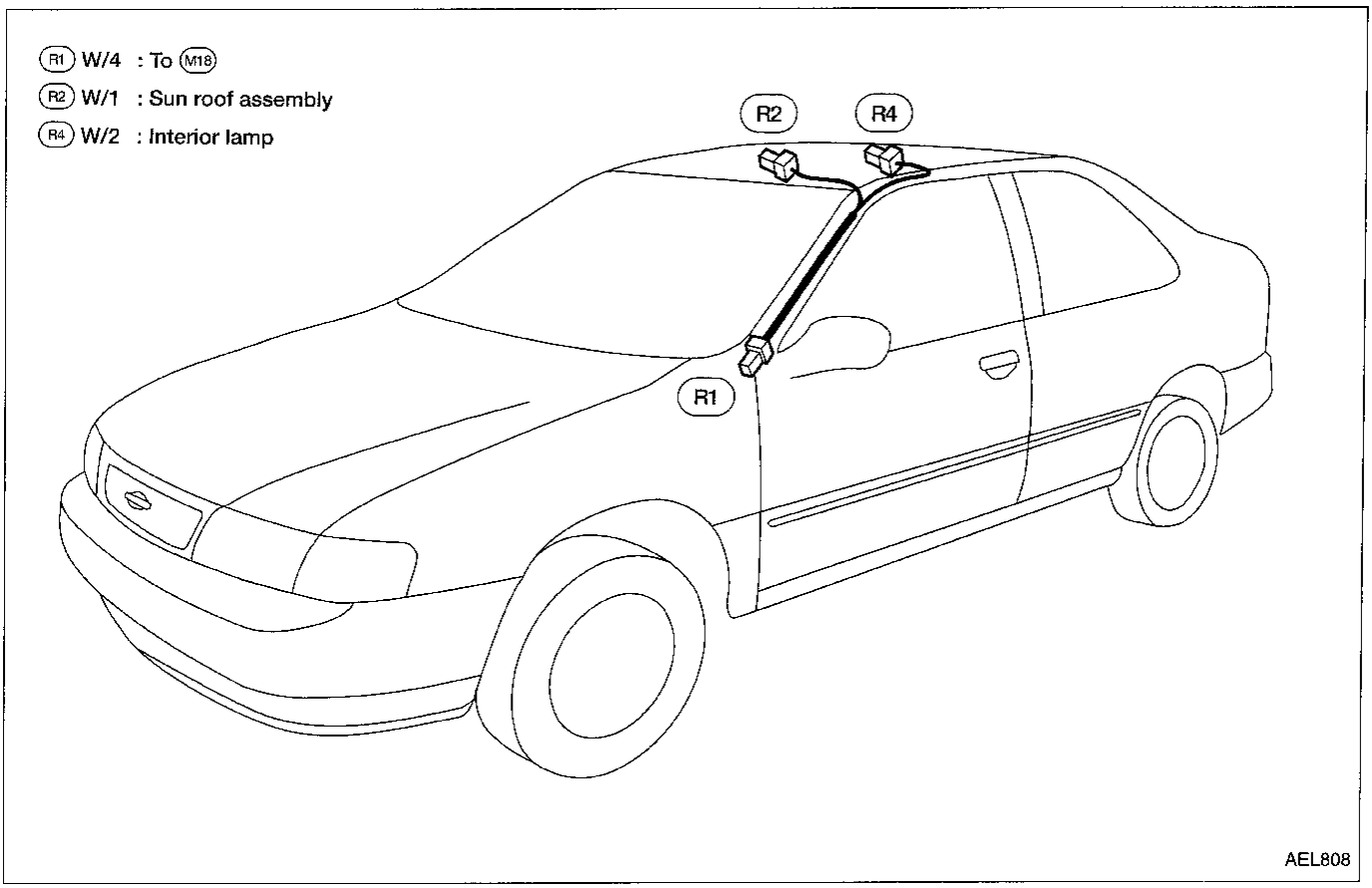


* : Be sure to connect and lock the connectors securely after repair work. Failure to do so may cause the ECM to have diagnostic trouble codes.
Do not disconnect these connectors except in the case of working according to WORK FLOW of TROUBLE DIAGNOSES in EC and AT sections.

