

ELECTRICAL SYSTEM

SECTION **EL**

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PRECAUTIONS

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

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

NFEL0001

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 SRS system composition which is available to NISSAN MODEL A33 is as follows (The composition varies according to the destination and optional equipment.):

- For a frontal collision
The Supplemental Restraint System consists of 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.
- For a side collision
The Supplemental Restraint System consists of front side air bag module (located in the outer side of front seat), satellite sensor, diagnosis sensor unit (one of components of air bags for a frontal collision), wiring harness, warning lamp (one of components of air bags for a frontal collision).

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. SRS wiring harnesses can be identified with yellow harness connector (and with yellow harness protector or yellow insulation tape before the harness connectors).**

Wiring Diagrams and Trouble Diagnosis

NFEL0002

When you read wiring diagrams, refer to the following:

- Refer to GI-11, "HOW TO READ WIRING DIAGRAMS"
- Refer to EL-9, "POWER SUPPLY ROUTING" for power distribution circuit

When you perform trouble diagnosis, refer to the following:

- Refer to GI-32, "HOW TO FOLLOW TEST GROUPS IN TROUBLE DIAGNOSES"
- Refer to GI-21, "HOW TO PERFORM EFFICIENT DIAGNOSIS FOR AN ELECTRICAL INCIDENT"

Check for any Service bulletins before servicing the vehicle.

HARNESS CONNECTOR

Description

Description

NFEL0003

NFEL0003S01

HARNESS CONNECTOR (TAB-LOCKING TYPE)

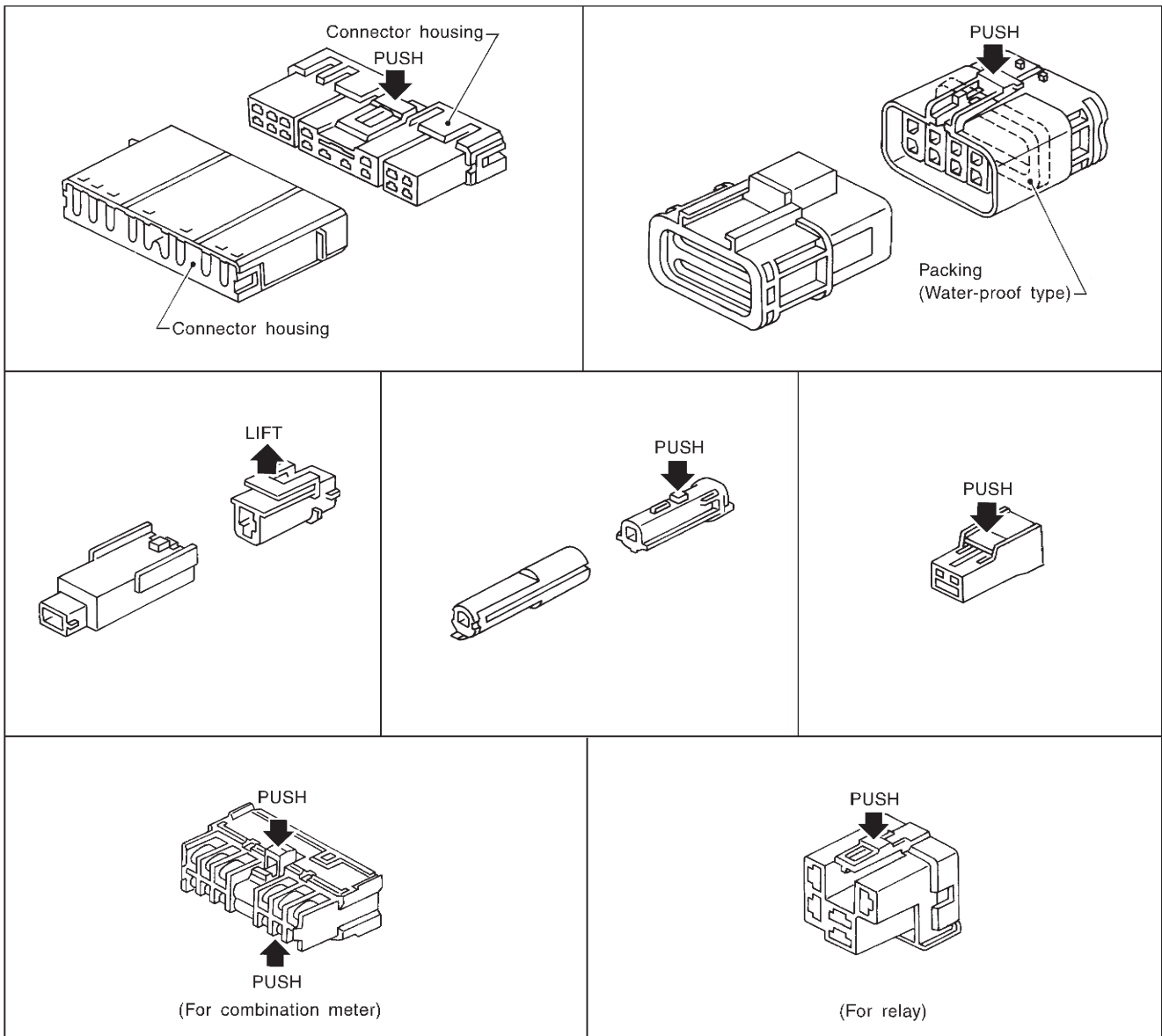
- The tab-locking type connectors help prevent accidental looseness or disconnection.
- The tab-locking type connectors are disconnected by pushing or lifting the locking tab(s). Refer to the illustration below.

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

CAUTION:

Do not pull the harness or wires when disconnecting the connector.

[Example]



SEL769DA

HARNESS CONNECTOR

Description (Cont'd)

HARNESS CONNECTOR (SLIDE-LOCKING TYPE)

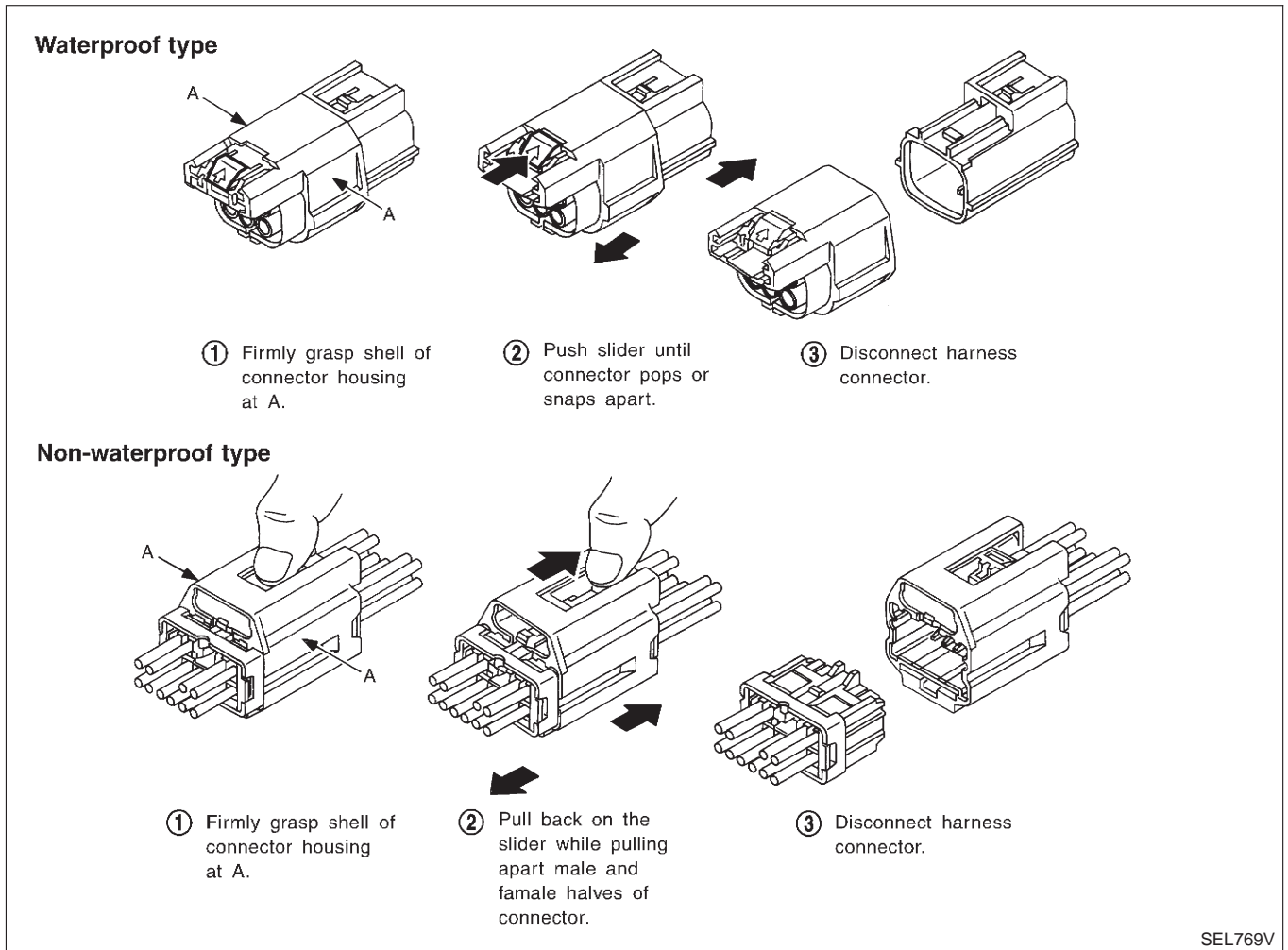
=NFEL0003S02

- 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 the 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]



STANDARDIZED RELAY

Description

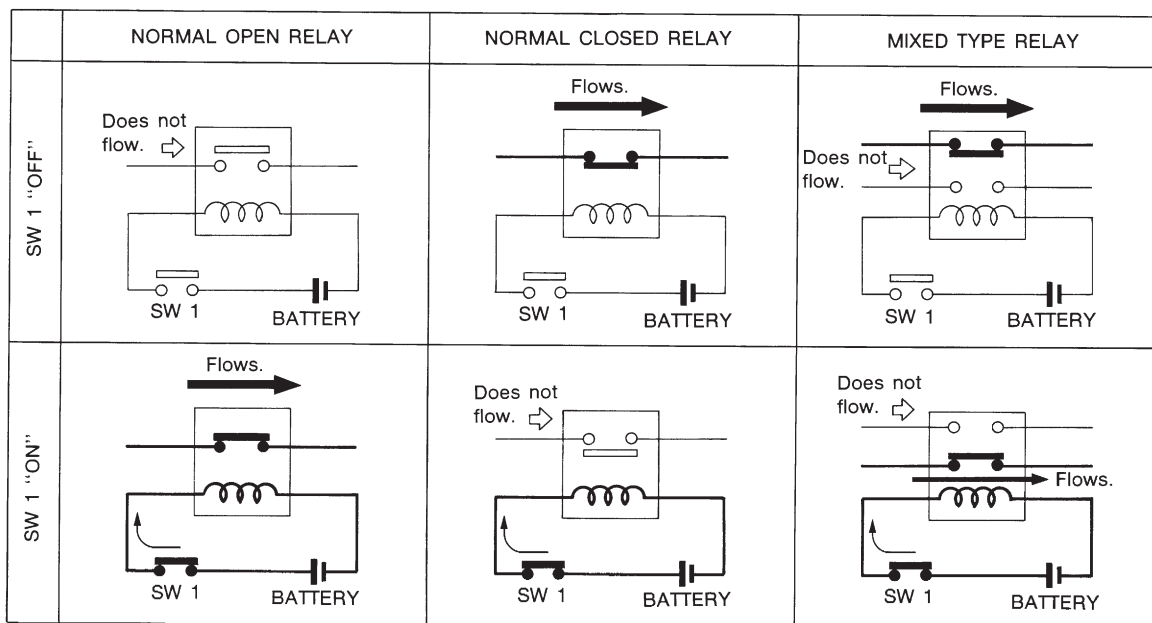
Description

NORMAL OPEN, NORMAL CLOSED AND MIXED TYPE RELAYS

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

NFEL0004

NFEL0004S01

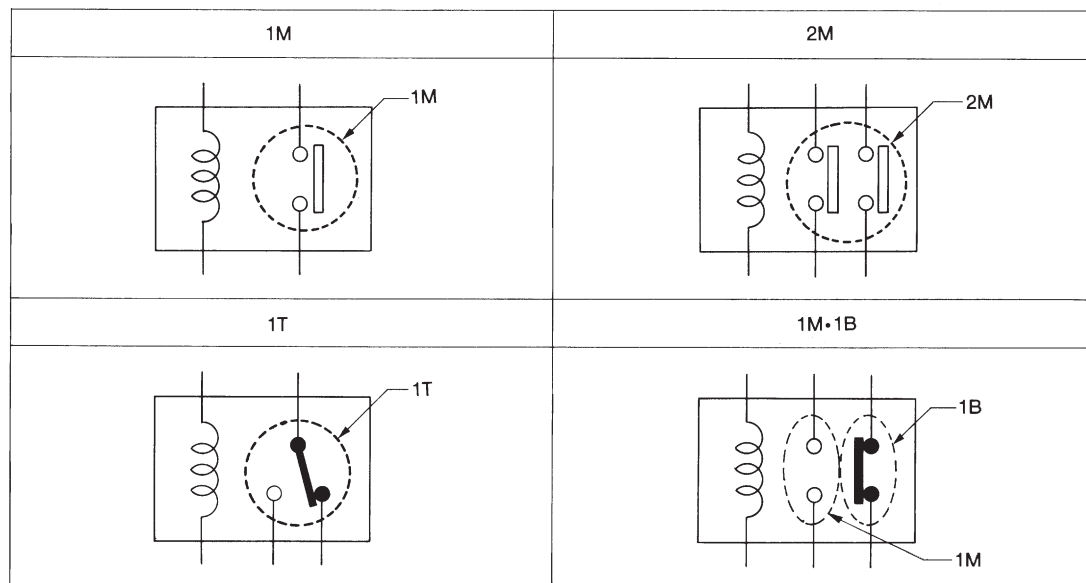


SEL881H

TYPE OF STANDARDIZED RELAYS

NFEL0004S02

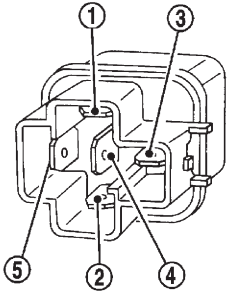
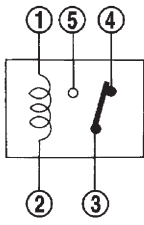
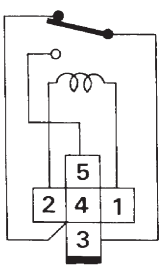
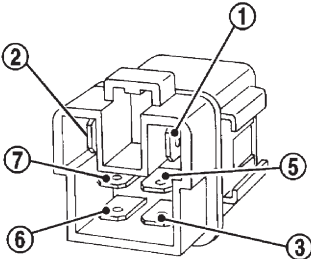
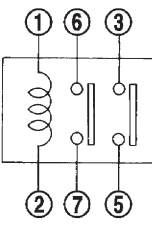
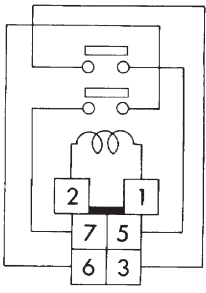
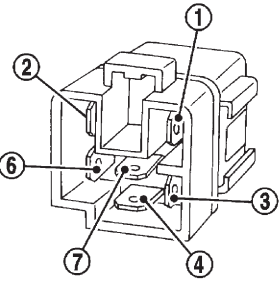
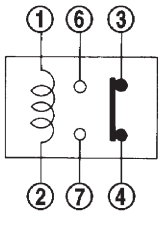
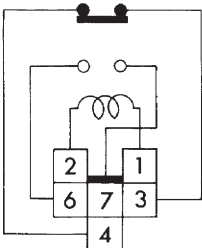
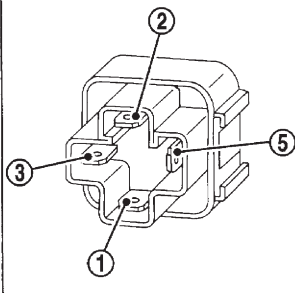
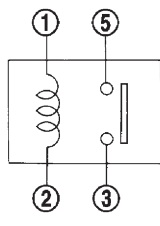
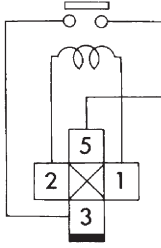
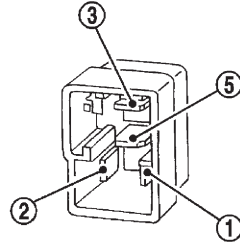
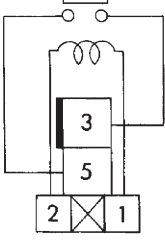
1M	1 Make	2M	2 Make
1T	1 Transfer	1M-1B	1 Make 1 Break



SEL882H

STANDARDIZED RELAY

Description (Cont'd)

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

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

SEL188W

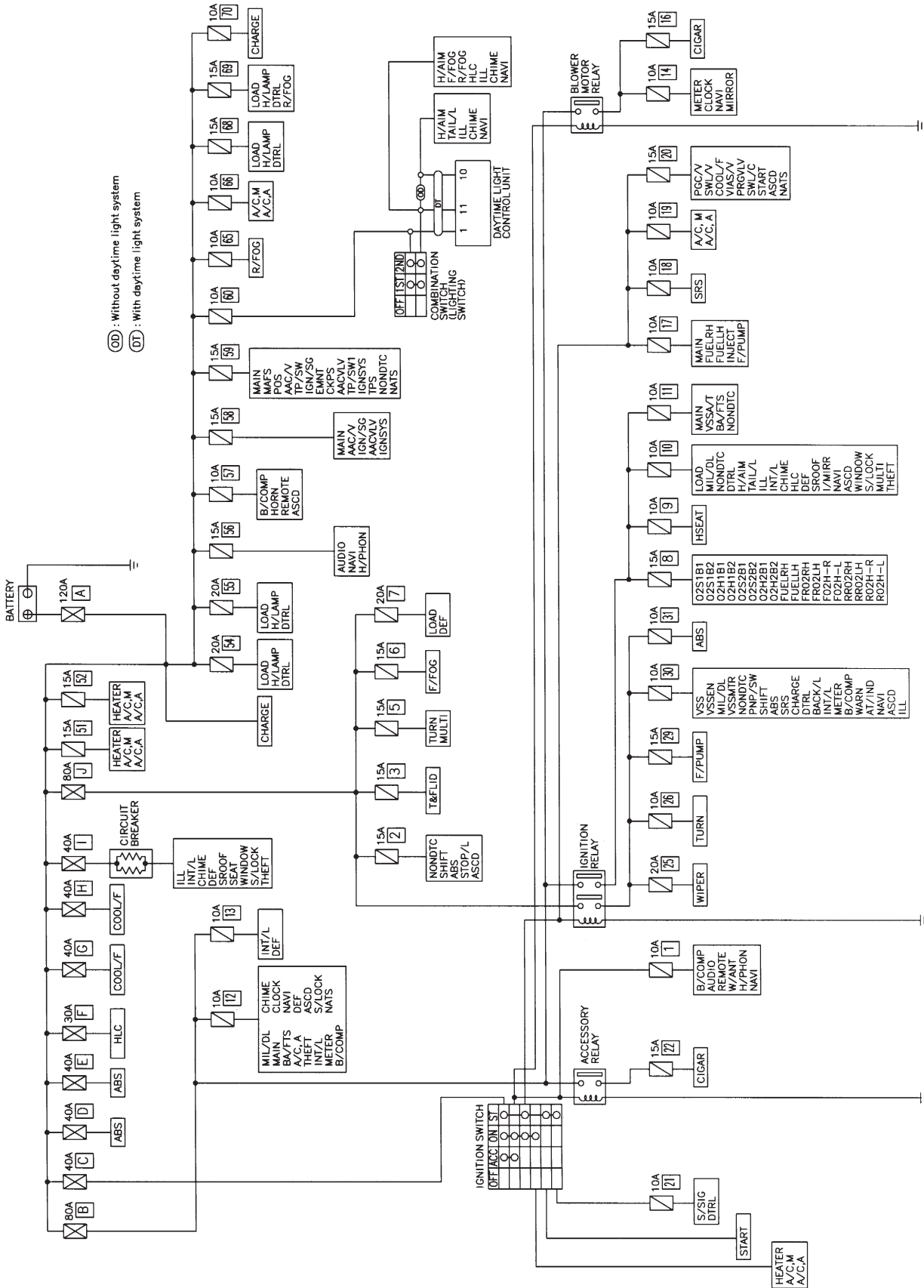
POWER SUPPLY ROUTING

Schematic

Schematic

NFEL0005

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



POWER SUPPLY ROUTING

Wiring Diagram — POWER —

Wiring Diagram — POWER —

BATTERY POWER SUPPLY — IGNITION SW. IN ANY POSITION

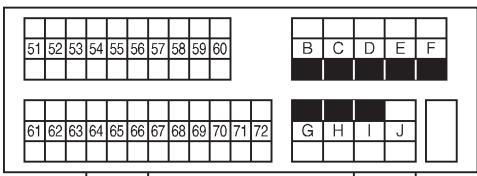
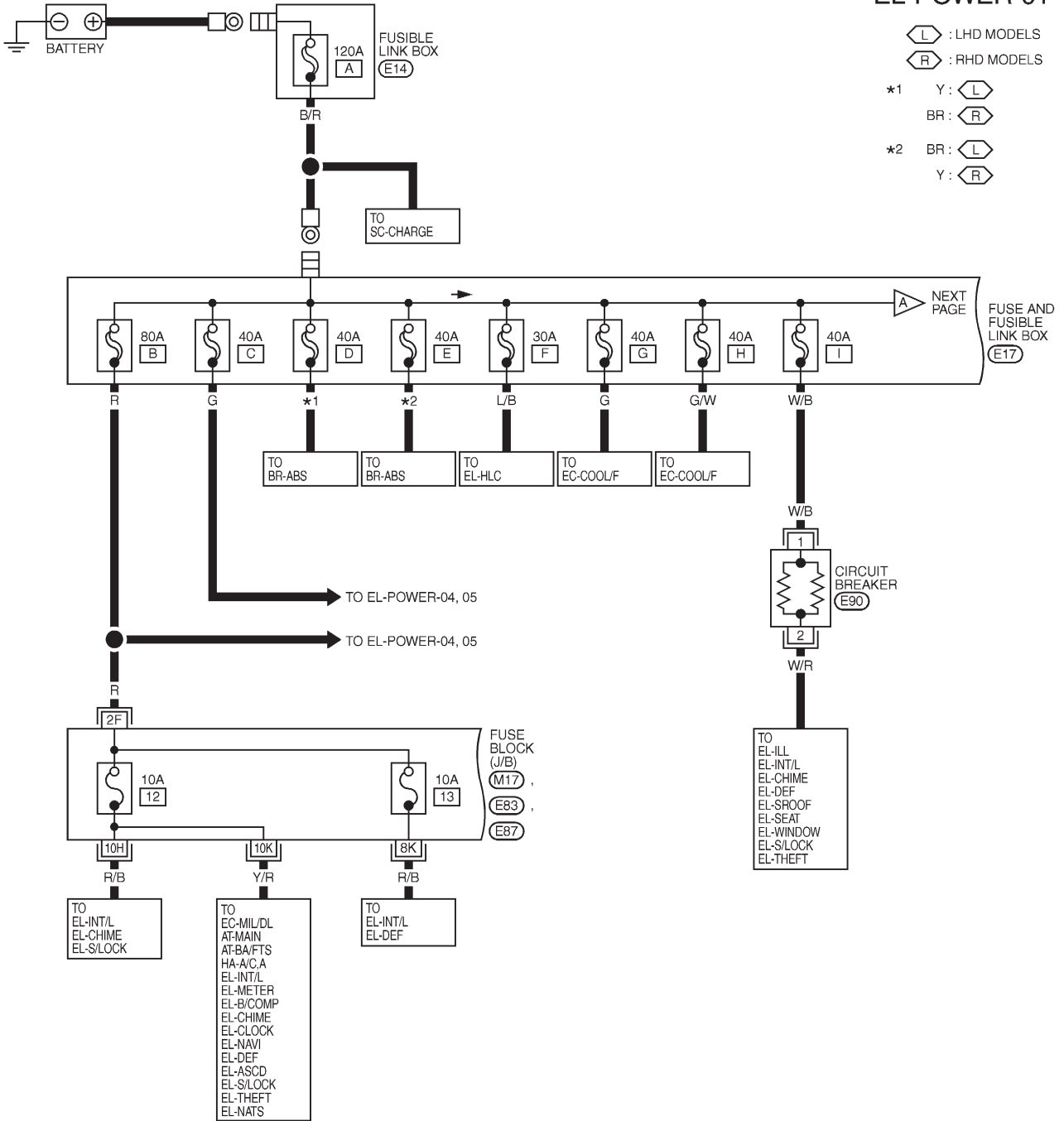
NFEL0006

NFEL0006S01

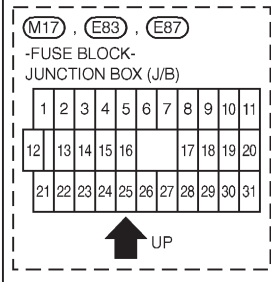
EL-POWER-01

⬡ : LHD MODELS
 ⬢ : RHD MODELS

*1 Y : ⬡
 BR : ⬢
 *2 BR : ⬡
 Y : ⬢



REFER TO THE FOLLOWING.

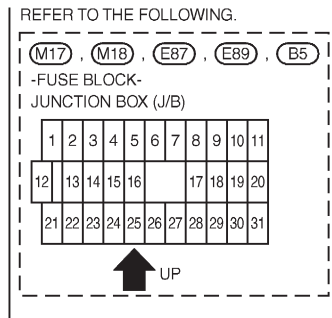
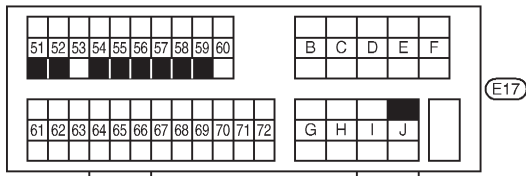
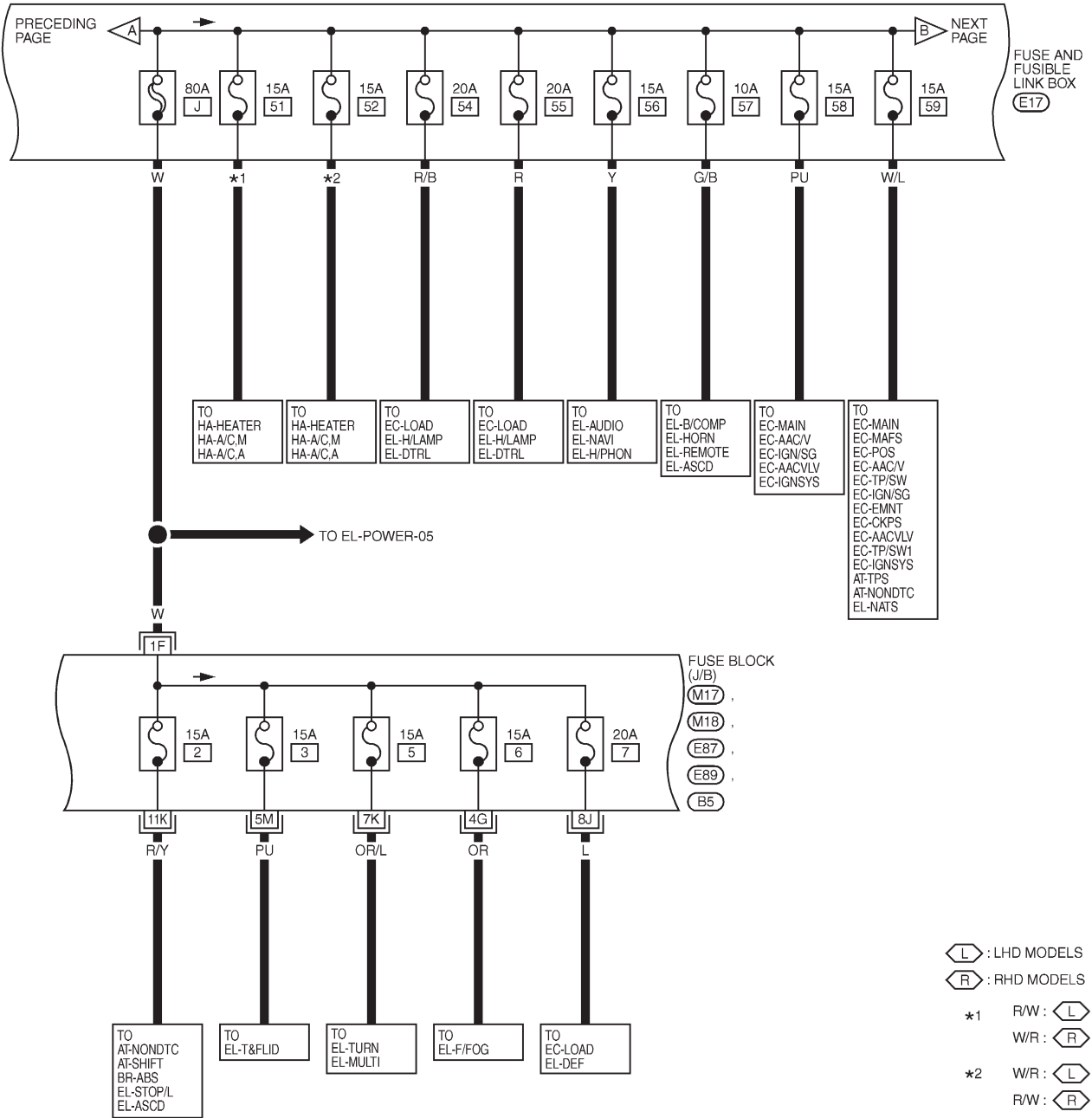


MEL813M

POWER SUPPLY ROUTING

Wiring Diagram — POWER — (Cont'd)

EL-POWER-02

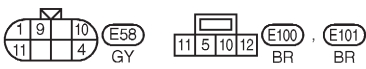
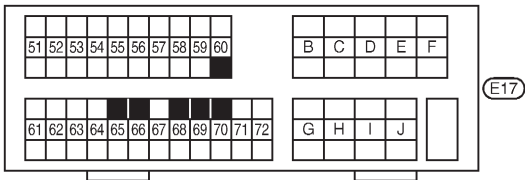
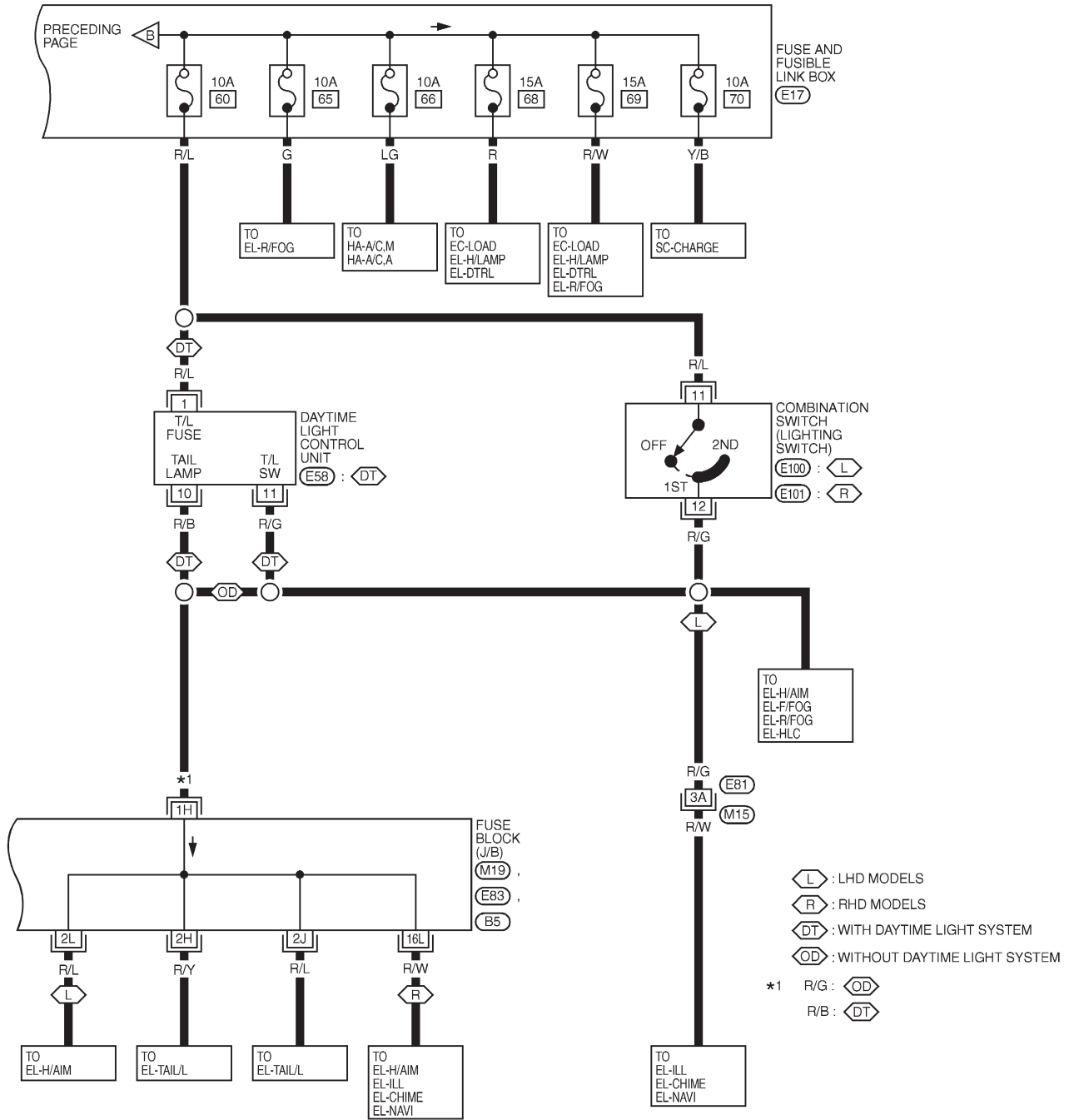


MEL814M

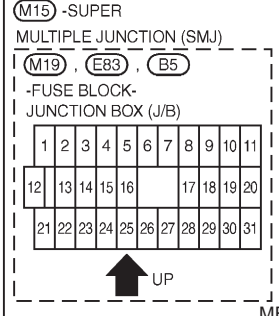
POWER SUPPLY ROUTING

Wiring Diagram — POWER — (Cont'd)

EL-POWER-03



REFER TO THE FOLLOWING.



