

ELECTRICAL SYSTEM

SECTION **EL**

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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

ECCS (Ignition system).....	EC SECTION	
AUTOMATIC TRANSAXLE CONTROL SYSTEM, SHIFT LOCK SYSTEM.....	AT SECTION	RA
ABS	BR SECTION	
HEATER AND AIR CONDITIONING	HA SECTION	BR

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PRECAUTIONS



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 on 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 must be performed by an authorized NISSAN dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system.
- Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses are covered with yellow insulation either just before the harness connectors or for the complete harness, for easy identification.

HARNESS CONNECTOR

Description

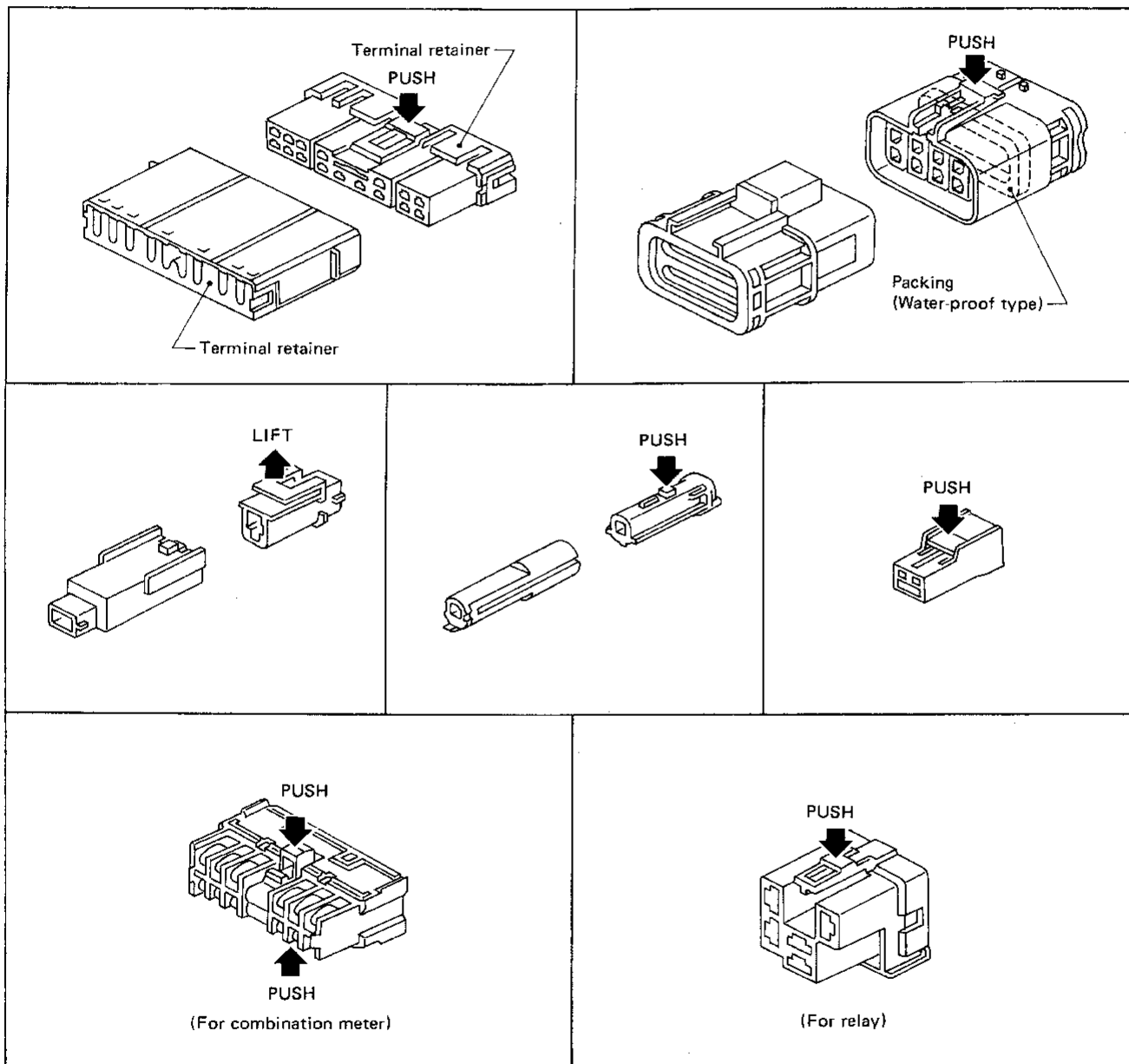
HARNESS CONNECTOR

- All harness connectors have been modified 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]



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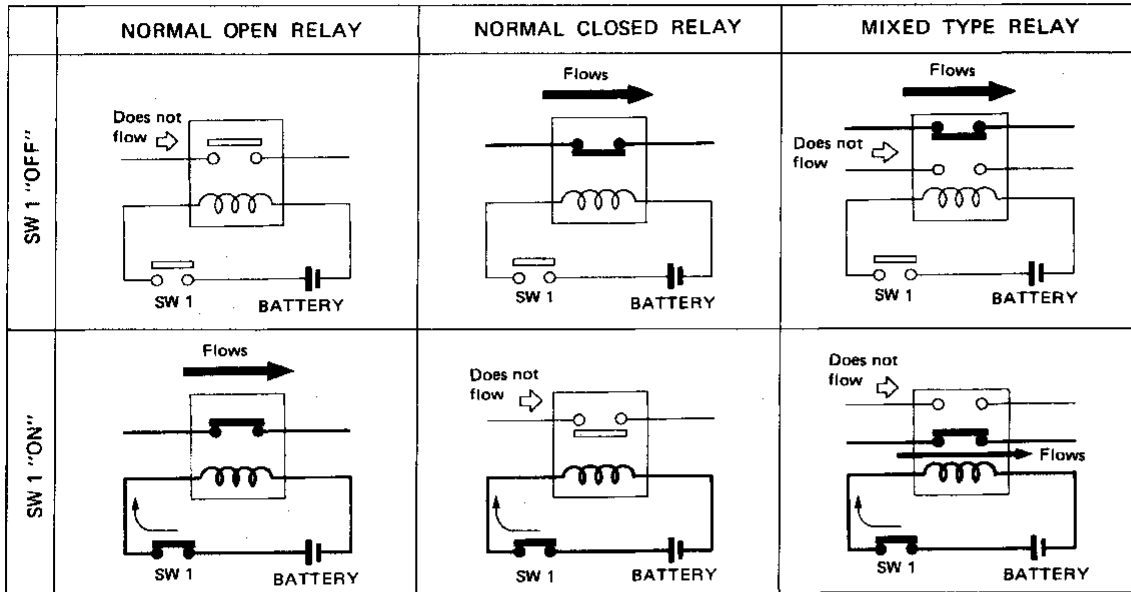
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STANDARDIZED RELAY

Description

NORMAL OPEN, NORMAL CLOSED AND MIXED TYPE RELAYS

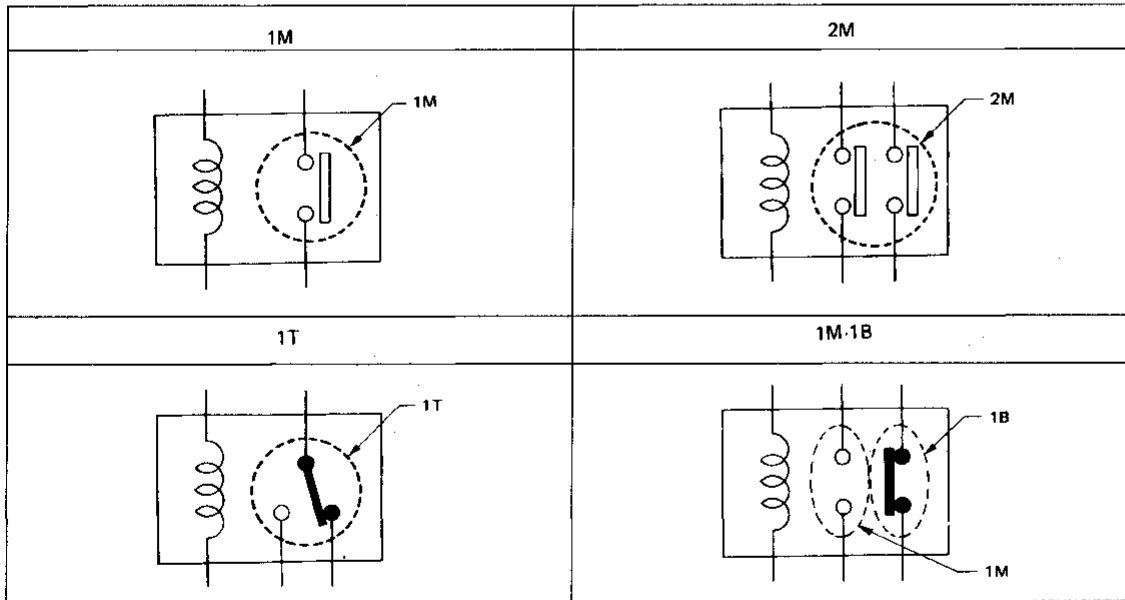
Relays can usually be divided into three types: normal open, normal closed and mixed type relays.



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TYPE OF STANDARDIZED RELAYS

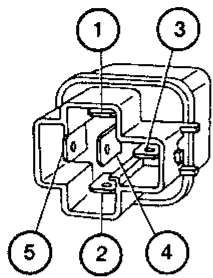
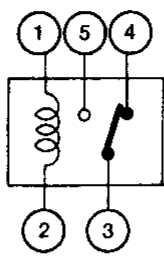
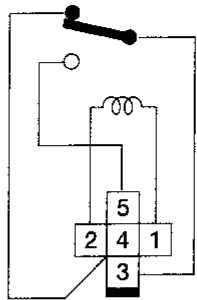
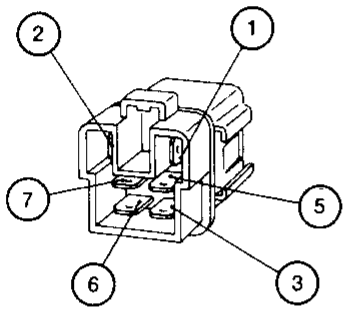
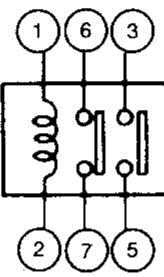
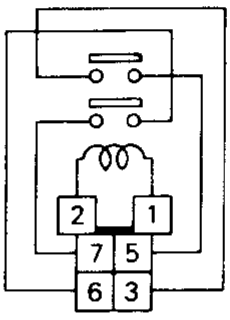
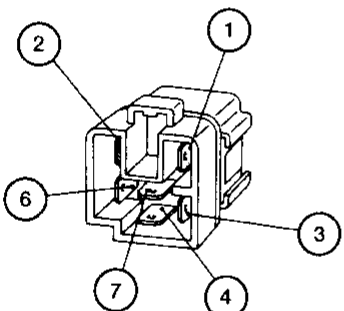
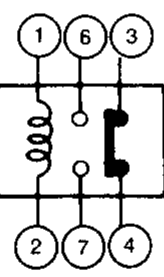
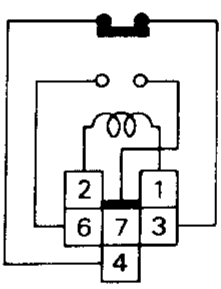
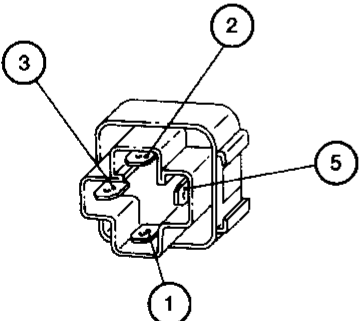
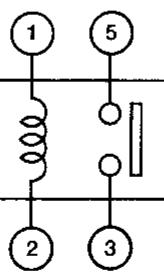
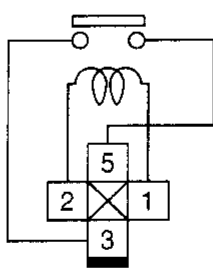
1M 1 Make 2M 2 Make
 1T 1 Transfer 1M·1B 1 Make 1 Break



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STANDARDIZED RELAY

Description (Cont'd)

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

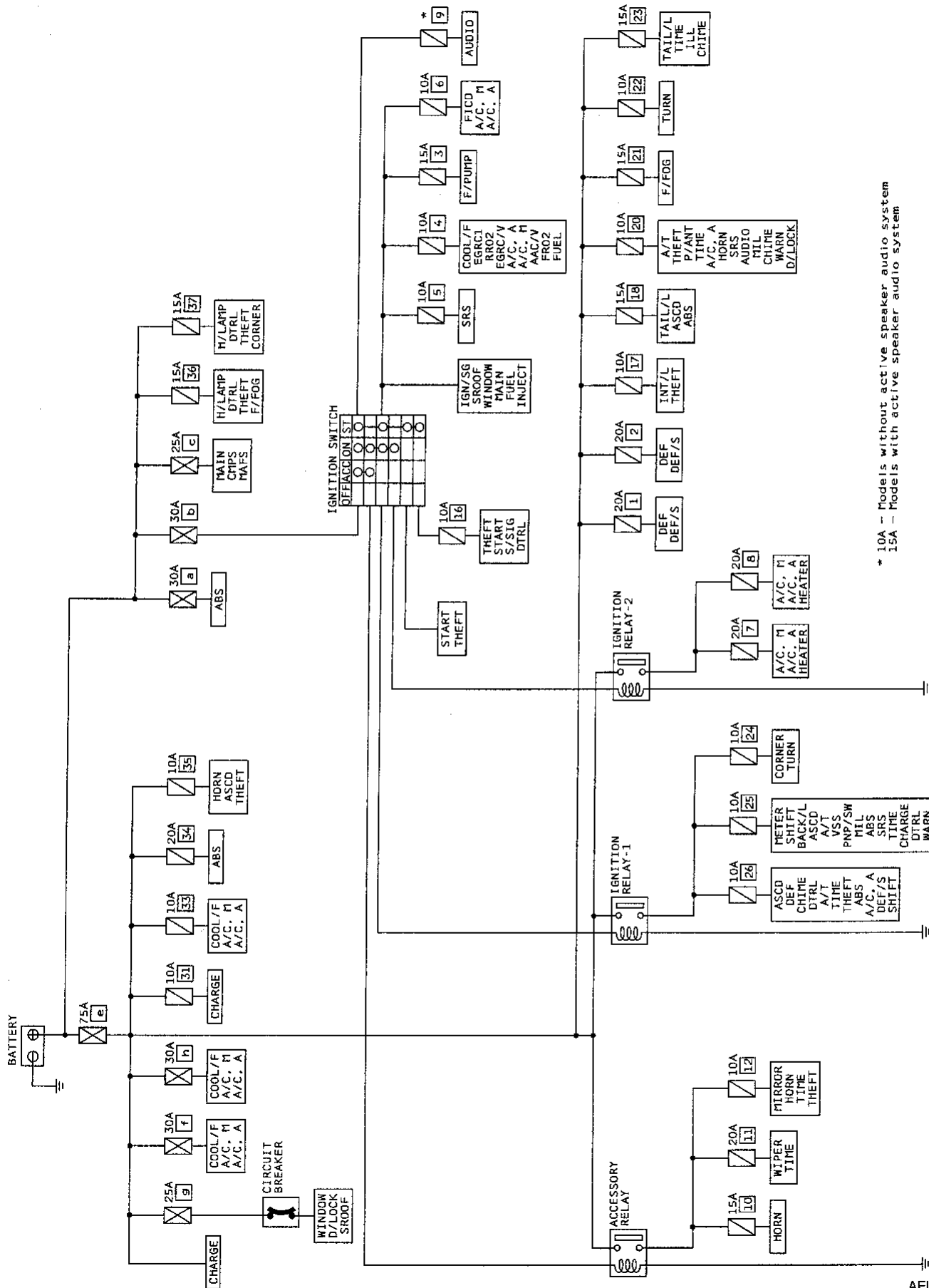
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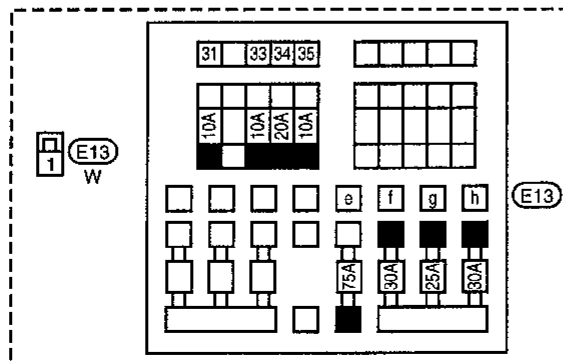
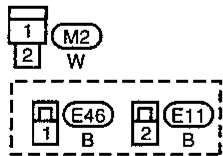
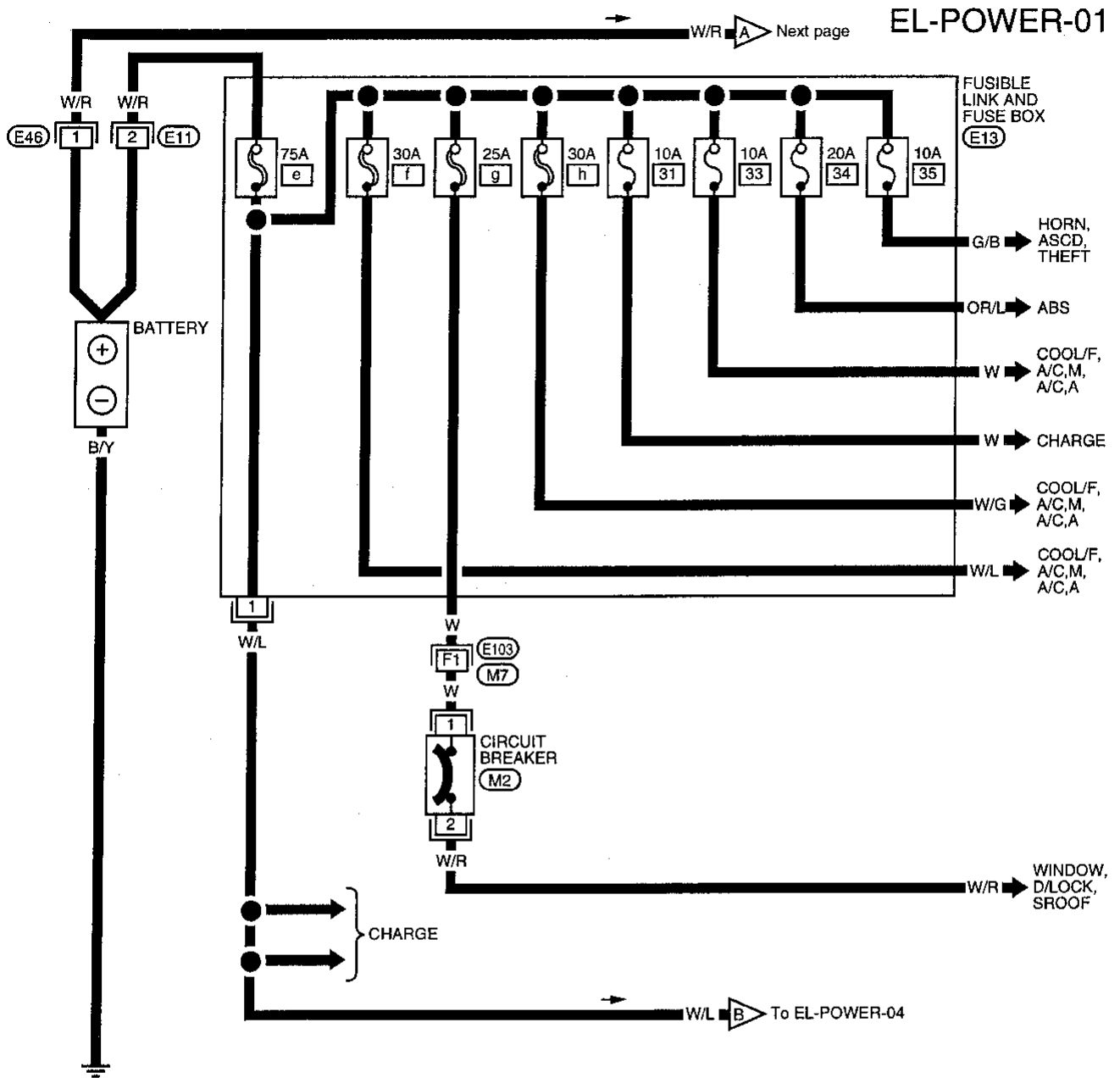
POWER SUPPLY ROUTING

Schematic



POWER SUPPLY ROUTING

Wiring Diagram -POWER-



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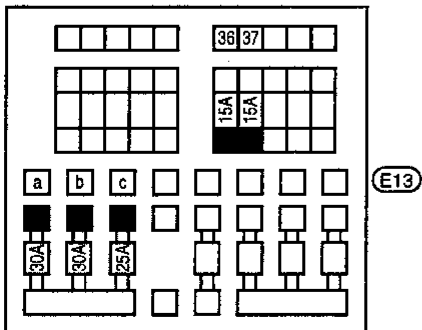
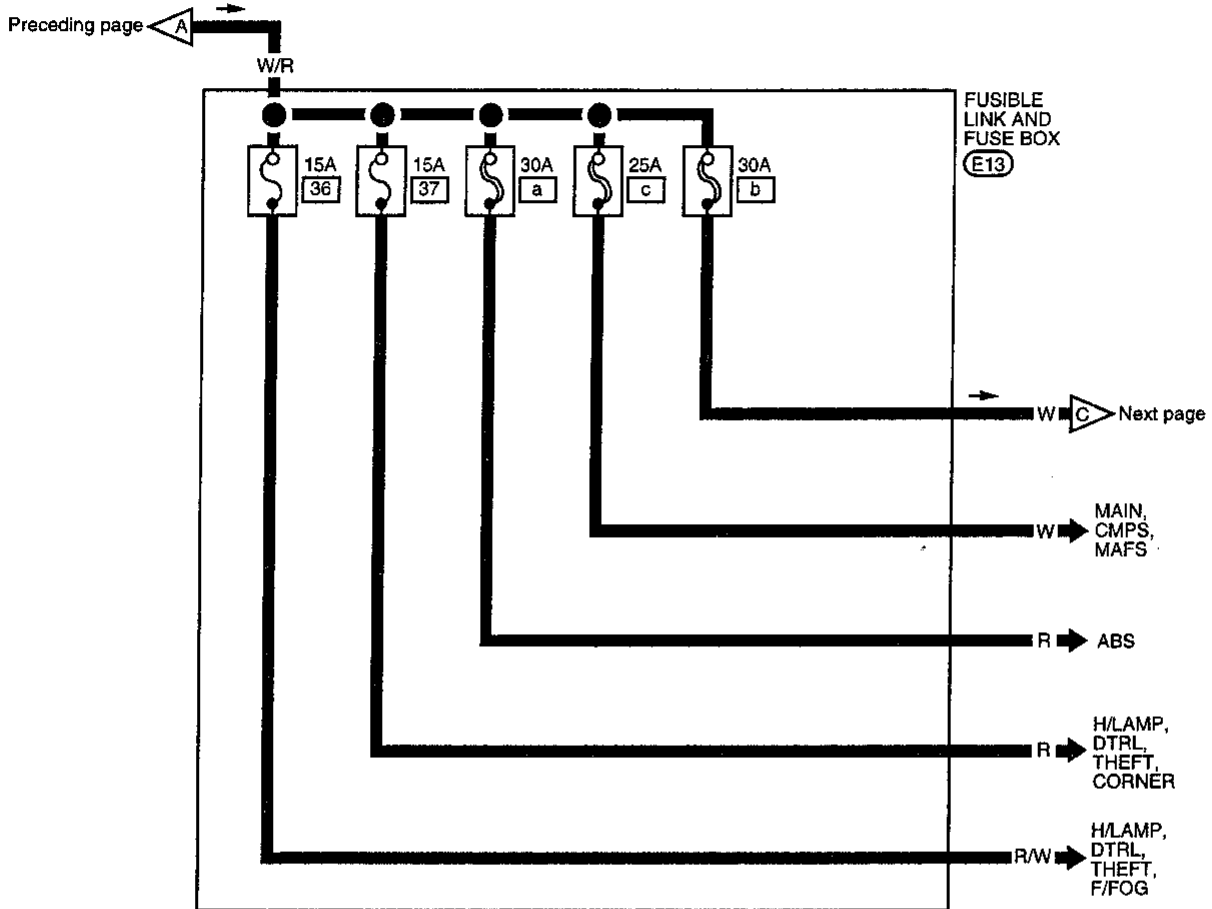
(M7), (E103)

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POWER SUPPLY ROUTING

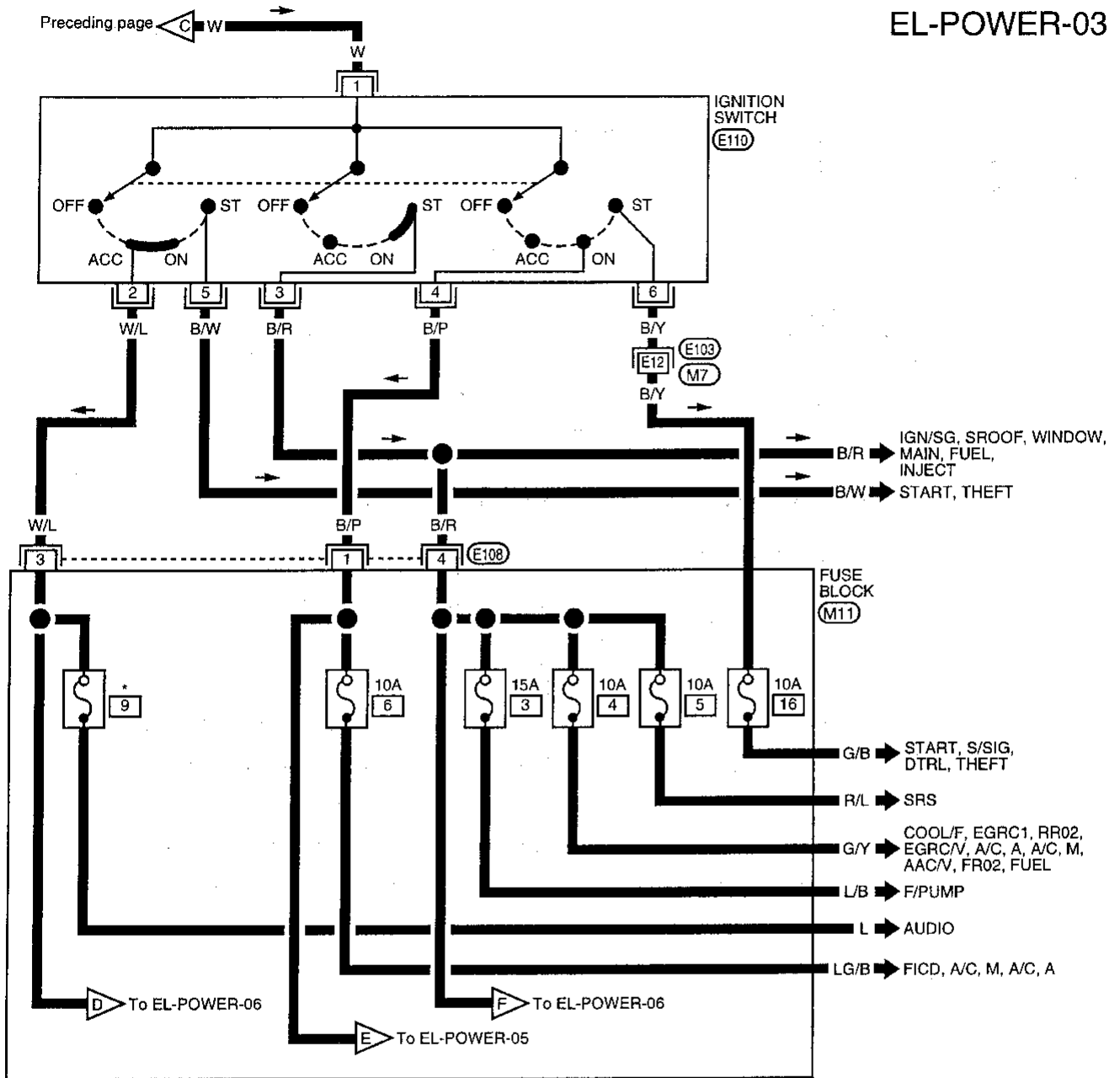
Wiring Diagram -POWER- (Cont'd)

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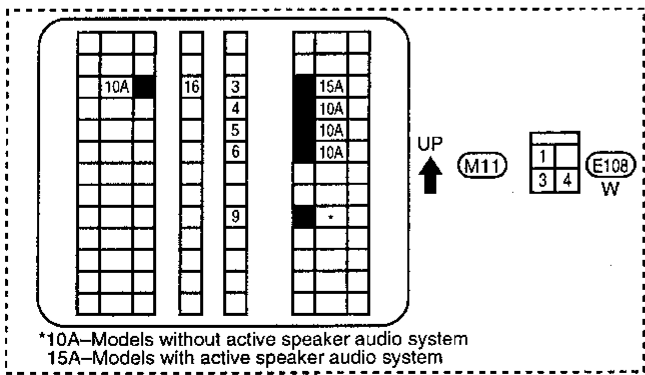


POWER SUPPLY ROUTING

Wiring Diagram -POWER- (Cont'd)



*10A—Models without active speaker audio system
15A—Models with active speaker audio system



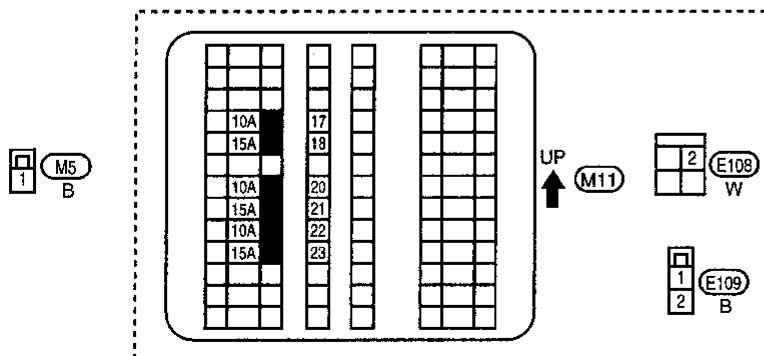
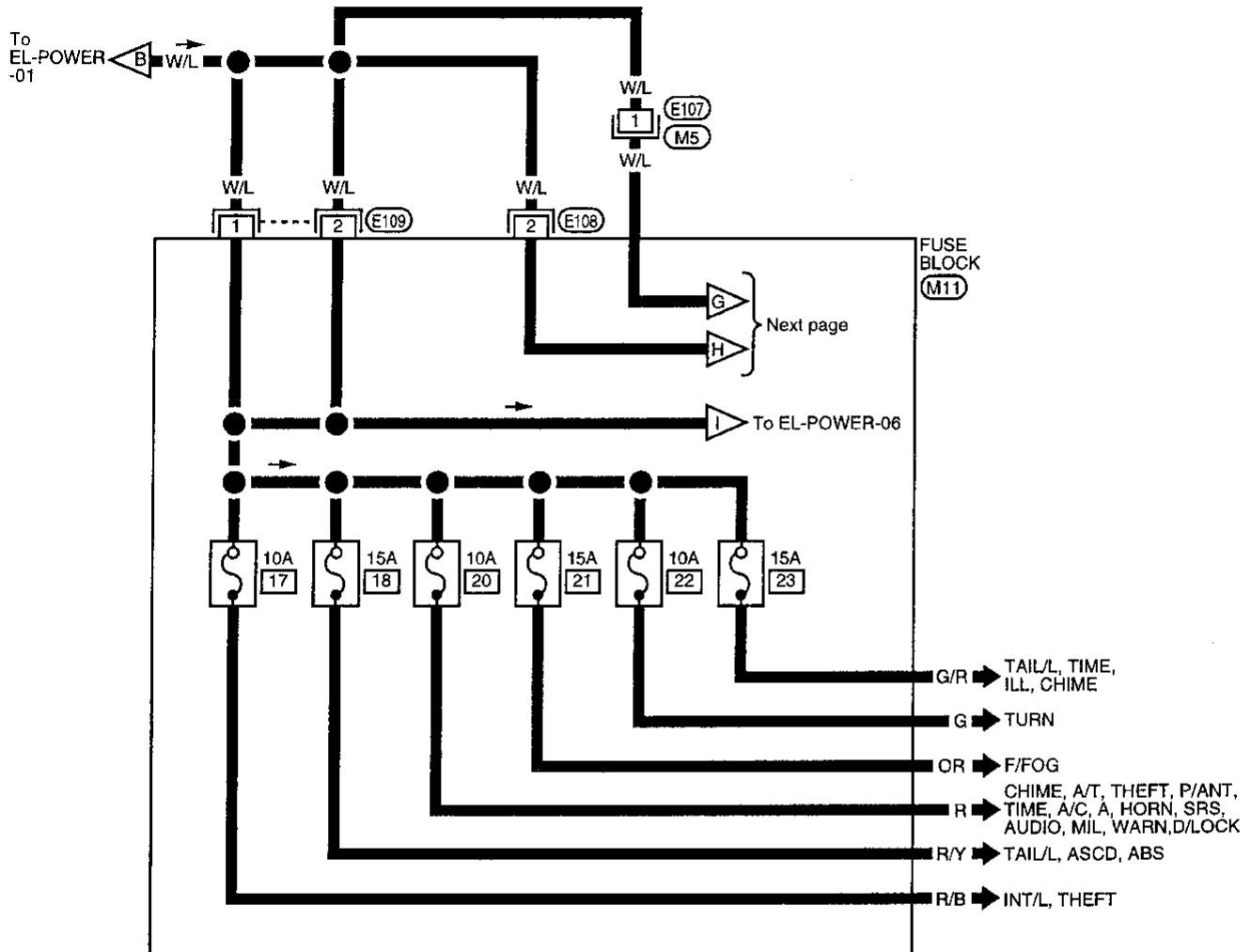
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POWER SUPPLY ROUTING

Wiring Diagram -POWER- (Cont'd)

EL-POWER-04

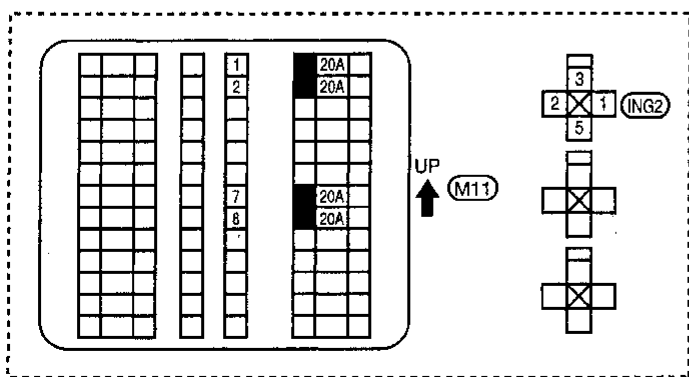
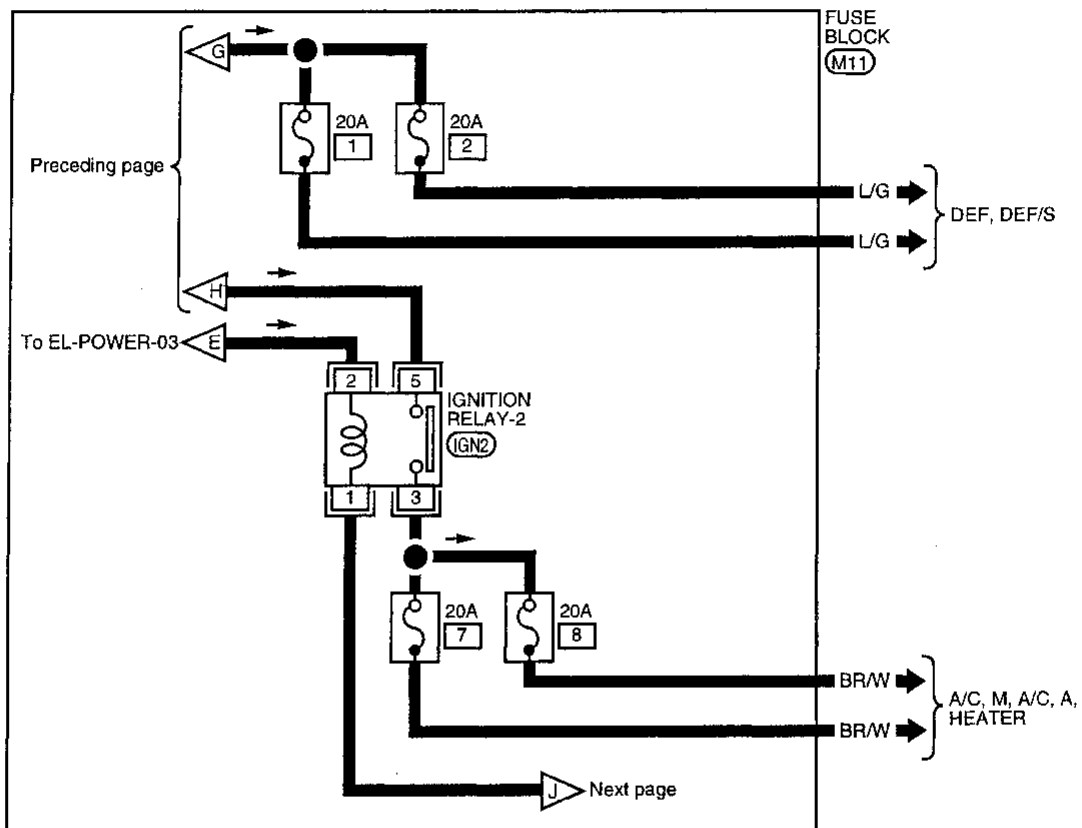


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POWER SUPPLY ROUTING

Wiring Diagram -POWER- (Cont'd)

EL-POWER-05



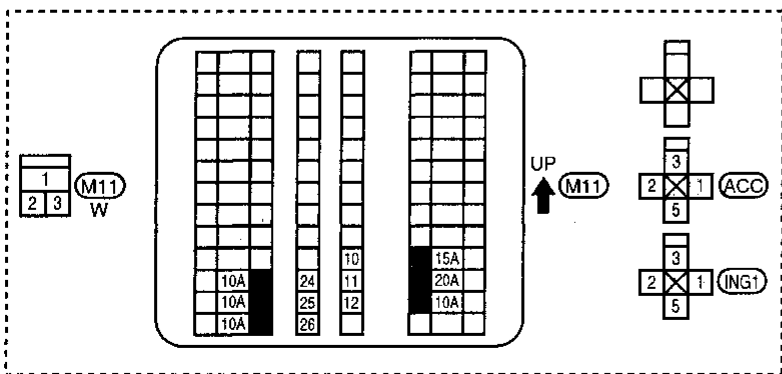
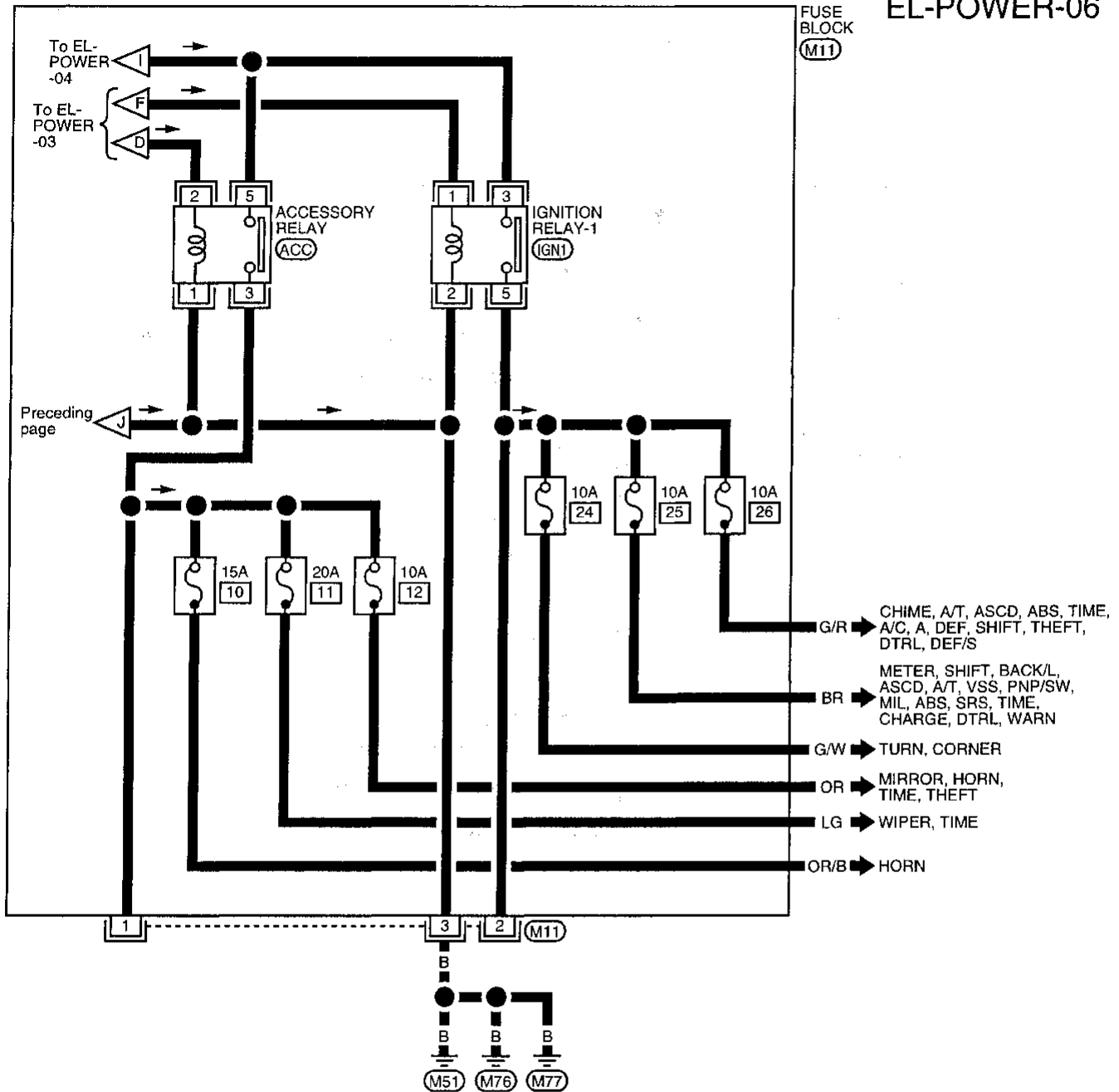
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POWER SUPPLY ROUTING

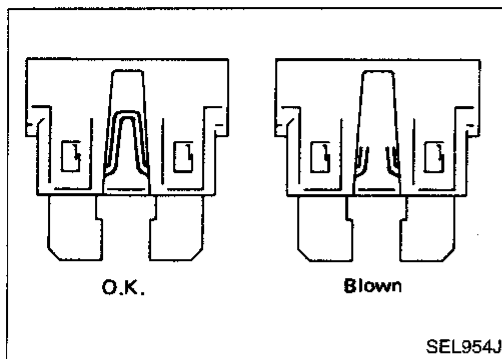
Wiring Diagram -POWER- (Cont'd)

EL-POWER-06

FUSE BLOCK
(M11)

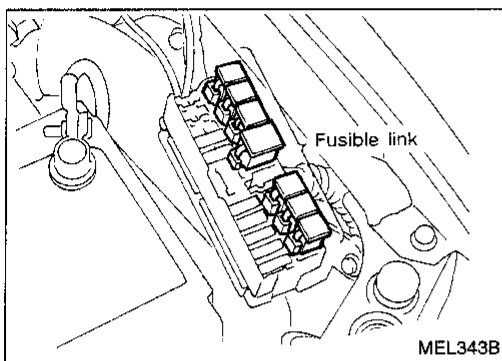


POWER SUPPLY ROUTING



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 clock if vehicle is not used for a long period of time.

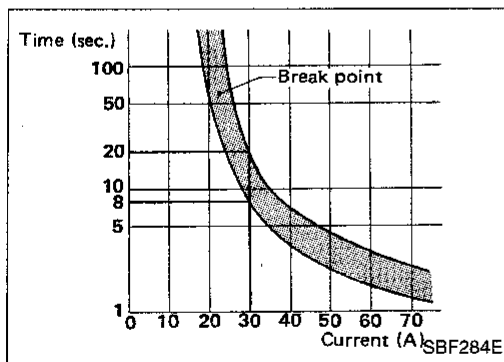


Fusible Link

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

CAUTION:

- 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:

- Power door lock
- Power window
- Power sun roof

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GROUND DISTRIBUTION

GROUND	CONNECT TO	CONN. NO.	CELL CODE
E12/E37	ABS CONTROL UNIT	E101	BR-ABS
	ABS RELAY BOX	E5	BR-ABS
	A/C TRIPLE PRESSURE SWITCH	E18	HA-A/C, M HA-A/C, A
	ASCD HOLD RELAY (A/T models)	E14	EL-ASCD
	ASCD HOLD RELAY (M/T models)	E14	EL-ASCD
	BRAKE FLUID LEVEL SWITCH	E2	EL-WARN
	CLEARANCE LAMP LH	E26	EL-TAIL/L
	CLEARANCE LAMP LH (With cornering lamp)	E25	EL-TAIL/L
	CLEARANCE LAMP RH	E29	EL-TAIL/L
	CLEARANCE LAMP RH (With cornering lamp)	E30	EL-TAIL/L
	COOLING FAN MOTOR-1	E19	EC-COOL/F HA-A/C, M HA-A/C, A
	COOLING FAN MOTOR-2	E20	EC-COOL/F HA-A/C, M HA-A/C, A
	COOLING FAN RELAY-1	E14	EC-COOL/F HA-A/C, M HA-A/C, A
	COOLING FAN RELAY-2	E40	EC-COOL/F HA-A/C, M HA-A/C, A
	COOLING FAN RELAY-3	E40	EC-COOL/F HA-A/C, M HA-A/C, A
	CORNERING LAMP LH	E25	EL-CORNER
	CORNERING LAMP RH	E30	EL-CORNER
	FRONT FOG LAMP LH	E22	EL-F/FOG
	FRONT FOG LAMP RH	E33	EL-F/FOG
	FRONT FOG LAMP SWITCH (SE Models)	E116	EL-F/FOG
	FRONT FOG LAMP SWITCH (Except SE models)	E105	EL-F/FOG
	FRONT SIDE MARKER LAMP LH	E21	EL-TAIL/L
	FRONT SIDE MARKER LAMP RH	E34	EL-TAIL/L
	FRONT TURN SIGNAL LAMP LH	E23	EL-TURN
	FRONT TURN SIGNAL LAMP RH	E32	EL-TURN
	FRONT WIPER RELAY	E14	EL-WIPER
	FRONT WIPER SWITCH	E112	EL-WIPER EL-TIME
	FRONT WIPER SWITCH (With variable intermittent wiper)	E112	EL-WIPER EL-TIME
	HEADLAMP LH	E24	EL-H/LAMP EL-THEFT
	HEADLAMP RH	E31	EL-H/LAMP EL-DTRL EL-THEFT
	HOOD SWITCH	E10	EL-THEFT
	IACV-FICD SOLENOID VALVE	E203	EC-FICD HA-A/C, M HA-A/C, A
	IGNITION RELAY-2 (POWER WINDOW)	E40	EL-WINDOW EL-SROOF
INHIBITOR RELAY	E14	EC-PNP/SW	
INHIBITOR RELAY (With ASCD system)	E14	EC-PNP/SW EL-ASCD	
NEUTRAL POSITION SWITCH	E210	EC-PNP/SW	
WASHER FLUID LEVEL SWITCH	E38	EL-WARN	
E41	GENERATOR	E42	EL-CHARGE
E102	SHIELD WIRE (FRONT LH WHEEL SENSOR)	E8	BR-ABS
	SHIELD WIRE (FRONT RH WHEEL SENSOR)	M102	BR-ABS
	SHIELD WIRE (REAR LH WHEEL SENSOR)	B102	BR-ABS
	SHEILD WIRE (REAR RH WHEEL SENSOR)	B103	BR-ABS

GROUND DISTRIBUTION

GROUND	CONNECT TO	CONN. NO.	CELL CODE
M51/M76/M77	A/C AUTO AMP.	M26	HA-A/C, A
	A/C AUTO AMP. (For Canada)	M27	HA-A/C, A
	ACCESSORY RELAY	M11	EL-POWER
	AIR MIX DOOR MOTOR	M35	HA-A/C, M
	ASCD CONTROL UNIT	M20	EL-ASCD
	ASCD MAIN SWITCH	M17	EL-ASCD
	ASHTRAY (ILLUMINATION)	M54	EL-ILL
	A/T DEVICE (OVERDRIVE SWITCH)	M108	AT-A/T
	BLOWER HIGH RELAY	M55	HA-A/C, A
	CIGARETTE LIGHTER SOCKET	M53	EL-HORN
	CLOCK	M109	EL-HORN
	CLOCK (DISPLAY)	M109	EL-ILL
	CLUTCH PEDAL POSITION SWITCH	M13	EL-START EL-THEFT
	COMBINATION FLASHER UNIT	M34	EL-TURN
	COMBINATION METER (AIR BAG)	M44	RS-SRS EL-WARN
	COMBINATION METER (CRUISE INDICATOR LAMP)	M43	EL-ASCD
	COMBINATION METER (FUEL GAUGE)	M44	EL-METER
	COMBINATION METER (HIGH BEAM INDICATOR)	M41	EL-H/LAMP EL-DTRL
	COMBINATION METER (SPEEDOMETER)	M44	EC-VSS AT-A/T EL-METER EL-ASCD
	COMBINATION METER (TACHOMETER)	M44	EL-METER
	COMBINATION METER (TURN SIGNAL LAMP)	M43	EL-TURN
	COMBINATION METER (WATER TEMP. GAUGE)	M44	EL-METER
	DATA LINK CONNECTOR FOR CONSULT	M15	EL-MIL AT-A/T
	DATA LINK CONNECTOR FOR GST	M107	EC-MIL
	DAYTIME LIGHT CONTROL UNIT	M82	EL-DTRL
	DIODE (For A/T DEVICE)	M83	AT-SHIFT
	DOOR LOCK CONTROL UNIT	M22	EL-D/LOCK
	DOOR MIRROR SWITCH	M18	EL-MIRROR
	FAN CONTROL AMP.	M67	HA-A/C, A
	FAN SWITCH	M32	HA-HEATER HA-A/C, M
	FRONT WIPER MOTOR	M104	EL-WIPER
	GLOVE BOX LAMP	M57	EL-ILL
	IGNITION RELAY-1	M11	EL-POWER
	IGNITION RELAY-2	M11	EL-POWER
	ILLUMINATION CONTROL SWITCH	M19	EL-ILL
	INTAKE DOOR MOTOR	M69	HA-A/C, M HA-A/C, A
	MODE DOOR MOTOR	M36	HA-A/C, M HA-A/C, A
	POWER STEERING OIL PRESSURE SWITCH	M101	EC-PST/SW
	PTC	M31	HA-A/C, M
	PUSH CONTROL UNIT	M28	HA-A/C, M
REAR WINDOW DEFOGGER SWITCH	M38	EL-DEF EL-TIME	

GROUND DISTRIBUTION

GROUND	CONNECT TO	CONN. NO.	CELL CODE
M51/M76/M77	REAR WINDOW DEFOGGER SWITCH (INDICATOR LAMP)	M43	EL-DEF
	THEFT WARNING CONTROL UNIT	M1	EL-THEFT
	TIME CONTROL UNIT	M37	EL-CHIME EL-TIME
	FRONT DOOR LOCK ACTUATOR LH (DOOR UNLOCK SENSOR)	D12	EL-D/LOCK EL-THEFT
	FRONT DOOR LOCK ACTUATOR RH (DOOR UNLOCK SENSOR)	D61	EL-D/LOCK EL-THEFT
	FRONT LH DOOR KEY CYLINDER SWITCH	D14	EL-D/LOCK
	FRONT LH DOOR KEY CYLINDER SWITCH (With theft warning system)	D10	EL-D/LOCK EL-THEFT
	FRONT RH DOOR KEY CYLINDER SWITCH	D62	EL-D/LOCK
	FRONT RH DOOR KEY CYLINDER SWITCH (With theft warning system)	D59	EL-D/LOCK EL-THEFT
	MAIN POWER WINDOW AND DOOR LOCK SWITCH	D7	EL-D/LOCK EL-WINDOW
	PERSONAL LAMP	R5	EL-INT/L
	VANITY MIRROR ILLUMINATION LH	R8	EL-INT/L
	VANITY MIRROR ILLUMINATION RH	R9	EL-INT/L
	AIR BAG DIAGNOSIS SENSOR UNIT	A6	RS-SRS
B6/B14	FRONT DOOR SWITCH LH	B3	RS-SRS EL-CHIME EL-D/LOCK EL-TIME
	FRONT DOOR SWITCH RH	B13	EL-D/LOCK
	FUEL TANK GAUGE UNIT	B20	EL-METER EL-WARN
	HIGH-MOUNTED STOP LAMP	B28	EL-TAIL/L
	SEAT BELT BUCKLE SWITCH	B9	EL-CHIME EL-TIME
	REAR DOOR LOCK ACTUATOR LH (DOOR UNLOCK SENSOR)	D105	EL-THEFT
	REAR DOOR LOCK ACTUATOR RH (DOOR UNLOCK SENSOR)	D155	EL-THEFT

GROUND DISTRIBUTION

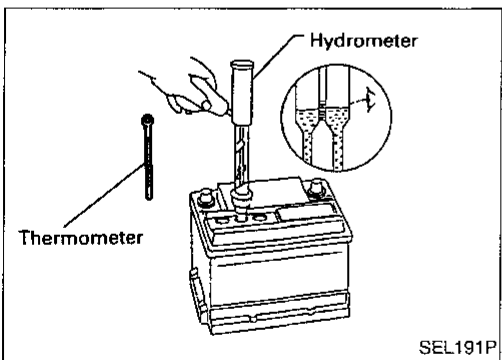
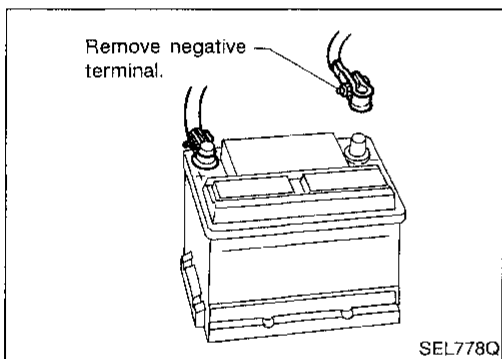
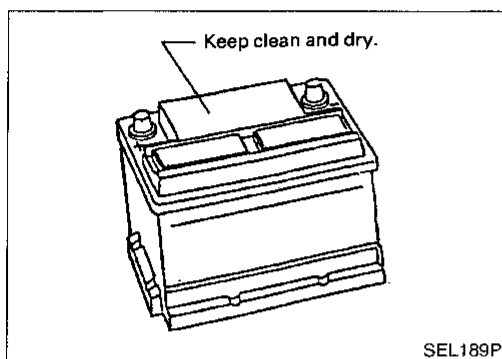
GROUND	CONNECT TO	CONN. NO.	CELL CODE
F17/F17	CONDENSER	F28	EC-IGN/SG
	DISTRIBUTOR (CAMSHAFT POSITION SENSOR)	F2	EC-CMPS
	ECM (ECCS CONTROL MODULE)	F19	EC-FRO2 EC-MAIN AT-A/T
	POWER TRANSISTOR	F4	EC-IGN/SG
	SHIELD WIRE [CAMSHAFT POSITION SENSOR (POS)]	F2	EC-CMPS
	SHIELD WIRE [CAMSHAFT POSITION SENSOR (REF)]	F2	EC-CMPS
	SHIELD WIRE [CRANKSHAFT POSITION SENSOR (GND-A)]	F25	EC-CKPS
	SHIELD WIRE [CRANKSHAFT POSITION SENSOR (RGC/S)]	F25	EC-CKPS
	SHIELD WIRE [FRONT HEATED OXYGEN SENSOR (O2SF)]	F29	EC-FRO2 EC-FUEL EC-FRO2/H
	SHIELD WIRE [FRONT OXYGEN SENSOR (O2SF)]	F1	EC-FRO2 EC-FUEL
	SHIELD WIRE (KNOCK SENSOR)	F19	EC-KS
	SHIELD WIRE (MASS AIR FLOW SENSOR)	F3	EC-MAFS
	SHIELD WIRE [REAR HEATED OXYGEN SENSOR (O2SR)]	F30	EC-RRO2 EC-RRO2/H
	SHIELD WIRE [THROTTLE POSITION SENSOR (TV01)]	F10	EC-TPS
	A/T CONTROL UNIT	M81	AT-A/T
	DATA LINK CONNECTOR FOR GST	M107	EC-MIL
SHIELD WIRE [REAR HEATED OXYGEN SENSOR (O2SR)]	B32	EC-RRO2	
T7/T7	HIGH-MOUNTED STOP LAMP (Models with rear air spoiler)	T101	EL-TAIL/L
	LICENSE PLATE LAMP LH	T5	EL-TAIL/L
	LICENSE PLATE LAMP RH	T6	EL-TAIL/L
	POWER ANTENNA	T12	EL-P/ANT
	REAR COMBINATION LAMP LH (BACK-UP)	T4	EL-BACK/L EL-TAIL/L
	REAR COMBINATION LAMP RH (BACK-UP)	T10	EL-BACK/L EL-TAIL/L
	REAR COMBINATION LAMP LH (TURN SIGNAL)	T4	EL-TURN
	REAR COMBINATION LAMP RH (TURN SIGNAL)	T10	EL-TURN
	REAR SIDE MARKER LAMP LH	T3	EL-TAIL/L
	REAR SIDE MARKER LAMP RH	T11	EL-TAIL/L
	TRUNK KEY CYLINDER SWITCH	T8	EL-THEFT
	TRUNK ROOM LAMP SWITCH	T9	EL-INT/L EL-THEFT

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BATTERY

CAUTION:

- If it becomes necessary to start the engine with a 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.



How to Handle Battery

METHODS OF PREVENTING 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.
- **During every routine maintenance, check the electrolyte level.** This also applies to batteries designated as “low maintenance” and “maintenance-free”.
- When the vehicle is not going to be used over a long period of time, disconnect the negative battery terminal.

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

CHECKING ELECTROLYTE LEVEL

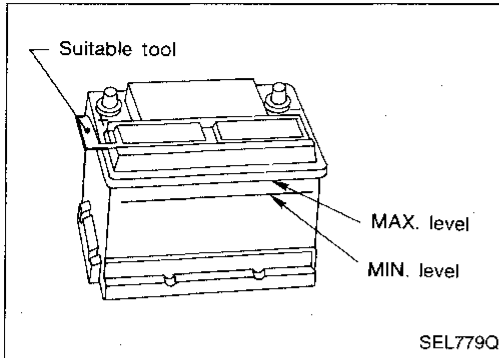
WARNING:

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 acid contacts 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.

BATTERY

How to Handle Battery (Cont'd)

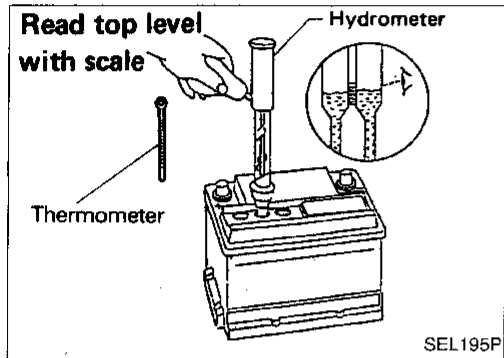


- Remove the cell plug using a suitable tool.
- Add distilled water up to the MAX level.

SULPHATION

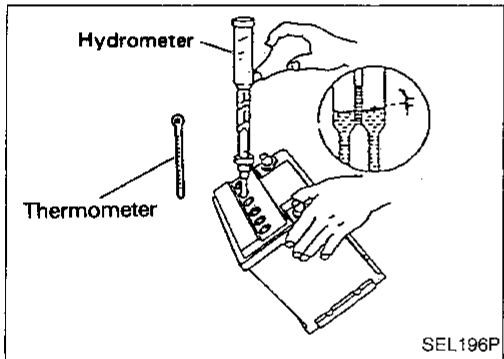
A battery (with specific gravity less than 1.100) will completely discharge when left unattended for a long period of time. This will result in sulphation on the cell plates.

A sulphated battery may sometimes be brought back into service by means of a slow charge, 12 hours or more. A capacity test should be run after the battery is charged to ensure the battery is not damaged.



SPECIFIC GRAVITY CHECK

- Read hydrometer and thermometer readings at eye level.



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

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

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

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BATTERY

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 the initial charge rate.

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

MEMORY RESET

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

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

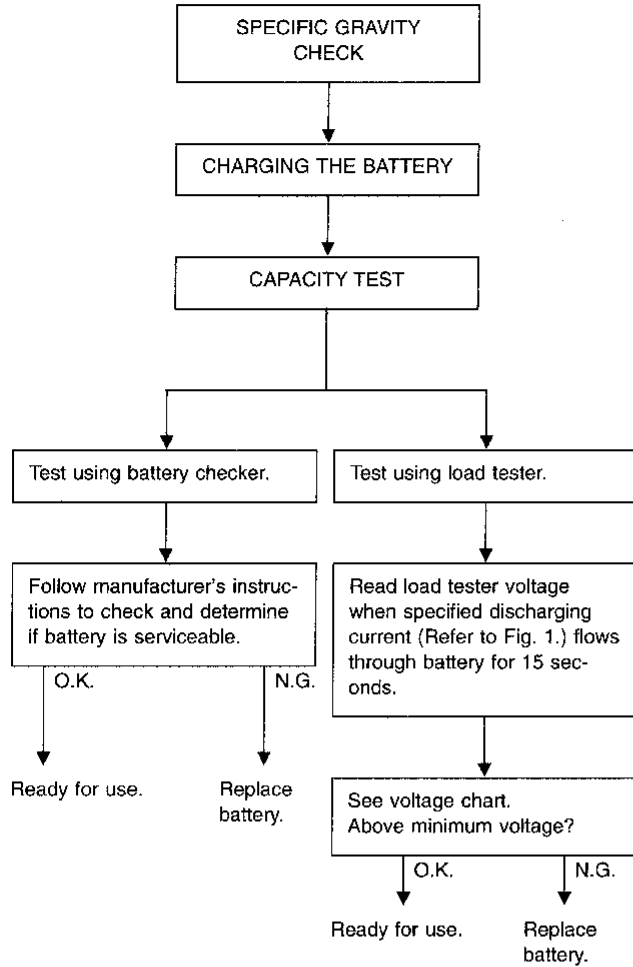
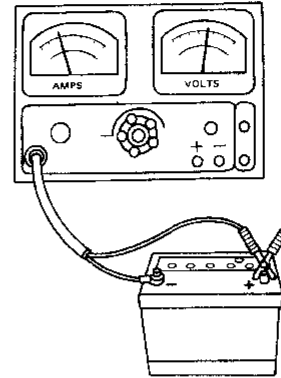
BATTERY

How to Handle Battery (Cont'd)

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

Fig. 1 DISCHARGING CURRENT (Load tester)

Group size	Current (A)
24F	275



SEL008Z

Voltage chart

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

Service Data and Specifications (SDS)

Applied area	USA and Canada	
Group size	24F	
Capacity	V-AH	12-65
Cold cranking current	A	550
Reserve capacity	minutes	113

STARTING SYSTEM

System Description

M/T models

Power is supplied at all times

- to ignition switch terminal ①
- through 30A fusible link (letter **b**), located in the fusible link and fuse box).

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

- through terminal ⑤ of the ignition switch
- to clutch interlock relay terminal ③.

Power is also supplied

- through terminal ⑥ of the ignition switch
- to the 10A fuse (No. 116), located in the fuse block).

USA models with theft warning system

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

- through 10A fuse (No. 26), located in the fuse block)
- to theft warning relay-1 terminal ①.

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

- through 10A fuse (No. 16), located in the fuse block)
- to theft warning relay-1 terminal ③
- through theft warning relay-1 terminal ④
- to clutch interlock relay terminal ①.

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

Except USA models with theft warning system

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

- through 10A fuse (No. 16), located in the fuse block)
- to clutch interlock relay terminal ①.

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

The clutch interlock relay is energized and power is supplied

- from terminal ⑤ of the clutch interlock relay
- to terminal 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.

A/T models

Power is supplied at all times

- to ignition switch terminal ①
- through 30A fusible link (letter **b**), located in the fusible link and fuse box).

USA models with theft warning system

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

- through 10A fuse (No. 26), located in the fuse block)
- to theft warning relay-1 terminal ①.

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

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

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

STARTING SYSTEM

System Description (Cont'd)

Except USA models with theft warning system

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

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

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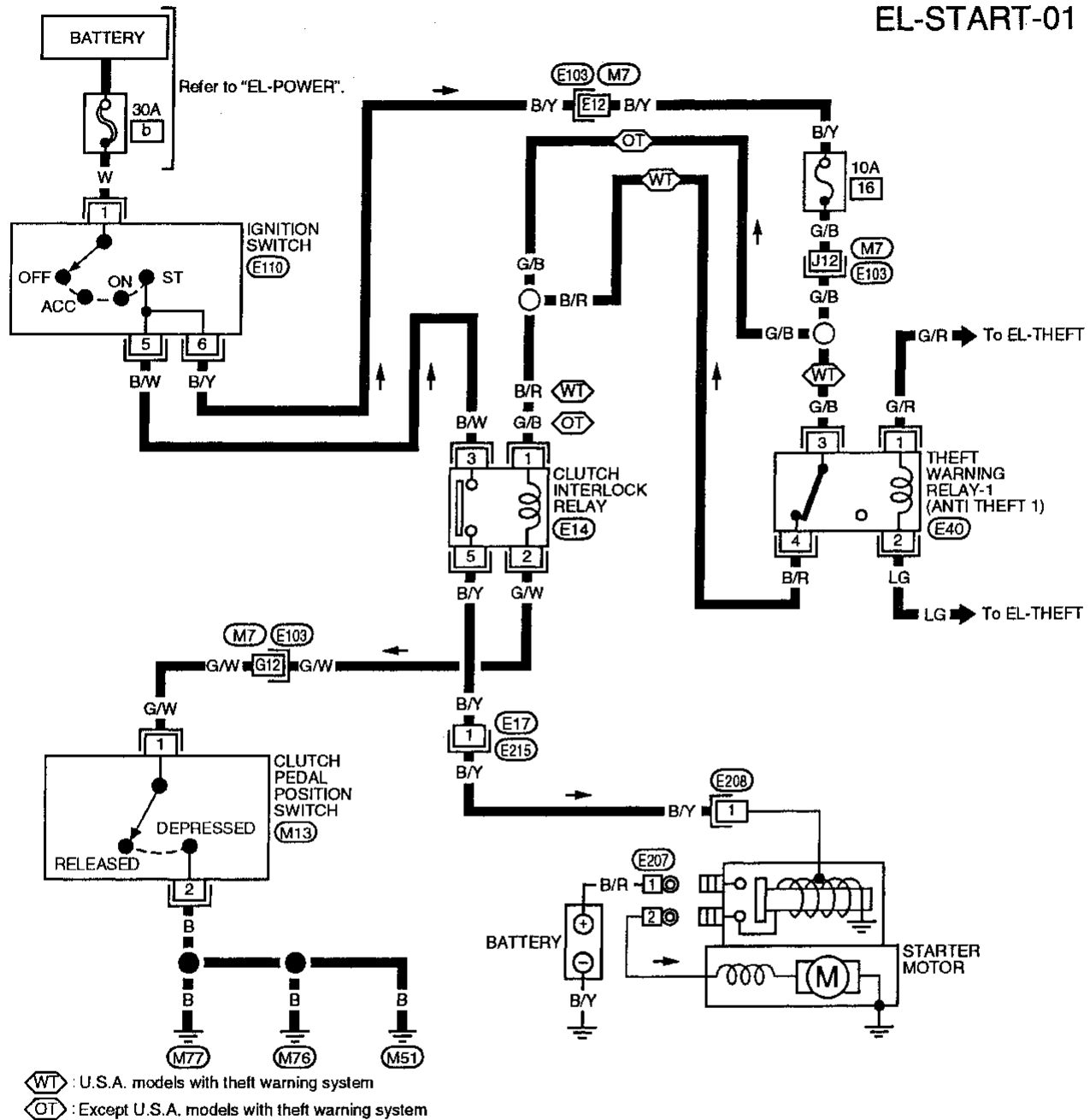
IDX

STARTING SYSTEM

Wiring Diagram -START-

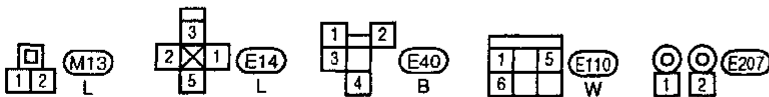
M/T MODELS

EL-START-01



Refer to last page (Foldout page).

M7, E103

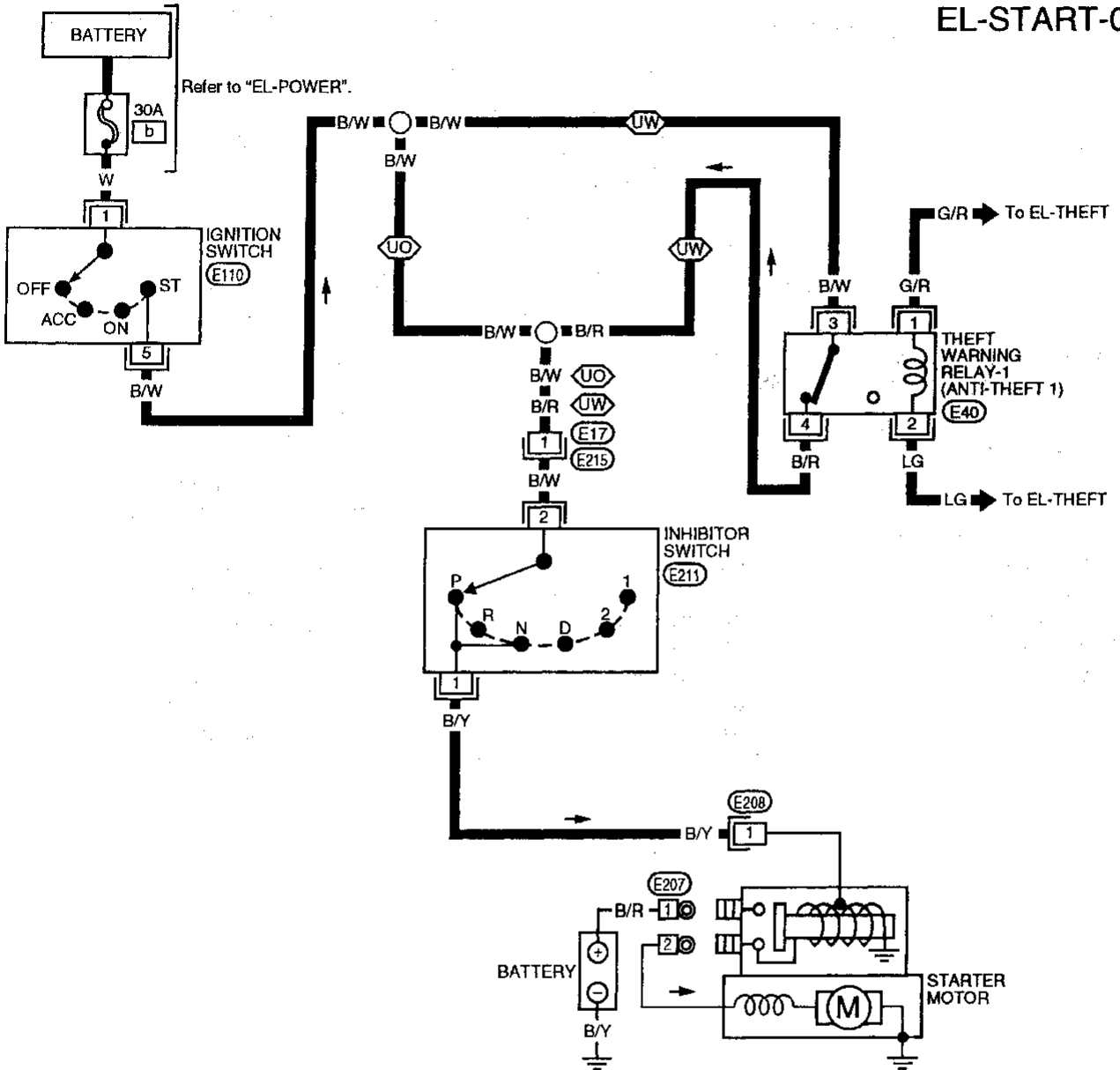


STARTING SYSTEM

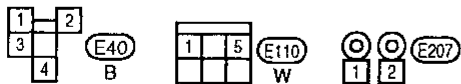
Wiring Diagram -START- (Cont'd)

A/T MODELS

EL-START-02



: U.S.A. models with theft warning system
 : Except U.S.A. models with theft warning system



STARTING SYSTEM

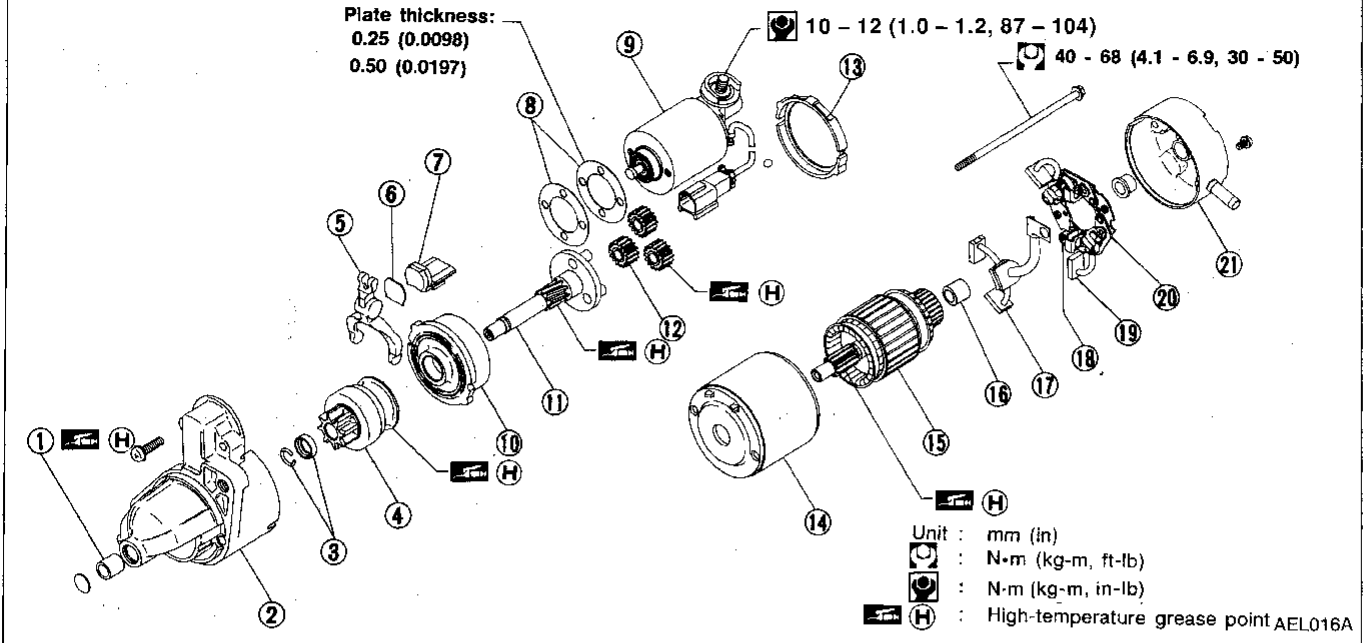
Starter

M1T73881ZC

Plate thickness:
0.25 (0.0098)
0.50 (0.0197)

10 - 12 (1.0 - 1.2, 87 - 104)

40 - 68 (4.1 - 6.9, 30 - 50)



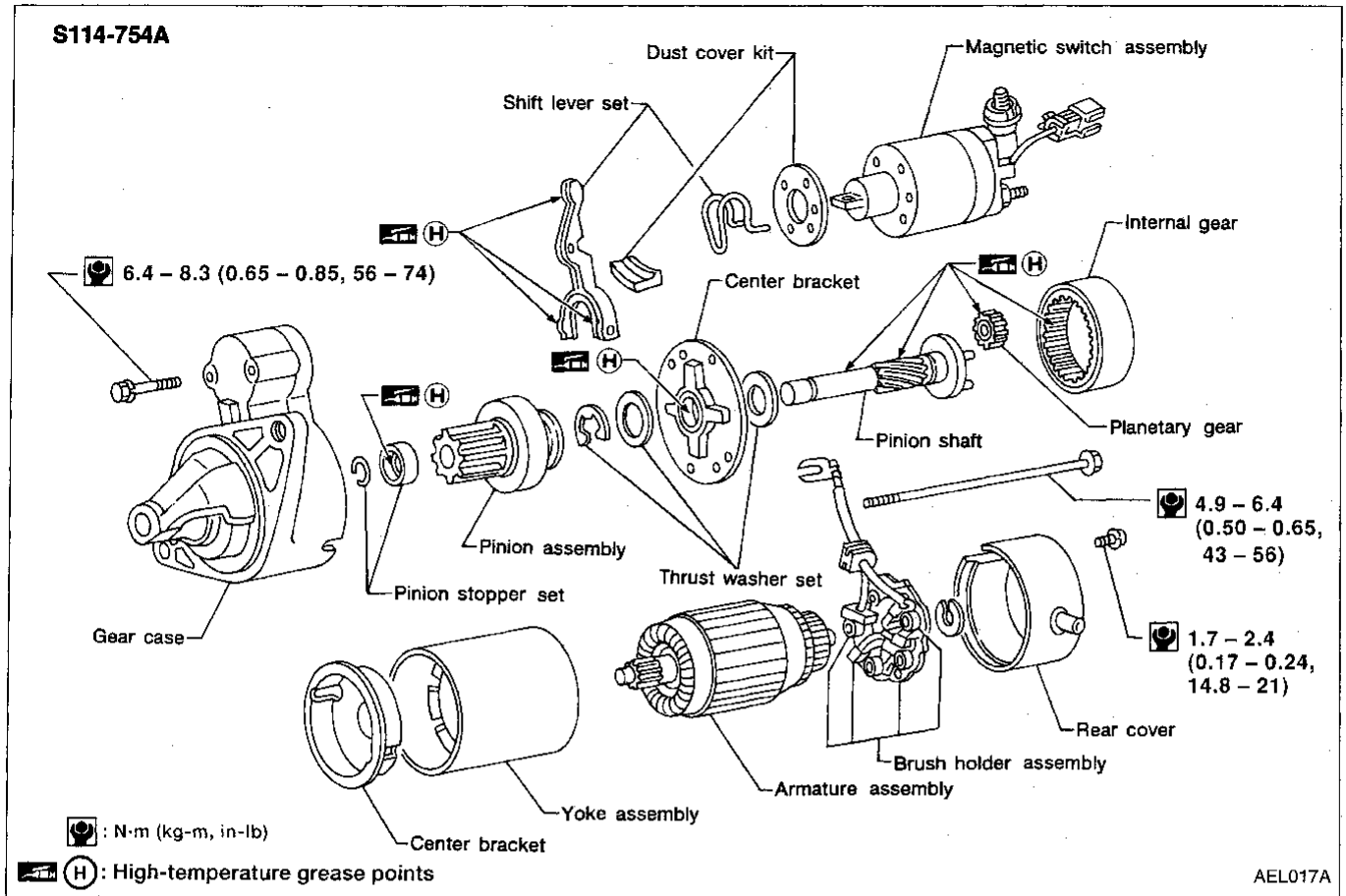
- ① Sleeve bearing
- ② Gear case
- ③ Pinion stopper
- ④ Pinion assembly
- ⑤ Shift lever
- ⑥ Plate
- ⑦ Packing

- ⑧ Adjusting plate
- ⑨ Magnetic switch assembly
- ⑩ Internal gear
- ⑪ Shaft
- ⑫ Planetary gear
- ⑬ Packing
- ⑭ Yoke

- ⑮ Armature
- ⑯ Sleeve bearing
- ⑰ Brush (+)
- ⑱ Brush spring
- ⑲ Brush (-)
- ⑳ Brush holder
- ㉑ Rear cover

STARTING SYSTEM

Starter (Cont'd)



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STARTING SYSTEM

Pinion/Clutch Check

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

Service Data and Specifications (SDS)

STARTER

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

CHARGING SYSTEM

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. GI

Power is supplied at all times to generator terminal (S) through:

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

Voltage output through generator terminal (B), to charge the battery and operate the vehicle's electrical system, is controlled by the amount of voltage detected by the IC regulator at terminal (S). The charging circuit is protected by the 75A fusible link. EM

Terminal (E) of the generator supplies ground through body ground (E41). LC

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

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

Ground is supplied to terminal (44) of the combination meter through terminal (L) 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. FE

If the charge warning lamp illuminates with the engine running, a fault is indicated. Refer to "Trouble Diagnoses", "CHARGING SYSTEM" (EL-31). CL

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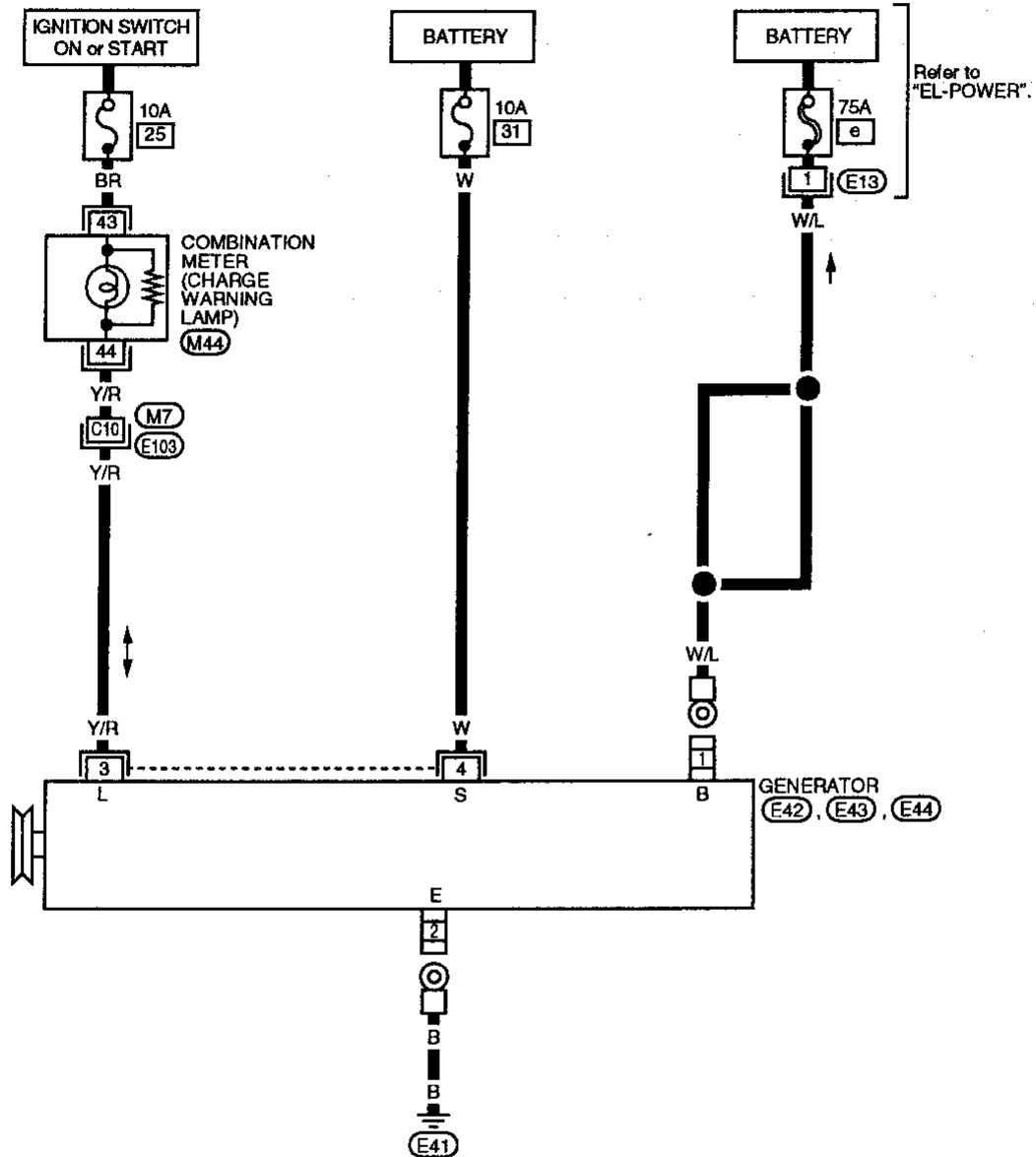
EL

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CHARGING SYSTEM

Wiring Diagram -CHARGE-

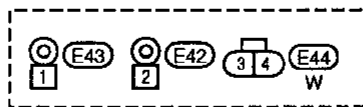
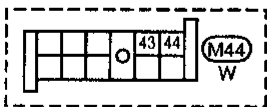
EL-CHARGE-01



Refer to "EL-POWER".

