

# ELECTRICAL SYSTEM

## SECTION **EL**

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## PRECAUTIONS

Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

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### Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

NDEL0001

The Supplemental Restraint System such as "AIR BAG" and "SEAT BELT PRE-TENSIONER" used along with a seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. The Supplemental Restraint System consists of a driver air bag module (located in the center of the steering wheel), front passenger air bag module (located on the instrument panel on passenger side), seat belt pre-tensioners, 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. For removal of Spiral Cable and Air Bag Module, see the RS Section.
- Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. Spiral cable and wiring harnesses (except "SEAT BELT PRE-TENSIONER") covered with yellow insulation either just before the harness connectors or for the complete harness are related to the SRS.

### Wiring Diagrams and Trouble Diagnosis

NDEL0002

When you read wiring diagrams, refer to the followings:

- **GI-10**, "HOW TO READ WIRING DIAGRAMS"
- **EL-12**, "POWER SUPPLY ROUTING" for power distribution circuit

When you perform trouble diagnosis, refer to the followings:

- **GI-33**, "How to Follow Test Group in Trouble Diagnoses"
- **GI-22**, "HOW TO PERFORM EFFICIENT DIAGNOSIS FOR AN ELECTRICAL INCIDENT"

Check for any Service bulletins before servicing the vehicle.



## Description

NDEL0003

NDEL0003S01

### HARNESS CONNECTOR (TAB-LOCKING TYPE)

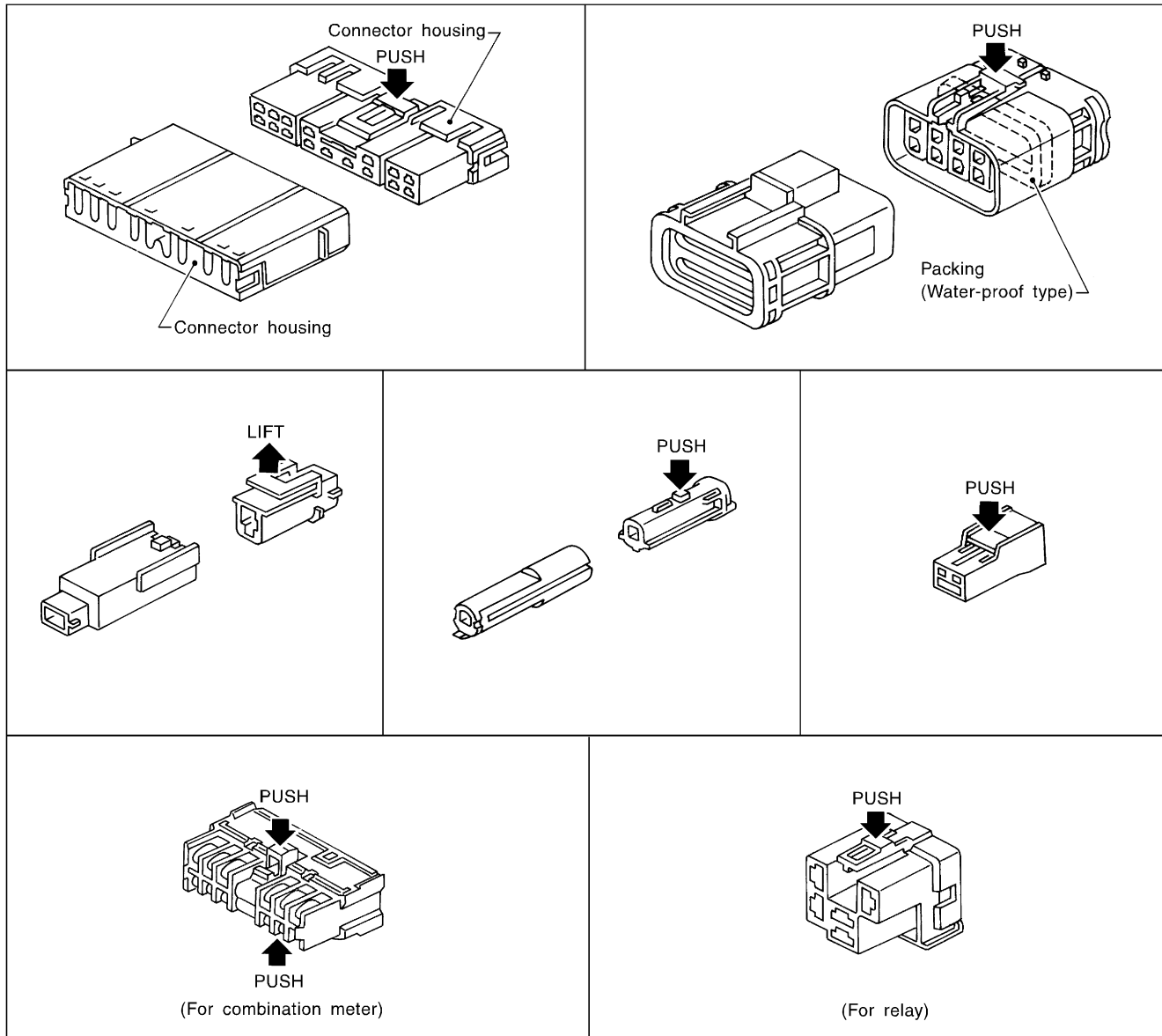
- The tab-locking type connectors help prevent accidental looseness or disconnection.
- The tab-locking type connectors are disconnected by pushing or lifting the locking tabs. Refer to illustration below.

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]



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# HARNESS CONNECTOR

Description (Cont'd)

## HARNESS CONNECTOR (SLIDE-LOCKING TYPE)

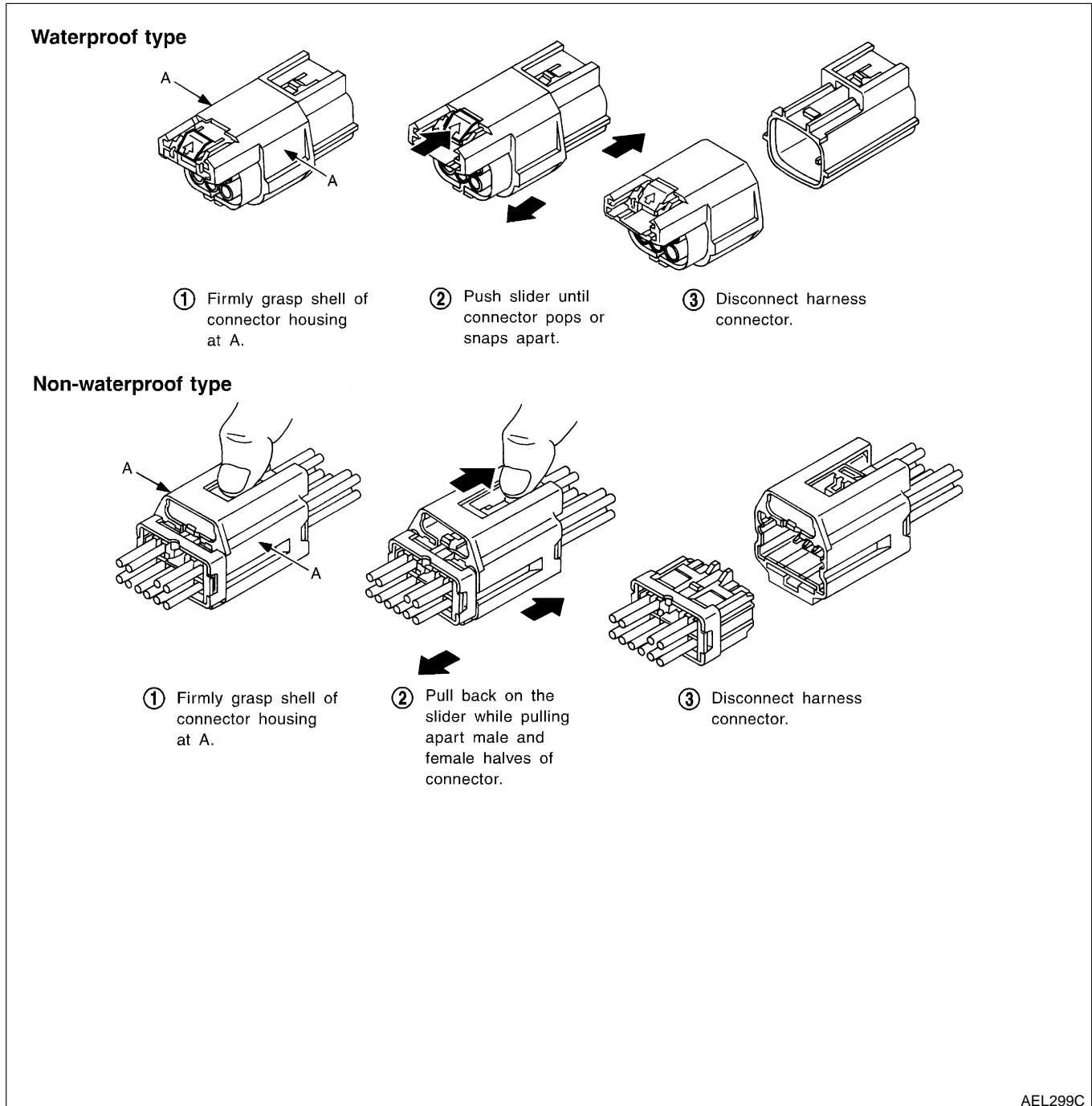
-NDEL0003S02

- 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]



AEL299C

# STANDARDIZED RELAY

Description

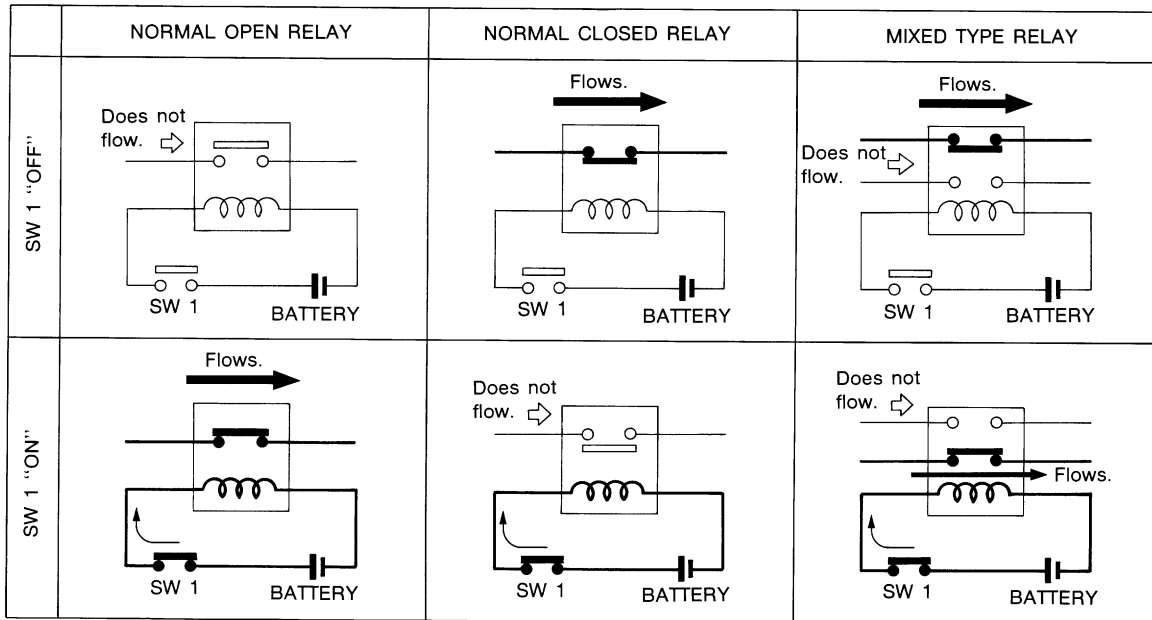
## Description

### NORMAL OPEN, NORMAL CLOSED AND MIXED TYPE RELAYS

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

NDEL0004

NDEL0004S01

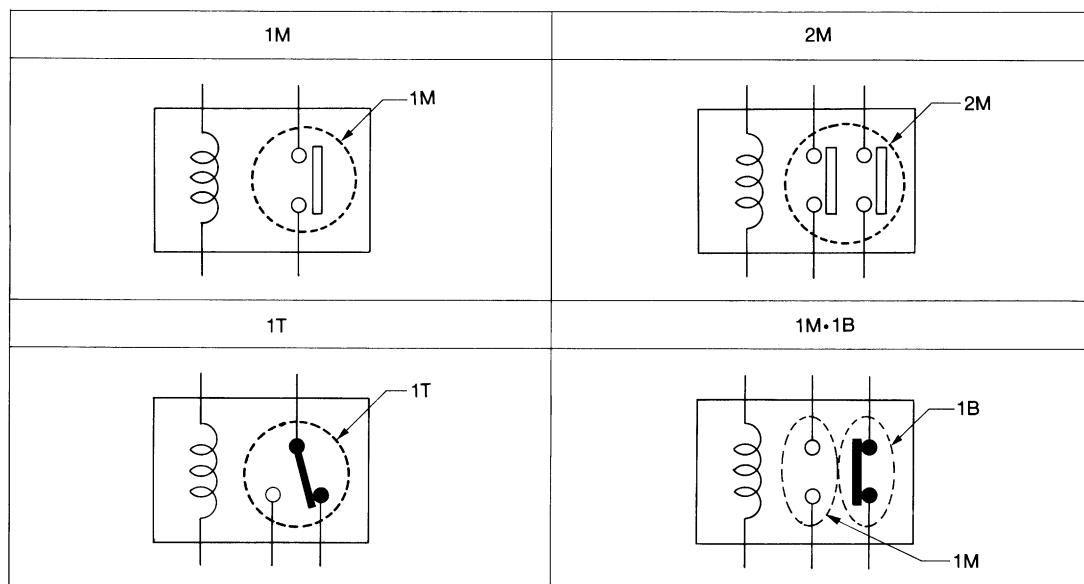


SEL881H

### TYPE OF STANDARDIZED RELAYS

NDEL0004S02

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



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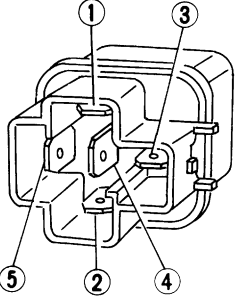
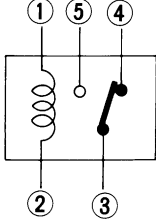
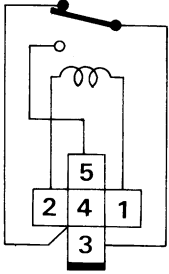
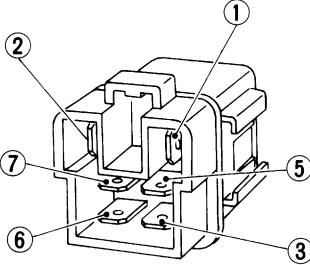
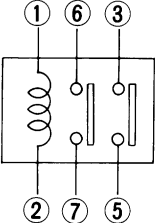
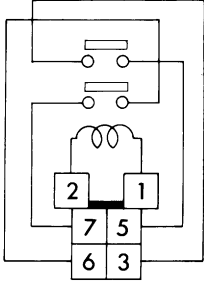
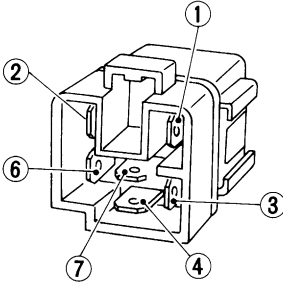
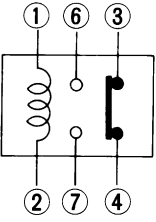
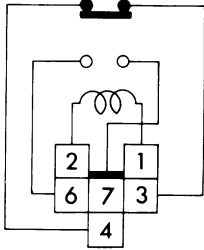
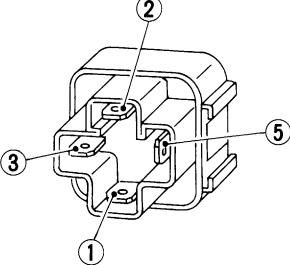
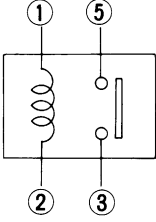
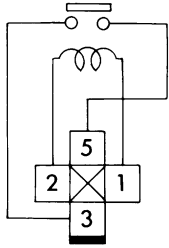
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# STANDARDIZED RELAY

Description (Cont'd)

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

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

AEL174C

# POWER SUPPLY ROUTING

NOTE:

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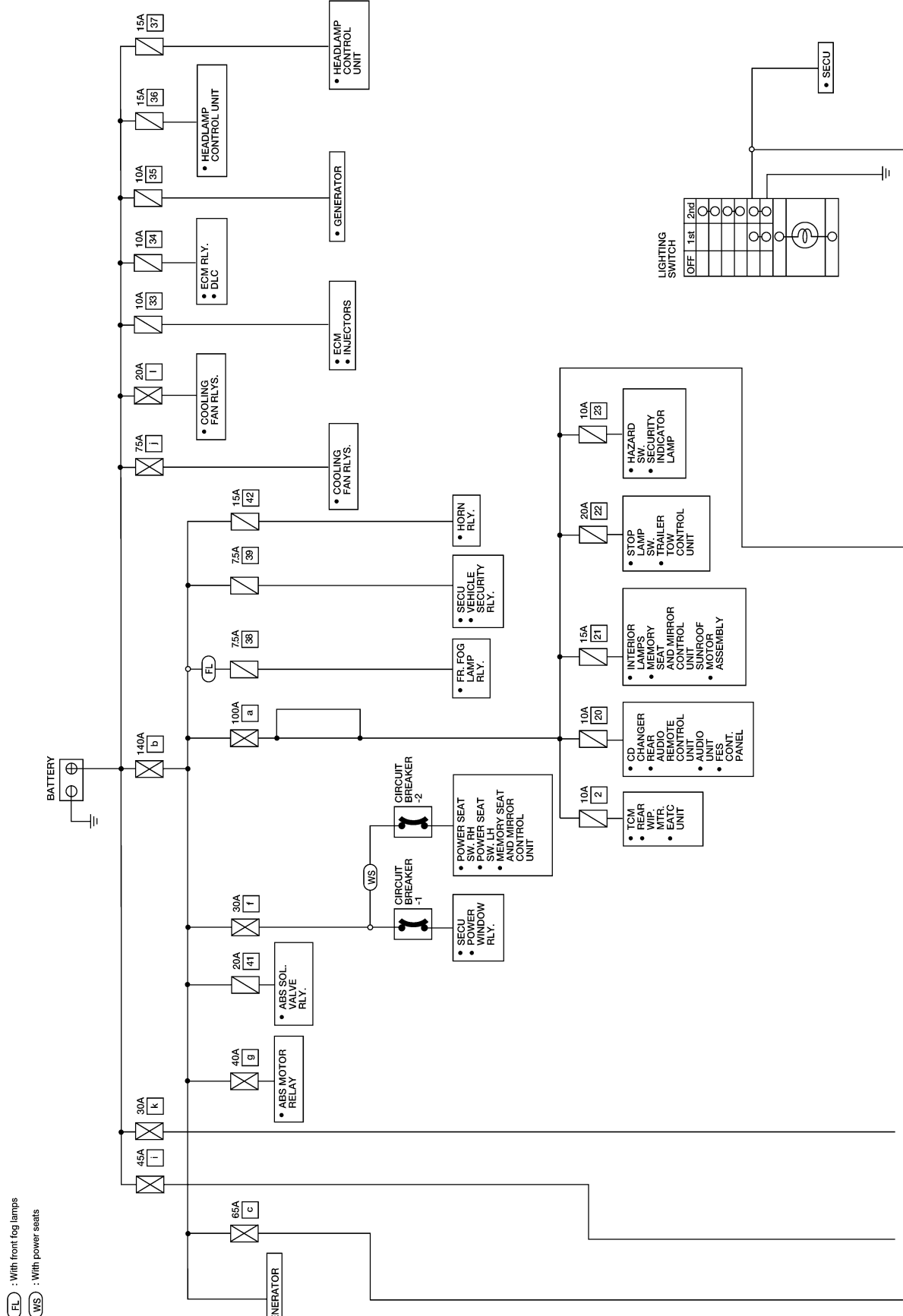
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# POWER SUPPLY ROUTING

Schematic

## Schematic

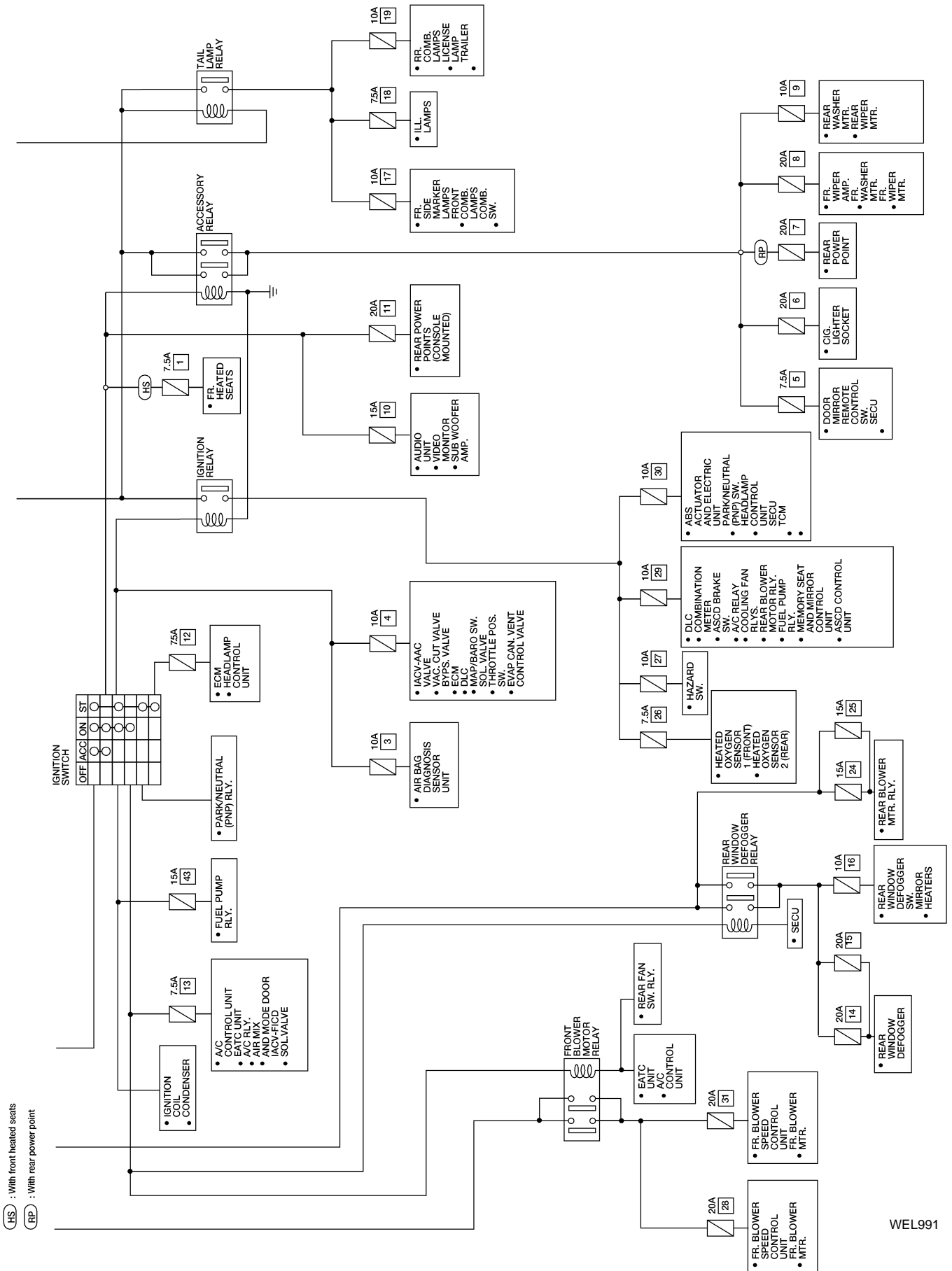
NDEL0005



WEL978A

# POWER SUPPLY ROUTING

Schematic (Cont'd)



# POWER SUPPLY ROUTING

Wiring Diagram — POWER —

## Wiring Diagram — POWER —

### BATTERY POWER SUPPLY — IGNITION SW. IN ANY POSITION

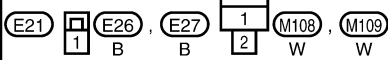
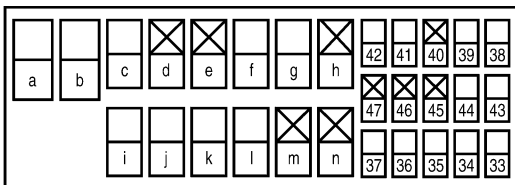
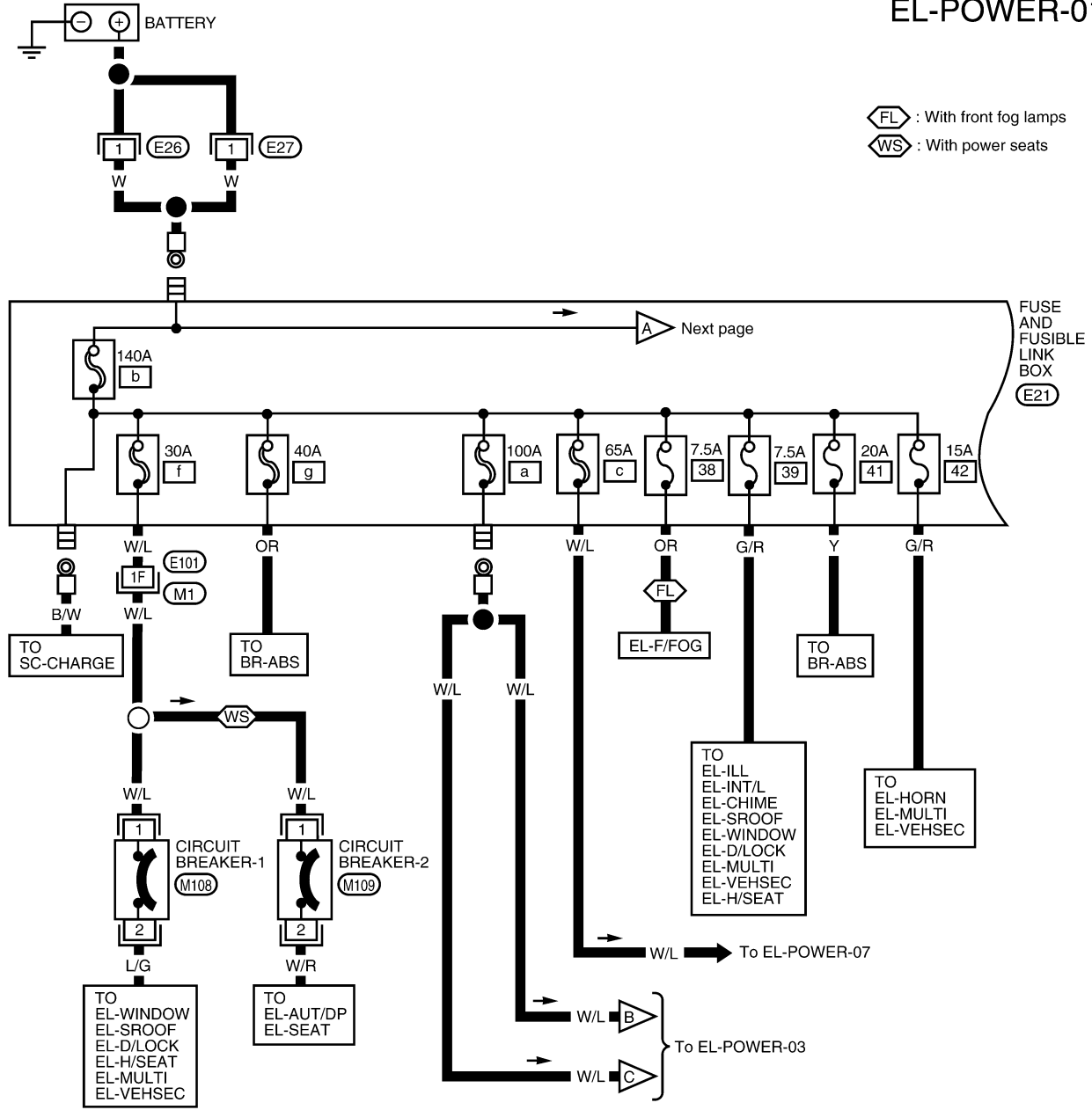
NDEL0006

NDEL0006S01

**NOTE:**

For detailed ground distribution information, refer to "GROUND DISTRIBUTION", EL-20.

### EL-POWER-01



Refer to the following.  
 (M1), (E101) - SUPER MULTIPLE JUNCTION (SMJ)

WEL979A



# POWER SUPPLY ROUTING

Wiring Diagram — POWER — (Cont'd)

## EL-POWER-02

GI

MA

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RS

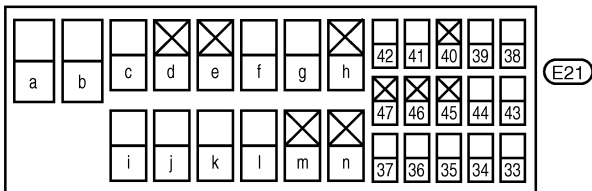
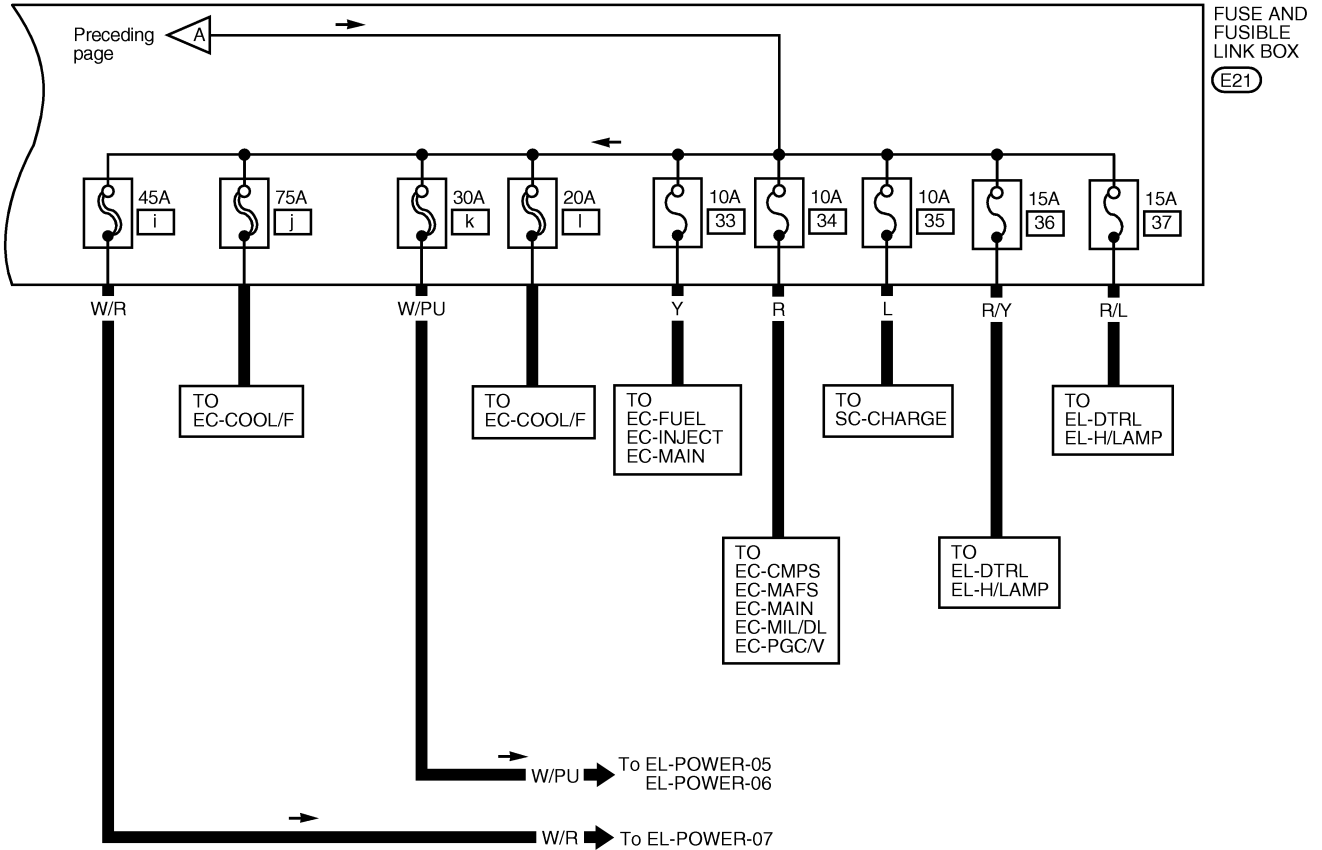
BT

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**EL**

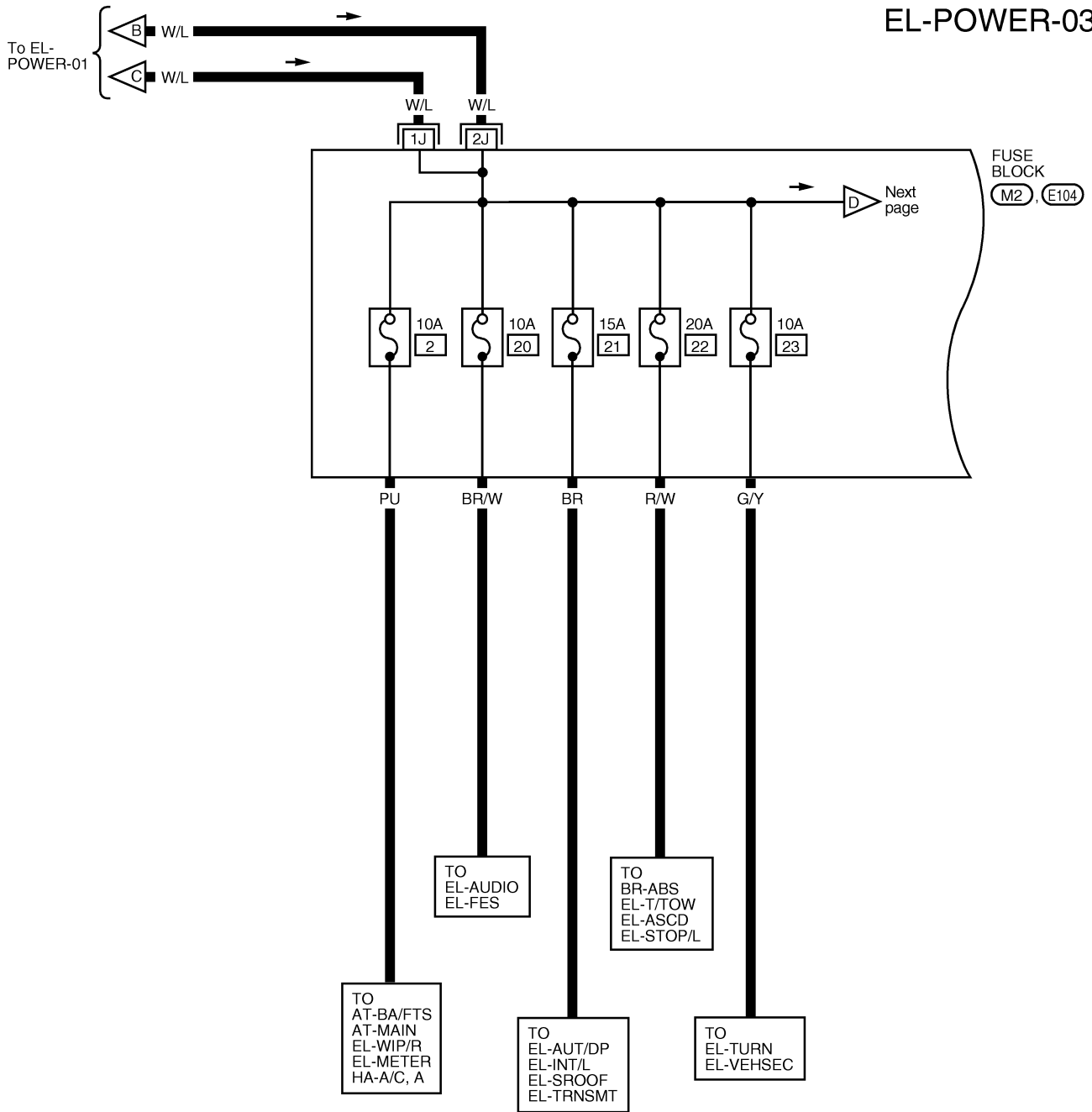
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# POWER SUPPLY ROUTING

Wiring Diagram — POWER — (Cont'd)

EL-POWER-03



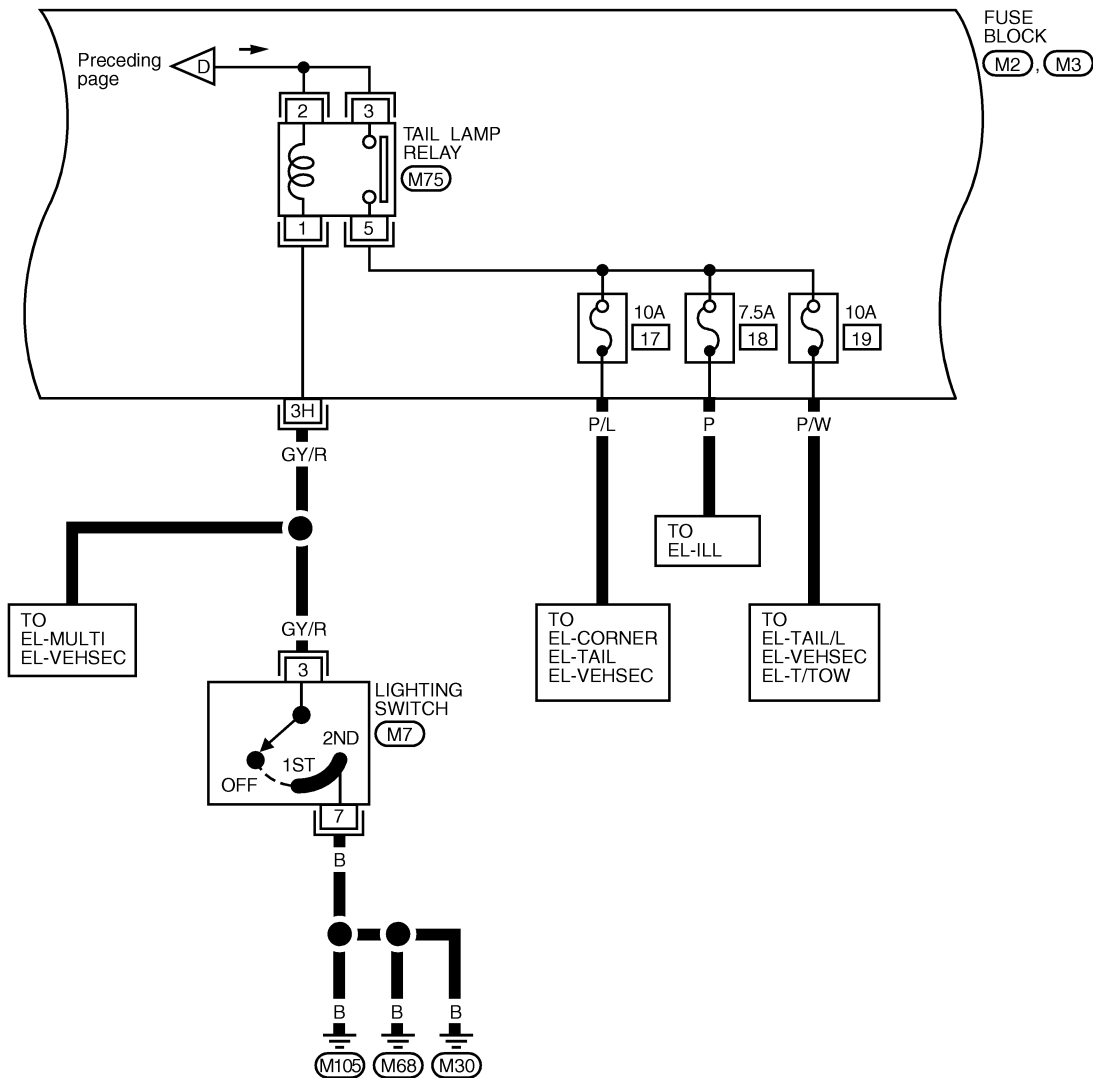
Refer to the following.  
 M2, E104 - FUSE BLOCK

WEL985

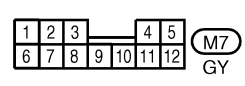
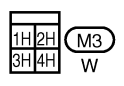
# POWER SUPPLY ROUTING

Wiring Diagram — POWER — (Cont'd)

## EL-POWER-04



GI  
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Refer to the following.  
M2, M3 - FUSE BLOCK

EL  
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WEL986

# POWER SUPPLY ROUTING

Wiring Diagram — POWER — (Cont'd)

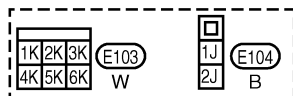
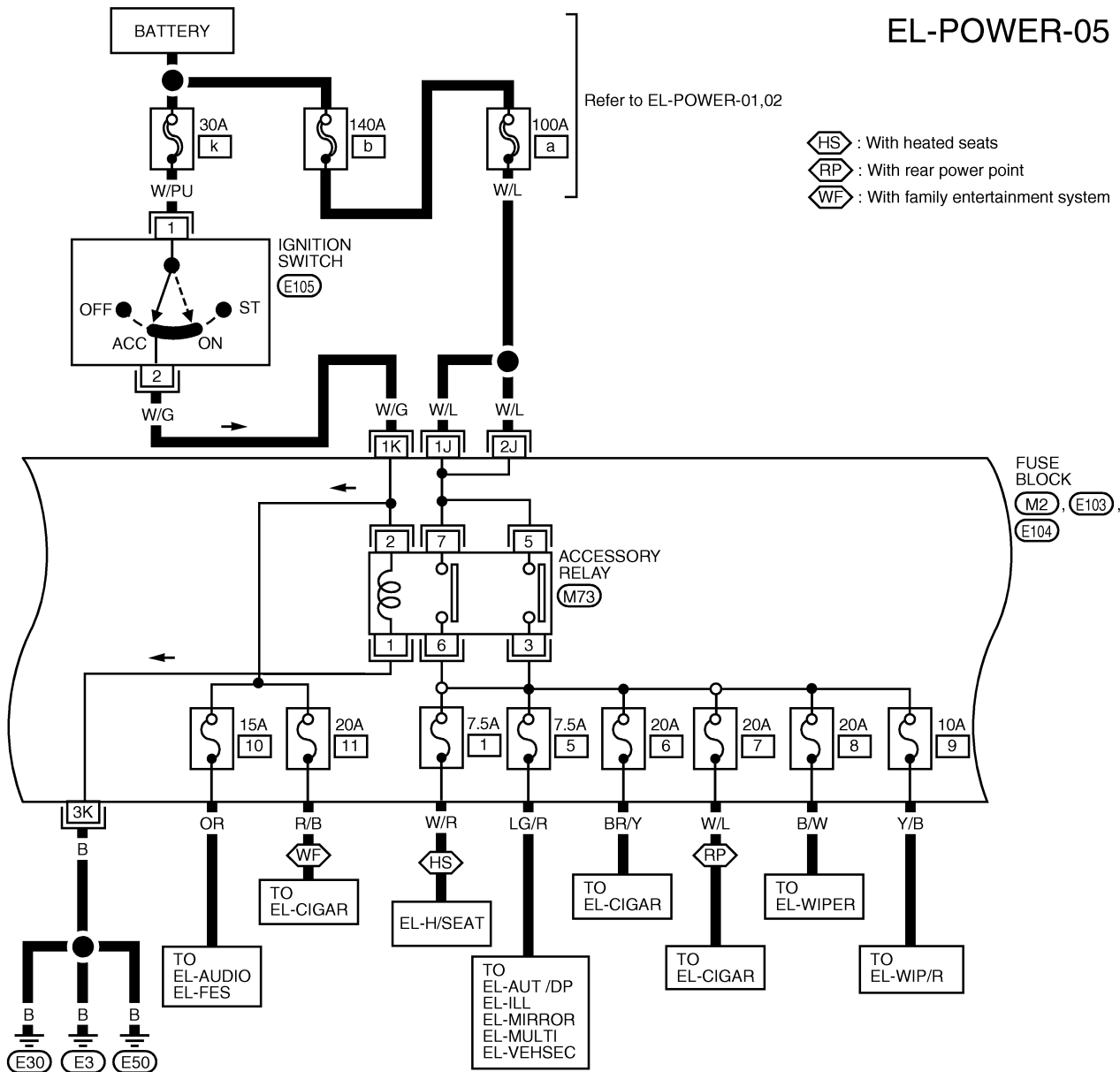
## ACCESSORY POWER SUPPLY — IGNITION SW. IN ACC OR ON

=NDEL0006S02

### NOTE:

For detailed ground distribution information, refer to "GROUND DISTRIBUTION", EL-20.

### EL-POWER-05



Refer to the following.  
 (M2), (E103), (E104) - FUSE BLOCK

WEL987

# POWER SUPPLY ROUTING

Wiring Diagram — POWER — (Cont'd)

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

=NDEL0006S03

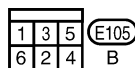
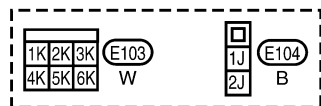
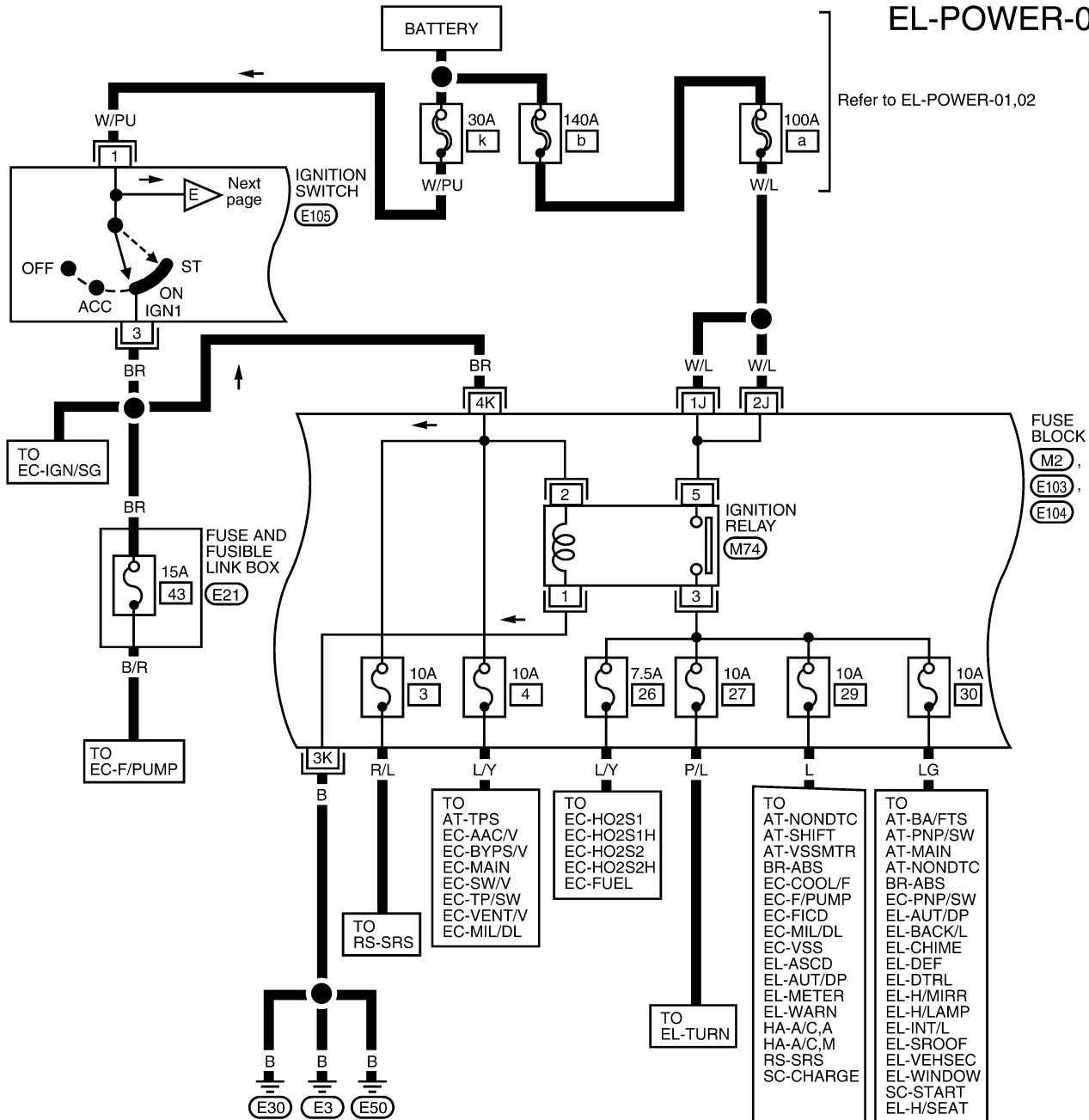
### NOTE:

For detailed ground distribution information, refer to "GROUND DISTRIBUTION", EL-20.

GI  
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SC

### EL-POWER-06

Refer to EL-POWER-01,02



Refer to the following.  
 (M2), (E103), (E104) - FUSE BLOCK  
 (E21) - FUSE AND FUSIBLE LINK BOX

EL

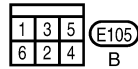
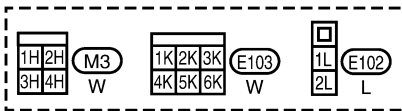
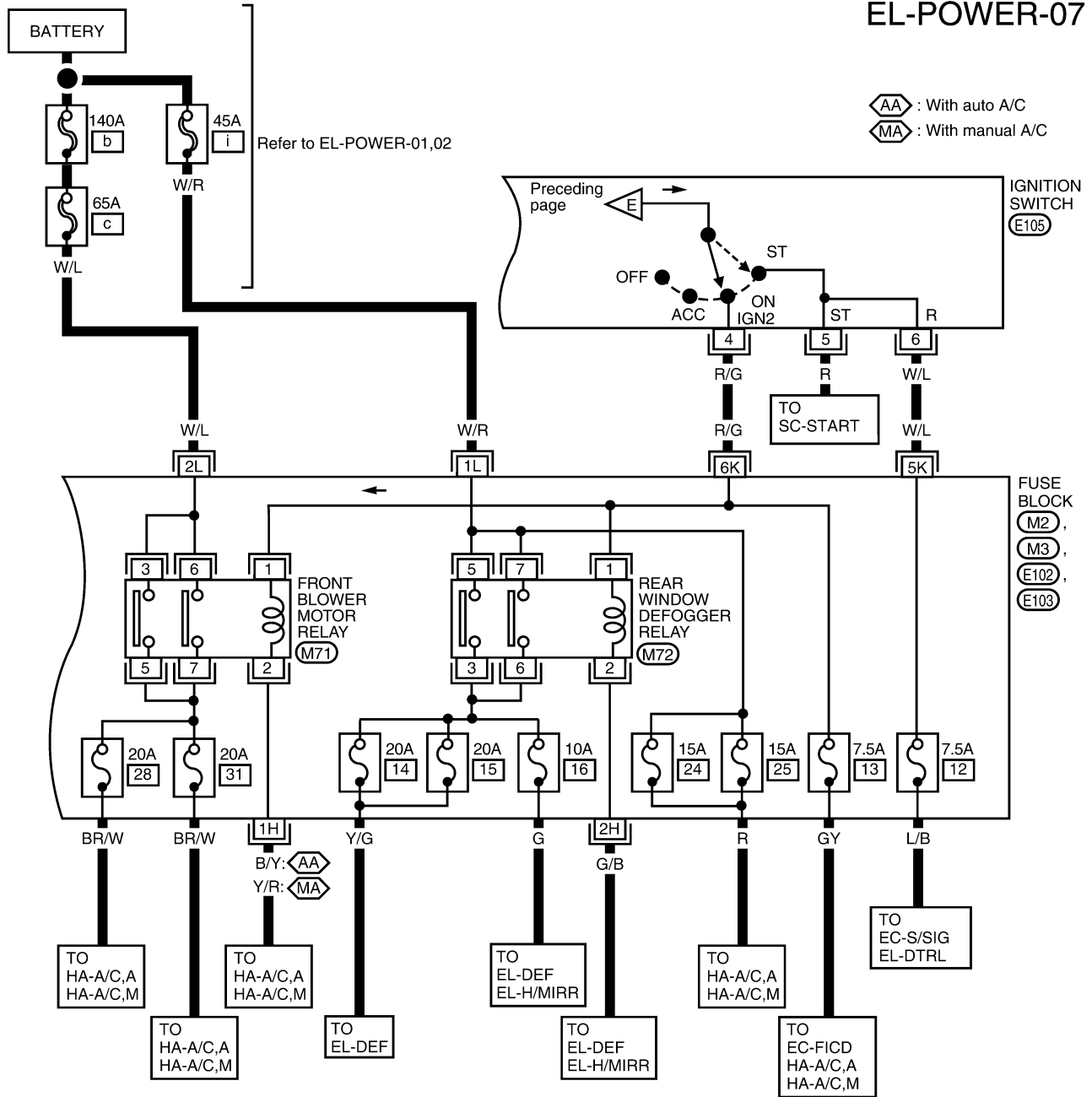
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WEL885A

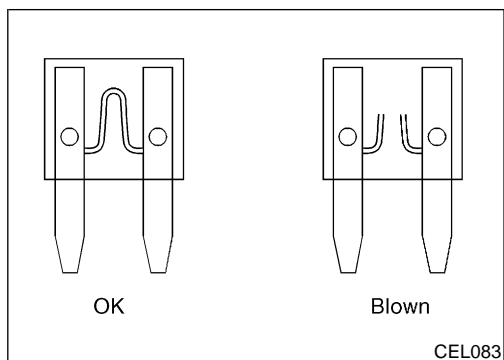
# POWER SUPPLY ROUTING

Wiring Diagram — POWER — (Cont'd)

EL-POWER-07



Refer to the following.  
 (M2), (M3), (E102), (E103)  
 FUSE BLOCK



## Inspection

### FUSE

NDEL0007

NDEL0007S01

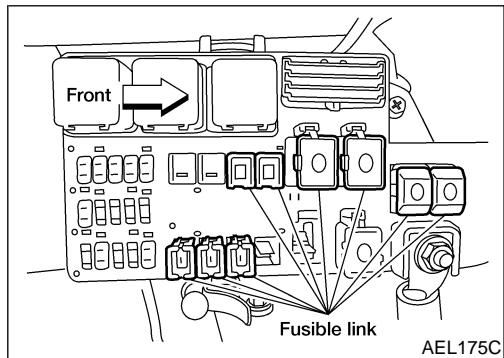
- If fuse is blown, be sure to eliminate cause of problem before installing new fuse.
- Use fuse of specified rating. Never use fuse of more than specified rating.
- Do not partially install fuse; always insert it into fuse holder properly.
- Remove fuse for “ELECTRICAL PARTS (BAT)” if vehicle is not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

GI

MA

EM

LC



### 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.

EC

FE

AT

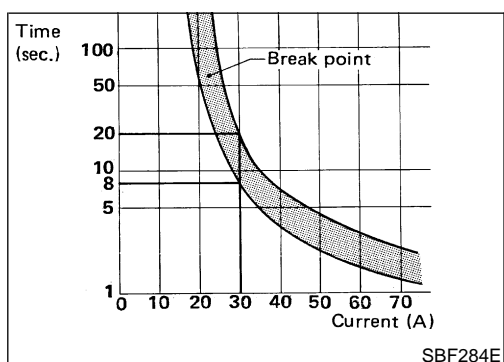
AX

SU

BR

ST

RS



### CIRCUIT BREAKER

NDEL0007S03

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

BT

HA

SC

EL

IDX

# GROUND

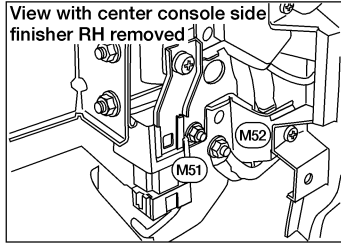
Ground Distribution

## Ground Distribution MAIN HARNESS

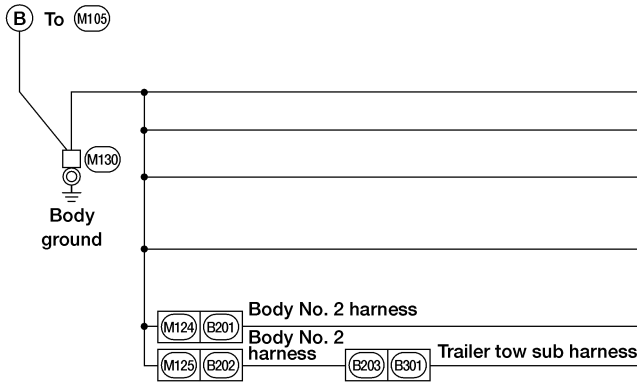
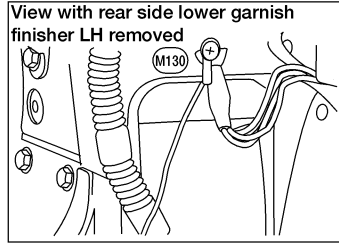
NDEL0008

NDEL0008S01

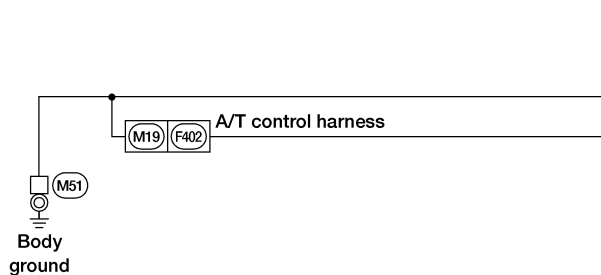
### Body ground



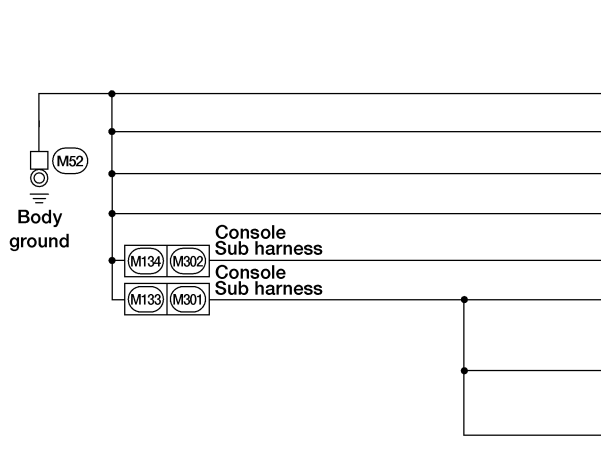
### Body ground



CONNECTOR NUMBER	CONNECT TO
(M120)	Rear power point (With rear power point)
(M123)	Sub woofer amplifier (With premium audio system)
(M129)	Trailer tow control unit (With trailer tow)
(M132)	Rear combination lamp LH (Terminal No. 4) <ul style="list-style-type: none"> <li>• Tail lamp</li> <li>• Stop lamp</li> <li>• Turn signal lamp</li> </ul>
(B205)	Fuel level sensor unit
(B302)	Trailer (With trailer tow)



CONNECTOR NUMBER	CONNECT TO
(M16)	Combination meter (Terminal No. 22)
(F301)	Vehicle speed sensor



CONNECTOR NUMBER	CONNECT TO
(M45)	Audio unit (Terminal No. 31)
(M45)	Audio unit (Terminal No. 36)
(M53)	C/D changer (With C/D changer)
(M137)	Video monitor (Terminal No. 3)
(M306)	Video cassette player (Terminal No. 1)
(M307)	Family entertainment system control panel (Terminal No. 4)
(M307)	Family entertainment system control panel (Terminal No. 8)
(M307)	Family entertainment system control panel (Terminal No. 11)

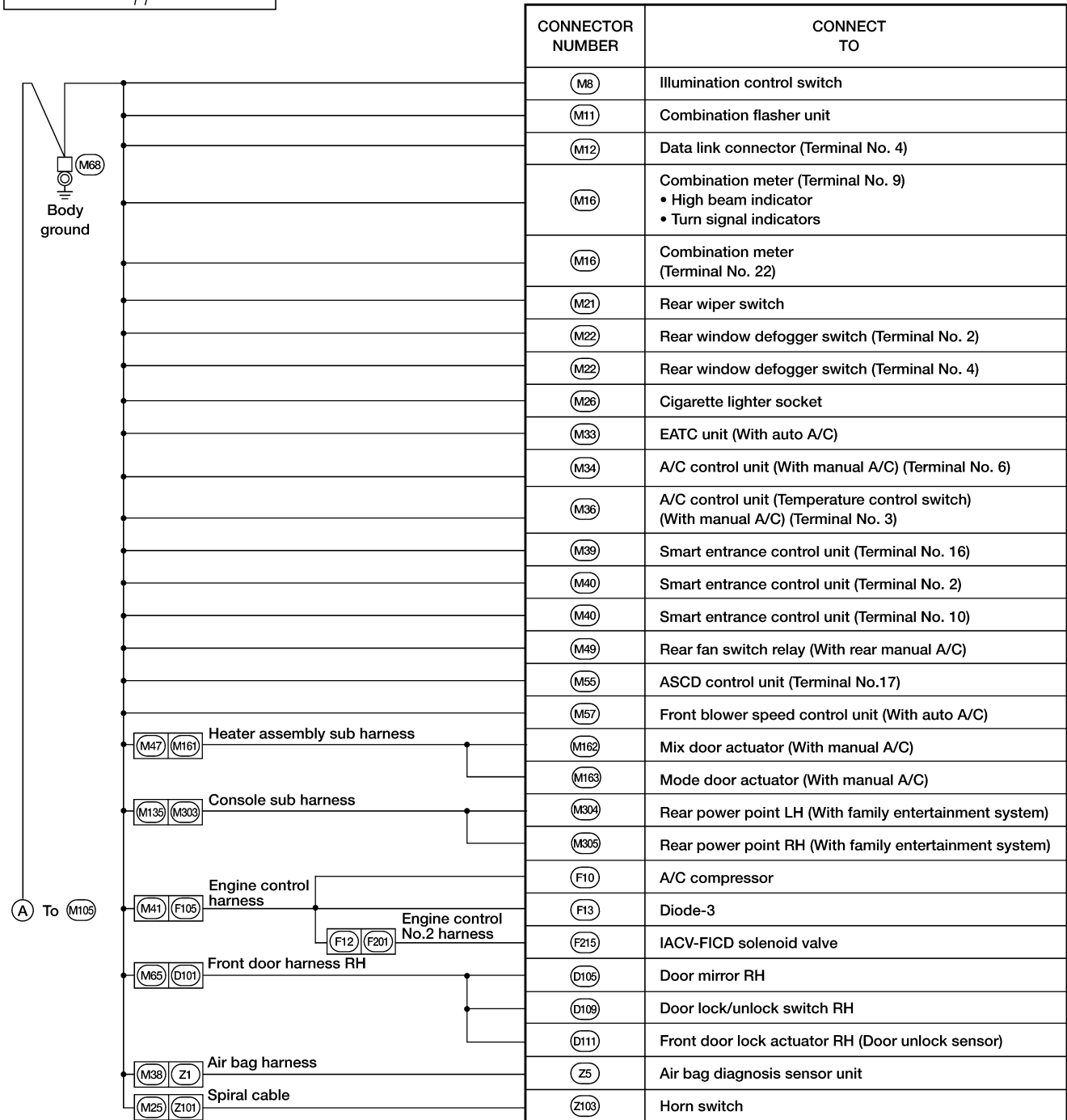
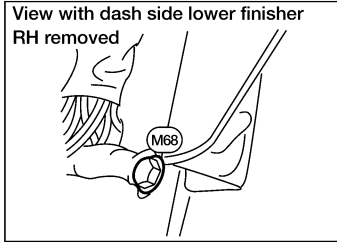
WEL996



# GROUND

Ground Distribution (Cont'd)

## Body ground



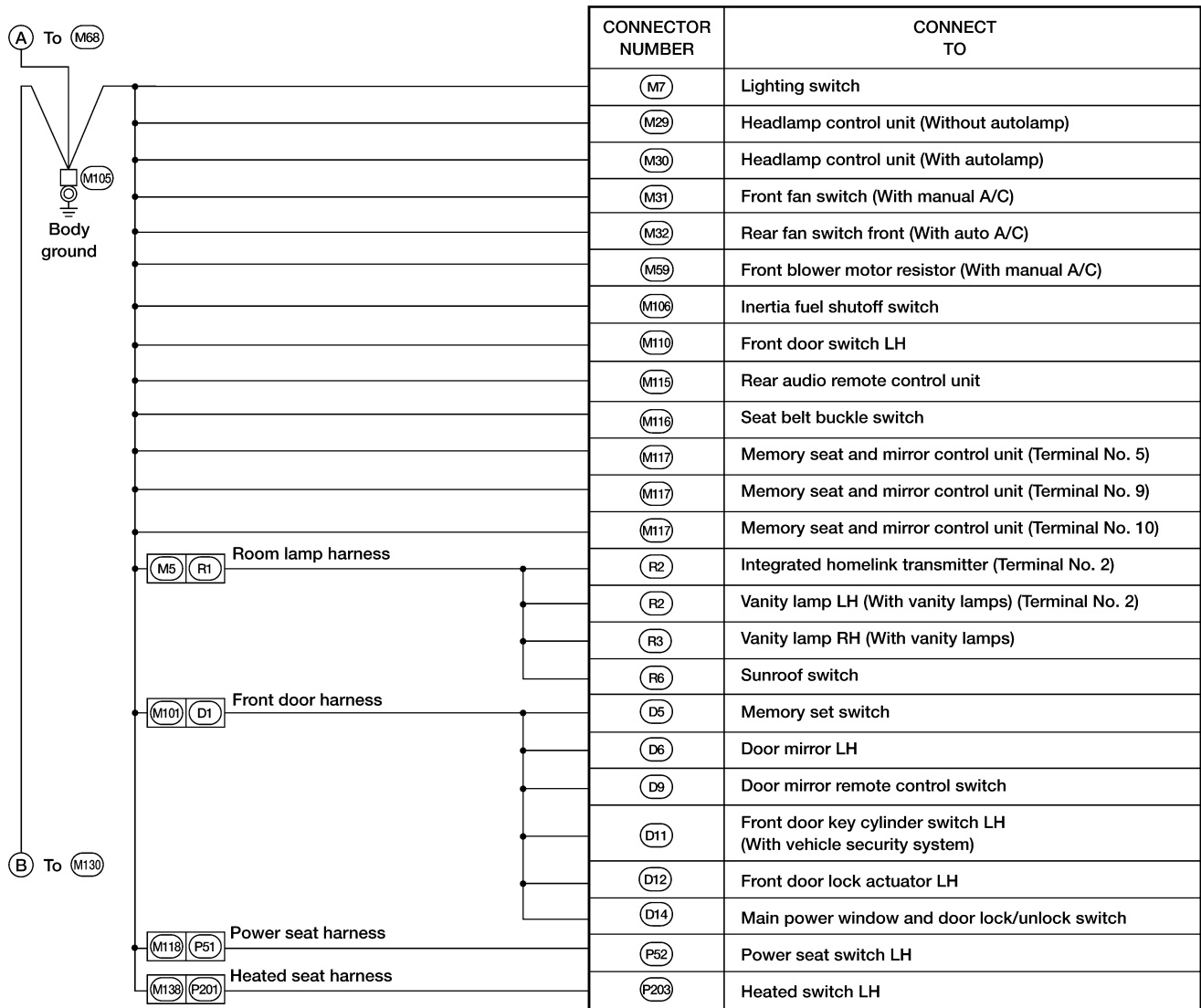
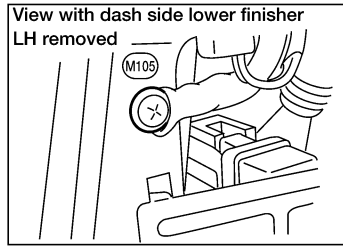
GI  
MA  
EM  
LC  
EC  
FE  
AT  
AX  
SU  
BR  
ST  
RS  
BT  
HA  
SC  
EL  
IDX

WEL997

# GROUND

## Ground Distribution (Cont'd)

### Body ground



# GROUND

Ground Distribution (Cont'd)

## ENGINE ROOM HARNESS

NDEL0008S02

GI

MA

EM

LC

EC

FE

AT

AX

SU

BR

ST

RS

BT

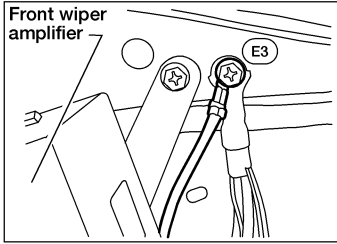
HA

SC

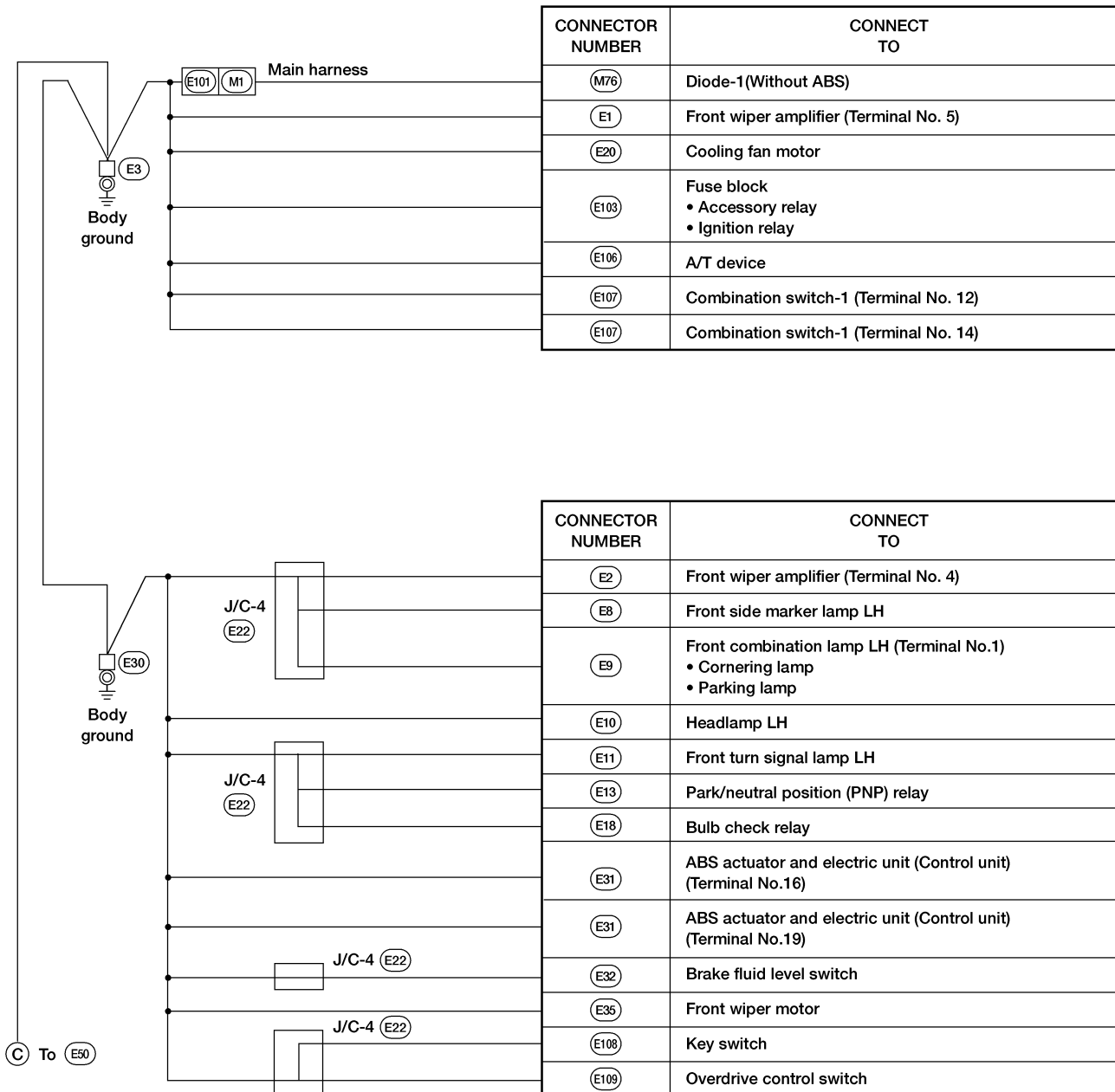
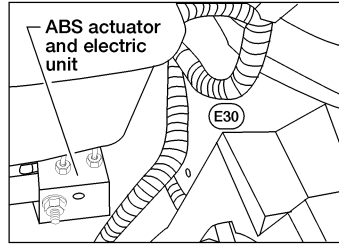
**EL**

IDX

### Body ground



### Body ground

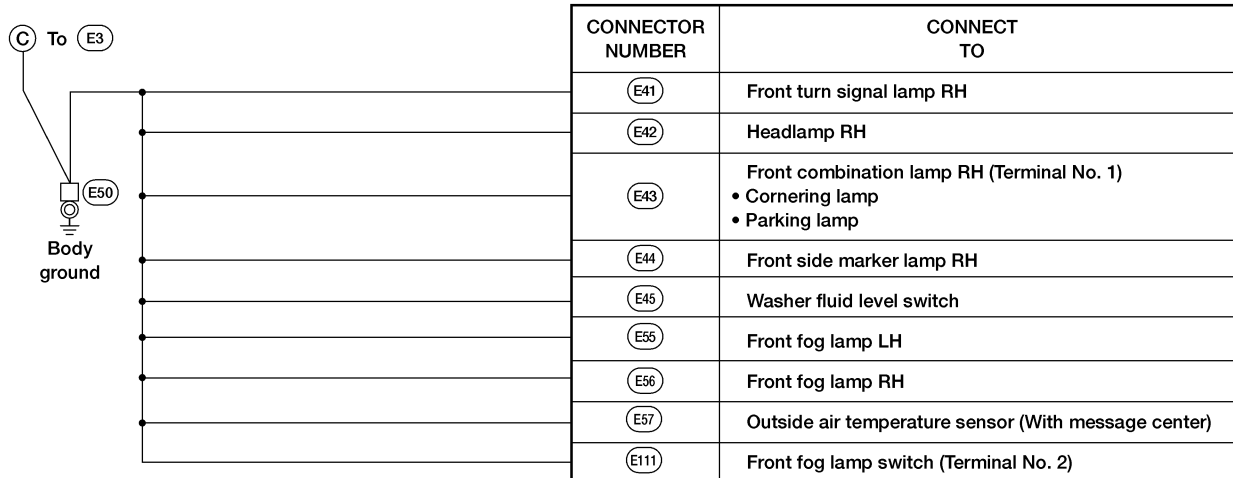
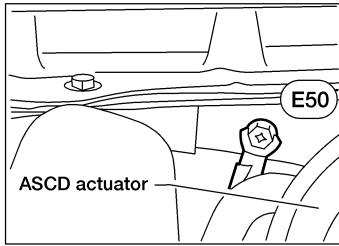


WEL992

# GROUND

## Ground Distribution (Cont'd)

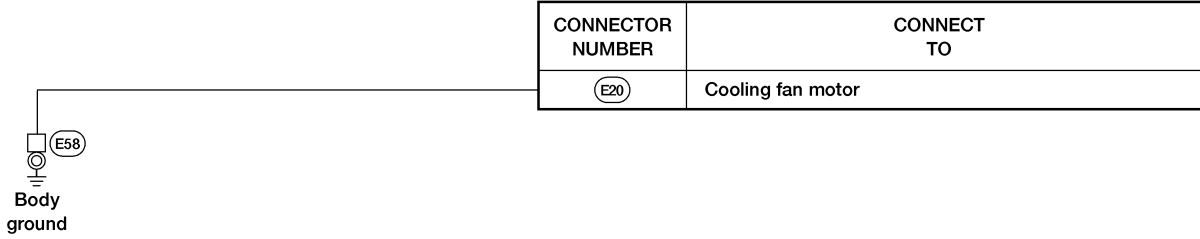
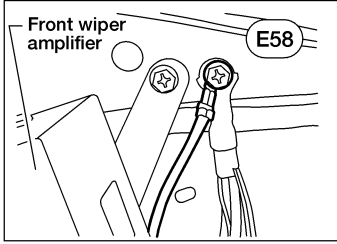
### Body ground



# GROUND

Ground Distribution (Cont'd)

## Body ground



GI

MA

EM

LC

EC

FE

AT

AX

SU

BR

ST

RS

BT

HA

SC

**EL**

IDX

LEL002A

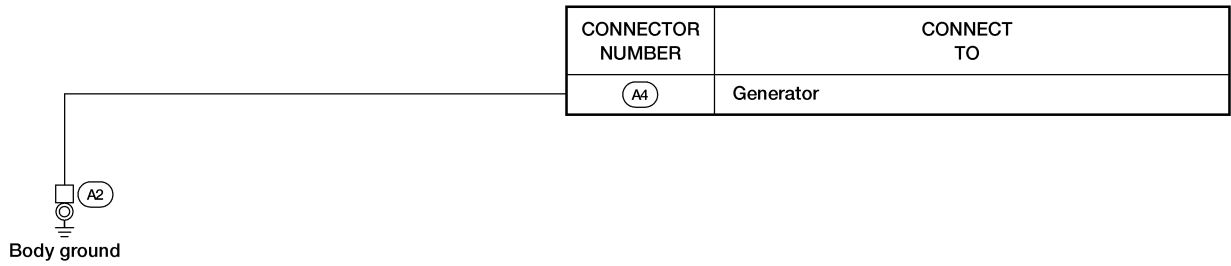
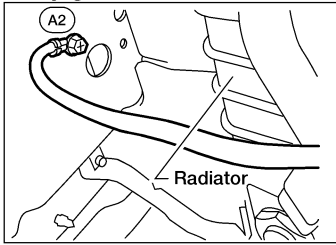
# GROUND

Ground Distribution (Cont'd)

## GENERATOR HARNESS

NDEL0008S03

### Body ground



WEL298

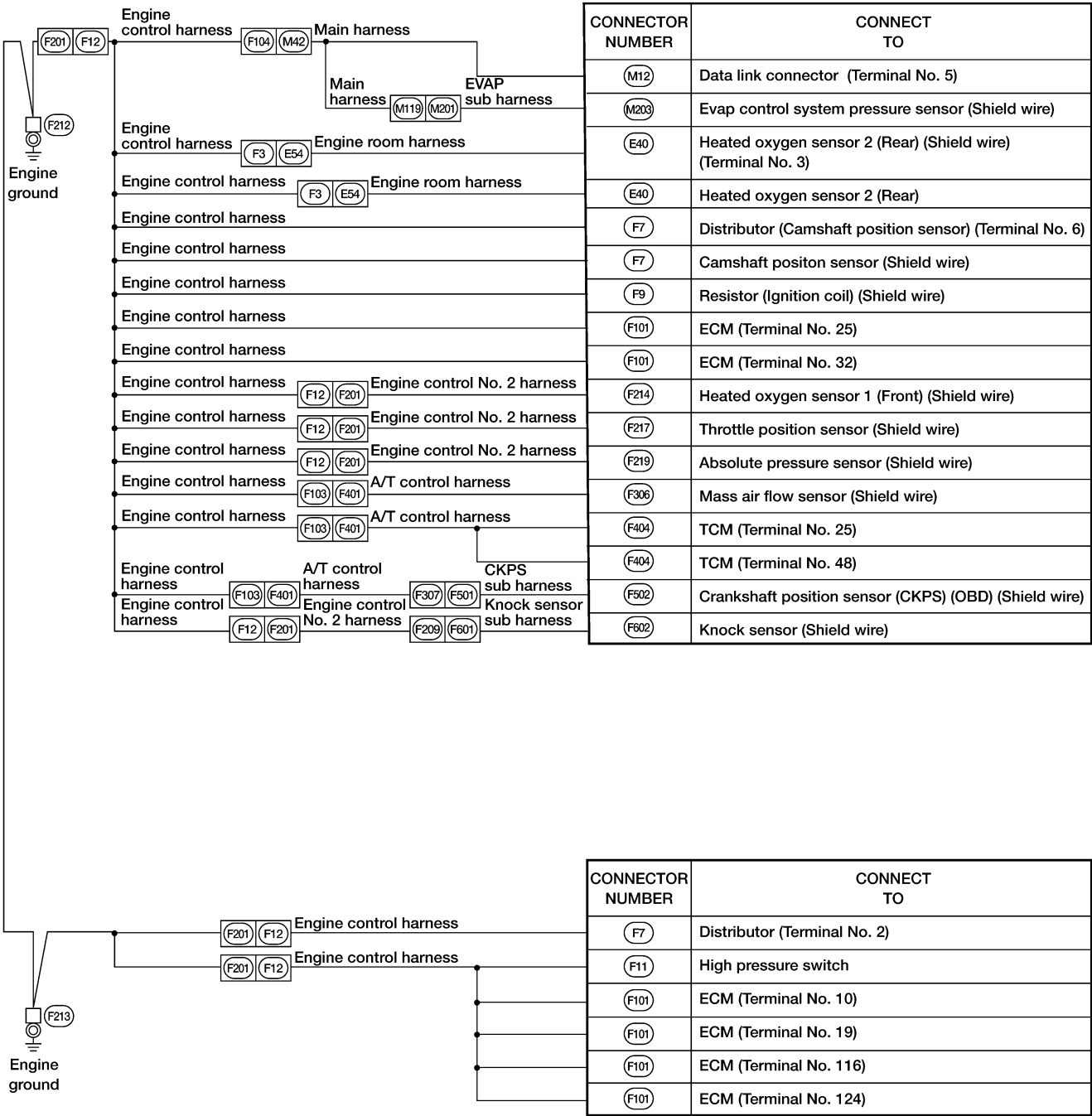
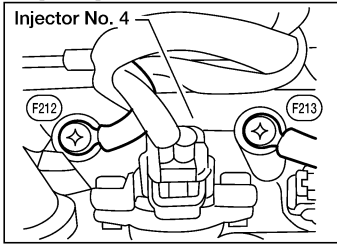
# GROUND

Ground Distribution (Cont'd)

## ENGINE CONTROL SUB HARNESS

NDEL0008S04

### Engine grounds



GI  
MA  
EM  
LC  
EC  
FE  
AT  
AX  
SU  
BR  
ST  
RS  
BT  
HA  
SC

**EL**

IDX

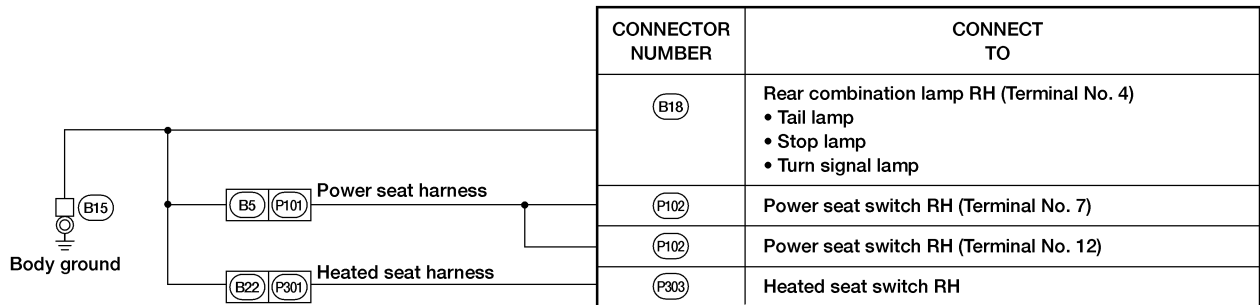
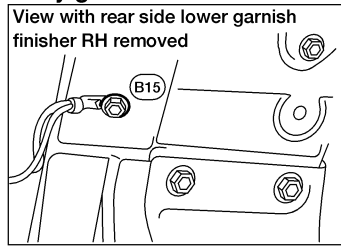
# GROUND

Ground Distribution (Cont'd)

## BODY NO. 2 HARNESS

NDEL0008S05

### Body ground



WEL994



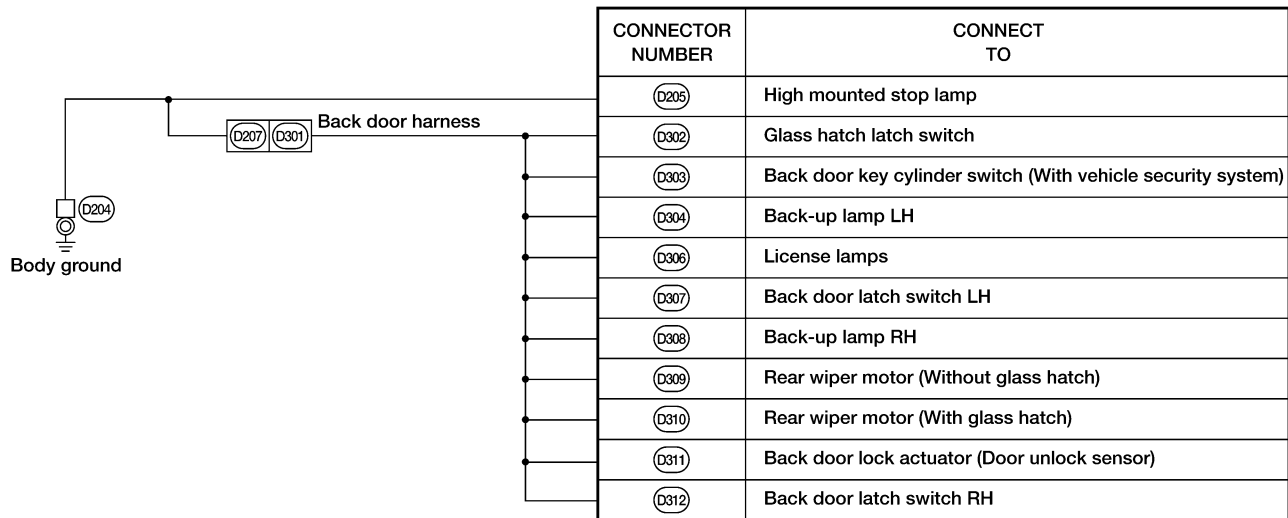
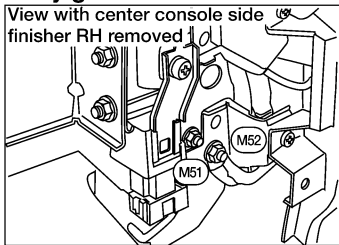
# GROUND

Ground Distribution (Cont'd)

## BACK DOOR NO. 2 HARNESS

NDEL0008S06

### Body ground



GI

MA

EM

LC

EC

FE

AT

AX

SU

BR

ST

RS

BT

HA

SC

**EL**

IDX

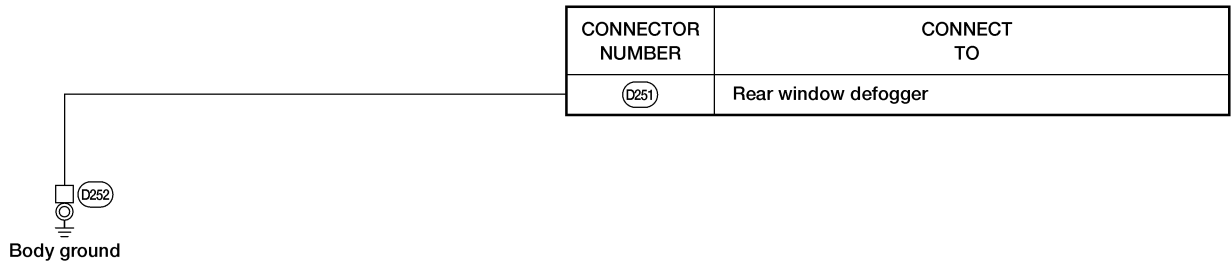
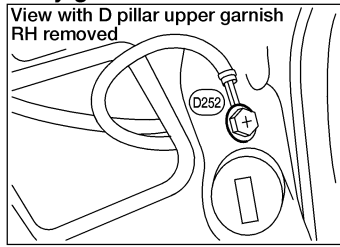
# GROUND

Ground Distribution (Cont'd)

## REAR DEFOGGER GROUND HARNESS

NDEL0008S07

### Body ground



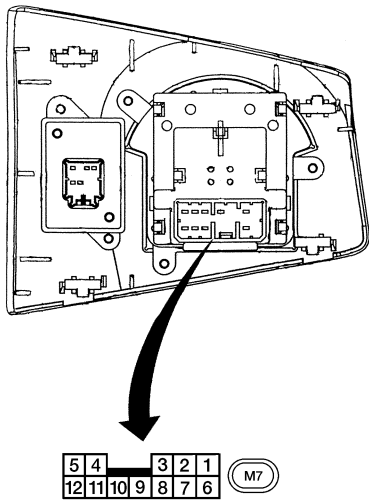
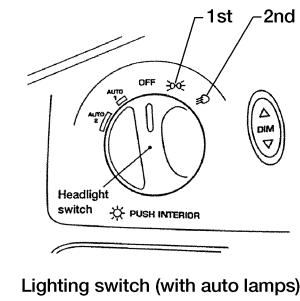
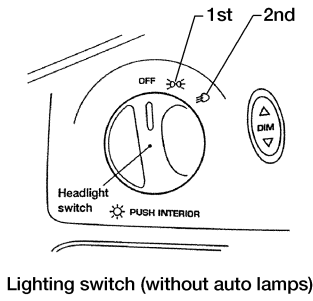
WEL302

# COMBINATION SWITCH

Check

## Check

NDEL0009



Lighting switch

	Off	1st	2nd	Auto 1	Auto 2
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					

Turn signal and cornering lamp switch

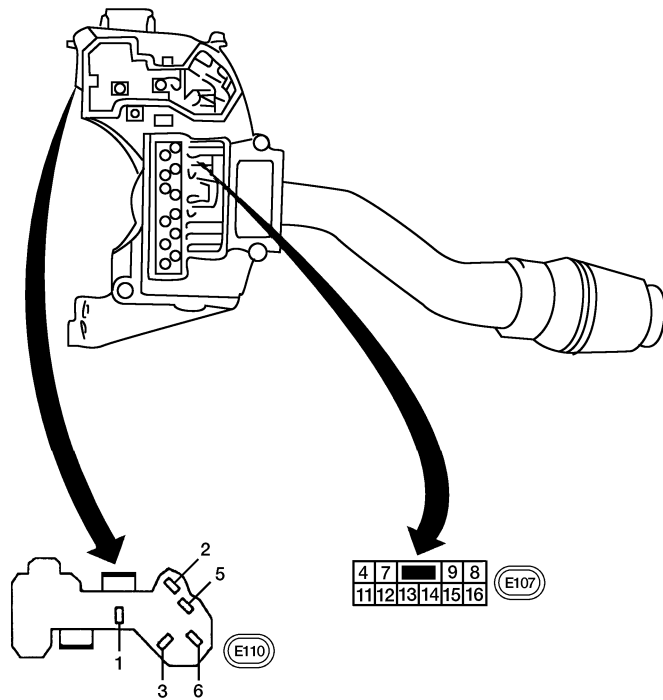
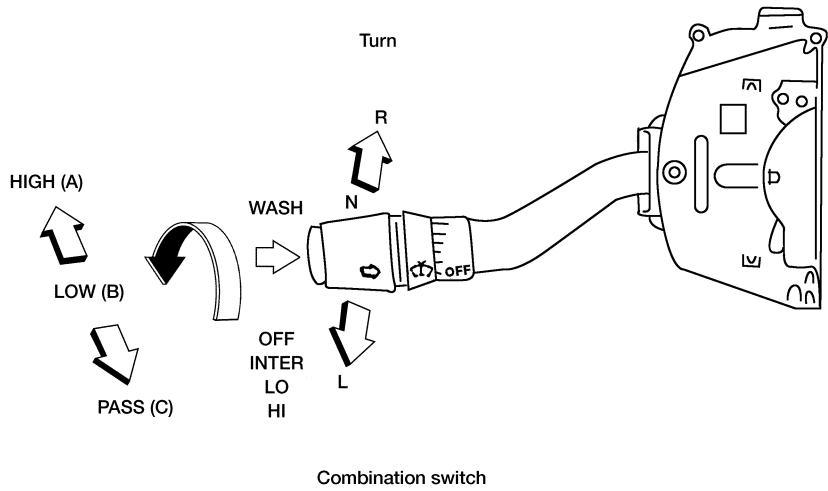
	L	N	R
1			
2			
3			
4			
5			
6			

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						



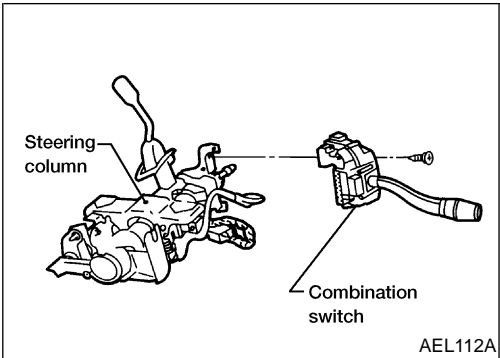
GI  
MA  
EM  
LC  
EC  
FE  
AT  
AX  
SU  
BR  
ST  
RS  
BT  
HA  
SC

EL

IDX

# COMBINATION SWITCH

Replacement



## Replacement

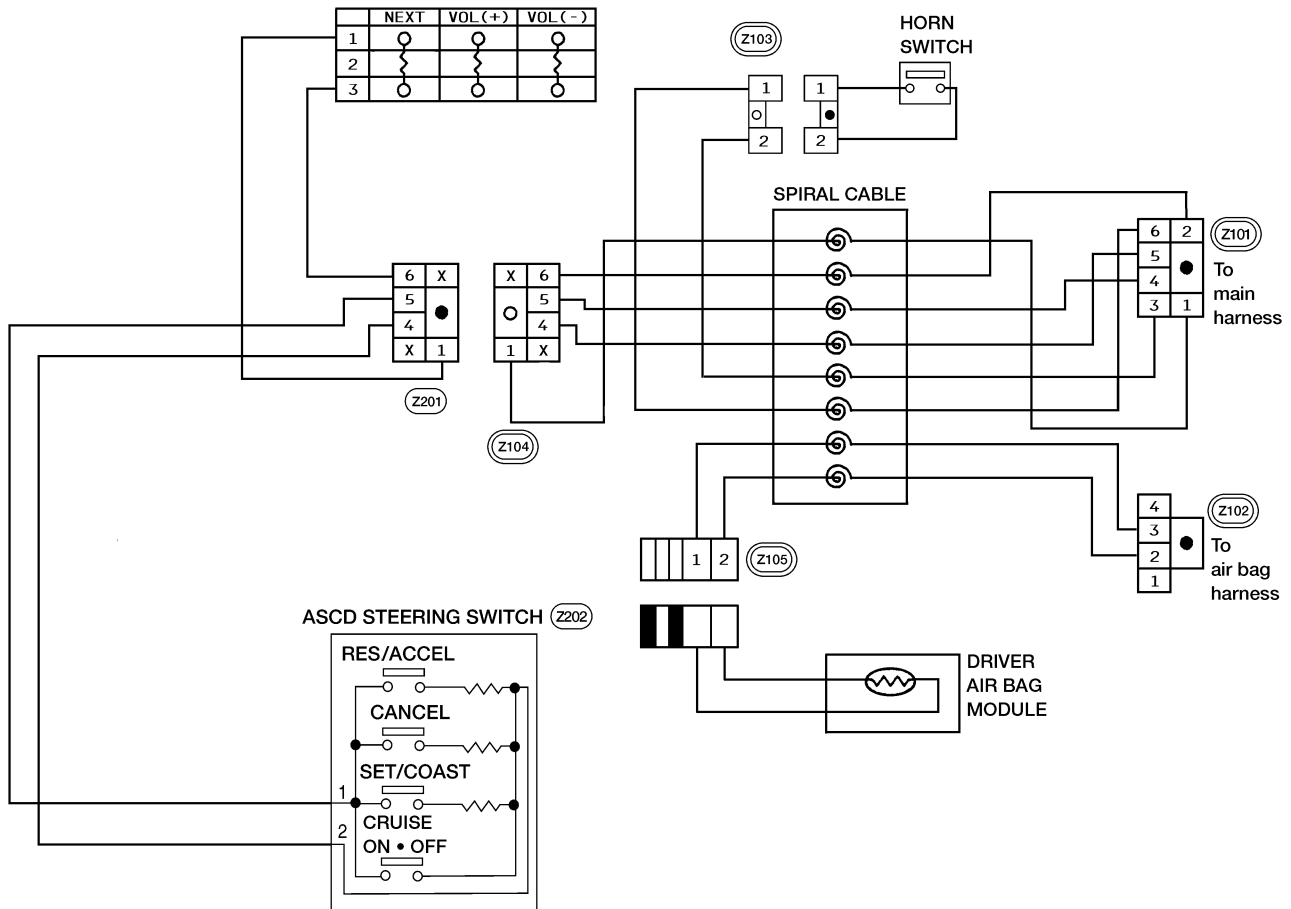
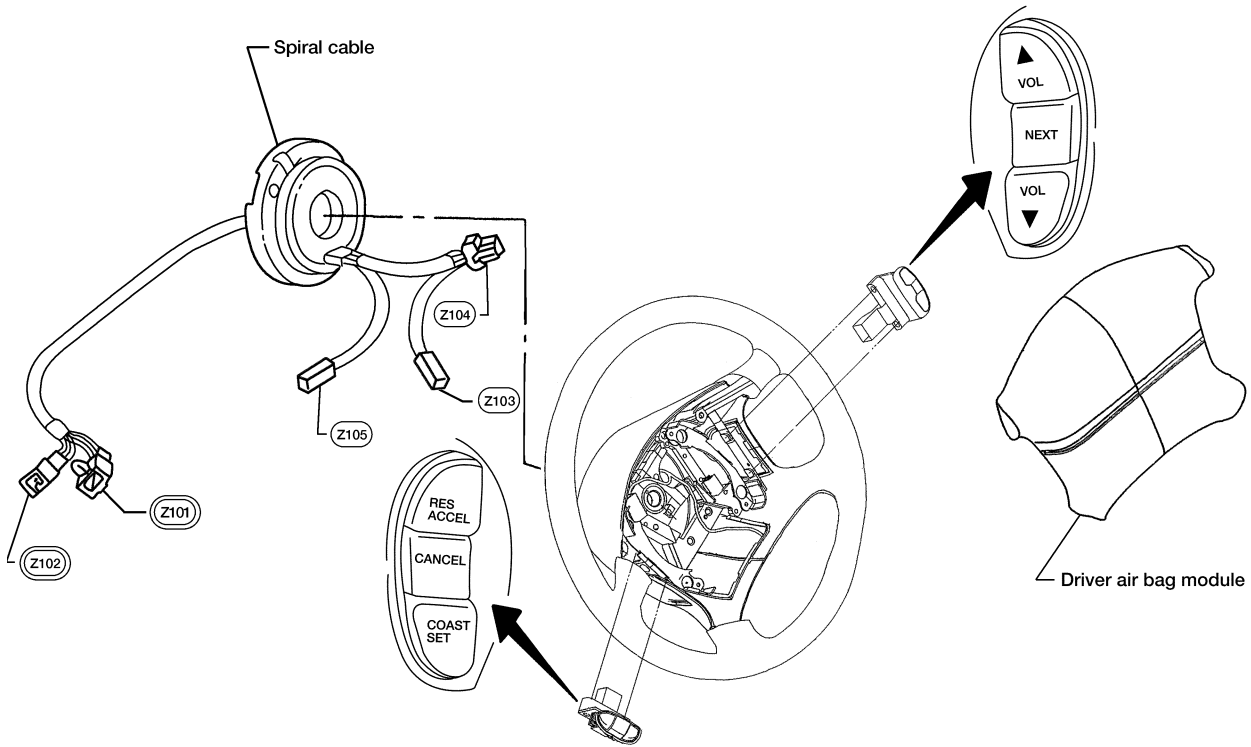
- To remove combination switch base, remove base attaching screws. NDEL0010

# STEERING SWITCH

Check

## Check

NDEL0011



GI  
MA  
EM  
LC  
EC  
FE  
AT  
AX  
SU  
BR  
ST  
RS  
BT  
HA  
SC  
EL  
IDX

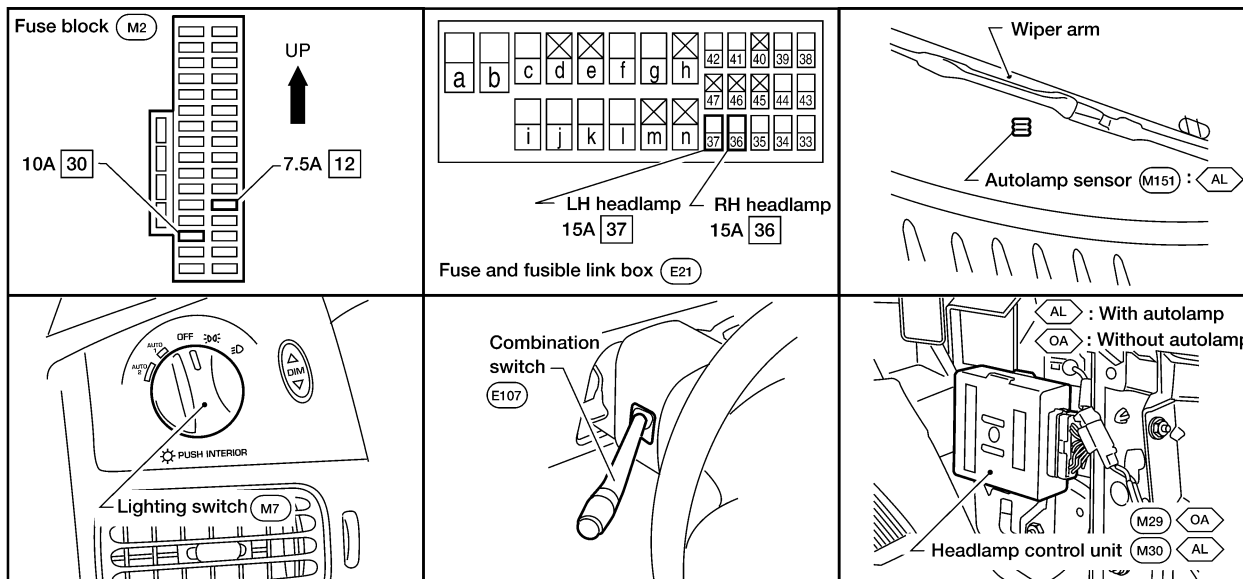
LEL266A

# HEADLAMP (FOR USA)

Component Parts and Harness Connector Location

## Component Parts and Harness Connector Location

NDEL0012



WEL267A

## 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 and
- 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

# HEADLAMP (FOR USA)

System Description (Cont'd)

- from headlamp control unit terminal 8
- to LH headlamp terminal 1 and
- from headlamp control unit terminal 4
- to RH headlamp terminal 1.

GI

Ground is supplied to each headlamp terminal 2 through body grounds E3, E30 and E50.

MA

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 15 for HIGH BEAM indicator.

EM

Ground is supplied to combination meter terminal 9 through body grounds M68, M105 and M130.

LC

With power and ground supplied the HIGH BEAM indicator will illuminate.

## Flash to Pass Operation

When the combination switch is placed in the FLASH TO PASS (C) position, ground is supplied

NDEL0013S0103

EC

- to headlamp control unit terminal 20
- through combination switch terminal 13
- to combination switch terminal 12
- through body grounds E3, E30 and E50.

FE

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.

AT

## AUTOLAMP OPERATION (IF EQUIPPED)

### Automatic Illumination

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

NDEL0013S02

AX

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

NDEL0013S0201

SU

With power at terminal 2 and lighting switch in AUTO1 or AUTO2 position, the headlamp control unit will monitor 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).

BR

ST

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-55 and "ILLUMINATION", EL-73.

RS

### Shut-off Delay

While the headlamps are lit in the automatic illumination mode, the ignition switch is turned from ON to OFF position and autolamp shut-off delay timer starts. At this time, ground to tail lamp relay is discontinued.

NDEL0013S0202

BT

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.

HA

Headlamp lighting time can be adjusted from 0 to 3 minutes.

SC

## VEHICLE SECURITY SYSTEM

If the vehicle security system is triggered, alarm signal is sent

NDEL0013S03

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

EL

Then headlamp control unit operates to flash the high beams. For details, refer to "VEHICLE SECURITY (THEFT WARNING) SYSTEM", EL-281.

IDX

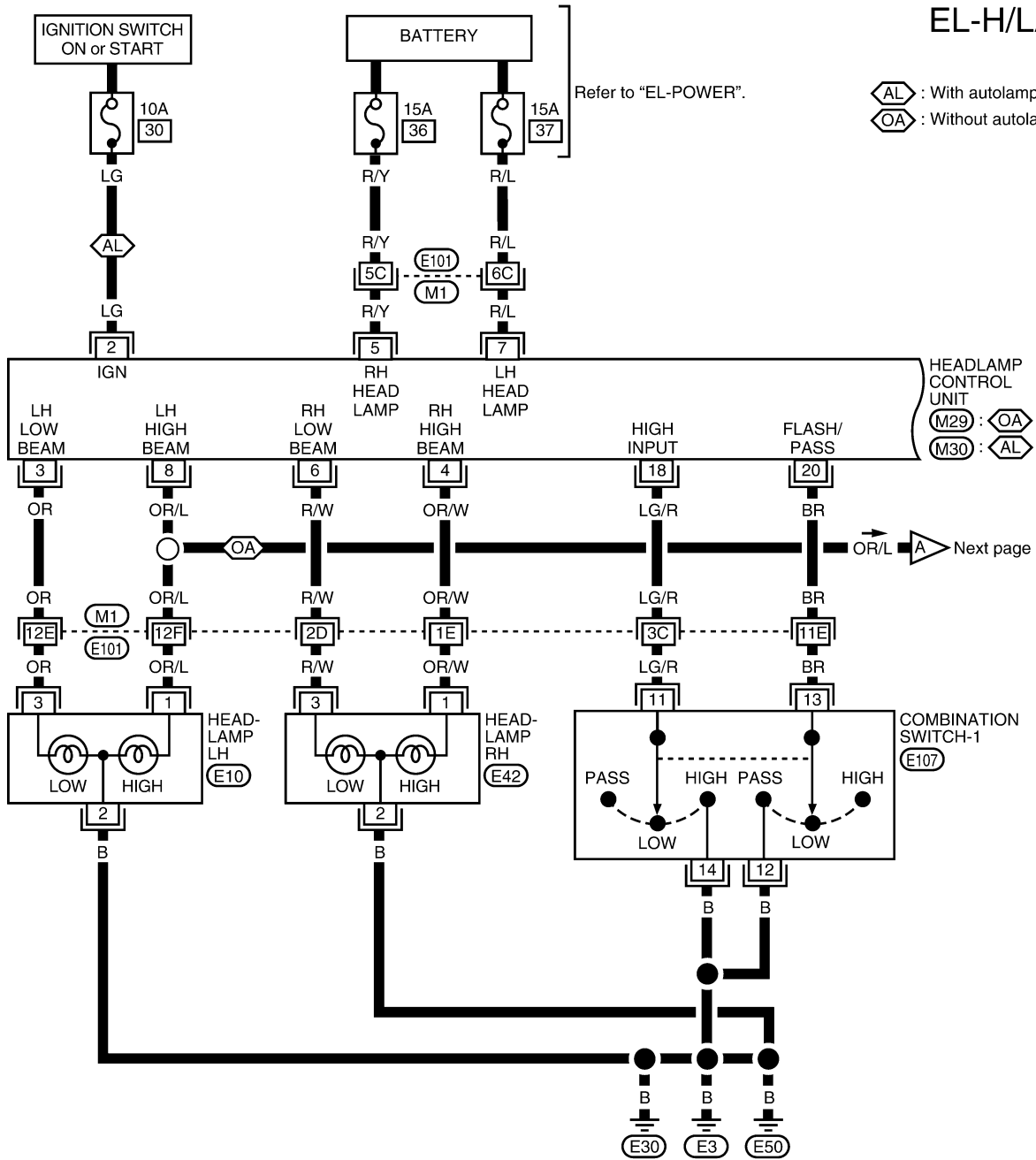
# HEADLAMP (FOR USA)

Wiring Diagram — H/LAMP —

## Wiring Diagram — H/LAMP —

NDEL0014

### EL-H/LAMP-01



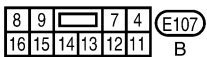
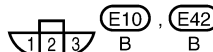
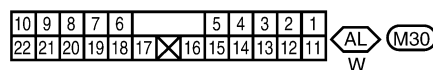
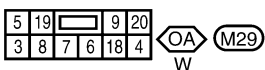
Refer to "EL-POWER".

AL : With autolamp  
OA : Without autolamp

HEADLAMP CONTROL UNIT  
M29 : OA  
M30 : AL

Next page

COMBINATION SWITCH-1  
E107

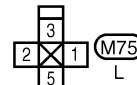
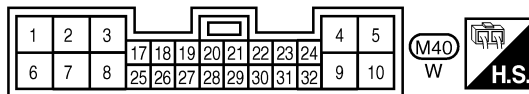
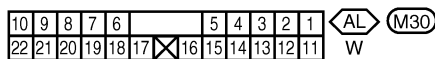
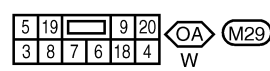
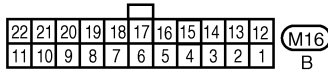
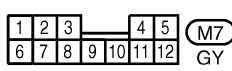
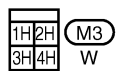
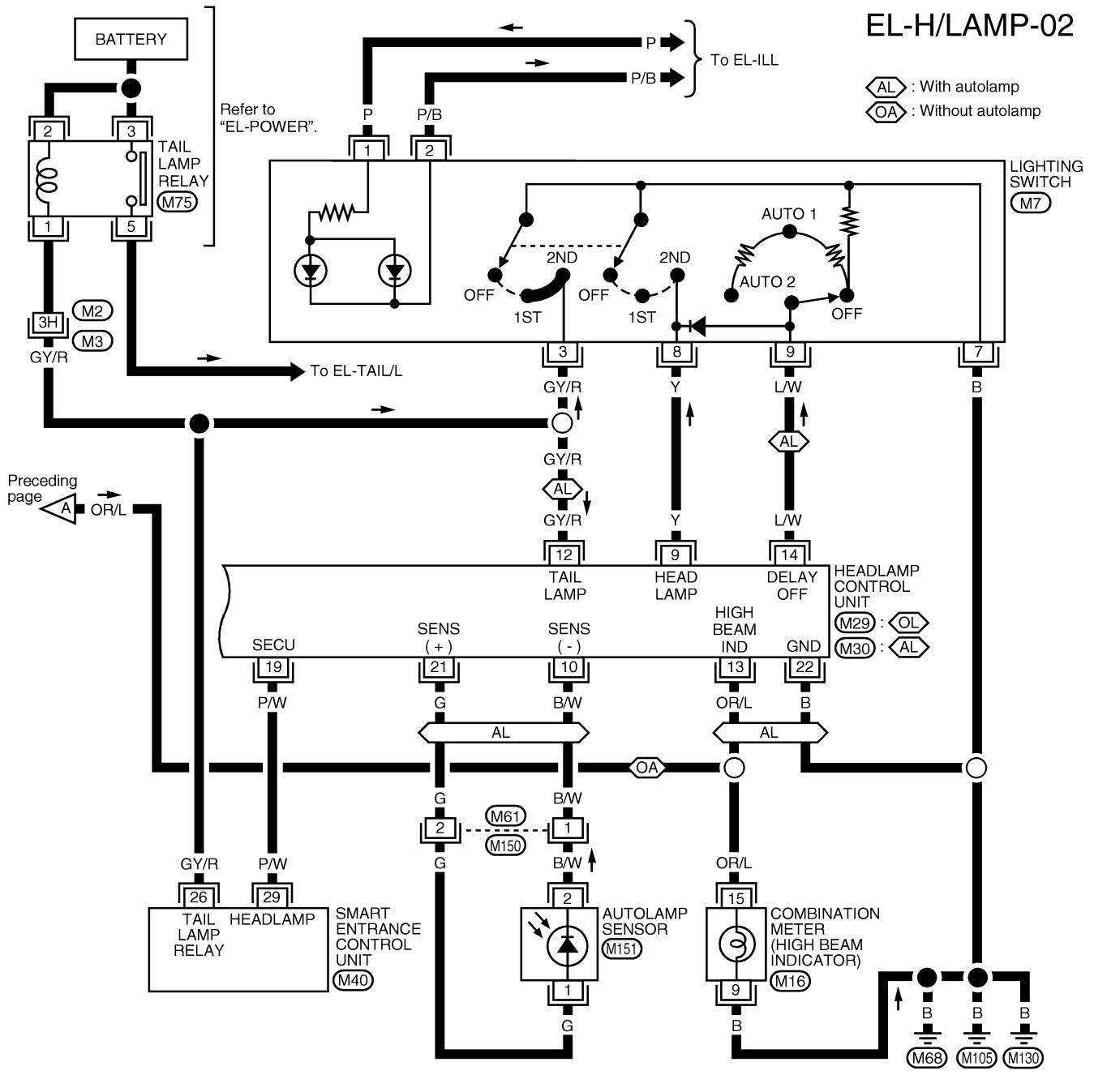


Refer to the following.  
M1, E101 - SUPER MULTIPLE JUNCTION (SMJ)



# HEADLAMP (FOR USA)

Wiring Diagram — H/LAMP — (Cont'd)



GI  
MA  
EM  
LC  
EC  
FE  
AT  
AX  
SU  
BR  
ST  
RS  
BT  
HA  
SC

EL

IDX

# HEADLAMP (FOR USA)

Trouble Diagnoses

## 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.)	<ol style="list-style-type: none"> <li>1. Bulb</li> <li>2. 15 A fuse</li> <li>3. Grounds E3, E30 and E50</li> </ol>	<ol style="list-style-type: none"> <li>1. Check bulb.</li> <li>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.</li> <li>3. Check grounds E3, E30 and E 50.</li> </ol>
RH headlamps do not illuminate with any operation. (LH headlamps operate properly.)	<ol style="list-style-type: none"> <li>1. Bulb</li> <li>2. 15 A fuse</li> <li>3. Grounds E3, E30 and E50</li> </ol>	<ol style="list-style-type: none"> <li>1. Check bulb.</li> <li>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.</li> <li>3. Check grounds E3, E30 and E50.</li> </ol>
Both LH and RH headlamps do not illuminate with lighting switch operation. (Headlamps illuminate with auto lamp operation.)	<ol style="list-style-type: none"> <li>1. Lighting switch</li> <li>2. Lighting switch ground circuit</li> <li>3. Headlamp on signal</li> </ol>	<ol style="list-style-type: none"> <li>1. Check lighting switch.</li> <li>2. Check continuity between lighting switch terminal 7 and ground.</li> <li>3. Check harness for open or short between lighting switch terminal 8 and headlamp control unit terminal 9.</li> </ol>
LH high beam does not illuminate with any operation.	<ol style="list-style-type: none"> <li>1. Bulb</li> <li>2. LH high beam on signal</li> <li>3. Harness for open or short</li> </ol>	<ol style="list-style-type: none"> <li>1. Check bulb.</li> <li>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.</li> <li>3. Check harness for open or short between headlamp control unit terminal 8 and LH headlamp terminal 1.</li> </ol>
LH low beam does not illuminate with any operation.	<ol style="list-style-type: none"> <li>1. Bulb</li> <li>2. LH low beam on signal</li> <li>3. Harness for open or short</li> </ol>	<ol style="list-style-type: none"> <li>1. Check bulb.</li> <li>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.</li> <li>3. Check harness for open or short between headlamp control unit terminal 3 and LH headlamp terminal 3.</li> </ol>
RH high beam does not illuminate with any operation.	<ol style="list-style-type: none"> <li>1. Bulb</li> <li>2. RH high beam on signal</li> <li>3. Harness for open or short</li> </ol>	<ol style="list-style-type: none"> <li>1. Check bulb.</li> <li>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.</li> <li>3. Check harness for open or short between headlamp control unit terminal 4 and RH headlamp terminal 1.</li> </ol>
RH low beam does not illuminate with any operation.	<ol style="list-style-type: none"> <li>1. Bulb</li> <li>2. RH low beam on signal</li> <li>3. Harness for open or short</li> </ol>	<ol style="list-style-type: none"> <li>1. Check bulb.</li> <li>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.</li> <li>3. Check harness for open or short between headlamp control unit terminal 6 and RH headlamp terminal 3.</li> </ol>
High beam indicator does not illuminate.	<ol style="list-style-type: none"> <li>1. Bulb</li> <li>2. High beam indicator on signal</li> <li>3. Harness for open or short</li> <li>4. Combination meter ground circuit</li> </ol>	<ol style="list-style-type: none"> <li>1. Check bulb.</li> <li>2. Verify battery voltage is present at terminal 13 (with autolamp) or 8 (without autolamp) of headlamp control unit with lighting switch in headlamp ON (2ND) position and combination switch in HIGH BEAM (A) position.</li> <li>3. Check harness for open or short between headlamp control unit terminal 13 and combination meter terminal 15.</li> <li>4. Check continuity between combination meter terminal 9 and ground.</li> </ol>

# HEADLAMP (FOR USA)

Trouble Diagnoses (Cont'd)

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 "AUTOLAMP CHECK", EL-39.
Shut off delay does not operate properly.	—	Go to "SHUT OFF DELAY SWITCH CHECK", EL-42.
Tail lamps do not operate by automatic illumination. (Headlamps operate properly by automatic illumination.)	—	Go to "TAIL LAMP RELAY CHECK", EL-42.

## AUTOLAMP CHECK

NDEL0015S02

<b>1</b>	<b>CHECK HEADLAMP OPERATION</b>
Do headlamps operate properly with lighting switch?	
<b>Yes or No</b>	
Yes	▶ GO TO 2.
No	▶ Check headlamp, refer to "SYMPTOM AND INSPECTION CHART", EL-38.

<b>2</b>	<b>CHECK AUTOLAMP OPERATION</b>
1. Turn ignition switch to ON position. 2. Turn lighting switch to AUTO1 or AUTO2 position. 3. Obstruct autolamp sensor.	
<b>Do headlamps and tail lamps illuminate?</b>	
Yes	▶ Go to "SHUT OFF DELAY SWITCH CHECK", EL-42.
No	▶ GO TO 3.

GI

MA

EM

LC

EC

FE

AT

AX

SU

BR

ST

RS

BT

HA

SC

EL

IDX

# HEADLAMP (FOR USA)

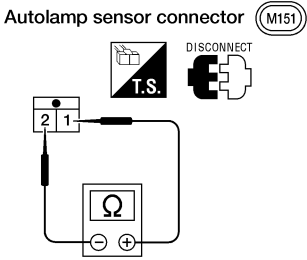
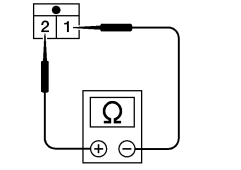
Trouble Diagnoses (Cont'd)

<b>3</b>	<b>CHECK IGNITION SWITCH ON SIGNAL</b>	<p>Check voltage between headlamp control unit terminal 2 and ground with ignition switch ON.</p> <div style="text-align: center;"> </div> <p style="text-align: right;">AEL935B</p> <p style="text-align: center;"><b>Does battery voltage exist?</b></p>	
Yes	▶	GO TO 4.	
No	▶	<p><b>Check the following.</b></p> <ul style="list-style-type: none"> <li>● 10 A fuse (No. 30, located in the fuse block)</li> <li>● Harness for open or short between fuse and headlamp control unit</li> </ul>	

<b>4</b>	<b>CHECK CONTROL UNIT GROUND</b>	<p>Check continuity between lighting control unit terminal 22 and ground.</p> <div style="text-align: center;"> </div> <p style="text-align: right;">AEL171C</p> <p style="text-align: center;"><b>Does continuity exist?</b></p>	
Yes	▶	GO TO 5.	
No	▶	Repair harness or connectors.	