MEL815M

POWER SUPPLY ROUTING

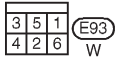
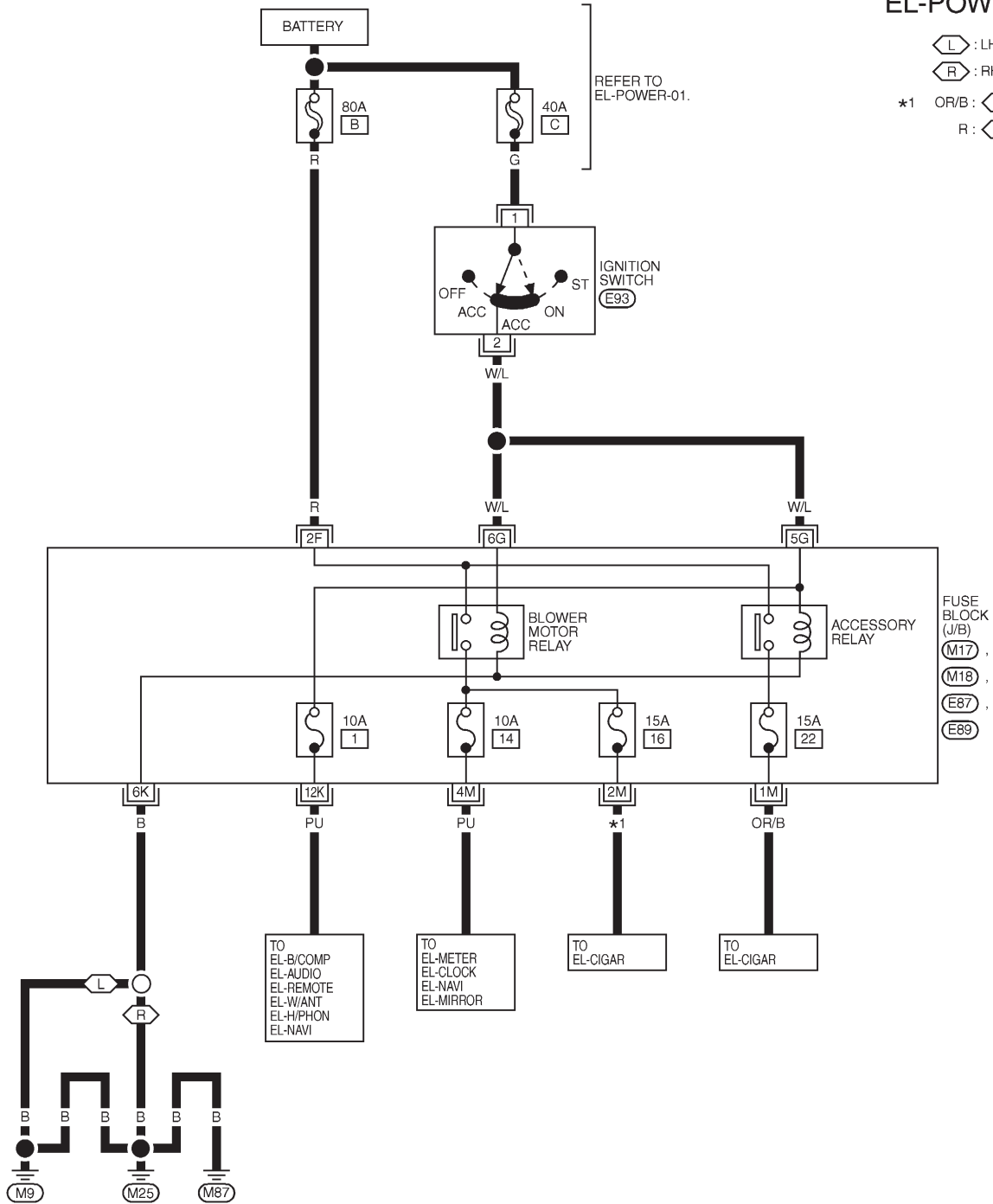
Wiring Diagram — POWER — (Cont'd)

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

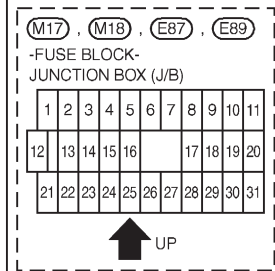
NFEL0006S02

EL-POWER-04

- ◁ : LHD MODELS
- ▷ : RHD MODELS
- *1 OR/B: ◁
- R: ▷



REFER TO THE FOLLOWING.



MEL816M

POWER SUPPLY ROUTING

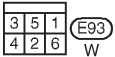
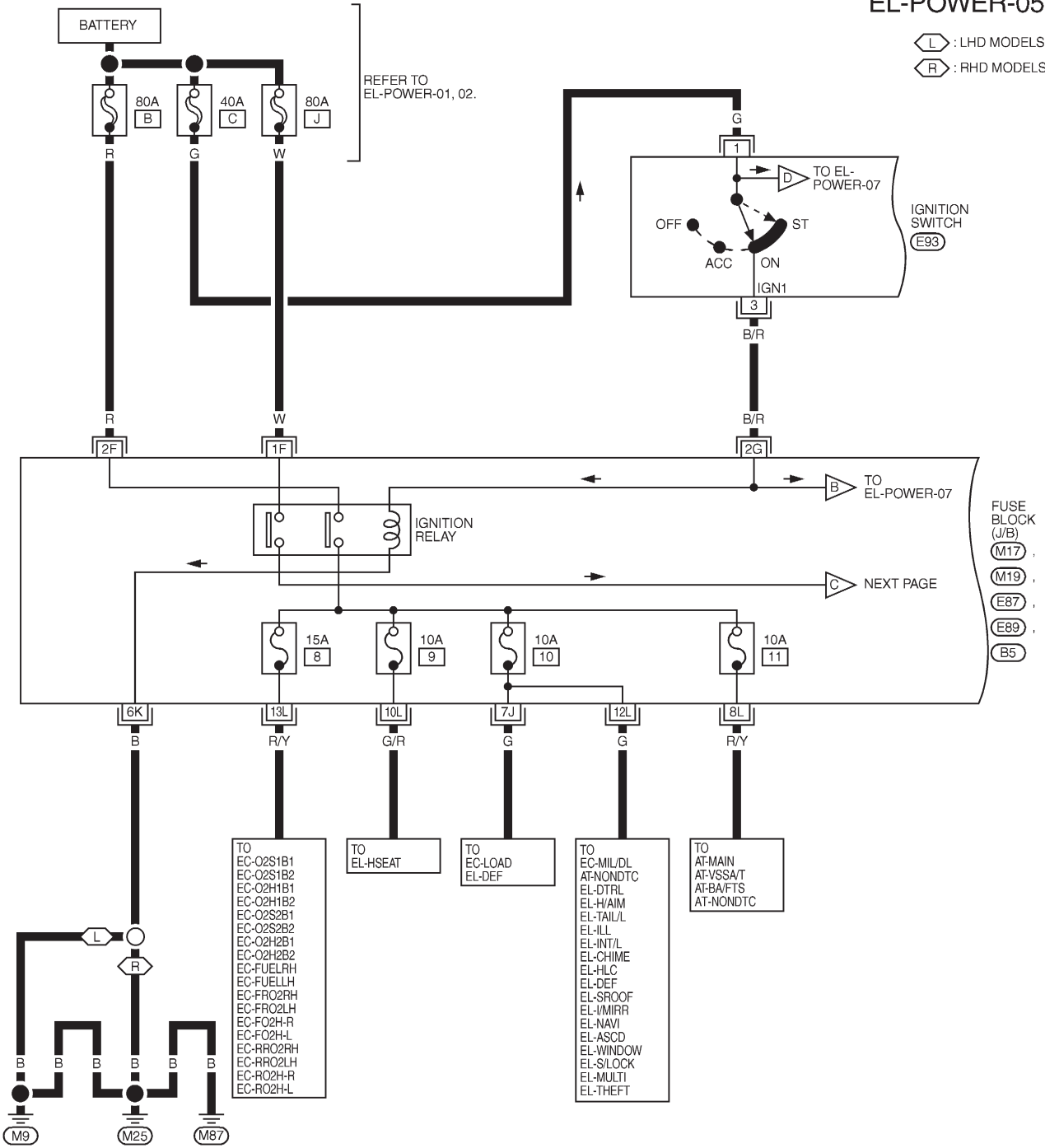
Wiring Diagram — POWER — (Cont'd)

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

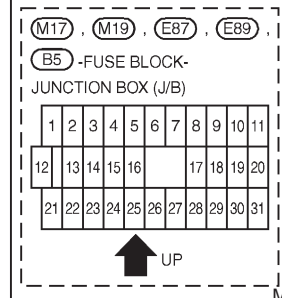
NFEL0006S03

EL-POWER-05

◁ : LHD MODELS
 ▷ : RHD MODELS



REFER TO THE FOLLOWING.

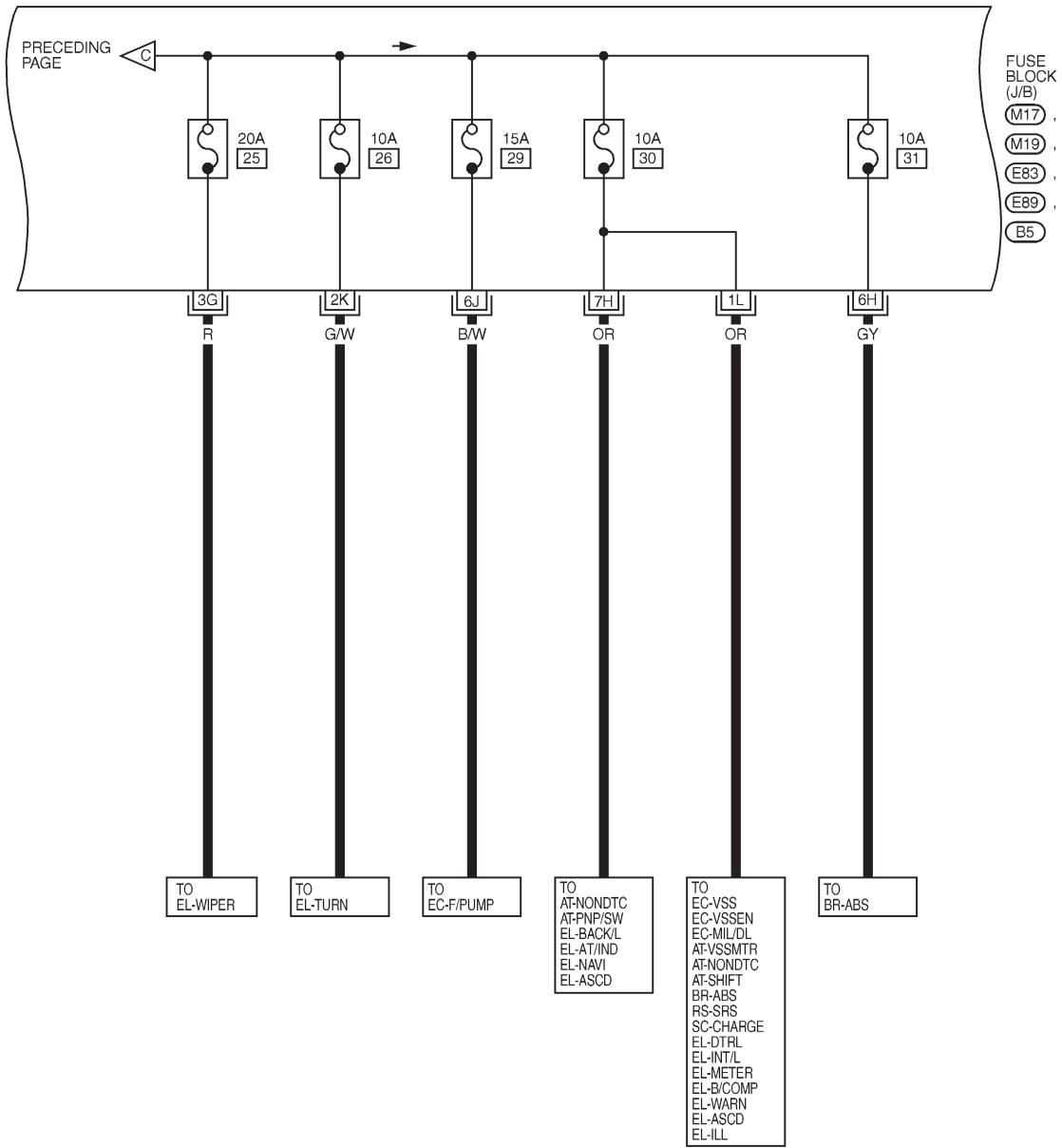


MEL619L

POWER SUPPLY ROUTING

Wiring Diagram — POWER — (Cont'd)

EL-POWER-06



REFER TO THE FOLLOWING.

(M17), (M19), (E83), (E89)

(B5) - FUSE BLOCK -
JUNCTION BOX (J/B)

1	2	3	4	5	6	7	8	9	10	11
12	13	14	15	16		17	18	19	20	
21	22	23	24	25	26	27	28	29	30	31



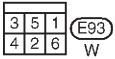
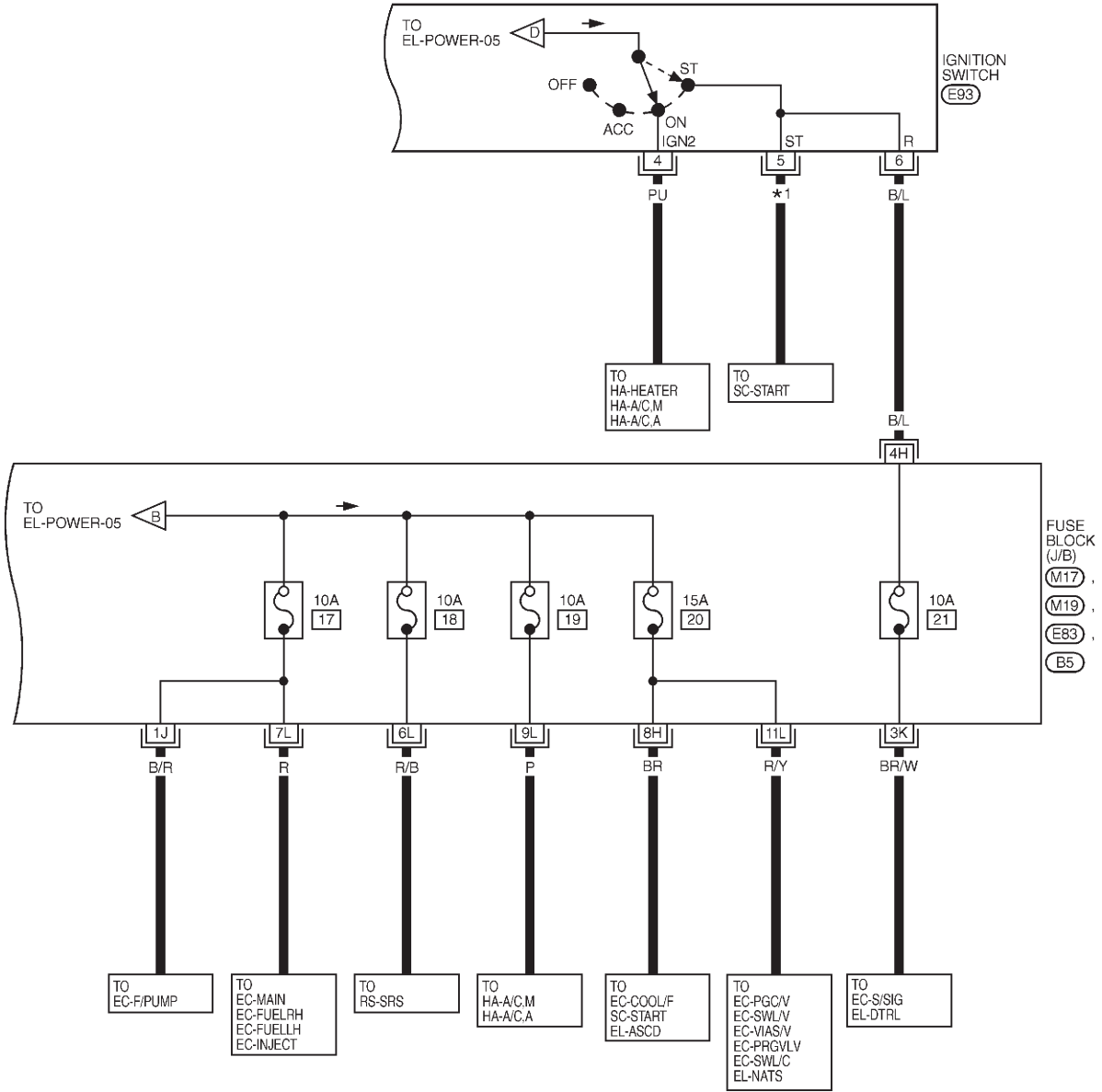
MEL817M

POWER SUPPLY ROUTING

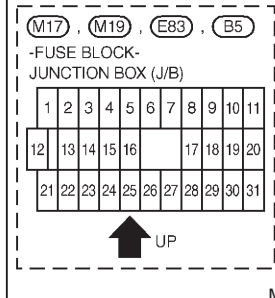
Wiring Diagram — POWER — (Cont'd)

EL-POWER-07

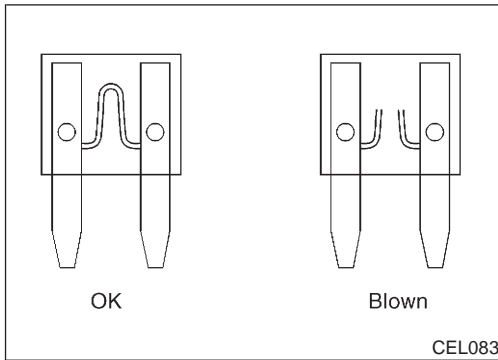
A : WITH A/T
M : WITH M/T
 *1 B/R : A
 L : M



REFER TO THE FOLLOWING.



MEL621L



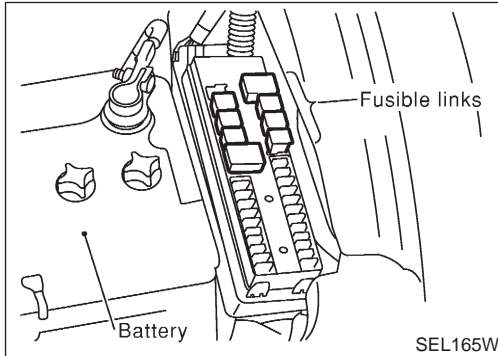
Inspection

NFEL0007

FUSE

NFEL0007S01

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



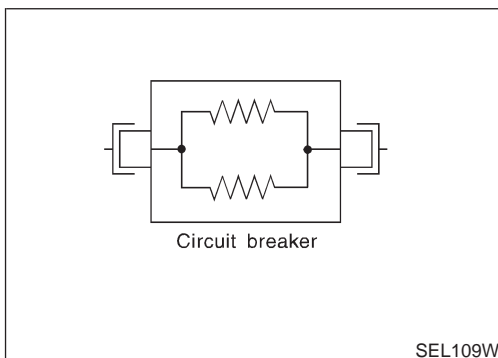
FUSIBLE LINK

NFEL0007S02

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

CAUTION:

- If fusible link should melt, it is possible that critical circuit (power supply or large current carrying circuit) is shorted. In such a case, carefully check and eliminate cause of problem.
- Never wrap outside of fusible link with vinyl tape. Important: Never let fusible link touch any other wiring harness, vinyl or rubber parts.



CIRCUIT BREAKER (PTC THERMISTOR TYPE)

NFEL0007S03

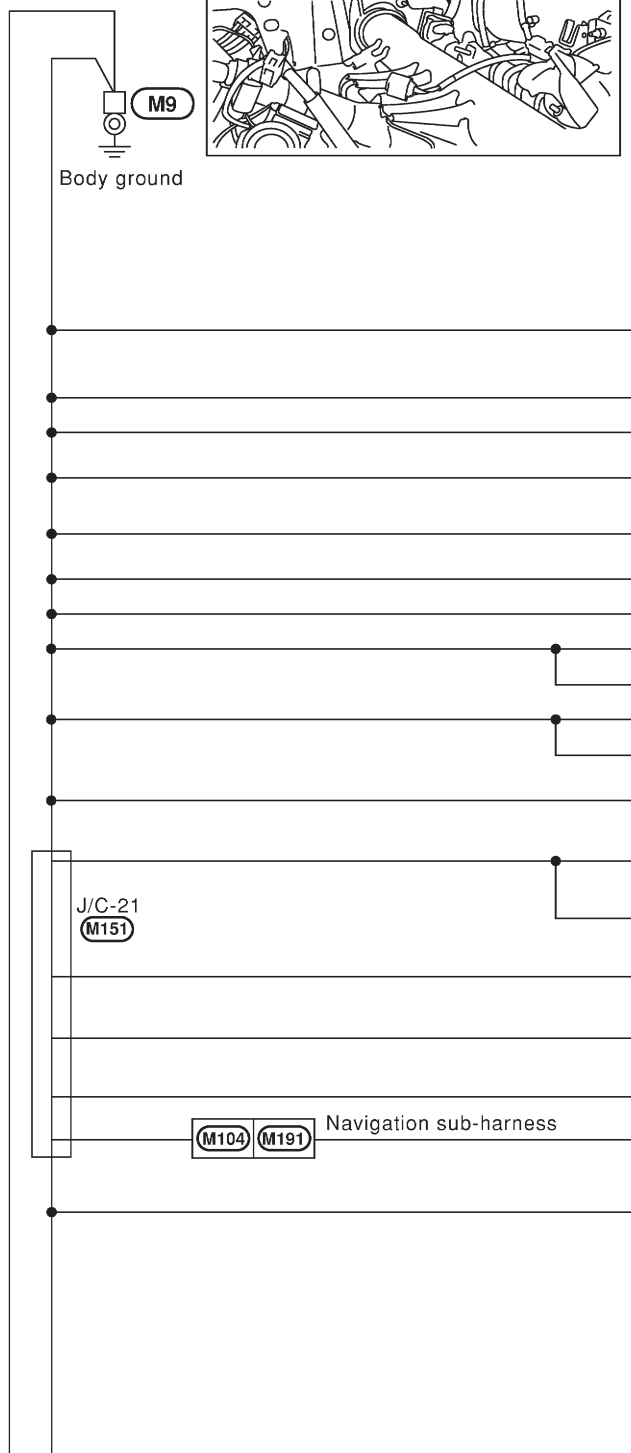
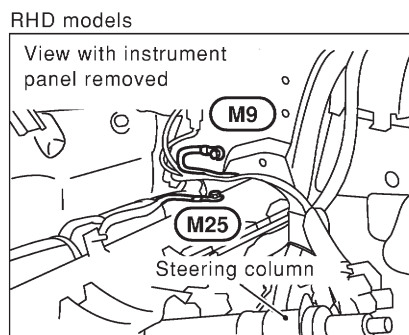
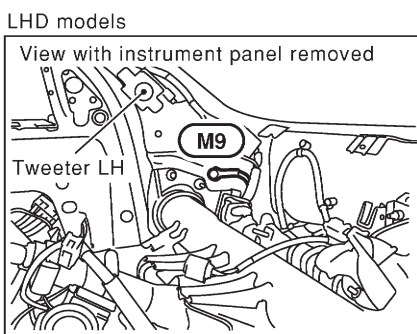
The PTC thermistor generates heat in response to current flow. The temperature (and resistance) of the thermistor element varies with current flow. Excessive current flow will cause the element's temperature to rise. When the temperature reaches a specified level, the electrical resistance will rise sharply to control the circuit current.

Reduced current flow will cause the element to cool. Resistance falls accordingly and normal circuit current flow is allowed to resume.