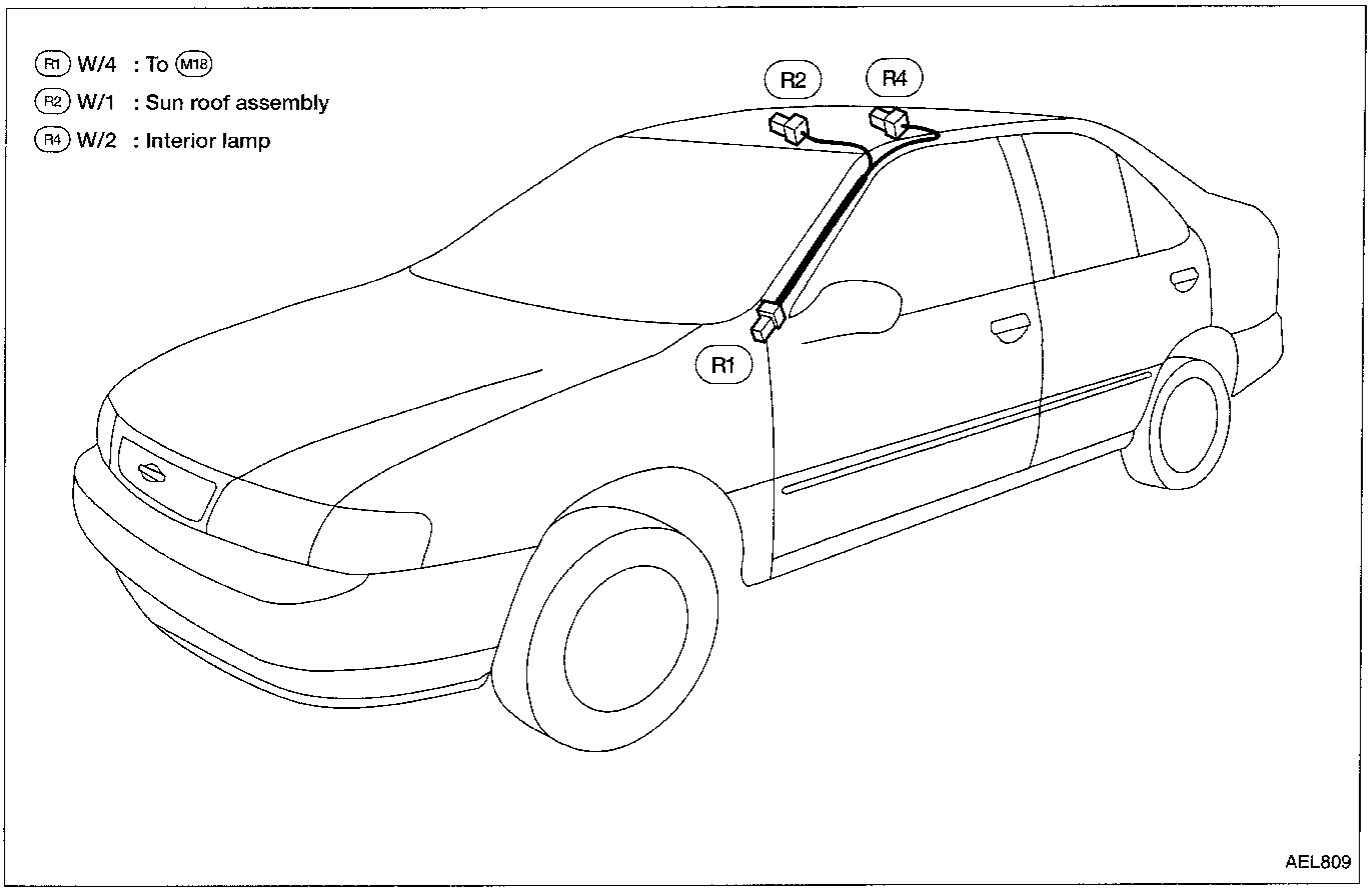
AEL660B

Room Lamp Harness

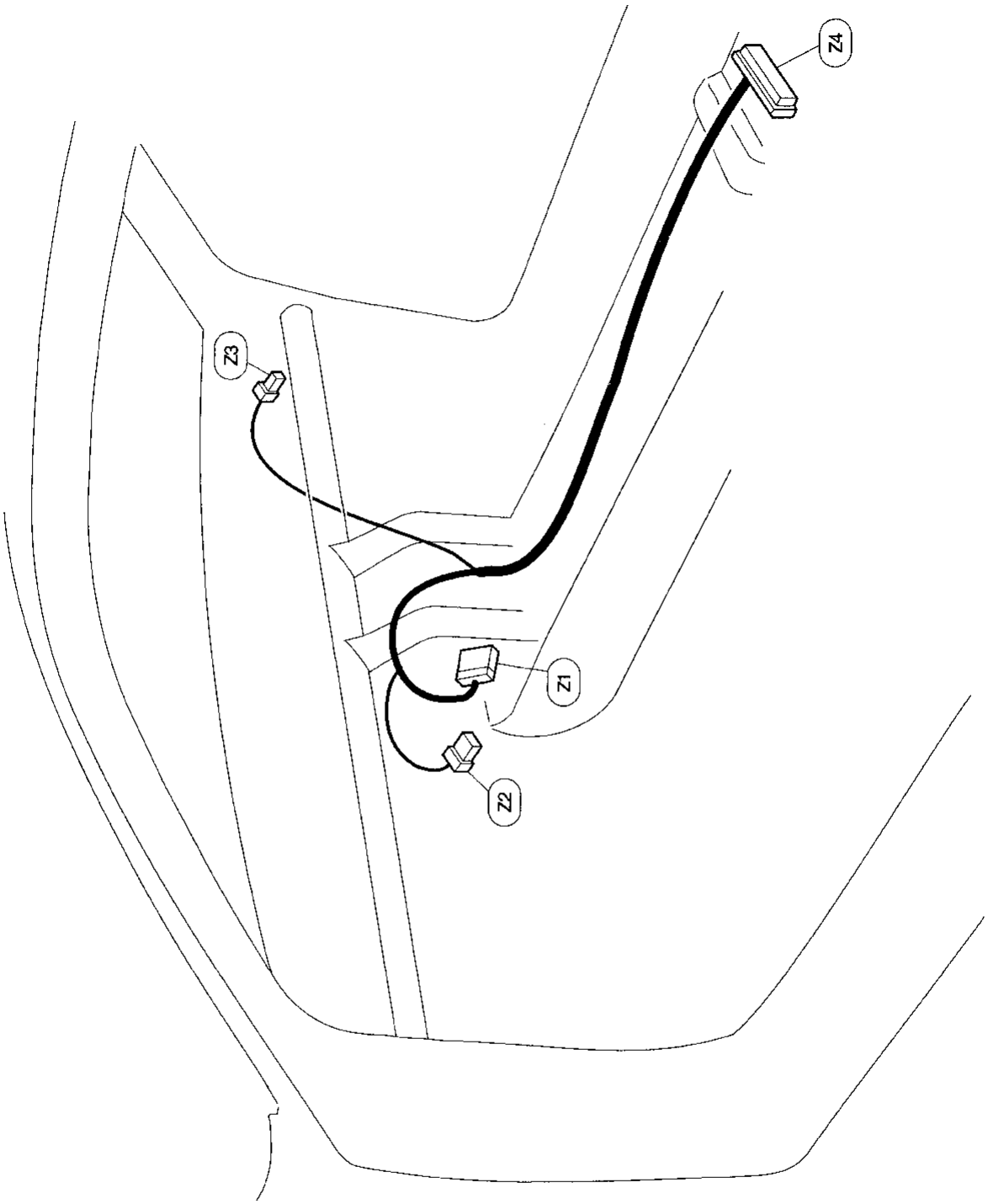
2-DOOR



4-DOOR



Air Bag Harness



Z1 W/12 : To M32
Z2 W/6 : Air bag module LH
Z3 W/2 : Air bag module RH
Z4 Y/22 : Air bag diagnosis sensor unit

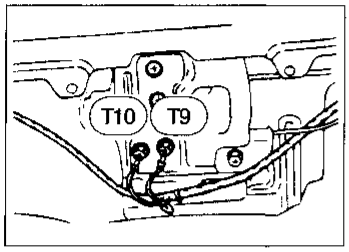
AEL702B

Tail Harness

2-DOOR

*(T1) W/16 : To (B19)
(T2) W/2 : Back-up lamp LH
(T3) BR/2 : Licence lamp
(T4) B/2 : Trunk room lamp switch
(T5) W/2 : High mounted stop lamp
(T6) W/3 : Trunk lid key cylinder switch
(T7) W/2 : Back-up lamp RH
(T8) W/4 : Rear combination lamp LH
(T9) — : Body ground
(T10) — : Body ground
(T11) W/4 : Rear combination lamp RH
*(T12) B/2 : EVAP canister vent control valve
*(T13) GY/3 : EVAP control system pressure sensor
*(T14) G/2 : Vacuum cut valve bypass valve

