ELECTRICAL SYSTEM

SECTION EL

CONTENTS

CONTENTS (Cont'd)

CONTENTS (Cont'd)

Supplemental Restraint System (SRS) "AIR BAG"

NDEL0001

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

WARNING:

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance 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 for the complete harness, for easy identification.**

Wiring Diagrams and Trouble Diagnosis

NDEL0002

When you read wiring diagrams, refer to the followings:

- "HOW TO READ WIRING DIAGRAMS" in GI section
- "POWER SUPPLY ROUTING" for power distribution circuit in EL section

When you perform trouble diagnosis, refer to the followings:

- "HOW TO FOLLOW TEST GROUP IN TROUBLE DIAGNOSIS" in GI section
- "HOW TO PERFORM EFFICIENT DIAGNOSIS FOR AN ELECTRICAL INCIDENT" in GI section

Check for any Service bulletins before servicing the vehicle.

Description

NDEL0003

HARNESS CONNECTOR (TAB-LOCKING TYPE)

NDEL0003S01

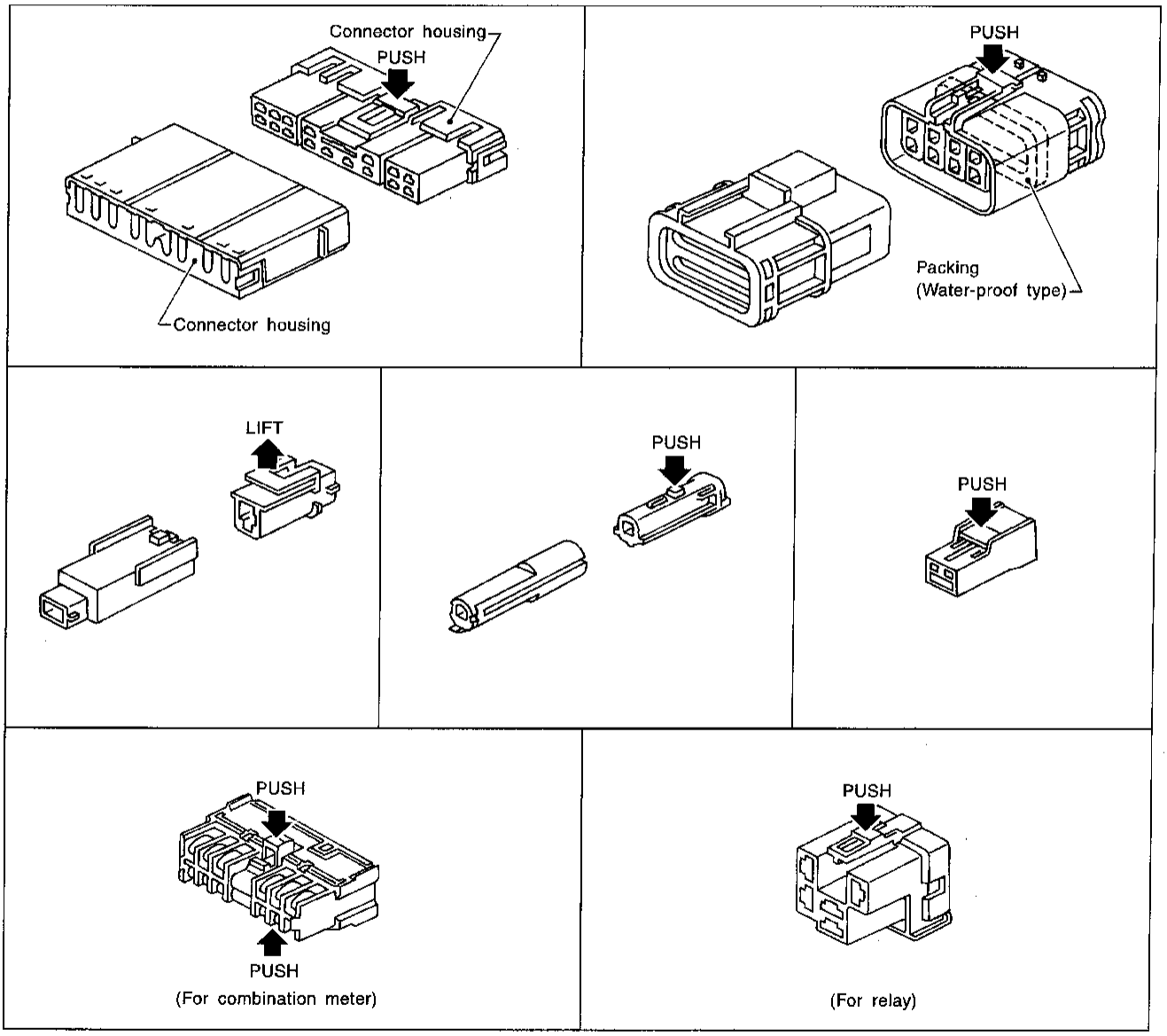
- The tab-locking type connectors help prevent accidental looseness or disconnection.
- The tab-locking type connectors are disconnected by pushing or lifting the locking tabs. Refer to illustration below.

Refer to the next page for description of slide-locking type connectors.

CAUTION:

- **Do not pull the harness or wires when disconnecting the connector.**
- **Be careful not to damage the connector support bracket when disconnecting the connector.**

[Example]



SEL769DA

Description (Cont'd)

HARNESS CONNECTOR (SLIDE-LOCKING TYPE)

=NDEL0003S02

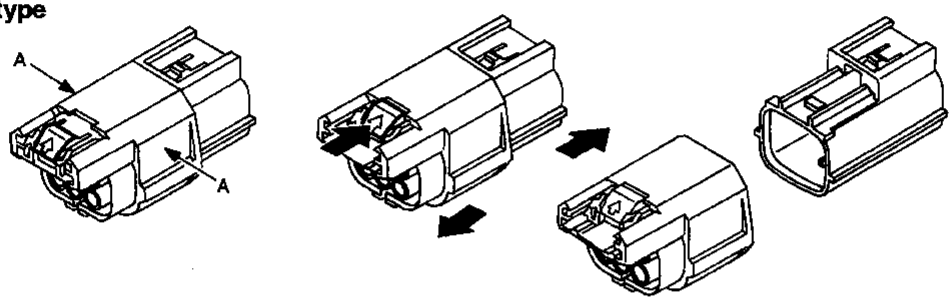
- A new style slide-locking type connector is used on certain systems and components, especially those related to OBD.
- The slide-locking type connectors help prevent incomplete locking and accidental looseness or disconnection.
- The slide-locking type connectors are disconnected by pushing or pulling the slider. Refer to illustration below.

CAUTION:

- **Do not pull the harness or wires when disconnecting the connector.**
- **Be careful not to damage the connector support bracket when disconnecting the connector.**

[Example]

Waterproof type

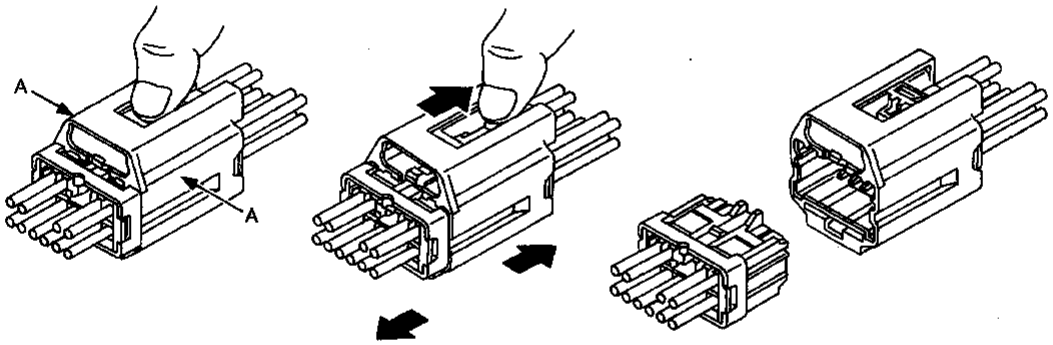


① Firmly grasp shell of connector housing at A.

② Push slider until connector pops or snaps apart.

③ Disconnect harness connector.

Non-waterproof type



① Firmly grasp shell of connector housing at A.

② Pull back on the slider while pulling apart male and female halves of connector.

③ Disconnect harness connector.

AEL299C

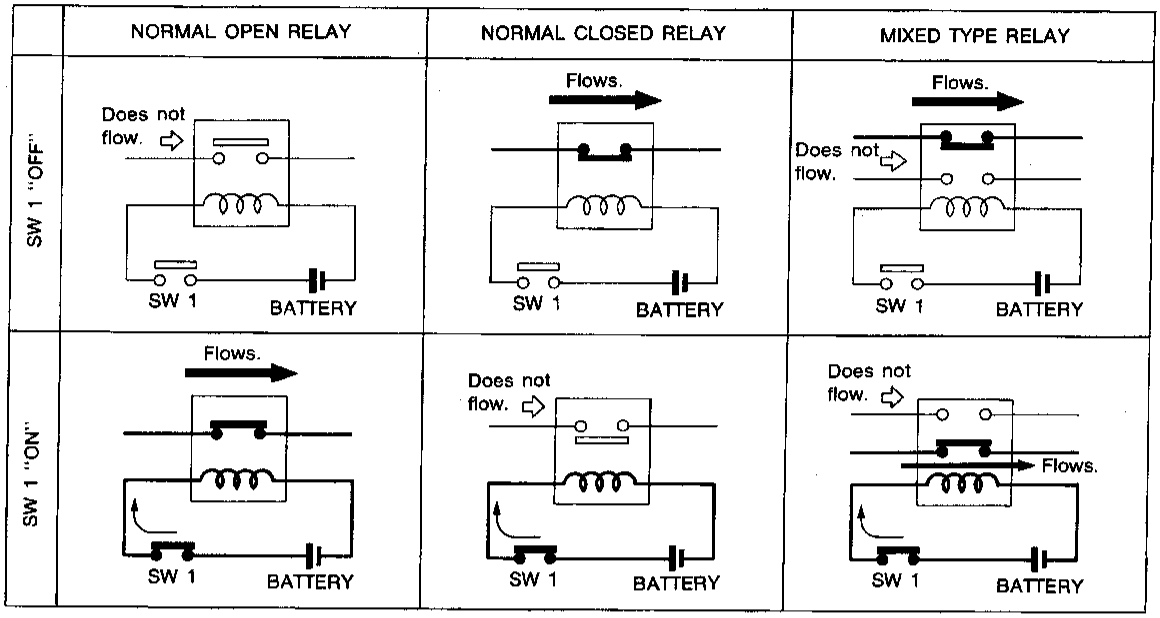
Description

NDEL0004

NORMAL OPEN, NORMAL CLOSED AND MIXED TYPE RELAYS

NDEL0004S01

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

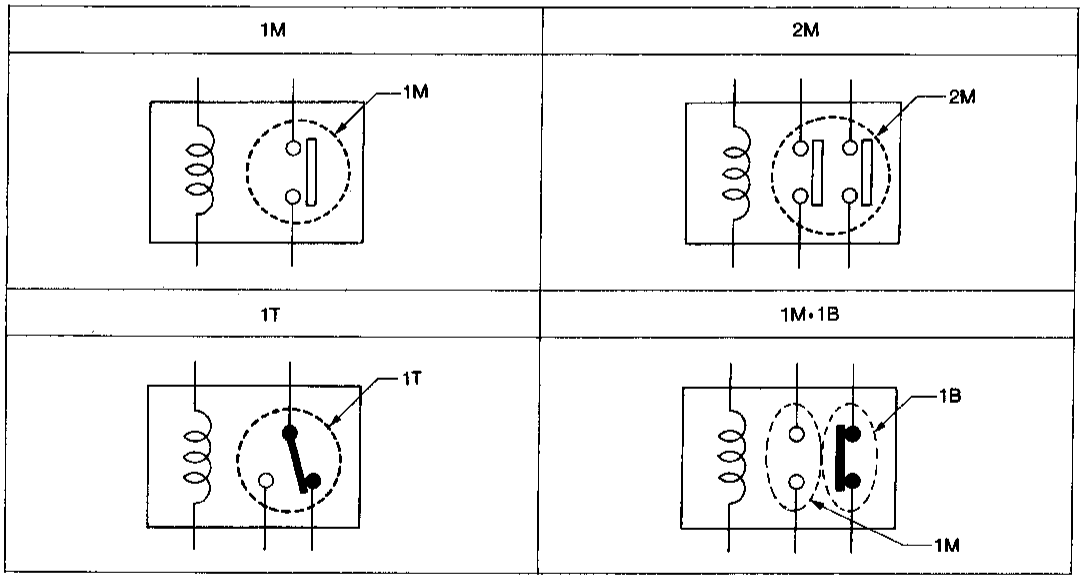


SEL881H

TYPE OF STANDARDIZED RELAYS

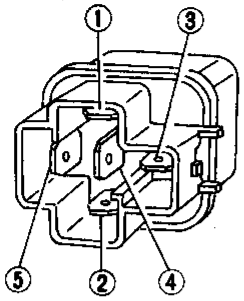
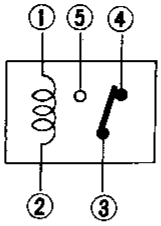
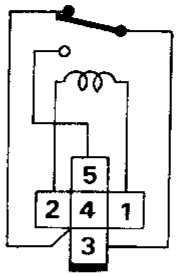
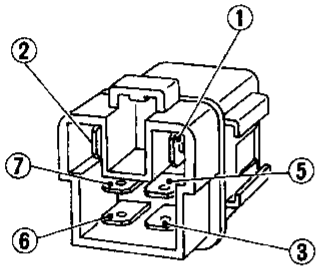
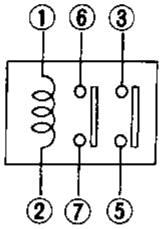
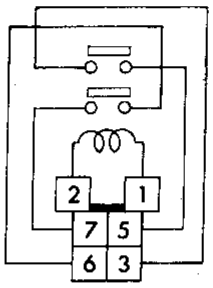
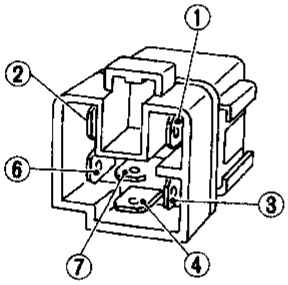
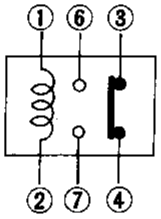
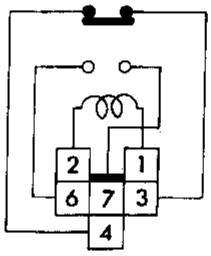
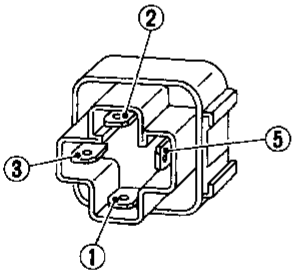
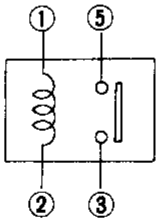
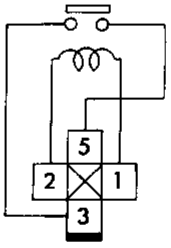
NDEL0004S02

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



SEL882H

Description (Cont'd)

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

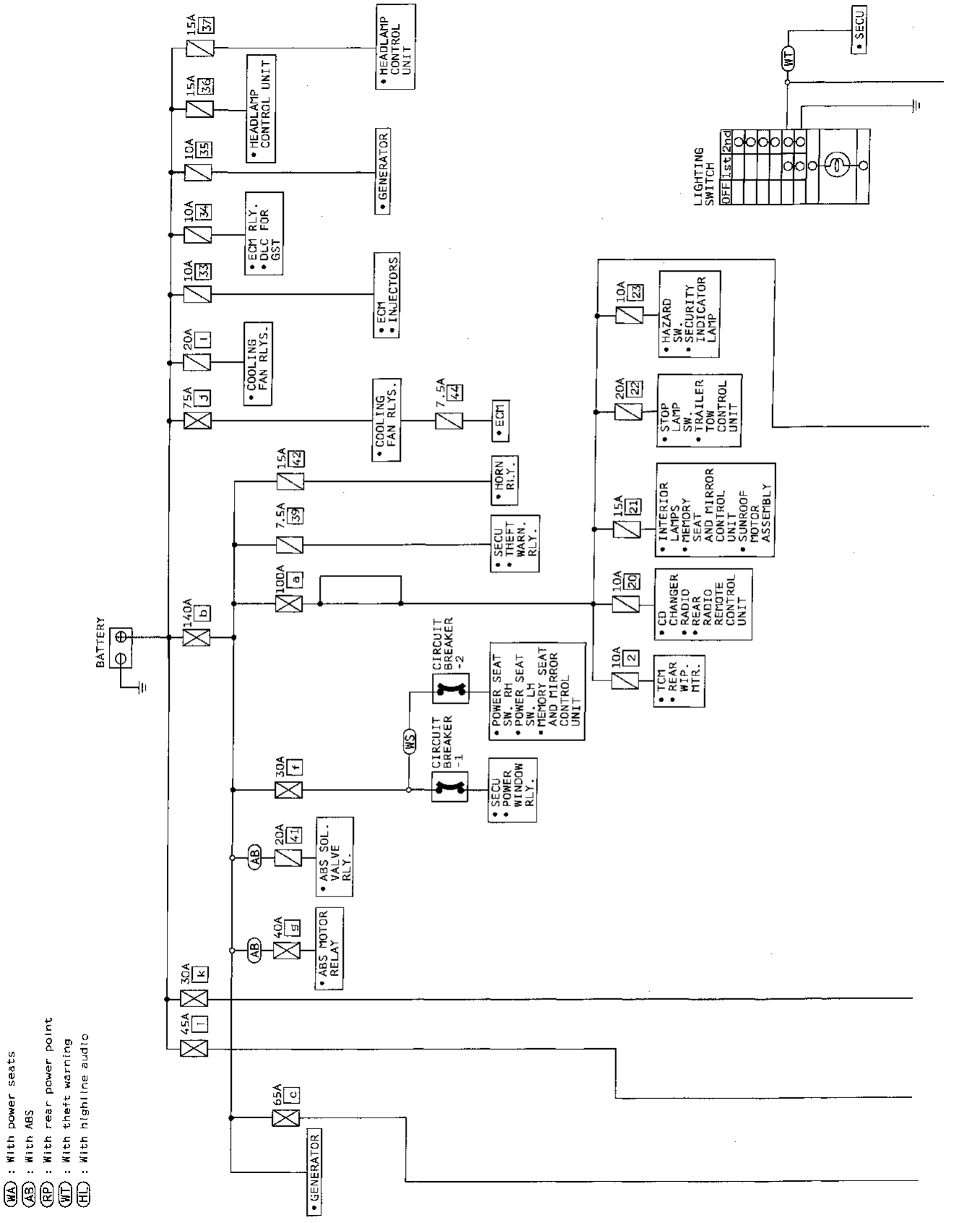
The arrangement of terminal numbers on the actual relays may differ from those shown above.

AEL174C

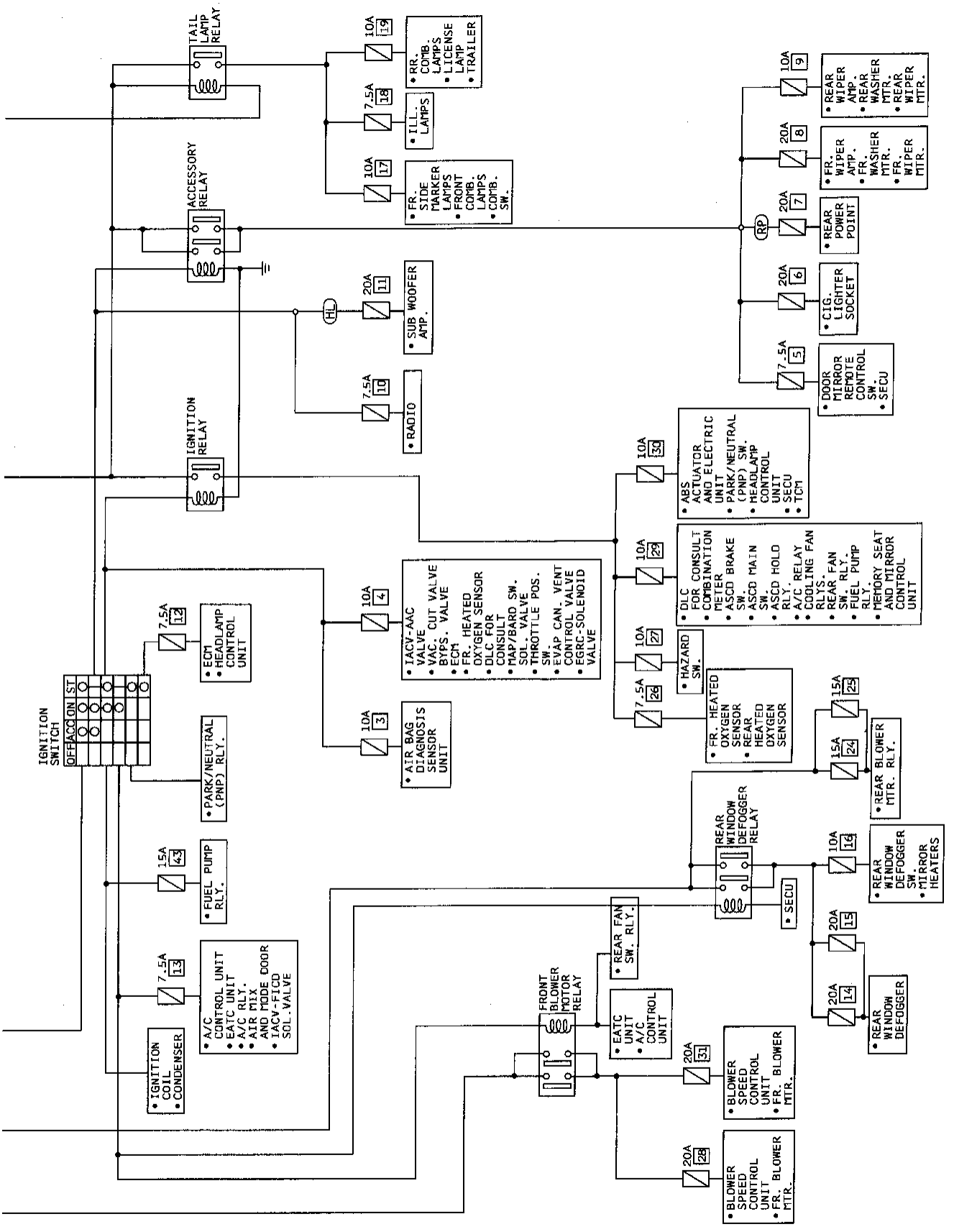
NOTE:

Schematic

NDEL0005



AEL801B


TAIL LAMP RELAY
ACCESSORY RELAY
IGNITION RELAY
IGNITION SWITCH
OFF ACC ON ST
10A 19
• RR. COMB. LAMPS • LICENSE LAMP • TRAILER
7.5A 18
• ILL. LAMPS
10A 17
• FR. SIDE MARKER LAMPS • FRONT COMB. LAMPS • COMB. SW.
20A 11
• SUB WOOFER AMP.
7.5A 10
• RADIO
10A 9
• REAR WIPER AMP. • REAR WASHER MTR. • REAR WIPER MTR.
20A 8
• FR. WIPER AMP. • FR. WASHER MTR. • FR. WIPER MTR.
20A 7
• REAR POWER POINT
20A 6
• CIG. LIGHTER SOCKET
7.5A 5
• DOOR MIRROR REMOTE CONTROL SW. • SECU
10A 30
• ABS ACTUATOR AND ELECTRIC UNIT • PARK/NEUTRAL (PNP) SW. • HEADLAMP CONTROL UNIT • SECU • TCM
10A 29
• DLC FOR CONSULT • COMBINATION METER • ASCD BRAKE SW. • ASCD MAIN SW. • ASCD HOLD RLY. • A/C RELAY • COOLING FAN RLYS. • REAR FAN SW. RLY. • FUEL PUMP RLY. • MEMORY SEAT AND MIRROR CONTROL UNIT
10A 27
• HAZARD SW.
7.5A 26
• FR. HEATED OXYGEN SENSOR • REAR HEATED OXYGEN SENSOR
10A 4
• IACV-AAC VALVE • VAC. CUT VALVE BYPS. VALVE • ECM • FR. HEATED OXYGEN SENSOR • DLC FOR CONSULT • MAP/BARO SW. SOL. VALVE • THROTTLE POS. SW. • EVAP CAN. VENT CONTROL VALVE • EGRC-SOLENOID VALVE
10A 3
• AIR BAG DIAGNOSIS SENSOR UNIT
7.5A 12
• ECM • HEADLAMP CONTROL UNIT
• PARK/NEUTRAL (PNP) RLY.
15A 43
• FUEL PUMP RLY.
7.5A 13
• A/C CONTROL UNIT • EATC UNIT • A/C RLY. • AIR MIX AND MODE DOOR • IACV-FICD SOL. VALVE
• IGNITION COIL • CONDENSER
15A 23
15A 24
• REAR BLOWER MTR. RLY.
REAR WINDOW DEFOGGER RELAY
• SECU
10A 16
• REAR WINDOW DEFOGGER SW. • MIRROR HEATERS
20A 15
20A 14
• REAR WINDOW DEFOGGER
FRONT BLOWER MOTOR RELAY
• REAR FAN SW. RLY.
• EATC UNIT • A/C CONTROL UNIT
20A 31
• BLOWER SPEED CONTROL UNIT • FR. BLOWER MTR.
20A 28
• BLOWER SPEED CONTROL UNIT • FR. BLOWER MTR.

AEL802B

Wiring Diagram — POWER —

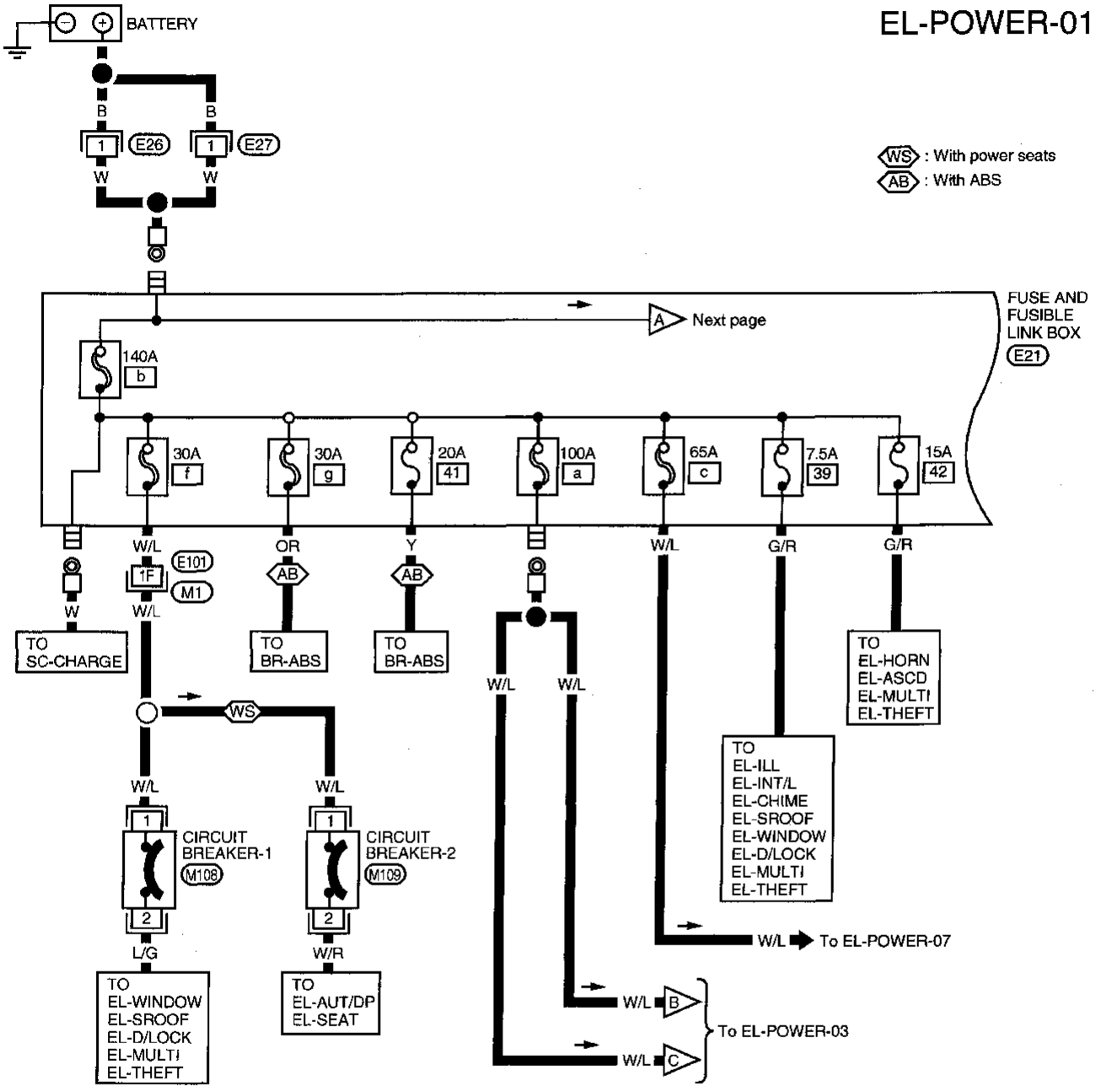
NDEL0006

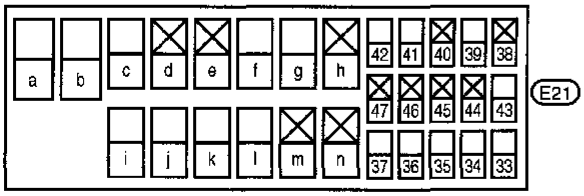
BATTERY POWER SUPPLY — IGNITION SW. IN ANY POSITION

NDEL0006S01

NOTE:

For detailed ground distribution information, refer to "GROUND DISTRIBUTION", EL-18.

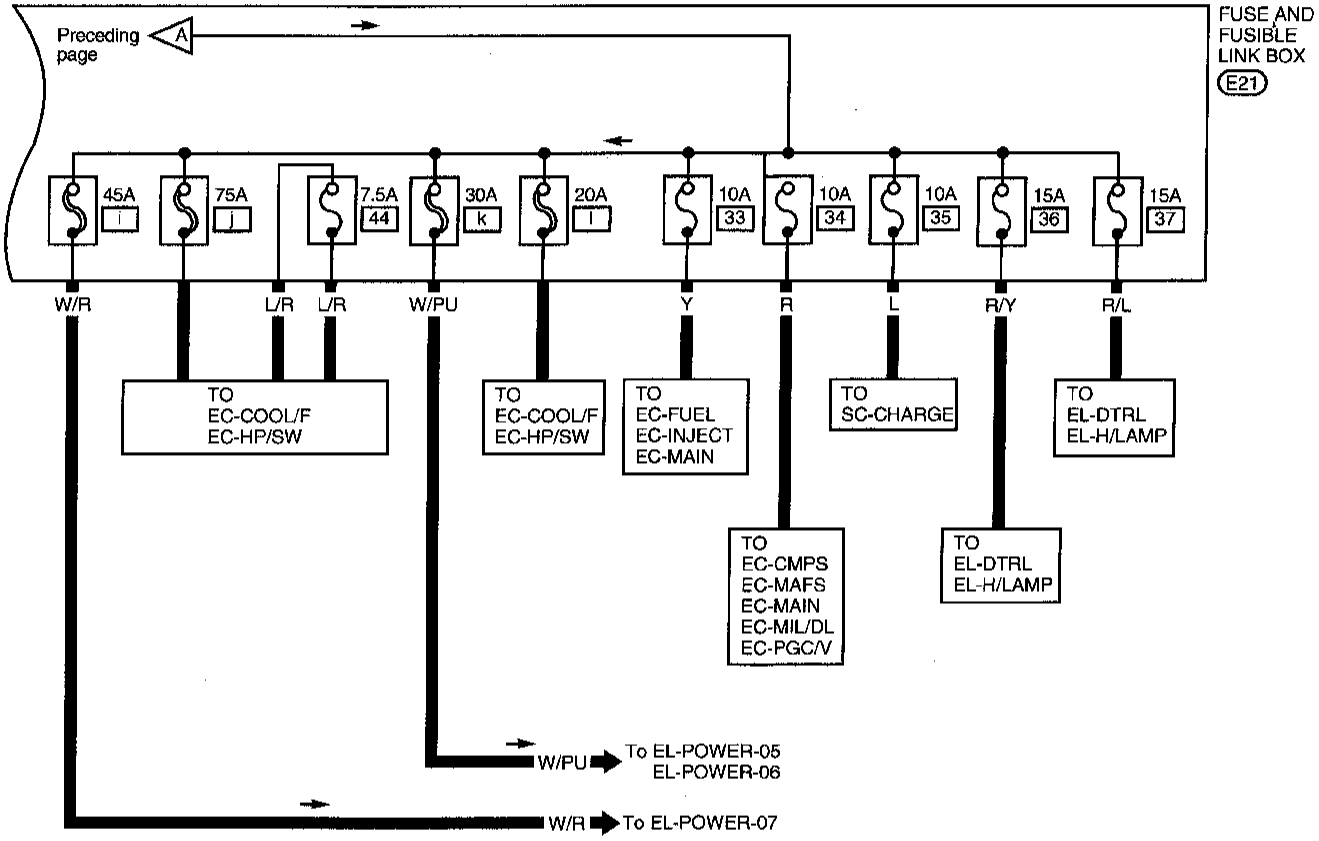


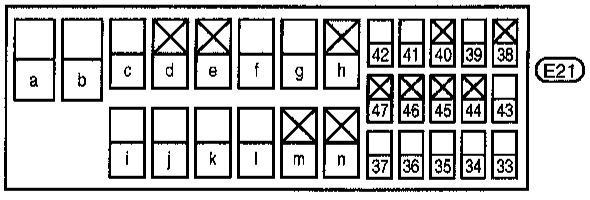


Refer to last page (Foldout page).

M1 , E101

AEL803B

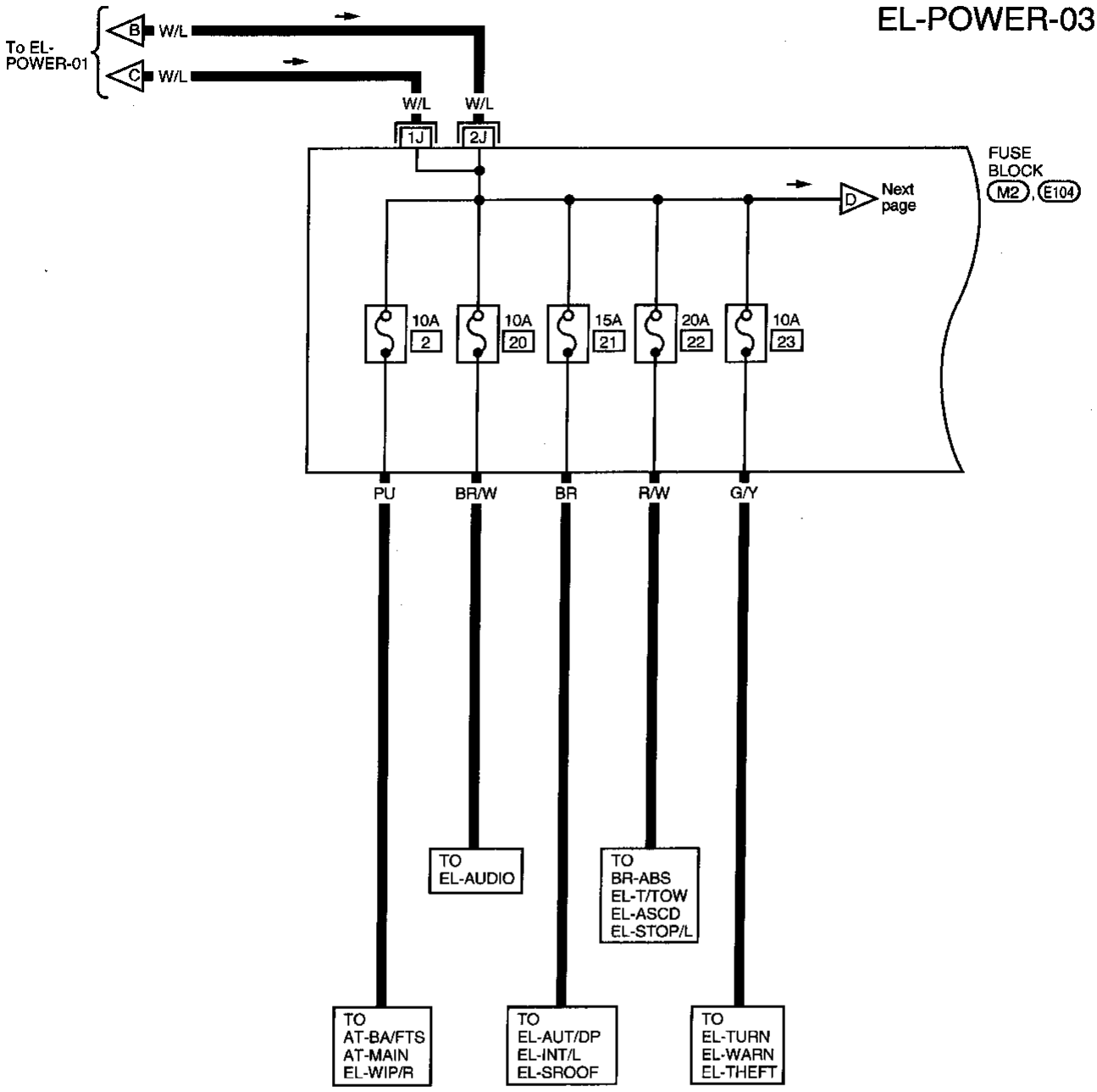

Preceding page
A
FUSE AND FUSIBLE LINK BOX
E21
45A i
75A j
7.5A 44
30A k
20A l
10A 33
10A 34
10A 35
15A 36
15A 37
W/R
L/R
L/R
W/PU
Y
R
L
R/Y
R/L
TO EC-COOL/F EC-HP/SW
TO EC-COOL/F EC-HP/SW
TO EC-FUEL EC-INJECT EC-MAIN
TO SC-CHARGE
TO EL-DTRL EL-H/LAMP
TO EC-CMPS EC-MAFS EC-MAIN EC-MIL/DL EC-PGC/V
TO EL-DTRL EL-H/LAMP
W/PU
To EL-POWER-05 EL-POWER-06
W/R
To EL-POWER-07


a b c d e f g h
42 41 40 39 38
47 46 45 44 43
i j k l m n
37 36 35 34 33
E21

AEL804B

Wiring Diagram — POWER — (Cont'd)

EL-POWER-03

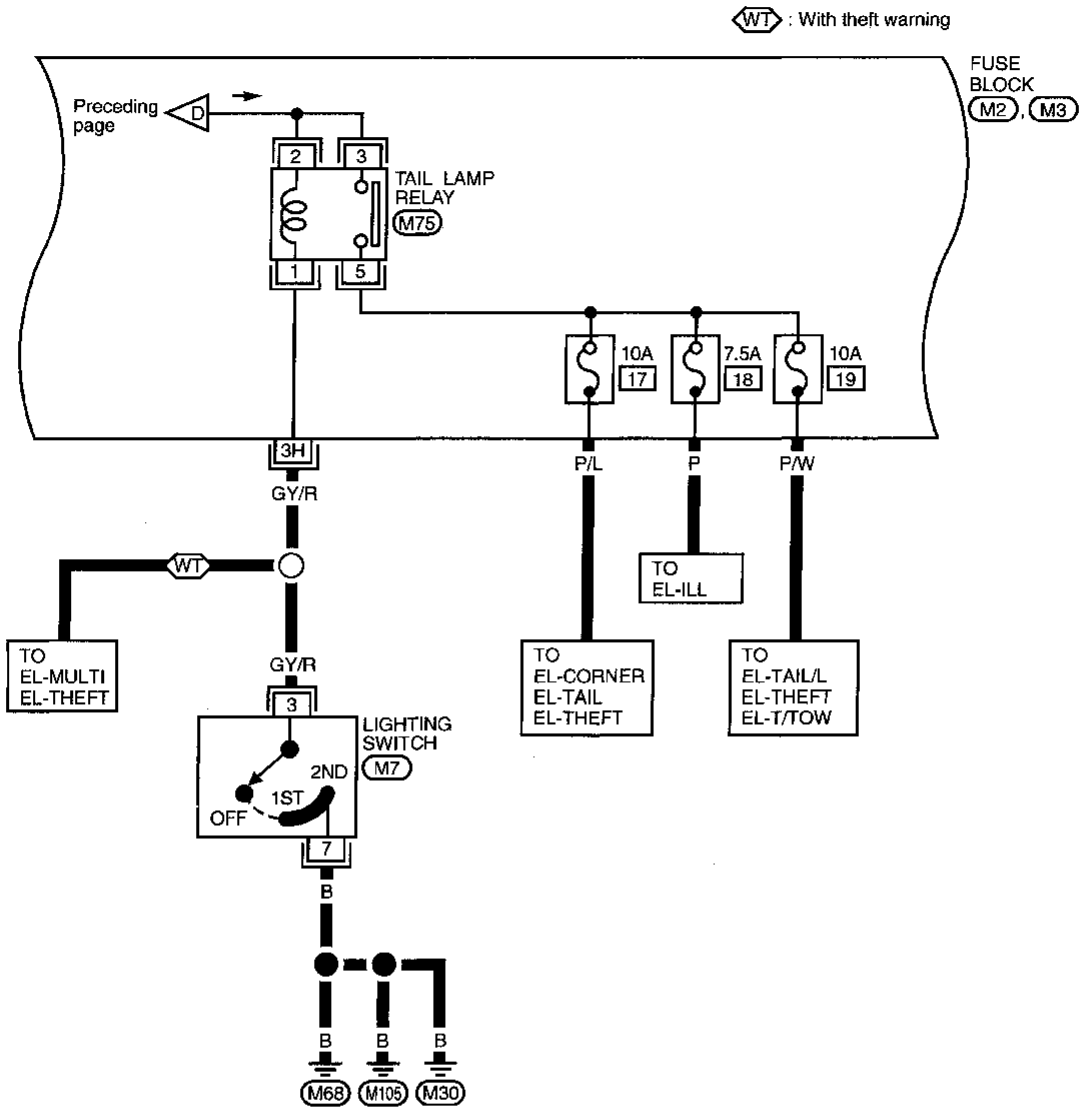


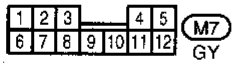
1J 2J E104 B

Refer to last page (Foldout page).
M2, E104

AEL805B

EL-POWER-04





Refer to last page (Foldout page).
(M2), (M3)

AEL806B

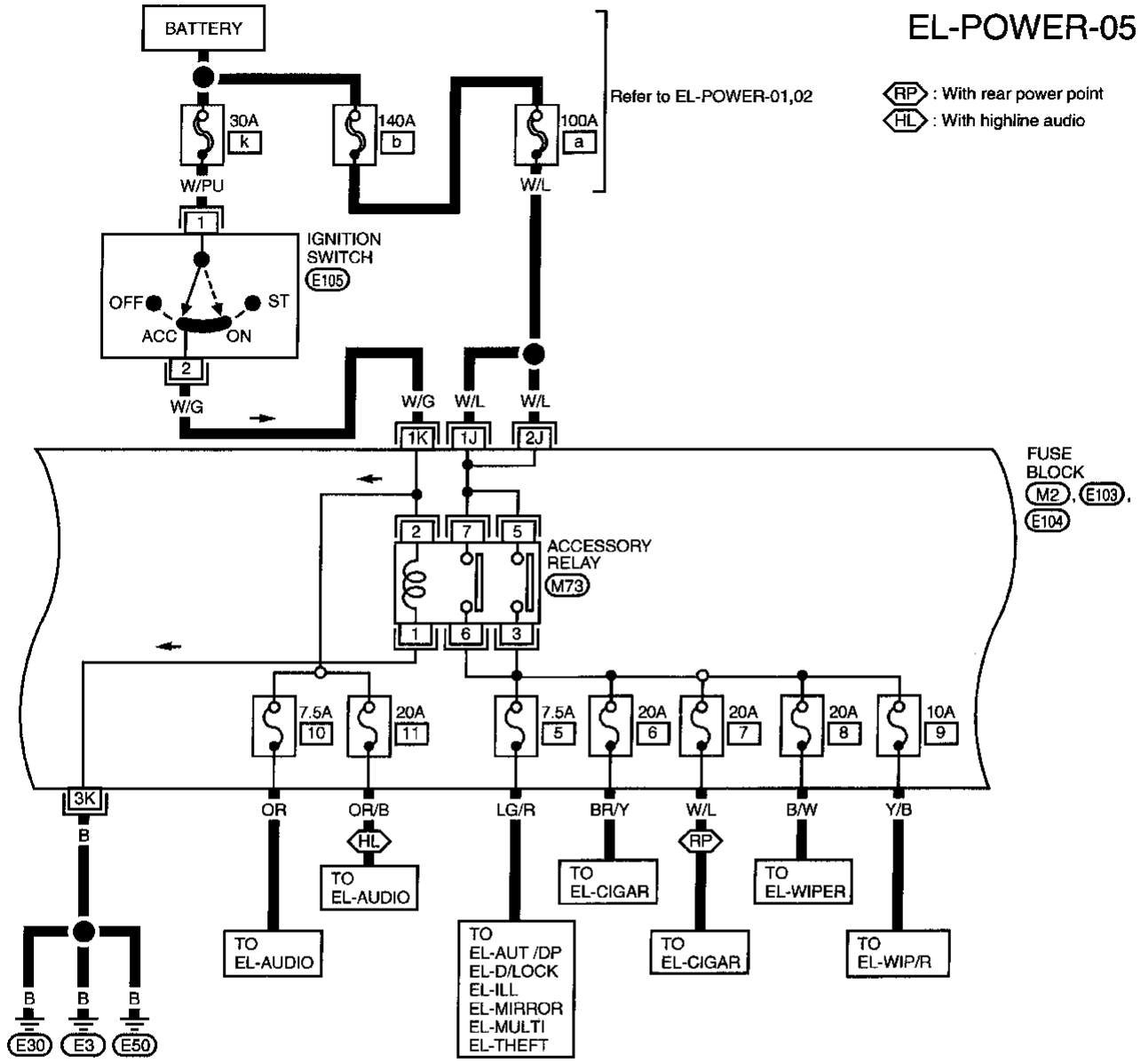
Wiring Diagram — POWER — (Cont'd)

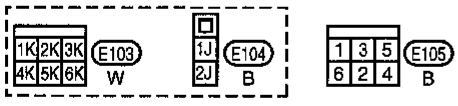
ACCESSORY POWER SUPPLY — IGNITION SW. IN ACC OR ON

=NDEL0006S02

NOTE:

For detailed ground distribution information, refer to "GROUND DISTRIBUTION", EL-18.





Refer to last page (Foldout page).
M2 , E103 , E104

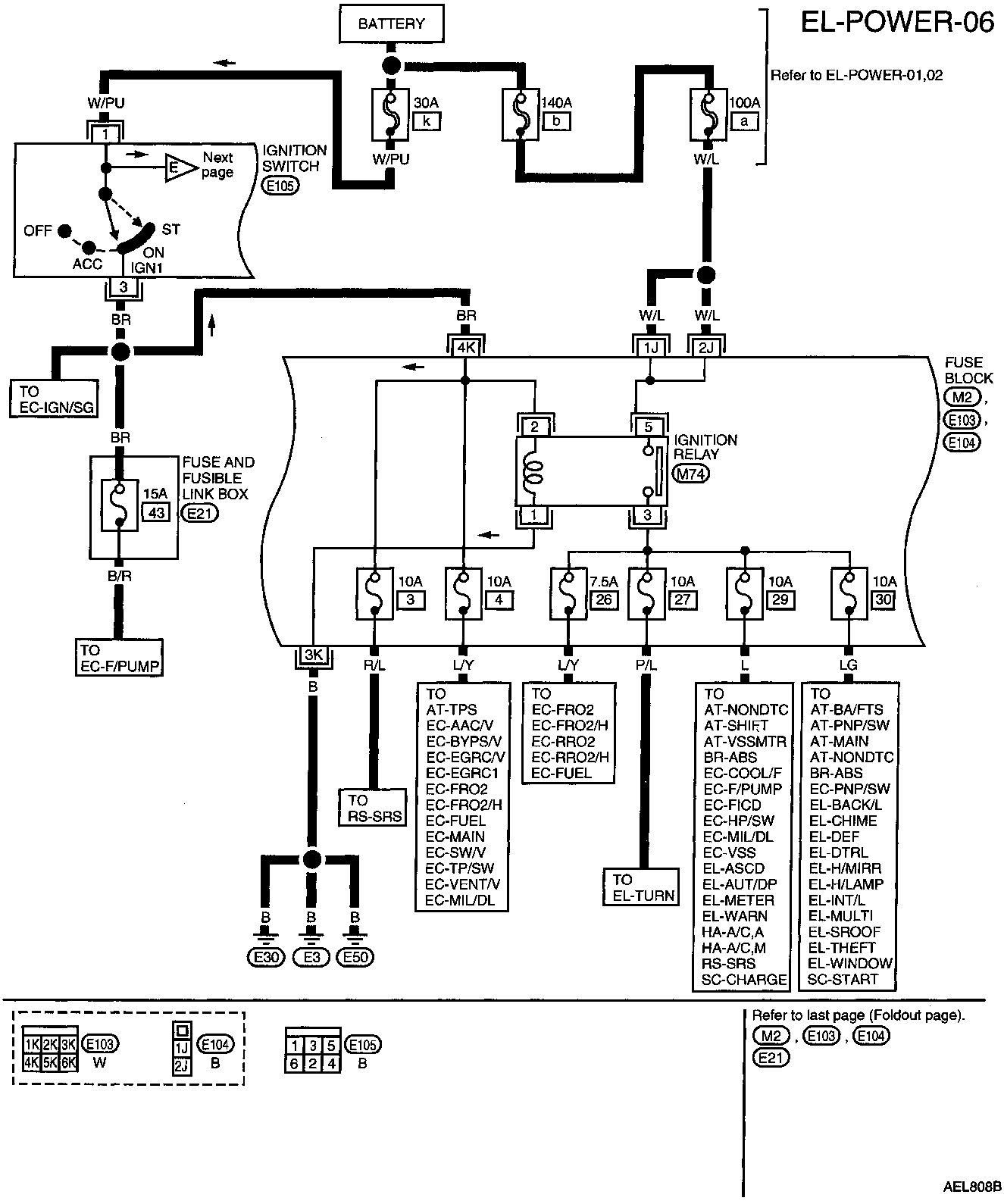
AEL807B

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

=NDEL0006S03

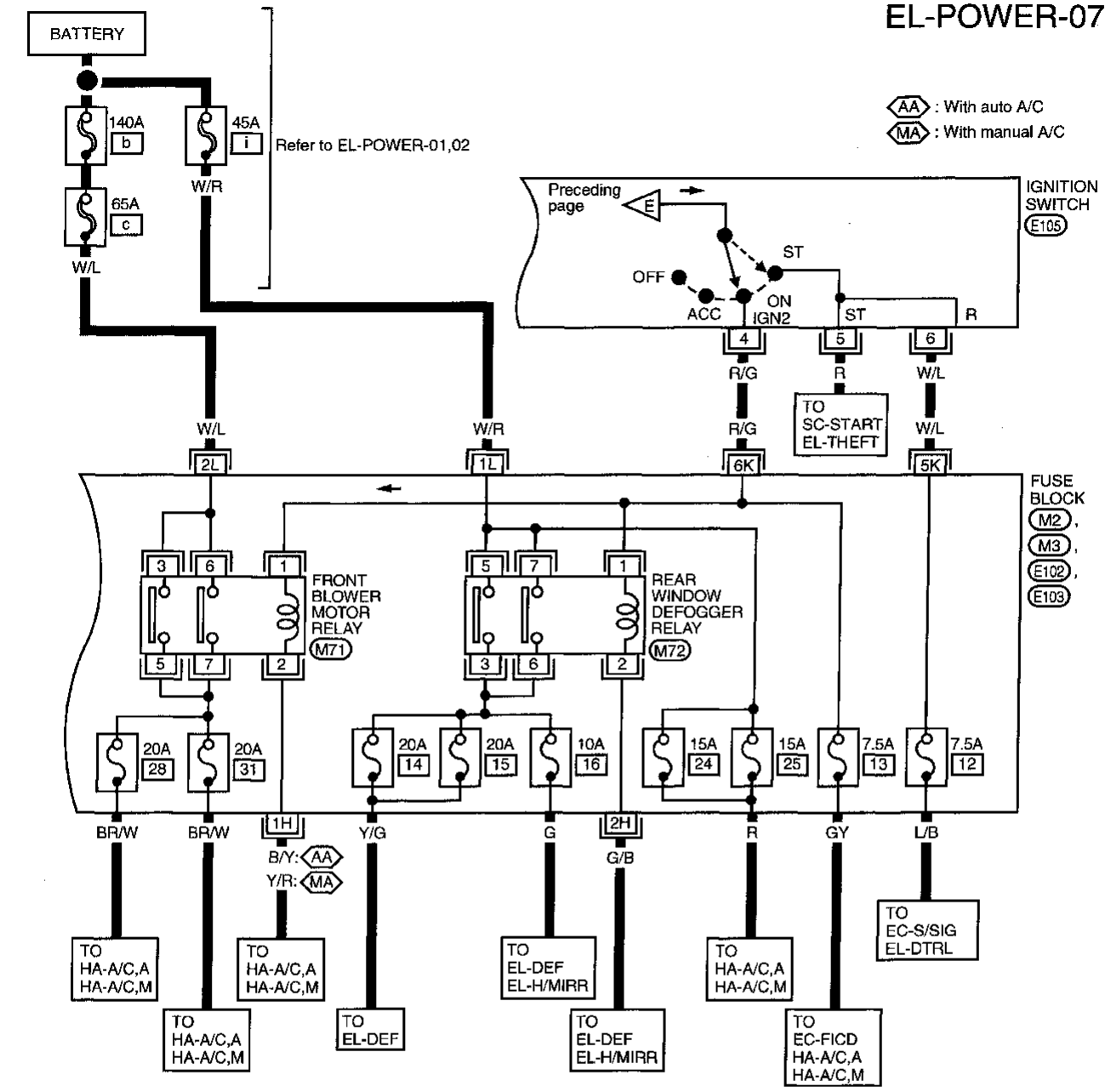
NOTE:

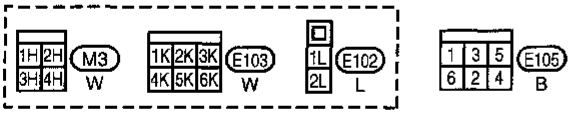
For detailed ground distribution information, refer to "GROUND DISTRIBUTION", EL-18.



Wiring Diagram — POWER — (Cont'd)

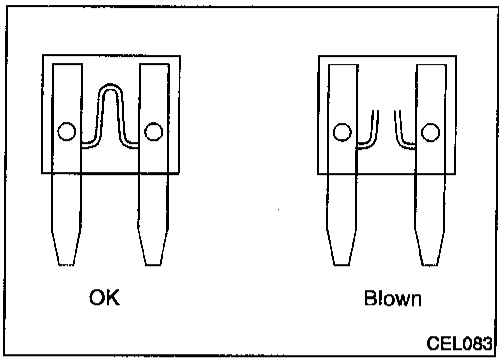
EL-POWER-07

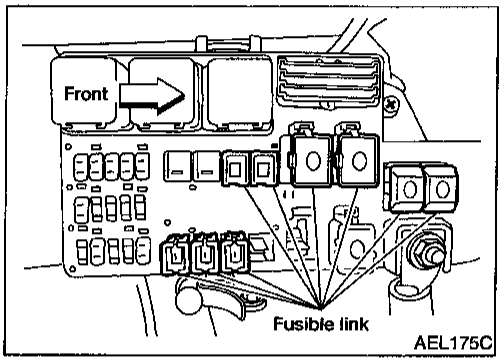




Refer to last page (Foldout page).
M2, M3, E102, E103

AEL809B





Inspection

NDEL0007

FUSE

NDEL0007S01

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

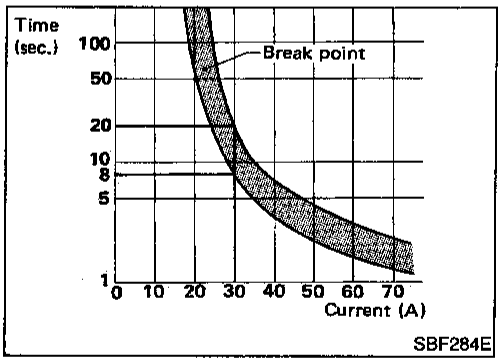
FUSIBLE LINK

NDEL0007S02

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 critical circuit (power supply or large current carrying circuit) is shorted. In such a case, carefully check 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

NDEL0007S03

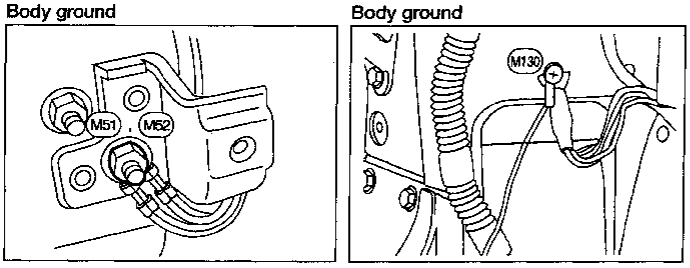
For example, when current is 30A, the circuit is broken within 8 to 20 seconds.

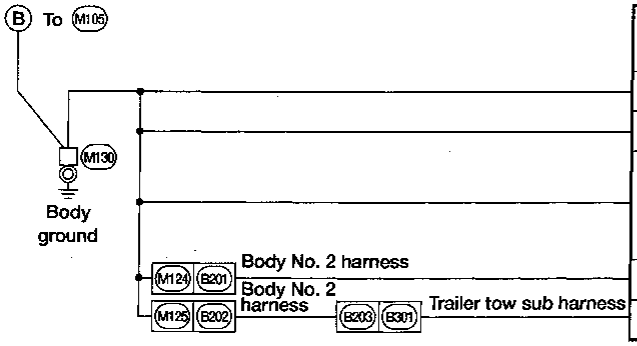
Ground Distribution

MAIN HARNESS

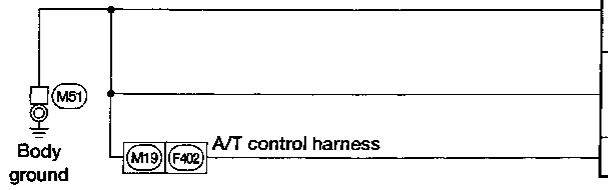
NDEL0008

NDEL0008S01

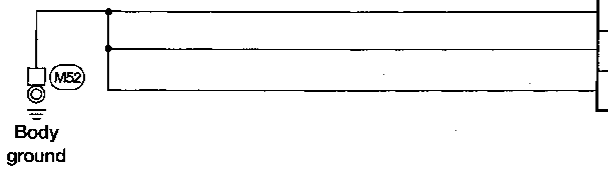




CONNECTOR NUMBER	CONNECT TO
M120	Rear power point (With rear power point)
M129	Trailer tow control unit (With trailer tow)
M132	Rear combination lamp LH (Terminal No. 4) • Tail lamp • Stop lamp • Turn signal lamp
B205	Fuel tank gauge unit
B302	Trailer (With trailer tow)



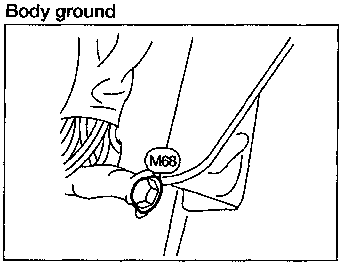
CONNECTOR NUMBER	CONNECT TO
M17	Combination meter (Terminal No. 30) • Speedometer • Tachometer
M18	Combination meter (Terminal No. 17) • Water temperature gauge • Fuel gauge
F301	Vehicle speed sensor

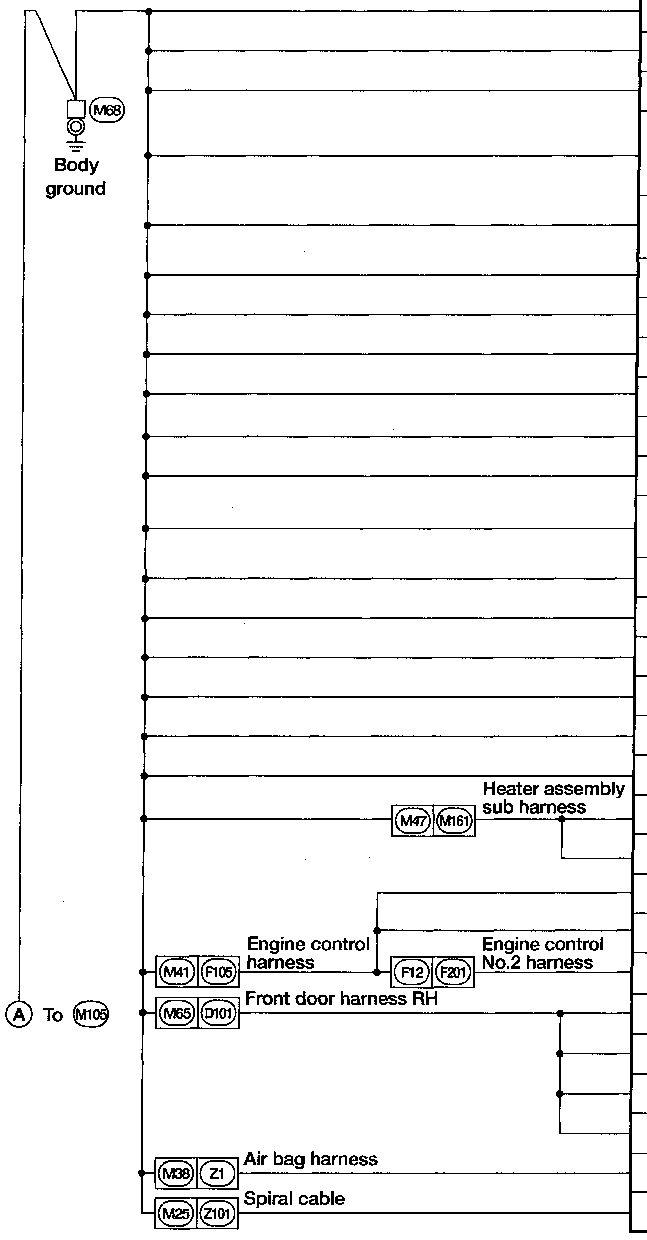


CONNECTOR NUMBER	CONNECT TO
M45	Audio (Terminal No. 31)
M45	Audio (Terminal No. 36)
M53	C/D changer (With C/D changer)

AEL854B

Body ground



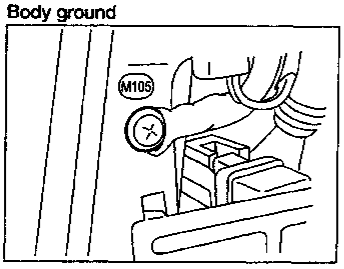


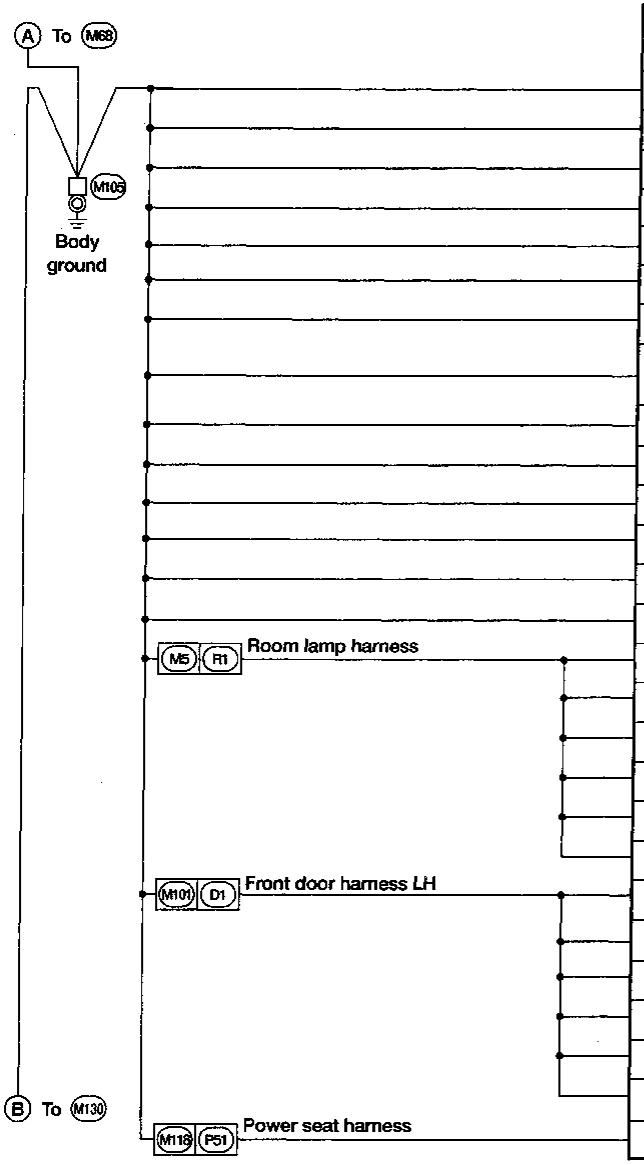
CONNECTOR NUMBER	CONNECT TO
M6	ASCD main switch
M8	Illumination control switch
M12	Data link connector for GST (Terminal No. 13)
M16	Combination meter (Terminal No. 12) • Air bag warning lamp • High beam indicator
M18	Combination meter (Turn signal indicators) (Terminal No. 22)
M21	Rear wiper switch
M22	Rear window defogger switch (Terminal No. 2)
M22	Rear window defogger switch (Terminal No. 4)
M26	Cigarette lighter socket
M33	EATC unit (With auto A/C)
M34	A/C control unit (With manual A/C) (Terminal No. 6)
M36	A/C control unit (Temperature control switch) (With manual A/C) (Terminal No. 3)
M39	Smart entrance control unit (Terminal No. 16)
M40	Smart entrance control unit (Terminal No. 2)
M40	Smart entrance control unit (Terminal No. 10)
M49	Rear fan switch relay (With rear manual A/C)
M55	ASCD control unit
M57	Front blower speed control unit (With auto A/C)
M162	Mix door actuator (With manual A/C)
M163	Mode door actuator (With manual A/C)
F10	A/C compressor
F13	Diode-3
F215	IACV-FICD solenoid valve
D105	Door mirror RH
D109	Door lock/unlock switch RH
D110	Front door key cylinder switch RH (With theft warning)
D111	Front door lock actuator RH
Z3	Air bag diagnosis sensor unit
Z103	Horn switch

AEL048C

Ground Distribution (Cont'd)

Body ground



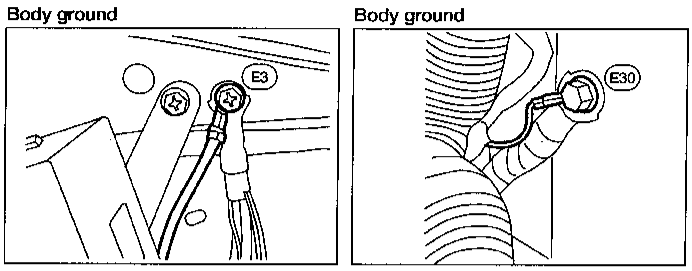


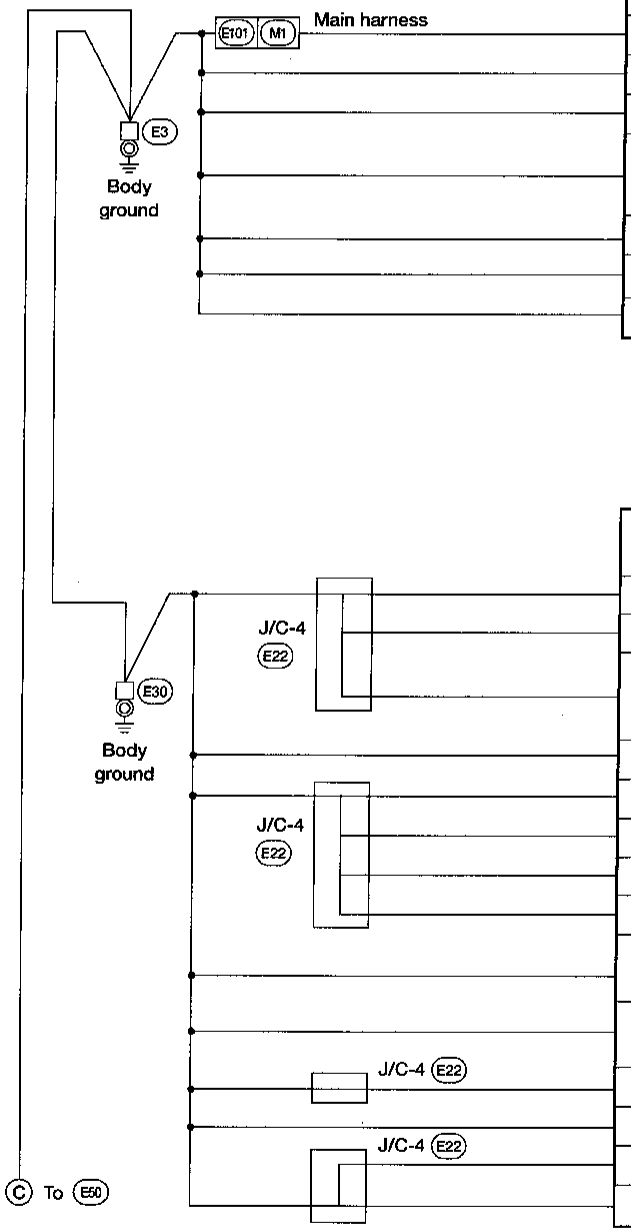
CONNECTOR NUMBER	CONNECT TO
M7	Lighting switch
M30	Headlamp control unit (With daytime light system)
M31	Front fan switch (With manual A/C)
M32	Rear fan switch front (With auto A/C)
M59	Front blower motor resistor (With manual A/C)
M106	Inertia fuel shutoff switch
M110	Front door switch LH
M115	Rear audio remote control unit (Illumination) (Terminal No. 10)
M115	Rear audio remote control unit (Terminal No. 14)
M116	Seat belt buckle switch
M117	Memory seat and mirror control unit (Terminal No. 5)
M117	Memory seat and mirror control unit (Terminal No. 9)
M117	Memory seat and mirror control unit (Terminal No. 10)
M123	Subwoofer amplifier (With highline audio system)
R2	Integrated homelink transmitter (Terminal No. 2)
R2	Vanity lamp LH (With vanity lamps) (Terminal No. 2)
R3	Vanity lamp RH (With vanity lamps)
R4	Sunroof motor assembly
R5	Map lamp (With map lamp)
R6	Sunroof switch
D5	Memory set switch
D6	Door mirror LH
D9	Door mirror remote control switch
D11	Front door key cylinder switch LH (With theft warning)
D12	Front door lock actuator LH
D14	Main power window and door lock/unlock switch
P52	Power seat switch LH

AEL855B

ENGINE ROOM HARNESS

NDEL0008S02





CONNECTOR NUMBER	CONNECT TO
M76	Diode-1 (Without ABS)
E1	Front wiper amplifier (Terminal No. 5)
E20	Cooling fan motor
E103	Fuse block • Accessory relay • Ignition relay
E106	A/T device
E107	Combination switch-1 (Terminal No. 12)
E107	Combination switch-1 (Terminal No. 14)

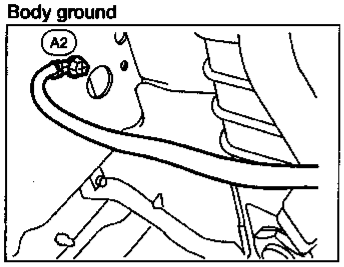
CONNECTOR NUMBER	CONNECT TO
E2	Front wiper amplifier (Terminal No. 4)
E8	Front side marker lamp LH
E9	Front combination lamp LH (Terminal No.1) • Cornering lamp • Parking lamp
E10	Headlamp LH
E11	Front turn signal lamp LH
E13	Park/neutral position (PNP) relay
E18	Bulb check relay
E19	ASCD hold relay
E31	ABS actuator and electric unit (Control unit) (Terminal No.16) (With ABS)
E31	ABS actuator and electric unit (Control unit) (Terminal No.19) (With ABS)
E32	Brake fluid level switch
E35	Front wiper motor
E108	Key switch
E109	Overdrive control switch

AEL856B

GENERATOR HARNESS

NDEL0008S03

Body ground



CONNECTOR NUMBER	CONNECT TO
A4	Generator

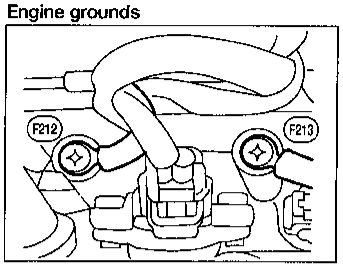
Body ground

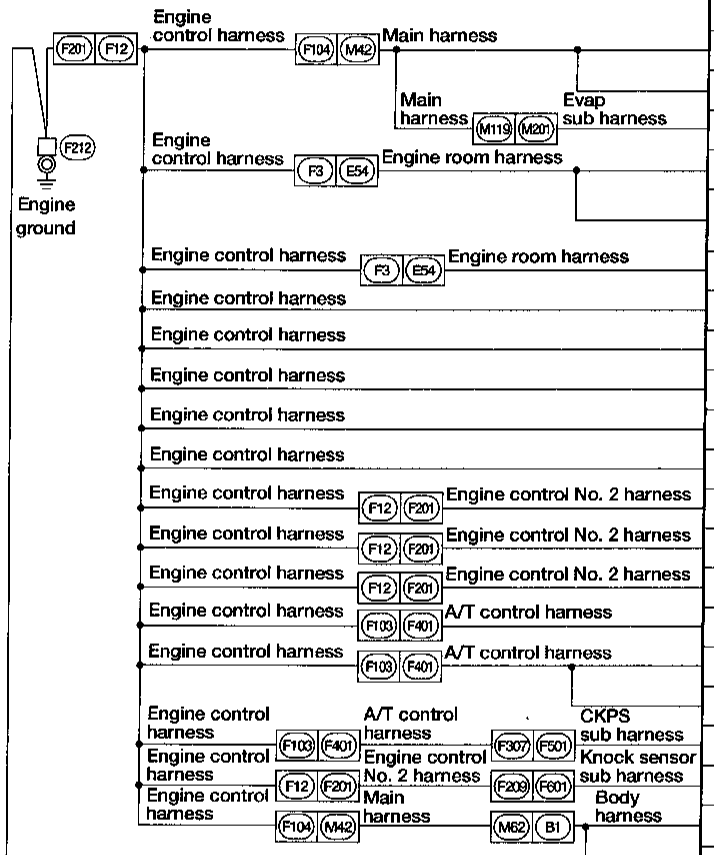
AEL857B

ENGINE CONTROL SUB HARNESS

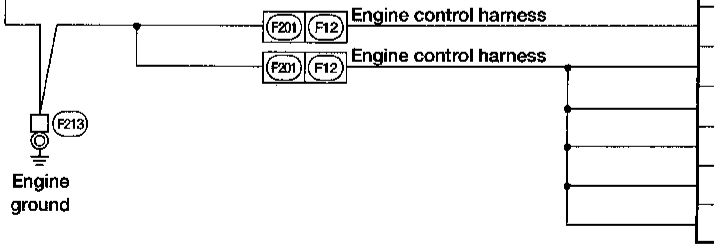
NDEL0008S04

Engine grounds





CONNECTOR NUMBER	CONNECT TO
M4	Data link connector for CONSULT
M12	Data link connector for GST (Terminal No. 12)
M203	Evap control system pressure sensor (Shield wire)
E39	Front heated oxygen sensor (Shield wire) (Federal)
E40	Rear heated oxygen sensor (Shield wire) (California) (Terminal No. 3)
E40	Rear heated oxygen sensor (California)
F7	Distributor (Camshaft position sensor) (Terminal No. 6)
F7	Camshaft positon sensor (Shield wire)
F9	Resistor (Ignition coil) (Shield wire)
F101	ECM (Terminal No. 25)
F101	ECM (Terminal No. 32)
F214	Front heated oxygen sensor (Shield wire) (California)
F217	Throttle position sensor (Shield wire)
F219	Absolute pressure sensor (Shield wire)
F306	Mass air flow sensor (Shield wire)
F404	TCM (Terminal No. 25)
F404	TCM (Terminal No. 48)
F502	Crankshaft position sensor (CKPS) (OBD) (Shield wire)
F602	Knock sensor (Shield wire)
B4	Rear heated oxygen sensor (Federal) (Terminal No. 3)
B4	Rear heated oxygen sensor (Shield wire) (Federal)



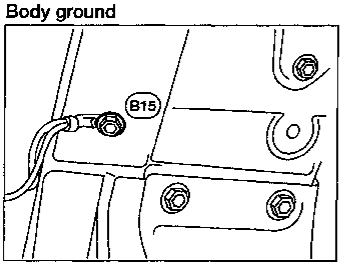
CONNECTOR NUMBER	CONNECT TO
F7	Distributor (Terminal No. 2)
F11	High pressure switch
F101	ECM (Terminal No. 10)
F101	ECM (Terminal No. 19)
F101	ECM (Terminal No. 116)
F101	ECM (Terminal No. 124)

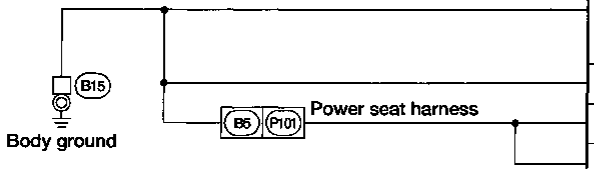
AEL858B

BODY NO. 2 HARNESS

NDEL0008S05

Body ground





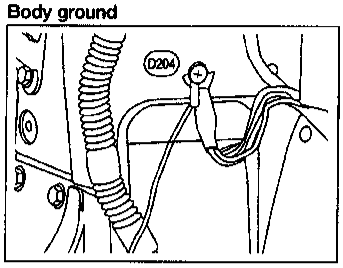
CONNECTOR NUMBER	CONNECT TO
B18	Rear combination lamp RH (Terminal No. 4) • Tail lamp • Stop lamp • Turn signal lamp
B19	Rear fan switch relay No. 2
P102	Power seat switch RH (Terminal No. 7)
P102	Power seat switch RH (Terminal No. 12)

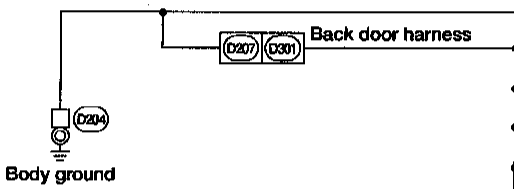
AEL859B

BACK DOOR NO. 2 HARNESS

NDEL0008S06

Body ground





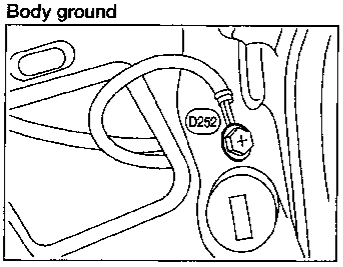
CONNECTOR NUMBER	CONNECT TO
D205	High mounted stop lamp
D302	Glass hatch latch switch
D303	Back door key cylinder switch (With theft warning)
D304	Back-up lamp LH
D306	License lamps
D307	Back door latch switch LH
D308	Back-up lamp RH
D309	Rear wiper motor (Without glass hatch)
D310	Rear wiper motor (With glass hatch)
D311	Back door lock actuator (Door unlock sensor)
D312	Back door latch switch RH

AEL860B

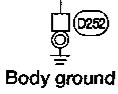
REAR DEFOGGER GROUND HARNESS

NDEL0008S07

Body ground



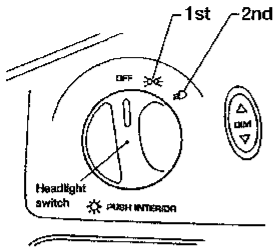
CONNECTOR NUMBER	CONNECT TO
D251	Rear window defogger



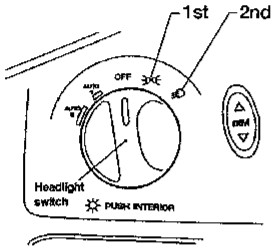
AEL861B

Check

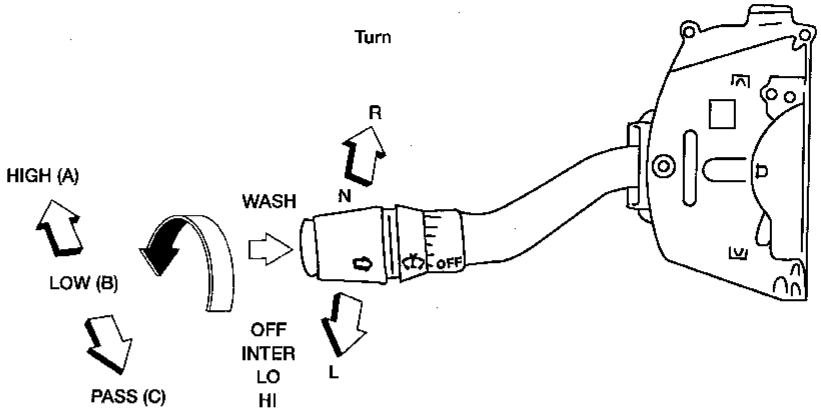
NDEL0009



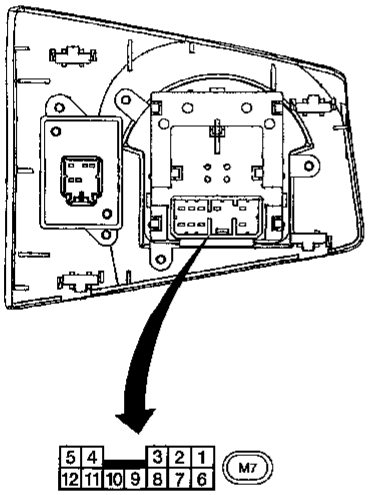
Lighting switch (without auto lamps)

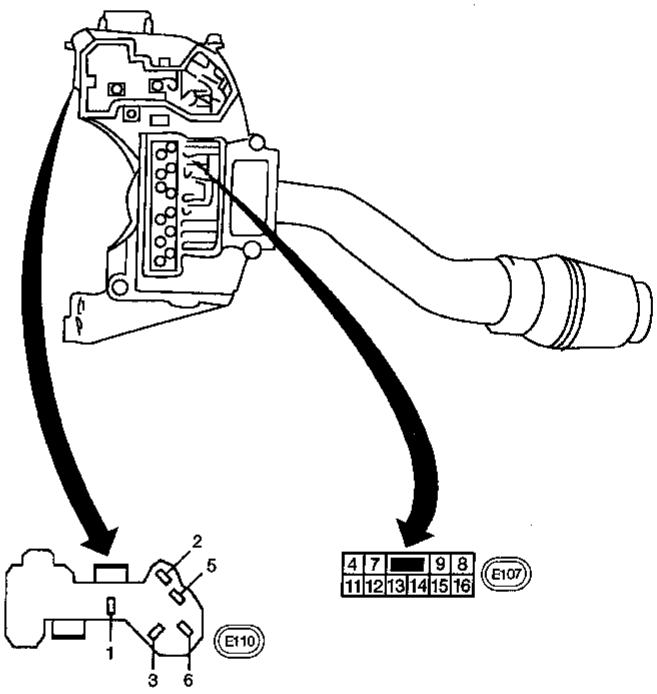


Lighting switch (with auto lamps)



Combination switch





Lighting switch

	Off	1st	2nd	Auto 1	Auto 2
1				○	
2				⊖	
3		○	○		
4					
5					
6					
7	33Ω	○	○	543Ω	2043Ω
8			○		
9	○			○	○
10					
11					
12					

Turn signal and cornering lamp switch

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

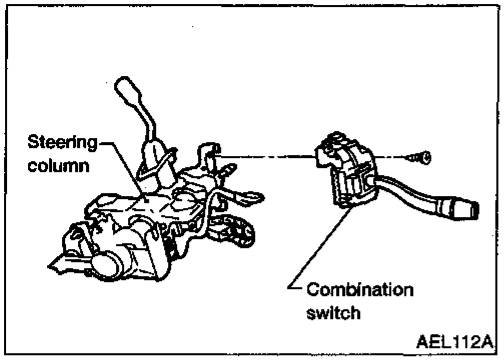
Combination switch (flash to pass)

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

Wiper switch

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

AEL862B



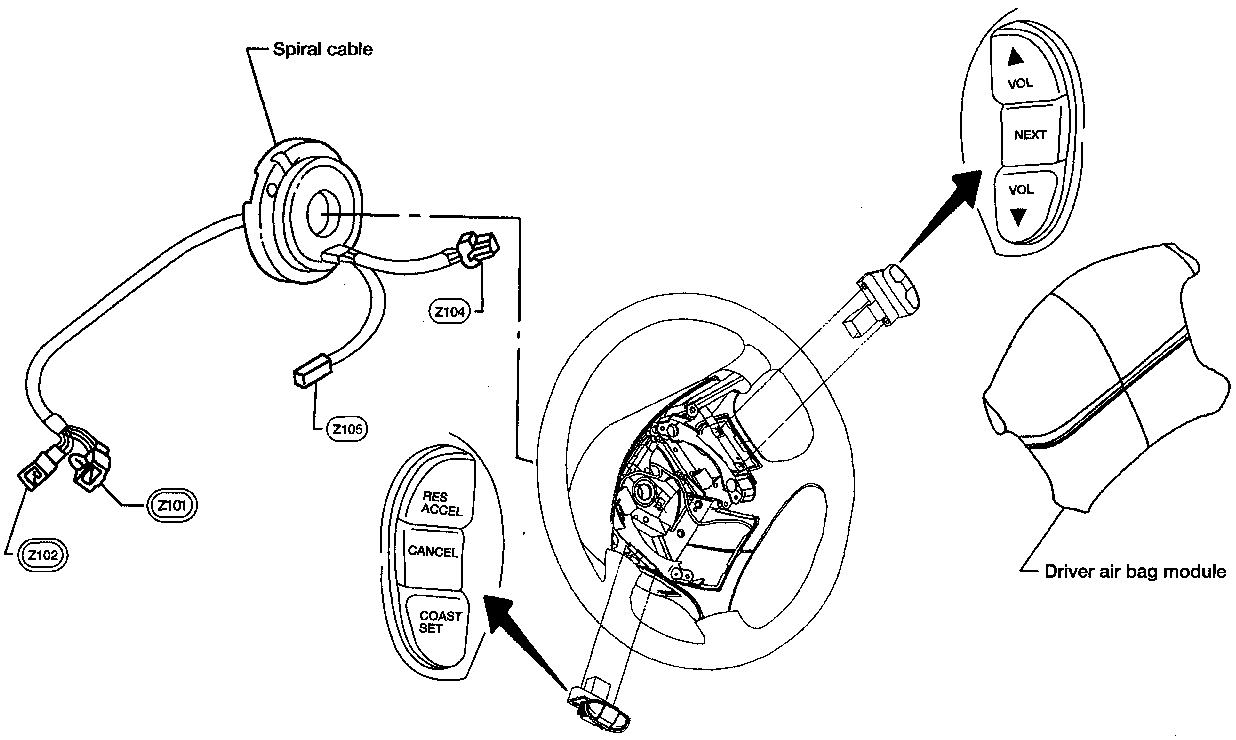
Replacement

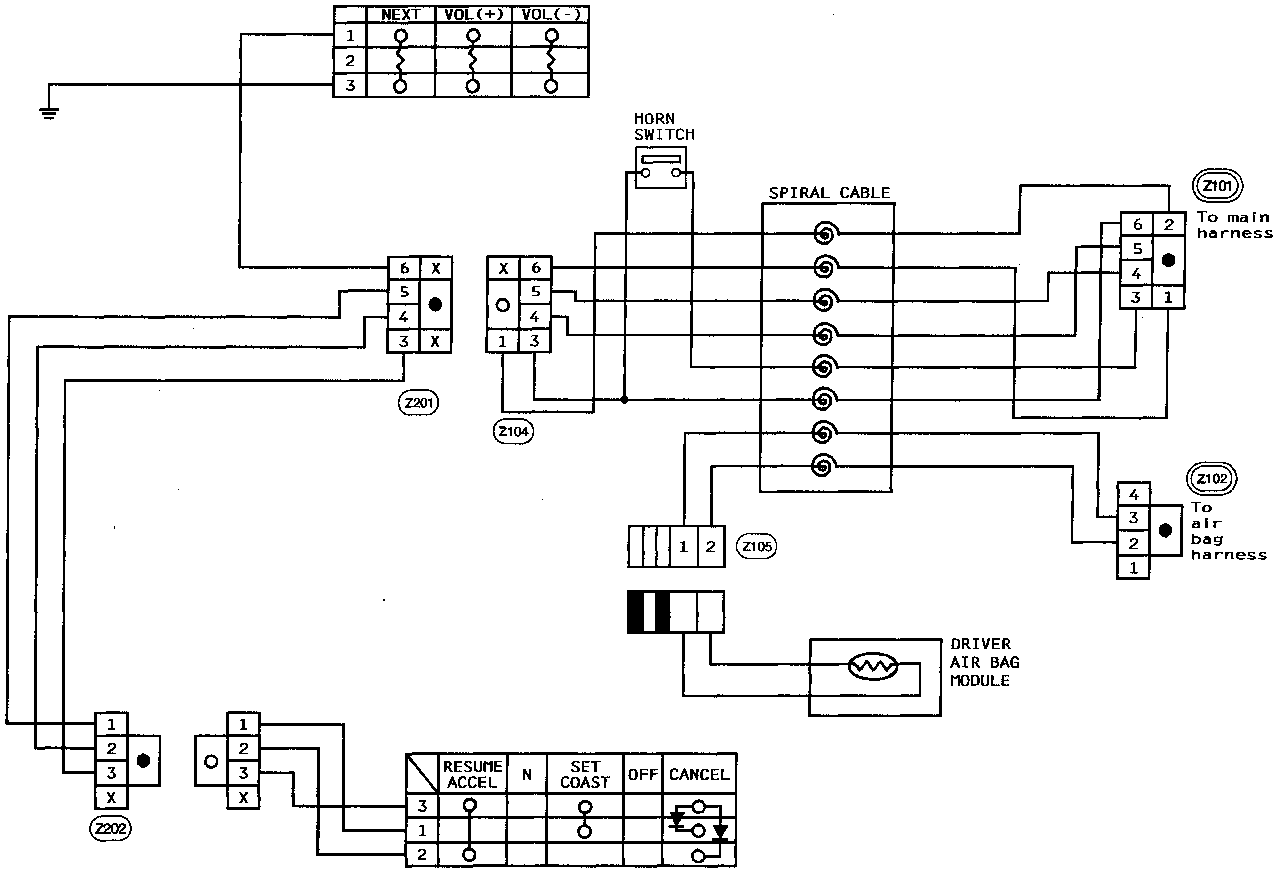
NDEL0010

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

Check

NDEL0011

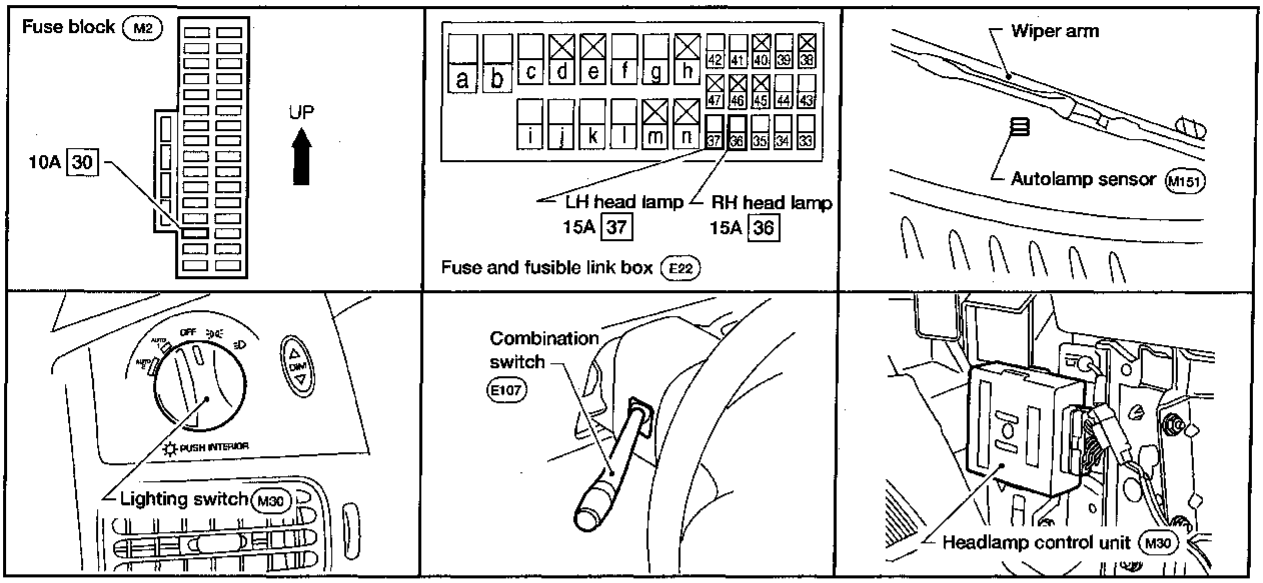




AEL863B

Component Parts and Harness Connector Location

NDEL0012



AEL191C

System Description

NDEL0013

The headlamps are controlled by the headlamp control unit.
Power is supplied at all times

- through 15A fuse (No. 37, located in the fuse and fusible link box)
- to headlamp control unit terminal 7 (for LH headlamp)
- through 15A fuse (No. 36, located in the fuse and fusible link box)
- to headlamp control unit terminal 5 (for RH headlamp).

MANUAL OPERATION

NDEL0013S01

Low Beam Operation

NDEL0013S0101

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

- to headlamp control unit terminal 9
- through lighting switch terminal 8
- to lighting switch terminal 7
- through body grounds M68, M105 and M130.

Then, power is supplied

- from headlamp control unit terminal 3
- to LH headlamp terminal 3
- from headlamp control unit terminal 6
- to RH headlamp terminal 3.

Ground is supplied to each headlamp terminal 2 through body grounds E3, E30 and E50.
With power and ground supplied, the low beam headlamps will illuminate.

High Beam Operation

NDEL0013S0102

When the lighting switch is placed in the headlamp ON (2ND) position, ground is supplied to headlamp control unit terminal 9 in the same manner as low beam operation.
With combination switch in the HIGH BEAM (A) position, ground is supplied

- to headlamp control unit terminal 18
- through combination switch terminal 11
- to combination switch terminal 14
- through body grounds E3, E30 and E50.

Then, power is supplied
- from headlamp control unit terminal 8
- to LH headlamp terminal 1
- from headlamp control unit terminal 4
- to RH headlamp terminal 1.

Ground is supplied to each headlamp terminal 2 through body grounds E3, E30 and E50.
With power and ground supplied, the high beam headlamps will illuminate.
Power is also supplied
- from headlamp control unit terminal 8 (models without autolamp),13 (models with autolamp)
- to combination meter terminal 6 for HIGH BEAM indicator.

Ground is supplied to combination meter terminal 12 through body grounds M68, M105 and M130.
With power and ground supplied the HIGH BEAM indicator will illuminate.

Flash to Pass Operation

NDEL0013S0103

When the combination switch is placed in the FLASH TO PASS (C) position, ground is supplied
- to headlamp control unit terminal 20
- through combination switch terminal 13
- to combination switch terminal 12
- through body grounds E3, E30 and E50.

Then, power is supplied to each headlamp (HIGH) from headlamp control unit to turn on the lamps in the same manner as high beam operation.

AUTO LAMP OPERATION (IF EQUIPPED)

NDEL0013S02

Automatic Illumination

NDEL0013S0201

When the ignition switch is in ON position, power is supplied
- through 10A fuse (No. 30, located in the fuse block)
- to headlamp control unit terminal 2.

With power at terminal 2 and lighting switch in AUTO1 or AUTO2 position, the headlamp control unit will measure the ambient light intensity through terminals 10 and 21. If the autolamp sensor does not detect sufficient light, power is supplied to headlamps in the same manner as low or high beam operation. Headlamp control unit decides to illuminate headlamps (Low or High) according to combination switch position (LOW or HIGH). At this time, ground is also supplied to tail lamp relay through headlamp control unit terminal 12 to energize tail lamp relay. Then tail lamp relay supplies power to turn on parking, license, tail lamps and illumination. For detailed wiring diagrams, refer to "PARKING, LICENSE, TAIL LAMPS", EL-49 and "ILLUMINATION", EL-64.

Shut-off Delay

NDEL0013S0202

While the headlamps are lit in the automatic illumination mode, the ignition switch is turned from ON to OFF position and auto lamp shut-off delay timer starts. At this time, ground to tail lamp relay is discontinued.
The delay time is set based on the resistance value at headlamp control unit terminal 14. With the timer running, the headlamps remain lit. When the timer reaches the end of its cycle, the headlamps turn off.
Headlamp lighting time can be adjusted from 0 to 3 minutes.

THEFT WARNING SYSTEM

NDEL0013S03

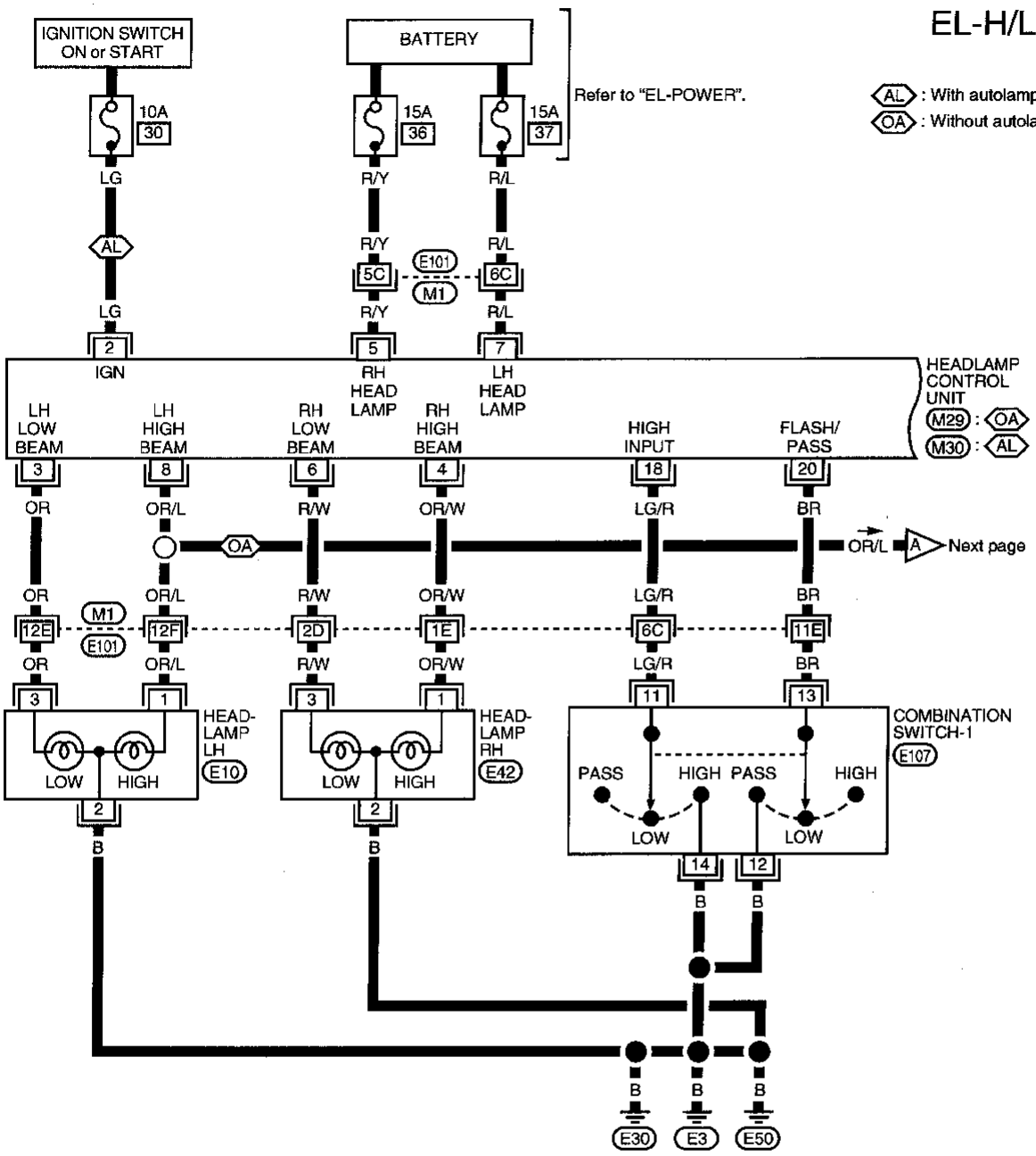
If the theft warning system is triggered, alarm signal is sent
- to headlamp control unit terminal 19
- from smart entrance control unit terminal 2.

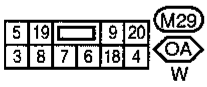
Then headlamp control unit operates to flash the high beams. For details, refer to "THEFT WARNING SYSTEM", EL-226.

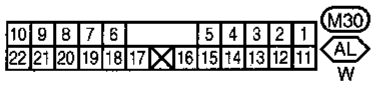
Wiring Diagram — H/LAMP —

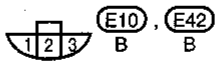
NDEL0014

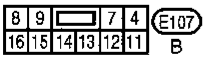
EL-H/LAMP-01





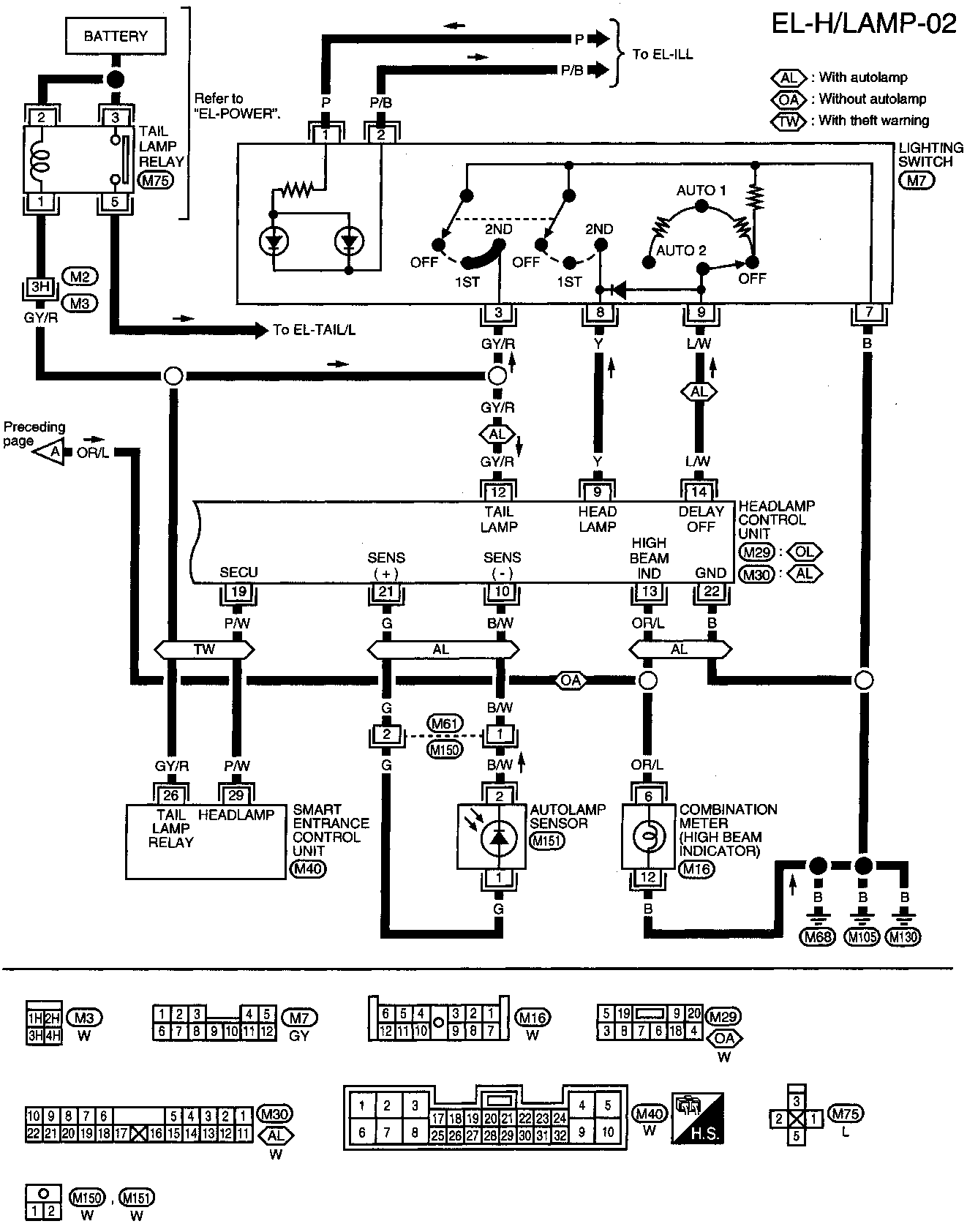






Refer to last page (Foldout page).
M1, E101
E22

AEL729B


EL-H/LAMP-02
BATTERY
Refer to "EL-POWER".
TAIL LAMP RELAY
M75
To EL-ILL
P
P/B
LIGHTING SWITCH
M7
AL : With autolamp
OA : Without autolamp
TW : With theft warning
AUTO 1
AUTO 2
2ND
OFF
1ST
3H
M2
M3
GY/R
To EL-TAIL/L
Preceding page
A
OR/L
Y
L/W
B
AL
12
9
14
TAIL LAMP
HEAD LAMP
DELAY OFF
HEADLAMP CONTROL UNIT
M29 : OL
M30 : AL
SECU
SENS (+)
SENS (-)
HIGH BEAM IND
GND
19
21
10
13
22
P/W
G
B/W
OR/L
B
TW
OA
M61
M150
26
29
TAIL LAMP RELAY
HEADLAMP
SMART ENTRANCE CONTROL UNIT
M40
AUTOLAMP SENSOR
M151
COMBINATION METER (HIGH BEAM INDICATOR)
M16
M68
M105
M130

M3
W
M7
GY
M16
W
M29
OA
W
M30
AL
W
M40
W
H.S.
M75
L
M150
W
M151
W

AEL730B

Trouble Diagnoses

SYMPTOM AND INSPECTION CHART

NDEL0015

NDEL0015S01

Symptom	Possible cause	Repair order
LH headlamps do not illuminate with any operation. (RH headlamps operate properly.)	1. Bulb 2. 15 A fuse 3. Grounds E3, E30 and E50	1. Check bulb. 2. Check 15 A fuse (No. 37, located in fuse and fusible link box). Verify battery voltage is present at terminal 7 of headlamp control unit. 3. Check grounds E3, E30 and E 50.
RH headlamps do not illuminate with any operation. (LH headlamps operate properly.)	1. Bulb 2. 15 A fuse 3. Grounds E3, E30 and E50	1. Check bulb. 2. Check 15 A fuse (No. 36, located in fuse and fusible link box). Verify battery voltage is present at terminal 5 of headlamp control unit. 3. Check grounds E3, E30 and E50.
Both LH and RH headlamps do not illuminate with lighting switch operation. (Headlamps illuminate with auto lamp operation.)	1. Lighting switch 2. Lighting switch ground circuit 3. Headlamp on signal	1. Check lighting switch. 2. Check continuity between lighting switch terminal 7 and ground. 3. Check harness for open or short between lighting switch terminal 8 and headlamp control unit terminal 9.
LH high beam does not illuminate with any operation.	1. Bulb 2. LH high beam on signal 3. Harness for open or short	1. Check bulb. 2. Verify battery voltage is present at terminal 8 of headlamp control unit with lighting switch in the headlamp ON (2ND) position and combination switch in HIGH BEAM (A) position. 3. Check harness for open or short between headlamp control unit terminal 8 and LH headlamp terminal 1.
LH low beam does not illuminate with any operation.	1. Bulb 2. LH low beam on signal 3. Harness for open or short	1. Check bulb. 2. Verify battery voltage is present at terminal 3 of headlamp control unit with lighting switch in the headlamp ON (2ND) position and combination switch in LOW BEAM (B) position. 3. Check harness for open or short between headlamp control unit terminal 3 and LH headlamp terminal 3.
RH high beam does not illuminate with any operation.	1. Bulb 2. RH high beam on signal 3. Harness for open or short	1. Check bulb. 2. Verify battery voltage is present at terminal 4 of headlamp control unit with lighting switch in the headlamp ON (2ND) position and combination switch in HIGH BEAM (A) position. 3. Check harness for open or short between headlamp control unit terminal 4 and RH headlamp terminal 1.
RH low beam does not illuminate with any operation.	1. Bulb 2. RH low beam on signal 3. Harness for open or short	1. Check bulb. 2. Verify battery voltage is present at terminal 6 of headlamp control unit with lighting switch in the headlamp ON (2ND) position and combination switch in LOW BEAM (B) position. 3. Check harness for open or short between headlamp control unit terminal 6 and RH headlamp terminal 3.
High beam indicator does not illuminate.	1. Bulb 2. High beam indicator on signal 3. Harness for open or short 4. Combination meter ground circuit	1. Check bulb. 2. Verify battery voltage is present at terminal 13 of headlamp control unit with lighting switch in headlamp ON (2ND) position and combination switch in HIGH BEAM (A) position. 3. Check harness for open or short between headlamp control unit terminal 13 and combination meter terminal 6. 4. Check continuity between combination meter terminal 12 and ground.