GROUND

Ground Distribution

MAIN HARNESS

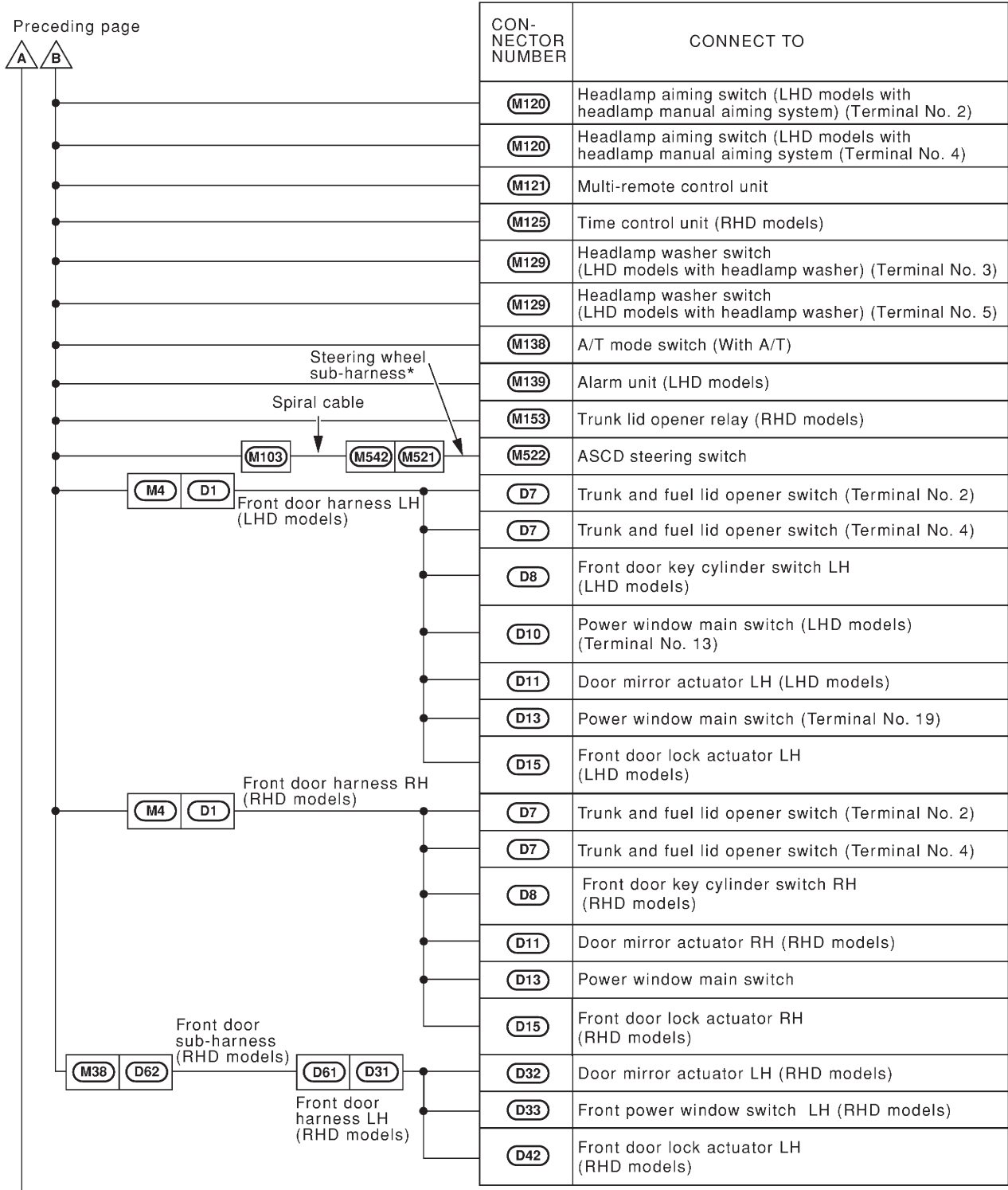


CON-NECTOR NUMBER	CONNECT TO
M17	Fuse block (J/B) (Terminal No. 6K) (LHD models) • Accessory relay • Blower motor relay • Ignition relay
M20	Power window relay
M21	Combination flasher unit (LHD models)
M23	Illumination control switch (Terminal No. 3) (RHD models)
M23	Illumination control switch (Terminal No. 6) (RHD models)
M24	Door mirror remote control switch
M28	Data link connector (Terminal No. 4)
M48	Mode door motor (RHD models with manual A/C)
M49	Mode door motor (RHD models with auto A/C)
M50	Air mix door motor (RHD models with manual A/C)
M51	Air mix door motor (RHD models with auto A/C)
M76	A/T device (With A/T) (Terminal No. 2)
M105	Navi control unit (RHD models with navigation system) (Terminal No. 29)
M116	Guide speaker relay (RHD models with navigation system)
M106	Navi control unit (RHD models with navigation system) (Terminal No. 3)
M106	Navi control unit (RHD models with navigation system) (Terminal No. 4)
M134	Navi option connector (RHD models with navigation system)
M193	Front monitor (RHD models with navigation system)
M115	Headlamp aiming control unit (LHD models with headlamp auto aiming system)

A B
Next page

GROUND

Ground Distribution (Cont'd)



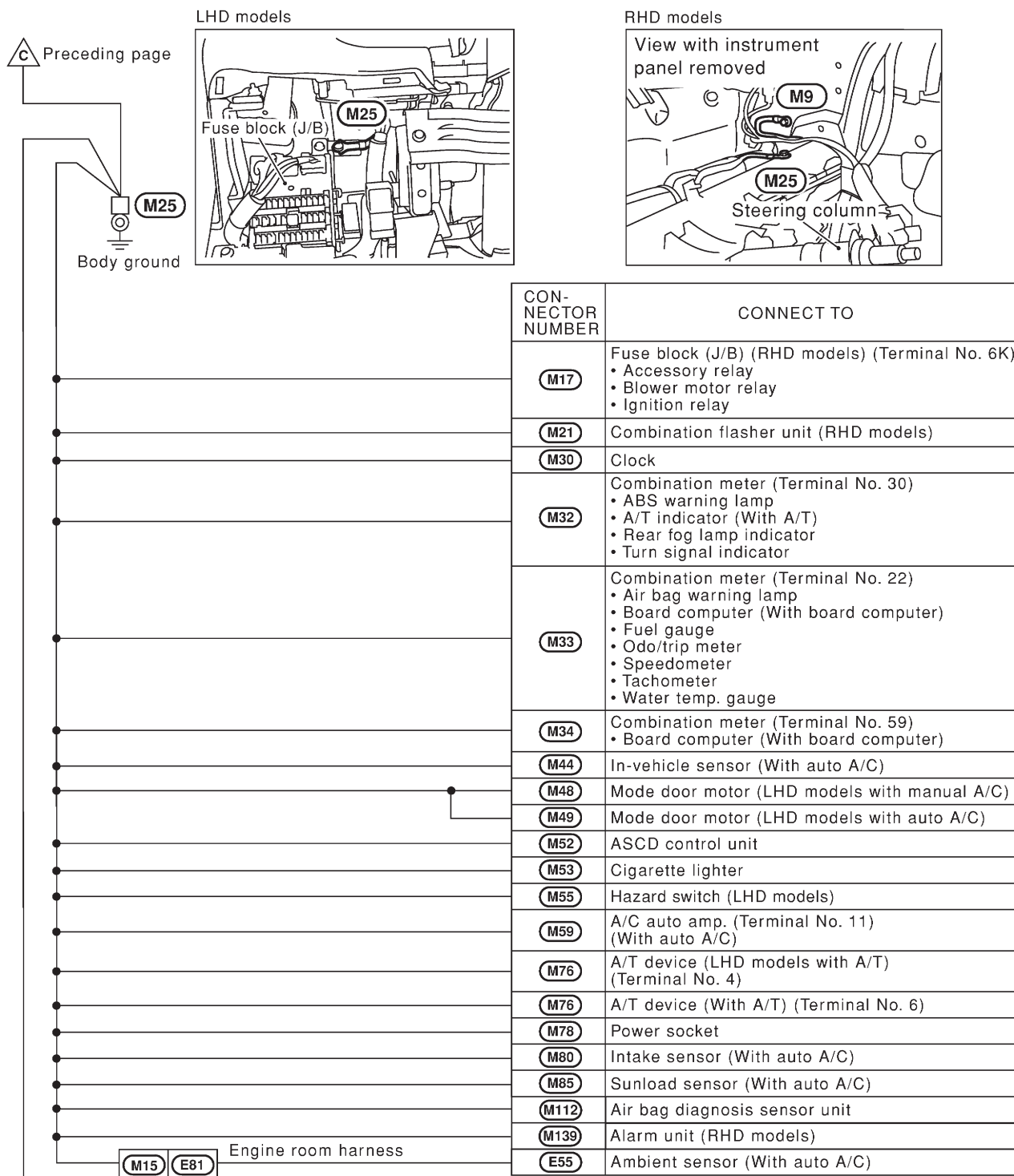
* : This sub-harness is not shown in "Harness Layout", EL section.

Preceding page
A B
C
Next page

MEL819M

GROUND

Ground Distribution (Cont'd)



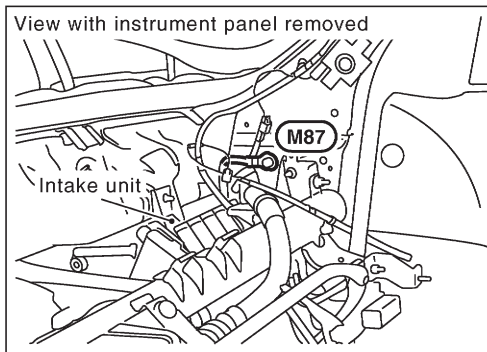
Next page

MEL669L

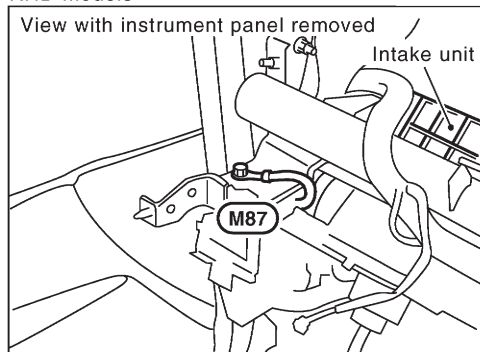
GROUND

Ground Distribution (Cont'd)

LHD models



RHD models



△ D Preceding page



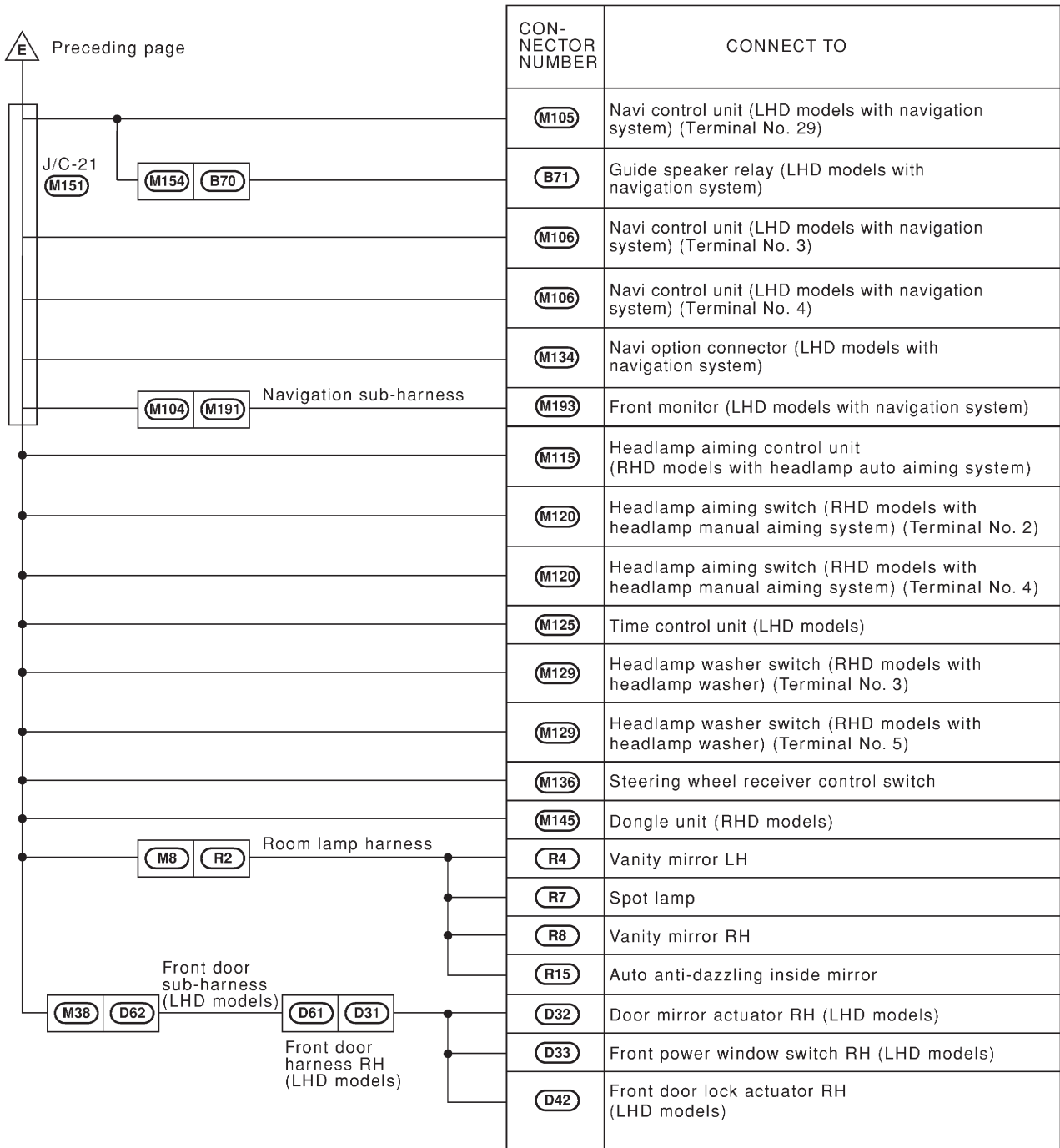
CON-NECTOR NUMBER	CONNECT TO
M23	Illumination control switch (Terminal No. 3) (LHD models)
M23	Illumination control switch (Terminal No. 6) (LHD models)
M31	Fan control amp. (With auto A/C)
M58	Fan switch (With manual A/C and heater)
M50	Air mix door motor (LHD models with manual A/C)
M51	Air mix door motor (LHD models with auto A/C)
M55	Hazard switch (RHD models)
M56	A/C control unit (With manual A/C) (Terminal No. 16)
M60	A/C auto amp. (With auto A/C) (Terminal No. 25)
M56	A/C control unit (With manual A/C) (Terminal No. 17)
M60	A/C auto amp. (With auto A/C) (Terminal No. 32)
M59	A/C auto amp. (With auto A/C) (Terminal No. 14)
M72	Ashtray illumination
M74	Heated seat switch LH
M75	Heated seat switch RH
M76	A/T device (RHD models with A/T) (Terminal No. 4)
M82	Glove box lamp
M83	Intake door motor (With manual A/C)
M84	Intake door motor (With auto A/C)

▽ E Next page

MEL670L

GROUND

Ground Distribution (Cont'd)



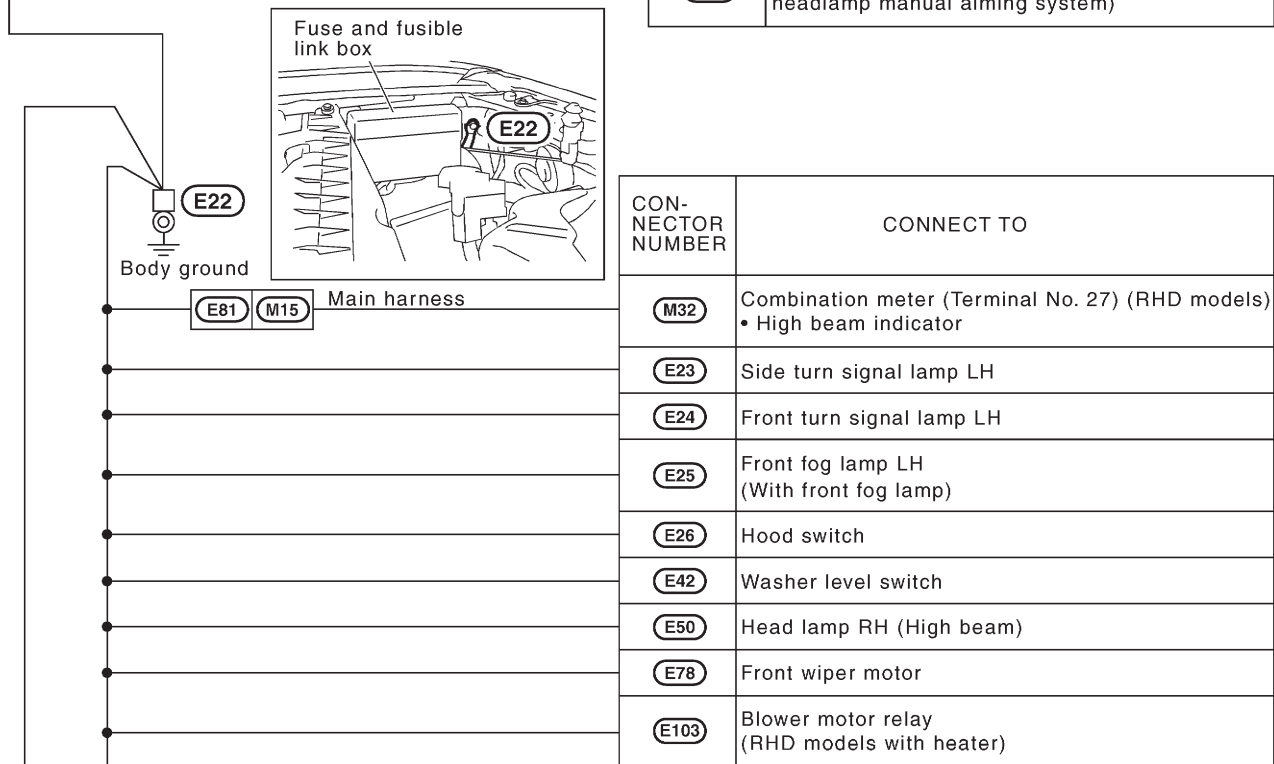
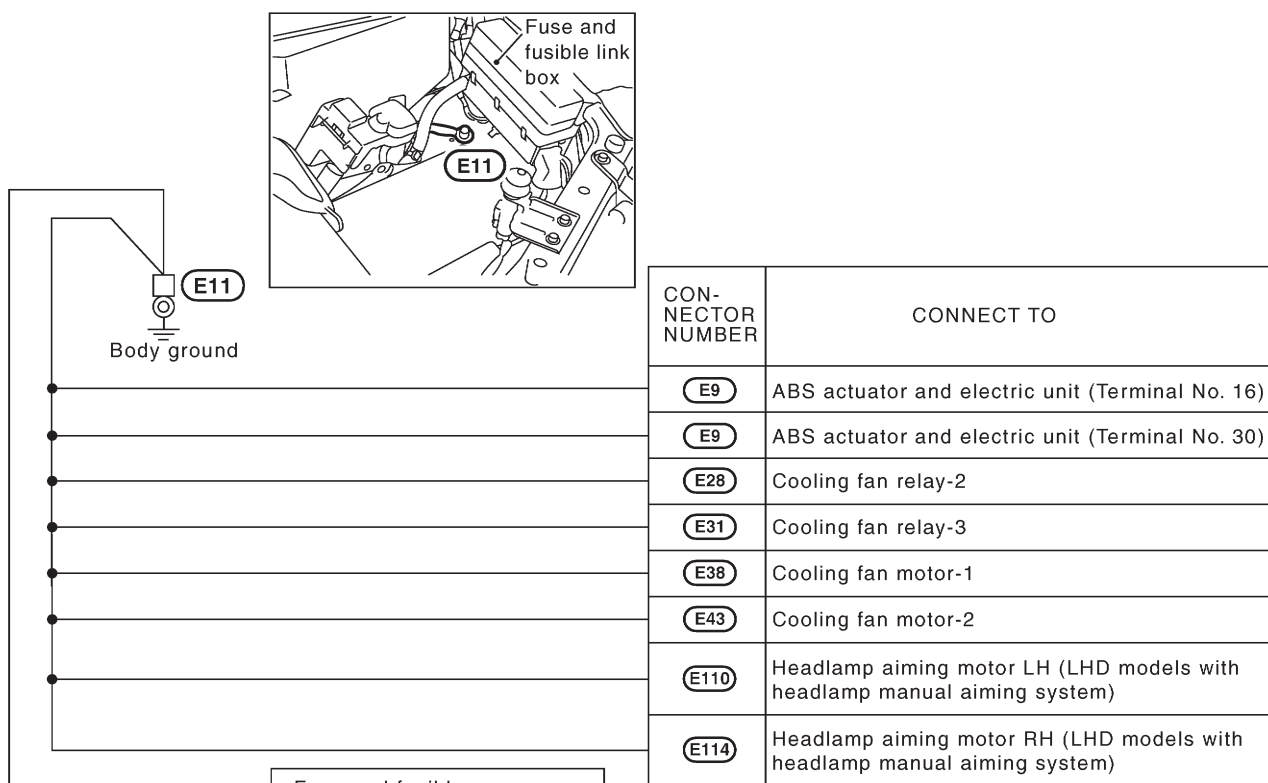
MEL820M

GROUND

Ground Distribution (Cont'd)

ENGINE ROOM HARNESS

NFEL0008S02



F
G
 Next page

MEL821M

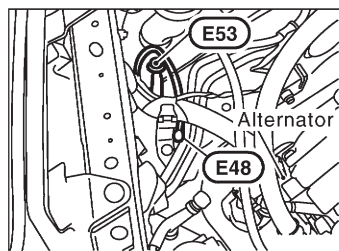
GROUND

Ground Distribution (Cont'd)

Preceding page

F G

E106	Head lamp LH (Low beam) (RHD models with xenon headlamp and LHD models with xenon headlamp with daytime light system)
E109	Clearance lamp LH
E110	Headlamp aiming motor LH (RHD models with headlamp manual aiming system)
E112	Headlamp RH (Low beam) (Without xenon headlamp)
E113	Headlamp RH (Low beam) (LHD models with xenon headlamp)
E114	Headlamp aiming motor RH (RHD models with headlamp manual aiming system)



E81 M15

Main harness

M32	Combination meter (Terminal No. 27) (LHD models) • High beam indicator
E1	Brake fluid level switch
E36	Headlamp LH (High beam)
E44	Front fog lamp RH (With front fog lamp)
E45	Front turn signal lamp RH
E49	Side turn signal lamp RH
E58	Daytime light control unit (With daytime light system)
E64	Front fog lamp relay (With front fog lamp)
E96	Combination switch (Front wiper switch)
E103	Blower motor relay (LHD models with heater)
E106	Headlamp LH (Low beam) (LHD models with xenon headlamp without daytime light system)
E107	Headlamp LH (Low beam) (Without xenon headlamp)

H

Next page

MEL822M

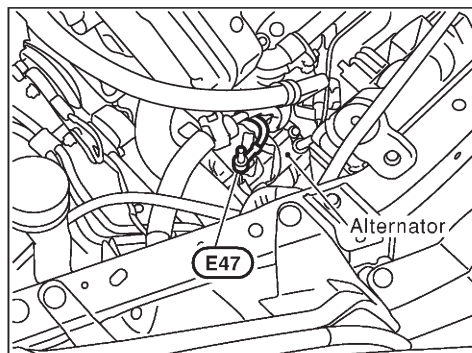
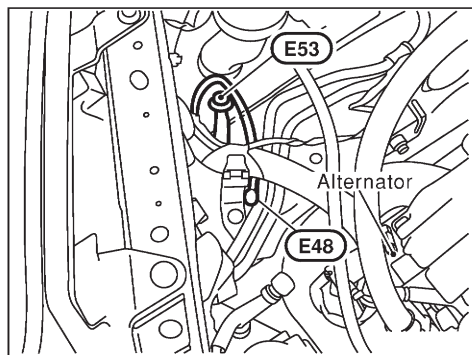
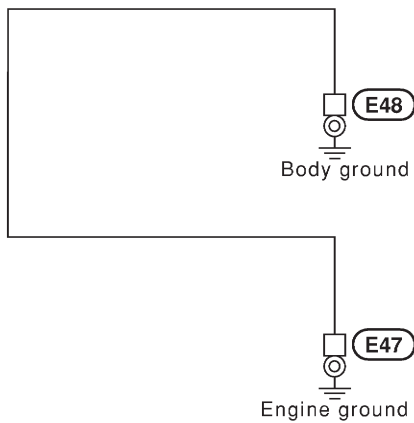
GROUND

Ground Distribution (Cont'd)

Preceding page



•	E113	Headlamp RH (Low beam) (RHD models with xenon headlamp)
•	E115	Clearance lamp RH
•	E120	Headlamp LH relay (With xenon headlamp)
•	E123	Headlamp RH relay (With xenon headlamp)
•	E135	Dimmer relay (Without xenon headlamp)
•	E136	Headlamp washer control unit (With headlamp washer)
•	E137	Rear fog lamp relay



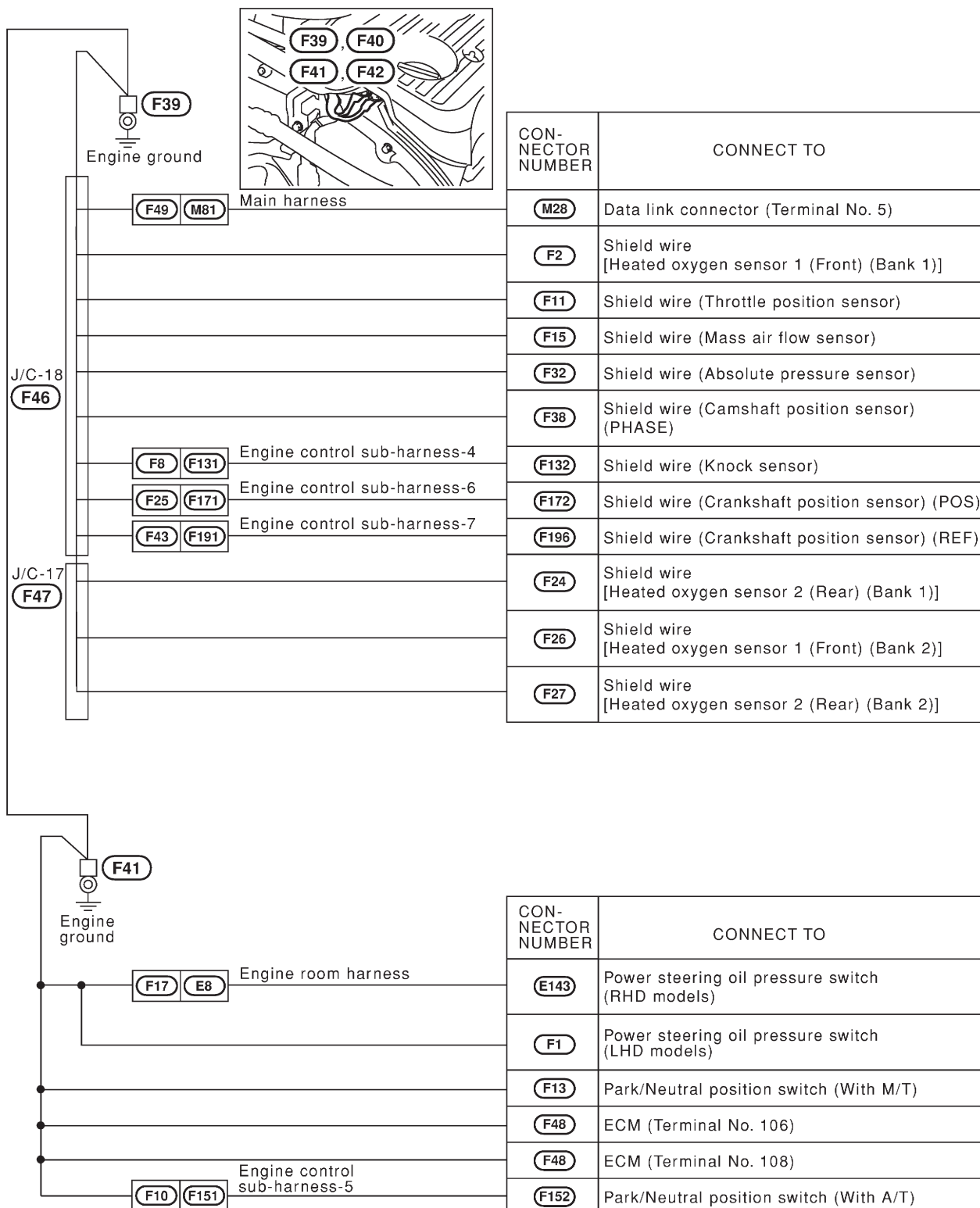
MEL673L

GROUND

Ground Distribution (Cont'd)

ENGINE CONTROL HARNESS

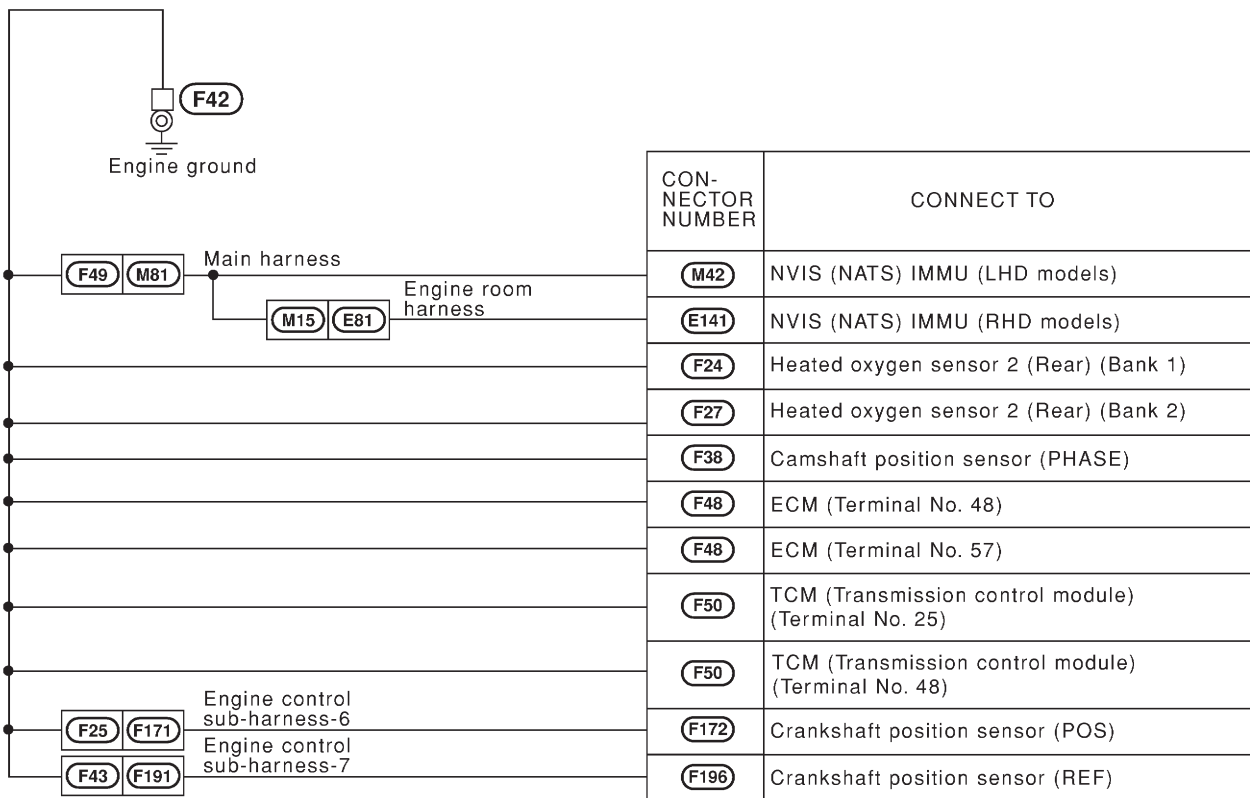
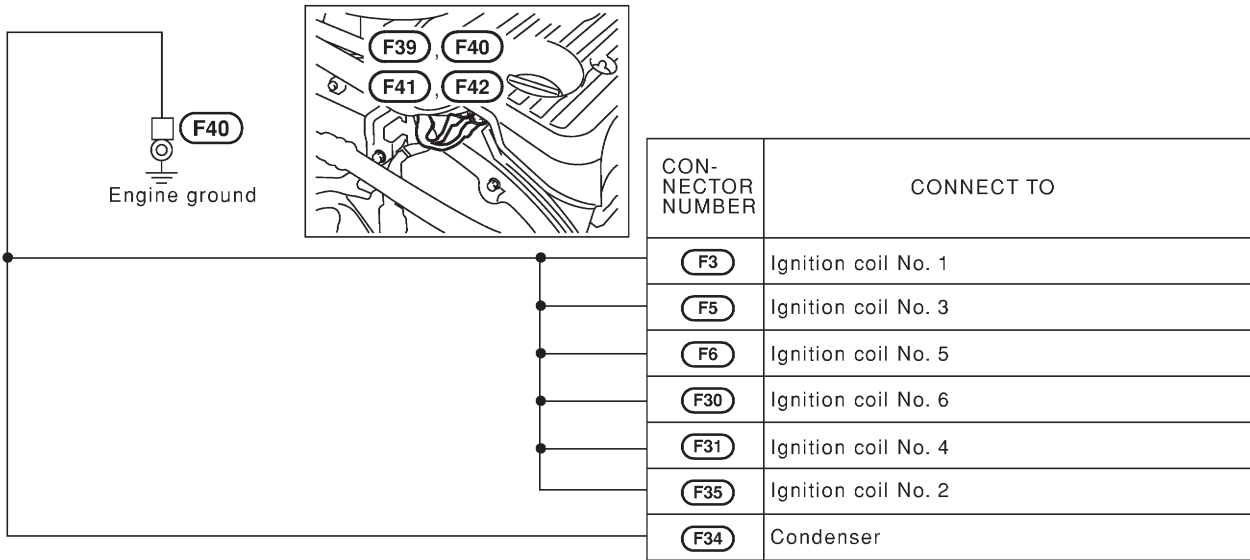
NFEL0008S03