# HEADLAMP (FOR USA)

Trouble Diagnoses (Cont'd)

5	CHECK AUTOLAMP SENSOR
	<p>1. Disconnect autolamp sensor connector.</p> <p>2. Check continuity between autolamp sensor connector terminals 2 and 1. With positive lead on pin 1 and negative lead on pin 2.</p> <p style="padding-left: 20px;"><b>Continuity should exist.</b></p> <p>3. Reverse leads.</p> <p style="padding-left: 20px;"><b>Continuity should not exist.</b></p> <p><b>NOTE:</b> Specifications may vary depending on tester type. Before performing this inspection, refer to instruction manual for your tester.</p> <div style="text-align: center;">  <p>Autolamp sensor connector (M151)</p> <p>DISCONNECT</p> <p>Continuity should exist.</p>  <p>Continuity should not exist.</p> </div> <p style="text-align: right;">AEL936B</p> <p style="text-align: center;"><b>OK or NG</b></p>
OK	▶ Check harness for open or short between headlamp control unit and autolamp sensor.
NG	▶ Replace autolamp sensor.

GI

MA

EM

LC

EC

FE

AT

AX

SU

BR

ST

RS

BT

HA

SC

**EL**

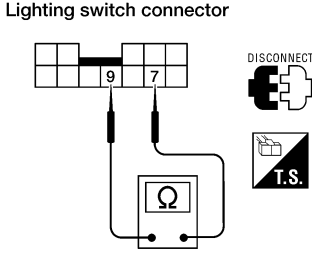
IDX

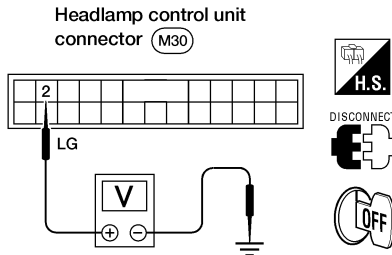
# HEADLAMP (FOR USA)

Trouble Diagnoses (Cont'd)

## SHUT OFF DELAY SWITCH CHECK

=NDEL0015S03

<b>1</b>	<b>CHECK SHUT-OFF DELAY FUNCTION</b>									
<p>1. Disconnect lighting switch. 2. Check resistance between lighting switch connector M7 terminals 7 and 9.</p>										
										
<table border="1" style="margin-left: auto; margin-right: 0;"> <thead> <tr> <th style="text-align: left;">Shut-off delay switch condition</th> <th style="text-align: left;">Resistance Ω (Approx.)</th> </tr> </thead> <tbody> <tr> <td>OFF</td> <td>31 - 35</td> </tr> <tr> <td>AUTO 1</td> <td>516 - 570</td> </tr> <tr> <td>AUTO 2</td> <td>1947 - 2145</td> </tr> </tbody> </table>			Shut-off delay switch condition	Resistance Ω (Approx.)	OFF	31 - 35	AUTO 1	516 - 570	AUTO 2	1947 - 2145
Shut-off delay switch condition	Resistance Ω (Approx.)									
OFF	31 - 35									
AUTO 1	516 - 570									
AUTO 2	1947 - 2145									
LEL357A										
<b>OK or NG</b>										
OK	▶	Shut-off delay switch is OK. GO TO 2.								
NG	▶	Replace the switch.								

<b>2</b>	<b>CHECK IGNITION SWITCH ON SIGNAL CIRCUIT</b>	
<p>1. Disconnect headlamp control unit. 2. Check voltage between headlamp control unit terminal 2 and ground with ignition switch OFF.</p>		
		
AEL324C		
<b>Does battery voltage exist?</b>		
Yes	▶	Repair the harness between fuse and headlamp control unit.
No	▶	Replace headlamp control unit.

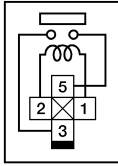
## TAIL LAMP RELAY CHECK

NDEL0015S04

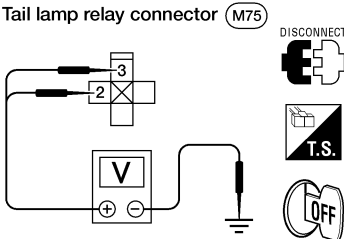
<b>1</b>	<b>CHECK TAIL LAMP OPERATION</b>	
<p>Do tail lamps illuminate with lighting switch operation? <b>NOTE:</b> For wiring diagram of tail lamp relay, refer to "PARKING, LICENSE AND TAIL LAMPS", EL-55</p>		
<b>Yes or No</b>		
Yes	▶	GO TO 4.
No	▶	GO TO 2.

# HEADLAMP (FOR USA)

Trouble Diagnoses (Cont'd)

<b>2</b>	<b>CHECK TAIL LAMP RELAY</b>	
<p>1. Apply 12 V direct current between relay terminal 1 and 2.                  2. Check continuity between relay terminals 3 and 5.</p>		
		
<p><b>12 V applied:</b>                  Continuity exists.  <b>No voltage applied</b>                  Continuity should not exist.</p>		
AEL938B		
<b>OK or NG</b>		
OK	▶	GO TO 3.
NG	▶	Replace the relay.

GI  
MA  
EM  
LC  
EC  
FE  
AT  
AX

<b>3</b>	<b>CHECK POWER SUPPLY FOR TAIL LAMP RELAY</b>	
<p>Check voltage between tail lamp relay terminals 2, 3 and ground.</p>		
<p>Tail lamp relay connector (M75)</p> 		
AEL939B		
<b>Does battery voltage exist?</b>		
Yes	▶	Check tail lamp relay connector and tail lamp circuits.
No	▶	Check harness between tail lamp relay and battery.

SU  
BR  
ST  
RS  
BT  
HA

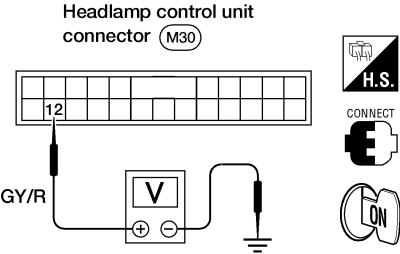
SC

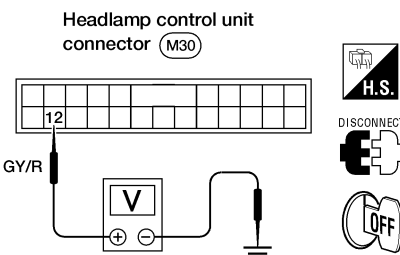
EL

IDX

# HEADLAMP (FOR USA)

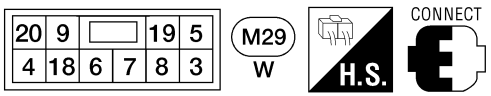
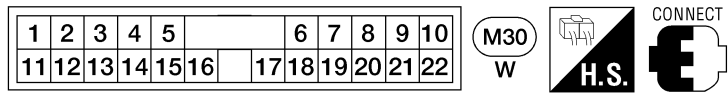
Trouble Diagnoses (Cont'd)

<b>4</b>	<b>CHECK HEADLAMP CONTROL UNIT TAIL LAMP CONTROL CIRCUIT-1</b>			
<ol style="list-style-type: none"> <li>1. Turn ignition switch to ON position.</li> <li>2. Turn lighting switch to AUTO1 or AUTO2 position.</li> <li>3. Obstruct autolamp sensor.</li> <li>4. Check voltage between headlamp control unit terminal 12 and ground.</li> </ol>				
				
AEL172C				
<b>Does battery voltage exist?</b>				
Yes		▶	Replace headlamp control unit.	
No		▶	GO TO 5.	

<b>5</b>	<b>CHECK HEADLAMP CONTROL UNIT TAIL LAMP CONTROL CIRCUIT-2</b>			
<ol style="list-style-type: none"> <li>1. Turn ignition switch to OFF position.</li> <li>2. Check voltage between headlamp control unit terminal 12 and ground.</li> </ol>				
				
AEL323C				
<b>Does battery voltage exist?</b>				
Yes		▶	Autolamp control system is OK.	
No		▶	Check harness between headlamp control unit and tail lamp relay.	

## HEADLAMP CONTROL UNIT INSPECTION TABLE

NDEL0015S05

<p>Headlamp control unit connector (without autolamp)</p> 	<p>Headlamp control unit connector (with autolamp)</p> 
AEL940B	

Terminal No.	Wire color	Item	Condition	Voltage (Approx. value)
2*	LG	Ignition switch on signal	Ignition switch OFF, ACC position	0
			Ignition switch ON, START position	12



# HEADLAMP (FOR USA)

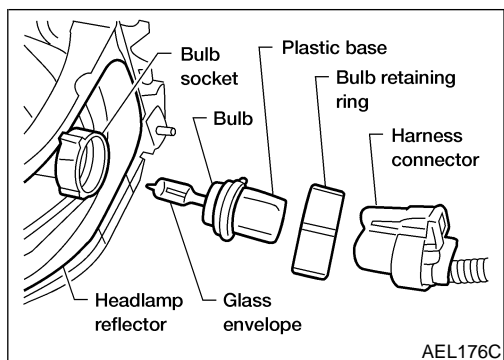
Trouble Diagnoses (Cont'd)

Terminal No.	Wire color	Item	Condition	Voltage (Approx. value)	
3	OR	LH headlamp low beam	Lighting switch in the headlamp ON (2ND) position and combination switch in LOW BEAM (B) position	12	GI
			All other conditions	0	MA
4	OR/W	RH headlamp high beam	Lighting switch in the ON (2ND) position and combination switch in HIGH BEAM (A) position	12	EM
			All other conditions	0	LC
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	EC
			All other conditions	0	FE
7	R/L	Power source for LH headlamp	—	12	AT
8	OR/L	LH headlamp high beam	Lighting switch in the ON (2ND) position and combination switch in HIGH BEAM (A) position	12	AX
			All other conditions	0	
9	Y	Lighting switch	OFF, 1ST position	12	SU
			Headlamp ON (2ND) position	0	
10*	B/W	Autolamp sensor ( - )	—	—	BR
12*	GY/R	Tail lamp relay	Autolamp is not operating and lighting switch is in the OFF position	12	
			Autolamp is operating	0	ST
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	RS
			All other conditions	0	BT
14*	L/W	Shut-off delay switch (lighting switch)	OFF	0.5	
			AUTO1	3.5	HA
			AUTO2	4.5	
18	LG/R	Combination switch	HIGH BEAM (A) or FLASH TO PASS (C) position	0	SC
			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	EL
			All other conditions	12	IDX
20	BR	Combination switch	FLASH TO PASS (C) position	0	
			All other conditions	12	
21*	G	Autolamp sensor ( + )	Sensor struck by light	—	
			Sensor obstructed	—	
22*	B	Ground	—	—	

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

# HEADLAMP (FOR USA)

## Bulb Replacement



## 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

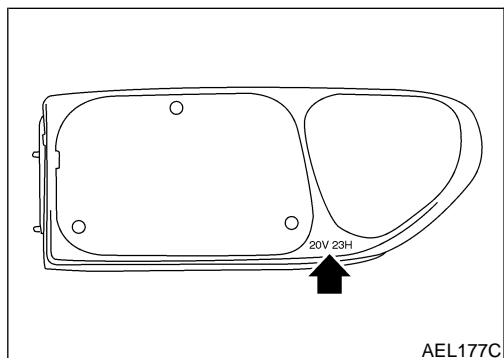
NDEL0017

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 position).



## AIMER ADJUSTMENT MARK

NDEL0017S01

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

### Example

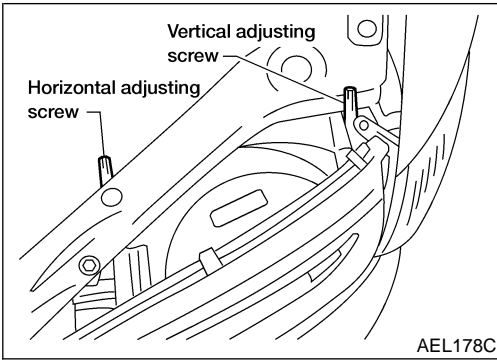
**20V23H**

**Horizontal side: 23**

**Vertical side: 20**

# HEADLAMP (FOR USA)

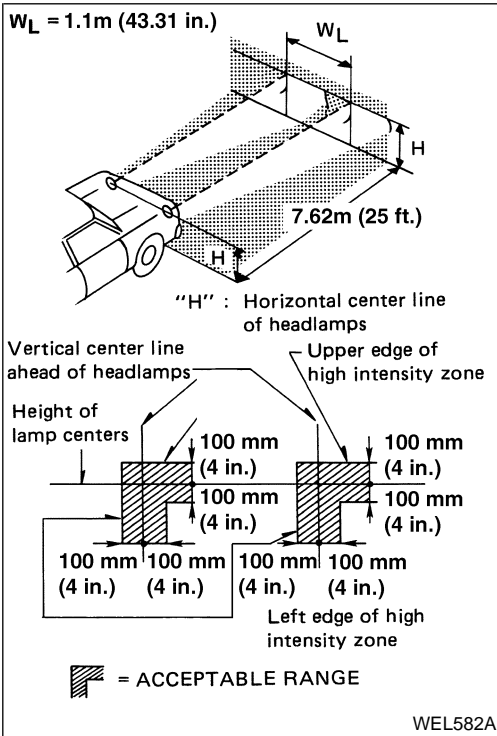
Aiming Adjustment (Cont'd)



## LOW BEAM

NDEL0017S02

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



- 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<sub>L</sub>": Distance between each headlamp center

GI

MA

EM

LC

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FE

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RS

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HA

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EL

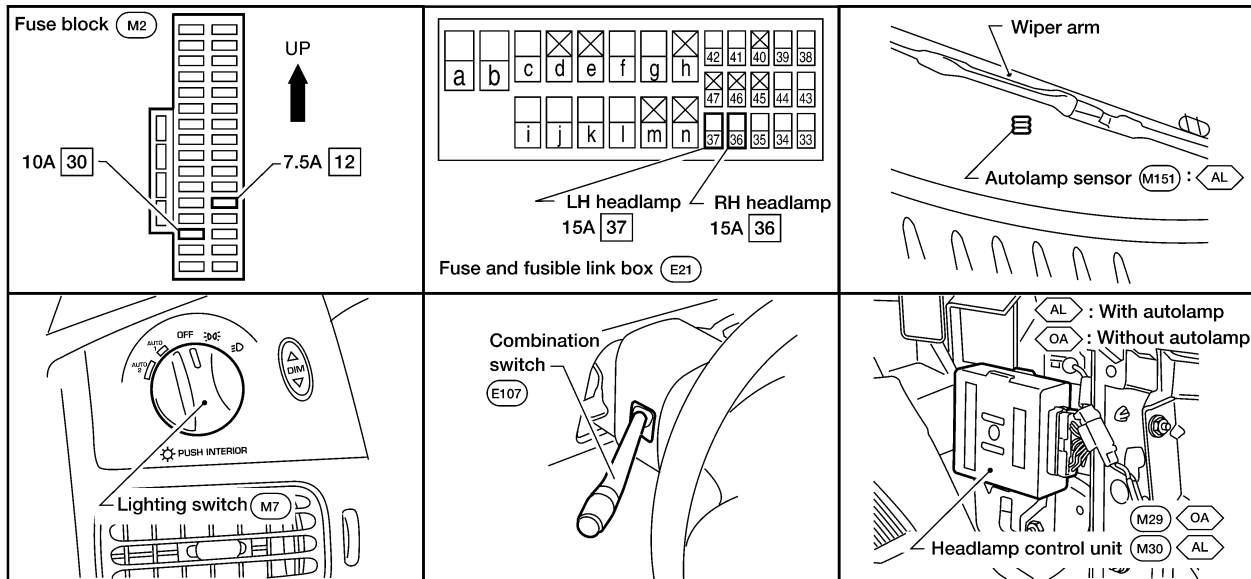
IDX

# HEADLAMP (FOR CANADA) — DAYTIME LIGHT SYSTEM —

Component Parts and Harness Connector Location

## Component Parts and Harness Connector Location

NDEL0018



WEL267A

## 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 and
- 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

# HEADLAMP (FOR CANADA) — DAYTIME LIGHT SYSTEM —

System Description (Cont'd)

- from headlamp control unit terminal 8
- to LH headlamp terminal 1 and
- 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 15 for the HIGH BEAM indicator.

Ground is supplied to combination meter terminal 9 through body grounds M68, M105 and M130. With power and ground supplied, the HIGH BEAM indicator will illuminate.

## Flash to Pass Operation

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

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

- 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.

GI

MA

EM

LC

NDEL0020S0103

EC

FE

AT

AX

NDEL0020S02

SU

BR

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IDX

# HEADLAMP (FOR CANADA) — DAYTIME LIGHT SYSTEM —

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.

## AUTOLAMP 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 monitor 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 (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-55 and "ILLUMINATION", EL-73.)

### 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.

## VEHICLE SECURITY SYSTEM

NDEL0020S04

If the vehicle security 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 "VEHICLE SECURITY (THEFT WARNING) SYSTEM", EL-283.

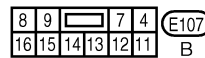
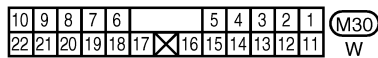
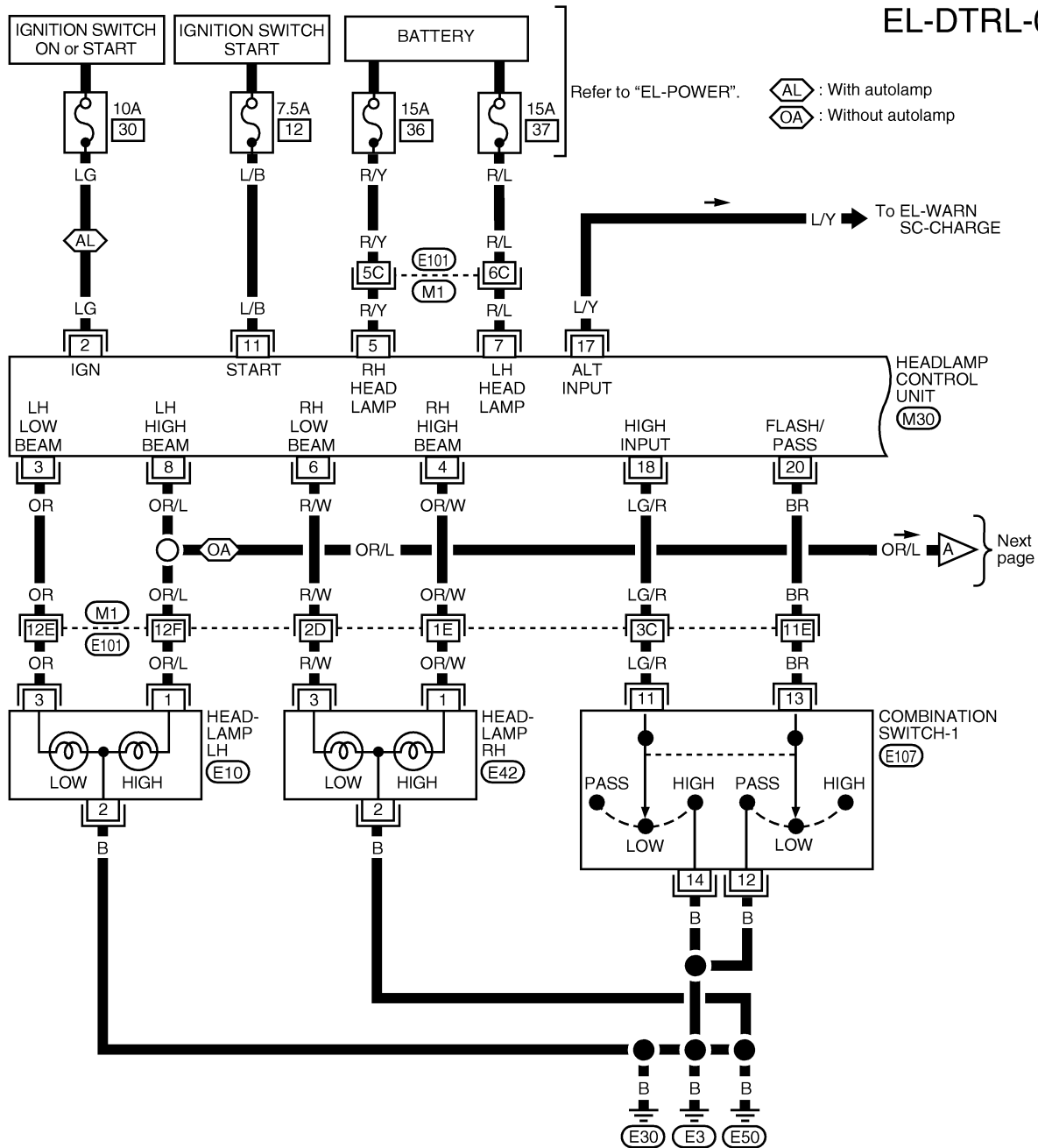
# HEADLAMP (FOR CANADA) — DAYTIME LIGHT SYSTEM —

Wiring Diagram — DTRL —

## Wiring Diagram — DTRL —

NDEL0022

EL-DTRL-01



Refer to the following.  
(M1), (E101) - SUPER MULTIPLE JUNCTION (SMJ)

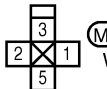
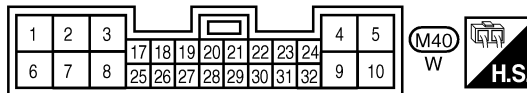
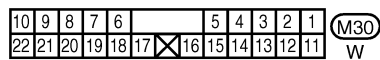
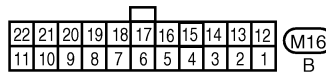
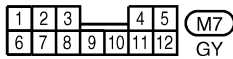
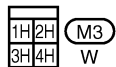
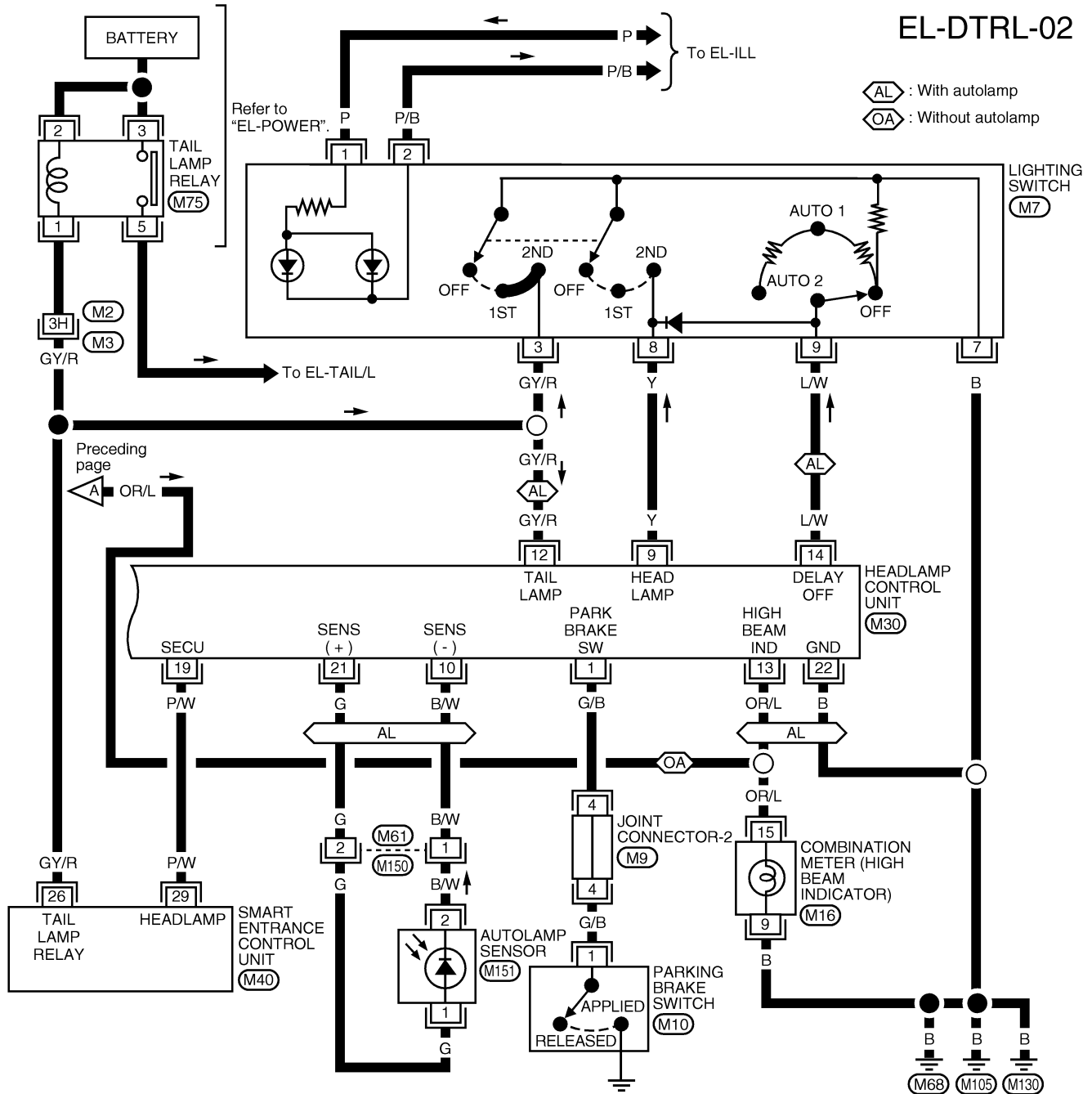
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IDX

# HEADLAMP (FOR CANADA) — DAYTIME LIGHT SYSTEM —

Wiring Diagram — DTRL — (Cont'd)



WEL931



# HEADLAMP (FOR CANADA) — DAYTIME LIGHT SYSTEM —

Trouble Diagnoses

## Trouble Diagnoses

NDEL0023

**NOTE:**

For trouble diagnoses relating to autolamp system, refer to “SYMPTOM AND INSPECTION CHART” for “HEADLAMP (FOR USA)”, EL-38.


### HEADLAMP CONTROL UNIT INSPECTION TABLE

NDEL0023S01


Headlamp control unit connector

1	2	3	4	5		6	7	8	9	10	
11	12	13	14	15	16	17	18	19	20	21	22

M30  
W



H.S.



CONNECT

AEL941B

Terminal No.	Wire color	Item	Condition	Voltage (Approx. 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) <b>CAUTION:</b> <b>Block wheels and ensure selector lever is in N or P position.</b>	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

# HEADLAMP (FOR CANADA) — DAYTIME LIGHT SYSTEM —

Trouble Diagnoses (Cont'd)

Terminal No.	Wire color	Item	Condition	Voltage (Approx. value)
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) <b>CAUTION:</b> <b>Block wheels and ensure selector lever is in N or P position.</b>	6
			All other conditions	0
9	Y	Lighting switch	OFF, 1ST position	12
			Headlamp ON (2ND) position	0
10	B/W	Autolamp sensor ( - )	—	—
11	L/B	Ignition switch start signal	Ignition switch in START position	12
			All other conditions	0
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	G	Autolamp sensor ( + )	Sensor struck by light	—
			Sensor obstructed	—
22	B	Ground	—	—

## Bulb Replacement

Refer to “Bulb Replacement”, EL-46.

NDEL0024

## Aiming Adjustment

Refer to “Aiming Adjustment”, EL-46.

NDEL0025

# PARKING, LICENSE AND TAIL LAMPS

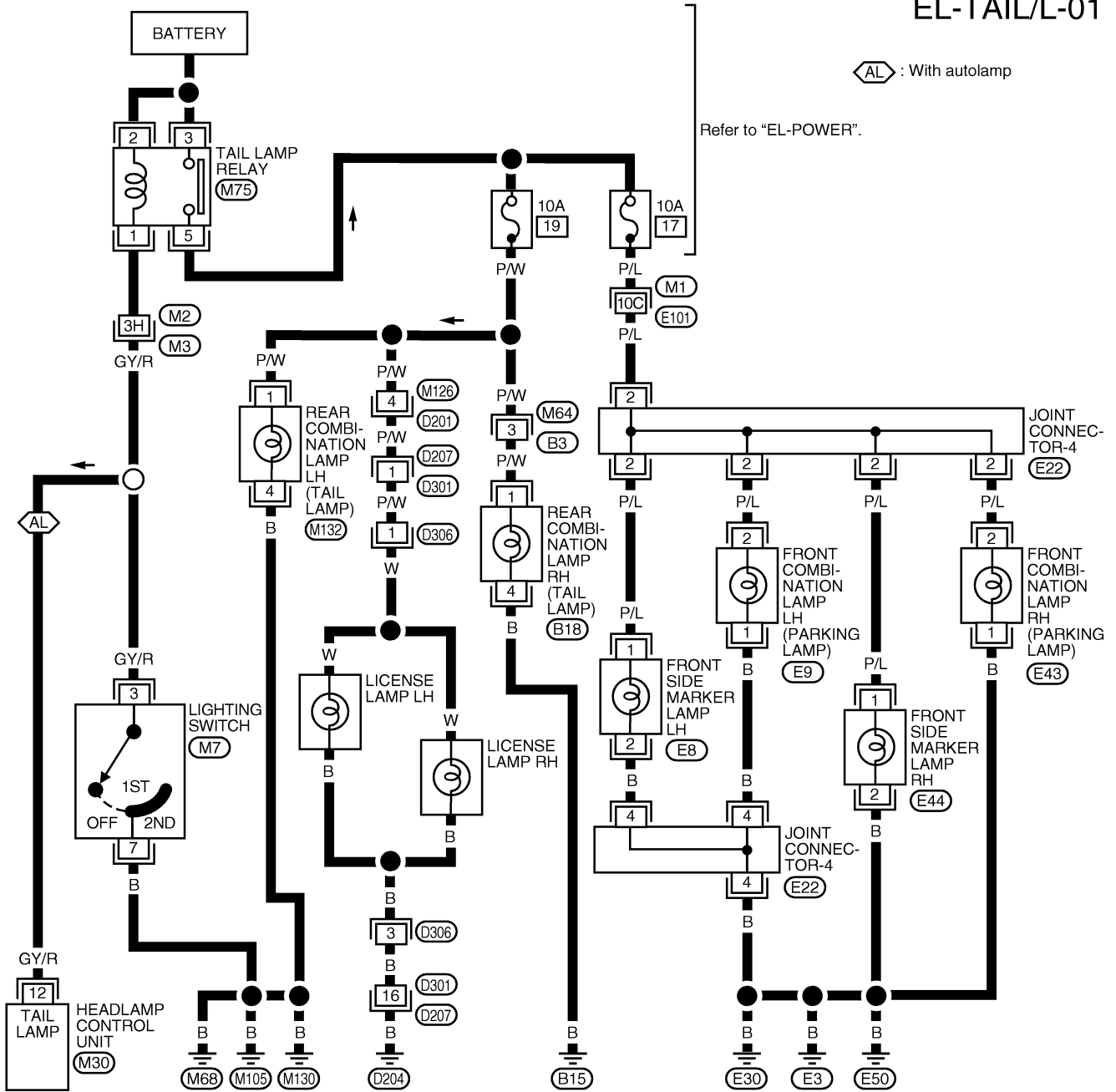
Wiring Diagram — TAIL/L —

## Wiring Diagram — TAIL/L —

NDEL0026

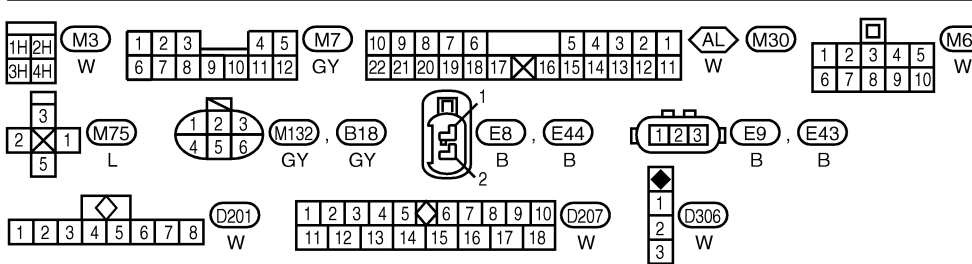
For information about autolamp operation, refer to "AUTOLAMP OPERATION (IF EQUIPPED)", "HEADLAMP (FOR USA)", EL-35, "AUTOLAMP OPERATION (IF EQUIPPED)", "HEADLAMP (FOR CANADA) — DAYTIME LIGHT SYSTEM", EL-50.

### EL-TAIL/L-01



AL : With autolamp

Refer to "EL-POWER".



Refer to the following.  
 M1, E101 - SUPER MULTIPLE JUNCTION (SMJ)  
 E22 - JOINT CONNECTOR

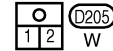
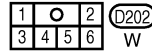
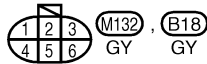
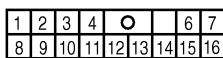
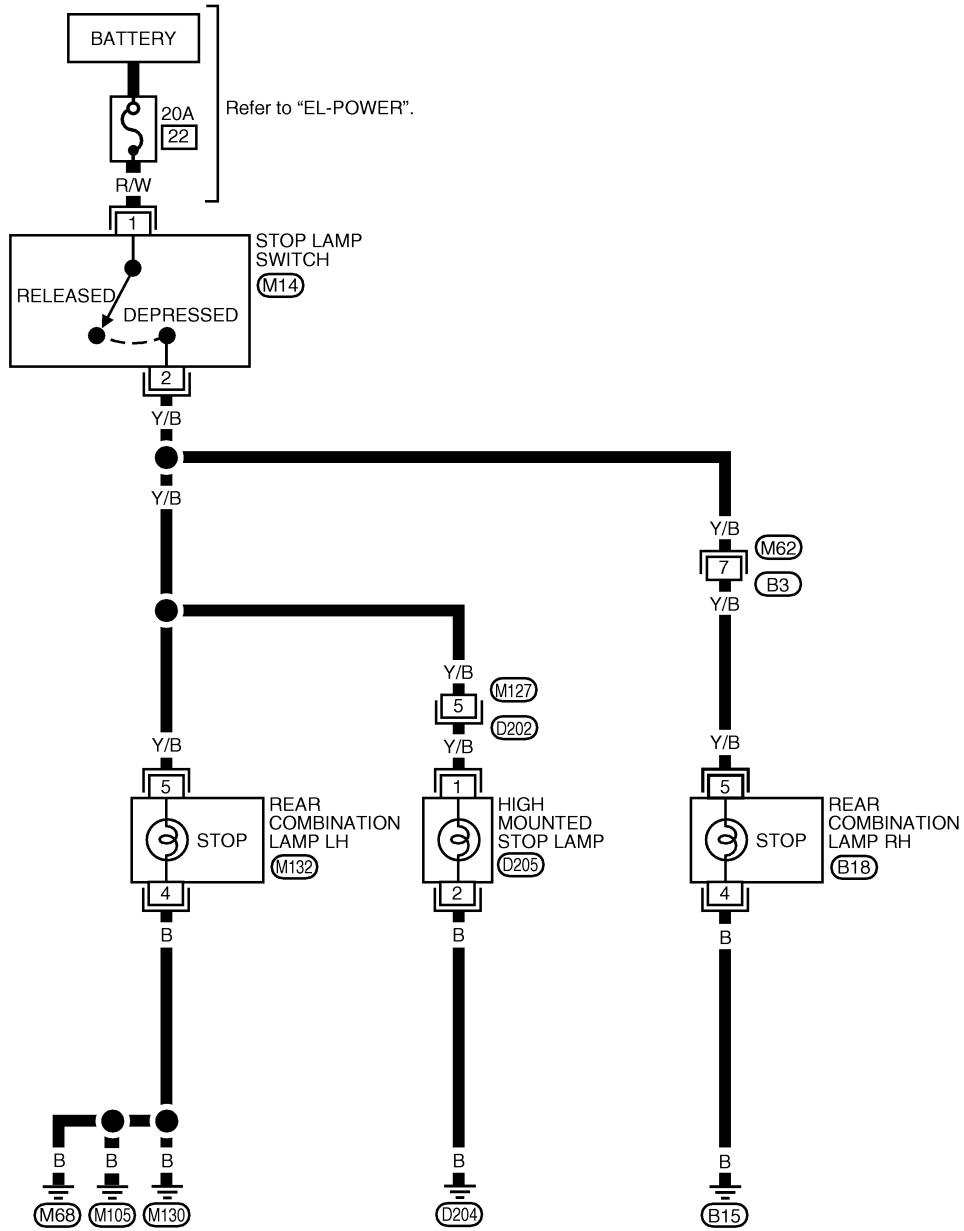
# STOP LAMP

Wiring Diagram — STOP/L —

## Wiring Diagram — STOP/L —

NDEL0027

### EL-STOP/L-01



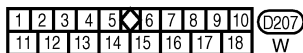
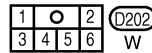
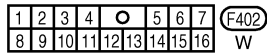
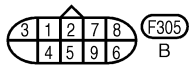
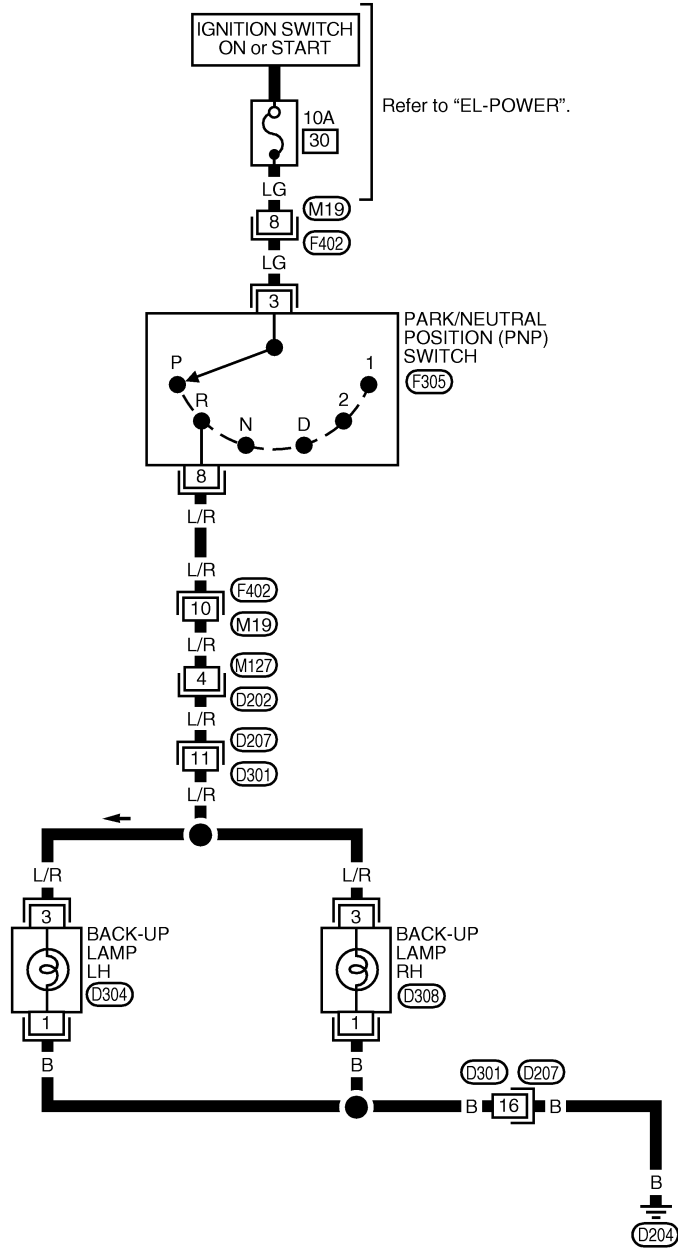
# BACK-UP LAMP

Wiring Diagram — BACK/L —

## Wiring Diagram — BACK/L —

NDEL0028

### EL-BACK/L-01



GI

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EC

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AX

SU

BR

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RS

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# FRONT FOG LAMP

*System Description*

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## System Description

NDEL0155

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

- 7.5A fuse (No. 38, located in the fuse and fusible link box).

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

- from headlamp control unit terminal 3
- to front fog lamp relay terminal 2.

## FOG LAMP OPERATION

NDEL0155S01

The lighting switch must be in headlamp ON (2ND) position and LOW BEAM (B) position for front fog lamp operation.

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

- to front fog lamp relay terminal 1
- through the front fog lamp switch terminal 2
- to body grounds E3, E30 and E50.

The front fog lamp relay is energized and power is supplied

- from front fog lamp relay terminal 5
- to fog lamp switch terminal 5 (fog lamp switch indicator) and
- to terminal 1 of each front fog lamp.

Ground is supplied to terminal 2 of each front fog lamp through body grounds E3, E30 and E50.

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

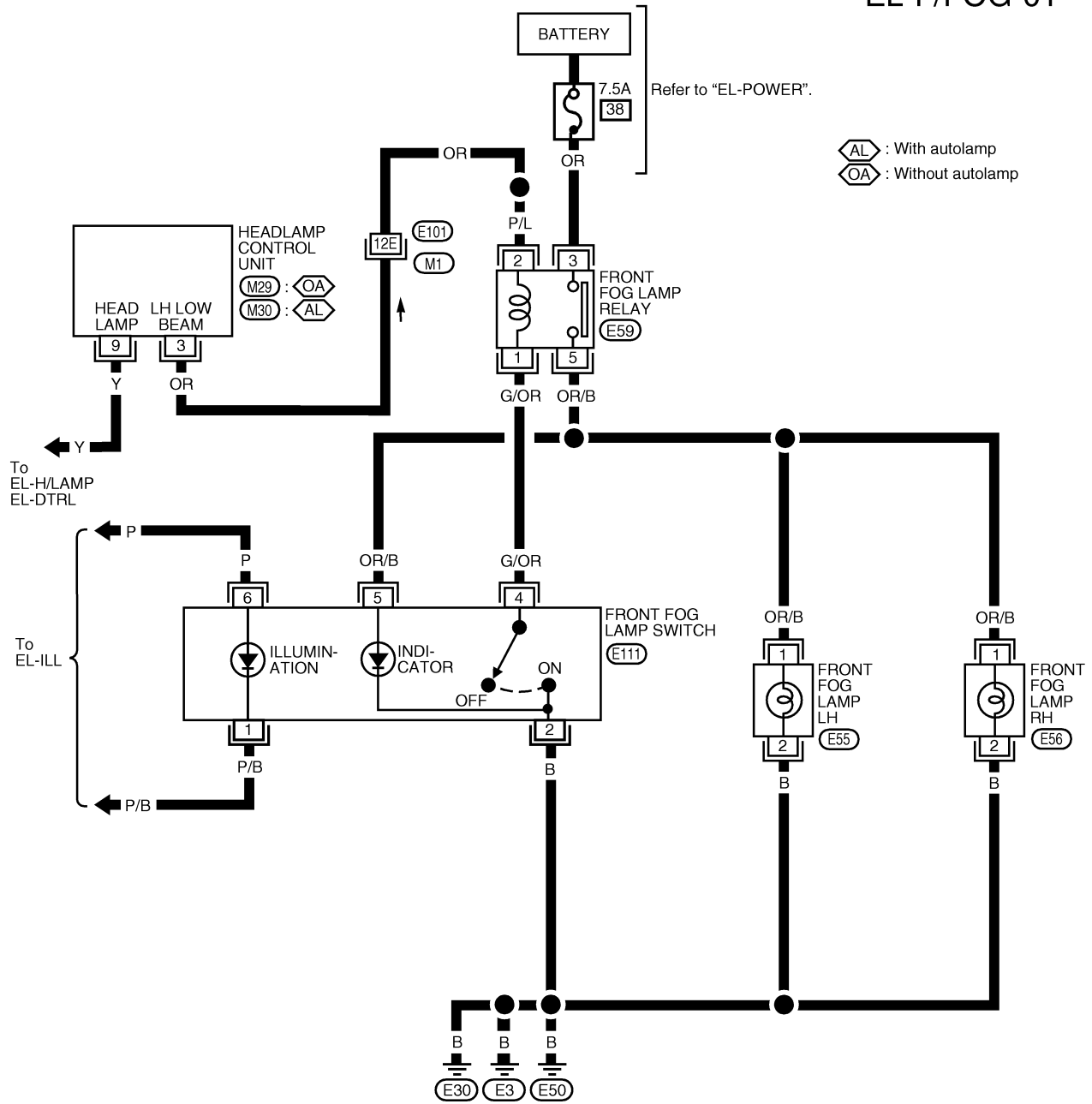
# FRONT FOG LAMP

Wiring Diagram — F/FOG —

## Wiring Diagram — F/FOG —

NDEL0156

EL-F/FOG-01



AL : With autolamp  
 OA : Without autolamp

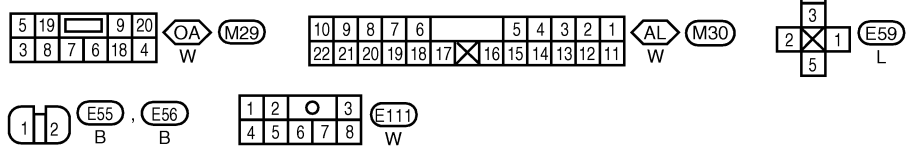
To EL-H/LAMP  
 EL-DTRL

To EL-ILL

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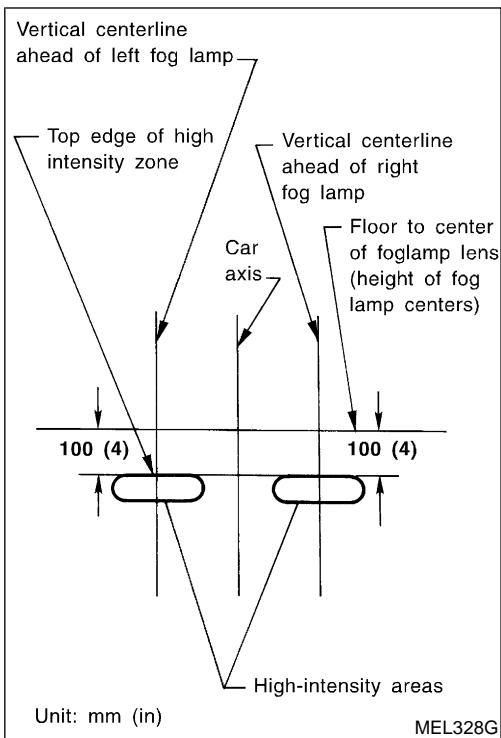
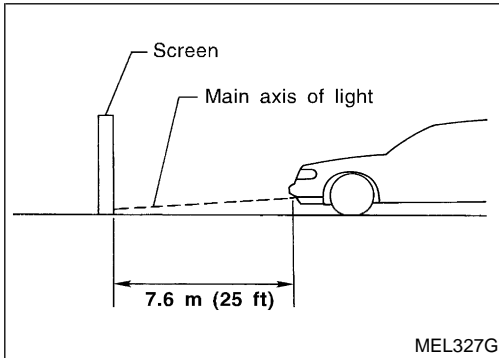
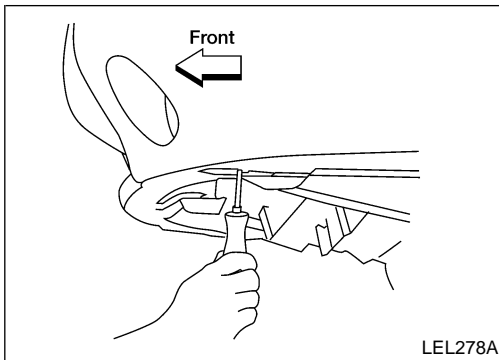


Refer to the following.  
 (M1), (E101) - SUPER MULTIPLE JUNCTION (SMJ)

LEL934

# FRONT FOG LAMP

## Aiming Adjustment



## Aiming Adjustment

Before performing aiming adjustment, make sure of the following. <sup>NDEL0157</sup>

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

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

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

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



# CORNERING LAMP

System Description

## 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.

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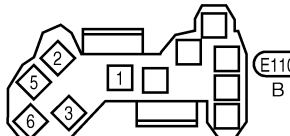
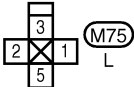
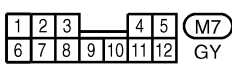
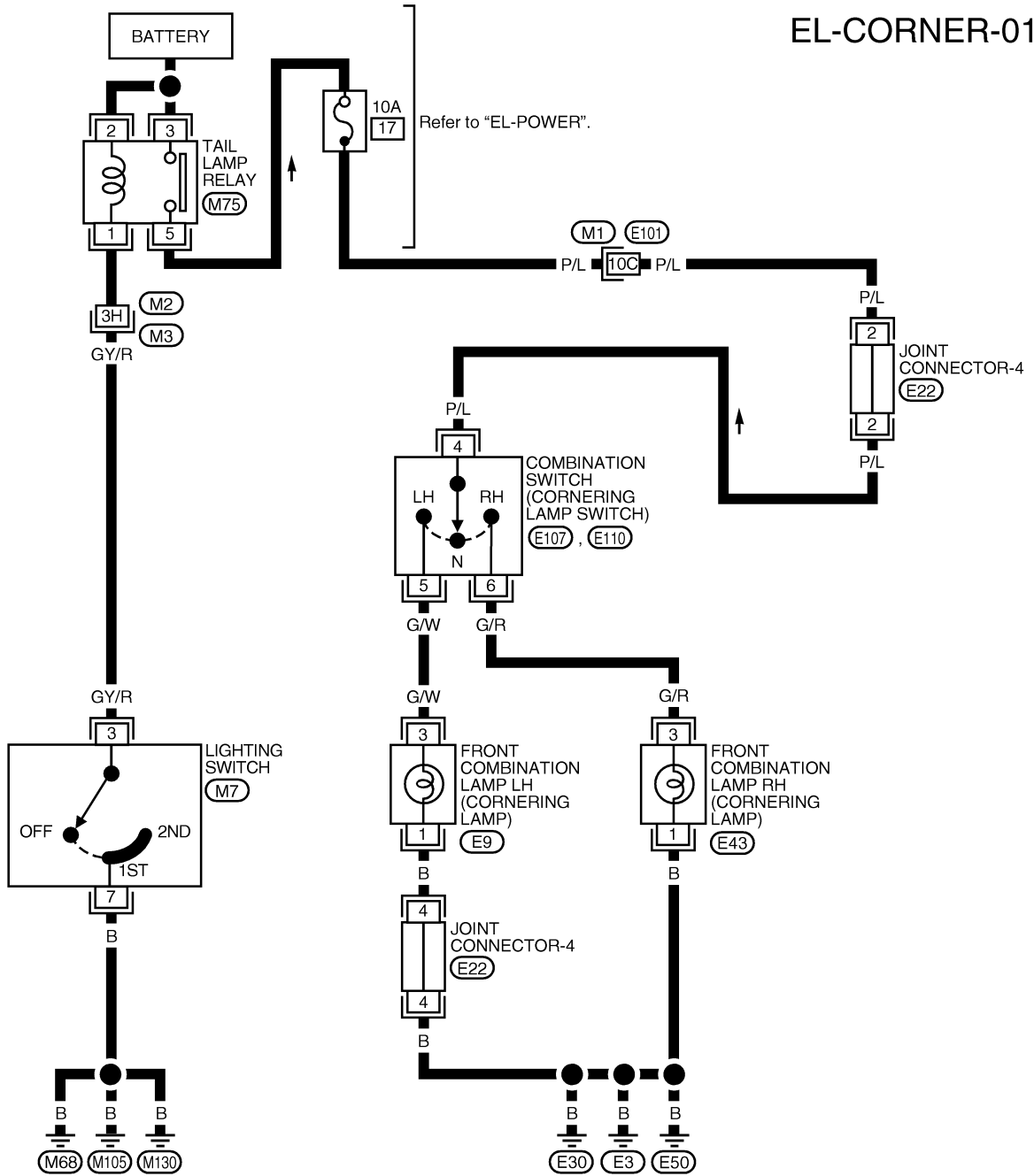
# CORNERING LAMP

Wiring Diagram — CORNER —

## Wiring Diagram — CORNER —

NDEL0034

EL-CORNER-01



Refer to the following.

(M1), (E101) - SUPER MULTIPLE JUNCTION (SMJ)

(E22) - JOINT CONNECTOR

WEL196

## 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 3 and
- 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 9 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 1 and
- 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 9 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 3 and
- 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 1 and
- 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.

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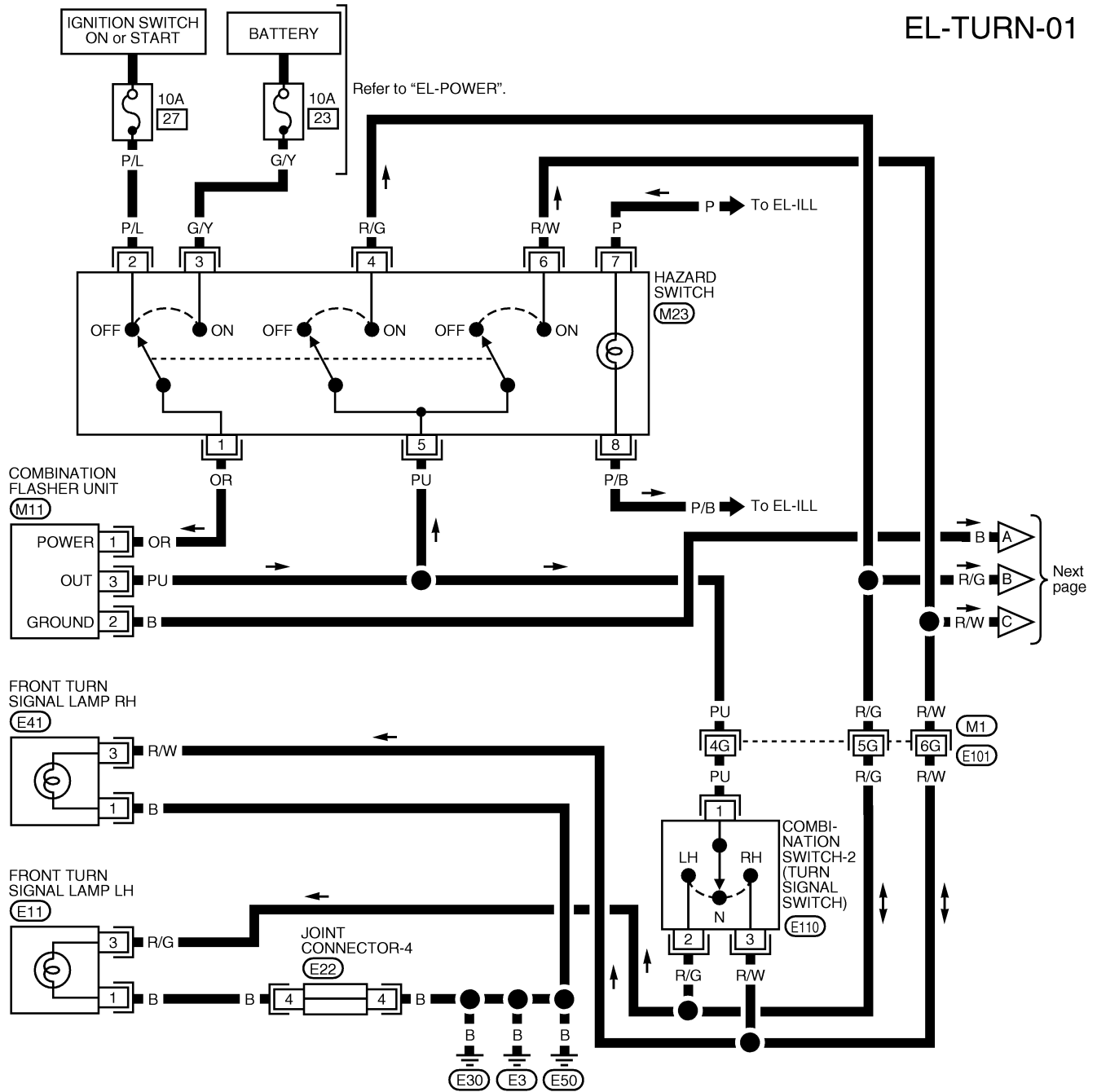
# TURN SIGNAL AND HAZARD WARNING LAMPS

Wiring Diagram — TURN —

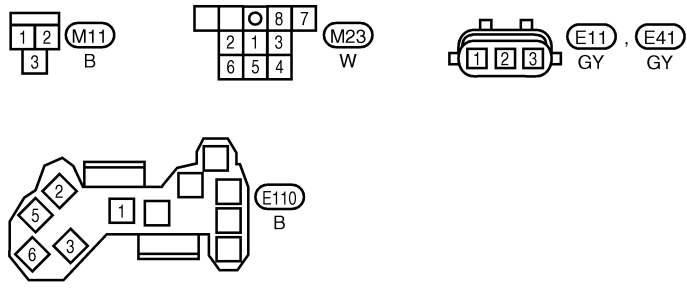
## Wiring Diagram — TURN —

NDEL0030

EL-TURN-01



Next page



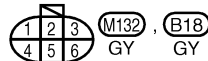
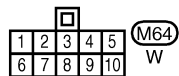
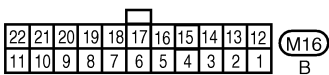
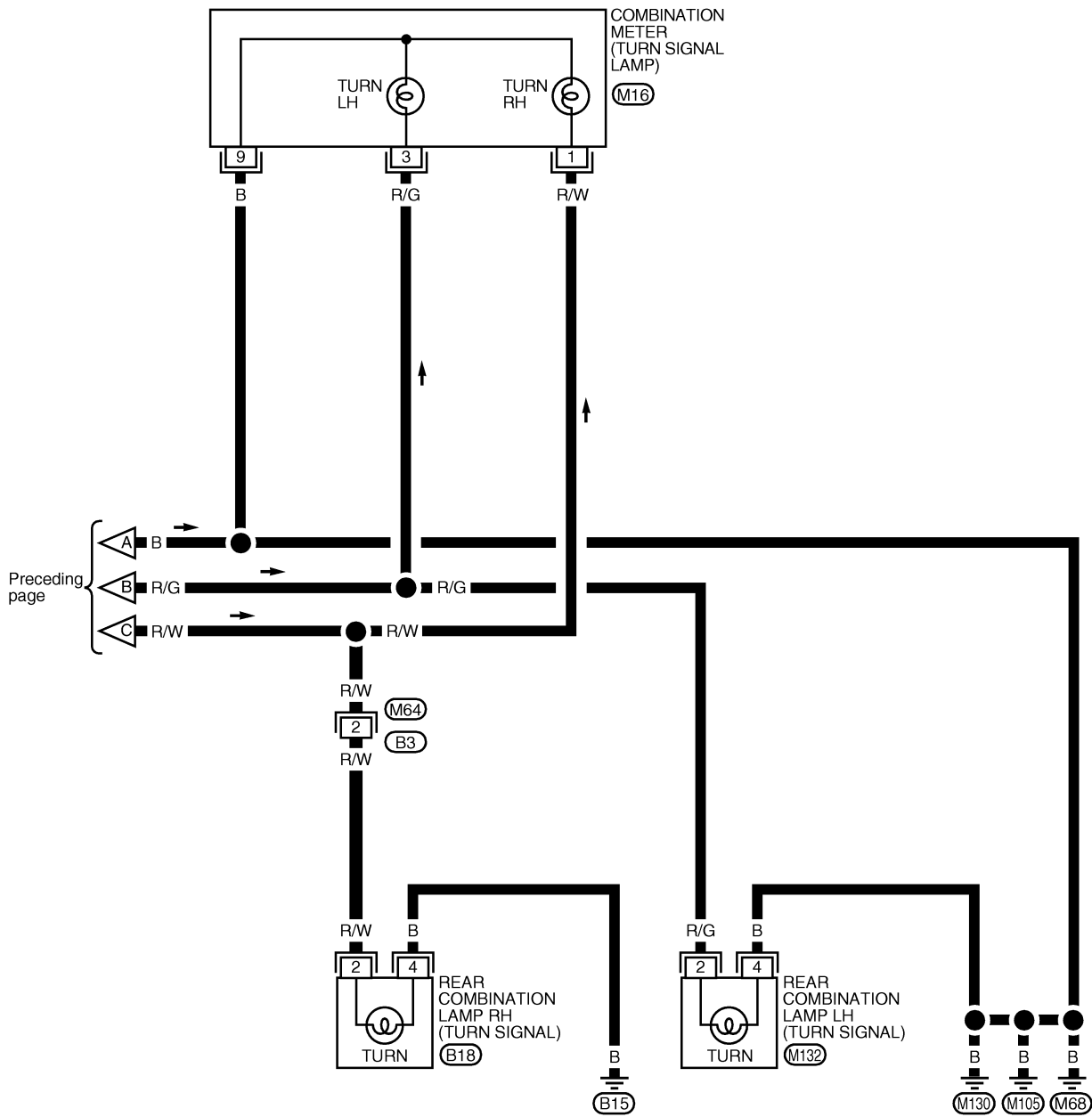
Refer to the following.  
 (M1), (E101) - SUPER MULTIPLE JUNCTION (SMJ)  
 (E22) - JOINT CONNECTOR

WEL317A

# TURN SIGNAL AND HAZARD WARNING LAMPS

Wiring Diagram — TURN — (Cont'd)

EL-TURN-02



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LEL935

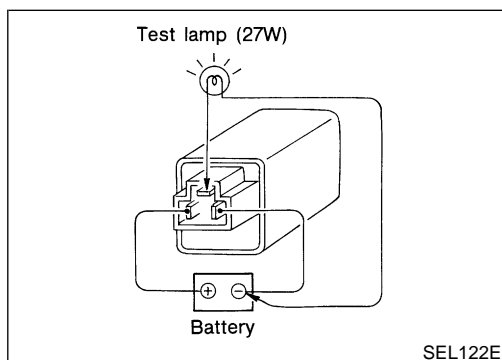
# TURN SIGNAL AND HAZARD WARNING LAMPS

Trouble Diagnoses

## Trouble Diagnoses

NDEL0031

Symptom	Possible cause	Repair order
Turn signal and hazard warning lamps do not operate.	<ol style="list-style-type: none"> <li>1. Hazard switch</li> <li>2. Combination flasher unit</li> <li>3. Open in combination flasher unit circuit</li> </ol>	<ol style="list-style-type: none"> <li>1. Check hazard switch.</li> <li>2. Refer to combination flasher unit check.</li> <li>3. Check wiring to combination flasher unit for open circuit.</li> </ol>
Turn signal lamps do not operate but hazard warning lamps operate.	<ol style="list-style-type: none"> <li>1. 10A fuse</li> <li>2. Hazard switch</li> <li>3. Turn signal switch</li> <li>4. Open in turn signal switch circuit</li> </ol>	<ol style="list-style-type: none"> <li>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.</li> <li>2. Check hazard switch.</li> <li>3. Check turn signal switch.</li> <li>4. Check PU wire between combination flasher unit and turn signal switch for open circuit.</li> </ol>
Hazard warning lamps do not operate but turn signal lamps operate.	<ol style="list-style-type: none"> <li>1. 10A fuse</li> <li>2. Hazard switch</li> <li>3. Open in hazard switch circuit</li> </ol>	<ol style="list-style-type: none"> <li>1. Check 10A fuse (No. 23, located in fuse block). Verify battery positive voltage is present at terminal 3 of hazard switch.</li> <li>2. Check hazard switch.</li> <li>3. Check PU wire between combination flasher unit and hazard switch for open circuit.</li> </ol>
Front turn signal lamp LH or RH does not operate.	<ol style="list-style-type: none"> <li>1. Bulb</li> <li>2. Grounds E3, E30 and E50</li> <li>3. Open in turn signal circuit</li> </ol>	<ol style="list-style-type: none"> <li>1. Check bulb.</li> <li>2. Check grounds E3, E30 and E50.</li> <li>3. Check R/G wire (LH) or R/W wire (RH) between turn signal lamp and turn signal switch for open circuit.</li> </ol>
Rear turn signal lamp LH does not operate.	<ol style="list-style-type: none"> <li>1. Bulb</li> <li>2. Grounds M68, M105 and M130</li> <li>3. Open in turn signal circuit</li> </ol>	<ol style="list-style-type: none"> <li>1. Check bulb.</li> <li>2. Check grounds M68, M105 and M130.</li> <li>3. Check R/G wire between rear turn signal lamp LH and turn signal switch for open circuit.</li> </ol>
Rear turn signal lamp RH does not operate.	<ol style="list-style-type: none"> <li>1. Bulb</li> <li>2. Ground B15</li> <li>3. Open in turn signal circuit</li> </ol>	<ol style="list-style-type: none"> <li>1. Check bulb.</li> <li>2. Check ground B15.</li> <li>3. Check R/W wire between rear turn signal lamp RH and turn signal switch for open circuit.</li> </ol>
LH and RH turn indicators do not operate.	<ol style="list-style-type: none"> <li>1. Grounds M68, M105 and M130</li> <li>2. Combination meter</li> </ol>	<ol style="list-style-type: none"> <li>1. Check grounds M68, M105 and M130.</li> <li>2. Check combination meter.</li> </ol>
LH or RH turn indicator does not operate.	<ol style="list-style-type: none"> <li>1. Bulb</li> <li>2. Open in indicator circuit</li> <li>3. Combination meter</li> </ol>	<ol style="list-style-type: none"> <li>1. Check bulb in combination meter.</li> <li>2. Check R/G wire (LH) or R/W wire (RH) between turn signal switch and combination meter for open circuit.</li> <li>3. Check combination meter.</li> </ol>



## Electrical Components Inspection COMBINATION FLASHER UNIT CHECK

NDEL0032

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

NDEL0035

**NOTE:**

Trailer tow option is not available on all vehicles.

GI

**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

MA

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

EM

Ground is supplied to trailer tow control unit terminal 2 and trailer harness connector terminal 1 through body grounds M68, M105 and M130.

LC

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.

EC

FE

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.

AT

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.

AX

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

SU

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

BR

Power is also supplied to trailer RH stop/turn lamp

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

ST

RS

BT

HA

SC

**EL**

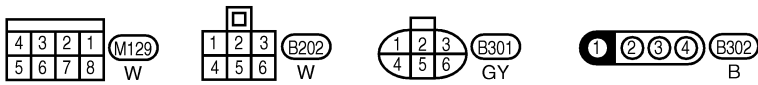
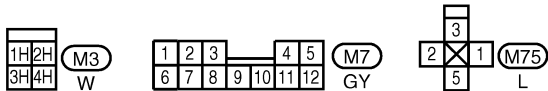
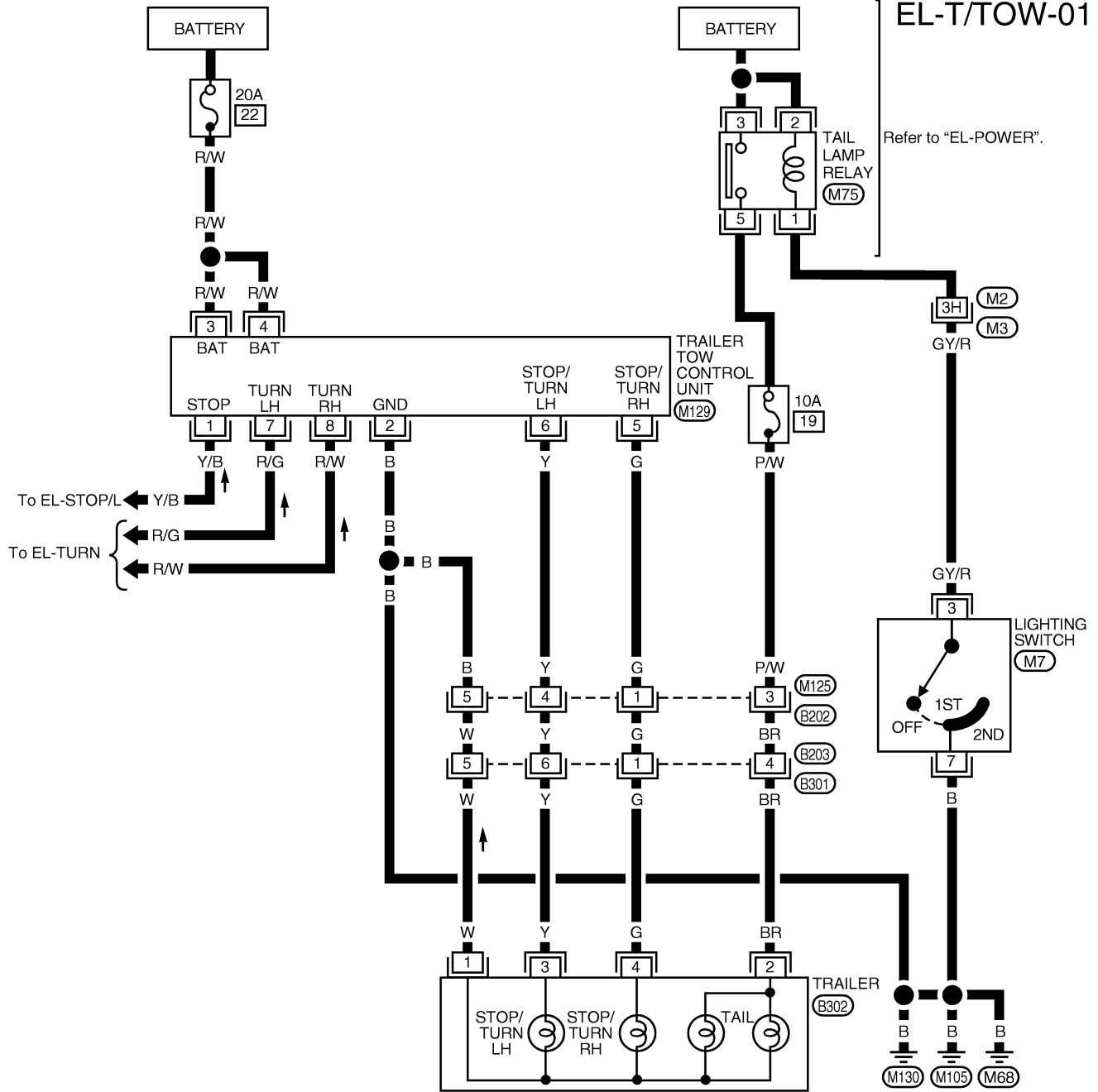
IDX

# TRAILER TOW

Wiring Diagram — T/TOW —

## Wiring Diagram — T/TOW —

NDEL0036



WEL197



# TRAILER TOW

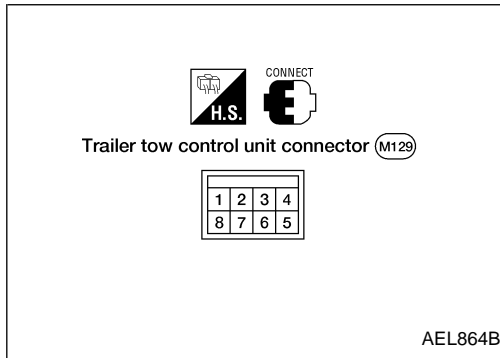
Trouble Diagnoses

## Trouble Diagnoses

### TRAILER TOW CONTROL UNIT INSPECTION TABLE

NDEL0037

NDEL0037S01



Terminal No.	Wire color	Item	Condition	Voltage (Approx. value)
1	Y/B	Stop lamps signal (input)	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 (input)	When LH turn lamps or hazard lamps operate	12 (intermittently)
			All other conditions	0
8	R/W	RH turn lamps (input)	When RH turn lamps or hazard lamps operate	12 (intermittently)
			All other conditions	0

GI

MA

EM

LC

EC

FE

AT

AX

SU

BR

ST

RS

BT

HA

SC

EL

IDX

# ILLUMINATION

System Description

## 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 7.5A 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 10A fuse (No. 17, located in the fuse block)
- to front fog lamp switch terminal 6 and
- through 7.5A fuse (No. 18, located in the fuse block)
- to power terminal on all illuminated components except door mirror remote control switch and front fog lamp switch.

For autolamp 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-34 or "HEADLAMP (FOR CANADA) — DAYTIME LIGHT SYSTEM, EL-48.

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 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
Family entertainment system control panel*	M307	16	15
Audio unit	M45	21	22
Combination meter	M16	19	7
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	1	2

# ILLUMINATION

System Description (Cont'd)

Component	Connector No.	Power terminal	Ground Terminal	
A/C control unit (without EATC)	M37, M34	1 and 7	2 and 1	GI
EATC unit*	M33	6	1	
Hazard switch	M23	7	8	MA
Rear window defogger switch	M22	6	5	
Ash tray	M77	1	2	EM
Rear fan switch (front)*	M32	2	3	
Rear wiper switch	M21	3	2	LC
Front fog lamp switch*	E111	6	1	
Door mirror remote control switch*	D9	1	3	EC

\* If equipped.

FE

AT

AX

SU

BR

ST

RS

BT

HA

SC

**EL**

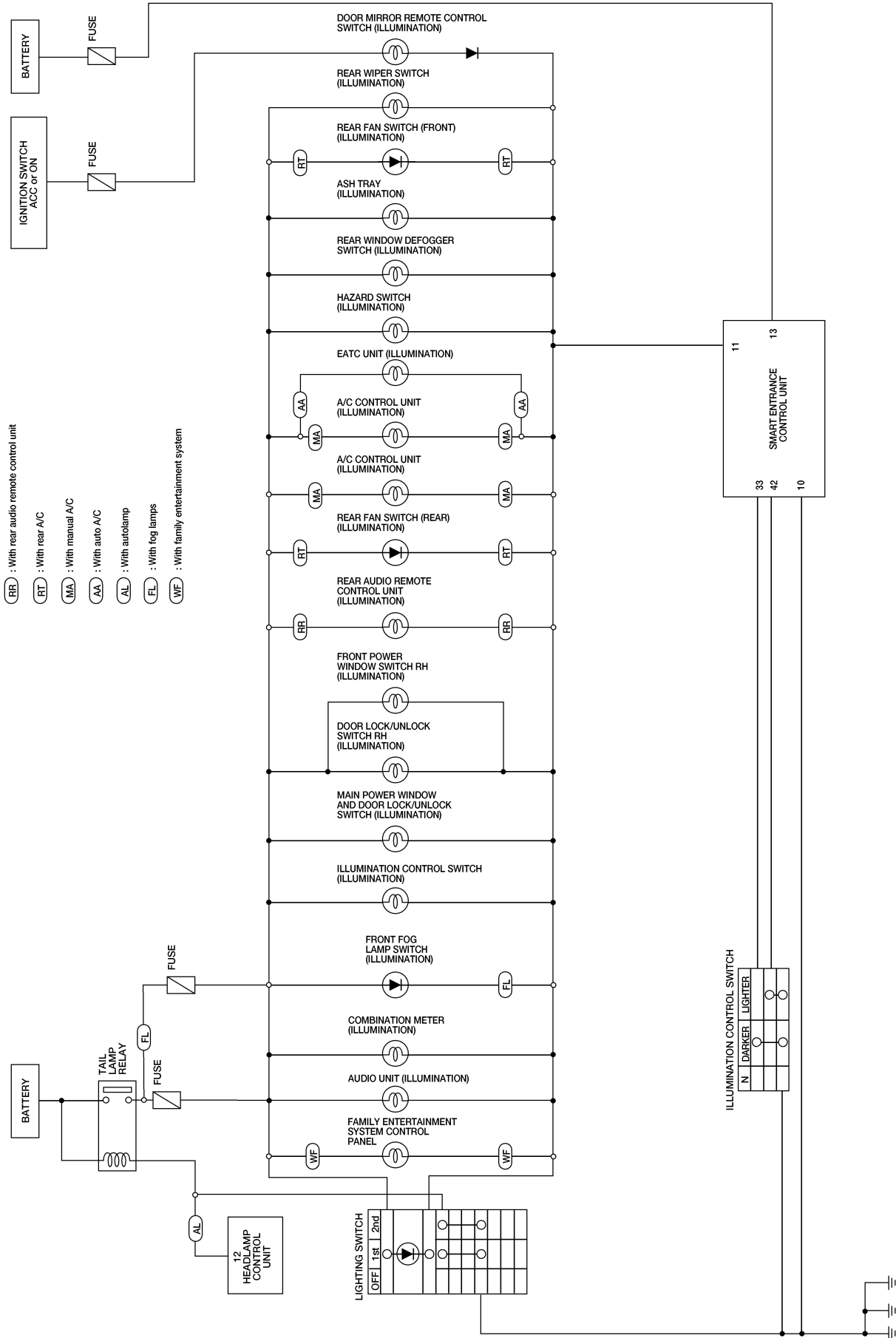
IDX

# ILLUMINATION

Schematic

NDEL0040

## Schematic



EL-72

WEL936

# ILLUMINATION

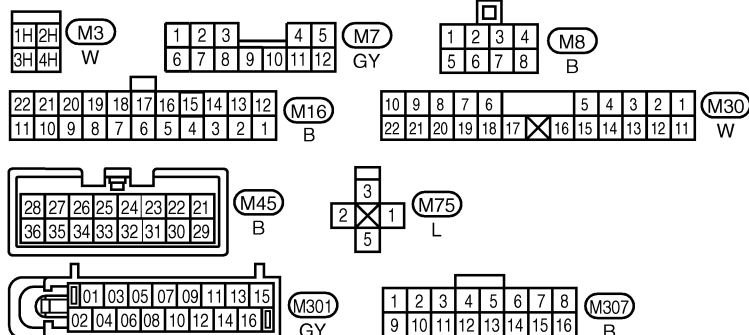
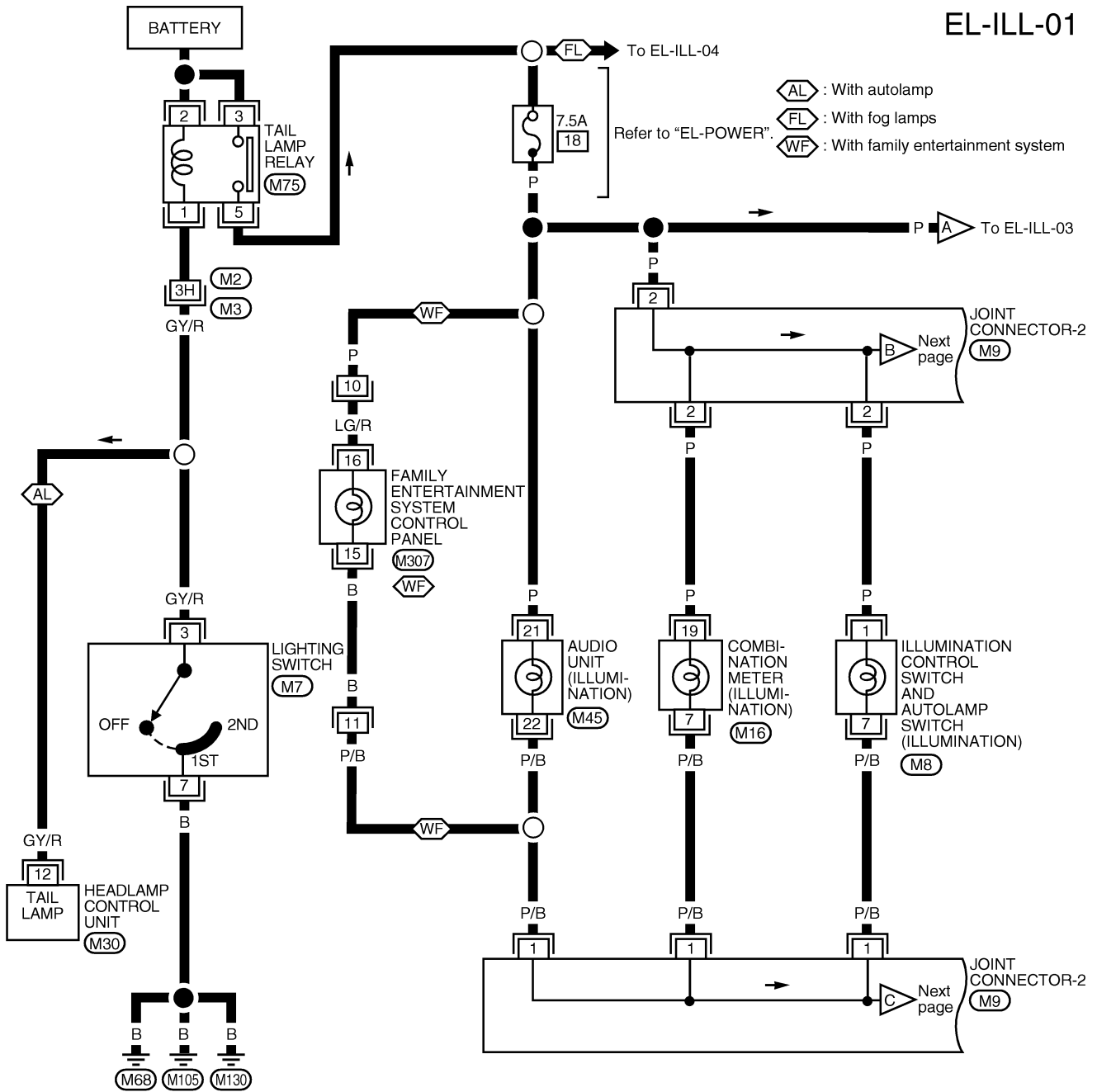
Wiring Diagram — ILL —

## Wiring Diagram — ILL —

NDEL0041

EL-ILL-01

GI  
MA  
EM  
LC  
EC  
FE  
AT  
AX  
SU  
BR  
ST  
RS  
BT  
HA  
SC



Refer to the following.  
(M9) - JOINT CONNECTOR

EL




IDX

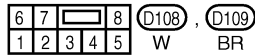
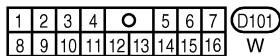
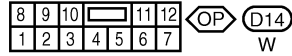
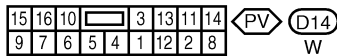
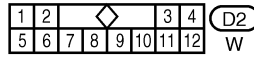
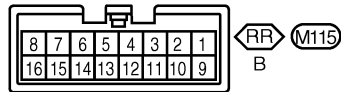
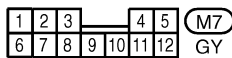
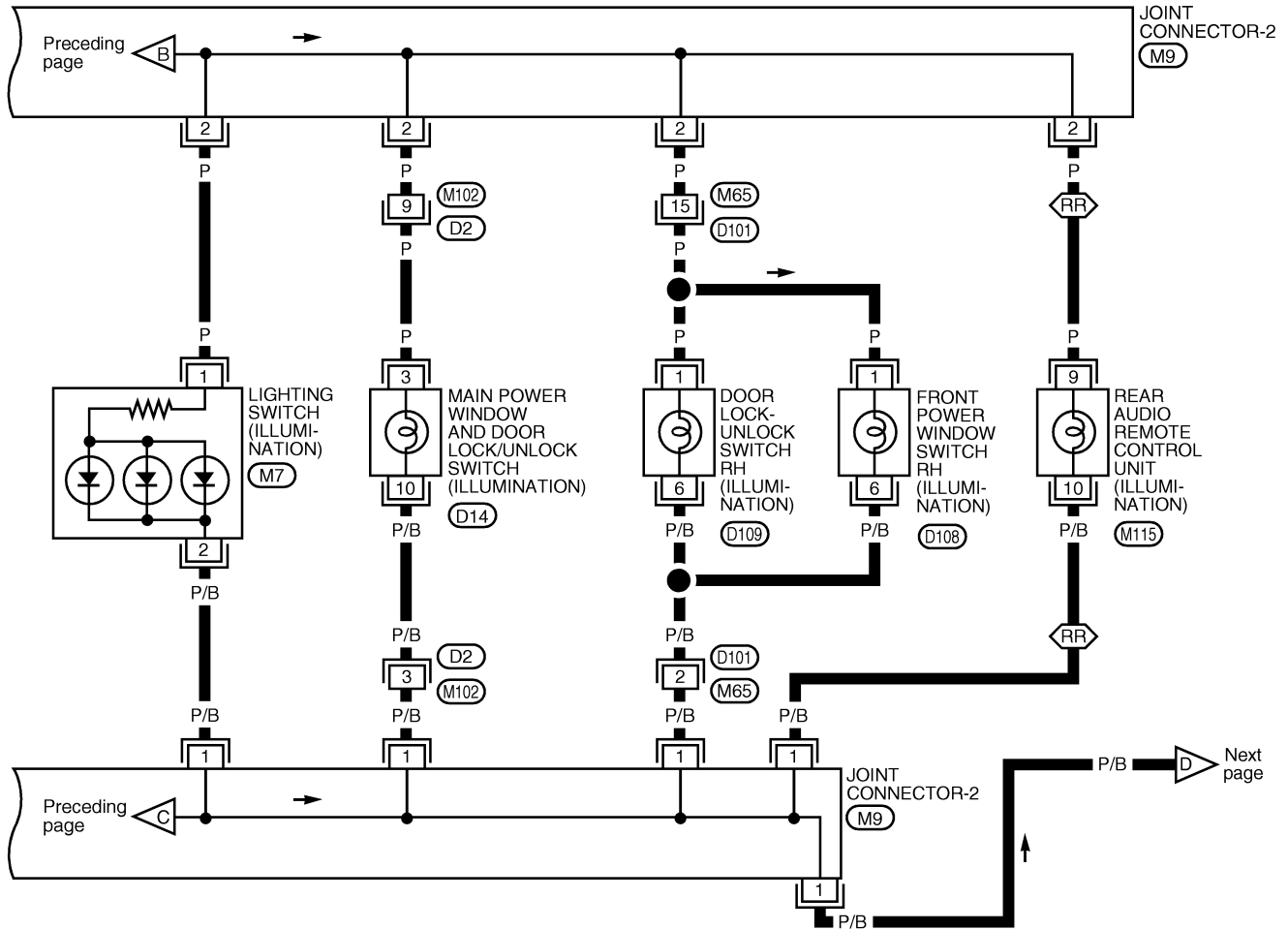
WEL937

# ILLUMINATION

Wiring Diagram — ILL — (Cont'd)

EL-ILL-02

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



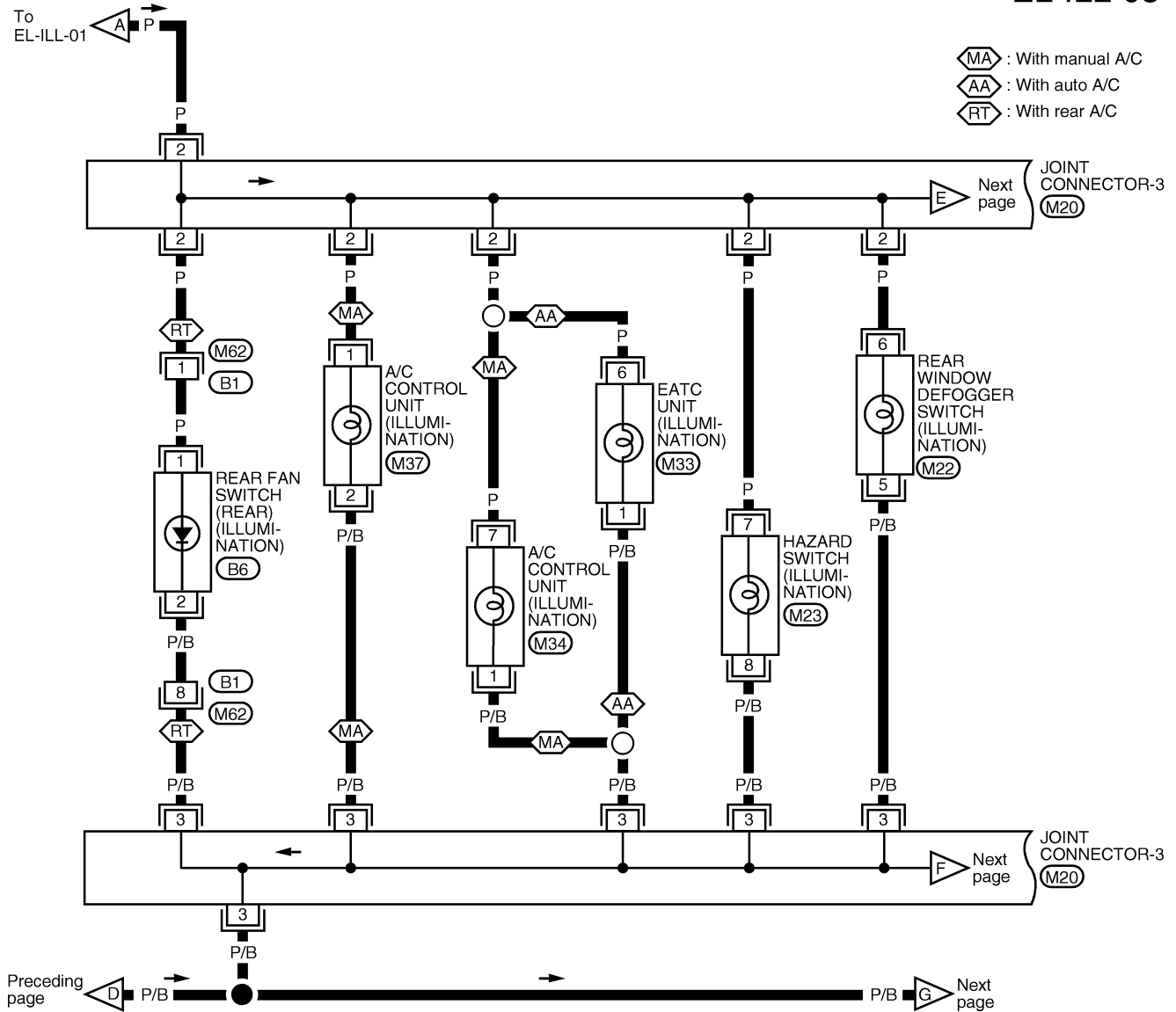
Refer to the following.  
(M9) - JOINT CONNECTOR

WEL938

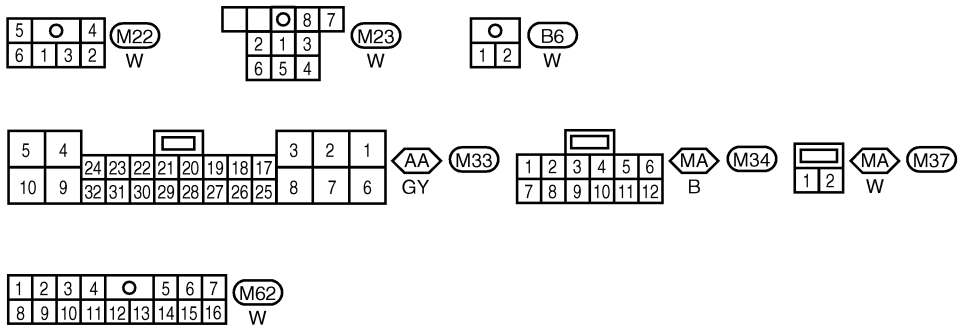
# ILLUMINATION

Wiring Diagram — ILL — (Cont'd)

EL-ILL-03



GI  
MA  
EM  
LC  
EC  
FE  
AT  
AX  
SU  
BR  
ST  
RS  
BT  
HA  
SC



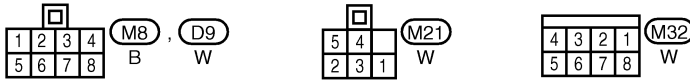
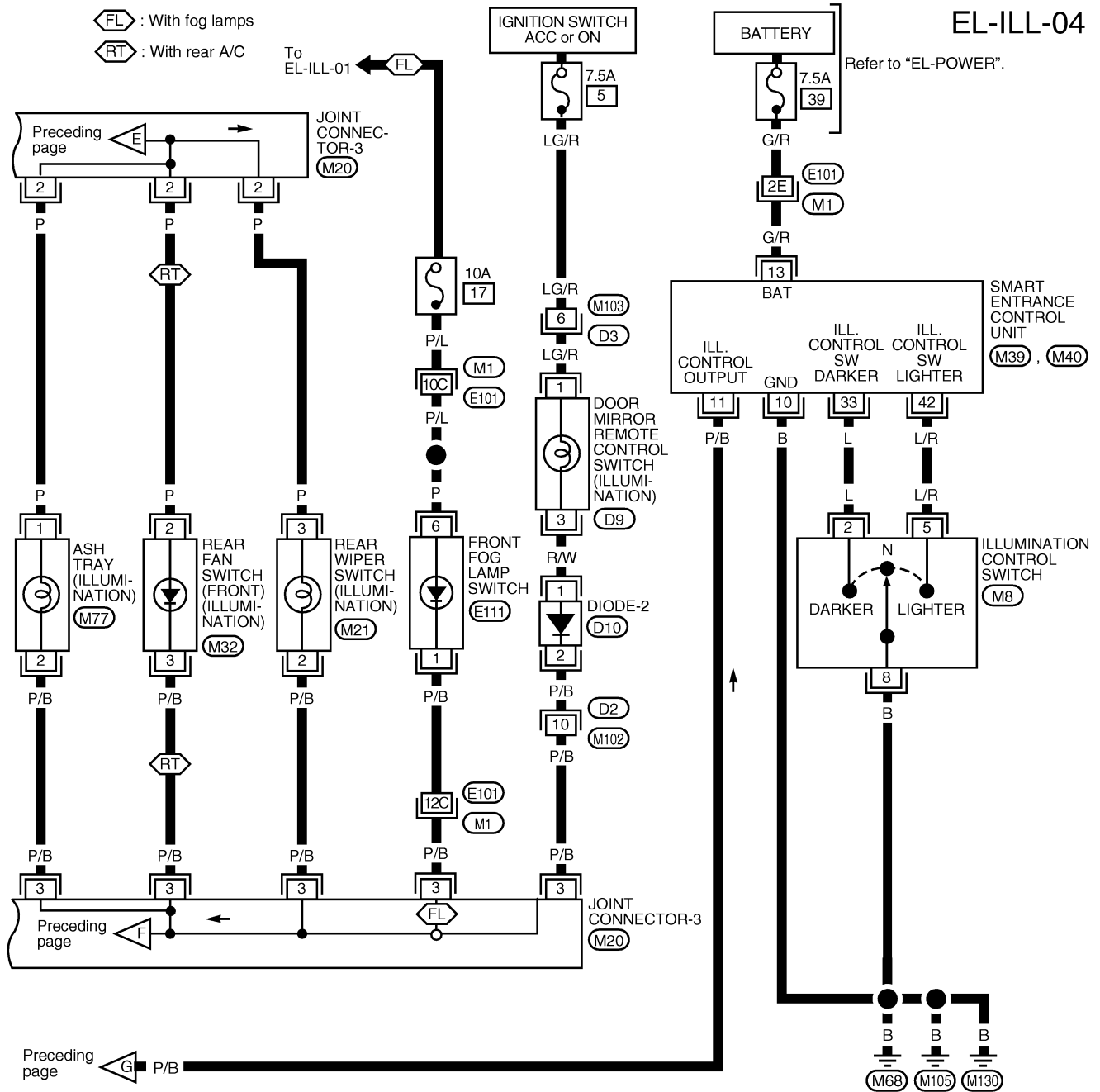
Refer to the following.  
M20 - JOINT CONNECTOR

EL  
IDX

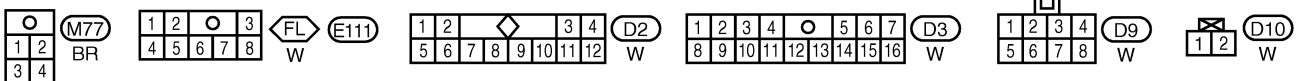
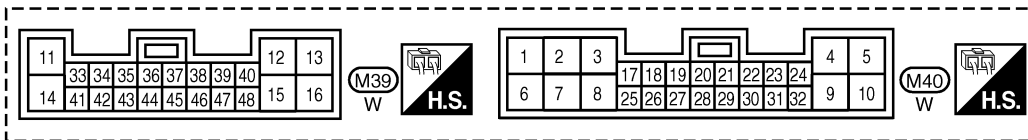
WEL201

# ILLUMINATION

Wiring Diagram — ILL — (Cont'd)



Refer to the following.  
 (M1), (E101) - SUPER MULTIPLE JUNCTION (SMJ)  
 (M20) - JOINT CONNECTOR



WEL939



## System Description

NDEL0039

NDEL0039S01

### OUTLINE

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) (Zone C, when its switch is in ON 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

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.

GI

MA

EM

LC

EC

FE

AT

AX

SU

BR

ST

RS

BT

HA

NDEL0039S02

SC

EL

IDX

# INTERIOR ROOM LAMP

System Description (Cont'd)

---

## **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.

### **Zones A and B (Door Controlled)**

NDEL0039S0301

When the driver, passenger or either side door is left open, and ignition switch is OFF, the interior room lamps will turn OFF after approximately 30 minutes.

When the back door is left open and ignition switch is OFF, the interior room lamps will turn OFF after approximately 60 minutes.

If the ignition switch is turned from OFF to ON and then OFF or any door is opened or closed, the battery saver timer is reset.

### **Zone C (Timer Controlled)**

NDEL0039S0302

When ignition switch is turned OFF, the smart entrance control unit provides a ground for approximately 30 minutes to Zone C circuit.

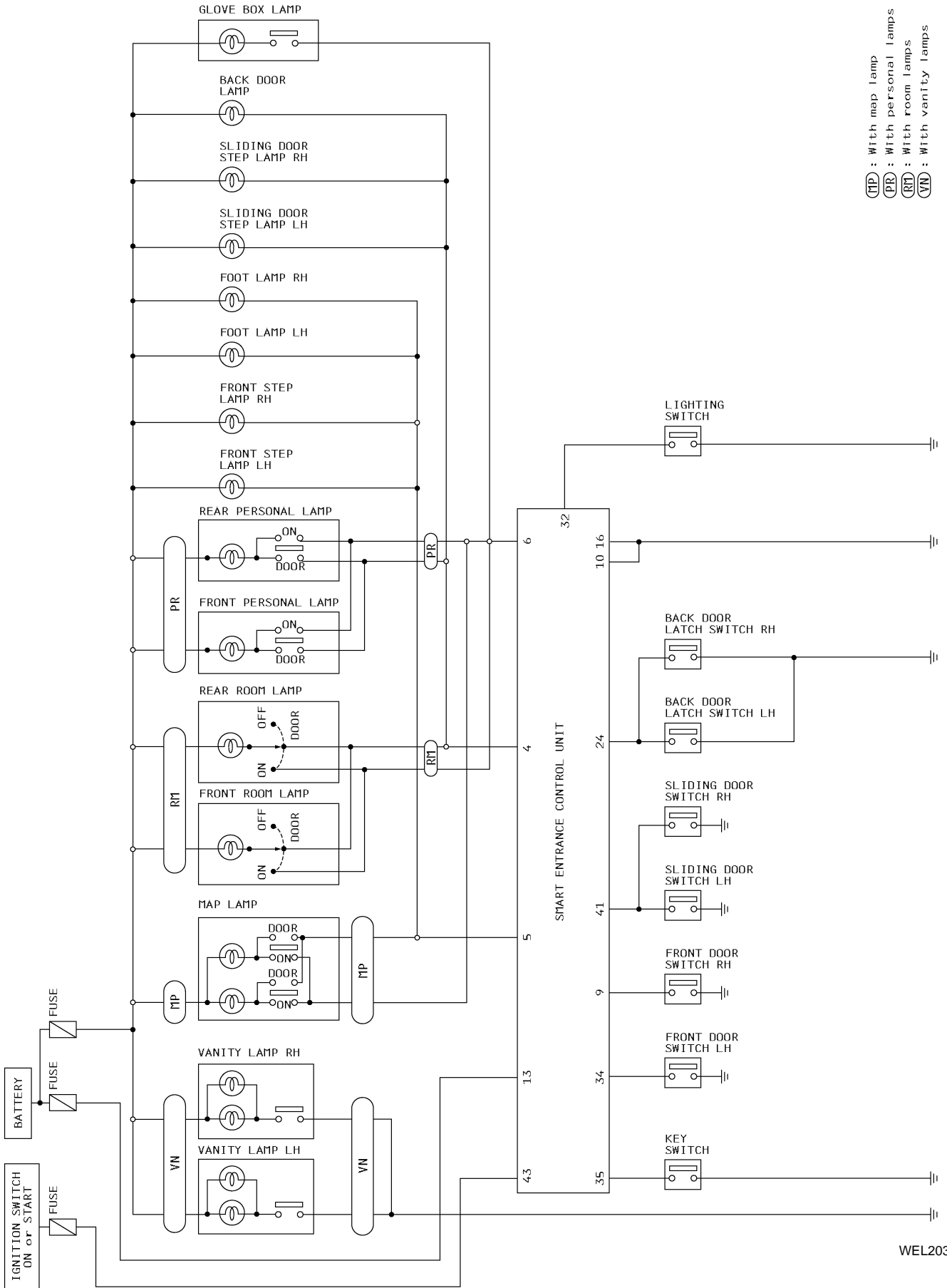
The timer is reset when any door is opened or closed.

# INTERIOR ROOM LAMP

Schematic

## Schematic

NDEL0042



GI

MA

EM

LC

EC

FE

AT

AX

SU

BR

ST

RS

BT

HA

SC

**EL**

IDX

WEL203

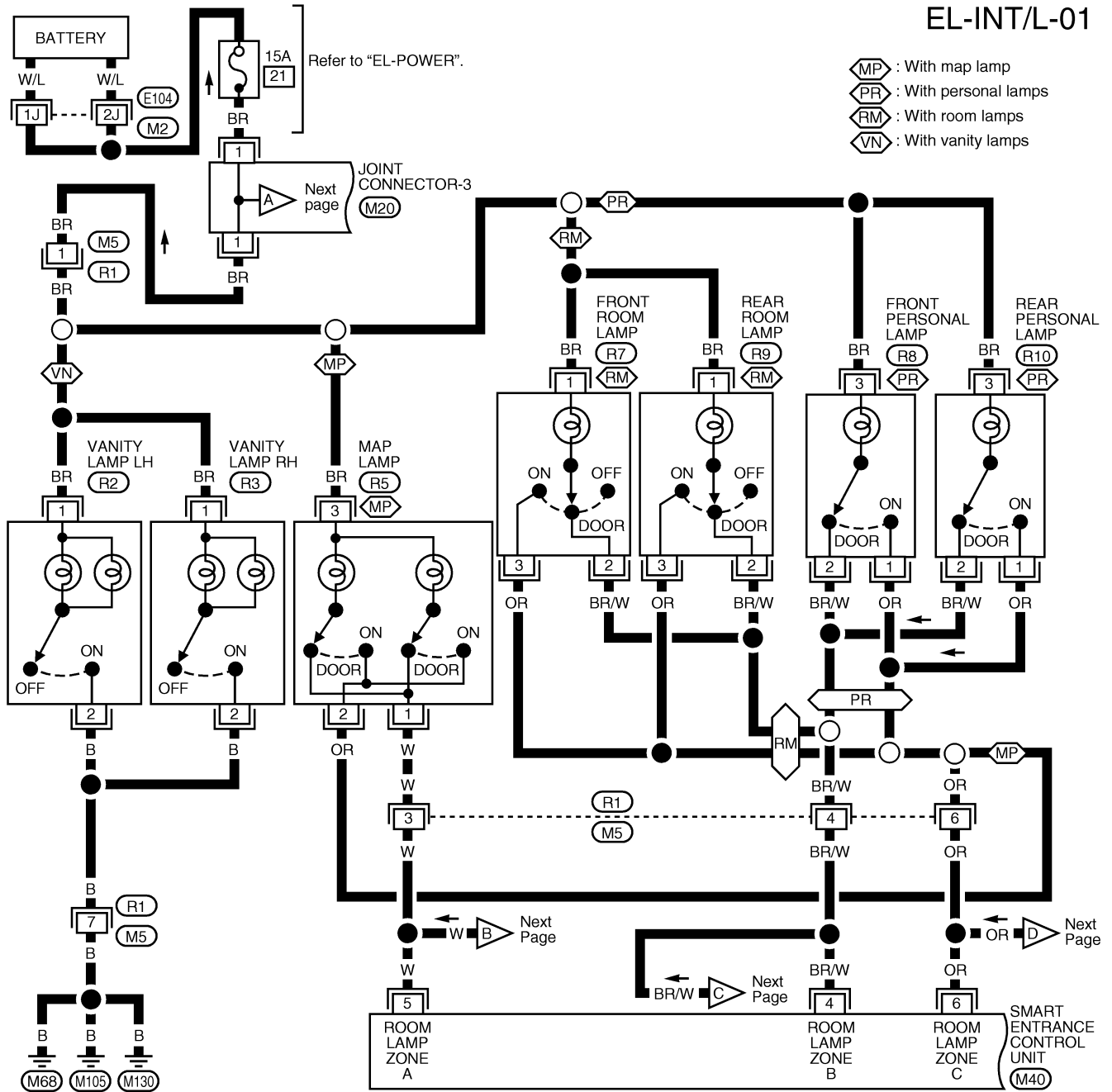
# INTERIOR ROOM LAMP

Wiring Diagram — INT/L —

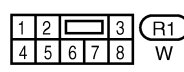
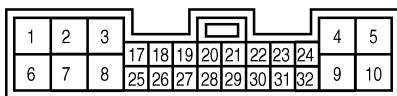
## Wiring Diagram — INT/L —

NDEL0043

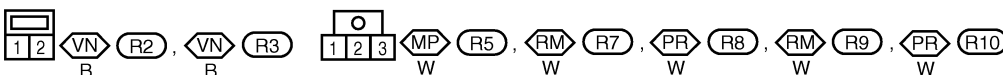
EL-INT/L-01



- : With map lamp
- : With personal lamps
- : With room lamps
- : With vanity lamps



Refer to the following.  
 - JOINT CONNECTOR

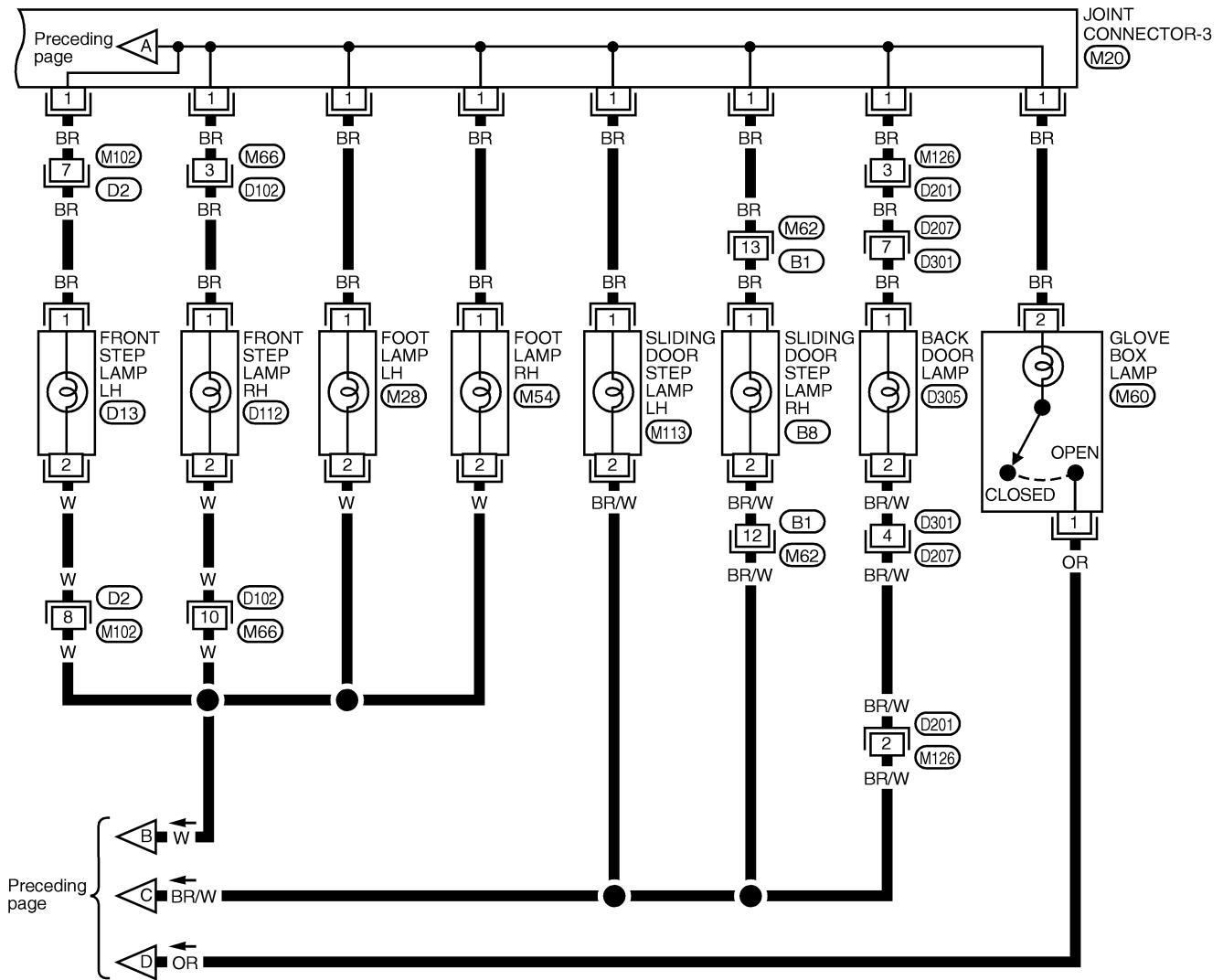


WEL940

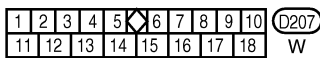
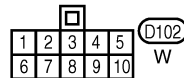
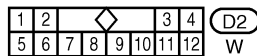
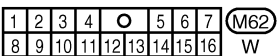
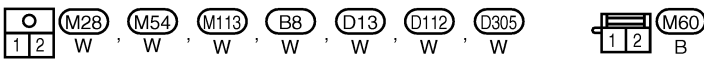
# INTERIOR ROOM LAMP

Wiring Diagram — INT/L — (Cont'd)

EL-INT/L-02



GI  
MA  
EM  
LC  
EC  
FE  
AT  
AX  
SU  
BR  
ST  
RS  
BT  
HA  
SC



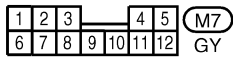
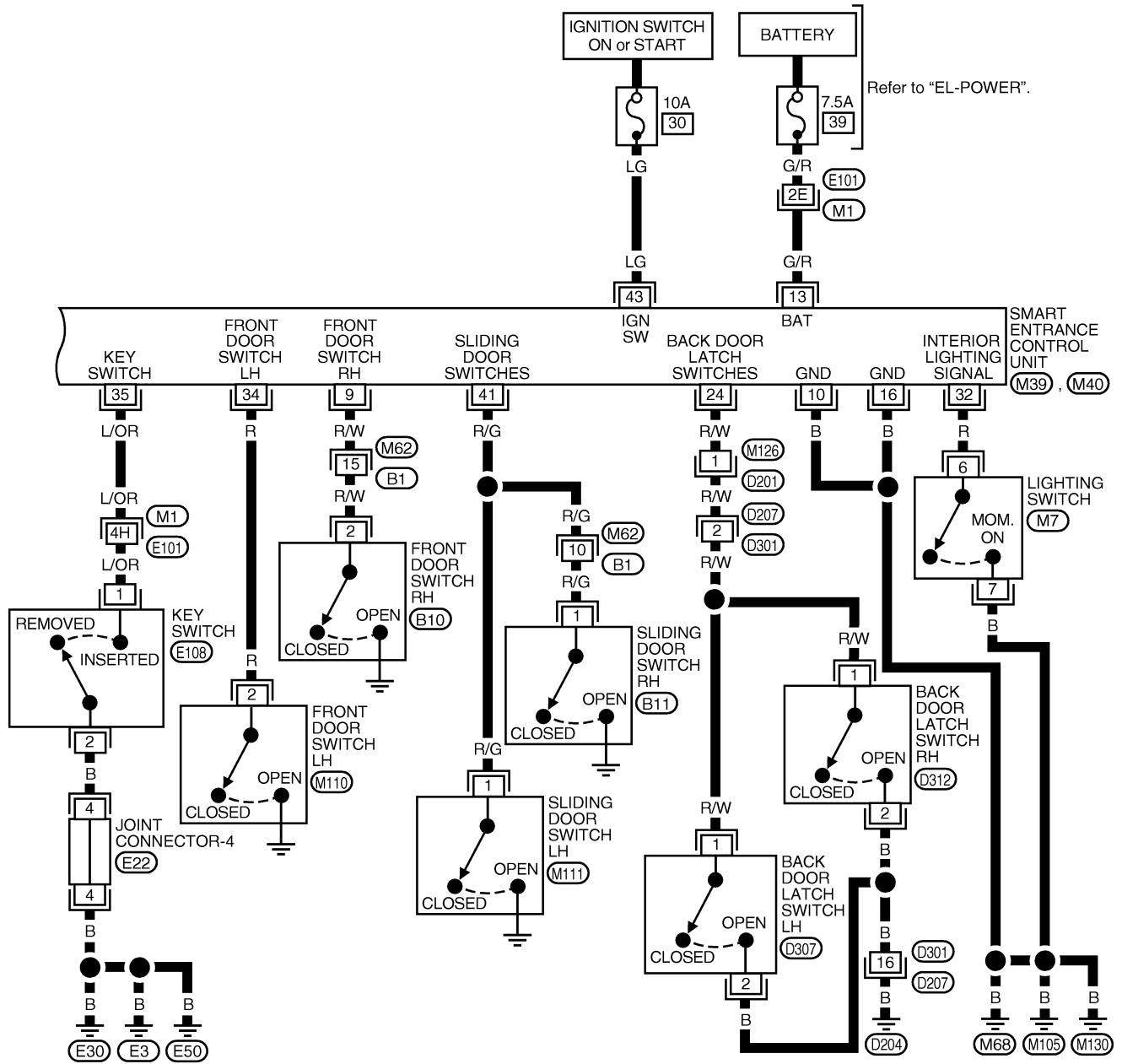
Refer to the following.  
(M20) - JOINT CONNECTOR

EL  
IDX

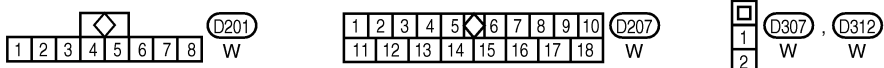
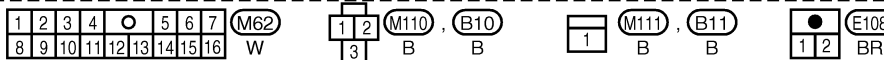
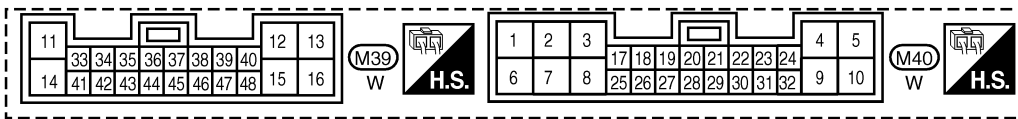
# INTERIOR ROOM LAMP

Wiring Diagram — INT/L — (Cont'd)

EL-INT/L-03



Refer to the following.  
 (M1), (E101) - SUPER MULTIPLE JUNCTION (SMJ)  
 (E22) - JOINT CONNECTOR



WEL206

# INTERIOR ROOM LAMP

Trouble Diagnoses

## Trouble Diagnoses

**SYMPTOM:** Interior room lamp does not turn on or off properly. NDEL0044

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

<b>2</b>	<b>CHECK LIGHTING SWITCH (INTERIOR) SIGNAL</b>	
1. Close all doors, turn ignition switch to ON position and push lighting switch. <b>Do interior room lamps turn on?</b>		
2. Push lighting switch again. <b>Do interior room lamps turn off?</b>		
<b>OK or NG</b>		
OK	▶	GO TO 3.
NG	▶	<b>Check the following.</b> <ul style="list-style-type: none"> <li>● Lighting switch</li> <li>● Lighting switch ground circuit</li> <li>● Harness for open or short between lighting switch and smart entrance control unit</li> </ul>

<b>3</b>	<b>CHECK INTERIOR ROOM LAMP POWER SUPPLY</b>	
For vehicles equipped with room lamps, check voltage between room lamp harness connector R7 (front) or R9 (rear) terminal 1 (BR) and ground.		
For vehicles equipped with personal lamps, check voltage between personal lamp harness connector R8 (front) or R10 (rear) terminal 3 (BR) and ground.		
<b>OK or NG</b>		
OK	▶	GO TO 4.
NG	▶	Check harness for open between fuse and interior room lamps.

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

# INTERIOR ROOM LAMP

Trouble Diagnoses (Cont'd)

<b>5</b>	<b>CHECK KEY SWITCH (INSERTED) AND IGNITION ON SIGNAL</b>		
1. Insert key into ignition key cylinder. 2. Open front door LH. <b>Does warning chime sound?</b> 3. Turn ignition key to ON position. <b>Does warning chime stop sounding?</b>			
<b>OK or NG</b>			
OK	▶	GO TO 6.	
NG	▶	Check "WARNING CHIME" system, refer to EL-109.	

<b>6</b>	<b>CHECK DOOR SWITCH INPUT SIGNAL</b>		
Check voltage between smart entrance control unit harness connectors M39, M40 terminals 34 (R) (front door switch LH) , 9 (R/W) (front door switch RH), 41 (R/G) (sliding door switch LH and RH), 24 (R/W) (back door latch switch LH and RH) and ground.			
LEL303A			
<b>OK or NG</b>			
OK	▶	Check harness for open or short between smart entrance control unit and interior room lamps.	
NG	▶	<b>Check the following.</b> <ul style="list-style-type: none"> <li>● Door switch</li> <li>● Door switch ground condition</li> <li>● Harness for open or short between door switch and smart entrance control unit</li> </ul>	

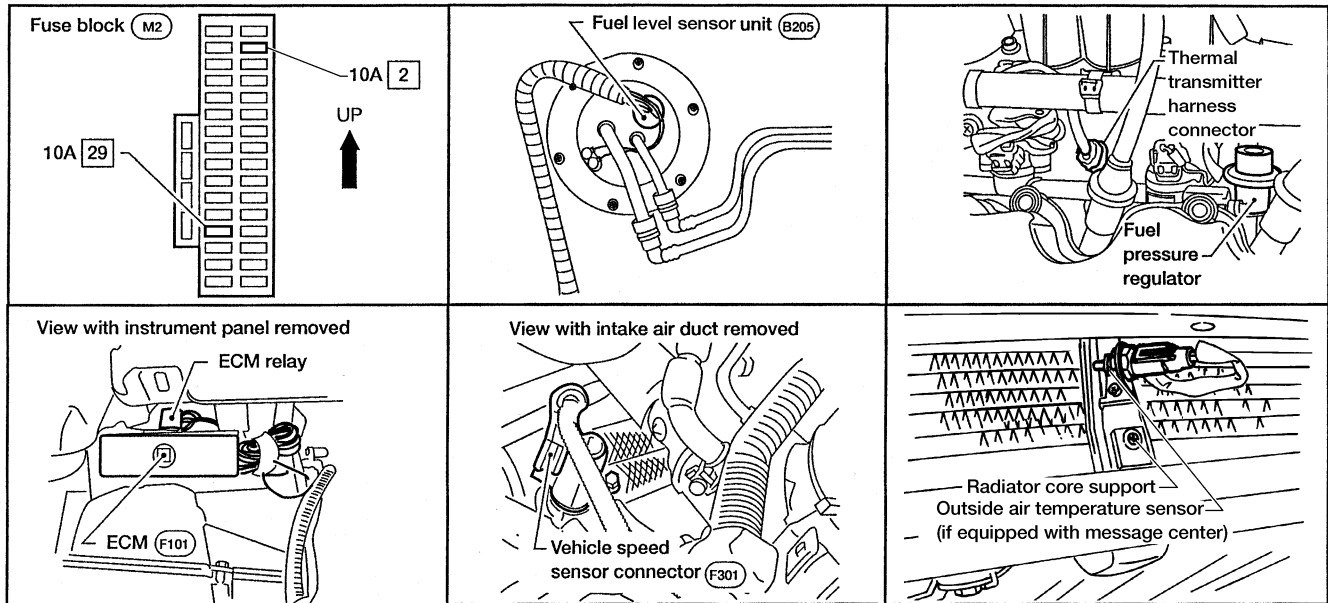


# METERS AND GAUGES

Component Parts and Harness Connector Location

## Component Parts and Harness Connector Location

NDEL0045



WEL268A

## System Description

### POWER SUPPLY AND GROUND CIRCUIT

NDEL0046

NDEL0046S01

Power is supplied at all times

- through 10A fuse (No. 2, located in the fuse block)
- to combination meter terminal 5.

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

- through 10A fuse (No. 29, located in the fuse block)
- to combination meter terminal 2.

Ground is supplied

- to combination meter terminal 22
- 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 25 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 27 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

- from terminal 5 of the fuel level sensor unit
- to combination meter terminal 26 for the fuel gauge
- through terminal 6 of the fuel level sensor unit and
- through body grounds M68, M105 and M130.

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# METERS AND GAUGES

System Description (Cont'd)

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## **SPEEDOMETER**

NDEL0046S05

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

The voltage is supplied

- to combination meter terminal 11 for the speedometer
- from vehicle speed sensor terminal 1.

The speedometer converts the voltage into the vehicle speed displayed.

