

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	BR
AUTOMATIC TRANSAXLE CONTROL SYSTEM, SHIFT LOCK SYSTEM.....	AT SECTION	
ANTI-LOCK BRAKE SYSTEM.....	BR SECTION	
SRS “AIR BAG”.....	RS SECTION	ST
HEATER AND AIR CONDITIONER.....	HA SECTION	

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Supplemental Restraint System (SRS) “AIR BAG”

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

WARNING:

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

HARNESS CONNECTOR

Description

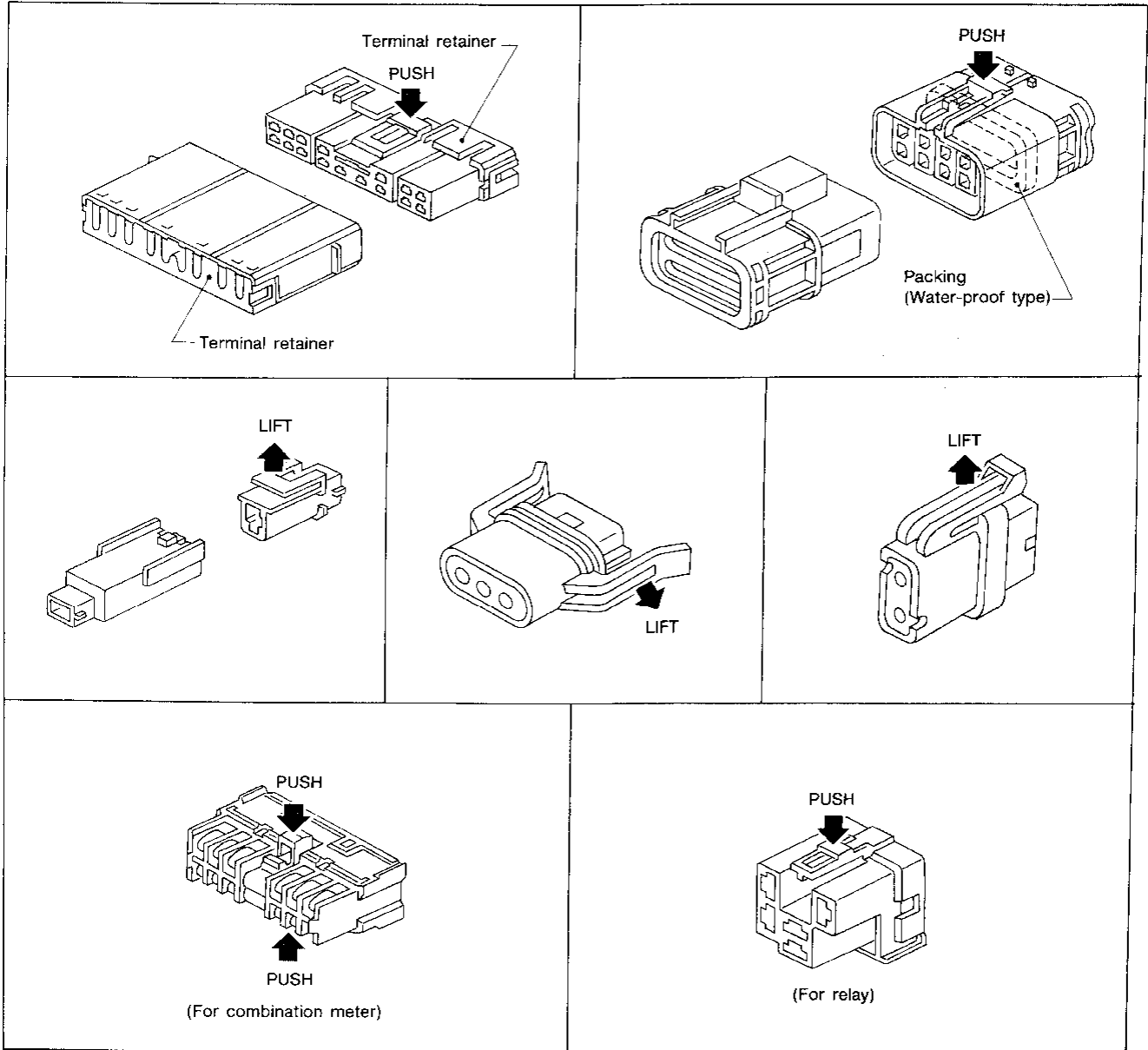
HARNESS CONNECTOR

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

CAUTION:

Do not pull the harness when disconnecting the connector.

[Example]



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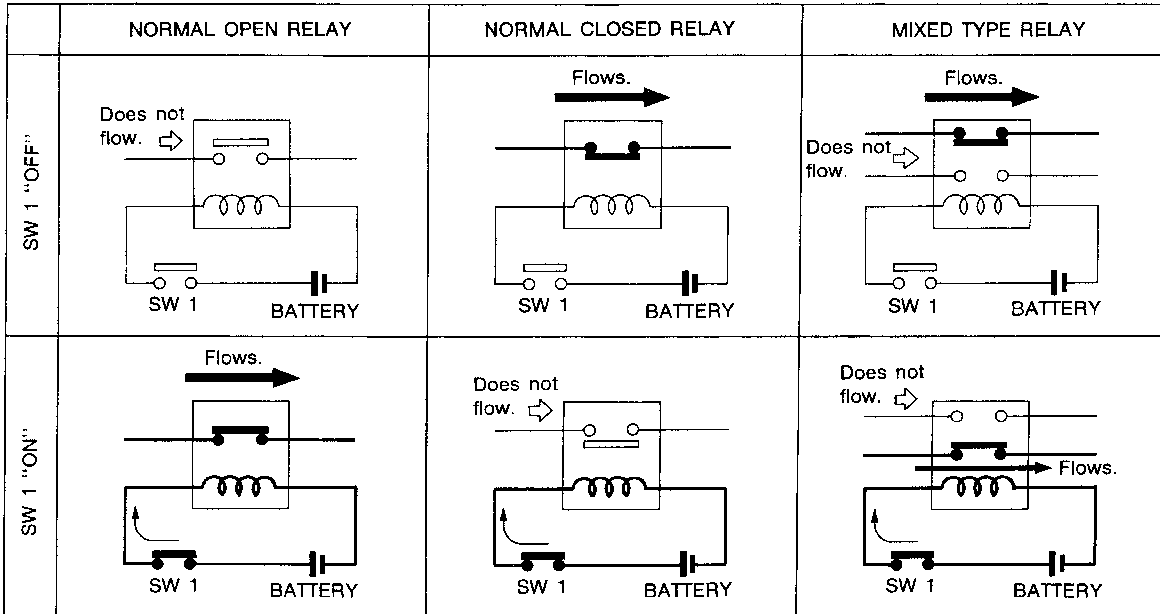
AEL050

STANDARDIZED RELAY

Description

NORMAL OPEN, NORMAL CLOSED AND MIXED TYPE RELAYS

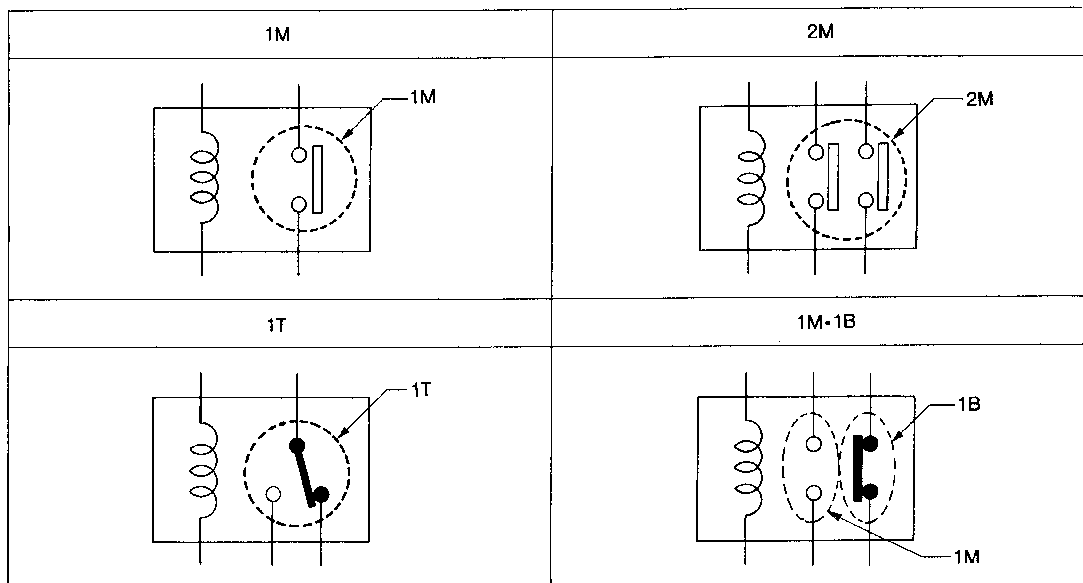
Relays can mainly be divided into three types: normal open, normal closed and mixed type relays.



SEL881H

TYPE OF STANDARDIZED RELAYS

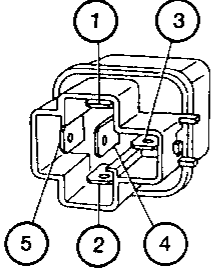
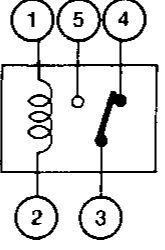
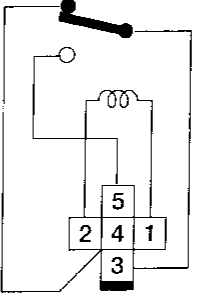
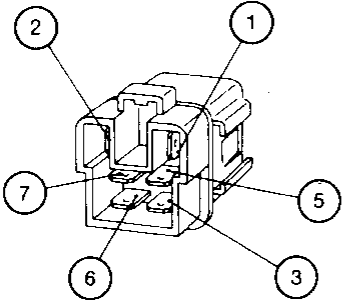
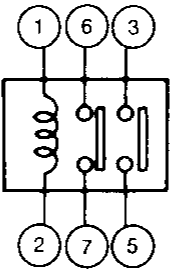
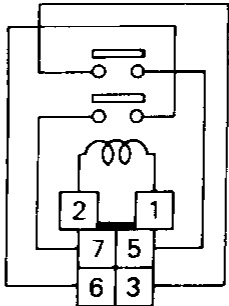
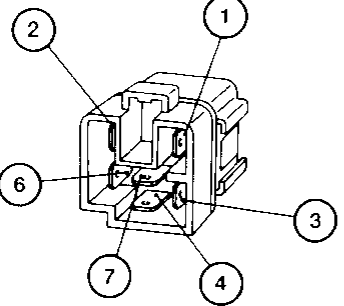
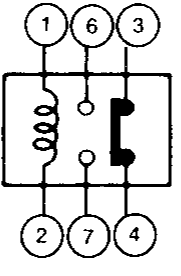
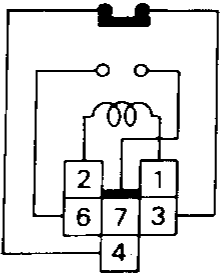
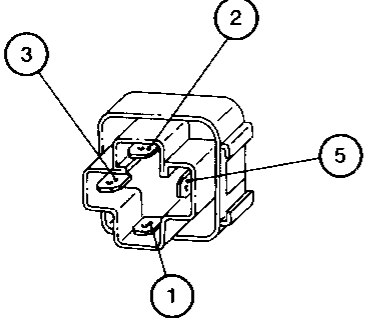
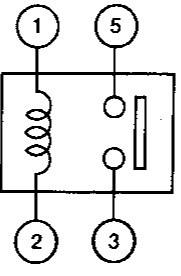
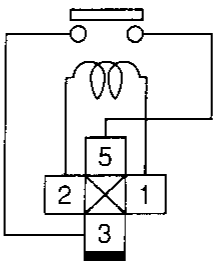
1M 1 Make 2M 2 Make
 1T 1 Transfer 1M-1B 1 Make 1 Break



SEL882H

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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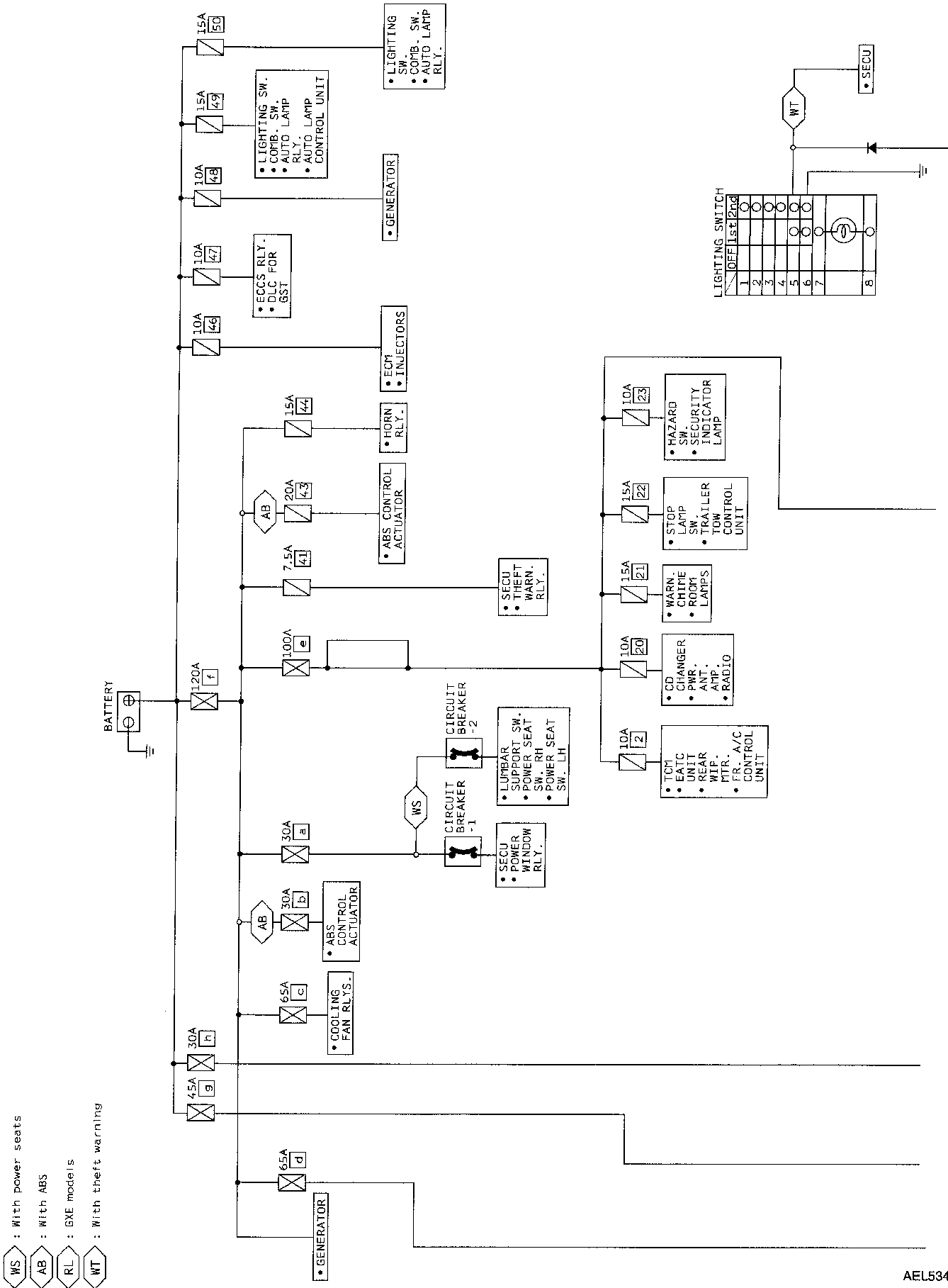
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POWER SUPPLY ROUTING

Schematic

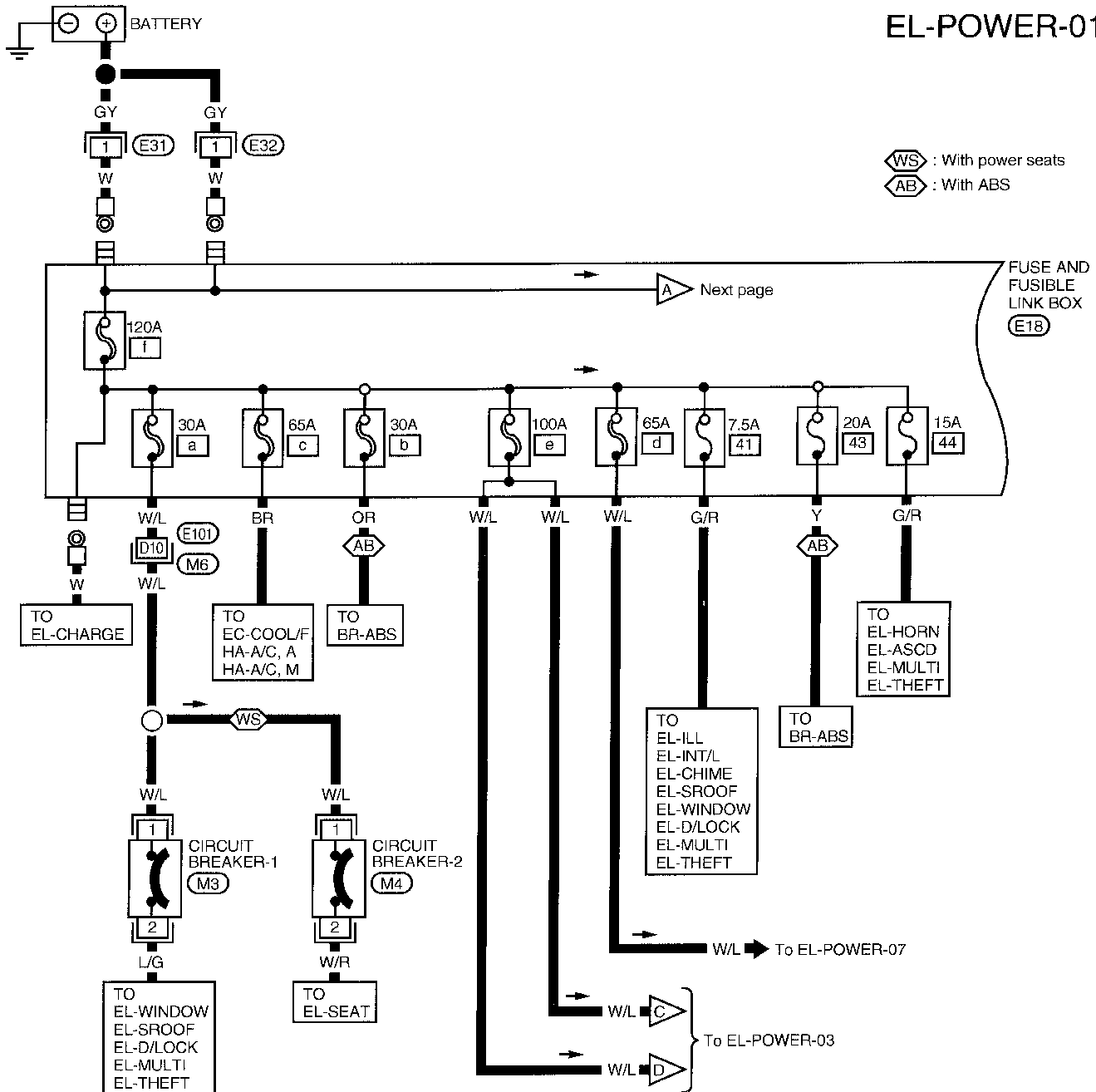


POWER SUPPLY ROUTING

Wiring Diagram -POWER-

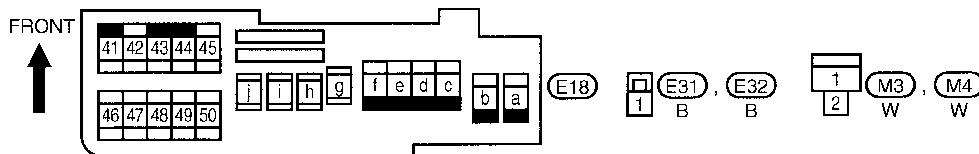
BATTERY POWER SUPPLY — IGNITION SW. IN ANY POSITION

EL-POWER-01



Refer to last page (Foldout page).

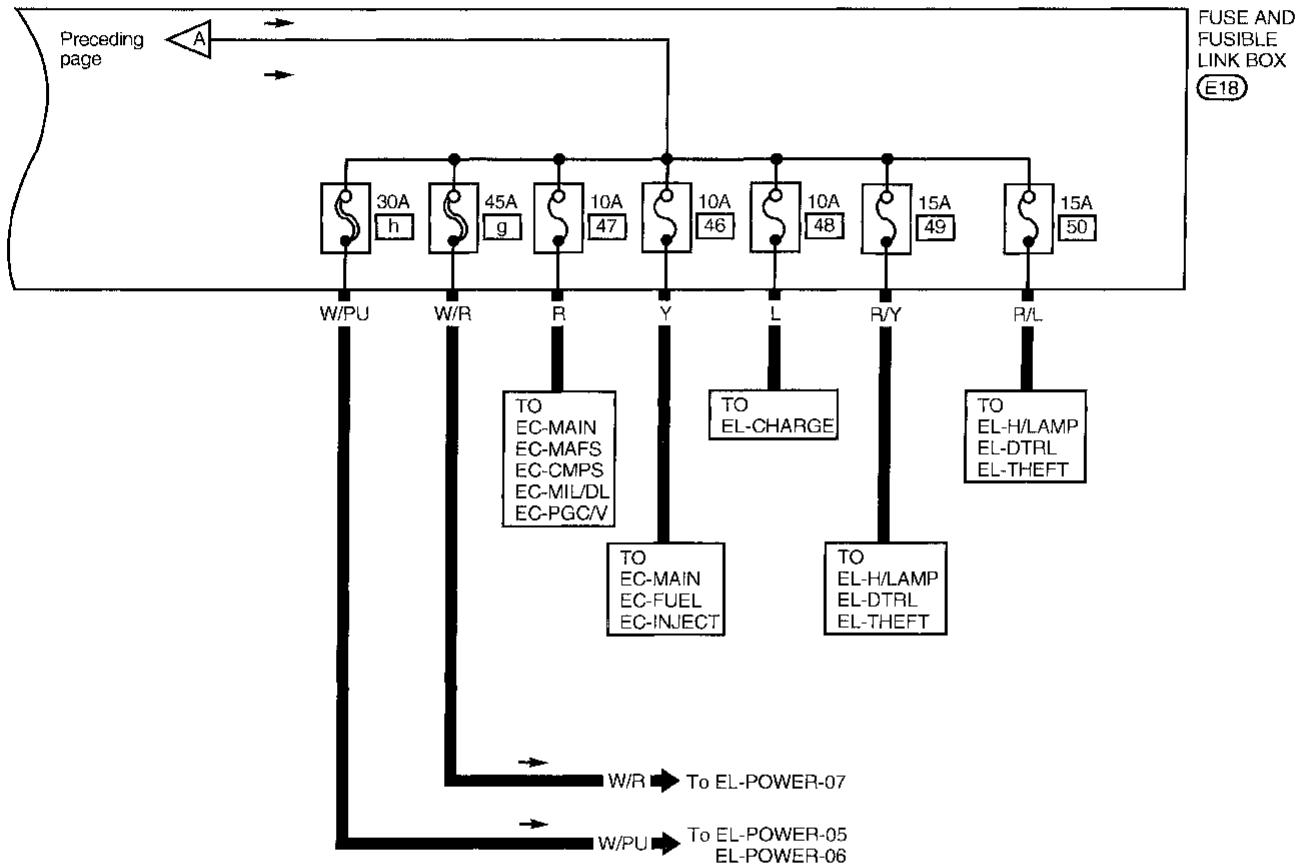
(M6), (E101)



POWER SUPPLY ROUTING

Wiring Diagram --POWER-- (Cont'd)

EL-POWER-02



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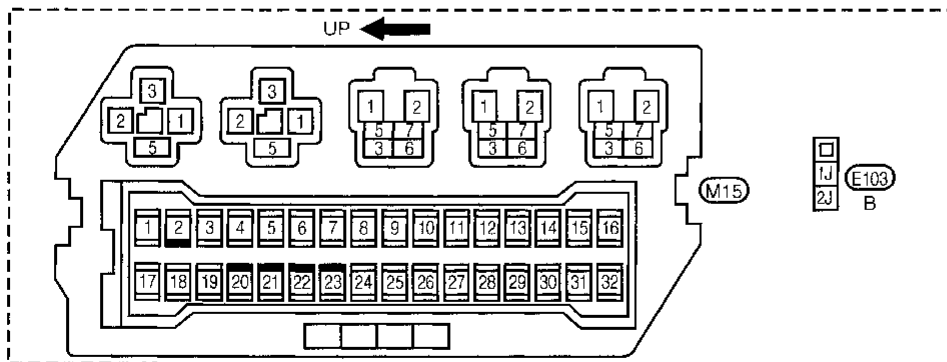
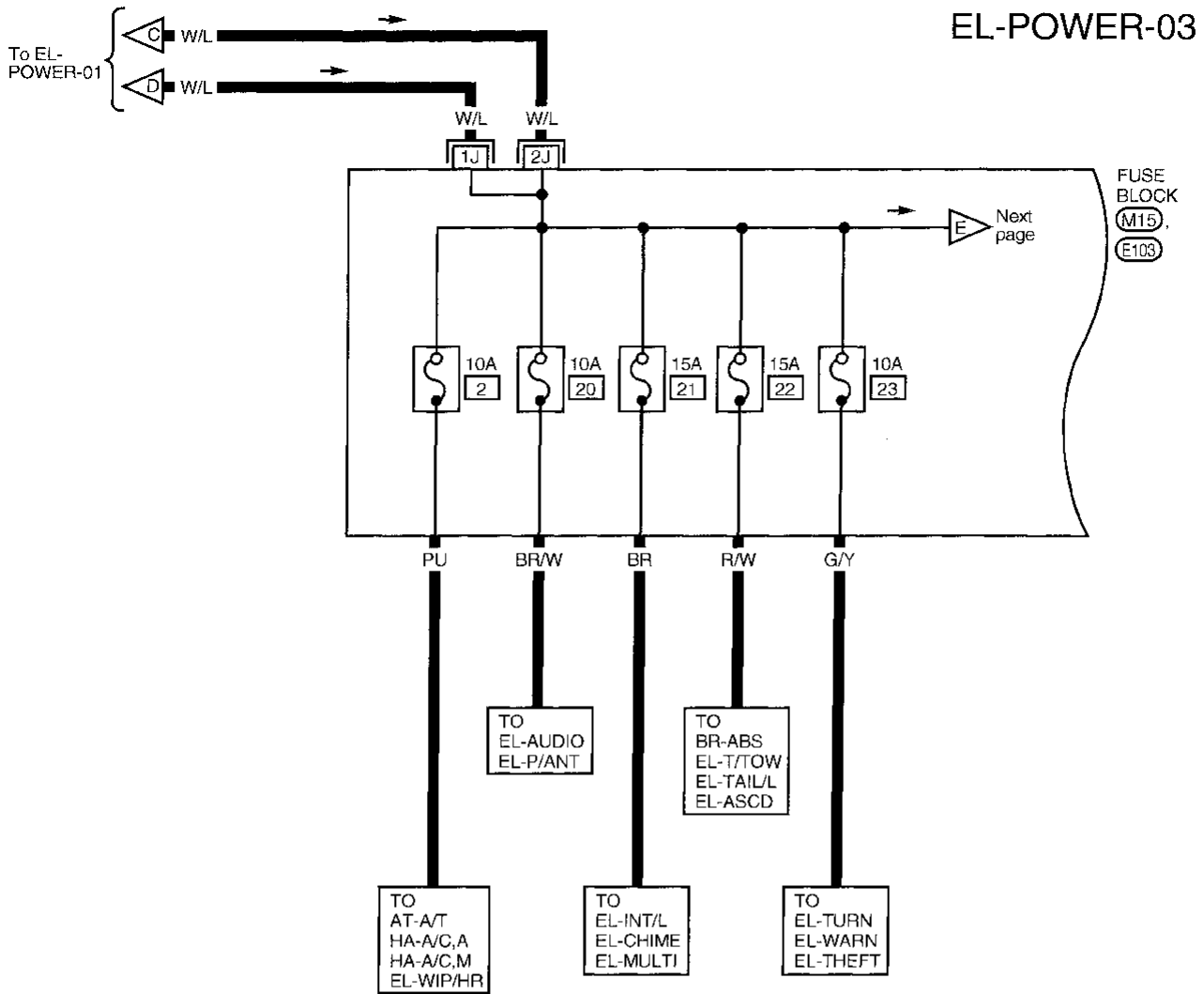
HA

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POWER SUPPLY ROUTING

Wiring Diagram -POWER- (Cont'd)



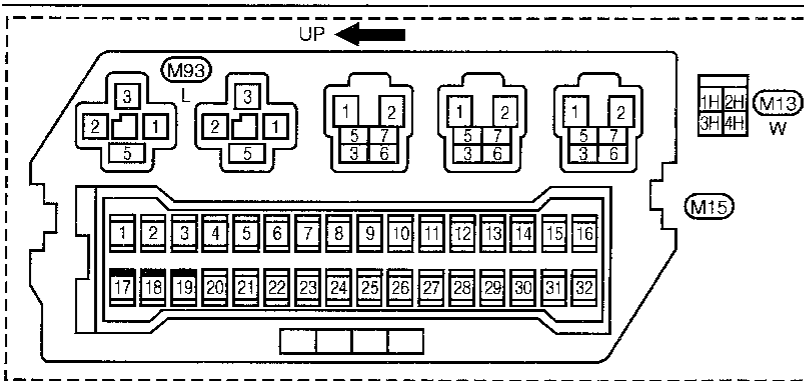
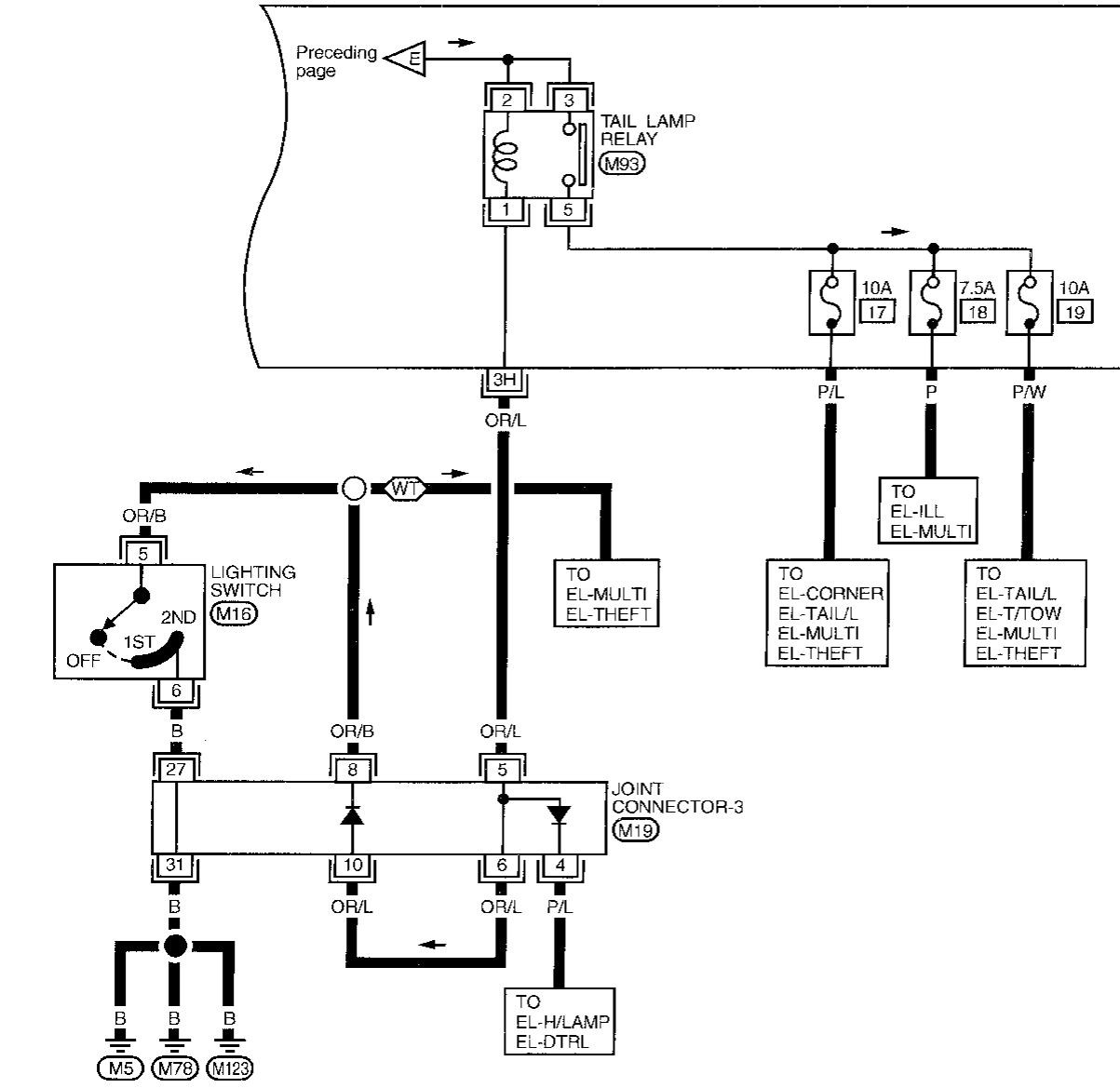
POWER SUPPLY ROUTING

Wiring Diagram -POWER- (Cont'd)

EL-POWER-04

WT : With theft warning

FUSE BLOCK
M13,
M15



Refer to last page (Foldout page).
M19

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POWER SUPPLY ROUTING

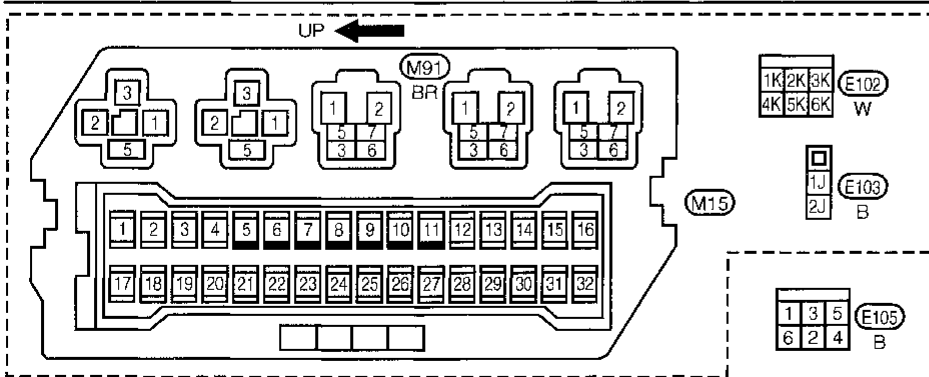
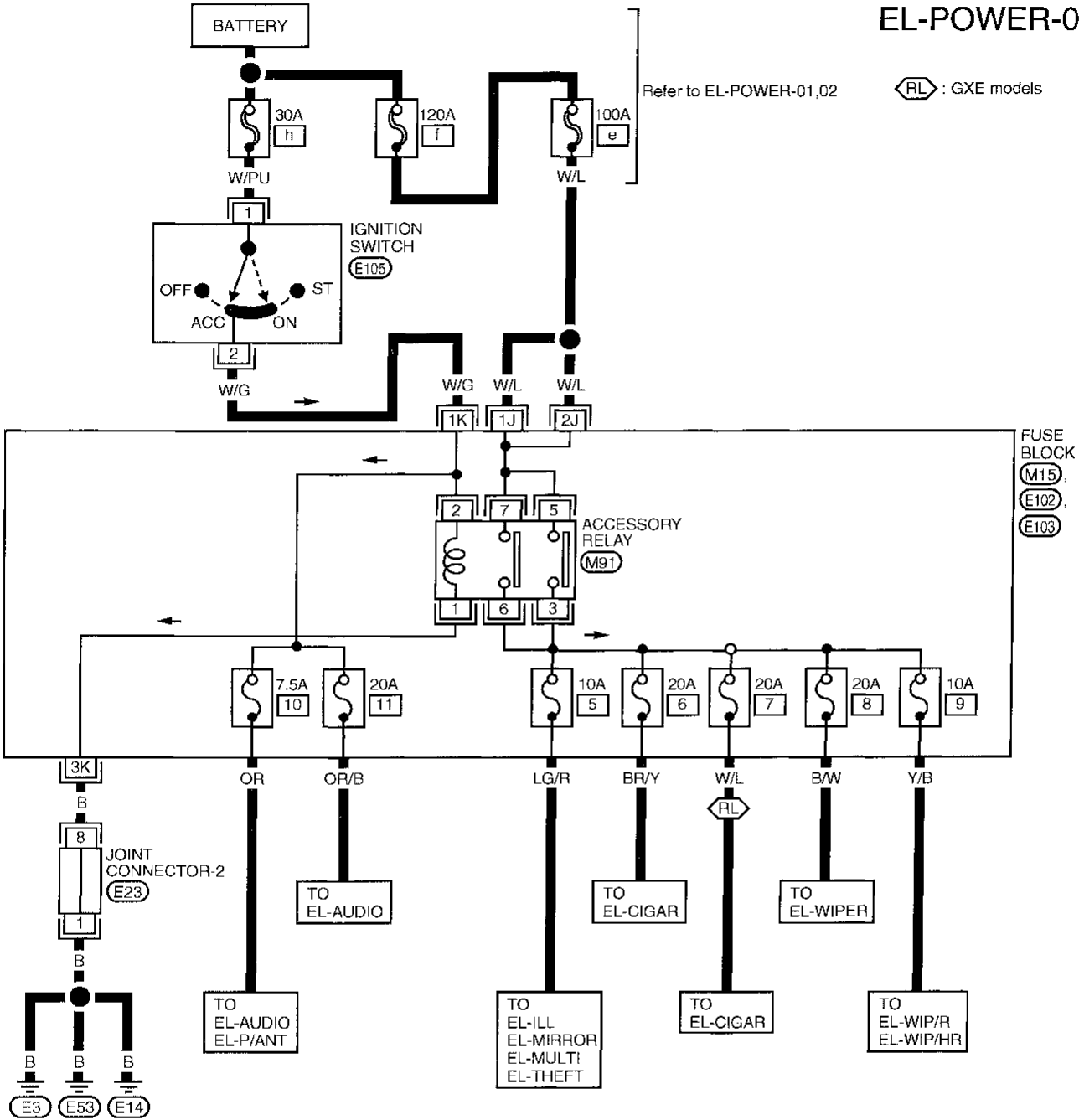
Wiring Diagram –POWER– (Cont'd)

ACCESSORY POWER SUPPLY — IGNITION SW. IN “ACC” OR “ON”

EL-POWER-05

Refer to EL-POWER-01,02

RL : GXE models



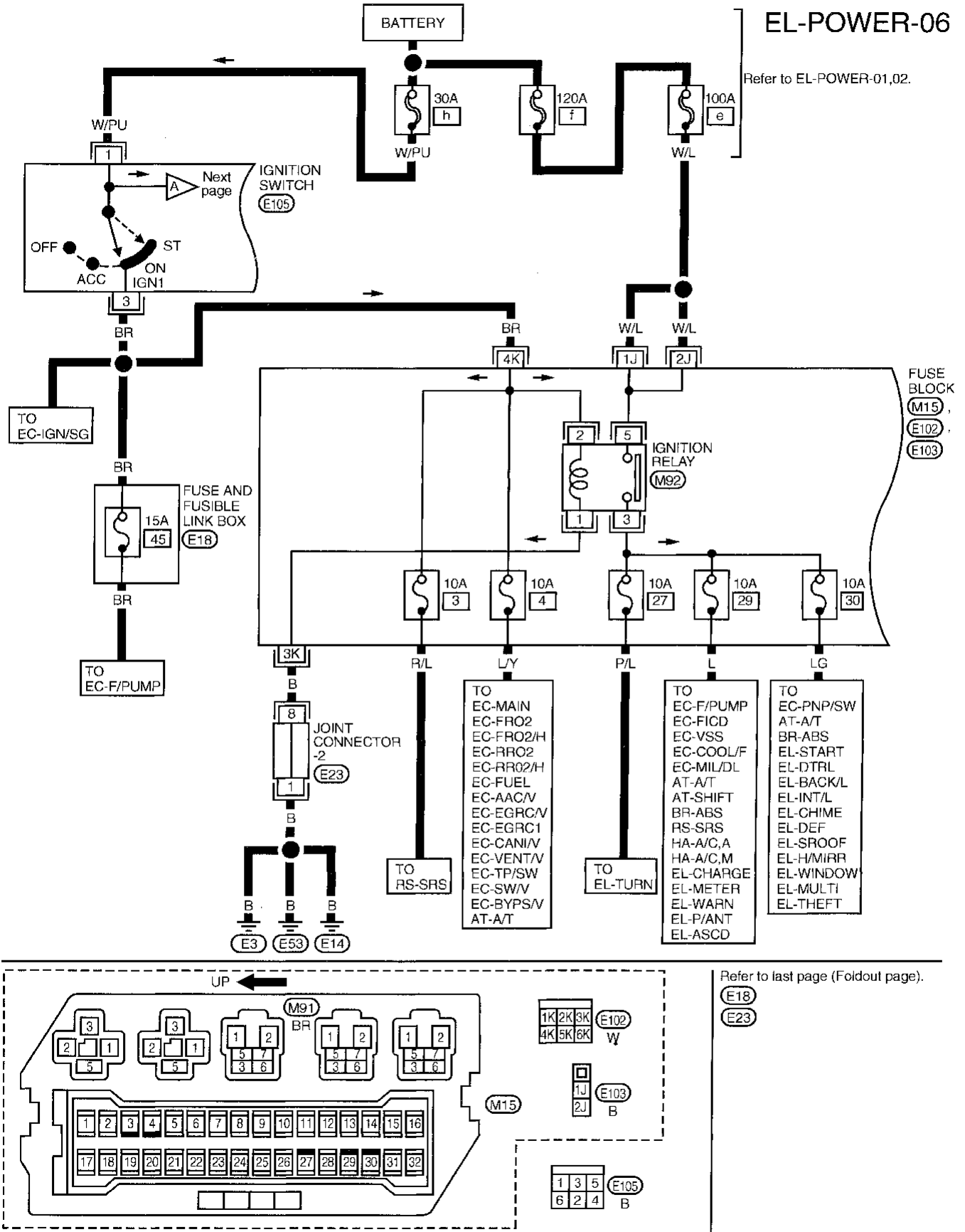
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POWER SUPPLY ROUTING

Wiring Diagram -POWER- (Cont'd)

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



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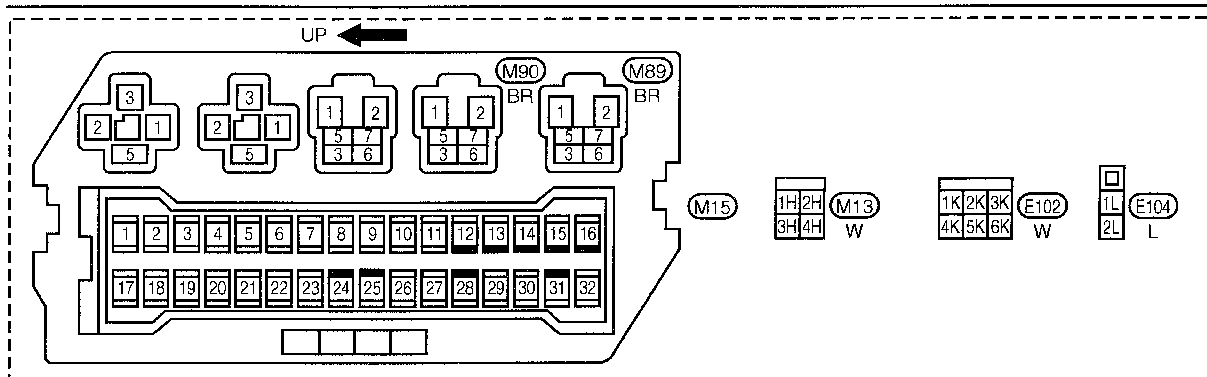
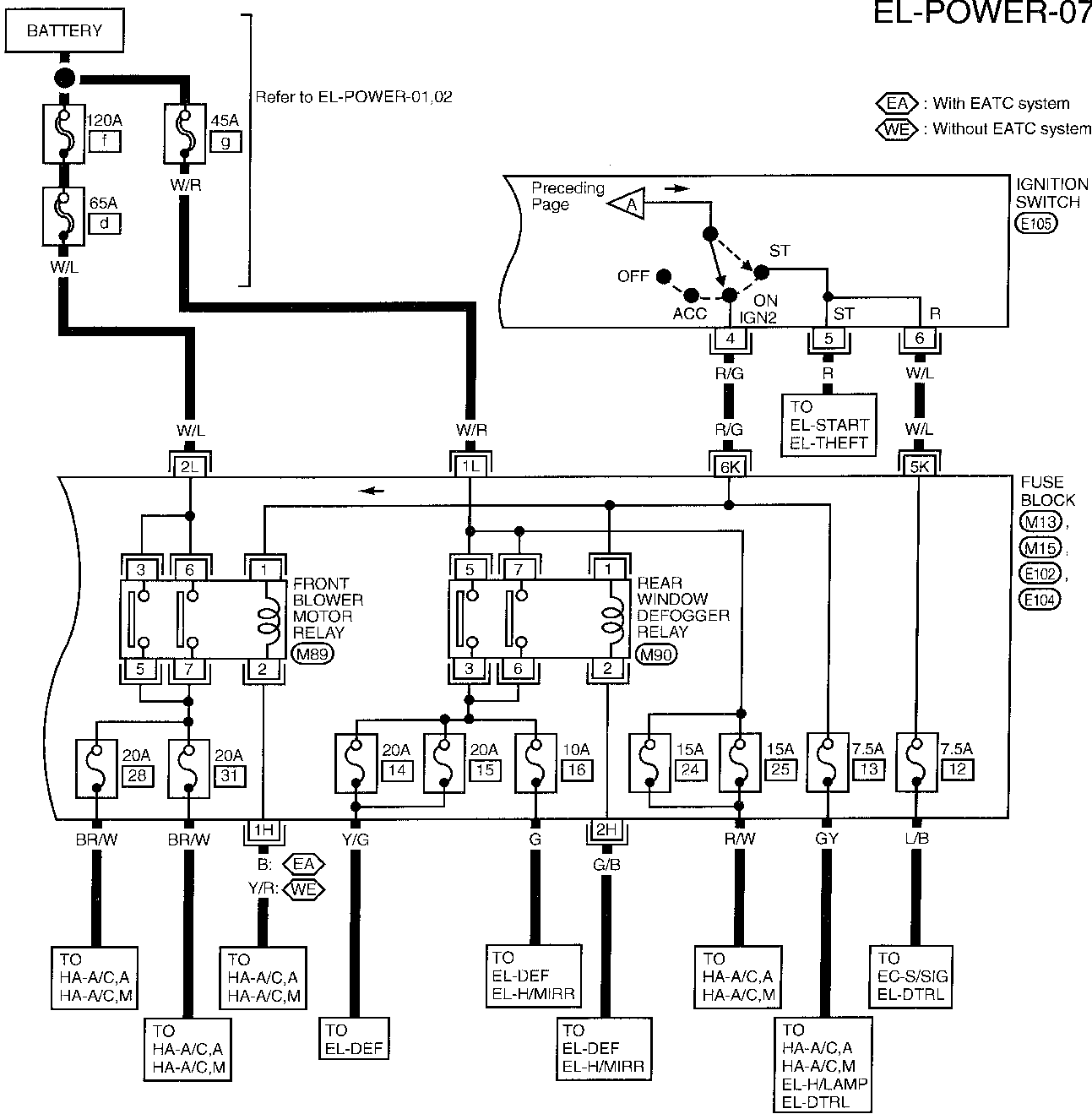
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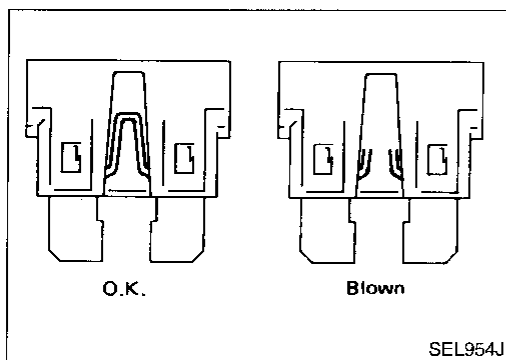
POWER SUPPLY ROUTING

Wiring Diagram -POWER- (Cont'd)

EL-POWER-07



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 "ELECTRICAL PARTS (BAT)" if vehicle is not used for a long period of time.

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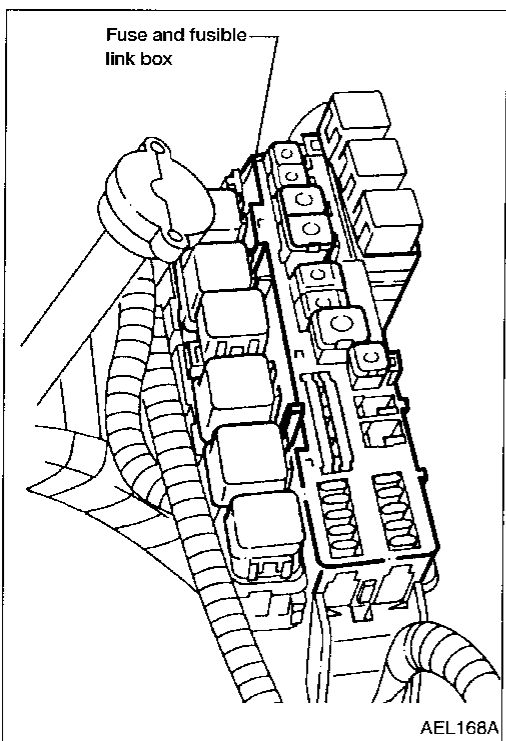
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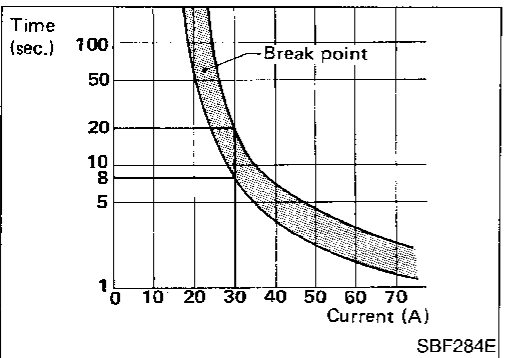


Fusible Link

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

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
- Electric sun roof

GROUND DISTRIBUTION

GROUND	CONNECT TO	CONN. NO.	CELL CODE
M5/M78/M123	A/C COMPRESSOR	F20	HA-A/C, A, HA-A/C, M
	AIR BAG DIAGNOSIS SENSOR UNIT	Z3	RS-SRS, EL-WARN
	ASCD CONTROL UNIT	M164	EL-ASCD
	ASCD MAIN SWITCH	M18	EL-ASCD
	AUTOLAMP CONTROL UNIT	M77	EL-DTRL, EL-H/LAMP
	AUTOLAMP SWITCH	M17	EL-DTRL, EL-H/LAMP
	CIGARETTE LIGHTER SOCKET	M41	EL-CIGAR
	COMBINATION FLASHER UNIT	M2	EL-TURN
	COMBINATION METER [AIR BAG WARNING LAMP]	M26	RS-SRS, EL-WARN
	COMBINATION METER (CRUISE INDICATOR)	M26	EL-ASCD
	COMBINATION METER [HIGH BEAM INDICATOR]	M26	EL-DTRL, EL-H/LAMP
	COMBINATION METER [TURN SIGNAL LAMP]	M28	EL-TURN
	DATA LINK CONNECTOR FOR GST	M23	EC-MIL/DL
	DOOR LOCK/UNLOCK SWITCH RH	D106	EL-D/LOCK
	DOOR MIRROR LH	D5	EL-H/MIRR
	DOOR MIRROR REMOTE CONTROL SWITCH	M12	EL-MIRROR
	DOOR MIRROR RH	D105	EL-H/MIRR
	EATC UNIT	M49	HA-A/C, A
	FRONT A/C CONTROL UNIT	M50	HA-A/C, M
	FRONT A/C CONTROL UNIT	M53	HA-A/C, M
	FRONT BLOWER MOTOR RESISTOR	M72	HA-A/C, M
	FRONT BLOWER SPEED CONTROL UNIT	M70	HA-A/C, A
	FRONT DOOR KEY CYLINDER SWITCH LH	D8	EL-THEFT
	FRONT DOOR KEY CYLINDER SWITCH RH	D109	EL-THEFT
	FRONT DOOR LOCK ACTUATOR LH	D9	EL-D/LOCK, EL-MULTI, EL-THEFT
	FRONT DOOR LOCK ACTUATOR RH	D110	EL-D/LOCK, EL-MULTI, EL-THEFT
	FRONT DOOR SWITCH LH	M104	RS-SRS
	FRONT FAN SWITCH	M51	HA-A/C, M
	FUEL TANK GAUGE UNIT	B205	EL-METER, EL-WARN
	IACV-FICD SOLENOID VALVE	F210	EC-FICD
	ILLUMINATION CONTROL SWITCH	M17	EL-ILL
	INERTIA FUEL SHUT OFF SWITCH	M1	EC-F/PUMP
	LIGHTING SWITCH	M16	EL-CHIME, EL-CORNER, EL-H/ LAMP, EL-DTRL, EL-ILL, EL-TAIL/L, EL-THEFT, EL-T/TOW
	LUMBAR SUPPORT MOTOR	P5	EL-SEAT
	MAIN POWER WINDOW AND DOOR LOCK/ UNLOCK SWITCH	D6	EL-D/LOCK, EL-WINDOW
	MAP LAMP	R6	EL-INT/L
	POWER ANTENNA AMPLIFIER	M80	EL-P/ANT
	POWER SEAT SWITCH LH	P2	EL-SEAT
	POWER SEAT SWITCH RH	P101	EL-SEAT
	REAR A/C CONTROL UNIT	M109	HA-A/C, M, EL-ILL
REAR FAN SWITCH (FRONT)	M47	HA-A/C, A	
REAR FAN SWITCH RELAY	M116	HA-A/C, A	

GROUND DISTRIBUTION

GROUND	CONNECT TO	CONN. NO.	CELL CODE	
M5/M78/M123	REAR POWER POINT	M110	EL-CIGAR	CI
	REAR POWER VENT WINDOW SWITCH	R5	EL-WINDOW	
	REAR RADIO REMOTE CONTROL UNIT	M107	EL-AUDIO, EL-ILL	MA
	REAR WINDOW DEFOGGER SWITCH	M32	EL-DEF, EL-H/MIRR	MA
	REAR WIPER SWITCH	M31	EL-WIP/HR, EL-WIP/R	
	REAR WIPER AMPLIFIER	M117	EL-WIP/R	EM
	ROOM LAMP FRONT	R8	EL-INT/L, EL-MULTI	
	ROOM LAMP FRONT	R10	EL-INT/L	
	SEAT BELT BUCKLE SWITCH	M102	EL-CHIME, EL-WARN	LC
	SMART ENTRANCE CONTROL UNIT	M44	EL-CHIME, EL-DEF, EL-H/MIRR, EL-THEFT, EL-SROOF, EL-WINDOW, EL-D/LOCK	EC
	SMART ENTRANCE CONTROL UNIT	M45	EL-MULTI, EL-D/LOCK, EL-THEFT, EL-ILL, EL-INT/L, EL-DEF	FE
	SMART ENTRANCE CONTROL UNIT	M46	EL-D/LOCK, EL-MULTI, EL-THEFT	
	SHIELD WIRE [REAR WHEEL SENSOR LH]	B204	BR-ABS	AT
	SHIELD WIRE [REAR WHEEL SENSOR RH]	B206	BR-ABS	
	SUNROOF MOTOR ASSEMBLY	R4	EL-SROOF	FA
	VANITY LAMP LH	R3	EL-INT/L	
	VANITY LAMP RH	R7	EL-INT/L	
	WATERCOCK SOLENOID VALVE	F1	HA-A/C, A, HA-A/C, M	RA
M65	CD CHANGER	M68	EL-AUDIO	
	RADIO & CASSETTE PLAYER	M61	EL-AUDIO, EL-P/ANT	BR
M66	COMBINATION METER (SPEEDOMETER)	M27	EC-VSS, AT-A/T, EL-ASCD, EL-METER	ST
	COMBINATION METER (LOW FUEL/ANTI-SLOSH UNIT)	M28	EL-METER, EL-WARN	
	VEHICLE SPEED SENSOR	F301	EC-VSS, AT-A/T, EL-ASCD, EL-METER	RS
M124	4-CHANNEL AMPLIFIER	M122	EL-AUDIO	
B8/B10	REAR COMBINATION LAMP LH	B7	EL-TAIL/L, EL-TURN, EL-THEFT	BT
	REAR COMBINATION LAMP RH	B11	EL-TAIL/L, EL-TURN, EL-THEFT	
	REAR SIDE MARKER LAMP LH	B9	EL-TAIL/L, EL-THEFT	HA
	REAR SIDE MARKER LAMP RH	B12	EL-TAIL/L, EL-THEFT	
	SUB WOOFER AMPLIFIER	B14	EL-AUDIO	EL
	TRAILER TOW CONNECTOR	B302	EL-T/TOW	
	TRAILER TOW CONTROL UNIT	B6	EL-T/TOW	IDX

GROUND DISTRIBUTION

GROUND	CONNECT TO	CONN. NO.	CELL CODE
B104	BACK DOOR KEY CYLINDER SWITCH	D308	EL-THEFT
	BACK DOOR LATCH SWITCH	D306	EL-INT/L, EL-MULTI, EL-THEFT, EL-WARN
	BACK DOOR LATCH SWITCH	D307	EL-INT/L, EL-MULTI, EL-THEFT, EL-WARN
	BACK DOOR LOCK ACTUATOR	D305	EL-MULTI, EL-THEFT
	BACKUP LAMP LH	D304	EL-BACK/L
	BACKUP LAMP RH	D313	EL-BACK/L
	GLASS HATCH SWITCH	D310	EL-WIP/HR
	LICENSE LAMP	D309	EL-TAIL/L, EL-THEFT
	REAR WIPER MOTOR	D311	EL-WIP/HR, EL-WIP/R
F5	SHIELD WIRE [FRONT WHEEL SENSOR RH]	F4	BR-ABS
F110	ABS CONTROL UNIT	F106	BR-ABS
	SHIELD WIRE [ABS CONTROL UNIT]	F106	BR-ABS
	SHIELD WIRE [FRONT WHEEL SENSOR RH]	F4	BR-ABS
	SHIELD WIRE [FRONT WHEEL SENSOR LH]	E13	BR-ABS
	SHIELD WIRE [REAR WHEEL SENSOR LH]	B204	BR-ABS
	SHIELD WIRE [REAR WHEEL SENSOR RH]	B206	BR-ABS
F213/F215	DATA LINK CONNECTOR FOR CONSULT	M14	AT-A/T, EC-MIL/DL
	DATA LINK CONNECTOR FOR GST	M23	EC-MIL/DL
	DISTRIBUTOR (CAMSHAFT POSITION SENSOR)	F15	EC-CMPS
	ECM (ECCS CONTROL MODULE)	F101	EC-MAIN, AT-A/T
	HIGH PRESSURE SWITCH	F21	EC-COOL/F, EC-HP/SW
	POWER STEERING OIL PRESSURE SWITCH	F3	EC-PST/SW
	POWER TRANSISTOR UNIT	F17	EC-IGN/SG
	SHIELD WIRE (ABSOLUTE PRESSURE SENSOR)	F220	EC-AP/SEN
	SHIELD WIRE [CRANKSHAFT POSITION SENSOR (OBD)]	F502	EC-CKPS
	SHIELD WIRE [DISTRIBUTOR (CAMSHAFT POSITION SENSOR)]	F15	EC-CMPS
	SHIELD WIRE [ECM (ECCS CONTROL MODULE)]	F101	EC-CKPS, EC-IGN/SG, EC-FRO2, EC-FRO2/H, EC-KS, EC-PRE/SE, EC-RRO2, EC-RRO2/H, EC-TPS, AT-A/T
	SHIELD WIRE (EVAP CONTROL SYSTEM PRESSURE SENSOR)	M403	EC-PRE/SE
	SHIELD WIRE (KNOCK SENSOR)	F208	EC-KS
	SHIELD WIRE (MASS AIR FLOW SENSOR)	F308	EC-MAFS
	SHIELD WIRE (THROTTLE POSITION SENSOR)	F218	EC-TPS, AT-A/T
	SHIELD WIRE (FRONT HEATED OXYGEN SENSOR)	E36	EC-FRO2, EC-FRO2/H, EC-FUEL
	SHIELD WIRE (REAR HEATED OXYGEN SENSOR)	M95	EC-RRO2, EC-RRO2/H
TRANSMISSION CONTROL MODULE	F404	AT-A/T	

GROUND DISTRIBUTION

GROUND	CONNECT TO	CONN. NO.	CELL CODE	
E3/E14/E53	ASCD HOLD RELAY	E29	EL-ASCD	GI
	BRAKE FLUID LEVEL SWITCH	E11	EL-WARN	
	BULB CHECK RELAY	E28	EL-WARN	MA
	COOLING FAN MOTOR	E30	EC-COOL/F, EC-HP/SW	EM
	DAYTIME LIGHT CONTROL UNIT	E55	EL-DTRL, EL-THEFT	LC
	FRONT COMBINATION LAMP LH	E10	EL-CORNER, EL TAIL/L, EL-THEFT	
	FRONT COMBINATION LAMP RH	E40	EL-CORNER, EL-TAIL/L, EL-THEFT	EC
	FRONT SIDE MARKER LAMP LH	E7	EL-TAIL/L, EL-THEFT	
	FRONT SIDE MARKER LAMP RH	E47	EL-TAIL/L, EL-THEFT	PE
	FRONT TURN SIGNAL LAMP LH	E33	EL-TURN	
	FRONT TURN SIGNAL LAMP RH	E35	EL-TURN	AT
	FRONT WIPER AMPLIFIER	E1	EL-WIPER	
	FRONT WIPER AMPLIFIER	E2	EL-WIPER	FA
	FRONT WIPER MOTOR	E12	EL-WIPER	
	HEADLAMP LH	E9	EL-H/LAMP, EL-THEFT, EL-DTRL	RA
	HEADLAMP RH	E39	EL-H/LAMP, EL-THEFT	BR
	HEADLAMP RELAY LH	E45	EL-DTRL, EL-H/LAMP, EL-THEFT	
HEADLAMP RELAY RH	E27	EL-DTRL, EL-H/LAMP, EL-THEFT	ST	
E3/E14/E53	HOOD SWITCH	E52	EL-THEFT	
	INHIBITOR RELAY	E26	EL-START, EL-THEFT	
	KEY SWITCH	E108	EL-CHIME, EL-D/LOCK, EL-INT/L, EL-MULTI, EL-THEFT	
	OVERDRIVE SWITCH	E109	AT-A/T	
	SHIFT LOCK SOLENOID AND PARK POSITION SWITCH	E106	AT-A/T	
	WASHER FLUID LEVEL SWITCH	E48	EL-WARN	
E15	SHIELD WIRE [FRONT WHEEL SENSOR LH]	E13	BR-ABS	RS
E60	GENERATOR	E59	EL-CHARGE	
D403	REAR WINDOW DEFOGGER	D401	EL-DEF	
	REAR WINDOW DEFOGGER	D402	EL-DEF	BT

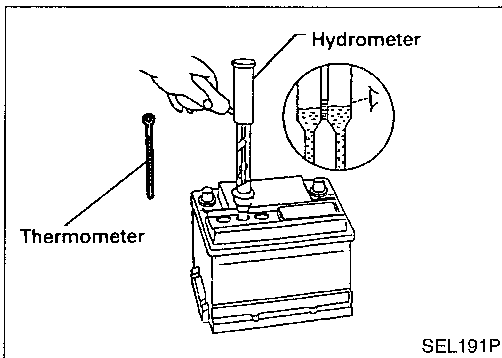
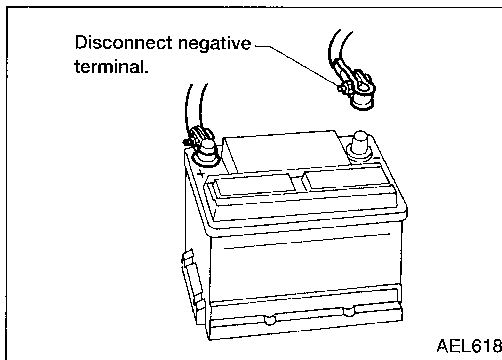
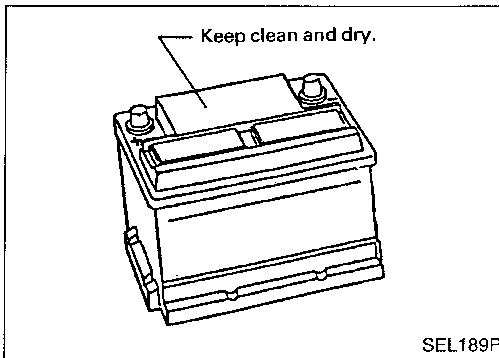
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BATTERY

CAUTION:

- If it becomes necessary to start engine with booster battery and jumper cables, use a 12-volt booster battery.
- After connecting battery cables, ensure that they are tightly clamped to battery terminals for good contact.



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 battery is used under severe conditions, adding distilled water may be necessary during battery life.

BATTERY

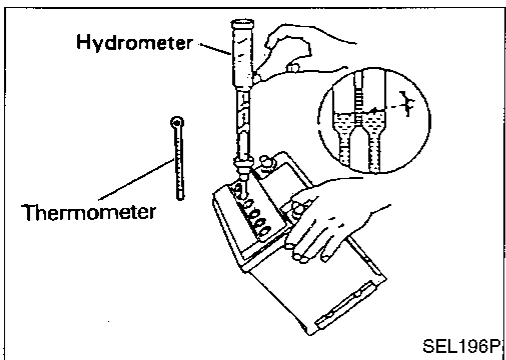
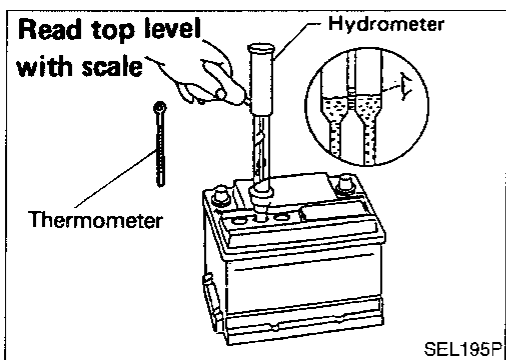
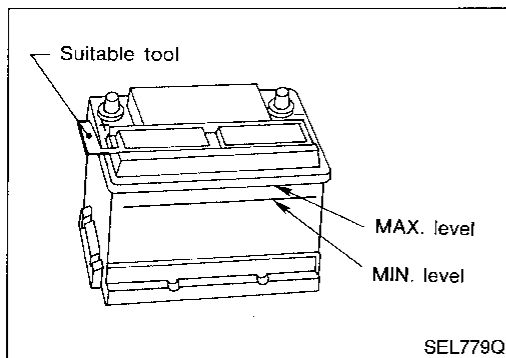
How to Handle Battery (Cont'd)

- 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 a slow charge of 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 initial charge rate.

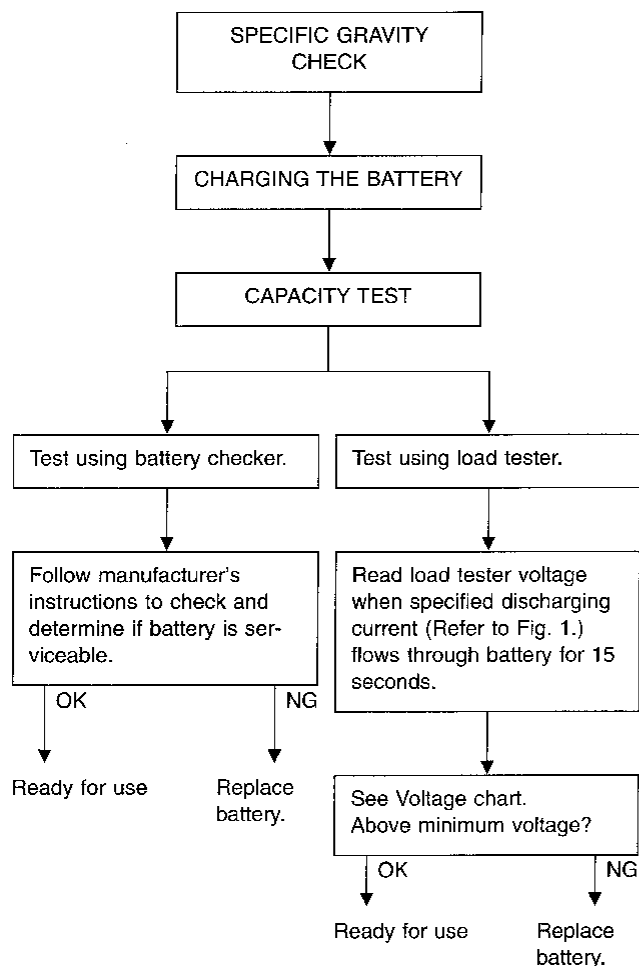
- If, after charging, the specific gravity of any two cells varies more than .050, the battery should be replaced.
- After the battery is charged, always perform a “capacity test” as follows, to assure that the battery is serviceable.

MEMORY RESET

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

- Radio AM and FM preset
- Radio clock

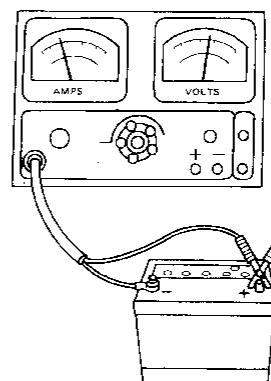
BATTERY



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

Fig. 1 DISCHARGING CURRENT (Load tester)

Group Size	Current (A)
35	180
24R	195



SEL008Z

Voltage chart

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

Service Data and Specifications (SDS)

Applied area	USA	USA option and Canada
Group size	35	24R
Capacity	V-AH	12-65
Cold cranking current	A	525
Reserve capacity	Minutes	105

STARTING SYSTEM

System Description

Power is supplied at all times:

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

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

- from ignition switch terminal **⑤**
- to inhibitor relay terminal **⑦**.

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

- through 10A fuse (No. **30**), located in the fuse block)
- to inhibitor switch terminal **②**.

For models with theft warning system

With the selector lever in the park (“P”) or neutral (“N”) position, power is supplied:

- from inhibitor switch terminal **①**
- to theft warning relay terminal **④**
- through theft warning relay terminal **③**
- to inhibitor relay terminal **①**.

If the theft warning system is triggered, ground is supplied to theft warning relay terminal **①**. This removes power from theft warning relay terminal **④**, which disengages the inhibitor relay and the starter motor will not operate.

For models without theft warning system

With the selector lever in the park (“P”) or neutral (“N”) position, power is supplied:

- from inhibitor switch terminal **①**
- to inhibitor relay terminal **①**.

Ground is supplied to inhibitor relay terminal **②**, through body grounds **E3**, **E14** and **E53**.

With power and ground supplied, the inhibitor relay is energized and power is supplied:

- from inhibitor relay terminal **⑥**
- to starter motor windings terminal **①**.

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

STARTING SYSTEM

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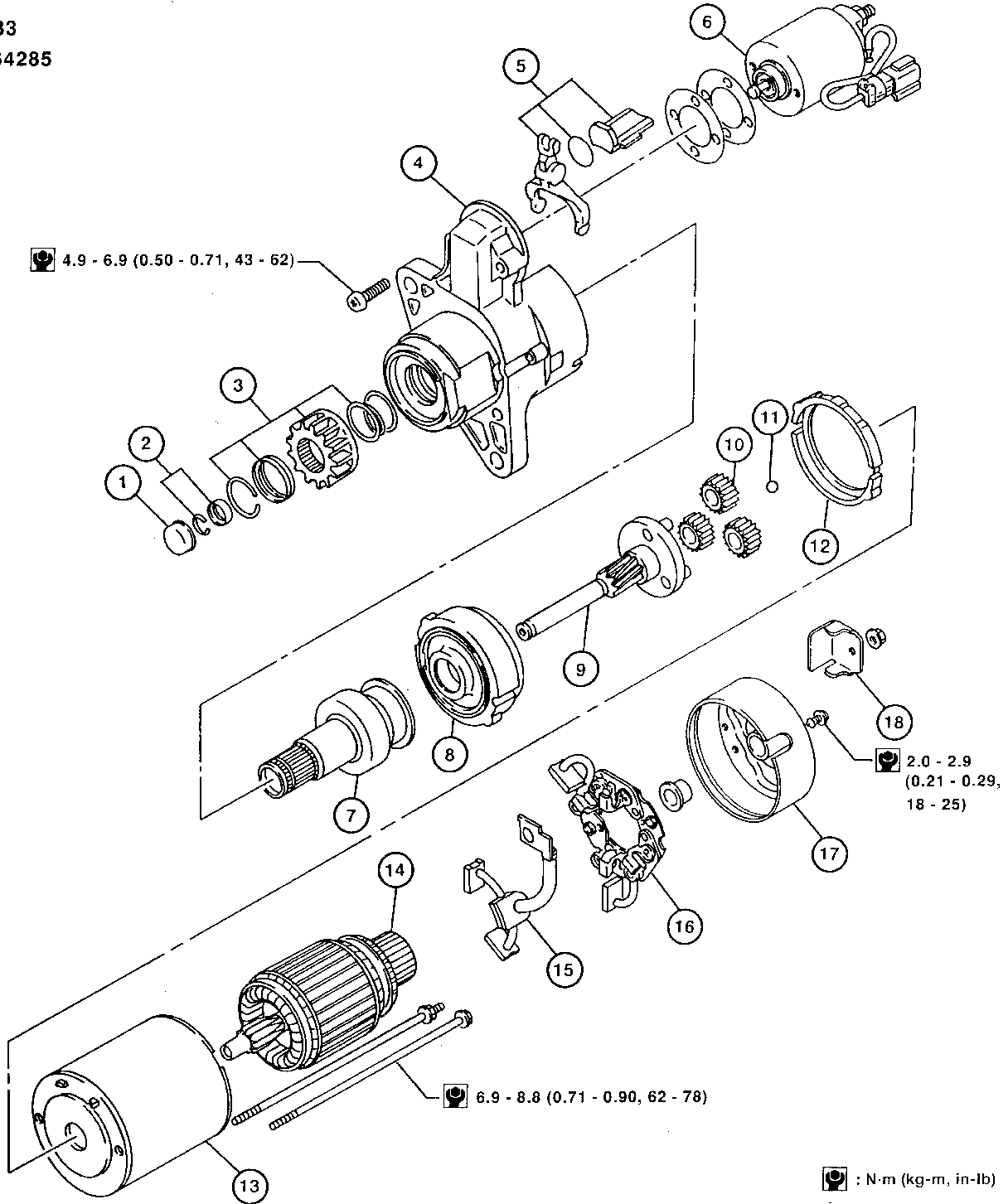
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STARTING SYSTEM

Starter

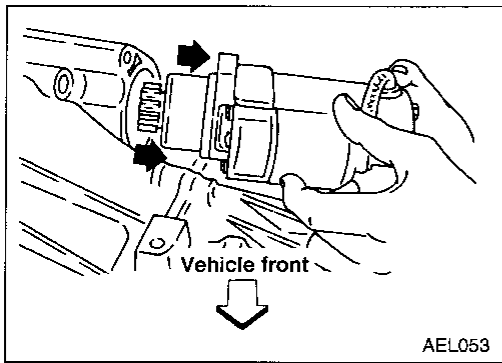
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M001T64285



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

STARTING SYSTEM



Removal and Installation

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

When installing, tighten starter motor mounting bolts.

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

Pinion/Clutch Check

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

Service Data and Specifications (SDS)

STARTER

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

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System Description

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

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

- 10A fuse (No. **(48)**, located in the fuse and fusible link box).

Terminal **(B)** of the generator supplies current to charge the battery and operate the vehicle's electrical system. Voltage output at this terminal is controlled by the amount of voltage detected by the IC regulator at terminal **(S)**. The charging circuit is protected by the 120A fusible link (letter **(f)**, located in the fuse and fusible link box).

Terminal **(E)** of the generator supplies ground through body ground **(E60)**.

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

- through 10A fuse (No. **(29)**, located in the fuse block)
- to combination meter terminal **(8)** for the charge warning lamp.

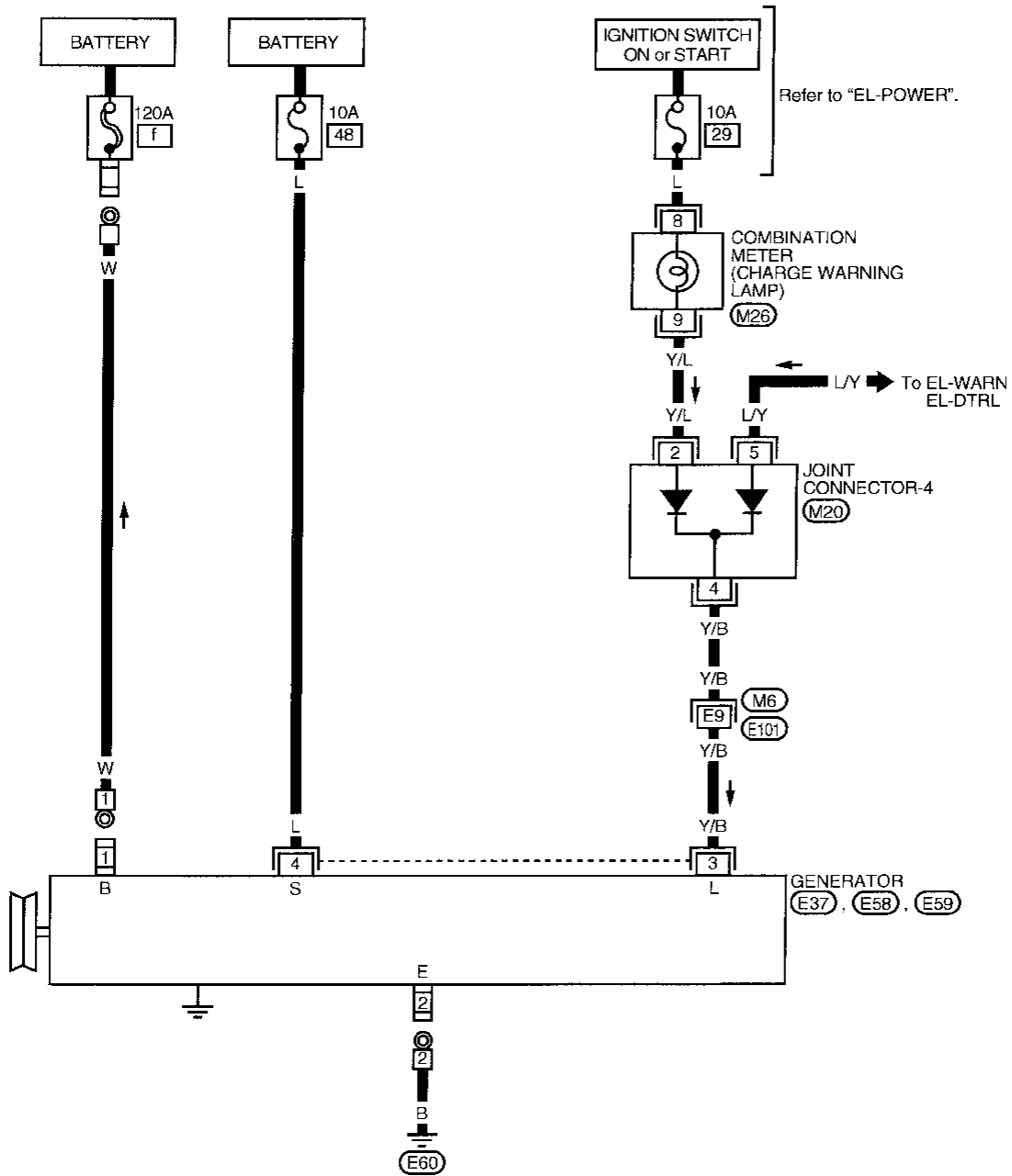
Ground is supplied to terminal **(9)** of the combination meter through terminal **(L)** of the generator. With power and ground supplied, the charge warning lamp will illuminate. When the generator is providing sufficient voltage the ground is opened and the charge warning lamp will go off.

If the charge warning lamp illuminates with the engine running, a fault is indicated. Refer to "Trouble Diagnoses", "CHARGING SYSTEM", EL-32.

CHARGING SYSTEM

Wiring Diagram -CHARGE-

EL-CHARGE-01



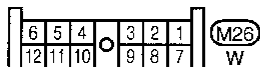
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(M6), (E101)
(M20)



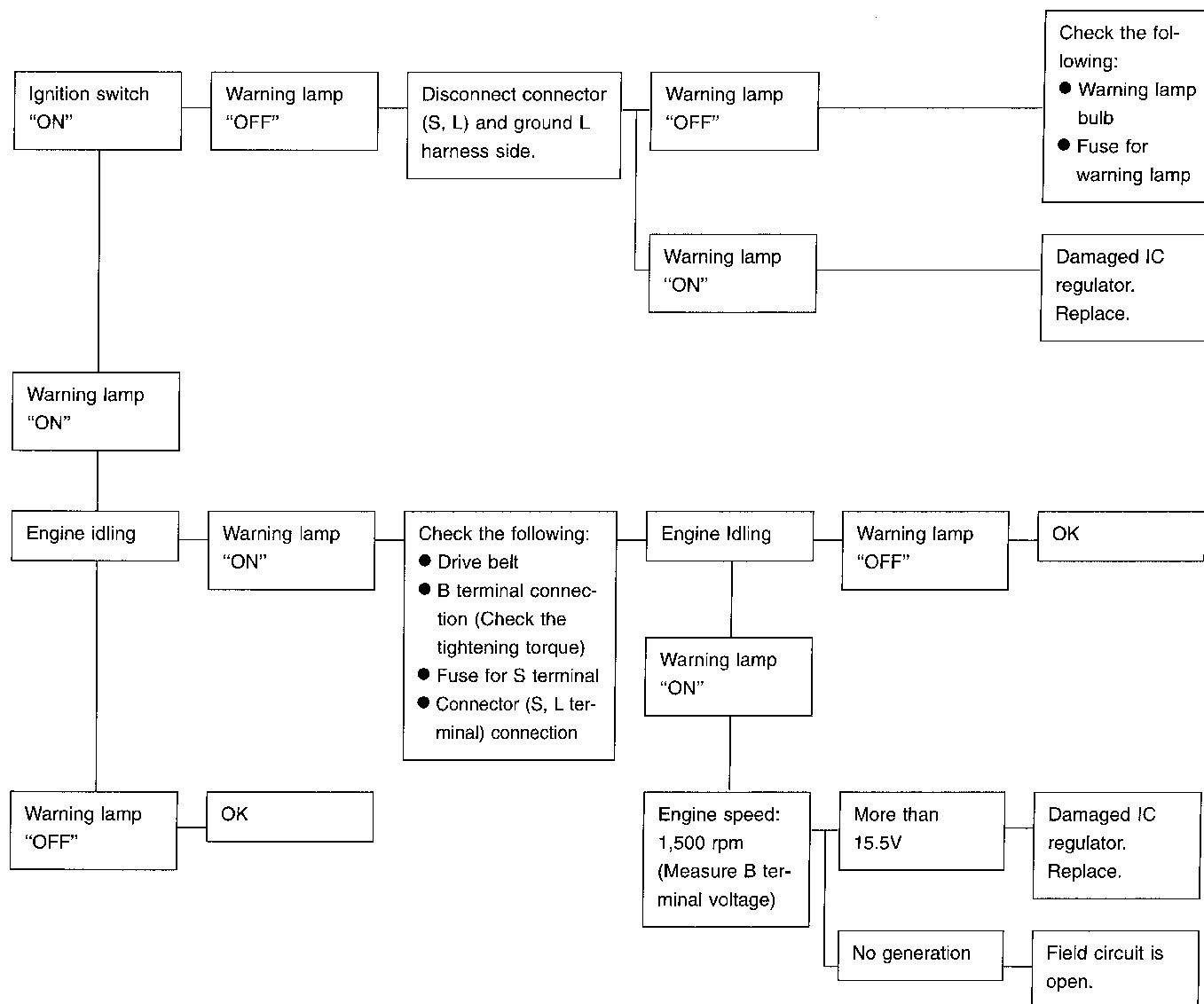
CHARGING SYSTEM

Trouble Diagnoses

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

- Before starting, inspect the fusible link.
- Use fully charged battery.

WITH IC REGULATOR



Warning lamp: "CHARGE" warning lamp in combination meter

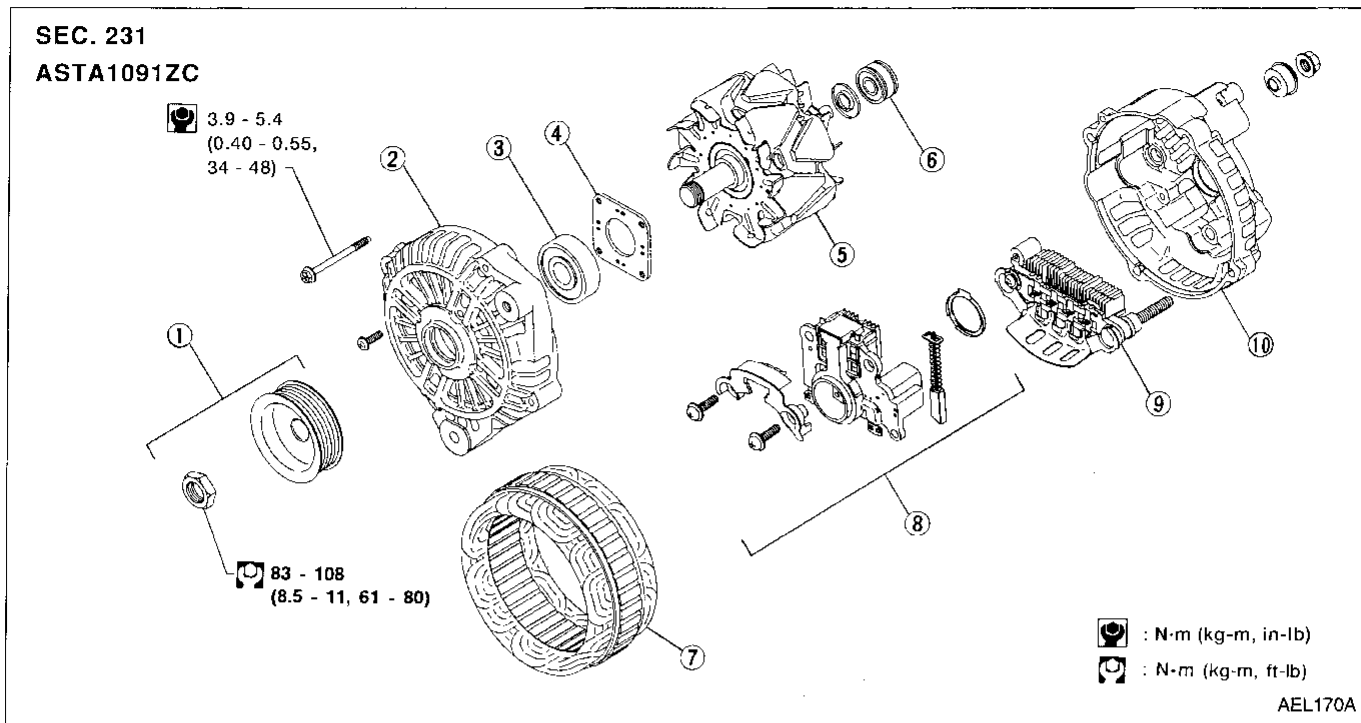
★: When field circuit is open, check condition of rotor coil, rotor slip ring and brush. If necessary, replace faulty parts with new ones.

MALFUNCTION INDICATOR

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

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

Construction



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

Removal and Installation

1. Disconnect battery cable.
2. Loosen idler pulley adjusting bolt.
3. Remove A/C compressor belt.
4. Remove engine undercover.
5. Remove generator harness and bracket.
6. Loosen generator mounting bolt.
7. Remove drive belt.
8. Remove generator.
- Install in the reverse order of removal.

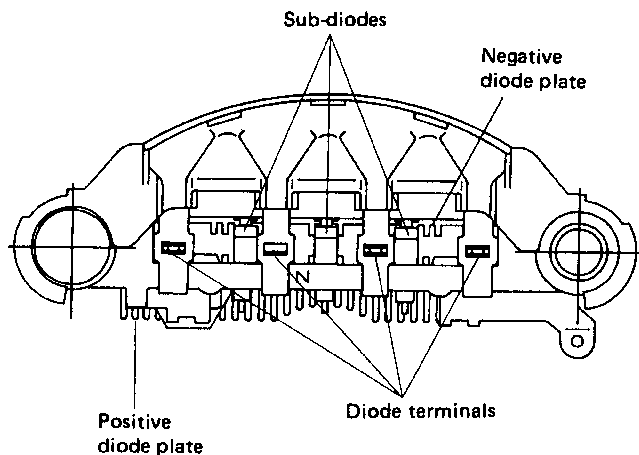
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Diode Check

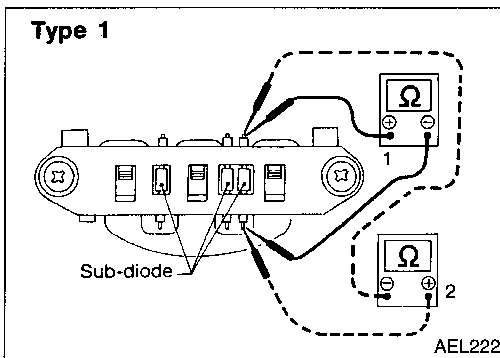
MAIN DIODES

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

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



SEL385L



SUB-DIODES

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

Assembly

Carefully observe the following instructions.

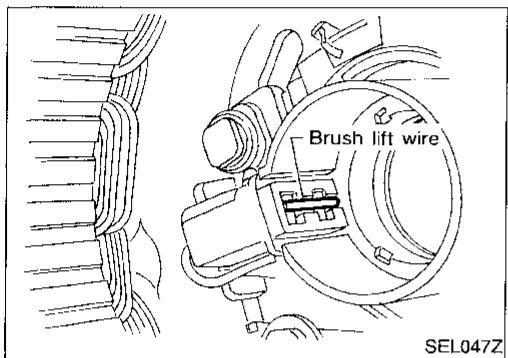
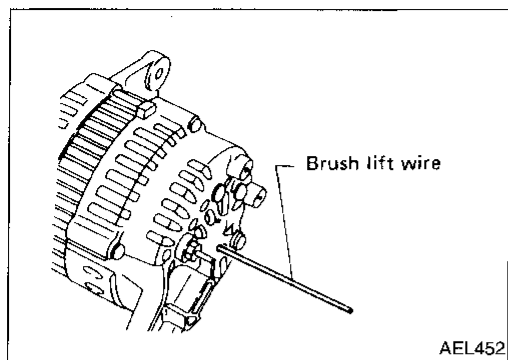
- When soldering each stator coil lead wire to diode assembly terminal, carry out the operation as fast as possible.

CHARGING SYSTEM — Generator —

Assembly (Cont'd)

REAR COVER INSTALLATION

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



Service Data and Specifications (SDS)

Type		A3TA1091ZC
Nominal rating	V-A	12-110
Ground polarity		Negative
Minimum revolution under no-load (When 13.5 volts is applied)	rpm	1,300
Hot output current	A/rpm	More than 33/1,300 More than 85/2,500
Regulated output voltage	V	14.1 - 14.7
Minimum length of brush	mm (in)	8.0 (0.315)
Brush spring pressure	N (g, oz)	3.138 - 4.315 (320 - 440, 11.29 - 15.52)
Slip ring minimum outer diameter	mm (in)	More than 22.1 (0.870)
Rotor (Field coil) resistance	Ω	2.3 - 2.7

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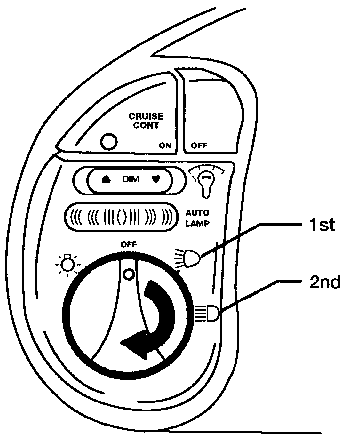
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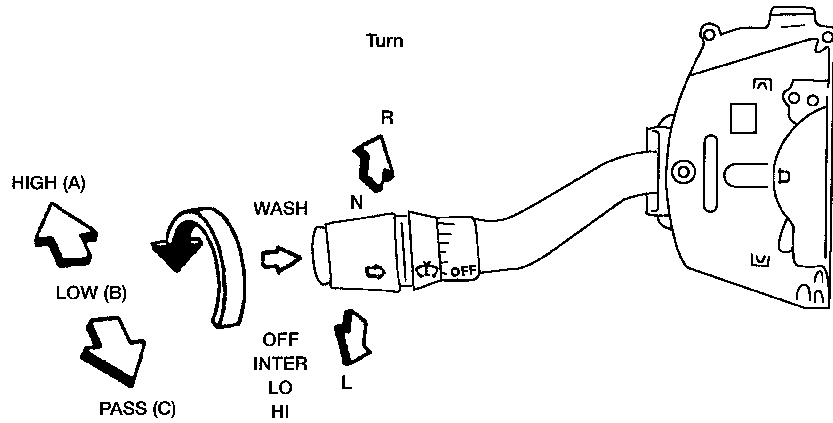
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COMBINATION SWITCH

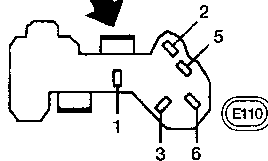
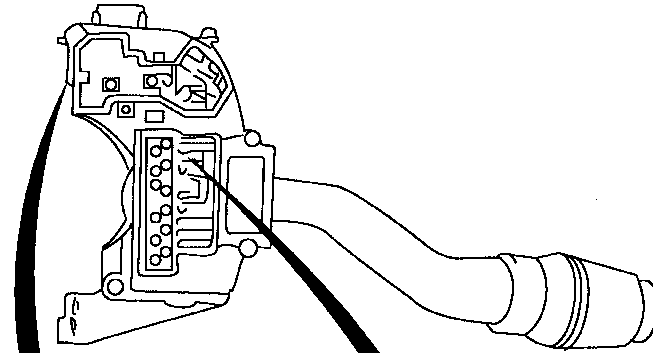
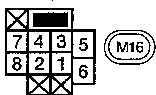
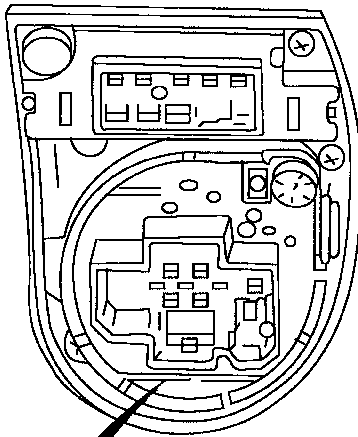
Check



Lighting switch



Combination switch



Lighting switch

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

Turn signal and cornering lamp switch

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

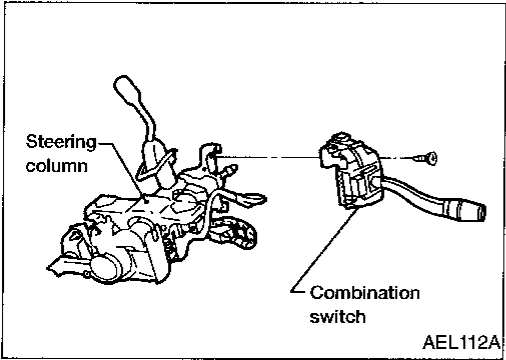
Combination switch (flash to pass)

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

Wiper switch

	Off	Int Max	Int Min	LO	HI	Wash
9	○	○	○	○	○	○
8	○	○	○	○	○	○
7	4.76kΩ	103.3kΩ	11.33kΩ	11.33kΩ	3.3kΩ	4.08kΩ
	103.3kΩ	11.33kΩ	103.3kΩ	3.3kΩ	3.3kΩ	3.3kΩ

COMBINATION SWITCH



Replacement

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

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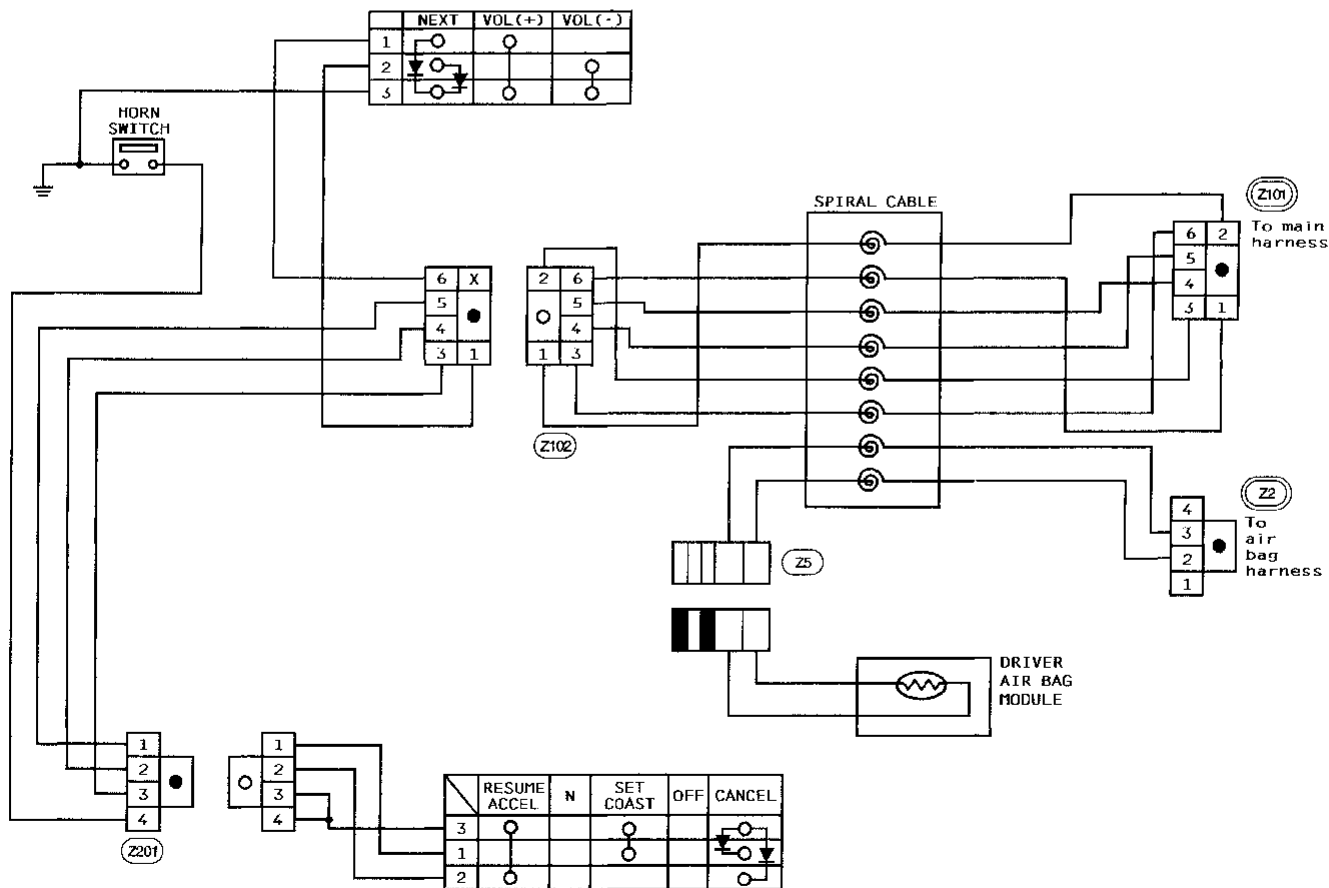
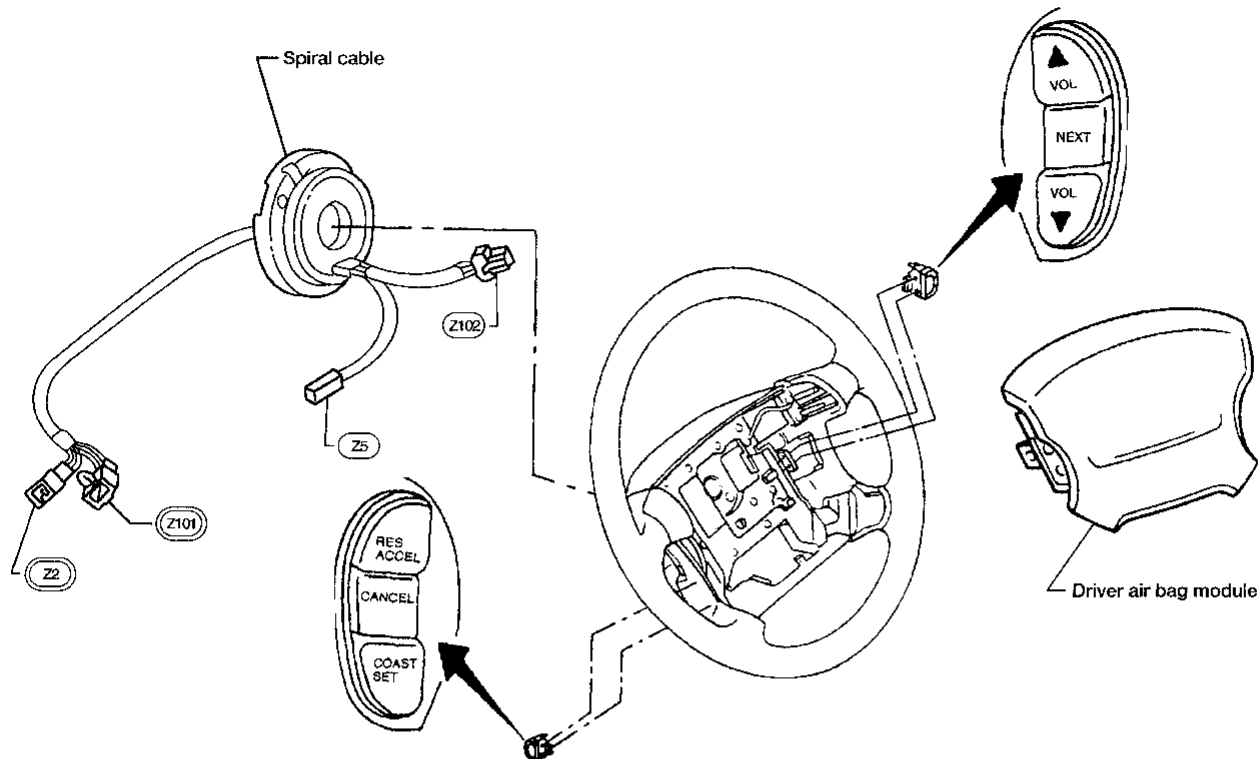
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STEERING SWITCH

Check



System Description (For USA)

The headlamps are controlled by the lighting switch.