MEL429N

GROUND

Ground Distribution (Cont'd)



MEL430N

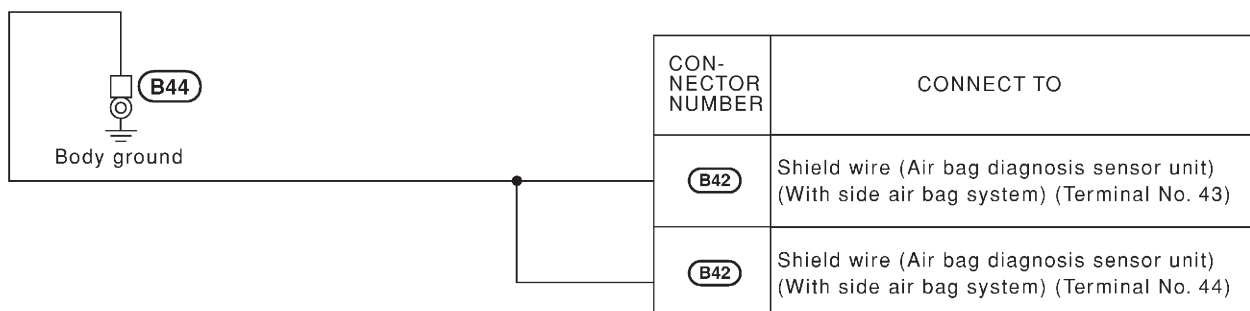
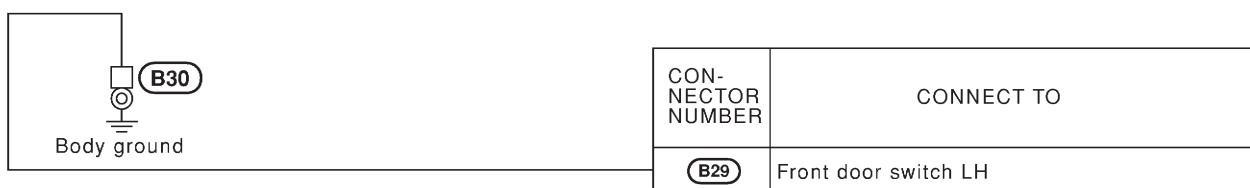
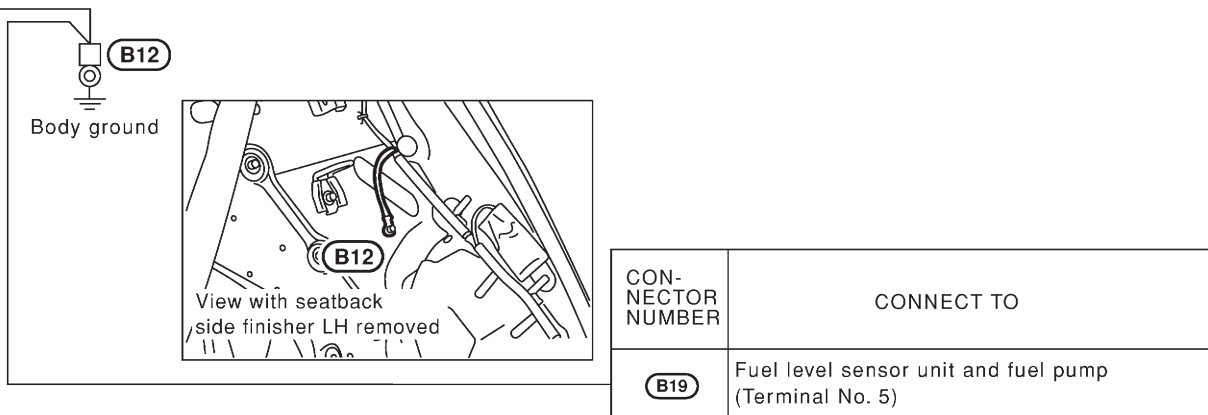
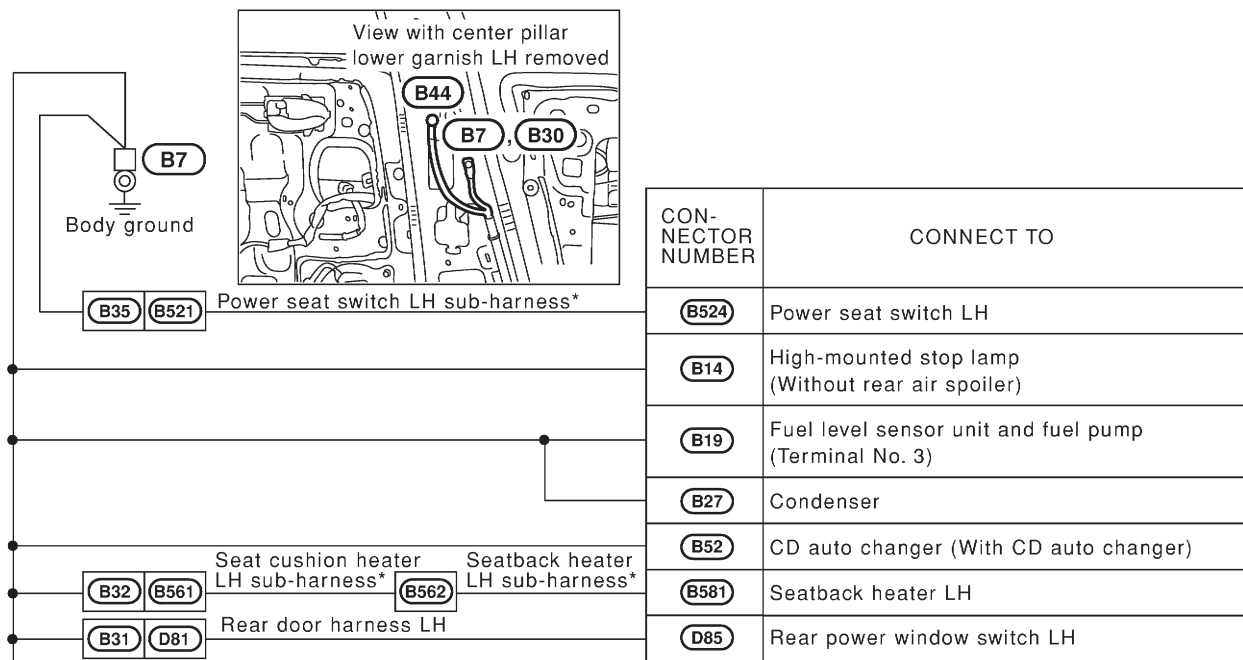
GROUND

Ground Distribution (Cont'd)

BODY HARNESS LHD Models

NFEL0008S04

NFEL0008S0401



*: This sub-harness is not shown in "Harness layout", EL-section.

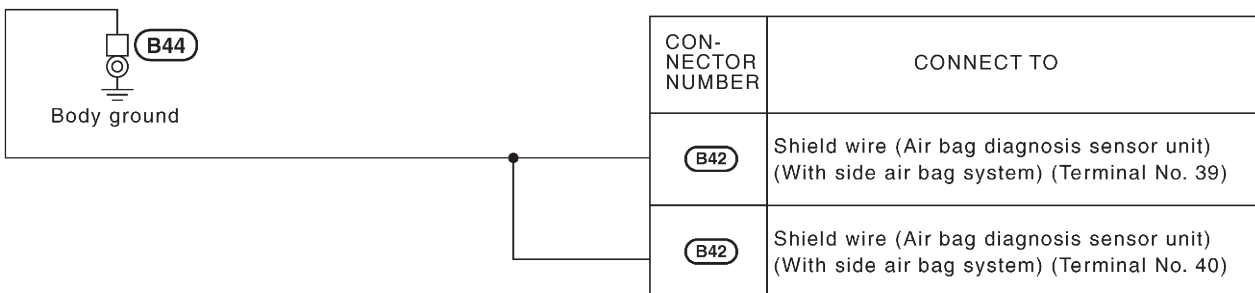
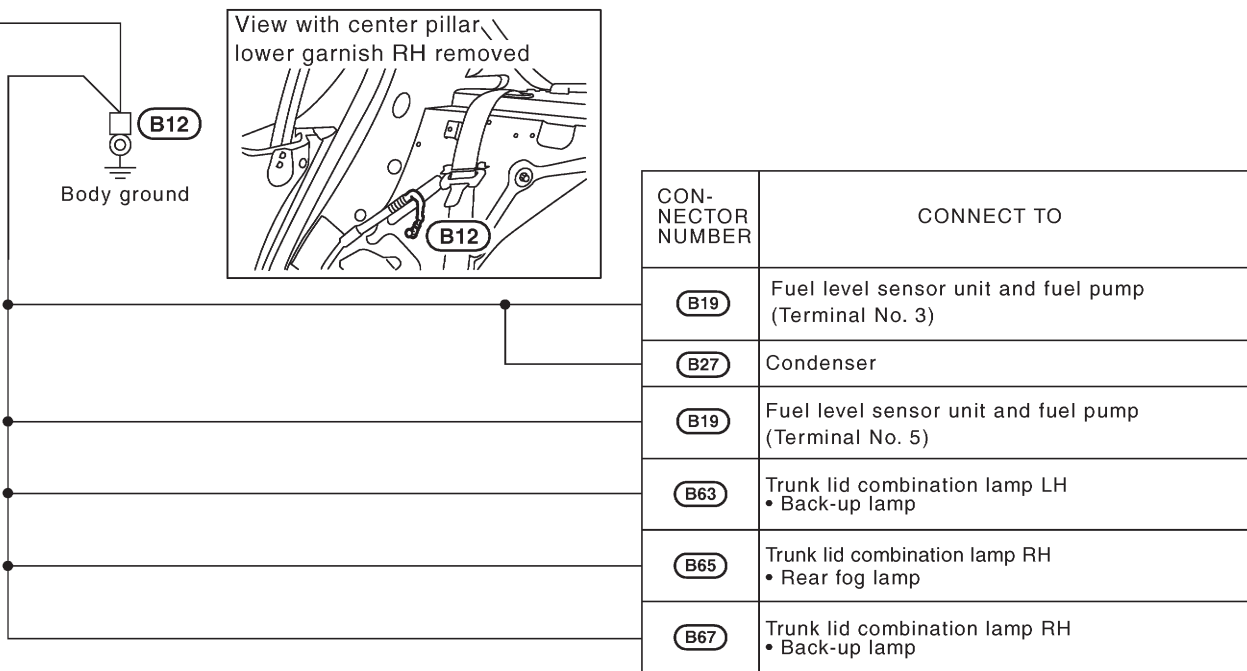
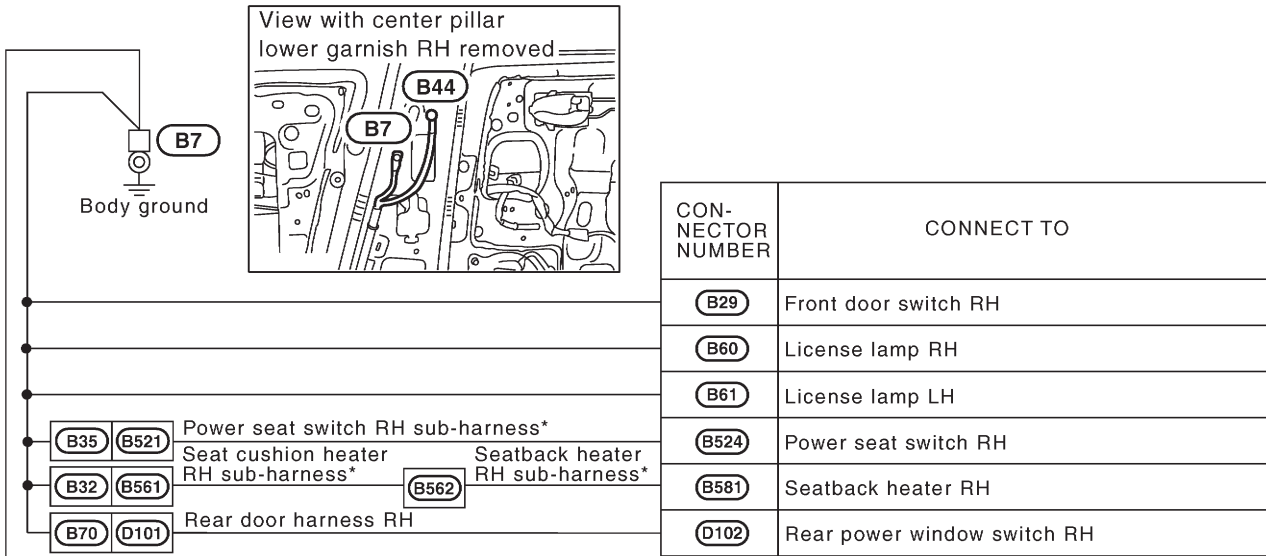
MEL675L

GROUND

Ground Distribution (Cont'd)

RHD Models

NFEL0008S0402

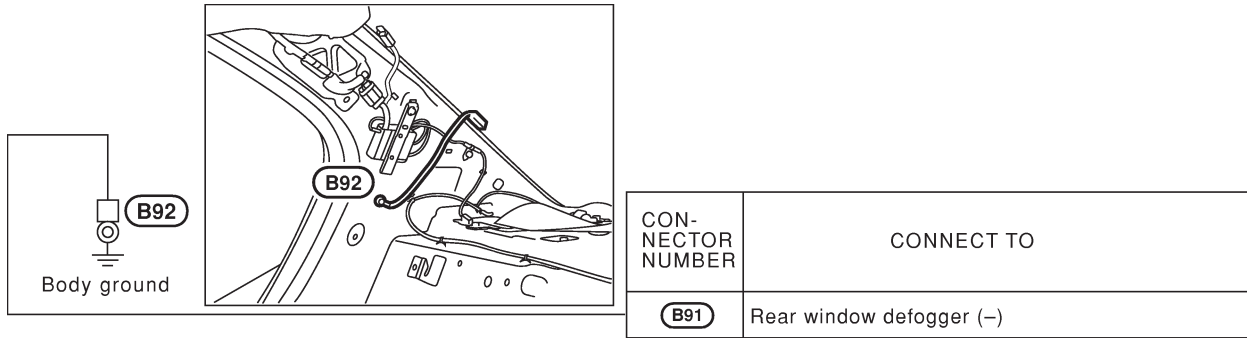


*: This sub-harness is not shown in "Harness layout", EL-section.

MEL823M

GROUND

Ground Distribution (Cont'd)



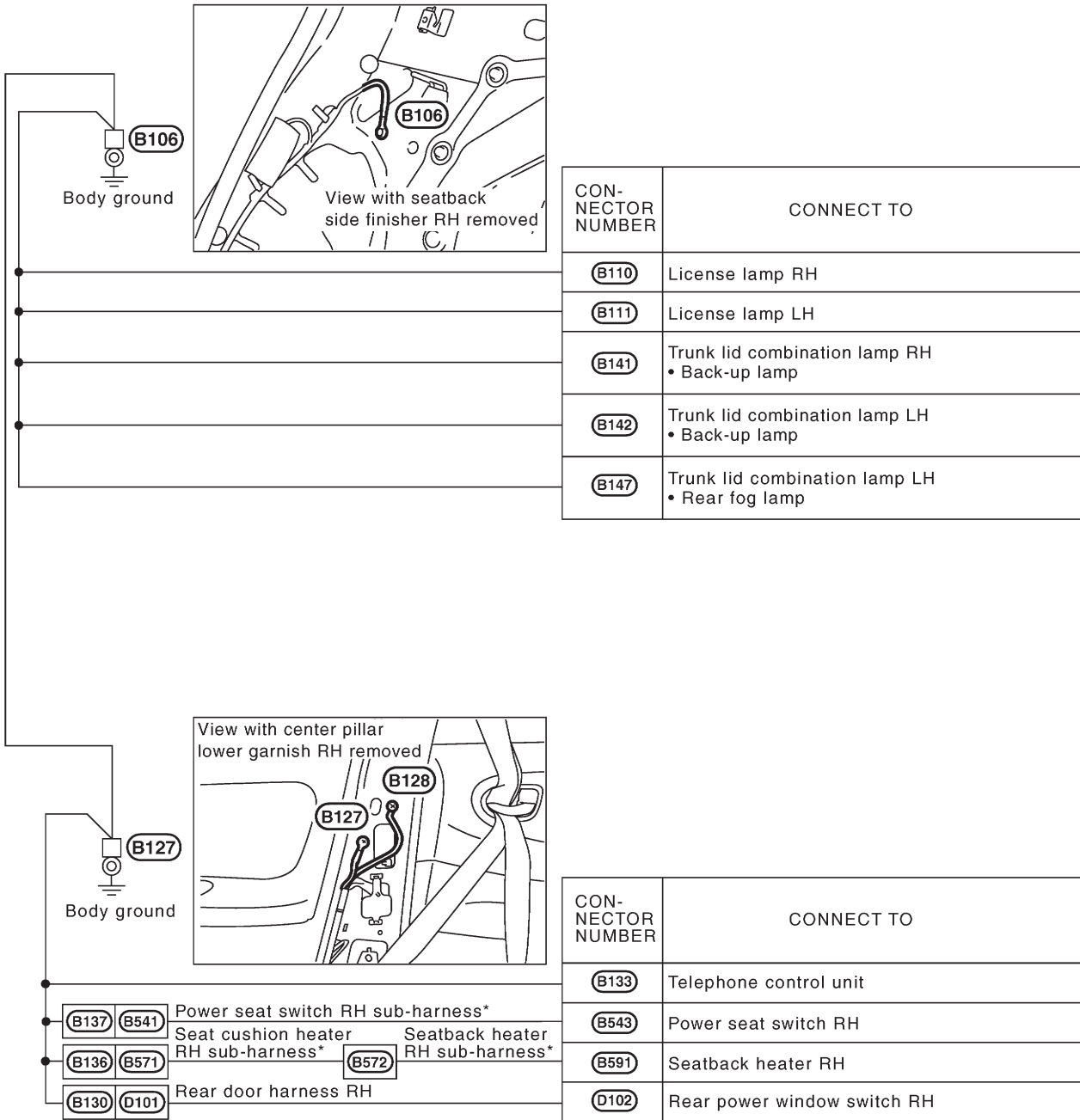
GROUND

Ground Distribution (Cont'd)

BODY NO. 2 HARNESS LHD Models

NFEL0008S05

NFEL0008S0501

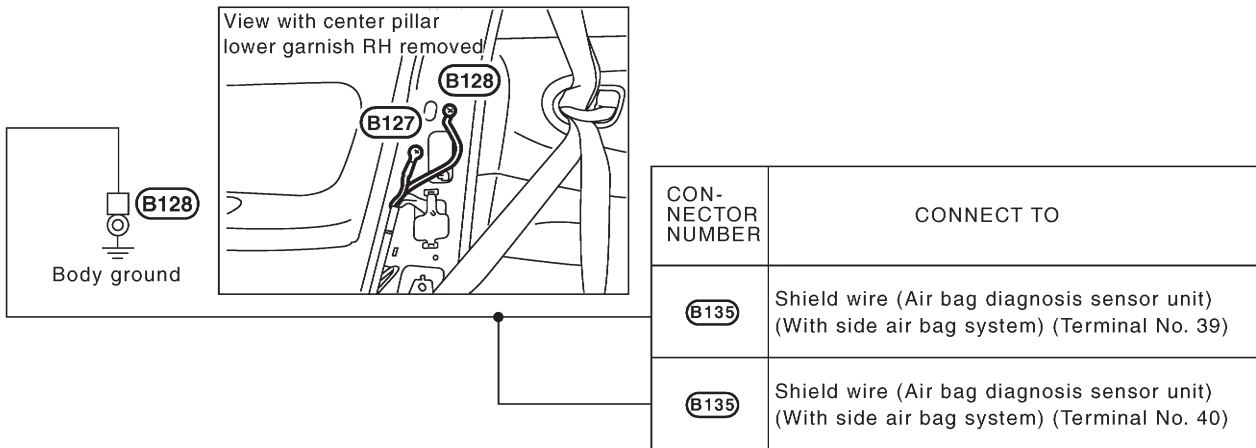


*: This sub-harness is not shown in "Harness layout", EL-section.

MEL824M

GROUND

Ground Distribution (Cont'd)

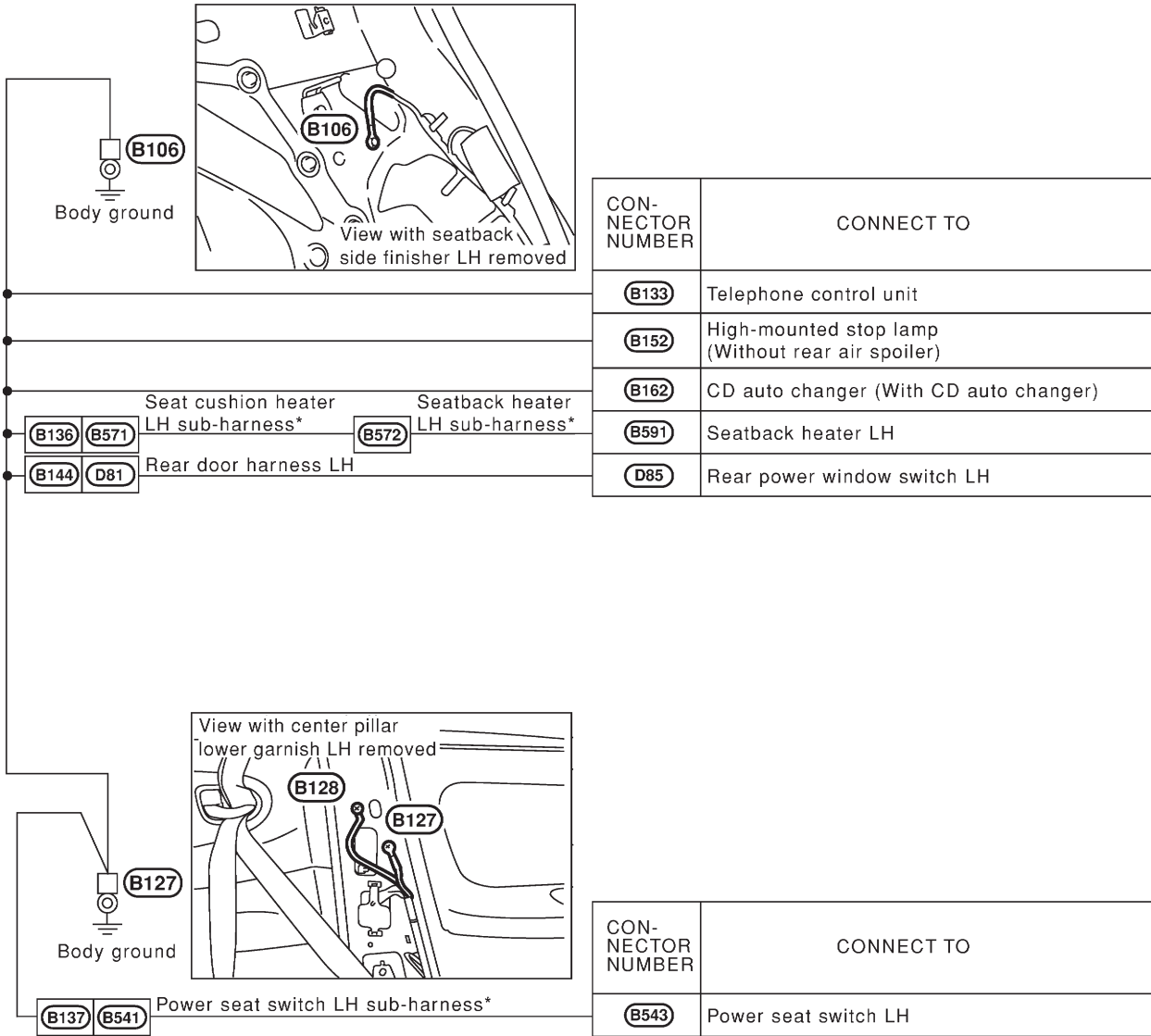


MEL011L

GROUND

RHD Models

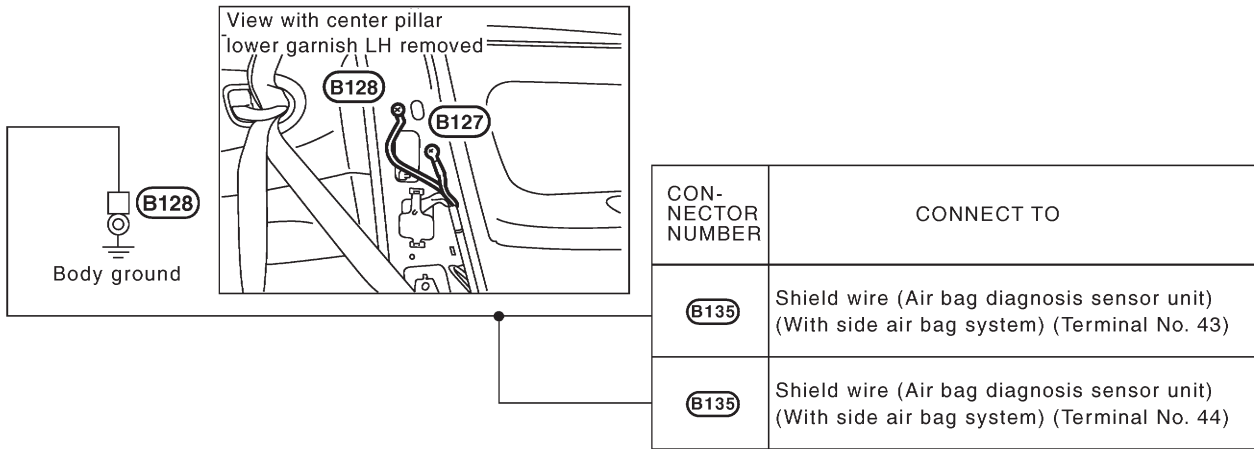
NFEL0008S0502



*: This sub-harness is not shown in "Harness layout", EL-section.

GROUND

Ground Distribution (Cont'd)



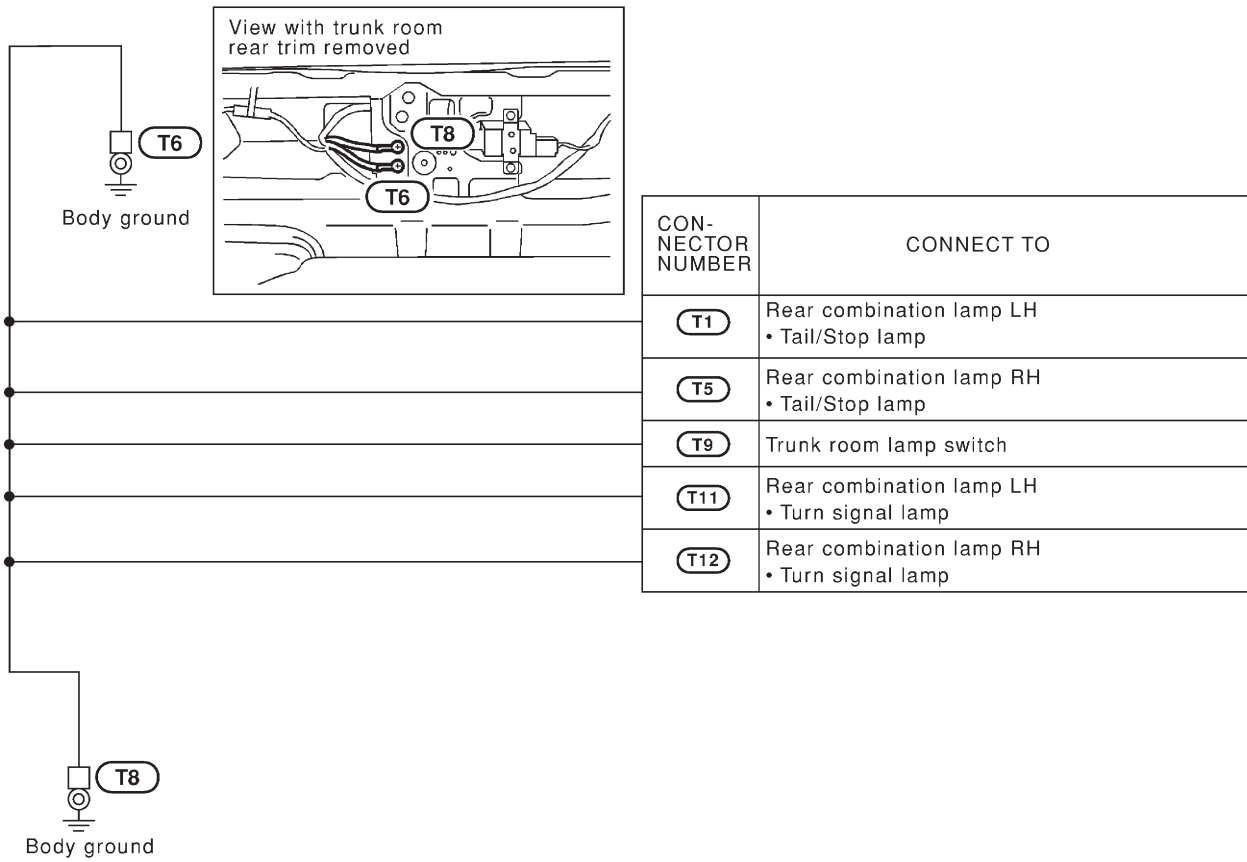
MEL013L

GROUND

Ground Distribution (Cont'd)