## **MESSAGE CENTER (IF EQUIPPED)**

NDEL0046S06

### **Outside Air Temperature**

NDEL0046S0601

The message center will display outside air temperature in °C or °F with a range of -40°C to 60°C or -40°F to 140°F.

An outside air temperature signal is supplied

- to combination meter terminal 24
- from outside air temperature sensor terminal 2.

Ground is supplied to outside air temperature sensor terminal 1 through body grounds E3, E30 and E50.

### **Average Fuel Economy**

NDEL0046S0602

Average fuel economy is displayed in liters/100 km (Canada only) or miles/gallon (U.S.A. only). The vehicle must be moving for average fuel economy to be calculated. The unified meter control unit calculates average fuel economy based on vehicle speed (signal from vehicle speed sensor) and fuel flow (signal from ECM).

Fuel flow data is supplied

- from terminal 8 of the ECM
- to combination meter terminal 6.

The vehicle speed sensor sends a voltage signal to the combination meter.

The voltage is supplied

- to combination meter terminal 11.
- from vehicle speed sensor terminal 1.

### **Distance to Empty**

NDEL0046S0603

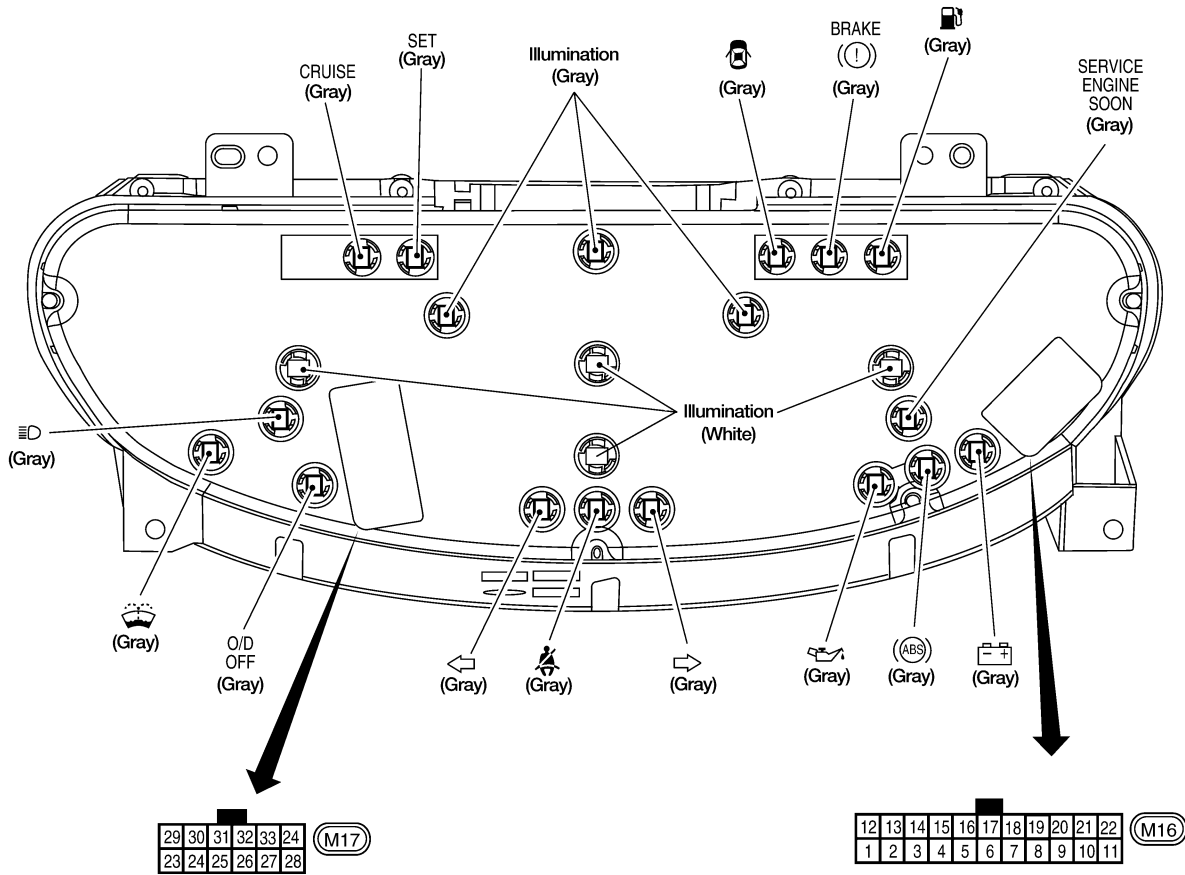
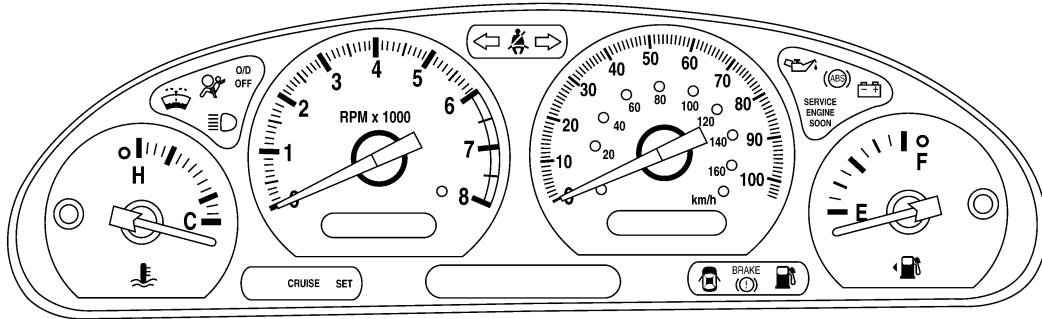
The distance to empty (DTE) function calculates the distance that can be travelled on the fuel remaining in the fuel tank, given the current fuel level and current average fuel economy. DTE is displayed in kilometers or miles.

# METERS AND GAUGES

Combination Meter

## Combination Meter

NDEL0047



29	30	31	32	33	24
23	24	25	26	27	28

(M17)

12	13	14	15	16	17	18	19	20	21	22
1	2	3	4	5	6	7	8	9	10	11

(M16)

Bulb socket color	Bulb wattage
Gray	1.26 W
White	3.0 W

( ): Bulb socket color

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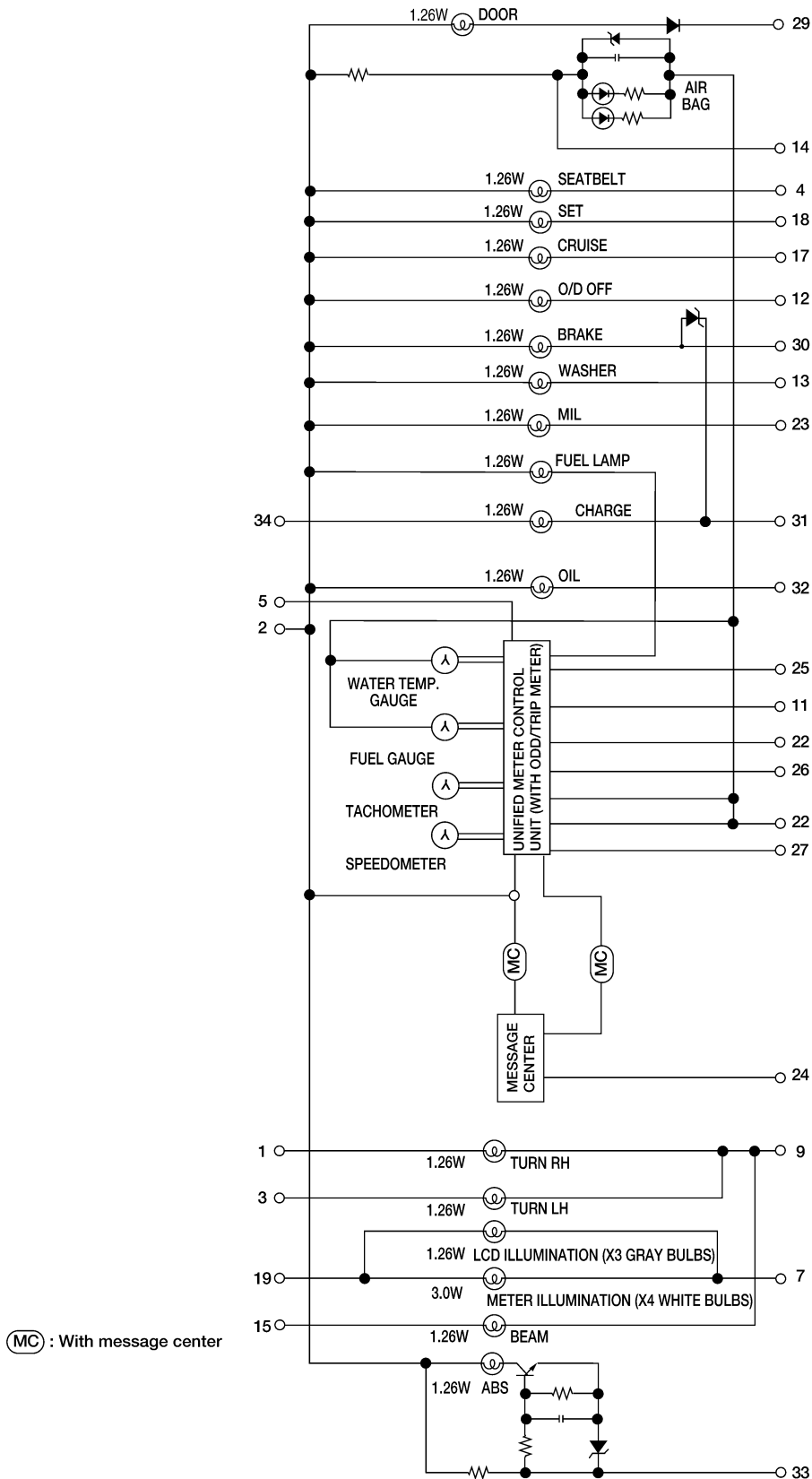
EL

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LEL279A

# METERS AND GAUGES

Combination Meter (Cont'd)



WEL281A

# METERS AND GAUGES

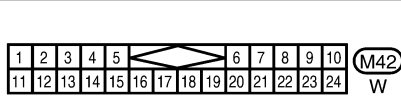
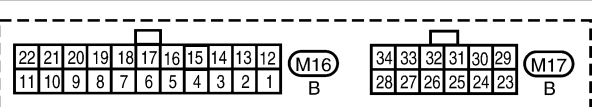
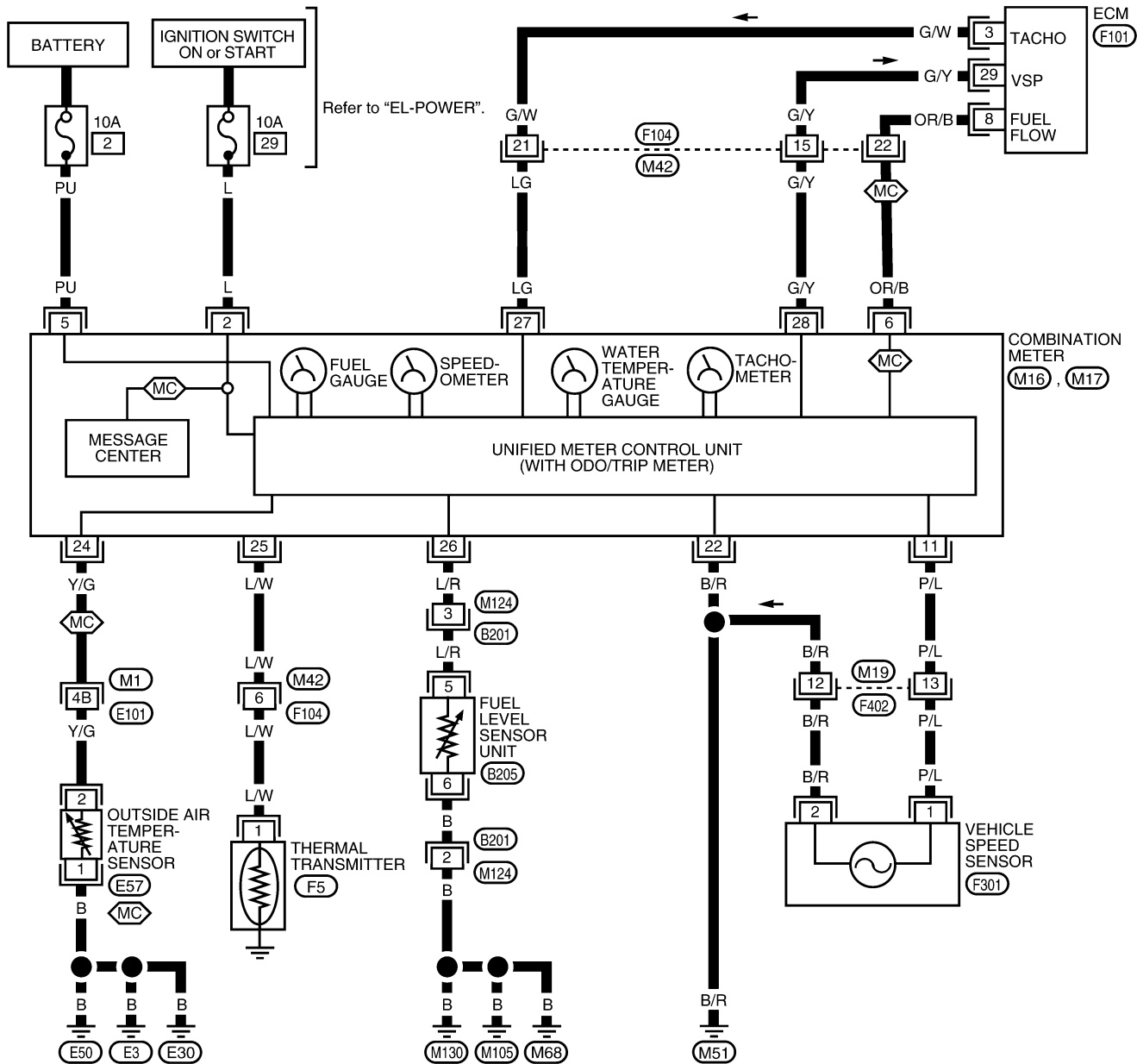
Wiring Diagram — METER —

## Wiring Diagram — METER —

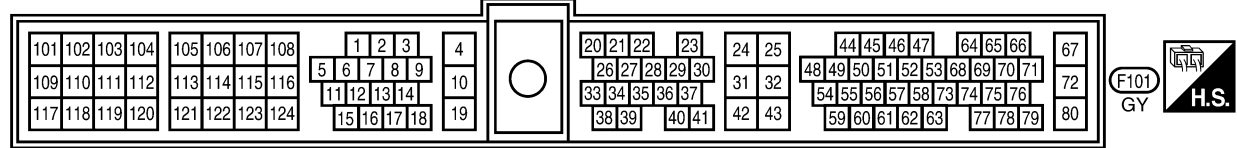
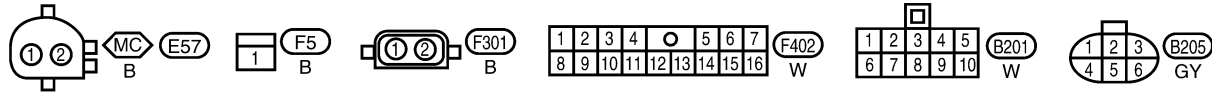
NDEL0048

◊(MC) : With Message center

### EL-METER-01



Refer to the following.  
 (M1), (E101) - SUPER MULTIPLE JUNCTION (SMJ)



GI  
 MA  
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 EC  
 FE  
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# METERS AND GAUGES

## Combination Meter Self-Diagnosis Mode

NDEL0168

### SELF-DIAGNOSIS FUNCTION

NDEL0168S01

The following items can be checked during Combination Meter Self-Diagnosis Mode.

- Odo/trip meter and message center (if equipped) display segments
- Meters/gauges
- Meters/gauges input signals
- Unified meter control unit (with odo/trip meter) (ROM/CHECKSUM)
- Current odometer value stored in non-volatile memory (NVM)
- Outside air temperature input signal (if equipped with message center)

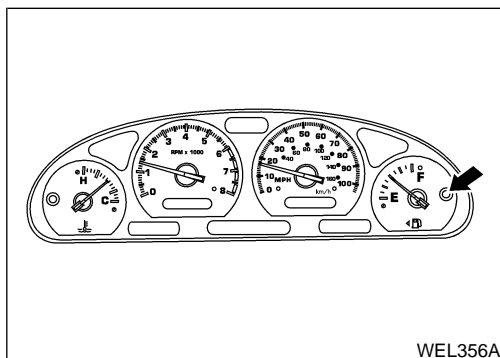
### HOW TO INITIATE COMBINATION METER SELF-DIAGNOSIS MODE

NDEL0168S02

#### NOTE:

This test can be cancelled at any time by turning ignition switch to OFF.

1. Push and hold the odo/trip meter reset button and turn ignition switch to ON.
2. Release the odo/trip meter reset button within 0.6 seconds of turning ignition switch to ON.



3. Press and release odo/trip meter reset button 3 times within 7 seconds.
- All odo/trip meter segments should be illuminated. All message center (if equipped) segments should also be illuminated.

#### NOTE:

If some segments are not illuminated, unified meter control unit with odo/trip meter should be replaced.

- At this point, the unified meter control unit is switched to self-diagnosis mode.

4. Press and hold odo/trip meter reset button. Indication of each meter/gauge should be as shown in figure at left while pressing the odo/trip meter reset button.

#### NOTE:

It takes a few seconds for indication of meters/gauges to become stable.

5. Release odo/trip meter reset button. Meters/gauges will return to previous positions, LOW FUEL lamp will illuminate and "bulb" will be displayed in the odo/trip meter display.

6. Press and release the odo/trip meter reset button to advance

# METERS AND GAUGES

Combination Meter Self-Diagnosis Mode (Cont'd)

through each subsequent test step as indicated in the following chart.

**NOTE:**

The engine can be started during this test. Raise and support the drive wheels and apply parking brake when performing speedometer and/or tachometer testing.

Odo/trip meter display	Test item description
r XXXX or FAIL	Returns all micro controlled warning lamps to normal operation. Displays hexadecimal ROM level. If a ROM checksum fault exists, FAIL will alternately display with ROM level.
nr XXXX or FAIL	Displays hexadecimal ROM level as stored in non-volatile memory (NVM).
EE XX or FAIL	Displays hexadecimal microprocessor ID (EE) level. If a hexadecimal microprocessor ID (EE) checksum fault exists, FAIL will alternately display with EE level.
dt XXXX or FAIL	Displays hexadecimal coding of final manufacturing date.
CFI XX	Displays hexadecimal coding of NVM module configuration settings.
E XXX.X	Displays English speed value being input (0-318.1). Speedometer will indicate present speed. A dashed line (----) will be displayed if signal is out of range for 1 second or more.
XXX.X	Displays Metric speed value being input (0-511.9). Speedometer will indicate present speed. A dashed line (----) will be displayed if signal is out of range for 1 second or more.
t XXXX	Displays tachometer value being input from ECM. Tachometer will indicate present rpm. A dashed line (----) will be displayed if signal is out of range for 1 second or more.
F XXX	Displays present fuel level analog-to-digital (A/D) input in decimal. Fuel gauge will indicate present fuel level. <ul style="list-style-type: none"> <li>● 000 - 009 indicates short circuit</li> <li>● 010 - 254 indicates normal range</li> <li>● 255 indicates open circuit</li> </ul>
FP XXX	Displays present fuel level signal status in decimal. <ul style="list-style-type: none"> <li>● 000 - 254 indicates normal range</li> <li>● 255 indicates open/shorted circuit</li> </ul>
XXX C	Displays present engine coolant temperature analog-to-digital (A/D) input in decimal. <ul style="list-style-type: none"> <li>● 000 - 255 indicated normal range</li> </ul> The normal range values get lower as the engine coolant temperature increases.
Ot XXX	If equipped with message center: Displays present outside air temperature analog-to-digital (A/D) input in decimal. The message center will display present temperature. <ul style="list-style-type: none"> <li>● 000 - 009 indicates short circuit</li> <li>● 010 - 254 indicates normal range</li> <li>● 255 indicates open circuit or short to battery</li> </ul>
XXXXXX	Displays stored odometer value in non-volatile memory (NVM) in miles. ERROR will be displayed if non-volatile memory (NVM) for odometer is corrupt.

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## METERS AND GAUGES

### Combination Meter Self-Diagnosis Mode (Cont'd)

Odo/trip meter display	Test item description
bAt XX.X	Displays present battery voltage reference analog-to-digital (A/D) reading in volts.
HSd -X	Displays present status of high voltage shutdown input. <ul style="list-style-type: none"><li>● -0 indicates voltage not high</li><li>● -1 indicates over-voltage shutdown</li></ul>
HLP -X	Displays input status of headlamp switch. <ul style="list-style-type: none"><li>● -P indicates headlamp switch ON</li><li>● -0 indicates headlamp switch OFF</li></ul>
PA -XX through PP -XX	Not used.
All segments turned ON	Repeats test display cycle.

7. Turn ignition switch to OFF to cancel Diagnosis mode.



## Trouble Diagnoses PRELIMINARY CHECK

NDEL0049

NDEL0049S07

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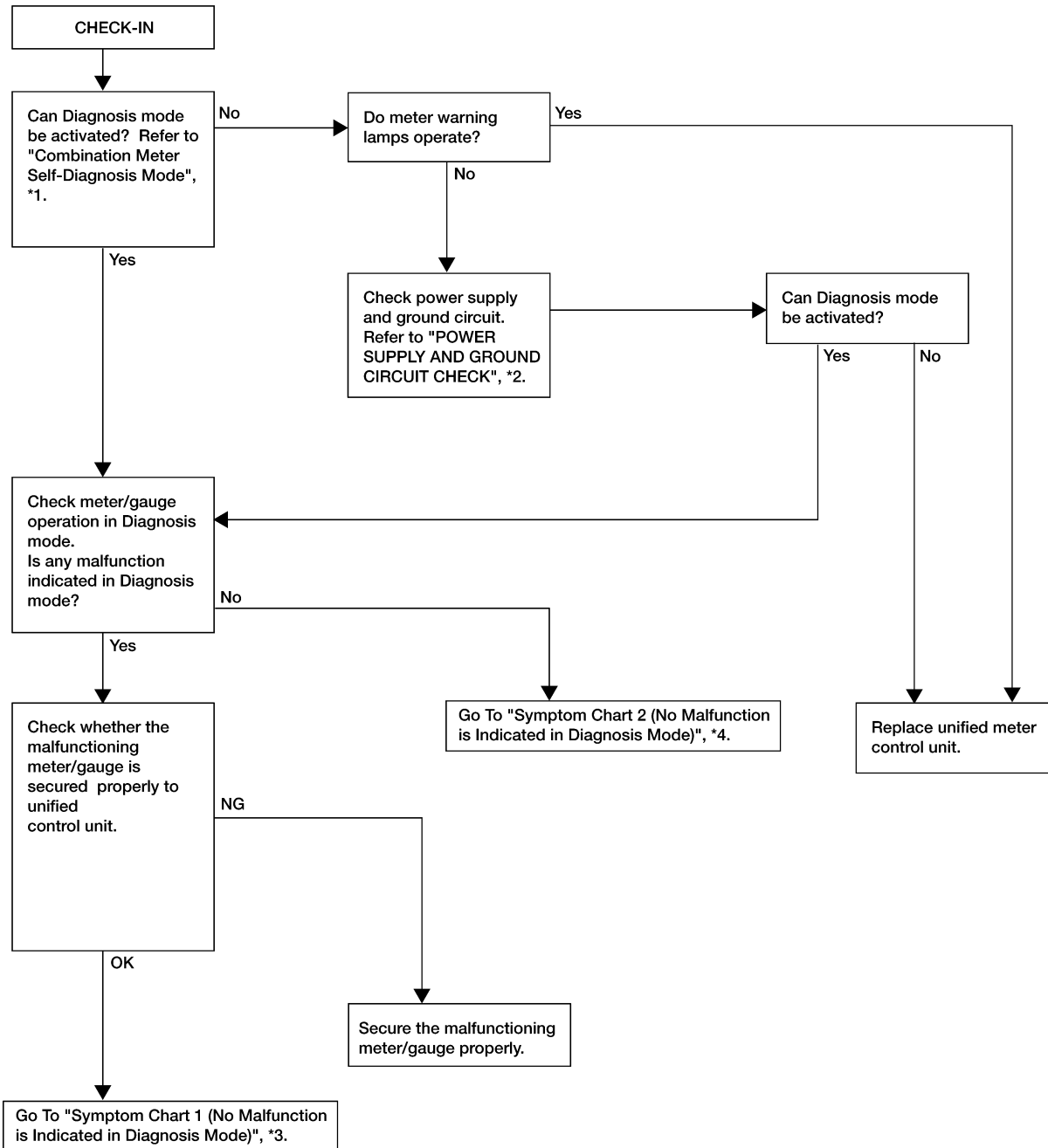
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\*1 "Combination Meter Self-Diagnosis Mode", (EL-90)

\*2 "POWER SUPPLY AND GROUND CIRCUIT CHECK", (EL-95)

\*3 "Symptom Chart 1 (Malfunction Is Indicated in Diagnosis Mode)", EL-94

\*4 "Symptom Chart 2 (No Malfunction Is Indicated in Diagnosis Mode)", EL-94

\*5 "Symptom Chart 3 (Malfunction in Message Center)", EL-94

# METERS AND GAUGES

Trouble Diagnoses (Cont'd)

## SYMPTOM CHART

### Symptom Chart 1 (Malfunction Is Indicated in Diagnosis Mode)

NDEL0049S01

NDEL0049S0102

Symptom	Possible causes	Repair order
Odo/trip meter indicate(s) malfunction in Diagnosis mode.	Unified meter control unit	Repair unified meter control unit.
Multiple meters/gauges indicate malfunction in Diagnosis mode.		
One of speedometer/tachometer/fuel gauge/water temp. gauge indicates malfunction in Diagnosis mode.		

### Symptom Chart 2 (No Malfunction Is Indicated in Diagnosis Mode)

NDEL0049S0103

Symptom	Possible causes	Repair order
One of speedometer/tachometer/fuel gauge/water temp. gauge is malfunctioning.	<ol style="list-style-type: none"> <li>Sensor signal                             <ul style="list-style-type: none"> <li>Vehicle speed signal</li> <li>Engine revolution signal</li> <li>Fuel gauge</li> <li>Water temp. gauge</li> </ul> </li> <li>Unified meter control unit</li> </ol>	<ol style="list-style-type: none"> <li>Check the sensor for malfunctioning meter/gauge. "INSPECTION/VEHICLE SPEED SENSOR", EL-95. "INSPECTION/ENGINE REVOLUTION SIGNAL", EL-97. "INSPECTION/FUEL LEVEL SENSOR UNIT", EL-98. "INSPECTION/THERMAL TRANSMITTER" EL-99.</li> <li>Replace unified meter control unit.</li> </ol>
Multiple meters/gauges are malfunctioning (except odo/trip meter).		

Before starting trouble diagnoses, perform "PRELIMINARY CHECK", EL-93.

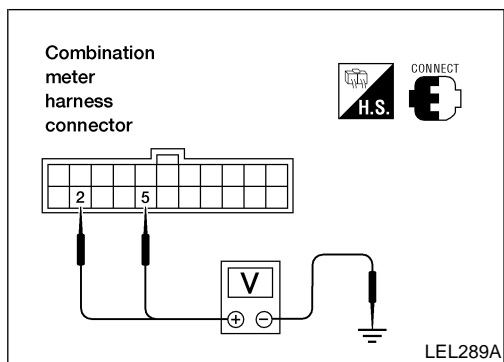
### Symptom Chart 3 (Malfunction in Message Center)

NDEL0049S0104

Symptom	Possible causes	Repair order
Outside air temperature function is malfunctioning.	<ol style="list-style-type: none"> <li>Grounds E3, E30, E50</li> <li>Outside air temperature sensor</li> <li>Open or short in signal circuit</li> <li>Unified meter control unit</li> </ol>	<ol style="list-style-type: none"> <li>Check grounds E, E30 and E50.</li> <li>Check outside air temperature sensor. Refer to "OUTSIDE AIR TEMPERATURE SENSOR CHECK", EL-100.</li> <li>Check Y/G wire between combination meter and outside air temperature sensor for open or short circuit.</li> <li>Replace unified meter control unit.</li> </ol>
Fuel economy/distance to empty function is malfunctioning. <b>NOTE:</b> If speedometer is also malfunctioning, refer to "PRELIMINARY CHECK", EL-93.	<ol style="list-style-type: none"> <li>Open or short in signal circuit</li> <li>Unified meter control unit</li> </ol>	<ol style="list-style-type: none"> <li>Check OR/B wire between ECM and combination meter for open or short circuit.</li> <li>Replace unified meter control unit.</li> </ol>

# METERS AND GAUGES

Trouble Diagnoses (Cont'd)



## POWER SUPPLY AND GROUND CIRCUIT CHECK

NDEL0049S02

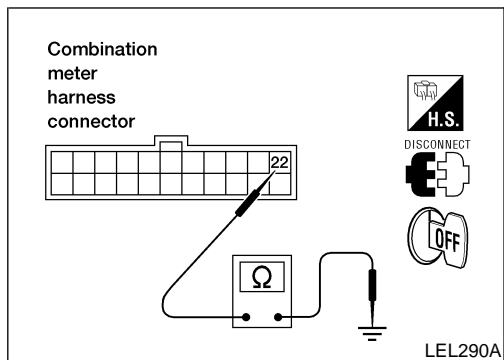
### Power Supply Circuit Check

NDEL0049S0201

Terminals		Ignition switch position			
( + )		( - )	OFF	ON	START
Connector	Terminal (Wire color)				
M16	5 (PU)	Ground	Battery voltage	Battery voltage	Battery voltage
M16	2 (L)	Ground	0 V	Battery voltage	Battery voltage

If NG, check the following

- 10A fuses (No. 2, 29, located in fuse block)
- Harness for open or short between fuse and combination meter.



### Ground Circuit Check

NDEL0049S0202

Terminals			Continuity
( + )		( - )	
Connector	Terminal (Wire color)		
M16	22 (B/R)	Ground	Yes

## INSPECTION/VEHICLE SPEED SENSOR

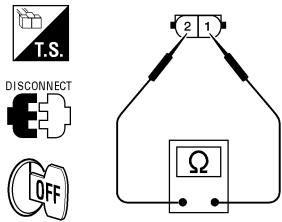
NDEL0049S03

<b>1</b>	<b>CHECK VEHICLE SPEED SENSOR OUTPUT</b>
<p>1. Remove vehicle speed sensor from transaxle.</p> <p>2. Check voltage between combination meter harness connector M16 terminals 11 (P/L) and 22 (B/R) while quickly turning speed sensor pinion.</p>	
<p>Combination meter harness connector</p> <p>DISCONNECT H.S.</p> <p>OFF</p> <p>Vehicle speed sensor</p> <p>Speed sensor pinion</p> <p><b>Voltage: Approx. 0.5V [Alternating current (AC)]</b></p> <p>Note: Vehicle speed sensor should remain connected.</p> <p>LEL291A</p>	
<b>OK or NG</b>	
OK	▶ Vehicle speed sensor is OK.
NG	▶ GO TO 2.

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# METERS AND GAUGES

Trouble Diagnoses (Cont'd)

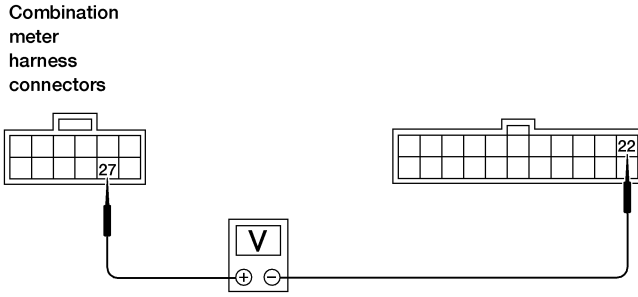

2	CHECK VEHICLE SPEED SENSOR
<p>Check resistance between vehicle speed sensor terminals 1 and 2.</p> <p style="text-align: center;">Vehicle speed sensor connector (F301)</p> <div style="text-align: center;"></div> <p><b>Resistance: Approx. 250Ω</b></p> <p style="text-align: right;">AEL757A</p> <p style="text-align: center;"><b>OK or NG</b></p>	
OK	▶ Check harness or connector between speedometer and vehicle speed sensor.
NG	▶ Replace vehicle speed sensor.

# METERS AND GAUGES

Trouble Diagnoses (Cont'd)

## INSPECTION/ENGINE REVOLUTION SIGNAL

=NDEL0049S04

<b>1</b>	<b>CHECK ECM OUTPUT</b>		
<p>1. Start engine. 2. Check voltage between combination meter harness connector M17 terminal 27 (LG) and combination meter harness connector M16 terminal 22 (B/R) at idle and 2,000 rpm.</p>			
<div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="width: 45%;"> <p>Combination meter harness connectors</p>  </div> <div style="width: 45%; text-align: center;">  <p><b>Higher rpm = Higher voltage</b> <b>Lower rpm = Lower voltage</b> <b>Voltage should change with rpm.</b></p> </div> </div>			
LEL292A			
<b>OK or NG</b>			
OK	▶	Engine revolution signal is OK.	
NG	▶	Check harness for open or short between ECM and combination meter.	

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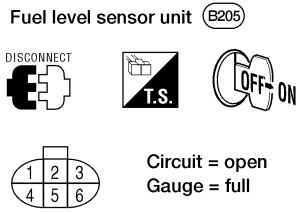
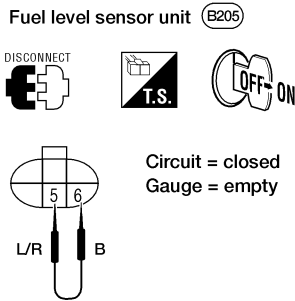
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# METERS AND GAUGES

Trouble Diagnoses (Cont'd)

## INSPECTION/FUEL LEVEL SENSOR UNIT

=NDEL0049S05

<b>1</b>	<b>CHECK GAUGE OPERATION</b>	<p>1. Disconnect fuel level sensor unit connector.                  2. Turn ignition switch ON.                  3. Check gauge operation.  <b>Gauge should move smoothly to full scale.</b>                  4. Connect terminals 5 and 6 with wire for <b>less than 10 seconds</b>.                  5. Check gauge operation.</p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <p>Fuel level sensor unit (B205)</p>  <p>Circuit = open Gauge = full</p> </div> <div style="text-align: center;"> <p>Fuel level sensor unit (B205)</p>  <p>Circuit = closed Gauge = empty</p> </div> </div> <p style="text-align: right;">WEL235</p> <p style="text-align: center;"><b>Gauge should move smoothly to empty scale.</b></p> <p style="text-align: center;"><b>OK or NG</b></p>	
OK	▶	GO TO 2.	
NG	▶	<p><b>Check the following.</b></p> <ul style="list-style-type: none"> <li>● Harness and connectors between combination meter and fuel level sensor unit</li> <li>● Combination meter</li> </ul>	

<b>2</b>	<b>CHECK FUEL LEVEL SENSOR UNIT</b>	<p>Refer to "FUEL LEVEL SENSOR UNIT CHECK", EL-99.</p> <p style="text-align: center;"><b>OK or NG</b></p>	
OK	▶	Fuel level sensor is OK.	
NG	▶	Replace fuel level sensor unit.	

# METERS AND GAUGES

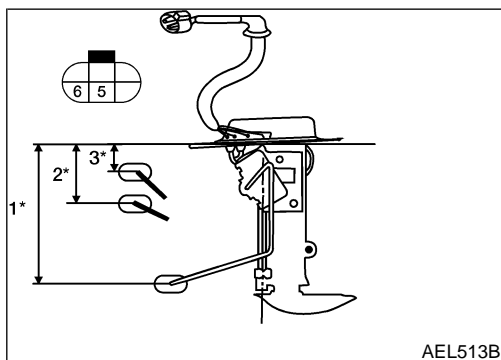
Trouble Diagnoses (Cont'd)

## INSPECTION/THERMAL TRANSMITTER

=NDEL0049S06

<b>1</b>	<b>CHECK THERMAL TRANSMITTER</b>
Refer to "THERMAL TRANSMITTER CHECK", EL-100.	
<b>OK or NG</b>	
OK	▶ GO TO 2.
NG	▶ Replace thermal transmitter.

<b>2</b>	<b>CHECK HARNESS FOR OPEN OR SHORT</b>
<p>1. Disconnect combination meter connector and thermal transmitter connector.</p> <p>2. Check continuity between combination meter harness connector M17 terminal 25 (L/W) and thermal transmitter harness connector F5 terminal 1 (L/W). <b>Continuity should exist.</b></p> <p>3. Check continuity between combination meter harness connector M17 terminal 25 (L/W) and ground. <b>Continuity should not exist.</b></p>	
LEL293A	
<b>OK or NG</b>	
OK	▶ Thermal transmitter is OK.
NG	▶ Repair harness or connector.



### Electrical Component Inspection FUEL LEVEL SENSOR UNIT CHECK

NDEL0050

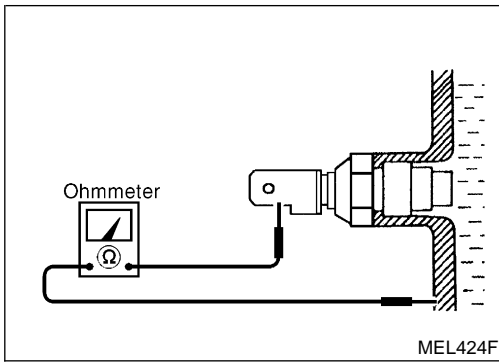
- For removal, refer to "FUEL PUMP AND GAUGE", **FE-6**.
- Check the resistance between terminals 5 and 6.

NDEL0050S01

Ohmmeter		Float position mm (in)			Resistance value (Ω) (Approx.)
(+)	(-)				
5	6	3*	Full	22.5 (0.89)	160.0
		2*	1/2	81.3 (3.20)	84.0
		1*	Empty	150.5 (5.93)	15.0

# METERS AND GAUGES

Electrical Component Inspection (Cont'd)

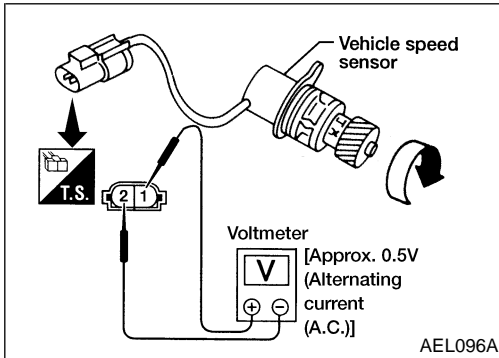


## THERMAL TRANSMITTER CHECK

NDEL0050S02

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

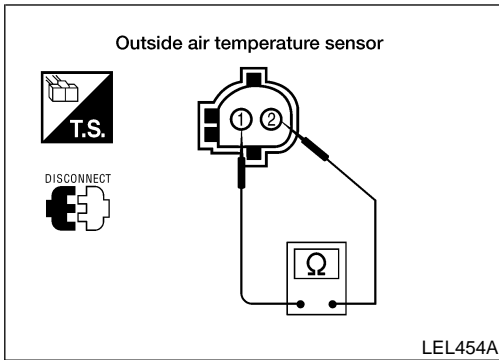
Water temperature	Resistance value (Approx.)
75°C (167°F)	179 - 219 Ω
100°C (212°F)	60 - 72 Ω



## 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.



## OUTSIDE AIR TEMPERATURE SENSOR

NDEL0050S04

After disconnecting outside air temperature sensor harness connector, measure resistance between sensor terminals 1 and 2 using the table below.

Temperature °C (°F)	Resistance kΩ
0 (32)	95.85
10 (50)	58.99
20 (68)	37.34
30 (86)	24.25
40 (104)	16.11



## System Description

### POWER SUPPLY AND GROUND CIRCUIT

*NDEL0051*

*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 2 and 34
- to bulb check relay terminal 1.

GI

MA

Ground is supplied

- to fuel level sensor unit terminal 6 and
- seat belt buckle switch terminal 2
- through body ground M68, M105 and M130.

EM

LC

Ground is supplied to combination meter terminal 22 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.

EC

FE

### 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 14.

AT

AX

Ground is then supplied

- to combination meter terminal 22
- through body ground M51.

SU

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

BR

### O/D OFF INDICATOR LAMP

*NDEL0051S03*

During prove out or when overdrive is cancelled, ground is supplied

- to combination meter terminal 12
- from TCM (transmission control module) terminal 13.

ST

RS

With power and ground supplied, O/D off indicator lamp illuminates.

When TCM detects malfunctioning, the indicator flashes. For further information, refer to **AT-83**.

BT

### 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 level sensor unit terminal 5 to combination meter terminal 26. The unified meter control unit will illuminate the low fuel level warning lamp when the fuel level is low.

HA

### 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 29
- from smart entrance control unit terminal 14.

SC

EL

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

IDX

### LOW WASHER FLUID LEVEL WARNING LAMP

*NDEL0051S06*

When the washer fluid level is low, ground is supplied

- to combination meter terminal 13
- 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 32.

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

# WARNING LAMPS

System Description (Cont'd)

---

## **BRAKE WARNING LAMP**

NDEL0051S08

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

- to combination meter terminal 30
- 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 31
- from generator terminal L.

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 L.

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 4
- 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 23
- from ECM terminal 18.

With power and ground supplied, the malfunction indicator lamp illuminates.  
For further information, refer to **EC-63**, "Malfunction Indicator Lamp (MIL)".

## **ABS WARNING LAMP**

NDEL0051S13

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

- to combination meter terminal 33
- from ABS actuator and electric unit (control unit) terminal 21.

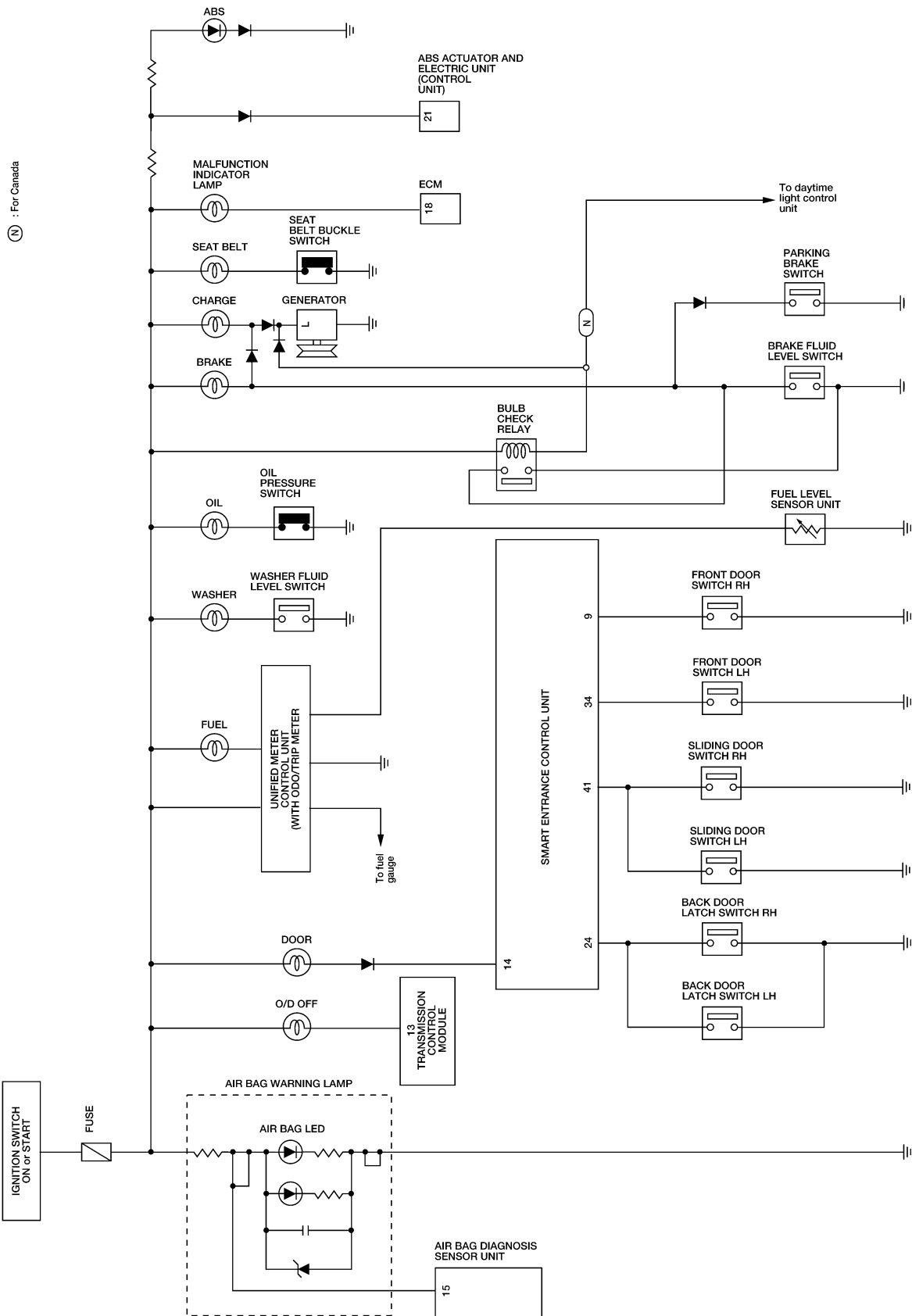
With power and ground supplied, the ABS warning lamp illuminates.  
For further information, refer to **BR-32**, "CONTROL UNIT (BUILT-IN ABS ACTUATOR AND ELECTRIC UNIT)".

# WARNING LAMPS

Schematic

## Schematic

NDEL0052



Ⓜ : For Canada

GI

MA

EM

LC

EC

FE

AT

AX

SU

BR

ST

RS

BT

HA

SC

EL

IDX

WEL567A

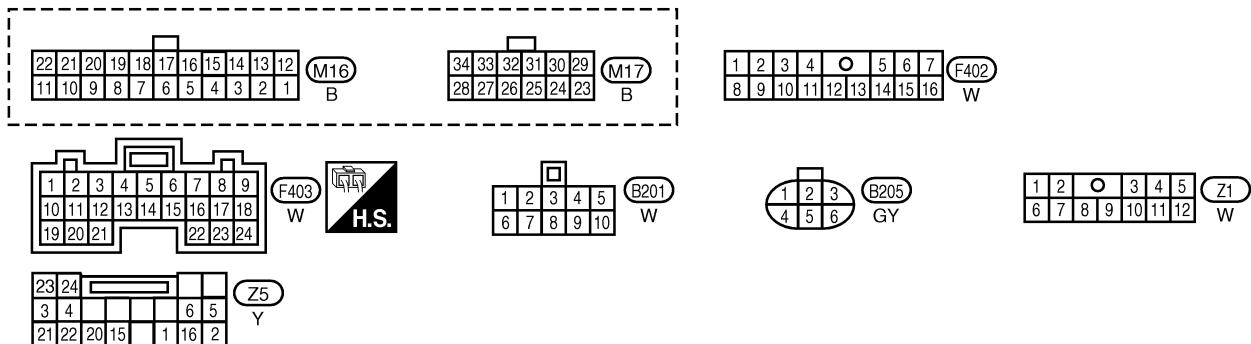
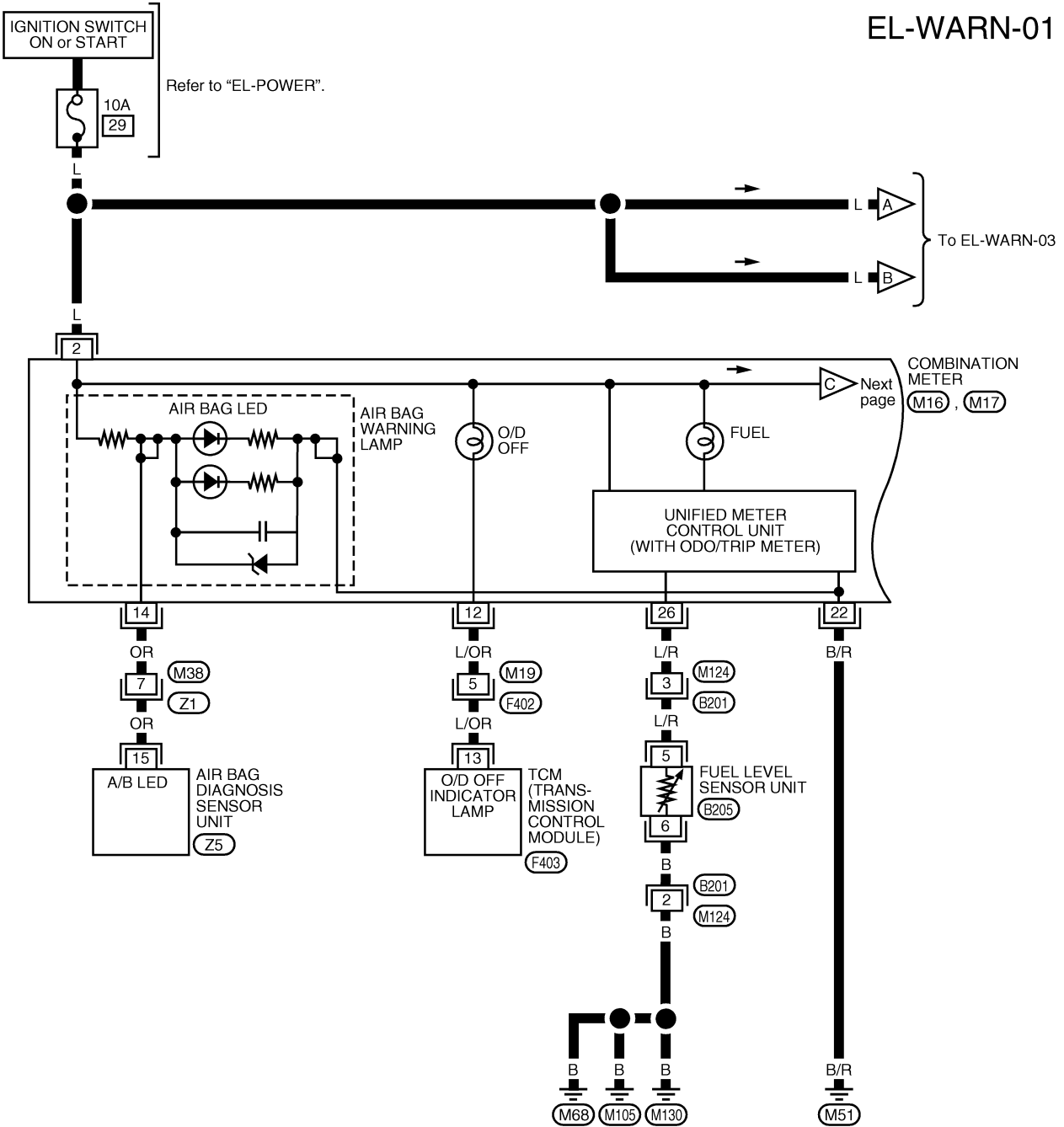
# WARNING LAMPS

Wiring Diagram — WARN —

## Wiring Diagram — WARN —

NDEL0053

EL-WARN-01

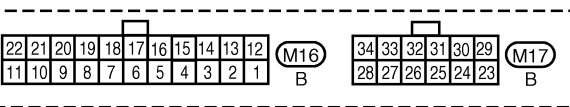
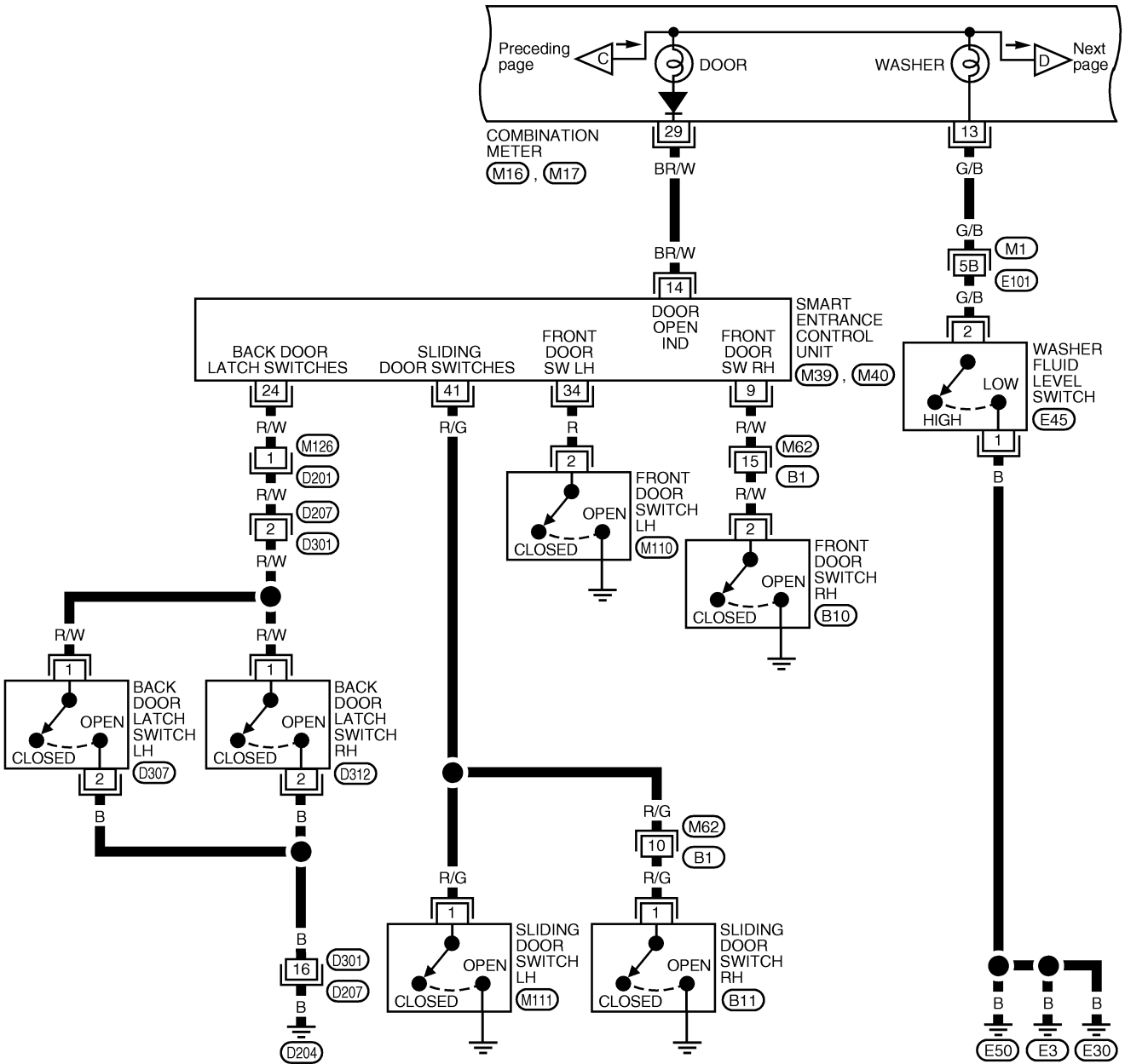


WEL943

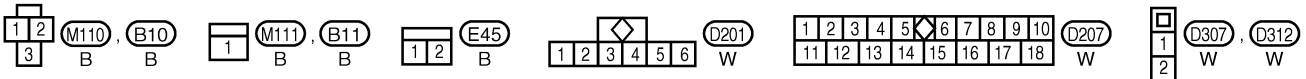
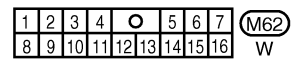
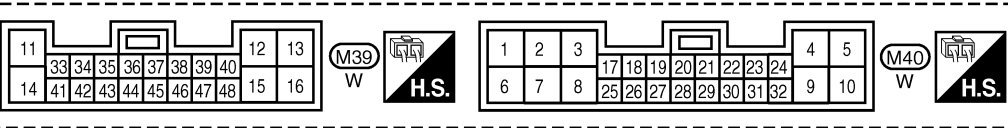
# WARNING LAMPS

Wiring Diagram — WARN — (Cont'd)

## EL-WARN-02



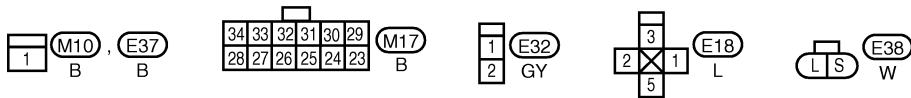
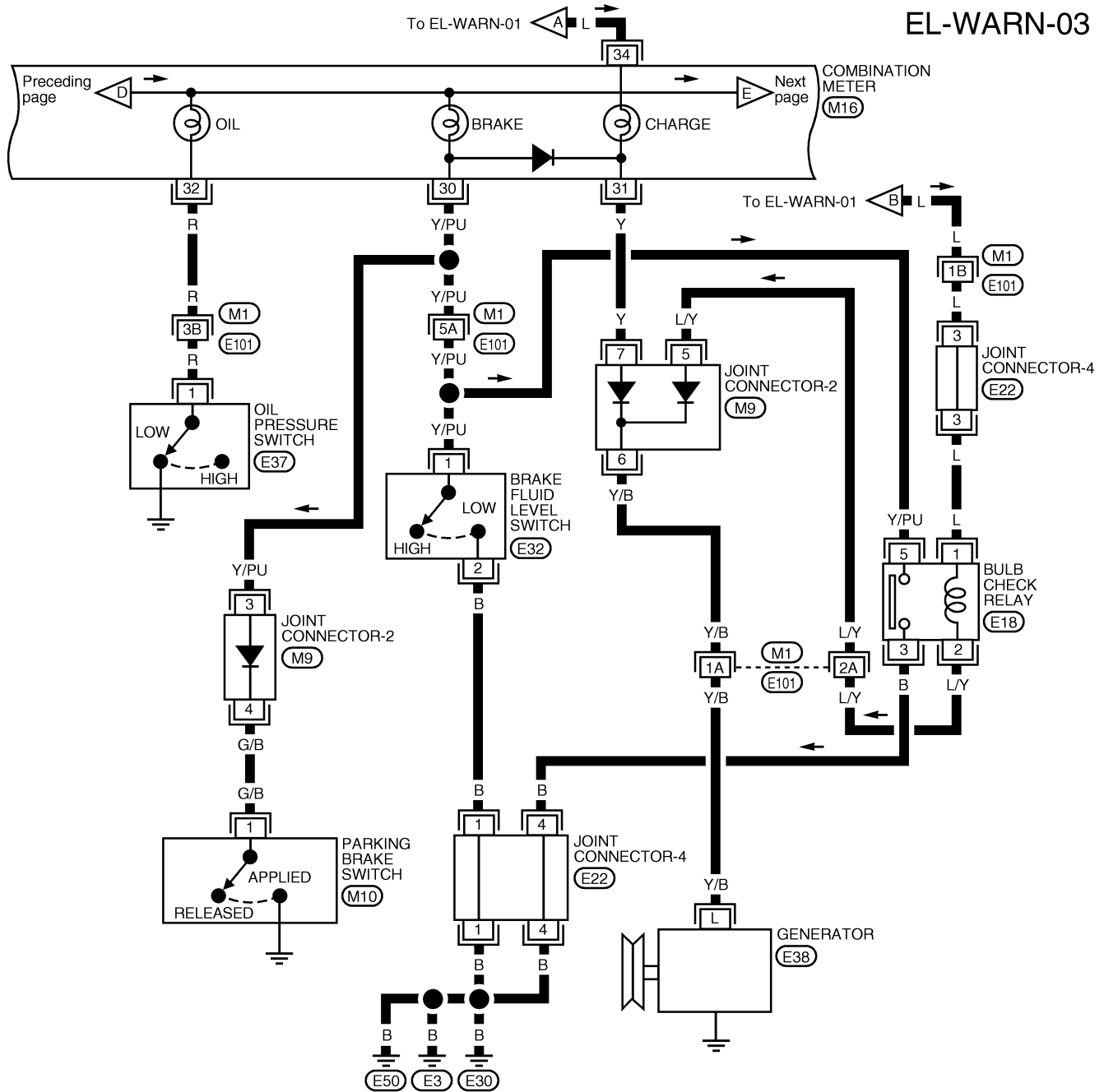
Refer to the following.  
 (M1), (E101) - SUPER MULTIPLE JUNCTION (SMJ)



WEL944

# WARNING LAMPS

Wiring Diagram — WARN — (Cont'd)



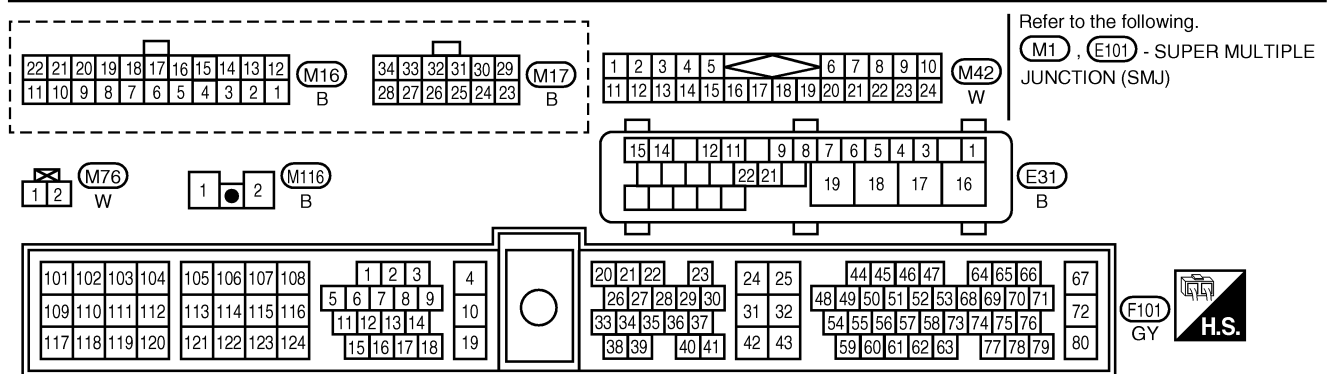
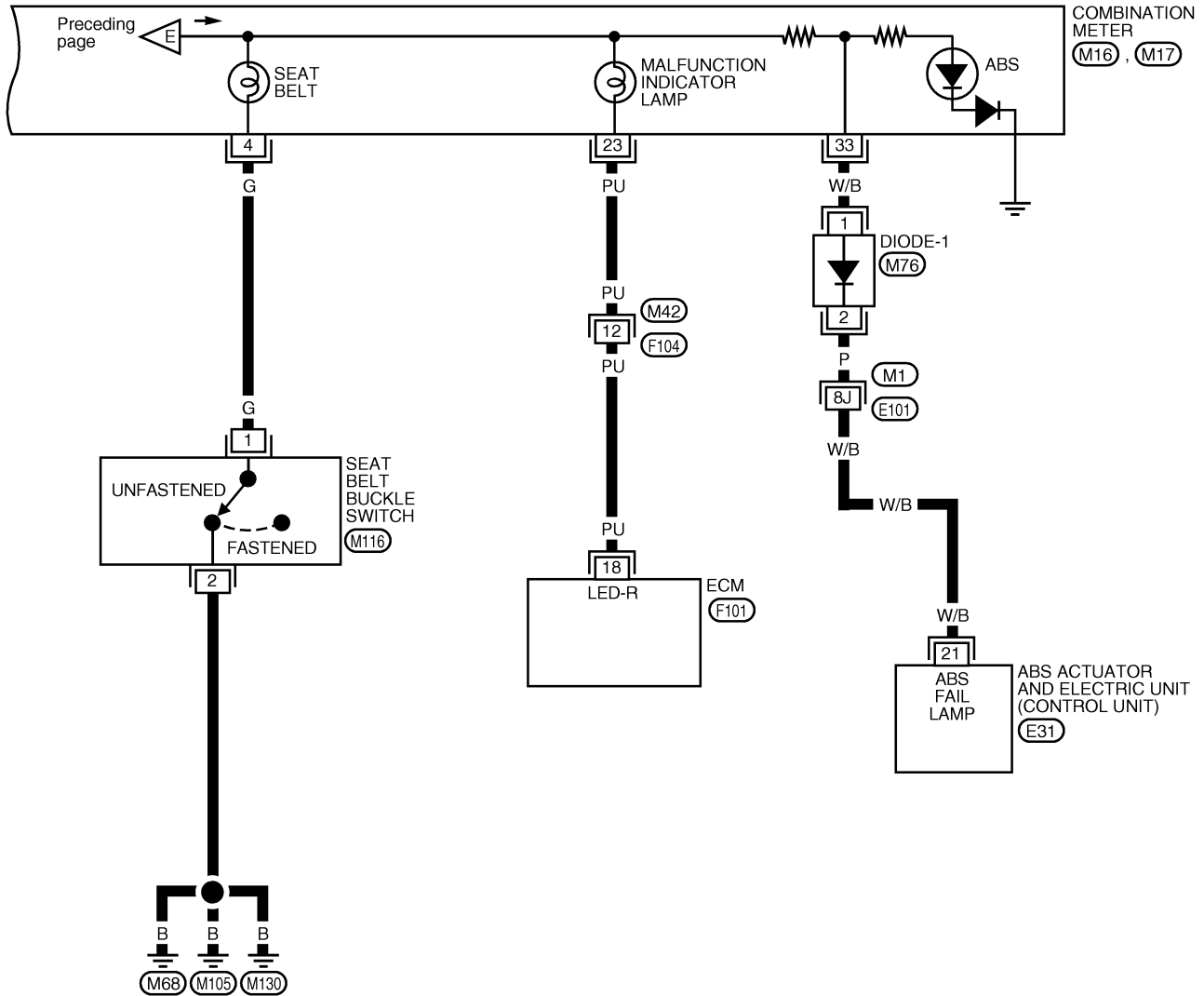
Refer to the following.  
 (M1, E101) - SUPER MULTIPLE JUNCTION (SMJ)  
 (M9, E22) - JOINT CONNECTOR

WEL945

# WARNING LAMPS

Wiring Diagram — WARN — (Cont'd)

EL-WARN-04



GI  
MA  
EM  
LC  
EC  
FE  
AT  
AX  
SU  
BR  
ST  
RS  
BT  
HA  
SC  
EL  
IDX

WEL946

# WARNING LAMPS

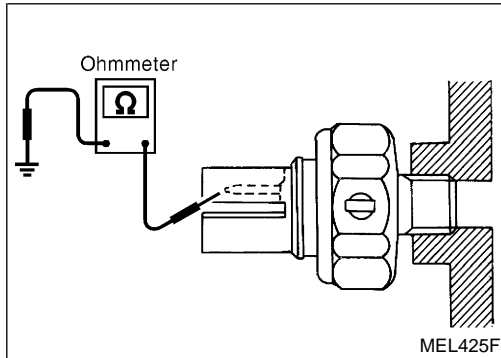
## Electrical Component Inspection

### FUEL WARNING LAMP SENSOR CHECK

NDEL0054

NDEL0054S01

- The low fuel level warning lamp is controlled by the unified meter control unit, which is built into the combination meter. If the low fuel level warning lamp fails to illuminate, first check the fuel level sensor unit, refer to "INSPECTION/FUEL LEVEL SENSOR UNIT" EL-98. If the fuel level sensor unit is operating properly, inspect the low fuel level warning lamp bulb and unified meter control unit for proper function.

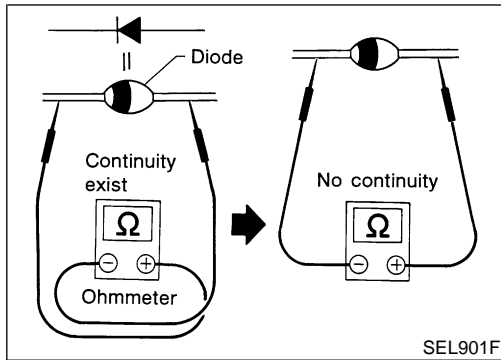


### OIL PRESSURE SWITCH CHECK

NDEL0054S02

	Oil pressure kPa (kg/cm <sup>2</sup> , 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.
- Check diodes at the combination meter harness connector instead of on the combination meter assembly. Refer to "Wiring Diagram—WARN—", EL-104.

#### NOTE:

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

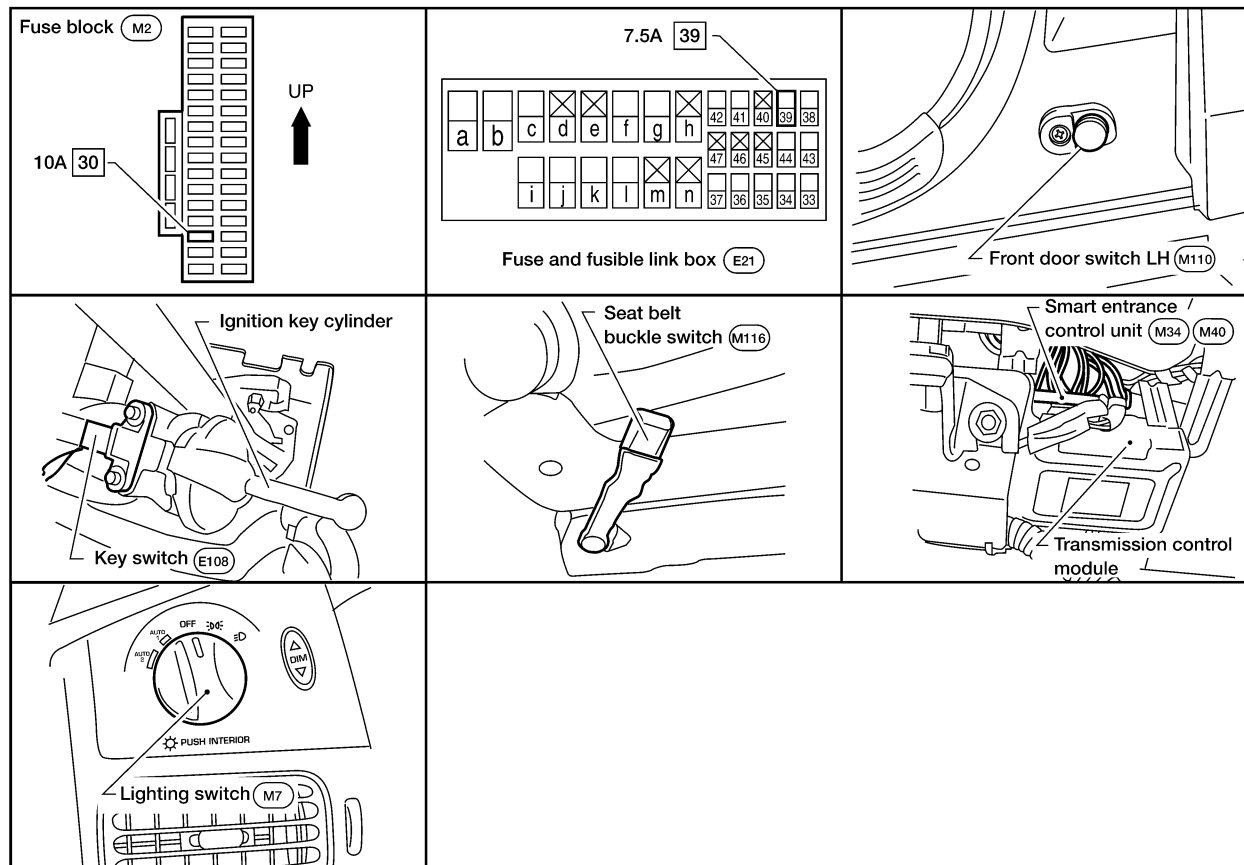


# WARNING CHIME

Component Parts and Harness Connector Location

## Component Parts and Harness Connector Location

NDEL0055



GI

MA

EM

LC

EC

FE

AT

AX

SU

BR

ST

WEL269A

RS

## System Description

### POWER SUPPLY AND GROUND CIRCUIT

NDEL0056

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.

EL

IDX

## WARNING CHIME

System Description (Cont'd)

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### 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.

### 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.

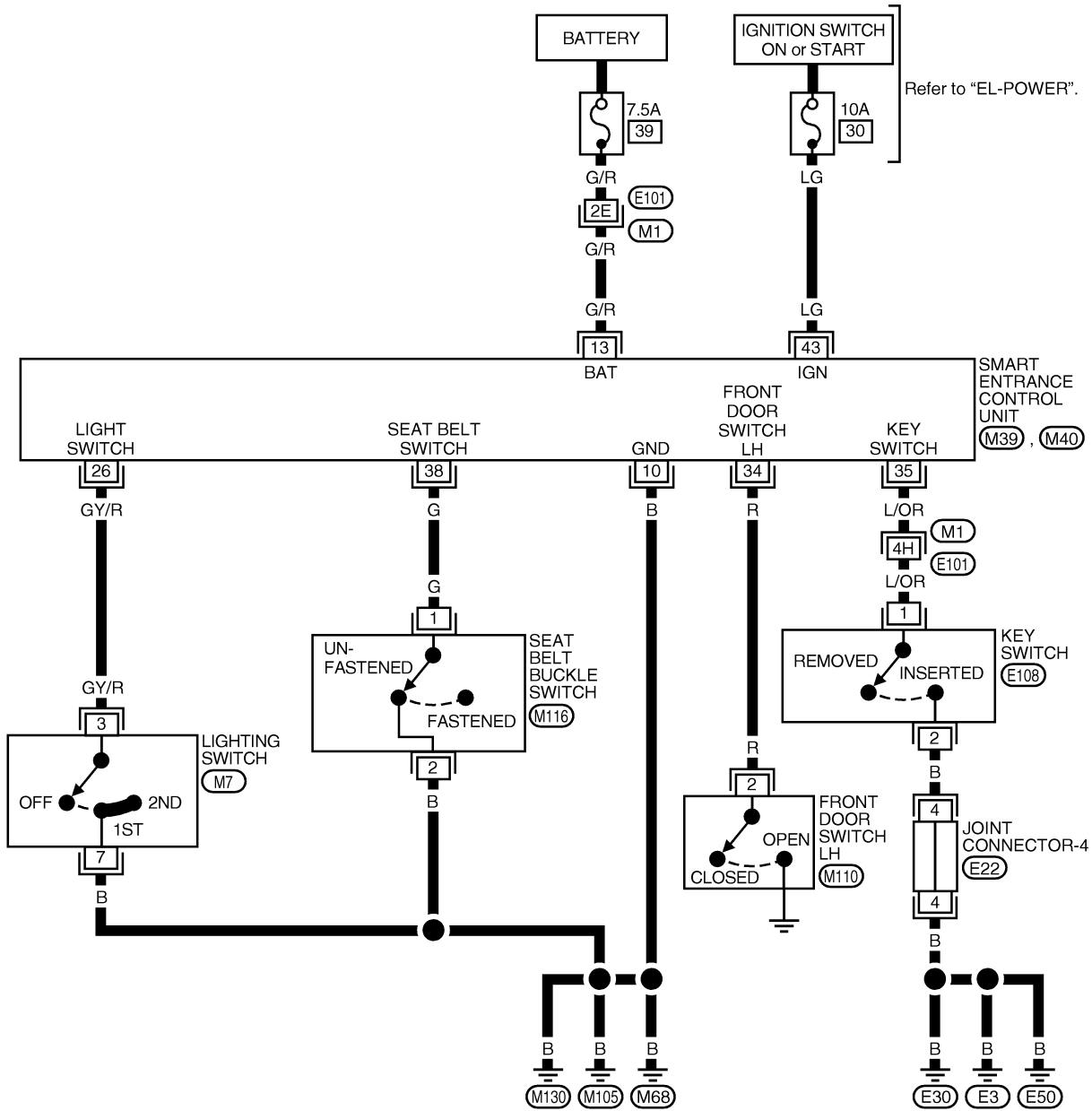
# WARNING CHIME

Wiring Diagram — CHIME —

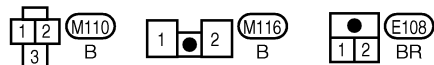
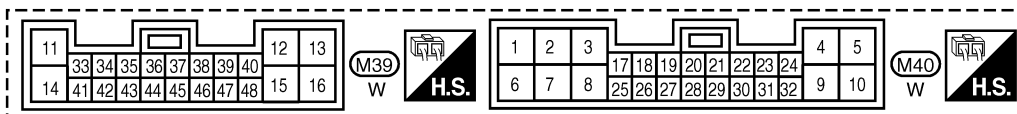
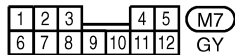
## Wiring Diagram — CHIME —

NDEL0057

### EL-CHIME-01



Refer to the following.  
 (M1, E101) - SUPER MULTIPLE JUNCTION (SMJ)  
 (E22) - JOINT CONNECTOR



# WARNING CHIME

Trouble Diagnoses

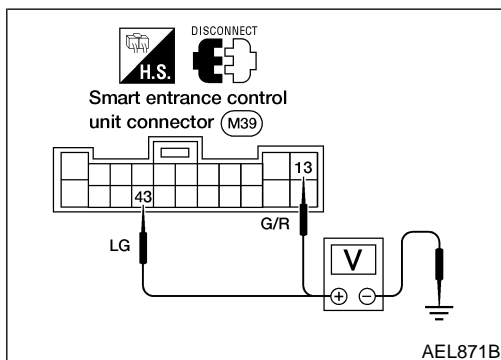
## Trouble Diagnoses SYMPTOM CHART

NDEL0058

NDEL0058S01

REFERENCE PAGE (EL-)	112	113	113	115	116
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

X : Applicable

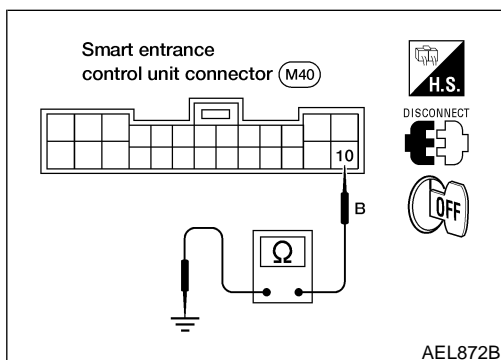


### POWER SUPPLY AND GROUND CIRCUIT CHECK Power Supply Circuit Check

NDEL0058S02

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

# WARNING CHIME

Trouble Diagnoses (Cont'd)

## LIGHTING SWITCH INPUT SIGNAL CHECK

NDEL0058S03

<b>1</b>	<b>CHECK LIGHTING SWITCH INPUT SIGNAL</b>	<p>Check voltage between control unit terminal 26 and ground.</p> <div style="text-align: center;"> </div> <p style="text-align: right;">AEL873B</p> <p><b>Voltage [V]:</b>  <b>Condition of lighting switch: 1ST or 2ND</b>  <b>0</b>  <b>Condition of lighting switch: OFF</b>  <b>Approx. 12</b></p> <p style="text-align: center;"><b>OK or NG</b></p>	GI MA EM LC EC FE AT AX SU
OK	▶	Lighting switch is OK.	
NG	▶	<p><b>Check to following.</b></p> <ul style="list-style-type: none"> <li>● Lighting switch</li> <li>● Lighting switch ground circuit</li> <li>● Harness for open or short between control unit and lighting switch</li> </ul>	

## KEY SWITCH (INSERTED) CHECK

NDEL0058S04

<b>1</b>	<b>CHECK KEY SWITCH INPUT SIGNAL</b>	<p>Check voltage between control unit harness connector M39 terminal 35 (L/OR) and ground.</p> <div style="text-align: center;"> </div> <p style="text-align: right;">LEL307A</p> <p><b>Voltage [V]:</b>  <b>Condition of key switch: Key is inserted.</b>  <b>0</b>  <b>Condition of key switch: Key is removed.</b>  <b>Approx. 1.5</b></p> <p style="text-align: center;"><b>OK or NG</b></p>	BR ST RS BT HA SC
OK	▶	Key switch is OK.	
NG	▶	GO TO 2.	EL

IDX

# WARNING CHIME

Trouble Diagnoses (Cont'd)

<b>2</b>	<b>CHECK KEY SWITCH (INSERTED)</b>	<p>Check continuity between terminals 1 and 2.</p> <div style="text-align: center;"> </div> <p style="text-align: right;">AEL875B</p> <p><b>Continuity:</b>  <b>Condition of key switch: Key is inserted.</b>          Yes  <b>Condition of key switch: Key is withdrawn.</b>          No</p> <p style="text-align: center;"><b>OK or NG</b></p>
OK	▶	<p><b>Check the following.</b></p> <ul style="list-style-type: none"> <li>● Key switch ground circuit</li> <li>● Harness for open or short between control unit and key switch</li> </ul>
NG	▶	Replace key switch.

# WARNING CHIME

Trouble Diagnoses (Cont'd)

## SEAT BELT BUCKLE SWITCH CHECK

=NDEL0058S05

<b>1</b>	<b>CHECK SEAT BELT BUCKLE SWITCH INPUT SIGNAL</b>	
<p>1. Turn ignition switch ON. 2. Check voltage between control unit terminal 38 and ground.</p>		
<p><b>Voltage [V]:</b>  <b>Condition of seat belt buckle switch: Fastened.</b>  <b>Approx. 12</b>  <b>Condition of seat belt buckle switch: Unfastened.</b>  <b>0</b></p>		
AEL876B		
<b>OK or NG</b>		
OK	▶	Seat belt buckle switch is OK.
NG	▶	GO TO 2.

<b>2</b>	<b>CHECK SEAT BELT BUCKLE SWITCH</b>	
<p>Check continuity between terminals 1 and 2 when seat belt is fastened and unfastened.</p>		
<p><b>Continuity:</b>  <b>Seat belt is fastened.</b>  <b>No</b>  <b>Seat belt is unfastened.</b>  <b>Yes</b></p>		
AEL877B		
<b>OK or NG</b>		
OK	▶	<p><b>Check the following.</b></p> <ul style="list-style-type: none"> <li>● Seat belt buckle switch ground circuit</li> <li>● Harness for open or short between control unit and seat belt buckle switch</li> </ul>
NG	▶	Replace seat belt buckle switch.

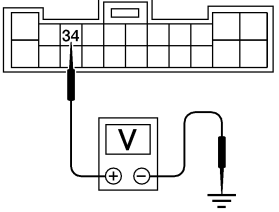

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AT  
AX  
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BR  
ST  
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BT  
HA  
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EL  
IDX

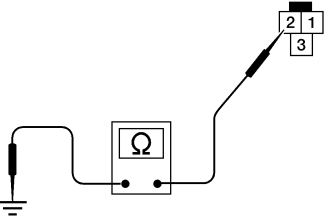

# WARNING CHIME

Trouble Diagnoses (Cont'd)

## FRONT DOOR SWITCH LH CHECK

NDEL0058S06

<b>1</b>	<b>CHECK FRONT DOOR SWITCH LH INPUT SIGNAL</b>	
Check voltage between smart entrance control unit harness connector M39 terminal 34 (R) and ground.		
<div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <p>Smart entrance control unit connector</p>  </div> <div style="text-align: center;">  </div> <div style="text-align: left;"> <p><b>Voltage [V]:</b>  <b>Condition of front door LH: CLOSED</b>                      Approx. 1.5  <b>Condition of front door LH: OPENED</b>                      0</p> </div> </div>		
LEL358A		
<b>OK or NG</b>		
OK	▶	Front door switch LH is OK.
NG	▶	GO TO 2.

<b>2</b>	<b>CHECK FRONT DOOR SWITCH LH</b>	
Check continuity between terminal 2 and switch body.		
<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  </div> <div style="text-align: center;"> <p>Front door switch LH connector (M110)</p>  </div> </div>		
AEL879B		
<p><b>Continuity:</b>  <b>Front door switch LH is pushed.</b>                      No  <b>Front door switch LH is released.</b>                      Yes</p>		
<b>OK or NG</b>		
OK	▶	<p><b>Check the following.</b></p> <ul style="list-style-type: none"> <li>● Front door switch LH ground condition</li> <li>● Harness for open or short between control unit and front door switch LH</li> </ul>
NG	▶	Replace front door switch LH.



## System Description

### WIPER OPERATION

NDEL0059

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.

GI

MA

EM

LC

EC

FE

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AX

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BR

ST

RS

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HA

SC

**EL**

IDX

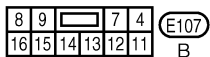
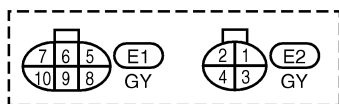
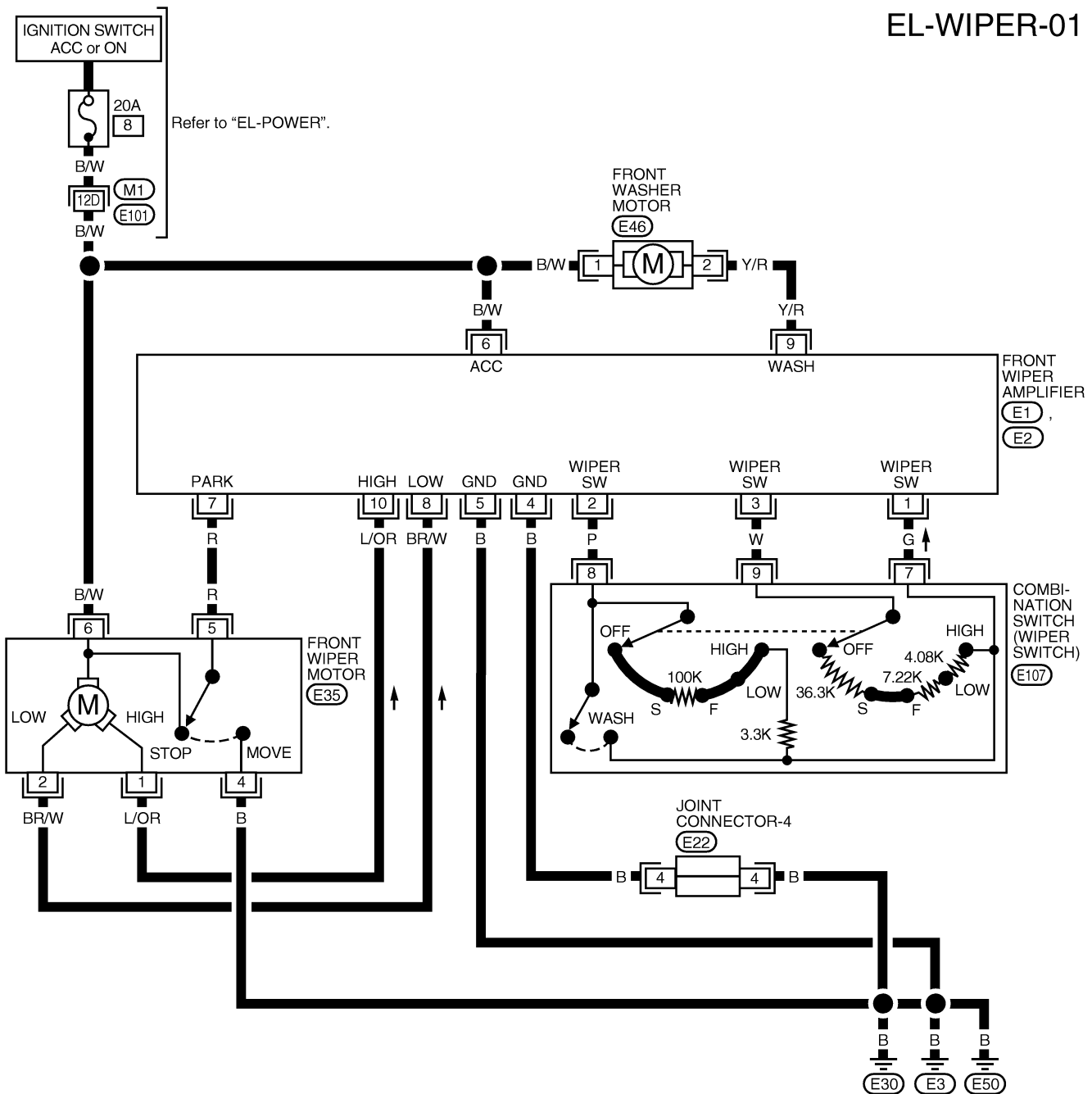
# FRONT WIPER AND WASHER

Wiring Diagram — WIPER —

## Wiring Diagram — WIPER —

NDEL0060

EL-WIPER-01



Refer to the following  
 (M1), (E101) - SUPER MULTIPLE JUNCTION (SMJ)  
 (E22) - JOINT CONNECTOR

WEL214

# FRONT WIPER AND WASHER

Trouble Diagnoses

## Trouble Diagnoses

### FRONT WIPER AMP INSPECTION TABLE

NDEL0061

NDEL0061S01

Terminal No.	Wire color	Ignition switch condition	Item	Condition	Voltage (Approx. 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

### REMOVAL

NDEL0062

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.

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# FRONT WIPER AND WASHER

Removal and Installation (Cont'd)

4. Gently tilt the wiper arm downward until contacting windshield.

## WIPER ARM ADJUSTMENT

NDEL0062S03

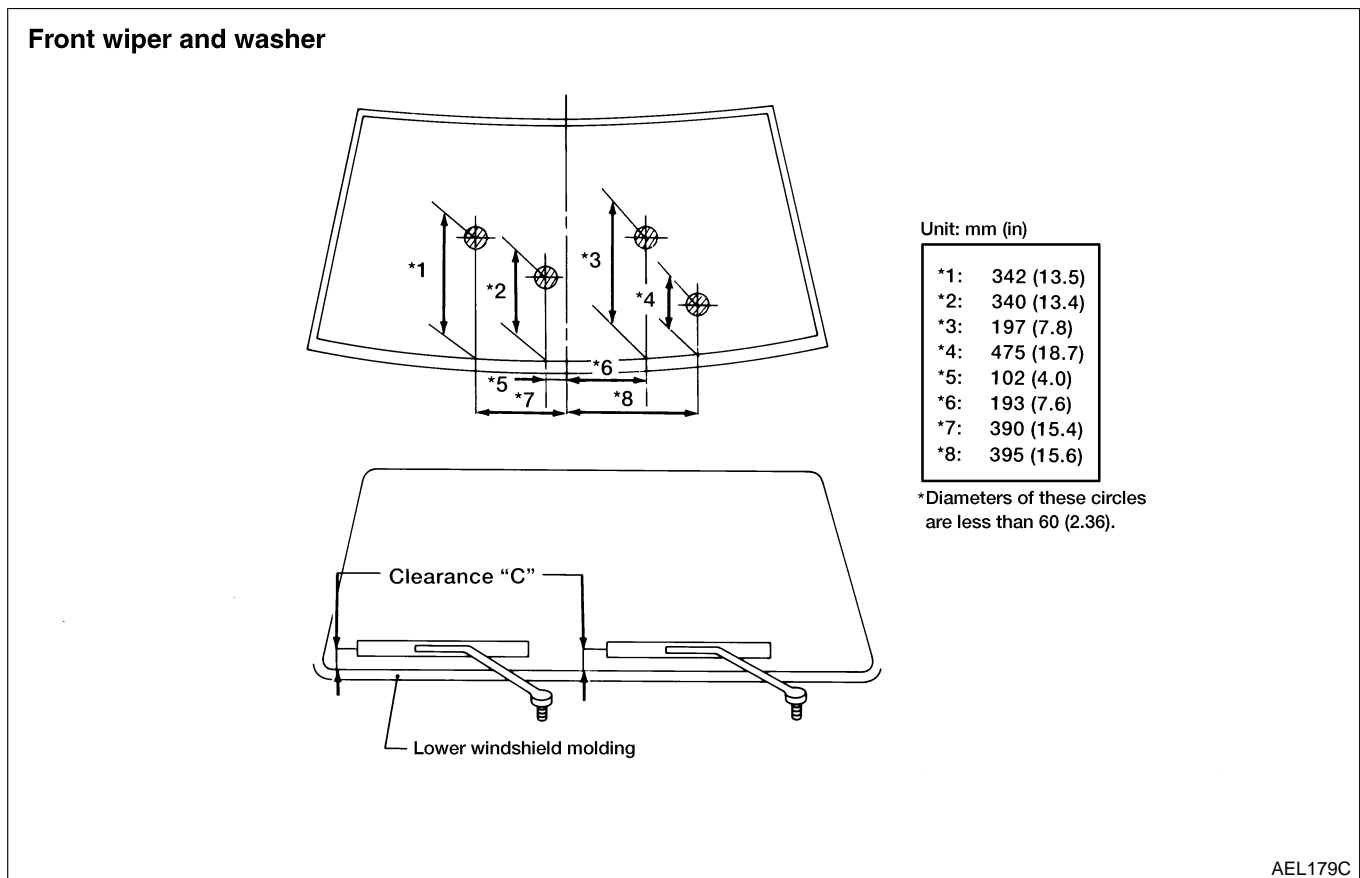
The wiper arms on this vehicle have a blind spline. The blind spline acts as an index and only allows the windshield wiper arm to be installed in one position. Therefore the wiper arms are not adjustable. If the measurement of clearance "C" is out of specification, inspect the windshield wiper motor,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

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

## Washer Nozzle Adjustment

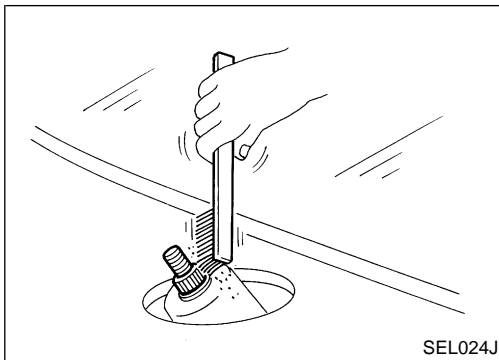
NDEL0149

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

Washer Nozzle Adjustment (Cont'd)



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

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# REAR WIPER AND WASHER

*System Description/Except for Glass Hatch Model*

## System Description/Except for Glass Hatch Model

### POWER SUPPLY AND GROUND CIRCUIT

NDEL0063

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.

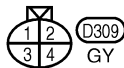
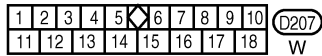
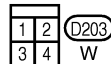
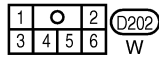
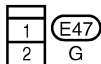
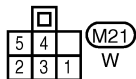
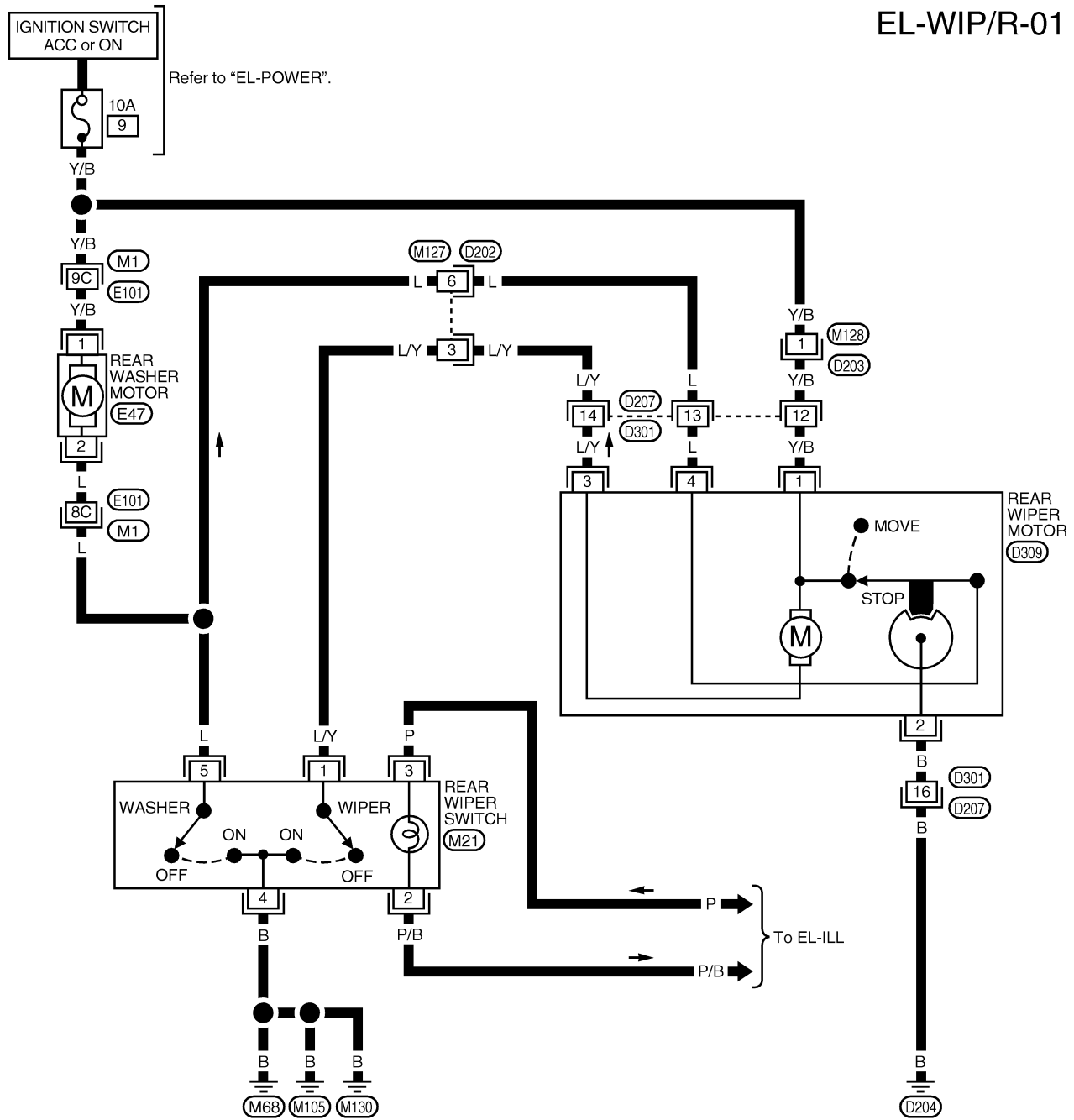
# REAR WIPER AND WASHER

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

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

NDEL0064

EL-WIP/R-01



Refer to the following.  
 (M1), (E101) - SUPER MULTIPLE JUNCTION (SMJ)

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# REAR WIPER AND WASHER

System Description/For Glass Hatch Model

## 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.



# REAR WIPER AND WASHER

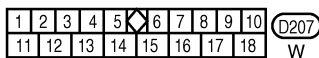
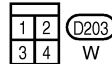
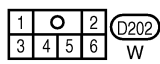
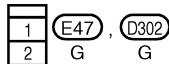
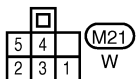
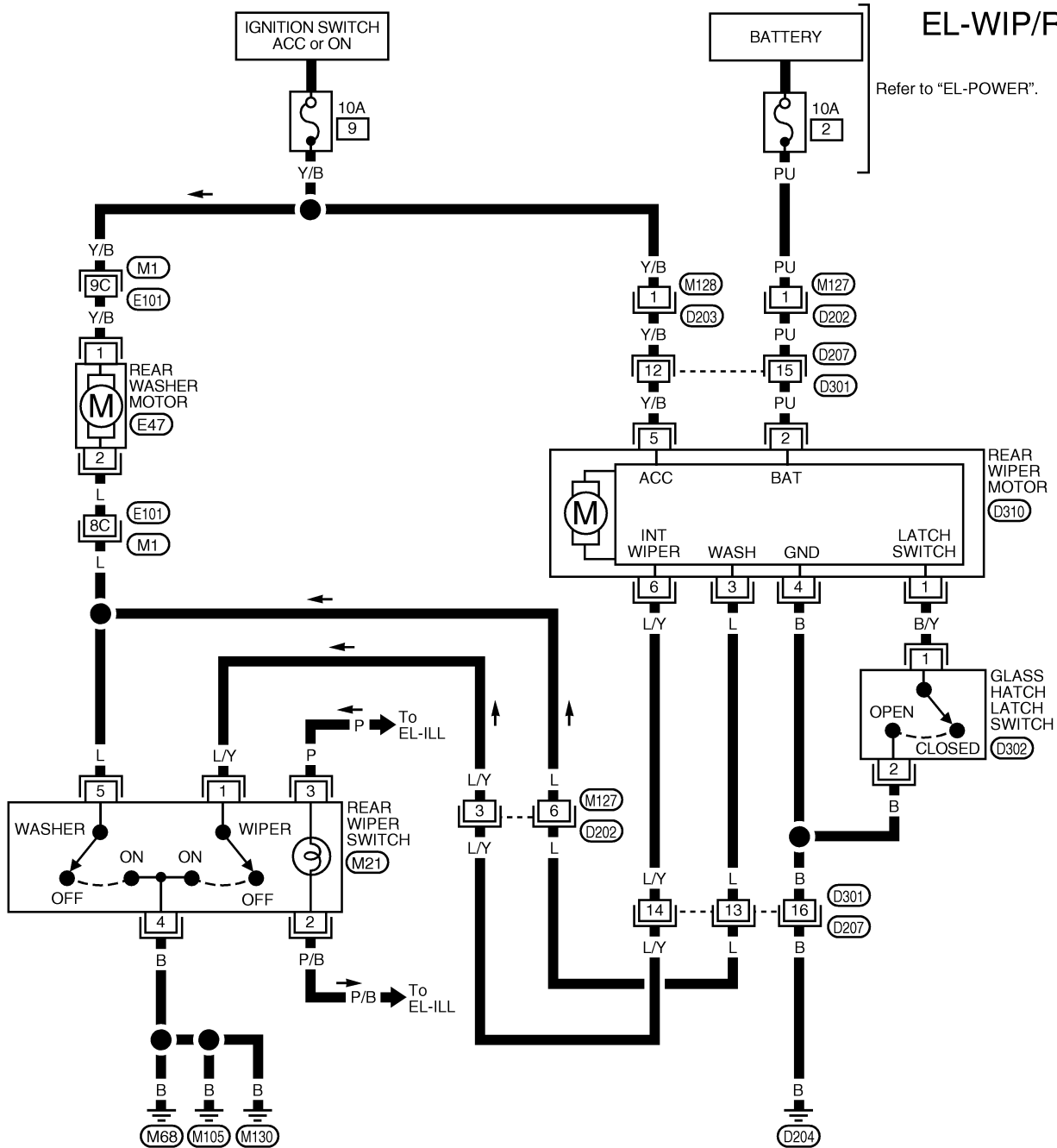
Wiring Diagram — WIP/R — /For Glass Hatch Model

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

NDEL0066

EL-WIP/R-02

Refer to "EL-POWER".



Refer to the following.  
(M1), (E101) - SUPER MULTIPLE JUNCTION (SMJ)

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# REAR WIPER AND WASHER

Removal and Installation

## Removal and Installation

NDEL0067

NDEL0067S01

### REMOVAL

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

### INSTALLATION

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 it contacts rear glass.

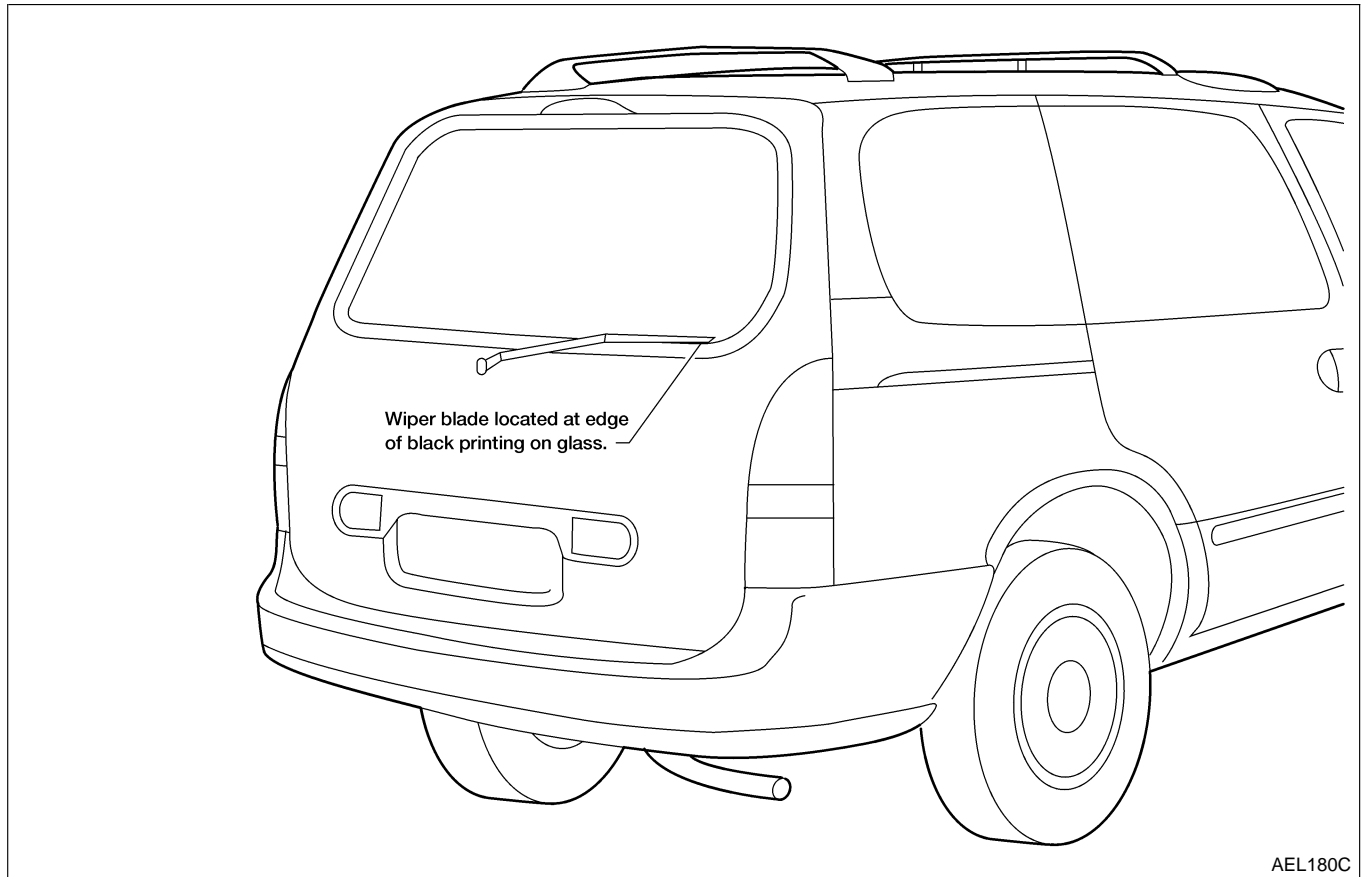
### WIPER ARM ADJUSTMENT

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.

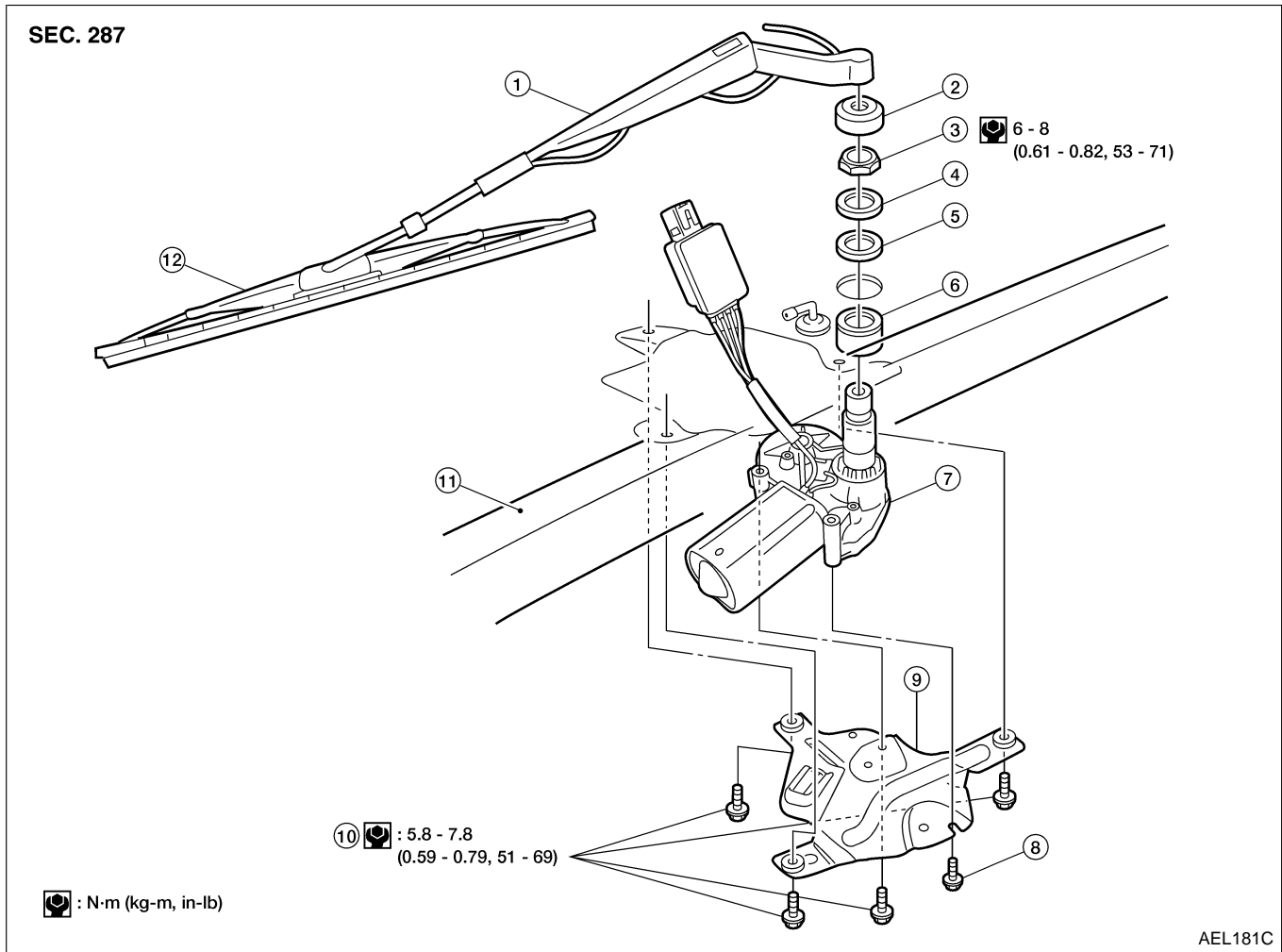
### NOTE:

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

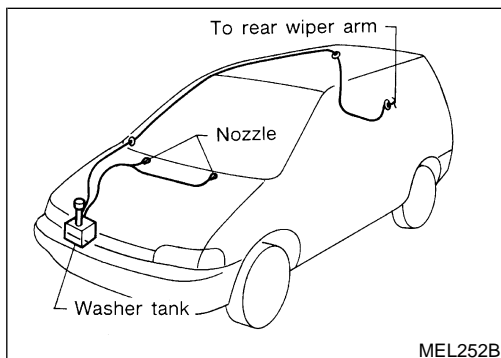


# REAR WIPER AND WASHER

Removal and Installation (Cont'd)



- |                     |                    |                     |
|---------------------|--------------------|---------------------|
| 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

- A check valve is provided in the washer fluid line. Be careful not to connect check valve to washer tube in the wrong direction. NDEL0150

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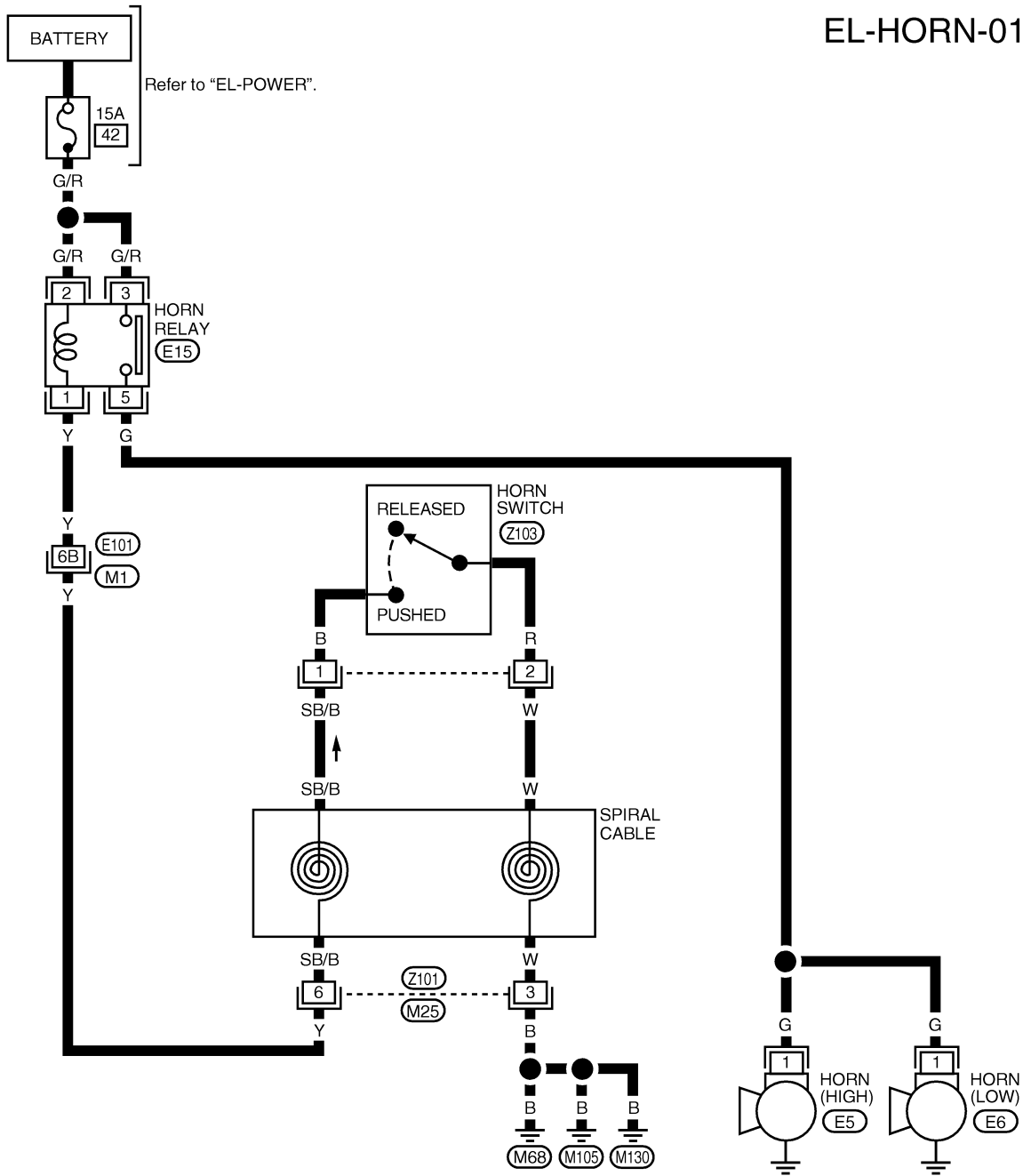
# HORN

Wiring Diagram — HORN —

## Wiring Diagram — HORN —

NDEL0068

EL-HORN-01



Refer to the following.  
 (M1), (E101) - SUPER MULTIPLE JUNCTION (SMJ)

\*: This connector is not shown in "HARNES LAYOUT".

WEL217

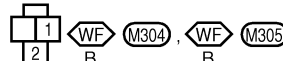
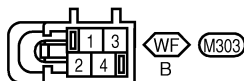
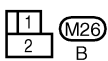
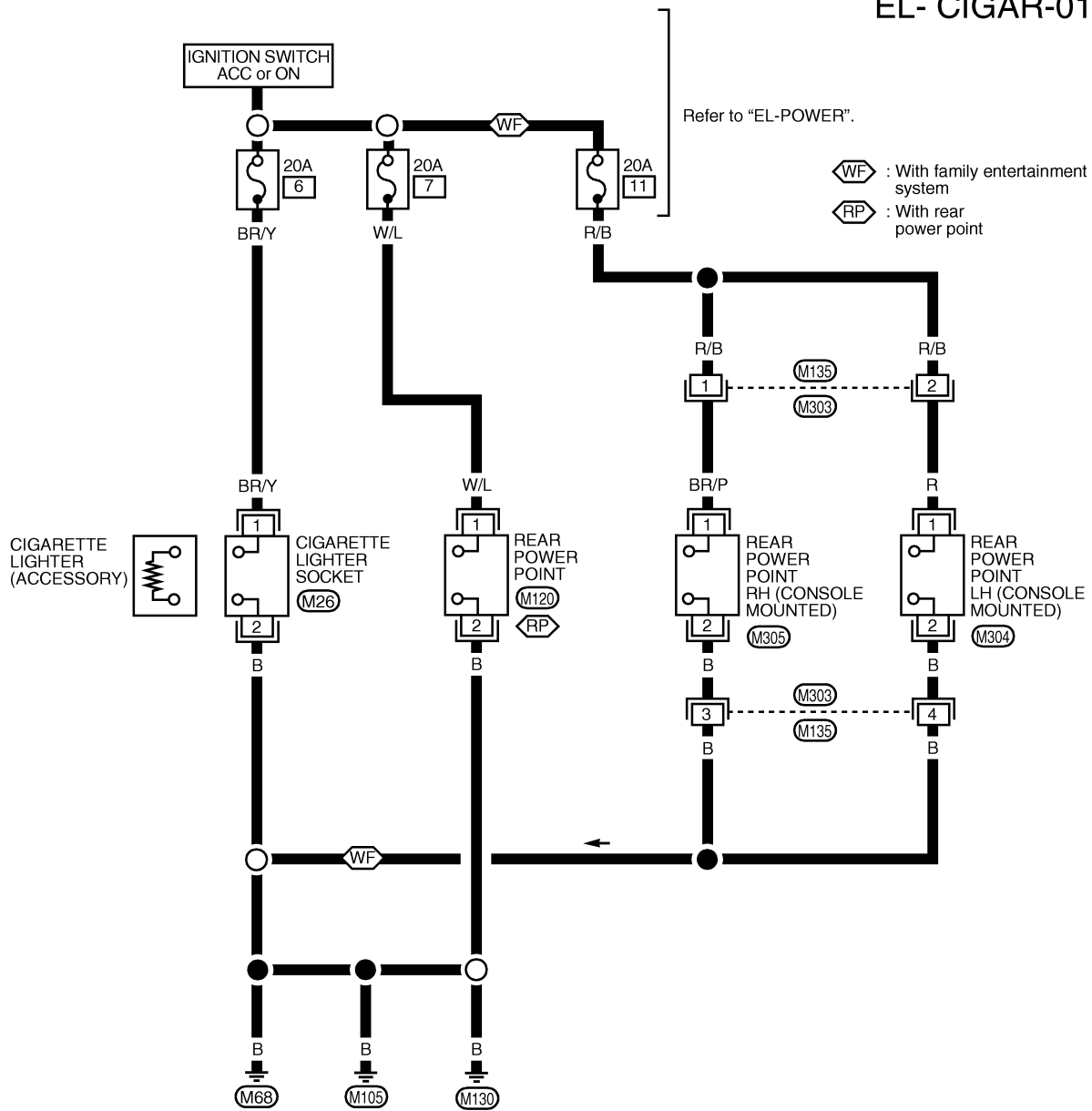
# CIGARETTE LIGHTER

Wiring Diagram — CIGAR —

## Wiring Diagram — CIGAR —

NDEL0069

### EL- CIGAR-01



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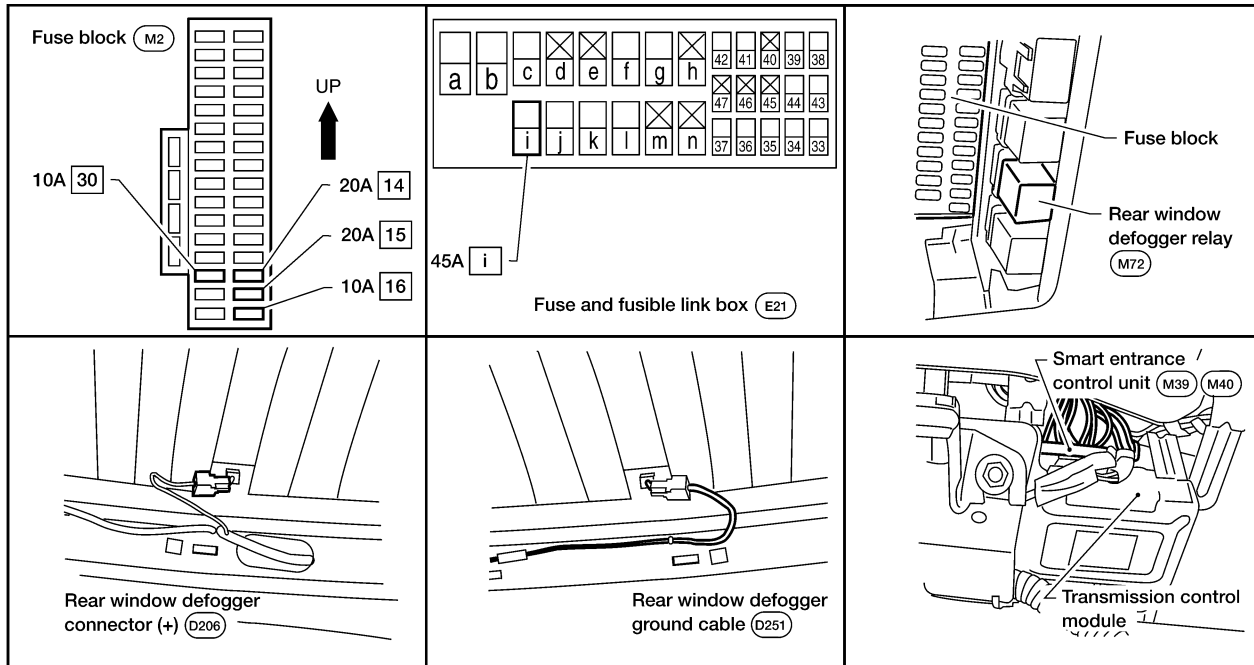
LEL948

# REAR WINDOW DEFOGGER

Component Parts and Harness Connector Location

## Component Parts and Harness Connector Location

NDEL0070



WEL270A

## 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 (Nos. 15 and 14, located in the fuse block)
- to rear window defogger terminal 1.