Symptom	Possible cause	Repair order
Headlamp beams cannot switch between low/high.	1. Combination switch-1 2. Combination switch-1 ground circuit 3. Harness for open or short	1. Check combination switch-1. 2. Check continuity between combination switch terminal 14 and ground. 3. Check harness for open or short between headlamp control unit terminal 18 and combination switch-1 terminal 11.
Flash to pass cannot be operated. (High beams illuminate with other operation.)	1. Combination switch-1 2. Combination switch-1 ground circuit 3. Harness for open or short	1. Check combination switch-1. 2. Check continuity between combination switch terminal 12 and ground. 3. Check harness for open or short between headlamp control unit terminal 20 and combination switch-1 terminal 13.
Automatic illumination does not operate properly.	—	Go to "AUTO LAMP CHECK", EL-35.
Shut off delay does not operate properly.	—	Go to "SHUT OFF DELAY SWITCH CHECK", EL-37.
Tail lamps do not operate by automatic illumination. (Headlamps operate properly by automatic illumination.)	—	Go to "TAIL LAMP RELAY CHECK", EL-37.

AUTOLAMP CHECK

NDEL0015S02

1 CHECK HEADLAMP OPERATION

Do headlamps operate properly with lighting switch?

Yes or No

Yes ▶	GO TO 2.
No ▶	Check headlamp, refer to EL-34.

2 CHECK AUTOLAMP OPERATION

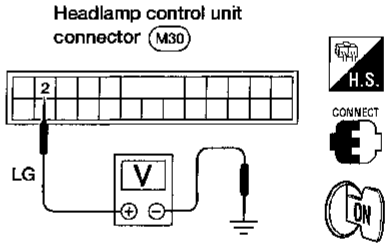
1. Turn ignition switch to ON position.
2. Turn lighting switch to AUTO1 or AUTO2 position.
3. Obstruct autolamp sensor.

Do headlamps and tail lamps illuminate?

Yes ▶	Go to "SHUT OFF DELAY SWITCH CHECK", EL-37.
No ▶	GO TO 3.

3 CHECK IGNITION SWITCH ON SIGNAL

Check voltage between headlamp control unit terminal 2 and ground with ignition switch ON.



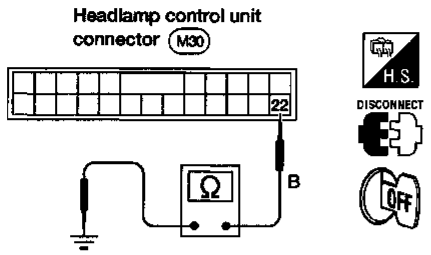
AEL935B

Does battery voltage exist?

Yes ▶	GO TO 4.
No ▶	**Check the following.** • 10 A fuse (No. 30, located in the fuse block) • Harness for open or short between fuse and headlamp control unit

4	CHECK CONTROL UNIT GROUND

Check continuity between lighting control unit terminal 22 and ground.



AEL171C

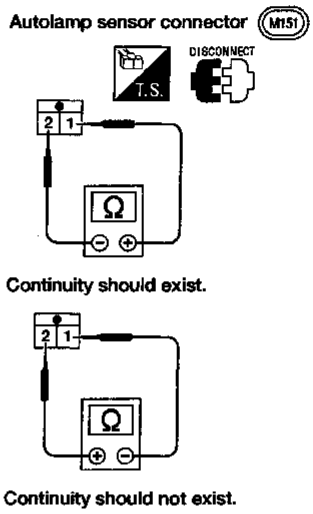
Does continuity exist?

Yes	▶	GO TO 5.
No	▶	Repair harness or connectors.

5	CHECK AUTOLAMP SENSOR

1. Disconnect autolamp sensor connector.
2. Check continuity between autolamp sensor connector terminals 2 and 1. With positive lead on pin 1 and negative lead on pin 2.
   Continuity should exist.
3. Reverse leads.
   Continuity should not exist.

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



AEL936B

OK or NG

OK	▶	Check harness for open or short between headlamp control unit and autolamp sensor.
NG	▶	Replace autolamp sensor.

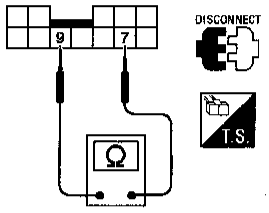
SHUT OFF DELAY SWITCH CHECK

=NDEL0015S03

1 CHECK SHUT-OFF DELAY FUNCTION

1. Disconnect lighting switch.
2. Check resistance between lighting switch terminals 7 and 9.

Lighting switch connector (M7)



AEL937B

Shut-off delay switch condition	Resistance (Ω)
OFF	Approx. 31 - 35
AUTO 1	Approx. 516 - 570
AUTO 2	Approx. 1947 - 2145

AEL955B

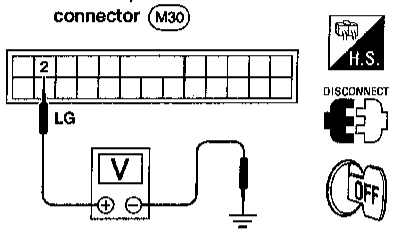
OK or NG

OK	▶	Shut-off delay switch is OK. GO TO 2.
NG	▶	Replace the switch.

2 CHECK IGNITION SWITCH ON SIGNAL CIRCUIT

1. Disconnect headlamp control unit.
2. Check voltage between headlamp control unit terminal 2 and ground with ignition switch OFF.

Headlamp control unit connector (M30)



AEL324C

Does battery voltage exist?

Yes	▶	Repair the harness between fuse and headlamp control unit.
No	▶	Replace headlamp control unit.

TAIL LAMP RELAY CHECK

NDEL0015S04

1 CHECK TAIL LAMP OPERATION

Do tail lamps illuminate with lighting switch operation?

NOTE:

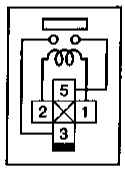
For wiring diagram of tail lamp relay, refer to "PARKING, LICENSE AND TAIL LAMPS", EL-49

Yes or No

Yes	▶	GO TO 4.
No	▶	GO TO 2.

2 CHECK TAIL LAMP RELAY

1. Apply 12 V direct current between relay terminal 1 and 2.
2. Check continuity between relay terminals 3 and 5.



AEL938B

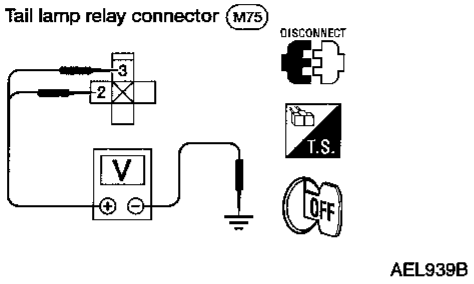
12 V applied:
Continuity exists.
No voltage applied
Continuity should not exist.

OK or NG

OK	▶	GO TO 3.
NG	▶	Replace the relay.

3 CHECK POWER SUPPLY FOR TAIL LAMP RELAY

Check voltage between tail lamp relay terminals 2, 3 and ground.



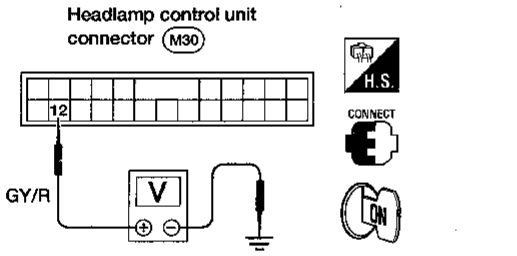
AEL939B

Does battery voltage exist?

Yes	▶	Check tail lamp relay connector and tail lamp circuits.
No	▶	Check harness between tail lamp relay and battery.

4 CHECK HEADLAMP CONTROL UNIT TAIL LAMP CONTROL CIRCUIT-1

1. Turn ignition switch to ON position.
2. Turn lighting switch to AUTO1 or AUTO2 position.
3. Obstruct autolamp sensor.
4. Check voltage between headlamp control unit terminal 12 and ground.



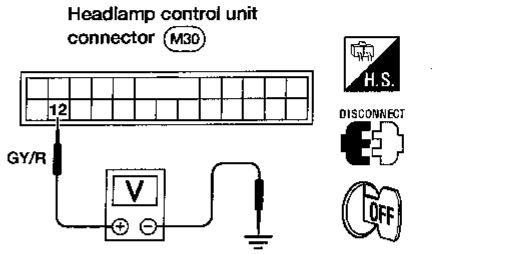
AEL172C

Does battery voltage exist?

Yes	▶	Replace headlamp control unit.
No	▶	GO TO 5.

5 CHECK HEADLAMP CONTROL UNIT TAIL LAMP CONTROL CIRCUIT-2

1. Turn ignition switch to OFF position.
2. Check voltage between headlamp control unit terminal 12 and ground.



AEL323C

Does battery voltage exist?

Yes	▶	Autolamp control system is OK.
No	▶	Check harness between headlamp control unit and tail lamp relay.

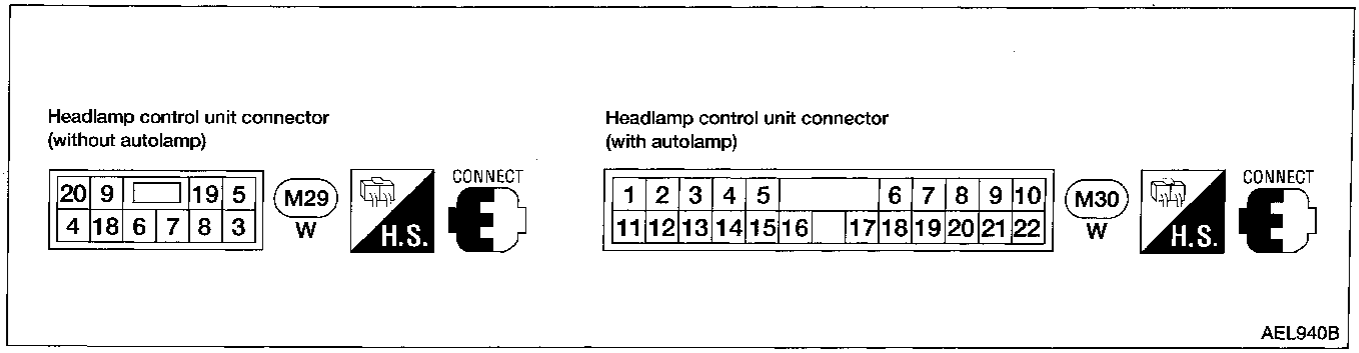
HEADLAMP CONTROL UNIT INSPECTION TABLE

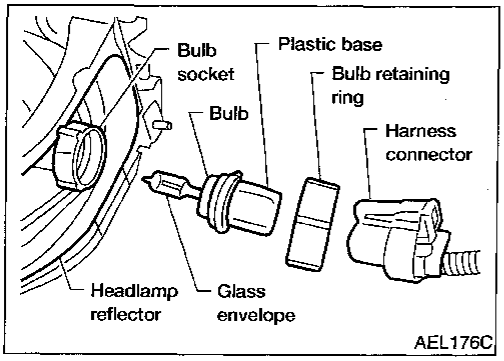
NDEL0015S05

Terminal No.	Wire color	Item	Condition	Voltage (Approximate value)
2*	LG	Ignition switch on signal	Ignition switch OFF, ACC position	0
			Ignition switch ON, START position	12
3	OR	LH headlamp low beam	Lighting switch in the headlamp ON (2ND) position and combination switch in LOW BEAM (B) position	12
			All other conditions	0
4	OR/W	RH headlamp high beam	Lighting switch in the ON (2ND) position and combination switch in HIGH BEAM (A) position	12
			All other conditions	0

Terminal No.	Wire color	Item	Condition	Voltage (Approximate value)
5	R/Y	Power source for RH headlamp	—	12
6	R/W	RH headlamp low beam	Lighting switch in the headlamp ON (2ND) position and combination switch in LOW BEAM (B) position	12
			All other conditions	0
7	R/L	Power source for LH headlamp	—	12
8	OR/L	LH headlamp high beam	Lighting switch in the ON (2ND) position and combination switch in HIGH BEAM (A) position	12
			All other conditions	0
9	Y	Lighting switch	OFF, 1ST position	12
			Headlamp ON (2ND) position	0
10*	G	Autolamp sensor (+)	Sensor struck by light	—
			Sensor obstructed	—
12*	GY/R	Tail lamp relay	Autolamp is not operating and lighting switch is in the OFF position	12
			Autolamp is operating	0
13*	OR/L	High beam indicator	Lighting switch in the ON (2ND) position and combination switch in HIGH BEAM (A) position Combination switch in FLASH TO PASS (C) position	12
			All other conditions	0
14*	L/W	Shut-off delay switch (lighting switch)	OFF	0.5
			AUTO1	3.5
			AUTO2	4.5
18	LG/R	Combination switch	HIGH BEAM (A) or FLASH TO PASS (C) position	0
			All other conditions	12
19	P/W	Smart entrance control unit (with theft warning)	When theft warning system is in alarm phase or panic operation is activated by multi-remote control system	0
			All other conditions	12
20	BR	Combination switch	FLASH TO PASS (C) position	0
			All other conditions	12
21*	B/W	Autolamp sensor (-)	—	—
22*	B	Ground	—	—

*: Marked terminals are available only for models with autolamps.





Bulb Replacement

NDEL0016

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

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

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

CAUTION:

Do not leave 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

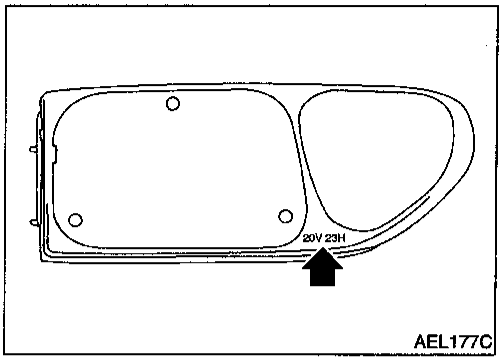
NDEL0017

When performing headlamp aiming adjustment, use an aiming machine, aiming wall screen or headlamp tester. Aimers should be in good repair, calibrated and operated in accordance with respective operation manuals.

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

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

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



AEL177C

AIMER ADJUSTMENT MARK

NDEL0017S01

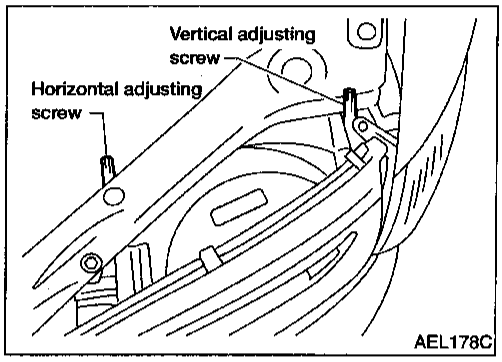
When using a mechanical aimer, adjust adapter legs to the data marked on the headlamps.

Example

20V23H

Horizontal side: 23

Vertical side: 20

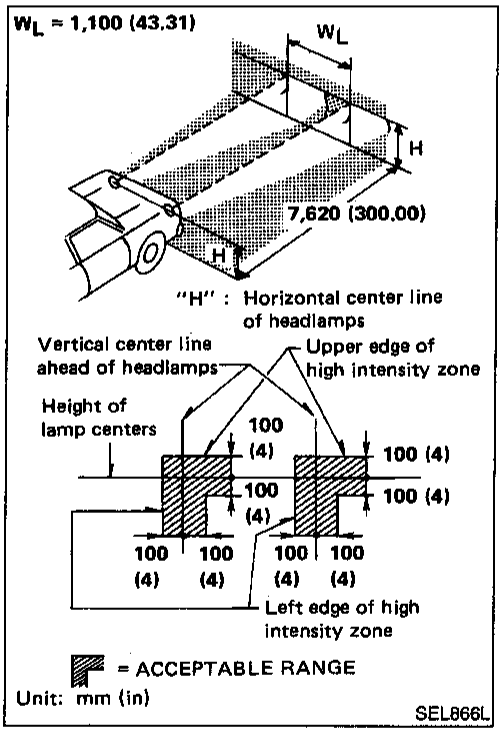


AEL178C

LOW BEAM

NDEL0017S02

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



SEL866L

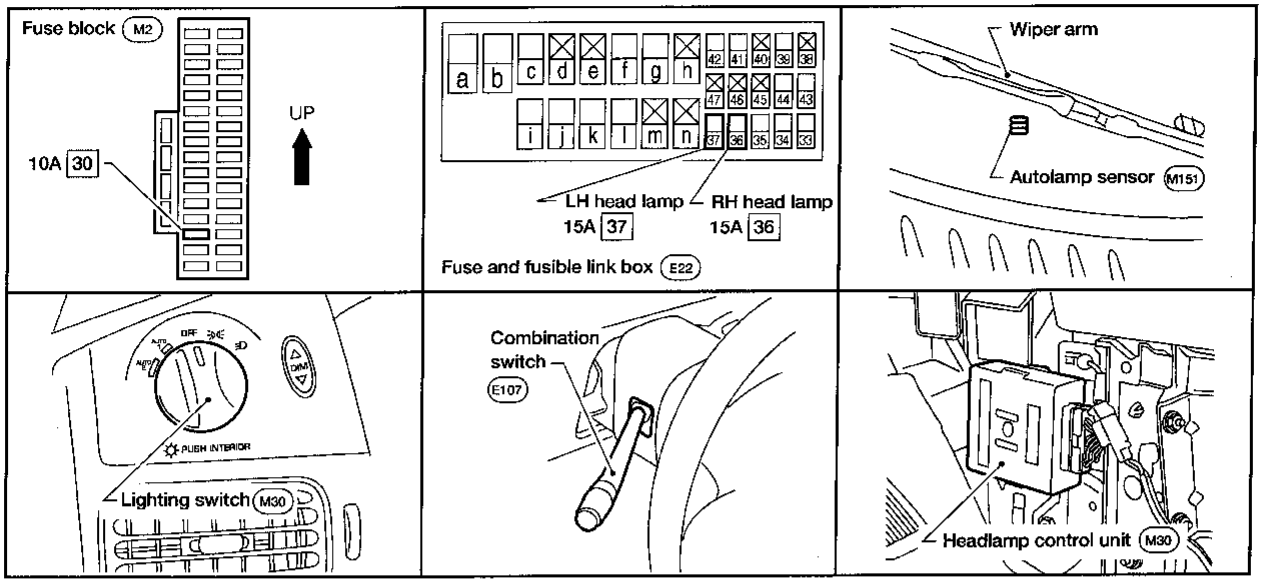
- **Upper edge and left edge of high intensity zone should be within the range shown at left. Adjust headlamps accordingly.**
- **Dotted lines in illustration show center of headlamp.**

"H": Horizontal center line of headlamps

"W_L": Distance between each headlamp center

Component Parts and Harness Connector Location

NDEL0018



AEL191C

System Description

NDEL0020

The headlamps are controlled by the headlamp control unit.
Power is supplied at all times

- through 15A fuse (No. 37, located in the fuse and fusible link box)
- to headlamp control unit terminal 7 (for LH headlamp)
- through 15A fuse (No. 36, located in the fuse and fusible link box)
- to headlamp control unit terminal 5 (for RH headlamp).

MANUAL OPERATION

NDEL0020S01

Low Beam Operation

NDEL0020S0101

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

- to headlamp control unit terminal 9
- through lighting switch terminal 8
- to lighting switch terminal 7
- through body grounds M68, M105 and M130.

Then power is supplied

- from headlamp control unit terminal 3
- to LH headlamp terminal 3
- from headlamp control unit terminal 6
- to RH headlamp terminal 3.

Ground is supplied to each headlamp terminal 2 through body grounds E3, E30 and E50.
With power and ground supplied, the low beam headlamps will illuminate.

High Beam Operation

NDEL0020S0102

When the lighting switch is placed in the headlamp ON (2ND) position, ground is supplied to headlamp control unit terminal 9 in the same manner as low beam operation.
With combination switch in the HIGH BEAM (A) position, ground is supplied

- to headlamp control unit terminal 18
- through combination switch terminal 11
- to combination switch terminal 14
- through body grounds E3, E30 and E50.

Then power is supplied
- from headlamp control unit terminal 8
- to LH headlamp terminal 1
- from headlamp control unit terminal 4
- to RH headlamp terminal 1

Ground is supplied to each headlamp terminal 2 through body grounds E3, E30 and E50.
With power and ground supplied, the high beam headlamps will illuminate.
Power is also supplied
- from headlamp control unit terminal 13
- to combination meter terminal 6 for the HIGH BEAM indicator.

Ground is supplied to combination meter terminal 12 through body grounds M68, M105 and M130.
With power and ground supplied, the HIGH BEAM indicator will illuminate.

Flash to Pass Operation

NDEL0020S0103

When the combination switch is placed in the FLASH TO PASS (C) position, ground is supplied
- to headlamp control unit terminal 20
- through combination switch terminal 13
- to combination switch terminal 12
- through body grounds E3, E30 and E50.

Then power is supplied to each headlamp HIGH from headlamp control unit to turn on the lamps in the same manner as high beam operation.

DAYTIME LIGHT OPERATION

NDEL0020S02

The headlamp system for CANADA vehicles contains a daytime light control system that activates the high beam headlamps at approximately half illumination whenever the engine is running (engine running signal is supplied to the headlamp control unit terminal 17 from generator L terminal).
If the parking brake is applied before the engine is started, the daytime lights will not be illuminated. The daytime lights will illuminate once the parking brake is released. Thereafter, the daytime lights will continue to operate when the parking brake is applied.
With the engine running, the lighting switch in the OFF or 1ST position and parking brake released, power is supplied
- to headlamp control unit terminal 11
- through headlamp control unit terminal 8
- to terminal 1 of LH headlamp.

And also
- through headlamp control unit terminal 4
- to terminal 1 of RH headlamp.

Ground is supplied to terminal 2 of LH and RH headlamps through body grounds E3, E30 and E50.

System Description (Cont'd)

OPERATION

=NDEL0020S05

After starting the engine with the lighting switch in the OFF or 1ST position, the headlamp high beam automatically turns on. Lighting switch operations other than the above are the same as conventional light systems.

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

A: HIGH BEAM position
B: LOW BEAM position
C: FLASH TO PASS position
O : Lamp ON
X : Lamp OFF
△ : Lamp dims. (Added functions)
*: When starting the engine with the parking brake released, the daytime lights will come ON.
When starting the engine with the parking brake applied, the daytime lights won't come ON.

AUTO LAMP OPERATION (IF EQUIPPED)

NDEL0020S03

Automatic Illumination

NDEL0020S0301

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

- through 10A fuse (No. 30, located in the fuse block)
- to headlamp control unit terminal 2.

With power at terminal 2 and lighting switch in AUTO1 or AUTO2 position, the headlamp control unit will measure the ambient light intensity through terminals 10 and 21. If the autolamp sensor does not detect sufficient light, power is supplied to headlamps in the same manner as low or high beam operation. The headlamp control unit illuminates the headlamps High or Low according to combination switch position HIGH or LOW.
At this time, ground is also supplied to tail lamp relay through headlamp control unit terminal 12 to energize tail lamp relay. Then tail lamp relay supplies power to turn on parking, license, tail lamps and interior illumination. (For detailed wiring diagrams, refer to "PARKING, LICENSE, TAIL LAMPS, EL-49 and "ILLUMINATION", EL-64.)

Shut-off Delay

NDEL0020S0302

While the headlamps are lit in the automatic illumination mode and the ignition switch is turned from ON to OFF position, the autolamp shut-off delay timer starts. At this time, ground to tail lamp relay is discontinued. The delay time is set based on the resistance value at headlamp control unit terminal 14. With the timer running, the headlamps remain lit. When the timer reaches the end of its cycle, the headlamps turn off. Headlamp lighting time can be adjusted from about 0 to 3 minutes.

THEFT WARNING SYSTEM

NDEL0020S04

If the theft warning system is triggered, alarm signal is sent

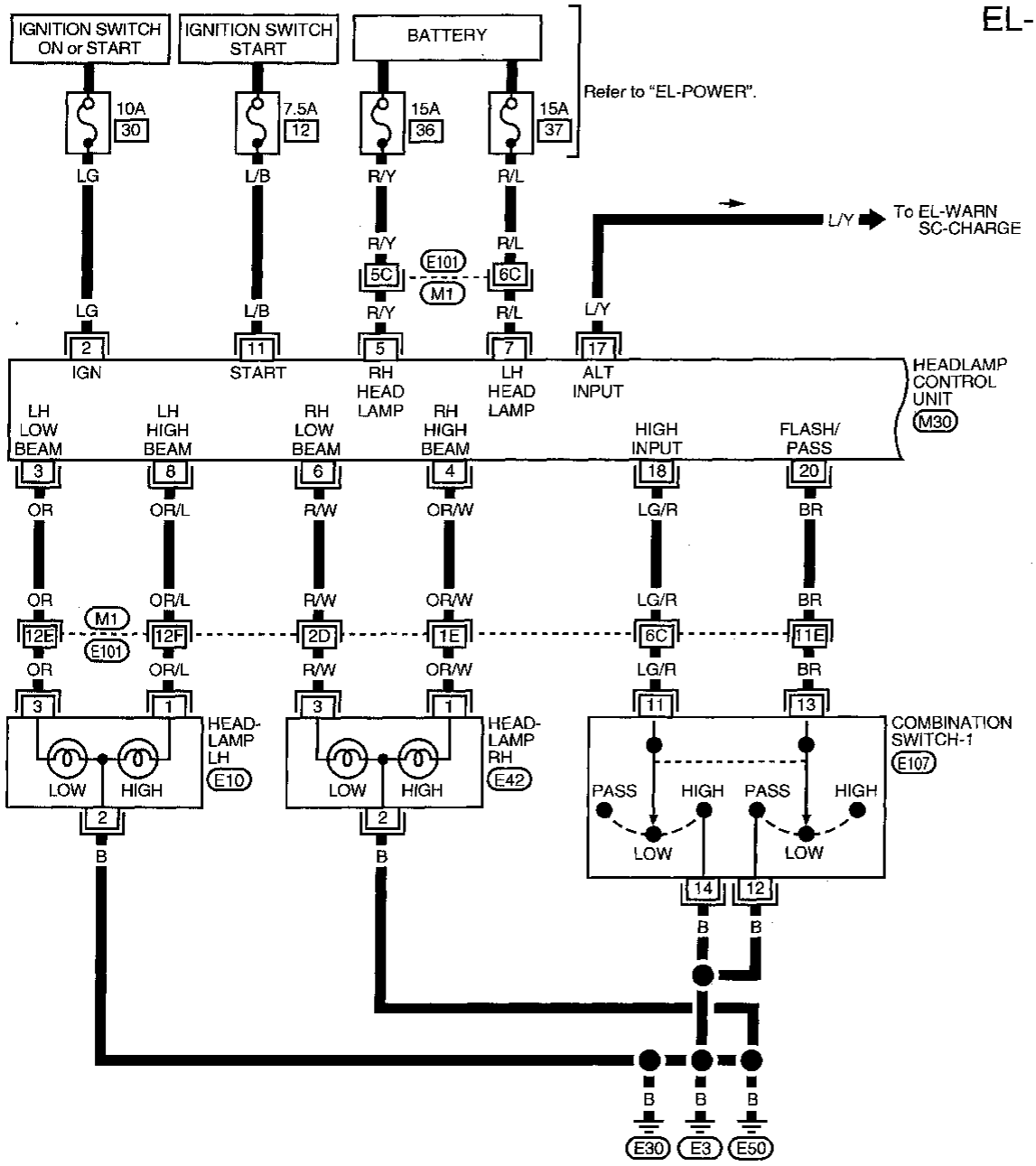
- to headlamp control unit terminal 19
- from smart entrance control unit terminal 29.

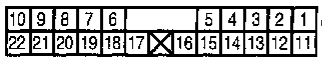
Then headlamp control unit operates to flash the high beams. For details, refer to "THEFT WARNING SYSTEM", EL-228.

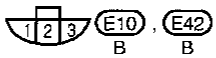
Wiring Diagram — DTRL —

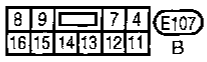
NDEL0022

EL-DTRL-01





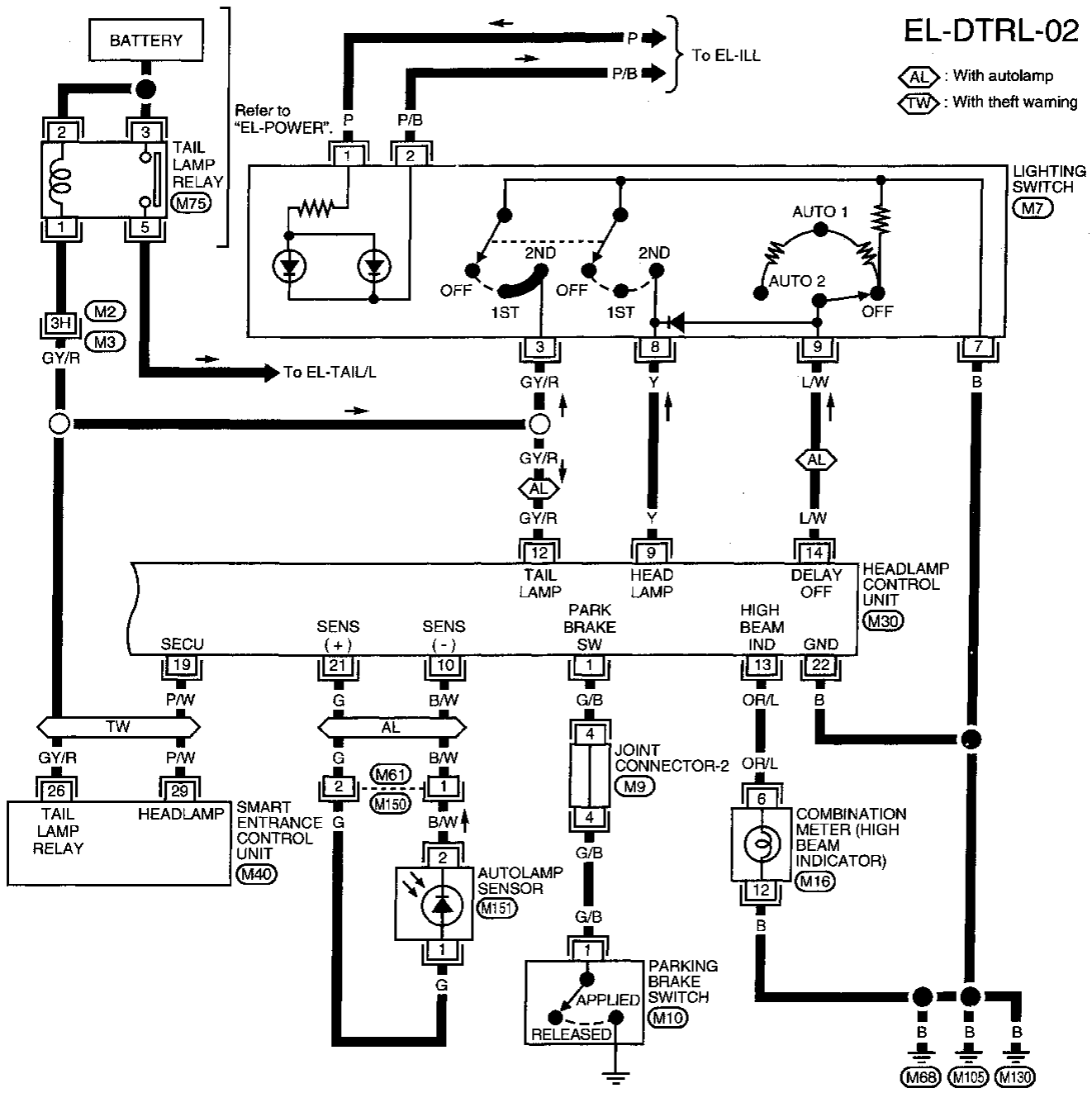


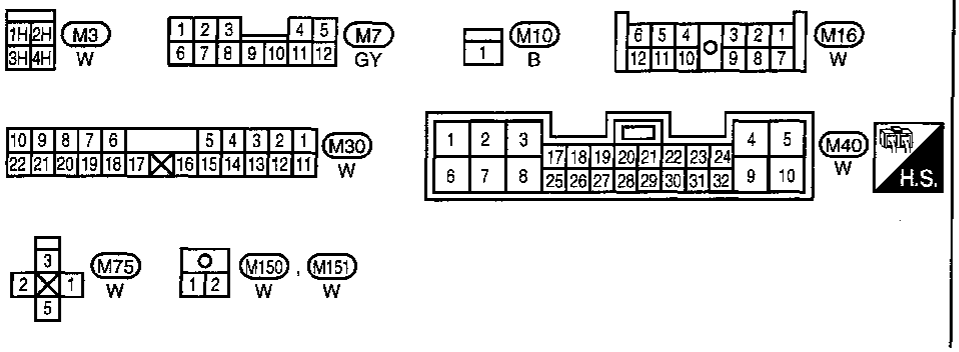


Refer to last page (Foldout page).
M1, E101
E22

AEL731B

Wiring Diagram — DTRL — (Cont'd)





Refer to last page (Foldout page).
M9

AEL732B

Trouble Diagnoses

NDEL0023

NOTE:
For trouble diagnoses relating to autolamp system, refer to "SYMPTOM AND INSPECTION CHART" for "HEADLAMP (FOR USA)", EL-34.

HEADLAMP CONTROL UNIT INSPECTION TABLE

NDEL0023S01

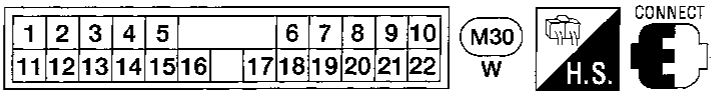
Terminal No.	Wire color	Item	Condition	Voltage (Approximate value)
1	G/B	Parking brake switch	Parking brake is released	12
			Parking brake is applied	0
2	LG	Ignition switch on signal	Ignition switch OFF, ACC position	0
			Ignition switch ON, START position	12
3	OR	LH headlamp low beam	Lighting switch in the headlamp ON (2ND) position and combination switch in LOW BEAM (B) position	12
			All other conditions	0
4	OR/W	RH headlamp high beam	Lighting switch in the ON (2ND) position and combination switch in HIGH BEAM (A) position	12
			When releasing parking brake with engine running and lighting switch to OFF (daytime light operation) **CAUTION:** **Block wheels and ensure selector lever is in N or P position.**	6
			All other conditions	0
5	R/Y	Power source for RH headlamp	—	12
6	R/W	RH headlamp low beam	Lighting switch in the headlamp ON (2ND) position and combination switch in LOW BEAM (B) position	12
			All other conditions	0
7	R/L	Power source for LH headlamp	—	12
8	OR/L	LH headlamp high beam	Lighting switch in the ON (2ND) position and combination switch in HIGH BEAM (A) position	12
			When releasing parking brake with engine running and lighting switch to OFF (daytime light operation) **CAUTION:** **Block wheels and ensure selector lever is in N or P position.**	6
			All other conditions	0
9	Y	Lighting switch	OFF, 1ST position	12
			Headlamp ON (2ND) position	0
10*	G	Autolamp sensor (+)	Sensor struck by light	—
			Sensor obstructed	—
11	L/B	Ignition switch start signal	Ignition switch in START position	12
			All other conditions	0

Trouble Diagnoses (Cont'd)

Terminal No.	Wire color	Item	Condition	Voltage (Approximate value)
12*	GY/R	Tail lamp relay	Autolamp is not operating and lighting switch is in the OFF position	12
			Autolamp is operating	0
13	OR/L	High beam indicator	Lighting switch in the ON (2ND) position and combination switch in HIGH BEAM (A) position Combination switch in FLASH TO PASS (C) position	12
			All other conditions	0
14*	L/W	Shut-off delay switch (lighting switch)	OFF	0.5
			AUTO1	3.5
			AUTO2	4.5
17	L/Y	Generator (L terminal)	When engine is running	12
			All other conditions	0
18	LG/R	Combination switch	HIGH BEAM (A) position	0
			All other conditions	12
19	P/W	Smart entrance control unit (with theft warning)	When theft warning system is in alarm phase or panic operation is activated by multi-remote control system	0
			All other conditions	12
20	BR	Combination switch	FLASH TO PASS (C) position	0
			All other conditions	0
21*	B/W	Autolamp sensor (-)	—	—
22	B	Ground	—	—

*: Marked terminals are available only for models with autolamps.

Headlamp control unit connector



AEL941B

Bulb Replacement

NDEL0024

Refer to "HEADLAMP (FOR USA)", EL-40.

Aiming Adjustment

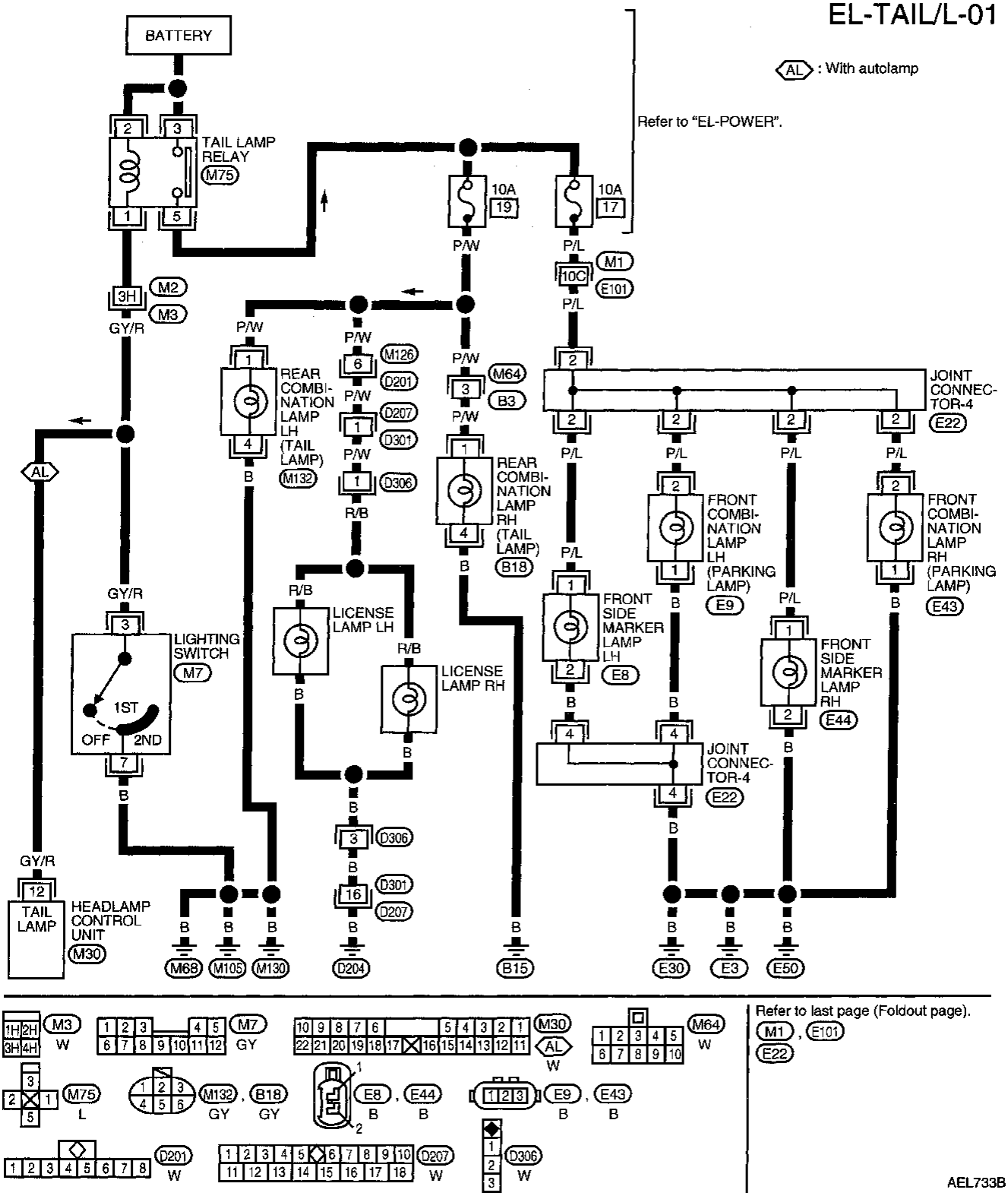
NDEL0025

Refer to "HEADLAMP (FOR USA)", EL-40.

Wiring Diagram — TAIL/L —

NDEL0026

For information about autolamp operation, refer to "AUTOLAMP OPERATION (IF EQUIPPED)", "HEADLAMP (FOR USA)", EL-31, "AUTOLAMP OPERATION (IF EQUIPPED)", "HEADLAMP (FOR CANADA) — DAYTIME LIGHT SYSTEM", EL-44.



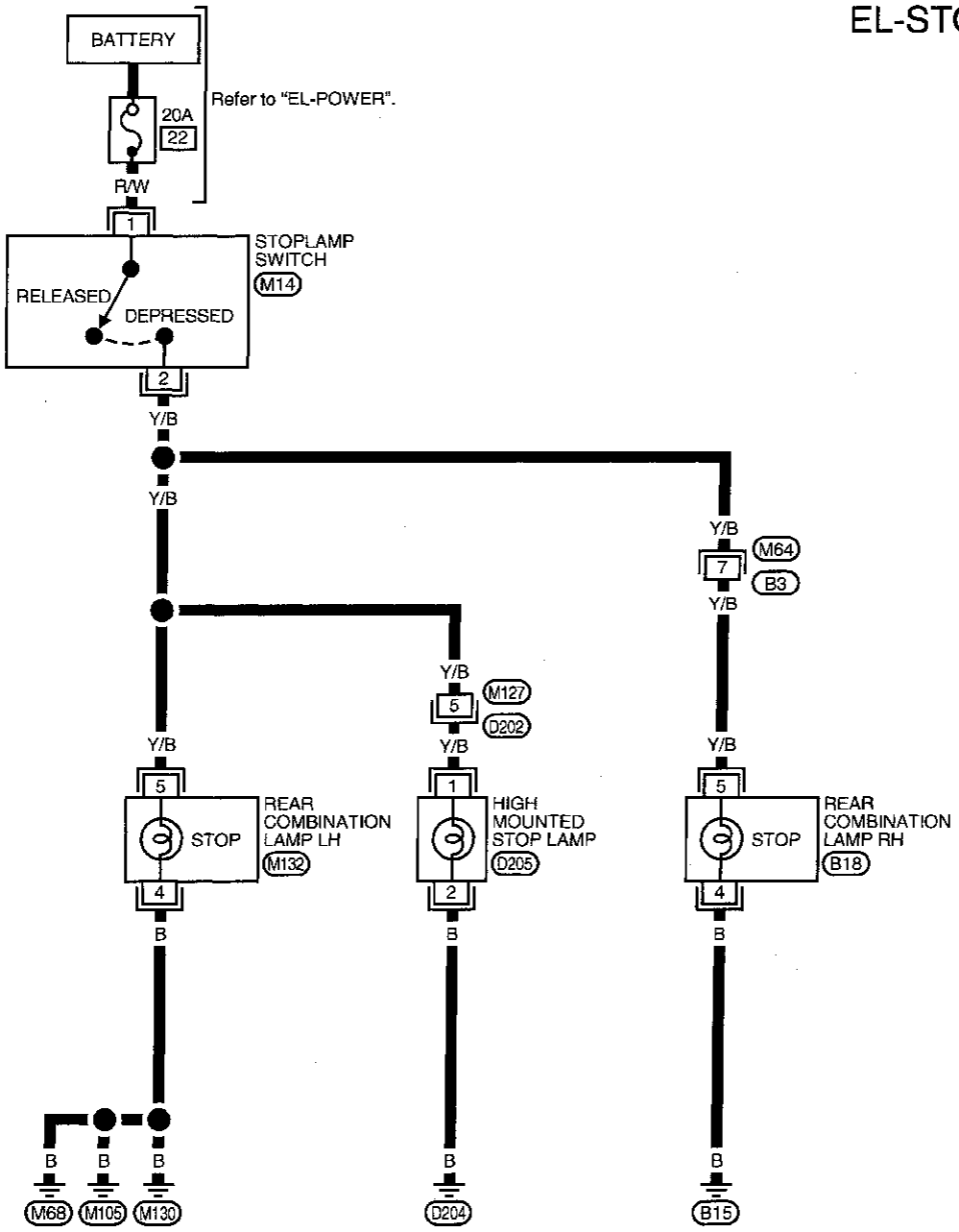
Refer to last page (Foldout page).
M1, E101
E22

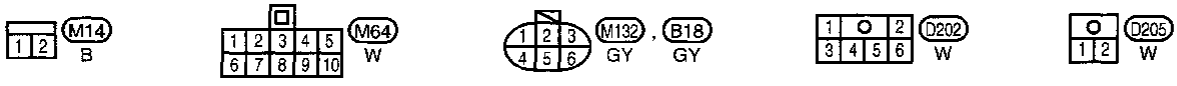
AEL733B

Wiring Diagram — STOP/L —

NDEL0027

EL-STOP/L-01



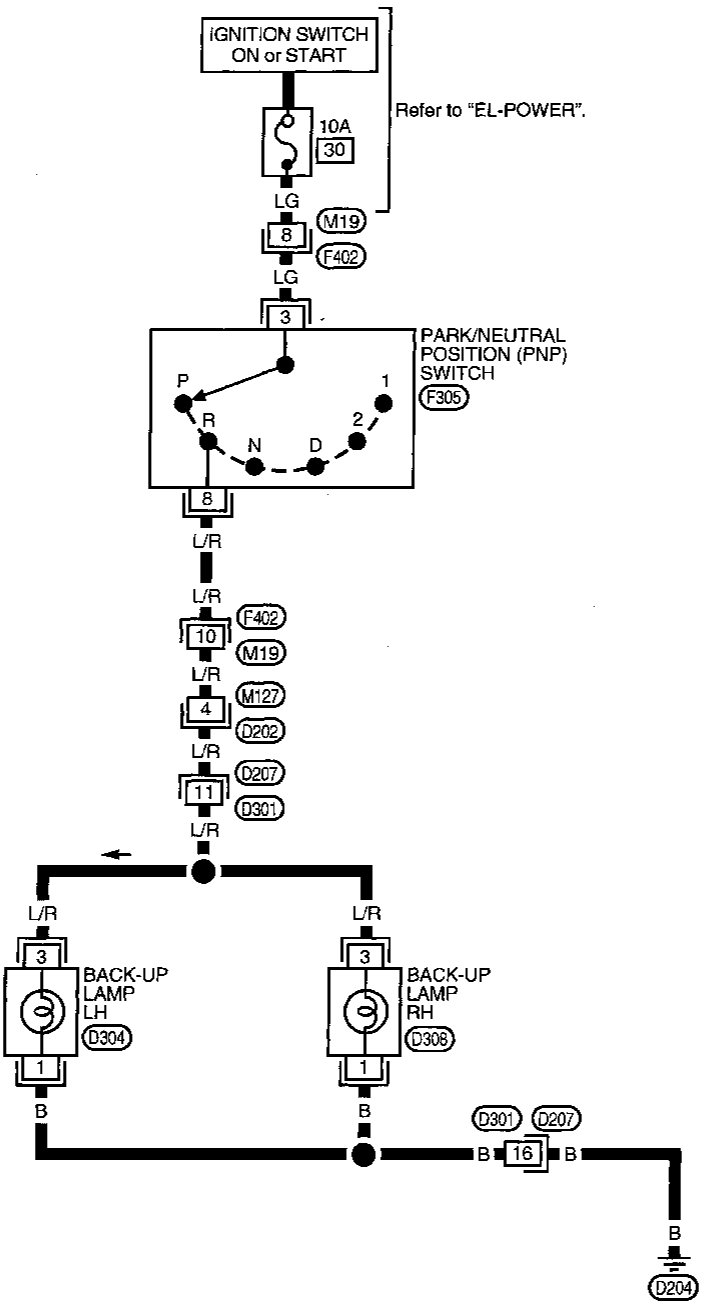


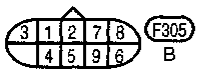
AEL720B

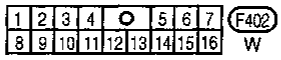
Wiring Diagram — BACK/L —

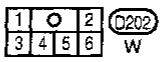
NDEL0028

EL-BACK/L-01









AEL719B

System Description

NDEL0029

TURN SIGNAL OPERATION

NDEL0029S01

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

Ground is supplied to combination flasher unit terminal 2 through body grounds M68, M105 and M130.

LH Turn

NDEL0029S0101

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
- combination meter terminal 15
- rear combination lamp LH terminal 2.

Ground is supplied to the front turn signal lamp LH terminal 1 through body grounds E3, E30 and E50.
Ground is supplied to the rear combination lamp LH terminal 4 through body grounds M68, M105 and M130.
Ground is supplied to combination meter terminal 22 through body grounds M68, M105 and M130.
With power and ground supplied, the combination flasher unit controls the flashing of the LH turn signal lamps.

RH Turn

NDEL0029S0102

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
- combination meter terminal 21
- rear combination lamp RH terminal 2.

Ground is supplied to the front turn signal lamp RH terminal 1 through body grounds E3, E30 and E50.
Ground is supplied to the rear combination lamp RH terminal 4 through body ground B15.
Ground is supplied to combination meter terminal 22 through body grounds M68, M105 and M130.
With power and ground supplied, the combination flasher unit controls the flashing of the RH turn signal lamps.

HAZARD LAMP OPERATION

NDEL0029S04

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

Ground is supplied to combination flasher unit terminal 2 through body grounds M68, M105 and M130.
Power is supplied through terminal 4 of the hazard switch to

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

Power is supplied through terminal 6 of the hazard switch to

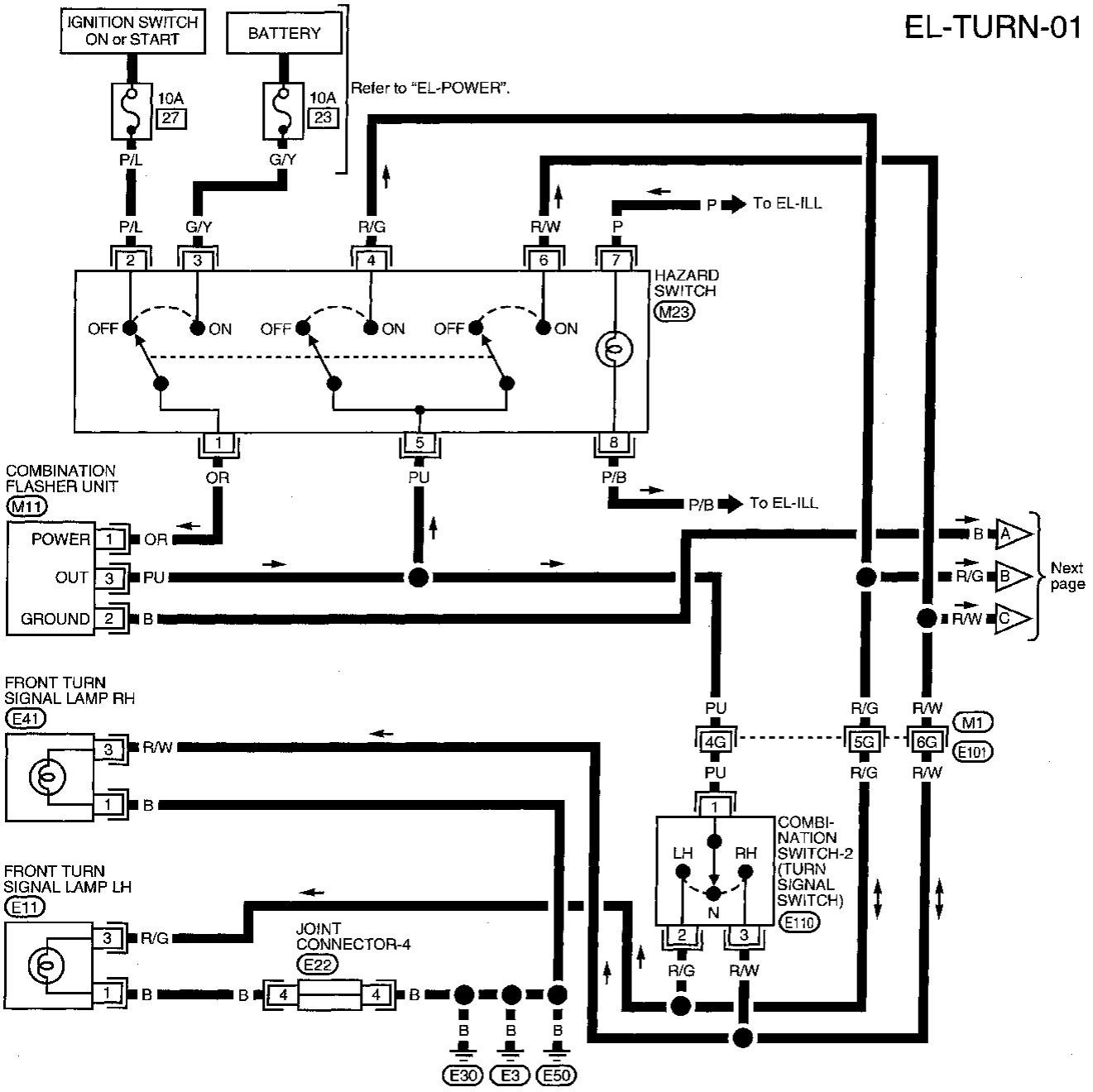
- front turn signal lamp RH terminal 3
- combination meter terminal 21
- rear combination lamp RH terminal 2.

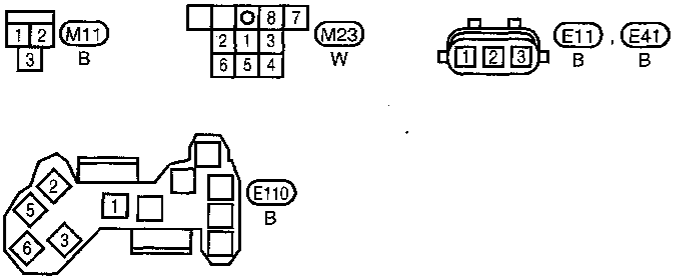
Ground is supplied to each lamp in the same manner as for LH or RH turn operation.
With power and ground supplied, the combination flasher unit controls the flashing of hazard warning lamps.

Wiring Diagram — TURN —

NDEL0030

EL-TURN-01

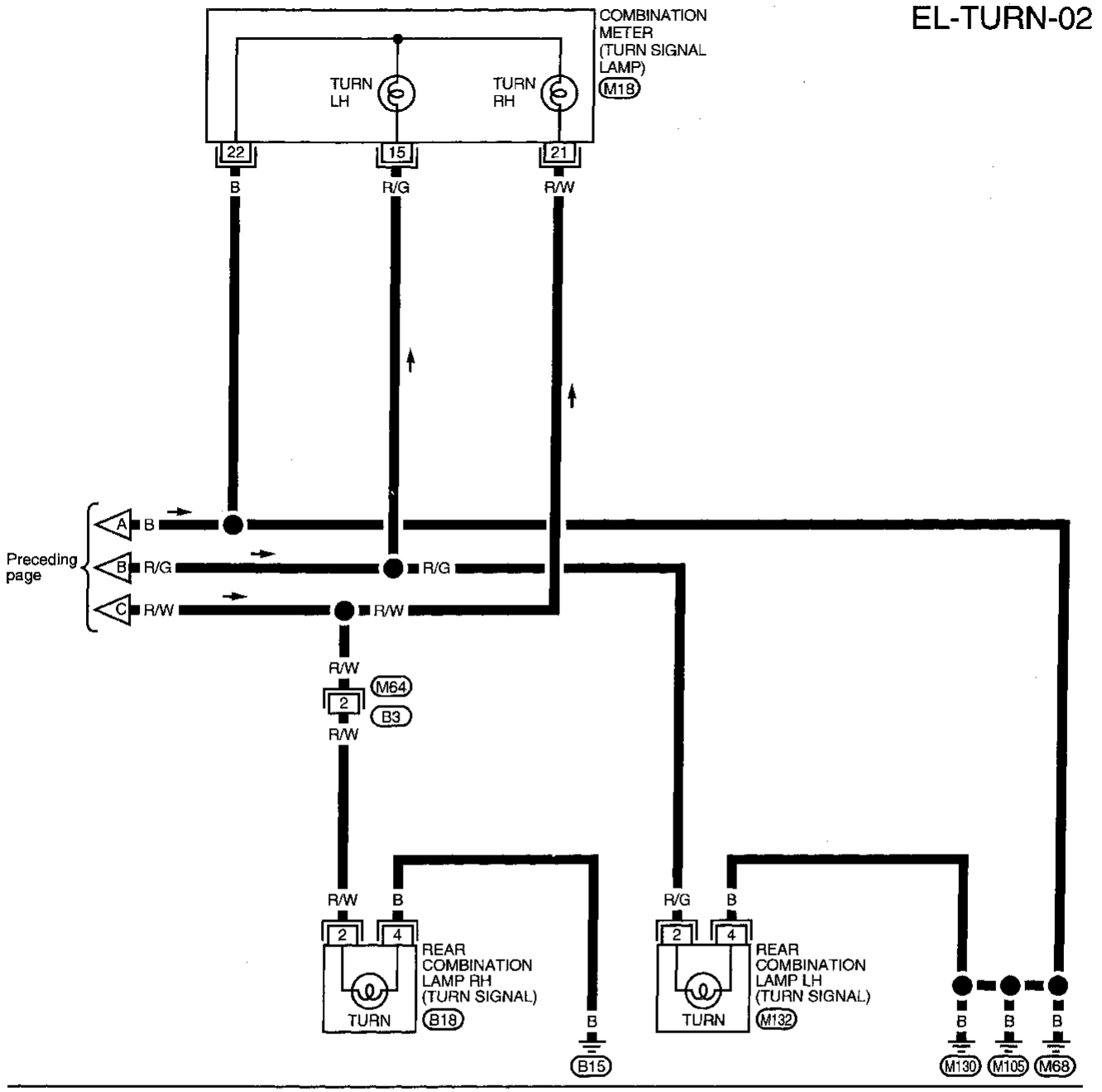


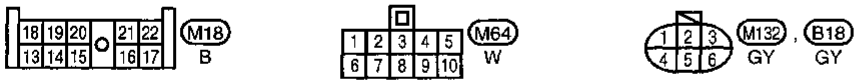


Refer to last page (Foldout page).
M1 , E101
E22

AEL721B

EL-TURN-02



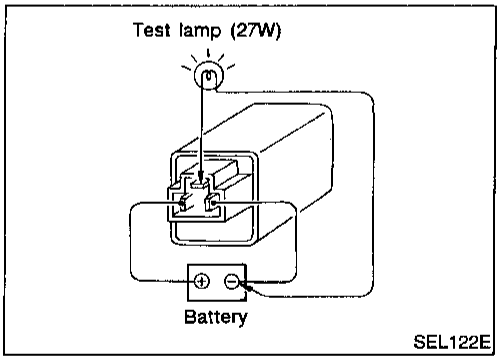


AEL722B

Trouble Diagnoses

NDEL0031

Symptom	Possible cause	Repair order
Turn signal and hazard warning lamps do not operate.	1. Hazard switch 2. Combination flasher unit 3. Open in combination flasher unit circuit	1. Check hazard switch. 2. Refer to combination flasher unit check. 3. Check wiring to combination flasher unit for open circuit.
Turn signal lamps do not operate but hazard warning lamps operate.	1. 10A fuse 2. Hazard switch 3. Turn signal switch 4. Open in turn signal switch circuit	1. Check 10A fuse (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.	1. 10A fuse 2. Hazard switch 3. Open in hazard switch circuit	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.	1. Bulb 2. Grounds E3, E30 and E50	1. Check bulb. 2. Check grounds E3, E30 and E50.
Rear turn signal lamp LH does not operate.	1. Bulb 2. Grounds M68, M105 and M130	1. Check bulb. 2. Check grounds M68, M105 and M130.
Rear turn signal lamp RH does not operate.	1. Bulb 2. Ground B15	1. Check bulb. 2. Check ground B15.
LH and RH turn indicators do not operate.	1. Grounds M68, M105 and M130	1. Check grounds M68, M105 and M130.
LH or RH turn indicator does not operate.	1. Bulb	1. Check bulb in combination meter.



Electrical Components Inspection

NDEL0032

COMBINATION FLASHER UNIT CHECK

NDEL0032S01

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

System Description

NDEL0033

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.
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. 17, located in the fuse block)
- to cornering lamp switch terminal 4.

RH TURN

NDEL0033S01

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

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

Ground is supplied to cornering lamp RH terminal 1 through body grounds E3, E30 and E50.
The RH cornering lamp illuminates until the turn is completed.

LH TURN

NDEL0033S02

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

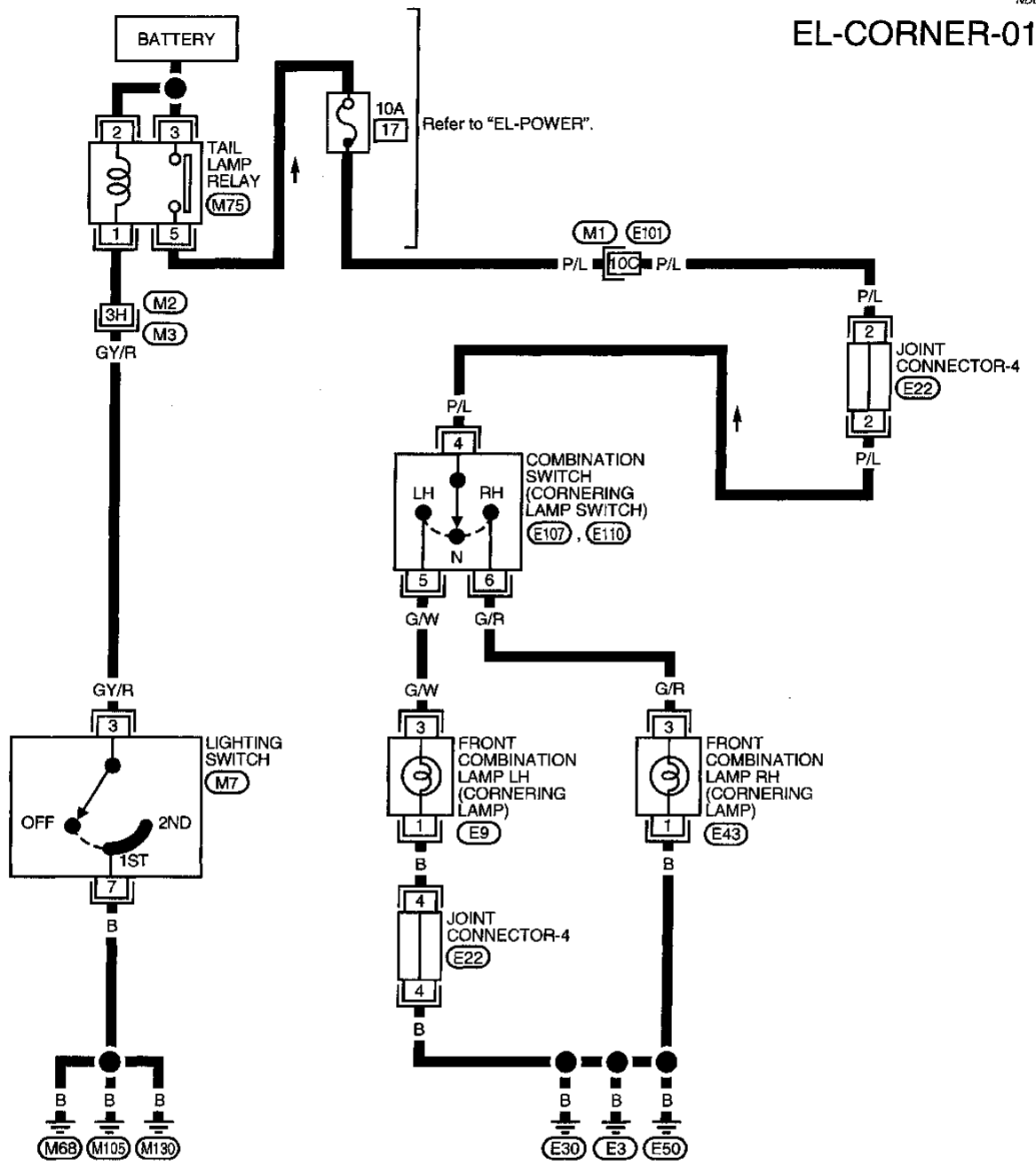
- from cornering lamp switch terminal 4
- through cornering lamp switch terminal 5
- to cornering lamp LH terminal 3.

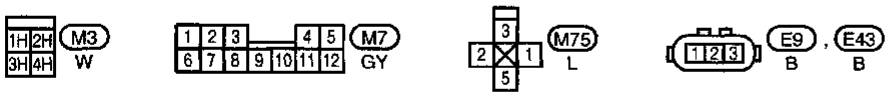
Ground is supplied to cornering lamp LH terminal 1 through body grounds E3, E30 and E50.
The LH cornering lamp illuminates until the turn is completed.

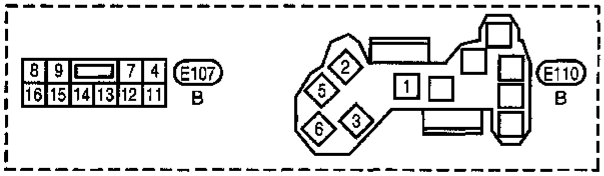
Wiring Diagram — CORNER —

NDEL0034

EL-CORNER-01







Refer to last page (Foldout page).
M1, E101
E22

AEL723B

System Description

NDEL0035

TRAILER TAIL LAMP OPERATION

NDEL0035S01

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 tow control unit terminal 2 and trailer harness connector terminal 1 through body grounds M68, M105 and M130.
With power and ground supplied, the trailer tail lamps will illuminate.

TRAILER STOP, TURN SIGNAL AND HAZARD LAMP OPERATION

NDEL0035S02

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 20A 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.
Based on the stop lamp, turn signal lamp and hazard lamp inputs to the trailer tow control unit, power is supplied to trailer LH stop/turn lamp:

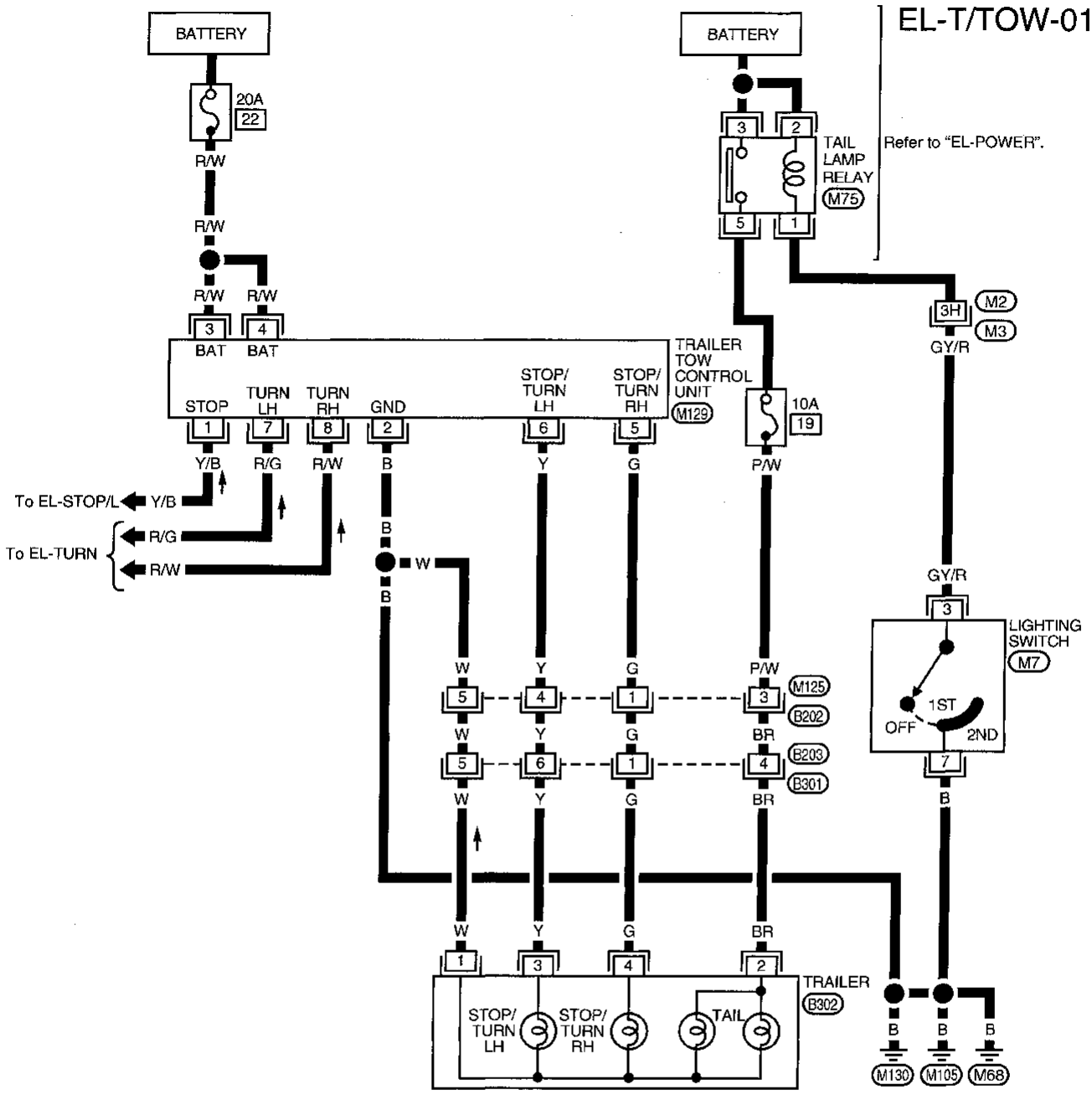
- from trailer tow control unit terminal 6
- to trailer harness connector terminal 3.

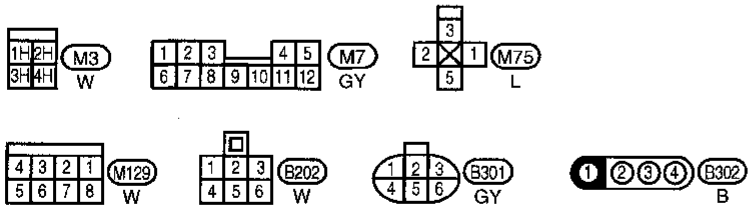
Power is also supplied to trailer RH stop/turn lamp:

- from trailer tow control unit terminal 5
- to trailer harness connector terminal 4.

Wiring Diagram — T/TOW —

NDEL0036





AEL734B

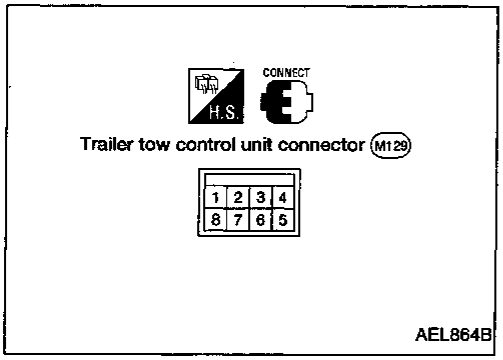
Trouble Diagnoses

TRAILER TOW CONTROL UNIT INSPECTION TABLE

NDEL0037

NDEL0037S01

Terminal No.	Wire color	Item	Condition	Voltage (Approximate value)
1	Y/B	Stop lamps signal	When brake pedal is depressed	12
			When brake pedal is released	0
2	B	Ground	—	—
3	R/W	Power supply	—	12
4	R/W	Power supply	—	12
5	G	Stop/RH turn lamp (output)	When brake pedal is depressed	12
			When RH turn lamps or hazard lamps operate	12 (intermittently)
			All other conditions	0
6	Y	Stop/LH turn lamp (output)	When brake pedal is depressed	12
			When LH turn lamps or hazard lamps operate	12 (intermittently)
			All other conditions	0
7	R/G	LH turn lamps	When LH turn lamps or hazard lamps operate	12 (intermittently)
			All other conditions	0
8	R/W	RH turn lamps	When RH turn lamps or hazard lamps operate	12 (intermittently)
			All other conditions	0



System Description

NDEL0038

Power is supplied at all times
- through 7.5A fuse (No. 39, located in the fuse and fusible link box)
- to smart entrance control unit terminal 13.

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 1.

Ground is supplied to smart entrance control unit terminal 10 through body grounds M68, M105 and M130.
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.

For auto lamp operation (if equipped), ground is supplied to tail lamp relay through headlamp control unit terminal 12 to energize tail lamp relay. Then tail lamp relay supplies power to turn on parking, license, tail lamps and illumination. For detailed information on autolamp operation, refer to "HEADLAMP (USA)", EL-30 or "HEADLAMP (FOR CANADA) — DAYTIME LIGHT SYSTEM, EL-42.
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 42
- through illumination control switch terminal 5
- from illumination control switch terminal 8
- through body grounds M68, M105 and M130.

When the illumination control switch is pushed in the DARKER direction, ground is supplied
- to smart entrance control unit terminal 33
- through illumination control switch terminal 2
- from illumination control switch terminal 8
- through body grounds M68, M105 and M130.

Ground is supplied to the illumination system from smart entrance control unit terminal 11 through smart entrance control unit terminal 10.
The rear audio remote control unit illumination is not controlled by the illumination control switch. The intensity of this lamp does not change. Rear audio remote control unit terminal 10 is grounded directly through body grounds M68, M105 and M130.
The following chart indicates power and ground terminals for the illumination system components.

Component	Connector No.	Power terminal	Ground Terminal
Audio unit	M45	21	22
Combination meter	M16, M17	23 and 10	24 and 11
ASCD main switch*	M6	5	6
Illumination control switch and autolamp switch	M8	1	7
Lighting switch	M7	1	2
Main power window and door lock/unlock switch	D14	3	10
Door lock/unlock switch RH	D109	1	6
Front power window switch RH	D108	1	6
Rear audio remote control unit	M115	9	10
Rear fan switch (rear)*	B6	7	8
A/C control unit (without EATC)	M37, M34	2 and 7	1 and 1

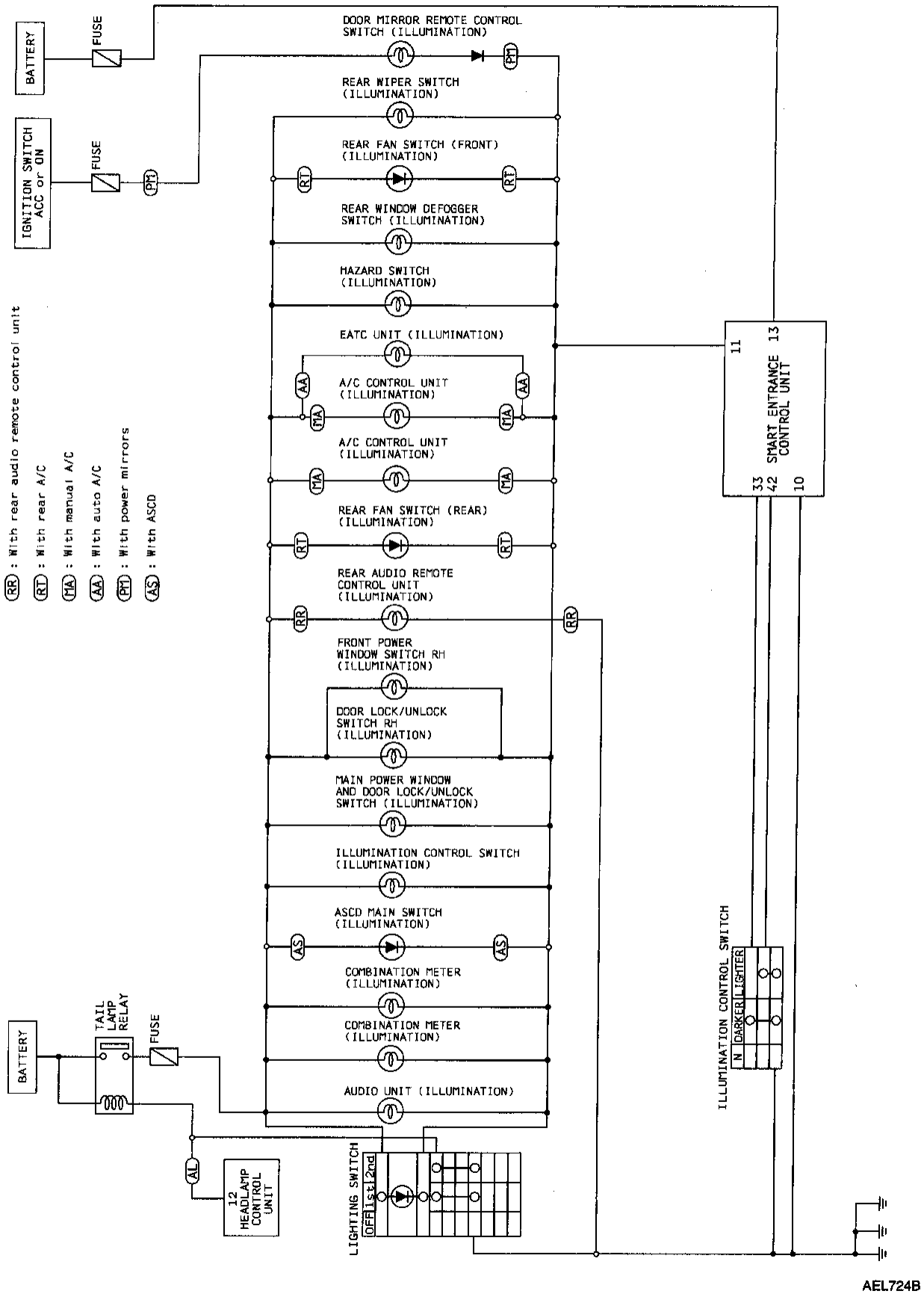
System Description (Cont'd)

Component	Connector No.	Power terminal	Ground Terminal
EATC unit*	M33	6	1
Hazard switch	M23	7	8
Rear window defogger switch	M22	6	5
Rear fan switch (front)*	M32	2	3
Rear wiper switch	M21	3	2
Door mirror remote control switch*	D9	1	3

* If equipped.

Schematic

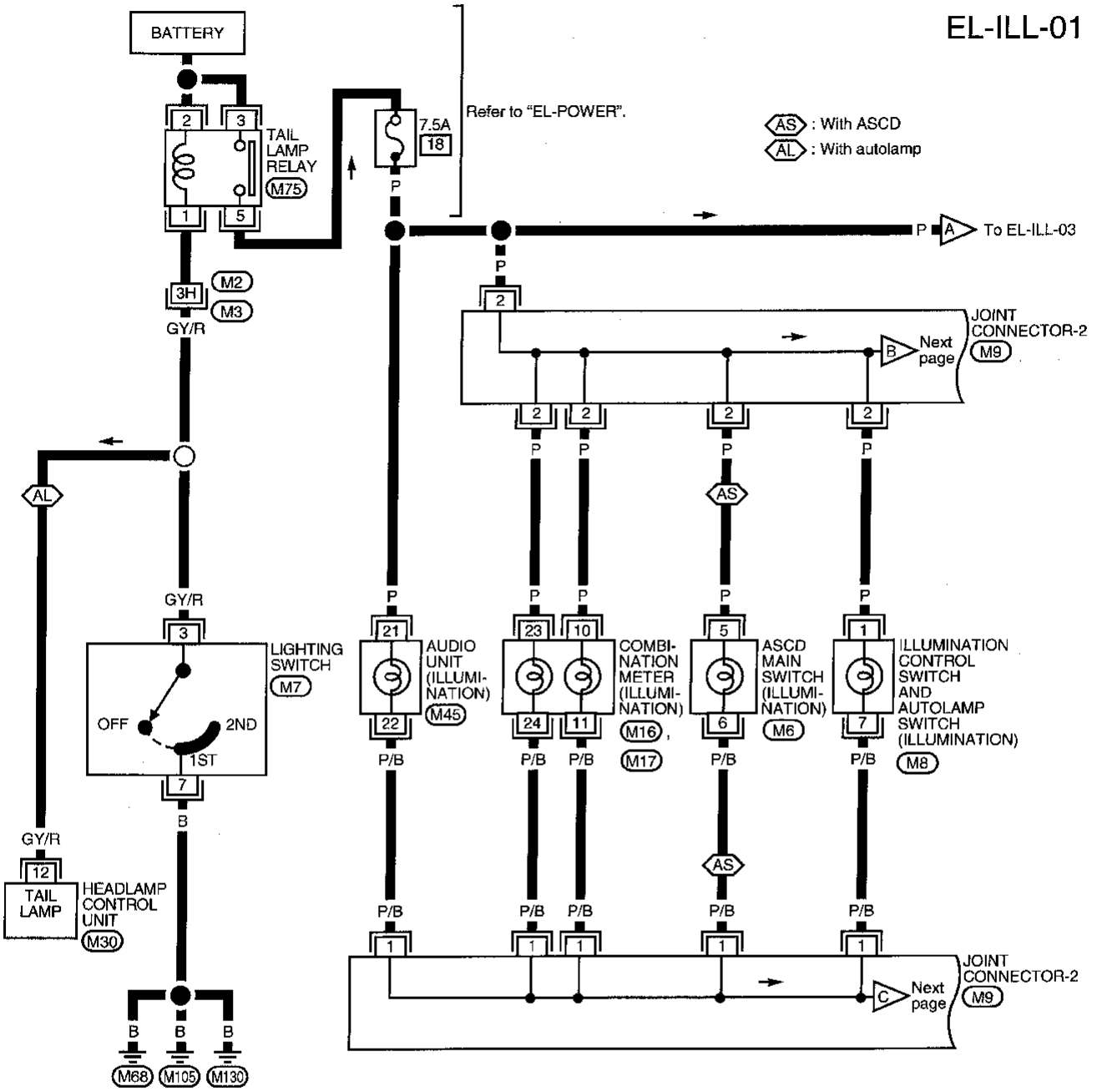
NDEL0040

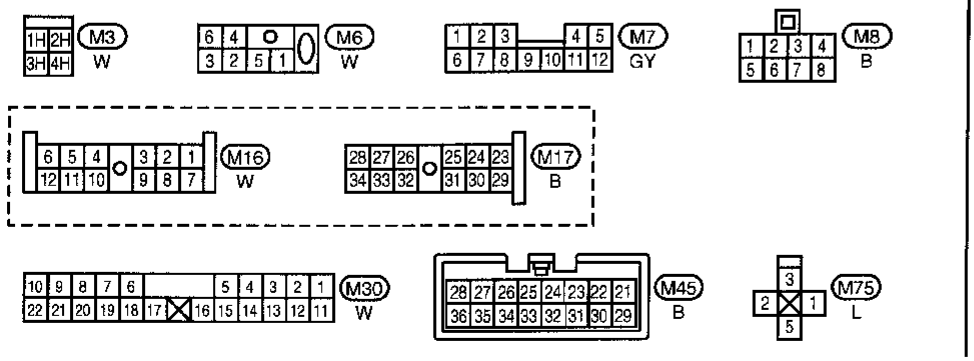


AEL724B

Wiring Diagram — ILL —

NDEL0041



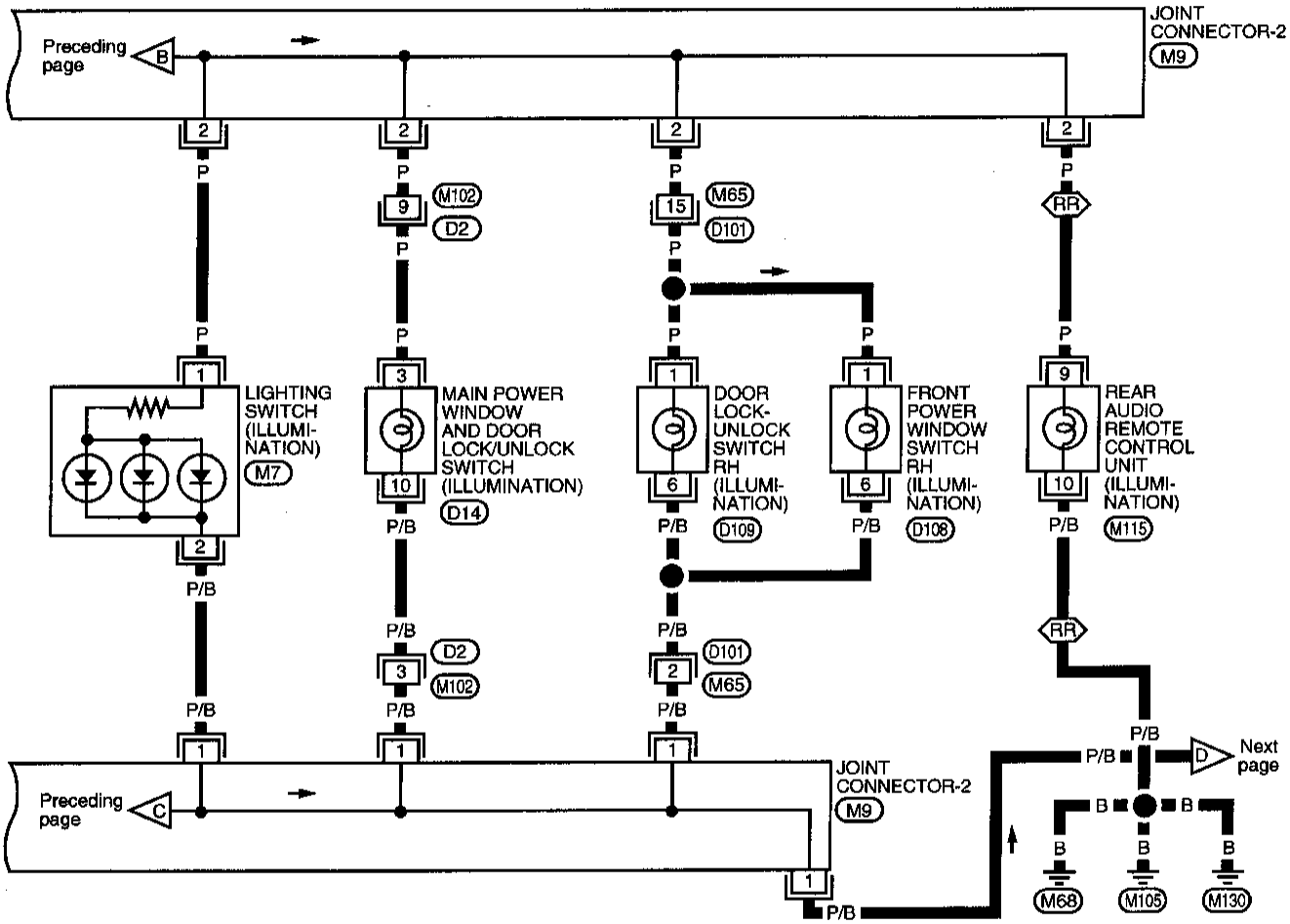


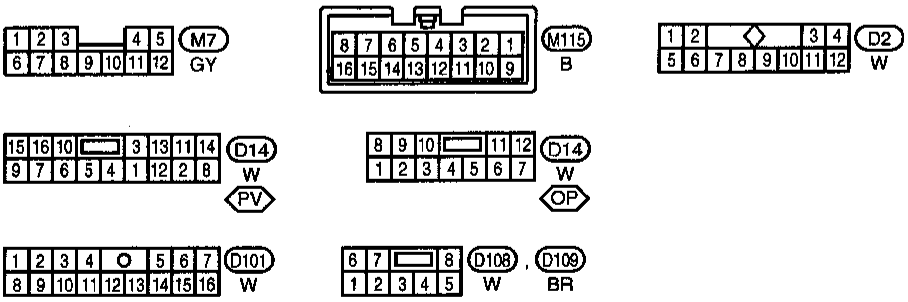
Refer to last page (Foldout page).
M9

AEL725B

EL-ILL-02

PV : With rear power vent windows
OP : Without rear power vent windows
RR : With rear audio remote control unit

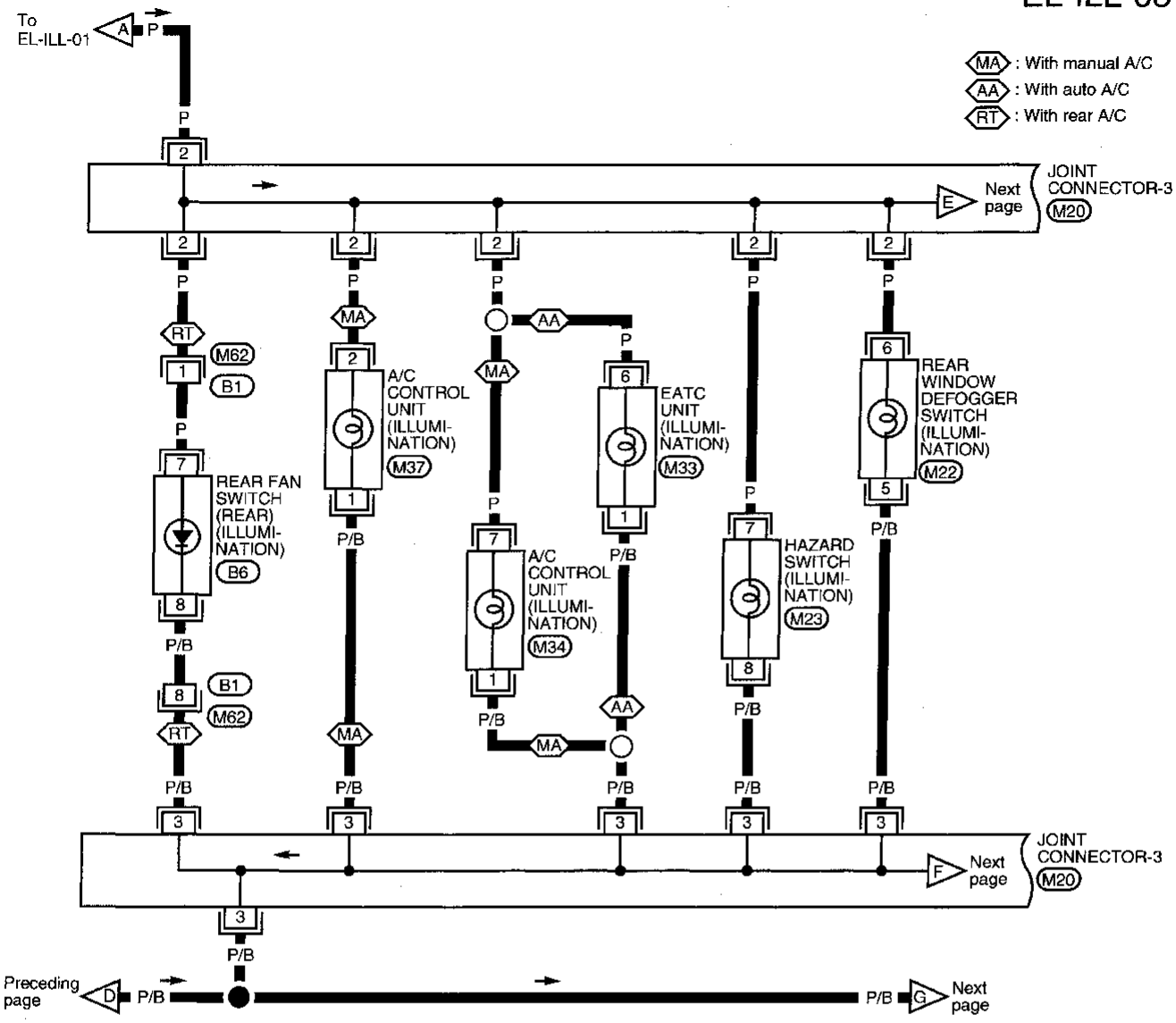


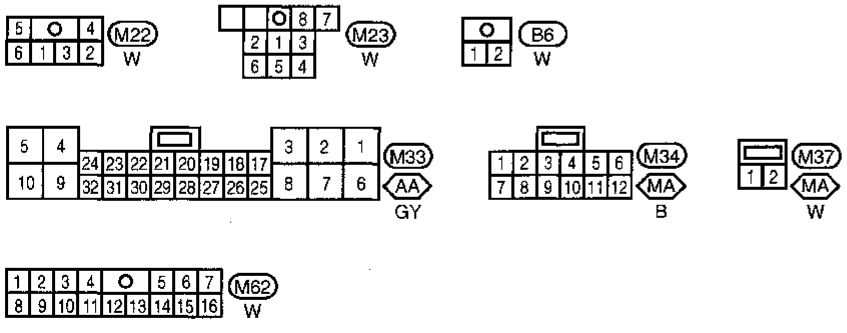


Refer to last page (Foldout page).
M9

AEL726B

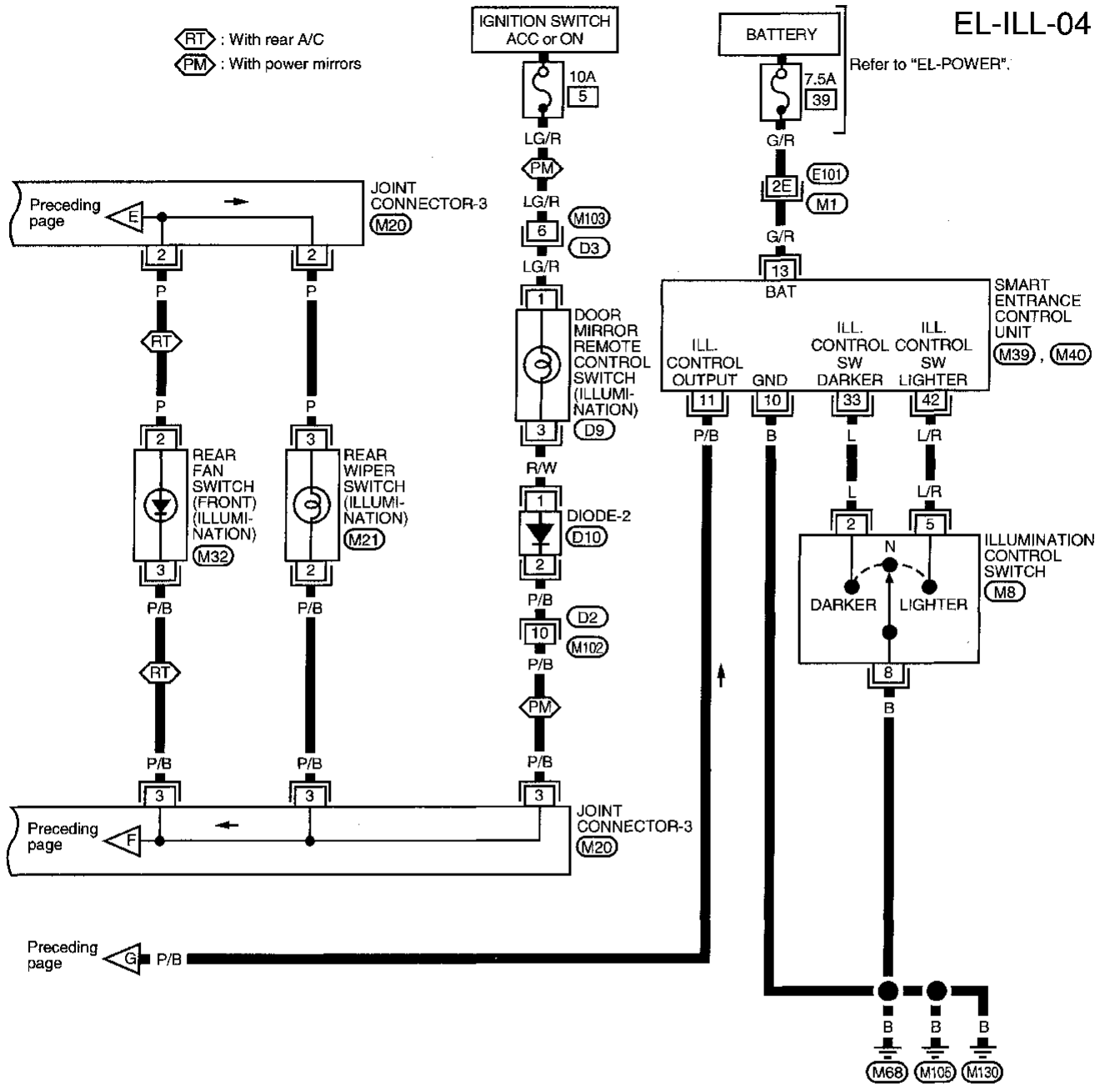
EL-ILL-03





Refer to last page (Foldout page).
M20

AEL727B



Refer to last page (Foldout page).
M1 , E101
M20

AEL728B

System Description

NDEL0039

OUTLINE

NDEL0039S01

Interior room lamps other than vanity lamp LH/RH (and map lamp when switch is in ON position) are controlled by the smart entrance control unit corresponding to the following signals

- Ignition switch (Power supply signal to smart entrance control unit terminal 43)
- Key switch (Ground signal to smart entrance control unit terminal 35)
- Lighting switch (Momentary ground signal to smart entrance control unit terminal 32)
- Front door switch LH/RH, sliding door switch LH/RH, back door latch switch LH/RH (Ground signal to smart entrance control unit terminal 9, 24, 34 or 41)
- Multi-remote controller.

Power is supplied at all times

- through 15A fuse (No. 21, located in the fuse block)
- to all interior room lamps.

Ground is supplied to the controlled interior room lamps

- through smart entrance control unit terminal 5 (Zone A)
- through smart entrance control unit terminal 4 (Zone B) or
- through smart entrance control unit terminal 6 (Zone C).

Controlled interior room lamps are grouped as zone A, B or C depending on connected smart entrance control unit terminals as follows

- Map lamp (Zone A, when its switch is in DOOR position)
- Front/rear room lamp (Zone B, when its switch is in DOOR position or Zone C, when its switch is in ON position)
- Front/rear personal lamps (Zone B, when its switch is in DOOR position or Zone C, when its switch is in ON position)
- Front step lamp LH/RH (Zone A)
- Foot lamp LH/RH (Zone A)
- Sliding door step lamp LH/RH (Zone B)
- Back door lamp (Zone B)
- Glove box lamp (Zone C, when glove box lid is opened).

Vanity lamp LH/RH are not controlled by the smart entrance control unit. They turn on and off corresponding to the switch position on the lamp.
When the vanity lamp LH/RH or map lamp switch is turned on, ground is supplied

- to vanity lamp LH/RH or map lamp terminal 2.

With power and ground supplied, the operated lamp turns on.

OPERATION

NDEL0039S02

Interior room lamps turn on when

- key switch REMOVED (ignition key removed from ignition key cylinder)
- any door is opened
- lighting switch is pushed (momentary on switch)
- unlock signal is transmitted from multi-remote controller (only for zone A and B).

Zone C interior room lamps will turn off when the last door is closed. Zone A and B interior room lamps will remain fully illuminated for 1 second. After 1 second, zone A and B interior room lamps are lit at half illumination for approximately 10 seconds. Finally the interior room lamps will gradually fade away over approximately the next 5 seconds.
Interior room lamps will turn off immediately during the above timer operation when

- ignition switch is turned to ON position
- lock signal is transmitted from multi-remote controller
- lighting switch is pushed (momentary on switch).

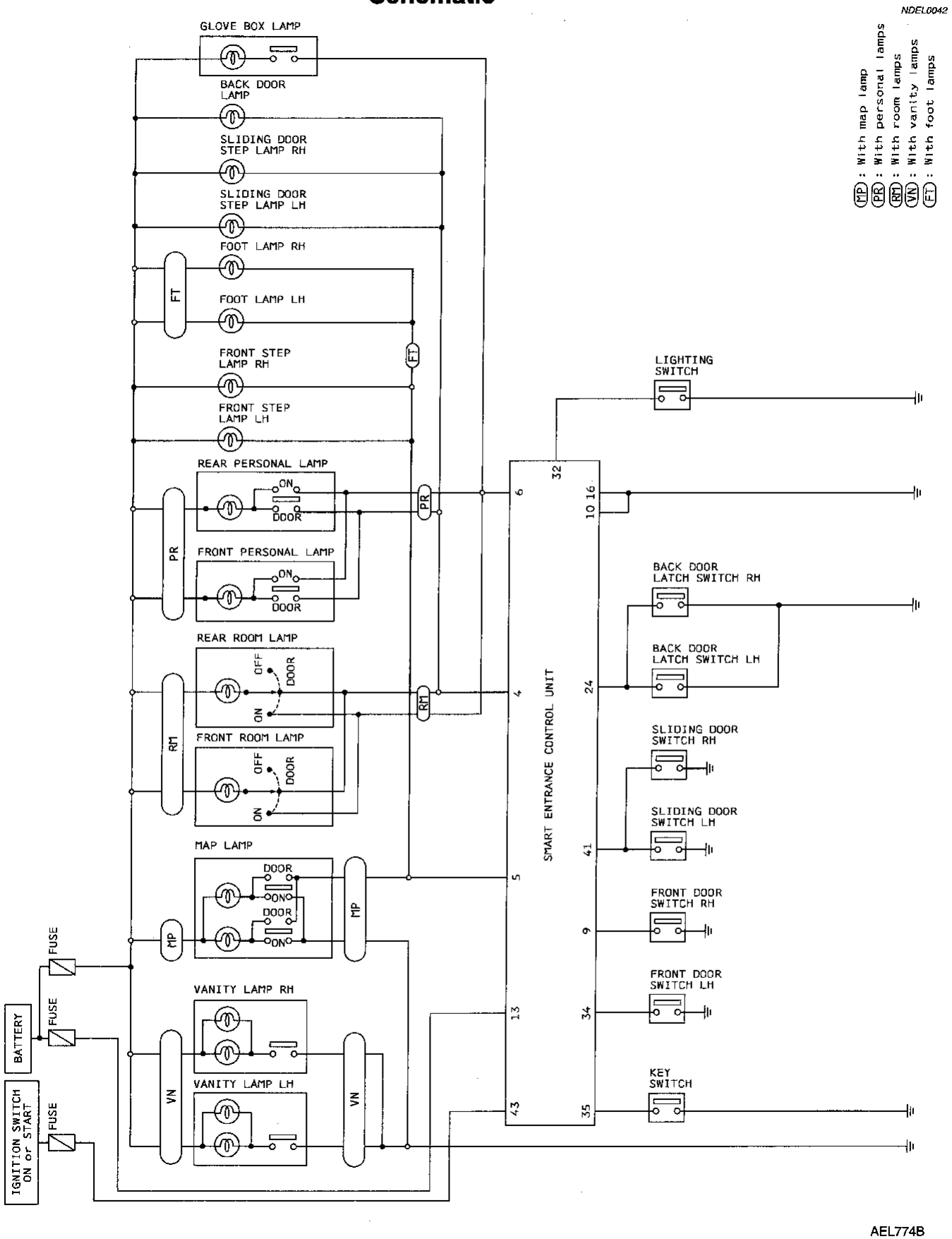
If the interior room lamps are turned on by pushing the lighting switch (momentary on switch), they can be turned off by pushing the lighting switch again.