TAIL HARNESS

NFEL0008S06



MEL680L

COMBINATION SWITCH

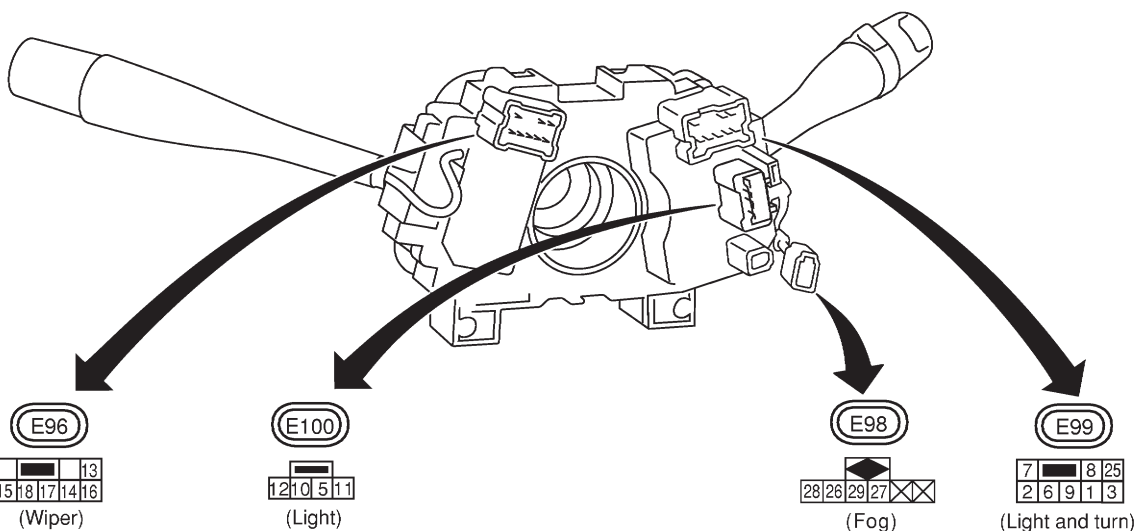
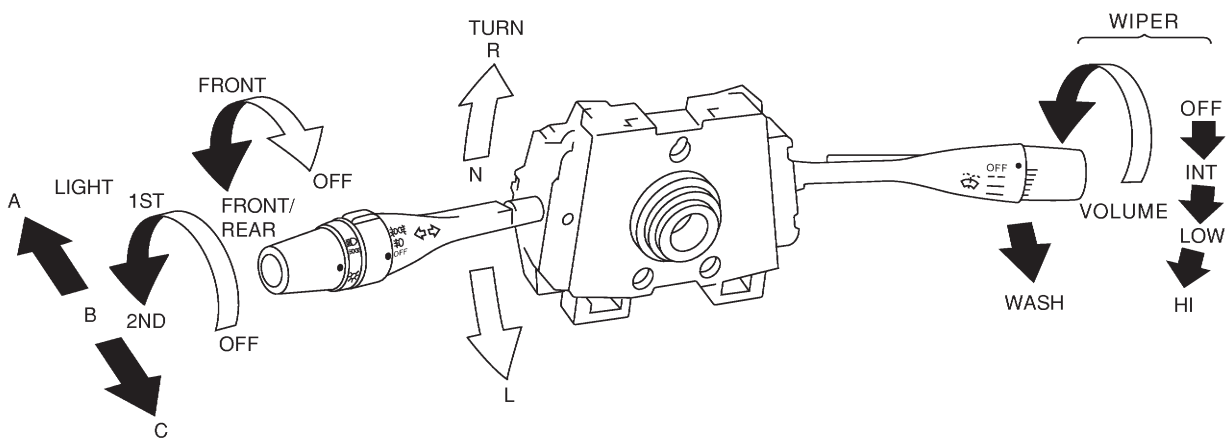
Check

Check

NFEL0009

NFEL0009S02

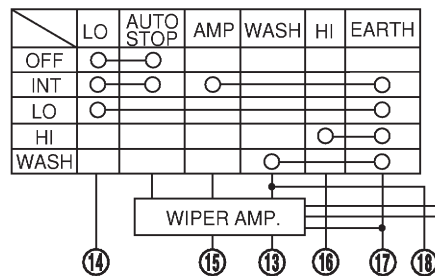
LHD MODELS



LIGHTING SWITCH

	OFF			1ST			2ND		
	A	B	C	A	B	C	A	B	C
25									
5									
6									
7									
8									
9									
10									
11									
12									

FRONT WIPER AND WASHER SWITCH



VARIABLE INTERMITTENT WIPER VOLUME

REAR FOG LAMP SWITCH

	OFF	ON
26		<input type="checkbox"/>
27		<input type="checkbox"/>

FRONT/REAR FOG LAMP SWITCH

	OFF	FR	FR RR
27			<input type="checkbox"/>
28		<input type="checkbox"/>	
29		<input type="checkbox"/>	<input type="checkbox"/>

TURN SIGNAL LAMP SWITCH

	L	N	R
1	<input type="checkbox"/>		<input type="checkbox"/>
2			<input type="checkbox"/>
3	<input type="checkbox"/>		<input type="checkbox"/>

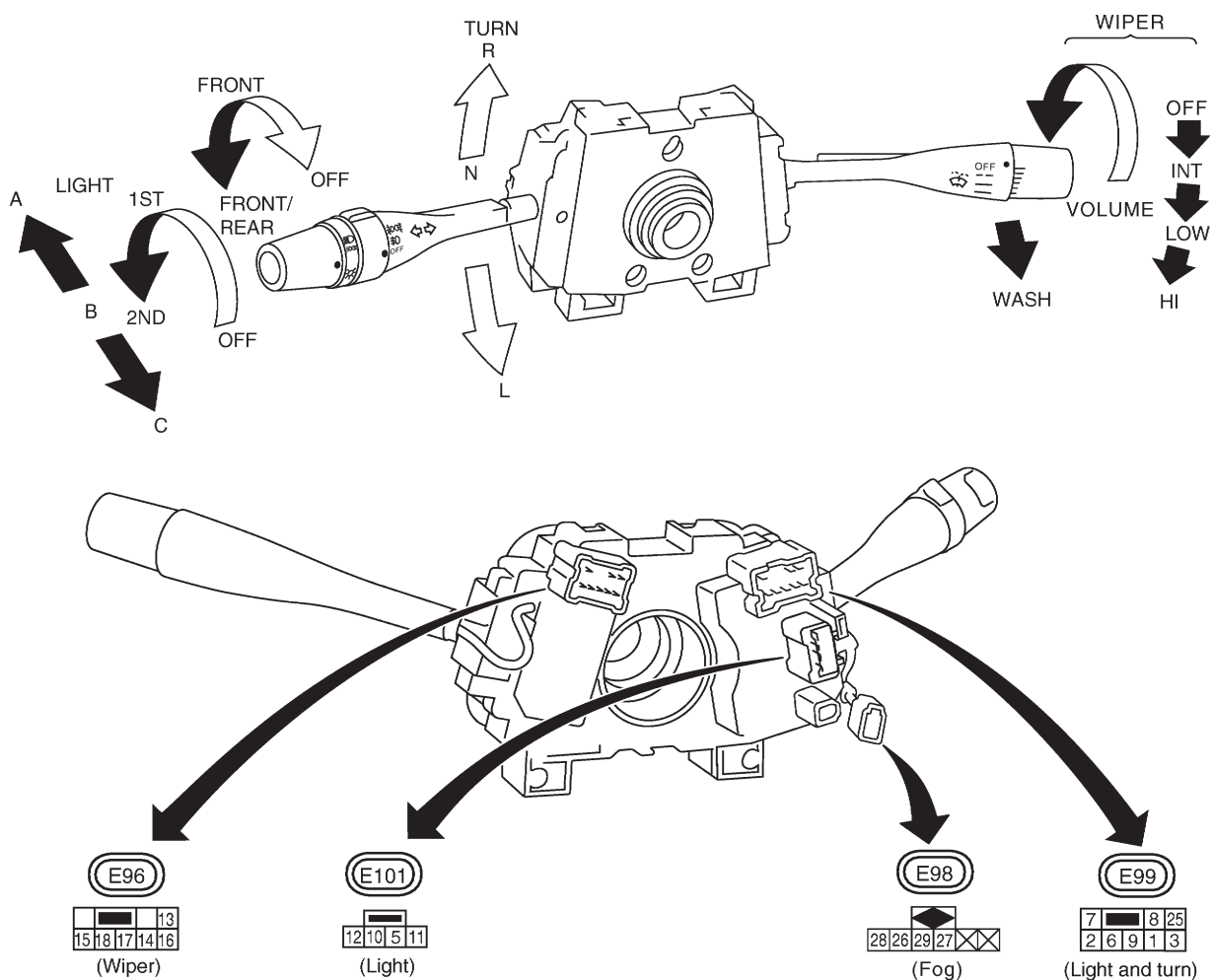
MEL172M

COMBINATION SWITCH

Check (Cont'd)

RHD MODELS

NFEL0009S03



LIGHTING SWITCH

	OFF			1ST			2ND		
	A	B	C	A	B	C	A	B	C
25							○	○	○
5			○				○	○	○
6			○						
7									○
8			○				○	○	○
9			○				○	○	○
10									
11				○	○	○	○	○	○
12				○	○	○	○	○	○

FRONT WIPER AND WASHER SWITCH

	LO	AUTO STOP	AMP	WASH	HI	EARTH
OFF	○	○				
INT	○	○	○			○
LO	○					○
HI					○	○
WASH				○		

WIPER AMP. terminals: 14, 15, 13, 16, 17, 18

VARIABLE INTERMITTENT WIPER VOLUME



REAR FOG LAMP SWITCH

	OFF	ON
26		○
27		○

FRONT/REAR FOG LAMP SWITCH

	OFF	FR	FR RR
27			○
28		○	○
29		○	○

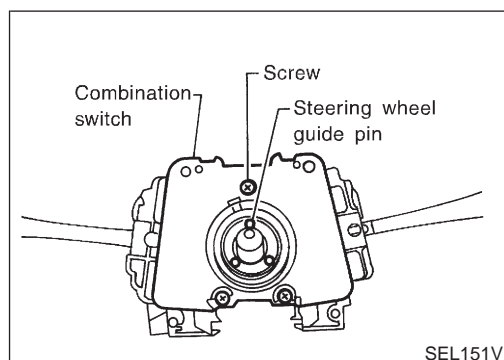
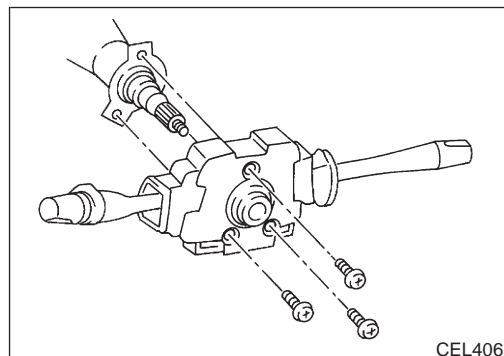
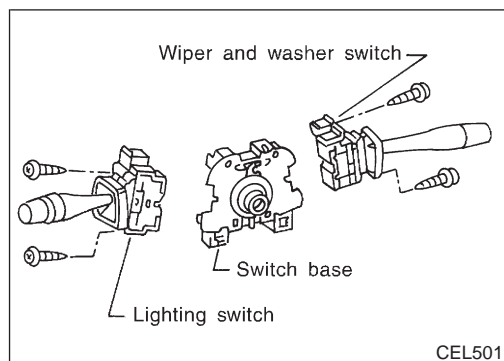
TURN SIGNAL LAMP SWITCH

	L	N	R
1	○		○
2			○
3	○		

MEL825M

COMBINATION SWITCH

Replacement



Replacement

For removal and installation of spiral cable, refer to RS-19^{NFEL0010} (“Installation — Driver Air Bag Module and Spiral Cable”).

- Each switch can be replaced without removing combination switch base.
- To remove combination switch base, remove base attaching screw.
- Before installing the steering wheel, align the steering wheel guide pins with the screws which secure the combination switch as shown in the left figure.

STEERING SWITCH

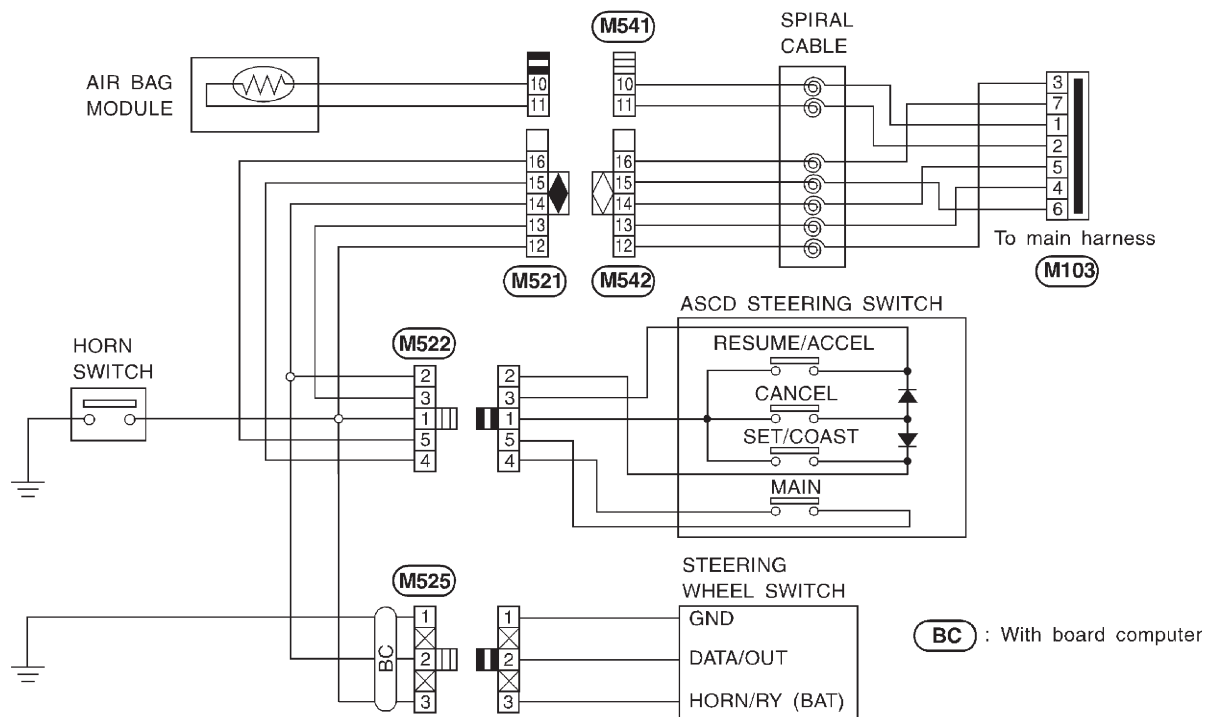
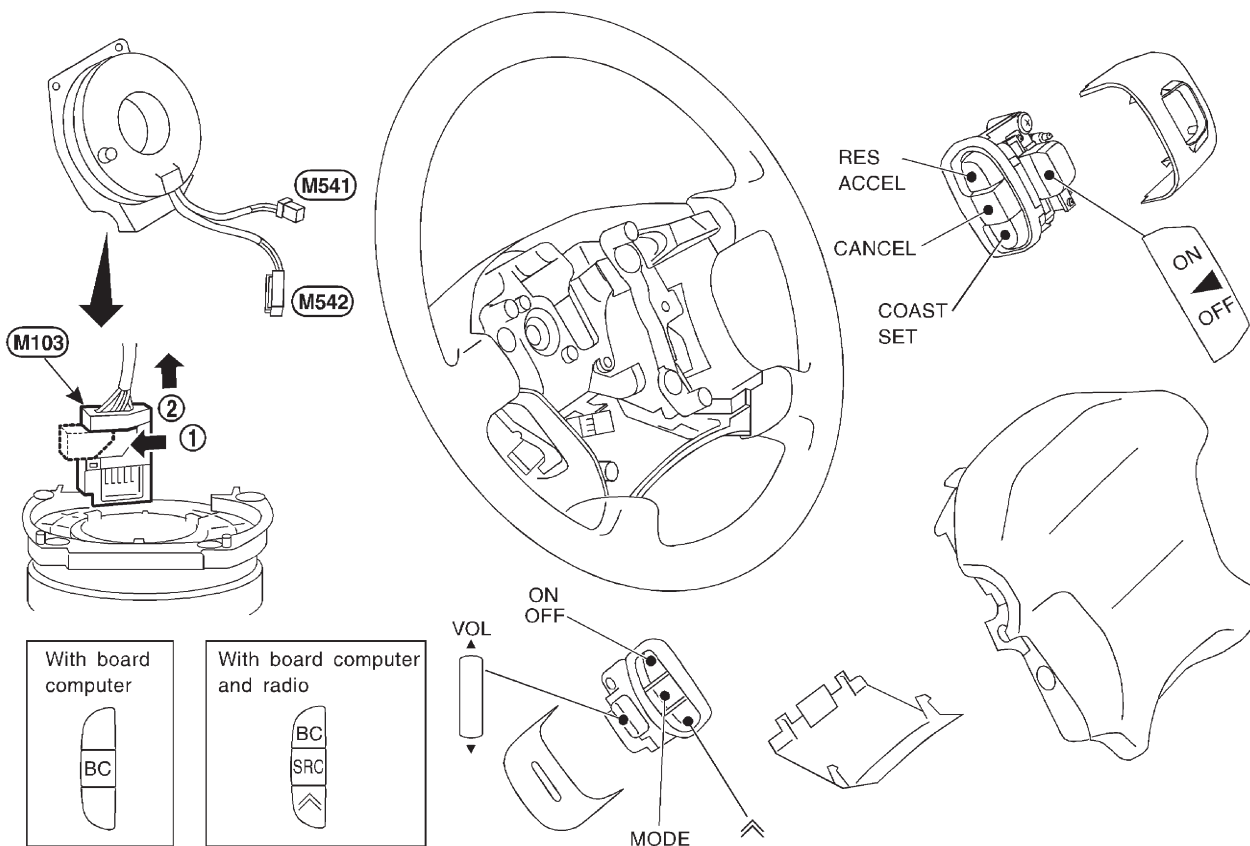
Check

Check

NFEL0011

NFEL0011S01

MODELS WITH ASCD



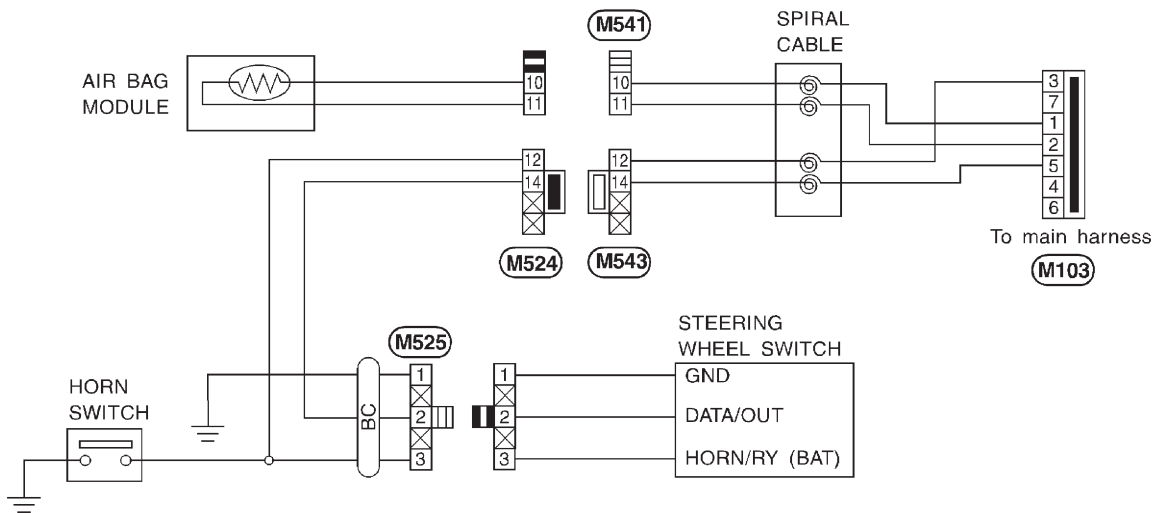
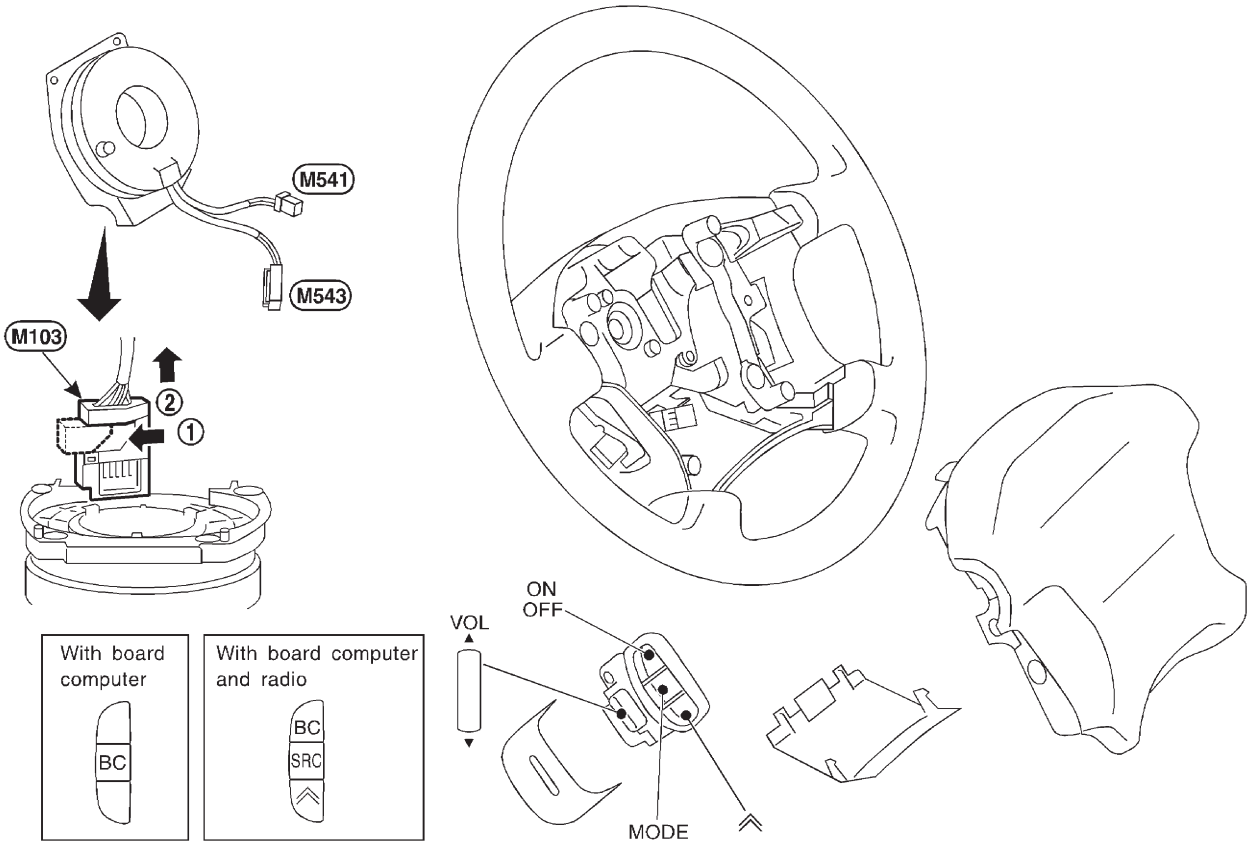
MEL175M

STEERING SWITCH

Check (Cont'd)

MODELS WITHOUT ASCD

NFEL0011S02



BC : With board computer

MEL176M

System Description

The headlamp operation is controlled by the lighting switch which is built into the combination switch.

NFEL0198

OUTLINE

Power is supplied at all times

NFEL0198S08

- to lighting switch terminal 8
- to dimmer relay terminal 6
- through 15A fuse (No. 68, located in the fuse and fusible link box), and
- to lighting switch terminal 5
- to dimmer relay terminal 3
- through 15A fuse (No. 69, located in the fuse and fusible link box).

Low Beam Operation

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

NFEL0198S0801

- from lighting switch terminal 10
- to terminal 3 of the headlamp LH, and
- from lighting switch terminal 7
- to terminal 3 of the headlamp RH.

Terminal 4 of each headlamp supplies ground through body grounds E11, E22 and E53.

With power and ground supplied, the low beams will illuminate.

High Beam Operation/Flash-to-Pass Operation

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

NFEL0198S0802

- from lighting switch terminal 6
- to terminal 1 of the headlamp RH,
- to combination meter terminal 26 for the high beam indicator (LHD models), and
- from lighting switch terminal 9
- to terminal 1 of the headlamp LH,
- to dimmer relay terminal 1
- to combination meter terminal 26 for the high beam indicator (RHD models).

Ground is supplied

- to terminal 27 of the combination meter through body grounds E11, E22 and E53, and
- to dimmer relay terminal 2 through body grounds E11, E22 and E53.

Then dimmer relay is energized and power is supplied to terminal 3 of each headlamp.

Terminals 2 and 4 of each headlamp supply ground through body grounds E11, E22 and E53.

With power and ground supplied, the high beams, the low beams and the high beam indicator illuminate.

HEADLAMP — COVENTIONAL TYPE —

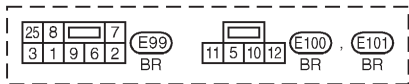
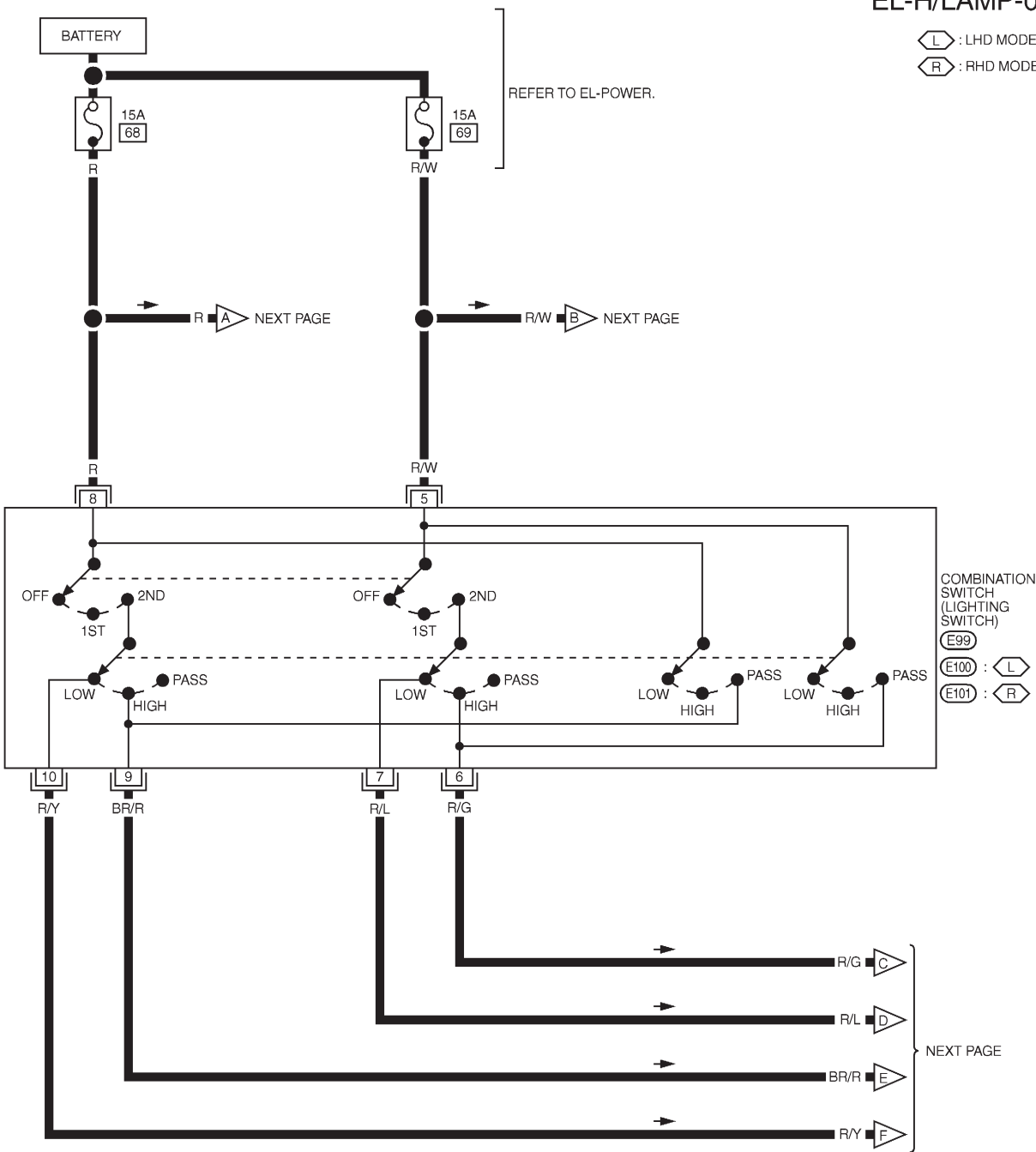
Wiring Diagram — H/LAMP —

Wiring Diagram — H/LAMP —

NFEL0013

EL-H/LAMP-01

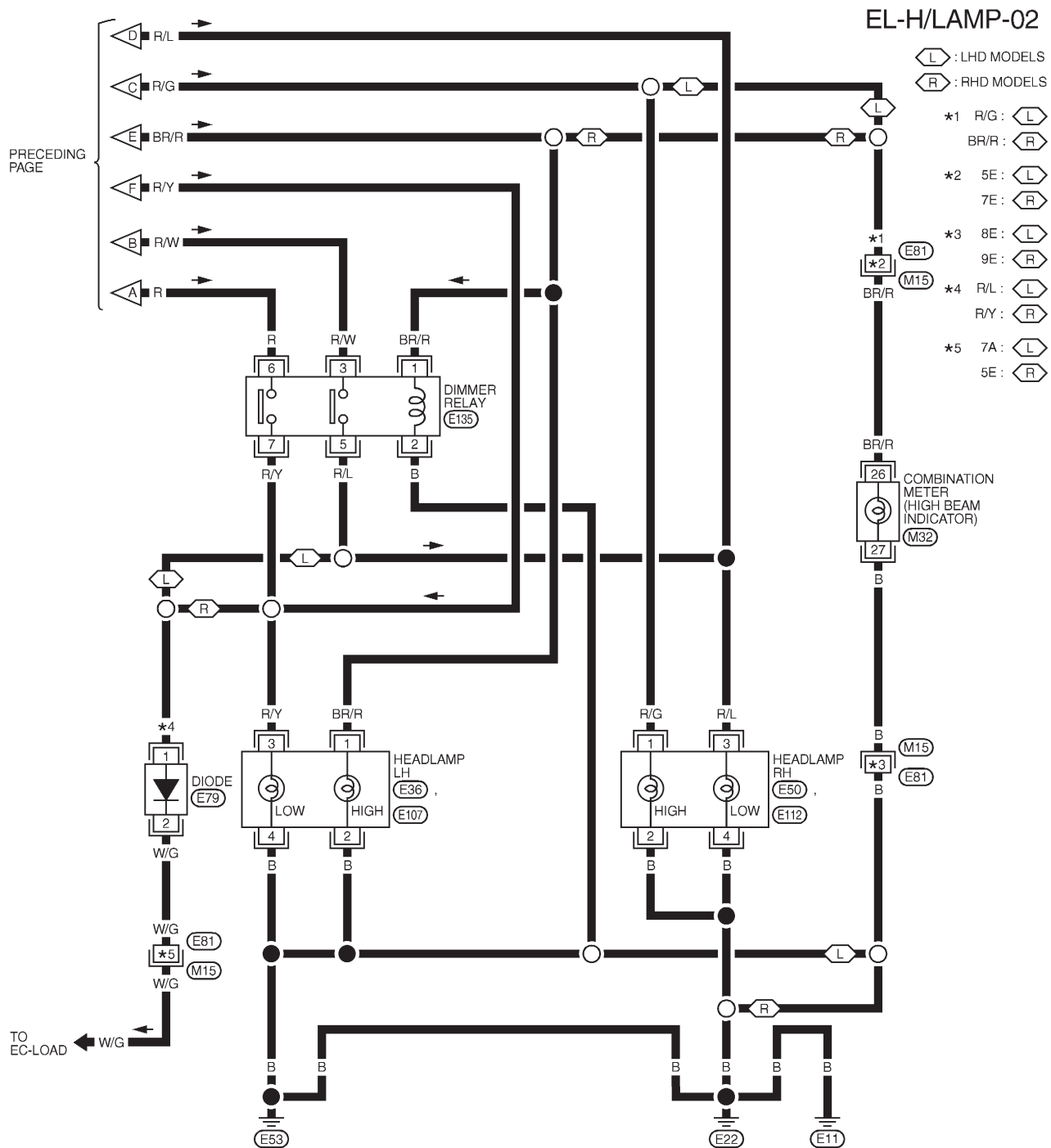
L : LHD MODELS
R : RHD MODELS



MEL501L

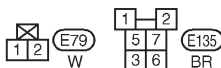
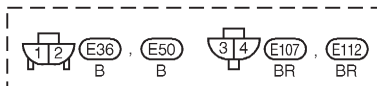
HEADLAMP — COVENTIONAL TYPE —