# REAR WINDOW DEFOGGER

System Description (Cont'd)

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.

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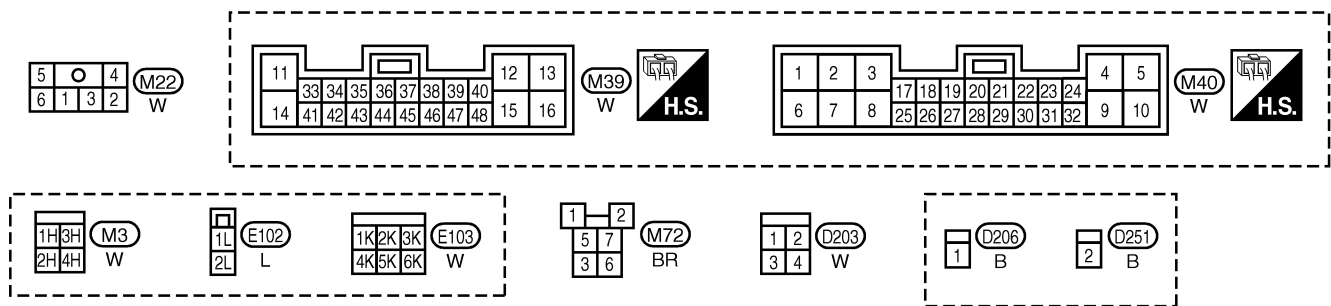
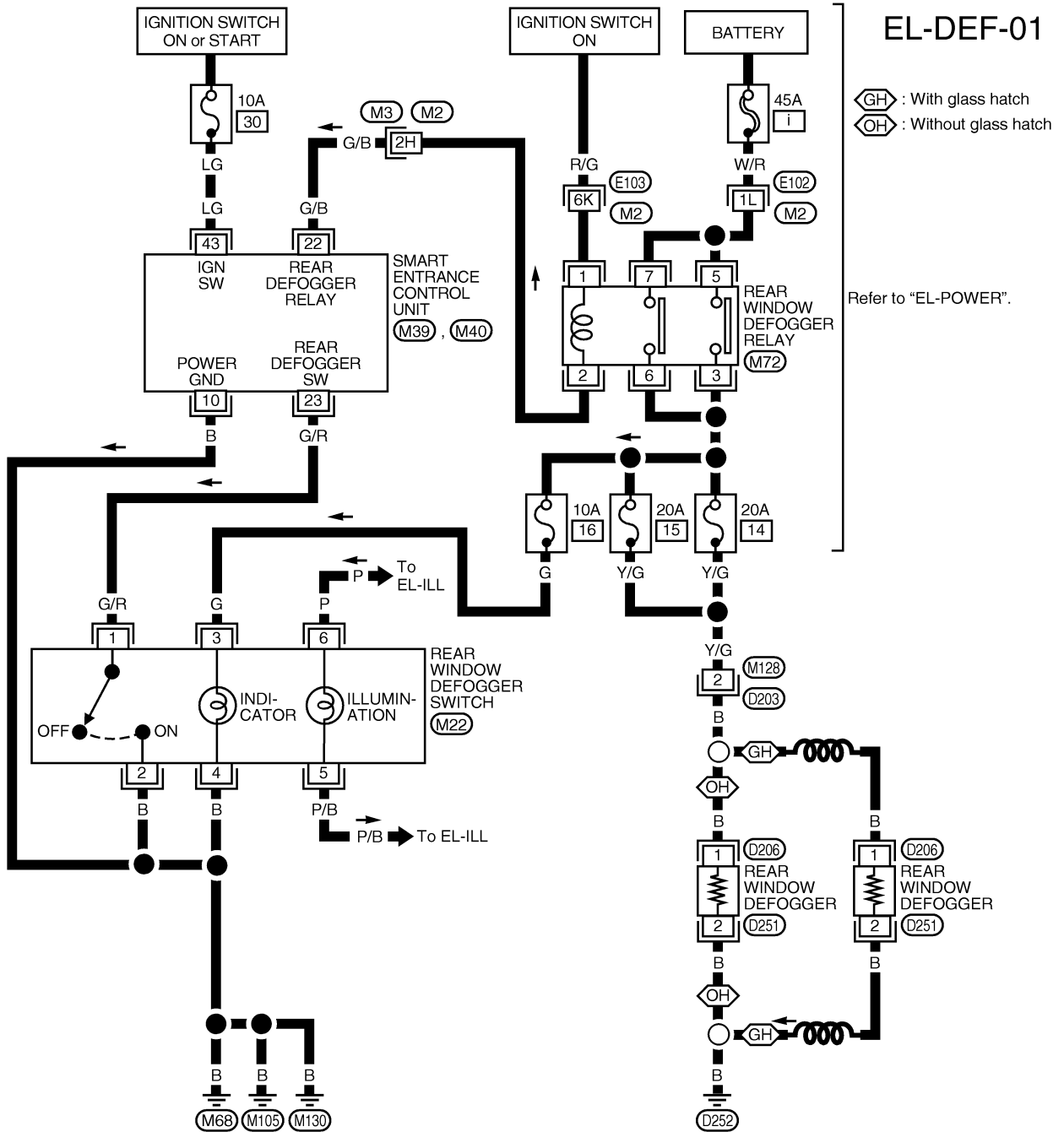
IDX

# REAR WINDOW DEFOGGER

Wiring Diagram — DEF —

## Wiring Diagram — DEF —

NDEL0072



WEL218



# REAR WINDOW DEFOGGER

Trouble Diagnoses

## Trouble Diagnoses DIAGNOSTIC PROCEDURE

NDEL0073

NDEL0073S01

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

<b>1</b>	<b>CHECK IGNITION INPUT SIGNAL</b>	
Check voltage between control unit terminal 43 and ground.		
<p><b>Voltage [V]:</b>                  Ignition switch is ON.                  Approx. 12                  Ignition switch is OFF.                  0</p>		
AEL948B		
<b>OK or NG</b>		
OK	▶	GO TO 2.
NG	▶	<b>Check the following</b> <ul style="list-style-type: none"> <li>● 10A fuse (No. 30, located in the fuse block)</li> <li>● Harness for open or short between control unit and fuse.</li> </ul>

<b>2</b>	<b>CHECK CONTROL UNIT GROUND CIRCUIT</b>	
Check continuity between control unit terminal 10 and ground.		
<b>Does continuity exist?</b>		
Yes	▶	GO TO 3.
No	▶	Repair harness or connectors.

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# REAR WINDOW DEFOGGER

Trouble Diagnoses (Cont'd)

<b>3</b>	<b>CHECK REAR WINDOW DEFOGGER SWITCH INPUT SIGNAL</b>	<p>Check continuity between control unit terminal 23 and ground.</p> <div style="text-align: center;"> </div> <p style="text-align: right;">AEL950B</p> <p><b>Continuity:</b>  <b>Rear window defogger switch is pushed.</b>          Yes  <b>Rear window defogger switch is released.</b>          No</p> <p style="text-align: center;"><b>OK or NG</b></p>	
OK	▶	GO TO 4.	
NG	▶	<p><b>Check the following</b></p> <ul style="list-style-type: none"> <li>• Rear window defogger switch (Refer to “REAR WINDOW DEFOGGER SWITCH”, EL-135)</li> <li>• Harness for open or short between control unit and rear window defogger switch</li> <li>• Rear window defogger switch ground circuit</li> </ul>	

<b>4</b>	<b>CHECK REAR WINDOW DEFOGGER OUTPUT SIGNAL</b>	<p>1. Turn ignition switch to ON position.                  2. Check voltage between control unit harness terminal 22 and ground.</p> <div style="text-align: center;"> </div> <p style="text-align: right;">AEL951B</p> <p><b>Voltage [V]:</b>  <b>Rear window defogger switch is OFF.</b>          Approx. 12  <b>Rear window defogger switch is ON.</b>          0</p> <p style="text-align: center;"><b>OK or NG</b></p>	
OK	▶	<p><b>Check the following</b></p> <ul style="list-style-type: none"> <li>• Rear window defogger relay (Refer to “REAR WINDOW DEFOGGER RELAY”, EL-135)</li> <li>• Rear window defogger circuit</li> <li>• Rear window defogger filament check (Refer to “Filament Check”, EL-135.)</li> </ul>	
NG	▶	GO TO 5.	

# REAR WINDOW DEFOGGER

Trouble Diagnoses (Cont'd)

**5 CHECK DEFOGGER RELAY COIL SIDE CIRCUIT**

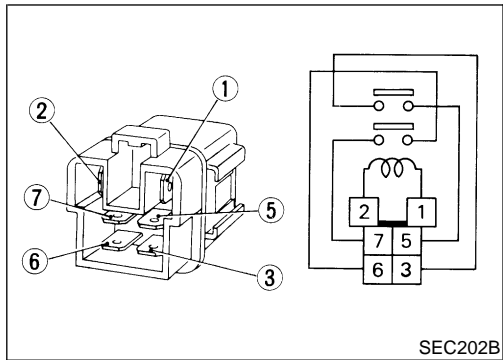
1. Disconnect control unit connector.
2. Turn ignition switch to ON position.
3. Check voltage between control unit terminal 22 and ground.

Smart entrance control unit connector (M40)

Does battery voltage exist?

Yes	▶	Replace control unit.
No	▶	<b>Check the following</b> <ul style="list-style-type: none"> <li>• Harness for open or short between ignition switch and rear window defogger relay</li> <li>• Rear window defogger relay</li> <li>• Harness for open or short between rear window defogger relay and control unit</li> </ul>

AEL952B



## Electrical Components Inspection

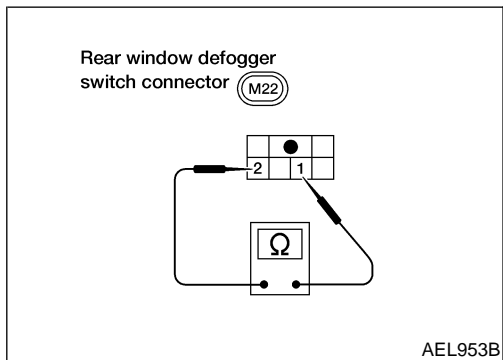
NDEL0074

### 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

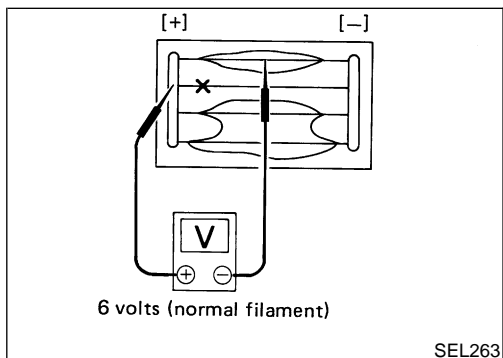


### REAR WINDOW DEFOGGER SWITCH

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



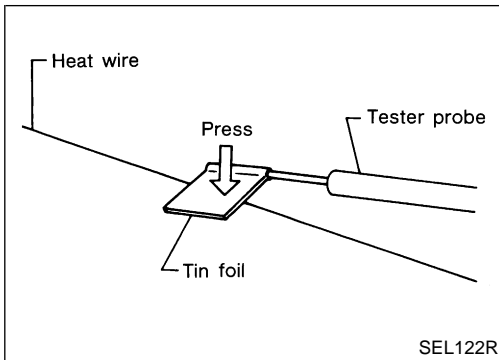
### Filament Check

NDEL0075

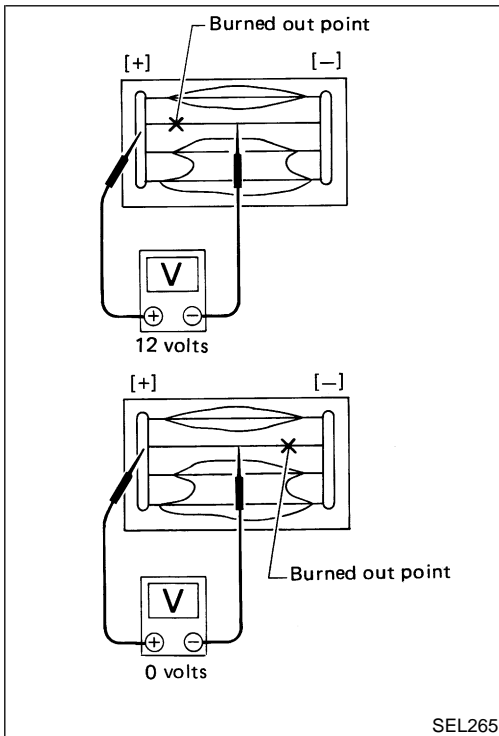
1. Attach probe circuit tester (in volt range) to middle portion of each filament.

# REAR WINDOW DEFOGGER

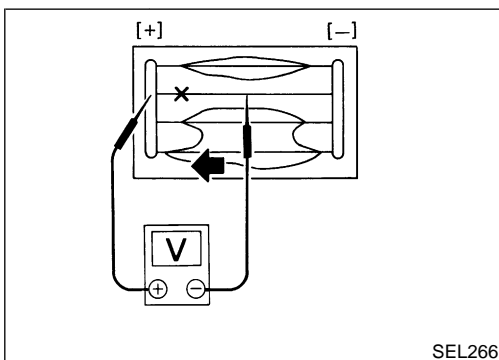
## Filament Check (Cont'd)



- 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 REPAIR EQUIPMENT

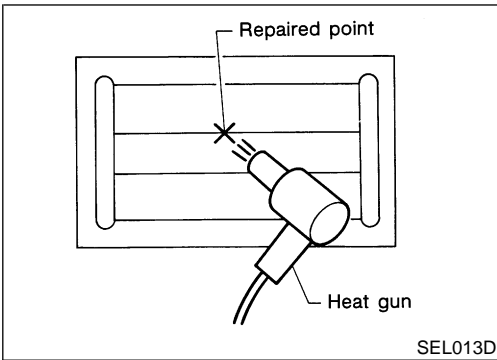
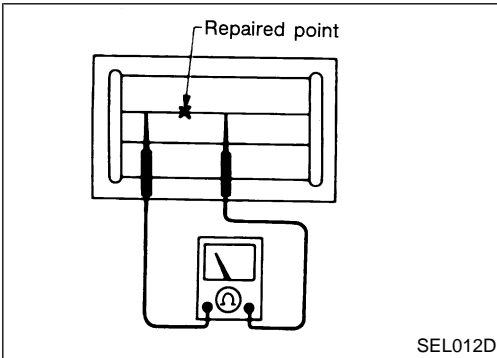
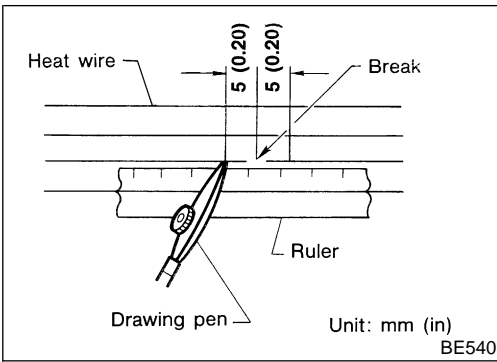
NDEL0076

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

# REAR WINDOW DEFOGGER

Filament Repair (Cont'd)



## 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.

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# AUDIO

## System Description

NDEL0077

### NOTE:

If vehicle is equipped with family entertainment system, refer to “FAMILY ENTERTAINMENT SYSTEM”, EL-153.

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

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 15A fuse (No. 10, located in the fuse block)
- to audio unit terminal 30 and
- 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
- to rear audio remote control unit terminals 3, 4, 6 and 7 for the headphone jacks, and
- to the front speakers 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.

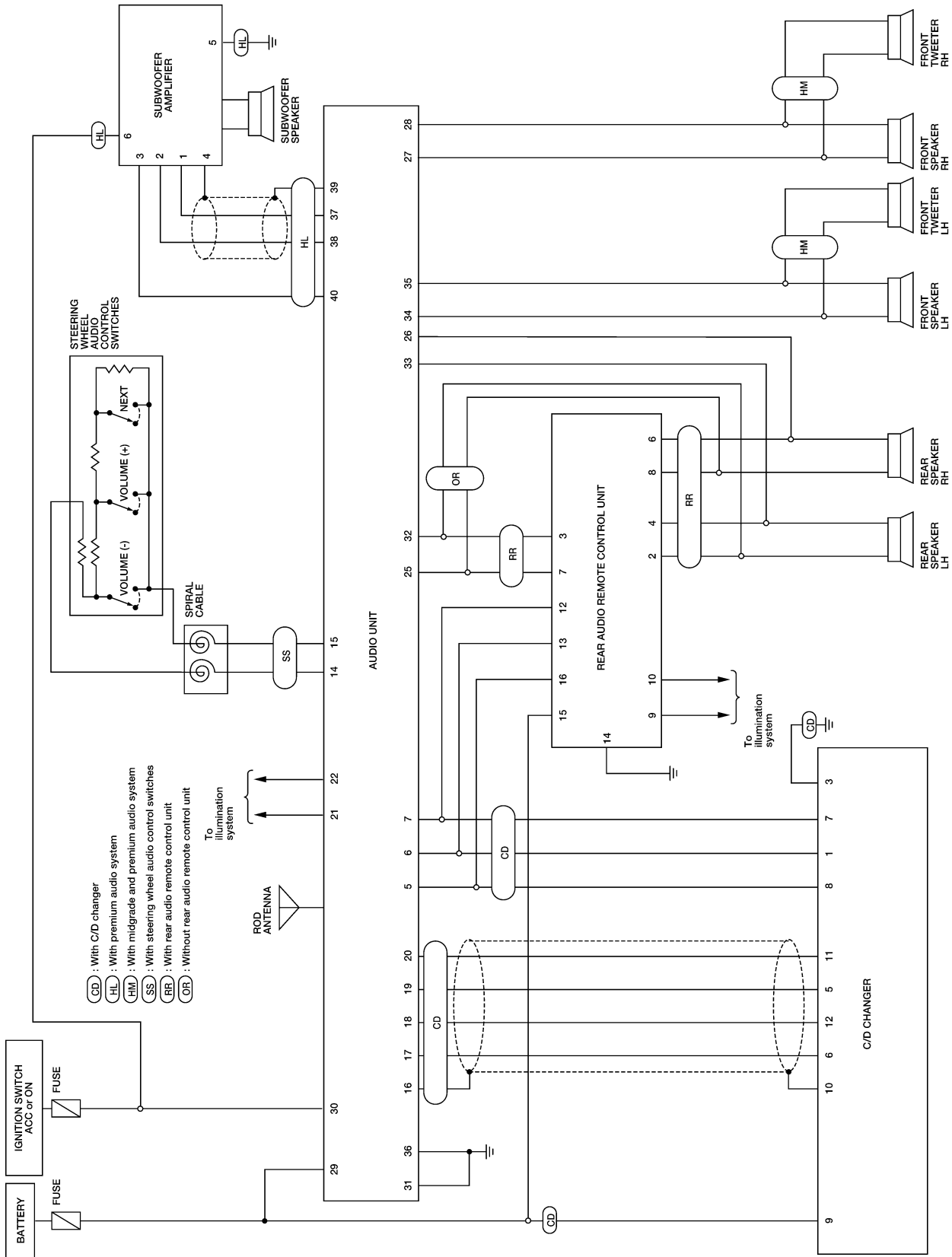
The audio unit receives a ground signal at terminal 14 (volume increase, volume decrease or next preset) when the switches are depressed.

# AUDIO

Schematic — Midgrade and Premium System

## Schematic — Midgrade and Premium System

NDEL0078



GI  
MA  
EM  
LC  
EC  
FE  
AT  
AX  
SU  
BR  
ST  
RS  
BT  
HA  
SC  
EL  
IDX

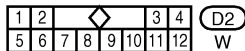
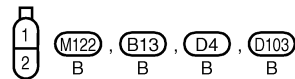
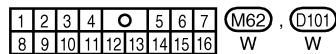
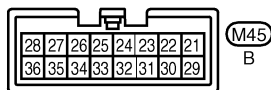
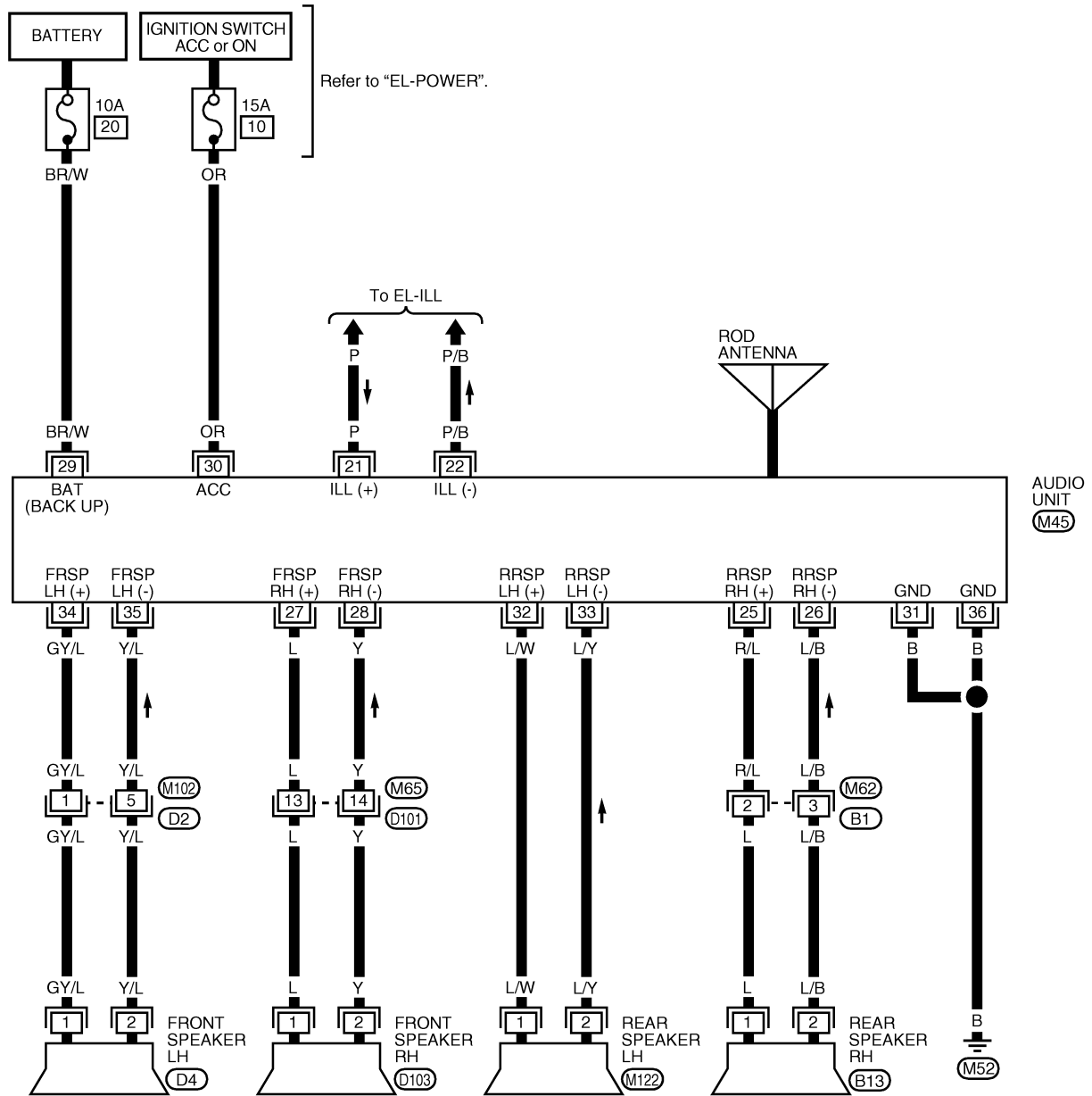
# AUDIO

Wiring Diagram — AUDIO — /Base System

## Wiring Diagram — AUDIO — /Base System

NDEL0079

### EL-AUDIO-01



LEL950



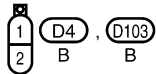
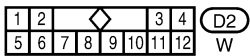
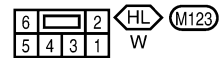
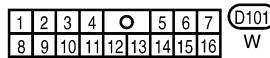
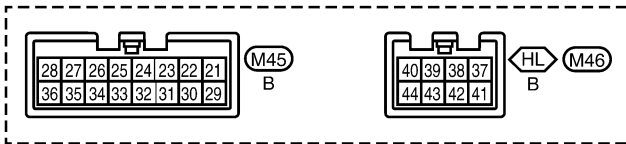
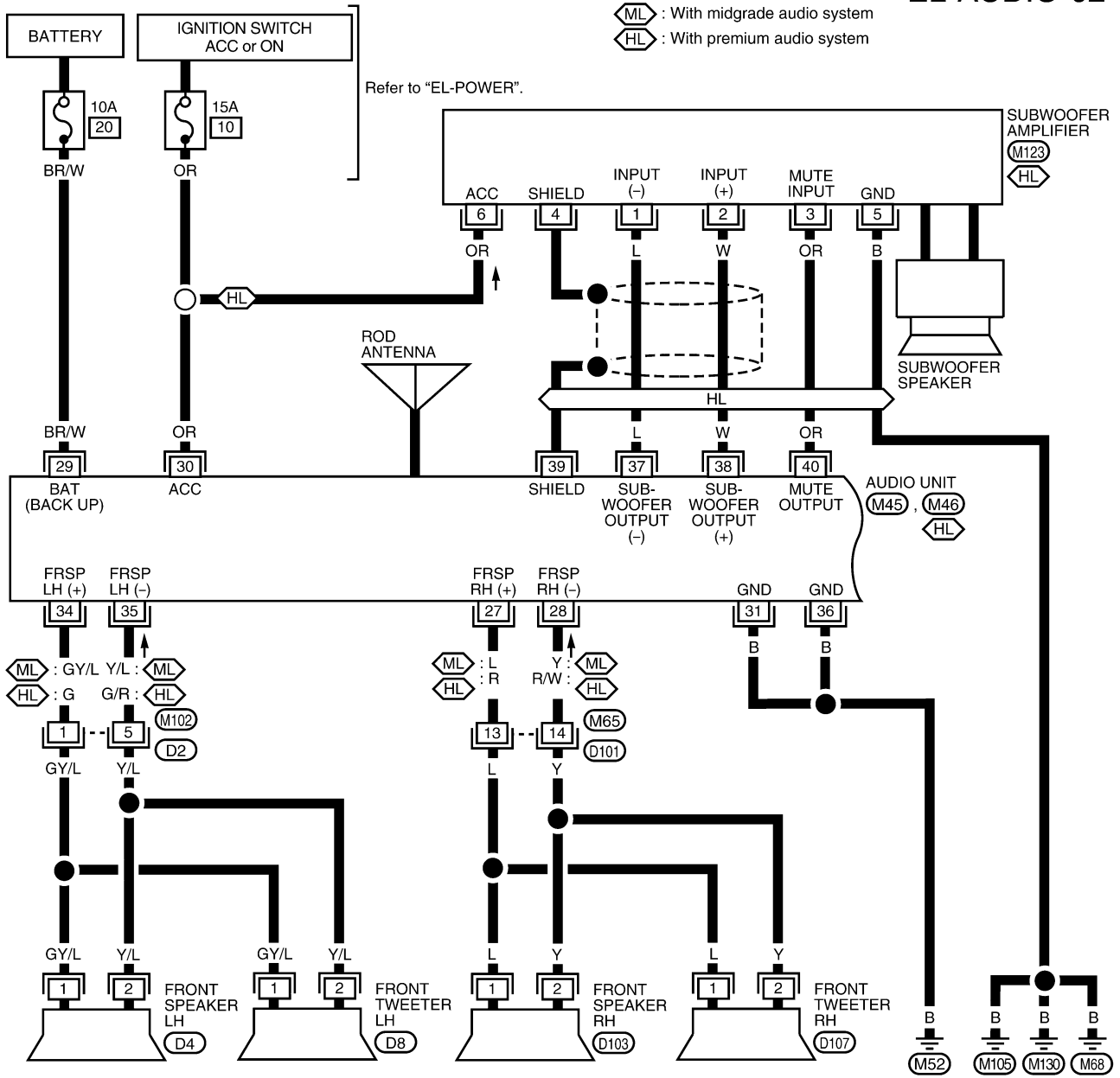
# AUDIO

Wiring Diagram — AUDIO — /Midgrade and Premium System

## Wiring Diagram — AUDIO — /Midgrade and Premium System

NDEL0158

EL-AUDIO-02



GI  
MA  
EM  
LC  
EC  
FE  
AT  
AX  
SU  
BR  
ST  
RS  
BT  
HA  
SC

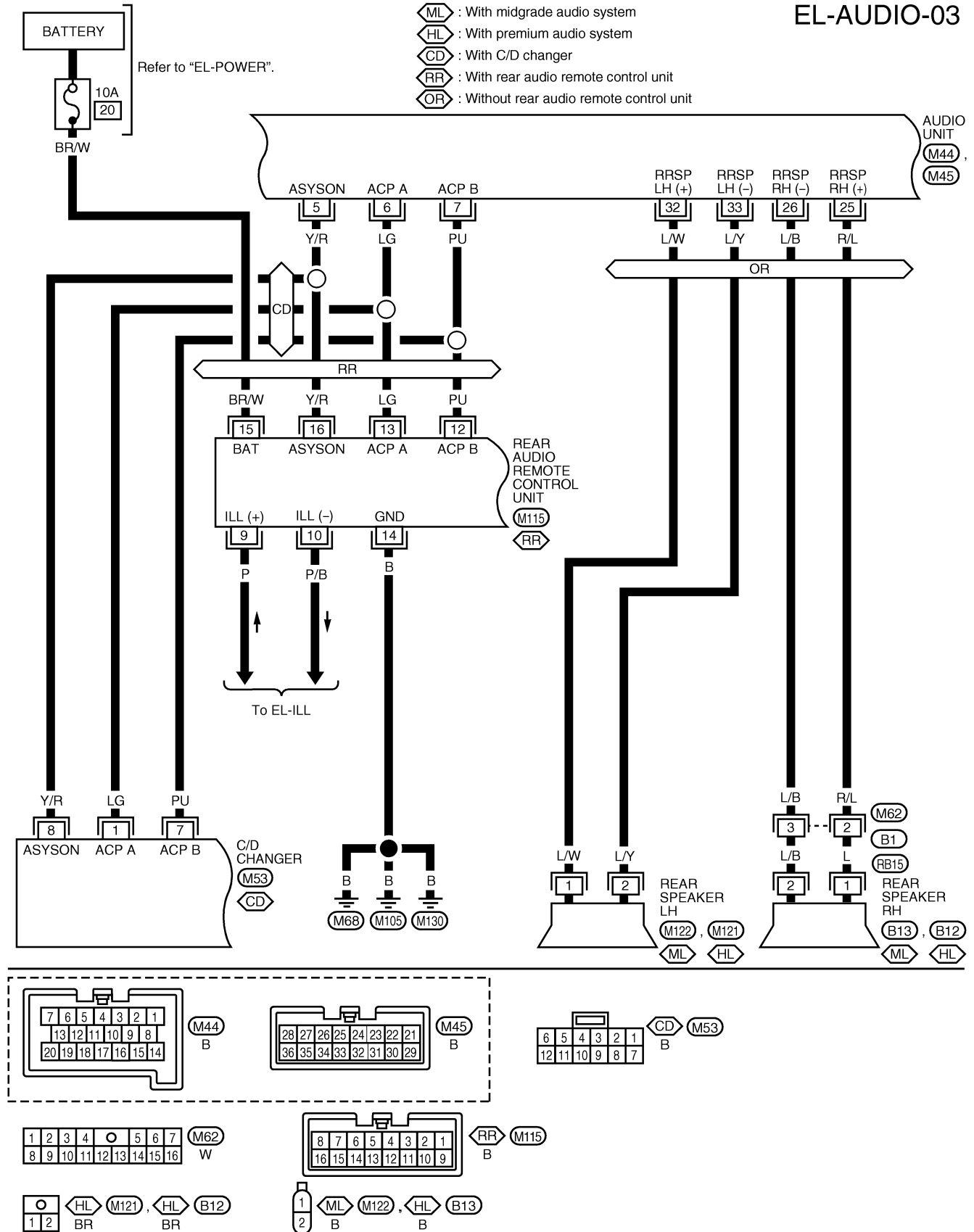
EL

IDX

# AUDIO

Wiring Diagram — AUDIO — /Midgrade and Premium System (Cont'd)

EL-AUDIO-03

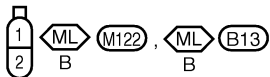
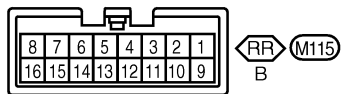
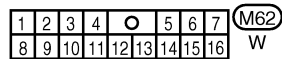
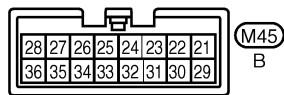
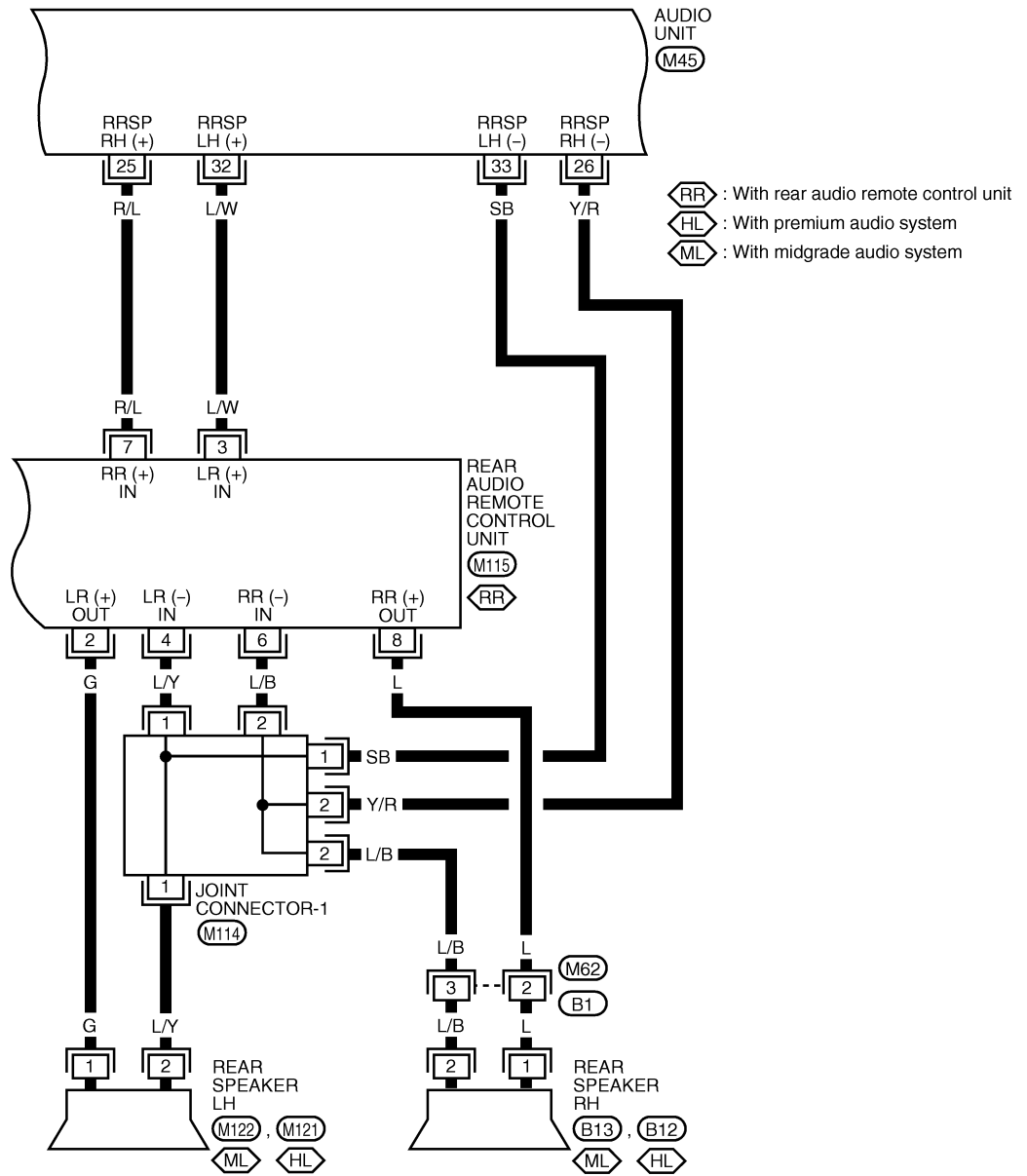


WEL952

# AUDIO

Wiring Diagram — AUDIO — /Midgrade and Premium System (Cont'd)

## EL-AUDIO-04



Refer to the following.  
 (M114) - JOINT CONNECTOR

GI  
 MA  
 EM  
 LC  
 EC  
 FE  
 AT  
 AX  
 SU  
 BR  
 ST  
 RS  
 BT  
 HA  
 SC

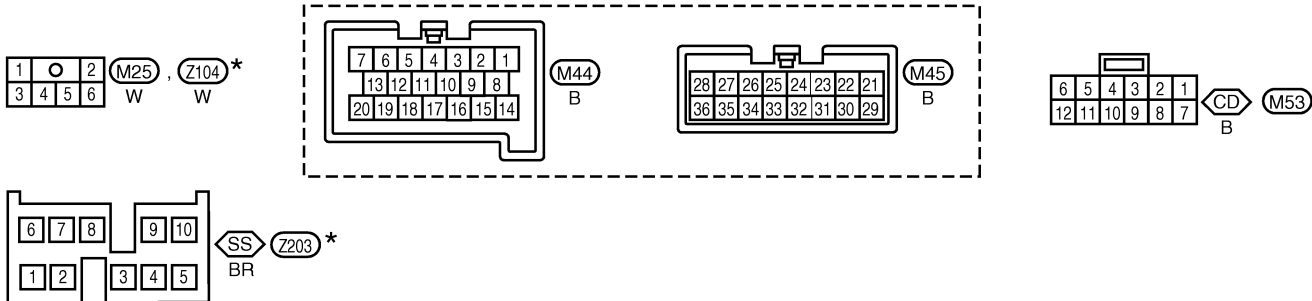
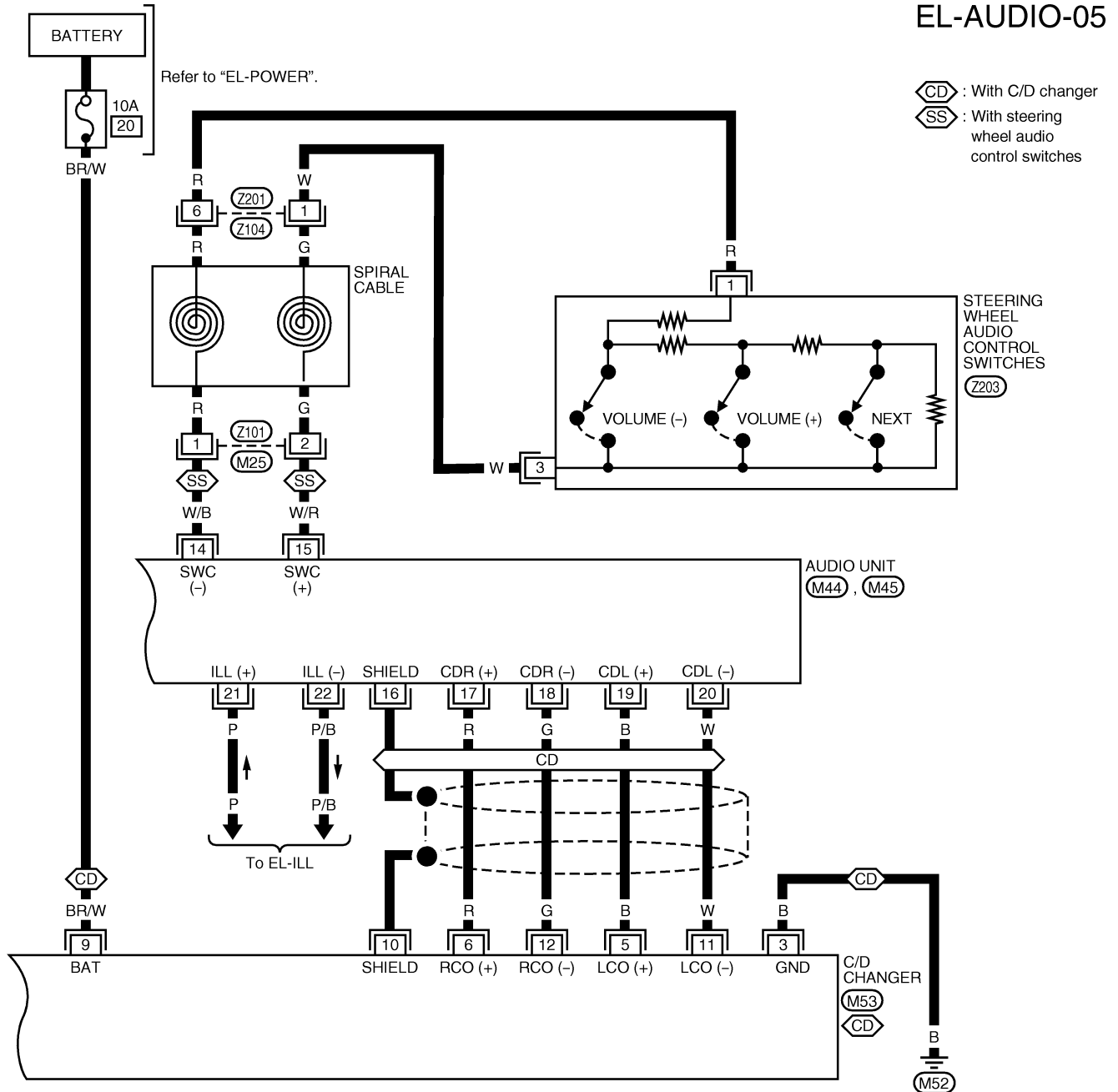
EL

IDX

# AUDIO

Wiring Diagram — AUDIO — /Midgrade and Premium System (Cont'd)

EL-AUDIO-05



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

WEL954

## Trouble Diagnoses

NDEL0081

NDEL0081S10

### SPEAKER WALK-AROUND TEST

**NOTE:**

The audio unit must be turned on and in radio tuner mode (AM/FM) in order to enter the speaker walk-around test.

1. To enter the speaker walk-around test, simultaneously press station select buttons 3 and 6.
2. The speaker walk-around test stops and applies sound to each speaker for about 2 seconds. Each speaker is tested and displayed on the audio unit display in the following sequence: RF, LF, LR, and RR.
3. If the vehicle is equipped with dual media audio unit, the speaker walk-around test automatically continues and tests antenna and subwoofer (if equipped). If a speaker short exists, "SPKR SHORT" will be displayed. If the vehicle is not equipped with a CD changer or if the CD changer is not responding, "NO CDDJ" will be displayed

### AUDIO UNIT SELF-TEST MATRIX

NDEL0081S11

**NOTE:**

The audio unit must be turned on and in radio tuner mode (AM/FM) in order to enter the audio unit self-test mode.

Document the diagnostic trouble codes (DTCs) and perform the self-test again.

1. To enter each of the following tests, press and release the station select button while in the speaker walk-around test.

Station Select Button	AM/FM/Cassette Audio Unit Test Function	Dual Media Audio Unit Test Function
1	This is an audio internal and external on-demand self-test. "SELF TEST" will be displayed during the test. If "SELF FAIL" is displayed, press and release "TUNE>" to scroll view each DTC stored. Refer to the "AM/FM/CASSETTE AUDIO UNIT DTC INDEX", EL-147. If the system is OK, "SELF PASS" will be displayed.	This is an audio internal and external on-demand self-test. "SELF TEST" will be displayed during this test. If DTCs are retrieved, "DTCS FOUND" will be displayed. Press and release "TUNE>" to scroll view each DTC stored. Refer to the "DUAL MEDIA AUDIO UNIT DTC INDEX", EL-146.
2	View/Clear continuous DTCs. "NO DTCS" is displayed if no DTCs are retrieved. If "DTCS FOUND" is displayed, press and release "TUNE>" to scroll view each DTC retrieved. Refer to the "AM/FM/CASSETTE AUDIO UNIT DTC INDEX", EL-147. To clear all DTCs, press the eject "EJ" button. "DTCS CLEAR" will be displayed.	No self-test function.
3	This is an antenna signal test. This test measures the average strength at the current tuner setting.	This is an antenna signal test. This test measures the average strength at the current tuner setting.
4	Software configuration level. This test queries each radio system controller for its software configuration level. "SOFT LEVELS" will be displayed upon completion of the query. Press and release "TUNE>" to scroll view the software configuration version level.	Software configuration level. The software configuration level will be displayed.
5	This is a display test. This test will light all display segments for five seconds. When the test is complete, "DISPLAY TEST" is displayed.	This is a display test. This test will light all display segments for five seconds. When the test is complete, "DISPLAY TEST" is displayed.
6	Audio unit configuration. "RADIO CONFIG" will be displayed. Press and release "TUNE>" to scroll view audio unit configuration data.	No self-test function.

2. To exit the self-test mode, turn the ignition switch or the audio unit off.
3. If the concern remains and the fault is not detected, proceed to the "SYMPTOM CHART", EL-148.

# AUDIO

Trouble Diagnoses (Cont'd)

## DUAL MEDIA AUDIO UNIT DTC INDEX

=NDEL0081S12

DTC	Description	Repair Order
9342	Audio unit is defective	Document and clear the DTCs. Perform the self-test. Remove the audio unit for repair if DTC 9342 is retrieved again.
B2401	Audio tape deck mechanism fault	Verify that no cassette is inserted in the audio unit. Document and clear the DTCs. Perform the self-test. Remove the audio unit for repair if DTC B2401 is retrieved again.
B2402	CD changer thermal shutdown fault	Allow CD changer to cool down. If DTC still exists after cool down, proceed to the following steps. 1. Check 10A fuse (No. 20, located in the fuse block). Verify battery voltage is present at terminal 9 of CD changer. 2. Check CD changer body ground. 3. Remove CD changer for repair.
B2403	CD changer internal fault	1. Check 10A fuse (No. 20, located in the fuse block). Verify battery voltage is present at terminal 9 of CD changer. 2. Check CD changer body ground. 3. Remove CD changer for repair.
B2404	Steering wheel audio control switches circuit fault	1. Check continuity between audio unit harness connector M44 and steering wheel audio control switches connector Z203. 2. Check steering wheel audio control switches. Refer to "STEERING WHEEL AUDIO CONTROL SWITCHES INSPECTION", EL-149 3. Remove audio unit for repair.
B2405	Audio single disc CD player thermal shutdown fault	Document and clear the DTCs. Perform the self-test. Remove the audio unit for repair if DTC B2405 is retrieved again.
B2406	Audio single disc CD player internal fault	Document and clear the DTCs. Perform the self-test. Remove the audio unit for repair if DTC B2406 is retrieved again.
U2003	CD changer is not responding	1. Check 10A fuse (No. 20, located in the fuse block). Verify battery voltage is present at terminal 9 of CD changer. 2. Check CD changer body ground. 3. Remove CD changer for repair.
U2005	Rear audio remote control unit is not responding	<b>NOTE:</b> U2005 is retrieved if rear audio remote control unit is not present, disconnected or inoperative. Verify the vehicle is equipped with rear audio remote control unit. 1. Check 10A fuse (No. 20, located in the fuse block). Verify battery voltage at terminal 15 of rear audio remote control unit. 2. Check rear audio remote control unit body ground.
U2008	Cell phone is not responding	This DTC will always be present because there is no telephone availability on the vehicle for this audio unit.

# AUDIO

Trouble Diagnoses (Cont'd)

## AM/FM/CASSETTE AUDIO UNIT DTC INDEX

=NDEL0081S13

DTC	Description	Repair Order	
B1342	Audio unit is defective	Document and clear the DTCs. Perform the self-test. Remove the audio unit for repair if DTC B1342 is retrieved again.	GI MA
B2401	Audio tape deck mechanism fault	Verify that no cassette is inserted in the audio unit. Document and clear the DTCs. Perform the self-test. Remove the audio unit for repair if DTC B2401 is retrieved again.	EM
B2402	CD changer thermal shutdown fault	Allow CD changer to cool down. If DTC still exists after cool down, proceed to the following steps. 1. Check 10A fuse (No. 20, located in the fuse block). Verify battery voltage is present at terminal 9 of CD changer. 2. Check CD changer body ground. 3. Remove CD changer for repair.	LC EC FE
B2403	CD changer internal fault	1. Check 10A fuse (No. 20, located in the fuse block). Verify battery voltage is present at terminal 9 of CD changer. 2. Check CD changer body ground. 3. Remove CD changer for repair.	AT AX
B2404	Steering wheel audio control switches circuit fault	1. Check continuity between audio unit harness connector M44 and steering wheel audio control switches connector Z203. 2. Check steering wheel audio control switches. Refer to "STEERING WHEEL AUDIO CONTROL SWITCHES INSPECTION", EL-149 3. Remove audio unit for repair.	SU BR
B2405	Audio single disc CD player thermal shutdown fault	Not applicable with this audio unit.	ST
B2406	Audio single disc CD player internal fault	Not applicable with this audio unit.	
U2003	CD changer is not responding	1. Check 10A fuse (No. 20, located in the fuse block). Verify battery voltage is present at terminal 9 of CD changer. 2. Check CD changer body ground. 3. Remove CD changer for repair.	RS BT
U2005	Rear audio remote control unit is not responding	<b>NOTE:</b> U2005 is retrieved if rear audio remote control unit is not present, disconnected or inoperative. Verify the vehicle is equipped with rear audio remote control unit. 1. Check 10A fuse (No. 20, located in the fuse block). Verify battery voltage at terminal 15 of rear audio remote control unit. 2. Check rear audio remote control unit body ground.	HA SC
U2008	Cell phone is not responding	This DTC will always be present because there is no telephone availability on the vehicle for this audio unit.	EL
U2014	Audio subwoofer unit is not responding	1. Perform speaker walk-around test to confirm subwoofer operation. 2. Confirm battery voltage is present at terminal 6 of subwoofer amplifier with the ignition switch in the ACC and ON positions. 3. Check subwoofer amplifier ground circuit. 4. Check L, W and OR wires between audio unit and subwoofer amplifier. 5. Remove subwoofer amplifier for repair.	IDX

# AUDIO

Trouble Diagnoses (Cont'd)

## SYMPTOM CHART

=NDEL0081S14

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).	<ol style="list-style-type: none"> <li>10A fuse and 15A fuse</li> <li>Poor audio unit (base system), or poor audio unit, CD changer or rear audio remote control unit body ground (midgrade and premium systems)</li> <li>Audio unit, CD changer or rear audio remote control unit</li> </ol>	<ol style="list-style-type: none"> <li>Check 10A fuse and 15A 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 15 of rear audio remote control unit. Turn ignition switch ON and verify battery positive voltage is present at terminal 30 of audio unit.</li> <li>Check audio unit ground, or audio unit, CD changer or rear audio remote control unit body ground.</li> <li>Remove audio unit, CD changer, or rear audio remote control unit for repair.</li> </ol>
Audio unit presets and/or CD changer memory is lost when ignition switch is turned OFF.	<ol style="list-style-type: none"> <li>10A fuse</li> <li>Audio unit</li> </ol>	<ol style="list-style-type: none"> <li>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.</li> <li>Remove audio unit for repair.</li> </ol>
Individual speaker is noisy or inoperative.	<ol style="list-style-type: none"> <li>Speaker</li> <li>15A fuse (midgrade and premium systems)</li> <li>Subwoofer amplifier output (midgrade and premium systems)</li> <li>Speaker circuit</li> <li>Audio unit output</li> <li>Audio unit</li> </ol>	<ol style="list-style-type: none"> <li>Check speaker.</li> <li>Check 15A fuse (No. 10, located in the fuse block). Turn ignition ON and verify battery positive voltage is present at terminal 6 of subwoofer amplifier.</li> <li>Check subwoofer amplifier output voltage.</li> <li>Check wires for open or short between audio unit and speaker (base system), or between subwoofer amplifier and subwoofer speaker (midgrade and premium systems).</li> <li>Check audio unit output voltages.</li> <li>Remove audio unit for repair.</li> </ol>
AM stations are weak or noisy (FM stations OK).	<ol style="list-style-type: none"> <li>Antenna</li> <li>Poor audio unit ground</li> <li>Audio unit</li> </ol>	<ol style="list-style-type: none"> <li>Check antenna.</li> <li>Check audio unit ground.</li> <li>Remove audio unit for repair.</li> </ol>
FM stations are weak or noisy (AM stations OK).	Audio unit	Remove audio unit for repair.
Audio unit generates noise in AM and FM modes with engine running.	<ol style="list-style-type: none"> <li>Poor audio unit ground</li> <li>Loose or missing ground bonding straps</li> <li>Ignition condenser</li> <li>Generator</li> <li>Ignition coil or secondary wiring</li> <li>Audio unit</li> </ol>	<ol style="list-style-type: none"> <li>Check audio unit ground.</li> <li>Check ground bonding strip.</li> <li>Replace ignition condenser.</li> <li>Check generator.</li> <li>Check ignition coil and secondary wiring.</li> <li>Remove audio unit for repair.</li> </ol>
Audio unit generates noise in AM and FM modes with accessories on (switch pops and motor noise).	<ol style="list-style-type: none"> <li>Poor audio unit ground</li> <li>Antenna</li> <li>Accessories ground</li> <li>Faulty accessory</li> </ol>	<ol style="list-style-type: none"> <li>Check audio unit ground.</li> <li>Check antenna.</li> <li>Check accessory ground.</li> <li>Replace accessory.</li> </ol>
Audio unit displays "CD TOO HOT".	Audio unit internal temperature has exceeded 60° C (140° F).	The audio unit is in thermal protection mode. Check display after allowing audio unit to cool. If the display continues to indicate "CD TOO HOT", remove audio unit for repair.

## 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.



# AUDIO

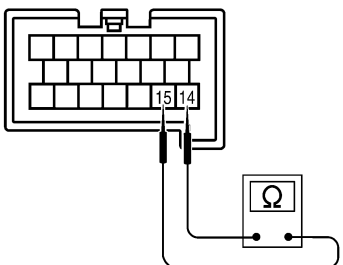
Trouble Diagnoses (Cont'd)

- If reception improves, check antenna ground (at body surface)
- If reception does not improve, check main feeder cable for short circuit or open circuit.


## STEERING WHEEL AUDIO CONTROL SWITCHES INSPECTION

NDEL0081S16

1. Disconnect audio unit harness connector M44.
2. Measure the resistance between audio unit harness connector M44 terminals 14 (W/R) and 15 (W/B) while pressing each button.



Audio unit harness connector



Switch	Resistance value (Ω)
VOL Down	69.27-77.38 ohms
VOL Up	198.5-217.61 ohms
NEXT	419.4-467.5 ohms
No buttons pressed	4,560-5,080 ohms

WEL980A

3. Resistances should be within specifications.

## 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.

## AUDIO UNIT VOLTAGES

NDEL0081S04

Terminal	Wire color	Voltage (V) (Approx.)	Terminal	Wire color	Voltage (V) (Approx.)
1	—	—	23	—	—
2	—	—	24	—	—
3	—	—	25	R/L	0 - 7
4	—	—	26	L/B or 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	L/Y or SB**	0 - 7
12	—	—	34	GY/L* or G	0 - 7
13	—	—	35	Y/L* or G/R	0 - 7

# AUDIO

## Trouble Diagnoses (Cont'd)

Terminal	Wire color	Voltage (V) (Approx.)	Terminal	Wire color	Voltage (V) (Approx.)
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	Check continuity between audio unit harness connector M44 and steering wheel audio control switches connector Z203.	37	L	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	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 base or midgrade      \*\* with rear audio remote control unit

## REAR AUDIO REMOTE CONTROL UNIT VOLTAGES

NDEL0081S07

Terminal	Wire color	Voltage (V) (Approx.)	Terminal	Wire color	Voltage (V) (Approx.)
1	—	—	9	P	10.8 - 15.6 (Illumination on)
2	G	0 - 7 (output)	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 (output)	16	Y/R	10.8 - 15.6 (Audio unit on)

## C/D CHANGER VOLTAGES

NDEL0081S08

Terminal	Wire color	Voltage (V) (Approx.)	Terminal	Wire color	Voltage (V) (Approx.)
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]

# AUDIO

Trouble Diagnoses (Cont'd)

## SUBWOOFER AMPLIFIER VOLTAGES

NDEL0081S09

Terminal	Wire color	Voltage (V) (Approx.)	Terminal	Wire color	Voltage (V) (Approx.)
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	10.8 - 15.6 (Ignition ACC or ON)

GI

MA

EM

LC

EC

FE

AT

AX

SU

BR

ST

RS

BT

HA

SC

**EL**

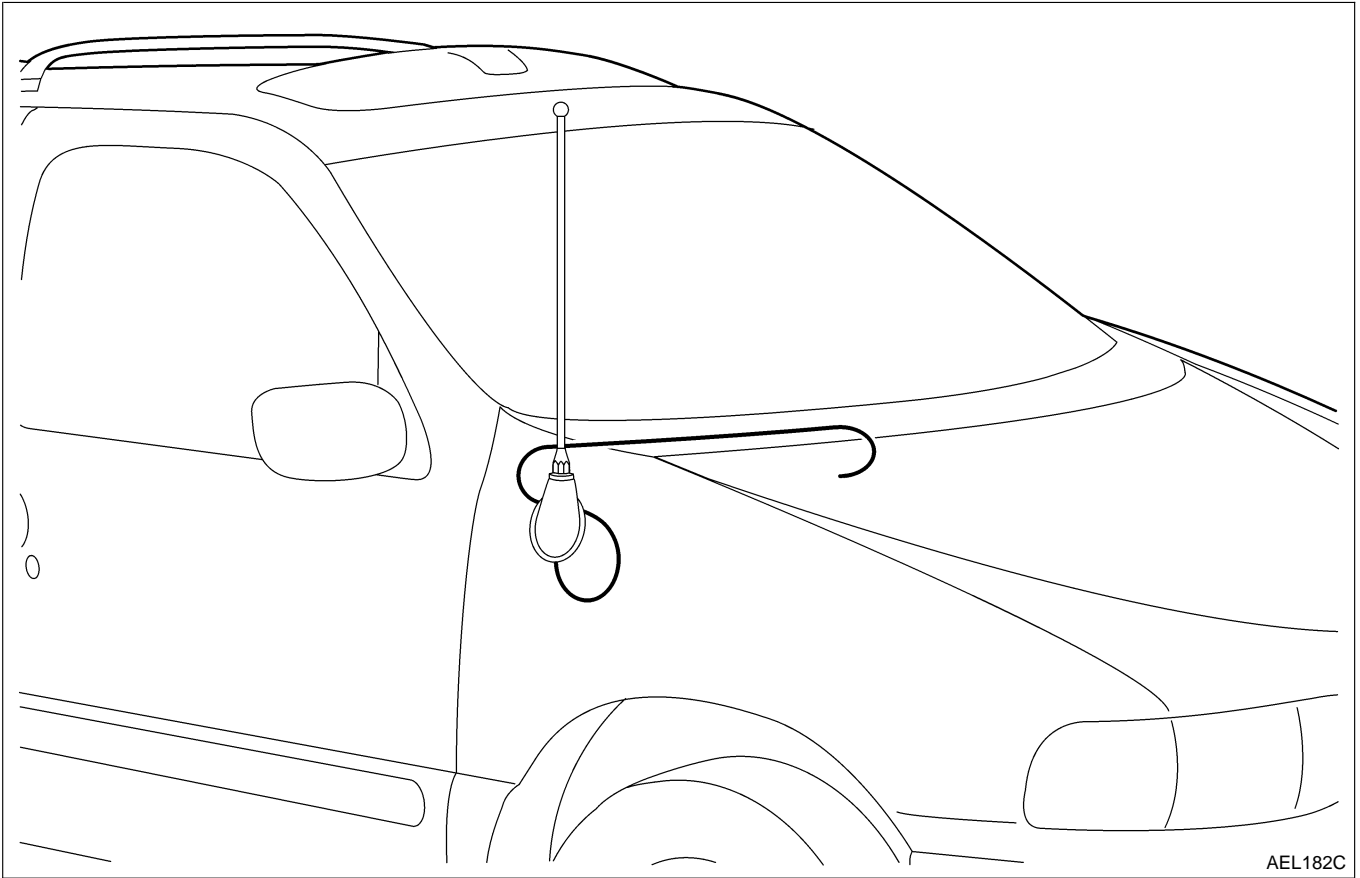
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# AUDIO ANTENNA

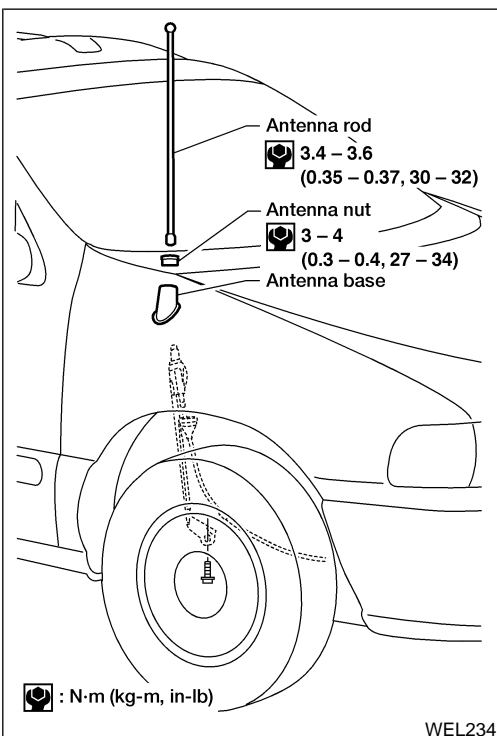
Location of Antenna

## Location of Antenna

NDEL0082



AEL182C



WEL234

## 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.
5. Remove bolt and antenna.

To install, reverse removal procedure.

## System Description

NDEL0159

Refer to Owner's Manual for family entertainment system operating instructions.

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 video cassette player terminal 2 and
- to family entertainment system control panel terminal 10.

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

- through 15A fuse (No. 10, located in the fuse block)
- to audio unit terminal 30 and
- to video monitor terminal 1 and
- to subwoofer amplifier terminal 6.

Ground is supplied to audio unit terminals 31 and 36, CD changer terminal 3, family entertainment system control panel terminals 4, 11 and 8, video cassette player terminal 1 and video monitor terminal 3 through body ground M52.

Ground is supplied to 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 family entertainment system control panel terminals 2, 3, 5 and 6 and
- to terminals 1 and 2 of the front speakers and terminal 2 of each rear speaker.

Audio signals are also supplied

- from family entertainment system control panel terminals 1 and 7
- to terminal 1 of each rear speaker.

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, volume decrease or next preset) when the switches are depressed.

When the video system is ON, video signals are supplied

- from video cassette player terminals 11 and 12
- to family entertainment system control panel terminals 32 and 22 and
- through family entertainment system control panel terminals 25 and 35
- to video monitor terminals 5 and 6.

When the video system is ON, audio signals are supplied

- from video cassette player terminals 7, 8, 9 and 10
- to family entertainment system control panel terminals 34, 24, 33 and 23.

A video cassette player control circuit exists

- from family entertainment system control panel terminal 36
- to video cassette player terminal 6.

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**EL**

IDX

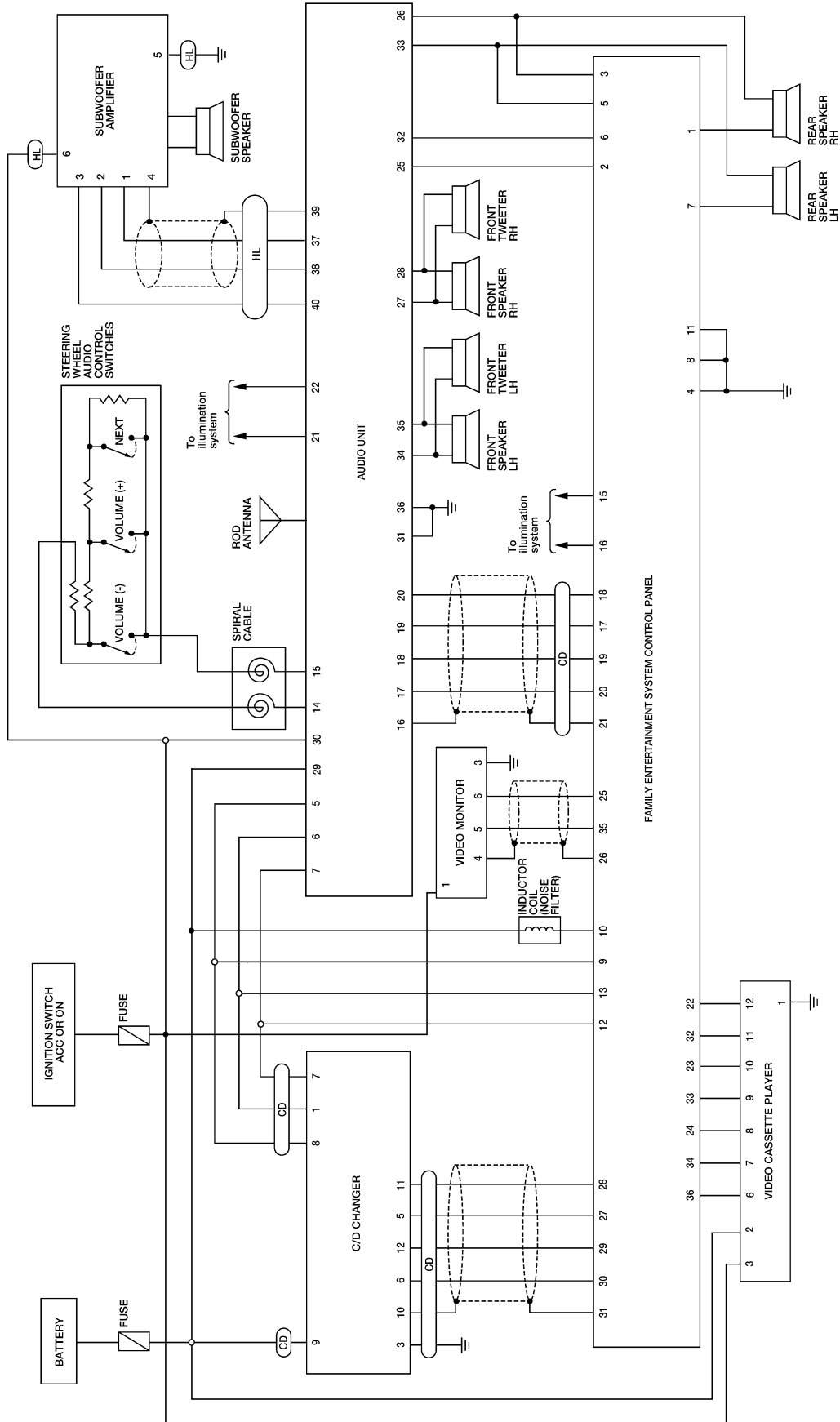
# FAMILY ENTERTAINMENT SYSTEM

Schematic

## Schematic

NDEL0160

(CD) : With C/D changer  
(HL) : With premium audio system



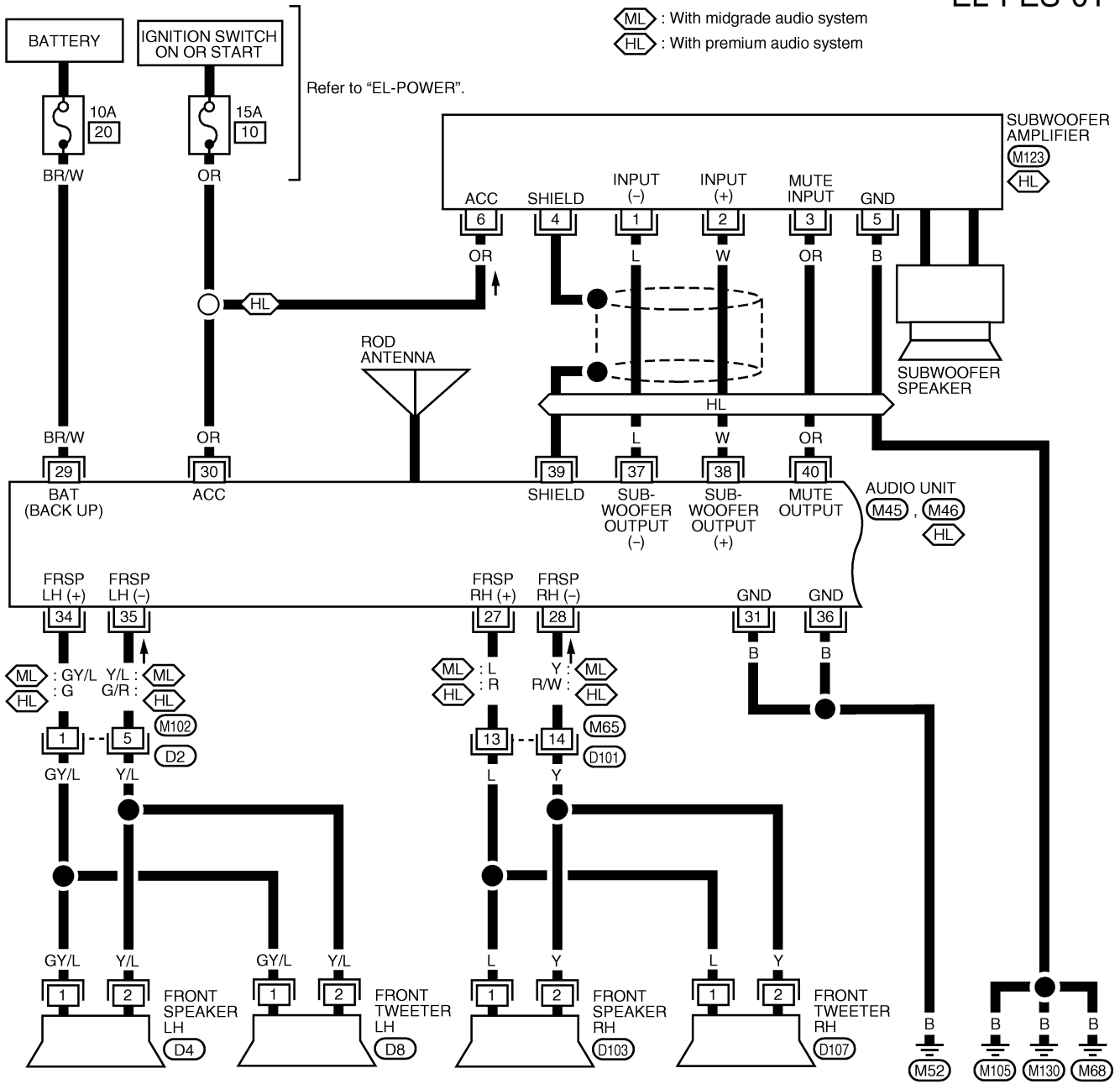
# FAMILY ENTERTAINMENT SYSTEM

Wiring Diagram — FES

## Wiring Diagram — FES

NDEL0161

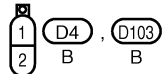
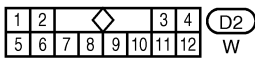
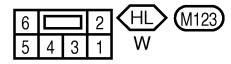
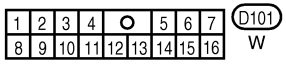
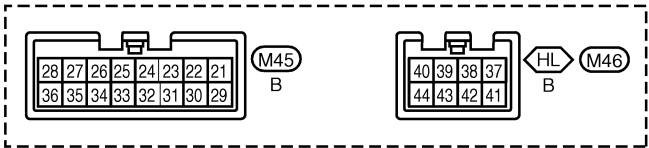
EL-FES-01



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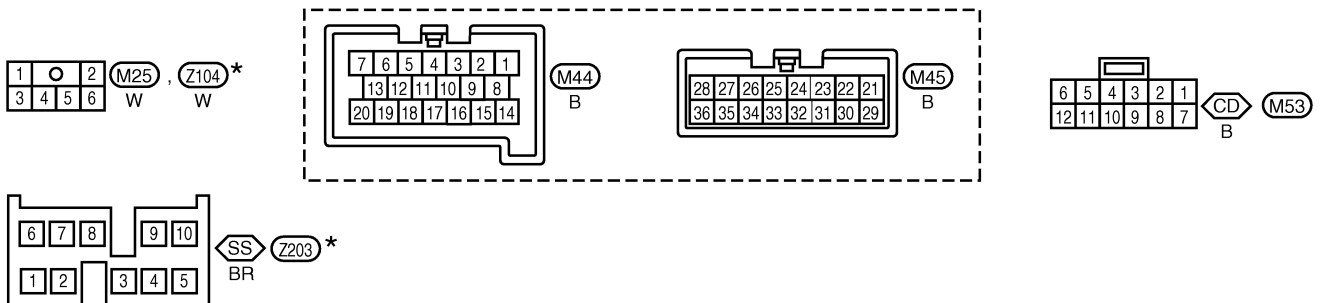
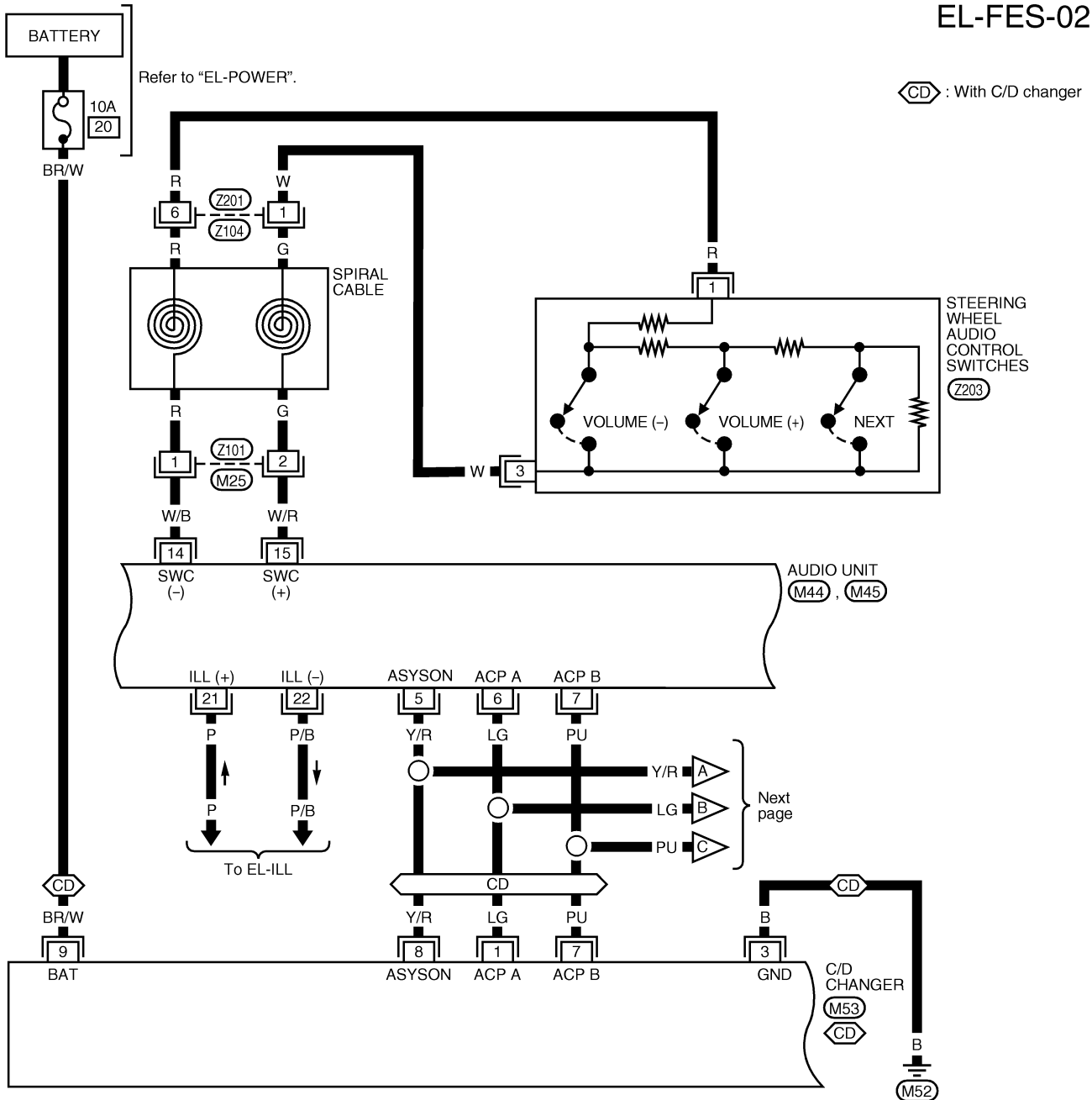


WEL956

# FAMILY ENTERTAINMENT SYSTEM

Wiring Diagram — FES (Cont'd)

EL-FES-02



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

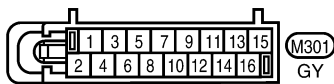
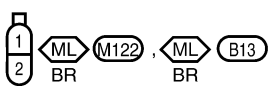
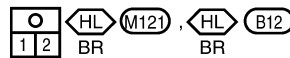
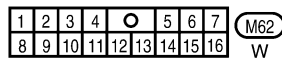
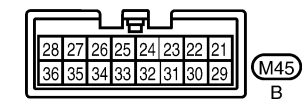
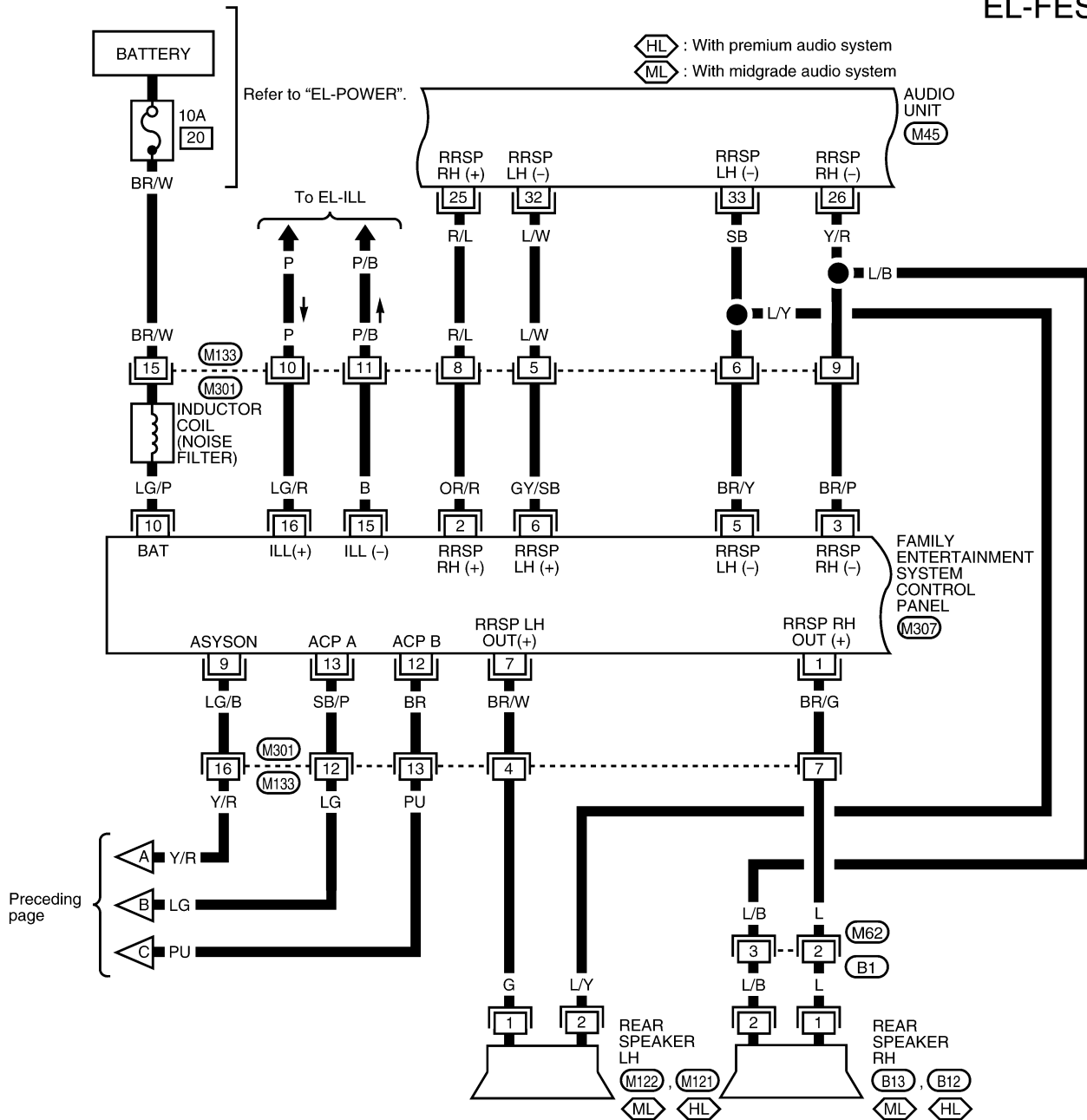
WEL957



# FAMILY ENTERTAINMENT SYSTEM

Wiring Diagram — FES (Cont'd)

## EL-FES-03



WEL617A

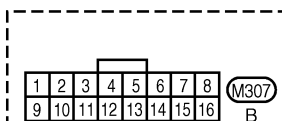
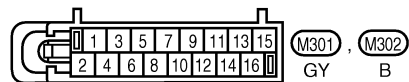
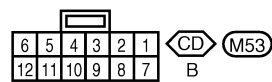
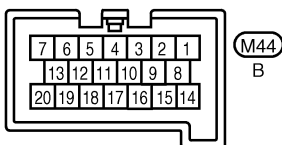
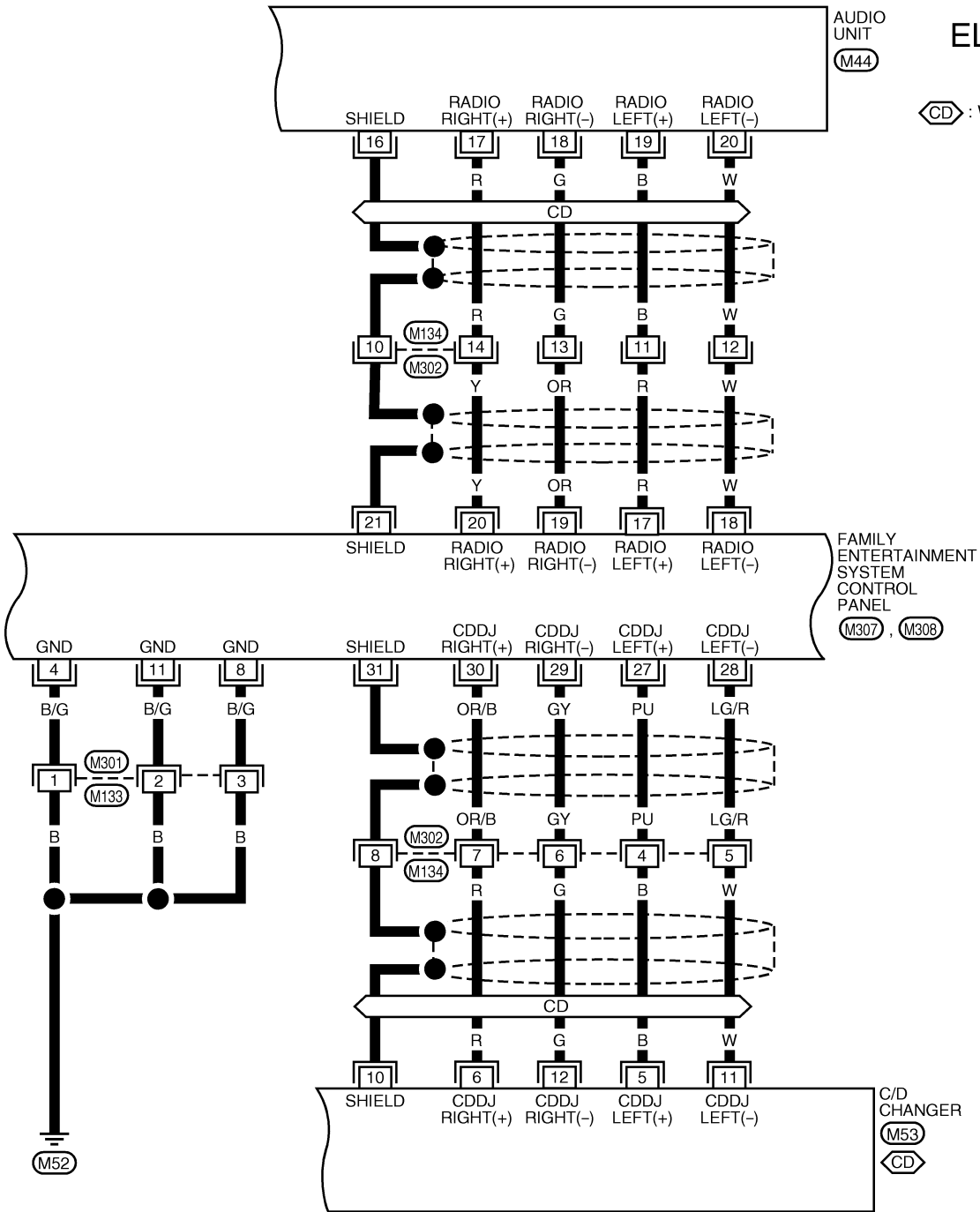
# FAMILY ENTERTAINMENT SYSTEM

Wiring Diagram — FES (Cont'd)

EL-FES-04

AUDIO UNIT  
(M44)

⬡ : With C/D changer

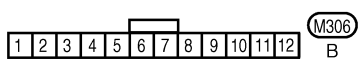
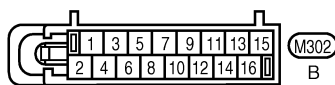
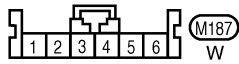
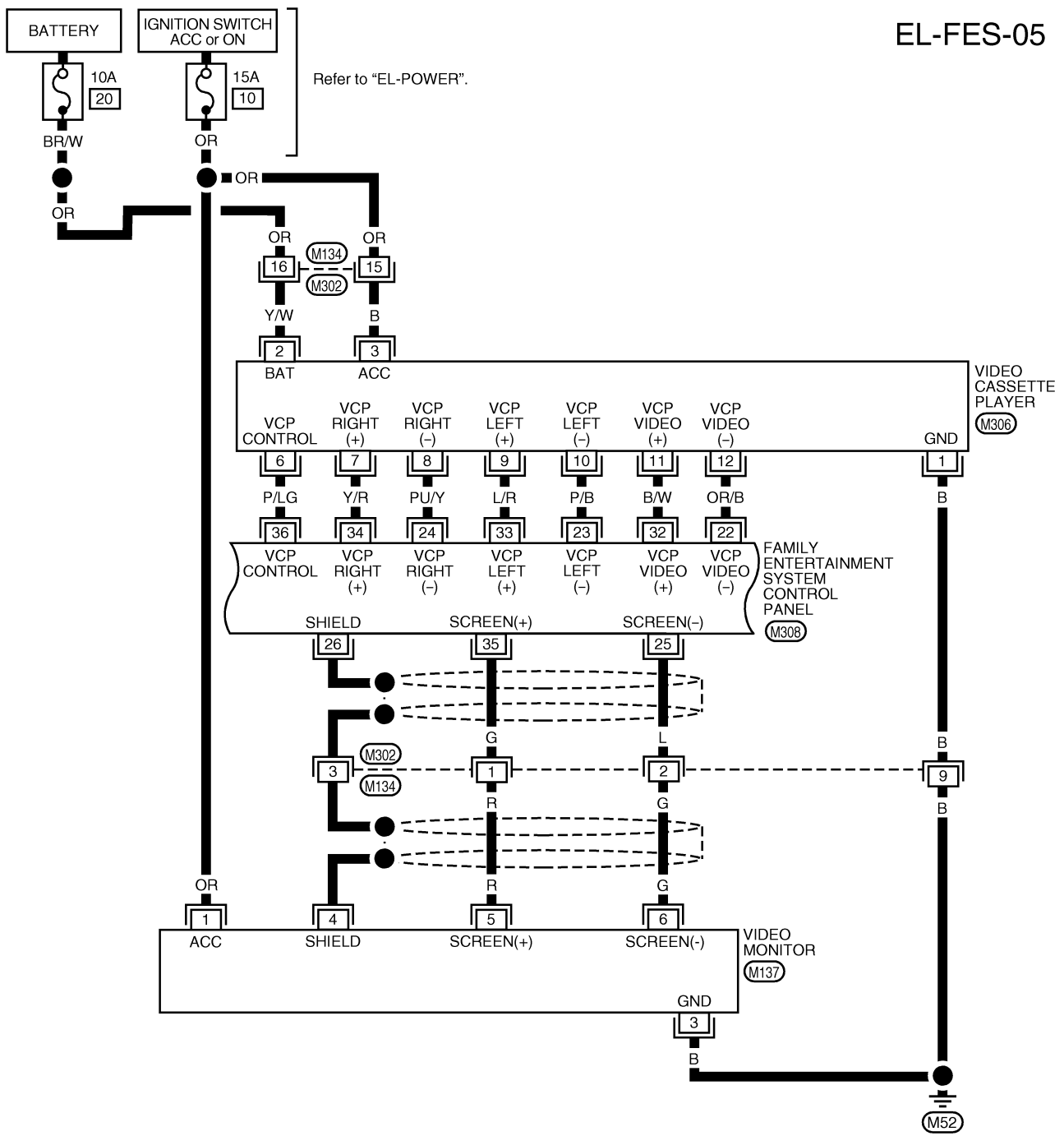


LEL959

# FAMILY ENTERTAINMENT SYSTEM

Wiring Diagram — FES (Cont'd)

EL-FES-05



GI  
MA  
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AT  
AX  
SU  
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ST  
RS  
BT  
HA  
SC

EL

IDX

# FAMILY ENTERTAINMENT SYSTEM

Trouble Diagnoses

## Trouble Diagnoses

NDEL0163

### SPEAKER WALK-AROUND TEST

NDEL0163S01

#### NOTE:

The audio unit must be turned on and in radio tuner mode (AM/FM) in order to enter the speaker walk-around test.

1. To enter the speaker walk-around test, simultaneously press station select buttons 3 and 6.
2. The speaker walk-around test stops and applies sound to each speaker for about 2 seconds. Each speaker is tested and displayed on the audio unit display in the following sequence: RF, LF, LR, and RR.
3. If the vehicle is equipped with dual media audio unit, the speaker walk-around test automatically continues and tests antenna and subwoofer (if equipped). If a speaker short exists, "SPKR SHORT" will be displayed. If the vehicle is not equipped with a CD changer or if the CD changer is not responding, "NO CDDJ" will be displayed.

### AUDIO UNIT SELF-TEST MATRIX

NDEL0163S02

#### NOTE:

The audio unit must be turned on and in radio tuner mode (AM/FM) in order to enter the audio unit self-test mode.

Document the diagnostic trouble codes (DTCs) and perform the self-test again.

1. To enter each of the following tests, press and release the station select button while in the speaker walk-around test.

Station Select Button	AM/FM/Cassette Audio Unit Test Function	Dual Media Audio Unit Test Function
1	This is an audio internal and external on-demand self-test. "SELF TEST" will be displayed during the test. If "SELF FAIL" is displayed, press and release "TUNE>" to scroll view each DTC stored. Refer to the "AM/FM/CASSETTE AUDIO UNIT DTC INDEX", EL-162. If the system is OK, "SELF PASS" will be displayed.	This is an audio internal and external on-demand self-test. "SELF TEST" will be displayed during this test. If DTCs are retrieved, "DTCS FOUND" will be displayed. Press and release "TUNE>" to scroll view each DTC stored. Refer to the "DUAL MEDIA AUDIO UNIT DTC INDEX", EL-161.
2	View/Clear continuous DTCs. "NO DTCS" is displayed if no DTCs are retrieved. If "DTCS FOUND" is displayed, press and release "TUNE>" to scroll view each DTC retrieved. Refer to the "AM/FM/CASSETTE AUDIO UNIT DTC INDEX", EL-162. To clear all DTCs, press the eject "EJ" button. "DTCS CLEAR" will be displayed.	No self-test function.
3	This is an antenna signal test. This test measures the average strength at the current tuner setting.	This is an antenna signal test. This test measures the average strength at the current tuner setting.
4	Software configuration level. This test queries each radio system controller for its software configuration level. "SOFT LEVELS" will be displayed upon completion of the query. Press and release "TUNE>" to scroll view the software configuration version level.	Software configuration level. The software configuration level will be displayed.
5	This is a display test. This test will light all display segments for five seconds. When the test is complete, "DISPLAY TEST" is displayed.	This is a display test. This test will light all display segments for five seconds. When the test is complete, "DISPLAY TEST" is displayed.
6	Audio unit configuration. "RADIO CONFIG" will be displayed. Press and release "TUNE>" to scroll view audio unit configuration data.	No self-test function.

2. To exit the self-test mode, turn the ignition switch or the audio unit off.
3. If the concern remains and the fault is not detected, proceed to the "SYMPTOM CHART", EL-163.

# FAMILY ENTERTAINMENT SYSTEM

*Trouble Diagnoses (Cont'd)*

## DUAL MEDIA AUDIO UNIT DTC INDEX

-NDEL0163S03

DTC	Description	Repair Order	
9342	Audio unit is defective	Document and clear the DTCs. Perform the self-test. Remove the audio unit for repair if DTC 9342 is retrieved again.	GI MA
B2401	Audio tape deck mechanism fault	Verify that no cassette is inserted in the audio unit. Document and clear the DTCs. Perform the self-test. Remove the audio unit for repair if DTC B2401 is retrieved again.	EM
B2402	CD changer thermal shutdown fault	Allow CD changer to cool down. If DTC still exists after cool down, proceed to the following steps. 1. Check 10A fuse (No. 20, located in the fuse block). Verify battery voltage is present at terminal 9 of CD changer. 2. Check CD changer body ground. 3. Remove CD changer for repair.	LC EC FE
B2403	CD changer internal fault	1. Check 10A fuse (No. 20, located in the fuse block). Verify battery voltage is present at terminal 9 of CD changer. 2. Check CD changer body ground. 3. Remove CD changer for repair.	AT AX
B2404	Steering wheel audio control switches circuit fault	1. Check continuity between audio unit harness connector M44 and steering wheel audio control switches connector Z203. 2. Check steering wheel audio control switches. Refer to "STEERING WHEEL AUDIO CONTROL SWITCHES INSPECTION", EL-165 3. Remove audio unit for repair.	SU BR
B2405	Audio single disc CD player thermal shutdown fault	Document and clear the DTCs. Perform the self-test. Remove the audio unit for repair if DTC B2405 is retrieved again.	ST
B2406	Audio single disc CD player internal fault	Document and clear the DTCs. Perform the self-test. Remove the audio unit for repair if DTC B2406 is retrieved again.	RS
U2003	CD changer is not responding	1. Check 10A fuse (No. 20, located in the fuse block). Verify battery voltage is present at terminal 9 of CD changer. 2. Check CD changer body ground. 3. Remove CD changer for repair.	BT HA
U2005	Family entertainment system control panel is not responding	<b>NOTE:</b> U2005 is retrieved if family entertainment system control panel is not present, disconnected or inoperative. 1. Check 10A fuse (No. 20, located in the fuse block). Verify battery voltage at terminal 10 of family entertainment system control panel. 2. Check family entertainment system control panel body ground.	SC EL
U2008	Cell phone is not responding	This DTC will always be present because there is no telephone availability on the vehicle for this audio unit.	IDX

# FAMILY ENTERTAINMENT SYSTEM

Trouble Diagnoses (Cont'd)

## AM/FM/CASSETTE AUDIO UNIT DTC INDEX

=NDEL0163S04

DTC	Description	Repair Order
B1342	Audio unit is defective	Document and clear the DTCs. Perform the self-test. Remove the audio unit for repair if DTC B1342 is retrieved again.
B2401	Audio tape deck mechanism fault	Verify that no cassette is inserted in the audio unit. Document and clear the DTCs. Perform the self-test. Remove the audio unit for repair if DTC B2401 is retrieved again.
B2402	CD changer thermal shutdown fault	Allow CD changer to cool down. If DTC still exists after cool down, proceed to the following steps. 1. Check 10A fuse (No. 20, located in the fuse block). Verify battery voltage is present at terminal 9 of CD changer. 2. Check CD changer body ground. 3. Remove CD changer for repair.
B2403	CD changer internal fault	1. Check 10A fuse (No. 20, located in the fuse block). Verify battery voltage is present at terminal 9 of CD changer. 2. Check CD changer body ground. 3. Remove CD changer for repair.
B2404	Steering wheel audio control switches circuit fault	1. Check continuity between audio unit harness connector M44 and steering wheel audio control switches connector Z203. 2. Check steering wheel audio control switches. Refer to "STEERING WHEEL AUDIO CONTROL SWITCHES INSPECTION", EL-165 3. Remove audio unit for repair.
B2405	Audio single disc CD player thermal shutdown fault	Not applicable with this audio unit.
B2406	Audio single disc CD player internal fault	Not applicable with this audio unit.
U2003	CD changer is not responding	1. Check 10A fuse (No. 20, located in the fuse block). Verify battery voltage is present at terminal 9 of CD changer. 2. Check CD changer body ground. 3. Remove CD changer for repair.
U2005	Family entertainment system control panel is not responding	<b>NOTE:</b> U2005 is retrieved if family entertainment system control panel is not present, disconnected or inoperative. 1. Check 10A fuse (No. 20, located in the fuse block). Verify battery voltage at terminal 10 of family entertainment system control panel. 2. Check family entertainment system control panel body ground.
U2008	Cell phone is not responding	This DTC will always be present because there is no telephone availability on the vehicle for this audio unit.
U2014	Audio subwoofer unit is not responding	1. Perform speaker walk-around test to confirm subwoofer operation. 2. Confirm battery voltage is present at terminal 6 of subwoofer amplifier with the ignition switch in the ACC and ON positions. 3. Check subwoofer amplifier ground circuit. 4. Check L, W and OR wires between audio unit and subwoofer amplifier. 5. Remove subwoofer amplifier for repair.

# FAMILY ENTERTAINMENT SYSTEM

*Trouble Diagnoses (Cont'd)*

## SYMPTOM CHART

-NDEL0163S05

Symptom	Possible causes	Repair order	
Audio unit, CD changer and/or family entertainment system control panel inoperative (no digital display and no sound from speakers).	<ol style="list-style-type: none"> <li>1. 10A fuse and 15A fuse</li> <li>2. Poor audio unit (base system), or poor audio unit, CD changer or family entertainment system control panel body ground</li> <li>3. Audio unit, CD changer or family entertainment system control panel</li> </ol>	<ol style="list-style-type: none"> <li>1. Check 10A fuse and 15A 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 10 of family entertainment system control panel. Turn ignition switch ON and verify battery positive voltage is present at terminal 30 of audio unit.</li> <li>2. Check audio unit ground, or audio unit, CD changer or rear audio remote control unit body ground.</li> <li>3. Remove audio unit, CD changer, or rear audio remote control unit for repair.</li> </ol>	<p>GI</p> <p>MA</p> <p>EM</p> <p>LC</p>
Audio unit presets and/or CD changer memory is lost when ignition switch is turned OFF.	<ol style="list-style-type: none"> <li>1. 10A fuse</li> <li>2. Audio unit</li> </ol>	<ol style="list-style-type: none"> <li>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.</li> <li>2. Remove audio unit for repair.</li> </ol>	<p>EC</p> <p>FE</p>
Individual speaker is noisy or inoperative.	<ol style="list-style-type: none"> <li>1. Speaker</li> <li>2. 15A fuse (midgrade and premium systems)</li> <li>3. Subwoofer amplifier output (midgrade and premium systems)</li> <li>4. Speaker circuit</li> <li>5. Audio unit output</li> <li>6. Audio unit</li> </ol>	<ol style="list-style-type: none"> <li>1. Check speaker.</li> <li>2. Check 15A fuse (No. 10, located in the fuse block). Turn ignition ON and verify battery positive voltage is present at terminal 6 of subwoofer amplifier.</li> <li>3. Check subwoofer amplifier output voltage.</li> <li>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).</li> <li>5. Check audio unit output voltages.</li> <li>6. Remove audio unit for repair.</li> </ol>	<p>AT</p> <p>AX</p> <p>SU</p>
AM stations are weak or noisy (FM stations OK).	<ol style="list-style-type: none"> <li>1. Antenna</li> <li>2. Poor audio unit ground</li> <li>3. Audio unit</li> </ol>	<ol style="list-style-type: none"> <li>1. Check antenna.</li> <li>2. Check audio unit ground.</li> <li>3. Remove audio unit for repair.</li> </ol>	<p>BR</p> <p>ST</p>
FM stations are weak or noisy (AM stations OK).	Audio unit	Remove audio unit for repair.	
Audio unit generates noise in AM and FM modes with engine running.	<ol style="list-style-type: none"> <li>1. Poor audio unit ground</li> <li>2. Loose or missing ground bonding straps</li> <li>3. Ignition condenser</li> <li>4. Generator</li> <li>5. Ignition coil or secondary wiring</li> <li>6. Audio unit</li> </ol>	<ol style="list-style-type: none"> <li>1. Check audio unit ground.</li> <li>2. Check ground bonding strip.</li> <li>3. Replace ignition condenser.</li> <li>4. Check generator.</li> <li>5. Check ignition coil and secondary wiring.</li> <li>6. Remove audio unit for repair.</li> </ol>	<p>RS</p> <p>BT</p> <p>HA</p>
Audio unit generates noise in AM and FM modes with accessories on (switch pops and motor noise).	<ol style="list-style-type: none"> <li>1. Poor audio unit ground</li> <li>2. Antenna</li> <li>3. Accessories ground</li> <li>4. Faulty accessory</li> </ol>	<ol style="list-style-type: none"> <li>1. Check audio unit ground.</li> <li>2. Check antenna.</li> <li>3. Check accessory ground.</li> <li>4. Replace accessory.</li> </ol>	<p>SC</p>
Audio unit displays "CD TOO HOT".	Audio unit internal temperature has exceeded 60° C (140° F).	The audio unit is in thermal protection mode. Check display after allowing audio unit to cool. If the display continues to indicate "CD TOO HOT", remove audio unit for repair.	<p>EL</p> <p>IDX</p>
Video cassette player is inoperative/does not operate properly.	<ol style="list-style-type: none"> <li>1. 10A fuse and 15A fuse</li> <li>2. Poor video cassette player ground</li> <li>3. Video cassette player circuit</li> <li>4. Video cassette player</li> </ol>	<ol style="list-style-type: none"> <li>1. Check 10A fuse and 15A fuse (Nos. 20 and 10, located in the fuse block). Verify battery positive voltage is present at terminal 2 of video cassette player. Turn ignition switch ON and verify battery positive voltage is present at terminal 3 of video cassette player.</li> <li>2. Check video cassette player body ground.</li> <li>3. Check wires for open or short between video cassette player and family entertainment system control panel.</li> <li>4. Remove video cassette player for repair.</li> </ol>	

# FAMILY ENTERTAINMENT SYSTEM

## Trouble Diagnoses (Cont'd)

Symptom	Possible causes	Repair order
Video monitor is inoperative/does not operate properly.	<ol style="list-style-type: none"> <li>1. 15A fuse</li> <li>2. Poor video monitor ground</li> <li>3. Video monitor circuit</li> <li>4. Video monitor</li> </ol>	<ol style="list-style-type: none"> <li>1. Check 15A fuse (No. 10, located in the fuse block). Turn ignition switch ON and verify battery positive voltage is present at terminal 1 of video monitor.</li> <li>2. Check video monitor ground.</li> <li>3. Check wires for open or short between family entertainment system control panel and video monitor.</li> <li>4. Remove video monitor for repair.</li> </ol>
Video cassette player remote control is inoperative/does not operate correctly	<ol style="list-style-type: none"> <li>1. Video cassette player remote control batteries</li> <li>2. Video cassette player remote control</li> <li>3. Video cassette player</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace video cassette player remote control batteries.</li> <li>2. Check video cassette player remote control.</li> <li>3. Remove video cassette player for repair.</li> </ol>
Snowy video — poor audio	<ol style="list-style-type: none"> <li>1. Harness or connectors</li> <li>2. Video cassette player</li> <li>3. Family entertainment system control panel</li> </ol>	<ol style="list-style-type: none"> <li>1. Check harness and connectors for open circuit or short to ground.</li> <li>2. Check video cassette player.</li> <li>3. Check family entertainment system control panel.</li> </ol>
Snowy video — audio OK	<ol style="list-style-type: none"> <li>1. Harness or connectors</li> <li>2. Video cassette player</li> <li>3. Family entertainment system control panel</li> </ol>	<ol style="list-style-type: none"> <li>1. Check harness and connectors for open circuit or short to ground.</li> <li>2. Check video cassette player.</li> <li>3. Check family entertainment system control panel.</li> </ol>
The auxiliary video input is inoperative	<ol style="list-style-type: none"> <li>1. Harness or connectors</li> <li>2. Family entertainment system control panel</li> <li>3. Video monitor</li> </ol>	<ol style="list-style-type: none"> <li>1. Check harness and connectors for open circuit or short to ground.</li> <li>2. Check family entertainment system control panel.</li> <li>3. Check video monitor.</li> </ol>
The auxiliary audio inputs are inoperative	<ol style="list-style-type: none"> <li>1. Family entertainment system control panel</li> <li>2. Audio unit</li> </ol>	<ol style="list-style-type: none"> <li>1. Check family entertainment system control panel.</li> <li>2. Check audio unit.</li> </ol>
The video cassette player does not play the video tape	<ol style="list-style-type: none"> <li>1. Harness or connectors</li> <li>2. Video cassette player</li> </ol>	<ol style="list-style-type: none"> <li>1. Check harness and connectors for open circuit or short to ground.</li> <li>2. Check video cassette player.</li> </ol>
No video — audio OK	<ol style="list-style-type: none"> <li>1. Harness or connectors</li> <li>2. Video cassette player</li> <li>3. Family entertainment system control panel</li> <li>4. Video monitor</li> </ol>	<ol style="list-style-type: none"> <li>1. Check harness and connectors for open circuit or short to ground.</li> <li>2. Check video cassette player.</li> <li>3. Check family entertainment system control panel.</li> <li>4. Check video monitor.</li> </ol>
Dim video — audio OK	<ol style="list-style-type: none"> <li>1. Harness or connectors</li> <li>2. Video cassette player</li> <li>3. Family entertainment system control panel</li> <li>4. Video monitor</li> </ol>	<ol style="list-style-type: none"> <li>1. Check harness and connectors for open circuit or short to ground.</li> <li>2. Check video cassette player.</li> <li>3. Check family entertainment system control panel.</li> <li>4. Check video monitor.</li> </ol>
No audio — video OK	<ol style="list-style-type: none"> <li>1. Harness or connectors</li> <li>2. Video cassette player</li> <li>3. Family entertainment system control panel</li> <li>4. Audio unit</li> </ol>	<ol style="list-style-type: none"> <li>1. Check harness and connectors for open circuit or short to ground.</li> <li>2. Check video cassette player.</li> <li>3. Check family entertainment system control panel.</li> <li>4. Check audio unit.</li> </ol>

## SPEAKER INSPECTION

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.

NDEL0163S06

## ANTENNA INSPECTION

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

NDEL0163S07



# FAMILY ENTERTAINMENT SYSTEM

Trouble Diagnoses (Cont'd)

## STEERING WHEEL AUDIO CONTROL SWITCHES INSPECTION

NDEL0163S08

1. Disconnect audio unit harness connector M44.
2. Measure the resistance between audio unit harness connector M44 terminals 14 (W/R) and 15 (W/B) while pressing each button.

Switch	Resistance value (Ω)
VOL Down	69.27-77.38 ohms
VOL Up	198.5-217.61 ohms
NEXT	419.4-467.5 ohms
No buttons pressed	4,560-5,080 ohms

WEL294A

3. Resistances should be within specifications.

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

NDEL0163S09

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.

## AUDIO UNIT VOLTAGES

NDEL0163S10

Terminal	Wire color	Voltage (V) (Approx.)	Terminal	Wire color	Voltage (V) (Approx.)
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

# FAMILY ENTERTAINMENT SYSTEM

## Trouble Diagnoses (Cont'd)

Terminal	Wire color	Voltage (V) (Approx.)	Terminal	Wire color	Voltage (V) (Approx.)
15	W/R	Check continuity between audio unit harness connector M44 and steering wheel audio control switches connector Z203.	37	L	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	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

## C/D CHANGER VOLTAGES

NDEL0163S12

Terminal	Wire color	Voltage (V) (Approx.)	Terminal	Wire color	Voltage (V) (Approx.)
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

NDEL0163S13

Terminal	Wire color	Voltage (V) (Approx.)	Terminal	Wire color	Voltage (V) (Approx.)
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	10.8 - 15.6 (Ignition ACC or ON)

## FAMILY ENTERTAINMENT SYSTEM CONTROL PANEL VOLTAGES

NDEL0163S11

Terminal	Wire color	Voltage (V) (Approx.)	Terminal	Wire color	Voltage (V) (Approx.)
1	BR/G	0 - 7 (output)	19	OR	—
2	OR/R	0 - 7 (input)	20	Y	—
3	BR/P	0 - 7 (input)	21	—	Shield ground
4	B/G	Body ground	22	OR/B	—
5	BR/Y	0 - 7 (input)	23	P/B	—
6	GY/SB	0 - 7 (input)	24	PU/Y	—

# FAMILY ENTERTAINMENT SYSTEM

Trouble Diagnoses (Cont'd)

Terminal	Wire color	Voltage (V) (Approx.)	Terminal	Wire color	Voltage (V) (Approx.)
7	BR/W	0 - 7 (output)	25	L	Screen data line (-)
8	B/G	Body ground	26	—	Shield ground
9	LG/B	10.8 - 15.6 (Audio unit on)	27	PU	—
10	LG/P	10.8 - 15.6 (Battery)	28	LG/R	—
11	B/G	Body ground	29	GY	—
12	BR	Data line	30	OR/B	—
13	SB/P	Data line	31	—	Shield ground
14	—	—	32	B/W	—
15	B	0 - 11 (Illumination on) or 0	33	L/R	—
16	LG/R	10.8 - 15.6 (Illumination on)	34	Y/R	—
17	R	—	35	G	Screen data line (+)
18	W	—	36	P/LG	—

## VIDEO CASSETTE PLAYER VOLTAGES

NDEL0163S17

Terminal	Wire color	Voltage (V) (Approx.)	Terminal	Wire color	Voltage (V) (Approx.)
1	B	Body ground	7	Y/R	Right (+)
2	Y/W	10.8 - 15.6 (Battery)	8	PU/Y	Right (-)
3	B	10.8 - 15.6 (Ignition ACC or ON)	9	L/R	Left (+)
4	—	—	10	P/B	Left (-)
5	—	—	11	B/W	Video (+)
6	P/LG	Control line	12	OR/B	Video (-)

## VIDEO MONITOR VOLTAGES

NDEL0163S18

Terminal	Wire color	Voltage (V) (Approx.)	Terminal	Wire color	Voltage (V) (Approx.)
1	OR	10.8 - 15.6 (Ignition ACC or ON)	4	—	Shield ground
2	—	—	5	R	Screen data line (+)
3	B	Body ground	6	G	Screen data line (-)

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# POWER SUNROOF

System Description

## 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 or passenger door is opened. **(Delayed power operation.)**

#### NOTE:

**When the battery or sunroof motor harness connector is disconnected during service, the sunroof will not operate properly.**

Procedure for resetting motor memory:

From any sunroof position (full open, partially open, closed, partially vented, and vented), push and hold the button in the forward position until the sunroof vents in the **Full-Up** position. This resets the sunroof motor memory and the sunroof will operate correctly.

### 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.

# POWER SUNROOF

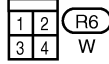
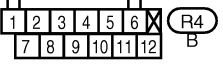
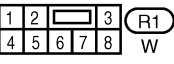
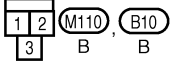
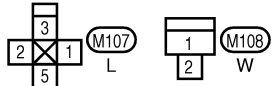
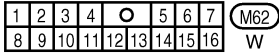
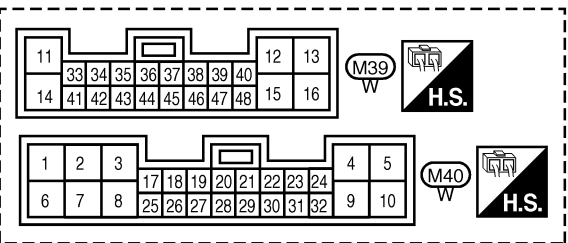
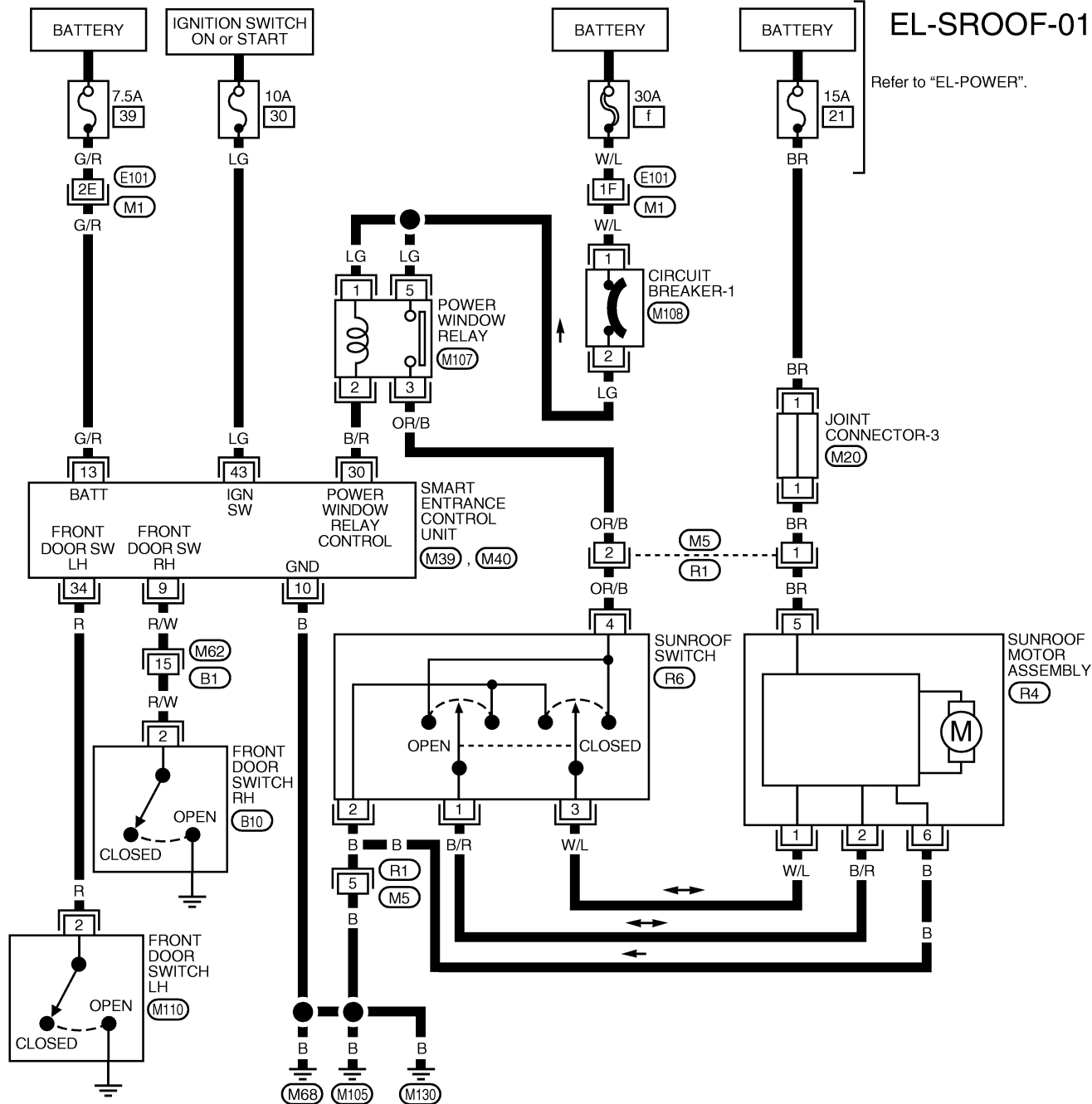
Wiring Diagram — SROOF —

## Wiring Diagram — SROOF —

NDEL0085

### EL-SROOF-01

Refer to "EL-POWER".



Refer to the following.

(M1), (E101) - SUPER MULTIPLE JUNCTION (SMJ)  
 (M20) - JOINT CONNECTOR

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# POWER DOOR MIRROR

Wiring Diagram — MIRROR — /Without Automatic Drive Positioner

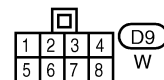
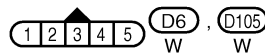
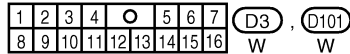
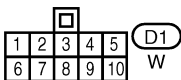
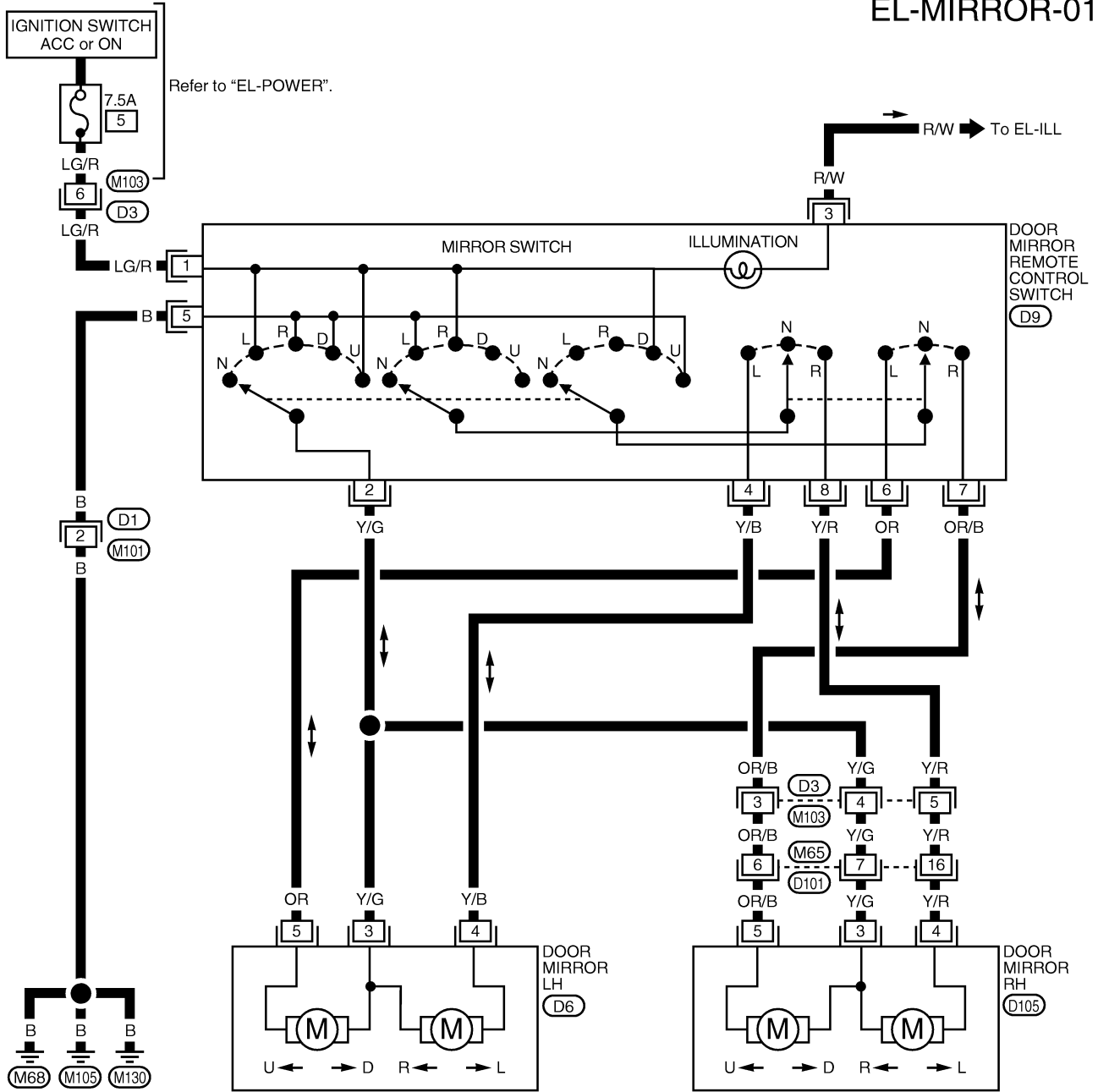
## Wiring Diagram — MIRROR — /Without Automatic Drive Positioner

NDEL0086

**NOTE:**

For the information about door mirror for models with automatic drive positioner, refer to "AUTOMATIC DRIVE POSITIONER", EL-172.