Refer to last page (Foldout page).

M7, E103



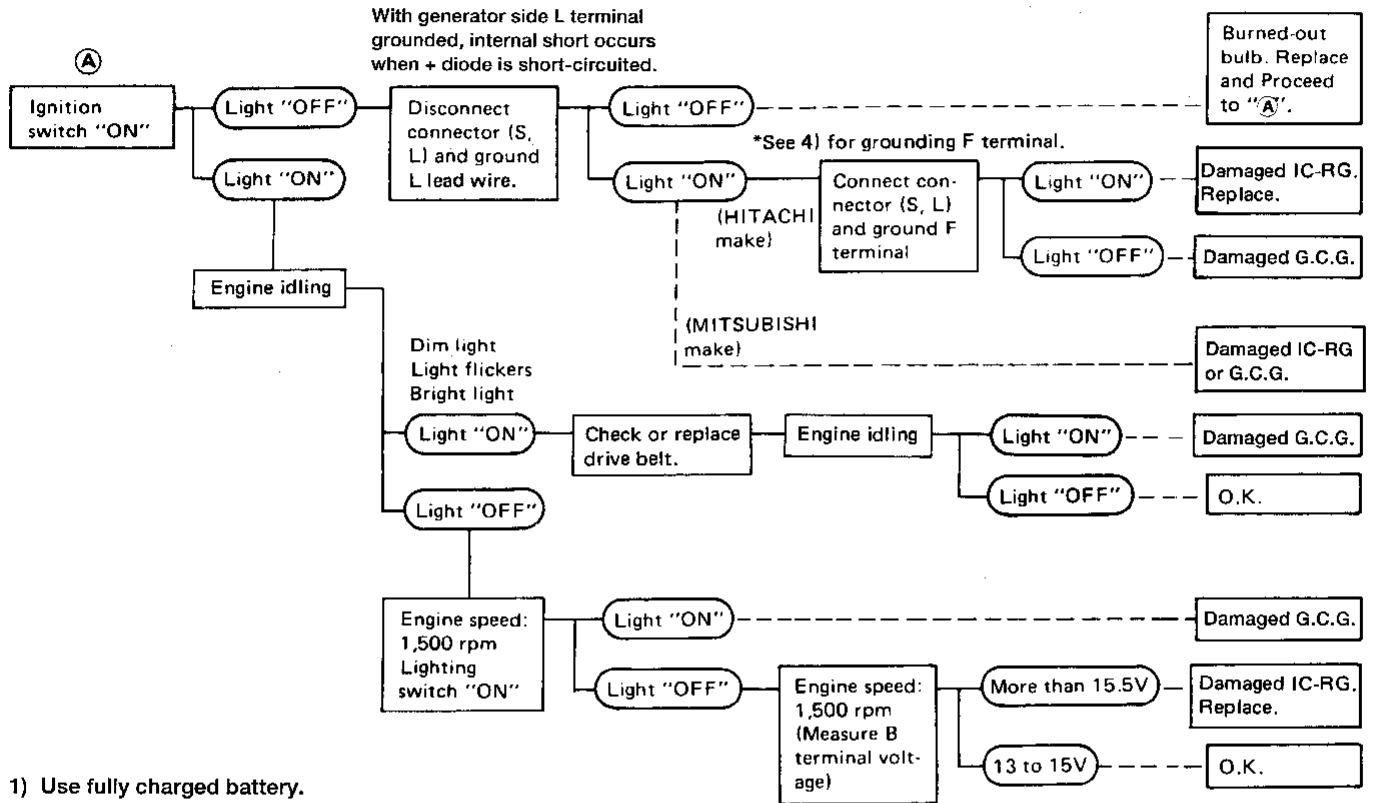
CHARGING SYSTEM

Trouble Diagnoses

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

Before starting diagnosis, inspect the fusible link.

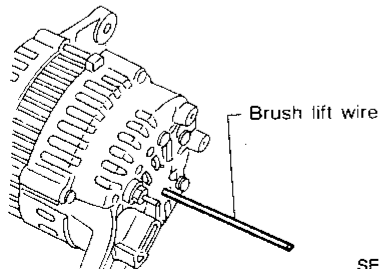
WITH IC REGULATOR



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

Gasoline engine model

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

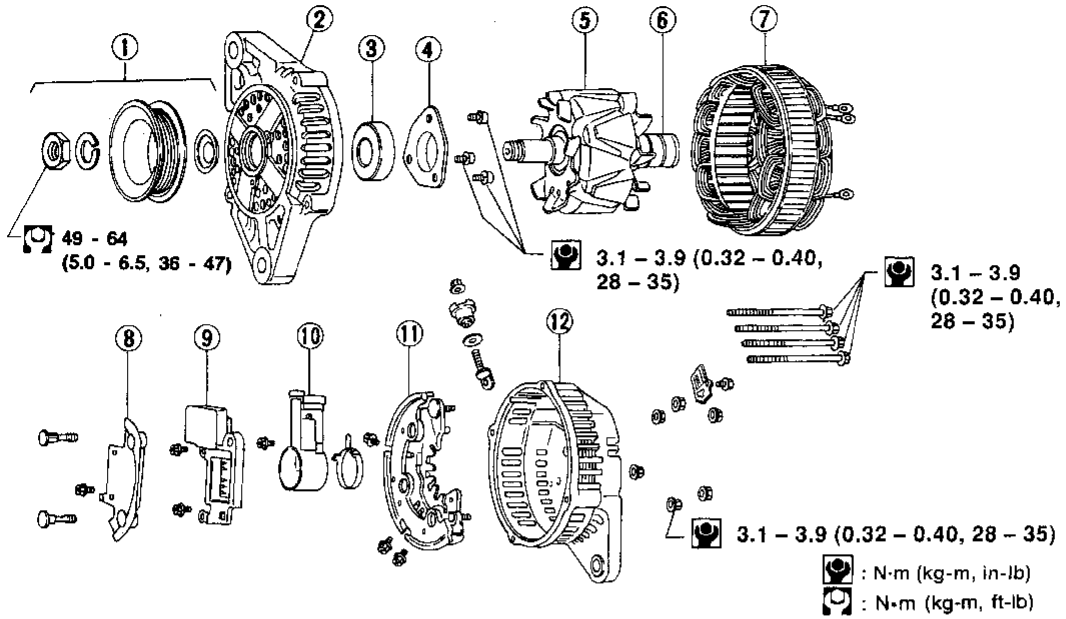


- 5) Terminals "S", "L", "B" and "E" are marked on rear cover of generator.

CHARGING SYSTEM

Generator

LR180-736B



AEL018A

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

CHARGING SYSTEM

Service Data and Specifications (SDS)

GENERATOR

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

GI

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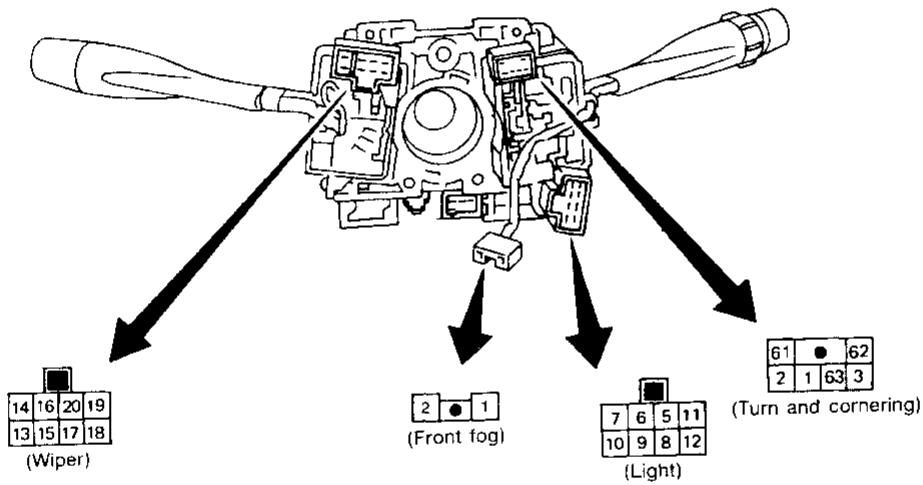
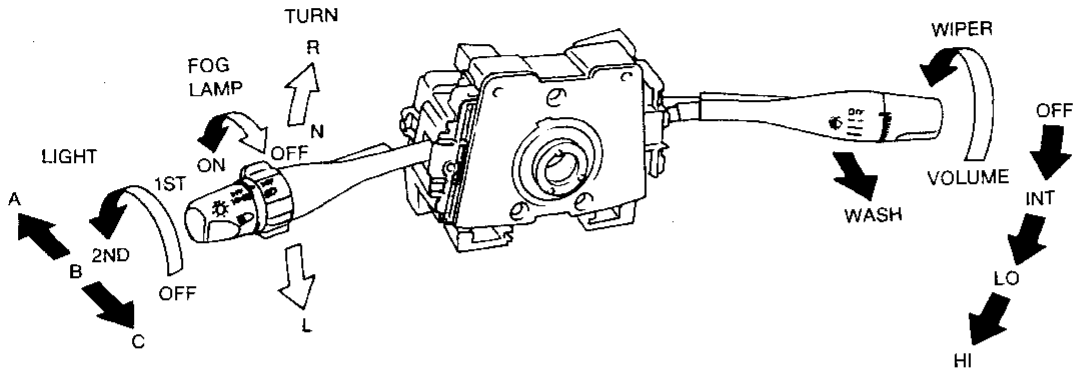
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COMBINATION SWITCH

Combination Switch/Check

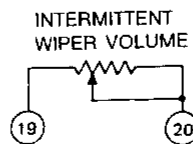


LIGHTING SWITCH

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

WIPER SWITCH

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



TURN SIGNAL SWITCH

	R	N	L
1	○	○	○
2	○		○
3			○

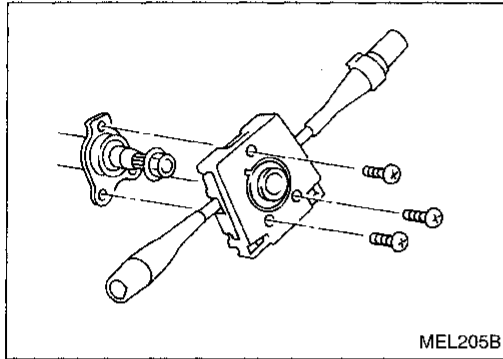
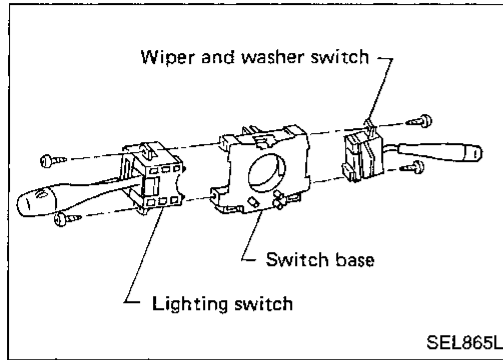
CORNERING LAMP SWITCH

	R	N	L
61	○		○
62	○		○
63			○

FRONT FOG LAMP SWITCH

	OFF	ON
2		○
1		○

COMBINATION SWITCH



Combination Switch/Replacement

- Each switch can be replaced without removing combination switch base.
- To remove combination switch base, remove base attaching screws.

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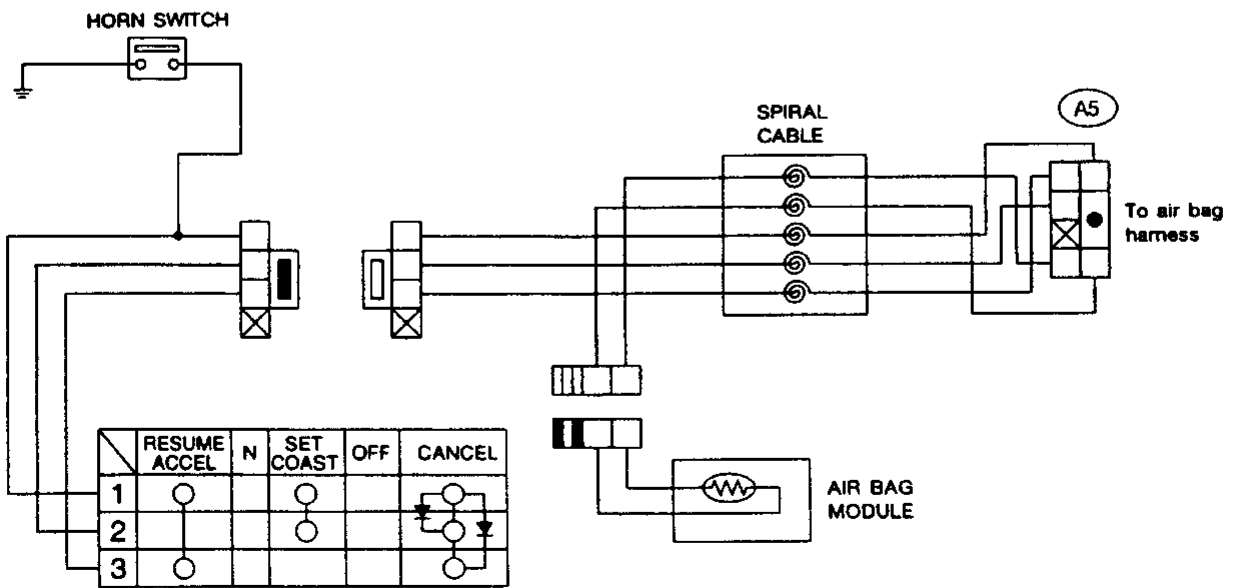
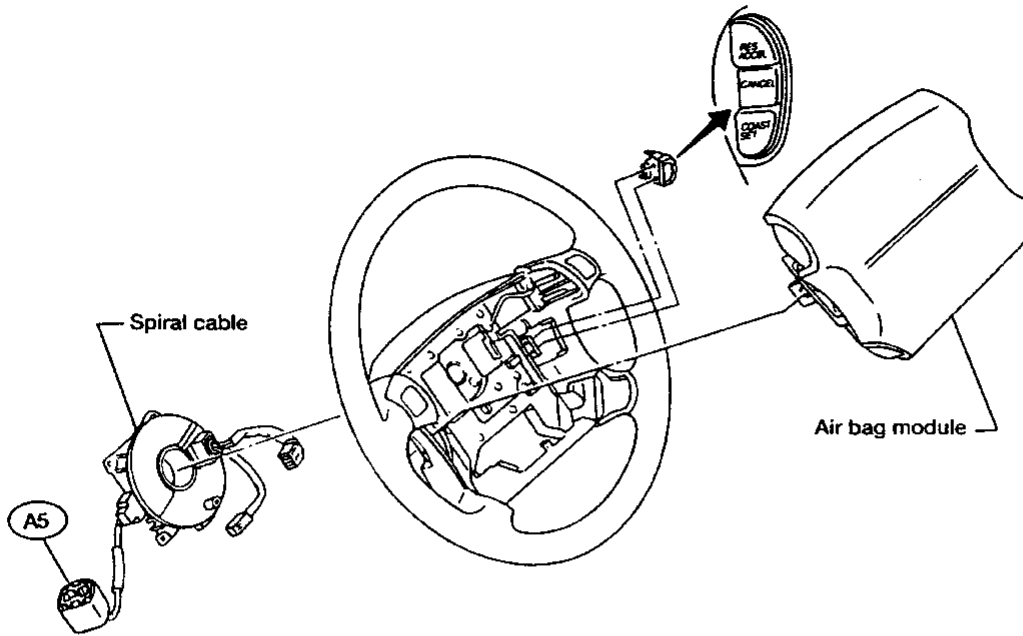
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COMBINATION SWITCH

Steering Switch/Check



HEADLAMP

System Description (For USA)

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

- to lighting switch terminal ⑤
- through 15A fuse (No. ③⑥ , located in the fusible link and fuse box), and
- to lighting switch terminal ⑧
- through 15A fuse (No. ③⑦ , located in the fusible link and fuse box).

Low beam operation

When the lighting switch is turned to the 2ND position and placed in LOW ("B") position, power is supplied

- from lighting switch terminal ⑩
- to terminal ① of the LH headlamp, and
- from lighting switch terminal ⑦
- to terminal ① of the RH headlamp.

Terminal ③ of each headlamp supplies ground through body grounds ①⑫ and ①③⑦.

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

High beam operation/flash-to-pass operation

When the lighting switch is placed in the 2ND position and placed in HIGH ("A") position, power is supplied

- from lighting switch terminal ⑥
- to terminal ② of the RH headlamp, and
- from lighting switch terminal ⑨
- to terminal ② of the LH headlamp, and
- to combination meter terminal ⑪ for the HI BEAM indicator.

Ground is supplied to terminal ⑩ of the combination meter through body grounds ①⑤①, ①⑦⑥, and ①⑦⑦.

Terminal ③ of each headlamp supplies ground through body grounds ①⑫ and ①③⑦.

With power and ground supplied, the high beams and the HI BEAM indicator illuminate.

Theft warning system

The theft warning system will flash the high beams if the system is triggered. Refer to "Schematic", "THEFT WARNING SYSTEM", (EL-170).

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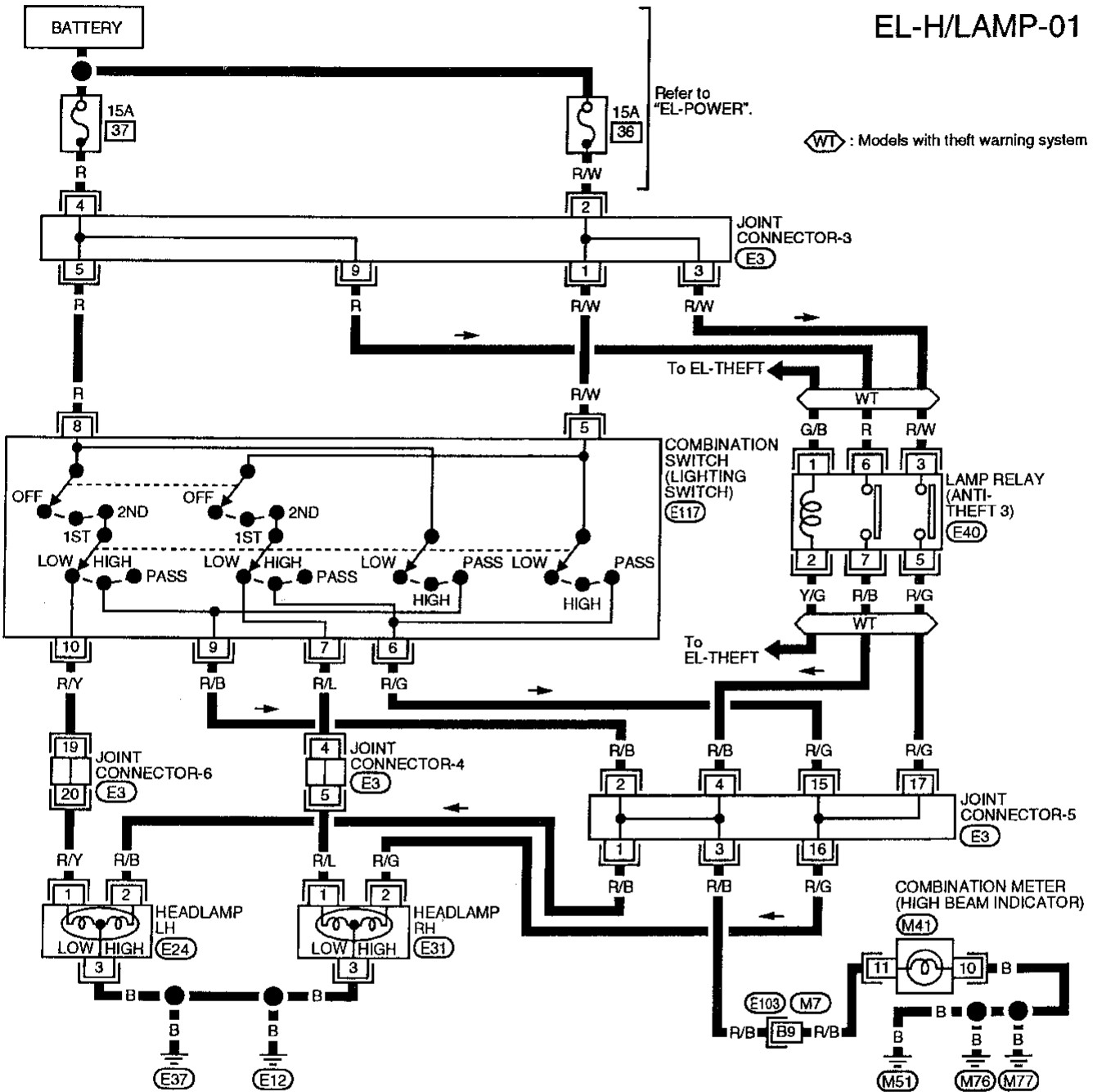
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HEADLAMP

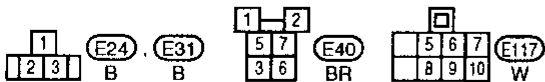
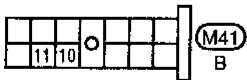
Wiring Diagram (For USA) -H/LAMP-

EL-H/LAMP-01



Refer to last page (Foldout page).

M7, E103
E3



HEADLAMP

Trouble Diagnoses (For USA)

Symptom	Possible cause	Repair order
LH headlamps do not operate.	<ol style="list-style-type: none"> 1. Bulb 2. Grounds (E12) and (E37) 3. 15A fuse 4. Lighting switch 	<ol style="list-style-type: none"> 1. Check bulb. 2. Check grounds (E12) and (E37). 3. Check 15A fuse (No. 37), located in fusible link and fuse box). Verify battery positive voltage is present at terminal (8) of lighting switch. 4. Check lighting switch.
RH headlamps do not operate.	<ol style="list-style-type: none"> 1. Bulb 2. Grounds (E12) and (E37) 3. 15A fuse 4. Lighting switch 	<ol style="list-style-type: none"> 1. Check bulb. 2. Check grounds (E12) and (E37). 3. Check 15A fuse (No. 36), located in fusible link and fuse box). Verify battery positive voltage is present at terminal (5) of lighting switch. 4. Check lighting switch.
LH high beam does not operate, but LH low beam operates.	<ol style="list-style-type: none"> 1. Bulb 2. Open in LH high beam circuit 3. Lighting switch 	<ol style="list-style-type: none"> 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.	<ol style="list-style-type: none"> 1. Bulb 2. Open in LH low beam circuit 3. Lighting switch 	<ol style="list-style-type: none"> 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.	<ol style="list-style-type: none"> 1. Bulb. 2. Open in RH high beam circuit 3. Lighting switch. 	<ol style="list-style-type: none"> 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.	<ol style="list-style-type: none"> 1. Bulb 2. Open in RH low beam circuit 3. Lighting switch 	<ol style="list-style-type: none"> 1. Check bulb. 2. Check R/L wire between lighting switch and RH headlamp for an open circuit. 3. Check lighting switch.
High beam indicator does not work.	<ol style="list-style-type: none"> 1. Bulb 2. Grounds (M51), (M76) and (M77) 3. Open in high beam circuit 	<ol style="list-style-type: none"> 1. Check bulb in combination meter. 2. Check grounds (M51), (M76) and (M77). 3. Check R/B wire between joint connector - 5 and combination meter for an open circuit.

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HEADLAMP

System Description (For Canada)

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

Power is supplied at all times

- through 15A fuse (No. 36), located in the fusible link and fuse box)
- to daytime light control unit terminal 3 and
- to lighting switch terminal 5.

Power is also supplied at all times

- through 15A fuse (No. 37), located in the fusible link and fuse box)
- to daytime light control unit terminal 4 and
- to lighting switch terminal 8.

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

- through 10A fuse (No. 26), located in the fuse block)
- to daytime light control unit terminal 5.

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

HEADLAMP OPERATION

Low beam operation

When the lighting switch is moved to the 2ND position and placed in LOW ("B") position (low beam operation), power is supplied

- from lighting switch terminal 7
- to RH headlamp terminal 1.

Ground is supplied to RH headlamp terminal 3 through body grounds E12 and E37.

Also, when the lighting switch is moved to the 2ND position and placed in LOW ("B") position (low beam operation), power is supplied

- from lighting switch terminal 10
- to LH headlamp terminal 1.

Ground is supplied

- to LH headlamp terminal 3
- from daytime light control unit terminal 8
- through daytime light control unit terminal 10
- through body grounds M51, M76 and M77.

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

High beam operation

When the lighting switch is moved to the 2ND position and placed in HIGH ("A") position, power is supplied

- from lighting switch terminal 6
- to RH headlamp terminal 2.

Also, when the lighting switch is moved to the 2ND position and placed in HIGH ("A") position, power is supplied

- from lighting switch terminal 9
- to daytime light control unit terminal 6
- through daytime light control unit terminal 7
- to LH headlamp terminal 2.

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

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

HEADLAMP

System Description (For Canada) (Cont'd)

DAYTIME LIGHT OPERATION

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

- to daytime light control unit terminal ④
- through daytime light control unit terminal ⑦
- to LH headlamp terminal ②
- through LH headlamp terminal ③
- to daytime light control unit terminal ⑧
- through daytime light control unit terminal ⑨
- to RH headlamp terminal ②.

Ground is supplied to RH headlamp terminal ③ through body grounds (E12) and (E37).

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

Operation (Daytime light system for Canada)

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

Engine		With engine stopped									With engine running									
		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	○	X
Clearance and tail lamp		X	X	X	○	○	○	○	○	○	X	X	X	○	○	○	○	○	○	○
License and instrument illumination lamp		X	X	X	○	○	○	○	○	○	X	X	X	○	○	○	○	○	○	○

○ : Lamp "ON"

X : Lamp "OFF"

△ : Lamp dims

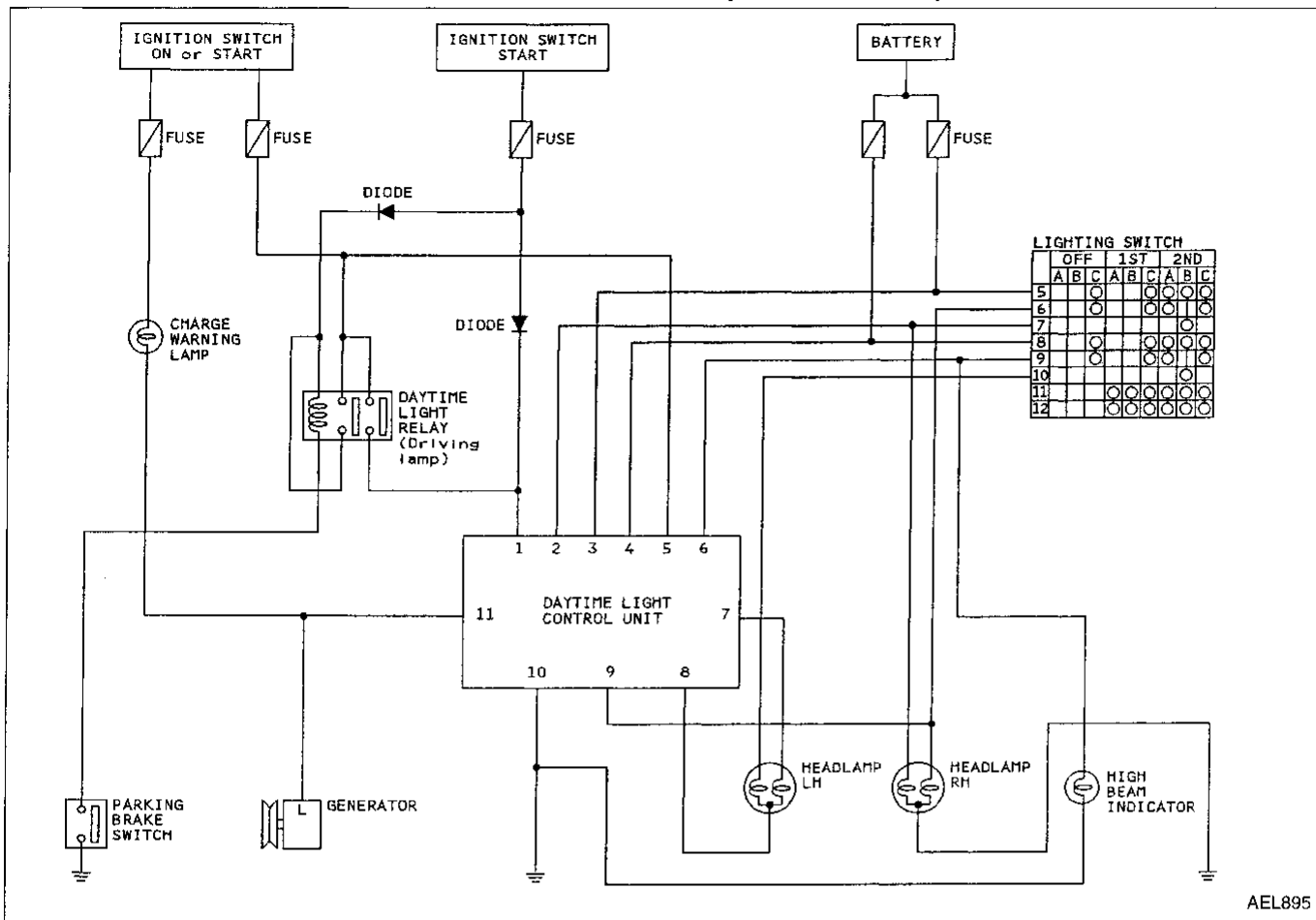
□ : Added functions

* : 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 won't come ON.

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HEADLAMP

Schematic (For Canada)

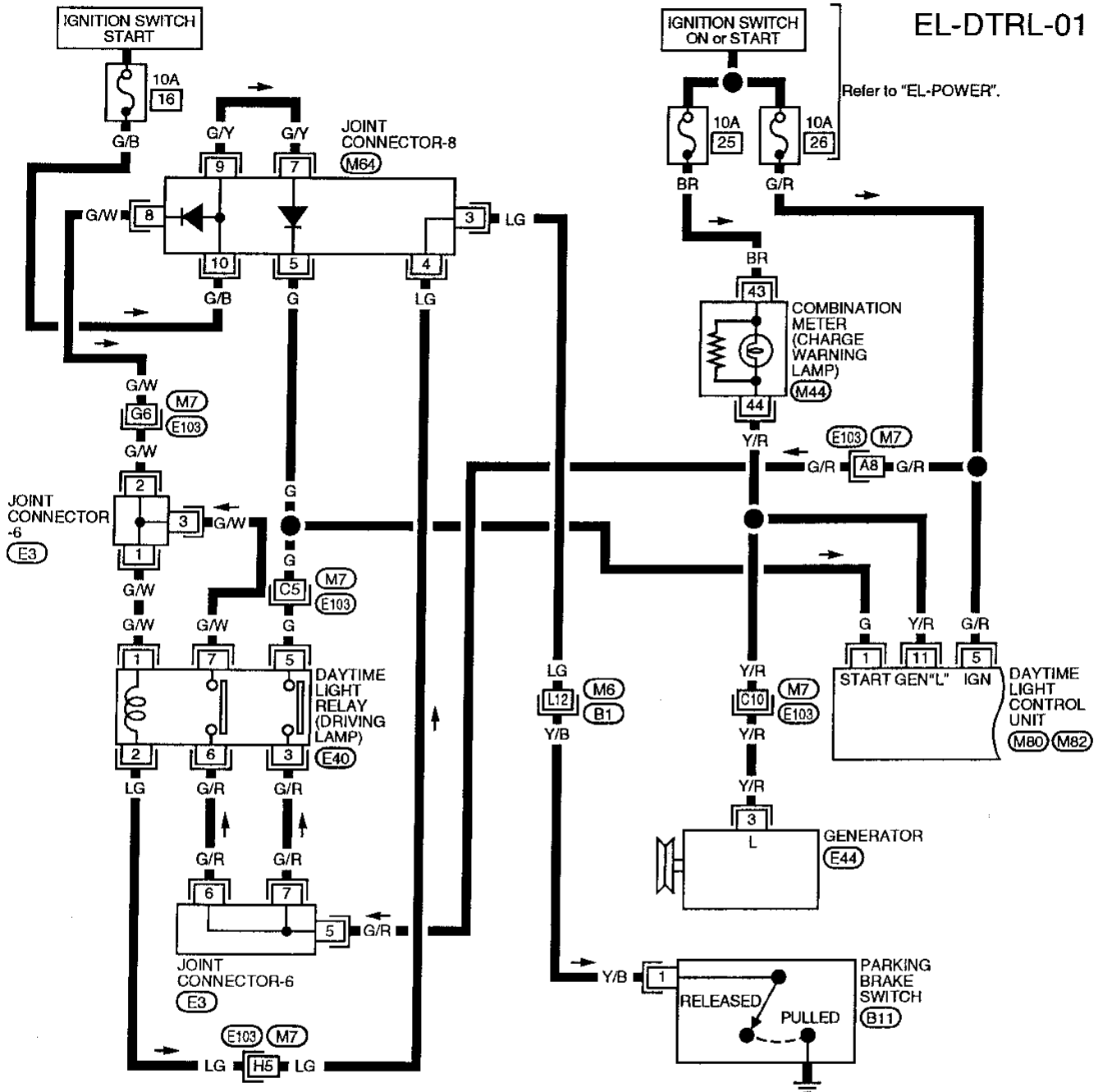


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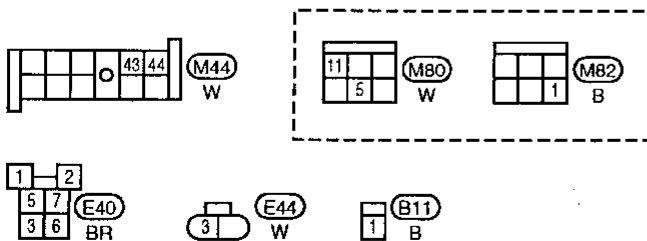
HEADLAMP

Wiring Diagram (For Canada) -DTRL-

EL-DTRL-01



Refer to last page (Foldout page).



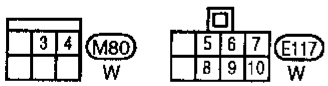
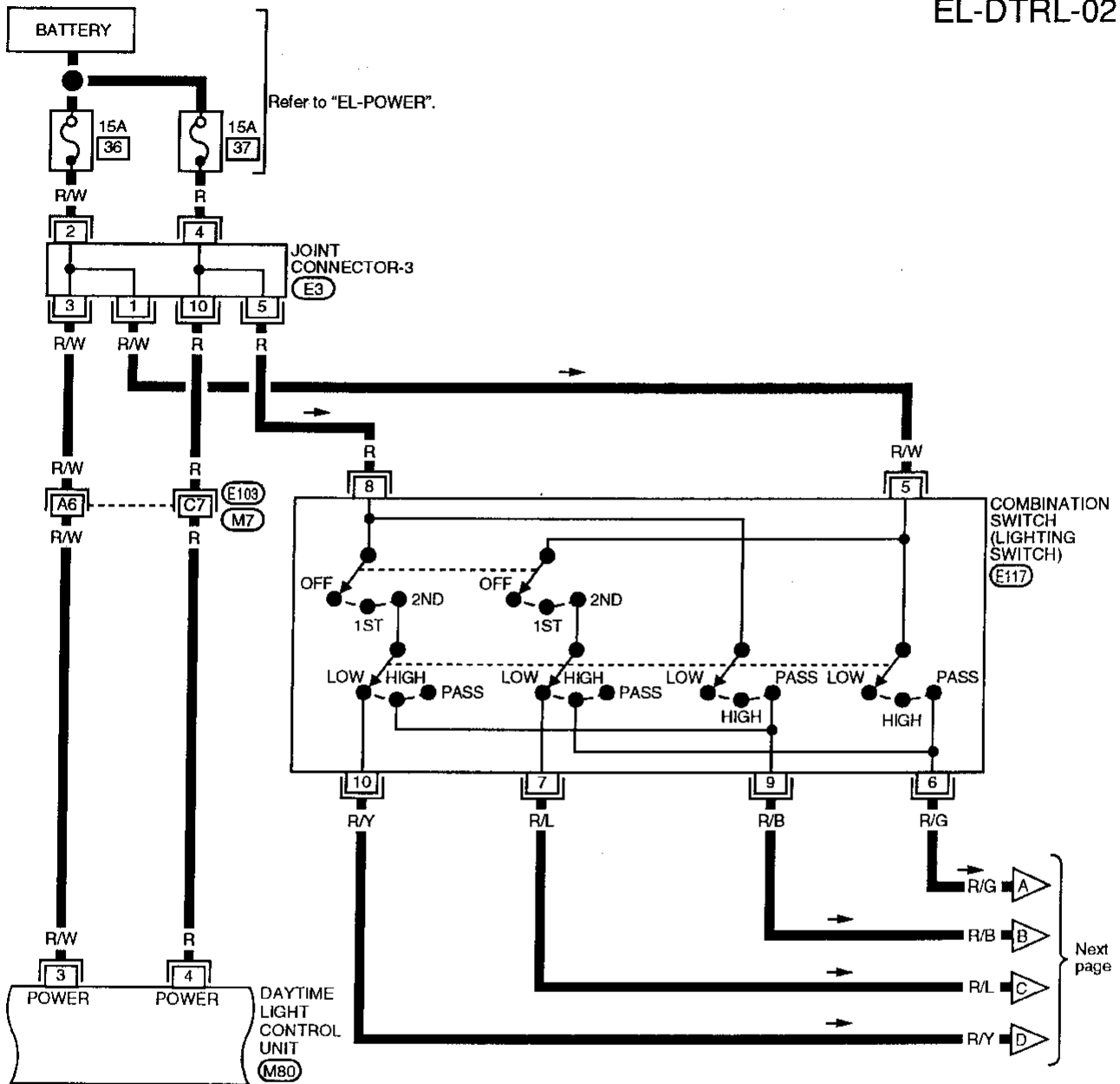
- (M7) (E103)
- (M6) (B1)
- (M64)
- (E3)

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HEADLAMP

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

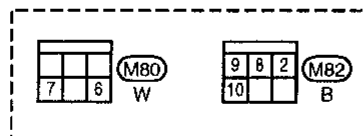
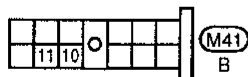
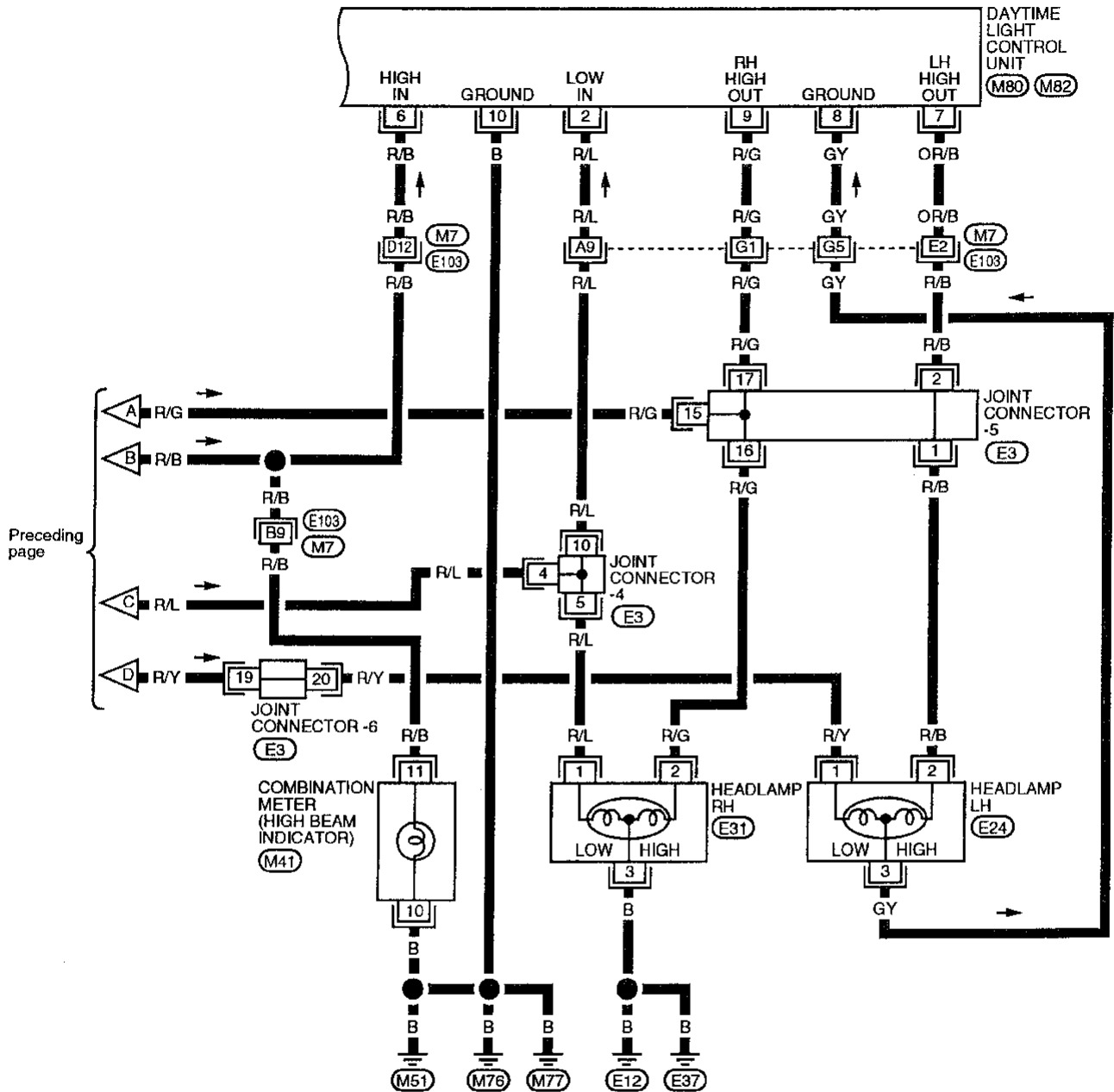
EL-DTRL-02



Refer to last page (Foldout page).
 M7, E103
 E3

HEADLAMP Wiring Diagram (For Canada) -DTRL- (Cont'd)

EL-DTRL-03



Refer to last page (Foldout page).

M7, E103
E9
















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HEADLAMP

Trouble Diagnoses (For Canada)

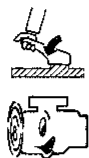
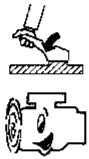



DAYTIME LIGHT CONTROL UNIT INSPECTION TABLE

(Data are reference values)

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

HEADLAMP

Trouble Diagnoses (For Canada) (Cont'd)

Terminal No.	Item		Condition	Judgement standard
8	LH headlamp control (ground)		When lighting switch is turned to 2nd position and placed in LOW ("B") position.	1V or less
			When releasing parking brake with engine running and turning lighting switch to "OFF" (daytime light operation). CAUTION: Block wheels and ensure selector lever is in N or P position.	Approx. half battery voltage
9	RH hi beam out		When turning lighting switch to 2nd position and placed in HIGH ("A") position.	Battery positive voltage
			When releasing parking brake with engine running and turning lighting switch to "OFF" (daytime light operation). CAUTION: Block wheels and ensure selector lever is in N or P position.	Approx. half battery voltage
10	Ground		—	—
11	Generator		When turning ignition switch to "ON".	1V or less
			When engine is running.	Battery positive voltage
			When turning ignition switch to "OFF".	1V or less
12	—		—	—

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HEADLAMP

Bulb Replacement

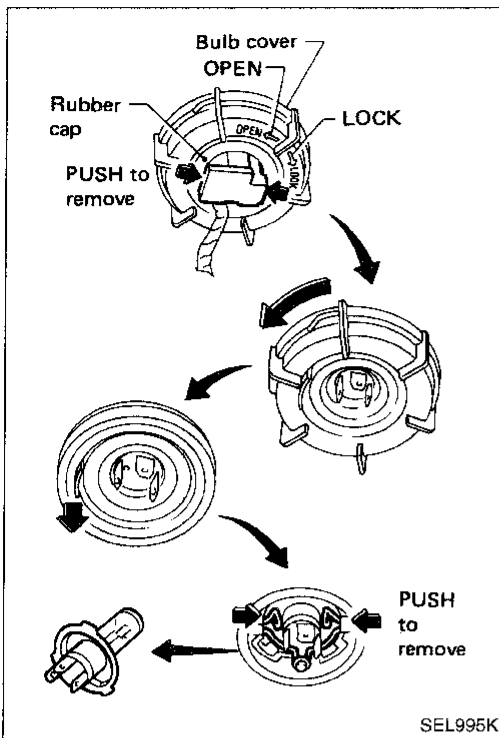
The headlamp is a semi-sealed beam type which uses a replaceable halogen bulb. The bulb can be replaced from the engine compartment side without removing the headlamp body.

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

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

CAUTION:

Do not leave 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.



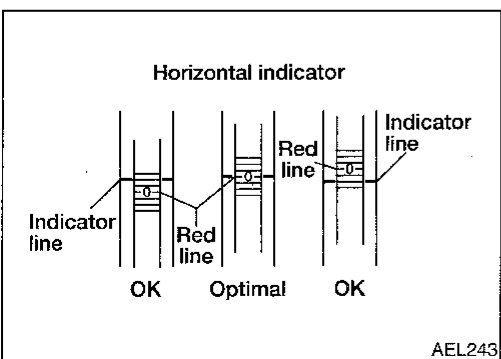
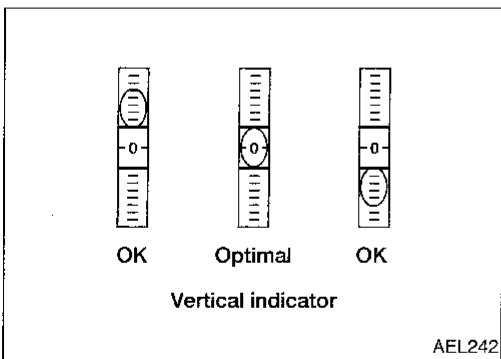
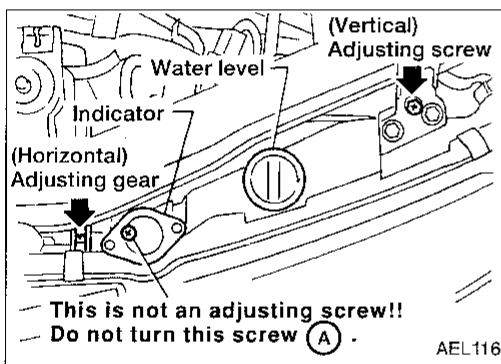
Aiming Adjustment

When performing headlamp aiming adjustment, use an aiming machine, aiming wall screen or headlamp tester. Aimers should be in good repair, 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, fuel, spare tire, jack and tools). Have the driver or equivalent weight placed in driver's seat.

LOW BEAM

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



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

HEADLAMP

Aiming Adjustment (Cont'd)

ADJUSTMENT AFTER HEADLAMP ASSEMBLY REPLACEMENT

If the vehicle has had front body repair or the headlamp assembly has been replaced, check the aiming as shown in the illustration.

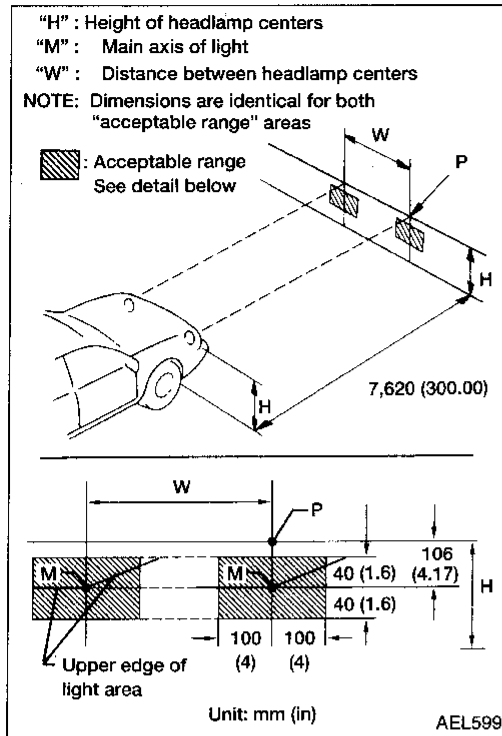
Vertical (Up and Down)

Adjust headlamp by turning adjusting screw so that main axis of light "M" is within acceptable range.

Horizontal (Left to Right)

Adjust headlamp by turning adjusting gear so that main axis of light "M" is parallel with vehicle center line.

If the indicators are not in the "Optimal" range, the "OK" range is acceptable.

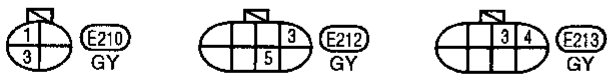
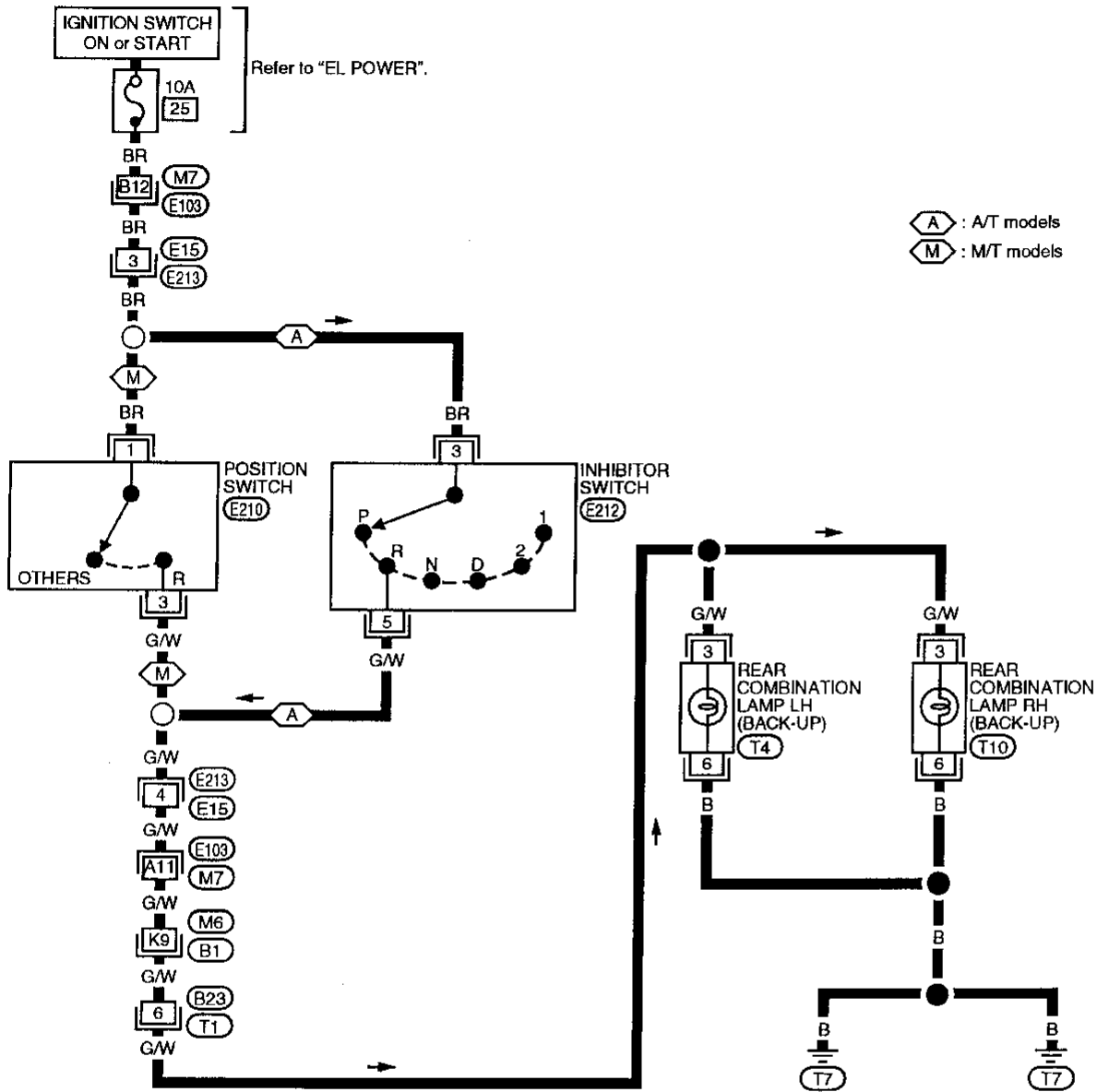


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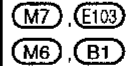
EXTERIOR LAMP

Back-up Lamp/Wiring Diagram -BACK/L-

EL-BACK/L-01



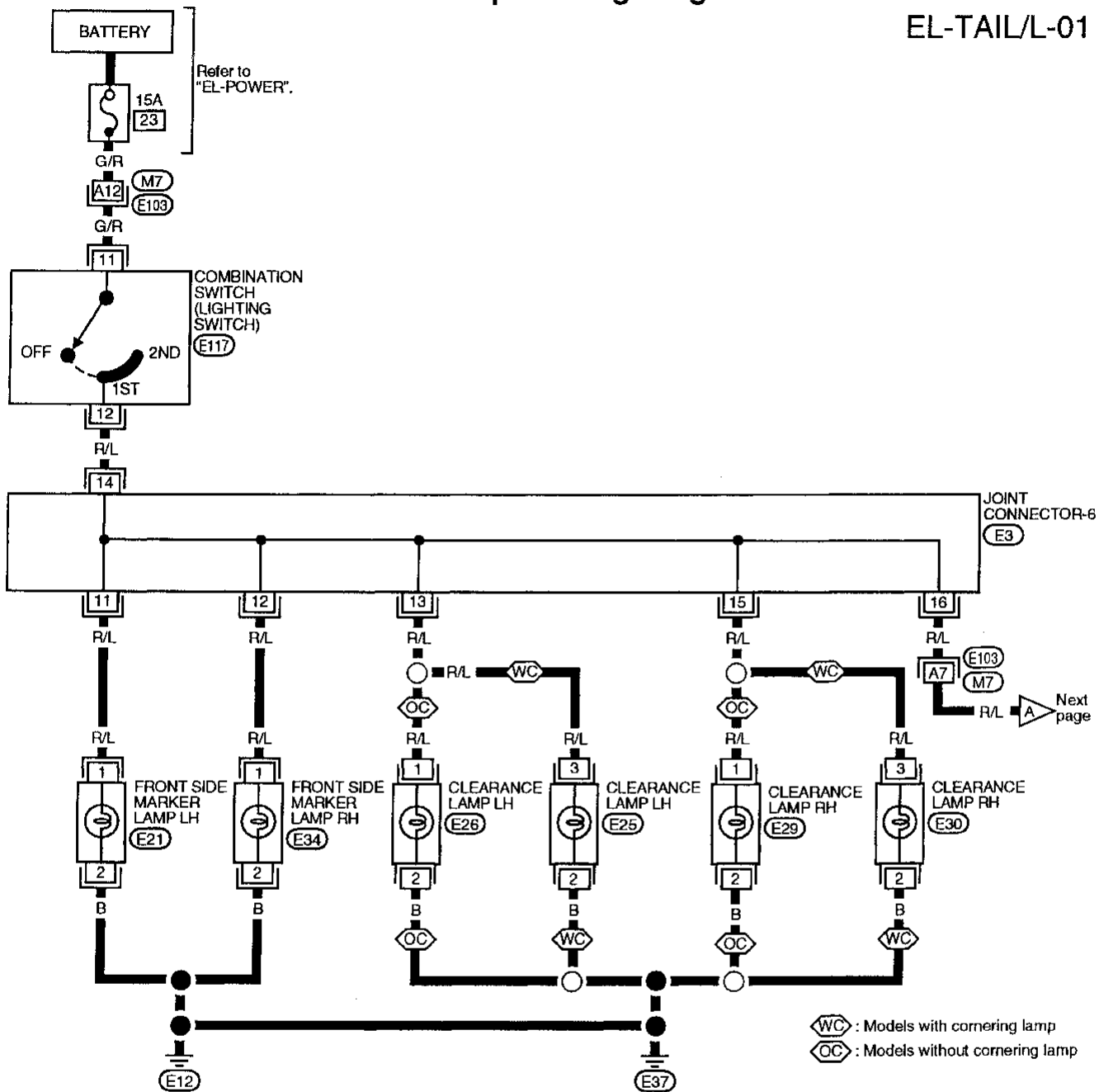
Refer to last page (Foldout page).



EXTERIOR LAMP

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

EL-TAIL/L-01



Refer to last page (Foldout page).

(M7), (E103)
(E3)

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GY GY

1 2 (E26), (E29)
GY GY

2 3 (E25), (E30)
GY GY

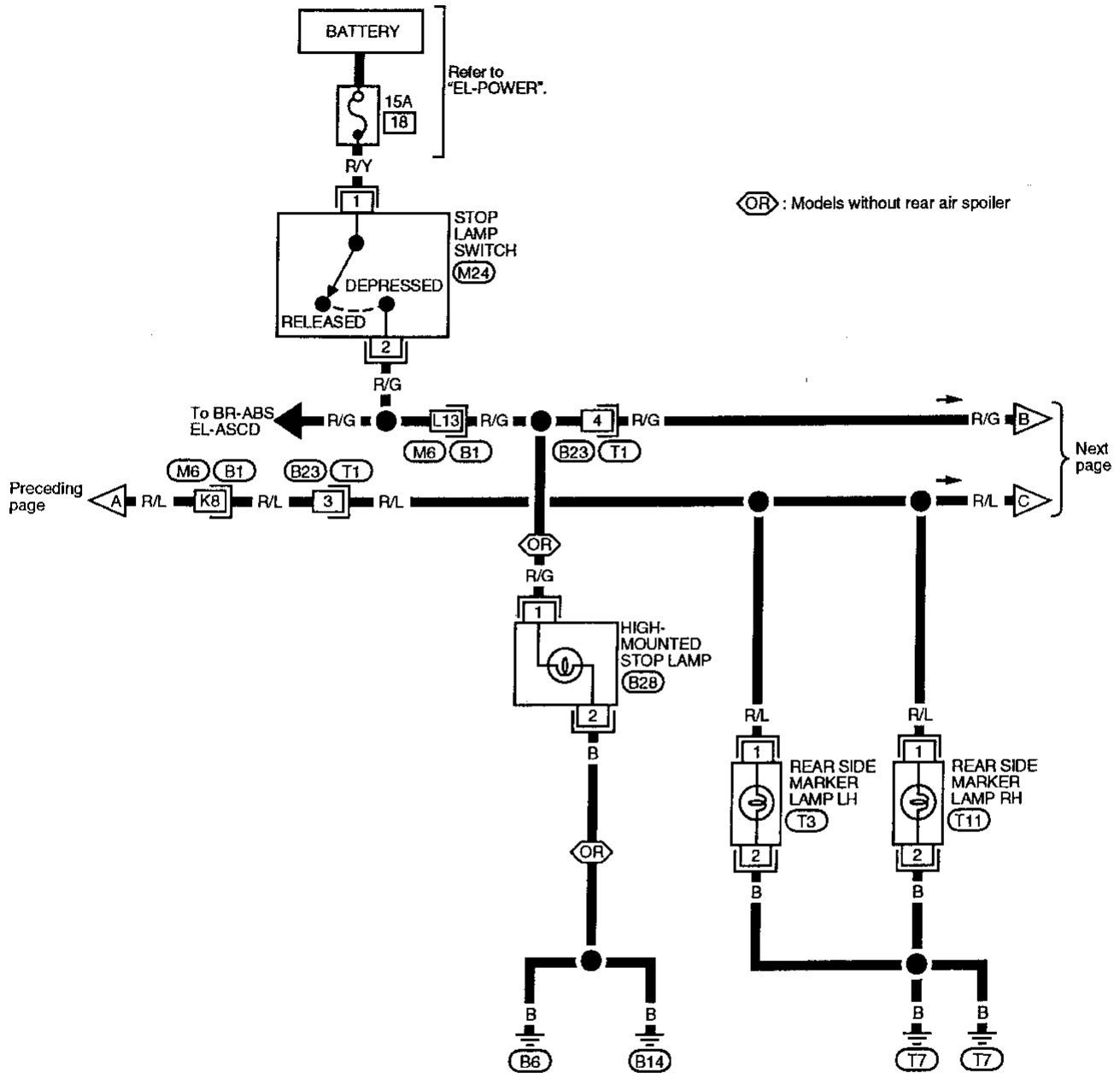
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EXTERIOR LAMP

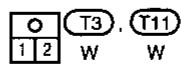
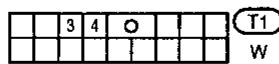
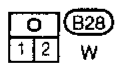
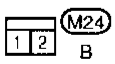
Clearance, License, Tail and Stop Lamps/Wiring Diagram -TAIL/L- (Cont'd)

EL-TAIL/L-02



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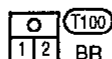
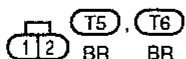
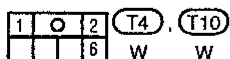
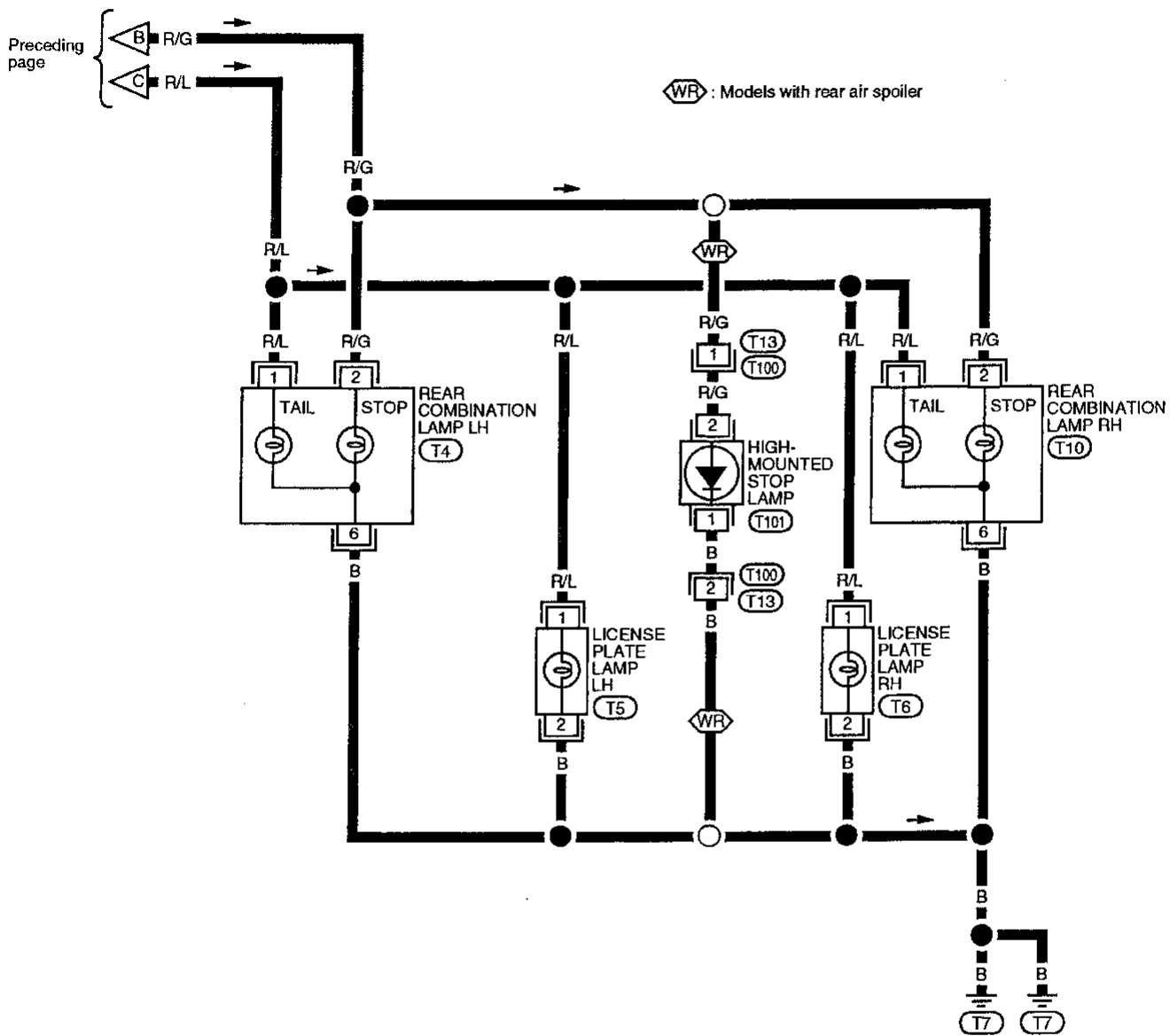
M6, B1



EXTERIOR LAMP

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

EL-TAIL/L-03



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EXTERIOR LAMP

Front Fog Lamp/System Description

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

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

With the lighting switch in the 2ND position and LOW ("B") position, power is supplied

- through 15A fuse (No. ③⑥, located in the fusible link and fuse box)
- to lighting switch terminal ⑤
- through terminal ⑦ of the lighting switch
- to 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 the 2ND position and LOW ("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 ①② and ③⑦.

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.

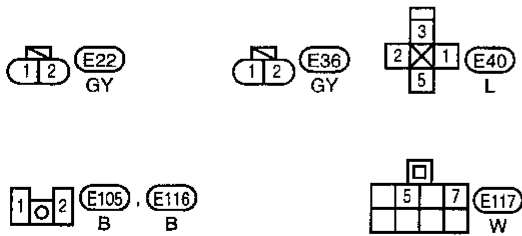
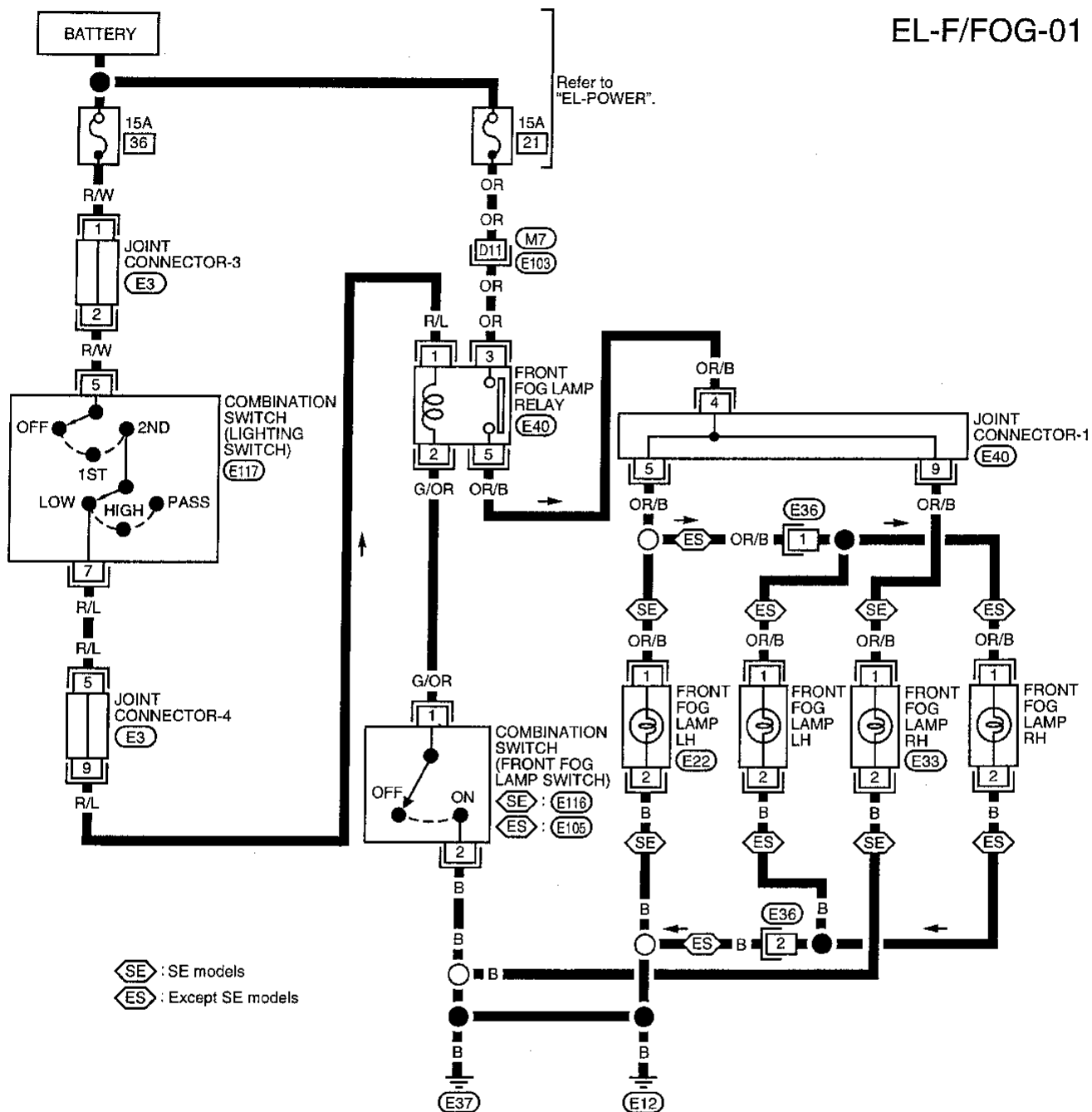
Ground is supplied to terminal ② of each front fog lamp through body grounds ①② and ③⑦.

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

EXTERIOR LAMP

Front Fog Lamp/Wiring Diagram -F/FOG-

EL-F/FOG-01



EXTERIOR LAMP

Turn Signal and Hazard Warning Lamps/System Description

TURN SIGNAL OPERATION

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

- through 10A fuse (No. 24 , located in the fuse block)
- to hazard switch terminal ②
- through terminal ① of the hazard switch
- to 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 (M51), (M76) and (M77).

LH turn

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

- front turn signal lamp LH terminal ①
- rear combination lamp LH terminal ⑤, and
- combination meter terminal ⑩.

Ground is supplied to the front turn signal lamp LH terminal ② through body grounds (E12) and (E37).

Ground is supplied to the rear combination lamp LH terminal ⑥ through body ground (T7).

Ground is supplied to combination meter terminal ⑰ through body grounds (M51), (M76) and (M77).

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 ①
- rear combination lamp RH terminal ⑤, and
- combination meter terminal ⑰.

Ground is supplied to the front turn signal lamp RH terminal ② through body grounds (E12) and (E37).

Ground is supplied to the rear combination lamp RH terminal ⑥ through body ground (T7).

Ground is supplied to combination meter terminal ⑰ through body grounds (M51), (M76) and (M77).

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. 22 , located in the fuse block).

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

- through terminal ① of the hazard switch
- to 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 (M51), (M76) and (M77).

Power is supplied through terminal ⑤ of the hazard switch to

- front turn signal lamp LH terminal ①
- rear combination lamp LH terminal ⑤, and
- combination meter terminal ⑩.

Power is supplied through terminal ⑥ of the hazard switch to

- front turn signal lamp RH terminal ①
- rear combination lamp RH terminal ⑤, and
- combination meter terminal ⑰.

Ground is supplied to terminal ② of the front turn signal lamps through body grounds (E12) and (E37).

Ground is supplied to terminal ⑥ of the rear combination lamps through body ground (T7).

Ground is supplied to combination meter terminal ⑰ through body grounds (M51), (M76) and (M77).

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

EXTERIOR LAMP

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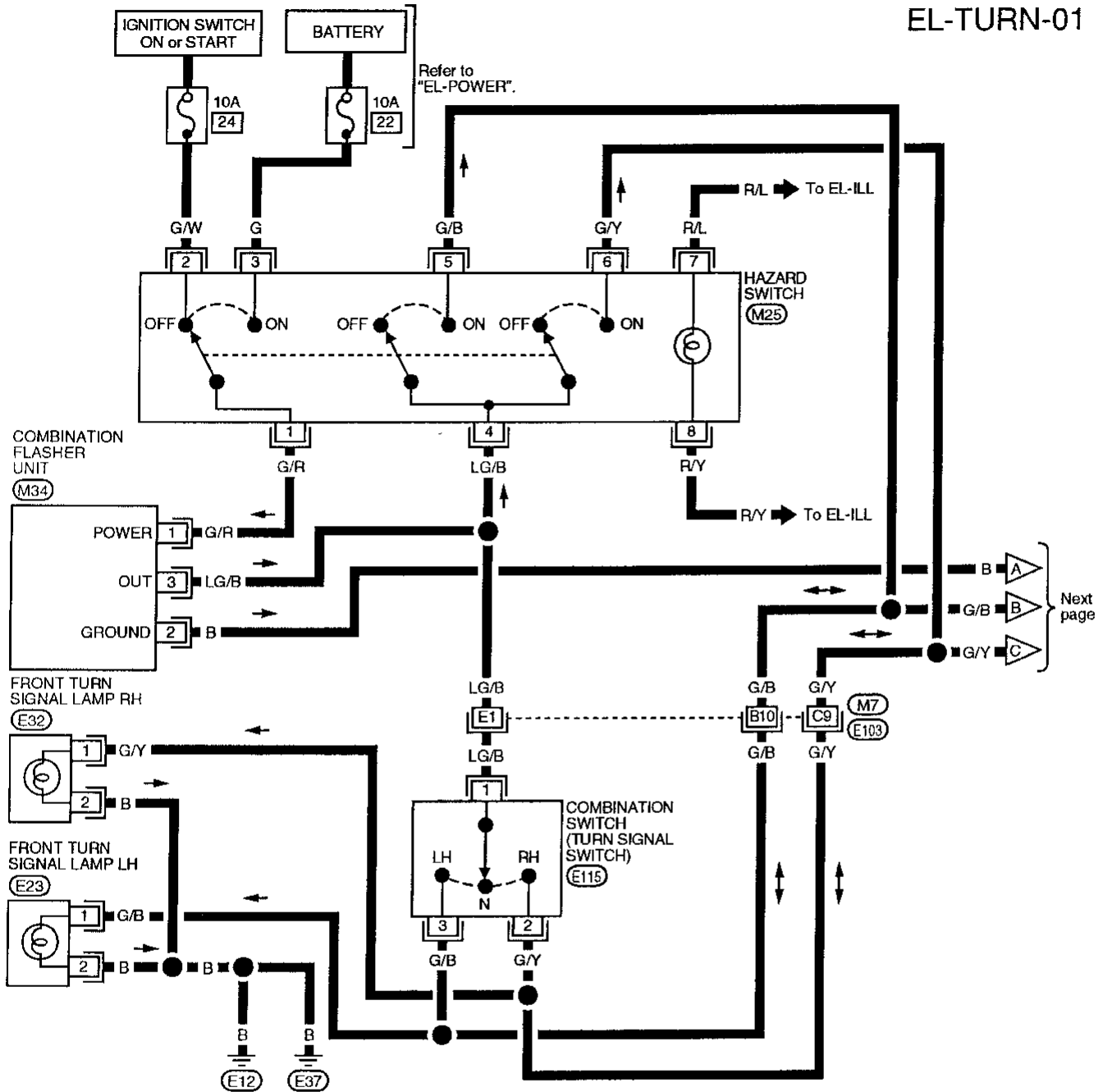
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EXTERIOR LAMP

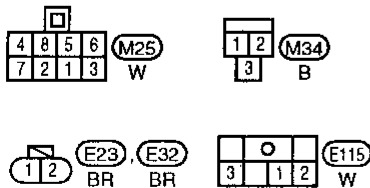
Turn Signal and Hazard Warning Lamps/Wiring Diagram -TURN-

EL-TURN-01



Refer to last page (Foldout page).

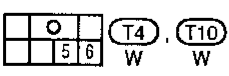
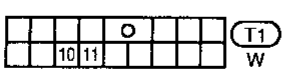
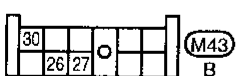
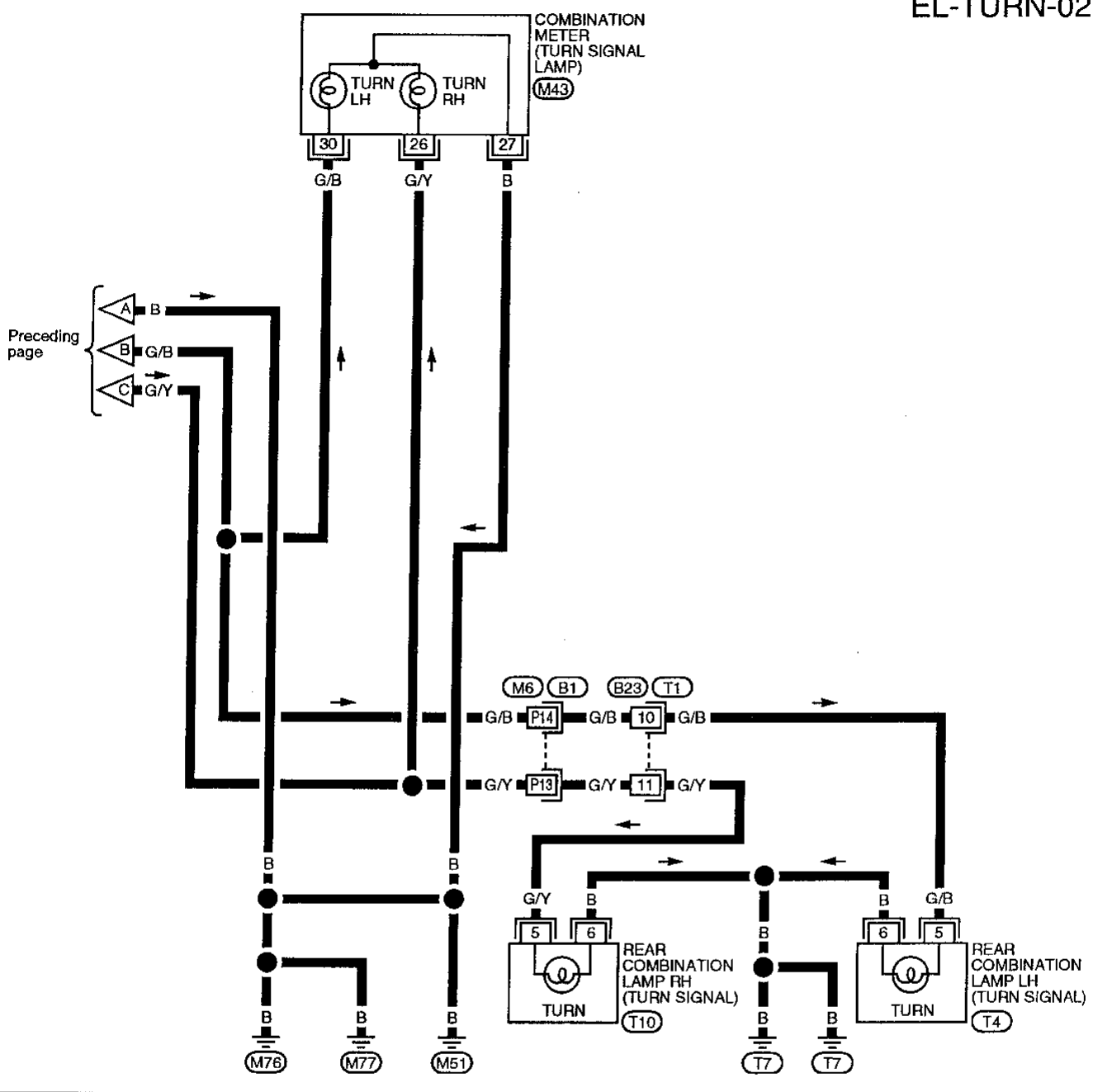
(M7) (E103)



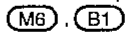
EXTERIOR LAMP

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

EL-TURN-02



Refer to last page (Foldout page).