Body ground



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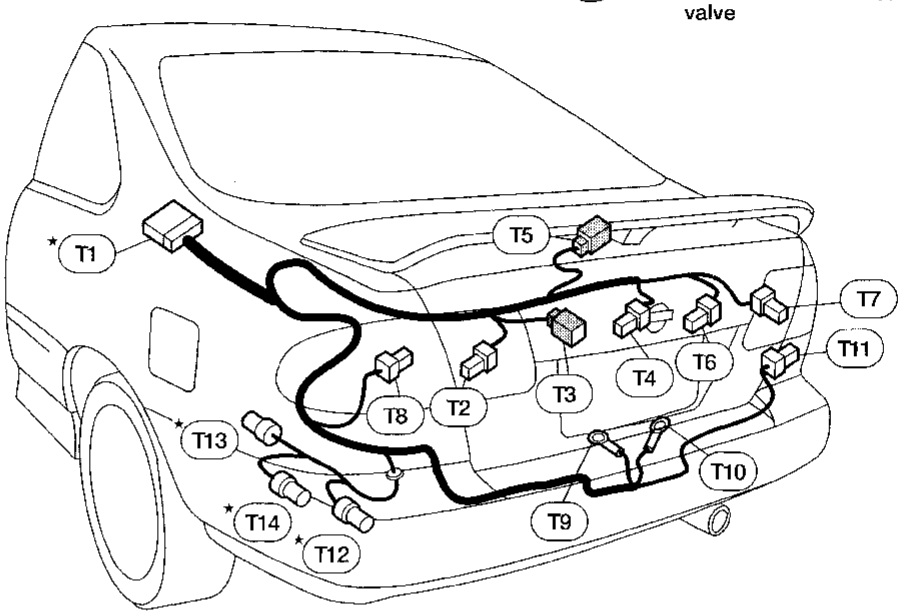
Do not disconnect these connectors except in the case of working according to WORK FLOW of TROUBLE DIAGNOSES in EC and AT sections.

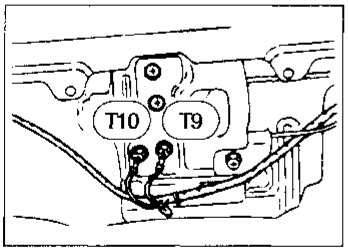


AEL502B

4-DOOR

*(T1) W/16 : To (B19)
(T2) W/2 : Back-up lamp LH
(T3) BR/2 : Licence lamp
(T4) B/2 : Trunk room lamp switch
(T5) BR/2 : High mounted stop lamp
(T6) W/3 : Trunk lid key cylinder switch
(T7) W/2 : Back-up lamp RH
(T8) W/4 : Rear combination lamp LH
(T9) — : Body ground
(T10) — : Body ground
(T11) W/4 : Rear combination lamp RH
*(T12) B/2 : EVAP canister vent control valve
*(T13) GY/3 : EVAP control system pressure sensor
*(T14) G/2 : Vacuum cut valve bypass valve