Wiring Diagram — H/LAMP — (Cont'd)



25	26	27	28	29	30	31	32	33		
34	35	36	37	38	39	40	41	42	43	44

(M32) BR



REFER TO THE FOLLOWING.
(M15) -SUPER
MULTIPLE JUNCTION (SMJ)

HEADLAMP — COVENTIONAL TYPE —

Trouble Diagnoses

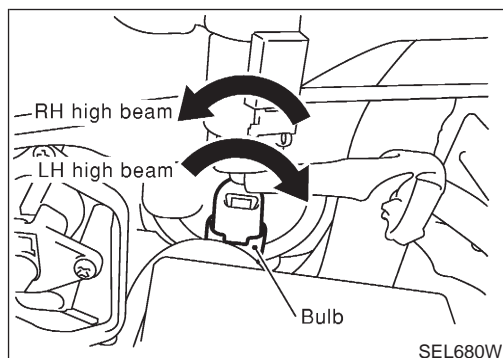
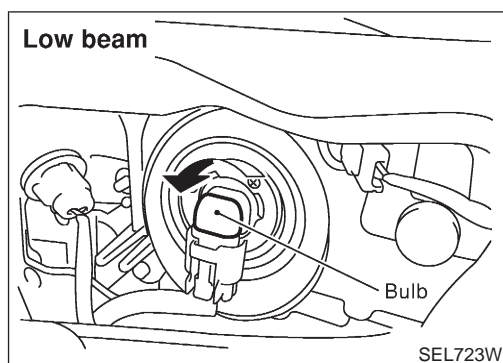
Trouble Diagnoses

NFEL0202

Symptom	Possible cause	Repair order
Neither headlamp operates.	1. Lighting switch	1. Check Lighting switch.
LH headlamp (low and high beam) does not operate, but RH headlamp (low and high beam) does operate.	1. 15A fuse 2. LH headlamp ground circuit 3. Lighting switch	1. Check 15A fuse (No. 68, located in fusible link and fuse box). Verify battery positive voltage is present at lighting switch terminal 8. 2. Check LH headlamp ground circuit. 3. Check lighting switch.
RH headlamp (low and high beam) does not operate, but LH headlamp (low and high beam) does operate.	1. 15A fuse 2. RH headlamp ground circuit 3. Lighting switch	1. Check 15A fuse (No. 69, located in fusible link and fuse box). Verify battery positive voltage is present at lighting switch terminal 5. 2. Check RH headlamp ground circuit. 3. Check lighting switch.
LH high beam does not operate, but LH low beam does operate.	1. Bulb 2. Open in LH high beams circuit 3. Lighting switch	1. Check bulb. 2. Check the following. a. Harness between lighting switch terminal 9 and LH headlamp terminal 1 b. Ground circuit of LH high beam 3. Check lighting switch.
LH low beam does not operate, but LH high beam does operate.	1. Bulb 2. Open in LH low beams circuit 3. Lighting switch	1. Check bulb. 2. Check the following. a. Harness between lighting switch terminal 10 and LH headlamp terminal 3 b. Ground circuit of LH low beam 3. Check lighting switch.
RH high beam does not operate, but RH low beam does operate.	1. Bulb 2. Open in RH high beams circuit 3. Lighting switch	1. Check bulb. 2. Check the following. a. Harness between lighting switch terminal 6 and RH headlamp terminal 1 b. Ground circuit of RH high beam 3. Check lighting switch.
RH low beam does not operate, but RH high beam does operate.	1. Bulb 2. Open in RH low beams circuit 3. Lighting switch	1. Check bulb. 2. Check the following. a. Harness between lighting switch terminal 7 and RH headlamp terminal 3 b. Ground circuit of RH low beam 3. Check lighting switch.
High beam indicator does not work.	1. Bulb 2. Ground circuit 3. Open in high beam circuit	1. Check bulb in combination meter. 2. Check harness between high beam indicator and ground. 3. Check the harness between lighting switch and combination meter.

HEADLAMP — COVENTIONAL TYPE —

Bulb Replacement



Bulb Replacement

NFEL0015

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 clockwise (LH high beam) or counterclockwise (LH, RH low beam and RH high beam)
 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.

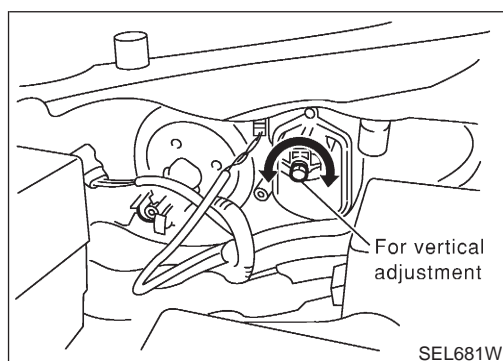
Aiming Adjustment

NFEL0016

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

Before performing aiming adjustment, check the following.

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



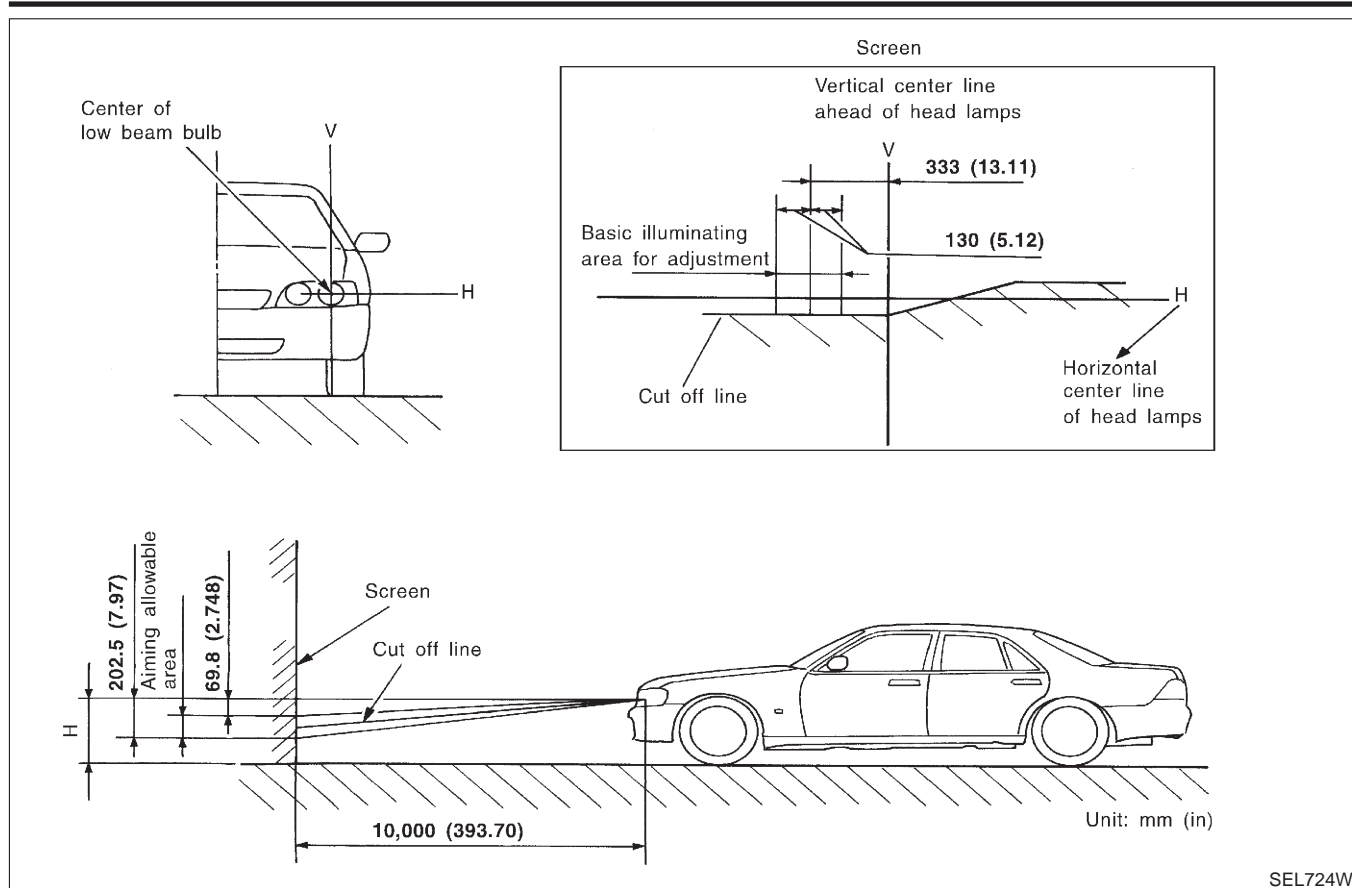
LOW BEAM

NFEL0016S02

1. Turn headlamp low beam on.
 2. Use adjusting screws to perform aiming adjustment.
- **First tighten the adjusting screw all the way and then make adjustment by loosening the screw.**

HEADLAMP — COVENTIONAL TYPE —

Aiming Adjustment (Cont'd)



If the vehicle front body has been repaired and/or the headlamp assembly has been replaced, check aiming. Use the aiming chart shown in the figure.

- **Basic illuminating area for adjustment should be within the range shown on the aiming chart. Adjust headlamps accordingly.**

System Description

The headlamp operation is controlled by the lighting switch which is built into the combination switch.

NFEL0253

OUTLINE

Power is supplied at all times

NFEL0253S09

- to lighting switch terminal 8
- through 15A fuse (No. 68, located in the fuse and fusible link box),
- to lighting switch terminal 5
- through 15A fuse (No. 69, located in the fuse and fusible link box),
- to headlamp relay LH terminal 3
- through 20A fuse (No. 54, located in the fuse and fusible link box), and
- to headlamp relay RH terminal 3
- through 20A fuse (No. 55, located in the fuse and fusible link box).

Low Beam Operation

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

NFEL0253S0901

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

Ground is supplied through body grounds E11, E22 and E53.

Then headlamp relays are energized and power is supplied to terminal 3 of each headlamp.

Terminal 4 of each headlamp supplies ground through body grounds E11, E22 and E53.

With power and ground supplied, the low beams will illuminate.

High Beam Operation/Flash-to-Pass Operation

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

NFEL0253S0902

- from lighting switch terminal 6
- to terminal 1 of the headlamp RH
- to terminal 1 of headlamp relay RH,
- to combination meter terminal 26 for the high beam indicator (LHD models), and
- from lighting switch terminal 9
- to terminal 1 of the headlamp LH
- to terminal 1 of headlamp relay LH, and
- to combination meter terminal 26 for the high beam indicator (RHD models).

Ground is supplied through body grounds E11, E22 and E53.

Then headlamp relays are energized and power is supplied to terminal 3 of each headlamp.

Ground is supplied to terminal 27 of the combination meter through body grounds E11, E22 and E53.

Terminals 2 and 4 of each headlamp supply ground through body grounds E11, E22 and E53.

With power and ground supplied, the high beams, low beams and the high beam indicator illuminate.

HEADLAMP — XENON TYPE —

System Description (Cont'd)

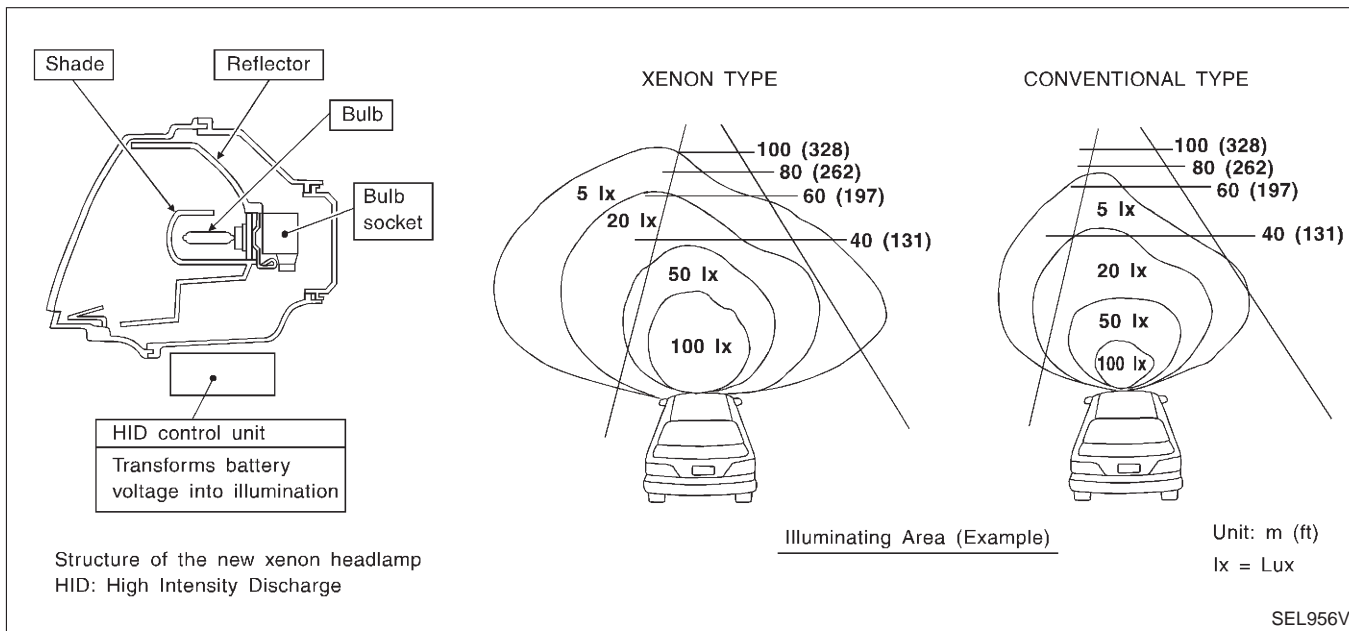
XENON HEADLAMP

=NFEL0253S0904

Xenon type headlamp is adopted to the low beam headlamps. Xenon bulbs do not use a filament. Instead, they produce light when a high voltage current is passed between two tungsten electrodes through a mixture of xenon (an inert gas) and certain other metal halides. In addition to added lighting power, electronic control of the power supply gives the headlamps stable quality and tone color.

Following are some of the many advantage of the xenon type headlamp.

- The light produced by the headlamps is white color approximating sunlight that is easy on the eyes.
- Light output is nearly double that of halogen headlamps, affording increased area of illumination.
- The light features a high relative spectral distribution at wavelengths to the human eye is most sensitive, which means that even in the rain, more light is reflected back from the road surface toward the vehicle, for added visibility.
- Power consumption is approximately 25 percent less than halogen headlamps, reducing battery load.



HEADLAMP — XENON TYPE —

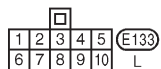
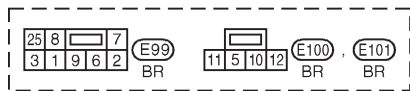
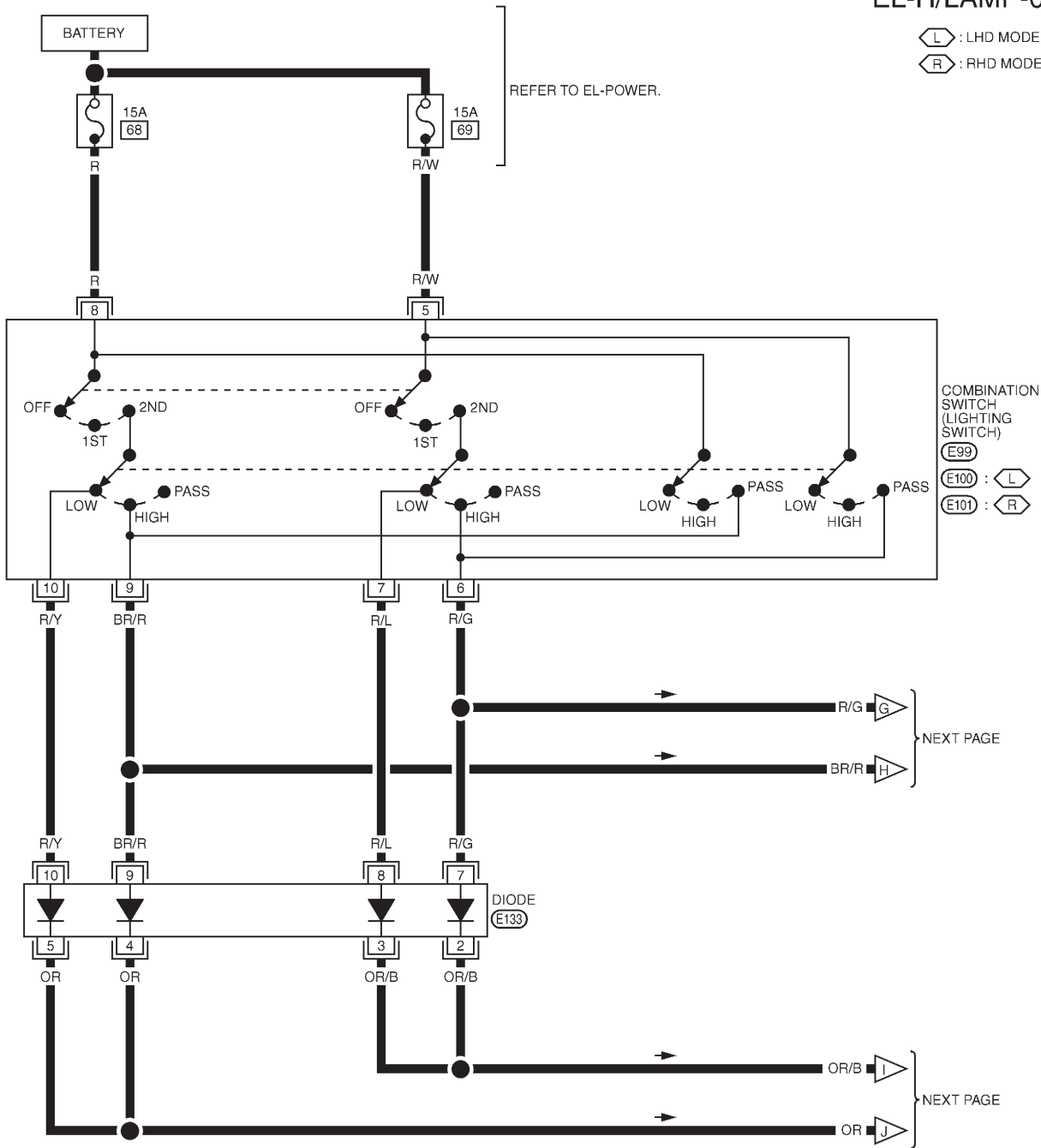
Wiring Diagram — H/LAMP —

Wiring Diagram — H/LAMP —

NFEL0255

EL-H/LAMP-03

L : LHD MODELS
R : RHD MODELS

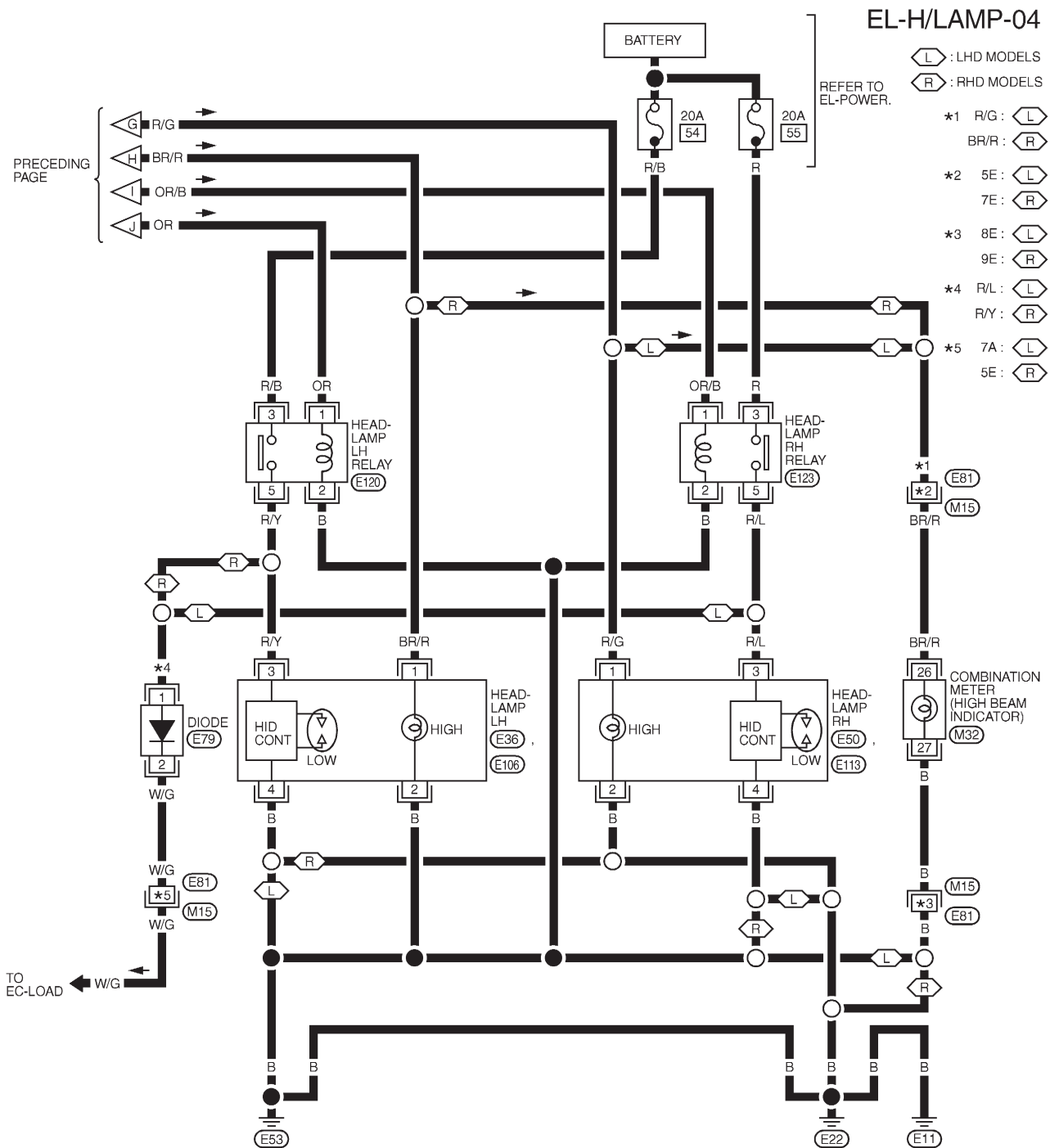


MEL650L

HEADLAMP — XENON TYPE —

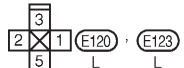
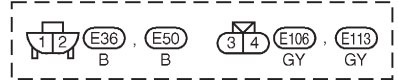
Wiring Diagram — H/LAMP — (Cont'd)

EL-H/LAMP-04



- REFER TO EL-POWER.
- ⬡ : LHD MODELS
 - ⬢ : RHD MODELS
 - *1 R/G : ⬡
 - BR/R : ⬢
 - *2 5E : ⬡
 - 7E : ⬢
 - *3 8E : ⬡
 - 9E : ⬢
 - *4 R/L : ⬡
 - R/Y : ⬢
 - *5 7A : ⬡
 - 5E : ⬢

25	26	27	28	29	30	31	32	33		
34	35	36	37	38	39	40	41	42	43	44



REFER TO THE FOLLOWING.
 (M15) -SUPER
 MULTIPLE JUNCTION (SMJ)

MEL827M

Trouble Diagnoses

NFEL0258

WARNING:

- The xenon headlamp has a high-tension current generating area. Be extremely careful when removing and installing. Be certain to disconnect the battery negative cable prior to removing or installing.
- When the xenon headlamp is lit, do not touch the harness (covered with red or amber insulation), bulb itself or the bulb socket with your bare hands.
- Never service a xenon headlamp with wet hands.
- When checking body side harness with a circuit tester, be certain to disconnect the harness connector from the xenon headlamp.
- When the xenon headlamp is lit, the xenon bulb must be installed in the headlamp housing. (Never turn on xenon headlamp, if the bulb is out of the headlamp housing.)

CAUTION:

Make sure to install the bulb securely; if the xenon bulb is improperly installed in its socket, high-tension current leaks occur. This may lead to a melted bulb and/or bulb socket.

Symptom	Possible cause	Repair order
Neither headlamp operates.	1. Lighting switch	1. Check Lighting switch.
LH headlamp (low and high beam) does not operate, but RH headlamp (low and high beam) does operate.	1. 15A fuse 2. Headlamp LH ground circuit (LHD models) 3. Lighting switch	1. Check 15A fuse (No. 68, located in fusible link and fuse box). Verify battery positive voltage is present at terminals 8 of lighting switch. 2. Check headlamp LH ground circuit. 3. Check lighting switch.
RH headlamp (low and high beam) does not operate, but LH headlamp (low and high beam) does operate.	1. 15A fuse 2. Headlamp RH ground circuit (LHD models) 3. Lighting switch	1. Check 15A fuse (No. 69, located in fusible link and fuse box). Verify battery positive voltage is present at terminal 5 of lighting switch. 2. Check headlamp RH ground circuit. 3. Check lighting switch.
LH high beam does not operate, but LH low beam operates.	1. Bulb 2. LH high beams circuit 3. Lighting switch	1. Check bulb. 2. Check the following. a. Harness between lighting switch terminal 9 and LH headlamp b. Ground circuit of LH high beam 3. Check lighting switch.
LH low beam does not operate, but LH high beam operates.	1. 20A fuse 2. Lighting switch 3. Headlamp LH relay 4. Headlamp LH relay circuit 5. LH low beam circuit 6. LH low beam ground circuit 7. Xenon bulb 8. HID control unit 9. Booster	1. Check 20A fuse (No. 54, located in fusible link and fuse box). Verify battery positive voltage is present at terminal 3 of headlamp LH relay. 2. Check lighting switch. 3. Check headlamp LH relay. 4. Check the following. a. Harness between lighting switch and headlamp LH relay b. Headlamp LH relay ground circuit 5. Check harness between headlamp LH relay terminal 5 and LH headlamp. 6. Check harness between LH headlamp and ground. 7. Replace the xenon bulb with other side bulb or new one. (If headlamps illuminate correctly, replace the bulb.) 8. Replace the HID control unit with other side control unit or new one. (If headlamps illuminate correctly, replace the control unit.) 9. Replace booster as a headlamp assembly.
RH high beam does not operate, but RH low beam operates.	1. Bulb 2. RH high beams circuit 3. Lighting switch	1. Check bulb. 2. Check the following. a. Harness between lighting switch terminal 6 and RH headlamp b. Ground circuit of RH high beam 3. Check lighting switch.

HEADLAMP — XENON TYPE —

Trouble Diagnoses (Cont'd)

Symptom	Possible cause	Repair order
RH low beam does not operate, but RH high beam operates.	<ol style="list-style-type: none"> 1. 20A fuse 2. Lighting switch 3. Headlamp RH relay 4. Headlamp RH relay circuit 5. RH low beam circuit 6. RH low beam ground circuit 7. Xenon bulb 8. HID control unit 9. Booster 	<ol style="list-style-type: none"> 1. Check 20A fuse (No. 55, located in fusible link and fuse box). Verify battery positive voltage is present at terminal 3 of headlamp RH relay. 2. Check lighting switch. 3. Check headlamp RH relay. 4. Check the following. <ol style="list-style-type: none"> a. Harness between lighting switch and headlamp RH relay b. Headlamp RH relay ground circuit 5. Check harness between headlamp RH relay terminal 5 and RH headlamp. 6. Check harness between RH headlamp and ground. 7. Replace the xenon bulb with other side bulb or new one. (If headlamps illuminate correctly, replace the bulb.) 8. Replace the HID control unit with other side control unit or new one. (If headlamps illuminate correctly, replace the control unit.) 9. Replace booster as a headlamp assembly.
High beam indicator does not work.	<ol style="list-style-type: none"> 1. Bulb 2. Ground circuit 3. Open in high beam circuit 	<ol style="list-style-type: none"> 1. Check bulb in combination meter. 2. Check harness between high beam indicator and ground. 3. Check the harness between lighting switch and combination meter for an open circuit.

Bulb Replacement/Xenon Type

NFEL0259

CAUTION:

- After replacing a new xenon bulb, be sure to make aiming adjustments.
- Hold only the plastic base when handling the bulb. Never touch the glass envelope.
- 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.

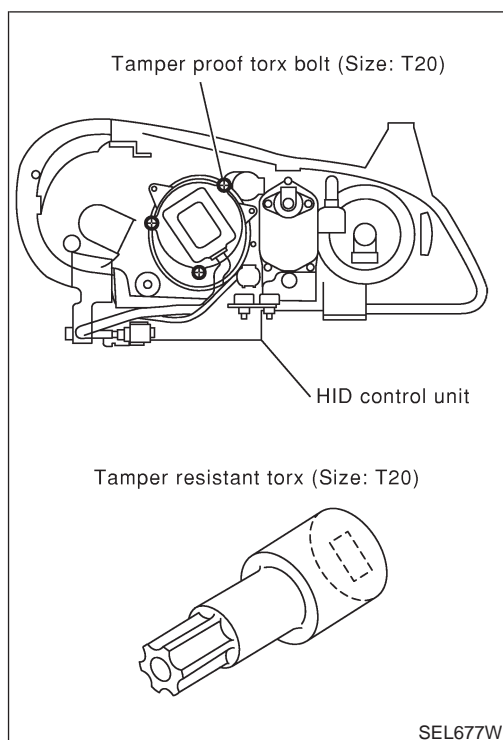
1. Disconnect negative battery cable.
2. Disconnect headlamp connector.
3. Remove headlamp assembly.

WARNING:

Never service a xenon headlamp without disconnecting negative battery cable and with wet hands.