Power is supplied at all times:

- through 15A fuse (No. 49, located in the fuse and fusible link box)
- to lighting switch terminal ① and
- combination switch terminal ⑯, and
- through 15A fuse (No. 50, located in the fuse and fusible link box)
- to lighting switch terminal ③ and
- combination switch terminal ⑭.

Low beam operation

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

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

Ground is supplied to each headlamp terminal ② through body grounds E3, E14 and E53. With power and ground supplied, the low beam headlamps will illuminate.

High beam operation

When the combination switch is placed in the "HIGH BEAM" (A) position, with the lighting switch in the headlamp "ON" (2ND) position, power is supplied:

- from lighting switch terminal ②
- to combination switch terminal ⑫
- through combination switch terminal ⑪
- to LH headlamp relay terminal ② and
- RH headlamp relay terminal ②.

Ground is supplied to each headlamp relay terminal ① through body grounds E3, E14 and E53.

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

- through LH headlamp relay terminal ⑤
- to LH headlamp terminal ①, and
- through RH headlamp relay terminal ⑤
- to RH headlamp terminal ① and
- combination meter terminal ⑥ for the HIGH BEAM indicator.

Ground is supplied to combination meter terminal ⑫ through body grounds M5, M78 and M123. Ground is supplied to each headlamp terminal ② through body grounds E3, E14 and E53. With power and ground supplied, the high beams and the HIGH BEAM indicator will illuminate.

Flash-to-pass operation

When the combination switch is placed in the "FLASH TO PASS" (C) position, both headlamp relays are energized to disable the low beams while the lighting switch is in the headlamp "ON" (2ND) position or when the Autolamp system is on.

Power is supplied:

- through combination switch terminal ⑮
- to LH headlamp terminal ①, and
- through combination switch terminal ⑬
- to RH headlamp terminal ① and
- combination meter terminal ⑥ for the HIGH BEAM indicator.

Ground is supplied to combination meter terminal ⑫ through body grounds M5, M78 and M123. Ground is supplied to each headlamp terminal ② through body grounds E3, E14 and E53. With power and ground supplied, the high beams and the HIGH BEAM indicator will illuminate until the combination switch is released from the "FLASH TO PASS" (C) position.

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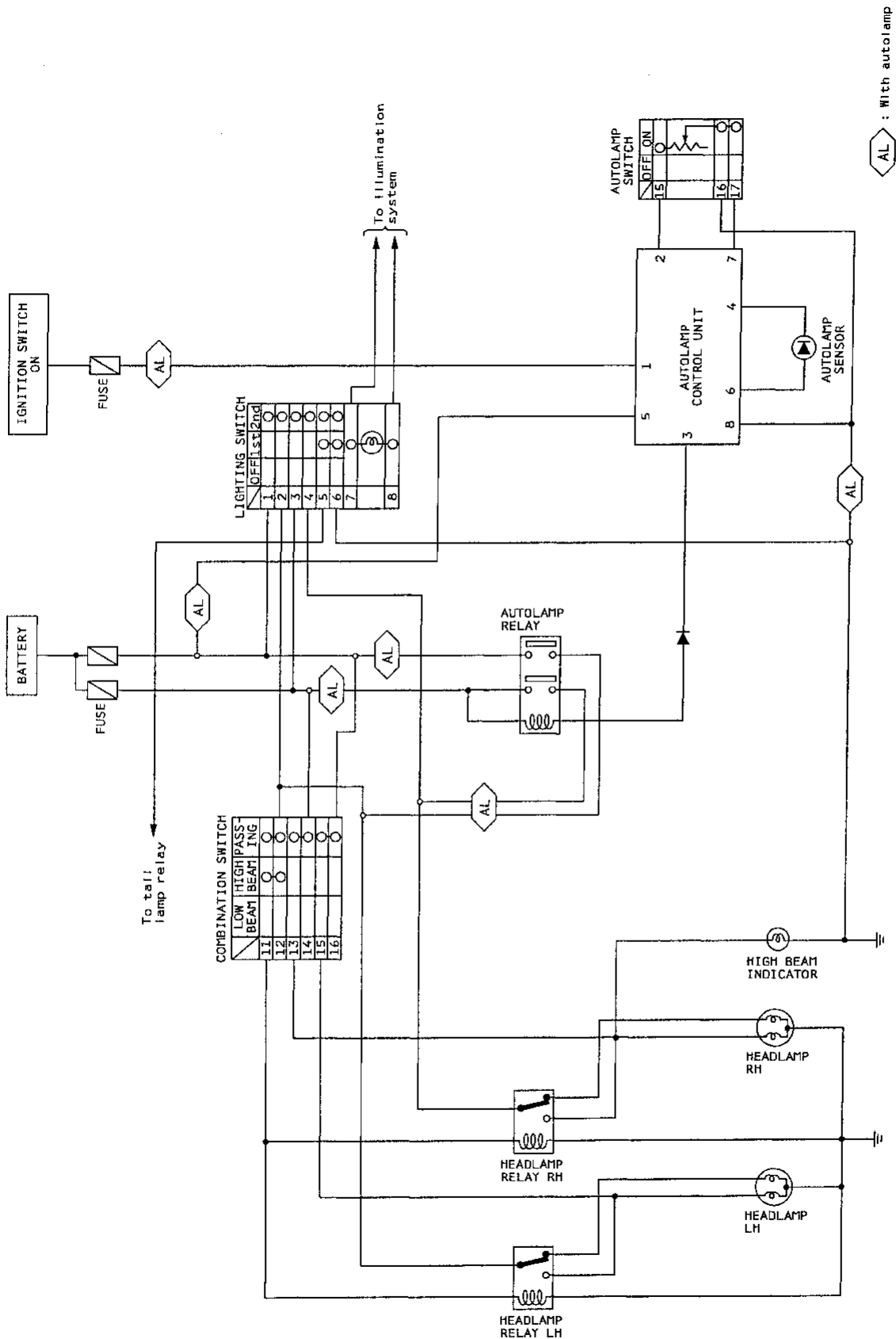
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HEADLAMP

Schematic (For USA)



HEADLAMP

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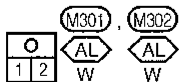
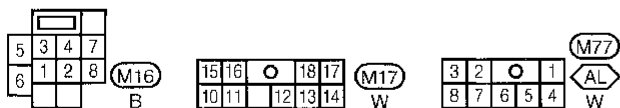
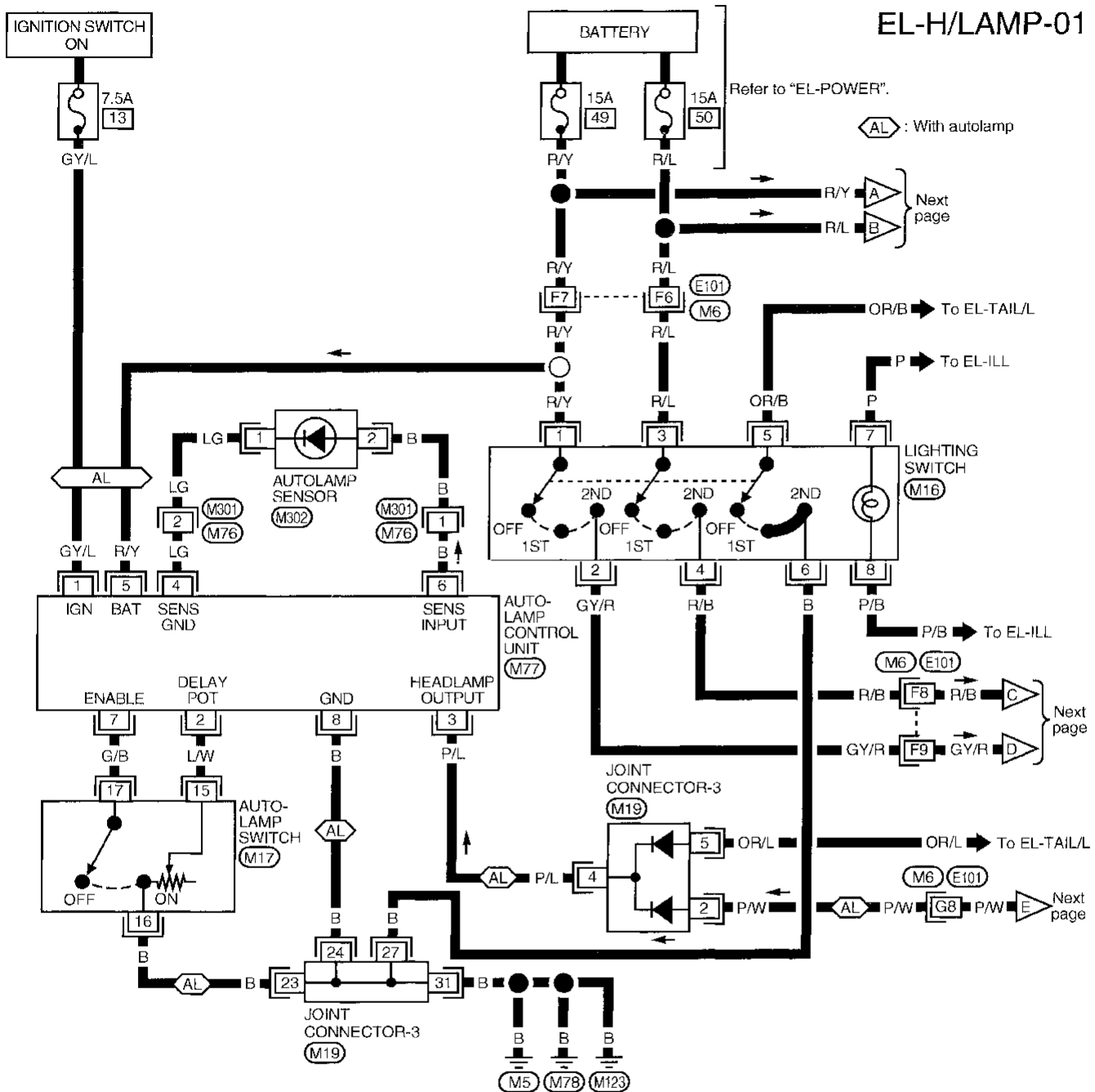
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HEADLAMP

Wiring Diagram (For USA) -H/LAMP-



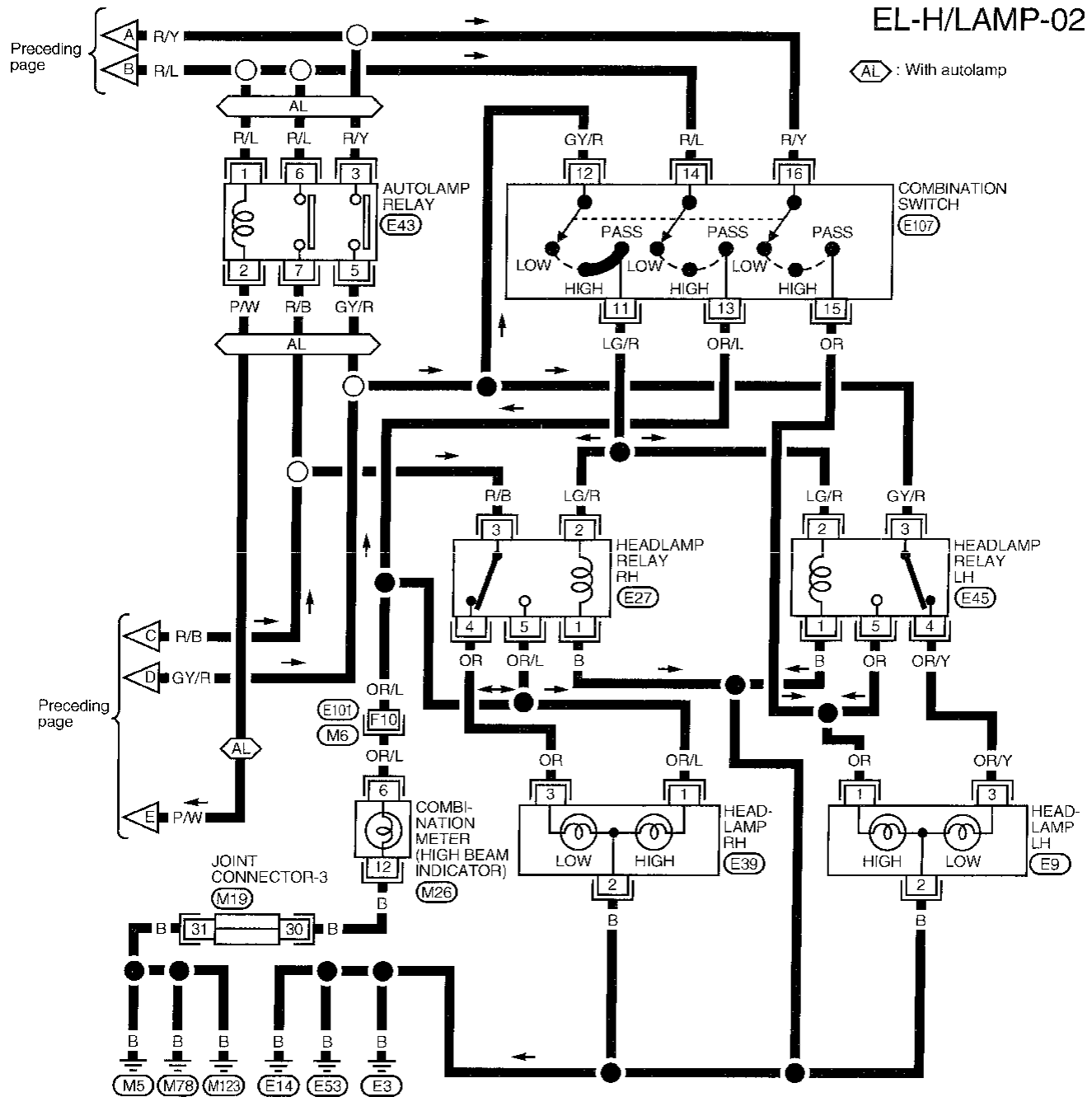
Refer to last page (Foldout page).

M6, E101
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HEADLAMP

Wiring Diagram (For USA) -H/LAMP-

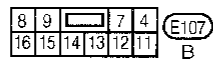
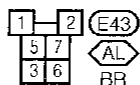
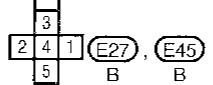
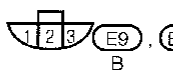
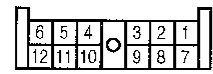
(Cont'd)



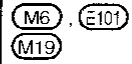
EL-H/LAMP-02

AL : With autolamp

Preceding page



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HEADLAMP

Trouble Diagnoses (For USA)

Symptom	Possible cause	Repair order
LH headlamp does not operate.	<ol style="list-style-type: none"> 1. Bulb 2. Grounds (E3) , (E14) and (E53) 3. 15A fuse 4. LH headlamp relay 5. Lighting switch 	<ol style="list-style-type: none"> 1. Check bulb. 2. Check grounds (E3) , (E14) and (E53) . 3. Check 15A fuse (No. 49), located in fuse and fusible link box). Verify battery positive voltage is present at terminal (1) of lighting switch. 4. Check relay (located in RH engine compartment relay box). Verify battery positive voltage is present at terminal (3) of LH headlamp relay with lighting switch in the 2ND position. 5. Check lighting switch.
RH headlamp does not operate.	<ol style="list-style-type: none"> 1. Bulb 2. Grounds (E3) , (E14) and (E53) 3. 15A fuse 4. RH headlamp relay 5. Lighting switch 	<ol style="list-style-type: none"> 1. Check bulb. 2. Check grounds (E3) , (E14) and (E53) . 3. Check 15A fuse (No. 50 located in fuse and fusible link box). Verify battery positive voltage is present at terminal (3) of lighting switch. 4. Check relay (located in fuse and fusible link box). Verify battery positive voltage is present at terminal (3) of RH headlamp relay with lighting switch in the 2ND position. 5. Check lighting switch.
LH low beam does not operate, but LH high beam operates.	<ol style="list-style-type: none"> 1. Bulb 2. LH headlamp relay 3. Open in LH low beam circuit 	<ol style="list-style-type: none"> 1. Check bulb. 2. Check relay (located in RH engine compartment relay box). 3. Check OR/Y wire between LH headlamp relay and LH headlamp for an open circuit.
LH high beam does not operate, but LH low beam operates.	<ol style="list-style-type: none"> 1. Bulb 2. LH headlamp relay 3. Combination switch 4. Open in LH high beam circuit 	<ol style="list-style-type: none"> 1. Check bulb. 2. Check relay (located in RH engine compartment relay box). Verify battery positive voltage is present at terminal (2) of relay with lighting switch in 2ND position and combination switch in HIGH BEAM position. 3. Check combination switch. Verify battery positive voltage is present at terminal (12) of combination switch with lighting switch in the 2ND position. 4. Check OR wire between LH headlamp relay and LH headlamp for an open circuit.
RH low beam does not operate, but RH high beam operates.	<ol style="list-style-type: none"> 1. Bulb 2. RH headlamp relay 3. Open in RH low beam circuit 	<ol style="list-style-type: none"> 1. Check bulb. 2. Check relay (located in fuse and fusible link box). 3. Check OR wire between RH headlamp relay and RH headlamp for an open circuit.

HEADLAMP

Trouble Diagnoses (For USA) (Cont'd)

Symptom	Possible cause	Repair order
RH high beam does not operate, but RH low beam operates.	<ol style="list-style-type: none"> 1. Bulb 2. RH headlamp relay 3. Combination switch 4. Open in RH high beam circuit 	<ol style="list-style-type: none"> 1. Check bulb. 2. Check relay (located in fuse and fusible link box). Verify battery positive voltage is present at terminal ② of relay with lighting switch in the 2ND position and combination switch in the HIGH BEAM position. 3. Check combination switch. Verify battery positive voltage is present at terminal ⑫ of combination switch with lighting switch in the 2ND position. 4. Check OR/L wire between RH headlamp relay and RH headlamp for an open circuit.
Flash-to-pass position does not work.	<ol style="list-style-type: none"> 1. Combination switch 2. Open in flash-to-pass circuit 	<ol style="list-style-type: none"> 1. Check combination switch. Verify battery positive voltage is present at terminals ⑭ and ⑯ of combination switch. 2. Check OR wire between combination switch and LH headlamp, and OR/L wire between combination switch and RH headlamp for an open circuit.
High beam indicator does not work.	<ol style="list-style-type: none"> 1. Bulb 2. Grounds ⑮, ⑯ and ⑰ 3. Open in high beam circuit 	<ol style="list-style-type: none"> 1. Check bulb in combination meter. 2. Check grounds ⑮, ⑯ and ⑰. 3. Check OR/L wire 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. This unit activates the high beams at approximately half illumination whenever the engine is running. If the parking brake is applied before the engine is started, daytime lights will not be illuminated. The daytime lights will illuminate once the parking brake is released. Thereafter, the daytime lights will continue to operate when the parking brake is applied. For location of daytime light control unit, refer to EL-251.

Power is supplied at all times:

- through 15A fuse (No. 49, located in the fuse and fusible link box)
- to daytime light control unit terminal ④,
- combination switch terminal ⑩ and
- lighting switch terminal ①.

Power is also supplied at all times:

- through 15A fuse (No. 50, located in the fuse and fusible link box)
- to daytime light control unit terminal ③,
- combination switch terminal ⑭ and
- lighting switch terminal ③.

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

- through 10A fuse (No. 30, located in the fuse block)
- to daytime light control unit terminal ⑤.

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

- through 7.5A fuse (No. 12, located in the fuse block)
- to daytime light control unit terminal ①.

Ground is supplied to the daytime light control unit terminal ⑩ through body grounds E3, E14 and E53.

HEADLAMP OPERATION

Low beam operation

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

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

Ground is supplied to LH headlamp terminal ② through body grounds E3, E14 and E53.

Ground is supplied to RH headlamp terminal ②:

- through daytime light control unit terminal ⑧
- from daytime light control unit terminal ⑩
- through body grounds E3, E14 and M53.

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

High beam operation

When the combination switch is placed in the "HIGH BEAM" (A) position, with the lighting switch in the headlamp "ON" (2ND) position, power is supplied:

- to the combination switch terminal ⑫
- through combination switch terminal ⑪
- to LH headlamp relay terminal ② and
- RH headlamp relay terminal ②.

Ground is supplied each headlamp relay terminal ① through body grounds E3, E14 and E53.

HEADLAMP

System Description (For Canada) (Cont'd)

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

- through LH headlamp relay terminal ⑤
- to LH headlamp terminal ①, and
- through RH headlamp relay terminal ⑤
- to combination meter terminal ⑥ for the HIGH BEAM indicator and
- to daytime light control unit terminal ⑥
- through daytime light control unit terminal ⑦
- to RH headlamp terminal ①.

Ground is supplied to combination meter terminal ⑫ through body grounds M5, M78 and M123.

Ground is supplied to LH headlamp terminal ② through body grounds E3, E14 and E53.

Ground is supplied to RH headlamp terminal ②:

- through daytime light control unit terminal ⑧
- from daytime light control unit terminal ⑩
- through body grounds E3, E14 and E53.

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

Flash-to-pass operation

When the combination switch is placed in "FLASH TO PASS" (C) position, both headlamp relays are energized to disable the low beams while the lighting switch is in the headlamp "ON" (2ND) position or when the Autolamp system is on.

Power is supplied:

- through combination switch terminal ⑮
- to LH headlamp terminal ①, and
- through combination switch terminal ⑬
- to combination meter terminal ⑥ for the HIGH BEAM indicator and
- daytime light control unit terminal ⑥
- through daytime light control unit terminal ⑦
- to RH headlamp terminal ①.

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

With power and ground supplied, the high beams and HIGH BEAM indicator will illuminate until the combination switch is released from the "FLASH TO PASS" (C) position.

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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 RH headlamp terminal ①
- through RH headlamp terminal ②
- to daytime light control unit terminal ⑧
- through daytime light control unit terminal ⑨
- to LH headlamp terminal ①.

Ground is supplied to LH headlamp terminal ② through body grounds (E3), (E14) and (E53). 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		
Lighting switch position		A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
Headlamp	High beam	X	X	○	X	X	○	○	X	○	△*	△*	○	△*	△*	○	○	X	○
	Low beam	X	X	X	X	X	X	X	○	X	X	X	X	X	X	X	X	○	X
Front side marker and tail lamp		X	X	X	○	○	○	○	○	○	X	X	X	○	○	○	○	○	○
License and instrument illumination lamp		X	X	X	○	○	○	○	○	○	X	X	X	○	○	○	○	○	○

○: Lamp ON

X: Lamp OFF

△: Lamp dims

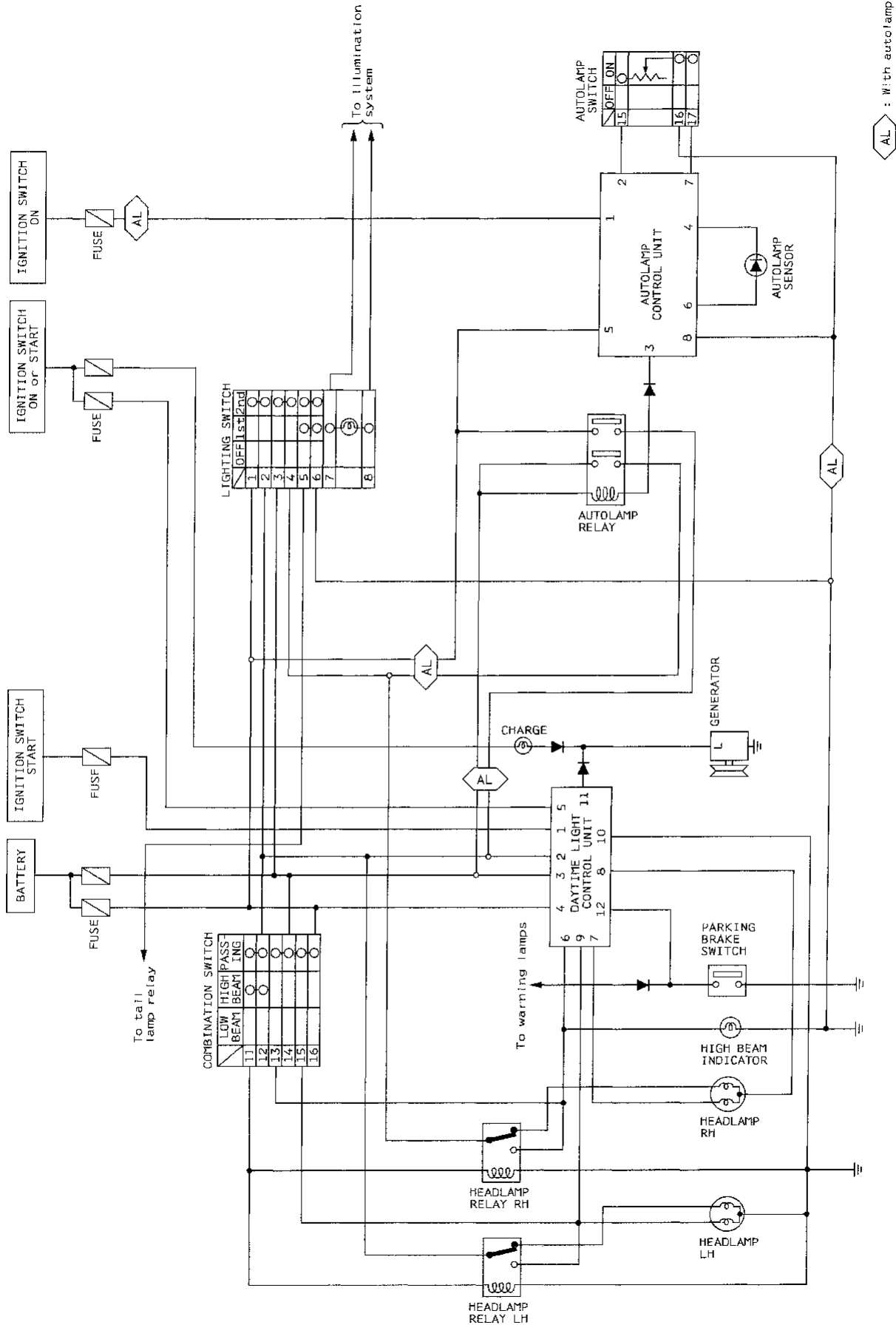
□: Added functions

*: 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.

HEADLAMP

Schematic (For Canada)



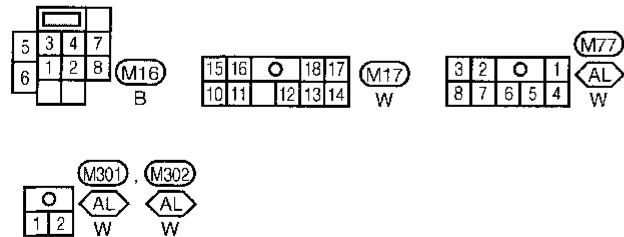
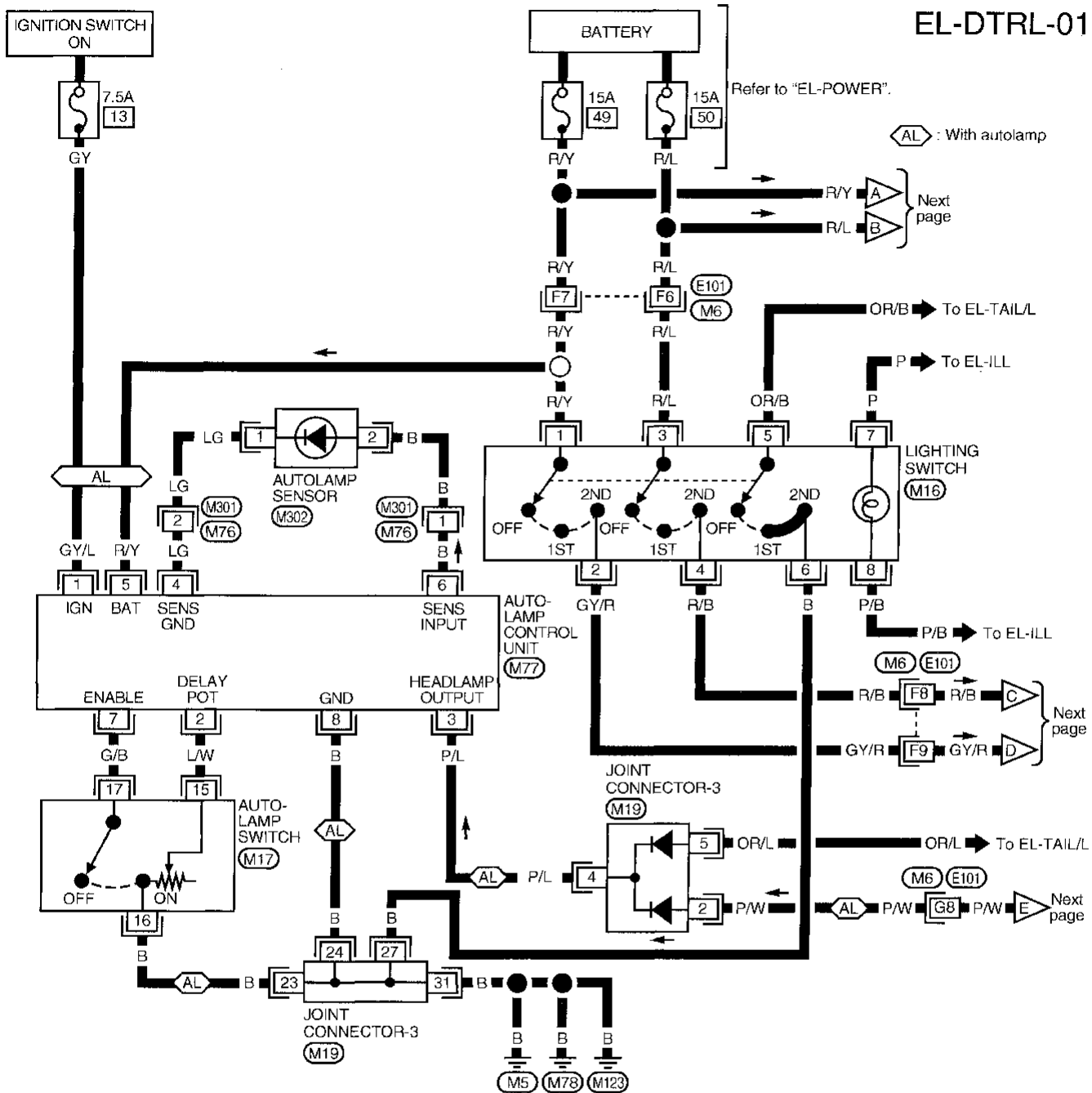
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HEADLAMP

Wiring Diagram (For Canada) -DTRL-

EL-DTRL-01

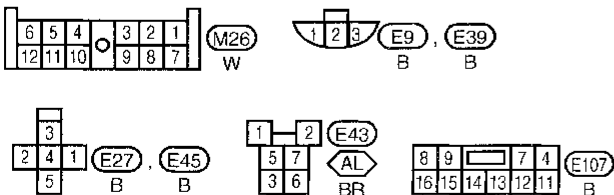
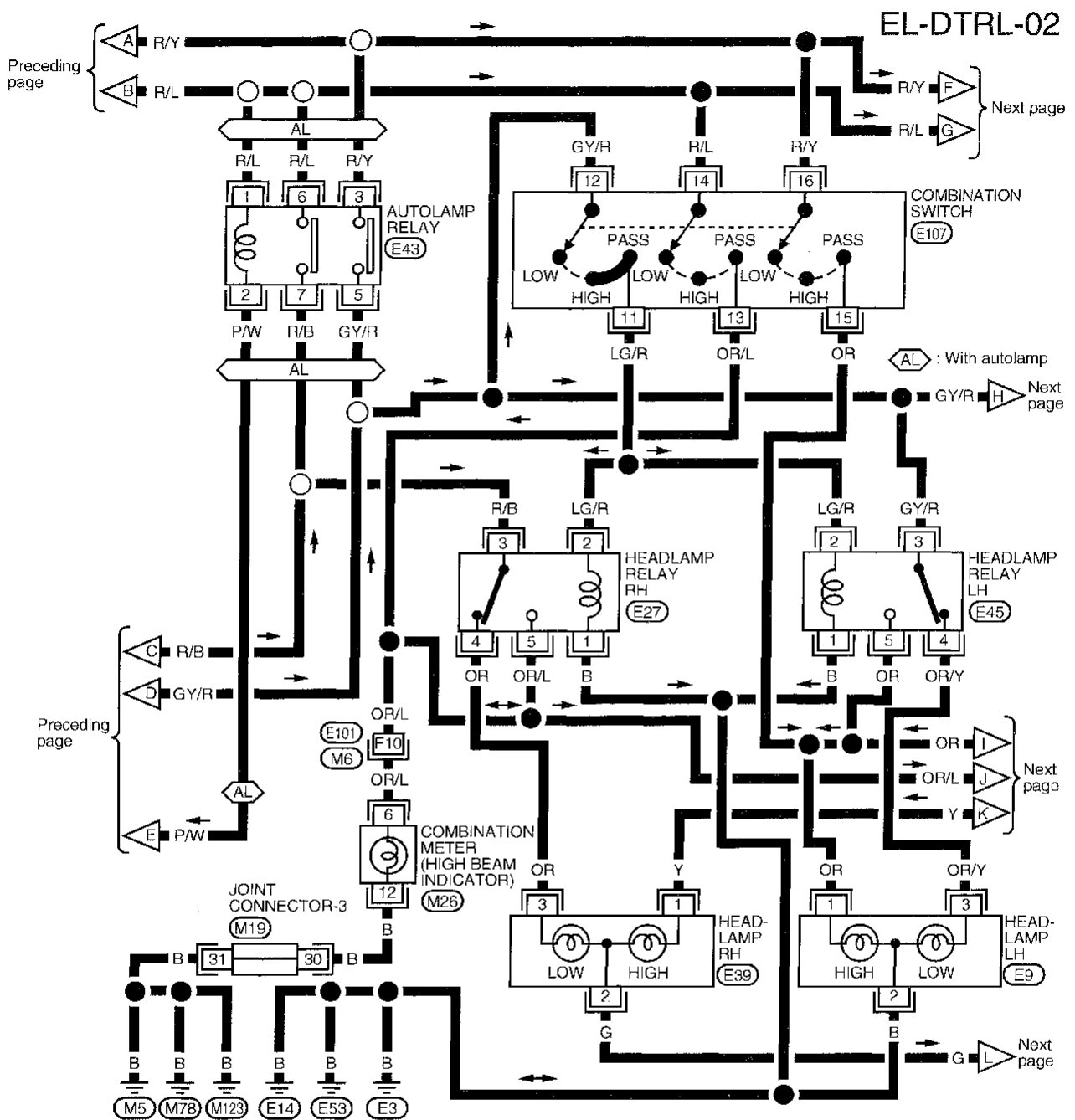


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M6, E101
M19

HEADLAMP

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



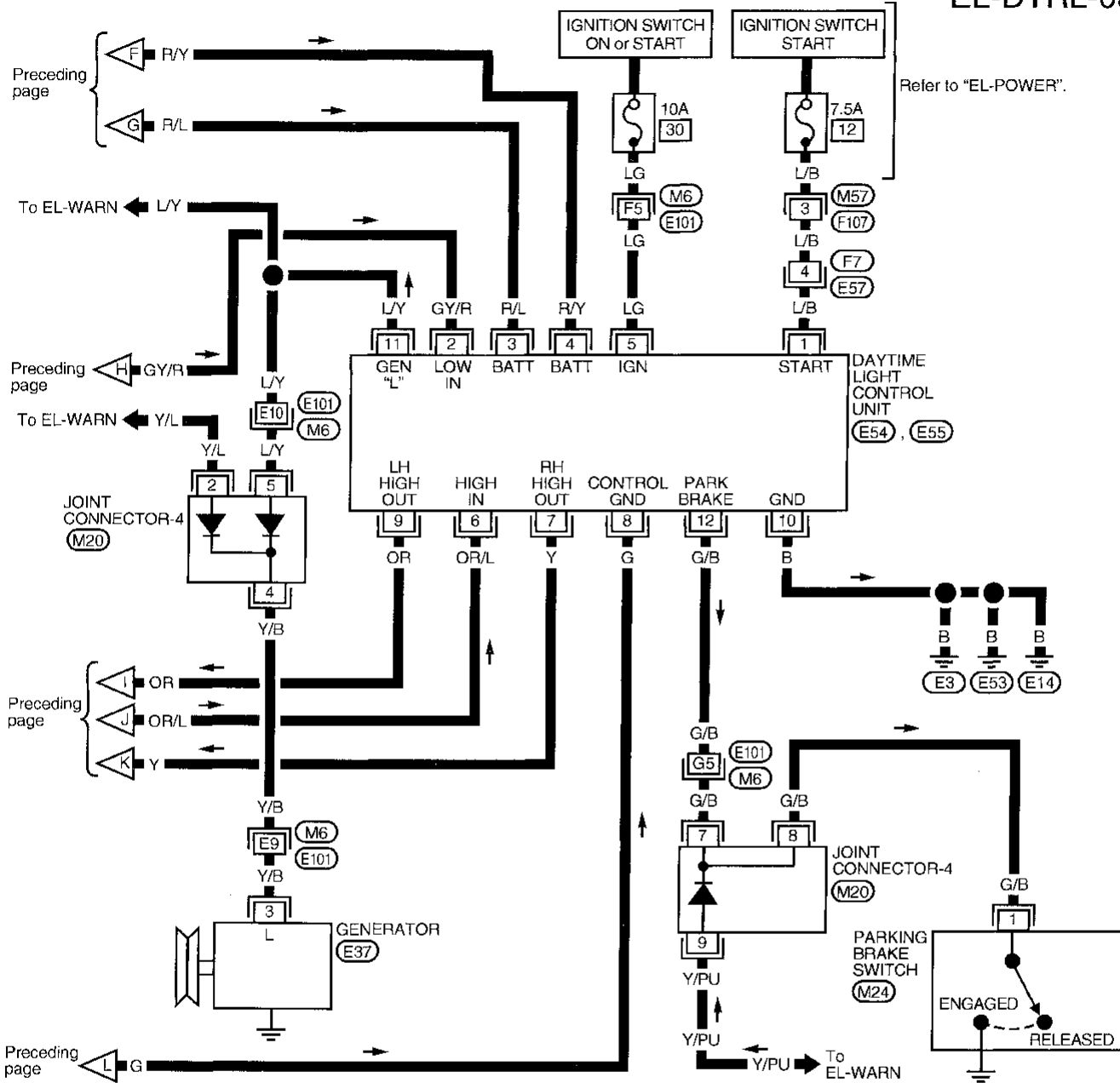
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(M6), (E101)
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HEADLAMP

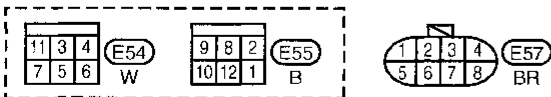
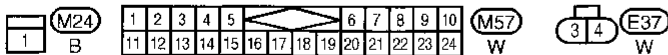
Wiring Diagram (For Canada) –DTRL– (Cont'd)

EL-DTRL-03



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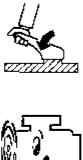


HEADLAMP

Trouble Diagnoses (For Canada)

DAYTIME LIGHT CONTROL UNIT INSPECTION TABLE

(Data are reference values.)

Terminal No.	Item	Condition		Judgement standard
1	Start signal		When turning ignition switch to ST	Battery positive voltage
			When turning ignition switch to ON from ST	1V or less
			When turning ignition switch to OFF	1V or less
2	Lighting switch (Low beam)		When turning lighting switch to 2ND position	Battery positive voltage
3	Power source		When turning ignition switch to ON	Battery positive voltage
			When turning ignition switch to OFF	Battery positive voltage
4	Power source		When turning ignition switch to ON	Battery positive voltage
			When turning ignition switch to OFF	Battery positive voltage
5	Power source		When turning ignition switch to ON	Battery positive voltage
			When turning ignition switch to ST	Battery positive voltage
			When turning ignition switch to OFF	1V or less
6	Combination switch (High beam)		When placing combination switch to HIGH with lighting switch in 2ND position	Battery positive voltage
			When placing combination switch to PASS	Battery positive voltage
7	RH high beam		When placing combination switch to HIGH with lighting switch in 2ND 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
8	RH headlamp control (ground)		When lighting switch is turned to 2ND	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

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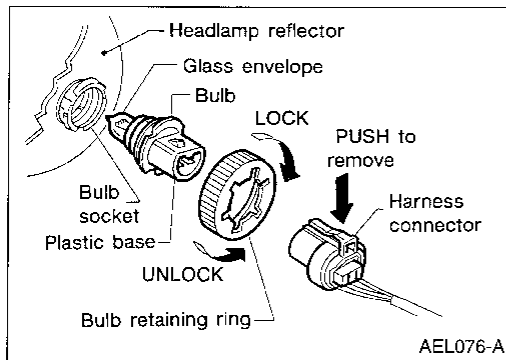
IDX

HEADLAMP

Trouble Diagnoses (For Canada) (Cont'd)

Terminal No.	Item	Condition		Judgement standard
9	LH high beam		When placing combination switch to HIGH	Battery positive voltage
		  CAUTION: Block wheels and ensure selector lever is in ("N") or ("P") position	When releasing parking brake with engine running and turning lighting switch to OFF (daytime lamp operation)	Approx. half battery voltage
10	Ground		—	—
11	Generator		When turning ignition switch to ON	4.6V or less
			When engine is running	Battery positive voltage
			When turning ignition switch to OFF	1V or less
12	Parking brake switch		When parking brake is released	Battery positive voltage
			When parking brake is set	1.5V or less

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 electrical connector from the bulb.
3. Turn bulb retainer counterclockwise to unlock it from headlamp reflector, then remove it.
4. Pull out the headlamp bulb and socket as an assembly. Do not shake or rotate the bulb when removing it. Do not handle the glass envelope.

CAUTION:

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

Aiming Adjustment

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

AIMER ADJUSTMENT MARK

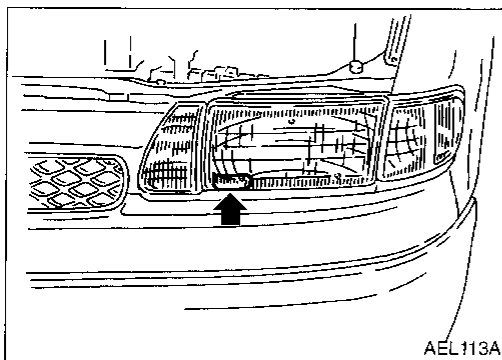
When using a mechanical aimer, set adapter legs to the adjustment data marked on each headlamp.

Example:

4H2V

Horizontal side: 4

Vertical side: 2

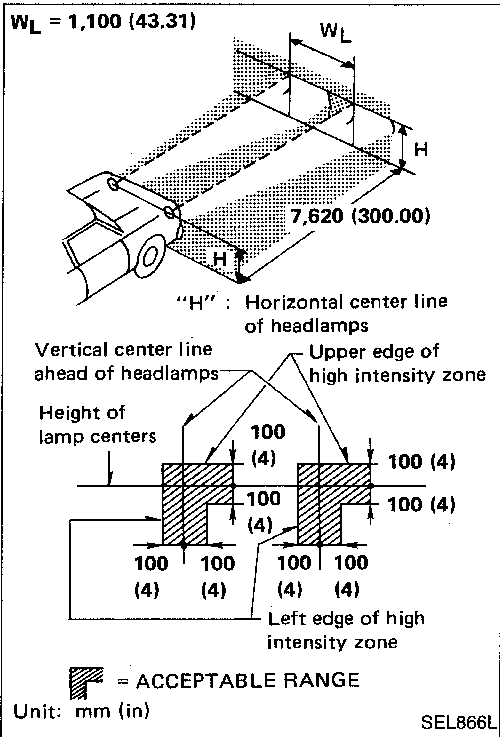
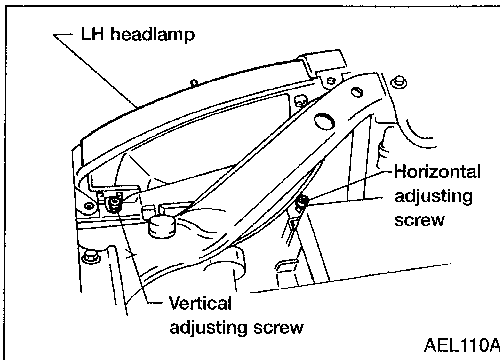


HEADLAMP

Aiming Adjustment (Cont'd)

LOW BEAM

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



- Adjust headlamps so that upper edge and left edge of the high intensity zone are within the acceptable range as shown at left.
 - Dotted lines in illustration show center of headlamp.
- “H”: Horizontal center line of headlamp
 “ W_L ”: Distance between each headlamp center

System Description

For wiring diagram refer to EL-42 (for USA), EL-50 (for Canada).

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

- through 15A fuse (No. 49, located in the fuse and fusible link box)
- to autolamp control unit terminal 5 and
- autolamp relay terminal 3, and
- through 15A fuse (No. 50, located in the fuse and fusible link box)
- to autolamp relay terminals 1 and 6.

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

- through 7.5A fuse (No. 13, located in the fuse block)
- to autolamp control unit terminal 1.

AUTOMATIC ILLUMINATION

When the autolamp switch is turned to the ON position, ground is supplied to the autolamp control unit terminal 7:

- through autolamp switch terminal 17
- to autolamp switch terminal 16
- through body grounds M5, M78 and M123.

With power at terminals 1 and 5, and ground supplied, the autolamp control unit will measure the ambient light intensity through terminals 4 and 6. If the autolamp sensor does not detect sufficient light, then ground is supplied:

- to autolamp relay terminal 2 and
- tail lamp relay terminal 1
- through autolamp control unit terminal 3
- to autolamp control unit terminal 8
- through body grounds M5, M78 and M123.

With power and ground supplied, the autolamp relays are energized and power is supplied:

- through autolamp relay terminal 5
- to LH headlamp relay terminal 3
- through LH headlamp relay terminal 4
- to LH headlamp terminal 3, and
- through autolamp relay terminal 7
- to RH headlamp relay terminal 3
- through RH headlamp relay terminal 4
- to RH headlamp terminal 3.

For USA models, ground is supplied to each headlamp terminal 2 through body grounds E3, E14 and E53.

For Canada models, ground is supplied to LH headlamp terminal 2 through body grounds E3, E14 and E53. Ground is supplied to RH headlamp terminal 2 through daytime light control unit terminal 8.

With power and ground supplied, the headlamps will illuminate.

DELAYED EXIT

With the autolamp switch in the ON position and the ignition switch turned from the ON to OFF position, the autolamp control unit will no longer receive a voltage signal at terminal 1. This will start the autolamp control unit's internal timer. The timer is set based on the resistance value at autolamp control unit terminal 2. With the timer running, the headlamps and parking lamps will continue to illuminate. When the timer reaches the end of its cycle, the headlamps and parking lamps will turn off.

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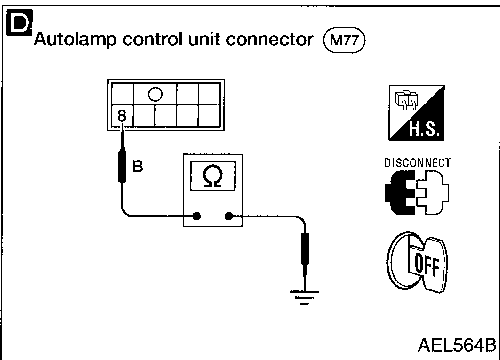
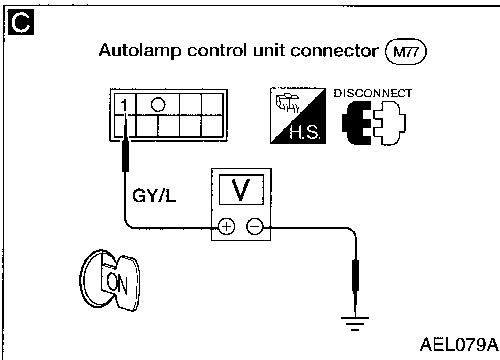
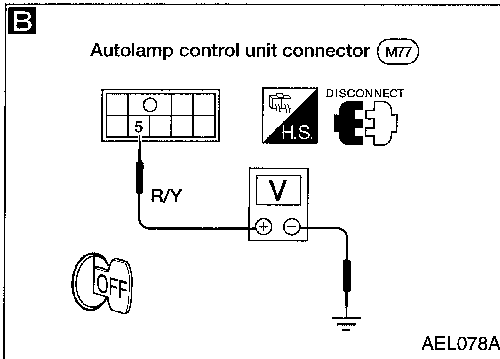
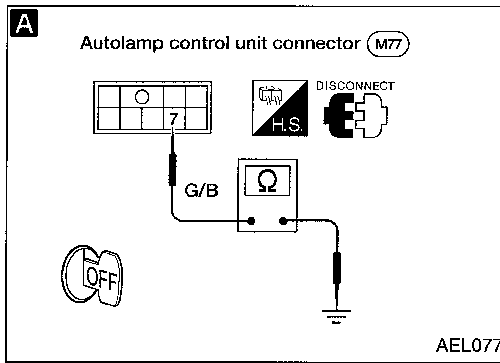
IDX

AUTOLAMP

Trouble Diagnoses

DIAGNOSTIC PROCEDURE 1

SYMPTOM: Lamps do not turn on or off with ambient light level changes.



AUTOLAMP SWITCH INPUT CHECK.

1. Turn ignition switch to OFF.
2. Check continuity between autolamp control unit harness terminal ⑦ and body ground.

Condition of autolamp switch	Continuity
OFF	No
ON	Yes

NG → Check the following items:

- Autolamp switch
- Autolamp switch ground circuit
- Harness for open or short between autolamp control unit and autolamp switch

BATTERY INPUT CHECK.

1. Keep ignition switch OFF.
2. Measure voltage between autolamp control unit harness terminal ⑤ and body ground.
Battery positive voltage should exist.

NG → Check battery, fuses and harness.

IGNITION POWER CHECK.

1. Turn ignition switch to ON.
2. Measure voltage between autolamp control unit harness terminal ① and body ground.
Battery positive voltage should exist.

NG → Check battery, fuses and harness.

GROUND CIRCUIT CHECK.

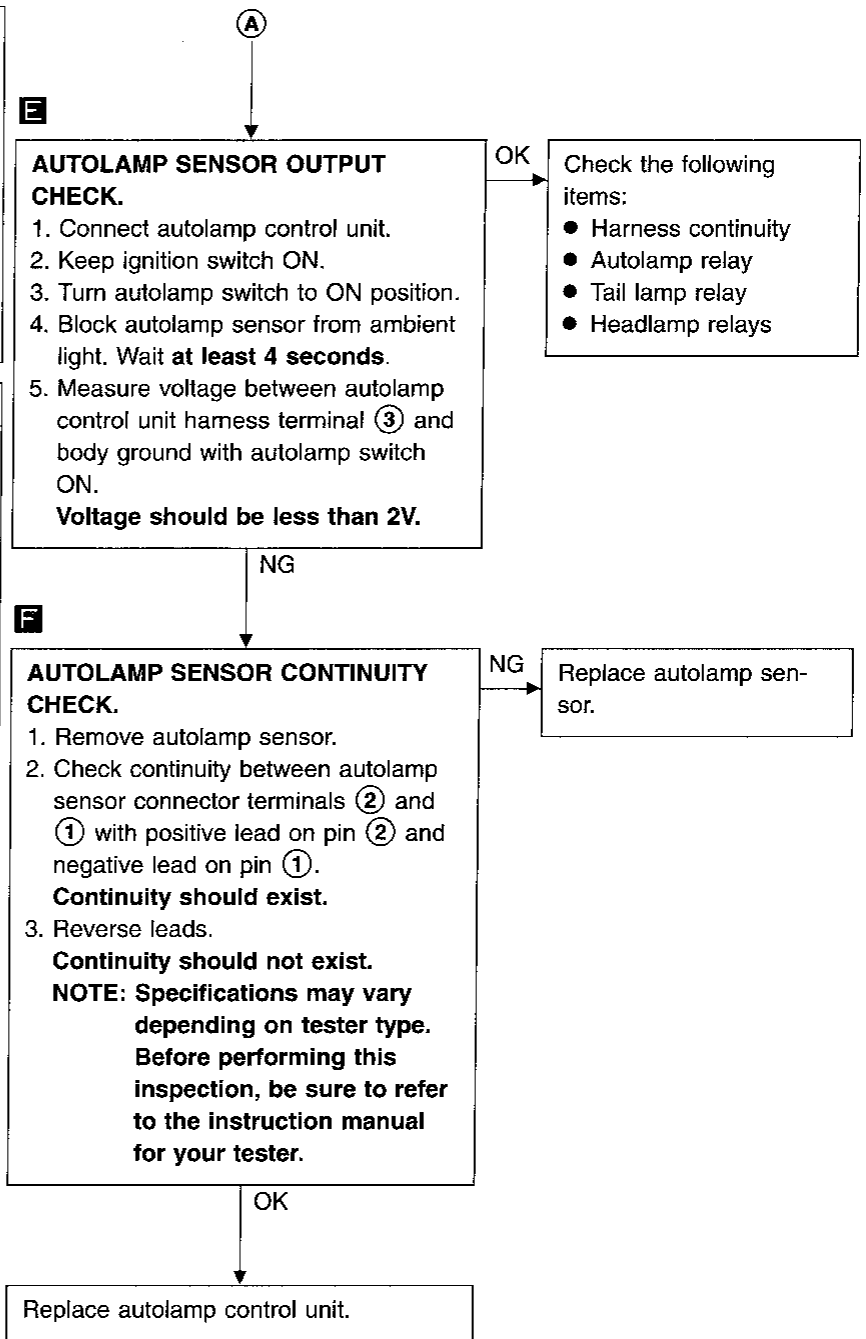
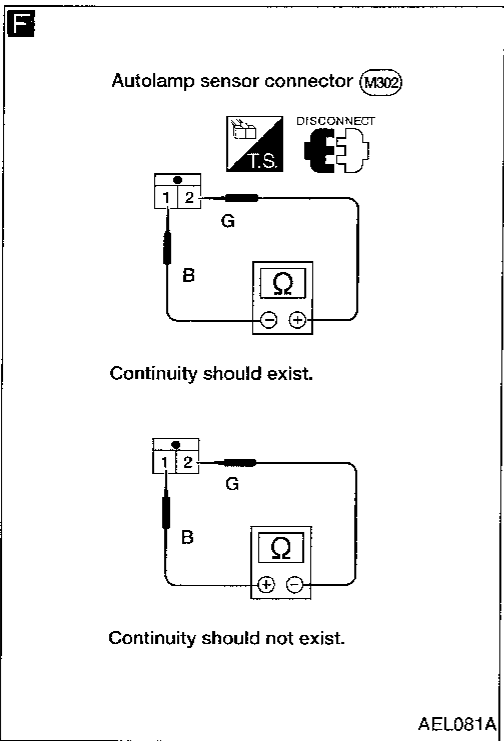
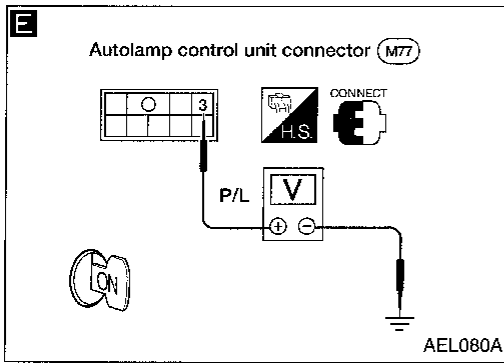
- Check continuity between autolamp control unit harness terminal ⑧ and body ground.
Continuity should exist.

NG → Repair harness.

OK → **A**
(Go to next page.)

AUTOLAMP

Trouble Diagnoses (Cont'd)



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AUTOLAMP

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 2

SYMPTOM: Headlamp delayed exit does not work properly.

AUTOLAMP OPERATION CHECK.

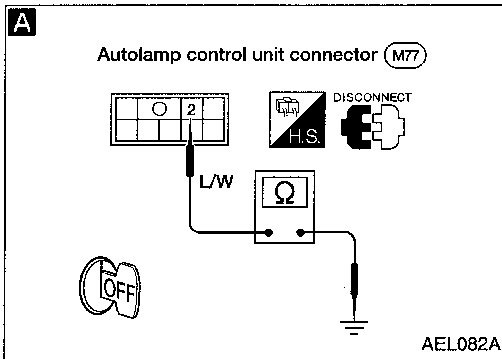
1. Turn ignition switch to ON.
2. Turn autolamp switch to ON.
3. Block autolamp sensor from ambient light.

Do headlamps turn on?

NG

Go to DIAGNOSTIC PROCEDURE 1, EL-58.

Yes



A DELAY RESISTANCE CHECK.

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

NG

Check the following items:

- Autolamp switch
- Harness for open or short between autolamp control unit and autolamp switch

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

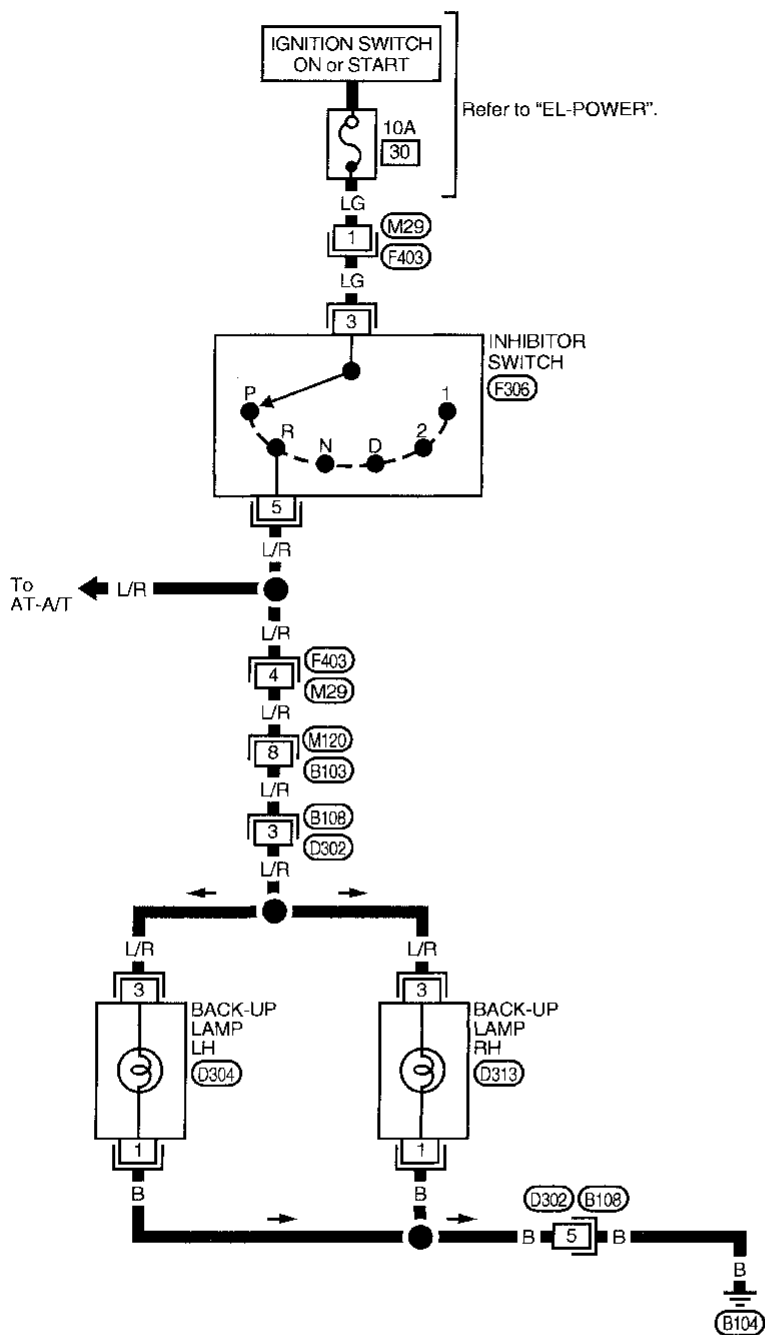
OK

Replace autolamp control unit.

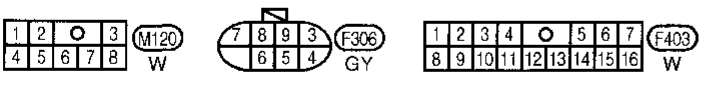
BACK-UP LAMP

Wiring Diagram -BACK/L-

EL-BACK/L-01



- GI
- MA
- EM
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- HA
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PARKING, LICENSE, TAIL AND STOP LAMPS

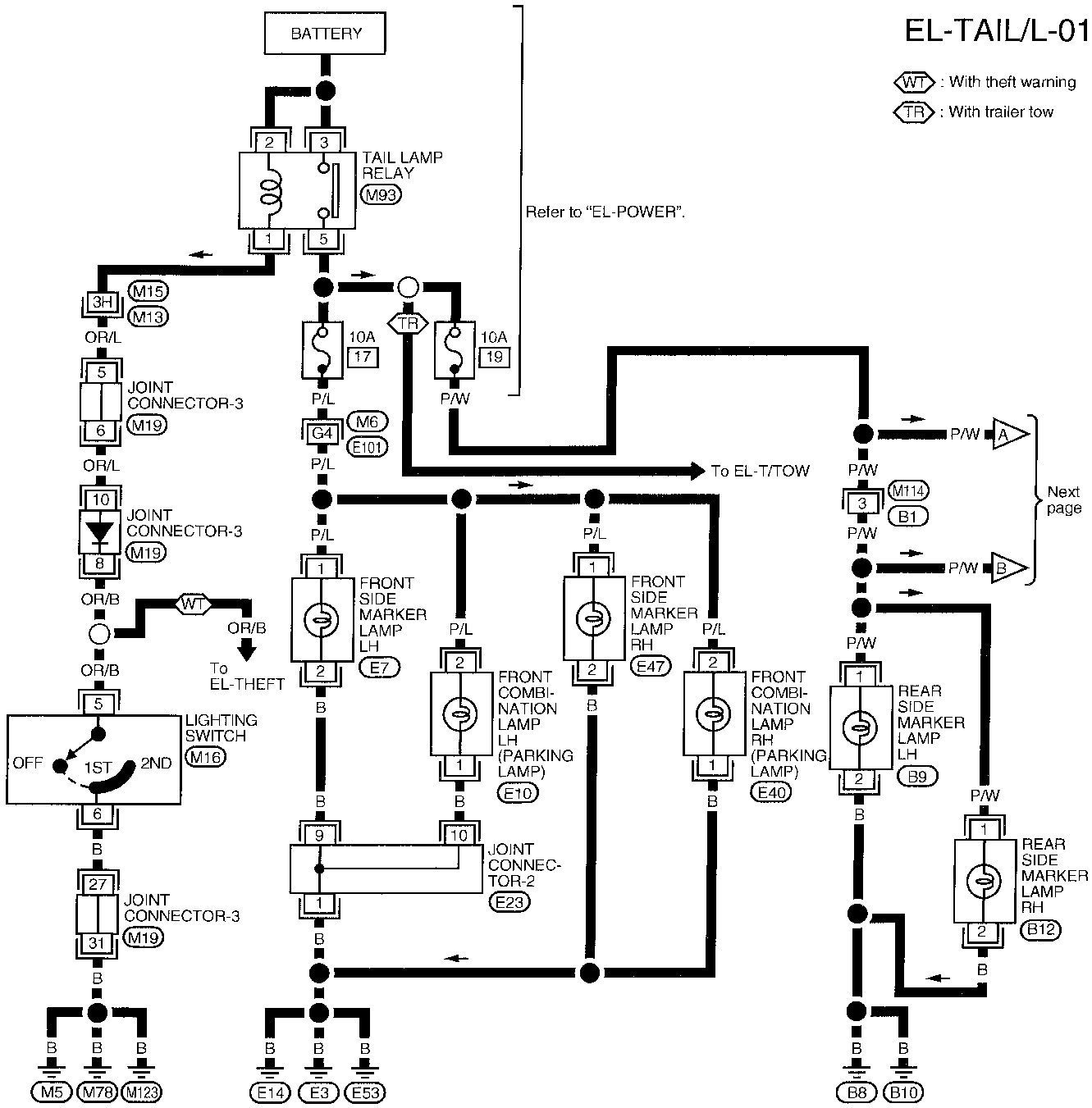
Wiring Diagram -TAIL/L-

EL-TAIL/L-01

WT : With theft warning

TR : With trailer tow

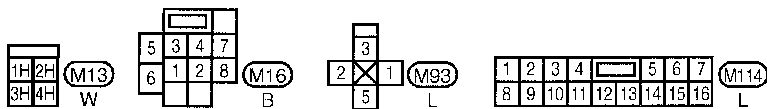
Refer to "EL-POWER".



Next page

Refer to last page (Foldout page).

M6 , E101
M19
E23



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. 27, located in the fuse block)
- to hazard switch terminal ②
- through hazard switch terminal ①
- to combination flasher unit terminal ①
- through combination flasher unit terminal ③
- to turn signal switch terminal ①.

Ground is supplied to combination flasher unit terminal ② through body grounds M5, M78 and M123.

LH turn

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

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

Ground is supplied to the front turn signal lamp LH terminal ① through body grounds E3, E14 and E53.

Ground is supplied to the rear combination lamp LH terminal ④ through body grounds B8 and B10.

Ground is supplied to combination meter terminal 22 through body grounds M5, M78 and M123.

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 ③ to:

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

Ground is supplied to the front turn signal lamp RH terminal ① through body grounds E3, E14 and E53.

Ground is supplied to the rear combination lamp RH terminal ④ through body grounds B8 and B10.

Ground is supplied to combination meter terminal 22 through body grounds M5, M78 and M123.

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. 23, located in the fuse block).

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

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

Ground is supplied to combination flasher unit terminal ② through body grounds M5, M78 and M123.

Power is supplied through hazard switch terminal ④ to:

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

TURN SIGNAL AND HAZARD WARNING LAMPS

System Description (Cont'd)

Power is supplied through hazard switch terminal ⑥ to:

- front turn signal lamp RH terminal ③,
- rear combination lamp RH terminal ② and
- combination meter terminal ⑳.

Ground is supplied to each front turn signal lamp terminal ① through body grounds ③, ④ and ⑤.

Ground is supplied to each rear combination lamp terminal ④ through body grounds ⑧ and ⑩.

Ground is supplied to combination meter terminal ⑳ through body grounds ⑤, ⑦ and ⑫.

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

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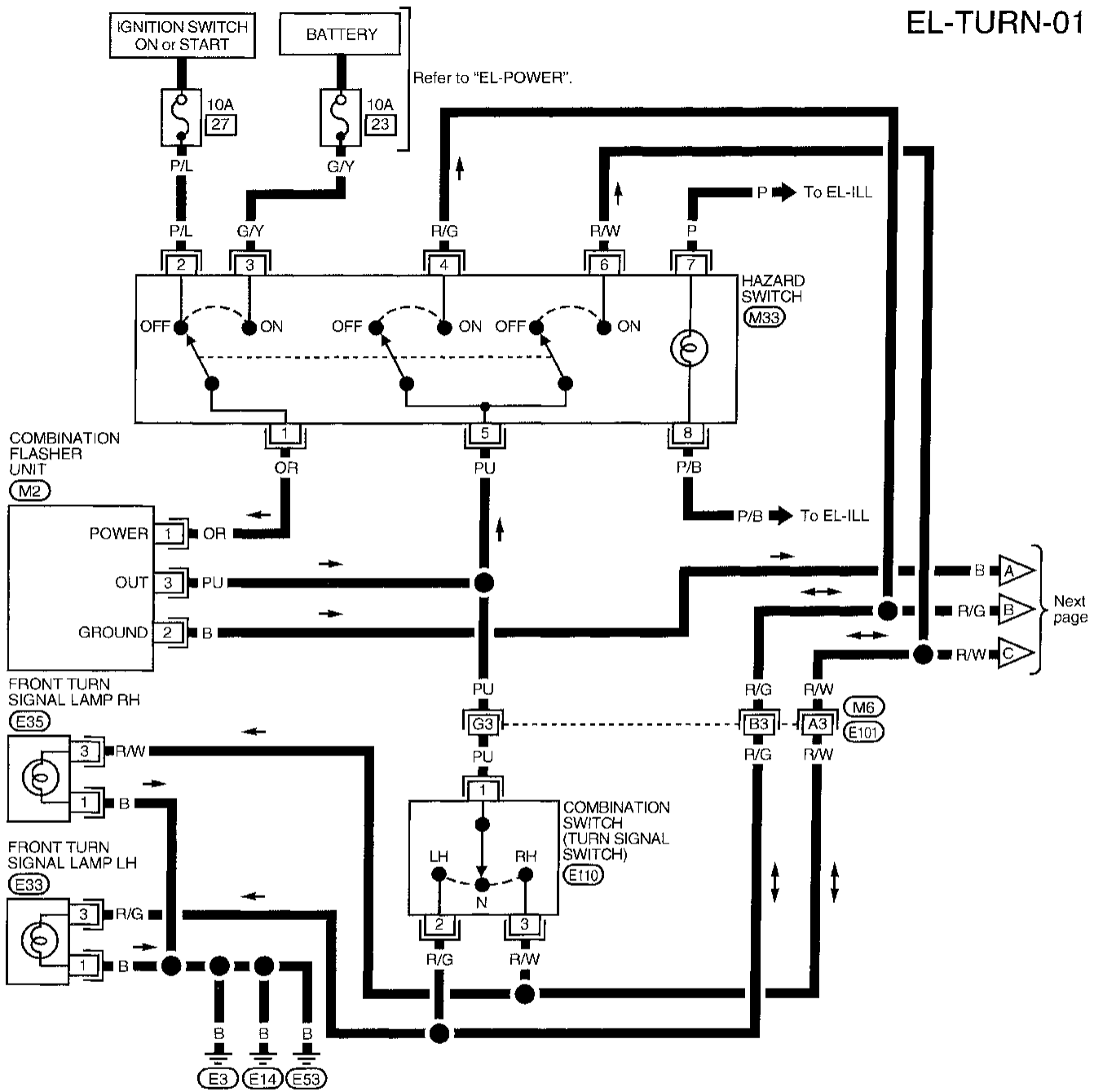
EL

IX

TURN SIGNAL AND HAZARD WARNING LAMPS

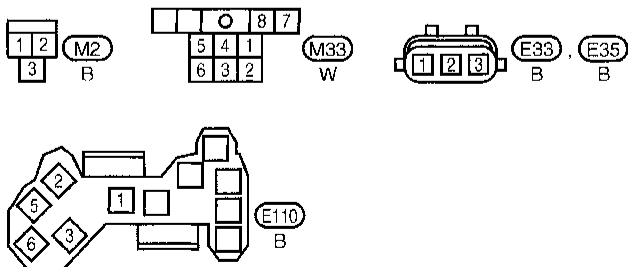
Wiring Diagram -TURN-

EL-TURN-01



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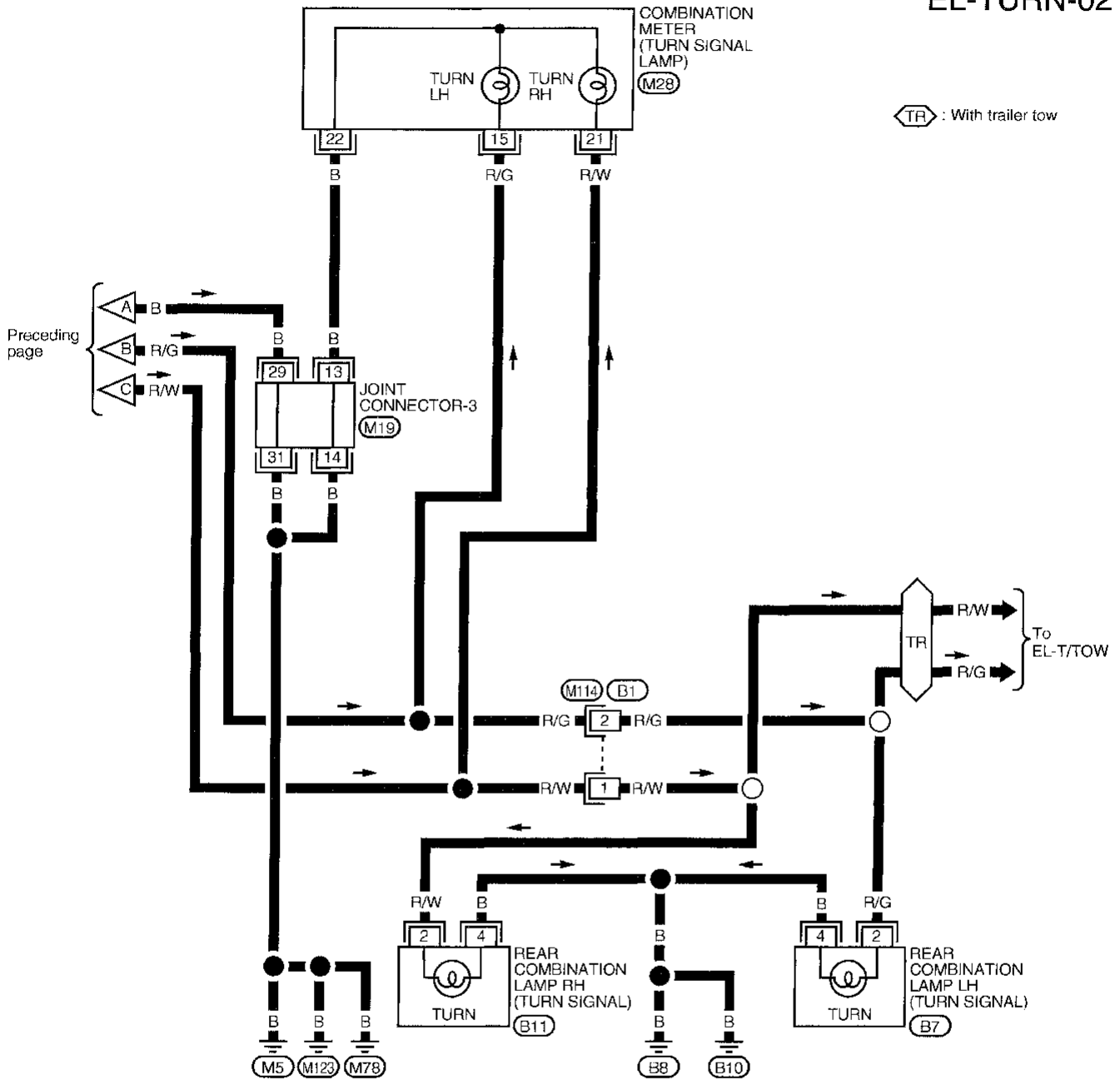
(M6), (E101)



TURN SIGNAL AND HAZARD WARNING LAMPS

Wiring Diagram -TURN- (Cont'd)

EL-TURN-02



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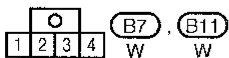
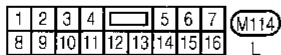
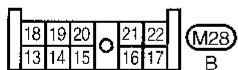
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Refer to last page (Foldout page).

(M19)

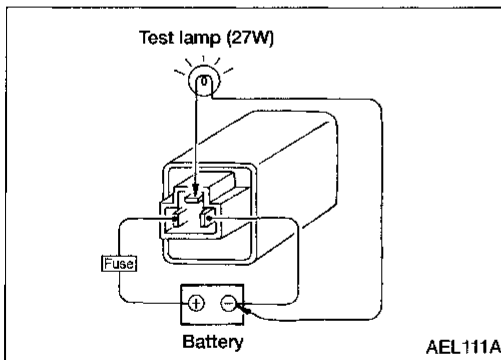


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TURN SIGNAL AND HAZARD WARNING LAMPS

Trouble Diagnoses

Symptom	Possible cause	Repair order
Turn signal and hazard warning lamps do not operate.	<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. 27, located in fuse block). Turn ignition switch ON and verify battery positive voltage is present at terminal ② of hazard switch. 2. Check hazard switch. 3. Check turn signal switch. 4. Check PU wire between combination flasher unit and turn signal switch for open circuit.
Hazard warning lamps do not operate but turn signal lamps operate.	<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. 23, located in fuse block). Verify battery positive voltage is present at terminal ③ of hazard switch. 2. Check hazard switch. 3. Check PU wire between combination flasher unit and hazard switch for open circuit.
Front turn signal lamp LH or RH does not operate.	<ol style="list-style-type: none"> 1. Bulb 2. Grounds E3, E14 and E53 	<ol style="list-style-type: none"> 1. Check bulb. 2. Check grounds E3, E14 and E53.
Rear turn signal lamp LH or RH does not operate.	<ol style="list-style-type: none"> 1. Bulb 2. Grounds B8 and B10 	<ol style="list-style-type: none"> 1. Check bulb. 2. Check grounds B8 and B10.
LH and RH turn indicators do not operate.	<ol style="list-style-type: none"> 1. Grounds M5, M78 and M123 	<ol style="list-style-type: none"> 1. Check grounds M5, M78 and M123.
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.



Electrical Component Inspection

COMBINATION FLASHER UNIT CHECK

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

CORNERING LAMP

System Description

The lighting switch must be in the 1ST or 2ND position for the cornering lamps to operate. The cornering lamp switch is part of the combination switch and is controlled by the turn signal lever. The cornering lamps provide additional lighting in the direction of the turn.

GI

With the lighting switch in the 1ST or 2ND position, the tail lamp relay is energized and power is supplied:

MA

- from tail lamp relay terminal ⑤
- through 10A fuse (No. 17, located in the fuse block)
- to cornering lamp switch terminal ④.

EM

RH turn

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

LC

- from cornering lamp switch terminal ④
- through cornering lamp switch terminal ⑥
- to cornering lamp RH terminal ③.

EC

Ground is supplied to cornering lamp RH terminal ① through body grounds E3, E14 and E53. The RH cornering lamp illuminates until the turn is completed.

FE

LH turn

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

AT

- from cornering lamp switch terminal ④
- through cornering lamp switch terminal ⑤
- to cornering lamp LH terminal ③.

FA

Ground is supplied to cornering lamp LH terminal ① through body grounds E3, E14 and E53. The LH cornering lamp illuminates until the turn is completed.

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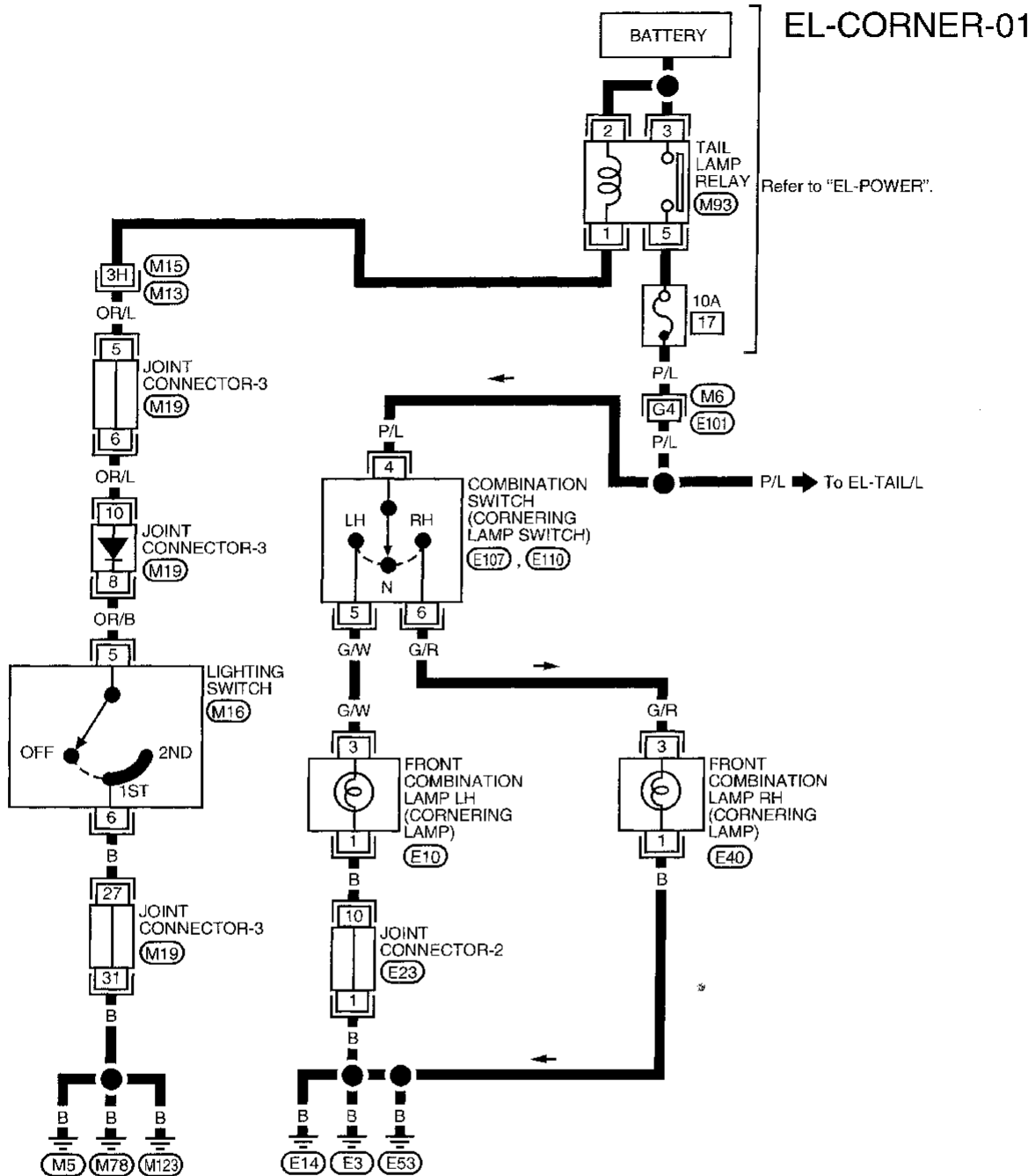
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CORNERING LAMP

Wiring Diagram -CORNER-

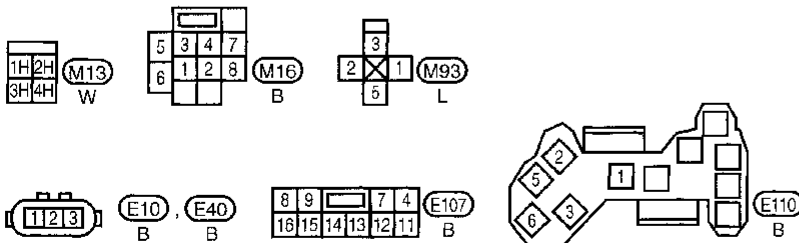


EL-CORNER-01

Refer to "EL-POWER".

Refer to last page (Foldout page).

- (M6), (E101)
- (M19)
- (E23)



TRAILER TOW

System Description

TRAILER TAIL LAMP OPERATION

With the lighting switch in the 1ST or 2ND position, the tail lamp relay is energized and power is supplied:

- from tail lamp relay terminal ⑤
- through 10A fuse (No. 19, located in the fuse block)
- to trailer harness connector terminal ②.

Ground is supplied to trailer harness connector terminal ① through body grounds B8 and B10. With power and ground supplied, the trailer tail lamps will illuminate.

TRAILER STOP, TURN SIGNAL AND HAZARD LAMP OPERATION

The trailer stop, turn signal and hazard lamps are all controlled by the trailer tow control unit. The trailer tow control unit regulates the amount of voltage supplied to the trailer lamps. If either turn signal or the hazard lamps are turned on and the control unit gets a brake lamp input, the control unit supplies more voltage to the trailer lamps to make them illuminate brighter.

Power is supplied to trailer tow control unit terminals ③ and ④ through 15A fuse (No. 22, located in the fuse block) at all times.

Stop lamp input is supplied to trailer tow control unit terminal ①.

Left turn signal and hazard lamp input is supplied to trailer tow control unit terminal ⑦.

Right turn signal and hazard lamp input is supplied to trailer tow control unit terminal ⑧.

The trailer left stop, turn signal and hazard lamps are controlled by trailer tow control unit terminal ⑥, which supplies power to trailer harness connector terminal ③.

The trailer right stop, turn signal and hazard lamps are controlled by trailer tow control unit terminal ⑤, which supplies power to trailer harness connector terminal ④.

Ground is supplied to trailer tow control unit terminal ②, and trailer harness connector terminal ① through body grounds B8 and B10.

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TRAILER TOW

Trouble Diagnoses

Symptom	Possible cause	Repair order
Tail lamps do not operate on trailer.	<ol style="list-style-type: none"> 1. Bulb(s) 2. Fuse 3. Open circuit 4. Grounds B8 and B10 	<ol style="list-style-type: none"> 1. Check bulb(s). 2. Check 10A fuse (No. 19, located in the fuse block). 3. Check for open circuit between fuse No. 19 and trailer tow connector terminal 2. 4. Check grounds B8 and B10.
Stop lamps do not operate on trailer.	<ol style="list-style-type: none"> 1. Bulb(s) 2. Fuse 3. Trailer tow control unit 4. Open circuit 5. Grounds B8 and B10 6. Stop lamp circuit 	<ol style="list-style-type: none"> 1. Check bulb(s). 2. Check 15A fuse (No. 22, located in the fuse block). Verify battery voltage at terminals 3 and 4 of trailer tow control unit. 3. Verify battery positive voltage at terminal 1 (stop lamp input) of trailer tow control unit when brake pedal is depressed. 4. Check for open circuit between 15A fuse No. 22 and terminals 3 and 4 of trailer tow control unit. Check for open circuit between trailer tow control unit terminals 6 and 5, and terminals 3 and 4 of trailer tow connector. 5. Check grounds B8 and B10. 6. Check stop lamp circuit.
Turn signals or hazard lamps do not operate on trailer.	<ol style="list-style-type: none"> 1. Bulb(s) 2. Fuse 3. Trailer tow control unit 4. Open circuit 5. Grounds B8 and B10 6. Turn signal circuit 	<ol style="list-style-type: none"> 1. Check bulb(s). 2. Check 15A fuse (No. 22, located in the fuse block). Verify battery voltage at terminals 3 and 4 of trailer tow control unit. 3. Check for fluctuating voltage (battery to zero volts) at terminals 7 and 8 (turn/hazard inputs) and terminals 6 and 5 (turn/hazard outputs) of the trailer tow control unit. 4. Check for open circuit between terminals 6 and 5 of the trailer tow control unit, and terminals 3 and 4 of the trailer tow connector. 5. Check grounds B8 and B10. 6. Check turn signal circuit.

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ILLUMINATION

System Description

Power is supplied at all times:

- through 7.5A fuse (No. 41), located in the fuse and fusible link box)
- to smart entrance control unit terminal 9.

Power is supplied at all times:

- to tail lamp relay terminals 2 and 3.

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

- through 10A fuse (No. 5), located in the fuse block)
- to door mirror remote control switch terminal 4.

Ground is supplied to smart entrance control unit terminal 20 through body grounds M5, M78 and M123.

With the lighting switch in the 1ST or 2ND position, the tail lamp relay is energized and power is supplied:

- from tail lamp relay terminal 5
- through 7.5A fuse (No. 18), located in the fuse block)
- to power terminal on all illuminated components except door mirror remote control switch.

The illumination control switch in combination with the smart entrance control unit control the amount of current flow through the illumination system. This is accomplished by varying the amount of ground supplied to the illumination system.

When the illumination control switch is pushed in the LIGHTER direction, ground is supplied:

- to smart entrance control unit terminal 36
- through illumination control switch terminal 13
- from illumination control switch terminal 14
- through body grounds M5, M78 and M123.

When the illumination control switch is pushed in the DARKER direction, ground is supplied:

- to smart entrance control unit terminal 35
- through illumination control switch terminal 12
- from illumination control switch terminal 14
- through body grounds M5, M78 and M123.

Ground is supplied to the illumination system from smart entrance control unit terminal 15.

The rear A/C control unit and rear radio remote control unit illumination are not controlled by the illumination control switch. The intensity of these lamps does not change. Rear A/C control unit terminal 4 and rear radio remote control unit terminal 7 are both grounded directly through body grounds M5, M78 and M123.

The following chart indicates power and ground terminals for the illumination system components.

Component	Power terminal	Ground terminal
Radio	20	18
Rear wiper switch	4	5
Front A/C control unit	25	26
Rear fan switch (front)*	2	3
Hazard switch	7	8
Rear A/C control unit*	11	4
Rear radio remote control unit*	8	7
Combination meter	23 and 10	24 and 11
ASCD main switch*	5	6
Rear window defogger switch	5	6
Lighting switch	7	8

* If equipped.

ILLUMINATION

System Description (Cont'd)

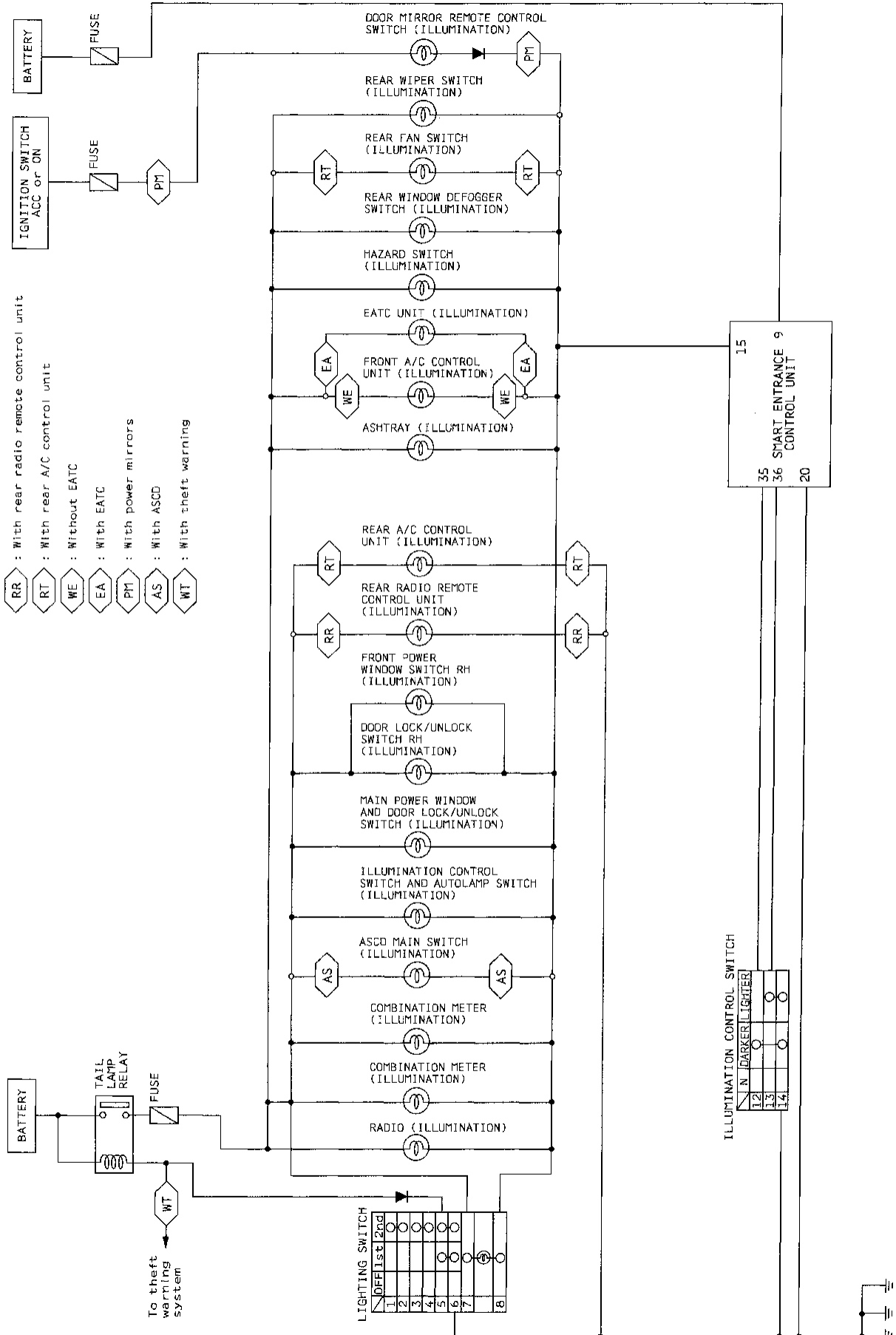
Component	Power terminal	Ground terminal
Illumination control switch and autolamp switch	⑪	⑩
Main power window and door lock/unlock switch	③	④
Door lock/unlock switch RH	⑥	⑤
Front power window switch RH	⑦	⑧
Ashtray	①	②
EATC unit*	⑥	①
Door mirror remote control switch*	④	⑧

* If equipped.

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ILLUMINATION

Schematic



AEL471B

ILLUMINATION

NOTES

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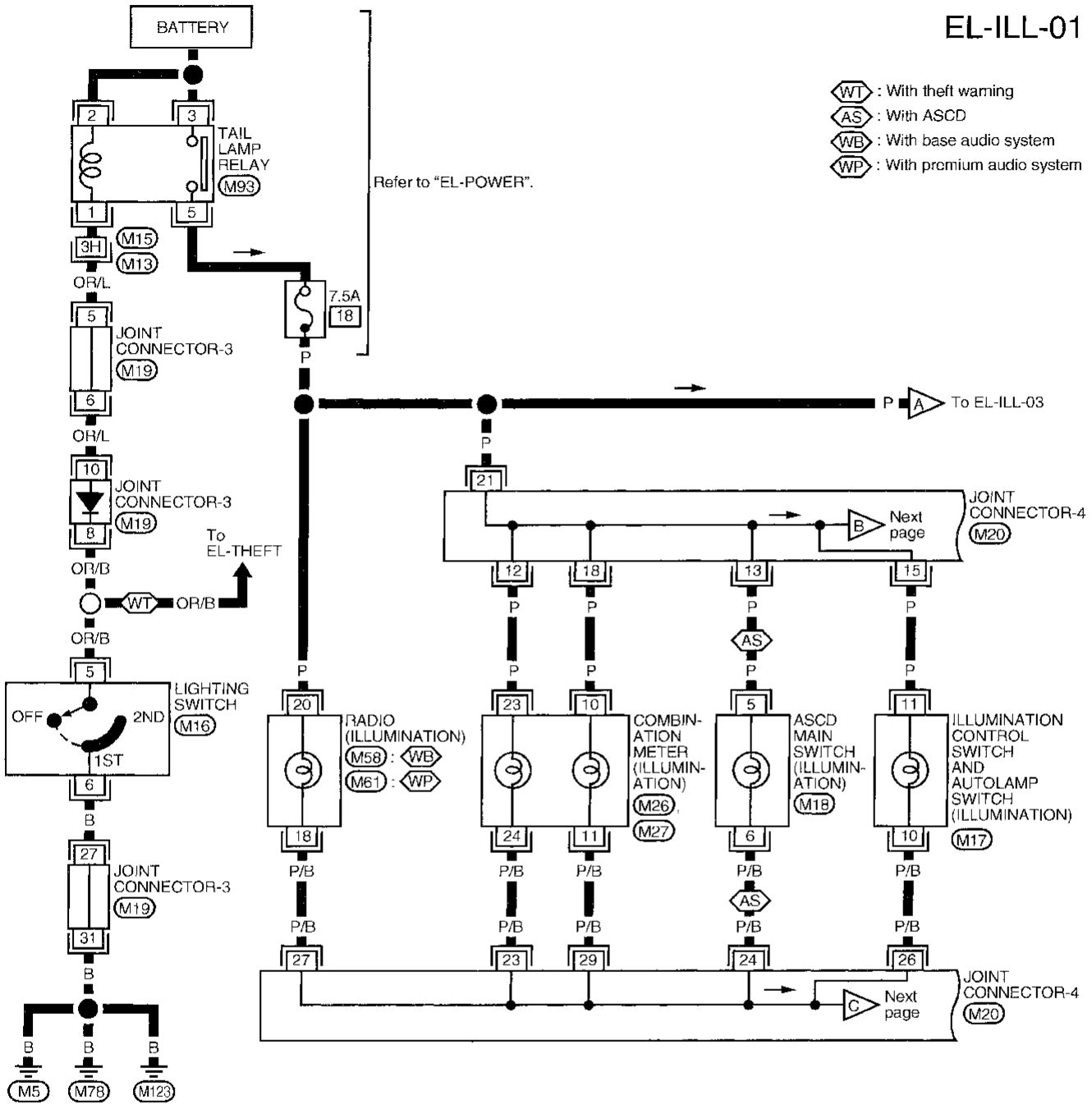
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ILLUMINATION

Wiring Diagram -ILL-

EL-ILL-01



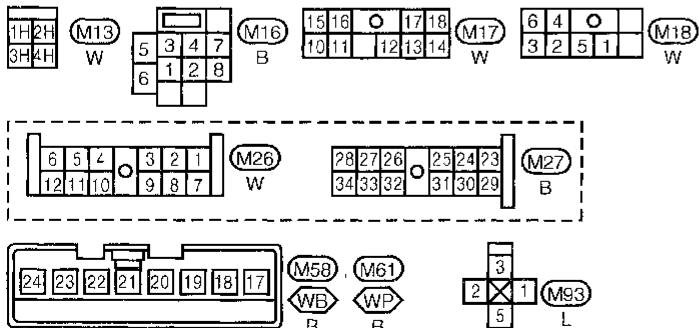
- : With theft warning
- : With ASCD
- : With base audio system
- : With premium audio system

Refer to "EL-POWER".

To EL-ILL-03

Next page

Next page



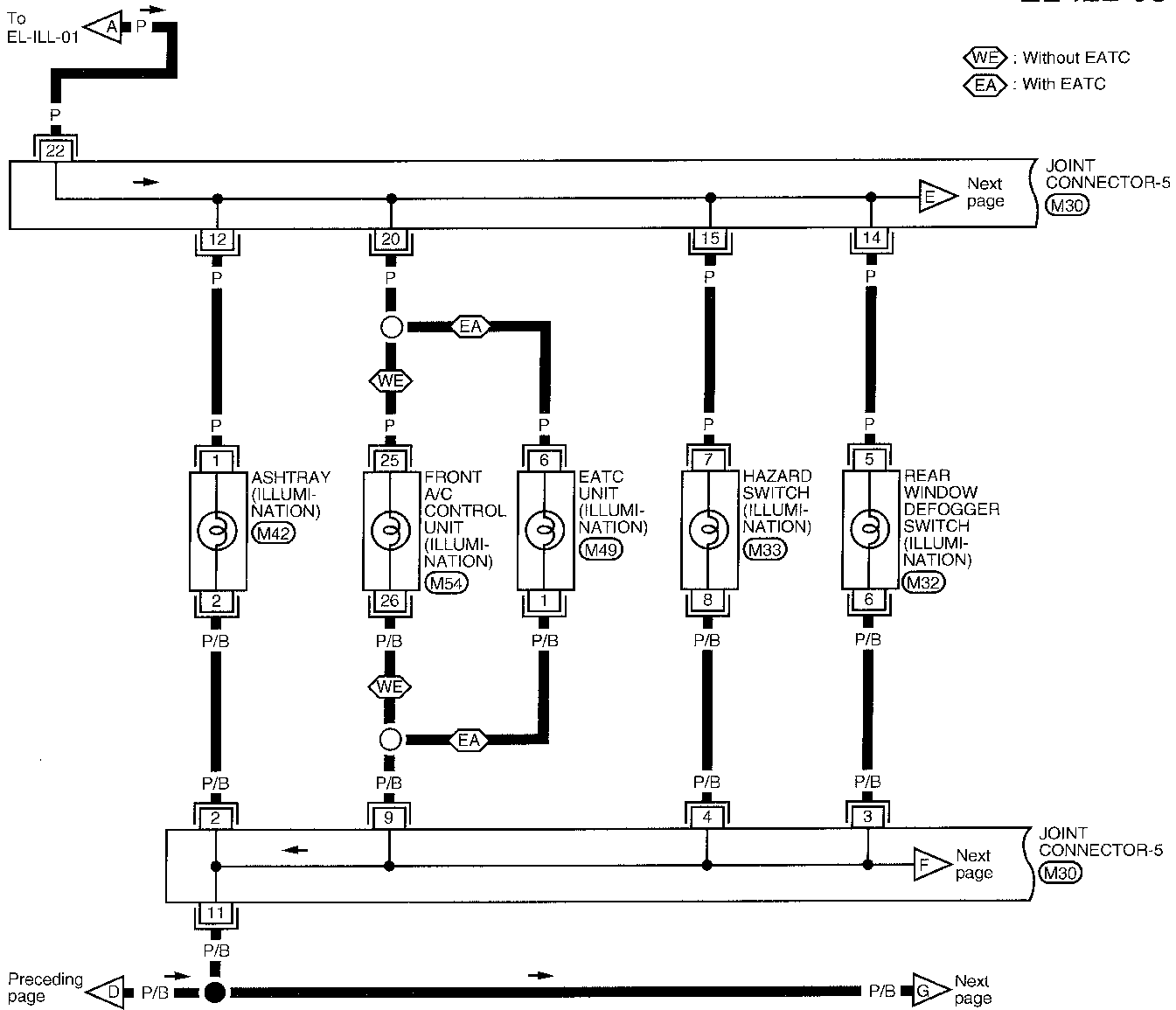
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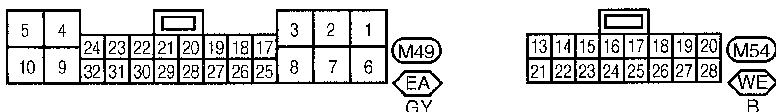
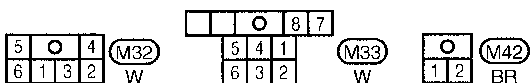
ILLUMINATION

Wiring Diagram -ILL- (Cont'd)

EL-ILL-03



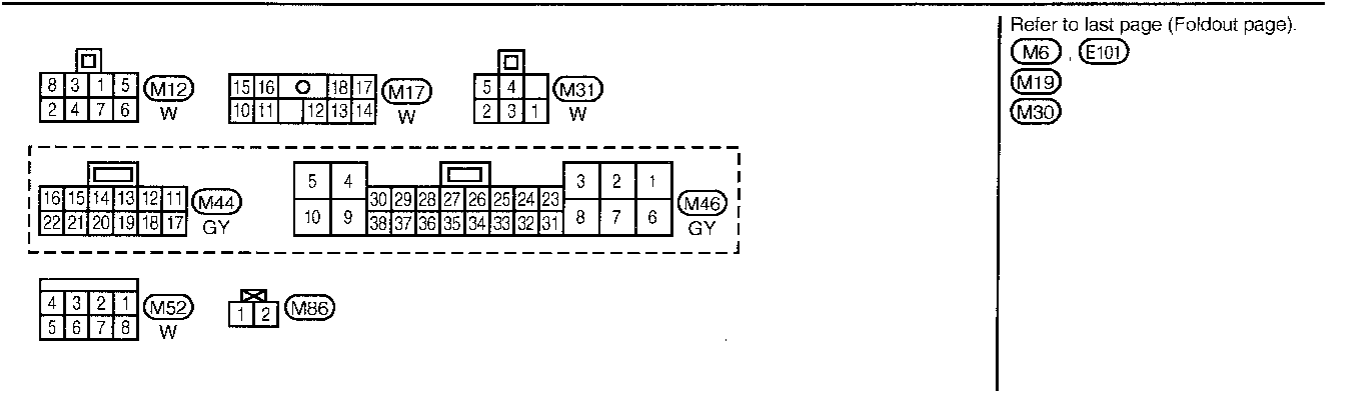
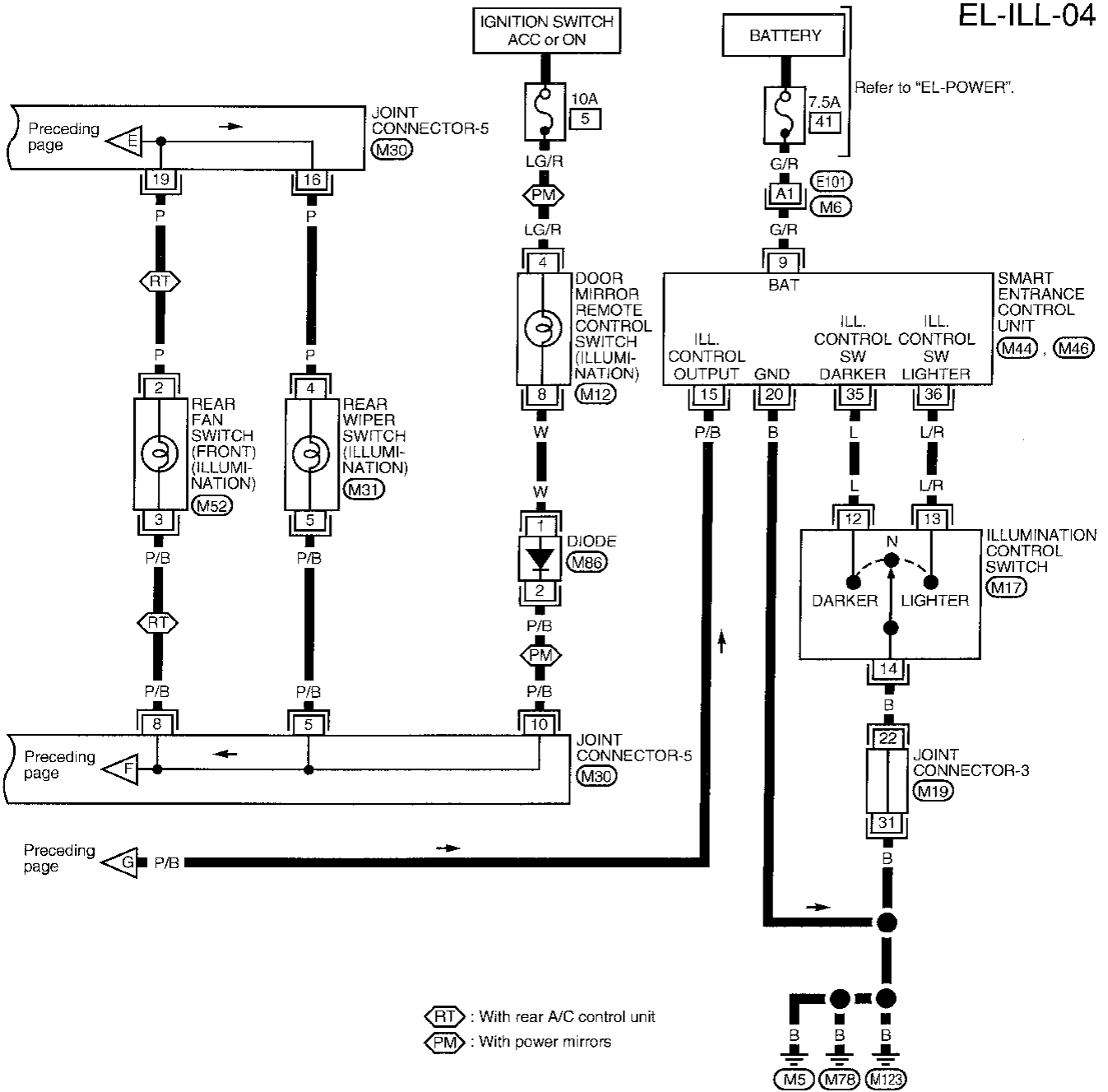
Refer to last page (Foldout page).
(M30)



ILLUMINATION

Wiring Diagram -ILL- (Cont'd)

EL-ILL-04



INTERIOR ROOM LAMP

System Description

Power is supplied at all times:

- through 15A fuse (No. 21, located in the fuse block)
- to joint connector-5 terminal 33, and
- through 7.5A fuse (No. 41, located in the fuse and fusible link box)
- to smart entrance control unit terminal 9.