BATTERY SAVER

NDEL0039S03

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

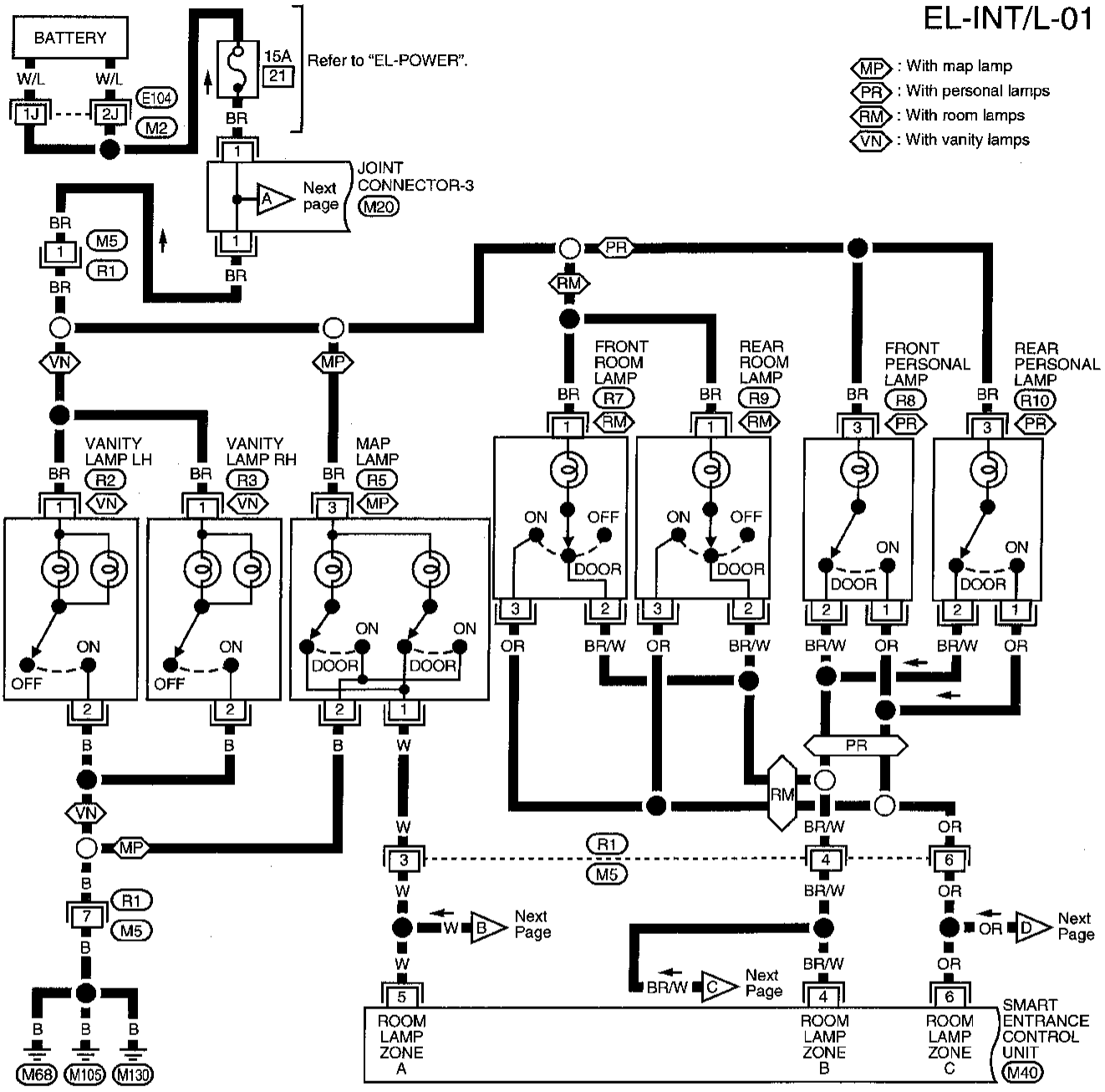
Schematic

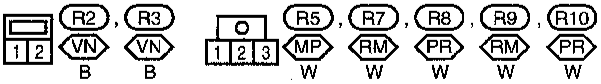

NDEL0042
(MP) : With map lamp
(PR) : With personal lamps
(RM) : With room lamps
(VN) : With vanity lamps
(FT) : With foot lamps
GLOVE BOX LAMP
BACK DOOR LAMP
SLIDING DOOR STEP LAMP RH
SLIDING DOOR STEP LAMP LH
FOOT LAMP RH
FOOT LAMP LH
FT
FRONT STEP LAMP RH
FRONT STEP LAMP LH
REAR PERSONAL LAMP
FRONT PERSONAL LAMP
ON
DOOR
PR
REAR ROOM LAMP
FRONT ROOM LAMP
OFF
ON
DOOR
RM
MAP LAMP
MP
VANITY LAMP RH
VANITY LAMP LH
VN
FUSE
BATTERY
IGNITION SWITCH ON or START
LIGHTING SWITCH
BACK DOOR LATCH SWITCH RH
BACK DOOR LATCH SWITCH LH
SLIDING DOOR SWITCH RH
SLIDING DOOR SWITCH LH
FRONT DOOR SWITCH RH
FRONT DOOR SWITCH LH
KEY SWITCH
SMART ENTRANCE CONTROL UNIT
32
6
10 16
24
4
41
5
9
13
34
43
35
AEL774B

Wiring Diagram — INT/L —

NDEL0043

EL-INT/L-01



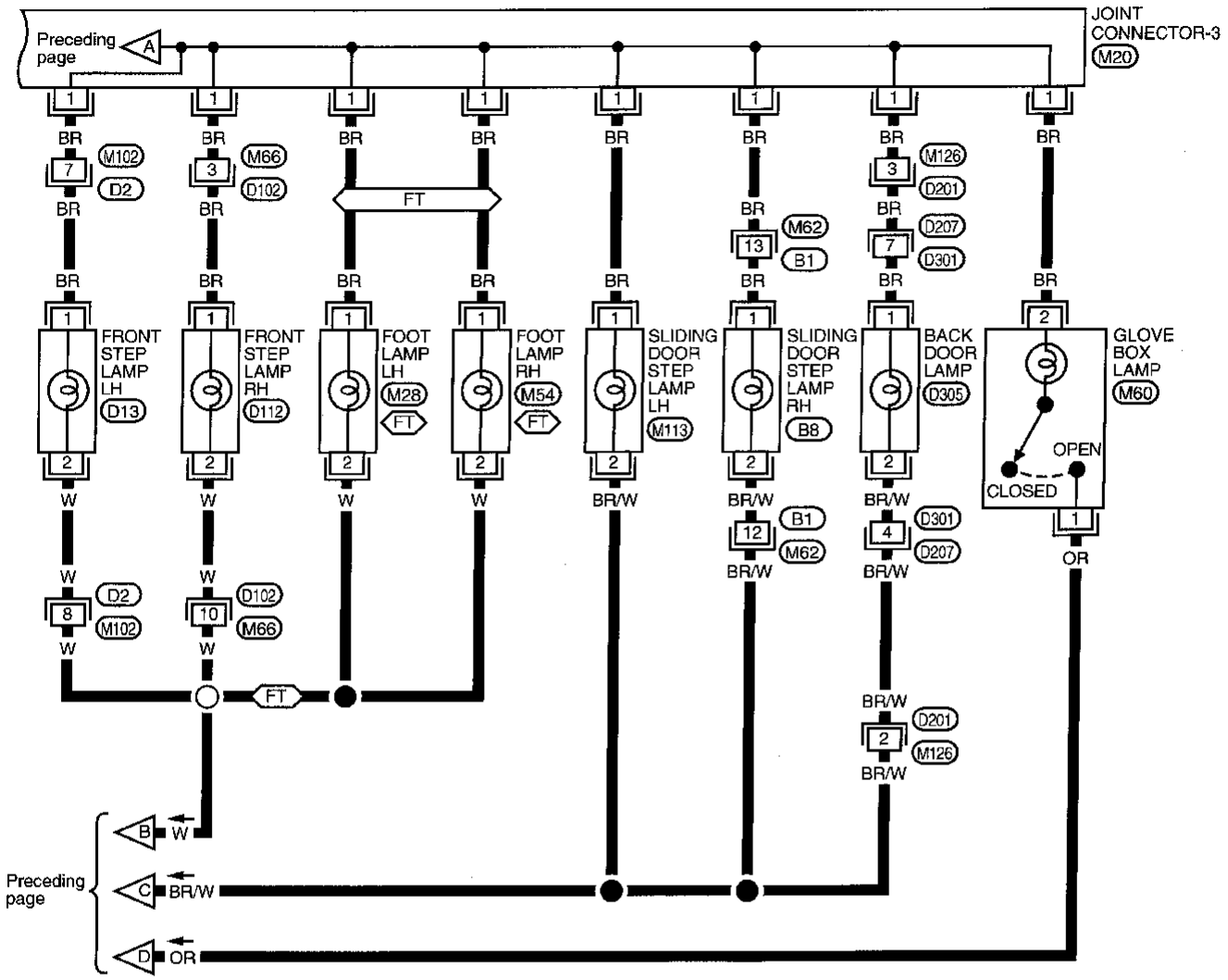


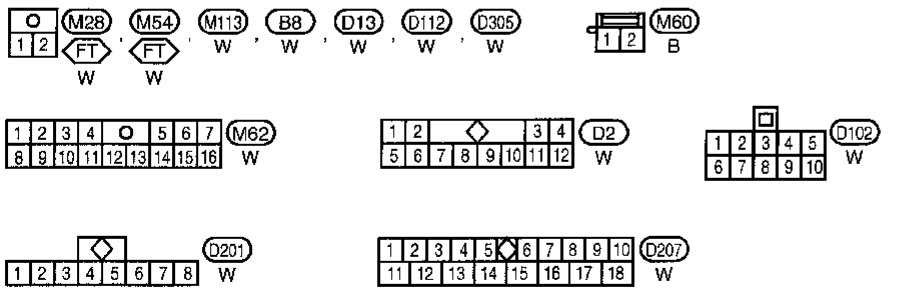
Refer to last page (Foldout page).
M20

AEL775B

EL-INT/L-02

FT : With foot lamps



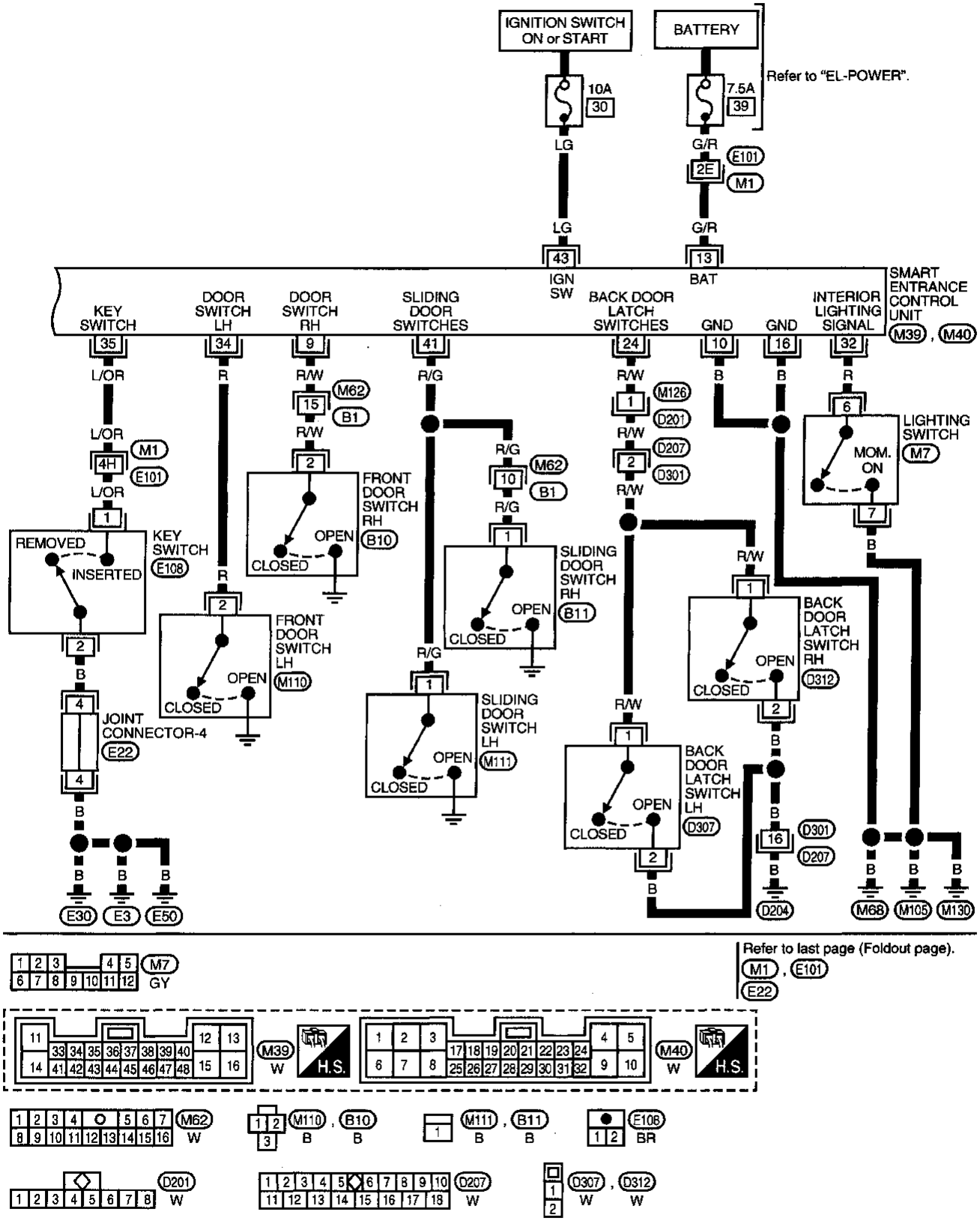


Refer to last page (Foldout page).

M20

AEL776B

EL-INT/L-03


IGNITION SWITCH ON or START
BATTERY
10A 30
7.5A 39
Refer to "EL-POWER".
LG
G/R
E101
2E
M1
43
IGN SW
13
BAT
SMART ENTRANCE CONTROL UNIT
M39, M40
KEY SWITCH
DOOR SWITCH LH
DOOR SWITCH RH
SLIDING DOOR SWITCHES
BACK DOOR LATCH SWITCHES
GND
GND
INTERIOR LIGHTING SIGNAL
35
34
9
41
24
10
16
32
L/OR
R
R/W
R/G
R/W
B
B
R
M62
B1
M126
D201
D207
D301
M1
E101
4H
REMOVED
INSERTED
KEY SWITCH E108
FRONT DOOR SWITCH RH B10
OPEN
CLOSED
FRONT DOOR SWITCH LH M110
SLIDING DOOR SWITCH RH B11
SLIDING DOOR SWITCH LH M111
BACK DOOR LATCH SWITCH RH D312
BACK DOOR LATCH SWITCH LH D307
LIGHTING SWITCH
MOM. ON
M7
JOINT CONNECTOR-4
E22
E30
E3
E50
D204
M68
M105
M130
Refer to last page (Foldout page).
M1, E101
E22
M7 GY
M39 W
M40 W
H.S.
M62 W
M110, B10 B B
M111, B11 B B
E108 BR
D201 W
D207 W
D307, D312 W W
AEL777B

Trouble Diagnoses

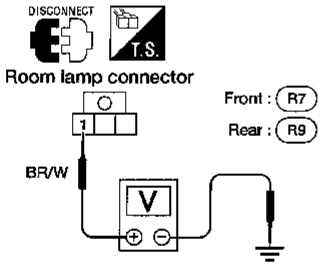
NDEL0044

SYMPTOM: Interior room lamp does not turn on or off properly.

1	CHECK INTERIOR ROOM LAMP FUSE	
Check 15 A fuse (No. 21, located in fuse block).		
OK or NG		
OK	▶	GO TO 2.
NG	▶	Replace fuse and check harness for short between fuse and interior room lamps.

2	CHECK LIGHTING SWITCH (INTERIOR) SIGNAL	
1. Close all doors, turn ignition switch to ON position and push lighting switch. **Do interior room lamps turn on?** 2. Push lighting switch again. **Do interior room lamps turn off?**		
OK or NG		
OK	▶	GO TO 3.
NG	▶	**Check the following.** • Lighting switch • Lighting switch ground circuit • Harness for open or short between lighting switch and smart entrance control unit

3	CHECK INTERIOR ROOM LAMP POWER SUPPLY	
Check voltage between room lamp terminals and ground		



AEL867B

	Terminals (+)	Terminals (−)	Voltage [V]
Front room lamp	1	Ground	Approx. 12
Rear room lamp	1	Ground	Approx. 12

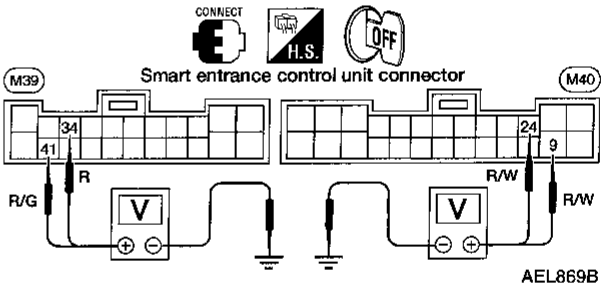
AEL868B

OK or NG		
OK	▶	GO TO 4.
NG	▶	Check harness for open between fuse and interior room lamps.

4	CHECK INTERIOR ROOM LAMP BULB	
Check interior room lamp bulb.		
OK or NG		
OK	▶	GO TO 5.
NG	▶	Replace bulb.

5	CHECK KEY SWITCH (INSERTED) AND IGNITION ON SIGNAL	
1. Insert key into ignition key cylinder. 2. Open front door LH. **Does warning chime sound?** 3. Turn ignition key to ON position. **Does warning chime stop sounding?**		
OK or NG		
OK	▶	GO TO 6.
NG	▶	Check "WARNING CHIME" system, refer to EL-93.

6	CHECK DOOR SWITCH INPUT SIGNAL	
Check voltage between smart entrance control unit terminals and ground.		



AEL869B

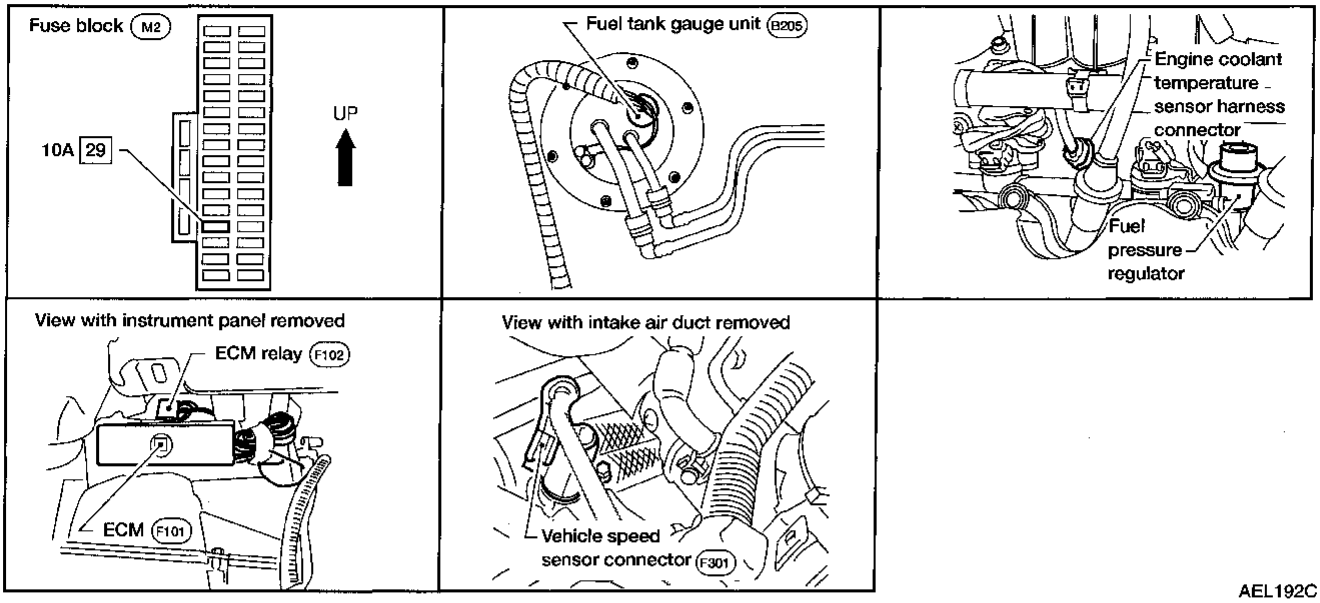
	Terminals (+)	Terminals (−)	Door condition	Voltage [V]
Front door switch LH	34	Ground	Open	0
			Closed	Approx. 12
Front door switch RH	9	Ground	Open	0
			Closed	Approx. 12
Sliding door switch LH and RH	41	Ground	Open	0
			Closed	Approx. 12
Back door latch switch LH and RH	24	Ground	Open	0
			Closed	Approx. 12

AEL870B

OK or NG		
OK	▶	Check harness for open or short between smart entrance control unit and interior room lamps.
NG	▶	**Check the following.** • Door switch • Door switch ground condition • Harness for open or short between door switch and smart entrance control unit

Component Parts and Harness Connector Location

NDEL0045



AEL192C

System Description

NDEL0046

POWER SUPPLY AND GROUND CIRCUIT

NDEL0046S01

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.

Ground is supplied

- to combination meter terminals 17 and 30
- through body ground M51.

WATER TEMPERATURE GAUGE

NDEL0046S02

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

TACHOMETER

NDEL0046S03

The tachometer indicates engine speed in revolutions per minute (rpm).
The tachometer is regulated by a signal

- from terminal 3 of the ECM
- to combination meter terminal 29 for the tachometer.

FUEL GAUGE

NDEL0046S04

The fuel gauge indicates the approximate fuel level in the fuel tank.
The fuel gauge is regulated by a variable ground signal supplied

- to combination meter terminal 20 for the fuel gauge
- from terminal 5 of the fuel tank gauge unit
- through terminal 6 of the fuel tank gauge unit and
- through body grounds M68, M105 and M130.

SPEEDOMETER

NDEL0046S05

The vehicle speed sensor sends a voltage signal to the combination meter for the speedometer.
Pulsed ground is supplied

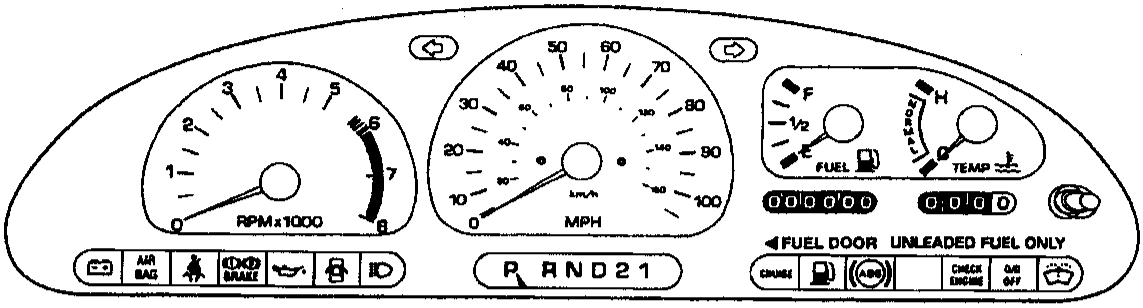
- to combination meter terminal 32 for the speedometer

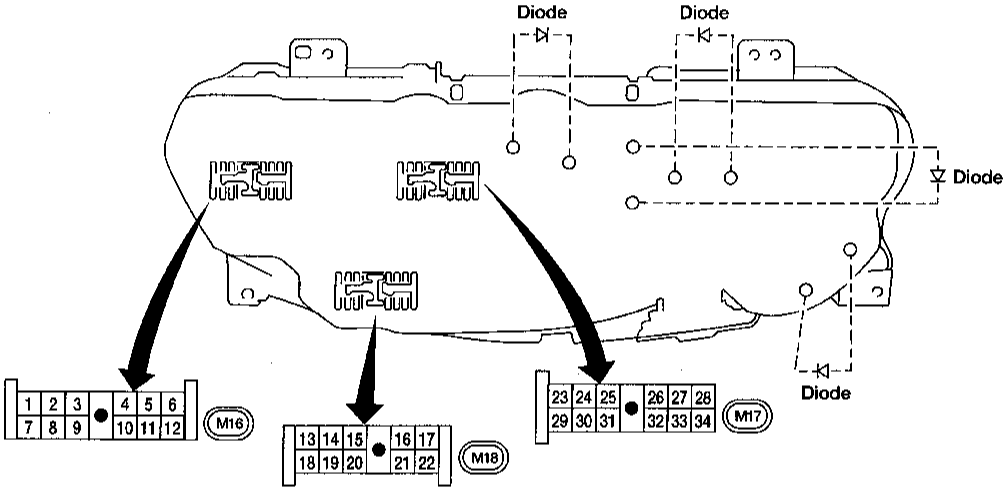
- from terminal 1 of the vehicle speed sensor.

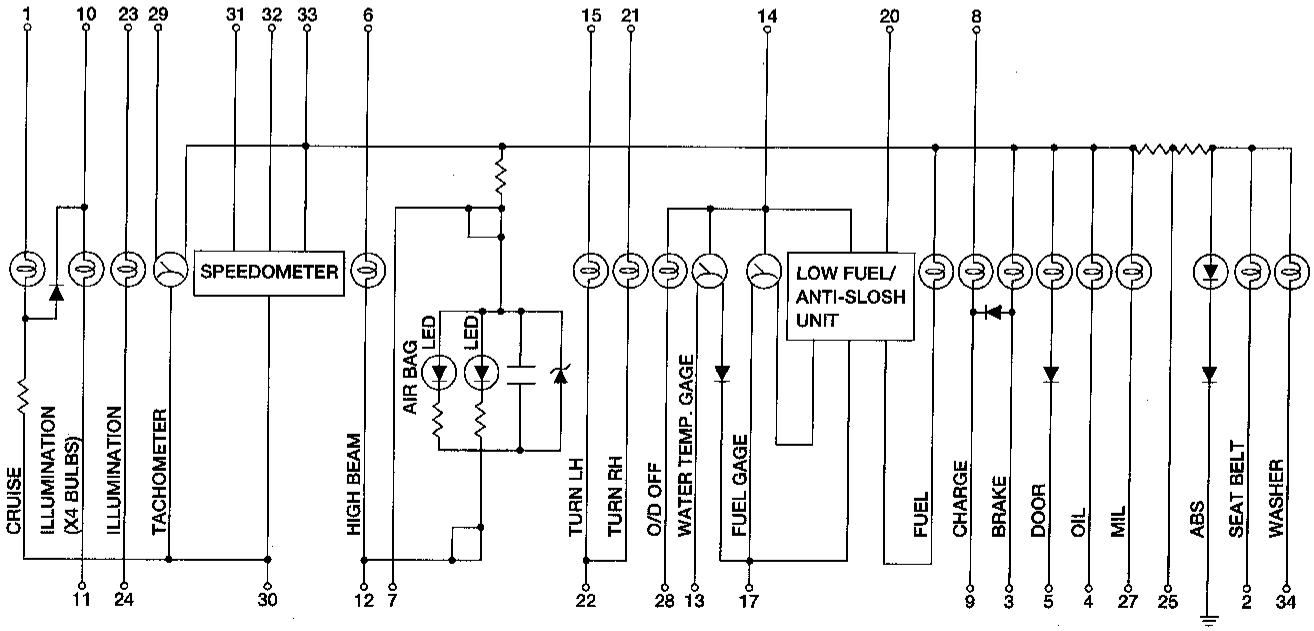
The speedometer converts the pulsed ground into the vehicle speed displayed.

Combination Meter

NDEL0047





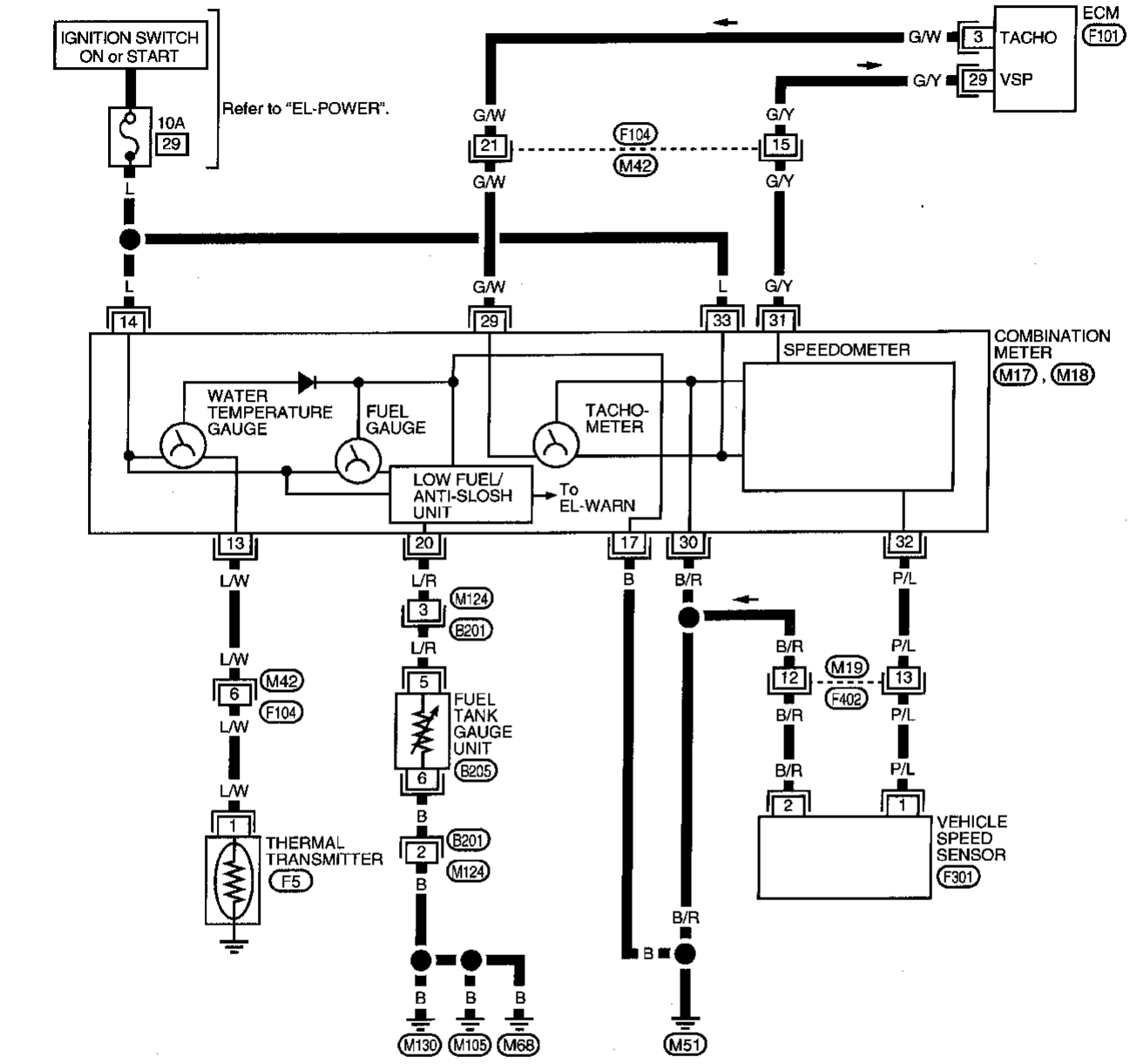


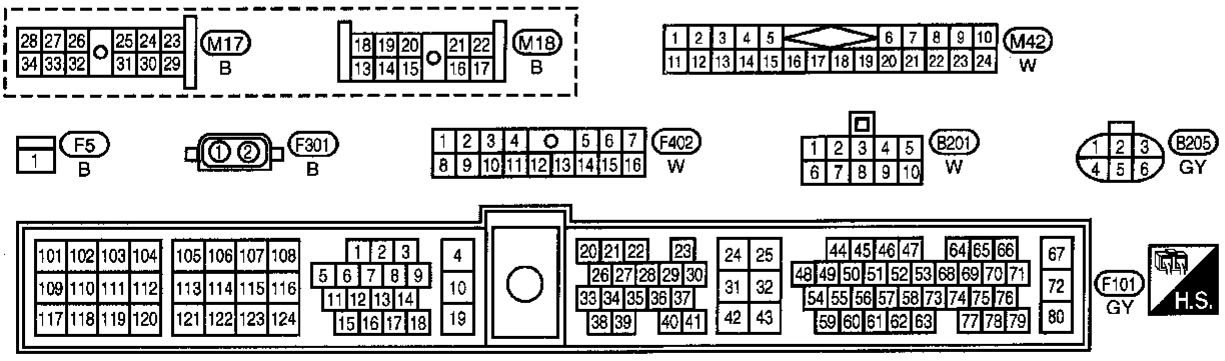
AEL203C

Wiring Diagram — METER —

NDEL0048

EL-METER-01





AEL748B

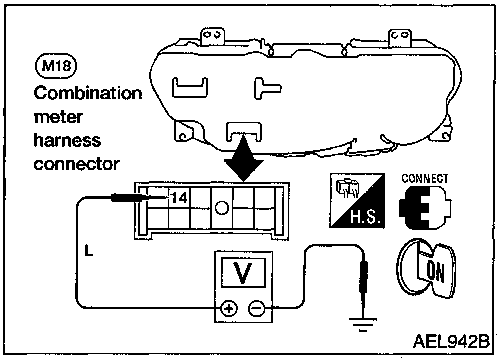
Trouble Diagnoses

SYMPTOM CHART

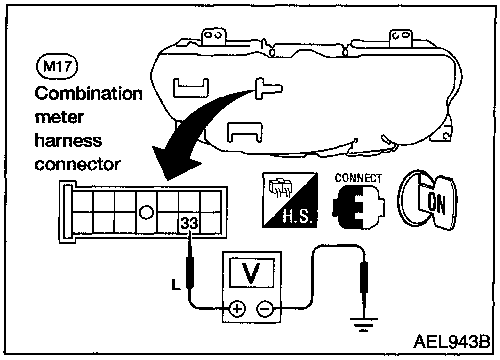
NDEL0049

NDEL0049S01

Symptom	Diagnoses procedure	Reference page
Speedometer is malfunctioning.	POWER SUPPLY AND GROUND CIRCUIT CHECK	EL-79
	INSPECTION/VEHICLE SPEED SENSOR	EL-80
Tachometer is malfunctioning.	INSPECTION/ENGINE REVOLUTION SIGNAL	EL-81
Fuel tank gauge is malfunctioning.	POWER SUPPLY AND GROUND CIRCUIT CHECK	EL-79
	INSPECTION/FUEL TANK GAUGE UNIT	EL-82
Water temperature gauge is malfunctioning.	POWER SUPPLY AND GROUND CIRCUIT CHECK	EL-79
	INSPECTION/THERMAL TRANSMITTER	EL-83



AEL942B



AEL943B

POWER SUPPLY AND GROUND CIRCUIT CHECK

NDEL0049S02

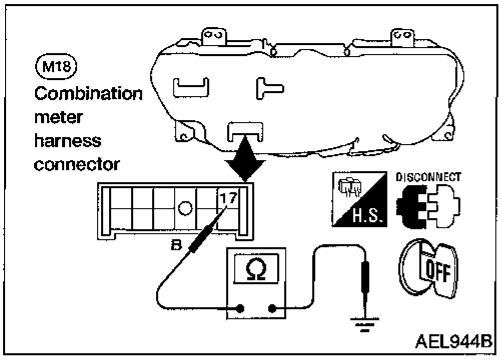
Power Supply Circuit Check

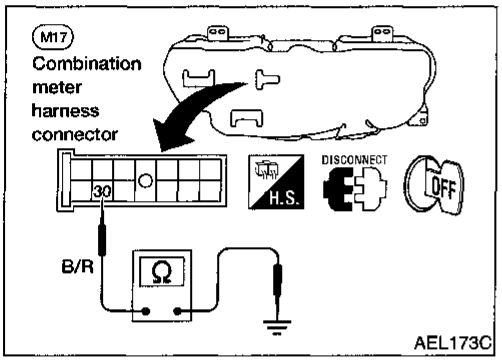
NDEL0049S0201

Terminals		Ignition switch position		
(+)	(−)	OFF	ON	START
14	Ground	0 V	Battery voltage	Battery voltage
33	Ground	0 V	Battery voltage	Battery voltage

If NG, check the following

- 10A fuse (No. 29, located in fuse block)
- Harness for open or short between fuse and combination meter.





Ground Circuit Check

NDEL0049S0202

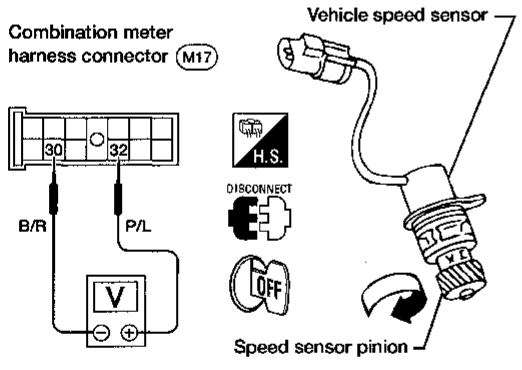
Terminals	Continuity
17 - Ground	Yes
30 - Ground	Yes

INSPECTION/VEHICLE SPEED SENSOR

NDEL0049S09

1 CHECK VEHICLE SPEED SENSOR OUTPUT

1. Remove vehicle speed sensor from transaxle.
2. Check voltage between combination meter terminals 30 and 32 while quickly turning speed sensor pinion.



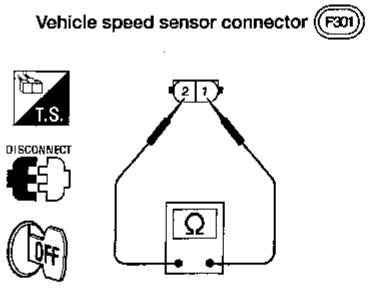
Voltage: Approx. 0.5 V

OK or NG

OK	▶	Vehicle speed sensor is OK.
NG	▶	GO TO 2.

2 CHECK VEHICLE SPEED SENSOR

Check resistance between vehicle speed sensor terminals 1 and 2.



Resistance: Approx. 250Ω

OK or NG

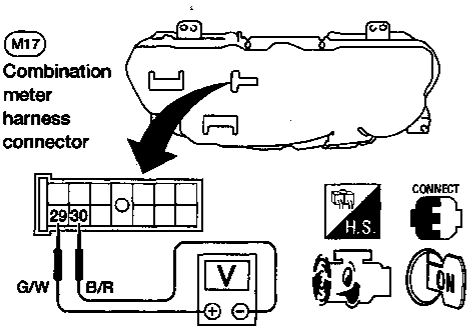
OK	▶	Check harness or connector between speedometer and vehicle speed sensor.
NG	▶	Replace vehicle speed sensor.

INSPECTION/ENGINE REVOLUTION SIGNAL

=NDEL0049S04

1	CHECK ECM OUTPUT

1. Start engine.
2. Check voltage between combination meter terminals 29 and 30 at idle and 2,000 rpm.



AEL946B

Higher rpm = Higher voltage
Lower rpm = Lower voltage
Voltage should change with rpm.

OK or NG

OK	▶	Engine revolution signal is OK.
NG	▶	Check harness for open or short between ECM and combination meter.

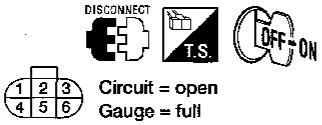
INSPECTION/FUEL TANK GAUGE UNIT

=NDEL0049S05

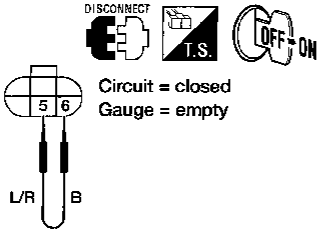
1	CHECK GAUGE OPERATION

1. Disconnect fuel tank gauge unit connector.
2. Turn ignition switch ON.
3. Check gauge operation.
   Gauge should move smoothly to full scale.
4. Connect terminals 5 and 6 with wire for **less than 10 seconds**.
5. Check gauge operation.

Fuel tank gauge unit (B206)



Fuel tank gauge unit (B205)



Gauge should move smoothly to empty scale.

OK or NG

OK	▶	GO TO 2.
NG	▶	**Check the following.** • Low fuel/anti-slosh unit • Combination meter

2	CHECK GAUGE UNITS

Refer to "FUEL TANK GAUGE UNIT CHECK", EL-83.

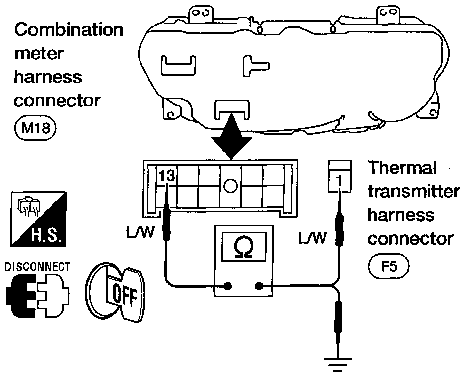
OK or NG

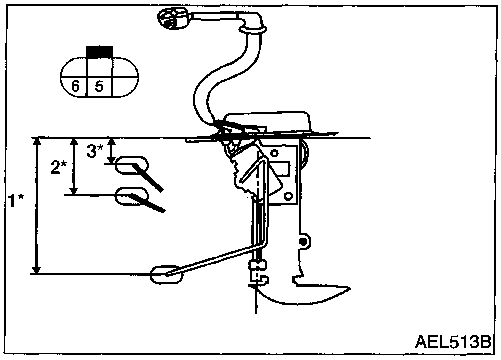
OK	▶	Fuel tank gauge is OK.
NG	▶	Replace fuel tank gauge unit.

INSPECTION/THERMAL TRANSMITTER

=NDEL0049S06

1	CHECK THERMAL TRANSMITTER	
Refer to "THERMAL TRANSMITTER CHECK", EL-84.		
OK or NG		
OK	▶	GO TO 2.
NG	▶	Replace thermal transmitter.

2	CHECK HARNESS FOR OPEN OR SHORT	
1. Disconnect combination meter connector and thermal transmitter connector. 2. Check continuity between combination meter terminal 13 and thermal transmitter terminal 1. **Continuity should exist.** 3. Check continuity between combination meter terminal 13 and ground. **Continuity should not exist.**		
 AEL947B		
OK or NG		
OK	▶	Thermal transmitter is OK.
NG	▶	Repair harness or connector.



AEL513B

Electrical Component Inspection

NDEL0050

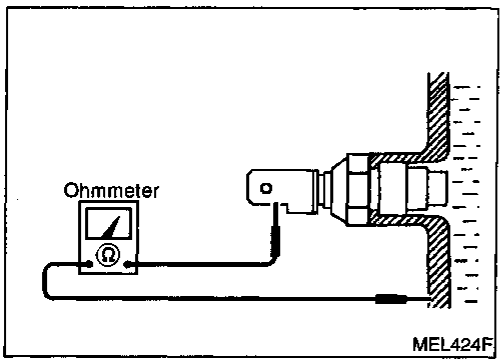
FUEL TANK GAUGE UNIT CHECK

NDEL0050S01

- For removal, refer to FE section.

Check the resistance between terminals 5 and 6.

Ohmmeter		Float position mm (in)			Resistance value (Ω)
(+)	(−)				
5	6	*3	Full	15 (0.59)	Approx. 150
		*2	1/2	73 (2.87)	84
		*1	Empty	151 (5.94)	15

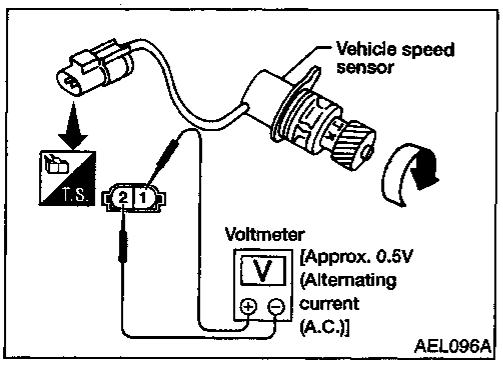


THERMAL TRANSMITTER CHECK

NDEL0050S02

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

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



VEHICLE SPEED SENSOR SIGNAL CHECK

NDEL0050S03

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

System Description

NDEL0051

POWER SUPPLY AND GROUND CIRCUIT

NDEL0051S01

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 33, 14, 8 and
- bulb check relay terminal 1.

Ground is supplied
- to combination meter terminal 12,
- fuel tank gauge unit terminal 6 and
- seat belt buckle switch terminal 2
- through body ground M68, M105 and M130.

Ground is supplied to combination meter terminal 17 through body ground M51.
Ground is supplied
- to bulb check relay terminal 3,
- brake fluid level switch terminal 2 and
- washer fluid level switch terminal 1
- through body grounds E3, E30 and E50.

AIR BAG WARNING LAMP

NDEL0051S02

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
- to combination meter terminal 12
- through body grounds M68, M105 and M130.

With power and ground supplied, the air bag warning lamp (LEDs) illuminates or flashes. For further information, refer to RS section.

O/D OFF INDICATOR LAMP

NDEL0051S03

During prove out or when overdrive is cancelled, ground is supplied
- to combination meter terminal 28
- from TCM (transmission control module) terminal 13.

With power and ground supplied, O/D off indicator lamp illuminates.
When TCM detects malfunctioning, the indicator flashes. For further information, refer to AT section.

LOW FUEL LEVEL WARNING LAMP

NDEL0051S04

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.

DOOR AJAR WARNING LAMP

NDEL0051S05

When a door is open, ground is supplied to the smart entrance control unit at terminals 9, 24, 34 or 41.
Ground is then supplied
- to combination meter terminal 5
- from smart entrance control unit terminal 14.

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

LOW WASHER FLUID LEVEL WARNING LAMP

NDEL0051S06

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.

LOW OIL PRESSURE WARNING LAMP

NDEL0051S07

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

BRAKE WARNING LAMP

NDEL0051S08

When the parking brake is applied 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.

CHARGE WARNING LAMP

NDEL0051S09

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.

BULB CHECK RELAY (BRAKE WARNING LAMP PROVE OUT)

NDEL0051S10

When the ignition switch is in the ON or START position, and with the engine not running, ground is supplied

- to bulb check relay terminal 2
- from generator terminal 3.

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.

SEAT BELT WARNING LAMP

NDEL0051S11

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.

MALFUNCTION INDICATOR LAMP

NDEL0051S12

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

- to combination meter terminal 27
- from ECM terminal 18.

With power and ground supplied, the malfunction indicator lamp illuminates.
For further information, refer to EC section.

ABS WARNING LAMP*

NDEL0051S13

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

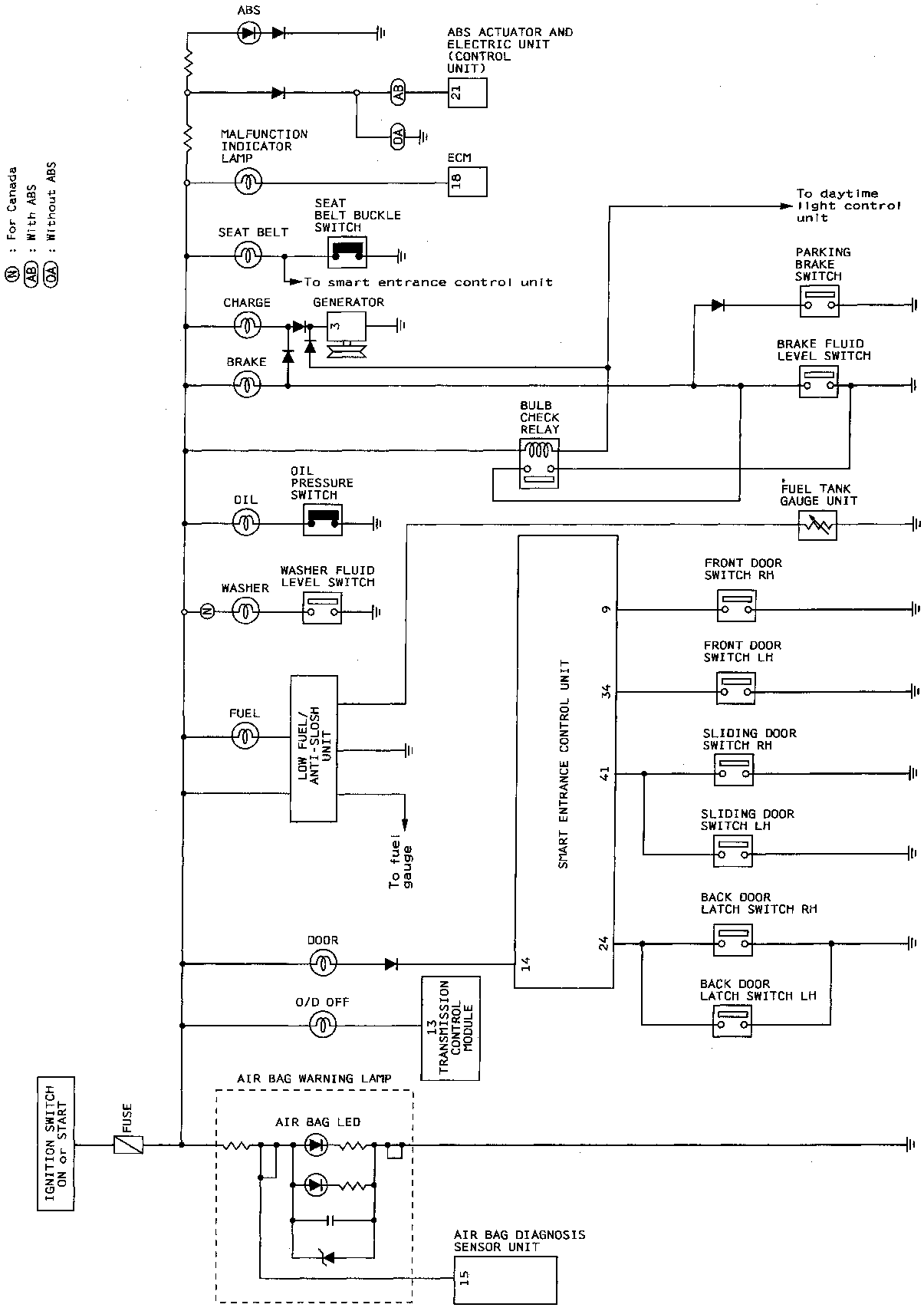
- to combination meter terminal 25
- from ABS actuator and electric unit (control unit) terminal 21.

With power and ground supplied, the ABS warning lamp illuminates.
For further information, refer to BR section.
* With non ABS systems, ground is supplied

- to combination terminal 25
- through body grounds E3, E30 and E50.

Schematic

NDEL0052

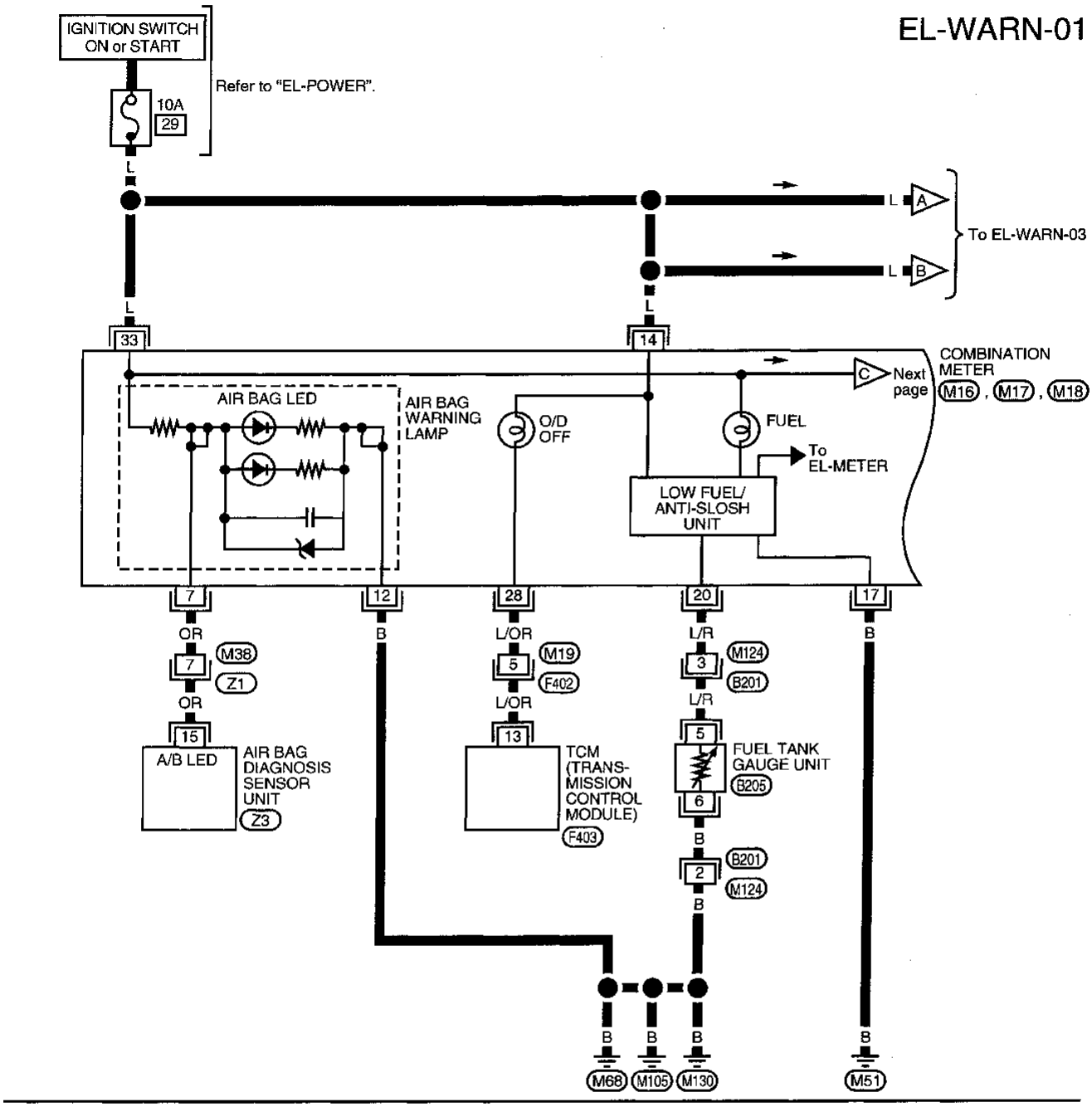


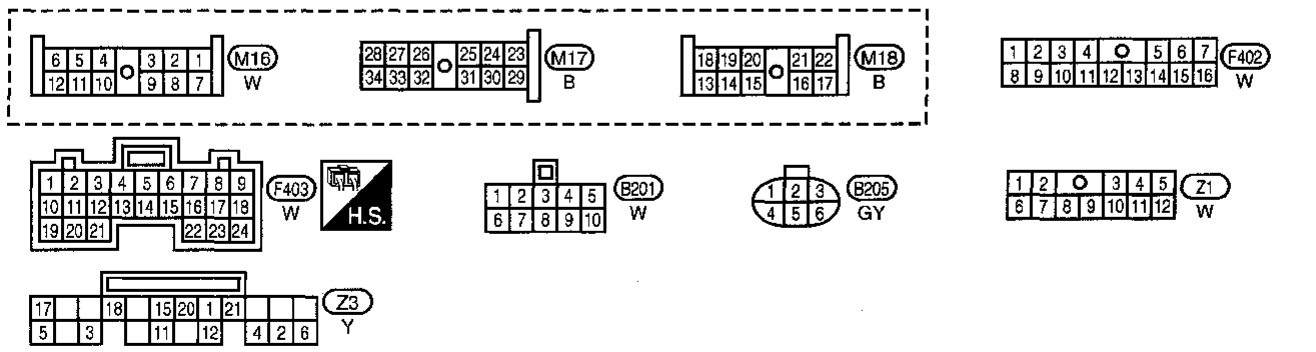
AEL749B

Wiring Diagram — WARN —

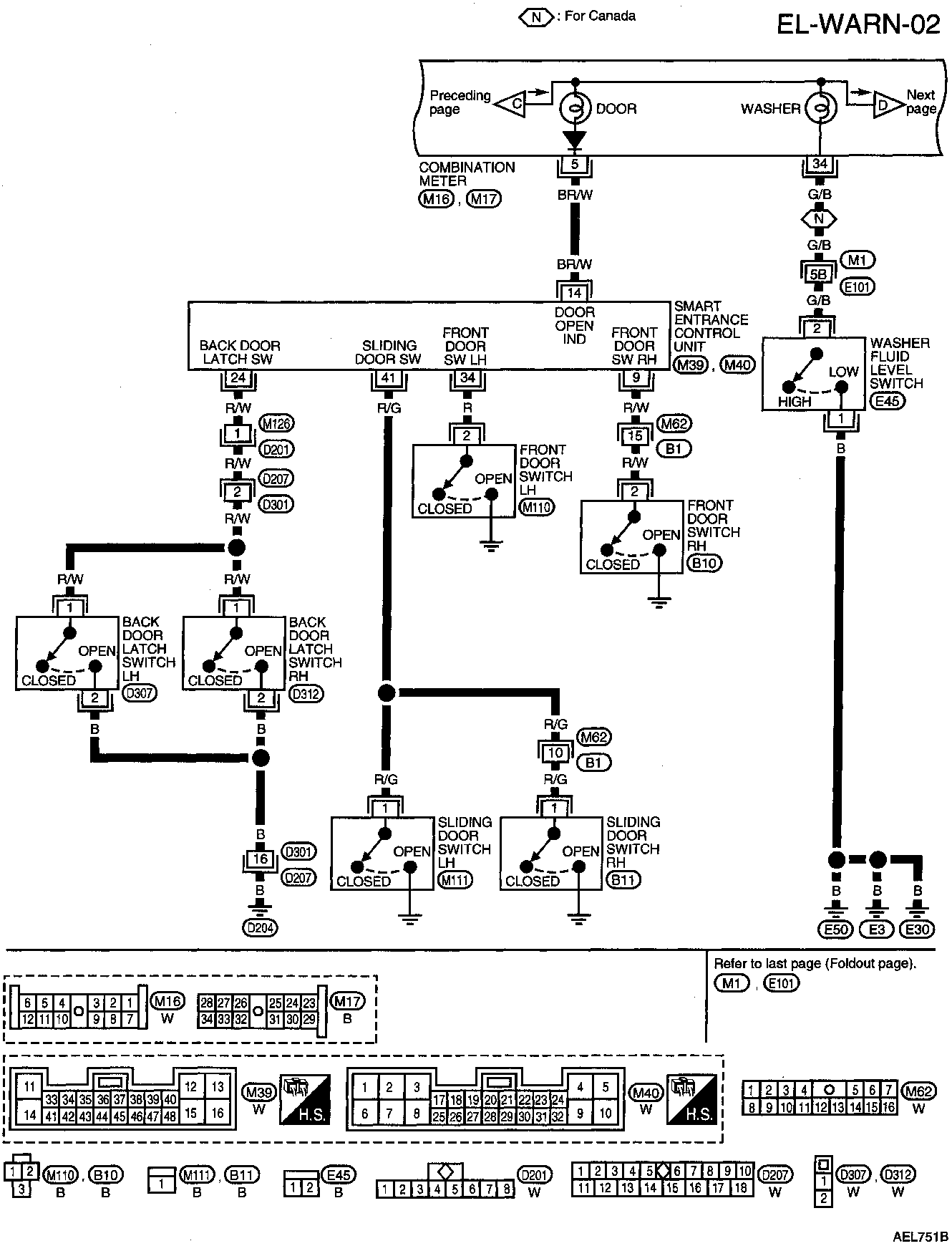
NDEL0053

EL-WARN-01

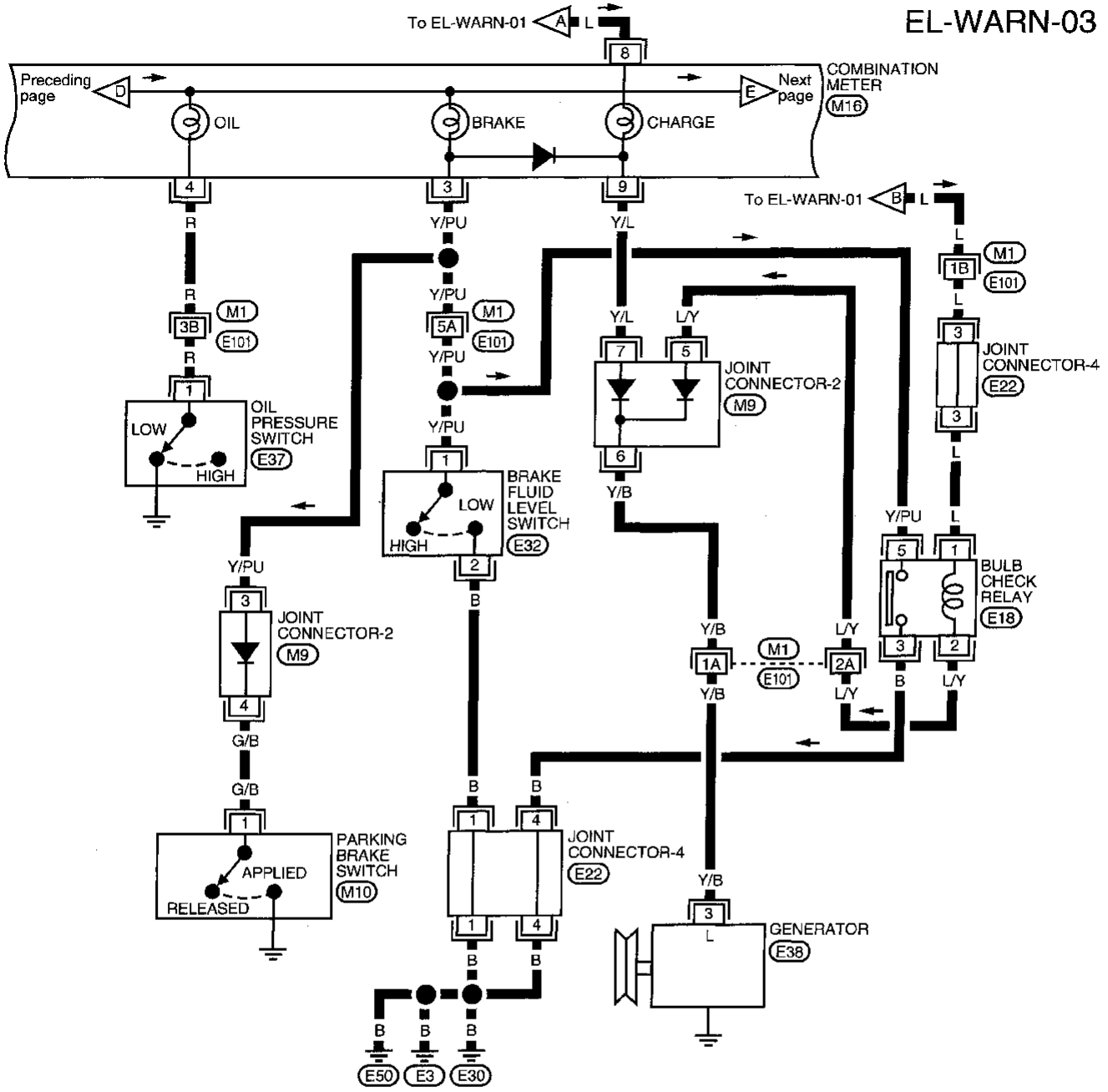


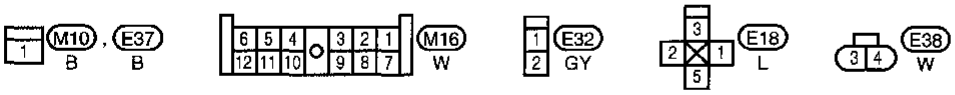


AEL750B


N: For Canada
EL-WARN-02
Preceding page
C
DOOR
WASHER
D
Next page
COMBINATION METER
M16, M17
5
BR/W
34
G/B
N
G/B
5B
M1
E101
BR/W
14
DOOR OPEN IND
SMART ENTRANCE CONTROL UNIT
M39, M40
BACK DOOR LATCH SW
SLIDING DOOR SW
FRONT DOOR SW LH
FRONT DOOR SW RH
24
41
34
9
G/B
2
WASHER FLUID LEVEL SWITCH
LOW
HIGH
E45
1
B
R/W
R/G
R
R/W
M126
1
D201
R/W
D207
2
D301
R/W
2
FRONT DOOR SWITCH LH
OPEN
CLOSED
M110
15
M62
B1
R/W
2
FRONT DOOR SWITCH RH
OPEN
CLOSED
B10
R/W
R/W
1
BACK DOOR LATCH SWITCH LH
OPEN
CLOSED
2
D307
B
1
BACK DOOR LATCH SWITCH RH
OPEN
CLOSED
2
D312
B
R/G
M62
10
B1
R/G
R/G
1
SLIDING DOOR SWITCH LH
OPEN
CLOSED
M111
1
SLIDING DOOR SWITCH RH
OPEN
CLOSED
B11
B
16
D301
D207
B
D204
B
B
B
E50
E3
E30
Refer to last page (Foldout page).
M1, E101
M16
W
M17
B
M39
W
H.S.
M40
W
H.S.
M62
W
M110, B10
B
B
M111, B11
B
B
E45
B
D201
W
D207
W
D307, D312
W
W
AEL751B

EL-WARN-03

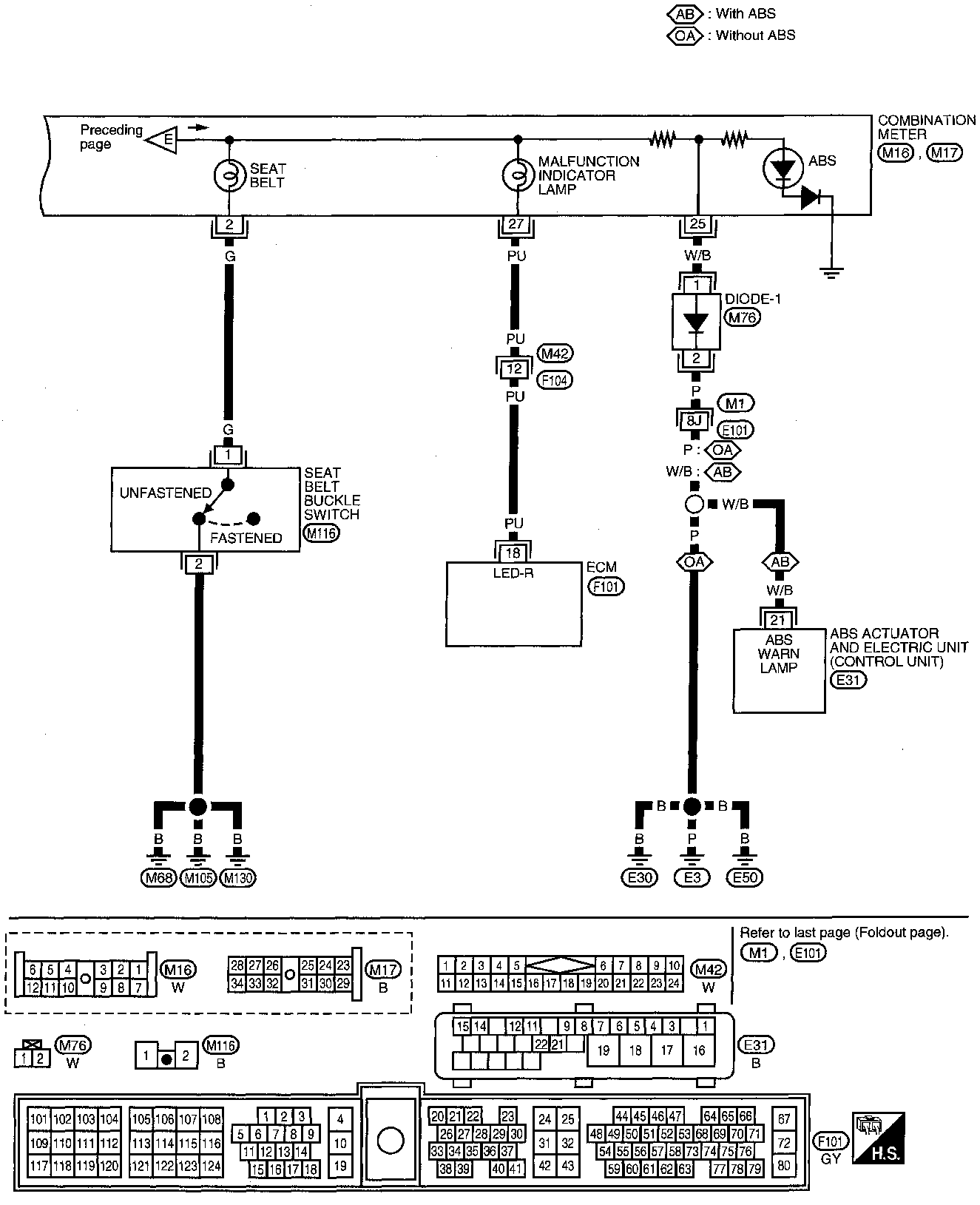




Refer to last page (Foldout page).
M1, E101
M9
E22

AEL752B

EL-WARN-04



AEL753B

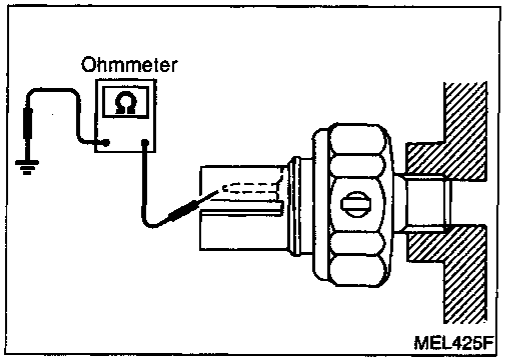
Electrical Component Inspection

NDEL0054

FUEL WARNING LAMP SENSOR CHECK

NDEL0054S01

- 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 "INSPECTION/FUEL TANK GAUGE UNIT" EL-82. If the fuel tank gauge unit is operating properly, inspect the low fuel level warning lamp bulb and anti-slosh unit for proper function.

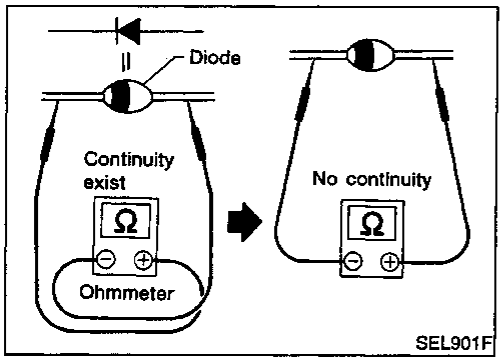


OIL PRESSURE SWITCH CHECK

NDEL0054S02

	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.

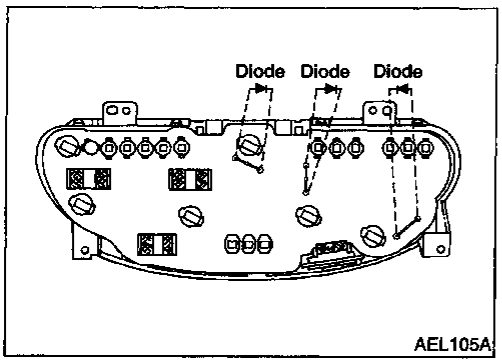


DIODE CHECK

NDEL0054S03

- 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.

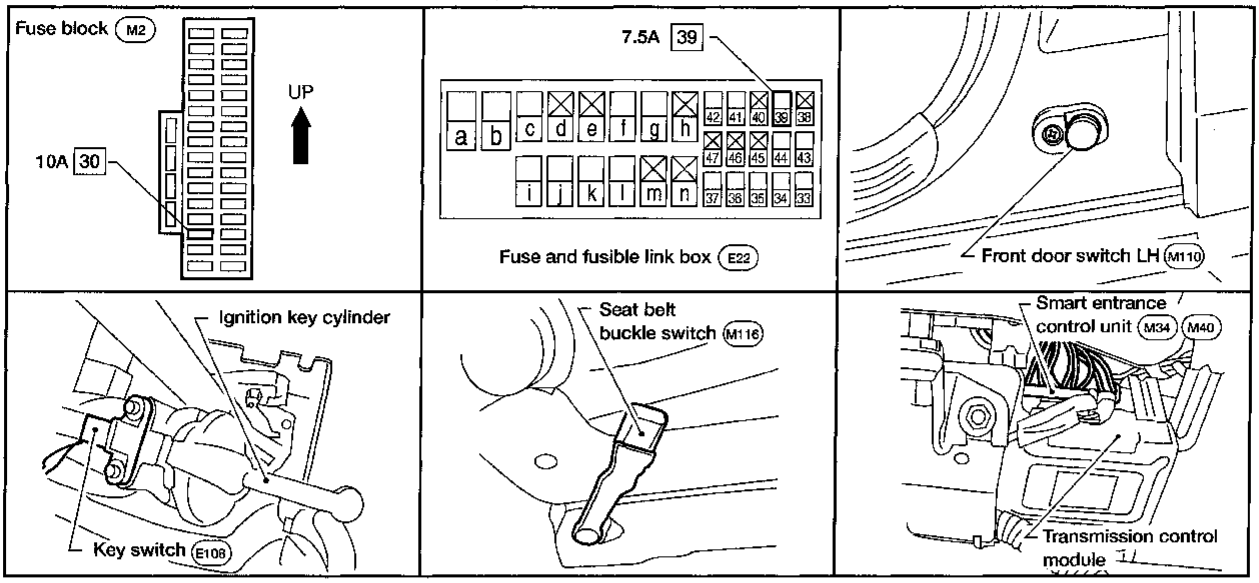


- Diodes for warning lamps are built into the combination meter printed circuit.

Refer to "Combination Meter", EL-77.

Component Parts and Harness Connector Location

NDEL0055



AEL193C

System Description

NDEL0056

POWER SUPPLY AND GROUND CIRCUIT

NDEL0056S01

The warning chime is integrated with the smart entrance control unit, which controls its operation.
Power is supplied at all times

- through 7.5A fuse (No. 39, located in the fuse and fusible link box)
- to smart entrance control unit terminal 13.

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 43.

Ground is supplied to smart entrance control unit terminal 10 through body grounds M68, M105 and M130.
When a signal, or combination of signals, is received by the smart entrance control unit, the warning chime will sound.

IGNITION KEY WARNING CHIME

NDEL0056S02

With the key in and the ignition switch in the OFF or ACC position, and the front door LH open, the warning chime will sound. Ground is supplied

- from key switch terminal 1
- to smart entrance control unit terminal 35 and
- from front door switch LH terminal 2
- to smart entrance control unit terminal 34.

Key switch terminal 2 is grounded through body grounds E3, E30 and E50.

LIGHT WARNING CHIME

NDEL0056S03

With ignition switch OFF or ACC, front door LH open, and lighting switch in 1ST or 2ND position, warning chime will sound. Ground is supplied

- from lighting switch terminal 3
- to smart entrance control unit terminal 26 and
- from front door switch LH terminal 2
- to smart entrance control unit terminal 34.

Lighting switch terminal 7 is grounded through body grounds M68, M105 and M130.

System Description (Cont'd)

SEAT BELT WARNING CHIME

NDEL0056S04

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

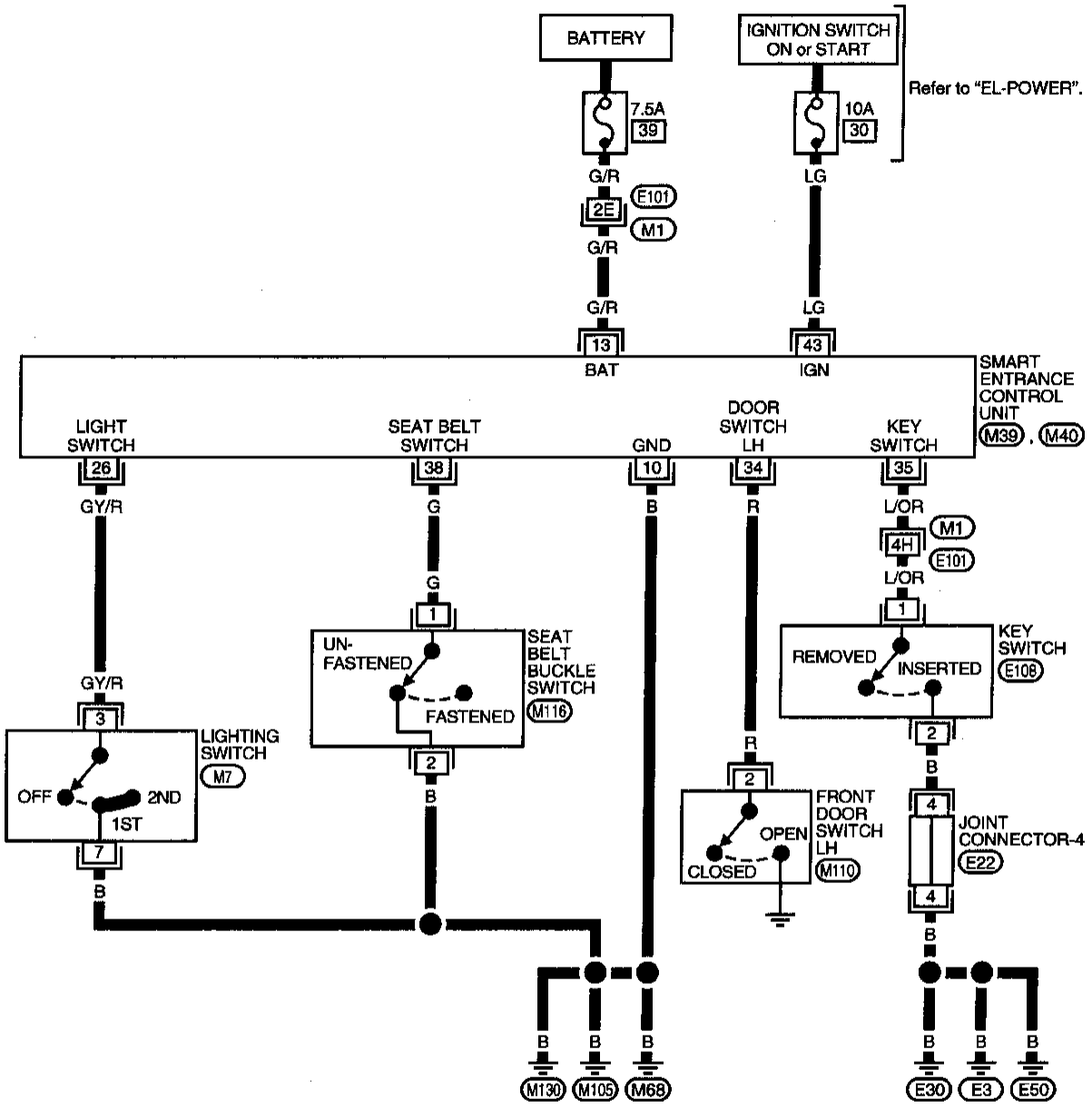
- from seat belt buckle switch terminal 1
- to smart entrance control unit terminal 38.

Seat belt buckle switch terminal 2 is grounded through body grounds M68, M105 and M130.

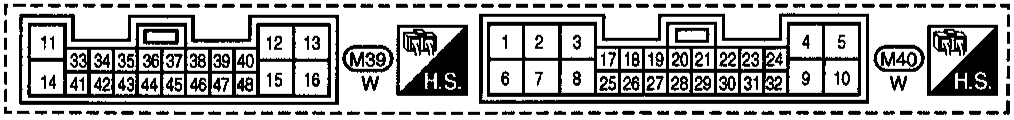
Wiring Diagram — CHIME —

NDEL0057

EL-CHIME-01



Refer to last page (Foldout page).
M1 , E101
E22



AEL778B

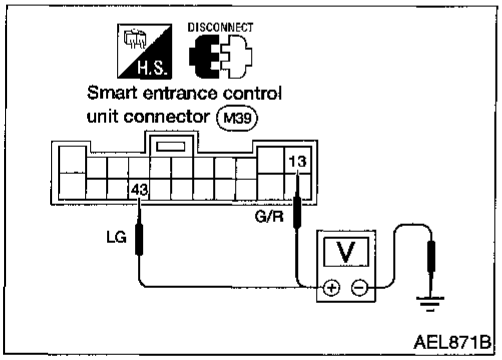
Trouble Diagnoses

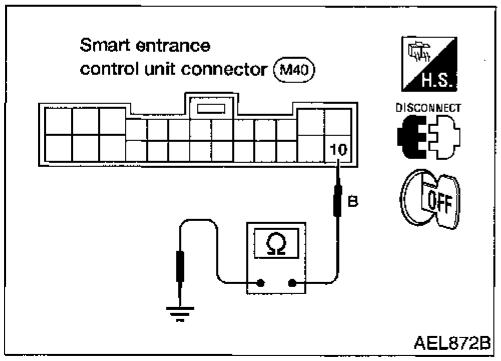
SYMPTOM CHART

NDEL0058

NDEL0058S01

REFERENCE PAGE (EL-)	96	97	97	98	98
SYMPTOM	POWER SUPPLY AND GROUND CIRCUIT CHECK	LIGHTING SWITCH INPUT SIGNAL CHECK	KEY SWITCH (INSERTED) CHECK	SEAT BELT BUCKLE SWITCH CHECK	FRONT DOOR SWITCH LH CHECK
Light warning chime does not activate.	X	X			X
Ignition key warning chime does not activate.	X		X		X
Seat belt warning chime does not activate.	X			X	
All warning chimes do not activate.	X				X





POWER SUPPLY AND GROUND CIRCUIT CHECK

NDEL0058S02

Power Supply Circuit Check

NDEL0058S0201

Terminals		Ignition switch position		
(+)	(−)	OFF	ACC	ON
13	Ground	Battery voltage	Battery voltage	Battery voltage
43	Ground	0V	0V	Battery voltage

Ground Circuit Check

NDEL0058S0202

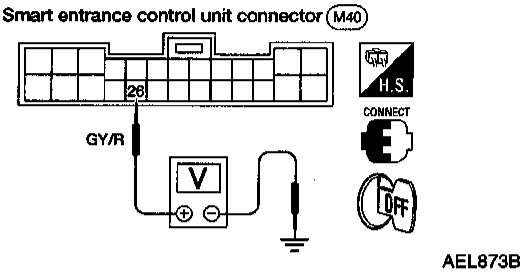
Terminals	Continuity
10 - Ground	YES

LIGHTING SWITCH INPUT SIGNAL CHECK

NDEL0058S03

1	CHECK LIGHTING SWITCH INPUT SIGNAL

Check voltage between control unit terminal 26 and ground.



AEL873B

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

OK or NG

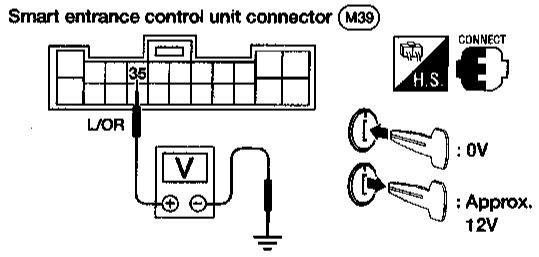
OK	▶	Lighting switch is OK.
NG	▶	**Check to following.** • Lighting switch • Lighting switch ground circuit • Harness for open or short between control unit and lighting switch

KEY SWITCH (INSERTED) CHECK

NDEL0058S04

1	CHECK KEY SWITCH INPUT SIGNAL

Check voltage between control unit terminal 35 and ground.



AEL874B

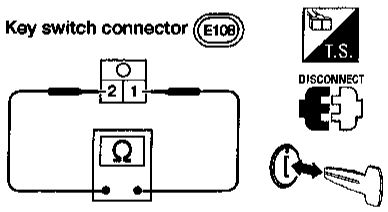
Voltage [V]:
Condition of key switch: Key is inserted.
0
Condition of key switch: Key is withdrawn.
Approx 12

OK or NG

OK	▶	Key switch is OK.
NG	▶	GO TO 2.

2	CHECK KEY SWITCH (INSERTED)

Check continuity between terminals 1 and 2.



AEL875B

Continuity:
Condition of key switch: Key is inserted.
Yes
Condition of key switch: Key is withdrawn.
No

OK or NG

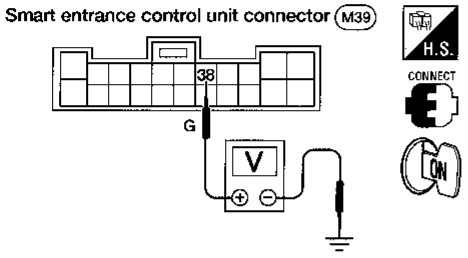
OK	▶	**Check the following.** • Key switch ground circuit • Harness for open or short between control unit and key switch
NG	▶	Replace key switch.

SEAT BELT BUCKLE SWITCH CHECK

=NDEL0058S05

1 CHECK SEAT BELT BUCKLE SWITCH INPUT SIGNAL

1. Turn ignition switch ON.
2. Check voltage between control unit terminal 38 and ground.



AEL876B

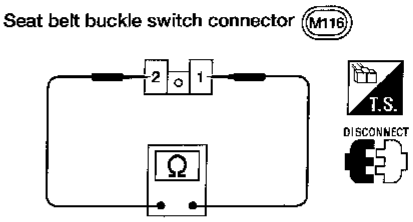
Voltage [V]:
Condition of seat belt buckle switch: Fastened.
Approx. 12
Condition of seat belt buckle switch: Unfastened.
0

OK or NG

OK	▶	Seat belt buckle switch is OK.
NG	▶	GO TO 2.

2 CHECK SEAT BELT BUCKLE SWITCH

Check continuity between terminals 1 and 2 when seat belt is fastened and unfastened.



AEL877B

Continuity:
Seat belt is fastened.
No
Seat belt is unfastened.
Yes

OK or NG

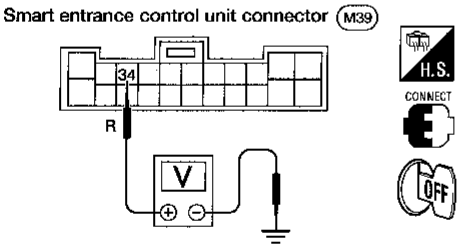
OK	▶	**Check the following.** • Seat belt buckle switch ground circuit • Harness for open or short between control unit and seat belt buckle switch
NG	▶	Replace seat belt buckle switch.

FRONT DOOR SWITCH LH CHECK

NDEL0058S06

1 CHECK FRONT DOOR SWITCH LH INPUT SIGNAL

Check voltage between control unit terminal 34 and ground.



AEL878B

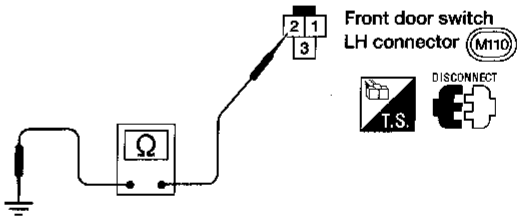
Voltage [V]:
Condition of front door LH: CLOSED
Approx. 12
Condition of front door LH: OPENED
0

OK or NG

OK	▶	Frond door switch LH is OK.
NG	▶	GO TO 2.

2 CHECK FRONT DOOR SWITCH LH

Check continuity between terminal 2 and switch body.



AEL879B

Continuity:
Front door switch LH is pushed.
No
Front door switch LH is released.
Yes

OK or NG

OK	▶	**Check the following.** • Front door switch LH ground condition • Harness for open or short between control unit and front door switch LH
NG	▶	Replace front door switch LH.

System Description

NDEL0059

WIPER OPERATION

NDEL0059S01

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, E30 and E50.

Low and High Speed Wiper Operation

NDEL0059S0101

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

NDEL0059S0102

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 blades reach park position on windshield, front wiper motor ground is interrupted and the front wiper motor stops.

Intermittent Operation

NDEL0059S0103

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, the front wiper amplifier cycles the front wiper motor. Ground is supplied in the same manner as low speed wiper operation.

WASHER OPERATION

NDEL0059S02

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

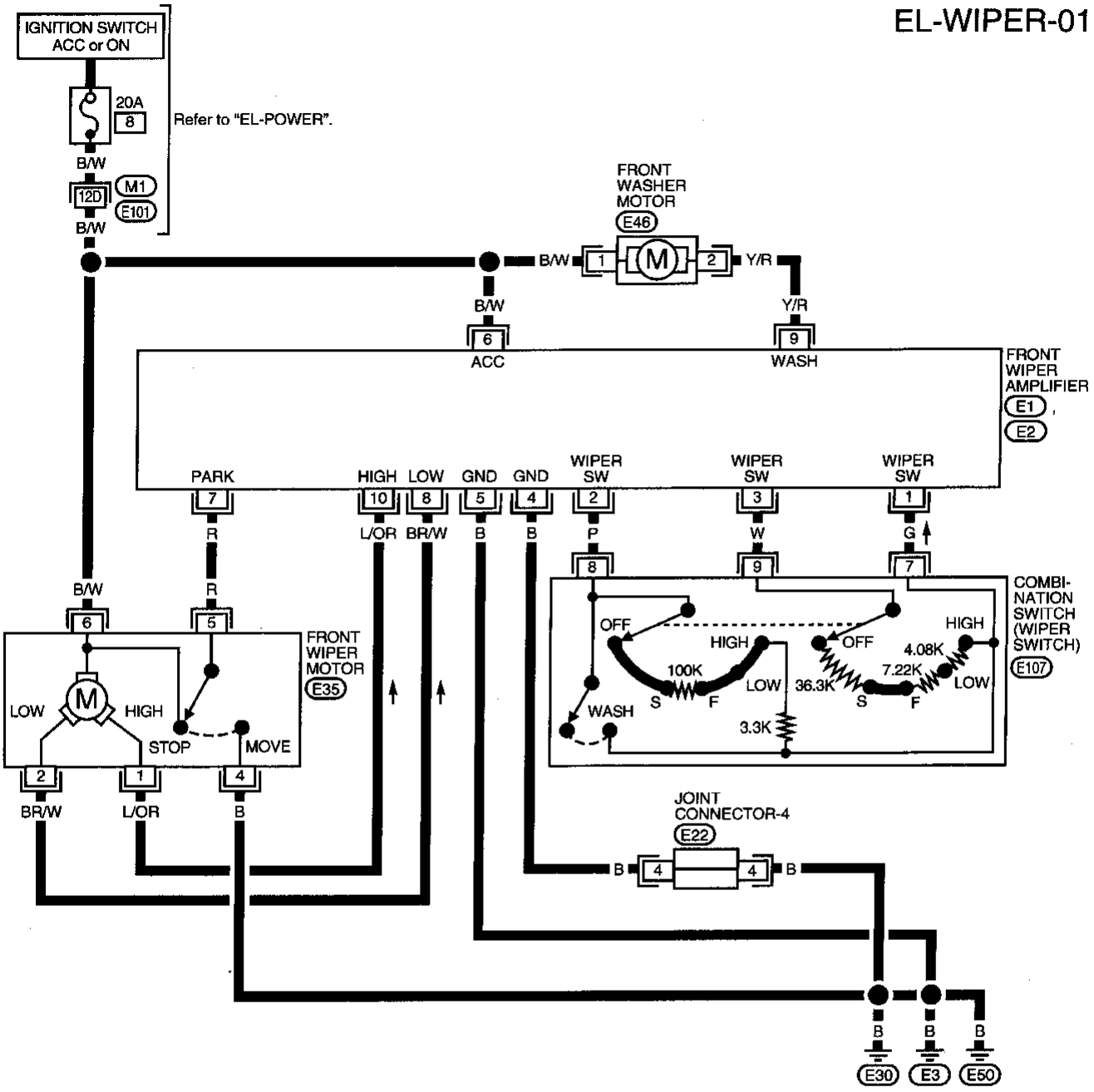
- to front washer motor terminal 2
- from front wiper amplifier terminal 9, and
- to amplifier terminals 4 and 5
- through body grounds E3, E30 and E50.

With power and ground supplied, the front 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 speed for approximately 3 seconds. This feature is controlled by the front wiper amplifier in the same manner as intermittent operation.

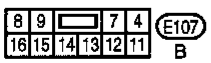
Wiring Diagram — WIPER —

NDEL0060

EL-WIPER-01



Refer to last page (Foldout page).
M1 , E101
E22



AEL739B

Trouble Diagnoses

NDEL0061

FRONT WIPER AMP INSPECTION TABLE

NDEL0061S01

Terminal No.	Wire color	Ignition switch condition	Item	Condition	Voltage (Approximate value)
1	G	ACC or ON	Combination switch (wiper switch ground)	—	—
2	P	ACC or ON	Combination switch (wiper switch)	Intermittent (slow)	3.5
				Intermittent (fast)	3.5
				Low or high	3.6
3	W	ACC or ON	Combination switch (wiper switch)	Intermittent (slow)	3.3
				Intermittent (fast)	3.5
				Low or high	3.7
4	B	—	Ground	—	—
5	B	—	Ground	—	—
6	B/W	—	Power supply	Ignition switch in ACC or ON position	12
				Ignition switch in OFF position	0
7	R	ACC or ON	Front wiper motor (position switch)	When wiper blade is not in park position	0
				When wiper blade is in park position	12
8	BR/W	ACC or ON	Front wiper motor (low)	When wiper is operating at low speed	0
				All other conditions	12
9	Y/R	ACC or ON	Front washer motor	When washer motor is operating	0
				All other conditions	12
10	L/OR	ACC or ON	Front wiper motor (high)	When wiper is operating at high speed	0
				All other conditions	12

Removal and Installation

NDEL0062

REMOVAL

NDEL0062S01

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

NDEL0062S02

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

NDEL0062S03

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.

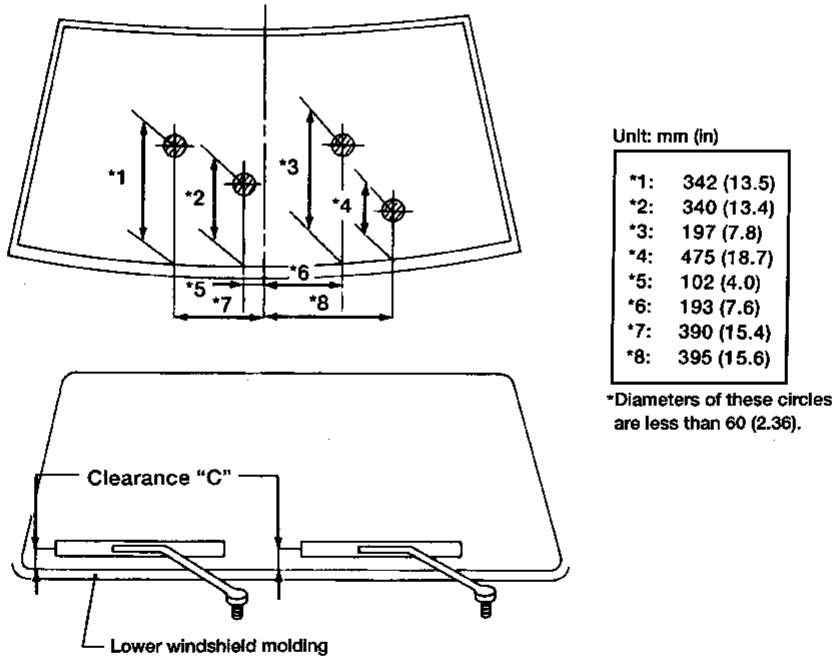
Clearance "C": 47 - 87 mm (1.85 - 3.43 in)

Washer Nozzle Adjustment

NDEL0149

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.

Front wiper and washer

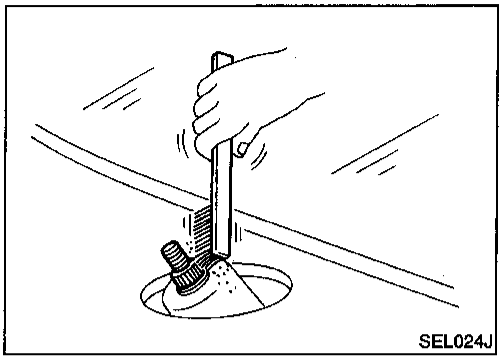


Unit: mm (in)

*1:	342 (13.5)
*2:	340 (13.4)
*3:	197 (7.8)
*4:	475 (18.7)
*5:	102 (4.0)
*6:	193 (7.6)
*7:	390 (15.4)
*8:	395 (15.6)

*Diameters of these circles are less than 60 (2.36).

AEL179C


SEL024J

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

System Description/Except for Glass Hatch Model

NDEL0063

POWER SUPPLY AND GROUND CIRCUIT

NDEL0063S01

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 motor terminal 1 and
- to rear washer motor terminal 1.

Ground is supplied

- to rear wiper switch terminal 4
- through body grounds M68, M105 and M130.

Ground is also supplied

- to rear wiper motor terminal 2
- through body ground D204.

WIPER OPERATION

NDEL0063S02

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

- to rear wiper motor terminal 3
- through rear wiper switch terminal 1.

WASHER OPERATION

NDEL0063S03

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

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

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 two times.

AUTO STOP OPERATION

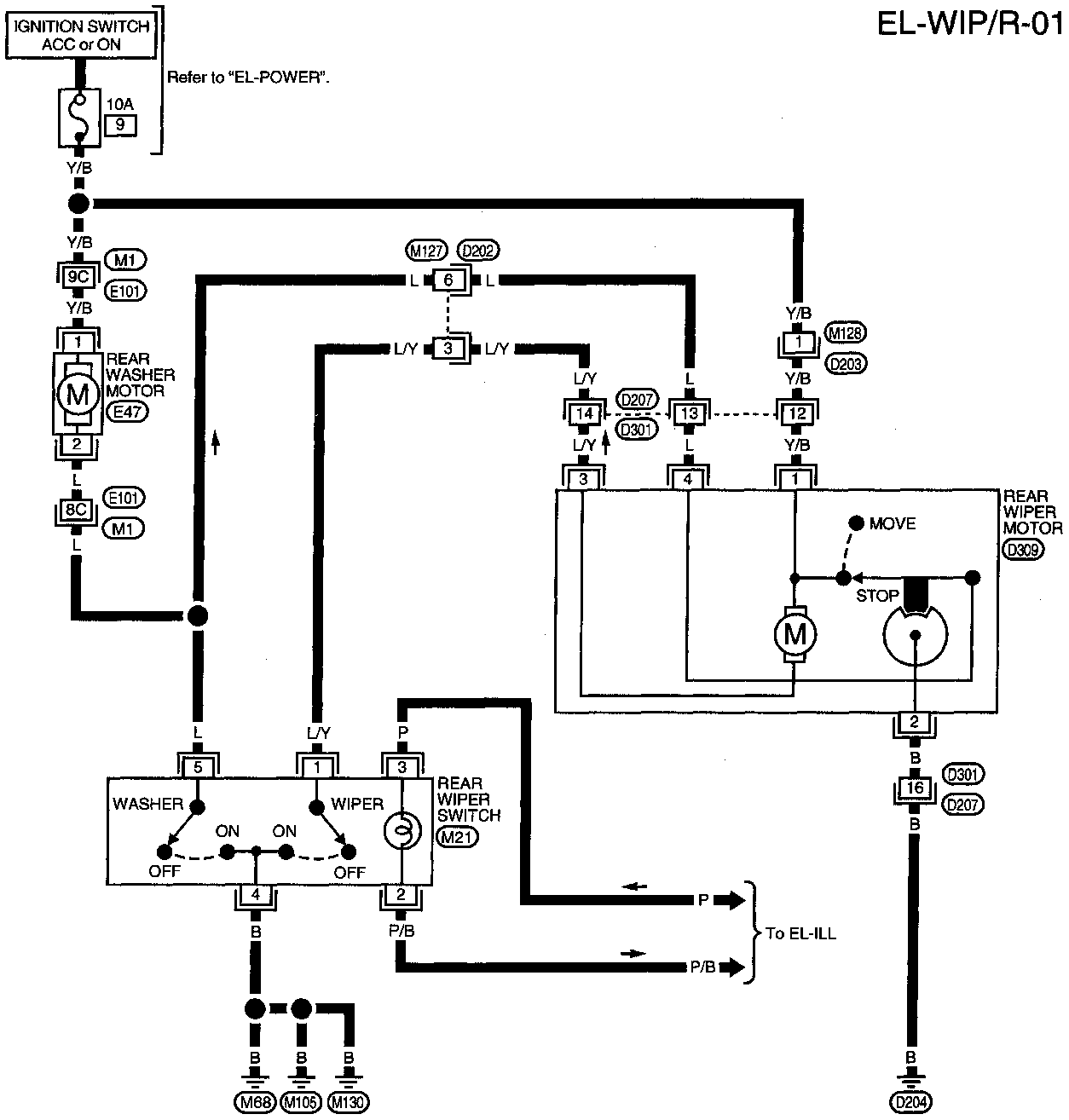
NDEL0063S04

When the rear wiper switch is placed in the OFF position, the rear wiper motor will continue to operate until the rear wiper blade reaches the park position.
The ground circuit is now routed through the rear wiper motor terminal 2. This allows the rear wiper motor to operate until the rear wiper blade reaches the park position. The rear wiper motor ground is interrupted when the rear wiper blade reaches the park position and the rear wiper motor stops.

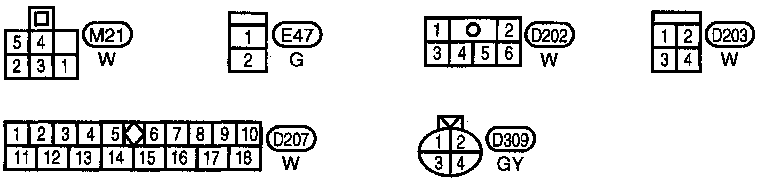
Wiring Diagram — WIP/R — /Except for Glass Hatch Model

NDEL0064

EL-WIP/R-01



Refer to last page (Foldout page).
M1 , E101



AEL740B

System Description/For Glass Hatch Model

NDEL0065

POWER SUPPLY AND GROUND CIRCUIT

NDEL0065S01

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 D204.

Ground is also supplied
- to rear wiper switch terminal 4
- through body grounds M68, M105 and M130.

With the glass hatch open, the glass hatch latch switch closes and ground is supplied
- to rear wiper motor terminal 1
- through glass hatch latch 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

NDEL0065S02

When the rear wiper switch is in the ON position, ground is supplied
- to rear wiper motor terminal 6
- through rear wiper switch terminal 1.

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

WASHER OPERATION

NDEL0065S03

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 wiper switch terminal 5.

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.

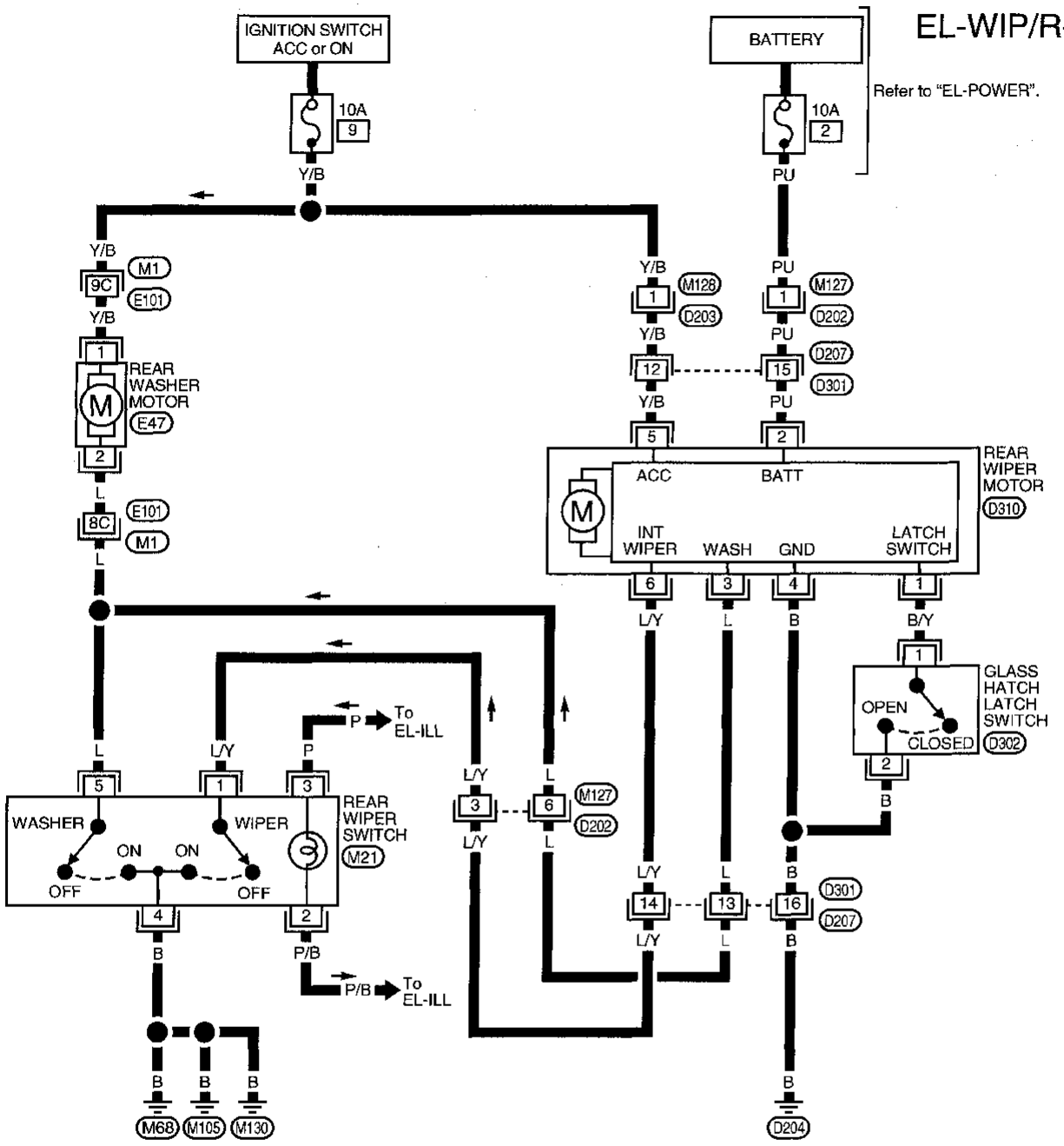
AUTO STOP OPERATION

NDEL0065S04

When the rear wiper switch is placed in the OFF position, the rear wiper motor will continue to operate until the rear wiper blade reaches the park position.
The ground circuit is now routed through the rear wiper motor terminal 4. This allows the rear wiper motor to operate until the rear wiper blade reaches the park position. The rear wiper motor ground is interrupted when the rear wiper blade reaches the park position, and the rear wiper motor stops.

Wiring Diagram — WIP/R — /For Glass Hatch Model

NDEL0066



Refer to last page (Foldout page).
M1 , E101

M21 W
E47 G , D302 G
D202 W
D203 W
D207 W
D310 GY

AEL741B

Removal and Installation

NDEL0067

REMOVAL

NDEL0067S01

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

NDEL0067S02

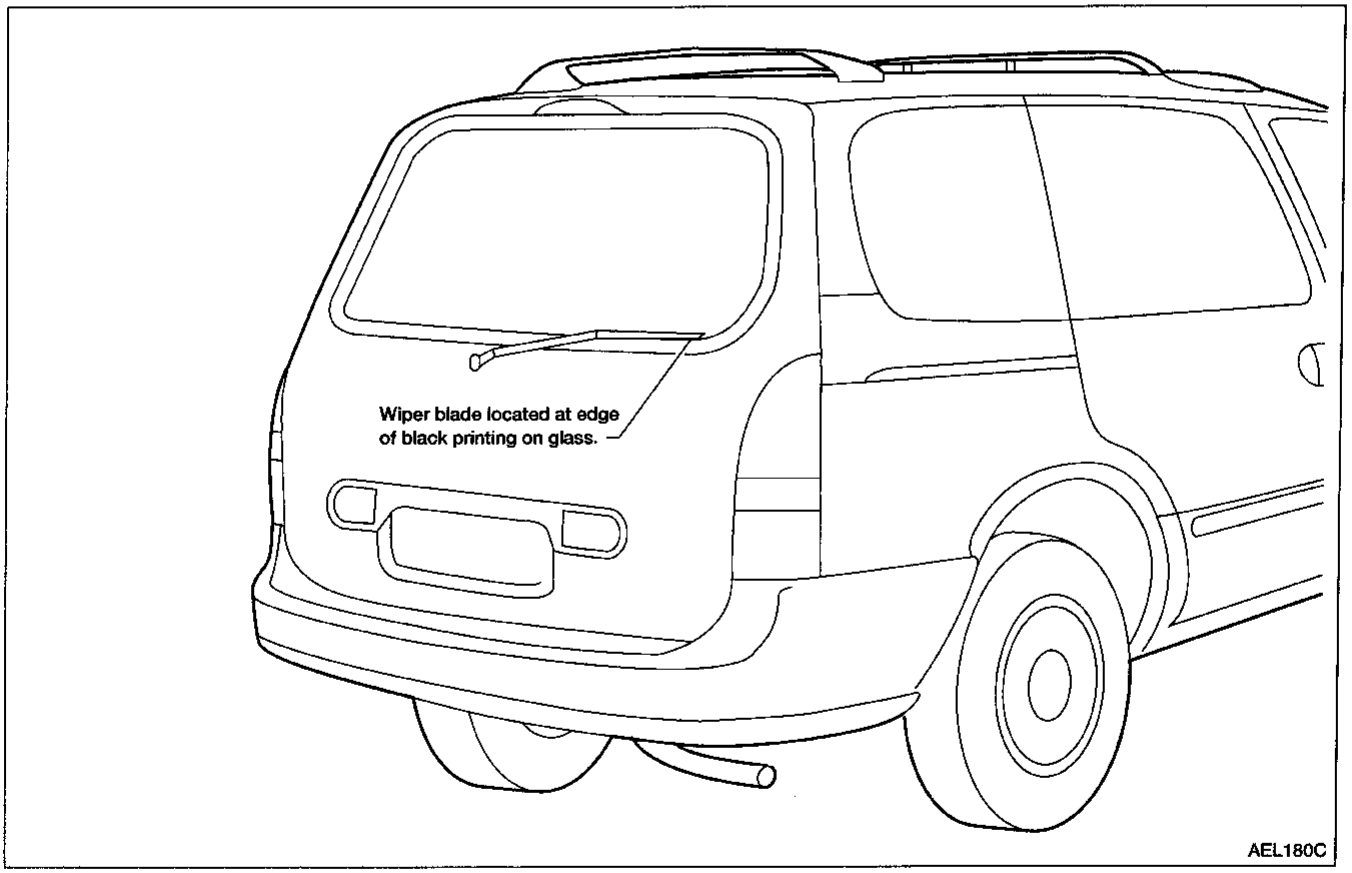
1. Connect washer solvent hose.
2. Place wiper arm base over pivot shaft and firmly push wiper arm onto pivot shaft.
3. Gently tilt wiper arm downward until contacting rear glass.

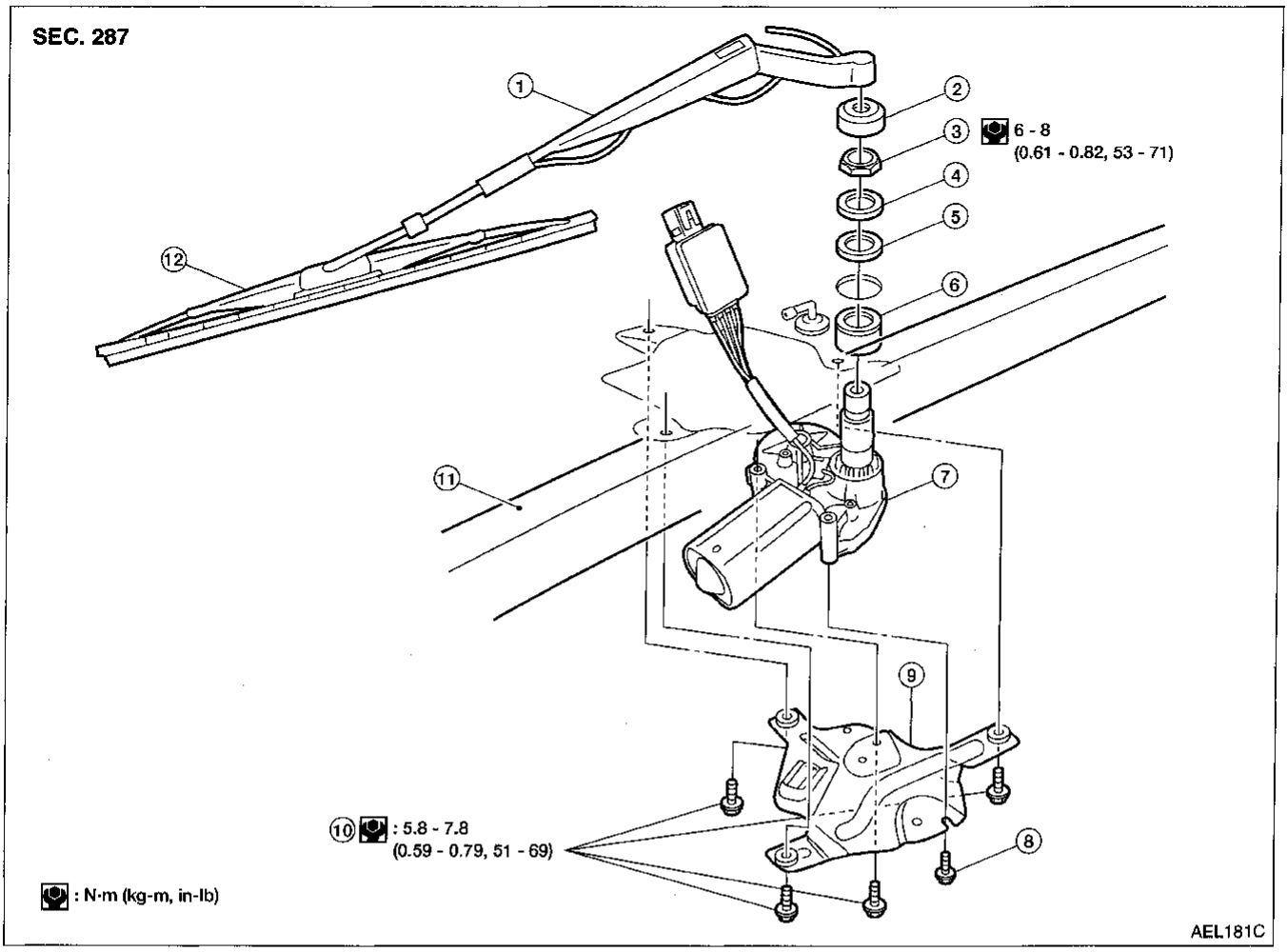
WIPER ARM ADJUSTMENT

NDEL0067S03

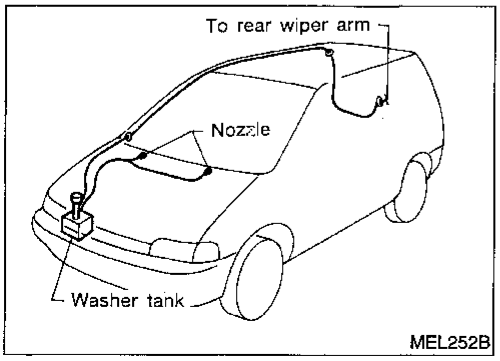
1. With wiper arm removed, turn on wiper and allow it to cycle two or three times, then turn the wiper switch to OFF and allow wiper motor to return to "park" position.
2. Install wiper arm and align splines so that the wiper blade is located on the edge of the black printing on the rear glass.
3. With 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 blade 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.