HEADLAMP — XENON TYPE —

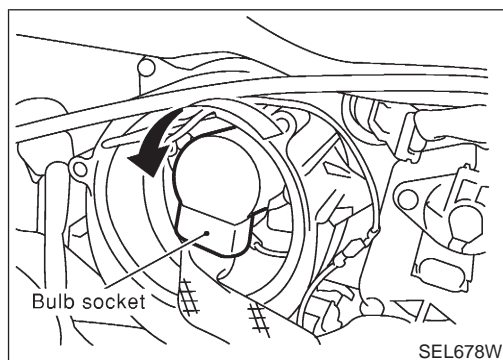
Bulb Replacement/Xenon Type (Cont'd)



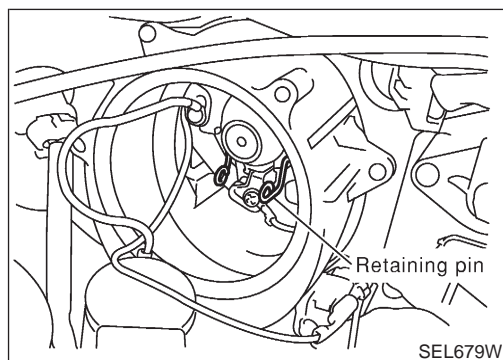
XENON BULB (LOW BEAM)

NFEL0259S01

1. Remove tamper proof torx bolt (size: T20), then remove headlamp seal cover.



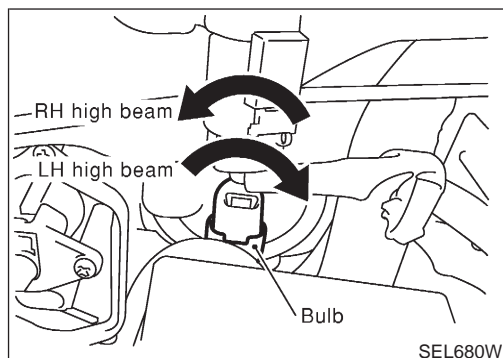
2. Turn bulb socket counterclockwise with keep pushing, then remove it.



3. Release retaining pin.
4. Remove the xenon bulb.
5. Install in the reverse order of removal.

CAUTION:

- When disposing of the xenon bulb, do not break it; always dispose of it as is.
- Make sure to install the bulb securely; if the xenon bulb is improperly installed in its socket, high-tension current leaks occur. This may lead to a melted bulb and/or bulb socket.



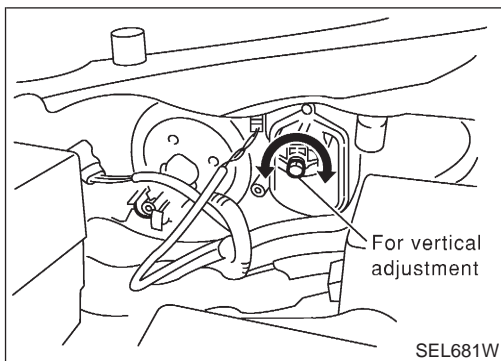
HIGH BEAM

NFEL0259S02

1. Turn the bulb clockwise (LH high beam) or counterclockwise (RH high beam).
2. Remove the bulb.
3. Install in the reverse order of removal.

HEADLAMP — XENON TYPE —

Aiming Adjustment/Xenon Type



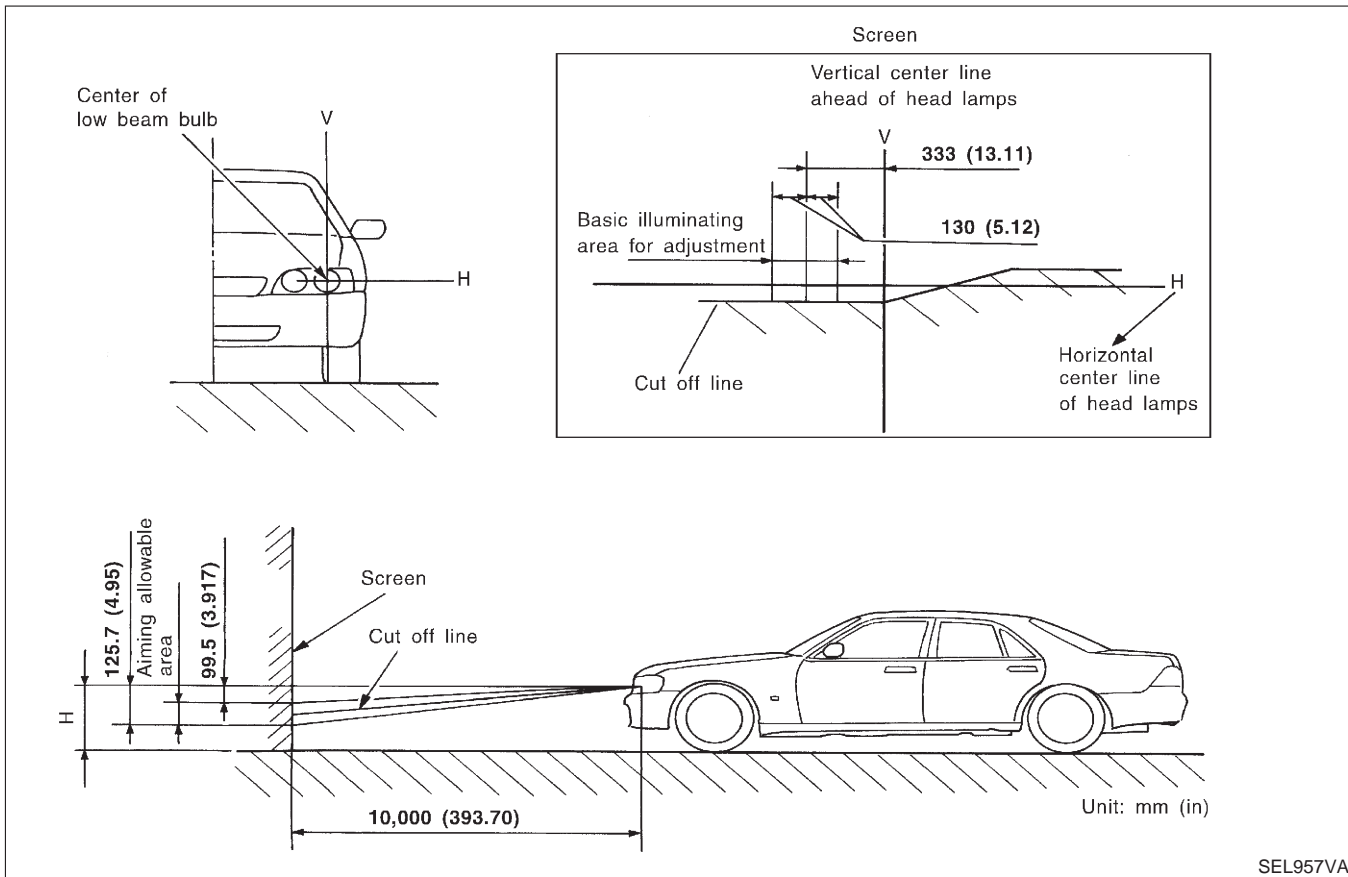
Aiming Adjustment/Xenon Type

=NFEL0260

LOW BEAM

NFEL0260S01

1. Turn headlamp low beam on.
2. Use adjusting screw to perform aiming adjustment.
 - **First tighten the adjusting screw all the way and then make adjustment by loosening the screw.**



CAUTION:
When adjusting aim, confirm that heavy luggage, which may change the vehicle height, are not loaded inside the vehicle.

HEADLAMP (WITH DAYTIME) — CONVENTIONAL TYPE —

System Description

System Description

NFEL0322

The headlamp system for Northern Europe vehicles contains a daytime light control unit that activates the low beam headlamps whenever the engine is running.

Power is supplied at all times

- to daytime light control unit terminal 2
- to dimmer relay terminal 6 and
- to lighting switch terminal 8
- through 15A fuse (No. 68, located in the fuse and fusible link box), and
- to daytime light control unit terminal 3
- to dimmer relay terminal 3 and
- to lighting switch terminal 5
- through 15A fuse (No. 69, located in the fuse and fusible link box), and
- to daytime light control unit terminal 1 and
- to lighting switch terminal 11
- through 10A fuse [No. 60, located in the fuse block (J/B)].

Ground is supplied to daytime light control unit terminal 9 through body ground E11, E22 and E53.

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

- to daytime light control unit terminal 7
- through 10A fuse [No. 10, located in the fuse block (J/B)].

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

- to daytime light control unit terminal 6
- through 10A fuse [No. 21, located in the fuse block (J/B)].

HEADLAMP OPERATION

For description, refer to “HEADLAMP — CONVENTIONAL TYPE —” (EL-41).

NFEL0322S01

DAYTIME LIGHT OPERATION

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

- from alternator terminal 2
- to daytime light control unit terminal 8, and
- from daytime light control unit terminal 2
- through daytime light control unit terminal 5
- to terminal 3 of LH headlamp
- from daytime light control unit terminal 3,
- through daytime light control unit terminal 4
- to terminal 3 of RH headlamp, and
- from daytime light control unit terminal 1
- through daytime light control unit terminal 10

Ground is supplied to terminal 4 of each headlamp through body ground E11, E22 and E53.

NFEL0322S04

HEADLAMP (WITH DAYTIME) — CONVENTIONAL TYPE —

System Description (Cont'd)

OPERATION

=NFEL0322S05

After starting the engine with the lighting switch in the "OFF" or "1ST" position, the headlamp low 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								
		OFF			1ST			2ND			OFF			1ST			2ND		
Lighting switch		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	X	X	O	X	X	O	O	X	O
	Low beam	X	X	X	X	X	X	X	O	X	△	△	△	X	X	X	X	O	X
Clearance and tail lamp		X	X	X	O	O	O	O	O	O	△	△	△	O	O	O	O	O	O
License and instrument illumination lamp		X	X	X	O	O	O	O	O	O	△	△	△	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"

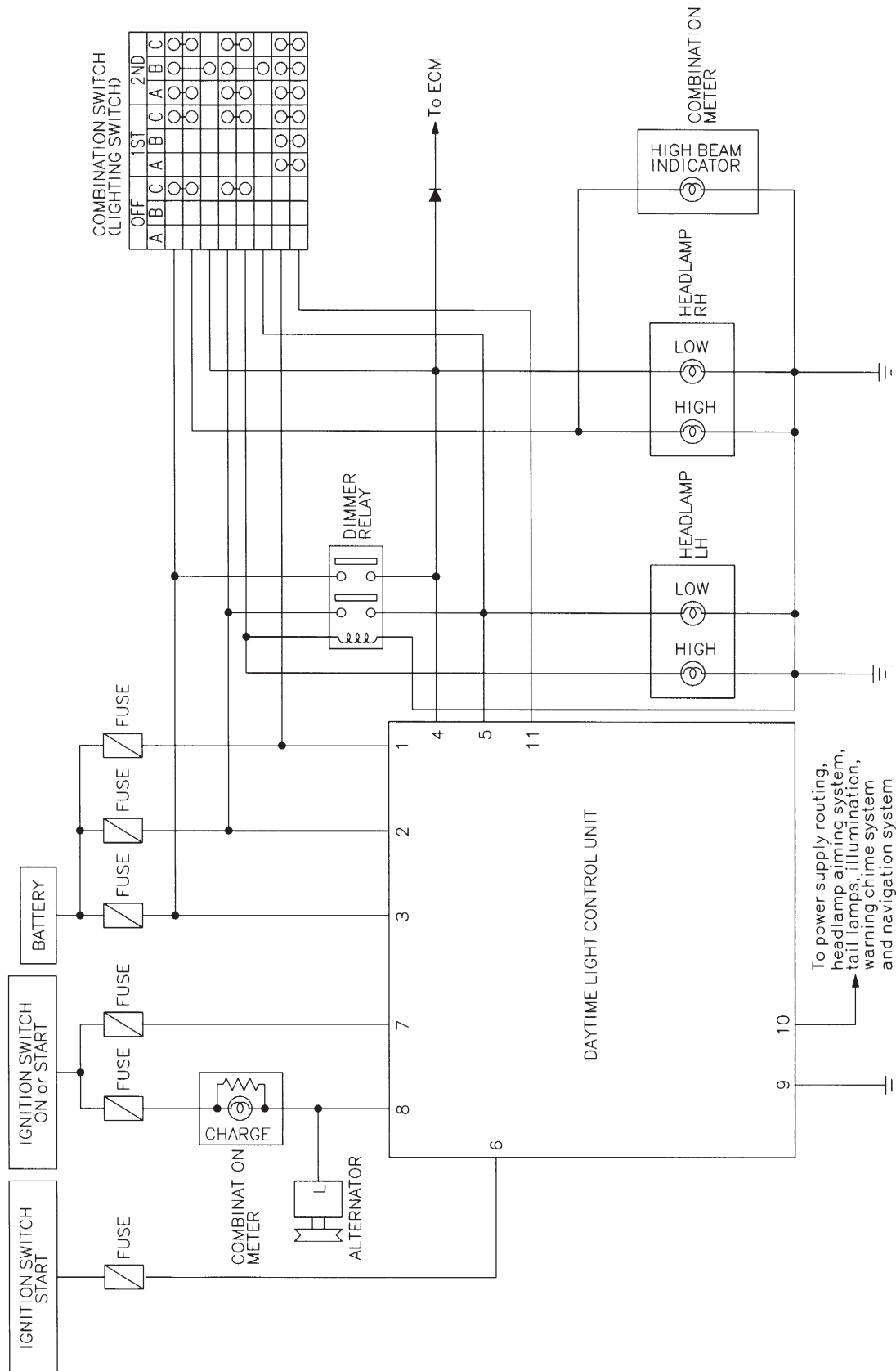
△ : Added functions

HEADLAMP (WITH DAYTIME) — CONVENTIONAL TYPE —

Schematic

Schematic

NFEL0323



MEL563L

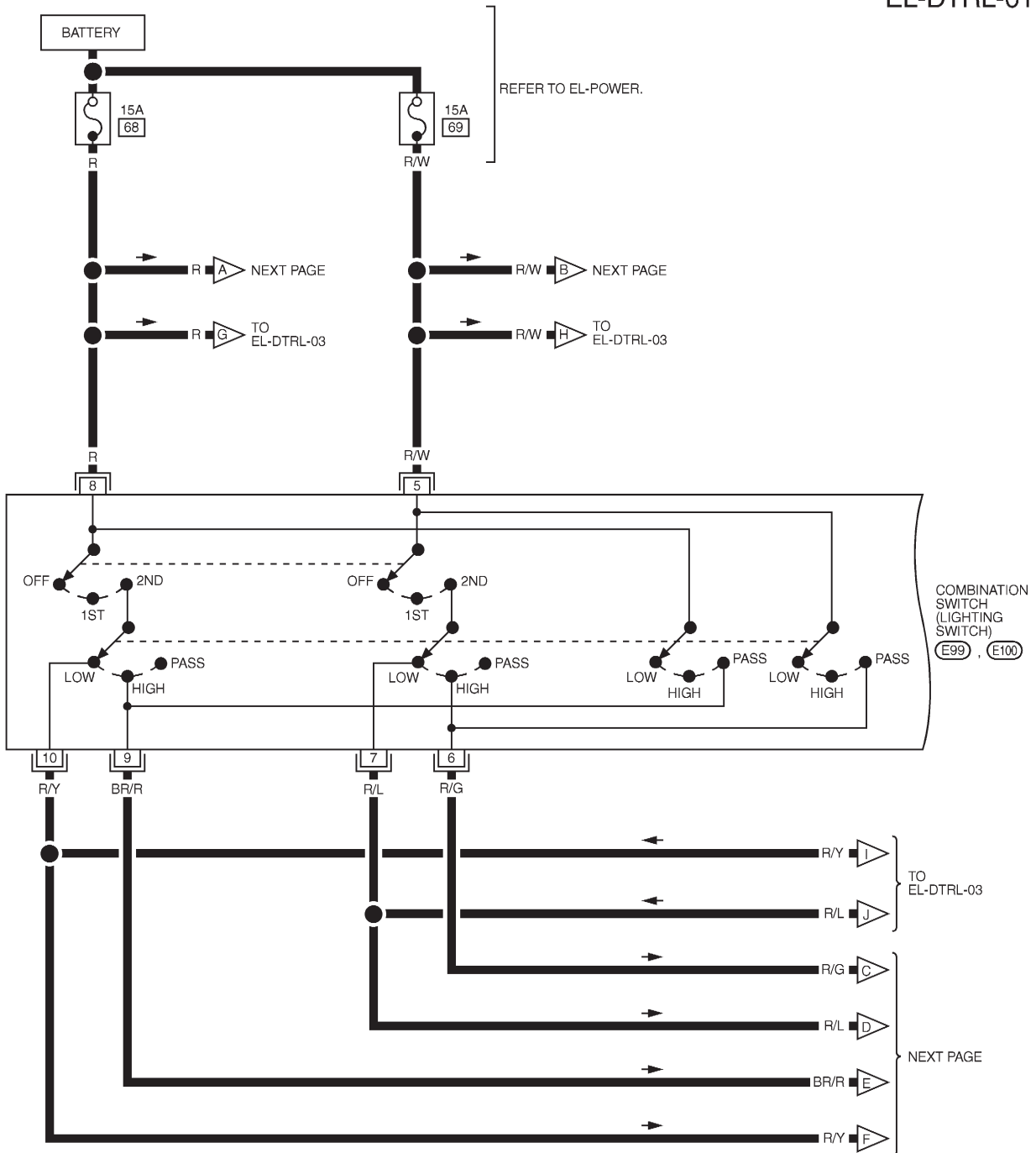
HEADLAMP (WITH DAYTIME) — CONVENTIONAL TYPE —

Wiring Diagram — DTRL —

Wiring Diagram — DTRL —

NFEL0324

EL-DTRL-01

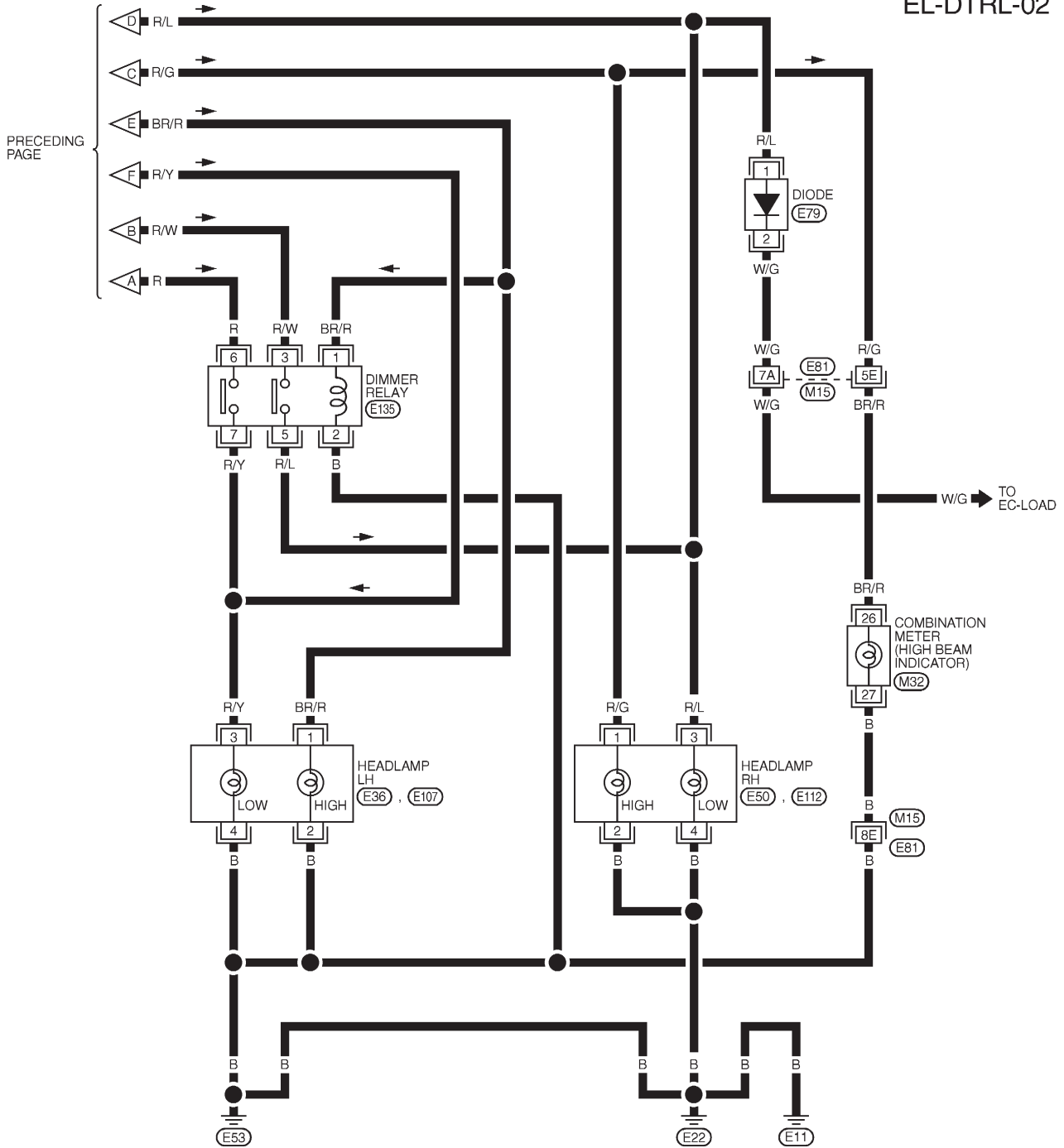


MEL564L

HEADLAMP (WITH DAYTIME) — CONVENTIONAL TYPE —

Wiring Diagram — DTRL — (Cont'd)

EL-DTRL-02

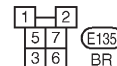


25	26	27	28	29	30	31	32	33		
34	35	36	37	38	39	40	41	42	43	44

(M32)
BR



(E79)
W



REFER TO THE FOLLOWING.

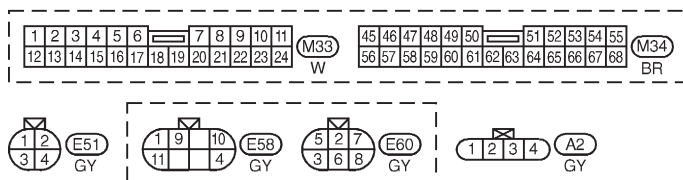
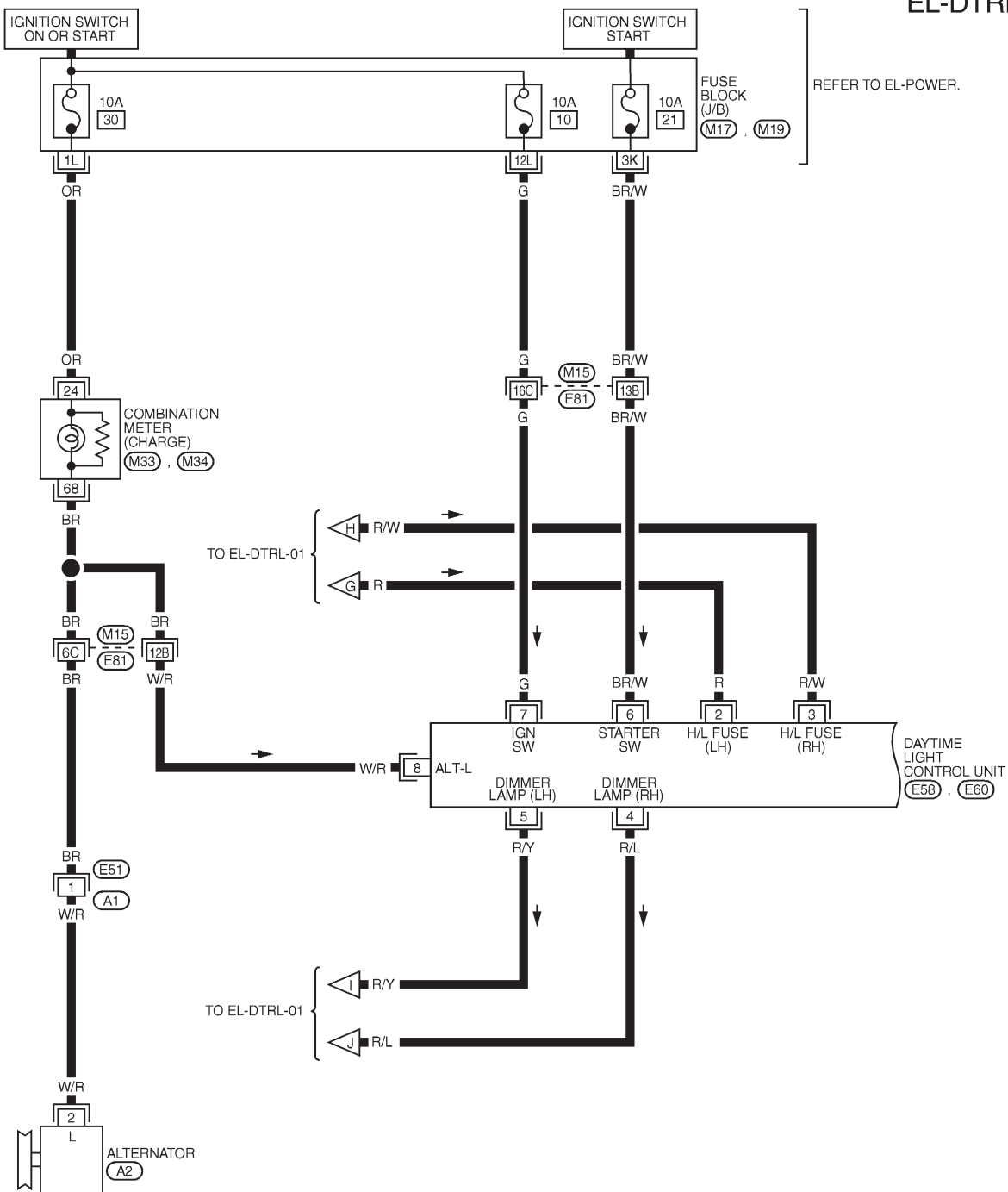
(M15) -SUPER
MULTIPLE JUNCTION (SMJ)

MEL565L

HEADLAMP (WITH DAYTIME) — CONVENTIONAL TYPE —

Wiring Diagram — DTRL — (Cont'd)

EL-DTRL-03



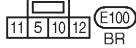
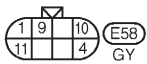
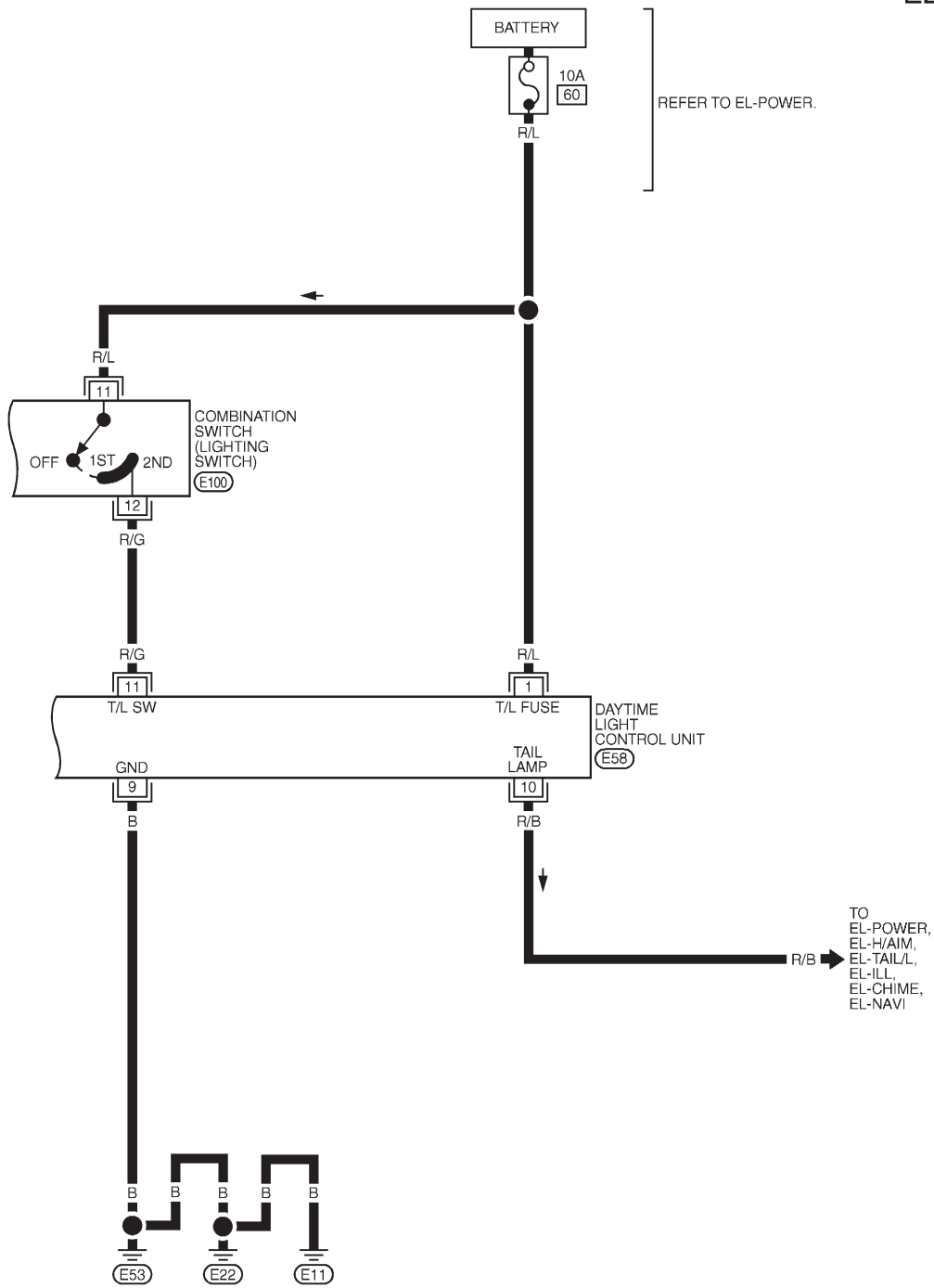
REFER TO THE FOLLOWING.
 (M15) -SUPER
 MULTIPLE JUNCTION (SMJ)
 (M17) , (M19) -FUSE BLOCK-
 JUNCTION BOX (J/B)

MEL566L

HEADLAMP (WITH DAYTIME) — CONVENTIONAL TYPE —

Wiring Diagram — DTRL — (Cont'd)

EL-DTRL-04



MEL567L














HEADLAMP (WITH DAYTIME) — CONVENTIONAL TYPE —

Trouble Diagnoses

Trouble Diagnoses DAYTIME LIGHT CONTROL UNIT INSPECTION TABLE







NFEL0325

NFEL0325S01

Terminal No.	Wire color	Item	Condition		Voltage (Approximate values)
1	R/L	Power source		When ignition switch is turned "ON"	Battery voltage
				When ignition switch is turned "OFF"	Battery voltage
2	R	Power source		When ignition switch is turned "ON"	Battery voltage
				When ignition switch is turned "OFF"	Battery voltage
3	R/W	Power source		When ignition switch is turned "ON"	Battery voltage
				When ignition switch is turned "OFF"	Battery voltage
4	R/L	RH low beam		When lighting switch is turned to the 2ND position	Battery voltage
				When engine running and turning lighting switched "OFF" (daytime light operation) CAUTION: Block wheels and ensure selector lever is in the N or P position.	Less than 1V
5	R/Y	LH low beam		When lighting switch is turned to the 2ND position	Less than 1V
				When engine is running and turning lighting switch to "OFF" (daytime light operation) CAUTION: Block wheels and ensure selector lever is in the N or P position.	Battery voltage
6	BR/W	Start signal		When turning ignition switch to "ST"	Battery voltage
				When turning ignition switch to "ON"	0V
				When turning ignition switch to "OFF"	0V
7	G	Power source		When turning ignition switch to "ST"	Battery voltage
				When turning ignition switch to "ON"	Battery voltage
				When turning ignition switch to "OFF"	Less than 1V

HEADLAMP (WITH DAYTIME) — CONVENTIONAL TYPE —

Trouble Diagnoses (Cont'd)

Terminal No.	Wire color	Item	Condition		Voltage (Approximate values)
8	W/R	Alternator		When turning ignition switch to "ON"	Less than 1V
				When engine is running and turning lighting switch to "OFF" (daytime light operation) CAUTION: Block wheels and ensure selector lever is in the N or P position.	Battery voltage
				When turning ignition switch to "OFF"	0V
9	B	Ground	—		—
10	R/B	Tail lamp		When turning ignition switch to "ON"	0V
				When engine is running and turning lighting switch to "OFF" (daytime light operation) CAUTION: Block wheels and ensure selector lever is in the N or P position.	0V
				When turning ignition switch to "OFF"	0V
11	R/G	Lighting switch		When turning lighting switch to the 1st position	Battery voltage
				When turning lighting switch to the 2nd position	Battery voltage

Bulb Replacement

Refer to "HEADLAMP — CONVENTIONAL TYPE —" EL-45.