EL-MIRROR-01



WEL225

# HEATED MIRROR

Wiring Diagram — H/MIRR —

## Wiring Diagram — H/MIRR —

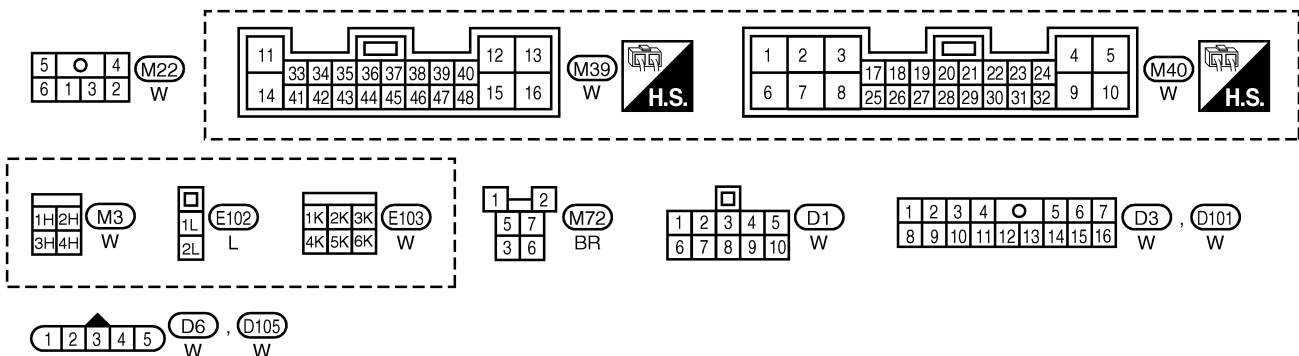
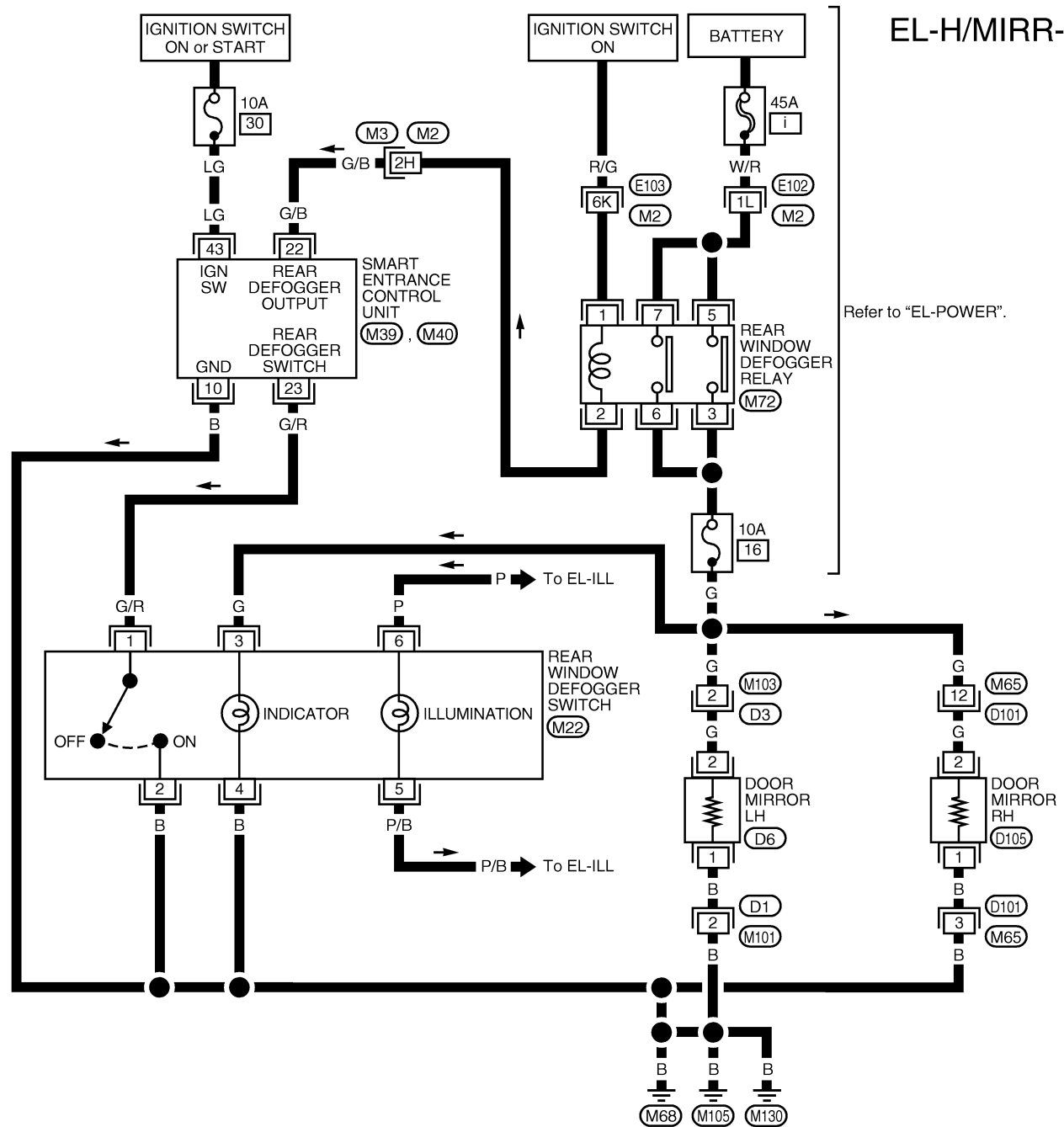
NDEL0087

EL-H/MIRR-01

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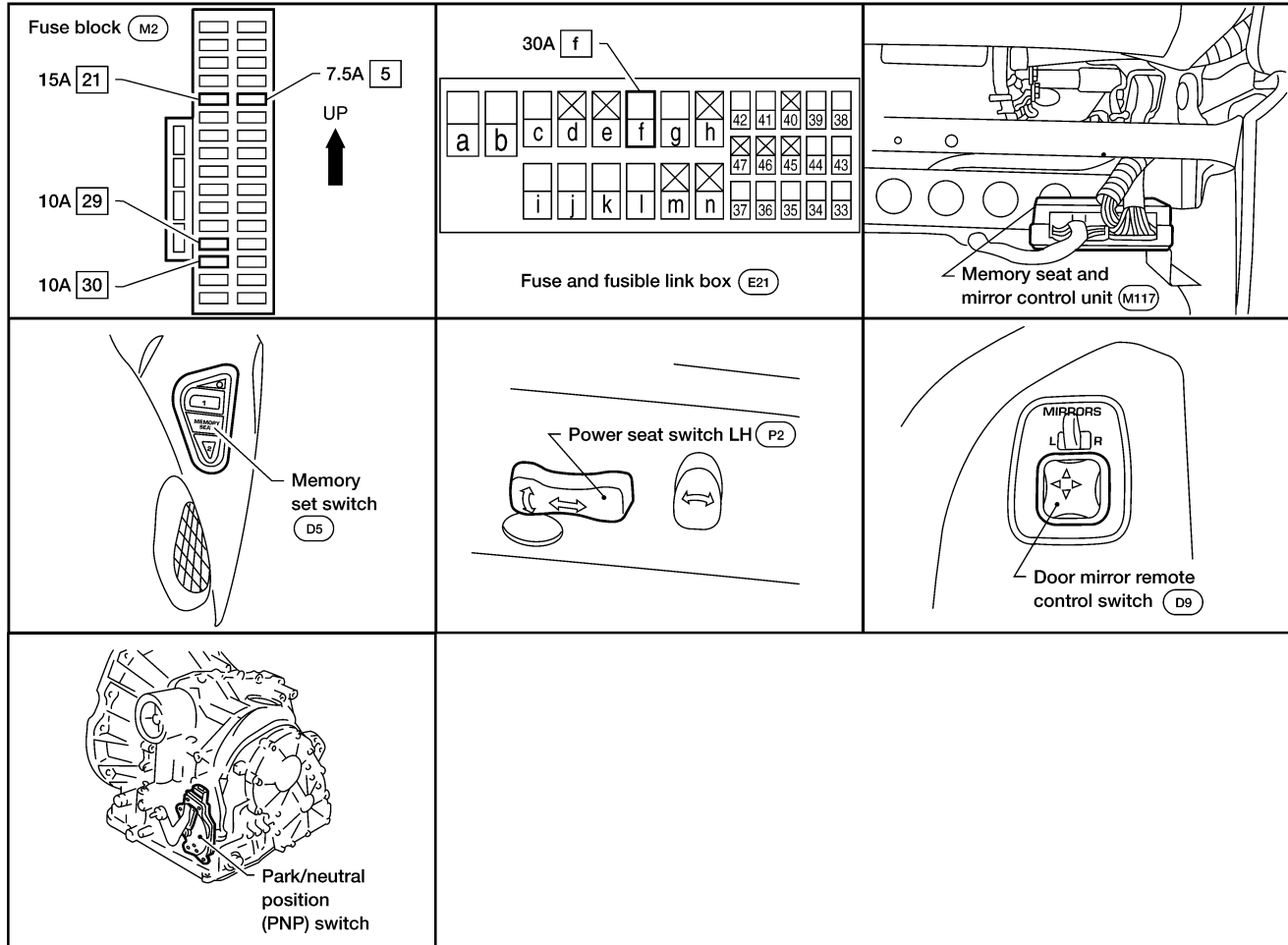
WEL227

# AUTOMATIC DRIVE POSITIONER

Component Parts and Harness Connector Location

## Component Parts and Harness Connector Location

NDEL0088



WEL271A

## System Description

NDEL0089

### OPERATION

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 driver door and multi-remote controller. Driver seat can be adjusted for sliding, reclining and cushion height.

NDEL0089S01

### MEMORY POSITION OPERATION

Automatic drive positioner has the following three functions

NDEL0089S02

- 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 door with multi-remote controller.)
- Auto back operation (Driver 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.



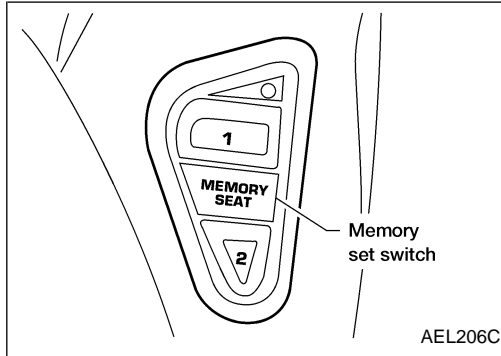
# AUTOMATIC DRIVE POSITIONER

System Description (Cont'd)

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

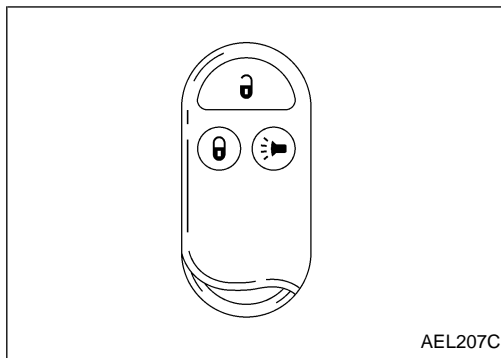
## Memory Set Switch Operation

- 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.)
- Driver seat, LH and RH door mirrors will move to the memorized position.



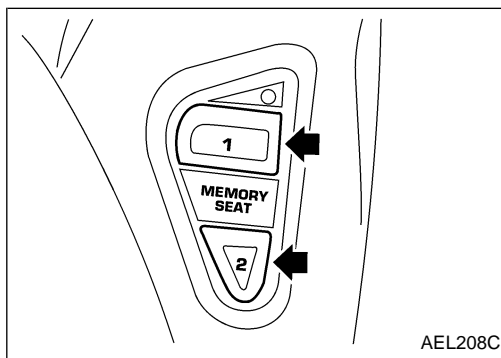
## Multi-remote Controller Operation

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



## Auto Back Operation

- 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.)
- Driver seat moves fully rearward and downward for easy entry and exist.



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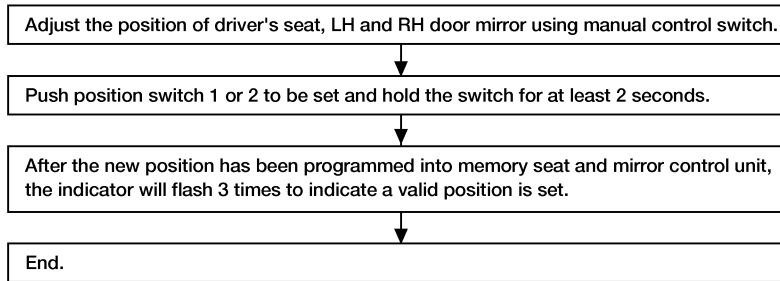
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# AUTOMATIC DRIVE POSITIONER

System Description (Cont'd)

## PROCEDURE FOR STORING MEMORY POSITION

NDEL0089S03



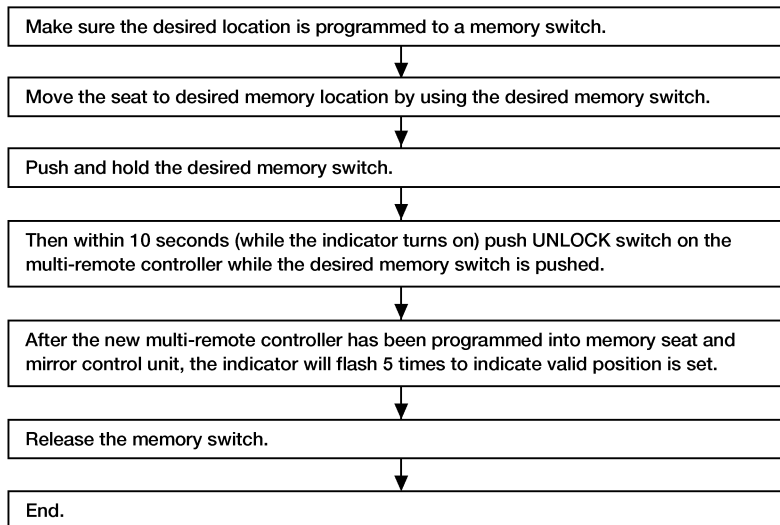
AEL006C

### 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

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

NDEL0089S0401

### NOTE:

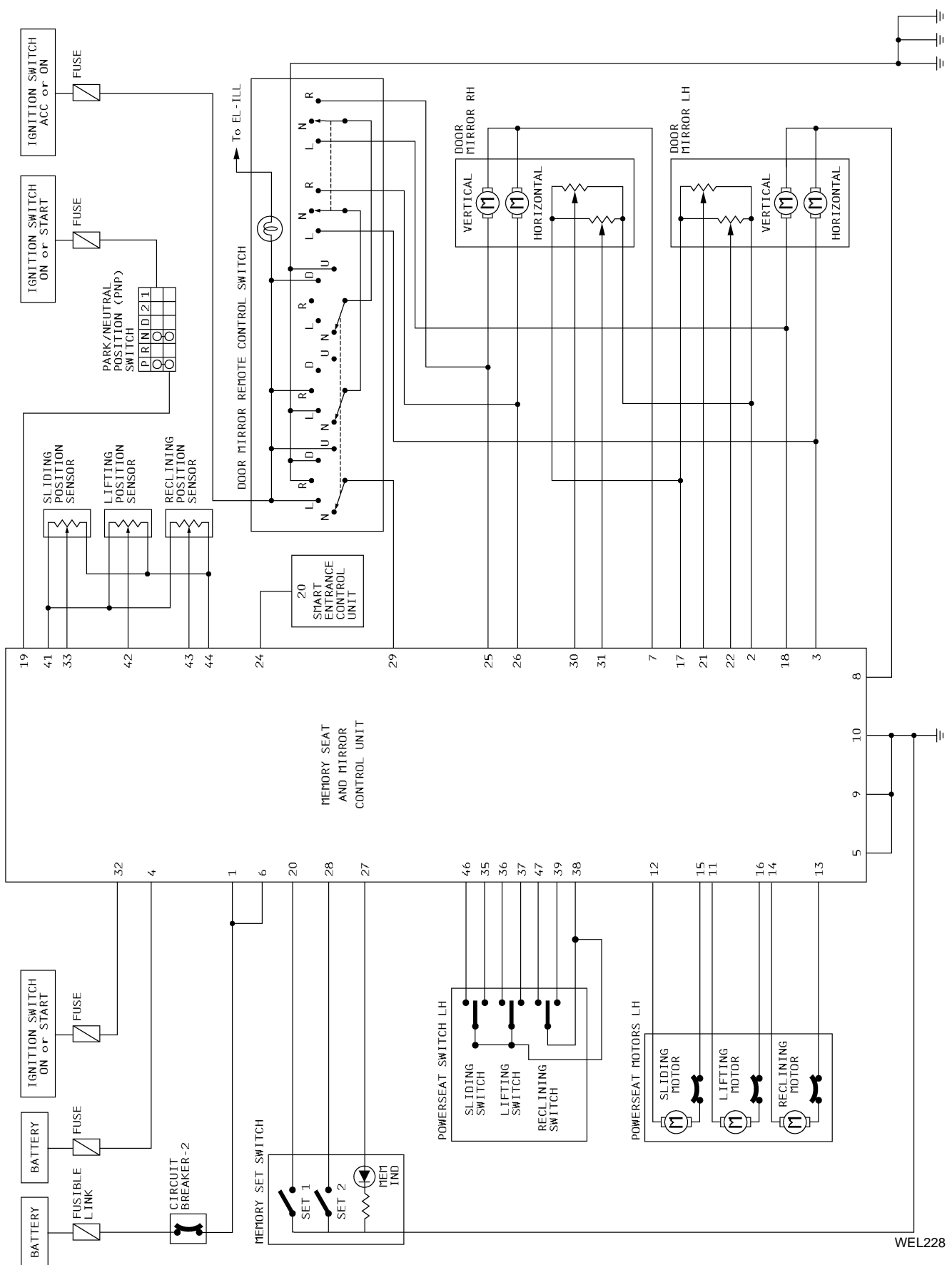
In this case auto back function will not operate.

# AUTOMATIC DRIVE POSITIONER

Schematic

## Schematic

NDEL0090



WEL228

# AUTOMATIC DRIVE POSITIONER

Wiring Diagram — AUT/DP —

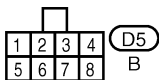
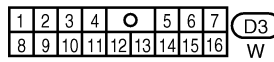
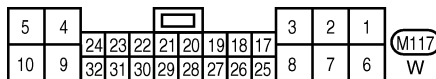
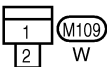
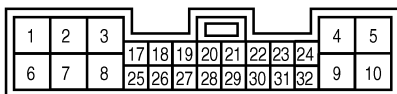
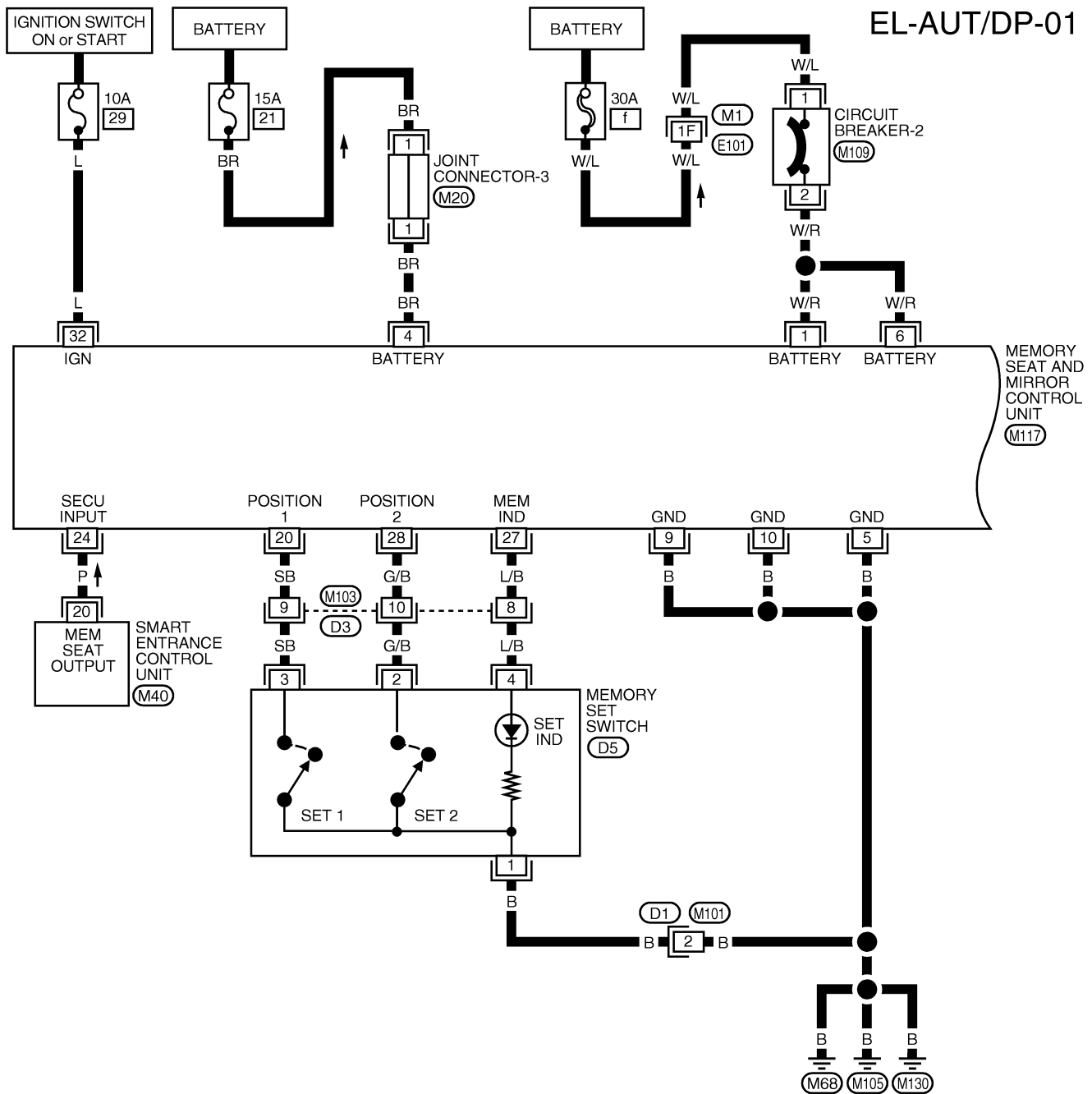
## Wiring Diagram — AUT/DP —

NDEL0091

NDEL0091S01

FIG. 1

EL-AUT/DP-01



Refer to the following.  
 (M1), (E101) - SUPER MULTIPLE JUNCTION (SMJ)  
 (M20) - JOINT CONNECTOR

WEL229

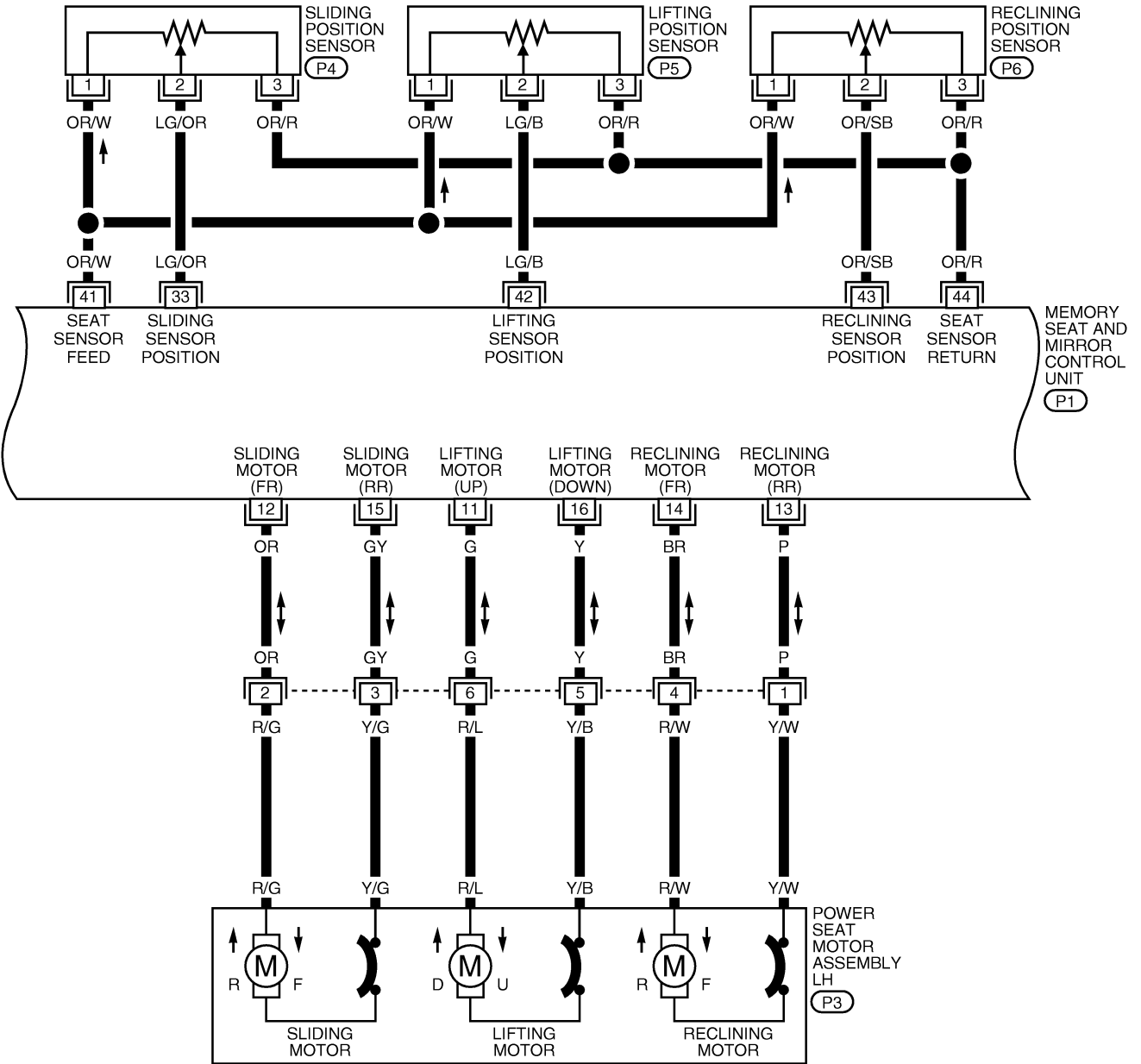
# AUTOMATIC DRIVE POSITIONER

Wiring Diagram — AUT/DP — (Cont'd)

FIG. 2

NDEL0091S02

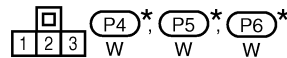
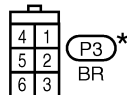
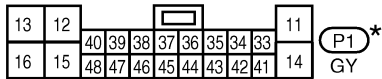
EL-AUT/DP-02



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\*: This connector is not shown in "HARNES LAYOUT".

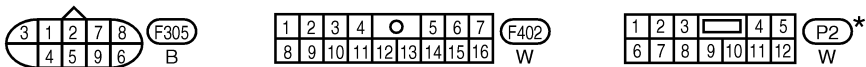
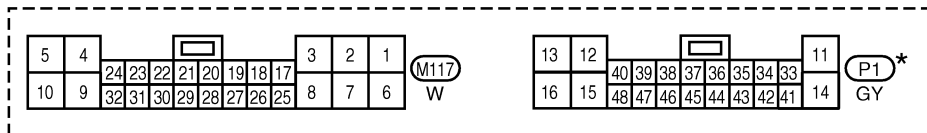
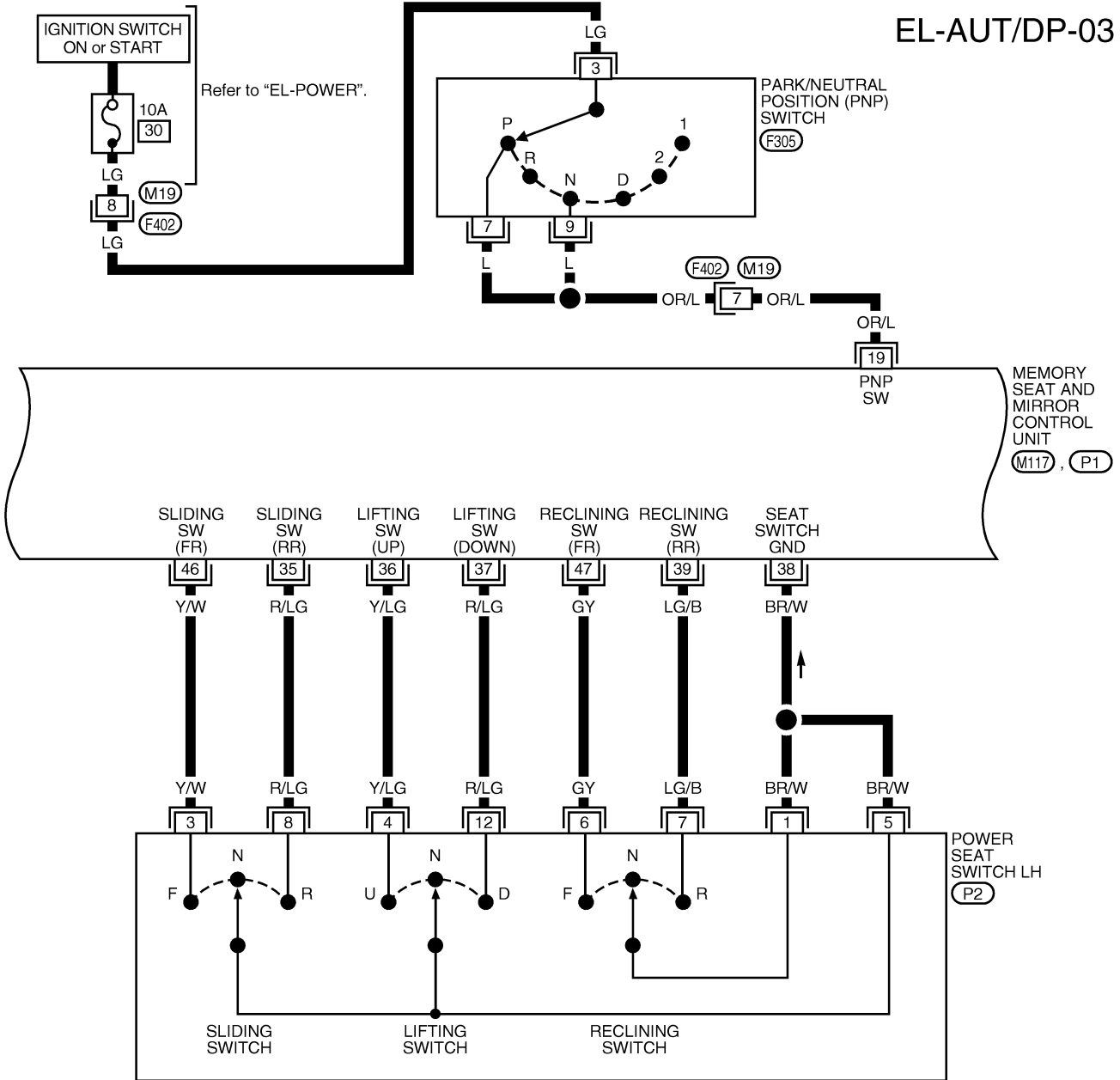
# AUTOMATIC DRIVE POSITIONER

Wiring Diagram — AUT/DP — (Cont'd)

NDEL0091S03

**FIG. 3**

EL-AUT/DP-03



\*: This connector is not shown in "HARNES LAYOUT".

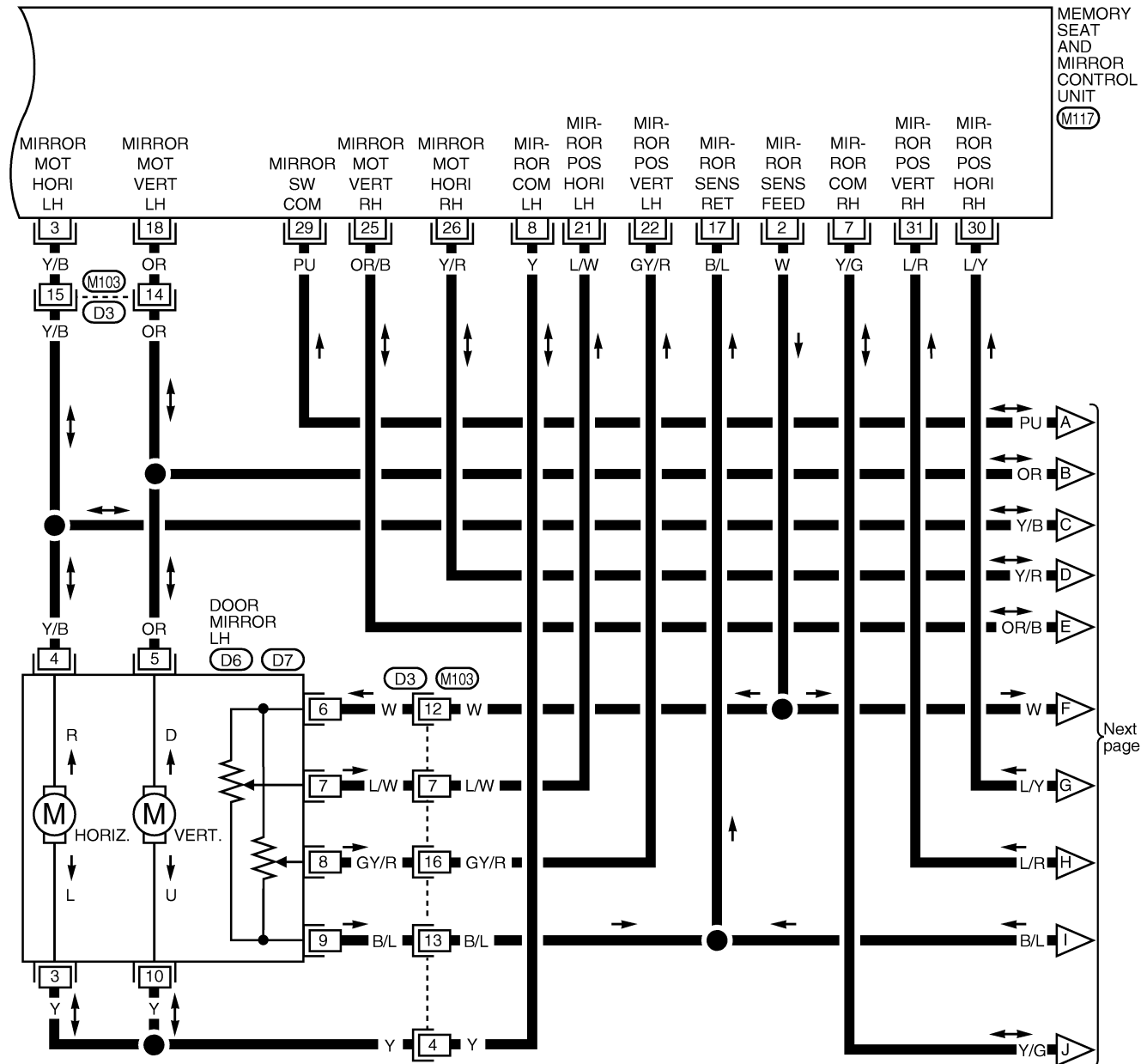
# AUTOMATIC DRIVE POSITIONER

Wiring Diagram — AUT/DP — (Cont'd)

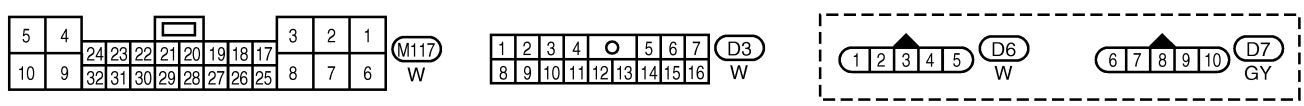
FIG. 4

NDEL0091S04

EL-AUT/DP-04



Next page



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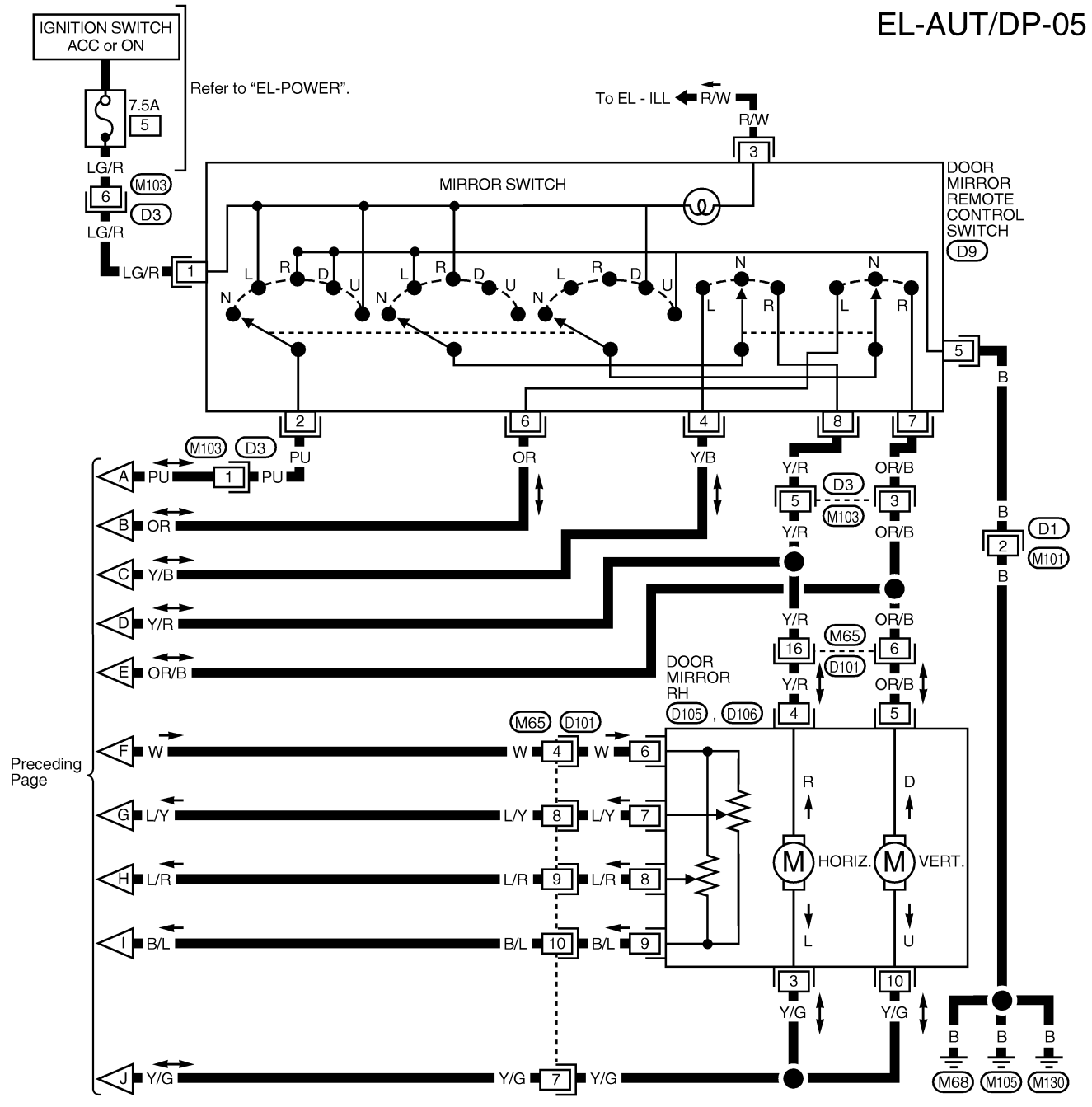
# AUTOMATIC DRIVE POSITIONER

Wiring Diagram — AUT/DP — (Cont'd)

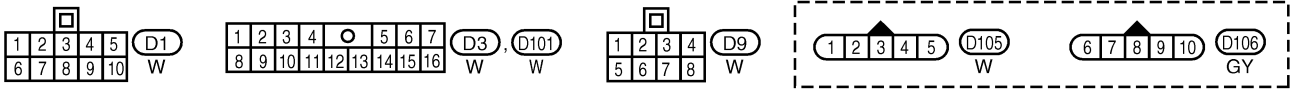
NDEL0091S05

**FIG. 5**

**EL-AUT/DP-05**



Preceding Page



WEL233



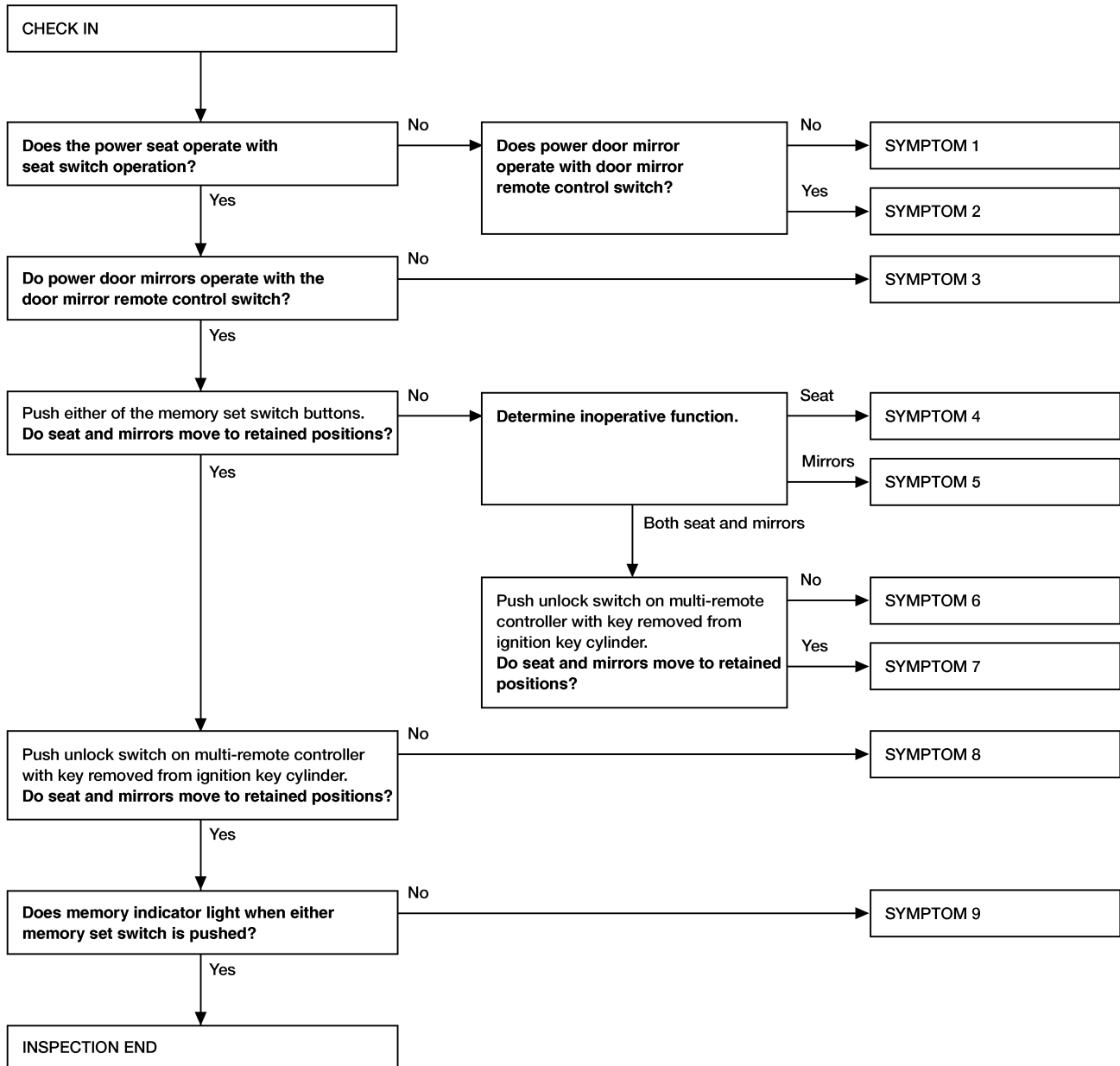
## Trouble Diagnosis PRELIMINARY CHECK

NDEL0092

NDEL0092S01

### NOTE:

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



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AEL005C

# AUTOMATIC DRIVE POSITIONER

Trouble Diagnosis (Cont'd)

## SYMPTOM CHART

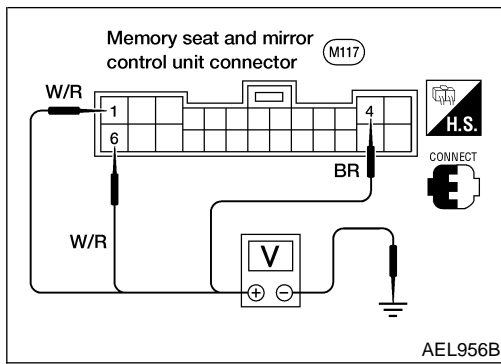
=NDEL0092S02

Before starting trouble diagnoses below, perform preliminary check, EL-181. 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-183	
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-186
			POWER SEAT SWITCH CHECK EL-201
		Reclining	POWER SEAT RECLINING MOTOR CHECK EL-187
			POWER SEAT SWITCH CHECK EL-201
		Lifting	POWER SEAT LIFTING MOTOR CHECK EL-188
			POWER SEAT SWITCH CHECK EL-201
		All	POWER SEAT SWITCH CHECK EL-201
		3	All/some functions of the power door mirror do not operate during manual operation or memory position operation.
	DOOR MIRROR REMOTE CONTROL SWITCH CHECK EL-205		
Passenger side	POWER DOOR MIRROR MOTOR CHECK EL-195		
	DOOR MIRROR REMOTE CONTROL SWITCH CHECK EL-205		
Both driver and passenger side	DOOR MIRROR REMOTE CONTROL COMMON CIRCUIT CHECK EL-203		
4	Some functions of the power seat do not operate during memory position operation. (Power seat operates properly with manual operation.)		
		Reclining	POWER SEAT RECLINING SENSOR CHECK EL-191
		Lifting	POWER SEAT LIFTING SENSOR CHECK EL-193
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-197
		Passenger side	DOOR MIRROR POSITION SENSOR CHECK (PASSENGER SIDE) EL-199
6	Memory positioning does not operate with either memory switch or multi-remote controller operation.	IGNITION SWITCH ON SIGNAL CHECK EL-183	
		PARK/NEUTRAL POSITION (PNP) SWITCH CHECK EL-184	
7	Memory positioning does not operate with memory set switch operation. (Memory positioning operates with multi-remote controller operation.)	MEMORY SET SWITCH CHECK EL-206	
8	Memory positioning does not operate with multi-remote controller operation. (Memory positioning operates with memory set switch operation.)	REMOTE CONTROLLER SIGNAL CHECK EL-208	
9	Memory indicator does not light up.	MEMORY INDICATOR CHECK EL-207	
—	Seat and mirror positions cannot be retained in memory.	MEMORY SET SWITCH CHECK EL-206	

# AUTOMATIC DRIVE POSITIONER

Trouble Diagnosis (Cont'd)



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

NDEL0092S03  
NDEL0092S0301

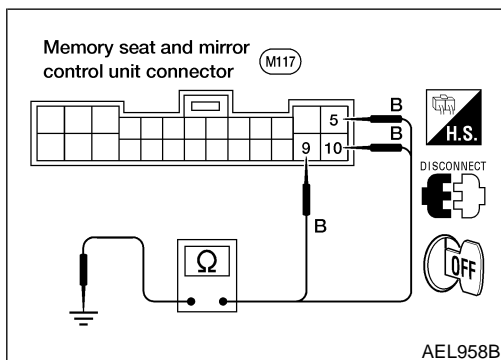
Terminals		Ignition switch position		
(+)	(-)	OFF	ACC	ON
1	Ground	Battery voltage	Battery voltage	Battery voltage
6	Ground	Battery voltage	Battery voltage	Battery voltage
4	Ground	Battery voltage	Battery voltage	Battery voltage

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.

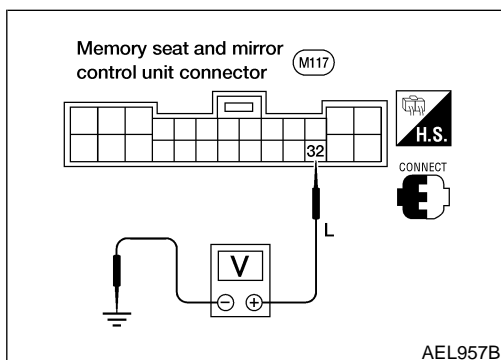


## Ground Circuit Check

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.

GI  
MA  
EM  
LC  
EC  
FE  
AT  
AX  
SU  
BR  
ST  
RS  
BT  
HA  
SC  
EL

IDX

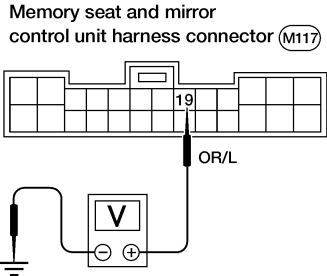



# AUTOMATIC DRIVE POSITIONER

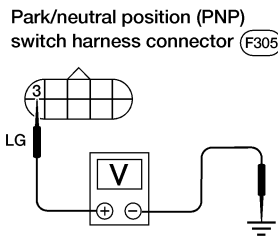



Trouble Diagnosis (Cont'd)

## PARK/NEUTRAL POSITION (PNP) SWITCH CHECK

=NDEL0092S20

<b>1</b>	<b>CHECK FUSE</b>	
Check 10A fuse No. 30. For fuse layout, refer to "POWER SUPPLY ROUTING" "WIRING DIAGRAM — POWER —" EL-12.		
<b>Is fuse OK?</b>		
Yes	▶	GO TO 2.
No	▶	GO TO 5.

<b>2</b>	<b>CHECK PARK/NEUTRAL POSITION (PNP) SWITCH SIGNAL</b>	
Check voltage between memory seat and mirror control unit terminal 19 and ground.		
<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>Memory seat and mirror control unit harness connector (M117)</p>  </div> <div style="text-align: center;">  <p>DISCONNECT</p>   </div> </div>		
AEL325C		
<b>Does battery voltage exist in both P and N positions?</b>		
Yes	▶	Replace memory seat and mirror control unit.
No	▶	GO TO 3.

<b>3</b>	<b>CHECK POWER SUPPLY CIRCUIT FOR PARK/NEUTRAL POSITION (PNP) SWITCH</b>	
<ol style="list-style-type: none"> <li>1. Disconnect park/neutral position (PNP) switch.</li> <li>2. Turn ignition switch to ON position.</li> <li>3. Check voltage between park/neutral position (PNP) switch terminal 3 and ground.</li> </ol>		
<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>Park/neutral position (PNP) switch harness connector (F305)</p>  </div> <div style="text-align: center;">  <p>DISCONNECT</p>   </div> </div>		
AEL326C		
<b>Does battery voltage exist?</b>		
Yes	▶	GO TO 4.
No	▶	Check harness for open or short between 10A fuse No. 30 and park/neutral position (PNP) switch.

# AUTOMATIC DRIVE POSITIONER

Trouble Diagnosis (Cont'd)

<b>4</b>	<b>CHECK PARK/NEUTRAL POSITION (PNP) SWITCH</b>	<p>Check continuity between park/neutral position (PNP) switch terminals.</p> <div style="text-align: center; margin: 10px 0;"> <p>Park/neutral position (PNP) switch connector</p> </div> <div style="text-align: right; margin-top: 10px;"> </div> <div style="text-align: right; margin-top: 20px;"> <p>WEL874A</p> </div> <table border="1" style="margin: 20px auto; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">Condition</th> <th colspan="3">Terminals</th> </tr> <tr> <th>3</th> <th>7</th> <th>9</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">P</td> <td style="text-align: center;">○</td> <td style="text-align: center;">○</td> <td style="text-align: center;">○</td> </tr> <tr> <td style="text-align: center;">N</td> <td style="text-align: center;">○</td> <td style="text-align: center;">○</td> <td style="text-align: center;">○</td> </tr> <tr> <td style="text-align: center;">Other</td> <td style="text-align: center;">○</td> <td style="text-align: center;">○</td> <td style="text-align: center;">○</td> </tr> </tbody> </table> <div style="text-align: right; margin-top: 10px;"> <p>AEL328C</p> </div> <p style="text-align: center; margin-top: 10px;"><b>OK or NG</b></p>	Condition	Terminals			3	7	9	P	○	○	○	N	○	○	○	Other	○	○	○	<p>GI</p> <p>MA</p> <p>EM</p> <p>LC</p> <p>EC</p> <p>FE</p> <p>AT</p> <p>AX</p> <p>SU</p>
Condition	Terminals																					
	3	7	9																			
P	○	○	○																			
N	○	○	○																			
Other	○	○	○																			
OK	▶	Check harness for open or short between memory seat and mirror control unit and park/neutral position (PNP) switch.	BR																			
NG	▶	Refer to <b>AT-271</b> , "Park/Neutral Position (PNP) Switch Adjustment" for adjustment procedure. If still NG, replace park/neutral position (PNP) switch.	ST																			

<b>5</b>	<b>REPLACE FUSE</b>	<p>Replace fuse.</p> <p style="text-align: center; margin: 10px 0;"><b>Does the fuse blow again when ignition switch is turned to ON position?</b></p>	<p>RS</p> <p>BT</p> <p>HA</p> <p>SC</p>
Yes	▶	Check harness for short to ground.	EL
No	▶	<b>INSPECTION END</b>	IDX

# AUTOMATIC DRIVE POSITIONER

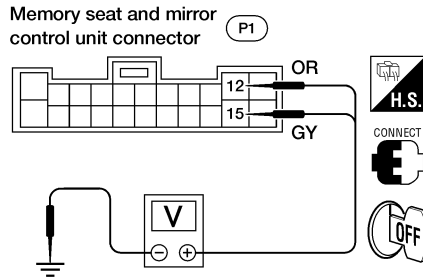
Trouble Diagnosis (Cont'd)

## 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		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-177.

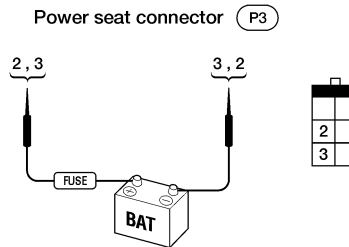
**OK or NG**

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		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.

# AUTOMATIC DRIVE POSITIONER

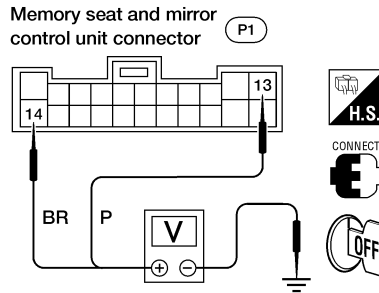
Trouble Diagnosis (Cont'd)

## 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		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-177.

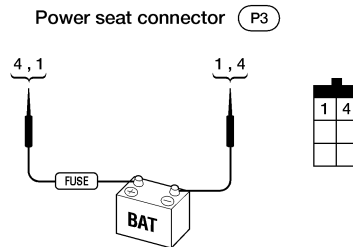
OK or NG

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		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.

GI

MA

EM

LC

EC

FE

AT

AX

SU

BR

ST

RS

BT

HA

SC

EL

IDX

# AUTOMATIC DRIVE POSITIONER

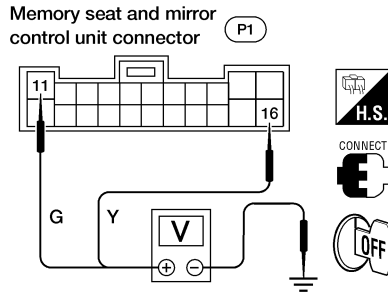
Trouble Diagnosis (Cont'd)

## 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		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-177.

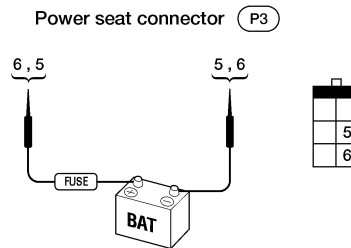
**OK or NG**

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		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.



# AUTOMATIC DRIVE POSITIONER

Trouble Diagnosis (Cont'd)

## POWER SEAT SLIDING SENSOR CHECK

=NDEL0092S08

<b>1</b>	<b>CHECK SLIDING SENSOR PULL UP VOLTAGE</b>	<p>1. Disconnect sliding sensor connector. 2. Check voltage between sliding sensor connector terminals 1 and 3.</p> <div style="text-align: center;"> </div> <p style="text-align: right;">AEL975B</p>	GI MA EM LC EC FE AT AX
<b>Do 5V exist?</b>			
Yes	▶	GO TO 2.	
No	▶	<p><b>Check the following</b></p> <ul style="list-style-type: none"> <li>● Harness for open or short between sliding sensor terminal 1 and memory seat and mirror control unit terminal 41</li> <li>● Harness for open or short between sliding sensor terminal 3 and memory seat and mirror control unit terminal 44.</li> </ul>	SU BR ST RS BT HA SC EL

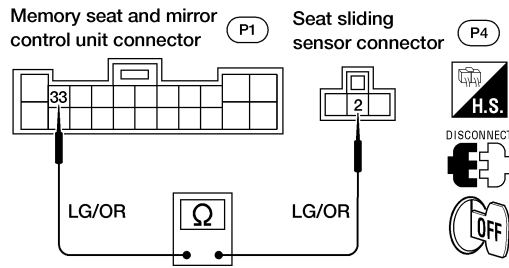
<b>2</b>	<b>CHECK SLIDING SENSOR INPUT SIGNAL</b>	<p>Measure voltage between memory seat and mirror control unit terminal 33 and ground with oscilloscope when seat slide is operated.</p> <div style="text-align: center;"> </div> <div style="text-align: center; margin-top: 20px;"> <p style="text-align: center;">HI: Approx. 5V LO: Approx. 0V</p> </div> <p style="text-align: right;">AEL976B</p>	HA SC EL IDX
<b>OK or NG</b>			
OK	▶	Sliding sensor is OK.	
NG	▶	GO TO 3.	

# AUTOMATIC DRIVE POSITIONER

Trouble Diagnosis (Cont'd)

## 3 CHECK SLIDING SENSOR OPEN OR SHORT CIRCUIT

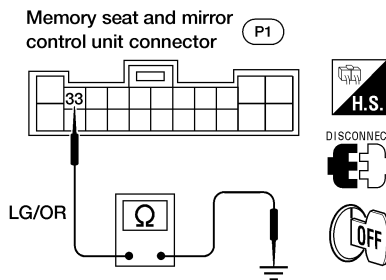
1. Disconnect sliding sensor connector and memory seat and mirror control unit.
2. Check continuity between memory seat and mirror control unit terminal 33 and sliding sensor terminal 2.



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**

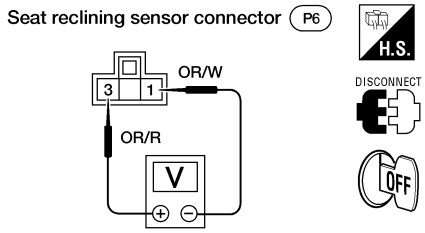
OK	▶	Replace sliding sensor.
NG	▶	Repair harness.

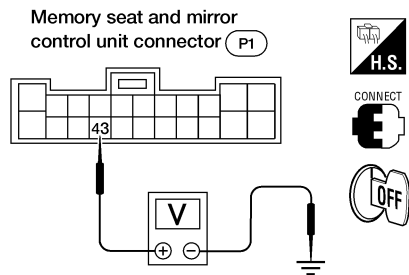
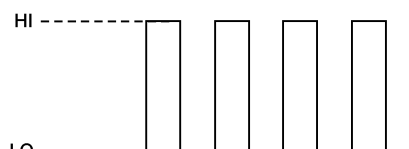
# AUTOMATIC DRIVE POSITIONER

Trouble Diagnosis (Cont'd)

## POWER SEAT RECLINING SENSOR CHECK

=NDEL0092S09

<b>1</b>	<b>CHECK RECLINING SENSOR PULL UP VOLTAGE</b>	<p>1. Disconnect reclining sensor connector. 2. Check voltage between reclining sensor connector terminals 1 and 3.</p> <div style="text-align: center;">  </div> <p style="text-align: right;">AEL980B</p> <p style="text-align: center;">Refer to wiring diagram, EL-177.</p> <p style="text-align: center;"><b>Do 5V exist?</b></p>	GI MA EM LC EC FE
Yes	▶	GO TO 2.	
No	▶	<p><b>Check the following</b></p> <ul style="list-style-type: none"> <li>● Harness for open or short between reclining sensor terminal 1 and memory seat and mirror control unit terminal 41</li> <li>● Harness for open or short between reclining sensor terminal 3 and memory seat and mirror control unit terminal 44.</li> </ul>	AT AX

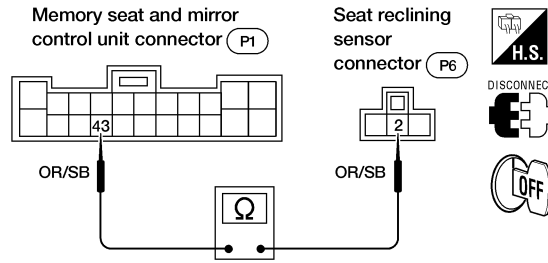
<b>2</b>	<b>CHECK RECLINING SENSOR INPUT SIGNAL</b>	<p>Measure voltage between memory seat and mirror control unit terminal 43 and ground with oscilloscope when seat reclining is operated.</p> <div style="text-align: center;">  </div> <div style="text-align: center; margin-top: 20px;">  <p style="margin-top: 10px;">HI: Approx. 5V LO: Approx. 0V</p> </div> <p style="text-align: right;">AEL981B</p> <p style="text-align: right;">AEL979B</p> <p style="text-align: center;"><b>OK or NG</b></p>	SU BR ST RS BT HA SC EL IDX
OK	▶	Reclining sensor is OK.	
NG	▶	GO TO 3.	

# AUTOMATIC DRIVE POSITIONER

Trouble Diagnosis (Cont'd)

## 3 CHECK RECLINING SENSOR OPEN OR SHORT CIRCUIT

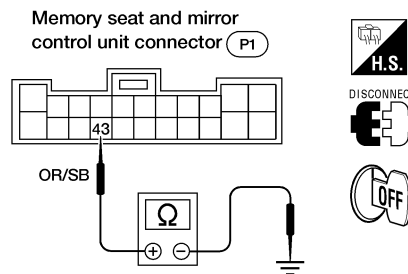
1. Disconnect reclining sensor connector and memory seat and mirror control unit.
2. Check continuity between memory seat and mirror control unit terminal 43 and reclining sensor terminal 2.



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**

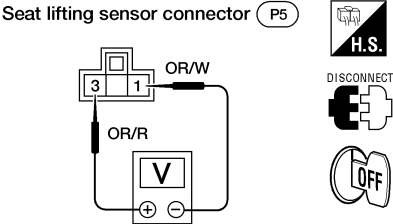
OK	▶	Replace reclining sensor.
NG	▶	Repair harness.

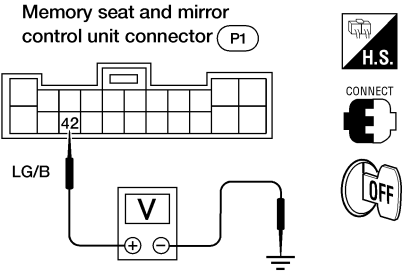
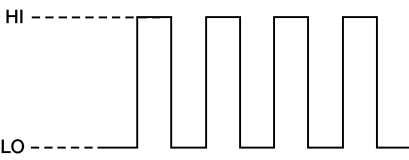
# AUTOMATIC DRIVE POSITIONER

Trouble Diagnosis (Cont'd)

## POWER SEAT LIFTING SENSOR CHECK

=NDEL0092S10

<b>1</b>	<b>CHECK LIFTING SENSOR PULL UP VOLTAGE</b>	<p>1. Disconnect lifting sensor connector. 2. Check voltage between lifting sensor connector terminals 1 and 3.</p> <div style="text-align: center;">  </div> <p style="text-align: right;">AEL984B</p> <p>Refer to wiring diagram, EL-177.</p> <p style="text-align: center;"><b>Does 5V exist?</b></p>	<p>GI</p> <p>MA</p> <p>EM</p> <p>LC</p> <p>EC</p> <p>FE</p>
Yes	▶	GO TO 2.	
No	▶	<p><b>Check the following</b></p> <ul style="list-style-type: none"> <li>● Harness for open or short between lifting sensor terminal 1 and memory seat and mirror control unit terminal 41</li> <li>● Harness for open or short between lifting sensor terminal 3 and memory seat and mirror control unit terminal 44.</li> </ul>	<p>AT</p> <p>AX</p>

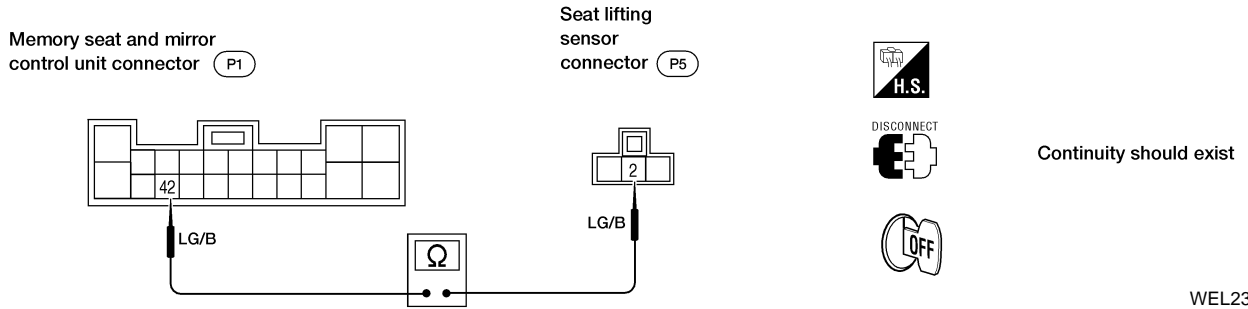
<b>2</b>	<b>CHECK LIFTING SENSOR INPUT SIGNAL</b>	<p>Measure voltage between memory seat and mirror control unit terminal 42 and ground with oscilloscope when seat lifting is operated.</p> <div style="text-align: center;">  </div> <div style="text-align: center; margin-top: 20px;">  <p>HI: Approx. 5V LO: Approx. 0V</p> </div> <p style="text-align: right;">AEL426C</p> <p style="text-align: right;">AEL979B</p> <p style="text-align: center;"><b>OK or NG</b></p>	<p>SU</p> <p>BR</p> <p>ST</p> <p>RS</p> <p>BT</p> <p>HA</p> <p>SC</p> <p style="background-color: black; color: white; text-align: center;">EL</p> <p>IDX</p>
OK	▶	Lifting sensor is OK.	
NG	▶	GO TO 3.	

# AUTOMATIC DRIVE POSITIONER

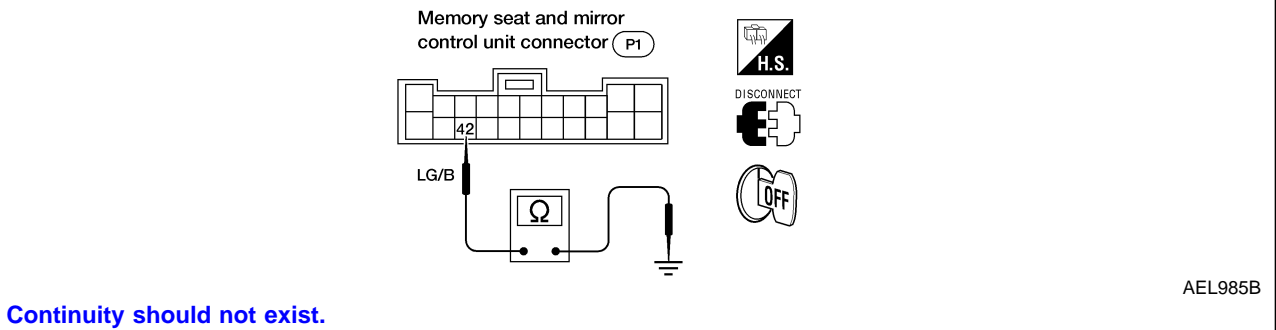
Trouble Diagnosis (Cont'd)

## 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.



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



OK or NG

OK	▶	Replace lifting sensor.
NG	▶	Repair harness.

# AUTOMATIC DRIVE POSITIONER

Trouble Diagnosis (Cont'd)

## POWER DOOR MIRROR MOTOR CHECK

=NDEL0092S07

<b>1</b>	<b>PRELIMINARY CHECK</b>
Determine which direction (horizontal or vertical) is not functioning.	
▶	GO TO 2.

<b>2</b>	<b>CHECK OUTPUT SIGNAL TO DOOR MIRROR MOTOR</b>																																								
Check the voltage between memory seat and mirror control unit terminals and ground.																																									
<p>Memory seat and mirror control unit connector (M117)</p> <p>3, 7, 8, 18, 25, 26</p>																																									
<table border="1"> <thead> <tr> <th rowspan="2">Condition of door mirror remote control switch</th> <th colspan="2">Terminals</th> <th rowspan="2">Voltage (V)</th> </tr> <tr> <th>(+)</th> <th>(-)</th> </tr> </thead> <tbody> <tr> <td rowspan="4">LH side</td> <td>Right</td> <td>8</td> <td>Ground</td> <td>More than 10.8</td> </tr> <tr> <td>Left</td> <td>3</td> <td>Ground</td> <td>More than 10.8</td> </tr> <tr> <td>Down</td> <td>8</td> <td>Ground</td> <td>More than 10.8</td> </tr> <tr> <td>Up</td> <td>18</td> <td>Ground</td> <td>More than 10.8</td> </tr> <tr> <td rowspan="4">RH side</td> <td>Right</td> <td>7</td> <td>Ground</td> <td>More than 10.8</td> </tr> <tr> <td>Left</td> <td>26</td> <td>Ground</td> <td>More than 10.8</td> </tr> <tr> <td>Down</td> <td>7</td> <td>Ground</td> <td>More than 10.8</td> </tr> <tr> <td>Up</td> <td>25</td> <td>Ground</td> <td>More than 10.8</td> </tr> </tbody> </table>		Condition of door mirror remote control switch	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
Condition of door mirror remote control switch	Terminals		Voltage (V)																																						
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	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																																					
Refer to wiring diagrams, EL-179 and 180.																																									
<b>OK or NG</b>																																									
OK	▶ GO TO 3.																																								
NG	▶ Replace memory seat and mirror control unit.																																								

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AEL972B

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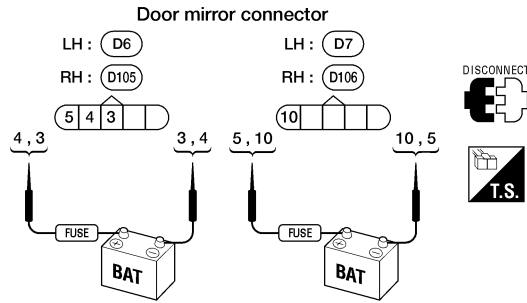
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# AUTOMATIC DRIVE POSITIONER

Trouble Diagnosis (Cont'd)

## 3 CHECK DOOR MIRROR MOTOR

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



AEL974B

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.

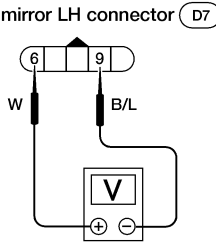



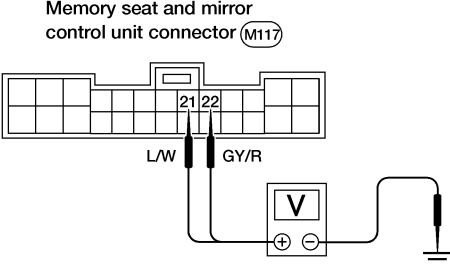

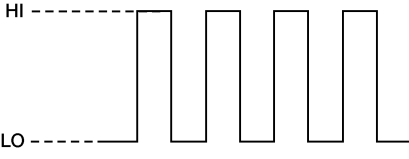
# AUTOMATIC DRIVE POSITIONER

Trouble Diagnosis (Cont'd)

## DOOR MIRROR POSITION SENSOR CHECK (DRIVER SIDE)

=NDEL0092S11

<b>1</b>	<b>CHECK DOOR MIRROR SENSOR PULL UP VOLTAGE</b>	
<p>1. Disconnect LH door mirror sensor connector. 2. Check voltage between LH door mirror sensor connector terminals 6 and 9.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>Door mirror LH connector (D7)</p>  </div> <div style="text-align: center;">  </div> </div> <p style="text-align: right;">AEL988B</p> <p>Refer to wiring diagram, EL-179.</p> <p style="text-align: center;"><b>Does 5V exist?</b></p>		
Yes	▶	GO TO 2.
No	▶	<p><b>Check the following</b></p> <ul style="list-style-type: none"> <li>• Harness for open or short between LH door mirror sensor terminal 6 and memory seat and mirror control unit terminal 2</li> <li>• Harness for open or short between LH door mirror sensor terminal 9 and memory seat and mirror control unit terminal 17.</li> </ul>

<b>2</b>	<b>CHECK DOOR MIRROR SENSOR INPUT SIGNAL</b>	
<p>Measure voltage between memory seat and mirror control unit terminal 21 (horizontal), 22 (vertical) and ground with oscilloscope when LH door mirror is operated.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>Memory seat and mirror control unit connector (M117)</p>  </div> <div style="text-align: center;">  </div> </div> <div style="text-align: right;">AEL989B</div> <div style="text-align: center; margin-top: 20px;">  <p>HI: Approx. 5V LO: Approx. 0V</p> </div> <p style="text-align: center;"><b>OK or NG</b></p>		
OK	▶	LH door mirror sensor is OK.
NG	▶	GO TO 3.

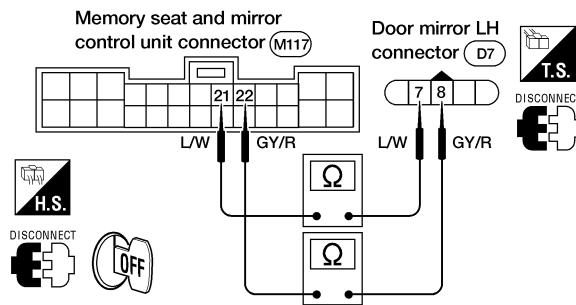
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# AUTOMATIC DRIVE POSITIONER

Trouble Diagnosis (Cont'd)

## 3 CHECK DOOR MIRROR SENSOR OPEN OR SHORT CIRCUIT

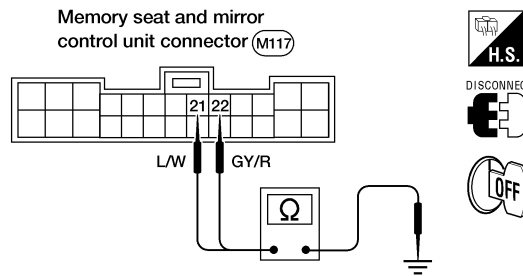
1. Disconnect LH door mirror sensor connector and memory seat and mirror control unit.
2. Check continuity between memory seat and mirror control unit terminal 21 and LH door mirror sensor terminal 7 (horizontal), memory seat and mirror control unit terminal 22 and LH door mirror terminal 8 (vertical).



AEL990B

Continuity should exist.

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



AEL991B

Continuity should not exist.

OK or NG

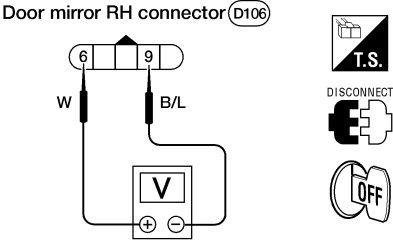
OK	▶	Replace LH door mirror sensor.
NG	▶	Repair harness.

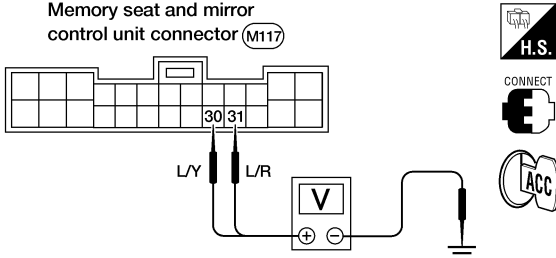
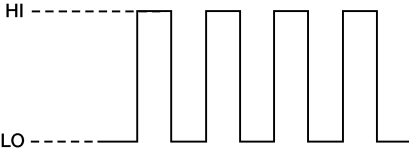
# AUTOMATIC DRIVE POSITIONER

Trouble Diagnosis (Cont'd)

## DOOR MIRROR POSITION SENSOR CHECK (PASSENGER SIDE)

=NDEL0092S12

<b>1</b>	<b>CHECK DOOR MIRROR SENSOR PULL UP VOLTAGE</b>	
<p>1. Disconnect RH door mirror sensor connector. 2. Check voltage between RH door mirror sensor connector terminals 6 and 9.</p>		
		
<p>Refer to wiring diagram, EL-180.</p> <p style="text-align: right;">AEL992B</p>		
<b>Do 5V exist?</b>		
Yes	▶	GO TO 2.
No	▶	<p><b>Check the following</b></p> <ul style="list-style-type: none"> <li>• Harness for open or short between RH door mirror sensor terminal 6 and memory seat and mirror control unit terminal 2</li> <li>• Harness for open or short between RH door mirror sensor terminal 9 and memory seat and mirror control unit terminal 17.</li> </ul>

<b>2</b>	<b>CHECK DOOR MIRROR SENSOR INPUT SIGNAL</b>	
<p>Measure voltage between memory seat and mirror control unit terminal 30 (horizontal), 31 (vertical) and ground with oscilloscope when RH door mirror is operated.</p>		
		
		
<p>HI: Approx. 5V LO: Approx. 0V</p> <p style="text-align: right;">AEL993B</p>		
<b>OK or NG</b>		
OK	▶	RH door mirror sensor is OK.
NG	▶	GO TO 3.

AEL979B

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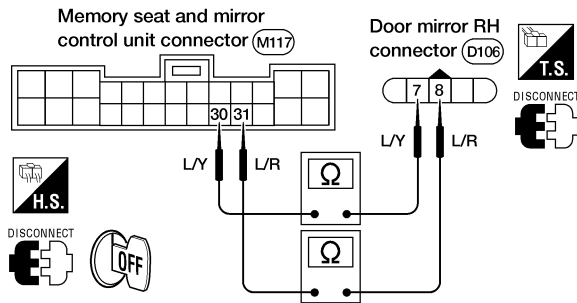
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# AUTOMATIC DRIVE POSITIONER

Trouble Diagnosis (Cont'd)

## 3 CHECK DOOR MIRROR SENSOR OPEN OR SHORT CIRCUIT

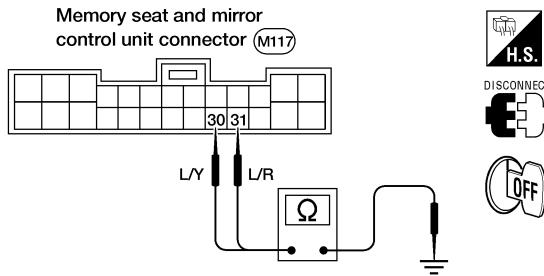
1. Disconnect RH door mirror sensor connector and memory seat and mirror control unit.
2. Check continuity between memory seat and mirror control unit terminal 30 and RH door mirror sensor terminal 7 (horizontal), memory seat and mirror control unit terminal 31 and RH door mirror sensor terminal 8 (vertical).



AEL994B

**Continuity should exist.**

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



AEL995B

**Continuity should not exist.**

**OK or NG**

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

# AUTOMATIC DRIVE POSITIONER

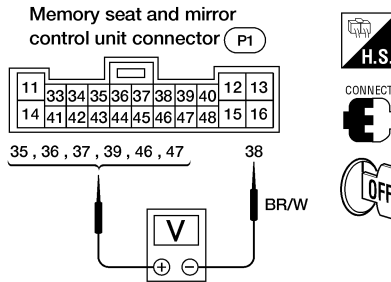
Trouble Diagnosis (Cont'd)

## 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		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-178.

### OK or NG

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

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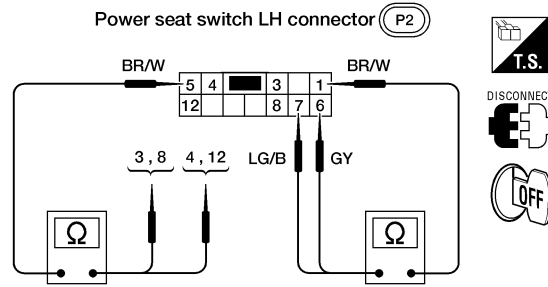
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# AUTOMATIC DRIVE POSITIONER

Trouble Diagnosis (Cont'd)

## 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.

# AUTOMATIC DRIVE POSITIONER

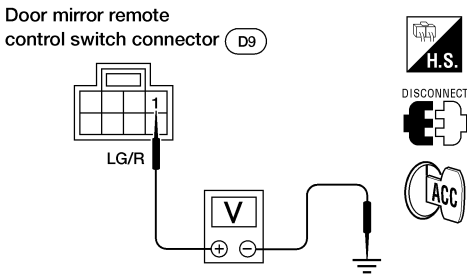
Trouble Diagnosis (Cont'd)

## DOOR MIRROR REMOTE CONTROL COMMON CIRCUIT CHECK

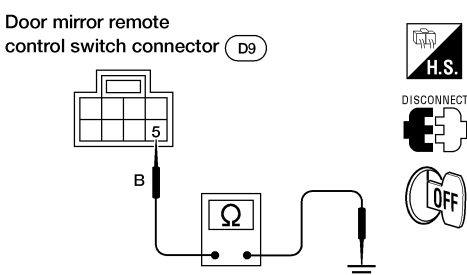
=NDEL0092S14

<b>1</b>	<b>PRELIMINARY CHECK</b>	
Do both power mirrors (LH and RH) not operate with door mirror remote control switch?		
<b>Yes or No</b>		
Yes	▶	GO TO 2.
No	▶	GO TO "DOOR MIRROR REMOTE CONTROL SWITCH CHECK", EL-205.

GI  
MA  
EM

<b>2</b>	<b>CHECK POWER SUPPLY CIRCUIT FOR DOOR MIRROR REMOTE CONTROL SWITCH</b>	
1. Turn ignition switch to ACC position. 2. Check voltage between door mirror remote control switch terminal 1 and ground.		
		
Refer to wiring diagram, EL-180.		
<b>Does battery voltage exist?</b>		
Yes	▶	GO TO 3.
No	▶	<b>Check the following</b> <ul style="list-style-type: none"> <li>● 7.5A fuse (No. 5, located in the fuse block)</li> <li>● Harness for open or short between fuse and the switch.</li> </ul>

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<b>3</b>	<b>CHECK GROUND CIRCUIT FOR DOOR MIRROR REMOTE CONTROL SWITCH</b>	
Check continuity between door mirror remote control switch terminal 5 and ground.		
		
Refer to wiring diagram, EL-180.		
<b>Does continuity exist?</b>		
Yes	▶	GO TO 4.
No	▶	Repair harness.

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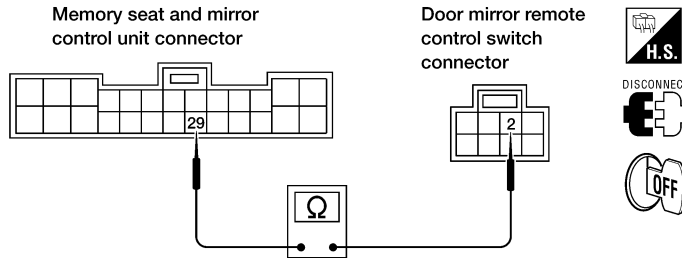
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# AUTOMATIC DRIVE POSITIONER

Trouble Diagnosis (Cont'd)

## 4 CHECK DOOR MIRROR COMMON SIGNAL OPEN OR SHORT CIRCUIT

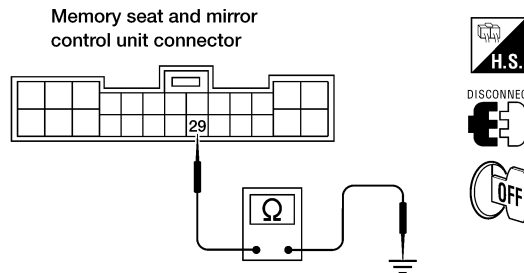
1. Disconnect memory seat and mirror control unit connector and door mirror remote control switch connector.
2. Check continuity between memory seat and mirror control unit connector M117 terminal 29 (PU) and door mirror remote control switch connector D9 terminal 2 (PU).



WEL875A

**Continuity should exist.**

3. Check continuity between memory seat and mirror control unit connector M117 terminal 29 (PU) and ground.



WEL876A

**Continuity should not exist.**

**OK or NG**

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



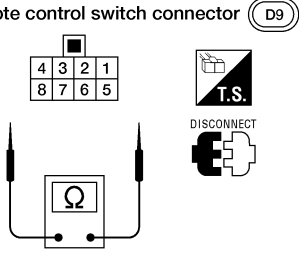
# AUTOMATIC DRIVE POSITIONER

Trouble Diagnosis (Cont'd)

## DOOR MIRROR REMOTE CONTROL SWITCH CHECK

=NDEL0092S15

<b>1</b>	<b>PRELIMINARY CHECK</b>	
Do both power mirrors (LH and RH) not operate with door mirror remote control switch?		
<b>Yes or No</b>		
Yes	▶	GO TO "DOOR MIRROR REMOTE CONTROL COMMON CIRCUIT CHECK", EL-203
No	▶	GO TO 2.

<b>2</b>	<b>CHECK DOOR MIRROR REMOTE CONTROL SWITCH</b>																																																																																											
<p>1. Disconnect door mirror remote control switch connector.</p> <p>2. Check continuity between door mirror remote control switch terminals.</p>																																																																																												
<p>Door mirror remote control switch connector (D9)</p> 																																																																																												
AEL009C																																																																																												
<table border="1" style="margin: auto; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">Switch condition</th> <th colspan="8">Terminals</th> </tr> <tr> <th>1</th> <th>2</th> <th>4</th> <th>5</th> <th>6</th> <th>7</th> <th>8</th> </tr> </thead> <tbody> <tr> <td rowspan="5">LH side</td> <td>U</td> <td>○—○</td> <td></td> <td>○—○</td> <td></td> <td></td> <td></td> </tr> <tr> <td>D</td> <td>○—○</td> <td></td> <td>○—○</td> <td></td> <td></td> <td></td> </tr> <tr> <td>L</td> <td>○—○</td> <td>○—○</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>R</td> <td>○—○</td> <td>○—○</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>N</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td rowspan="5">RH side</td> <td>U</td> <td>○—○</td> <td></td> <td>○—○</td> <td></td> <td>○—○</td> <td></td> </tr> <tr> <td>D</td> <td>○—○</td> <td></td> <td>○—○</td> <td></td> <td>○—○</td> <td></td> </tr> <tr> <td>L</td> <td>○—○</td> <td></td> <td>○—○</td> <td></td> <td>○—○</td> <td>○—○</td> </tr> <tr> <td>R</td> <td>○—○</td> <td></td> <td>○—○</td> <td></td> <td>○—○</td> <td>○—○</td> </tr> <tr> <td>N</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>			Switch condition	Terminals								1	2	4	5	6	7	8	LH side	U	○—○		○—○				D	○—○		○—○				L	○—○	○—○					R	○—○	○—○					N								RH side	U	○—○		○—○		○—○		D	○—○		○—○		○—○		L	○—○		○—○		○—○	○—○	R	○—○		○—○		○—○	○—○	N							
Switch condition	Terminals																																																																																											
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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.																																																																																										

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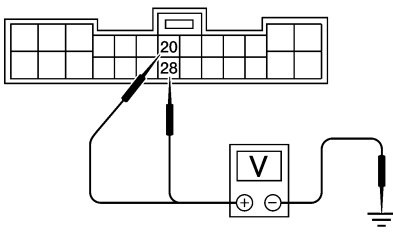

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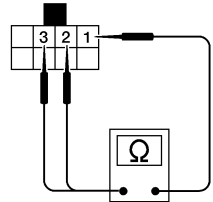

# AUTOMATIC DRIVE POSITIONER

Trouble Diagnosis (Cont'd)

## MEMORY SET SWITCH CHECK

=NDEL0092S16

<b>1</b>	<b>CHECK MEMORY SET SWITCH INPUT SIGNAL</b>														
<p>Check voltage between memory seat and mirror control unit harness connector M117 terminals 20 (SB), 28 (G/B) and ground.</p>															
<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>Memory seat and mirror control unit connector</p>  </div> <div style="text-align: center;">  </div> <div style="border: 1px solid black; padding: 5px;"> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th>Terminals</th> <th>Memory set switch condition</th> <th>Voltage [V]</th> </tr> </thead> <tbody> <tr> <td rowspan="2">20 - Ground</td> <td>Set switch 1 ON</td> <td>0</td> </tr> <tr> <td>Set switch 1 OFF</td> <td>5</td> </tr> <tr> <td rowspan="2">28 - Ground</td> <td>Set switch 2 ON</td> <td>0</td> </tr> <tr> <td>Set switch 2 OFF</td> <td>5</td> </tr> </tbody> </table> </div> </div>			Terminals	Memory set switch condition	Voltage [V]	20 - Ground	Set switch 1 ON	0	Set switch 1 OFF	5	28 - Ground	Set switch 2 ON	0	Set switch 2 OFF	5
Terminals	Memory set switch condition	Voltage [V]													
20 - Ground	Set switch 1 ON	0													
	Set switch 1 OFF	5													
28 - Ground	Set switch 2 ON	0													
	Set switch 2 OFF	5													
WEL426A															
<b>OK or NG</b>															
OK	▶	Memory set switch is OK.													
NG	▶	GO TO 2.													

<b>2</b>	<b>CHECK MEMORY SET SWITCH</b>																											
<p>1. Disconnect memory set switch. 2. Check continuity between memory set switch terminals.</p>																												
<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>Memory set switch connector (D5)</p>  </div> <div style="text-align: center;">  </div> </div>																												
AEL014C																												
<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th colspan="2" rowspan="2">Memory set switch</th> <th colspan="3">Terminals</th> </tr> <tr> <th>1</th> <th>2</th> <th>3</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Set switch 1</td> <td>Pushed</td> <td>○</td> <td>○</td> <td>○</td> </tr> <tr> <td>Released</td> <td></td> <td></td> <td></td> </tr> <tr> <td rowspan="2">Set switch 2</td> <td>Pushed</td> <td>○</td> <td>○</td> <td></td> </tr> <tr> <td>Released</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>			Memory set switch		Terminals			1	2	3	Set switch 1	Pushed	○	○	○	Released				Set switch 2	Pushed	○	○		Released			
Memory set switch		Terminals																										
		1	2	3																								
Set switch 1	Pushed	○	○	○																								
	Released																											
Set switch 2	Pushed	○	○																									
	Released																											
AEL013C																												
<b>OK or NG</b>																												
OK	▶	Check harness for open or short between memory set switch and memory seat and mirror control unit.																										
NG	▶	Replace memory set switch.																										

# AUTOMATIC DRIVE POSITIONER

Trouble Diagnosis (Cont'd)

## MEMORY INDICATOR CHECK

NDEL0092S17

<b>1</b>	<b>CHECK INDICATOR OUTPUT SIGNAL</b>	
<p>Check voltage between memory seat and mirror control unit terminal 27 and ground with any of memory set switches pushed.</p> <p><b>NOTE:</b> Check voltage within 10 seconds after the switch is pushed.</p> <div style="text-align: center;"> </div> <p style="text-align: right;">AEL012C</p>		
<p>Refer to wiring diagram in EL-176.</p> <p style="text-align: center;"><b>Does battery voltage exist?</b></p>		
Yes	▶	<p><b>Check the following harnesses for opens or shorts</b></p> <ul style="list-style-type: none"> <li>● Between memory seat and mirror control unit and memory set switch indicator</li> <li>● Between memory set switch indicator and ground.</li> </ul> <p>If results are OK, replace memory set switch.</p>
No	▶	<p>Check memory set switch. Refer to EL-205.</p> <p>If results are OK, replace memory seat and mirror control unit.</p>

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# AUTOMATIC DRIVE POSITIONER

Trouble Diagnosis (Cont'd)

## REMOTE CONTROLLER SIGNAL CHECK

=NDEL0092S18

<b>1</b>	<b>CHECK ID REGISTRATION</b>
Re-register multi-remote controller ID into memory seat and mirror control unit. (Refer to EL-174.) <b>NOTE:</b> Before re-registering the ID, confirm that multi-remote control system operates properly. If NG, check multi-remote control system, refer to EL-262.	
<b>Can the remote controller ID be entered?</b>	
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-176.)

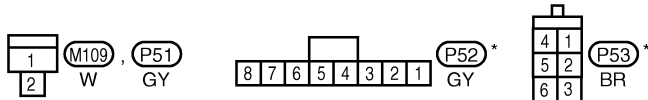
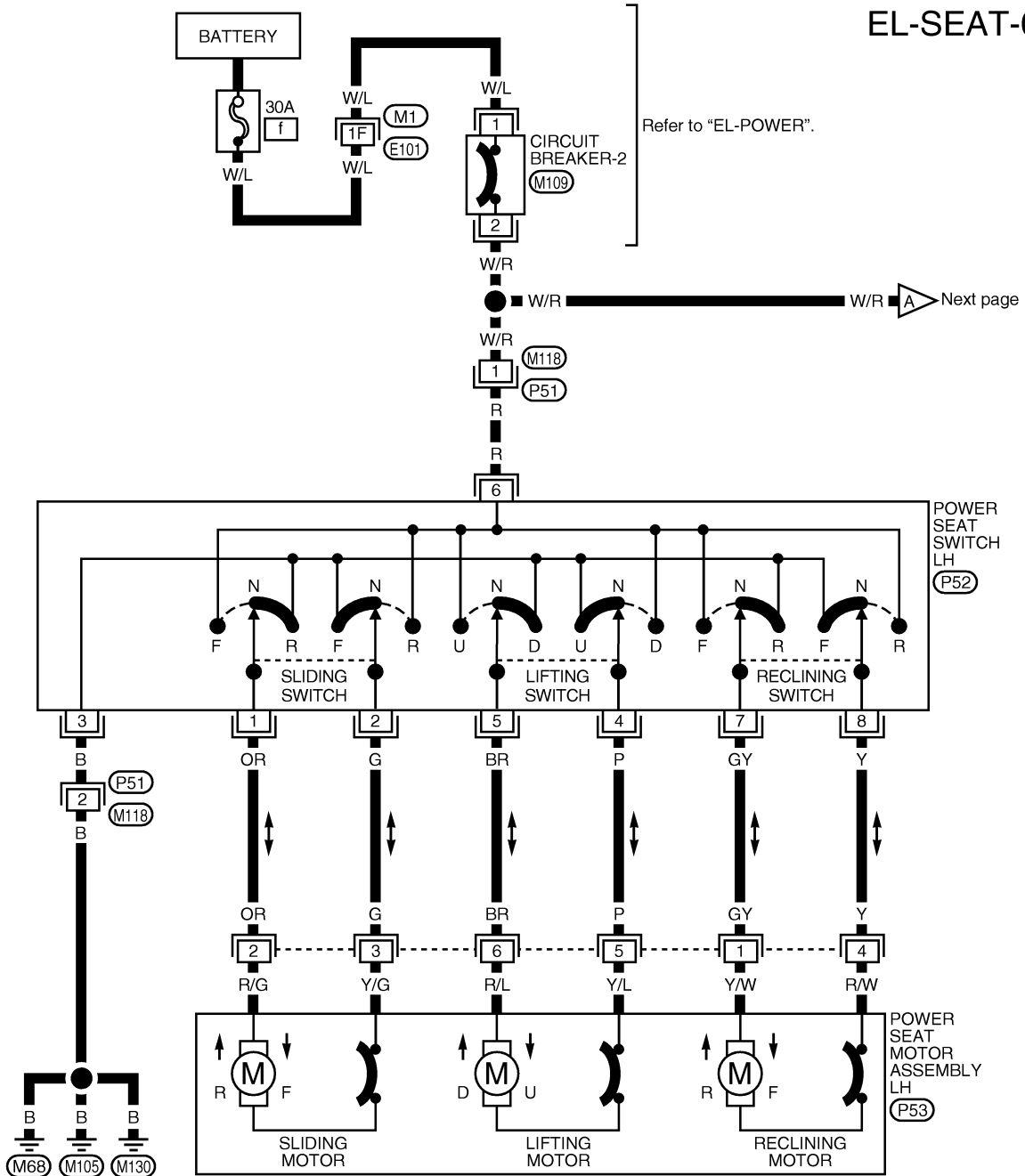
# POWER SEAT

Wiring Diagram — SEAT —

## Wiring Diagram — SEAT —

NDEL0093

EL-SEAT-01



Refer to the following.  
 (M1), (E101) - SUPER MULTIPLE  
 JUNCTION (SMJ)

\*: This connector is not shown in "HARNES LAYOUT".

GI  
 MA  
 EM  
 LC  
 EC  
 FE  
 AT  
 AX  
 SU  
 BR  
 ST  
 RS  
 BT  
 HA  
 SC

EL

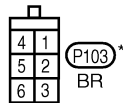
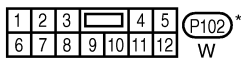
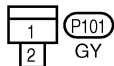
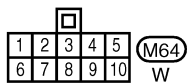
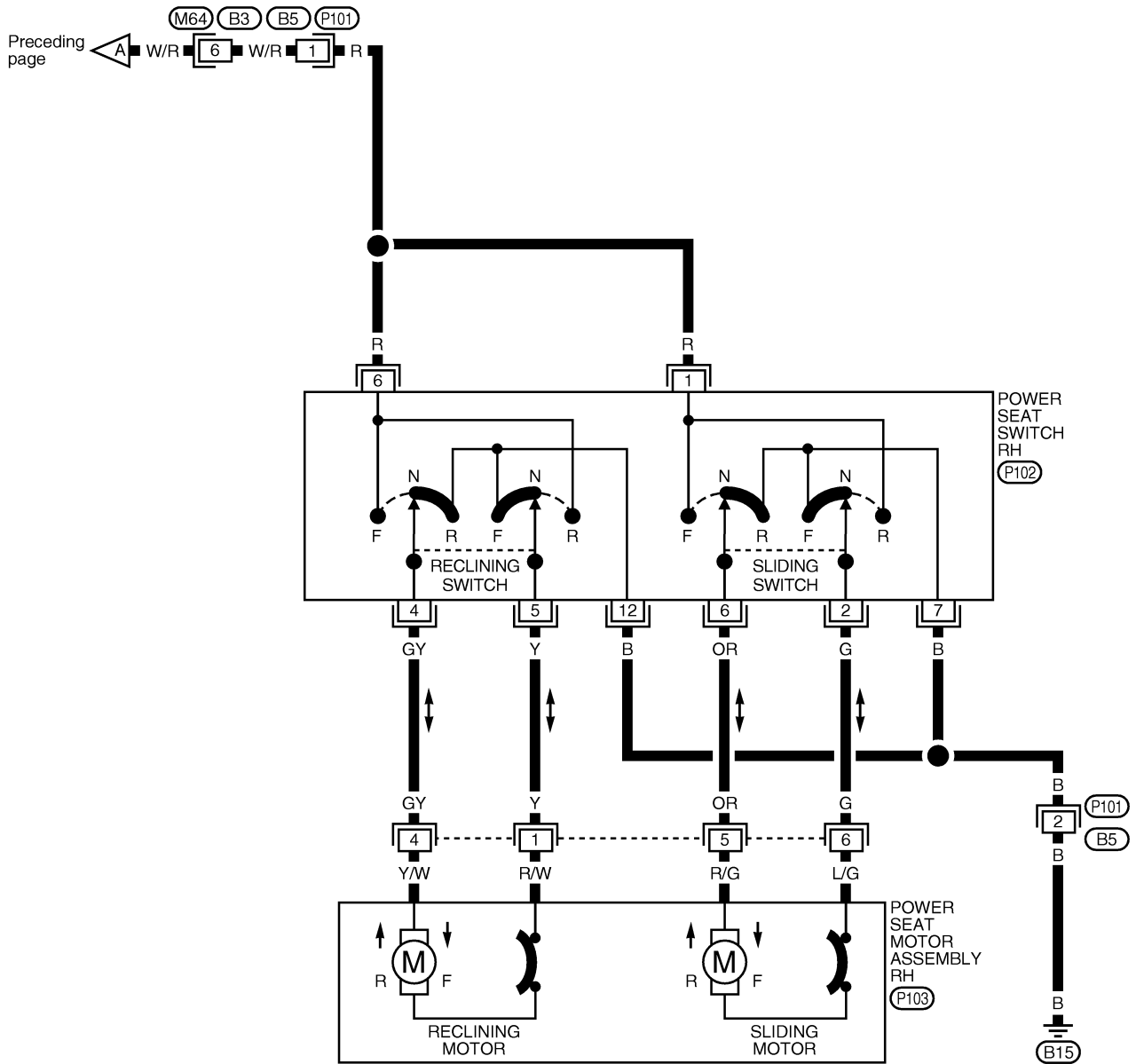
IDX

WEL237

# POWER SEAT

Wiring Diagram — SEAT — (Cont'd)

EL-SEAT-02



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

WEL238

## System Description

### POWER SUPPLY AND GROUND CIRCUIT

NDEL0164

NDEL0164S01

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 smart entrance control unit terminal 10 and
- to heated seat switch LH terminal 1
- through body grounds M68, M105 and M130
- to heated seat LH and heated seat RH.

Ground is also supplied

- to heated seat switch RH terminal 1
- through body ground B15.

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
- through 7.5A fuse (No. 1, located in the fuse block)
- to heated seat LH and heated seat RH.

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

GI

MA

EM

LC

EC

FE

AT

AX

SU

BR

ST

RS

BT

HA

SC

EL

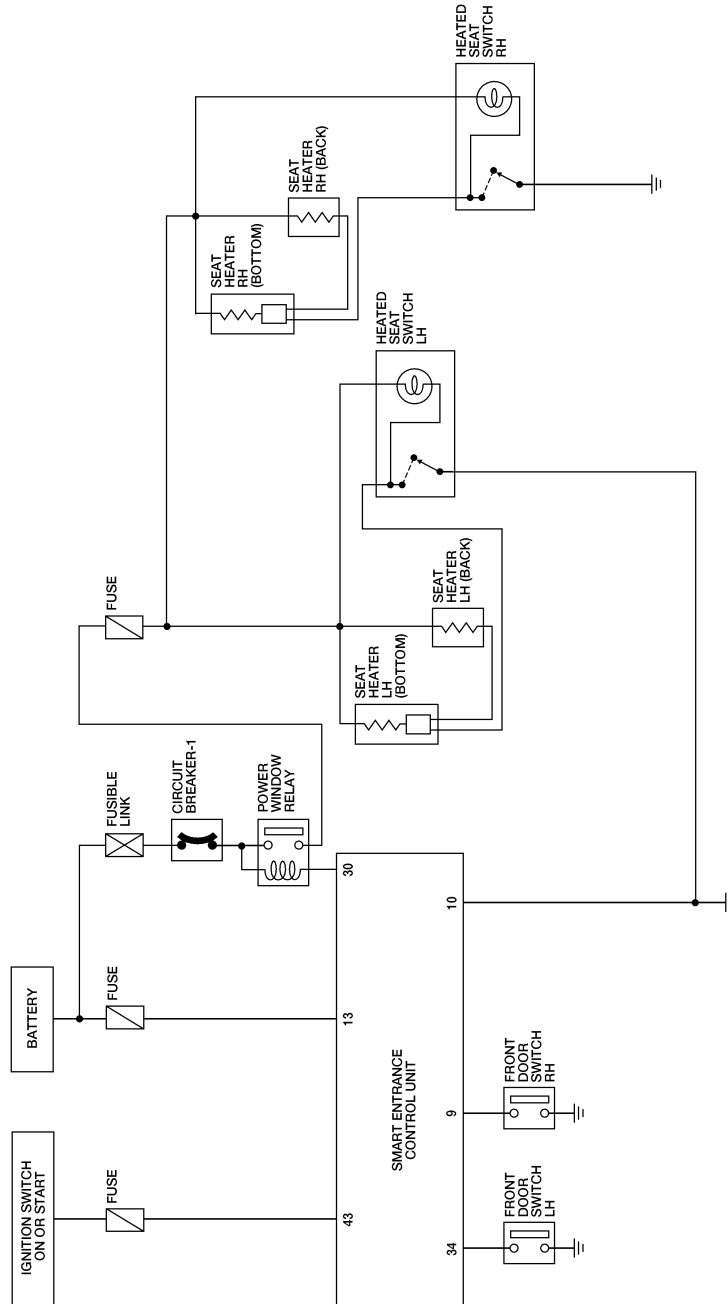
IDX

# HEATED SEAT

Schematic

## Schematic

NDEL0167



LEL282A



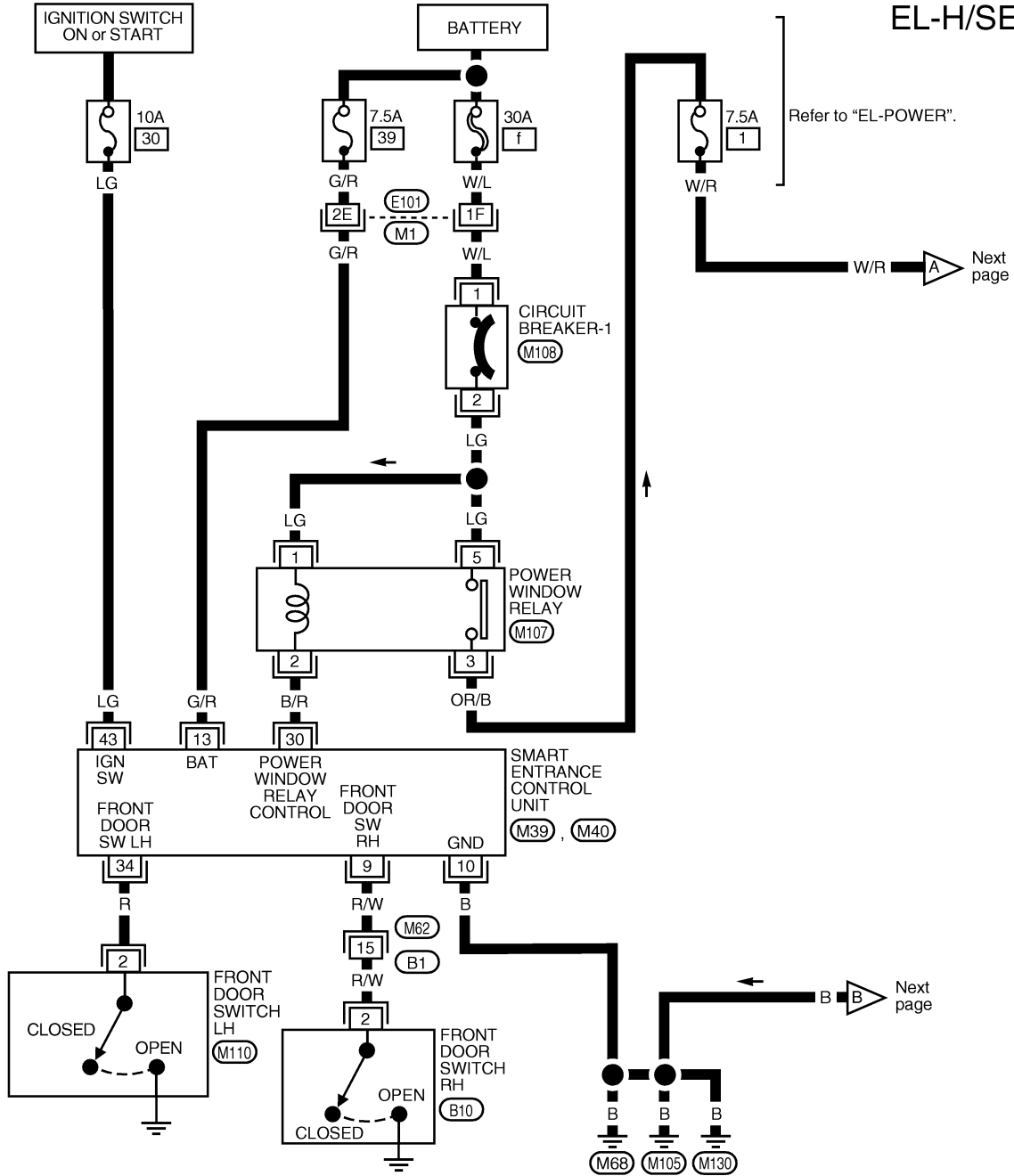
# HEATED SEAT

Wiring Diagram — H/SEAT

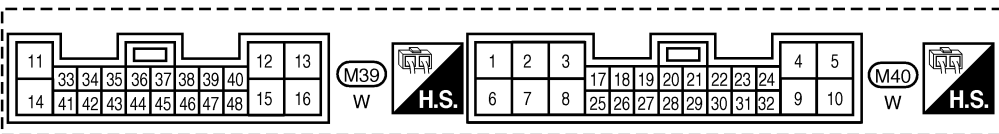
## Wiring Diagram — H/SEAT

NDEL0165

EL-H/SEAT-01



GI  
MA  
EM  
LC  
EC  
FE  
AT  
AX  
SU  
BR  
ST  
RS  
BT  
HA  
SC



Refer to the following.  
 (M1), (E101) - SUPER MULTIPLE JUNCTION (SMJ)

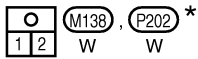
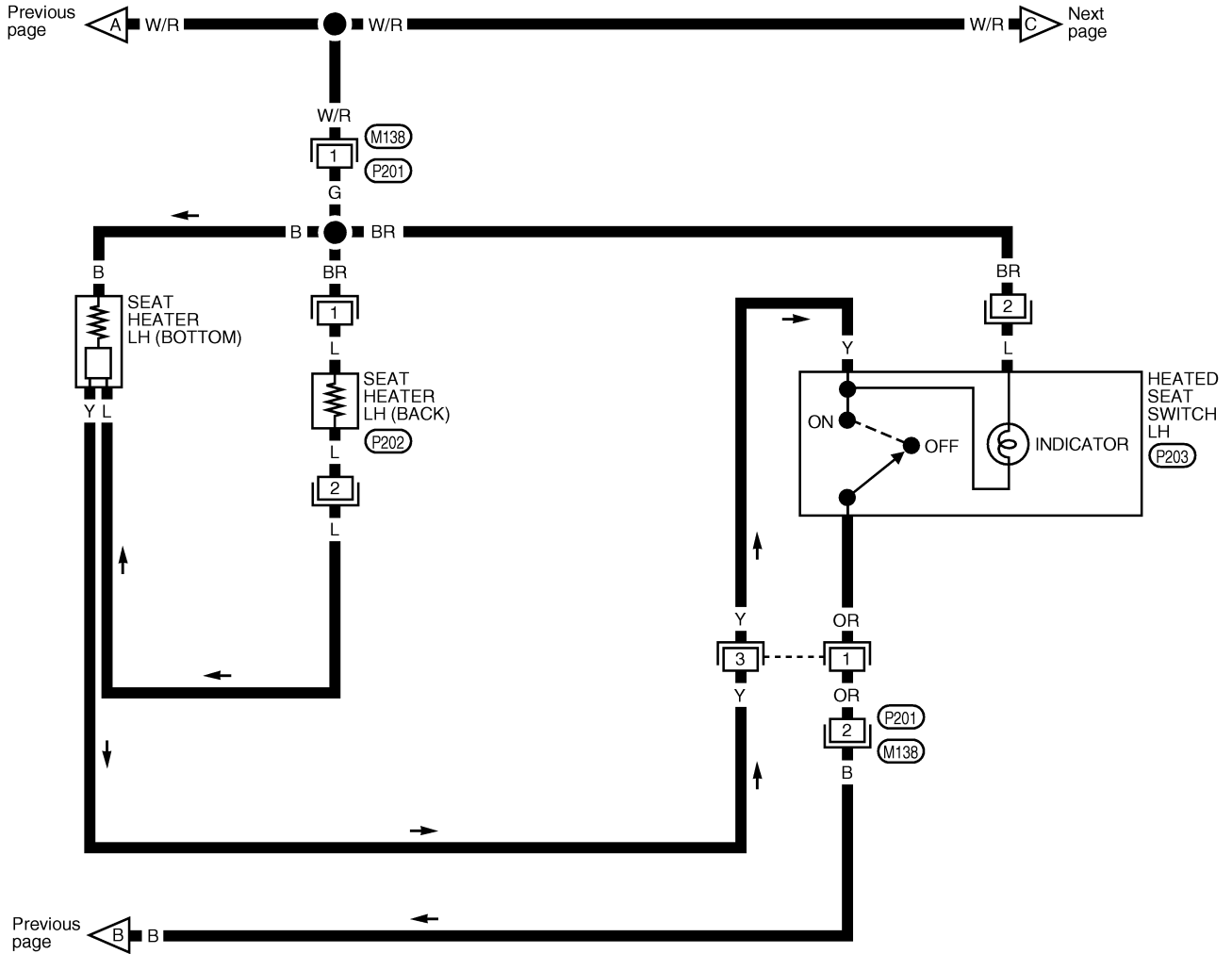
EL

IDX

# HEATED SEAT

Wiring Diagram — H/SEAT (Cont'd)

EL-H/SEAT-02



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

LEL284A

# HEATED SEAT

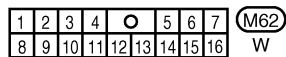
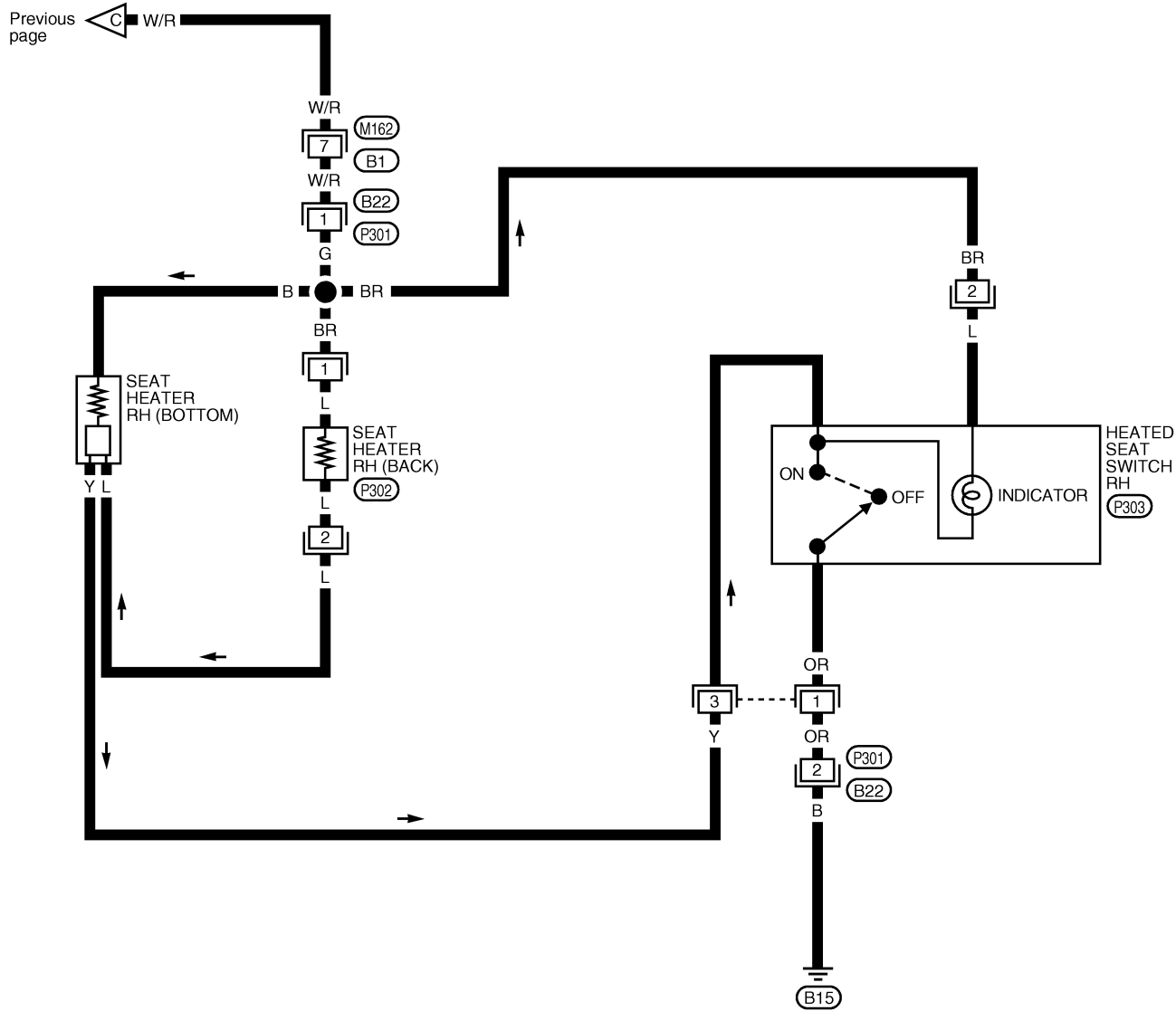
Wiring Diagram — H/SEAT (Cont'd)

EL-H/SEAT-03

GI  
MA  
EM  
LC  
EC  
FE  
AT  
AX  
SU  
BR  
ST  
RS  
BT  
HA  
SC

EL

IDX



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

LEL285A

# HEATED SEAT

Trouble Diagnoses

## Trouble Diagnoses

NDEL0166

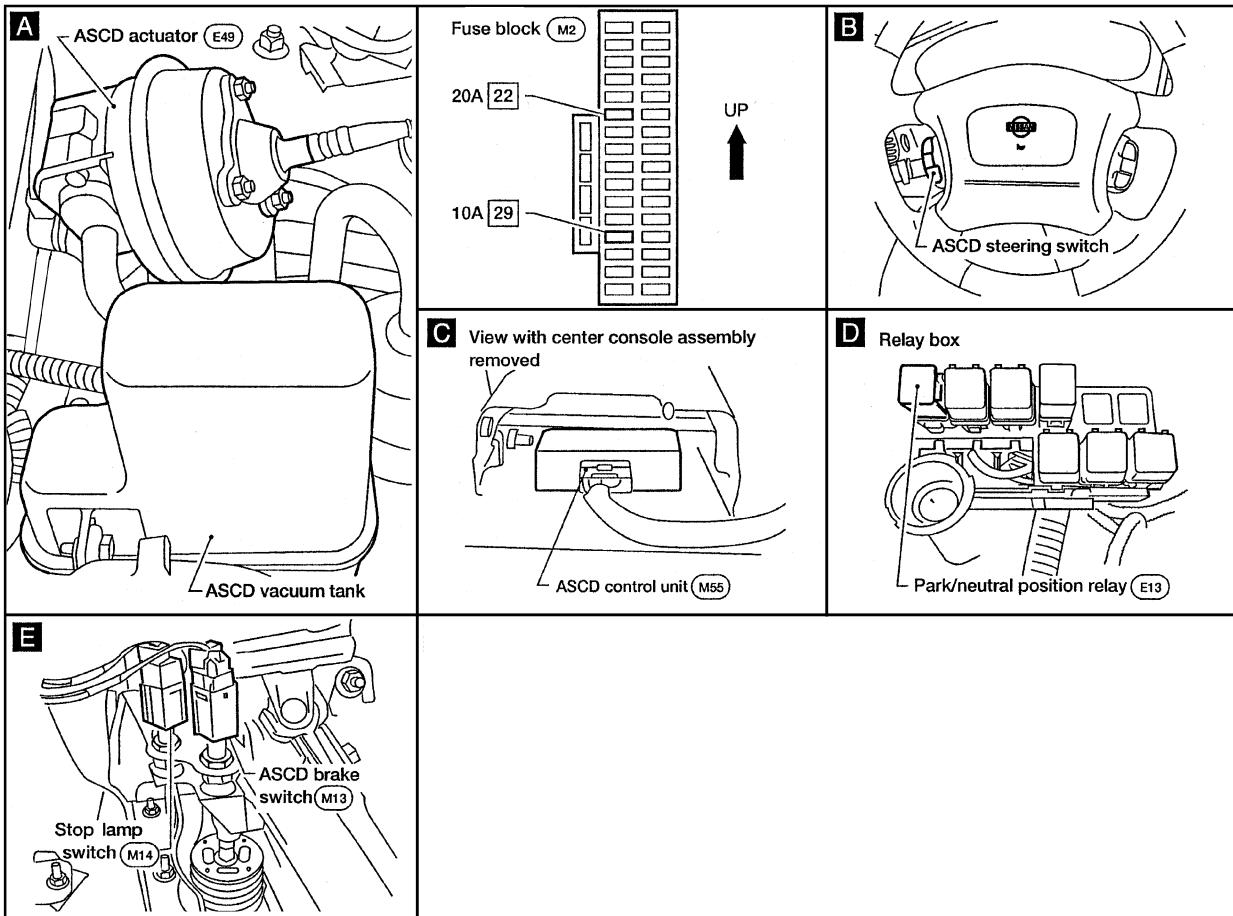
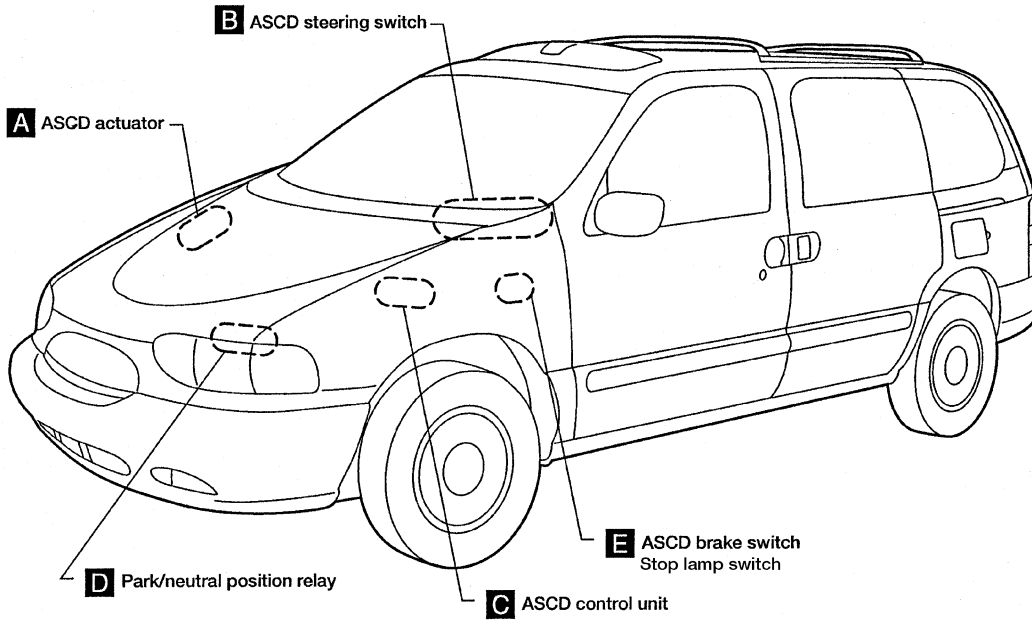
Symptom	Possible cause	Repair order
Neither of the heated seats can be operated.	<ol style="list-style-type: none"> <li>1. 7.5A fuse, 10A fuse, 30A fusible link and circuit breaker-1</li> <li>2. Grounds M68, M105 and M130</li> <li>3. Power window relay</li> <li>4. Open/short in power supply circuit to 7.5A fuse</li> <li>5. Open/short in power supply circuit to seat heater grids</li> </ol>	<ol style="list-style-type: none"> <li>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 43 of the smart entrance control unit.</li> <li>2. Check grounds M68, M105 and M130.</li> <li>3. Check power window relay.</li> <li>4. Check OR/B wire between power window relay and 7.5A fuse (No. 1, located in fuse block).</li> <li>5. Check W/R wire between 7.5A fuse (No. 1, located in fuse block) and seat heater grids.</li> </ol>
Driver side heated seat cannot be operated but passenger side heated seat can be operated.	<ol style="list-style-type: none"> <li>1. Driver side heated seat circuit</li> <li>2. Driver side heated seat ground circuit</li> <li>3. Heated seat switch LH</li> </ol>	<ol style="list-style-type: none"> <li>1. Check driver side heated seat circuit.</li> <li>2. Check driver side heated seat ground circuit.</li> <li>3. Check heated seat switch LH.</li> </ol>
Passenger side heated seat cannot be operated but driver side heated seat can be operated	<ol style="list-style-type: none"> <li>1. Passenger side heated seat circuit</li> <li>2. Passenger side heated seat ground circuit</li> <li>3. Heated seat switch RH</li> </ol>	<ol style="list-style-type: none"> <li>1. Check passenger side heated seat circuit.</li> <li>2. Check passenger side heated seat ground circuit.</li> <li>3. Check heated seat switch RH.</li> </ol>

# AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Components Parts and Harness Connector Location

## Components Parts and Harness Connector Location

NDEL0151



GI

MA

EM

LC

EC

FE

AT

AX

SU

BR

ST

RS

BT

HA

SC

**EL**

IDX

WEL272A

# AUTOMATIC SPEED CONTROL DEVICE (ASCD)

System Description

## System Description

NDEL0094

Refer to Owner's Manual for ASCD operating instructions.