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



Washer Fluid and Check Valve

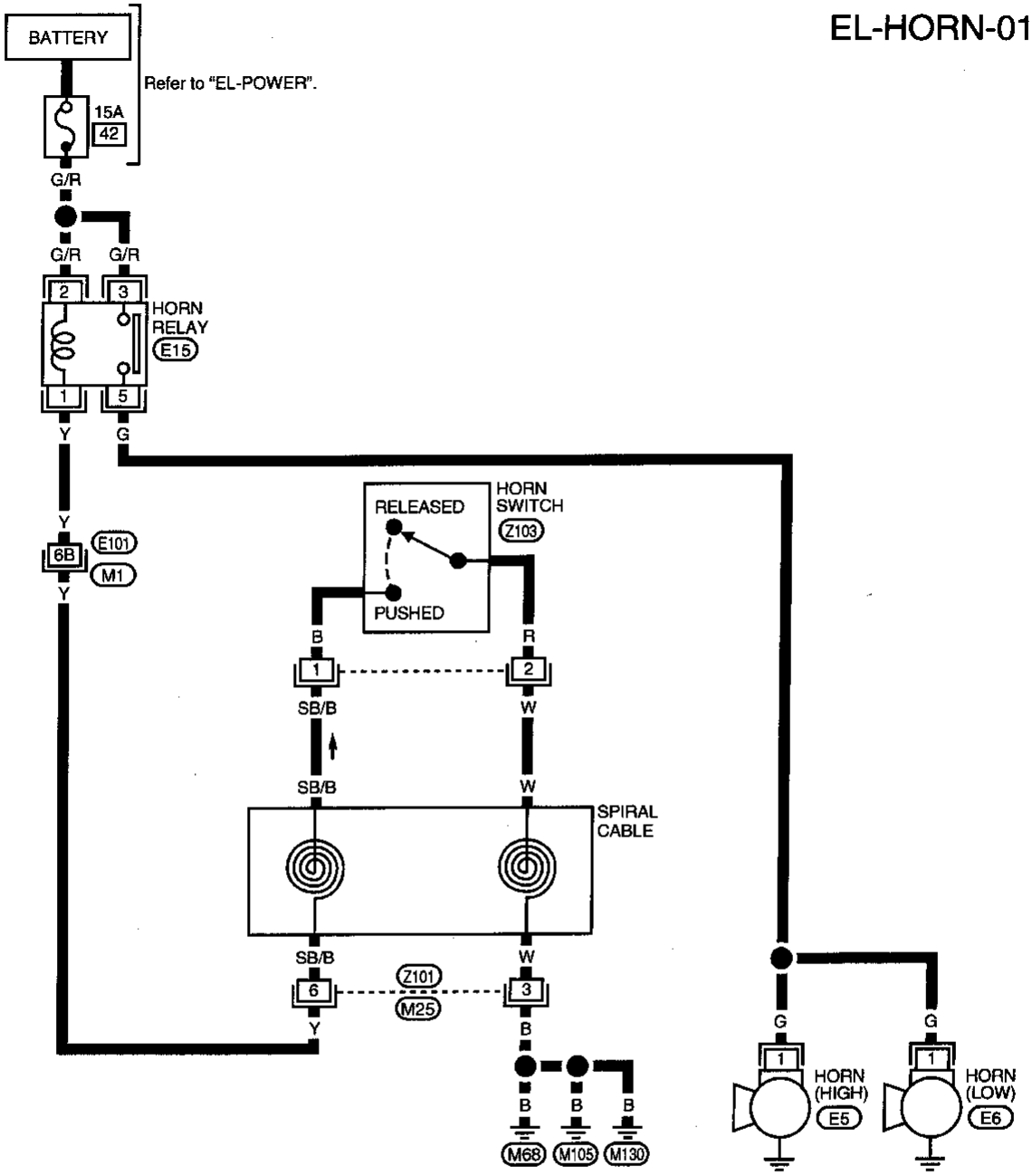
NDEL0150

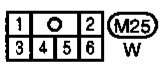
- A check valve is provided in the washer fluid line. Be careful not to connect check valve to washer tube in the wrong direction.

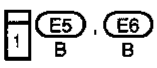
Wiring Diagram — HORN —

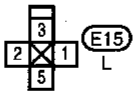
NDEL0068

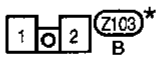
EL-HORN-01











Refer to last page (Foldout page).
M1, E101

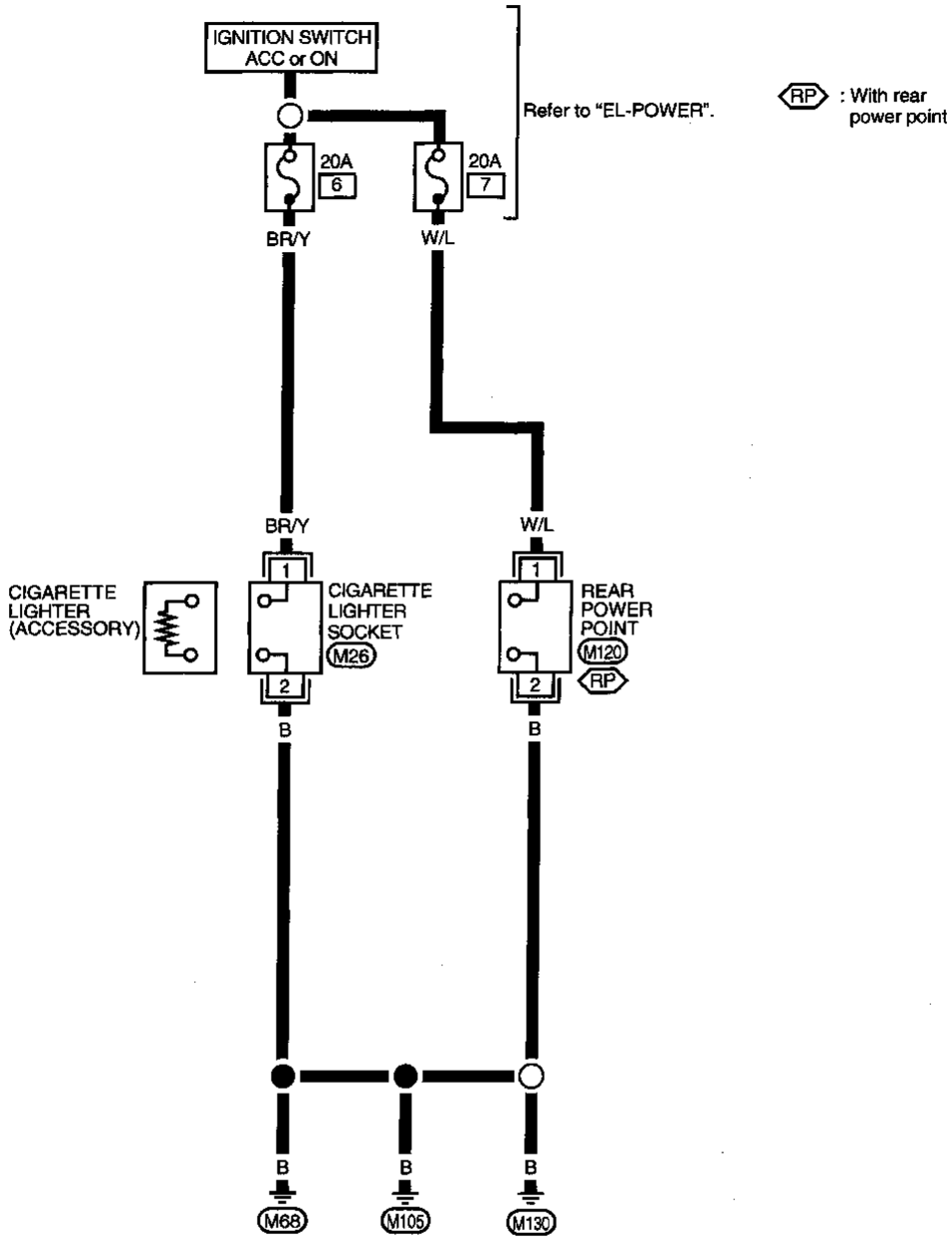
*: This connector is not shown in "HARNESS LAYOUT".

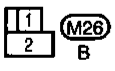
AEL754B

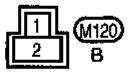
Wiring Diagram — CIGAR —

NDEL0069

EL- CIGAR-01



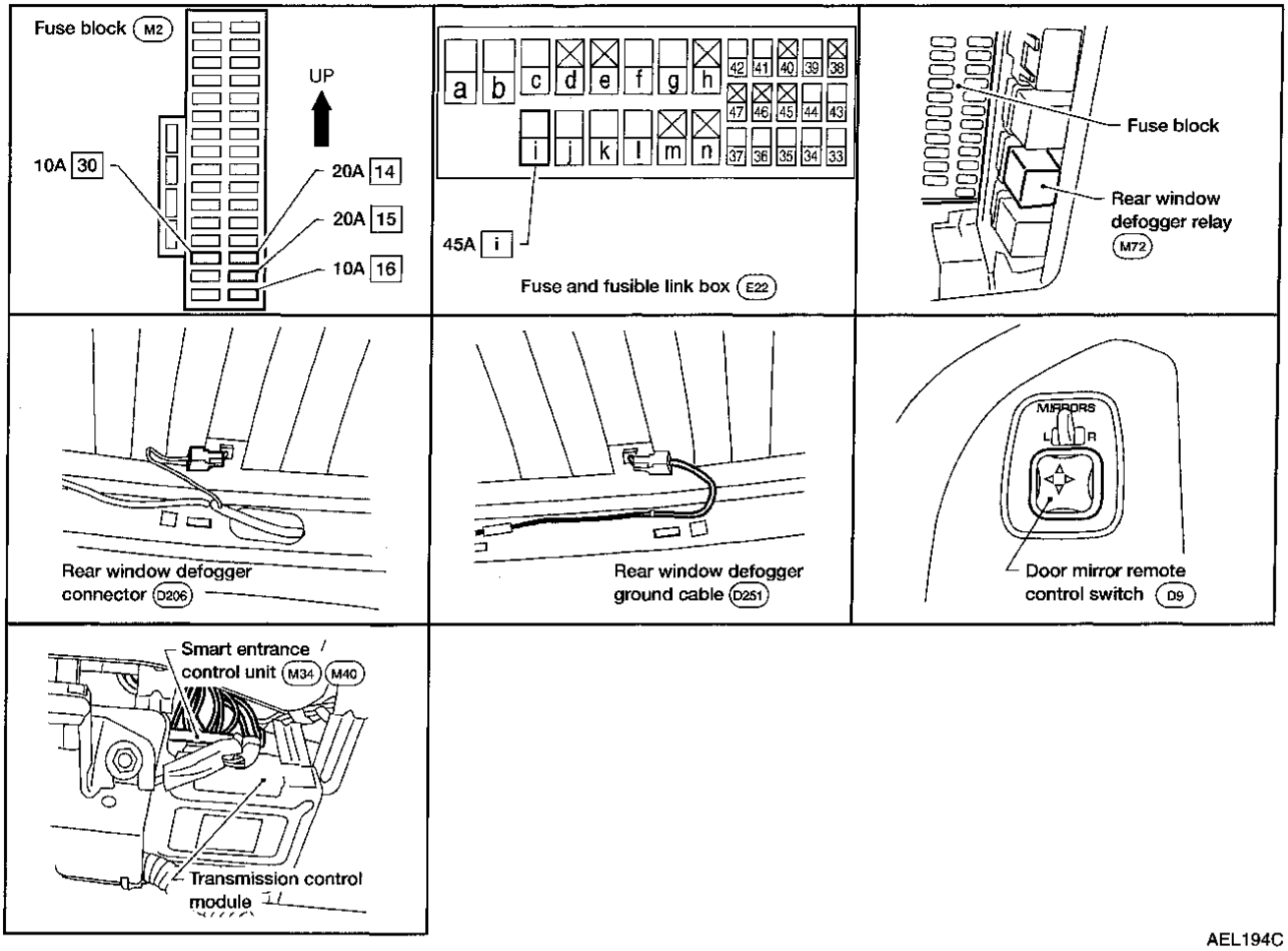




AEL755B

Component Parts and Harness Connector Location

NDEL0070



AEL194C

System Description

NDEL0071

The rear window defogger system is controlled by the smart entrance control unit. The rear window defogger operates for approximately 15 minutes.
Power is supplied at all times

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

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

- to the rear window defogger relay 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 43.

Ground is supplied to rear window defogger switch terminal 2 through body grounds M68, M105 and M130.
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 23.

Then, smart entrance control unit terminal 22 supplies ground to the rear window defogger relay terminal 2.
With power and ground supplied, the rear window defogger relay is energized.
Power is then supplied

- through terminals 6 and 3 of the rear window defogger relay
- through 20A fuses (No. 15 and 14, located in the fuse block)
- to rear window defogger terminal 1.

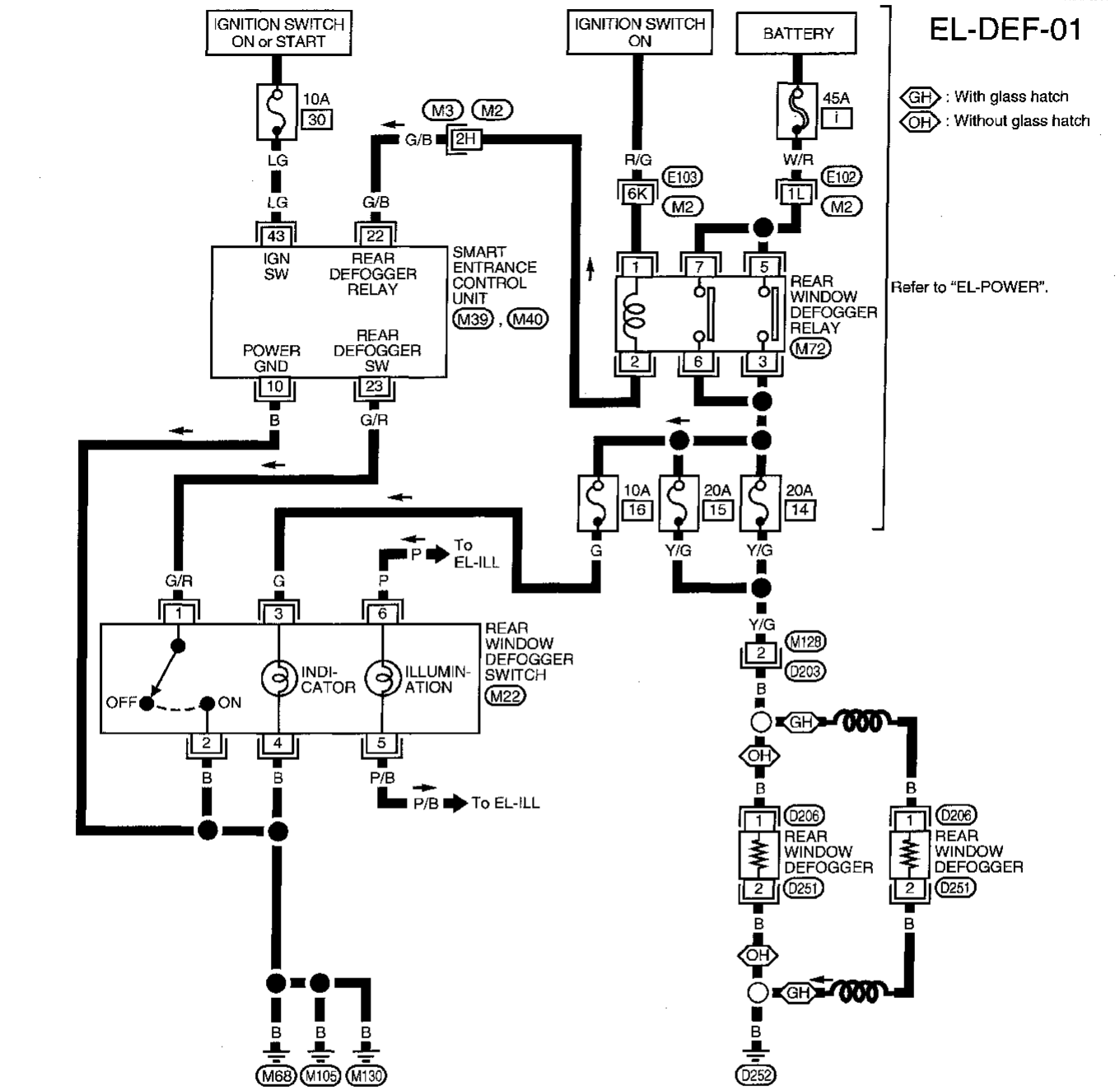
The rear window defogger has an independent ground.
With power and ground supplied, the rear window defogger filaments heat and defog the rear window.
With the rear window defogger relay energized, power is also supplied

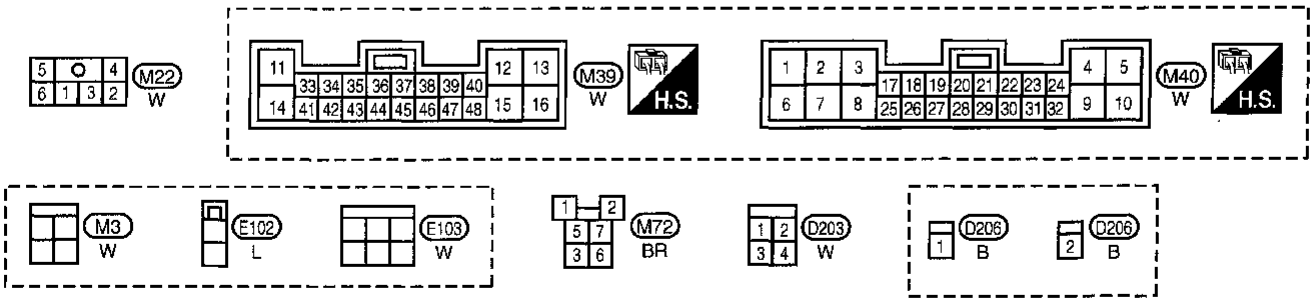
- from terminals 6 and 3 of the rear window defogger relay
- through 10A fuse (No.16, located in the fuse block).
- to terminal 3 of the rear window defogger switch

Ground is supplied to rear window defogger switch terminal 4 through body grounds M68, M105 and M130.
With power and ground supplied, the rear window defogger indicator illuminates in the rear window defogger switch.

Wiring Diagram — DEF —

NDEL0072





AEL756B

Trouble Diagnoses

NDEL0073

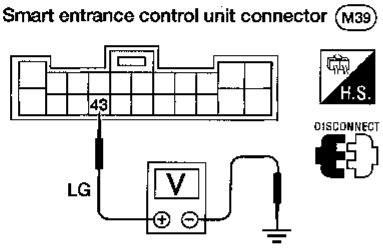
DIAGNOSTIC PROCEDURE

NDEL0073S01

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

1 CHECK IGNITION INPUT SIGNAL

Check voltage between control unit terminal 43 and ground.



AEL948B

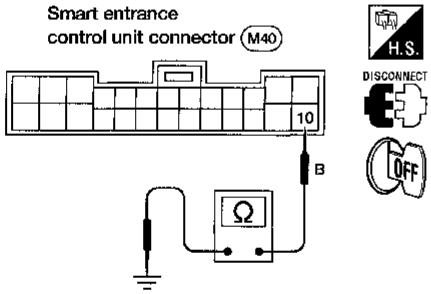
Voltage [V]:
Ignition switch is ON.
Approx. 12
Ignition switch is OFF.
0

OK or NG

OK	▶	GO TO 2.
NG	▶	**Check the following** • 10A fuse (No. 30, located in the fuse block) • Harness for open or short between control unit and fuse.

2 CHECK CONTROL UNIT GROUND CIRCUIT

Check continuity between control unit terminal 10 and ground.



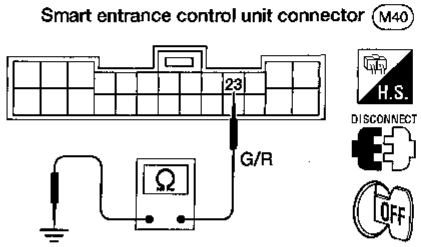
AEL872B

Does continuity exist?

Yes	▶	GO TO 3.
No	▶	Repair harness or connectors.

3 CHECK REAR WINDOW DEFOGGER SWITCH INPUT SIGNAL

Check continuity between control unit terminal 23 and ground.



AEL950B

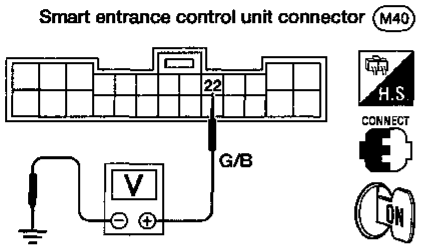
Continuity:
Rear window defogger switch is pushed.
Yes
Rear window defogger switch is released.
No

OK or NG

OK	▶	GO TO 4.
NG	▶	**Check the following** • Rear window defogger switch (Refer to EL-116) • Harness for open or short between control unit and rear window defogger switch • Rear window defogger switch ground circuit.

4	CHECK REAR WINDOW DEFOGGER OUTPUT SIGNAL

1. Turn ignition switch to ON position.
2. Check voltage between control unit harness terminal 22 and ground.



AEL951B

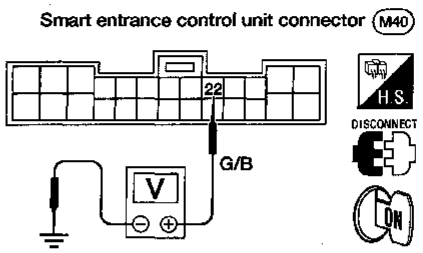
Voltage [V]:
Rear window defogger switch is OFF.
Approx. 12
Rear window defogger switch is ON.
0

OK or NG

OK	▶	**Check the following** • Rear window defogger relay (Refer to EL-116) • Rear window defogger circuit • Rear window defogger filament check (Refer to EL-117.)
NG	▶	GO TO 5.

5	CHECK DEFOGGER RELAY COIL SIDE CIRCUIT

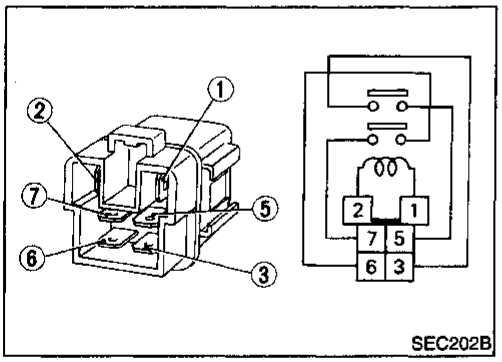
1. Disconnect control unit connector.
2. Turn ignition switch to ON position.
3. Check voltage between control unit terminal 22 and ground.



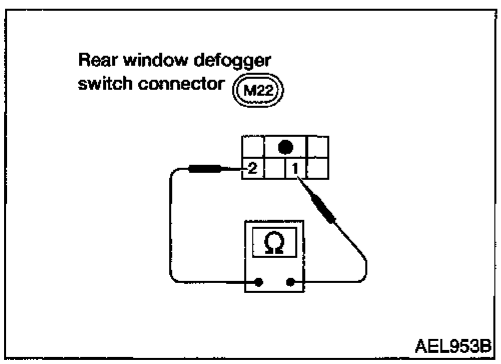
AEL952B

Does battery voltage exist?

Yes	▶	Replace control unit.
No	▶	**Check the following** • Harness for open or short between ignition switch and rear window defogger relay • Rear window defogger relay • Harness for open or short between rear window defogger relay and control unit.



SEC202B



AEL953B

Electrical Components Inspection

NDEL0074

REAR WINDOW DEFOGGER RELAY

NDEL0074S01

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

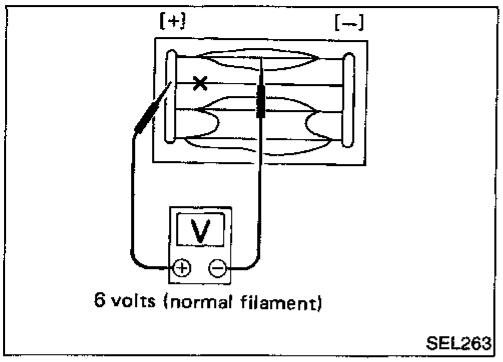
Condition	Continuity
12V direct current supply between terminals 1 and 2	Yes
No current supply	No

REAR WINDOW DEFOGGER SWITCH

NDEL0074S02

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

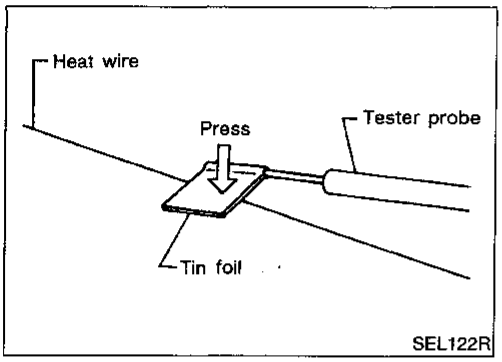
Terminals	Condition	Continuity
1 - 2	Rear window defogger switch is pushed.	Yes
	Rear window defogger switch is released.	No



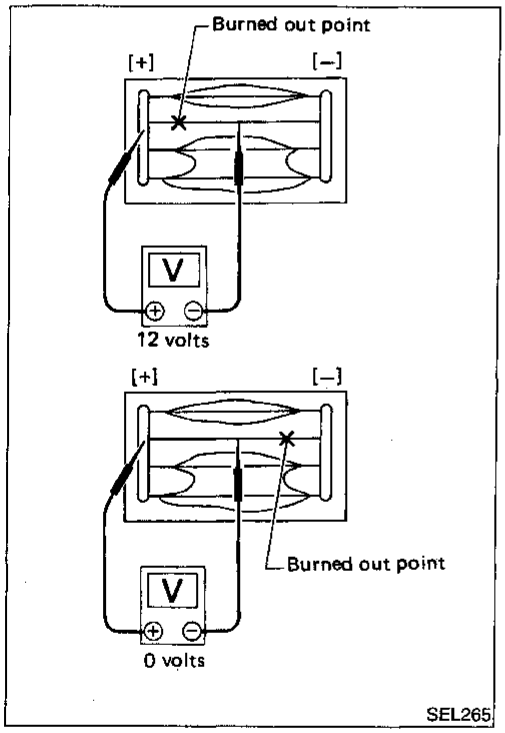
Filament Check

NDEL0075

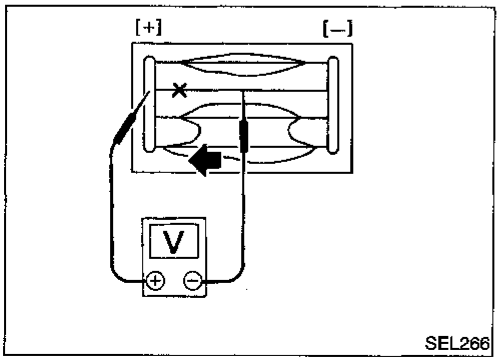
1. Attach probe circuit tester (in volt range) to middle portion of each filament.



- **When measuring voltage, wrap tin foil around the top of the negative probe. Then press the foil against the wire with your finger.**



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. Test needle will swing abruptly when probe passes the point.

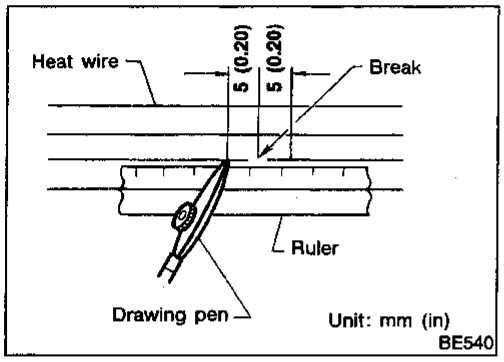
Filament Repair

NDEL0076

REPAIR EQUIPMENT

NDEL0076S01

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



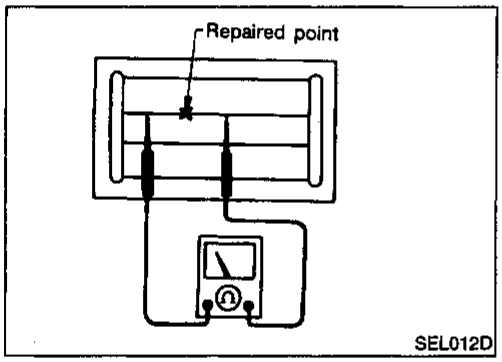
REPAIRING PROCEDURE

NDEL0076S02

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

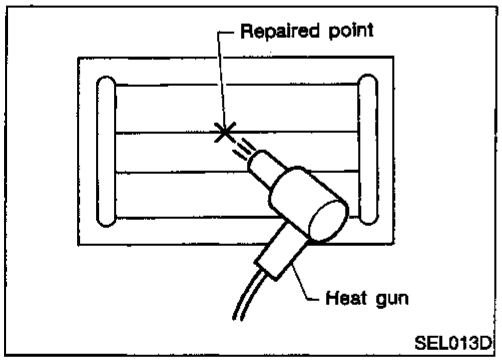
Shake silver composition container before use.

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



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

Do not touch repaired area while test is being conducted.



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

System Description

NDEL0077

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

MIDGRADE AND PREMIUM SYSTEM

NDEL0077S01

Power is supplied at all times

- through 10A fuse (No. 20, located in the fuse block)
- to audio unit terminal 29 and
- to CD changer terminal 9 and
- to rear audio remote control unit terminal 15.

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 audio unit terminal 30 and
- through 20 A fuse (No. 11, located in the fuse block)
- to subwoofer amplifier terminal 6.

Ground is supplied to audio unit terminals 31 and 36 and CD changer terminal 3 through body ground M52.
Ground is supplied to rear audio remote control unit terminal 14 and subwoofer amplifier terminal 5 through body grounds M68, M105 and M130.
When the system is ON, audio signals are supplied

- through audio unit terminals 25, 26, 27, 28, 32, 33, 34, 35, 37 and 38
- to subwoofer amplifier terminals 1 and 2, and
- to rear audio remote control unit terminals 3, 4, 6 and 7 for the headphone jacks, and
- to the front 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 audio control switches.
The audio unit receives a ground signal at terminal 14 (volume increase or volume decrease), or at terminal 14 (next preset) when the switches are depressed.

BASE SYSTEM

NDEL0077S02

Power is supplied at all times

- through 10A fuse (No. 20, located in the fuse block)
- to audio unit terminal 29.

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 audio unit terminal 30.

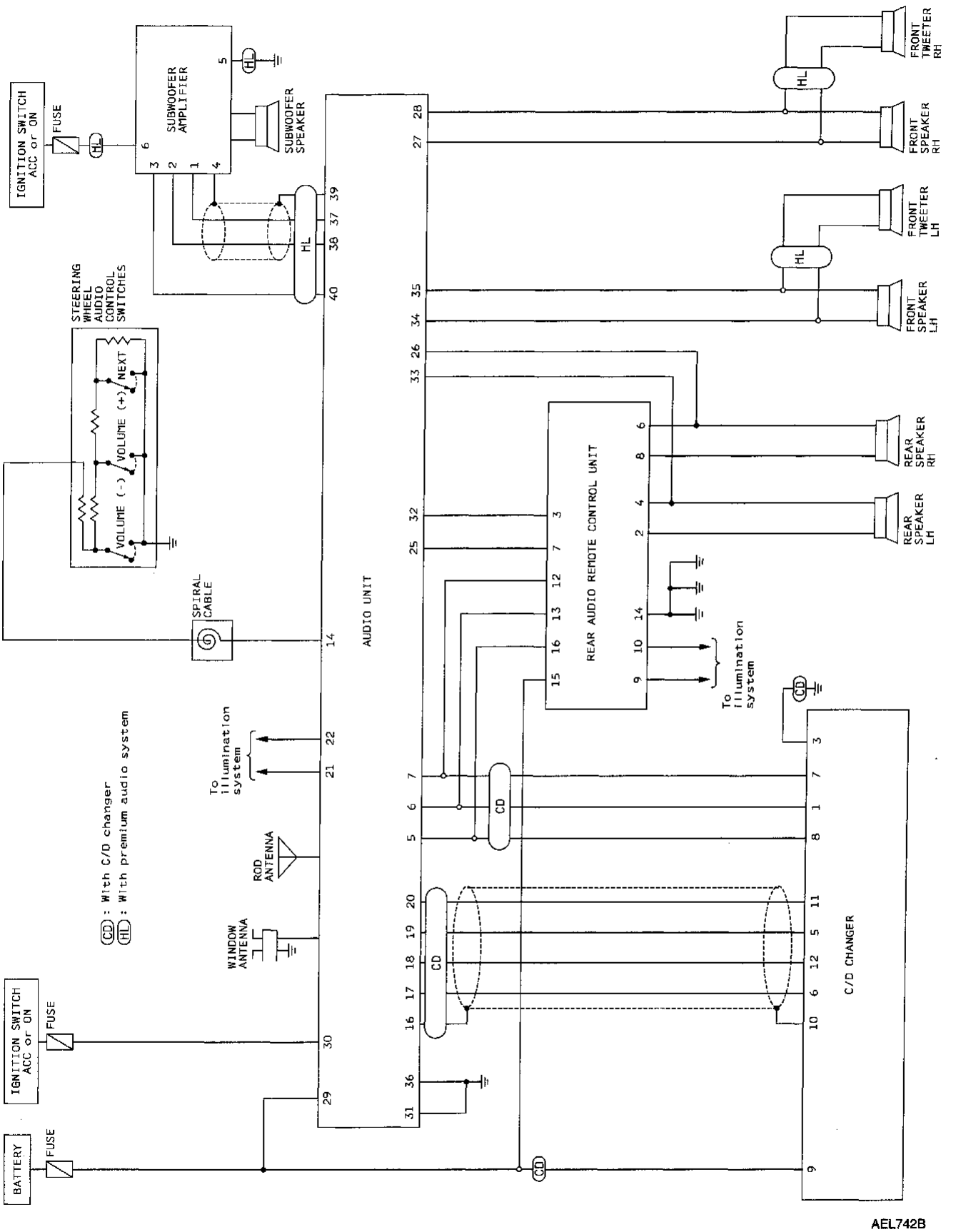
Ground is supplied to audio unit terminal 31 and 36 through body ground M52.
When the system is ON, audio signals are supplied

- through audio unit terminals 25, 26, 27, 28, 32, 33, 34 and 35
- to the front and rear speakers.

The volume may be increased or decreased, or the next preset station may be selected using the steering wheel audio control switches.
The audio unit receives a ground signal at terminal 14 (volume increase or volume decrease), or at terminal 14 (next preset) when the switches are depressed.

Schematic/Midgrade and Premium System

NDEL0078

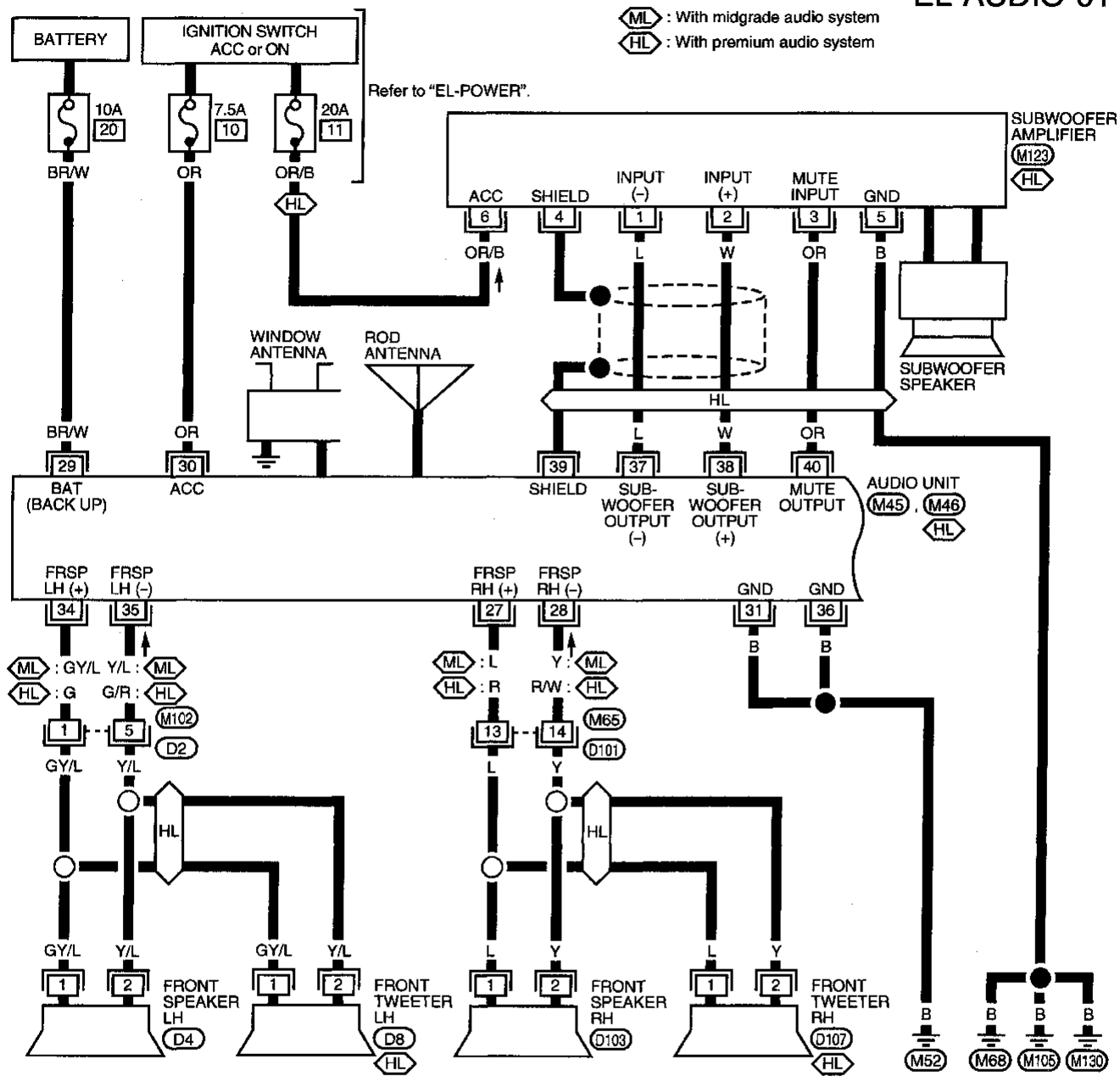


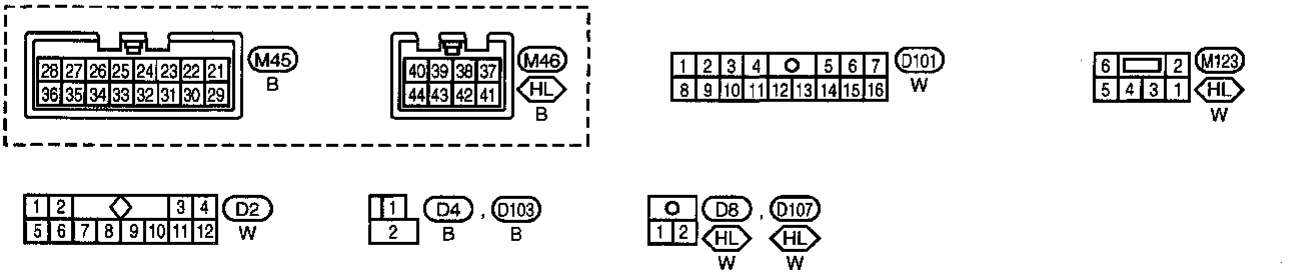
AEL742B

Wiring Diagram — AUDIO — /Midgrade and Premium System

NDEL0079

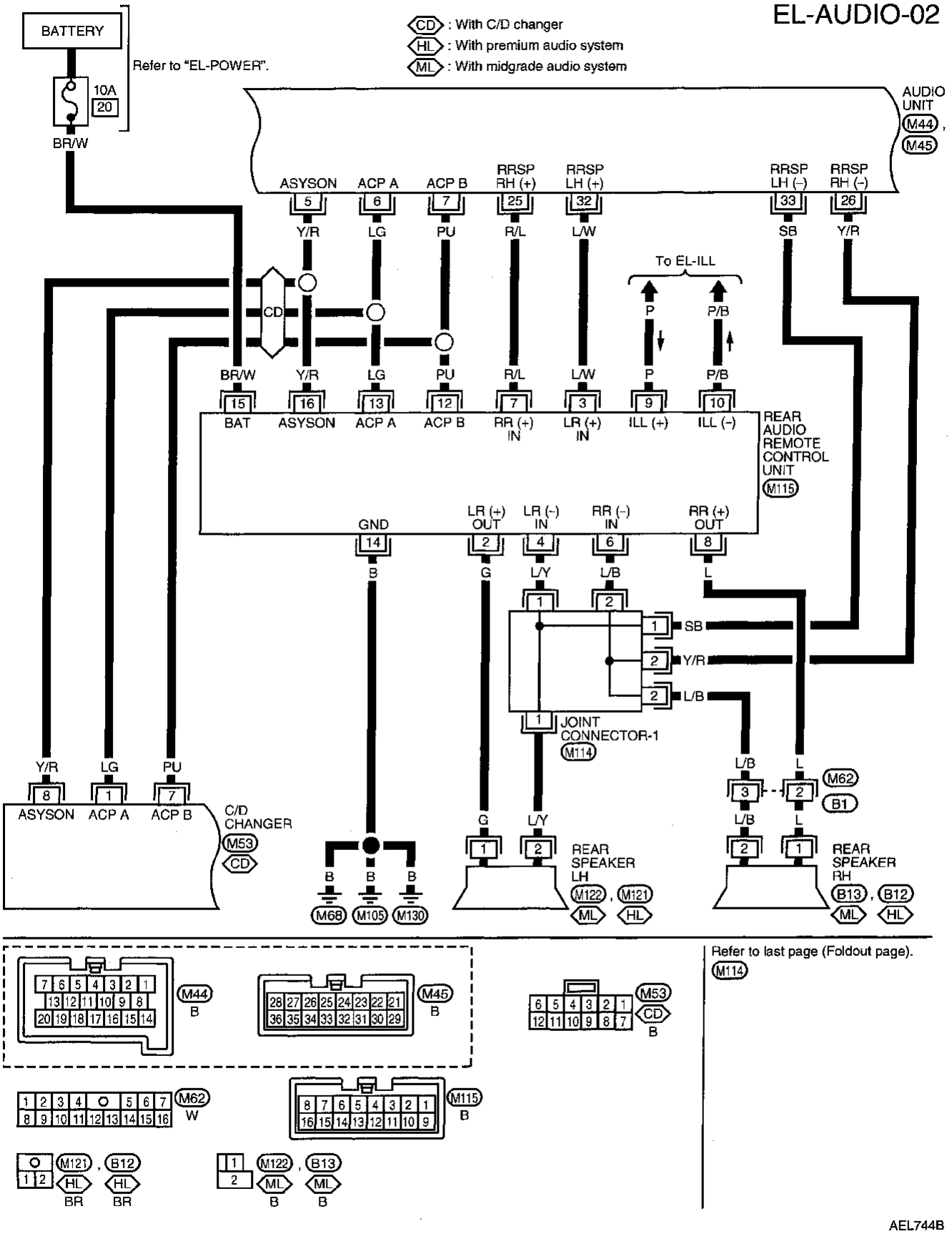
EL-AUDIO-01





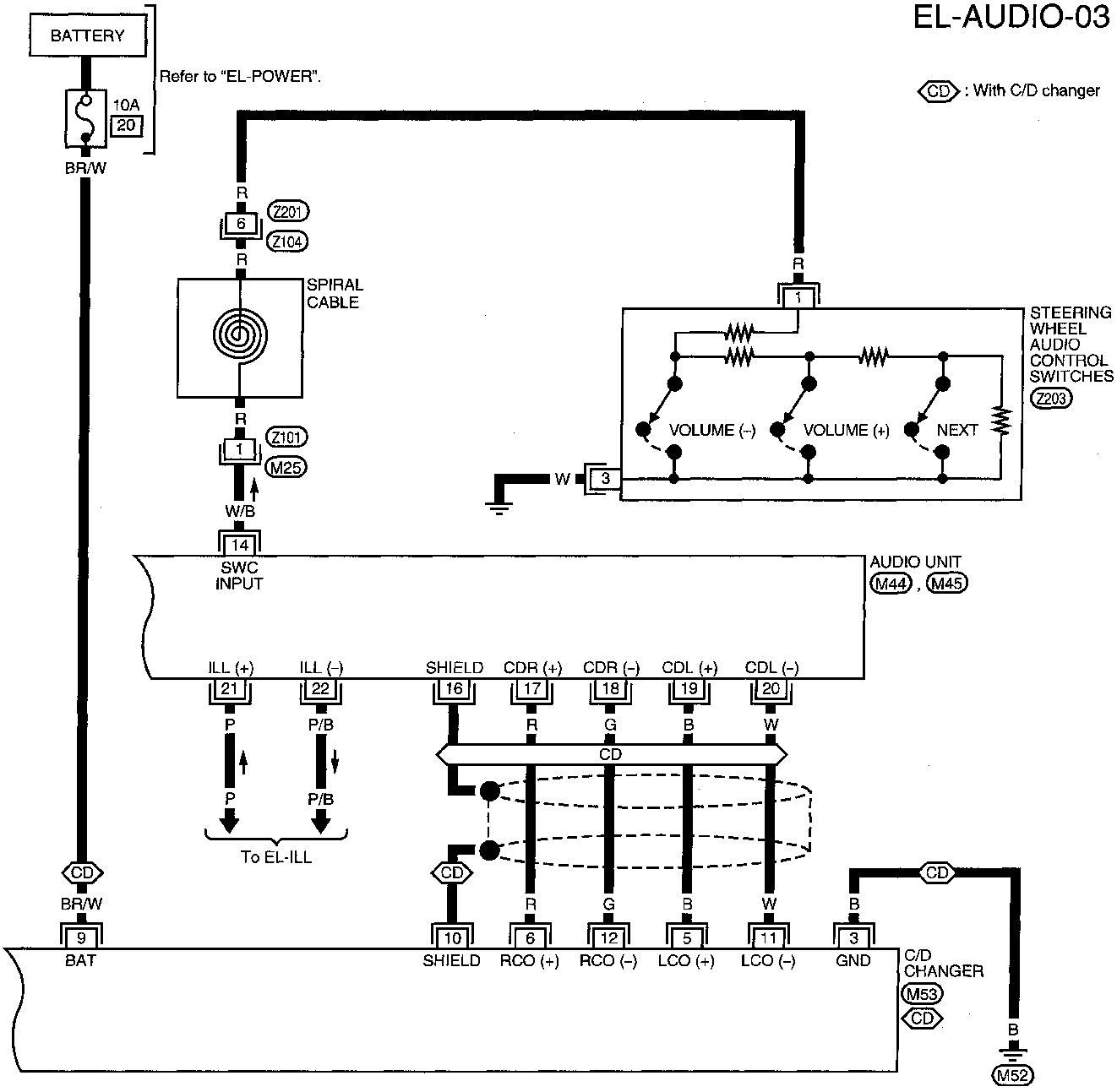
AEL743B

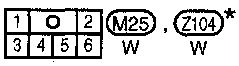
EL-AUDIO-02

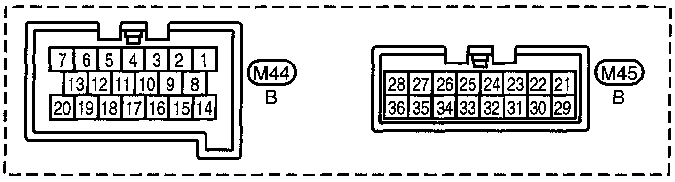


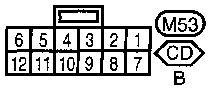
AEL744B

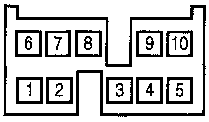
EL-AUDIO-03











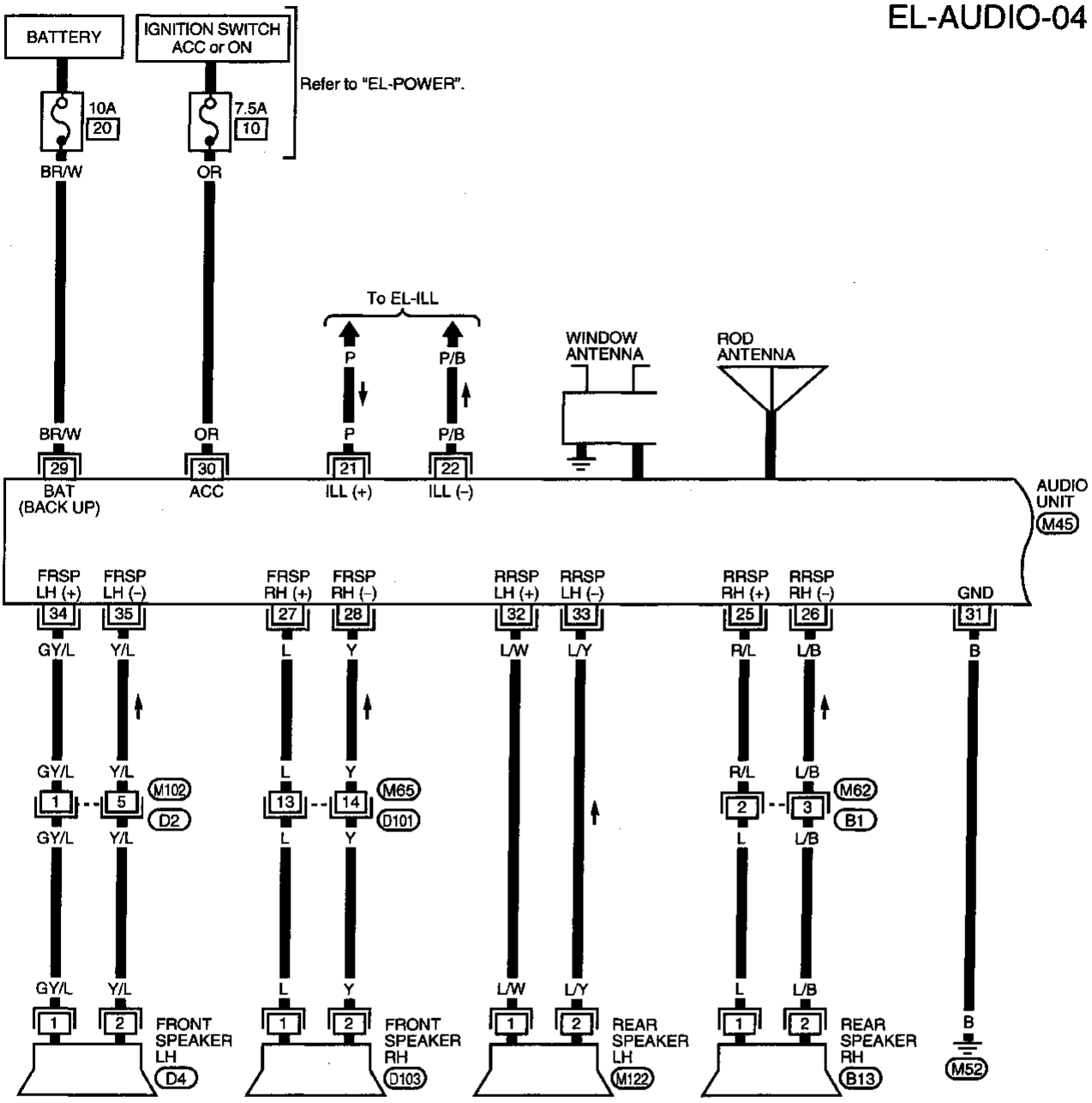
*: This connector is not shown in "HARNESS LAYOUT" of EL section.

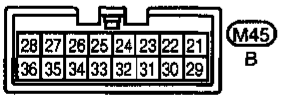
AEL745B

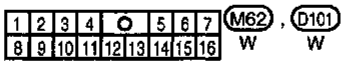
Wiring Diagram — AUDIO — /Base System

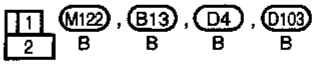
NDEL0080

EL-AUDIO-04



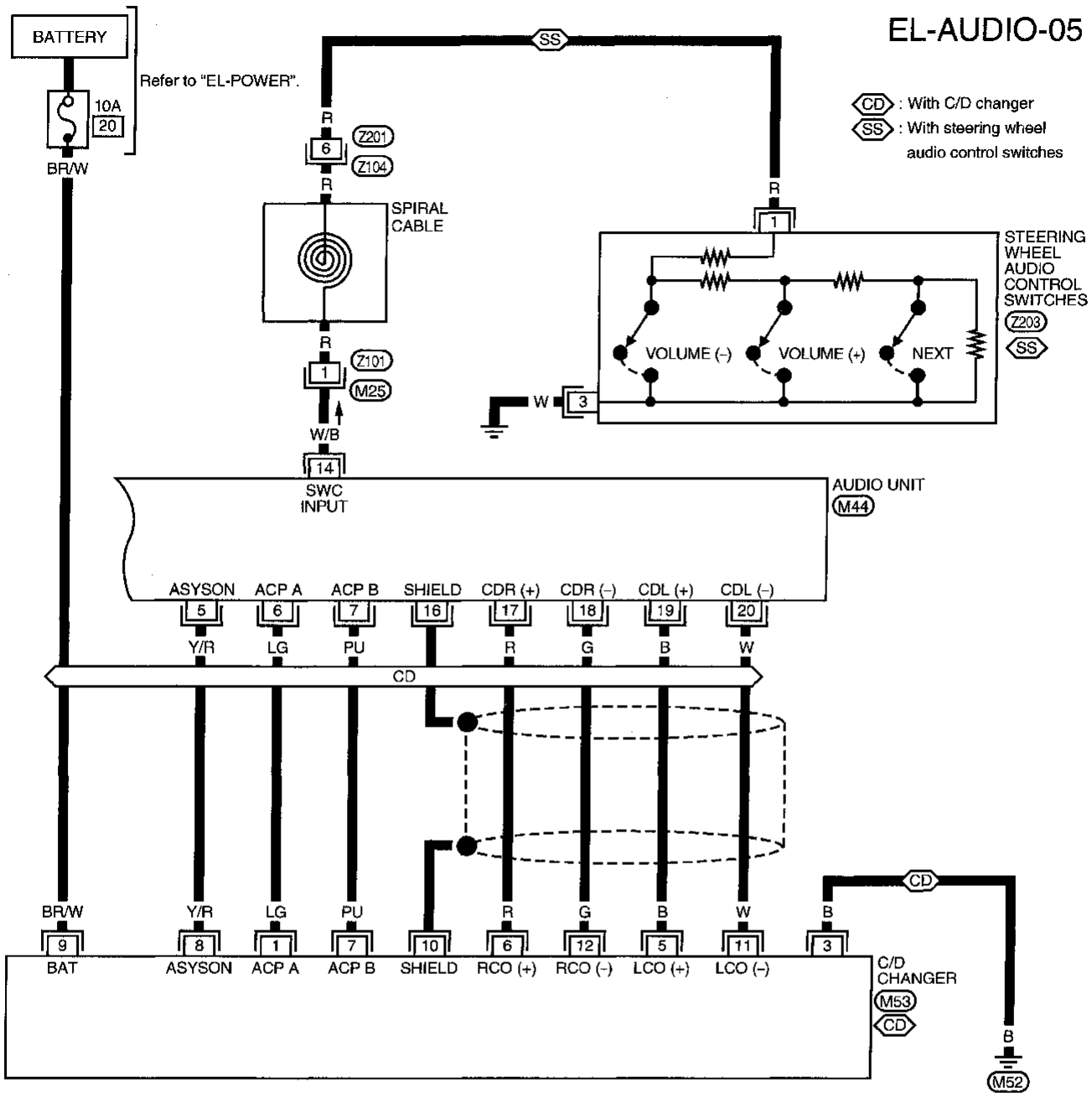


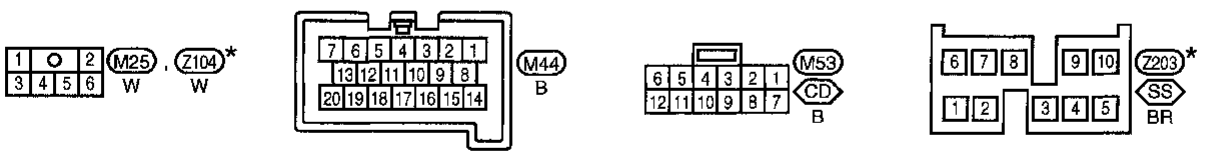




AEL746B

EL-AUDIO-05





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

AEL747B

Trouble Diagnoses

NDEL0081

Symptom	Possible causes	Repair order
Audio unit, CD changer and/or rear audio remote control unit inoperative (no digital display and no sound from speakers).	1. 10A fuse and 7.5A fuse 2. Poor audio unit (base system), or poor audio unit, CD changer or rear audio remote control unit body ground (midgrade and premium systems) 3. Audio unit, CD changer or rear audio remote control unit	1. Check 10A fuse and 7.5A fuse (Nos. 20 and 10, located in the fuse block). Verify battery positive voltage is present at terminal 29 of audio unit and terminal 9 of CD changer, and terminal 5 of rear audio remote control unit. Turn ignition switch ON and verify battery positive voltage is present at terminal 30 of audio unit. 2. Check audio unit case ground, or audio unit, CD changer or rear audio remote control unit body ground. 3. Remove audio unit, CD changer, or rear audio remote control unit for repair.
Audio unit presets and/or CD changer memory is lost when ignition switch is turned OFF.	1. 10A fuse 2. Audio unit	1. Check 10A fuse (No. 20, located in the fuse block) and verify battery positive voltage is present at terminal 29 of audio unit and terminal 9 of CD changer. 2. Remove audio unit for repair.
Individual speaker is noisy or inoperative.	1. Speaker 2. 20A fuse (midgrade and premium systems) 3. Subwoofer amplifier output (midgrade and premium systems) 4. Speaker circuit 5. Audio unit output 6. Audio unit	1. Check speaker. 2. Check 20A fuse (No. 11, located in the fuse block). Turn ignition ON and verify battery positive voltage is present at terminal 6 of subwoofer amplifier. 3. Check subwoofer amplifier output voltage. 4. Check wires for open or short between audio unit and speaker (base system), or between subwoofer amplifier and subwoofer speaker (midgrade and premium systems). 5. Check audio unit output voltages. 6. Remove audio unit for repair.
AM stations are weak or noisy (FM stations OK).	1. Antenna 2. Poor audio unit ground 3. Audio unit	1. Check antenna. 2. Check audio unit case ground. 3. Remove audio unit for repair.
FM stations are weak or noisy (AM stations OK).	1. Diversity antenna 2. Audio unit	1. Check diversity antenna. 2. Remove audio unit for repair.
Audio unit generates noise in AM and FM modes with engine running.	1. Poor audio unit ground 2. Loose or missing ground bonding straps 3. Ignition condenser 4. Generator 5. Ignition coil or secondary wiring 6. Audio unit	1. Check audio unit case ground. 2. Check ground bonding strip. 3. Replace ignition condenser. 4. Check generator. 5. Check ignition coil and secondary wiring. 6. Remove audio unit for repair.
Audio unit generates noise in AM and FM modes with accessories on (switch pops and motor noise).	1. Poor audio unit ground 2. Antenna 3. Accessories ground 4. Faulty accessory	1. Check audio unit case ground. 2. Check antenna. 3. Check accessory ground. 4. Replace accessory.

SPEAKER INSPECTION

NDEL0081S01

1. Disconnect speaker harness connector.
2. Measure the resistance between speaker terminals 1 and 2.
- The resistance should be 2 - 4Ω.
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

NDEL0081S02

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.

AUDIO UNIT, C/D CHANGER, REAR AUDIO REMOTE CONTROL UNIT AND SUBWOOFER AMPLIFIER INSPECTION

NDEL0081S03

All voltage inspections are made with

- Ignition switch ON or ACC
- Audio unit ON
- Audio unit, CD changer, rear audio remote control unit and subwoofer amplifier connected. (If the base audio unit is removed from the audio unit mounting bracket to make the inspection, supply a ground to the case using a jumper wire.

MIDGRADE AND PREMIUM AUDIO UNIT VOLTAGES

NDEL0081S04

Terminal	Wire color	Voltage (V)	Terminal	Wire color	Voltage (V)
1	—	—	23	—	—
2	—	—	24	—	—
3	—	—	25	R/L	0 - 7
4	—	—	26	Y/R	0 - 7
5	Y/R	10.8 - 15.6 (Audio unit on)	27	L* or R	0 - 7
6	LG	Data line	28	Y* or R/W	0 - 7
7	PU	Data line	29	BR/W	10.8 - 15.6 (Battery)
8	—	—	30	OR	10.8 - 15.6 (Ignition ACC or ON)
9	—	—	31	B	Body ground
10	—	—	32	L/W	0 - 7
11	—	—	33	SB	0 - 7
12	—	—	34	GY/L* or G	0 - 7
13	—	—	35	Y/L* or G/R	0 - 7
14	W/B	Check continuity between audio unit harness connector M44 and steering wheel audio control switches connector Z203.	36	B	Body ground
15	W/R	—	37	L	Approx. 0
16	—	Shield ground	38	W	0 - 5
17	R	0 - 5 [CD changer right channel (+) input]	39	—	Shield ground
18	G	0 - 5 [CD changer right channel (−) input]	40	OR	Approx. 5 (Mute output)
19	B	0 - 5 [CD changer left channel (+) input]	41	—	—
20	W	0 - 5 [CD changer left channel (−) input]	42	—	—
21	P	10.8 - 15.6 (Illumination on)	43	—	—
22	P/B	0 - 11 (Illumination on)	44	—	—

* with midgrade

Trouble Diagnoses (Cont'd)

BASE AUDIO UNIT VOLTAGES

NDEL0081S06

Terminal	Wire color	Voltage (V)	Terminal	Wire color	Voltage (V)
1	—	—	19	B	0 - 5 [CD changer left channel (+) input]
2	—	—	20	W	0 - 5 [CD changer left channel (–) input]
3	—	—	21	P	10.8 - 15.6 (Illumination on)
4	—	—	22	P/B	0 - 11 (Illumination on)
5	Y/R	10.8 - 15.6 (Audio unit on)	23	—	—
6	LG	Data line	24	—	—
7	PU	Data line	25	R/L	0 - 7
8	—	—	26	L/B	0 - 7
9	—	—	27	L	0 - 7
10	—	—	28	Y	0 - 7
11	—	—	29	BR/W	10.8 - 15.6 (Battery)
12	—	—	30	OR	10.8 - 15.6 (Ignition ACC or ON)
13	—	—	31	B	Body ground
14	W/B	Check continuity between audio unit harness connector M44 and steering wheel audio control switches connector Z203.	32	L/W	0 - 7
15	W/R	—	33	L/Y	0 - 7
16	—	Shield ground (With CD changer)	34	GY/L	0 - 7
17	R	0 - 5 [CD changer right channel (+) input]	35	Y/L	0 - 7
18	G	0 - 5 [CD changer right channel (–) input]	36	B	—

The audio unit is case grounded through the audio unit mounting bracket.

REAR AUDIO REMOTE CONTROL UNIT VOLTAGES

NDEL0081S07

Terminal	Wire color	Voltage (V)	Terminal	Wire color	Voltage (V)
1	—	—	9	P	10.8 - 15.6 (Illumination on)
2	G	0 - 7	10	P/B	0 - 11 (Illumination on) or 0*
3	L/W	0 - 7 (input)	11	—	—
4	L/Y	0 - 7 (input)	12	PU	Data line
5	—	—	13	LG	Data line
6	L/B	0 - 7 (input)	14	B	Body ground
7	R/L	0 - 7 (input)	15	BR/W	10.8 - 15.6 (Battery)
8	L	0 - 7	16	Y/R	10.8 - 15.6 (Audio unit on)

* with rear audio remote control unit (illumination control)

C/D CHANGER VOLTAGES

NDEL0081S08

Terminal	Wire color	Voltage (V)	Terminal	Wire color	Voltage (V)
1	LG	Data line	7	PU	Data line
2	—	—	8	Y/R	10.8 - 15.6 (Audio unit on)
3	B	Body ground	9	BR/W	10.8 - 15.6 (Battery)
4	—	—	10	—	Shield ground
5	B	0 - 5 [left channel (+) output]	11	W	0 - 5 [left channel (–) output]
6	R	0 - 5 [right channel (+) output]	12	G	0 - 5 [right channel (–) output]

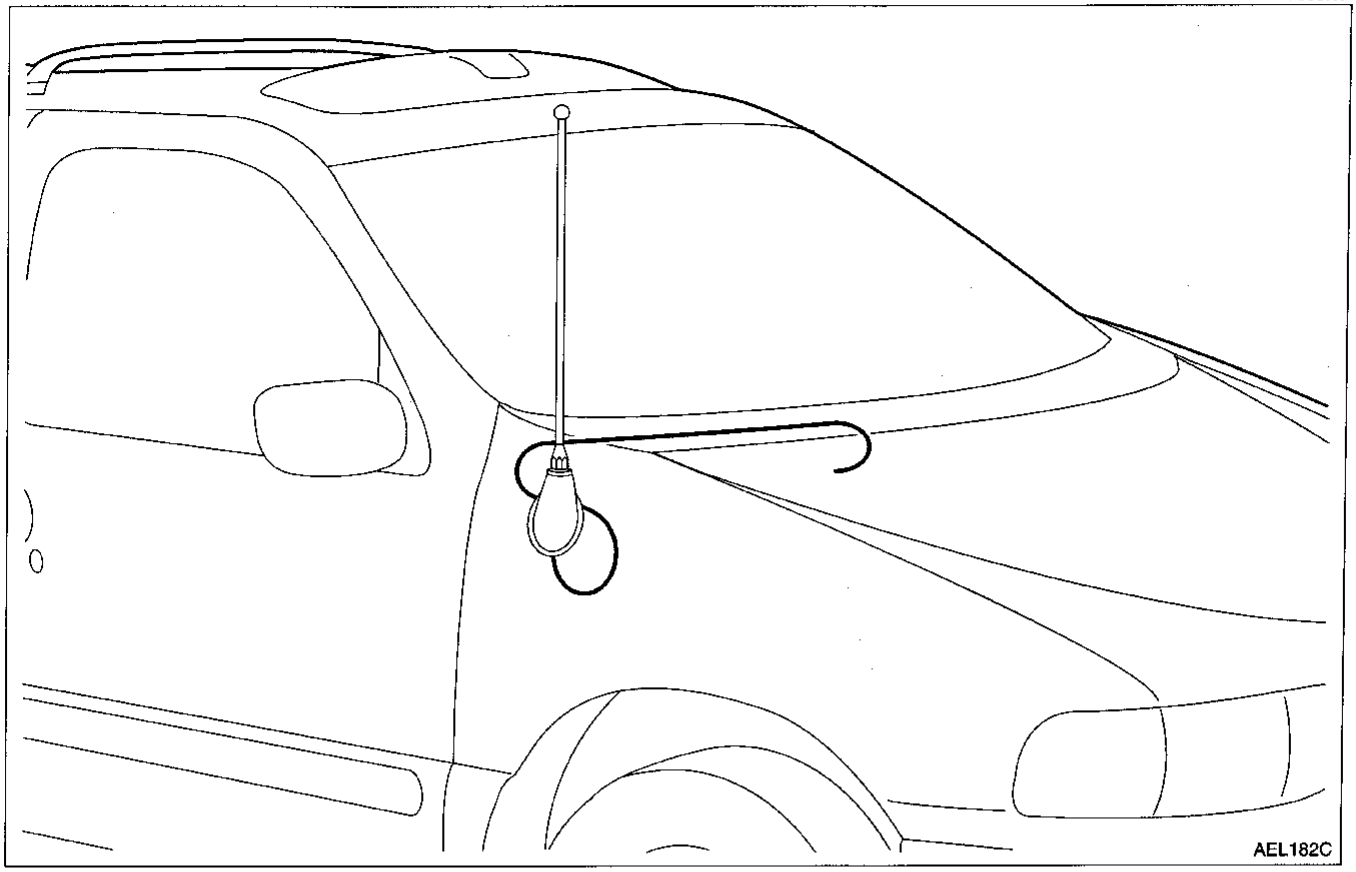
SUBWOOFER AMPLIFIER VOLTAGES

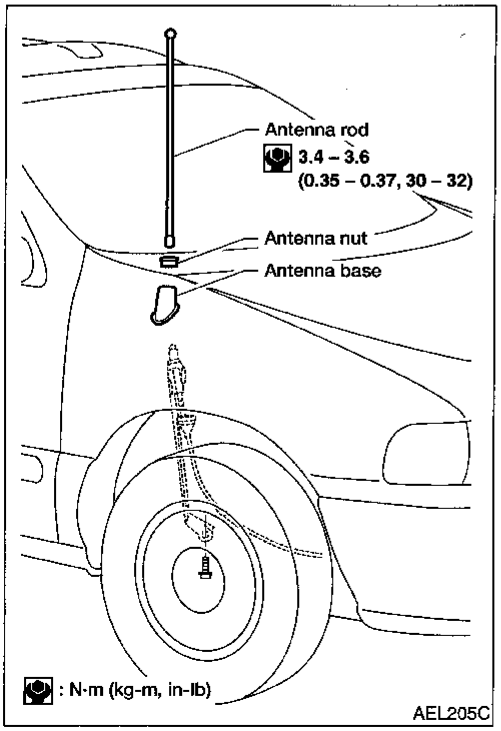
NDEL0081S09

Terminal	Wire color	Voltage (V)	Terminal	Wire color	Voltage (V)
1	L	0 - 1.5 (input)	4	—	Shield ground
2	W	0 - 1.5	5	B	Body ground
3	OR	Greater than 11 (Audio unit on)	6	OR/B	10.8 - 15.6 (Ignition ACC or ON)

Location of Antenna

NDEL0082





Removal and Installation

NDEL0083

1. Remove antenna rod.
2. Remove antenna nut and antenna base.
3. Remove inner splash shield.
4. Disconnect antenna cable from audio unit, refer to BT section.
5. Remove bolt and antenna.

To install, reverse removal procedure.

System Description

NDEL0084

POWER

NDEL0084S01

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 M68, M105 and M130.
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. **(Delayed power operation.)**

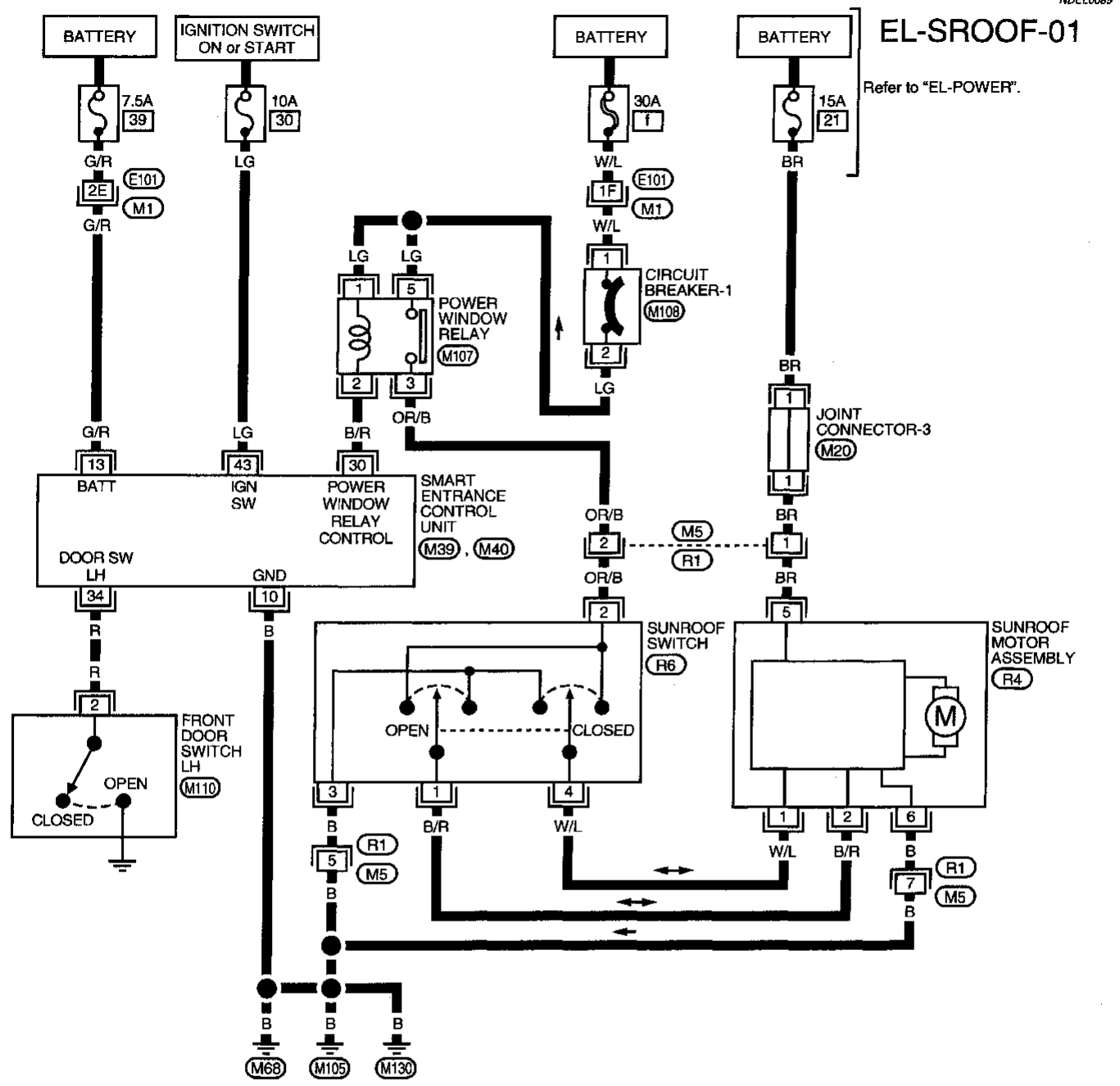
TILT AND SLIDE OPERATION

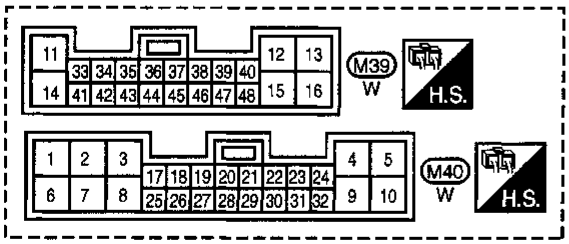
NDEL0084S02

The sunroof is controlled by the sunroof switch. With the 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.

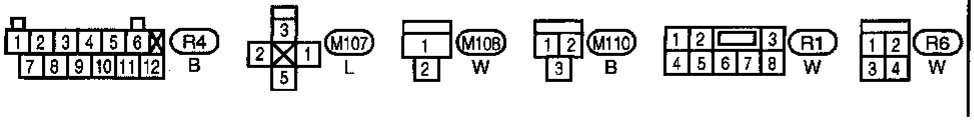
Wiring Diagram — SROOF —

NDEL0085





Refer to last page (Foldout page).
M1, E101
M20



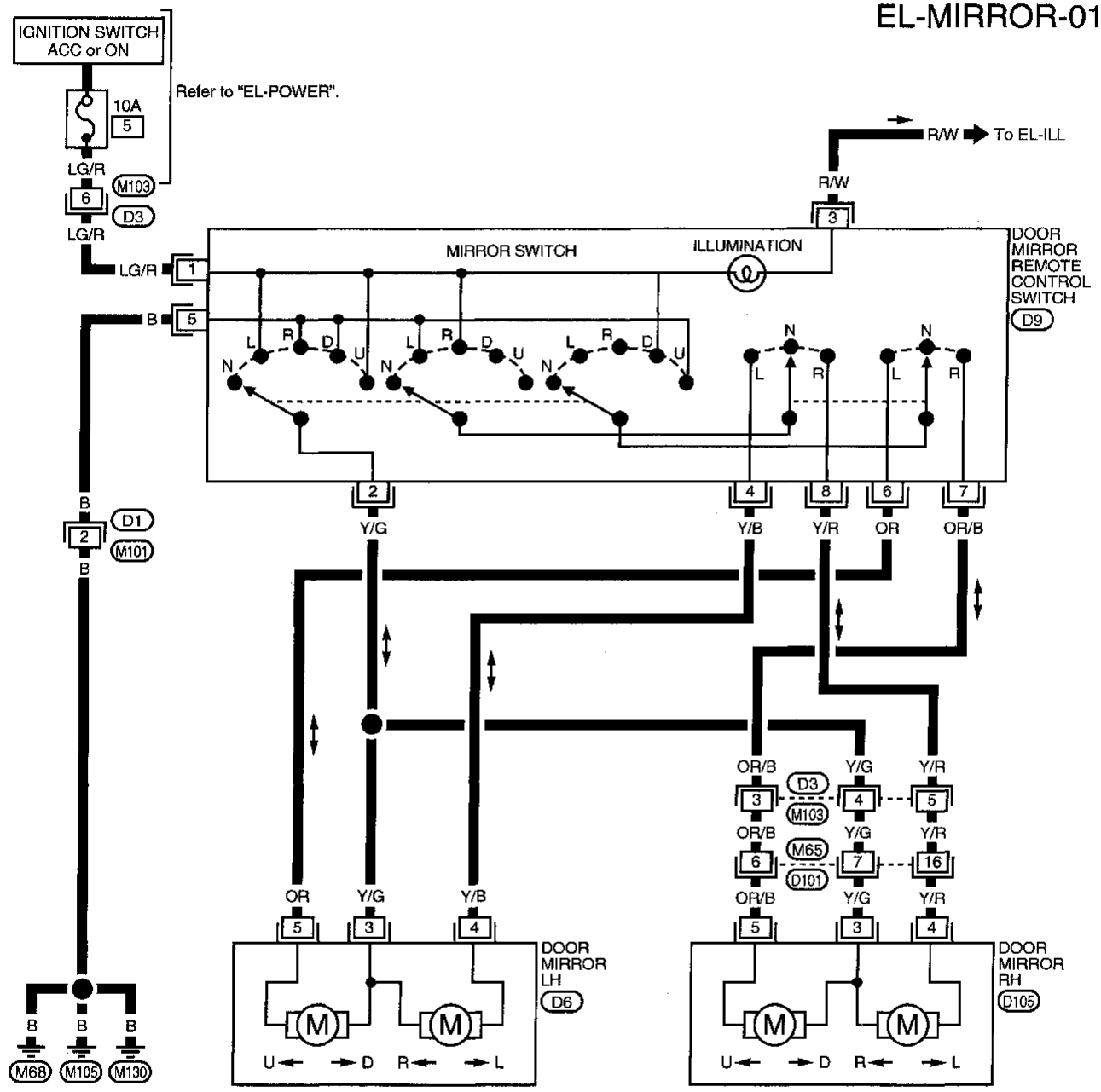
AEL757B

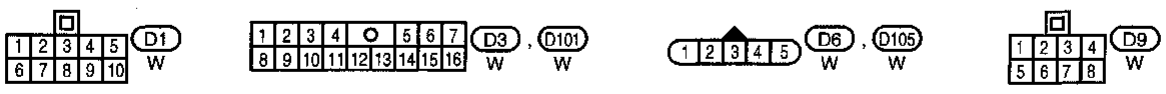
Wiring Diagram — MIRROR — /Without Automatic Drive Positioner

NDEL0086

NOTE:
For the information about door mirror for models with automatic drive positioner, refer to "AUTOMATIC DRIVE POSITIONER", EL-135.

EL-MIRROR-01

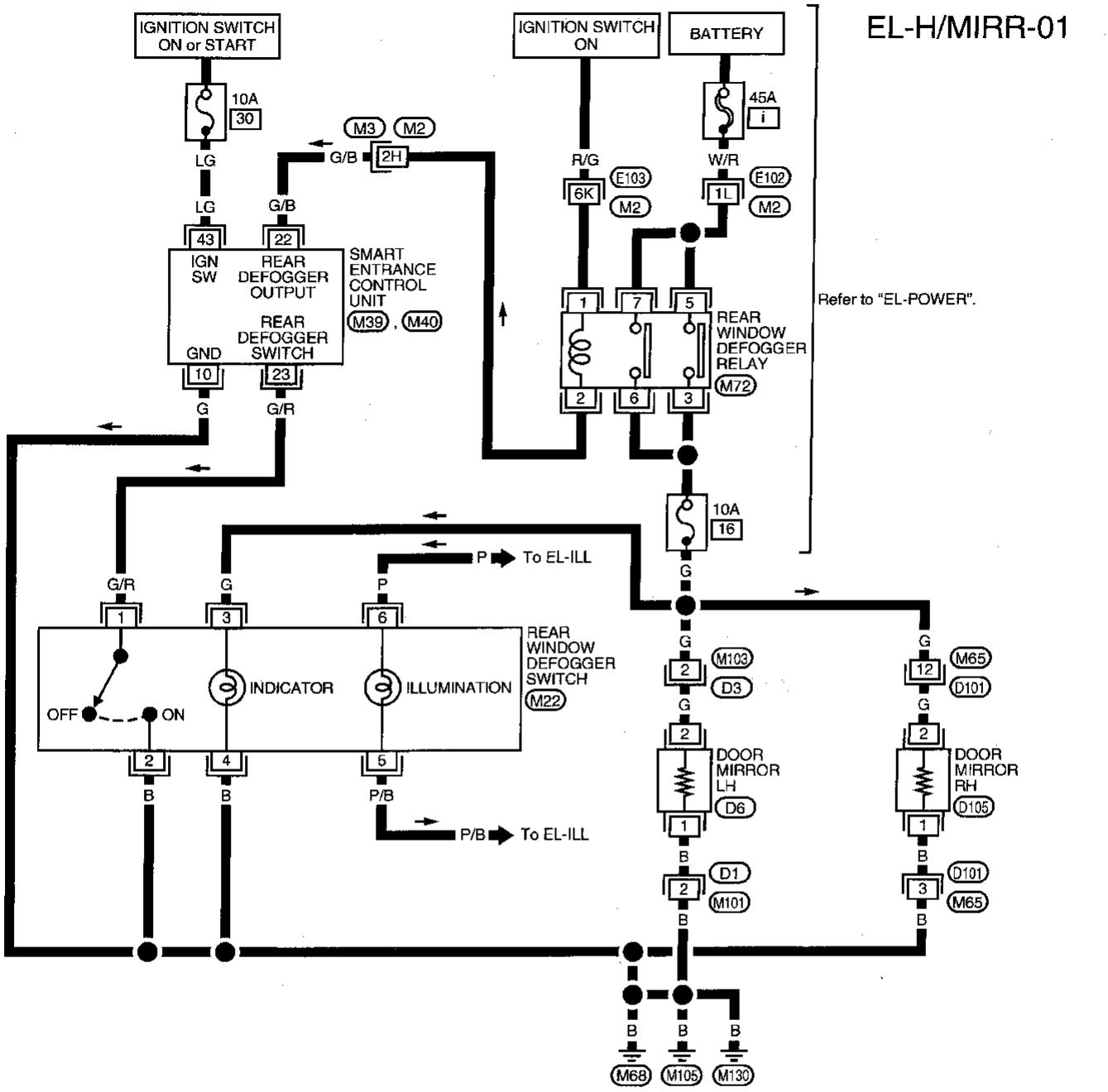


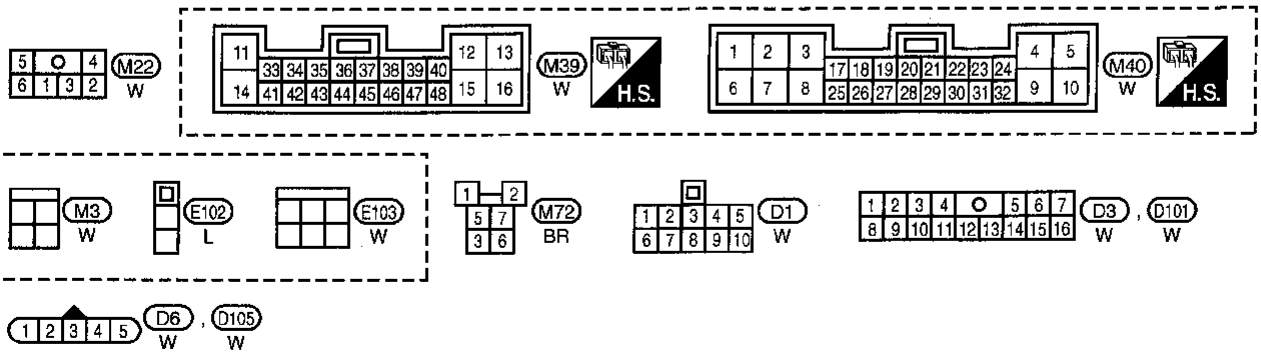


AEL758B

Wiring Diagram — H/MIRR —

NDEL0087

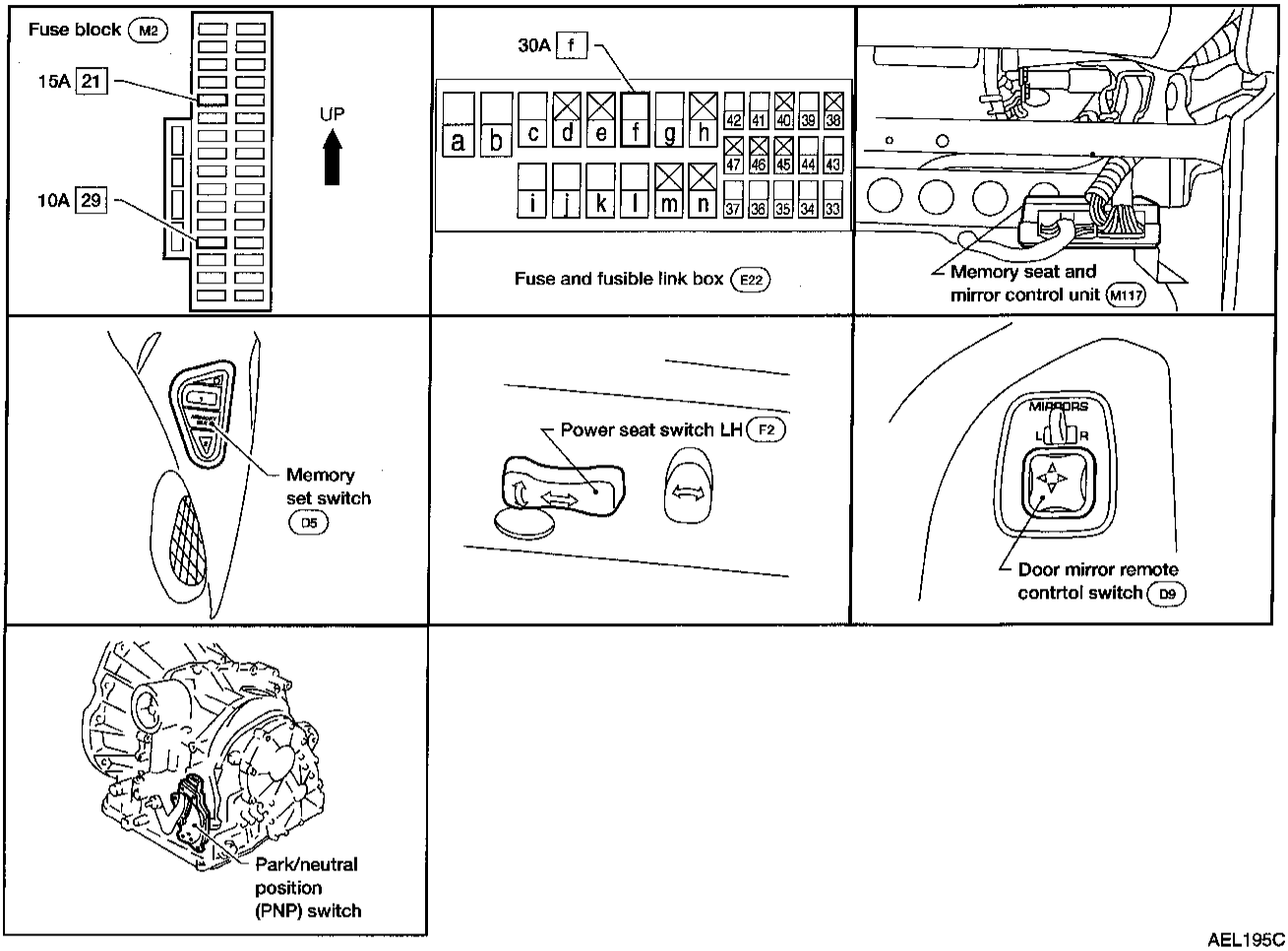




AEL759B

Component Parts and Harness Connector Location

NDEL0088



AEL195C

System Description

NDEL0089

OPERATION

NDEL0089S01

Automatic drive positioner allows automatic positioning of driver seat, LH and RH door mirror to two programmable positions using the memory set switch located on the drivers door and multi-remote controller.
Driver's seat can be adjusted for sliding, reclining and cushion height.

MEMORY POSITION OPERATION

NDEL0089S02

Automatic drive positioner has the following three functions

- Memory set switch operation (Memorized position can be set corresponding to memory switch operation.)
- Multi-remote controller operation (Memorized position can be set by unlocking driver's door with multi-remote controller.)
- Auto back operation (Driver's seat fully rearward and down for easy access.)

NOTE:

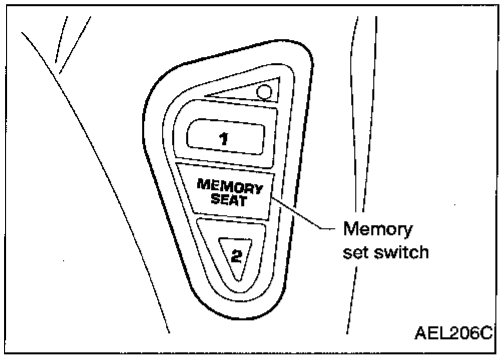
- As a safety feature, the memory positioning operation is permitted to operate only if the park/neutral position (PNP) switch is in the park or neutral position. If the memory position operation is activated and PNP switch is moved from park or neutral position, the memory position operation will be halted.
- If either memory position switch is pressed after motion has started, all motion will immediately stop.
- If a manual control switch is pressed, memory operation will be cancelled.
- All seat and mirror sensors shall be monitored for validity. If any sensor is seen to be out of range, no motion shall be performed for that axis during memory recall. Invalid sensors do not affect manual operation.

- Up to 2 seat axes will move simultaneously during memory position operation. All mirror axes may move simultaneously during memory position operation.

Memory Set Switch Operation

NDEL0089S0201

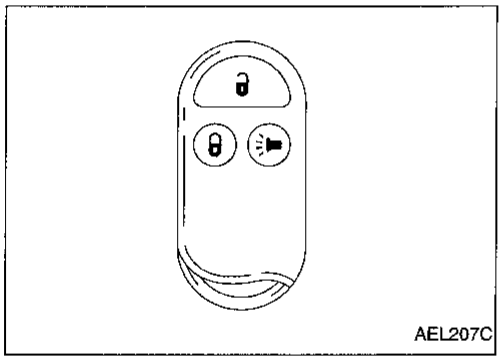
1. Push and release memory set switch 1 or 2 with ignition switch in OFF or ACC position. (LED indicator on the memory set switch will turn on until memory set switch is released or 10 seconds have passed.)
2. Driver's seat, LH and RH door mirrors will move to the memorized position.



Multi-remote Controller Operation

NDEL0089S0202

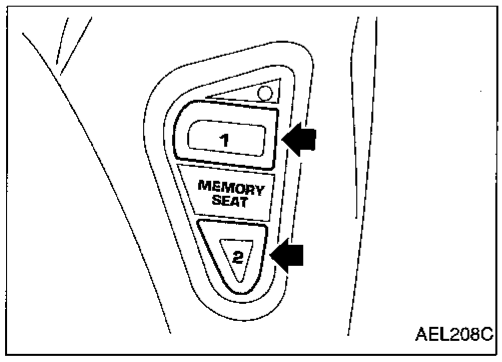
1. Unlock driver's door with multi-remote controller. (Automatic positioning signal will be sent to memory seat and mirror control unit from smart entrance control unit.)
2. Driver's seat, LH and RH door mirrors will move to the memorized position.



Auto Back Operation

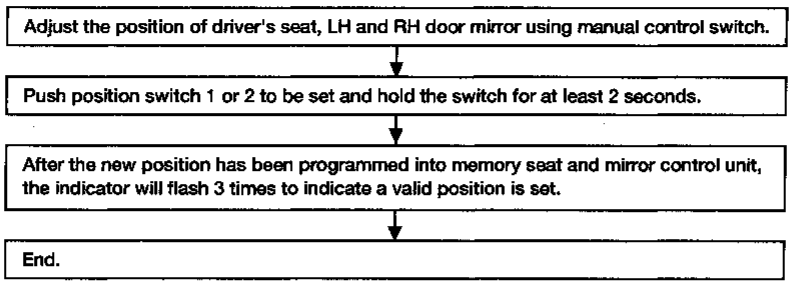
NDEL0089S0203

1. Push and release memory set switch 1 and 2 together with the park/neutral position (PNP) switch in park or neutral position. (LED indicator on the memory set switch will turn on until both memory set switches are released or 10 seconds have passed.
2. Driver's seat moves fully rearward and downward for easy entry and exist.



PROCEDURE FOR STORING MEMORY POSITION

NDEL0089S03



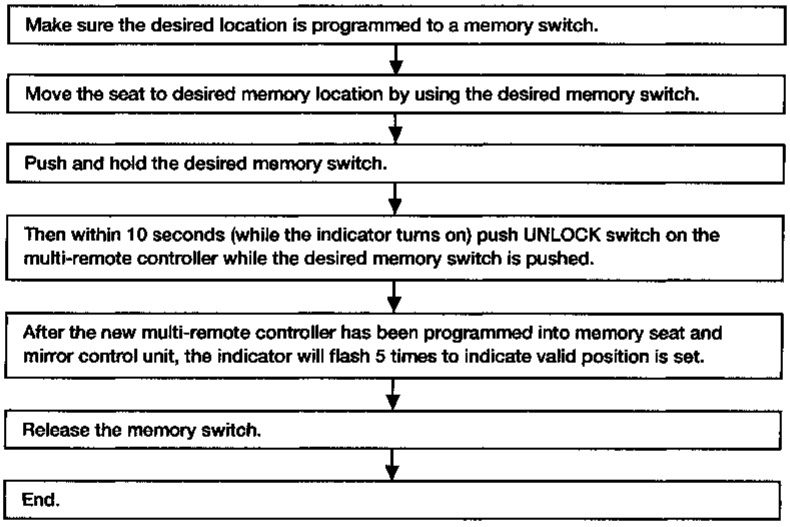
AEL006C

NOTE:

- The stored memory positions are maintained unless battery power is disconnected from memory seat and mirror control unit.
- Two different positions are memorized for positions 1 and 2 in the memory seat and mirror control unit initially. After the battery power supply is disconnected and reconnected, the memories of positions will return to the initial memorized positions.
  If the current position is the programmed position for that switch, the position will not be re-programmed.
- If a sensor is not valid, the memory of axis position will not be changed. Only the position of motors with a valid sensor will change to new positions.

PROCEDURE FOR STORING MULTI-REMOTE CONTROLLER

NDEL0089S04



AEL007C

Procedure for Erasing Multi-remote Controller Memory

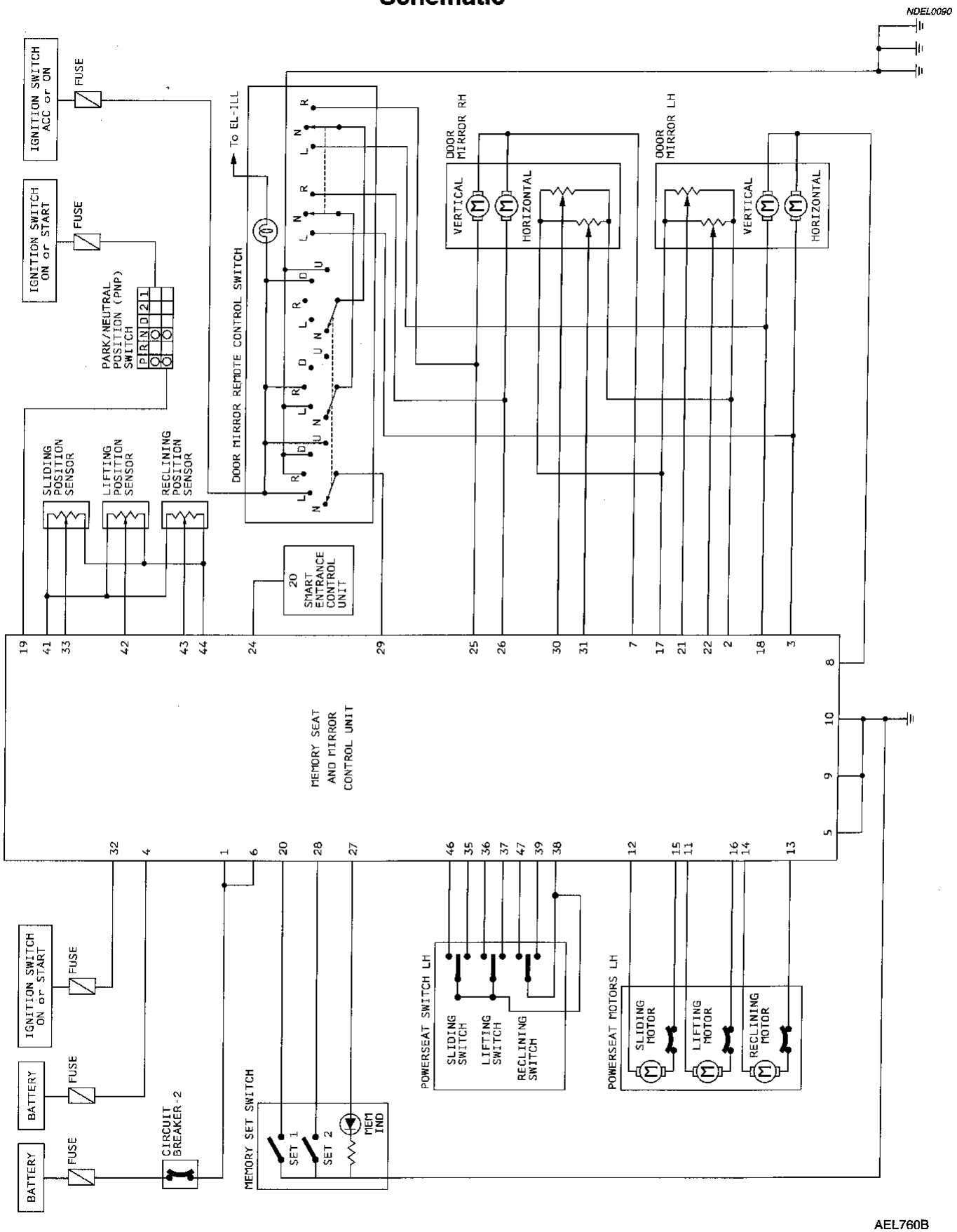
NDEL0089S0401

Hold both memory switch 1 and 2 then push UNLOCK switch on the multi-remote controller to be deprogrammed.

NOTE:

In this case auto back function will not operate.

Schematic

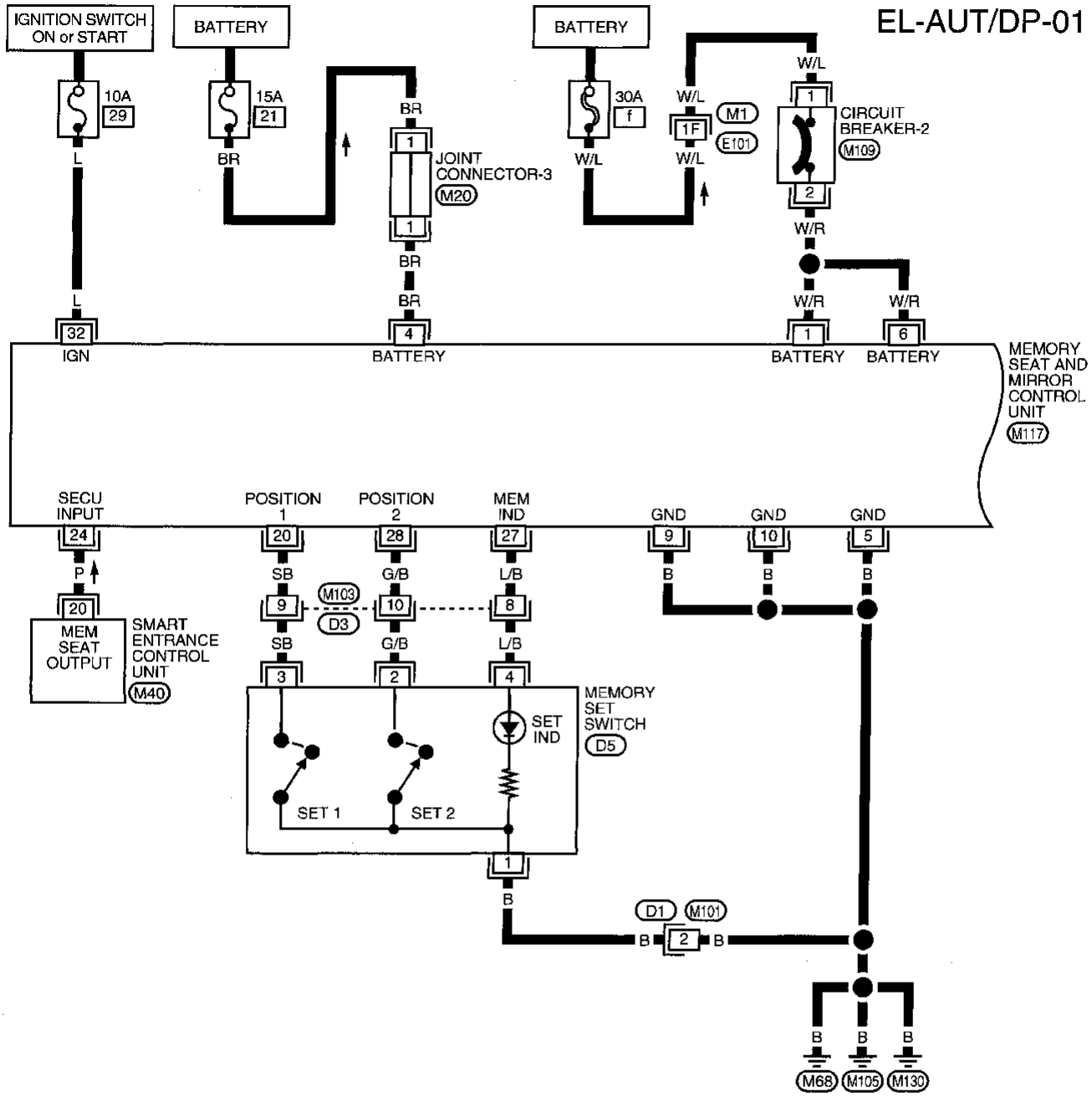

NDEL0090
IGNITION SWITCH ACC or ON
FUSE
IGNITION SWITCH ON or START
FUSE
PARK/NEUTRAL POSITION (PNP) SWITCH
P R N D 2 1
SLIDING POSITION SENSOR
LIFTING POSITION SENSOR
RECLINING POSITION SENSOR
To EL-ILL
DOOR MIRROR REMOTE CONTROL SWITCH
DOOR MIRROR RH
VERTICAL
HORIZONTAL
DOOR MIRROR LH
VERTICAL
HORIZONTAL
20 SMART ENTRANCE CONTROL UNIT
MEMORY SEAT AND MIRROR CONTROL UNIT
IGNITION SWITCH ON or START
FUSE
BATTERY
FUSE
BATTERY
FUSE
CIRCUIT BREAKER-2
MEMORY SET SWITCH
SET 1
SET 2
MEM IND
POWERSEAT SWITCH LH
SLIDING SWITCH
LIFTING SWITCH
RECLINING SWITCH
POWERSEAT MOTORS LH
SLIDING MOTOR
LIFTING MOTOR
RECLINING MOTOR
AEL760B

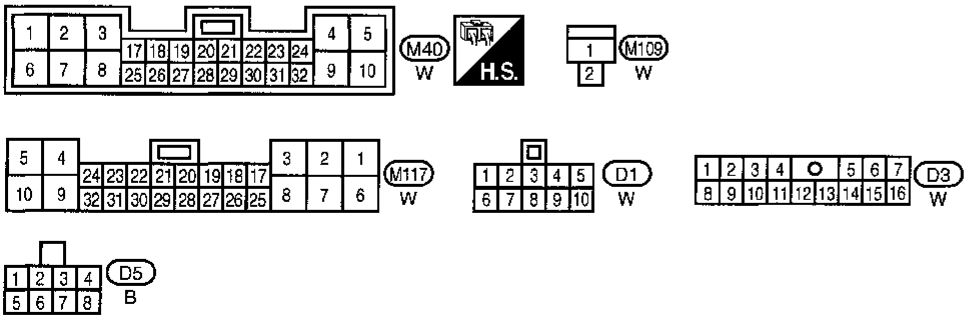
Wiring Diagram — AUT/DP —

NDEL0091

FIG. 1

NDEL0091S01





Refer to last page (Foldout page).
M1, E101
M20

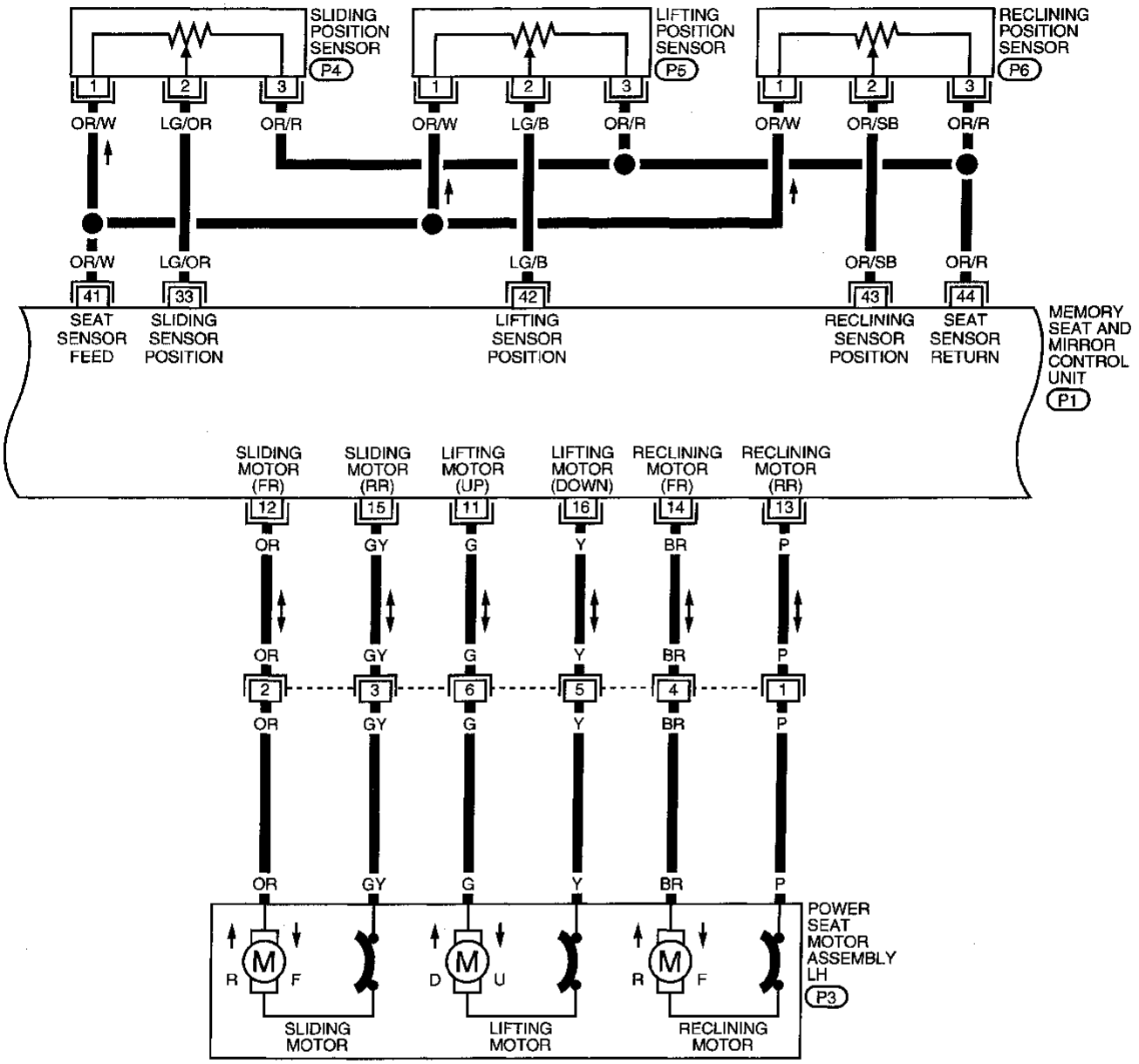
AEL761B

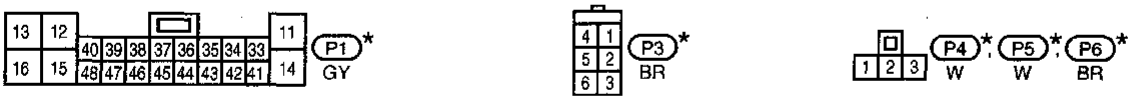
Wiring Diagram — AUT/DP — (Cont'd)

FIG. 2

NDEL0091S02

EL-AUT/DP-02



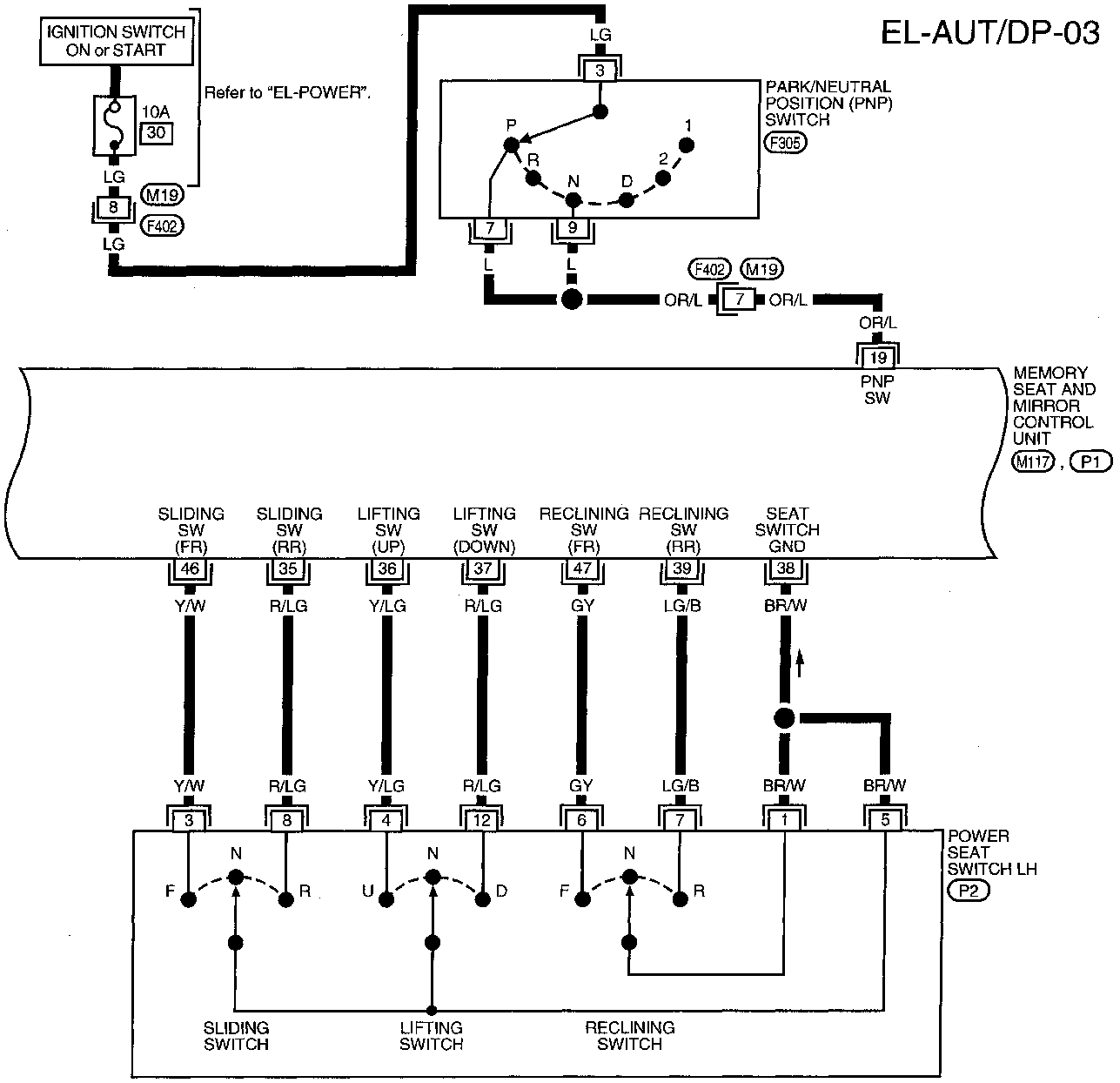


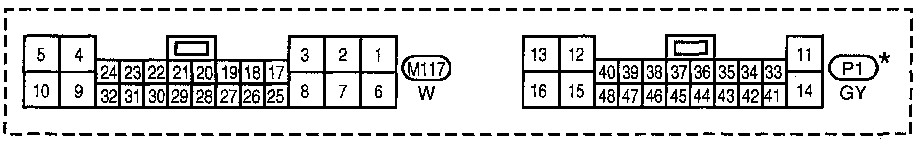
∗: This connector is not shown in "HARNESS LAYOUT".