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EXTERIOR LAMP

Turn Signal and Hazard Warning Lamps/Trouble Diagnoses

Symptom	Possible cause	Repair order
Turn signal and hazard warning lamps do not operate.	<ol style="list-style-type: none"> 1. Hazard switch 2. Combination flasher unit 3. Open in combination flasher unit circuit 	<ol style="list-style-type: none"> 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.	<ol style="list-style-type: none"> 1. 10A fuse 2. Hazard switch 3. Turn signal switch 4. Open in turn signal switch circuit 	<ol style="list-style-type: none"> 1. Check 10A fuse (No. 24 , located in fuse block). Turn ignition switch ON and verify battery positive voltage is present at terminal 2 of hazard switch. 2. Check hazard switch. 3. Check turn signal switch. 4. Check 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.	<ol style="list-style-type: none"> 1. 10A fuse 2. Hazard switch 3. Open in hazard switch circuit 	<ol style="list-style-type: none"> 1. Check 10A fuse (No. 22 , located in fuse block). Verify battery positive voltage is present at terminal 3 of hazard switch. 2. Check hazard switch. 3. Check LG/B wire between combination flasher unit and hazard switch for open circuit.
Front turn signal lamp LH or RH does not operate.	<ol style="list-style-type: none"> 1. Bulb 2. Grounds (E12) and (E37) 	<ol style="list-style-type: none"> 1. Check bulb. 2. Check grounds (E12) and (E37).
Rear turn signal lamp LH or RH does not operate.	<ol style="list-style-type: none"> 1. Bulb 2. Ground (T7) 	<ol style="list-style-type: none"> 1. Check bulb. 2. Check ground (T7).
LH and RH turn indicators do not operate.	<ol style="list-style-type: none"> 1. Ground 	<ol style="list-style-type: none"> 1. Check grounds (M51) , (M76) and (M77).
LH or RH turn indicator does not operate.	<ol style="list-style-type: none"> 1. Bulb 	<ol style="list-style-type: none"> 1. Check bulb in combination meter.

EXTERIOR LAMP

Cornering Lamp/System Description

The lighting switch must be in the 2ND and LOW ("B") or HIGH ("A") position for the cornering lamps to operate. The cornering lamp switch is a part of the combination switch and is controlled by the turn signal lever. The cornering lamps provide additional lighting in the direction of the turn.

Power is supplied at all times to terminal ⑧ of the lighting switch through:

- 15A fuse (No. 37 , located in the fusible link and fuse box).

With the ignition switch in the ON or START position, power is supplied to cornering lamp relay terminal ③ through:

- 10A fuse (No. 24 , located in the fuse block).

Power is supplied to cornering lamp relay terminal ①

- through terminal ⑩ of the lighting switch in the 2ND and LOW ("B") position or
- through terminal ⑨ of the lighting switch in the 2ND and HIGH ("A") position.

Ground is supplied to cornering lamp relay terminal ② through body grounds E12 and E37.

With power and ground supplied, the cornering lamp relay is energized.

Power is supplied

- from terminal ⑤ of the cornering lamp relay
- to cornering lamp switch terminal ⑥1.

RH turn

When the turn signal lever is moved to the RH position, power is supplied

- from terminal ⑥1 of the cornering lamp switch
- through terminal ⑥2 of the cornering lamp switch
- to cornering lamp RH terminal ①.

Ground is supplied to terminal ② of cornering lamp RH through body grounds E12 and E37.

The RH cornering lamp illuminates until the turn is completed.

LH turn

When the turn signal lever is moved to the LH position, power is supplied

- from terminal ⑥1 of the cornering lamp switch
- through terminal ⑥3 of the cornering lamp switch
- to cornering lamp LH terminal ①.

Ground is supplied to terminal ② of cornering lamp LH through body grounds E12 and E37.

The LH cornering lamp illuminates until the turn is completed.

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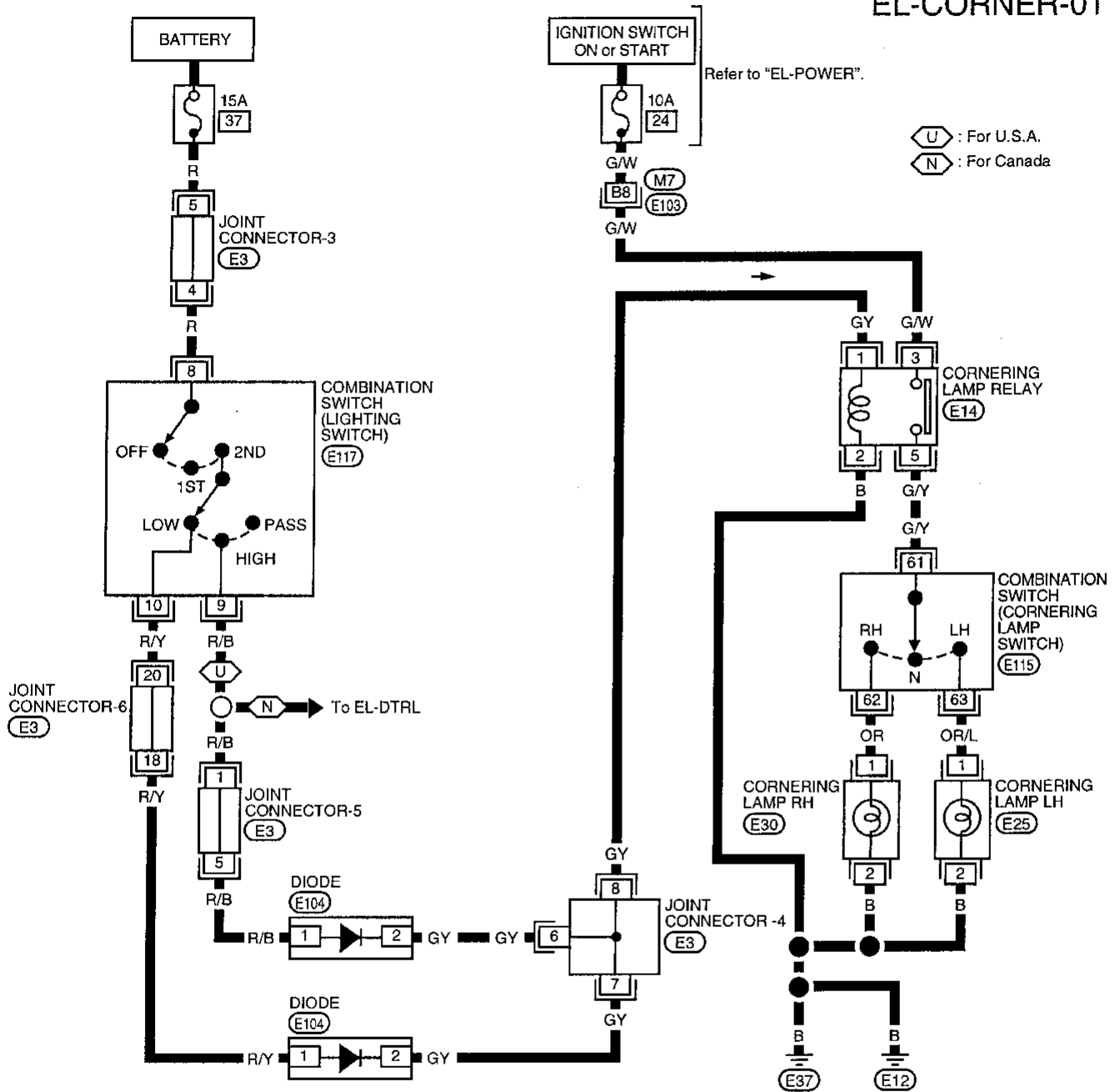
EL

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EXTERIOR LAMP

Cornering Lamp/Wiring Diagram -CORNER-

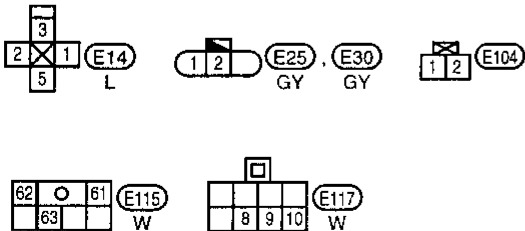
EL-CORNER-01



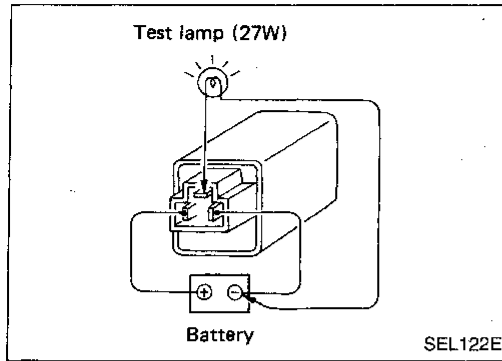
U : For U.S.A.
N : For Canada

Refer to last page (Foldout page).

M7, E103
E3



EXTERIOR LAMP



Combination Flasher Unit Check

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

Bulb Specifications

	Wattage (12 volt)	Bulb No.
Headlamp (Semi-sealed beam)		
High/Low	60/55	HB2
Front turn signal lamp	27	1156NA
Cornering lamp/Front clearance lamp ¹	27/5	1157
Front clearance lamp ²	5	168
Front side marker lamp	3.8	194
Front fog lamp	55	H3
Rear combination lamp		
Turn signal	27	1156NA
Stop/Tail	27/8	1157
Back-up	27	1156
Rear side marker lamp (In rear combination lamp)	3.8	194
License plate lamp	5	168
High-mounted stop lamp	13	912
Interior lamp	8	
Front personal lamp	10	
Trunk room lamp	3.4	158

- 1: Models with cornering lamp
 2: Models without cornering lamp

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INTERIOR LAMP

Illumination/System Description

Power is supplied at all times

- through 15A fuse (No. 23 , located in the fuse block)
- to lighting switch terminal ⑪.

The lighting switch must be in the 1ST or 2ND position for illumination.

The illumination control switch is a thumbwheel that controls the amount of current to the illumination system. As the amount of current increases, the illumination becomes brighter.

The glove box lamp is not controlled by the illumination control switch. The intensity of this lamp does not change.

The clock display (if equipped) will dim when the lighting switch is turned to the 1ST or 2ND position.

The clock display is not controlled by the illumination control switch.

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

Component	Power terminal	Ground terminal
Radio	⑧	⑦
Auto A/C amplifier*	⑬	⑭
Push control unit*	⑮	⑯
PTC*	⑳**	㉓
A/T device indicator*	③	④
Hazard switch	⑦	⑧
Main power window and door lock switch	③	⑧
Combination meter	④①	④②
Clock*	②	①
ASCD main switch*	⑤	⑥
Rear window defogger switch	⑤	⑥
Glove box lamp*	②	①
Illumination control switch	①	③

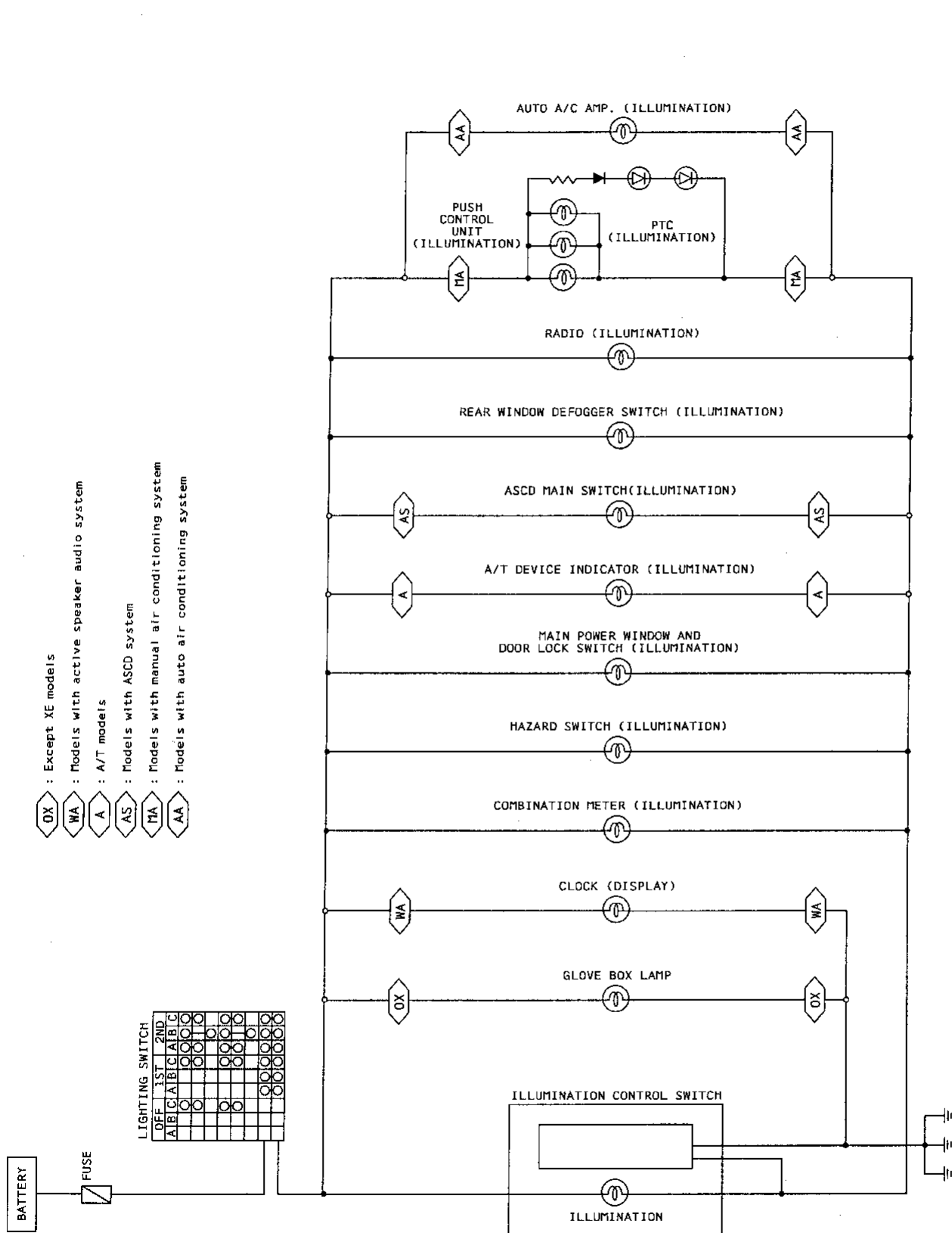
* If equipped.

** Power supplied to PTC terminal ⑳ is supplied through terminal ㉒ of the push control unit.

With the exception of the clock and glove box lamp, the ground for all of the components are controlled through terminals ④ and ⑤ of the illumination control switch and body grounds ①⑤①, ①⑦⑥ and ①⑦⑦. The glove box lamp terminal ① and the clock illumination terminal ① are grounded directly through body grounds ①⑤①, ①⑦⑥ and ①⑦⑦.

INTERIOR LAMP

Illumination/Schematic

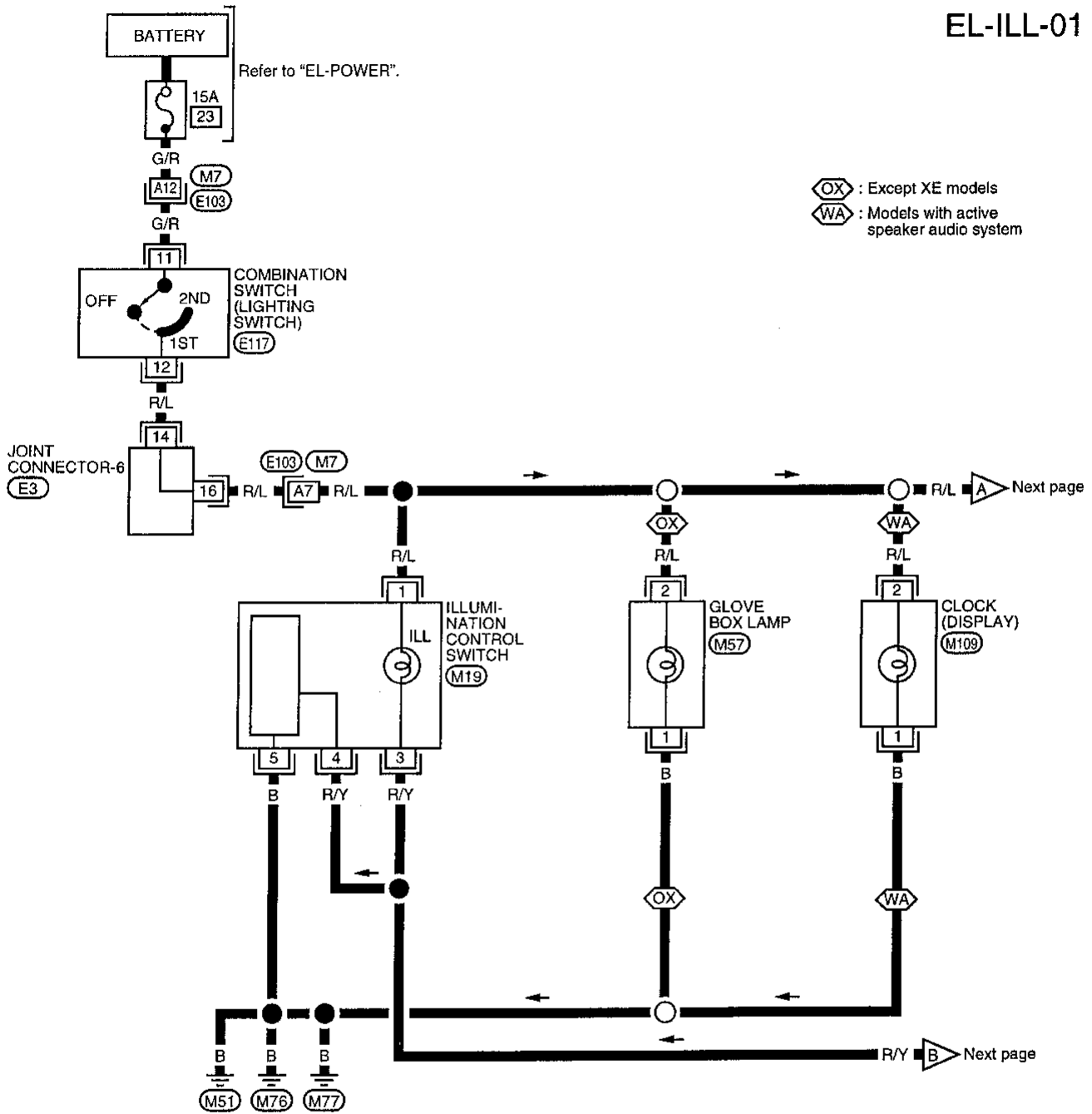


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INTERIOR LAMP

Illumination/Wiring Diagram -ILL-

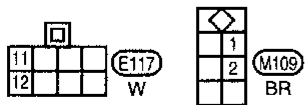
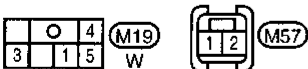
EL-ILL-01



OX : Except XE models
 WA : Models with active speaker audio system

Refer to last page (Foldout page).

M7, E103
 E3

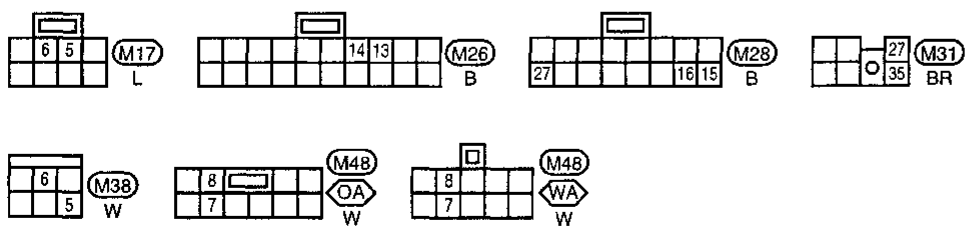
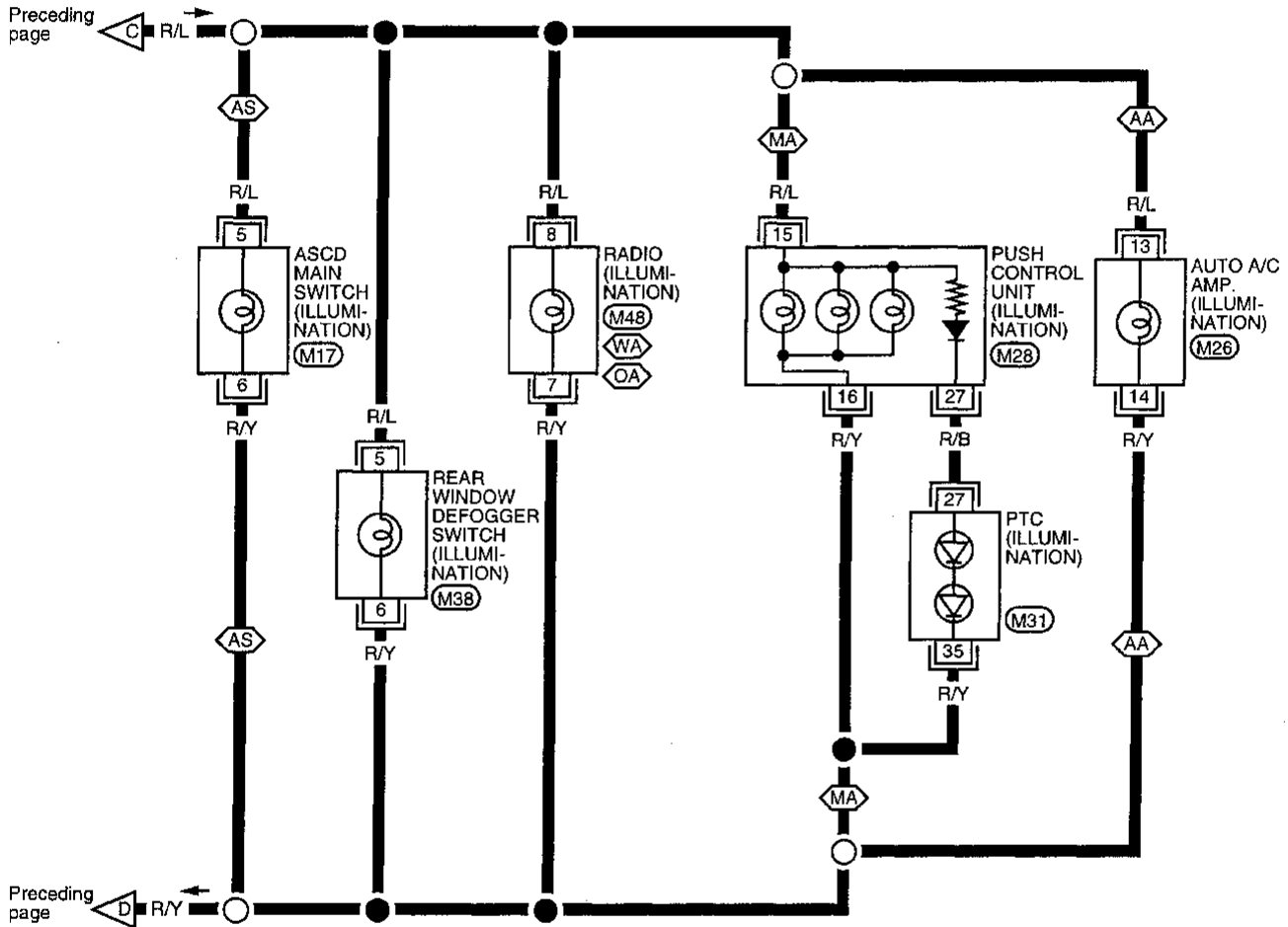


INTERIOR LAMP

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

EL-ILL-03

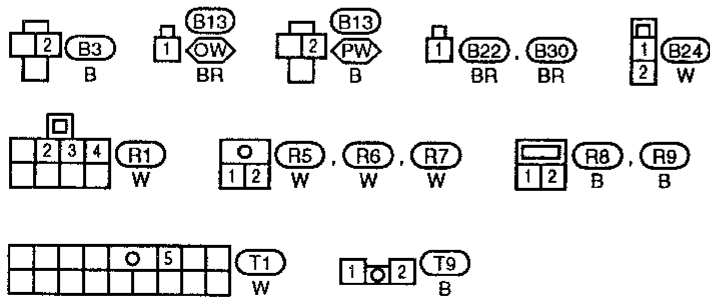
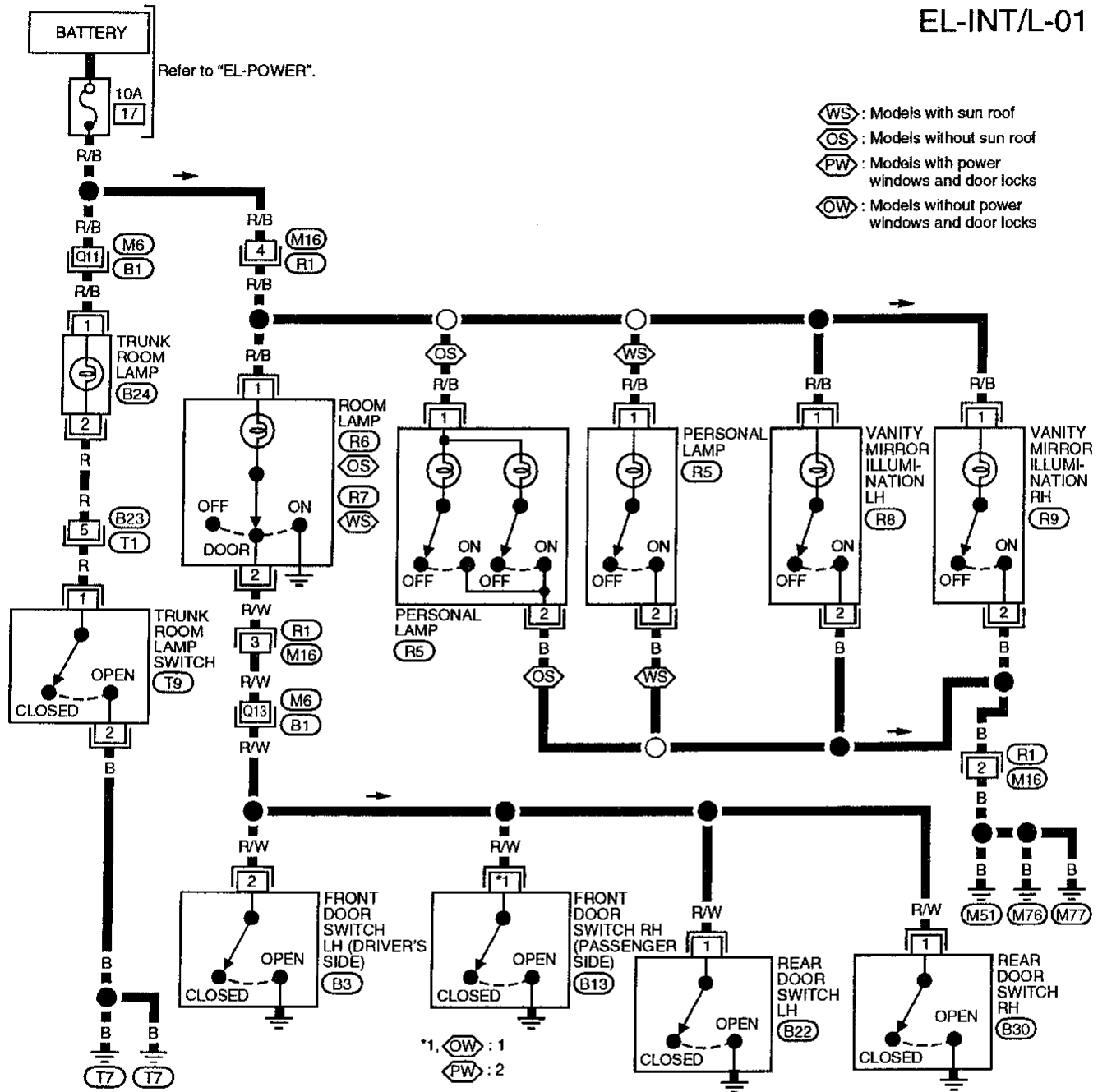
- AS : Models with ASCD system
- WA : Models with active speaker audio system
- OA : Models without active speaker audio system
- MA : Models with manual air conditioning system
- AA : Models with auto air conditioning system



INTERIOR LAMP

Interior, Personal and Trunk Room Lamps/Wiring Diagram -INT/L-

EL-INT/L-01



Refer to last page (Foldout page).

M6, B1

System Description

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

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

Ground is supplied

- to combination meter terminal 38
- through body grounds M51, M76 and M77.

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

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

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

The tachometer is regulated by a signal

- from terminal 3 of the ECM (ECCS control module)
- to combination meter terminal 35 for the tachometer.

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

The fuel gauge is regulated by a variable ground signal supplied

- to combination meter terminal 4 for the fuel gauge
- from terminal 1 of the fuel tank gauge unit
- through terminal 3 of the fuel tank gauge unit and
- through body grounds B6 and B14.

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

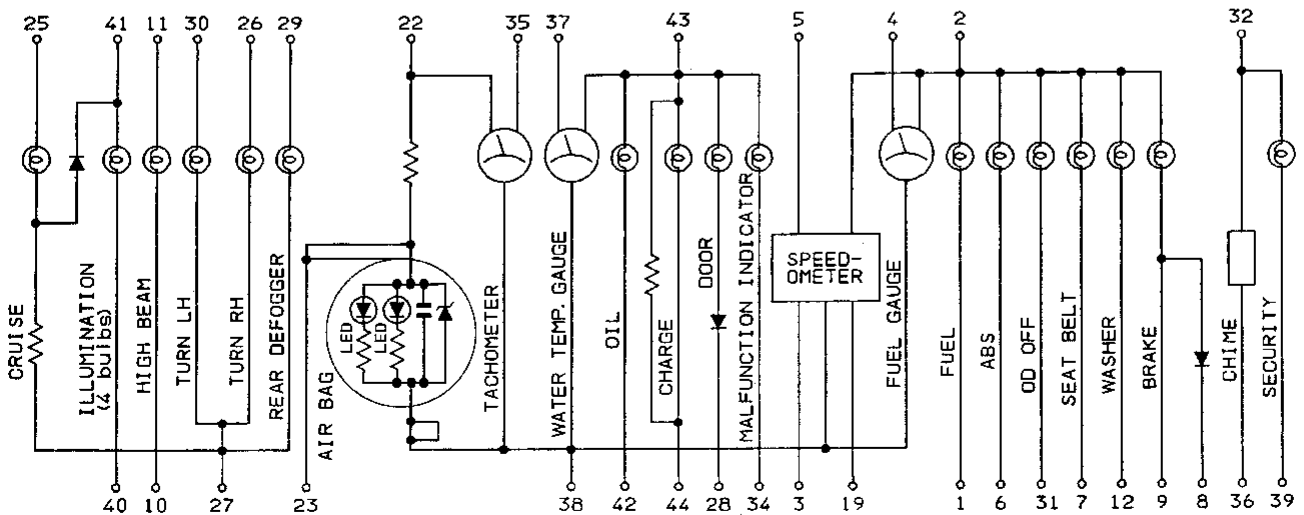
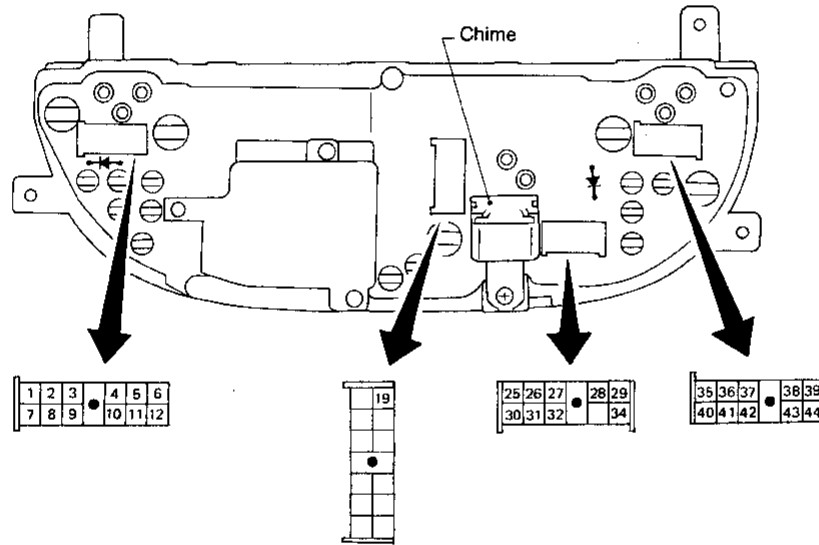
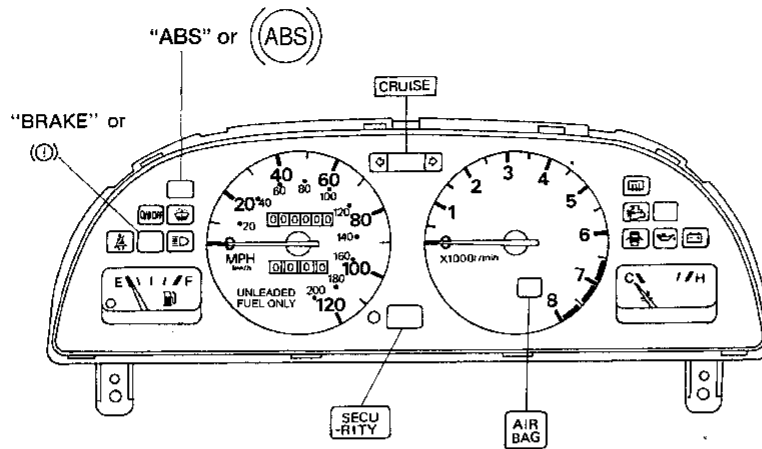
The voltage is supplied

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

The speedometer converts the voltage into the vehicle speed displayed.

METERS AND GAUGES

Combination Meter

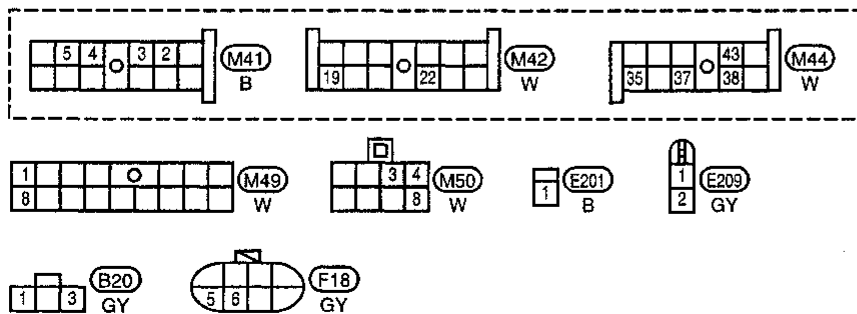
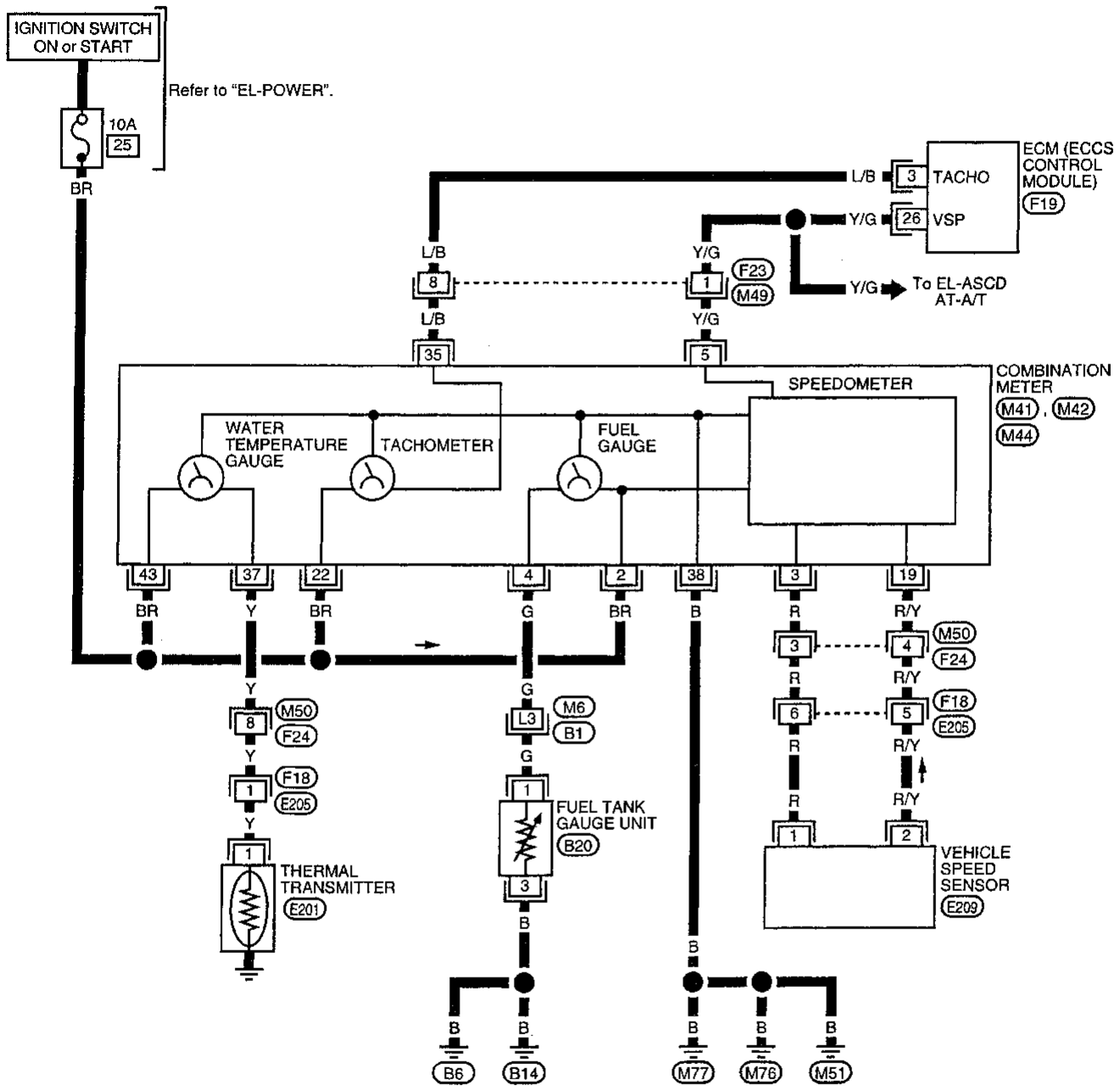


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METERS AND GAUGES

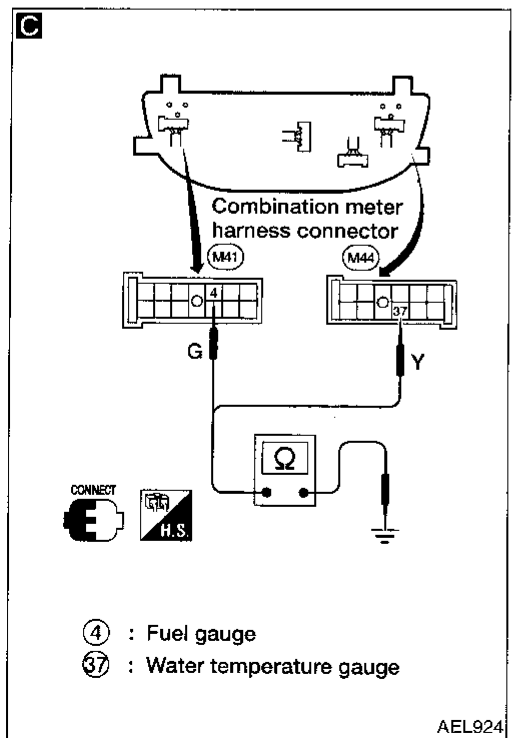
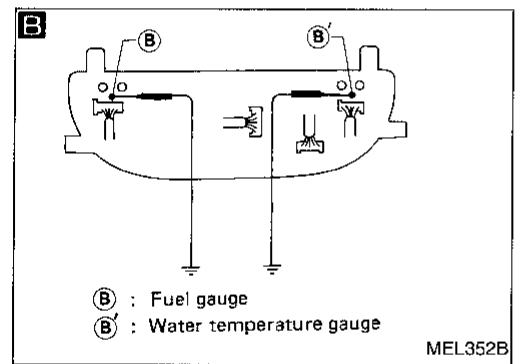
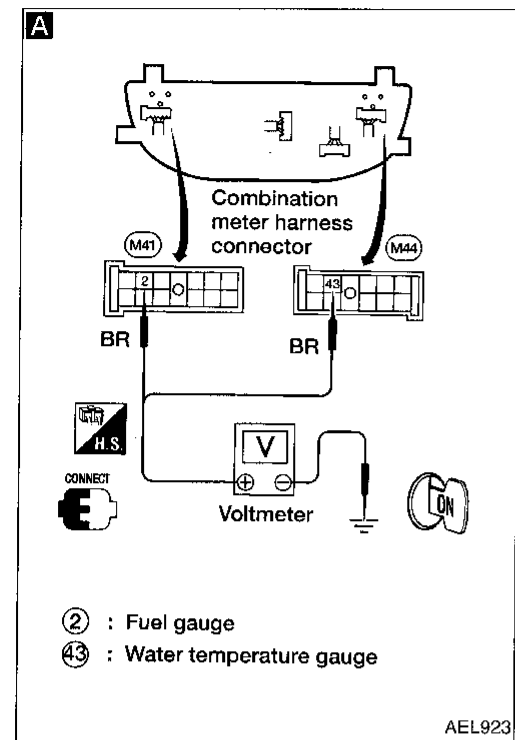
Speedometer, Tachometer, Temp. and Fuel Gauges/Wiring Diagram -METER-

EL-METER-01

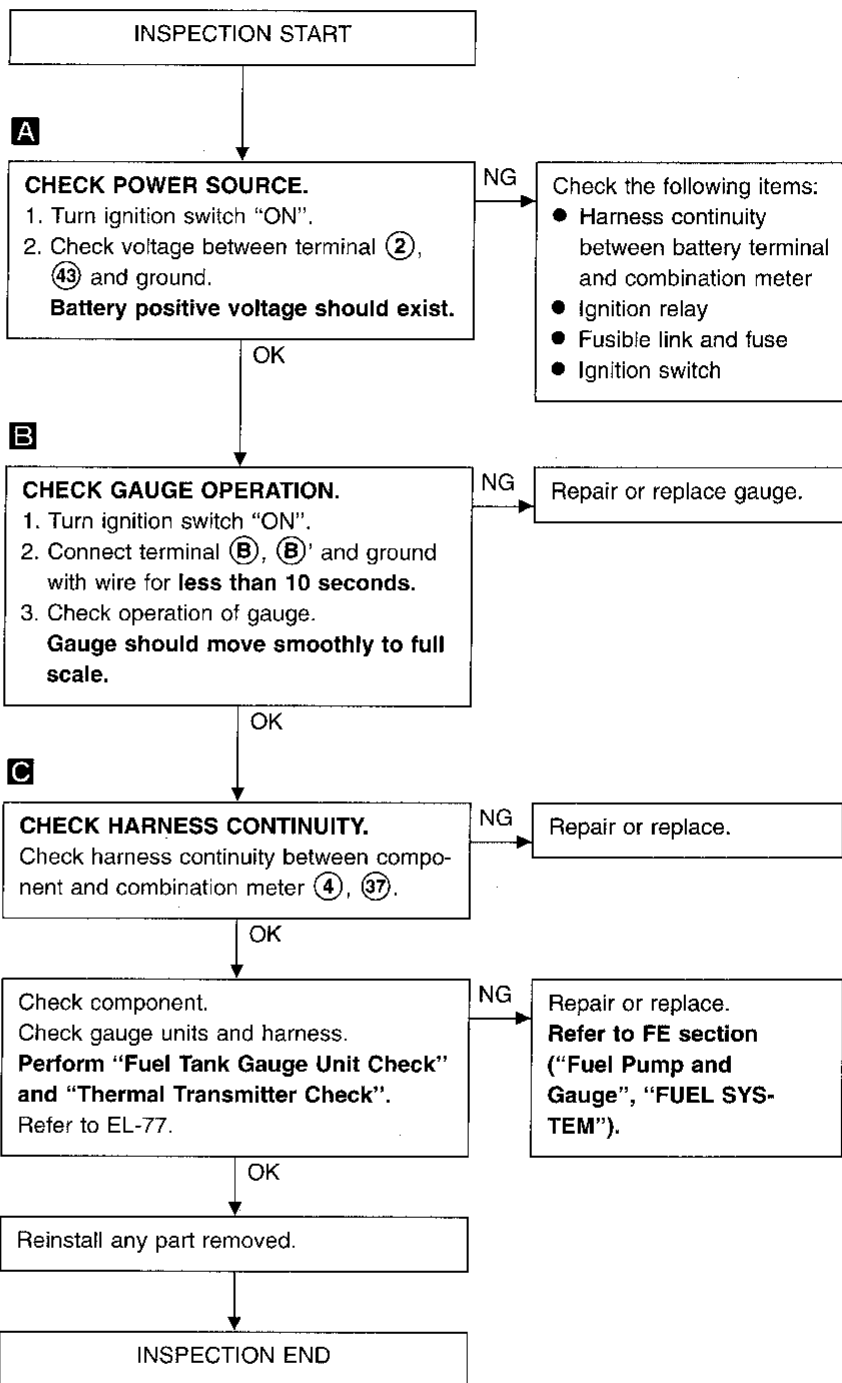


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(M6) (B1)
(F19)



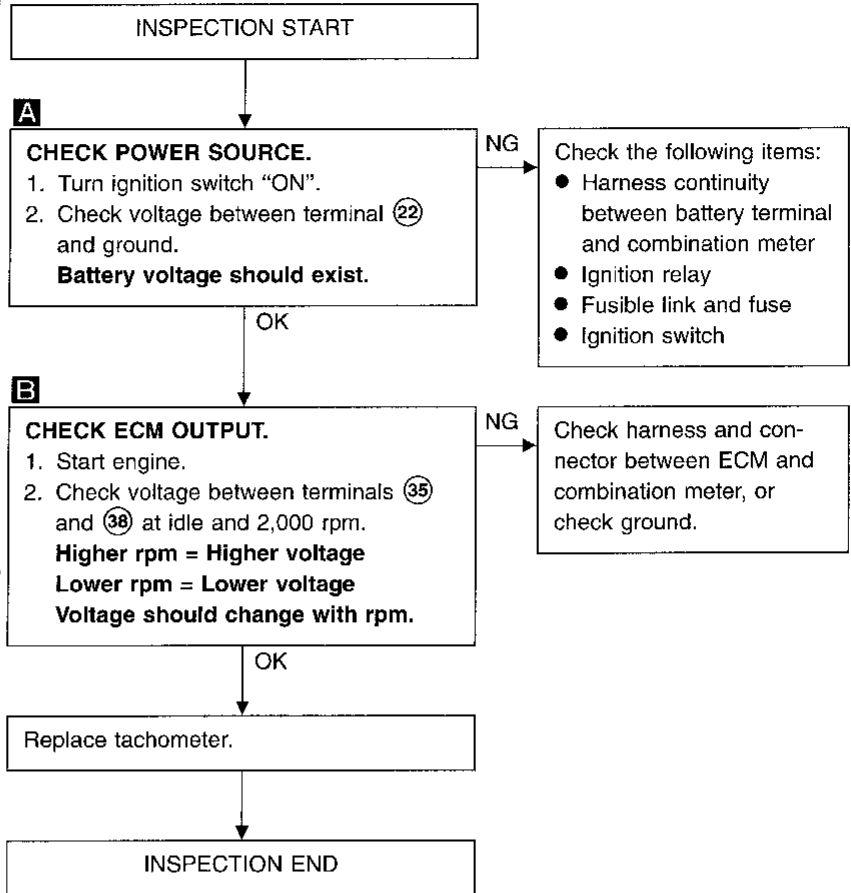
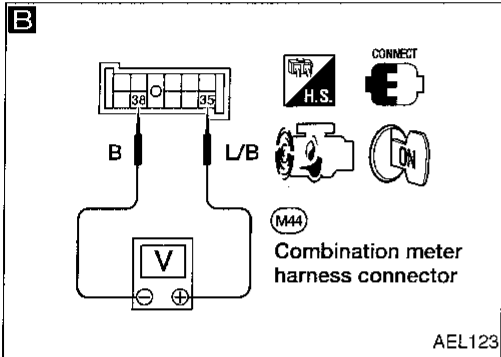
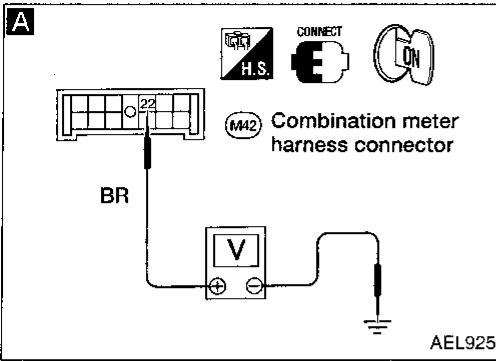
Inspection/Fuel Gauge and Water Temperature Gauge

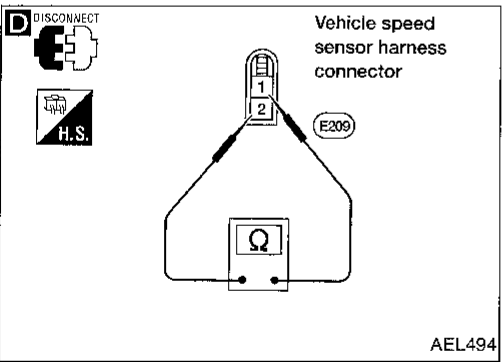
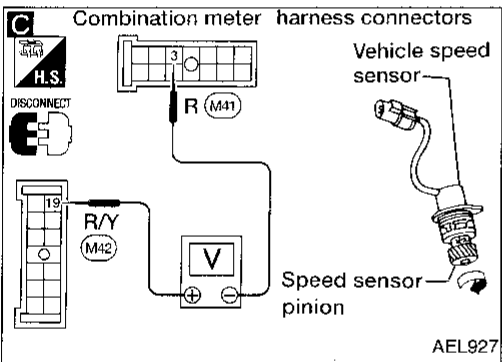
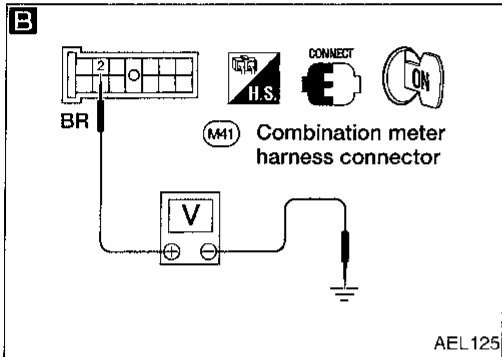
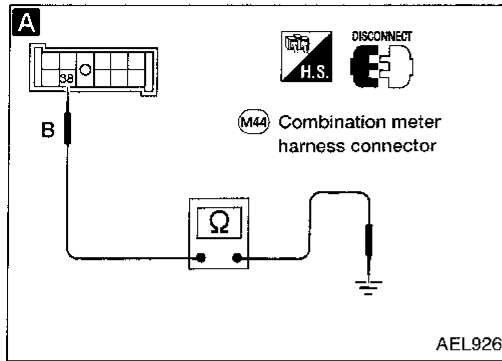


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METERS AND GAUGES

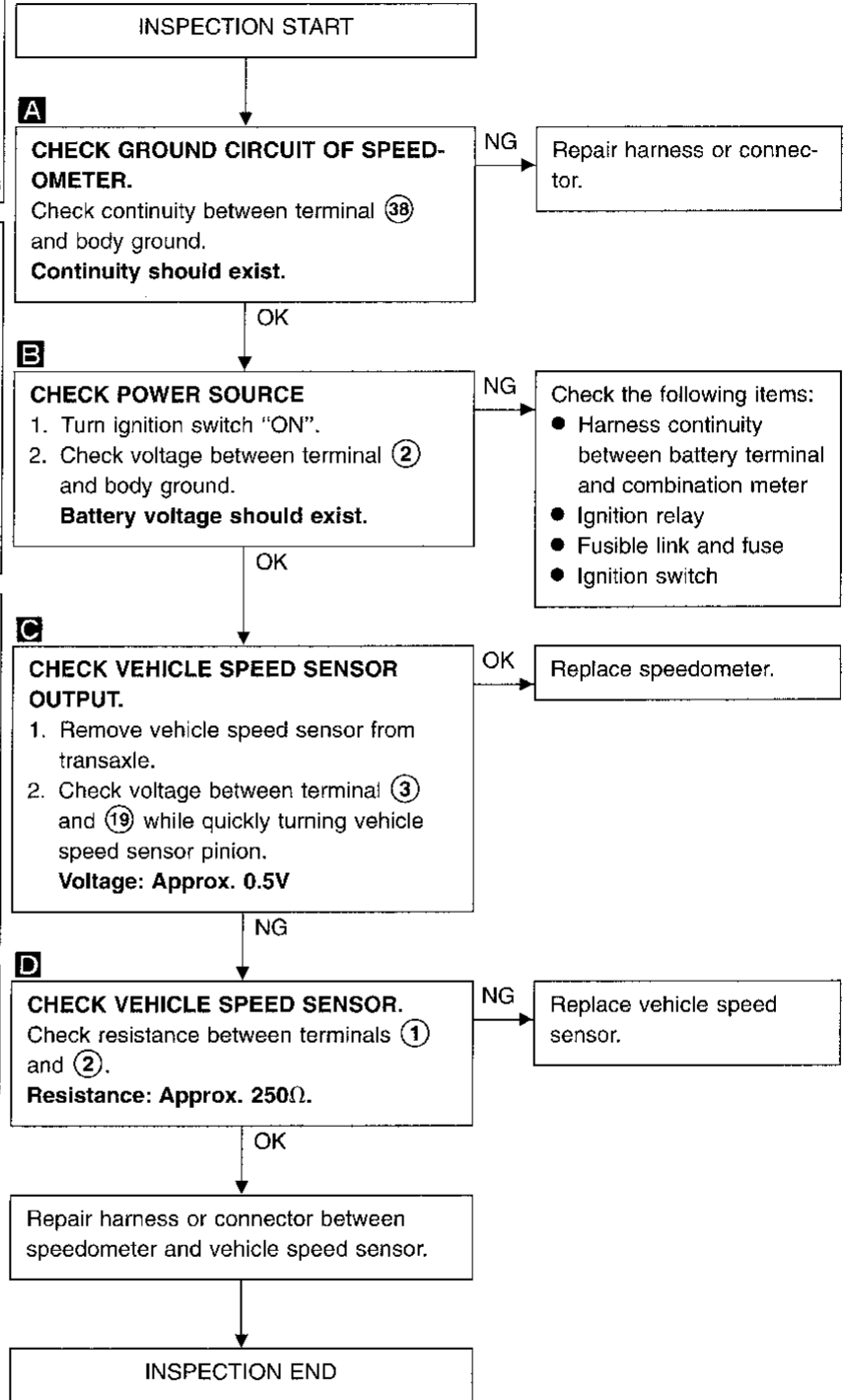
Inspection/Tachometer





Inspection/Speedometer and Vehicle Speed Sensor

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

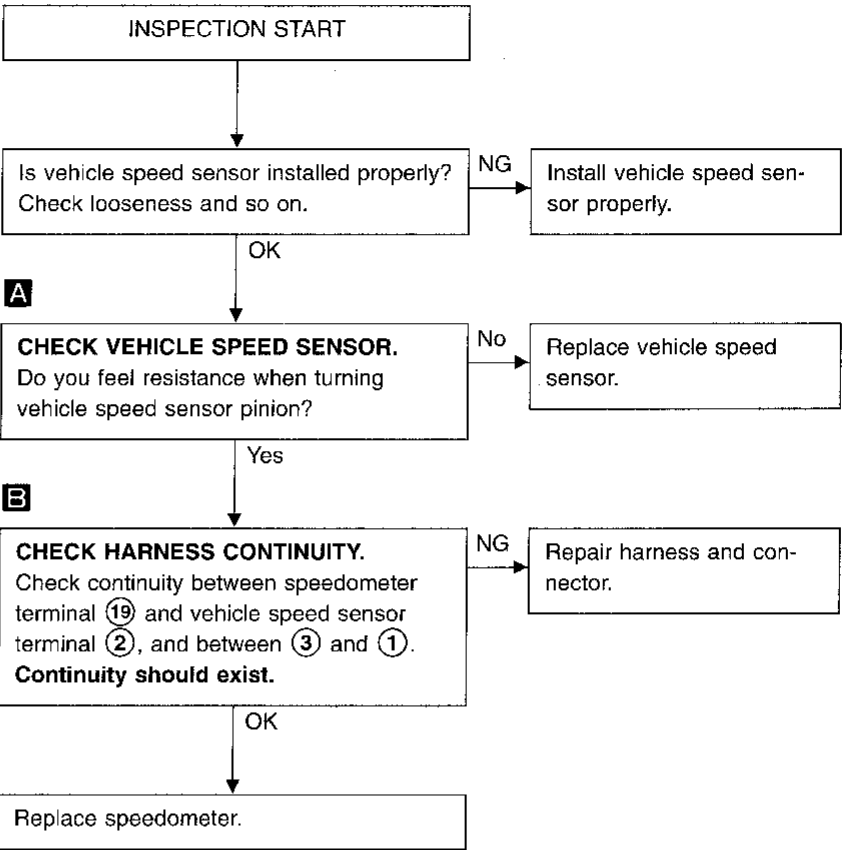
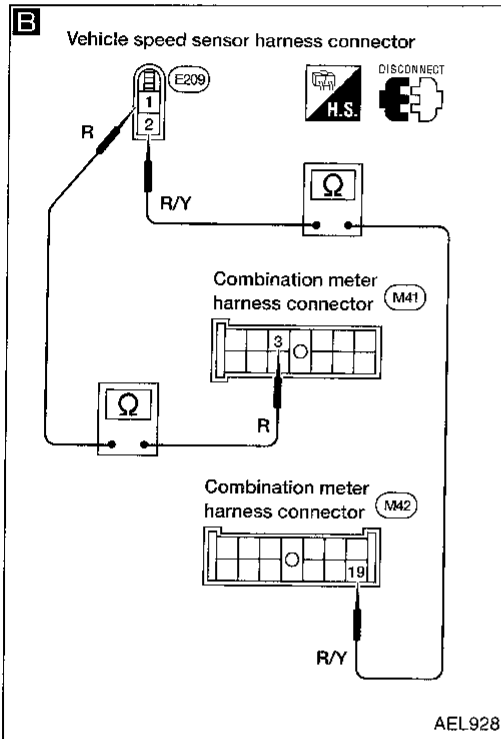
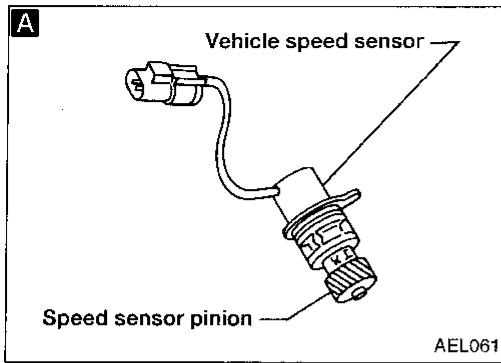


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METERS AND GAUGES

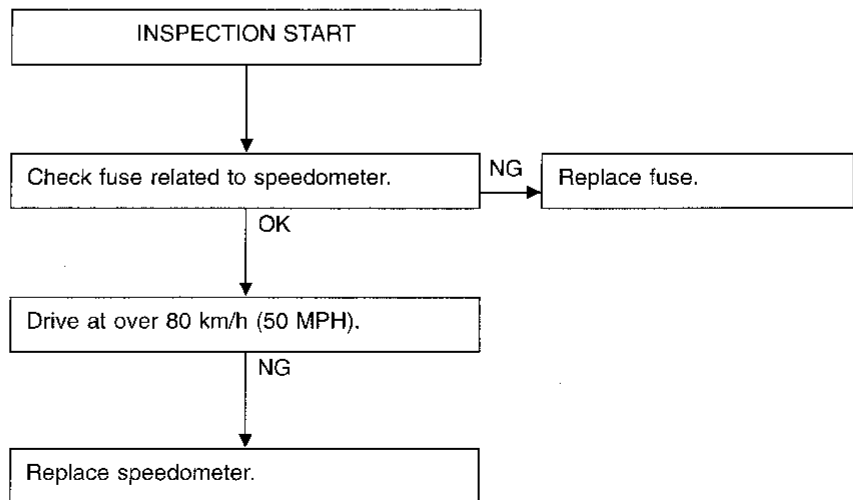
Inspection/Speedometer and Vehicle Speed Sensor (Cont'd)

SYMPTOM: Speedometer indication flutters.

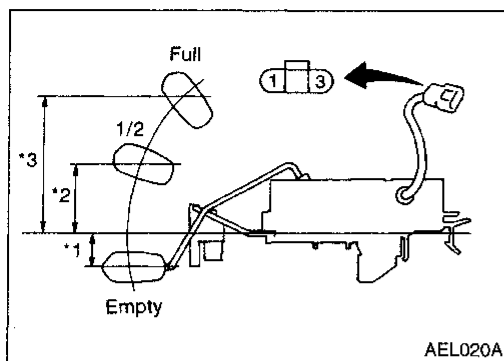


Inspection/Speedometer and Fuse

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



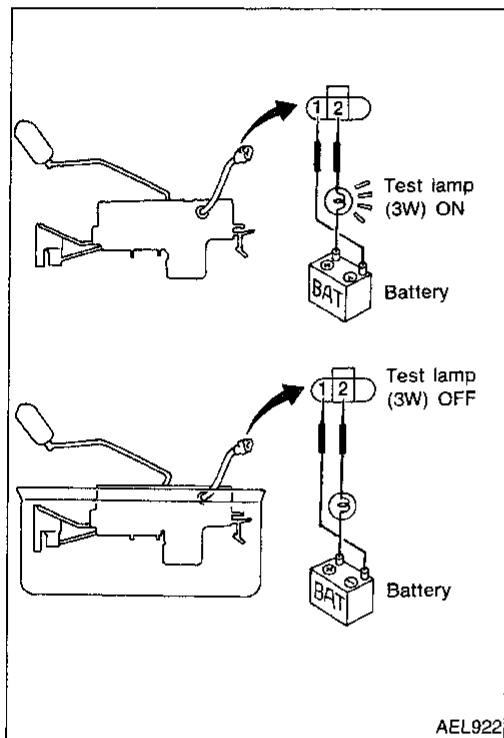
METERS AND GAUGES



Fuel Tank Gauge Unit Check

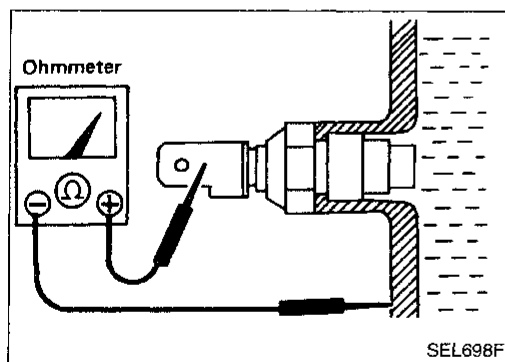
- For removal, refer to FE section ("Fuel Pump and Gauge", "FUEL SYSTEM").
- Check the resistance between terminals ③ and ①.

Ohmmeter		Float position		Resistance value (Ω)
(+)	(-)	mm (in)		
3	1	*3	Full	80.5 (3.169)
		*2	1/2	29.4 (1.157)
		*1	Empty	19.0 (0.748)



Fuel Warning Lamp Sensor Check

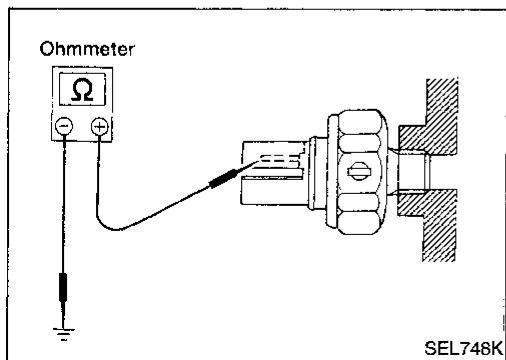
- It will take a short time for the bulb to light.



Thermal Transmitter Check

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

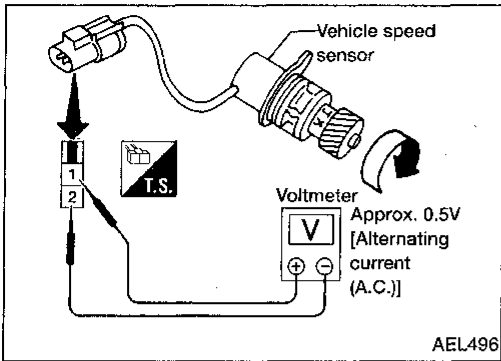
Water temperature	Resistance
60°C (140°F)	Approx. 70 - 90Ω
100°C (212°F)	Approx. 21 - 24Ω



Oil Pressure Switch Check

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

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



Vehicle Speed Sensor Signal Check

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

WARNING LAMPS AND CHIME

Warning Lamps/System Description

If equipped with theft warning system, power is supplied at all times

- through 10A fuse (No. 20 , located in the fuse block)
- to combination meter terminal 32 for the security lamp.

Ground for the security lamp is supplied when the system is activated

- to combination meter terminal 39
- from terminal 2 of the theft warning control module.

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

- through 10A fuse (No. 25 , located in the fuse block)
- to combination meter terminal 22 for the air bag warning lamp
- to combination meter terminal 43 and
- to combination meter terminal 2.

Ground is supplied for each of the warning lamps through different terminals of the combination meter.

For details of power and ground terminals for the warning lamps in the combination meter, refer to "Combination Meter", "METERS AND GAUGES".

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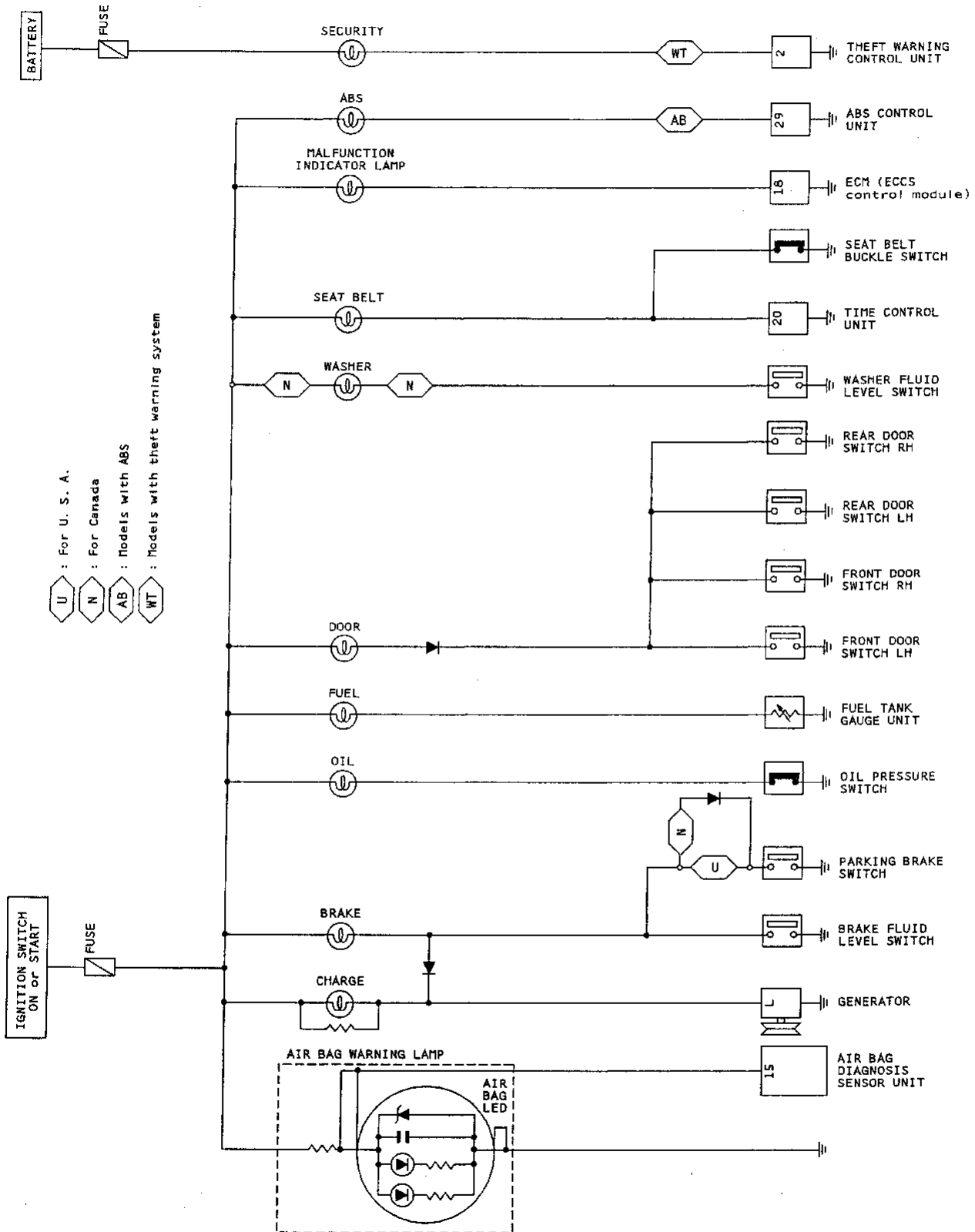
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WARNING LAMPS AND CHIME

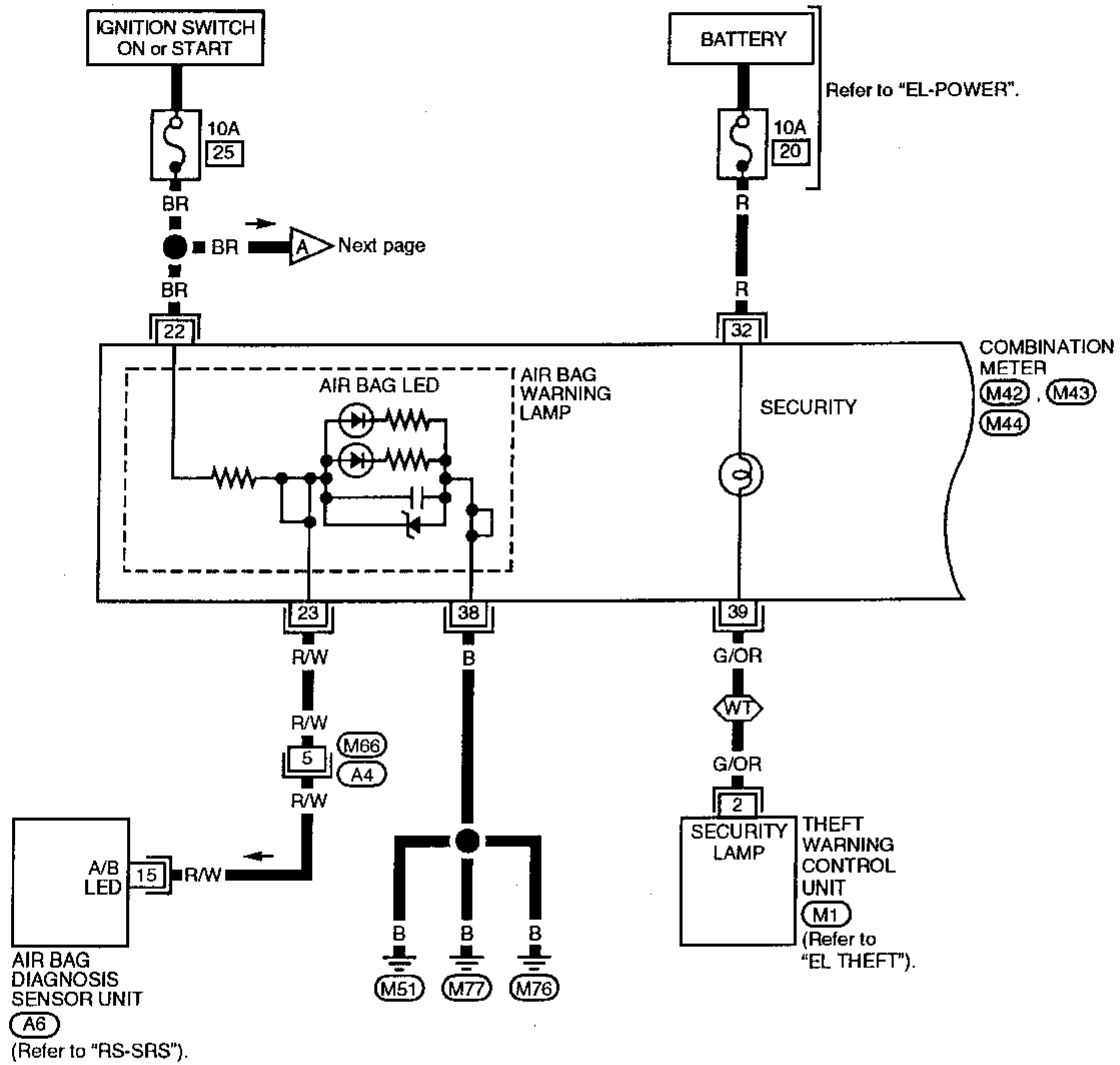
Warning Lamps/Schematic



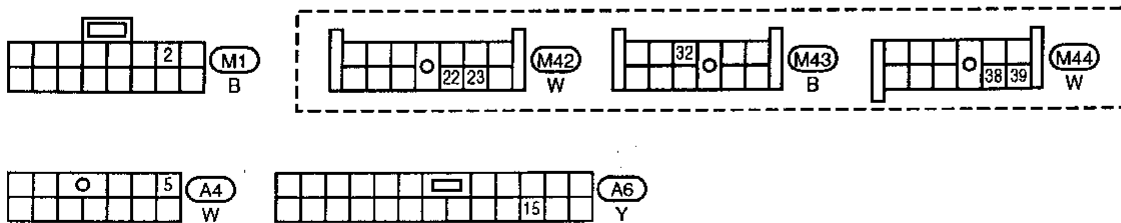
WARNING LAMPS AND CHIME

Warning Lamps/Wiring Diagram -WARN-

EL-WARN-01 GI



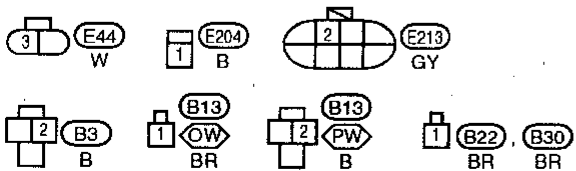
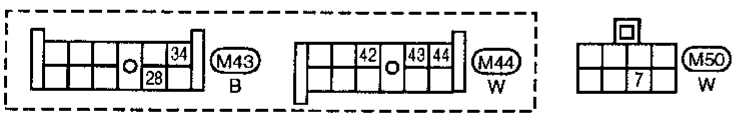
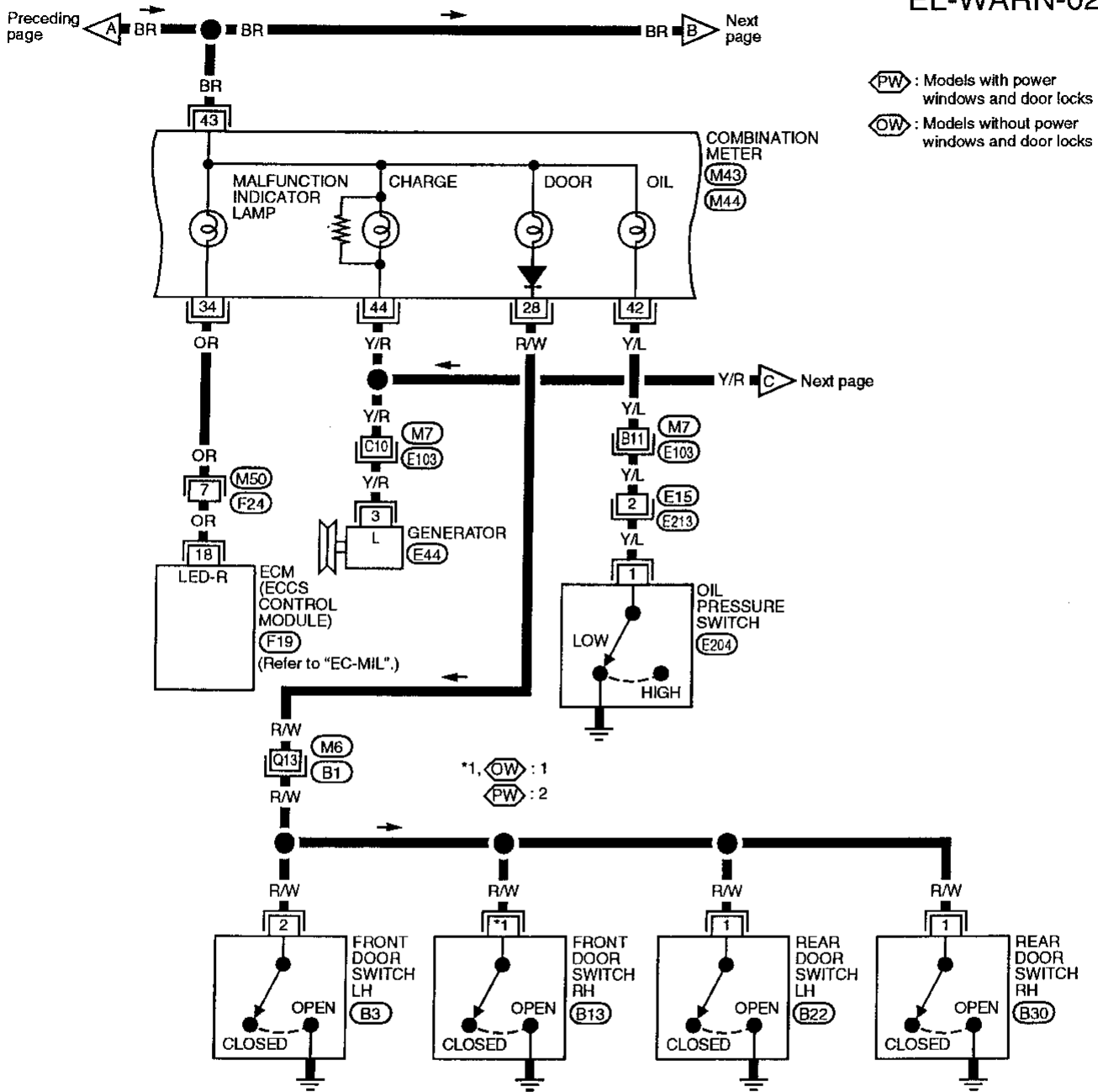
WT : Models with theft warning system



WARNING LAMPS AND CHIME

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

EL-WARN-02



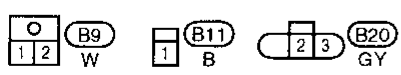
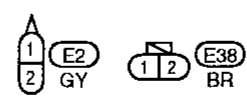
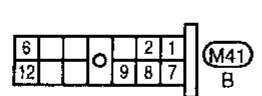
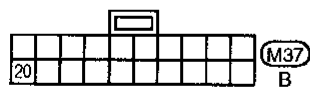
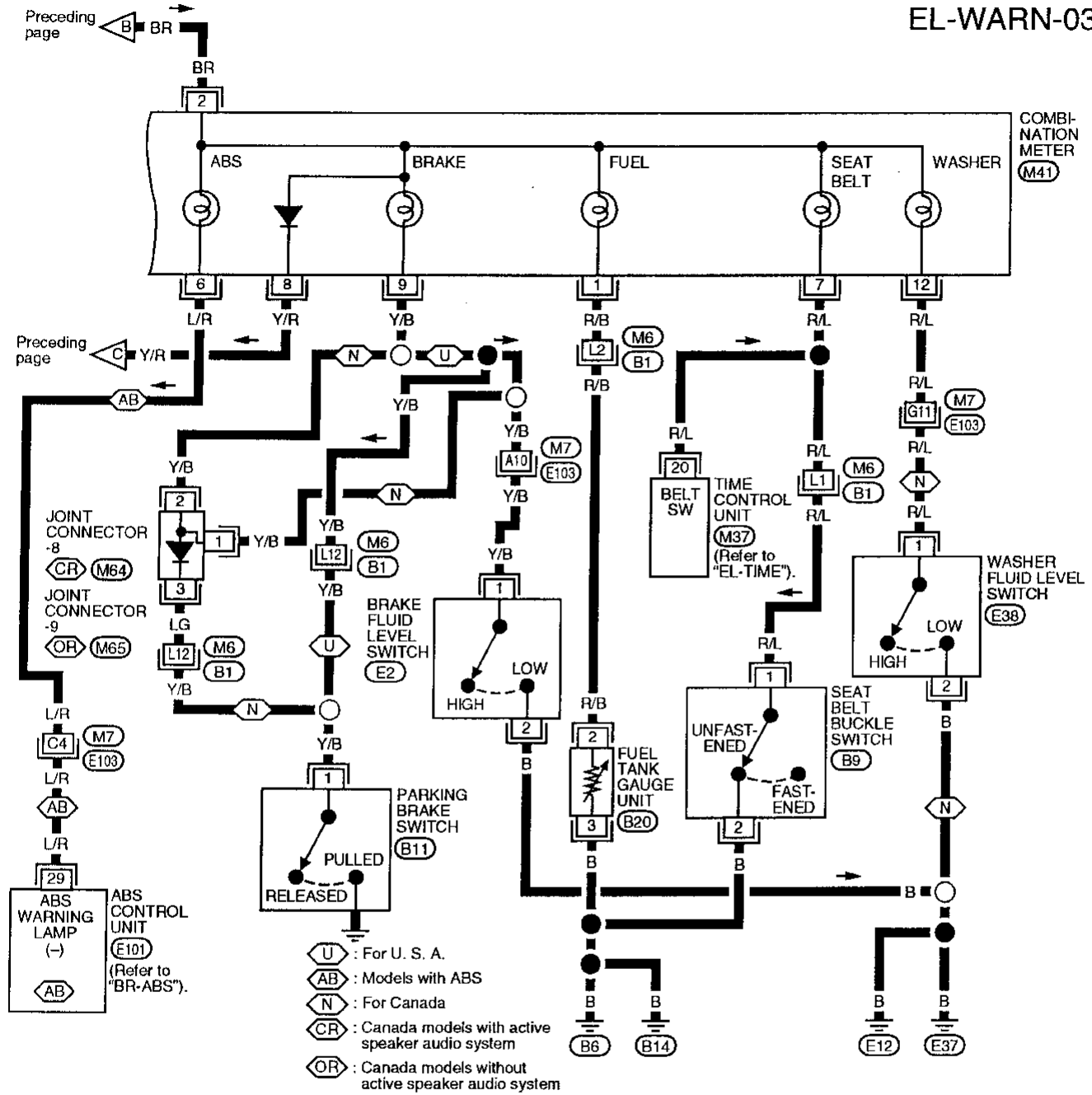
Refer to last page (Foldout page).