### POWER SUPPLY AND GROUND CIRCUIT

NDEL0094S01

Power is supplied at all times

- through 20A fuse (No. 22, located in the fuse block)
- to stop lamp switch terminal 1.

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 brake switch terminal 1
- to combination meter terminal 2 and
- to ASCD control unit terminal 5.

Ground is supplied

- to ASCD control unit terminal 17
- through body grounds M68, M105 and M130.

### OPERATION

NDEL0094S02

#### Set Operation

NDEL0094S0201

To activate the ASCD, all of following conditions must exist.

- ASCD control unit receives ASCD MAIN switch ON signal
- Power supply to ASCD control unit terminal 8 (Brake pedal is released and A/T selector lever is in other than P and N positions.)
- Vehicle speed is between 40 km/h (25 MPH) and 144 km/h (89 MPH) (Signal from combination meter).

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

- from ASCD steering switch terminal 5
- to ASCD control unit terminal 11.

Then ASCD actuator is activated to control throttle wire and ASCD control unit terminal 18 supplies ground

- to combination meter terminal 18 to illuminate SET 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 10
- 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.

#### ASCD Shifting Control

NDEL0094S0207

During ASCD cruise, ASCD control unit controls A/T shifting to avoid uncomfortable shifting. This is used to control the following signals.

- Throttle position sensor from ECM
- A/T shift solenoid valve A

# AUTOMATIC SPEED CONTROL DEVICE (ASCD)

System Description (Cont'd)

## 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.

GI

## Accel Operation

NDEL0094S0204

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

- from ASCD steering switch terminal 5
- to ASCD control unit terminal 11.

MA

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.

EM

LC

## Cancel Operation

NDEL0094S0205

When any of the following condition exists, cruise operation will be canceled.

- CANCEL switch is depressed (ground is supplied to ASCD control unit terminal 11.)
- Brake pedal is depressed (power is supplied to ASCD control unit terminal 23 from stop lamp switch and power supply to ASCD control unit terminal 8 is interrupted.)
- A/T selector lever is shifted to P or N position (power supply to ASCD control unit terminal 8 is interrupted.)

EC

FE

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

AT

## 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

AX

- Brake pedal is released
- A/T selector lever is in other than P or N position
- Vehicle speed is between 40 km/h (25 MPH) and 144 km/h (89 MPH).

SU

BR

## 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

ST

- from terminal 12 of ASCD control unit
- to ASCD actuator terminal 1.

RS

Ground is supplied to vacuum valve, air valve and release valve from ASCD control unit depending on the operating condition as shown in the following table.

BT

When the vacuum valve is opened, the vacuum is applied to the diaphragm of ASCD actuator through ASCD vacuum tank to control throttle cable.

HA

		Air valve*	Release valve*	Vacuum valve**	Actuator inner pressure
ASCD not operating		Open	Open	Closed	Atmosphere
ASCD operating	Releasing throttle cable	Open	Closed	Closed	Vacuum
	Holding throttle position	Closed	Closed	Closed	Vacuum**
	Pulling throttle cable	Closed	Closed	Open	Vacuum

SC

EL

IDX

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

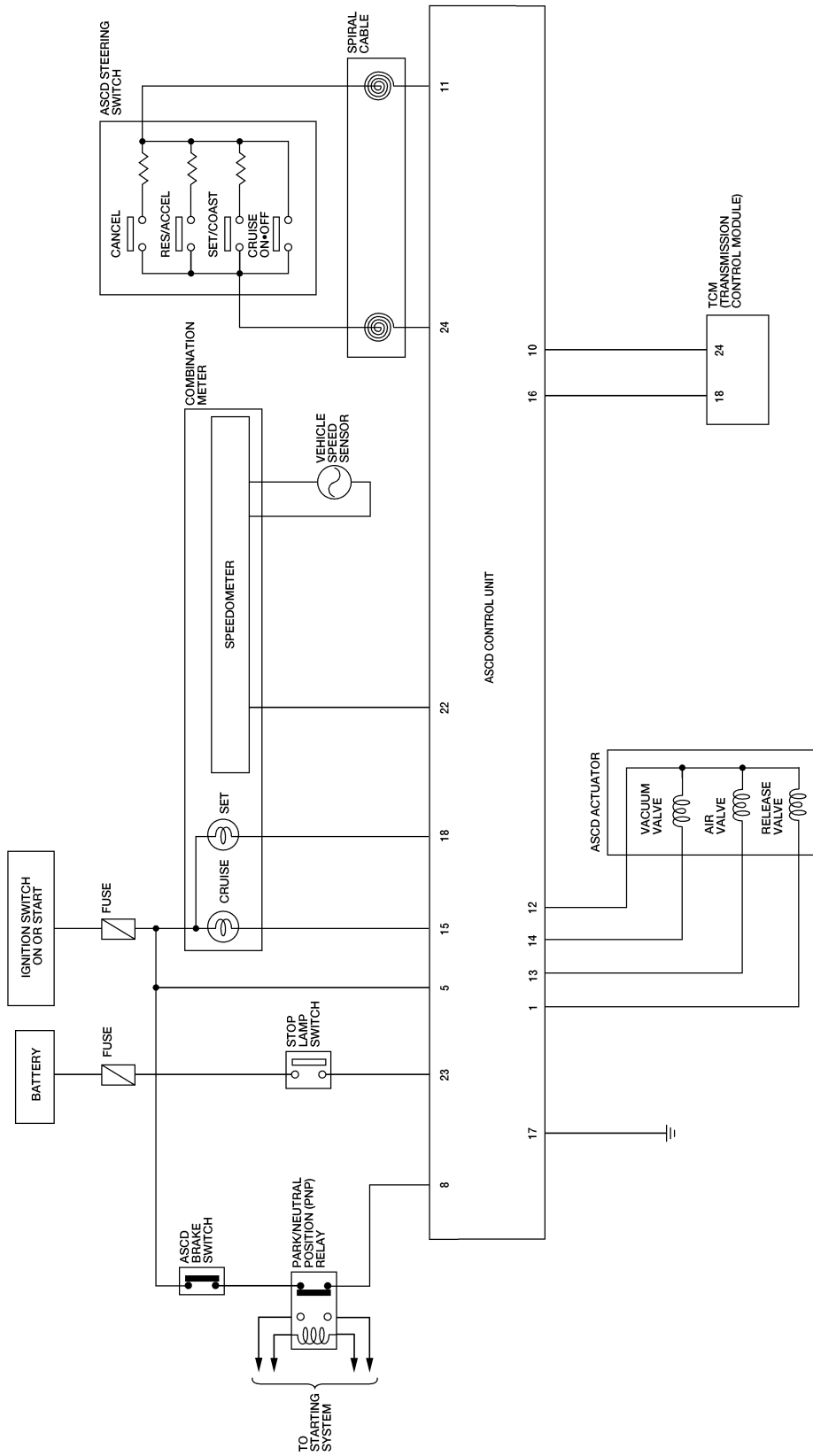
\*\* : Set position held.

# AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Schematic

## Schematic

NDEL0095



WEL963



# AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Wiring Diagram — ASCD —

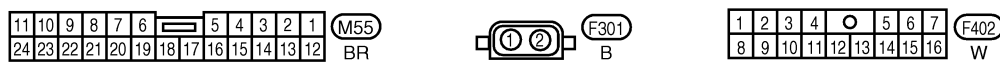
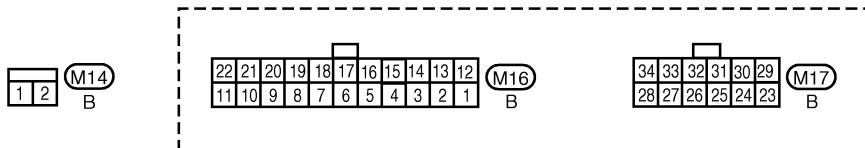
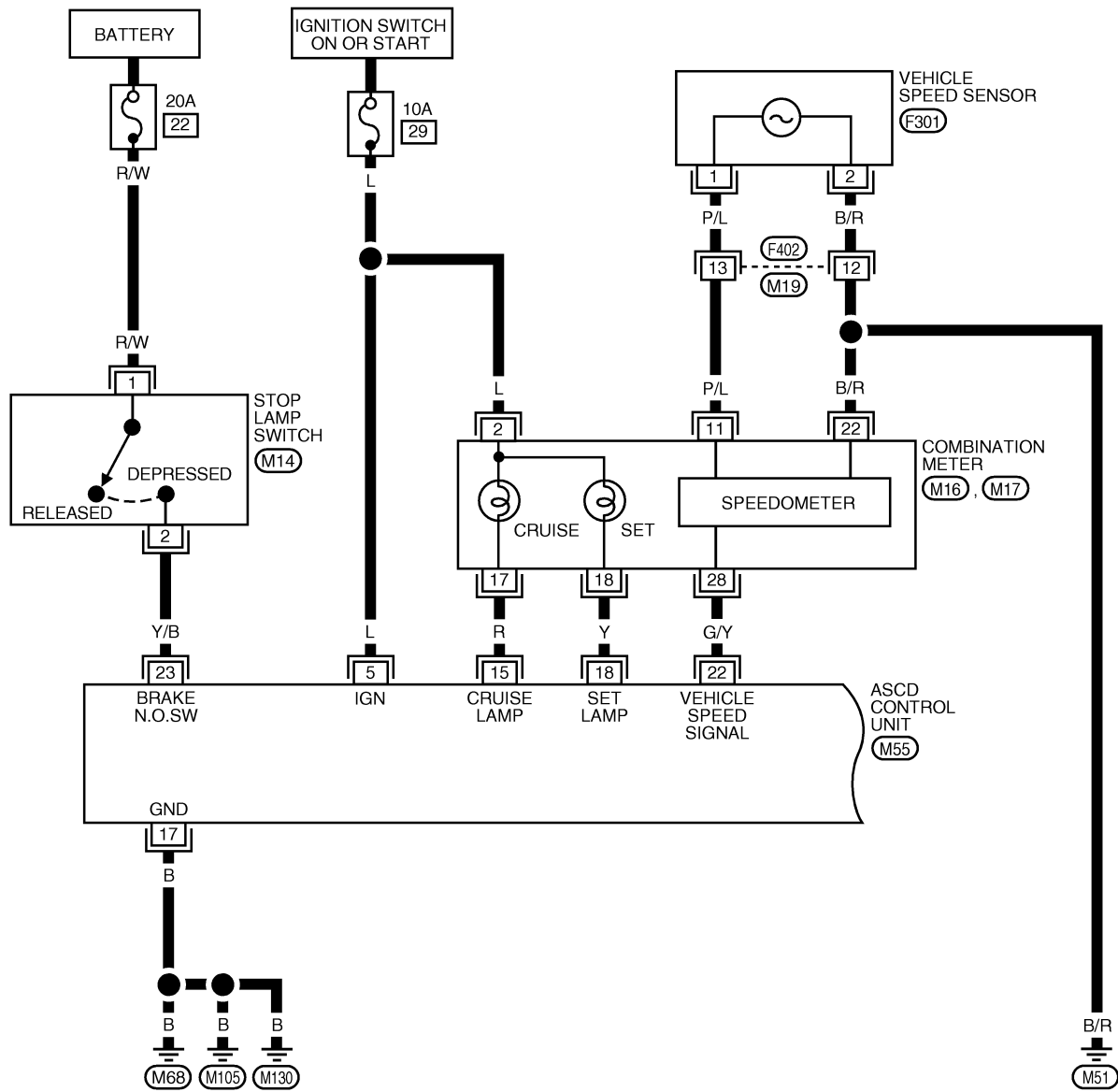
FIG. 1

## Wiring Diagram — ASCD —

NDEL0096

NDEL0096S01

EL-ASCD-01



GI  
MA  
EM  
LC  
EC  
FE  
AT  
AX  
SU  
BR  
ST  
RS  
BT  
HA  
SC

EL

IDX

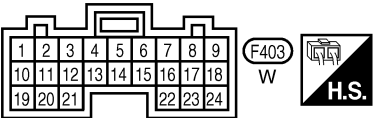
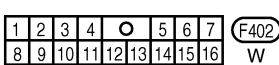
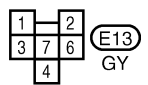
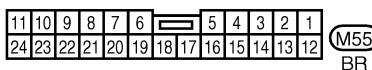
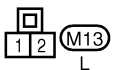
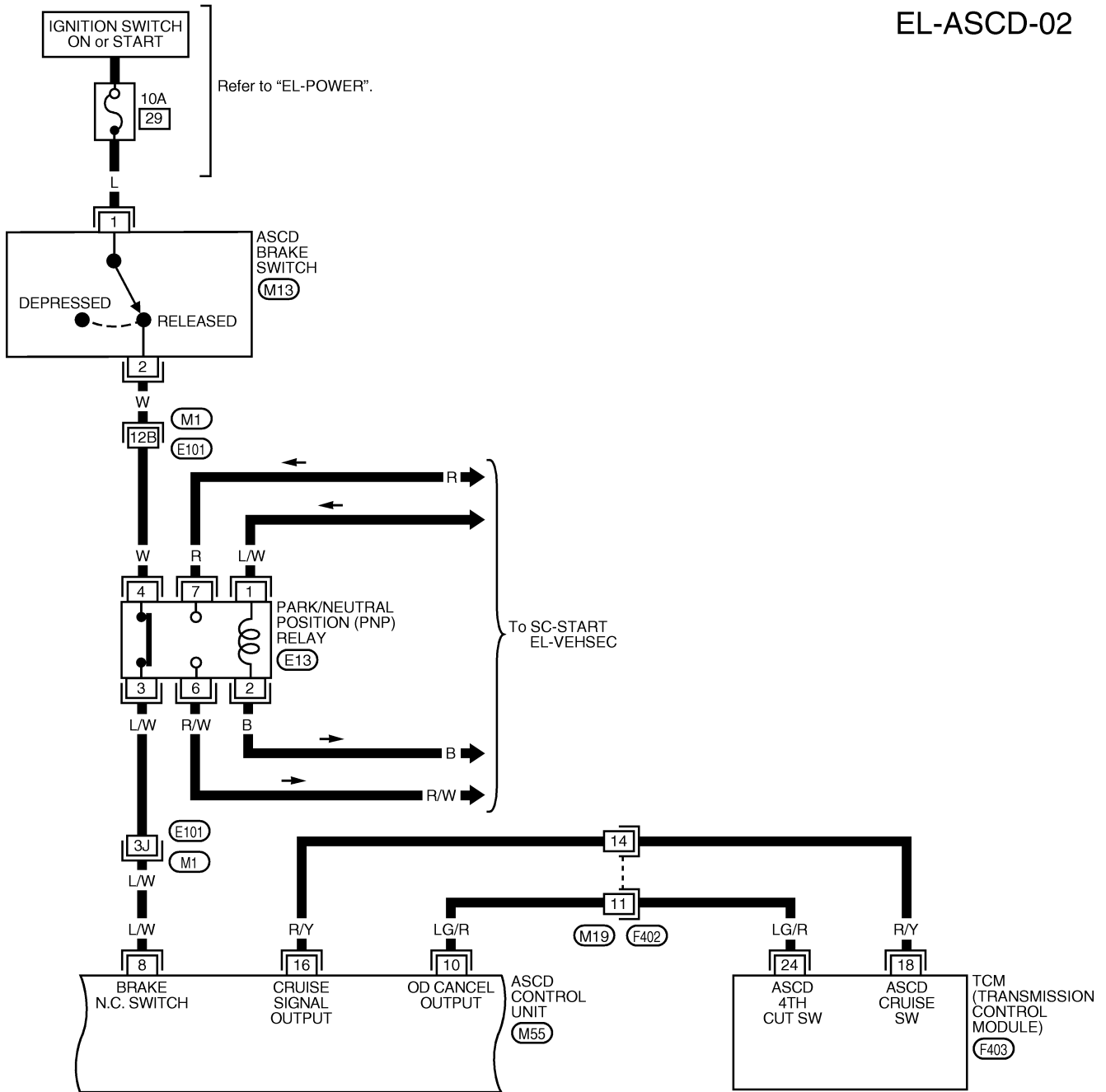
# AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Wiring Diagram — ASCD — (Cont'd)

NDEL0096S02

## EL-ASCD-02

**FIG. 2**



Refer to the following.  
**(M1)**, **(E101)** - SUPER MULTIPLE JUNCTION (SMJ)

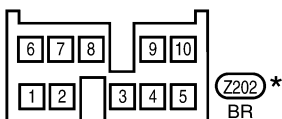
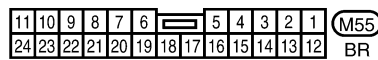
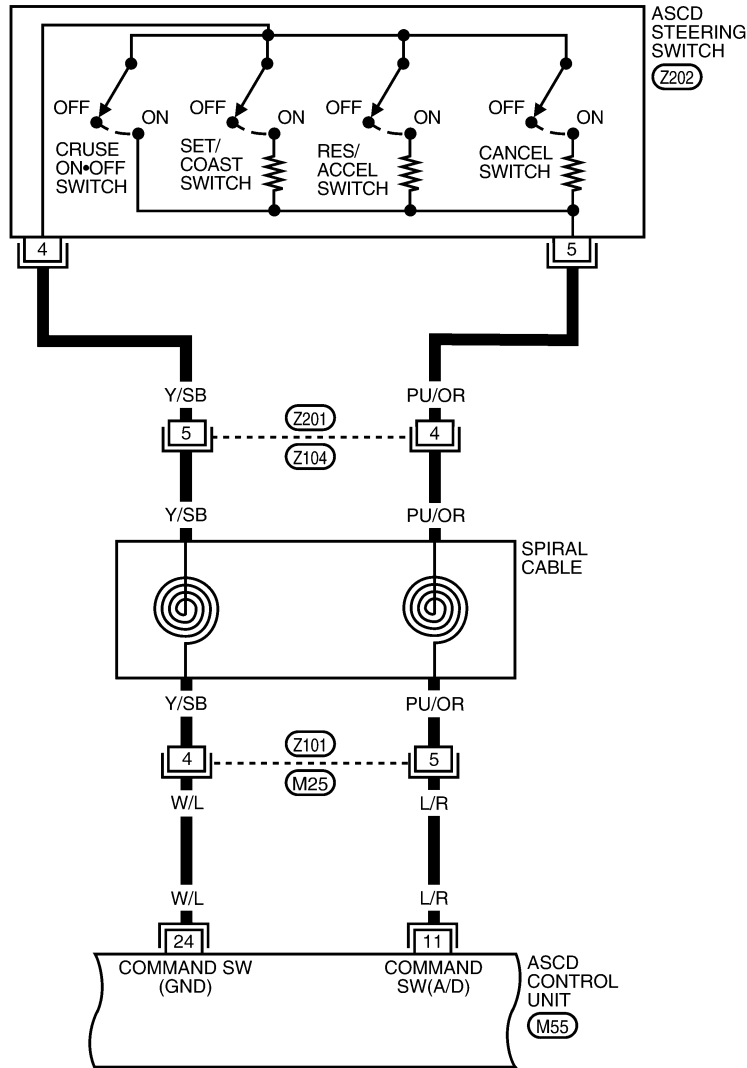
# AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Wiring Diagram — ASCD — (Cont'd)

FIG. 3

NDEL0096S03

EL-ASCD-03



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

LEL966

GI  
MA  
EM  
LC  
EC  
FE  
AT  
AX  
SU  
BR  
ST  
RS  
BT  
HA  
SC

EL

IDX

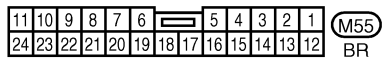
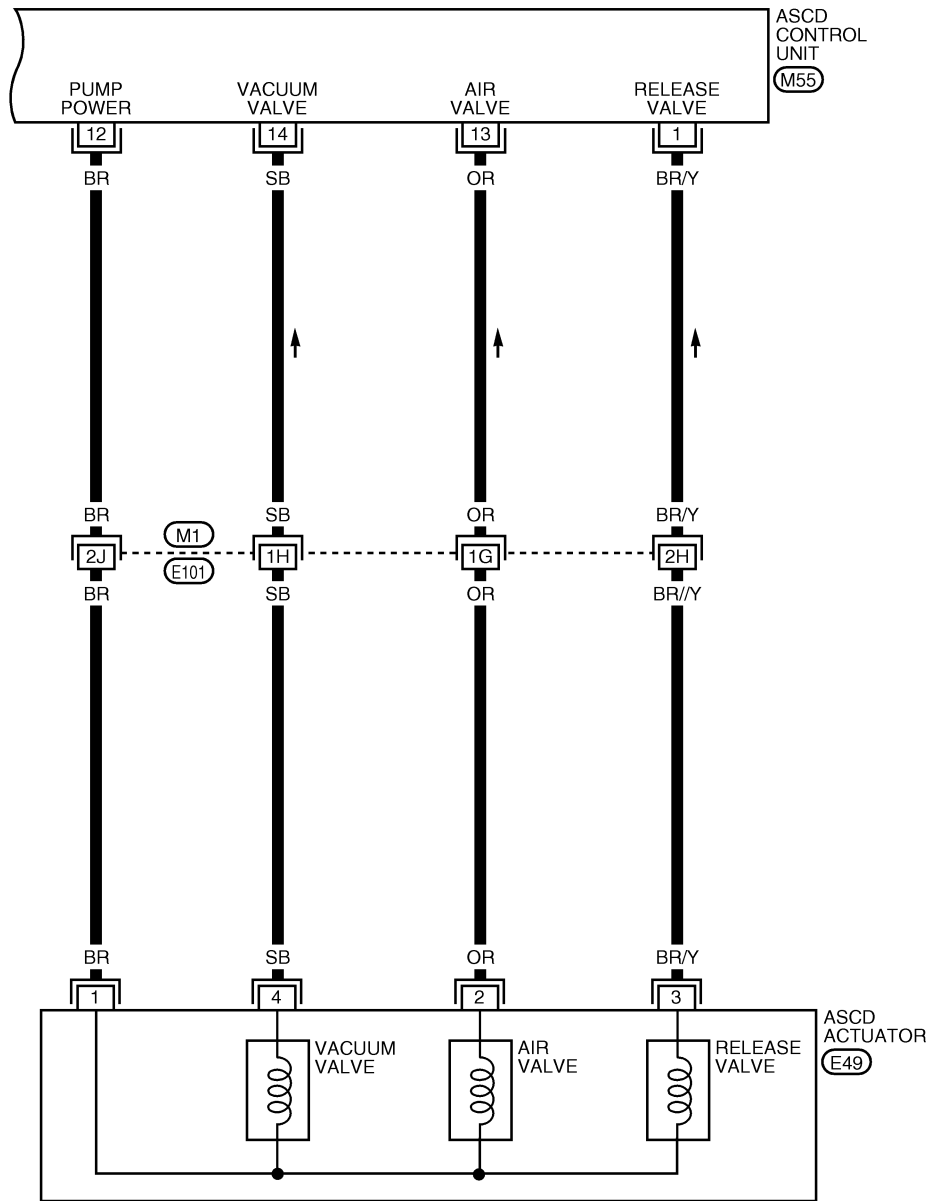
# AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Wiring Diagram — ASCD — (Cont'd)

**FIG. 4**

NDEL0096S04

EL-ASCD-04

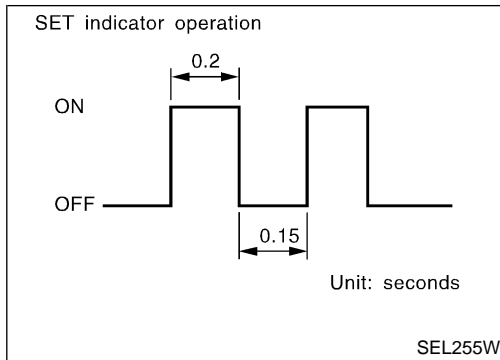


Refer to the following.  
 (M1), (E101) - SUPER MULTIPLE  
 JUNCTION (SMJ)

WEL967

# AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Fail-safe System



## Fail-safe System

### DESCRIPTION

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

NDEL0097

NDEL0097S01

GI

MA

EM

LC

### MALFUNCTION DETECTION CONDITIONS

NDEL0097S02

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

EC

FE

AT

AX

SU

BR

ST

RS

BT

HA

SC

EL

IDX

# AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses

## Trouble Diagnoses SYMPTOM CHART

=NDEL0098

NDEL0098S01

PROCEDURE	Diagnostic procedure						
REFERENCE PAGE (EL- )	227	228	229	230	231	232	233
SYMPTOM	FAIL-SAFE SYSTEM CHECK	POWER SUPPLY AND GROUND CIRCUIT 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 turn ON.)		X		X★3			
ASCD cannot be set. ("SET" indicator lamp does not turn ON.)			X	X	X		
ASCD cannot be set. ("SET" indicator lamp does not blink.)							X★4
ASCD cannot be set. ("SET" 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 ACCEL/RES 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	X	X
Deceleration is greatest immediately after ASCD has been set.					X	X	X

X: Applicable

★1: It indicates that system is in fail-safe. After completing diagnostic procedures, perform "FAIL-SAFE SYSTEM CHECK", EL-227 to verify repairs.

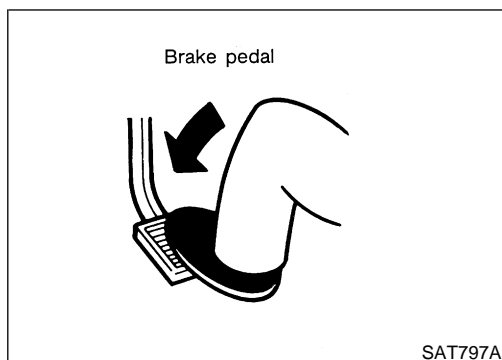
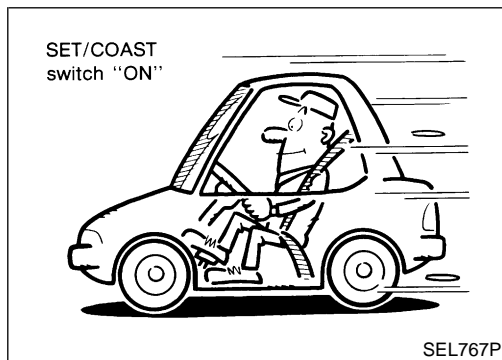
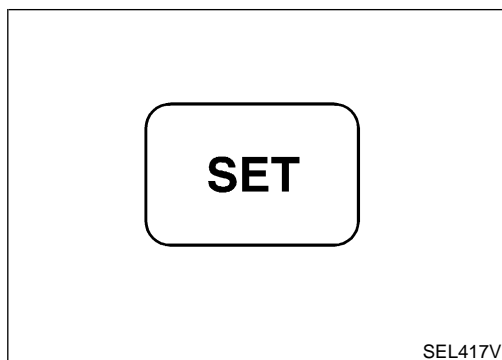
★2: If vehicle speed is greater than 40 km/h (25 MPH) after system has been released, pressing RESUME/ACCEL switch returns vehicle speed to the set speed previously achieved. However, doing so when the MAIN switch is turned to "OFF", vehicle speed will not return to the set speed since the memory is canceled.

★3: Check only MAIN switch built-in steering switch.

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

# AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses (Cont'd)



## FAIL-SAFE SYSTEM CHECK

NDEL0098S02

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

**If the indicator lamp blinks, refer to the following**

- ASCD Steering Switch Check. Refer to EL-230.

3. Drive the vehicle at more than 40 km/h (25 MPH) and push SET/COAST switch.

**If the indicator lamp blinks, refer to the following**

- Vehicle Speed Sensor Check. Refer to EL-231.
- ASCD Actuator Circuit Check. Refer to EL-232.
- Replace control unit.

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-229.

5. END. (System is OK.)

GI

MA

EM

LC

EC

FE

AT

AX

SU

BR

ST

RS

BT

HA

SC

EL

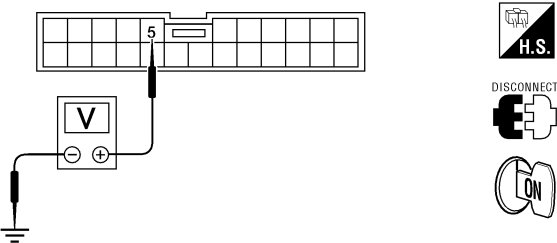
IDX

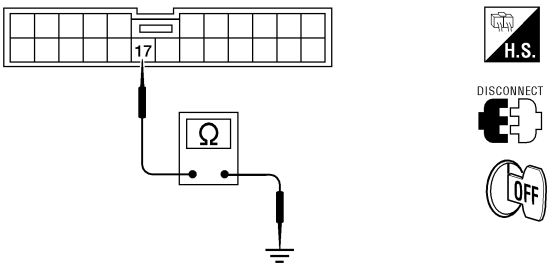
# AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses (Cont'd)

## POWER SUPPLY AND GROUND CIRCUIT CHECK

=NDEL0098S03

<b>1</b>	<b>CHECK POWER SUPPLY CIRCUIT FOR ASCD CONTROL UNIT</b>	
<p>1. Disconnect ASCD control unit harness connector.                  2. Turn ignition switch ON.                  3. Check voltage between ASCD control unit harness connector M55 terminal 5 (L) and ground.</p>		
<p>ASCD control unit connector</p>  <p style="text-align: right;"><b>Does battery voltage exist?</b></p>		
WEL334A		
Refer to wiring diagram in EL-221.		
Yes	▶	GO TO 2.
No	▶	<p><b>Check the following.</b></p> <ul style="list-style-type: none"> <li>● 10A fuse (No. 29 located in the fuse block)</li> <li>● Harness for open or short</li> </ul>

<b>2</b>	<b>CHECK GROUND CIRCUIT FOR ASCD CONTROL UNIT</b>	
<p>Check continuity between ASCD control unit harness connector M55 terminal 17 (B) and body ground.</p>		
<p>ASCD control unit connector</p>  <p style="text-align: right;"><b>Does continuity exist?</b></p>		
WEL335A		
Refer to wiring diagram in EL-221.		
Yes	▶	Power supply and ground circuit is OK.
No	▶	Repair harness.

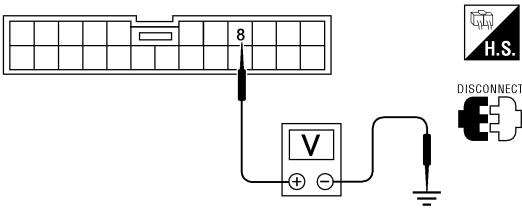


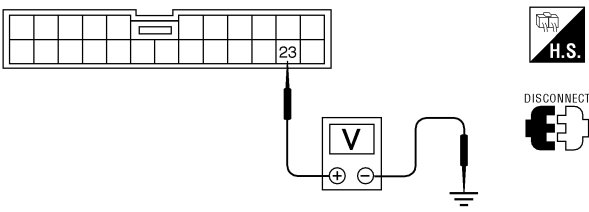
# AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses (Cont'd)

## ASCD BRAKE/STOP LAMP SWITCH CHECK

=NDEL0098S06

<b>1</b>	<b>CHECK ASCD BRAKE SWITCH CIRCUIT</b>	
<ol style="list-style-type: none"> <li>1. Disconnect control unit connector.</li> <li>2. Turn ignition switch ON.</li> <li>3. Push ASCD main switch ON.</li> <li>4. Check voltage between control unit connector harness connector M55 terminal 8 (L/W) and body ground.</li> </ol>		
<p>ASCD control unit connector</p>  <p><b>H.S.</b> When brake pedal is depressed or A/T selector lever is in "N" or "P" range; Approx. 0V When brake pedal is released and A/T selector lever is not in "N" or "P" range: Battery voltage should exist.</p> <p>Refer to wiring diagrams, EL-222.</p> <p style="text-align: right;">LEL336A</p>		
<b>OK or NG</b>		
OK	▶	GO TO 2.
NG	▶	<p><b>Check the following</b></p> <ul style="list-style-type: none"> <li>• ASCD brake switch and park neutral position (PNP) switch Refer to "Electrical Components Inspection", EL-234.</li> <li>• Harness for open or short.</li> </ul>

<b>2</b>	<b>CHECK STOP LAMP SWITCH CIRCUIT</b>	
<ol style="list-style-type: none"> <li>1. Disconnect control unit connector.</li> <li>2. Check voltage between ASCD control unit harness connector M55 terminal 23 (Y/B) and ground.</li> </ol>		
<p>ASCD control unit connector</p>  <p><b>H.S.</b> Voltage [V]; Stop lamp switch: Depressed Approx. 12 Stop lamp switch: Released 0</p> <p>Refer to wiring diagram, EL-221.</p> <p style="text-align: right;">WEL337A</p>		
<b>OK or NG</b>		
OK	▶	ASCD brake/stop lamp switch is OK.
NG	▶	<p><b>Check the following</b></p> <ul style="list-style-type: none"> <li>• 20A fuse (No. 22, located in the fuse block)</li> <li>• Harness for open or short between ASCD control unit and stop lamp switch</li> <li>• Stop lamp switch Refer to "Electrical Components Inspection", EL-234.</li> </ul>

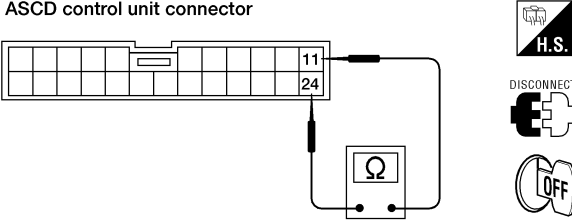
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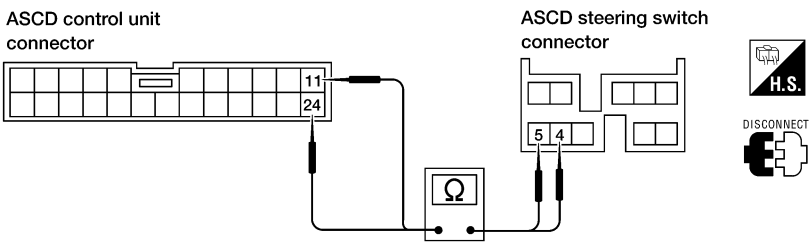
# AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses (Cont'd)

## ASCD STEERING SWITCH CHECK

=NDEL0098S07

<b>1</b>	<b>CHECK ASCD STEERING SWITCH CIRCUIT FOR ASCD CONTROL UNIT</b>													
<p>1. Disconnect ASCD control unit.                  2. Check resistance between ASCD control unit harness connector M55 terminals 11 (L/R) and 24 (W/L).</p>														
														
<table border="1" style="border-collapse: collapse;"> <thead> <tr> <th></th> <th>Terminal No.</th> <th>Resistance (kΩ)</th> </tr> </thead> <tbody> <tr> <td>MAIN SW</td> <td rowspan="4" style="text-align: center;">11 - 24</td> <td style="text-align: center;">Approx. 0</td> </tr> <tr> <td>SET/COAST SW</td> <td style="text-align: center;">1.47 - 1.53</td> </tr> <tr> <td>RESUME/ACCEL SW</td> <td style="text-align: center;">3.24 - 3.36</td> </tr> <tr> <td>CANCEL SW</td> <td style="text-align: center;">5.00 - 5.20</td> </tr> </tbody> </table>				Terminal No.	Resistance (kΩ)	MAIN SW	11 - 24	Approx. 0	SET/COAST SW	1.47 - 1.53	RESUME/ACCEL SW	3.24 - 3.36	CANCEL SW	5.00 - 5.20
	Terminal No.	Resistance (kΩ)												
MAIN SW	11 - 24	Approx. 0												
SET/COAST SW		1.47 - 1.53												
RESUME/ACCEL SW		3.24 - 3.36												
CANCEL SW		5.00 - 5.20												
WEL338A														
Refer to wiring diagram in EL-223.														
<b>OK or NG</b>														
OK	▶	ASCD steering switch is OK.												
NG	▶	GO TO 2.												

<b>2</b>	<b>CHECK CIRCUIT CONTINUITY</b>	
<p>1. Disconnect ASCD steering switch.                  2. Check continuity between ASCD steering switch connector Z202 terminals 4 (Y/SB) [5 (PU/OR)] and ASCD control unit connector M55 terminal 24 (W/L) [11 (L/R)].</p>		
		
<p style="font-size: 1.2em;"><b>Continuity should exist.</b></p>		
WEL878A		
Refer to wiring diagram in EL-223.		
<b>OK or NG</b>		
Yes	▶	Replace ASCD steering switch.
No	▶	Repair or replace harness or connectors.

# AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses (Cont'd)

## VEHICLE SPEED SENSOR CHECK

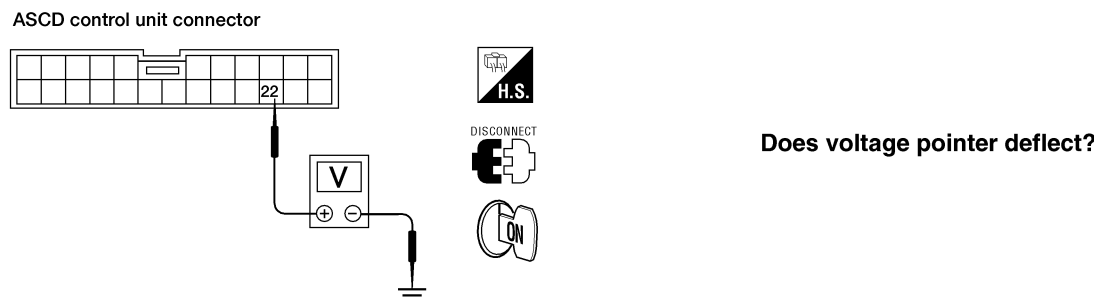
=NDEL0098S08

<b>1</b>	<b>CHECK SPEEDOMETER OPERATION</b>	
Refer to wiring diagram, EL-221.		
<b>Does speedometer operate normally?</b>		
Yes	▶	GO TO 2.
No	▶	Check speedometer and vehicle speed sensor circuit. Refer to "Trouble Diagnosis", EL-93.

GI

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<b>2</b>	<b>CHECK VEHICLE SPEED INPUT</b>	
<ol style="list-style-type: none"> <li>1. Apply wheel chocks and jack up drive wheels.</li> <li>2. Disconnect ASCD control unit harness connector.</li> <li>3. Turn ignition switch ON.</li> <li>4. Check voltage between ASCD control unit harness connector M55 terminal 22 (G/Y) and ground with turning drive wheel slowly by hand.</li> </ol>		
		
WEL304A		
<b>Yes or No</b>		
Yes	▶	Vehicle speed sensor is OK.
No	▶	Check harness for open or short between ASCD control unit terminal 22 and combination meter terminal 28.

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# AUTOMATIC SPEED CONTROL DEVICE (ASCD)

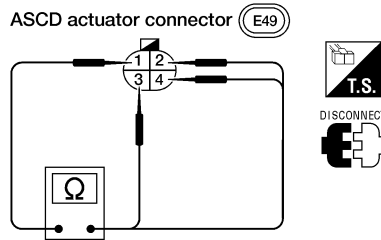
Trouble Diagnoses (Cont'd)

## 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 [ $\Omega$ ]	
1	4	Approx. 65
	2	Approx. 65
	3	Approx. 65

AEL027C

Refer to wiring diagram, EL-224.

**OK or NG**

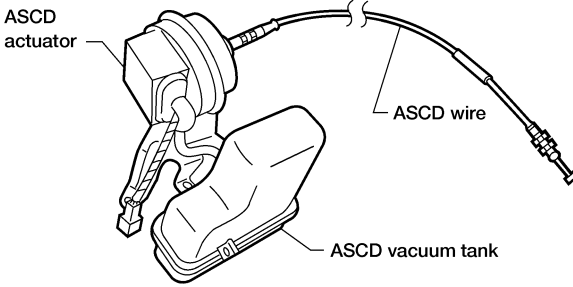
OK	▶	Check harness for open or short between ASCD actuator and ASCD control unit.
NG	▶	Replace ASCD actuator.

# AUTOMATIC SPEED CONTROL DEVICE (ASCD)

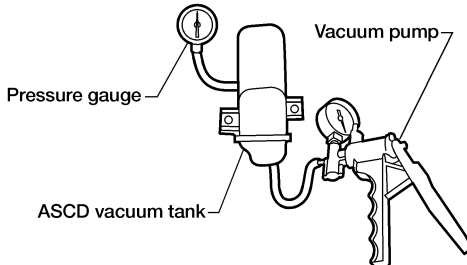
Trouble Diagnoses (Cont'd)

## ASCD ACTUATOR CHECK

=NDEL0098S10

<b>1</b>	<b>CHECK VACUUM HOSE</b>	
<p>Check vacuum hose (between ASCD actuator and ASCD vacuum tank) and between ASCD vacuum tank and intake manifold collector for breakage, cracks and fracture.</p>		
 <p>The diagram shows an ASCD actuator on the left, connected to an ASCD vacuum tank below it. A vacuum hose runs from the actuator to the tank. Another vacuum hose runs from the tank to the right, labeled as the ASCD wire. Labels with leader lines point to the 'ASCD actuator', 'ASCD wire', and 'ASCD vacuum tank'.</p>		
AEL329C		
<b>OK or NG</b>		
OK	▶	GO TO 2.
NG	▶	Repair or replace hose.

<b>2</b>	<b>CHECK ASCD WIRE</b>	
<p>Check wire for improper installation, rust formation and breaks.</p>		
<b>OK or NG</b>		
OK	▶	GO TO 3.
NG	▶	Repair or replace wire. Refer to "ASCD Wire Adjustment", EL-236.

<b>3</b>	<b>CHECK ASCD VACUUM TANK</b>	
<ol style="list-style-type: none"> <li>1. Disconnect vacuum hose to ASCD actuator and to intake manifold collector from ASCD vacuum tank.</li> <li>2. Install pressure gauge and hand vacuum pump as shown in figure below.</li> <li>3. Apply <math>-56.3 \text{ kPa}</math> (<math>-0.574 \text{ kg/cm}^2</math>, <math>-8.16 \text{ psi}</math>) vacuum to ASCD vacuum tank.</li> <li>4. Wait 10 seconds and check for decrease in vacuum pressure.</li> </ol> <p><b>Vacuum pressure decrease:</b>  <b>Less than <math>2.7 \text{ kPa}</math> (<math>0.028 \text{ kg/cm}^2</math>, <math>0.39 \text{ psi}</math>)</b></p>		
 <p>The diagram shows an ASCD vacuum tank in the center. A pressure gauge is connected to the top of the tank. A hand vacuum pump is connected to the side of the tank. Labels with leader lines point to the 'Pressure gauge', 'Vacuum pump', and 'ASCDC vacuum tank'.</p>		
AEL330C		
<b>OK or NG</b>		
OK	▶	GO TO 4.
NG	▶	Replace ASCD vacuum tank.

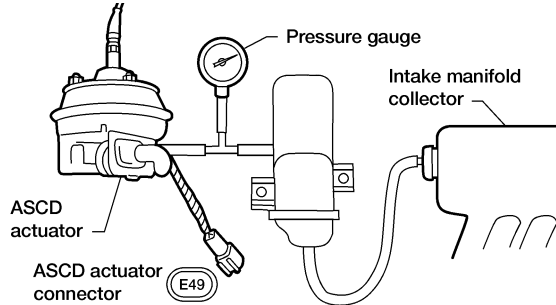
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# AUTOMATIC SPEED CONTROL DEVICE (ASCD)

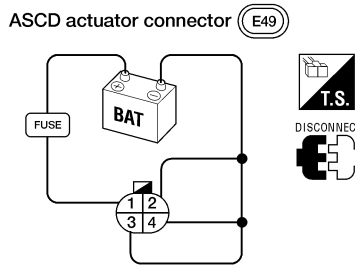
Trouble Diagnoses (Cont'd)

## 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

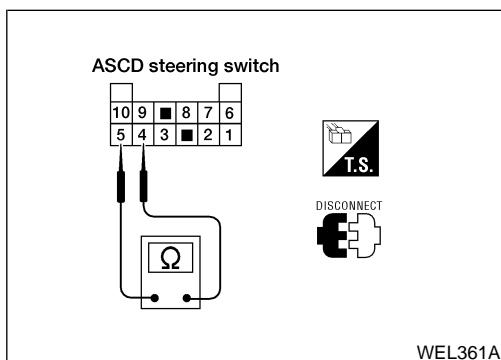
	12V direct current supply terminals		Operation
	(+)	(-)	
Air valve	1	2	Close
Release valve		3	Close
Vacuum valve		4	Open

AEL030C

Vacuum pressure should be lower than  $-26.7 \text{ kPa}$  ( $-0.272 \text{ kg/cm}^2$ ,  $-3.87 \text{ psi}$ )

OK or NG

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



## Electrical Component Inspection

### ASCD STEERING SWITCH

NDEL0099

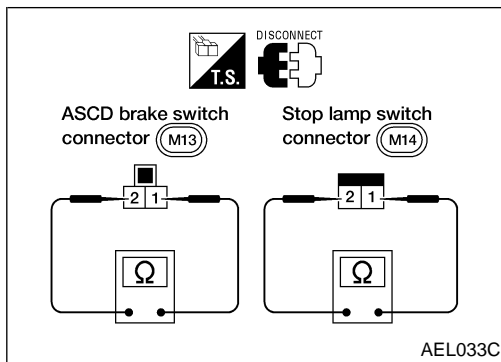
NDEL0099S01

Check continuity between terminals by pushing each button.

Button	Terminals	Resistance (kΩ)
ON/OFF (MAIN)	4 - 5	Approx. 0
SET/COAST		1.47 - 1.53
RES/ACCEL		3.24 - 3.36
CANCEL		5.00 - 5.20

# AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Electrical Component Inspection (Cont'd)

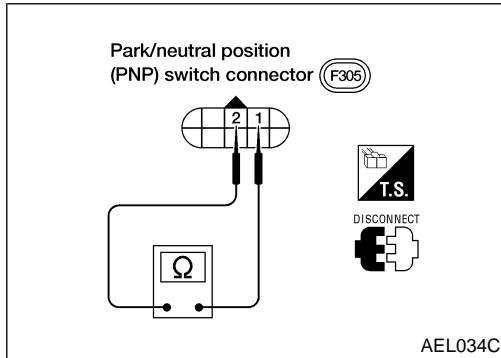


## ASCD BRAKE SWITCH AND STOP LAMP SWITCH

NDEL0099S02

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

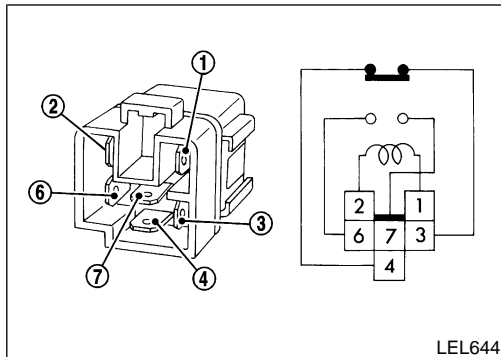
Check each switch after adjusting brake pedal — refer to **BR-13**.



## PARK NEUTRAL POSITION (PNP) SWITCH

NDEL0099S03

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



## PARK/NEUTRAL POSITION (PNP) RELAY

NDEL0099S04

Check continuity between terminals 3 and 4, 6 and 7.

Condition	Continuity
12V direct current supply between terminals 1 and 2	Between terminals 6 and 7
No current supply	Between terminals 3 and 4

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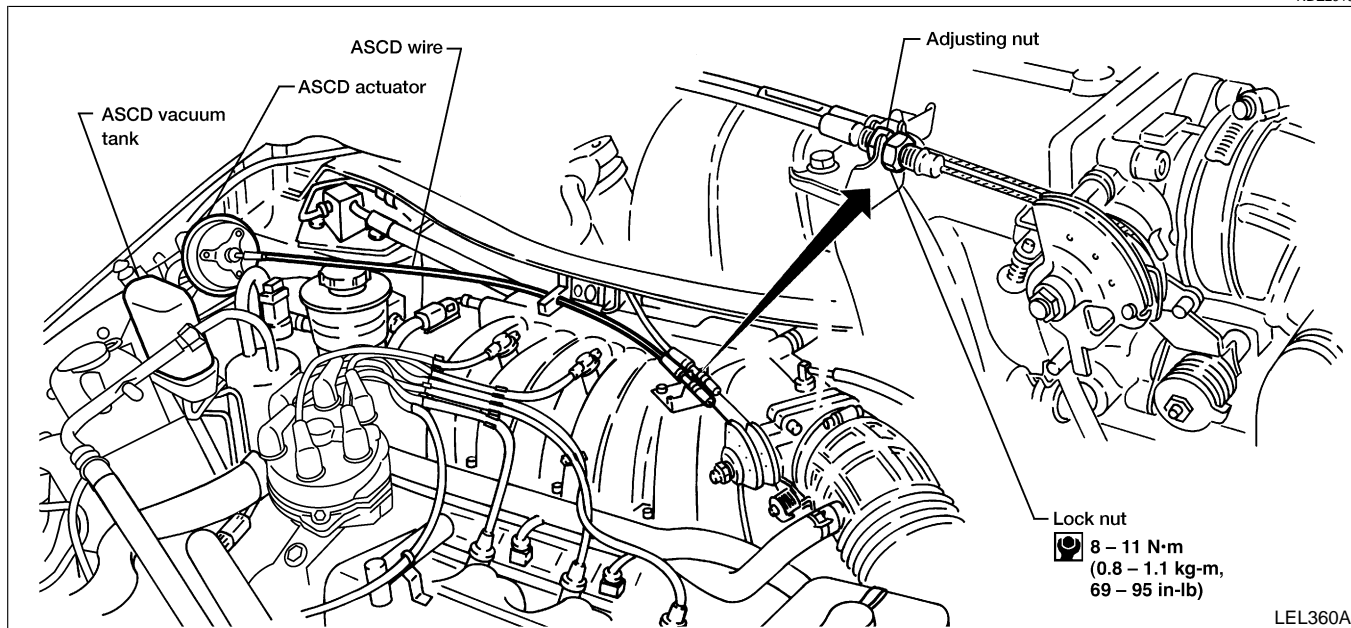
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# AUTOMATIC SPEED CONTROL DEVICE (ASCD)

ASCD Wire Adjustment

## 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-3**, "ACCELERATOR CONTROL SYSTEM".
3. Tighten adjusting nut just until throttle drum starts to move.
4. Loosen adjusting nut as follows.
  - Cold engine: 2 to 2 1/2 turns**
  - Hot engine: 1/2 to 1 turn**
5. Tighten lock nut.



## System Description

### POWER SUPPLY AND GROUND CIRCUIT

NDEL0101

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 or passenger door is opened. **(Delayed power operation)**

### FRONT DOOR LH

#### Window Up

NDEL0101S02

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 window 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 window downward movement.

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

# POWER WINDOW

System Description (Cont'd)

---

## 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 (3, 8)
- through main power window and door lock/unlock switch terminal (6, 7)
- 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 CLOSE 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.

# POWER WINDOW

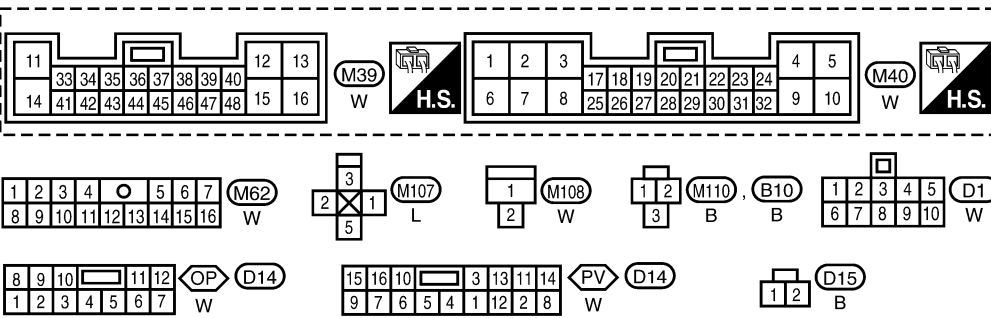
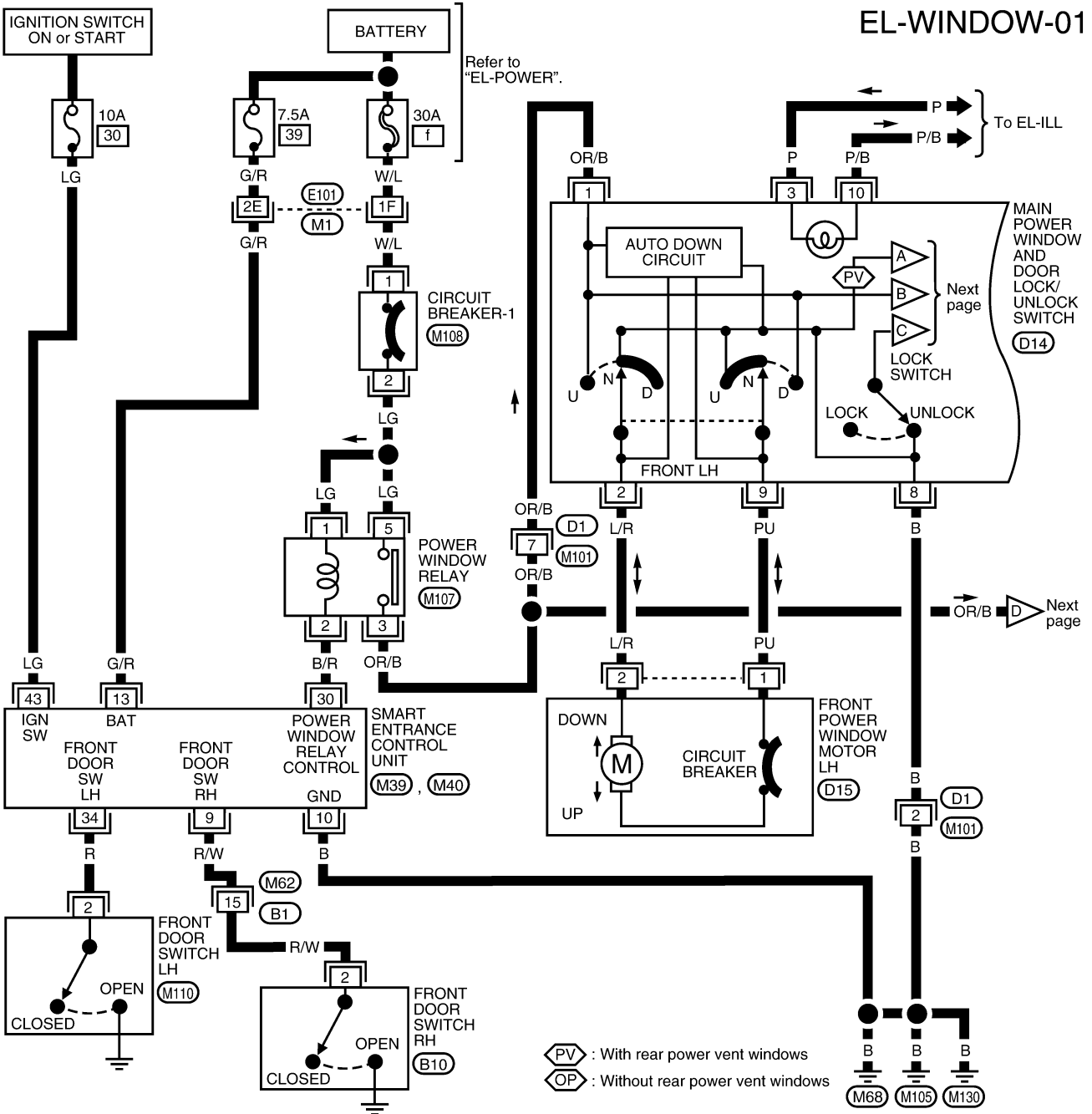
Wiring Diagram — WINDOW —

## Wiring Diagram — WINDOW —

NDEL0102

### EL-WINDOW-01

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Refer to the following.  
(M1), (E101) - SUPER MULTIPLE JUNCTION (SMJ)

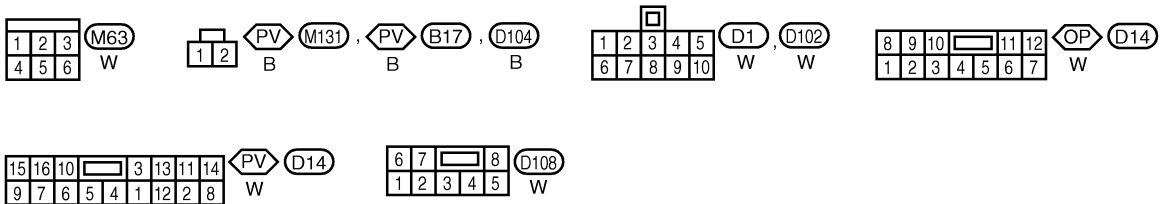
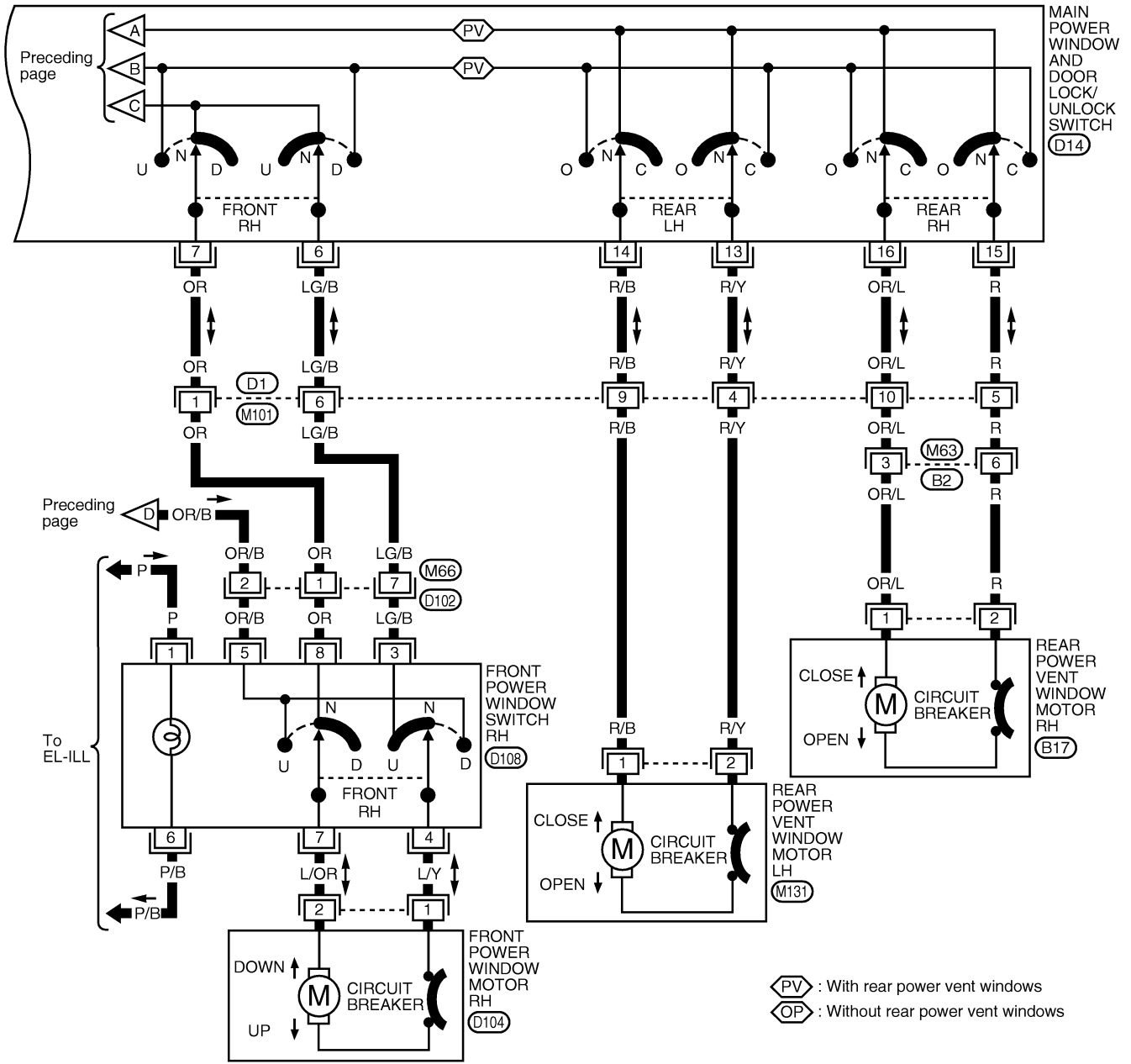
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# POWER WINDOW

Wiring Diagram — WINDOW — (Cont'd)

## EL-WINDOW-02



WEL245

# POWER WINDOW

Trouble Diagnoses

## Trouble Diagnoses

NDEL0103

Symptom	Possible cause	Repair order
None of the power windows can be operated using any switch.	<ol style="list-style-type: none"> <li>7.5A fuse, 10A fuse, 30A fusible link and circuit breaker-1</li> <li>Grounds M68, M105 and M130</li> <li>Power window relay</li> <li>Open/short in main power window and door lock/unlock switch circuit</li> </ol>	<ol style="list-style-type: none"> <li>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.</li> <li>Check grounds M68, M105 and M130.</li> <li>Check power window relay.</li> <li>Check OR/B wire between power window relay and main power window and door lock/unlock switch for open/short circuit.</li> </ol>
Driver side power window cannot be operated but other windows can be operated.	<ol style="list-style-type: none"> <li>Driver side (front LH) power window motor circuit</li> <li>Driver side (front LH) power window motor</li> </ol>	<ol style="list-style-type: none"> <li>Check driver side (front LH) power window motor circuit.</li> <li>Check driver side (front LH) power window motor.</li> </ol>
Passenger side power window cannot be operated.	<ol style="list-style-type: none"> <li>Power window switch (front RH)</li> <li>Power window motor (front RH)</li> <li>Main power window and door lock/unlock switch</li> <li>Power window circuits</li> </ol>	<ol style="list-style-type: none"> <li>Check power window switch (front RH).</li> <li>Check power window motor (front RH).</li> <li>Check main power window and door lock/unlock switch.</li> <li>Check wires between main power window and door lock/unlock switch, power window switch RH and motor for open/short circuit.</li> </ol>
Passenger side power window cannot be operated by main switch but can be operated by passenger's switch.	<ol style="list-style-type: none"> <li>Main power window and door lock/unlock switch</li> </ol>	<ol style="list-style-type: none"> <li>Check main power window and door lock/unlock switch.</li> </ol>
One or both rear power vent windows cannot be operated.	<ol style="list-style-type: none"> <li>Main power window and door lock/unlock switch</li> <li>Rear power vent window motors</li> <li>Rear power vent window circuits</li> </ol>	<ol style="list-style-type: none"> <li>Check main power window and door lock/unlock switch.</li> <li>Check rear power vent window motors (LH and RH).</li> <li>Check wires between rear power vent window motors for open or short circuits.</li> </ol>

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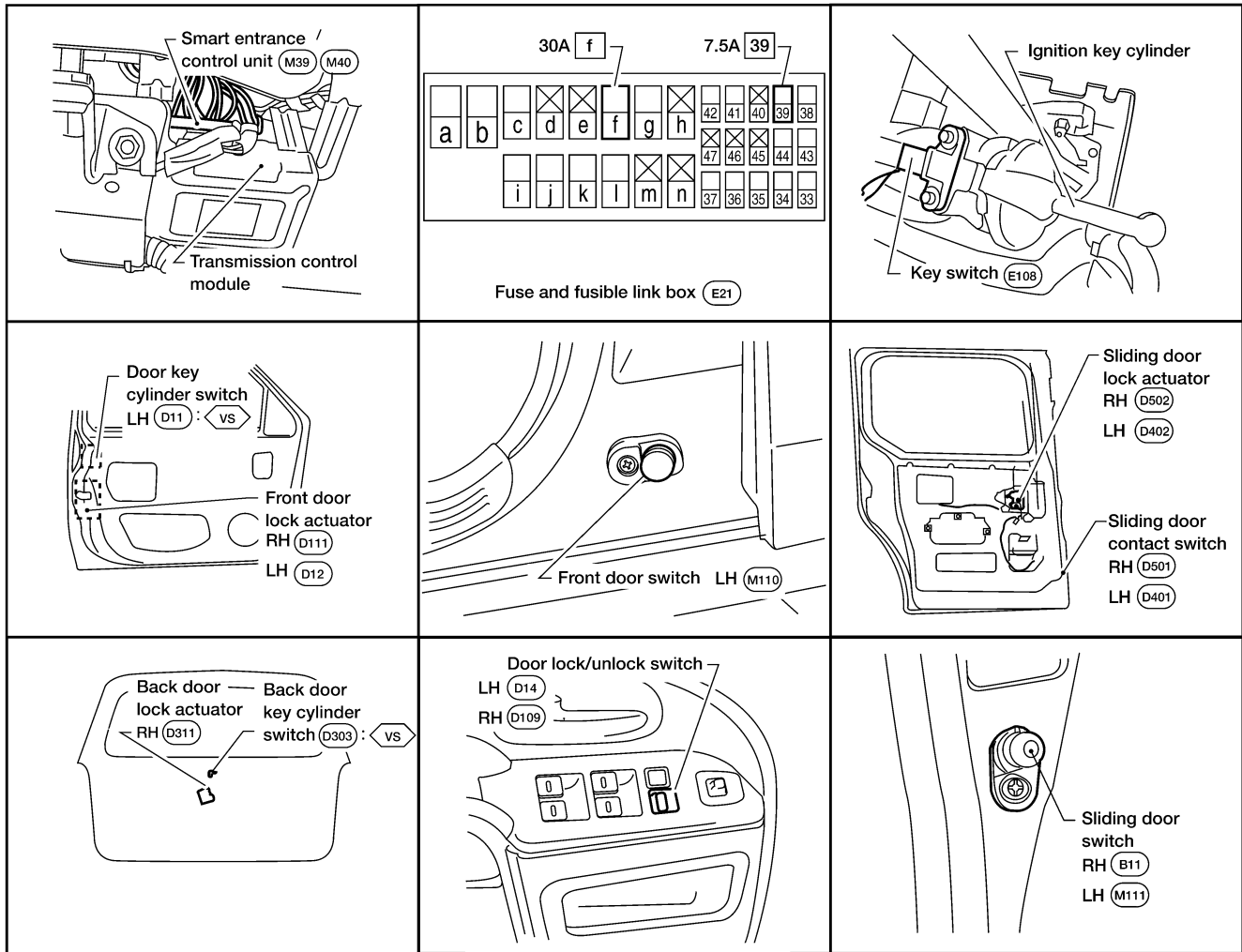
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# POWER DOOR LOCK

Component Parts and Harness Connector Location

## Component Parts and Harness Connector Location

NDEL0104



**VS** : With vehicle security system

WEL273A

## System Description

### POWER SUPPLY AND GROUND CIRCUIT

=NDEL0105

NDEL0105S01

Power is supplied at all times

- 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 smart entrance control unit terminal 7 and
- from 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
- through body grounds M68, M105 and M130.

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 (door unlock sensor) 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 (WITH VEHICLE SECURITY SYSTEM)

NDEL0105S04

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

- to smart entrance control unit terminal 19
- through front door key cylinder switch LH terminal 2
- 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 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 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 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)

GI

MA

EM

LC

EC

FE

AT

AX

SU

BR

ST

RS

BT

HA

SC

EL

IDX

## POWER DOOR LOCK

*System Description (Cont'd)*

---

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

Front door lock status is detected by ground supplied from front door lock actuator (door unlock sensor) to smart entrance control unit terminal 46 or 37.

### **SLIDING DOOR LOCK DELAY FUNCTION**

*NDELO105S06*

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.



# POWER DOOR LOCK

Schematic

## Schematic

NDEL0106

GI

MA

EM

LC

EC

FE

AT

AX

SU

BR

ST

RS

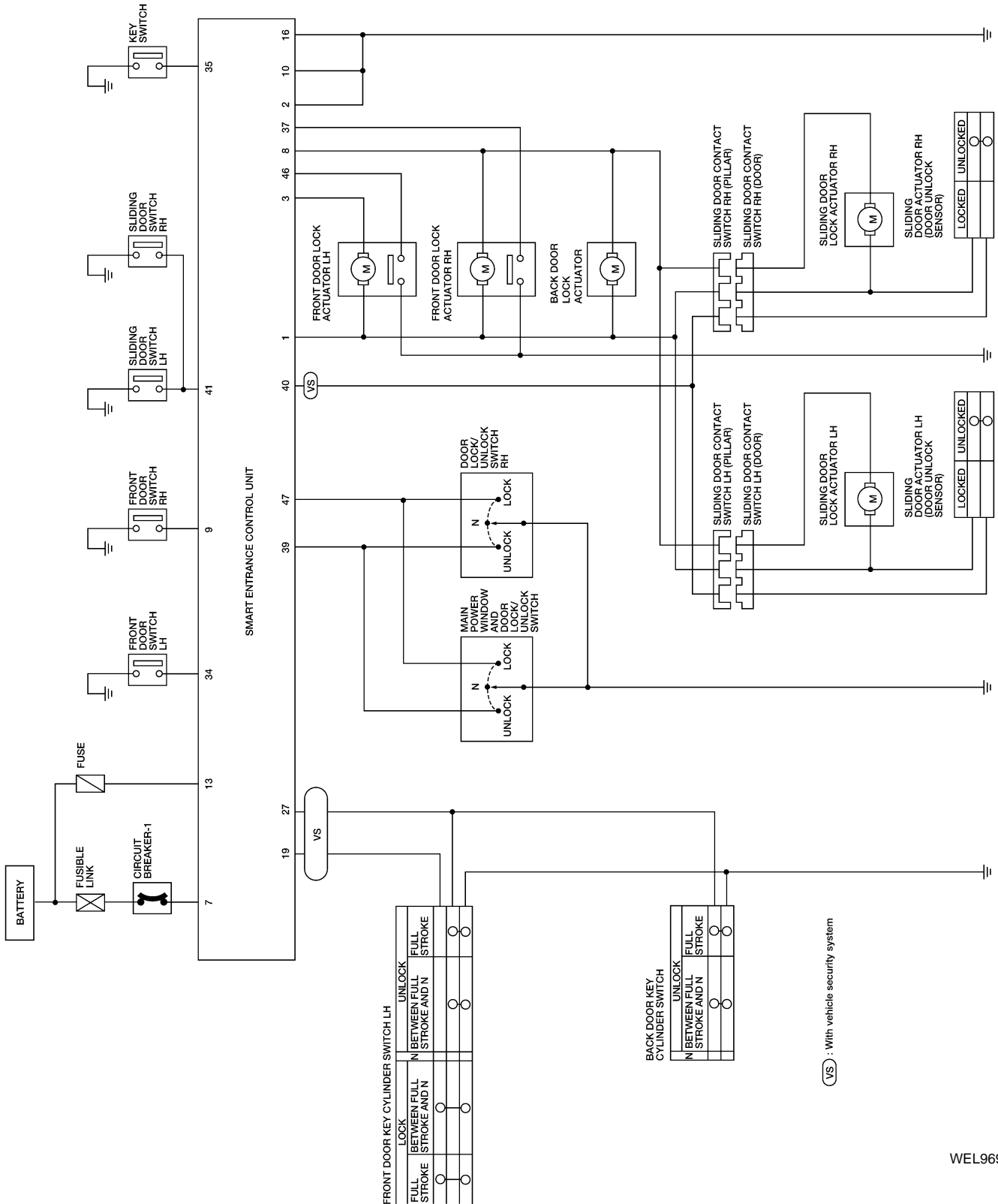
BT

HA

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EL

IDX



WEL969

# POWER DOOR LOCK

Wiring Diagram — D/LOCK —

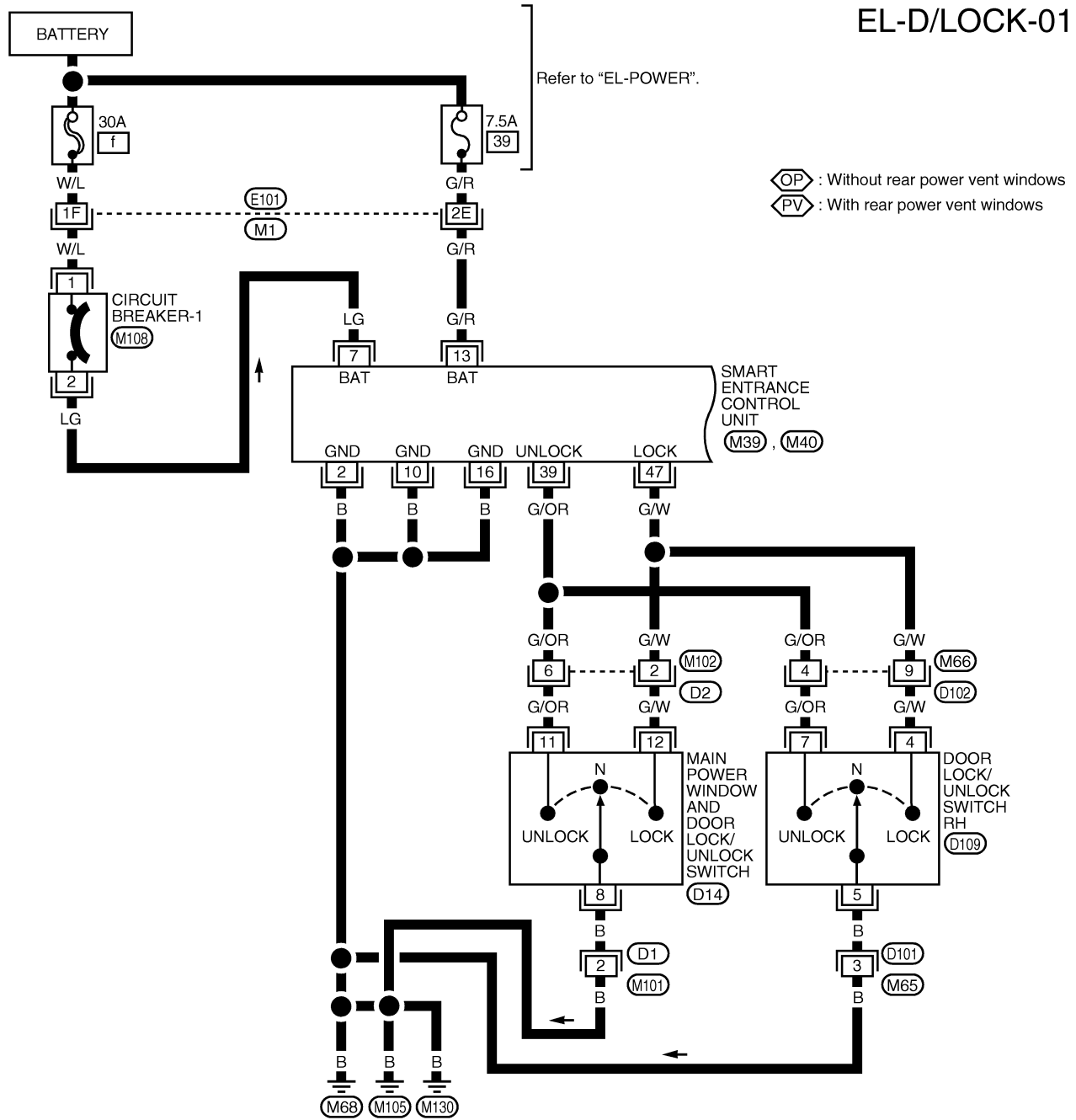
## Wiring Diagram — D/LOCK —

NDEL0107

NDEL0107S01

FIG. 1

EL-D/LOCK-01



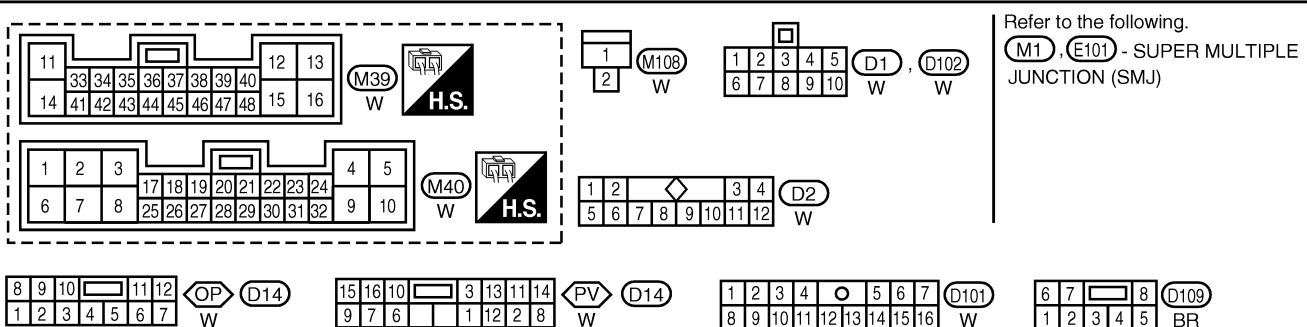
OP : Without rear power vent windows  
 PV : With rear power vent windows

Refer to "EL-POWER".

SMART ENTRANCE CONTROL UNIT (M39, M40)

MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH (D14)

DOOR LOCK/UNLOCK SWITCH RH (D109)



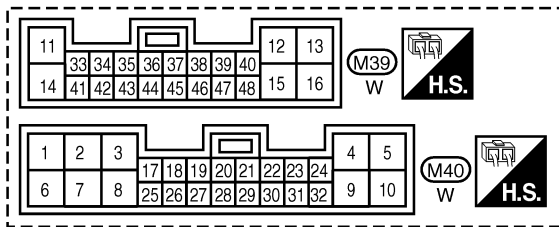
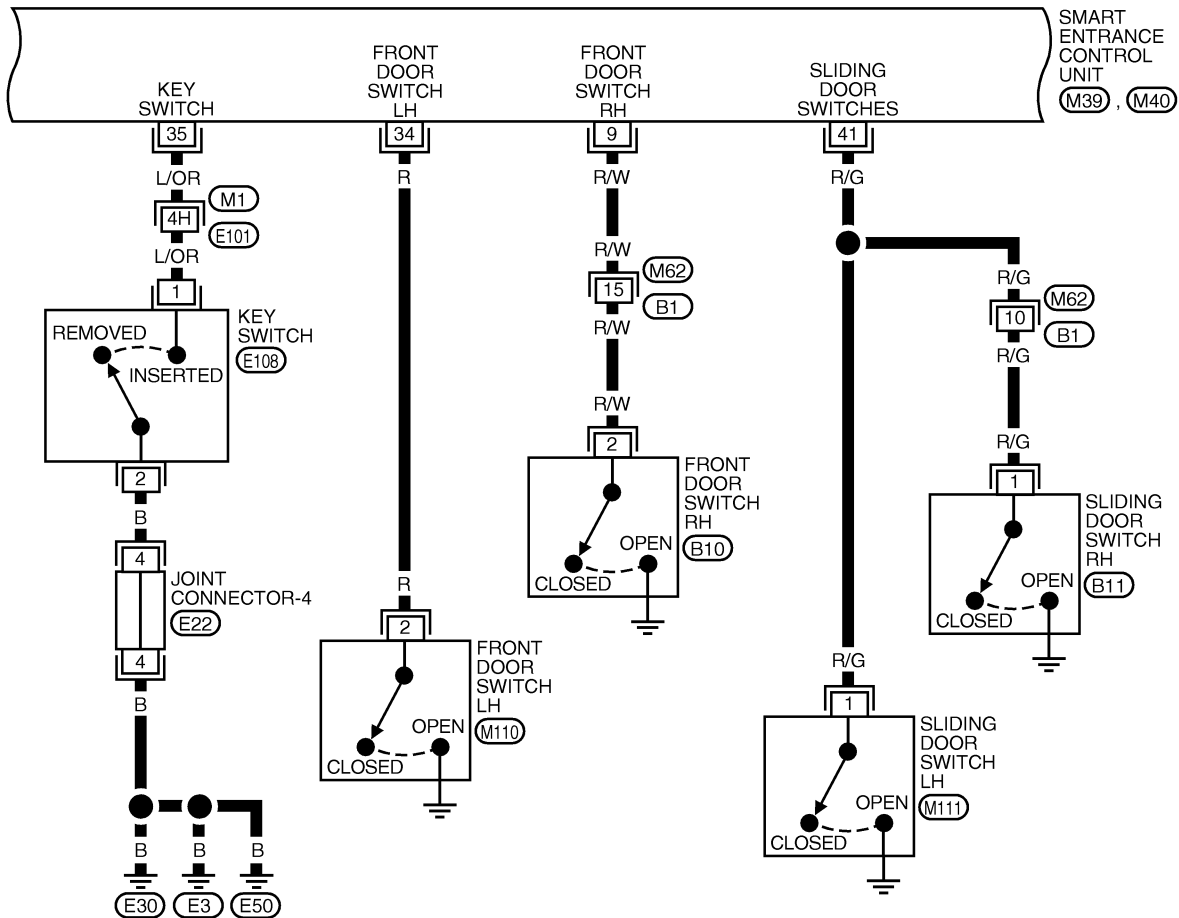
# POWER DOOR LOCK

Wiring Diagram — D/LOCK — (Cont'd)

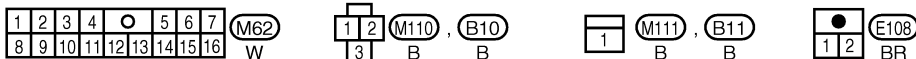
FIG. 2

NDEL0107S02

EL-D/LOCK-02



Refer to the following.  
 (M1), (E101) - SUPER MULTIPLE JUNCTION (SMJ)  
 (E22) - JOINT CONNECTOR



WEL248

GI  
MA  
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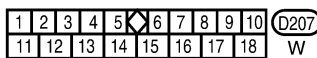
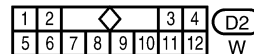
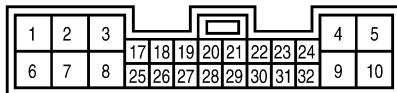
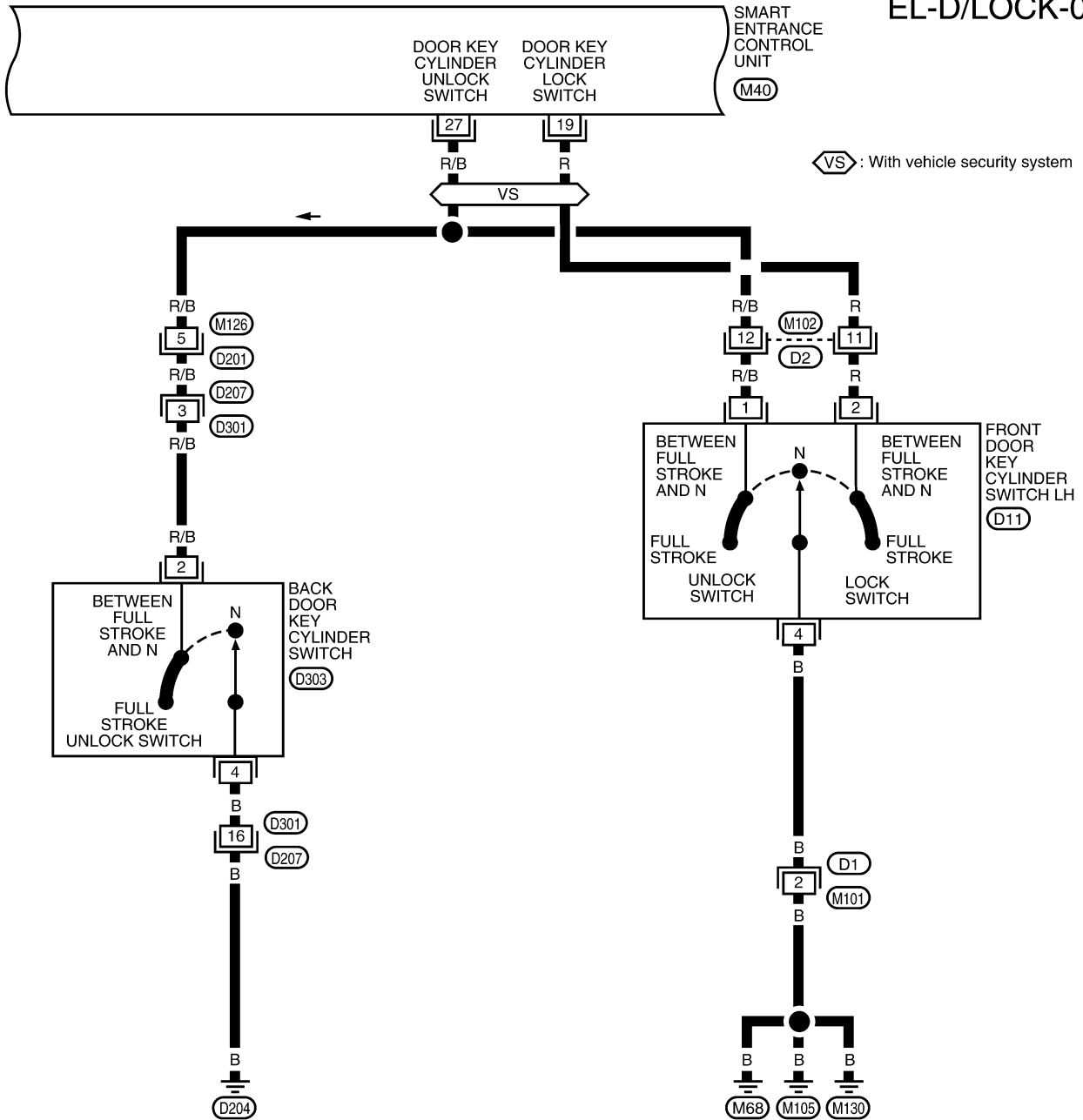
# POWER DOOR LOCK

Wiring Diagram — D/LOCK — (Cont'd)

FIG. 3

NDEL0107S03

EL-D/LOCK-03



WEL970

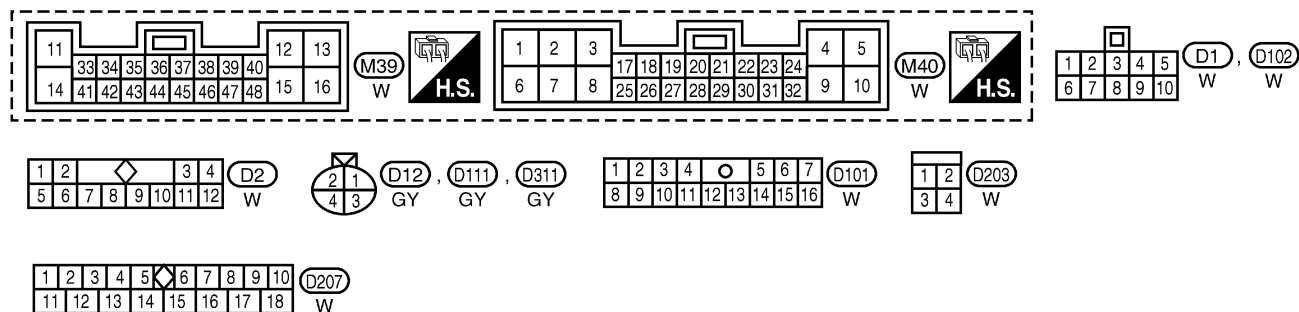
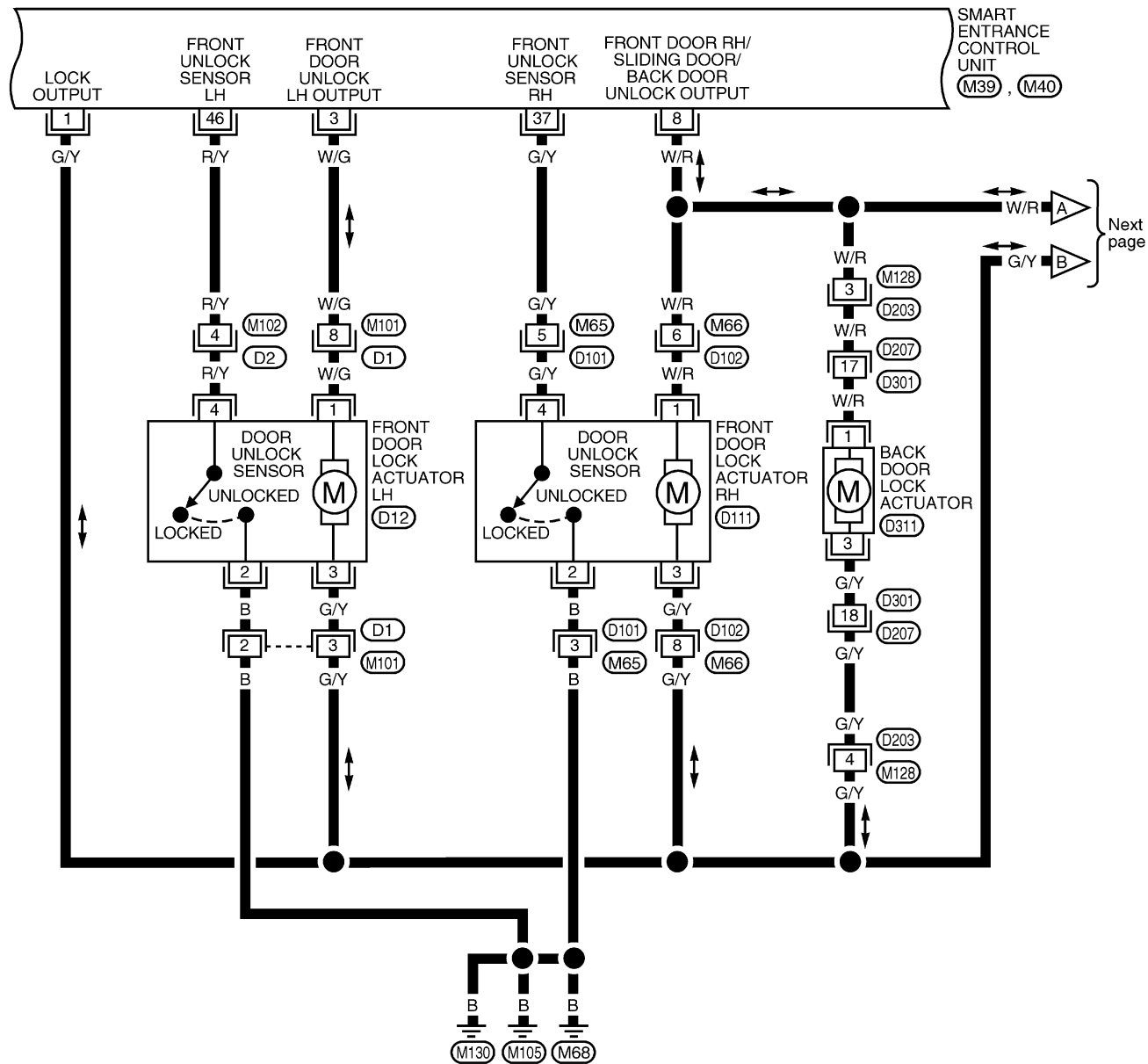
# POWER DOOR LOCK

Wiring Diagram — D/LOCK — (Cont'd)

FIG. 4

NDEL0107S04

EL-D/LOCK-04



AEL783B

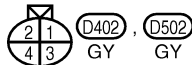
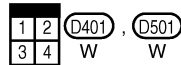
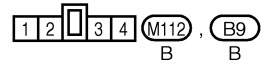
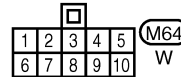
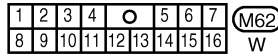
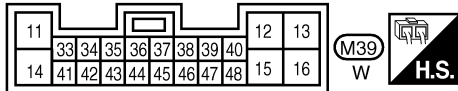
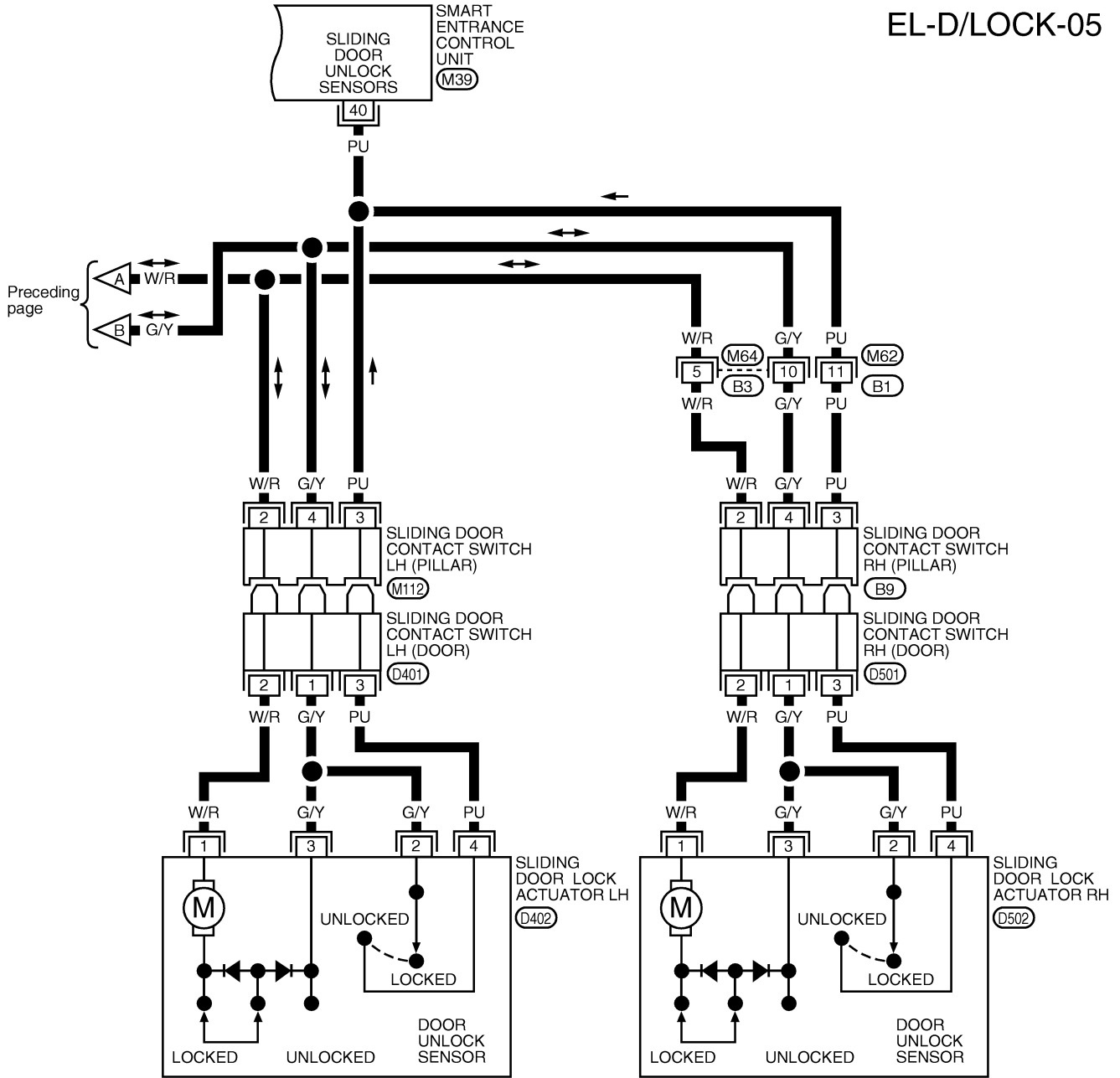
# POWER DOOR LOCK

Wiring Diagram — D/LOCK — (Cont'd)

FIG. 5

NDEL0107S05

EL-D/LOCK-05



WEL250

# POWER DOOR LOCK

Trouble Diagnosis

## Trouble Diagnosis SYMPTOM CHART

NDEL0108

NDEL0108S01

REFERENCE PAGE (EL- )	252	253	254	255	256	258	259	260
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 (with vehicle security system).	X					X		
Power door unlock does not operate with back door key cylinder operations (with vehicle security 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					

X: Applicable

GI

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RS

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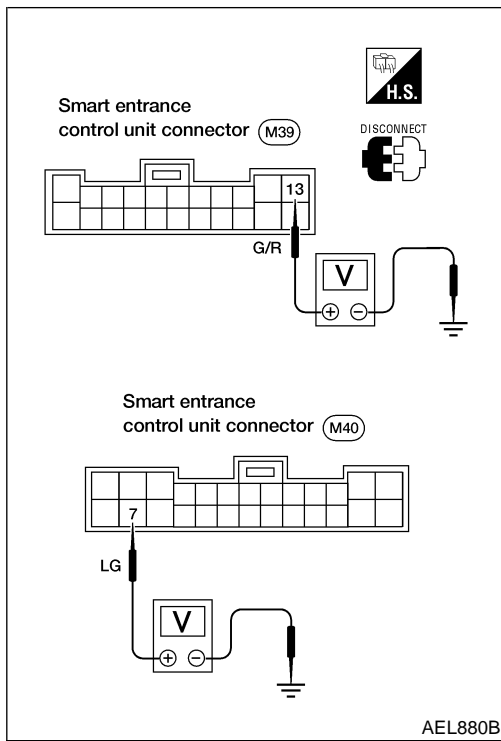
SC

EL

IDX

# POWER DOOR LOCK

Trouble Diagnosis (Cont'd)



## MAIN POWER SUPPLY AND GROUND CIRCUIT CHECK

NDEL0108S02

### Main Power Supply Circuit Check

NDEL0108S0201

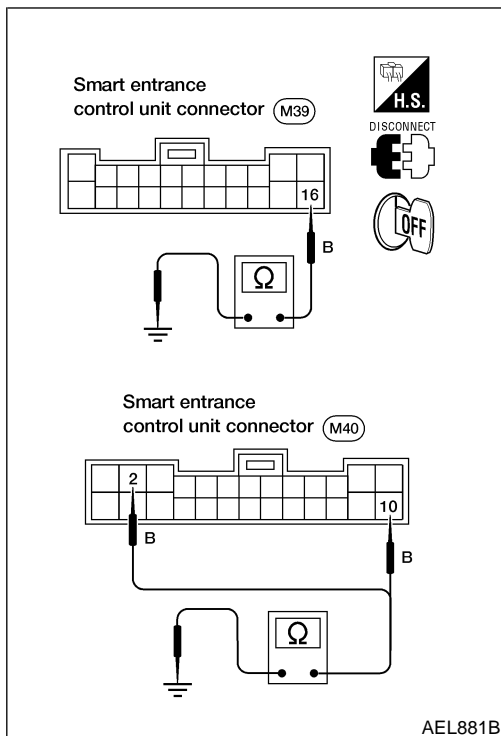
Terminal		Ignition switch position		
( + )	( - )	OFF	ACC	ON
13	Ground	Battery voltage	Battery voltage	Battery voltage
7	Ground	Battery voltage	Battery voltage	Battery voltage

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



# POWER DOOR LOCK

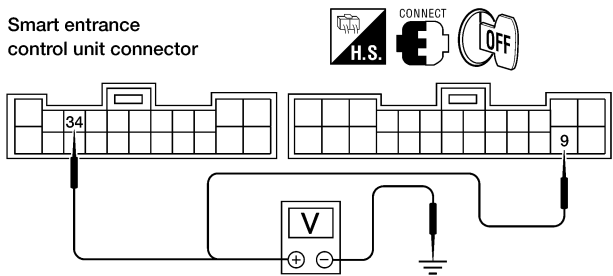
Trouble Diagnosis (Cont'd)

## FRONT DOOR SWITCH CHECK

=NDEL0108S03

**1 CHECK FRONT DOOR SWITCH INPUT SIGNAL**

Check voltage between smart entrance control unit harness connector M39 terminal 34 (R) or M40 terminal 9 (R/W) and ground.



	Terminals		Door condition	Voltage [V] (Approx.)
	(+)	(-)		
Front door switch LH	34	Ground	Open	0
			Closed	1.5
Front door switch RH	9	Ground	Open	0
			Closed	1.5

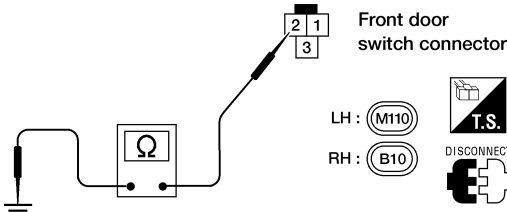
LEL305A

**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	▶	<b>Check the following</b> <ul style="list-style-type: none"> <li>• Door switch ground condition</li> <li>• Harness for open or short between smart entrance control unit and door switch.</li> </ul>
NG	▶	Replace door switch.

GI

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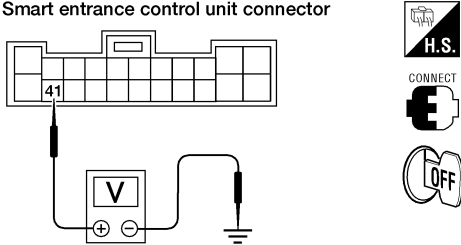
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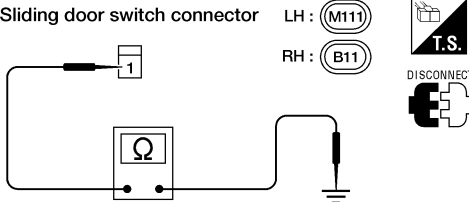
# POWER DOOR LOCK

Trouble Diagnosis (Cont'd)

## SLIDING DOOR SWITCH CHECK

NDEL0108S04

<b>1</b>	<b>CHECK SLIDING DOOR SWITCH INPUT SIGNAL</b>	
<p>Check voltage between smart entrance control unit harness connector M39 terminal 41 (R/G) and ground.</p>		
		
		<p><b>Voltage [V]:</b>                  Either sliding door is opened.                  0                  Both sliding doors are closed.                  Approx. 1.5</p>
LEL306A		
<b>OK or NG</b>		
OK	▶	Sliding door switch is OK.
NG	▶	GO TO 2.

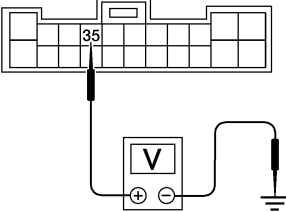
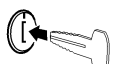


<b>2</b>	<b>CHECK SLIDING DOOR SWITCH</b>	
<p>Check continuity between sliding door switch terminal 1 and switch body.</p>		
		
		AEL888B
<b>OK or NG</b>		
OK	▶	<p><b>Check the following</b></p> <ul style="list-style-type: none"> <li>● Sliding door switch ground condition</li> <li>● Harness for open or short between smart entrance control unit and sliding door switch.</li> </ul>
NG	▶	Replace sliding door switch.

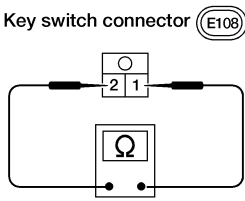

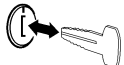
# POWER DOOR LOCK

Trouble Diagnosis (Cont'd)

## KEY SWITCH (INSERTED) CHECK

=NDEL0108S05

<b>1</b>	<b>CHECK KEY SWITCH INPUT SIGNAL</b>	<p>Check voltage between smart entrance control unit harness connector M39 terminal 35 (L/OR) and ground.</p> <div style="display: flex; align-items: center;"> <div style="margin-right: 20px;"> <p>Smart entrance control unit connector</p>  </div> <div style="margin-right: 20px;"> <p>: 0V</p>  </div> <div style="margin-right: 20px;"> <p>: Approx. 1.5V</p>  </div> <div style="margin-right: 20px;">  </div> <div style="flex-grow: 1;"> <p><b>Voltage [V]:</b>                  Condition of key switch: Key is inserted. 0                  Condition of key switch: Key is removed. Approx. 1.5</p> </div> </div> <p style="text-align: right;">LEL307A</p> <p style="text-align: center;"><b>OK or NG</b></p>	GI MA EM LC EC FE AT
OK	▶	Key switch is OK.	
NG	▶	GO TO 2.	

<b>2</b>	<b>CHECK KEY SWITCH (INSERTED)</b>	<p>Check continuity between key switch terminals 1 and 2.</p> <div style="display: flex; align-items: center;"> <div style="margin-right: 20px;"> <p>Key switch connector (E108)</p>  </div> <div style="margin-right: 20px;">  </div> <div style="margin-right: 20px;">  </div> </div> <p style="text-align: right;">AEL875B</p> <p><b>Continuity:</b>                  Condition of key switch: Key is inserted. Yes                  Condition of key switch: Key is removed. No</p> <p style="text-align: center;"><b>OK or NG</b></p>	AX SU BR ST RS BT HA SC
OK	▶	<p><b>Check the following</b></p> <ul style="list-style-type: none"> <li>● Key switch ground circuit</li> <li>● Harness for open or short between smart entrance control unit and key switch.</li> </ul>	
NG	▶	Replace key switch.	

GI

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# POWER DOOR LOCK

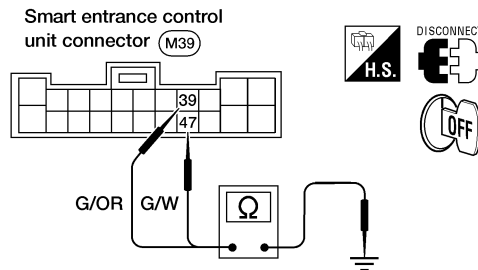
Trouble Diagnosis (Cont'd)

## 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.



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-246.

### OK or NG

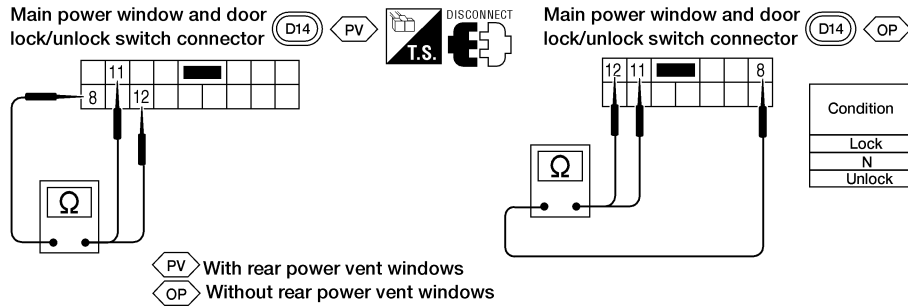
OK	▶	Door lock/unlock switch is OK.
NG	▶	GO TO 2.

# POWER DOOR LOCK

Trouble Diagnosis (Cont'd)

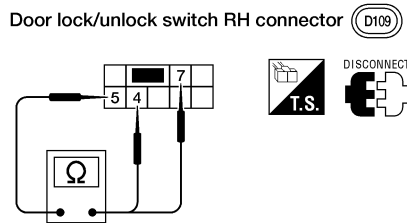
## 2 CHECK DOOR LOCK/UNLOCK SWITCH

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)



WEL656

- Door lock/unlock switch RH



AEL893B

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

AEL894B

OK or NG

OK	▶	<b>Check the following</b> <ul style="list-style-type: none"> <li>● Ground circuit for door lock/unlock switch</li> <li>● Harness for open or short between smart entrance control unit and door lock/unlock switch.</li> </ul>
NG	▶	Replace door lock/unlock switch.

GI

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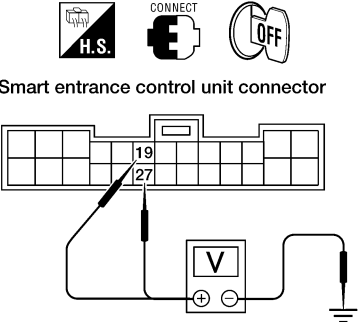
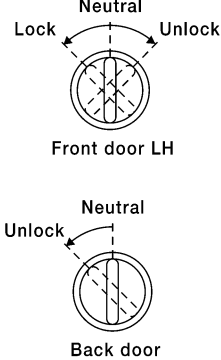
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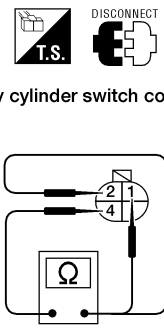
# POWER DOOR LOCK

Trouble Diagnosis (Cont'd)

## DOOR KEY CYLINDER SWITCH CHECK (WITH VEHICLE SECURITY SYSTEM)

=NDEL0108S10

<b>1</b>	<b>CHECK DOOR KEY CYLINDER SWITCH INPUT SIGNAL (LOCK/UNLOCK SIGNAL)</b>																		
<p>Check voltage between control unit harness connector M40 terminals 19 (R) or 27 (R/B) and ground.</p>																			
<div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="width: 30%;">  <p>Smart entrance control unit connector</p> </div> <div style="width: 30%;">  <p>Front door LH</p> <p>Back door</p> </div> <div style="width: 30%;"> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th colspan="2">Terminals</th> <th rowspan="2">Key position</th> <th rowspan="2">Voltage [V] (Approx.)</th> </tr> <tr> <th>(+)</th> <th>(-)</th> </tr> </thead> <tbody> <tr> <td rowspan="2">19</td> <td rowspan="2">Ground</td> <td>Neutral</td> <td>1.5</td> </tr> <tr> <td>Lock</td> <td>0</td> </tr> <tr> <td rowspan="2">27</td> <td rowspan="2">Ground</td> <td>Neutral</td> <td>1.5</td> </tr> <tr> <td>Unlock</td> <td>0</td> </tr> </tbody> </table> </div> </div>		Terminals		Key position	Voltage [V] (Approx.)	(+)	(-)	19	Ground	Neutral	1.5	Lock	0	27	Ground	Neutral	1.5	Unlock	0
Terminals		Key position	Voltage [V] (Approx.)																
(+)	(-)																		
19	Ground	Neutral	1.5																
		Lock	0																
27	Ground	Neutral	1.5																
		Unlock	0																
WEL568A																			
Refer to wiring diagram, EL-248.																			
<b>OK or NG</b>																			
OK	▶ Door key cylinder switch is OK.																		
NG	▶ GO TO 2.																		

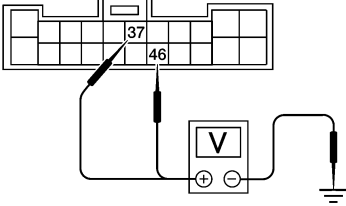

<b>2</b>	<b>CHECK DOOR KEY CYLINDER SWITCH</b>													
<p>1. Disconnect door key cylinder switch connector. 2. Check continuity between front door key cylinder switch LH D11 and back door key cylinder switch D303 terminals as shown.</p>														
<div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="width: 30%;">  <p>Door key cylinder switch connector</p> </div> <div style="width: 30%;"> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th>Terminals</th> <th>Key position</th> <th>Continuity</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Front LH: 2 - 4</td> <td>Neutral</td> <td>No</td> </tr> <tr> <td>Lock</td> <td>Yes</td> </tr> <tr> <td rowspan="2">Front LH: 1 - 4 Back: 2 - 4</td> <td>Neutral</td> <td>No</td> </tr> <tr> <td>Unlock</td> <td>Yes</td> </tr> </tbody> </table> </div> </div>		Terminals	Key position	Continuity	Front LH: 2 - 4	Neutral	No	Lock	Yes	Front LH: 1 - 4 Back: 2 - 4	Neutral	No	Unlock	Yes
Terminals	Key position	Continuity												
Front LH: 2 - 4	Neutral	No												
	Lock	Yes												
Front LH: 1 - 4 Back: 2 - 4	Neutral	No												
	Unlock	Yes												
<p>① : Door unlock switch terminal (Front LH) ② : Door lock switch terminal (Front LH) Door unlock switch terminal (Back) ④ : Ground terminal</p>														
LEL309A														
<b>OK or NG</b>														
OK	▶ <b>Check the following</b>													
<ul style="list-style-type: none"> <li>● Door key cylinder switch ground circuit</li> <li>● Harness for open or short between control unit and door key cylinder switch.</li> </ul>														
NO	▶ Replace door key cylinder switch.													

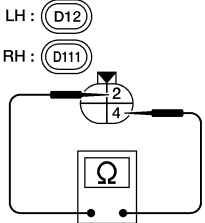

# POWER DOOR LOCK

Trouble Diagnosis (Cont'd)

## FRONT DOOR UNLOCK SENSOR CHECK

=NDEL0108S08

<b>1</b>	<b>CHECK DOOR UNLOCK SENSOR INPUT SIGNAL</b>																						
<p>Check voltage between control unit harness connector M39 terminals 46 (R/Y) or 37 (G/Y) and ground.</p>																							
<div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="width: 30%;"> <p>Smart entrance control unit connector</p>  </div> <div style="width: 20%; text-align: center;">  </div> <div style="width: 45%;"> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th rowspan="2"></th> <th colspan="2">Terminals</th> <th rowspan="2">Condition</th> <th rowspan="2">Voltage [V] (Approx.)</th> </tr> <tr> <th>(+)</th> <th>(-)</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Front LH door</td> <td rowspan="2">46</td> <td rowspan="2">Ground</td> <td>Locked</td> <td>1.5</td> </tr> <tr> <td>Unlocked</td> <td>0</td> </tr> <tr> <td rowspan="2">Front RH door</td> <td rowspan="2">37</td> <td rowspan="2">Ground</td> <td>Locked</td> <td>1.5</td> </tr> <tr> <td>Unlocked</td> <td>0</td> </tr> </tbody> </table> </div> </div>				Terminals		Condition	Voltage [V] (Approx.)	(+)	(-)	Front LH door	46	Ground	Locked	1.5	Unlocked	0	Front RH door	37	Ground	Locked	1.5	Unlocked	0
	Terminals			Condition	Voltage [V] (Approx.)																		
	(+)	(-)																					
Front LH door	46	Ground	Locked	1.5																			
			Unlocked	0																			
Front RH door	37	Ground	Locked	1.5																			
			Unlocked	0																			
<p>Refer to wiring diagram, EL-249.</p> <p style="text-align: right;">LEL310A</p>																							
<b>OK or NG</b>																							
OK	▶	Door unlock sensor is OK.																					
NG	▶	GO TO 2.																					