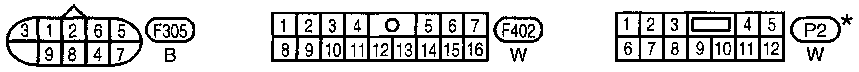
AEL762B

FIG. 3

NDEL0091S03







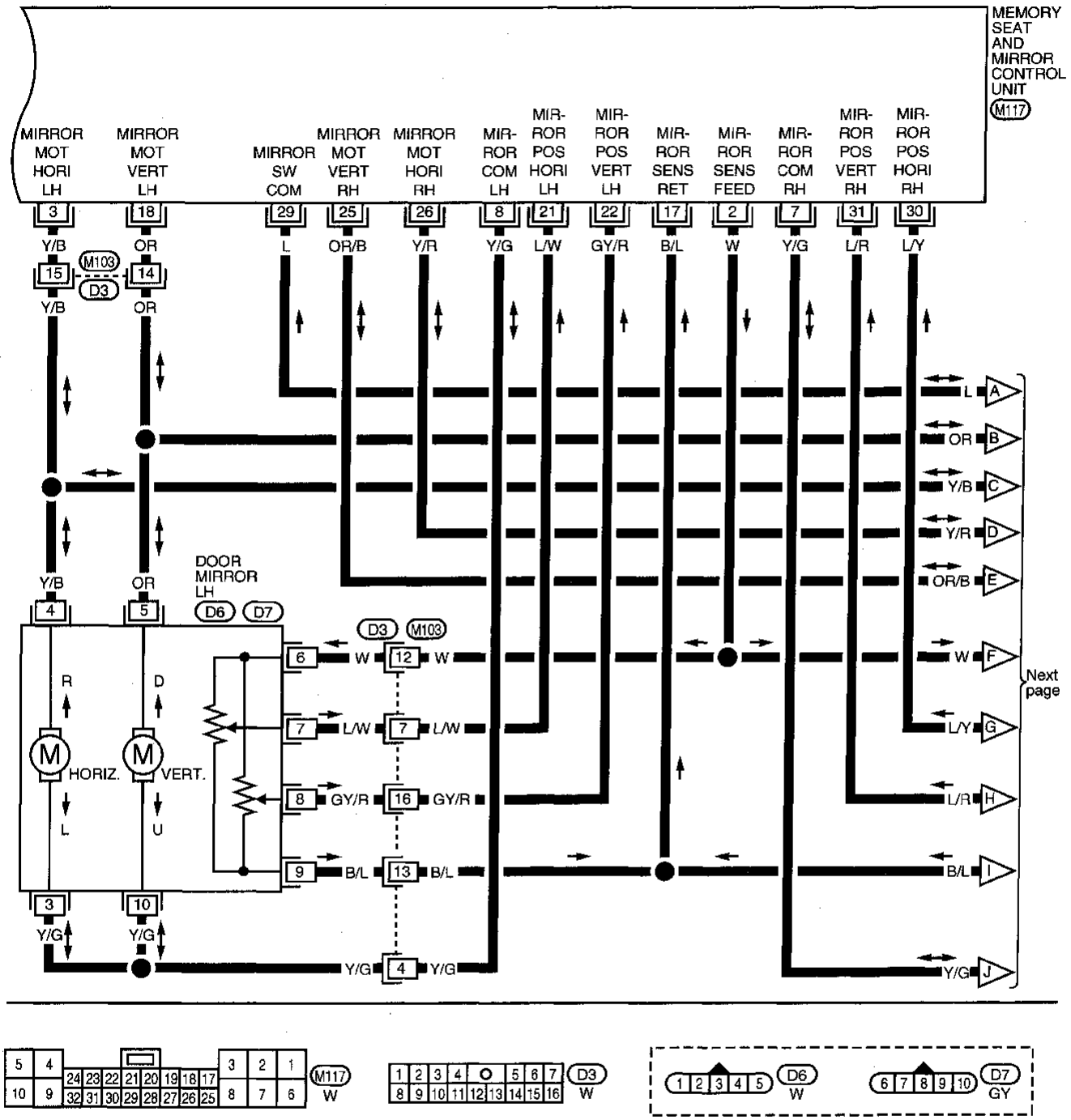
*: This connector is not shown in "HARNESS LAYOUT".

AEL763B

FIG. 4

NDEL0091S04

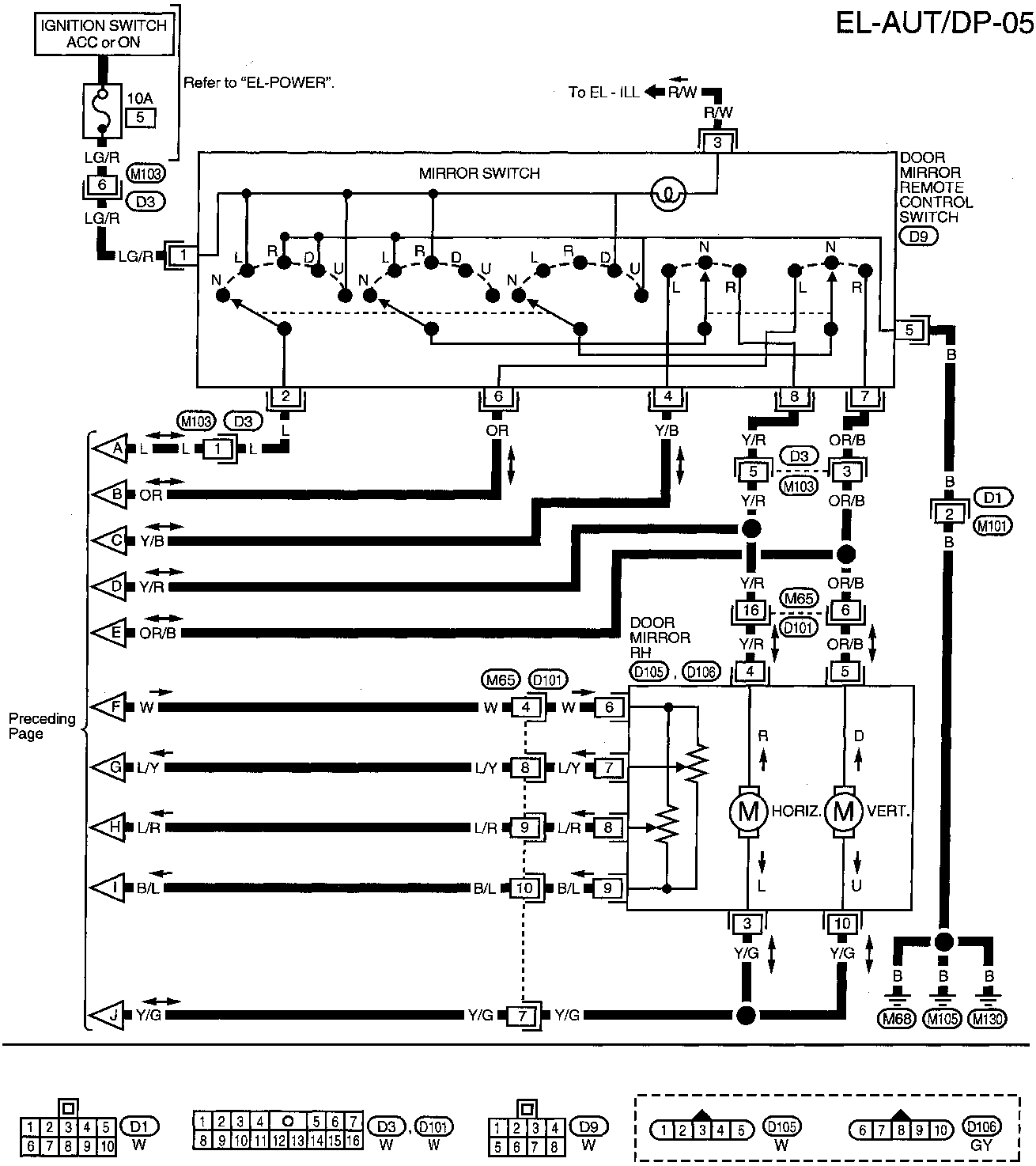
EL-AUT/DP-04



AEL764B

FIG. 5

NDEL0091S05



AEL765B

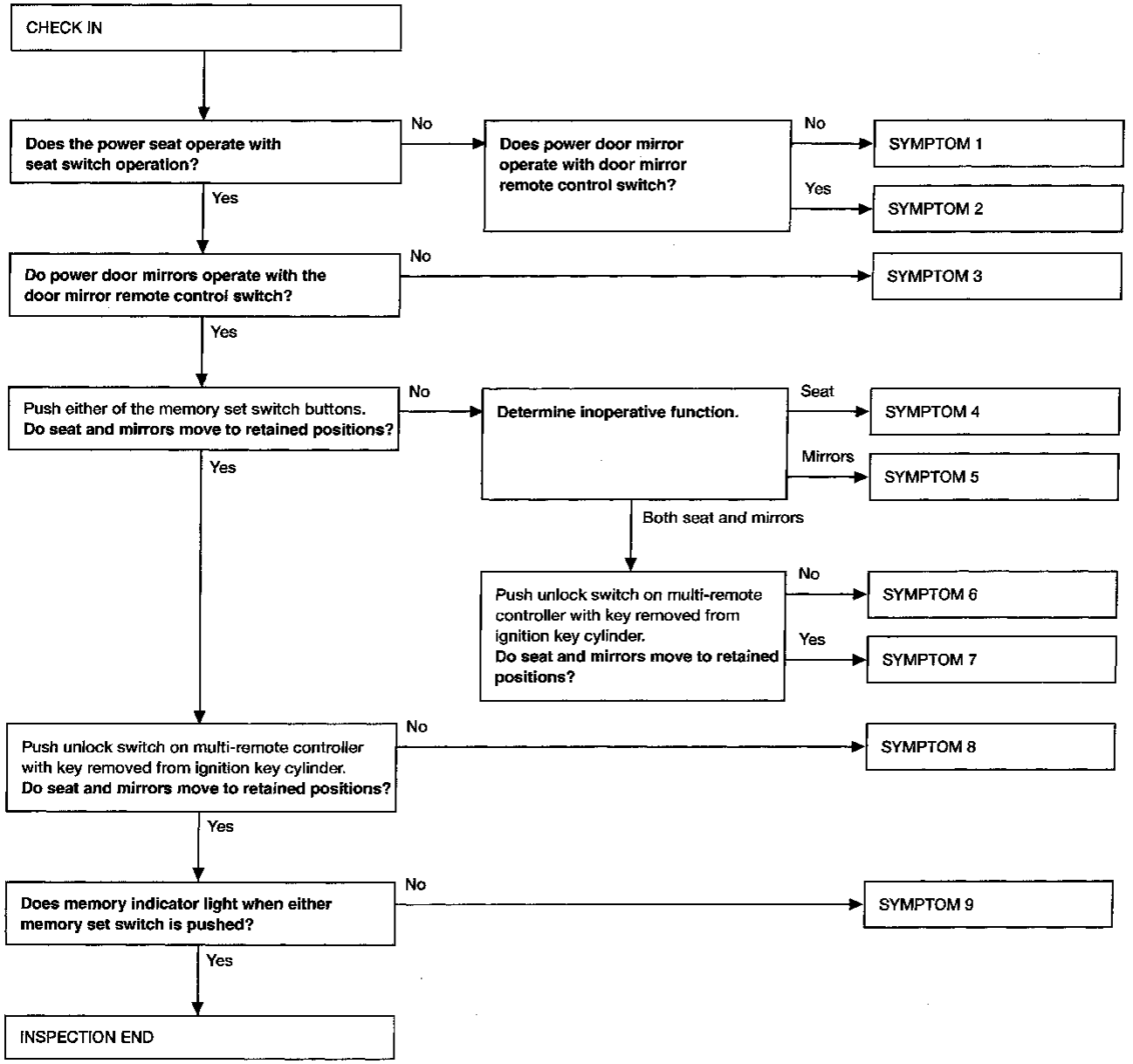
Trouble Diagnosis

NDEL0092

PRELIMINARY CHECK

NDEL0092S01

NOTE:
After performing preliminary check, go to symptom chart on next page.



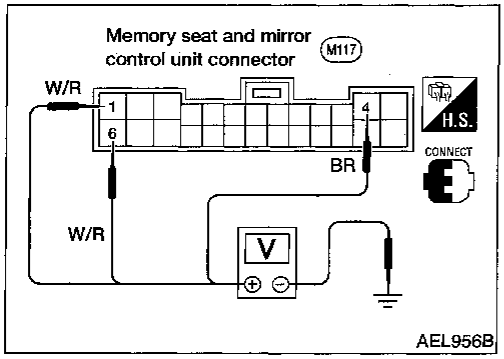
AEL005C

SYMPTOM CHART

=NDEL0092S02

Before starting trouble diagnoses below, perform preliminary check, EL-144. Symptom numbers in symptom chart correspond with those of preliminary check.

	Symptom		Diagnoses/service procedure	Reference page
1	Neither seat nor mirror function operate by any operation.		POWER SUPPLY AND GROUND CIRCUIT FOR MEMORY SEAT AND MIRROR CONTROL UNIT CHECK	EL-146
2	All/some functions of the power seat do not operate during manual operation or memory position operation.	Sliding	POWER SEAT SLIDING MOTOR CHECK	EL-148
			POWER SEAT SWITCH CHECK	EL-160
		Reclining	POWER SEAT RECLINING MOTOR CHECK	EL-149
			POWER SEAT SWITCH CHECK	EL-160
		Lifting	POWER SEAT LIFTING MOTOR CHECK	EL-150
			POWER SEAT SWITCH CHECK	EL-160
		All	POWER SEAT SWITCH CHECK	EL-160
3	All/some functions of the power door mirror do not operate during manual operation or memory position operation.	Driver side	POWER DOOR MIRROR MOTOR CHECK	EL-155
			DOOR MIRROR REMOTE CONTROL SWITCH CHECK	EL-162
		Passenger side	POWER DOOR MIRROR MOTOR CHECK	EL-155
			DOOR MIRROR REMOTE CONTROL SWITCH CHECK	EL-162
		Both driver and passenger side	DOOR MIRROR REMOTE CONTROL COMMON CIRCUIT CHECK	EL-161
4	Some functions of the power seat do not operate during memory position operation. (Power seat operates properly with manual operation.)	Sliding	POWER SEAT SLIDING SENSOR CHECK	EL-151
		Reclining	POWER SEAT RECLINING SENSOR CHECK	EL-152
		Lifting	POWER SEAT LIFTING SENSOR CHECK	EL-154
5	Some functions of the power door mirrors do not operate during memory position operation. (Door mirrors operate properly with manual operation.)	Driver side	DOOR MIRROR POSITION SENSOR CHECK (DRIVER SIDE)	EL-156
		Passenger side	DOOR MIRROR POSITION SENSOR CHECK (PASSENGER SIDE)	EL-158
6	Memory positioning does not operate with either memory switch or multi-remote controller operation.		IGNITION SWITCH ON SIGNAL CHECK	EL-146
			PARK/NEUTRAL POSITION (PNP) SWITCH CHECK	EL-147
7	Memory positioning does not operate with memory set switch operation. (Memory positioning operates with multi-remote controller operation.)		MEMORY SET SWITCH CHECK	EL-163
8	Memory positioning does not operate with multi-remote controller operation. (Memory positioning operates with memory set switch operation.)		REMOTE CONTROLLER SIGNAL CHECK	EL-165
9	Memory indicator does not light up.		MEMORY INDICATOR CHECK	EL-164
—	Seat and mirror positions cannot be retained in memory.		MEMORY SET SWITCH CHECK	EL-163



POWER SUPPLY AND GROUND CIRCUIT FOR MEMORY SEAT AND MIRROR CONTROL UNIT CHECK

NDEL0092S03

Power Supply Circuit Check

NDEL0092S0301

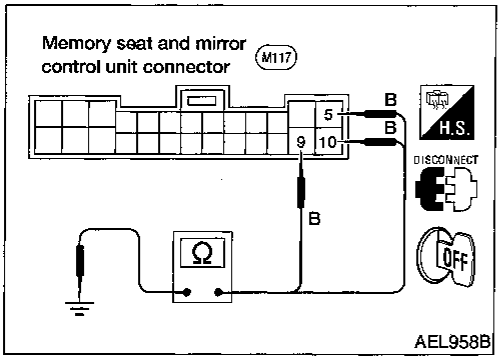
Terminals		Ignition switch position		
(+)	(−)	OFF	ACC	ON
1	Ground	Battery voltage	Battery voltage	Battery voltage
6	Ground	Battery voltage	Battery voltage	Battery voltage
4	Ground	Battery voltage	Battery voltage	Battery voltage

If result for terminal 4 is NG, check the following

- 15A fuse (No. 21, located in the fuse block)
- Joint connector-3
- Harness for open or short between memory seat and mirror control unit and fuse.

If result for terminals 1 or 6 is NG, check the following

- 30A fusible link (letter **f**, located in the fuse and fusible link box)
- Circuit breaker-2
- Harness for open or short between memory seat and mirror control unit and fuse.

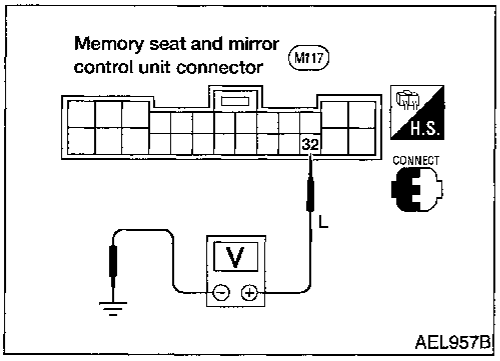


Ground Circuit Check

NDEL0092S0304

Terminals	Continuity
5 - Ground	Yes
9 - Ground	Yes
10 - Ground	Yes

If NG, check harness for open between memory seat and mirror control unit and ground.



IGNITION SWITCH ON SIGNAL CHECK

NDEL0092S19

Terminals		Ignition switch position		
(+)	(−)	OFF	ACC	ON
32	Ground	0	0	Battery voltage

If NG, check the following

- 10A fuse (No. 29, located in the fuse block)
- Harness for open or short between memory seat and mirror control unit and fuse.

PARK/NEUTRAL POSITION (PNP) SWITCH CHECK

=NDEL0092S20

1 CHECK FUSE

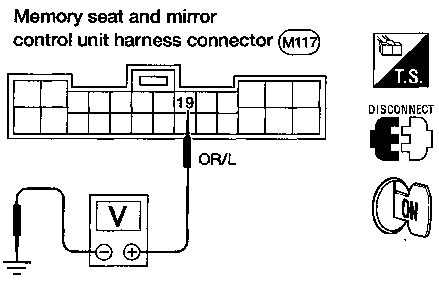
Check 10A fuse No. 30. For fuse layout, refer to "POWER SUPPLY ROUTING" "WIRING DIAGRAM — POWER —" EL-10.

Is fuse OK?

Yes	▶	GO TO 2.
No	▶	GO TO 5.

2 CHECK PARK/NEUTRAL POSITION (PNP) SWITCH SIGNAL

Check voltage between memory seat and mirror control unit terminal 19 and ground.



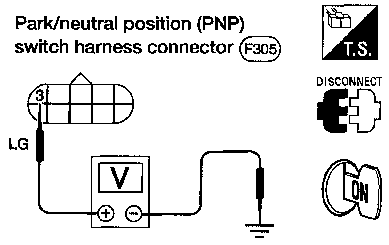
AEL325C

Does battery voltage exist in both P and N positions?

Yes	▶	Replace memory seat and mirror control unit.
No	▶	GO TO 3.

3 CHECK POWER SUPPLY CIRCUIT FOR PARK/NEUTRAL POSITION (PNP) SWITCH

1. Disconnect park/neutral position (PNP) switch.
2. Turn ignition switch to ON position.
3. Check voltage between park/neutral position (PNP) switch terminal 3 and ground.



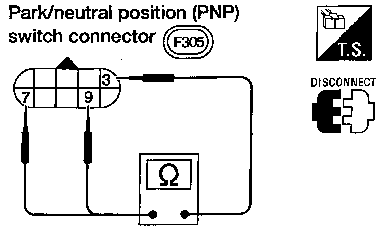
AEL326C

Does battery voltage exist?

Yes	▶	GO TO 4.
No	▶	Check harness for open or short between 10A fuse No. 30 and park/neutral position (PNP) switch.

4 CHECK PARK/NEUTRAL POSITION (PNP) SWITCH

Check continuity between park/neutral position (PNP) switch terminals.



AEL327C

Condition	Terminals		
	3	7	9
P	o	o	
N	o		o
Other			

AEL328C

OK or NG

OK	▶	Check harness for open or short between memory seat and mirror control unit and park/neutral position (PNP) switch.
NG	▶	Refer to "Park/Neutral Position (PNP) Switch Adjustment", "ON VEHICLE SERVICE" in AT section for adjustment procedure. If still NG, replace park/neutral position (PNP) switch.

5 REPLACE FUSE

Replace fuse.

Does the fuse blow again when ignition switch is turned to ON position?

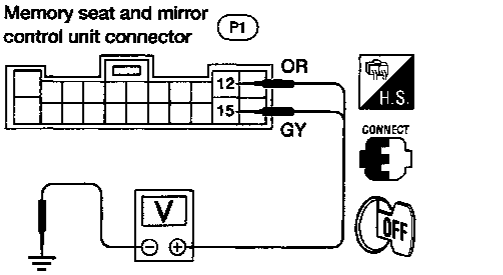
Yes	▶	Check harness for short to ground.
No	▶	**INSPECTION END**

POWER SEAT SLIDING MOTOR CHECK

=NDEL0092S04

1 CHECK OUTPUT SIGNAL TO SLIDING MOTOR

Check voltage between memory seat and mirror control unit terminals 12 or 15 and ground.



AEL960B

Condition of sliding switch	Terminals (+)	Terminals (−)	Voltage (V)
Forward	12	Ground	More than 10.8
	15	Ground	Less than 1.2
Rearward	12	Ground	Less than 1.2
	15	Ground	More than 10.8

AEL959B

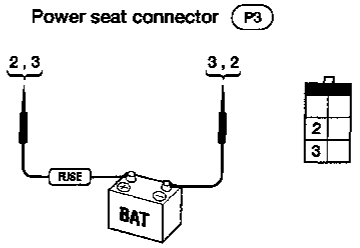
Refer to wiring diagram, EL-140.

OK or NG

OK	▶	GO TO 2.
NG	▶	Replace memory seat and mirror control unit.

2 CHECK SLIDING MOTOR

1. Disconnect sliding motor connector.
2. Apply 12V DC direct current to motor and check operation.



AEL962B

Terminals (+)	Terminals (−)	Operation
2	3	Forward
3	2	Rearward

AEL961B

OK or NG

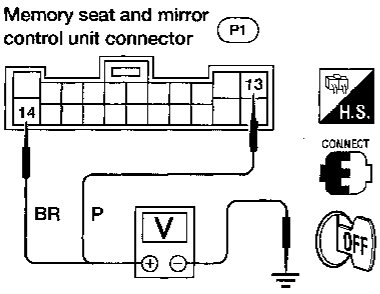
OK	▶	Check harness for open or short between memory seat and mirror control unit and sliding motor.
NG	▶	Replace sliding motor.

POWER SEAT RECLINING MOTOR CHECK

=NDEL0092S05

1 CHECK OUTPUT SIGNAL TO RECLINING MOTOR

Check voltage between memory seat and mirror control unit terminals 13 or 14 and ground.



AEL964B

Condition of reclining switch	Terminals (+)	Terminals (−)	Voltage (V)
Forward	14	Ground	More than 10.8
	13	Ground	Less than 1.2
Rearward	14	Ground	Less than 1.2
	13	Ground	More than 10.8

AEL963B

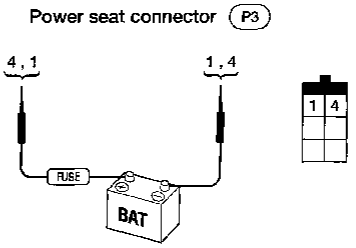
Refer to wiring diagram, EL-140.

OK or NG

OK	▶	GO TO 2.
NG	▶	Replace memory seat and mirror control unit.

2 CHECK RECLINING MOTOR

1. Disconnect reclining motor connector.
2. Apply 12V DC direct current to motor and check operation.



AEL966B

Terminals (+)	Terminals (−)	Operation
4	1	Forward
1	4	Rearward

AEL965B

OK or NG

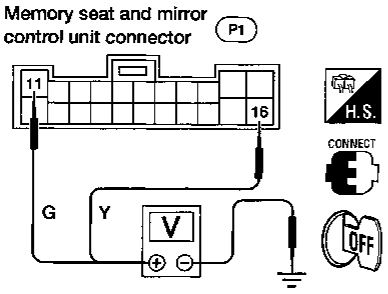
OK	▶	Check harness for open or short between memory seat and mirror control unit and reclining motor.
NG	▶	Replace reclining motor.

POWER SEAT LIFTING MOTOR CHECK

=NDEL0092S06

1 CHECK OUTPUT SIGNAL TO LIFTING MOTOR

Check voltage between memory seat and mirror control unit terminals 11 or 16 and ground.



AEL968B

Condition of lifting switch	Terminals (+)	Terminals (−)	Voltage (V)
Up	11	Ground	More than 10.8
	16	Ground	Less than 1.2
Down	11	Ground	Less than 1.2
	16	Ground	More than 10.8

AEL967B

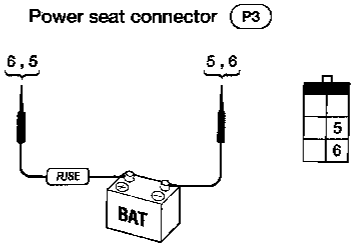
Refer to wiring diagram, EL-140.

OK or NG

OK	▶	GO TO 2.
NG	▶	Replace memory seat and mirror control unit.

2 CHECK LIFTING MOTOR

1. Disconnect lifting motor connector.
2. Apply 12V DC direct current to motor and check operation.



AEL970B

Terminals (+)	Terminals (−)	Operation
6	5	Up
5	6	Down

AEL969B

OK or NG

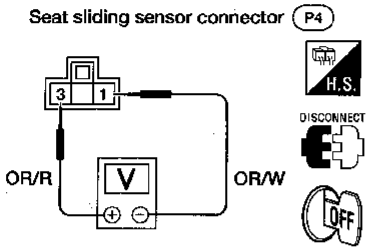
OK	▶	Check harness for open or short between memory seat and mirror control unit and lifting motor.
NG	▶	Replace lifting motor.

POWER SEAT SLIDING SENSOR CHECK

=NDEL0092S08

1 CHECK SLIDING SENSOR PULL UP VOLTAGE

1. Disconnect sliding sensor connector.
2. Check voltage between sliding sensor connector terminals 1 and 3.



AEL975B

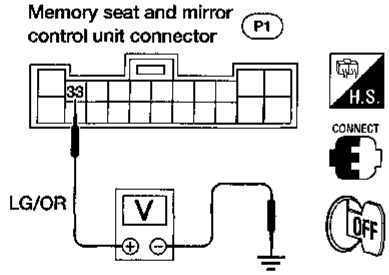
Refer to wiring diagram, EL-140.

Does 5V exist?

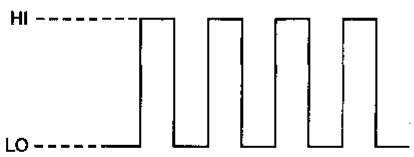
Yes	▶	GO TO 2.
No	▶	**Check the following** • Harness for open or short between sliding sensor terminal 1 and memory seat and mirror control unit terminal 41 • Harness for open or short between sliding sensor terminal 3 and memory seat and mirror control unit terminal 44.

2 CHECK SLIDING SENSOR INPUT SIGNAL

Measure voltage between memory seat and mirror control unit terminal 33 and ground with oscilloscope when seat slide is operated.



AEL976B



HI: Approx. 5V
LO: Approx. 0V

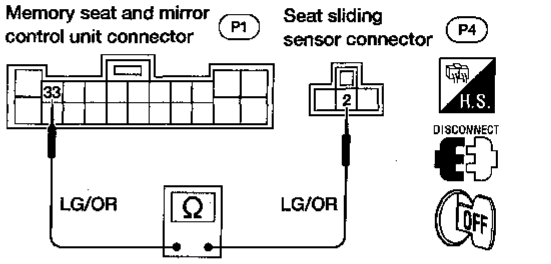
AEL979B

OK or NG

OK	▶	Sliding sensor is OK.
NG	▶	GO TO 3.

3 CHECK SLIDING SENSOR OPEN OR SHORT CIRCUIT

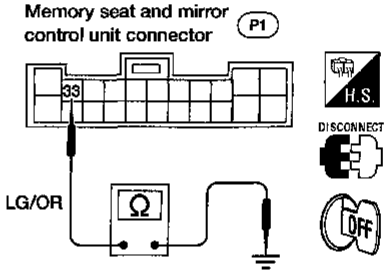
1. Disconnect sliding sensor connector and memory seat and mirror control unit.
2. Check continuity between memory seat and mirror control unit terminal 33 and sliding sensor terminal 2.



AEL977B

Continuity should exist.

3. Check continuity between memory seat and mirror control unit terminal 33 and ground.



AEL978B

Continuity should not exist.

OK or NG

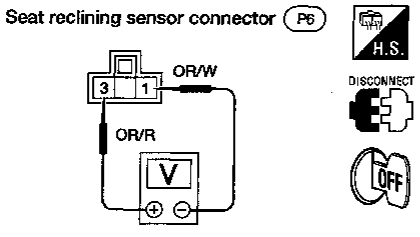
OK	▶	Replace sliding sensor.
NG	▶	Repair harness.

POWER SEAT RECLINING SENSOR CHECK

=NDEL0092S09

1 CHECK RECLINING SENSOR PULL UP VOLTAGE

1. Disconnect reclining sensor connector.
2. Check voltage between reclining sensor connector terminals 1 and 3.



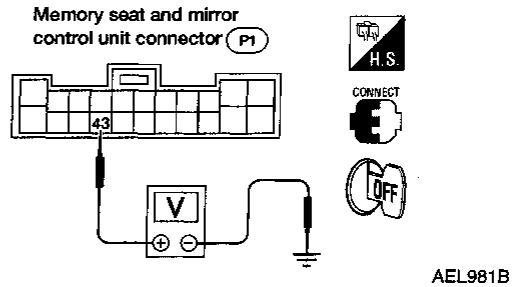
Refer to wiring diagram, EL-140.

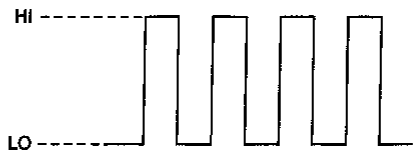
Does 5V exist?

Yes	▶	GO TO 2.
No	▶	**Check the following** • Harness for open or short between reclining sensor terminal 1 and memory seat and mirror control unit terminal 41 • Harness for open or short between reclining sensor terminal 3 and memory seat and mirror control unit terminal 44.

2 CHECK RECLINING SENSOR INPUT SIGNAL

Measure voltage between memory seat and mirror control unit terminal 43 and ground with oscilloscope when seat reclining is operated.





HI: Approx. 5V
LO: Approx. 0V

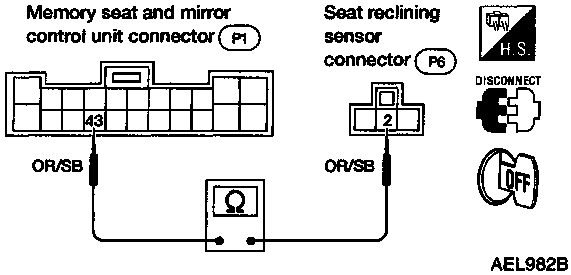
AEL979B

OK or NG

OK	▶	Reclining sensor is OK.
NG	▶	GO TO 3.

3	CHECK RECLINING SENSOR OPEN OR SHORT CIRCUIT

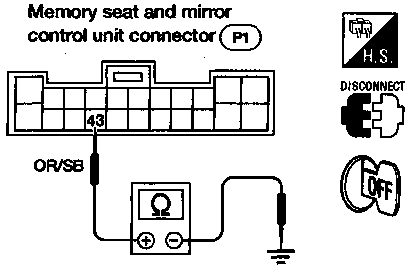
1. Disconnect reclining sensor connector and memory seat and mirror control unit.
2. Check continuity between memory seat and mirror control unit terminal 43 and reclining sensor terminal 2.



AEL982B

Continuity should exist.

3. Check continuity between memory seat and mirror control unit terminal 43 and ground.



AEL983B

Continuity should not exist.

OK or NG

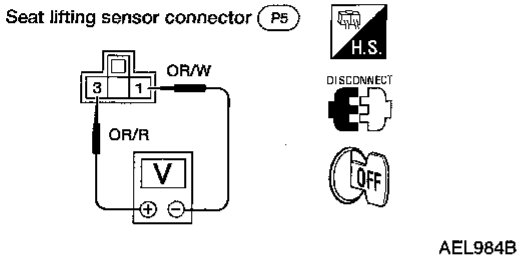
OK	▶	Replace reclining sensor.
NG	▶	Repair harness.

POWER SEAT LIFTING SENSOR CHECK

=NDEL0092S10

1 CHECK LIFTING SENSOR PULL UP VOLTAGE

1. Disconnect lifting sensor connector.
2. Check voltage between lifting sensor connector terminals 1 and 3.



AEL984B

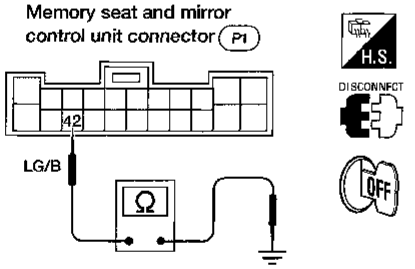
Refer to wiring diagram, EL-140.

Does 5V exist?

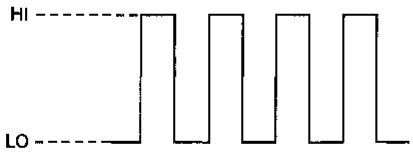
Yes	▶	GO TO 2.
No	▶	**Check the following** • Harness for open or short between lifting sensor terminal 1 and memory seat and mirror control unit terminal 41 • Harness for open or short between lifting sensor terminal 3 and memory seat and mirror control unit terminal 44.

2 CHECK LIFTING SENSOR INPUT SIGNAL

Measure voltage between memory seat and mirror control unit terminal 42 and ground with oscilloscope when seat lifting is operated.



AEL985B



HI: Approx. 5V
LO: Approx. 0V

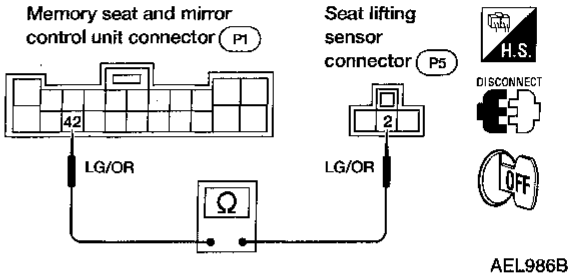
AEL979B

OK or NG

OK	▶	Lifting sensor is OK.
NG	▶	GO TO 3.

3 CHECK LIFTING SENSOR OPEN OR SHORT CIRCUIT

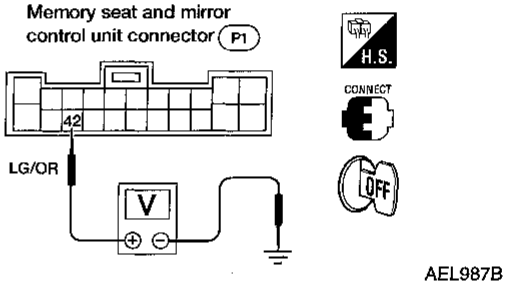
1. Disconnect lifting sensor connector and memory seat and mirror control unit.
2. Check continuity between memory seat and mirror control unit terminal 42 and lifting sensor terminal 2.



AEL986B

Continuity should exist.

3. Check continuity between memory seat and mirror control unit terminal 42 and ground.



AEL987B

Continuity should not exist.

OK or NG

OK	▶	Replace lifting sensor.
NG	▶	Repair harness.

POWER DOOR MIRROR MOTOR CHECK

=NDEL0082S07

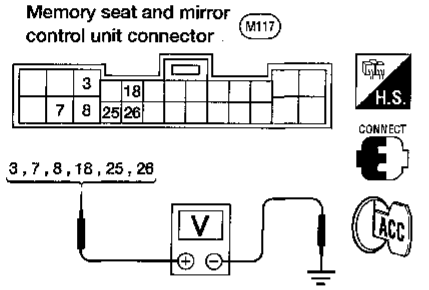
1 PRELIMINARY CHECK

Determine which direction (horizontal or vertical) is not functioning.

▶ GO TO 2.

2 CHECK OUTPUT SIGNAL TO DOOR MIRROR MOTOR

Check the voltage between memory seat and mirror control unit terminals and ground.



AEL972B

Condition of door mirror remote control switch		Terminals (+)	Terminals (−)	Voltage (V)
LH side	Right	8	Ground	More than 10.8
	Left	3	Ground	More than 10.8
	Down	8	Ground	More than 10.8
	Up	18	Ground	More than 10.8
RH side	Right	7	Ground	More than 10.8
	Left	26	Ground	More than 10.8
	Down	7	Ground	More than 10.8
	Up	25	Ground	More than 10.8

AEL971B

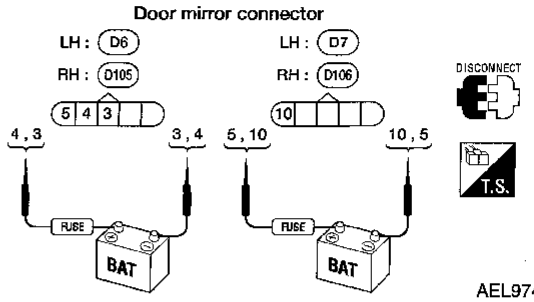
Refer to wiring diagrams, EL-142 and 143.

OK or NG

OK	▶	GO TO 3.
NG	▶	Replace memory seat and mirror control unit.

3 CHECK DOOR MIRROR MOTOR

1. Disconnect door mirror motor connector.
2. Apply 12V DC direct current to motor and check operation.



AEL974B

Terminals (+)	Terminals (−)	Operation	
4	3	Left	Horizontal
3	4	Right	
5	10	Up	Vertical
10	5	Down	

AEL973B

OK or NG

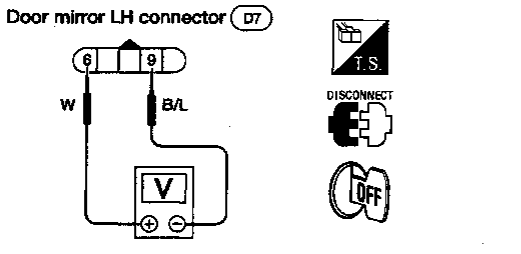
OK	▶	Check harness for open or short between memory seat and mirror control unit and door mirror motor.
NG	▶	Replace door mirror motor.

DOOR MIRROR POSITION SENSOR CHECK (DRIVER SIDE)

=NDEL0092S11

1 CHECK DOOR MIRROR SENSOR PULL UP VOLTAGE

1. Disconnect LH door mirror sensor connector.
2. Check voltage between LH door mirror sensor connector terminals 6 and 9.



AEL988B

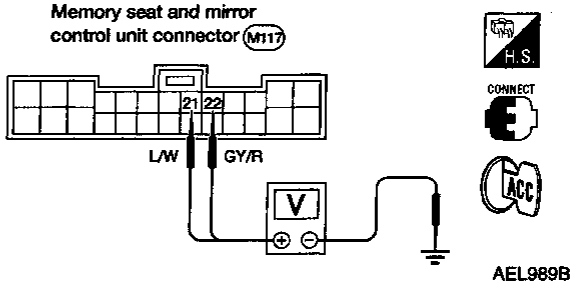
Refer to wiring diagram, EL-142.

Does 5V exist?

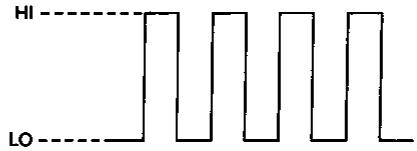
Yes	▶	GO TO 2.
No	▶	**Check the following** • Harness for open or short between LH door mirror sensor terminal 6 and memory seat and mirror control unit terminal 2 • Harness for open or short between LH door mirror sensor terminal 9 and memory seat and mirror control unit terminal 17.

2 CHECK DOOR MIRROR SENSOR INPUT SIGNAL

Measure voltage between memory seat and mirror control unit terminal 21 (horizontal), 22 (vertical) and ground with oscilloscope when LH door mirror is operated.



AEL989B



HI: Approx. 5V
LO: Approx. 0V

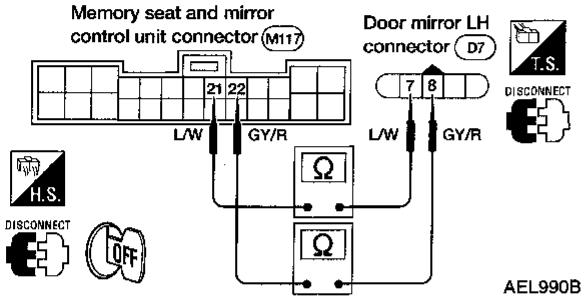
AEL979B

OK or NG

OK	▶	LH door mirror sensor is OK.
NG	▶	GO TO 3.

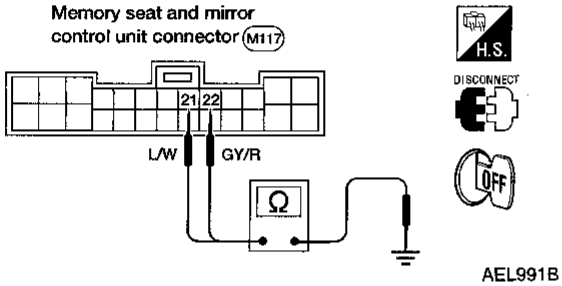
3	CHECK DOOR MIRROR SENSOR OPEN OR SHORT CIRCUIT

1. Disconnect LH door mirror sensor connector and memory seat and mirror control unit.
2. Check continuity between memory seat and mirror control unit terminal 21 and LH door mirror sensor terminal 7 (horizontal), memory seat and mirror control unit terminal 22 and LH door mirror terminal 8 (vertical).



Continuity should exist.

3. Check continuity between memory seat and mirror control unit terminal 21 (horizontal), 22 (vertical) and ground.



Continuity should not exist.

OK or NG

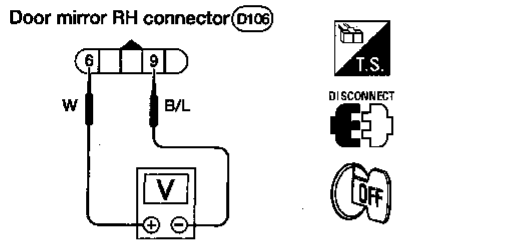
OK	▶	Replace LH door mirror sensor.
NG	▶	Repair harness.

DOOR MIRROR POSITION SENSOR CHECK (PASSENGER SIDE)

=NDEL0092S12

1 CHECK DOOR MIRROR SENSOR PULL UP VOLTAGE

1. Disconnect RH door mirror sensor connector.
2. Check voltage between RH door mirror sensor connector terminals 6 and 9.



AEL992B

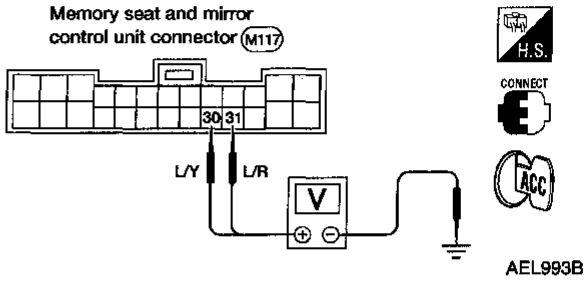
Refer to wiring diagram, EL-143.

Does 5V exist?

Yes	▶	GO TO 2.
No	▶	**Check the following** • Harness for open or short between RH door mirror sensor terminal 6 and memory seat and mirror control unit terminal 2 • Harness for open or short between RH door mirror sensor terminal 9 and memory seat and mirror control unit terminal 17.

2 CHECK DOOR MIRROR SENSOR INPUT SIGNAL

Measure voltage between memory seat and mirror control unit terminal 30 (horizontal), 31 (vertical) and ground with oscilloscope when RH door mirror is operated.



AEL993B

HI: Approx. 5V
LO: Approx. 0V

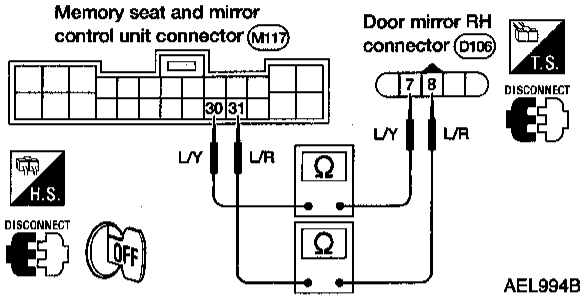
AEL979B

OK or NG

OK	▶	RH door mirror sensor is OK.
NG	▶	GO TO 3.

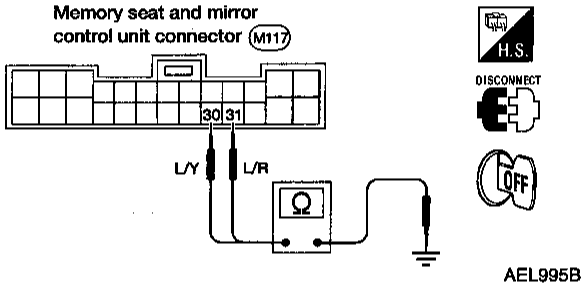
3	CHECK DOOR MIRROR SENSOR OPEN OR SHORT CIRCUIT

1. Disconnect RH door mirror sensor connector and memory seat and mirror control unit.
2. Check continuity between memory seat and mirror control unit terminal 30 and RH door mirror sensor terminal 7 (horizontal), memory seat and mirror control unit terminal 31 and RH door mirror terminal 8 (vertical).



Continuity should exist.

3. Check continuity between memory seat and mirror control unit terminal 30 (horizontal), 31 (vertical) and ground.



Continuity should not exist.

OK or NG

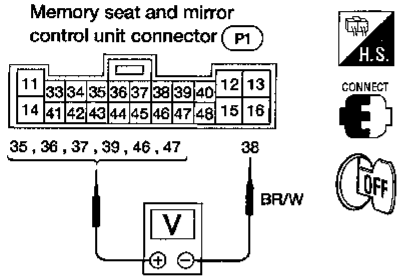
OK	▶	Replace RH door mirror sensor.
NG	▶	Repair harness.

POWER SEAT SWITCH CHECK

=NDEL0092S13

1 CHECK POWER SEAT SWITCH INPUT SIGNAL

Check voltage between memory seat and mirror control unit terminals and ground.



AEL997B

Terminals (+)	Terminals (−)	Power seat switch condition		Voltage (V)
46	38	Sliding switch forward	ON	0
			OFF	5
35	38	Sliding switch rearward	ON	0
			OFF	5
47	38	Reclining switch forward	ON	0
			OFF	5
39	38	Reclining switch rearward	ON	0
			OFF	5
36	38	Lifting switch up	ON	0
			OFF	5
37	38	Lifting switch down	ON	0
			OFF	5

AEL996B

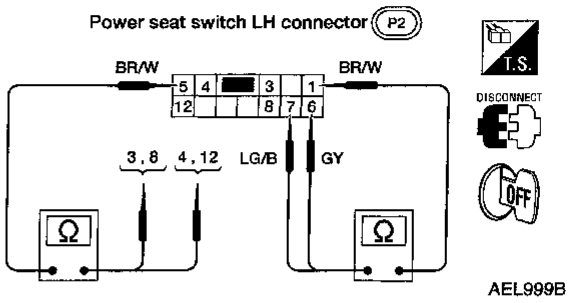
Refer to wiring diagram, EL-141.

OK or NG

OK	▶	Power seat switch is OK.
NG	▶	GO TO 2.

2 CHECK POWER SEAT SWITCH

1. Disconnect power seat switch.
2. Check continuity between power seat switch terminals.



AEL999B

Switch	Condition	Terminals 3	8	6	7	4	12	1	5
Sliding	Forward	○							○
	Rearward		○						○
Reclining	Forward			○				○	
	Rearward				○			○	
Lifting	Up					○			○
	Down						○		○

AEL998B

OK or NG

OK	▶	Check harness for open or short between power seat switch and memory seat and mirror control unit.
NG	▶	Replace power seat switch.

DOOR MIRROR REMOTE CONTROL COMMON CIRCUIT CHECK

=NDEL0092S14

1 PRELIMINARY CHECK

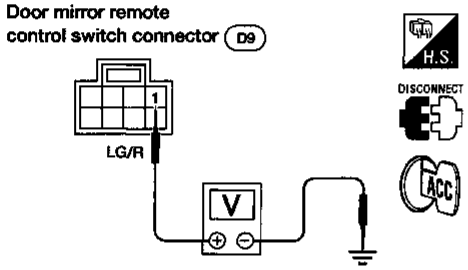
Do both power mirrors (LH and RH) not operate with door mirror remote control switch?

Yes or NO

Yes ▶	GO TO 2.
No ▶	GO TO "DOOR MIRROR REMOTE CONTROL SWITCH CHECK", EL-162.

2 CHECK POWER SUPPLY CIRCUIT FOR DOOR MIRROR REMOTE CONTROL SWITCH

1. Turn ignition switch to ACC position.
2. Check voltage between door mirror remote control switch terminal 1 and ground.



AEL001C

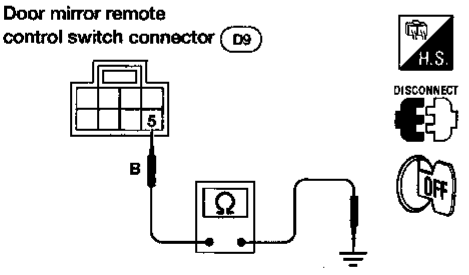
Refer to wiring diagram, EL-143.

Does battery voltage exist?

Yes ▶	GO TO 3.
No ▶	**Check the following** • 10A fuse (No. 5, located in the fuse block) • Harness for open or short between fuse and the switch.

3 CHECK GROUND CIRCUIT FOR DOOR MIRROR REMOTE CONTROL SWITCH

Check continuity between door mirror remote control switch terminal 5 and ground.



AEL002C

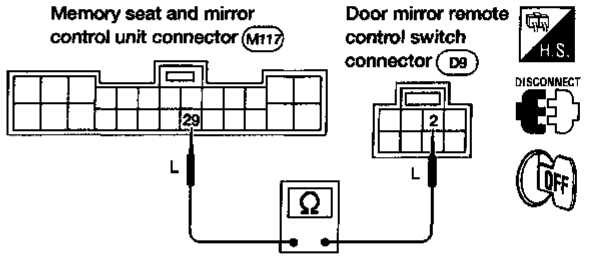
Refer to wiring diagram, EL-143.

Does continuity exist?

Yes ▶	GO TO 4.
No ▶	Repair harness.

4 CHECK DOOR MIRROR COMMON SIGNAL OPEN OR SHORT CIRCUIT

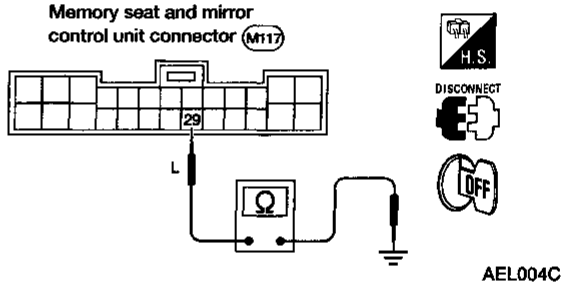
1. Disconnect memory seat and mirror control unit connector and door mirror remote control switch connector.
2. Check continuity between memory seat and mirror control unit terminal 29 and door mirror remote control switch terminal 2.



AEL003C

Continuity should exist.

3. Check continuity between memory seat and mirror control unit terminal 29 and ground.



AEL004C

Continuity should not exist.

OK or NG

OK ▶	Replace door mirror remote control switch.
NG ▶	Repair harness.

DOOR MIRROR REMOTE CONTROL SWITCH CHECK

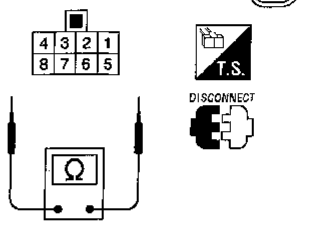
=NDEL0092S15

1	PRELIMINARY CHECK
Do both power mirrors (LH and RH) not operate with door mirror remote control switch?	
Yes or No?	
Yes ▶	GO TO "DOOR MIRROR REMOTE CONTROL COMMON CIRCUIT CHECK", EL-161
No ▶	GO TO 2.

2	CHECK DOOR MIRROR REMOTE CONTROL SWITCH

1. Disconnect door mirror remote control switch connector.
2. Check continuity between door mirror remote control switch terminals.

Door mirror remote control switch connector D9



AEL009C

Switch condition		Terminals						
		1	2	4	5	6	7	8
LH side	U	○—○			○—○			
	D	○	○—○		○—○			
	L	○—○		○—○				
	R	○	○—○		○—○			
	N							
RH side	U	○—○			○—○			
	D	○	○—○		○—○			
	L	○—○			○—○			○
	R	○	○—○		○—○			○
	N							

AEL008C

OK or NG

OK ▶	Check harness for open or short between memory seat control unit and door mirror remote control switch.
NG ▶	Replace door mirror remote control switch.

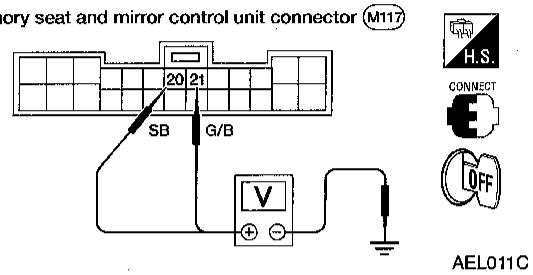
MEMORY SET SWITCH CHECK

=NDEL0092S16

1 CHECK MEMORY SET SWITCH INPUT SIGNAL

Check voltage between memory seat and mirror control unit terminals and grounds.

Memory seat and mirror control unit connector (M117)



AEL011C

Terminals	Memory set switch condition		Voltage [V]
20 - Ground	Set switch 1	ON	0
		OFF	5
28 - Ground	Set switch 2	ON	0
		OFF	5

AEL010C

Refer to wiring diagram in EL-139.

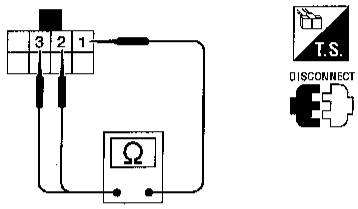
OK or NG

OK	▶	Memory set switch is OK.
NG	▶	GO TO 2.

2 CHECK MEMORY SET SWITCH

1. Disconnect memory set switch.
2. Check continuity between memory set switch terminals.

Memory set switch connector (D5)



AEL014C

Memory set switch		Terminals 1	2	3
Set switch 1	Pushed	○		○
	Released			
Set switch 2	Pushed	○	○	
	Released			

AEL013C

OK or NG

OK	▶	Check harness for open or short between memory set switch and memory seat and mirror control unit.
NG	▶	Replace memory set switch.

MEMORY INDICATOR CHECK

NDEL0092S17

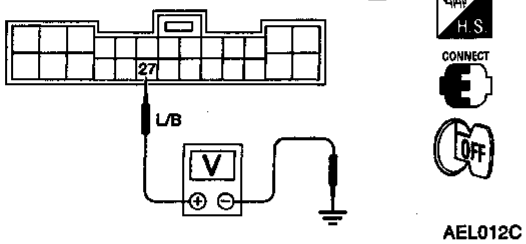
1	CHECK INDICATOR OUTPUT SIGNAL

Check voltage between memory seat and mirror control unit terminal 27 and grounds with any of memory set switch pushed.

NOTE:

Check voltage within 10 seconds after the switch is pushed.

Memory seat and mirror control unit connector (M117)



AEL012C

Refer to wiring diagram in EL-139.

Does battery voltage exist?

Yes	▶	**Check the following harnesses for opens or shorts** • Between memory seat and mirror control unit and memory set switch indicator • Between memory set switch indicator and ground. If results are OK, replace memory set switch.
No	▶	Check memory set switch. Refer to EL-162. If results are OK, replace memory seat and mirror control unit.

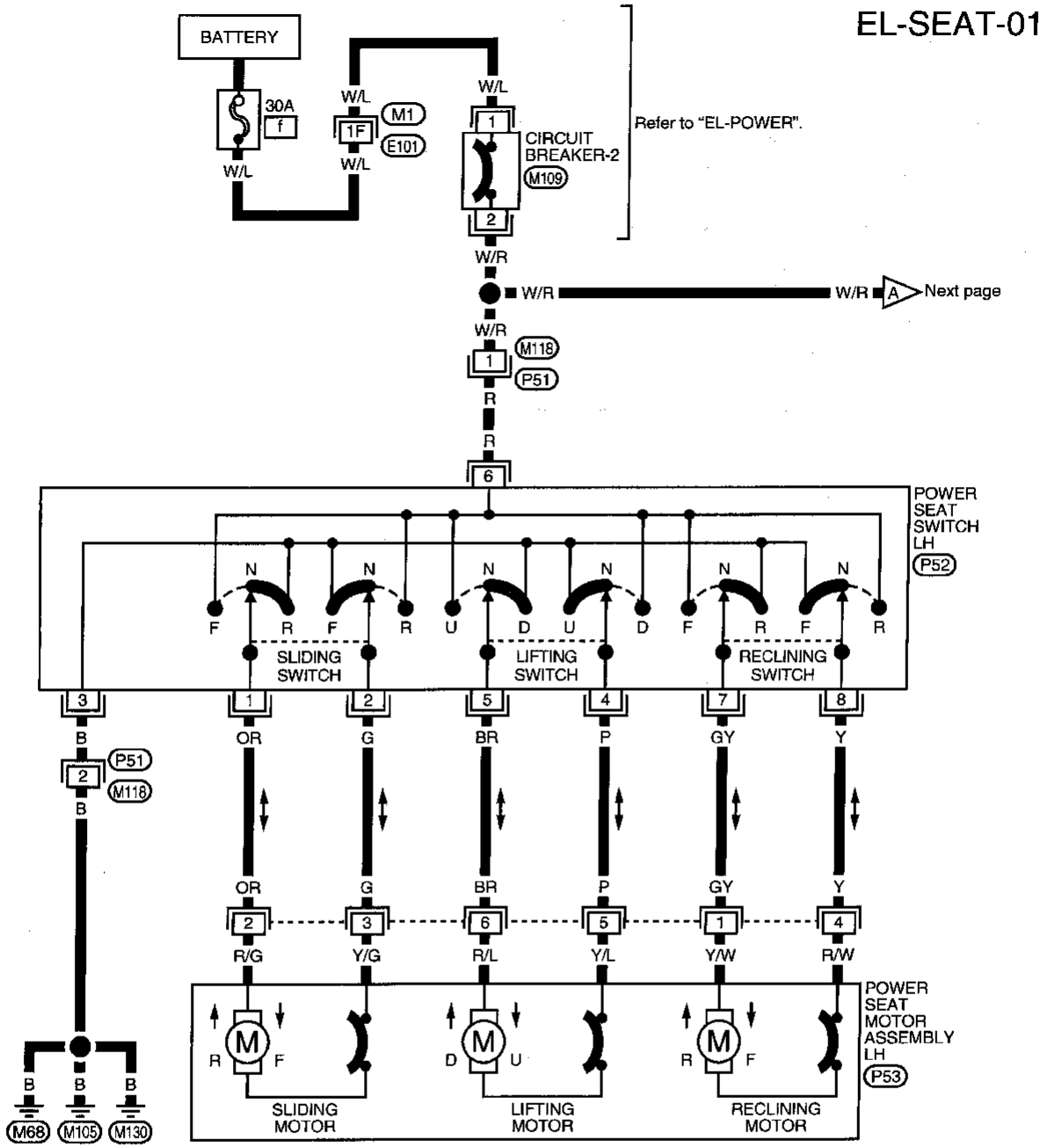
REMOTE CONTROLLER SIGNAL CHECK

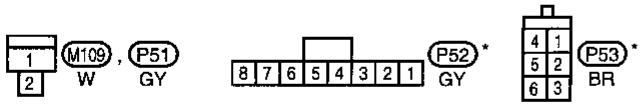
=NDEL0092S18

1	CHECK ID REGISTRATION	
Re-register multi-remote controller ID into memory seat and mirror control unit. (Refer to EL-137.) **NOTE:** Before re-registering the ID, confirm that multi-remote control system operates properly. If NG, check multi-remote control system. **Can the remote controller ID be entered?**		
Yes	▶	The system is OK. (The remote controller ID has not been entered.)
No	▶	Check harness for open or short between memory seat control unit and smart entrance control unit. (Refer to wiring diagram in EL-139.)

Wiring Diagram — SEAT —

NDEL0093



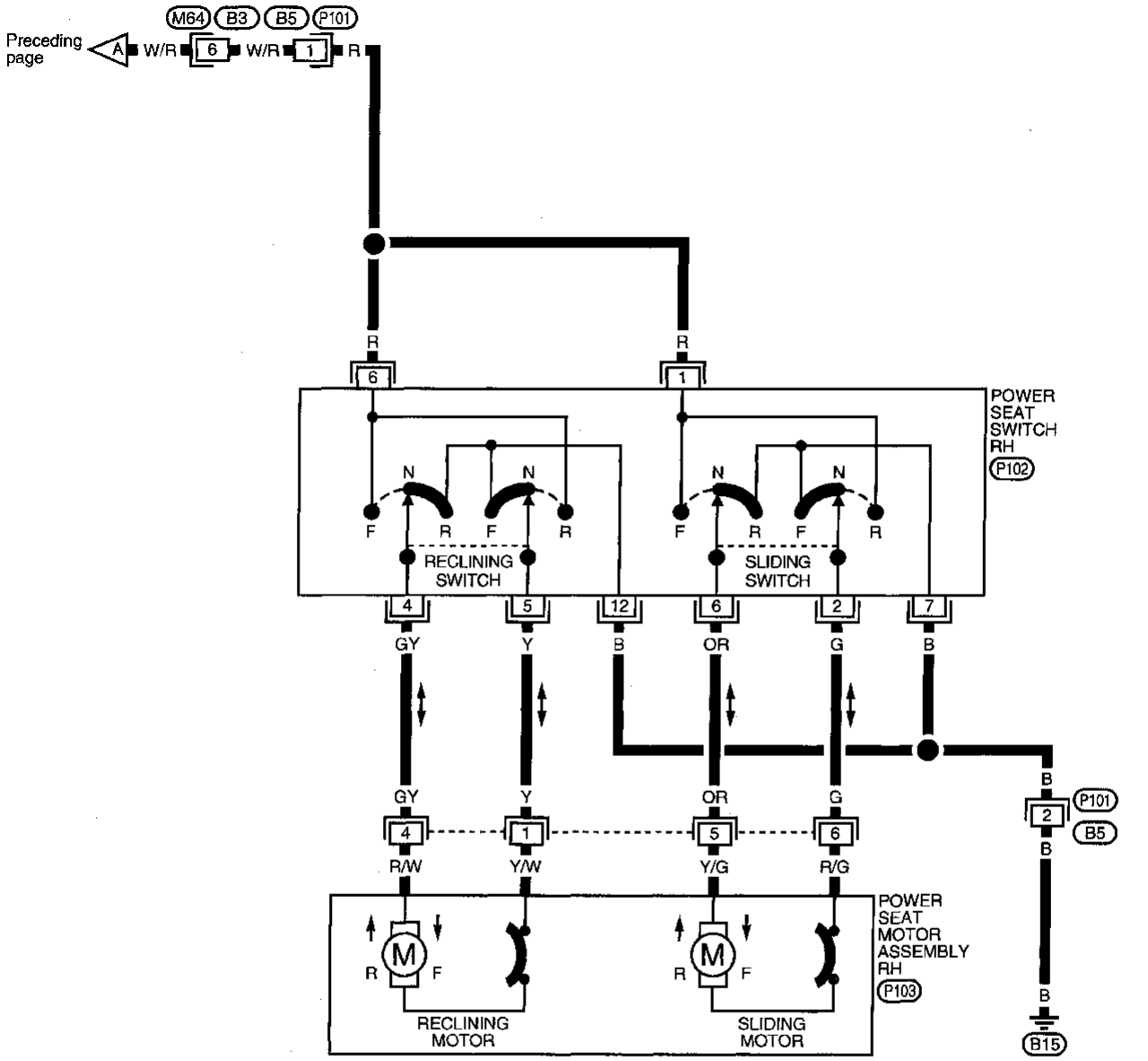


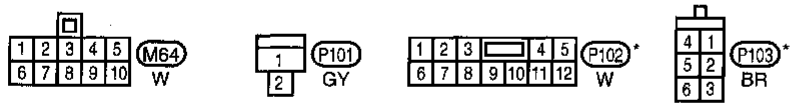
Refer to last page (Foldout page).
M1, E101

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

AEL810B

EL-SEAT-02



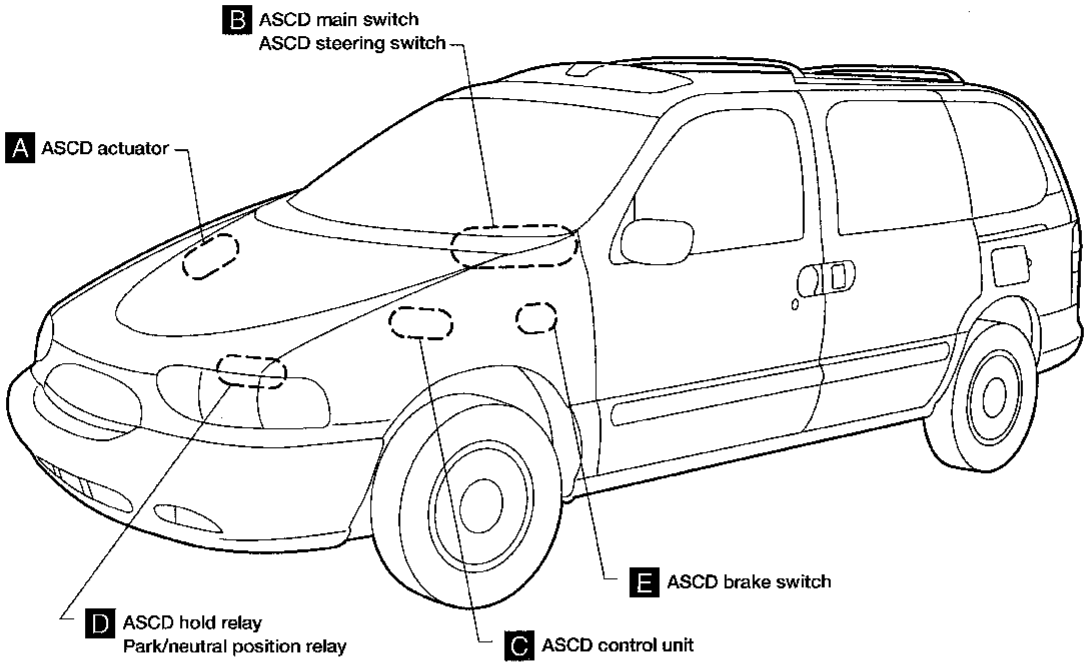


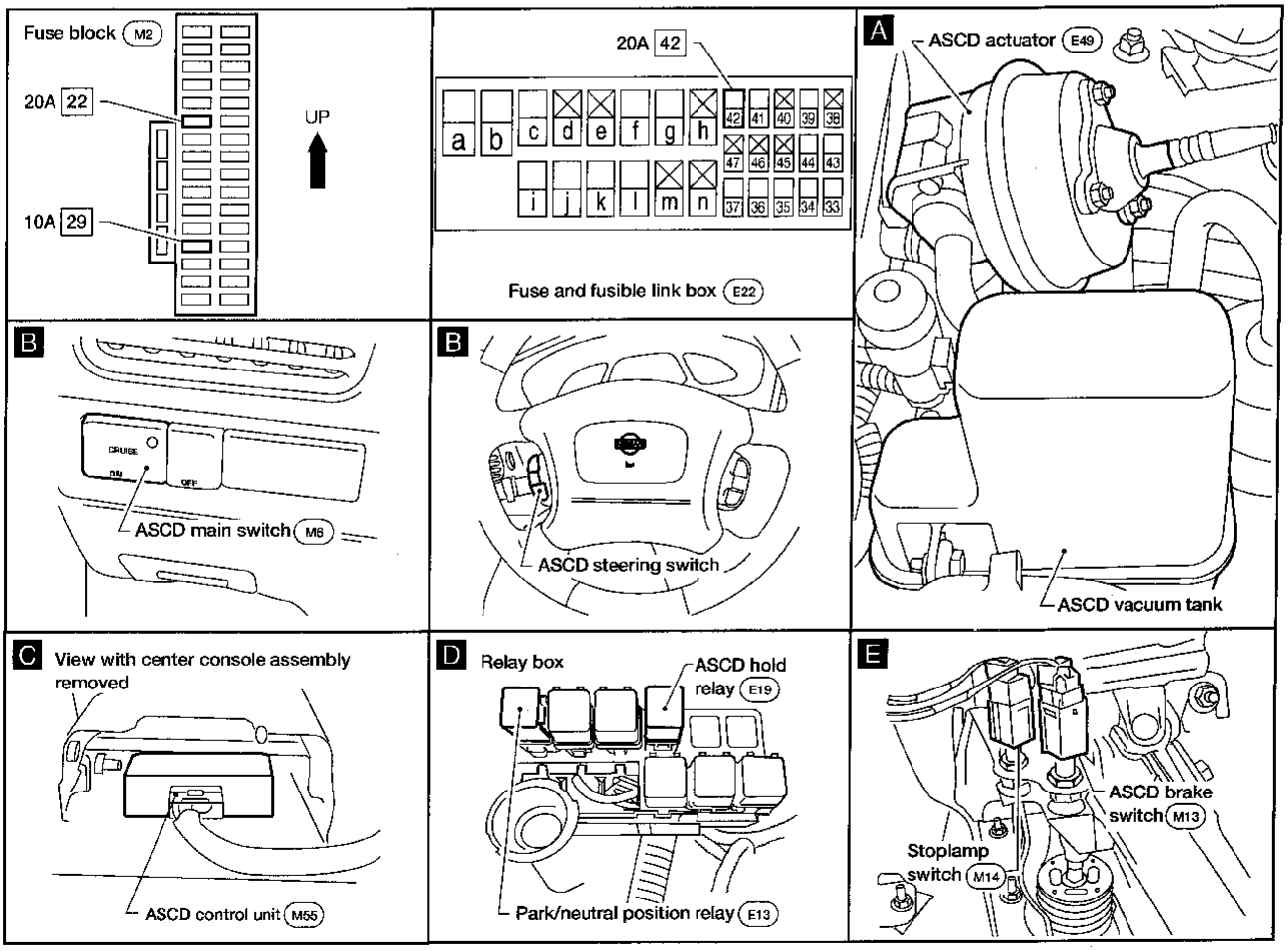
*: This connector is not shown in "HARNESS LAYOUT".

AEL811B

Components Parts and Harness Connector Location

NDEL0151





AEL196C

System Description

NDEL0094

Refer to Owner's Manual for ASCD operating instructions.

POWER SUPPLY AND GROUND CIRCUIT

NDEL0094S01

When 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 ON position, power is supplied
- from ASCD main switch terminal 3
- to ASCD hold relay terminal 2.

Ground is supplied
- to ASCD hold relay terminal 1
- through body grounds E3, E30 and E50.

With power and ground supplied, ASCD hold relay is energized, and then power is supplied
- from ASCD hold relay terminal 3
- to ASCD control unit terminal 4 and
- to ASCD main switch terminal 2.

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

This power supply continues until any of the following things happen.
- Ignition switch is returned to the ACC or OFF position
- ASCD main switch is turned to OFF position.

While ASCD hold relay is energized power is also supplied to ASCD control unit terminal 5
- through ASCD brake switch, ASCD hold relay and park/neutral position (PNP) relay.

Ground is supplied
- to ASCD control unit terminal 3
- through body grounds M68, M105 and M130.

OPERATION

NDEL0094S02

Set Operation

NDEL0094S0201

To activate the ASCD, all of following conditions must exist
- Power supply to ASCD control unit terminal 4.
- Power supply to ASCD control unit terminal 5 (Brake pedal is released and A/T selector lever is in other than P and N positions.)
- Vehicle speed is greater than 48 km/h (30 MPH) (Signal from combination meter).

When the SET/COAST switch is depressed, power is supplied
- from ASCD steering switch terminal 1
- to ASCD control unit terminal 2.

And then ASCD actuator is activated to control throttle wire and ASCD control unit terminal 13 supplies power
- to combination meter terminal 1 to illuminate CRUISE indicator.

A/T Overdrive Control During Cruise Control Driving

NDEL0094S0202

When the vehicle speed is approximately 8 km/h (5 MPH) below set speed, a signal is sent
- from ASCD control unit terminal 12
- to TCM (transmission control module) terminal 24.

When this occurs, the TCM cancels overdrive.
After vehicle speed is approximately 3 km/h (2 MPH) above set speed, overdrive is reactivated.

Coast Operation

=NDEL0094S0203

When the SET/COAST switch is depressed during cruise control driving, ASCD actuator returns the throttle cable to decrease vehicle set speed until the switch is released. Then ASCD will keep the new set speed.

Accel Operation

NDEL0094S0204

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

- from ASCD steering switch terminal 2
- to ASCD control unit terminal 1.

If the RESUME/ACCEL switch is depressed during cruise control driving, ASCD actuator pulls the throttle cable to increase the vehicle speed until the switch is released or vehicle speed is reached to maximum controlled speed by the system. Then ASCD will keep the new set speed.

Cancel Operation

NDEL0094S0205

When any of the following condition exists, cruise operation will be canceled (main switch indicator will continue to illuminate.)

- CANCEL switch is depressed (power is supplied to ASCD control unit terminals 1 and 2.)
- Brake pedal is depressed (power is supplied to ASCD control unit terminal 11 from stop lamp switch and power supply to ASCD control unit terminal 5 is interrupted.)
- A/T selector lever is shifted to P or N position (power supply to ASCD control unit terminal 5 is interrupted.)

If MAIN switch is depressed while ASCD is activated, all of ASCD operation will be canceled and vehicle speed memory will be erased.

Resume Operation

NDEL0094S0206

When the RESUME/ACCEL switch is depressed after cancel operation (other than depressing MAIN switch), vehicle speed will return to last set speed. To resume vehicle set speed, vehicle condition must meet following conditions

- Brake pedal is released
- A/T selector lever is in other than P or N position
- Vehicle speed is greater than 48 km/h (30 MPH).

ASCD ACTUATOR OPERATION

NDEL0094S03

The ASCD actuator consists of a vacuum valve, an air valve and a release valve. When the ASCD activates, power is supplied

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

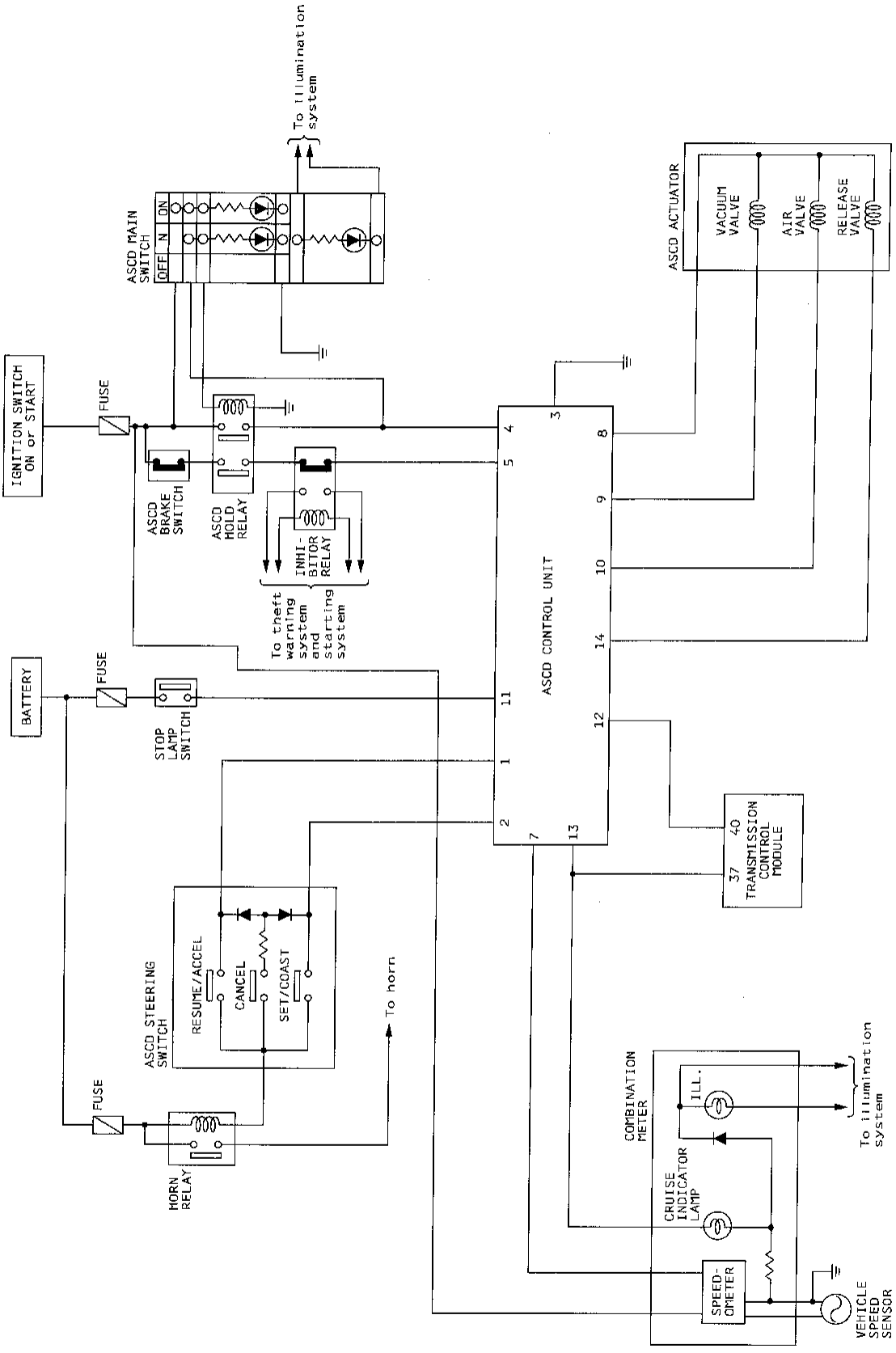
Ground is supplied to vacuum valve, air valve and released valve from ASCD control unit depending on the operating condition as shown in the table below.
When the vacuum valve is opened, the vacuum is applied to the diaphragm of ASCD actuator through ASCD vacuum tank.

		Air valve*	Release valve*	Vacuum valve**	Actuator inner pressure
ASCD not operating		Open	Open	Close	Atmosphere
ASCD operating	Releasing throttle cable	Open	Close	Close	Vacuum (decrease)
	Holding throttle position	Close	Close	Close	Vacuum (hold)
	Pulling throttle cable	Close	Close	Open	Vacuum (increase)

*: When power and ground is supplied, valve is closed.
**: When power and ground is supplied, valve is open.

Schematic

NDEL0095



AEL766B

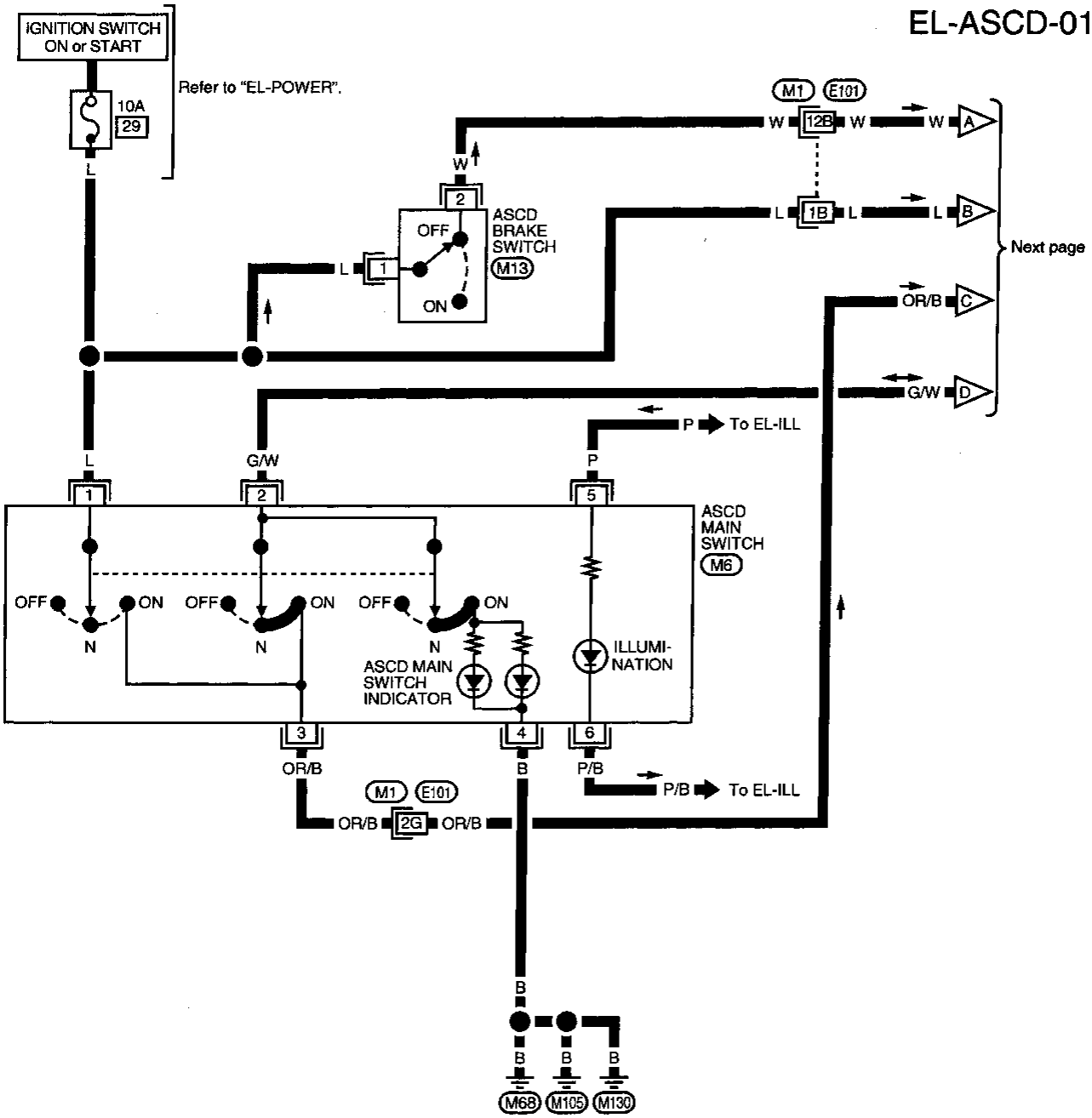
Wiring Diagram — ASCD —

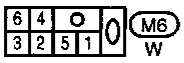
NDEL0096

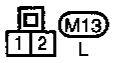
FIG. 1

NDEL0096S01

EL-ASCD-01







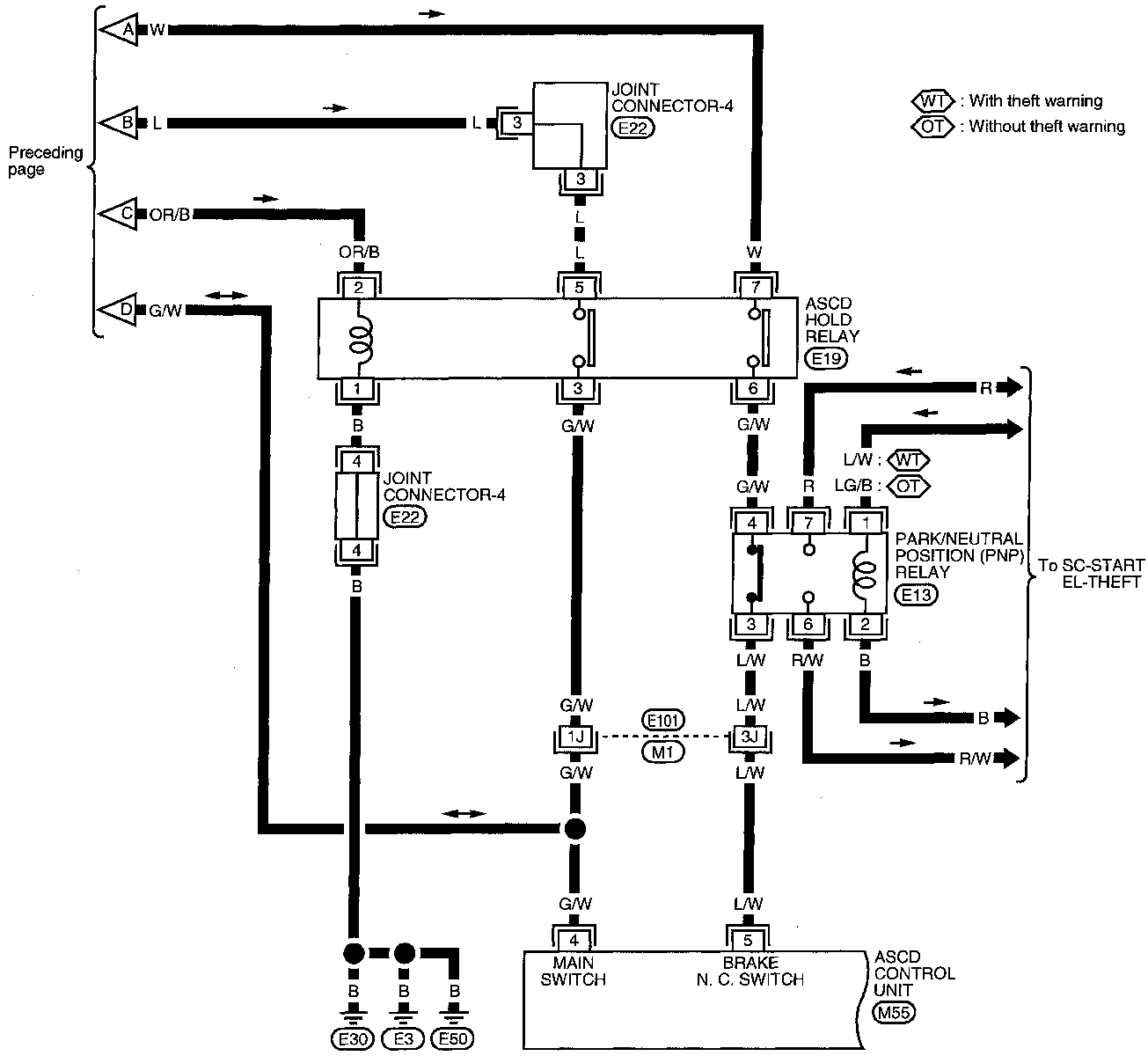
Refer to last page (Foldout page).
M1 , E101

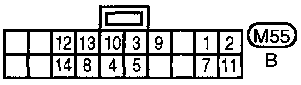
AEL767B

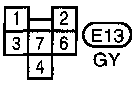
FIG. 2

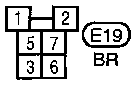
NDEL0096S02

EL-ASCD-02









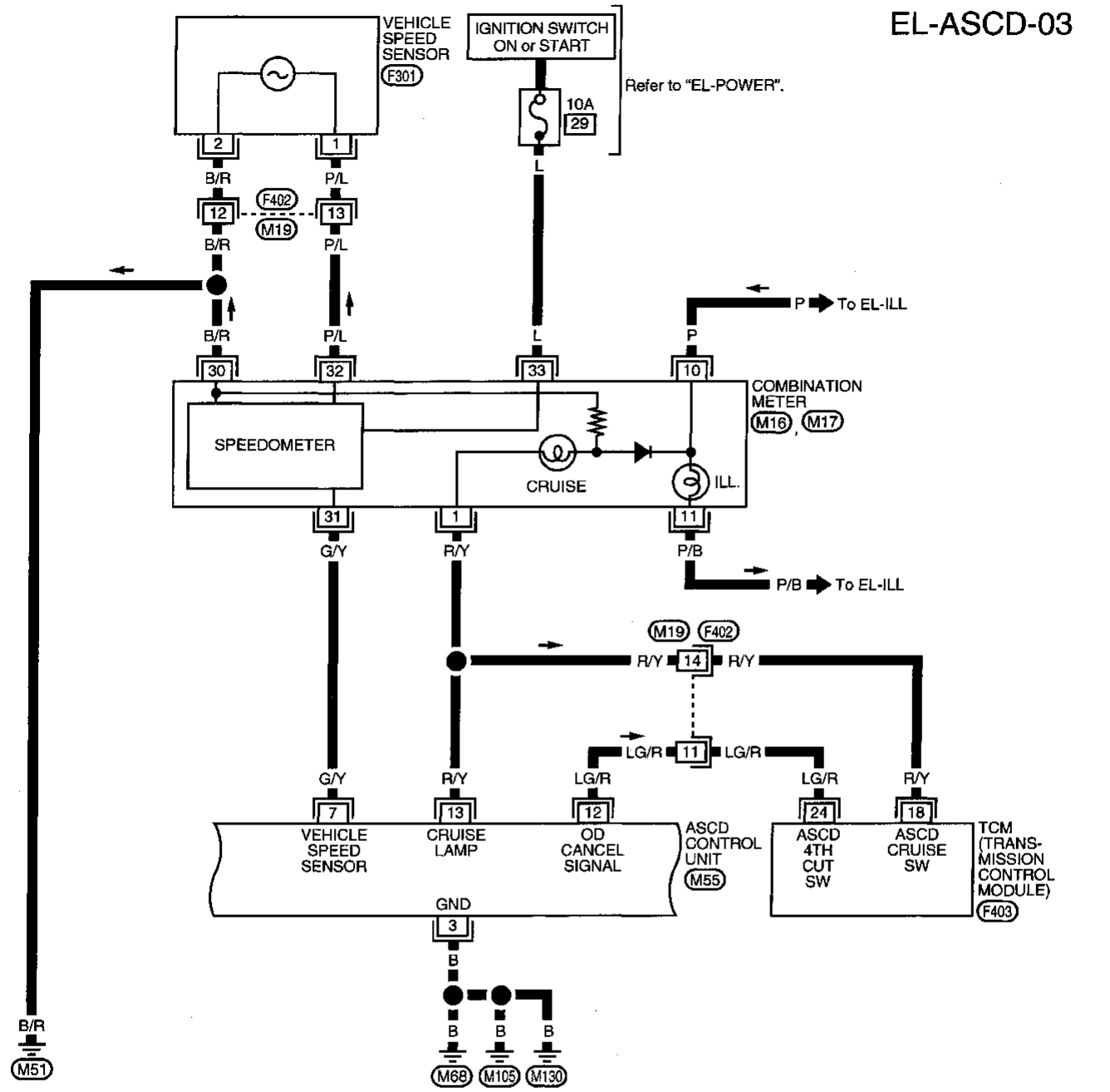
Refer to last page (Foldout page).
M1 , E101
E22

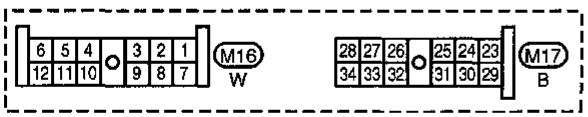
AEL768B

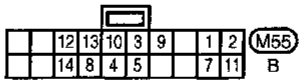
FIG. 3

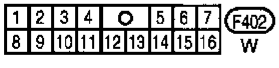
NDEL0096S03

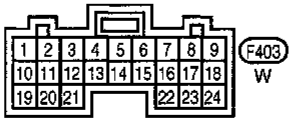
EL-ASCD-03









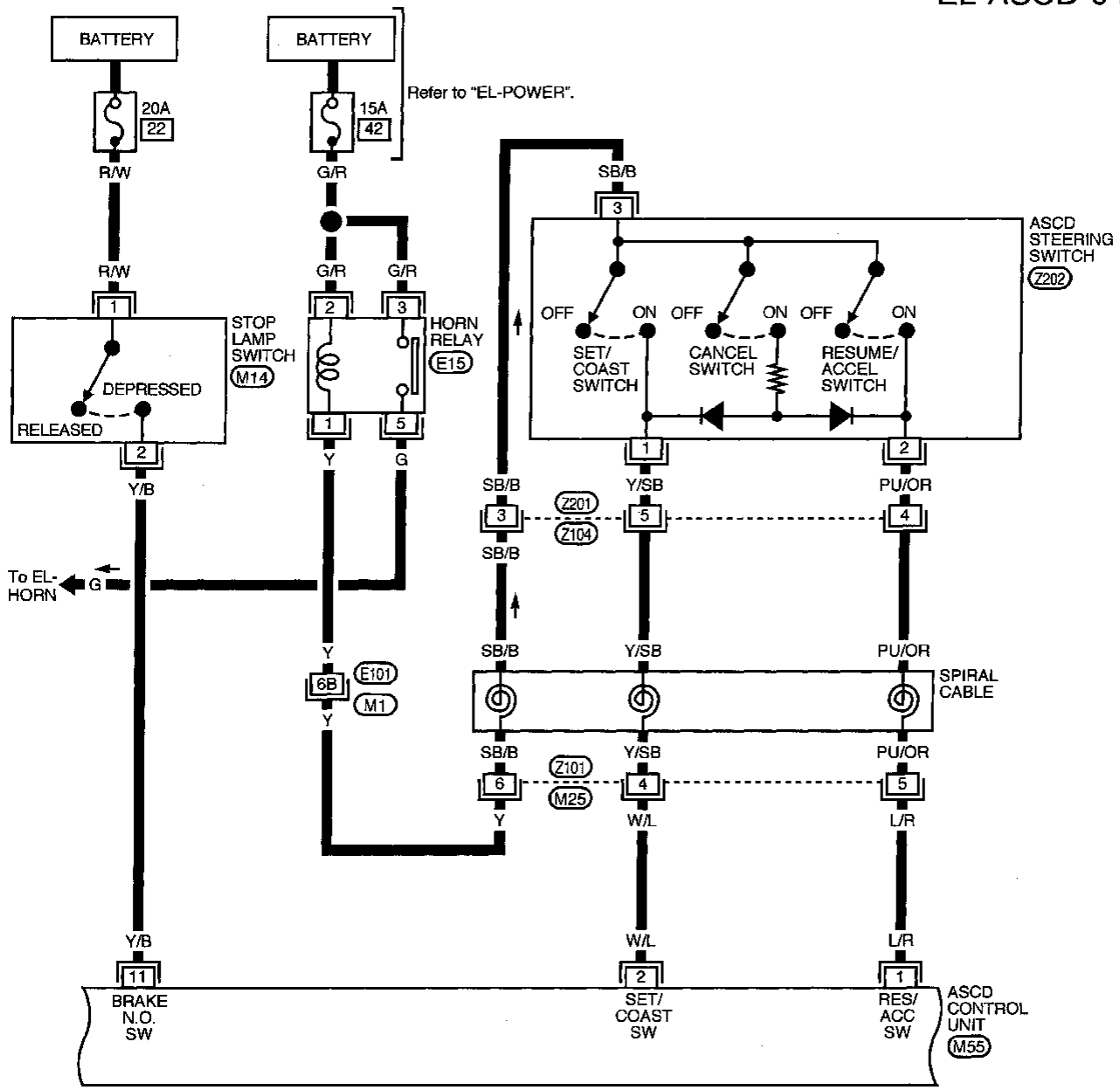


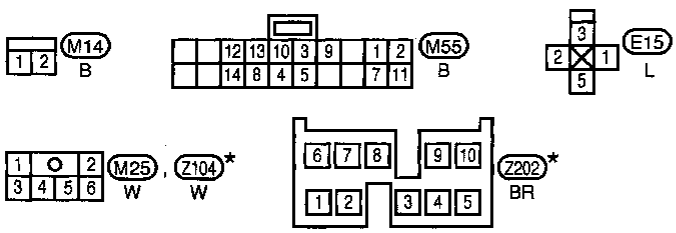
AEL769B

FIG. 4

NDEL0096S04

EL-ASCD-04





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

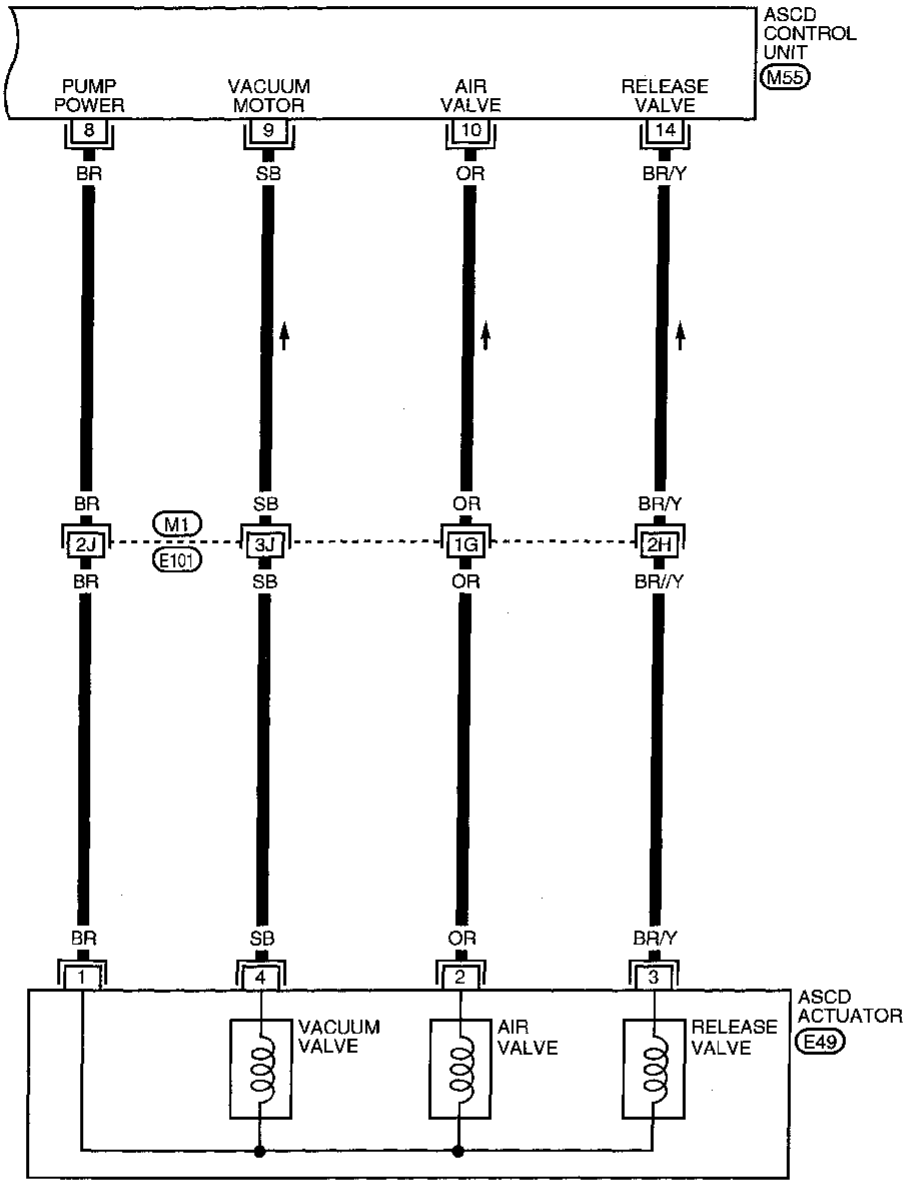
Refer to last page (Foldout page).
M1, E101

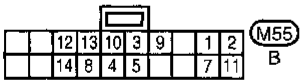
AEL770B

FIG. 5

NDEL0096S05

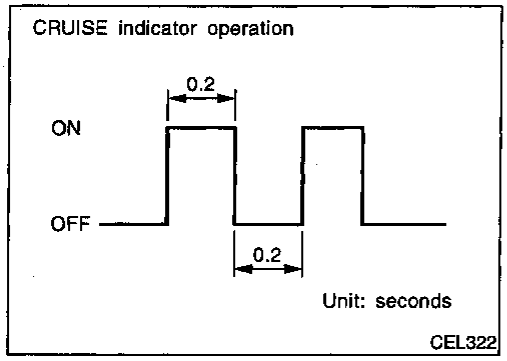
EL-ASCD-05





Refer to last page (Foldout page).
M1, E101

AEL771B



Fail-safe System

NDEL0097

DESCRIPTION

NDEL0097S01

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

NDEL0097S02

Detection conditions	ASCD operation during malfunction detection
• ASCD steering (RESUME/ACCEL, CANCEL, SET/COAST) switch is stuck. • Vacuum valve ground circuit or power circuit is open or shorted. • Air valve ground circuit or power circuit is open or shorted. • Release valve ground circuit or power circuit is open or shorted. • Vehicle speed sensor is faulty. • ASCD control unit internal circuit is malfunctioning.	• ASCD is deactivated. • Vehicle speed memory is canceled.
• ASCD brake switch or stop lamp switch is faulty.	• ASCD is deactivated. • Vehicle speed memory is canceled.

Trouble Diagnoses

SYMPTOM CHART

=NDEL0098

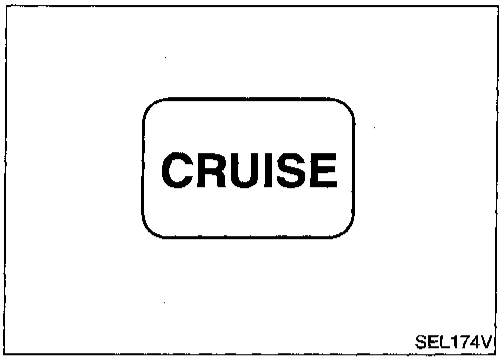
NDEL0098S01

REFERENCE PAGE (EL-)	179	180	181	182	183	184	185	185	186
SYMPTOM	FAIL-SAFE SYSTEM CHECK	POWER SUPPLY AND GROUND CIRCUIT CHECK	ASCD MAIN SWITCH CHECK	ASCD HOLD RELAY CHECK	ASCD BRAKE/STOP LAMP SWITCH CHECK	ASCD STEERING SWITCH CHECK	VEHICLE SPEED SENSOR CHECK	ASCD ACTUATOR CIRCUIT CHECK	ASCD ACTUATOR CHECK
ASCD cannot be set. ("CRUISE" indicator lamp does not blink.)		X	X	X		X	X		X★3
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-179) 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.

★3: Verify that vacuum hose between ASCD vacuum tank and intake manifold collector or between ASCD vacuum tank and ASCD actuator has not come off.

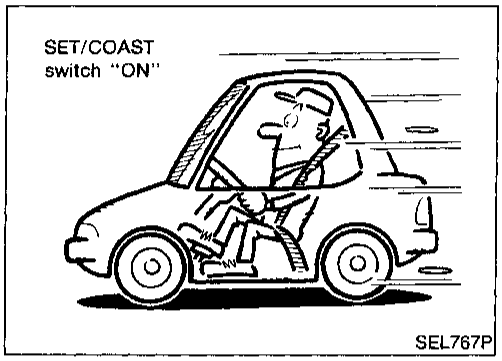


SEL174V

FAIL-SAFE SYSTEM CHECK

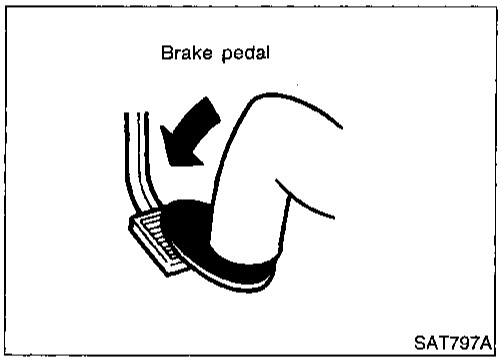
NDEL0098S02

1. Turn ignition switch to ON position.
2. Turn ASCD main switch to ON and check if the "cruise indicator" blinks.
   If the indicator lamp blinks, refer to the following
- ASCD Steering Switch Check. Refer to EL-184.