- M7, E103
- M6, B1
- F19

WARNING LAMPS AND CHIME

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

EL-WARN-03



Refer to last page (Foldout page).

- M6 . B1
- M7 . E103
- M64
- M65
- E101

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Warning Chime/System Description

The warning chime is a part of the combination meter and is controlled by the time control unit.

Power is supplied at all times

- through 10A fuse (No. 20 , located in the fuse block)
- to time control unit terminal 9,
- combination meter terminal 32, and
- key switch terminal 1.

Power is supplied at all times

- through 15A fuse (No. 23 , located in the fuse block)
- to lighting switch terminal 11.

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

- through 10A fuse (No. 26 located in the fuse block)
- to time control module terminal 6.

Ground is supplied to time control unit terminal 15 through body grounds M51, M76 and M77.

When a signal, or combination of signals, is received by the time control unit, ground is supplied

- through time control unit terminal 18
- to combination meter terminal 36.

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

Ignition key warning chime

With the key inserted in the ignition switch in the OFF position, and the driver's door open, the warning chime will sound. A battery positive voltage signal is sent

- from key switch terminal 2
- to time control unit terminal 19.

Ground is supplied

- from front door switch LH terminal 1
- to time control unit terminal 10.

Front door switch LH terminal 3 is grounded through body grounds B6 and B14.

Light warning chime

With the ignition switch in the OFF position, the driver's door open, and the lighting switch in the 1ST or 2ND position, the warning chime will sound. A battery positive voltage signal is sent

- from lighting switch terminal 12
- to time control unit terminal 7.

Ground is supplied

- from front door switch LH terminal 1
- to time control unit terminal 10.

Seat belt warning chime

With the ignition switch turned from the OFF position to the ON position, and the seat belt unfastened (seat belt switch ON), the warning chime will sound for approximately 7 seconds.

Ground is supplied

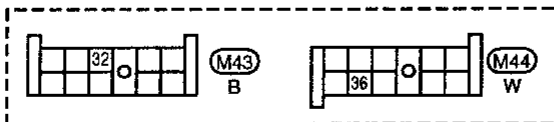
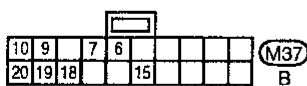
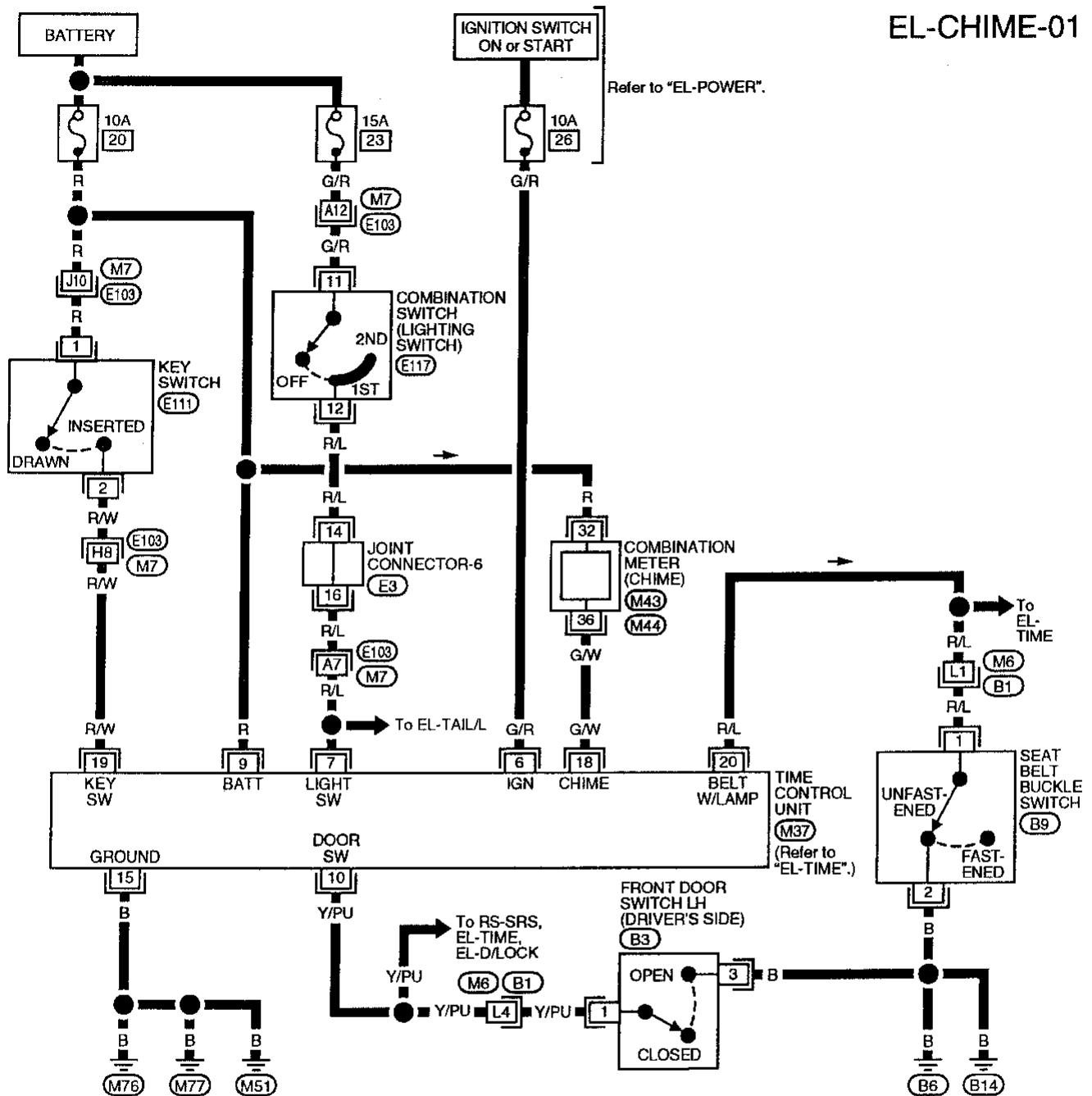
- from seat belt buckle switch terminal 1
- to time control unit terminal 20.

Seat belt buckle switch terminal 2 is grounded through body grounds B6 and B14.

For diagnosis, refer to "TIME CONTROL SYSTEM".

Warning Chime/Wiring Diagram -CHIME-

EL-CHIME-01

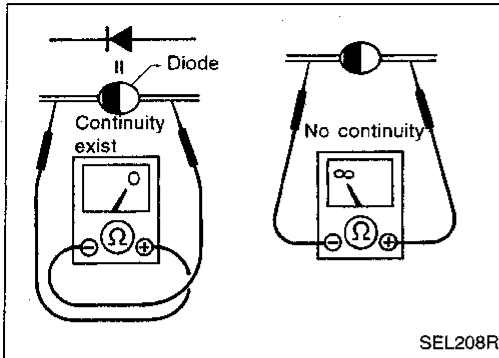


Refer to last page (Foldout page).

- (M7) (E103)
- (M6) (B1)
- (E3)

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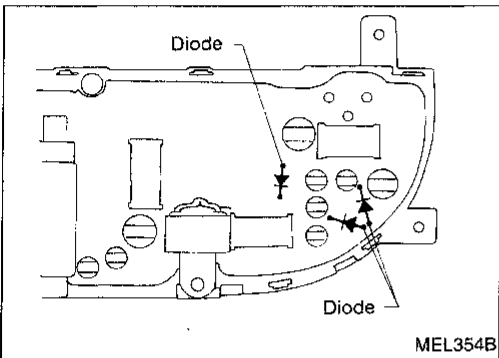
WARNING LAMPS AND CHIME



Diode Check

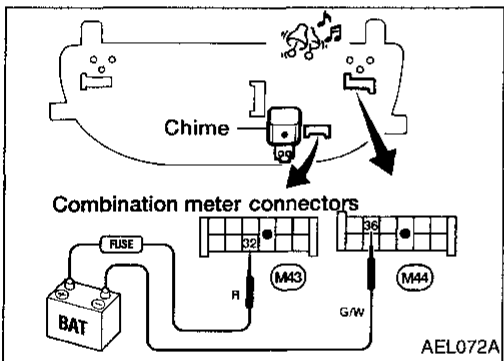
- Check continuity using an ohmmeter.
- Diode is functioning properly if test results are as shown in the figure at left.

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



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

Refer to EL-71.



Warning Chime Check

Supply battery voltage to warning chime as shown in the illustration.

Warning chime should operate.

TIME CONTROL SYSTEM

System Description

Power is supplied at all times

- to time control unit terminal ⑨
- through 10A fuse (No. 20 , located in the fuse block).

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

- to time control unit terminal ⑪
- through 10A fuse (No. 12 , located in the fuse block).

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

- to time control unit terminal ⑥
- through 10A fuse (No. 26 , located in the fuse block).

Terminal ⑮ of the time control unit is grounded through body grounds M51 , M76 and M77 .

The time control system controls operation of the

- rear window defogger,
- warning chime and
- front wiper and washer.

Rear Window Defogger

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

Warning Chime

The time control system will operate the warning chime located on the combination meter under the following conditions:

- key in ignition, ignition switch in OFF position, and driver's door open.
- ignition switch in the OFF position, driver's door open, and lighting switch in the 1ST or 2ND position.
- ignition switch turned from the OFF position to the ON position, and the seat belt unfastened.

For detailed description, refer to "WARNING LAMPS AND CHIME", (EL-84).

Front Wiper and Washer

The time control system controls operation of the intermittent feature for the front wiper. It also controls wiper motor for the washer operation.

For detailed description, refer to "WIPER AND WASHER", (EL-102).

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TIME CONTROL SYSTEM

System Description (Cont'd)

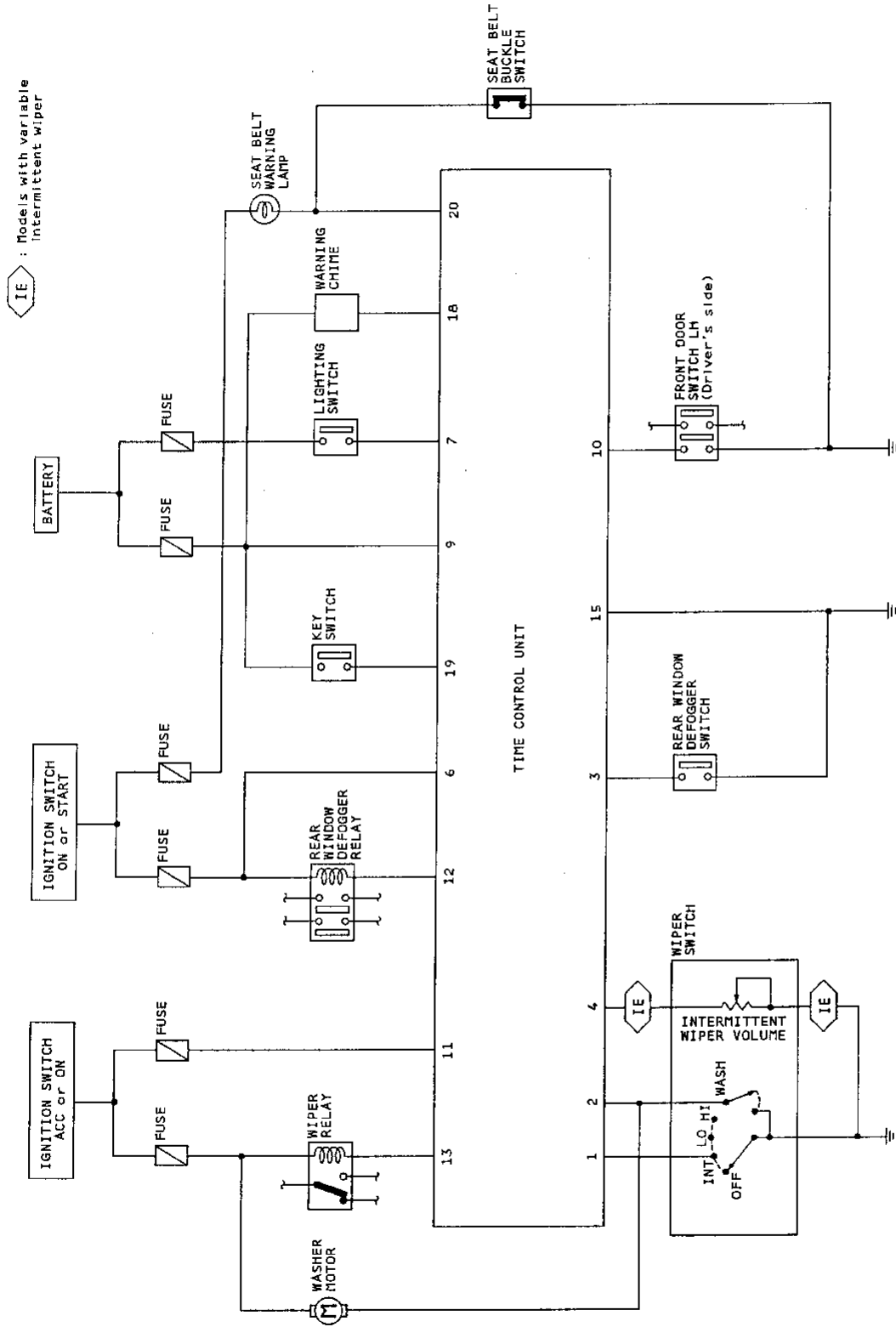
FUNCTION

- Time control unit has the following functions.

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

TIME CONTROL SYSTEM

Schematic

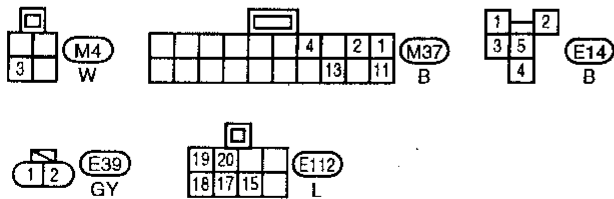
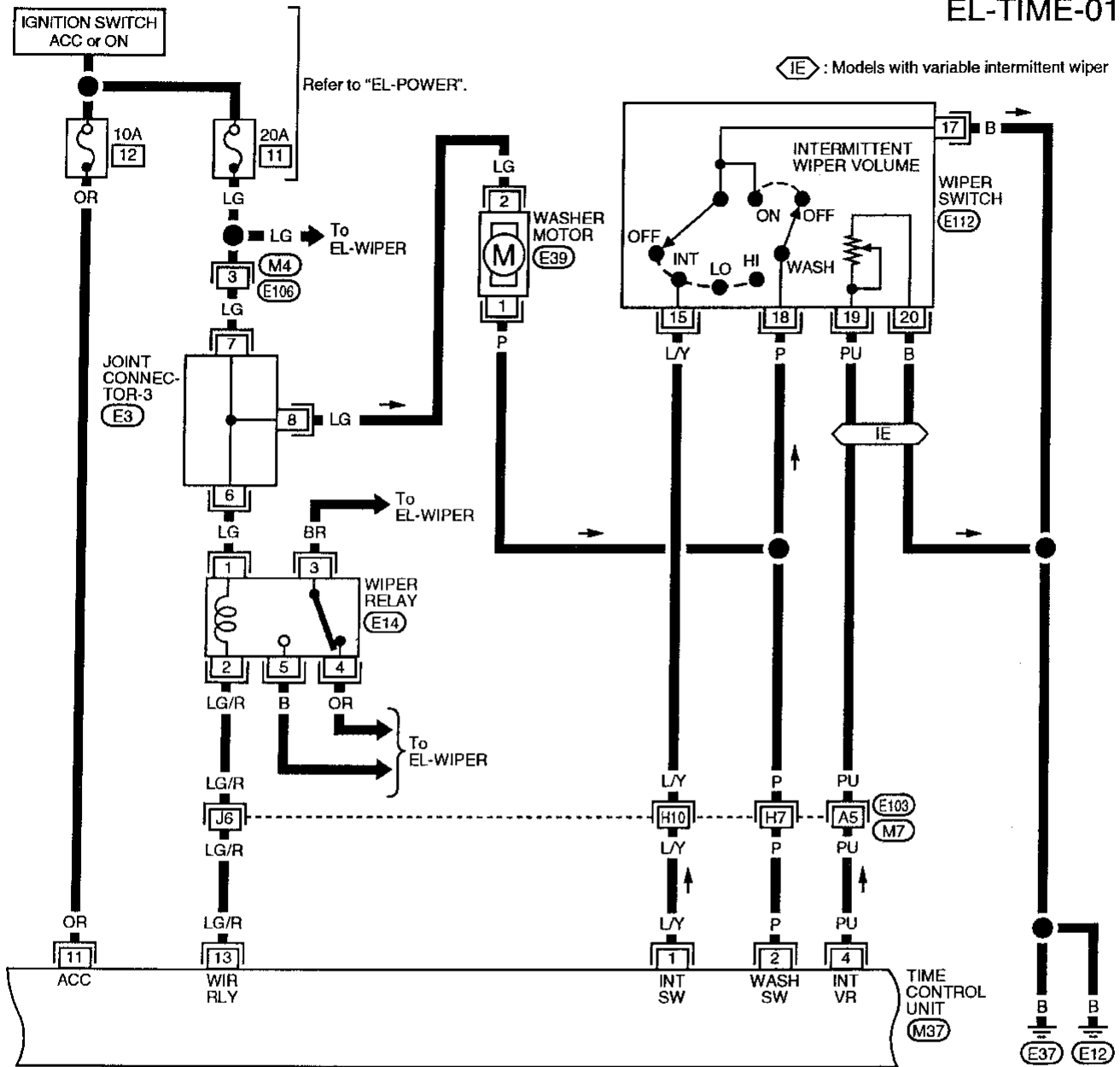


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TIME CONTROL SYSTEM

Wiring Diagram -TIME-

EL-TIME-01



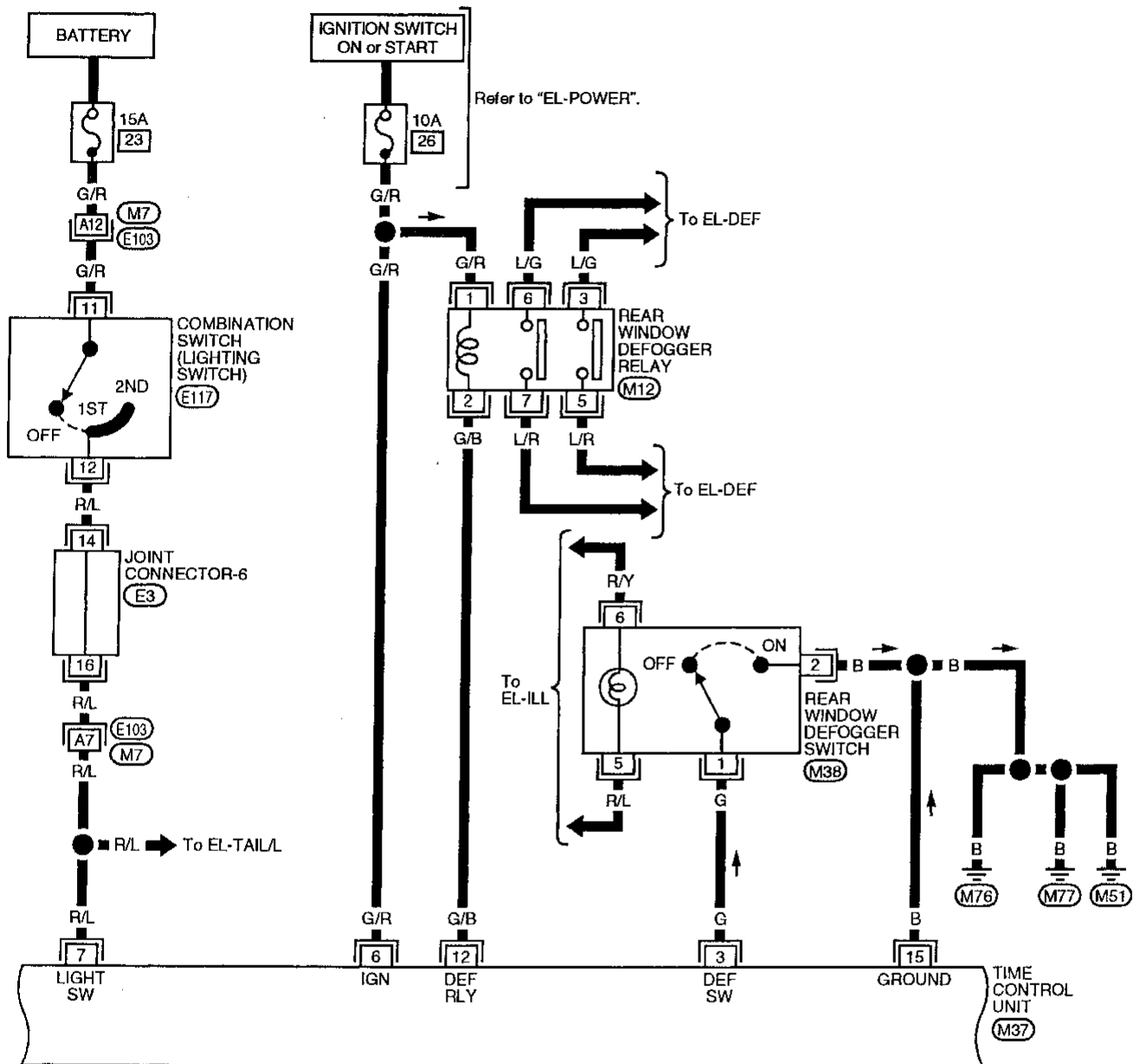
Refer to last page (Foldout page).

M7, E103
E3

TIME CONTROL SYSTEM

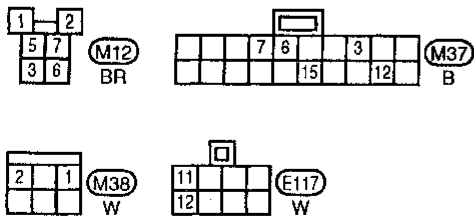
Wiring Diagram -TIME- (Cont'd)

EL-TIME-02



Refer to last page (Foldout page).

M7, E103
E3

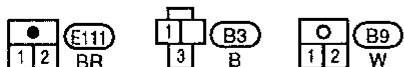
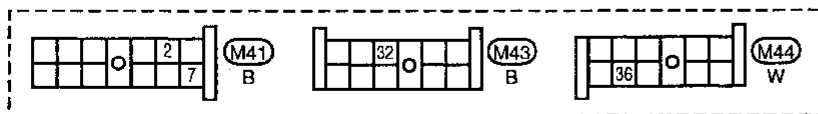
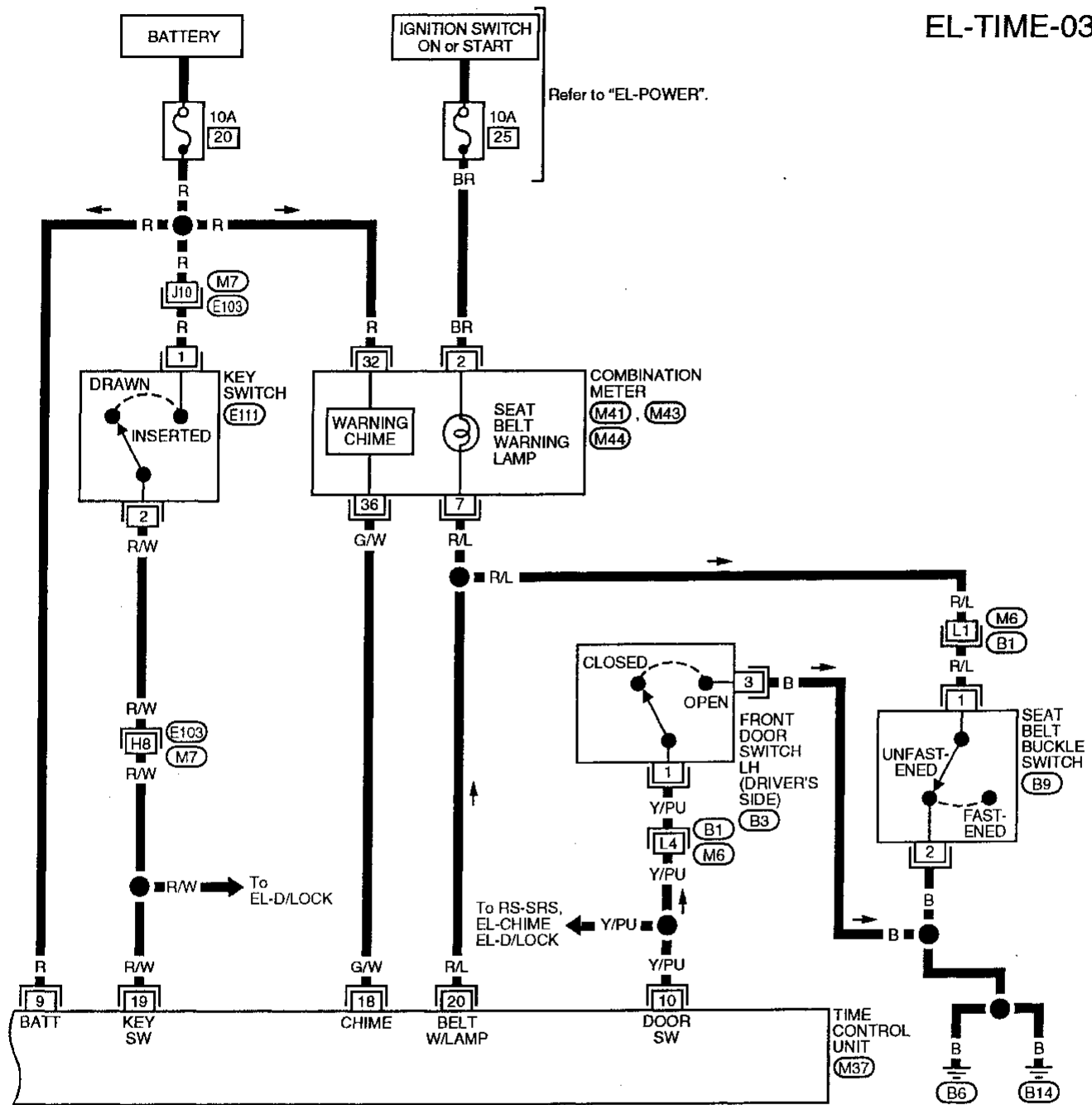


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TIME CONTROL SYSTEM

Wiring Diagram -TIME- (Cont'd)

EL-TIME-03



Refer to last page (Foldout page).

M7, E103
M6, B1

TIME CONTROL SYSTEM

Trouble Diagnoses

SYMPTOM CHART

PROCEDURE		Preliminary Check			Main Power Supply and Ground Circuit Check	Diagnostic Procedure						
		EL-94	EL-94	EL-94		EL-95	EL-96	EL-97	EL-97	EL-98	EL-99	EL-100
REFERENCE PAGE												
SYMPTOM		Preliminary check 1	Preliminary check 2	Preliminary check 3	Main power supply and Ground circuit check	Diagnostic Procedure 1	Diagnostic Procedure 2	Diagnostic Procedure 3	Diagnostic Procedure 4	Diagnostic Procedure 5	Diagnostic Procedure 6	Diagnostic Procedure 7
Wiper & washer	Intermittent wiper does not operate.				○	○						
	Intermittent time of wiper cannot be adjusted.						○					
	Wiper and washer activate individually but not in combination.							○				
Warning	Light warning chime does not activate.	○			○				○			
	Ignition key warning chime does not activate.		○		○					○		
	Seat belt warning chime does not activate.			○	○						○	
Rear defogger	Rear defogger does not activate, or go off after activating.				○							○

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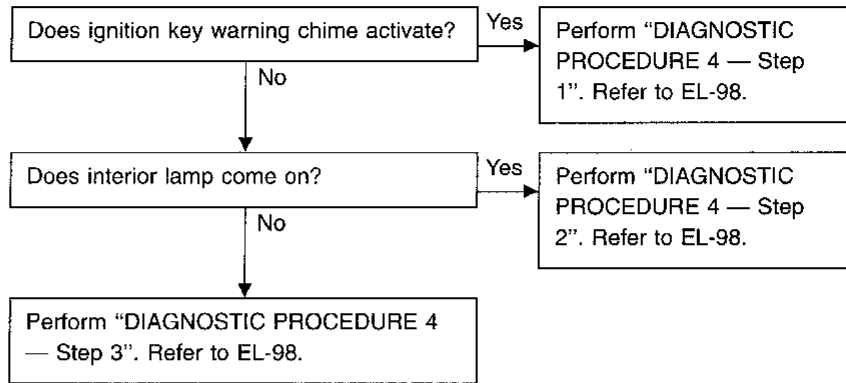
TIME CONTROL SYSTEM

Trouble Diagnoses (Cont'd)

PRELIMINARY CHECK

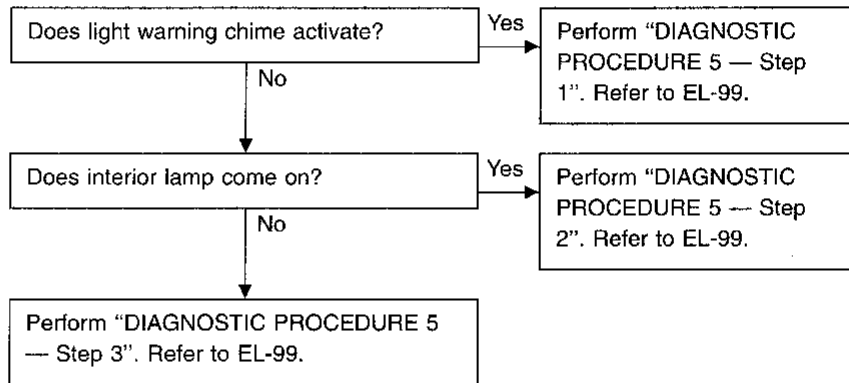
Preliminary check 1

- Light warning chime does not activate.



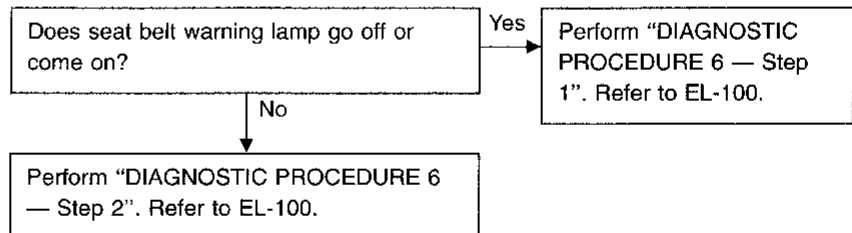
Preliminary check 2

- Ignition key warning chime does not activate.



Preliminary check 3

- Seat belt warning chime does not activate.



TIME CONTROL SYSTEM

Trouble Diagnoses (Cont'd)

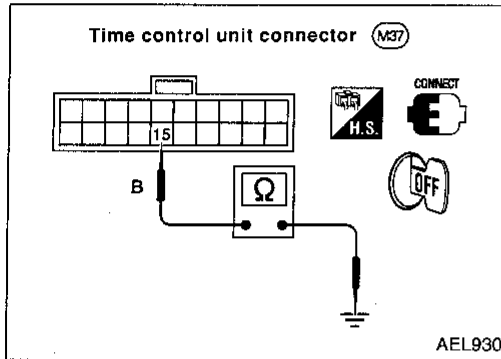
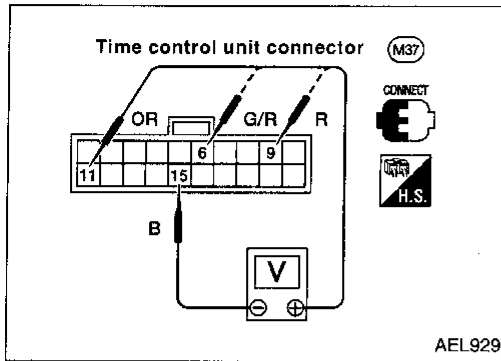
MAIN POWER SUPPLY AND GROUND CIRCUIT CHECK

Main power supply

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

Ground circuit

Terminals	Continuity
⑮ - Ground	Yes



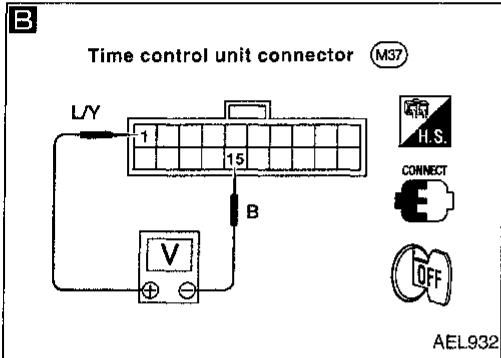
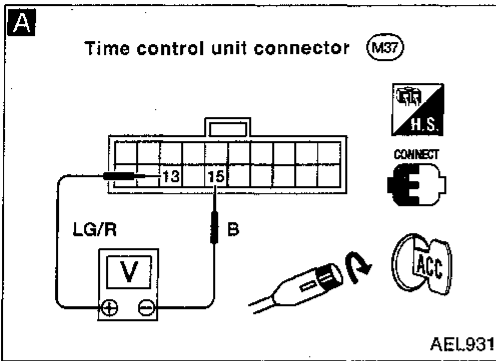
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TIME CONTROL SYSTEM

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 1

SYMPTOM: Intermittent wiper does not operate.

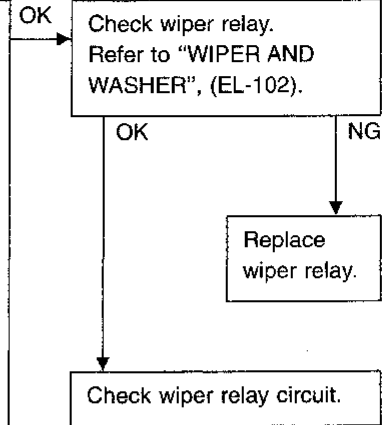


A

WIPER RELAY OUTPUT SIGNAL CHECK

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

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

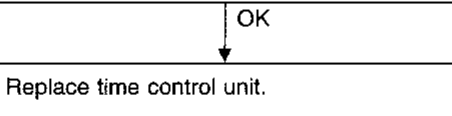
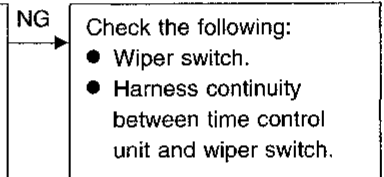


B

INTERMITTENT SWITCH INPUT SIGNAL CHECK

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

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

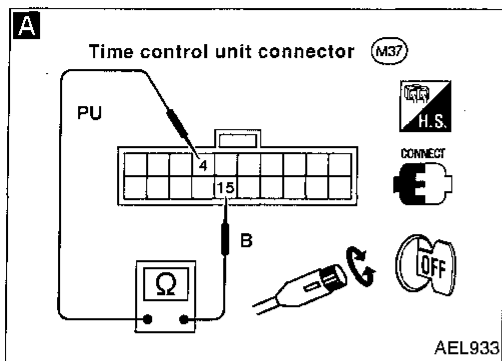


TIME CONTROL SYSTEM

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 2

SYMPTOM: Intermittent time of wiper cannot be adjusted.



A

INTERMITTENT WIPER VOLUME INPUT SIGNAL CHECK

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

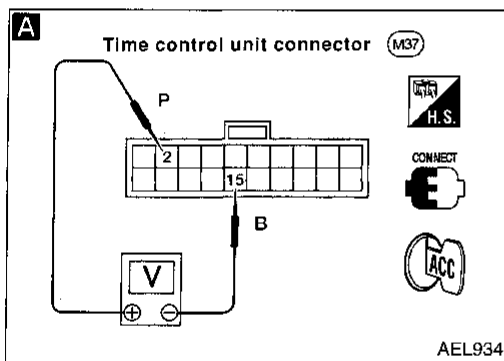
Position of wiper knob	Resistance [KΩ]
S	0
L	Approx. 1

OK → TRY A KNOWN GOOD TIME CONTROL UNIT.*

NG

Check the following:

- Intermittent wiper volume.
- Harness continuity between time control unit and wiper switch.



DIAGNOSTIC PROCEDURE 3

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

A

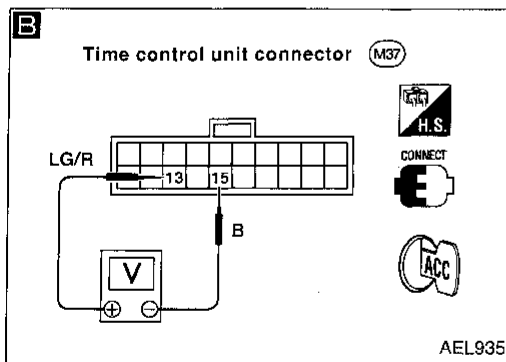
WASHER SWITCH INPUT SIGNAL CHECK

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

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

NG → Check harness continuity between time control unit and washer switch.

OK



B

TIME CONTROL UNIT SIGNAL CHECK

Measure voltage between time control unit harness terminals ⑬ and ⑮ after operating washer switch. 0V for approx. 3 seconds after washer has operated.

NG → TRY A KNOWN GOOD TIME CONTROL UNIT.*

OK

Check wiper relay and circuit.

NG → Repair wiper circuit or replace wiper relay.

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

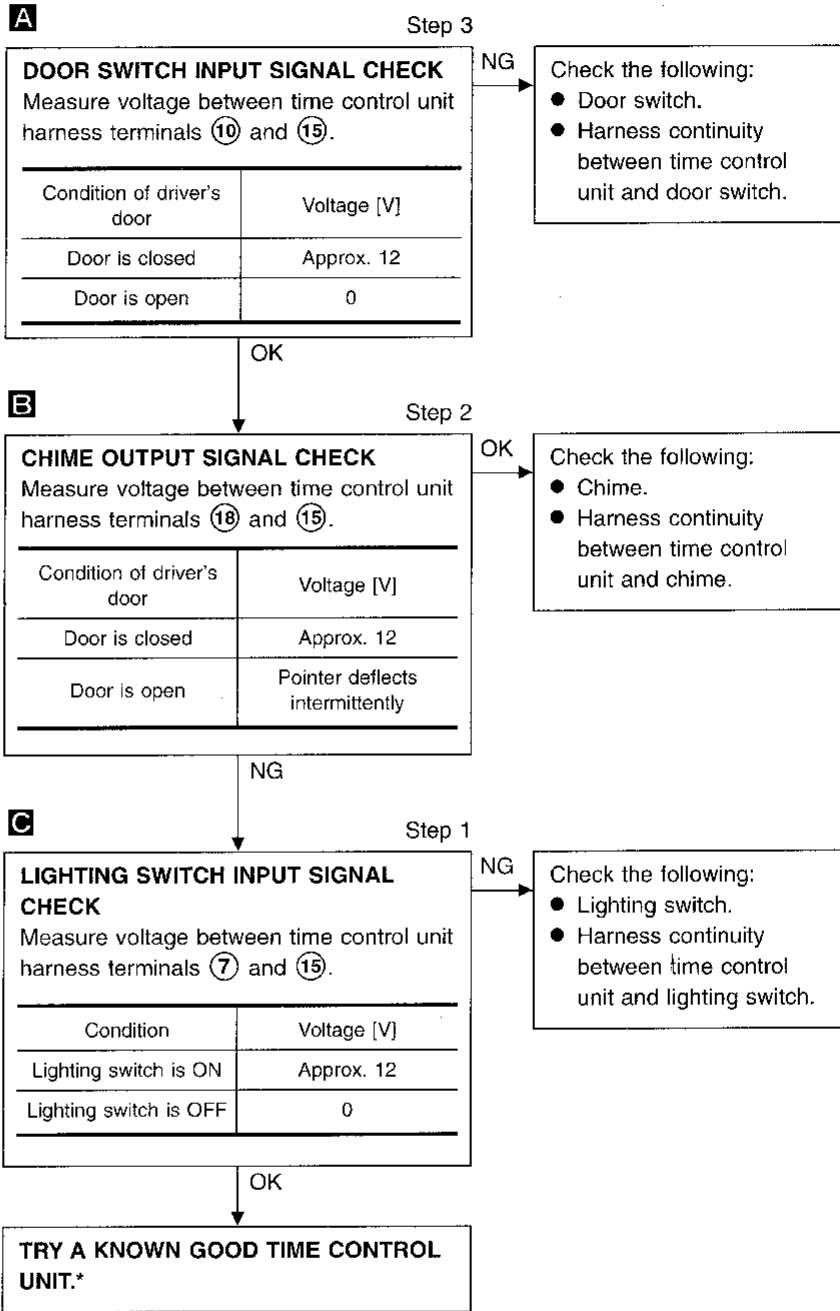
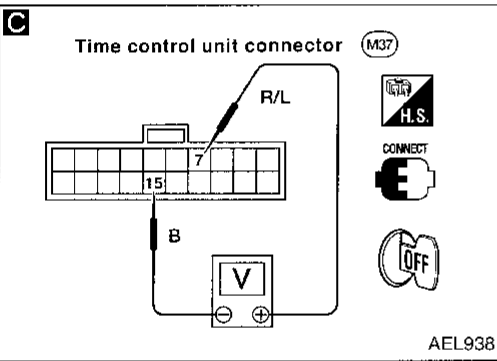
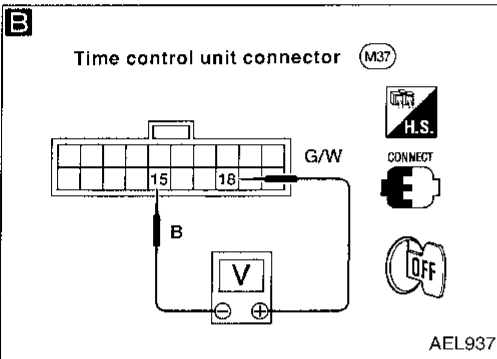
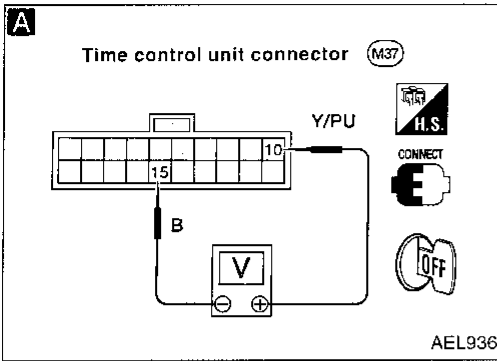
TIME CONTROL SYSTEM

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 4

SYMPTOM: Light warning chime does not activate.

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



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

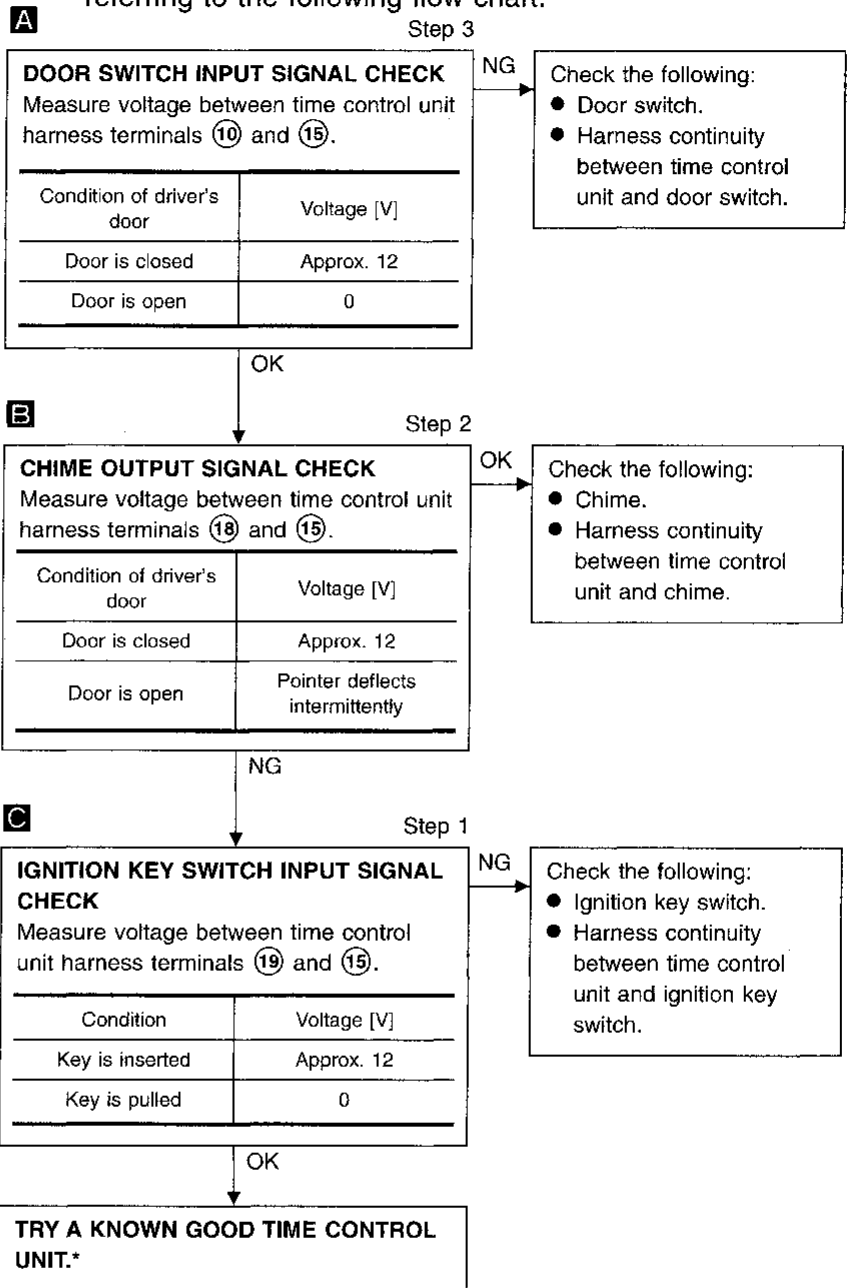
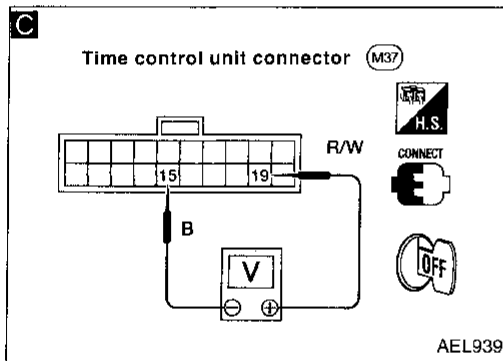
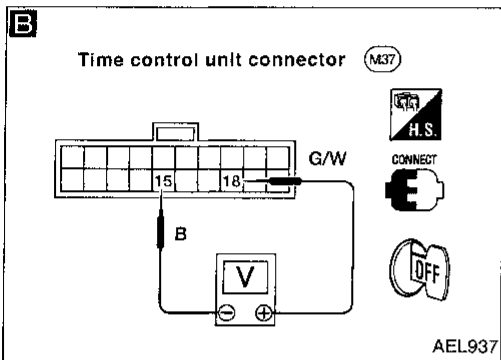
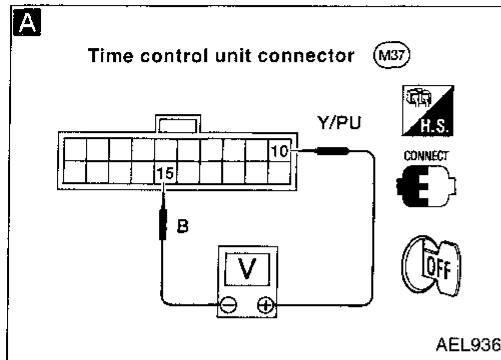
TIME CONTROL SYSTEM

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 5

SYMPTOM: Ignition key warning chime does not activate.

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



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

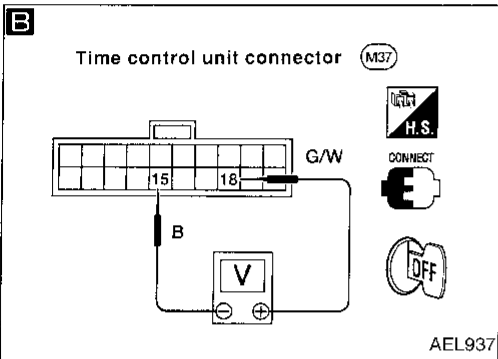
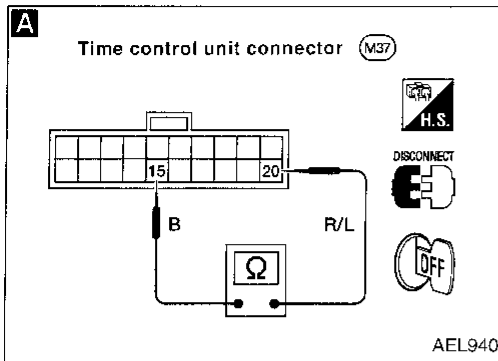
TIME CONTROL SYSTEM

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 6

SYMPTOM: Seat belt warning chime does not activate.

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



A Step 2

SEAT BELT SWITCH INPUT SIGNAL CHECK

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

Condition	Continuity
Unfastened	Yes
Fastened	No

NG

Check the following:

- Seat belt switch.
- Harness continuity between time control unit and seat belt switch.

OK

B Step 1

CHIME OUTPUT SIGNAL CHECK

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

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

OK

Check the following:

- Chime.
- Harness continuity between time control unit and chime.

NG

TRY A KNOWN GOOD TIME CONTROL UNIT.*

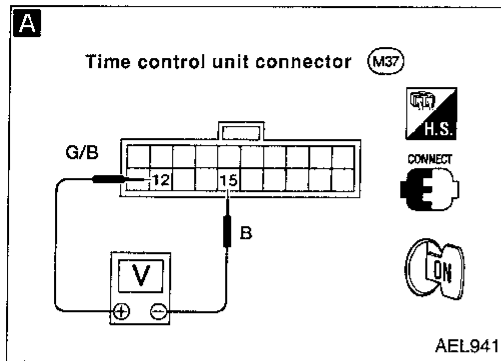
*: Time control unit may be the cause of a problem, but this is rarely the case.

TIME CONTROL SYSTEM

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 7

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



A

REAR WINDOW DEFOGGER OUTPUT SIGNAL CHECK

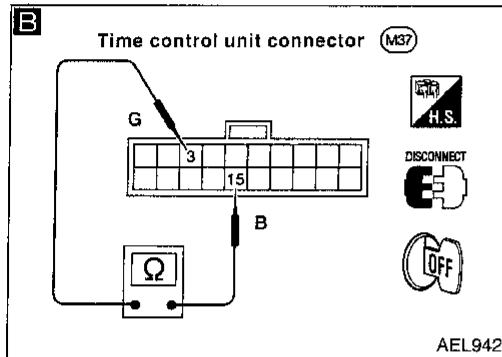
Measure voltage between time control unit harness terminals (12) and (15).

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

OK

Check the following:

- Rear window defogger relay.
- Rear window defogger circuit.



B

REAR WINDOW DEFOGGER SWITCH INPUT SIGNAL CHECK

1. Disconnect time control unit harness connector.
2. Check continuity between time control unit harness terminals (3) and (15).

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

NG

Check the following:

- Rear window defogger switch.
- Harness continuity between time control unit and rear window defogger switch.

OK

TRY A KNOWN GOOD TIME CONTROL UNIT.*

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

System Description

WIPER OPERATION

The wiper switch is controlled by a lever built into the combination switch.

There are three wiper switch positions:

- LO speed
- HI speed
- INT (Intermittent)

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

- through 20A fuse (No. 11), located in the fuse block
- to wiper motor terminal ④.

Low and high speed wiper operation

Ground is supplied to wiper switch terminal ⑰ through body grounds (E12) and (E37).

When the wiper switch is placed in the LO position, ground is supplied

- through terminal ⑱ 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 ⑲ of the wiper switch
- to wiper motor terminal ③.

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

Auto stop operation

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

When the wiper switch is placed in the OFF position, ground is supplied

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

The ground path to terminal ⑭ of the wiper switch is supplied

- through terminal ⑬ of the wiper switch
- to wiper relay terminal ③
- through terminal ④ of the wiper relay
- to wiper motor terminal ⑤
- through terminal ⑥ of the wiper motor, and
- through body grounds (M51), (M76) and (M77).

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

Intermittent operation

Intermittent operation can be set or variable depending on the model option. The wiper motor operates the wiper arms one time at low speed at a set interval of approximately 1 to 20 seconds. This feature is controlled by the time control unit.

When the wiper switch is placed in the INT position, ground is supplied

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

The desired interval time is input

- to time control unit terminal ④
- from wiper switch terminal ⑰.

Based on these two inputs, an intermittent ground is supplied

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

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

When activated, an intermittent ground is supplied

- to wiper motor terminal ②
- through the wiper switch terminal ⑱
- to wiper switch terminal ⑲
- through wiper relay terminal ③
- to wiper relay terminal ⑤

WIPER AND WASHER

System Description (Cont'd)

- through body grounds (E12) and (E37).

The wiper motor operates at low speed at the desired time interval.

For further diagnosis, refer to "TIME CONTROL SYSTEM".

WASHER OPERATION

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

- through 20A fuse (No. 11), located in the fuse block)
- to washer motor terminal (2).

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

- to washer motor terminal (1), and
- to time control unit terminal (2)
- from terminal (18) of the wiper switch
- through terminal (17) of the wiper switch, and
- through body grounds (E12) and (E37).

With power and ground supplied, the washer motor operates.

The wiper motor operates at low speed for approximately 3 seconds to clean the windshield. This feature is controlled by the time control unit in the same manner as the intermittent operation.

For further diagnosis, refer to "TIME CONTROL SYSTEM".

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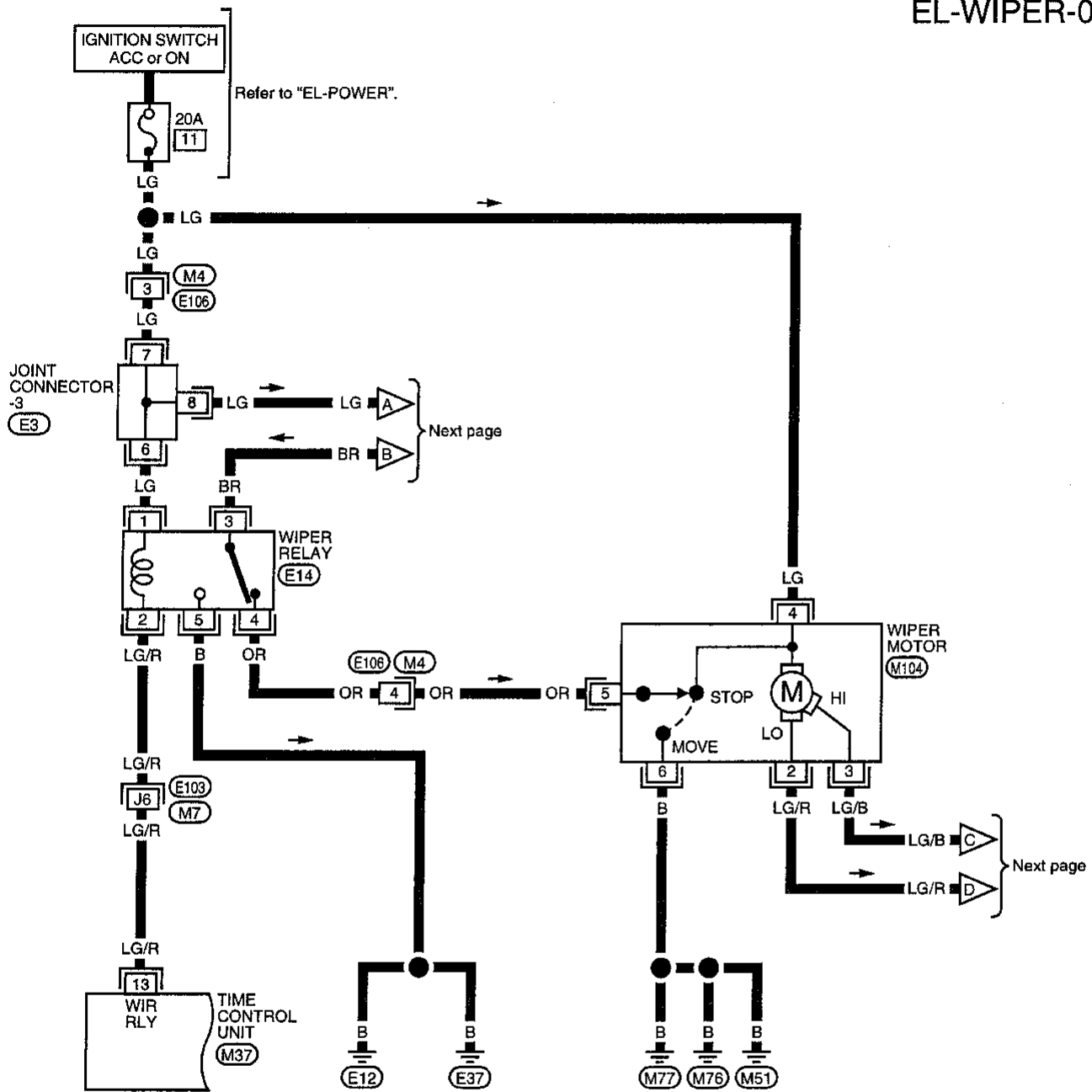
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WIPER AND WASHER

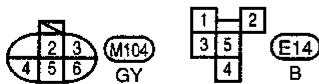
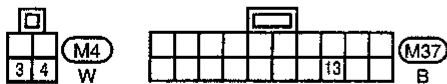
Front Wiper and Washer/Wiring Diagram -WIPER-

EL-WIPER-01



Refer to last page (Foldout page).

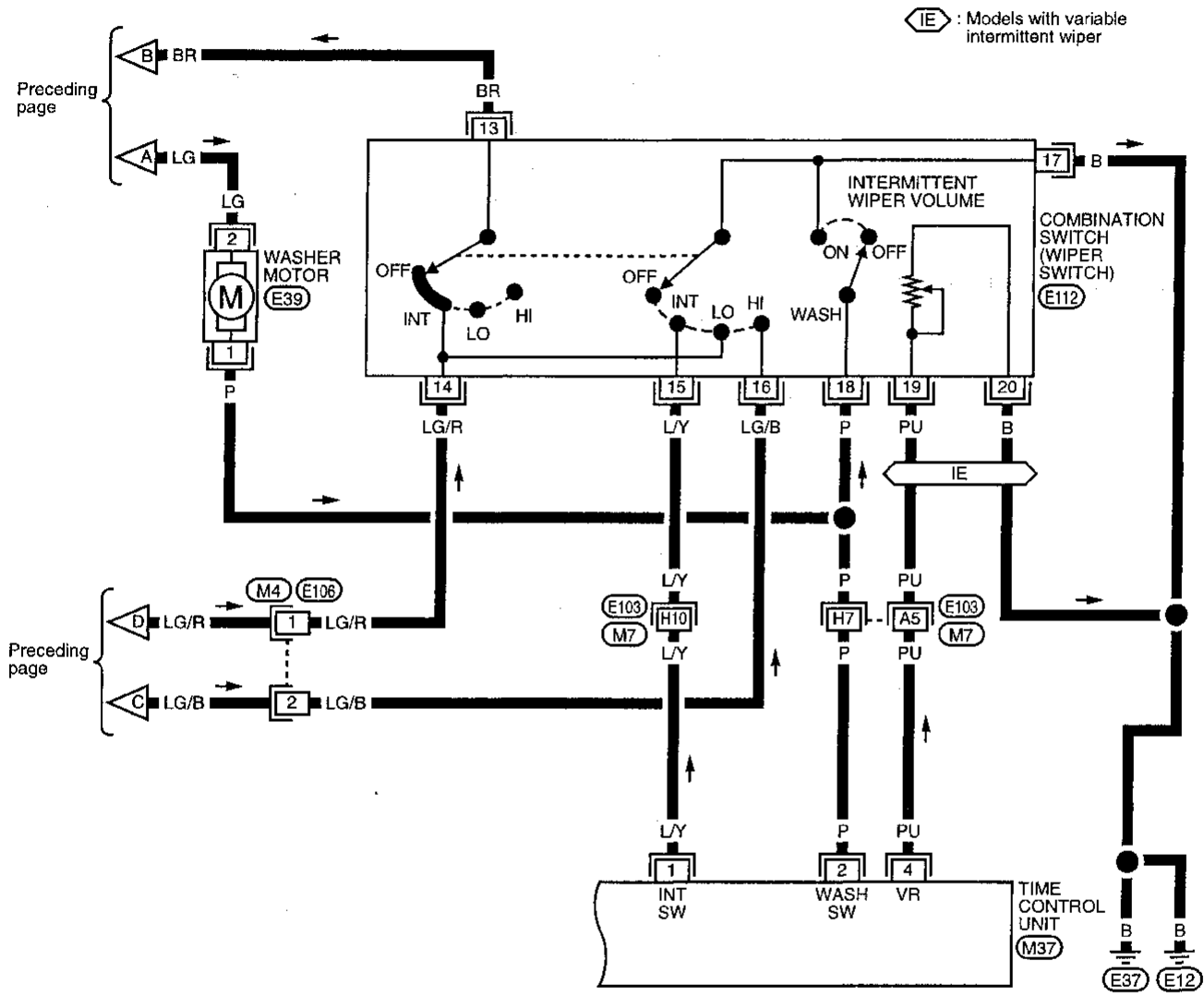
M7 E103
E3



WIPER AND WASHER

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

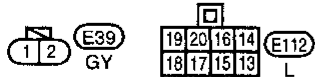
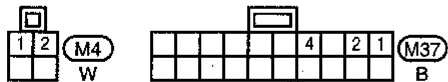
EL-WIPER-02



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WIPER AND WASHER

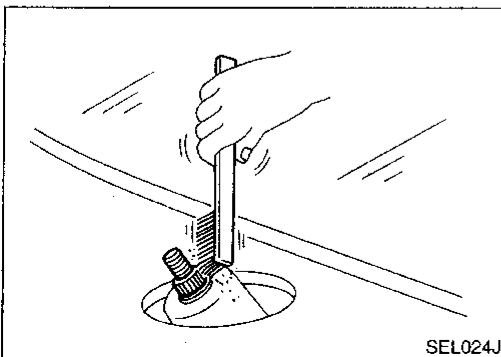
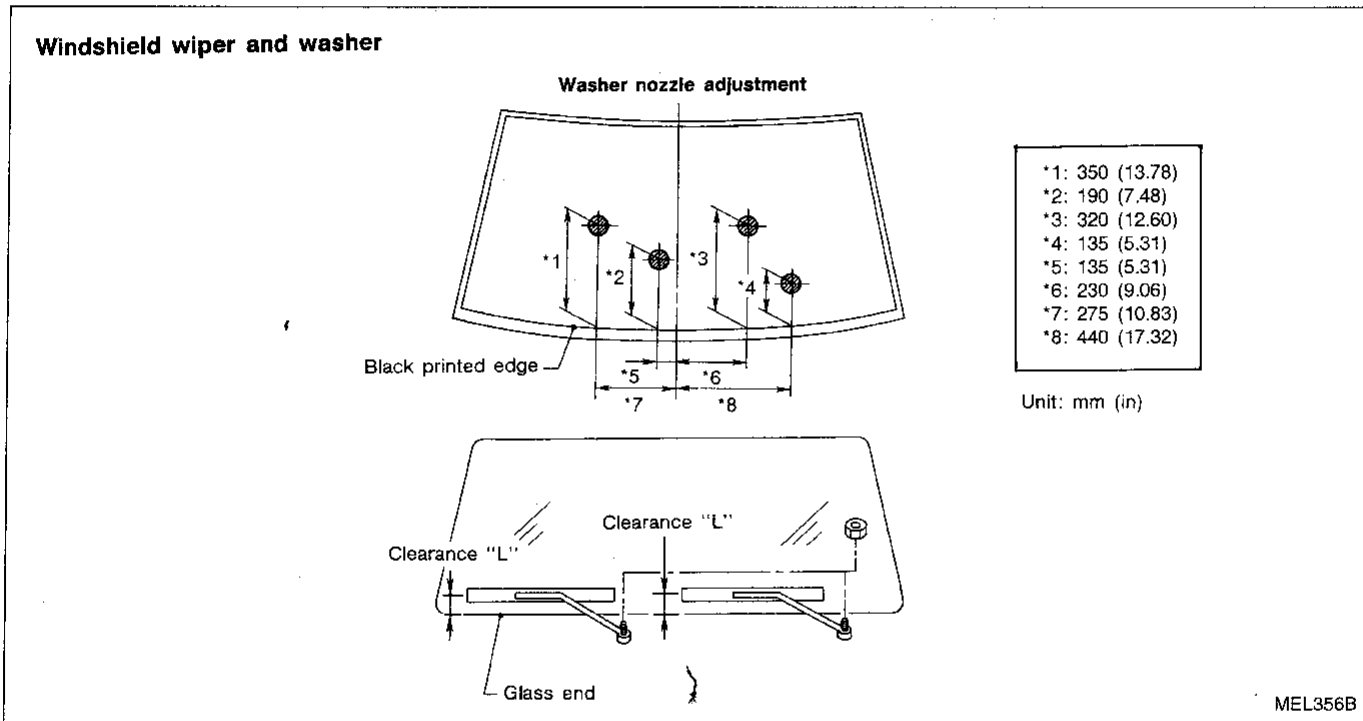
Installation

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".
- Tighten windshield wiper arm nuts to specified torque.

Clearance "L": 27 - 41 mm (1.06 - 1.61 in)

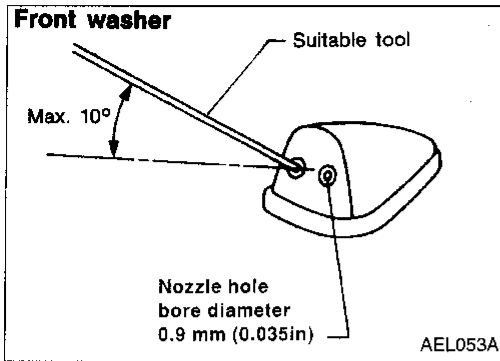
Windshield wiper:

[D]: 21 - 26 N·m (2.1 - 2.7 kg·m, 15 - 20 ft·lb)



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

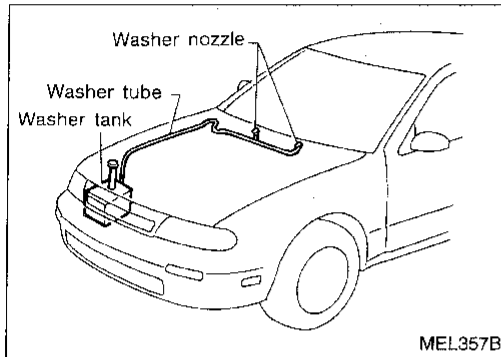
WIPER AND WASHER



Washer Nozzle Adjustment

- Adjust washer nozzle with suitable tool as shown in the figure at left.

Adjustable range: $\pm 10^\circ$



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POWER WINDOW

System Description

Power is supplied at all times

- from 30A fusible link (Letter **b**), located in the fusible link and fuse box
- to ignition switch terminal ①.

Power is also supplied

- from 25A fusible link (Letter **g**), located in the fusible link and fuse box
- to circuit breaker terminal ①
- through circuit breaker terminal ②
- to ignition relay-2 (POWER WINDOW) terminal ⑤.

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

- through ignition switch terminal ③
- to ignition relay-2 (POWER WINDOW) terminal ①.

Ground is supplied to ignition relay-2 (POWER WINDOW) terminal ②

- through body grounds **(E12)** and **(E37)**.

The ignition relay-2 (POWER WINDOW) is energized and power is supplied

- through terminal ③
- to main power window and door lock switch terminal ②,
- to power window switch (front RH) terminal ②,
- to power window switch (rear LH) terminal ②, and
- to power window switch (rear RH) terminal ②.

Ground is supplied

- to main power window and door lock switch terminal ⑩
- through body grounds **(M51)**, **(M76)** and **(M77)**.

MANUAL OPERATION

Front door LH

WINDOW UP

When the main power window switch front LH is pressed in the up position, power is supplied

- to front power window motor LH terminal ①
- through main power window and door lock switch terminal ⑫.

Ground is supplied

- to front power window motor LH terminal ②
- through main power window and door lock switch terminal ⑯.

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 motor LH terminal ②
- through main power window and door lock switch terminal ⑯.

Ground is supplied

- to front power window motor LH terminal ①
- through main power window and door lock switch terminal ⑫.

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

Except front LH door

FRONT DOOR RH

NOTE:

Figures in parentheses () refer to terminal Nos. arranged in order when the UP or DOWN section of power window switch is pressed.

Operation by main switch

Power is supplied

- through main power window and door lock switch terminal (⑬, ⑭)
- to power window switch (front RH) terminal (③, ①).

The subsequent operations are the same as those outlined under "Operation by sub-switches".

POWER WINDOW

System Description (Cont'd)

Operation by sub-switches

Power is supplied

- through power window switch (front RH) terminal (6, 4)
- to power window motor (front RH) terminal (1, 2).

Ground is supplied

- to front power window motor (front RH) terminal (2, 1)
- through power window switch (front RH) terminal (4, 6)
- to power window switch (front RH) terminal (1, 3)
- through main power window and door lock switch terminal (14, 13)
- to main power window and door lock switch terminal (10)
- through body grounds (M77), (M76), and (M51).

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

REAR DOOR LH

NOTE:

Figures in parentheses () refer to terminal Nos. arranged in order when the UP or DOWN section of power window switch is pressed.

Operation by main switch

Power is supplied

- through main power window and door lock switch terminal (1, 6)
- to power window switch (rear LH) terminal (1, 3).

The subsequent operations are the same as those outlined under "Operation by sub-switches".

Operation by sub-switches

Power is supplied

- through power window switch (rear LH) terminal (4, 6)
- to power window motor (rear LH) terminal (1, 2).

Ground is supplied

- to front power window motor (rear LH) terminal (2, 1)
- through power window switch (rear LH) terminal (6, 4)
- to power window switch (rear LH) terminal (3, 1)
- through main power window and door lock switch terminal (6, 1)
- to main power window and door lock switch terminal (10)
- through body grounds (M77), (M76), and (M51).

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

REAR DOOR RH

NOTE:

Figures in parentheses () refer to terminal Nos. arranged in order when the UP or DOWN section of power window switch is pressed.

Operation by main switch

Power is supplied

- through main power window and door lock switch terminal (1, 6)
- to power window switch (rear RH) terminal (1, 3).

The subsequent operations are the same as those outlined under "Operation by sub-switches".

Operation by sub-switches

Power is supplied

- through power window switch (rear RH) terminal (4, 6)
- to power window motor (rear RH) terminal (1, 2).

Ground is supplied

- to front power window motor (rear RH) terminal (2, 1)
- through power window switch (rear RH) terminal (6, 4)
- to power window switch (rear RH) terminal (3, 1)
- through main power window and door lock switch terminal (9, 7)
- to main power window and door lock switch terminal (10)
- through body grounds (M77), (M76), and (M51).

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

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POWER WINDOW

System Description (Cont'd)

AUTO FEATURE

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

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 motor LH terminal ①
- through main power window and door lock switch terminal ⑫.

Power is supplied

- to front power window motor LH terminal ②
- through main power window and door lock switch terminal ⑬.

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

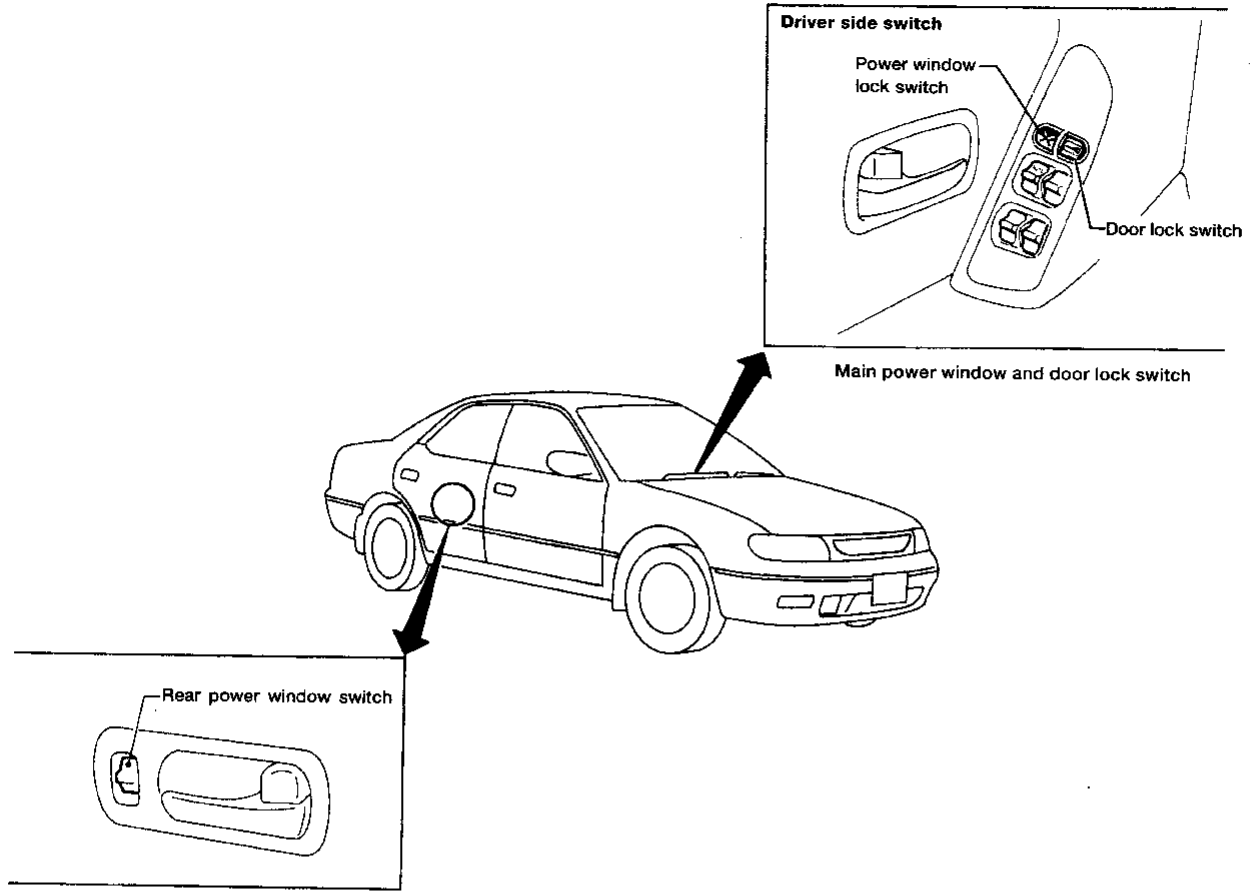
LOCK FEATURE

The power window lock is designed to lock-out window operation to all windows except the front door LH window.

When the lock switch is pressed to lock position, ground of the main power window and door lock switch is disconnected. This prevents the power window motors from operating.

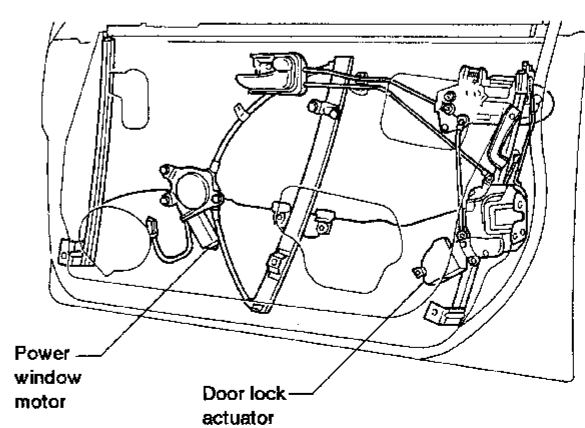
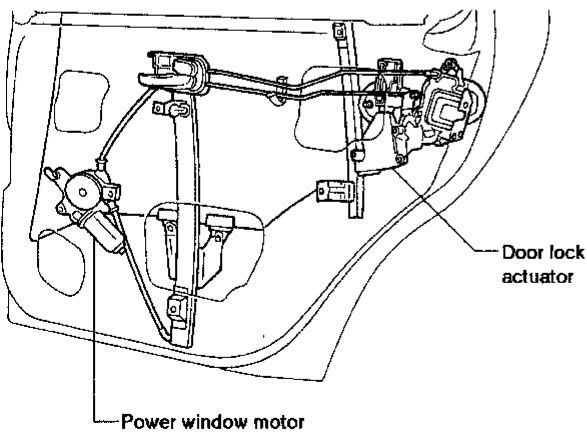
POWER WINDOW

Component Layout



Rear door

Front door

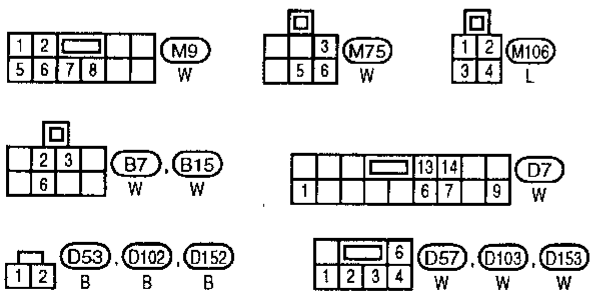
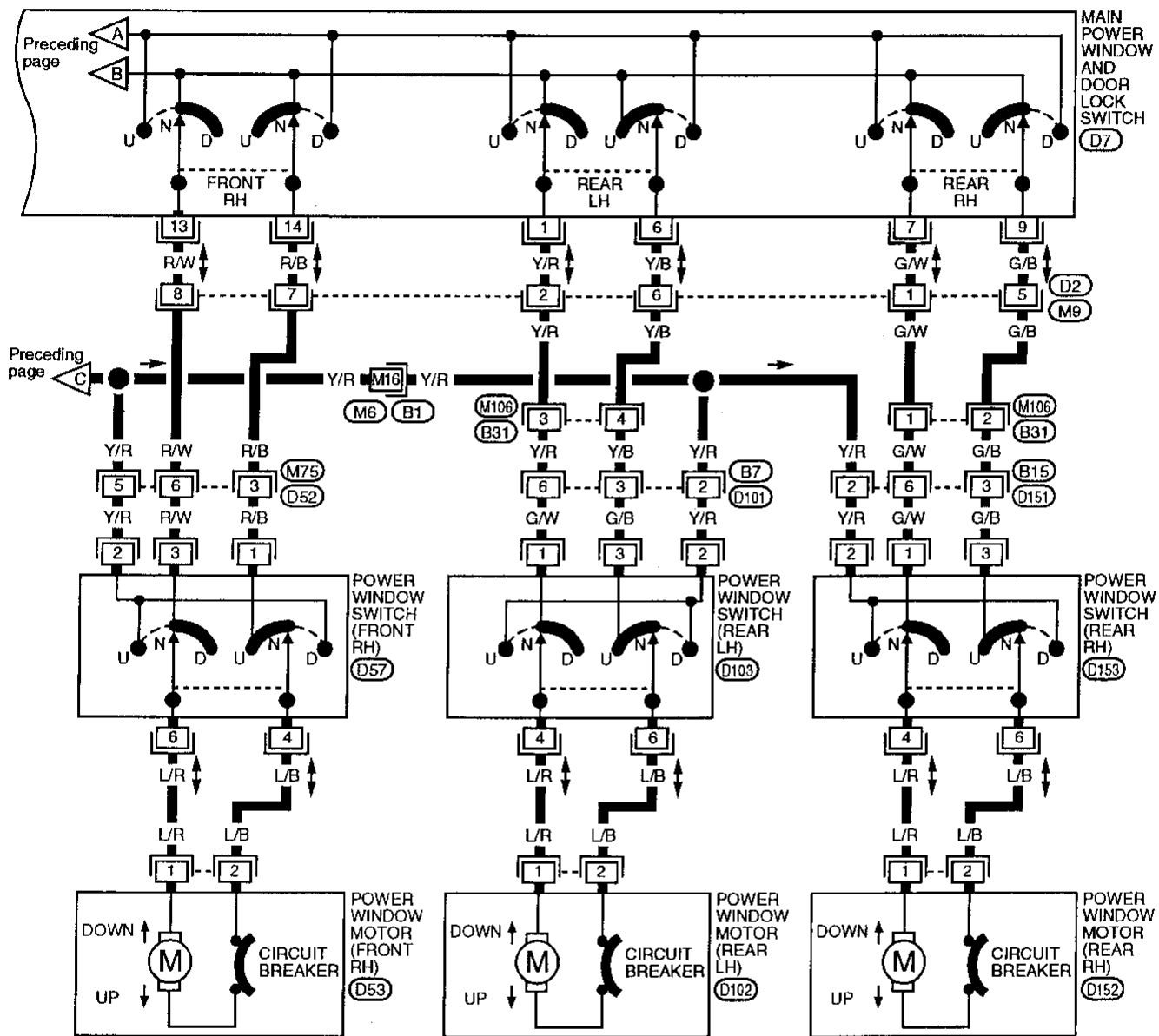


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POWER WINDOW

Wiring Diagram -WINDOW- (Cont'd)

EL-WINDOW-02



Refer to last page (Foldout page).
 (M6), (B1)

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POWER WINDOW

Trouble Diagnoses

Symptom	Possible causes	Repair order
None of the power windows can be operated from any switch.	<ol style="list-style-type: none"> 25A and 30A fusible links and (M2) circuit breaker. Grounds (E12), (E37), (M77), (M76), and (M51). Ignition relay-2 (power window) Open/short in main power window and door lock switch circuit 	<ol style="list-style-type: none"> Check 25A and 30A fusible links (Let. g and b), located in the fusible link and fuse box) and the (M2) circuit breaker. Turn ignition switch ON and verify battery positive voltage is present at terminal (2) of all power window switches. Check grounds (E12), (E37), (M77), (M76), and (M51). Check ignition relay-2 (power window) Check Y/R wire between ignition relay-2 (power window) and main power window and door lock switch for open/short circuit.
Driver side power window cannot be operated but other windows can be operated.	<ol style="list-style-type: none"> Driver side (front LH) power window motor circuit. Driver side (front LH) power window motor. 	<ol style="list-style-type: none"> Check driver side (front LH) power window motor circuit. Check driver side (front LH) power window motor.
One or more passenger power windows cannot be operated.	<ol style="list-style-type: none"> Power window switches (front RH, rear LH and RH). Power window motors (front RH, rear LH and RH). Main power window and door lock switch Power window circuits. 	<ol style="list-style-type: none"> Check power window switches (front RH, rear LH and RH). Check power window motors (front RH, rear LH and RH). Check main power window and door lock switch. Check wires between main power windows and door lock switch and power window switches and motors 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 switch.	Check main power window and door lock switch.