Body ground



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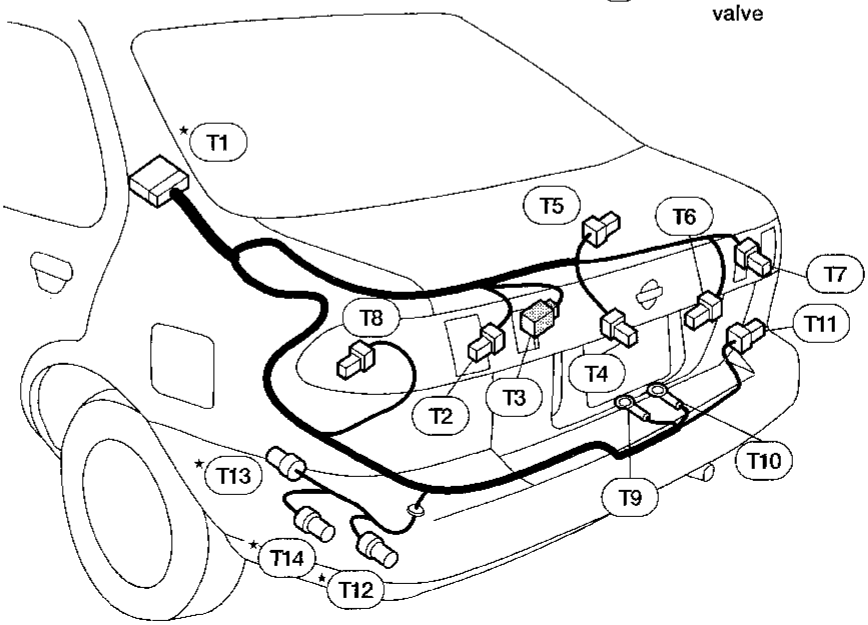
Do not disconnect these connectors except in the case of working according to WORK FLOW of TROUBLE DIAGNOSES in EC and AT sections.

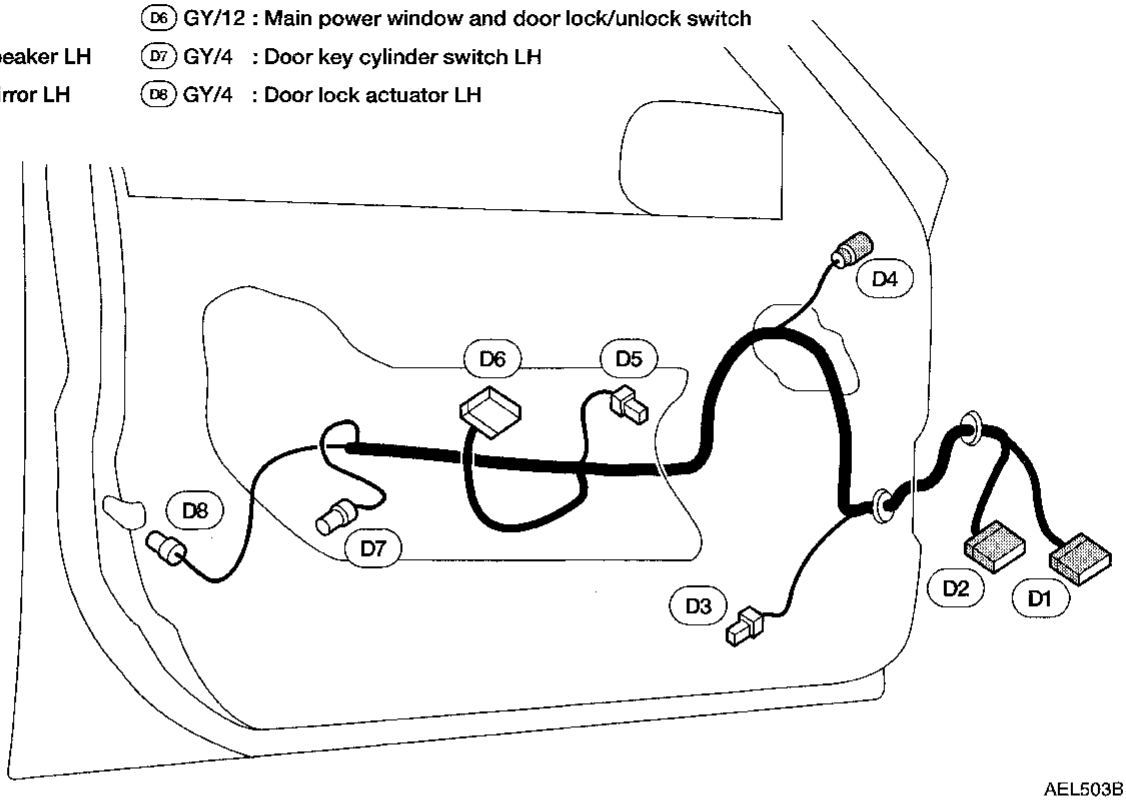


AEL501B

Front Door Harness (2-Door)