SEL767P

3. Drive the vehicle at more than 48 km/h (30 MPH) and push SET/COAST switch.
   If the indicator lamp blinks, refer to the following
- Vehicle Speed Sensor Check. Refer to EL-185.
- ASCD Actuator Circuit Check. Refer to EL-185.
- Replace control unit.



SAT797A

4. Depress brake pedal slowly (brake pedal should be depressed more than 5 seconds).
   If the indicator lamp blinks, refer to the following
- ASCD Brake/Stop Lamp Switch Check. Refer to EL-183.

5. END. (System is OK.)

POWER SUPPLY AND GROUND CIRCUIT CHECK

=NDEL0098S03

1 OPERATION CHECK

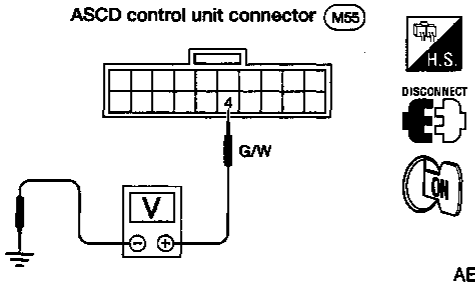
1. Turn ignition switch ON.
2. Push ASCD main switch ON.

Does ASCD indicator illuminate?

Yes	▶	GO TO 2.
No	▶	Go to ASCD MAIN SWITCH CHECK. Refer to EL-181.

2 CHECK POWER SUPPLY CIRCUIT FOR ASCD CONTROL UNIT

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



AEL015C

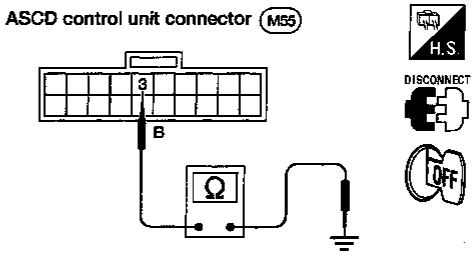
Refer to wiring diagram, EL-173.

Does battery voltage exist?

Yes	▶	GO TO 3.
No	▶	Go to ASCD HOLD RELAY CHECK. Refer to EL-182.

3 CHECK GROUND CIRCUIT FOR ASCD CONTROL UNIT

Check continuity between ASCD control unit harness terminal 3 and body ground.



AEL016C

Refer to wiring diagram, EL-174.

Does continuity exist?

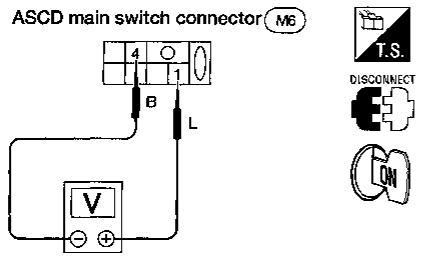
Yes	▶	Power supply and ground circuit is OK.
No	▶	Repair harness.

ASCD MAIN SWITCH CHECK

=NDEL009BS04

1	CHECK POWER SUPPLY FOR ASCD MAIN SWITCH

1. Disconnect main switch connector.
2. Check voltage between main switch terminals 1 and 4.



AEL017C

Refer to wiring diagram, EL-172.

Does battery voltage exist?

Yes	▶	GO TO 2.
No	▶	**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.

2	CHECK ASCD MAIN SWITCH

Check ASCD main switch. Refer to "Electrical Component Inspection", EL-187.

OK or NG

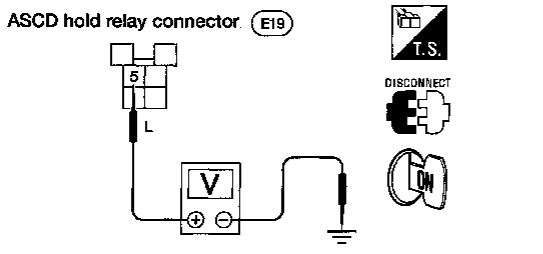
OK	▶	Go to ASCD HOLD RELAY CHECK. Refer to EL-182.
NG	▶	Replace ASCD main switch.

ASCD HOLD RELAY CHECK

=NDEL0098S05

1 CHECK POWER SUPPLY CIRCUIT FOR ASCD HOLD RELAY

1. Disconnect ASCD hold relay.
2. Check voltage between ASCD hold relay terminal 5 and body ground.



AEL018C

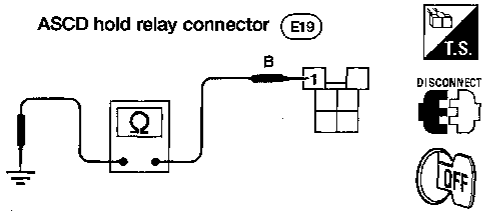
Refer to wiring diagram, EL-173.

Does battery voltage exist?

Yes	▶	GO TO 2.
No	▶	**Check the following** • 10A fuse (No. 29, located in the fuse block) • Harness for open or short between fuse and ASCD hold relay.

2 CHECK GROUND CIRCUIT FOR ASCD HOLD RELAY

Check continuity between ASCD hold relay terminal 1 and body ground.



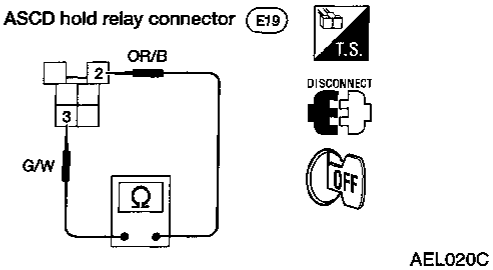
AEL019C

Does continuity exist?

Yes	▶	GO TO 3.
No	▶	Repair harness.

3 CHECK ASCD HOLD RELAY OPEN OR SHORT CIRCUIT

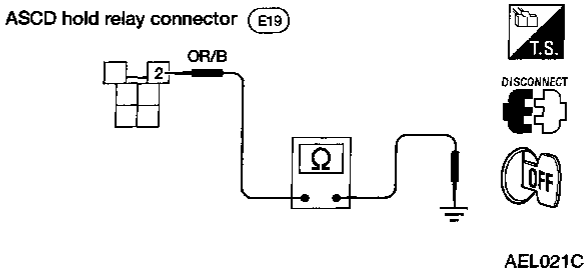
1. Check continuity between ASCD hold relay harness terminals 2 and 3.



AEL020C

Continuity should exist.

2. Check continuity between ASCD hold relay terminal 2 and body ground.



AEL021C

Continuity should not exist.

OK or NG

OK	▶	GO TO 4.
NG	▶	GO TO 5.

4 CHECK ASCD HOLD RELAY

Check ASCD hold relay. Refer to "Electrical Component Inspection", EL-187.

OK or NG

OK	▶	ASCD hold relay is OK.
NG	▶	Replace ASCD hold relay.

5 CHECK ASCD MAIN SWITCH

Check ASCD main switch. Refer to "Electrical Component Inspection", EL-187.

OK or NG

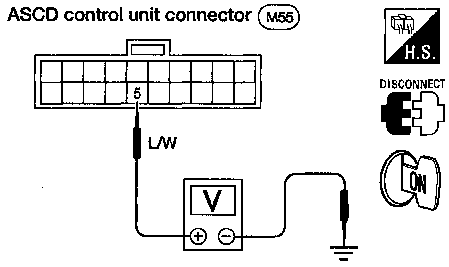
OK	▶	Repair harness.
NG	▶	Replace ASCD main switch.

ASCD BRAKE/STOP LAMP SWITCH CHECK

=NDEL0098S06

1 CHECK ASCD BRAKE SWITCH CIRCUIT

1. Disconnect control unit connector.
2. Turn ignition switch ON.
3. Push ASCD main switch ON.
4. Check voltage between control unit connector harness terminal 5 and body ground.



AEL022C

When brake pedal is depressed or A/T selector lever is in N or P range:

Approx. 0V

When both brake pedal is released and A/T selector lever is not in N or P range:

Battery voltage should exist.

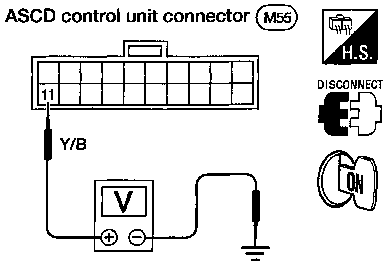
Refer to wiring diagrams, EL-172, 173.

OK or NG

OK	▶	GO TO 2.
NG	▶	**Check the following** • ASCD brake switch, ASCD hold relay, park neutral position (PNP) switch Refer to "Electrical Components Inspection", EL-187. • Harness for open or short.

2 CHECK STOP LAMP SWITCH CIRCUIT

1. Disconnect control unit connector.
2. Check voltage between control unit harness terminal 11 and ground.



AEL023C

Voltage [V]:

Stop lamp switch: Depressed

Approx. 12

Stop lamp switch: Released

0

Refer to wiring diagram, EL-175.

OK or NG

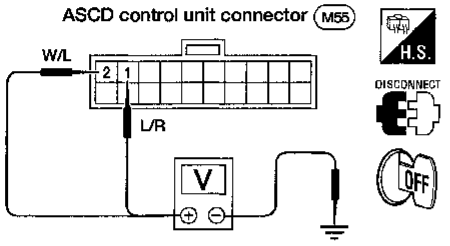
OK	▶	ASCD brake/stop lamp switch is OK.
NG	▶	**Check the following** • 15A fuse (No. 22, located in the fuse block) • Harness for open or short between ASCD control unit and stop lamp switch • Stop lamp switch Refer to "Electrical Components Inspection", EL-187.

ASCD STEERING SWITCH CHECK

=NDEL0098S07

1 CHECK ASCD STEERING SWITCH CIRCUIT FOR ASCD CONTROL UNIT

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



AEL024C

	Terminal No.		Switch condition	
	(+)	(−)	Pressed	Released
SET/COAST SW	2	ground	12V	0V
RESUME/ACC SW	1	ground	12V	0V
CANCEL SW	2	ground	12V	0V
	1	ground	12V	0V

MTBL0002

Refer to wiring diagram, EL-175.

OK or NG

OK	▶	ASCD steering switch is OK.
NG	▶	GO TO 2.

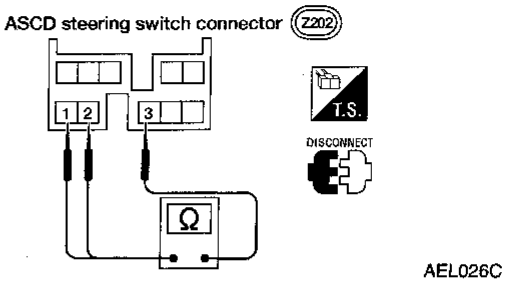
2 CHECK POWER SUPPLY FOR ASCD STEERING SWITCH

Does horn work?

Yes	▶	GO TO 3.
No	▶	**Check the following** • 15A fuse (No. 42, located in the fuse and fusible link box) • Horn relay • Harness for open or short between horn relay and fuse.

3 CHECK ASCD STEERING SWITCH

1. Disconnect ASCD steering switch.
2. Check continuity between terminals by pushing each switch.



AEL026C

Switch	Terminals		
	3	1	2
RESUME/ACCEL	o		o
SET/COAST	o	o	
CANCEL	o	▶ o	
	o	▶	o

AEL025C

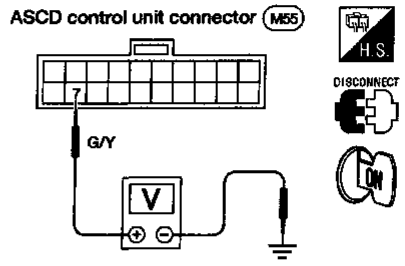
OK or NG

OK	▶	Check harness for open or short between ASCD steering switch and ASCD control unit.
NG	▶	Replace ASCD steering switch.

VEHICLE SPEED SENSOR CHECK

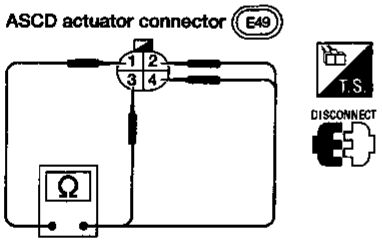
=NDEL0098S08

1	CHECK SPEEDOMETER OPERATION	
Refer to wiring diagram, EL-174. **Does speedometer operate normally?**		
Yes	▶	GO TO 2.
No	▶	Check speedometer and vehicle speed sensor circuit. Refer to EL-75.

2	CHECK VEHICLE SPEED INPUT	
1. Apply wheel chocks and jack up drive wheels. 2. Disconnect control unit connector. 3. Check voltage between control unit terminal 7 and ground with turning drive wheels slowly.  AEL029C **Does voltmeter pointer deflect?**		
Yes	▶	Vehicle speed sensor is OK.
No	▶	Check harness for open or short between ASCD control unit terminal 7 and combination meter terminal 31. Refer to "Inspection/Vehicle Speed Sensor", EL-80.

ASCD ACTUATOR CIRCUIT CHECK

NDEL0098S09

1	CHECK ASCD ACTUATOR	
1. Disconnect ASCD actuator connector. 2. Measure resistance between ASCD actuator terminals 1 and 2, 3, 4.  AEL028C		

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

AEL027C

Refer to wiring diagram, EL-176.

OK or NG

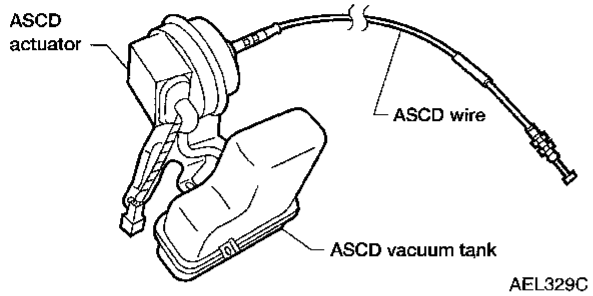
OK	▶	Check harness for open or short between ASCD actuator and ASCD control unit.
NG	▶	Replace ASCD actuator.

ASCD ACTUATOR CHECK

=NDEL0098S10

1 CHECK VACUUM HOSE

Check vacuum hose (between ASCD actuator and ASCD vacuum tank) and between ASCD vacuum tank and intake manifold collector for breakage, cracks and fracture.



AEL329C

OK or NG

OK	▶	GO TO 2.
NG	▶	Repair or replace hose.

2 CHECK ASCD WIRE

Check wire for improper installation, rust formation and breaks.

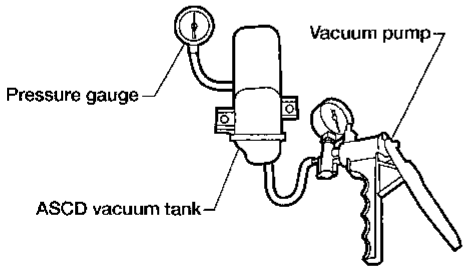
OK or NG

OK	▶	GO TO 3.
NG	▶	Repair or replace wire. Refer to "ASCD Wire Adjustment", EL-188.

3 CHECK ASCD VACUUM TANK

1. Disconnect vacuum hose to ASCD actuator and to intake manifold collector from ASCD vacuum tank.
2. Install pressure gauge and hand vacuum pump as shown in figure below.
3. Apply −56.3 kPa (−0.574 kg/cm^2, −8.16 psi) vacuum to ASCD vacuum tank.
4. Wait 10 seconds and check for decrease in vacuum pressure.

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



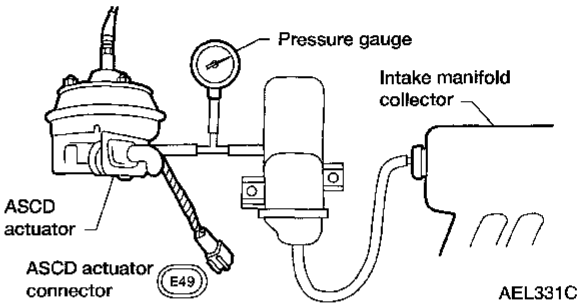
AEL330C

OK or NG

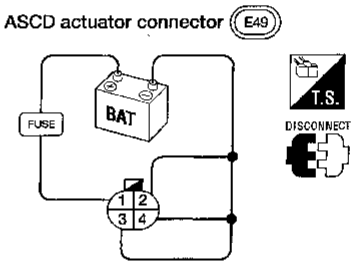
OK	▶	GO TO 4.
NG	▶	Replace ASCD vacuum tank.

4 CHECK ASCD ACTUATOR

1. Disconnect ASCD wire from throttle drum.
2. Reconnect vacuum hose from intake manifold collector to ASCD vacuum tank.
3. With vacuum hose disconnected from ASCD actuator, install pressure gauge as shown in figure below.
4. Disconnect ASCD actuator connector.
5. Start engine.
6. Apply 12V direct current to ASCD actuator connector terminal 1 and ground terminals 2, 3 and 4 together.



AEL331C



AEL031C

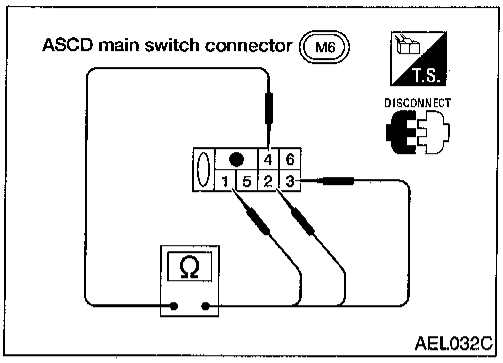
	12V direct current supply terminals		Operation
	(+)	(−)	
Air valve	1	2	Close
Release valve		3	Close
Vacuum valve		4	Open

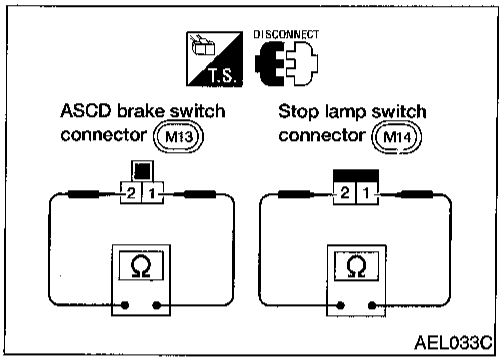
AEL030C

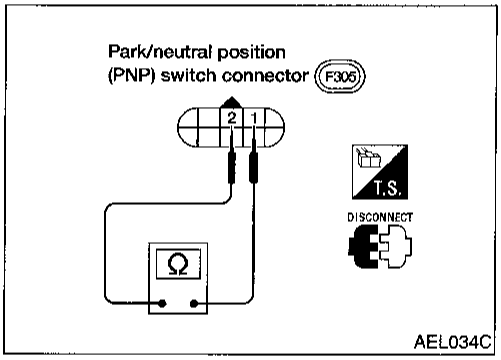
Vacuum pressure should be lower than −26.7 kPa (−0.272 kg/cm^2, −3.87 psi)

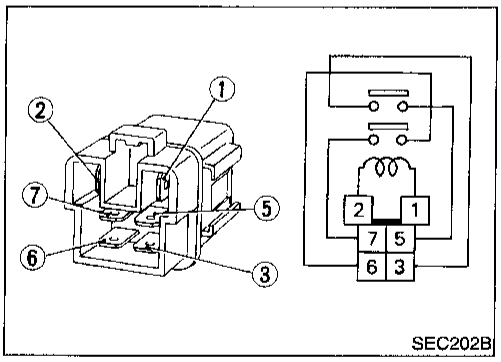
OK or NG

OK	▶	ASCD actuator/vacuum tank is OK.
NG	▶	Replace ASCD actuator.









Electrical Component Inspection

NDEL0099

ASCD MAIN SWITCH

NDEL0099S01

Check continuity between terminals by pushing switch to each position.

Switch position	Terminals	Illumination
ON	1 - 2 - 3 - 4	5 - 6
N	2 - 3 - 4	
OFF		

ASCD BRAKE SWITCH AND STOP LAMP SWITCH

NDEL0099S02

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.

PARK NEUTRAL POSITION (PNP) SWITCH

NDEL0099S03

Selector lever position	Continuity
	Between terminals 1 and 2
P	Yes
N	Yes
Except P and N	No

ASCD HOLD RELAY

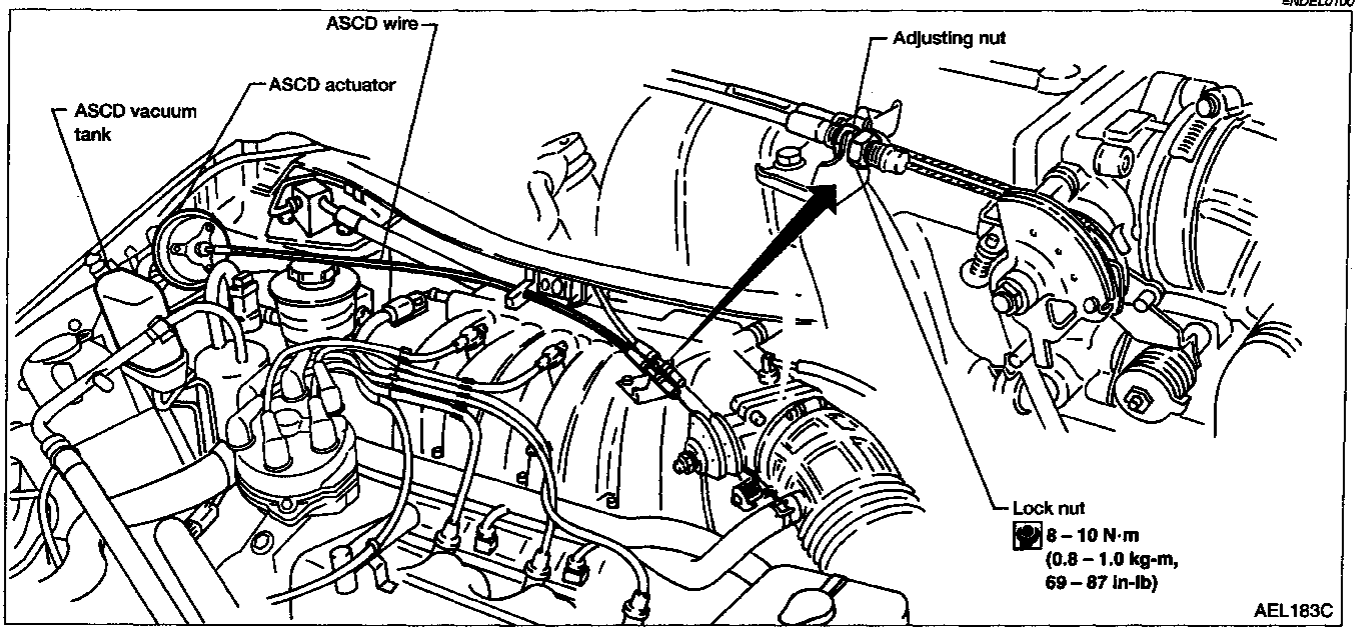
NDEL0099S04

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

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

ASCD Wire Adjustment

=NDEL0100



CAUTION:

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

Adjust the tension of ASCD wire in the following manner.

1. Loosen lock nut and adjusting nut.
2. Make sure that accelerator wire is properly adjusted. Refer to FE section ("ACCELERATOR CONTROL SYSTEM").
3. Tighten adjusting nut just until throttle drum starts to move.
4. Loosen adjusting nut again 1/2 to 1 turn.
5. Tighten lock nut.

System Description

NDEL0101

POWER SUPPLY AND GROUND CIRCUIT

NDEL0101S01

Power is supplied at all times

- from 7.5A fuse (No. 39, located in the fuse and fusible link box)
- to smart entrance control unit terminal 13 and
- from 30A fusible link (letter f, located in the fuse and fusible link box)
- to circuit breaker-1 terminal 1
- through circuit breaker-1 terminal 2
- to power window relay terminals 5 and 1.

Ground is supplied

- to main power window and door lock/unlock switch terminal 8 and
- to smart entrance control unit terminal 10
- through body grounds M68, M105 and M130.

With the ignition 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 43.

Ground is then supplied to power window relay terminal 2 from smart entrance control unit terminal 30.
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 terminal 1 and
- to front power window switch RH terminal 5.

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

FRONT DOOR LH

NDEL0101S02

Window Up

NDEL0101S0201

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 2
- to front power window motor LH terminal 2.

Ground is supplied

- to front power window motor LH terminal 1
- from main power widow and door lock/unlock switch terminal 9.

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

Window Down

NDEL0101S0202

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 9
- 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 2.

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

Auto Down

NDEL0101S0203

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

FRONT DOOR RH

NDEL0101S03

NOTE:

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

Operation By Main Switch

NDEL0101S0301

Power is supplied

- from main power window and door lock/unlock switch terminal (7, 6)
- to front power window switch RH terminal (8, 3).

Subsequent operations are the same as those outlined under "Operation By Front Power Window Switch RH".

Operation By Front Power Window Switch RH

NDEL0101S0302

Power is supplied

- from front power window switch RH terminal 5
- Through front power window switch RH terminal (7, 4)
- 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 (4, 7)
- to front power window switch RH terminal (8, 3)
- through main power window and door lock/unlock switch terminal (7, 6)
- to main power window and door lock/unlock switch terminal 8
- through body grounds M68, M105 and M130.

Lock Feature

NDEL0101S0303

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

NDEL0101S04

NOTE:

Figures in parenthesis ( ) refer to terminal Nos. arranged in order when OPEN or CLOSED section of power window switch is pressed.

When the rear LH vent switch (in main power window and door lock/unlock switch) is pressed in the OPEN-(CLOSE) position, power is supplied

- from main power window and door lock/unlock switch terminal (14, 13)
- to rear power vent window motor LH (1, 2).

Ground is supplied

- to rear power vent window motor (2, 1)
- through main power window and door lock/unlock switch terminal (13, 14)
- to main power window and door lock/unlock switch terminal 8
- through body grounds M68, M105 and M130.

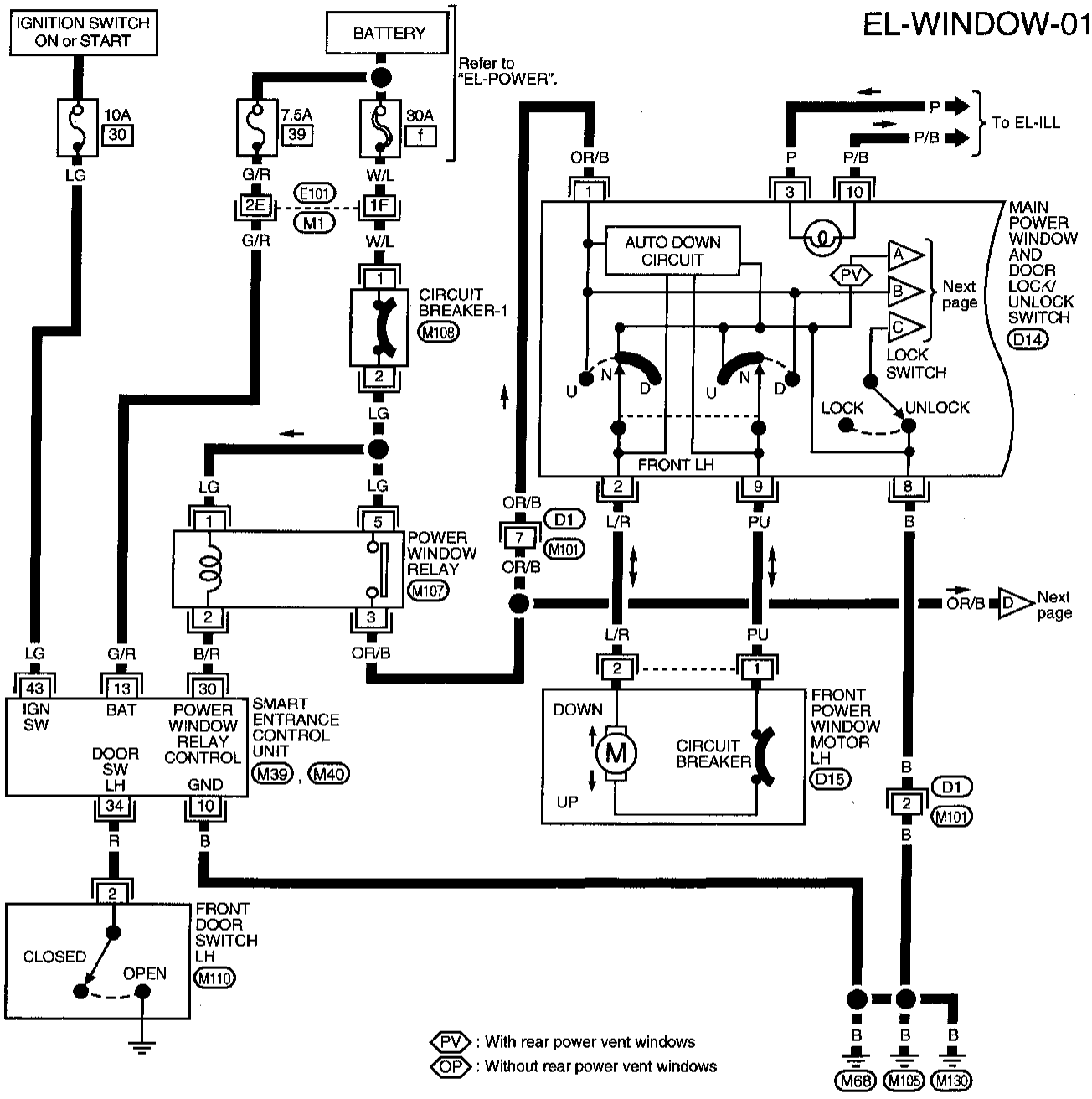
REAR POWER VENT WINDOW RH

NDEL0101S05

Rear power vent window RH operates in the same manner as rear power vent window LH.

Wiring Diagram — WINDOW —

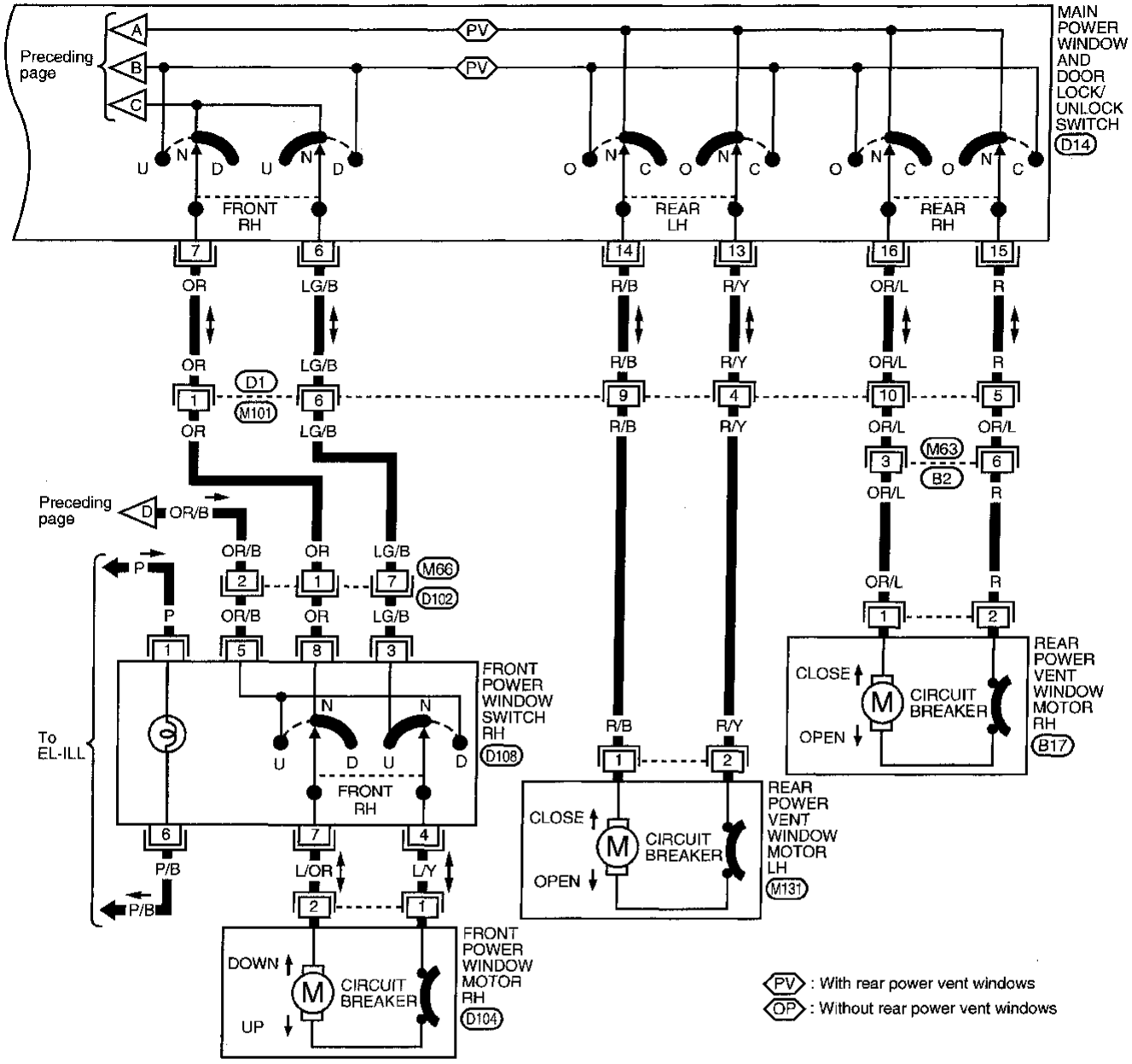
NDEL0102

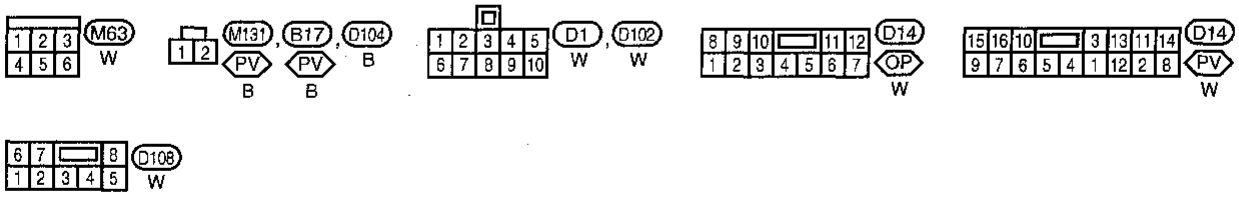


AEL772B

Wiring Diagram — WINDOW — (Cont'd)

EL-WINDOW-02





AEL773B

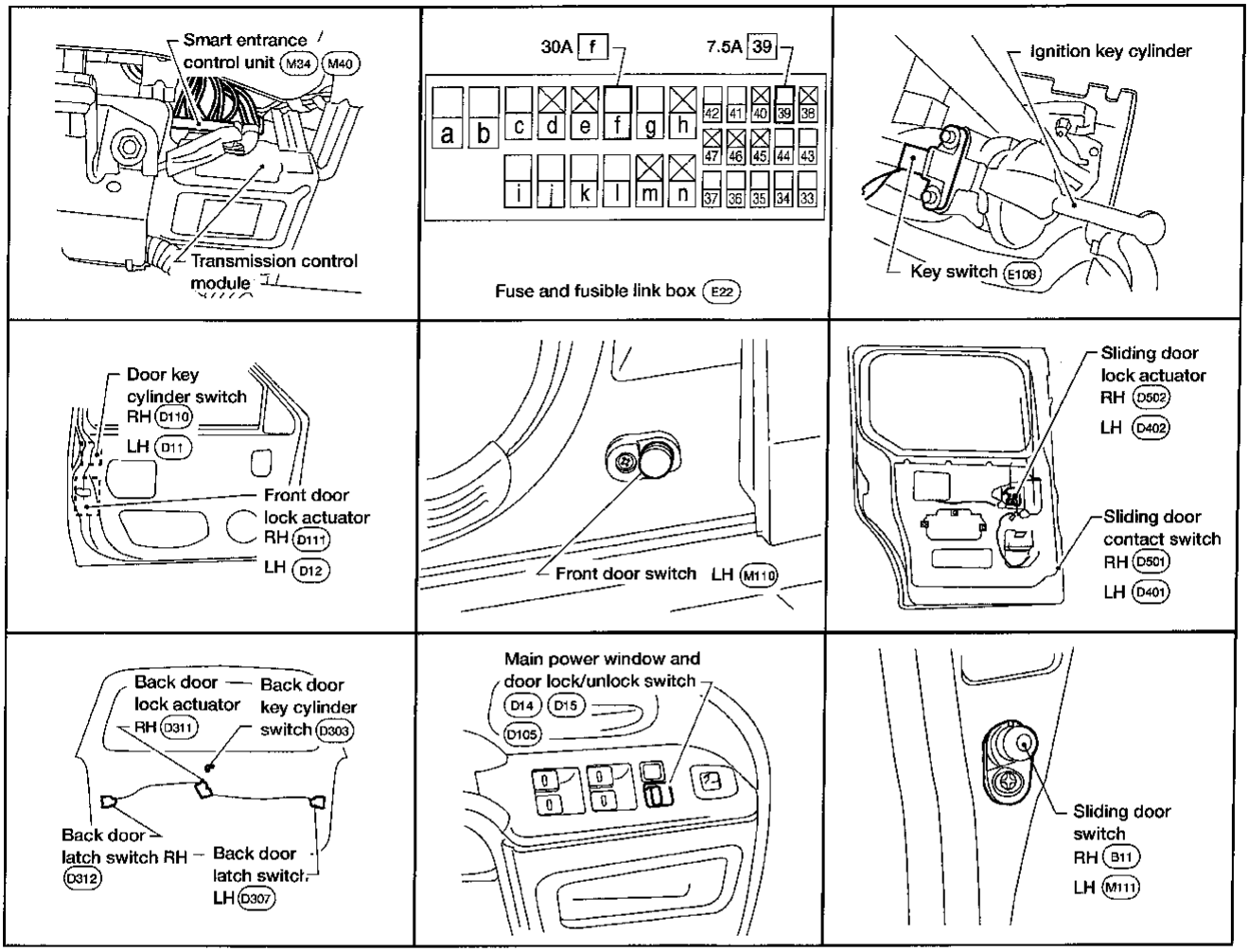
Trouble Diagnoses

NDEL0103

Symptom	Possible cause	Repair order
None of the power windows can be operated using any switch.	1. 7.5A fuse, 10A fuse, 30A fusible link and circuit breaker-1 2. Grounds M68, M105 and M130 3. Power window relay 4. Open/short in main power window and door lock/unlock switch circuit	1. Check 7.5A fuse (No. 39, located in fuse and fusible link box), 10A fuse (No. 30, located in fuse block), 30A fusible link (letter f, located in the fuse and fusible link box) and circuit breaker-1. Turn ignition switch "ON" and verify battery positive voltage is present at terminal 1 of main power window and door lock/unlock, terminal 5 of front power window switch RH. 2. Check grounds M68, M105 and M130. 3. Check power window relay. 4. 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.	1. Driver side (front LH) power window motor circuit 2. Driver side (front LH) power window motor	1. Check driver side (front LH) power window motor circuit. 2. Check driver side (front LH) power window motor.
Passenger side power window cannot be operated.	1. Power window switch (front RH) 2. Power window motor (front RH) 3. Main power window and door lock/unlock switch 4. Power window circuits	1. Check power window switch (front RH). 2. Check power window motor (front RH). 3. Check main power window and door lock/unlock switch. 4. Check wires between main power window and door lock/unlock switch, power window switch RH and motor for open/short circuit.
Passenger side power window cannot be operated by main switch but can be operated by passenger's switch.	1. Main power window and door lock/unlock switch	1. Check main power window and door lock/unlock switch.
One or both rear power vent windows cannot be operated.	1. Main power window and door lock/unlock switch 2. Rear power vent window motors 3. Rear power vent window circuits	1. Check main power window and door lock/unlock switch. 2. Check rear power vent window motors (LH and RH). 3. Check wires between rear power vent window motors for open or short circuits.

Component Parts and Harness Connector Location

NDEL0104



AEL197C

System Description

NDEL0105

POWER SUPPLY AND GROUND CIRCUIT

NDEL0105S01

Power is supplied at all times

- through 30A fusible link (letter **f**, located in the fuse and fusible link box)
- and through circuit breaker-1
- to smart entrance control unit terminal 7
- through 7.5A fuse (No. 39, located in the fuse and fusible link box)
- to smart entrance control unit terminal 13.

Ground is supplied

- to smart entrance control unit terminal 2, 10 and 16

- through body grounds M68, M105 and M130.

STANDARD DOOR LOCK/UNLOCK FUNCTION

NDEL0105S02

When main power window and door lock/unlock switch or door lock/unlock switch RH is in LOCK position, ground is supplied

- to smart entrance control unit terminal 47
- from main power window and door lock/unlock switch terminal 12 or door lock/unlock switch RH terminal 4
- through body grounds M68, M105 and M130.

Then power and ground is supplied from smart entrance control unit to all door lock actuators to lock all doors.
When main power window and door lock/unlock switch or door lock/unlock switch RH is in UNLOCK position, ground is supplied

- to smart entrance control unit terminal 39
- from main power window and door lock/unlock switch terminal 11 or door lock/unlock switch RH terminal 7.

Then power and ground is supplied from smart entrance control unit to all door lock actuators to unlock all doors.

FRONT DOOR KNOB LOCK SWITCH OPERATION

NDEL0105S03

When front door knob lock switch LH or RH is in LOCK position, ground is interrupted

- to smart entrance control unit terminal 46 or 37
- from front door lock actuator LH or RH terminal 4.

Then smart entrance control unit supplies power and ground to all door lock actuators to lock all doors.

DOOR KEY CYLINDER OPERATION (FOR MODELS WITH THEFT WARNING SYSTEM)

NDEL0105S04

With key inserted in front door key cylinder switch LH or RH and turned to LOCK, ground is supplied

- to smart entrance control unit terminal 19
- through front door key cylinder switch LH terminal 2 or RH terminal 1
- through body grounds M68, M105 and M130.

Then power and ground is supplied from smart entrance control unit to all door lock actuators to lock all doors.
With key inserted in front door key cylinder switch LH or RH or back door key cylinder switch and turned to UNLOCK, ground is supplied

- to smart entrance control unit terminal 27
- through front door key cylinder switch LH terminal 1, RH terminal 2 or back door key cylinder switch terminal 2
- through body grounds M68, M105 and M130 or D204.

Key will unlock only corresponding door. If front door key cylinder switch LH or RH is turned to UNLOCK again within 5 seconds after first unlock operation, then smart entrance control unit supplies power and ground to all door lock actuators to unlock all doors.

KEY REMINDER

NDEL0105S05

If both of the following conditions exist, performing any front door lock operation locks the doors once but immediately unlocks them when

- ignition key is in ignition key cylinder (ground is supplied at smart entrance control unit terminal 35)
- either front door is opened (ground is supplied at smart entrance control unit terminal 34 or 9).

Frond door lock status is detected by ground supplied from front door lock actuator to smart entrance control unit terminal 46 or 37.

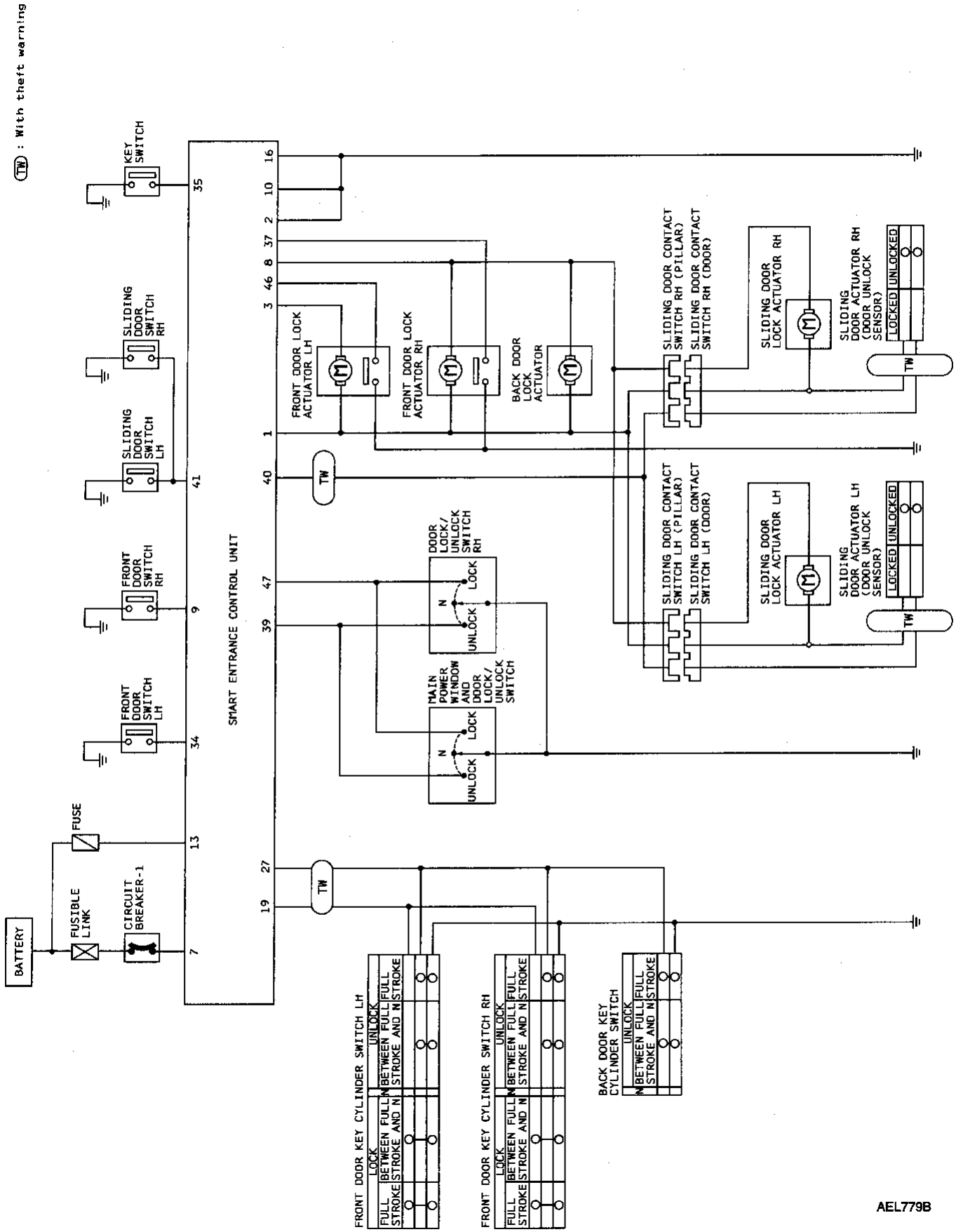
SLIDING DOOR LOCK DELAY FUNCTION

NDEL0105S06

If a sliding door is open when a lock operation is performed, that sliding door will not be locked.
If the sliding door is closed after the lock operation is performed, the smart entrance control unit supplies power and ground to all door lock actuators to lock all doors again.
If a mechanical or electrical unlock of either front door is performed before closing sliding door, sliding door delay feature is canceled.

Schematic

NDEL0106



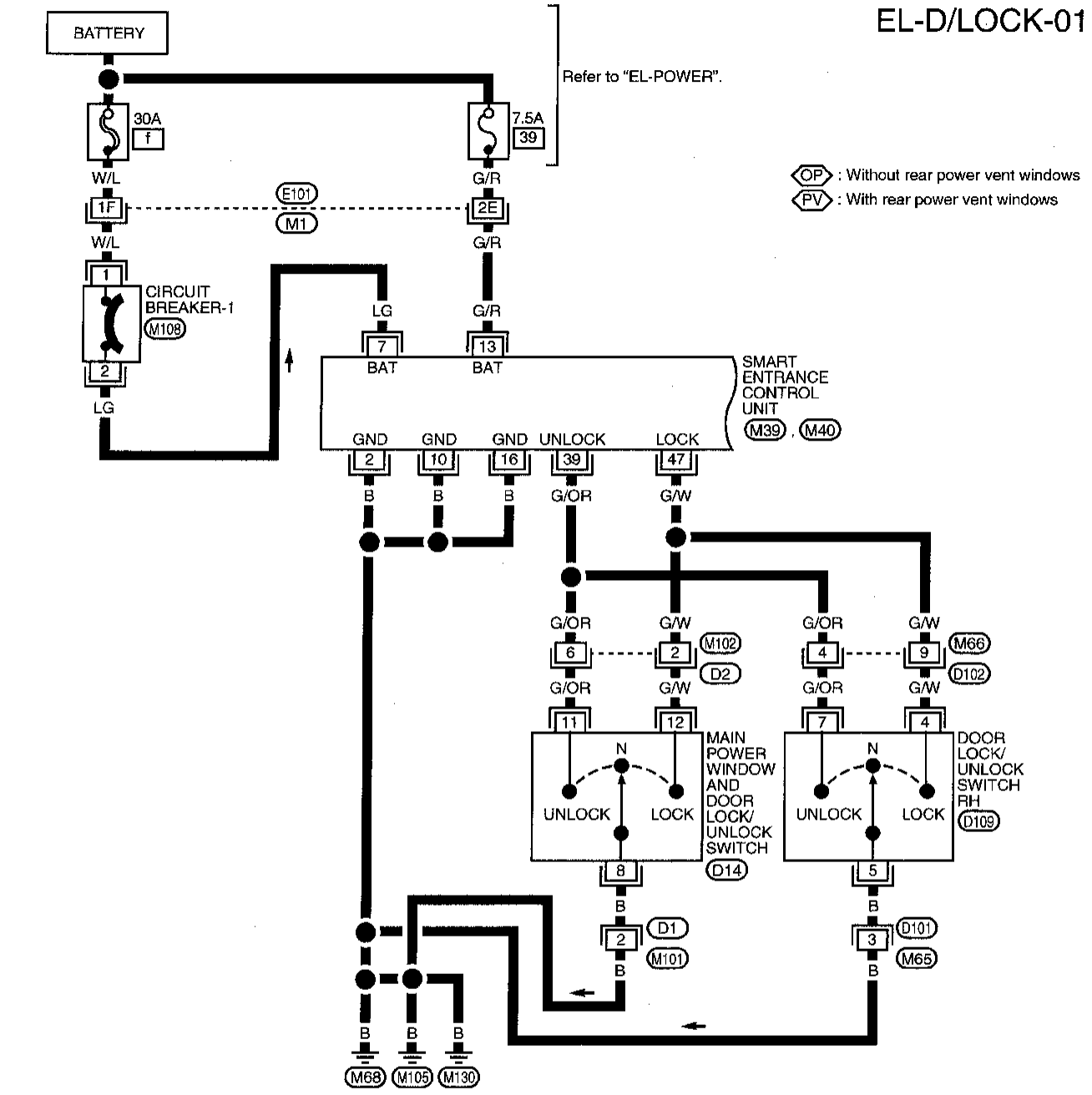
Wiring Diagram — D/LOCK —

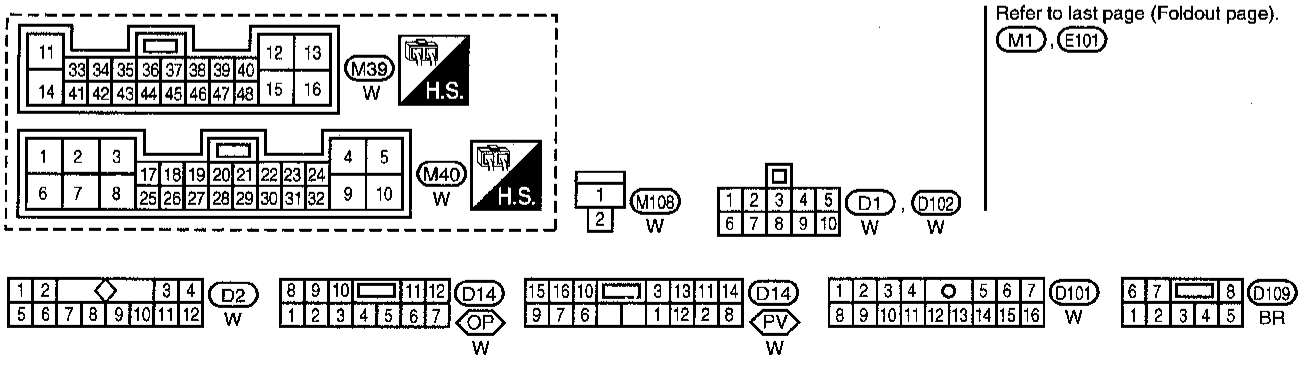
NDEL0107

FIG. 1

NDEL0107S01

EL-D/LOCK-01





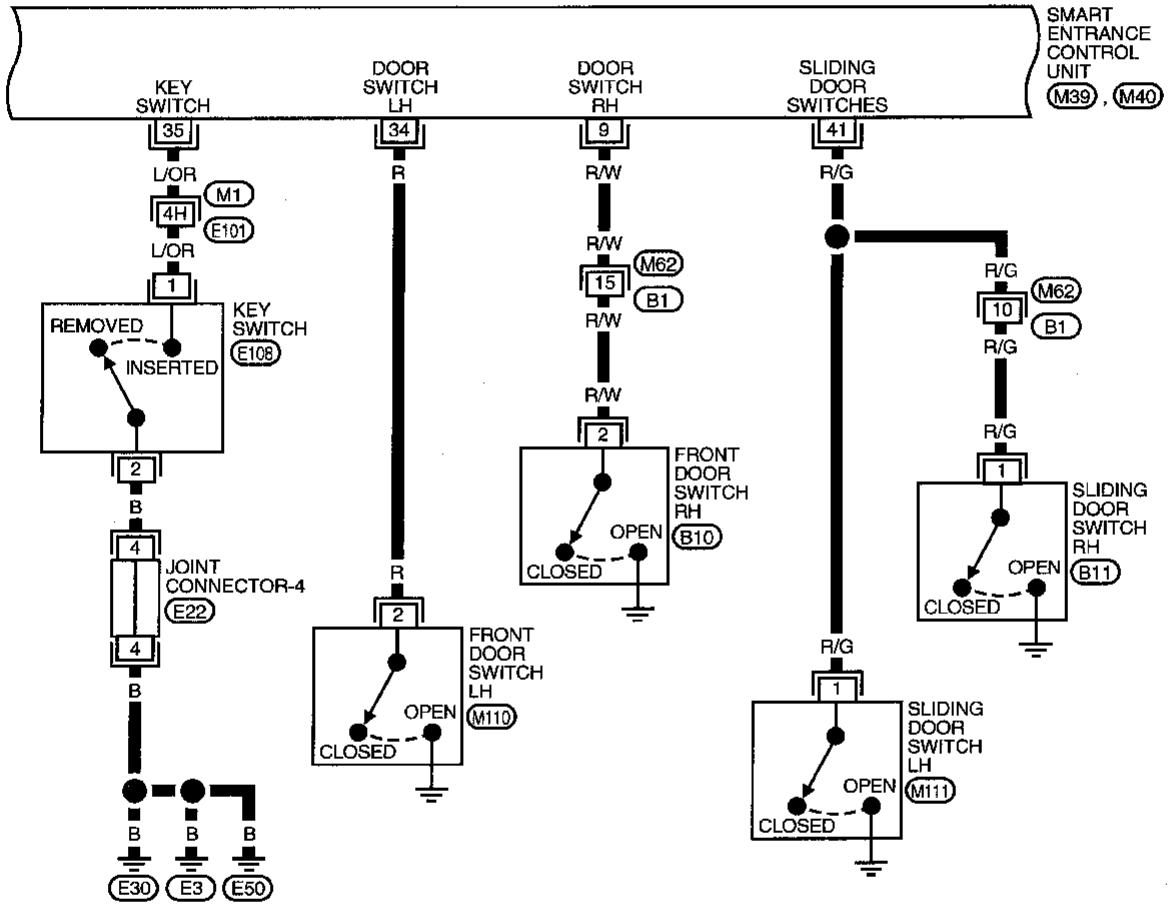
AEL780B

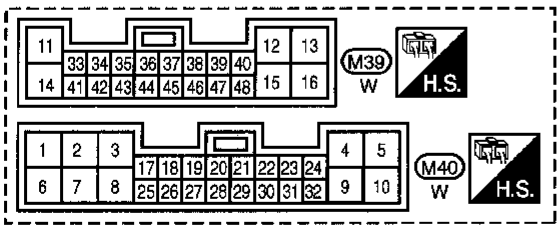
Wiring Diagram — D/LOCK — (Cont'd)

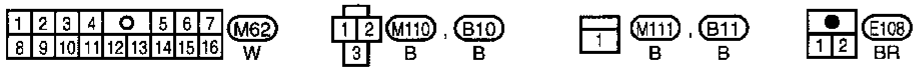
FIG. 2

NDEL0107S02

EL-D/LOCK-02







Refer to last page (Foldout page).

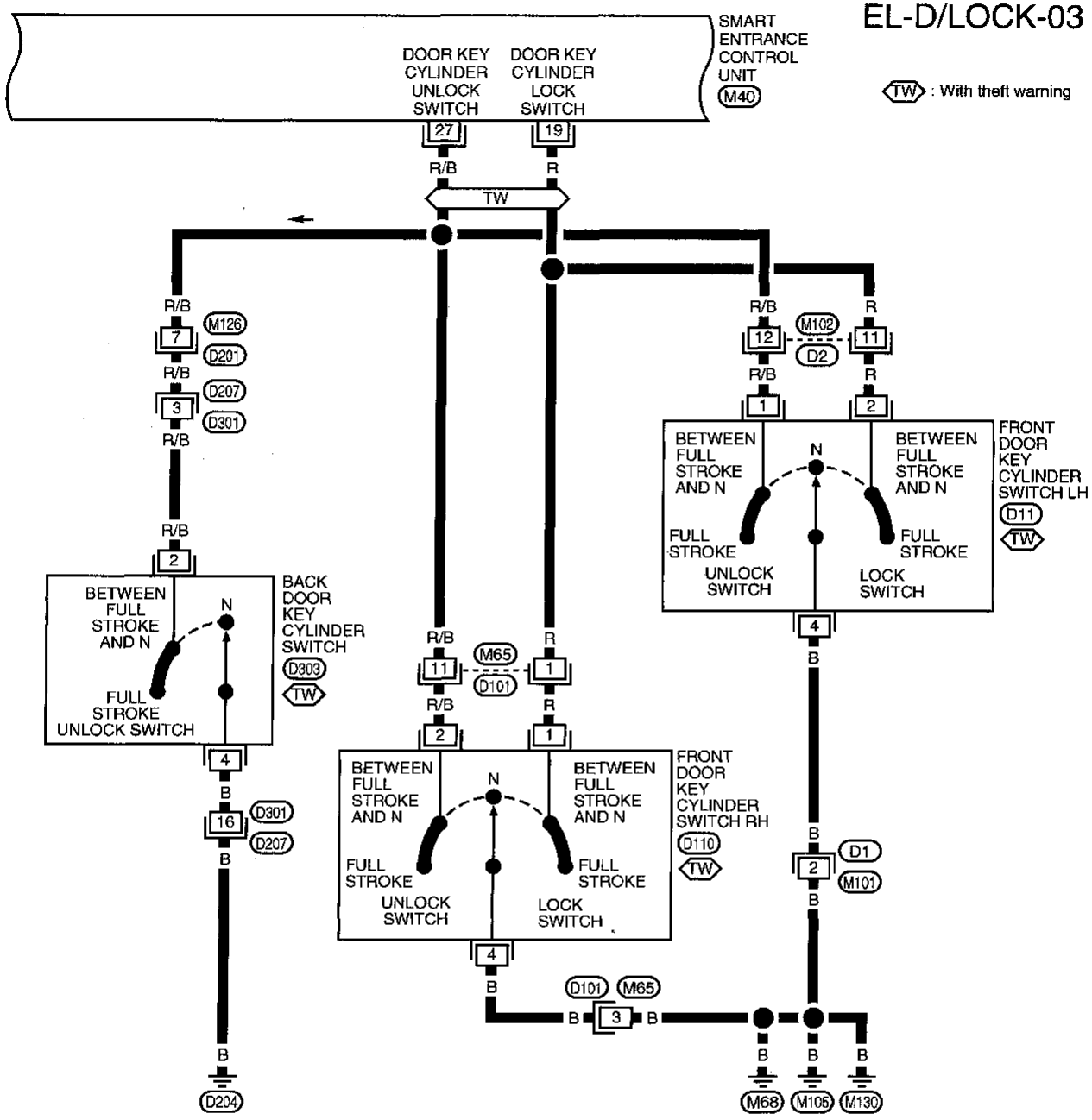
M1 , E101

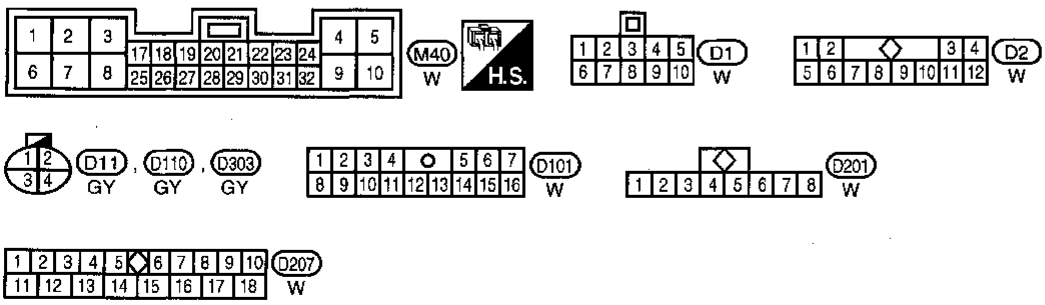
E22

AEL781B

FIG. 3

NDEL0107S03





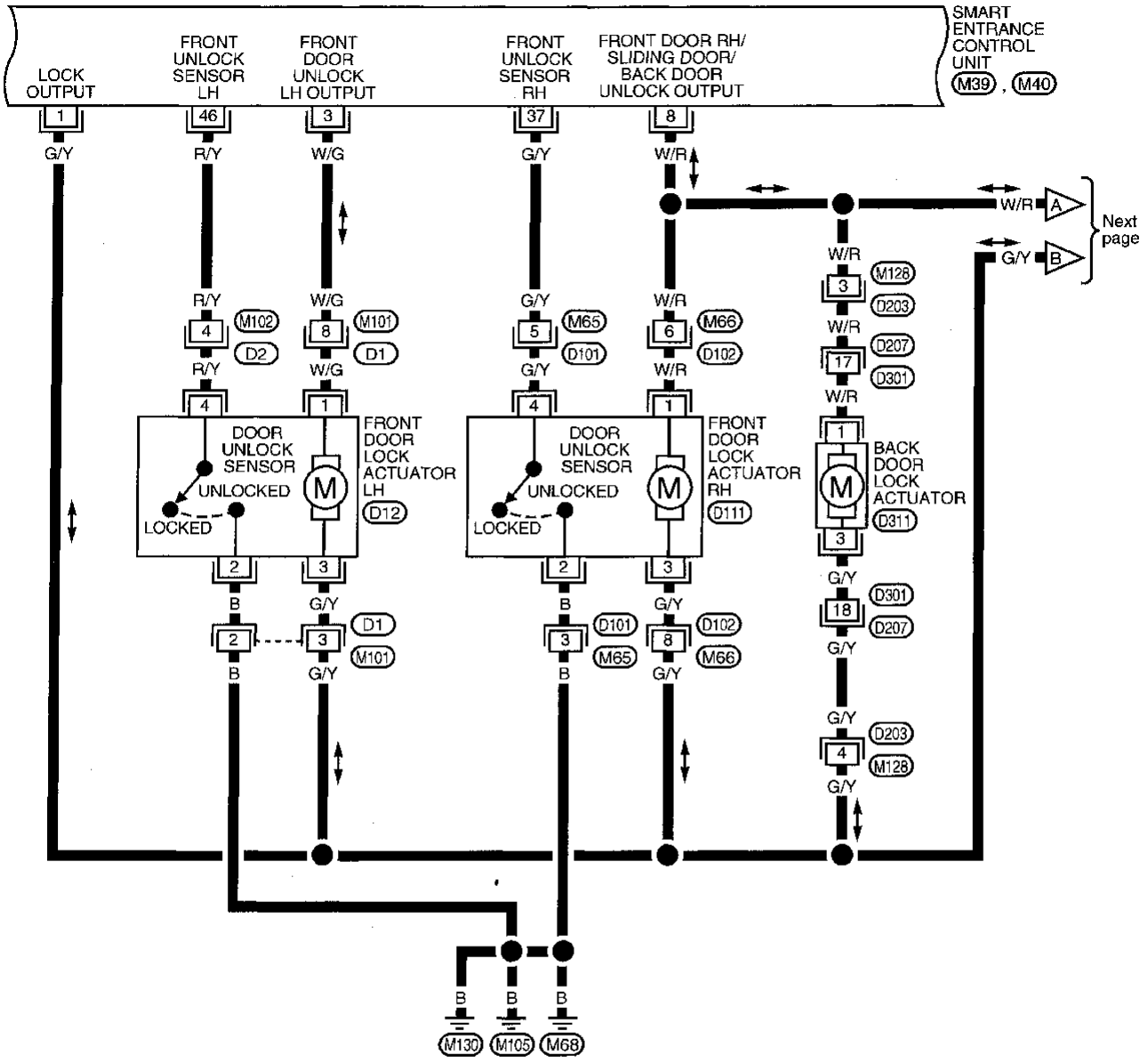
AEL782B

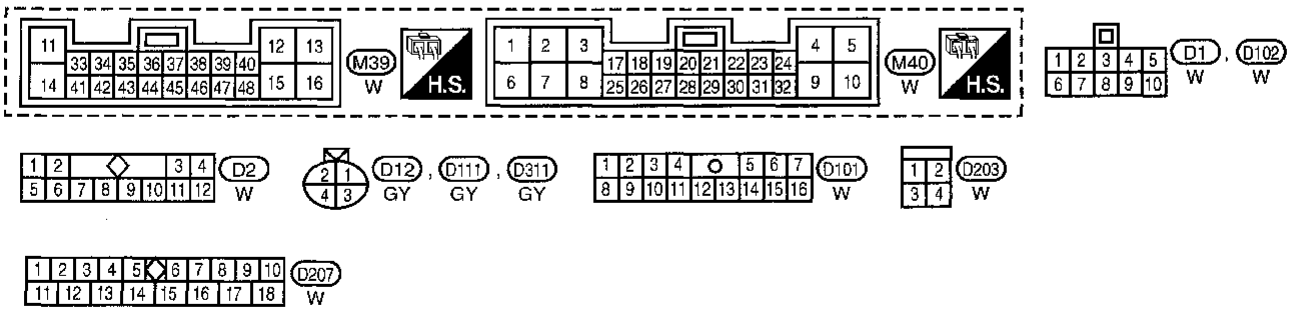
Wiring Diagram — D/LOCK — (Cont'd)

FIG. 4

NDEL0107S04

EL-D/LOCK-04

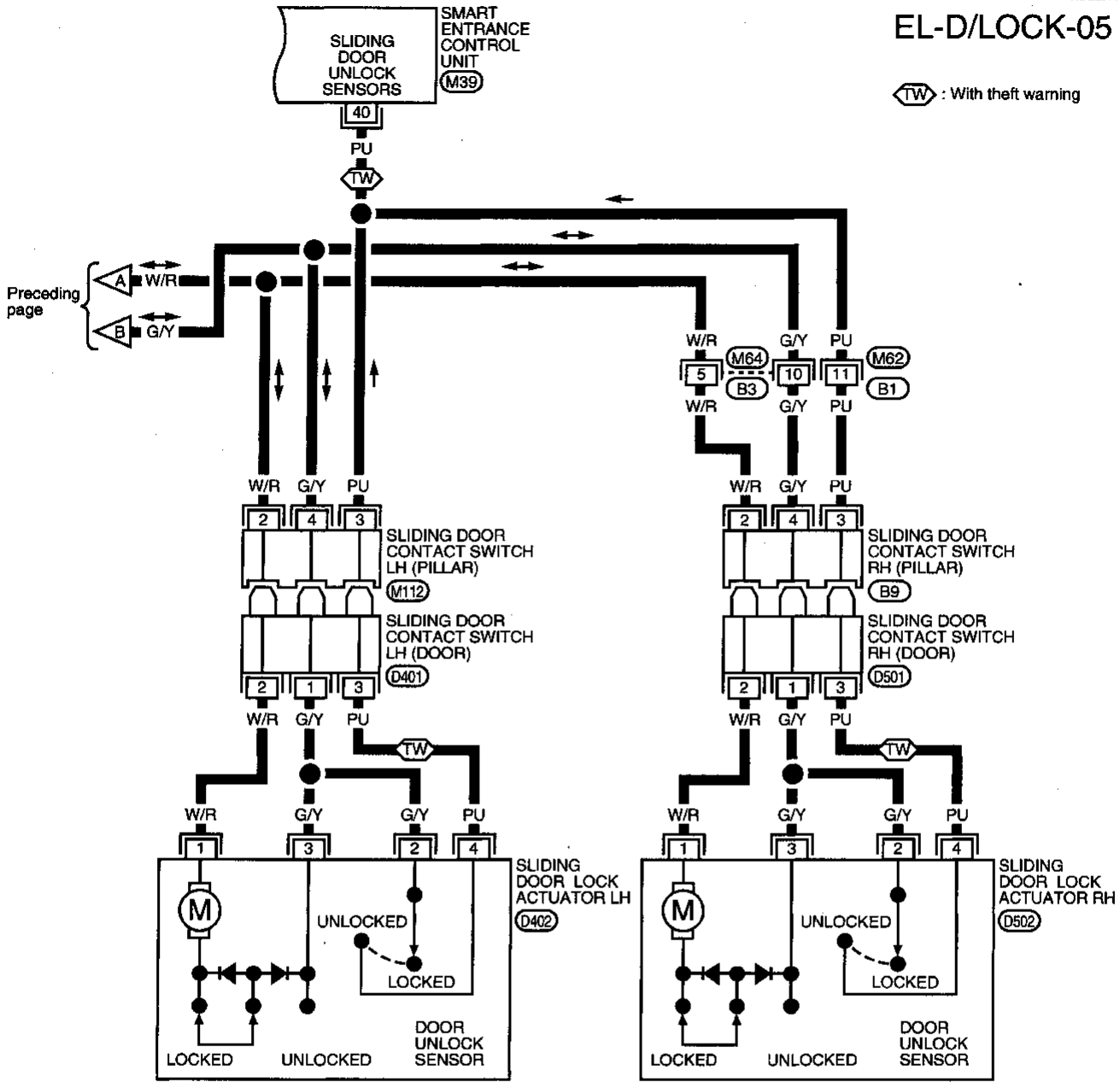


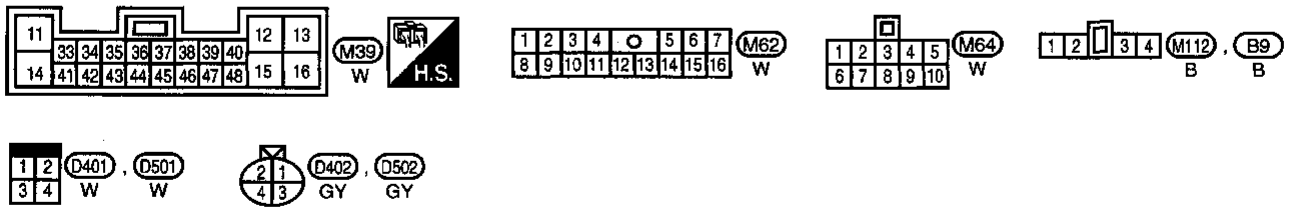


AEL783B

FIG. 5

NDEL0107S05





AEL784B

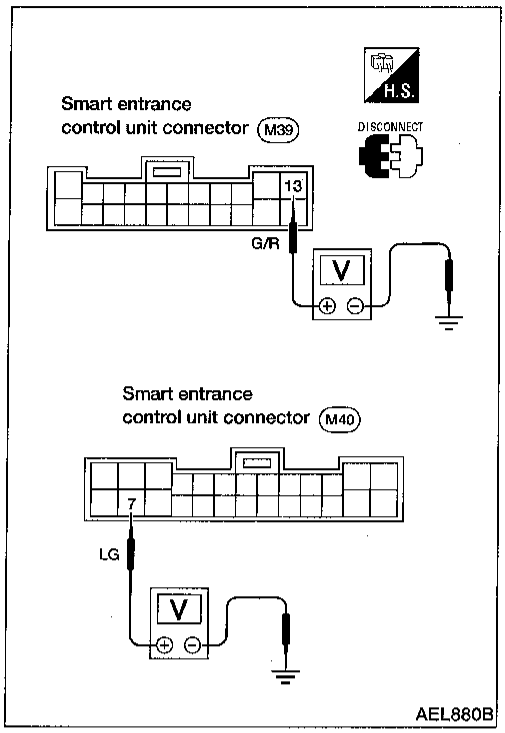
Trouble Diagnosis

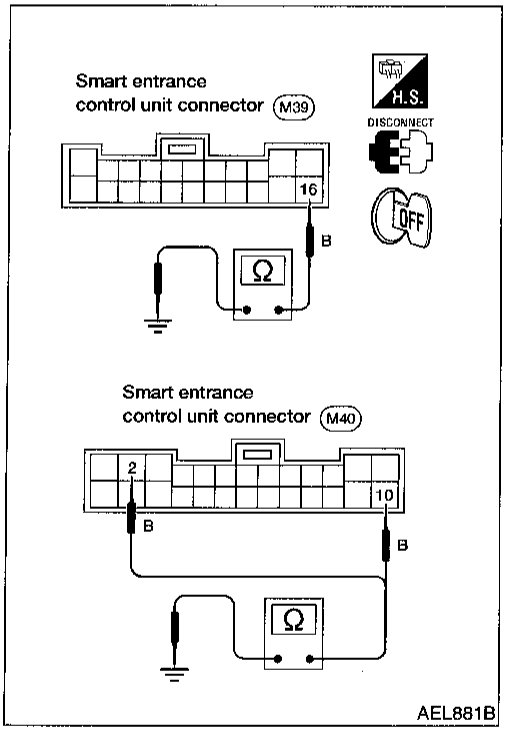
SYMPTOM CHART

NDEL0108

NDEL0108S01

REFERENCE PAGE (EL-)	203	204	204	205	206	207	208	209
SYMPTOM	MAIN POWER SUPPLY AND GROUND CIRCUIT CHECK	FRONT DOOR SWITCH CHECK	SLIDING DOOR SWITCH CHECK	KEY SWITCH (INSERTED) CHECK	DOOR LOCK/UNLOCK SWITCH CHECK	DOOR KEY CYLINDER SWITCH CHECK	FRONT DOOR UNLOCK SENSOR CHECK	DOOR LOCK ACTUATOR CHECK
Key reminder door system does not operate properly.	X	X		X			X	X
Specific door lock actuator does not operate properly.	X							X
Power door lock/unlock does not operate with door lock and unlock switch on power window main switch.	X				X			
Power door lock/unlock does not operate with front door key cylinder operation. (For models with theft warning system.)	X					X		
Power door unlock does not operate with back door key cylinder operations. (For models with theft warning system.)	X					X		
Power door lock does not operate with front door lock knob switch.	X						X	
Sliding door lock delay feature does not operate properly.	X		X					





MAIN POWER SUPPLY AND GROUND CIRCUIT CHECK

NDEL0108S02

Main Power Supply Circuit Check

NDEL0108S0201

Terminal		Ignition switch position		
(+)	(−)	OFF	ACC	ON
13	Ground	Battery voltage	Battery voltage	Battery voltage
7	Ground	Battery voltage	Battery voltage	Battery voltage

If check result for terminal 13 is NG, check the following

- 7.5A fuse (No. 39, located in the fuse and fusible link box)
- Harness for open or short between smart entrance control unit and fuse.

If check result for terminal 7 is NG, check the following

- 30A fusible link (letter **f**, located in the fuse and fusible link box)
- Circuit breaker-1
- Harness for open or short between smart entrance control unit and fusible link.

Ground Circuit Check

NDEL0108S0202

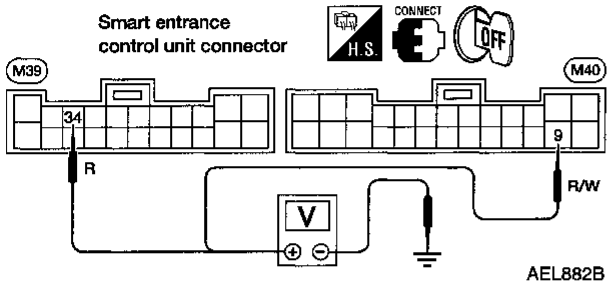
Terminals		Continuity
(+)	(−)	
2	Ground	Yes
10	Ground	Yes
16	Ground	Yes

FRONT DOOR SWITCH CHECK

=NDEL0108S03

1 CHECK FRONT DOOR SWITCH INPUT SIGNAL

Check voltage between smart entrance control unit terminals 34 or 9 and ground.



AEL882B

	Terminals (+)	Terminals (−)	Door condition	Voltage [V]
Front door switch LH	34	Ground	Open	0
			Closed	Approx. 12
Front door switch RH	9	Ground	Open	0
			Closed	Approx. 12

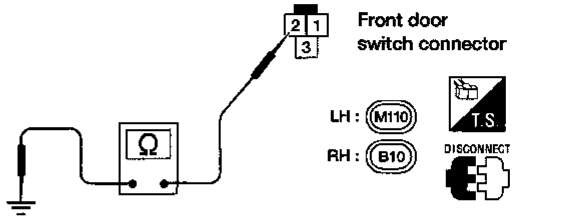
AEL883B

OK or NG

OK	▶	Door switch is OK.
NG	▶	GO TO 2.

2 CHECK FRONT DOOR SWITCH

Check continuity between terminal 2 and switch body.



AEL884B

Continuity
Door switch is pushed.
No
Door switch is released
Yes

OK or NG

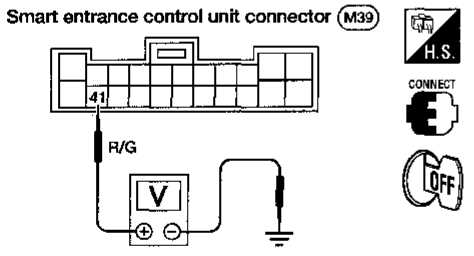
OK	▶	**Check the following** • Door switch ground condition • Harness for open or short between smart entrance control unit and door switch.
NG	▶	Replace door switch.

SLIDING DOOR SWITCH CHECK

NDEL0108S04

1 CHECK SLIDING DOOR SWITCH INPUT SIGNAL

Check voltage between smart entrance control unit terminal 41 and ground.



AEL887B

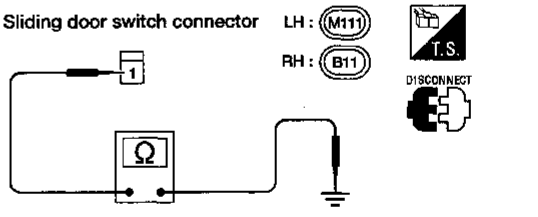
Voltage [V]:
Either sliding door is opened.
0
Both sliding doors are closed.
Approx. 12

OK or NG

OK	▶	Sliding door switch is OK.
NG	▶	GO TO 2.

2 CHECK SLIDING DOOR SWITCH

Check continuity between sliding door switch terminal 1 and switch body.



AEL888B

Continuity:
Sliding door switch is pushed.
No
Sliding door switch is released.
Yes

OK or NG

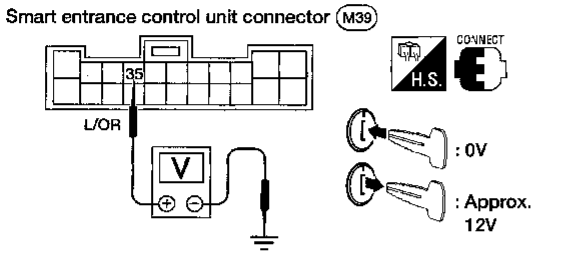
OK	▶	**Check the following** • Sliding door switch ground condition • Harness for open or short between smart entrance control unit and sliding door switch.
NG	▶	Replace sliding door switch.

KEY SWITCH (INSERTED) CHECK

=NDEL0108S05

1	CHECK KEY SWITCH INPUT SIGNAL

Check voltage between smart entrance control unit terminal 35 and ground.



AEL874B

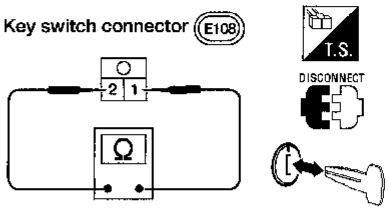
Voltage [V]:
Condition of key switch: Key is inserted.
0
Condition of key switch: Key is removed.
Approx. 12

OK or NG

OK	▶	Key switch is OK.
NG	▶	GO TO 2.

2	CHECK KEY SWITCH (INSERTED)

Check continuity between key switch terminals 1 and 2.



AEL875B

Continuity:
Condition of key switch: Key is inserted.
Yes
Condition of key switch: Key is removed.
No

OK or NG

OK	▶	**Check the following** • Key switch ground circuit • Harness for open or short between smart entrance control unit and key switch.
NG	▶	Replace key switch.

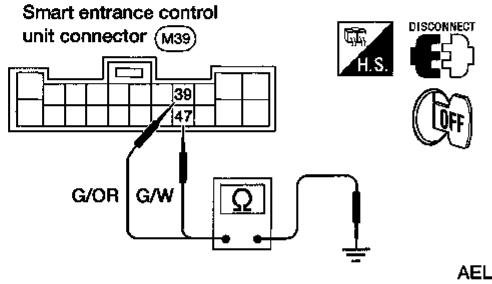
DOOR LOCK/UNLOCK SWITCH CHECK

=NDEL0108S06

1 CHECK DOOR LOCK/UNLOCK SWITCH INPUT SIGNAL

1. Disconnect smart entrance control unit connector.
2. Check continuity between control unit terminal 39 or 47 and ground.

Smart entrance control unit connector (M39)



AEL889B

Terminals	Door lock/unlock switch (LH or RH) condition	Continuity
47 - ground	Lock	Yes
	N and Unlock	No
39 - ground	Unlock	Yes
	N and Lock	No

AEL890B

Refer to wiring diagram, EL-197.

OK or NG

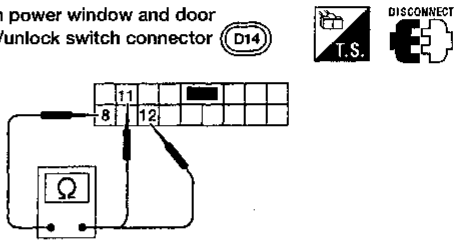
OK	▶	Door lock/unlock switch is OK.
NG	▶	GO TO 2.

2 CHECK DOOR LOCK/UNLOCK SWITCH

1. Disconnect door lock/unlock switch connector.
2. Check continuity between door lock/unlock switch terminals.

- Main power window and door lock/unlock switch (Door lock/unlock switch LH)

Main power window and door lock/unlock switch connector (D14)



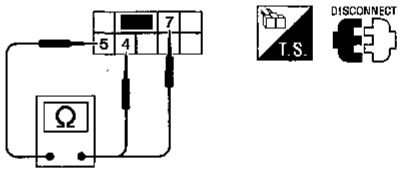
AEL891B

Condition	Terminals		
	8	11	12
Lock	○		○
N	No continuity		
Unlock	○	○	

AEL892B

- Door lock/unlock switch RH

Door lock/unlock switch RH connector (D109)



AEL893B

Condition	Terminals		
	5	4	7
Lock	○	○	
N	No continuity		
Unlock	○		○

AEL894B

OK or NG

OK	▶	**Check the following** • Ground circuit for door lock/unlock switch • Harness for open or short between smart entrance control unit and door lock/unlock switch.
NG	▶	Replace door lock/unlock switch.

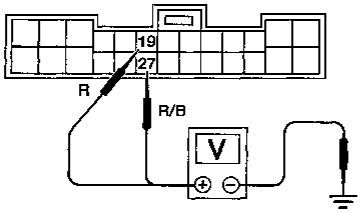
DOOR KEY CYLINDER SWITCH CHECK

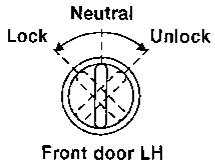
=NDEL0108S10

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

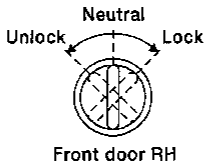
Check voltage between control unit terminals 19 or 27 and ground.

Smart entrance control unit connector (M40)

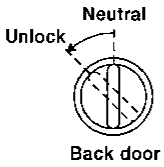




Front door LH



Front door RH



Back door

AEL927B

Terminals (+)	Terminals (-)	Key position	Voltage [V]
19	Ground	Neutral	Approx. 12
		Lock	0
27	Ground	Neutral	Approx. 12
		Unlock	0

AEL928B

Refer to wiring diagram, EL-199.

OK or NG

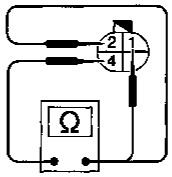
OK	▶	Door key cylinder switch is OK.
NG	▶	GO TO 2.

2 CHECK DOOR KEY CYLINDER SWITCH

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

Door key cylinder switch connector

Front LH : (D11) Front RH : (D110) Back : (D303)



①: Door unlock switch terminal (Front LH)
Door lock switch terminal (Front RH)

②: Door lock switch terminal (Front LH)
Door unlock switch terminal (Front RH and back)

④: Ground terminal

AEL929B

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

AEL930B

OK or NG

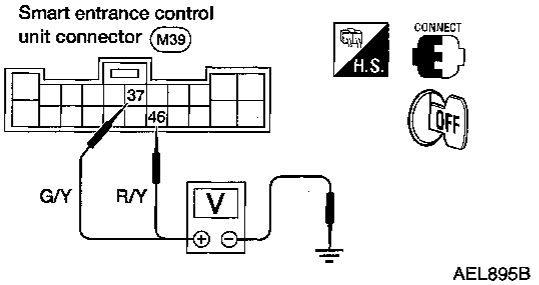
OK	▶	**Check the following** • Door key cylinder switch ground circuit • Harness for open or short between control unit and door key cylinder switch.
NO	▶	Replace door key cylinder switch.

FRONT DOOR UNLOCK SENSOR CHECK

=NDEL0108S08

1 CHECK DOOR UNLOCK SENSOR INPUT SIGNAL

Check voltage between control unit terminals 46 or 37 and ground.



AEL895B

	Terminals (+)	Terminals (−)	Condition	Voltage [V]
Front LH door	46	Ground	Locked	Approx. 12
			Unlocked	0
Front RH door	37	Ground	Locked	Approx. 12
			Unlocked	0

AEL896B

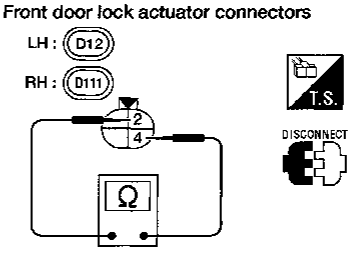
Refer to wiring diagram, EL-200.

OK or NG

OK	▶	Door unlock sensor is OK.
NG	▶	GO TO 2.

2 CHECK DOOR UNLOCK SENSOR

1. Disconnect front door lock actuator connector.
2. Check continuity between door unlock sensor terminals 4 and 2.



AEL897B

Continuity:
Condition: Locked
No
Condition: Unlocked
Yes

OK or NG

OK	▶	**Check the following** • Door unlock sensor ground circuit • Harness for open or short between smart entrance control unit and door unlock sensor.
NG	▶	Replace front door lock actuator.

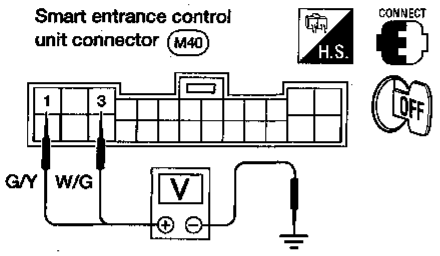
DOOR LOCK ACTUATOR CHECK

=NDEL0108S09

1 CHECK DOOR LOCK ACTUATOR CIRCUIT

Check voltage for door lock actuator.

- Front door lock actuator LH

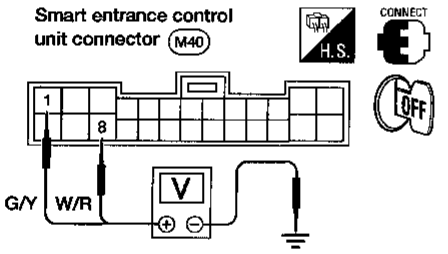


AEL898B

Door lock/unlock switch condition	Terminal No. (+)	Terminal No. (–)	Voltage [V]
Lock	1	ground	Approx. 12
Unlock	3	ground	

AEL900B

- Front door lock actuator RH, sliding door lock actuator LH and RH, and back door lock actuator



AEL901B

Door lock/unlock switch condition	Terminals (+)	Terminals (–)	Voltage [V]
Lock	1	ground	Approx. 12
Unlock	8	ground	

AEL902B

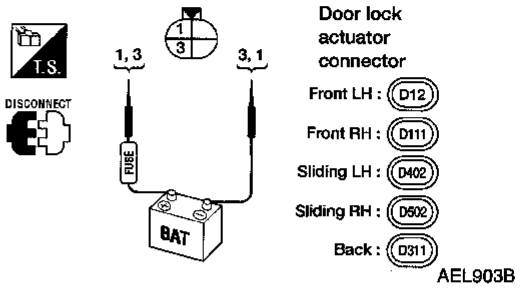
Refer to wiring diagrams, EL-200.

OK or NG

OK	▶	GO TO 2.
NG	▶	Replace smart entrance control unit. (Before replacing smart entrance control unit, perform "DOOR LOCK/UNLOCK SWITCH CHECK", EL-209.)

2 CHECK DOOR LOCK ACTUATOR

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



AEL903B

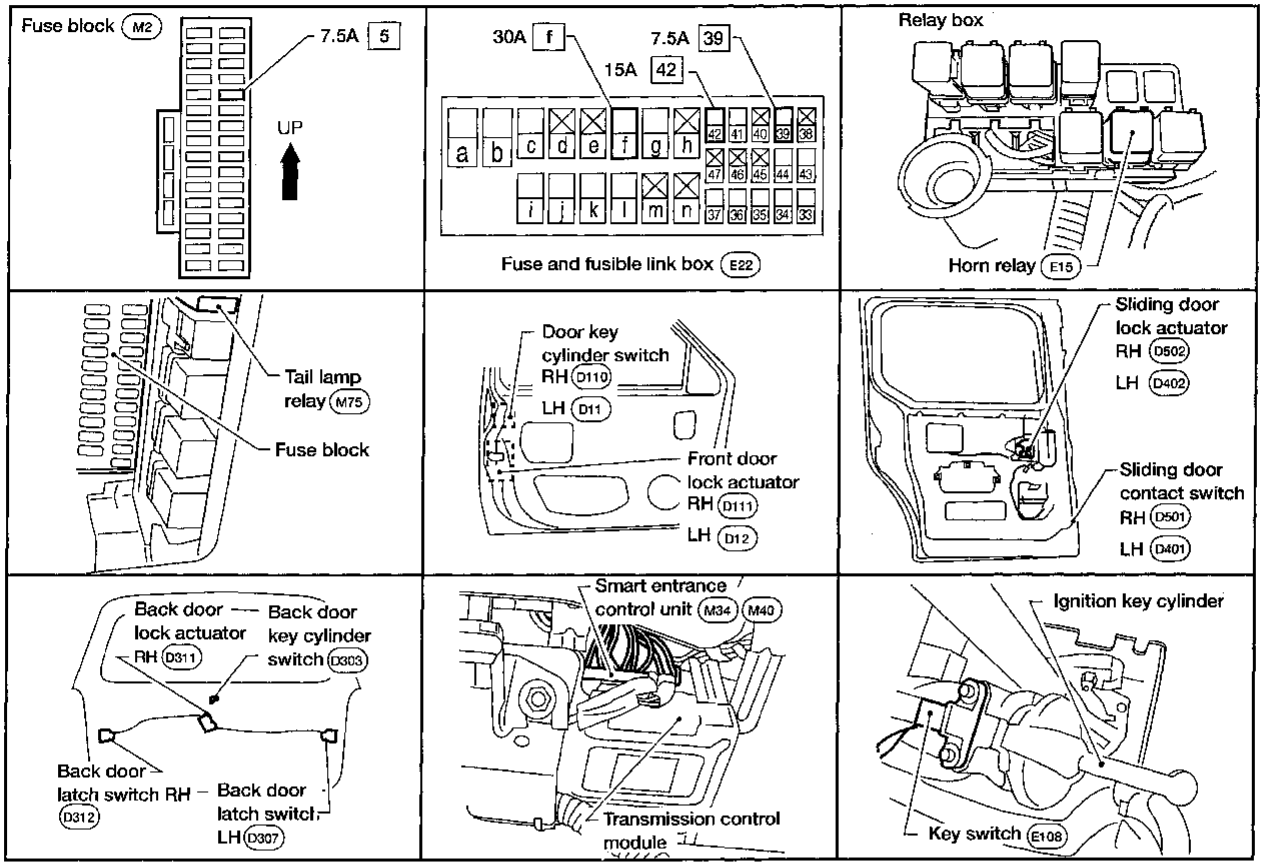
Door lock actuator operation:
Terminals between (+): 3 and (–): 1
Unlocked → Locked
Terminals between (+): 1 and (–): 3
Locked → Unlocked

OK or NG

OK	▶	Check harness for open or short between smart entrance control unit connector and door lock actuator.
NG	▶	Replace door lock actuator.

Component Parts and Harness Connector Location

NDEL0109



AEL198C

System Description

NDEL0110

FUNCTION

NDEL0110S01

Multi-remote control system has the following functions

- power door locks
- door lock verification
- panic alarm
- interior room lamps
- automatic drive positioner
- ID code entry.

NOTE:
Remote control operations other than ID code entry are independent of door status and ignition key status.

POWER SUPPLY AND GROUND

NDEL0110S08

Power is supplied at all times

- through 30A fusible link (letter **f**, located in the fuse and fusible link box)
- and through circuit breaker-1
- to smart entrance control unit terminal 7
- through 7.5A fuse (No. 39, located in the fuse and fusible link box)
- to smart entrance control unit terminal 13.

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

- through 7.5A fuse (No. 5, located in the fuse block)
- to smart entrance control unit terminal 36.

Ground is supplied

- to smart entrance control unit terminal 2, 10 and 16
- through body grounds M68, M105 and M130.

POWER DOOR LOCK OPERATION

NDEL0110S02

When key switch is OFF (key is out of ignition key cylinder) and a LOCK signal is input to smart entrance control unit (antenna is integrated with smart entrance control unit), the smart entrance control unit locks all doors.
When an UNLOCK signal is sent from remote controller once, front door LH will unlock.
Then, if an UNLOCK signal is sent from remote controller again within 5 seconds, all other doors will unlock.

DOOR LOCK VERIFICATION

NDEL0110S03

When vehicle is locked or unlocked with remote controller, side marker lamps, tail lamps, license lamps, and interior illumination flash and horn beeps (if horn chirp function is activated) as follows

- Lock operation: exterior and interior lamps flash twice and horn beeps once
- Unlock operation: exterior and interior lamps flash once.

If horn chirp is not activated, no reminder will occur for unlocking operation.
To activate or deactivate horn chirp, press both LOCK and UNLOCK buttons on remote controller for 2 seconds. When horn chirp setting is changed, exterior and interior lamps will flash three times as an reminder.
Door lock verification will not activate until door lock status signal is input to smart entrance control unit terminals 37, 40, 46 and 48 from door unlock sensors.

INTERIOR ROOM LAMP OPERATION

NDEL0110S06

Interior room lamps turn on and off according to remote controller lock or unlock operation.
For detailed description, refer to "System Description", "INTERIOR ROOM LAMP", EL-68.

PANIC ALARM

NDEL0110S04

When PANIC ALARM button of the remote controller is pushed continuously, multi-remote control system turns horn and headlamps on and off intermittently.
For detailed description, refer to "System Description", "THEFT WARNING SYSTEM", EL-228.

AUTO DRIVE POSITIONER

NDEL0110S05

When an UNLOCK signal is sent from remote controller, smart entrance control unit terminal 20 sends a signal to memory seat and mirror control unit terminal 24. Then driver seat and outside mirrors will be adjusted to the positions memorized for that remote controller. For detailed description, refer to "System Description", "AUTOMATIC DRIVE POSITIONER", EL-135.

ID CODE ENTRY

NDEL0110S07

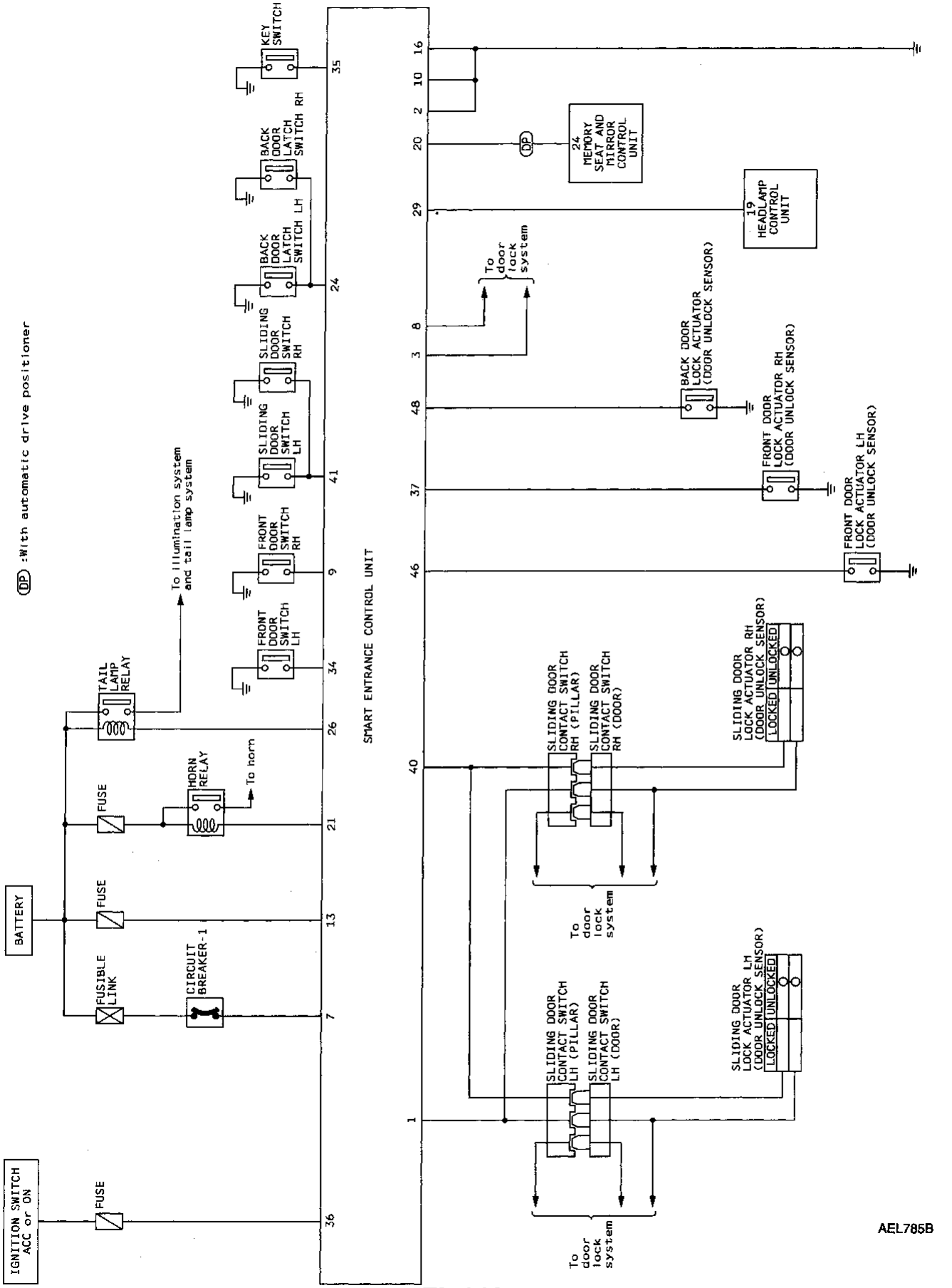
To enter ID code, the following signals must be input to multi-remote control unit

- Front door LH LOCKED signal (ground signal from front door LH unlock sensor terminal 4 to smart entrance control unit terminal 46)
- All door switches CLOSED (ground signal from door switches to smart entrance control unit terminals 9, 24, 34 and 41)
- Key switch INSERTED and REMOVED (ground signal from key switch terminal 1 to smart entrance control unit terminal 35)
- ACC power supply signal [ACC power supply signal through 7.5A fuse (No. 5, located in the fuse block) to smart entrance control unit terminal 36].

For detailed description, refer to "ID Code Entry Procedure", EL-224.