<b>2</b>	<b>CHECK DOOR UNLOCK SENSOR</b>	
<p>1. Disconnect front door lock actuator connector. 2. Check continuity between door lock actuator terminals 4 and 2.</p>		
<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="width: 30%;"> <p>Front door lock actuator connectors</p> <p>LH : (D12)</p> <p>RH : (D11)</p>  </div> <div style="width: 20%; text-align: center;">  </div> <div style="width: 45%; text-align: right;"> <p>AEL897B</p> </div> </div>		
<p><b>Continuity:</b>  <b>Condition: Locked</b>                  No  <b>Condition: Unlocked</b>                  Yes</p> <p style="text-align: center;"><b>OK or NG</b></p>		
OK	▶	<p><b>Check the following</b></p> <ul style="list-style-type: none"> <li>● Door unlock sensor ground circuit</li> <li>● Harness for open or short between smart entrance control unit and door unlock sensor.</li> </ul>
NG	▶	Replace front door lock actuator.

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# POWER DOOR LOCK

Trouble Diagnosis (Cont'd)

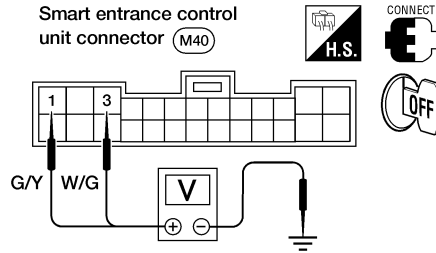
## DOOR LOCK ACTUATOR CHECK

=NDEL0108S09

### 1 CHECK DOOR LOCK ACTUATOR CIRCUIT

Check voltage for door lock actuator.

- Front door lock actuator LH

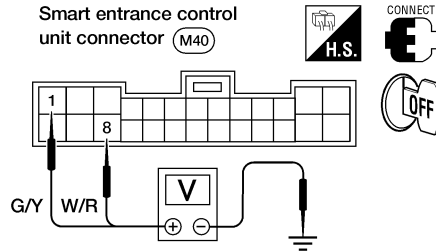


AEL898B

Door lock/unlock switch condition	Terminal No.		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		Voltage [V]
	(+)	(-)	
Lock	1	ground	Approx. 12
Unlock	8	ground	

AEL902B

Refer to wiring diagrams, EL-249.

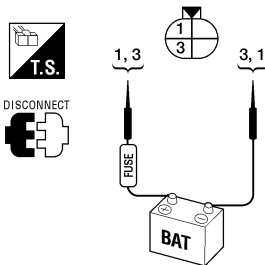
**OK or NG**

OK	▶	GO TO 2.
NG	▶	Replace smart entrance control unit. (Before replacing smart entrance control unit, perform "DOOR LOCK/UNLOCK SWITCH CHECK", EL-256.)



# POWER DOOR LOCK

Trouble Diagnosis (Cont'd)

2	CHECK DOOR LOCK ACTUATOR
	<p>1. Disconnect door lock actuator connector.                      2. Apply 12V direct current to door lock actuator and check operation.</p> <div style="display: flex; align-items: center; justify-content: center;">  <div style="margin-left: 20px;"> <p>Door lock actuator connector</p> <p>Front LH : (D12)</p> <p>Front RH : (D111)</p> <p>Sliding LH : (D402)</p> <p>Sliding RH : (D502)</p> <p>Back : (D311)</p> </div> </div> <p><b>Door lock actuator operation:</b>                      Terminals between (+): 3 and (-): 1                      Unlocked → Locked                      Terminals between (+): 1 and (-): 3                      Locked → Unlocked</p> <p style="text-align: center;"><b>OK or NG</b></p>
OK	▶ Check harness for open or short between smart entrance control unit connector and door lock actuator.
NG	▶ Replace door lock actuator.

AEL903B

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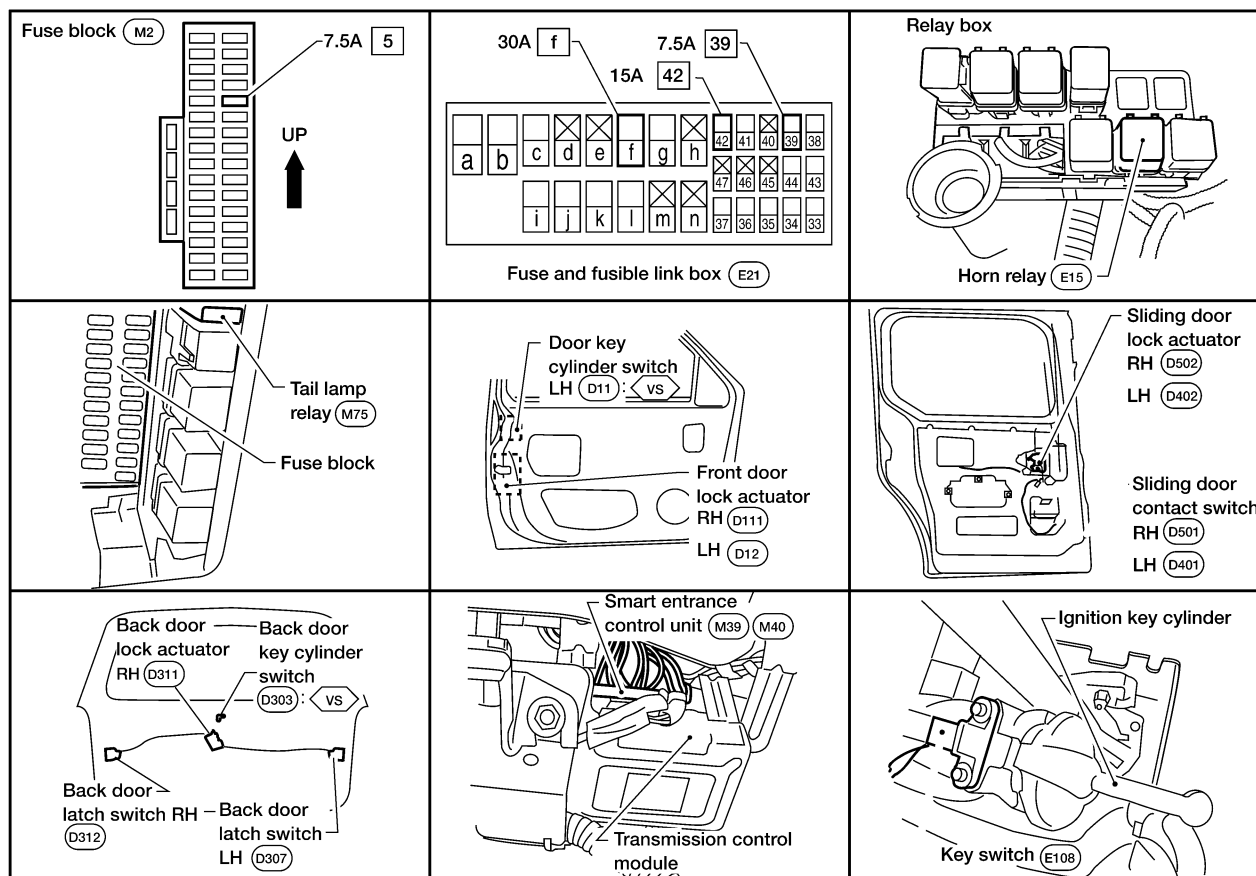
IDX

# MULTI-REMOTE CONTROL SYSTEM

Component Parts and Harness Connector Location

## Component Parts and Harness Connector Location

NDEL0109



VS : With vehicle security system

WEL274A

## System Description

NDEL0110

NDEL0110S01

### INPUTS

When the key switch is ON (ignition key is inserted in the key cylinder), ground is supplied

- through key switch terminal 1
- to smart entrance control unit terminal 35.

When the front door switch LH is OPEN, ground is supplied

- to smart entrance control unit terminal 34
- through front door switch LH terminal 2
- through front door switch LH body ground.

When the front door switch RH is OPEN, ground is supplied

- to smart entrance control unit terminal 9
- through front door switch RH terminal 2
- through front door switch RH body ground.

When the sliding door switches are OPEN, ground is supplied

- to smart entrance control unit terminal 41
- through sliding door switches terminal 1
- through the sliding door switches body grounds.

When back door latch switches are OPEN, ground is supplied

- to smart entrance control unit terminal 24
- through back door latch switches terminal 1

# MULTI-REMOTE CONTROL SYSTEM

System Description (Cont'd)

- through back door latch switches terminal 2
- through body ground D204.

Remote controller signal is input to the smart entrance control unit. (The antenna of the system is combined with smart entrance control unit).

The multi-remote control system controls operation of the

- power door lock
- interior lamp
- panic alarm
- door lock verification
- automatic drive positioner

## OPERATED PROCEDURE

### Power Door Lock Operation

NDELO110S08

Smart entrance control unit receives a LOCK signal from remote controller. Smart entrance control unit locks all doors with input of LOCK signal from remote controller.

NDELO110S0801

When an UNLOCK signal is sent from remote controller once, front door LH will unlock.

If an UNLOCK signal is sent from remote controller again within 5 seconds, all other doors will be unlocked.

### Door Lock Verification

NDELO110S0802

Power is supplied at all times

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

When smart entrance control unit receives LOCK or UNLOCK signal from remote controller with all doors closed, ground is supplied

- to tail lamp relay terminal 1
- through smart entrance control unit terminal 26 and
- to horn relay terminal 1
- through smart entrance control unit terminal 21

Tail lamp relay and horn relay are now energized, and side marker, tail, and license lamps flash and horn sounds as a reminder (if horn chirp function is activated).

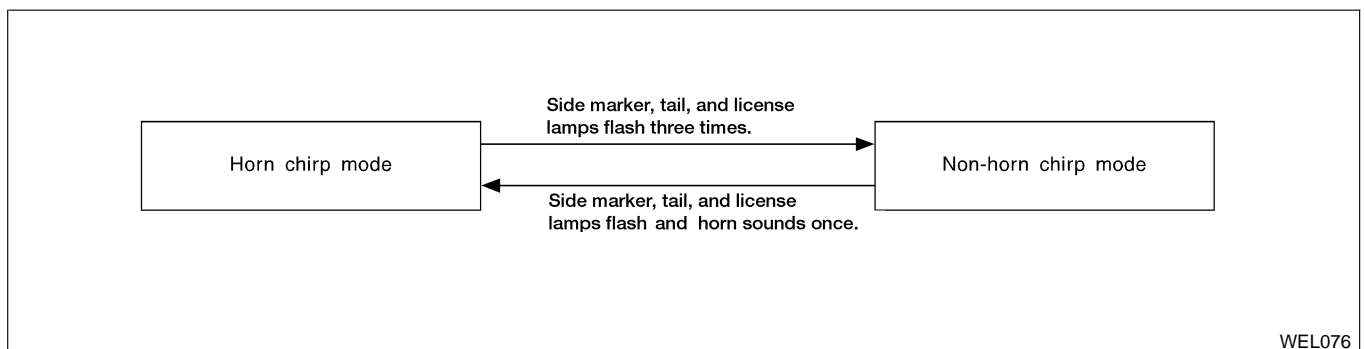
The lamp and horn reminder has a horn chirp mode and a non-horn chirp mode.

### Operating function of door lock verification

	Horn chirp mode		Non-horn chirp mode	
	Side marker, tail and license lamps flash	Horn sound	Side marker, tail and license lamps flash	Horn sound
Lock	Twice	Once	Twice	—
Unlock	Once	—	—	—

### How to change door lock verification mode

When LOCK and UNLOCK signals are sent from the remote controller for more than 2 seconds at the same time, the door lock verification mode is changed and side marker, tail and license lamps flash and horn sounds as follows:



WEL076

# MULTI-REMOTE CONTROL SYSTEM

*System Description (Cont'd)*

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## **Interior Lamp Operation**

NDEL0110S0803

When the following input signals are both supplied:

- door switch CLOSED (when all doors are closed);
- front door LH LOCKED;

Multi-remote control system turns on interior lamp (for about 30 seconds) with input of UNLOCK signal from remote controller.

For detailed description, refer to "INTERIOR ROOM LAMP", EL-77.

## **Panic Alarm Operation**

NDEL0110S0804

Multi-remote control system turns on and off horn and headlamp intermittently with input of PANIC ALARM signal from remote controller.

For detailed description, refer to "VEHICLE SECURITY (THEFT WARNING) SYSTEM", EL-281.

# MULTI-REMOTE CONTROL SYSTEM

Schematic

## Schematic

NDEL0111

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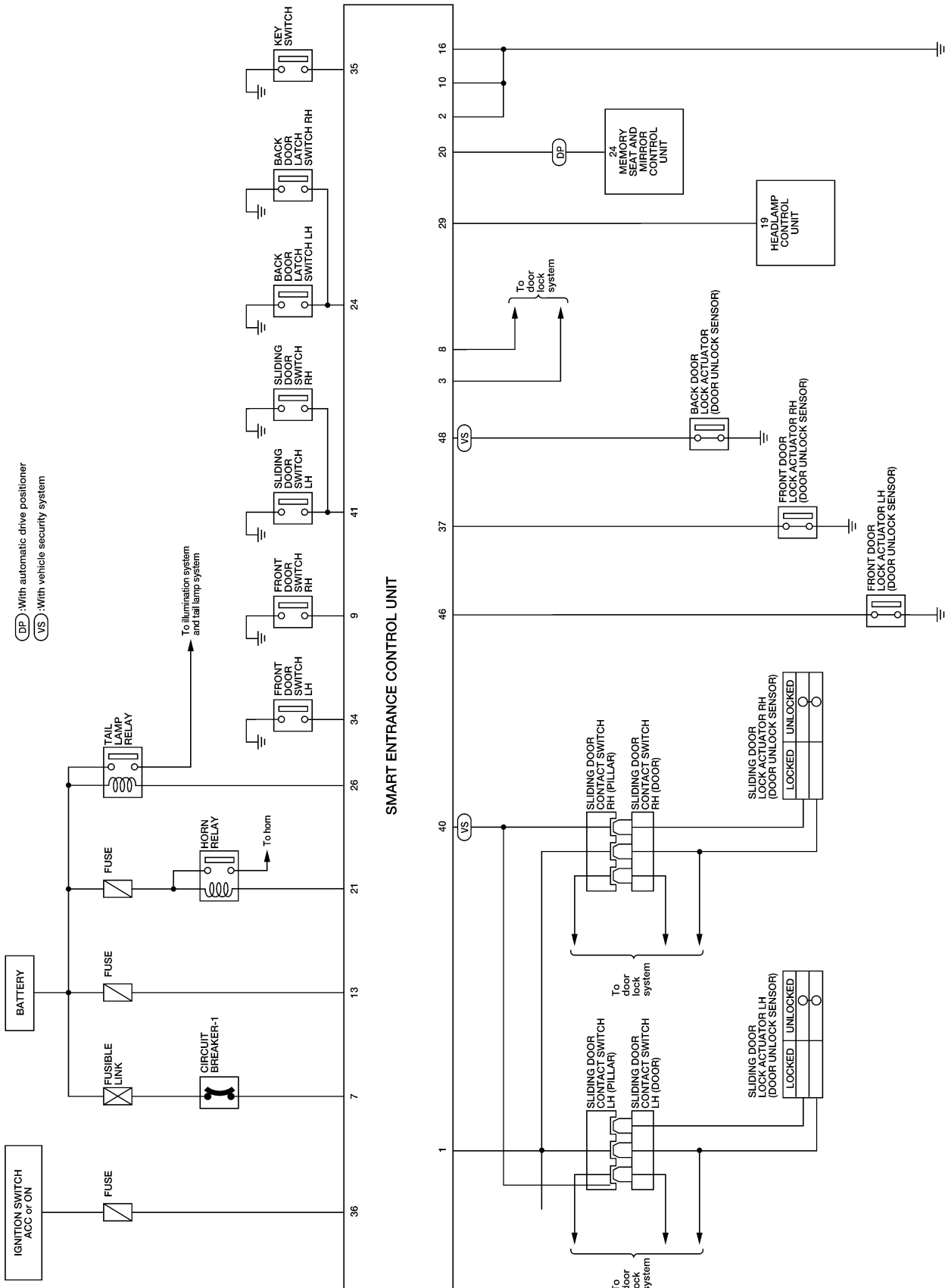
BT

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IDX



WEL565A

# MULTI-REMOTE CONTROL SYSTEM

Wiring Diagram — MULTI —

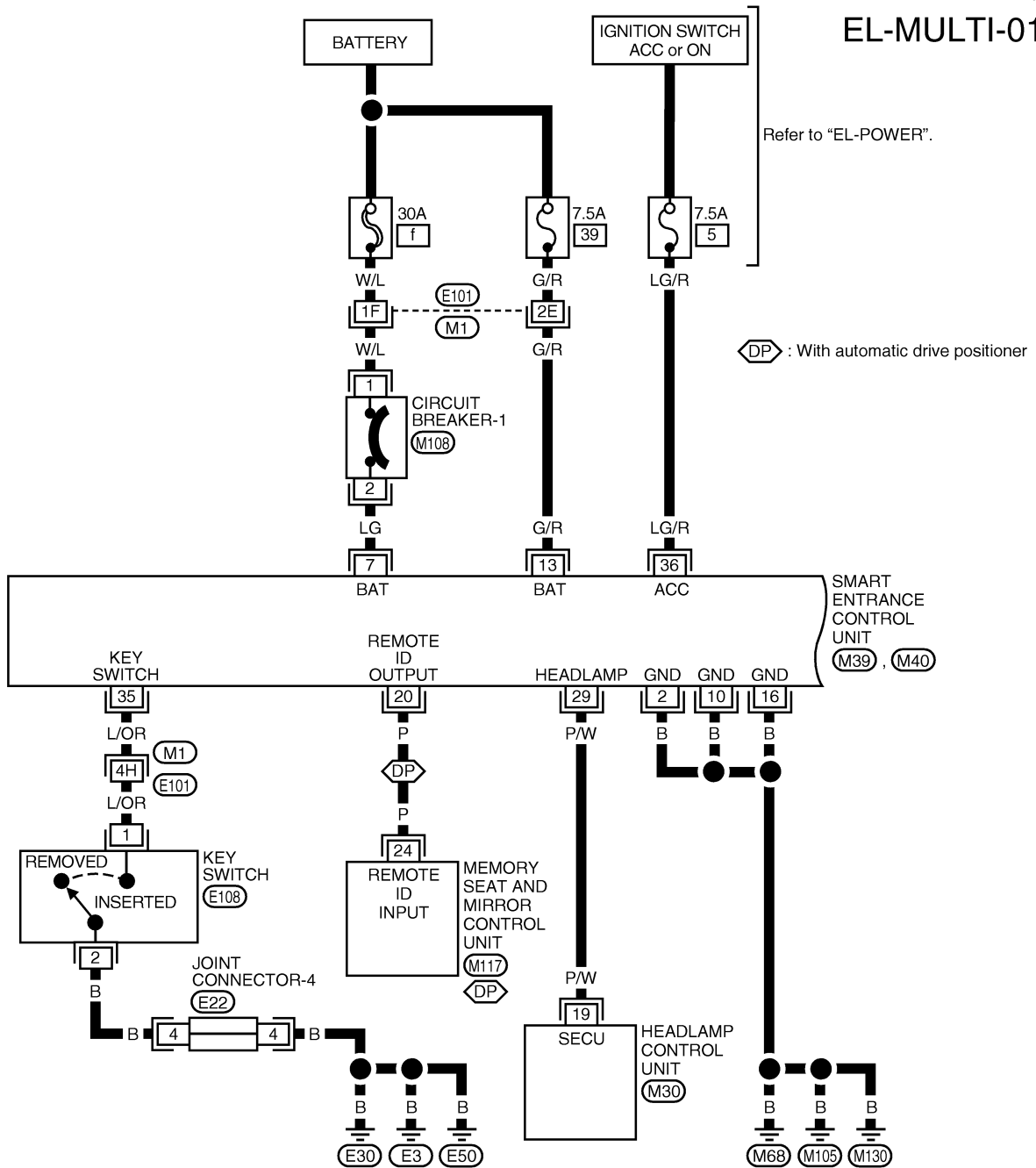
## Wiring Diagram — MULTI —

NDEL0112

NDEL0112S01

FIG. 1

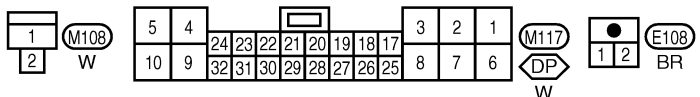
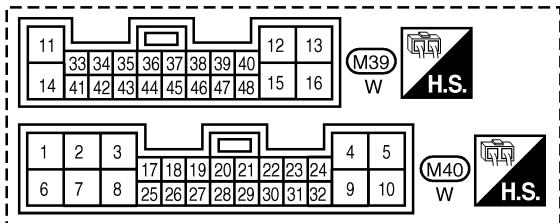
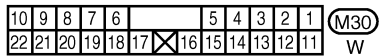
EL-MULTI-01



Refer to "EL-POWER".

⬠DP⬠ : With automatic drive positioner

SMART ENTRANCE CONTROL UNIT (M39, M40)



Refer to the following.

⬠M1⬠, ⬠E101⬠ SUPER MULTIPLE JUNCTION (SMJ)

⬠E22⬠ JOINT CONNECTOR

WEL077

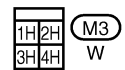
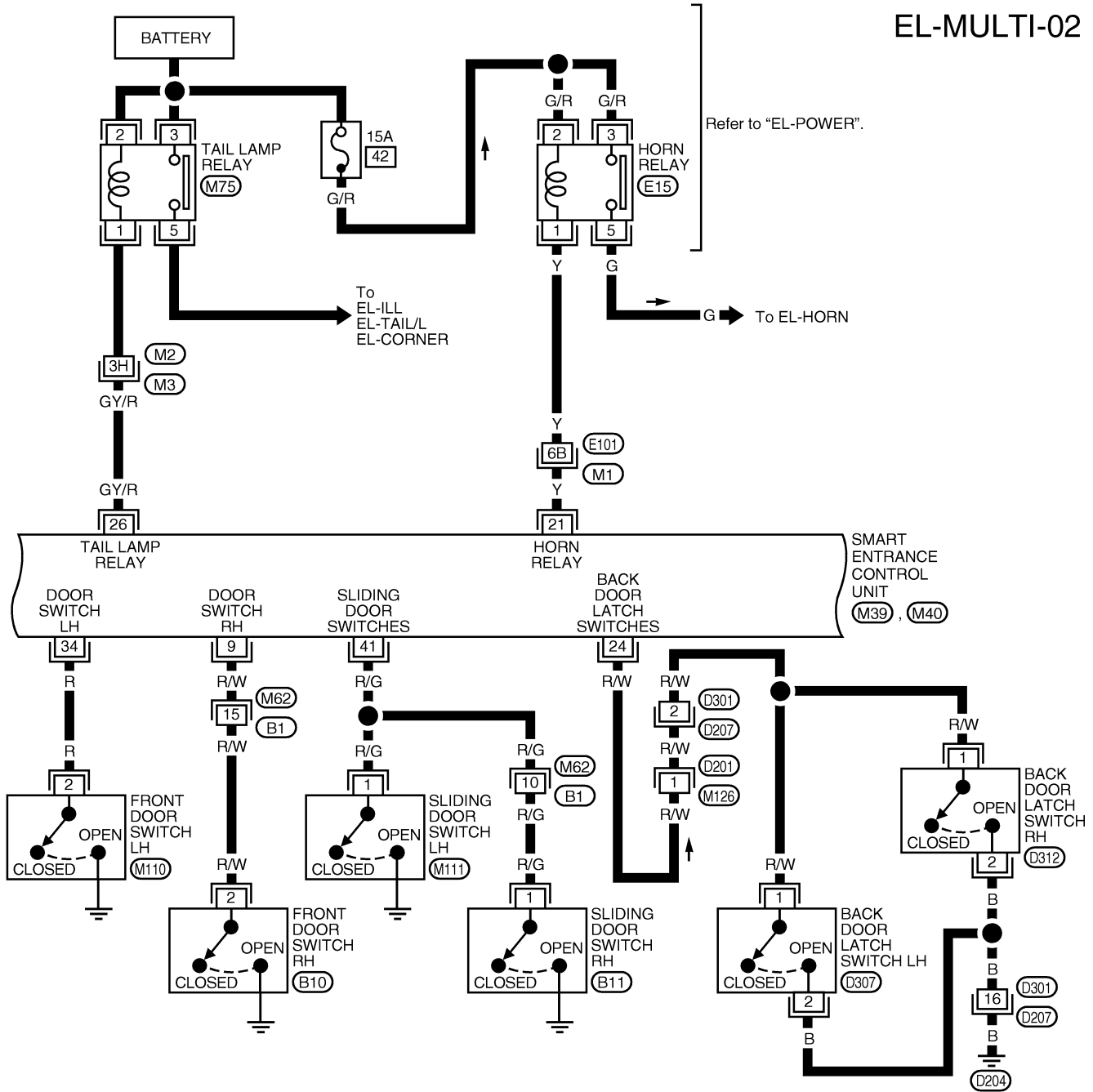
# MULTI-REMOTE CONTROL SYSTEM

Wiring Diagram — MULTI — (Cont'd)

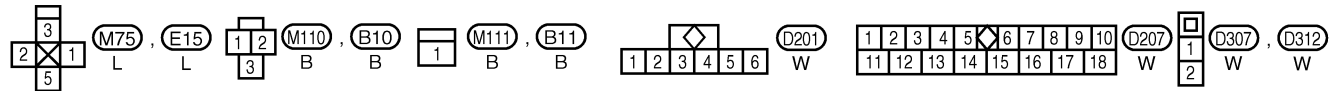
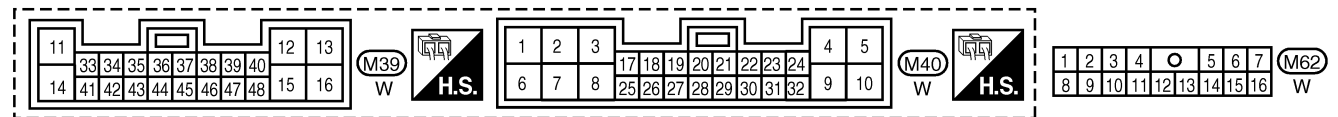
FIG. 2

NDEL0112S02

EL-MULTI-02



Refer to the following.  
M1, E101 - SUPER MULTIPLE JUNCTION (SMJ)



WEL971

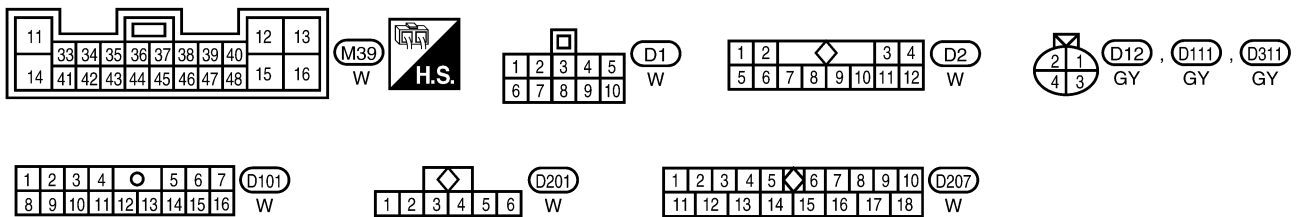
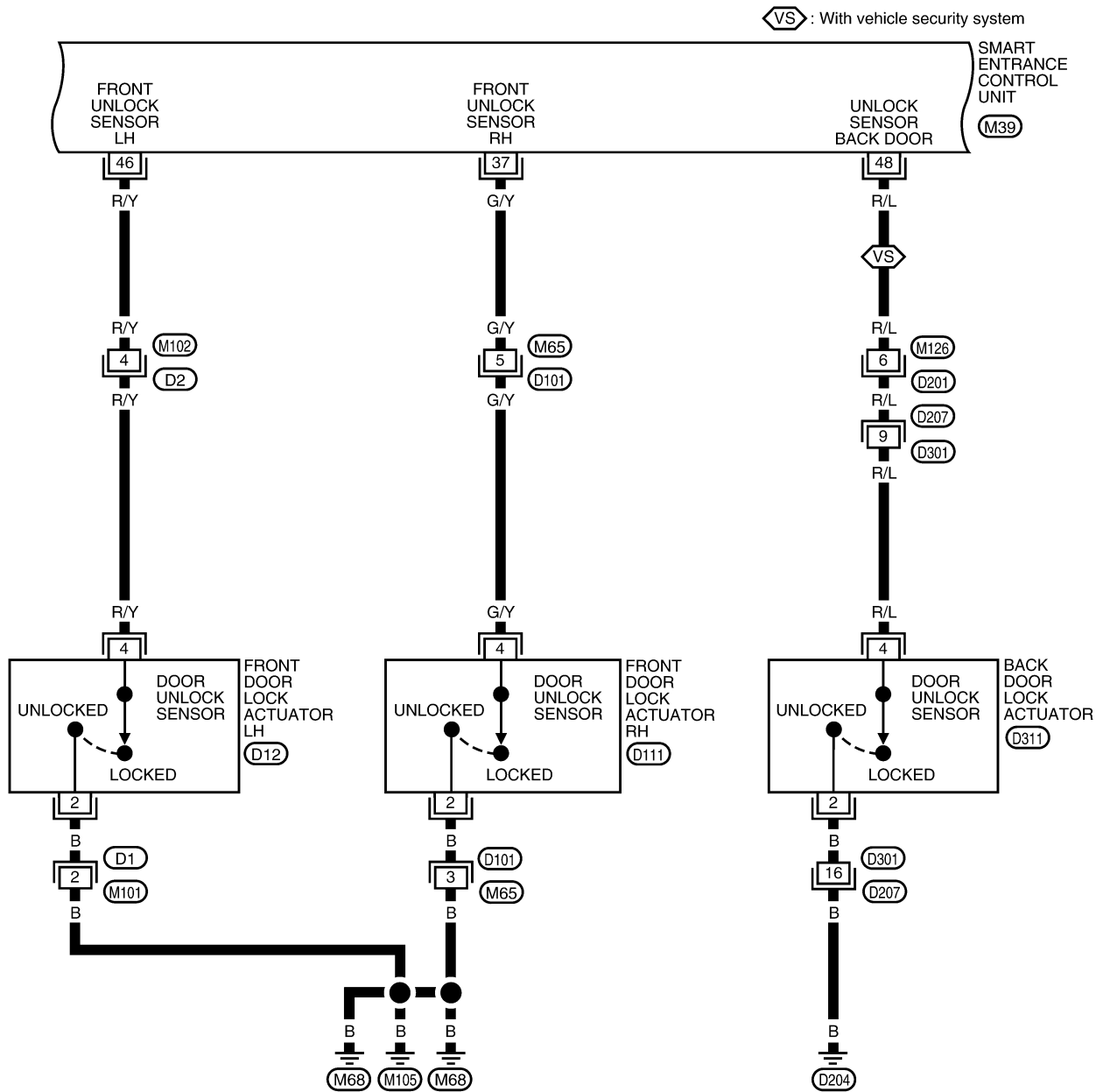
# MULTI-REMOTE CONTROL SYSTEM

Wiring Diagram — MULTI — (Cont'd)

FIG. 3

NDEL012S03

## EL-MULTI-03



LEL972



# MULTI-REMOTE CONTROL SYSTEM

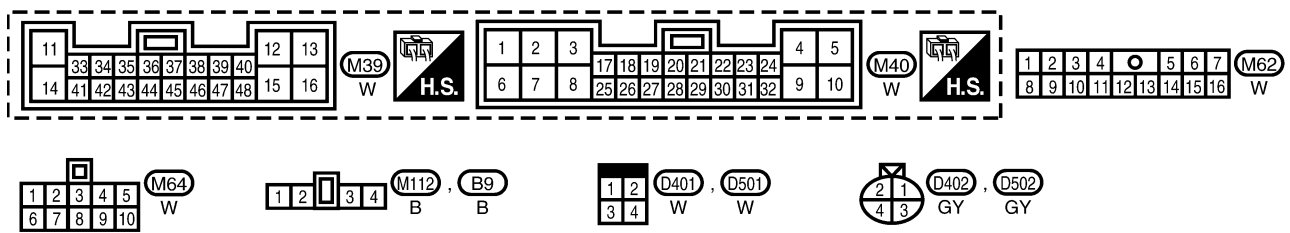
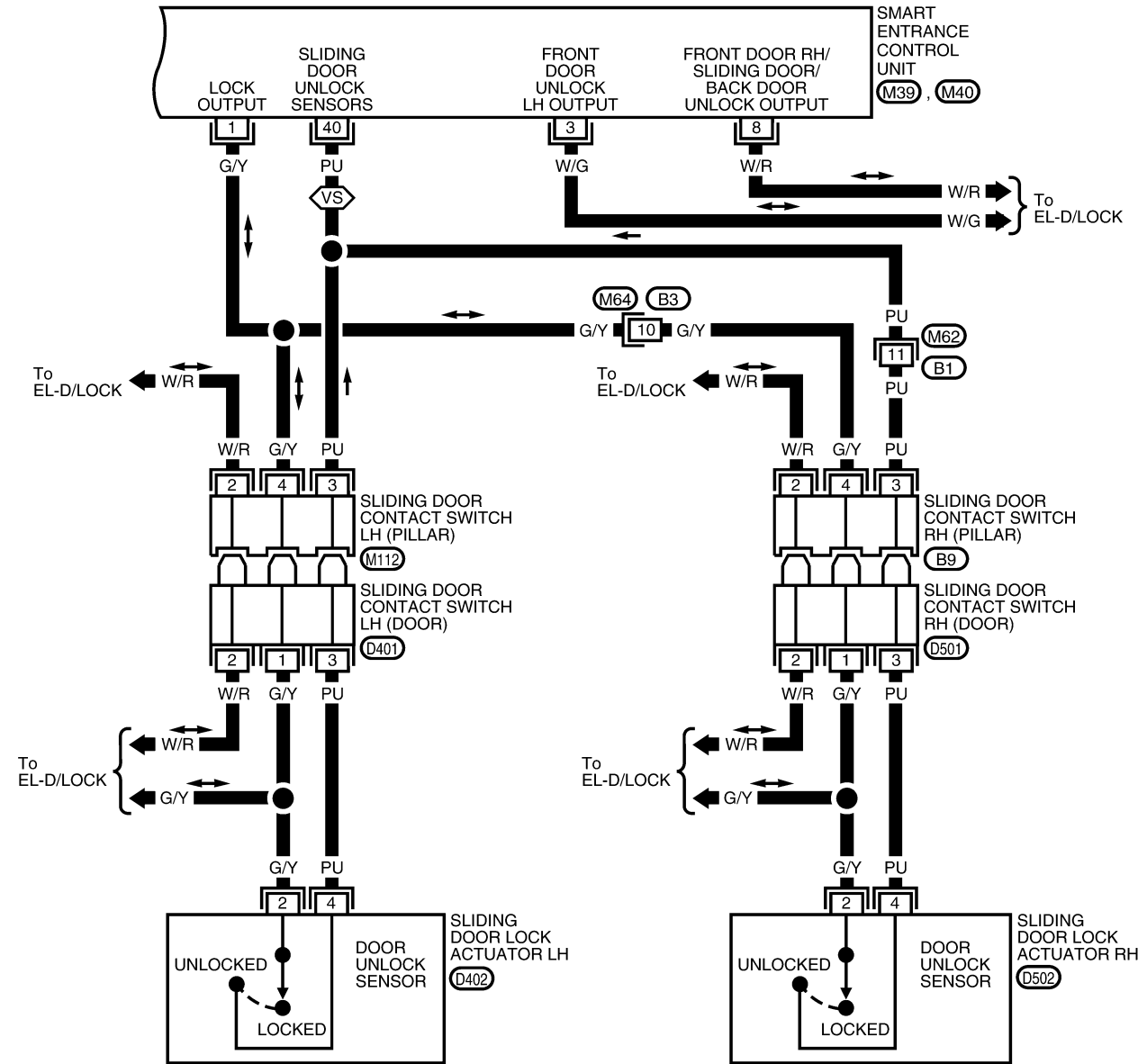
Wiring Diagram — MULTI — (Cont'd)

FIG. 4

NDEL012S04

## EL-MULTI-04

VS : With vehicle security system



LEL429A

# MULTI-REMOTE CONTROL SYSTEM

Trouble Diagnoses

## Trouble Diagnoses SYMPTOM CHART

NDEL0113

NDEL0113S01

### NOTE:

- Always check the remote controller battery before replacing remote controller.

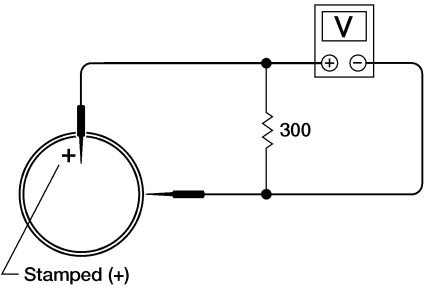
Symptom	Diagnoses/service procedure	Reference page
All functions of multi-remote control system do not operate.	1. Remote controller battery check	EL-271
	2. Power supply and ground circuit for smart entrance control unit check	EL-272
	3. Replace remote controller. Refer to "ID Code Entry Procedure".	EL-279
Remote controller ID code cannot be entered.	1. Remote controller battery check	EL-271
	2. Key switch (inserted) check	EL-276
	3. Door switch check	EL-274
	4. Door unlock sensor check	EL-277
	5. Power supply and ground circuit for smart entrance control unit check	EL-272
	6. Replace remote controller. Refer to "ID Code Entry Procedure".	EL-279
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-251.)	1. Replace remote controller. Refer to "ID Code Entry Procedure".	EL-279
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-278
	2. Door unlock sensor check	EL-277
	3. Replace remote controller. Refer to "ID Code Entry Procedure".	EL-279
Horn does not chirp when pressing lock button of remote controller.	1. Check horn chirp setting. Refer to "System Description".	EL-262
	2. Door unlock sensor check.	EL-277
	3. Check vehicle security system operation. Refer to "PRELIMINARY CHECK".	EL-294
	4. Replace remote controller. Refer to "ID Code Entry Procedure".	EL-279
Panic alarm (horn and headlamps) does not activate when panic alarm button is continuously pressed more than 1.5 seconds.	1. Vehicle security system operation check. Refer to "PRELIMINARY CHECK".	EL-294
	2. Replace remote controller. Refer to "ID Code Entry Procedure".	EL-279

# MULTI-REMOTE CONTROL SYSTEM

Trouble Diagnoses (Cont'd)

## REMOTE CONTROLLER BATTERY CHECK

-NDEL0113S02

1	<b>CHECK REMOTE CONTROLLER BATTERY</b>	
<p>1. Remove remote controller battery. Refer to "Remote Controller Battery Replacement", EL-280.                  2. Measure voltage across battery positive and negative terminals, (+) and (-).</p>		
<div style="text-align: center;">  </div>		
<p><b>Voltage [V]: 2.5 - 3.0</b></p>		
<p><b>NOTE:</b> Remote controller does not function if battery is not installed correctly.</p>		
<p><b>OK or NG</b></p>		
OK	▶	Check remote controller battery terminals for corrosion and damage.
NG	▶	Replace battery.

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# MULTI-REMOTE CONTROL SYSTEM

Trouble Diagnoses (Cont'd)

## POWER SUPPLY AND GROUND CIRCUIT CHECK

=NDEL0113S03

<b>1</b>	<b>CHECK MAIN POWER SUPPLY CIRCUIT FOR SMART ENTRANCE CONTROL UNIT</b>	
<p>1. Disconnect connector from smart entrance control unit.                  2. Check voltage between smart entrance control unit terminal 13 and ground.</p>		
<p>Refer to wiring diagram, EL-266.</p> <p style="text-align: right;">AEL906B</p>		
<b>Does battery voltage exist?</b>		
Yes	▶	GO TO 2.
No	▶	<p><b>Check the following</b></p> <ul style="list-style-type: none"> <li>● 7.5A fuse (No. 39, located in the fuse and fusible link box)</li> <li>● Harness for open or short between smart entrance control unit and fuse.</li> </ul>

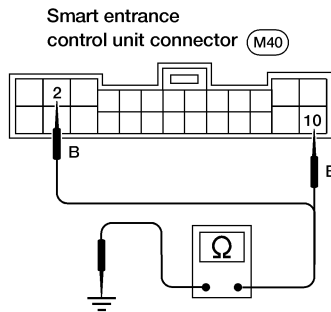
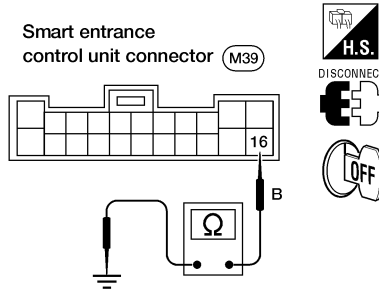
<b>2</b>	<b>CHECK IGNITION SWITCH ACC CIRCUIT</b>	
<p>1. Disconnect smart entrance control unit connector.                  2. Check voltage between smart entrance control unit terminal 36 and ground with ignition switch in ACC.</p>		
<p>Refer to wiring diagram, EL-266.</p> <p style="text-align: right;">AEL907B</p>		
<b>Does battery voltage exist?</b>		
Yes	▶	GO TO 3.
No	▶	<p><b>Check the following</b></p> <ul style="list-style-type: none"> <li>● 7.5A fuse (No. 5, located in fuse block)</li> <li>● Harness for open or short between smart entrance control unit and fuse.</li> </ul>

# MULTI-REMOTE CONTROL SYSTEM

Trouble Diagnoses (Cont'd)

## 3 CHECK GROUND CIRCUIT FOR SMART ENTRANCE CONTROL UNIT

Check continuity between smart entrance control unit terminals 2, 10, 16 and ground.



Refer to wiring diagram, EL-266.

AEL881B

**Does continuity exist?**

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

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# MULTI-REMOTE CONTROL SYSTEM

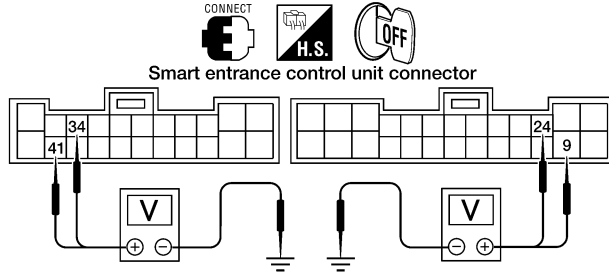
Trouble Diagnoses (Cont'd)

## DOOR SWITCH CHECK

=NDEL0113S04

### 1 CHECK DOOR SWITCH INPUT SIGNAL

Check voltage between smart entrance control unit harness connectors M39, M40 terminals 34 (R) (front door switch LH), 9 (R/W) (front door switch RH), 41 (R/G) (sliding door switch LH and RH), 24 (R/W) (back door latch switch LH and RH) and ground.



	Terminals		Door condition	Voltage [V] (Approx.)
	(+)	(-)		
Front door switch LH	34	Ground	Open	0
			Closed	1.5
Front door switch RH	9	Ground	Open	0
			Closed	1.5
Sliding door switch LH and RH	41	Ground	Open	0
			Closed	1.5
Back door latch switch LH and RH	24	Ground	Open	0
			Closed	1.5

LEL303A

Refer to wiring diagram, EL-267.

### OK or NG

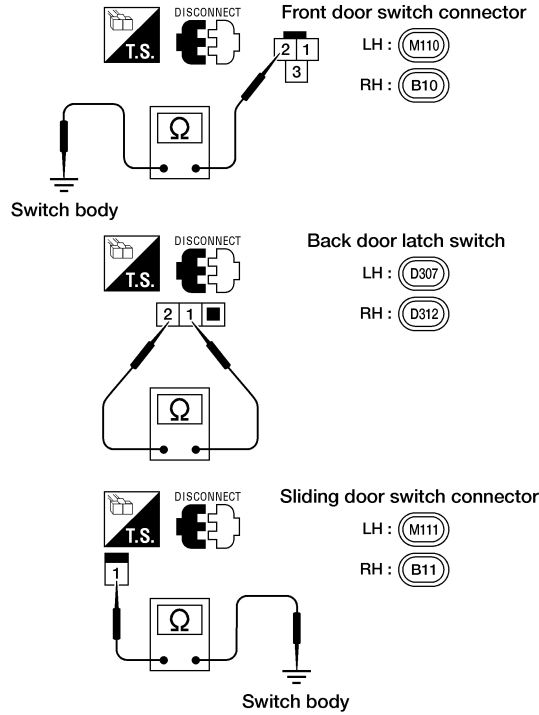
OK	▶	Door switch is OK.
NG	▶	GO TO 2.

# MULTI-REMOTE CONTROL SYSTEM

Trouble Diagnoses (Cont'd)

## 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	▶	<b>Check the following</b> <ul style="list-style-type: none"> <li>• Door switch ground circuit (back door latch switch) or door switch ground condition</li> <li>• Harness for open or short between smart entrance control unit and door switch.</li> </ul>
NG	▶	Replace door switch.

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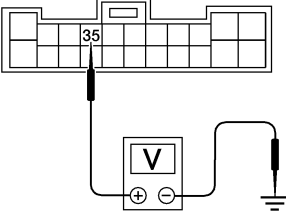
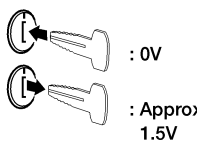

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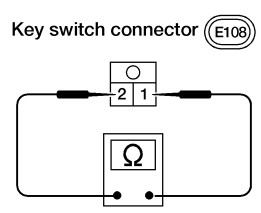
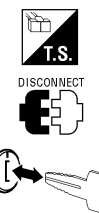
# MULTI-REMOTE CONTROL SYSTEM

Trouble Diagnoses (Cont'd)

## KEY SWITCH (INSERTED) CHECK

-NDEL0113S05

<b>1</b>	<b>CHECK KEY SWITCH INPUT SIGNAL</b>	<p>Check voltage between control unit harness connector M39 terminal 35 (L/OR) and ground.</p> <div style="display: flex; align-items: center; justify-content: space-around;"> <div style="text-align: center;"> <p>Smart entrance control unit connector</p>  </div> <div style="text-align: center;">  <p>: 0V : Approx. 1.5V</p> </div> <div style="text-align: center;">  </div> <div style="text-align: left;"> <p><b>Voltage [V]:</b>  <b>0</b>  <b>Condition of key switch: Key is inserted.</b>  <b>Approx. 1.5</b>  <b>Condition of key switch: Key is removed.</b></p> </div> </div> <p style="text-align: right;">LEL307A</p> <p>Refer to wiring diagram in EL-266.</p> <p style="text-align: center;"><b>OK or NG</b></p>
OK	▶	Key switch is OK.
NG	▶	GO TO 2.

<b>2</b>	<b>CHECK KEY SWITCH (INSERTED)</b>	<p>Check continuity between terminals 1 and 2.</p> <div style="display: flex; align-items: center; justify-content: center;"> <div style="text-align: center;"> <p>Key switch connector (E108)</p>  </div> <div style="text-align: center;">  </div> </div> <p style="text-align: right;">AEL875B</p> <p><b>Continuity:</b>  <b>Condition of key switch: Key is inserted.</b>  <b>Yes</b>  <b>Condition of key switch: Key is removed.</b>  <b>No</b></p> <p style="text-align: center;"><b>OK or NG</b></p>
OK	▶	<p><b>Check the following</b></p> <ul style="list-style-type: none"> <li>● Key switch ground circuit</li> <li>● Harness for open or short between smart entrance control unit and key switch.</li> </ul>
NG	▶	Replace key switch.

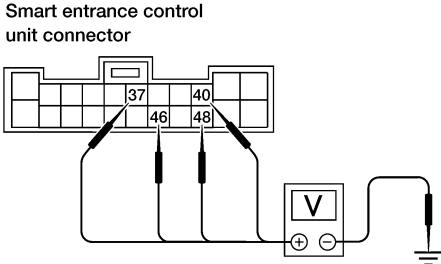



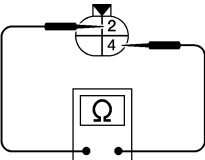

# MULTI-REMOTE CONTROL SYSTEM

Trouble Diagnoses (Cont'd)

## DOOR UNLOCK SENSOR CHECK

=NDEL0113S06

<b>1</b>	<b>CHECK DOOR UNLOCK SENSOR INPUT SIGNAL</b>																																			
<p>Check voltage between smart entrance control unit harness connector M39 terminals 37 (G/Y), 40 (PU), 46 (R/Y), 48 (R/L) and ground as shown.</p>																																				
<div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="width: 30%;">  <p>Smart entrance control unit connector</p> </div> <div style="width: 15%; text-align: center;">  </div> <div style="width: 45%;"> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th rowspan="2"></th> <th colspan="2">Terminals</th> <th rowspan="2">Condition</th> <th rowspan="2">Voltage [V] (Approx.)</th> </tr> <tr> <th>(+)</th> <th>(-)</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Front door LH</td> <td rowspan="2">46</td> <td rowspan="2">Ground</td> <td>Locked</td> <td>1.5</td> </tr> <tr> <td>Unlocked</td> <td>0</td> </tr> <tr> <td rowspan="2">Front door RH</td> <td rowspan="2">37</td> <td rowspan="2">Ground</td> <td>Locked</td> <td>1.5</td> </tr> <tr> <td>Unlocked</td> <td>0</td> </tr> <tr> <td rowspan="2">Sliding door LH and RH</td> <td rowspan="2">40</td> <td rowspan="2">Ground</td> <td>Locked</td> <td>1.5</td> </tr> <tr> <td>Unlocked</td> <td>0</td> </tr> <tr> <td rowspan="2">Back door</td> <td rowspan="2">48</td> <td rowspan="2">Ground</td> <td>Locked</td> <td>1.5</td> </tr> <tr> <td>Unlocked</td> <td>0</td> </tr> </tbody> </table> </div> </div>			Terminals		Condition	Voltage [V] (Approx.)	(+)	(-)	Front door LH	46	Ground	Locked	1.5	Unlocked	0	Front door RH	37	Ground	Locked	1.5	Unlocked	0	Sliding door LH and RH	40	Ground	Locked	1.5	Unlocked	0	Back door	48	Ground	Locked	1.5	Unlocked	0
	Terminals		Condition	Voltage [V] (Approx.)																																
	(+)	(-)																																		
Front door LH	46	Ground	Locked	1.5																																
			Unlocked	0																																
Front door RH	37	Ground	Locked	1.5																																
			Unlocked	0																																
Sliding door LH and RH	40	Ground	Locked	1.5																																
			Unlocked	0																																
Back door	48	Ground	Locked	1.5																																
			Unlocked	0																																
LEL311A																																				
Refer to wiring diagrams, EL-268, 269.																																				
<b>OK or NG</b>																																				
OK	▶ Door unlock sensor is OK.																																			
NG	▶ GO TO 2.																																			

<b>2</b>	<b>CHECK DOOR UNLOCK SENSOR</b>
<p>1. Disconnect door unlock sensor connector. 2. Check continuity between door unlock sensor terminals.</p>	
<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="width: 30%;"> <p>Front LH : (D12)    Sliding LH : (D402)    Back : (D311)</p> <p>Front RH : (D111)    Sliding RH : (D502)</p> </div> <div style="width: 30%; text-align: center;">  <p>Door lock actuator connectors</p> </div> <div style="width: 15%; text-align: center;">  </div> </div>	
AEL914B	
<p><b>Continuity:</b>  <b>Condition: Locked</b>  <b>No</b>  <b>Condition: Unlocked</b>  <b>Yes</b></p>	
<b>OK or NG</b>	
OK	▶ <b>Check the following</b>
<ul style="list-style-type: none"> <li>● Door unlock sensor ground circuit (front door LH/RH and back door)</li> <li>● Harness for open or short between smart entrance control unit and door unlock sensor.</li> </ul>	
NG	▶ Replace door unlock sensor.

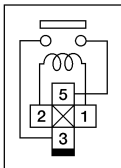
# MULTI-REMOTE CONTROL SYSTEM

Trouble Diagnoses (Cont'd)

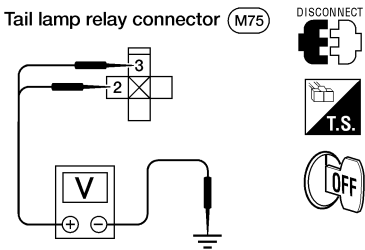
## TAIL LAMP RELAY CHECK

-NDEL0113S07

<b>1</b>	<b>CHECK TAIL LAMP OPERATION</b>	
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.

<b>2</b>	<b>CHECK TAIL LAMP RELAY</b>	
1. Apply 12V DC direct current between relay terminals 1 and 2. 2. Check continuity between relay terminals 3 and 5.		
		
<p style="color: blue;">Continuity:          12V applied          Yes          No voltage applied          No</p> <p style="text-align: center;"><b>OK or NG</b></p>		
OK	▶	GO TO 3.
NG	▶	Replace relay.

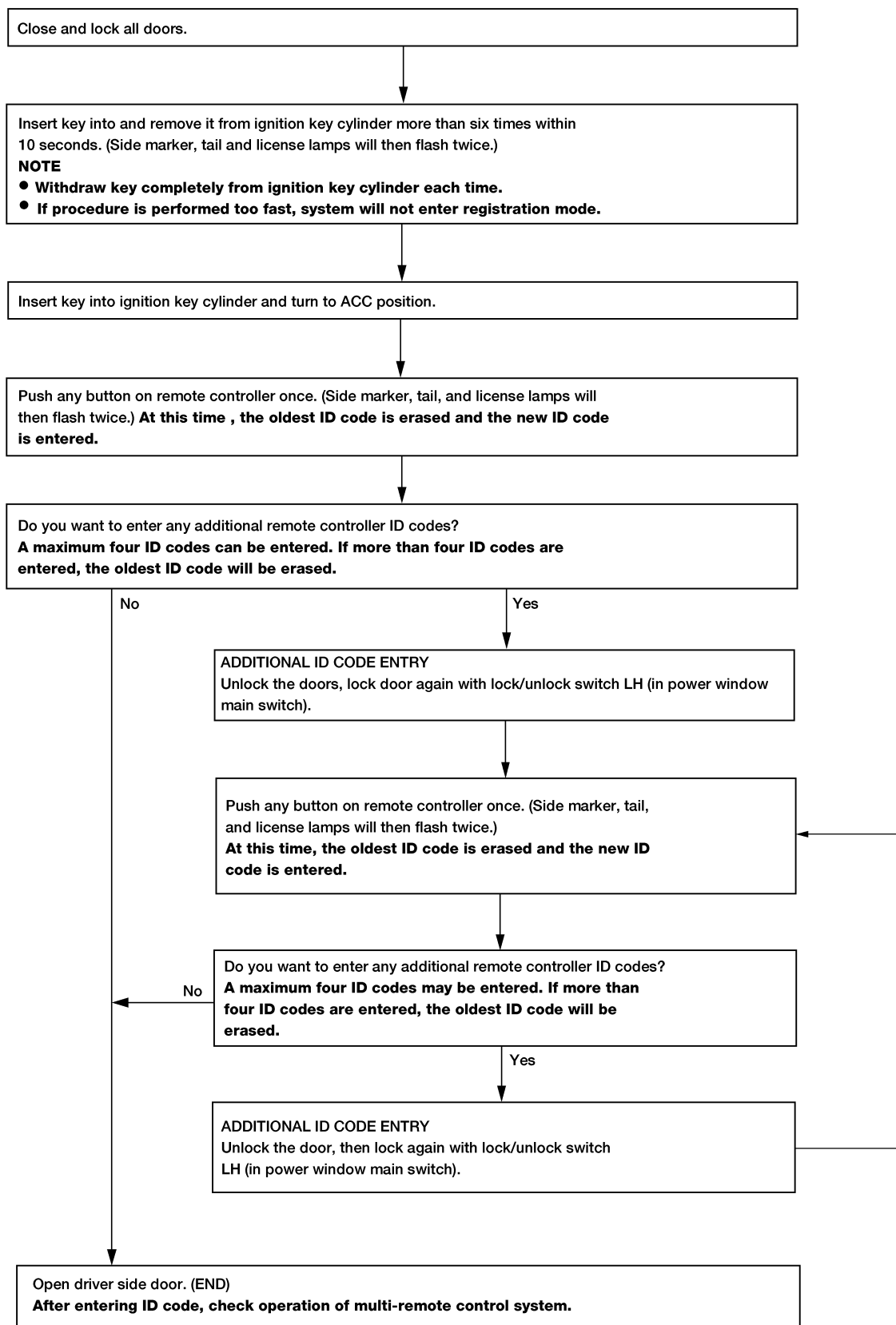
AEL916B

<b>3</b>	<b>CHECK TAIL LAMP RELAY POWER SUPPLY</b>	
Check voltage between tail lamp relay terminals 2, 3 and ground.		
		
<b>Does battery voltage exist?</b>		
Yes	▶	Check tail lamp circuits.
No	▶	Check harness between tail lamp relay and battery.

AEL917B

## ID Code Entry Procedure

NDEL0114



GI  
MA  
EM  
LC  
EC  
FE  
AT  
AX  
SU  
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IDX

# MULTI-REMOTE CONTROL SYSTEM

## ID Code Entry Procedure (Cont'd)

### NOTE:

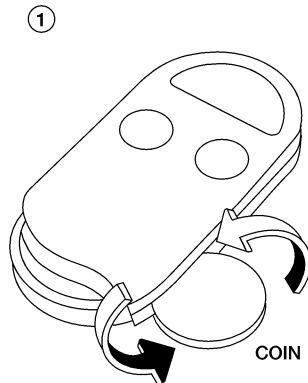
- If a remote controller is lost, the ID code of the lost remote controller must be erased to prevent unauthorized use. To erase all ID codes in memory, register one ID code (remote controller) four times. After all codes are erased, the ID codes of all remaining and/or new remote controllers must be re-registered.
- When registering an additional remote controller, the existing ID codes in memory may or may not be erased. If four ID codes are stored in memory, when an additional code is registered, only the oldest code is erased. If less than four ID codes are stored in memory, when an additional ID code is registered the new ID code is added and no ID codes are erased.
- If you need to activate more than two new remote controllers, repeat the procedure "Additional ID code entry" for each additional new remote controller.
- A maximum of four ID codes may be entered. When more than four ID codes are entered, the ID oldest code will be erased.
- For the procedure to memorize position for automatic drive positioner, refer to "PROCEDURE FOR STORING MULTI-REMOTE CONTROLLER", EL-174.
- Even if the same ID code that is already in the memory is input, the same ID code can be entered. The code is counted as an additional code.

## Remote Controller Battery Replacement

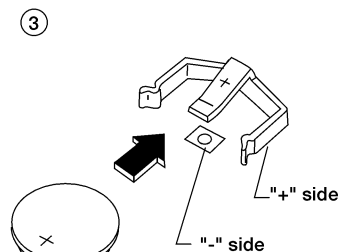
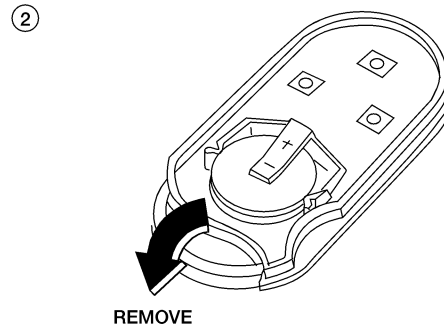
NDEL0115

### NOTE:

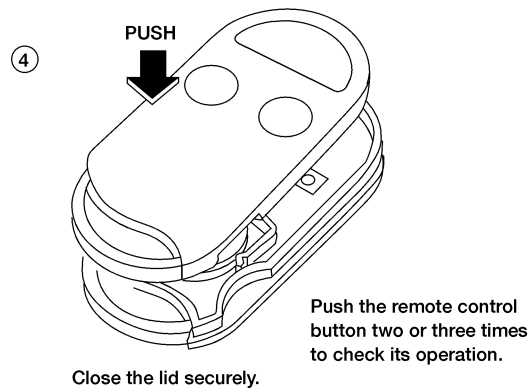
- Be careful not to touch the circuit board or battery terminal.
- The remote controller is water-resistant. However, if it does get wet, immediately wipe dry.



Open the lid using a coin.



Insert the new battery.



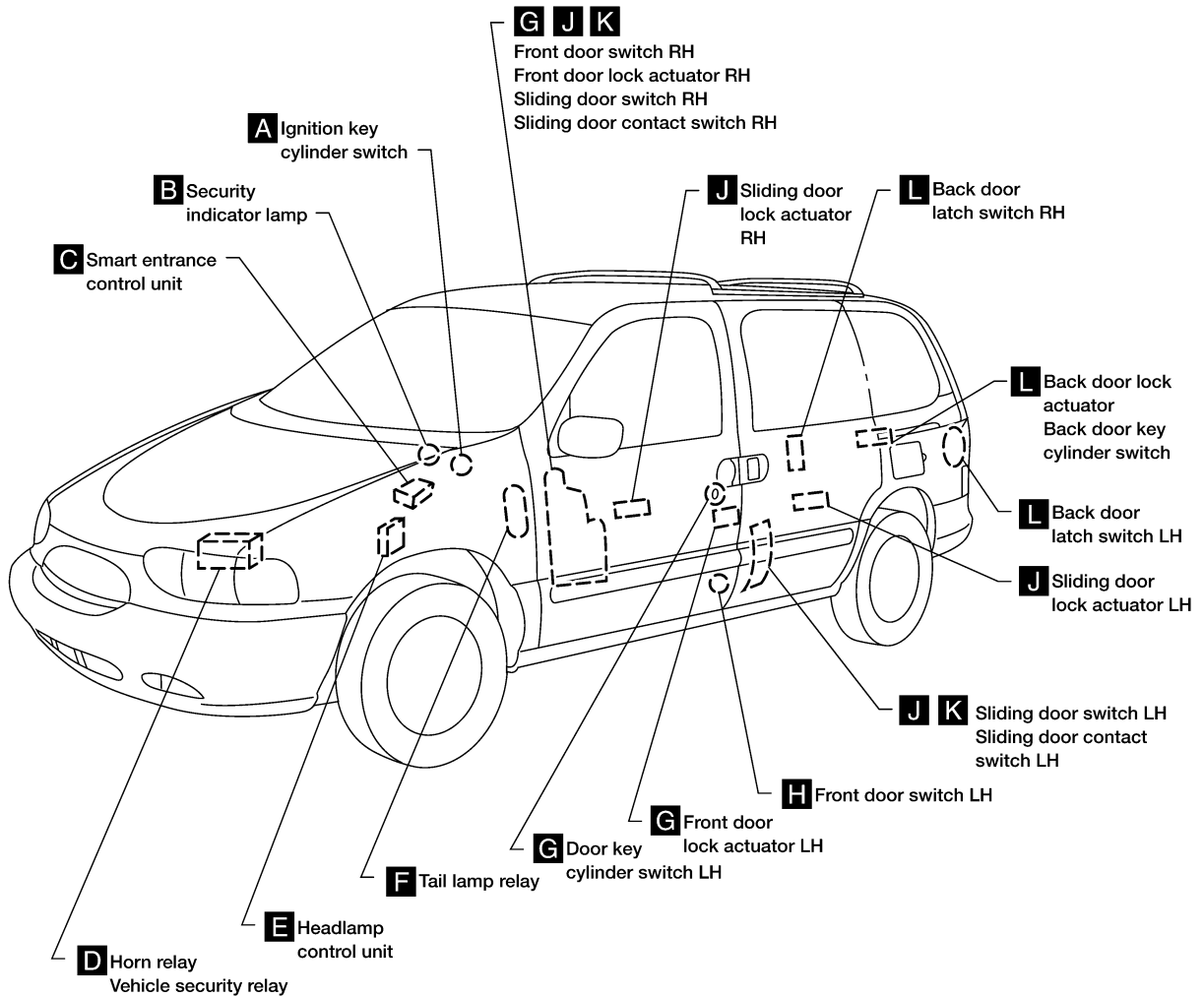
WEL318A

# VEHICLE SECURITY (THEFT WARNING) SYSTEM

Component Parts and Harness Connector Location

## Component Parts and Harness Connector Location

NDEL0116



GI

MA

EM

LC

EC

FE

AT

AX

SU

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ST

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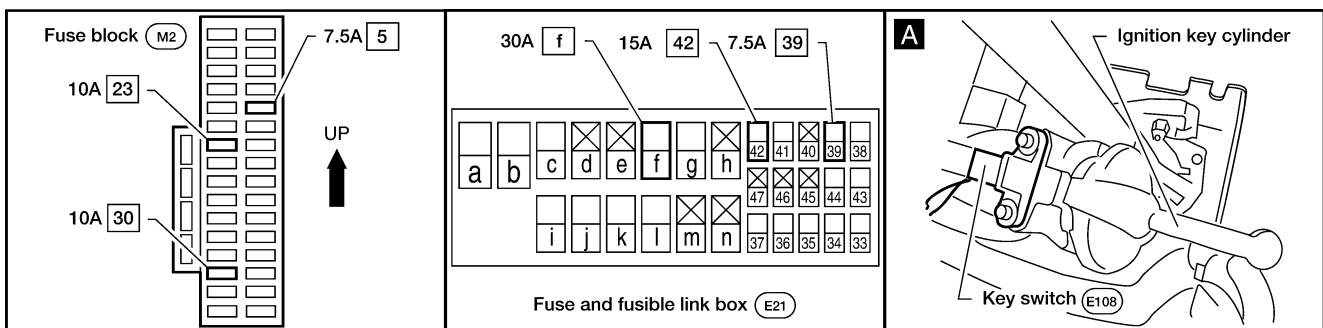
BT

HA

SC

EL

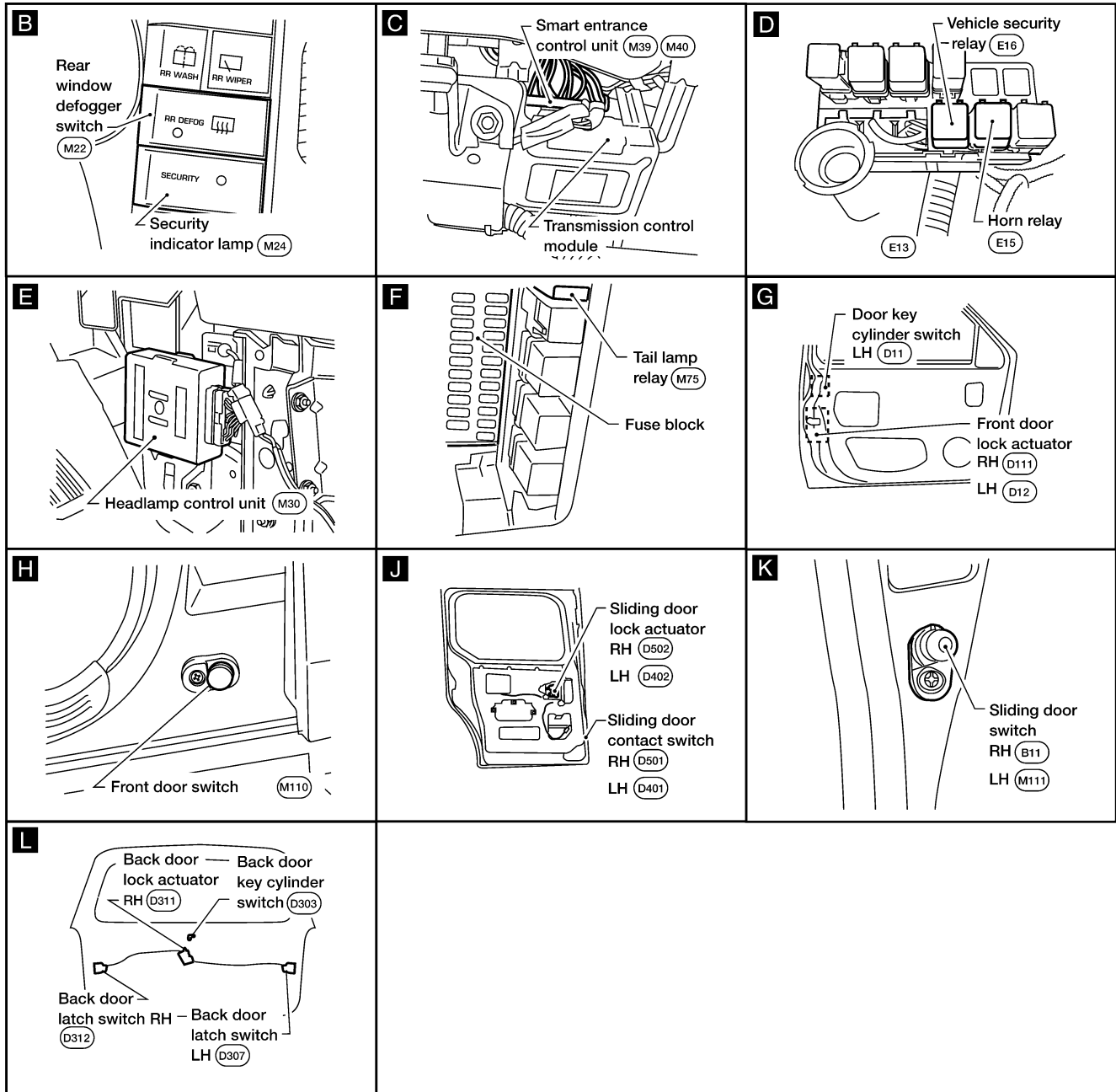
IDX



WEL275A

# VEHICLE SECURITY (THEFT WARNING) SYSTEM

Component Parts and Harness Connector Location (Cont'd)



WEL276A

## System Description

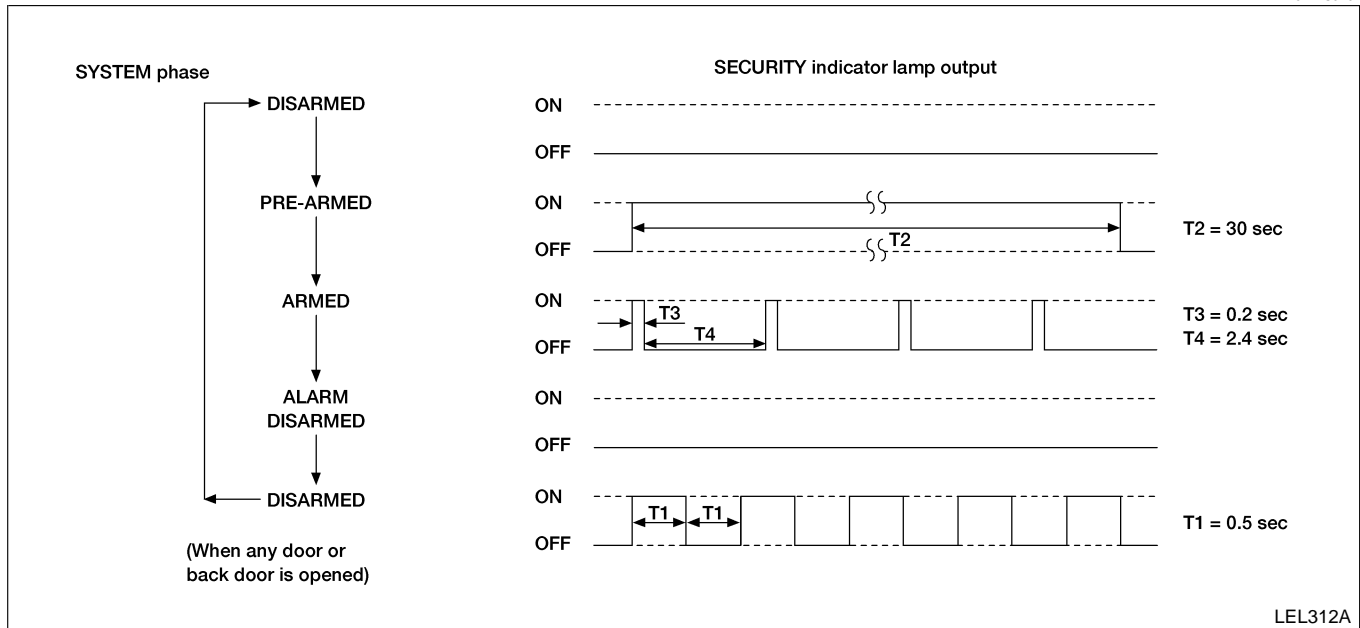
### DESCRIPTION

NDEL0117

#### 1. Operation Flow

NDEL0117S01

NDEL0117S0101



LEL312A

#### 2. Setting the Vehicle Security System

##### Initial condition

- 1) Close all doors.
- 2) Close back door.

##### Disarmed phase

Vehicle security system is in the disarmed phase when any door is open. Security indicator lamp blinks every second.

##### Pre-armed phase and armed phase

Vehicle security system turns into "pre-armed" phase when 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 Vehicle Security System

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 Vehicle Security System

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) 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

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)

NDEL0117S02

# VEHICLE SECURITY (THEFT WARNING) SYSTEM

## System Description (Cont'd)

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- 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 vehicle security system is controlled by doors.

To activate vehicle security system, smart entrance control unit must receive signals indicating all doors are closed and all 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 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, vehicle security system will automatically shift to armed phase.

## VEHICLE SECURITY 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
- 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, vehicle security system will activate automatically.

Once vehicle security 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 every 2.6 seconds.

Vehicle security system is now in armed phase.

## VEHICLE SECURITY SYSTEM ALARM OPERATION

NDEL0117S05

Vehicle security system is triggered by

- opening a door without using key or remote controller to unlock door
- 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.

Once vehicle security system is in armed phase, if smart entrance control unit receives a ground signal at terminal 37, 40, 46, or 48 (door unlock sensor), 9, 24, 34, or 41 (door switch), or power is supplied to smart entrance control unit terminal 36 or 43 without ignition key inserted signal at terminal 35, vehicle security 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)



# VEHICLE SECURITY (THEFT WARNING) SYSTEM

System Description (Cont'd)

- to vehicle security relay terminal 2.

If vehicle security system is triggered, ground is supplied

- from smart entrance control unit terminal 28
- to vehicle security 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

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

When vehicle security system is triggered, ground is supplied intermittently

- from smart entrance control unit terminal 21
- to horn relay terminal 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 about 2.5 minutes but will reactivate if the vehicle is tampered with again.

## VEHICLE SECURITY SYSTEM DEACTIVATION

To deactivate vehicle security 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 or
- from back door key cylinder switch terminal 2.

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

## PANIC ALARM OPERATION

Multi-remote control system may or may not operate vehicle security 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.

GI

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NDEL0117S06

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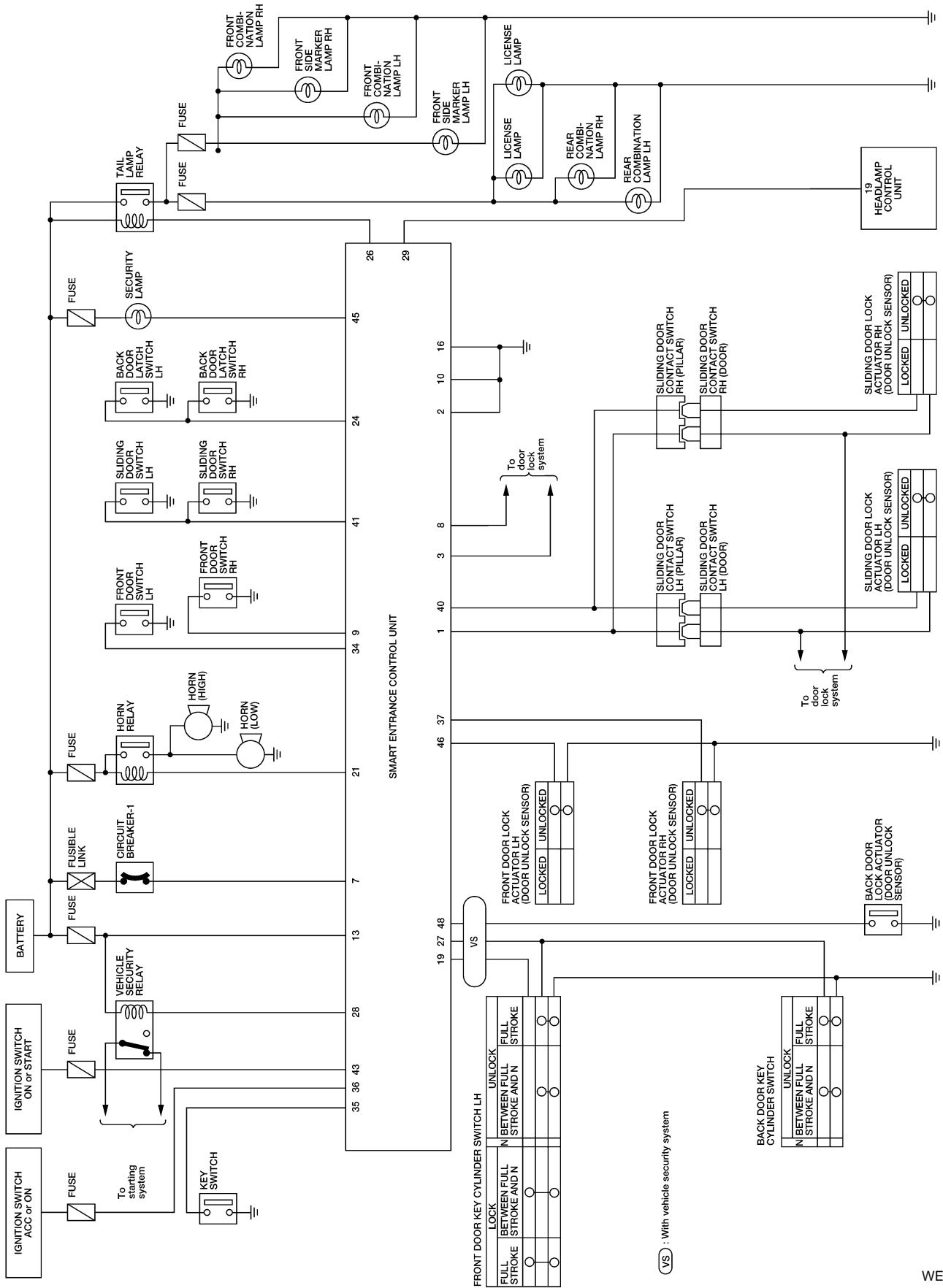
IDX

# VEHICLE SECURITY (THEFT WARNING) SYSTEM

Schematic

## Schematic

NDEL0118



WEL566A

# VEHICLE SECURITY (THEFT WARNING) SYSTEM

Wiring Diagram — VEHSEC —

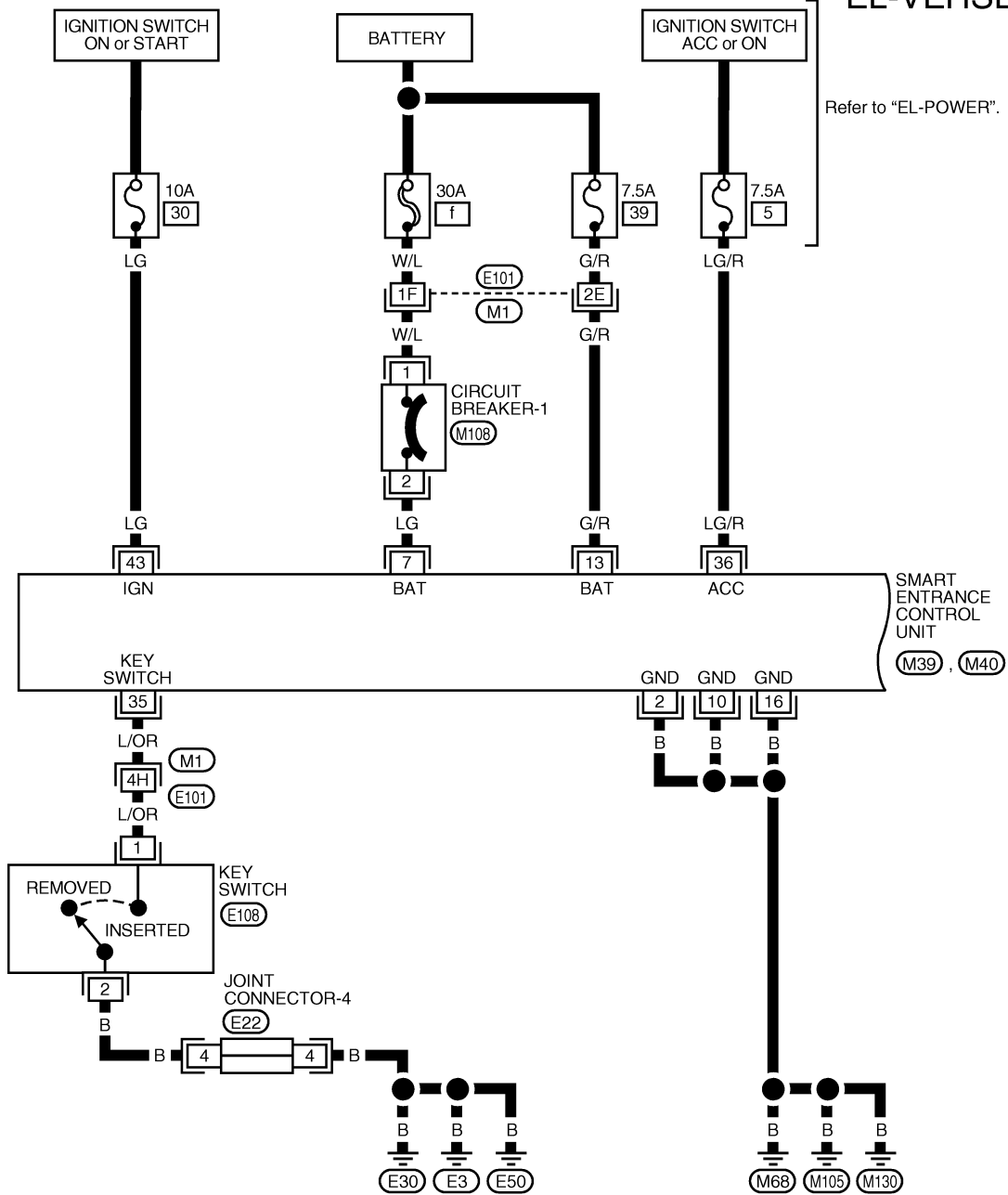
FIG. 1

## Wiring Diagram — VEHSEC —

NDEL0119

NDEL0119S01

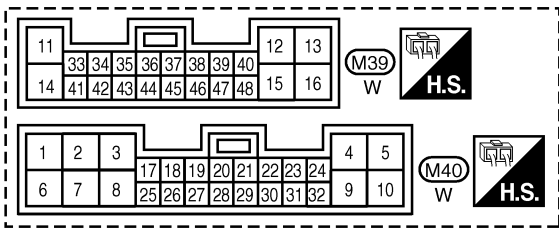
### EL-VEHSEC-01



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Refer to the following.  
 (M1), (E101) - SUPER MULTIPLE JUNCTION (SMJ)  
 (E22) - JOINT CONNECTOR

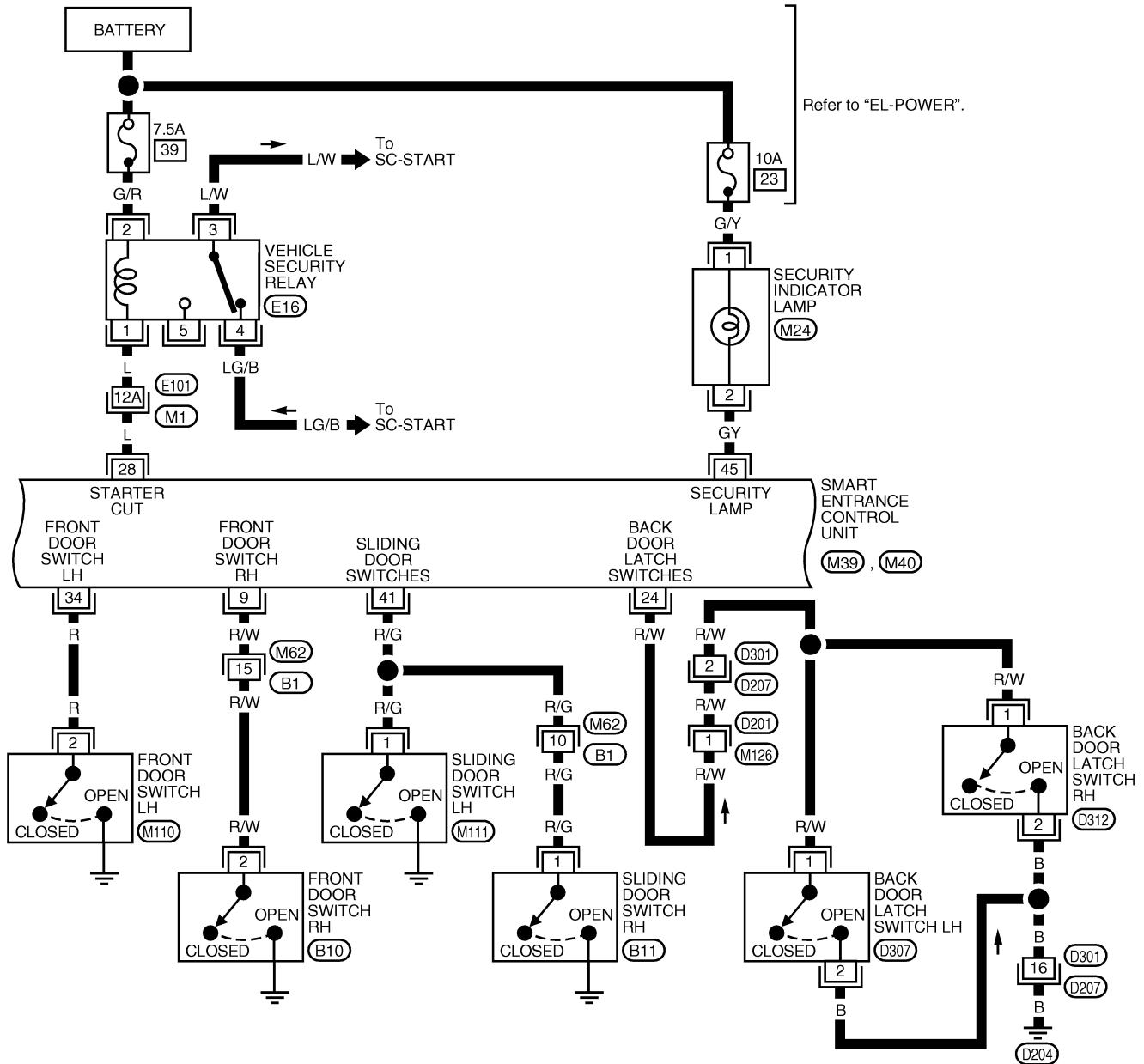
# VEHICLE SECURITY (THEFT WARNING) SYSTEM

Wiring Diagram — VEHSEC — (Cont'd)

FIG. 2

NDEL0119S02

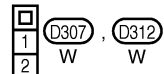
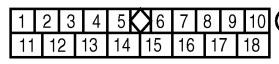
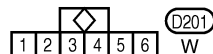
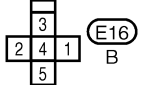
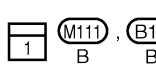
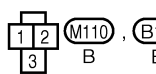
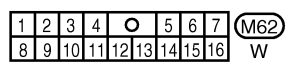
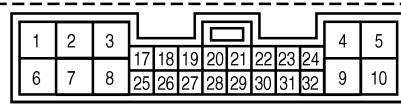
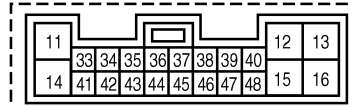
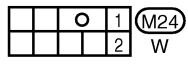
EL-VEHSEC-02



Refer to "EL-POWER".

SMART ENTRANCE CONTROL UNIT (M39, M40)

Refer to the following.  
 (M1), (E101) - SUPER MULTIPLE JUNCTION (SMJ)



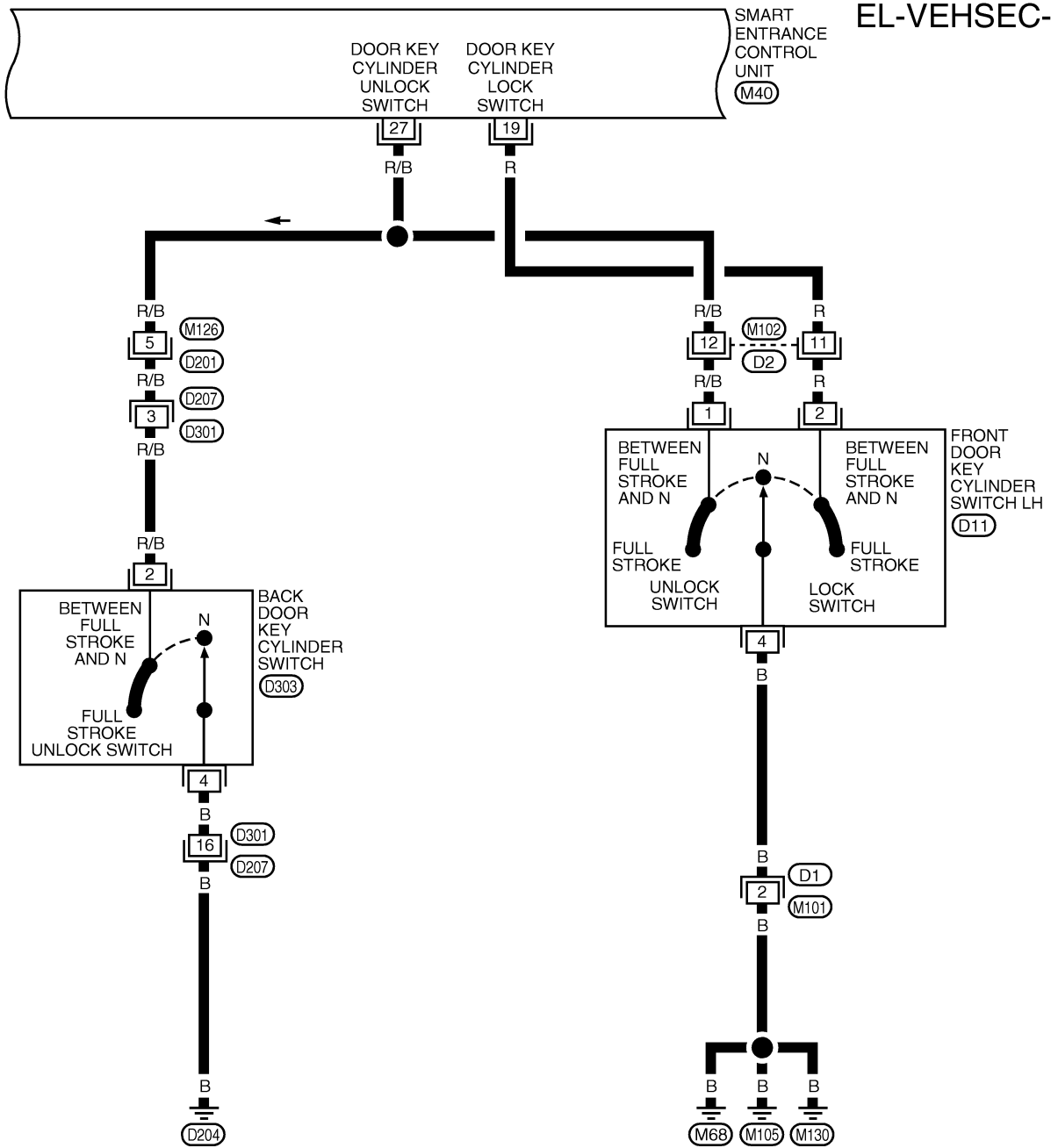
WEL975

# VEHICLE SECURITY (THEFT WARNING) SYSTEM

Wiring Diagram — VEHSEC — (Cont'd)

FIG. 3

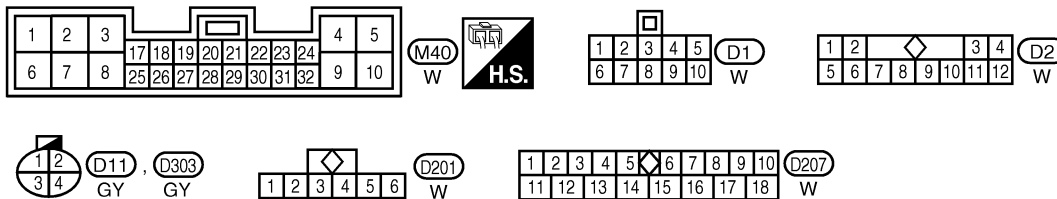
NDEL0119S03



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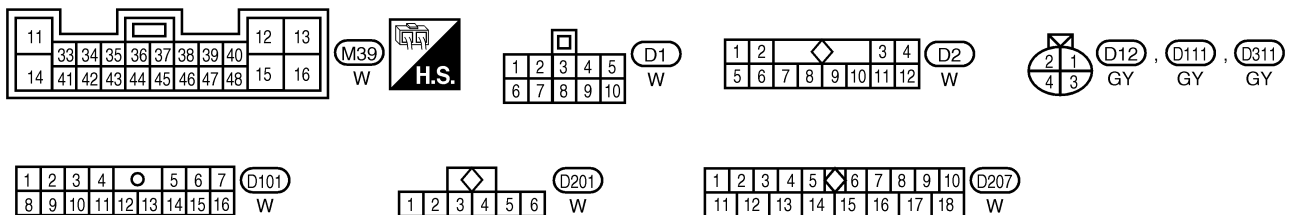
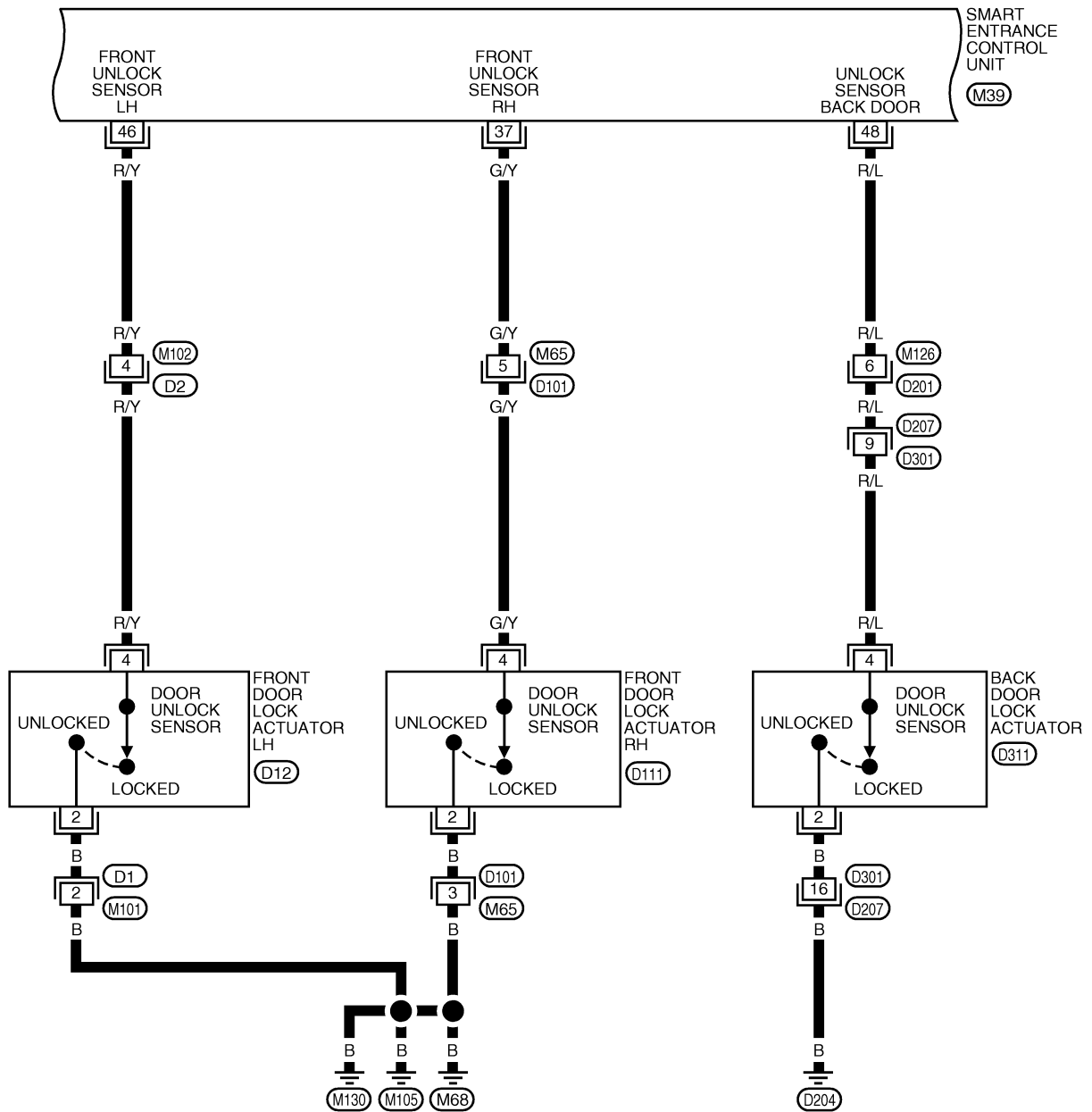
# VEHICLE SECURITY (THEFT WARNING) SYSTEM

Wiring Diagram — VEHSEC — (Cont'd)

FIG. 4

NDEL0119S04

## EL-VEHSEC-04



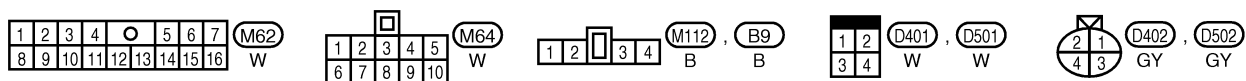
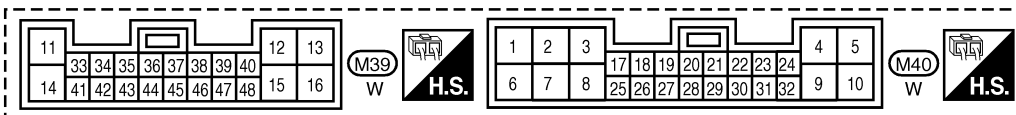
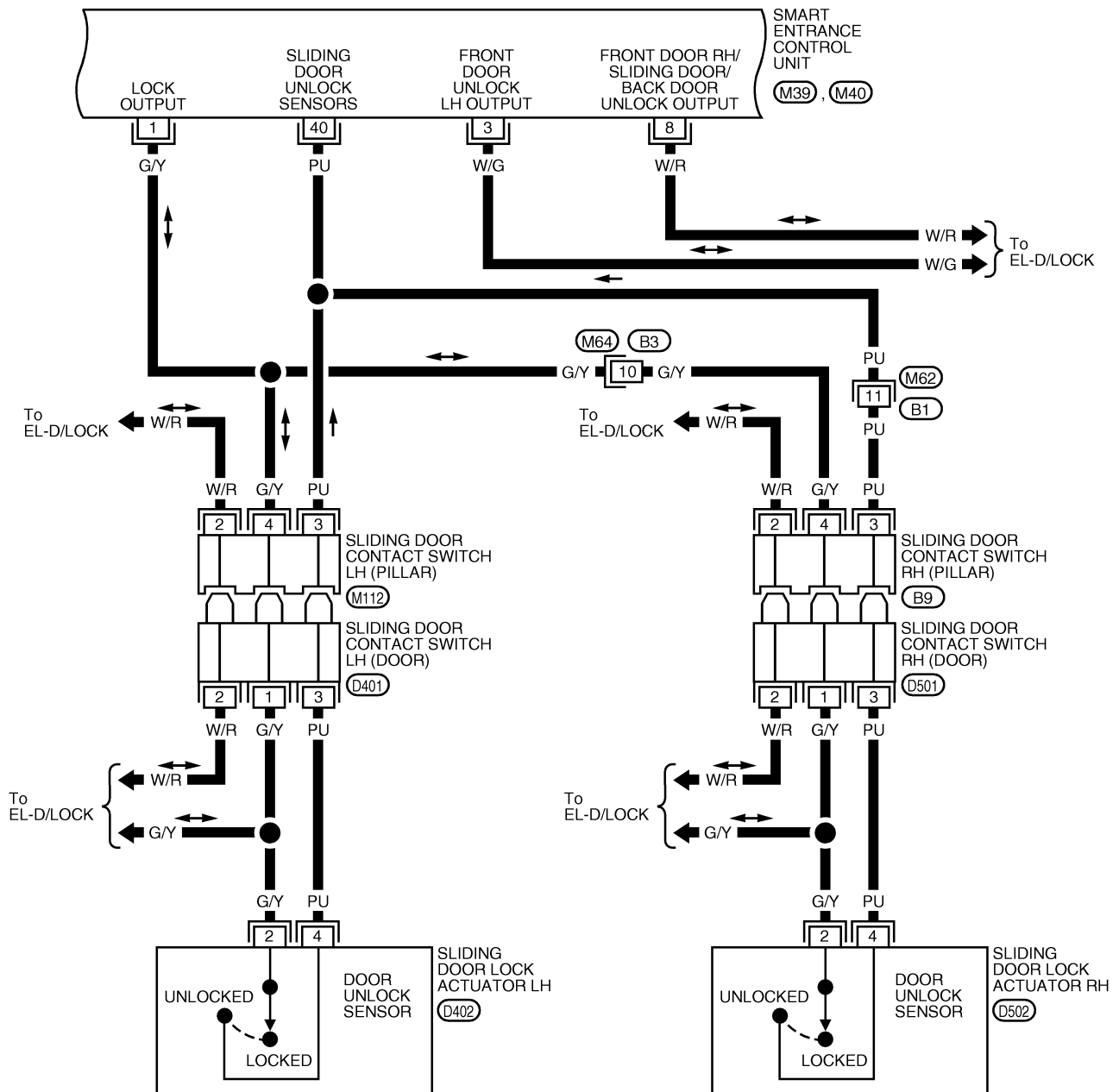
# VEHICLE SECURITY (THEFT WARNING) SYSTEM

Wiring Diagram — VEHSEC — (Cont'd)

FIG. 5

NDEL0119S05

EL-VEHSEC-05



LEL977





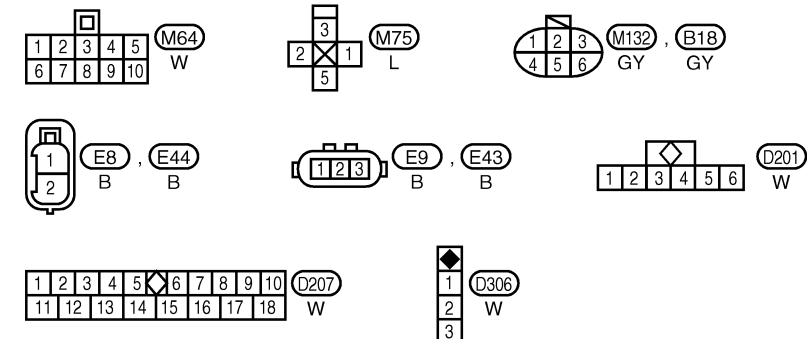
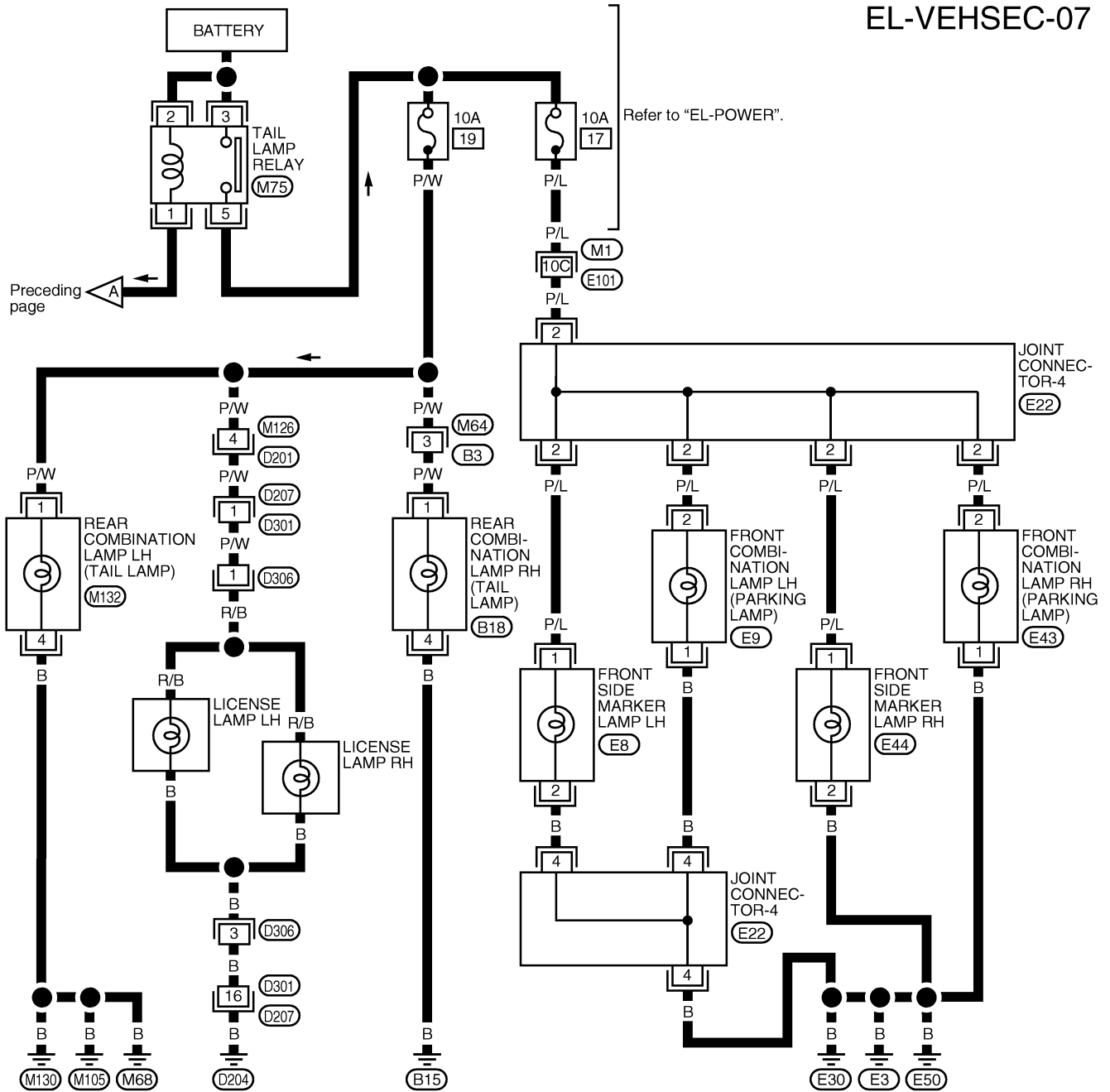
# VEHICLE SECURITY (THEFT WARNING) SYSTEM

Wiring Diagram — VEHSEC — (Cont'd)

FIG. 7

NDEL0119S07

EL-VEHSEC-07



Refer to the following.  
 (M1), (E101) - SUPER MULTIPLE JUNCTION (SMJ)  
 (E22) - JOINT CONNECTOR

GI  
MA  
EM  
LC  
EC  
FE  
AT  
AX  
SU  
BR  
ST  
RS  
BT  
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SC

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# VEHICLE SECURITY (THEFT WARNING) SYSTEM

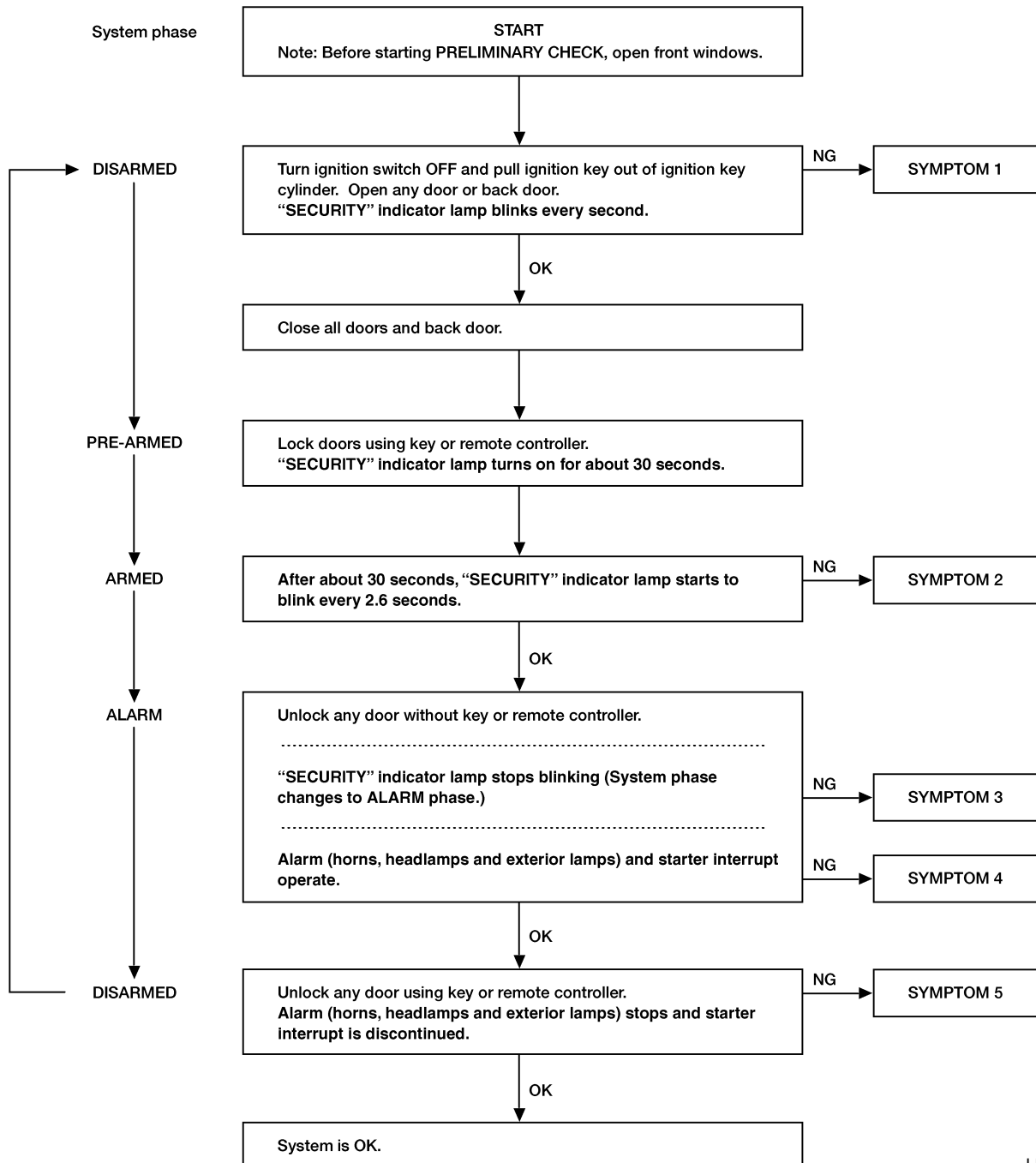
Trouble Diagnoses

## Trouble Diagnoses PRELIMINARY CHECK

NDEL0120

NDEL0120S01

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



LEL313A

After performing "PRELIMINARY CHECK", go to "SYMPTOM CHART", EL-295.

# VEHICLE SECURITY (THEFT WARNING) SYSTEM

Trouble Diagnoses (Cont'd)

## SYMPTOM CHART

NDEL0120S02

REFERENCE PAGE (EL- )	294	296	297	299	300	258	301	301	302	303	270												
SYMPTOM	PRELIMINARY CHECK	POWER SUPPLY AND GROUND CIRCUIT CHECK	DOOR SWITCH CHECK	SECURITY INDICATOR LAMP CHECK	DOOR UNLOCK SENSOR CHECK	DOOR KEY CYLINDER SWITCH CHECK Refer to "POWER DOOR LOCK" system.	VEHICLE SECURITY HORN ALARM CHECK	VEHICLE SECURITY HEADLAMP ALARM CHECK	TAIL LAMP RELAY CHECK	STARTER INTERRUPT SYSTEM CHECK	Check "MULTI-REMOTE CONTROL" system.	GI MA EM LC EC FE AT											
1	"SECURITY" indicator lamp does not turn on or blink.											AX											
2	Vehicle security system cannot be set by ...											SU											
												All items											BR
												Door outside key											ST
												Back door key											RS
	Remote controller											BT											
3	*1 Vehicle security system does not alarm when ...											HA											
												Any door is opened.											SC
	Any door is unlocked without using key or remote controller.											EL											
4	Vehicle security alarm does not activate.											IDX											
												All functions											EL
												Horn alarm											EL
												Headlamp alarm											EL
												Exterior lamp alarm											EL
	Starter interrupt											EL											
5	Vehicle security system cannot be canceled by ...											EL											
												Door outside key											EL
												Back door key											EL
	Remote controller											EL											

X : Applicable

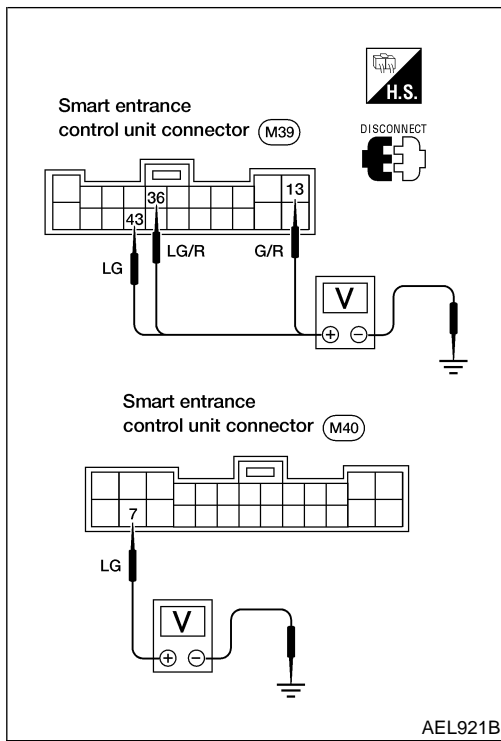
\*1: Make sure the system is in the armed phase.

**Before starting trouble diagnoses above, perform "PRELIMINARY CHECK", EL-294.**

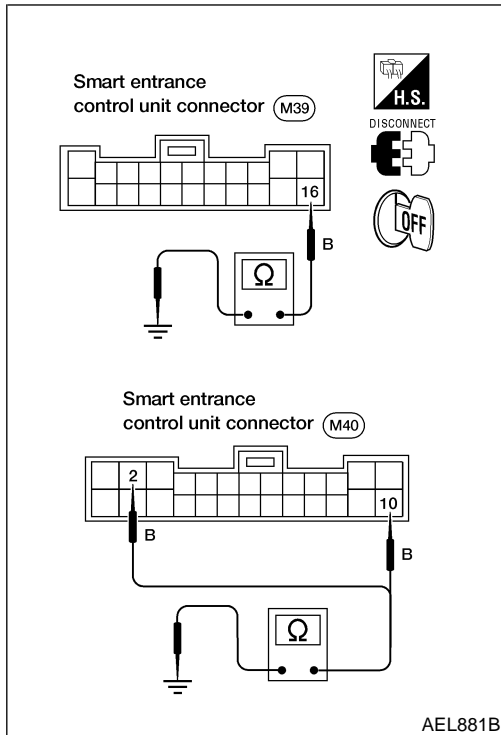
Symptom numbers in the symptom chart correspond with those of "PRELIMINARY CHECK".

# VEHICLE SECURITY (THEFT WARNING) SYSTEM

Trouble Diagnoses (Cont'd)



AEL921B



AEL881B

## 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	

# VEHICLE SECURITY (THEFT WARNING) SYSTEM

Trouble Diagnoses (Cont'd)

## DOOR SWITCH CHECK

=NDEL0120S04

<b>1</b>	<b>PRELIMINARY CHECK</b>	
1. Turn ignition switch OFF and remove ignition key from ignition key cylinder. 2. Close all doors. <b>“SECURITY” indicator lamp should turn off.</b> 3. Open any door. <b>“SECURITY” indicator lamp should blink every second.</b> <p style="text-align: center;"><b>OK or NG</b></p>		
OK	▶	Door switch is OK.
NG	▶	GO TO 2.

<b>2</b>	<b>CHECK DOOR SWITCH INPUT SIGNAL</b>																																				
Check voltage between smart entrance control unit harness connectors M39, M40 terminals 34 (R) (front door switch LH), 9 (R/W) (front door switch RH), 41 (R/G) (sliding door switch LH and RH), 24 (R/W) (back door latch switch LH and RH) and ground.																																					
<table border="1"> <thead> <tr> <th rowspan="2"></th> <th colspan="2">Terminals</th> <th rowspan="2">Door condition</th> <th rowspan="2">Voltage [V] (Approx.)</th> </tr> <tr> <th>(+)</th> <th>(-)</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Front door switch LH</td> <td rowspan="2">34</td> <td rowspan="2">Ground</td> <td>Open</td> <td>0</td> </tr> <tr> <td>Closed</td> <td>1.5</td> </tr> <tr> <td rowspan="2">Front door switch RH</td> <td rowspan="2">9</td> <td rowspan="2">Ground</td> <td>Open</td> <td>0</td> </tr> <tr> <td>Closed</td> <td>1.5</td> </tr> <tr> <td rowspan="2">Sliding door switch LH and RH</td> <td rowspan="2">41</td> <td rowspan="2">Ground</td> <td>Open</td> <td>0</td> </tr> <tr> <td>Closed</td> <td>1.5</td> </tr> <tr> <td rowspan="2">Back door latch switch LH and RH</td> <td rowspan="2">24</td> <td rowspan="2">Ground</td> <td>Open</td> <td>0</td> </tr> <tr> <td>Closed</td> <td>1.5</td> </tr> </tbody> </table>				Terminals		Door condition	Voltage [V] (Approx.)	(+)	(-)	Front door switch LH	34	Ground	Open	0	Closed	1.5	Front door switch RH	9	Ground	Open	0	Closed	1.5	Sliding door switch LH and RH	41	Ground	Open	0	Closed	1.5	Back door latch switch LH and RH	24	Ground	Open	0	Closed	1.5
	Terminals			Door condition	Voltage [V] (Approx.)																																
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			Closed	1.5																																	
Front door switch RH	9	Ground	Open	0																																	
			Closed	1.5																																	
Sliding door switch LH and RH	41	Ground	Open	0																																	
			Closed	1.5																																	
Back door latch switch LH and RH	24	Ground	Open	0																																	
			Closed	1.5																																	
LEL303A																																					
Refer to wiring diagram in EL-288.																																					
<b>OK or NG</b>																																					
OK	▶	Door switch is OK.																																			
NG	▶	GO TO 3.																																			

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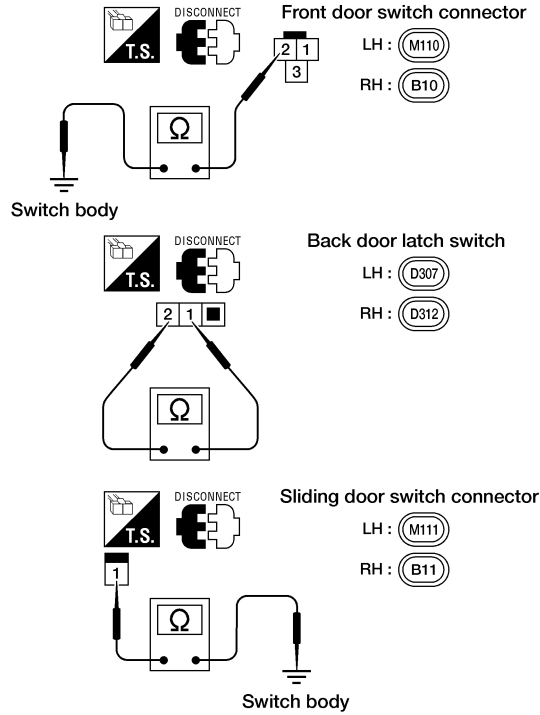
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# VEHICLE SECURITY (THEFT WARNING) SYSTEM

Trouble Diagnoses (Cont'd)

## 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.

# VEHICLE SECURITY (THEFT WARNING) SYSTEM

Trouble Diagnoses (Cont'd)

## SECURITY INDICATOR LAMP CHECK

=NDEL0120S05

<b>1</b>	<b>CHECK INDICATOR LAMP OUTPUT SIGNAL</b>	
<p>1. Disconnect smart entrance control unit connector.                  2. Check voltage between smart entrance control unit terminal 45 and ground.</p>		
AEL925B		
<b>Does battery voltage exist?</b>		
Yes	▶	Security indicator lamp is OK.
No	▶	GO TO 2.

<b>2</b>	<b>CHECK INDICATOR LAMP</b>	
<b>OK or NG</b>		
OK	▶	GO TO 3.
NG	▶	Replace security indicator lamp.