POWER DOOR LOCK

System Description

Power is supplied at all times

- through 25A fusible link (Letter **g** , located in the fusible link and fuse box)
- to circuit breaker terminal ①.
- through circuit breaker terminal ②
- to door lock control unit terminal ①.

Power is supplied at all times

- through 10A fuse (No. **20** , located in the fuse block)
- to key switch terminal ①.

Ground is supplied

- to door lock control unit terminal ⑤
- through body grounds **(M51)** , **(M76)** and **(M77)** .

INPUT

Power is supplied to door lock control unit terminal ⑦ through key switch terminal ② when ignition key is inserted in the key switch.

Ground is supplied

- to door lock control unit terminal ④ or ⑫
- from front LH or RH door switch terminal ①
- through front LH or RH door switch terminal ③ when door switch is in OPEN position and
- through body grounds **(B6)** and **(B14)** .

Ground is supplied

- to door lock control unit terminal ⑭
- from front LH or RH door key cylinder switch terminal ① (Without theft warning system) or ② (With theft warning system)
- through front LH or RH door key cylinder switch terminal ② (Without theft warning system) or ④ (With theft warning system) when door key cylinder is BETWEEN FULL STROKE AND N position and
- through body grounds **(M51)** , **(M76)** and **(M77)** .

Ground is supplied

- to door lock control unit terminal ⑨ or ⑩
- from door unlock sensor (in the front LH or RH door lock actuator) terminal ② when door lock is in UNLOCKED position
- through door unlock sensor (in the front LH or RH door lock actuator) terminal ①
- through body grounds **(M51)** , **(M76)** and **(M77)** .

Ground is supplied

- to door lock control unit terminal ⑮ or ⑯
- from main power window and door lock switch terminal ⑮ or ⑪
- through main power window and door lock switch terminal ⑩
- through body grounds **(M51)** , **(M76)** and **(M77)** .

OUTPUT

Unlock

Power is supplied

- from door lock control unit terminal ③
- to all door actuator terminals ④.

Ground is supplied

- from door lock control unit terminal ②
- to all door actuator terminals ③.

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

Lock

Power is supplied

- from door lock control unit terminal ②
- to all door actuator terminals ③.

Ground is supplied

- from door lock control unit terminal ③
- to all door actuator terminals ④.

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

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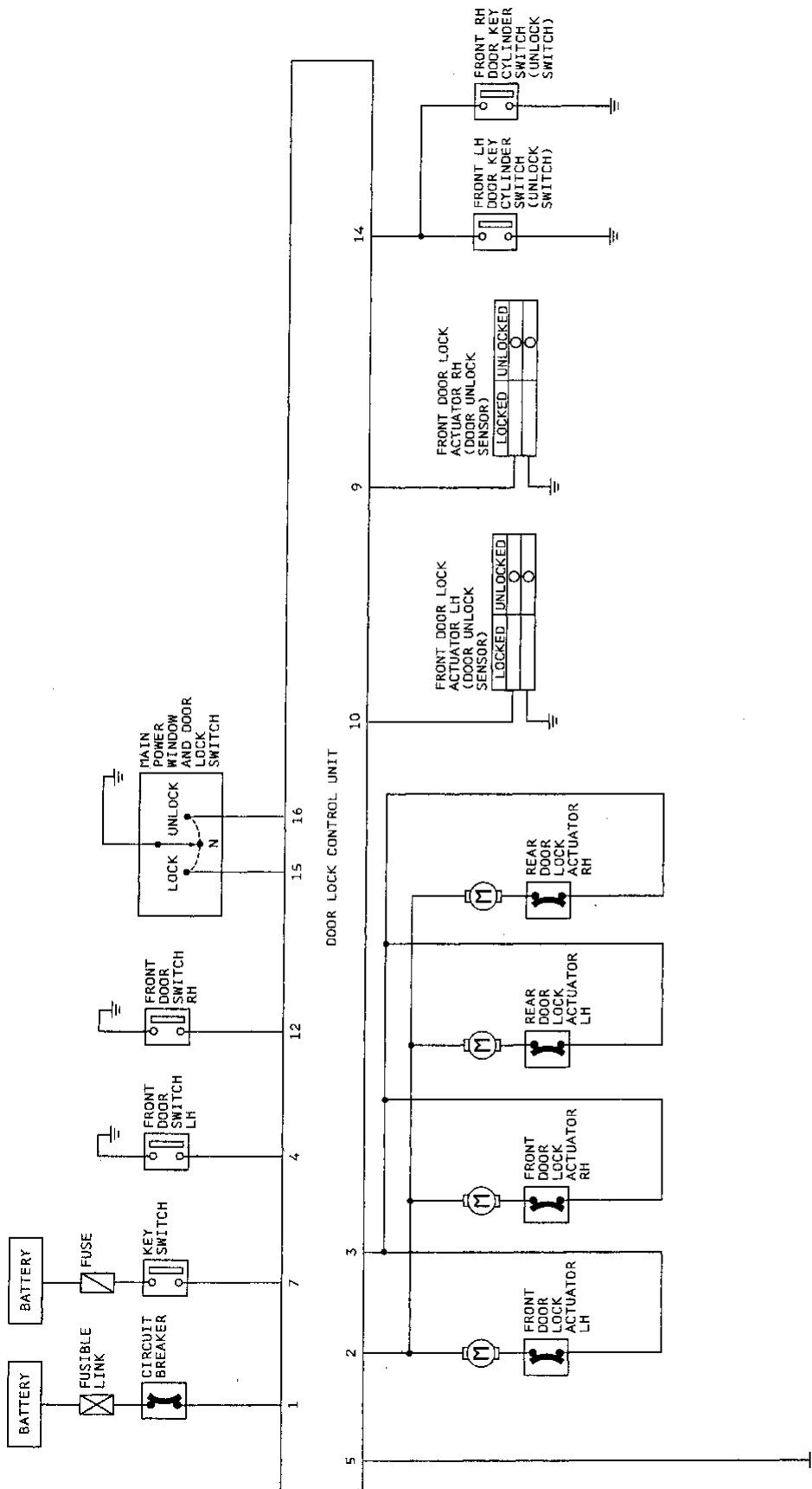
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POWER DOOR LOCK

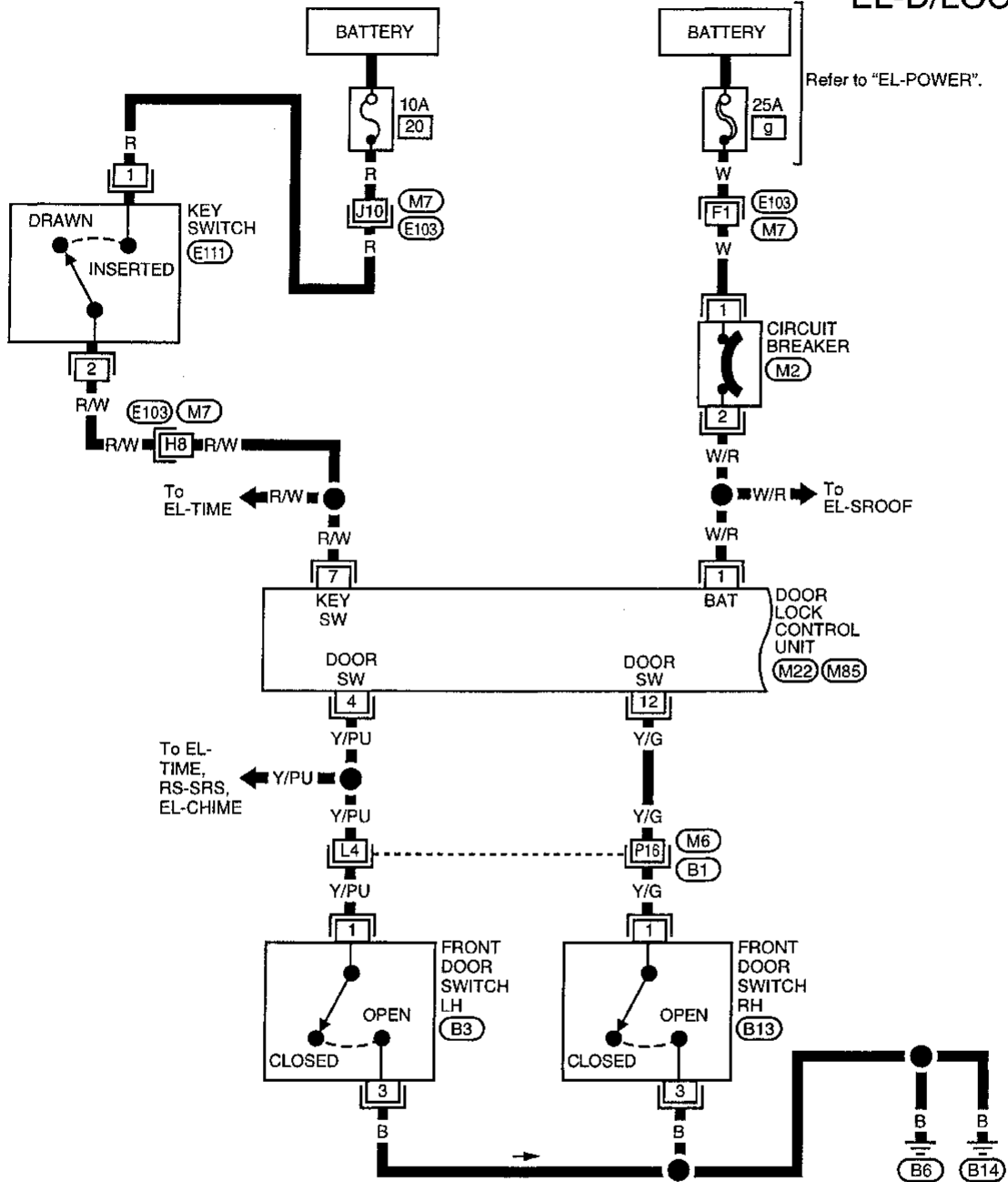
Schematic



POWER DOOR LOCK

Wiring Diagram -D/LOCK-

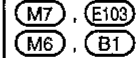
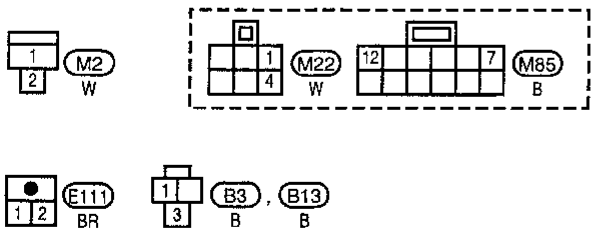
EL-D/LOCK-01



Refer to "EL-POWER".

To EL-TIME, RS-SRS, EL-CHIME

Refer to last page (Foldout page).

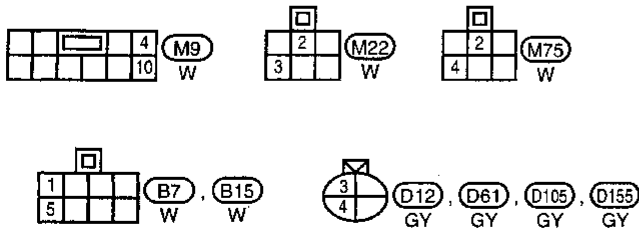
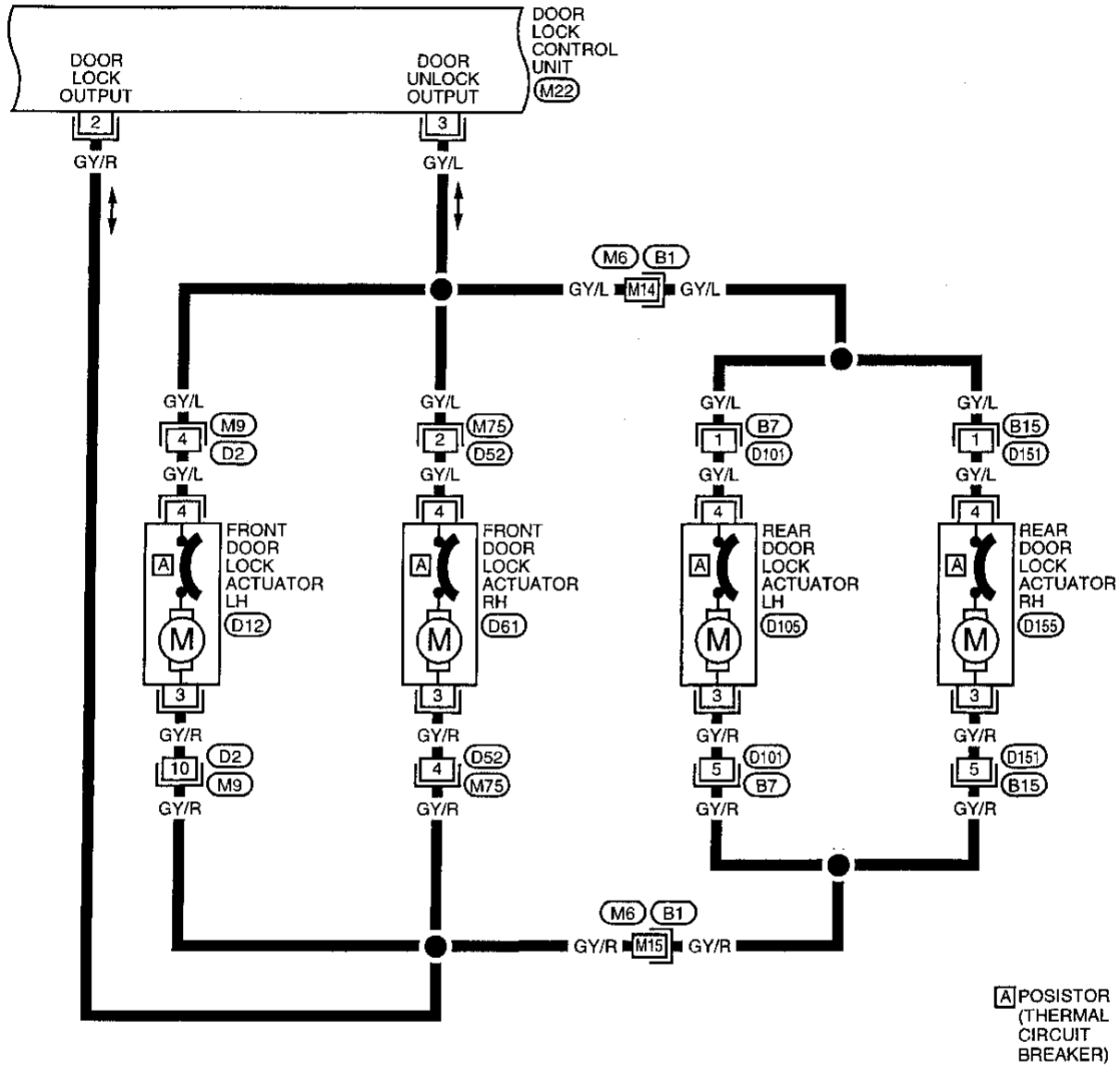


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POWER DOOR LOCK

Wiring Diagram -D/LOCK- (Cont'd)

EL-D/LOCK-02



Refer to last page (Foldout page).

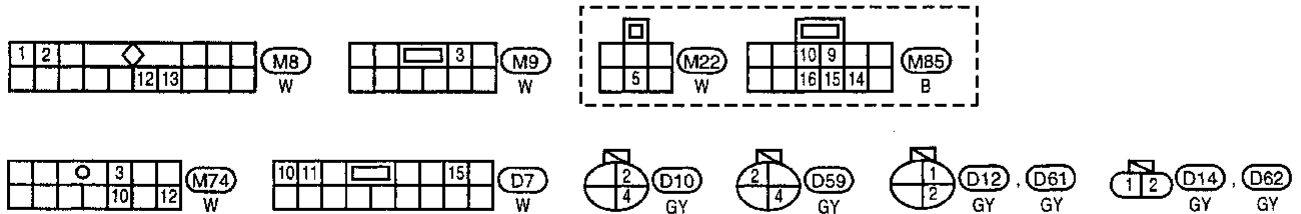
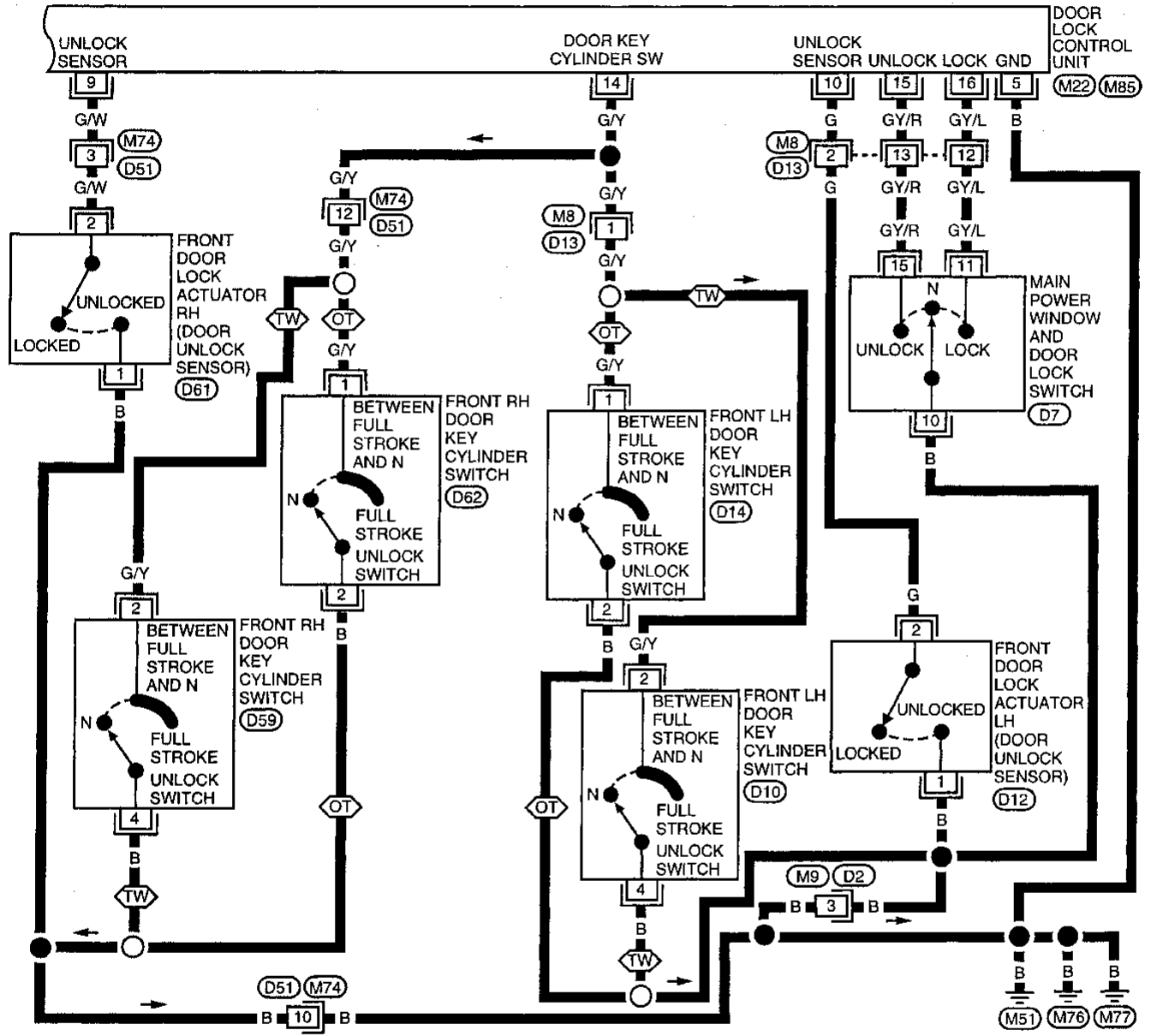
(M6) (B1)

POWER DOOR LOCK

Wiring Diagram -D/LOCK- (Cont'd)

EL-D/LOCK-03

TW : With theft warning system
OT : Without theft warning system



POWER DOOR LOCK

Trouble Diagnoses

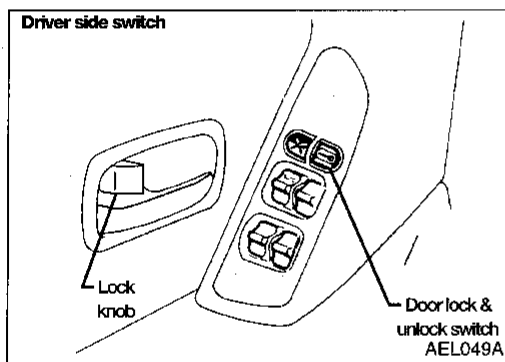
OPERATIVE CONDITION

- 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.
- 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.

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. — (KEY REMINDER DOOR SYSTEM)

If any of the following symptoms occur, key reminder door system is malfunctioning.

- With ignition key removed from the ignition key cylinder and all doors closed, operating the lock and unlock switch or lock knob on the front LH or RH door trim unlocks all doors the instant they are locked.
- With ignition key inserted into the ignition key cylinder and front LH or RH door opened, operating the lock and unlock switch or lock knob on the front LH or RH door trim to "LOCK" does not unlock all doors.



POWER DOOR LOCK

Trouble Diagnoses (Cont'd)

SYMPTOM CHART

PROCEDURE	Main power supply and ground circuit check		Diagnostic procedure					
	EL-122	EL-122	EL-122	EL-123	EL-123	EL-124	EL-125	EL-126
REFERENCE PAGE								
SYMPTOM	Main power supply for door lock control unit	Ground circuit for door lock control unit	Procedure 1 (Door switch)	Procedure 2 (Ignition key switch)	Procedure 3 (Lock & unlock switch)	Procedure 4 (Door key cylinder switch)	Procedure 5 (Front door unlock sensor)	Procedure 6 (Door lock actuator)
Key reminder door system does not operate properly.	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 lock/unlock when operating door key cylinder switch.	X	X				X		
None of the doors lock when operating front door knob lock switch.	X	X					X	

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

The following ABBREVIATIONS are used in this Trouble Diagnoses.

- (FL): Front LH
- (FR): Front RH
- (RL): Rear LH
- (RR): Rear RH

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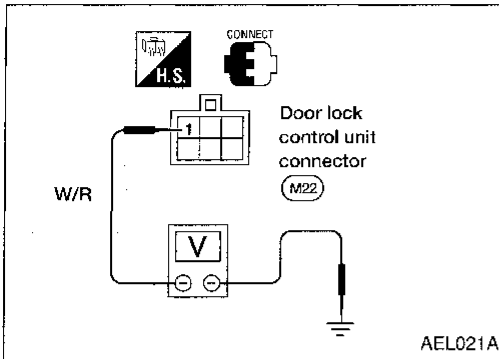
POWER DOOR LOCK

Trouble Diagnoses (Cont'd)

MAIN POWER SUPPLY AND GROUND CIRCUIT CHECK

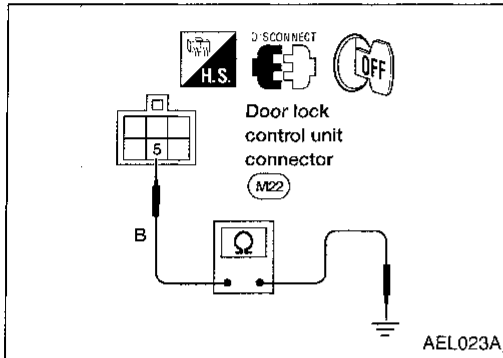
Main power supply for door lock control unit

Terminals	Battery voltage existence
① - Ground (GND)	Yes

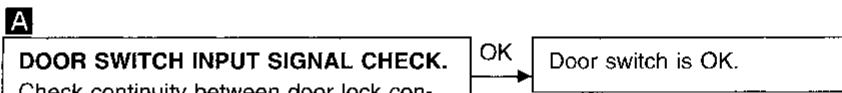
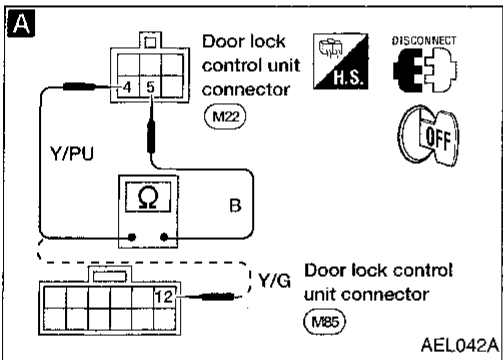


Ground circuit for door lock control unit

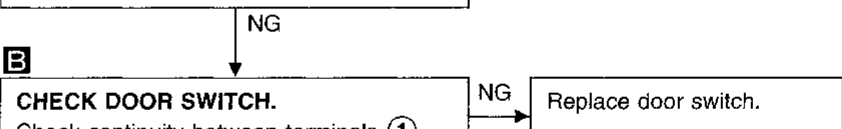
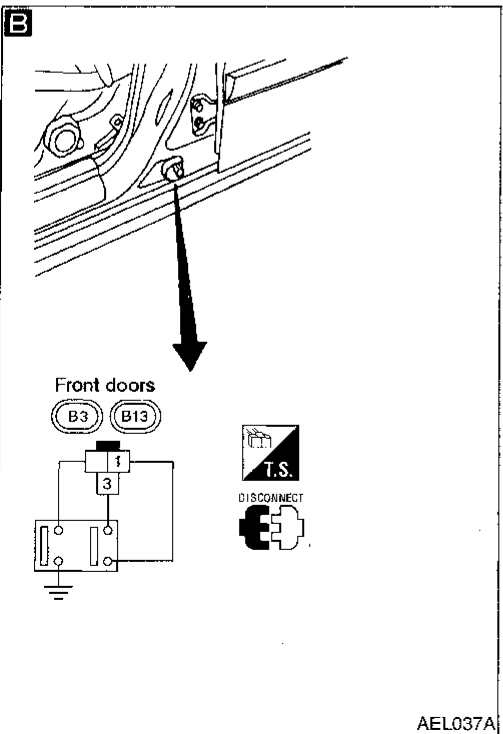
Terminals	Continuity
⑤ - Ground	Yes



DIAGNOSTIC PROCEDURE 1 — Door switch



Condition		Terminals	Continuity
Driver door	Closed	④ - ⑤	No
	Open		Yes
Pas-senger door	Closed	⑫ - ⑤	No
	Open		Yes



Terminals		Condition	Continuity
Driver and pas-senger door switches	① - ③	Pressed	No
		Released	Yes

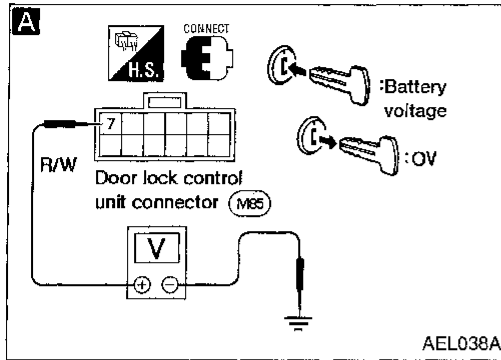
Check the following:

- Ground circuit for door switch.
- Connection at each connector.
- Harness for open or short between door switch and control unit.

POWER DOOR LOCK

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 2 — Ignition key switch



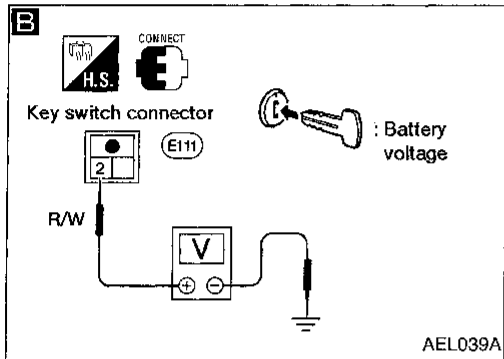
A

IGNITION KEY SWITCH INPUT SIGNAL CHECK.

Check voltage between door lock control unit harness terminal (7) and body ground when key is inserted in ignition key switch. **Battery voltage should exist.**

OK → Ignition key switch is OK.

NG



B

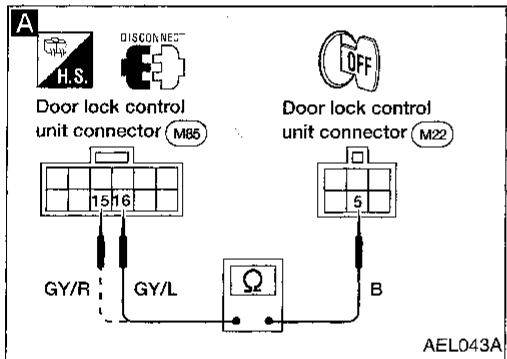
CHECK IGNITION KEY SWITCH

Check voltage of ignition key switch connector terminal (2) when key is inserted in ignition key switch. **Battery voltage should exist.**

OK → Repair harness between ignition key switch and control unit connector.

NG

Check ignition key switch unit and fuse circuit.



DIAGNOSTIC PROCEDURE 3 — Lock & unlock switch

A

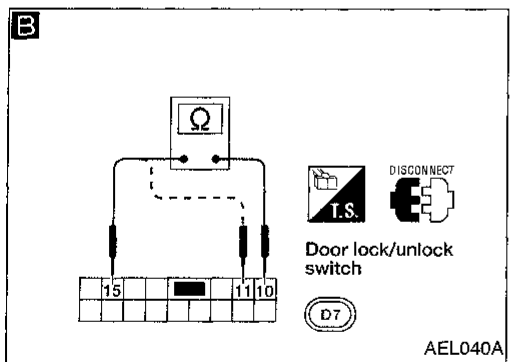
DOOR LOCK/UNLOCK SWITCH INPUT SIGNAL CHECK.

Check continuity between door lock control unit harness terminals (15), (16) and (5).

Door lock/unlock switch operation	Terminals	Continuity
Lock	(16) - (5)	Yes
Unlock	(15) - (5)	

OK → Door lock & unlock switch is OK.

NG



B

CHECK DOOR LOCK/UNLOCK SWITCH.

Check continuity between door lock/unlock switch terminals.

Operation	Terminals	Continuity
Lock	(11) - (10)	Yes
Unlock	(15) - (10)	

NG → Replace door lock/unlock switch.

OK

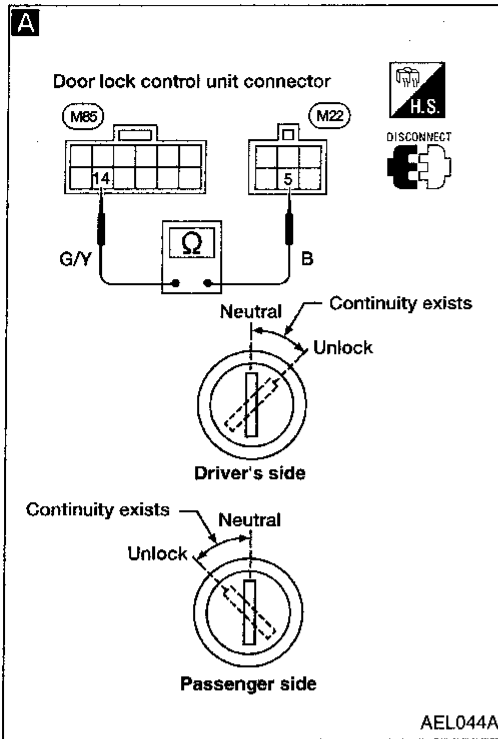
Check the following:

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

POWER DOOR LOCK

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 4 — Door key cylinder switch



A

KEY CYLINDER SWITCH INPUT SIGNAL CHECK (UNLOCK SIGNAL).

Check continuity between door lock control unit harness terminals (14) and (5).

Key position	Continuity
Neutral	No
Between neutral and unlock	Yes

OK → Door key cylinder switch is OK.

NG

B

CHECK DOOR KEY CYLINDER SWITCH.

Check continuity between switch terminals.

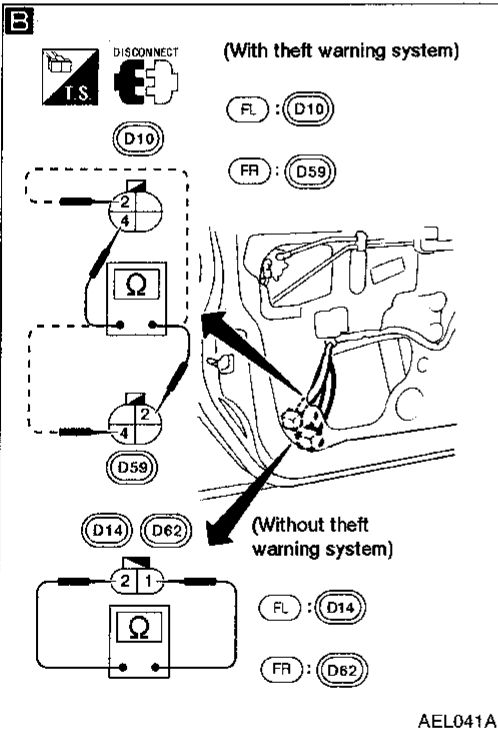
Terminals	Condition	Continuity
① - ② (Without theft warning system)	Neutral	No
② - ④ (With theft warning system)	Between neutral and unlock	Yes

NG → Replace door key cylinder switch.

OK

Check the following:

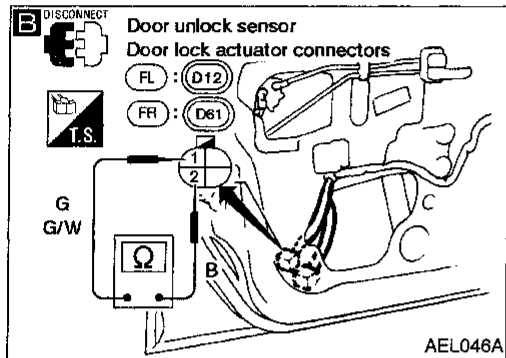
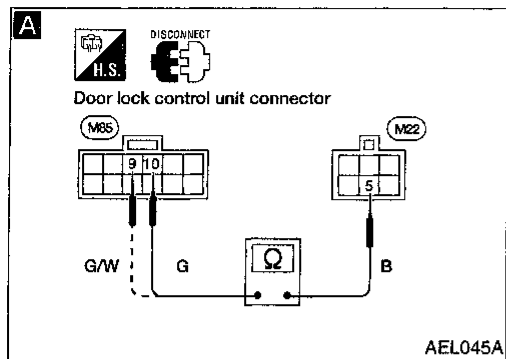
- Ground circuit for door key cylinder switch.
- Connection at each connector.
- Harness for open or short between door key cylinder switch and control unit.



POWER DOOR LOCK

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 5 — Front door unlock sensor



A

FRONT DOOR UNLOCK SENSOR INPUT SIGNAL CHECK.

Check continuity between door lock control unit harness terminals (9), (10) and (5).

Condition	Terminals	Continuity	
Driver door	(10) - (5)	Locked	No
		Unlocked	Yes
Passenger door	(9) - (5)	Locked	No
		Unlocked	Yes

OK → Front door unlock sensor is OK.

B

CHECK FRONT DOOR UNLOCK SENSOR.

Check continuity between sensor terminals.

Operation	Terminals	Continuity
Lock	(1) - (2)	No
Unlock	(1) - (2)	Yes

NG → Replace front door lock actuator.

OK

Check the following:

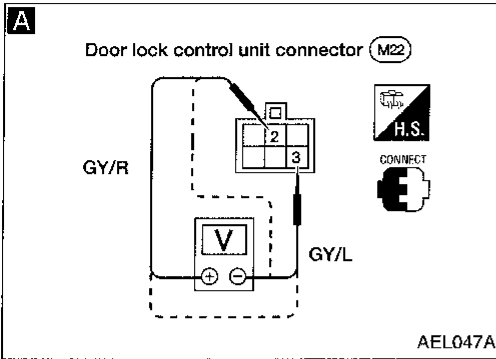
- Ground circuit for door unlock sensor.
- Connection at each connector.
- Harness for open or short between front door unlock sensor and control unit.

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POWER DOOR LOCK

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 6 — Door lock actuator

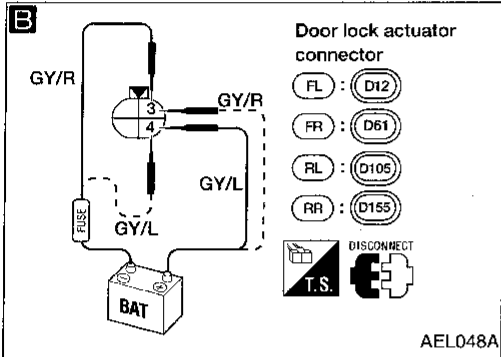


A

CHECK DOOR LOCK ACTUATOR CIRCUIT.
Check voltage for door lock actuator.

Door lock/unlock switch operation	Terminals		Voltage (V)
	⊕	⊖	
Lock	②	③	Battery voltage
Unlock	③	②	

NG → Replace door lock control unit.



B

CHECK DOOR LOCK ACTUATOR.

Door lock operation	Terminals	
	⊕	⊖
Lock	③	④
Unlock	④	③

NG → Replace door lock actuator.

OK

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

SUNROOF

System Description

POWER

Power is supplied to the sunroof motor assembly by the sunroof relay when the ignition switch is turned ON. The power circuit is protected by the circuit breaker. The sunroof motor assembly has an independent ground circuit.

TILT AND SLIDE OPERATION

A ground signal is sent to the internal control circuitry of the sunroof motor assembly when the sunroof switches are pressed. The motor is activated by the control circuitry. The motor turns off when the switches are released.

The sunroof will slide open when the OPEN side of the sunroof switch is pressed. It will slide closed when the CLOSE side of the switch is pressed.

The sunroof must be in the closed position for the tilt feature to operate. The rear of the sunroof will tilt up when the UP side of the tilt switch is pressed. The sunroof will return from the up position to the closed position when the DOWN side of the tilt switch is pressed.

The sun shade opens automatically when the sunroof is opened. It must be closed manually.

IF THE SUNROOF DOES NOT CLOSE

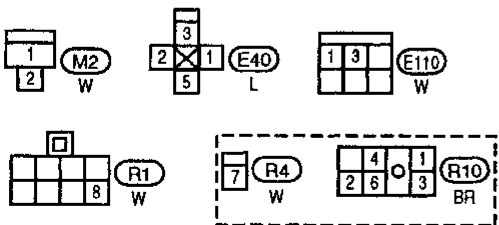
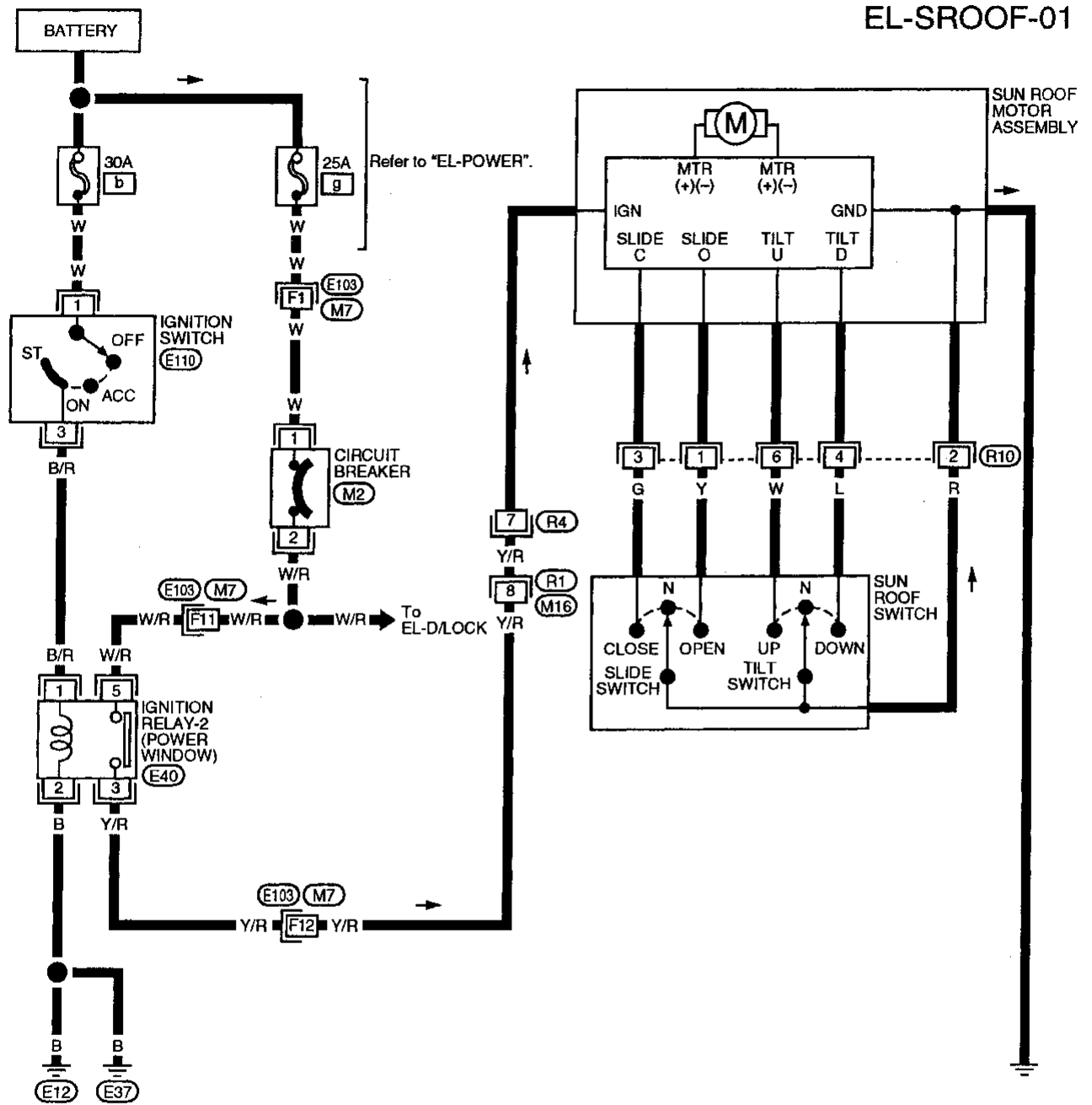
The sunroof motor may be manually operated using 5 mm ALLEN wrench (not supplied).

1. Turn the ignition switch OFF.
2. Remove the sunroof switch and personal lamp assembly.
3. Insert the wrench into the sunroof motor shaft and rotate the shaft clockwise to close the sunroof.

SUNROOF

Wiring Diagram -SROOF-

EL-SROOF-01



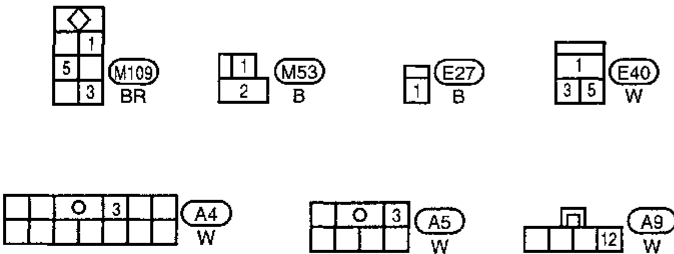
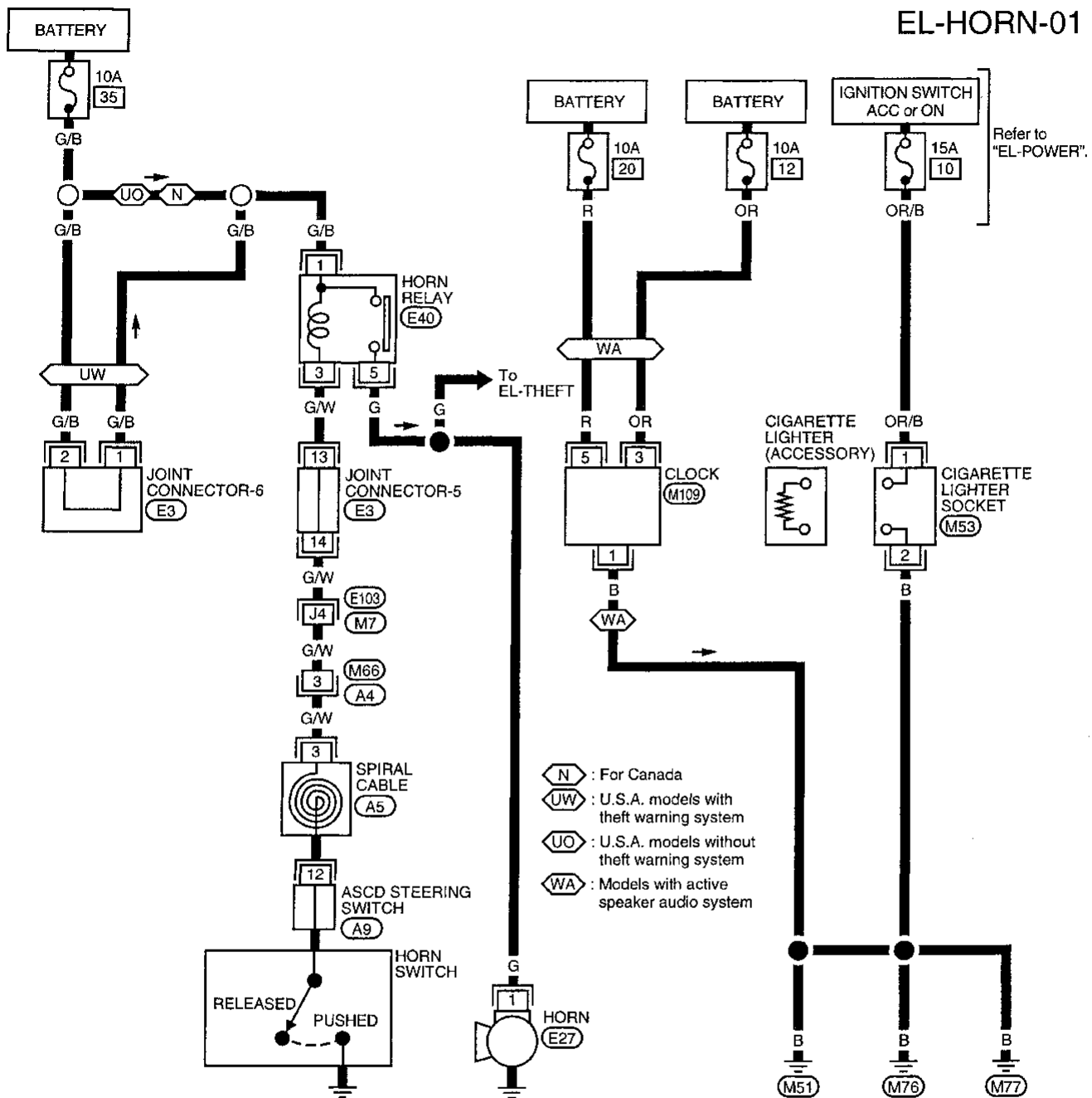
Refer to last page (Foldout page).
 (M7), (E103)

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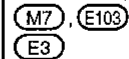
HORN, LIGHTER, CLOCK

Wiring Diagram -HORN-

EL-HORN-01



Refer to last page (Foldout page).



REAR WINDOW DEFOGGER

System Description

The rear window defogger system is controlled by the time control unit. The rear window defogger operates only for approximately 15 minutes.

Power is supplied at all times

- to rear window defogger relay terminal ③
- through 20A fuse (No. ① , located in the fuse block) and
- to rear window defogger relay terminal ⑥
- through 20A fuse (No. ② , located in the fuse block).

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

- to the rear window defogger relay terminal ①.

Ground is supplied to terminal ② of the rear window defogger switch through body grounds (M51), (M76) and (M77).

When the rear window defogger switch is activated, ground is supplied

- through terminal ① of the rear window defogger switch
- to time control unit terminal ③.

Terminal ② of the time 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 condenser terminal ①
- through terminal ② of the condenser
- to the rear window defogger.

The rear window defogger has an independent ground.

With power and ground supplied, the rear window defogger filaments heat and defog the rear window.

When the system is activated, the rear window defogger indicator illuminates in the combination meter.

Power is supplied

- to terminal ⑳ of the combination meter
- from terminal ⑤ of the rear window defogger relay.

Terminal ㉗ of the combination meter is grounded through body grounds (M51), (M76) and (M77).

For diagnosis, refer to "TIME CONTROL SYSTEM".

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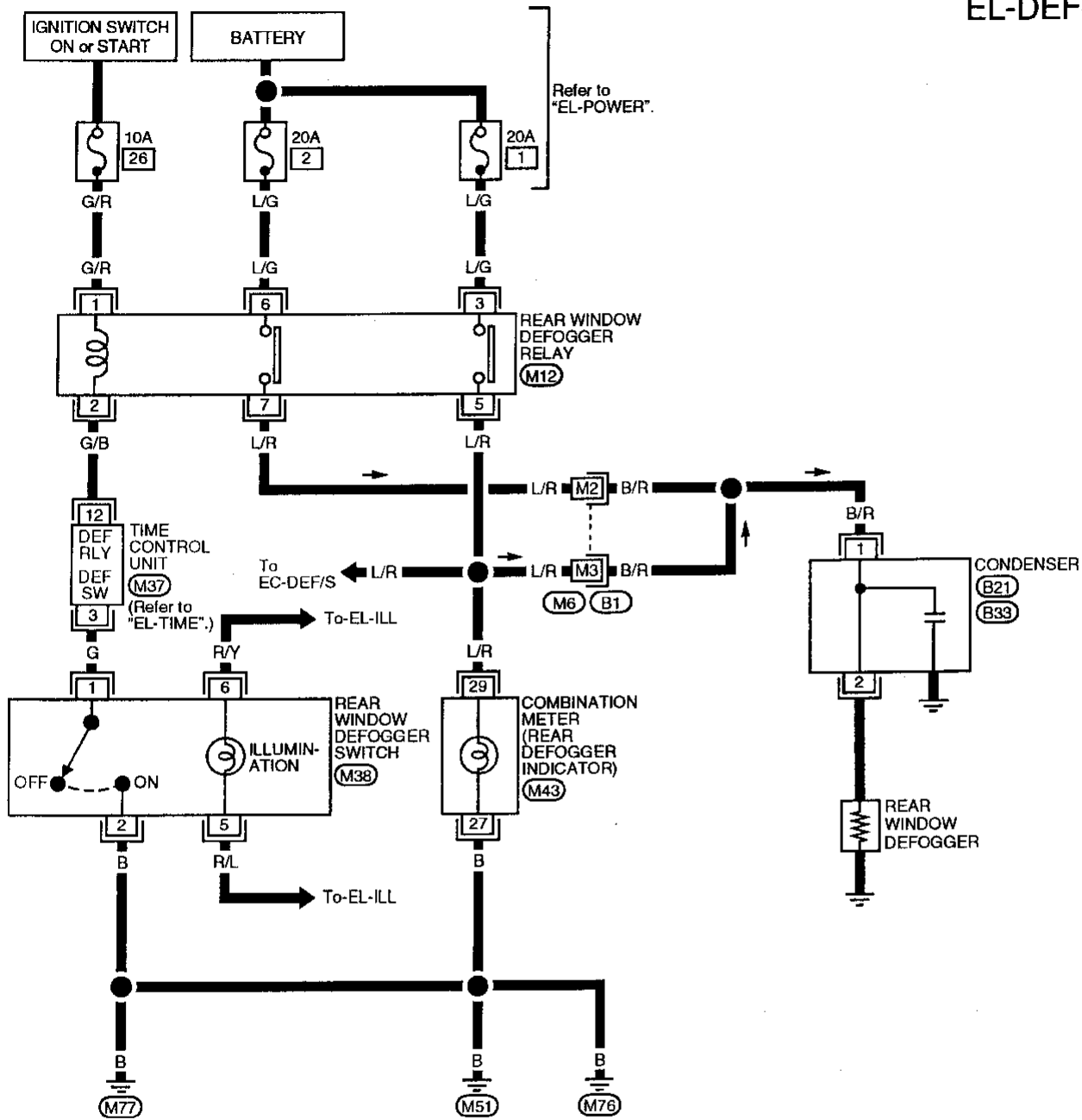
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REAR WINDOW DEFOGGER

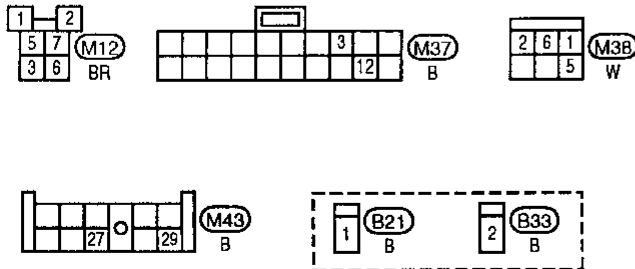
Wiring Diagram -DEF-

EL-DEF-01

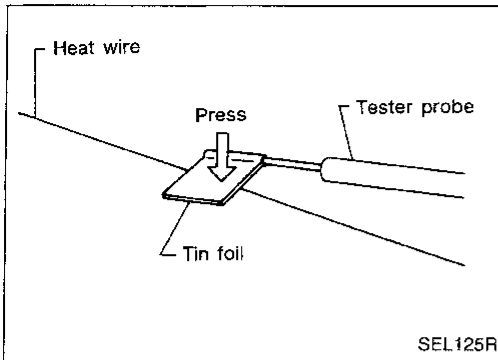


Refer to last page (Foldout page).

(M6), (B1)

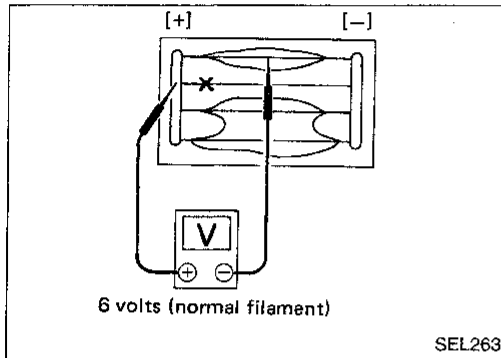


REAR WINDOW DEFOGGER

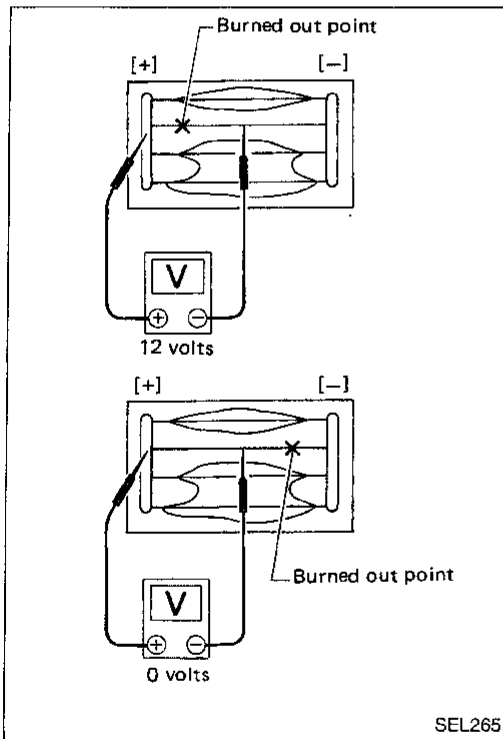


Filament Check

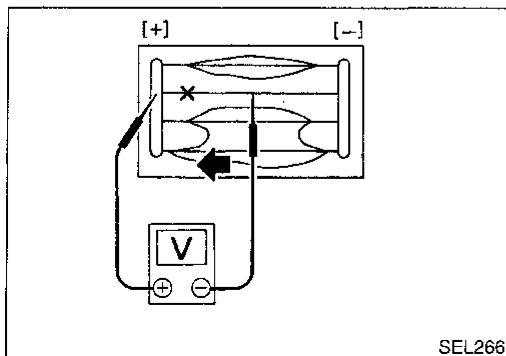
- When measuring voltage, wrap tin foil around the top of the negative probe. Press the foil against the wire with your finger. Otherwise, the element may be damaged.



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



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



- To locate burned out point, move probe along filament. Tester needle swings abruptly at the burned point.

REAR WINDOW DEFOGGER

Filament Repair

REPAIR EQUIPMENT

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

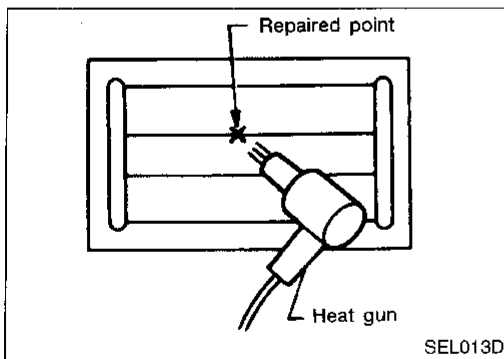
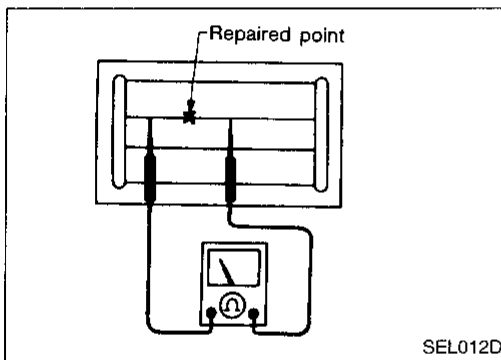
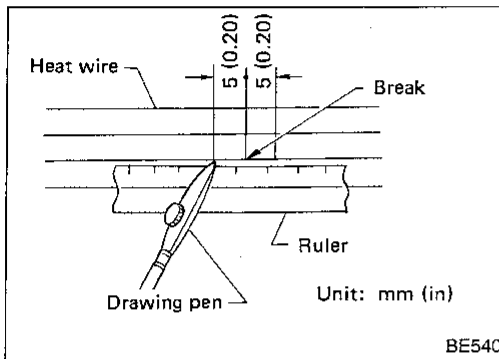
REPAIRING PROCEDURE

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

Shake silver composition container before use.

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

Do not touch repaired area while test is being conducted.



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

Audio/System Description

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

WITH ACTIVE SPEAKER AUDIO SYSTEM

Power is supplied at all times

- through 10A fuse (No. 20 , located in the fuse block)
- to radio, cassette and CD player terminal 6.

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

- through 15A fuse (No. 9 , located in the fuse block)
- to radio, cassette and CD player terminal 10
- to front speaker amplifier terminal 36, and
- to rear speaker amplifier terminal 16.

Ground is supplied through the case of the radio, cassette, CD player and front and rear speaker amplifiers.

When the system is on, audio signals are supplied

- through radio, cassette and CD player terminals 1, 2, 3, 4, 13, 14, 15 and 16
- to terminals 7, 8, 9 and 10 of the rear speaker amplifier and terminals 27, 28, 29 and 30 of the front speaker amplifier.
- to tweeters and the front and rear speakers through terminals 31, 32, 33 and 34 of the front speaker amplifier and terminals 11, 12, 13 and 14 of the rear speaker amplifier.

WITHOUT ACTIVE SPEAKER AUDIO SYSTEM

Power is supplied at all times

- through 10A fuse (No. 20 , located in the fuse block)
- to radio and cassette player terminal 6.

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

- through 10A fuse (No. 9 , located in the fuse block)
- to radio and cassette player terminal 10.

Ground is supplied through the case of the radio and cassette player.

When the system is on, audio signals are supplied

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

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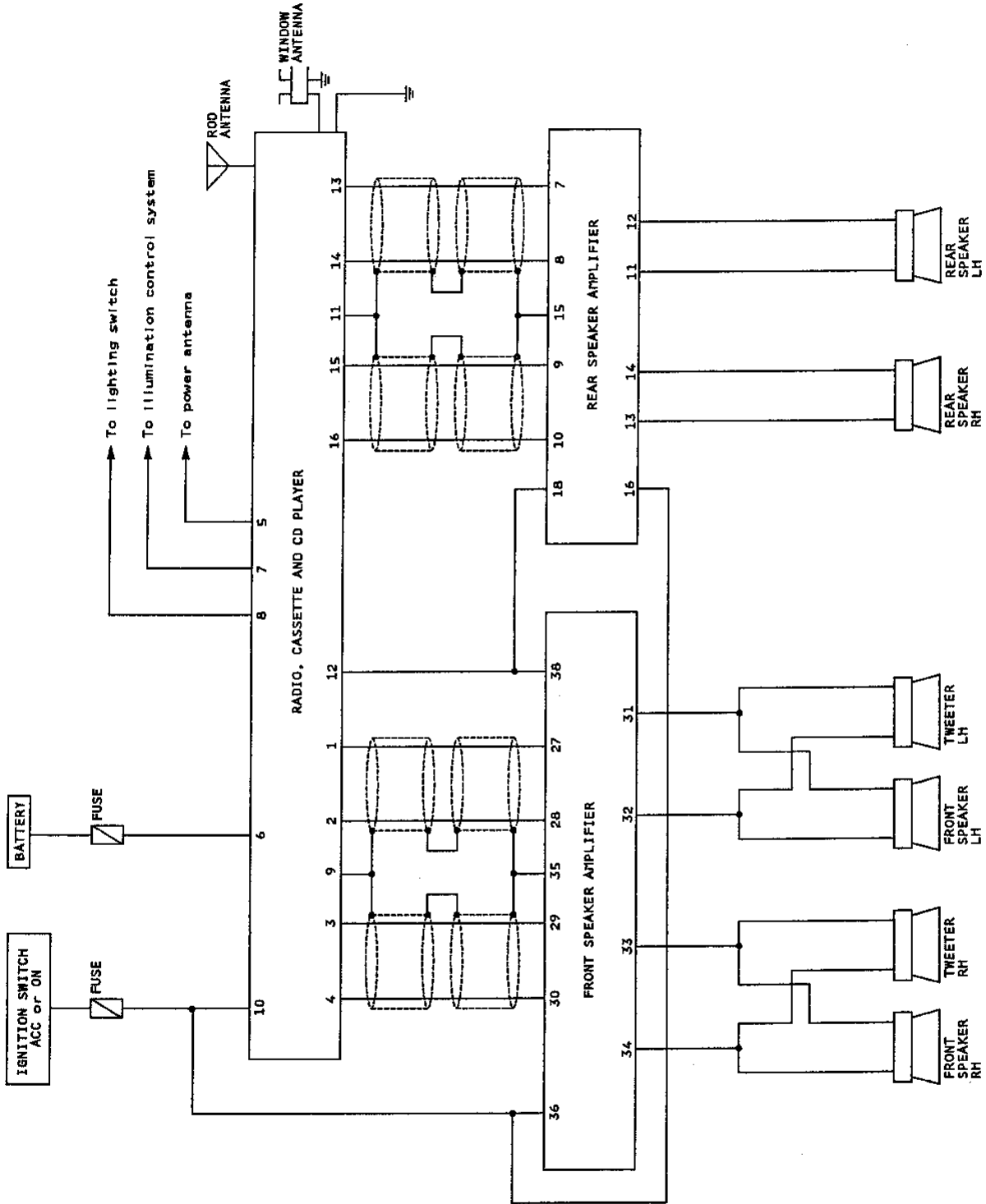
EL

IDX

AUDIO AND POWER ANTENNA

Audio/Schematic

WITH ACTIVE SPEAKER AUDIO SYSTEM

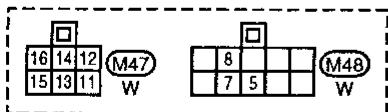
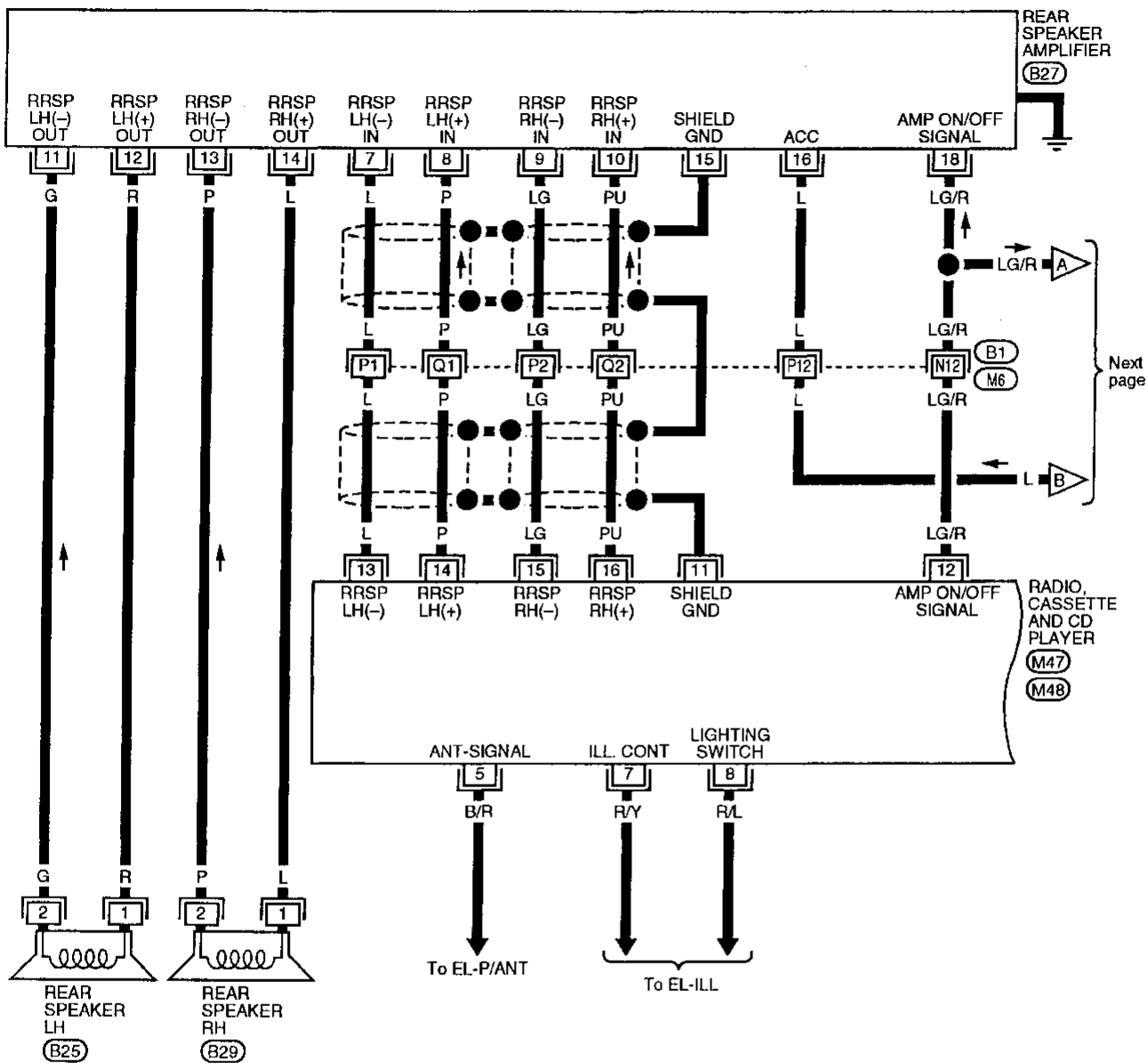


AUDIO AND POWER ANTENNA

Audio/Wiring Diagram -AUDIO-

WITH ACTIVE SPEAKER AUDIO SYSTEM

EL-AUDIO-01



Refer to last page (Foldout page).

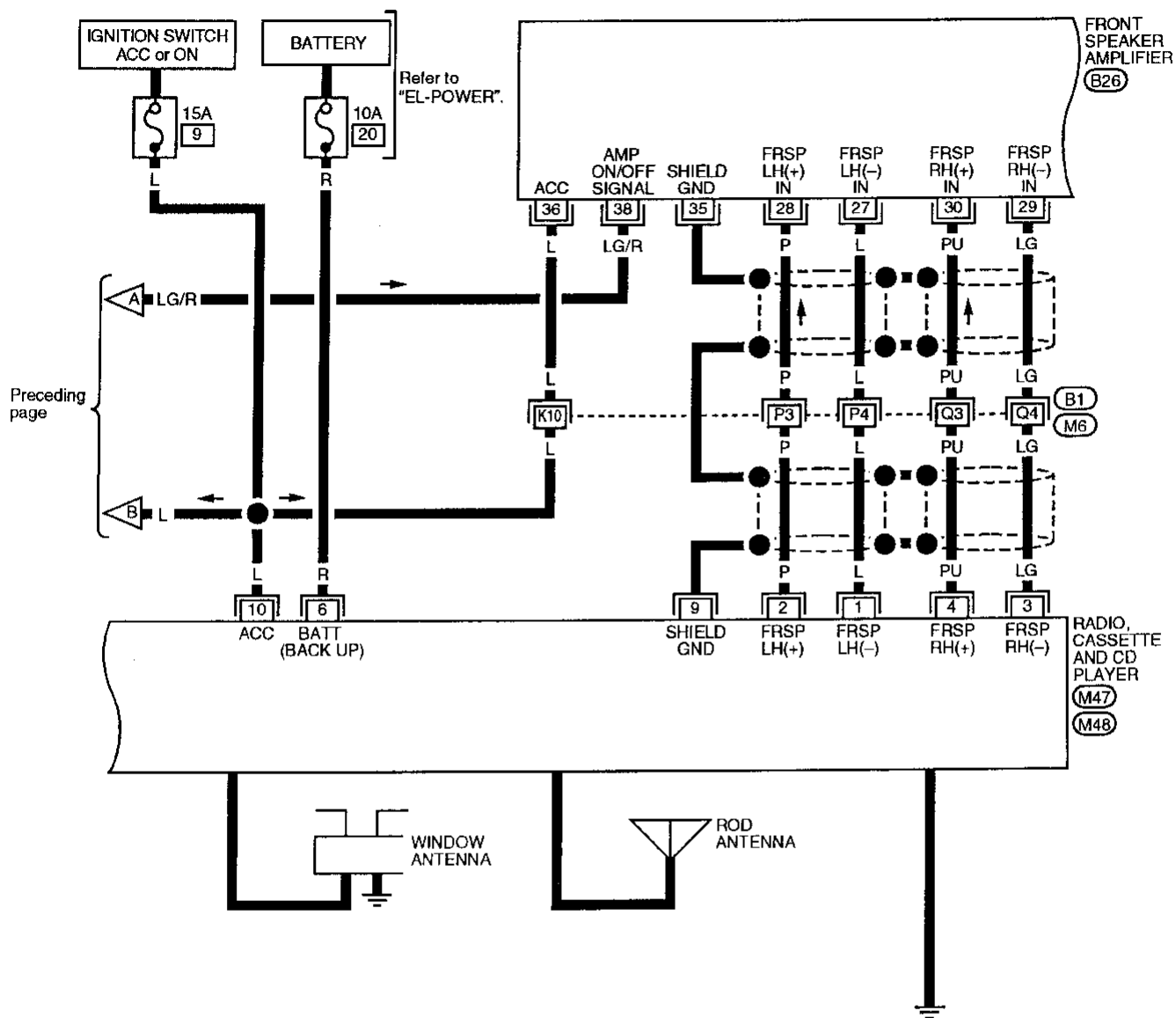
(M6), (B1)

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AUDIO AND POWER ANTENNA

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

EL-AUDIO-02

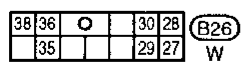
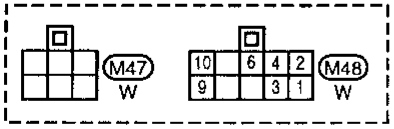


Preceding page

Refer to "EL-POWER".

Refer to last page (Foldout page).

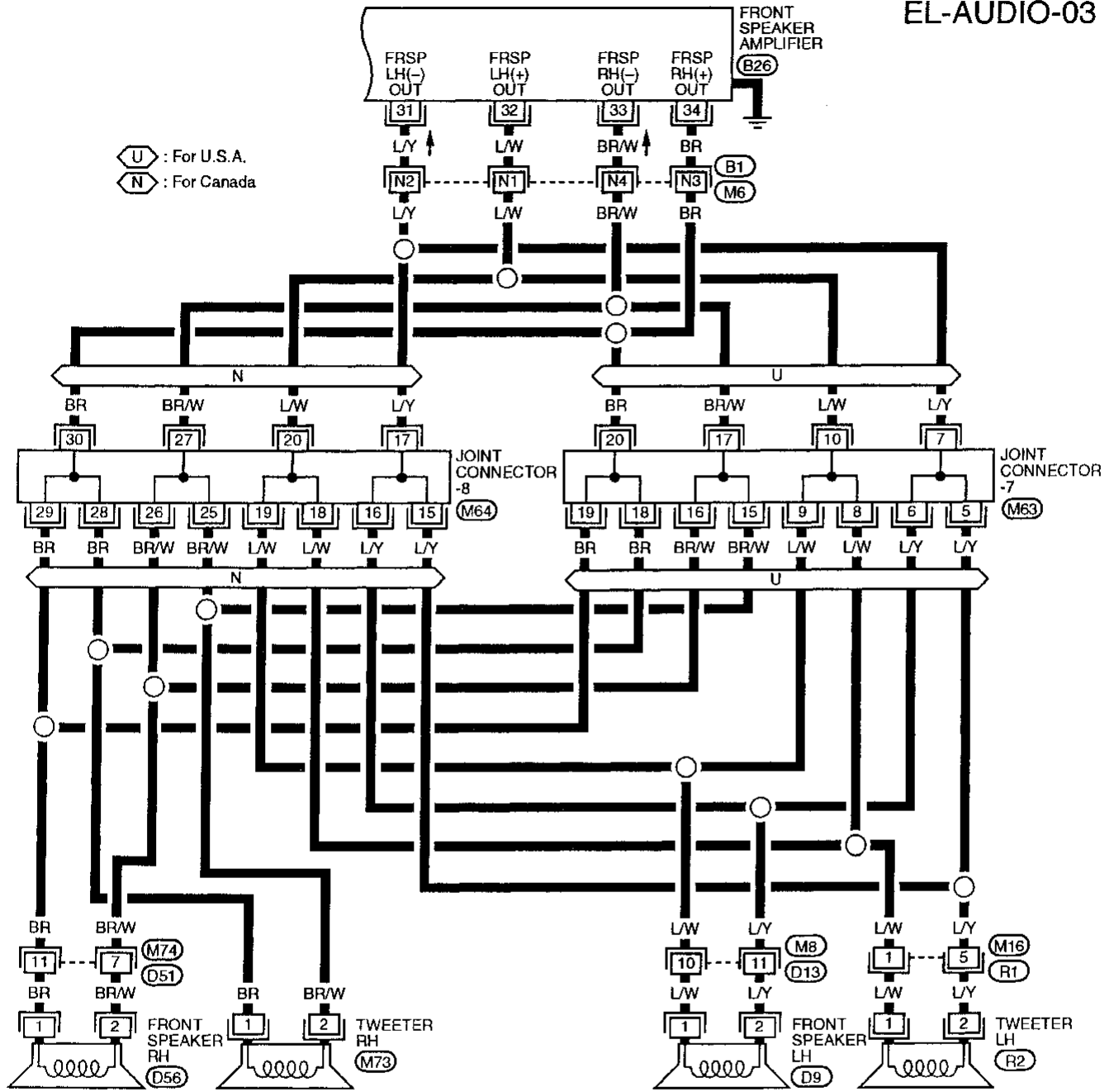
M6, B1



AUDIO AND POWER ANTENNA

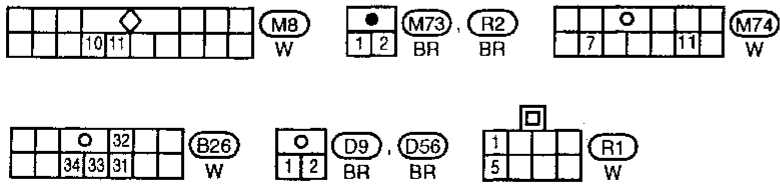
Audio/Wiring Diagram -AUDIO- (Cont'd)

EL-AUDIO-03



U : For U.S.A.
N : For Canada

Refer to last page (Foldout page).



M6, B1
M63
M64

AUDIO AND POWER ANTENNA

Power Antenna/System Description

Power is supplied at all times

- through 10A fuse (No. 20 , located in the fuse block)
- to power antenna terminal ⑥.

Ground is supplied to power antenna terminal ② through body ground (T7).

When the radio is turned to the ON position, battery positive voltage is supplied

- through radio terminal ⑤
- to power antenna terminal ④.

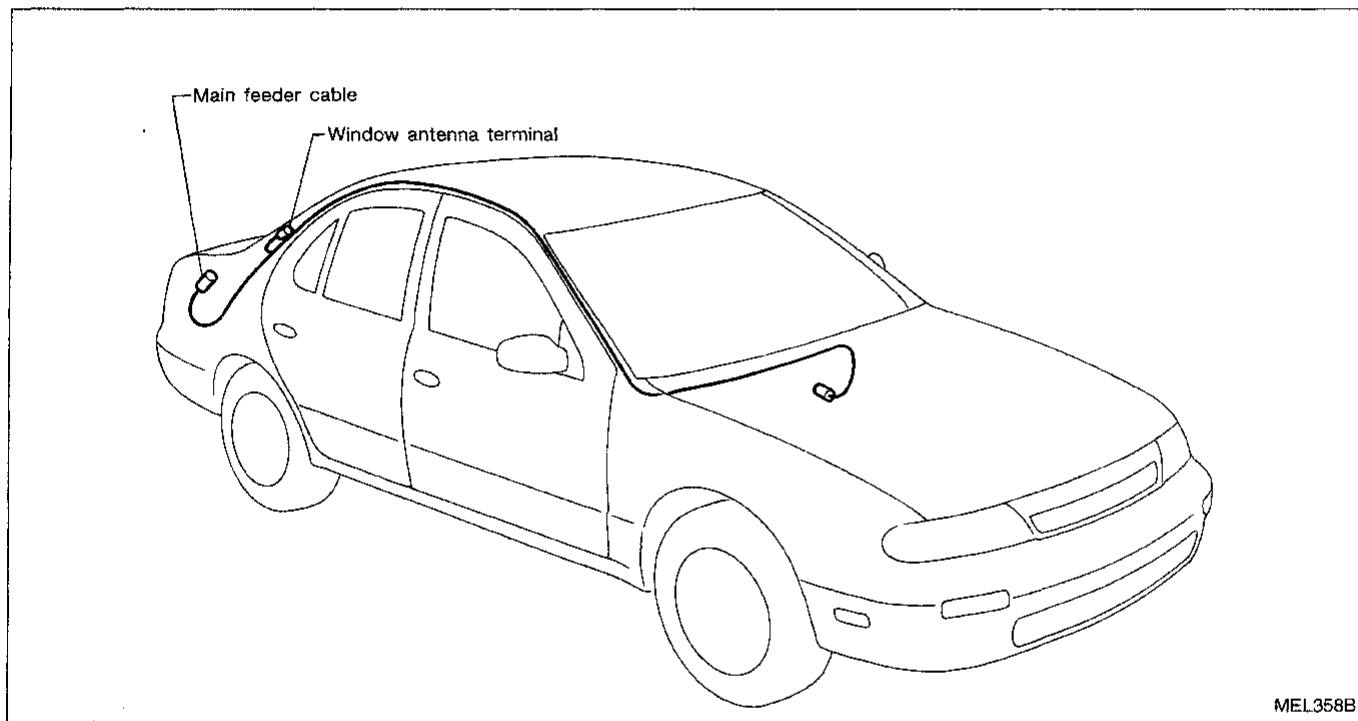
The antenna raises and is held in the extended position.