Schematic

NDEL0111

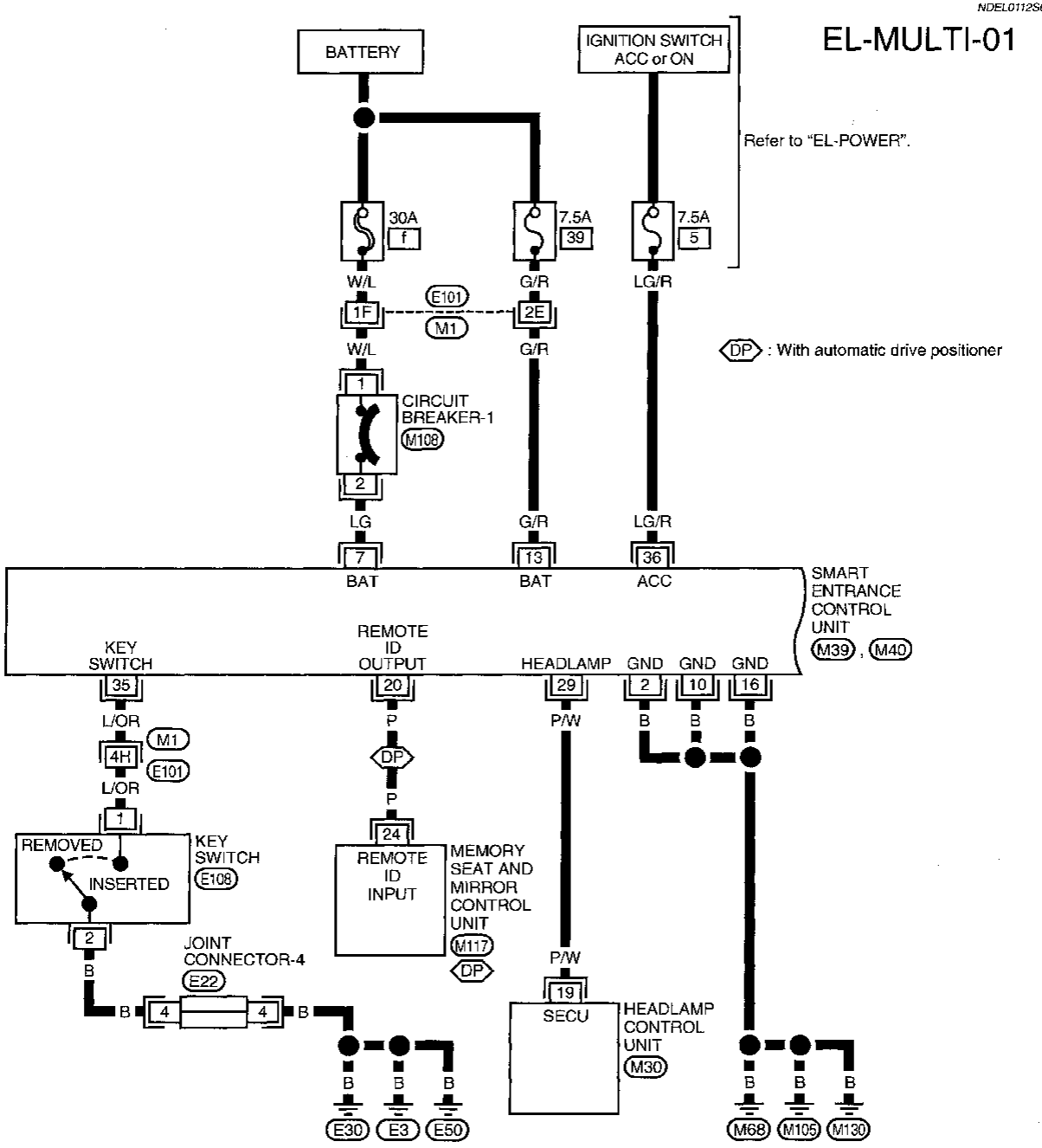


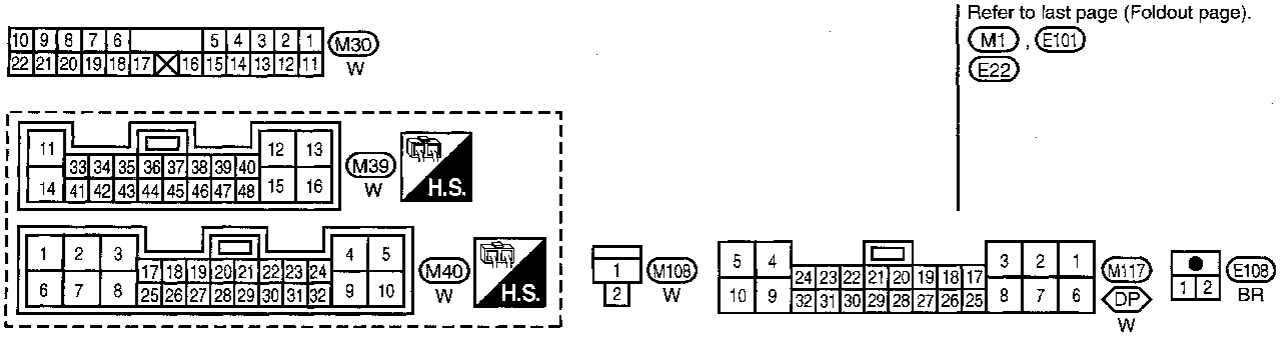
Wiring Diagram — MULTI —

NDEL0112

FIG. 1

NDEL0112S01



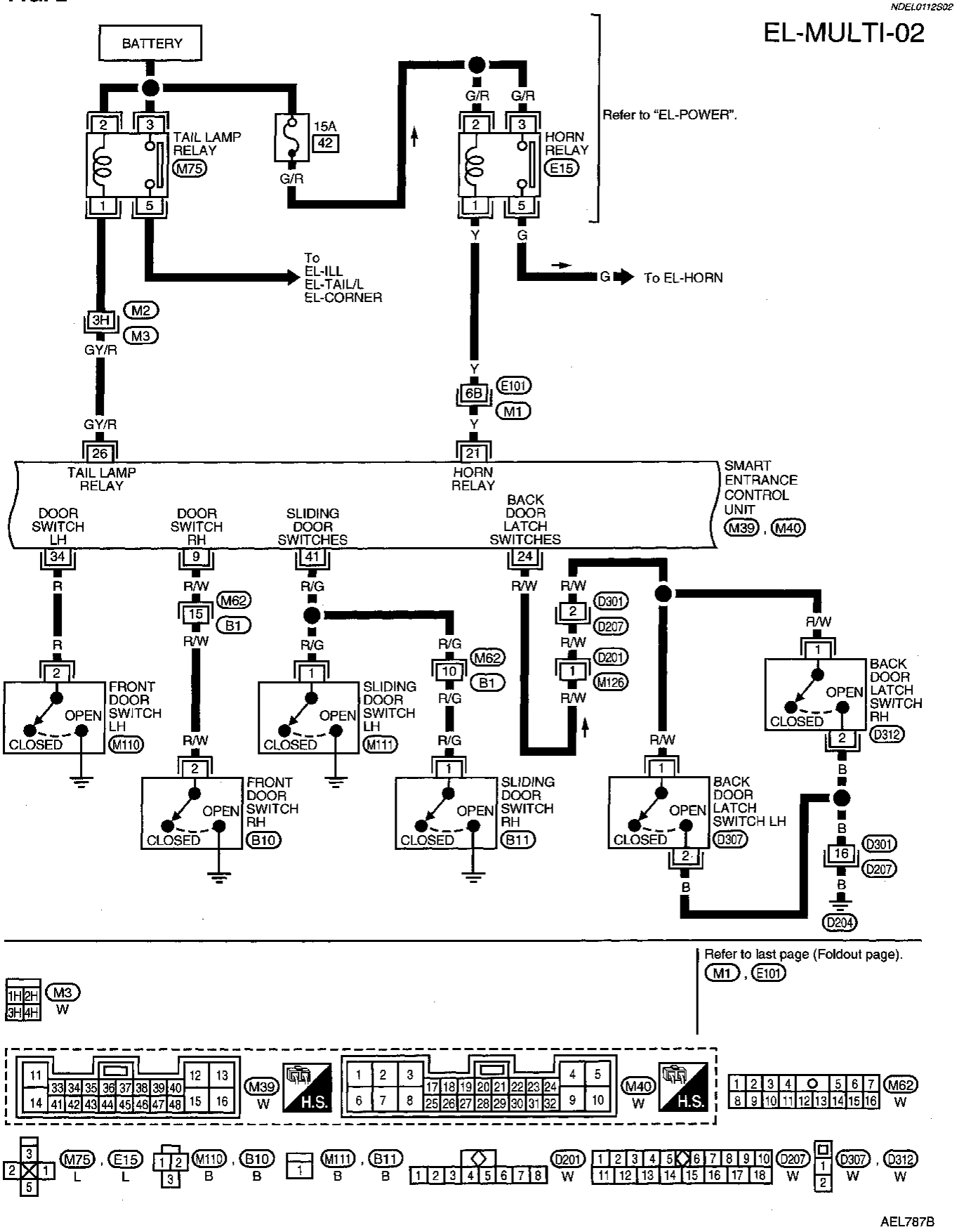


Refer to last page (Foldout page).
M1 , E101
E22

AEL786B

FIG. 2

NDEL0112S02

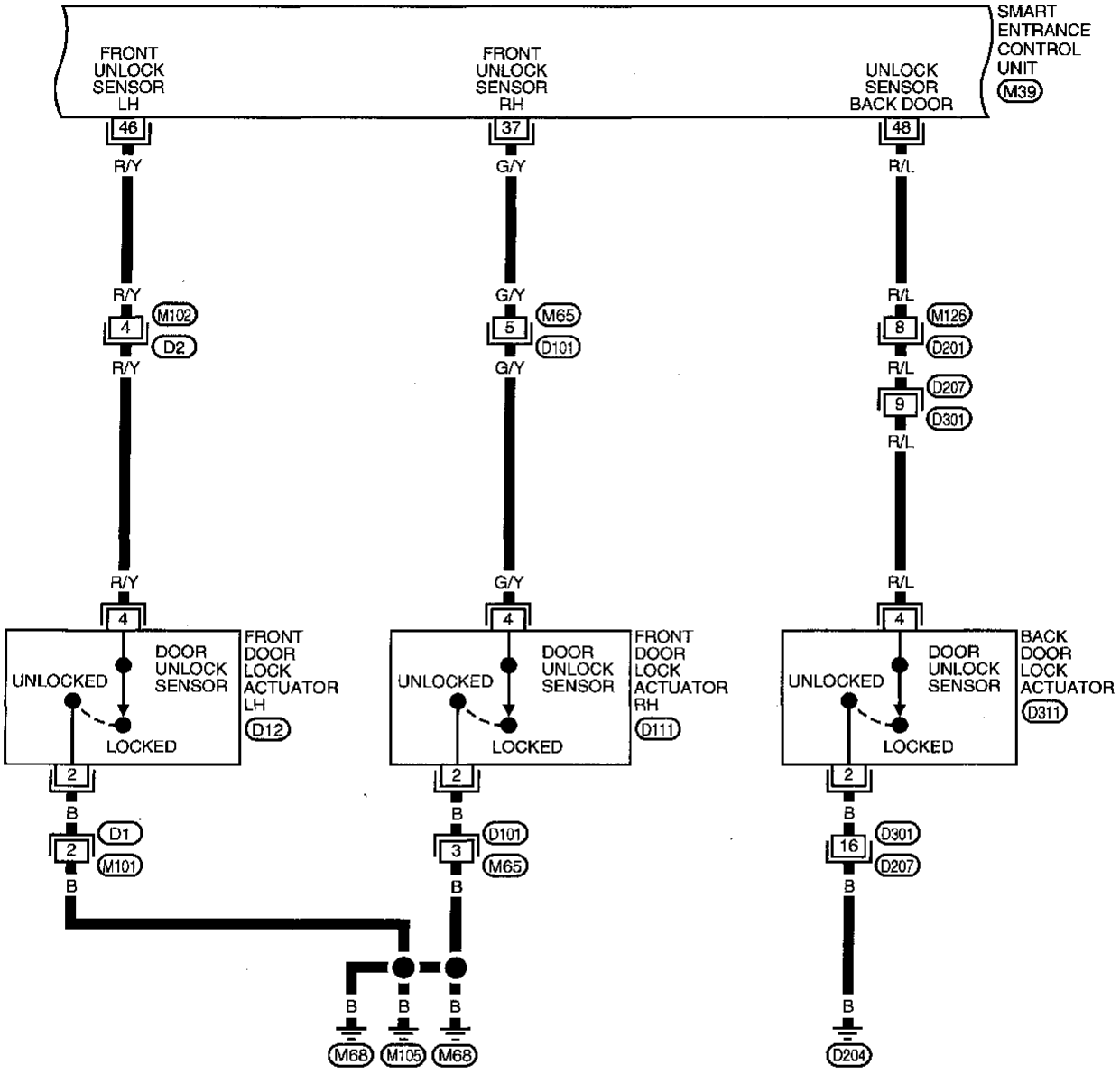


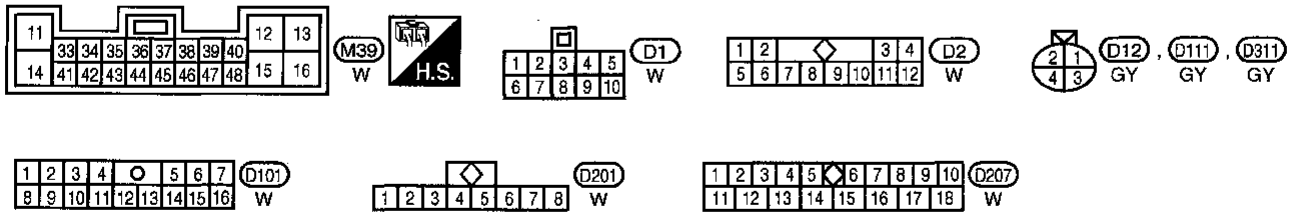
AEL787B

FIG. 3

NDEL0112S03

EL-MULTI-03



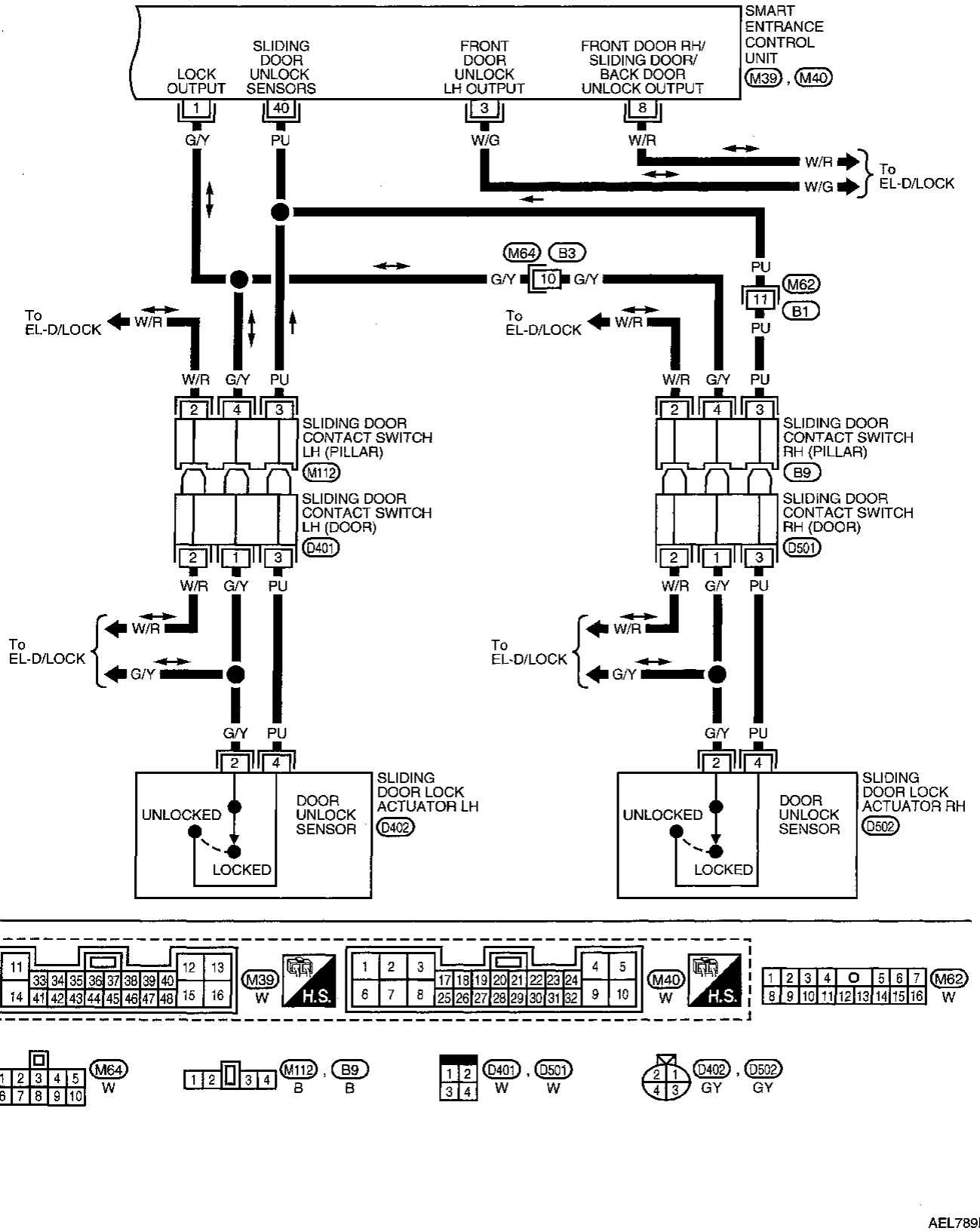


AEL788B

FIG. 4

NDEL0112S04

EL-MULTI-04



AEL789B

Trouble Diagnoses

SYMPTOM CHART

NDEL0113

NDEL0113S01

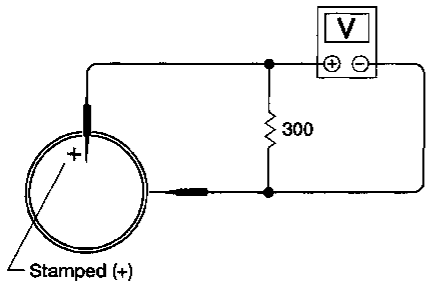
Symptom	Diagnoses/service procedure	Reference page
All functions of multi-remote control system do not operate.	1. Remote controller battery check	EL-218
	2. Power supply and ground circuit for smart entrance control unit check	EL-219
	3. Replace remote controller. Refer to ID Code Entry Procedure.	EL-224
Remote controller ID code cannot be entered.	1. Remote controller battery check	EL-218
	2. Key switch (inserted) check	EL-221
	3. Door switch check	EL-220
	4. Door unlock sensor check	EL-222
	5. Power supply and ground circuit for smart entrance control unit check	EL-219
	6. Replace remote controller. Refer to ID Code Entry Procedure.	EL-224
Door lock or unlock does not function. (If the power door lock system does not operate manually, check power door lock system. Refer to EL-202.)	1. Replace remote controller. Refer to ID Code Entry Procedure.	EL-224
Side marker lamps, tail lamps, license lamps and interior illumination do not flash when pressing lock or unlock button of remote controller.	1. Tail lamp relay check	EL-223
	2. Door unlock sensor check	EL-222
	3. Replace remote controller. Refer to ID Code Entry Procedure.	EL-224
Horn does not chirp when pressing lock button of remote controller.	1. Check horn chirp setting. Refer to "System Description".	EL-211
	2. Check theft warning operation. Refer to "PRELIMINARY CHECK" in "THEFT WARNING SYSTEM".	EL-239
	3. Replace remote controller. Refer to ID Code Entry Procedure.	EL-224
Panic alarm (horn and headlamps) does not activate when panic alarm button is continuously pressed more than 1.5 seconds.	1. Theft warning operation check. Refer to "PRELIMINARY CHECK" in "THEFT WARNING SYSTEM".	EL-239
	2. Replace remote controller. Refer to ID Code Entry Procedure.	EL-224

REMOTE CONTROLLER BATTERY CHECK

=NDEL0113S02

1	CHECK REMOTE CONTROLLER BATTERY

Remove battery (refer to EL-225 and measure voltage across battery positive and negative terminals, (+) and (–).



AEL678A

Voltage [V]: 2.5 - 3.0

NOTE:

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

OK or NG

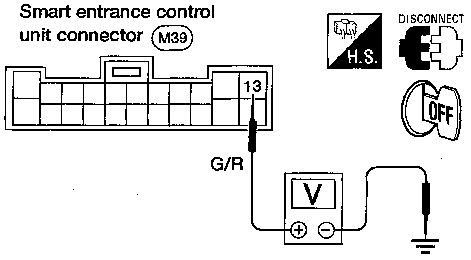
OK	▶	Check remote controller battery terminals for corrosion and damage.
NG	▶	Replace battery.

POWER SUPPLY AND GROUND CIRCUIT CHECK

=NDEL0113S03

1 CHECK MAIN POWER SUPPLY CIRCUIT FOR SMART ENTRANCE CONTROL UNIT

1. Disconnect connector from smart entrance control unit.
2. Check voltage between smart entrance control unit terminal 13 and ground.



AEL906B

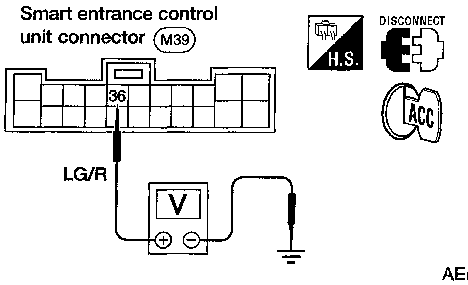
Refer to wiring diagram, EL-213.

Does battery voltage exist?

Yes	▶	GO TO 2.
No	▶	**Check the following** • 7.5A fuse (No. 39, located in the fuse and fusible link box) • Harness for open or short between smart entrance control unit and fuse.

2 CHECK IGNITION SWITCH ACC CIRCUIT

1. Disconnect smart entrance control unit connector.
2. Check voltage between smart entrance control unit terminal 36 and ground with ignition switch in ACC.



AEL907B

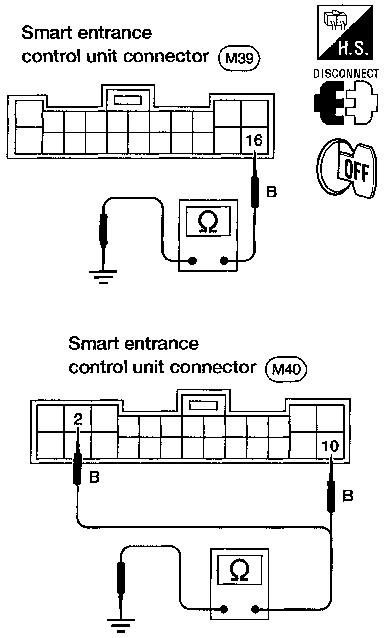
Refer to wiring diagram, EL-213.

Does battery voltage exist?

Yes	▶	GO TO 3.
No	▶	**Check the following** • 7.5A fuse (No. 5, located in fuse block) • Harness for open or short between smart entrance control unit and fuse.

3 CHECK GROUND CIRCUIT FOR SMART ENTRANCE CONTROL UNIT

Check continuity between smart entrance control unit terminal 10 and ground.



AEL881B

Refer to wiring diagram, EL-213.

Does continuity exist?

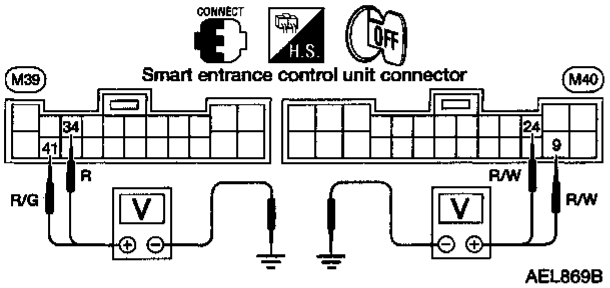
Yes	▶	Power supply and ground circuits are OK.
No	▶	Check ground harness.

DOOR SWITCH CHECK

=NDEL0113S04

1 CHECK DOOR SWITCH INPUT SIGNAL

Check voltage between smart entrance control unit terminals and ground.



AEL869B

	Terminals (+)	Terminals (—)	Door condition	Voltage [V]
Front door switch LH	34	Ground	Open	0
			Closed	Approx. 12
Front door switch RH	9	Ground	Open	0
			Closed	Approx. 12
Sliding door switch LH and RH	41	Ground	Open	0
			Closed	Approx. 12
Back door latch switch LH and RH	24	Ground	Open	0
			Closed	Approx. 12

AEL870B

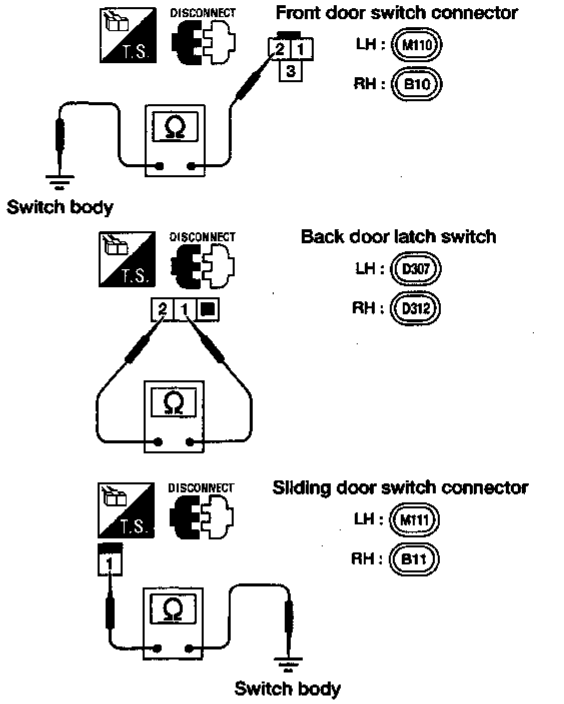
Refer to wiring diagram, EL-214.

OK or NG

OK	▶	Door switch is OK.
NG	▶	GO TO 2.

2 CHECK DOOR SWITCH

1. Disconnect door switch connector.
2. Check continuity as indicated.



AEL910B

	Terminals	Door Condition	Continuity
Front door switch LH and RH	2 - ground	Closed	No
		Open	Yes
Back door latch switch LH and RH	1 - 2	Closed	No
		Open	Yes
Sliding door switch LH and RH	1 - ground	Closed	No
		Open	Yes

AEL911B

OK or NG

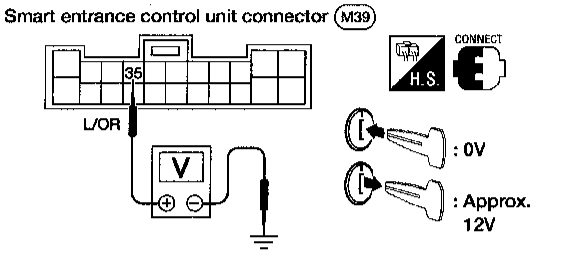
OK	▶	**Check the following** • Door switch ground circuit (back door latch switch) or door switch ground condition • Harness for open or short between smart entrance control unit and door switch.
NG	▶	Replace door switch.

KEY SWITCH (INSERTED) CHECK

=NDEL0113S05

1	CHECK KEY SWITCH INPUT SIGNAL

Check voltage between control unit terminal 35 and ground.



AEL874B

Voltage [V]:

Condition of key switch: Key is inserted.

0

Condition of key switch: Key is removed.

Approx. 12

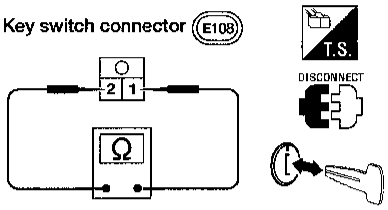
Refer to wiring diagram in EL-213.

OK or NG

OK	▶	Key switch is OK.
NG	▶	GO TO 2.

2	CHECK KEY SWITCH (INSERTED)

Check continuity between terminals 1 and 2.



AEL875B

Continuity:

Condition of key switch: Key is inserted.

Yes

Condition of key switch: Key is removed.

No

OK or NG

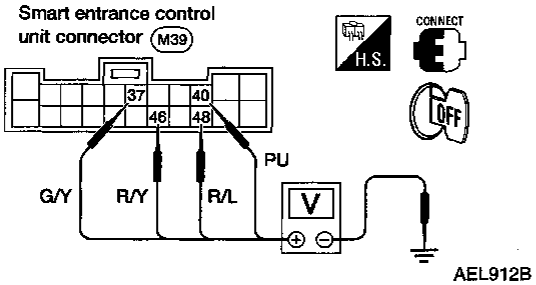
OK	▶	**Check the following** • Key switch ground circuit • Harness for open or short between smart entrance control unit and key switch.
NG	▶	Replace key switch.

DOOR UNLOCK SENSOR CHECK

=NDEL0113S06

1 CHECK DOOR UNLOCK SENSOR INPUT SIGNAL

Check voltage between smart entrance control unit terminals and ground.



AEL912B

	Terminals (+)	Terminals (—)	Condition	Voltage [V]
Front door LH	46	Ground	Locked	Approx. 12
			Unlocked	0
Front door RH	37	Ground	Locked	Approx. 12
			Unlocked	0
Sliding door LH and RH	40	Ground	Locked	Approx. 12
			Unlocked	0
Back door	48	Ground	Locked	Approx. 12
			Unlocked	0

AEL913B

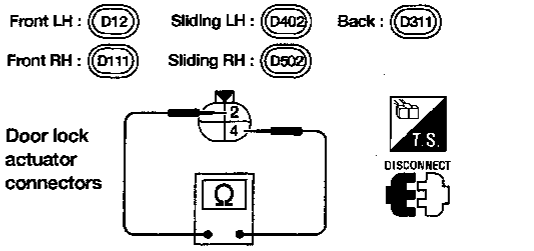
Refer to wiring diagrams, EL-215, 216.

OK or NG

OK	▶	Door unlock sensor is OK.
NG	▶	GO TO 2.

2 CHECK DOOR UNLOCK SENSOR

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



AEL914B

Continuity:
Condition: Locked
No
Condition: Unlocked
Yes

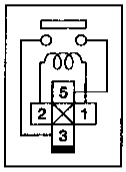
OK or NG

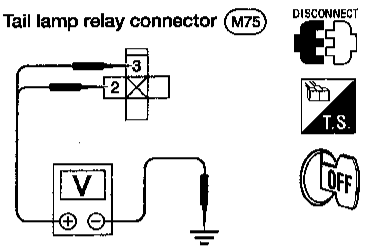
OK	▶	**Check the following** • Door unlock sensor ground circuit (front door LH/RH and back door) • Harness for open or short between smart entrance control unit and door unlock sensor.
NG	▶	Replace door unlock sensor.

TAIL LAMP RELAY CHECK

=NDEL0113S07

1	CHECK TAIL LAMP OPERATION
Do tail lamps illuminate with lighting switch operation?	
Yes ▶	Check harness for open or short between smart entrance control unit and tail lamp relay.
No ▶	GO TO 2.

2	CHECK TAIL LAMP RELAY
1. Apply 12V DC direct current between relay terminals 1 and 2. 2. Check continuity between relay terminals 3 and 5.  AEL916B **Continuity:** **12V applied** **Yes** **No voltage applied** **No**	
OK or NG	
OK ▶	GO TO 3.
NG ▶	Replace relay.

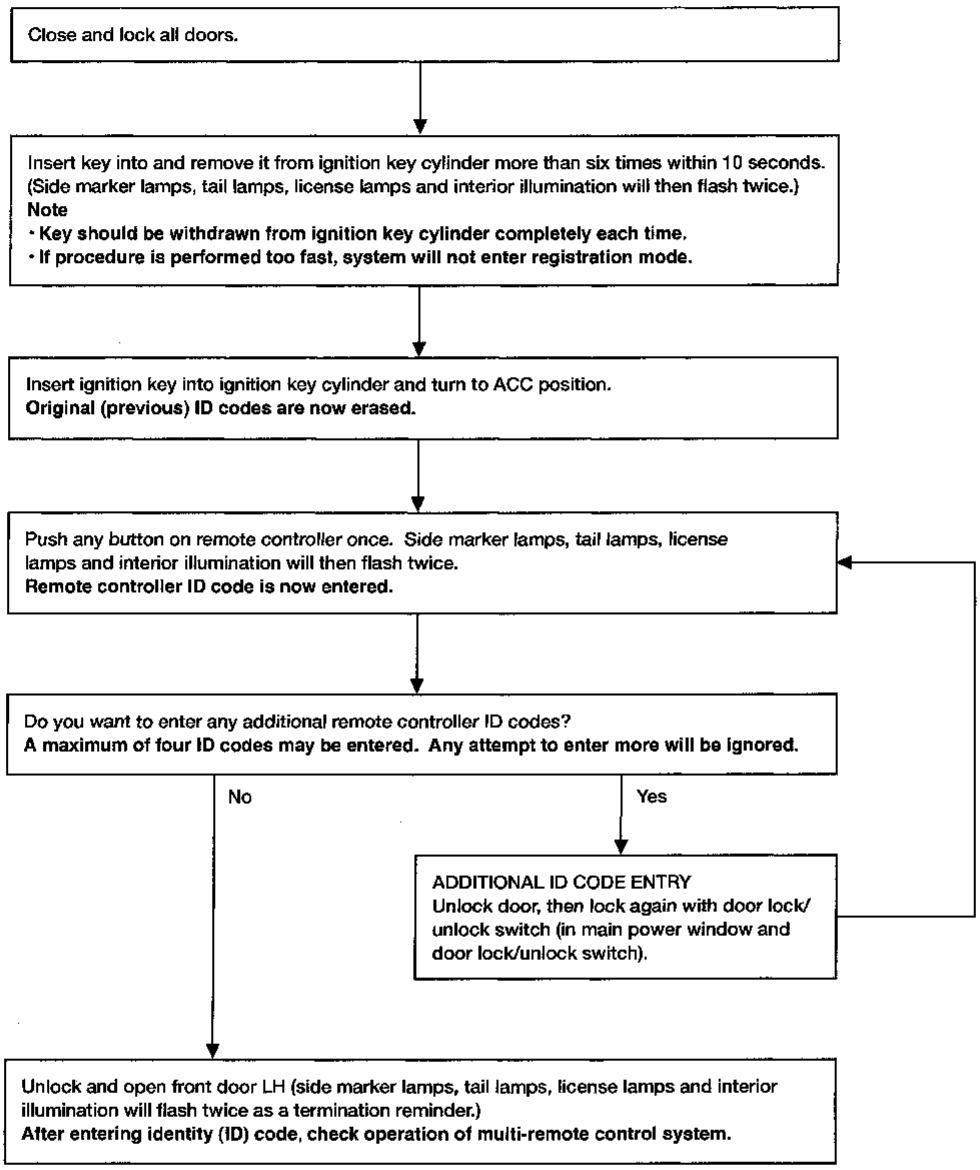
3	CHECK TAIL LAMP RELAY POWER SUPPLY
Check voltage between tail lamp relay terminals 2, 3 and ground. Tail lamp relay connector (M75)  AEL917B **Does battery voltage exist?**	
Yes ▶	Check tail lamp circuits.
No ▶	Check harness between tail lamp relay and battery.

ID Code Entry Procedure

NDEL0114

Enter identity (ID) code manually when:
- **remote controller or smart entrance control unit is replaced.**
- **an additional remote controller is activated.**

To enter ID code, follow procedure below.



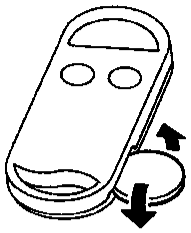
AEL918B

NOTE:
- If you need to activate more than two new remote controllers, repeat the procedure "Additional ID code entry" for each additional new remote controller.
- If the ID code that is input already exists in memory, the entry will be ignored.
- A maximum of four ID codes may be entered and any attempt to enter more will be ignored.
- For the procedure to memorize position for automatic drive positioner, refer to "PROCEDURE FOR STORING MULTI-REMOTE CONTROLLER", "AUTOMATIC DRIVE POSITIONER", EL-137.

Remote Controller Battery Replacement

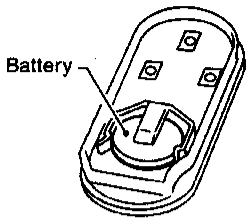
NDEL0115

1.



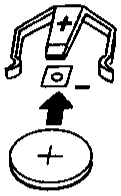
Open the lid using a coin.

2.



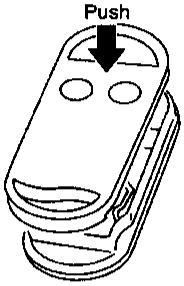
Remove the battery.

3.



Insert the new battery.
Recommended battery: CR2025 or equivalent.

4.

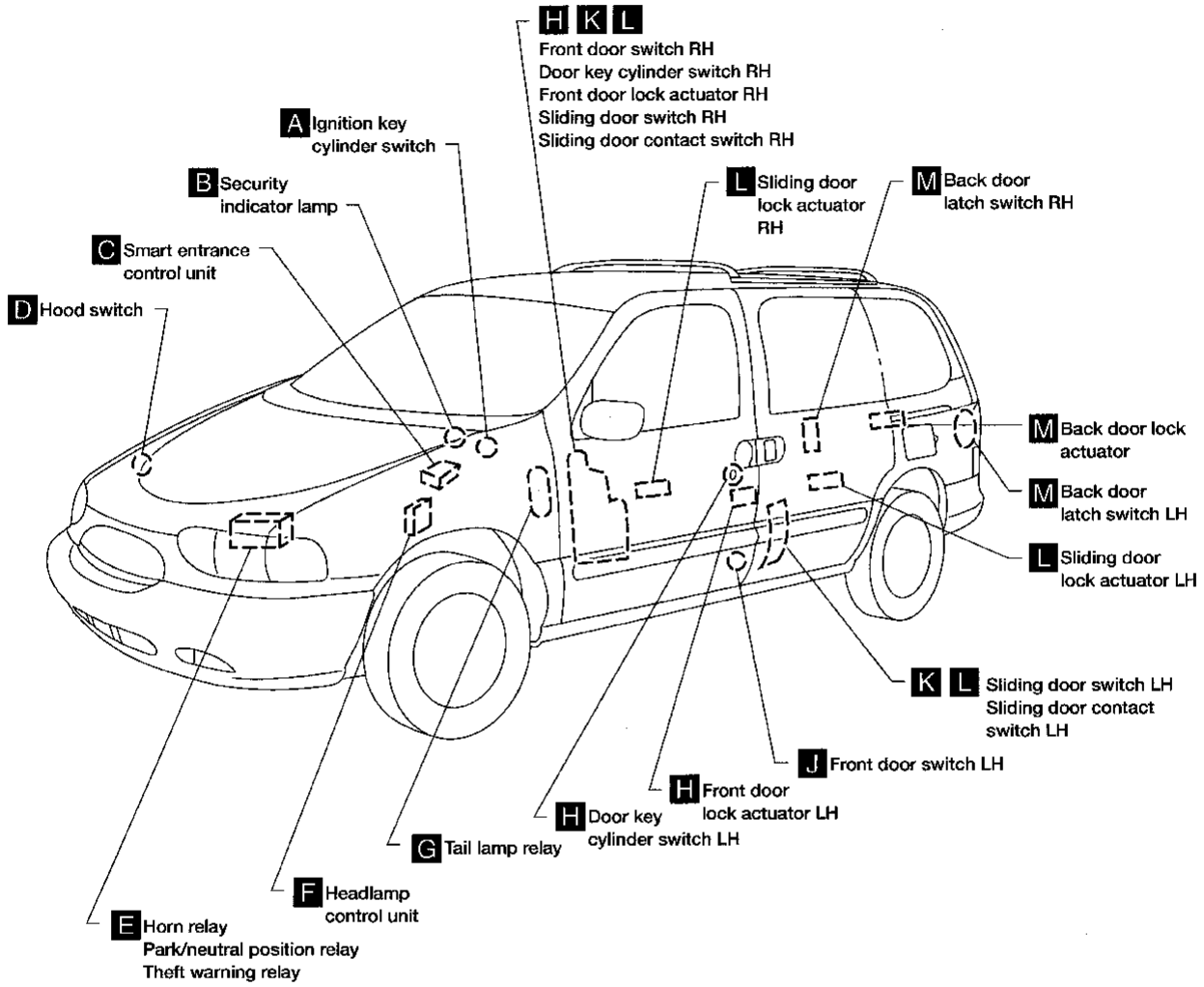


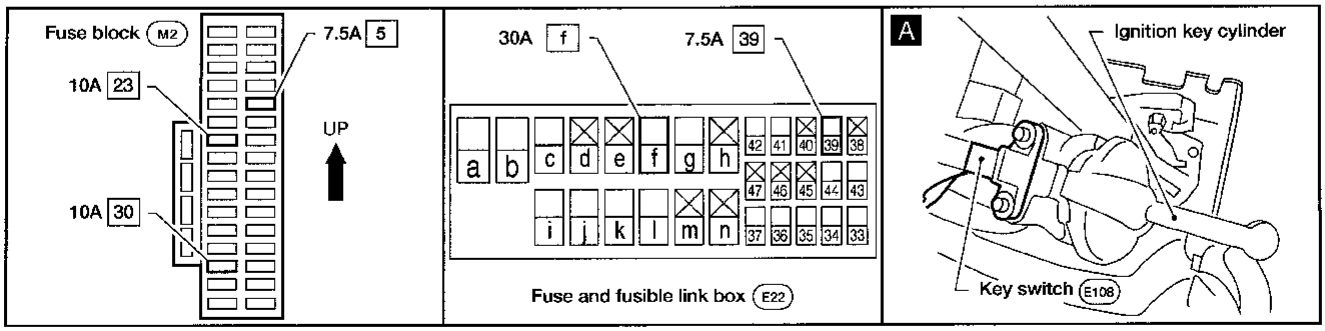
Close the lid securely.

SEL126V

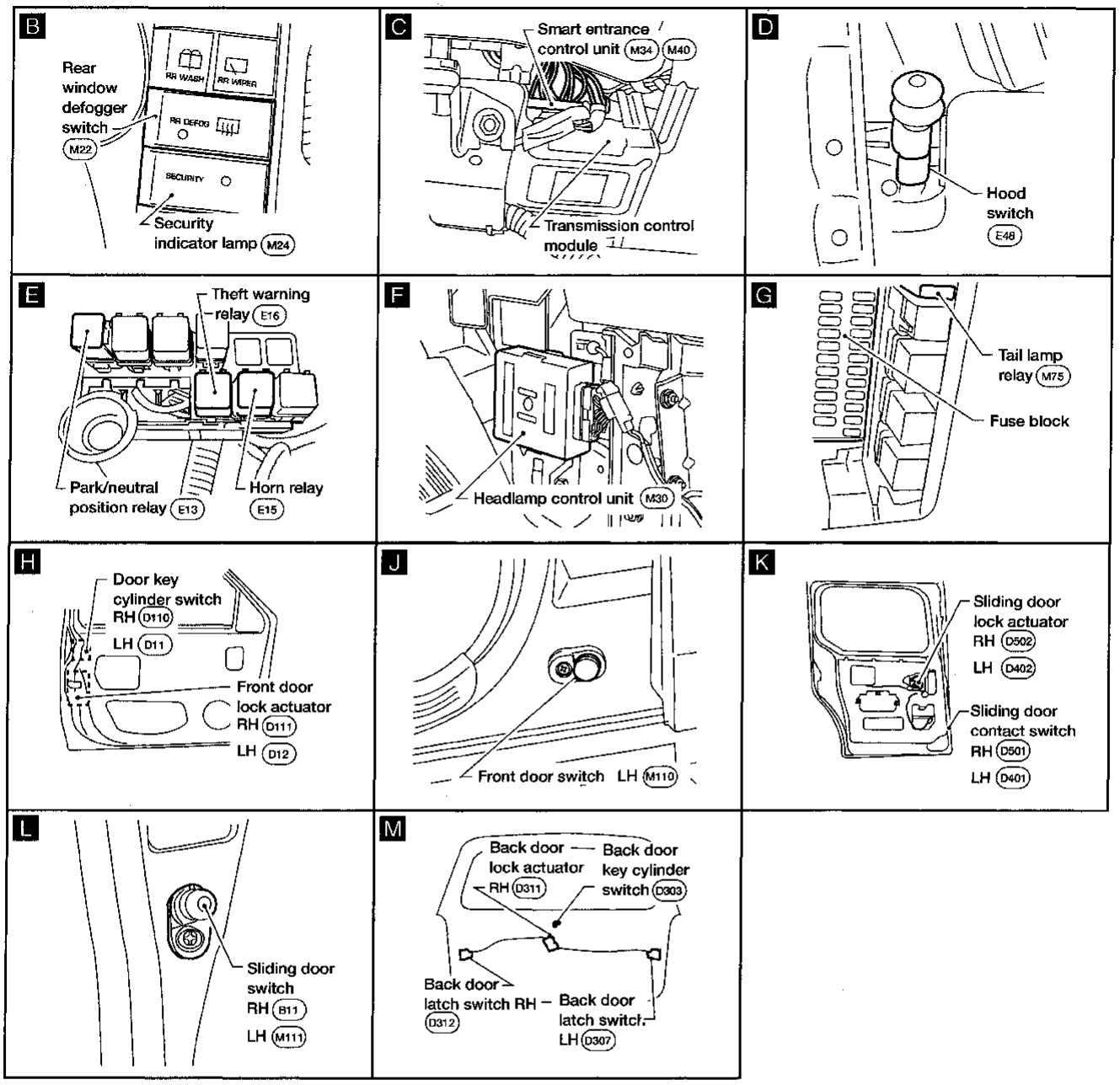
Component Parts and Harness Connector Location

NDEL0116





AEL735B


B
Rear window defogger switch M22
RR WASH
RR WIPER
RR DEFOG
SECURITY
Security indicator lamp M24
C
Smart entrance control unit M34 M40
Transmission control module
D
Hood switch E48
E
Theft warning relay E16
Park/neutral position relay E13
Horn relay E15
F
Headlamp control unit M30
G
Tail lamp relay M75
Fuse block
H
Door key cylinder switch RH D110
LH D11
Front door lock actuator RH D111
LH D12
J
Front door switch LH M110
K
Sliding door lock actuator RH D502
LH D402
Sliding door contact switch RH D501
LH D401
L
Sliding door switch RH B11
LH M111
M
Back door lock actuator RH D311
Back door key cylinder switch D303
Back door latch switch RH D312
Back door latch switch LH D307

AEL199C

System Description

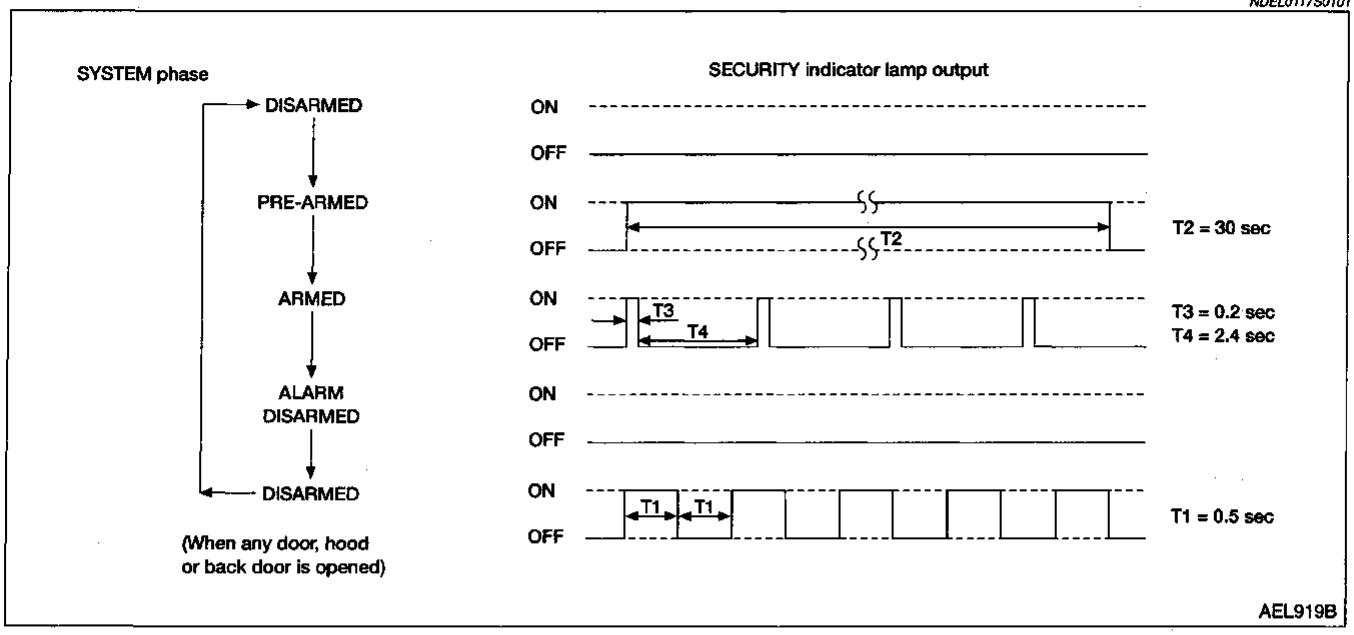
NDEL0117

DESCRIPTION

NDEL0117S01

1. Operation Flow

NDEL0117S0101



2. Setting the Theft Warning System

NDEL0117S0102

Initial condition

1) Close all doors.
2) Close hood and back door.

Disarmed phase

Theft warning system is in the disarmed phase when hood or any door is open. Security indicator lamp blinks every second.

Pre-armed phase and armed phase

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

3. Canceling the Set Theft Warning System

NDEL0117S0103

When the following 1) or 2) operation is performed, armed phase is canceled.

1) Unlock door with the key or remote controller.
2) ACC power is supplied with ignition key in ignition key cylinder.

4. Activating the Alarm Operation of the Theft Warning System

NDEL0117S0104

Make sure system is in armed phase. (Security indicator lamp blinks every 2.6 seconds.)
When the following operation 1), 2), 3) or 4) is performed, system sounds horns and flashes headlamps and exterior lamps for about 2.5 minutes. (At the same time, system disconnects the starting system circuit.)

1) Hood or any door is opened before unlocking door with key or remote controller.
2) Door is unlocked without using key or remote controller.
3) Battery is reconnected after being disconnected while system is in armed phase.
4) ACC, ON or START power is supplied without ignition key in ignition key cylinder

POWER SUPPLY AND GROUND CIRCUIT

NDEL0117S02

Power is supplied at all times

- through 10A fuse (No. 23, located in the fuse block)
- to security indicator lamp terminal 1.

Power is supplied at all times

- through 30A fusible link (letter f, 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 7 and
- through 7.5A fuse (No. 39, located in the fuse and fusible link box)
- to smart entrance control unit terminal 13.

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

- through 7.5A fuse (No. 5, located in the fuse block)
- to smart entrance control unit terminal 36.

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

- through 10A fuse (No. 30, located in the fuse block)
- to smart entrance control unit terminal 43.

Ground is supplied

- to smart entrance control unit terminals 2, 10 and 16
- through body grounds M68, M105 and M130.

INITIAL CONDITION TO ACTIVATE THE SYSTEM

NDEL0117S03

Operation of theft warning system is controlled by doors.
To activate theft warning system, smart entrance control unit must receive signals indicating doors and hood are closed and doors are locked.
When a door is open, smart entrance control unit terminal 9, 24, 34 or 41 receives a ground signal from a door switch or back door latch switches.
When a door is unlocked, smart entrance control unit terminal 37, 40, 46 or 48 receives a ground signal from front door lock actuator LH or RH (door unlock sensor) terminal 4 or from back door lock actuator (door unlock sensor) terminal 4 or from sliding door lock actuator LH or RH (door unlock sensor) terminal 4.
When hood is open, smart entrance control unit terminal 31 receives a ground signal

- from hood switch terminal 1
- through body grounds E3, E30 and E50.

When back door is open, smart entrance control unit terminal 24 receives a ground signal

- from back door latch switch LH and RH terminal 1
- through body ground D204.

When doors are locked with key or multi-remote controller and none of the described conditions exist, theft warning system will automatically shift to armed phase.

THEFT WARNING SYSTEM ACTIVATION (WITH KEY OR REMOTE CONTROLLER USED TO LOCK DOORS)

NDEL0117S04

If key is used to lock doors, smart entrance control unit terminal 19 receives a ground signal

- from front door key cylinder switch LH terminal 2
- from front door key cylinder switch RH terminal 1
- through body grounds M68, M105 and M130
- from back door key cylinder switch terminal 2
- through body ground D204.

If this signal or lock signal from remote controller is received by smart entrance control unit, theft warning system will activate automatically.
Once theft warning system has been activated, smart entrance control unit terminal 45 supplies ground to security indicator lamp terminal 2.
Security lamp will illuminate for approximately 30 seconds and then blink.
Theft warning system is now in armed phase.

THEFT WARNING SYSTEM ALARM OPERATION

NDEL0117S05

Theft warning system is triggered by

- opening a door without using key or remote controller
- opening hood
- unlocking door without using key or remote controller
- ACC, ON or START signal without ignition key in ignition key cylinder
- Battery is reconnected after being disconnected while system is in armed phase.

System Description (Cont'd)

Once theft warning system is in armed phase, if smart entrance control unit receives a ground signal at terminal 37, 40, 46, 48 (door unlock sensor), 9, 24, 34, 41 (door switch), or 31 (hood switch), or power is supplied to smart entrance control unit terminal 36 or 43 without ignition key inserted signal at terminal 35, theft warning system will be triggered. Headlamps flash, horn sounds intermittently, and starting system is interrupted.

Power is supplied at all times

- through 7.5A fuse (No. 39, located in the fuse and fusible link box)
- to theft warning relay terminal 2.

If theft warning system is triggered, ground is supplied

- from smart entrance control unit terminal 28
- to theft warning relay terminal 1.

With power and ground supplied, starter motor circuit is interrupted. Starter motor will not crank and engine will not start.

Power is supplied at all times

- through 15A fuse (No. 42, located in fuse and fusible link box)
- to horn relay terminals 2 and 3, and
- to tail lamp relay terminals 2 and 3.

When theft warning system is triggered, ground is supplied intermittently

- from smart entrance control unit terminal 21
- to horn relay terminals 1 and
- from smart entrance control unit terminal 26
- to tail lamp relay terminal 1.

At this time, alarm signal is sent from smart entrance control unit terminal 29 to headlamp control unit terminal 19.

Headlamps and exterior lamps flash and horn sounds intermittently.

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

THEFT WARNING SYSTEM DEACTIVATION

NDEL0117S06

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

When key is used to unlock the door, smart entrance control unit terminal 27 receives a ground signal

- from front door key cylinder switch LH terminal 1
- from front door key cylinder switch RH terminal 2
- from back door key cylinder switch terminal 2.

When smart entrance control unit receives one of these signals or unlock signal from remote controller, theft warning system is deactivated (Disarmed phase).

PANIC ALARM OPERATION

NDEL0117S07

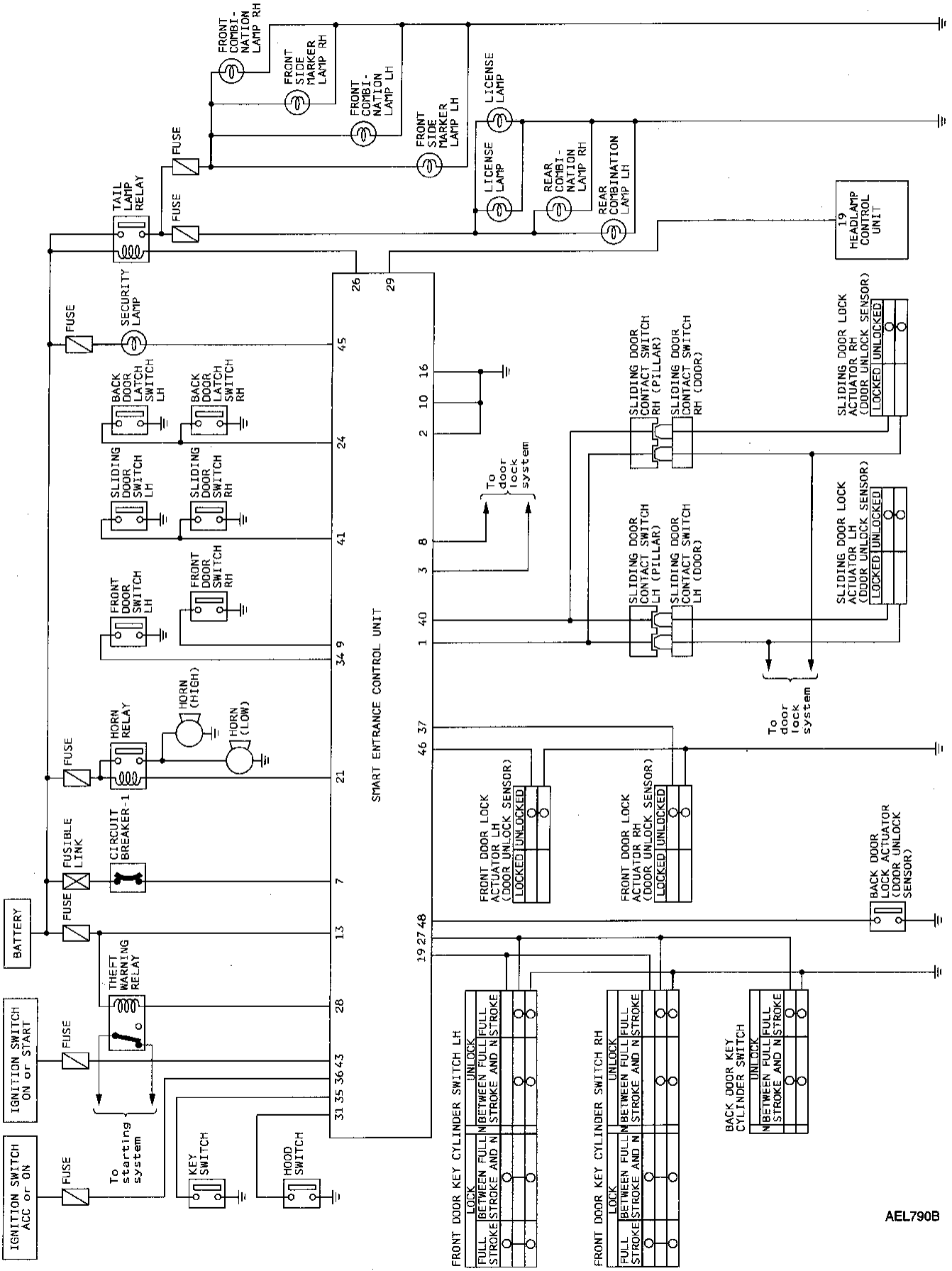
Multi-remote control system may or may not operate theft warning system (horn and headlamps) as required.

Headlamps flash and horn sounds intermittently.

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

Schematic

NDEL0118



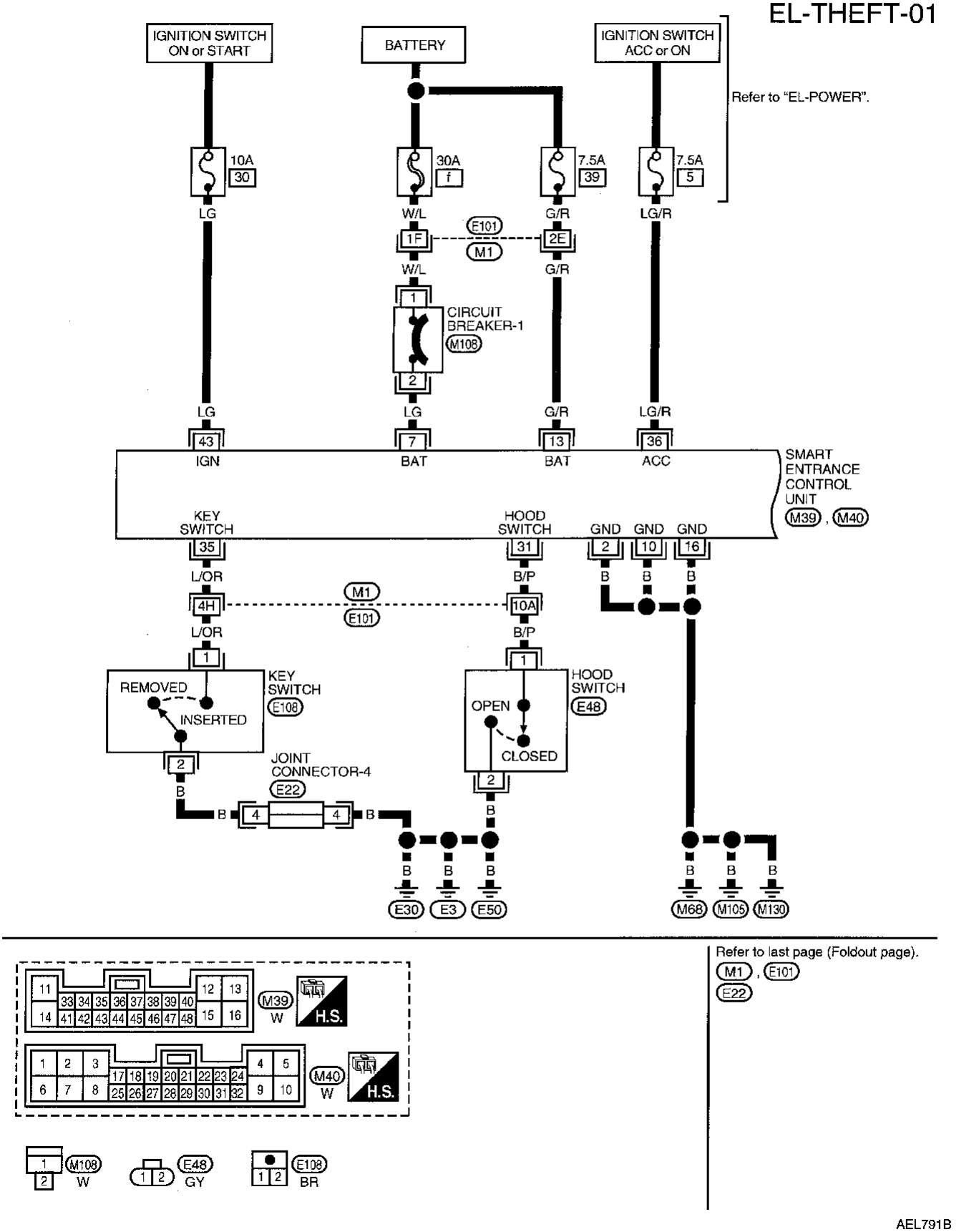
AEL790B

Wiring Diagram — THEFT —

NDEL0119

FIG. 1

NDEL0119S01



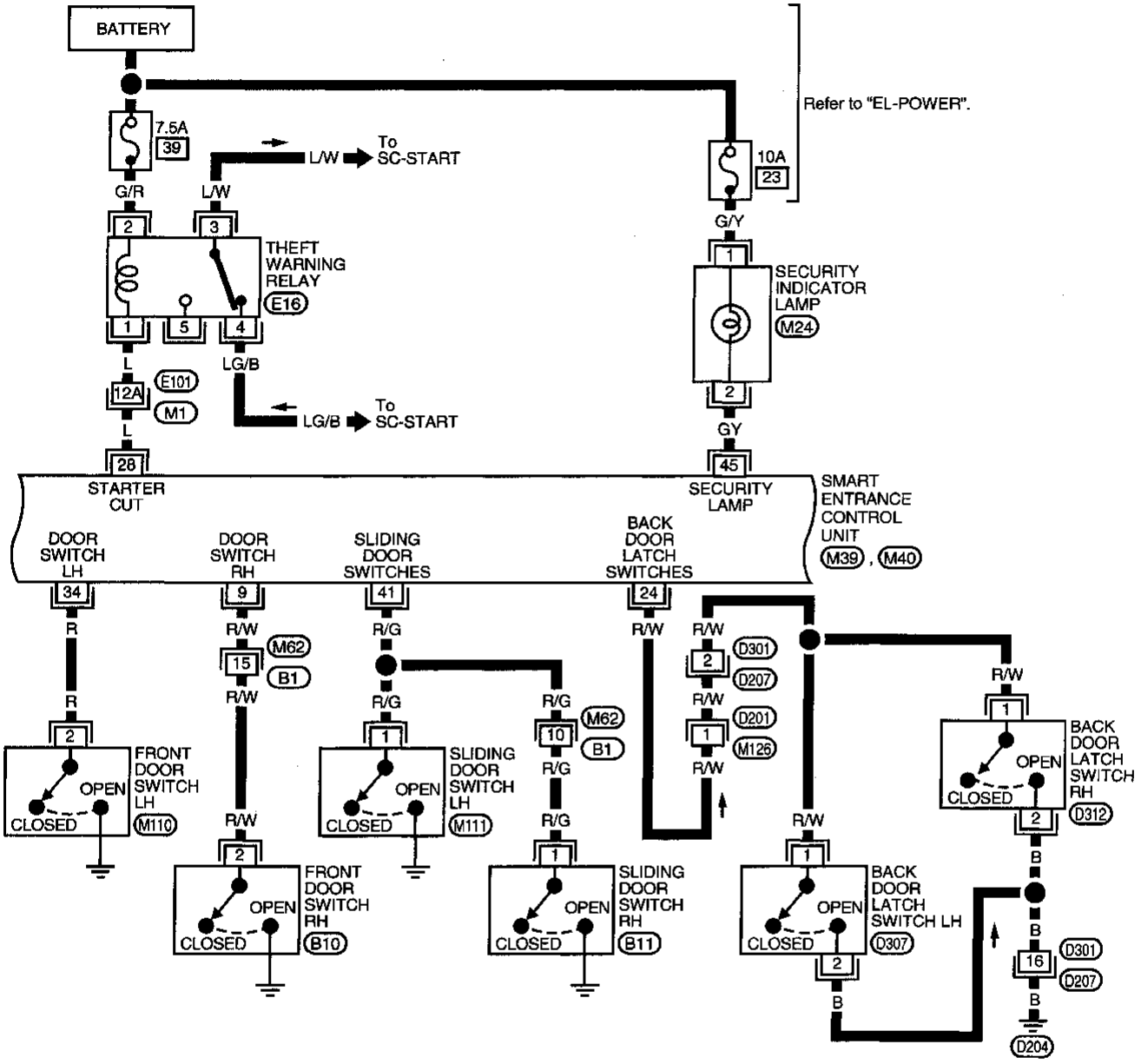
Refer to last page (Foldout page).
M1 , E101
E22

AEL791B

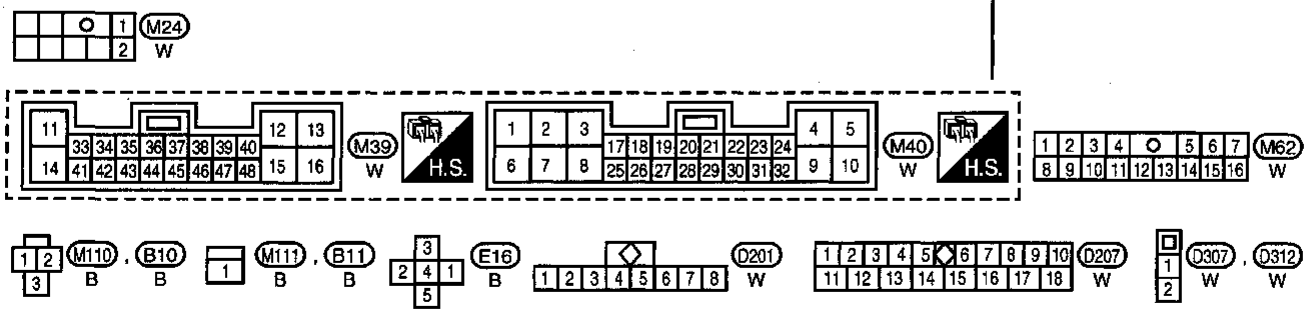
FIG. 2

NDEL0119S02

EL-THEFT-02



Refer to last page (Foldout page).
M1 , E101

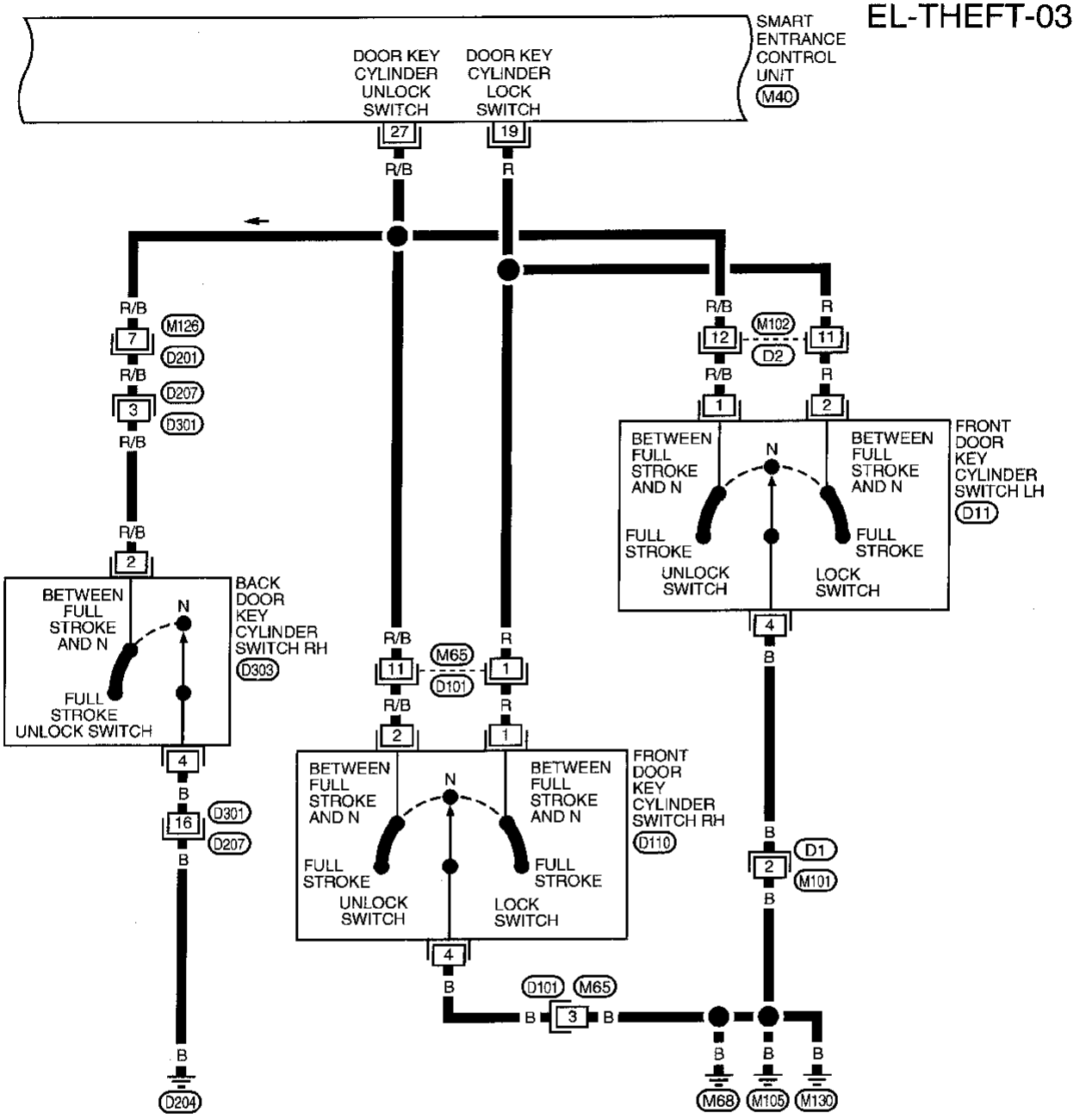


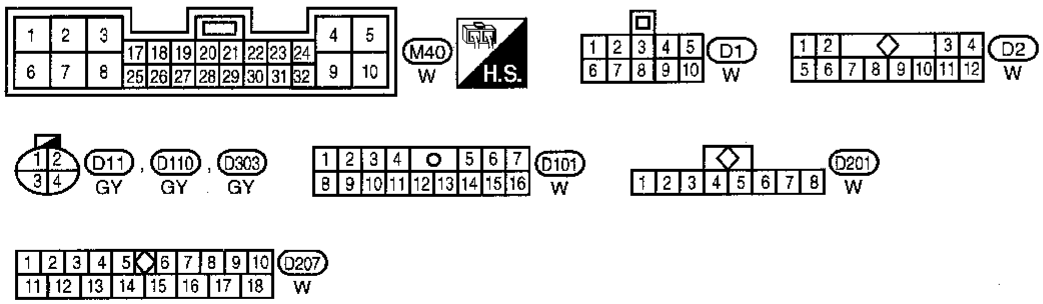
AEL792B

FIG. 3

NDEL0119S03

EL-THEFT-03



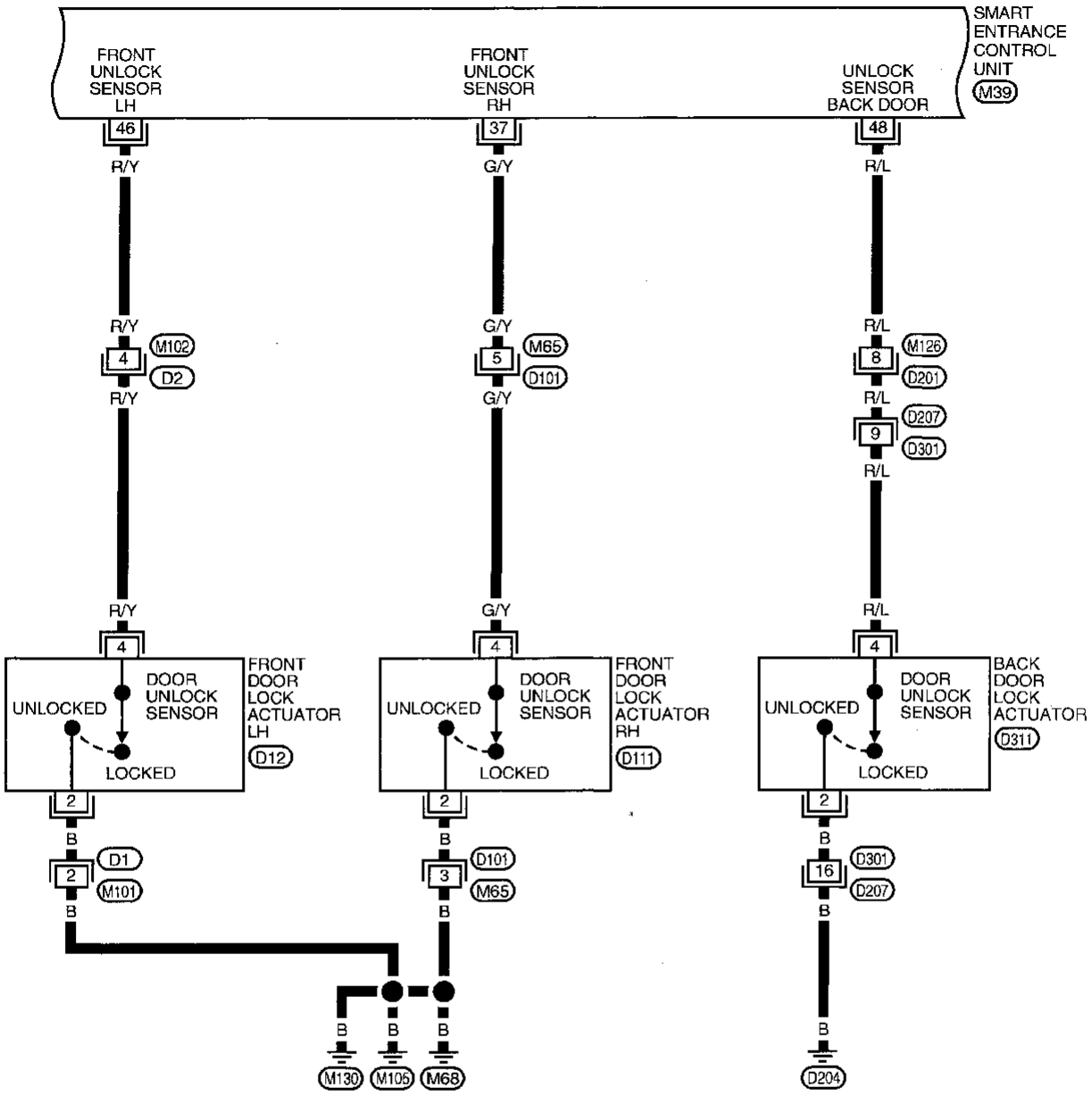


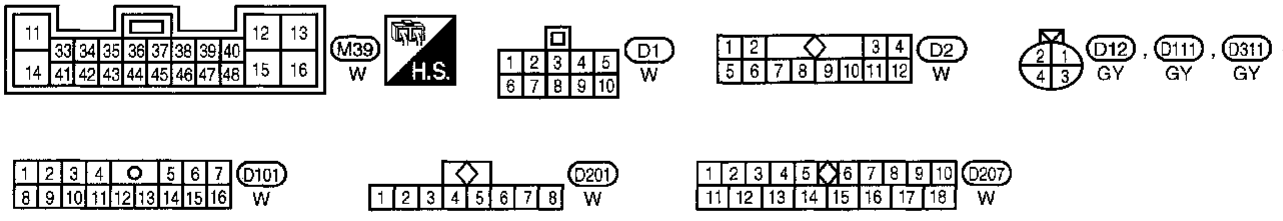
AEL793B

FIG. 4

NDEL0119S04

EL-THEFT-04

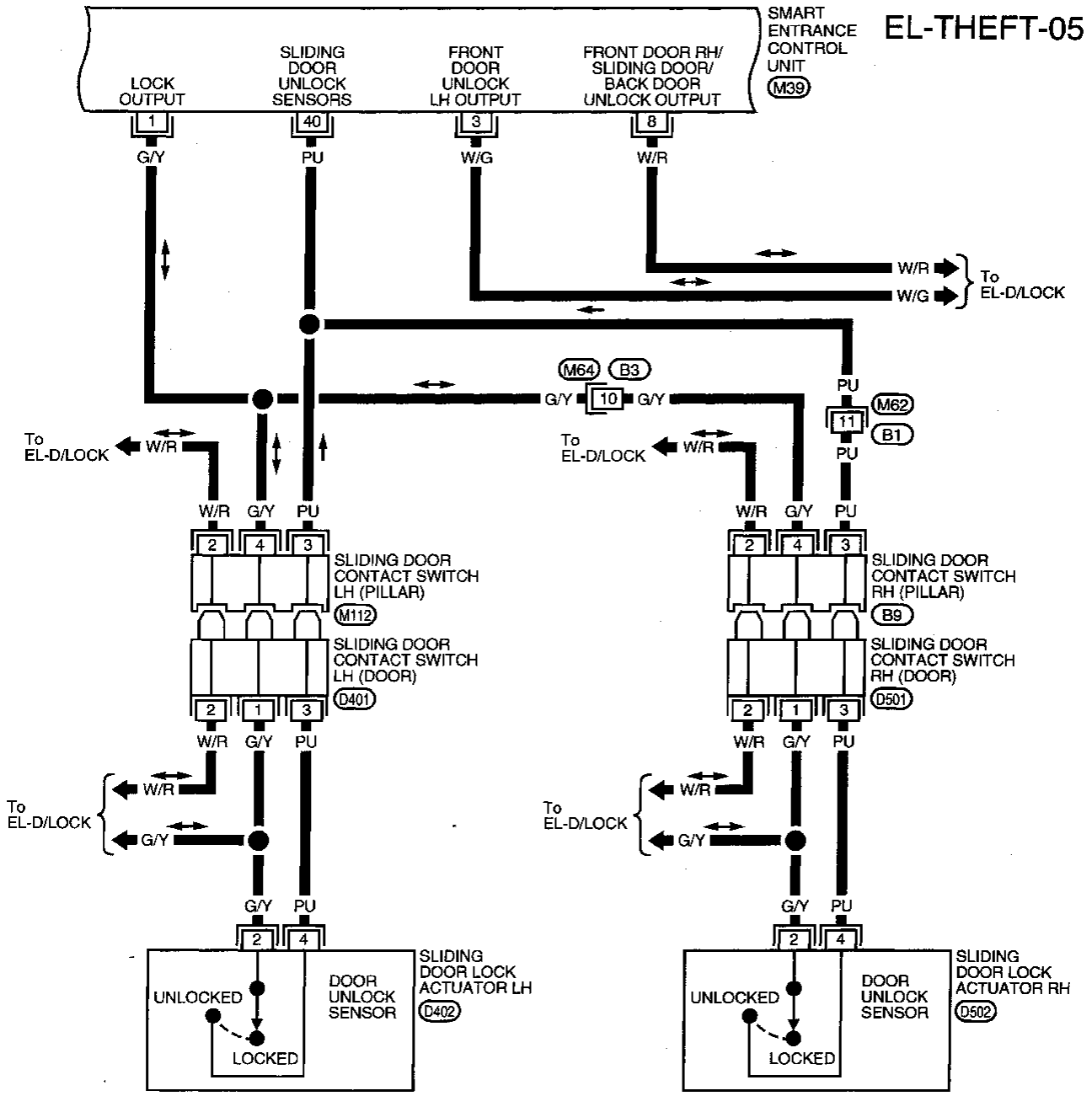


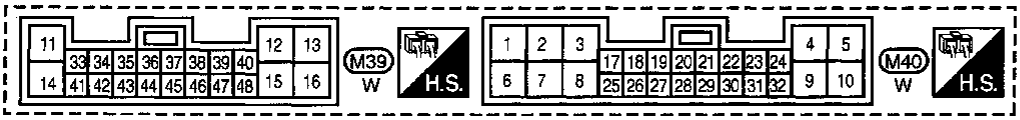


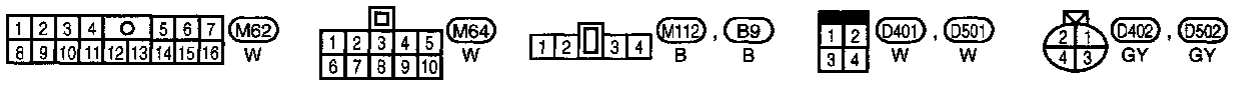
AEL794B

FIG. 5

NDEL0119S05



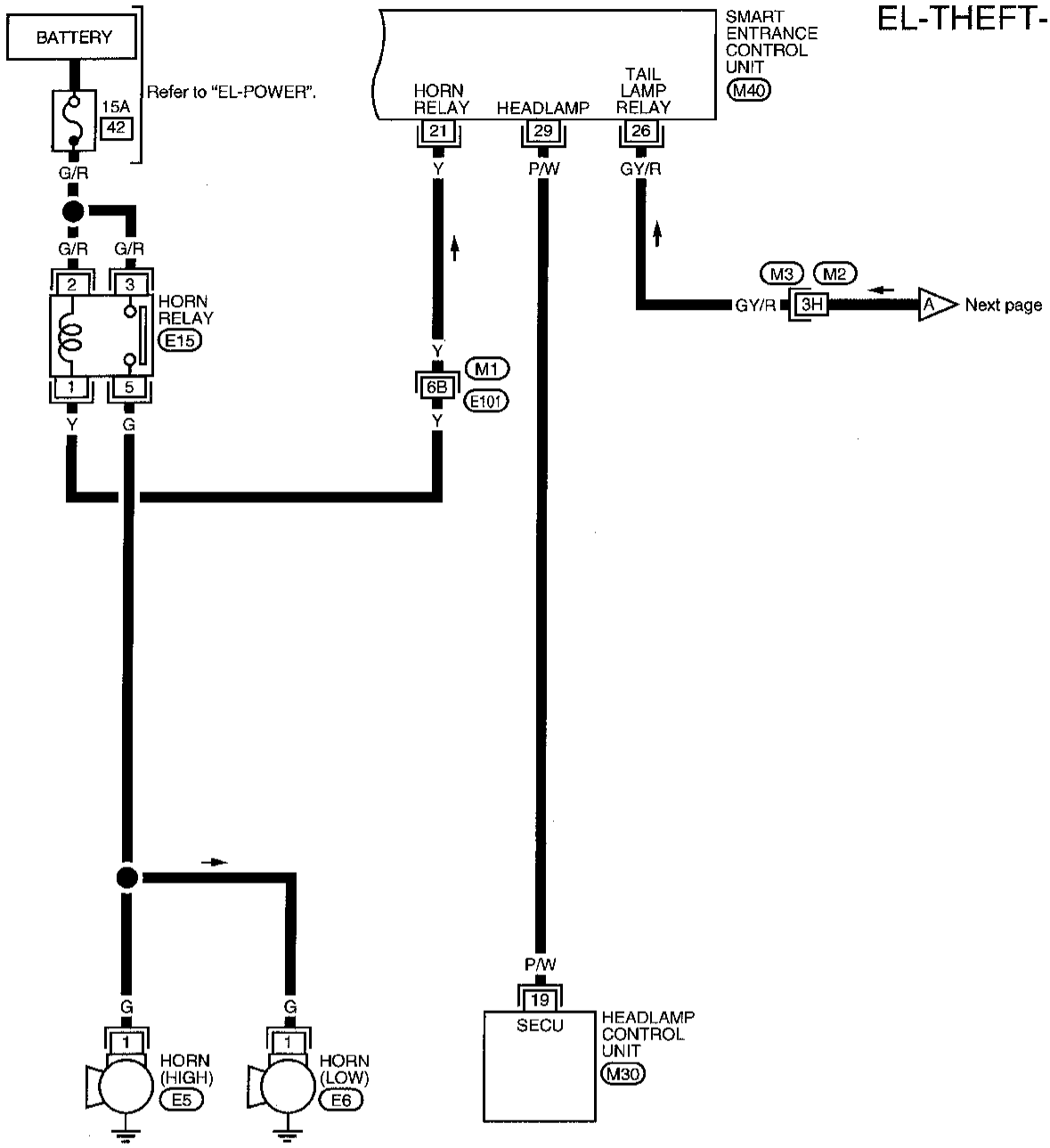


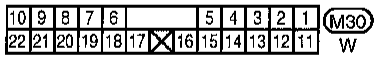


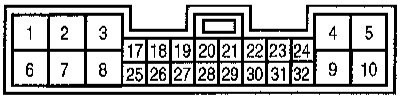
AEL795B

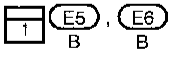
FIG. 6

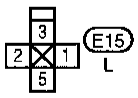
NDEL0119S06











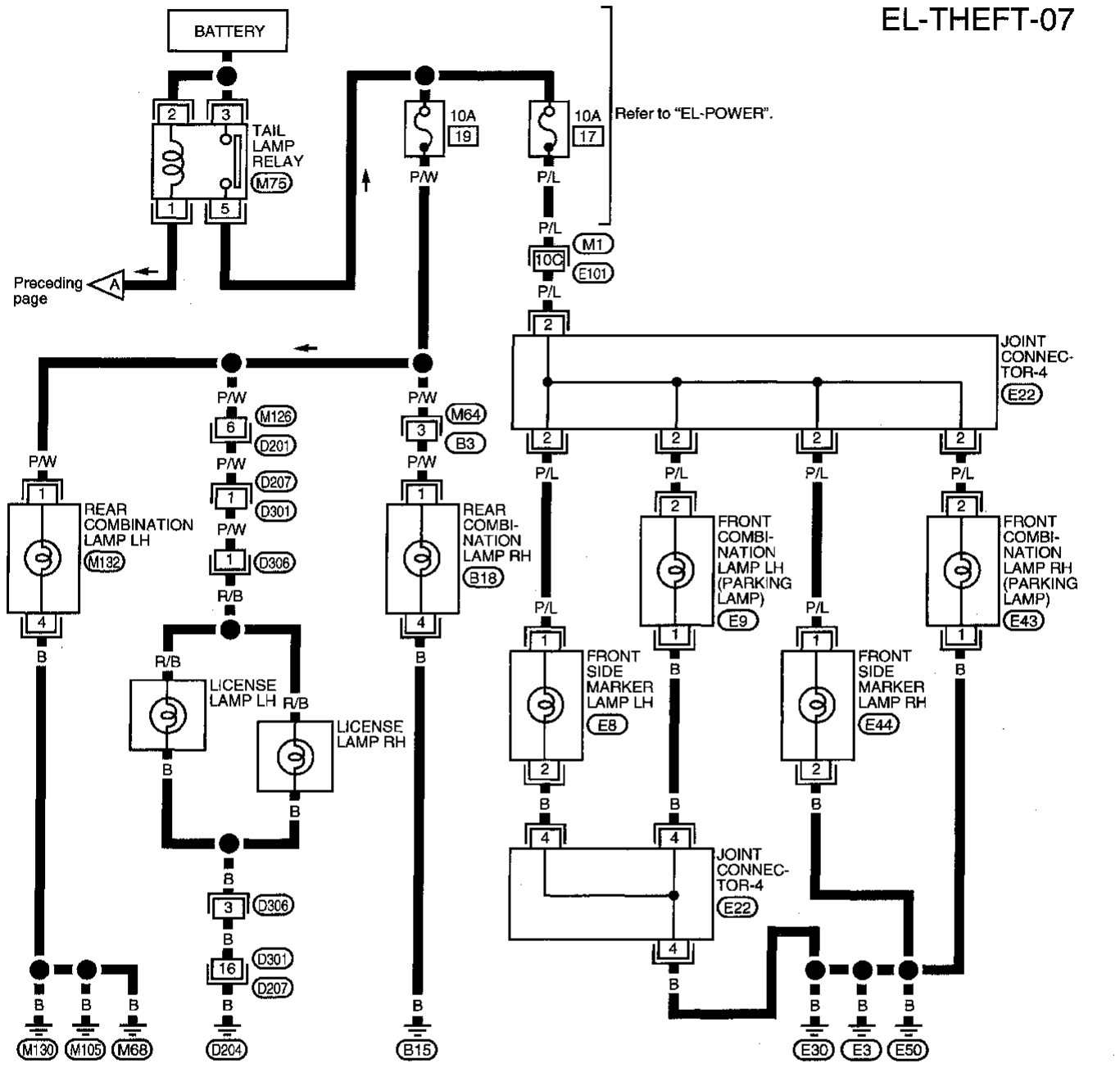
Refer to last page (Foldout page).
M1, E101

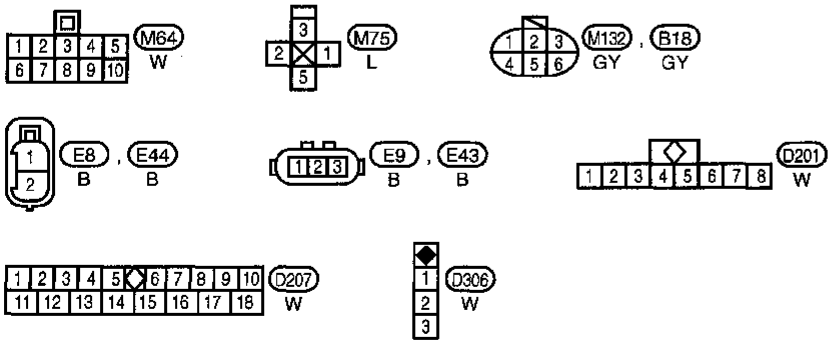
AEL796B

Wiring Diagram — THEFT — (Cont'd)

FIG. 7

NDEL0119S07





Refer to last page (Foldout page).
M1 , E101
E22

AEL797B

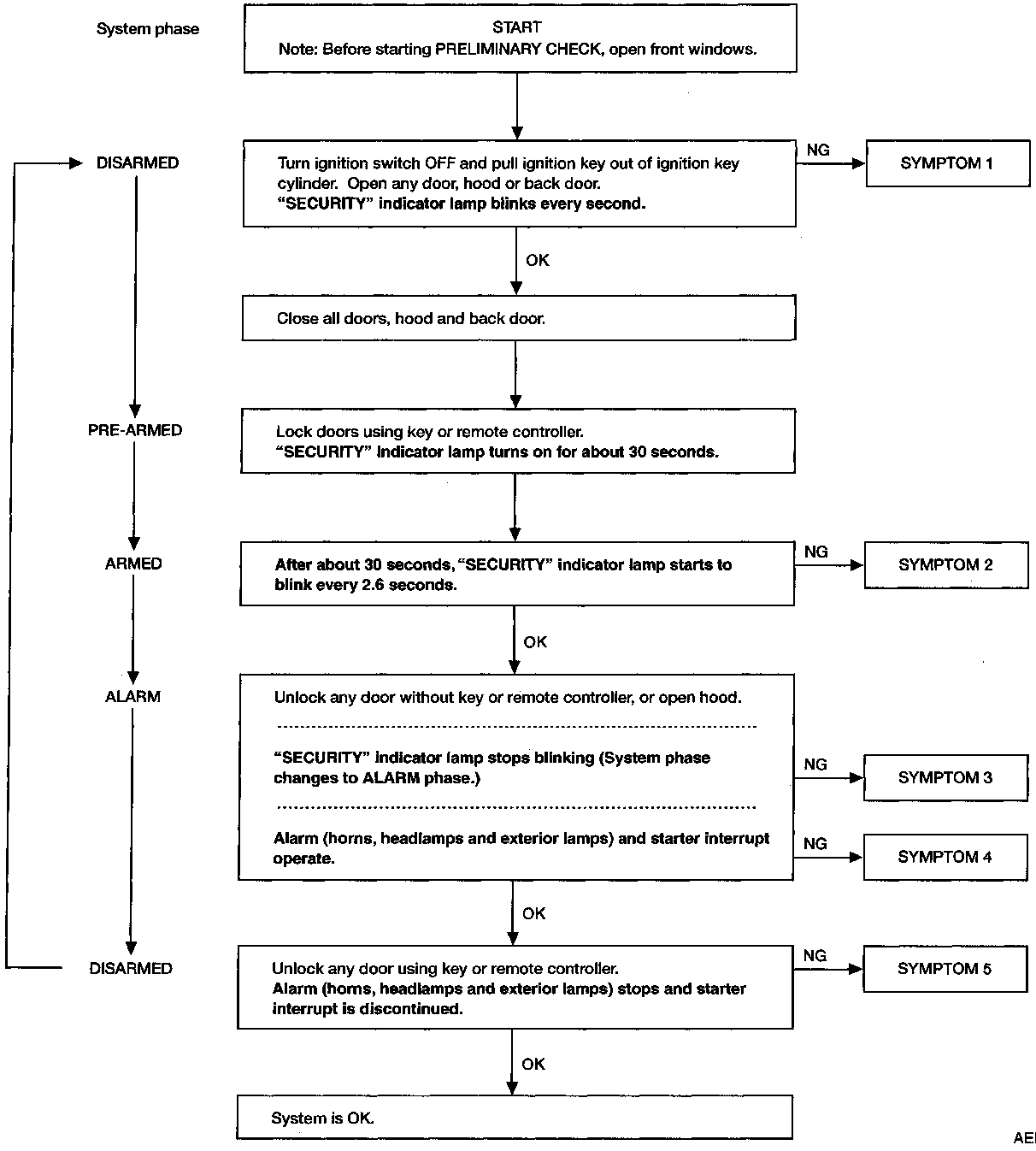
Trouble Diagnoses

NDEL0120

PRELIMINARY CHECK

NDEL0120S01

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



AEL920B

After performing "PRELIMINARY CHECK", go to "SYMPTOM CHART", EL-240.

SYMPTOM CHART

NDEL0120S02

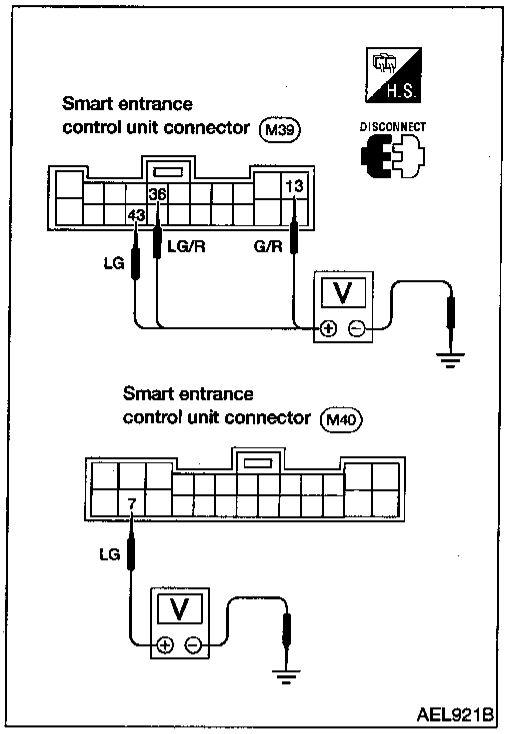
REFERENCE PAGE (EL-)			239	241	242	244	245	207	246	246	247	248	217
SYMPTOM			PRELIMINARY CHECK	POWER SUPPLY AND GROUND CIRCUIT CHECK	DOOR AND HOOD SWITCH CHECK	SECURITY INDICATOR LAMP CHECK	DOOR UNLOCK SENSOR CHECK	DOOR KEY CYLINDER SWITCH CHECK Refer to "POWER DOOR LOCK" system.	THEFT WARNING HORN ALARM CHECK	THEFT WARNING HEADLAMP ALARM CHECK	TAIL LAMP RELAY CHECK	STARTER INTERRUPT SYSTEM CHECK	Check "MULTI-REMOTE CONTROL" system.
1	"SECURITY" indicator lamp does not turn on or blink.		X	X		X							
2	Theft warning system cannot be set by	All items	X	X	X		X						
		Door outside key	X	X				X					
		Back door key	X	X				X					
		Remote controller	X	X									X
3	*1 Theft warning system does not alarm when ...	Any door is opened.	X	X	X								
		Any door is unlocked without using key or remote controller.	X	X			X						
4	Theft warning alarm does not activate.	All function	X	X	X		X						
		Horn alarm	X	X					X				
		Headlamp alarm	X	X						X			
		Exterior lamp alarm									X		
		Starter interrupt	X	X								X	
5	Theft warning system cannot be canceled by	Door outside key	X	X				X					
		Back door key	X	X				X					
		Remote controller	X	X									X

X : Applicable

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

Before starting trouble diagnoses above, perform "PRELIMINARY CHECK", EL-239.

Symptom numbers in the symptom chart correspond with those of "PRELIMINARY CHECK".



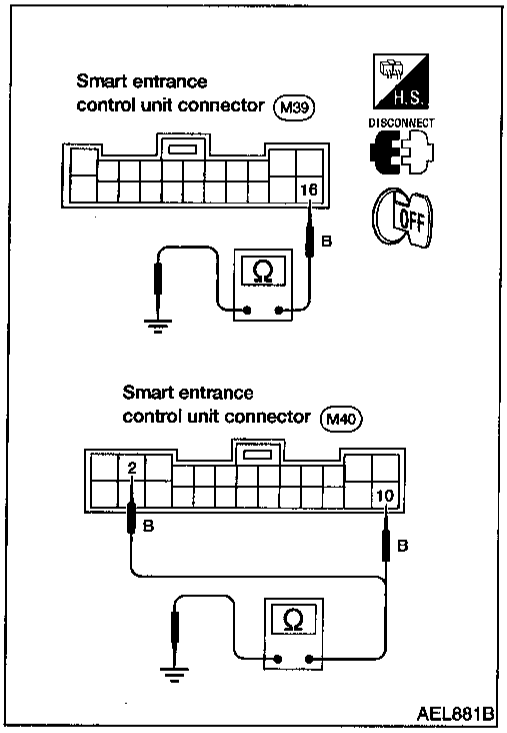
POWER SUPPLY AND GROUND CIRCUIT CHECK

NDEL0120S03

Power Supply Circuit Check

NDEL0120S0301

Terminals		Ignition switch position		
(+)	(–)	OFF	ACC	ON
7	Ground	Battery voltage	Battery voltage	Battery voltage
13	Ground	Battery voltage	Battery voltage	Battery voltage
36	Ground	0V	Battery voltage	Battery voltage
43	Ground	0V	0V	Battery voltage



Ground Circuit Check

NDEL0120S0302

Terminals	Continuity
2 - Ground	Yes
10 - Ground	
16 - Ground	

DOOR AND HOOD SWITCH CHECK

Door Switch Check

=NDEL0120S04

NDEL0120S0401

1 PRELIMINARY CHECK

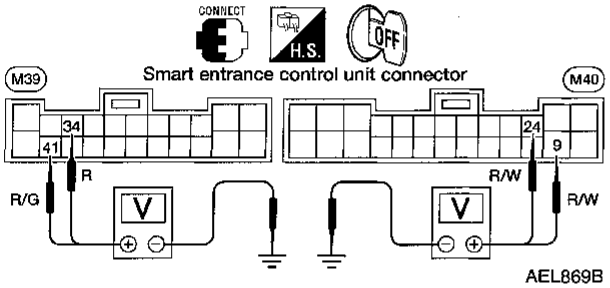
1. Turn ignition switch OFF and remove ignition key from ignition key cylinder.
2. Close all doors and hood.
   "SECURITY" indicator lamp should turn off.
3. Open any door.
   "SECURITY" indicator lamp should blink every second.

OK or NG

OK	▶	Door switch is OK.
NG	▶	GO TO 2.

2 CHECK DOOR SWITCH INPUT SIGNAL

Check voltage between smart entrance control unit terminals and ground.



AEL869B

	Terminals (+)	Terminals (−)	Door condition	Voltage [V]
Front door switch LH	34	Ground	Open	0
			Closed	Approx. 12
Front door switch RH	9	Ground	Open	0
			Closed	Approx. 12
Sliding door switch LH and RH	41	Ground	Open	0
			Closed	Approx. 12
Back door latch switch LH and RH	24	Ground	Open	0
			Closed	Approx. 12

AEL870B

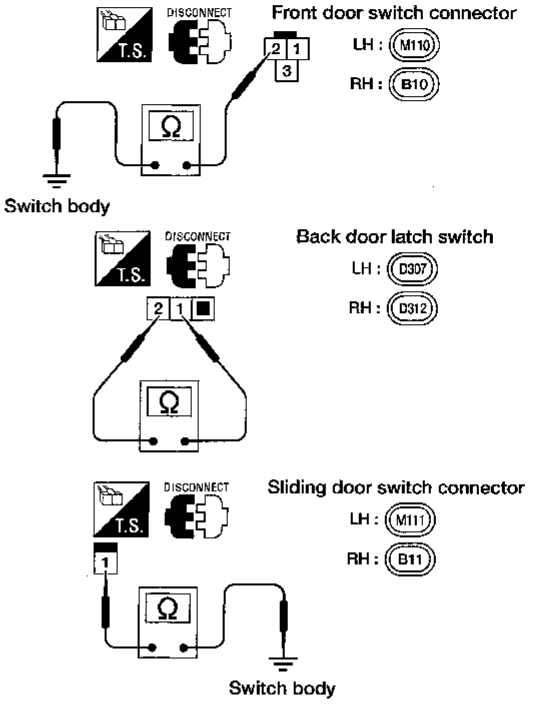
Refer to wiring diagram in EL-233.

OK or NG

OK	▶	Door switch is OK.
NG	▶	GO TO 3.

3 CHECK DOOR SWITCH

1. Disconnect door switch connector.
2. Check continuity as indicated.



AEL910B

	Terminals	Door Condition	Continuity
Front door switch LH and RH	2 - ground	Closed	No
		Open	Yes
Back door latch switch LH and RH	1 - 2	Closed	No
		Open	Yes
Sliding door switch LH and RH	1 - ground	Closed	No
		Open	Yes

AEL911B

OK or NG

OK	▶	**Check the following** • Door switch ground circuit (back door latch switch) or door switch ground condition • Harness for open or short between smart entrance control unit and door switch.
NG	▶	Replace door switch.

Hood Switch Check

=NDEL0120S0402

1	PRELIMINARY CHECK

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

OK or NG

OK	▶	Hood switch is OK.
NG	▶	GO TO 2.

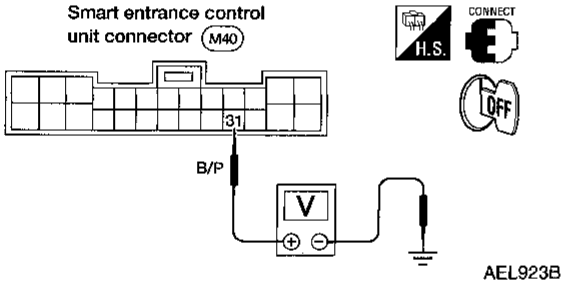
2	CHECK HOOD SWITCH FITTING CONDITION

OK or NG

OK	▶	GO TO 3.
NG	▶	Adjust installation of hood switch or hood.

3	CHECK HOOD SWITCH INPUT SIGNAL

Check voltage between smart entrance control unit terminal 31 and ground.



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

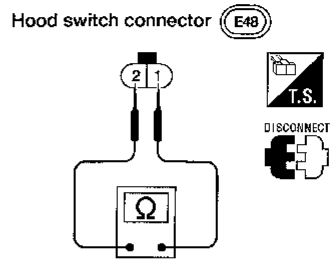
Refer to wiring diagram in EL-232.

OK or NG

OK	▶	Hood switch is OK.
NG	▶	GO TO 4.

4	CHECK HOOD SWITCH

1. Disconnect hood switch connector.
2. Check continuity between hood switch terminals 1 and 2.



Continuity:
Condition: Pushed
No
Condition: Released
Yes

OK or NG

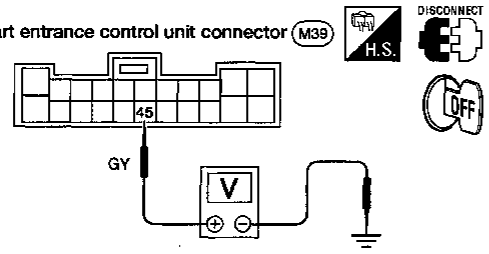
OK	▶	**Check the following** • Hood switch ground circuit • Harness for open or short between smart entrance control unit and hood switch.
NG	▶	Replace hood switch.

SECURITY INDICATOR LAMP CHECK

=NDEL0120S05

1	CHECK INDICATOR LAMP OUTPUT SIGNAL

1. Disconnect smart entrance control unit connector.
2. Check voltage between smart entrance control unit terminal 45 and ground.



AEL925B

Refer to wiring diagram in EL-233.

Does battery voltage exist?

Yes	▶	Security indicator lamp is OK.
No	▶	GO TO 2.

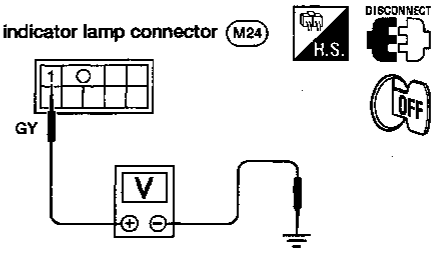
2	CHECK INDICATOR LAMP

OK or NG

OK	▶	GO TO 3.
NG	▶	Replace security indicator lamp.

3	CHECK POWER SUPPLY CIRCUIT FOR INDICATOR LAMP

1. Disconnect security indicator lamp connector.
2. Check voltage between security indicator lamp terminal 1 and ground.



AEL926B

Does battery voltage exist?

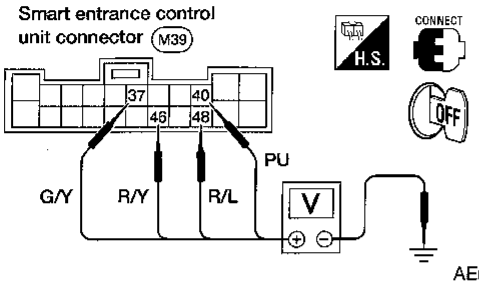
Yes	▶	Check harness for open or short between security indicator lamp and smart entrance control unit.
No	▶	**Check the following** • 10A fuse (No. 23, located in fuse block) • Harness for open or short between security indicator lamp and fuse.

DOOR UNLOCK SENSOR CHECK

=NDEL0120S06

1 CHECK DOOR UNLOCK SENSOR INPUT SIGNAL

Check voltage between smart entrance control unit terminals and ground.



AEL912B

	Terminals (+)	Terminals (—)	Condition	Voltage [V]
Front door LH	46	Ground	Locked	Approx. 12
			Unlocked	0
Front door RH	37	Ground	Locked	Approx. 12
			Unlocked	0
Sliding door LH and RH	40	Ground	Locked	Approx. 12
			Unlocked	0
Back door	48	Ground	Locked	Approx. 12
			Unlocked	0

AEL913B

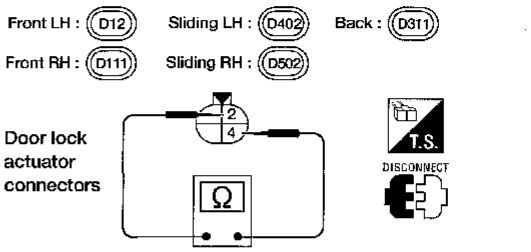
Refer to wiring diagrams, EL-235, 236.

OK or NG

OK ▶	Door unlock sensor is OK.
NG ▶	GO TO 2.

2 CHECK DOOR UNLOCK SENSOR

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



AEL914B

Continuity:
Condition: Locked
No
Condition: Unlocked
Yes

OK or NG

OK ▶	**Check the following** • Door unlock sensor ground circuit (front door LH/RH and back door) • Harness for open or short between smart entrance control unit and door unlock sensor.
NG ▶	Replace door unlock sensor.

THEFT WARNING HORN ALARM CHECK

=NDEL0120S08

1	CHECK HORN OPERATION	
Does horn work properly with horn switch?		
Yes or No		
Yes	▶	Check harness for open or short between horn relay and smart entrance control unit.
No	▶	Check horn circuit. Refer to "Wiring Diagram — HORN —", EL-110.

THEFT WARNING HEADLAMP ALARM CHECK

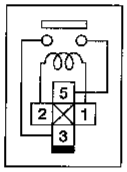
NDEL0120S09

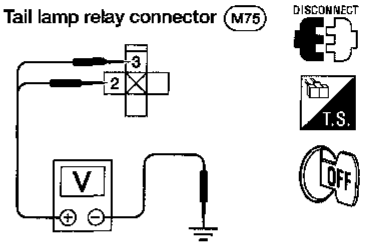
1	CHECK HEADLAMP OPERATION	
Do headlamps operate properly with lighting switch operation?		
Yes or No		
Yes	▶	Check harness for open or short between headlamp control unit and smart entrance control unit.
No	▶	Check headlamp circuit. Refer to "Wiring Diagram — H/LAMP —", "HEADLAMP (FOR USA)", EL-32 or "Wiring Diagram — DTRL —", "HEADLAMP (FOR CANADA) — DAYTIME LIGHT SYSTEM —", EL-45.

TAIL LAMP RELAY CHECK

=NDEL0120S10

1	CHECK TAIL LAMP OPERATION	
Do tail lamps illuminate with lighting switch operation?		
Yes or No		
Yes	▶	Check harness for open or short between smart entrance control unit and tail lamp relay.
No	▶	GO TO 2.

2	CHECK TAIL LAMP RELAY	
1. Apply 12V DC direct current between relay terminals 1 and 2. 2. Check continuity between relay terminals 3 and 5.		
 AEL916B		
Continuity: **12V applied.** **Yes** **No voltage applied.** **No**		
OK or NG		
OK	▶	GO TO 3.
NG	▶	Replace relay.

3	CHECK TAIL LAMP RELAY POWER SUPPLY	
Check voltage between tail lamp relay terminals 2, 3 and ground.		
Tail lamp relay connector (M75)  AEL917B		
Does battery voltage exist?		
Yes	▶	Check tail lamp circuits.
No	▶	Check harness between tail lamp relay and battery.

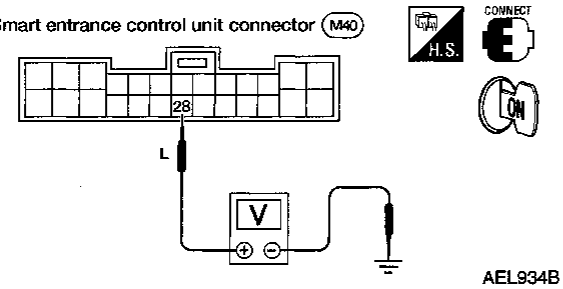
STARTER INTERRUPT SYSTEM CHECK

=NDEL0120S11

1	CHECK STARTER MOTOR INTERRUPT SIGNAL

1. Turn ignition switch ON.
2. Check voltage between smart entrance control unit terminal 28 and ground.

Smart entrance control unit connector (M40)



AEL934B

Voltage [V]:
Except starter interrupted phase
Approx. 12
Starter interrupted phase
0

Refer to wiring diagram, EL-233.

OK or NG

OK	▶	GO TO 2.
NG	▶	**Check the following** • 7.5A fuse (No. 39, located in fuse and fusible link box) • Harness for open or short between theft warning relay and fuse • Harness for open or short between smart entrance control unit and theft warning relay.

2	CHECK THEFT WARNING RELAY

Check theft warning relay.

OK or NG

OK	▶	Check system again.
NG	▶	Replace theft warning relay.

Description

NDEL0121

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

- Illumination control (brightness adjustment)
- Interior room lamp
- Warning chime
- Rear window defogger timer
- Power window and electric sunroof delay 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 smart entrance control unit receives signals from the switches and sensors to control their corresponding system relays and actuators.