LEFT

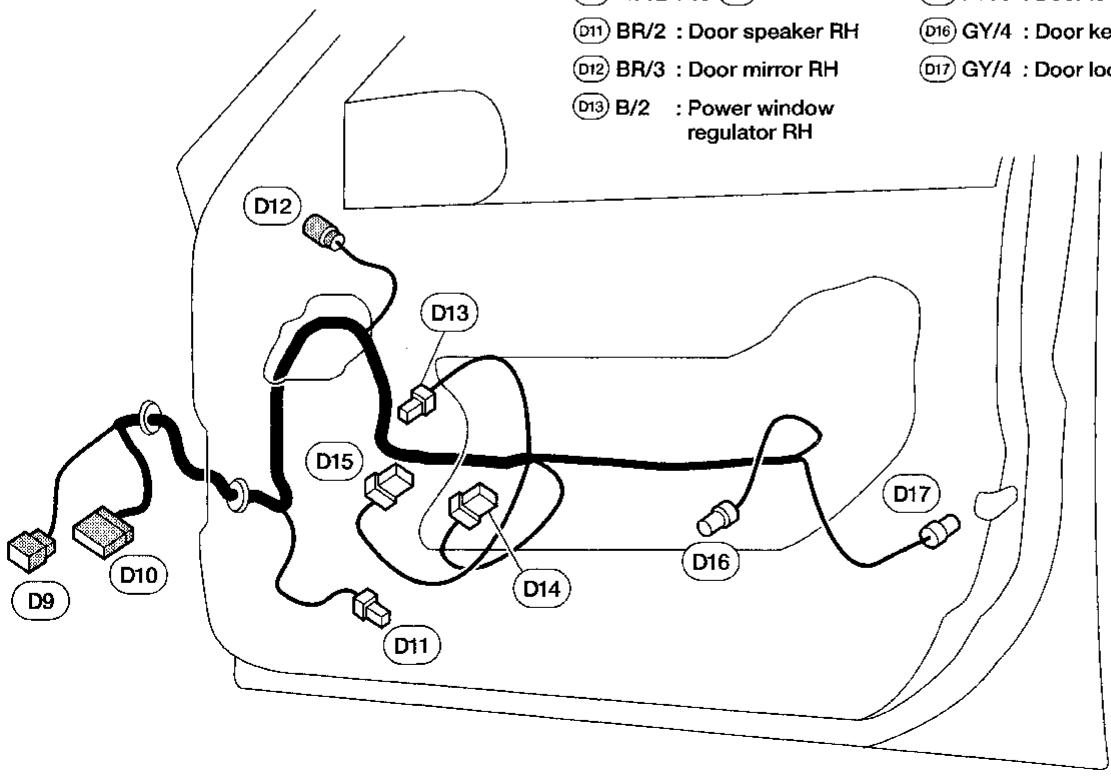
(D1) W/12 : To (M10)
(D2) W/16 : To (M11)
(D3) BR/2 : Door speaker LH
(D4) BR/3 : Door mirror LH
(D5) B/2 : Power window regulator LH
(D6) GY/12 : Main power window and door lock/unlock switch
(D7) GY/4 : Door key cylinder switch LH
(D8) GY/4 : Door lock actuator LH



AEL503B

RIGHT

(D9) W/8 : To (M57)
(D10) W/12 : To (M58)
(D11) BR/2 : Door speaker RH
(D12) BR/3 : Door mirror RH
(D13) B/2 : Power window regulator RH
(D14) W/6 : Power window switch RH
(D15) BR/6 : Door lock/unlock switch RH
(D16) GY/4 : Door key cylinder switch RH
(D17) GY/4 : Door lock actuator RH

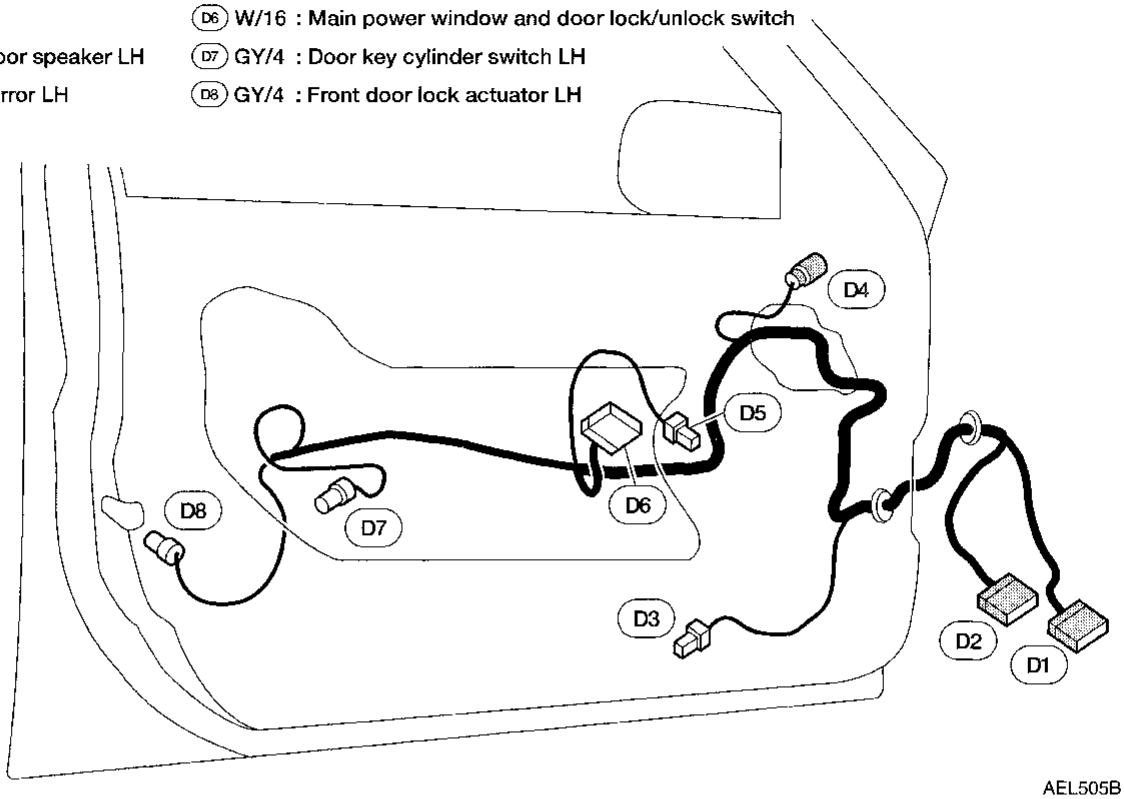


AEL504B

Front Door Harness (4-Door)