When the radio is turned to the OFF position, battery positive voltage is interrupted

- from radio terminal ⑤
- to power antenna terminal ④.

The antenna retracts.

Location of Antenna



MEL358B

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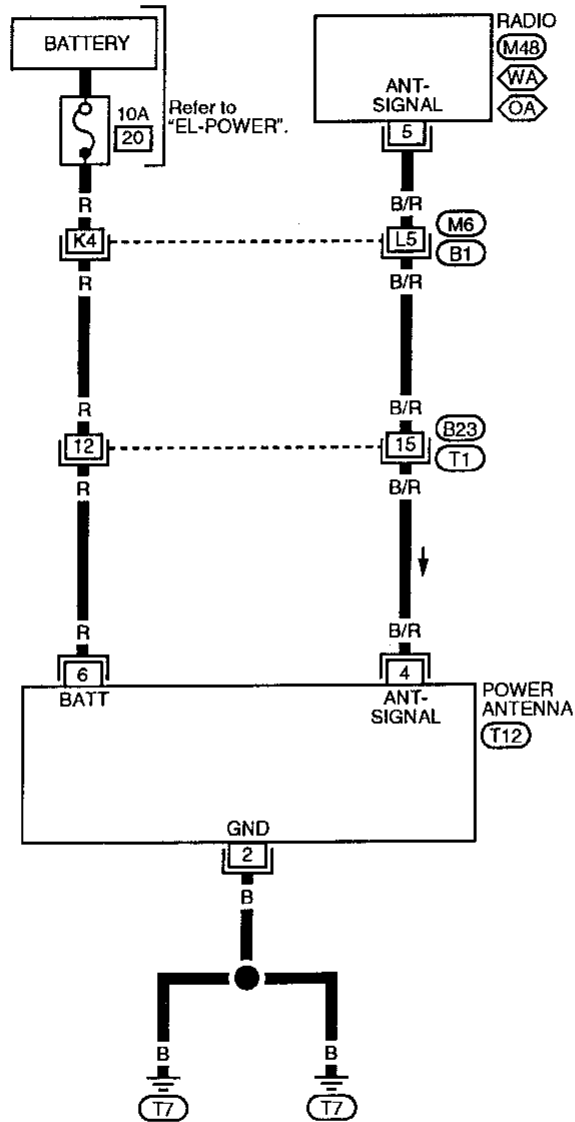
IDX

AUDIO AND POWER ANTENNA

Power Antenna/Wiring Diagram -P/ANT-

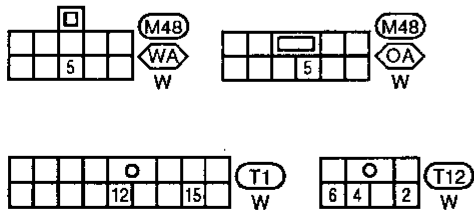
EL-P/ANT-01

WA : Models with active speaker audio system
OA : Models without active speaker audio system



Refer to last page (Foldout page).

M6 , B1



AUDIO AND POWER ANTENNA

Trouble Diagnoses

Symptom	Possible causes	Repair order
Radio inoperative (no digital display and no sound from speakers).	<ol style="list-style-type: none"> 10A fuse (without active speaker audio system) 15A fuse (with active speaker audio system) Poor radio case ground Radio 	<ol style="list-style-type: none"> Check 10A (without active speaker audio system) or 15A (with active speaker audio system) fuse (No. 9 , located in fuse block). Turn ignition switch ON and verify battery positive voltage is present at terminal 10 of radio (and terminal 16 of rear speaker amplifier and terminal 36 of front speaker amplifier with active speakers). Check radio case ground. Remove radio for repair.
Radio controls are operational, but no sound is heard from any speaker.	<ol style="list-style-type: none"> Radio output Radio 	<ol style="list-style-type: none"> Check radio output voltages. Remove radio for repair.
Radio presets are lost when ignition switch is turned OFF.	<ol style="list-style-type: none"> 10A fuse Radio 	<ol style="list-style-type: none"> Check 10A fuse (No. 20 , located in fuse block) and verify battery positive voltage is present at terminal 6 of radio. Remove radio for repair.
Rear speakers are inoperative.	<p>WITH ACTIVE SPEAKER AUDIO SYSTEM</p> <ol style="list-style-type: none"> Rear speaker amplifier 10A fuse Poor rear amplifier case ground Rear speaker amplifier Rear speaker amplifier circuit <p>5. Radio</p> <p>WITHOUT ACTIVE SPEAKER AUDIO SYSTEM</p> <ol style="list-style-type: none"> Radio output Radio 	<p>WITH ACTIVE SPEAKER AUDIO SYSTEM</p> <ol style="list-style-type: none"> Check 10A fuse on amplifier. Check rear amplifier case ground. Check rear speaker amplifier voltages. Check wires for open or short between radio, rear speaker amplifier and rear speakers. <p>5. Remove radio for repair.</p> <p>WITHOUT ACTIVE SPEAKER AUDIO SYSTEM</p> <ol style="list-style-type: none"> Check radio output voltages. Remove radio for repair.
Front speakers are inoperative.	<p>WITH ACTIVE SPEAKER AUDIO SYSTEM</p> <ol style="list-style-type: none"> Front speaker amplifier 10A fuse Poor front amplifier case ground Front speaker amplifier Front speaker amplifier circuit <p>5. Radio</p> <p>WITHOUT ACTIVE SPEAKER AUDIO SYSTEM</p> <ol style="list-style-type: none"> Radio output Radio 	<p>WITH ACTIVE SPEAKER AUDIO SYSTEM</p> <ol style="list-style-type: none"> Check 10A fuse on amplifier. Check front amplifier case ground. Check front speaker amplifier voltages. Check wires for open or short between radio, front speaker amplifier and front speakers. <p>5. Remove radio for repair.</p> <p>WITHOUT ACTIVE SPEAKER AUDIO SYSTEM</p> <ol style="list-style-type: none"> Check radio output voltages. Remove radio for repair.
Individual speaker is noisy or inoperative.	<ol style="list-style-type: none"> Speaker Radio/amplifier output Speaker circuit <p>4. Radio</p>	<ol style="list-style-type: none"> Check speaker. Check radio/amplifier output voltages. Check wires for open or short between radio/amplifier and speaker. Remove radio for repair.
AM stations are weak or noisy (FM stations OK).	<ol style="list-style-type: none"> Antenna Poor radio ground Radio 	<ol style="list-style-type: none"> Check antenna. Check radio ground. Remove radio for repair.
FM stations are weak or noisy (AM stations OK).	<ol style="list-style-type: none"> Window antenna Radio 	<ol style="list-style-type: none"> Check window antenna. Remove radio for repair.
Radio generates noise in AM and FM modes with engine running.	<ol style="list-style-type: none"> Poor radio ground Loose or missing ground bonding straps Ignition condenser or rear window defogger noise suppressor condenser Generator Ignition coil or secondary wiring Radio 	<ol style="list-style-type: none"> Check radio ground. Check ground bonding straps. Replace ignition condenser or rear window defogger noise suppressor condenser. Check generator. Check ignition coil and secondary wiring. Remove radio for repair.
Radio generates noise in AM and FM modes with accessories on (switch pops and motor noise).	<ol style="list-style-type: none"> Poor radio ground Antenna Accessory ground Faulty accessory 	<ol style="list-style-type: none"> Check radio ground. Check antenna. Check accessory ground. Replace accessory.
Power antenna does not operate.	<ol style="list-style-type: none"> 10A fuse Radio signal Poor power antenna ground 	<ol style="list-style-type: none"> Check 10A fuse (No. 20 , located in fuse block). Verify battery positive voltage is present at terminal 6 of power antenna. Turn radio ON and verify battery positive voltage is present at terminal 4 of power antenna. Check power antenna ground.

AUDIO AND POWER ANTENNA

Trouble Diagnoses (Cont'd)

SPEAKER INSPECTION

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

ANTENNA INSPECTION

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

RADIO AND AMPLIFIER INSPECTION

All voltage inspections are made with:

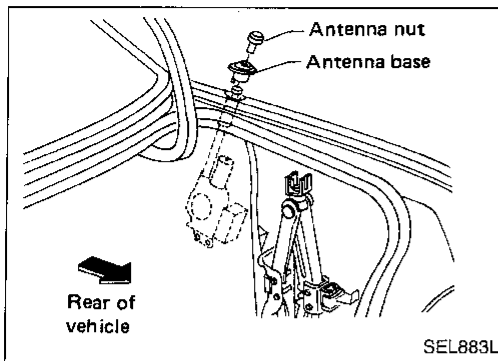
- Ignition switch ON or ACC
- Radio ON
- Radio and amplifiers connected (If either is removed for inspection, supply a ground to the case using a jumper wire.)

RADIO VOLTAGES

Terminal	Voltage (V)	
	Without Active Speaker Audio System	With Active Speaker Audio System
1	5 - 7.5	2.5 - 6.5
2	5 - 7.5	2.5 - 6.5
3	5 - 7.5	2.5 - 6.5
4	5 - 7.5	2.5 - 6.5
5	10 - 15 (0 when tape is playing)	9 - 15 (0 when tape is playing)
6	10.8 - 15.6	10.8 - 15.6
7	—	—
8	—	—
9	0	0
10	10.8 - 15.6	10.8 - 15.6
11	—	0
12	—	19 - 15
13	5 - 7.5	2.5 - 6.5
14	5 - 7.5	2.5 - 6.5
15	5 - 7.5	2.5 - 6.5
16	5 - 7.5	2.5 - 6.5

AMPLIFIER VOLTAGES

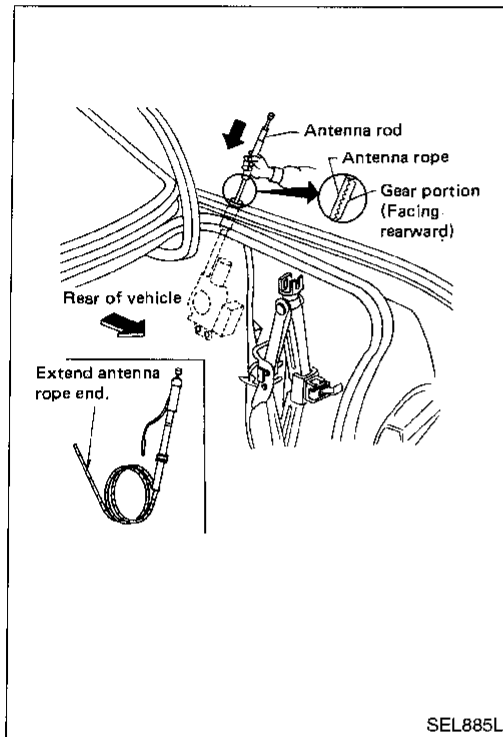
Terminal		Voltages (V)
Front Amplifier	Rear Amplifier	
27	7	2.5 - 6.5
28	8	2.5 - 6.5
29	9	2.5 - 6.5
30	10	2.5 - 6.5
31	11	4.5 - 8.5
32	12	4.5 - 8.5
33	13	4.5 - 8.5
34	14	4.5 - 8.5
35	15	0
36	16	10.8 - 15.6
37	17	—
38	18	9 - 15



Antenna Rod Replacement

REMOVAL

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



INSTALLATION

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

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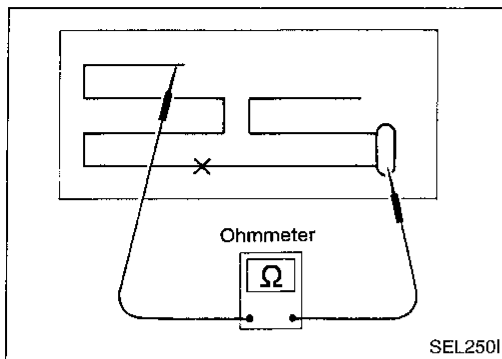
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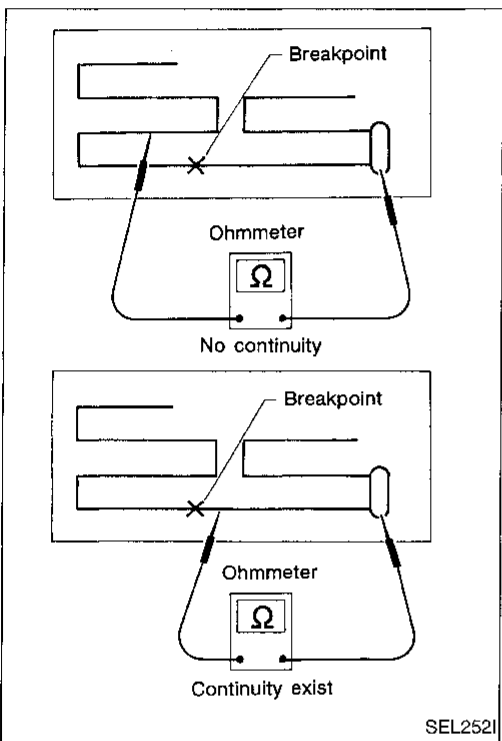
Window Antenna Repair

ELEMENT CHECK

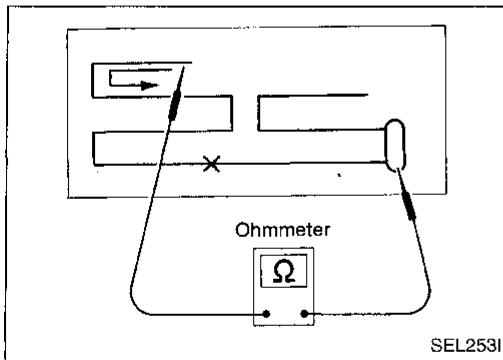
1. Attach probe circuit tester (in ohm range) to each side of antenna terminal.



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



3. To locate a burned out point, move probe along filament. Tester needle swings abruptly at the burned point.



ELEMENT REPAIR

Refer to "Filament Repair", "REAR WINDOW DEFOGGER", (EL-134).

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

System Description

Refer to Owner's Manual for ASCD operating instructions.

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

- through 10A fuse (No. 26 , located in the fuse block)
- to ASCD cancel switch terminal ① (A/T models)
- with brake pedal released, power remains supplied through ASCD cancel switch terminal ② (A/T models) and
- to ASCD hold relay terminal ⑦ (A/T models)
- through 10A fuse (No. 26 , located in the fuse block)
- to ASCD main switch terminal ① and
- to ASCD hold relay terminal ⑤ (M/T models) or
- to ASCD hold relay terminal ⑤ (A/T models).

When ASCD main switch is in the ON position, power is supplied

- from terminal ② of the ASCD main switch
- to ASCD control unit terminal ④ and
- from terminal ③ of the ASCD main switch
- to ASCD hold relay terminal ① (M/T models) or
- to ASCD hold relay terminal ① (A/T models).

Ground is supplied

- to ASCD hold relay terminal ② (M/T models) or
- to ASCD hold relay terminal ② (A/T models).
- through body grounds E12 and E37 .

With power and ground supplied, the ASCD hold relay is activated, and power is supplied

- from terminal ③ of the ASCD hold relay (M/T or A/T models)
- to ASCD control unit terminal ④ and
- to ASCD clutch pedal position switch terminal ① (M/T models) or
- from terminal ⑥ of the ASCD hold relay (A/T models)
- to inhibitor relay terminal ③ (A/T models).

Power remains supplied to ASCD control unit terminal ④ when the ASCD main switch is released to the N (neutral) position.

Ground is supplied

- to ASCD control unit terminal ③
- through body grounds M51 , M76 and M77 .

Inputs

At this point, the system is ready to activate or deactivate, based on inputs from the following:

- speedometer in the combination meter
- stop lamp switch
- ASCD steering switch
- inhibitor relay (A/T models)
- ASCD clutch pedal position switch (M/T models)
- ASCD cancel switch.

A vehicle speed input is supplied

- to ASCD control unit terminal ⑦
- from terminal ⑤ of the combination meter.

Power is supplied at all times

- to stop lamp switch terminal ①
- through 15A fuse (No. 18 , located in the fuse block).

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. 35 , located in the fusible link and fuse box)
- to horn relay terminal ①
- through terminal ③ of the horn relay
- to ASCD steering switch terminal ⑫.

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AUTOMATIC SPEED CONTROL DEVICE (ASCD)

System Description (Cont'd)

When the SET/COAST button is depressed, power is supplied

- from terminal ⑭ of the ASCD steering switch
- to ASCD control unit terminal ②.

When the RESUME/ACCEL button is depressed, power is supplied

- from terminal ⑬ 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 shift lever is placed in P or N (A/T models)
- the clutch pedal is depressed (M/T models) or
- the brake pedal is depressed.

Outputs

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

Power is supplied

- from terminal ⑧ of the ASCD control unit
- to ASCD actuator terminal ①.

Ground is supplied to the vacuum motor

- from terminal ⑨ of the ASCD control unit
- to ASCD actuator terminal ④.

Ground is supplied to the air valve

- from terminal ⑩ of the ASCD control unit
- to ASCD actuator terminal ②.

Ground is supplied to the release valve

- from terminal ⑭ of the ASCD control unit
- to ASCD actuator terminal ③.

When the system is activated, power is supplied

- from terminal ⑬ of the ASCD control unit
- to combination meter terminal ⑳ and
- to A/T control unit terminal ⑳ (A/T models).

Ground is supplied

- to combination meter terminal ⑳
- through body grounds (M51), (M76) and (M77).

With power and ground supplied, the CRUISE indicator illuminates.

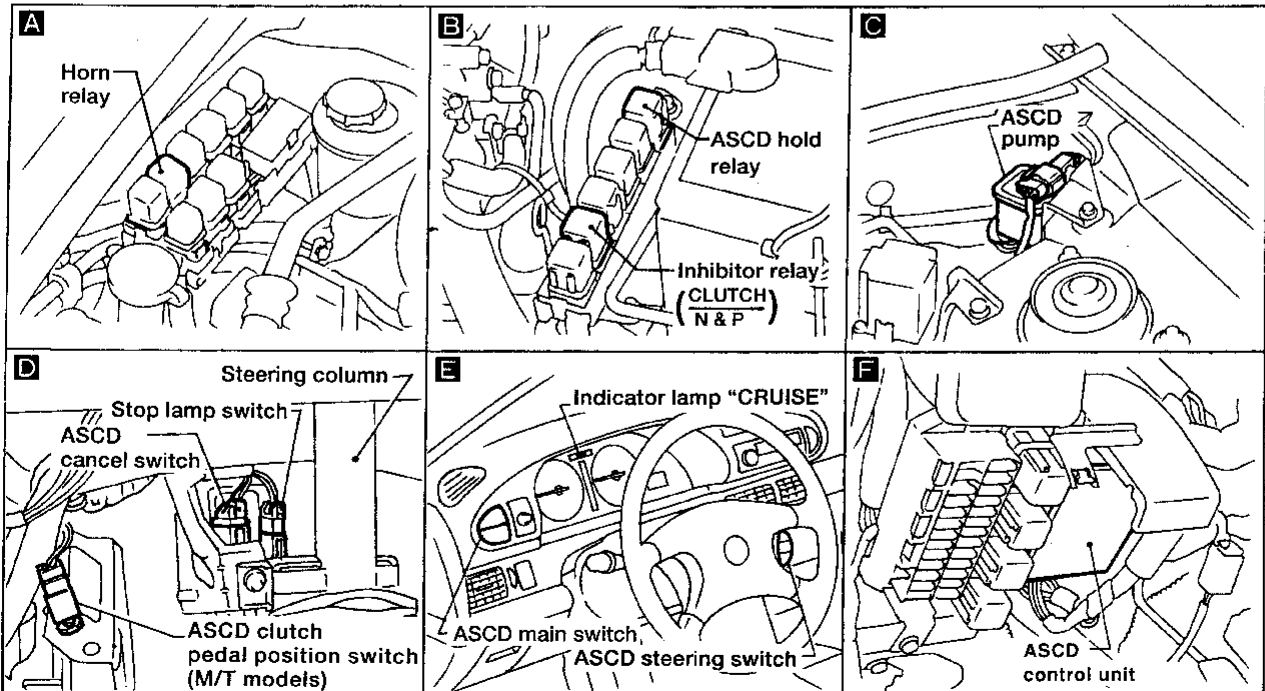
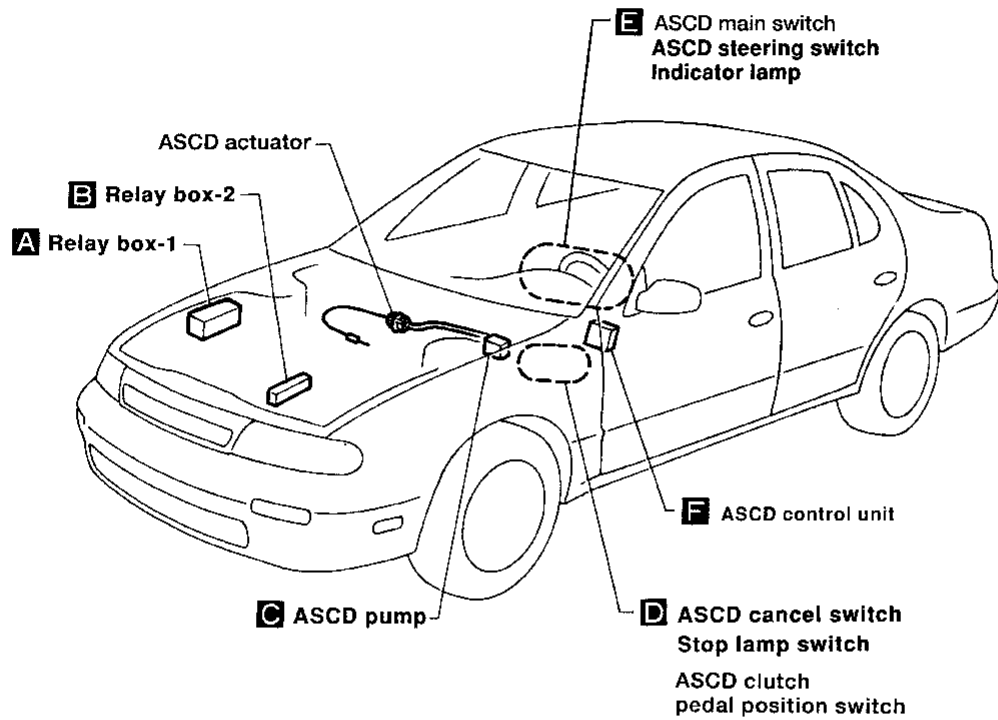
When the RESUME/ACCEL button is depressed on A/T models, a signal is sent

- from terminal ⑫ of the ASCD control unit
- to A/T control unit terminal ④.

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

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Component Parts and Harness Connector Location



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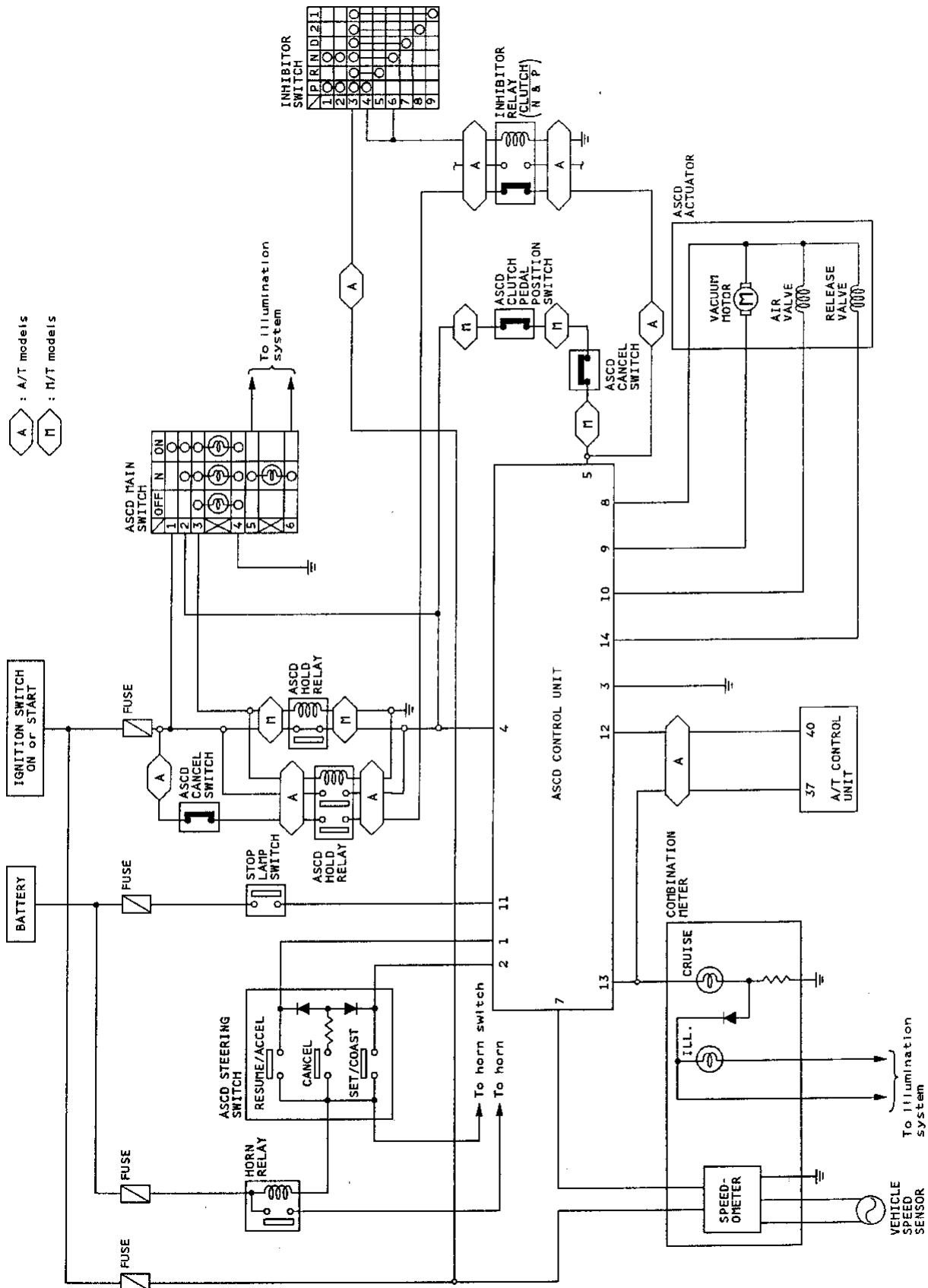
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AUTOMATIC SPEED CONTROL DEVICE (ASCD)

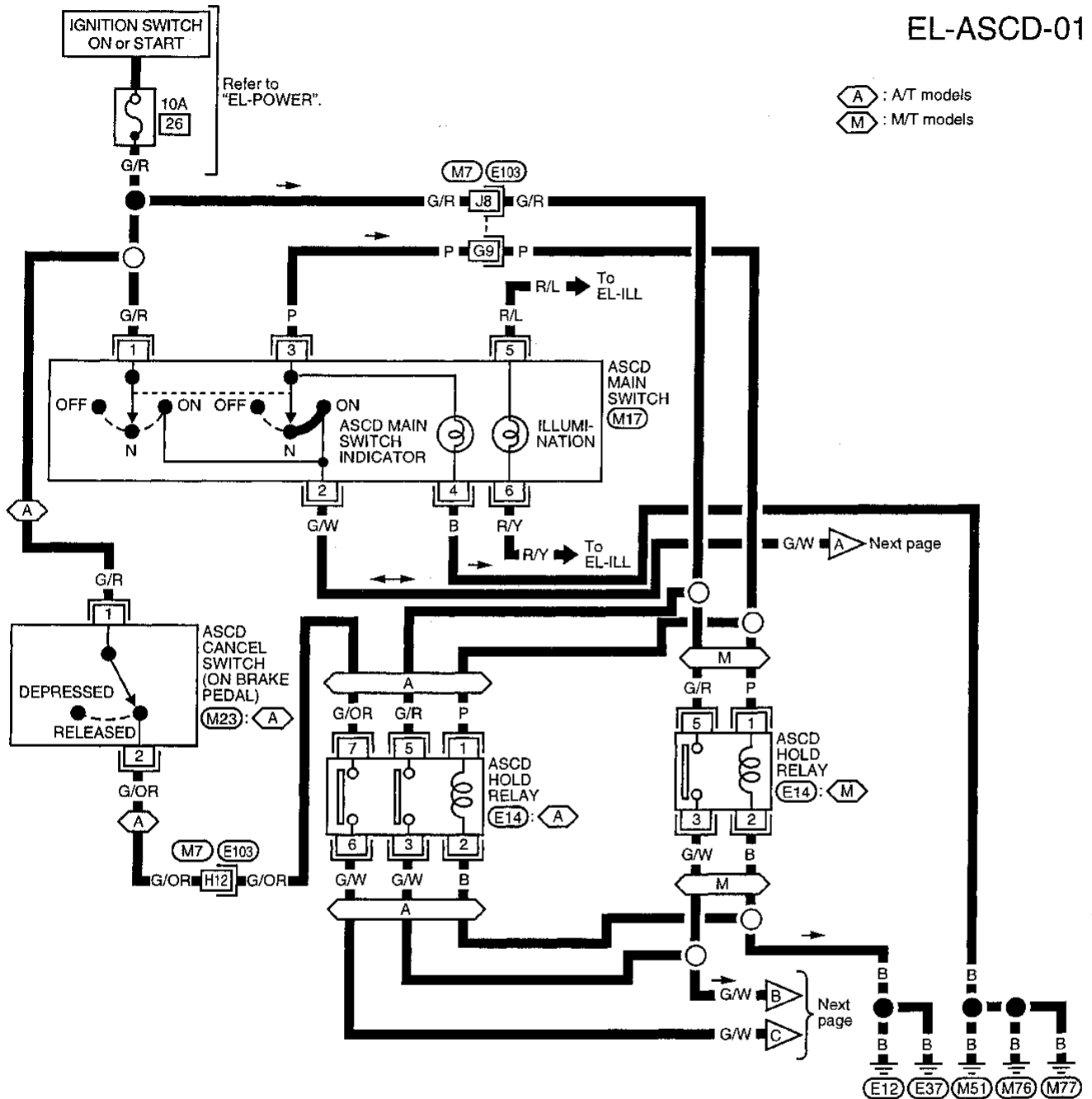
Schematic



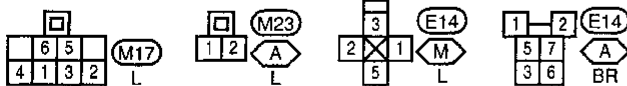
AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Wiring Diagram -ASCD-

EL-ASCD-01



⬡ A : A/T models
 ⬡ M : M/T models

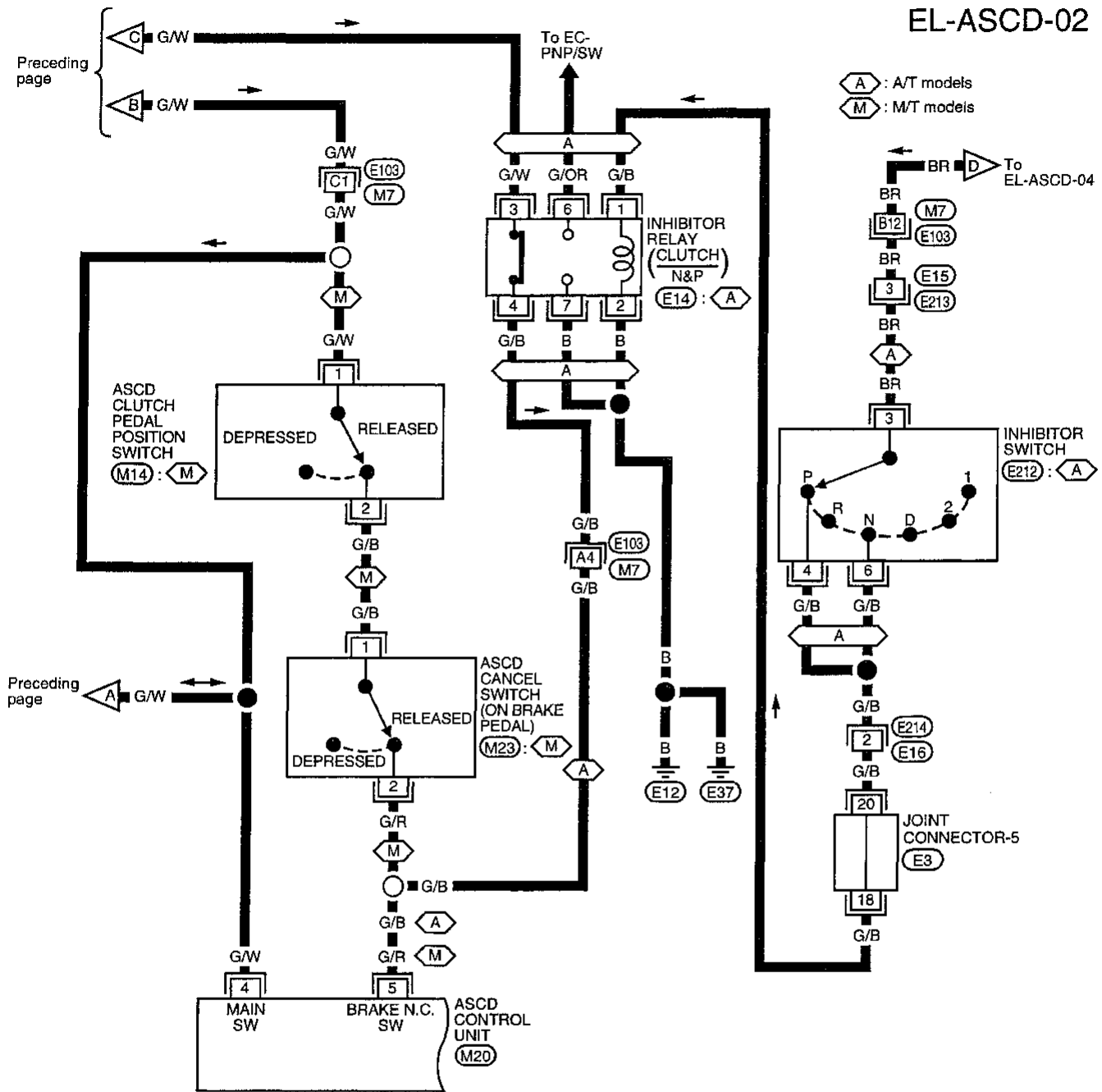


Refer to last page (Foldout page).
 (M7), (E103)

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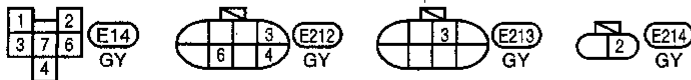
AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Wiring Diagram -ASCD- (Cont'd)



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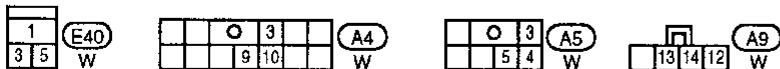
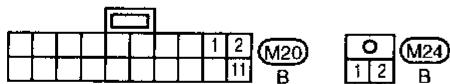
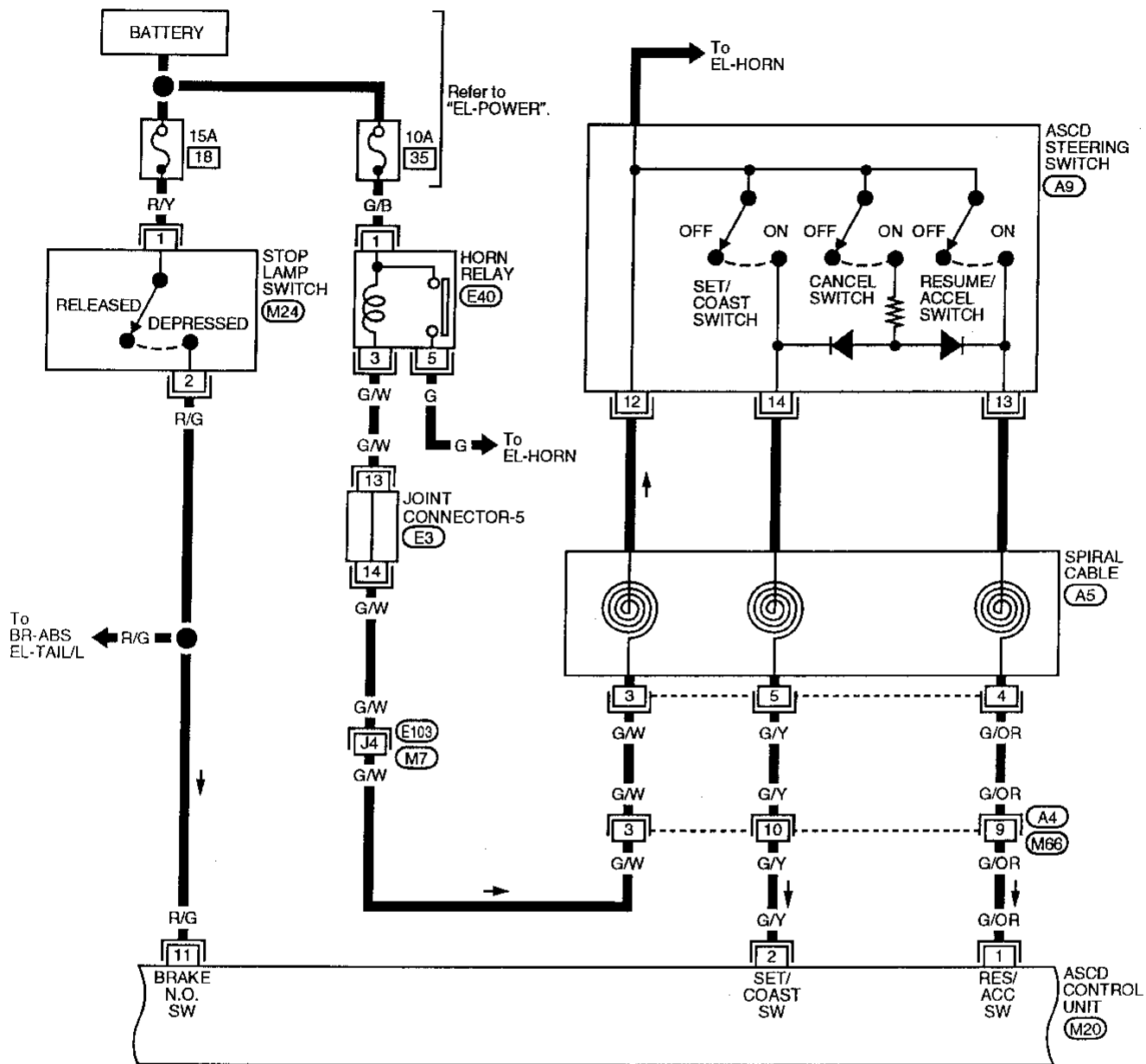
M7, E103
E3



AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Wiring Diagram -ASCD- (Cont'd)

EL-ASCD-03



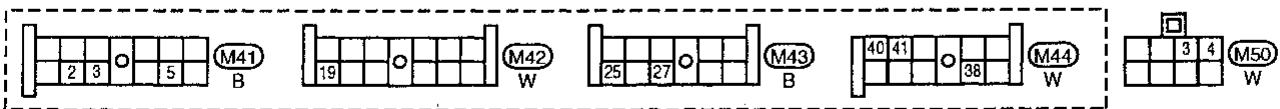
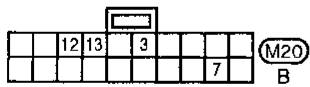
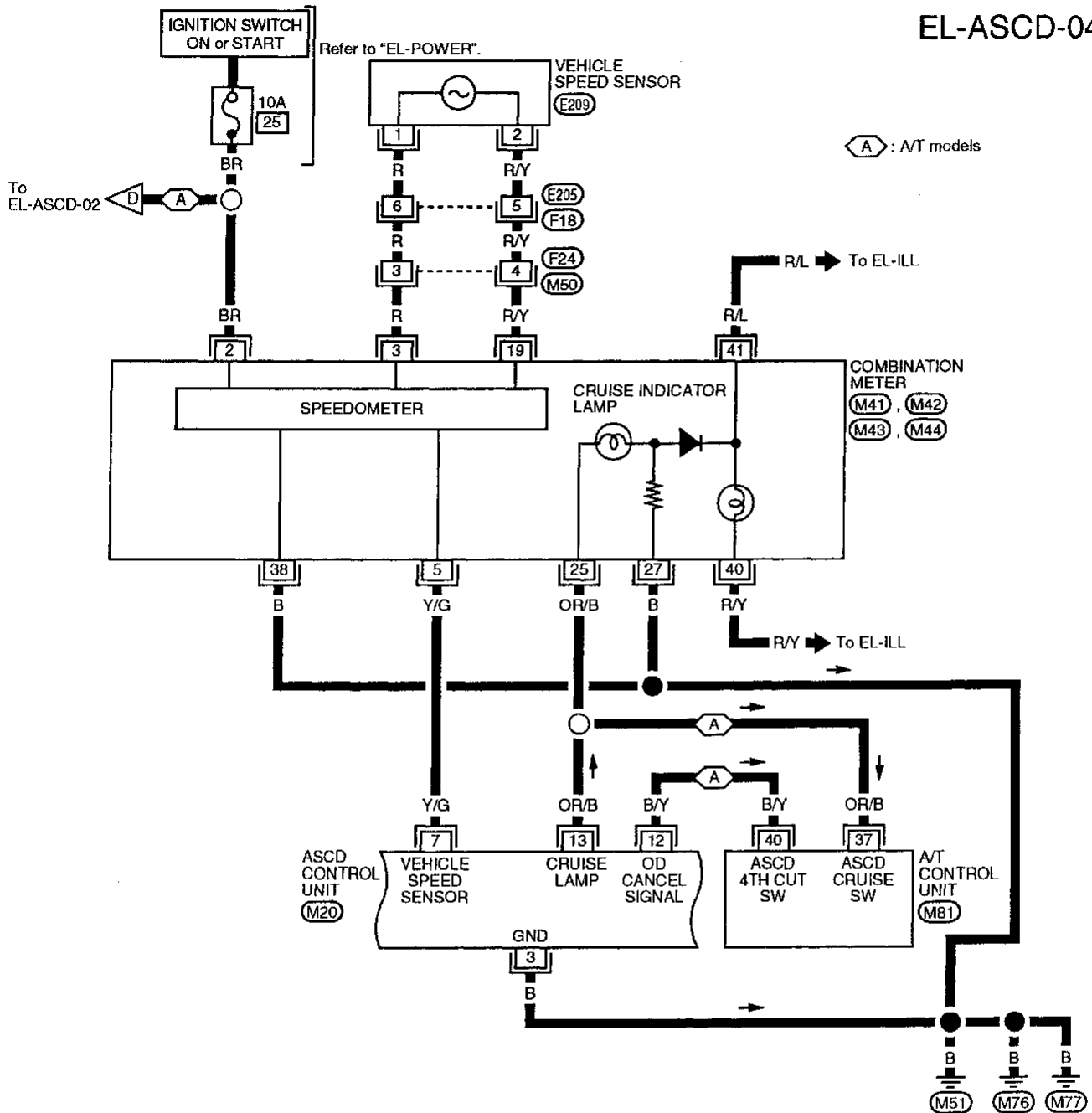
Refer to last page (Foldout page).

M7, E103
E9

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Wiring Diagram -ASCD- (Cont'd)

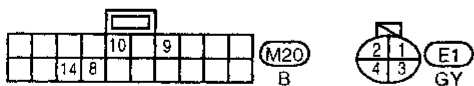
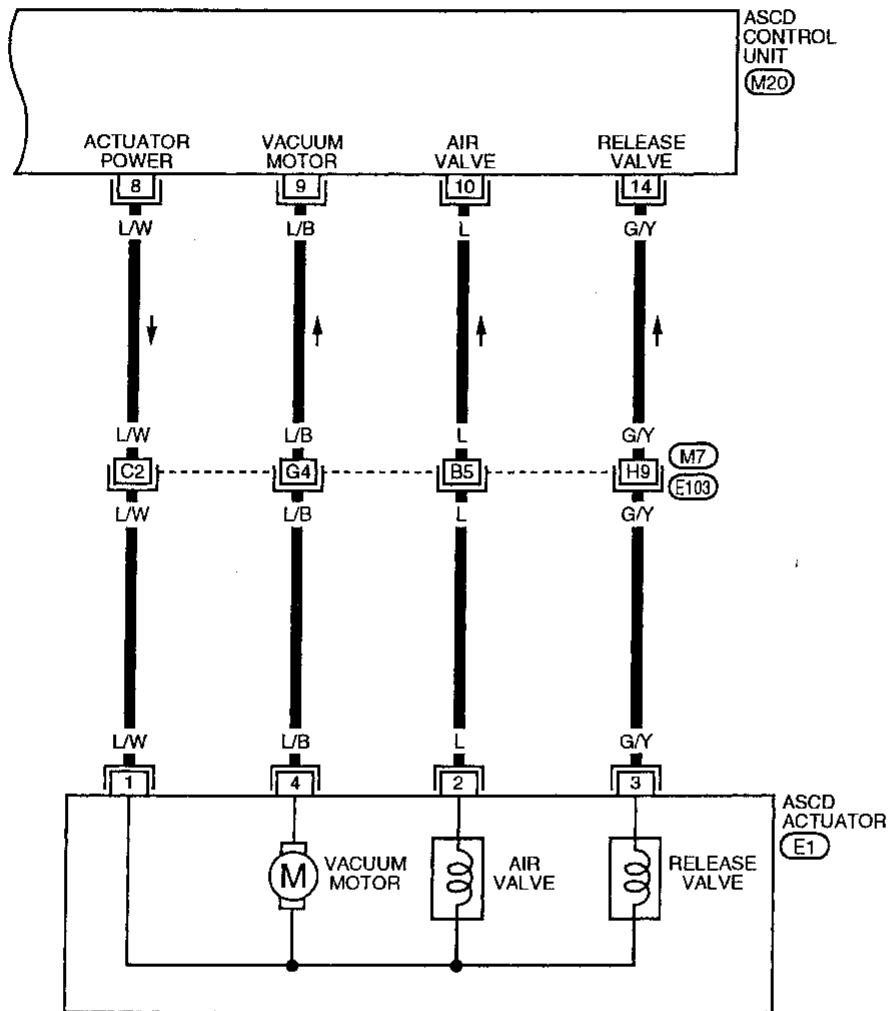
EL-ASCD-04



AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Wiring Diagram -ASCD- (Cont'd)

EL-ASCD-05



Refer to last page (Foldout page).

(M7) (E103)

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AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses

SYMPTOM CHART

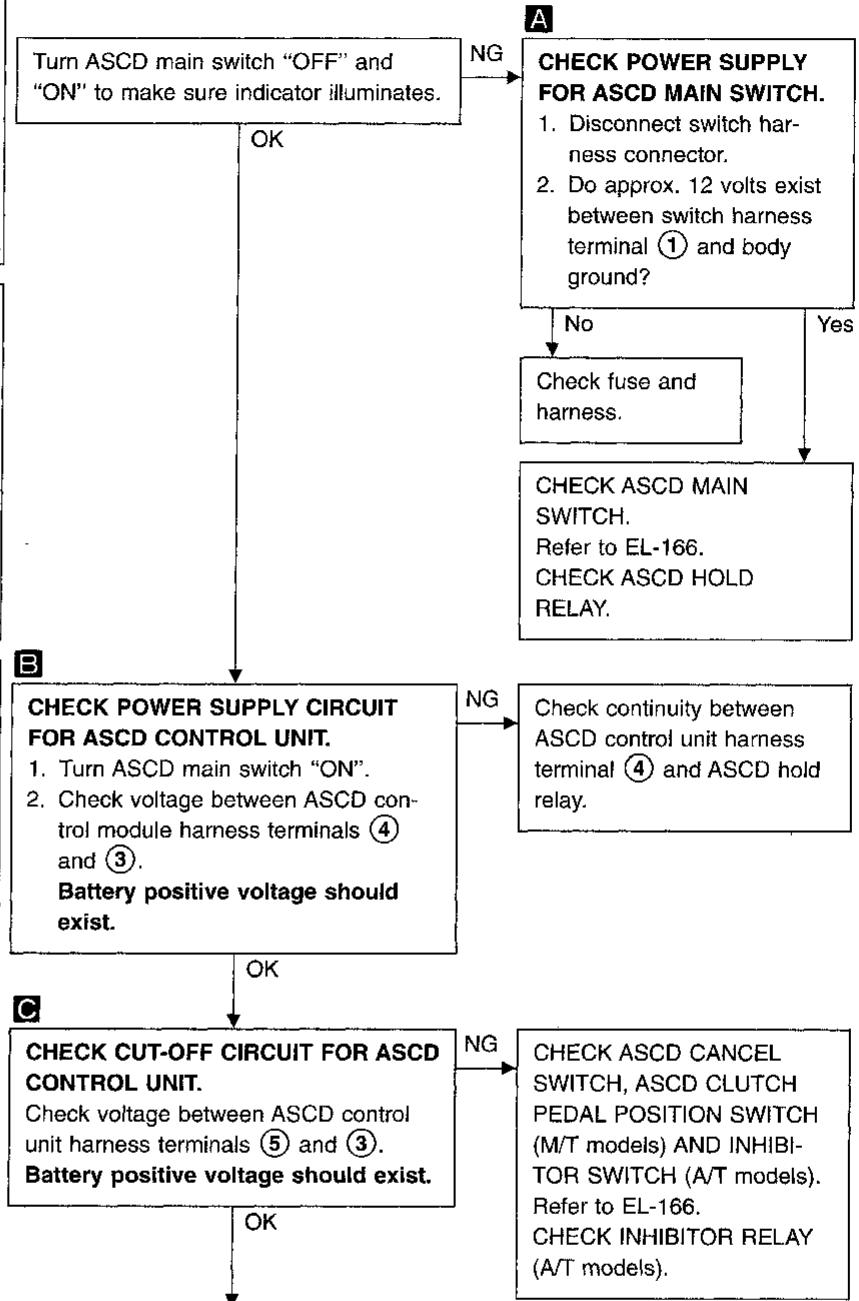
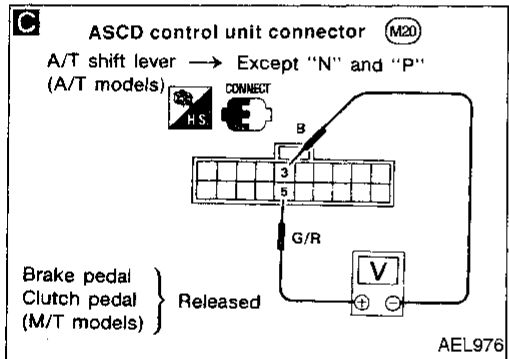
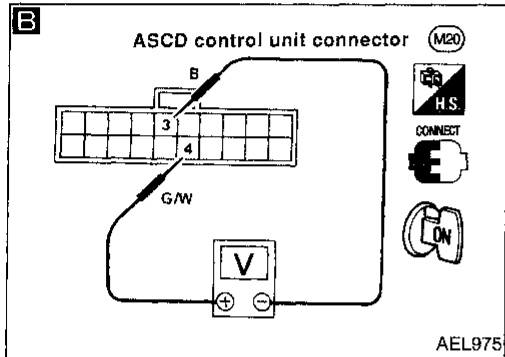
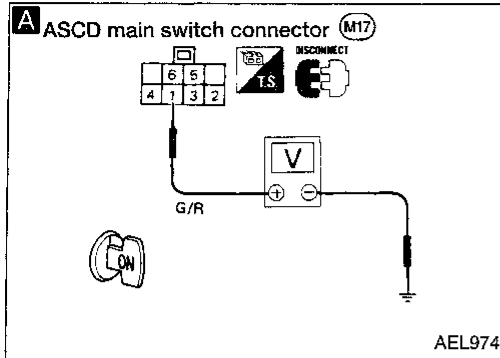
PROCEDURE	Diagnostic Procedure								—	Electrical Components Inspection						
REFERENCE PAGE	EL-157	EL-159	EL-159	EL-159	EL-160	EL-161	EL-162	EL-163	EL-164	EL-165	EL-166	EL-166	EL-166	EL-166	EL-166	EL-167
SYMPTOM	Diagnostic Procedure 1	Diagnostic Procedure 2	Diagnostic Procedure 3	Diagnostic Procedure 4	Diagnostic Procedure 5	Diagnostic Procedure 6	Diagnostic Procedure 7	Diagnostic Procedure 8	ASCD Wire Adjustment	ASCD actuator/ASCD pump	ASCD main switch	ASCD steering switch	ASCD cancel switch and stop lamp switch	Clutch pedal position switch (M/T models)	Inhibitor switch (A/T models)	Vehicle speed sensor
ASCD control unit cannot be set properly.	<input type="radio"/>									<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Engine hunts.		<input type="radio"/>							<input type="radio"/>	<input type="radio"/>						
Large difference between set speed and actual vehicle speed.			<input type="radio"/>						<input type="radio"/>	<input type="radio"/>						
Deceleration is greatest immediately after ASCD has been set.				<input type="radio"/>					<input type="radio"/>	<input type="radio"/>						
ACCEL switch will not operate.	<input type="radio"/>				<input type="radio"/>							<input type="radio"/>				
RESUME switch will not operate.	<input type="radio"/>					<input type="radio"/>						<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Set speed cannot be cancelled.							<input type="radio"/>		<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>		
"CRUISE" indicator lamp blinks.								<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>			

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 1

SYMPTOM: ASCD control cannot be set.

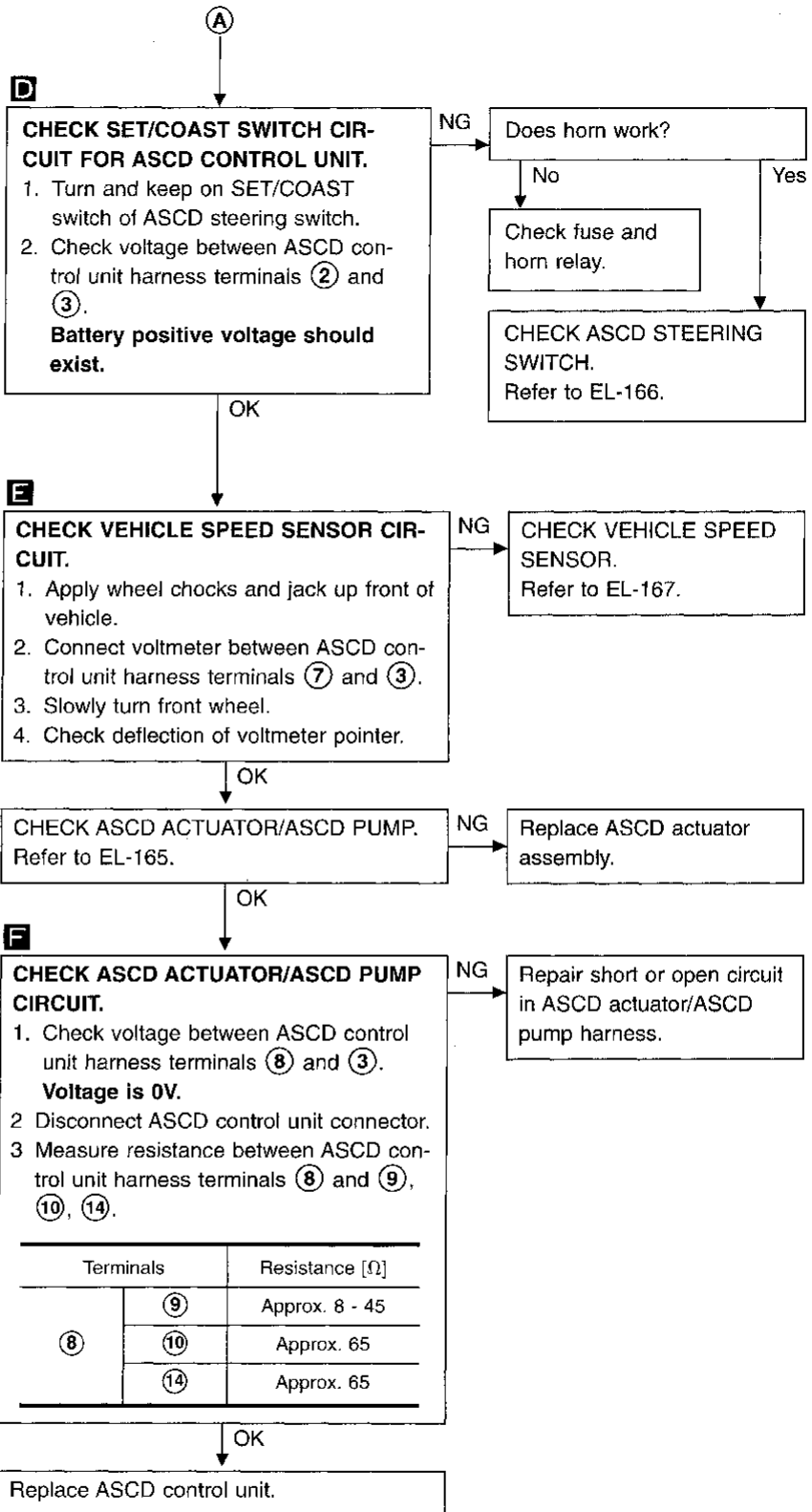
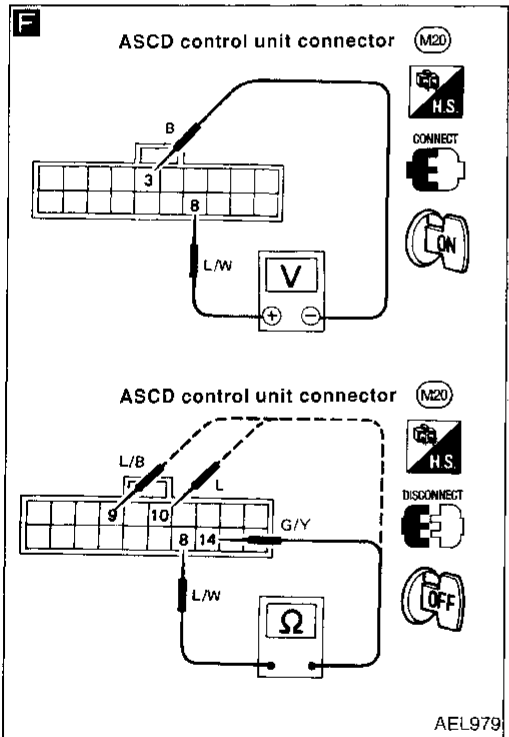
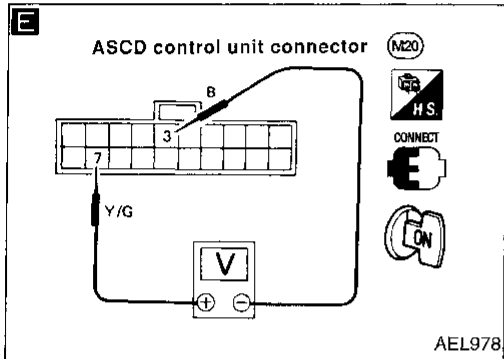
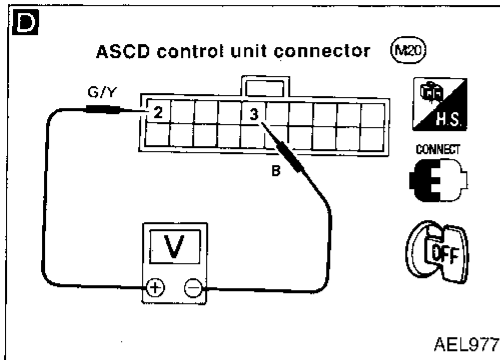


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AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses (Cont'd)

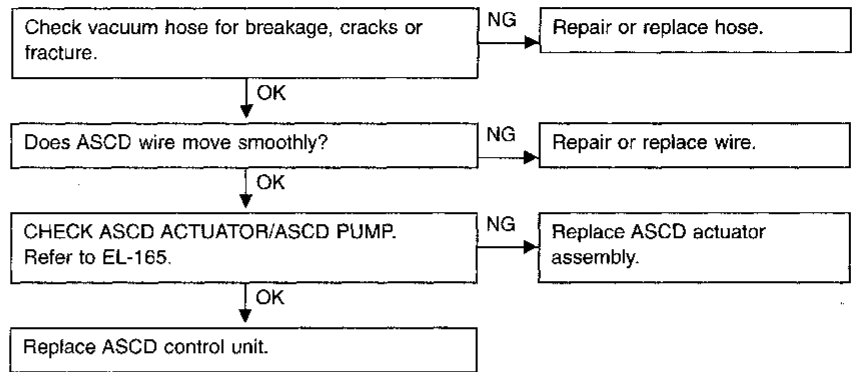


AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses (Cont'd)

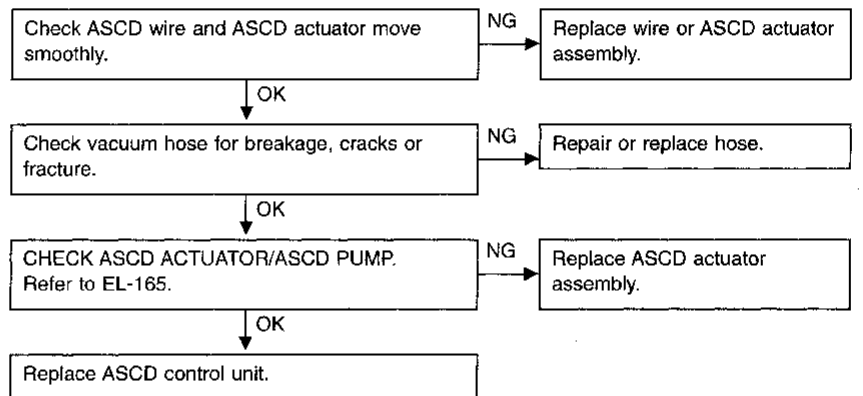
DIAGNOSTIC PROCEDURE 2

SYMPTOM: Engine hunts.



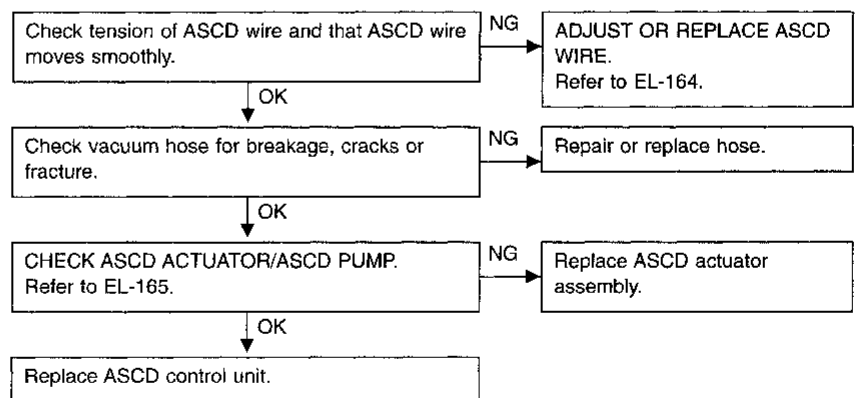
DIAGNOSTIC PROCEDURE 3

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



DIAGNOSTIC PROCEDURE 4

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



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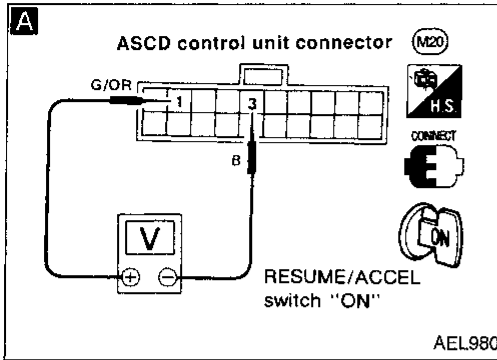
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AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 5

SYMPTOM: ACCEL switch will not operate.

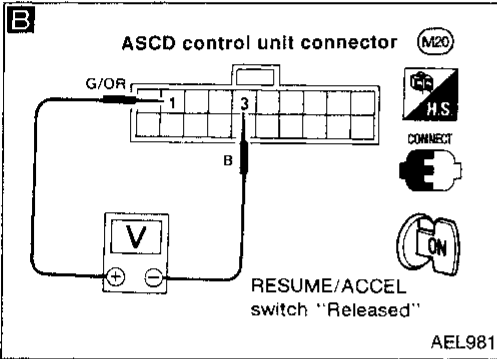


Check constant-speed function for operating using SET/COAST switch.

NG

Perform "DIAGNOSTIC PROCEDURE 1". Refer to EL-157.

OK



Check voltage between ASCDC control unit harness terminals ① and ③ after turning on and holding RESUME/ACCEL switch. **Battery positive voltage should exist.**

NG

CHECK ASCDC STEERING SWITCH. Refer to EL-166.

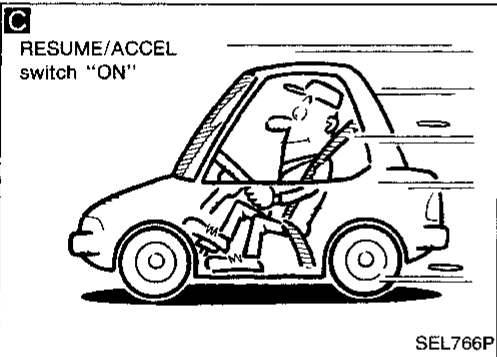
OK

Check voltage between ASCDC control unit harness terminals ① and ③ after releasing RESUME/ACCEL switch. **Voltage is 0V.**

NG

CHECK ASCDC STEERING SWITCH. Refer to EL-166.

OK



Does vehicle accelerate when RESUME/ACCEL switch is turned on?

No

Replace ASCDC control unit.

Yes

Does vehicle maintain the new (faster) speed when RESUME/ACCEL switch is released?

No

Replace ASCDC control unit.

Yes

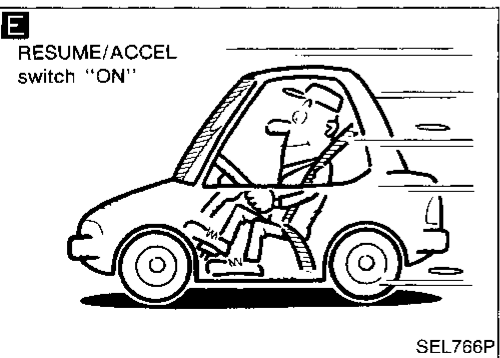
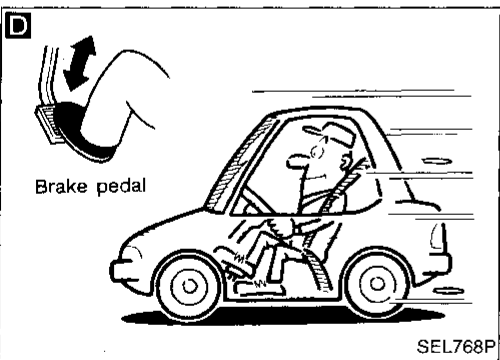
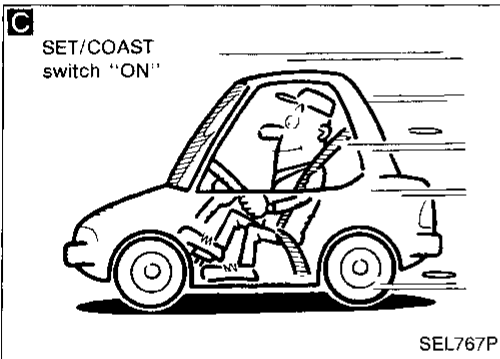
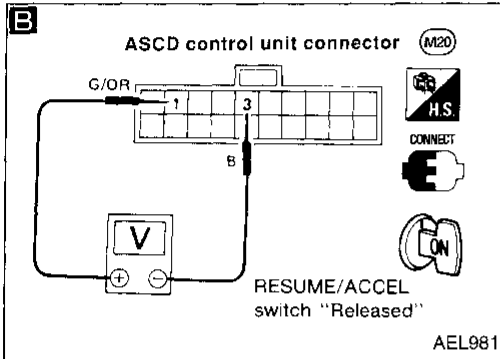
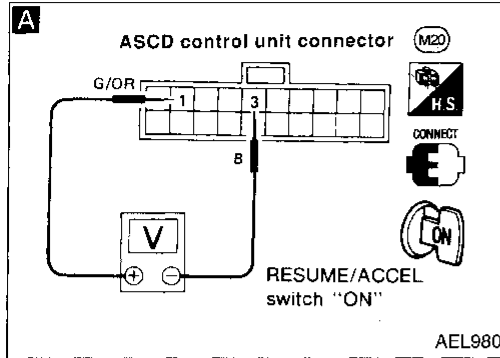
System is O.K.

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 6

SYMPTOM: RESUME switch will not operate.



Check constant-speed function for operation using SET/COAST switch.

NG → Perform "DIAGNOSTIC PROCEDURE 1". Refer to EL-157.

OK ↓

A

Check voltage between ASCD control unit harness terminals ① and ③ after turning on and holding RESUME/ACCEL switch. **Battery positive voltage should exist.**

NG → CHECK ASCD STEERING SWITCH. Refer to EL-166.

OK ↓

B

Check voltage between ASCD control unit harness terminals ① and ③ after releasing RESUME/ACCEL switch. **Voltage is 0V.**

NG → CHECK ASCD STEERING SWITCH. Refer to EL-166.

OK ↓

C

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

OK ↓

D

While cruising at set speed, depress and release brake pedal.

OK ↓

Does speed control disengage and "CRUISE" lamp turn off?

No → CHECK STOP LAMP SWITCH, ASCD CANCEL SWITCH AND ASCD CLUTCH PEDAL POSITION SWITCH (M/T models). Refer to EL-166.

Yes ↓

E

Above 48 km/h (30 MPH), press and release RESUME/ACCEL switch.

OK ↓

Does vehicle return to previously set speed [80 km/h (50 MPH)]?

No → Replace ASCD control unit.

Yes ↓

System is O.K.

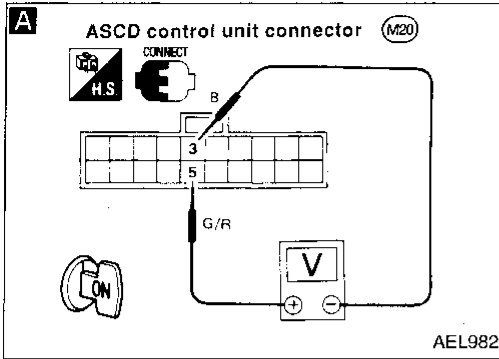
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AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 7

SYMPTOM: Set speed cannot be cancelled.



A

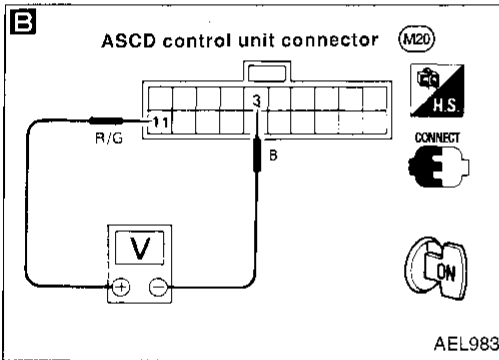
CHECK ASCD CANCEL, CLUTCH PEDAL POSITION, INHIBITOR SWITCH CIRCUIT.

1. Turn ASCD main switch "ON".
2. Check voltage between ASCD control unit harness terminals (5) and (3).

NG → CHECK ASCD CANCEL, CLUTCH PEDAL POSITION, and INHIBITOR SWITCH. Refer to EL-166.

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

OK



B

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

NG → CHECK STOP LAMP SWITCH. Refer to EL-166.

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

OK

Check ASCD wire moves smoothly.

NG → Replace ASCD wire.

OK

CHECK ASCD ACTUATOR/ASCD PUMP. Refer to EL-165.

NG → Replace ASCD actuator assembly.

OK

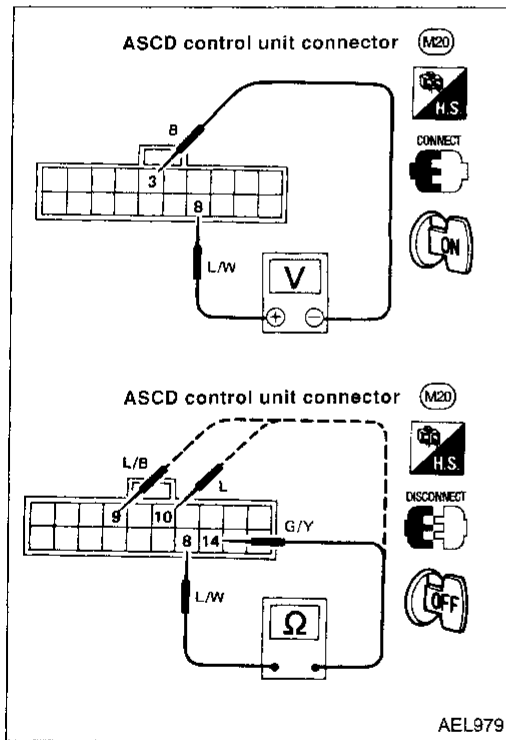
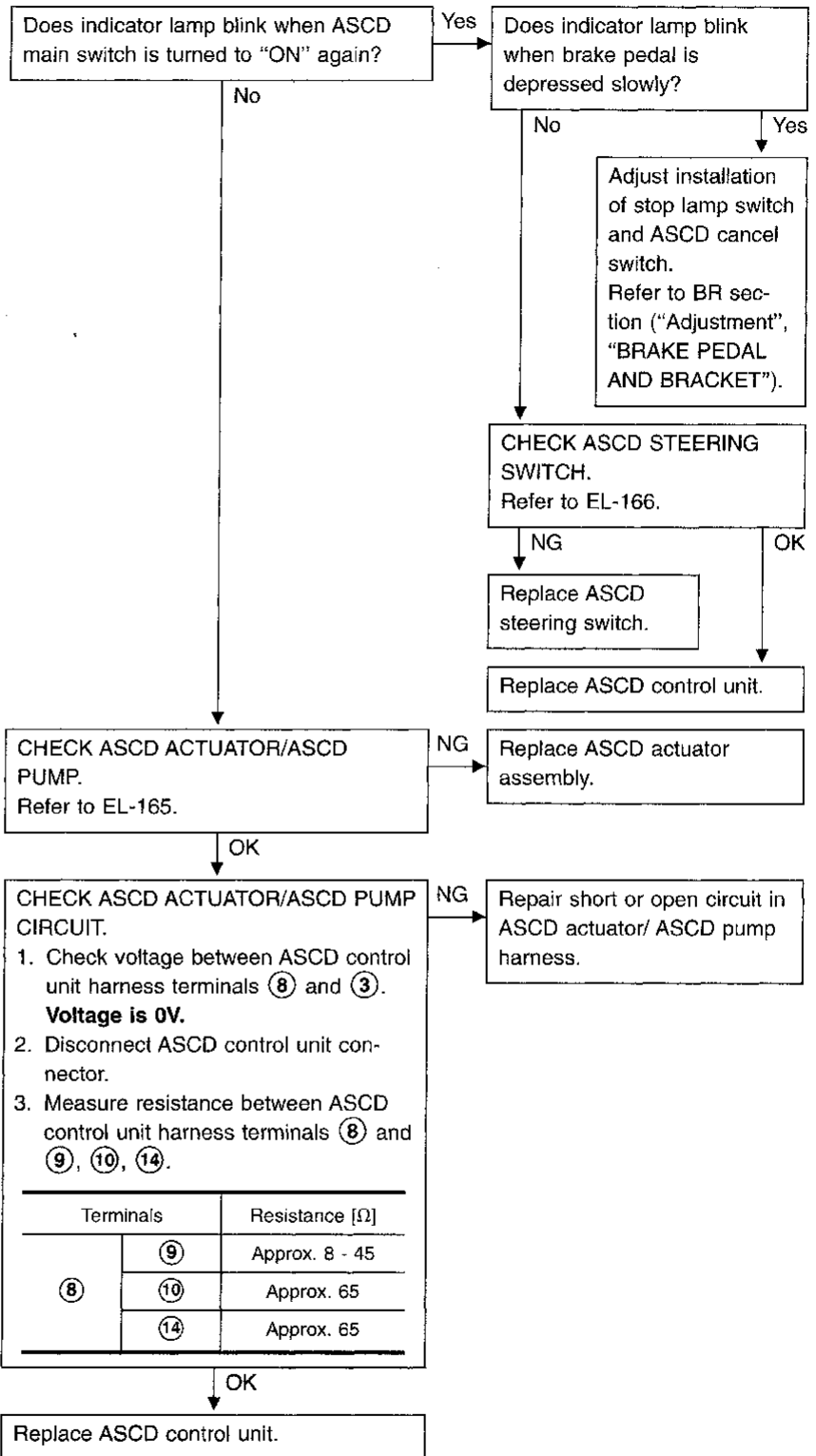
Replace ASCD control unit.

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 8

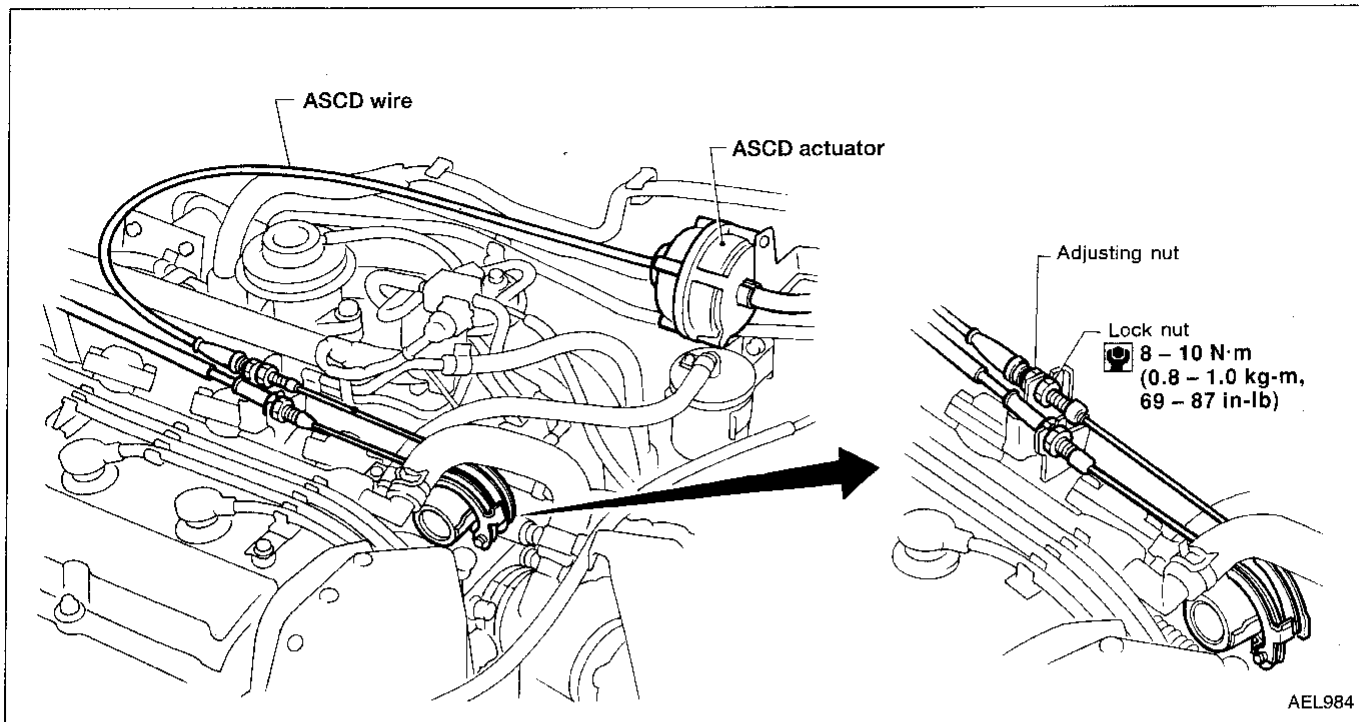
SYMPTOM: "CRUISE" indicator lamp blinks.



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AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses (Cont'd) ASCD WIRE ADJUSTMENT



CAUTION:

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

Confirm that accelerator wire is properly adjusted.

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

Adjust the ASCD wire as follows.

1. Loosen lock nut and tighten adjusting nut until throttle drum starts to move.
 2. From that position turn back adjusting nut 0.5 to 1 turn, and secure lock nut.
(This prevents a delay in the operation of the ASCD.)
- For ASCD cancel switch adjustment, refer to BR and CL sections (“Adjustment”, “BRAKE PEDAL AND BRACKET” and “Adjusting Clutch Pedal”, “INSPECTION AND ADJUSTMENT”, respectively).