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

- through 10A fuse (No. 30, located in the fuse block)
- to smart entrance control unit terminal 25.

Ground is supplied to smart entrance control unit terminals 20 and 54 through body grounds M5, M78 and M123.

FRONT ROOM LAMP

Power is supplied at all times:

- from joint connector-5 terminal 23
- to front room lamp terminal 1.

When the front room lamp switch is placed in the ON position, ground is supplied to front room lamp terminal 3 through body grounds M5, M78 and M123.

With power and ground supplied, the front room lamp will illuminate.

If the front room lamp switch is placed in the DOOR position and either front door or sliding door is opened, ground is supplied to front room lamp terminal 2 through smart entrance control unit terminal 21.

With power and ground supplied, the front room lamp will illuminate.

If the front room lamp switch is placed in the OFF position, the front room lamp will not illuminate.

REAR ROOM LAMP

Power is supplied at all times:

- from joint connector-5 terminal 23
- to rear room lamp terminal 1.

When the rear room lamp switch is placed in the ON position, ground is supplied to rear room lamp switch terminal 3 through smart entrance control unit terminal 16.

With power and ground supplied, the rear room lamp will illuminate.

If the rear room lamp switch is placed in the DOOR position and either front door, sliding door or tailgate is opened, ground is supplied to rear room lamp terminal 2 through smart entrance control unit terminal 22.

With power and ground supplied, the rear room lamp will illuminate.

If the rear room lamp switch is placed in the OFF position, the rear room lamp will not illuminate.

STEP LAMPS

Power is supplied at all times:

- from joint connector-5 terminal 24
- to front step lamp RH terminal 1, and
- from joint connector-5 terminal 32
- to front step lamp LH terminal 1, and
- from joint connector-5 terminal 31
- to sliding door step lamp terminal 1.

When either front door or sliding door is opened, ground is supplied:

- from smart entrance control unit terminal 21
- to front step lamp RH terminal 2
- front step lamp LH terminal 2 and
- sliding door step lamp terminal 2.

With power and ground supplied, the step lamps will illuminate.

INTERIOR ROOM LAMP

System Description (Cont'd)

FOOT LAMPS

Power is supplied at all times:

- from joint connector-5 terminal (27)
- to foot lamp RH terminal (1), and
- from joint connector-5 terminal (28)
- to foot lamp LH terminal (1).

GI

MA

EM

LC

When either front door or sliding door is opened, ground is supplied:

- from smart entrance control unit terminal (21)
- to foot step lamp RH terminal (2) and
- foot lamp LH terminal (2).

With power and ground supplied, the foot lamps will illuminate.

TAILGATE LAMP

Power is supplied at all times:

- from joint connector-5 terminal (29)
- to tailgate lamp terminal (1).

EC

When either front door, sliding door, or tailgate is opened, ground is supplied to tailgate lamp terminal (2) through smart entrance control unit terminal (22).

With power and ground supplied, the tailgate lamp will illuminate.

FE

AT

FADE AWAY OPERATION

When exiting the vehicle, the smart entrance control unit will gradually fade out the foot lamps, room lamps, step lamps, and tailgate lamp over a period of approximately 15 seconds. This process happens in several stages. First, the rear room lamp and tailgate lamp will turn off approximately 1 second after the last door has been closed. Second, the foot lamps, front room lamp, and step lamps remain lit at half illumination for approximately 9 seconds. Finally, the front room lamp and step lamps will gradually fade away over the final approximately 5 seconds.

FA

RA

MULTI-REMOTE OPERATION

If the vehicle is equipped with multi-remote control system, the smart entrance control unit will illuminate the foot lamps, front and rear room lamps, step lamps, and tailgate lamp when the doors are unlocked using the remote controller. The room lamps will not illuminate during this function unless the room lamp switches are in the DOOR position.

BR

ST

MAP LAMP

Power is supplied at all times:

- from joint connector-5 terminal (23)
- to map lamp terminal (1).

RS

BT

When the map lamp switch is placed in the ON position, ground is supplied to map lamp terminal (2) through body grounds (M5), (M78) and (M123).

With power and ground supplied, the map lamp will illuminate.

HA

PERSONAL LAMP

Power is supplied at all times:

- from joint connector-5 terminal (23)
- to personal lamp terminal (1).

EL

IDX

When the personal lamp switch is placed in the ON position, ground is supplied to personal lamp terminal (2) through smart entrance control unit terminal (16).

With power and ground supplied, the personal lamp will illuminate.

VANITY LAMPS

Power is supplied at all times:

- from joint connector-5 terminal (23)
- to vanity lamp RH terminal (1) and
- vanity lamp LH terminal (1).

INTERIOR ROOM LAMP

System Description (Cont'd)

When a vanity mirror cover is pulled down, the vanity lamp switch closes and ground is supplied to each vanity mirror terminal ② through body grounds M5, M78 and M123. With power and ground supplied, the vanity lamp will illuminate.

GLOVE BOX LAMP

Power is supplied at all times:

- from joint connector-5 terminal ②
- to glove box lamp terminal ②.

When the glove box door is opened, the glove box lamp switch closes and ground is supplied to glove box lamp terminal ① through smart entrance control unit terminal ⑩.

With power and ground supplied, the glove box lamp will illuminate.

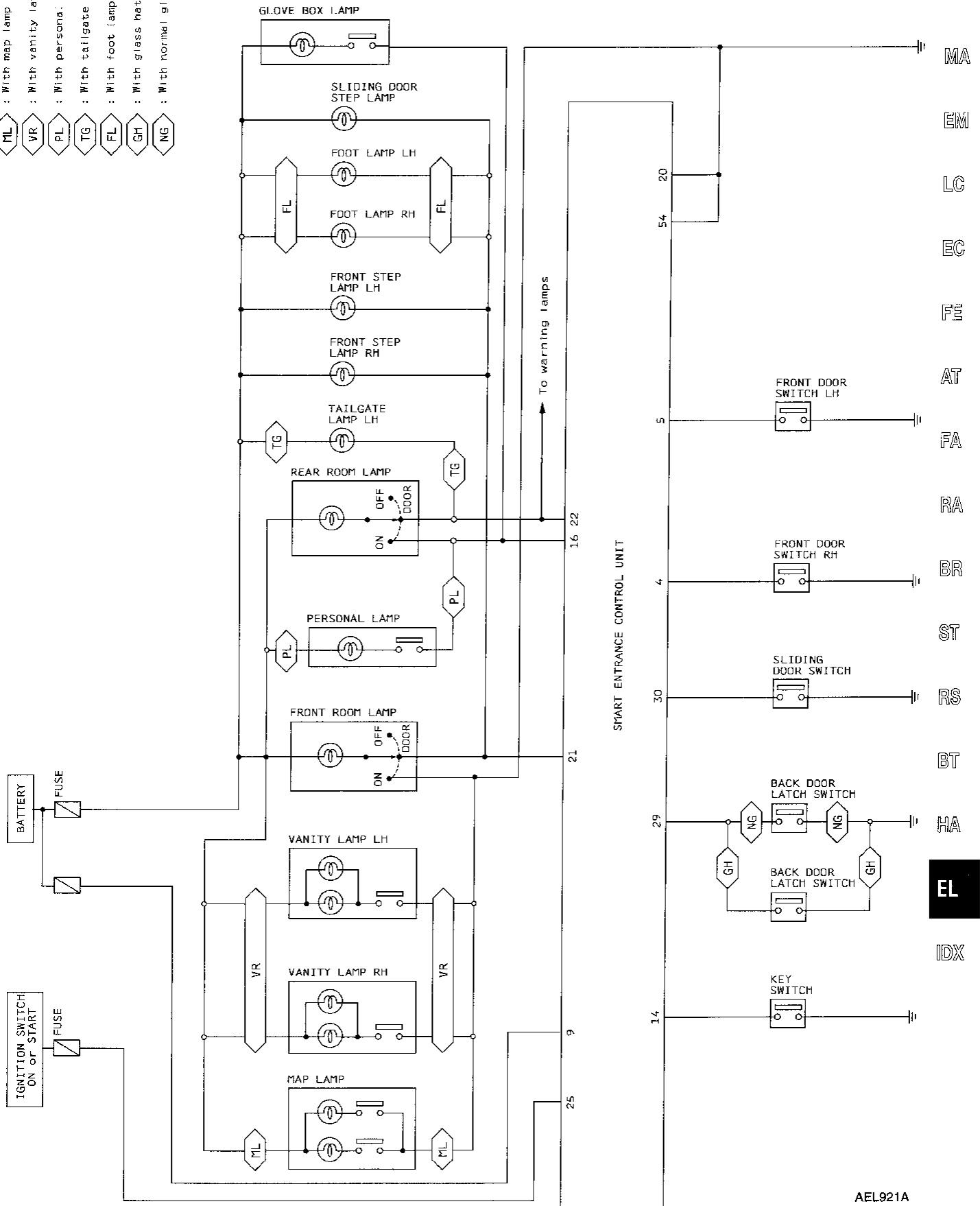
BATTERY SAVER

If any of the lamps controlled by the smart entrance control unit remain on for an extended period of time, the control unit will turn off the lamps to save the battery by disrupting the ground circuit.

INTERIOR ROOM LAMP

Schematic

- ML : With map lamp
- VR : With vanity lamps
- PL : With personal lamp
- TG : With tailgate lamp
- FL : With foot lamps
- GH : With glass hatch
- NG : With normal glass

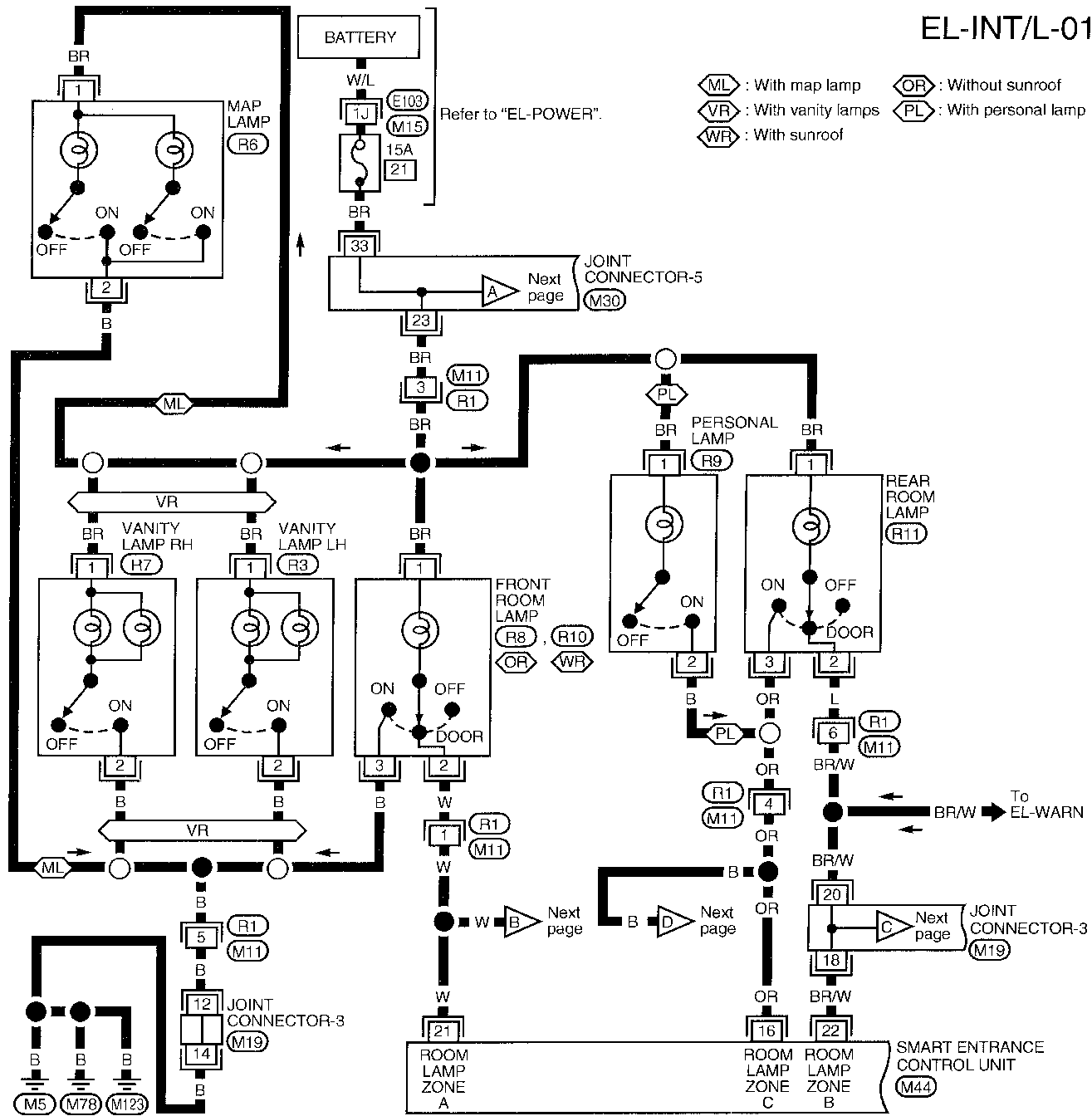


AEL921A

INTERIOR ROOM LAMP

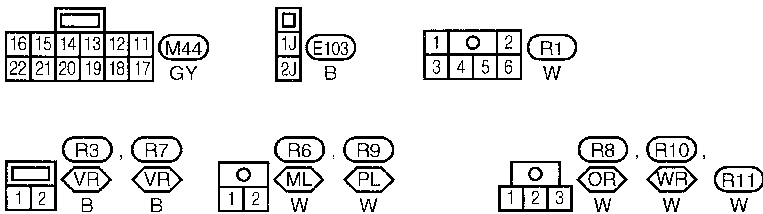
Wiring Diagram -INT/L-

EL-INT/L-01



Refer to last page (Foldout page).

M19
M30



System Description

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

- through 10A fuse (No. 29, located in the fuse block) GI
- to combination meter terminal 14 for the water temperature gauge, fuel gauge and low fuel/anti-slosh unit, and
- to combination meter terminal 33 for the tachometer and speedometer. MA

Ground is supplied:

- to combination meter terminals 17 and 30 EM
- through body ground M66.

WATER TEMPERATURE GAUGE

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

As the temperature of the coolant increases, the resistance of the thermal transmitter decreases. A variable ground is supplied to terminal 13 of the combination meter for the water temperature gauge. The needle on the gauge moves from "C" to "H". EC

FUEL GAUGE

The fuel gauge is regulated by a variable ground signal supplied by the low fuel/anti-slosh unit. The low fuel/anti-slosh unit dampens the ground signal from the fuel tank gauge unit. This reduces the amount of needle fluctuation on the fuel gauge. The low fuel/anti-slosh unit also sends a signal to the warning lamp system. Refer to "LOW FUEL LEVEL WARNING LAMP", "Warning Lamps/System Description", EL-98. FE

A fuel level signal is supplied to the low fuel/anti-slosh unit:

- from combination meter terminal 20 AT
- through fuel tank gauge unit terminal 5 FA

Ground is supplied:

- to fuel tank gauge unit terminal 6 RA
- through body grounds M5, M78 and M123. BR

TACHOMETER

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

The tachometer is regulated by a signal:

- from terminal 3 of the ECM (ECCS control module)
- to combination meter terminal 29 for the tachometer. RS

SPEEDOMETER

The vehicle speed sensor provides a pulsed ground signal to the combination meter for the speedometer. BT

Pulsed ground is supplied:

- to combination meter terminal 32 for the speedometer
- from vehicle speed sensor terminal 1. HA

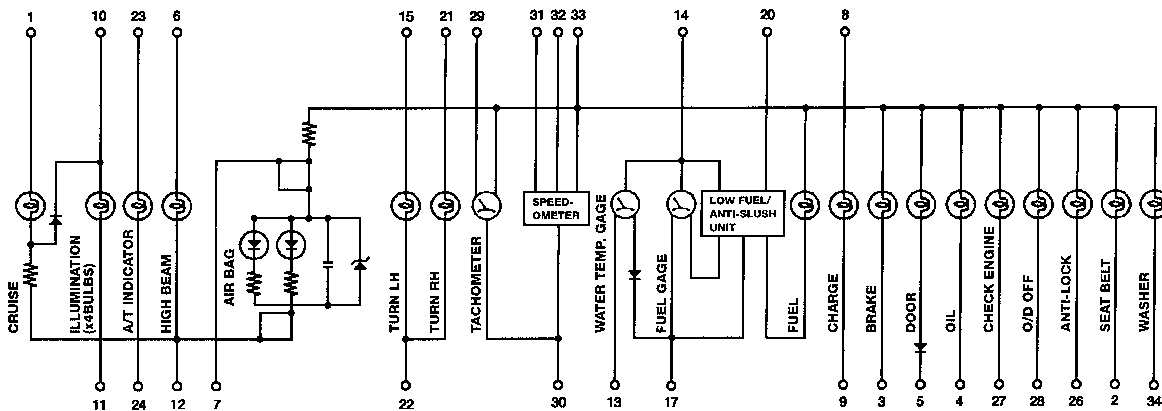
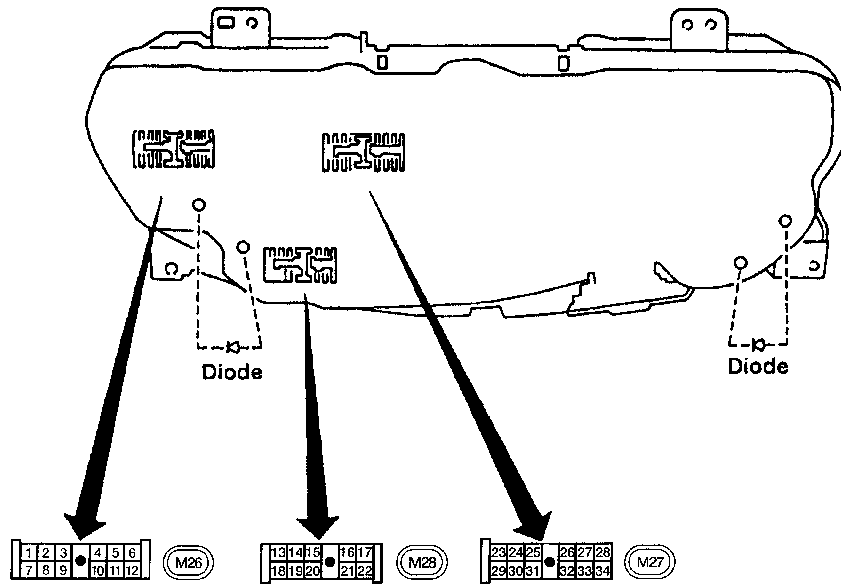
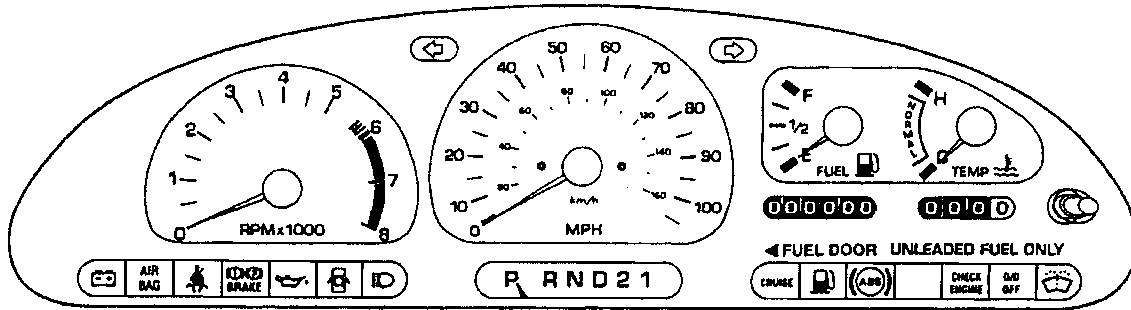
The speedometer converts the pulsed ground into the vehicle speed displayed.

EL

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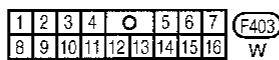
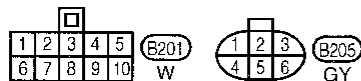
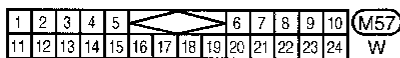
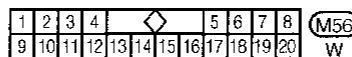
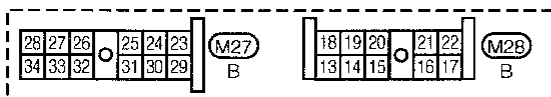
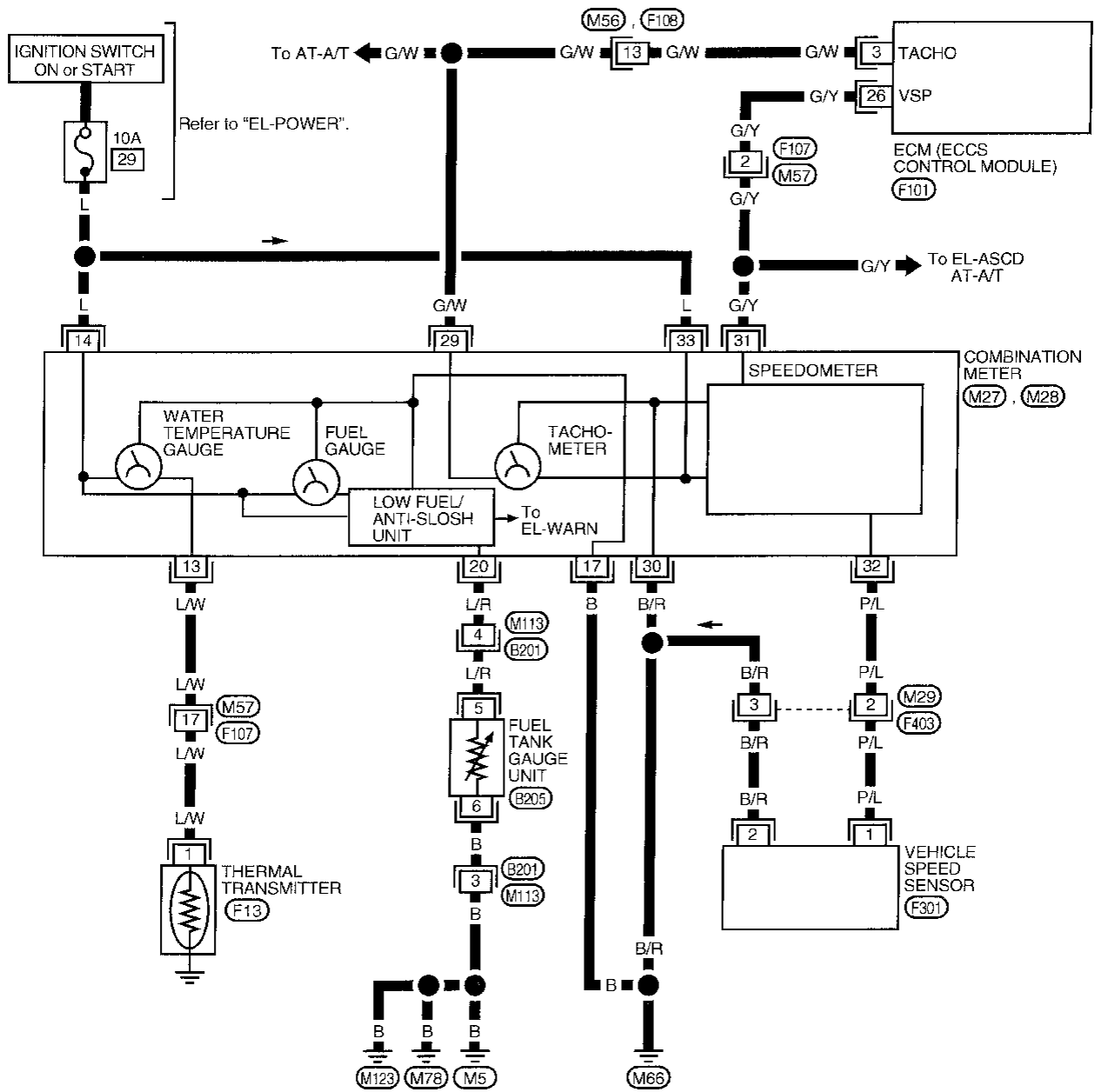
METERS AND GAUGES

Combination Meter



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

EL-METER-01



Refer to last page (Foldout page).

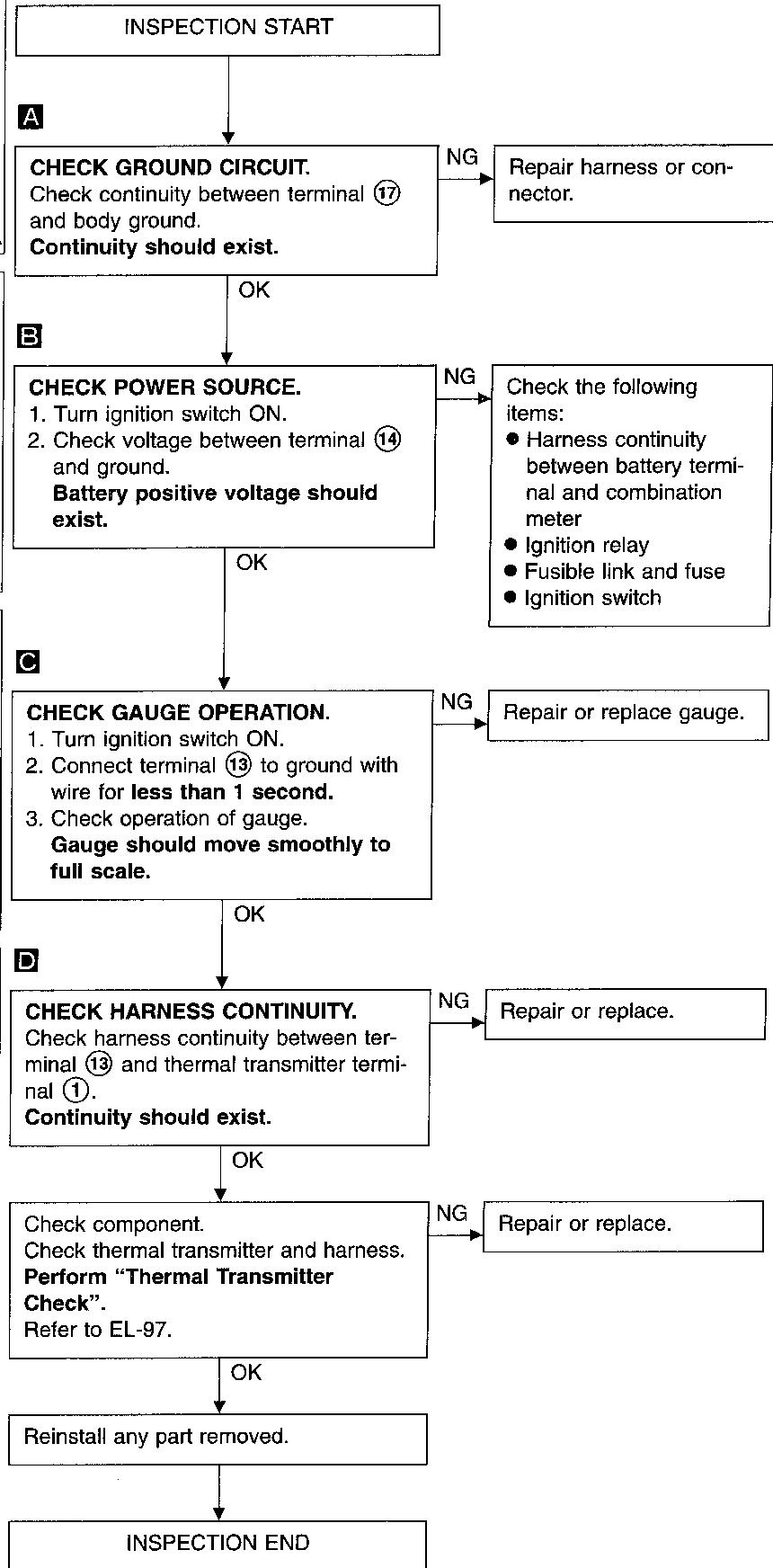
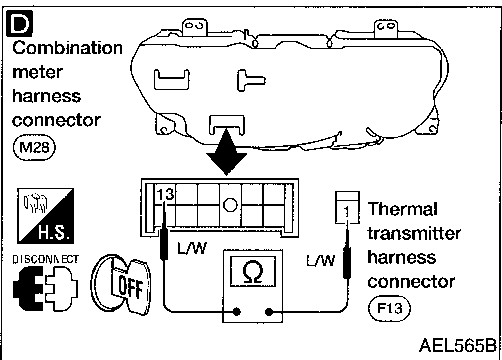
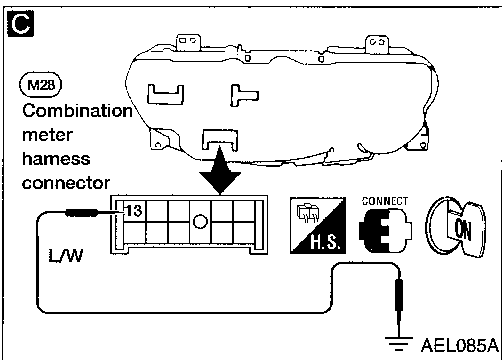
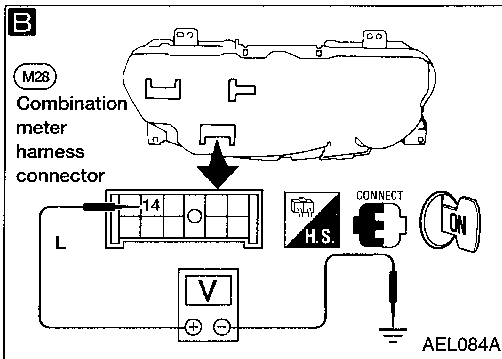
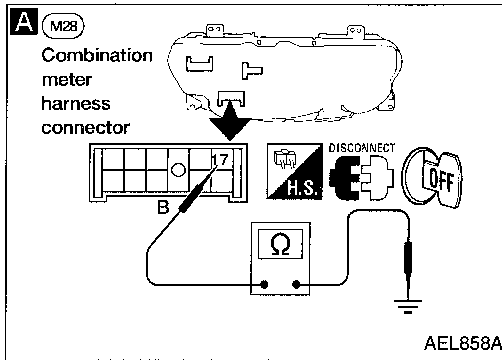
(F101)

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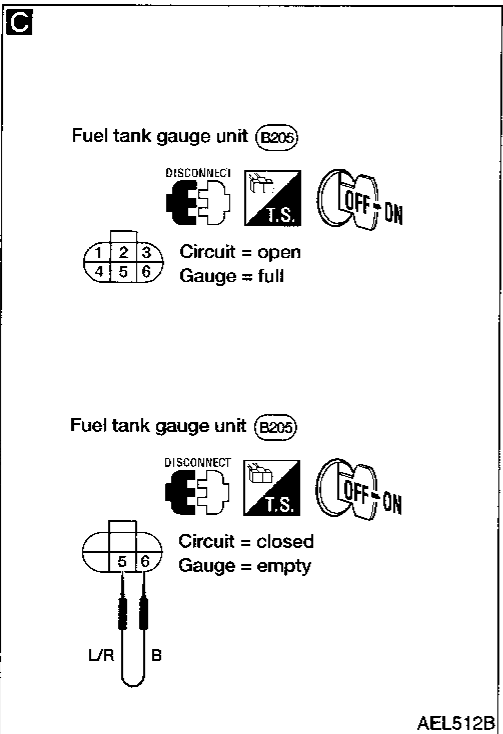
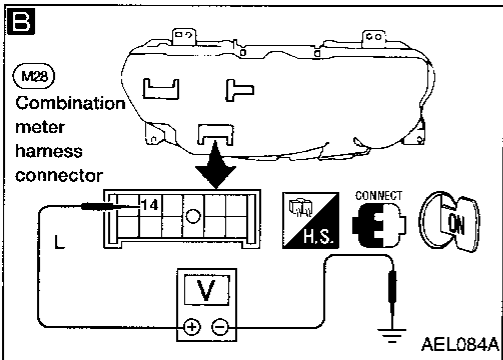
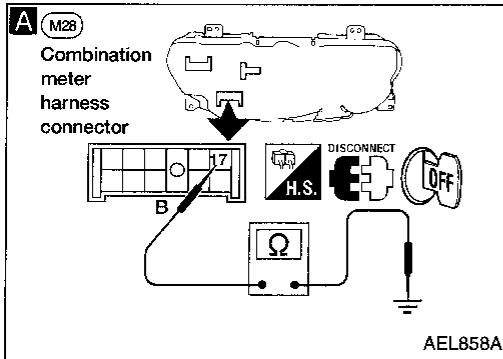
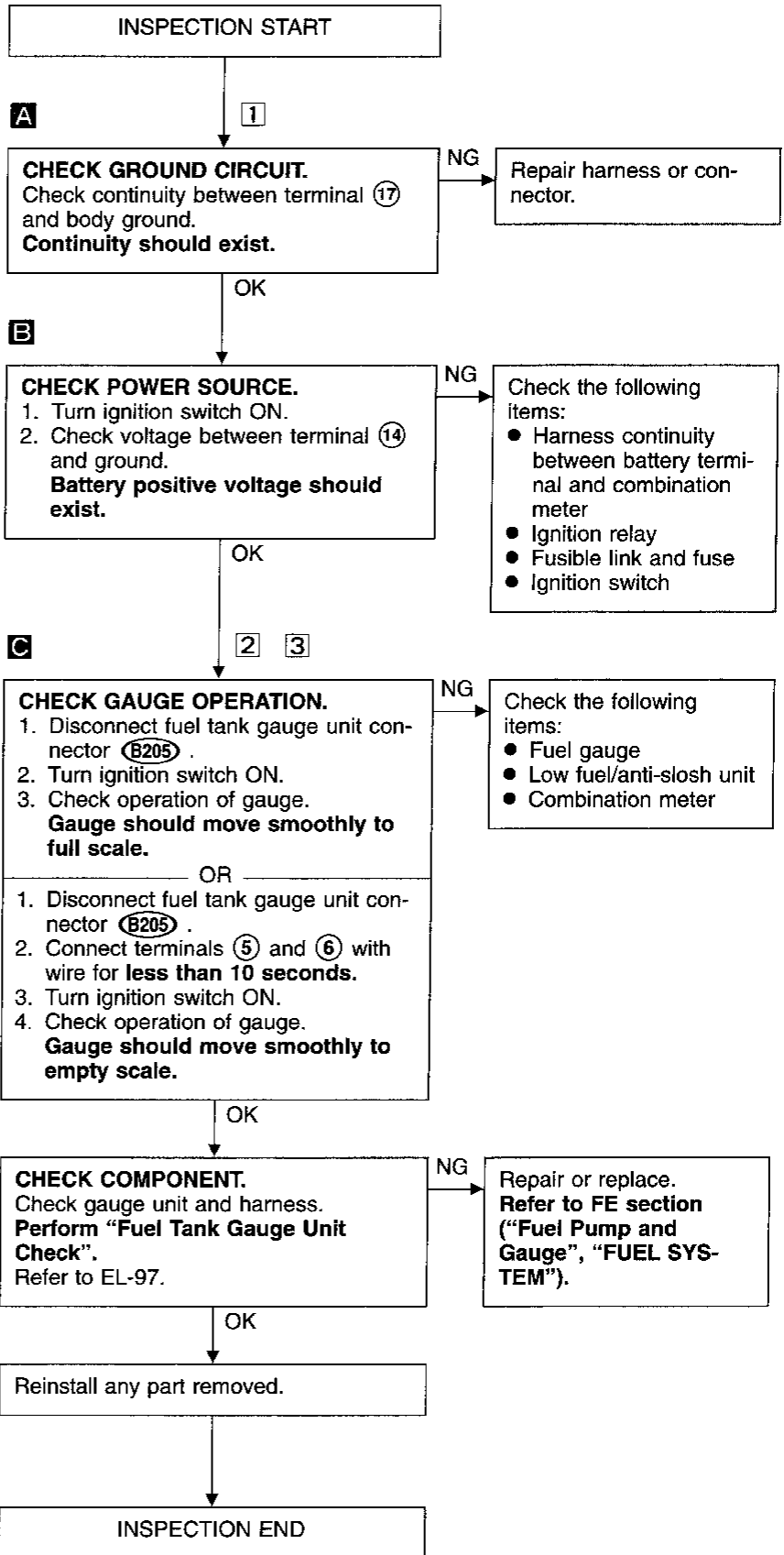
Inspection/Water Temperature Gauge



METERS AND GAUGES

	INCIDENT	Flow chart No.
1	Fuel gauge always reads empty	1
2	Fuel gauge reads inaccurately	2
3	Fuel gauge always reads full	3

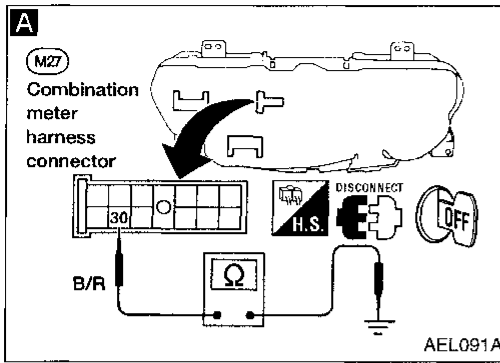
Inspection/Fuel Gauge



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METERS AND GAUGES

Inspection/Tachometer

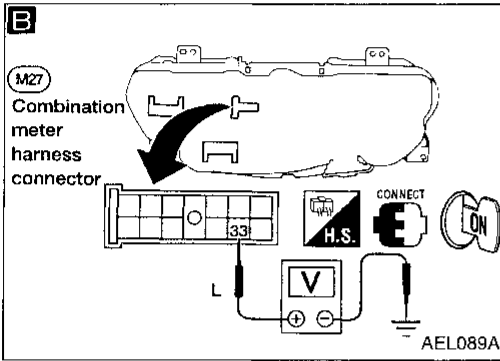


INSPECTION START

A

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

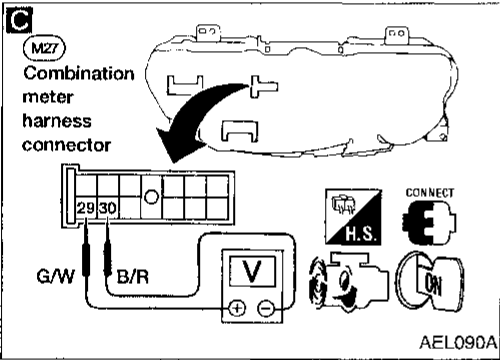
NG → Repair harness or connector.



B

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

NG → Check the following items:
 • Harness continuity between battery terminal and combination meter
 • Ignition relay
 • Fusible link and fuse
 • Ignition switch



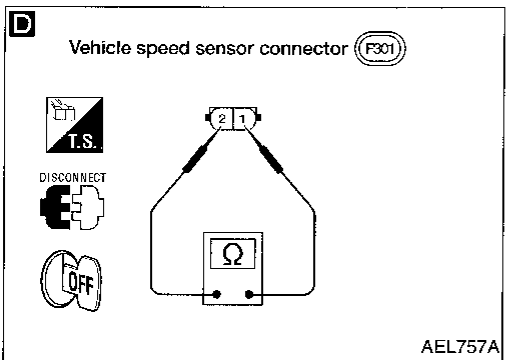
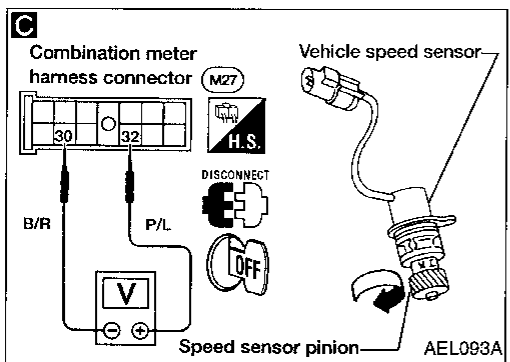
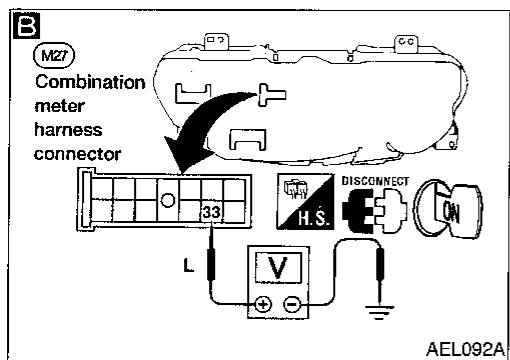
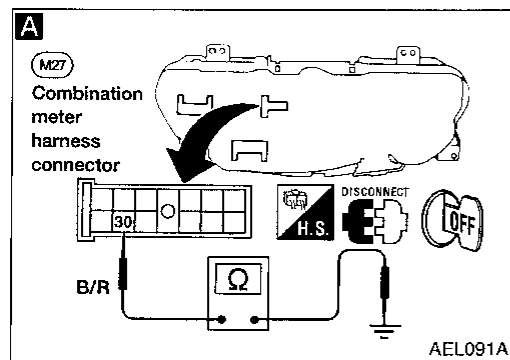
C

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

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

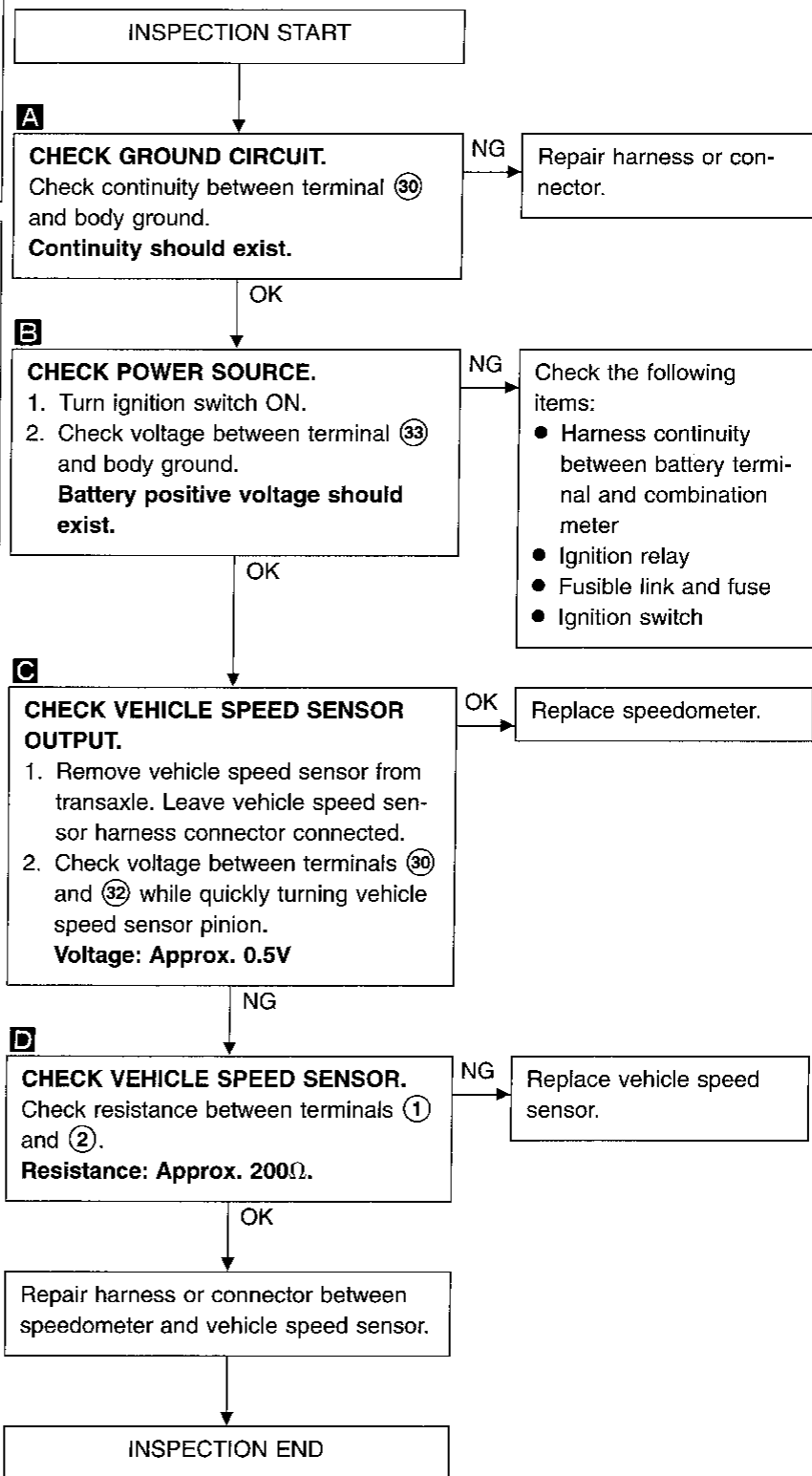
Replace tachometer.

INSPECTION END



Inspection/Speedometer and Vehicle Speed Sensor

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



CI

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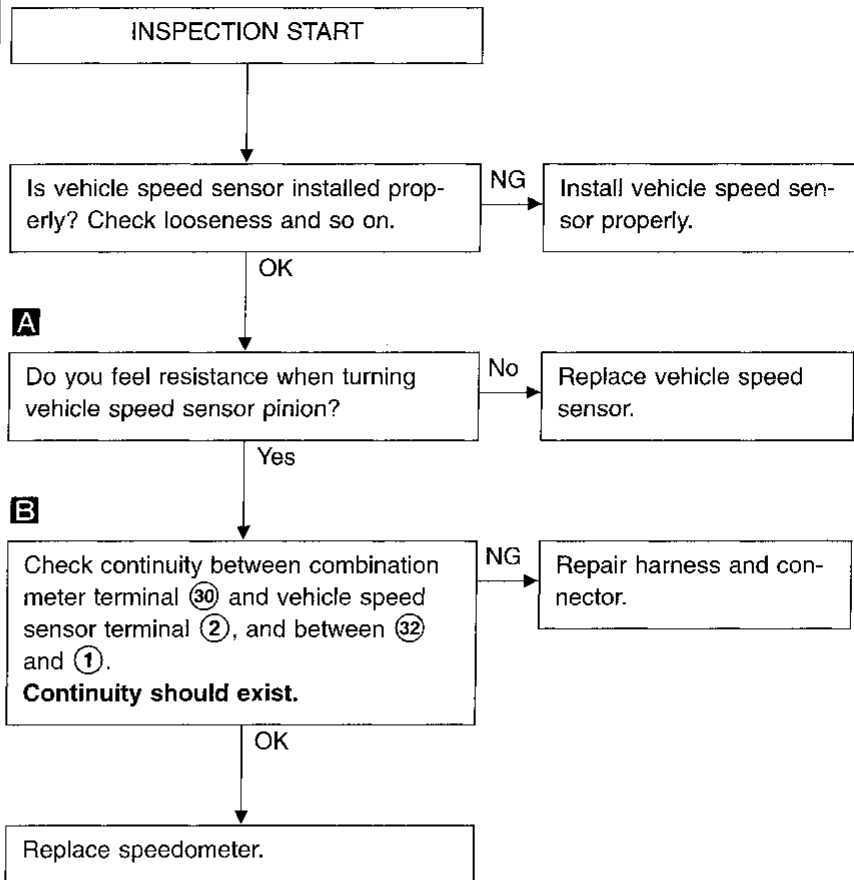
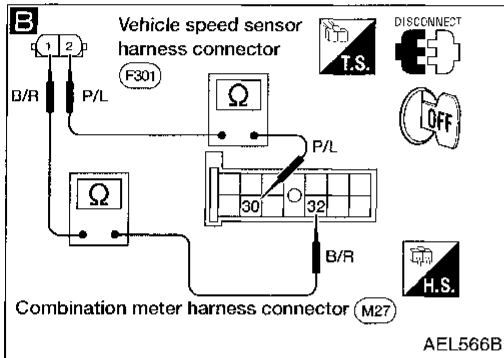
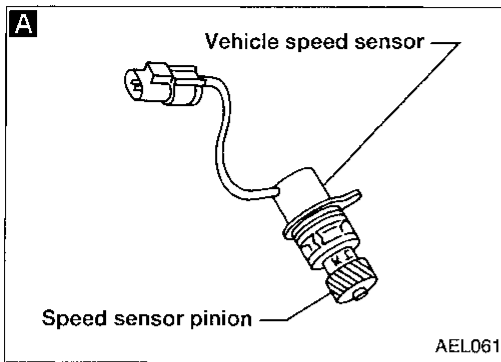
EL

IDX

METERS AND GAUGES

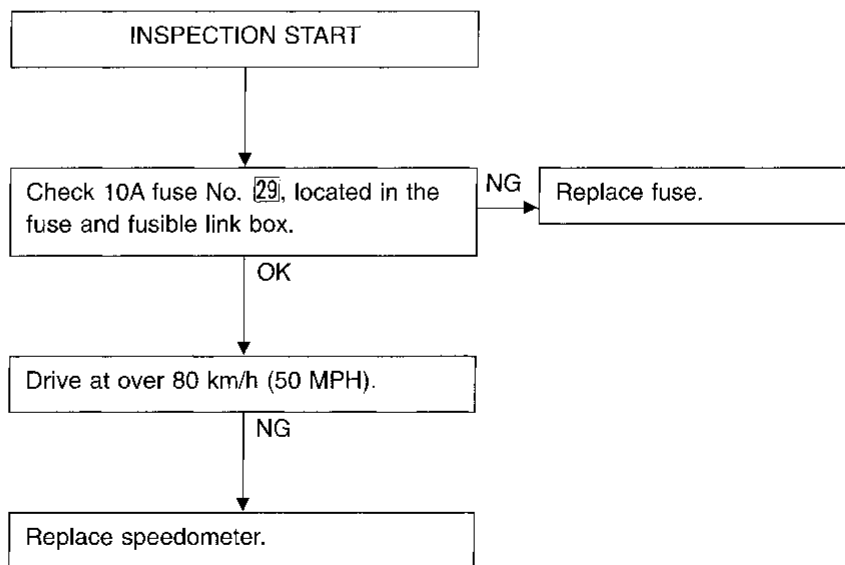
Inspection/Speedometer and Vehicle Speed Sensor (Cont'd)

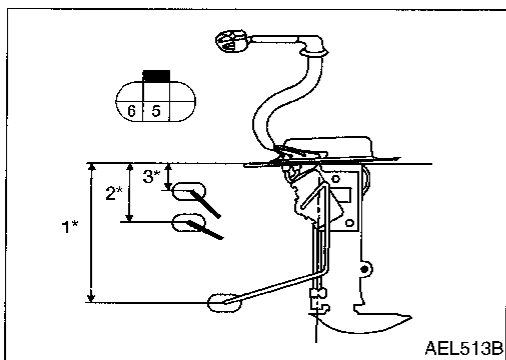
SYMPTOM: Speedometer indication flutters.



Inspection/Speedometer and Fuse

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



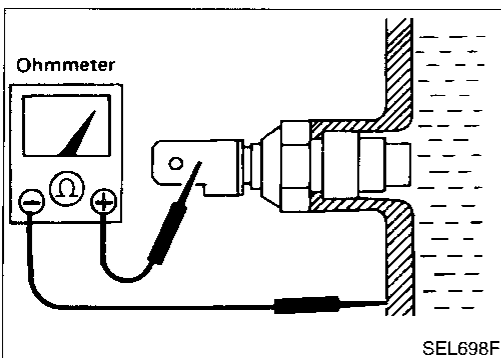


Fuel Tank Gauge Unit Check

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

Check the resistance between terminals ③ and ④.

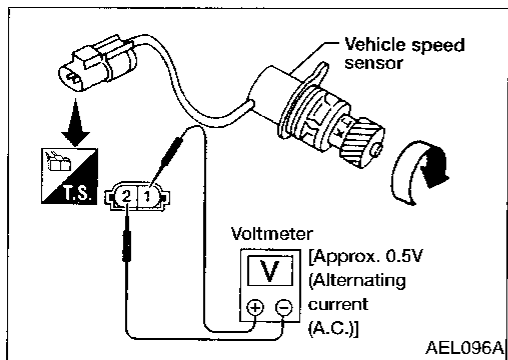
Ohmmeter		Float position			Resistance value (Ω)
(+)	(-)	mm (in)			
⑤	⑥	*3	Full	23 (0.91)	Approx. 160
		*2	1/2	93 (3.66)	
		*1	Empty	151 (5.94)	



Thermal Transmitter Check

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

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



Vehicle Speed Sensor Signal Check

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

GI

MA

EM

LC

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HA

EL

IDX

System Description

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

- through 10A fuse (No. 29, located in the fuse block)
- to combination meter terminals 14 and 33, and
- bulb check relay terminal 2.

Ground is supplied:

- to combination meter terminal 12,
- fuel tank gauge unit terminal 6,
- air bag diagnosis sensor unit terminal 2 and
- seat belt buckle switch terminal 2
- through body grounds M5, M78 and M123.

Ground is supplied to combination meter terminal 17 through body ground M66.

Ground is supplied:

- to bulb check relay terminal 5,
- brake fluid level switch terminal 2 and
- washer fluid level switch terminal 1
- through body grounds E3, E14 and E53.

Ground is supplied to back door latch switch terminal 2 (without theft warning) or terminal 1 (with theft warning) through body ground B104.

AIR BAG WARNING LAMP

During prove out or when an air bag malfunction occurs, the ground path is interrupted:

- from the air bag diagnosis sensor unit terminal 15
- to combination meter terminal 7.

Ground is then supplied:

- through combination meter terminal 12.

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

LOW FUEL LEVEL WARNING LAMP

The amount of fuel in the fuel tank is determined by a float in the tank. A signal is sent from fuel tank gauge unit terminal 5 to combination meter terminal 20. The low fuel/anti-slosh unit will illuminate the low fuel level warning lamp when the fuel level is low.

SECURITY INDICATOR LAMP

Power is supplied at all times:

- through 10A fuse (No. 23, located in the fuse block)
- to security indicator lamp terminal 2.

Under certain conditions, ground is supplied:

- to security indicator lamp terminal 1
- from smart entrance control unit terminal 51.

With power and ground supplied, the security indicator lamp will illuminate. For further information, refer to "System Description", "THEFT WARNING SYSTEM", EL-218.

LOW OIL PRESSURE WARNING LAMP

Low oil pressure causes oil pressure switch terminal 1 to provide ground to combination meter terminal 4.

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

WARNING LAMPS

System Description (Cont'd)

LOW WASHER FLUID LEVEL WARNING LAMP

When the washer fluid level is low, ground is supplied:

- to combination meter terminal ③④
- from washer fluid level switch terminal ②.

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

GI

DOOR AJAR WARNING LAMP

When a door is open, a ground signal is received by the smart entrance control unit at terminal ④, ⑤, ②⑨, or ③⑩. Ground is then supplied:

- to combination meter terminal ⑤
- from smart entrance control unit terminal ②②.

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

MA

EM

LC

BRAKE WARNING LAMP

When the parking brake is set, or the brake fluid level is low, ground is supplied:

- to combination meter terminal ③
- from parking brake switch terminal ①, or
- brake fluid level switch terminal ①.

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

EC

FE

CHARGE WARNING LAMP

During prove out or when a generator malfunction occurs, ground is supplied:

- to combination meter terminal ⑨
- from generator terminal ③.

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

AT

FA

BULB CHECK RELAY (brake warning lamp prove out)

When the ignition switch is in the ON or START position, and the generator grounds terminal ③, ground is supplied to the bulb check relay terminal ①. With power and ground supplied, the bulb check relay is energized, providing a ground path for the brake warning lamp.

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

RA

BR

SEAT BELT WARNING LAMP

When the driver's seat belt is unfastened, ground is supplied:

- to combination meter terminal ②
- from seat belt buckle switch terminal ①.

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

ST

RS

MALFUNCTION INDICATOR LAMP

During prove out or when an engine control malfunction occurs, ground is supplied:

- to combination meter terminal ②⑦
- from ECM terminal ①⑨.

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

For further information, refer to EC section ["Malfunction Indicator Lamp (MIL)", "ON-BOARD DIAGNOSTIC SYSTEM DESCRIPTION"].

BT

HA

EL

ABS WARNING LAMP

During prove out or when an ABS malfunction occurs, ground is supplied:

- to combination meter terminal ②⑤
- from ABS control unit terminal ②⑨.

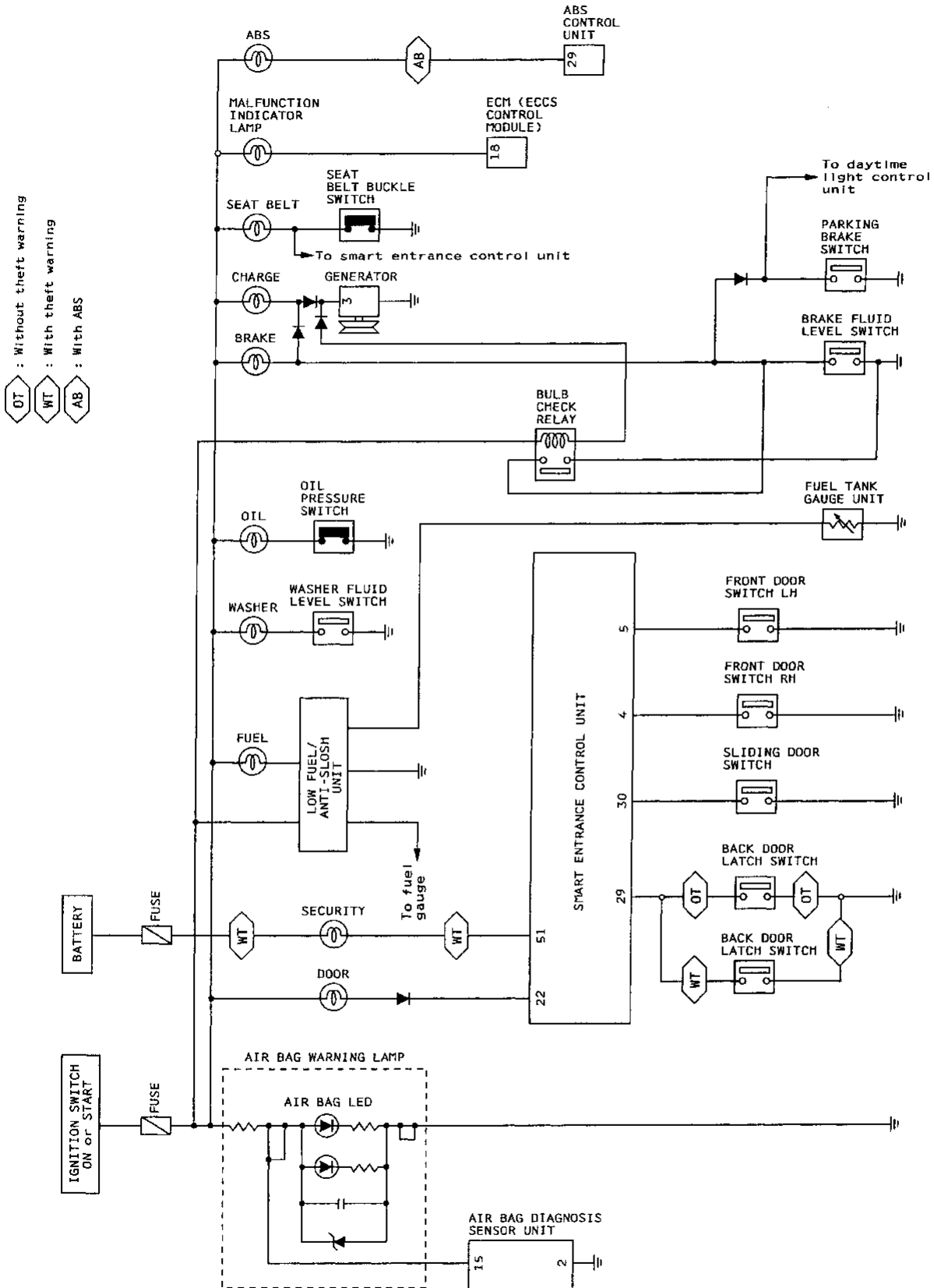
With power and ground supplied, the ABS warning lamp illuminates.

For further information, refer to BR section ("Self-diagnosis", "TROUBLE DIAGNOSES").

IDX

WARNING LAMPS

Schematic



WARNING LAMPS

NOTES

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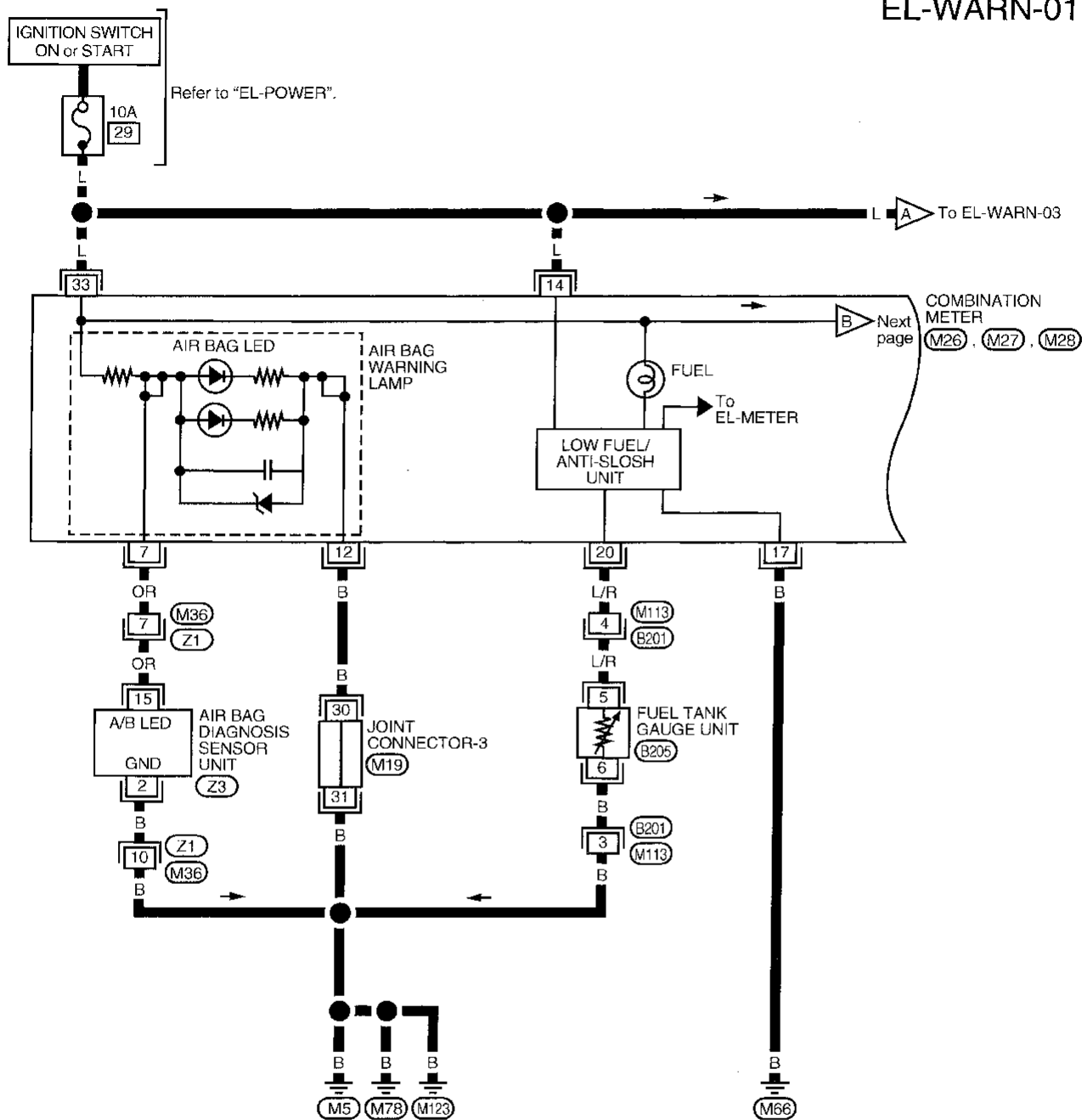
EL

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WARNING LAMPS

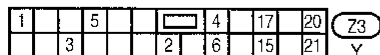
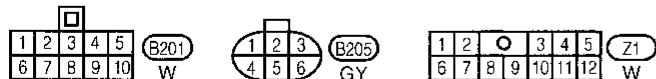
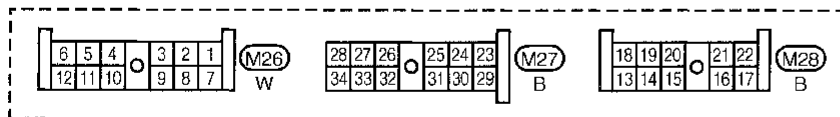
Wiring Diagram -WARN-

EL-WARN-01



Refer to last page (Foldout page).

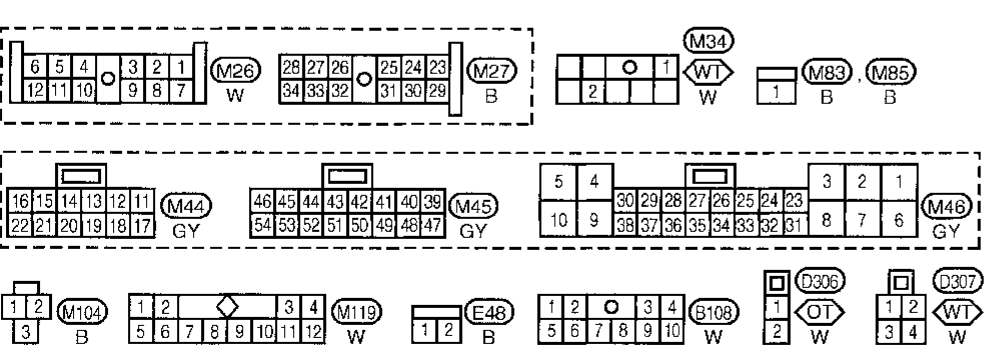
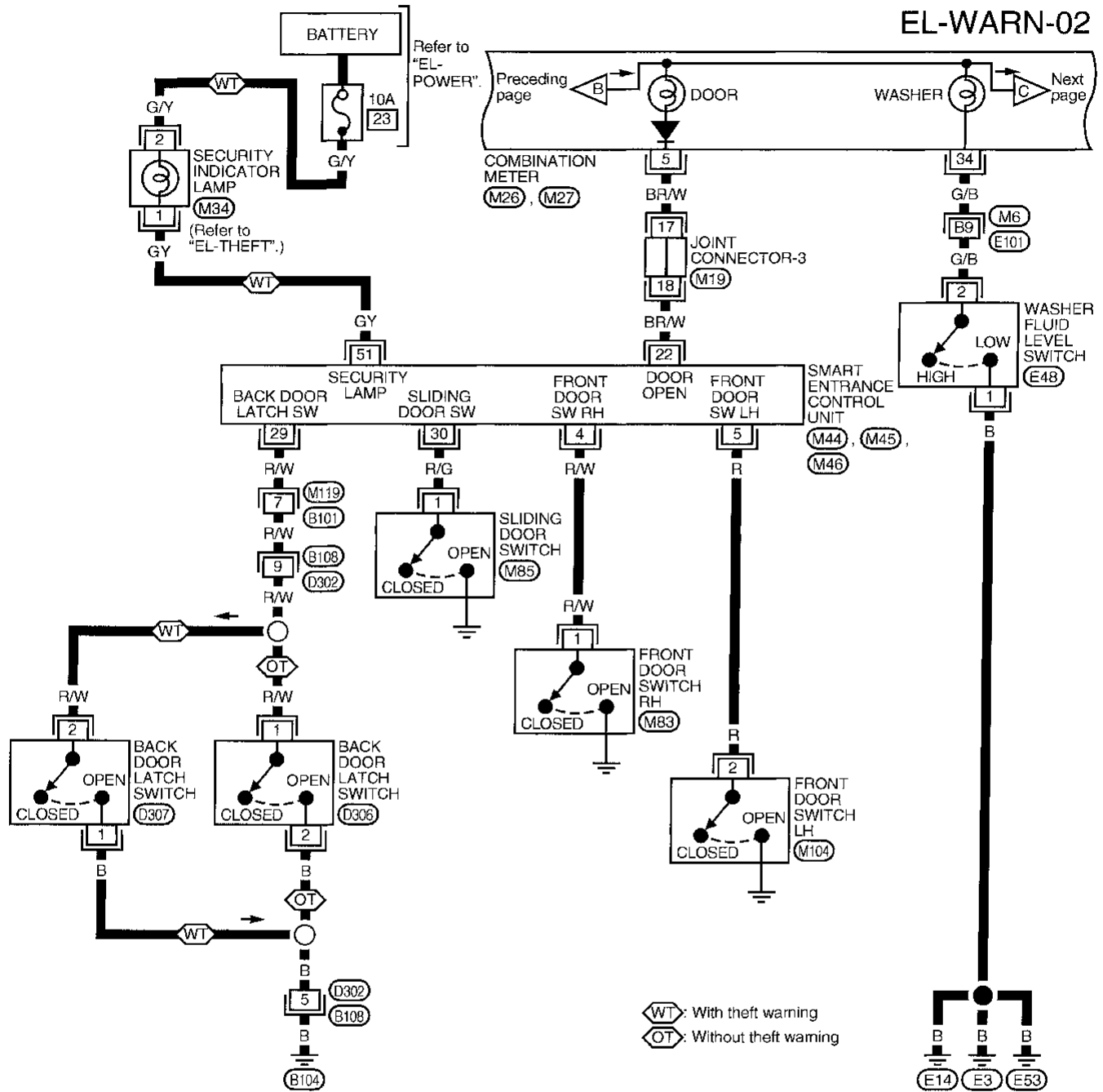
(M19)



WARNING LAMPS

Wiring Diagram -WARN- (Cont'd)

EL-WARN-02



Refer to last page (Foldout page).

M6, E101
M19

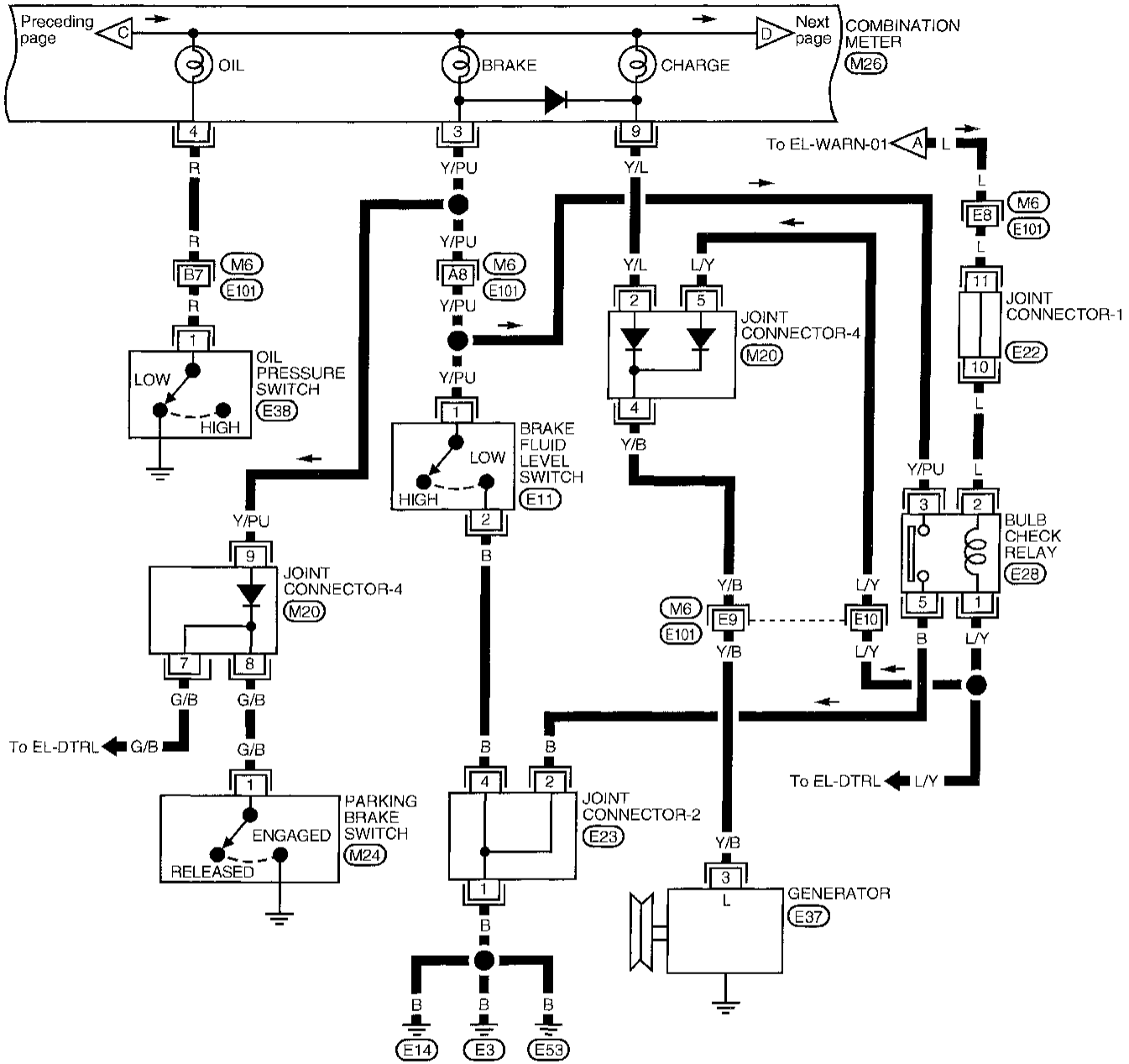
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WARNING LAMPS

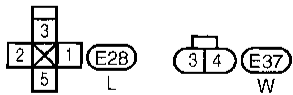
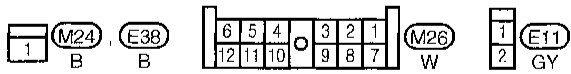
Wiring Diagram -WARN- (Cont'd)

EL-WARN-03



Refer to last page (Foldout page).

- (M6), (E101)
- (M20)
- (E22)
- (E23)

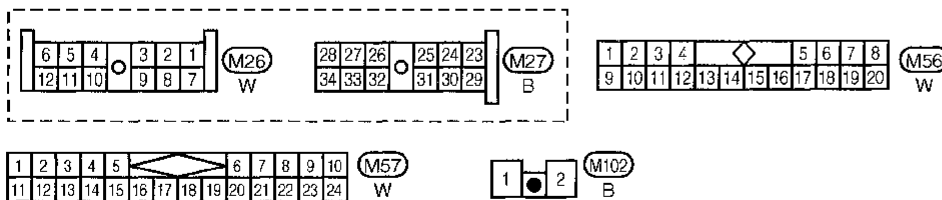
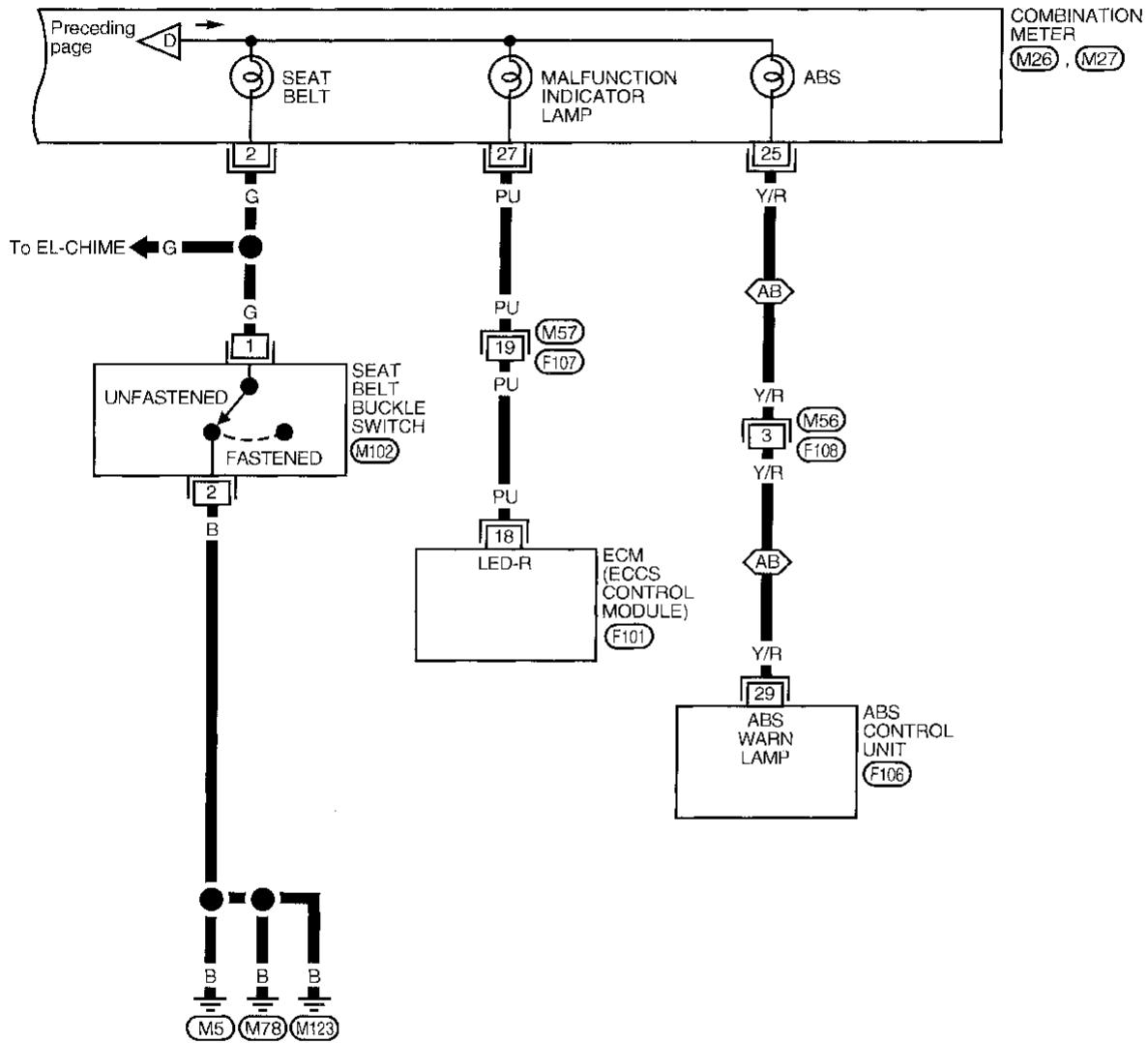


WARNING LAMPS

Wiring Diagram -WARN- (Cont'd)

EL-WARN-04

⬡ : With ABS



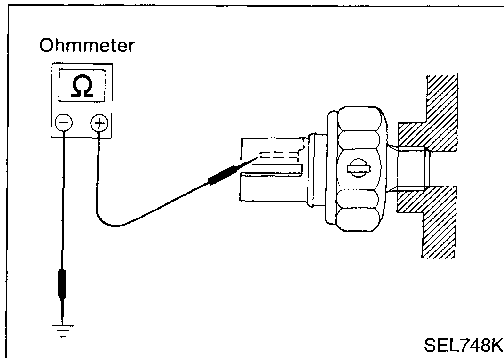
Refer to last page (Foldout page).

(F101)

(F106)

Low Fuel Level Warning Lamp

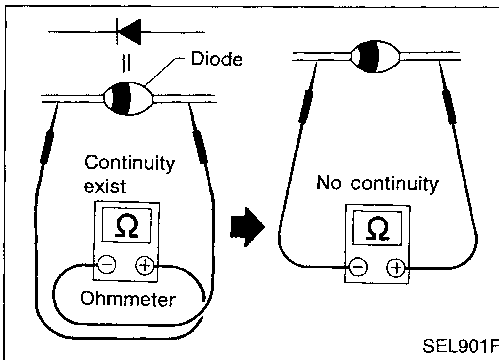
- The low fuel level warning lamp is controlled by the low fuel/anti-slosh unit, which is built into the combination meter. If the low fuel level warning lamp fails to illuminate, first check the fuel tank gauge unit, refer to EL-97. If the fuel tank gauge unit is operating properly, inspect the low fuel level warning lamp bulb and anti-slosh unit for proper function.



Oil Pressure Switch Check

	Oil pressure kPa (kg/cm ² , psi)	Continuity
Engine start	More than 10 - 20 (0.1 - 0.2, 1 - 3)	NO
Engine stop	Less than 10 - 20 (0.1 - 0.2, 1 - 3)	YES

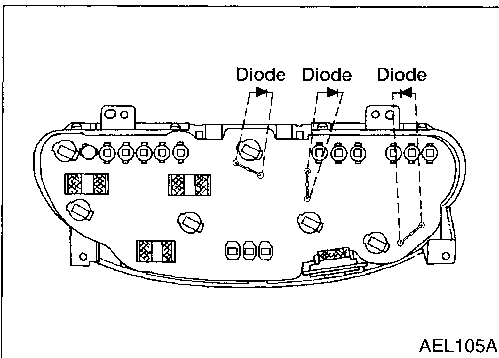
Check the continuity between the terminals of oil pressure switch and body ground.



Diode Check

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

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



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

Refer to "Combination Meter", EL-90.

WARNING CHIME

System Description

The warning chime is controlled by the smart entrance control unit.

Power is supplied at all times:

- through 7.5A fuse (No. 41, located in the fuse and fusible link box)
- to smart entrance control unit terminal 9.

Power is also supplied at all times:

- through 15A fuse (No. 21, located in the fuse block)
- to warning chime terminal 1.

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

- through 10A fuse (No. 30, located in the fuse block)
- to smart entrance control unit terminal 25.

Ground is supplied to smart entrance control unit terminal 20 through body grounds M5, M78 and M123.

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

- through smart entrance control unit terminal 12
- to warning chime terminal 2.

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

Ignition key warning chime

With the key in the ignition switch, in the OFF or ACC position and the driver's door open, the warning chime will sound. Ground is supplied:

- from key switch terminal 1
- to smart entrance control unit terminal 14, and
- from front door switch LH terminal 2
- to smart entrance control unit terminal 5.

Front door switch LH is grounded through body ground.

Key switch terminal 2 is grounded through body grounds E3, E14 and E53.

Light warning chime

With ignition switch in OFF or ACC position, driver's door open and lighting switch in 1ST or 2ND position, the warning chime will sound. Ground is supplied:

- to smart entrance control unit terminal 5
- from front door switch LH terminal 2, and
- to smart entrance control unit terminal 37
- from lighting switch terminal 5.

Front door switch LH is grounded through body ground.

Lighting switch terminal 6 is grounded through body grounds M5, M78 and M123.

Seat belt warning chime

With ignition switch turned ON and seat belt unfastened (seat belt switch ON), warning chime will sound for approximately 6 seconds.

Ground is supplied:

- to smart entrance control unit terminal 32
- from seat belt switch terminal 1.

Seat belt switch terminal 2 is grounded through body grounds M5, M78 and M123.

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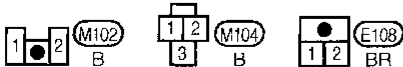
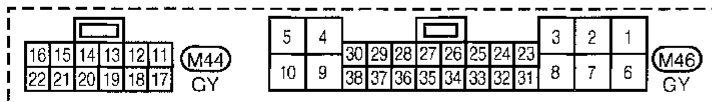
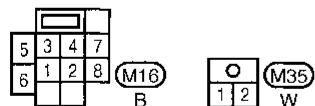
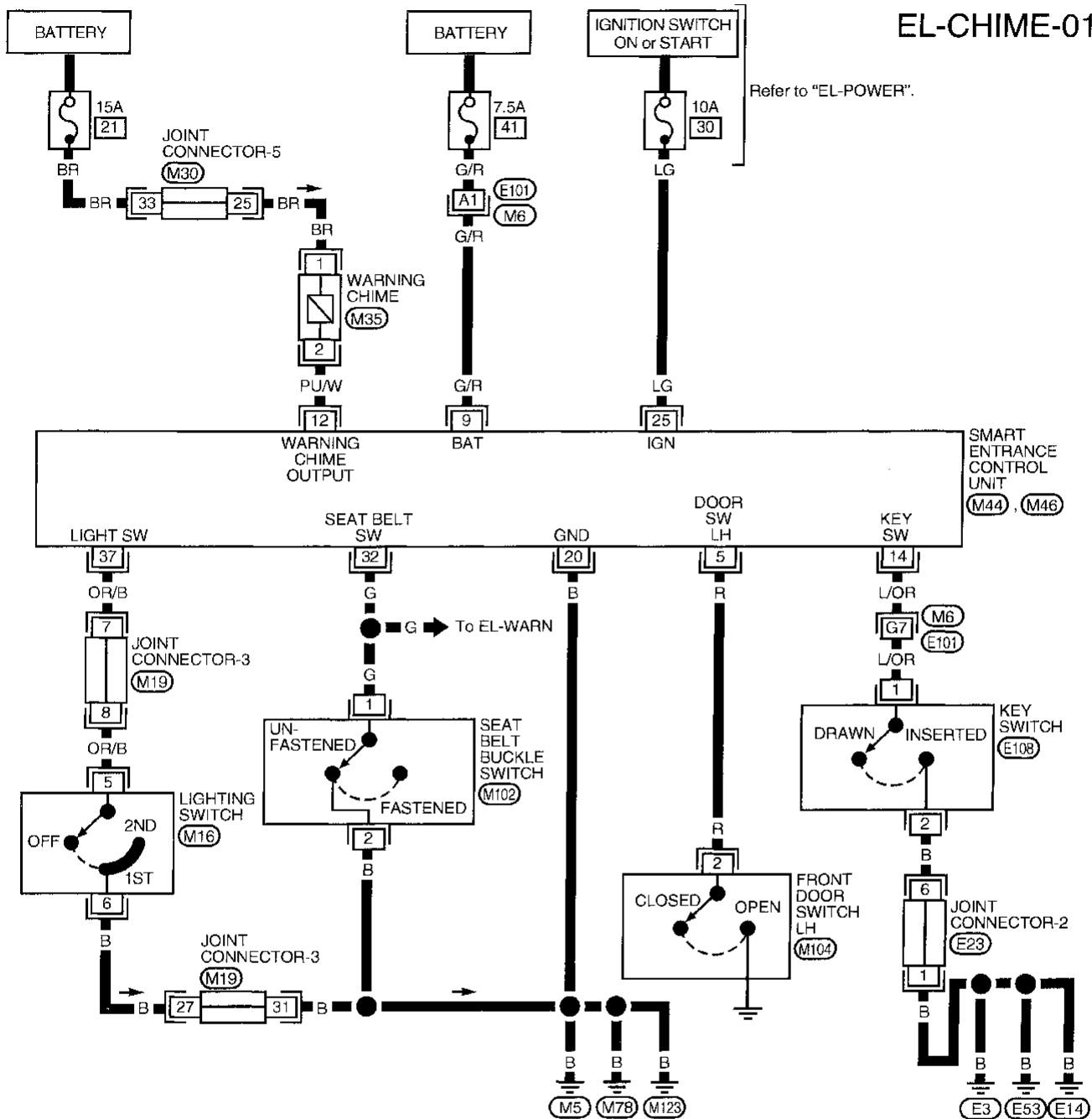
EL

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WARNING CHIME

Wiring Diagram -CHIME-

EL-CHIME-01



Refer to last page (Foldout page).

- (M6), (E101)
- (M19)
- (M30)
- (E23)

WARNING CHIME

Trouble Diagnoses

SYMPTOM CHART

PROCEDURE	Preliminary Check			Main Power Supply and Ground Circuit Check	Diagnostic Procedure		
	EL-110	EL-110	EL-110		EL-111	EL-112	EL-113
SYMPTOM	Preliminary check 1	Preliminary check 2	Preliminary check 3	Main power supply and Ground circuit	Diagnostic Procedure 1	Diagnostic Procedure 2	Diagnostic Procedure 3
Light warning chime does not activate.	○			○	○		
Ignition key warning chime does not activate.		○		○		○	
Seat belt warning chime does not activate.			○	○			○

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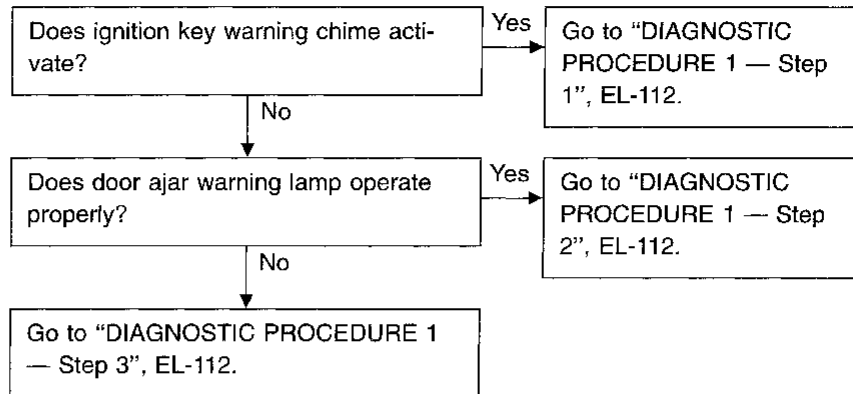
WARNING CHIME

Trouble Diagnoses (Cont'd)

PRELIMINARY CHECK

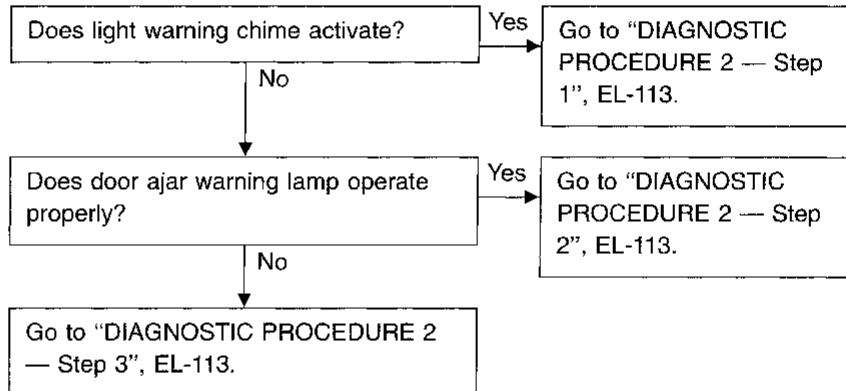
Preliminary check 1

- Light warning chime does not activate.



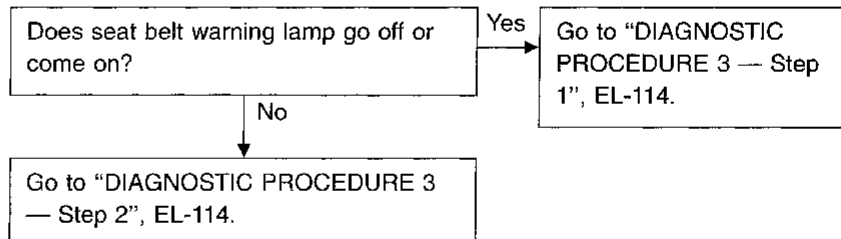
Preliminary check 2

- Ignition key warning chime does not activate.



Preliminary check 3

- Seat belt warning chime does not activate.



WARNING CHIME

Trouble Diagnoses (Cont'd)

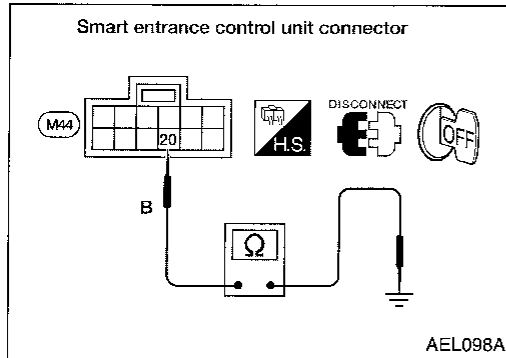
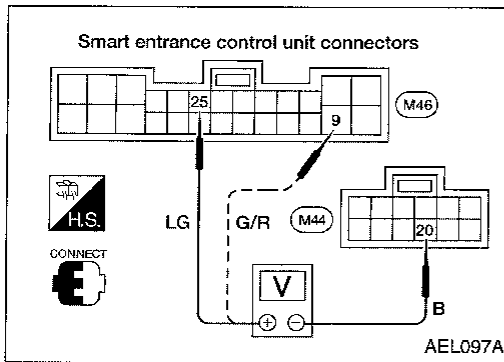
MAIN POWER SUPPLY AND GROUND CIRCUIT CHECK

Main power supply

Terminals	Battery voltage existence condition		
	Ignition switch position		
	OFF	ACC	ON
②5 - ②0	No	No	Yes
⑨ - ②0	Yes	Yes	Yes

Ground circuit

Terminals	Continuity
②0 - Ground	Yes



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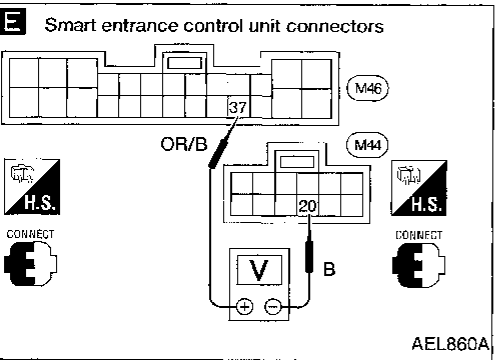
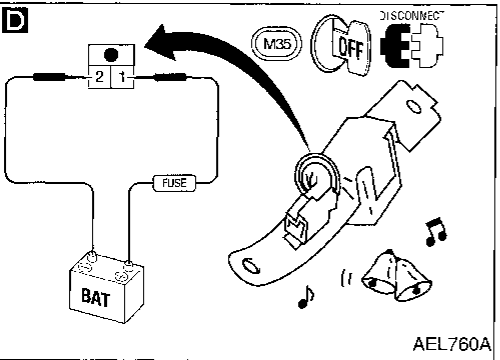
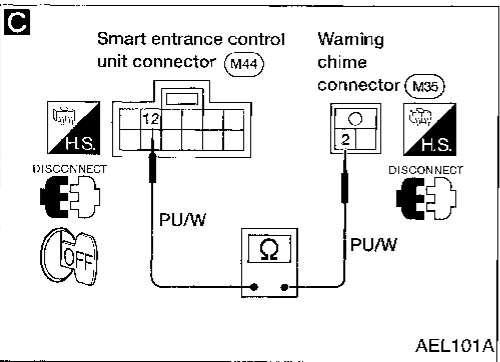
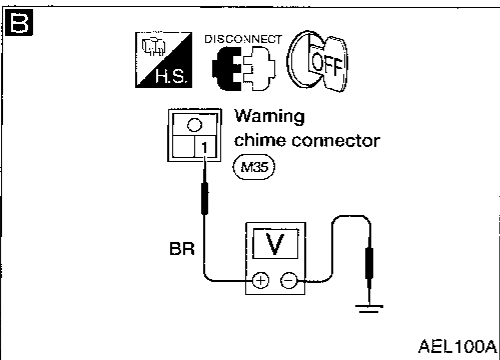
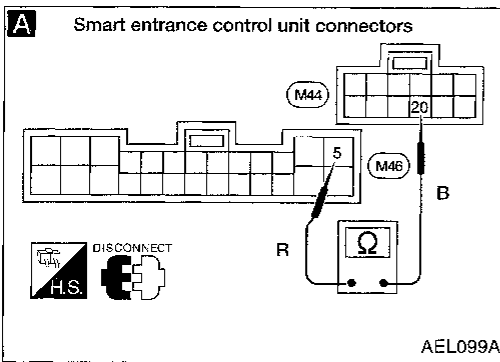
WARNING CHIME

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 1

SYMPTOM: Light warning chime does not activate.

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



A Step 3

DOOR SWITCH INPUT SIGNAL CHECK.
Check continuity between smart entrance control unit harness terminals ⑤ and ⑳.

Condition of driver's door	Continuity
Front door LH is closed.	No
Front door LH is open.	Yes

NG

- Check door switch, (Refer to EL-235.)
- Check harness continuity between smart entrance control unit harness terminal ⑤ and front door LH switch harness terminal ②.

Continuity should exist.

- Check harness continuity between front door LH switch body and body ground.

Continuity should exist.

B Step 2

WARNING CHIME POWER SUPPLY CHECK.
Measure voltage between warning chime harness terminal ① and body ground. **Battery positive voltage should exist.**

NG

Check 15A fuse (No. 21, located in the fuse block), harness and connector.

C

WARNING CHIME OUTPUT SIGNAL CHECK.
Check continuity between warning chime harness terminal ② and control unit harness terminal ⑫.

NG

Repair harness or connectors.

Continuity should exist.

D

WARNING CHIME CHECK.
1. Disconnect warning chime connector.
2. Apply 12V direct current to warning chime.

Does warning chime work?

No

Replace warning chime.

Yes

E Step 1

LIGHTING SWITCH INPUT SIGNAL CHECK.
Check voltage between smart entrance control unit harness terminals ⑳ and ⑳.

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

NG

- Check lighting switch.
- Check harness continuity between smart entrance control unit harness terminal ⑳ and lighting switch harness terminal ⑤.

Continuity should exist.

- Check harness continuity between lighting switch harness terminal ⑥ and body ground.

Continuity should exist.

OK

Replace smart entrance control unit.