LEFT

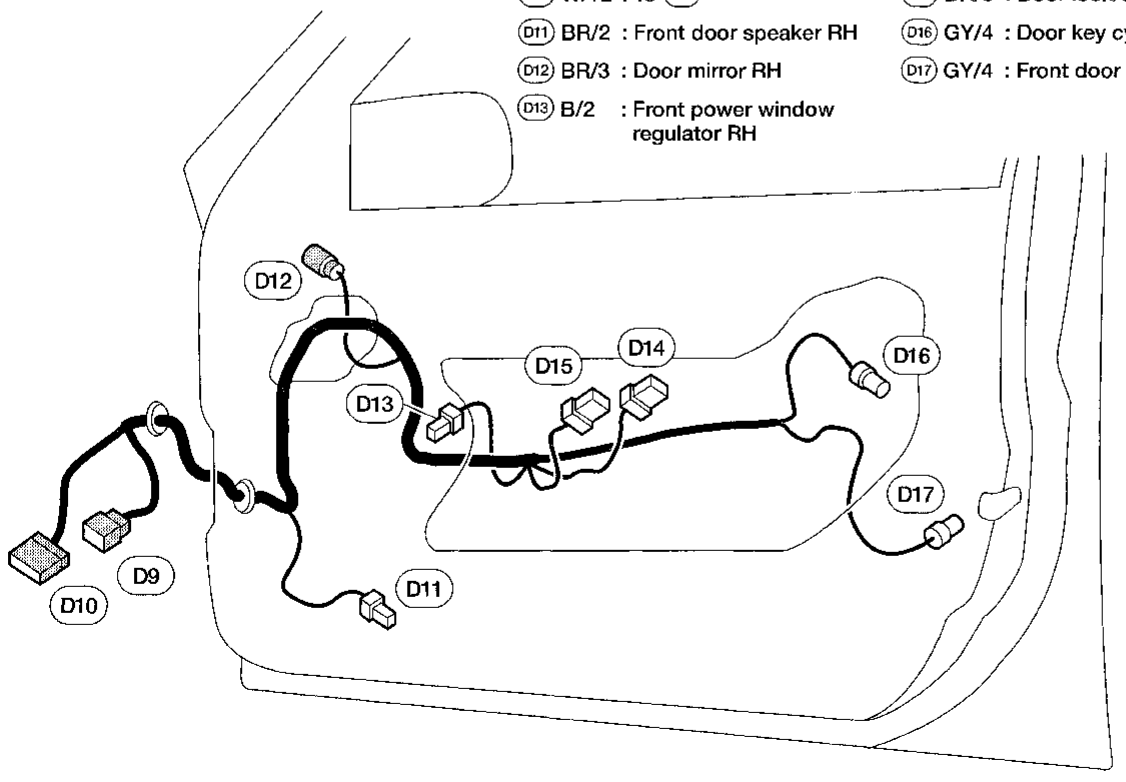
(D1) W/12 : To (M10)
(D2) W/16 : To (M11)
(D3) BR/2 : Front door speaker LH
(D4) BR/3 : Door mirror LH
(D5) W/12 : Front power window regulator LH
(D6) W/16 : Main power window and door lock/unlock switch
(D7) GY/4 : Door key cylinder switch LH
(D8) GY/4 : Front door lock actuator LH