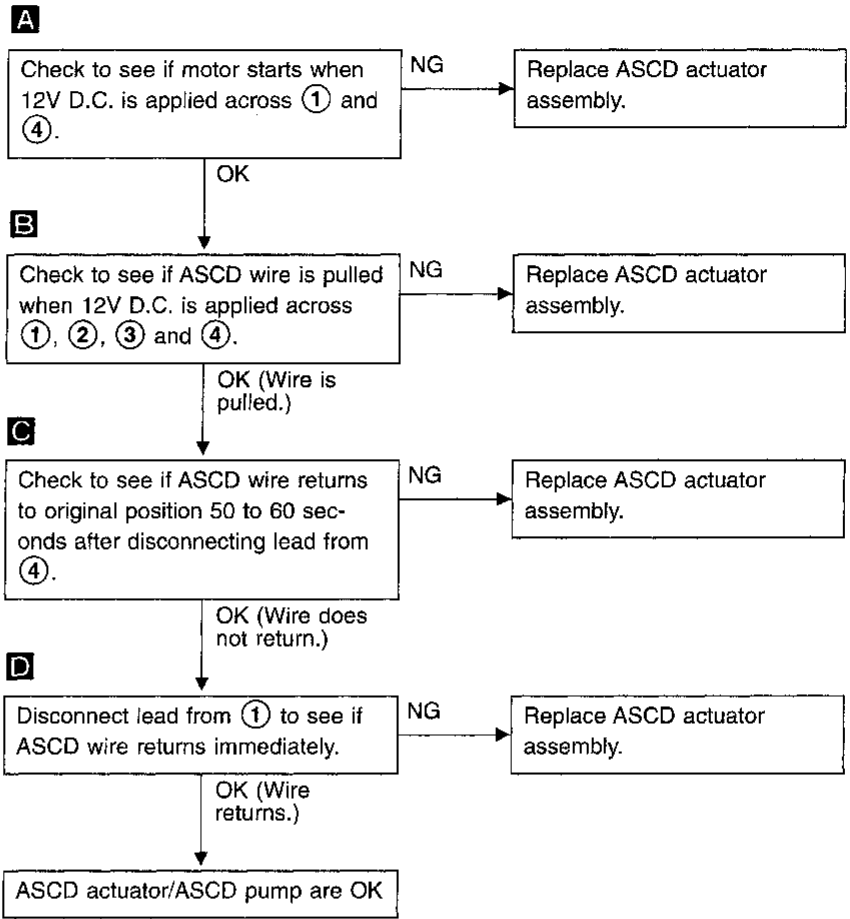
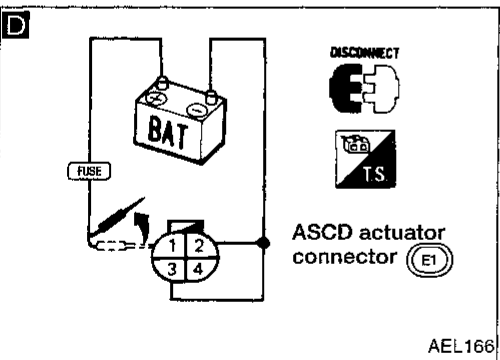
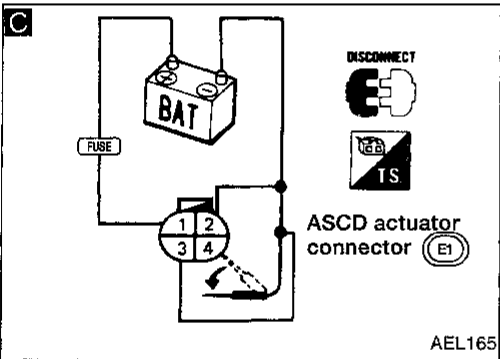
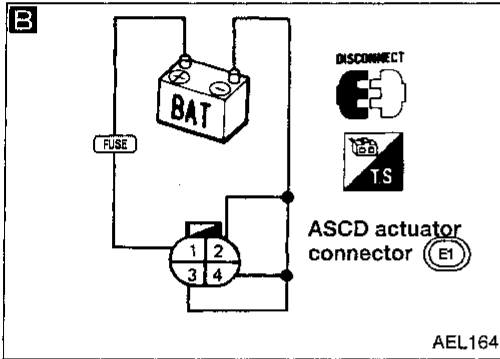
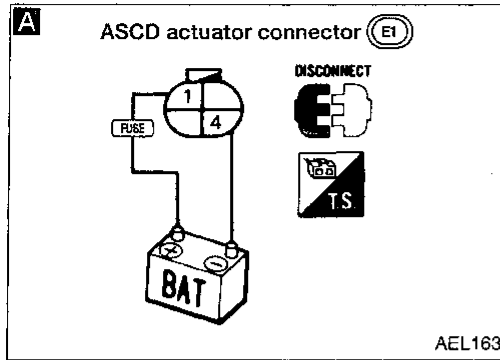
AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses (Cont'd)

ELECTRICAL COMPONENTS INSPECTION

ASCD actuator/ASCD pump

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



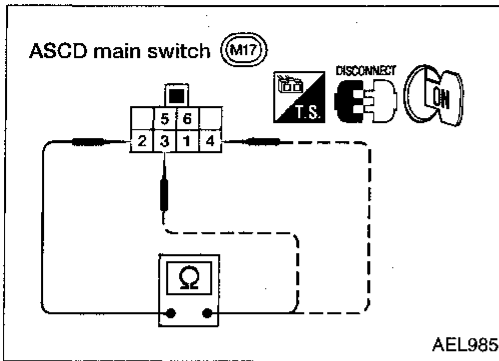
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AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses (Cont'd)

ASCD main switch

Check continuity between terminals by pushing switch to each position.

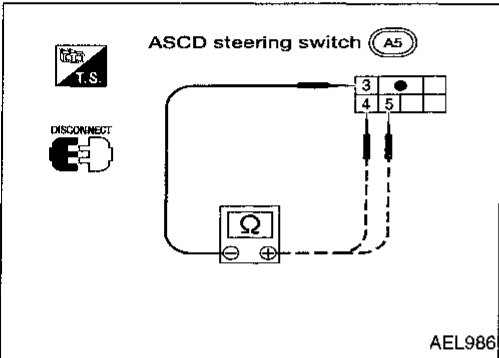


AEL985

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

ASCD steering switch

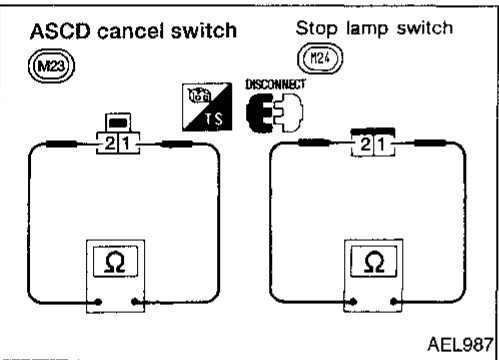
Check continuity between terminals by pushing each button.



AEL986

Button	Terminal		
	3	5	4
SET/COAST	○	○	
RESUME/ACCEL	○		○
CANCEL	○	▶	
	○	▶	○

ASCD cancel switch and stop lamp switch

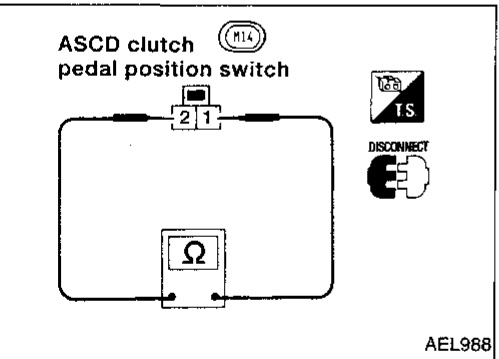


AEL987

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

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

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

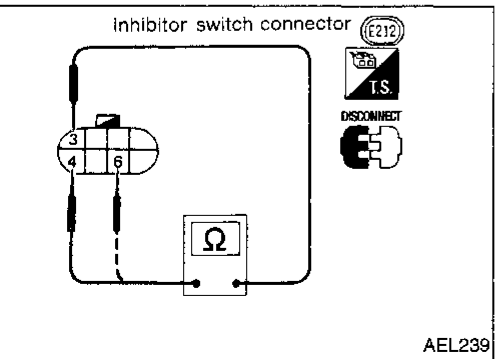


AEL988

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").

Inhibitor switch (For A/T models)



AEL239

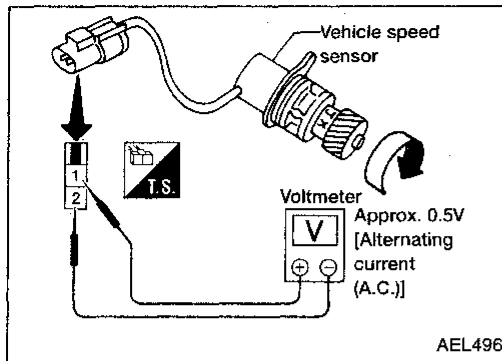
Shift lever position	Terminal		
	3	4	6
"P"	○	○	
"N"	○		○
Except "N" or "P"			

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses (Cont'd)

Vehicle speed sensor

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



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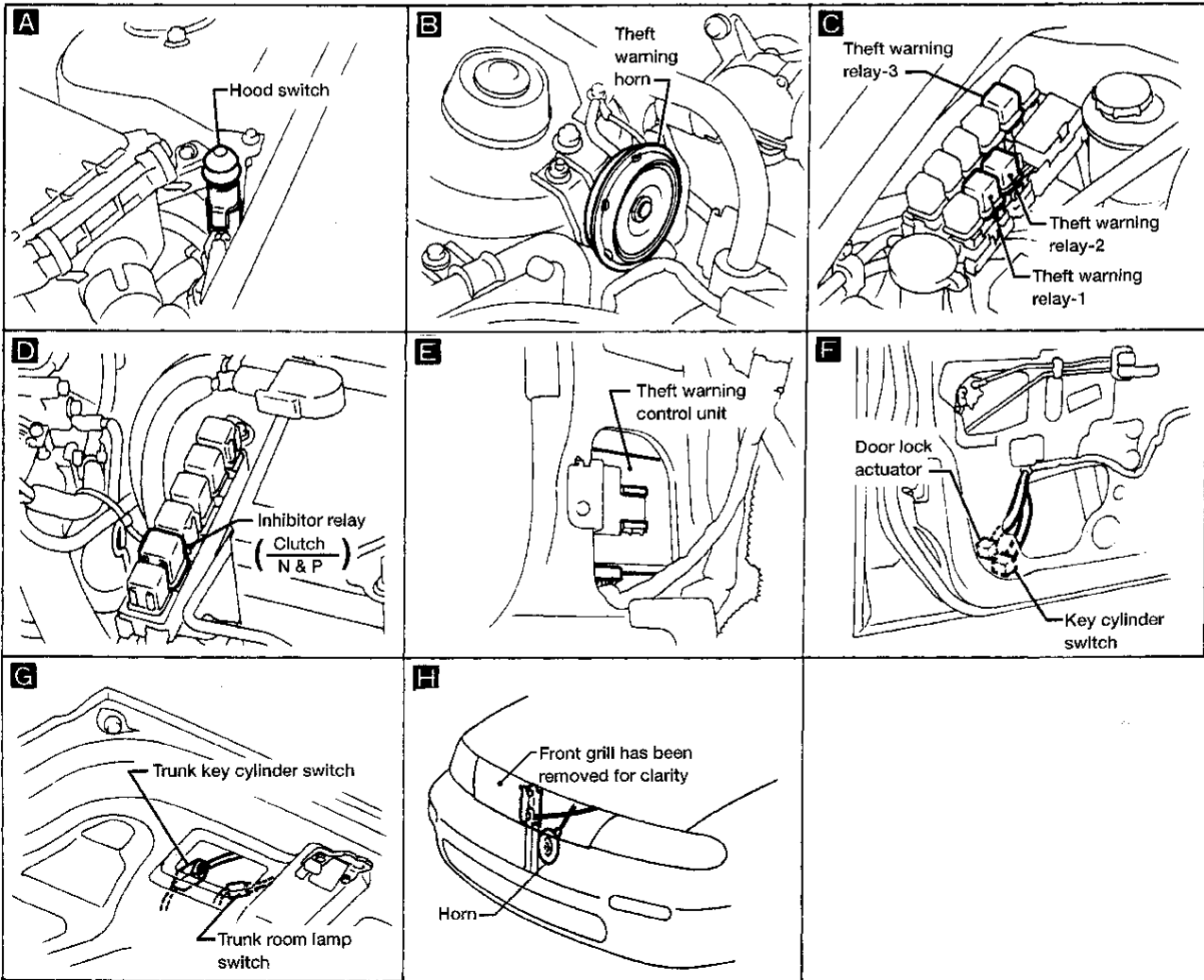
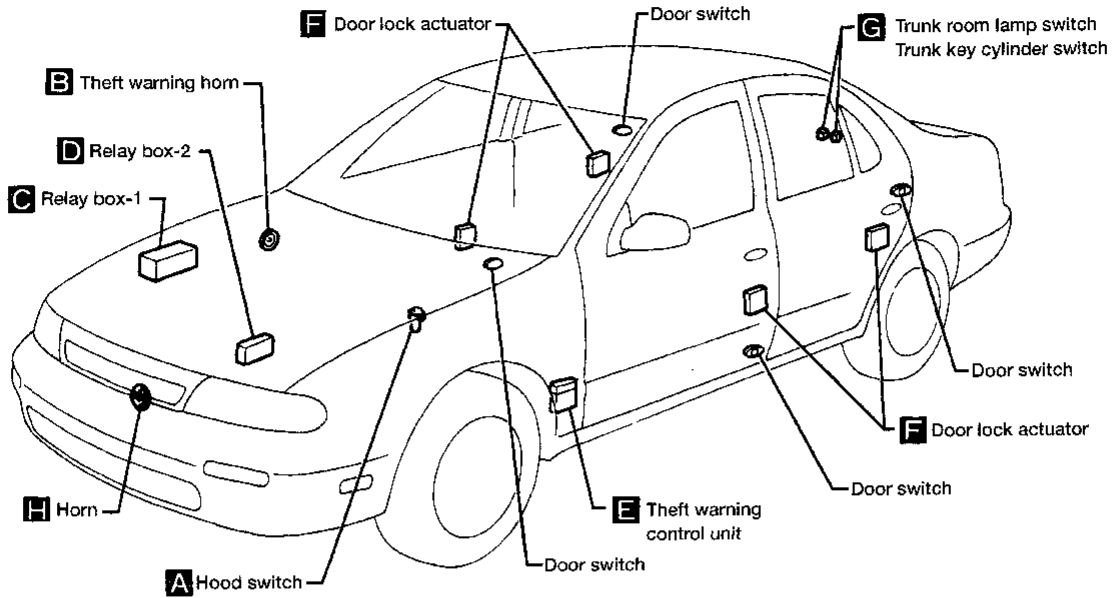
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THEFT WARNING SYSTEM

Component Parts and Harness Connector Location



THEFT WARNING SYSTEM

NOTES

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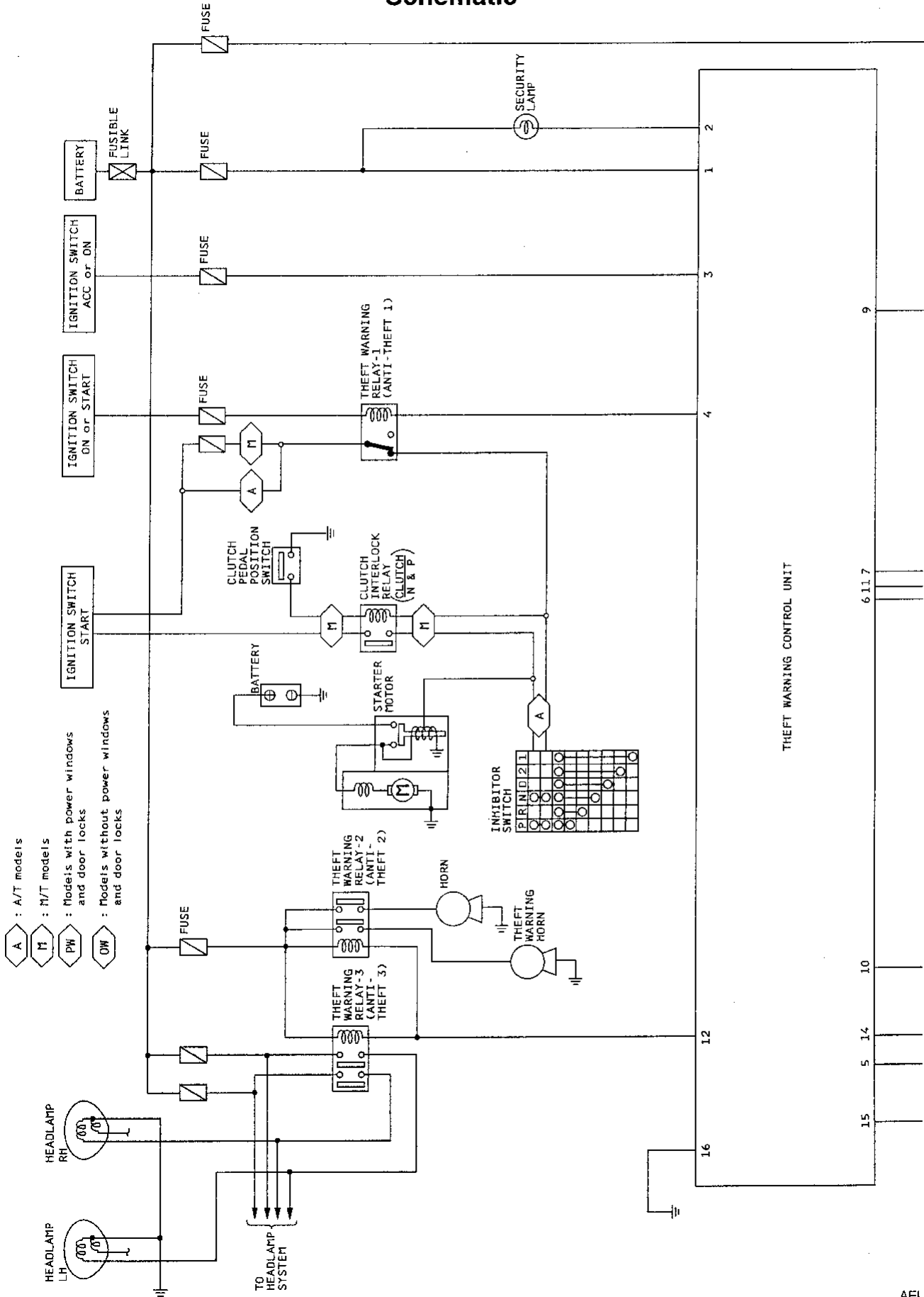
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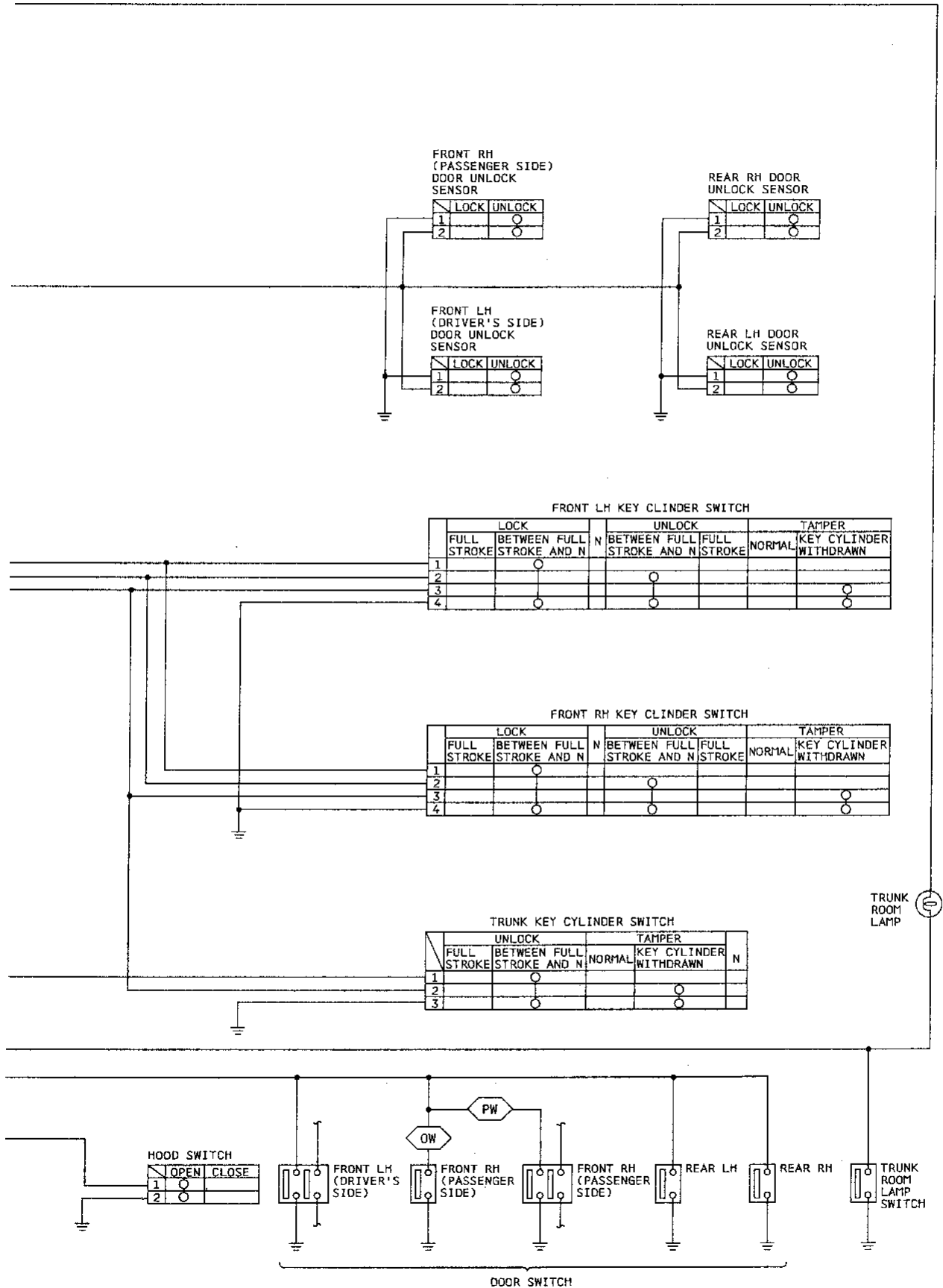
THEFT WARNING SYSTEM

Schematic



THEFT WARNING SYSTEM

Schematic (Cont'd)

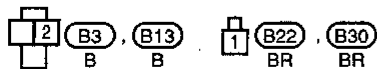
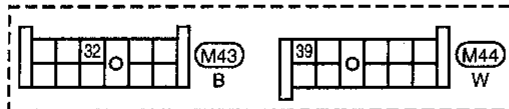
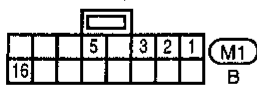
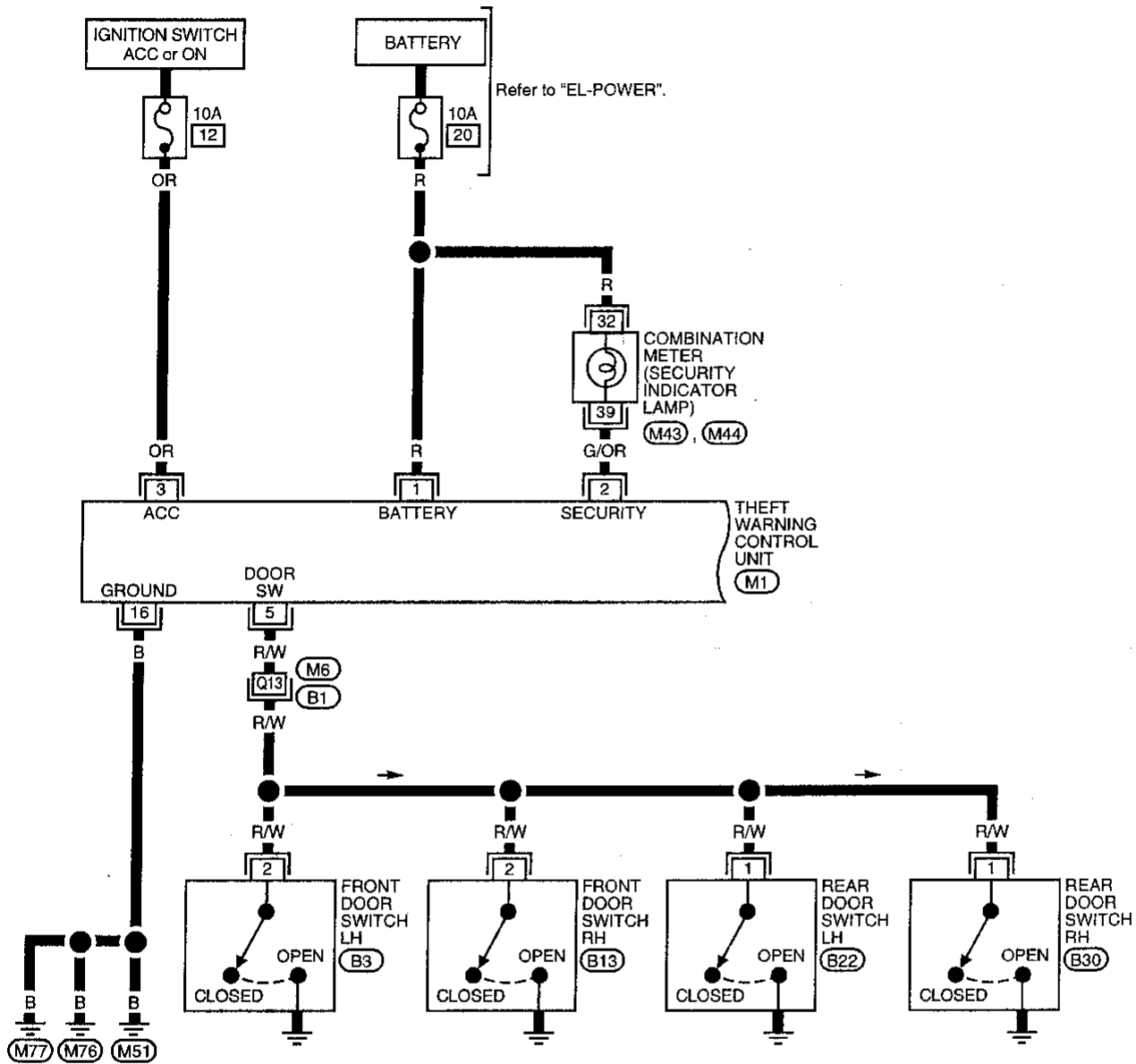


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THEFT WARNING SYSTEM

Wiring Diagram -THEFT-

EL-THEFT-01



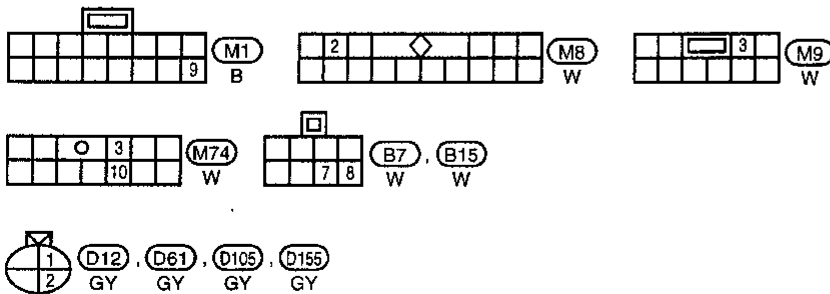
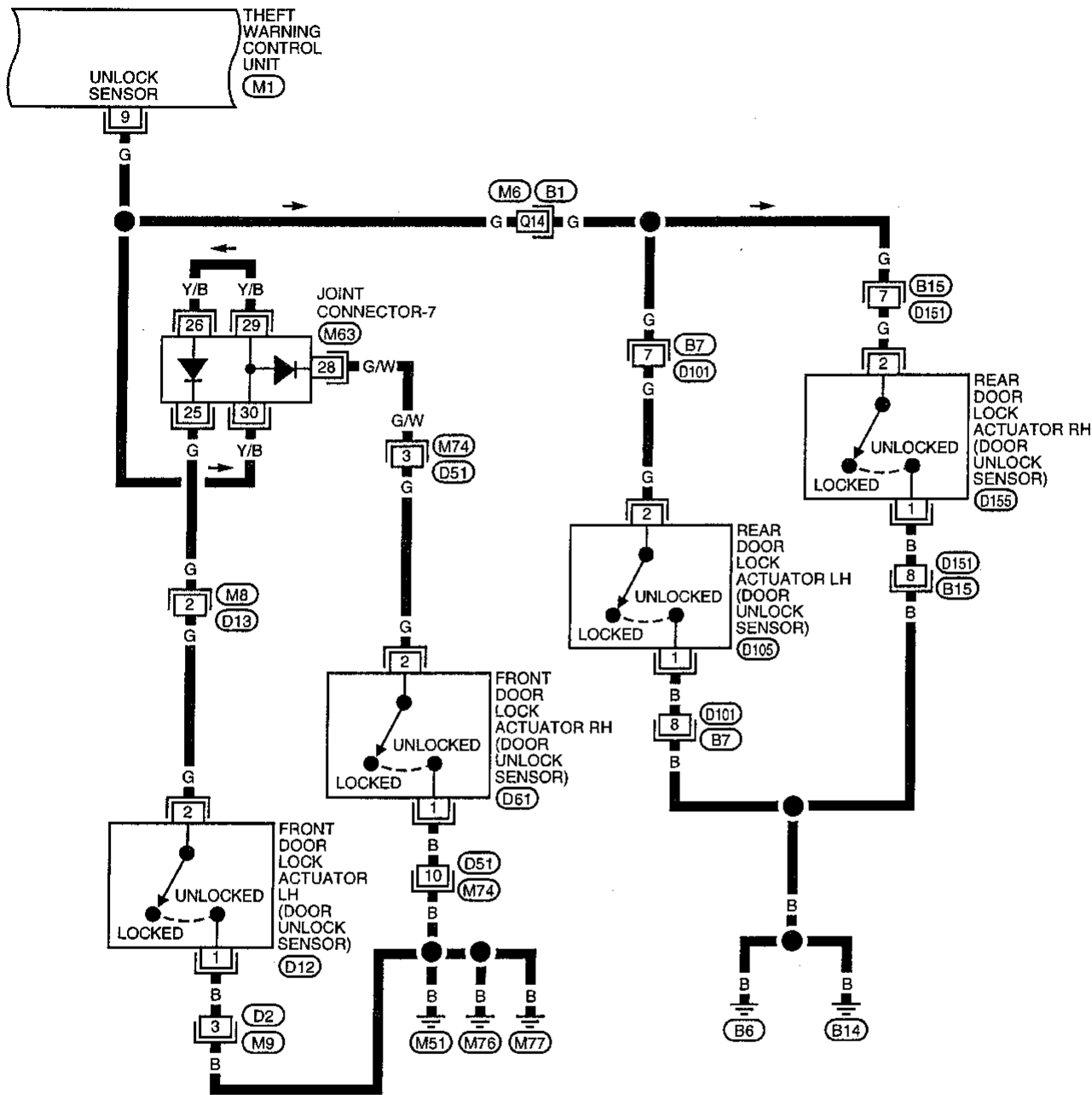
Refer to last page (Foldout page).

M6, B1

THEFT WARNING SYSTEM

Wiring Diagram -THEFT- (Cont'd)

EL-THEFT-02



Refer to last page (Foldout page).

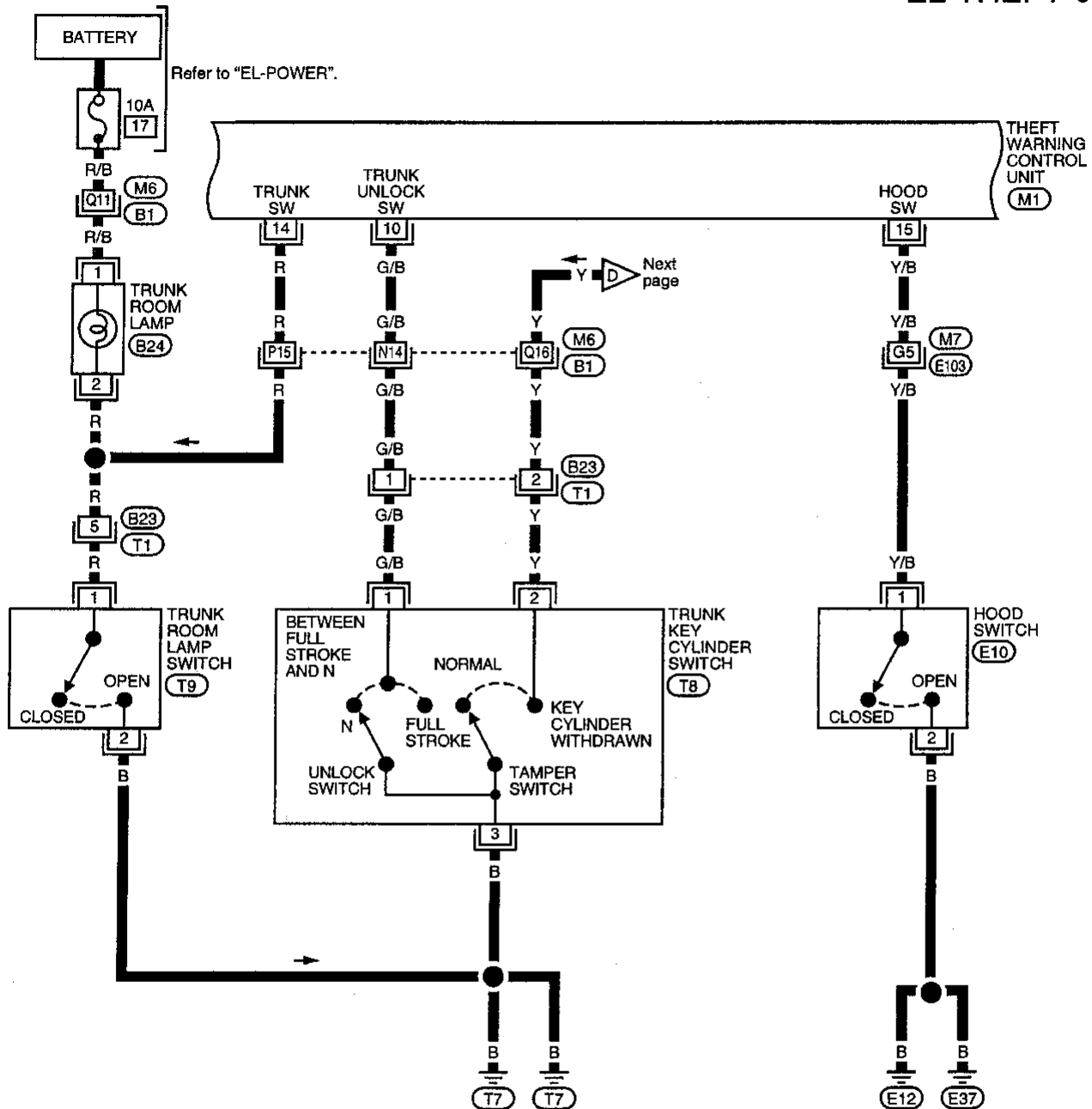
M6, B1, M63

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THEFT WARNING SYSTEM

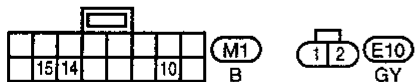
Wiring Diagram -THEFT- (Cont'd)

EL-THEFT-03



Refer to last page (Foldout page).

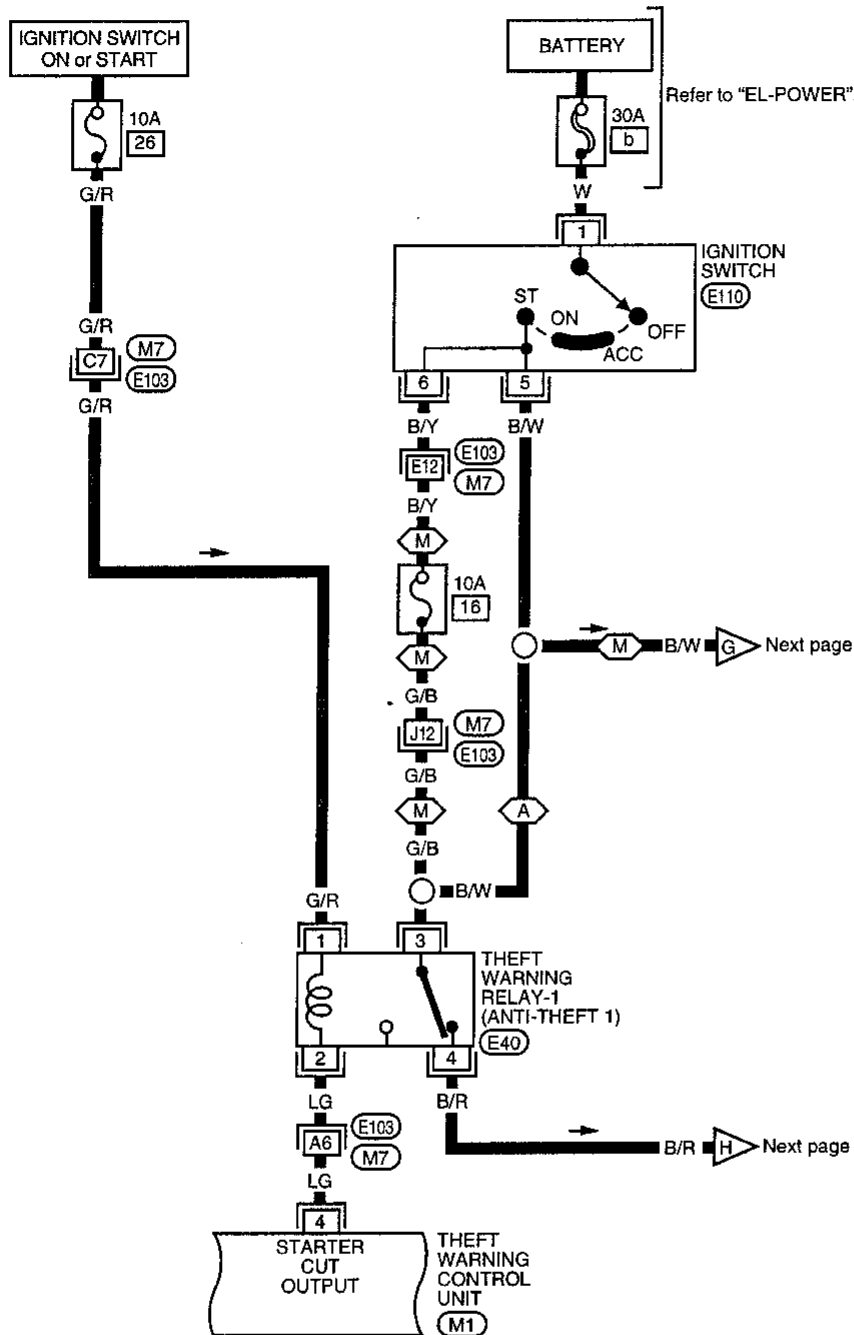
M6, B1
M7, E103



THEFT WARNING SYSTEM

Wiring Diagram -THEFT- (Cont'd)

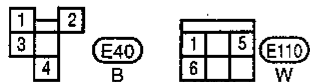
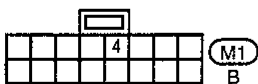
EL-THEFT-05



A : A/T models
M : M/T models

Refer to last page (Foldout page).

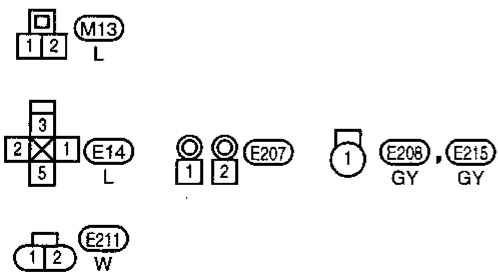
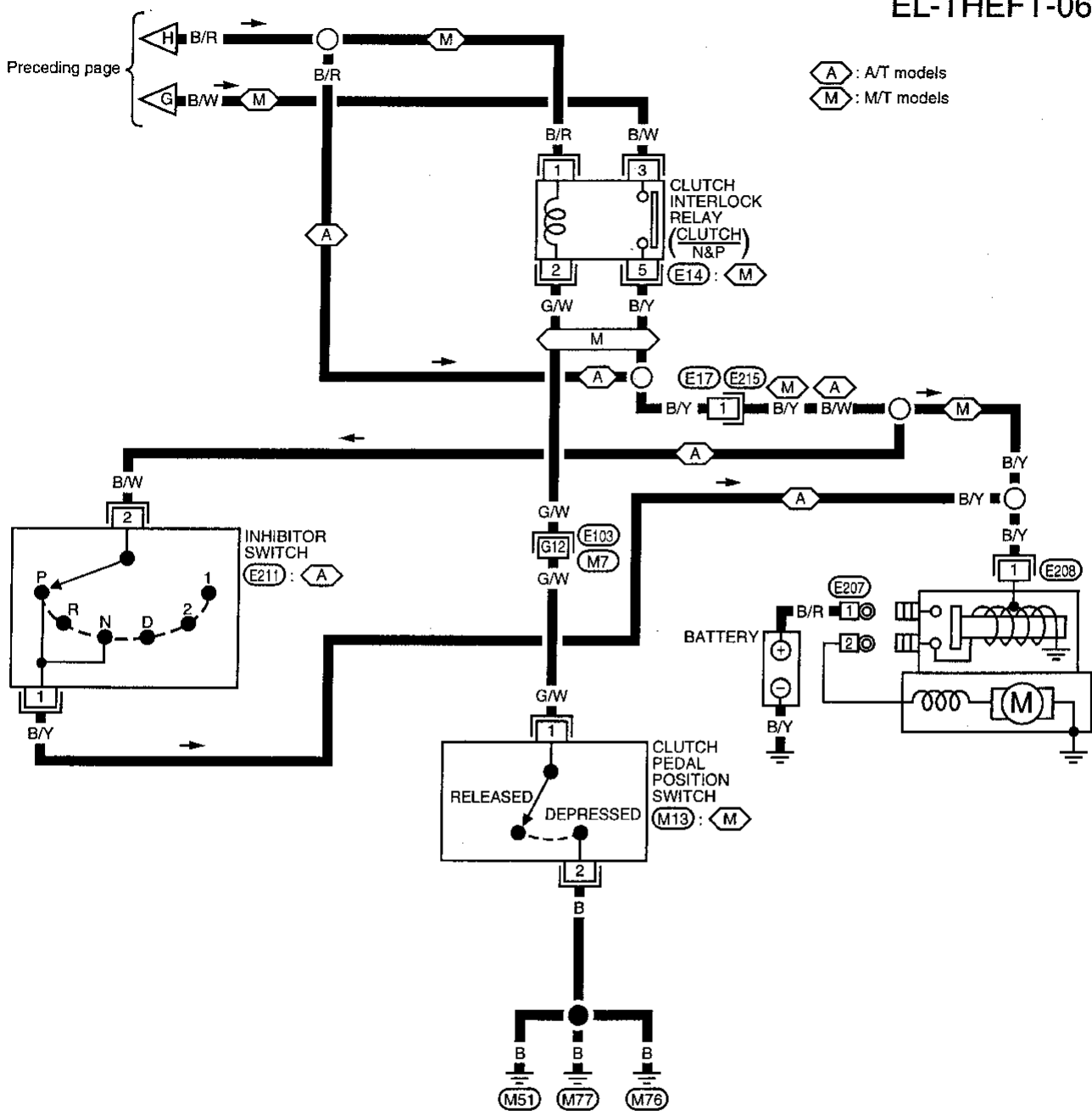
M7, E103



THEFT WARNING SYSTEM

Wiring Diagram -THEFT- (Cont'd)

EL-THEFT-06



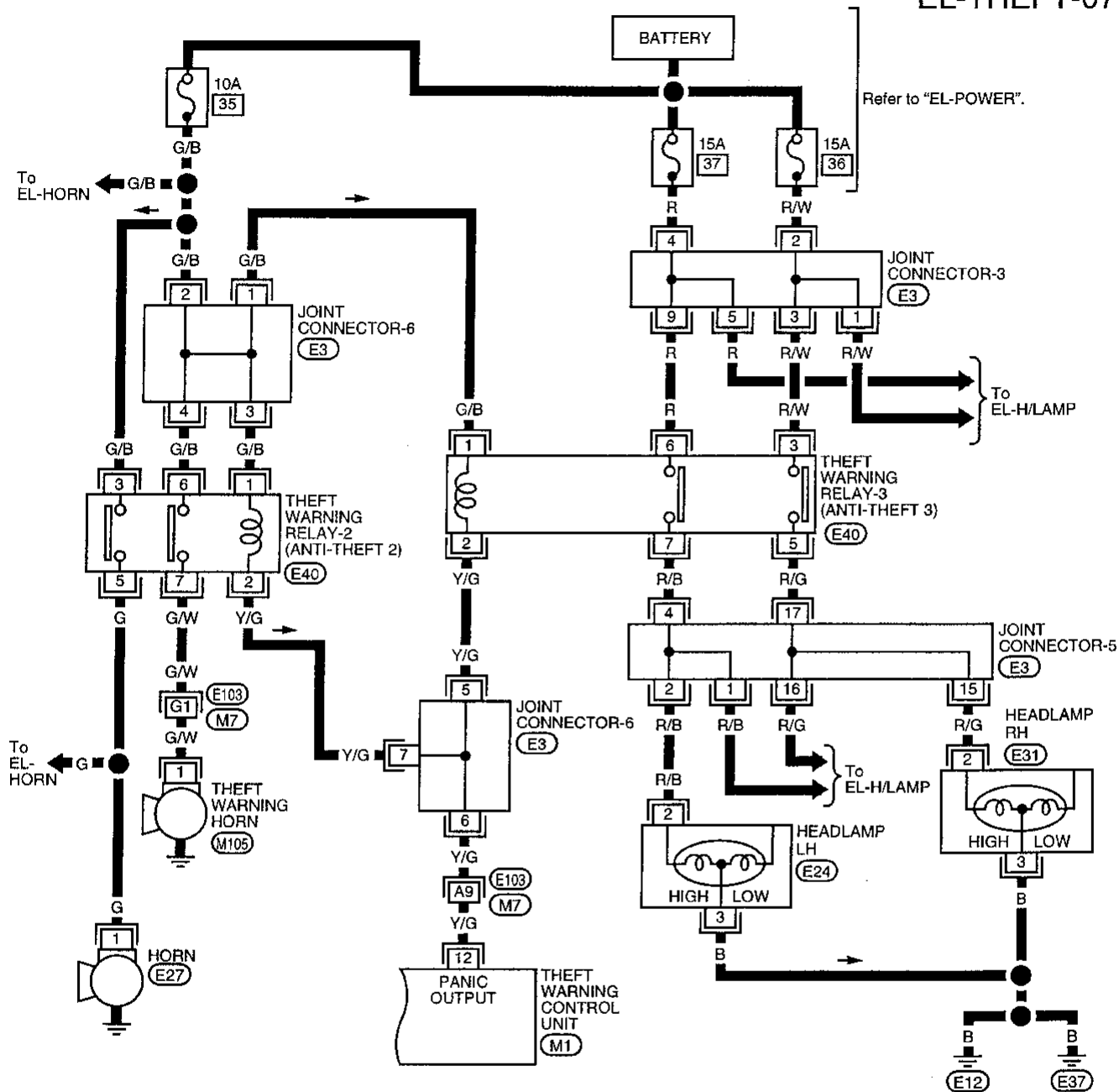
Refer to last page (Foldout page).
M7, E103

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THEFT WARNING SYSTEM

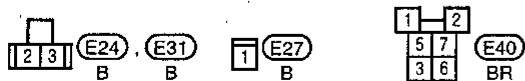
Wiring Diagram -THEFT- (Cont'd)

EL-THEFT-07



Refer to last page (Foldout page).

- (M7), (E103)
- (E3)

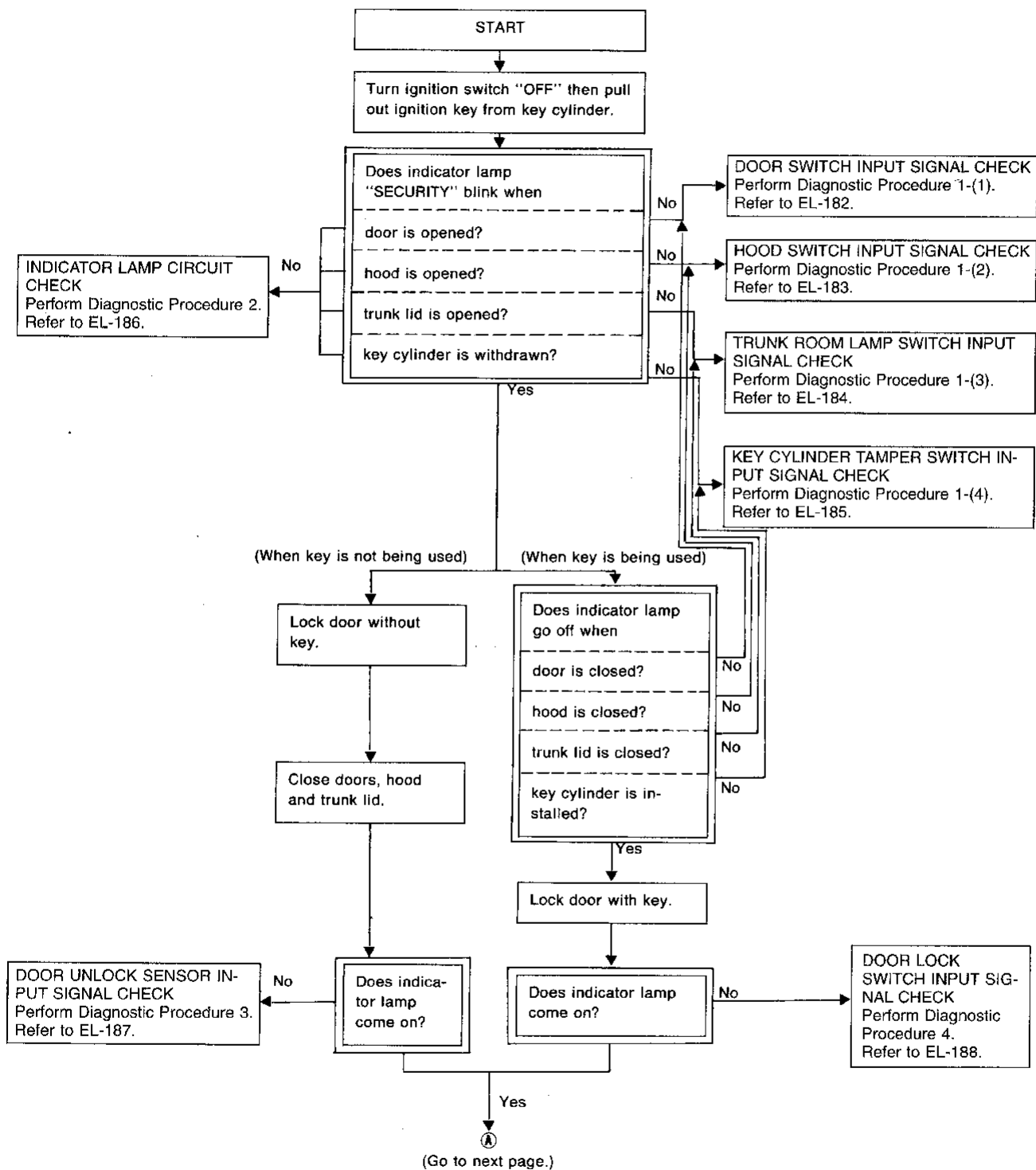


THEFT WARNING SYSTEM

Trouble Diagnoses

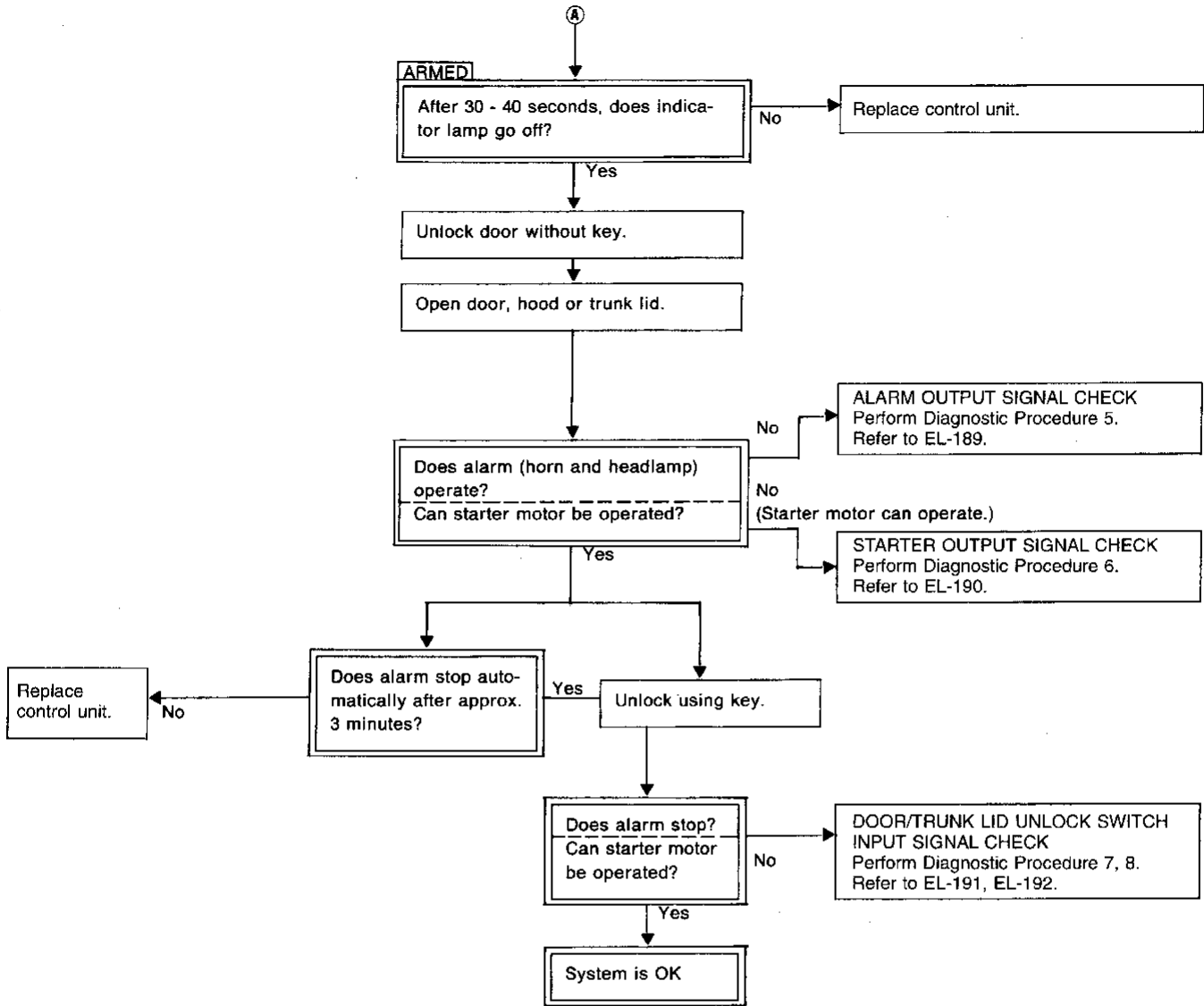
SYSTEM OPERATION CHECK

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



THEFT WARNING SYSTEM

Trouble Diagnoses (Cont'd)



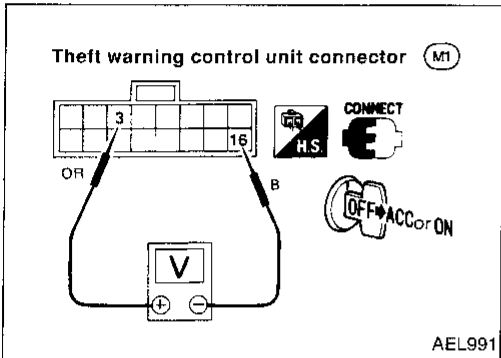
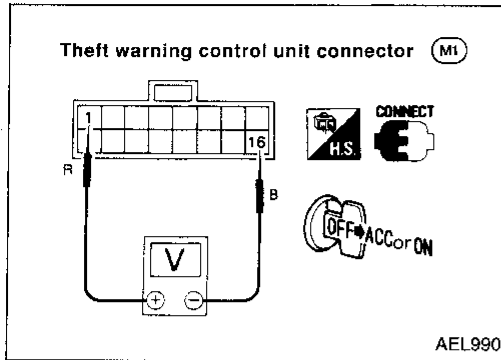
THEFT WARNING SYSTEM

Trouble Diagnoses (Cont'd)

POWER SUPPLY AND GROUND CIRCUIT CHECK

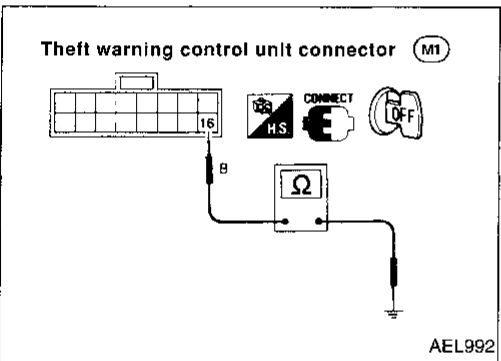
Main power supply circuit check

Terminals	Ignition switch position		
	OFF	ACC	ON
① - ⑫	Battery positive voltage	Battery positive voltage	Battery positive voltage



Power supply circuit check for system cancel

Terminals	Ignition switch position		
	OFF	ACC	ON
③ - ⑫	0V	Battery positive voltage	Battery positive voltage



Ground circuit check

Terminals	Continuity
⑫ - Ground	Yes

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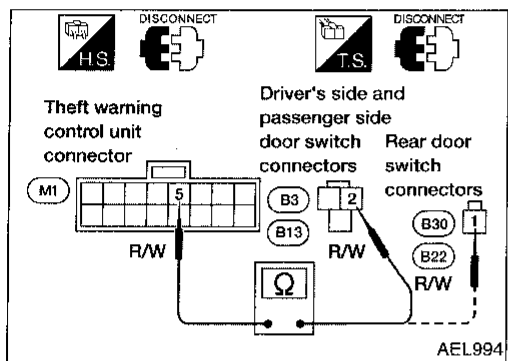
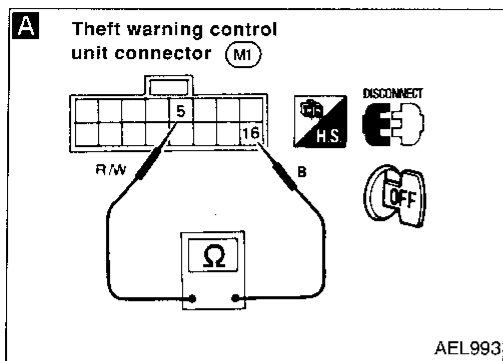
THEFT WARNING SYSTEM

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 1

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

Diagnostic procedure 1-(1)



A **DOOR SWITCH INPUT SIGNAL CHECK**

Check continuity between theft warning control unit harness terminals (5) and (16).

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

OK → Perform Diagnostic Procedure 2. Refer to EL-186.

NG → **DOOR SWITCH CHECK**
Refer to EL-193.

NG → Replace door switch.

B **DOOR SWITCH CIRCUIT CHECK**
Check harness continuity between theft warning control unit harness terminal (5) and door switch harness terminal.
Continuity should exist.

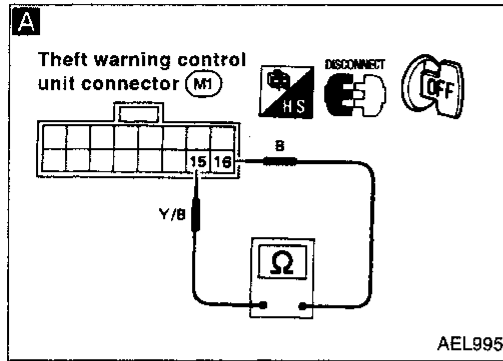
NG → Repair harness or connectors.

OK → **CHECK THE CONNECTIONS AT EACH CONNECTOR.**

THEFT WARNING SYSTEM

Trouble Diagnoses (Cont'd)

Diagnostic procedure 1-(2)

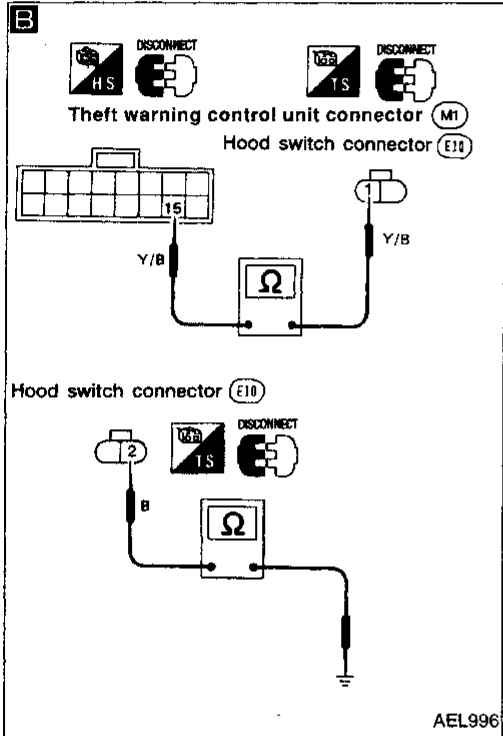


A

HOOD SWITCH INPUT SIGNAL CHECK
Check continuity between theft warning control unit harness terminals ⑮ and ⑯.

Condition	Continuity
Hood is open	Yes
Hood is closed	No

OK → Perform Diagnostic Procedure 2. Refer to EL-186.



NG

Check hood switch and hood fitting condition.

NG → Adjust installation of hood switch or hood.

OK

HOOD SWITCH CHECK
Refer to EL-193.

NG → Replace hood switch.

OK

B

HOOD SWITCH CIRCUIT CHECK

- Check harness continuity between theft warning control unit harness terminal ⑮ and hood switch harness terminal ①.
- Check harness continuity between hood switch terminal ② and body ground.

Continuity should exist.

NG → Repair harness or connectors.

OK

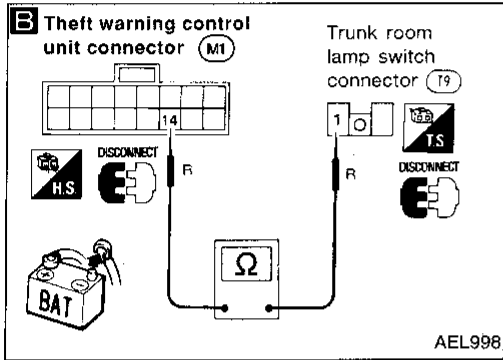
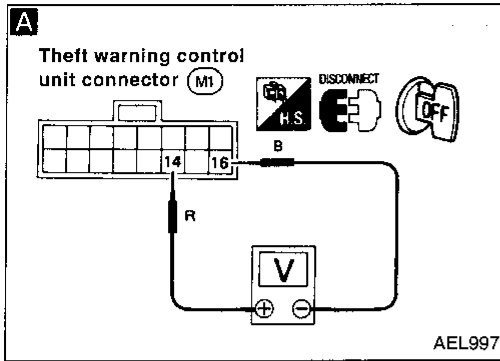
CHECK THE CONNECTIONS AT EACH CONNECTOR.

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THEFT WARNING SYSTEM

Trouble Diagnoses (Cont'd)

Diagnostic procedure 1-(3)



A

TRUNK ROOM LAMP SWITCH INPUT SIGNAL CHECK

Check voltage between theft warning control unit harness terminals ⑭ and ⑮.

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

OK → Perform Diagnostic Procedure 2. Refer to EL-186.

NG

Does trunk room lamp come on?

Yes →

No →

TRUNK ROOM LAMP SWITCH CHECK

Refer to EL-193.

OK →

NG →

B

TRUNK ROOM LAMP SWITCH CIRCUIT CHECK.

Check harness continuity between theft warning control unit harness terminal ⑭ and trunk room lamp harness terminal ①. **Continuity should exist.**

OK →

Replace trunk room lamp switch.

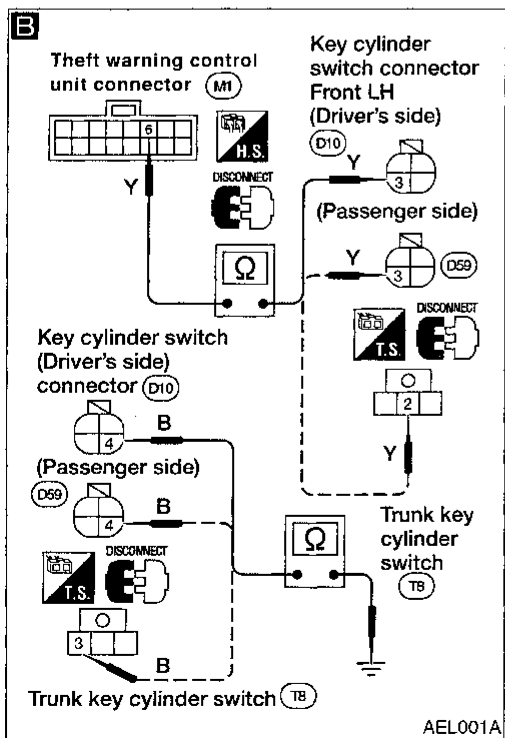
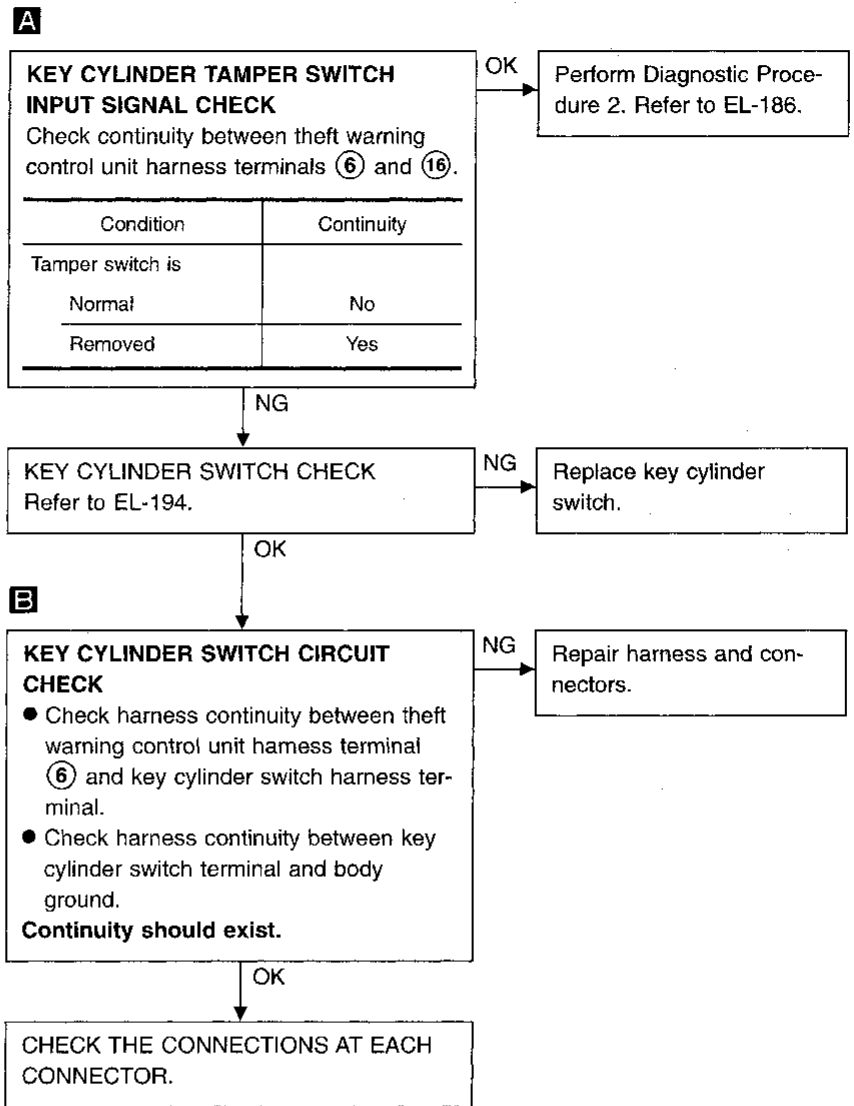
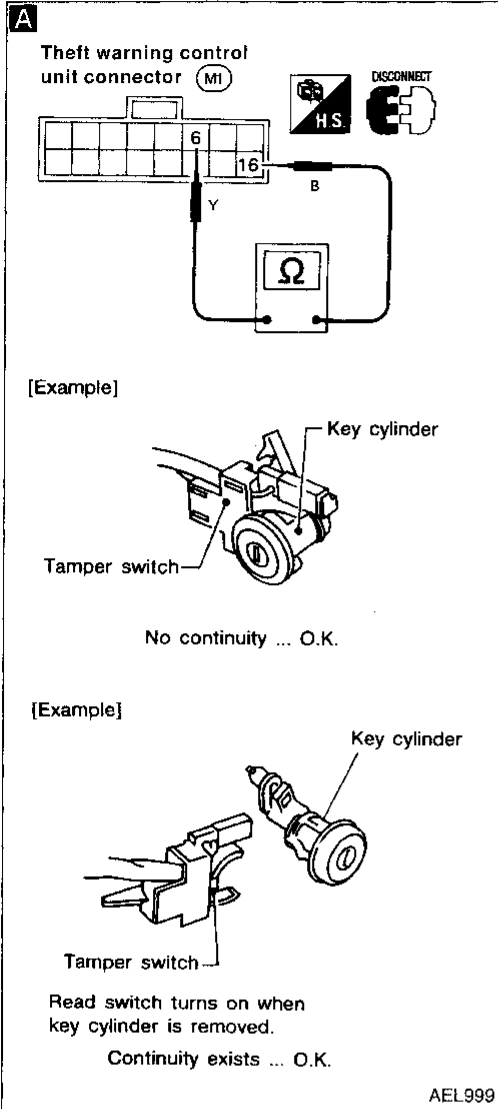
OK →

CHECK THE CONNECTIONS AT EACH CONNECTOR.

THEFT WARNING SYSTEM

Trouble Diagnoses (Cont'd)

Diagnostic procedure 1-(4)



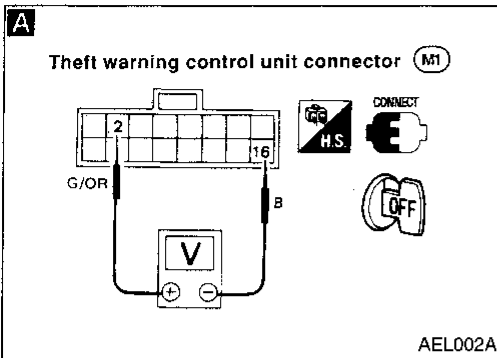
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THEFT WARNING SYSTEM

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 2

SYMPTOM: Indicator lamp does not blink.



A

INDICATOR LAMP OUTPUT SIGNAL CHECK

Check voltage between theft warning control unit harness terminals ② and ⑯. **Pointer of voltmeter should deflect intermittently.**

NG → Replace theft warning control unit.

OK

INDICATOR LAMP CHECK

Refer to EL-194.

NG → Replace indicator lamp.

OK

B

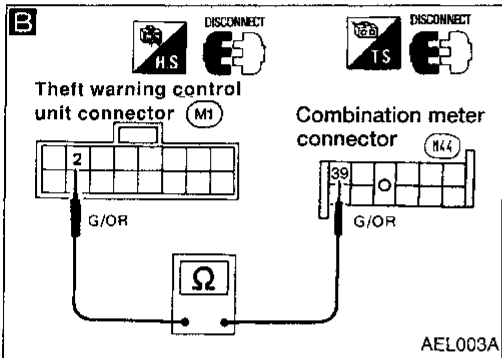
INDICATOR LAMP CIRCUIT CHECK

Check harness continuity between theft warning control unit harness terminal ② and indicator lamp harness terminal. **Continuity should exist.**

NG → Repair harness or connectors.

OK

CHECK THE CONNECTIONS AT EACH CONNECTOR.

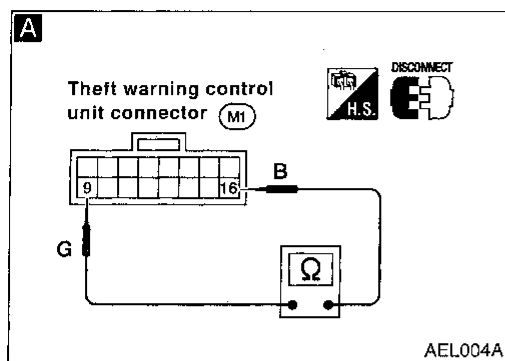


THEFT WARNING SYSTEM

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 3

SYMPTOM: Indicator lamp does not come on.



A

DOOR UNLOCK SENSOR INPUT SIGNAL CHECK

Check continuity between theft warning control unit harness terminals ⑨ and ⑯.

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

OK → Perform Diagnostic Procedure 4. Refer to EL-188.

OK

Replace theft warning control unit.

NG

DOOR UNLOCK SENSOR CHECK
Refer to EL-194.

NG → Replace door lock actuator.

OK

B

DOOR UNLOCK SENSOR CIRCUIT CHECK

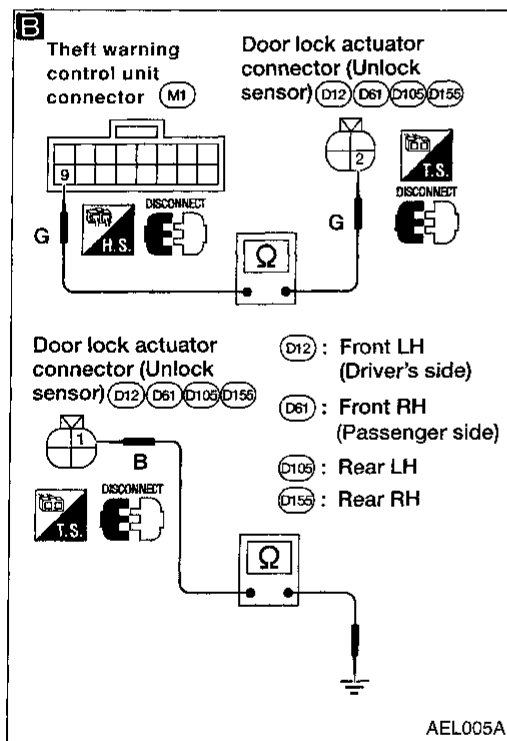
- Check harness continuity between theft warning control unit harness terminal ⑨ and door lock actuator terminal ②.
- Check harness continuity between door lock actuator terminal ① and body ground.

Continuity should exist.

NG → Repair harness or connectors.

OK

CHECK THE CONNECTIONS AT EACH CONNECTOR.



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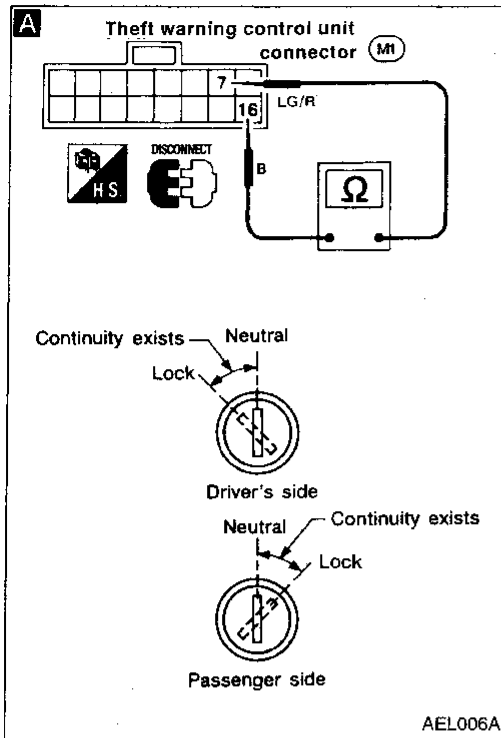
IDX

THEFT WARNING SYSTEM

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 4

SYMPTOM: Indicator lamp does not come on.



A

KEY CYLINDER SWITCH INPUT SIGNAL CHECK (LOCK SIGNAL)

Check continuity between theft warning control unit harness terminals (7) and (16).

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

OK → Perform Diagnostic Procedure 3. Refer to EL-187.

OK

Replace theft warning control unit.

NG

KEY CYLINDER SWITCH CHECK

Refer to EL-194.

NG

Replace key cylinder switch.

OK

B

KEY CYLINDER SWITCH CIRCUIT CHECK

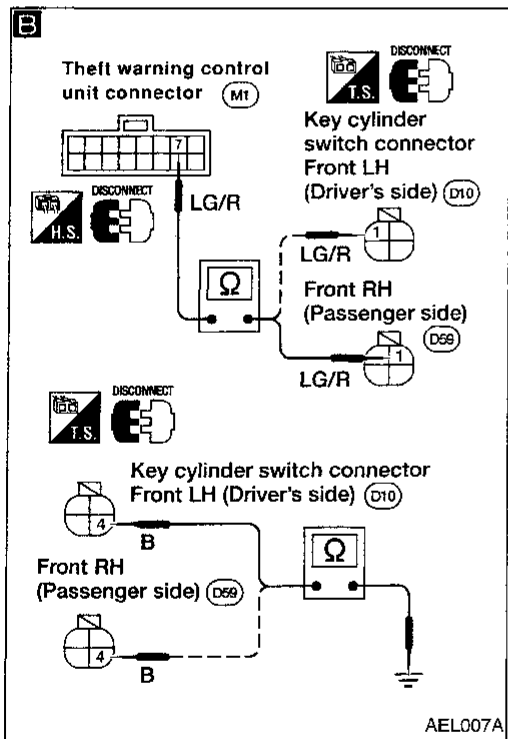
- Check harness continuity between theft warning control unit harness terminal (7) and key cylinder switch terminal (1).
 - Check harness continuity between key cylinder switch terminal (4) and body ground.
- Continuity should exist.**

NG

Repair harness or connectors.

OK

CHECK THE CONNECTIONS AT EACH CONNECTOR.

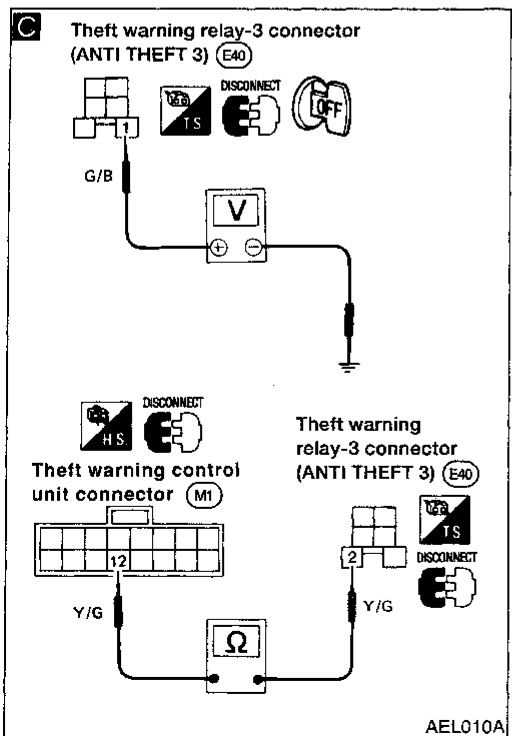
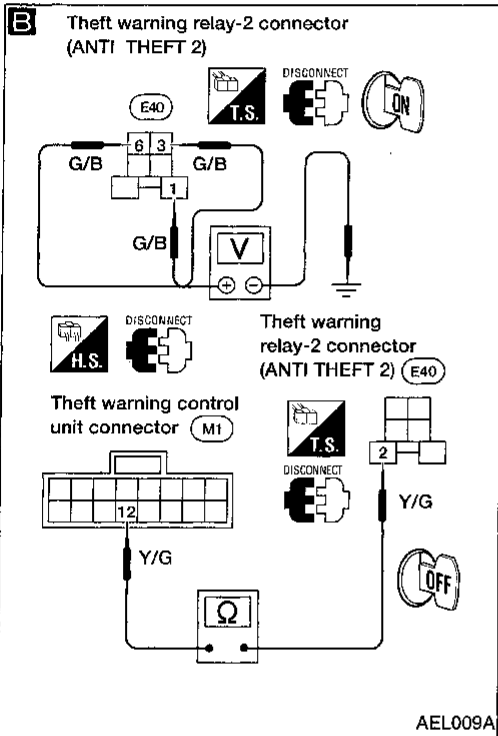
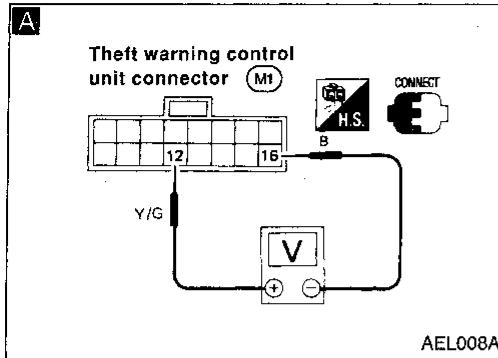


THEFT WARNING SYSTEM

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 5

SYMPTOM: Alarm does not operate.



A

ALARM SIGNAL OUTPUT CHECK
Check voltage between theft warning control unit harness terminals ⑫ and ⑯.

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

NG → Replace theft warning control unit.

OK →

Check theft warning relay-2.

NG → Replace theft warning relay-2.

OK →

B

THEFT WARNING HORN CIRCUIT CHECK
Check if voltage across theft warning relay-2 harness terminals ①, ③, ⑥ and body ground is 12V.
Check continuity between theft warning relay-2 terminal ② and theft warning control unit harness terminal ⑫.
Continuity should exist.

NG → Repair harness, fuse and connectors.

OK →

Check theft warning relay-3.

NG → Replace theft warning relay-3.

OK →

C

THEFT WARNING HEADLAMP CIRCUIT CHECK
Check if voltage across theft warning relay-3 harness terminal ① and body is 12V.
Check continuity between theft warning relay-3 terminal ② and theft warning control unit harness terminal ⑫.

NG → Repair harness, fuse and connectors.

OK →

Does headlamp come on when turning ignition switch "ON"?

No → Check headlamp system. Refer to EL-37.

Yes →

Repair harness and connectors between lamp relay and headlamp.