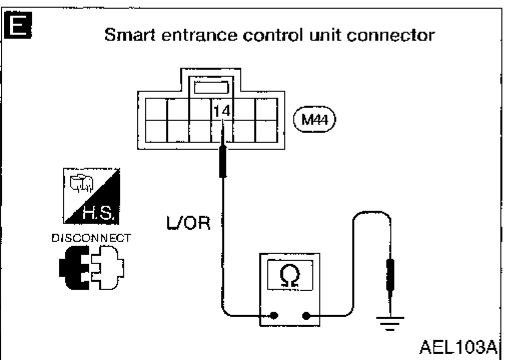
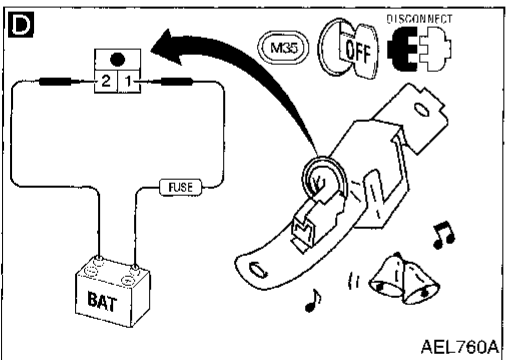
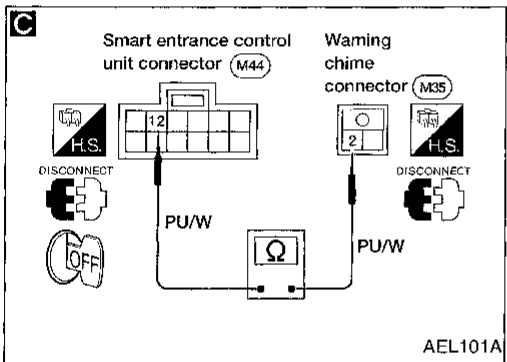
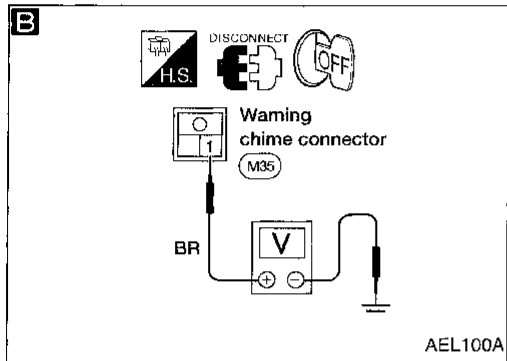
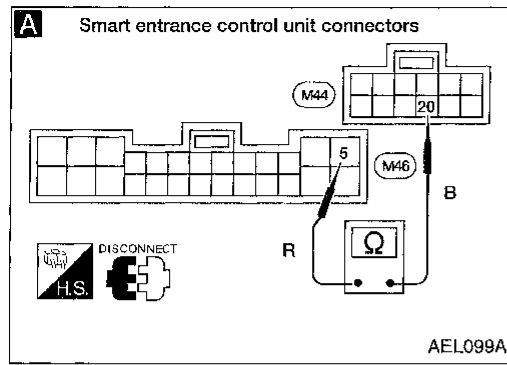
WARNING CHIME

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 2

SYMPTOM: Ignition key warning chime does not activate.

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



Step 3

A **DOOR SWITCH INPUT SIGNAL CHECK.**
Check continuity between smart entrance control unit harness terminals (5) and (20).

Condition of driver's door	Continuity
Front door LH is closed.	No
Front door LH is open.	Yes

NG

- Check door switch. (Refer to EL-235.)
- Check harness continuity between smart entrance control unit harness terminal (5) and front door LH switch harness terminal (2). **Continuity should exist.**
- Check harness continuity between front door LH switch body and body ground. **Continuity should exist.**

OK

Step 2

B **WARNING CHIME POWER SUPPLY CHECK.**
Measure voltage between warning chime harness terminal (1) and body ground. **Battery positive voltage should exist.**

NG

Check 15A fuse (No. [21], located in the fuse block), harness and connector.

OK

C **WARNING CHIME OUTPUT SIGNAL CHECK.**
Check continuity between warning chime harness terminal (2) and smart entrance control unit harness terminal (12). **Continuity should exist.**

NG

Repair harness or connectors.

OK

D **WARNING CHIME CHECK.**
1. Disconnect warning chime connector.
2. Apply 12V direct current to warning chime.
Does warning chime work?

No

Replace warning chime.

Yes

Step 1

E **IGNITION KEY SWITCH INPUT SIGNAL CHECK.**
Check continuity between smart entrance control unit harness terminal (14) and body ground.

Condition	Continuity
Key is inserted.	Yes
Key is pulled.	No

NG

- Check ignition key switch.
- Check harness continuity between smart entrance control unit harness terminal (14) and key switch harness terminal (1). **Continuity should exist.**
- Check harness continuity between key switch harness terminal (2) and body ground. **Continuity should exist.**

OK

Replace smart entrance control unit.

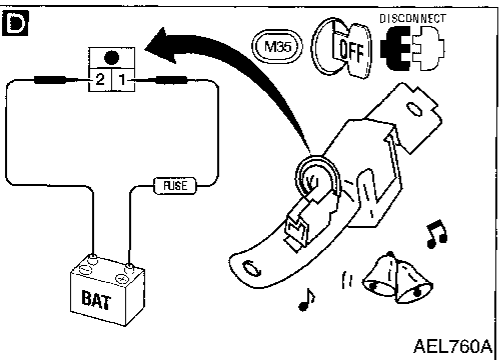
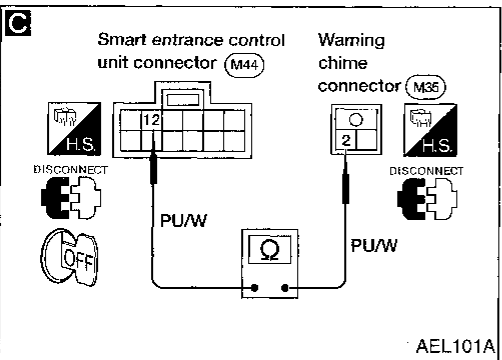
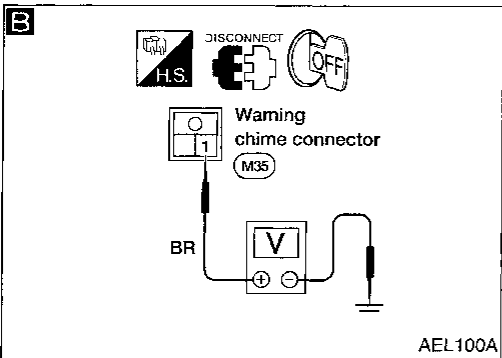
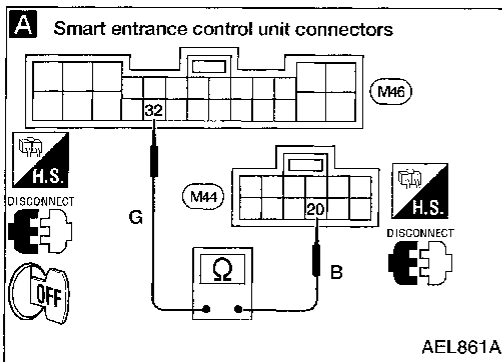
WARNING CHIME

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 3

SYMPTOM: Seat belt warning chime does not activate.

- Perform "Preliminary check 3" before referring to the following flow chart.



A Step 2

SEAT BELT BUCKLE SWITCH INPUT SIGNAL CHECK.

Check continuity between smart entrance control unit harness terminals (32) and (20).

Condition	Continuity
Unfastened	Yes
Fastened	No

NG

- Check seat belt buckle switch.
- Check harness continuity between smart entrance control unit harness terminal (32) and seat belt buckle switch harness terminal (1). **Continuity should exist.**
- Check harness continuity between seat belt buckle switch harness terminal (2) and body ground. **Continuity should exist.**

OK

B Step 1

WARNING CHIME POWER SUPPLY CHECK.

Measure voltage between warning chime harness terminal (1) and body ground. **Battery positive voltage should exist.**

NG

Check 15A fuse (No. 21, located in the fuse block), harness and connector.

OK

WARNING CHIME OUTPUT SIGNAL CHECK.

Check continuity between warning chime harness terminal (2) and smart entrance control unit harness terminal (12). **Continuity should exist.**

NG

Repair harness or connectors.

OK

WARNING CHIME CHECK.

1. Disconnect warning chime connector.
2. Apply 12V direct current to warning chime.

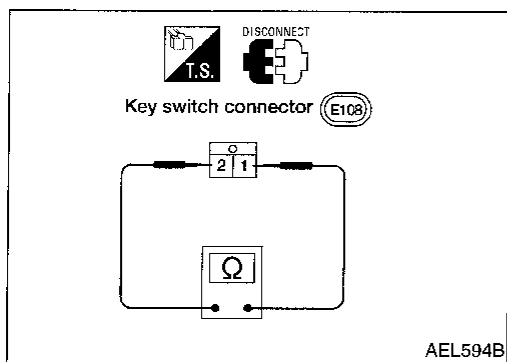
Does warning chime work?

NG

Replace warning chime.

OK

Replace smart entrance control unit.

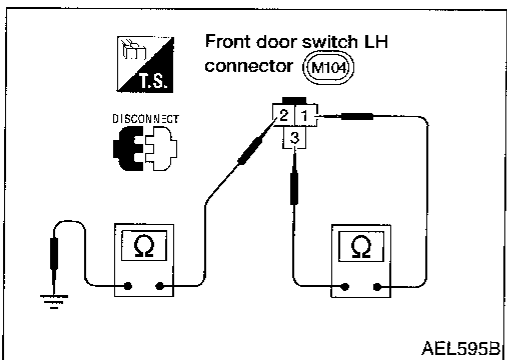


Electrical Component Inspection

KEY SWITCH (insert)

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

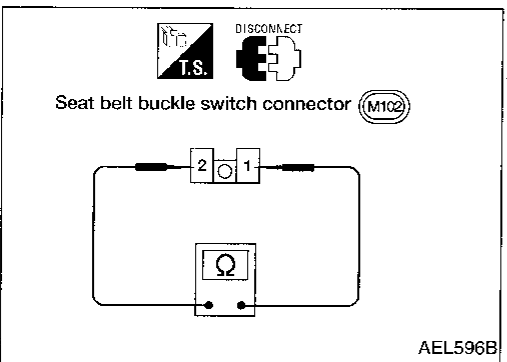
Terminal No.	Condition	Continuity
① - ②	Key is inserted.	Yes
	Key is removed.	No



DRIVER SIDE DOOR SWITCH

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

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



SEAT BELT BUCKLE SWITCH

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

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

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System Description

WIPER OPERATION

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

There are three wiper switch positions:

- LOW speed
- HIGH speed
- INT ("S" through "F")

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

- through 20A fuse (No. 8), located in the fuse block)
- to front wiper motor terminal ⑥ and
- front wiper amplifier terminal ⑥.

Ground is supplied to front wiper amplifier terminals ④ and ⑤ through body grounds E3, E14 and E53.

Low and high speed wiper operation

When the wiper switch is placed in the LOW position, ground is supplied:

- through terminal ⑧ of the front wiper amplifier
- to front wiper motor terminal ②.

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

When the wiper switch is placed in the HIGH position, ground is supplied:

- through terminal ⑩ of the front wiper amplifier
- to front wiper motor terminal ①.

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

Auto stop operation

With wiper switch turned OFF, the front wiper motor will continue to operate until wiper arms reach windshield base.

When the wiper switch is placed in OFF position, ground is no longer supplied by the front wiper amplifier. Ground is now supplied through front wiper motor terminal ④. When wiper arms reach base of windshield, front wiper motor ground is interrupted and the front wiper motor stops.

Intermittent operation

The front wiper motor operates the wiper arms one time at low speed at an interval of approximately 1 to 14 seconds. This feature is controlled by the front wiper amplifier.

With the wiper switch in the INT position, and the front wiper amplifier cycles the front wiper motor. Ground is supplied in the same manner as low speed wiper operation.

WASHER OPERATION

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

- through 20A fuse (No. 8), located in the fuse block)
- to front washer motor terminal ①.

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

- to washer motor terminal ②
- from front wiper amplifier terminal ⑨, and
- to amplifier terminals ④ and ⑤
- through body grounds E3, E14 and E53.

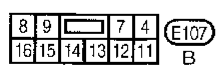
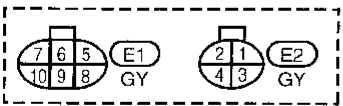
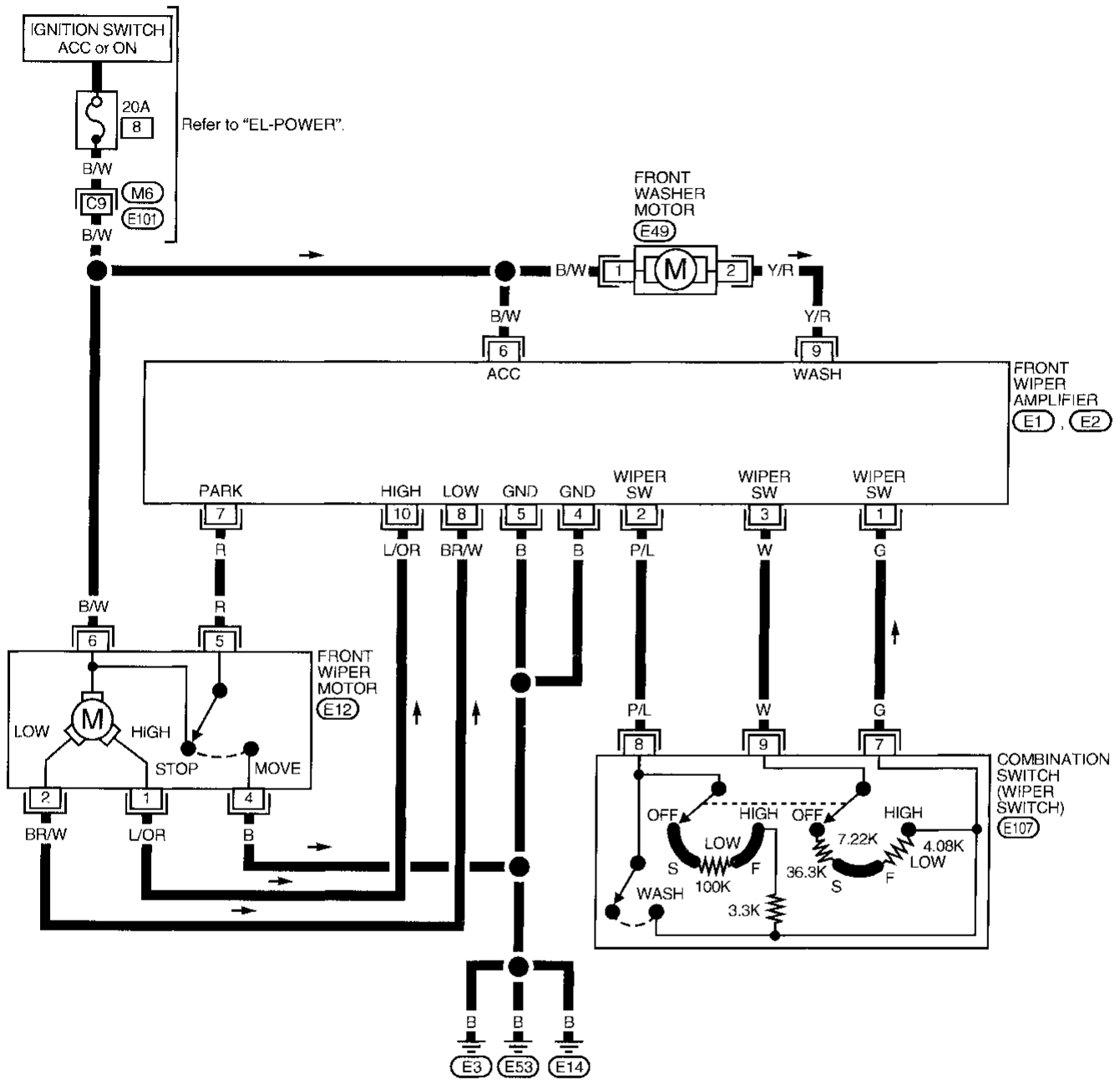
With power and ground supplied, the washer motor operates.

The front wiper motor is activated when the lever is pushed to WASH for 1 second or more. The motor operates at low for approximately 3 seconds. This feature is controlled by the front wiper amplifier in the same manner as intermittent operation.

FRONT WIPER AND WASHER

Wiring Diagram -WIPER-

EL-WIPER-01



Refer to last page (Foldout page).
M6, E101

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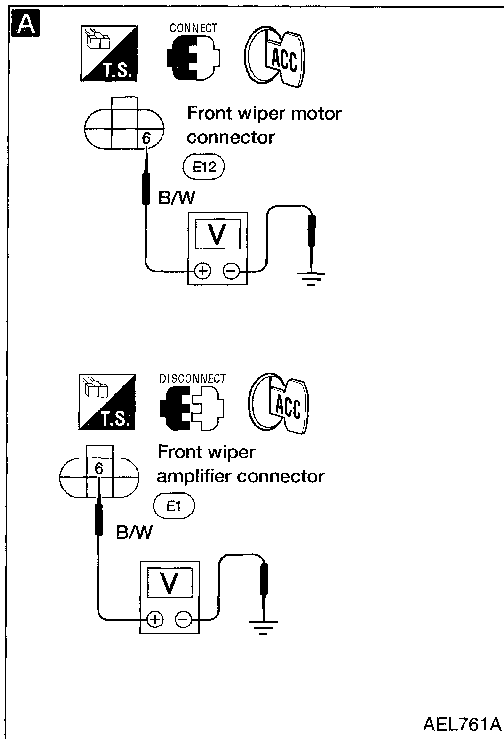
IDX

FRONT WIPER AND WASHER

Trouble Diagnoses

DIAGNOSTIC PROCEDURE 1

SYMPTOM: Intermittent wiper does not operate.



VOLTAGE CHECK.

1. Turn ignition switch to ACC.
2. Measure voltage between front wiper motor harness connector terminal ⑥ and body ground.
3. Measure voltage between front wiper amplifier terminal ⑥ and body ground.

Battery positive voltage should exist at both terminals.

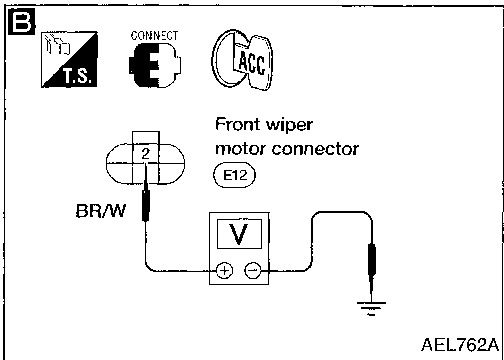
NG → Check 20A fuse (No. ⑧, located in the fuse block), harness and connectors.

FRONT WIPER AMPLIFIER CHECK.

1. Place wiper switch in INT position.
2. Measure voltage between front wiper motor harness terminal ② and body ground.

OK → Replace front wiper motor.

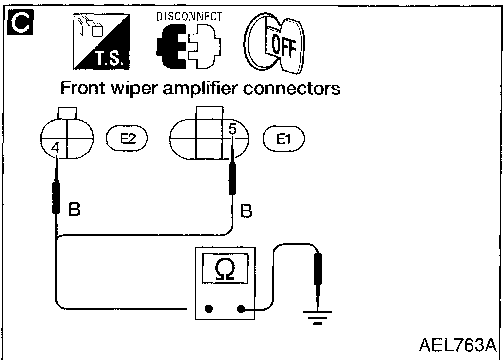
Condition of wiper switch	Voltage [V]
INT	Pointer swings from 0 to 12 every 1 to 14 seconds.



CHECK GROUND CIRCUIT.

1. Turn ignition switch to OFF.
2. Disconnect front wiper amplifier connectors.
3. Check harness continuity between front wiper amplifier harness terminals ④ and ⑤, and body ground. **Continuity should exist.**

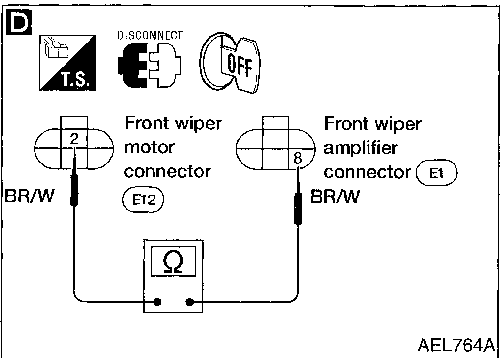
NG → Repair harness or connector.



FRONT WIPER MOTOR CONTROL CIRCUIT CHECK.

1. Disconnect front wiper motor harness connector.
2. Check harness continuity between front wiper motor harness terminal ② and front wiper amplifier terminal ⑧. **Continuity should exist.**

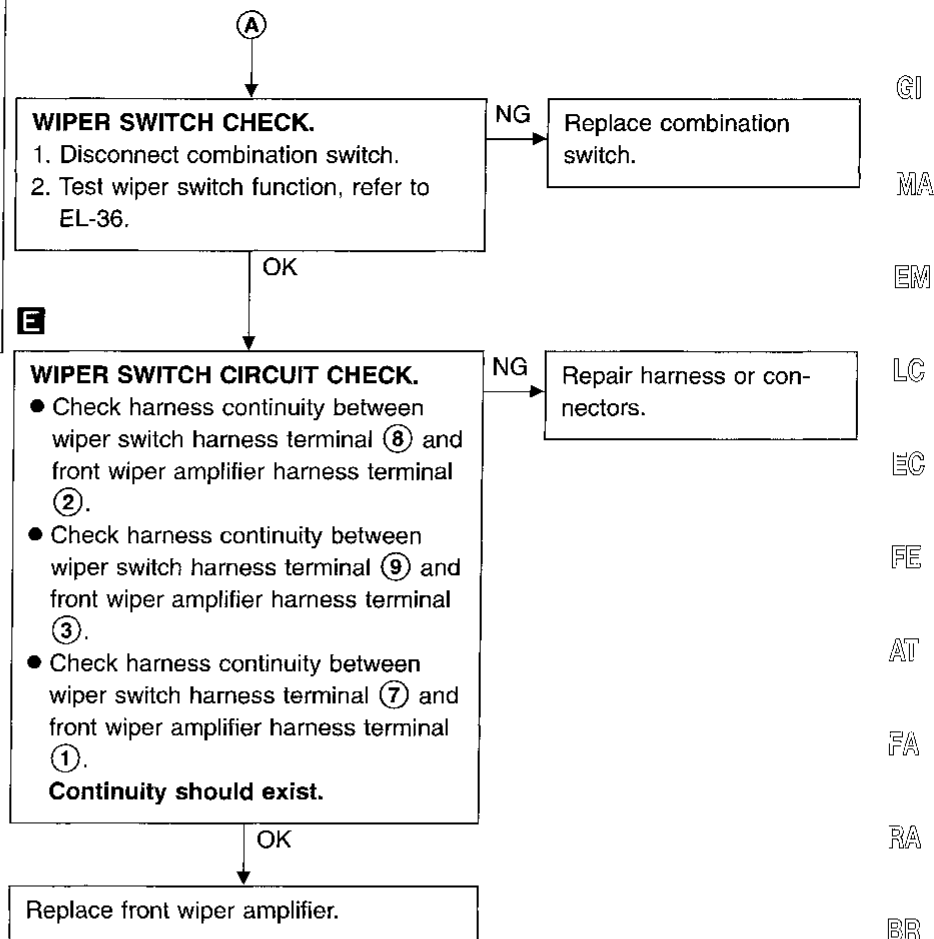
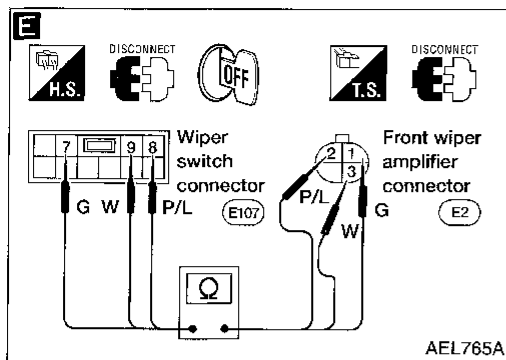
NG → Repair harness or connector.



OK → (Go to next page.)

FRONT WIPER AND WASHER

Trouble Diagnoses (Cont'd)



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FRONT WIPER AND WASHER

Front Wiper

REMOVAL

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

INSTALLATION

1. Push wiper arm onto pivot shaft, paying attention to blind spline.
2. Tilt and hold wiper arm in upright position.
3. Push locking lever at base of wiper arm inward.
4. Gently tilt the wiper arm downward until contacting windshield.

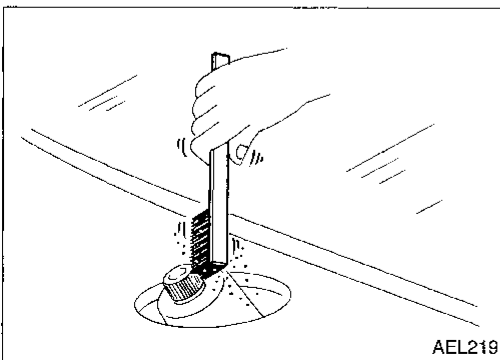
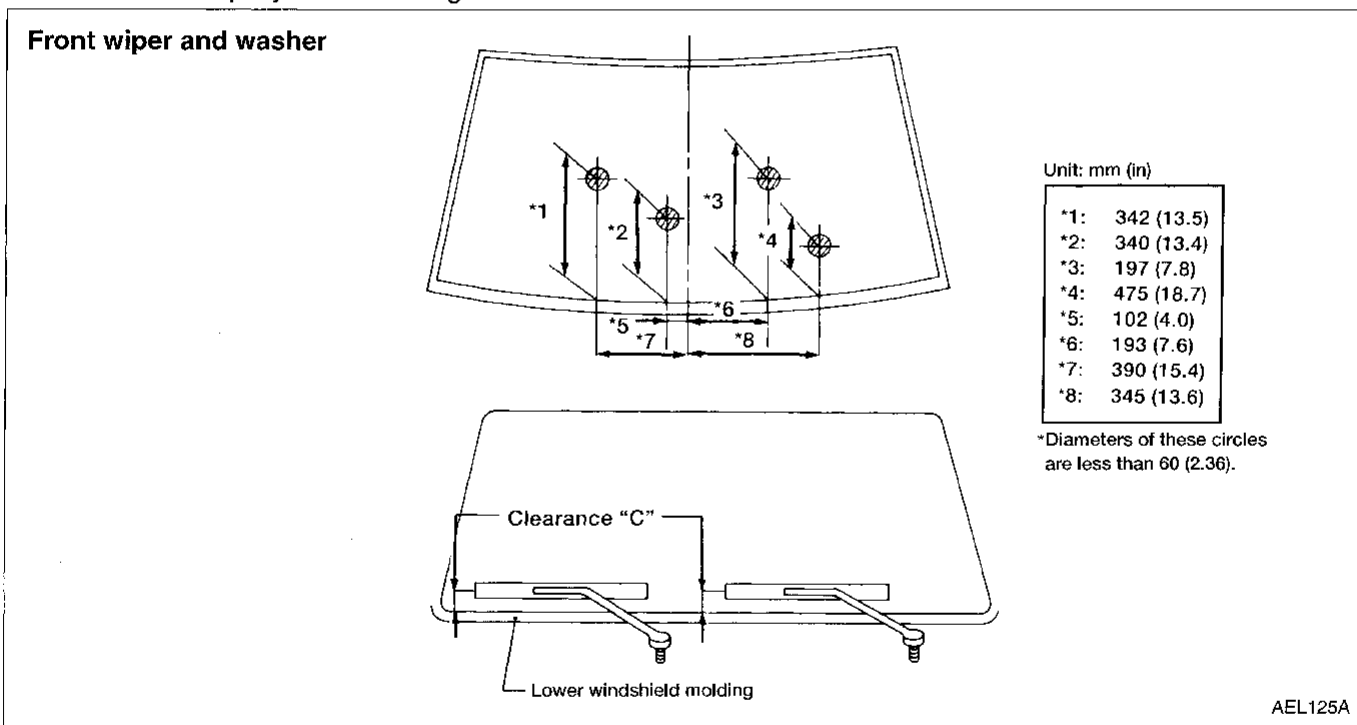
WIPER ARM ADJUSTMENT

The wiper arms on this vehicle have a blind spline. The blind spline acts as an index and only allows the windshield wiper arm to be installed in one position. Therefore the wiper arms are not adjustable. If the measurement of clearance "C" is out of specification, inspect the windshield wiper motor, linkage, and pivot for damage.

Clearance "C": 47 - 87 mm (1.85 - 3.43 in)

WASHER NOZZLE ADJUSTMENT

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



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

REAR WIPER AND WASHER

System Description (Except for Glass Hatch Model)

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

- through 10A fuse (No. 9), located in the fuse block
- to rear wiper amplifier terminal 7,
- to rear wiper motor terminal 1 and
- to rear washer motor terminal 1.

Ground is supplied:

- to rear wiper amplifier terminal 6 and
- to rear wiper switch terminal 3
- through body grounds M5, M78 and M123.

Ground is also supplied:

- to rear wiper motor terminal 2
- through body ground B104.

WIPER OPERATION

When the rear wiper switch wiper is in the ON position, ground is supplied:

- to rear wiper amplifier terminal 1
- through rear wiper switch terminal 1.

An intermittent ground is then supplied:

- to rear wiper motor terminal 3
- through rear wiper amplifier terminal 4
- to rear wiper amplifier terminal 6
- through body grounds M5, M78 and M123.

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

WASHER OPERATION

When the rear wiper switch washer is in the ON position, ground is supplied:

- to rear washer motor terminal 2 and
- to rear wiper amplifier terminal 5
- through rear wiper switch terminal 2.

With power and ground supplied, the rear wiper and rear washer motor operates until the rear window wiper switch is released from the ON position. If the switch is pressed momentarily, the rear wiper motor will cycle three times.

AUTO STOP OPERATION

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

When the rear wiper switch is placed in the OFF position, the rear wiper amplifier no longer supplies a ground circuit to the rear wiper motor. The ground circuit is now routed through the rear wiper motor terminal 2. This allows the wiper motor to operate until the rear wiper arm reaches the base of the glass. The rear wiper motor ground is interrupted when the rear wiper arm reaches the base of the glass, and the rear wiper motor stops.

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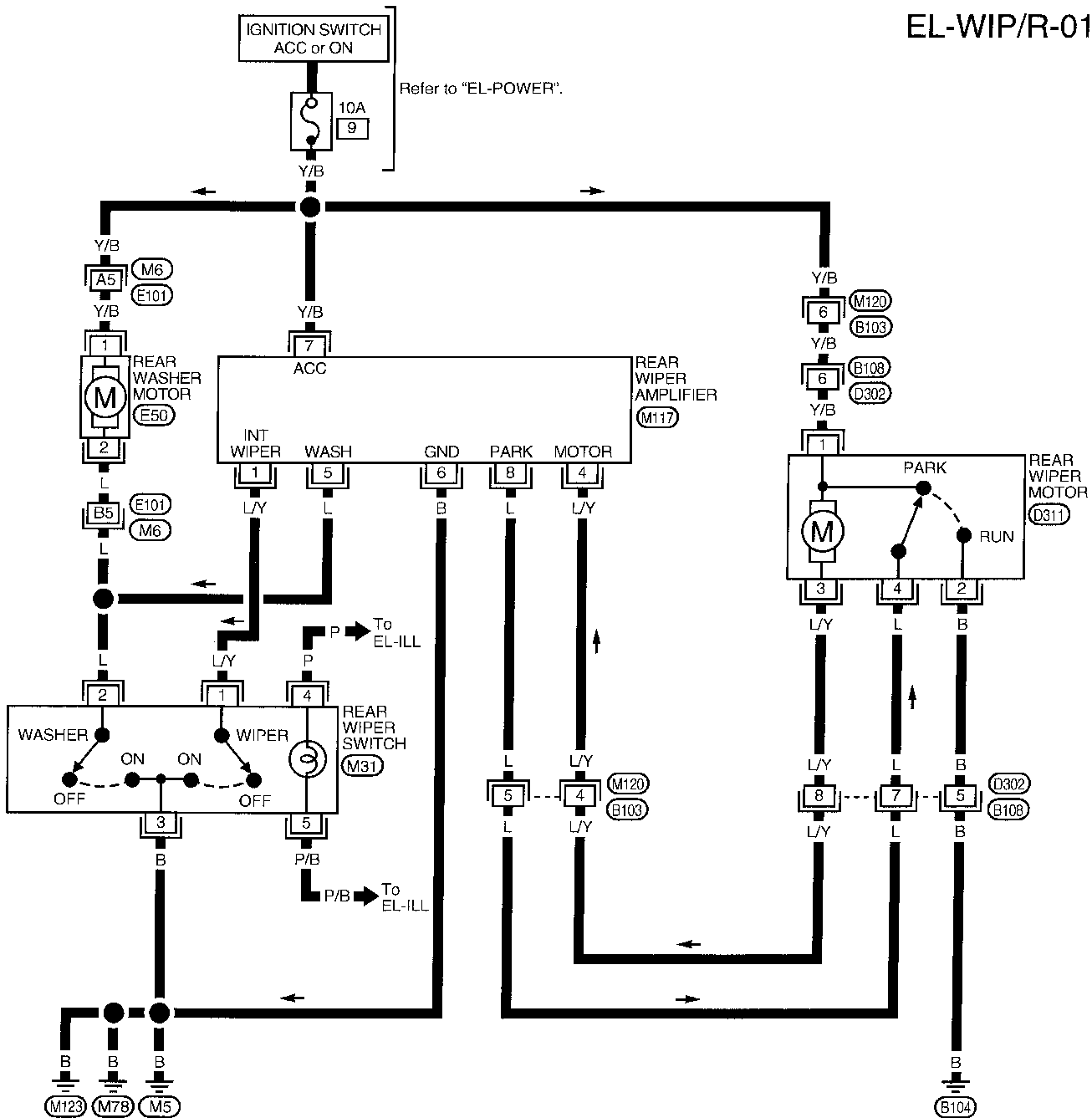
EL

IDX

REAR WIPER AND WASHER

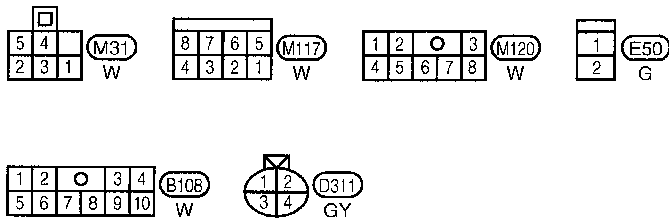
Wiring Diagram -WIP/R- (Except for Glass Hatch Model)

EL-WIP/R-01



Refer to last page (Foldout page).

(M6), (E101)



REAR WIPER AND WASHER

System Description (For Glass Hatch Model)

Power is supplied at all times:

- through 10A fuse (No. 2), located in the fuse block
- to rear wiper motor terminal 2.

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

- through 10A fuse (No. 9), located in the fuse block
- to rear washer motor terminal 1 and
- rear wiper motor terminal 5.

Ground is supplied:

- to glass hatch latch switch terminal 2 and
- rear wiper motor terminal 4
- through body ground B104.

Ground is also supplied:

- to rear wiper switch terminal 3
- through body grounds M5, M78 and M123.

With the glass hatch open, the glass hatch switch closes and ground is supplied:

- to rear wiper motor terminal 1
- through glass hatch switch terminal 1.

The rear wiper motor operates momentarily to move the wiper arm off the glass hatch so that it may be opened.

WIPER OPERATION

When the rear wiper switch is in the ON position, ground is supplied:

- to rear wiper motor terminal 6
- through rear window wiper switch terminal 1.

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

WASHER OPERATION

When the rear window wiper switch washer is in the ON position, ground is supplied:

- to rear wiper motor terminal 3 and
- rear washer motor terminal 2
- through rear window wiper switch terminal 2.

With power and ground supplied, the rear wiper and rear washer motors operate until the rear window wiper switch is released from the ON position. If the switch is pressed momentarily, the rear wiper motor will cycle three times.

AUTO STOP OPERATION

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

When the rear wiper switch is placed in the OFF position, the rear wiper amplifier no longer supplies a ground circuit to the rear wiper motor. The ground circuit is now routed through the rear wiper motor terminal 4. This allows the wiper motor to operate until the rear wiper arm reaches the base of the glass. The rear wiper motor ground is interrupted when the rear wiper arm reaches the base of the glass, and the rear wiper motor stops.

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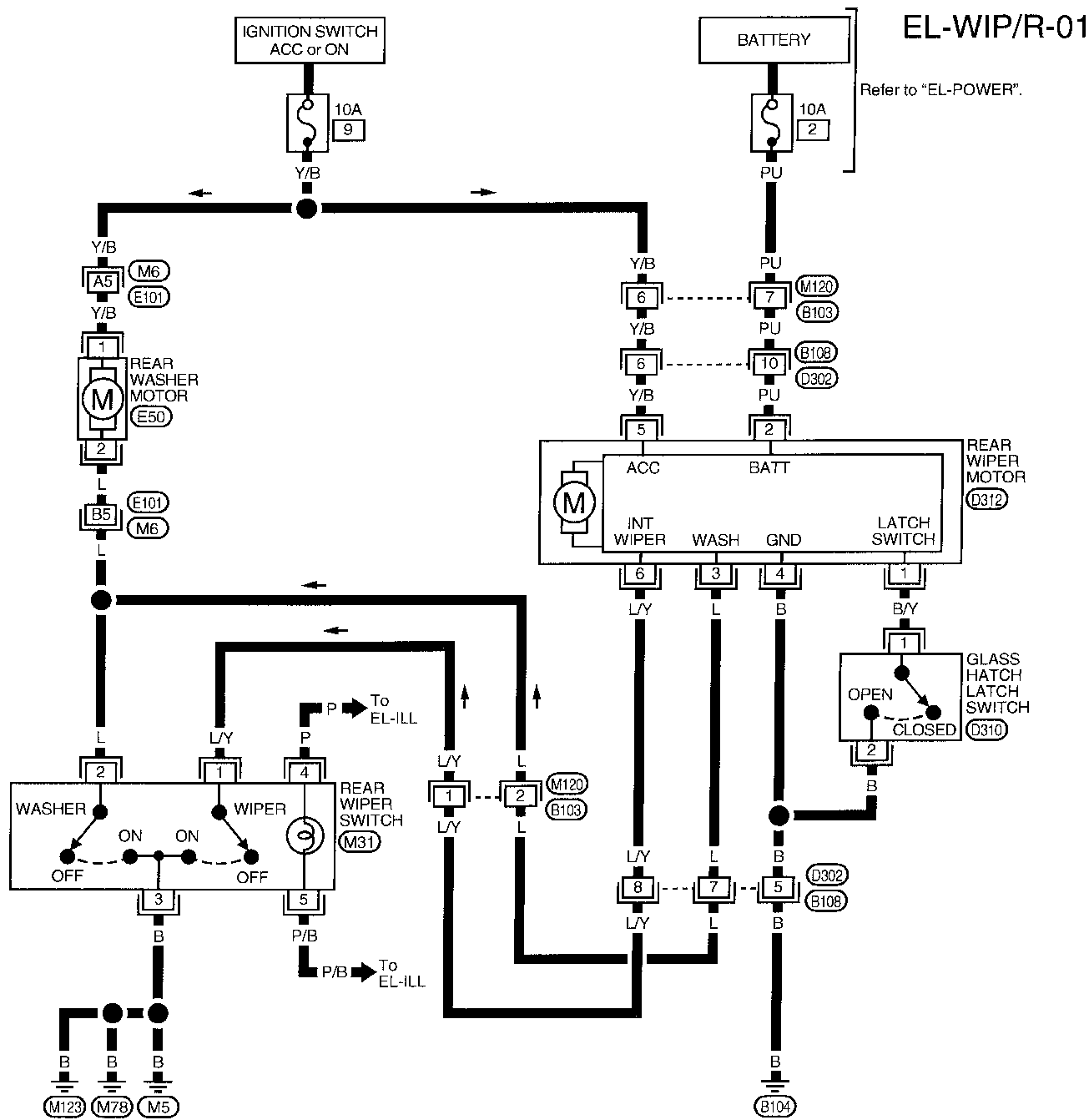
HA

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REAR WIPER AND WASHER

Wiring Diagram -WIP/R- (For Glass Hatch Model)

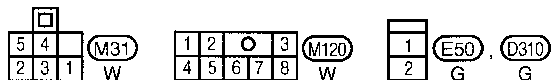


EL-WIP/R-01

Refer to "EL-POWER".

Refer to last page (Foldout page).

(M6), (E101)



REAR WIPER AND WASHER

Rear Wiper

REMOVAL

1. Tilt rear wiper arm to upright position.
2. Grasp base of rear wiper arm and pull it from the pivot shaft.
3. Disconnect washer solvent hose.

INSTALLATION

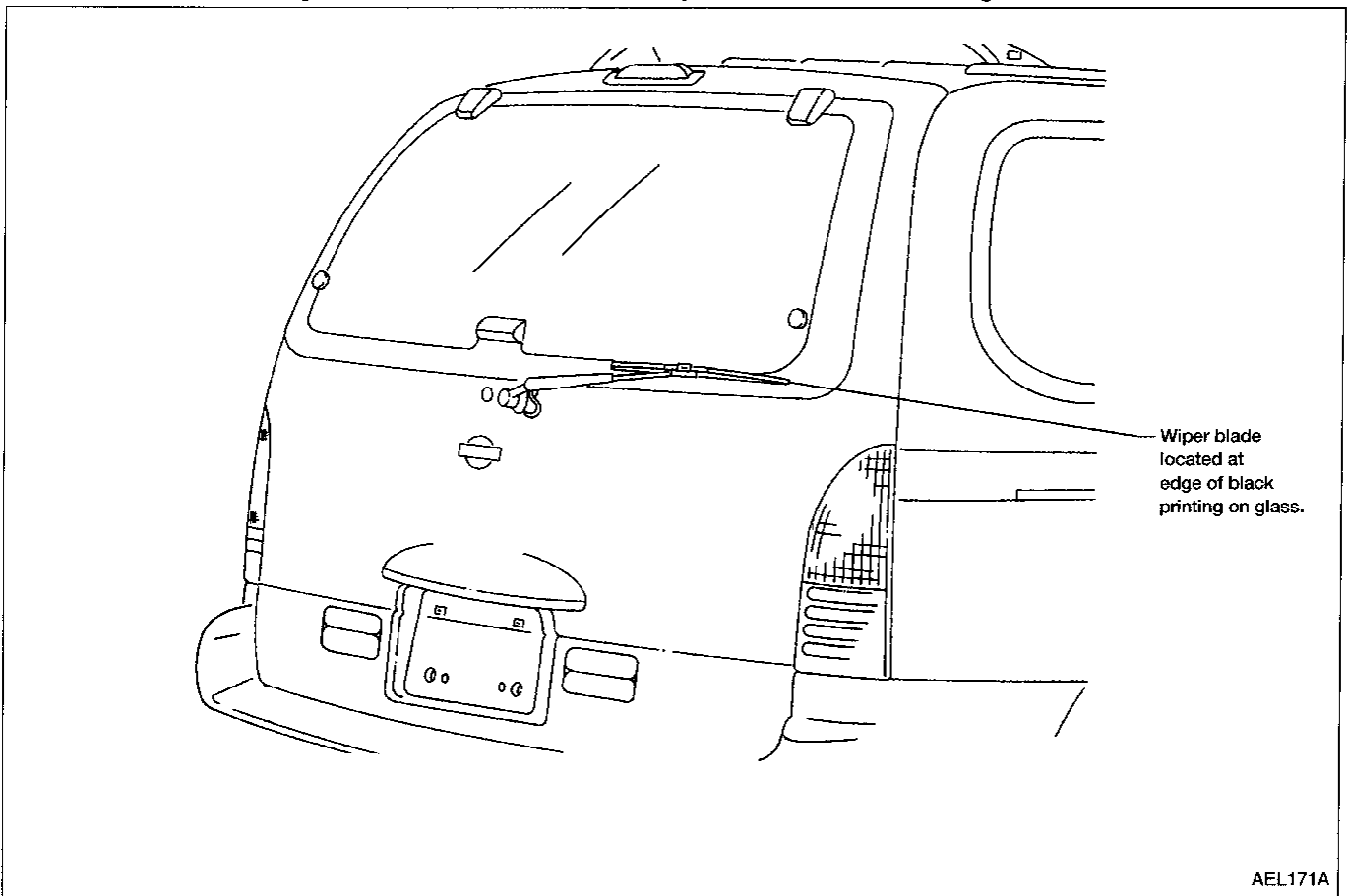
1. Connect washer solvent hose.
2. Place wiper arm base over pivot shaft and firmly push wiper arm onto pivot shaft.
3. Gently tilt wiper arm downward until contacting rear glass.

WIPER ARM ADJUSTMENT

1. With wiper arm removed, turn on wiper and allow it to cycle two or three times, then turn the wiper switch to OFF and allow wiper motor to return to "park" position.
2. Install wiper arm and align splines so that the wiper blade is located on the edge of the black printing on the rear glass.
3. With wiper arm installed, operate the wiper and allow it to cycle two or three times.
4. Turn the wiper switch to OFF and allow the wiper motor to return to the "park" position, then ensure that the wiper arm is still located at the edge of the black printing.
5. If necessary, readjust wiper arm.

NOTE:

Model with rear hatch glass shown in illustration. Adjustment for fixed rear glass models is the same.



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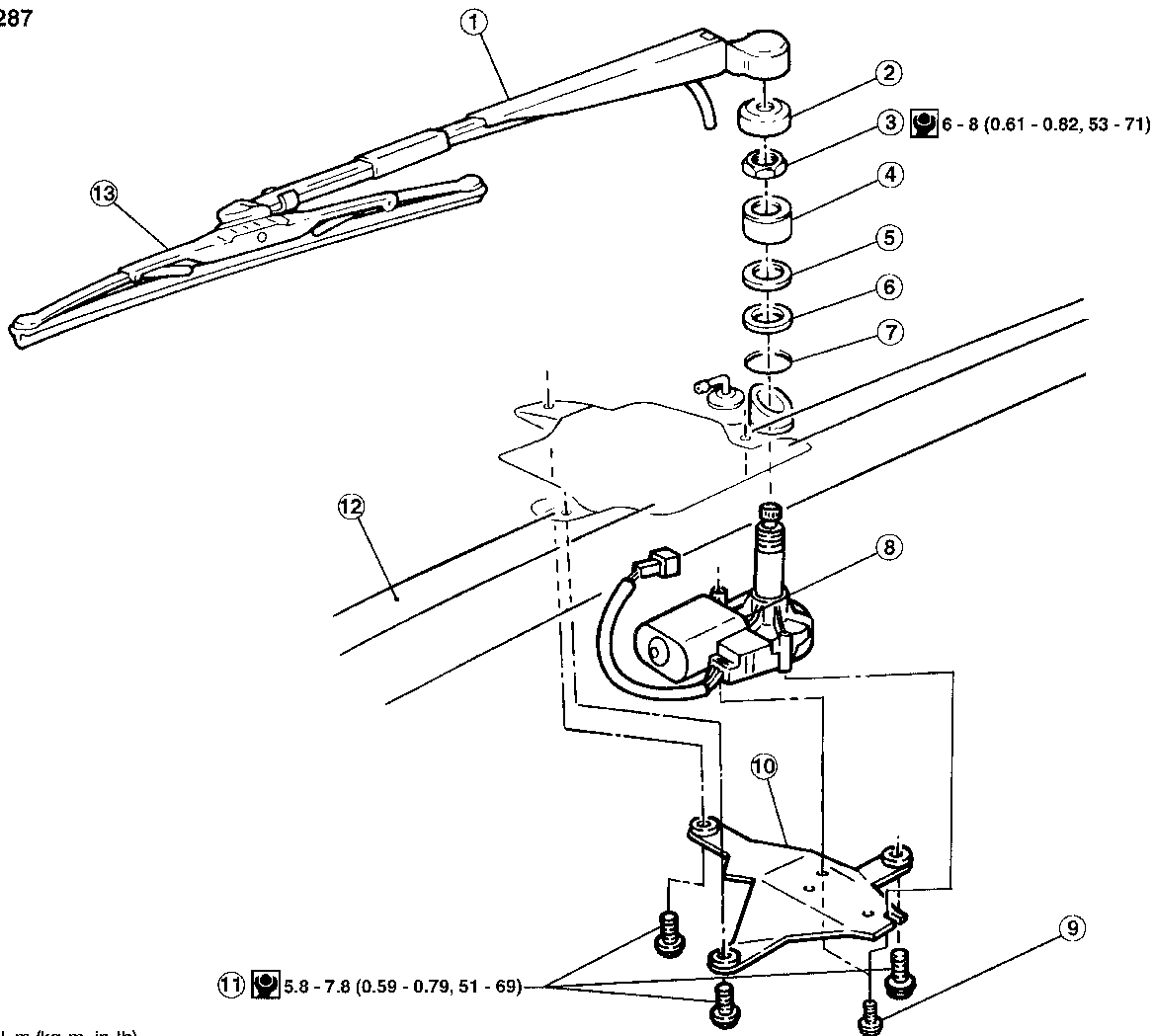
EL

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REAR WIPER AND WASHER

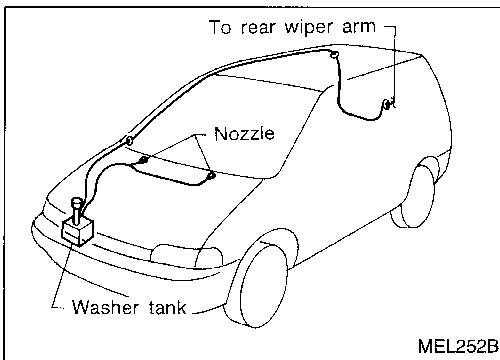
Rear Wiper (Cont'd)

SEC. 287



AEL841A

- | | | |
|---------------------|--------------------|--------------------|
| ① Rear wiper arm | ⑥ Plastic seal | ⑩ Bracket |
| ② Pivot shaft cover | ⑦ Inner collar | ⑪ Mounting bolts |
| ③ Pivot shaft nut | ⑧ Rear wiper motor | ⑫ Back door |
| ④ Outer collar | ⑨ Bracket bolts | ⑬ Rear wiper blade |
| ⑤ Seal | | |

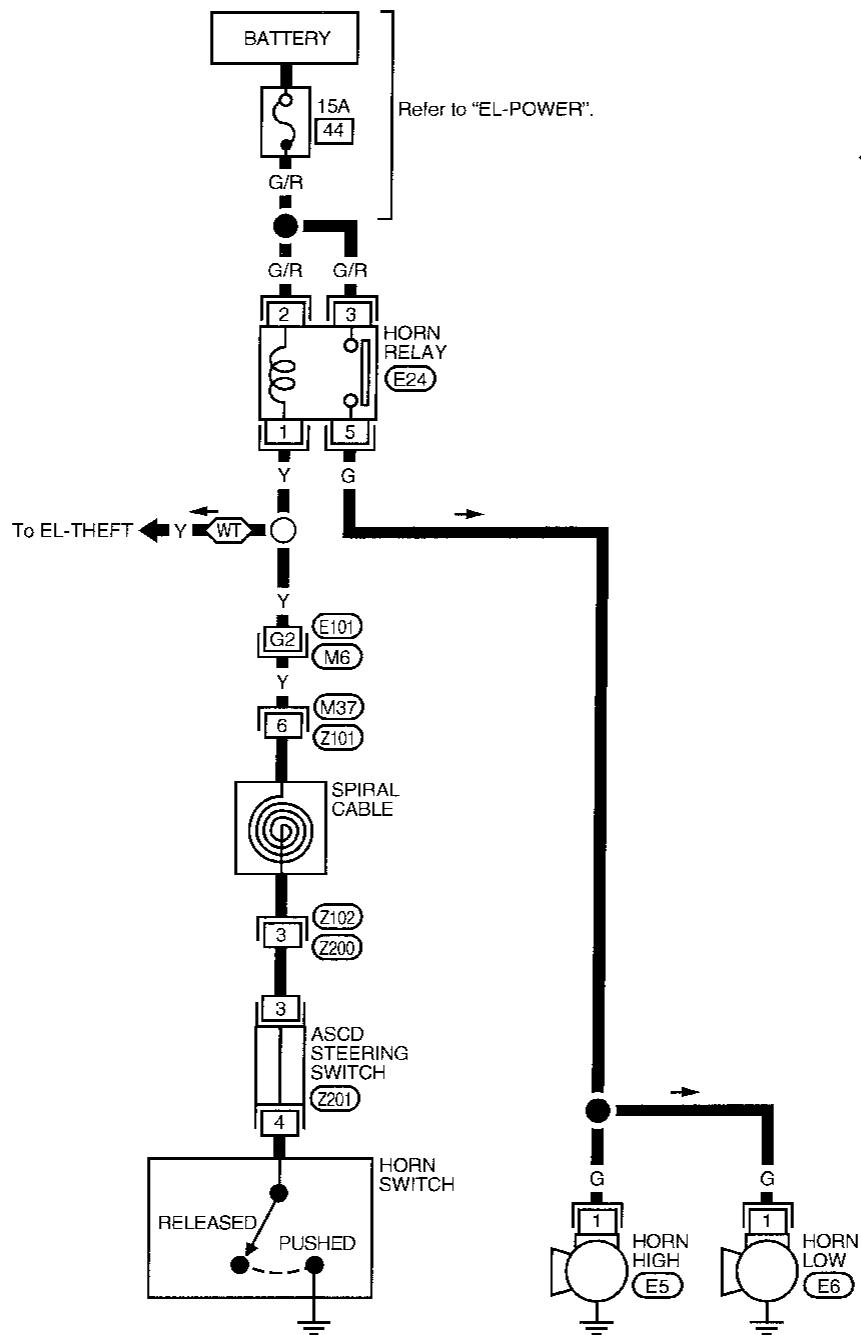


Washer Fluid and Check Valve

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

HORN

Wiring Diagram -HORN-



EL-HORN-01

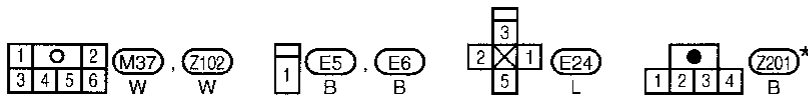
WT : With theft warning

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Refer to last page (Foldout page).

(M16), (E101)

IDX

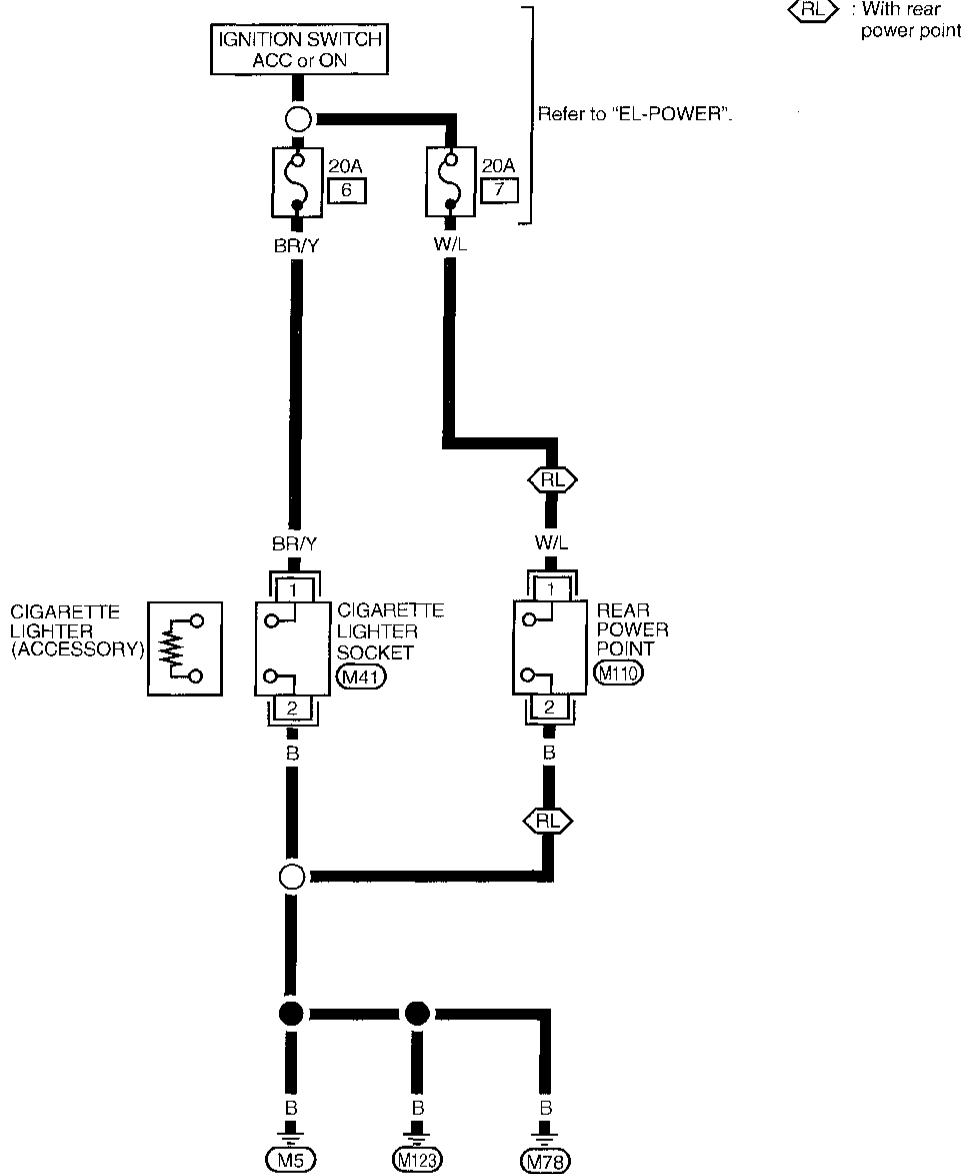


* : This connector is not shown in "HARNES LAYOUT" of EL section.

CIGARETTE LIGHTER

Wiring Diagram -CIGAR-

EL- CIGAR-01



REAR WINDOW DEFOGGER

System Description

The rear window defogger system is controlled by the smart entrance control unit. Once turned on, the rear window defogger operates for approximately 15 minutes.

GI

Power is supplied at all times:

- through 45A fusible link (letter **9**, located in the fuse and fusible link box)
- to rear window defogger relay terminals **5** and **7**.

MA

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

- through 10A fuse (No. **30**, located in the fuse block)
- to smart entrance control unit terminal **25**.

EM

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

- to rear window defogger relay terminal **1**.

LC

Ground is supplied:

- to rear window defogger switch terminal **2**
- to smart entrance control unit terminal **20**
- through body grounds **M5**, **M78** and **M123**.

EC

FE

When the rear window defogger switch is turned on, ground is supplied:

- through rear window defogger switch terminal **1**
- to smart entrance control unit terminal **31**. Smart entrance control unit terminal **13** then supplies ground to rear window defogger relay terminal **2**.

AT

With power and ground supplied, the rear window defogger relay is energized and power is supplied:

- from rear window defogger relay terminals **3** and **6**
- through 20A fuses (No. **14** and **15**, located in the fuse block)
- to rear window defogger terminal **1**. The rear window defogger terminal **2** is grounded through body ground **D403**.

FA

RA

With power and ground supplied, the rear window defogger filaments heat and defog the rear window. When the system is activated, the rear window defogger indicator illuminates in the rear window defogger switch.

BR

Power is supplied:

- to rear window defogger switch terminal **3**
- through 10A fuse (No. **16**, located in the fuse block)
- from rear window defogger relay terminals **3** and **6**.

ST

RS

Ground is supplied:

- to rear window defogger switch terminal **4**
- through body grounds **M5**, **M78** and **M123**.

BT

HA

EL

IDX

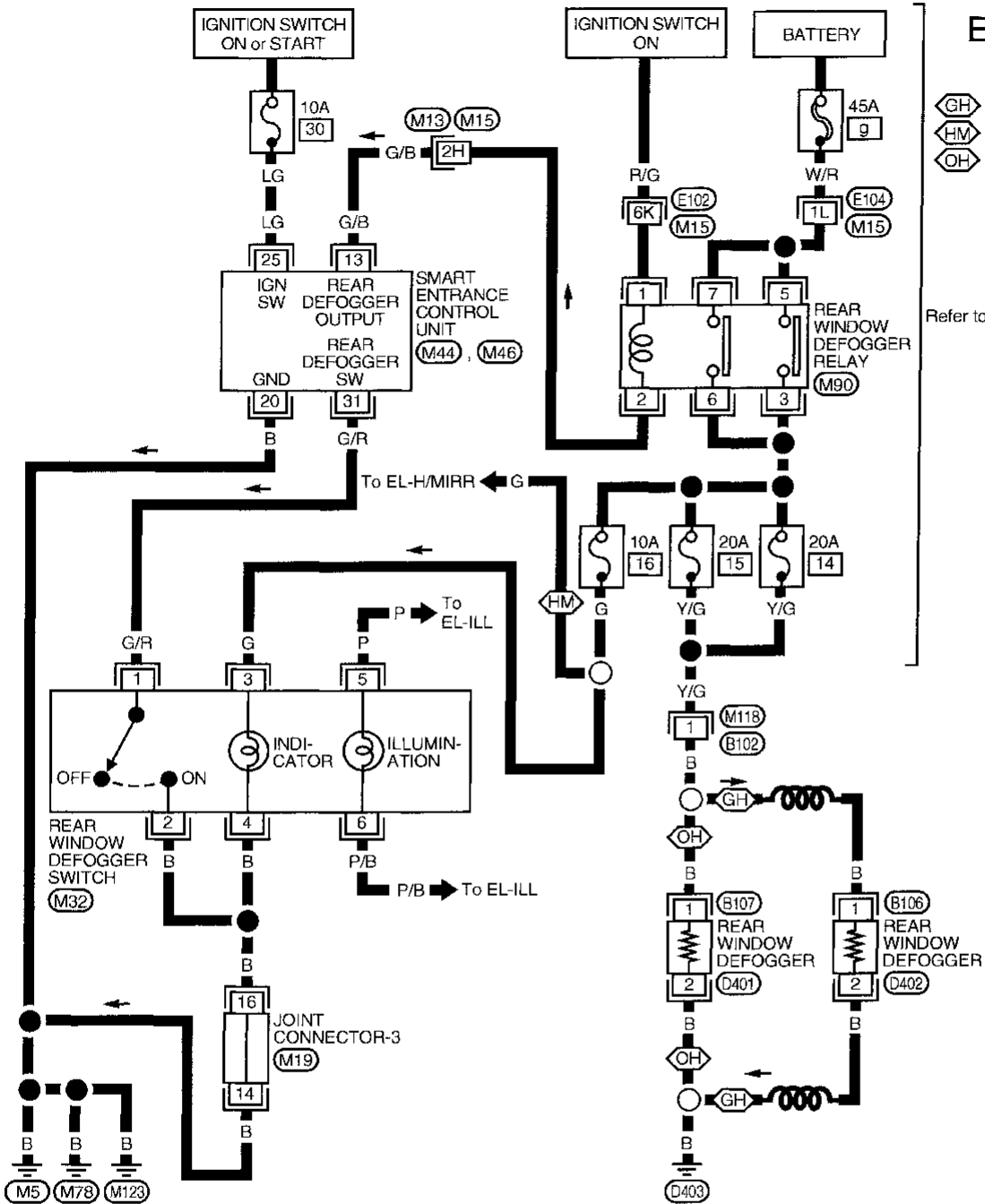
REAR WINDOW DEFOGGER

Wiring Diagram -DEF-

EL-DEF-01

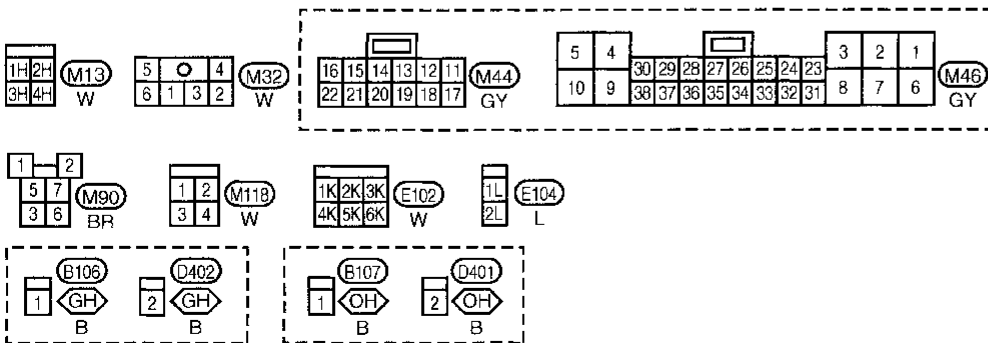
- ⬡ GH : With glass hatch
- ⬡ HM : With heated mirrors
- ⬡ OH : Without glass hatch

Refer to "EL-POWER".



Refer to last page (Foldout page).

(M19)

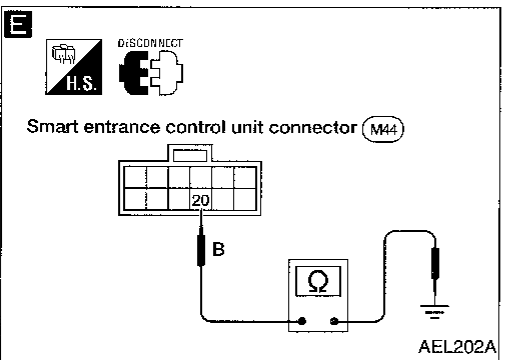
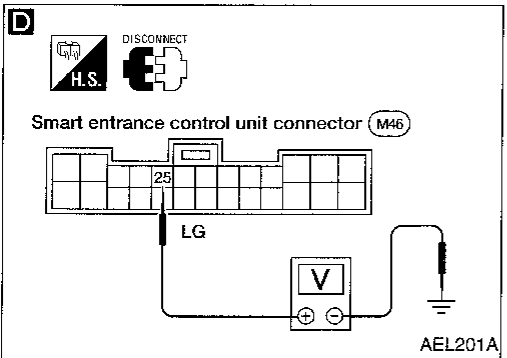
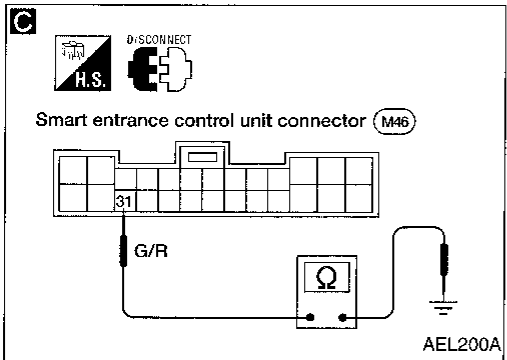
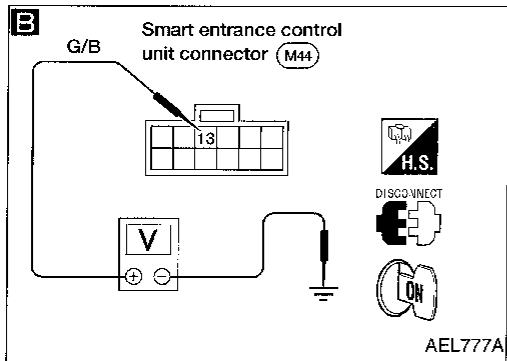
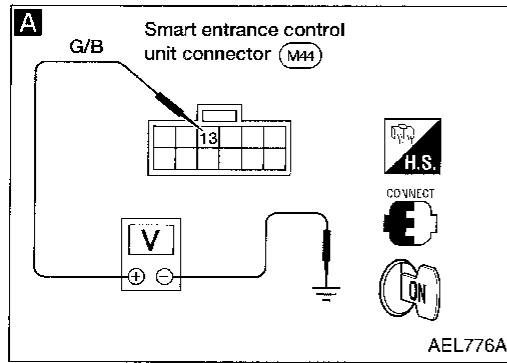


REAR WINDOW DEFOGGER

Trouble Diagnoses

DIAGNOSTIC PROCEDURE

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



A

REAR WINDOW DEFOGGER OUTPUT SIGNAL CHECK.
Measure voltage between smart entrance control unit harness terminal (13) and body ground.

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

OK →

- Check rear window defogger relay. (Refer to EL-132.)
- Check 20A fuses (No's. 14 and 15, located in the fuse block).
- Check 10A fuse (No. 16 located in the fuse block).
- Check rear window defogger circuit.
- Check rear window defogger filament. (Refer to EL-132.)

NG ↓

B

1. Disconnect control unit connector.
2. Turn ignition switch to ON position.
3. Check voltage between control unit harness terminal (13) and body ground. **Battery voltage should exist.**

NG →

Check the following:

- Fusible link and fuse
- Rear window defogger relay
- Harness for open or short

OK ↓

C

REAR WINDOW DEFOGGER SWITCH INPUT SIGNAL CHECK.
Check continuity between smart entrance control unit harness terminal (31) and body ground.

Condition of defogger switch	Continuity
Rear defogger switch is pushed.	Yes
Rear defogger switch is released.	No

NG →

- Check rear window defogger switch. (Refer to EL-132.)
- Check continuity between smart entrance control unit harness terminal (31) and rear window defogger switch harness terminal (1).
- **Continuity should exist.**
- Check continuity between rear window defogger switch harness terminal (2) and body ground. **Continuity should exist.**

OK ↓

D

IGNITION INPUT SIGNAL CHECK.
Check voltage between smart entrance control unit harness terminal (25) and body ground.

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

NG →

- Check 10A fuse (No. 30, located in the fuse block).
- Repair harness or connectors.

OK ↓

E

CONTROL UNIT GROUND CIRCUIT CHECK.
Check continuity between smart entrance control unit harness terminal (20) and body ground. **Continuity should exist.**

NG →

Repair harness or connectors.

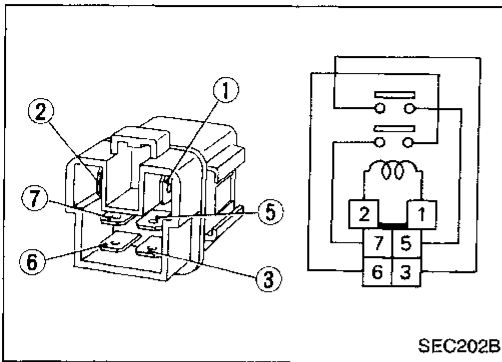
OK ↓

Replace smart entrance control unit.

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REAR WINDOW DEFOGGER

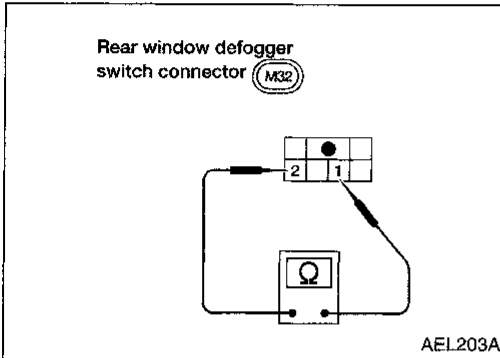


Electrical Components Inspection

Rear window defogger relay

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

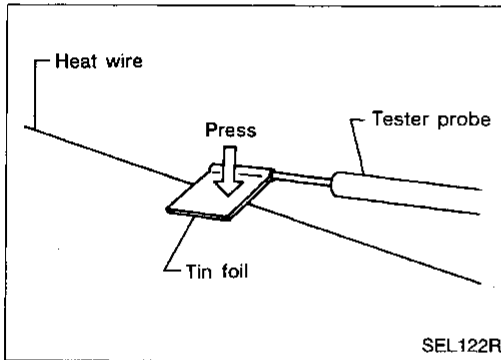
Condition	Continuity
12V direct current supply between terminals ① and ②	Yes
No current supply	No



Rear window defogger switch

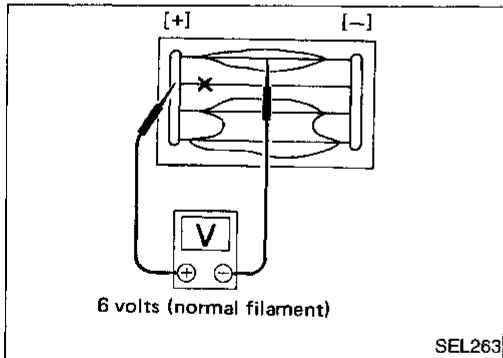
Check continuity between terminals when rear window defogger switch is pushed and released.

Terminals	Condition	Continuity
① - ②	Rear window defogger switch is pushed	Yes
	Rear window defogger switch is released	No



Filament Check

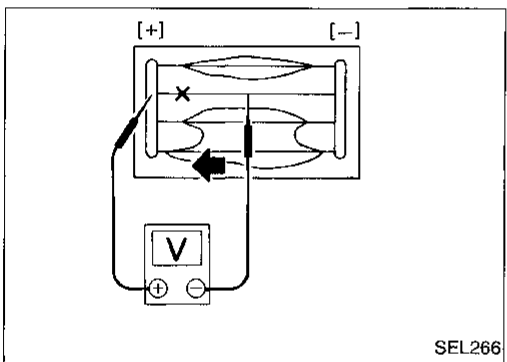
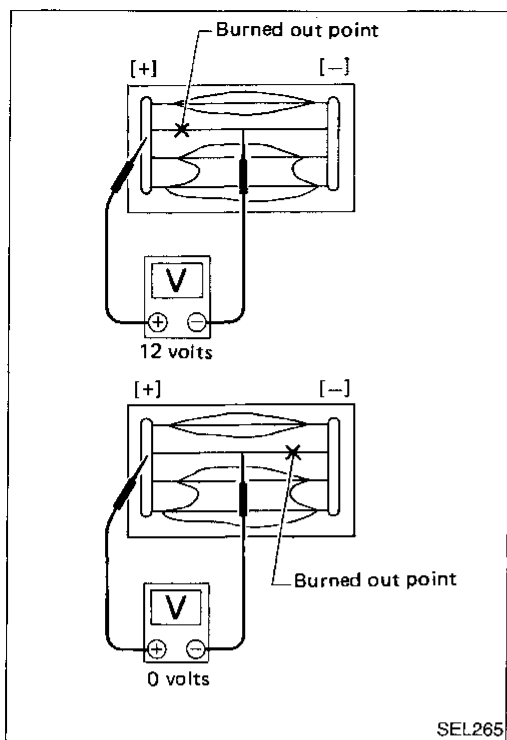
- When measuring voltage, wrap tin foil around the top of the negative probe. Press the foil against the wire with your finger. Otherwise, the element may be damaged.



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

REAR WINDOW DEFOGGER

Filament Check (Cont'd)



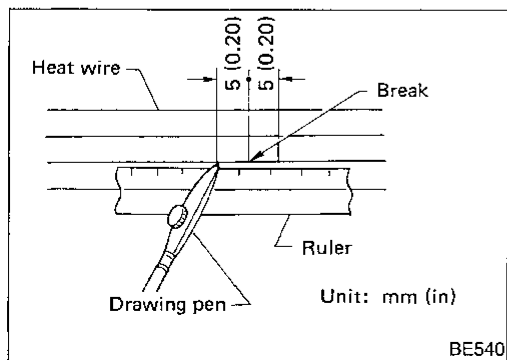
2. If a filament is burned out, circuit tester registers 0 or 12 volts.

3. To locate burned out point, move probe to left and right along filament. Tester needle swings abruptly at the burned out point.

Filament Repair

REPAIR EQUIPMENT

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



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.

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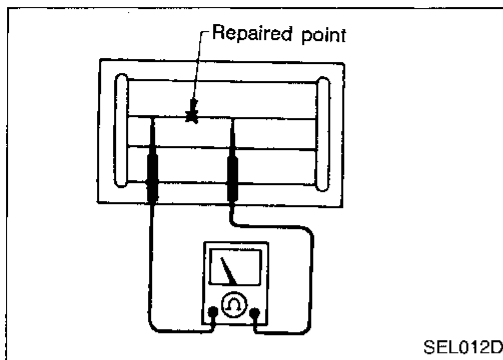
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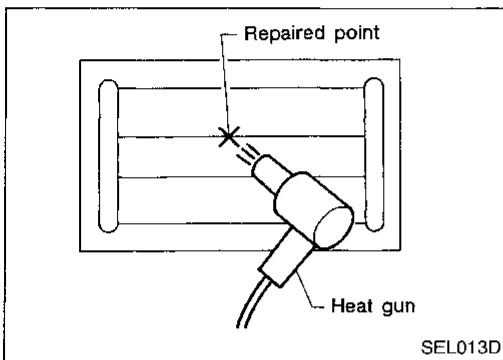
REAR WINDOW DEFOGGER

Filament Repair (Cont'd)



4. After repair has been completed, check repaired wire for continuity. This check should be conducted 10 minutes after silver composition is deposited.

Do not touch repaired area while test is being conducted.



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

System Description

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

PREMIUM AUDIO SYSTEM

Power is supplied at all times:

- through 10A fuse (No. 20, located in the fuse block)
- to radio and cassette player terminal 17 and
- to CD changer terminal 9.

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

- through 7.5A fuse (No. 10, located in the fuse block)
- to radio and cassette player terminal 19 and
- to rear radio remote control unit terminal 5, and
- through 20A fuse (No. 11, located in the fuse block)
- to 4-channel amplifier terminal 6 and
- to subwoofer amplifier terminal 2.

Ground is supplied to radio and cassette player terminal 22 and CD changer terminal 3 through body ground M65.

Ground is supplied to 4-channel amplifier terminal 5 through body ground M124.

Ground is supplied to rear radio remote control unit terminal 12 through body grounds M5, M78 and M123.

Ground is supplied to subwoofer amplifier terminal 6 through body grounds B8 and B10.

When the system is ON, audio signals are supplied:

- through radio and cassette player terminals 4, 5, 6, 7, 12, 13, 14 and 15
- to 4-channel amplifier terminals 18, 24, 23, 22, 21, 20, 19 and 15, and
- to rear radio remote control unit terminals 10, 9, 1 and 2 for the headphone jacks.

The 4-channel amplifier then supplies audio signals:

- through terminals 13, 14, 9, 10, 12, 11, 8, 7, 26 and 28
- to the front door speakers, rear speakers and subwoofer amplifier.

The volume may be increased or decreased, or the next preset station may be selected using the steering wheel radio control switches.

The radio and cassette player receives a ground signal at terminal 25 (volume increase) or 26 (volume decrease), or at terminals 25 and 26 (next preset) when the switches are depressed.

BASE AUDIO SYSTEM

Power is supplied at all times:

- through 10A fuse (No. 20, located in the fuse block)
- to radio and cassette player terminal 17.

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

- through 7.5A fuse (No. 10, located in the fuse block)
- to radio and cassette player terminal 19.

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, 5, 6, 7 and 8
- to the front and rear speakers.

GI

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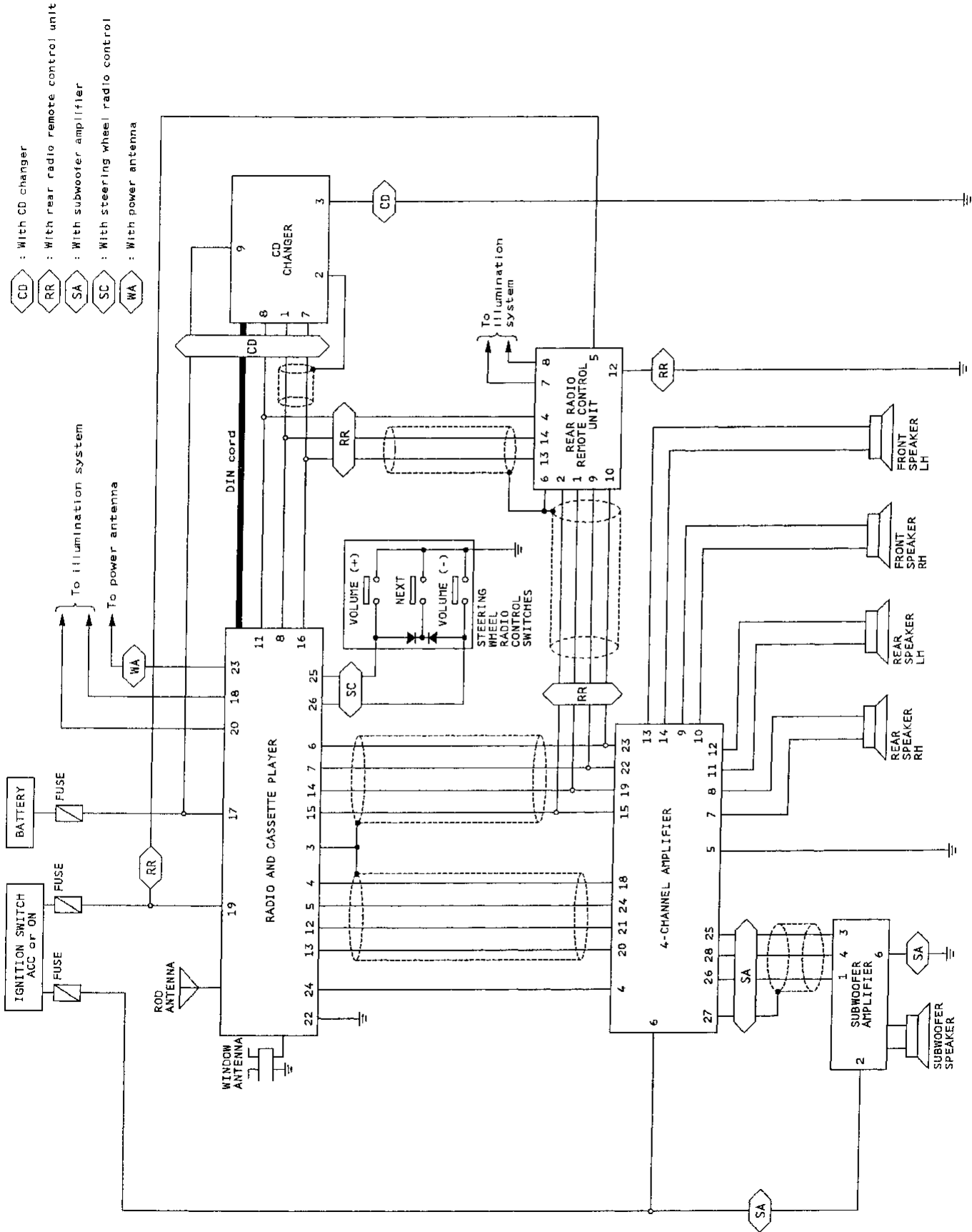
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Schematic

PREMIUM AUDIO SYSTEM



AEL033A

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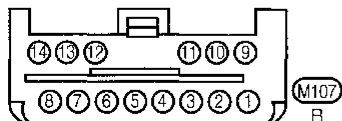
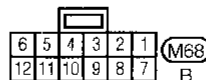
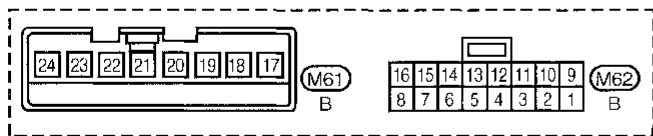
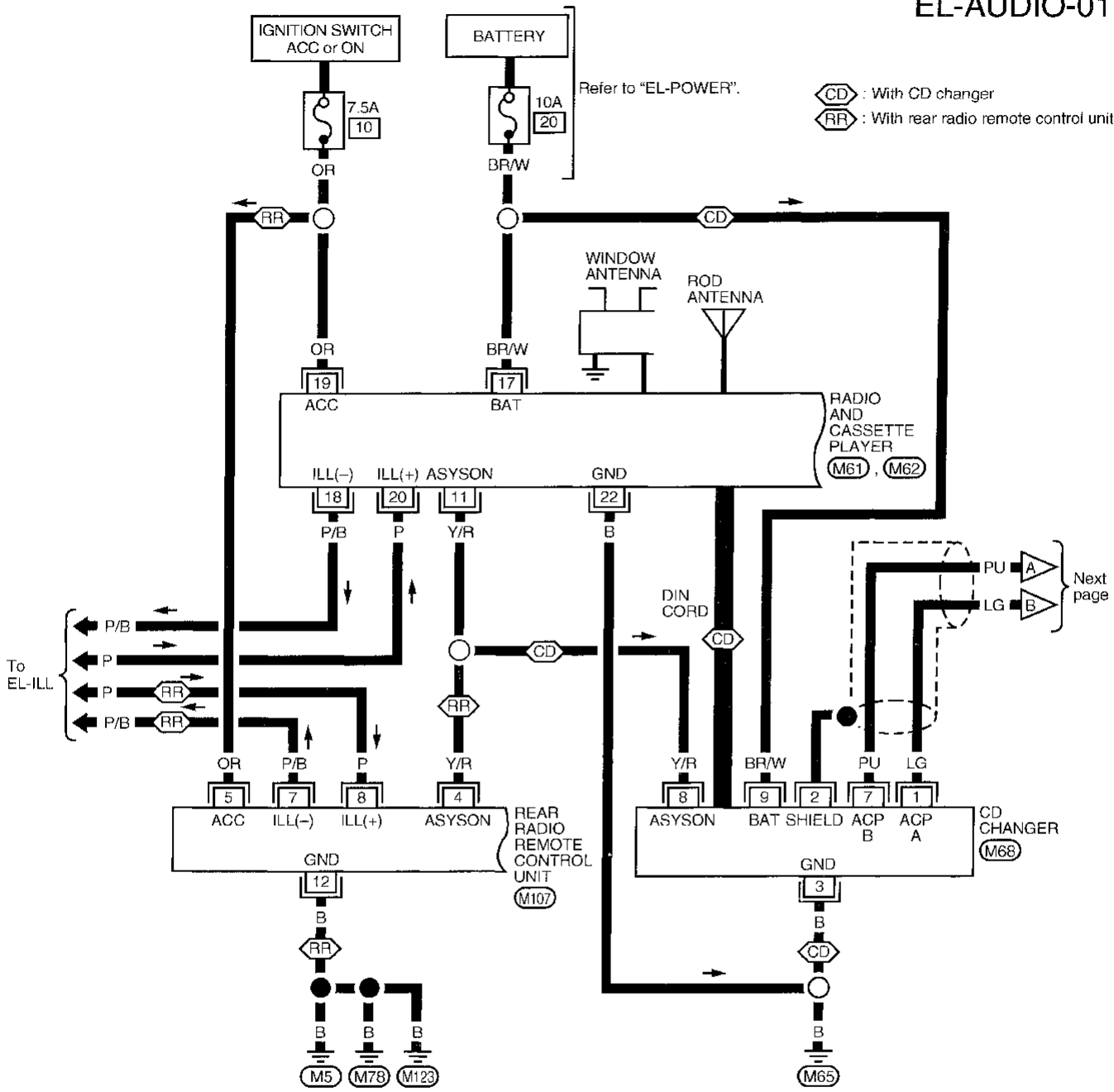
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AUDIO

Wiring Diagram -AUDIO-

PREMIUM AUDIO SYSTEM

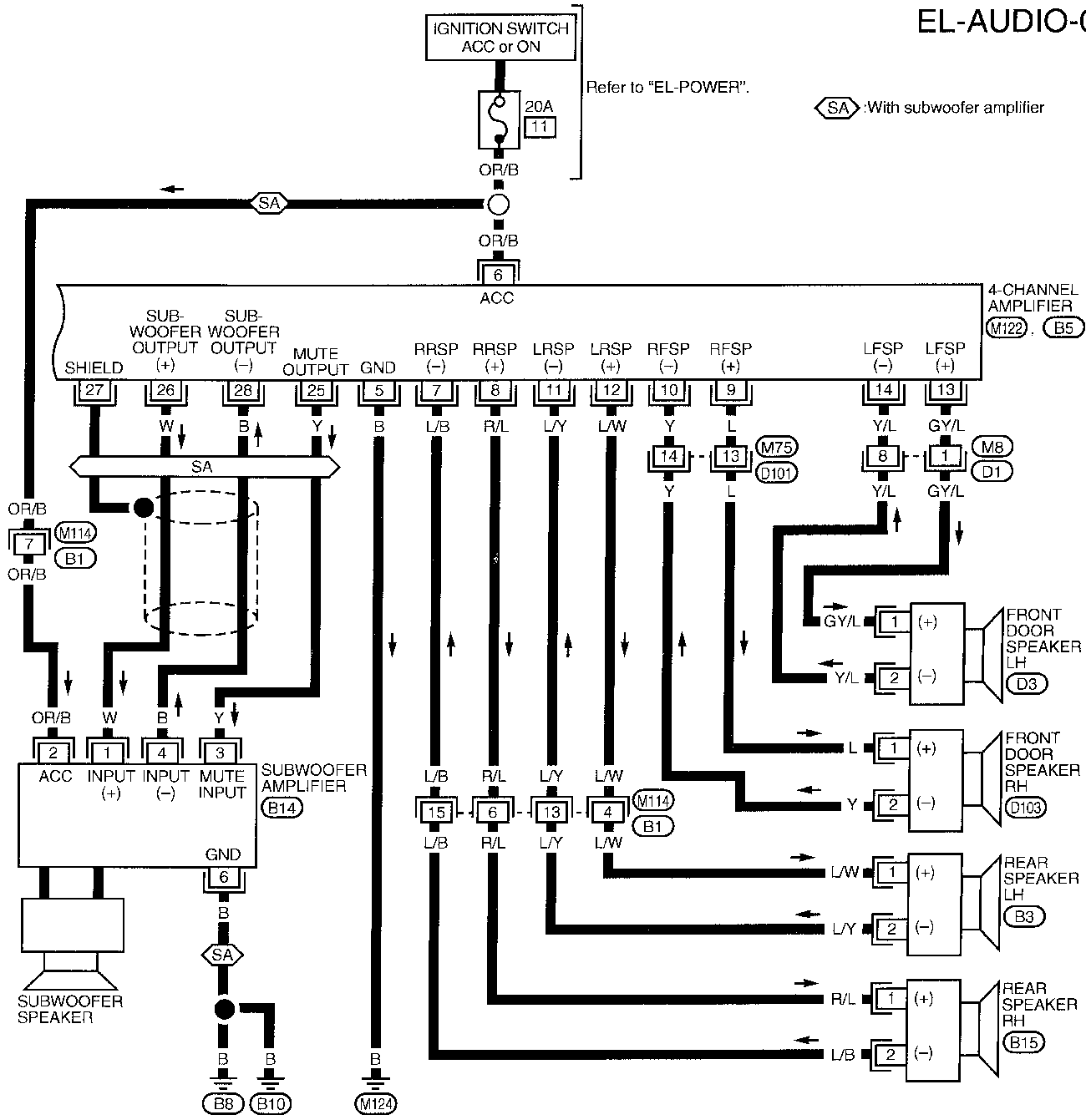
EL-AUDIO-01



AUDIO

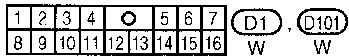
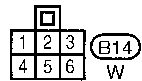
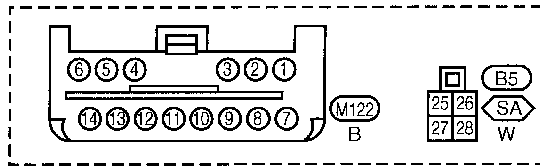
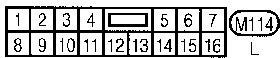
Wiring Diagram –AUDIO– (Cont'd)

EL-AUDIO-03



Refer to "EL-POWER".

SA: With subwoofer amplifier

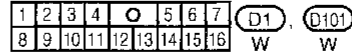
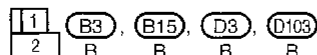
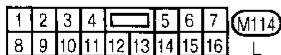
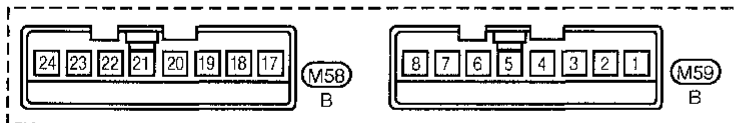
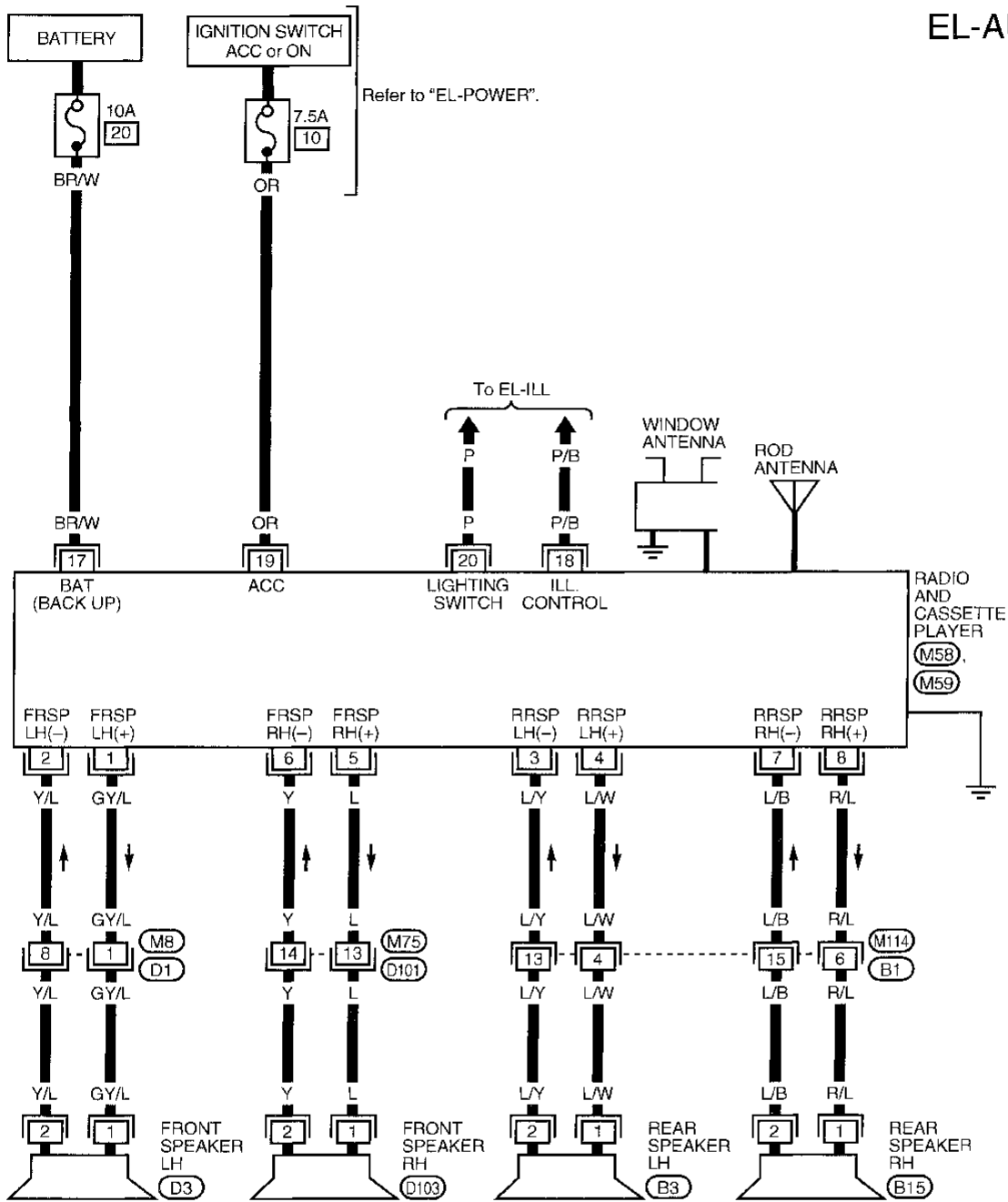


AUDIO

Wiring Diagram -AUDIO- (Cont'd)

BASE AUDIO SYSTEM

EL-AUDIO-04



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AUDIO

Trouble Diagnoses

Symptom	Possible causes	Repair order
Radio, C/D changer and/or rear radio remote control unit inoperative (no digital display and no sound from speakers).	<ol style="list-style-type: none"> 10A fuse and 7.5A fuse Poor radio case ground (base system), or poor radio, CD changer or rear radio remote control unit body ground (premium system) Radio, C/D changer or rear radio remote control unit 	<ol style="list-style-type: none"> Check 10A fuse and 7.5A fuse (No's. 20 and 10), located in the fuse block). Verify battery positive voltage is present at terminal 17 of radio and terminal 9 of C/D changer. Turn ignition switch ON and verify battery positive voltage is present at terminal 19 of radio and terminal 5 of rear radio remote control unit. Check radio case ground, or radio, CD changer or rear radio remote control unit body ground. Remove radio, C/D changer, or rear radio remote control unit for repair.
Radio controls are operational, but no sound is heard from any speaker.	<ol style="list-style-type: none"> 20A fuse (premium system) Poor 4-channel amplifier and subwoofer amplifier body grounds (premium system) 4-channel amplifier and subwoofer amplifier (premium system) 4-channel amplifier circuits (premium system) Radio output Radio 	<ol style="list-style-type: none"> Check 20A fuse (No. 11), located in the fuse block). Turn ignition switch ON and verify battery positive voltage is present at terminal 6 of 4-channel amplifier and terminal 2 of subwoofer amplifier. Check 4-channel amplifier and subwoofer body grounds. Check 4-channel amplifier and subwoofer amplifier voltages. Check wires for open or short between radio, 4-channel amplifier, subwoofer amplifier and speakers. Check radio output voltages. Remove radio for repair.
Radio presets and/or CD changer memory is 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 the fuse block) and verify battery positive voltage is present at terminal 17 of radio and terminal 9 of CD changer. Remove radio for repair.
Individual speaker is noisy or inoperative.	<ol style="list-style-type: none"> Speaker 4-channel amplifier output (premium system) Speaker circuit Radio output Radio 	<ol style="list-style-type: none"> Check speaker. Check 4-channel amplifier output voltages. Check wires for open or short between radio and speaker (base system), or between 4-channel amplifier and speaker (premium system). Check radio output voltages. 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 case ground (base system), or radio body ground (premium system). Remove radio for repair.
FM stations are weak or noisy (AM stations OK).	<ol style="list-style-type: none"> Diversity antenna Radio 	<ol style="list-style-type: none"> Check diversity 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 Generator Ignition coil or secondary wiring Radio 	<ol style="list-style-type: none"> Check radio case ground (base system), or radio body ground (premium system). Check ground bonding straps. Replace ignition 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 Accessories ground Faulty accessory 	<ol style="list-style-type: none"> Check radio case ground (base system), or radio body ground (premium system). Check antenna. Check accessory ground. Replace accessory.

AUDIO

Trouble Diagnoses (Cont'd)

SPEAKER INSPECTION

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

ANTENNA INSPECTION

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

RADIO, C/D CHANGER, REAR RADIO REMOTE CONTROL UNIT, 4-CHANNEL AMPLIFIER AND SUBWOOFER AMPLIFIER INSPECTION

All voltage inspections are made with:

- Ignition switch ON or ACC
- Radio ON
- Radio, C/D changer, rear radio remote control unit, 4-channel amplifier and subwoofer amplifier connected (If the base radio is removed from the audio mounting bracket to make the inspection, supply a ground to the case using a jumper wire.)

PREMIUM RADIO VOLTAGES

Terminal	Voltage (V)
1	—
2	—
3	Shield ground
4	0 - 5V
5	0 - 5V
6	0 - 5V
7	0 - 5V
8	Data line
9	—
10	—
11	10.8 - 15.6V (Radio on)
12	0 - 5V
13	0 - 5V
14	0 - 5V
15	0 - 5V
16	Data line
17	10.8 - 15.6V (Battery)
18	Greater than 3.0V (Illumination on)
19	10.8 - 15.6V (Ignition ACC or ON)
20	10.8 - 15.6V (Illumination on)
21	—
22	Body ground
23	10.8 - 15.6V (Radio on)
24	Greater than 3.5V (Radio on)
25	Check continuity between radio harness connector (M60) and steering wheel radio control switches harness connector (Z102).
26	

BASE RADIO VOLTAGES

Terminal	Voltage (V)
1	0 - 2.3V
2	0 - 2.3V
3	0 - 2.3V
4	0 - 2.3V
5	0 - 2.3V
6	0 - 2.3V
7	0 - 2.3V
8	0 - 2.3V
17	10.8 - 15.6V (Battery)
18	Greater than 3.0V (Illumination on)
19	10.8 - 15.6V (Ignition ACC or ON)
20	10.8 - 15.6V (Illumination on)
21	—
22	—
23	—
24	—

The radio is case grounded through the audio mounting bracket.

AUDIO

Trouble Diagnoses (Cont'd)

REAR RADIO REMOTE CONTROL UNIT VOLTAGES

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

C/D CHANGER VOLTAGES

Terminal	Voltage (V)
1	Data line
2	Shield ground
3	Body ground
4	—
5	—
6	—
7	Data line
8	10.8 - 15.6V (Radio on)
9	10.8 - 15.6V (Battery)
10	—
11	—
12	—

SUBWOOFER AMPLIFIER VOLTAGES

Terminal	Voltage (V)
1	0 - 1.5V input
2	10.8 - 15.6V (Ignition ACC or ON)
3	Greater than 11V (Radio on)
4	0 - 1.5V input
5	—
6	Body ground

4-CHANNEL AMPLIFIER VOLTAGES

Terminal	Voltage (V)
1	—
2	—
3	—
4	Greater than 3.5V (Radio on)
5	Body ground
6	10.8 - 15.6V (Ignition ACC or ON)
7	0 - 7.5V
8	0 - 7.5V
9	0 - 7.5V
10	0 - 7.5V
11	0 - 7.5V
12	0 - 7.5V
13	0 - 7.5V
14	0 - 7.5V
15	0 - 5V
16	—
17	—
18	0 - 5V
19	0 - 5V
20	0 - 5V
21	0 - 5V
22	0 - 5V
23	0 - 5V
24	0 - 5V
25	Greater than 11V (Radio on)
26	0 - 1.5V
27	Shield ground
28	0 - 1.5V

POWER ANTENNA

System Description

Power is supplied at all times:

- through 10A fuse (No. 20, located in the fuse block)
- to power antenna amplifier terminal ③, and
- to radio terminal 17.

GI

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

- through 7.5A fuse (No. 10, located in the fuse block)
- to power antenna amplifier terminal ⑥, and
- to radio terminal 19.

MA

EM

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

- through 10A fuse (No. 29, located in the fuse block)
- to power antenna amplifier terminal ⑤.

LC

Ground is supplied to the power antenna amplifier terminal ⑦ through body grounds M5, M78 and M123.

EC

Ground is supplied to radio terminal 22 through body ground M65.

FE

When the radio is turned ON, battery positive voltage is supplied:

- through radio terminal 23
- to power antenna amplifier terminal ④.

AT

The power antenna amplifier controls the operation of the power antenna motor through terminals ⑧ and ⑨.

FA

The antenna raises and is held in the extended position.

When the radio is turned OFF, or a cassette tape or compact disc is played, battery positive voltage is interrupted:

- from radio terminal 23
- to power antenna amplifier terminal ④.

RA

The antenna retracts.