AEL505B

RIGHT

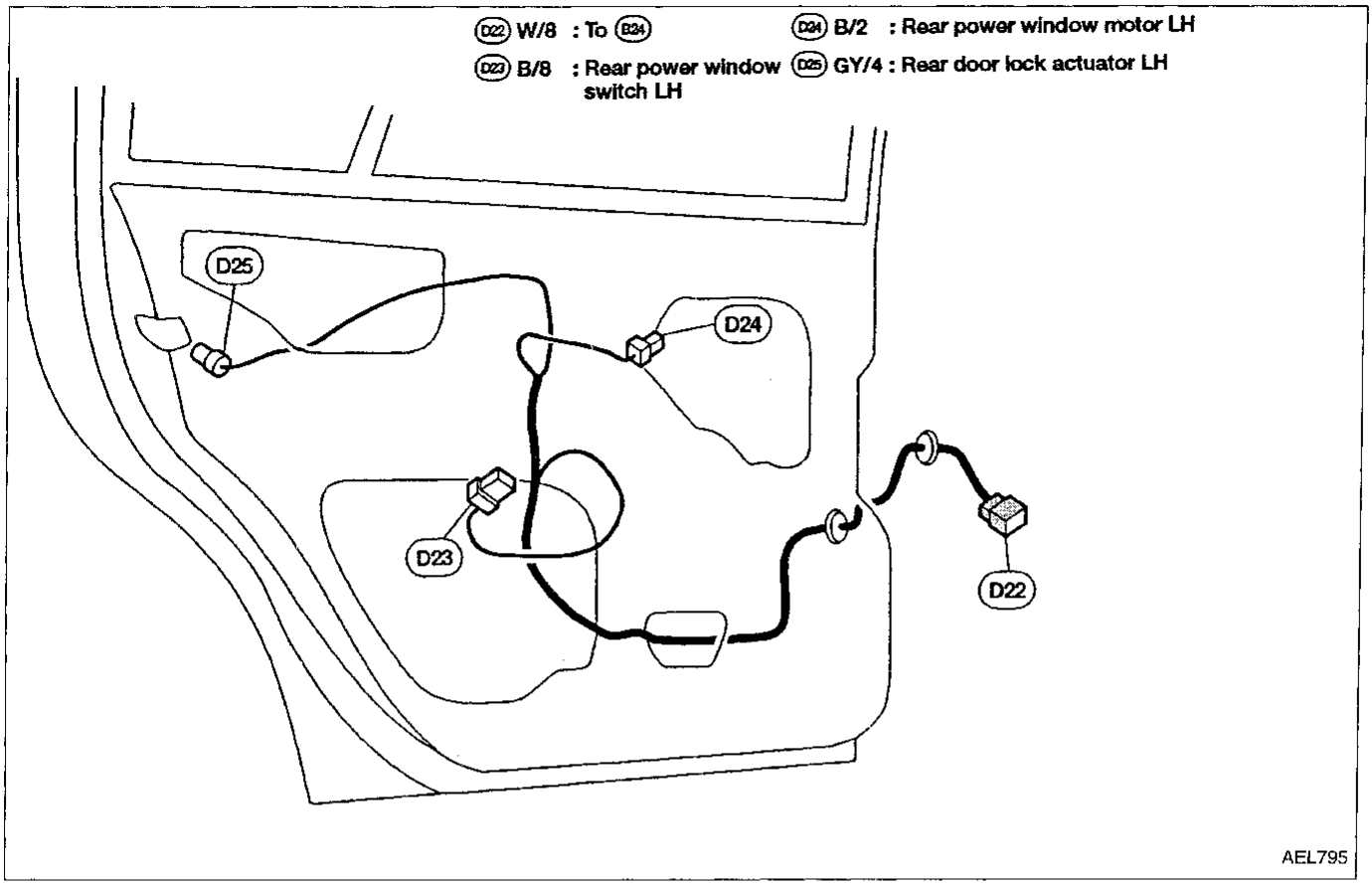
(D9) W/8 : To (M57)
(D10) W/12 : To (M58)
(D11) BR/2 : Front door speaker RH
(D12) BR/3 : Door mirror RH
(D13) B/2 : Front power window regulator RH
(D14) W/6 : Front power window switch RH
(D15) BR/6 : Door lock/unlock switch RH
(D16) GY/4 : Door key cylinder switch RH
(D17) GY/4 : Front door lock actuator RH