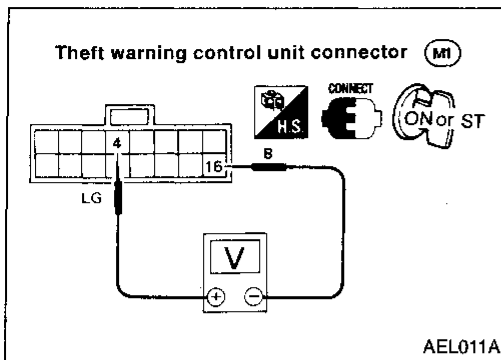
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THEFT WARNING SYSTEM

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 6

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



STARTER MOTOR KILL OUTPUT SIGNAL CHECK

Turn ignition switch to "ON" or "START" position. Check voltage between theft warning control unit harness terminals ④ and ⑯.

Approx. 12V

Replace theft warning control unit.

Approx. 0V

Check theft warning relay-1 and circuit.

NG

Replace theft warning relay-1.

OK

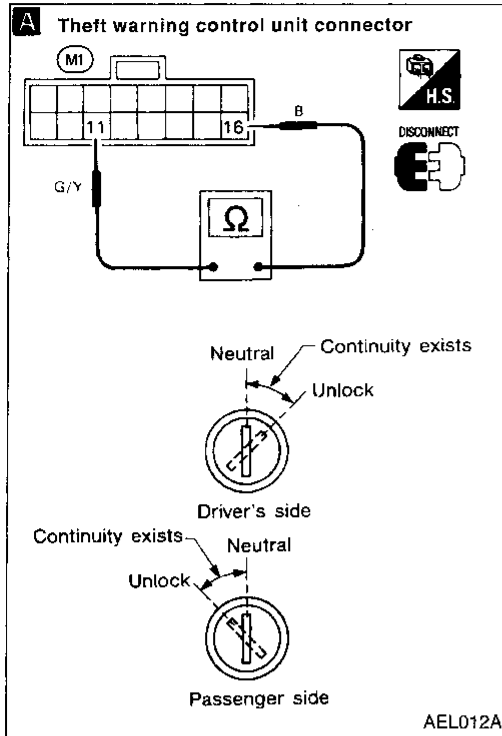
Repair harness between theft warning control unit and clutch interlock relay (M/T models) or inhibitor switch (A/T models).

THEFT WARNING SYSTEM

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 7

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



A

KEY CYLINDER SWITCH INPUT SIGNAL CHECK (UNLOCK SIGNAL)

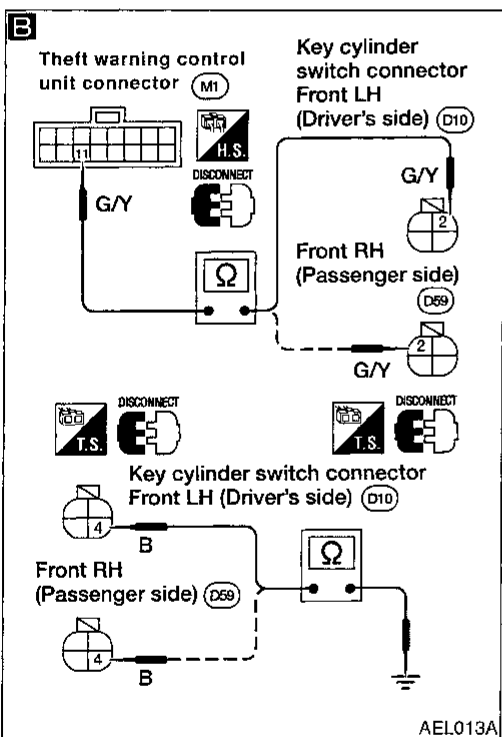
Check continuity between theft warning control unit harness terminals (11) and (16).

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

OK → Replace theft warning control unit.

NG → KEY CYLINDER SWITCH CHECK
Refer to EL-194.

NG → Replace key cylinder switch.



B

KEY CYLINDER SWITCH CIRCUIT CHECK

- Check harness continuity between theft warning control unit harness terminal (11) and key cylinder switch terminal (2).
- Check harness continuity between key cylinder switch terminal (4) and body ground.

Continuity should exist.

NG → Repair harness or connectors.

OK → CHECK THE CONNECTIONS AT EACH CONNECTOR.

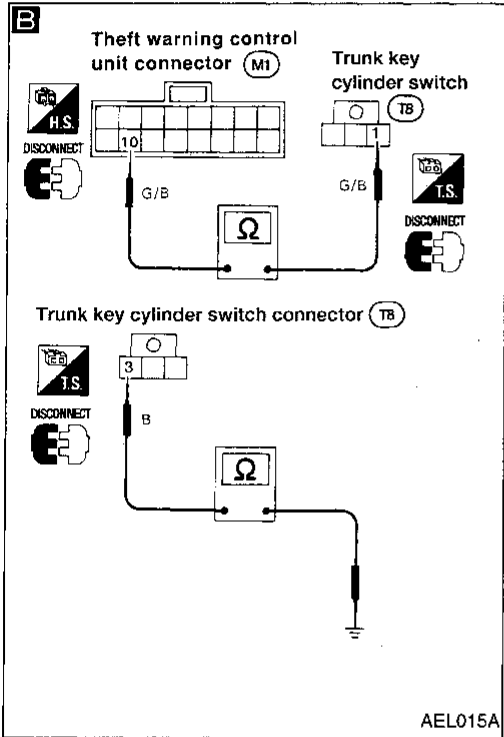
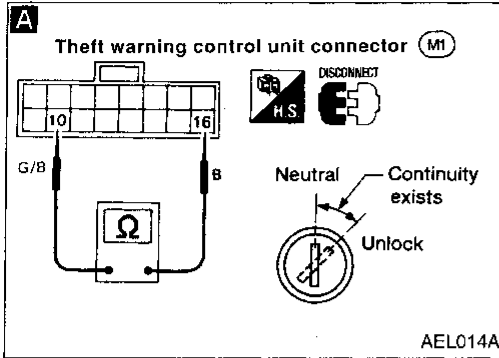
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THEFT WARNING SYSTEM

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 8

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



A

TRUNK KEY CYLINDER SWITCH INPUT SIGNAL CHECK (UNLOCK SIGNAL)

Check continuity between theft warning control unit harness terminals ⑩ and ⑯.

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

OK → Replace theft warning control unit.

NG

TRUNK KEY CYLINDER SWITCH CHECK
Refer to EL-194.

NG → Replace trunk key cylinder switch.

OK

B

TRUNK KEY CYLINDER SWITCH CIRCUIT CHECK

- Check harness continuity between theft warning control unit harness terminal ⑩ and trunk key cylinder switch terminal ①.
- Check harness continuity between trunk key cylinder switch terminal ③ and body ground.

NG → Repair harness or connectors.

OK

CHECK THE CONNECTIONS AT EACH CONNECTOR.

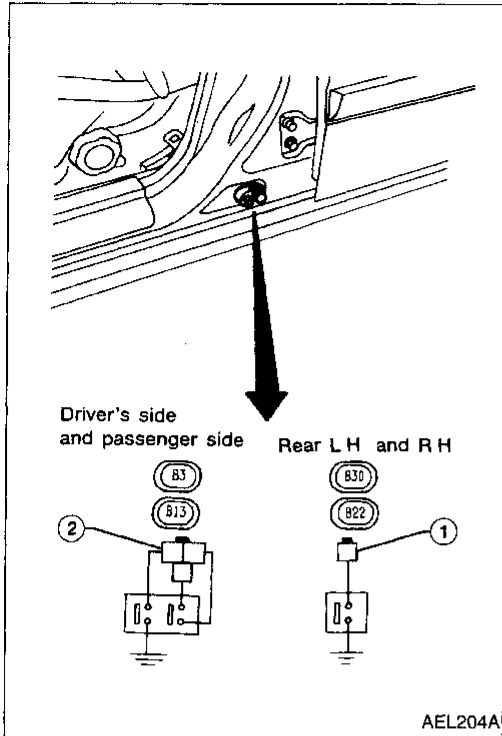
THEFT WARNING SYSTEM

Trouble Diagnoses (Cont'd)

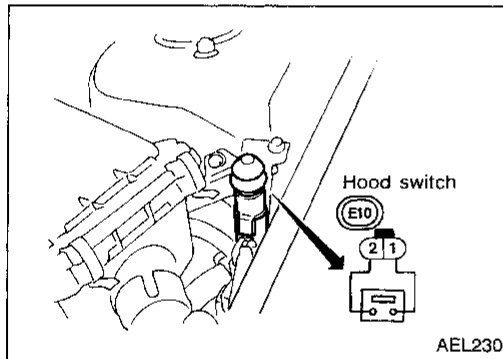
ELECTRICAL COMPONENTS INSPECTION

Door switches

Check continuity between terminal ①, ② and switch body.



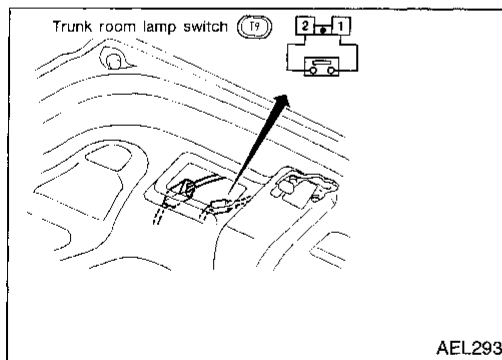
Terminal	Pushed	Released
1, 2		○
switch body		○



Hood switch

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

Terminal	Pushed	Released
1		○
2		○



Trunk room lamp switch

Terminal	Trunk lid	
	Closed	Open
1		○
2		○

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THEFT WARNING SYSTEM

Trouble Diagnoses (Cont'd)

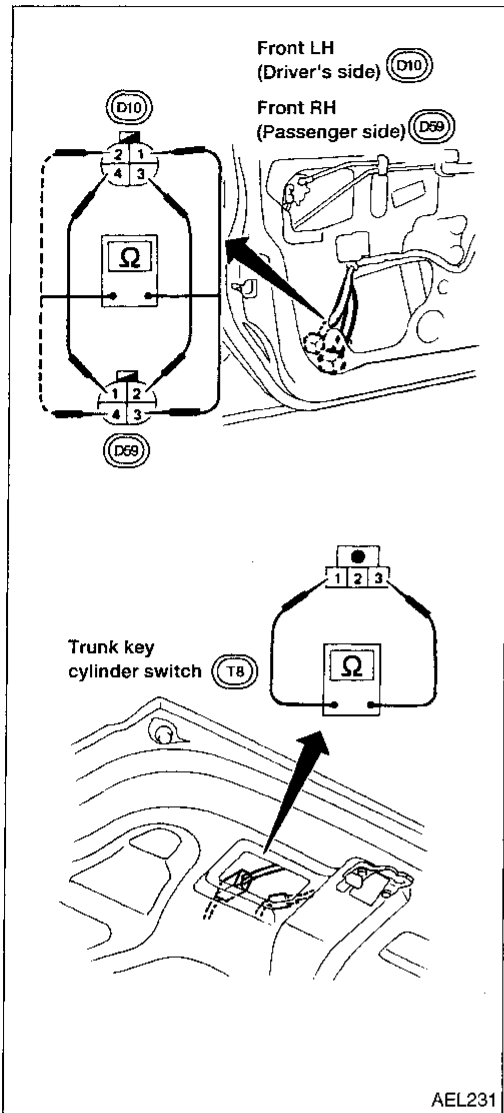
Key cylinder switch

Door

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

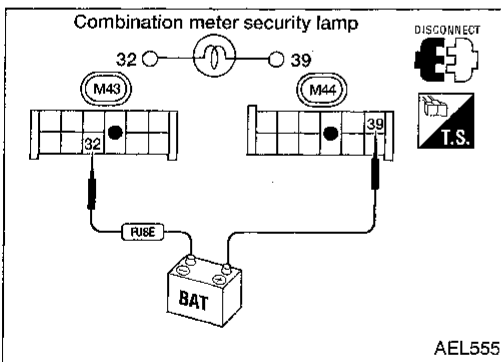
Trunk

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



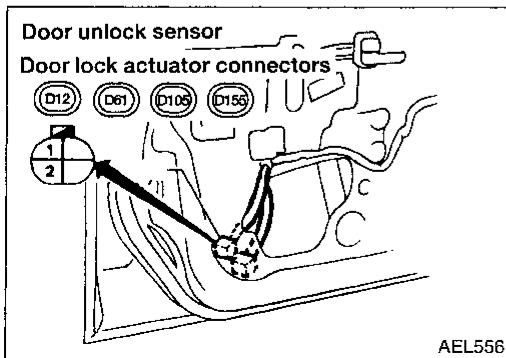
Indicator lamp (security lamp)

Check if it lights when 12V is supplied.



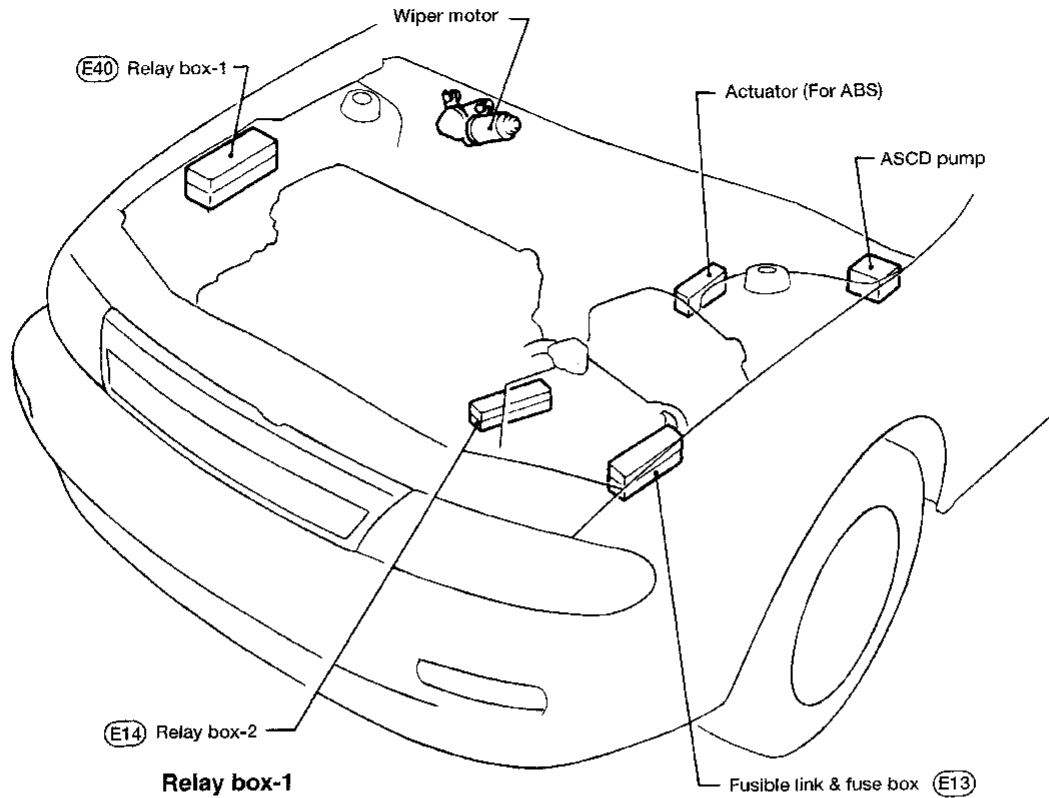
Door unlock sensor

	LOCK	UNLOCK
1		○
2		○

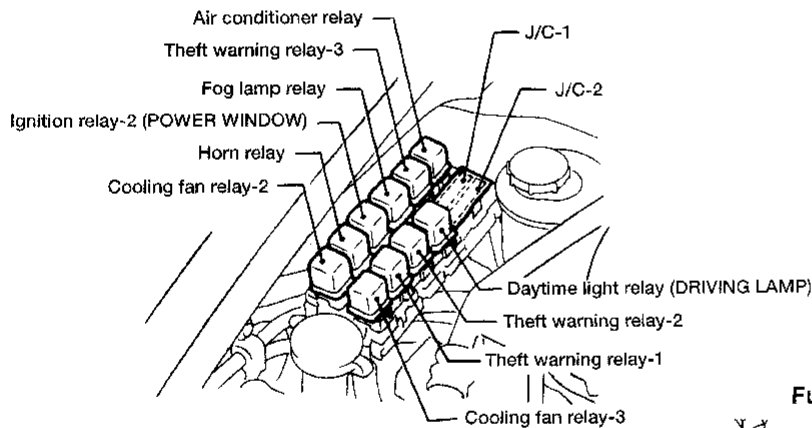


LOCATION OF ELECTRICAL UNITS

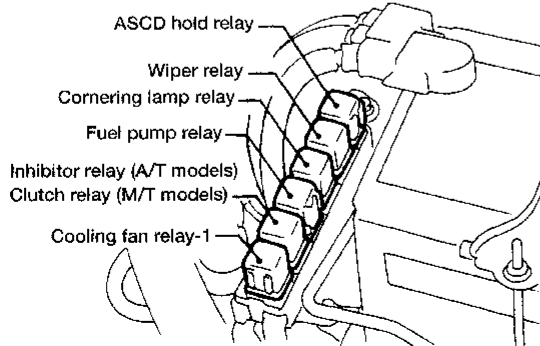
Engine Compartment



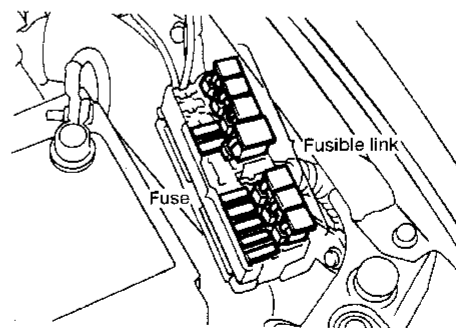
Relay box-1



Relay box-2



Fusible link & fuse box



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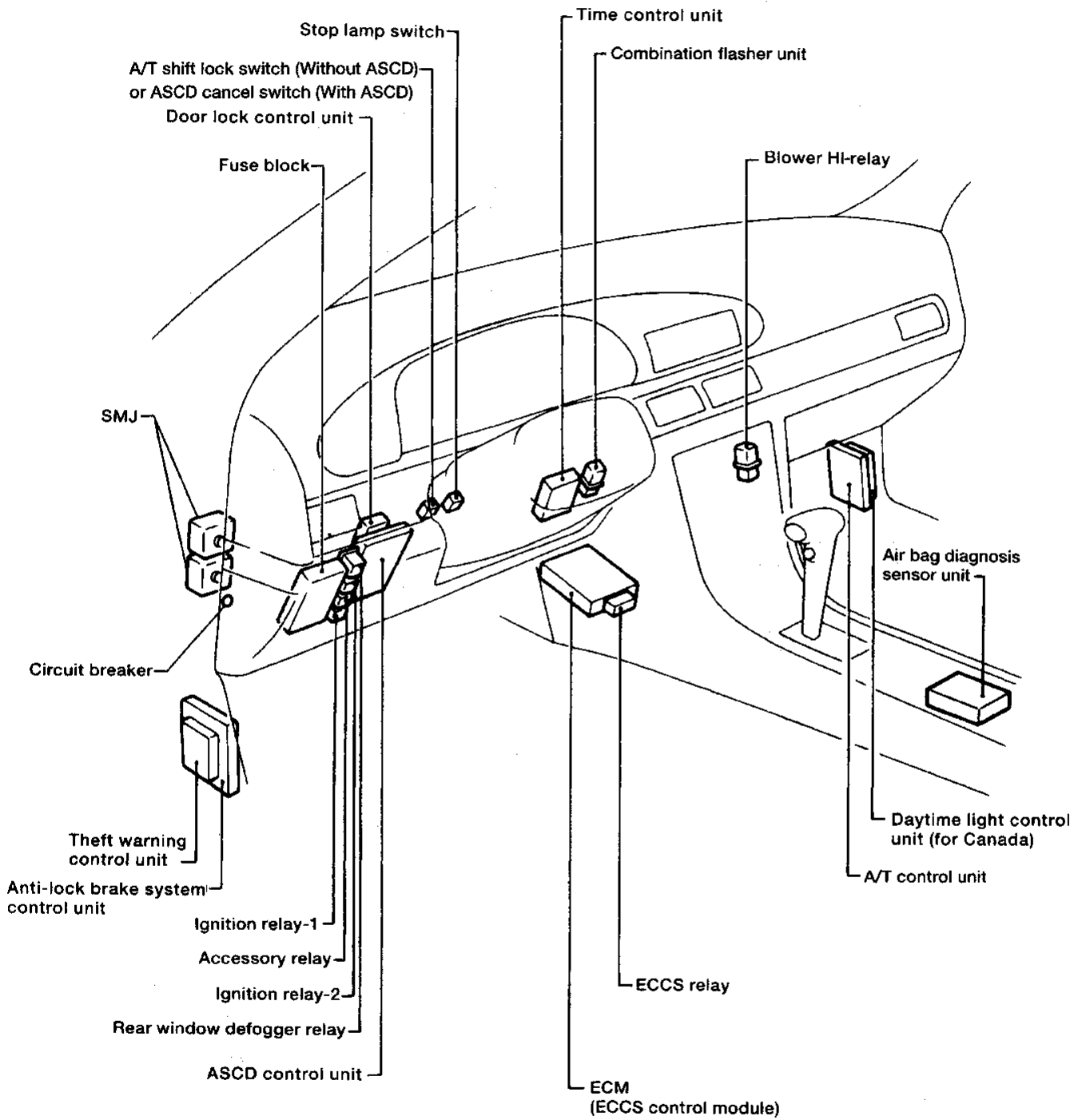
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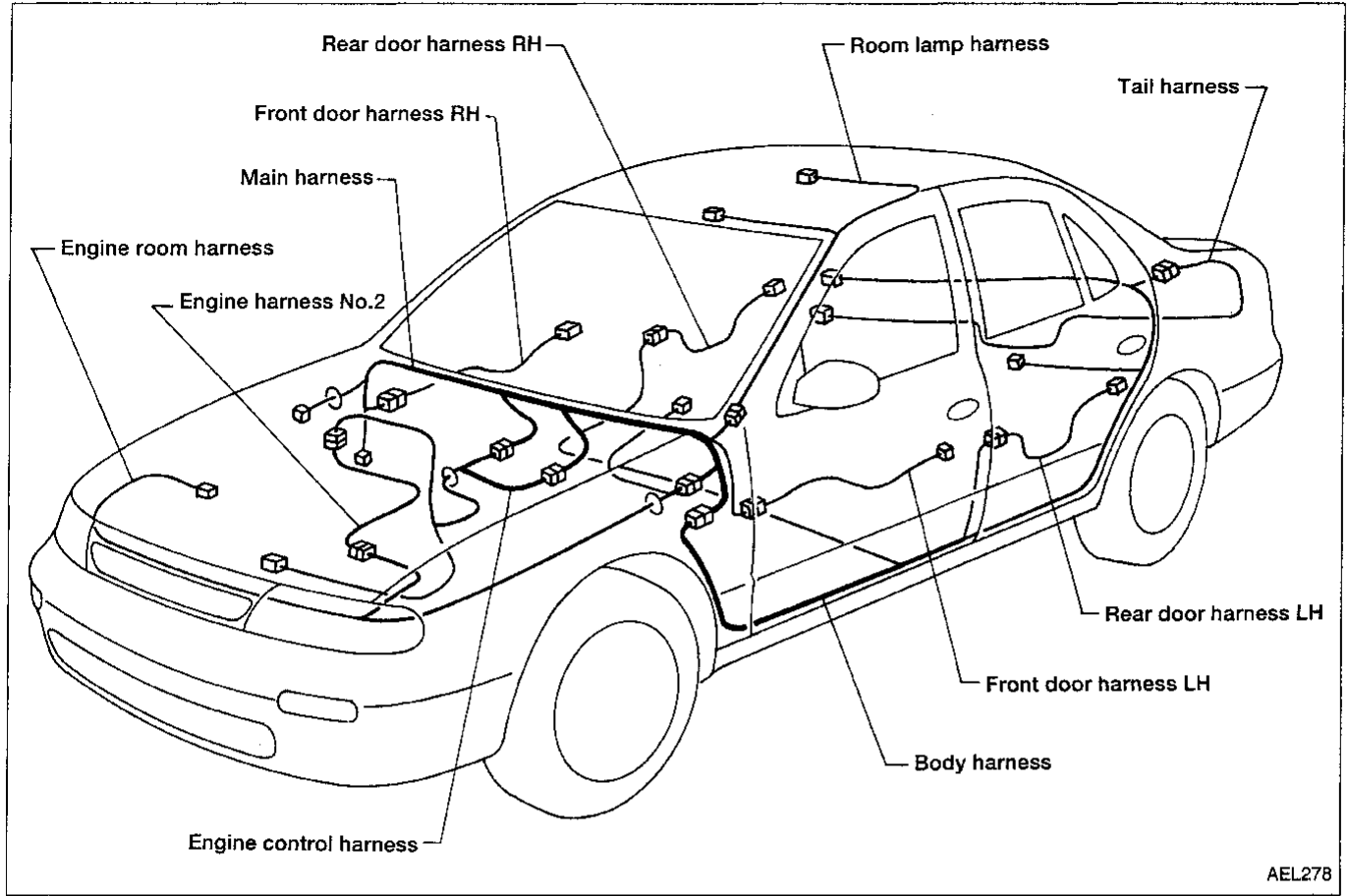
LOCATION OF ELECTRICAL UNITS

Passenger Compartment



HARNES LAYOUT

Outline



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

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

The grid reference is placed on the page where connectors are listed in number order.

To the left of the connector number code there is a grid reference.

Example:

G2 (E1): ASCD actuator

└ grid reference

To use the grid reference

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

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

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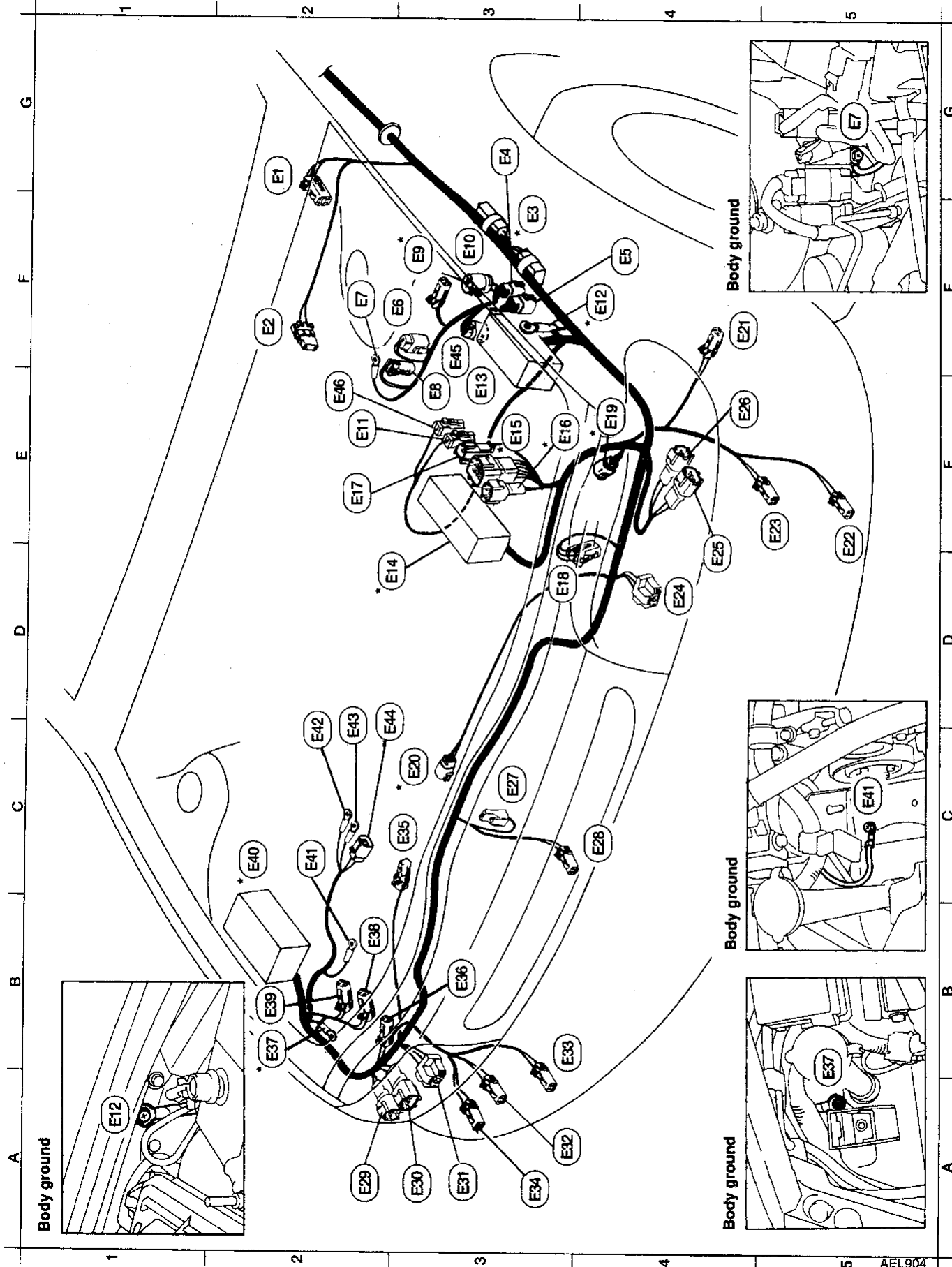
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HARNESS LAYOUT

ENGINE COMPARTMENT

Engine Room Harness



AEL904

HARNES LAYOUT

Engine Room Harness (Cont'd)

Engine room harness

G2	(E1)	: ASCD actuator	D4	(E24)	: Headlamp LH
F2	(E2)	: Brake fluid level switch	D4	(E25)	: Clearance and cornering lamp LH
F3 *	(E3)	: Joint connectors 3-6	E4	(E26)	: Clearance lamp LH
G3	(E4)	: Actuator (For ABS)	C3	(E27)	: Horn
F4	(E5)	: Actuator (For ABS)	C4	(E28)	: Ambient sensor
F3	(E6)	: Actuator (For ABS)	A2	(E29)	: Clearance lamp RH
F2	(E7)	: Body ground (For ABS)	A3	(E30)	: Clearance and cornering lamp RH
E3	(E8)	: Front sensor LH (For ABS)	A3	(E31)	: Headlamp RH
F3 *	(E9)	: Dropping resistor (A/T models)	A3	(E32)	: Front turn signal lamp RH
F3	(E10)	: Hood switch (For theft warning system)	B3	(E33)	: Front fog lamp RH (For standard fog lamp models)
E2	(E11)	: Battery	A3	(E34)	: Front side marker RH
F4 *	(E12)	: Body ground	C3	(E35)	: Compressor
E3	(E13)	: Fusible link and fuse box	B3	(E36)	: Front fog lamp sub-harness (For optional fog lamp models)
D3 *	(E14)	: Relay box-2	B2 *	(E37)	: Body ground
E3 *	(E15)	: To (E213)	B2	(E38)	: Washer level switch (For Canada)
E3 *	(E16)	: To (E214)	B2	(E39)	: Washer motor
E2	(E17)	: To (E215)	C2 *	(E40)	: Relay box-1
E4	(E18)	: Air conditioning triple-pressure switch	C2	(E41)	: Body ground
E4 *	(E19)	: Cooling fan motor-1	C2	(E42)	: Generator
C3 *	(E20)	: Cooling fan motor-2	D2	(E43)	: Generator
F4	(E21)	: Front side marker lamp LH	D2	(E44)	: Generator
E5	(E22)	: Front fog lamp LH (For standard fog lamp models)	E3 *	(E45)	: Intake air temperature sensor (Models for California)
E5	(E23)	: Front turn signal lamp LH	E2	(E46)	: Battery

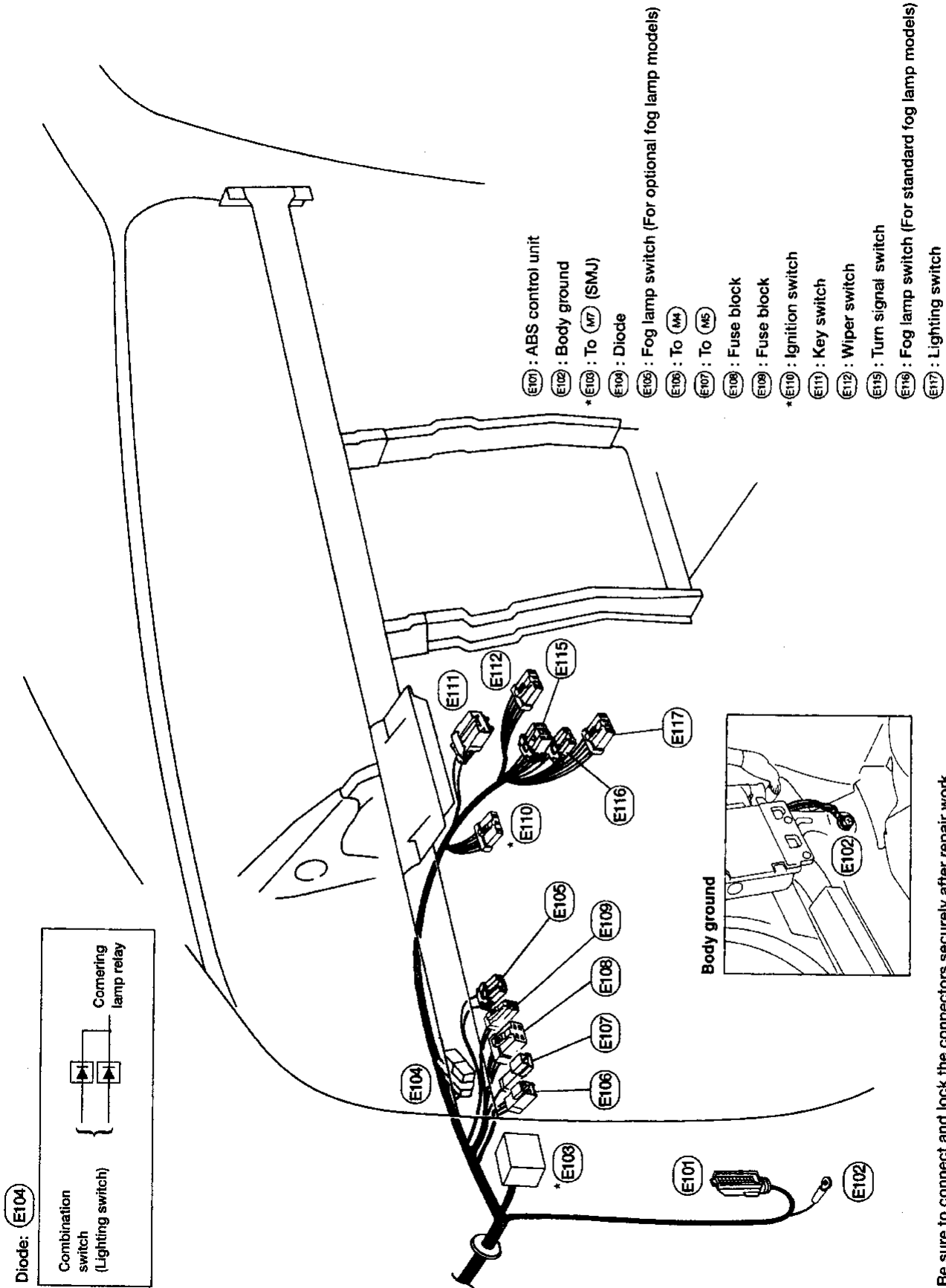
* : Be sure to connect and lock the connectors securely after repair work.
Failure to do so may cause the on-board diagnostic system to light up the MIL as an open circuit detection.

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HARNESS LAYOUT

Engine Room Harness (Cont'd)

PASSENGER COMPARTMENT



* : Be sure to connect and lock the connectors securely after repair work. Failure to do so may cause the on-board diagnostic system to light up the MIL as an open circuit detection.

AEL913

HARNESS LAYOUT

NOTES

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HARNES LAYOUT

Main Harness (Cont'd)

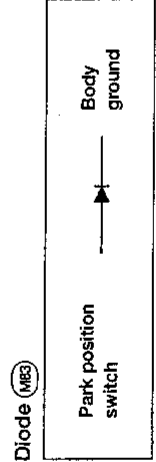
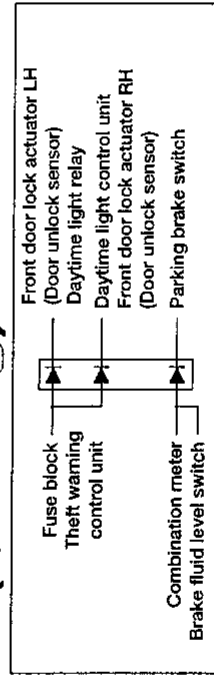
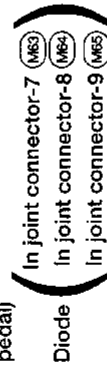
Main Harness

- B5 (M1) : Theft warning control unit (For theft warning system)
- B4 (M2) : Circuit breaker
- A2 (M4) : To (E106)
- A2 (M5) : To (E107)
- A4 * (M6) : To (E1) (SMJ)
- A4 * (M7) : To (E103) (SMJ)
- A3 (M8) : To (D13)
- A3 (M9) : To (D2)
- B4 (M11) : Fuse block
- B4 (M12) : Rear window defogger relay
- B3 (M13) : Clutch pedal position switch (M/T models)
- B3 (M14) : ASCD clutch pedal position switch (M/T models)
- A5 (M15) : Data link connector for CONSULT
- B2 (M16) : To (R1)
- B2 (M17) : ASCD switch
- B3 (M18) : Mirror switch
- C4 (M19) : Illumination control switch
- C4 (M20) : ASCD control unit
- C4 (M22) : Door lock control unit
- B2 (M23) : ASCD cancel switch (On brake pedal)
- C2 (M24) : Stop lamp switch
- E1 (M25) : Hazard switch
- D1 (M26) : Auto air conditioning unit
- E2 (M27) : Auto air conditioning unit
- D1 (M28) : Push control unit
- E3 (M29) : Push control unit
- E1 (M30) : Air conditioning switch
- E2 (M31) : Potentio temperature control
- D1 (M32) : Fan switch
- D4 (M34) : Combination flasher unit
- D4 (M35) : Air mix door motor

- D4 (M36) : Mode door motor
- D4 (M37) : Time control unit
- C1 (M38) : Rear window defogger switch
- C1 (M40) : In-vehicle sensor
- C3 * (M41) : Combination meter
- C3 * (M42) : Combination meter
- C3 (M43) : Combination meter
- C1 (M44) : Combination meter
- E3 (M47) : Radio
- E3 (M48) : Radio
- D4 * (M49) : To (F23)
- E4 * (M50) : To (F24)
- C2 (M51) : Body Ground
- E4 (M53) : Cigarette lighter
- E2 (M55) : Blower HI-relay
- F3 (M56) : Thermo control amp.
- F3 (M57) : Glove box lamp
- F3 (M58) : Fresh vent door motor
- F3 * (M59) : To (F2)
- F4 * (M60) : To (F2)

- E1 (M63) : Joint connector-7 (With audio amp. for USA)
- F1 (M64) : Joint connector-8 (With audio amp. for Canada)
- F1 (M65) : Joint connector-9 (Without audio amp. for Canada)
- D2 (M66) : To (A4)
- F2 (M67) : Fan control amp.
- E2 (M69) : Intake door motor
- E1 (M70) : Sunload sensor
- F1 (M73) : Tweeter RH
- G2 (M74) : To (D51)
- G2 (M75) : To (D52)
- G2 (M76) : Body ground
- G3 (M77) : Body ground
- F3 (M78) : Fan resistor
- G2 (M79) : Blower motor
- G3 (M80) : Daytime light control unit (For Canada)
- G3 * (M81) : A/T control unit
- G3 (M82) : Daytime light control unit (For Canada)
- C1 (M83) : Diode
- B2 (M84) : A/T shift lock switch (Without ASCD)
- C4 (M85) : Door lock control unit
- B3 (M106) : To (E31)
- B4 (M107) : Data link connector for GST
- E4 (M108) : Shift lock solenoid, park position switch, override switch and A/T illumination (A/T models)
- D1 (M109) : Clock (With active speaker audio system)

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

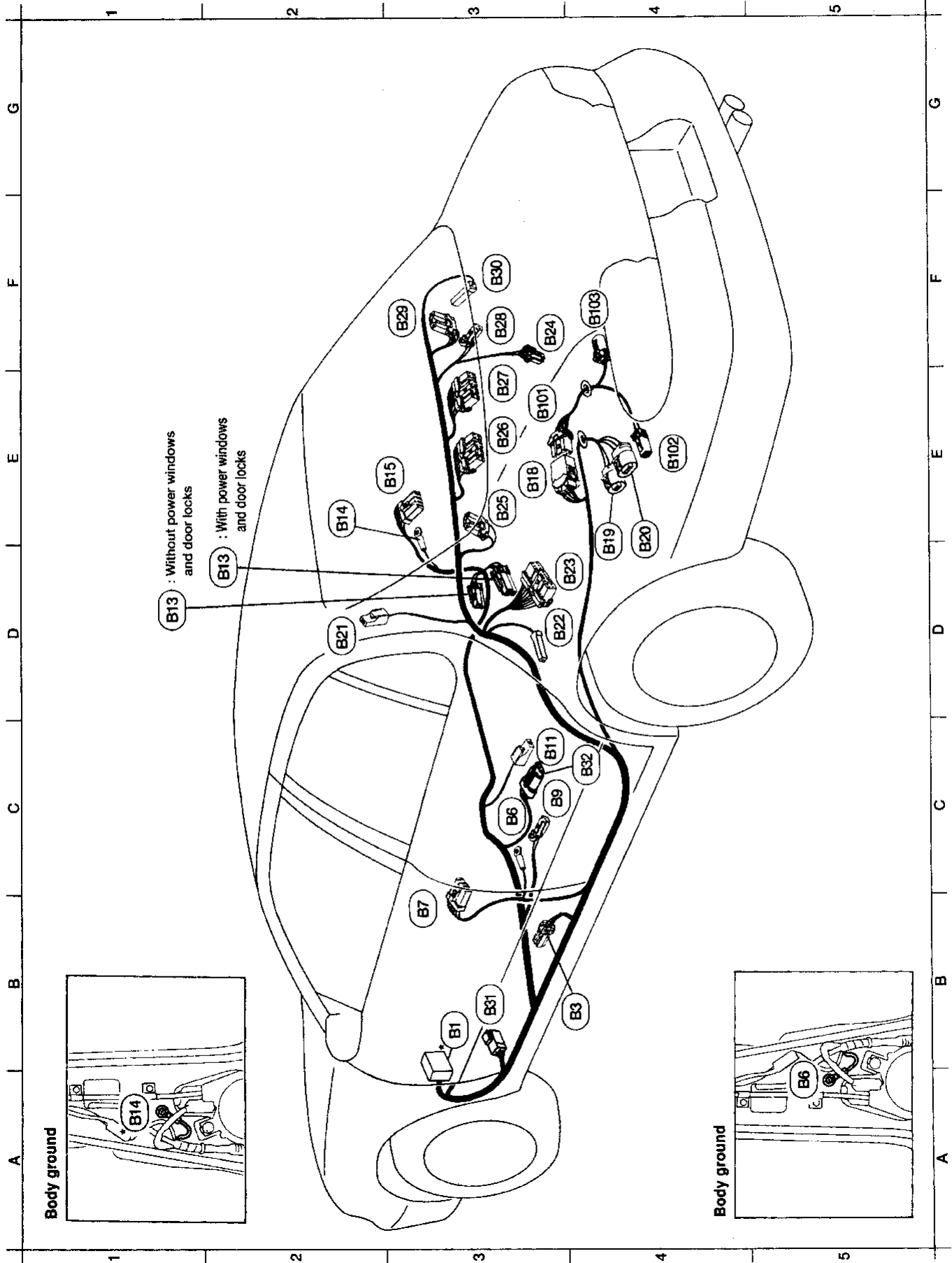


* : Be sure to connect and lock the connectors securely after repair work. Failure to do so may cause the on-board diagnostic system to light up the MIL as an open circuit detection.

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HARNESS LAYOUT

Body Harness



Body ground

Body ground

HARNES LAYOUT

Body Harness (Cont'd)

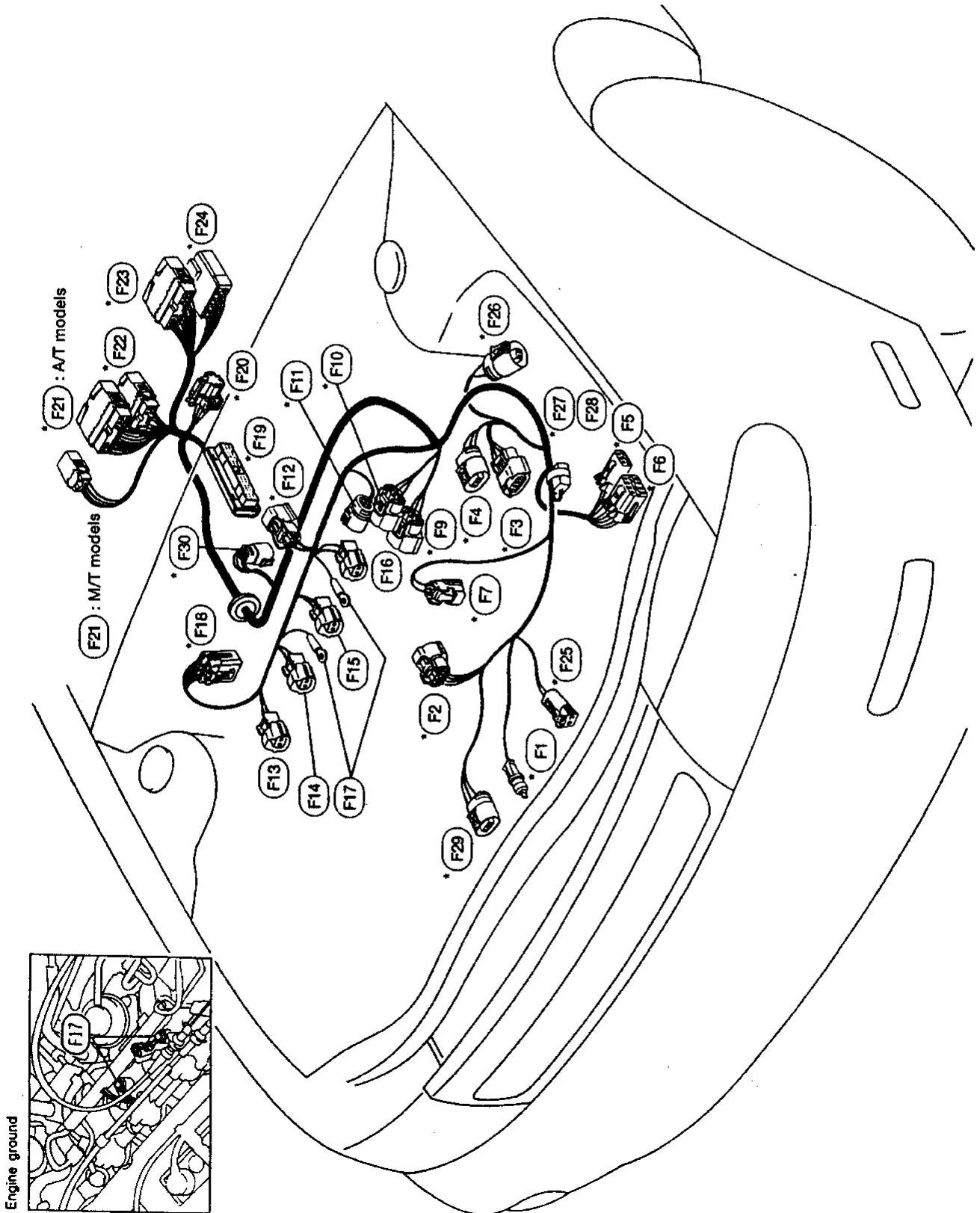
B3 *	(B1) : To (ME) (SMU)	D3	(B23) : To (T1)
B4	(B3) : Front door switch LH (Driver's side)	F3	(B24) : Trunk room lamp
C3	(B6) : Body ground	B3	(B25) : Rear speaker LH
B3	(B7) : To (D10)	C3	(B26) : Front speaker amp.
C3	(B8) : Seat belt switch	E3	(B27) : Rear speaker amp.
C3	(B11) : Parking brake switch	E3	(B28) : High-mounted stop lamp (Without rear air spoiler)
D2	(B13) : Front door switch RH (Passenger side)	E3	(B29) : Rear speaker RH
E2	(B14) : Body ground	F3	(B30) : Rear door switch RH
E2	(B15) : To (D15)	B3	(B31) : To (M108)
E3	(B18) : To (B107)	C3 *	(B32) : Rear heated oxygen sensor (Except models for California)
E4	(B19) : Fuel pump	E3	(B101) : To (B18)
E4	(B20) : Fuel tank gauge unit	E4	(B102) : Rear sensor LH (For ABS)
D2	(B21) : Rear window defogger condenser	F4	(B103) : Rear sensor RH (For ABS)
D3	(B22) : Rear door switch LH		

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HARNESS LAYOUT

Engine Control Harness



HARNESS LAYOUT

Engine Control Harness (Cont'd)

Engine control harness

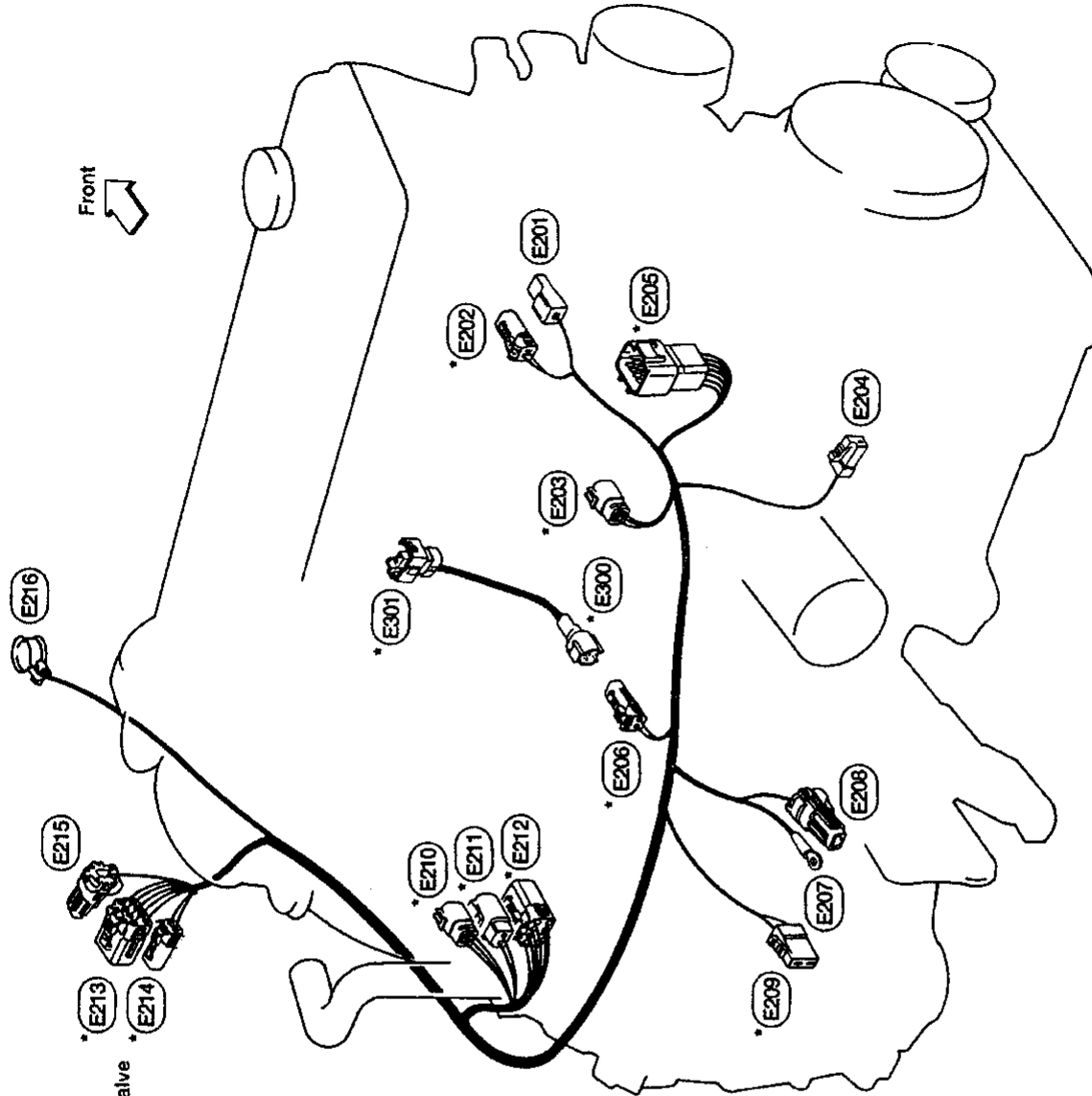
- * F1 : Front oxygen sensor (Except models for California)
- * F2 : Camshaft position sensor
- * F3 : Mass air flow sensor
- * F4 : Power transistor
- * F5 : Revolution sensor (A/T models)
- * F6 : To terminal cord assembly (A/T models)
- * F7 : Ignition coil
- * F9 : Throttle position switch (A/T models)
- * F10 : Throttle position sensor
- * F11 : EGR temperature sensor
- * F12 : EGR valve & EVAP canister control solenoid valve
- F13 : Injector No. 1
- F14 : Injector No. 2
- F15 : Injector No. 3
- F16 : Injector No. 4
- F17 : Engine ground
- * F18 : To E206
- * F19 : ECM (ECCS control module)
- * F20 : ECCS relay
- * F21 : To M109
- * F22 : To M180
- * F23 : To M149
- * F24 : To M150
- * F25 : Crankshaft position sensor (OBD)
- * F26 : Intake air temperature sensor
- * F27 : Resistor
- F28 : Condenser
- * F29 : Front heated oxygen sensor (Models for California)
- * F30 : Rear heated oxygen sensor (Models for California)

* : Be sure to connect and lock the connectors securely after repair work.
Failure to do so may cause the on-board diagnostic system to light up the MIL as an open circuit detection.

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HARNESS LAYOUT

Engine Harness No. 2



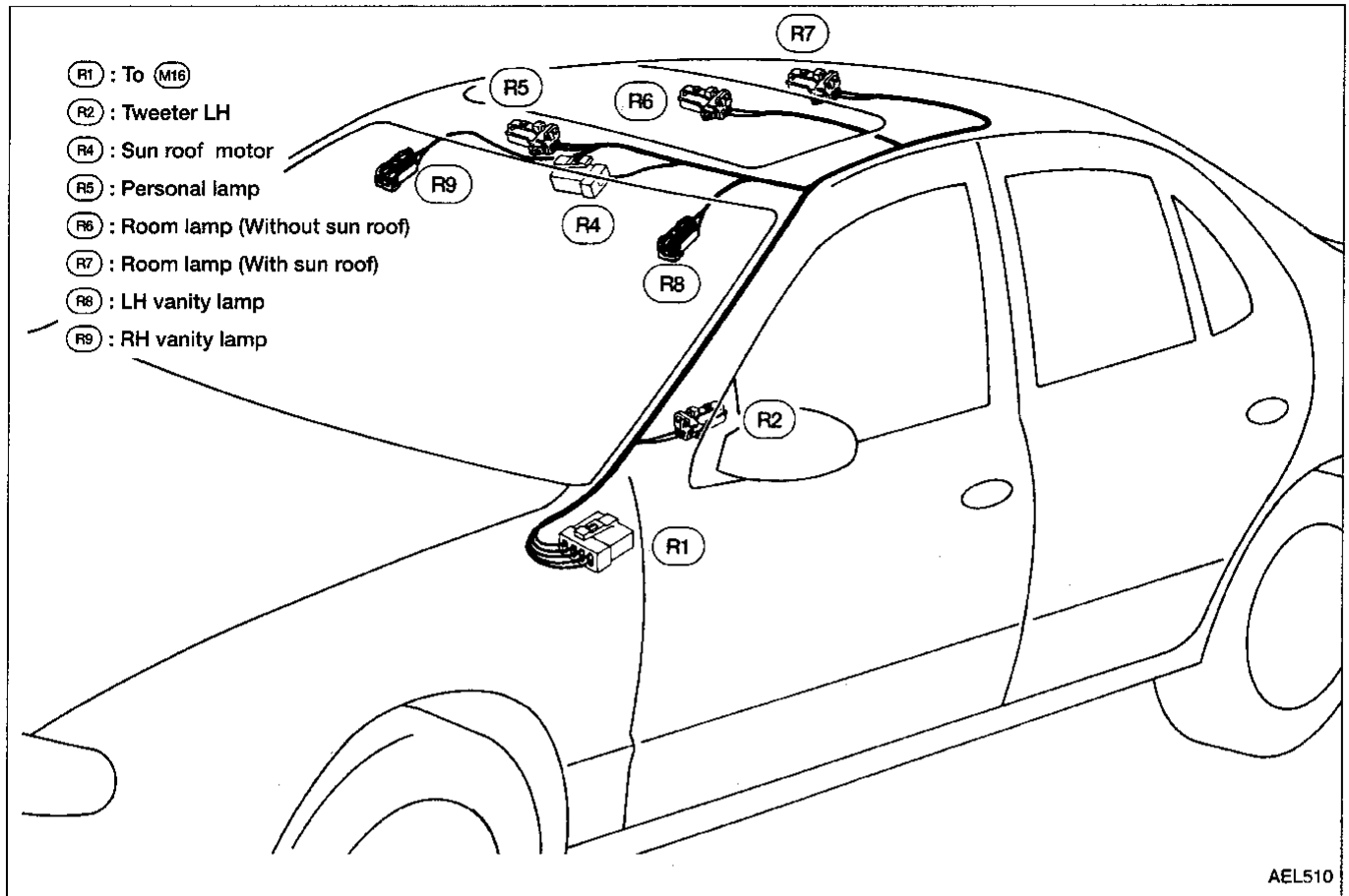
Engine harness No. 2

- (E20) : Thermal transmitter
- (E202) : Engine coolant temperature sensor
- (E203) : IAC valve-FICD solenoid valve & IAC valve-AAC valve
- (E204) : Oil pressure switch
- (E206) : To (E18)
- (E209) : To (E300)
- (E207) : Starter motor
- (E208) : Starter motor
- (E209) : Vehicle speed sensor
- (E210) : Position switch (M/T models)
- (E211) : Inhibitor switch (A/T models)
- (E212) : Inhibitor switch (A/T models)
- (E213) : To (E15)
- (E214) : To (E16)
- (E215) : To (E17)
- (E216) : Battery
- Subharness
- (E209) : To (E206)
- (E201) : Knock sensor

* : Be sure to connect and lock the connectors securely after repair work.
 Failure to do so may cause the on-board diagnostic system to light up the MIL as an open circuit detection.

HARNESS LAYOUT

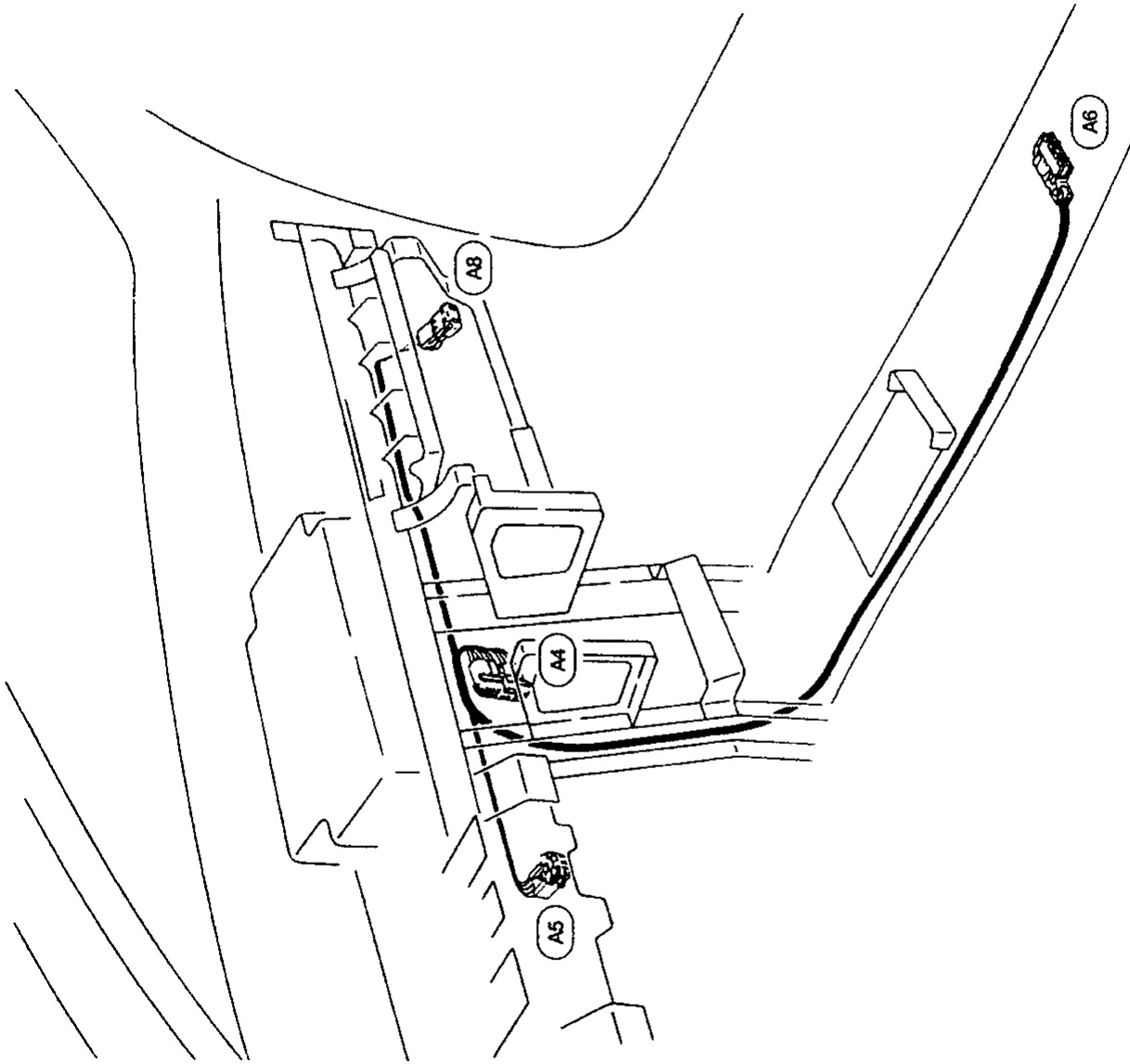
Room Lamp Harness



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HARNESS LAYOUT

Air Bag Harness

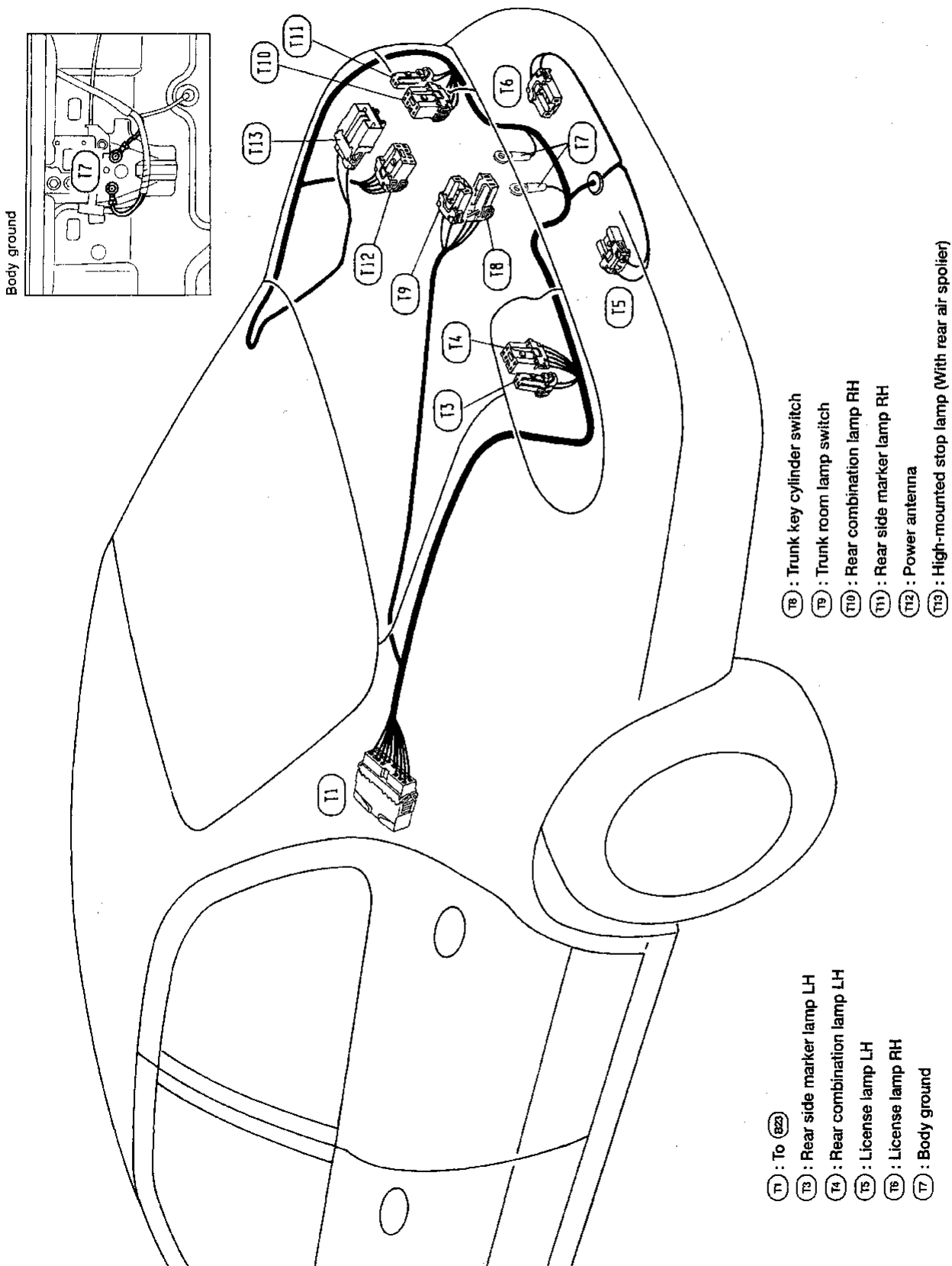


- (A4) : To (M65)
- (A5) : To spiral cable
- (A6) : Air bag diagnosis sensor unit
- (A8) : Air bag module (Passenger side)

AEL918

HARNESS LAYOUT

Tail Harness

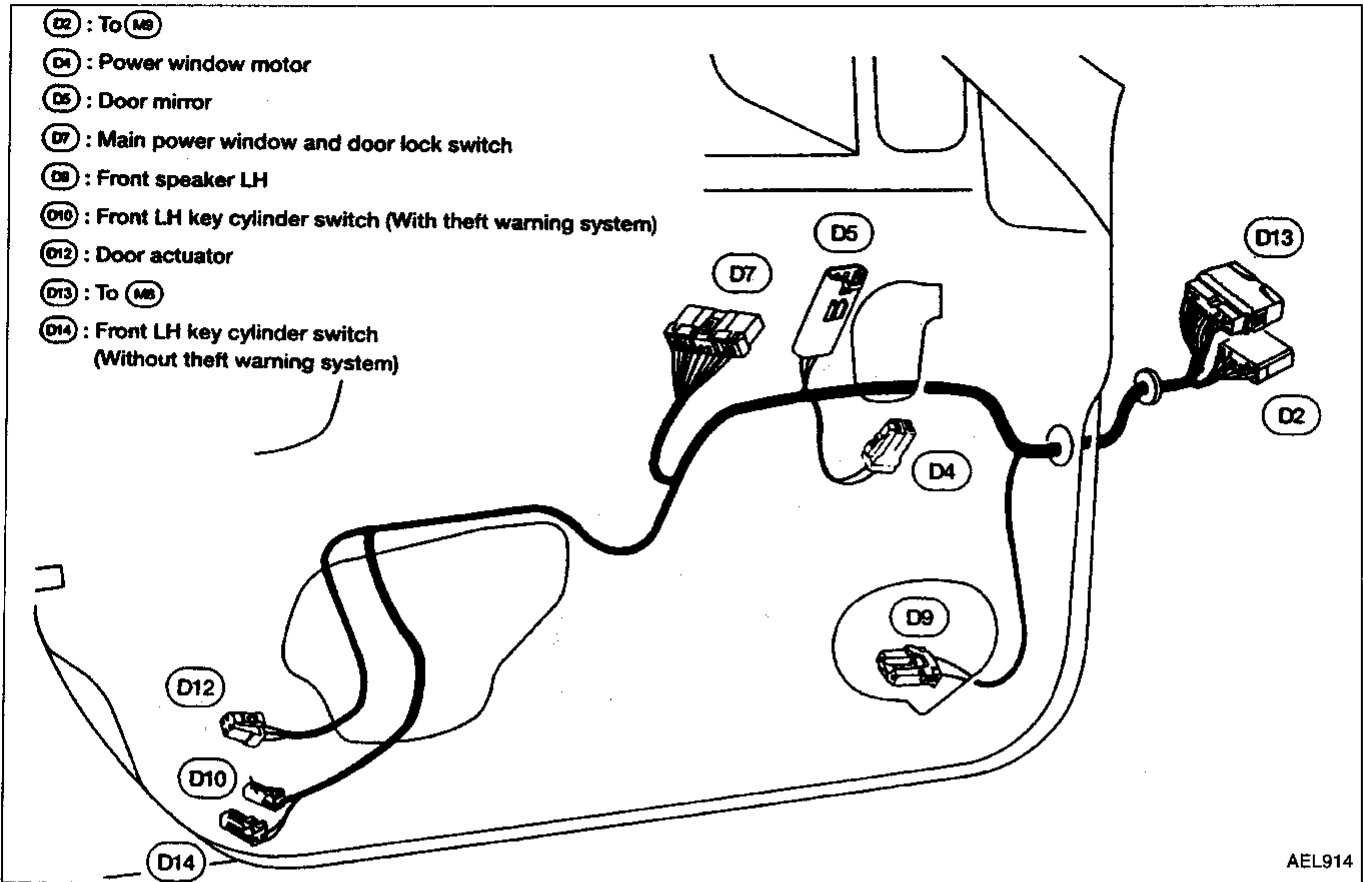


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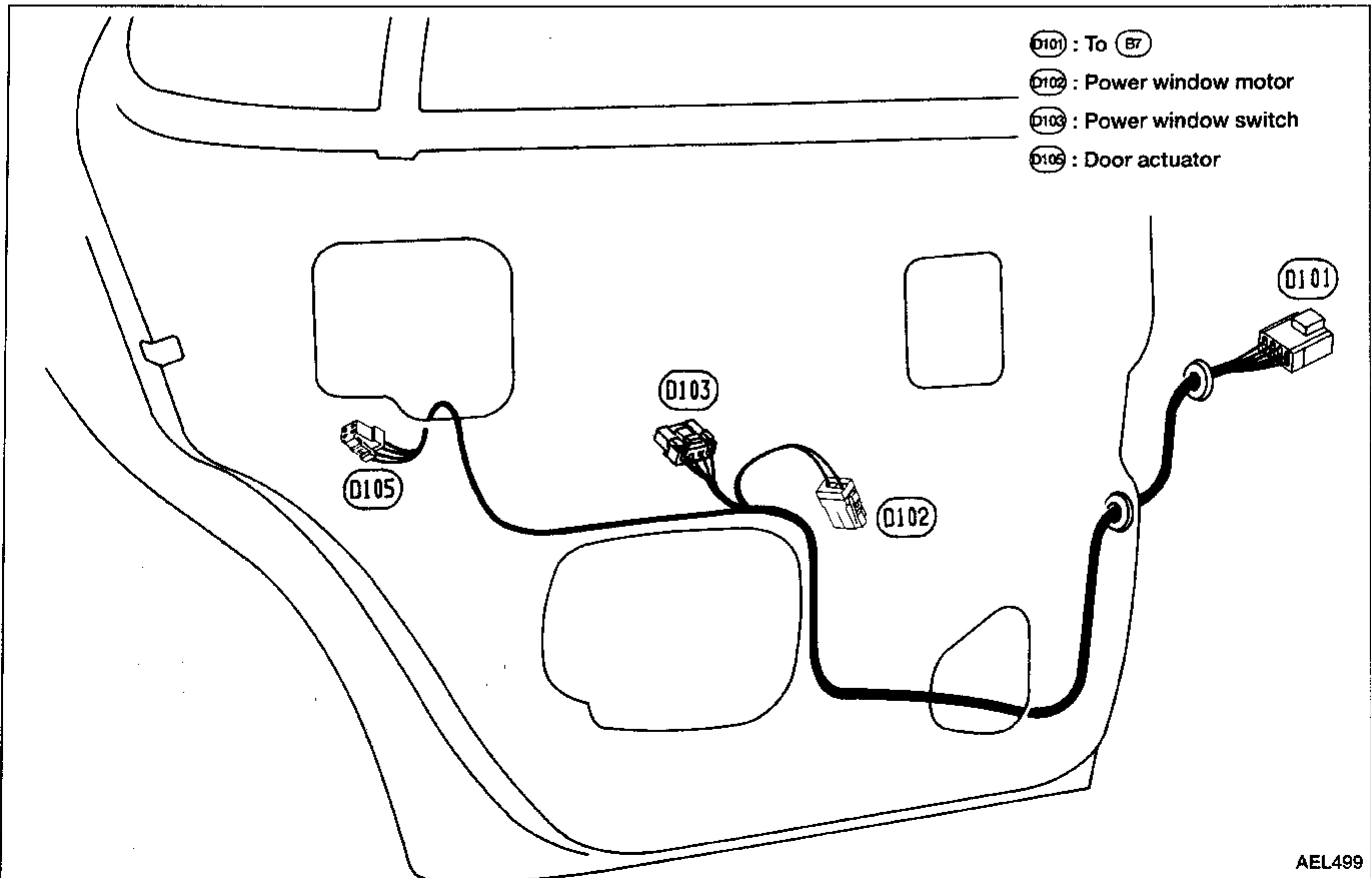
HARNESS LAYOUT

FRONT

Door Harness (LH side)



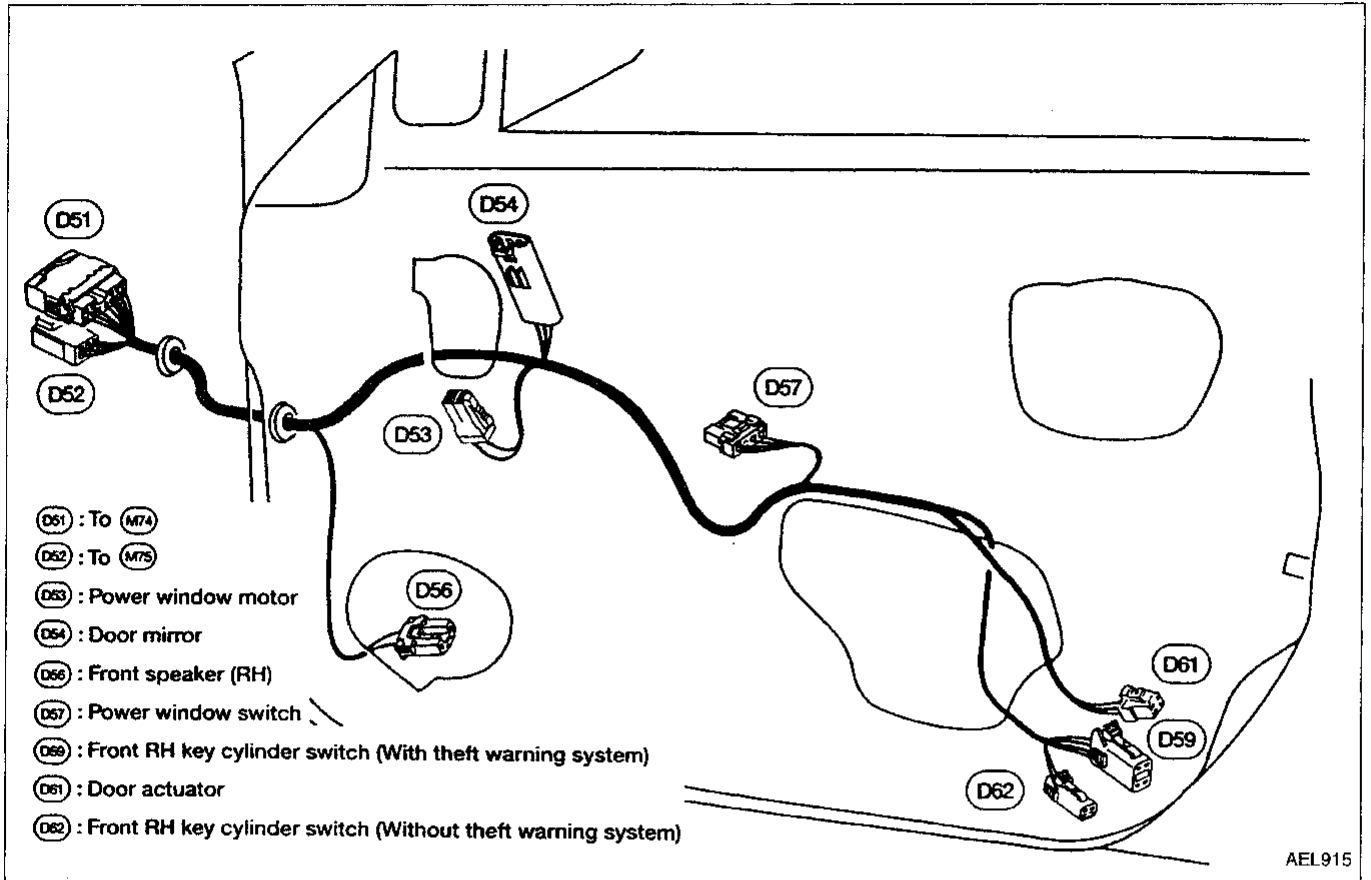
REAR



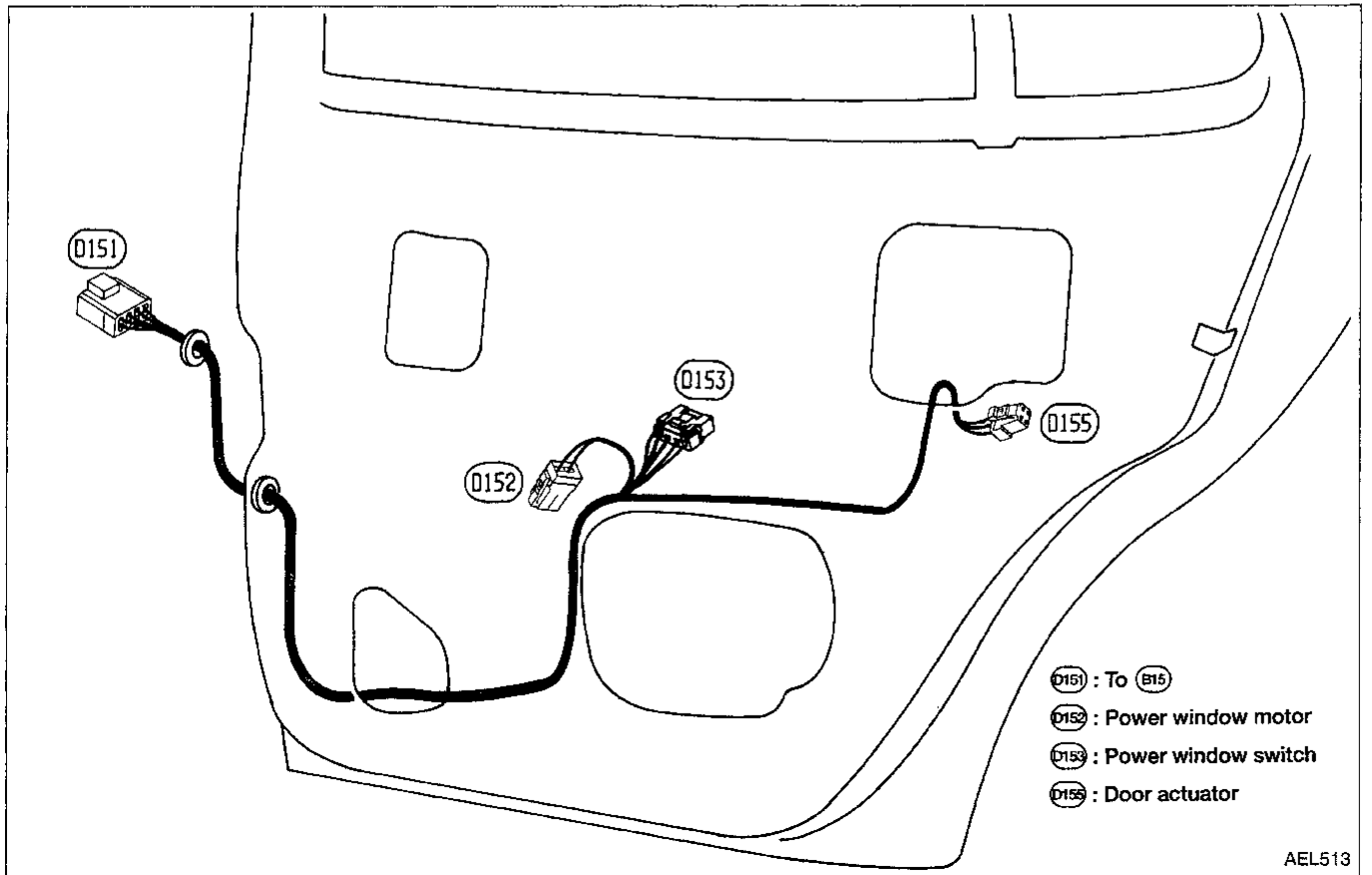
BATTERY

FRONT

Door Harness (RH side)



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