BR

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HA

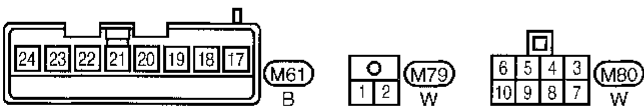
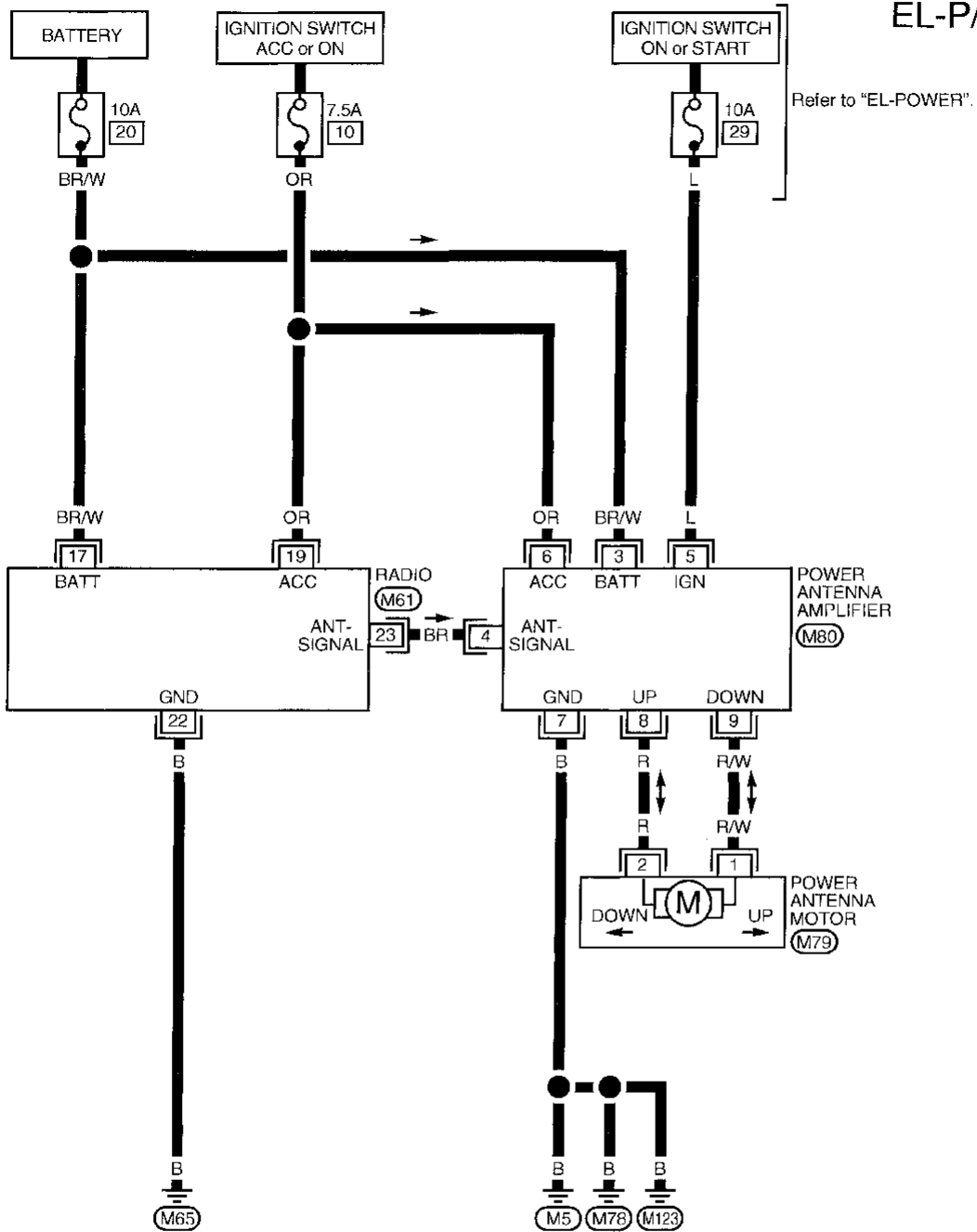
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POWER ANTENNA

Wiring Diagram -P/ANT-

EL-P/ANT-01



POWER ANTENNA

Trouble Diagnoses

Symptom	Possible causes	Repair order
Power antenna does not operate.	1. 10A fuse	1. Check 10A fuse (No. 20, located in the fuse block). Verify battery positive voltage is present at terminal ③ of power antenna amplifier.
	2. 10A fuse	2. Check 10A fuse (No. 29, located in the fuse block). Turn ignition switch ON and verify battery positive voltage is present at terminal ⑤ of power antenna amplifier.
	3. 7.5A fuse	3. Check 7.5A fuse (No. 10, located in the fuse block). Turn ignition switch ON and verify battery positive voltage is present at terminal ⑥ of power antenna amplifier.
	4. Radio signal	4. Turn radio ON and verify battery positive voltage is present at terminal ④ of power antenna amplifier.
	5. Poor power antenna amplifier body ground	5. Check power antenna amplifier body ground.
	6. Power antenna circuit	6. Check wires for open or short between power antenna amplifier and power antenna motor.

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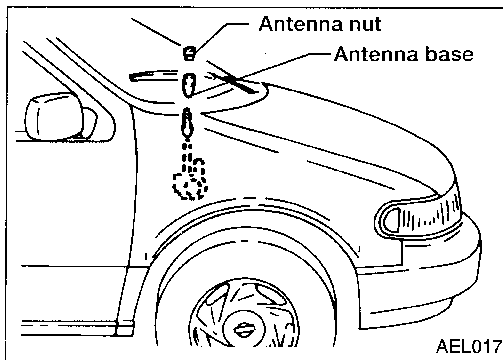
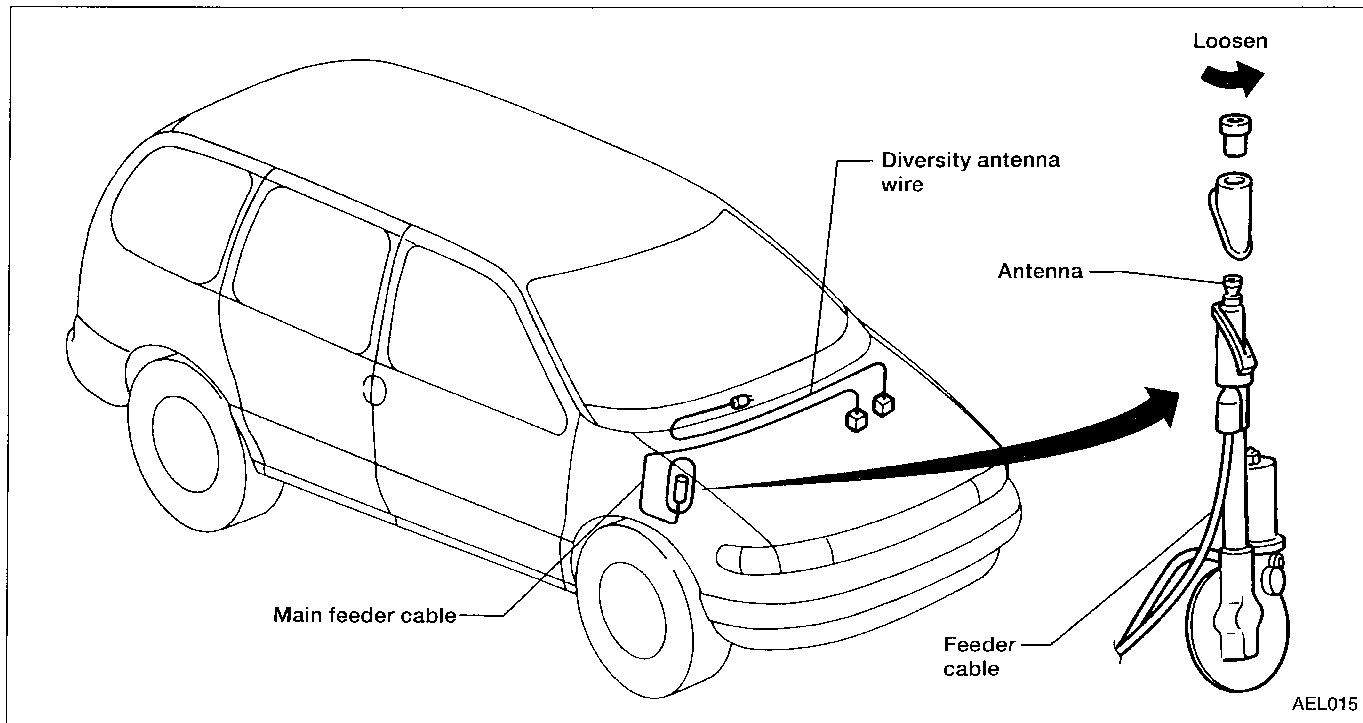
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POWER ANTENNA

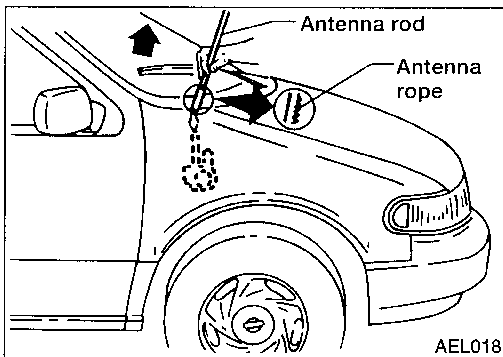
Location of Antenna



Antenna Rod Replacement

REMOVAL

1. Remove antenna nut and antenna base.



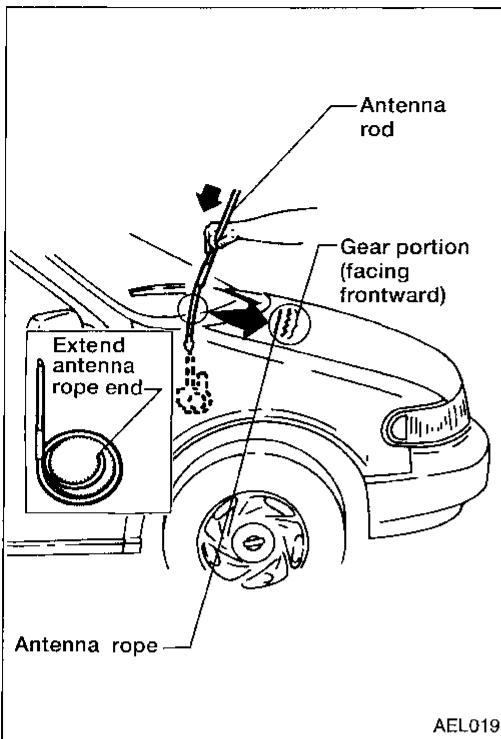
2. Remove antenna rod while raising it by operating antenna motor.

POWER ANTENNA

Antenna Rod Replacement (Cont'd)

INSTALLATION

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



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System Description

POWER

Power is supplied to the sunroof motor assembly by the power window relay. When the ignition switch is turned ON, the relay is energized by the smart entrance control unit. The power circuit is protected by the circuit breaker-1. The sunroof motor assembly is grounded through body grounds (M5), (M78) and (M123).

When the ignition switch is turned to the OFF position, the sunroof will still operate for up to approximately 15 minutes unless the driver's door is opened.

TILT AND SLIDE OPERATION

The sunroof is controlled by the sunroof switch. With sunroof in closed position, depressing UP/CLOSE switch will tilt rear of sunroof up. The sunroof will stop when the switch is released, or when the sunroof reaches its maximum tilt position.

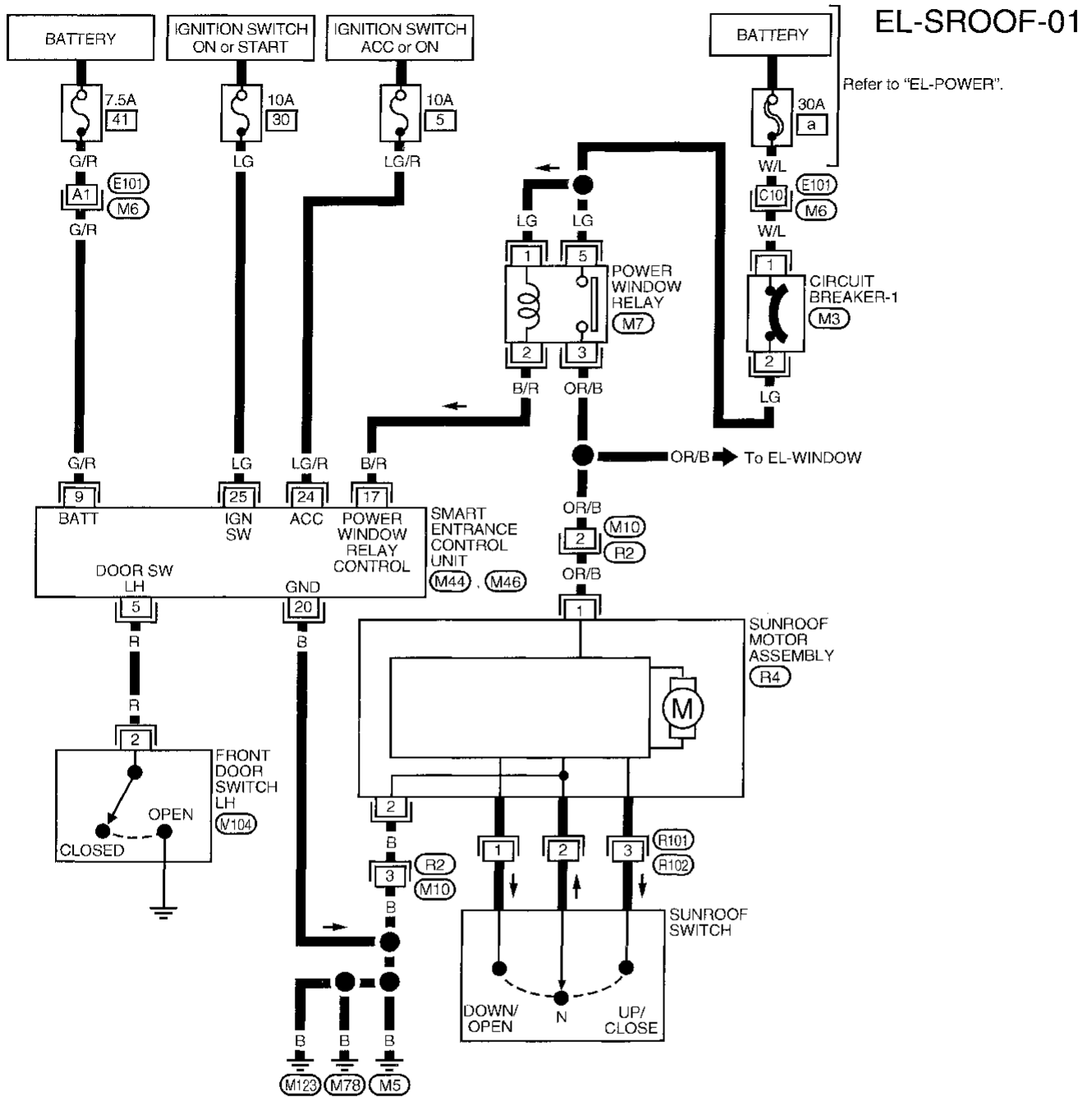
The sunroof will tilt down when in tilt up position and DOWN/OPEN switch is depressed. The sunroof will stop when switch is released, or when sunroof is fully closed.

With sunroof in closed position, pressing DOWN/OPEN switch will cause sunroof to slide open. The sunroof will slide open until switch is released or until it is all the way open. The sunroof will close when in open position, and UP/CLOSE switch is depressed. The sunroof will slide until switch is released, or when sunroof is fully closed.

All automatic operations in sunroof are controlled by internal limit switches located in sunroof motor assembly.

ELECTRIC SUNROOF

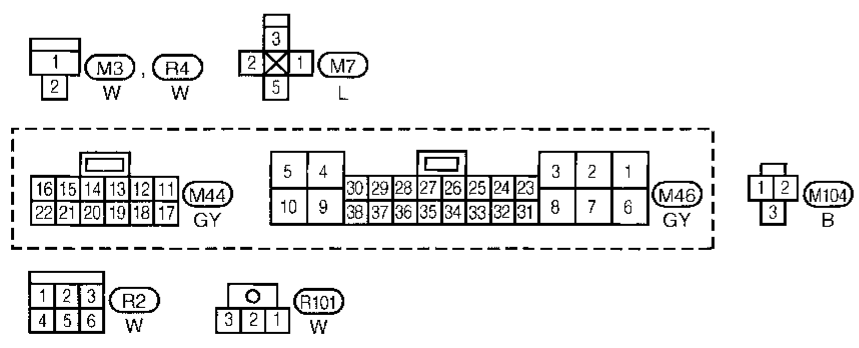
Wiring Diagram -SROOF-



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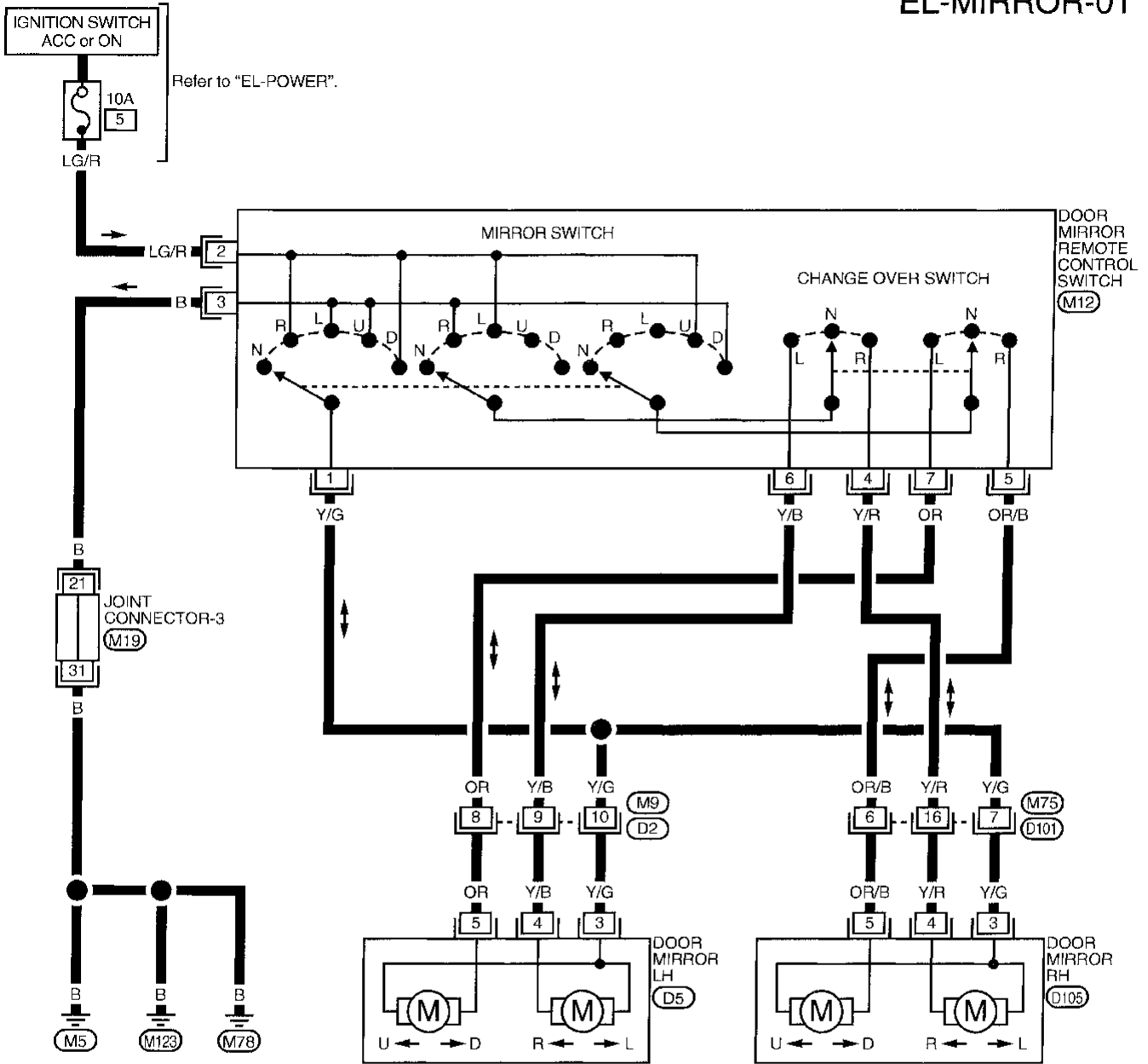


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M6, E101

POWER DOOR MIRROR

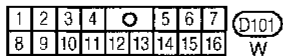
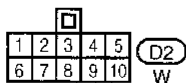
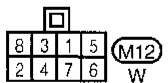
Wiring Diagram -MIRROR-

EL-MIRROR-01



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(M19)

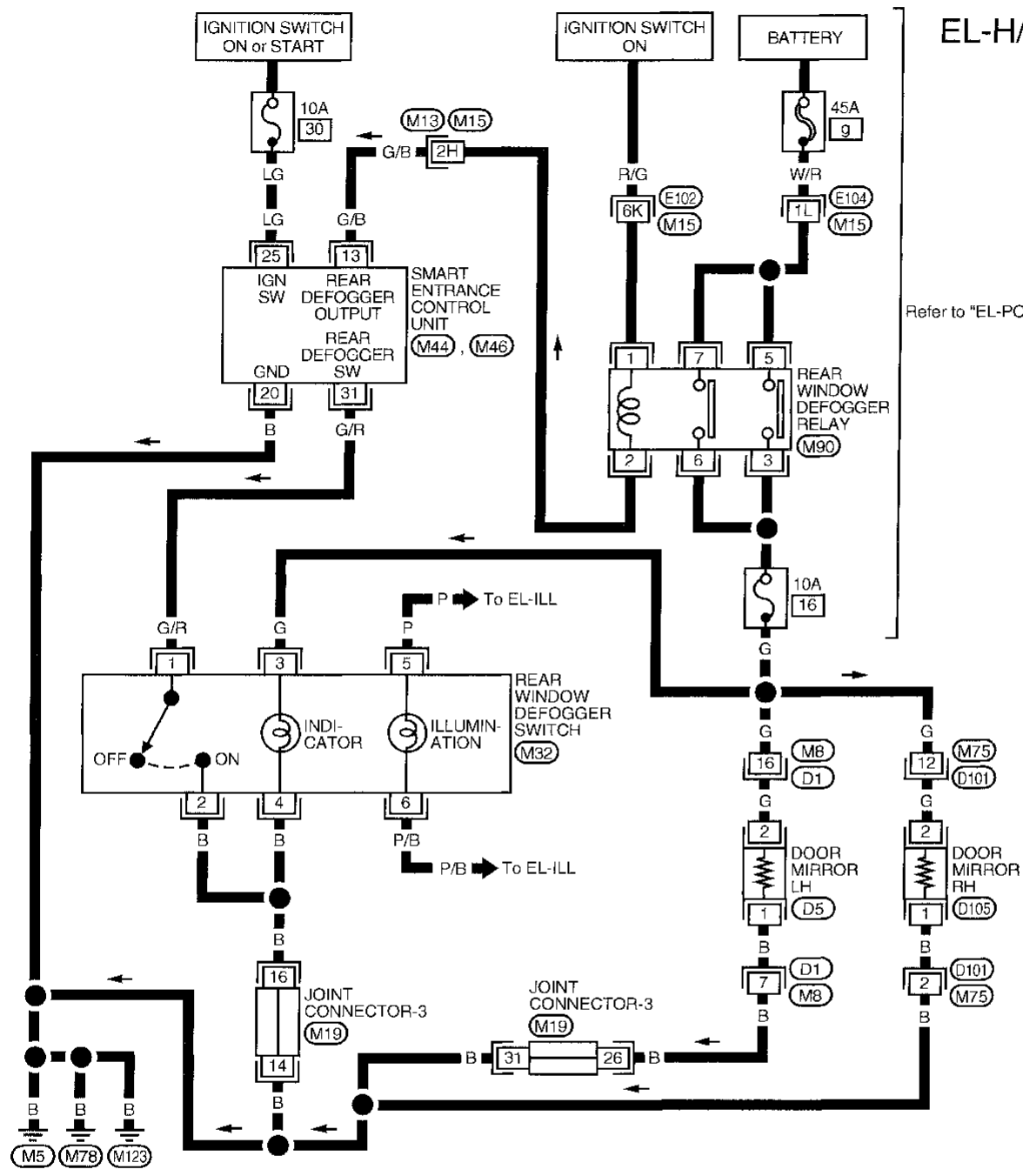


HEATED MIRROR

Wiring Diagram -H/MIRR-

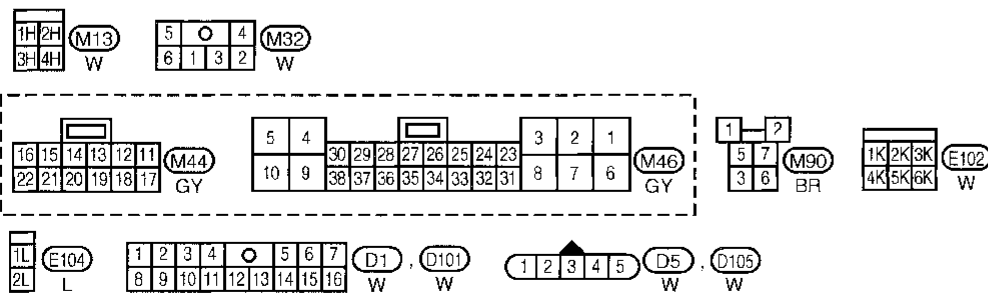
EL-H/MIRR-01

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Refer to "EL-POWER".

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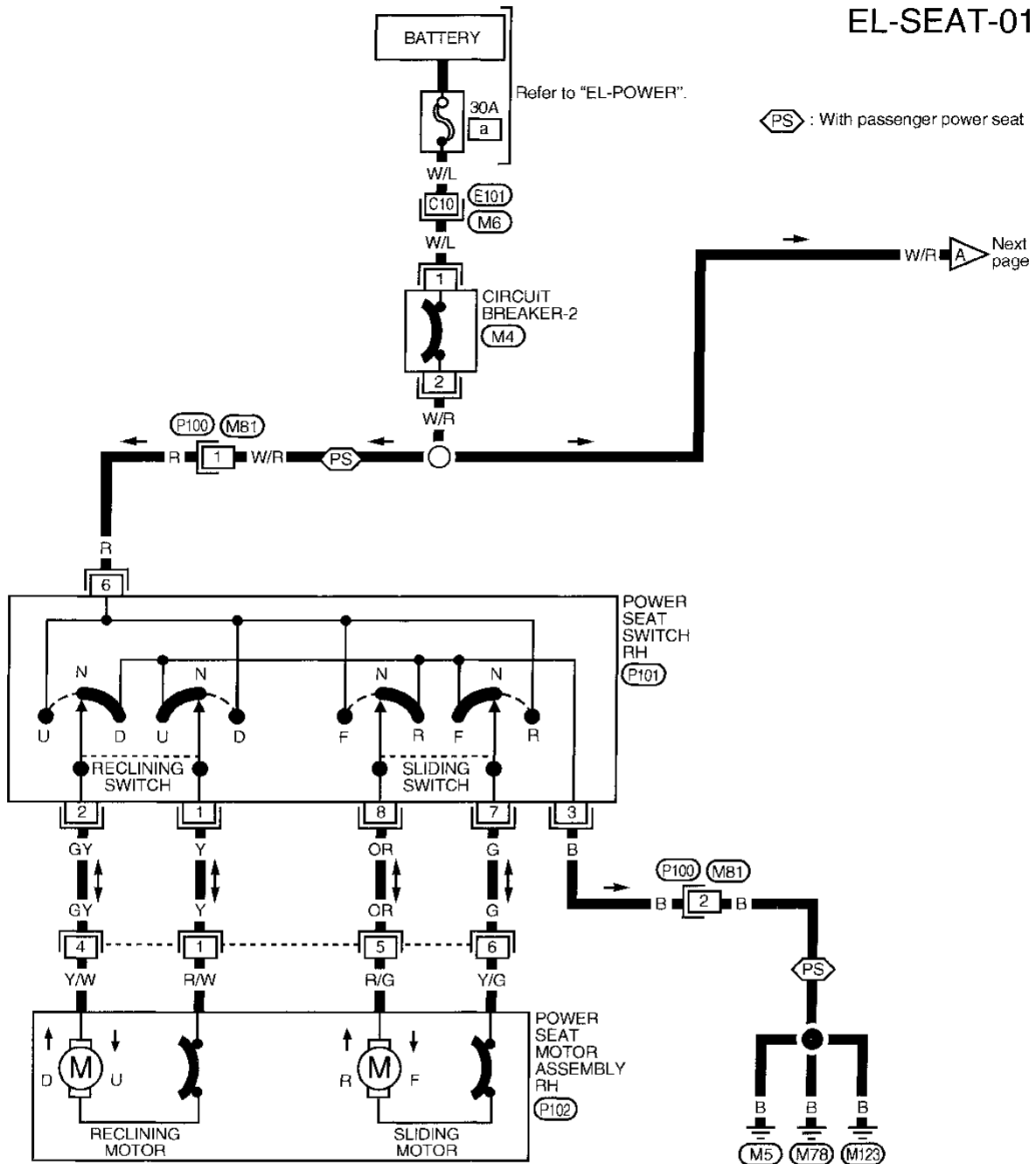
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POWER SEAT

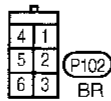
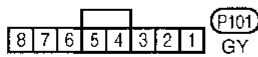
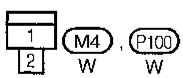
Power Seat/Wiring Diagram -SEAT-

EL-SEAT-01



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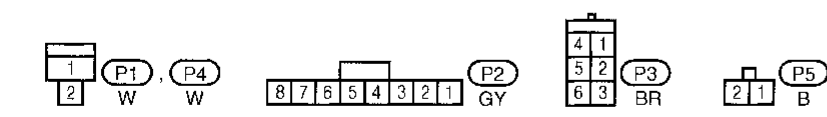
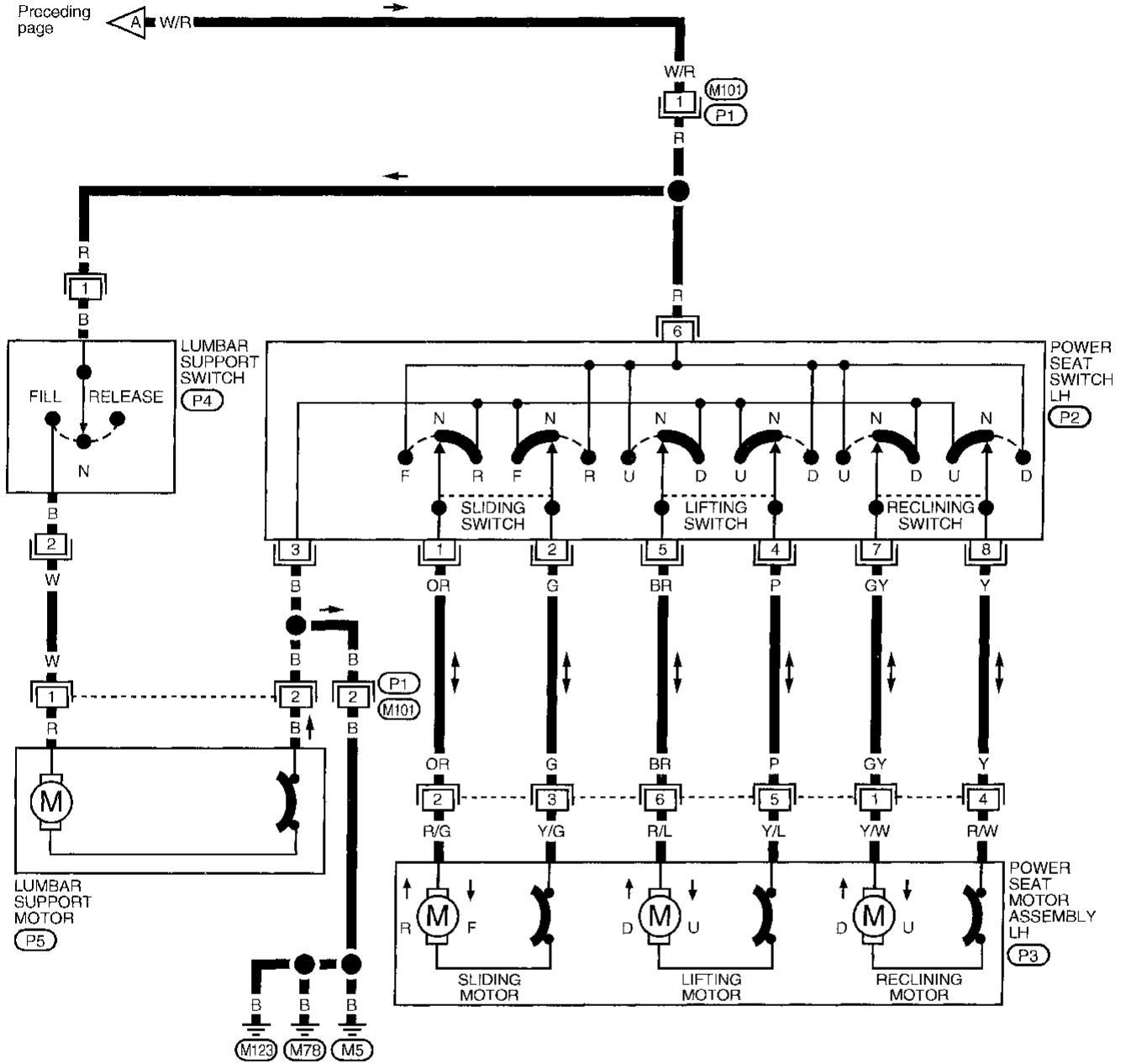
(M6), (E101)



POWER SEAT

Power Seat/Wiring Diagram –SEAT– (Cont'd)

EL-SEAT-02

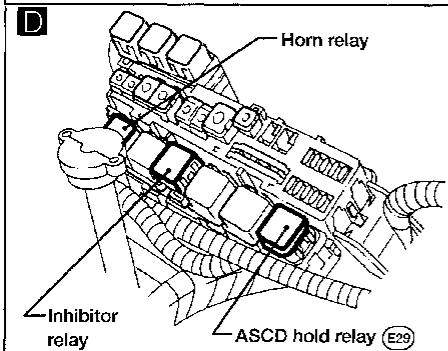
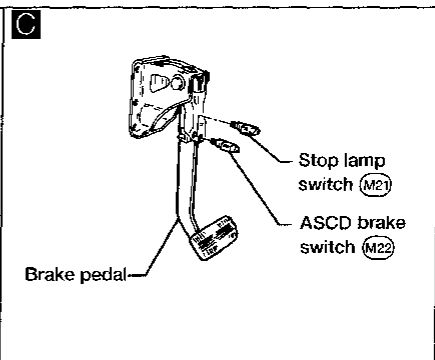
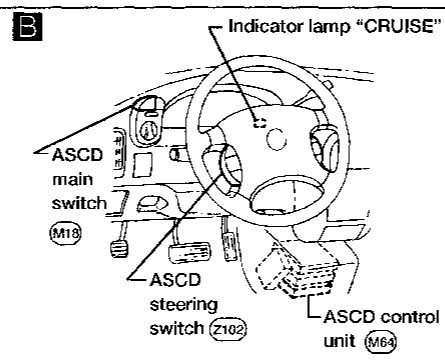
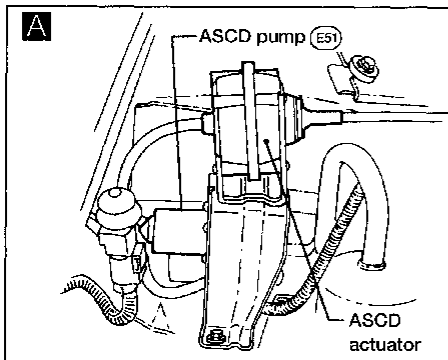
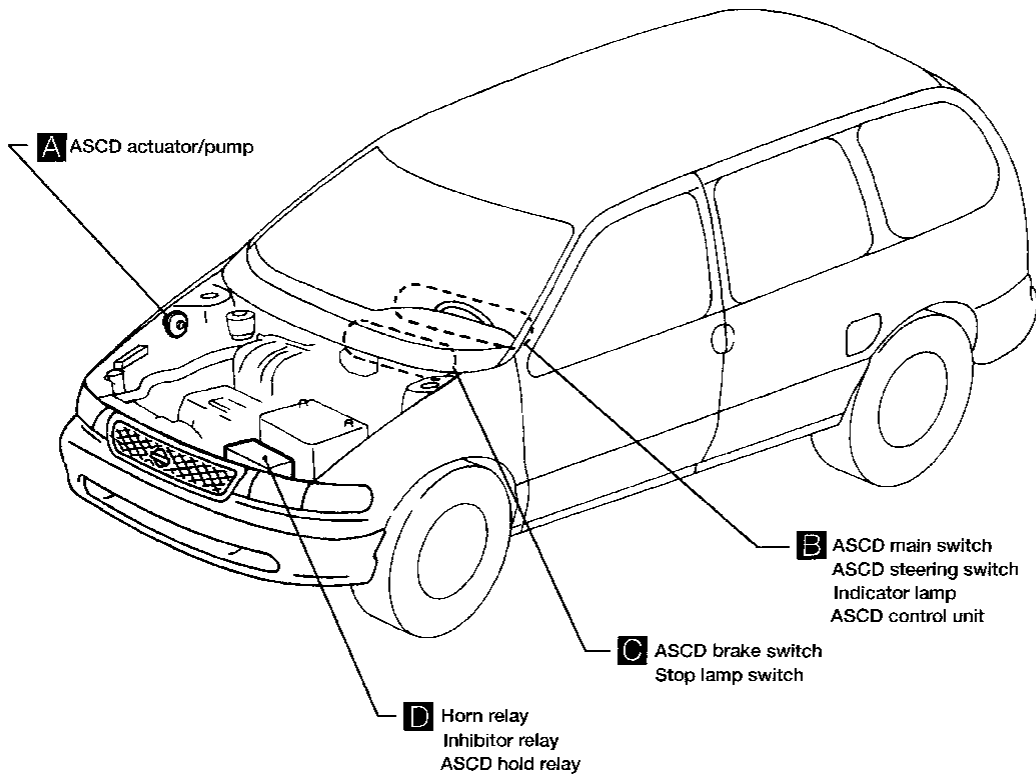


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AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Component Parts and Harness Connector Location



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. 29, located in the fuse block)
- to ASCD main switch terminal ①
- to ASCD hold relay terminal ⑤ and
- to ASCD brake switch terminal ①.

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 ②.

Ground is supplied:

- to ASCD hold relay terminal ①
- through body grounds E3, E14 and E53.

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

- from terminal ③ of the ASCD hold relay
- to ASCD control unit terminal ④.

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 M5, M78 and M123.

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 and
- ASCD brake switch.

A vehicle speed input is supplied:

- to ASCD control unit terminal ⑦
- from terminal ③① of the combination meter.

Power is supplied at all times:

- through 15A fuse (No. 22, located in the fuse block)
- to stop lamp switch terminal ①.

When the brake pedal is depressed, power is supplied:

- from terminal ② of the stop lamp switch
- to ASCD control unit terminal ⑪.

Power is supplied at all times:

- through 15A fuse (No. 44, located in the fuse and fusible link box)
- to horn relay terminal ②
- through terminal ① of the horn relay
- to ASCD steering switch terminal ⑳.

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

- from terminal ㉒ of the ASCD steering switch
- to ASCD control unit terminal ②.

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

- from terminal ㉓ of the ASCD steering switch
- to ASCD control unit terminal ①.

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AUTOMATIC SPEED CONTROL DEVICE (ASCD)

System Description (Cont'd)

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:

- from ASCD brake switch terminal ②
- to ASCD hold relay terminal ⑦
- through ASCD hold relay terminal ⑥
- to inhibitor relay terminal ④
- through inhibitor relay terminal ③
- to ASCD control unit terminal ⑤.

Power is interrupted when:

- the selector lever is placed in ("P") or ("N") or
- the brake pedal is depressed.

OUTPUTS

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

Power is supplied:

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

Ground is supplied to the vacuum motor:

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

Ground is supplied to the air valve:

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

Ground is supplied to the release valve:

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

When the system is activated, power is supplied:

- from terminal ⑬ of the ASCD control unit
- to combination meter terminal ① and
- to A/T control unit terminal ⑳.

Ground is supplied:

- to combination meter terminal ⑫
- through body grounds M5, M78 and M123.

With power and ground supplied, the CRUISE indicator illuminates.

When vehicle speed is approximately 8 km/h (5 MPH) below set speed on A/T models, a signal is sent:

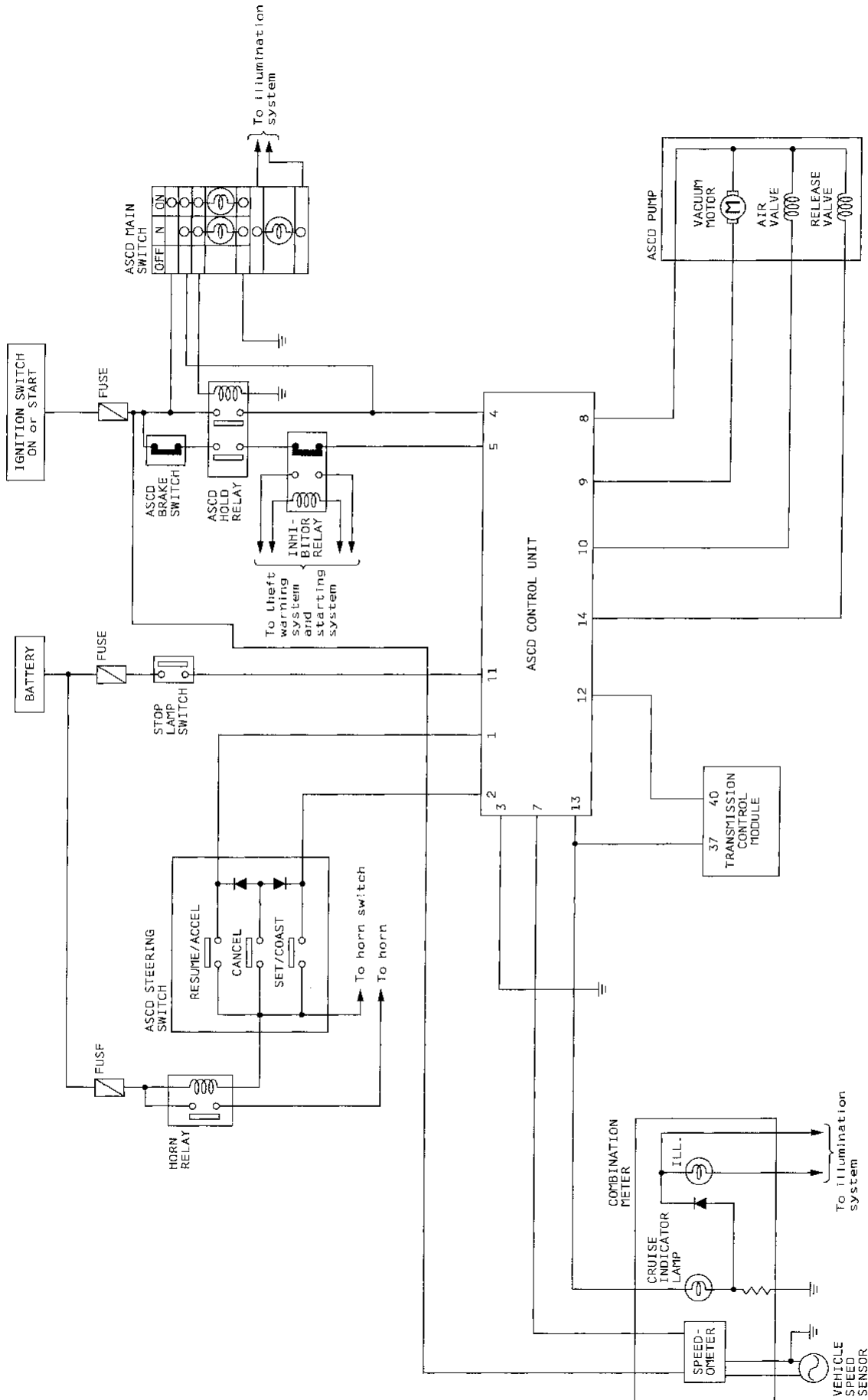
- from terminal ⑫ of the ASCD control unit
- to A/T control unit terminal ⑳.

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

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

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

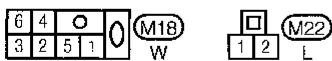
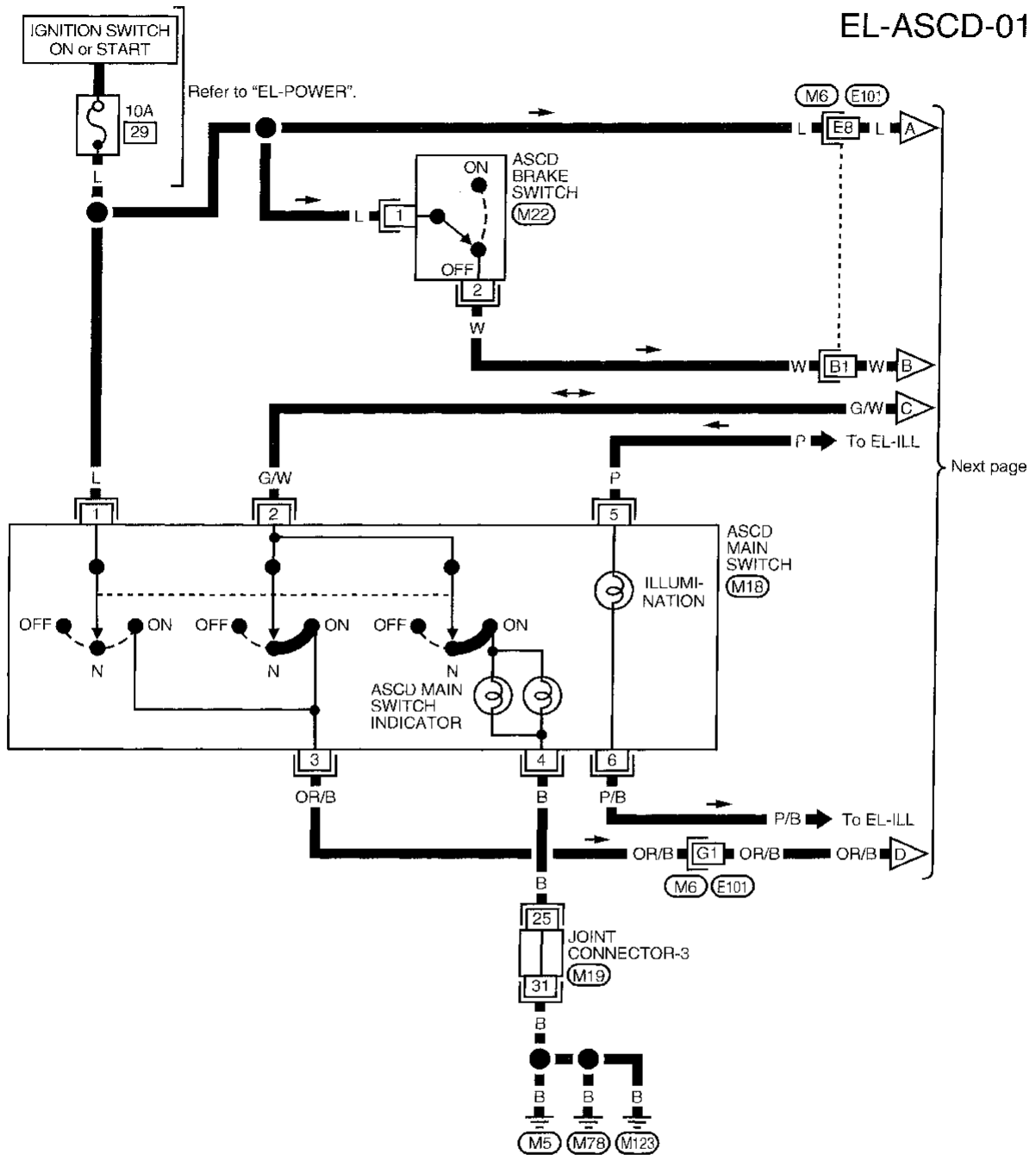
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AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Wiring Diagram -ASCD-

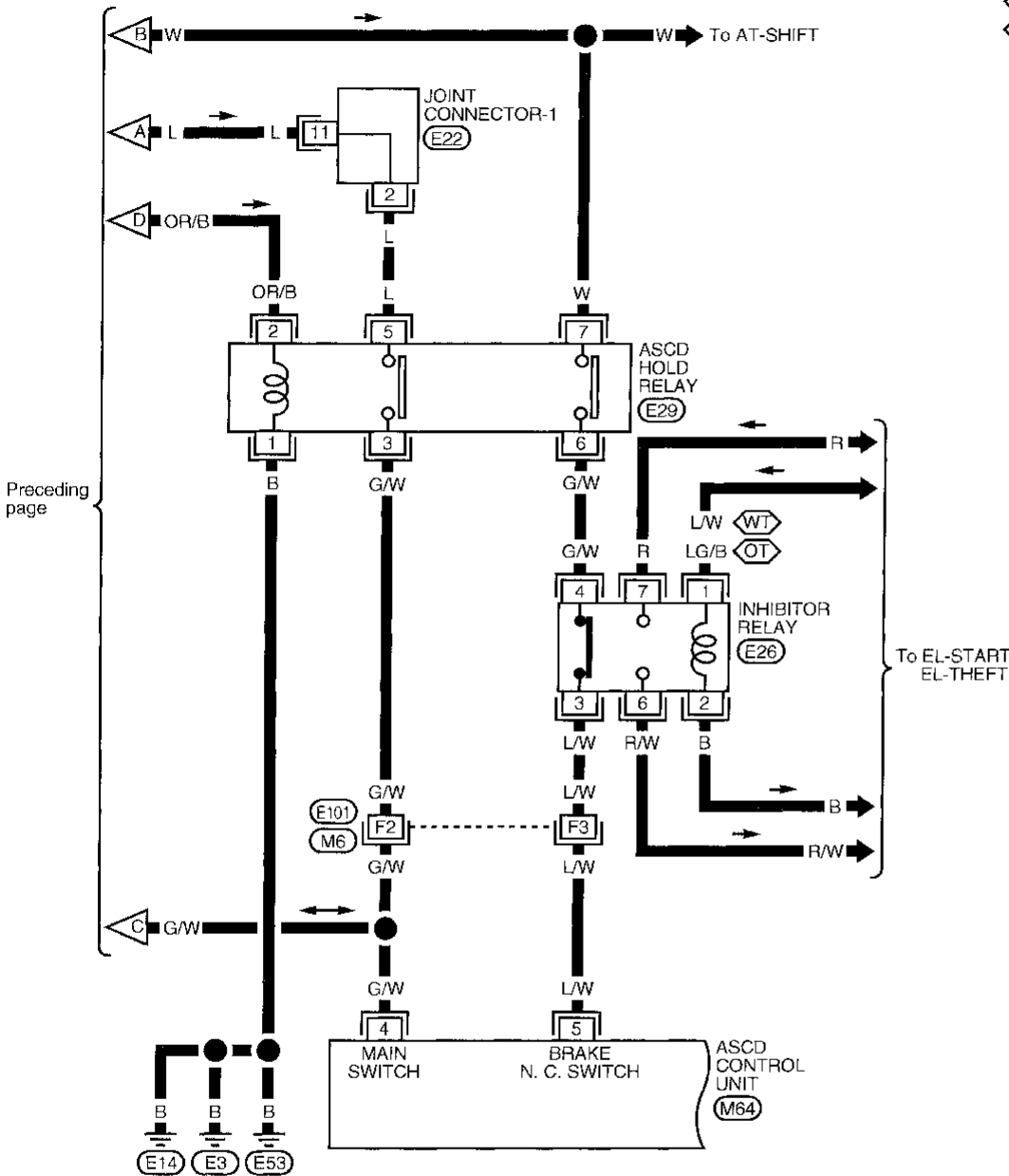


AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Wiring Diagram -ASCD- (Cont'd)

EL-ASCD-02

WT : With theft warning
OT : Without theft warning

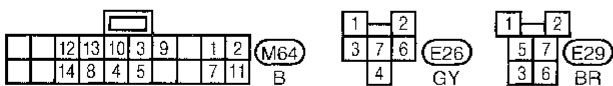


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Refer to last page (Foldout page).

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E22

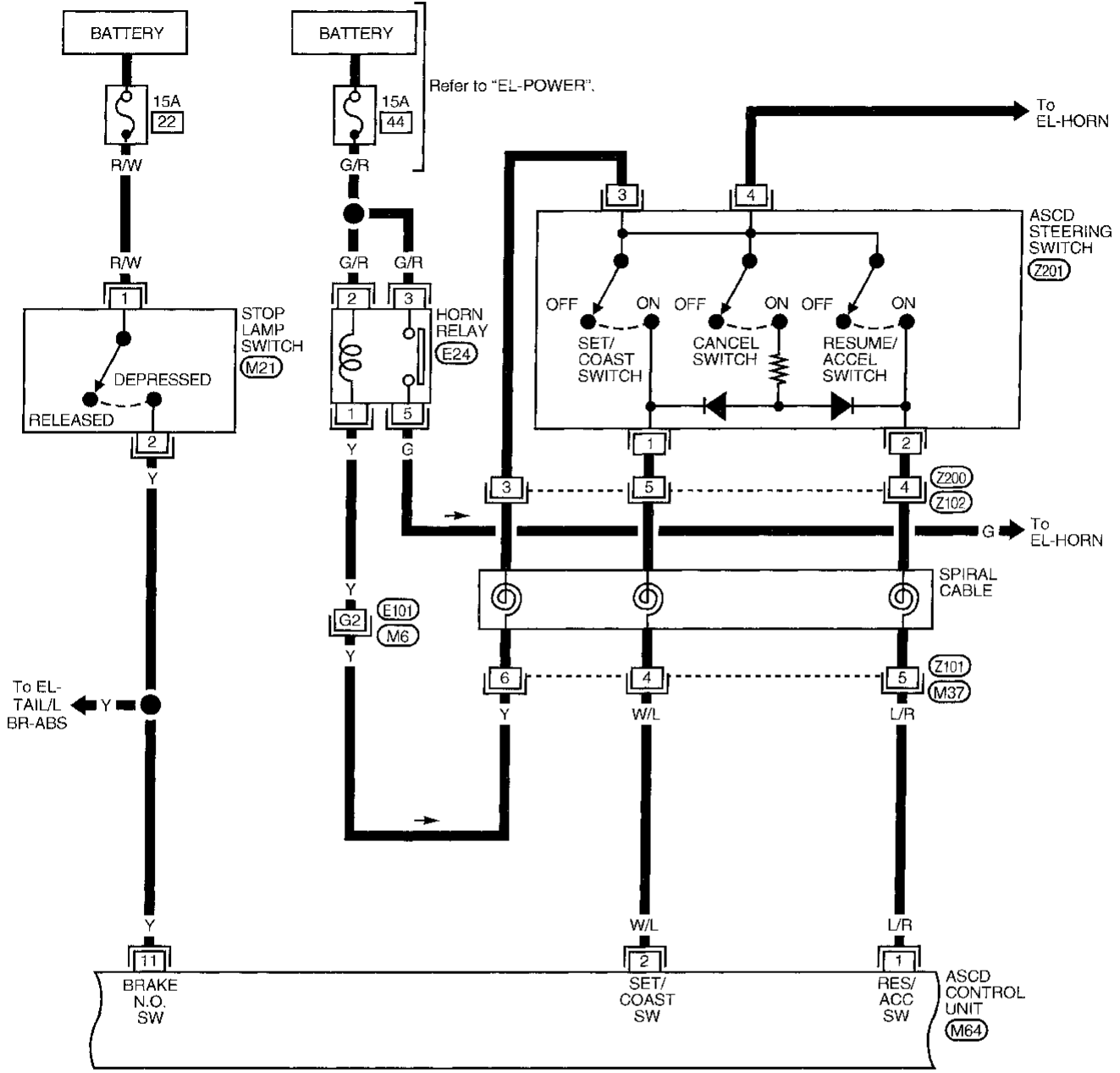
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AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Wiring Diagram -ASCD- (Cont'd)

EL-ASCD-04

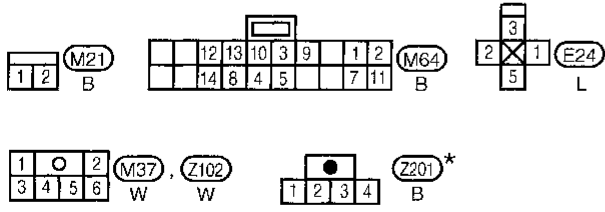


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Refer to last page (Foldout page).

(M6), (E101)

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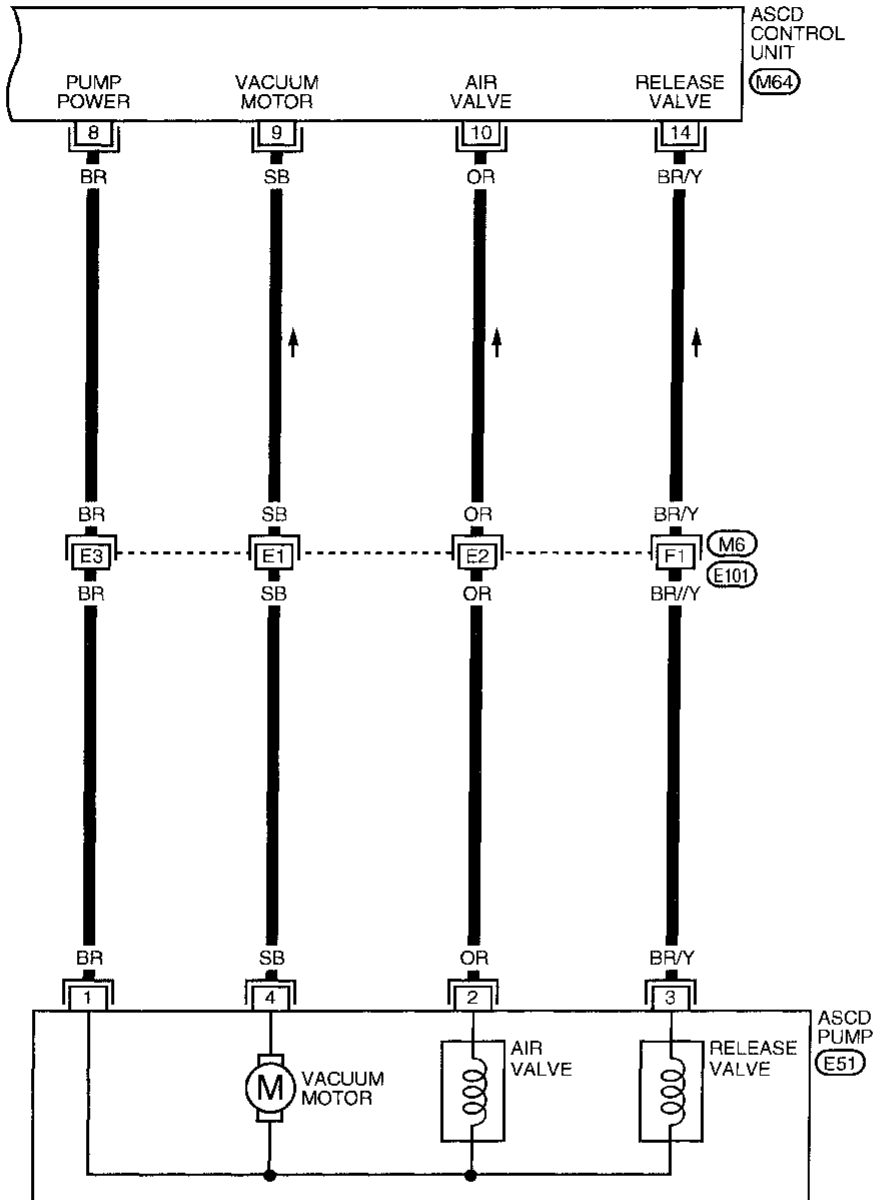


*: This connector is not shown in "HARNESS LAYOUT" of EL section.

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

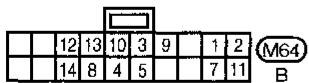
Wiring Diagram -ASCD- (Cont'd)

EL-ASCD-05

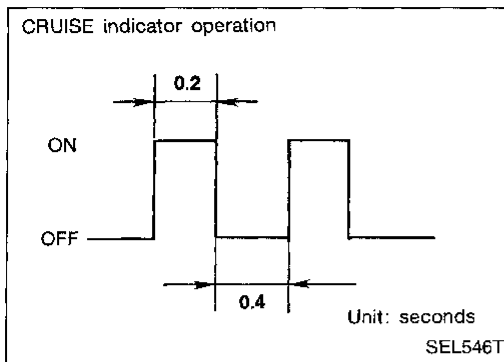


Refer to last page (Foldout page).

(M6), (E101)



AUTOMATIC SPEED CONTROL DEVICE (ASCD)



Fail-Safe System Description

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

Malfunction detection conditions

Detection conditions	ASCD operation during malfunction detection
<ul style="list-style-type: none"> ● ASCD steering (RESUME/ACCEL, CANCEL, SET/COAST) switch is stuck. ● Vacuum motor ground circuit or power circuit is open or shorted. ● Air valve ground circuit or power circuit is open or shorted. ● Release valve ground circuit or power circuit is open or shorted. ● Vehicle speed sensor is faulty. ● ASCD control unit internal circuit is malfunctioning. 	<ul style="list-style-type: none"> ● ASCD is deactivated. ● Vehicle speed memory is canceled.
<ul style="list-style-type: none"> ● ASCD brake switch or stop lamp switch is faulty. 	<ul style="list-style-type: none"> ● ASCD is deactivated. ● Vehicle speed memory is not canceled.

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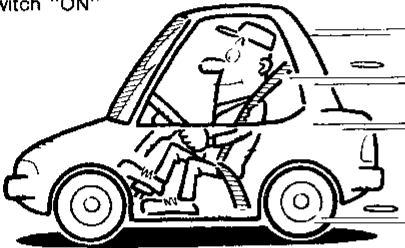
AUTOMATIC SPEED CONTROL DEVICE (ASCD)



CRUISE

SEL174V

SET/COAST
switch "ON"



SEL767P

Brake pedal



SAT797A

Fail-Safe System Check

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

If the indicator lamp blinks, check the following.

- ASCD steering switch. Refer to "DIAGNOSTIC PROCEDURE 5" (EL-171).

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

If the indicator lamp blinks, check the following:

- Vehicle speed sensor. Refer to "DIAGNOSTIC PROCEDURE 6" (EL-172).
- ASCD pump circuit. Refer to "DIAGNOSTIC PROCEDURE 7" (EL-173).
- Replace control unit.

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

If the indicator lamp blinks, check the following:

- ASCD brake/stop lamp switch. Refer to "DIAGNOSTIC PROCEDURE 4" (EL-170).

5. END. (System is OK.)

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses

SYMPTOM CHART

PROCEDURE	Diagnostic procedure								
	EL-166	EL-168	EL-168	EL-169	EL-170	EL-171	EL-172	EL-173	EL-174
REFERENCE PAGE									
SYMPTOM	Fail-safe system check	DIAGNOSTIC PROCEDURE 1 (POWER SUPPLY AND GROUND CIRCUIT CHECK)	DIAGNOSTIC PROCEDURE 2 (ASCD MAIN SWITCH CHECK)	DIAGNOSTIC PROCEDURE 3 (ASCD HOLD RELAY CIRCUIT CHECK)	DIAGNOSTIC PROCEDURE 4 (ASCD BRAKE SWITCH CHECK)	DIAGNOSTIC PROCEDURE 5 (ASCD STEERING SWITCH CHECK)	DIAGNOSTIC PROCEDURE 6 (VEHICLE SPEED SENSOR CHECK)	DIAGNOSTIC PROCEDURE 7 (ASCD PUMP CIRCUIT CHECK)	DIAGNOSTIC PROCEDURE 8 (ASCD ACTUATOR/PUMP CHECK)
ASCD cannot be set. ("CRUISE" indicator lamp does not blink.)		X	X	X		X	X		
ASCD cannot be set. ("CRUISE" indicator lamp blinks. *1)	X				X	X	X	X	
Vehicle speed does not decrease after SET/COAST switch has been pressed.						X			X
Vehicle speed does not return to the set speed after RESUME/ACCEL switch has been pressed. *2						X			X
Vehicle speed does not increase after RESUME/ACCEL switch has been pressed.						X			X
System is not released after CANCEL switch (steering) has been pressed.						X			X
Large difference between set speed and actual vehicle speed.									X
Deceleration is greatest immediately after ASCD has been set.									X

*1:It indicates that system is in fail-safe. After completing diagnostic procedures, perform "Fail-Safe System Check" (EL-166) to verify repairs.

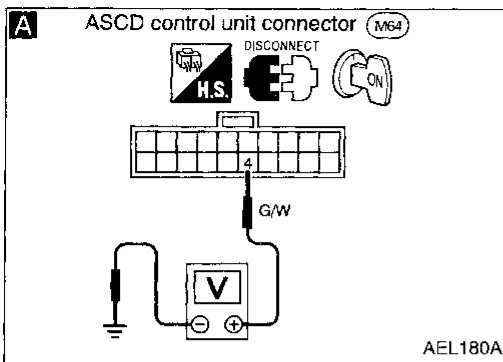
*2:If vehicle speed is greater than 48 km/h (30 MPH) after system has been released, pressing RESUME/ACCEL switch returns vehicle speed to the set speed previously achieved. However, doing so when the ASCD main switch is turned to "OFF", vehicle speed will not return to the set speed since the memory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

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses (Cont'd)

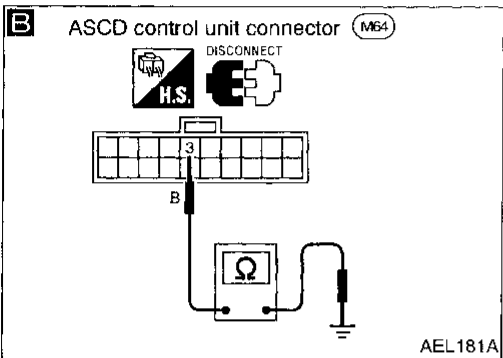
DIAGNOSTIC PROCEDURE 1

(POWER SUPPLY AND GROUND CIRCUIT CHECK)



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

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



A CHECK POWER SUPPLY CIRCUIT FOR ASCD CONTROL UNIT.

1. Disconnect ASCD control unit connector.
2. Turn ignition switch ON.
3. Turn ASCD main switch ON.
4. Check voltage between ASCD control unit connector terminal (4) and body ground.

Battery voltage should exist.

NG → Go to DIAGNOSTIC PROCEDURE 3 (ASCD HOLD RELAY CIRCUIT CHECK). Refer to EL-169.

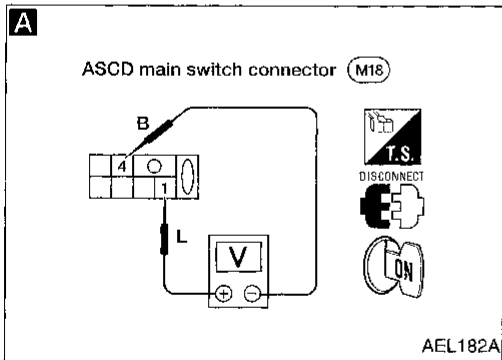
- B**
- #### CHECK GROUND CIRCUIT FOR ASCD CONTROL UNIT.
- Check continuity between ASCD control unit harness terminal (3) and body ground.

NG → Repair harness.

OK → Go to next procedure.

DIAGNOSTIC PROCEDURE 2

(ASCD MAIN SWITCH CHECK)



A CHECK POWER SUPPLY FOR ASCD MAIN SWITCH.

1. Disconnect main switch connector.
2. Measure voltage between main switch harness terminals (1) and (4).

Battery voltage should exist.

NG → Check the following:

- 10A fuse (No. 29, located in the fuse block)
- Harness for open or short between fuse and ASCD main switch
- Ground circuit for ASCD main switch

OK → Check ASCD main switch. Refer to EL-176.

NG → Replace ASCD main switch.

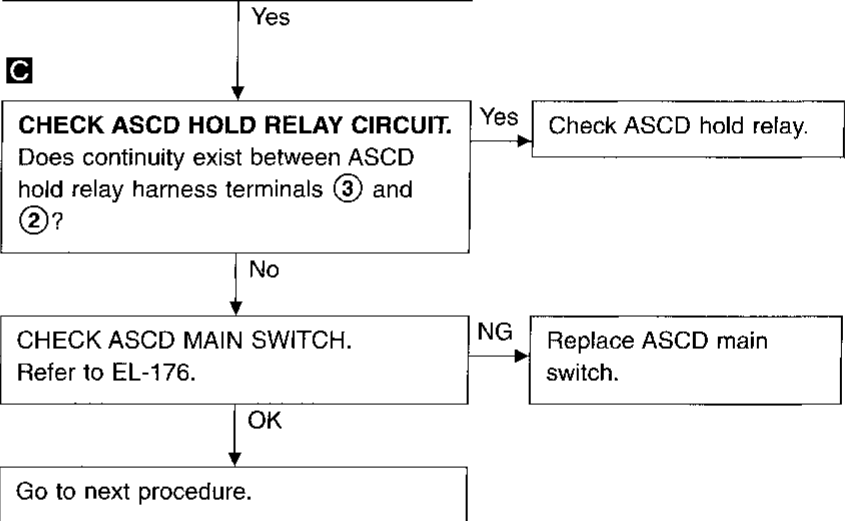
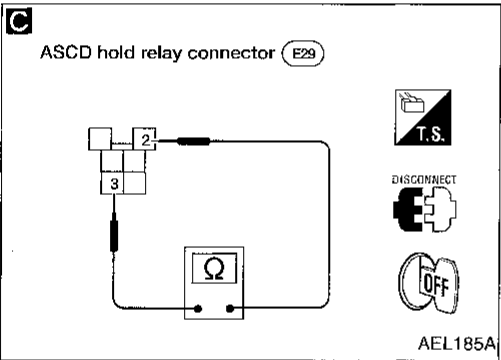
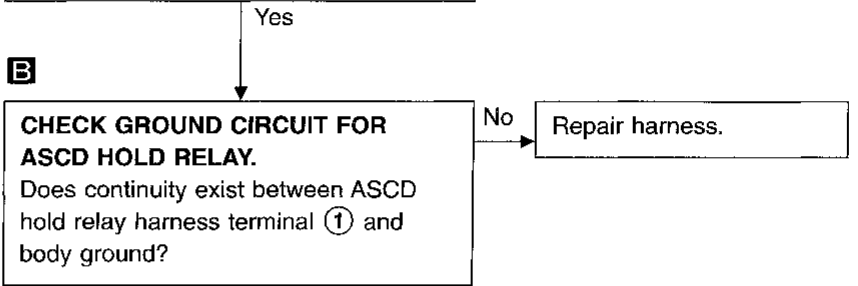
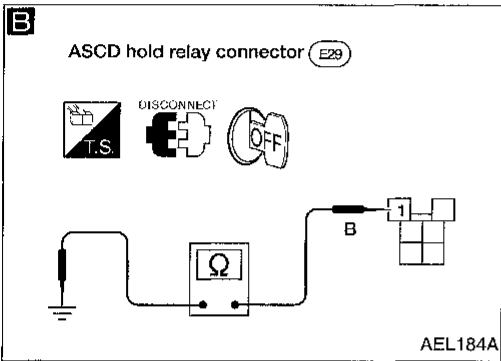
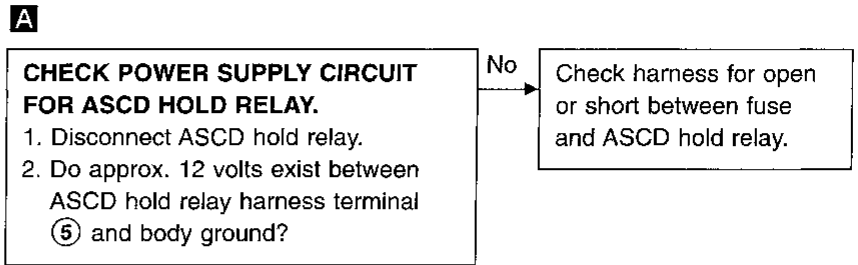
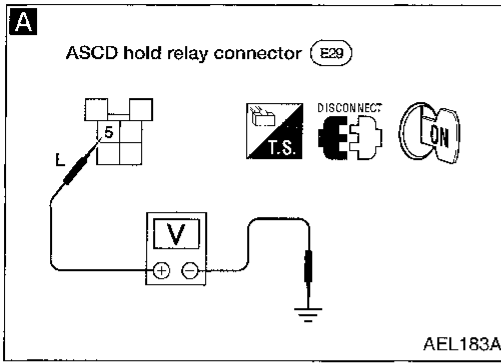
OK → Go to next procedure.

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 3

(ASCD HOLD RELAY CIRCUIT CHECK)



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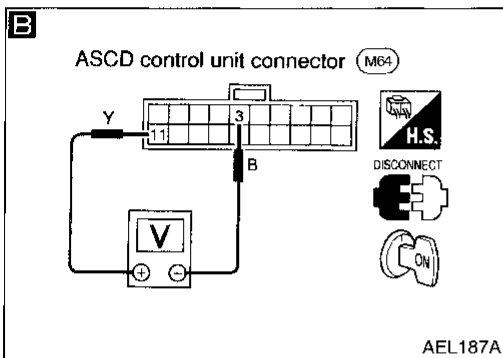
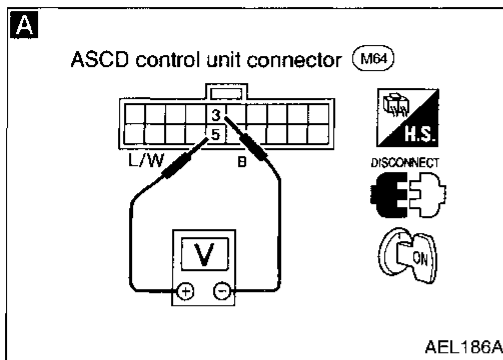
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AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 4

(ASCD BRAKE SWITCH CHECK)



A

CHECK CUT-OFF CIRCUIT FOR ASCD CONTROL UNIT.

1. Disconnect ASCD control unit connector.
2. Turn ignition switch ON.
3. Turn ASCD main switch ON.
4. Measure voltage between ASCD control unit connector terminals (5) and (3). **When brake pedal is depressed or A/T selector lever is in ("N") or ("P") position:**

Approx. 0V

When brake pedal is released or A/T selector lever is in any positions other than ("N") or ("P"):
Battery voltage should exist.

NG

CHECK THE FOLLOWING:

- ASCD brake switch Refer to EL-176
- Inhibitor switch Refer to EL-176
- ASCD hold relay Refer to EL-5
- Inhibitor relay Refer to EL-5
- Harness for open or short

OK

B

CHECK STOP LAMP SWITCH CIRCUIT.

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

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

NG

CHECK THE FOLLOWING:

- Harness for open or short between ASCD control unit and stop lamp switch
- 15A fuse (No. 22, located in the fuse block)
- Stop lamp switch Refer to EL-176

OK

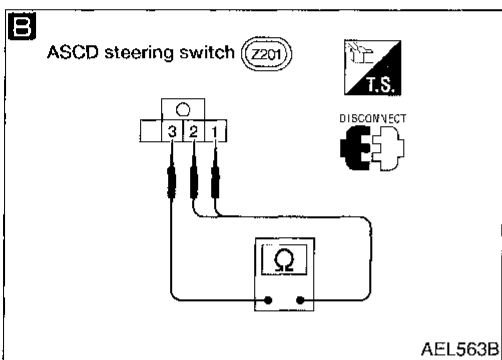
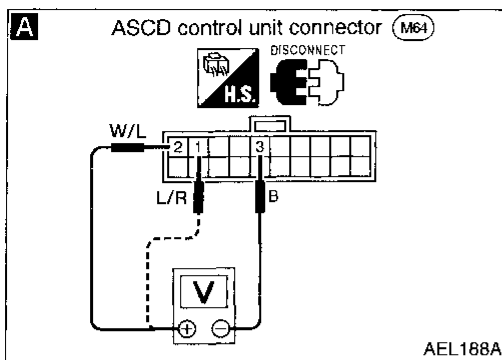
ASCD brake switch is OK.

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 5

(ASCD STEERING SWITCH CHECK)



- A**
- CHECK ASCD STEERING SWITCH CIRCUIT FOR ASCD CONTROL UNIT.**
1. Disconnect ASCD control unit connector.
 2. Check voltage between ASCD control unit harness terminals.

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

OK → ASCD steering switch is OK.

NG

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

NG → Check the following:

- 15A fuse (No. 44, located in the fuse and fusible link box)
- Horn relay
- Harness for open or short

OK

B

CHECK ASCD STEERING SWITCH.
Check continuity between terminals by pushing each button.

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

NG → Replace ASCD steering switch.

OK

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

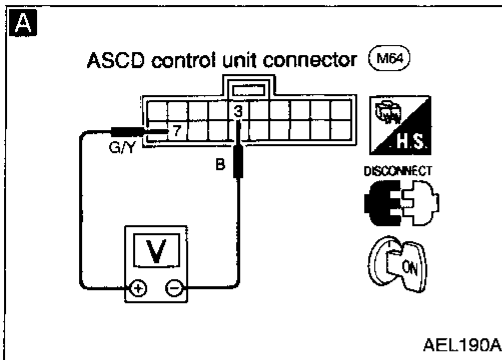
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AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 6

(VEHICLE SPEED SENSOR CHECK)



A

CHECK VEHICLE SPEED SENSOR CIRCUIT.

1. Insert wheel chocks and jack up front of vehicle.
2. Disconnect ASCD control unit connector.
3. Connect voltmeter between ASCD control unit harness terminals ⑦ and ③.
4. Slowly turn front wheel.
5. Check deflection of voltmeter pointer.

OK

Vehicle speed sensor is OK.

NG

Does speedometer operate normally?

No

Check speedometer and vehicle speed sensor circuit. Refer to EL-95.

Yes

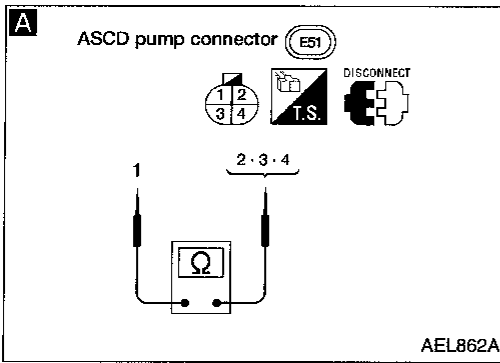
Check harness for open or short between ASCD control unit terminal ⑦ and combination meter terminal ③①.

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 7

(ASCD PUMP CIRCUIT CHECK)



A

CHECK ASCD PUMP.

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

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

NG

Replace ASCD pump.

OK

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

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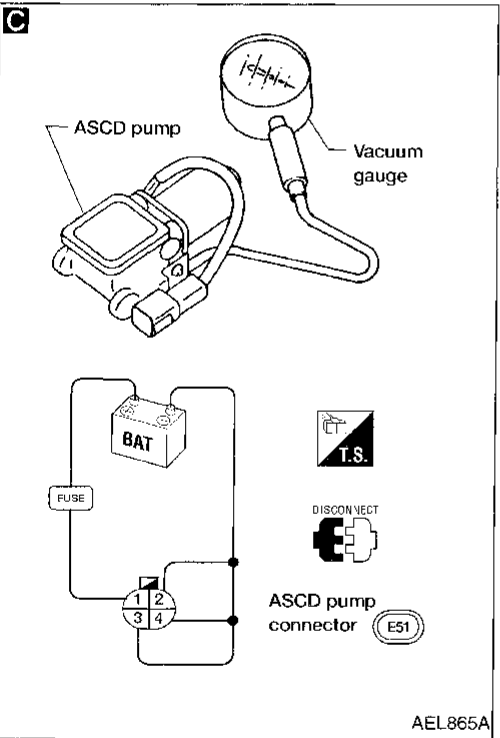
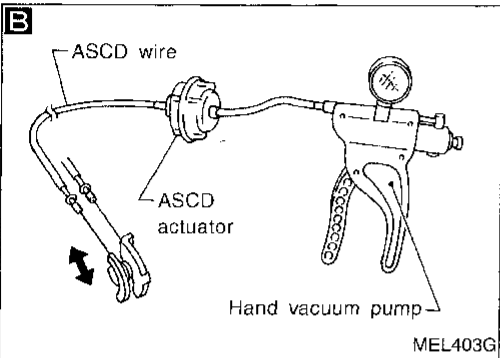
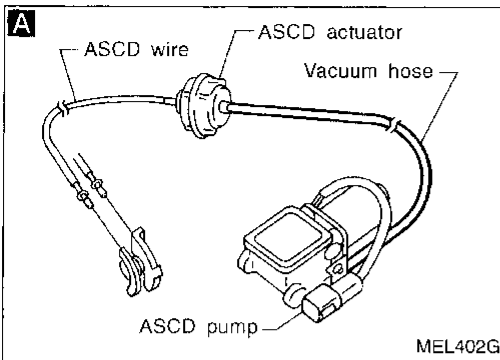
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AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 8

(ASCD ACTUATOR/PUMP CHECK)



A

CHECK VACUUM HOSE.

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

NG → Repair or replace hose.

OK

B

CHECK ASCD WIRE.

Check wire for improper installation, rust formation or breaks.

NG → Repair or replace wire. Refer to "ASCD WIRE ADJUSTMENT", EL-175.

OK

B

CHECK ASCD ACTUATOR.

1. Disconnect vacuum hose from ASCD actuator.
2. Apply -40 kPa (-0.400 bar, -0.41 kg/cm², -5.8 psi) vacuum to ASCD actuator with hand vacuum pump.

ASCD wire should move to pull throttle drum.

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

Vacuum pressure decrease:

Less than 2.7 kPa (0.0270 bar, 0.028 kg/cm², 0.39 psi)

NG → Replace ASCD actuator.

OK

C

CHECK ASCD PUMP.

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

NG → Replace ASCD pump.

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

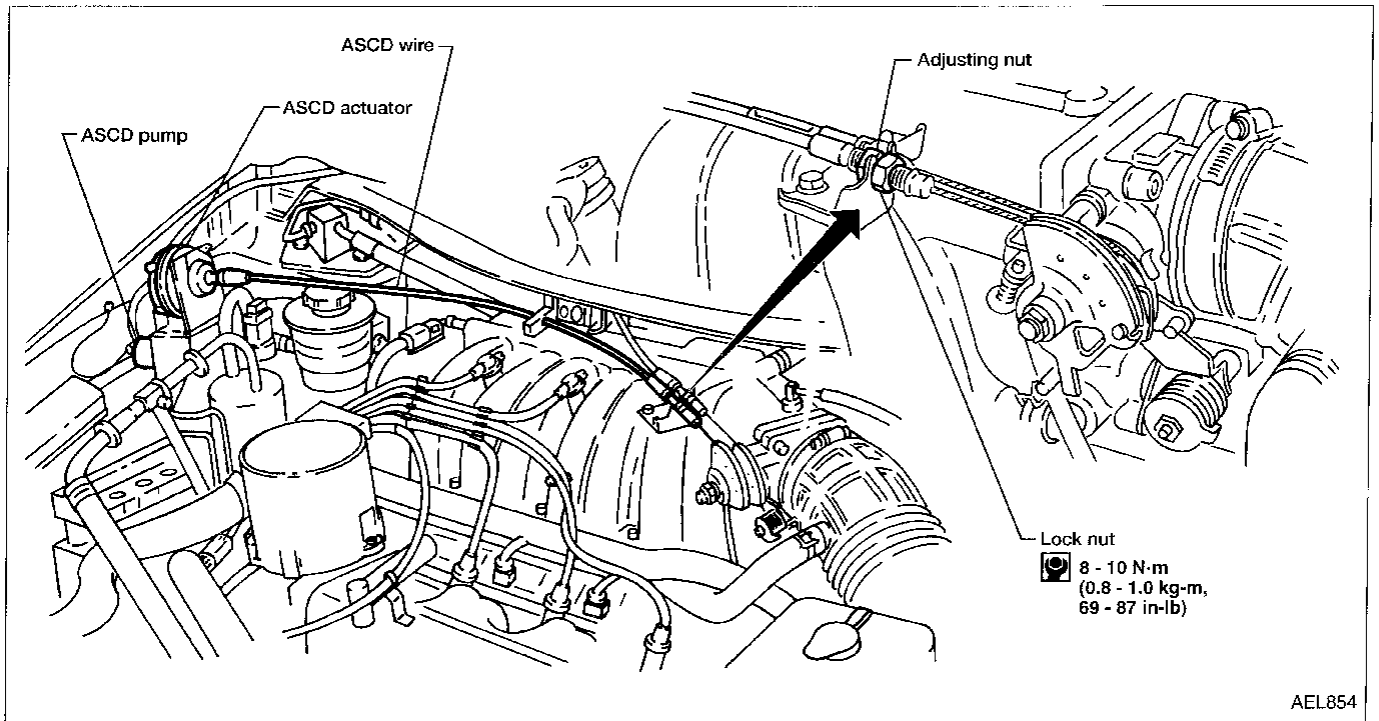
A vacuum pressure of at least -35 kPa (-0.350 bar, -0.36 kg/cm², -5.1 psi) should be generated.

OK

INSPECTION END

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 overly tighten ASCD wire during adjustment.

Confirm that accelerator wire is properly adjusted.

- For accelerator cable adjustment, refer to FE section ("Adjusting Accelerator Wire", "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 brake switch adjustment, refer to BR section ("Adjustment", "BRAKE PEDAL AND BRACKET").

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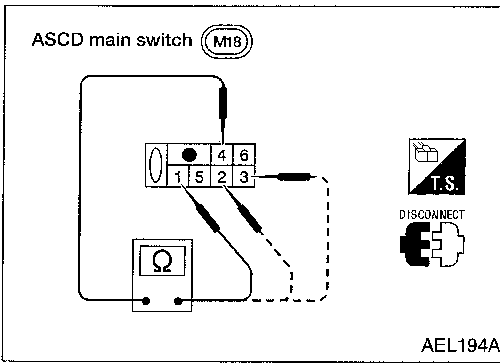
AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses (Cont'd)

ELECTRICAL COMPONENT INSPECTION

ASCD main switch

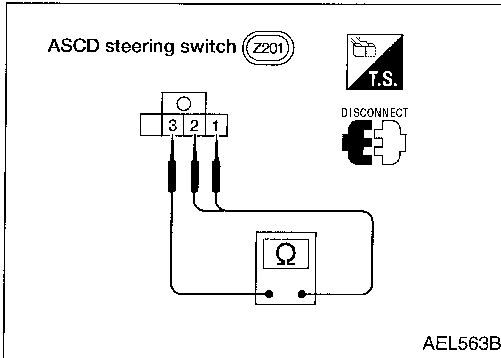
Check continuity between terminals by pushing switch to each position.



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

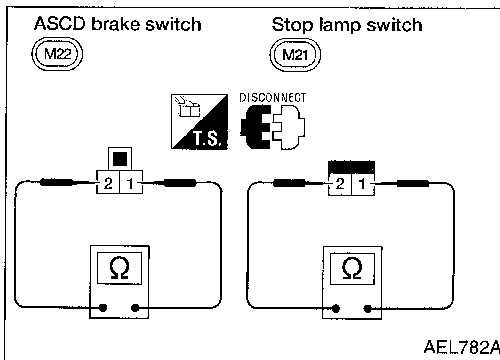
ASCD steering switch

Check continuity between terminals by pushing each button.



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

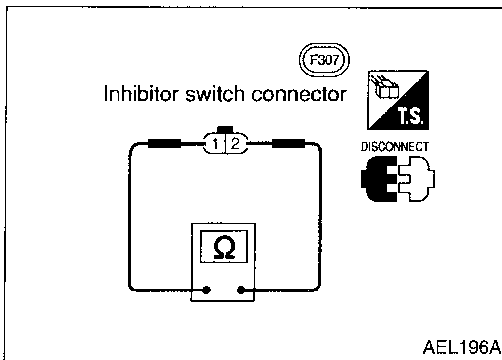
ASCD brake switch and stop lamp switch



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

Check each switch after adjusting brake pedal — refer to BR section.

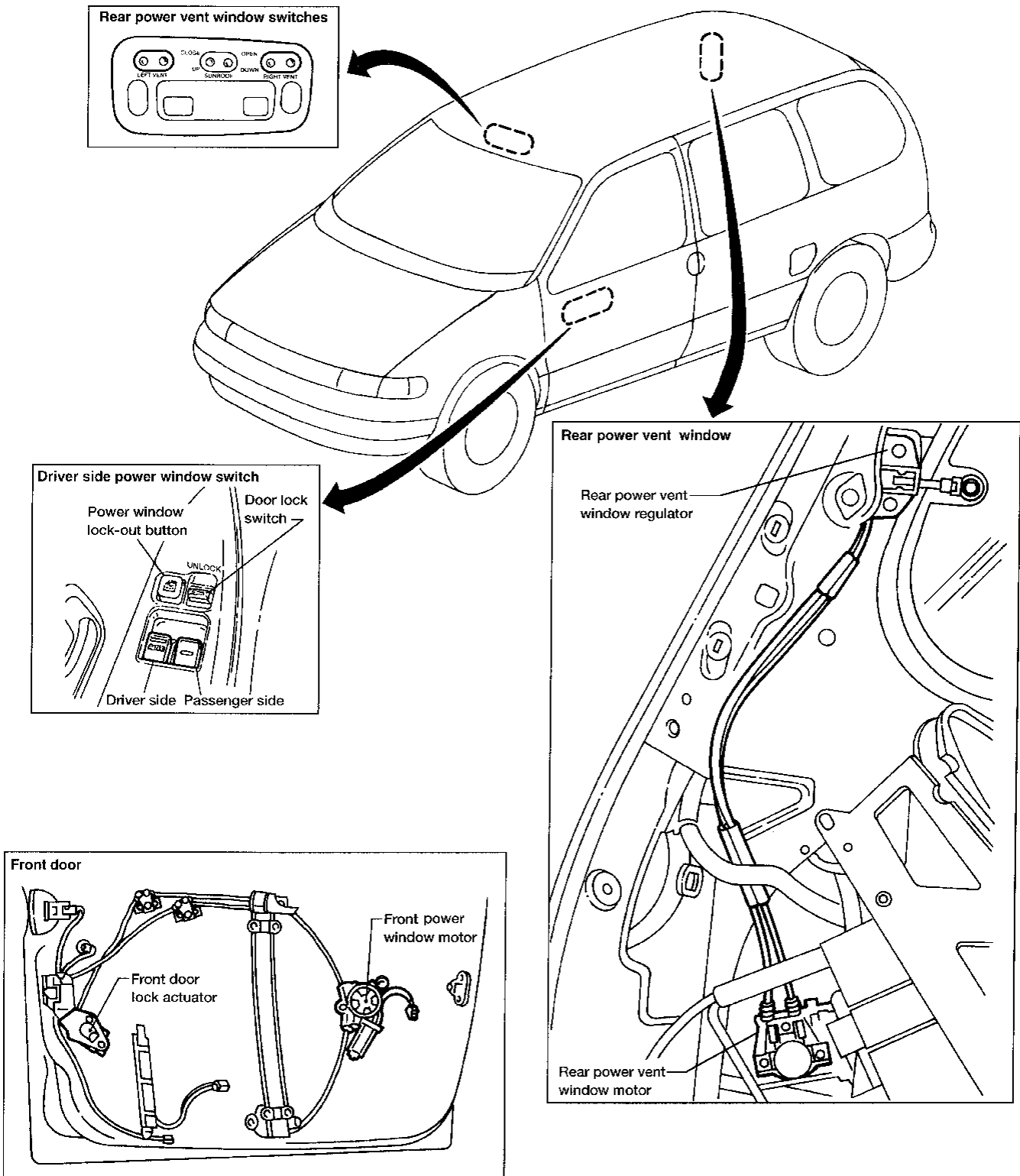
Inhibitor switch



Condition	Continuity
When shift lever position is "N" or "P"	Yes
When shift lever position is not "N" or "P"	No

POWER WINDOW

Component Layout



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System Description

Power is supplied at all times:

- from 7.5A fuse (No. 41, located in the fuse and fusible link box)
- to smart entrance control unit terminal 9, and
- from 30A fusible link (Letter a, located in the fuse and fusible link box)
- to circuit breaker-1 terminal 1
- through circuit breaker-1 terminal 2
- to power window relay terminal 5 and
- power window relay terminal 1.

Ground is supplied:

- to main power window and door lock/unlock switch terminals 5 and 6
- to smart entrance control unit terminal 20, and
- to rear power vent window switch terminal 4
- through body grounds M5, M78 and M123.

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

- from 10A fuse (No. 30, located in the fuse block)
- to smart entrance control unit terminal 25.

Ground is then supplied to power window relay terminal 2 from smart entrance control unit terminal 17.

With power and ground supplied, the power window relay is energized and power is supplied:

- from power window relay terminal 3
- to main power window and door lock/unlock switch terminals 1 and 2
- to front power window switch RH terminal 6, and
- to rear power vent window switch terminal 3.

When the ignition switch is turned to the OFF position, the power windows will still operate for up to approximately 15 minutes unless the driver's door is opened.

FRONT DOOR LH

Window Up

When the main power window and door lock/unlock switch is pressed in the UP position, power is supplied:

- from main power window and door lock/unlock switch terminal 15
- to front power window motor LH terminal 2.

Ground is supplied:

- to front power window motor LH terminal 1
- from main power window and door lock/unlock switch terminal 16.

With power and ground supplied, the front power window motor LH will raise the window until the switch is released.

Window Down

When the main power window and door lock/unlock switch is pressed in the DOWN position, power is supplied:

- from main power window and door lock/unlock switch terminal 16
- to front power window motor LH terminal 1.

Ground is supplied:

- to front power window motor LH terminal 2
- from main power window and door lock/unlock switch terminal 15.

With power and ground supplied, the power window motor LH will lower the window until the switch is released.

Auto Down

If the main power window and door lock/unlock switch is pressed in the down position for more than three seconds, the auto down circuit will bypass the switch and continue to lower the window until it is completely lowered.

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

POWER WINDOW

System Description (Cont'd)

Power and ground are supplied to the front power window motor LH in the same manner as outlined in "Window down".

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:

- from main power window and door lock/unlock switch terminal (13, 14)
- to front power window switch RH terminal (4, 3).

Subsequent operations are the same as those outlined under "Operation by front power window switch RH".

Operation by front power window switch RH

Power is supplied:

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

Ground is supplied:

- to front power window motor RH terminal (1, 2)
- through front power window switch RH terminal (1, 2)
- to front power window switch RH terminal (3, 4)
- through main power window and door lock/unlock switch terminal (14, 13)
- to main power window and door lock/unlock switch terminals 5 and 6
- through body grounds M5, M78 and M123.

Lock Feature

If the main power window and door lock/unlock switch window lockout switch is in the LOCK position, the front power window switch RH ground circuit is interrupted. When this happens, the front power window motor RH cannot be operated by the front power window switch RH or the main power window and door lock/unlock switch.

REAR POWER VENT WINDOW LH

When the rear power vent window switch LEFT VENT is pressed in the OPEN position, power is supplied:

- through rear power vent window switch terminal 6
- to rear power vent window motor LH terminal 1.

Ground is supplied:

- through rear power vent window switch terminal 5
- to rear power vent window motor LH terminal 2.

With power and ground supplied, the rear power vent window motor LH will open the vent window until the switch is released.

When the rear power vent window switch LEFT VENT is pressed in the CLOSE position, power is supplied:

- through rear power vent window switch terminal 5
- to rear power vent window motor LH terminal 2.

Ground is supplied:

- through rear power vent window switch terminal 6
- to rear power vent window motor LH terminal 1.

With power and ground supplied, the rear power vent window motor will close the vent window until the switch is released.

REAR POWER VENT WINDOW RH

When the rear power vent window switch RIGHT VENT is pressed in the OPEN position, power is supplied:

- through rear power vent window switch terminal 2
- to rear power vent window motor RH terminal 1.

POWER WINDOW

System Description (Cont'd)

Ground is supplied:

- through rear power vent window switch terminal ①
- to rear power vent window motor RH terminal ②.

With power and ground supplied, the rear power vent window motor RH will open the vent window until the switch is released.

When the rear power vent window switch RIGHT VENT is pressed in the CLOSE position, power is supplied:

- through rear power vent window switch terminal ①
- to rear power vent window motor RH terminal ②.

Ground is supplied:

- through rear power vent window switch terminal ②
- to rear power vent window motor RH terminal ①.

With power and ground supplied, the rear power vent window motor RH will close the vent window until the switch is released.

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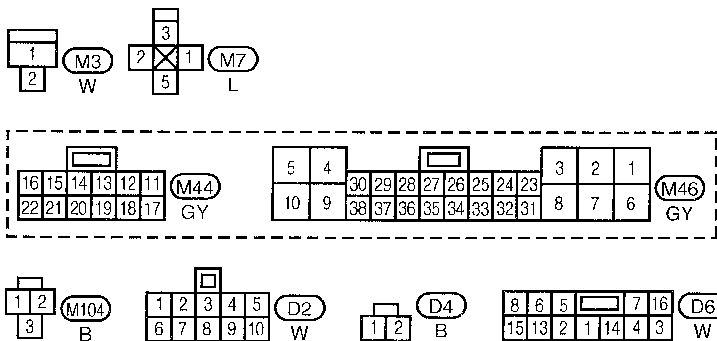
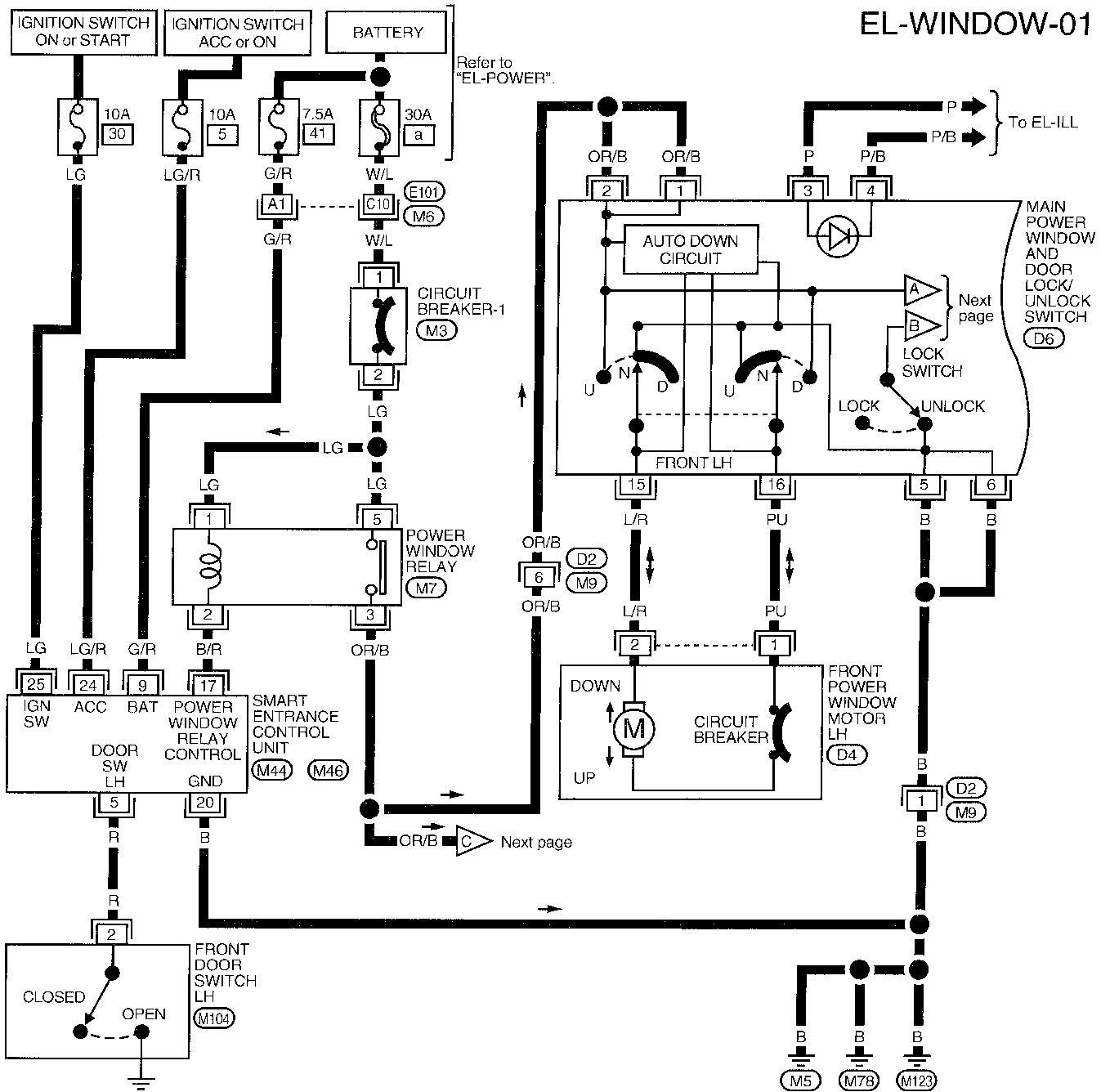
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POWER WINDOW

Wiring Diagram -WINDOW-



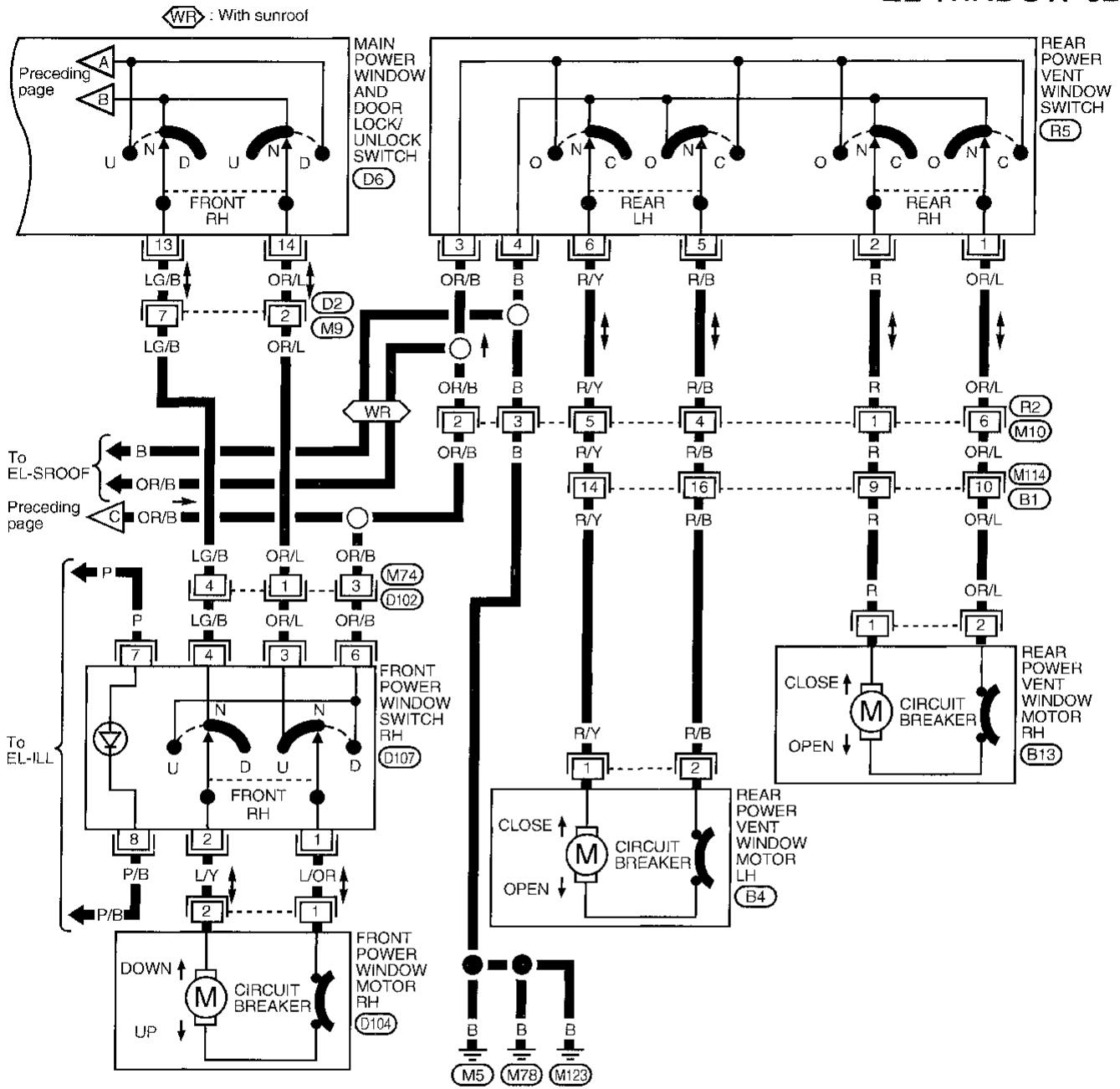
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M6 .E101

POWER WINDOW

Wiring Diagram - WINDOW- (Cont'd)

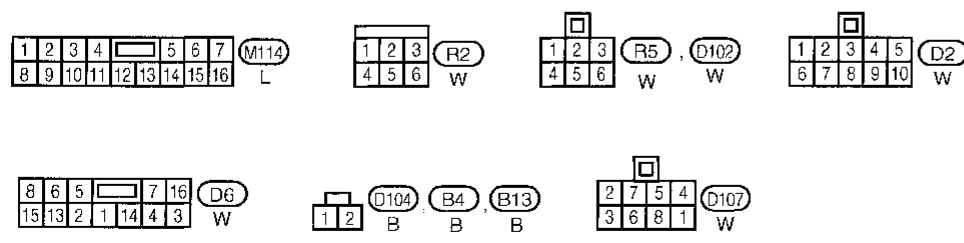
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POWER WINDOW

Trouble Diagnoses

Symptom	Possible causes	Repair order
None of the power windows can be operated from any switch.	<ol style="list-style-type: none"> 7.5A fuse, 10A fuse, 30A fusible link and circuit breaker-1 Grounds (M5) , (M78) and (M123) Power window relay Open/short in main power window and door lock/unlock switch circuit 	<ol style="list-style-type: none"> Check 7.5A fuse (No. 41), located in fuse and fusible link box), 10A fuse (No. 30, located in the fuse block), 30A fusible link (letter a), located in the fuse and fusible link box) and the circuit breaker-1. Turn ignition switch ON and verify battery positive voltage is present at terminals (1) and (2) of main power window and door lock/unlock switch, terminal (6) of front power window switch RH and terminal (3) of rear power vent window switch. Check grounds (M5) , (M78) and (M123) . Check power window relay. Check OR/B wire between power window relay and main power window and door lock/unlock 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.
Passenger side power window cannot be operated.	<ol style="list-style-type: none"> Power window switch (front RH) Power window motor (front RH) Main power window and door lock/unlock switch Power window circuits 	<ol style="list-style-type: none"> Check power window switch (front RH). Check power window motor (front RH). Check main power window and door lock/unlock switch. Check wires between main power window and door lock/unlock switch, power window switch RH and motor for open/short circuits.
Passenger side power window cannot be operated by main switch but can be operated by passenger's switch.	<ol style="list-style-type: none"> Main power window and door lock/unlock switch 	<ol style="list-style-type: none"> Check main power window and door lock/unlock switch.
One or both rear power vent windows cannot be operated.	<ol style="list-style-type: none"> Rear power vent window switch Rear power vent window motors Rear power vent window circuits 	<ol style="list-style-type: none"> Check rear power vent window switch. Check rear power vent window motors (LH and RH). Check wires between power window relay, rear power vent window switch and rear power vent window motors for open/short circuits.