<b>3</b>	<b>CHECK POWER SUPPLY CIRCUIT FOR INDICATOR LAMP</b>	
<p>1. Disconnect security indicator lamp connector.                  2. Check voltage between security indicator lamp terminal 1 and ground.</p>		
WEL264		
<b>Does battery voltage exist?</b>		
Yes	▶	Check harness for open or short between security indicator lamp and smart entrance control unit.
No	▶	<p><b>Check the following</b></p> <ul style="list-style-type: none"> <li>● 10A fuse (No. 23, located in fuse block)</li> <li>● Harness for open or short between security indicator lamp and fuse.</li> </ul>

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# VEHICLE SECURITY (THEFT WARNING) SYSTEM

Trouble Diagnoses (Cont'd)

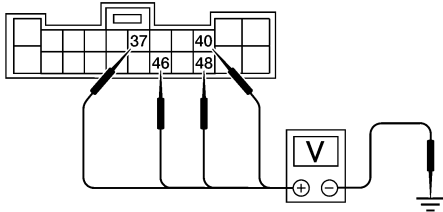
## DOOR UNLOCK SENSOR CHECK

=NDEL0120S06

### 1 CHECK DOOR UNLOCK SENSOR INPUT SIGNAL

Check voltage between smart entrance control unit harness connector M39 terminals 37 (G/Y), 40 (PU), 46 (R/Y), 48 (R/L) and ground as shown.

Smart entrance control unit connector



	Terminals		Condition	Voltage [V] (Approx.)
	(+)	(-)		
Front door LH	46	Ground	Locked	1.5
			Unlocked	0
Front door RH	37	Ground	Locked	1.5
			Unlocked	0
Sliding door LH and RH	40	Ground	Locked	1.5
			Unlocked	0
Back door	48	Ground	Locked	1.5
			Unlocked	0

LEL311A

Refer to wiring diagrams, EL-290, 291.

OK or NG

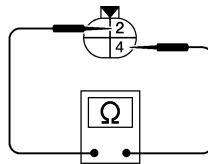
OK	▶	Door unlock sensor is OK.
NG	▶	GO TO 2.

### 2 CHECK DOOR UNLOCK SENSOR

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

Front LH : (D12)    Sliding LH : (D402)    Back : (D31)  
 Front RH : (D111)    Sliding RH : (D502)

Door lock actuator connectors



AEL914B

**Continuity:**  
 Condition: Locked  
 No  
 Condition: Unlocked  
 Yes

OK or NG

OK	▶	<b>Check the following</b> <ul style="list-style-type: none"> <li>● Door unlock sensor ground circuit (front door LH/RH and back door)</li> <li>● Harness for open or short between smart entrance control unit and door unlock sensor.</li> </ul>
NG	▶	Replace door unlock sensor.



# VEHICLE SECURITY (THEFT WARNING) SYSTEM

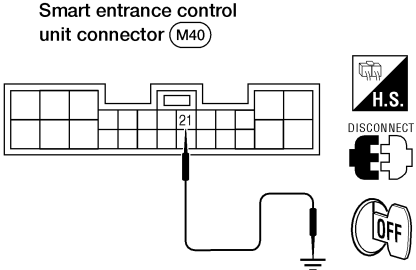
Trouble Diagnoses (Cont'd)

## VEHICLE SECURITY HORN ALARM CHECK

=NDEL0120S08

<b>1</b>	<b>CHECK HORN OPERATION</b>	
Does horn work properly with horn switch?		
<b>Yes or No</b>		
Yes	▶	GO TO 2.
No	▶	Check horn circuit. Refer to "Wiring Diagram — HORN —", EL-128.

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<b>2</b>	<b>CHECK HORN REMINDER OPERATION</b>	
<p>1. Disconnect control unit connector. 2. Apply ground to control unit terminal 21.</p>		
 <p>Smart entrance control unit connector (M40)</p> <p>Refer to wiring diagram in EL-292.</p>		
<b>Does horn sound?</b>		
Yes	▶	Replace smart entrance control unit.
No	▶	Check harness for open or short between control unit and horn relay.

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## VEHICLE SECURITY HEADLAMP ALARM CHECK

NDEL0120S09

<b>1</b>	<b>CHECK HEADLAMP OPERATION</b>	
Do headlamps operate properly with lighting switch operation?		
<b>Yes or No</b>		
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 —", EL-36 or "Wiring Diagram — DTRL —", EL-51.

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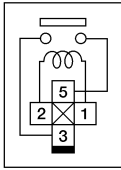
# VEHICLE SECURITY (THEFT WARNING) SYSTEM

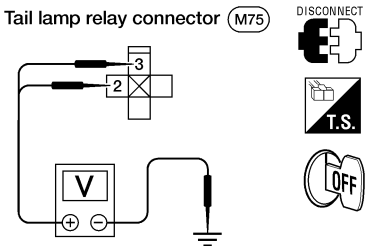
Trouble Diagnoses (Cont'd)

## TAIL LAMP RELAY CHECK

=NDEL0120S10

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

<b>2</b>	<b>CHECK TAIL LAMP RELAY</b>	
1. Apply 12V DC direct current between relay terminals 1 and 2. 2. Check continuity between relay terminals 3 and 5.		
		
<p><b>Continuity:</b>          12V applied.          Yes          No voltage applied.          No</p> <p style="text-align: right;">AEL916B</p>		
<b>OK or NG</b>		
OK	▶	GO TO 3.
NG	▶	Replace relay.

<b>3</b>	<b>CHECK TAIL LAMP RELAY POWER SUPPLY</b>	
Check voltage between tail lamp relay terminals 2, 3 and ground.		
		
<b>Does battery voltage exist?</b>		
Yes	▶	Check tail lamp circuits.
No	▶	Check harness between tail lamp relay and battery.

AEL917B

# VEHICLE SECURITY (THEFT WARNING) SYSTEM

Trouble Diagnoses (Cont'd)

## STARTER INTERRUPT SYSTEM CHECK

=NDEL0120S11

<b>1</b>	<b>CHECK STARTER MOTOR INTERRUPT SIGNAL</b>	
<p>1. Turn ignition switch ON. 2. Check voltage between smart entrance control unit terminal 28 and ground.</p> <div style="text-align: center;"> </div> <p><b>Voltage [V]:</b>  <b>Except starter interrupted phase</b>  <b>Approx. 12</b>  <b>Starter interrupted phase</b>  <b>0</b></p> <p>Refer to wiring diagram, EL-288.</p> <p style="text-align: right;">AEL934B</p>		
<b>OK or NG</b>		
OK	▶	GO TO 2.
NG	▶	<p><b>Check the following</b></p> <ul style="list-style-type: none"> <li>● 7.5A fuse (No. 39, located in fuse and fusible link box)</li> <li>● Harness for open or short between vehicle security relay and fuse</li> <li>● Harness for open or short between smart entrance control unit and vehicle security relay.</li> </ul>

<b>2</b>	<b>CHECK VEHICLE SECURITY RELAY</b>	
Check vehicle security relay.		
<b>OK or NG</b>		
OK	▶	Check system again.
NG	▶	Replace vehicle security relay.

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# SMART ENTRANCE CONTROL UNIT

Description

## 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, electric sunroof and heated seat delay timer
- Power door lock
- Multi-remote control system
- Vehicle security system

For detailed description and wiring diagrams, refer to the relevant pages for 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 illumination Switch illumination Audio system illumination A/C control unit/EATC unit illumination Ash tray illumination FES control panel illumination (if equipped)
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, electric sunroof and heated seat delay timer	Ignition switch (ON) Front door switch LH and RH	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 (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

# SMART ENTRANCE CONTROL UNIT

Description (Cont'd)

System	Input	Output
Vehicle security system	Ignition switch (ACC, ON)	
	Key switch (inserted)	
	Front door switch LH and RH	
	Sliding door switch LH and RH	Horn relay
	Back door latch switch LH and RH	Tail lamp relay
	Front door unlock sensor LH and RH	Headlamp control unit
	Sliding door unlock sensor LH and RH	Security indicator lamp
	Back door unlock sensor	Vehicle security relay (starter interrupt)
	Front door key cylinder switch LH (lock/unlock)	
	Back door key cylinder switch (unlock)	

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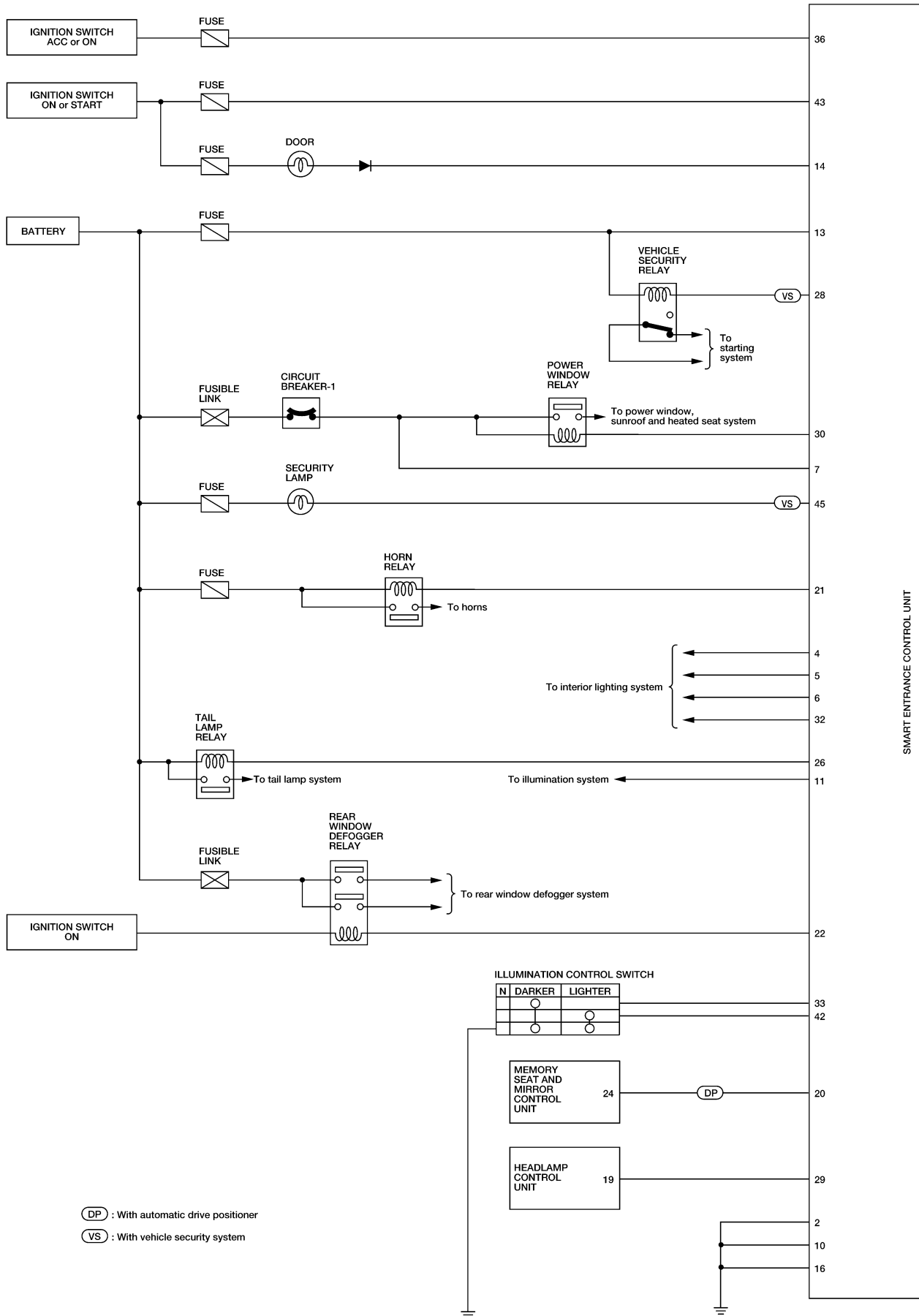
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# SMART ENTRANCE CONTROL UNIT

Schematic

## Schematic

NDEL0122



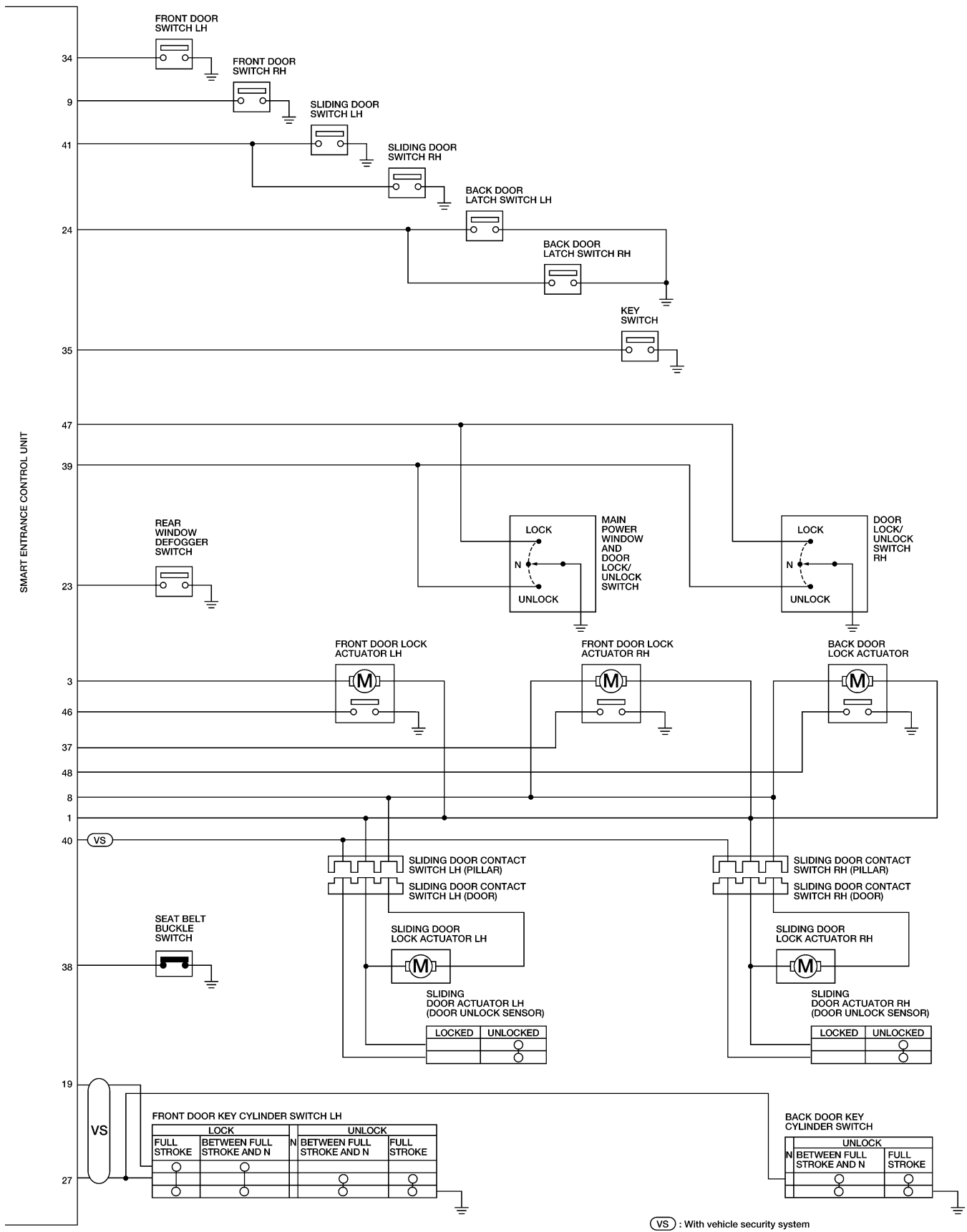
SMART ENTRANCE CONTROL UNIT

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EL-306

# SMART ENTRANCE CONTROL UNIT

Schematic (Cont'd)



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(VS) : With vehicle security system

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# SMART ENTRANCE CONTROL UNIT

Smart Entrance Control Unit Inspection Table

## Smart Entrance Control Unit Inspection Table

NDEL0123

Terminal No.	Wire color	Connections	Operated condition	Voltage (Approx.)
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)	1.5V → 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	OFF (Neutral) → ON (Locked)	1.5V → 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 vehicle security 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	1.5V → 0V
24	R/W	Back door latch switch LH/RH	OFF (Closed) → ON (Open)	1.5V → 0V
26	GY/R	Tail lamp relay	During remote controller operation or when vehicle security system is in alarm phase	12V → 0V
27	R/B	Front door key cylinder switch LH, back door key cylinder switch	OFF (Neutral) → ON (Unlock)	1.5V → 0V
28	L	Vehicle security relay	Vehicle security system is in alarm phase	12V → 0V
29	P/W	Headlamp control unit	Vehicle security system is in alarm phase or panic operation is activated	0V ⇔ 12V
30	B/R	Power window relay	OFF → ON	12V → 0V
32	R	Lighting switch (Interior lighting)	OFF (Open) → ON (Closed)	1.5V → 0V
33	L	Illumination control	NEUTRAL → DARKER	1.5V → 0V
34	R	Front door switch LH	OFF (Closed) → ON (Open)	1.5V → 0V



# SMART ENTRANCE CONTROL UNIT

Smart Entrance Control Unit Inspection Table (Cont'd)

Terminal No.	Wire color	Connections	Operated condition	Voltage (Approx.)
35	L/OR	Key switch	Ignition key inserted in ignition key cylinder → Ignition key removed from ignition key cylinder	0V → 1.5V
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	1.5V → 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	1.5V → 0V
40	PU	Sliding door lock actuator LH/RH (door unlock sensor)	LOCKED → UNLOCKED	1.5V → 0V
41	R/G	Sliding door switch LH/RH	OFF (Closed) → ON (Open)	1.5V → 0V
42	L/R	Illumination control	NEUTRAL → LIGHTER	1.5V → 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	1.5V → 0V
47	G/W	Main power window and door lock/unlock switch, door lock/unlock switch RH	NEUTRAL → LOCK	1.5V → 0V
48	R/L	Back door lock actuator (door unlock sensor)	LOCKED → UNLOCKED	1.5V → 0V

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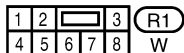
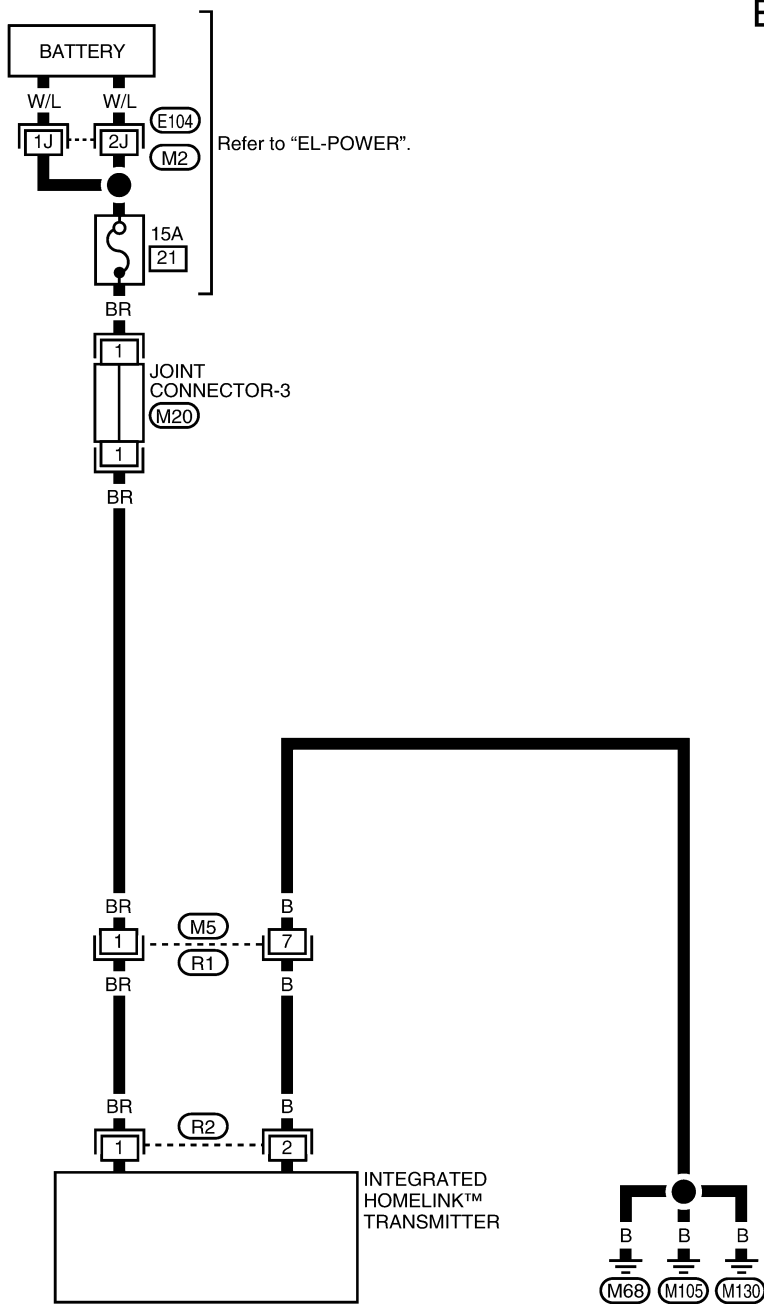
# INTEGRATED HOMELINK TRANSMITTER

Wiring Diagram — TRNSMT —

## Wiring Diagram — TRNSMT —

NDEL0124

EL-TRNSMT-01



Refer to the following.

(M20) - JOINT CONNECTOR

# INTEGRATED HOMELINK TRANSMITTER

Trouble Diagnoses

## Trouble Diagnoses

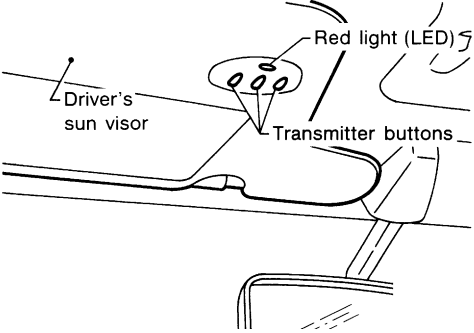
### DIAGNOSTIC PROCEDURE

NDEL0125

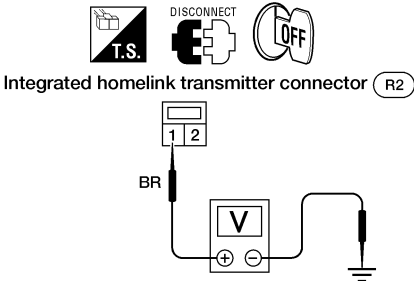
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**SYMPTOM: Transmitter does not activate receiver.**

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.

<b>1</b>	<b>PRELIMINARY CHECK</b>	<p>1. Turn ignition switch "OFF". 2. Does red light (LED) of transmitter illuminate when any button is pressed?</p> <div style="text-align: center;">  </div> <p style="text-align: right;">SEL442U</p>	
		<b>Yes or No</b>	
Yes		▶	GO TO 2.
No		▶	GO TO 3.

<b>2</b>	<b>CHECK TRANSMITTER FUNCTION</b>	<p>Check transmitter with Tool. For details, refer to Technical Service Bulletin.</p> <p style="text-align: center;"><b>OK or NG</b></p>	
OK		▶	Receiver or handheld transmitter fault, not vehicle related.
NG		▶	Replace transmitter with sun visor assembly.

<b>3</b>	<b>CHECK POWER SUPPLY</b>	<p>1. Disconnect transmitter connector. 2. Turn ignition switch "OFF". 3. Check voltage between terminal 1 and body ground.</p> <div style="text-align: center;">  </div> <p style="text-align: center;"><b>Does battery voltage exist?</b></p>	
Yes		▶	GO TO 4.
No		▶	Check fuse 15A fuse (No. 21, located in the fuse block) and repair harness.

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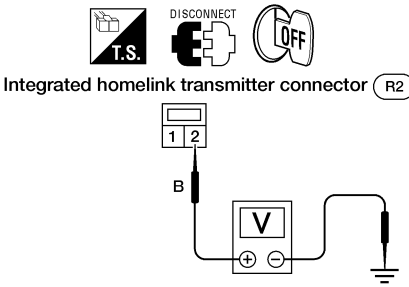
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# INTEGRATED HOMELINK TRANSMITTER

Trouble Diagnoses (Cont'd)

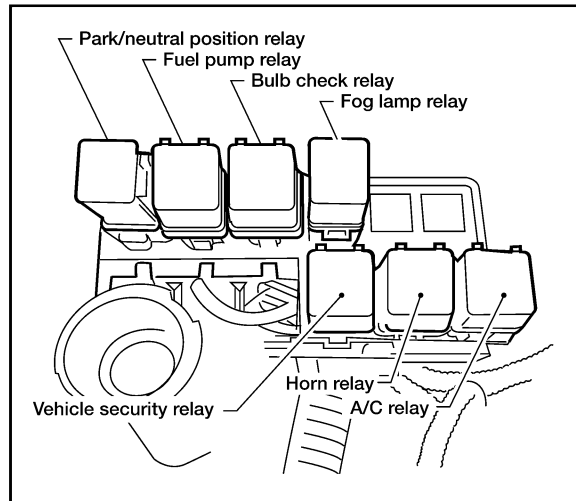
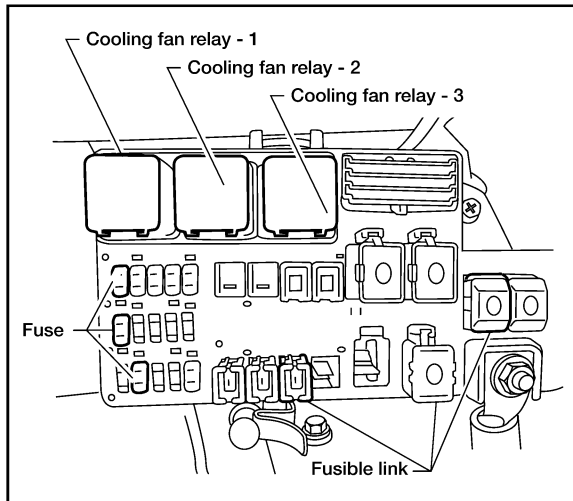
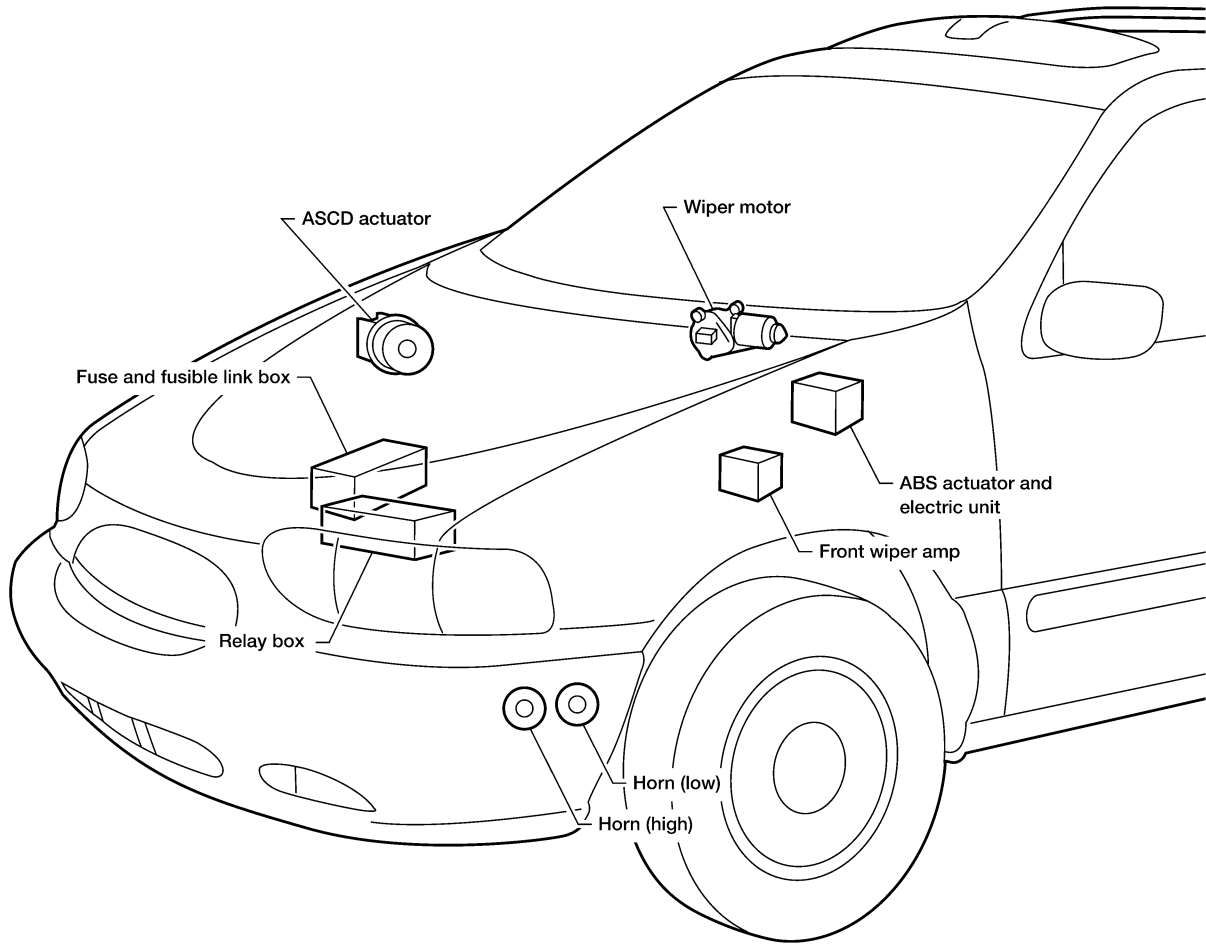
<b>4</b>	<b>CHECK GROUND CIRCUIT</b>
<p>Check continuity between terminal 2 and ground.</p> <div style="text-align: center;"></div>	
AEL866B	
<b>Does continuity exist?</b>	
Yes	▶ Replace transmitter with sun visor assembly.
No	▶ Repair harness.

# ELECTRICAL UNITS LOCATION

Engine Compartment

## Engine Compartment

NDEL0126



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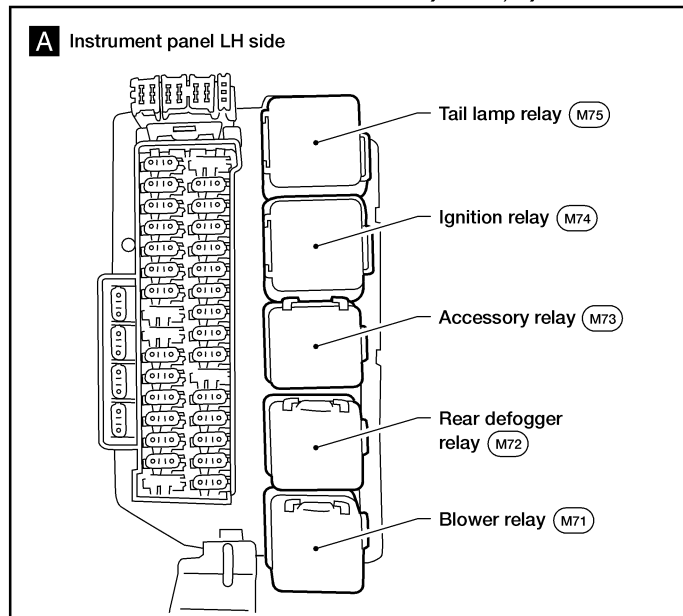
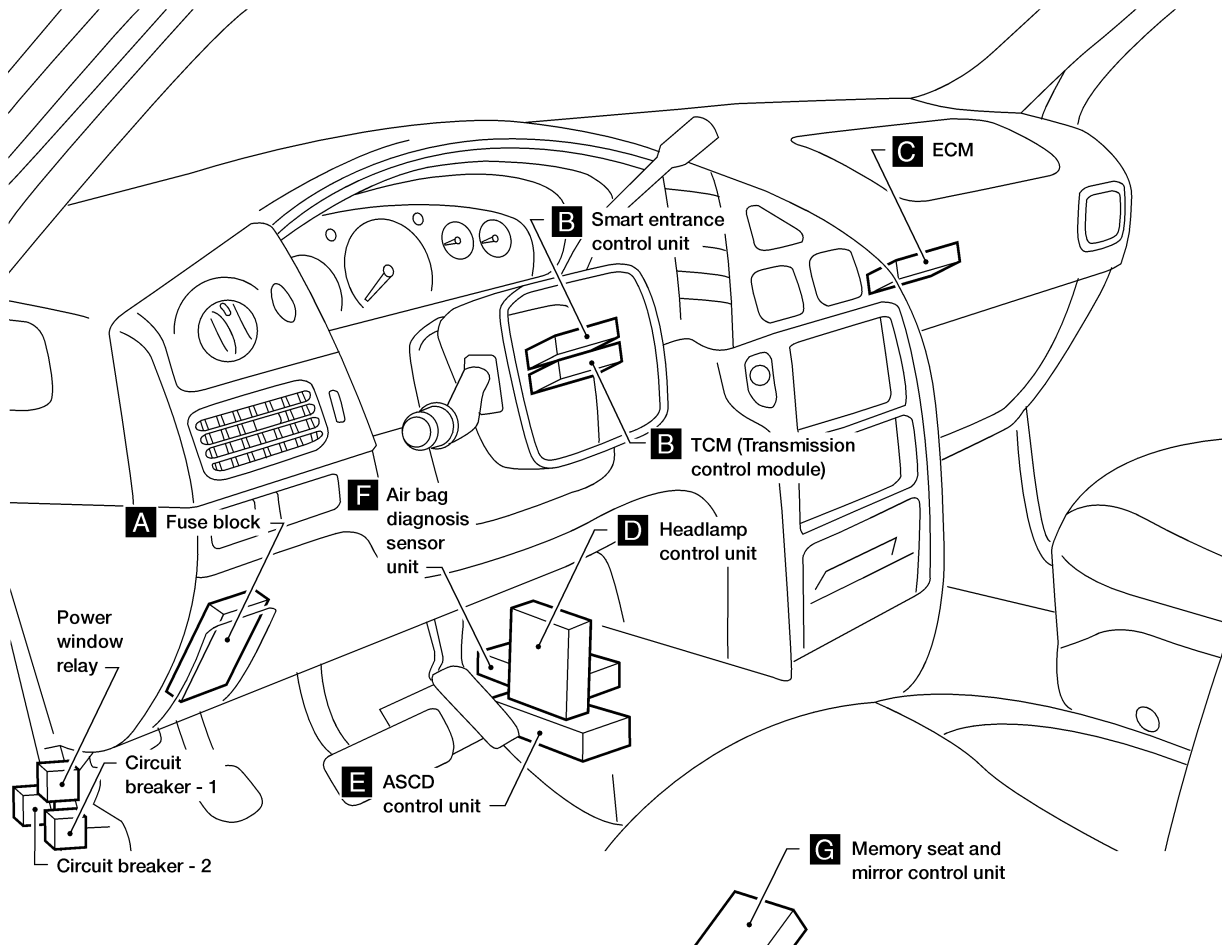
LEL277A

# ELECTRICAL UNITS LOCATION

Passenger Compartment

## Passenger Compartment

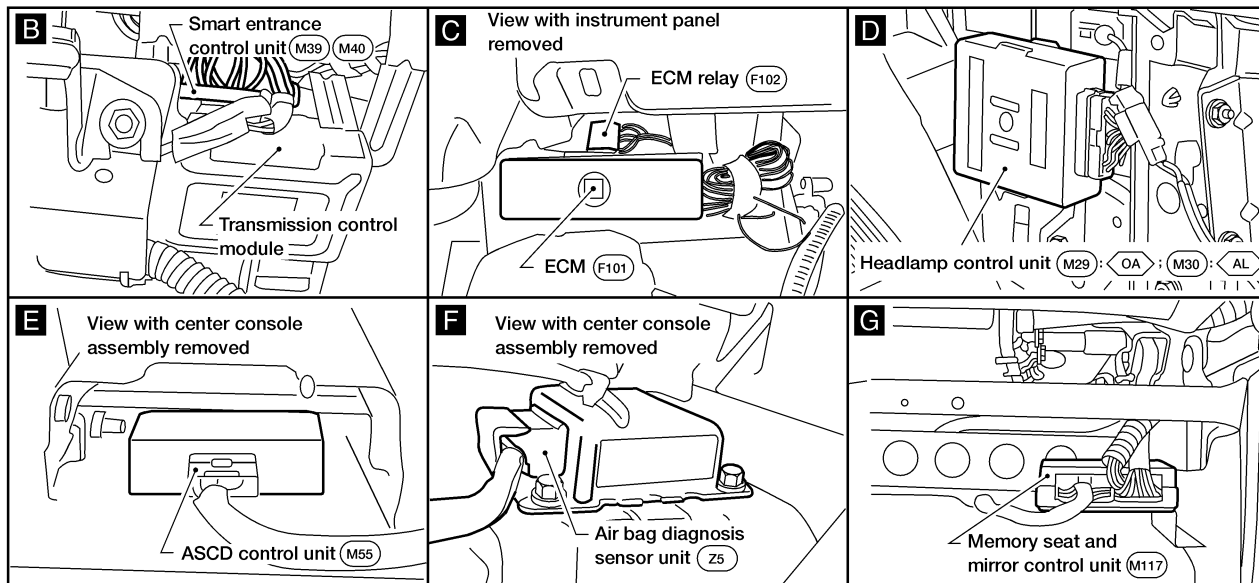
NDEL0127



WEL277

# ELECTRICAL UNITS LOCATION

Passenger Compartment (Cont'd)



AL : With autolamp

OA : Without autolamp

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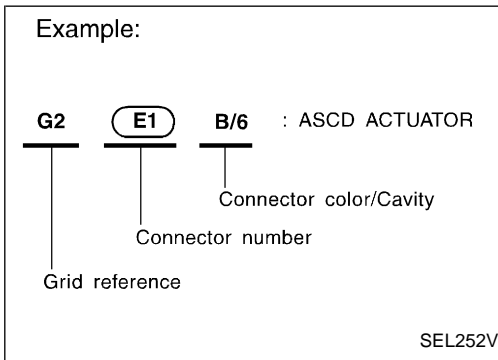
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# HARNESS LAYOUT

How to Read Harness Layout

## 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
<ul style="list-style-type: none"> <li>● Cavity: Less than 4</li> <li>● Relay connector</li> </ul>				
<ul style="list-style-type: none"> <li>● Cavity: From 5 to 8</li> </ul>				
<ul style="list-style-type: none"> <li>● Cavity: More than 9</li> </ul>				
<ul style="list-style-type: none"> <li>● Ground terminal etc.</li> </ul>	—			

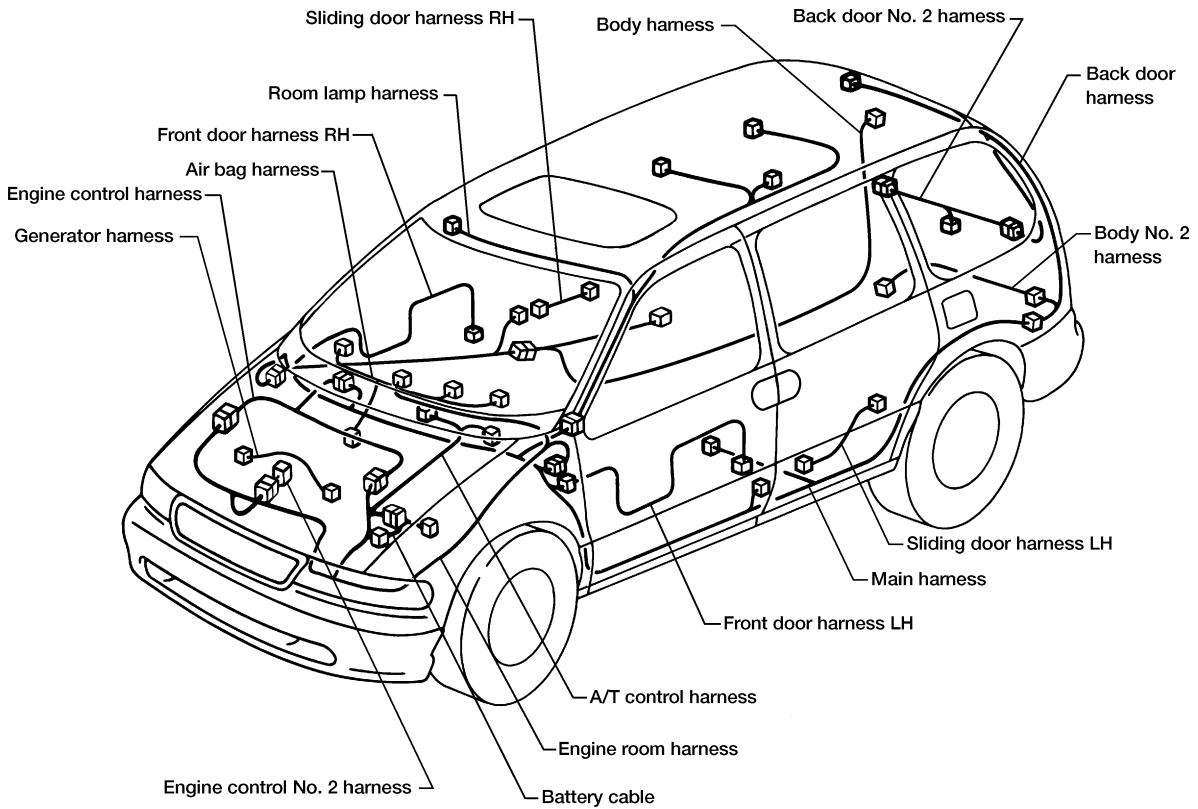


# HARNESS LAYOUT

Outline

## Outline

NDEL0129



AEL296C

**NOTE:**

For detailed ground distribution information, refer to "GROUND DISTRIBUTION", EL-20.

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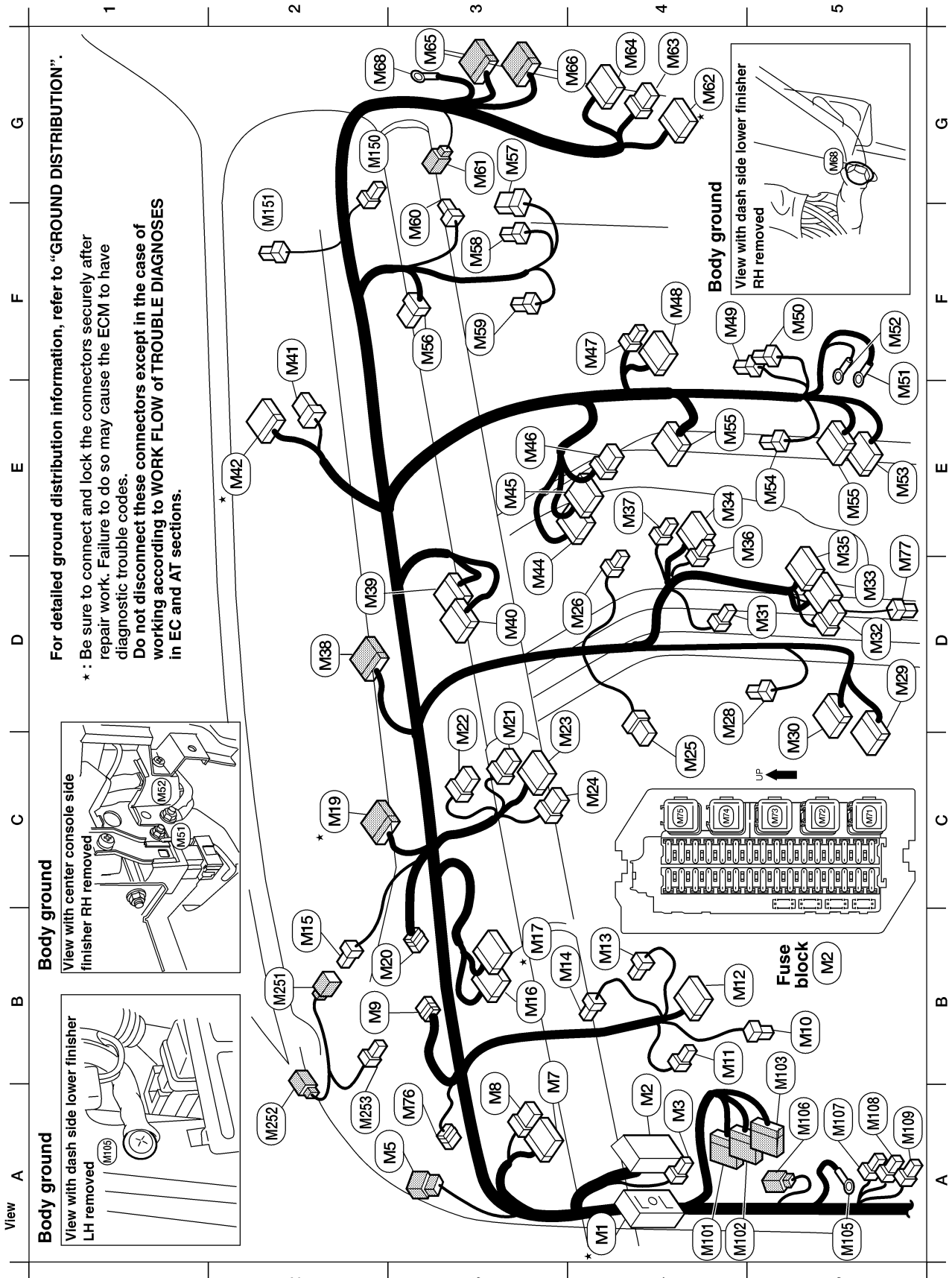
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# HARNES LAYOUT

Main Harness and Body No. 2 Harness

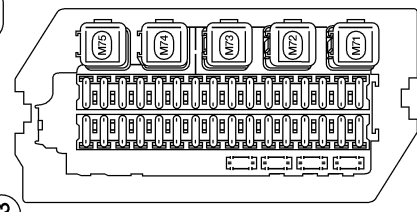
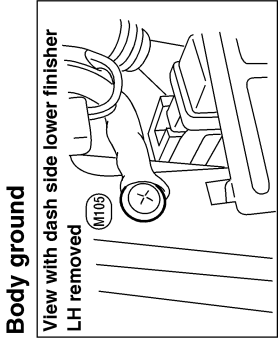
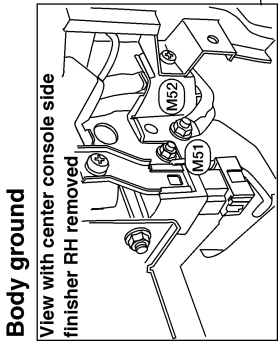
## Main Harness and Body No. 2 Harness

NDEL0130



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

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



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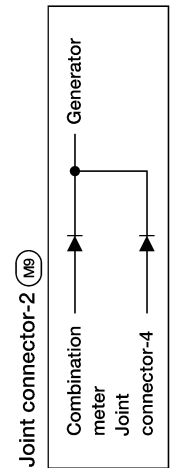
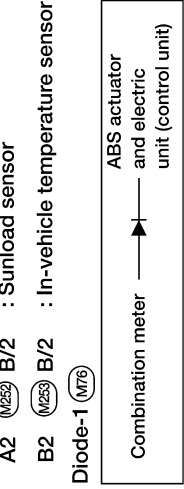
# HARNESS LAYOUT

Main Harness and Body No. 2 Harness (Cont'd)

**\* Main harness**

A4 (M1) SMJ : To (E101)	D4 (M30) W/4 : Front fan switch	F3 (M59) BR/4 : Front blower motor resistor
A4 (M2) FB : Fuse block	D5 (M32) W/8 : Rear fan switch (front)	F3 (M60) B/2 : Glove box lamp
A4 (M3) W/4 : To (M2) (fuse block)	D5 (M33) GY/26 : EATC unit (with auto A/C)	G3 (M61) W/2 : To (M150)
A3 (M5) W/8 : To (R1)	E4 (M34) B/12 : A/C control unit (with manual A/C)	G4 * (M62) W/16 : To (B1)
A3 (M7) GY/12 : Lighting switch	D5 (M35) GY/22 : EATC unit (with auto A/C)	G4 (M63) W/6 : To (B2)
A3 (M8) B/8 : Illumination control switch	D4 (M36) W/3 : A/C control unit (temperature control switch) (with manual A/C)	G4 (M64) W/10 : To (B3)
B3 (M9) GY/33 : Joint connector-2	E4 (M37) W/2 : A/C control unit (illumination) (with manual A/C)	G3 (M65) W/16 : To (D101)
B5 (M10) B/1 : Parking brake switch	D2 (M38) Y/12 : To (Z1)	G3 (M66) W/10 : To (D102)
B4 (M11) B/3 : Combination flasher unit	D3 (M39) W/22 : Smart entrance control unit (SECU)	G3 (M68) - : Body ground
B4 (M12) W/16 : Data link connector	D3 (M40) W/26 : Smart entrance control unit (SECU)	C5 (M71) BR/6 : Front blower motor relay
B4 (M13) L/2 : ASCD brake switch	E2 (M41) W/6 : To (F105)	C5 (M72) BR/6 : Rear window defogger relay
B4 (M14) B/2 : Stop lamp switch	E2 * (M42) W/24 : To (F104)	C5 (M73) BR/6 : Accessory relay
B2 (M15) W/3 : To (M25) (sunload sensor) (with auto A/C)	E4 (M44) B/20 : Audio unit	C4 (M74) L/4 : Ignition relay
B3 (M19) B/12 : Combination meter	E4 (M45) B/16 : Audio unit	C4 (M75) L/4 : Tail lamp relay
B3 * (M17) B/22 : Combination meter	E4 (M46) B/8 : Audio unit (with premium audio)	A3 (M76) W/2 : Diode-1
C2 * (M19) W/16 : To (F402)	F4 (M47) BR/4 : To (M16) (with manual A/C)	D5 (M77) BR/4 : Ashtray illumination
B3 (M20) GY/33 : Joint connector-3	F4 (M48) W/16 : To (M17) (with manual A/C)	A4 (M101) W/10 : To (D1)
C3 (M21) W/6 : Rear wiper switch	F5 (M49) L/4 : Rear fan switch relay No. 1 (with manual A/C and rear A/C)	A4 (M102) W/12 : To (D2)
C3 (M22) W/6 : Rear window defogger switch	F5 (M50) L/4 : Rear blower motor relay (with auto A/C)	A5 (M103) W/16 : To (D3)
C3 (M23) W/10 : Hazard switch	F5 (M51) - : Body ground	A5 (M105) - : Body ground
C3 (M24) W/8 : Security indicator lamp (with vehicle security system)	F5 (M52) - : Body ground	A5 (M106) GY/3 : Inertia fuel shutoff switch
C4 (M25) W/6 : To (Z10) (spiral cable)	E5 (M53) B/12 : C/D changer	A5 (M107) L/4 : Power window relay
D4 (M26) B/2 : Cigarette lighter socket (accessory)	E5 (M54) W/2 : Footlamp RH	A5 (M108) W/2 : Circuit breaker-1
D5 (M28) W/2 : Footlamp LH	E5 (M55) BR/24 : ASCD control unit	A5 (M109) W/2 : Circuit breaker-2
D5 (M29) W/10 : Headlamp control unit (without autolamp and without DTRL)	F3 (M56) W/8 : Intake door motor	<b>Autolamp Sub harness</b>
D5 (M30) W/22 : Headlamp control unit (with autolamp and/or DTRL)	G3 (M57) B/5 : Front blower speed control unit (with auto A/C)	G2 (M130) W/2 : To (M61)
	F3 (M58) B/2 : Front blower motor	F2 (M151) W/2 : Autolamp sensor
		<b>EATC Sub harness</b>
		B2 (M251) W/3 : To (M115)
		A2 (M252) B/2 : Sunload sensor
		B2 (M253) B/2 : In-vehicle temperature sensor

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

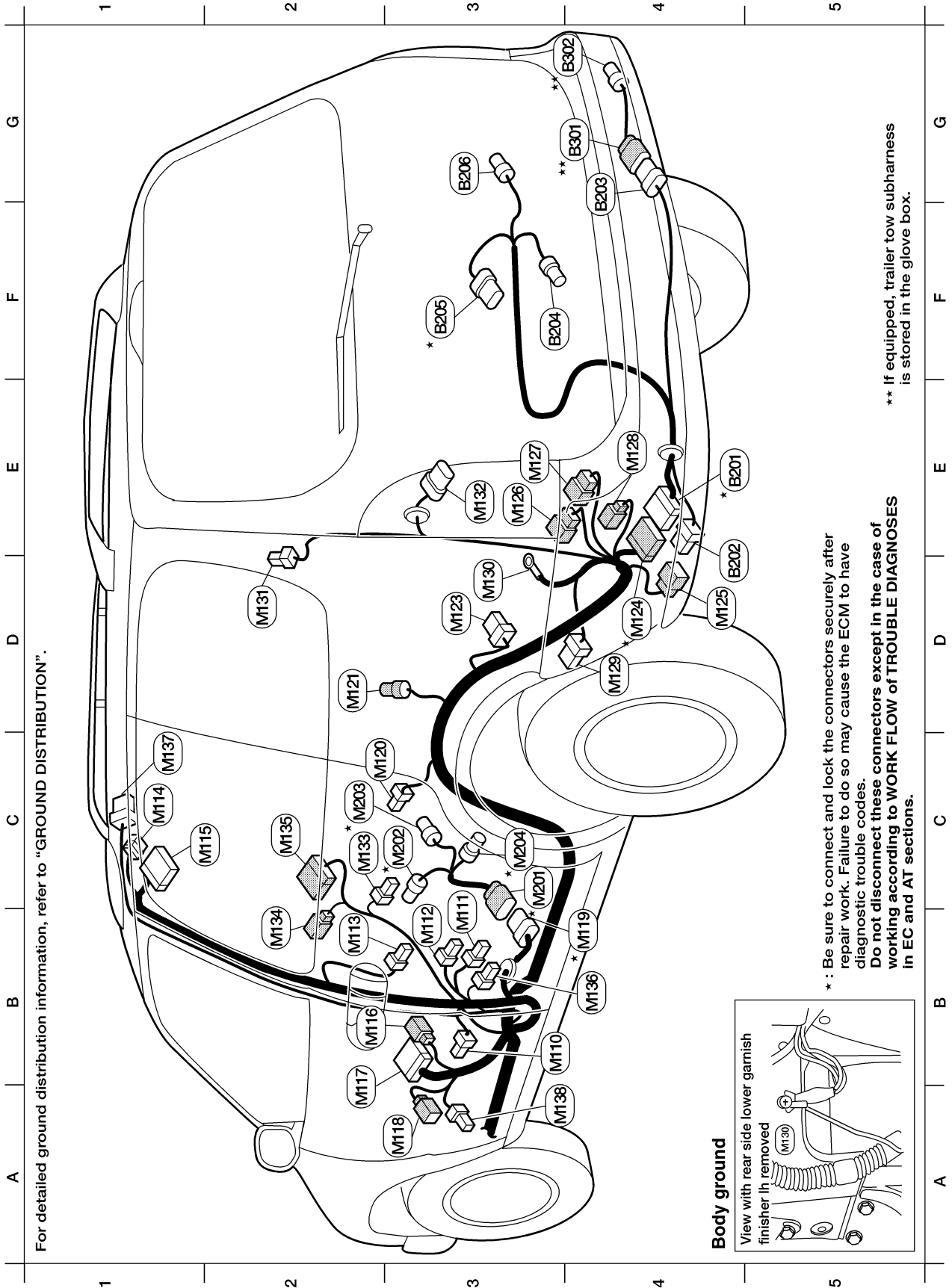


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# HARNESS LAYOUT

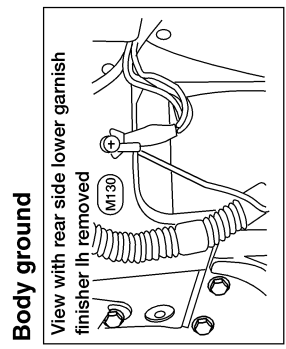
Main Harness and Body No. 2 Harness (Cont'd)



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

\* : 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.

\*\* If equipped, trailer tow subharness is stored in the glove box.



# HARNES LAYOUT

Main Harness and Body No. 2 Harness (Cont'd)

## Main harness

- B3 (M110) B/3 : Front door switch LH
- B3 (M111) B/1 : Sliding door switch LH
- B3 (M112) B/4 : Sliding door contact switch LH (pillar)
- B3 (M113) W/2 : Sliding door step lamp LH
- C1 (M114) W/6 : Joint connector-1
- C2 (M115) B/16 : Rear audio remote control unit  
(with rear audio remote control unit)
- B3 (M116) B/2 : Seat belt buckle switch
- B3 (M117) W/26 : Memory seat and mirror control unit  
(with automatic drive positioner)
- A3 (M118) W/2 : To (P51)
- B3\* (M119) GY/8 : To (M201)
- C3 (M120) B/2 : Rear power point (with rear power point)
- D3 (M121) B/2 : Rear speaker LH
- D3 (M123) W/6 : Sub woofer amplifier (with premium audio)
- E4\* (M124) W/10 : To (E201)
- D4 (M125) W/6 : To (B202)
- E4 (M126) W/8 : To (D201)
- E4 (M127) W/6 : To (D202)
- E4 (M128) W/4 : To (D203)
- D4 (M129) W/8 : Trailer tow control unit (with trailer tow)
- D3 (M130) - : Body ground
- D2 (M131) B/2 : Rear power vent window motor LH (with power vents)
- E3 (M132) GY/6 : Rear combination lamp LH

- C2 (M133) GY/16 : To (M301)
  - B2 (M134) B/16 : To (M302)
  - C2 (M135) B/4 : To (M303)
  - B4 (M136) Y/2 : Driver seat belt pre-tensioner
  - C1 (M137) W/6 : Video monitor
  - A3 (M138) W/2 : To (P201)
- ### EVAP Sub harness
- C3\* (M201) GY/8 : To (M119)
  - C3\* (E202) B/2 : EVAP canister vent control valve
  - C3\* (M203) GY/3 : EVAP control system pressure sensor
  - C3\* (M204) G/2 : Vacuum cut valve bypass valve

## Body No. 2 harness

- E4\* (E201) W/10 : To (M124)
  - E4 (M202) W/6 : To (M125)
  - F4 (E203) GY/6 : To (E301)
  - F4 (E204) BR/2 : Rear wheel sensor LH
  - F3\* (E205) GY/6 : Fuel tank gauge unit
  - G3 (E206) GY/6 : Rear wheel sensor RH
- ### Trailer tow sub harness
- F4 (E301) GY/6 : To (E203)
  - G4 (E302) 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.

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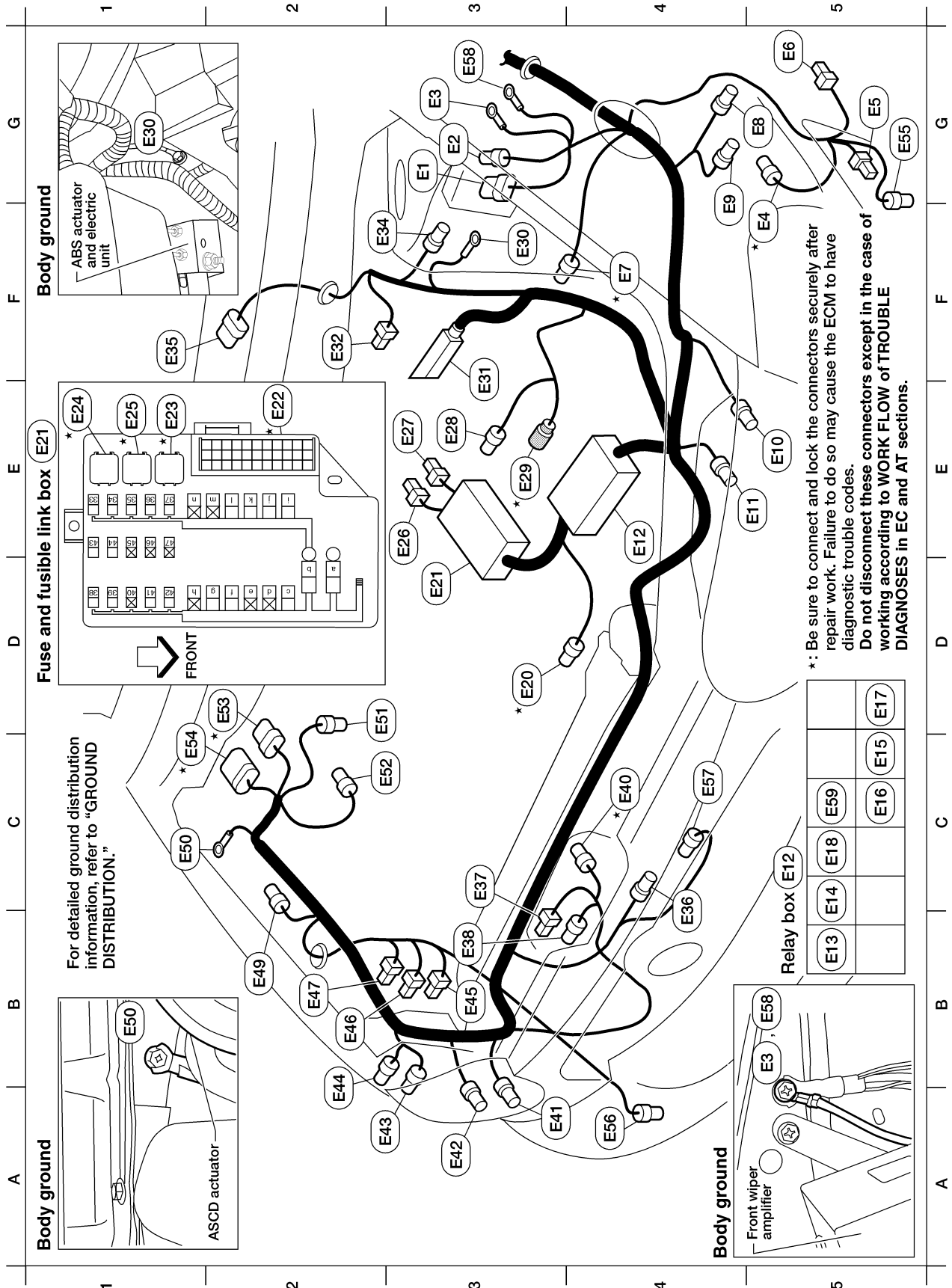
# HARNESS LAYOUT

Engine Room Harness

## Engine Room Harness ENGINE COMPARTMENT

NDEL0131

NDEL0131S01



Relay box (E12)

E13	E14	E18	E59
	E15	E16	E17

# HARNESS LAYOUT

Engine Room Harness (Cont'd)

G3 (E1) GY/6 : Front wiper amplifier	F2 (E32) GY/2 : Brake fluid level switch
G3 (E2) GY/4 : Front wiper amplifier	G3 (E34) BR/2 : Front wheel sensor LH
G3 (E3) — : Body ground	F1 (E35) GY/6 : Front wiper motor
G5* (E4) GY/2 : Dropping resistor	B4 (E36) B/2 : Ambient temperature sensor (with auto A/C)
G5 (E5) B/1 : Horn (high)	B3 (E37) B/1 : Oil pressure switch
G5 (E6) B/1 : Horn (low)	B4 (E38) W/2 : Generator
F4* (E7) B/2 : Intake air temperature sensor	C4* (E40) GY/4 : Heated oxygen sensor 2 (rear)
G5 (E8) B/2 : Front side marker lamp LH	A3 (E41) GY/3 : Front turn signal lamp RH
G5 (E9) B/3 : Front combination lamp LH	A3 (E42) B/3 : Headlamp RH
E5 (E10) B/3 : Headlamp LH	A2 (E43) B/3 : Front combination lamp RH
E5 (E11) GY/3 : Front turn signal lamp LH	A2 (E44) B/2 : Front side marker lamp RH
E4 (E12) FB : Relay box	B3 (E45) B/2 : Washer fluid level switch
B5 (E13) GY/6 : Park/neutral position (PNP) relay	B2 (E46) W/2 : Front washer motor
C5 (E14) L/4 : Fuel pump relay	B2 (E47) G/2 : Rear washer motor
C5 (E15) L/4 : Horn relay	B2 (E49) GY/4 : ASCD actuator
C5 (E16) B/5 : Vehicle security relay (with vehicle security system)	B1 (E50) — : Body ground
C5 (E17) L/4 : Air conditioner relay	C2 (E51) B/4 : Low pressure switch
C5 (E18) L/4 : Bulb check relay	C2 (E52) GY/2 : Front wheel sensor RH
D4* (E20) B/3 : Cooling fan motor	C2* (E63) GY/6 : To (F2)
E3 (E21) FB : Fuse and fusible link box	C1* (E54) GY/12 : To (F3)
E2* (E22) W/33 : Joint connector-4	G5 (E55) B/2 : Front fog lamp LH
E1* (E23) L/4 : Cooling fan relay-3 (high relay)	A4 (E56) B/2 : Front fog lamp RH
E1* (E24) L/4 : Cooling fan relay-1 (low relay)	C4 (E57) B/2 : Outside air temperature
E1* (E25) L/4 : Cooling fan relay-2 (high relay)	G3 (E58) — : Body ground
E3 (E26) B/1 : Battery	C5 (E59) L/4 : Front fog lamp relay
E3 (E27) B/1 : Battery	
E3 (E28) GY/1 : Starter motor	
E3* (E29) GY/4 : To (F30)	
G3 (E30) — : Body ground	
F3 (E31) B/31 : ABS actuator and electric unit (control unit)	

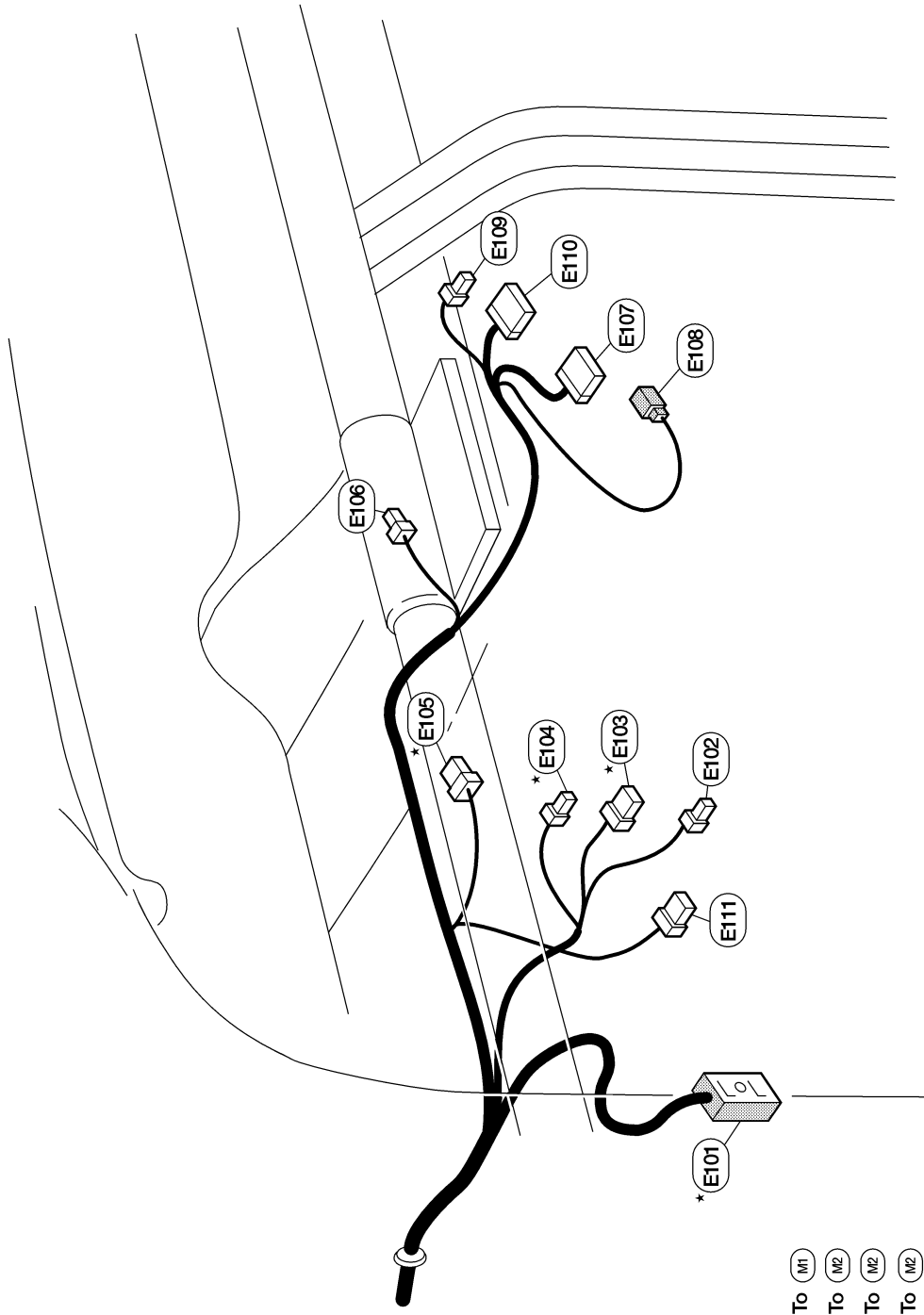
\* : Be sure to connect and lock the connectors securely after repair work. Failure to do so may cause the ECM to have diagnostic trouble codes. Do not disconnect these connectors except in the case of working according to WORK FLOW of TROUBLE DIAGNOSES in EC and AT sections.

# HARNESS LAYOUT

Engine Room Harness (Cont'd)

## PASSENGER COMPARTMENT

=NDEL0131S02



- \* 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
- E111 W/8 : Front fog lamp switch

\* : 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.



# HARNESS LAYOUT

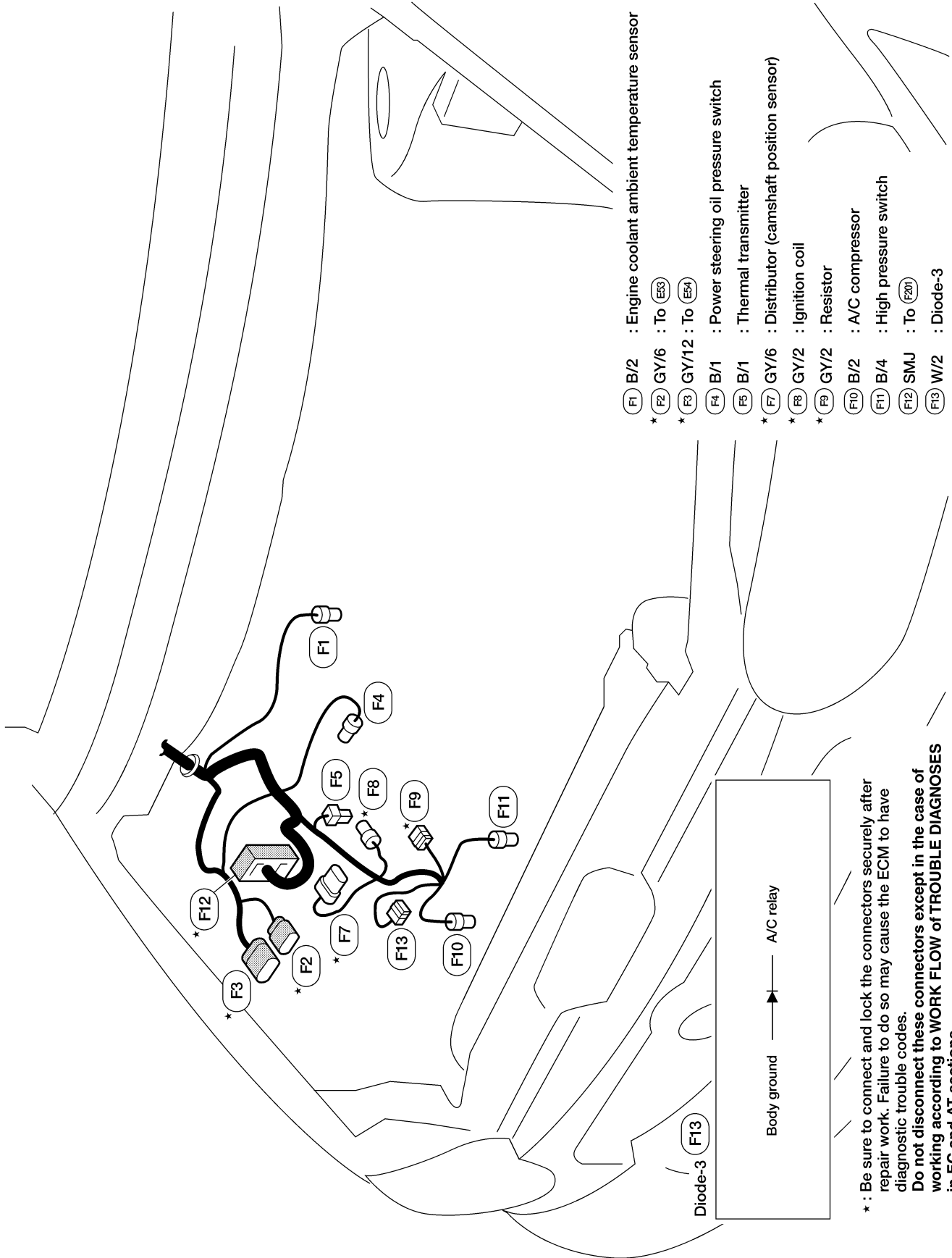
Engine Control Harness

NDEL0132

NDEL0132S01

## Engine Control Harness

### ENGINE COMPARTMENT



- (F1) B/2 : Engine coolant ambient temperature sensor
- \* (F2) GY/6 : To (ES3)
- \* (F3) GY/12 : To (ES4)
- (F4) B/1 : Power steering oil pressure switch
- (F5) B/1 : Thermal transmitter
- \* (F7) GY/6 : Distributor (camshaft position sensor)
- \* (F8) GY/2 : Ignition coil
- \* (F9) GY/2 : Resistor
- (F10) B/2 : A/C compressor
- (F11) B/4 : High pressure switch
- (F12) SMJ : To (F20)
- (F13) W/2 : Diode-3

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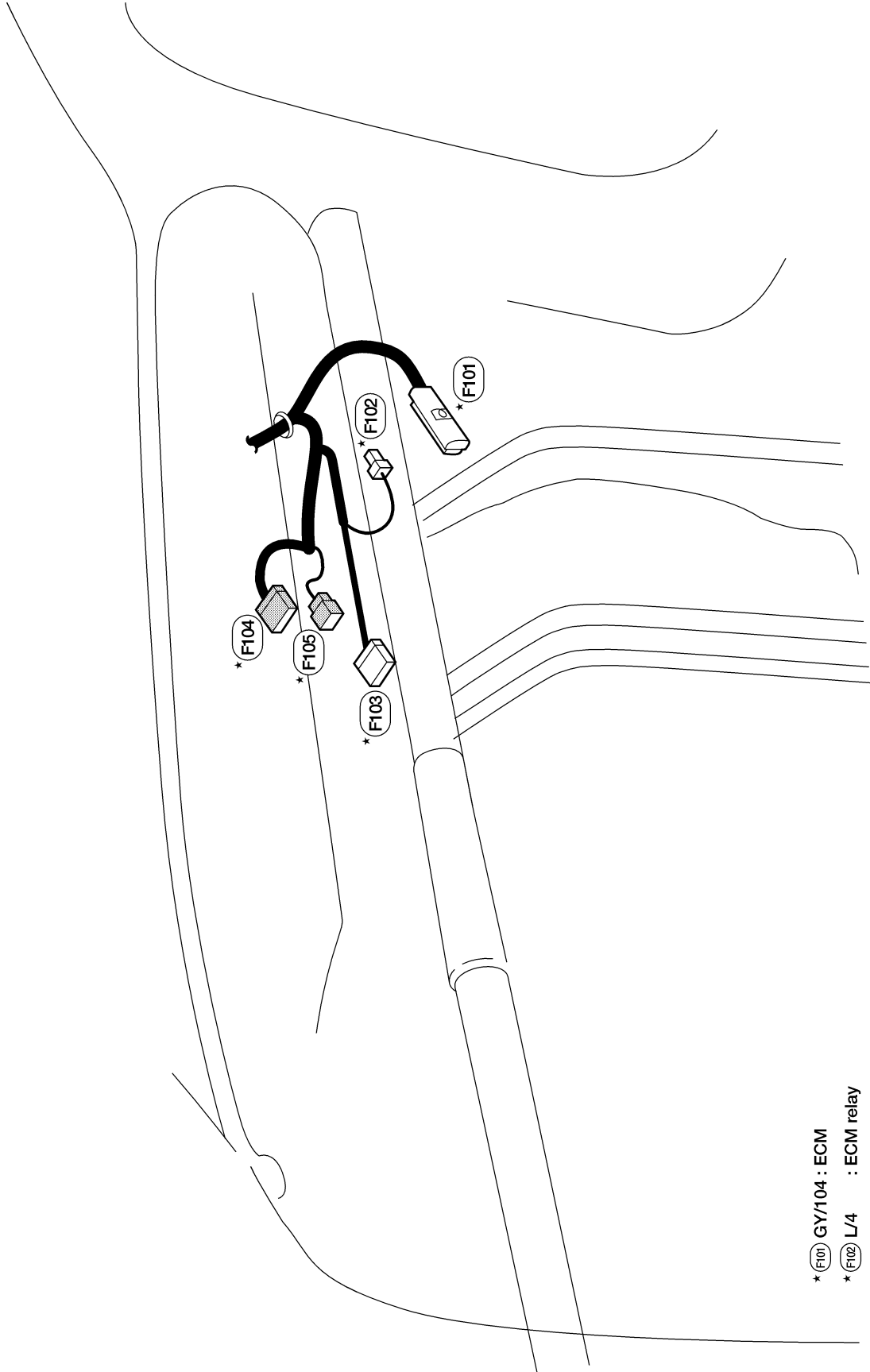
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# HARNESS LAYOUT

Engine Control Harness (Cont'd)

## 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) W/16 : To (F101)
- \* (F104) W/24 : To (M42)
- \* (F105) W/6 : To (M41)

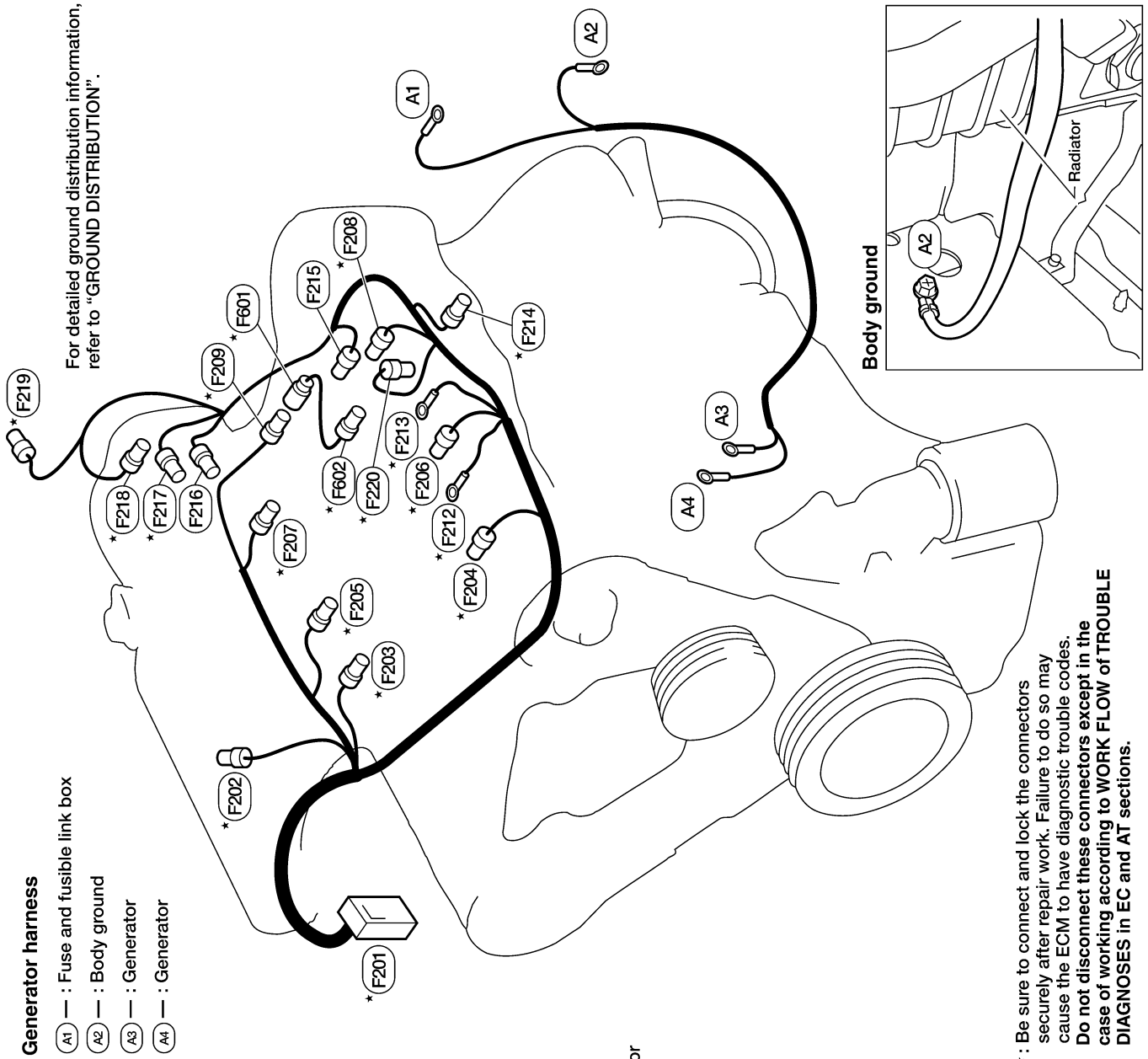
LEL246A

# HARNESS LAYOUT

Engine Control Harness (Cont'd)

## ENGINE CONTROL SUB HARNESS AND GENERATOR HARNESS

NDEL0132S03



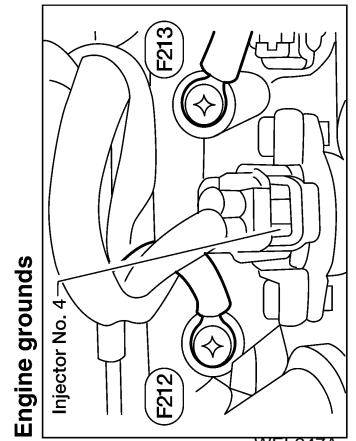
### Generator harness

- A1 — : Fuse and fusible link box
- A2 — : Body ground
- A3 — : Generator
- A4 — : Generator

### Engine control No. 2 harness

- \* F201 SMJ : To F12
- \* F202 L/2 : EVAP canister purge volume control solenoid valve
- \* F203 B/2 : Injector No. 1
- \* F204 B/2 : Injector No. 2
- \* F205 B/2 : Injector No. 3
- \* F206 B/2 : Injector No. 4
- \* F207 B/2 : Injector No. 5
- \* F208 B/2 : Injector No. 6
- \* F209 B/2 : To F601
- \* F212 — : Engine ground
- \* F213 — : Engine ground
- \* F214 GY/3 : Heated oxygen sensor 1 (front)
- \* F215 GY/4 : IACV-AAC valve and FICD valve
- \* F216 GY/3 : Throttle position switch
- \* F217 BR/3 : Throttle position sensor
- \* F218 BR/2 : Map/baro switch solenoid valve
- \* F219 GY/3 : Absolute pressure sensor
- \* F220 GY/2 : Engine coolant temperature sensor
- \* F601 B/2 : To F209
- \* F602 GY/2 : Knock sensor

\*: 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.



WEL247A

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EC  
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AX  
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HA  
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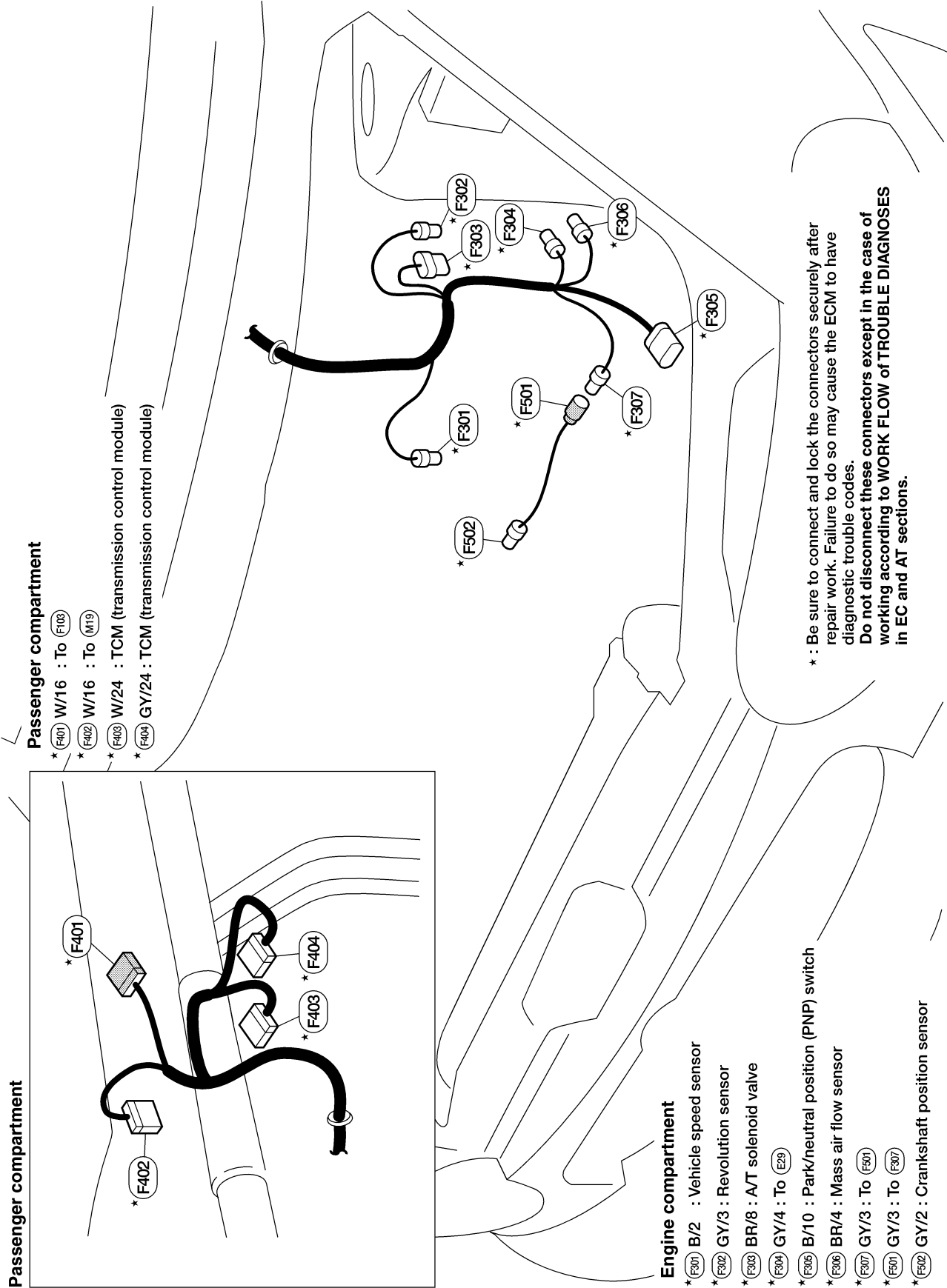
EL  
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# HARNESS LAYOUT

Engine Control Harness (Cont'd)

## TRANSMISSION CONTROL HARNESS

NDEL0132S04



# HARNESS LAYOUT

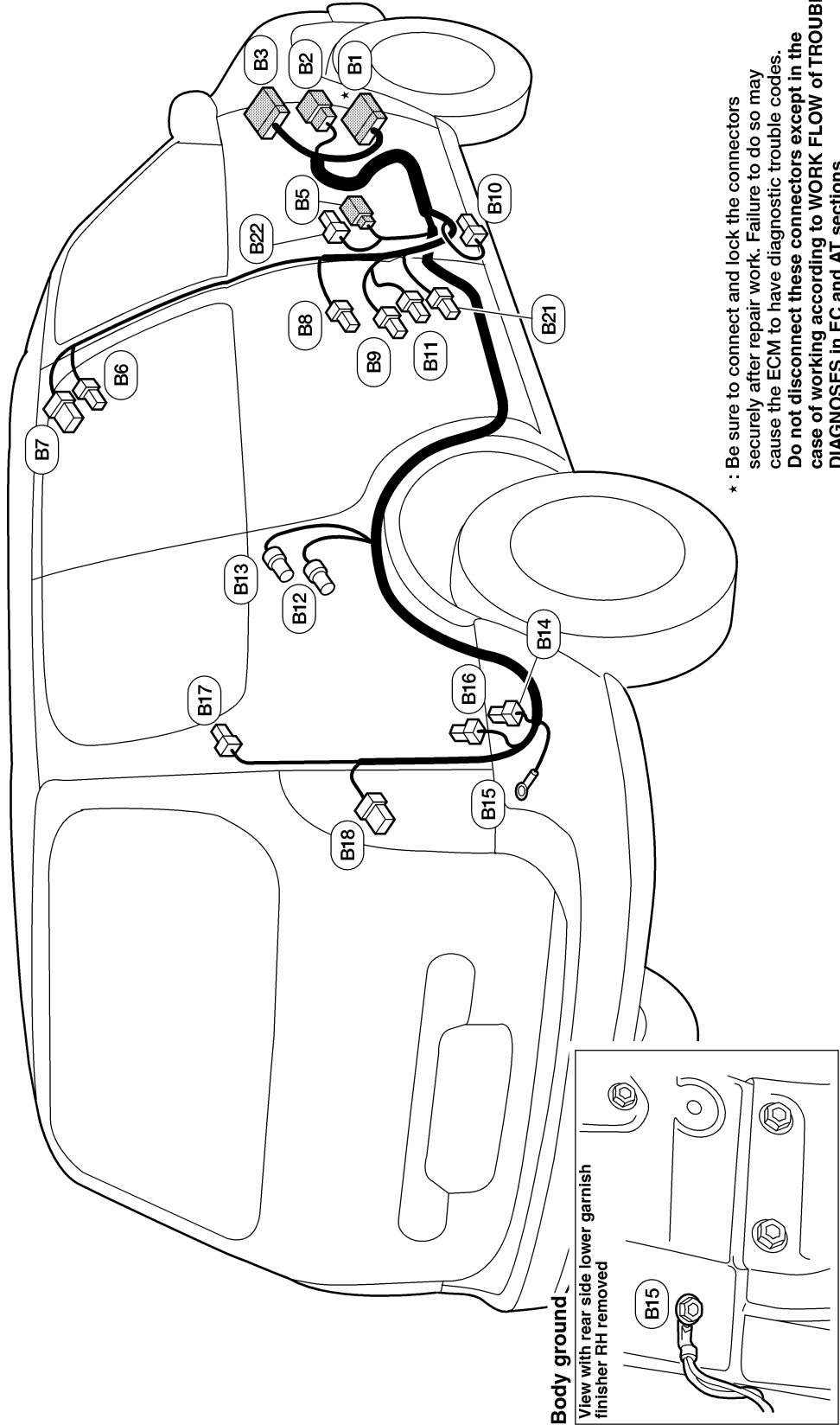
Body Harness

## Body Harness

NDEL0133

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

- \* (E1) W/16 : To (M62)
- (E2) W/6 : To (M63)
- (E3) W/10 : To (M64)
- (E5) W/2 : To (F01) (with RH power seat)
- (E6) W/2 : Rear fan switch (illumination) (with rear A/C)
- (E7) W/6 : Rear fan switch (rear) (with rear A/C)
- (E8) W/2 : Sliding door step lamp RH
- (E9) B/4 : Sliding door contact switch RH (pillar)
- (E10) B/3 : Front door switch RH
- (E11) B/1 : Sliding door switch RH
- (E12) BR/2 : Rear speaker RH (with premium audio system)
- (E13) B/2 : Rear speaker RH (with base or midgrade audio system)
- (E14) B/2 : Rear blower motor (with rear A/C)
- (E15) — : Body ground
- (E17) B/2 : Rear power vent window motor RH (with power vent windows)
- (E18) GY/6 : Rear combination lamp RH
- (E20) W/4 : Rear blower motor resistor (with rear A/C)
- (E21) Y/2 : Passenger seat belt pre-tensioner
- (E22) W/2 : To (F30)



\* : 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.

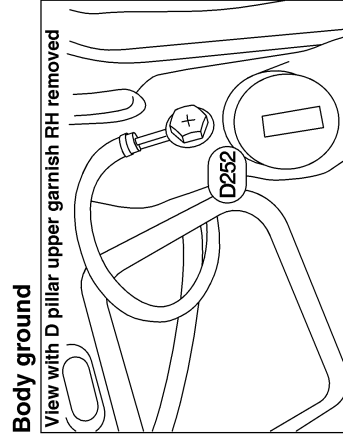
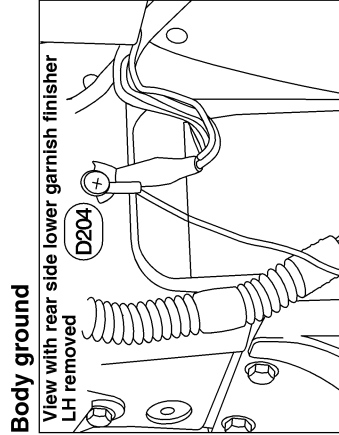
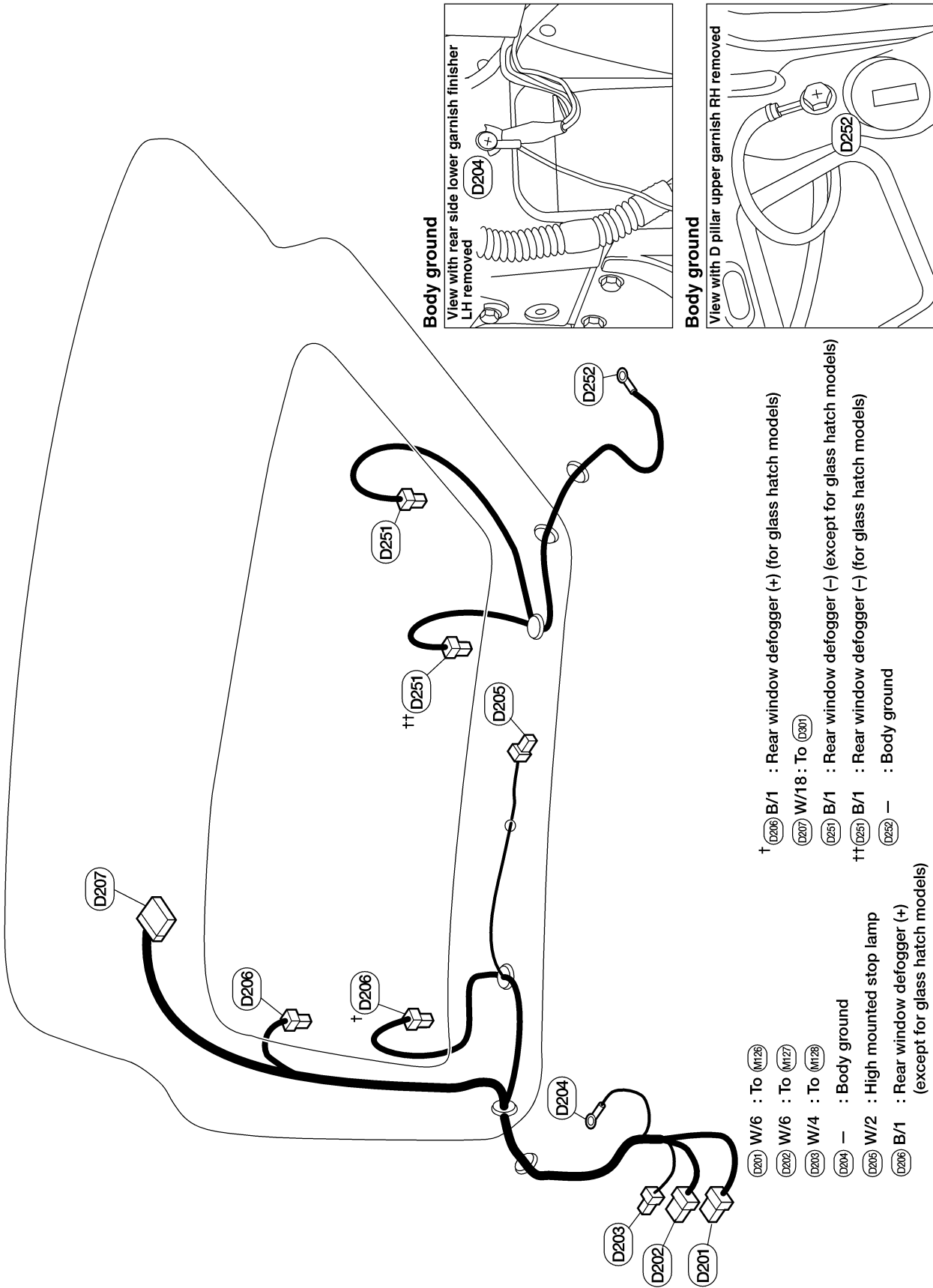
- GI
- MA
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- BT
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- SC
- EL**
- IDX

WEL249A

# HARNES LAYOUT

## Back Door Harness

NDEL0135



- † D206 B/1 : Rear window defogger (+) (for glass hatch models)
- D207 W/18 : To C301
- D251 B/1 : Rear window defogger (-) (except for glass hatch models)
- †† D251 B/1 : Rear window defogger (-) (for glass hatch models)
- D252 - : Body ground
- D201 W/6 : To M126
- D202 W/6 : To M127
- D203 W/4 : To M128
- D204 - : Body ground
- D205 W/2 : High mounted stop lamp
- D206 B/1 : Rear window defogger (+) (except for glass hatch models)

# HARNESS LAYOUT

Back Door No. 2 Harness

## Back Door No. 2 Harness

NDEL0136

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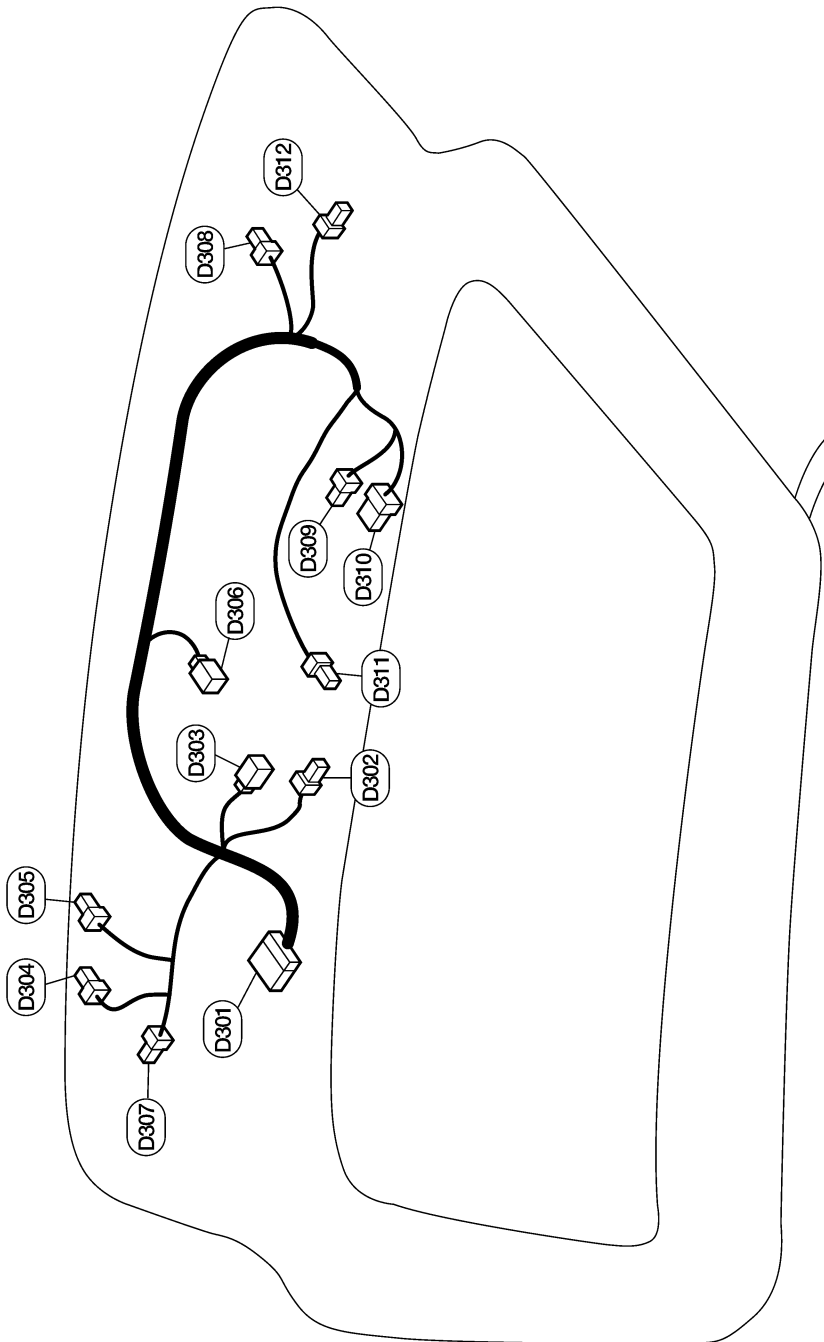
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- ⓐ D301 W/18 : To ⓐ D207
- ⓐ D302 G/2 : Glass hatch latch switch (for glass hatch model)
- ⓐ D303 GY/4 : Back door key cylinder switch (with vehicle security system)
- ⓐ D304 GY/3 : Back-up lamp LH
- ⓐ D305 W/2 : Back door lamp
- ⓐ D306 W/3 : License 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

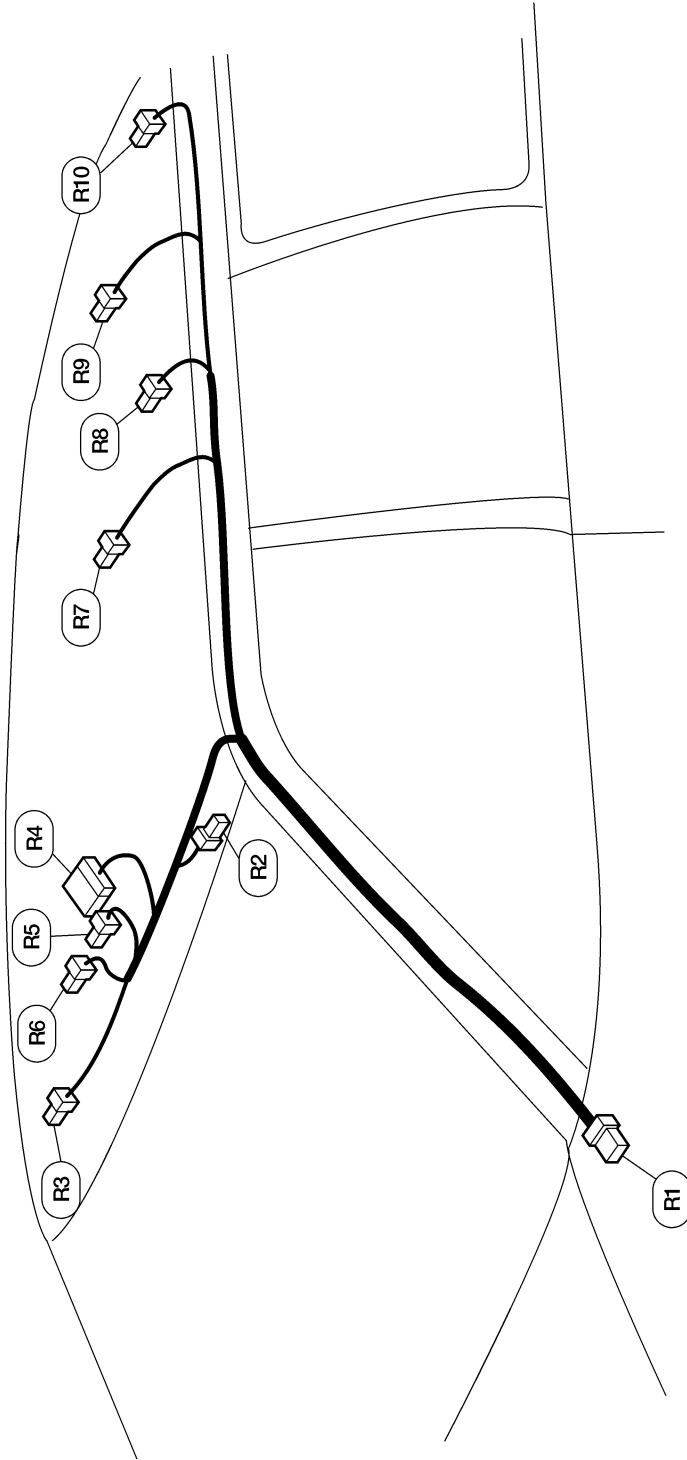
LEL428A

# HARNESS LAYOUT

Room Lamp Harness

## 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

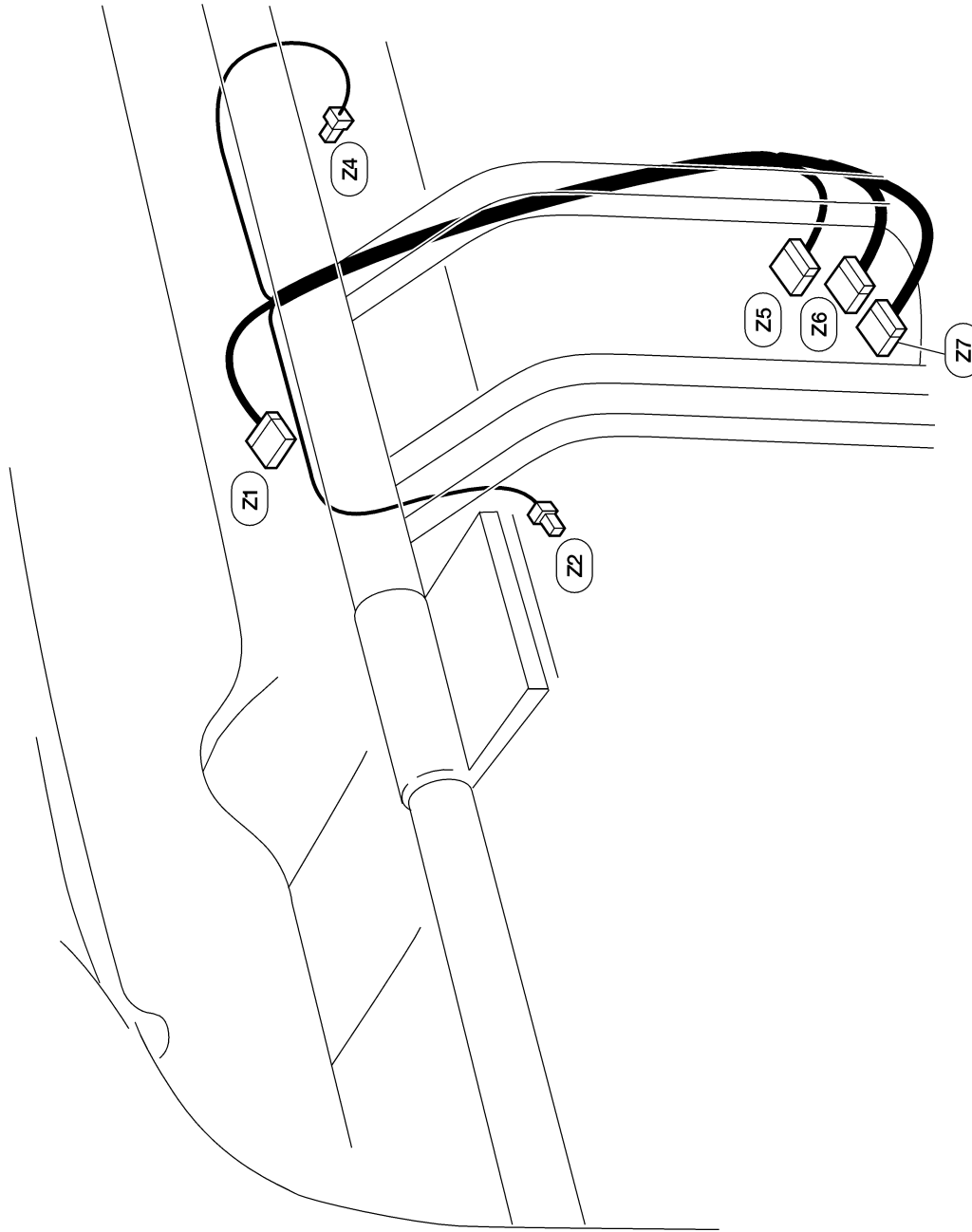


# HARNESS LAYOUT

Air Bag Harness

## Air Bag Harness

NDEL0138



(Z6) Y/12 : Air bag diagnosis sensor module  
(Z7) Y/12 : Air bag diagnosis sensor module

(Z1) W/12 : To (M3)  
(Z2) Y/4 : To spiral cable  
(Z4) W/2 : Front passenger air bag module  
(Z5) Y/20 : Air bag diagnosis sensor module

GI

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# HARNESS LAYOUT

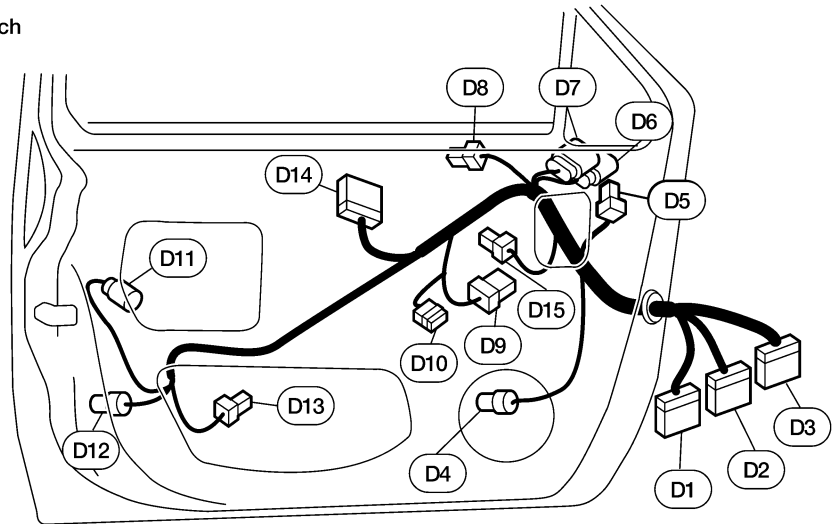
Front Door Harness

## Front Door Harness

NDEL0139

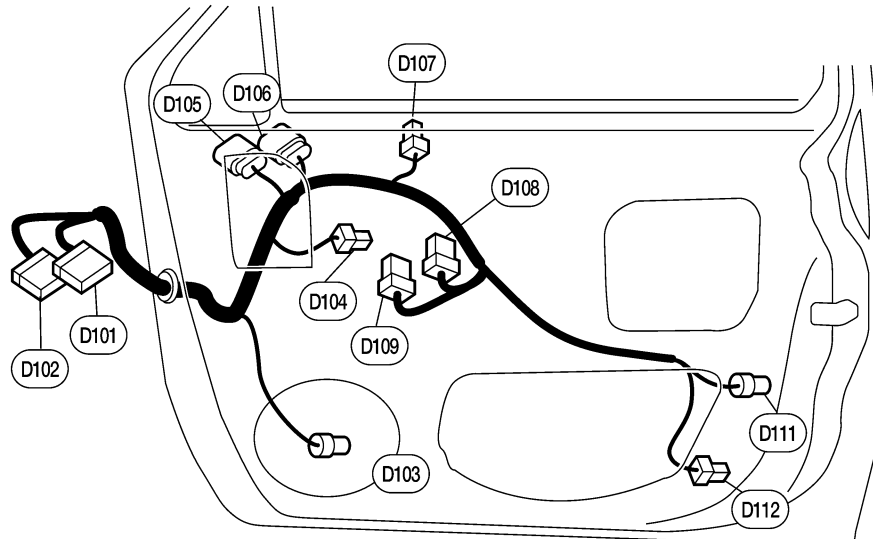
### LH Door

- |   |   |
|---|---|
| ⓁD1 W/10 : To ⓁM101   | ⓁD11 GY/4 : Front door key cylinder switch LH<br>(with vehicle security system)             |
| ⓁD2 W/12 : To ⓁM102   | ⓁD12 GY/4 : Front door lock actuator LH   |
| ⓁD3 W/16 : To ⓁM103   | ⓁD13 W/2 : Front step lamp LH   |
| ⓁD4 B/2 : Front speaker LH                                    | ⓁD14 W/12 : Main power window and door lock/unlock switch                                   |
| ⓁD5 B/8 : Memory set switch (with automatic drive positioner) | ⓁD14 W/16 : Main power window and door lock/unlock switch<br>(with rear power vent windows) |
| ⓁD6 W/5 : Door mirror LH                                      | ⓁD15 B/2 : Front power window motor LH  |
| ⓁD7 GY/5 : Door mirror LH (with automatic drive positioner)   |   |
| ⓁD8 W/2 : Front tweeter LH (except base audio)                |   |
| ⓁD9 W/8 : Door mirror remote control switch                   |   |
| ⓁD10 W/2 : Diode-2  |   |



### RH Door

- |  |  |
|--|--|
| ⓁD101 W/16 : To ⓁM65   | ⓁD107 W/2 : Front tweeter RH (except base audio) |
| ⓁD102 W/10 : To ⓁM66   | ⓁD108 W/8 : Front power window switch RH         |
| ⓁD103 B/2 : Front speaker RH                                     | ⓁD109 BR/8 : Door lock/unlock switch RH          |
| ⓁD104 B/2 : Front power window motor RH                          | ⓁD111 GY/4 : Front door lock actuator RH         |
| ⓁD105 W/5 : Door mirror RH                                       | ⓁD112 W/2 : Front step lamp RH                   |
| ⓁD106 GY/5 : Door mirror RH<br>(with automatic drive positioner) |  |



WEL252A

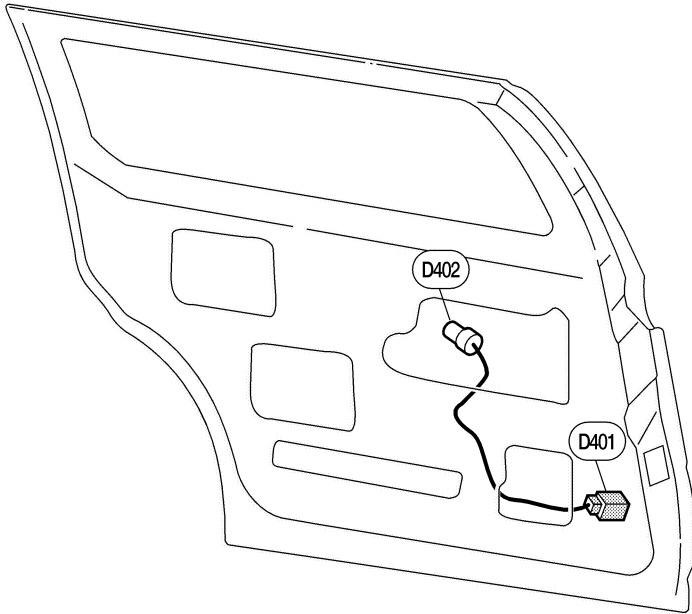
# HARNESS LAYOUT

Sliding Door Harness

## Sliding Door Harness

NDEL0140

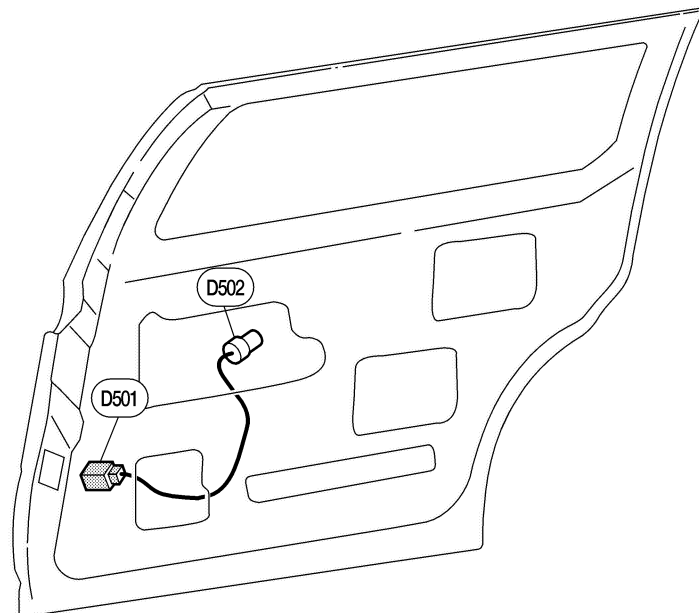
### LH Door



(D401) W/4 : To contact switch LH

(D402) GY/4 : Sliding door lock actuator LH

### RH Door



(D501) W/4 : To contact switch RH

(D502) GY/4 : Sliding door lock actuator RH

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**EL**

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WEL275

**BULB SPECIFICATIONS***Headlamp***Headlamp**

NDEL0141S01

Item	ANSI #	Wattage (W)
High/Low (Semi-sealed beam)	9007 (HB5)	65/55
Front turn signal	3157A	8.25/27

**Exterior Lamp**

NDEL0141S02

Item	ANSI #	Wattage (W)	
Front combination lamp	Parking/Cornering lamp	3157	8.25/27
	Front side marker lamp	194	3.8
Rear combination lamp	Turn signal lamp	3156A	27
	Stop/Tail lamp	3157	8/27
	Rear side marker lamp	168	5
Front fog lamp	881L	27	
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 and luggage compartment 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
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
ENGSS	AT	Engine Speed Signal
F/FOG	EL	Front Fog Lamp
F/PUMP	EC	Fuel Pump Control
FES	EL	Family Entertainment System

Code	Section	Wiring Diagram Name	
FICD	EC	IACV-FICD Solenoid Valve	GI
FTS	AT	A/T Fluid Temperature Sensor	
FTTS	EC	Fuel Tank Temperature Sensor	MA
FUEL	EC	Fuel Injection System Function	
H/LAMP	EL	Headlamp	EM
H/MIRR	EL	Heated Mirror	
H/SEAT	EL	Heated Seat	LC
HO2S1	EC	Heated Oxygen Sensor 1 (Front)	
HO2S2	EC	Heated Oxygen Sensor 2 (Rear)	EC
HO2S1H	EC	Heated Oxygen Sensor 1 (Front) Heater	FE
HO2S2H	EC	Heated Oxygen Sensor 2 (Rear) Heater	AT
HORN	EL	Horn	
IATS	EC	Intake Air Temperature Sensor	AX
IGN/SG	EC	Ignition Signal	
ILL	EL	Illumination	SU
INJECT	EC	Injector	
INT/L	EL	Map, Vanity, Room, Step, Foot, Door and Glove Box	BR
KS	EC	Knock Sensor	ST
LPSV	AT	Line Pressure Solenoid Valve	
MAFS	EC	Mass Air Flow Sensor	RS
MAIN	AT	Main Power Supply and Ground Circuit	
MAIN	EC	Main Power Supply and Ground Circuit	BT
METER	EL	Speedometer, Tachometer, Temp., Oil, and Fuel Gauges	HA
MIL/DL	EC	MIL and Data Link Connector	SC
MIRROR	EL	Door Mirror	
MULTI	EL	Multi-remote Control System	EL
NONDTC	AT	Non-detectable Items	
OVRCSV	AT	Overrun Clutch Solenoid Valve	IDX
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	

## WIRING DIAGRAM CODES (CELL CODES)

Code	Section	Wiring Diagram Name
PST/SW	EC	Power Steering Oil Pressure Switch
S/SIG	EC	Start Signal
SEAT	EL	Power Seat
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
TP/SW	EC	Throttle Position Switch
TPS	AT	Throttle Position Sensor
TPS	EC	Throttle Position Sensor
TRNSMT	EL	Integrated HOMELINK <sup>™</sup> Transmitter
T/TOW	EL	Trailer Tow
TURN	EL	Turn Signal and Hazard Warning Lamps
VENT/V	EC	EVAP Canister Vent Control Valve
VEHSEC	EL	Vehicle Security System
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