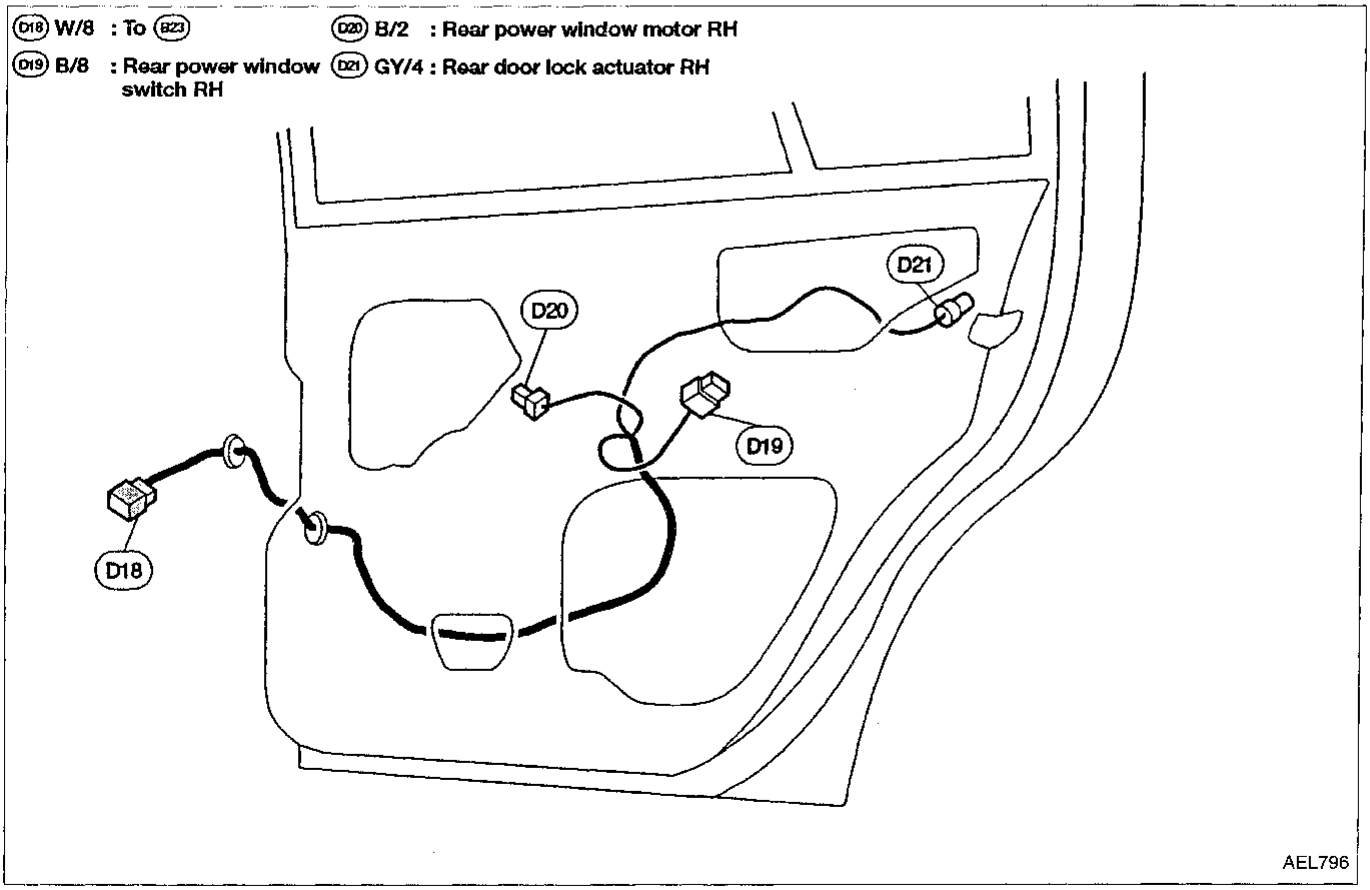
AEL506B

Rear Door Harness (4-Door)

LEFT



RIGHT



BULB SPECIFICATIONS

Item	Wattage (12 volt)	Bulb No.
Headlamp (Semi-sealed beam)		
High/Low	65/45	9004
Front combination lamp	27/8	1157NA
Front fog lamp (200SX)	35	H3 (Special)
Rear combination lamp		
Turn signal	27	1156
Stop/Tail	27/8	1157
Back-up (SENTRA)	13	912
Back-up (200SX)	27	1156
License plate lamp	5	168
High-mounted stop lamp	13	912
Trunk lid-mounted stop lamp	13	912

Wiring Diagram Codes (Cell Codes)

- Use the chart below to find out what each wiring diagram code stands for.
- Refer to the wiring diagram code in the Alphabetical Index to find the location (page number) of each wiring diagram.

Code	Section	Wiring Diagram Name
AAC/V	EC	IACV-AAC Valve
ABS	BR	Anti-lock Brake System
A/C	HA	Air Conditioner
AP/SEN	EC	Absolute Pressure Sensor
ASCD	EL	Automatic Speed Control Device (ASCD)
A/T	AT	Automatic Transaxle
AUDIO	EL	Audio
BACK/L	EL	Back-up Lamp
BYPS/V	EC	Vacuum Cut Valve Bypass Valve
CANI/V	EC	EVAP Canister Purge Control Solenoid Valve
CHARGE	EL	Charging System
CHIME	EL	Warning Chime
CKPS	EC	Crankshaft Position Sensor (OBD)
CMPS	EC	Camshaft Position Sensor
COOL/F	EC	Cooling Fan (Overheat)
DEF	EL	Rear Window Defogger
D/LOCK	EL	Power Door Lock
DTRL	EL	Headlamp – With Daytime Light System
ECTS	EC	Engine Coolant Temperature Sensor
EGRC/V	EC	EGR Valve and EVAP Canister Purge Control Solenoid Valve
EGRC1	EC	EGR Function
EGR/TS	EC	EGR Temperature Sensor
F/FOG	EL	Front Fog Lamp
FICD	EC	IACV-FICD Solenoid Valve
F/PUMP	EC	Fuel Pump
FRO2	EC	Front Heated Oxygen Sensor
FRO2/H	EC	Front Heated Oxygen Sensor Heater
FUEL	EC	Fuel Injection System Function
HEATER	HA	Heater
H/LAMP	EL	Headlamp
HORN	EL	Horn and Cigarette Lighter
IATS	EC	Intake Air Temperature Sensor
IGN/SG	EC	Ignition Signal
ILL	EL	Illumination
INJECT	EC	Injector

Code	Section	Wiring Diagram Name
INT/L	EL	Interior and Trunk Room Lamps
IVC	EC	Intake Valve Timing Control Solenoid Valve
KS	EC	Knock Sensor
LKUP	EC	Torque Converter Clutch Solenoid Valve
LOAD	EC	Load Signal
MAFS	EC	Mass Air Flow Sensor
MAIN	EC	Main Power Supply and Ground Circuit
METER	EL	Speedometer, Tachometer, Temp. and Fuel Gauges
MIL/DL	EC	MIL & Data Link Connectors
MIRROR	EL	Door Mirror
MULTI	EL	Multi-Remote Control System
PGC/V	EC	EVAP Canister Purge Volume Control Valve
PNP/SW	EC	Park/Neutral Position Switch
POWER	EL	Power Supply Routing
PRE/SE	EC	EVAP Control System Pressure Sensor
PST/SW	EC	Power Steering Oil Pressure Switch
RRO2	EC	Rear Heated Oxygen Sensor
RR02/H	EC	Rear Heated Oxygen Sensor Heater
SHIFT	AT	A/T Shift Lock System
SROOF	EL	Sunroof
SRS	RS	Supplemental Restraint System
S/SIG	EC	Start Signal
START	EL	Starting System
SW/V	EC	MAP/BARO Switch Solenoid Valve
TAIL/L	EL	License, Tail and Stop Lamps
TFTS	EC	Tank Fuel Temperature Sensor
THEFT	EL	Theft Warning System
TPS	EC	Throttle Position Sensor
TP/SW	EC	Throttle Position Switch
TURN	EL	Turn Signal and Hazard Warning Lamps
VENT/V	EC	EVAP Canister Vent Control Valve
VSS	EC	Vehicle Speed Sensor
WARN	EL	Warning Lamps
WINDOW	EL	Power Window
WIPER	EL	Wiper and Washer