POWER DOOR LOCK

System Description

Power is supplied at all times:

- through 7.5A fuse (No. 41, located in the fuse and fusible link box)
- to smart entrance control unit terminal 9, and
- through 30A fusible link (Letter a, located in the fuse and fusible link box)
- to circuit breaker-1 terminal 1
- through circuit breaker-1 terminal 2
- to smart entrance control unit terminal 3.

Ground is supplied to smart entrance control unit terminals 1, 20 and 54 through body grounds M5, M78 and M123.

INPUT

When the main power window and door lock/unlock switch is in the LOCK position, ground signal is supplied:

- through body grounds M5, M78 and M123
- to main power window and door lock/unlock switch terminal 5,
- through main power window and door lock/unlock switch terminal 7
- to smart entrance control unit terminal 33.

When the door lock/unlock switch RH is in the LOCK position, ground signal is supplied :

- through body grounds M5, M78 and M123
- to door lock/unlock switch RH terminal 4,
- through door lock/unlock switch RH terminal 1
- to smart entrance control unit terminal 33.

When the main power window and door lock/unlock switch is in the UNLOCK position, ground signal is supplied:

- through body grounds M5, M78 and M123
- to main power window and door lock/unlock switch terminal 5,
- through main power window and door lock/unlock switch terminal 8
- to smart entrance control unit terminal 34.

When the door lock/unlock switch RH is in the UNLOCK position, ground signal is supplied :

- through body grounds E3, E53 and E14
- to door lock/unlock switch RH terminal 4,
- through door lock/unlock switch RH terminal 3
- to smart entrance control unit terminal 34.

OUTPUT

Unlock

Power is supplied:

- from smart entrance control unit terminal 2
- to front door lock actuator LH terminal 2
- from smart entrance control unit terminal 7
- to front door lock actuator RH terminal 2
- to sliding door lock actuator terminal 2, and
- from smart entrance control unit terminal 8
- to back door lock actuator terminal 2.

Ground is supplied:

- from smart entrance control unit terminal 6
- to all door lock actuators terminal 1.

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

Lock

Power is supplied:

- from smart entrance control unit terminal 6
- to all door lock actuators terminal 1.

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POWER DOOR LOCK

System Description (Cont'd)

Ground is supplied:

- from smart entrance control unit terminal ②
- to front door lock actuator LH terminal ②
- from smart entrance control unit terminal ⑦
- to front door lock actuator RH terminal ②
- to sliding door lock actuator terminal ②, and
- from smart entrance control unit terminal ⑧
- to back door lock actuator terminal ②.

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

KEY REMINDER DOOR SYSTEM

When the key is inserted into the ignition key cylinder, the key switch closes and a ground signal is supplied:

- through body grounds E3 , E53 and E14
- to key switch terminal ②
- through key switch terminal ①
- to smart entrance control unit terminal ⑭.

With the ground signal supplied, the smart entrance control unit provides a key reminder feature. For more information, refer to "OPERATIVE CONDITION", "System Description", EL-187.

POWER DOOR LOCK

System Description (Cont'd)

OPERATIVE CONDITION

- The lock/unlock switches on driver's and passenger's door trim can lock and unlock all doors.
- With the lock knob on front LH or RH door set to LOCK, all doors are locked.

Models with theft warning system

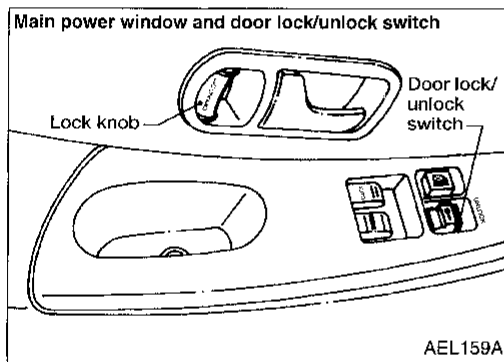
- With the door key inserted in the key cylinder on front LH or RH door, or sliding door, turning it to LOCK, will lock all doors; turning it to UNLOCK once unlocks the corresponding door; turning it to UNLOCK again within 5 seconds after the first unlock operation unlocks all of the other doors.

Doors can be also unlocked by back door key cylinder, operation in the same manner as other doors. This function is operated by the signal from each door key cylinder switch.

However, if the ignition key is in the ignition key cylinder and one or more of the front doors are open, setting the lock/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/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/unlock switch or lock knob on the front LH or RH door trim to LOCK does not unlock all doors.



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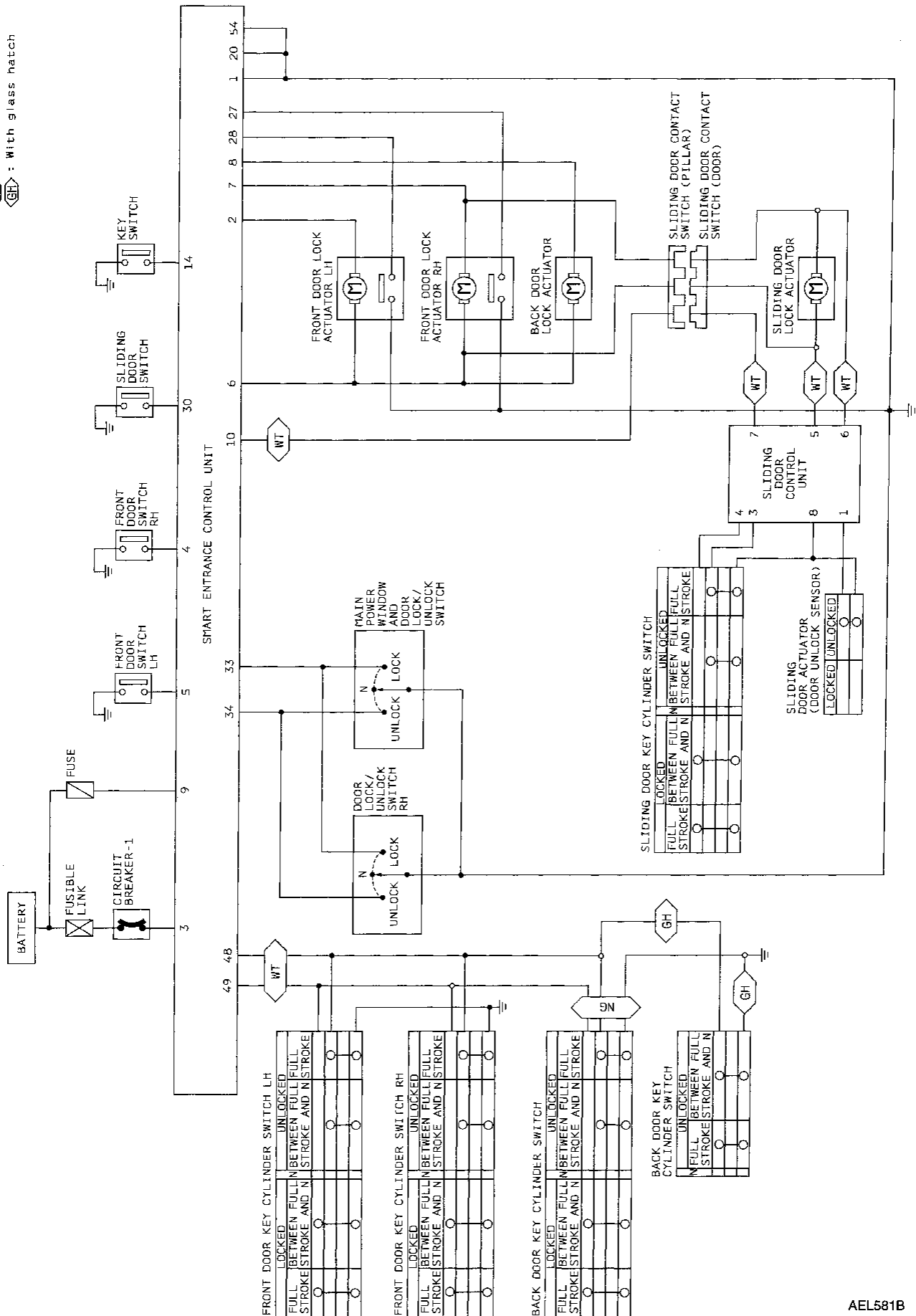
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POWER DOOR LOCK

Schematic

- : With theft warning
- : With normal glass
- : With glass hatch

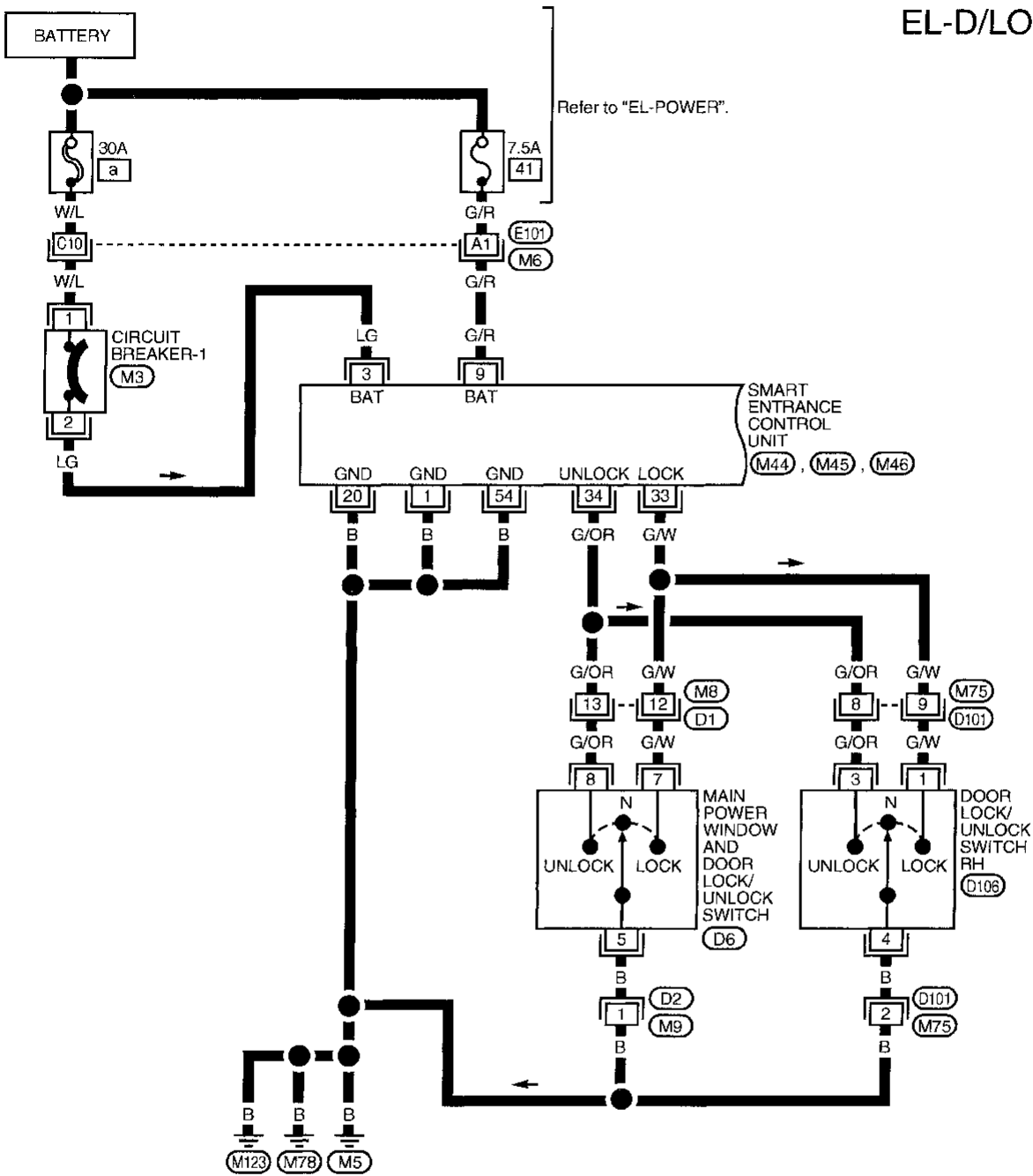


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POWER DOOR LOCK

Wiring Diagram -D/LOCK-

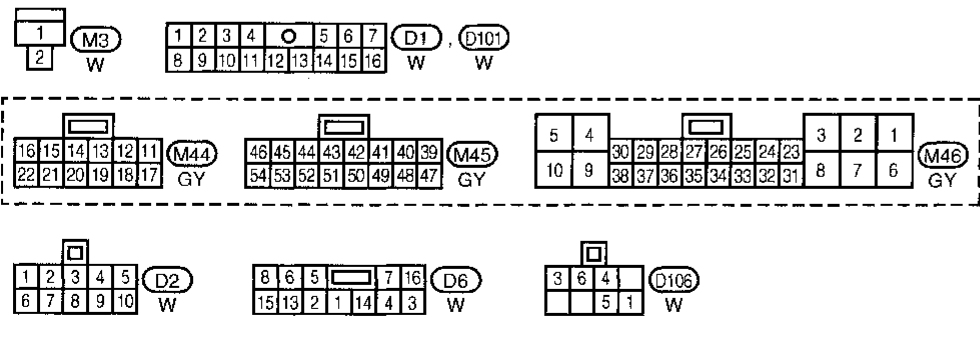
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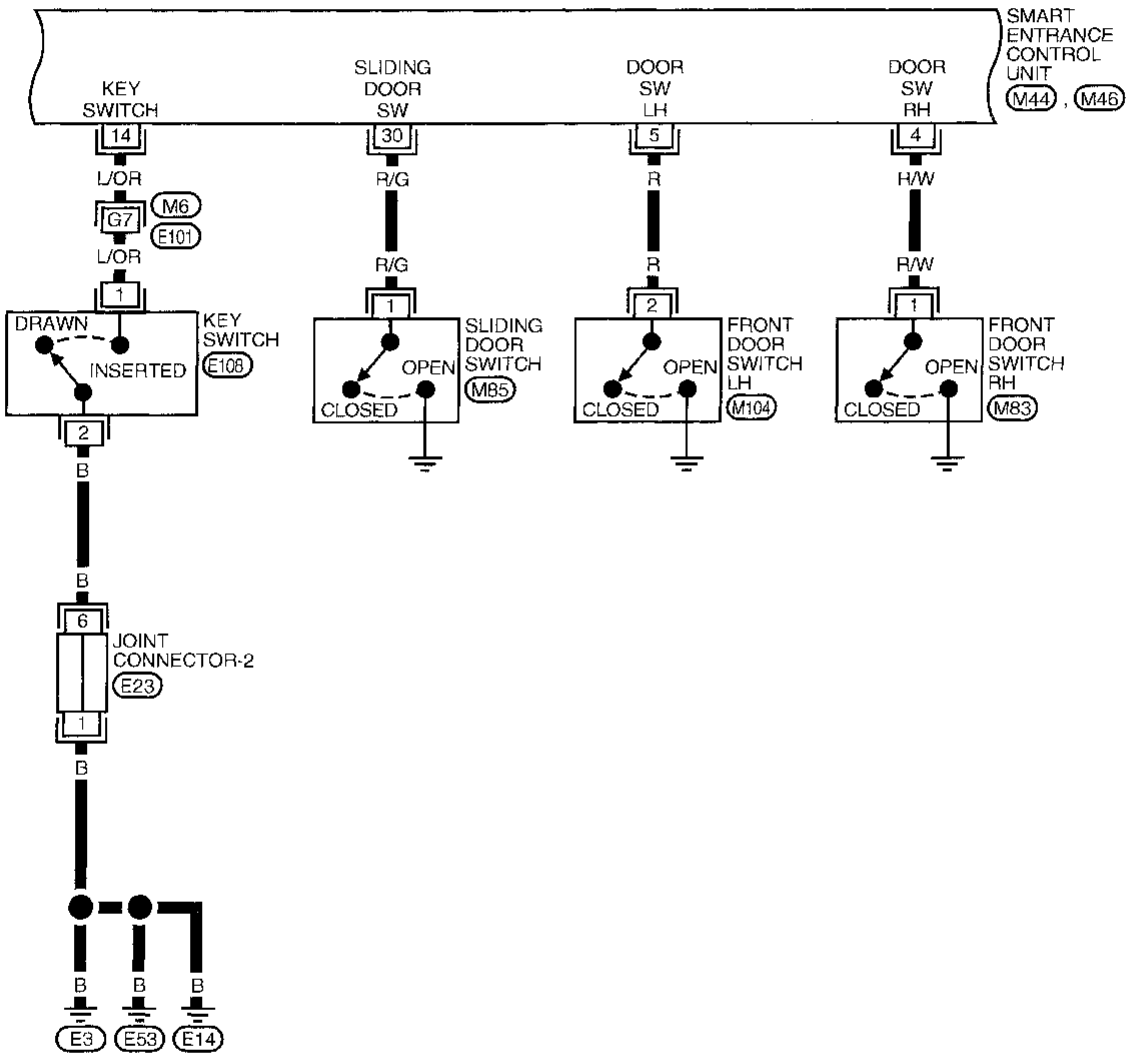
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POWER DOOR LOCK

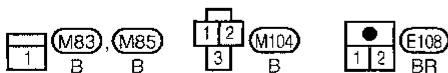
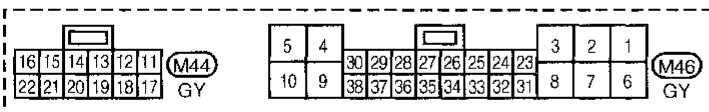
Wiring Diagram -D/LOCK- (Cont'd)

EL-D/LOCK-02



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(M6, E101)
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POWER DOOR LOCK

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

EL-D/LOCK-03

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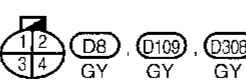
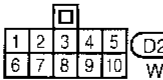
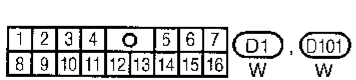
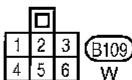
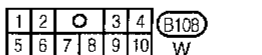
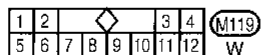
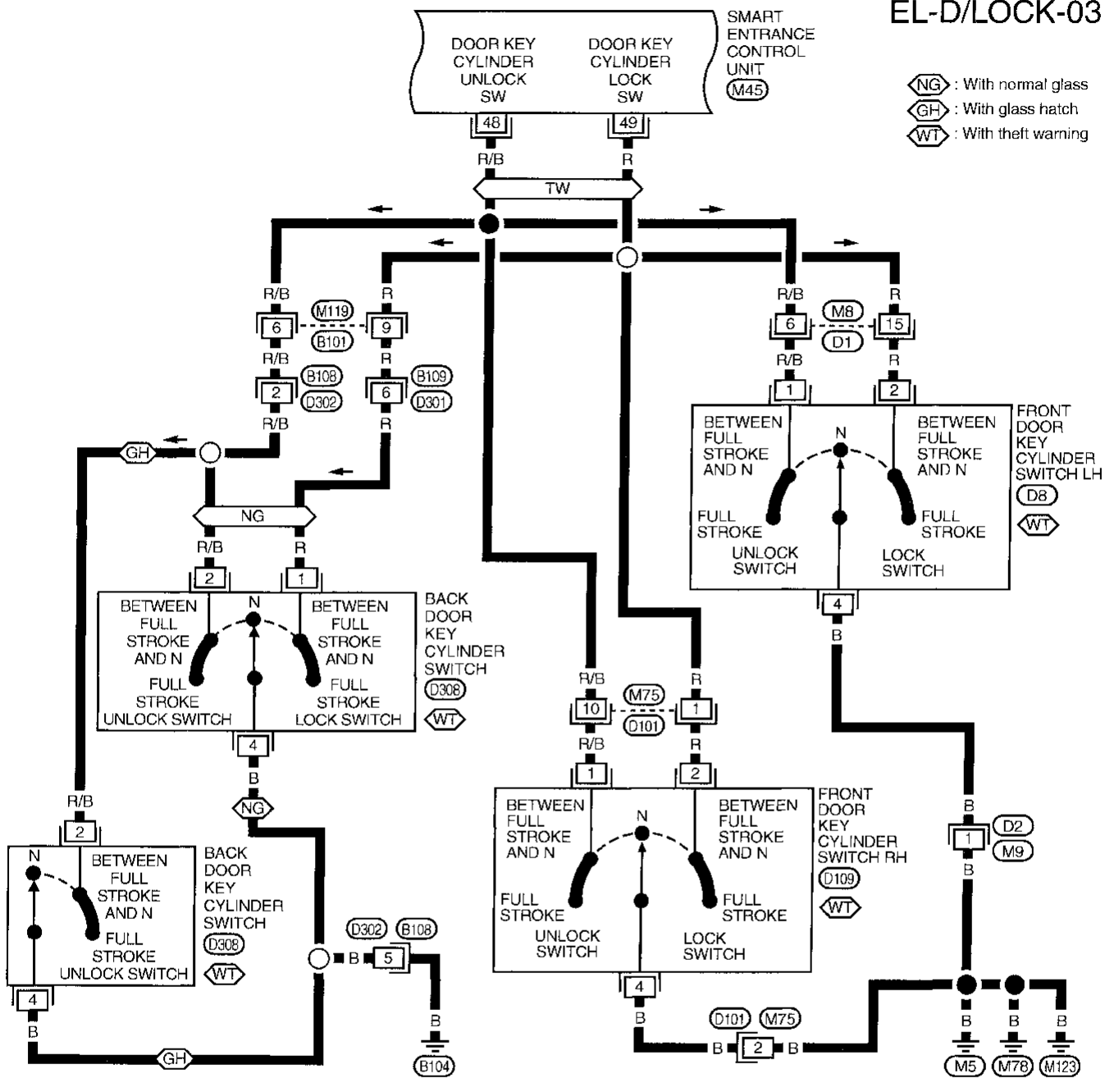
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POWER DOOR LOCK

Trouble Diagnoses

SYMPTOM CHART

PROCEDURE		Main power supply and ground circuit check		Diagnostic procedure					
		EL-195	EL-195	EL-196	EL-197	EL-198	EL-199	EL-200	EL-241
REFERENCE PAGE									
SYMPTOM		Main power supply for smart entrance control unit	Ground circuit for smart entrance control unit	Procedure 1 (Door switch)	Procedure 2 (Ignition key switch)	Procedure 3 (Lock/unlock switches)	Procedure 4 (Door unlock sensor)	Procedure 5 (Door lock actuator)	Check door key cylinder switch (Refer to "Diagnostic Procedure 4" in "THEFT WARNING SYSTEM")
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.	without theft warning system	X	X				X		
	with theft warning system	X	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
- (SL): Sliding door
- (RD): Rear Door

POWER DOOR LOCK

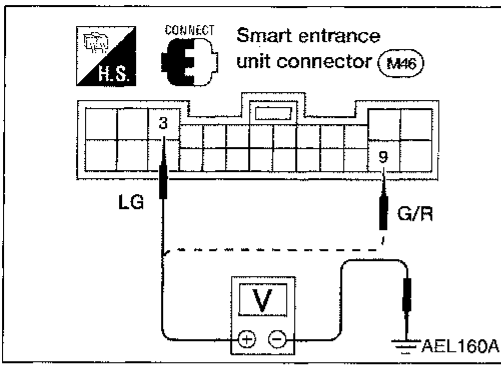
Trouble Diagnoses (Cont'd)

MAIN POWER SUPPLY AND GROUND CIRCUIT CHECK

Main power supply for smart entrance control unit

Terminals	Battery voltage existence
③ - Ground (GND)	Yes
⑨ - Ground (GND)	Yes

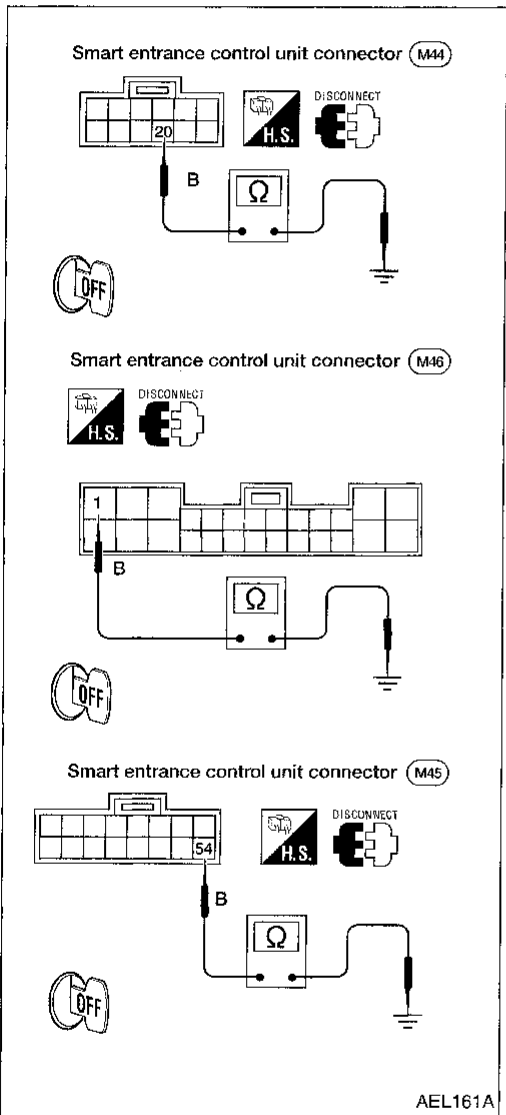
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Ground circuit for smart entrance control unit

Connectors	Terminals	Continuity
M44	⑳ - Ground	Yes
M46	① - Ground	Yes
M45	⑤④ - Ground	Yes

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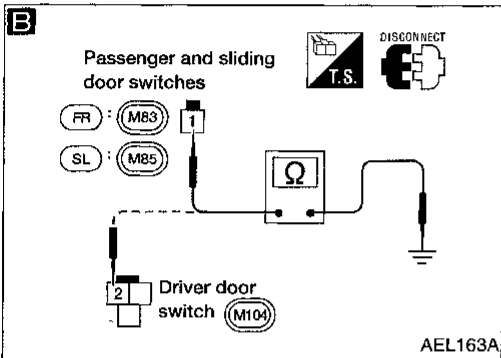
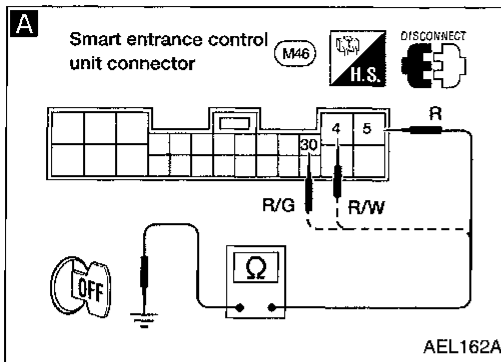
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POWER DOOR LOCK

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 1 — Door switch



A

DOOR SWITCH INPUT SIGNAL CHECK.
Check continuity between smart entrance control unit harness terminals ④, ⑤, ③① and ground.

Condition		Terminals	Continuity
Driver door	Closed	⑤ - Ground	No
	Open	Ground	Yes
Passenger door	Closed	④ - Ground	No
	Open	Ground	Yes
Sliding door	Closed	③① - Ground	No
	Open	Ground	Yes

OK → Door switch is OK.

NG

B

CHECK DOOR SWITCH.
Check continuity between terminal and switch body.

	Terminals	Condition	Continuity
Driver door switch	②	Pressed	No
		Released	Yes
Passenger and sliding door switches	①	Pressed	No
		Released	Yes

NG → Replace door switch.

OK

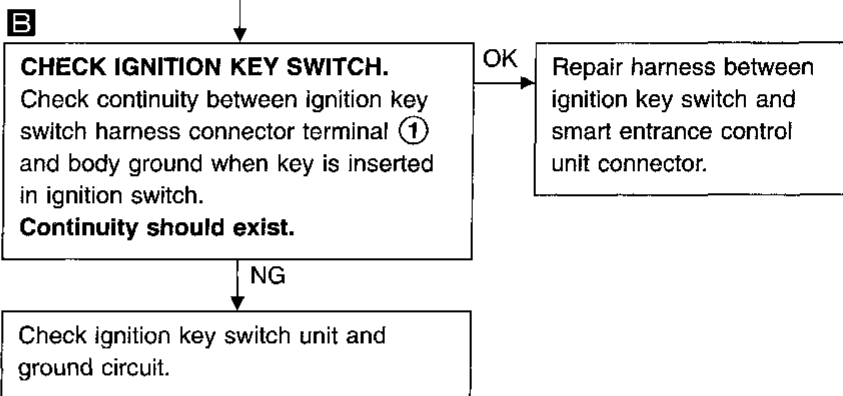
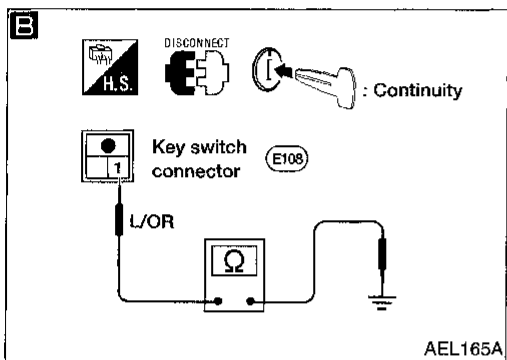
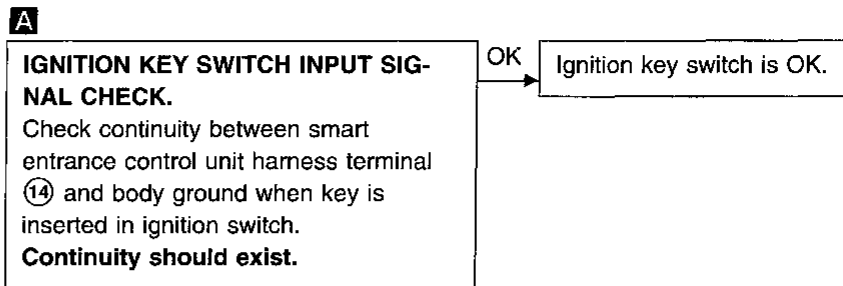
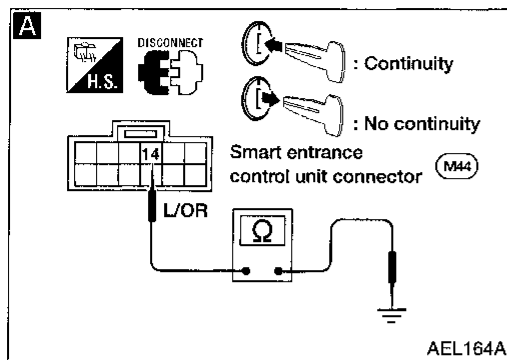
Check harness for open or short between door switch and smart entrance control unit.

OK → Check the connections at each connector.

POWER DOOR LOCK

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 2 — Ignition key switch

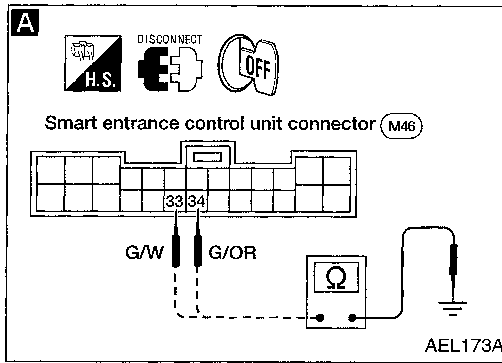


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POWER DOOR LOCK

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 3 — Lock/unlock switches



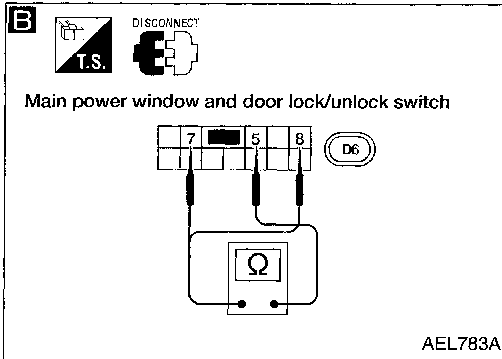
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DOOR LOCK/UNLOCK SWITCHES INPUT SIGNAL CHECK

Check continuity between smart entrance control unit harness terminals ③③, ③④ and body ground.

Door lock/unlock switches operation	Terminals	Continuity
Lock	③③ - Ground	Yes
Unlock	③④ - Ground	

OK → Door lock/unlock switches are OK.



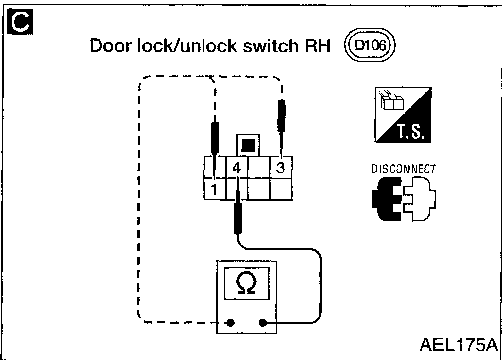
B

CHECK MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH.

Check continuity between main power window and door lock/unlock switch terminals.

Operation	Terminals	Continuity
Lock	⑦ - ⑤	Yes
Unlock	⑧ - ⑤	

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



C

CHECK DOOR LOCK/UNLOCK SWITCH RH.

Check continuity between door lock/unlock switch RH terminals.

Operation	Terminals	Continuity
Lock	① - ④	Yes
Unlock	③ - ④	

NG → Replace door lock/unlock switch RH.

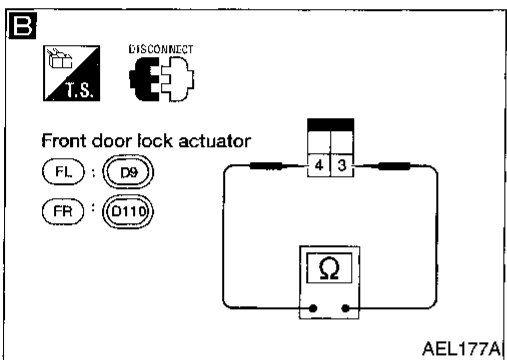
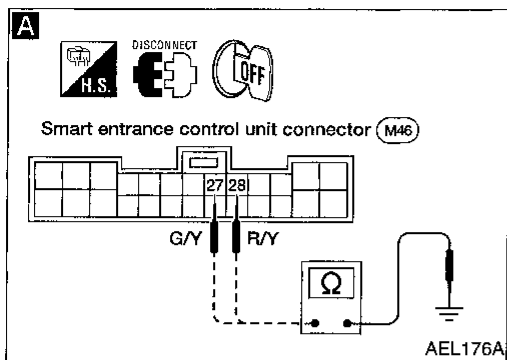
OK → Check harness for open or short between door lock/unlock switch and smart entrance control unit.

OK → Check ground harness of door lock/unlock switch and the connections at each connector.

POWER DOOR LOCK

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 4 — Door unlock sensor



A

FRONT DOOR UNLOCK SENSOR INPUT SIGNAL CHECK.

Check continuity between smart entrance control unit harness terminals (28), (27) and body ground.

OK → Front door unlock sensor is OK.

Condition	Terminals	Continuity
Driver's door	(28) - Ground	Locked: No
		Unlocked: Yes
Passenger's door	(27) - Ground	Locked: No
		Unlocked: Yes

NG

B

CHECK FRONT DOOR UNLOCK SENSOR.

Check continuity between front door lock actuator terminals.

NG → Replace front door lock actuator.

Operation	Terminals	Continuity
Lock	(3) - (4)	No
Unlock	(3) - (4)	Yes

OK

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

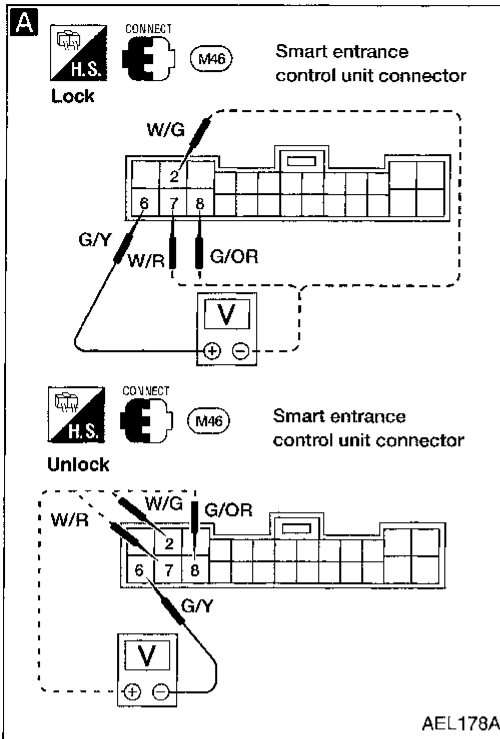
OK → Check ground harness of front door lock actuator and the connections at each connector.

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POWER DOOR LOCK

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 5 — Door lock actuator



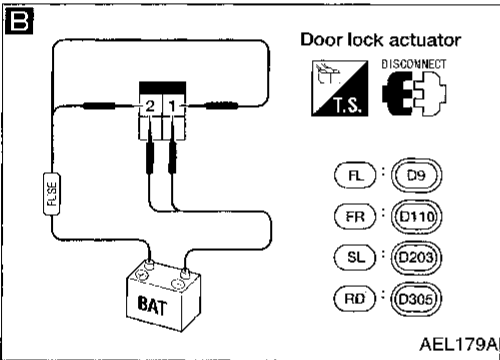
A

CHECK DOOR LOCK ACTUATOR CIRCUIT.

Check voltage between smart entrance control unit connector terminals (2), (7), (8), and (6).

Door lock operation		Terminals		Voltage (V)
		⊕	⊖	
Front door LH door	Lock	⑥	②	Battery voltage
	Unlock	②	⑥	
Front door RH and sliding door	Lock	⑥	⑦	
	Unlock	⑦	⑥	
Back door	Lock	⑥	⑧	
	Unlock	⑧	⑥	

NG → Replace smart entrance control unit.



B

CHECK DOOR LOCK ACTUATOR.

Door lock operation	Terminals	
	⊕	⊖
Lock	①	②
Unlock	②	①

NG → Replace door lock actuator.

OK

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

System Description

Power is supplied at all times:

- from 30A fusible link (letter **a**, located in the fuse and fusible link box)
- to circuit breaker-1 terminal **①**
- through circuit breaker-1 terminal **②**
- to smart entrance control unit terminal **③**.

GI

MA

Power is supplied at all times:

- from 7.5A fuse (No. **41**), located in the fuse and fusible link box)
- to smart entrance control unit terminal **⑨**.

EM

Power is supplied at all times:

- from 15A fuse (No. **44**, located in the fuse and fusible link box)
- to horn relay terminals **②** and **③**.

LC

Power is supplied at all times:

- to tail lamp relay terminals **②** and **③**.

EC

Ground is supplied:

- to smart entrance control unit terminals **①**, **⑳** and **⑤4**
- through body grounds **M5**, **M78** and **M123**.

FE

INPUTS

AT

When the ignition key is inserted in ignition key cylinder, ground is supplied:

- through key switch terminal **①**
- to smart entrance control unit terminal **⑭**.

FA

When the front door LH is open, ground is supplied:

- to smart entrance control unit terminal **⑤**
- through front door switch LH terminal **②**.

RA

When the front door RH is open, ground is supplied:

- to smart entrance control unit terminal **④**
- through front door switch RH terminal **①**.

BR

When the sliding door is open, ground is supplied:

- to smart entrance control unit terminal **③0**
- through sliding door switch terminal **①**.

ST

When the tailgate is open, ground is supplied:

- to smart entrance control unit terminal **②9**
- through back door latch switch terminal **①** (with normal glass), or terminal **②** (with glass hatch)
- to back door latch switch terminal **②** (with normal glass), or terminal **①** (with glass hatch)
- through body ground **B104**.

RS

BT

When the front door lock actuator LH (door unlock sensor) is UNLOCKED, ground is supplied:

- to smart entrance control unit terminal **②8**
- through front door lock actuator LH (door unlock sensor) terminal **③**
- to front door lock actuator LH (door unlock sensor) terminal **④**
- through body grounds **M5**, **M78** and **M123**.

HA

EL

When the front door lock actuator RH (door unlock sensor) is UNLOCKED, ground is supplied:

- to smart entrance control unit terminal **②7**
- through front door lock actuator RH (door unlock sensor) terminal **③**
- to front door lock actuator RH (door unlock sensor) terminal **④**
- through body grounds **M5**, **M78** and **M123**.

IDX

When the sliding door lock actuator (door unlock sensor) is UNLOCKED, a ground signal is supplied:

- to sliding door control unit terminal **①**
- through sliding door lock actuator (door unlock sensor) terminal **④**
- to sliding door lock actuator (door unlock sensor) terminal **③**
- through sliding door control unit terminal **⑧**.

MULTI-REMOTE CONTROL SYSTEM

System Description (Cont'd)

A sliding door status signal is supplied:

- to smart entrance control unit terminal ⑩
- from sliding door control unit terminal ⑦.

When the back door lock actuator (door unlock sensor) is UNLOCKED, ground is supplied:

- to smart entrance control unit terminal ④④
- through back door lock actuator (door unlock sensor) terminal ③ (with normal glass), or terminal ④ (with glass hatch)
- to back door lock actuator (door unlock sensor) terminal ④ (with normal glass), or terminal ③ (with glass hatch)
- through body ground B104 .

Remote controller signal is input:

- through window antenna
- to smart entrance control unit terminal ⑤⑤.

The multi-remote control system controls operation of the:

- power door locks
- interior lamps
- panic alarm
- ID code entry.

OPERATING PROCEDURE

Power door locks operation

When the following signals are both supplied:

- key switch OFF (when ignition key is not inserted in ignition key cylinder);
- door switches CLOSED (when all the doors are closed); smart entrance control unit locks all the doors with input of LOCK signal from remote controller. When key switch is OFF (when ignition key is not inserted in the ignition key cylinder), smart entrance control unit unlocks all the doors with input of UNLOCK signal from remote controller. Pressing UNLOCK once will unlock the driver's door, pressing UNLOCK again within 5 seconds will unlock the other doors. The doors may also be locked and unlocked in a similar manner using the door key. Refer to "POWER DOOR LOCK", EL-185 and "THEFT WARNING SYSTEM", EL-216.

Interior lamps operation

When the following input signals are both supplied:

- key switch OFF (when ignition key is not inserted in ignition key cylinder);
- door switches CLOSED (when all the doors are closed); smart entrance control unit turns on interior lamps (for 30 seconds) with input of UNLOCK signal from remote controller. For detailed description, refer to "Interior, Map, Personal, Step and Tailgate Lamps/System Description", EL-82.

Panic alarm operation

The smart entrance control unit turns on and off horn, headlamps, side marker lamps, tail lamps, and license lamps intermittently with the input of a PANIC ALARM signal from the remote controller. For detailed description, refer to "System Description", "THEFT WARNING SYSTEM", EL-219.

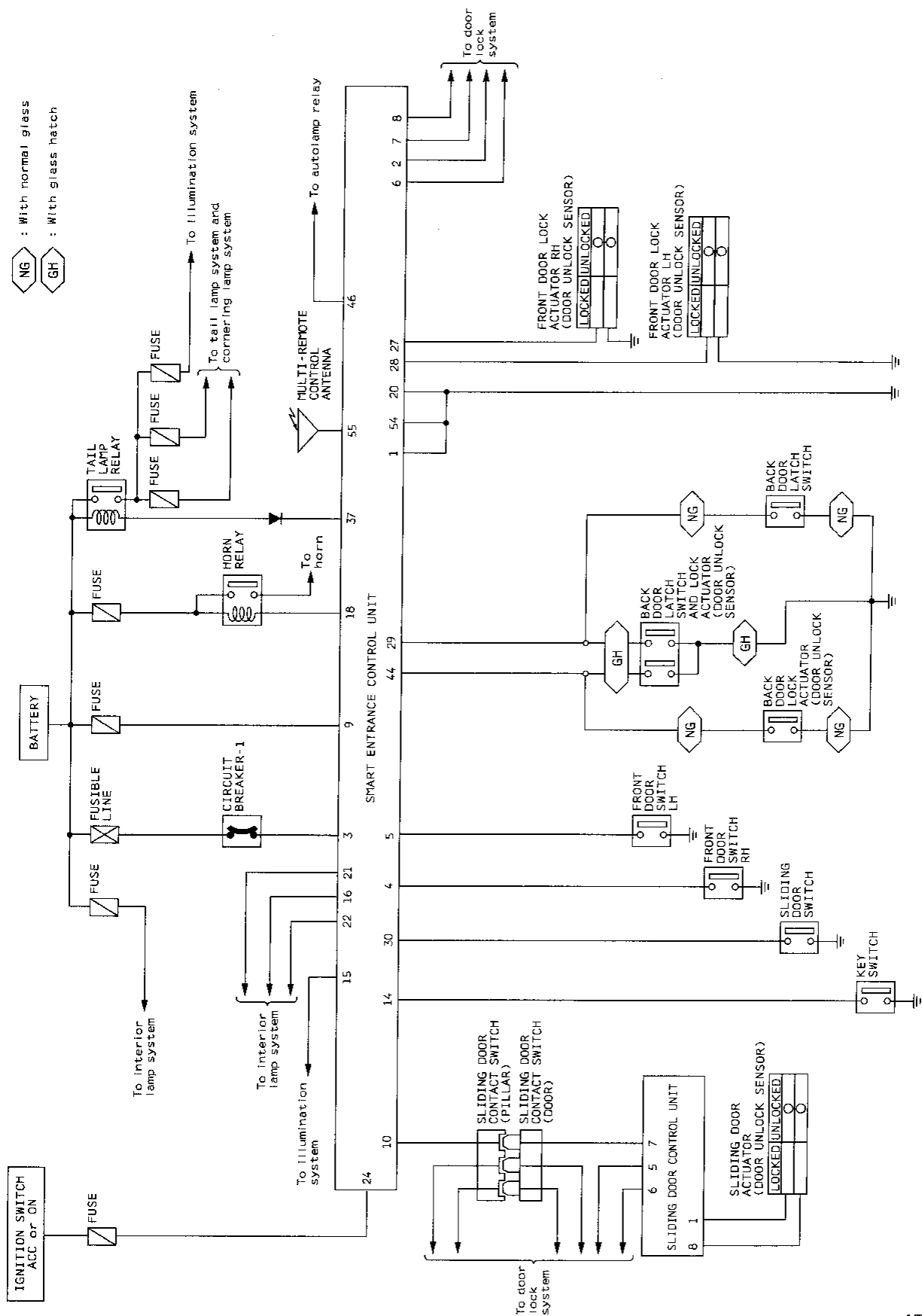
Door lock verification

When the following input signals are all supplied:

- key switch OFF (when ignition key is not inserted in ignition key cylinder);
- door switches CLOSED (when all the doors are closed);
- door lock actuator (door unlock sensor) LOCKED (when all the doors are locked); smart entrance control unit outputs the following ground signals with input of LOCK signal from remote controller:
- to horn relay terminal ①
- through smart entrance control unit terminal ⑱
- to tail lamp relay terminal ①
- through smart entrance control unit terminal ③⑦
- to all interior illumination lamps
- through smart entrance control unit terminal ⑮.

As a result, horn relay and tail lamp relay are energized and the horn, side marker lamps, tail lamps, license lamps, and interior illumination lamps turn on and off.

Schematic



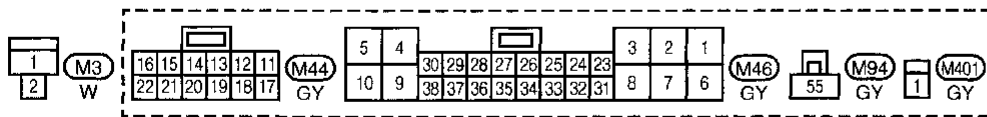
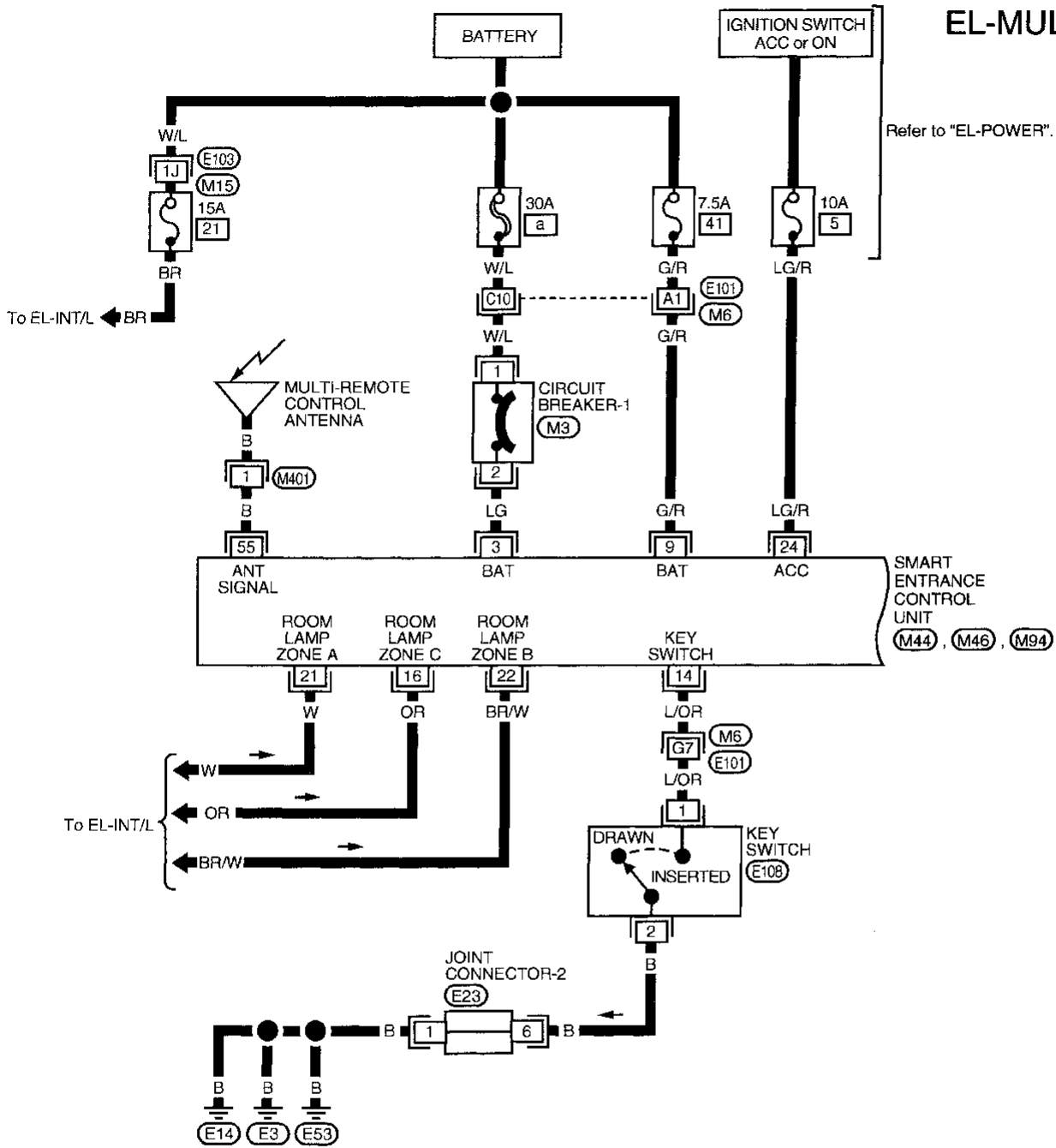
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MULTI-REMOTE CONTROL SYSTEM

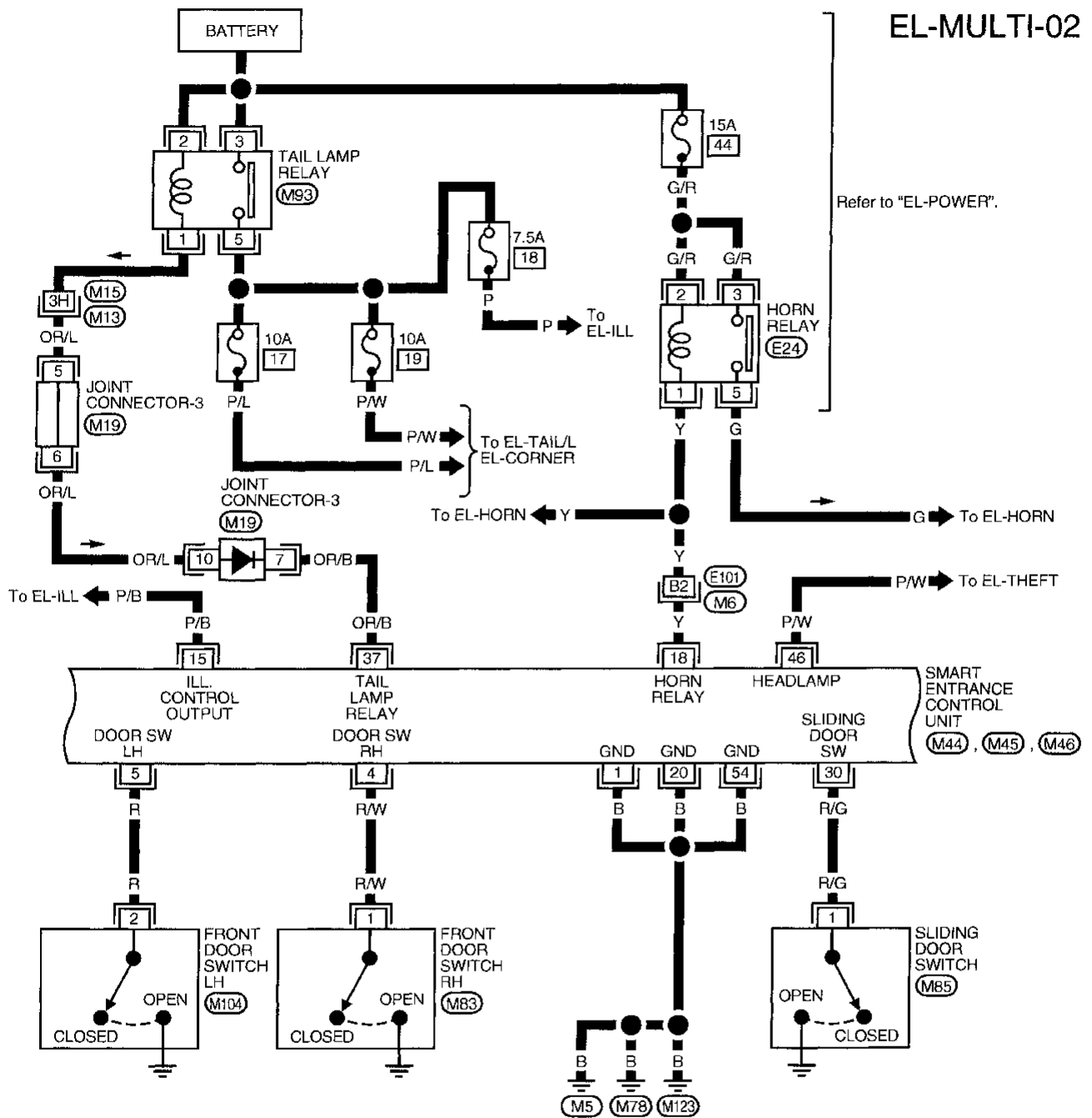
Wiring Diagram -MULTI-

EL-MULTI-01



MULTI-REMOTE CONTROL SYSTEM

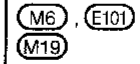
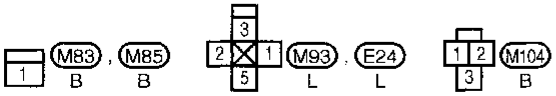
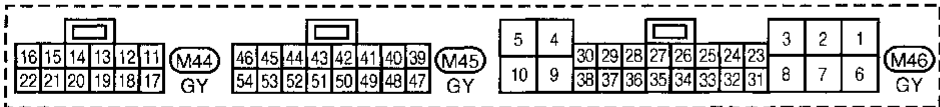
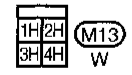
Wiring Diagram -MULTI- (Cont'd)



EL-MULTI-02

Refer to "EL-POWER".

Refer to last page (Foldout page).



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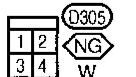
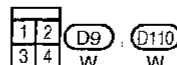
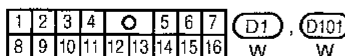
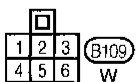
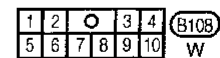
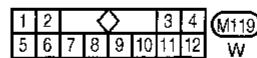
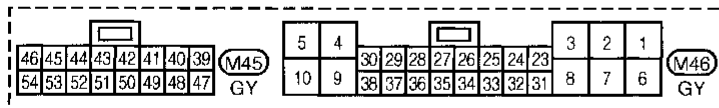
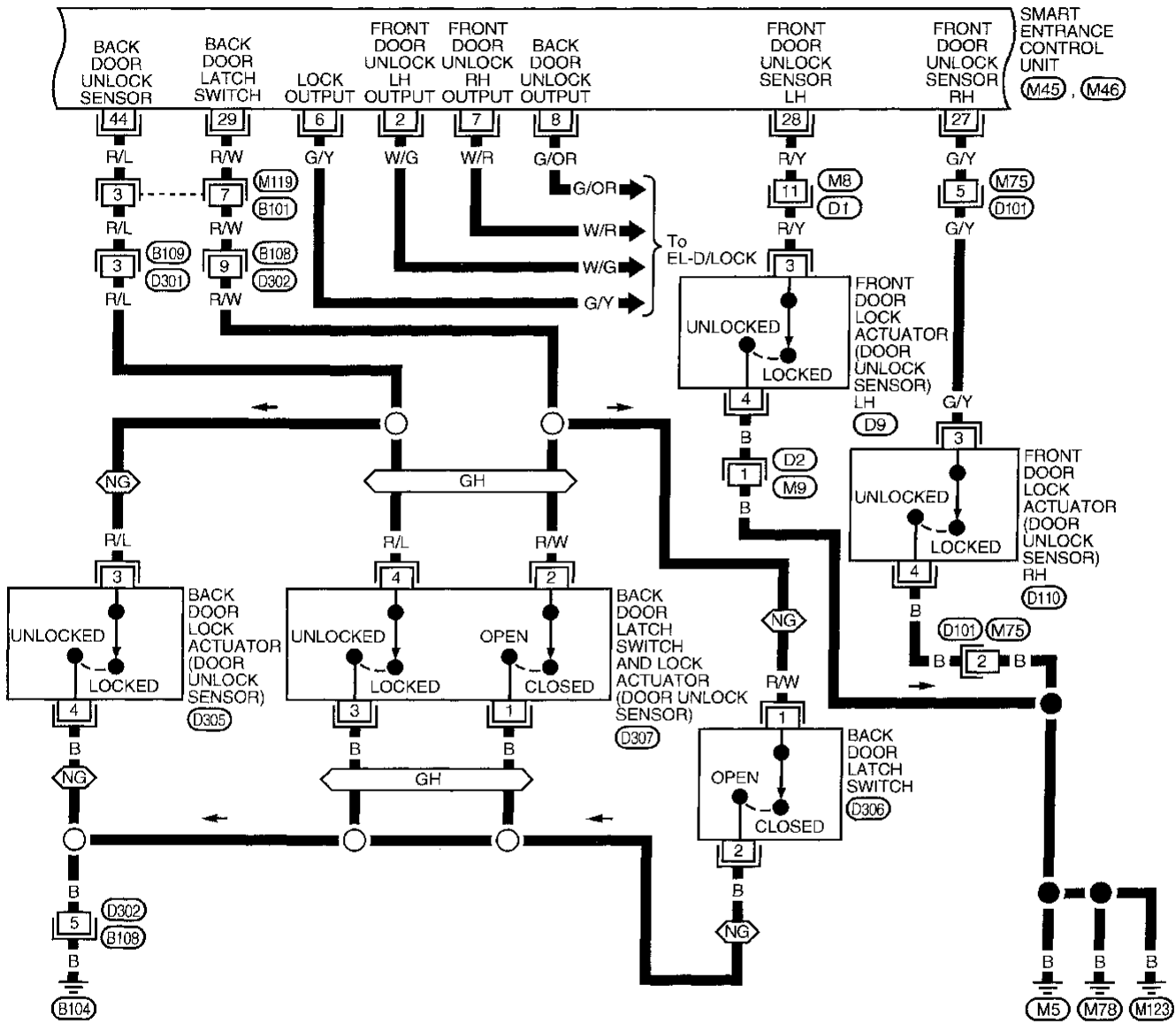
MULTI-REMOTE CONTROL SYSTEM

Wiring Diagram –MULTI– (Cont'd)

EL-MULTI-03

◊NG : With normal glass

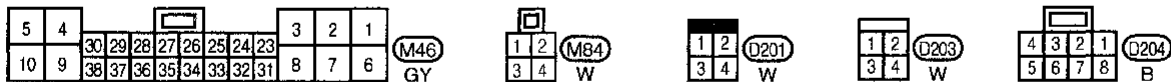
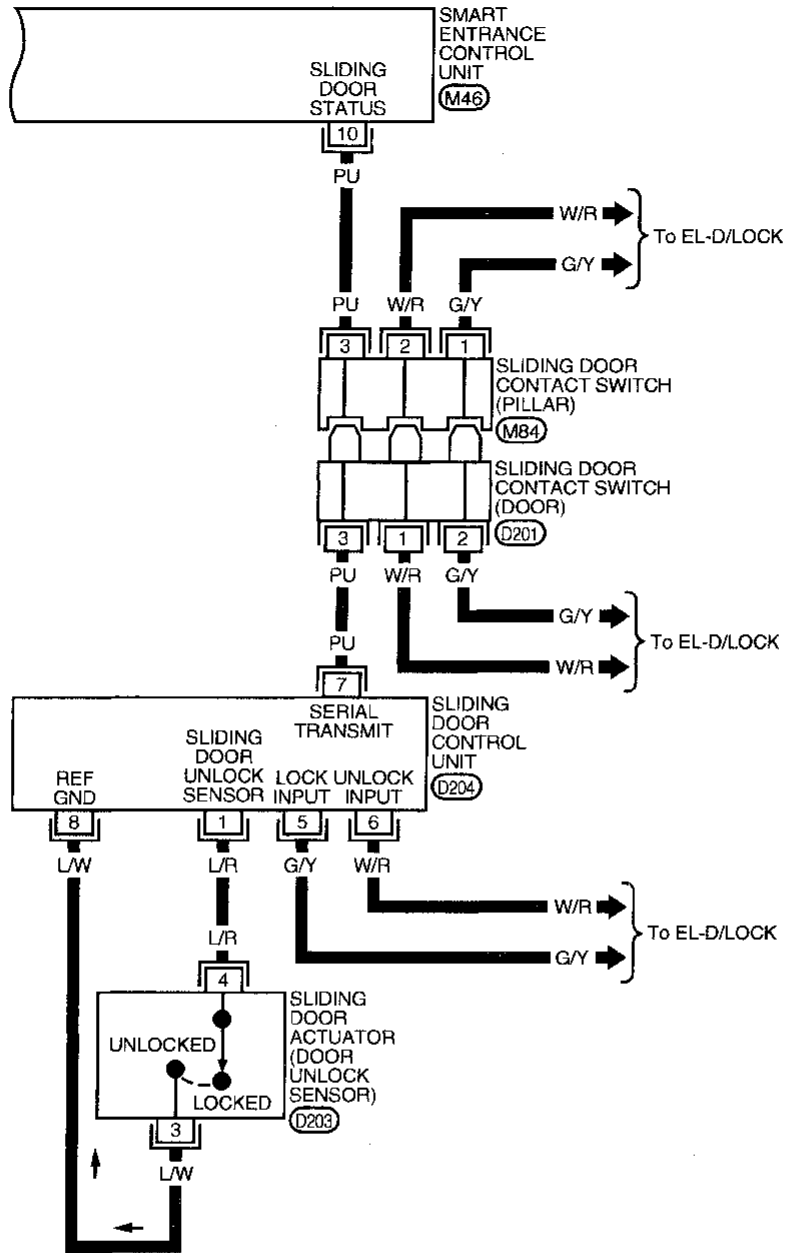
◊GH : With glass hatch



MULTI-REMOTE CONTROL SYSTEM

Wiring Diagram –MULTI– (Cont'd)

EL-MULTI-04



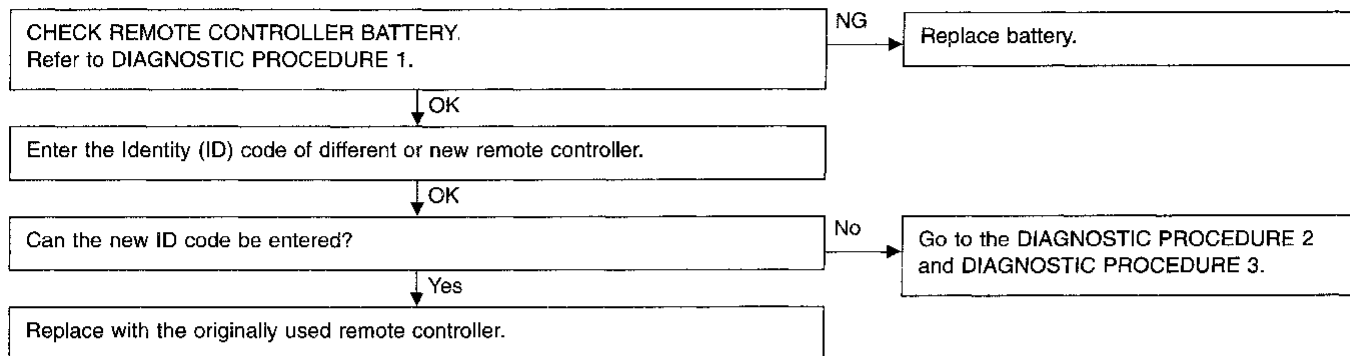
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MULTI-REMOTE CONTROL SYSTEM

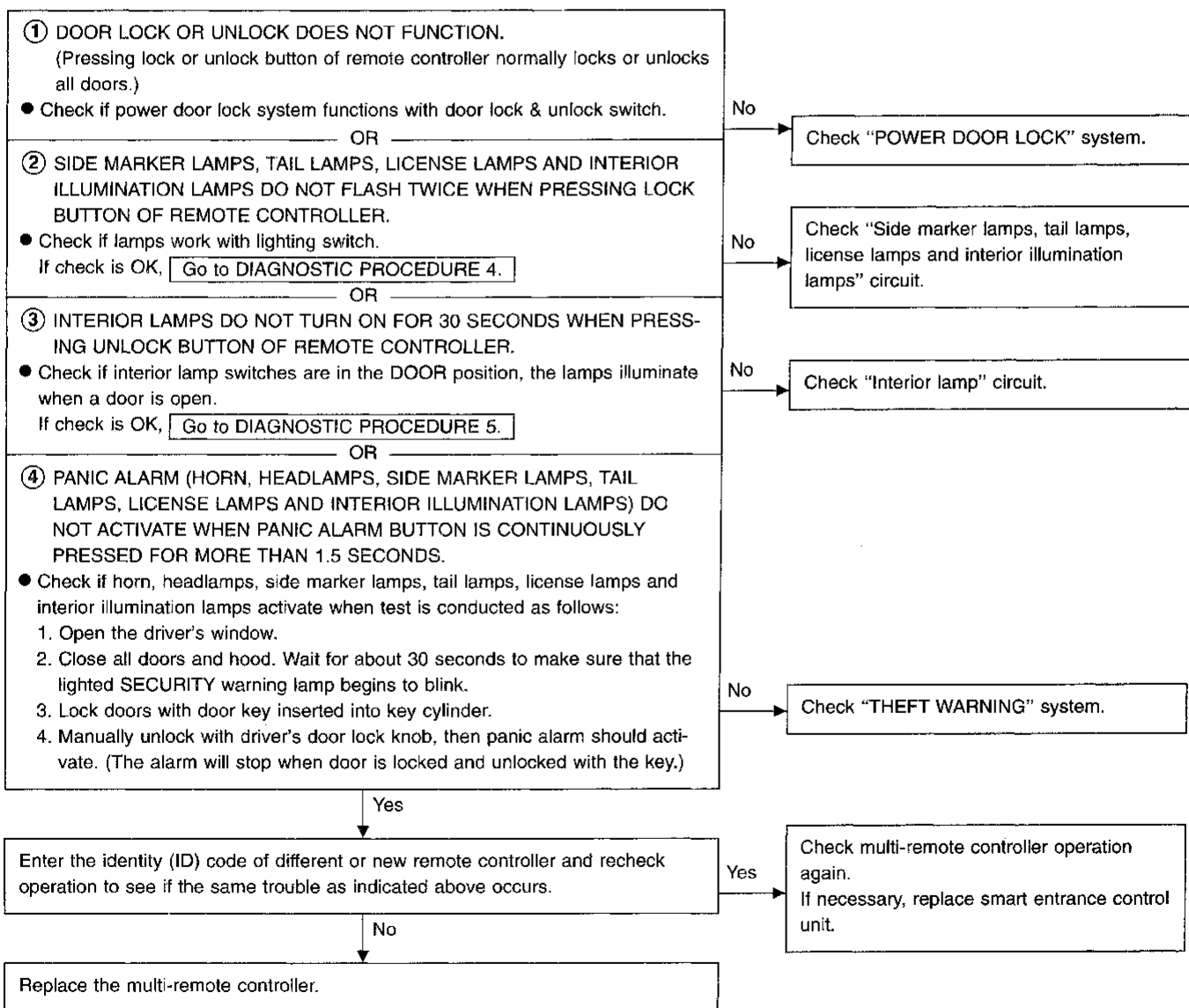
Trouble Diagnoses

TROUBLE SYMPTOM

- All functions of remote control system do not operate.



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



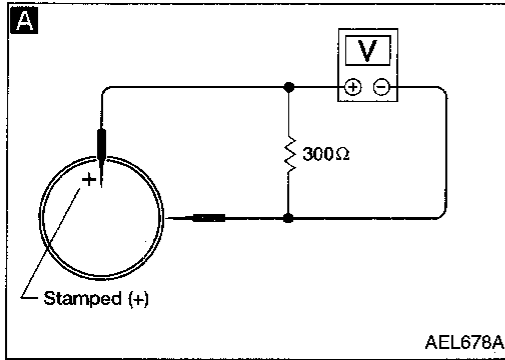
- Note:**
- The unlock and panic alarm operation of the multi-remote control system does not activate with the ignition key inserted in the ignition key cylinder.
 - The lock operation of the multi-remote control system does not activate with the key inserted in the ignition key cylinder or if one of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

MULTI-REMOTE CONTROL SYSTEM

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 1

Check remote controller battery.



A

CHECK REMOTE CONTROLLER BATTERY.

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

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

Note:

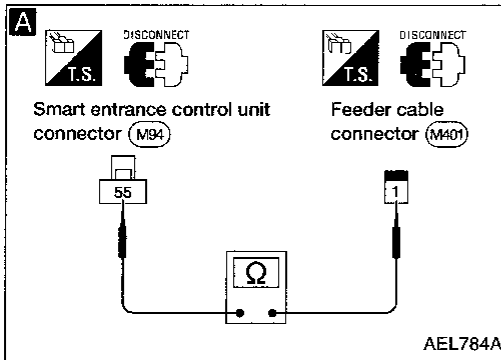
Remote controller does not function if battery is not set correctly.

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DIAGNOSTIC PROCEDURE 2

Check antenna of multi remote control system.



A

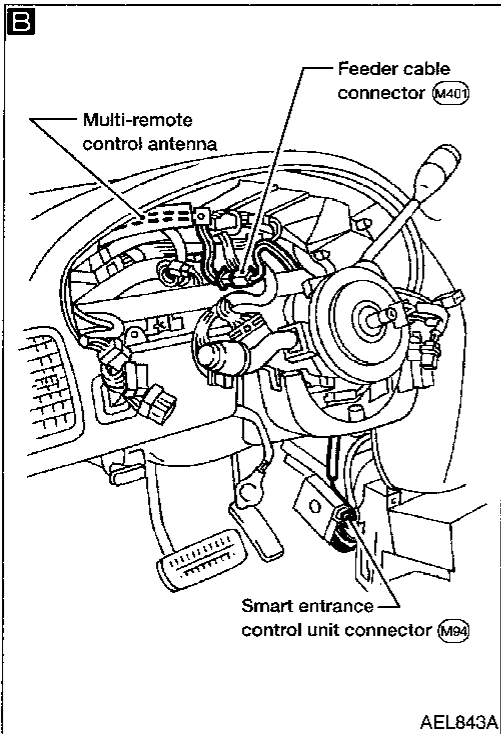
CHECK ANTENNA FEEDER CABLE.

1. Remove cluster lid and combination meter. Remove center console left side finisher and center console. Disconnect feeder cable connector from multi-remote control antenna.
2. Disconnect feeder cable connector from smart entrance control unit.
3. Check continuity between the feeder cable connector terminals (55) and (1).

Continuity should exist.

NG → Replace feeder cable.

RA
BR



B

CHECK MULTI-REMOTE CONTROL ANTENNA.

1. Remove cluster lid and combination meter. Remove two clips from instrument panel.
2. Visually check multi-remote control antenna.

NG → Replace multi-remote control antenna.

OK → Antenna of multi-remote control is OK.

ST
RS
BT
HA

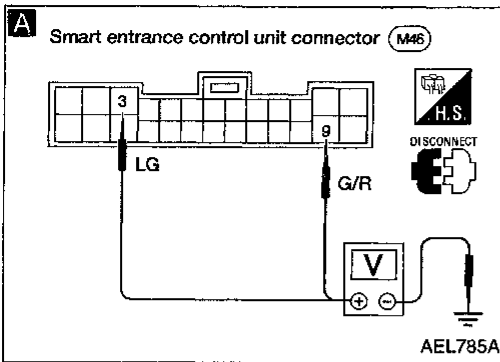
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MULTI-REMOTE CONTROL SYSTEM

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 3

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



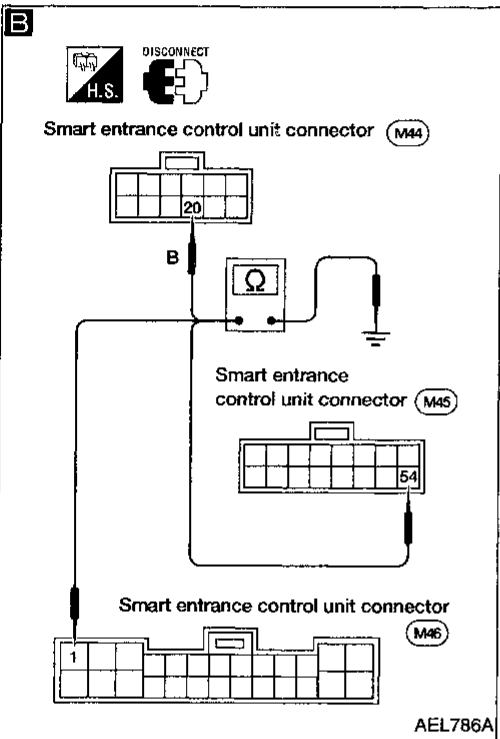
A **CHECK MAIN POWER SUPPLY CIRCUIT.**

1. Remove key from ignition.
2. Disconnect connector from smart entrance control unit. Check voltage across smart entrance control unit harness terminals ⑨, ③ and ground.

Battery voltage should exist.

NG → Check the following:

- 30A fusible link (Letter **a**), located in fuse and fusible link box)
- 7.5A fuse (No. **41**), located in fuse and fusible link box)
- **(M3)** circuit breaker
- Harness for open or short

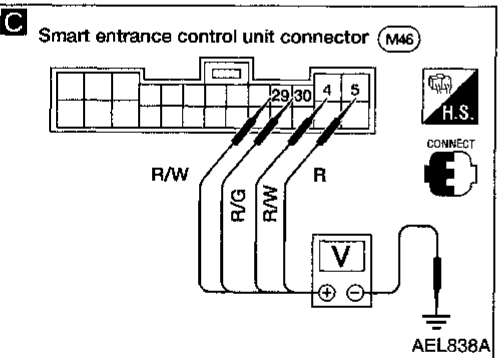


B **CHECK GROUND CONTINUITY.**

Check continuity between harness terminals ②①, ①, ⑤④ and ground.

Continuity should exist.

NG → Check ground harness.



C **CHECK DOOR SWITCH CIRCUIT.**

Check voltage between smart entrance control unit harness terminals and ground.

NG → Check the following:

- Door switch
- Door switch case ground condition
- Door switch body ground (for back door latch switch)
- Harness for open or short

	Terminals		Condi- tion	Voltage [V]
	⊕	⊖		
Front door switch LH	⑤	ground	Open	0
			Close	Approx. 12
Front door switch RH	④	ground	Open	0
			Close	Approx. 12
Sliding door switch	③①	ground	Open	0
			Close	Approx. 12
Back door latch switch	②⑨	ground	Open	0
			Close	Approx. 12

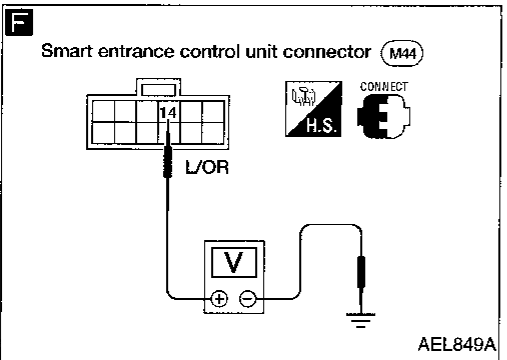
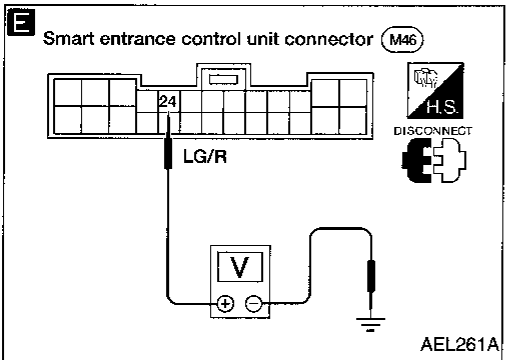
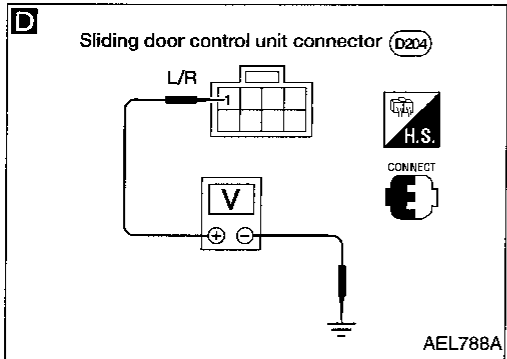
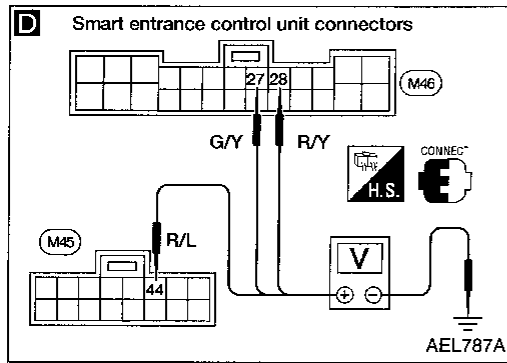
OK

(A)

(Go the next page.)

MULTI-REMOTE CONTROL SYSTEM

Trouble Diagnoses (Cont'd)



D **CHECK UNLOCK SENSOR CIRCUIT.**

- Check voltage between smart entrance control unit harness terminals (28), (27), (44) and ground.

	Terminals		Condition	Voltage [V]
	⊕	⊖		
Front door unlock sensor LH	28	ground	Unlock	0
			Lock	Approx. 12
Front door unlock sensor RH	27	ground	Unlock	0
			Lock	Approx. 12
Back door unlock sensor	44	ground	Unlock	0
			Lock	Approx. 12

- NG → Check the following:
- Door unlock sensor
 - Door unlock sensor ground circuit
 - Harness for open or short
 - Check continuity between sliding door contact switch (pillar) and sliding door contact switch (door).

- Check voltage between sliding door control unit harness terminal ① and ground.

	Terminals		Condition	Voltage [V]
	⊕	⊖		
Sliding door unlock sensor	①	ground	Unlock	0
			Lock	Approx. 12

E **CHECK IGNITION SWITCH "ACC" CIRCUIT.**

1. Disconnect smart entrance control unit connector.
2. Check voltage between smart entrance control unit harness terminal (24) and ground while ignition switch is turned to ACC.
Does battery voltage exist?

- No → Check the following:
- 10A fuse (No. 5), located in fuse block
 - Harness for open or short

F **KEY SWITCH INPUT SIGNAL CHECK.**

Check voltage between smart entrance control unit harness terminal (14) and ground.

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

- NG → Check the following:
- Key switch
 - Harness for open or short
 - Ground circuit

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

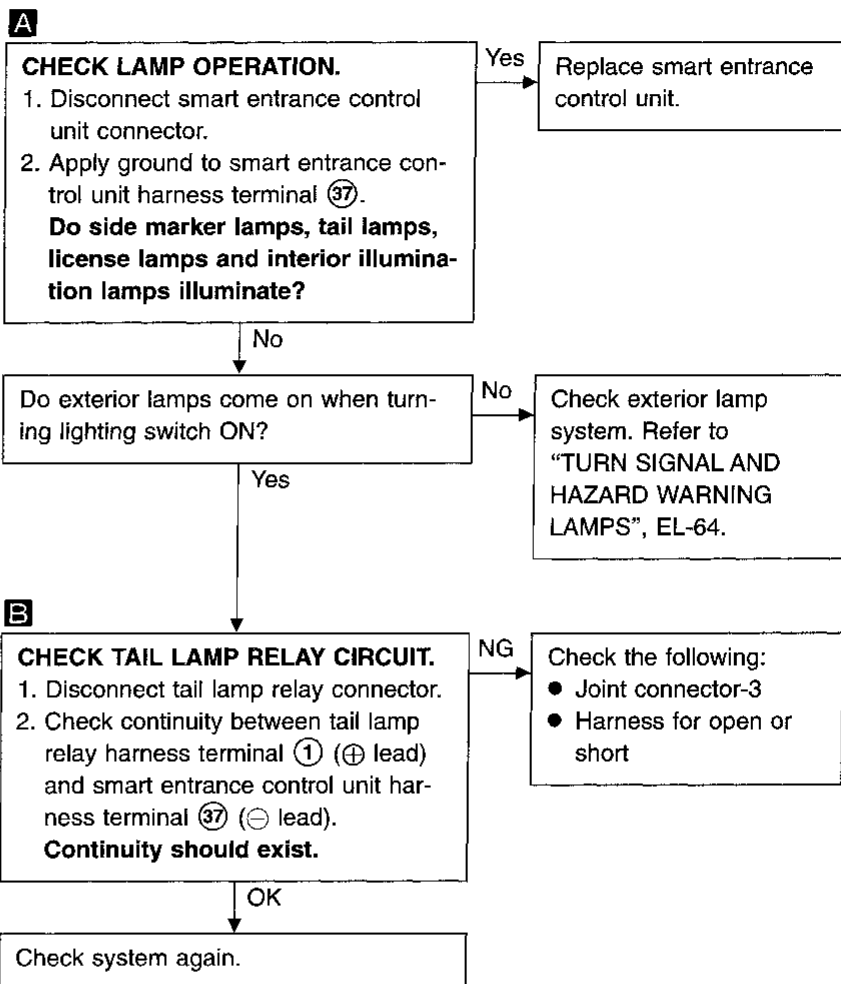
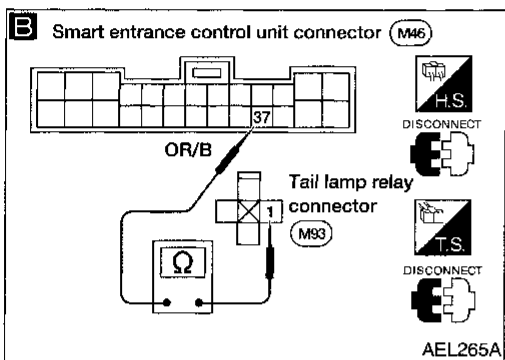
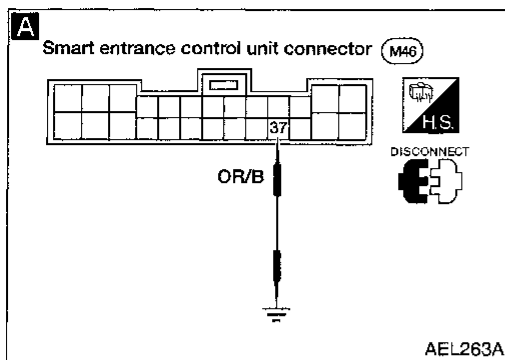
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MULTI-REMOTE CONTROL SYSTEM

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 4

Side marker lamps, tail lamps, license lamps and interior illumination lamps do not flash twice when pressing lock button of remote controller. Everything else functions.

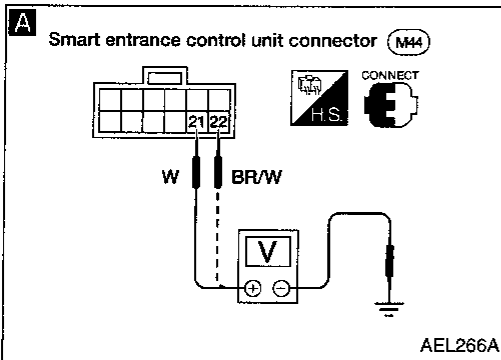


MULTI-REMOTE CONTROL SYSTEM

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 5

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



A

CHECK INTERIOR LAMP CIRCUIT.
When interior lamp switches are in DOOR position, check voltage across smart entrance control unit harness terminals ②1, ②2 and ground.
Does battery voltage exist?

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

Yes

CHECK VOLTAGE.
Push unlock button of remote controller and check voltage across smart entrance control unit harness terminals ②1, ②2 and ground.
Is voltage approx. 0V?

No → Replace smart entrance control unit.

Yes

Check system again.

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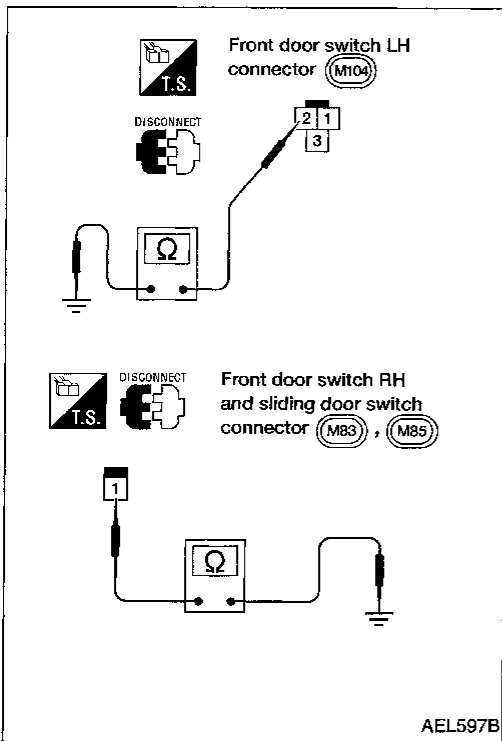
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Electrical Components Inspection

DOOR SWITCHES

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

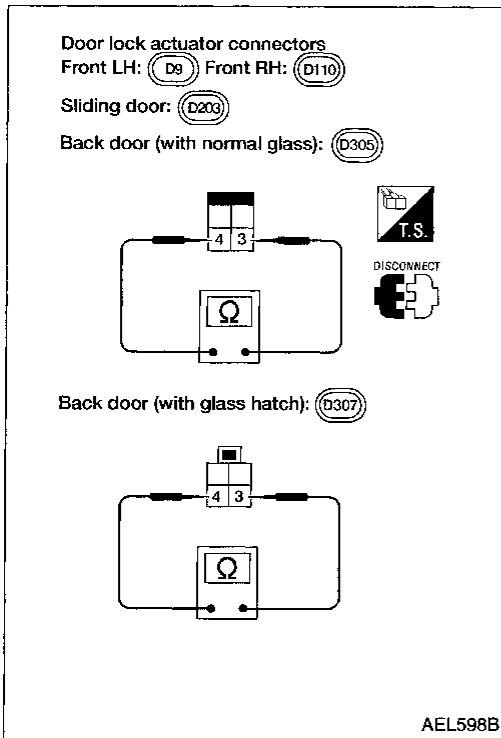
	Terminal No.	Condition	Continuity
Front door switch LH	① - ③, ② - ground	Door switch is pushed.	No
		Door switch is released.	Yes
Other door switches	① - ground	Door switch is pushed.	No
		Door switch is released.	Yes



DOOR LOCK ACTUATOR (Door unlock sensor)

Check continuity between terminals when door is locked and unlocked.

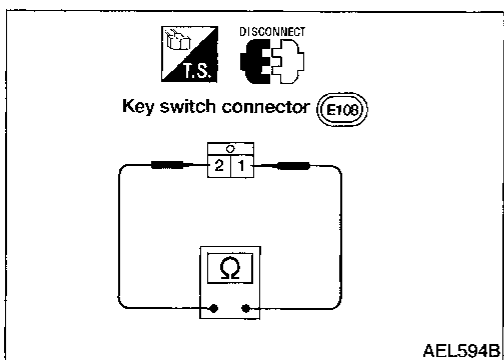
Terminal No.	Condition	Continuity
④ - ③	Door is locked.	No
	Door is unlocked.	Yes



KEY SWITCH (insert)

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

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



MULTI-REMOTE CONTROL SYSTEM

ID Code Entry Procedure

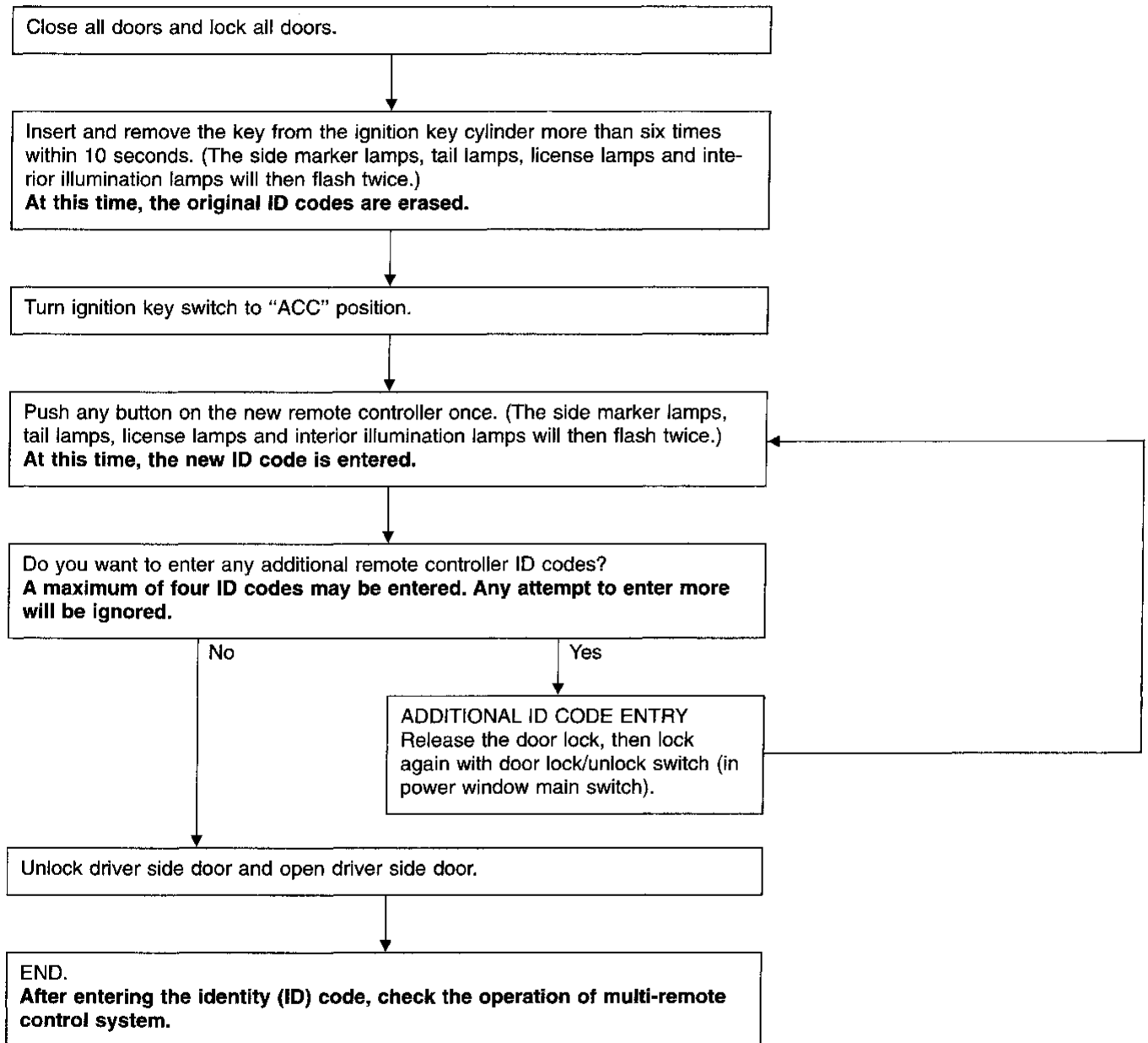
Enter the identity (ID) code manually when:

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

ID Code Entry Procedure

To enter the ID code, follow the procedures below.

PROCEDURE

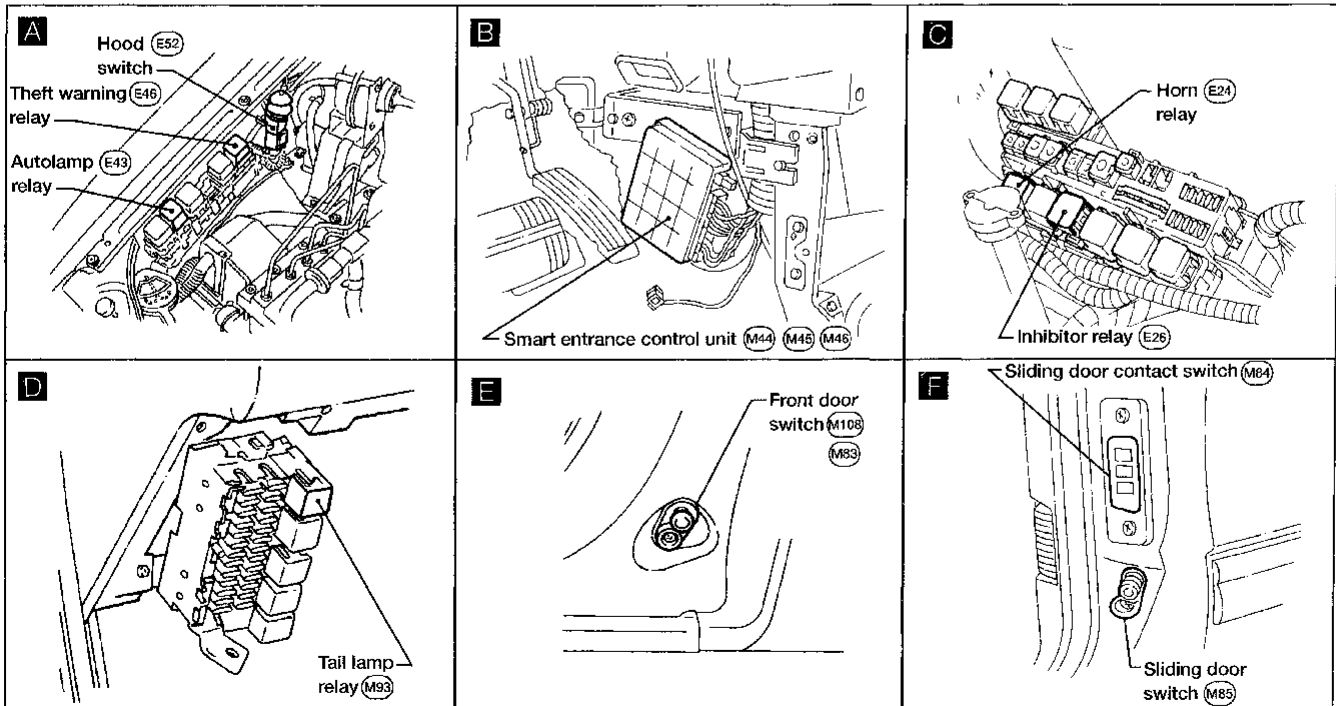
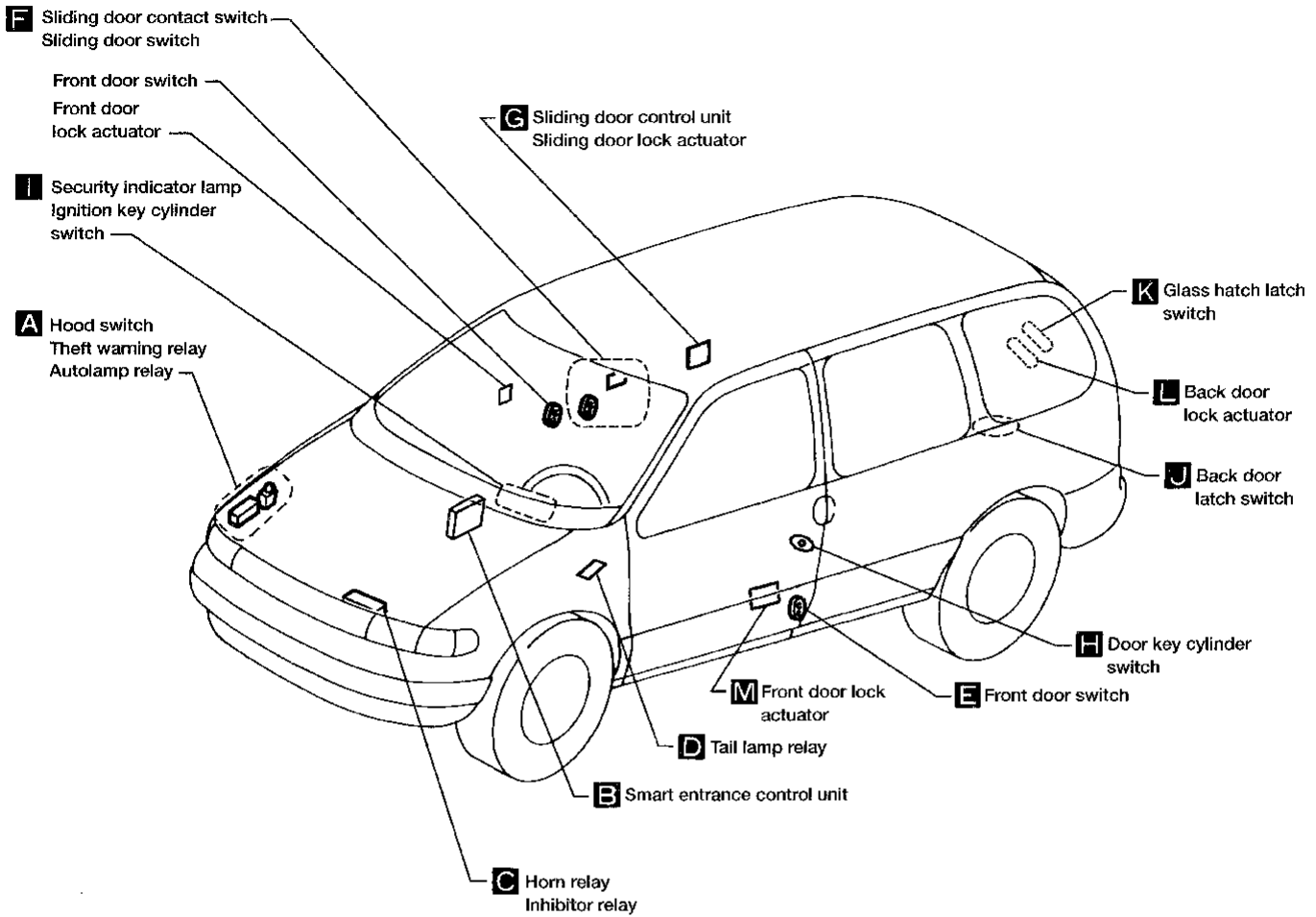


NOTE

- If you need to activate more than two additional new remote controllers, repeat the procedure "Additional ID code entry" for each new remote controller.
- If the same ID code that exists in the memory is input, the entry will be ignored.
- Entry of maximum of four ID codes is allowed and any attempt to enter more will be ignored.