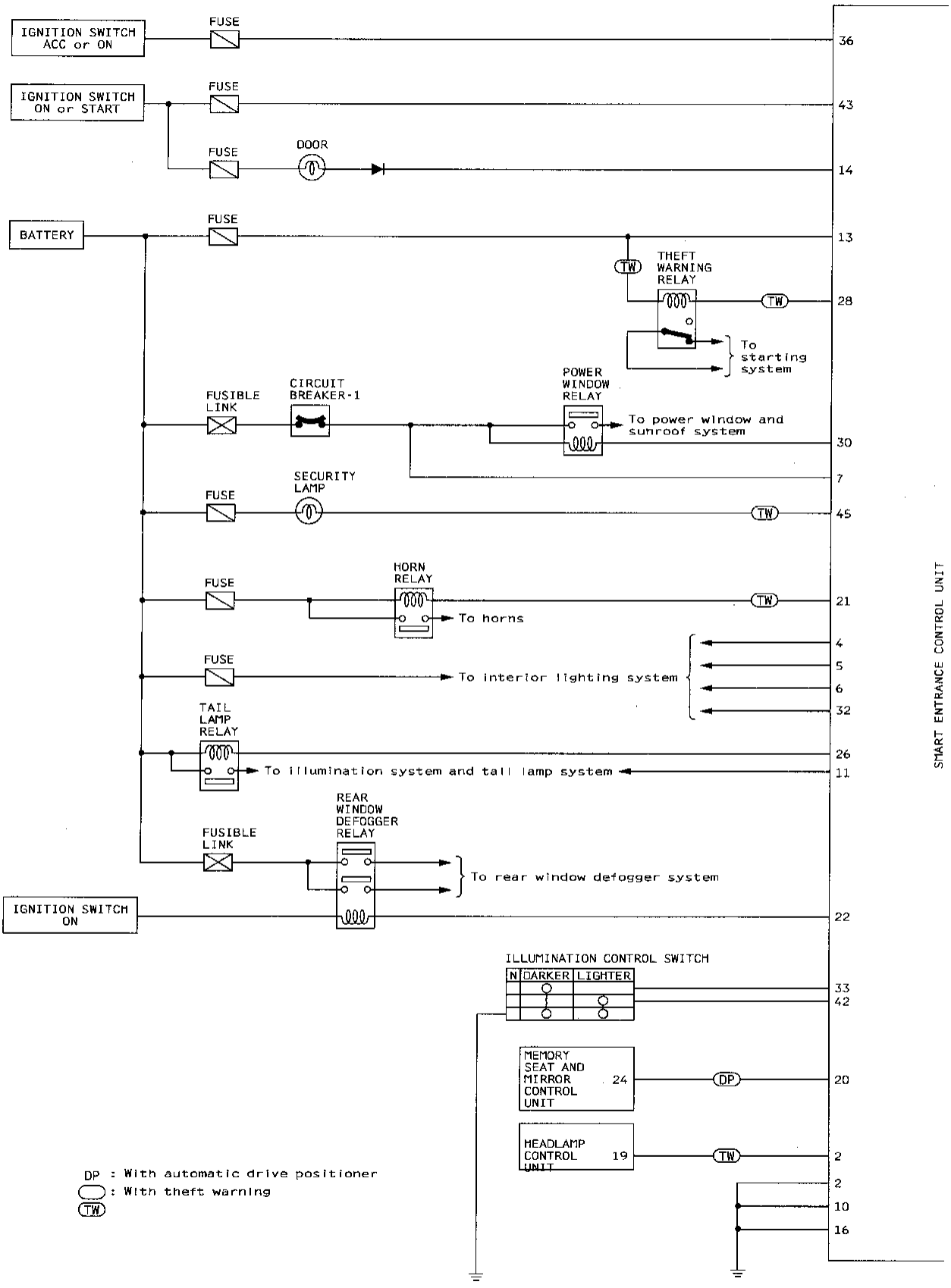
System	Input	Output
Illumination control	Illumination control switch	Combination meter and switch illumination
Interior room lamp	Ignition switch (ON) Key switch (inserted) Front door switch LH and RH Sliding door switch LH and RH Back door latch switch LH and RH Lighting switch (interior)	Interior lighting
Warning chime	Ignition switch (ON) Key switch (inserted) Lighting switch (1st) Seat belt buckle switch Front door switch LH	Warning chime (internal)
Rear window defogger timer	Ignition switch (ON) Rear window defogger switch	Rear window defogger relay
Power window and electric sunroof delay timer	Ignition switch (ON) Front door switch LH	Power window relay
Power door lock	Door lock/unlock switch LH and RH Key switch (inserted) Front door switch LH and RH Sliding door switch LH and RH Front door unlock sensor LH and RH Sliding door unlock sensor LH and RH Front door key cylinder switch LH and RH (lock/unlock) Back door key cylinder switch (unlock)	Door lock actuators
Multi-remote control system	Ignition switch (ACC) Key switch (inserted) Front door switch LH and RH Sliding door switch LH and RH Back door latch switch LH and RH Front door unlock sensor LH and RH Sliding door unlock sensor LH and RH Back door unlock sensor Remote controller	Door lock actuators Horn relay Tail lamp relay Interior lighting Headlamp control unit Memory seat and mirror control unit

Description (Cont'd)

System	Input	Output
Theft warning system	Ignition switch (ACC, ON) Hood switch Key switch (inserted) Front door switch LH and RH Sliding door switch LH and RH Back door latch switch LH and RH Front door unlock sensor LH and RH Sliding door unlock sensor LH and RH Back door unlock sensor Front door key cylinder switch LH and RH (lock/unlock) Back door key cylinder switch (unlock)	Horn relay Tail lamp relay Headlamp control unit Security indicator lamp Theft warning relay (starter interrupt)

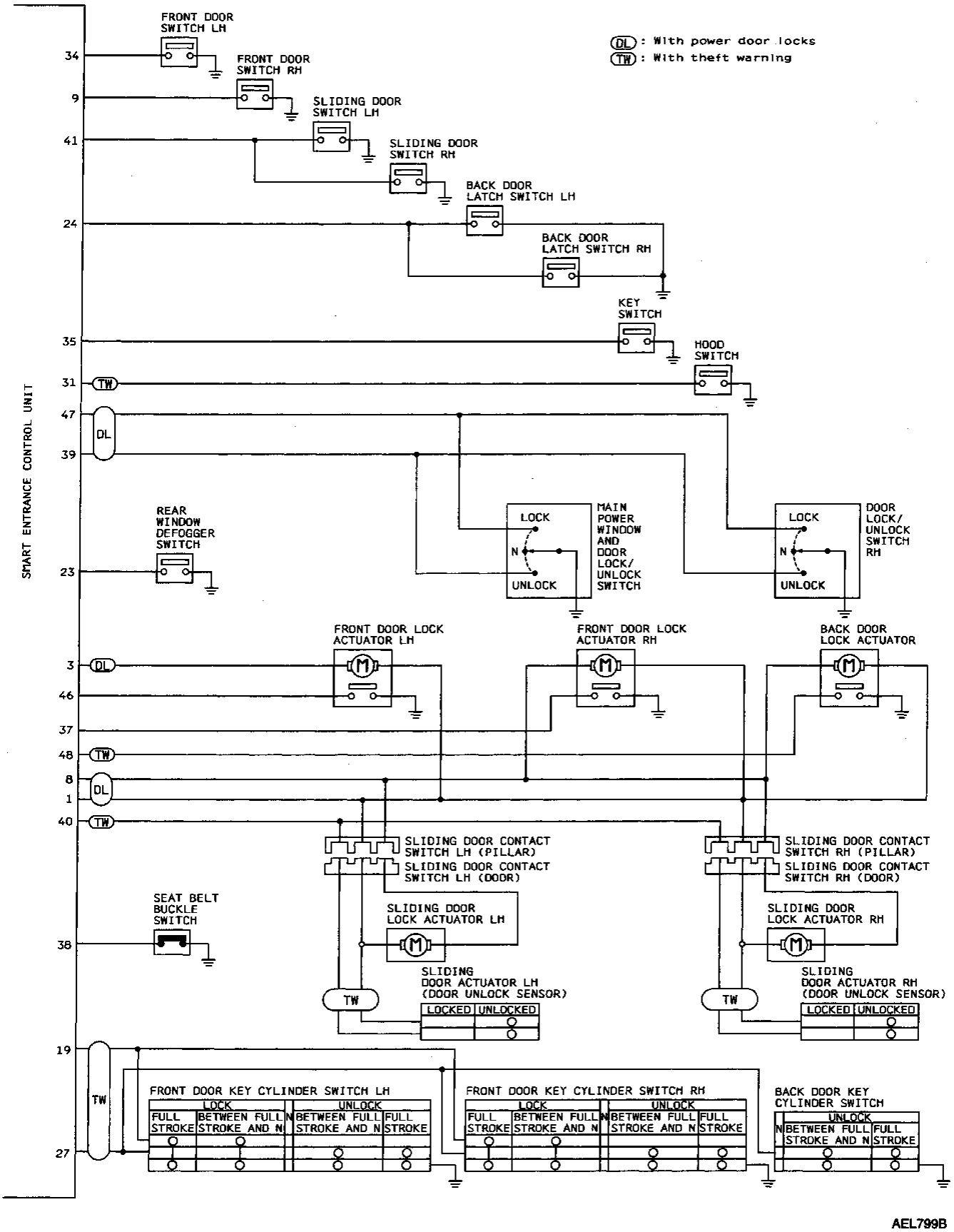
Schematic

NDEL0122



AEL798B

Schematic (Cont'd)



AEL799B

Smart Entrance Control Unit Inspection Table

NDEL0123

Terminal No.	Wire color	Connections	Operated condition	Voltage (Approximate values)
1	G/Y	Front door lock actuator LH/RH, sliding door lock actuator, back door lock actuator	Door lock/unlock switch NEUTRAL→LOCK	0V →12V
2	B	Actuator ground	—	—
3	W/G	Front door lock actuator LH	Door lock/unlock switch NEUTRAL→UNLOCK	0V →12V
4	BR/W	Interior lamps (Zone B)	When interior lamps are operated by smart entrance control unit	12V → 0V
5	W	Interior lamps (Zone A)	When interior lamps are operated by smart entrance control unit	12V → 0V
6	OR	Interior lamps (Zone C)	When interior lamps are operated by smart entrance control unit	12V → 0V
7	LG	Circuit breaker-1 (Battery power)	—	12V
8	W/R	Front door lock actuator LH/RH, sliding door lock actuator LH/RH, back door lock actuator	Door lock/unlock switch NEUTRAL→UNLOCK	0V →12V
9	R/W	Front door switch RH	OFF (Closed) → ON (Open)	12V → 0V
10	B	Power ground	—	—
11	P/B	Illumination	OFF → ON	0V → 3V or more
13	G/R	Fuse 39 (logic battery power)	—	12V
14	BR/W	Door ajar warning lamp	OFF (Closed) → ON (Open)	12V → 0V
16	B	Signal ground	—	—
19	R	Front door key cylinder switch LH/RH	OFF (Neutral) → ON (Locked)	12V → 0V
20	P	Memory seat and mirror control unit	Remote controller ID code sent to initialize automatic drive positioner	0V ⇔ 12V
21	Y	Horn relay	When doors are locked using remote controller or theft warning system is in alarm phase	12V → 0V
22	G/B	Rear window defogger relay	OFF → ON	12V → 0V
23	G/R	Rear window defogger switch	OFF → ON	12V → 0V
24	R/W	Back door latch switch LH/RH	OFF (Closed) → ON (Open)	12V → 0V
26	GY/R	Tail lamp relay	During remote controller operation or when theft warning system is in alarm phase	12V → 0V
27	R/B	Front door key cylinder switch LH/RH, back door key cylinder switch	OFF (Neutral) → ON (Unlock)	12V → 0V
28	L	Theft warning relay	Theft warning system is in alarm phase	12V → 0V
29	P/W	Headlamp control unit	Theft warning system is in alarm phase or panic operation is activated	0V ⇔ 12V
30	B/R	Power window relay	OFF → ON	12V → 0V
31	B/P	Hood switch	ON (Open) → OFF (Closed)	0V → 12V
32	R	Lighting switch (Interior lighting)	OFF (Open) → ON (Closed)	12V → 0V

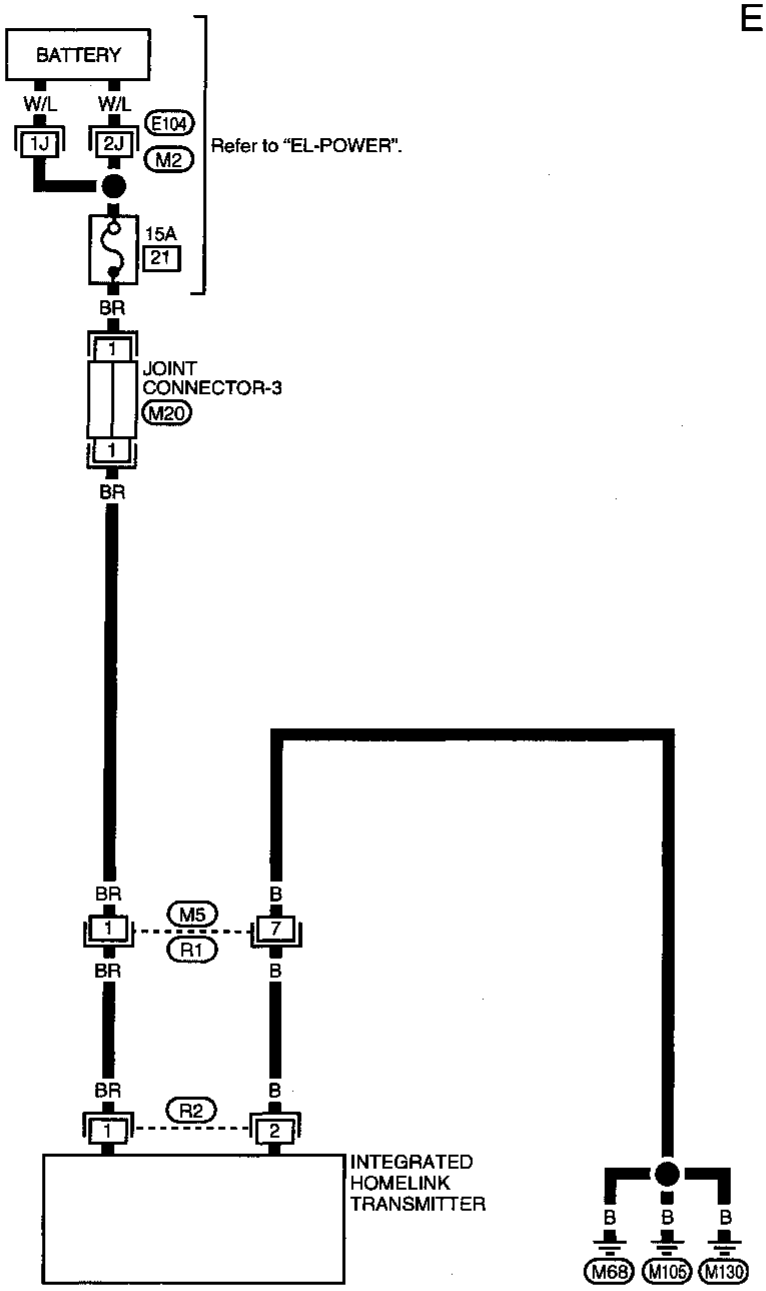
Smart Entrance Control Unit Inspection Table (Cont'd)

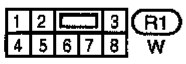
Terminal No.	Wire color	Connections	Operated condition	Voltage (Approximate values)
33	L	Illumination control	NEUTRAL → DARKER	12V → 0V
34	R	Front door switch LH	OFF (Closed) → ON (Open)	12V → 0V
35	L/OR	Key switch	Ignition key inserted in ignition key cylinder → Ignition key removed from ignition key cylinder	0V → 12V
36	LG/R	Ignition switch (ACC)	Ignition switch in ACC position	12V
37	G/Y	Front door lock actuator RH (door unlock sensor)	LOCKED → UNLOCKED	12V → 0V
38	G	Seat belt buckle switch	ON (Unfastened) → OFF (Fastened)	0V → 12V
39	G/OR	Main power window and door lock/ unlock switch, door lock/unlock switch RH	NEUTRAL → UNLOCK	12V → 0V
40	PU	Sliding door lock actuator LH/RH (door unlock sensor)	LOCKED → UNLOCKED	12V → 0V
41	R/G	Sliding door switch LH/RH	OFF (Closed) → ON (Open)	12V → 0V
42	L/R	Illumination control	NEUTRAL → LIGHTER	12V → 0V
43	LG	Ignition switch (ON)	Ignition switch in ON position	12V
45	GY	Security indicator lamp	OFF → ON	12V → 0V
46	R/Y	Front door lock actuator LH (door unlock sensor)	LOCKED → UNLOCKED	12V → 0V
47	G/W	Main power window and door lock/ unlock switch, door lock/unlock switch RH	NEUTRAL → LOCK	12V → 0V
48	R/L	Back door lock actuator (door unlock sensor)	LOCKED → UNLOCKED	12V → 0V

Wiring Diagram — TRNSMT —

NDEL0124

EL-TRNSMT-01





Refer to last page (Foldout page).
M20

AEL800B

Trouble Diagnoses

NDEL0125

DIAGNOSTIC PROCEDURE

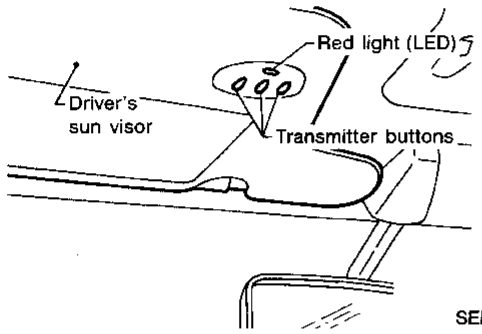
NDEL0125S01

SYMPTOM: Transmitter does not activate receiver.

Before conducting the procedure given below, make sure that system receiver (garage door opener, etc.) operates with original hand-held transmitter. If NG, receiver or hand-held transmitter is at fault, not vehicle related.

1 PRELIMINARY CHECK

1. Turn ignition switch "OFF".
2. Does red light (LED) of transmitter illuminate when any button is pressed?



Yes or No

Yes	▶	GO TO 2.
No	▶	GO TO 3.

2 CHECK TRANSMITTER FUNCTION

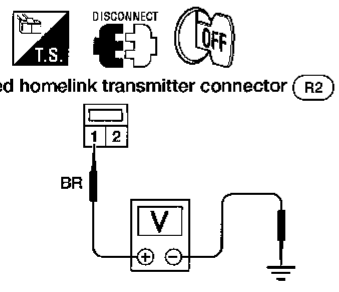
Check transmitter with Tool.
For details, refer to Technical Service Bulletin.

OK or NG

OK	▶	Receiver or handheld transmitter fault, not vehicle related.
NG	▶	Replace transmitter with sun visor assembly.

3 CHECK POWER SUPPLY

1. Disconnect transmitter connector.
2. Turn ignition switch "OFF".
3. Check voltage between terminal 1 and body ground.

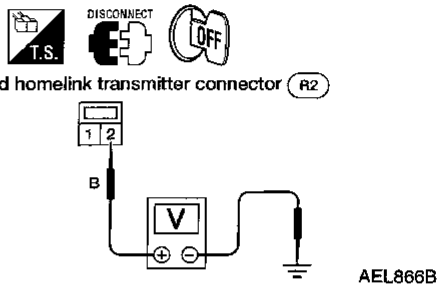


Does battery voltage exist?

Yes	▶	GO TO 4.
No	▶	Check fuse 15A fuse (No. 21, located in the fuse block) and repair harness.

4 CHECK GROUND CIRCUIT

Check continuity between terminal 2 and ground.

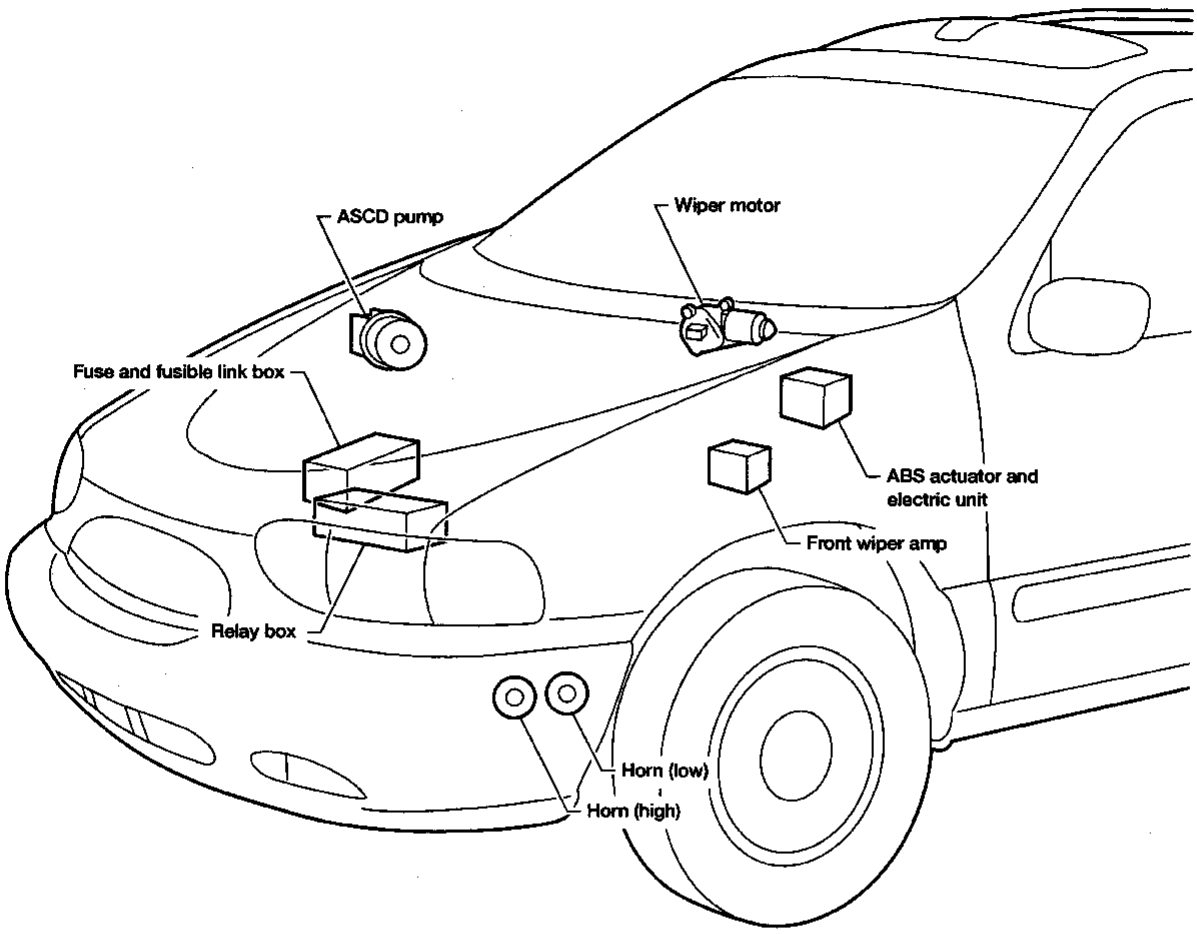


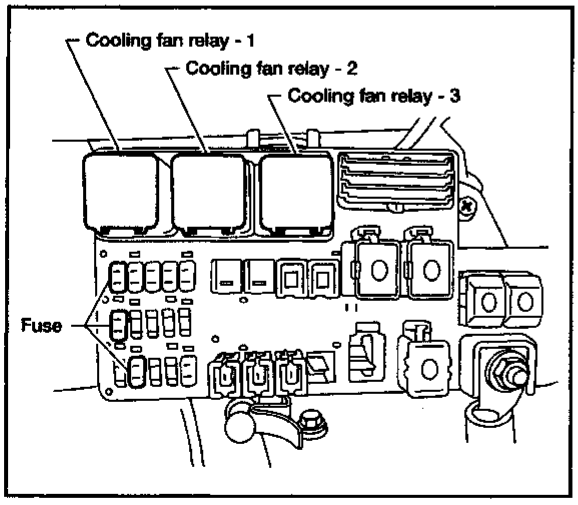
Does continuity exist?

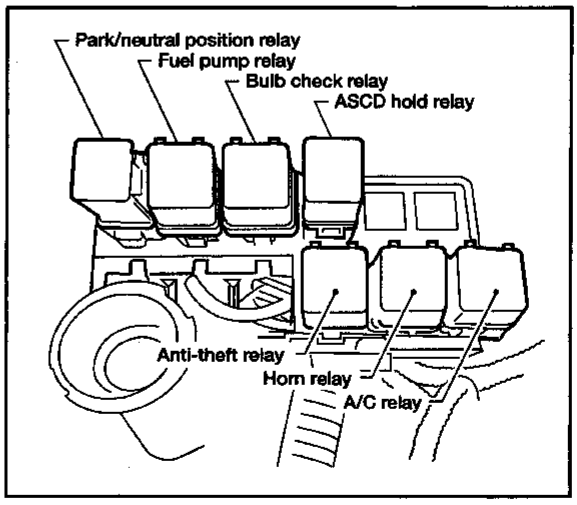
Yes	▶	Replace transmitter with sun visor assembly.
No	▶	Repair harness.

Engine Compartment

NDEL0126



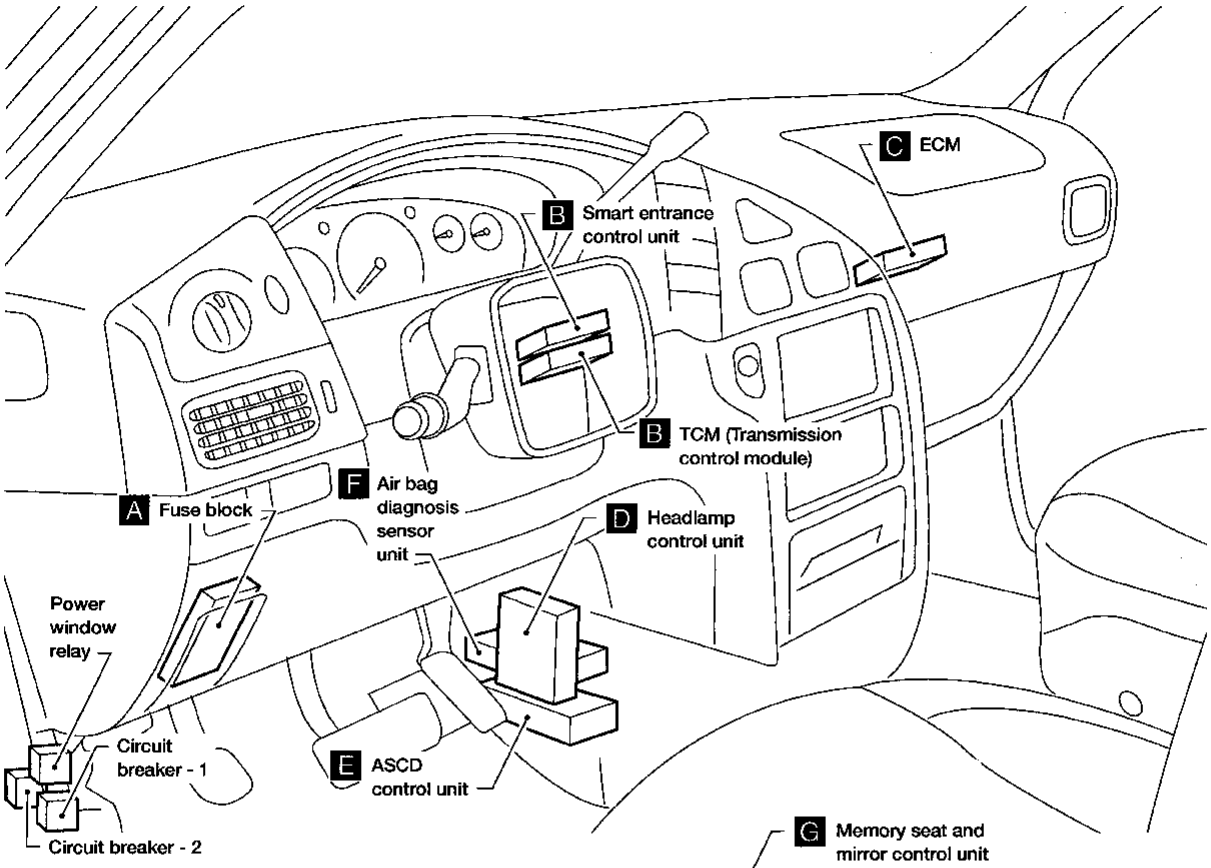


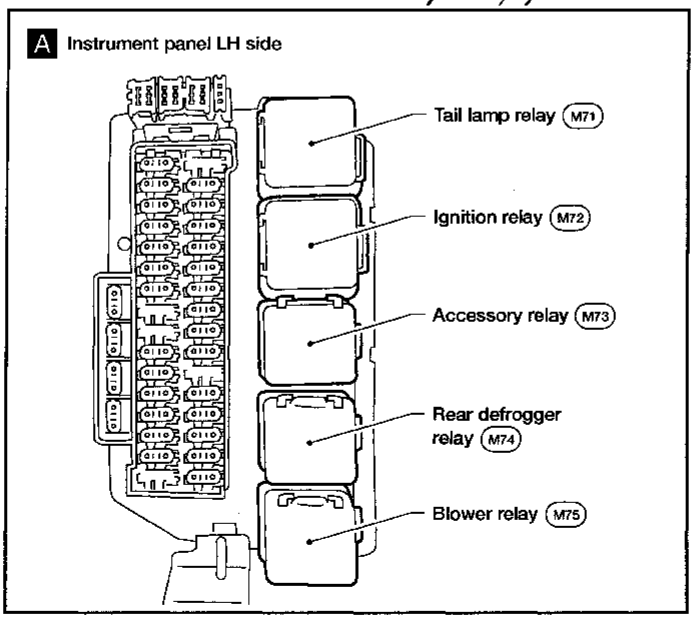


AEL188C

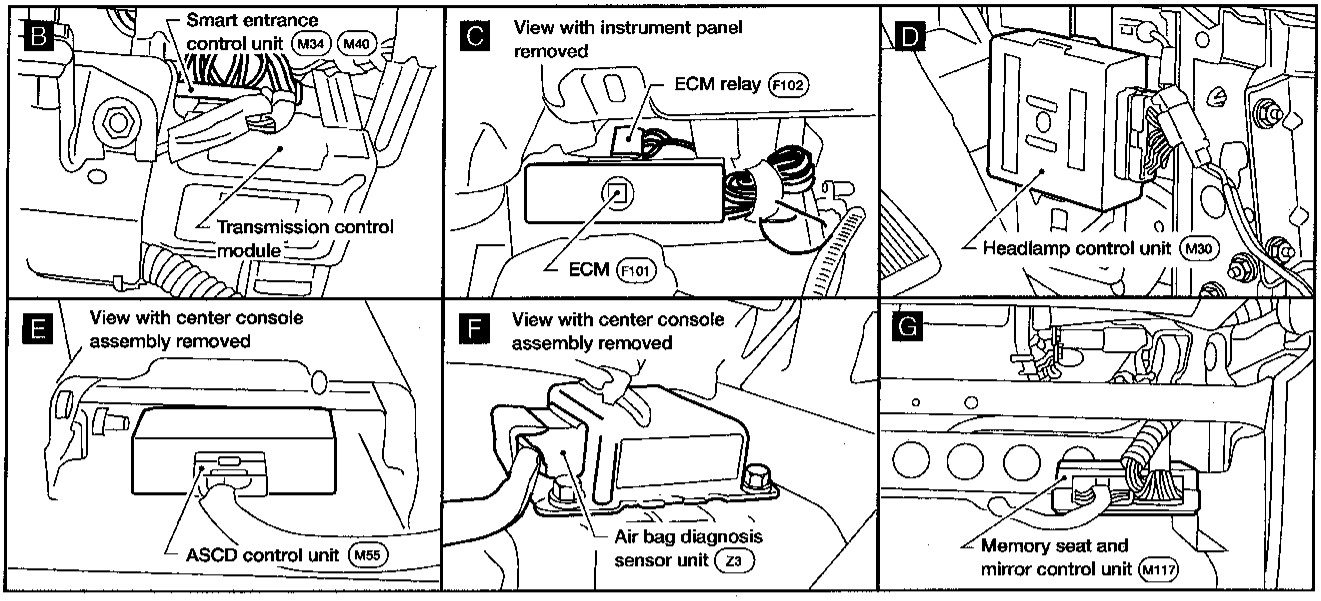
Passenger Compartment

NDEL0127





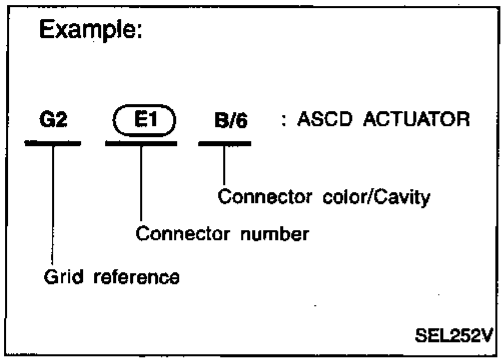
AEL189C


B
Smart entrance control unit M34 M40
Transmission control module
C
View with instrument panel removed
ECM relay F102
ECM F101
D
Headlamp control unit M30
E
View with center console assembly removed
ASCD control unit M55
F
View with center console assembly removed
Air bag diagnosis sensor unit Z3
G
Memory seat and mirror control unit M117

AEL190C

How to Read Harness Layout

NDEL0128



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

- Main Harness and Body No. 2 Harness
- Engine Room Harness (Engine Compartment)

TO USE THE GRID REFERENCE

NDEL0128S01

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

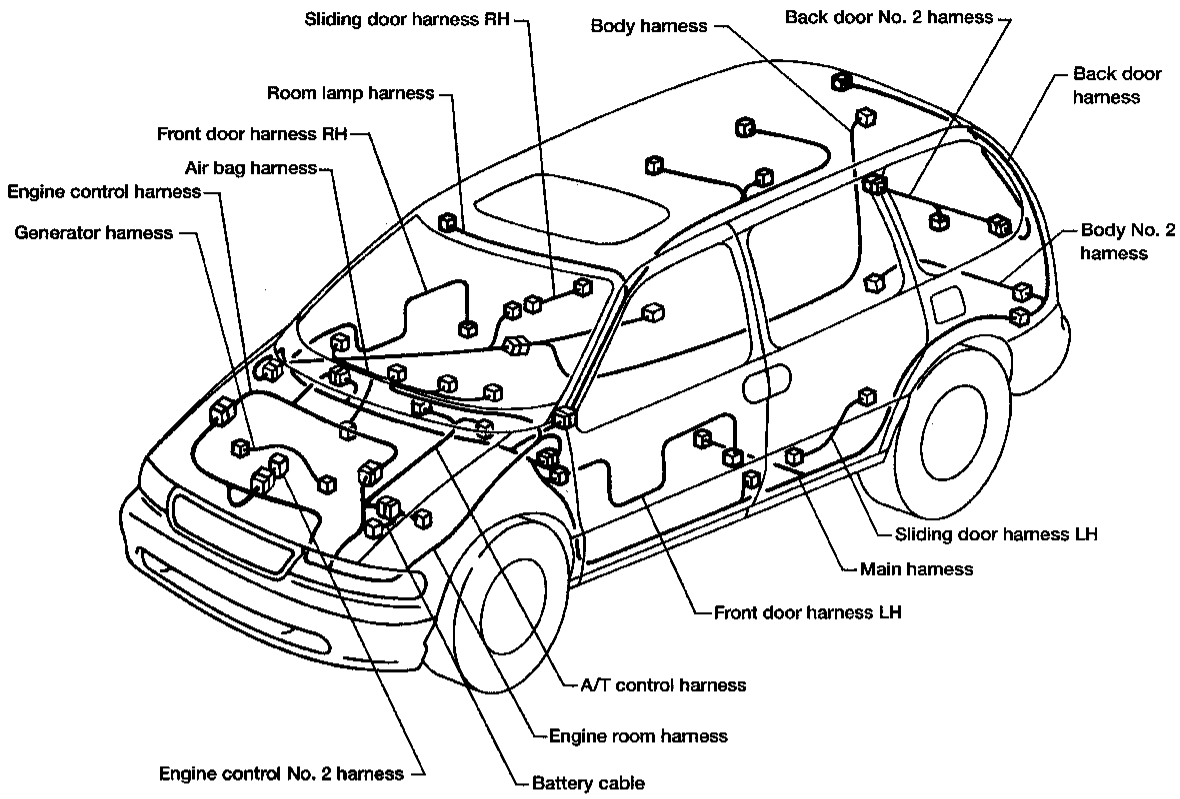
NDEL0128S02

Main symbols of connector (in Harness Layout) are indicated in the below.

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

Outline

NDEL0129



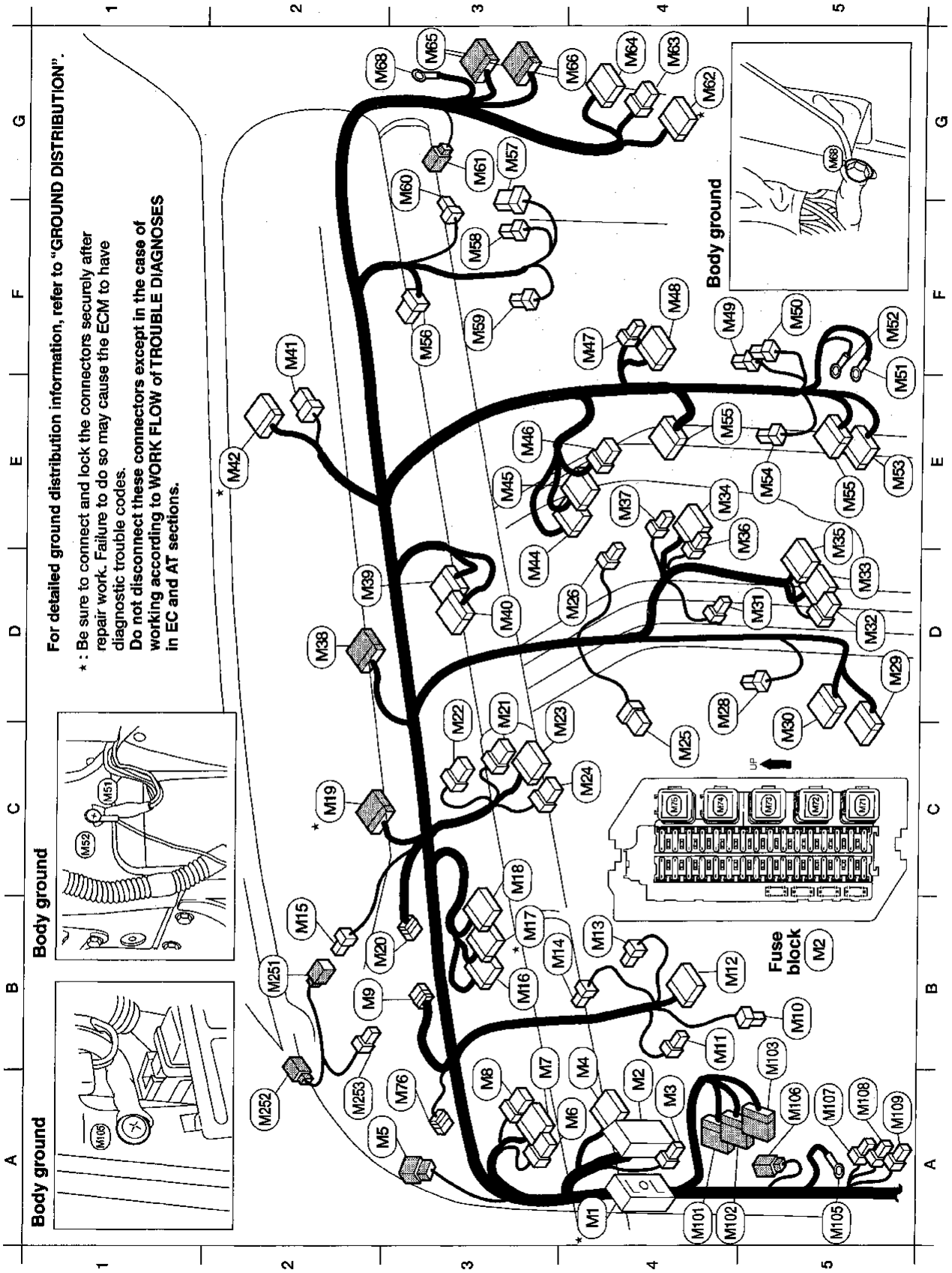
AEL296C

NOTE:
For detailed ground distribution information, refer to "GROUND DISTRIBUTION", EL-18.

Main Harness and Body No. 2 Harness

Main Harness and Body No. 2 Harness

NDEL0130



AEL210C

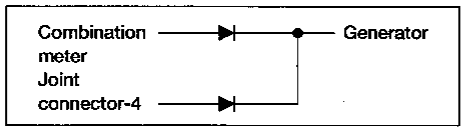
Main harness

A4 * (M1) SMJ : To (E101)
A4 (M2) FB : Fuse block
A4 (M3) W/4 : To (M2) (fuse block)
A4 (M4) GY/14 : Data link connector for Consult
A3 (M5) W/8 : To (R1)
A3 (M6) W/8 : ASCD main switch (with ASCD)
A3 (M7) GY/12 : Lighting switch
A3 (M8) B/8 : Illumination control switch
B3 (M9) GY/33 : Joint connector-2
B5 (M10) B/1 : Parking brake switch
B4 (M11) B/3 : Combination flasher unit
B4 (M12) W/16 : Data link connector for GST
B4 (M13) L/2 : ASCD brake switch (with ASCD)
B4 (M14) B/2 : Stop lamp switch
B2 (M15) W/3 : To (M251) (sunload sensor) (with auto A/C)
B3 (M16) W/12 : Combination meter
B3 * (M17) B/12 : Combination meter
B3 (M18) B/10 : Combination meter
C2 * (M19) W/16 : To (F402)
B3 (M20) GY/33 : Joint connector-3
C3 (M21) W/6 : Rear wiper switch
C3 (M22) W/6 : Rear window defogger switch
C3 (M23) W/10 : Hazard switch
C3 (M24) W/8 : Security indicator lamp (with theft warning system)
C4 (M25) W/6 : To (Z101) (sprial cable)
D4 (M26) B/2 : Cigarette lighter socket (accessory)
D5 (M28) W/2 : Footlamp LH (with footlamps)
D5 (M29) W/10 : Headlamp control unit (without auto lamp and without DTRL)
D5 (M30) W/22 : Headlamp control unit (with auto lamp and/or DTRL)
D4 (M31) W/4 : Front fan switch
D5 (M32) W/8 : Rear fan switch (front)
D5 (M33) GY/26 : EATC unit (with auto A/C)
E4 (M34) B/12 : A/C control unit (with manual A/C)
D5 (M35) GY/22 : EATC unit (with auto A/C)
D4 (M36) W/3 : A/C control unit (temperature control switch) (with manual A/C)
E4 (M37) W/2 : A/C control unit (illumination) (with manual A/C)
D2 (M38) Y/12 : To (Z1)
D3 (M39) W/22 : Smart entrance control unit (SECU)
D3 (M40) W/26 : Smart entrance control unit (SECU)
E2 (M41) W/6 : To (F105)
E2 * (M42) W/24 : To (F104)
E4 (M44) B/20 : Audio unit
E4 (M45) B/16 : Audio unit
E4 (M46) B/8 : Audio unit (with premium audio)
F4 (M47) BR/4 : To (M161) (with manual A/C)
F4 (M48) W/16 : To (M171) (with manual A/C)
F5 (M49) L/4 : Rear fan switch relay No. 1 (with manual A/C and rear A/C)
F5 (M50) L/4 : Rear blower motor relay (with auto A/C)
F5 (M51) – : Body ground
F5 (M52) – : Body ground
E5 (M53) B/12 : C/D changer
E5 (M54) W/2 : Footlamp RH (with footlamps)
E5 (M55) B/20 : ASCD control unit
F3 (M56) W/8 : Intake door motor
G3 (M57) B/5 : Front blower speed control unit (with auto A/C)
F3 (M58) B/2 : Front blower motor
F3 (M59) BR/4 : Front blower motor resistor
F3 (M60) B/2 : Glove box lamp
G3 (M61) W/2 : To (M150)
G4 * (M62) W/16 : To (B1)
G4 (M63) W/6 : To (B2)
G4 (M64) W/10 : To (B3)
G3 (M65) W/16 : To (D101)
G3 (M66) W/10 : To (D102)
G3 (M68) – : Body ground
C5 (M71) BR/6 : Front blower motor relay
C5 (M72) BR/6 : Rear window defogger relay
C5 (M73) BR/6 : Accessory relay
C4 (M74) L/4 : Ignition relay
C4 (M75) L/4 : Tail lamp relay
A3 (M76) W/2 : Diode-1
A4 (M101) W/10 : To (D1)
A4 (M102) W/12 : To (D2)
A5 (M103) W/16 : To (D3)
A5 (M105) – : Body ground
A5 (M106) GY/3 : Inertia fuel shutoff switch
A5 (M107) L/4 : Power window relay
A5 (M108) W/2 : Circuit breaker-1
A5 (M109) W/2 : Circuit breaker-2

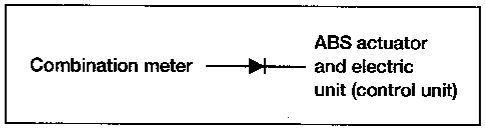
Sub harness

B2 (M251) W/3 : To (M15)
A2 (M252) B/2 : Sunload sensor
B2 (M253) B/2 : In-vehicle temperature sensor

Joint connector-2 (M9)

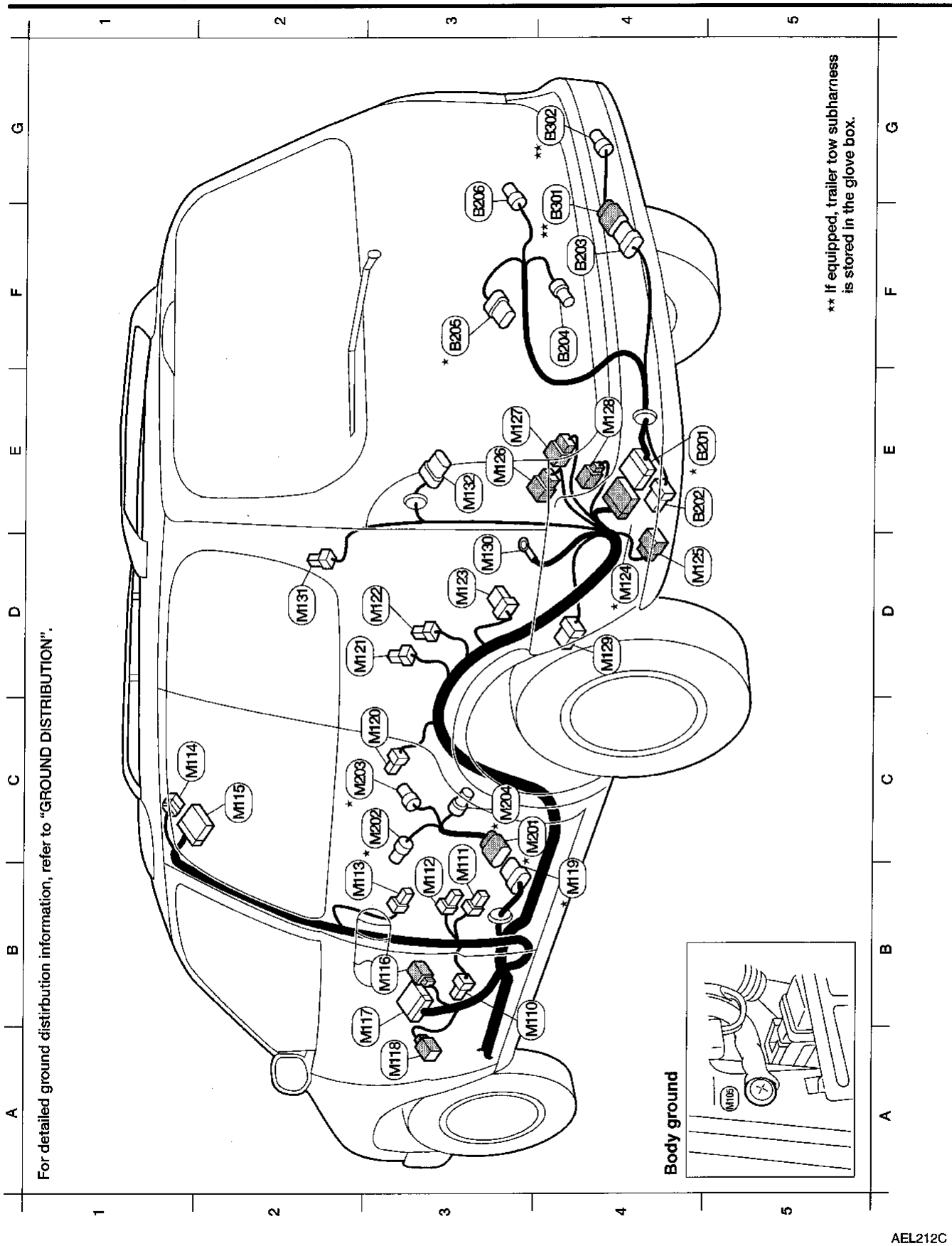


Diode-1 (M76)



* : 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.

AEL211C


** If equipped, trailer tow subharness is stored in the glove box.
For detailed ground distirbution information, refer to "GROUND DISTRIBUTION".
Body ground
M105
B302
B206
B301
B203
B205
B204
M127
M128
M126
B201
M132
B202
M130
M125
M123
M124
M131
M122
M129
M121
M120
M114
M203
M204
M115
M202
M201
M113
M112
M111
M119
M116
M110
M117
M118
1
2
3
4
5
A
B
C
D
E
F
G

AEL212C

Main harness

B3 (M11) B/3 : Front door switch LH
B3 (M11) B/1 : Sliding door switch LH
B3 (M12) B/4 : Sliding door contact switch LH (pillar)
B3 (M13) W/2 : Sliding door step lamp LH
C1 (M14) W/6 : Joint connector-1
C2 (M15) B/16 : Rear audio remote control unit (with rear audio remote control unit)
B3 (M16) B/2 : Seat belt buckle switch
B3 (M17) W/26 : Memory seat and mirror control unit (with automatic drive positioner)
A3 (M18) W/2 : To (P51)
B3 *(M19) GY/8 : To (M201)
C3 (M20) B/2 : Rear power point (with rear power point)
D3 (M21) BR/2 : Rear speaker LH (with premium audio)
D3 (M22) B/2 : Rear speaker LH (with base and midgrade audio)
D3 (M23) W/6 : Sub woofer amplifier (with premium audio)
E4 *(M24) W/10 : To (B201)
D4 (M25) W/6 : To (B202)
E4 (M26) W/8 : To (D201)
E4 (M27) W/6 : To (D202)
E4 (M28) W/4 : To (D203)
D4 (M29) W/8 : Trailer tow control unit (with trailer tow)
D3 (M30) – : Body ground
D2 (M31) B/2 : Rear power vent window motor LH (with power vents)
E3 (M32) GY/6 : Rear combination lamp LH

Sub harness

C3 *(M201) GY/8 : To (M19)
C3 *(M202) B/2 : EVAP canister vent control valve
C3 *(M203) GY/3 : EVAP control system pressure sensor
C3 *(M204) GY/2 : Vacuum cut valve bypass valve

Body No. 2 harness

E4 *(B201) W/10 : To (M24)
E4 (B202) W/6 : To (M25)
F4 (B203) GY/6 : To (B201)
F4 (B204) BR/2 : Rear wheel sensor LH (with ABS)
F3 *(B205) GY/6 : Fuel tank gauge unit
F4 (B301) GY/6 : To (B203)
G3 (B206) GY/6 : Rear wheel sensor RH (with ABS)
G4 (B302) B/4 : SAE J1239 trailer tow connector (with trailer tow)

***: 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.

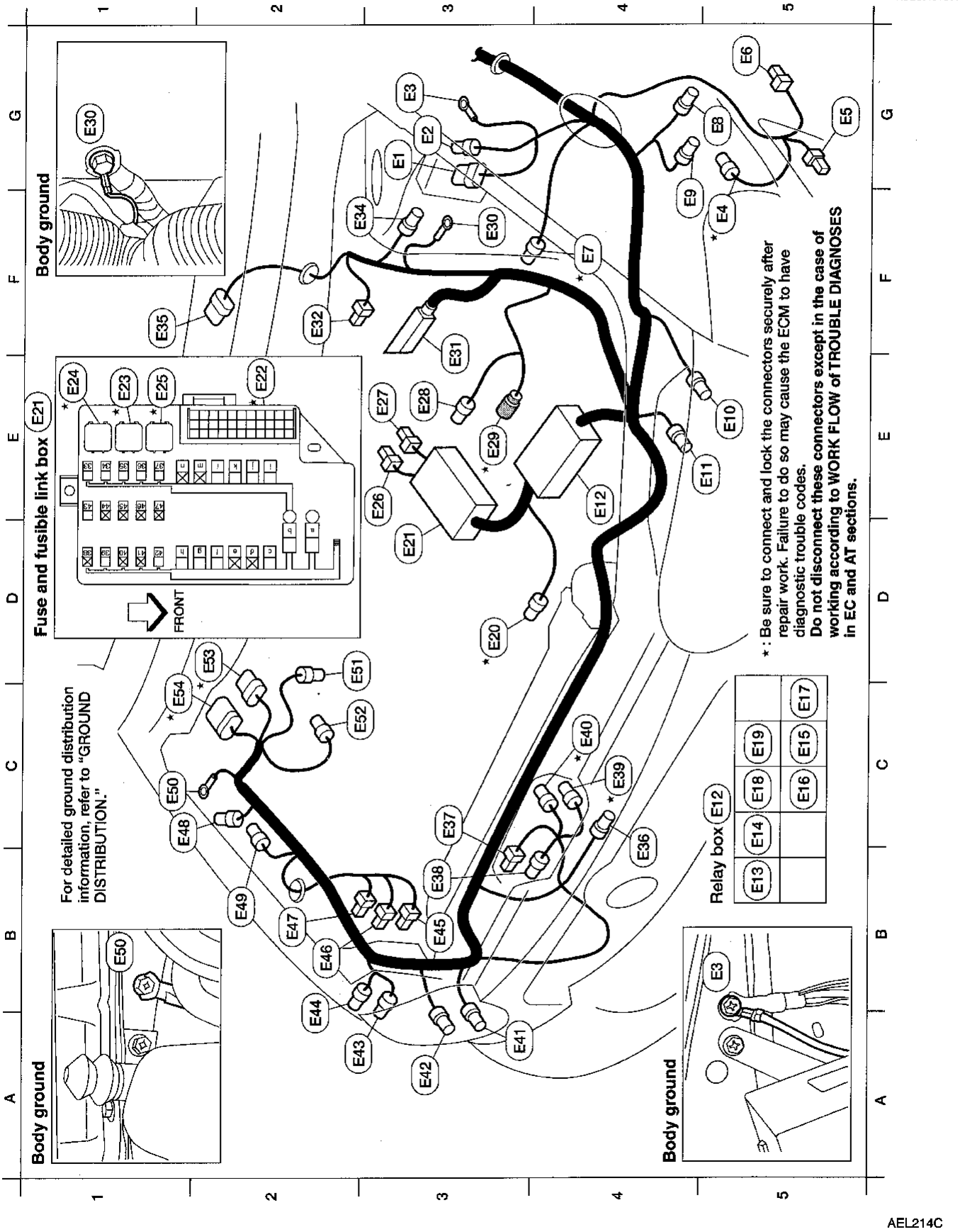
AEL213C

Engine Room Harness

ENGINE COMPARTMENT

NDEL0131

NDEL0131S01



AEL214C

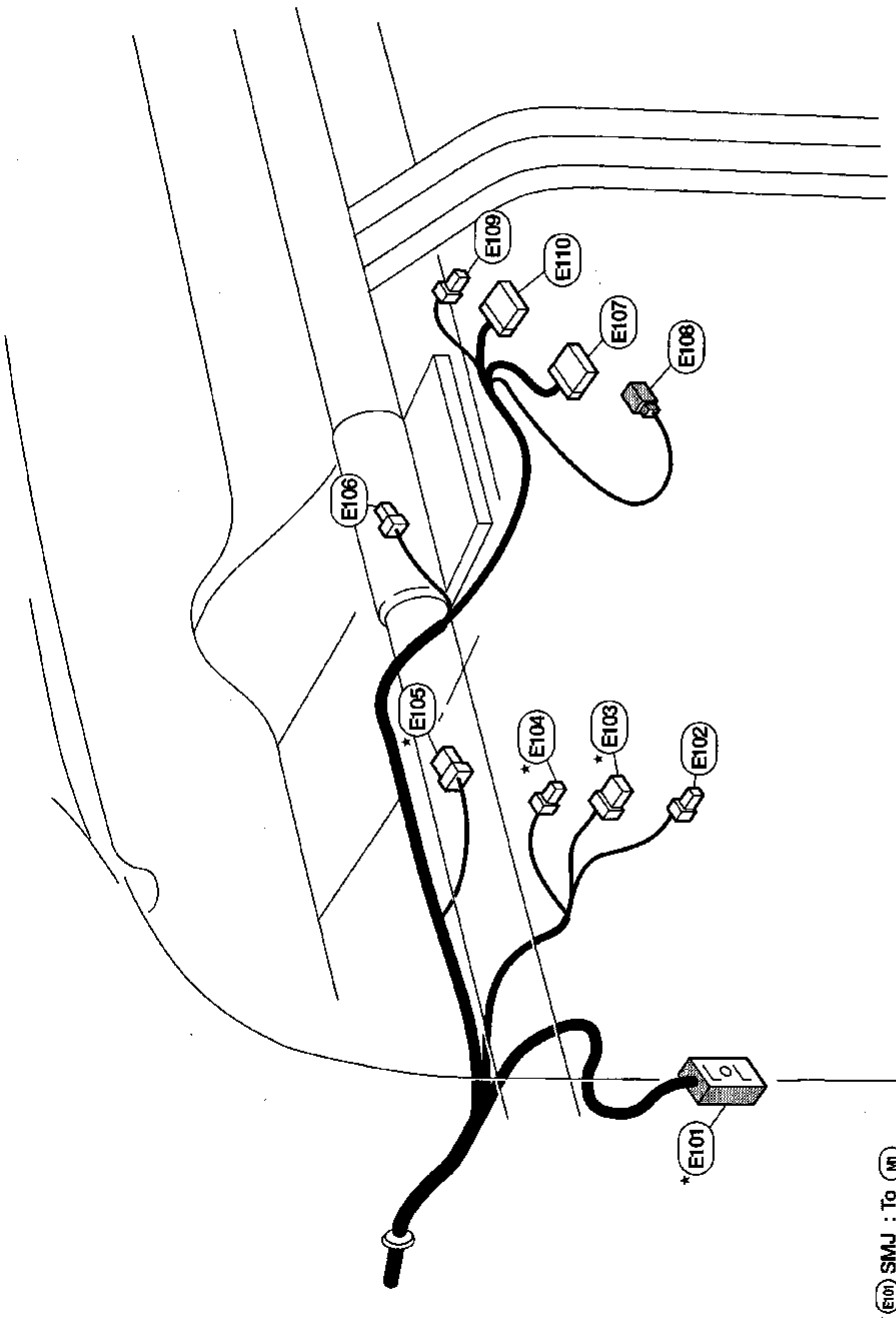
G3 (E1) GY/6 : Front wiper amplifier
G3 (E2) GY/4 : Front wiper amplifier
G3 (E3) — : Body ground
G5 *(E4) GY/2 : Dropping resistor
G5 (E5) B/1 : Horn (high)
G5 (E6) B/1 : Horn (low)
F4 *(E7) B/2 : Intake air temperature sensor
G5 (E8) B/2 : Front side marker lamp LH
G5 (E9) B/3 : Front combination lamp LH
E5 (E10) B/3 : Headlamp LH
E5 (E11) B/3 : Front turn signal lamp LH
E4 (E12) FB : Relay box
B5 (E13) GY/7 : Park/neutral position (PNP) relay
C5 (E14) L/4 : Fuel pump relay
C5 (E15) L/4 : Horn relay
C5 (E16) B/5 : Theft warning relay (with theft warning system)
C5 (E17) L/4 : Air conditioner relay
C5 (E18) L/4 : Bulb check relay
C5 (E19) BR/6 : ASCD hold relay (with ASCD)
D4 *(E20) B/3 : Cooling fan motor
E3 (E21) FB : Fuse and fusible link box
E2 *(E22) W/33 : Joint connector-4
E1 *(E23) L/4 : Cooling fan relay-3 (high relay)
E1 *(E24) L/4 : Cooling fan relay-1 (low relay)
E1 *(E25) L/4 : Cooling fan relay-2 (high relay)
E3 (E26) B/1 : Battery
E3 (E27) B/1 : Battery

E3 (E28) GY/1 : Starter motor
E3 *(E29) GY/4 : To (F304)
G3 (E30) — : Body ground
F3 (E31) B/31 : ABS actuator and electric unit (control unit) (with ABS)
F2 (E32) GY/2 : Brake fluid level switch
G3 (E34) BR/2 : Front wheel sensor LH (with ABS)
F1 (E35) GY/6 : Front wiper motor
B4 (E36) B/2 : Ambient temperature sensor (with auto A/C)
B3 (E37) B/1 : Oil pressure switch
B4 (E38) GY/2 : Generator
C4 *(E39) GY/3 : Front heated oxygen sensor (except for California)
C4 *(E40) GY/4 : Rear heated oxygen sensor (for California)
A3 (E41) B/3 : Front turn signal lamp RH
A3 (E42) B/3 : Headlamp RH
A2 (E43) B/3 : Front combination lamp RH
A2 (E44) B/2 : Front side marker lamp RH
B3 (E45) B/2 : Washer fluid level switch (for Canada)
B2 (E46) W/2 : Front washer motor
B2 (E47) G/2 : Rear washer motor
B2 (E48) GY/2 : Hood switch (with theft warning system)
B2 (E49) GY/4 : ASCD pump (with ASCD)
B1 (E50) — : Body ground
C2 (E51) B/4 : Low pressure switch
C2 (E52) GY/2 : Front wheel sensor RH (with ABS)
C2 *(E53) GY/6 : To (F2)
C1 *(E54) GY/12 : To (F3)

*: 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.**

PASSENGER COMPARTMENT

=NDEL0131S02



★ : 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.

★ (E101) SMJ : To (M1)
(E102) L/2 : To (M2)
★ (E103) W/6 : To (M2)
★ (E104) B/2 : To (M2)
★ (E105) B/6 : Ignition switch
(E106) W/2 : A/T device (Shift lock solenoid and park position switch)
(E107) B/10 : Combination switch-1
(E108) BR/2 : Key switch
(E109) W/2 : Overdrive control switch
(E110) B/11 : Combination switch-2

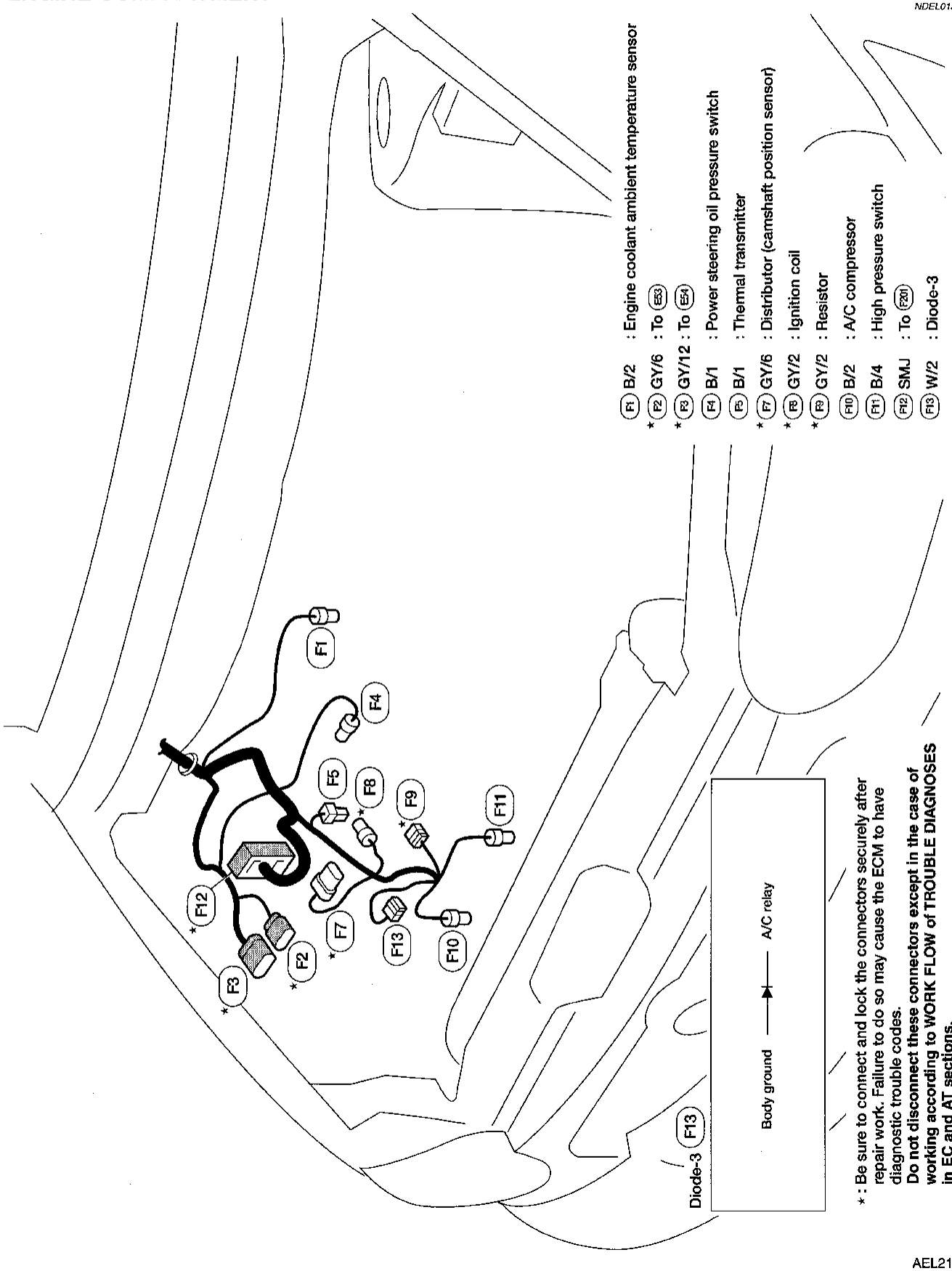
AEL216C

Engine Control Harness

NDEL0132

NDEL0132S01

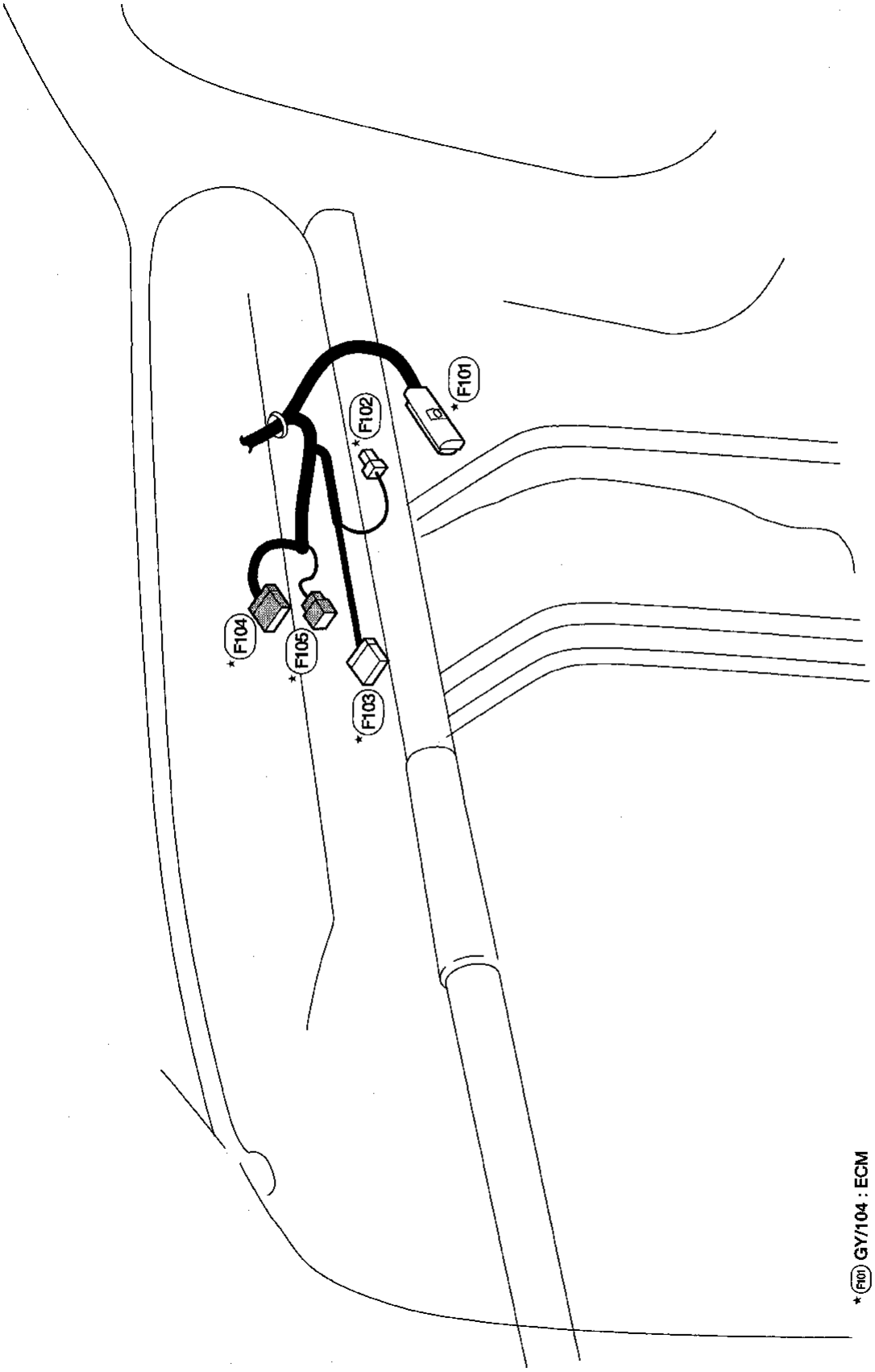
ENGINE COMPARTMENT



AEL217C

PASSENGER COMPARTMENT

NDEL0132S02



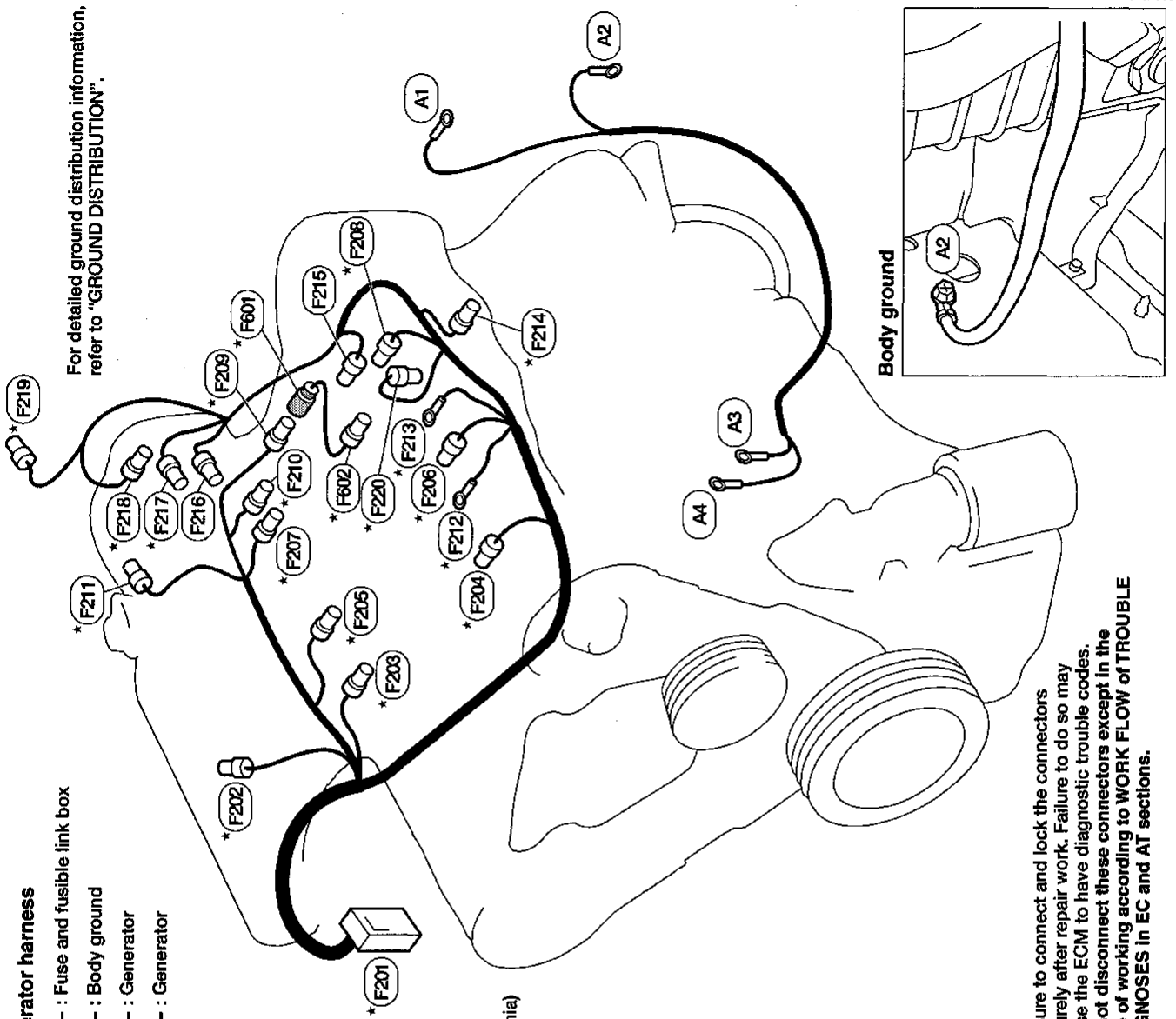
★ : Be sure to connect and lock the connectors securely after repair work. Failure to do so may cause the ECM to have diagnostic trouble codes.
Do not disconnect these connectors except in the case of working according to WORK FLOW of TROUBLE DIAGNOSES in EC and AT sections.

★ (F101) GY/104 : ECM
★ (F102) L/4 : ECM relay
★ (F103) GY/16 : To (F401)
★ (F104) W/24 : To (M42)
★ (F105) W/6 : To (M41)

AEL218C

ENGINE CONTROL SUB HARNESS AND GENERATOR HARNESS

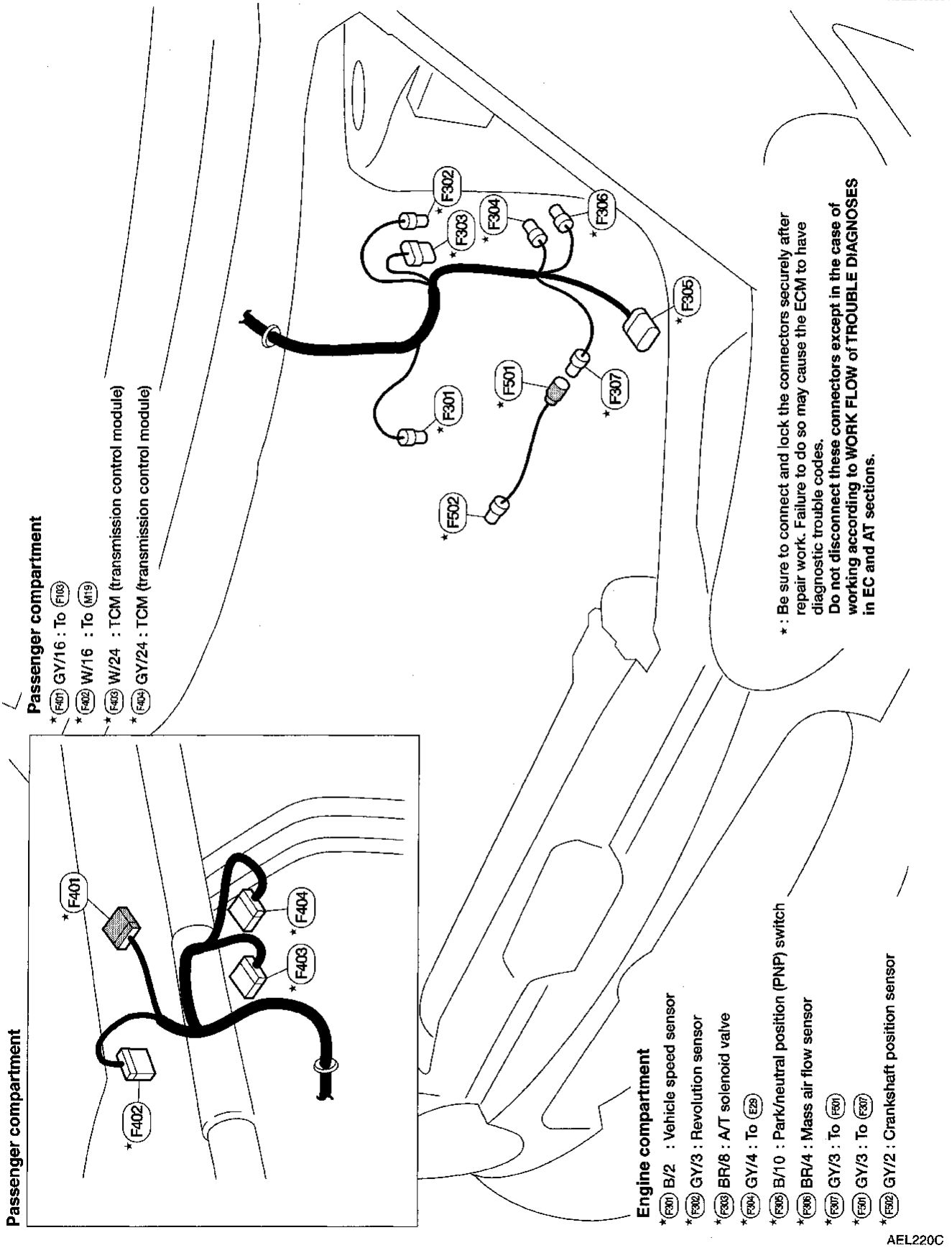
NDEL0132S03



AEL219C

TRANSMISSION CONTROL HARNESS

NDEL0132S04



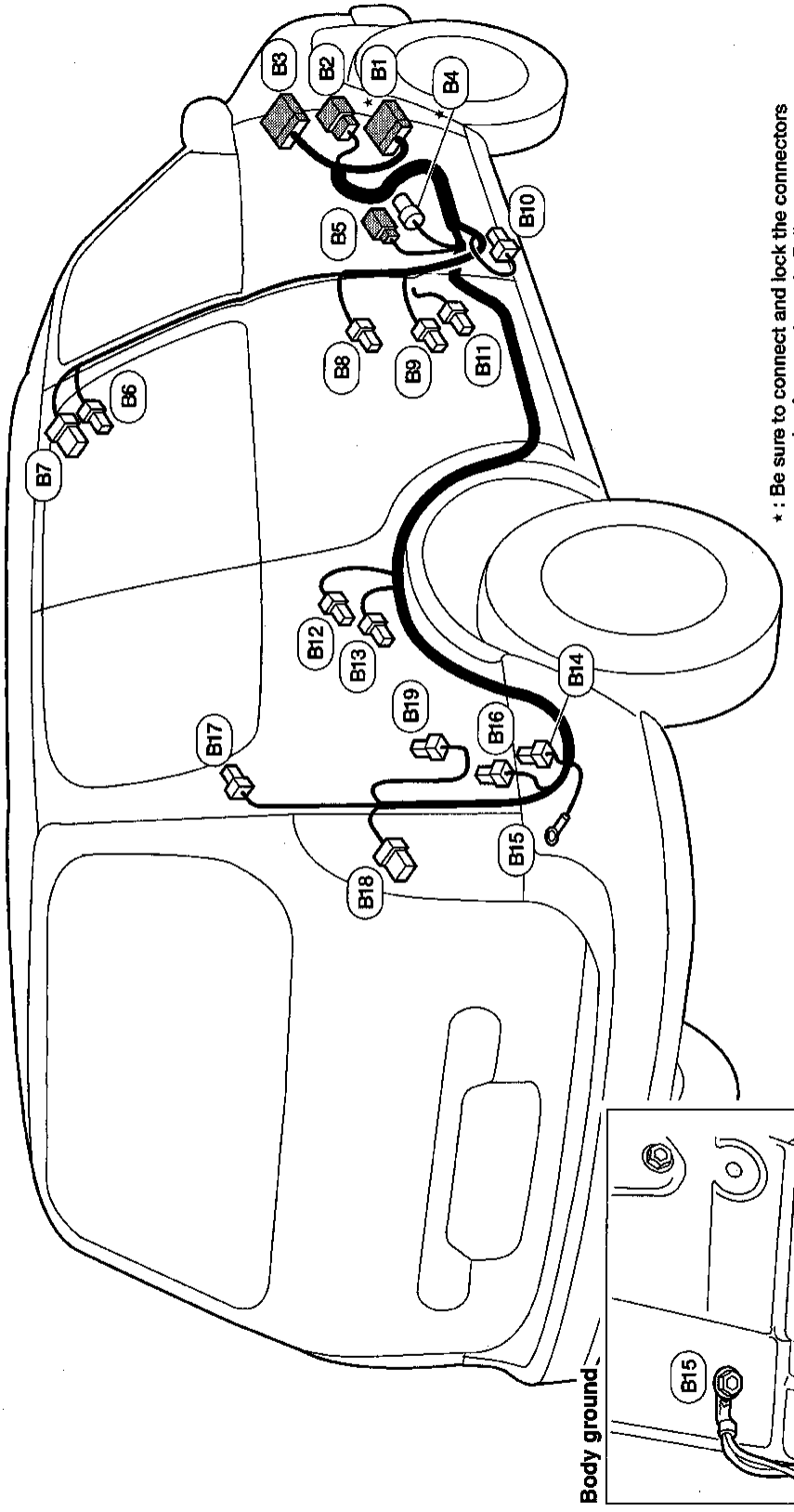
AEL220C

Body Harness

NDEL0133

For detailed ground distribution information, refer to "GROUND DISTRIBUTION".

- *(B1) W/16 : To (M82)
- (B2) W/6 : To (M83)
- (B3) W/10 : To (M84)
- *(B4) GY/4 : Rear heated oxygen sensor (except for California)
- (B5) W/2 : To (P10) (with RH power seat)
- (B6) W/2 : Rear fan switch (rear illumination) (with rear A/C)
- (B7) W/6 : Rear fan switch (rear) (with rear A/C)
- (B8) W/2 : Sliding door step lamp RH
- (B9) B/4 : Sliding door contact switch RH (pillar)
- (B10) B/3 : Front door switch RH
- (B11) B/1 : Sliding door switch RH
- (B12) BR/2 : Rear speaker RH (with premium audio)
- (B13) B/2 : Rear speaker RH
- (B14) B/2 : Rear blower motor (with rear A/C)
- (B15) — : Body ground
- (B16) BR/4 : Rear blower motor resistor (with rear A/C)
- (B17) B/2 : Rear power vent window motor RH (with power vent windows)
- (B18) GY/6 : Rear combination lamp RH
- (B19) L/4 : Rear fan switch relay No. 2 (with rear A/C)

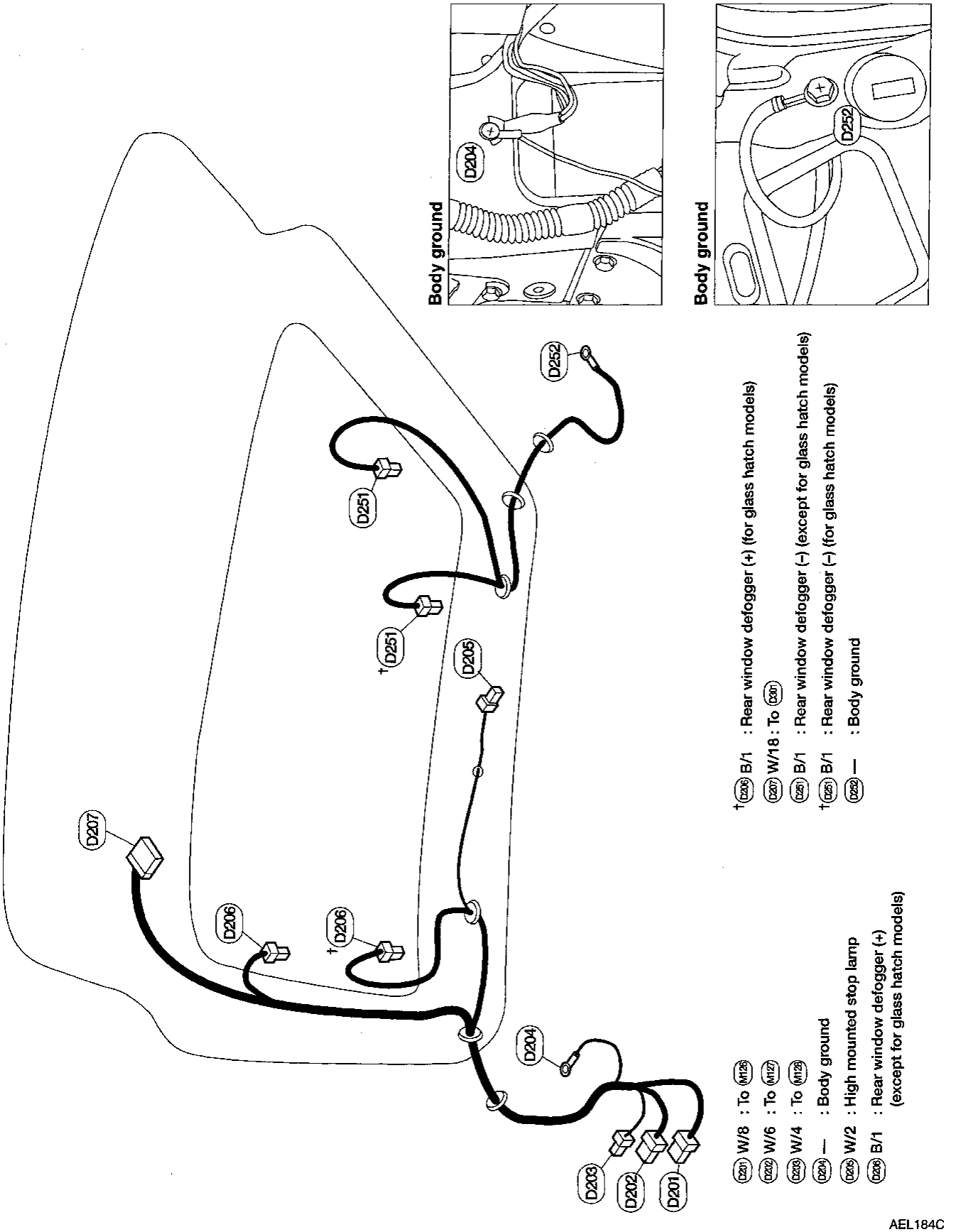


*: Be sure to connect and lock the connectors securely after repair work. Failure to do so may cause the ECM to have diagnostic trouble codes. Do not disconnect these connectors except in the case of working according to WORK FLOW of TROUBLE DIAGNOSES in EC and AT sections.

AEL209C

Back Door Harness

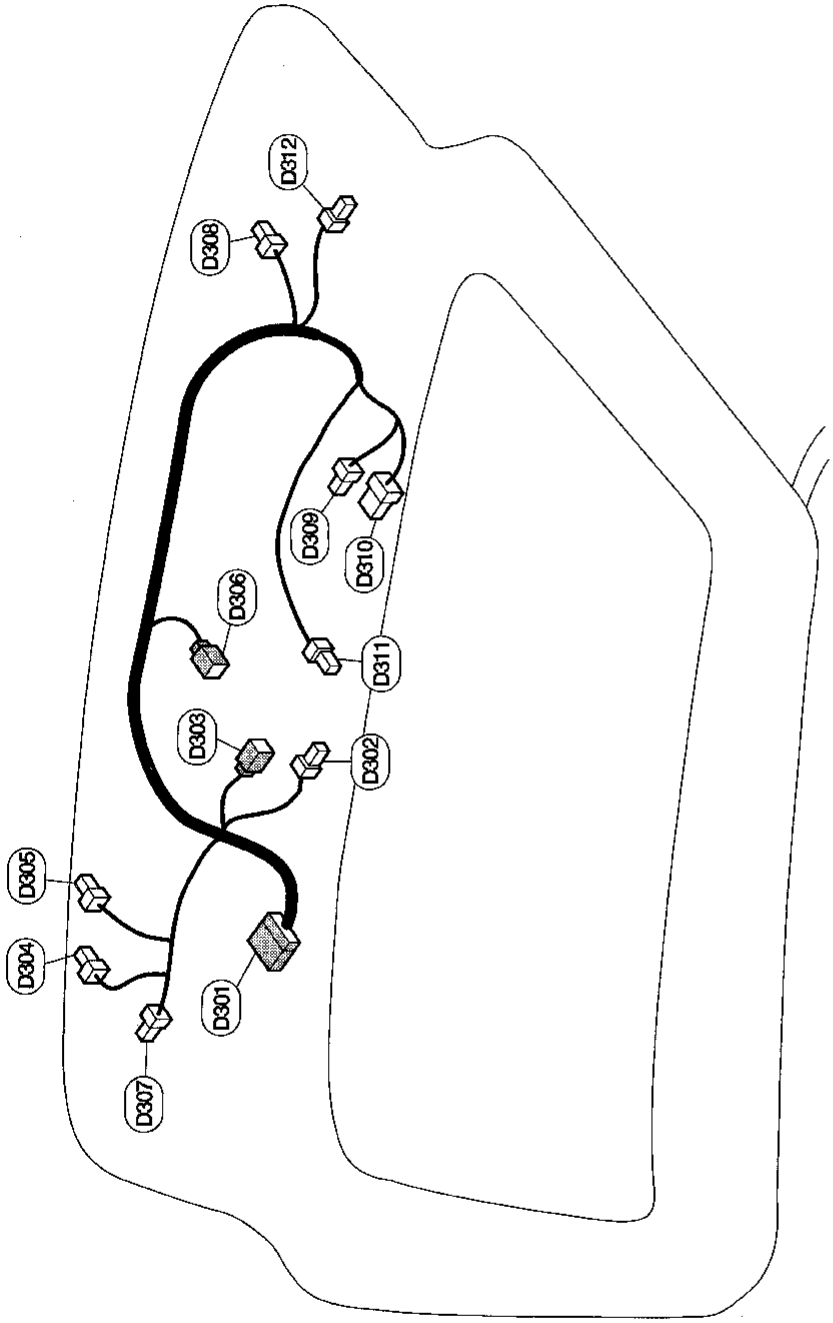
NDEL0135



AEL184C

Back Door No. 2 Harness

NDEL0136

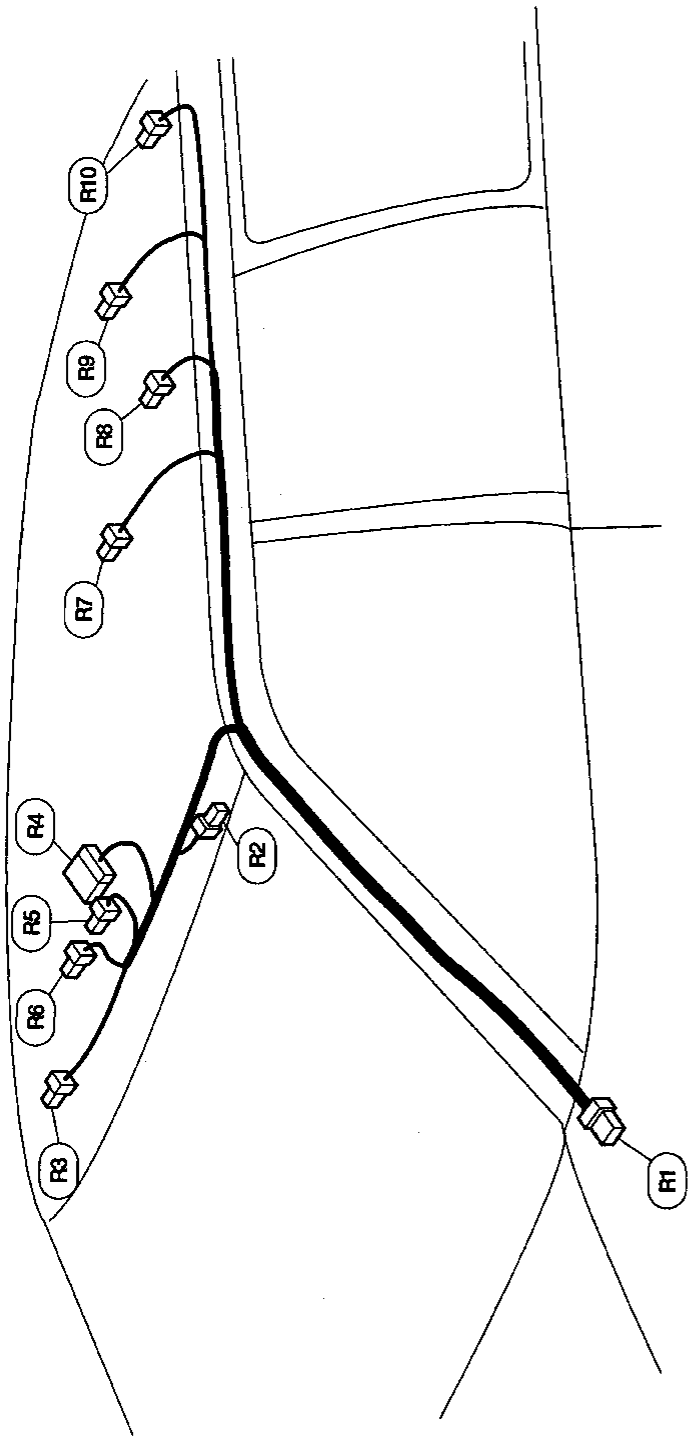


(D301) W/18 : To (D207)
(D302) G/2 : Glass hatch latch switch (for glass hatch model)
(D303) GY/4 : Back door key cylinder switch
(D304) GY/3 : Back-up lamp LH
(D305) W/2 : Back door lamp
(D306) W/3 : License lamp
(D307) W/2 : Back door latch switch LH
(D308) GY/3 : Back-up lamp RH
(D309) GY/4 : Rear wiper motor (except for glass hatch model)
(D310) GY/6 : Rear wiper motor (for glass hatch model)
(D311) GY/4 : Back door lock actuator
(D312) W/2 : Back door latch switch RH

AEL187C

Room Lamp Harness

NDEL0137



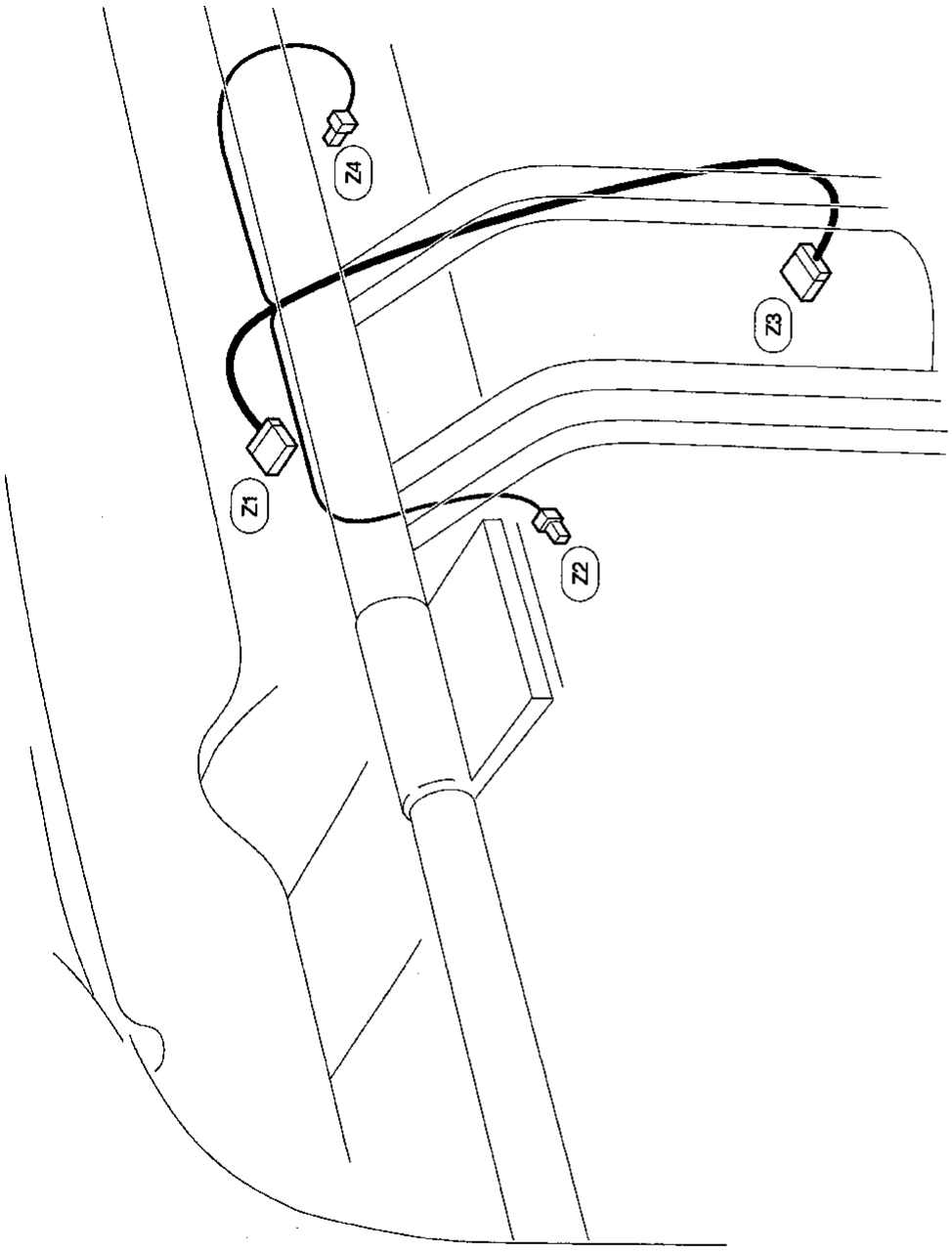
(R1) W/8 : To (M5)
(R2) B/2 : Vanity lamp LH
(R3) B/2 : Vanity lamp RH
(R4) B/12 : Sun roof motor assembly (with sun roof)
(R5) W/3 : Map lamp (with map lamp)

(R6) W/4 : Sun roof switch (with sun roof)
(R7) W/3 : Front room lamp (without personal lamp)
(R8) W/3 : Front personal lamp (with personal lamp)
(R9) W/3 : Rear room lamp (without personal lamp)
(R10) W/3 : Rear personal lamp (with personal lamp)

AEL204C

Air Bag Harness

NDEL0138



(Z1) W/12 : To (M36)
(Z2) Y/4 : To spiral cable
(Z3) Y/22 : Air bag diagnosis sensor unit
(Z4) W/2 : Front passenger air bag module

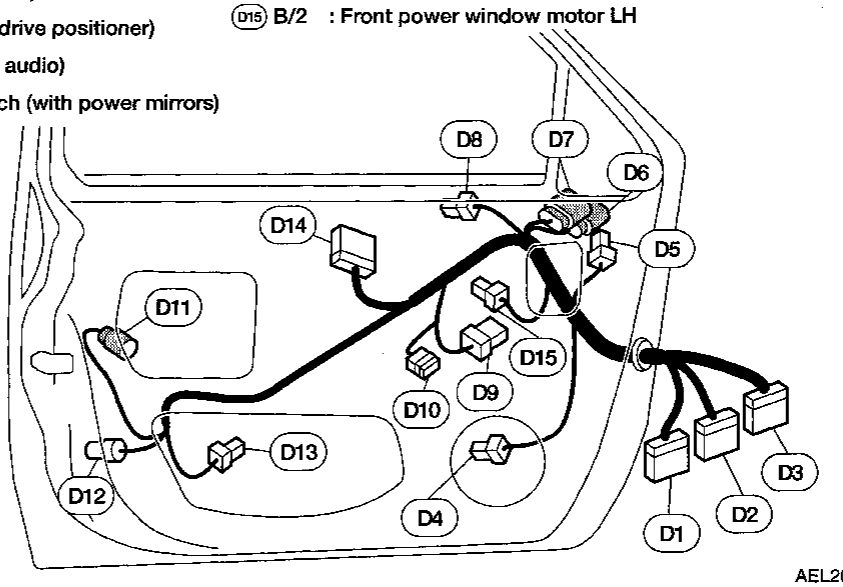
AEL221C

Front Door Harness

NDEL0139

LH Door

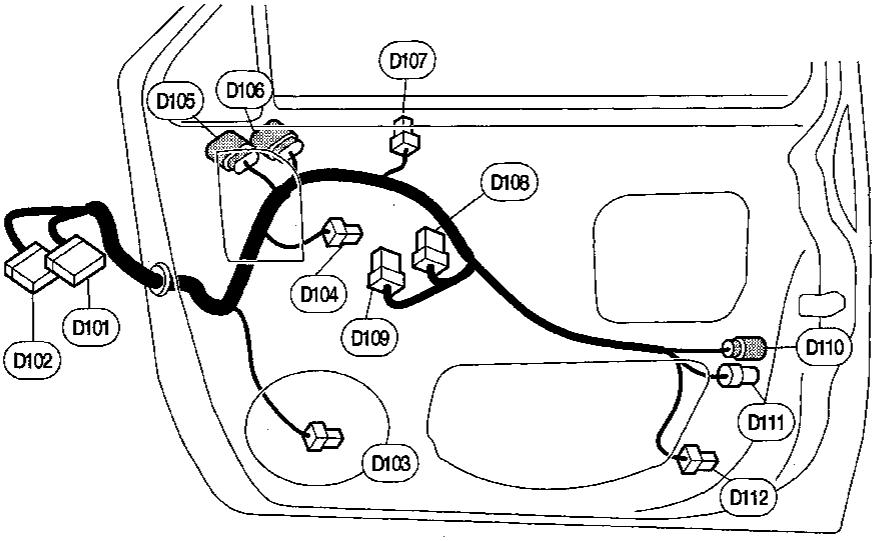
(D1) W/10 : To (M101)
(D2) W/12 : To (M102)
(D3) W/16 : To (M103)
(D4) B/2 : Front speaker LH
(D5) B/2 : Memory set switch (with automatic drive positioner)
(D6) W/5 : Door mirror LH (with power mirrors)
(D7) GY/5 : Door mirror LH (with automatic drive positioner)
(D8) W/2 : Front tweeter LH (with premium audio)
(D9) W/8 : Door mirror remote control switch (with power mirrors)
(D10) W/2 : Diode-2 (with power mirrors)
(D11) GY/4 : Front door key cylinder switch LH (with theft warning)
(D12) GY/4 : Front door lock actuator LH (with power door locks)
(D13) W/2 : Front step lamp LH
(D14) W/12 : Main power window and door lock/unlock switch
(D14) W/16 : Main power window and door lock/unlock switch (with rear power vent windows)
(D15) B/2 : Front power window motor LH



AEL200C

RH Door

(D101) W/16 : To (M65)
(D102) W/10 : To (M66)
(D103) B/2 : Front speaker RH
(D104) B/2 : Front power window motor RH
(D105) W/5 : Door mirror RH (with power mirrors)
(D106) GY/5 : Door mirror RH (with automatic drive positioner)
(D107) W/2 : Front tweeter RH (with premium audio)
(D108) W/8 : Front power window switch RH
(D109) BR/8 : Door lock/unlock switch RH (with power door locks)
(D110) GY/4 : Front door key cylinder switch RH (with theft warning)
(D111) GY/4 : Front door lock actuator RH (with power door locks)
(D112) W/2 : Front step lamp RH

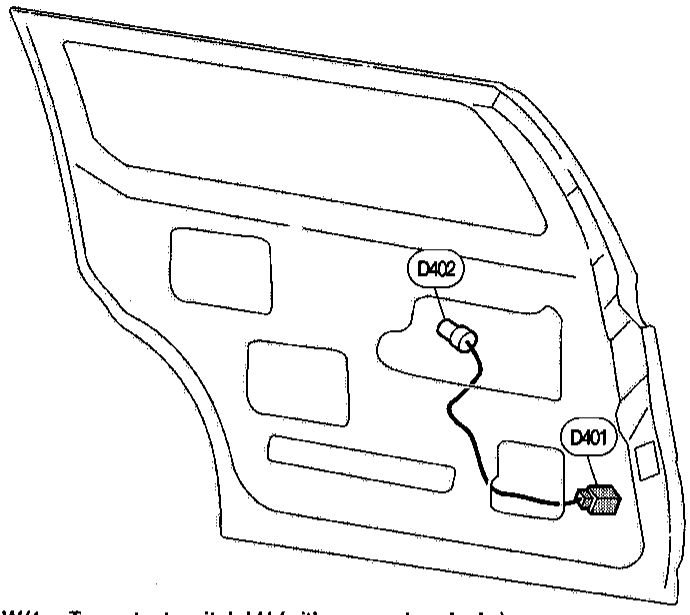


AEL201C

Sliding Door Harness

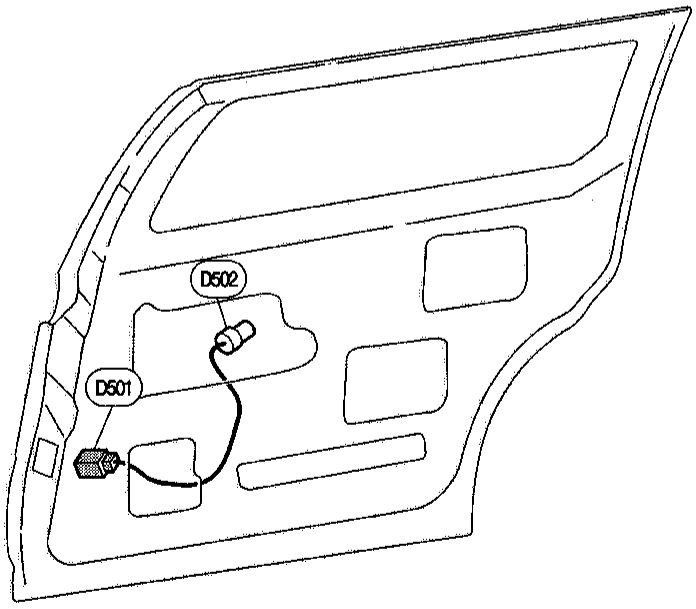
NDEL0140

LH Door



(D401) W/4 : To contact switch LH (with power door locks)
(D402) GY/4 : Sliding door lock actuator LH (with power door locks)

RH Door



(D501) W/4 : To contact switch RH (with power door locks)
(D502) GY/4 : Sliding door lock actuator RH (with power door locks)

AEL202C

BULB SPECIFICATIONS

Headlamp

Headlamp

NDEL0141S01

Item	ANSI #	Wattage (W)
High/Low (Semi-sealed beam)	9007 (HB5)	65/55
Front turn signal	3157na	27/7

Exterior Lamp

NDEL0141S02

Item		ANSI #	Wattage (W)
Front combination lamp	Parking/Cornering lamp	3157	27/7
	Front sidemarker lamp	194	3.8
Rear combination lamp	Turn signal lamp	3156	27
	Stop/Tail lamp	3157	27/7
	Rear sidemarker lamp	168	5
Back-up lamp		3156	27
License plate lamp		194	3.8
High-mounted stop lamp		912	12.8

Interior Lamp

NDEL0141S03

Item	ANSI #	Wattage (W)
Map lamp	578	10
Personal lamp	578	10
Room lamp	211-2	12

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
1STSIG	AT	A/T 1ST Signal
2NDSIG	AT	A/T 2ND Signal
3RDSIG	AT	A/T 3RD Signal
4THSIG	AT	A/T 4TH Signal
A/C, A	HA	Auto Air Conditioner
A/C, M	HA	Manual Air Conditioner
AAC/V	EC	IACV-AAC Valve
ABS	BR	Anti-lock Brake System
AP/SEN	EC	Absolute Pressure Sensor
ASCD	EL	Automatic Speed Control Device
AT/C	EC	A/T Control
ATDIAG	EC	A/T Diagnosis Communication Line
AUDIO	EL	Audio
AUT/DP	EL	Automatic Drive Positioner
BA/FTS	AT	A/T Fluid Temperature Sensor Circuit
BACK/L	EL	Back-up Lamp
BYPS/V	EC	Vacuum Cut Valve Bypass Valve
CANI/V	EC	EVAP Canister Purge Control Solenoid Valve
CHARGE	SC	Charging System
CHIME	EL	Warning Chime
CIGAR	EL	Cigarette Lighter
CKPS	EC	Crankshaft Position Sensor (OBD)
COOL/F	EC	Cooling Fan Control
CORNER	EL	Cornering Lamp
CMPS	EC	Camshaft Position Sensor
D/LOCK	EL	Power Door Lock
DEF	EL	Rear Window Defogger
DTRL	EL	Headlamp — With Daytime Light System —
ECTS	EC	Engine Coolant Temperature Sensor
EGR/TS	EC	EGR Temperature Sensor
EGRC/V	EC	EGRC-solenoid Valve
EGRC1	EC	EGR Function
ENGSS	AT	Engine Speed Signal
F/PUMP	EC	Fuel Pump Control
FICD	EC	IACV-FICD Solenoid Valve
FRO2	EC	Front Heated Oxygen Sensor
FRO2/H	EC	Front Heated Oxygen Sensor Heater
FTS	AT	A/T Fluid Temperature Sensor
FUEL	EC	Fuel Injection System Function
H/LAMP	EL	Headlamp
H/MIRR	EL	Heated Mirror
HP/SW	EC	Air Conditioning High Pressure Switch
HORN	EL	Horn
IATS	EC	Intake Air Temperature Sensor
IGN/SG	EC	Ignition Signal
ILL	EL	Illumination
INJECT	EC	Injector
INT/L	EL	Interior, Spot, and Tailgate Lamps
KS	EC	Knock Sensor
LPSV	AT	Line Pressure Solenoid Valve
MAFS	EC	Mass Air Flow Sensor
MAIN	AT	Main Power Supply and Ground Circuit
MAIN	EC	Main Power Supply and Ground Circuit
METER	EL	Speedometer, Tachometer, Temp., Oil, and Fuel Gauges
MIL/DL	EC	MIL and Data Link Connectors
MIRROR	EL	Door Mirror
MULTI	EL	Multi-remote Control System
NONDTC	AT	Non-detectable Items
OVRCSV	AT	Overrun Clutch Solenoid Valve
PGC/V	EC	EVAP Canister Purge Volume Control Solenoid Valve
PNP/SW	AT	Park/Neutral Position Switch
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

Code	Section	Wiring Diagram Name
RRO2	EC	Rear Heated Oxygen Sensor
RRO2/H	EC	Rear Heated Oxygen Sensor Heater
S/SIG	EC	Start Signal
SEAT	EL	Power Seat
SECU	EL	Smart Entrance Control Unit
SHIFT	AT	A/T Shift Lock System
SROOF	EL	Sunroof
SRS	RS	Supplemental Restraint System
SSV/A	AT	Shift Solenoid Valve A
SSV/B	AT	Shift Solenoid Valve B
START	SC	Starting System
STOP/L	EL	Stop lamp
SW/V	EC	MAP/BARO Switch Solenoid Valve
TAIL/L	EL	Parking, License and Tail Lamps
TCCSIG	AT	A/T TCC Signal (Lock up)
TCV	AT	Torque Converter Clutch Solenoid Valve
TFTS	EC	Tank Fuel Temperature Sensor
THEFT	EL	Theft Warning System
TP/SW	EC	Throttle Position Switch
TPS	AT	Throttle Position Sensor
TPS	EC	Throttle Position Sensor
TRNSMT	EL	Integrated HOMELINK® Transmitter
T/TOW	EL	Trailer Tow
TURN	EL	Turn Signal and Hazard Warning Lamps
VENT/V	EC	EVAP Canister Vent Control Valve
VSS	EC	Vehicle Speed Sensor
VSSAT	AT	Vehicle Speed Sensor A/T (Revolution Sensor)
VSSMTR	AT	Vehicle Speed Sensor MTR
WARN	EL	Warning Lamps
WINDOW	EL	Power Window
WIP/R	EL	Rear Wiper and Washer (Except for Glass Hatch Model)
WIP/R	EL	Rear Wiper and Washer (For Glass Hatch Model)
WIPER	EL	Front Wiper and Washer