THEFT WARNING SYSTEM

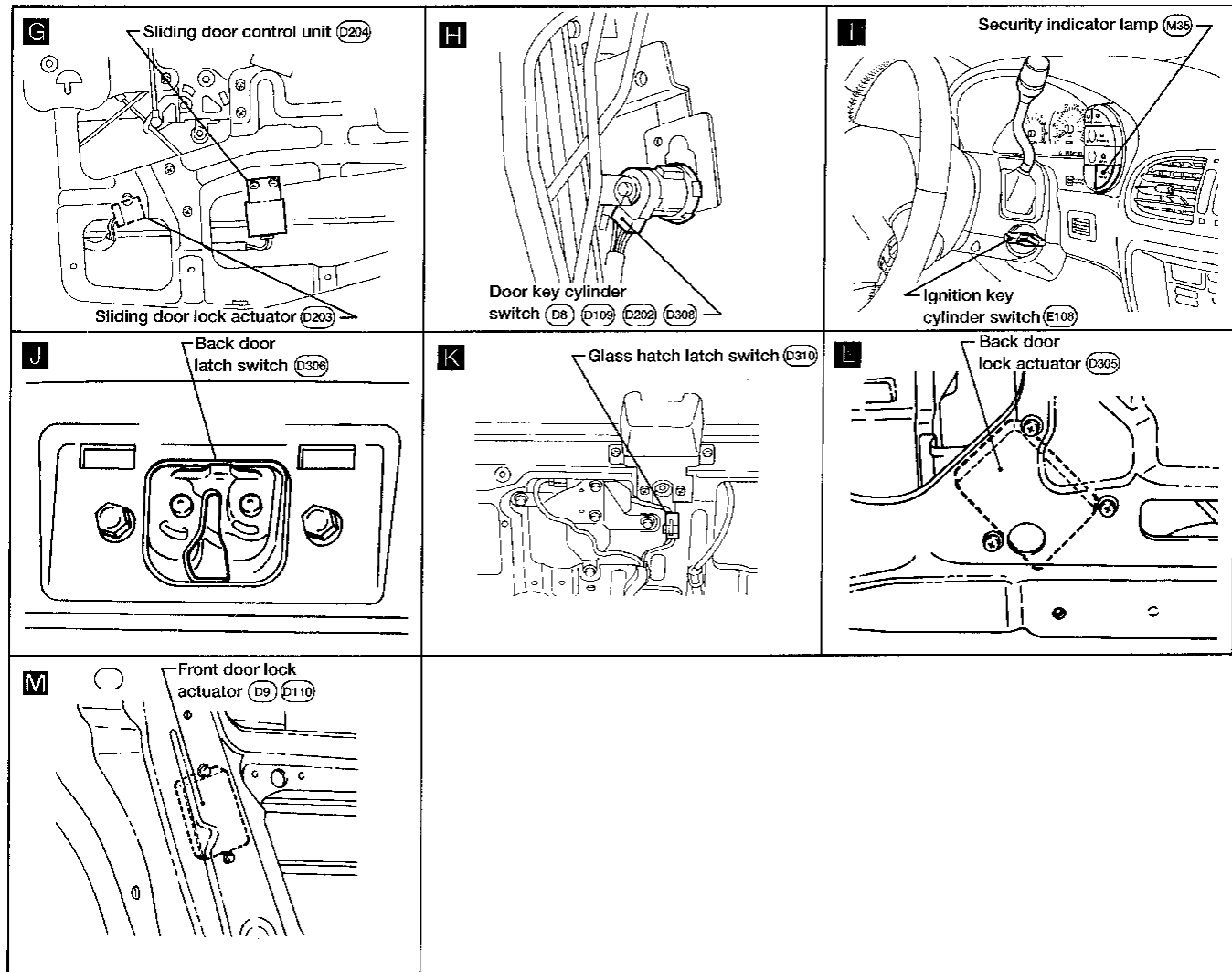
Component Parts and Harness Connector Location



AEL851A

THEFT WARNING SYSTEM

Component Parts and Harness Connector Location (Cont'd)



GI

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EM

LC

EC

FE

AT

FA

RA

BR

ST

RS

BT

HA

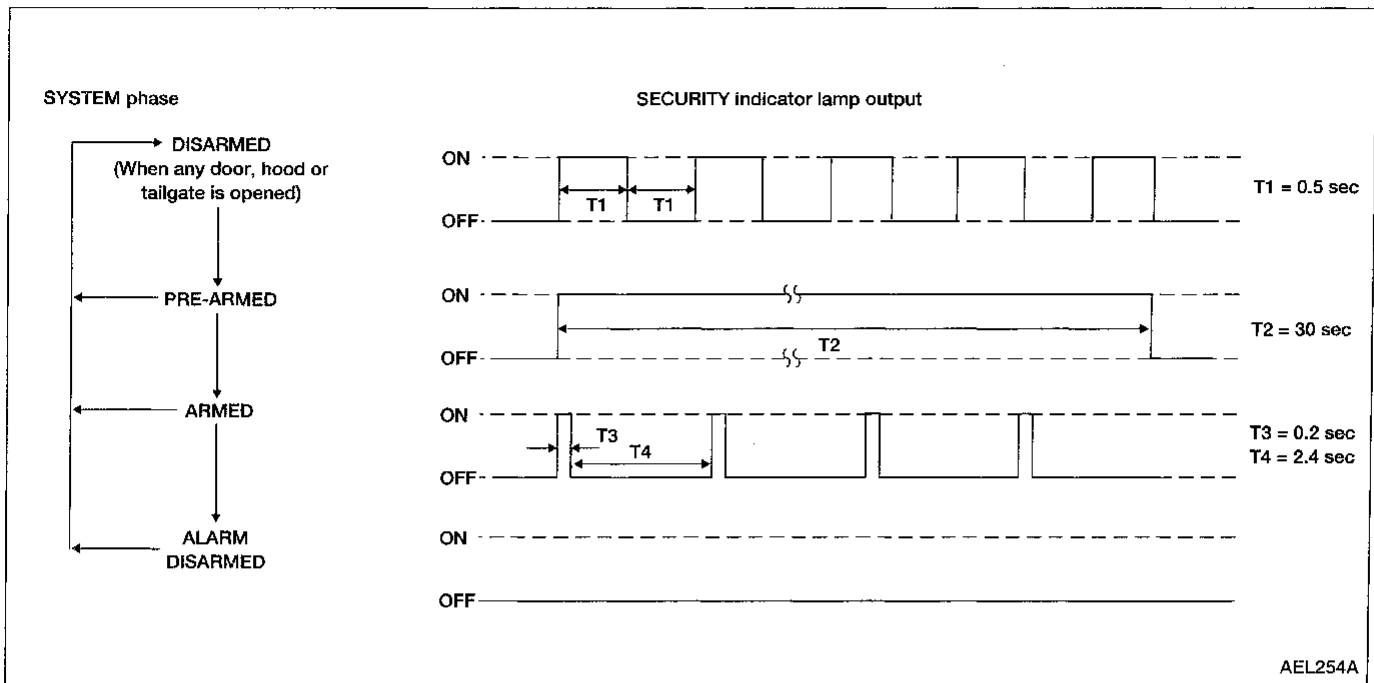
EL

IDX

THEFT WARNING SYSTEM

System Description

1. Operation flow



2. Setting the theft warning system

Initial condition

- (1) Close all doors.
- (2) Close hood and back door.
- (3) Pull key out of ignition.

Disarmed phase

The theft warning system is in the disarmed phase when any door(s), hood or back door is opened. The security indicator lamp blinks every 0.5 seconds.

Pre-armed phase and armed phase

The theft warning system turns into the "pre-armed" phase when hood, back door and all doors are closed and locked by key or multi-remote control. (The security indicator lamp illuminates.)

After about 30 seconds, the system automatically shifts into the "armed" phase (the system is set.) (The security indicator lamp blinks every 2.4 seconds.)

3. Canceling the set theft warning system

When the following (a) or (b) operation is performed, the armed phase is canceled.

- (a) Unlock the doors or the back door with the key.
- (b) Unlock the doors or the back door with the multi-remote controller.

4. Activating the alarm operation of the theft warning system

Make sure the system is in the armed phase. (The security indicator lamp blinks every 2.4 seconds.)

When any of the following operations (a), (b), (c) or (d) is performed, the system sounds the horns and flashes the headlamps for about 2.5 minutes. (At the same time, the system disconnects the starting system circuit.) The starting system is kept dead even after the alarm turns off.

- (a) Engine hood is opened before unlocking door with key or multi-remote controller.
- (b) Door is unlocked or back door is opened without using key or multi-remote controller.
- (c) Accessory, ignition or start power is activated without the key in the ignition.
- (d) Battery is reconnected after being disconnected in armed or alarm phase.

THEFT WARNING SYSTEM

System Description (Cont'd)

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

Power is supplied at all times:

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

GI

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

- through 10A fuse (No. **30**), located in the fuse block
- to smart entrance control unit terminal **⑫**
- to inhibitor switch terminal **②**.

MA

EM

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

- from ignition switch terminal **⑤**
- to inhibitor relay terminal **⑦**.

LC

Power is supplied at all times:

- through 7.5A fuse (No. **41**), located in the fuse and fusible link box
- to smart entrance control unit terminal **⑨**
- to theft warning relay terminal **②**.

EC

Power is supplied at all times:

- through 30A fusible link (letter **a**), located in the fuse and fusible link box
- to circuit breaker-1 terminal **①**
- through circuit breaker-1 terminal **②**
- to smart entrance control unit terminal **③**.

FE

AT

Power is supplied at all times:

- through 15A fuses (No. **49** and **50**), located in the fuse and fusible link box
- to autolamp relay terminals **①**, **③** and **⑥**.

FA

Power is supplied at all times:

- to tail lamp relay terminals **②** and **③**.

RA

Power is supplied at all times:

- through 15A fuse (No. **44**), located in the fuse and fusible link box
- to horn relay terminals **②** and **③**.

BR

Power is supplied at all times:

- through 10A fuse (No. **23**), located in the fuse block
- to security indicator lamp terminal **②**.

ST

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

- through 10A fuse (No. **5**), located in the fuse block
- to smart entrance control unit terminal **⑭**.

RS

Ground is supplied:

- to smart entrance control unit terminals **①**, **⑳** and **⑤④**
- through body grounds **M5**, **M78** and **M123**.

BT

HA

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

EL

The operation of the theft warning system is controlled by the doors, hood and back door. To activate the theft warning system, the ignition key must be removed, doors, hood and back door closed, and the doors locked. When a door or the back door is open, smart entrance control unit terminal **④**, **⑤**, **⑳** or **③①** receives a ground signal from door switches.

IDX

When a front door or the back door is unlocked, smart entrance control unit terminal **⑳**, **㉔** or **④④** receives a ground signal from all door unlock sensors.

When the sliding door is unlocked, smart entrance control unit terminal **⑩** receives a status signal from sliding door control unit terminal **⑦**.

When the hood is open, smart entrance control unit terminal **⑤③** receives a ground signal:

- from hood switch terminal **①**
- through body grounds **E3**, **E14** and **E53**.

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

THEFT WARNING SYSTEM

System Description (Cont'd)

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

If the key is used to lock doors, smart entrance control unit terminal (49) receives a ground signal from the front LH or RH door key cylinder switches and the back door key cylinder switch with normal glass.

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

With the theft warning system activated, smart entrance control unit terminal (51) supplies ground to the security indicator lamp. The security indicator lamp will illuminate for approximately 30 seconds and then go out.

THEFT WARNING SYSTEM OPERATION

The theft warning system is triggered by:

- unlocking or opening a door or the back door without using the key
- opening the hood without using the hood opener
- activating accessory, ignition or start power without the key in the ignition
- reconnecting the battery after it is disconnected in the armed or alarm phase. Once the theft warning system has been activated, it will be triggered if the smart entrance control unit receives a ground signal at terminal (4), (5), (29) or (30). The headlamps, side marker lamps, tail lamps and license lamps flash and the horn sounds intermittently, and the starting system is interrupted.

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

- from smart entrance control unit terminal (45)
- to theft warning relay terminal (1).

With power and ground supplied, power to the inhibitor relay is interrupted. The starter motor will not crank and the engine will not start.

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

- from smart entrance control unit terminal (46)
- to autolamp relay terminal (2) and
- from smart entrance control unit terminal (37)
- to tail lamp relay terminal (1), and
- from smart entrance control unit terminal (18)
- to horn relay terminal (1).

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

THEFT WARNING SYSTEM DEACTIVATION

To deactivate the theft warning system, a door or the back door must be unlocked using the key or remote controller.

If the key is used to unlock a door, smart entrance control unit terminal (48) receives a ground signal from the front door LH or RH, or the back door key cylinder switches.

If the key is used to unlock the sliding door, smart entrance control unit terminal (10) receives a status signal from sliding door control unit terminal (7).

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

THEFT WARNING SYSTEM

System Description (Cont'd)

PANIC ALARM OPERATION

The multi-remote control system may or may not operate theft warning system (horn and headlamps, side marker lamps, tail lamps, and license lamps) as required.

GI

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

- from smart entrance control unit terminal ④⑥
- to autolamp relay terminal ② and
- from smart entrance control unit terminal ③⑦
- to tail lamp relay terminal ① and
- from smart entrance control unit terminal ①⑧
- to horn relay terminal ①.

MA

EM

The headlamps, side marker lamps, tail lamps, and license lamps flash, and the horn sounds intermittently. The alarm automatically turns off after 30 seconds or when the smart entrance control unit receives any signal from multi-remote controller.

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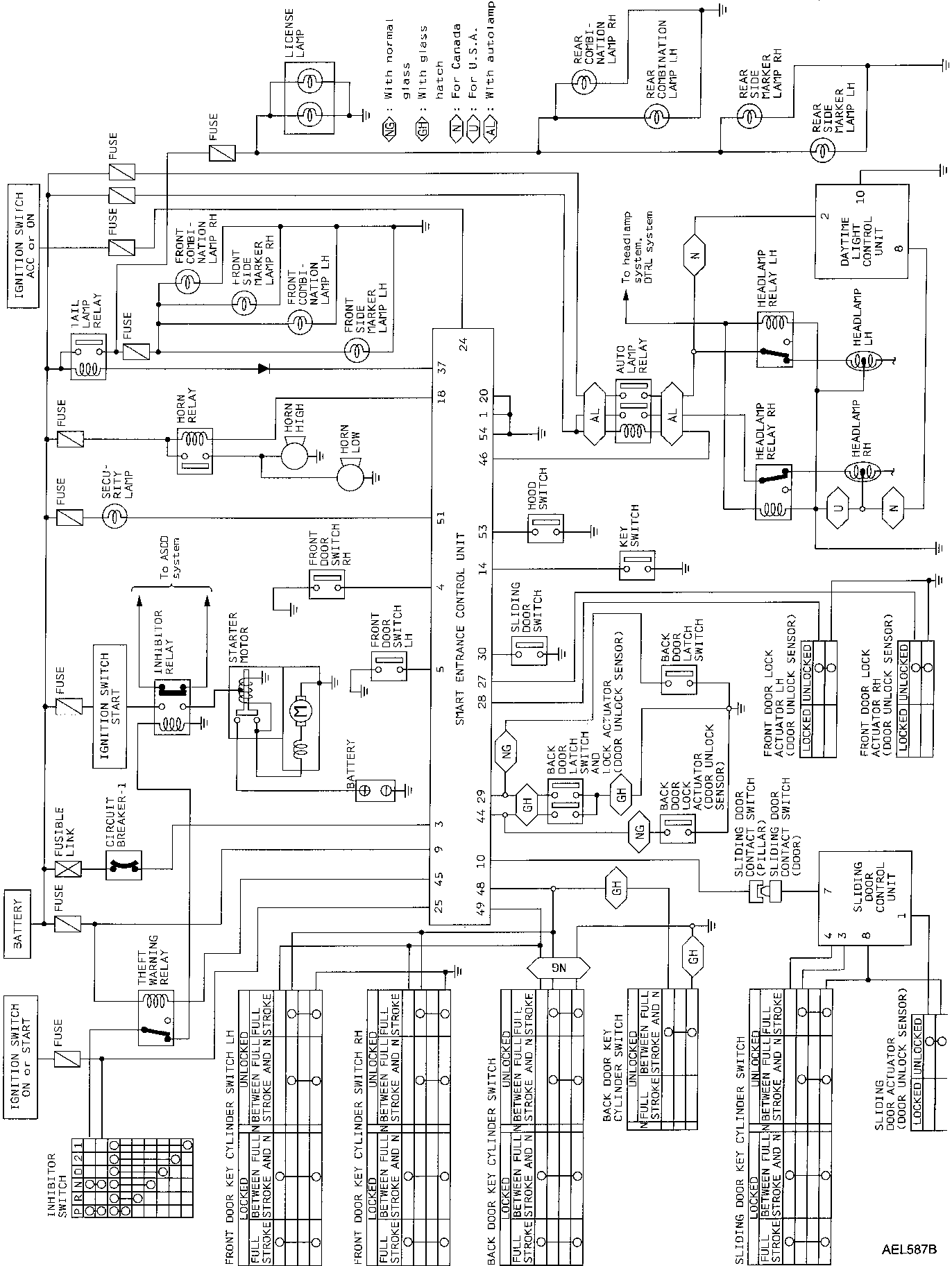
HA

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THEFT WARNING SYSTEM

Schematic



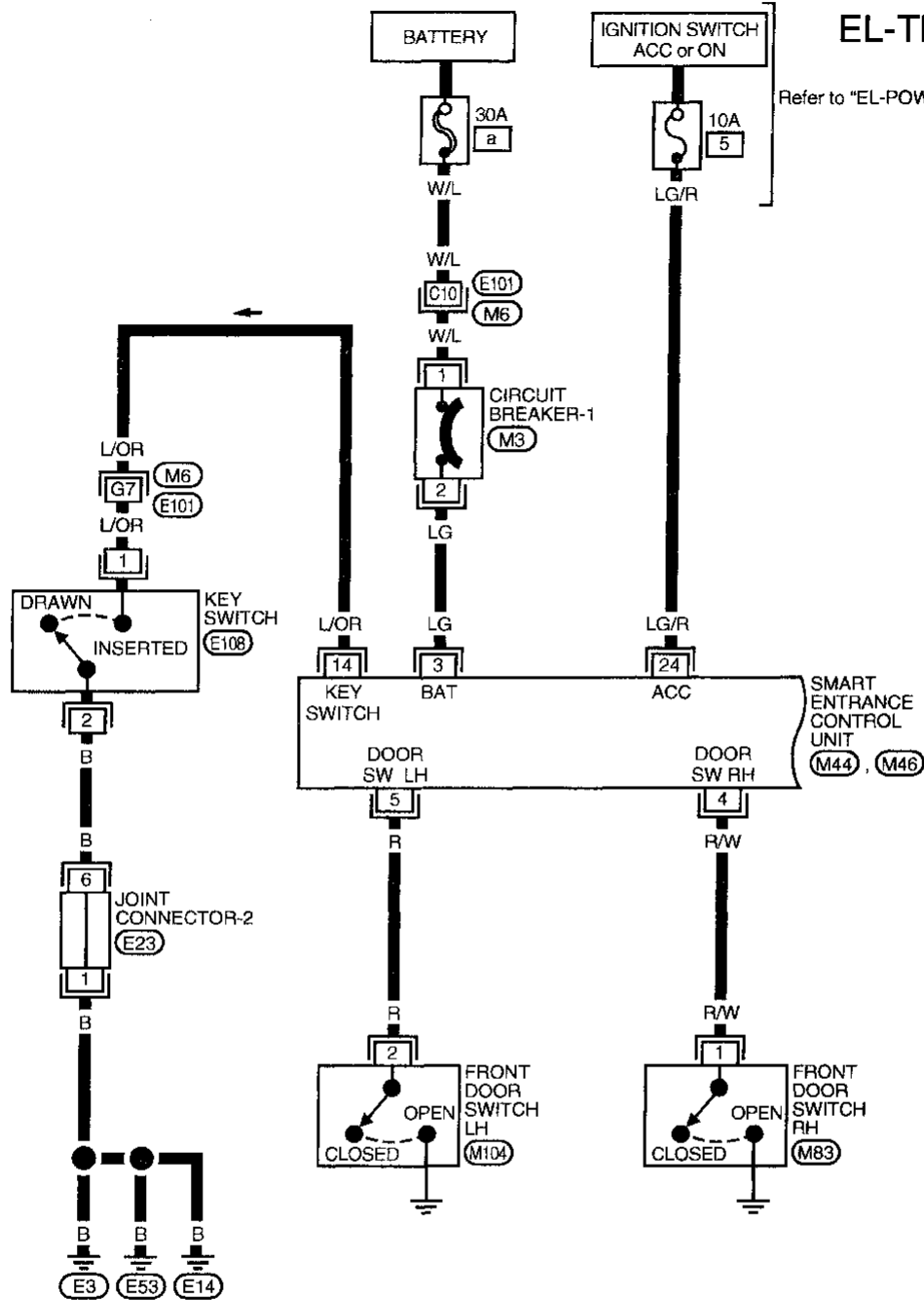
AEL587B

THEFT WARNING SYSTEM

Wiring Diagram -THEFT-

EL-THEFT-01

Refer to "EL-POWER".



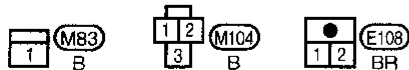
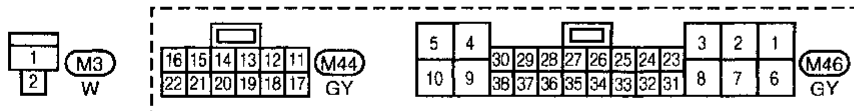
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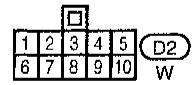
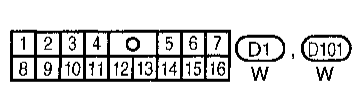
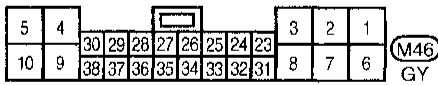
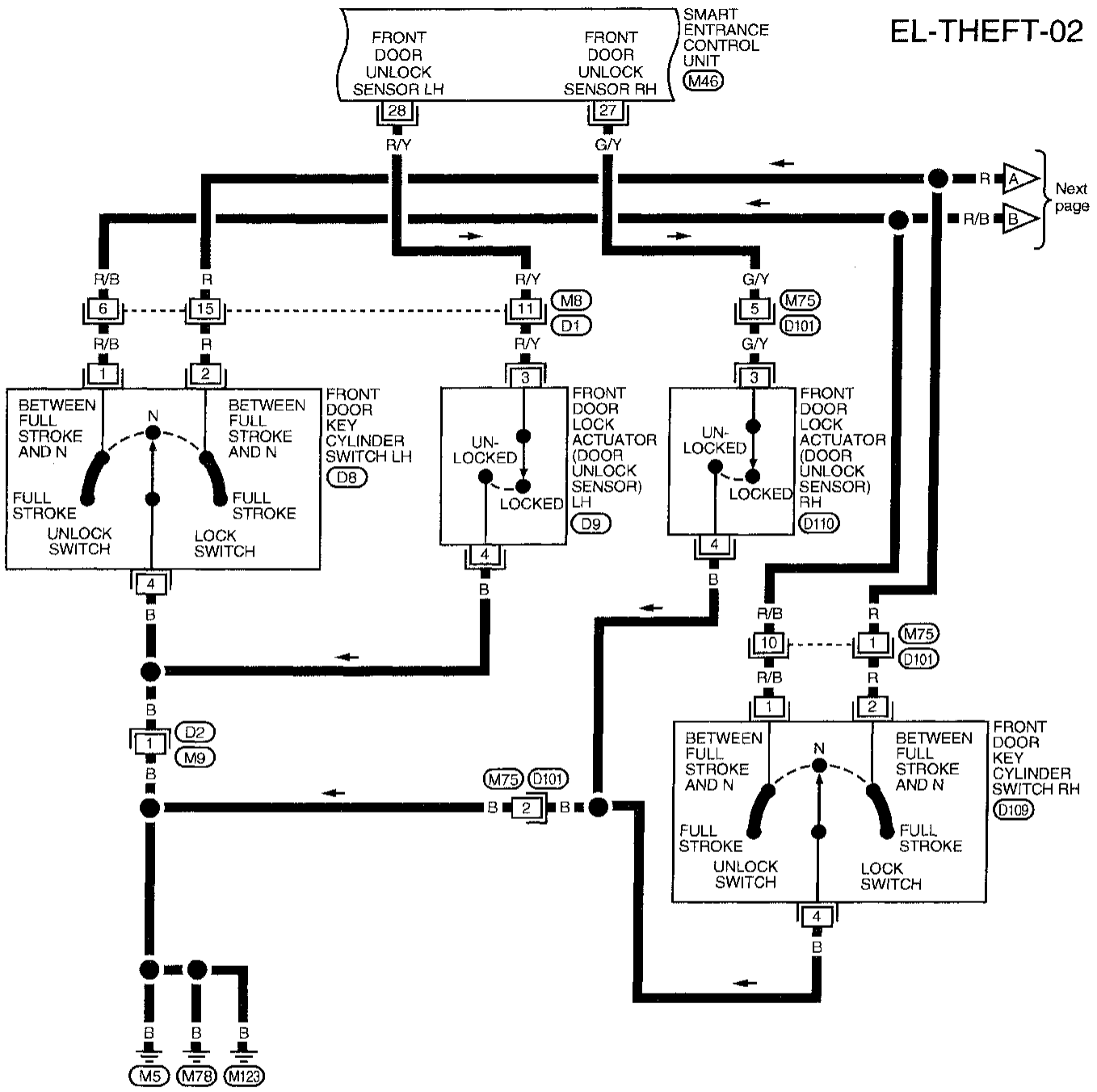
M6, E101
E23



THEFT WARNING SYSTEM

Wiring Diagram -THEFT- (Cont'd)

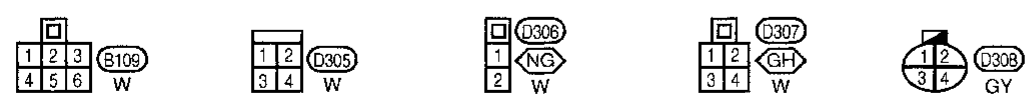
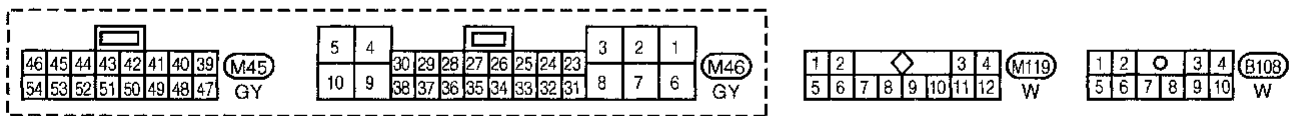
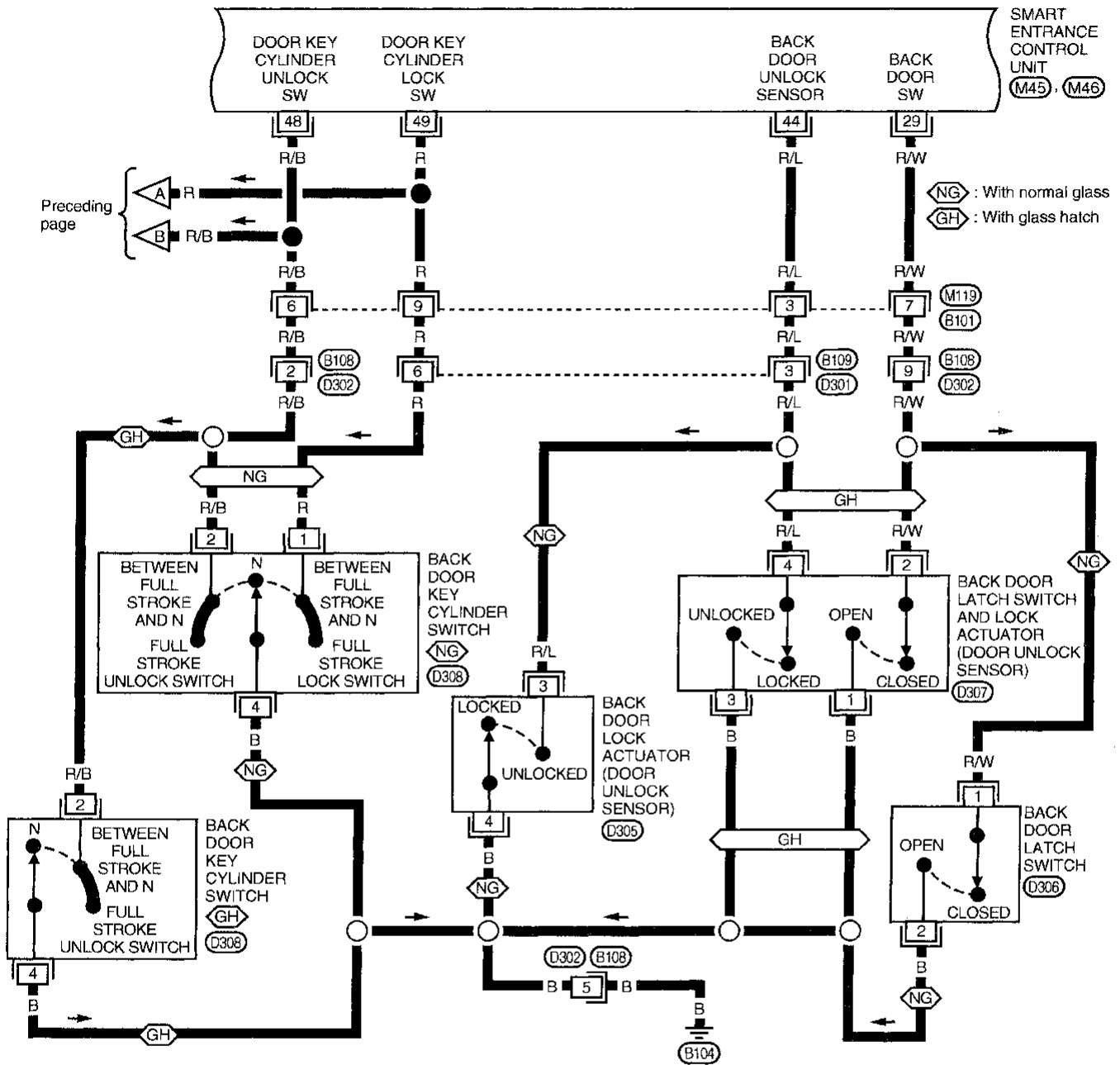
EL-THEFT-02



THEFT WARNING SYSTEM

Wiring Diagram -THEFT- (Cont'd)

EL-THEFT-03



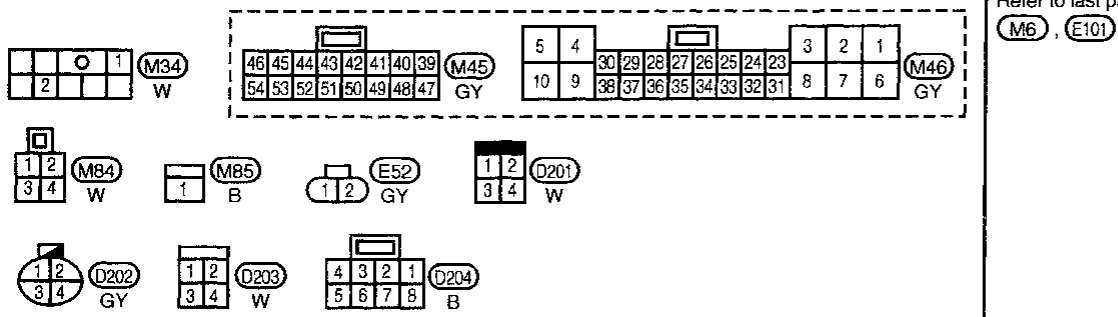
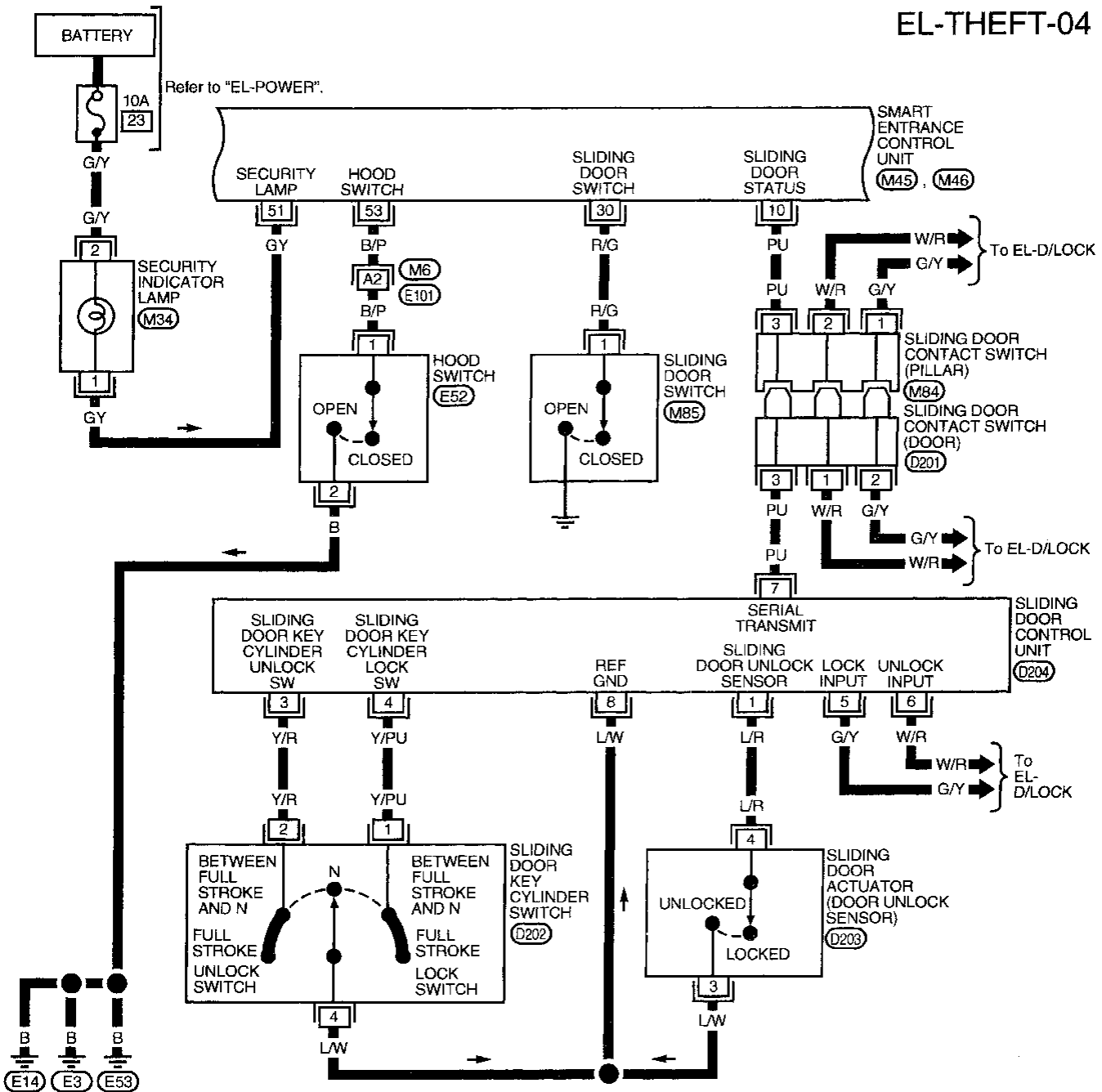
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THEFT WARNING SYSTEM

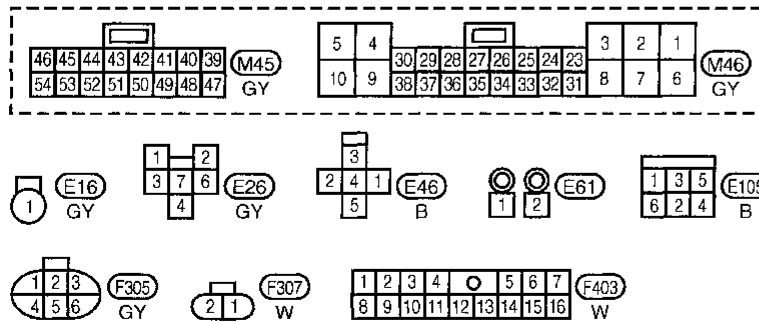
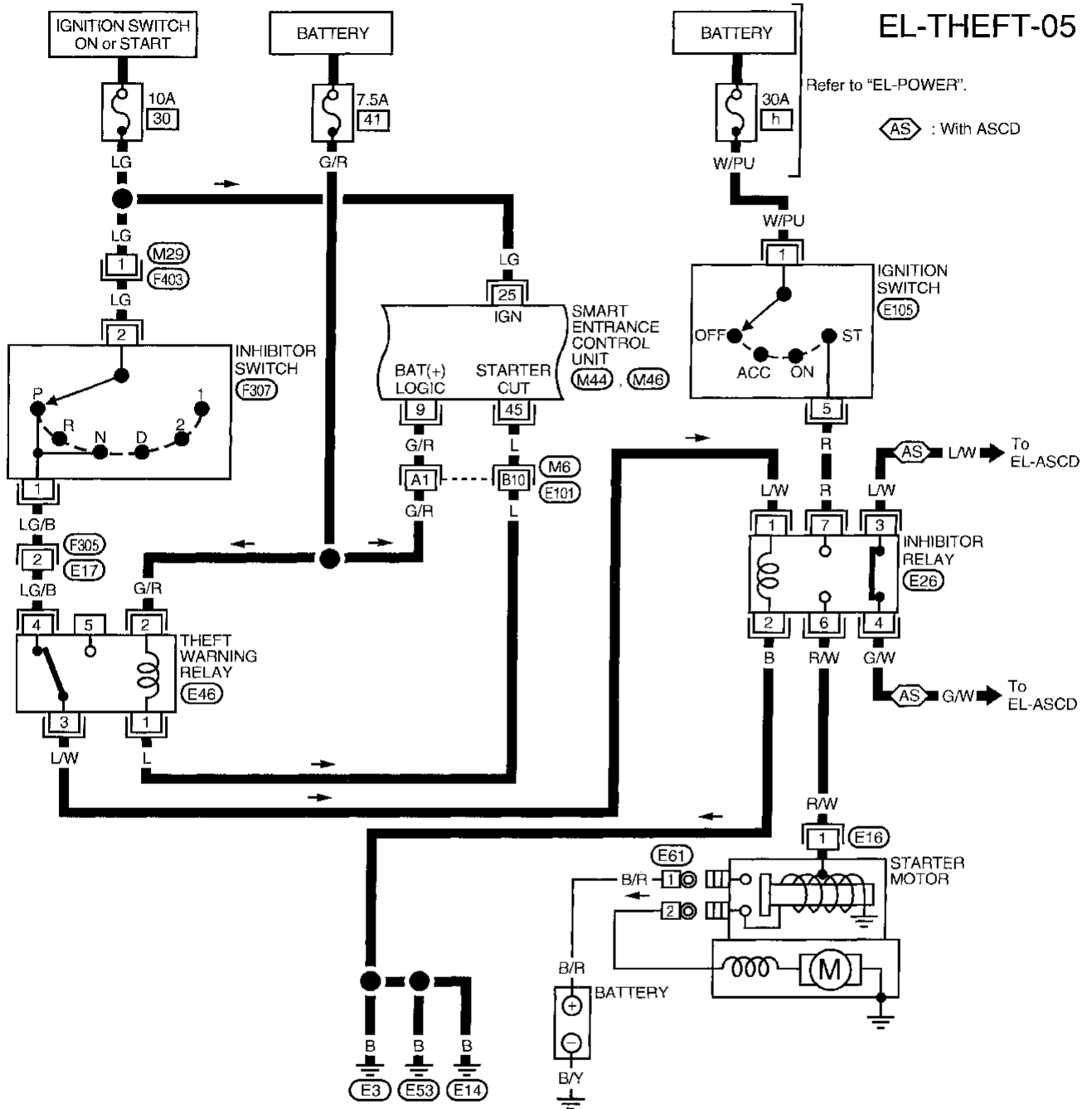
Wiring Diagram -THEFT- (Cont'd)

EL-THEFT-04



THEFT WARNING SYSTEM

Wiring Diagram -THEFT- (Cont'd)



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 (M6), (E101)

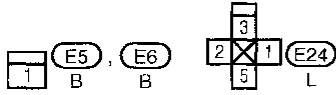
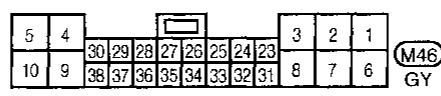
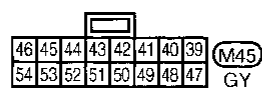
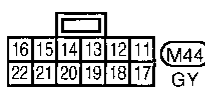
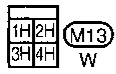
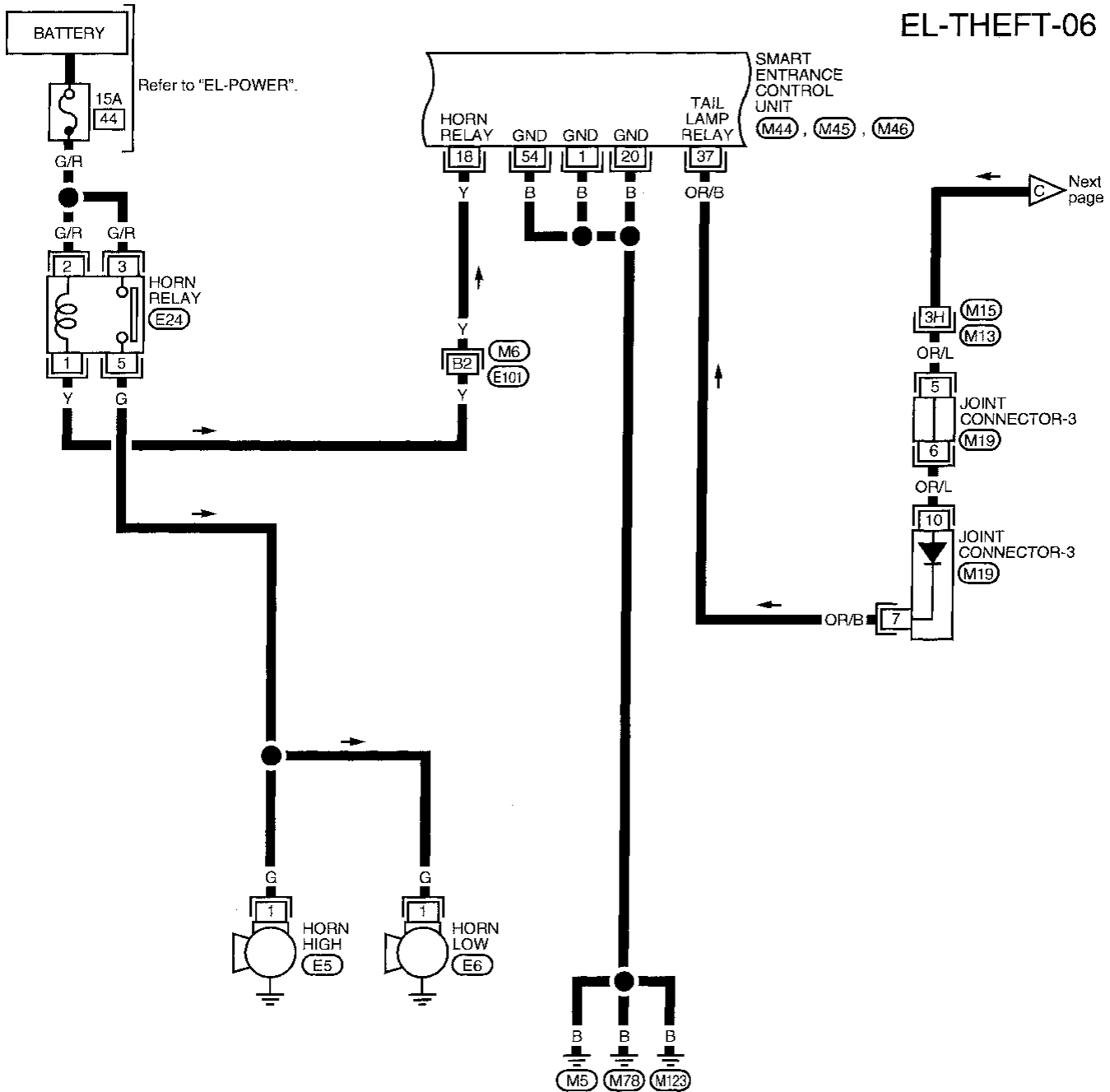
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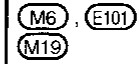
THEFT WARNING SYSTEM

Wiring Diagram -THEFT- (Cont'd)

EL-THEFT-06



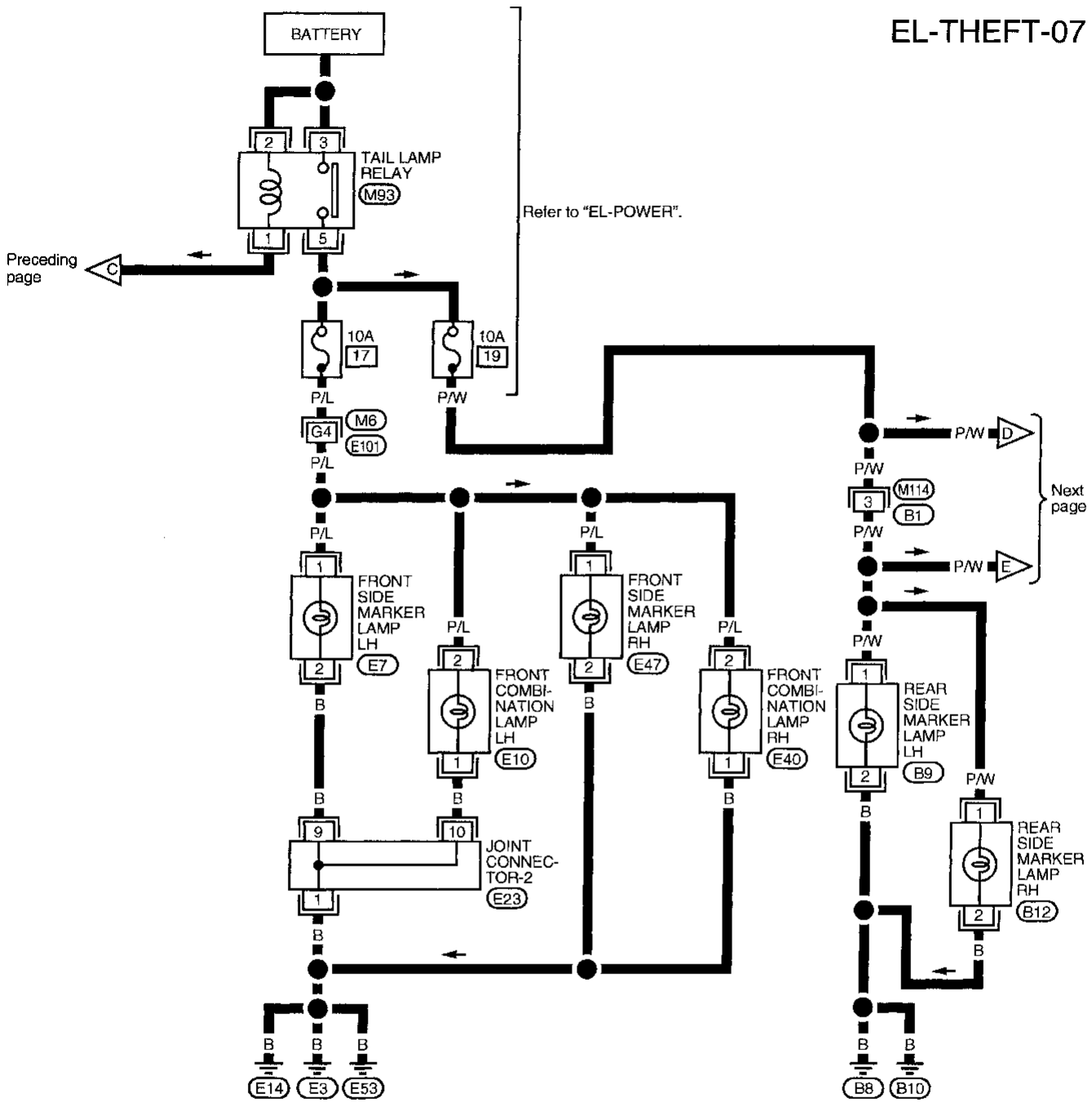
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THEFT WARNING SYSTEM

Wiring Diagram -THEFT- (Cont'd)

EL-THEFT-07

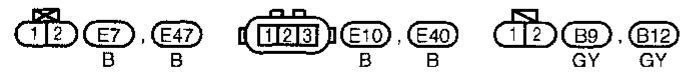
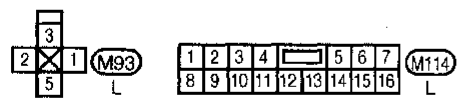


Preceding page

Refer to "EL-POWER".

Next page

Refer to last page (Foldout page).



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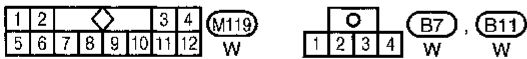
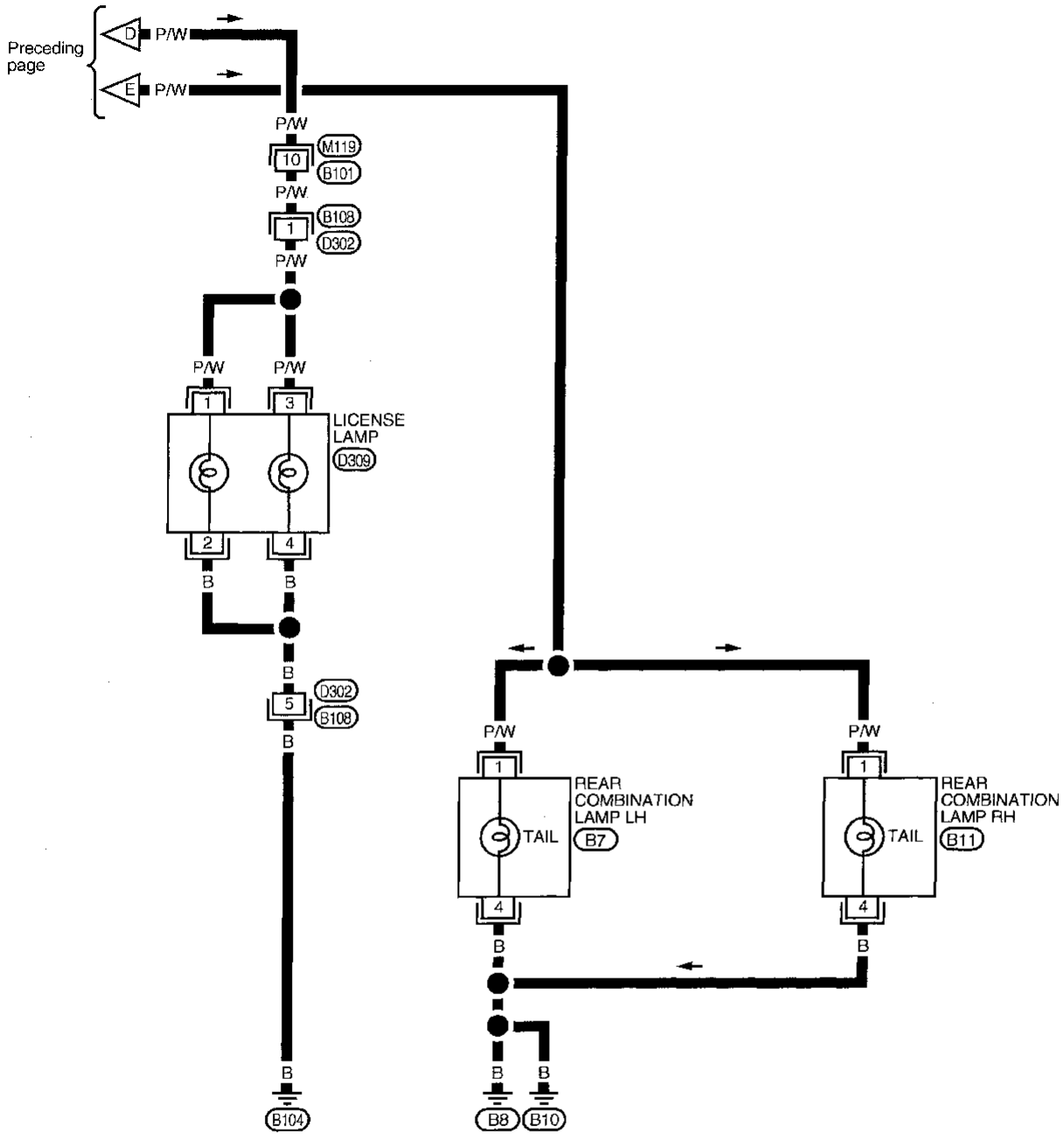
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THEFT WARNING SYSTEM

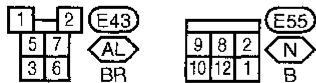
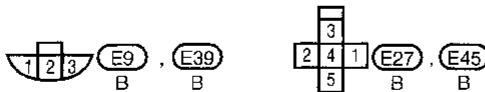
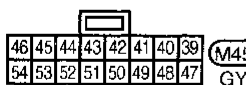
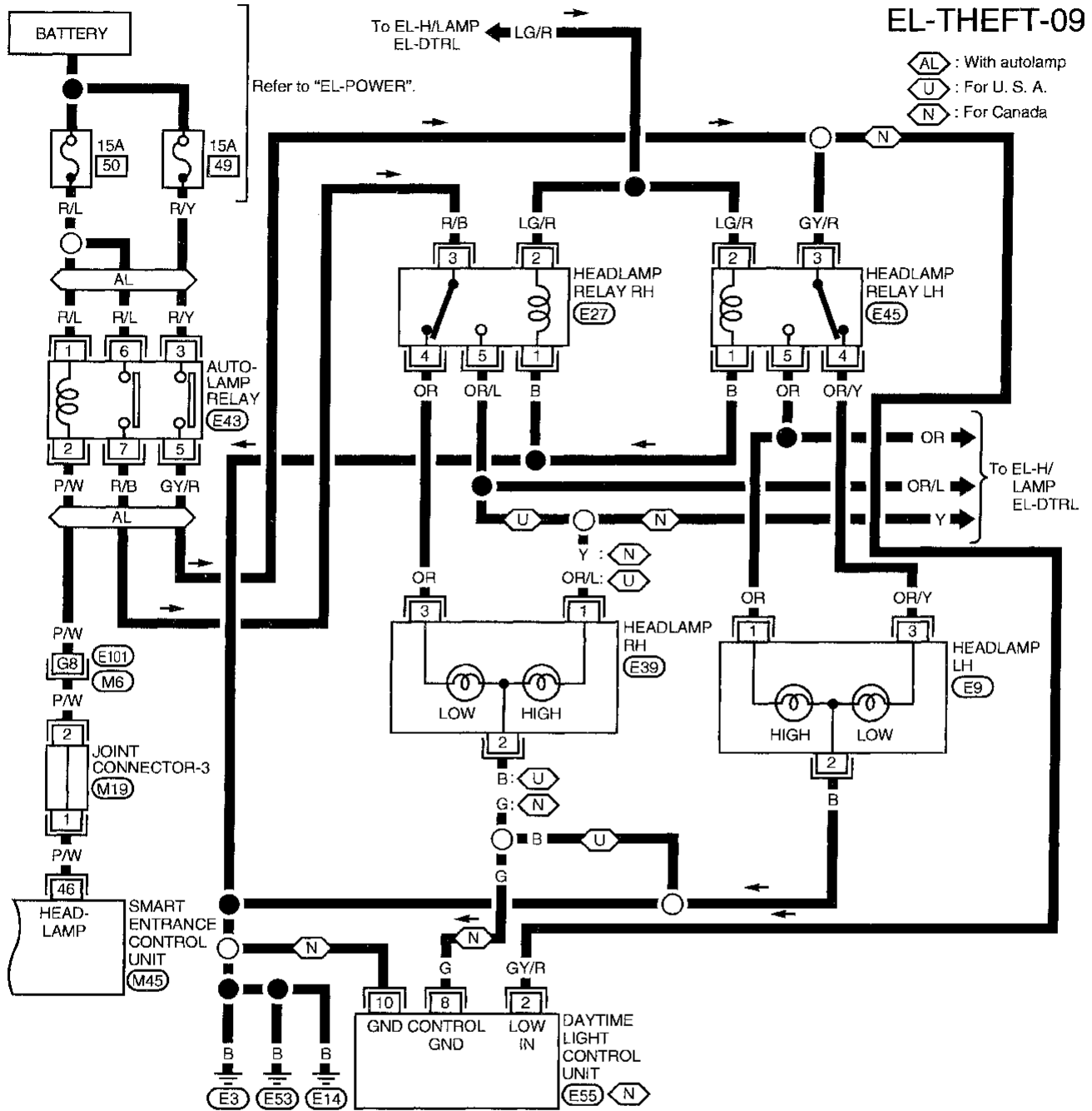
Wiring Diagram -THEFT- (Cont'd)

EL-THEFT-08



THEFT WARNING SYSTEM

Wiring Diagram -THEFT- (Cont'd)



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M19

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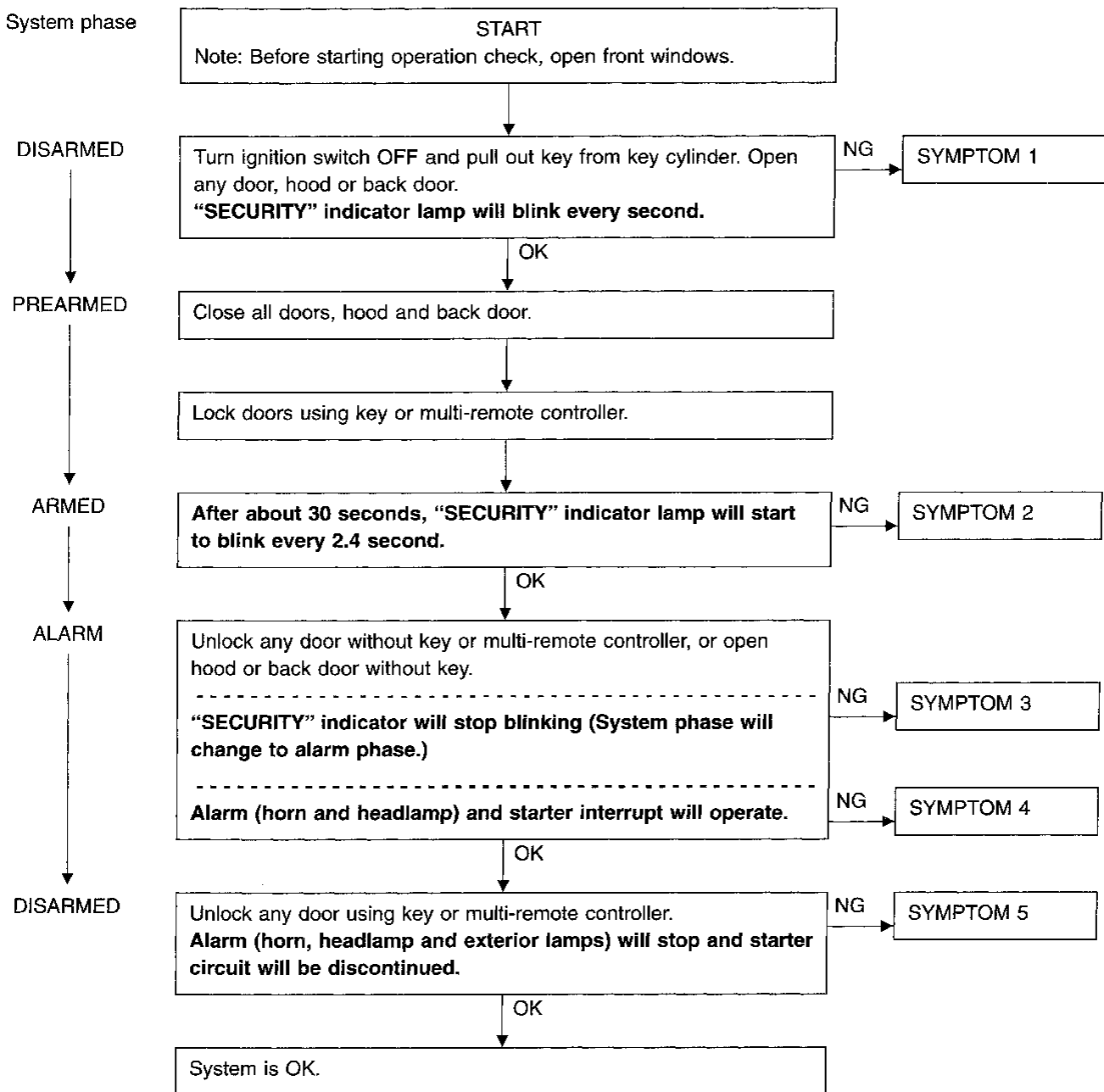
IDX

THEFT WARNING SYSTEM

Trouble Diagnosis

PRELIMINARY CHECK

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



After performing preliminary check go to SYMPTOM CHART on next page.

THEFT WARNING SYSTEM

Trouble Diagnosis (Cont'd)

SYMPTOM CHART

PROCEDURE		Power supply and ground circuit check			Diagnostic procedure							I
		EL-232	EL-234	EL-234	EL-235	EL-238	EL-239	EL-241	EL-244	EL-245	EL-247	
SYMPTOM		Preliminary check	Ground circuit check	Power supply circuit check	Diagnostic Procedure 1 (Door, hood and back door latch switch check)	Diagnostic Procedure 2 (Security Indicator lamp check)	Diagnostic Procedure 3 (Door unlock sensor check)	Diagnostic Procedure 4 (Door key cylinder switch check)	Diagnostic Procedure 5 (Theft warning horn alarm check)	Diagnostic Procedure 6 (Headlamp side marker lamp, combination lamp, tail lamp, and license lamp alarm check)	Diagnostic Procedure 7 (Starter interrupt system check)	Check "MULTI-REMOTE CONTROL SYSTEM".
1	Theft warning indicator does not turn ON or blink	X	X	X		X						
2	Theft warning system cannot be set by ...	All items	X	X	X	X		X				
		Door outside key	X	X	X			X				
		Multi-remote control	X	X	X							X
3	*1 Theft warning system does not alarm when ...	Any door is opened.	X	X	X	X						
		Any door is unlocked without using key or multi-remote controller	X	X	X			X				
4	Theft warning alarm does not activate.	All function	X	X	X	X		X				
		Horn alarm	X	X	X				X			
		Headlamp alarm	X	X	X					X		
		Sidemarkers lamp, combination lamp, tail lamp, and license lamp alarm									X	
		Starter interrupt		X	X							X
5	Theft warning system cannot be canceled by ...	Door outside key	X	X	X			X				
		Multi-remote control	X	X	X							X

X : Applicable

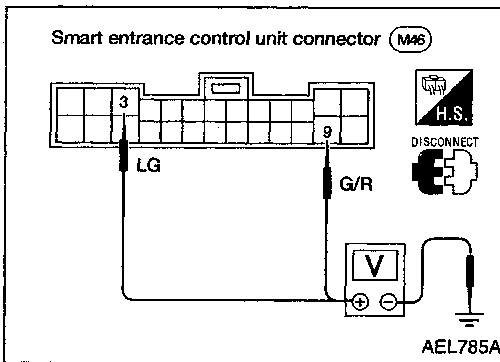
*1: Make sure the system is in the armed phase.

THEFT WARNING SYSTEM

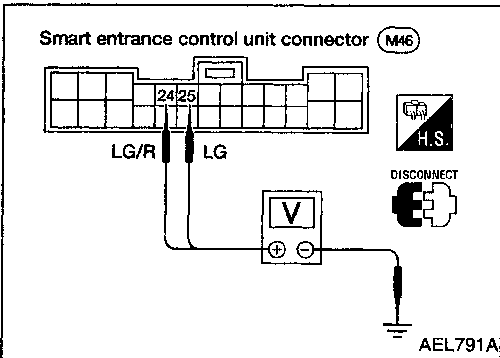
Trouble Diagnosis (Cont'd)

POWER SUPPLY AND GROUND CIRCUIT CHECK

Main power supply circuit check

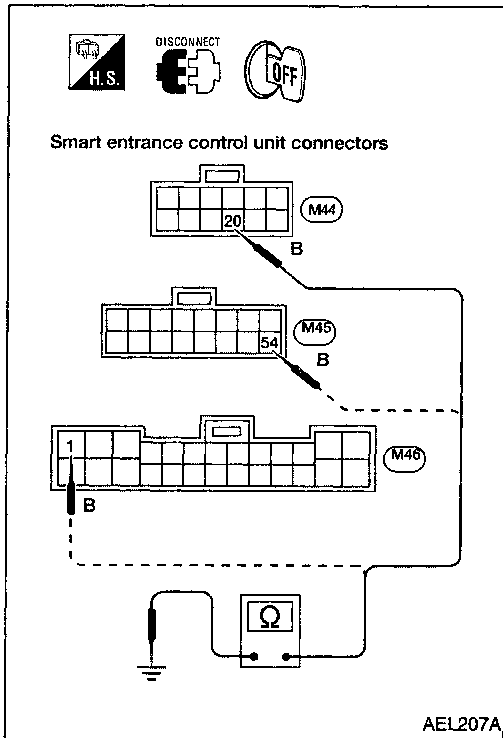


Terminals	Ignition switch position		
	OFF	ACC	ON
③ - ground	Battery voltage	Battery voltage	Battery voltage
⑨ - ground			



Power supply circuit check for system cancel

Terminals	Ignition switch position		
	OFF	ACC	ON
②④ - ground	0V	Battery voltage	Battery voltage
②⑤ - ground	0V	0V	Battery voltage



Ground circuit check

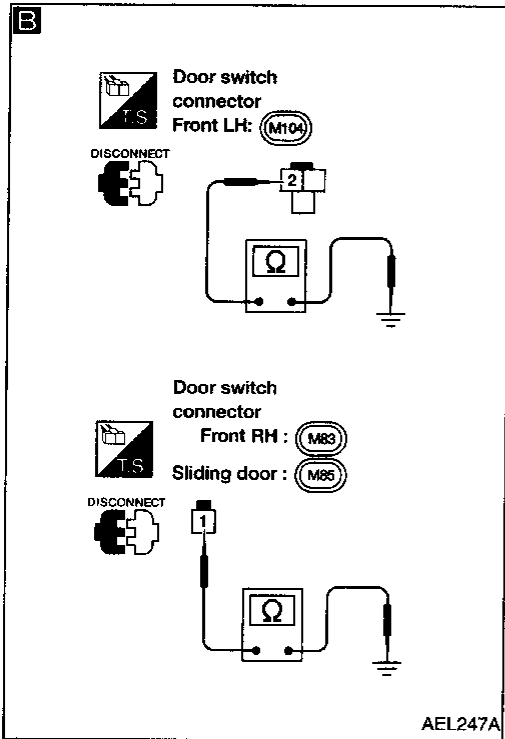
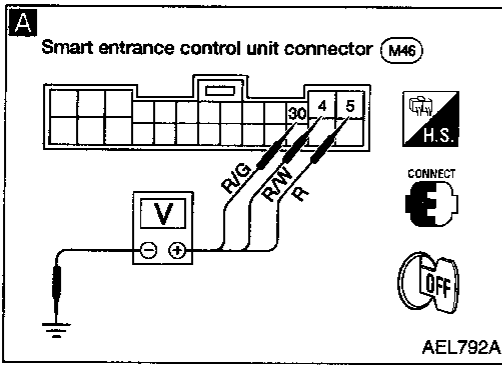
Terminals	Continuity
①, ②①, ⑤④ - ground	Yes

THEFT WARNING SYSTEM

Trouble Diagnosis (Cont'd)

DOOR SWITCH INPUT SIGNAL CHECK

Diagnostic procedure 1-(1)



A

DOOR SWITCH INPUT SIGNAL CHECK.
Check voltage between smart entrance control unit harness terminals ④, ⑤, ③① and ground.

	Terminals		Condition	Voltage [V]
	⊕	⊖		
Front door switch LH	⑤	ground	Open	0
			Closed	Approx. 12

	Terminals		Condition	Voltage [V]
	⊕	⊖		
Front door switch RH	④	ground	Open	0
			Closed	Approx. 12

	Terminals		Condition	Voltage [V]
	⊕	⊖		
Sliding door switch	③①	ground	Open	0
			Closed	Approx. 12

OK → Go to the next procedure.

NG

B

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

	Terminals	Condition	Continuity
Front door switch LH	② - ground	Closed	No
		Open	Yes
Front door switch RH	① - ground	Closed	No
		Open	Yes
Sliding door switch	① - ground	Closed	No
		Open	Yes

NG → Replace door switch.

OK

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

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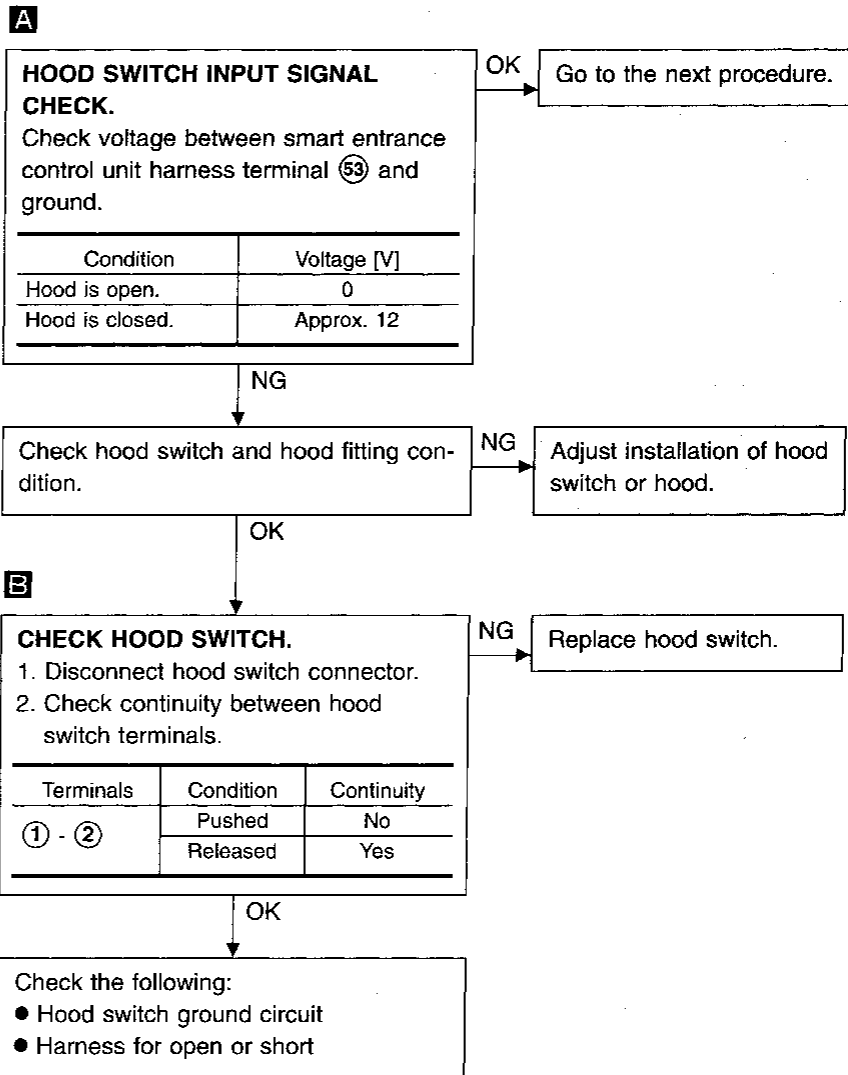
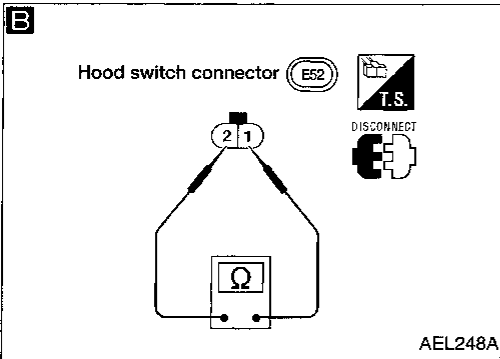
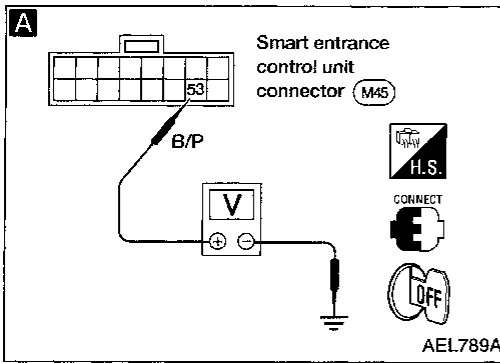
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THEFT WARNING SYSTEM

Trouble Diagnosis (Cont'd) HOOD SWITCH INPUT SIGNAL CHECK

Diagnostic procedure 1-(2)

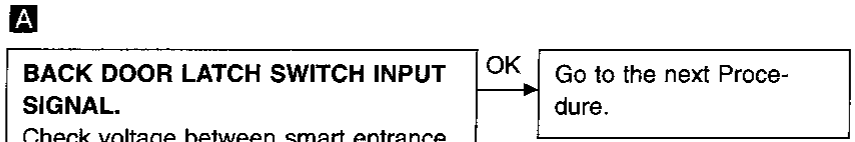
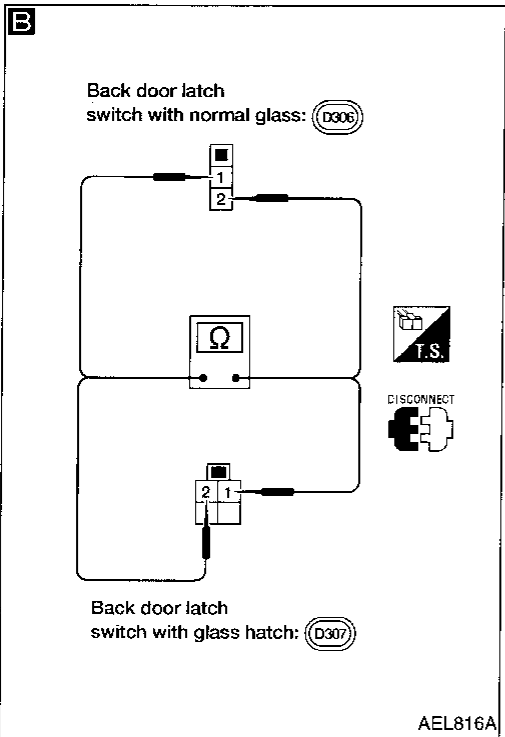
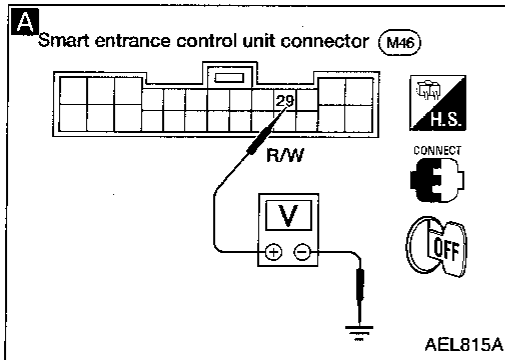


THEFT WARNING SYSTEM

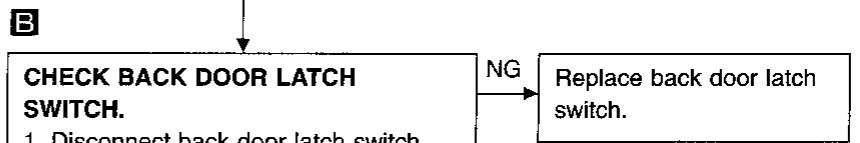
Trouble Diagnosis (Cont'd)

BACK DOOR LATCH SWITCH INPUT SIGNAL CHECK

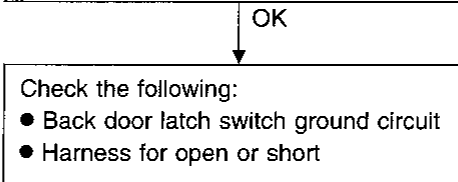
Diagnostic procedure 1-(3)



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



Terminals	Condition	Continuity
① - ②	Closed	No
	Open	Yes

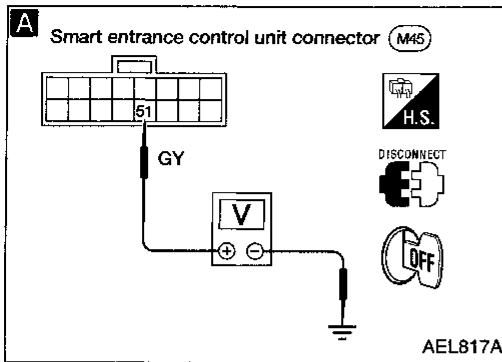


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THEFT WARNING SYSTEM

Trouble Diagnosis (Cont'd) SECURITY INDICATOR LAMP CHECK

Diagnostic procedure 2



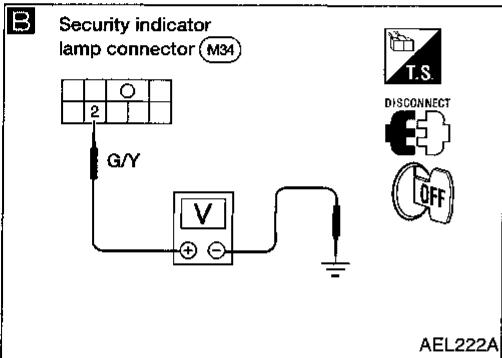
A

INDICATOR LAMP OUTPUT SIGNAL CHECK.

1. Disconnect control unit connector.
2. Check voltage between smart entrance control unit harness terminal ⑤1 and ground.

Battery voltage should exist.

OK → Go to the next procedure.



NG

Check indicator lamp.

NG → Replace indicator lamp.

B

CHECK VOLTAGE.

1. Disconnect security indicator lamp connector.
2. Check voltage between indicator lamp harness terminal ② and body ground.

Battery voltage should exist.

NG → CHECK THE FOLLOWING:

- 10A fuse (No. 23, located in the fuse block)
- Harness for open or short

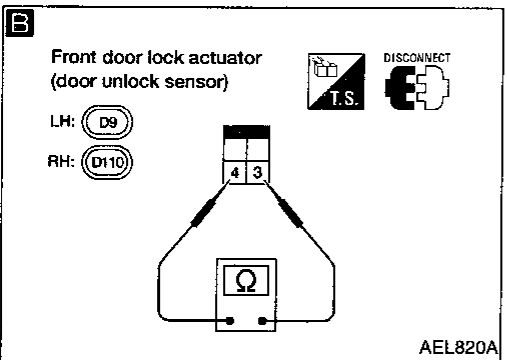
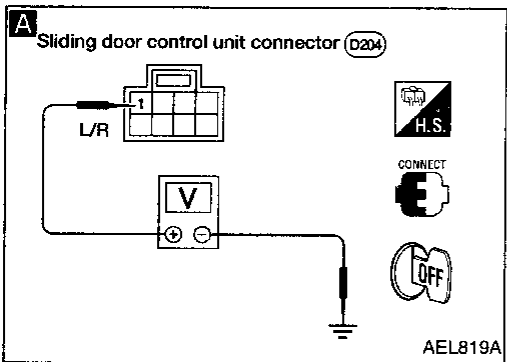
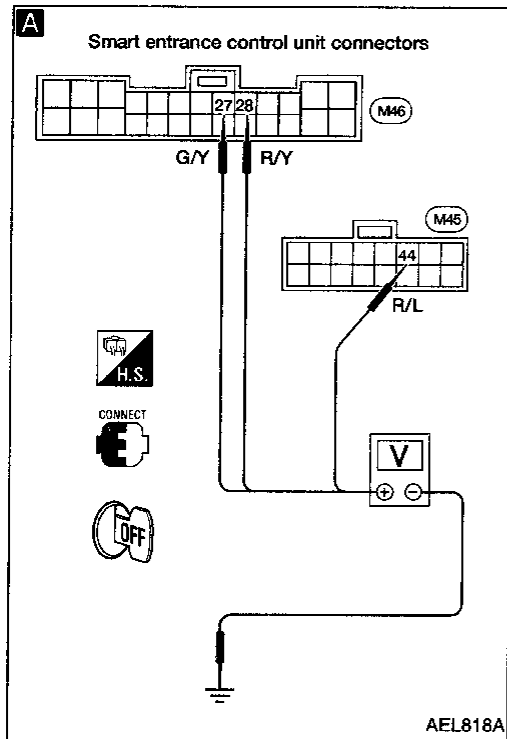
OK

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

THEFT WARNING SYSTEM

Trouble Diagnosis (Cont'd) DOOR UNLOCK SENSOR CHECK

Diagnostic procedure 3



A

CHECK DOOR UNLOCK SENSOR INPUT SIGNAL.

Check voltage between smart entrance control unit harness terminals (28), (27), (44) and ground.

	Terminals		Condi- tion	Voltage [V]
	⊕	⊖		
Front door LH	(28)	ground	Locked	Approx. 12
			Unlocked	0
Front door RH	(27)	ground	Locked	Approx. 12
			Unlocked	0
Back door	(44)	ground	Locked	Approx. 12
			Unlocked	0

● Check voltage between sliding door control unit harness terminal (1) and ground.

	Terminals		Condi- tion	Voltage [V]
	⊕	⊖		
Sliding door	(1)	ground	Locked	Approx. 12
			Unlocked	0

OK → Go to the next procedure.

NG

Check continuity between sliding door contact switch (pillar) and sliding door contact switch (door).

NG → Replace sliding door contact switch.

OK

B

CHECK FRONT DOOR UNLOCK SENSOR.

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

Terminals	Condition	Continuity
(4) - (3)	Locked	No
	Unlocked	Yes

NG → Replace front door unlock sensor.

OK

A

(Go to next page.)

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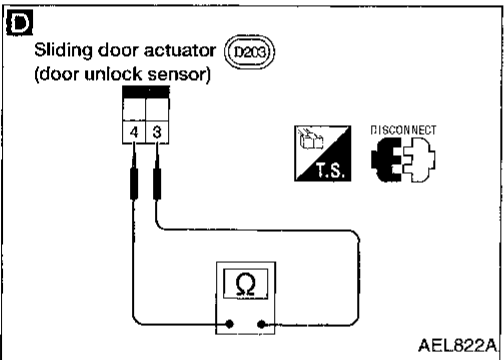
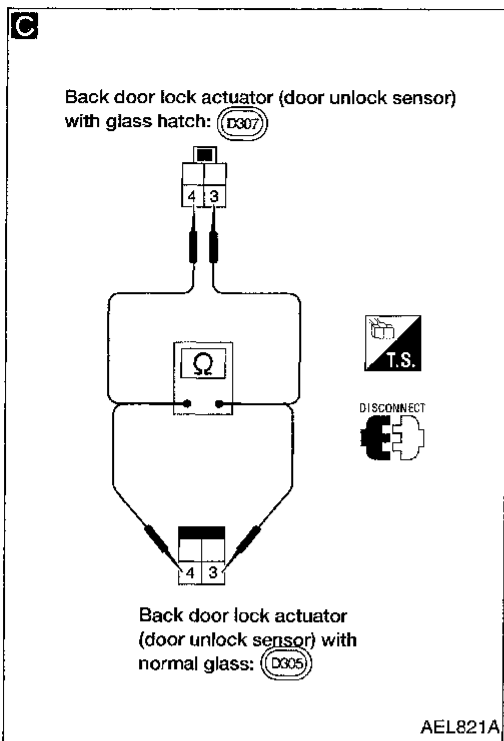
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THEFT WARNING SYSTEM

Trouble Diagnosis (Cont'd)



A

C

CHECK BACK DOOR UNLOCK SENSOR.

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

Terminals	Condition	Continuity
④ - ③	Locked	No
	Unlocked	Yes

NG → Replace back door unlock sensor.

OK

D

CHECK SLIDING DOOR UNLOCK SENSOR.

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

Terminals	Condition	Continuity
④ - ③	Locked	No
	Unlocked	Yes

NG → Replace sliding door unlock sensor.

OK

Check the following:

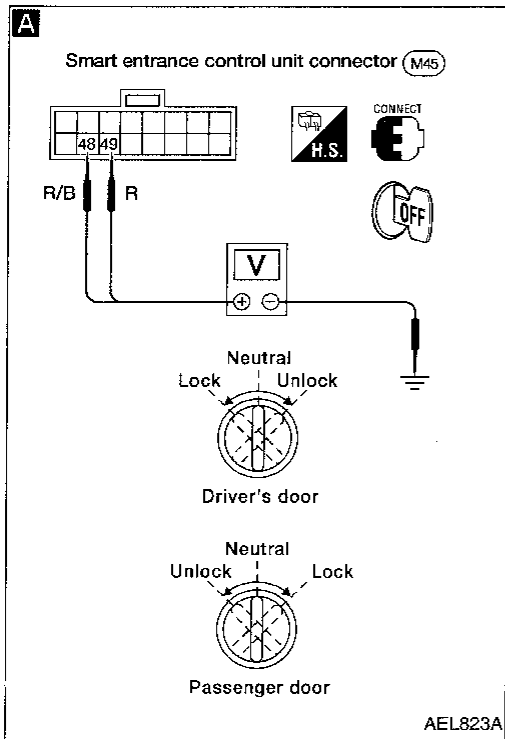
- Unlock sensor ground circuit
- Harness for open or short

THEFT WARNING SYSTEM

Trouble Diagnosis (Cont'd)

FRONT DOOR KEY CYLINDER SWITCH CHECK

Diagnostic procedure 4-(1)



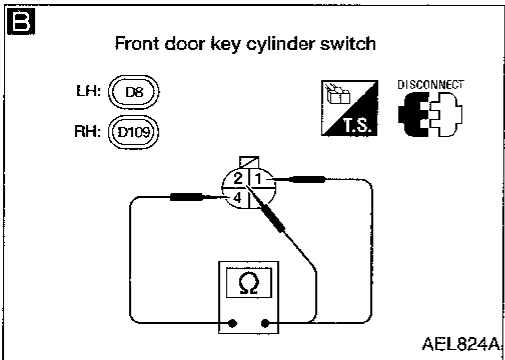
A

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

Check voltage between smart entrance control unit harness terminals (48), (49) and ground.

Terminals		Key position	Voltage [V]
⊕	⊖		
(48)	ground	Neutral	Approx. 12
		Lock	0
(49)	ground	Neutral	Approx. 12
		Unlock	0

OK → Go to the next procedure.



B

CHECK FRONT DOOR KEY CYLINDER SWITCH.

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

Terminals	Key position	Continuity
(1) - (4)	Neutral	No
	Lock	Yes
(2) - (4)	Neutral	No
	Unlock	Yes

NG → Replace front door key cylinder switch.

OK

Check the following:

- Front door key cylinder switch ground circuit
- Harness for open or short

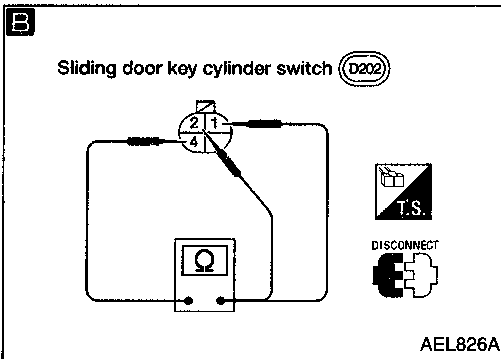
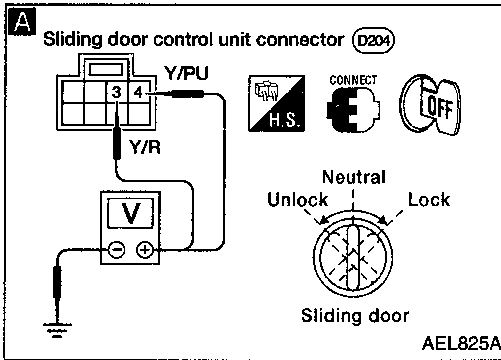
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THEFT WARNING SYSTEM

Trouble Diagnosis (Cont'd)

SLIDING DOOR KEY CYLINDER SWITCH INPUT SIGNAL CHECK

Diagnostic procedure 4-(2)



A

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

Check voltage between sliding door control unit harness terminals ③, ④ and ground.

Terminals		Key position	Voltage [V]
⊕	⊖		
④	ground	Neutral	Approx. 12
		Lock	0
③	ground	Neutral	Approx. 12
		Unlock	0

OK → Go to the next procedure.

NG

B

CHECK SLIDING DOOR KEY CYLINDER SWITCH.

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

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

NG → Replace sliding door key cylinder switch.

OK

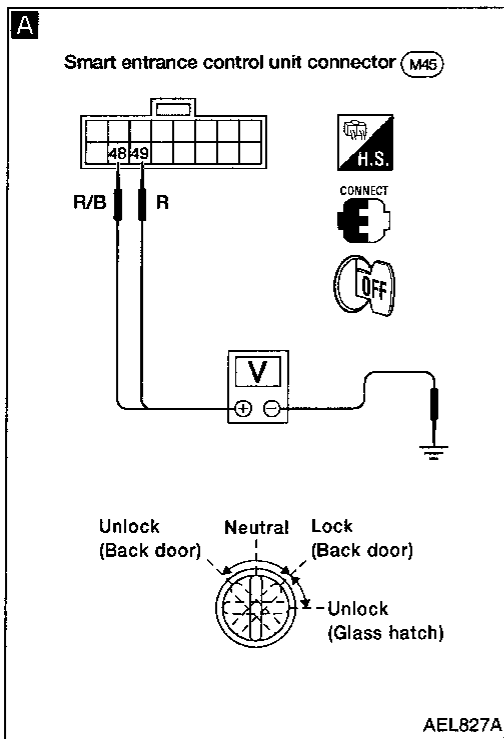
- Check the following:
- Sliding door key cylinder switch ground circuit
 - Harness for open or short
 - Continuity between sliding door contact switch (pillar) and sliding door contact switch (door)

THEFT WARNING SYSTEM

Trouble Diagnosis (Cont'd)

BACK DOOR KEY CYLINDER SWITCH INPUT SIGNAL CHECK

Diagnostic procedure 4-(3)



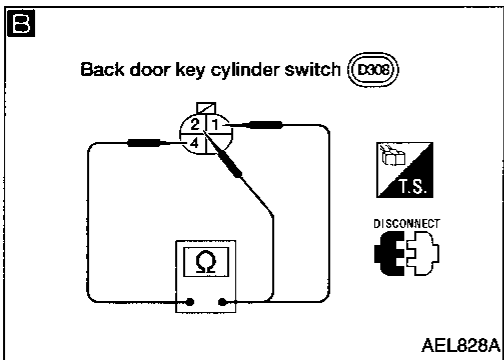
A

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

Check voltage between smart entrance control unit harness terminals (48), (49) and ground.

OK → Go to the next procedure.

Terminals		Key position	Voltage [V]
⊕	⊖		
(49)	ground	Neutral	Approx. 12
		Between neutral and lock	0
(48)	ground	Neutral	Approx. 12
		Between neutral and unlock	0



NG

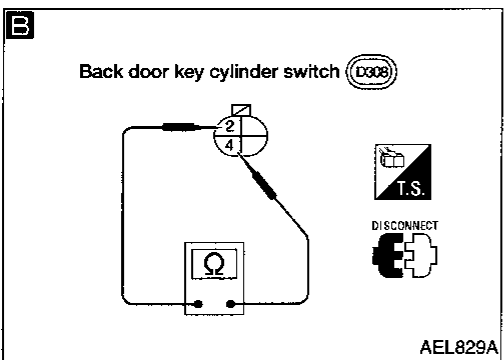
B

CHECK BACK DOOR KEY CYLINDER SWITCH.

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

NG → Replace back door key cylinder switch.

Terminals	Key Position	Continuity
(2) - (4)	Neutral	No
	Lock (Back door)	Yes
(1) - (4)	Neutral	No
	Unlock (Back door)	Yes
(2) - (4)	Neutral	No
	Unlock (Glass hatch)	Yes



OK

Check the following:

- Back door key cylinder switch ground circuit
- Harness for open or short

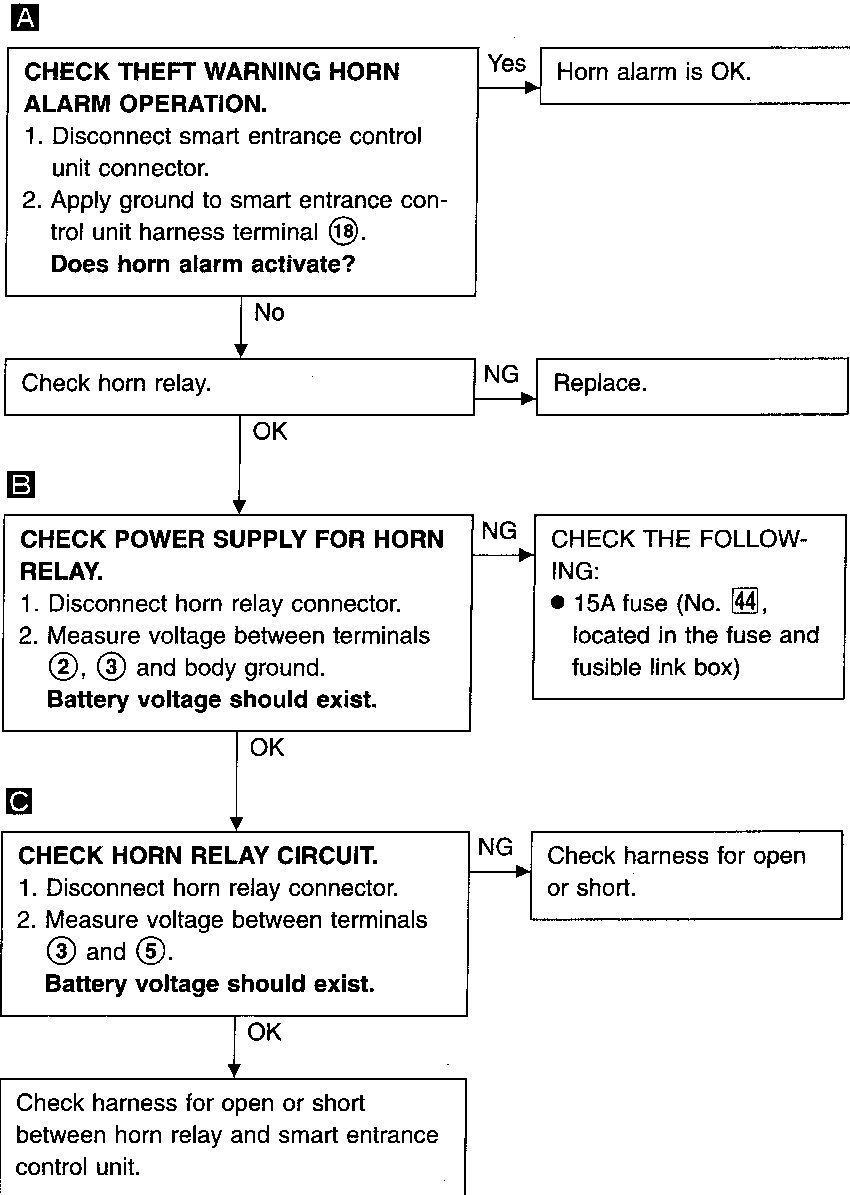
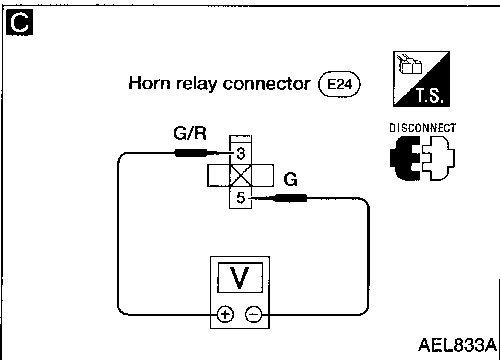
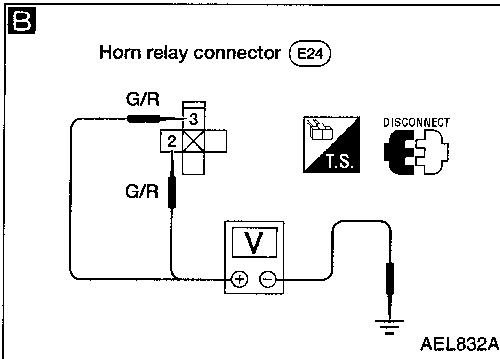
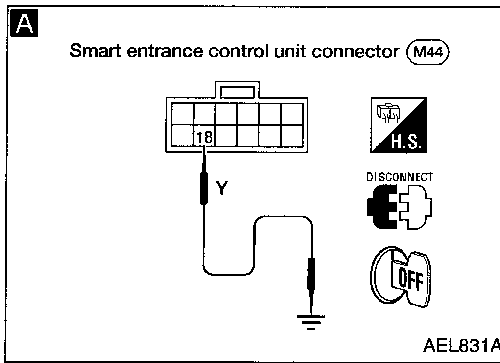
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THEFT WARNING SYSTEM

Trouble Diagnosis (Cont'd)

THEFT WARNING HORN ALARM CHECK

Diagnostic procedure 5

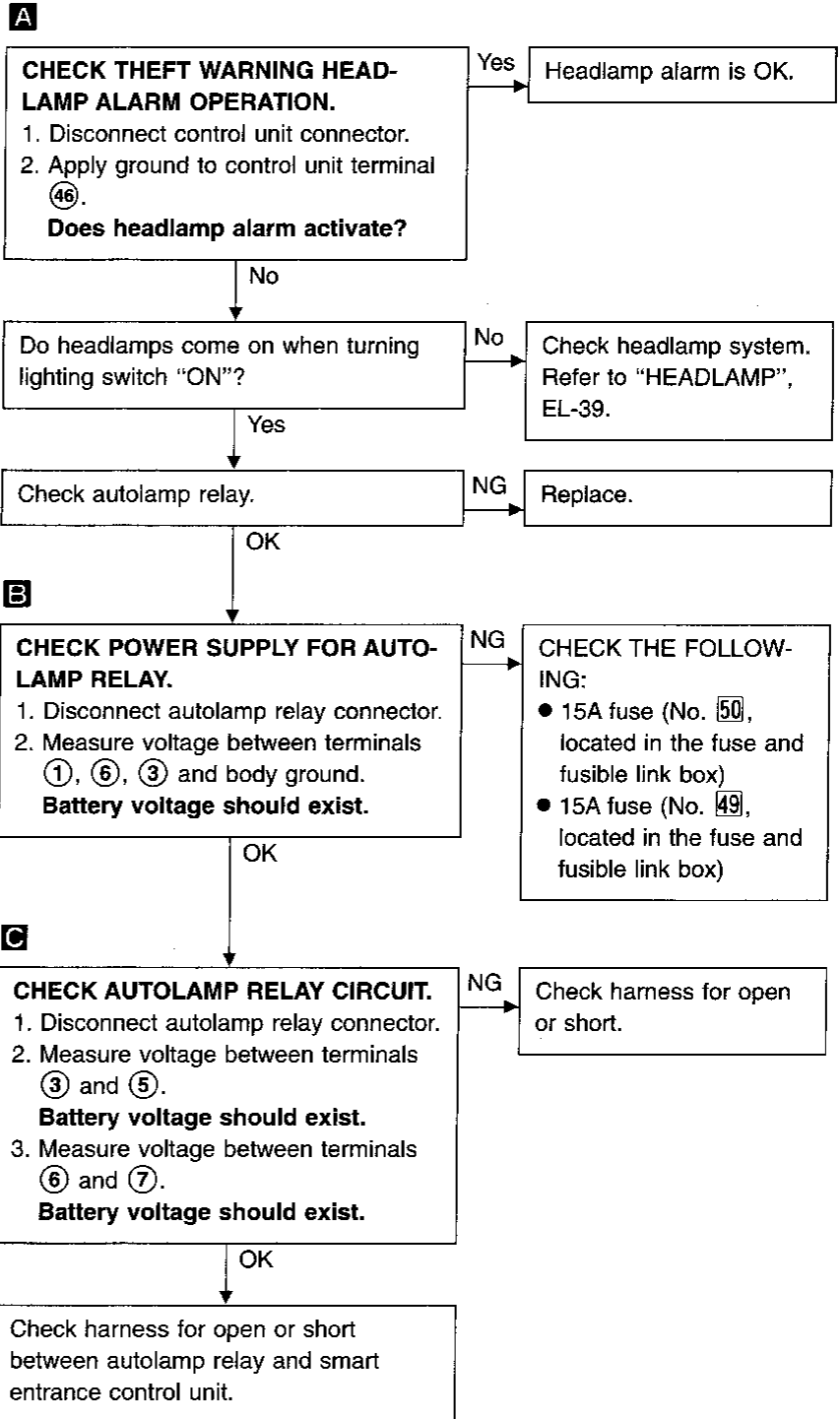
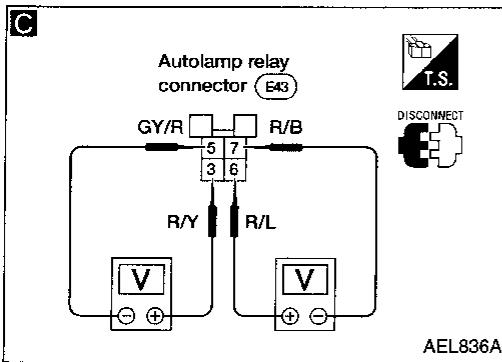
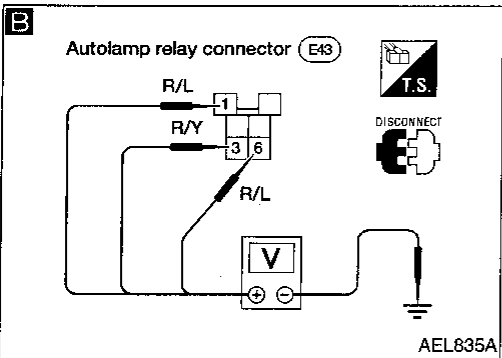
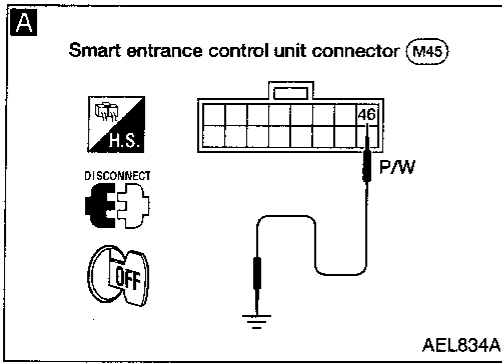


THEFT WARNING SYSTEM

Trouble Diagnosis (Cont'd)

THEFT WARNING HEADLAMP ALARM CHECK

Diagnostic procedure 6-(1)



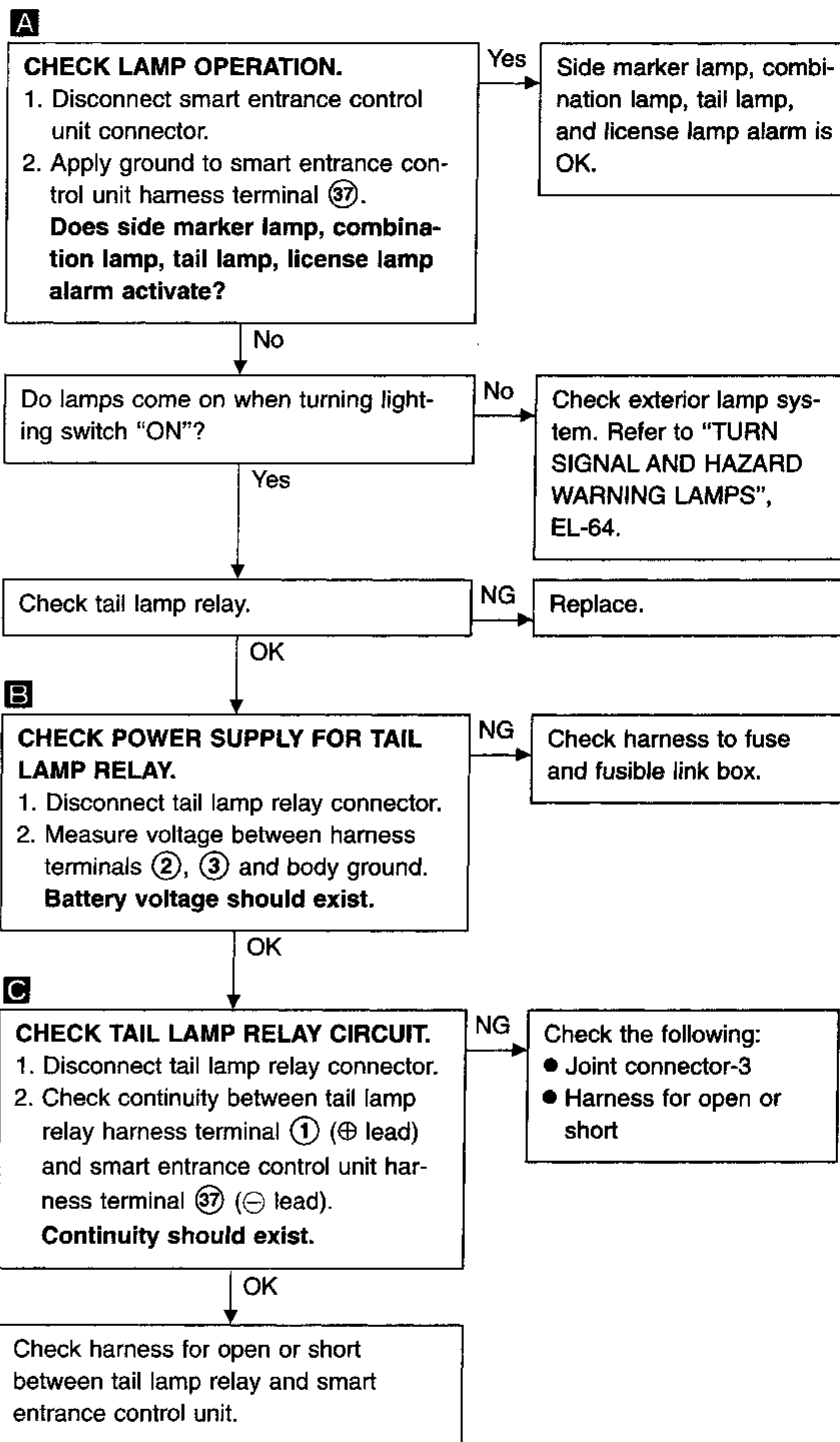
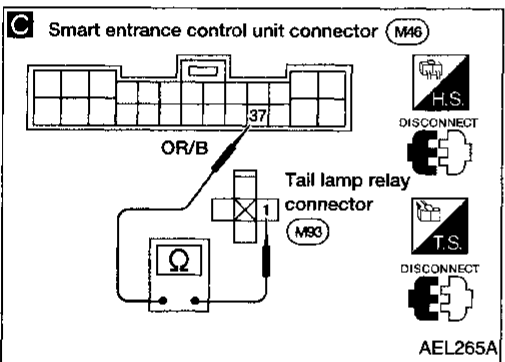
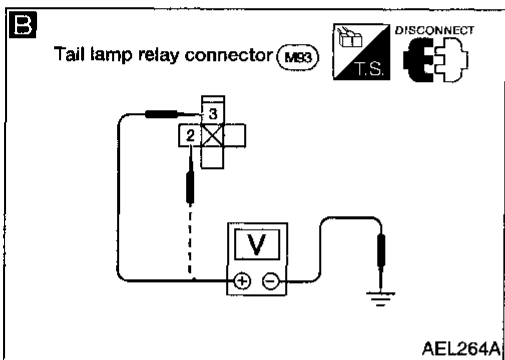
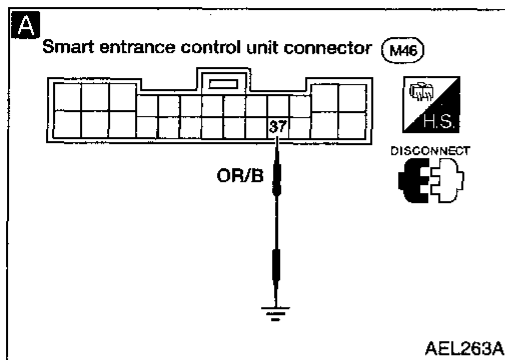
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THEFT WARNING SYSTEM

Trouble Diagnosis (Cont'd)

THEFT WARNING SIDE MARKER LAMP, COMBINATION LAMP, TAIL LAMP, AND LICENSE LAMP ALARM CHECK

Diagnostic procedure 6-(2)

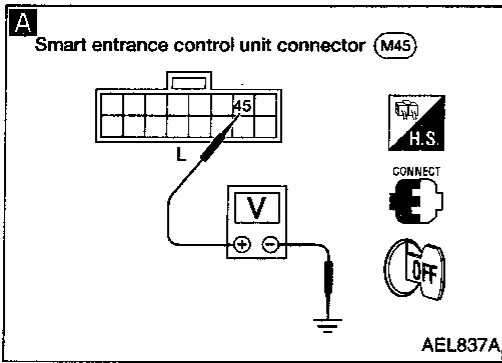


THEFT WARNING SYSTEM

Trouble Diagnosis (Cont'd)

STARTER INTERRUPT SYSTEM CHECK

Diagnostic procedure 7



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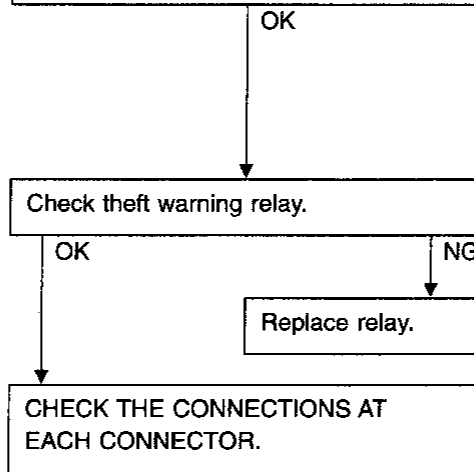
STARTER MOTOR KILL OUTPUT SIGNAL CHECK.

Check voltage between smart entrance control unit harness terminal (45) and ground.

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

NG → Check the following:

- 7.5A fuse (No. 41), located in the fuse and fusible link box
- Harness continuity between smart entrance control unit harness terminal (45) and theft warning relay harness terminal (1)
- Harness continuity between theft warning relay harness terminal (2) and fuse



OK

Replace smart entrance control unit.

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SMART ENTRANCE CONTROL UNIT

Description

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

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

For detailed description and wiring diagrams, refer to the relevant pages for the each system.

The control unit receives data from the switches and sensors to control their corresponding system relays and actuators.

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

SMART ENTRANCE CONTROL UNIT

Input/Output Operation Signal

SMART ENTRANCE CONTROL UNIT

Terminal No.	Connections	Operated condition	Voltage (V) (Approximate values)
1	Ground	—	—
2	Front door LH actuator	Door lock/unlock switch NEUTRAL → LOCK	0V → 12V
3	Power source (C/B)	—	12V
4	Front door switch RH	OFF (Closed) → ON (Open)	12V → 0V
5	Front door switch LH	OFF (Closed) → ON (Open)	12V → 0V
6	All door lock actuators	Door lock/unlock switch NEUTRAL → LOCK	0V → 12V
7	Front door RH/sliding door actuator	Door lock/unlock switch NEUTRAL → UNLOCK	0V → 12V
8	Back door lock actuator	Door lock/unlock switch NEUTRAL → UNLOCK	0V → 12V
9	Power source (logic)	—	12V
10	Sliding door status	—	—
11	—	—	—
12	Warning chime	OFF → ON	12V → 0V
13	Rear defogger relay	OFF → ON	12V → 0V
14	Ignition key switch (Insert)	IGN key inserted → IGN key removed from IGN key cylinder	0V → 12V
15	Illumination	OFF → ON	0V → 3V or greater
16	Interior lamp (zone C)	Rear room lamp or personal lamp OFF → ON	12V → 0V
17	Power window/electric sunroof delayed power relay	OFF → ON	12V → 0V
18	Horn relay	When doors are locked using remote controller	12V → 0V
19	—	—	—
20	Ground	—	—
21	Interior lamp (zone A)	When interior lamp is operated using remote controller. (Lamp switch in DOOR position)	12V → 0V
22	Interior lamp (zone B)	When interior lamp is operated using remote controller. (Lamp switch in DOOR position)	12V → 0V
23	—	—	—
24	Ignition switch (ACC)	ACC position	12V
25	Ignition switch (ON)	ON position	12V
26	—	—	—
27	Front door RH unlock sensor	LOCKED → UNLOCKED	12V → 0V
28	Front door LH unlock sensor	LOCKED → UNLOCKED	12V → 0V
29	Back door latch switch	OFF (Closed) → ON (Open)	12V → 0V
30	Sliding door switch	OFF (Closed) → ON (Open)	12V → 0V
31	Rear window defogger switch	OFF → ON	12V → 0V
32	Seat belt switch	Unfasten → Fasten	0V → 12V
33	Door lock/unlock switches	NEUTRAL → LOCK	12V → 0V
34	Door lock/unlock switches	NEUTRAL → UNLOCK	12V → 0V
35	Illumination control (Darker)	NEUTRAL → DARKER	12V → 0V
36	Illumination control (Lighter)	NEUTRAL → LIGHTER	12V → 0V
37	Tail lamp relay	When panic alarm is operated using remote controller	12V → 0V

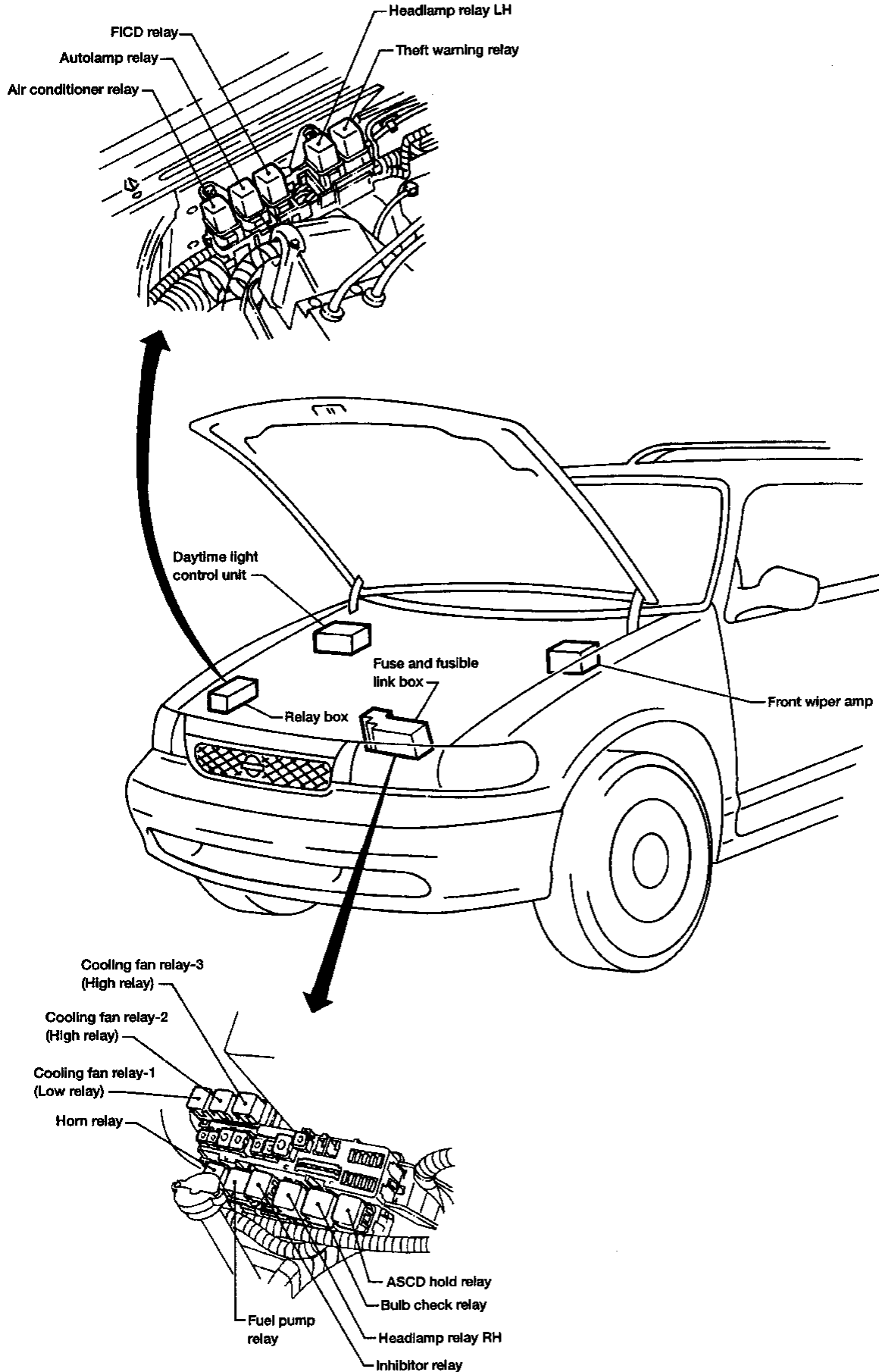
SMART ENTRANCE CONTROL UNIT

Input/Output Operation Signal (Cont'd)

Terminal No.	Connections	Operated condition	Voltage (V) (Approximate values)
38	—	—	—
39	—	—	—
40	—	—	—
41	—	—	—
42	—	—	—
43	—	—	—
44	Back door unlock sensor	LOCKED → UNLOCKED	12V → 0V
45	Theft warning relay	When theft warning system is activated	12V → 0V
46	Autolamp relay	When panic alarm is operated using remote controller	12V → 0V
47	—	—	—
48	Door key cylinder unlock switch	OFF (Neutral) → ON (Unlocked)	12V → 0V
49	Door key cylinder lock switch	OFF (Neutral) → ON (Locked)	12V → 0V
50	—	—	—
51	Security indicator lamp	Turns off → Illuminates	12V → 0V
52	—	—	—
53	Hood switch	ON (Open) → OFF (Closed)	0V → 12V
54	Ground	—	—
55	Multi-remote antenna	—	—

LOCATION OF ELECTRICAL UNITS

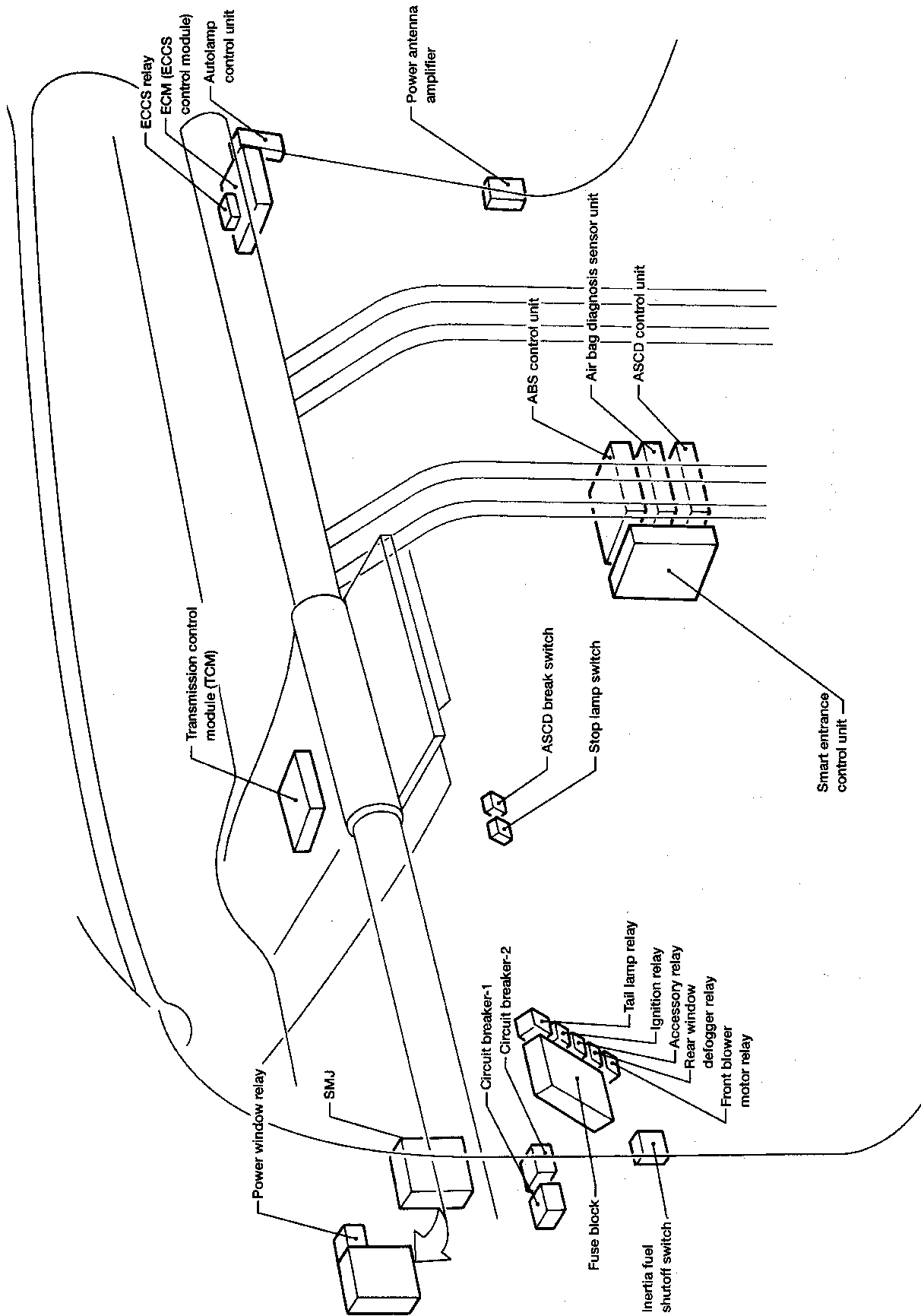
Engine Compartment



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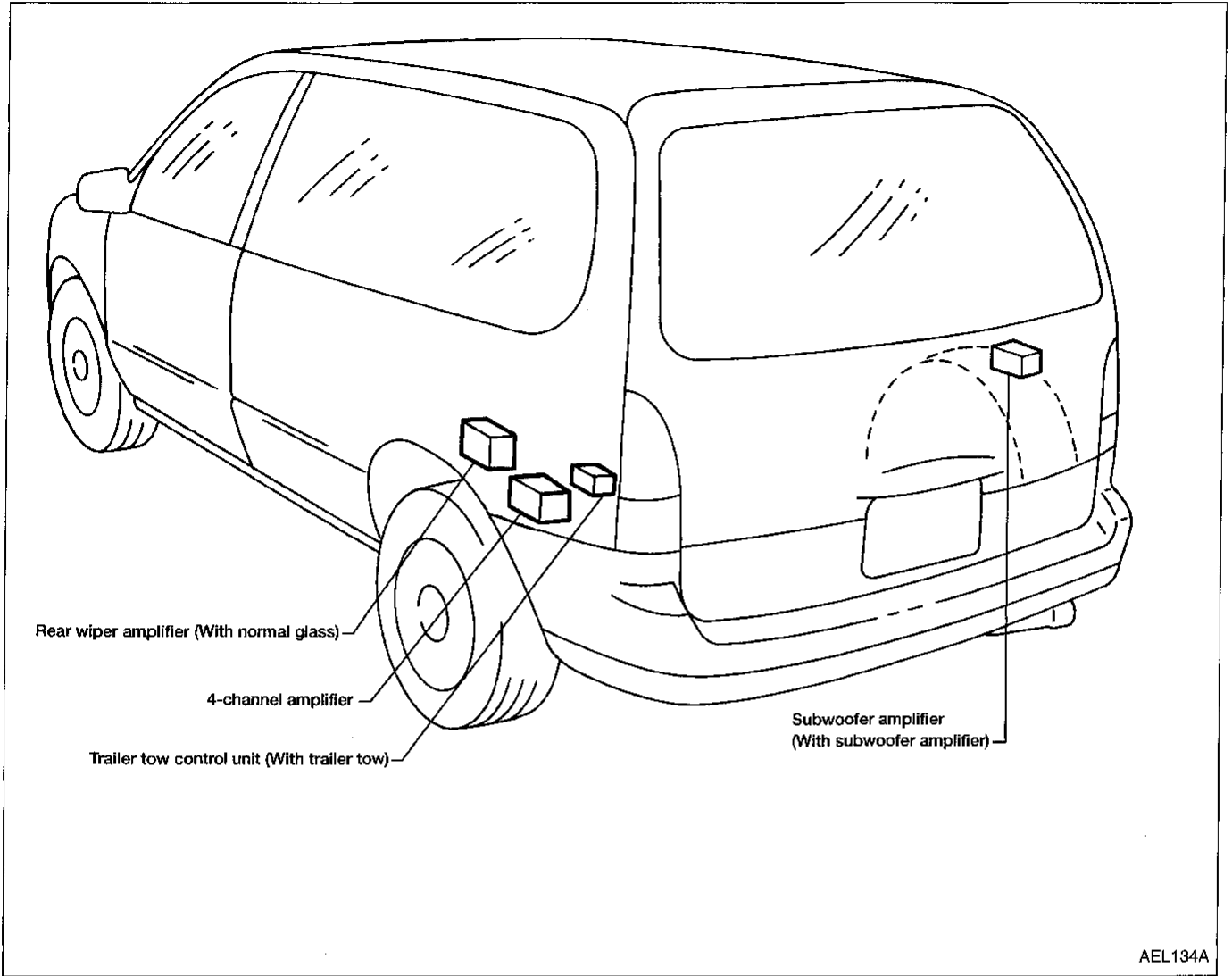
LOCATION OF ELECTRICAL UNITS

Passenger Compartment



LOCATION OF ELECTRICAL UNITS

Luggage Compartment



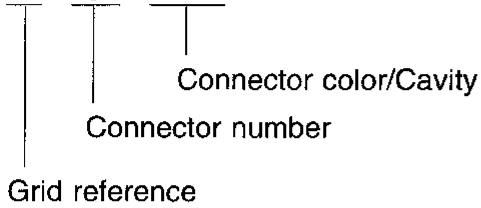
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HARNESS LAYOUT

How To Read Harness Layout

Example:

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



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

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

To use the grid reference

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

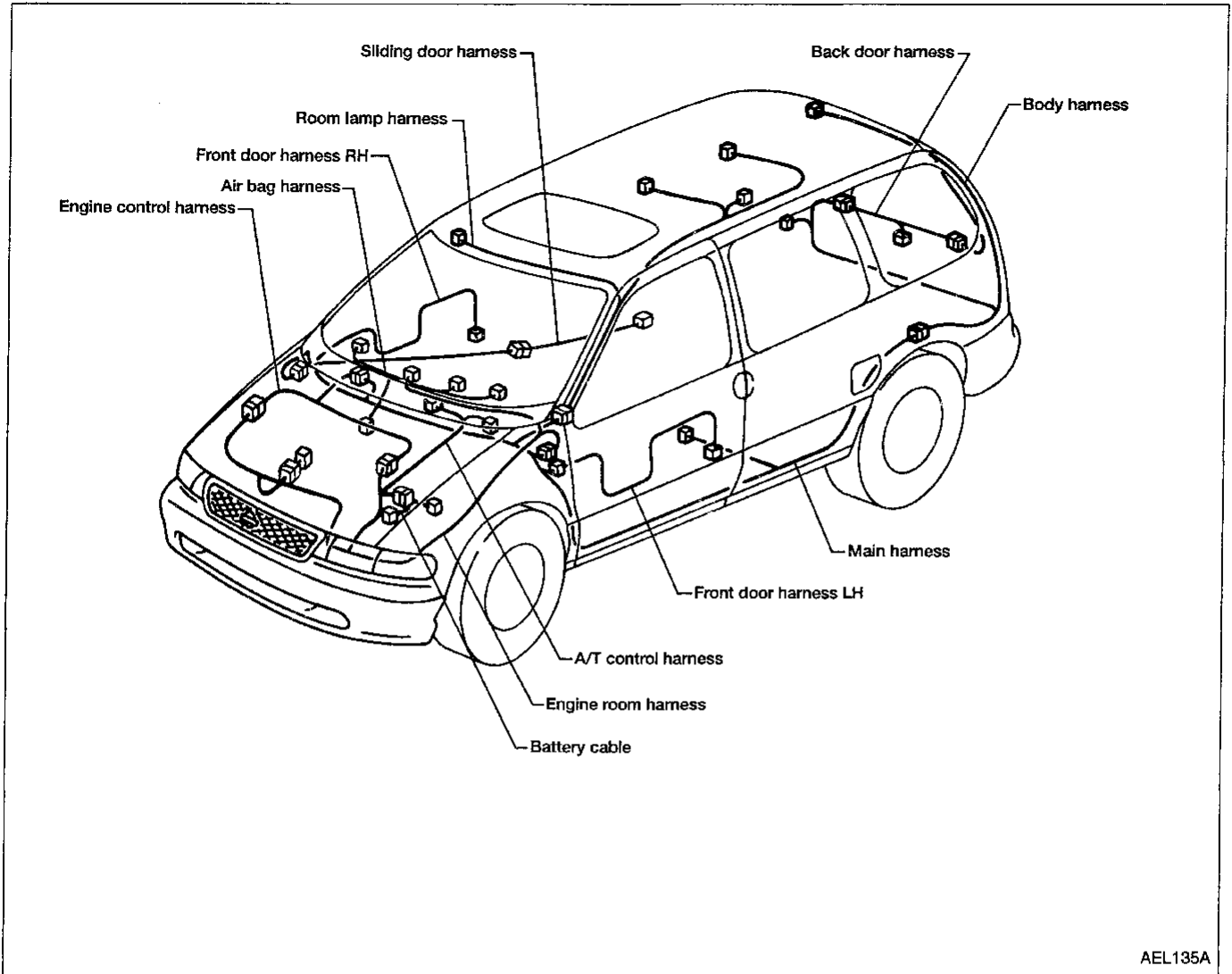
CONNECTOR SYMBOL

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

Connector type	Waterproof type		Standard type	
	Male	Female	Male	Female
<ul style="list-style-type: none"> • Cavity: Less than 4 • Relay connector 				
<ul style="list-style-type: none"> • Cavity: From 5 to 8 				
<ul style="list-style-type: none"> • Cavity: More than 9 				
<ul style="list-style-type: none"> • Ground: terminal etc. 	—			

HARNES LAYOUT

Outline



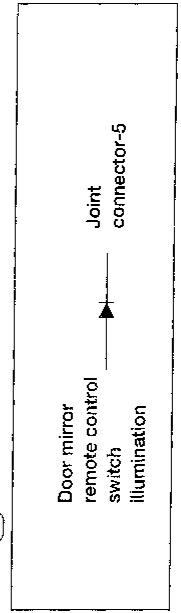
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HARNESS LAYOUT

Main Harness (Cont'd)

A5 (M1) B/3 : Inertia fuel shutoff switch	C4 (M33) W/10 : Hazard switch	E4 (M65) — : Body ground
A4 (M2) B/3 : Combination flasher unit	C4 (M34) W/8 : Security indicator lamp	E4 (M66) — : Body ground
A5 (M3) W/2 : Circuit breaker-1	C2 (M35) W/2 : Warning chime	E5 (M67) W/2 : Foot lamp RH
A4 (M4) W/2 : Circuit breaker-2	D3 (M36) W/12 : To (Z1)	D5 (M68) B/12 : CD changer
A4 (M5) — : Body ground	D3 (M37) W/6 : To (Z10) (Spiral cable)	F3 (M69) B/8 : Front intake door motor
A3* (M6) SMJ : To (E10)	D4 (M38) BR/10 : Mode door motor	F4 (M70) B/5 : Front blower speed control unit (with EATC)
A4 (M7) L/4 : Power window relay	C4 (M41) B/2 : Cigarette lighter socket (Accessory)	F3 (M71) B/2 : Front blower motor (with manual A/C)
A4 (M8) W/16 : To (D1)	D5 (M42) BR/2 : Ashtray illumination	E3 (M72) W/4 : Front blower motor resistor (with manual A/C)
A4 (M9) W/10 : To (D2)	C5 (M43) W/2 : Foot lamp LH	E3 (M73) B/2 : Glove box lamp
A3 (M10) W/6 : To (R2)	C5 (M44) GY/12 : Smart entrance control unit (SEC)	G3 (M74) W/6 : To (D102)
A3 (M11) W/6 : To (R1)	C5 (M45) GY/16 : Smart entrance control unit (SEC)	G4 (M75) W/16 : To (D10)
B3 (M12) W/8 : Door mirror remote control switch	C5 (M46) GY/26 : Smart entrance control unit (SEC)	F2 (M76) W/2 : To (M80)
B4 (M13) W/4 : To (M15)	D3 (M47) W/8 : Rear fan switch (front) (with EATC)	G2 (M77) W/8 : Autolamp control unit (with autolamp)
A4 (M14) GY/4 : Data link connector for CONSULT	E3 (M48) GY/22 : EATC unit	G3 (M78) — : Body ground
B4 (M15) SMJ : Fuse block	E3 (M49) GY/26 : EATC unit	G4 (M79) W/2 : Power antenna motor (with power antenna)
B4 (M16) B/9 : Lighting switch	D3 (M50) W/2 : Front A/C control unit (with rear A/C)	G4 (M80) W/8 : Power antenna amplifier (with power antenna)
C4 (M17) W/10 : Illumination control switch and autolamp switch	D3 (M51) W/4 : Front fan switch	B3 (M81) W/2 : Diode
B3 (M18) W/8 : ASCD main switch	D4 (M52) W/8 : Rear fan switch (front) (with manual A/C)	E3 (M82) W/2 : Front blower speed control unit (with EATC)
B3 (M19) GY/33 : Joint connector-3	E3 (M53) B/12 : Front A/C control unit	F4 (M83) B/2 : Front blower motor (with EATC)
B3 (M20) GY/33 : Joint connector-4	E3 (M54) B/16 : Front A/C control unit	C5 (M84) BR/6 : Front blower motor relay
C4 (M21) B/2 : Stop lamp switch	E2 (M55) W/4 : To (F108)	B5 (M85) BR/6 : Rear window defogger relay
C4 (M22) L/2 : ASCD brake switch	F2 (M56) W/20 : To (F109)	B5 (M86) BR/6 : Accessory relay
C4 (M23) W/16 : Data link connector for GST	F2* (M57) W/24 : To (F107)	B5 (M87) L/4 : Ignition relay
B4 (M24) B/1 : Parking brake switch	E4 (M58) B/8 : Radio and cassette player (Base)	B5 (M88) L/4 : Tail lamp relay
B3 (M25) W/3 : To (M20)	E4 (M59) B/8 : Radio and cassette player (Base)	D5 (M89) GY/1 : To window antenna (for multi-remote control)
C4 (M26) W/12 : Combination meter	D4 (M60) B/2 : Radio and cassette player (Premium)	B3 (M90) W/3 : To (M25)
C3* (M27) B/12 : Combination meter	E4 (M61) B/8 : Radio and cassette player (Premium)	B2 (M91) B/3 : Sunload sensor (with EATC)
C4 (M28) B/10 : Combination meter	E4 (M62) B/16 : Radio and cassette player (Premium)	B3 (M92) B/2 : In-vehicle temperature sensor (with EATC)
D2* (M29) W/16 : To (F403)	E4 (M63) B/6 : Front air mix door motor	F2 (M93) W/2 : To (M76)
B3 (M30) GY/33 : Joint connector-5	D5 (M64) B/20 : ASCD control unit	F2 (M94) W/2 : Autolamp sensor (with autolamp)
D4 (M31) W/6 : Rear wiper switch	<p>* : Be sure to connect and lock the connectors securely after repair work. Failure to do so may cause the ECM to have diagnostic trouble codes. Do not disconnect these connectors except in the case of working according to WORK FLOW of TROUBLE DIAGNOSES in EC and AT sections.</p>	
C4 (M32) W/6 : Rear window defogger switch	<p>Diode (M86)</p>	

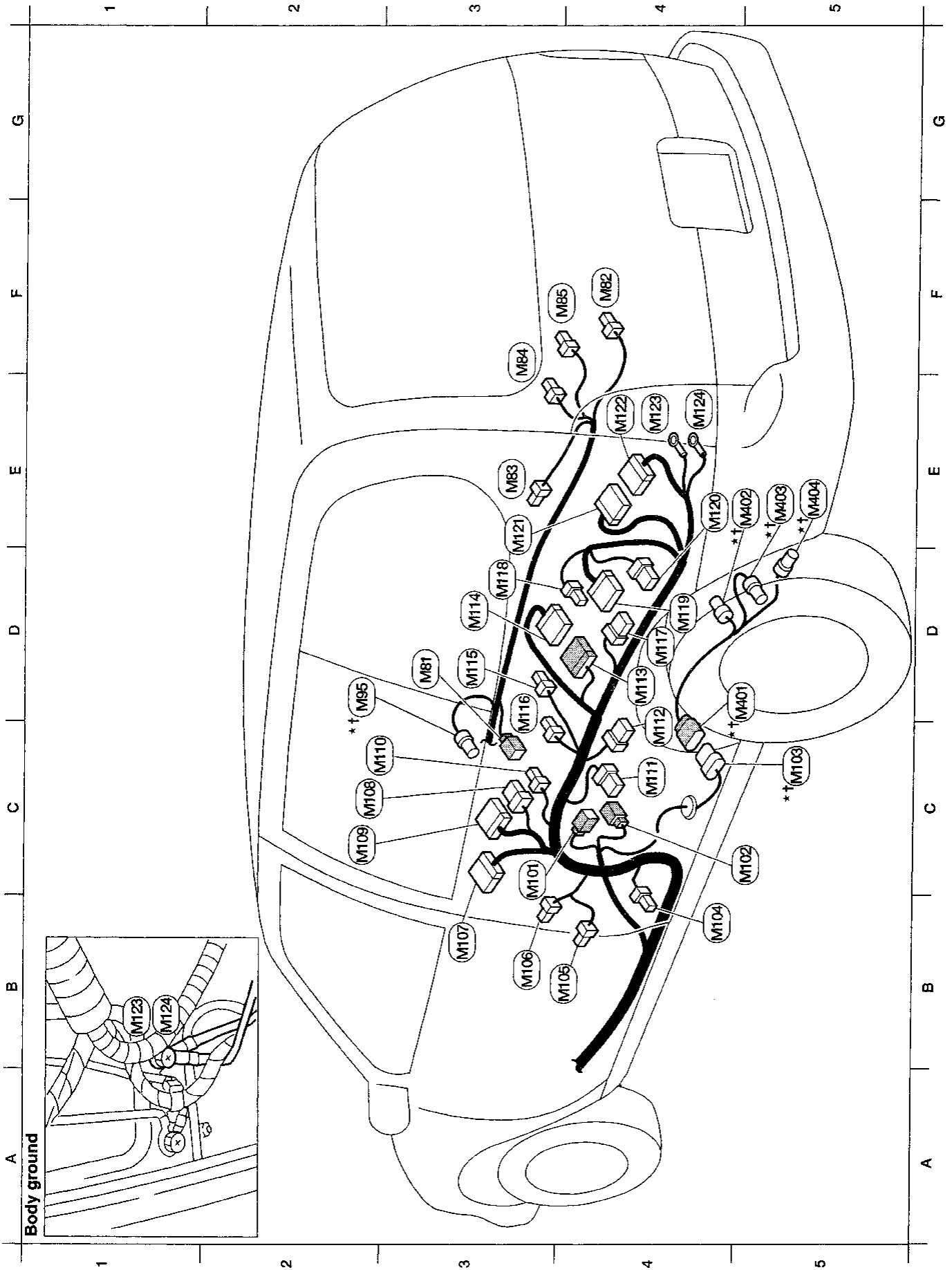
* : Be sure to connect and lock the connectors securely after repair work. Failure to do so may cause the ECM to have diagnostic trouble codes. Do not disconnect these connectors except in the case of working according to WORK FLOW of TROUBLE DIAGNOSES in EC and AT sections.



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HARNESS LAYOUT

Main Harness (Cont'd)



AEL516B

HARNES LAYOUT

Main Harness (Cont'd)

D3 (M81) W/2 : To (F100)	D4 (M112) B/8 : Rear vent door motor (with rear A/C)	
F4 (M82) W/2 : Sliding door step lamp	D4 (M113) W/10 : To (B201)	GI
E3 (M83) B/1 : Front door switch RH	D3 (M114) L/16 : To (B1)	
F3 (M84) W/4 : Sliding door contact switch	D3 (M115) L/4 : Rear blower motor relay (with EATC)	MA
F3 (M85) B/1 : Sliding door switch	D3 (M116) L/4 : Rear fan switch relay (with EATC)	MA
D2** (M86) GY/4 : Rear heated oxygen sensor	D4 (M117) W/8 : Rear wiper amplifier (with normal glass)	
C3 (M101) W/2 : To (F1)	D3 (M118) W/4 : To (B102)	EM
C5 (M102) B/2 : Seat belt buckle switch	D4 (M119) W/12 : To (B101)	
C5** (M103) GY/8 : To (M401)	D4 (M120) W/8 : To (B103)	
B4 (M104) B/3 : Front door switch LH	E3 (M121) B/10 : 4-channel amplifier	LC
B4 (M105) B/2 : Rear blower motor (with rear A/C)	E4 (M122) B/14 : 4-channel amplifier	
B3 (M106) W/4 : Rear blower motor resistor (with rear A/C)	E4 (M123) - : Body ground	EC
B3 (M107) B14 : Rear radio remote control unit (with rear radio remote control)	E4 (M124) - : Body ground	
C3 (M108) W/6 : Rear fan switch (with rear A/C)	D4** (M401) GY/8 : To (M103)	FE
C3 (M109) B/12 : Rear A/C control unit (with rear A/C)	E4** (M402) B/2 : EVAP canister vent control valve	
C3 (M110) B/2 : Rear power point	E5** (M403) GY/3 : EVAP control system pressure sensor	
C5 (M111) B/8 : Rear air mix door motor (with rear A/C)	E5** (M404) G/2 : Vacuum cut valve bypass valve	AT

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

†: For California models

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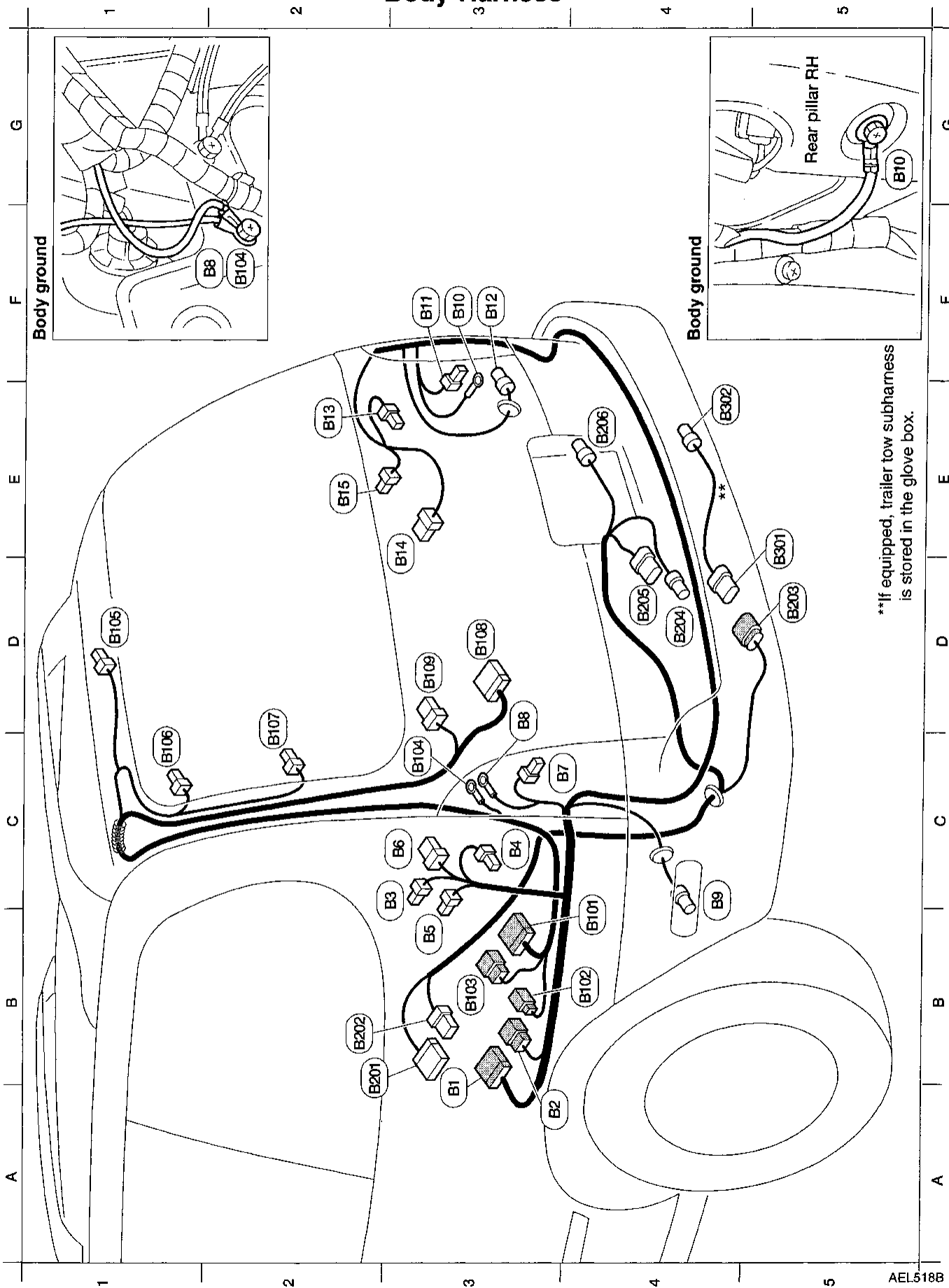
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HARNESS LAYOUT

Body Harness



**If equipped, trailer tow subharness is stored in the glove box.

HARNES LAYOUT

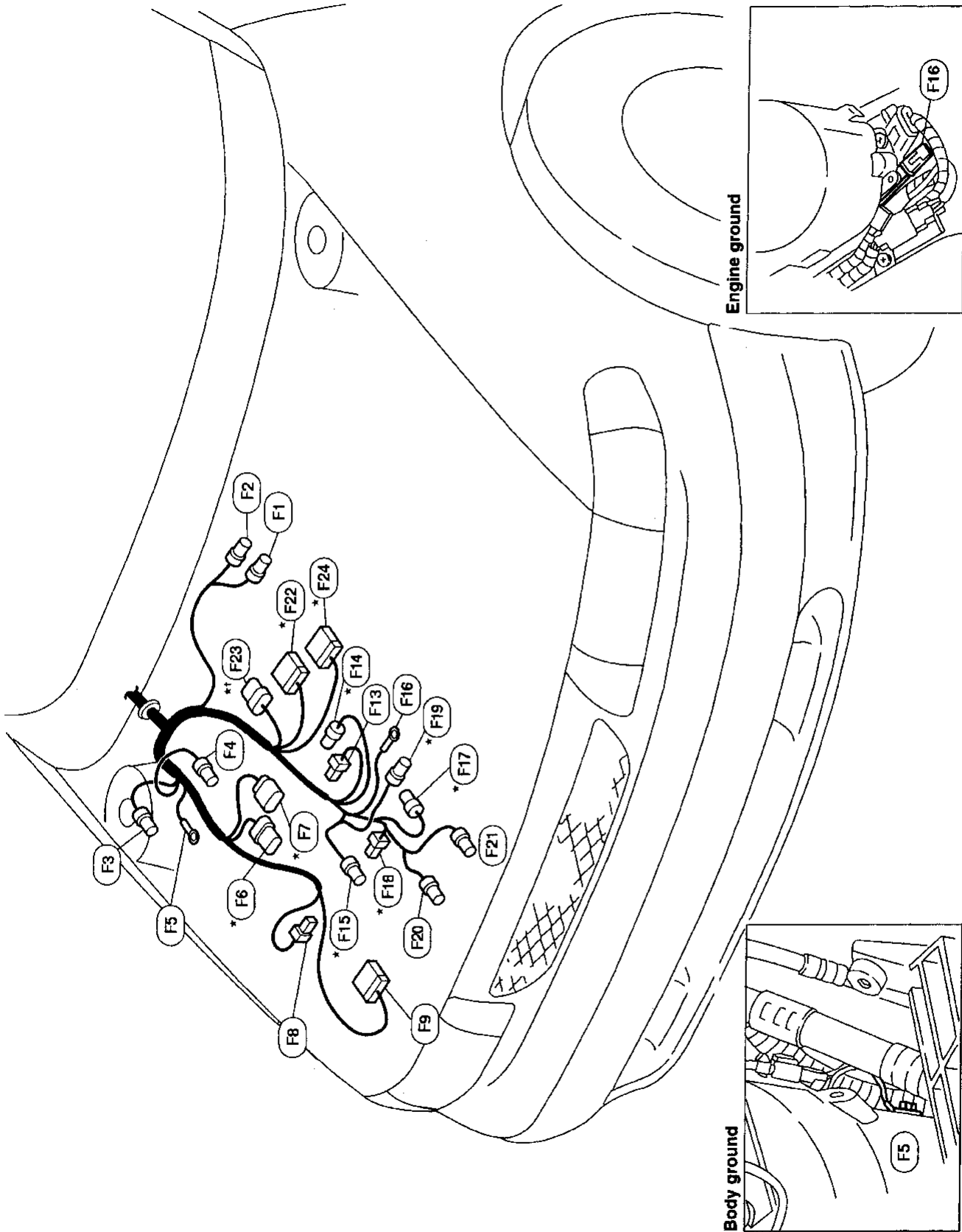
Body Harness (Cont'd)

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| <p>B3 (B1) L/16 : To (M114)</p> <p>A3 (B2) L/6 : To (B202)</p> <p>C3 (B3) B/2 : Rear speaker LH</p> <p>C3 (B4) B/2 : Rear power vent window motor LH (with power vent windows)</p> <p>B3 (B5) W/4 : 4-channel amplifier</p> <p>C3 (B6) W/8 : Trailer tow control unit (with trailer tow)</p> <p>C3 (B7) W/4 : Rear combination lamp LH</p> <p>D3 (B8) - : Body ground</p> <p>C4 (B9) GY/2 : Rear side marker lamp LH</p> <p>F3 (B10) - : Body ground</p> <p>F3 (B11) W/4 : Rear combination lamp RH</p> <p>F3 (B12) GY/2 : Rear side marker lamp RH</p> <p>E2 (B13) B/2 : Rear power vent window motor RH (with power vent windows)</p> <p>E3 (B14) W/6 : Subwoofer amplifier (with subwoofer amplifier)</p> <p>E2 (B15) B/2 : Rear speaker RH</p> <p>B4 (B16) W/12 : To (M119)</p> | <p>B4 (B17) W/4 : To (M118)</p> <p>B3 (B18) W/8 : To (M120)</p> <p>C3 (B19) - : Body ground</p> <p>D1 (B20) W/2 : High-mounted stop lamp</p> <p>C1 (B21) B/1 : Rear window defogger (+) (with glass hatch)</p> <p>D2 (B22) B/1 : Rear window defogger (+)</p> <p>D3 (B23) W/10 : To (C302)</p> <p>D3 (B24) W/6 : To (C301)</p> <p>B2 (B25) W/10 : To (M113)</p> <p>B2 (B26) L/6 : To (B2)</p> <p>D5 (B27) GY/6 : To (B301)</p> <p>D4 (B28) BR/2 : Rear wheel sensor LH (with ABS)</p> <p>D4 (B29) GY/6 : Fuel pump</p> <p>E4 (B30) GY/2 : Rear wheel sensor RH (with ABS)</p> <p>E5 (B31) GY/6 : To (B302)</p> <p>E4 (B32) B/4 : SAE J1239 trailer tow connector (with trailer tow)</p> |
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HARNESS LAYOUT

Engine Control Harness



HARNESS LAYOUT

Engine Control Harness (Cont'd)

- (F1) BR/2 : Water cock solenoid valve (with rear A/C)
- (F2) B/2 : Engine coolant ambient temperature sensor (with EATC)
- (F3) GY/2 : Power steering oil pressure switch
- (F4) GY/2 : Front wheel sensor RH
- (F5) - : Body ground
- * (F6) GY/6 : To (E56)
- * (F7) GY/8 : To (E57)
- (F8) B/2 : Low pressure switch
- (F9) B/12 : ABS control actuator
- (F13) B/1 : Thermal transmitter
- * (F14) GY/2 : Engine coolant temperature sensor
- * (F15) GY/4 : Distributor (camshaft position sensor)
- (F16) - : Engine ground
- * (F17) GY/3 : Power transistor unit
- * (F18) GY/3 : Resistor
- * (F19) GY/2 : Ignition coil
- (F20) B/2 : A/C compressor
- (F21) B/4 : High pressure switch
- * (F22) GY/12 : To (F219)
- *† (F23) GY/6 : To (F60)
- * (F24) GY/16 : To (F223)

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

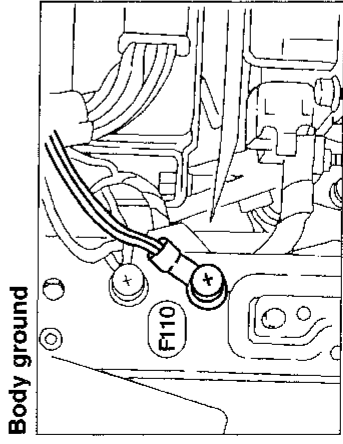
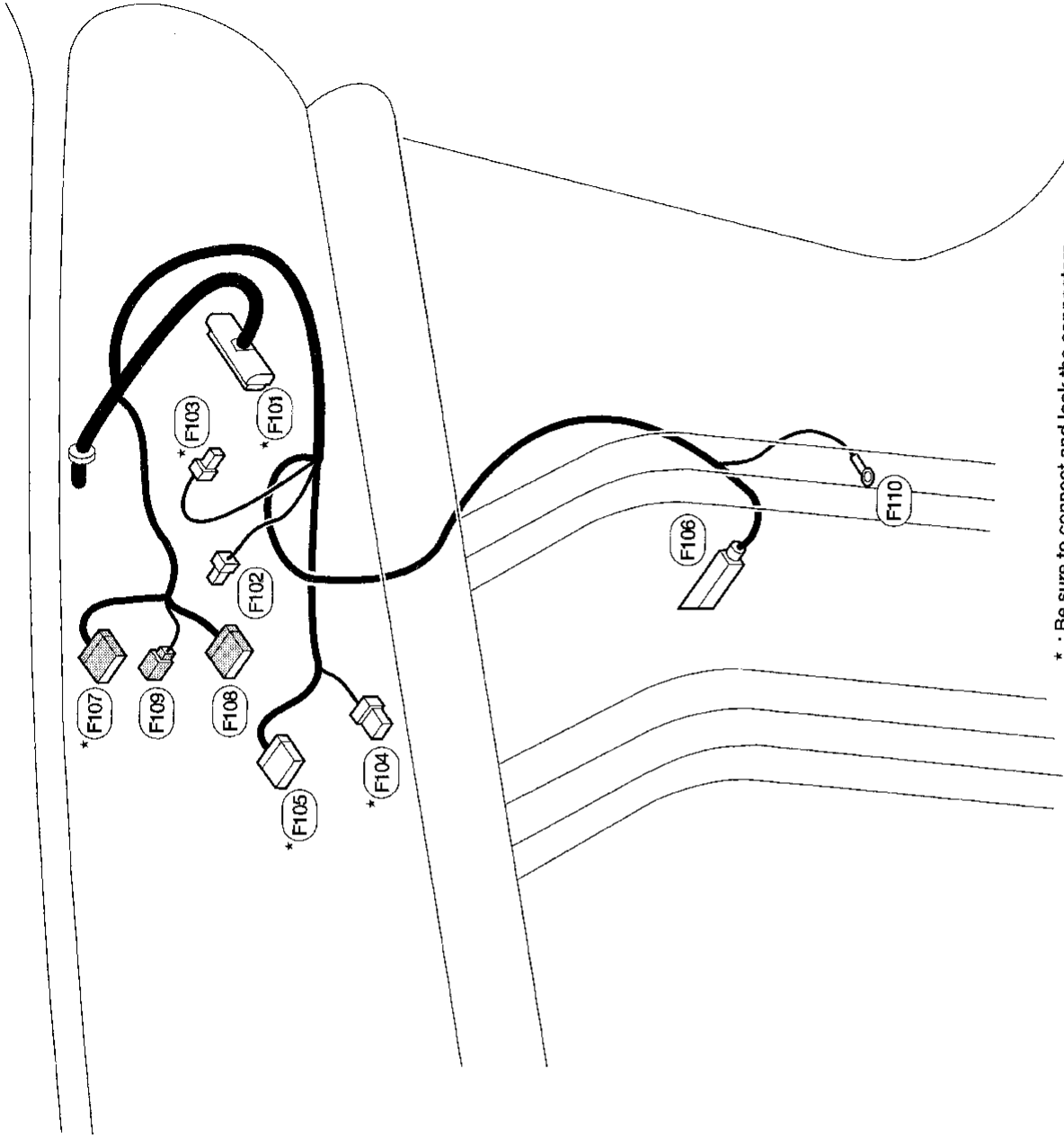
† For California models

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HARNESS LAYOUT

Engine Control Harness (Cont'd)

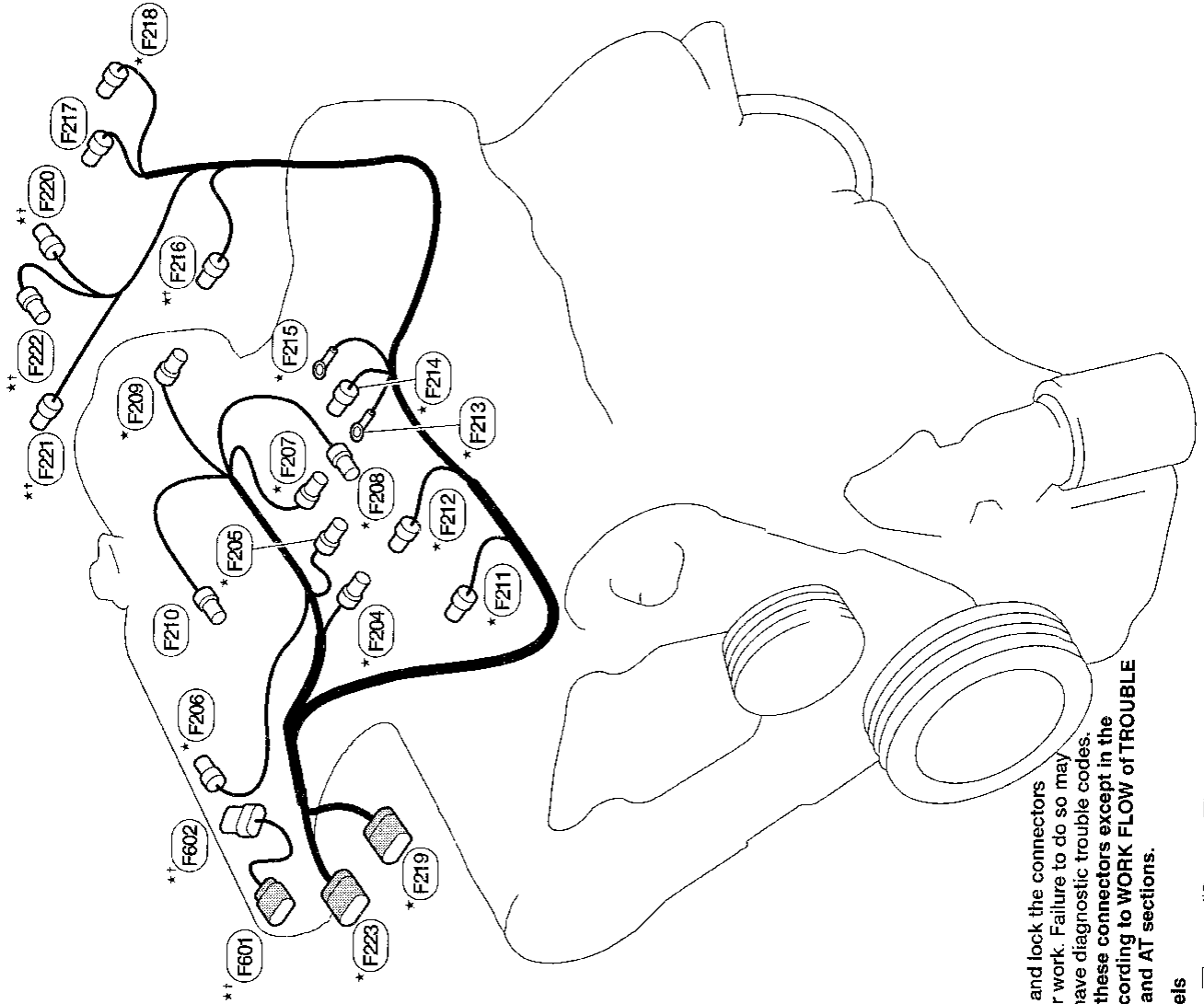
- * (F10) SMJ : ECM (ECCS control module)
- (F102) W/2 : Condensor
- * (F106) L/4 : ECCS relay
- * (F104) W/8 : To (F402)
- * (F105) B/16 : To (F401)
- (F106) SMJ : ABS control unit
- * (F107) W/24 : To (N57)
- (F108) W/20 : To (N56)
- (F109) W/4 : To (N55)
- (F110) - : Body ground



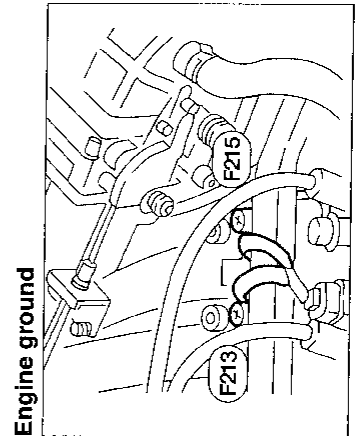
* : Be sure to connect and lock the connectors securely after repair work. Failure to do so may cause the ECM to have diagnostic trouble codes.

Do not disconnect these connectors except in the case of working according to **WORK FLOW of TROUBLE DIAGNOSES** in EC and AT sections.

Engine Control Sub-Harness



- * (F204) B/2 : Injector No. 1
- * (F205) B/2 : Injector No. 3
- * (F206) BR/2 : IACV-AAC valve
- * (F207) B/2 : Injector No. 5
- * (F208) B/2 : Knock sensor
- * (F209) GY/2 : EGR temperature sensor
- (F210) PU/2 : IACV-FICD solenoid valve
- * (F211) B/2 : Injector No. 2
- * (F212) B/2 : Injector No. 4
- * (F213) - : Engine ground
- * (F214) B/2 : Injector No. 6
- * (F215) - : Engine ground
- * (F216) B/2 : EGRC-solenoid valve (For California models) or EGR valve & EVAP canister purge control solenoid valve (Except for California models)
- (F217) GY/3 : Throttle position switch
- * (F218) BR/3 : Throttle position sensor
- ** (F219) GY/1/2 : To (F22)
- * (F220) GY/3 : Absolute pressure sensor
- ** (F221) BR/2 : MAP/BARO switch solenoid valve
- * (F222) G/2 : EVAP canister purge control solenoid valve
- ** (F223) GY/16 : To (F24)
- ** (F601) GY/6 : To (F23)
- ** (F602) GY/6 : EVAP canister purge volume control valve



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

† : For California models

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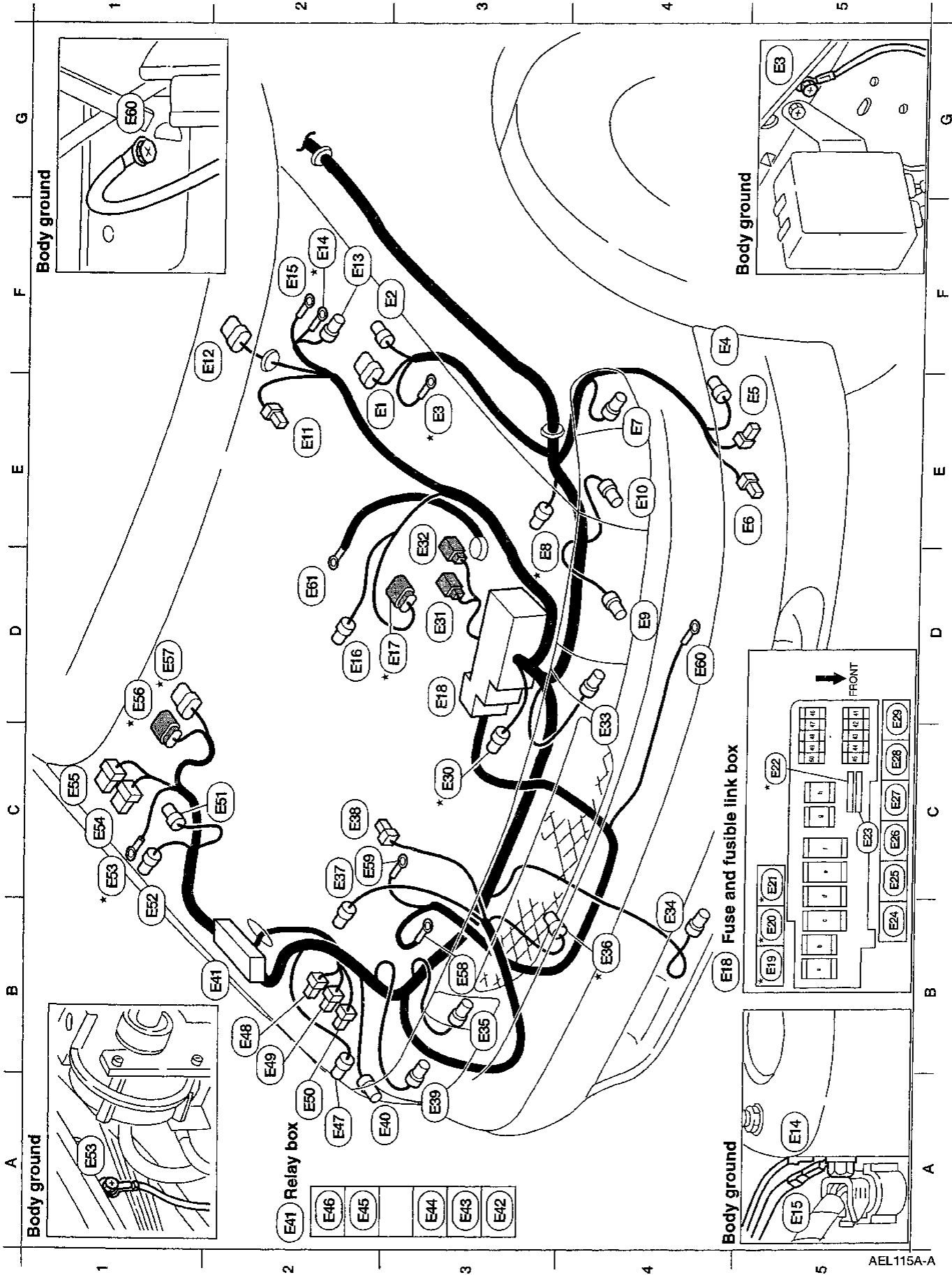
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HARNESS LAYOUT

ENGINE COMPARTMENT

Engine Room Harness



HARNESS LAYOUT

Engine Room Harness (Cont'd)

E3	E1	GY/6	: Front wiper amplifier	B4	E24	B/2	: Ambient temperature sensor
F3	E2	GY/4	: Front wiper amplifier	B3	E25	B/3	: Front turn signal lamp RH
E3*	E3	-	: Body ground	B4*	E26	GY/3	: Front heated oxygen sensor
F4	E4	GY/2	: Dropping resistor	C2	E27	W/2	: Generator
E5	E5	B/1	: Horn high	C2	E28	B/1	: Oil pressure switch
E5	E6	B/1	: Horn low	A3	E29	B/3	: Headlamp RH
E4	E7	GY/2	: Front side marker lamp LH	A3	E40	B/3	: Front combination lamp RH
D3*	E8	GY/2	: Intake air temperature sensor	A2	E41	FB	: Relay box
D4	E9	B/3	: Headlamp LH	A3	E42	L/4	: Air conditioner relay
E4	E10	B/3	: Front combination lamp LH	A3	E43	BR/6	: Autolamp relay
E2	E11	GY/2	: Brake fluid level switch	A3	E44	L/4	: FICD relay
F1	E12	GY/6	: Front wiper motor	A2	E45	B/5	: Headlamp relay LH
F2	E13	BR/2	: Front wheel sensor LH	A2	E46	B/5	: Theft warning relay
F2*	E14	-	: Body ground	A2	E47	GY/2	: Front side marker lamp RH
F2	E15	-	: Body ground	B2	E48	B/2	: Washer fluid level switch
D2	E16	GY/1	: Starter motor	B2	E49	W/2	: Front washer motor
D3*	E17	GY/6	: To (E30)	A2	E50	G/2	: Rear washer motor
D3	E18	FB	: Fuse and fusible link box	C2	E51	GY/4	: ASCD actuator
B5*	E19	L/4	: Cooling fan relay-1 (low relay)	B1	E52	GY/2	: Hood switch (with theft warning)
B5*	E20	L/4	: Cooling fan relay-2 (high relay)	C1*	E53	-	: Body ground
C5*	E21	L/4	: Cooling fan relay-3 (high relay)	C1	E54	W/6	: Daytime light control unit (with DTRL)
C5*	E22	GY/11	: Joint connector-1	C1	E55	B/6	: Daytime light control unit (with DTRL)
C5	E23	GY/11	: Joint connector-1	D1*	E56	GY/6	: To (F6)
B5	E24	L/4	: Horn relay	D1*	E57	BR/8	: To (F7)
C5	E25	L/4	: Fuel pump relay	B3	E58	B/1	: Generator
C5	E26	GY/6	: Inhibitor relay	C2	E59	B/1	: Generator
C5	E27	B/5	: Headlamp relay RH	D4	E60	-	: Body ground
C5	E28	L/4	: Bulb check relay	D2	E61	-	: Starter motor
D5	E29	BR/6	: ASCD hold relay				
C3*	E30	GY/3	: Cooling fan motor				
D3	E31	B/1	: To battery				
E3	E32	B/1	: To battery				
D4	E33	B/3	: Front turn signal lamp LH				

* : Be sure to connect and lock the connectors securely after repair work. Failure to do so may cause the ECM to have diagnostic trouble codes.

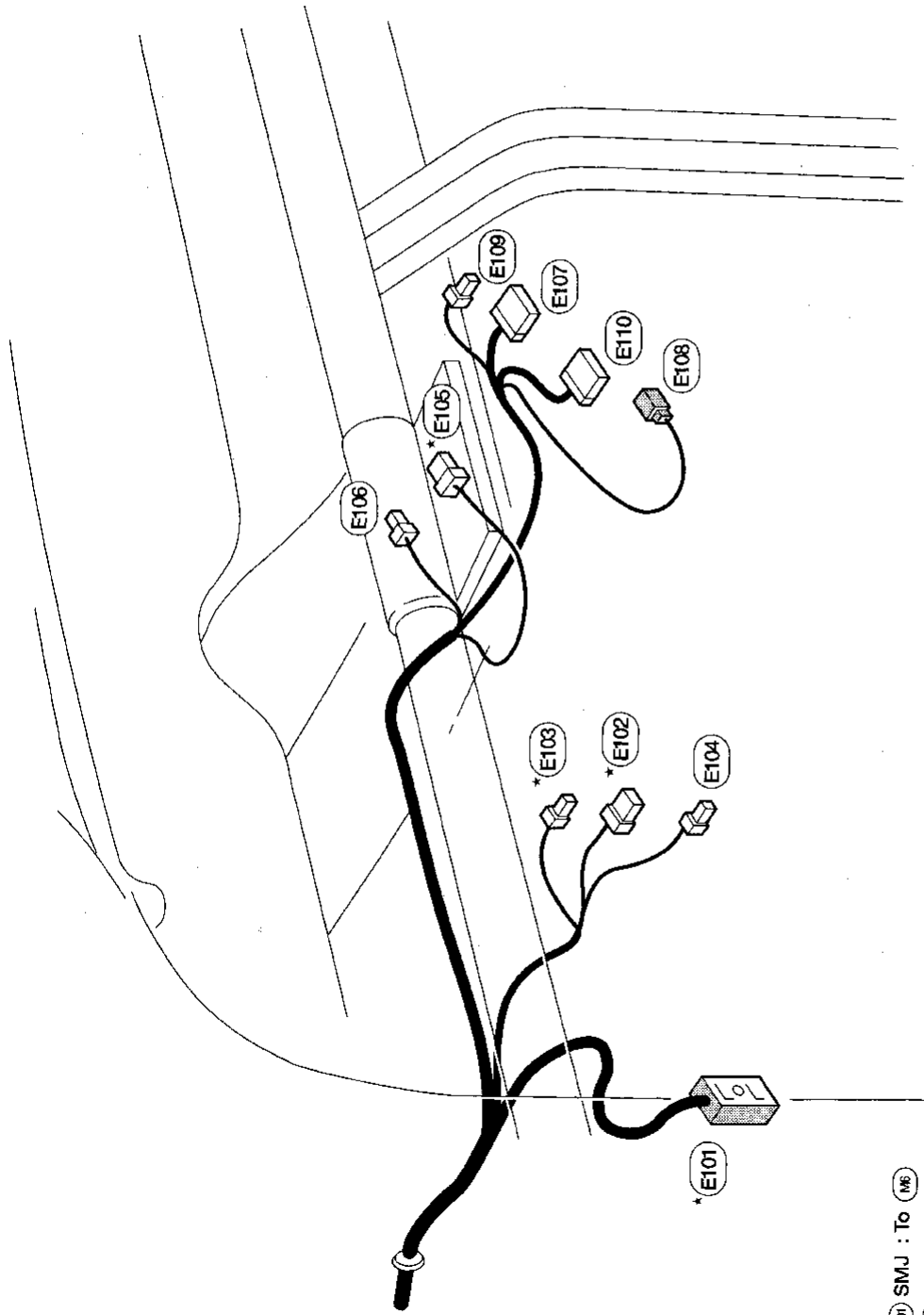
Do not disconnect these connectors except in the case of working according to WORK FLOW of TROUBLE DIAGNOSES in EC and AT sections.

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HARNESS LAYOUT

Engine Room Harness (Cont'd)

PASSENGER COMPARTMENT

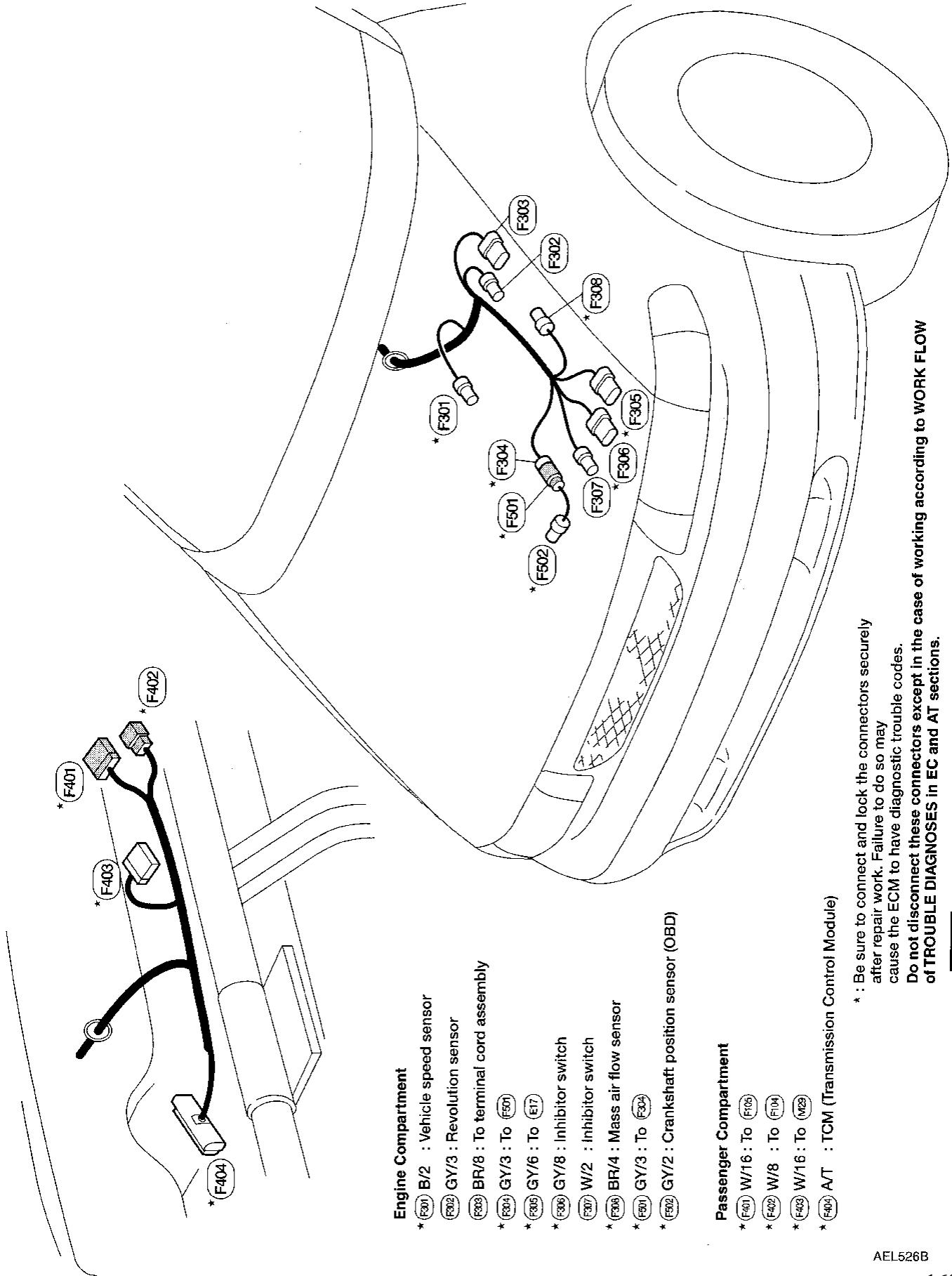


- * E101 SMJ : To M6
- * E102 W/6 : To M15
- * E103 B/2 : To M15
- E104 L/2 : To M15
- * E105 B/6 : Ignition switch
- E106 W/2 : Shift lock solenoid and park position switch
- E107 B/10 : Combination switch-1
- E108 BR/2 : Key switch
- E109 W/2 : Overdrive switch
- E110 B/11 : Combination switch-2

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

AEL525B

A/T Control Harness



Engine Compartment

- * F301 B/2 : Vehicle speed sensor
- F302 GY/3 : Revolution sensor
- F303 BR/8 : To terminal cord assembly
- * F304 GY/3 : To F501
- * F305 GY/6 : To E17
- * F306 GY/8 : Inhibitor switch
- F307 W/2 : Inhibitor switch
- * F308 BR/4 : Mass air flow sensor
- * F301 GY/3 : To F304
- * F302 GY/2 : Crankshaft position sensor (OBD)

Passenger Compartment

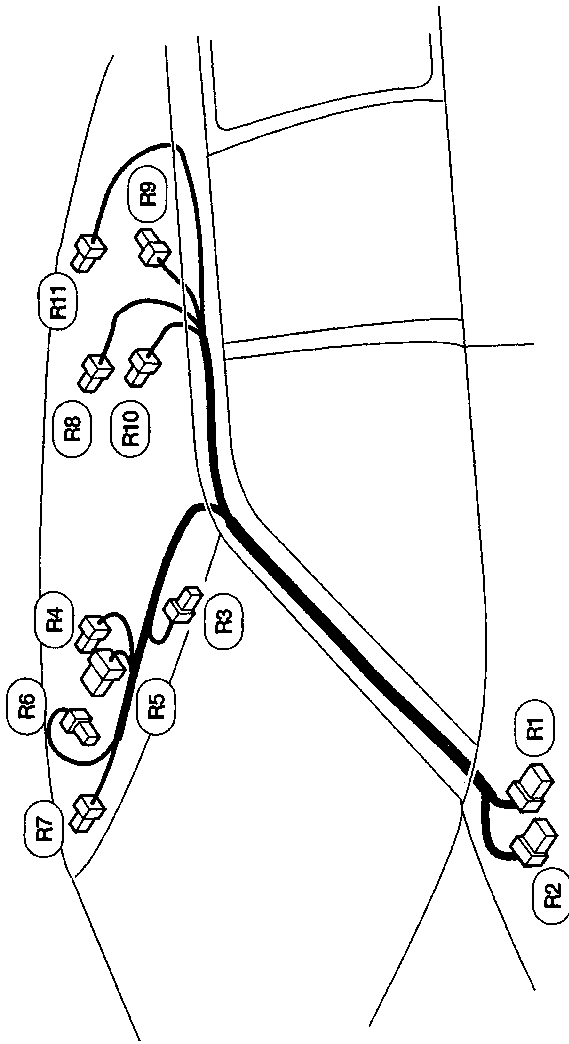
- * F401 W/16 : To F106
- * F402 W/8 : To F104
- * F403 W/16 : To (V12)
- * F404 A/T : TCM (Transmission Control Module)

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

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HARNESS LAYOUT

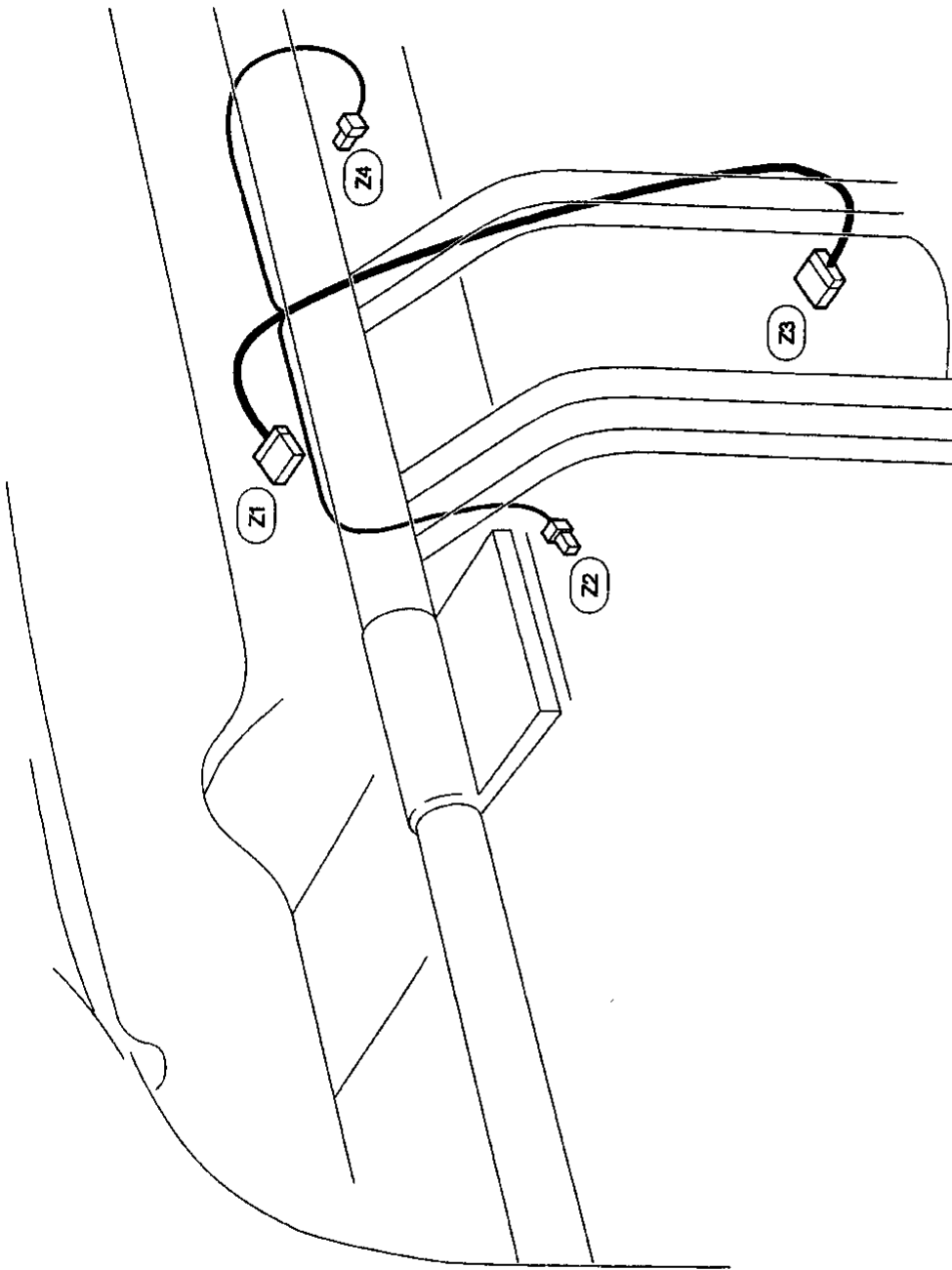
Room Lamp Harness



- (R1) W/6 : To (M11)
- (R2) W/6 : To (M10)
- (R3) B/2 : Vanity lamp LH
- (R4) W/2 : Sunroof assembly (with sunroof)
- (R5) W/6 : Rear power vent window switch (with power windows)
- (R6) W/2 : Map lamp (with map lamp)
- (R7) B/2 : Vanity lamp RH
- (R8) W/3 : Front room lamp
- (R9) W/2 : Personal lamp (with personal lamp)
- (R10) W/3 : Front room lamp (with sunroof)
- (R11) W/3 : Rear room lamp

HARNESS LAYOUT

Air Bag Harness



- (Z1) W/12 : To (N6)
- (Z2) W/4 : To spiral cable
- (Z3) Y/24 : Air bag diagnosis sensor unit
- (Z4) B/2 : Front passenger air bag module

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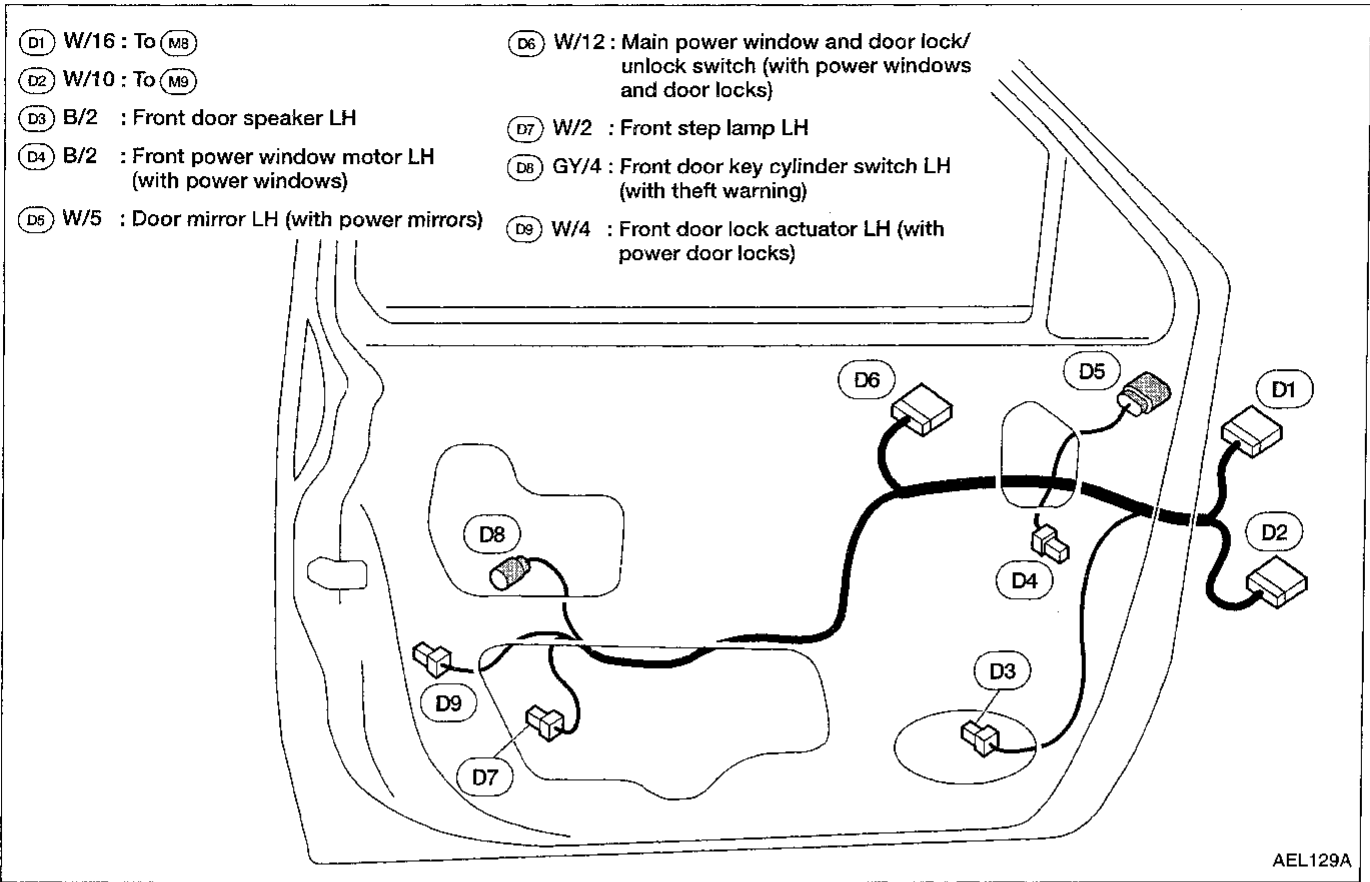
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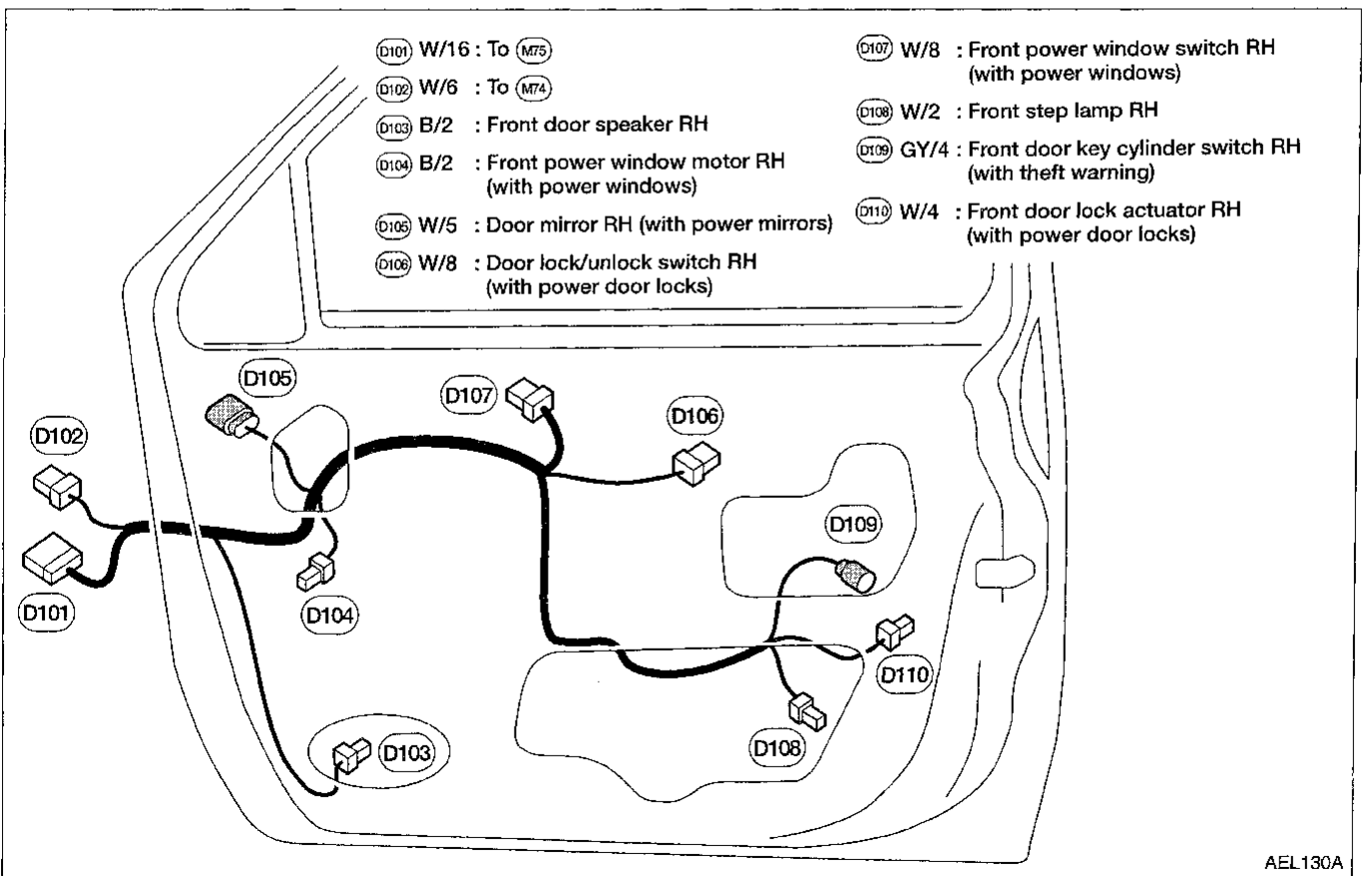
HARNESS LAYOUT

Front Door Harness

LEFT

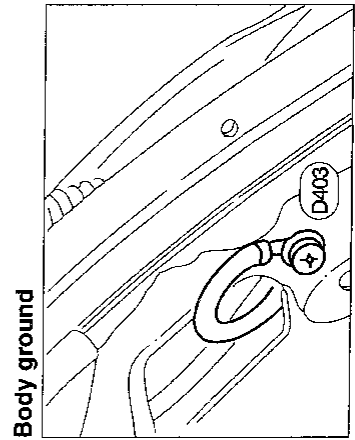
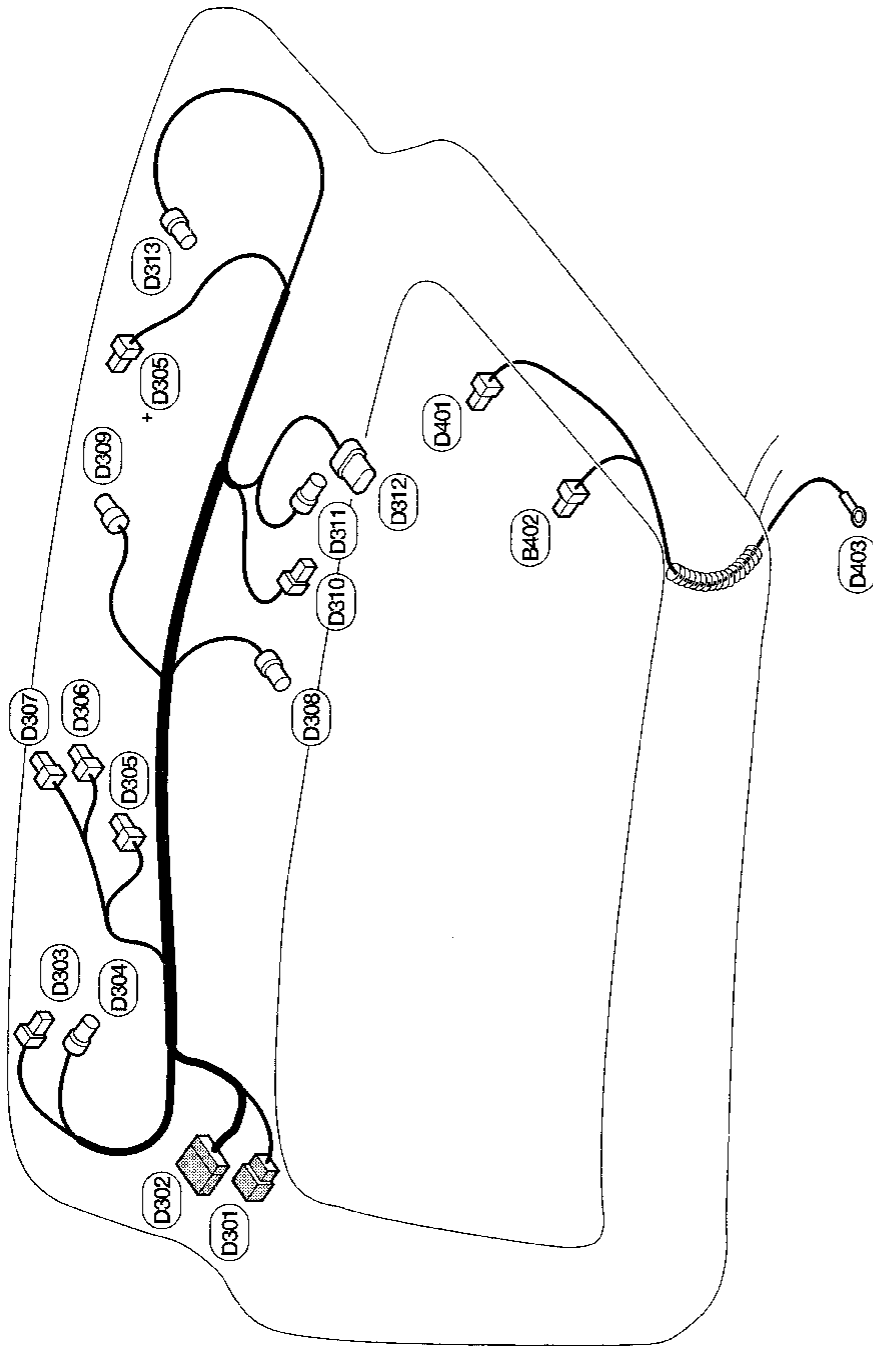


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HARNESS LAYOUT

Back Door Harness

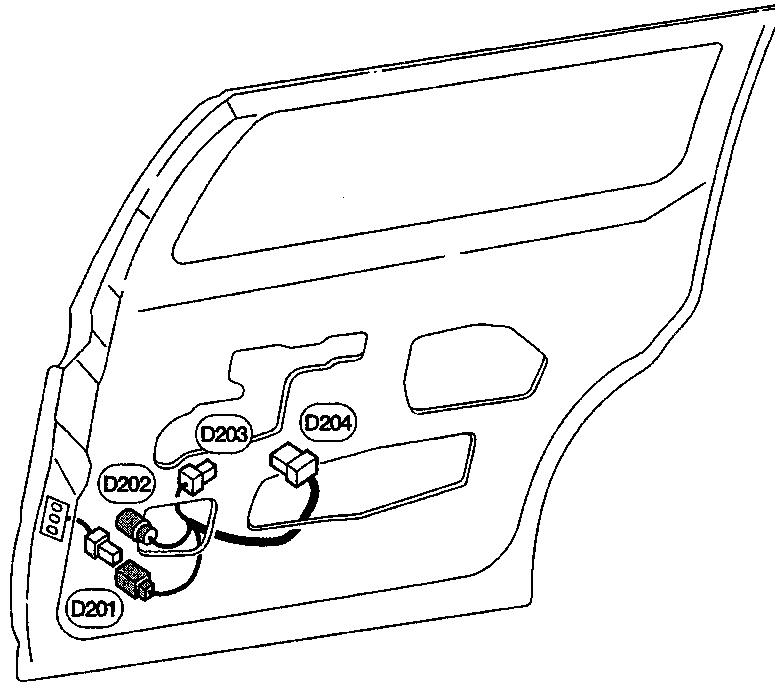


- (D301) W/6 : To (E301)
- (D302) W/10 : To (E108)
- (D303) W/2 : Tailgate lamp LH
- (D304) B/3 : Back-up lamp LH
- (D305) W/4 : Back door lock actuator
- (D306) W/2 : Back door lock actuator (with glass hatch)
- (D307) W/2 : Back door latch switch
- (D307) W/4 : Back door latch switch and lock actuator (with glass hatch)
- (D308) GY/4 : Back door key cylinder switch
- (D309) GY/4 : License lamp
- (D310) G/2 : Glass hatch latch switch
- (D311) GY/4 : Rear wiper motor
- (D312) GY/6 : Rear wiper motor (with glass hatch)
- (D313) B/3 : Back-up lamp RH
- (D401) B/1 : Rear window defogger (-)
- (D402) B/1 : Rear window defogger (-) (with glass hatch)
- (D403) - : Body ground

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HARNESS LAYOUT

Sliding door Harness



- Ⓛ201 W/4 : To contact switch
- Ⓛ202 GY/4 : Sliding door key cylinder switch (with theft warning)
- Ⓛ203 W/4 : Sliding door lock actuator (with power door locks)
- Ⓛ204 B/8 : Sliding door control unit (with theft warning)

AEL128A

BULB SPECIFICATIONS

Item	Wattage (W)	Bulb No.	
Headlamp (Semi-sealed beam)			GI
High/Low	65/45	9007	
Front combination lamp			MA
Front side marker	3.8	194	
Parking/Cornering	8.25/27	3157	
Front turn signal lamp	27	3457	EM
Rear combination lamp			
Turn signal	27	1156A	LC
Stop/Tail	27	1157	
Back-up	27	3156	EC
Rear side marker lamp	3.8	194	
License plate lamp	3.8	194	FE
High-mounted stop lamp	12.8	912	

Item	Wattage (W)	Bulb No.	
Personal lamp	9.8	208	AT
Interior lamp	12	211-2	FA
Tailgate lamp	12	211-2	RA
Step lamp	3.8	194	
Map lamp	10	—	BR

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WIRING DIAGRAM CODES (CELL CODES)

- Use the chart below to find out what each wiring diagram code stands for.
- Refer to the wiring diagram code in the Alphabetical Index to find the location (page number) of each wiring diagram.

Code	Section	Wiring Diagram Name
AAC/V	EC	IACV-AAC Valve
ABS	BR	Anti-lock Brake System
A/C, A	HA	Auto Air Conditioner
A/C, M	HA	Manual Air Conditioner
AP/SEN	EC	Absolute Pressure Sensor
ASCD	EL	Automatic Speed Control Device (ASCD)
A/T	AT	Automatic Transaxle
AT/C	EC	A/T Control
ATDIAG	EC	A/T Diagnosis Communication Line
AUDIO	EL	Audio
BACK/L	EL	Back-up Lamp
BYPS/V	EC	Vacuum Cut Valve Bypass Valve
CANI/V	EC	EVAP Canister Purge Control Solenoid Valve
CHARGE	EL	Charging System
CHIME	EL	Warning Chime
CIGAR	EL	Cigarette Lighter
CKPS	EC	Crankshaft Position Sensor
CMPS	EC	Camshaft Position Sensor
COOL/F	EC	Cooling Fan Control
CORNER	EL	Cornering Lamp
DEF	EL	Rear Window Defogger
D/LOCK	EL	Power Door Lock
DTRL	EL	Headlamp - With Daytime Light System
ECTS	EC	Engine Coolant Temperature Sensor
EGRC1	EC	EGR Function
EGRC/V	EC	EGRC-Solenoid Valve
EGR/TS	EC	EGR Temperature Sensor
FICD	EC	IACV-FICD Solenoid Valve
F/PUMP	EC	Fuel Pump Control
FRO2	EC	Front Heated Oxygen Sensor
FRO2/H	EC	Front Heated Oxygen Sensor Heater
FUEL	EC	Fuel Injection System Function
H/LAMP	EL	Headlamp
H/MIRR	EL	Heated mirror
HORN	EL	Horn

Code	Section	Wiring Diagram Name
HP/SW	EC	High Pressure Switch
IATS	EC	Intake Air Temperature Sensor
IGN/SG	EC	Ignition Signal
ILL	EL	Illumination
Code	Section	Wiring Diagram Name
INJECT	EC	Injector
INT/L	EL	Interior, Map, Step and Tailgate Lamps
KS	EC	Knock Sensor
MAFS	EC	Mass Air Flow Sensor
MAIN	EC	Main Power Supply and Ground Circuit
METER	EL	Speedometer, Tachometer, Temp. and Fuel Gauges
MIL/DL	EC	MIL, Data Link Connector For CONSULT, GST
MIRROR	EL	Door Mirror
MULTI	EL	Multi-remote Control System
P/ANT	EL	Power Antenna
PGC/V	EC	EVAP Canister Purge Volume Control Valve
PNP/SW	EC	Park/Neutral Position Switch
POWER	EL	Power Supply Routing
PRE/SE	EC	EVAP Control System Pressure Sensor
PST/SW	EC	Power Steering Oil Pressure Switch
RRO2	EC	Rear Heated Oxygen Sensor
RRO2/H	EC	Rear Heated Oxygen Sensor Heater
SEAT	EL	Power Seat
SHIFT	AT	A/T Shift Lock System
SROOF	EL	Sunroof
SRS	RS	Supplemental Restraint System
S/SIG	EC	Start Signal
START	EL	Starting System
SW/V	EC	MAP/BARO Switch Solenoid Valve
TAIL/L	EL	Parking, License, Tail and Stop Lamps
T/TOW	EL	Trailer Tow
TFTS	EC	Tank Fuel Temperature Sensor
THEFT	EL	Theft Warning System

WIRING DIAGRAM CODES (CELL CODES)

Code	Section	Wiring Diagram Name
TPS	EC	Throttle Position Sensor
TP/SW	EC	Throttle Position Switch
TURN	EL	Turn Signal and Hazard Warning Lamps
VENT/V	EC	EVAP Canister Vent Control Valve
VSS	EC	Vehicle Speed Sensor
WARN	EL	Warning Lamps

Code	Section	Wiring Diagram Name
WINDOW	EL	Power Window
WIPER	EL	Front Wiper and Washer
WIP/R	EL	Rear Wiper and Washer (Except for Glass Hatch Model)
WIP/R	EL	Rear Wiper and Washer (For Glass Hatch Model)

GI

MA

EM

LC

EC

FE

AT

FA

RA

BR

ST

RS

BT

HA

EL

IX