NFEL0326

HEADLAMP (WITH DAYTIME) — XENON TYPE —

System Description

System Description

NFEL0327

For headlamp operation, refer to “HEADLAMP — XENON TYPE —” (EL-47).

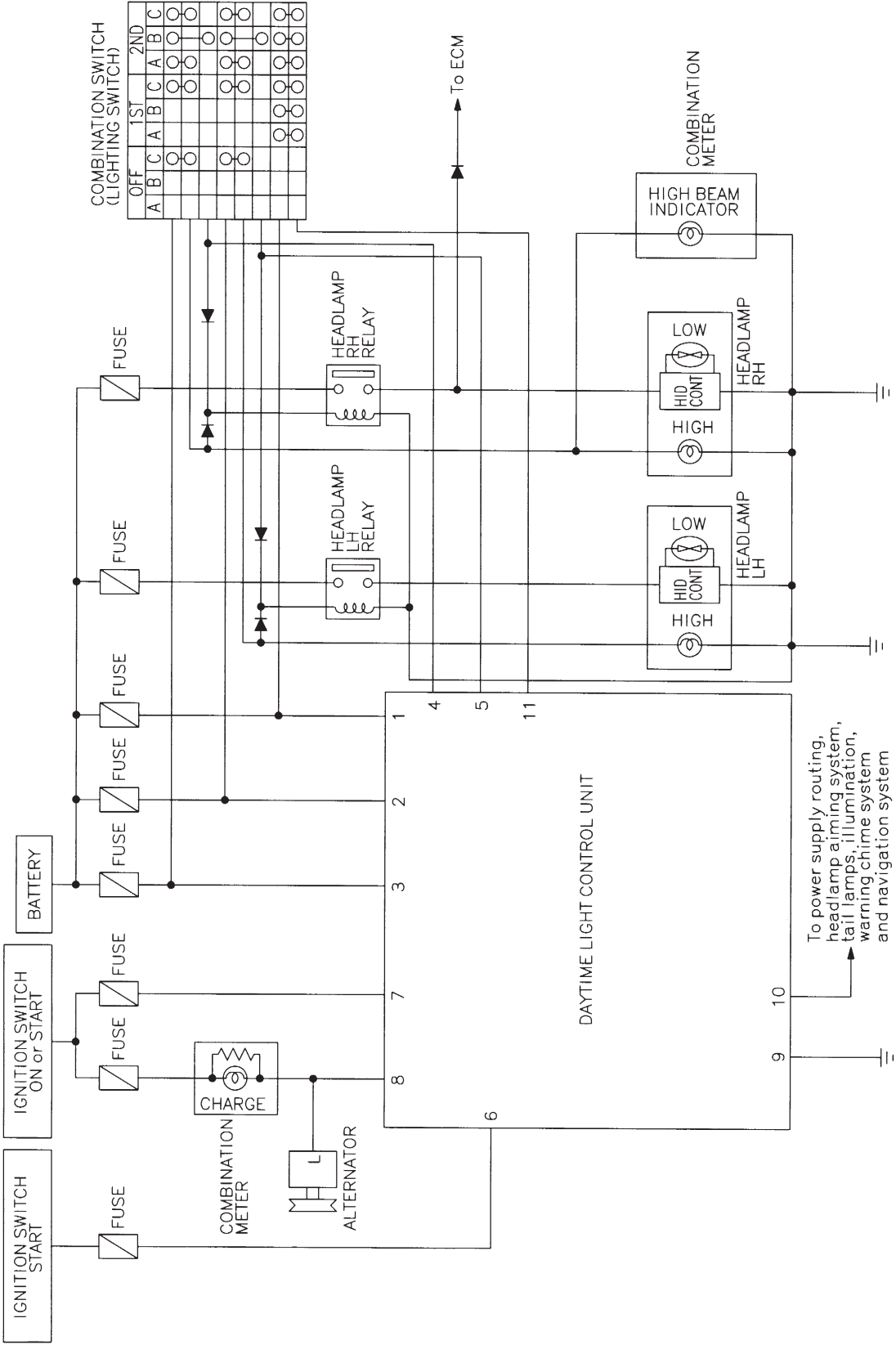
For daytime light operation, refer to “HEADLAMP (WITH DAYTIME) — CONVENTIONAL TYPE —” (EL-55).

HEADLAMP (WITH DAYTIME) — XENON TYPE —

Schematic

Schematic

NFEL0328



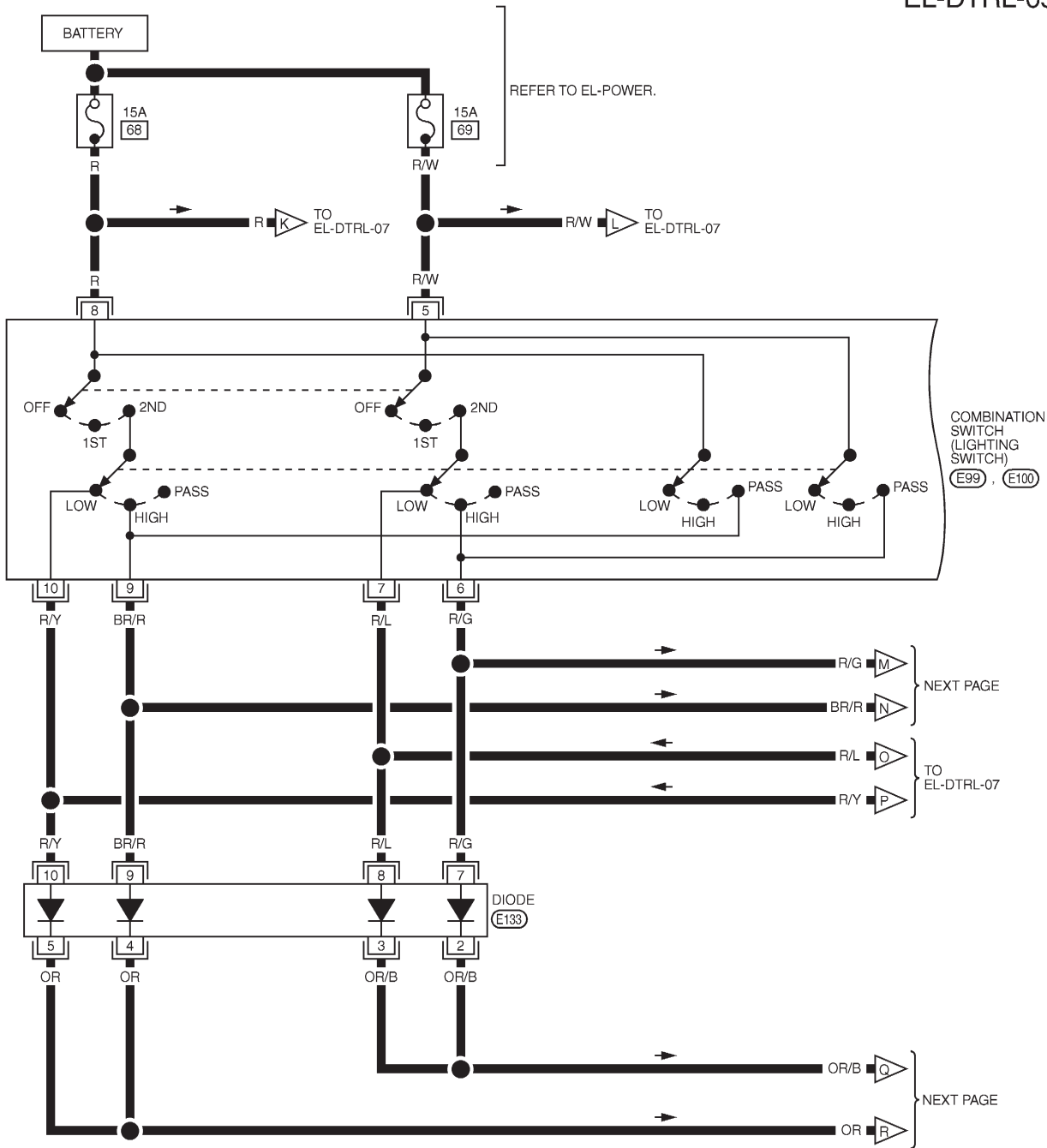
HEADLAMP (WITH DAYTIME) — XENON TYPE —

Wiring Diagram — DTRL —

Wiring Diagram — DTRL —

NFEL0329

EL-DTRL-05

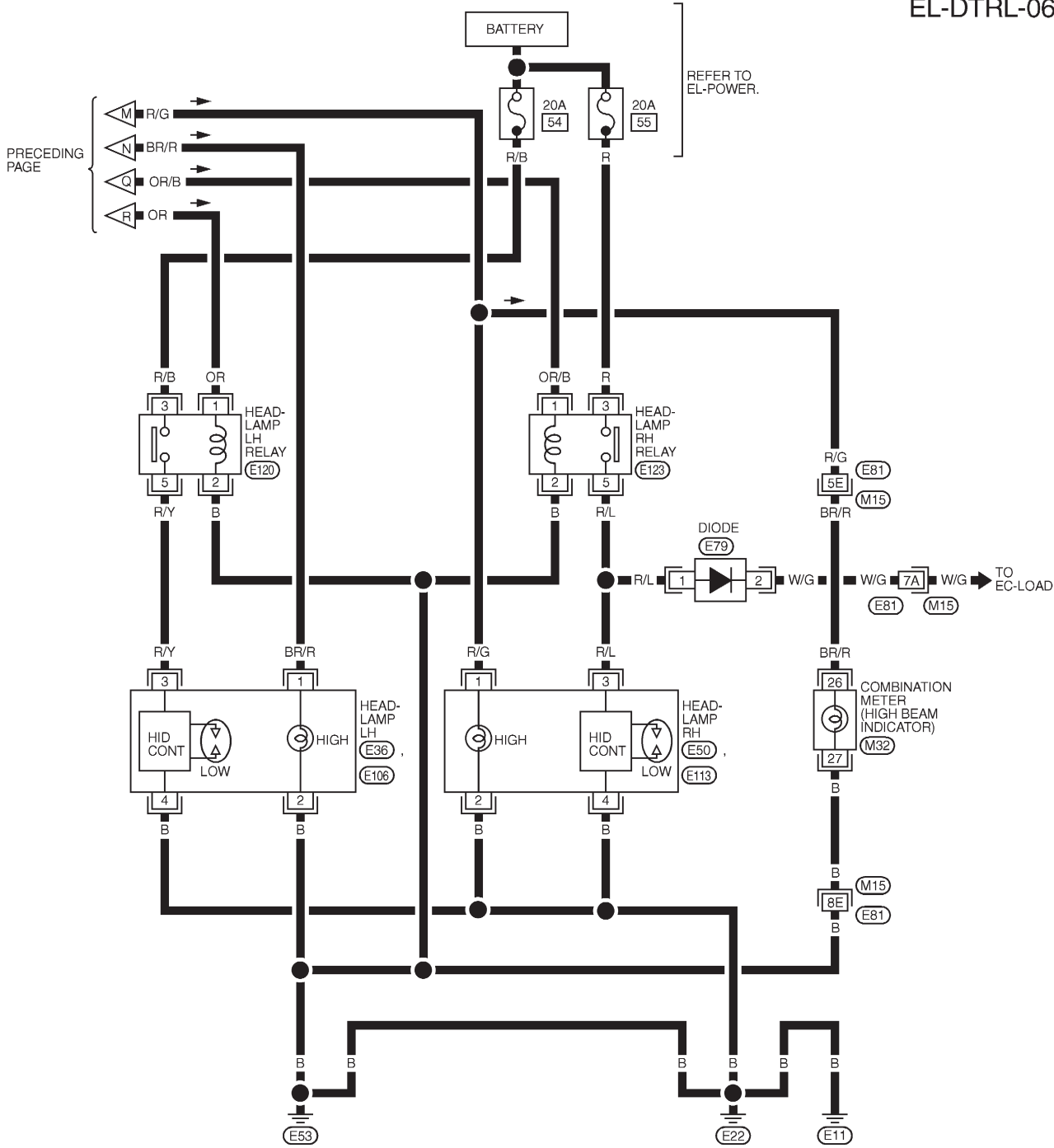


MEL569L

HEADLAMP (WITH DAYTIME) — XENON TYPE —

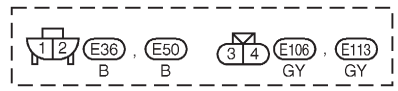
Wiring Diagram — DTRL — (Cont'd)

EL-DTRL-06

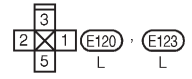


25	26	27	28	29	30	31	32	33		
34	35	36	37	38	39	40	41	42	43	44

(M32) BR



REFER TO THE FOLLOWING.
(M15) - SUPER
MULTIPLE JUNCTION (SMJ)

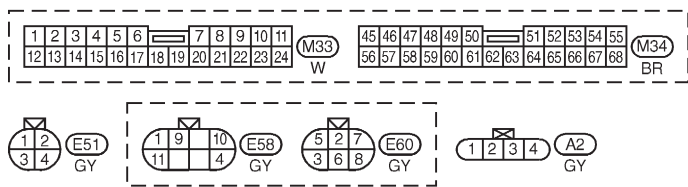
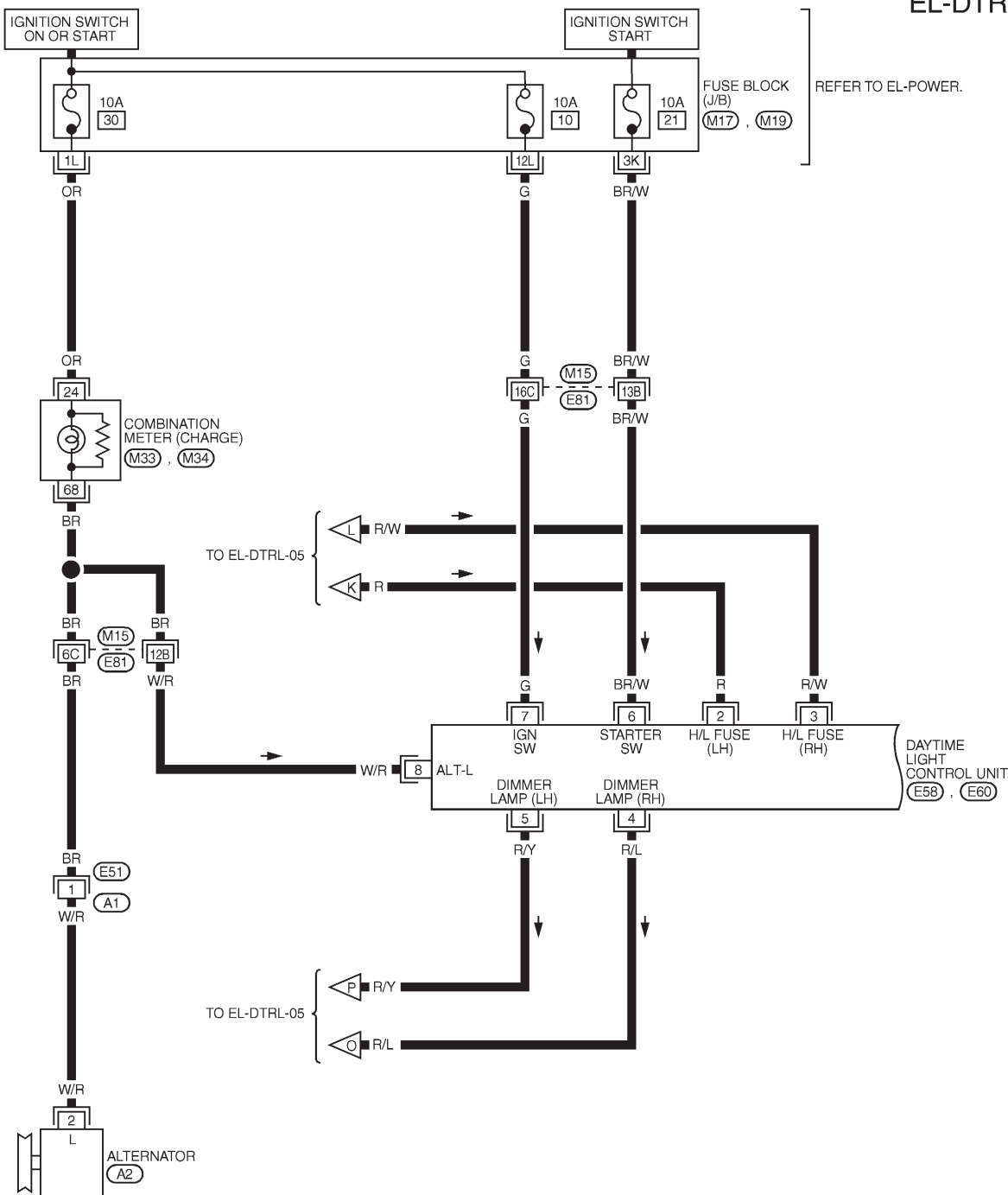


MEL570L

HEADLAMP (WITH DAYTIME) — XENON TYPE —

Wiring Diagram — DTRL — (Cont'd)

EL-DTRL-07



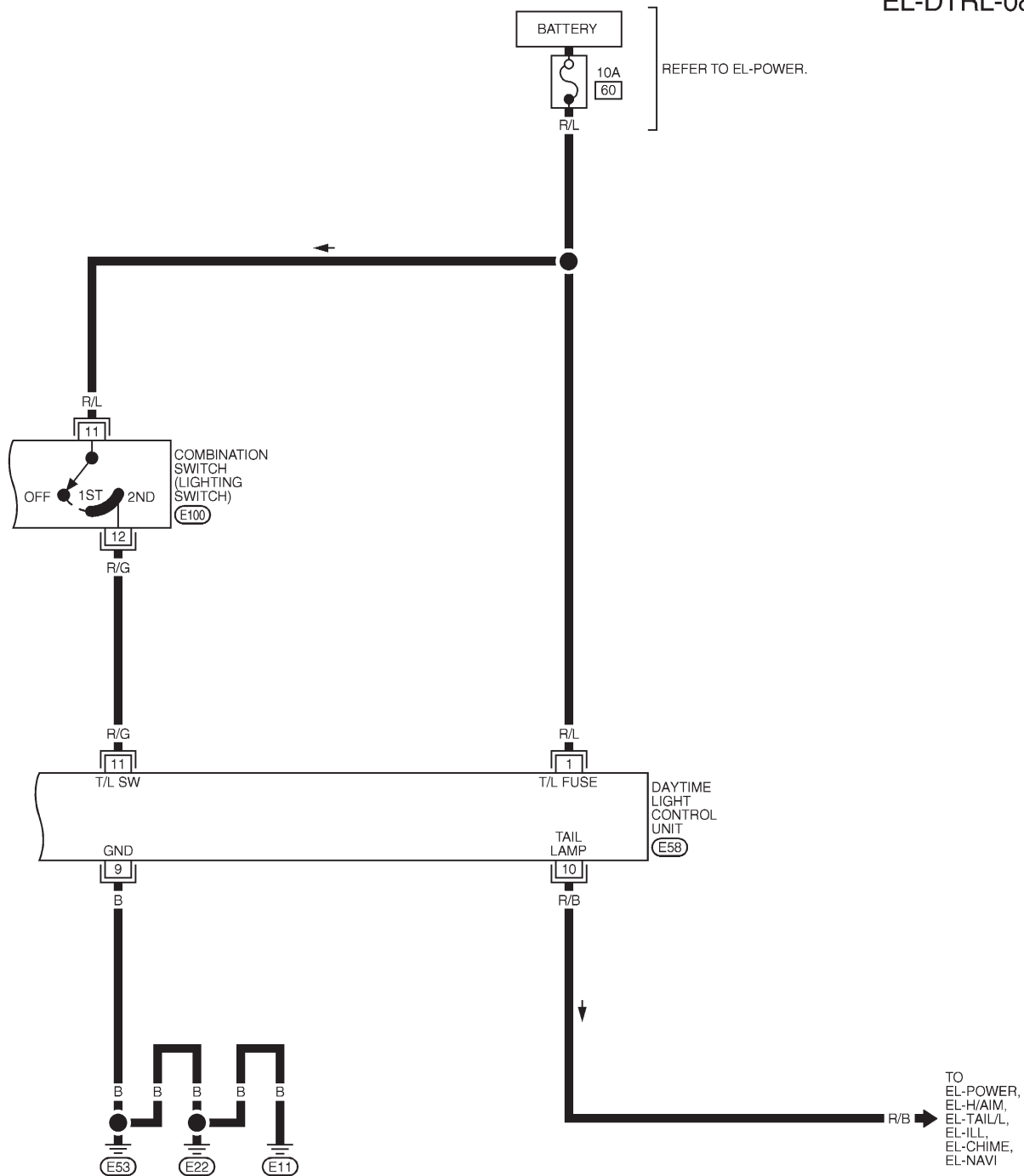
REFER TO THE FOLLOWING.
 (M15) -SUPER
 MULTIPLE JUNCTION (SMJ)
 (M17) , (M19) -FUSE BLOCK-
 JUNCTION BOX (J/B)

MEL571L

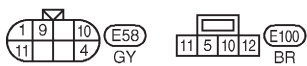
HEADLAMP (WITH DAYTIME) — XENON TYPE —

Wiring Diagram — DTRL — (Cont'd)

EL-DTRL-08



TO
EL-POWER,
EL-H/AIM,
EL-TAIL/L,
EL-ILL,
EL-CHIME,
EL-NAVI



MEL572L

HEADLAMP (WITH DAYTIME) — XENON TYPE —

Trouble Diagnoses

Trouble Diagnoses

DAYTIME LIGHT CONTROL UNIT INSPECTION TABLE

NFEL0330

NFEL0330S01

Refer to “HEADLAMP (WITH DAYTIME) — CONVENTIONAL —” (EL-62).

Bulb Replacement

Refer to HEADLAMP — XENON TYPE — (EL-52).

NFEL0331

System Description

NFEL0314

WITHOUT AUTO AIMING SYSTEM

NFEL0314S01

The headlamp aiming operation is controlled by the headlamp aiming switch. Power is supplied at all times.

- through 10A fuse (No. 60, located in fuse and fusible link box)
- to lighting switch terminal 11.

When lighting switch is in 1ST or 2ND position, power is supplied

- through lighting switch terminal 12
- to terminal 3 of each headlamp aiming motor.

Ground is supplied

- to terminal 1 of each headlamp aiming motor
- through body grounds E11, E22 and E53,
- to terminal 2 of each headlamp aiming motor
- through headlamp aiming switch and body grounds M9, M25 and M87.

With power and ground supplied, headlamp aiming motors operate according to the aiming switch position.

WITH AUTO AIMING SYSTEM

NFEL0314S02

Auto aiming system is controlled by the headlamp aiming control unit. When the lighting switch is in 1ST or 2ND position, the headlamp aiming control unit receives the vehicle height signal from height sensors located on the rear suspension member. Then the headlamp aiming control unit detects the vehicle posture based on height signal and adjusts the headlamp aiming automatically.

Power is supplied at all times.

- through 10A fuse (No. 60, located in fuse and fusible link box)
- to lighting switch terminal 11.

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

- through 10A fuse [No. 10, located in fuse block (J/B)]
- to headlamp aiming control unit terminal 1.

Ground is supplied

- to headlamp aiming control unit terminal 14.
- through body grounds M9, M25 and M87.

When lighting switch is in 1ST or 2ND position, power is supplied

- through lighting switch terminal 12
- to terminal 3 of each headlamp aiming motor and
- to terminal 4 of headlamp aiming control unit, and
- through terminal 11 of headlamp aiming control unit
- to terminal 3 of each height sensor.

Ground is supplied

- to terminal 1 of each headlamp aiming motor
- through terminal 5 of headlamp aiming control unit
- to terminal 2 of each headlamp aiming motor
- through headlamp aiming control unit terminal 3.

With power and ground supplied, headlamp aiming motors are operated according to the signal from height sensors.

HEADLAMP — HEADLAMP AIMING CONTROL —

Wiring Diagram — H/AIM —

Wiring Diagram — H/AIM —

NFEL0293

NFEL0293S01

WITHOUT AUTO AIMING

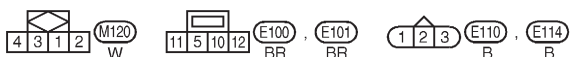
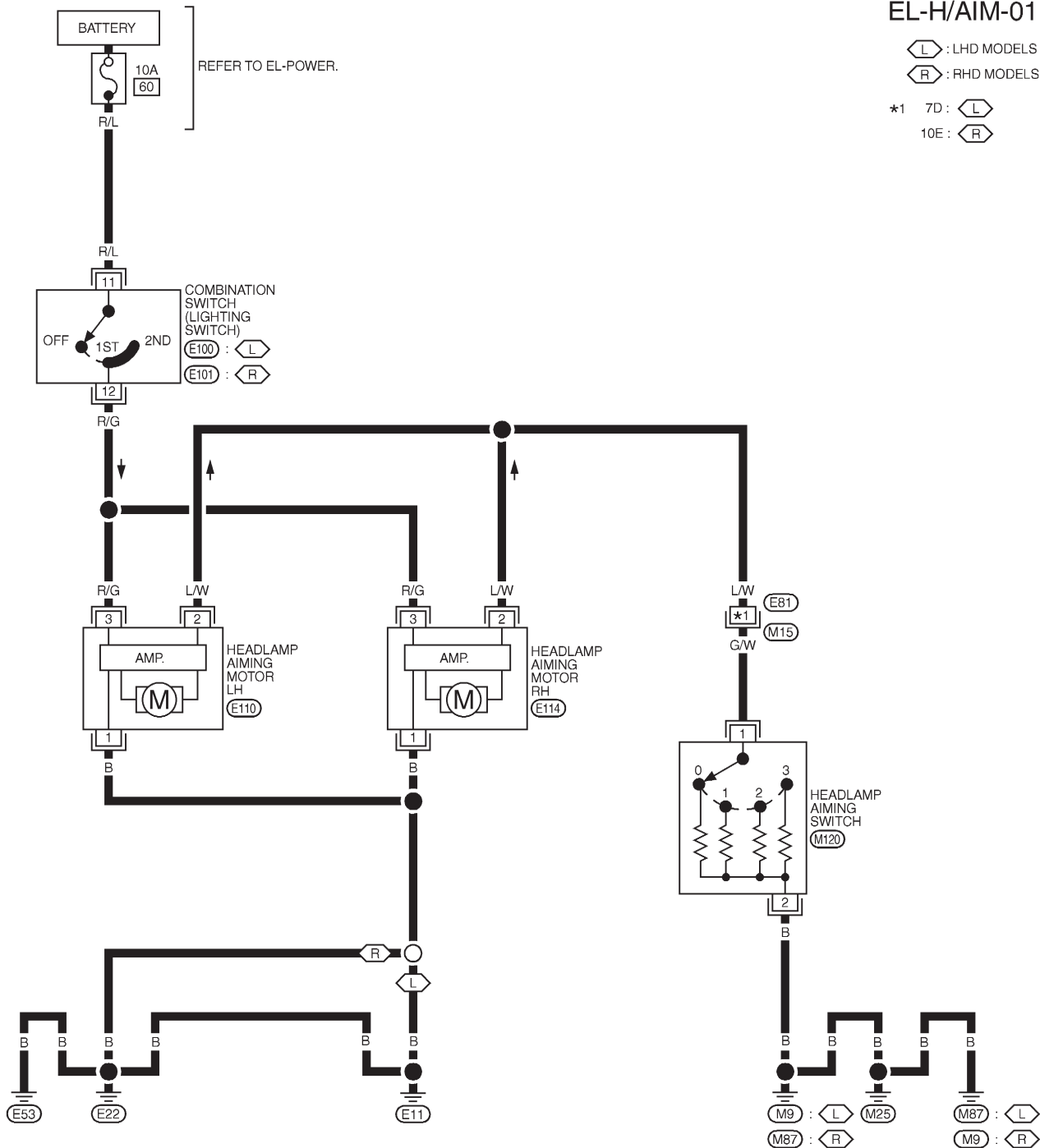
EL-H/AIM-01

L : LHD MODELS

R : RHD MODELS

*1 7D : L

10E : R



REFER TO THE FOLLOWING.

M15 - SUPER

MULTIPLE JUNCTION (SMJ)

MEL505L

HEADLAMP — HEADLAMP AIMING CONTROL —

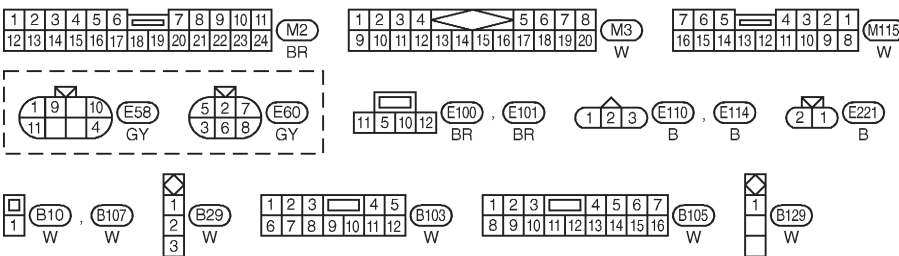
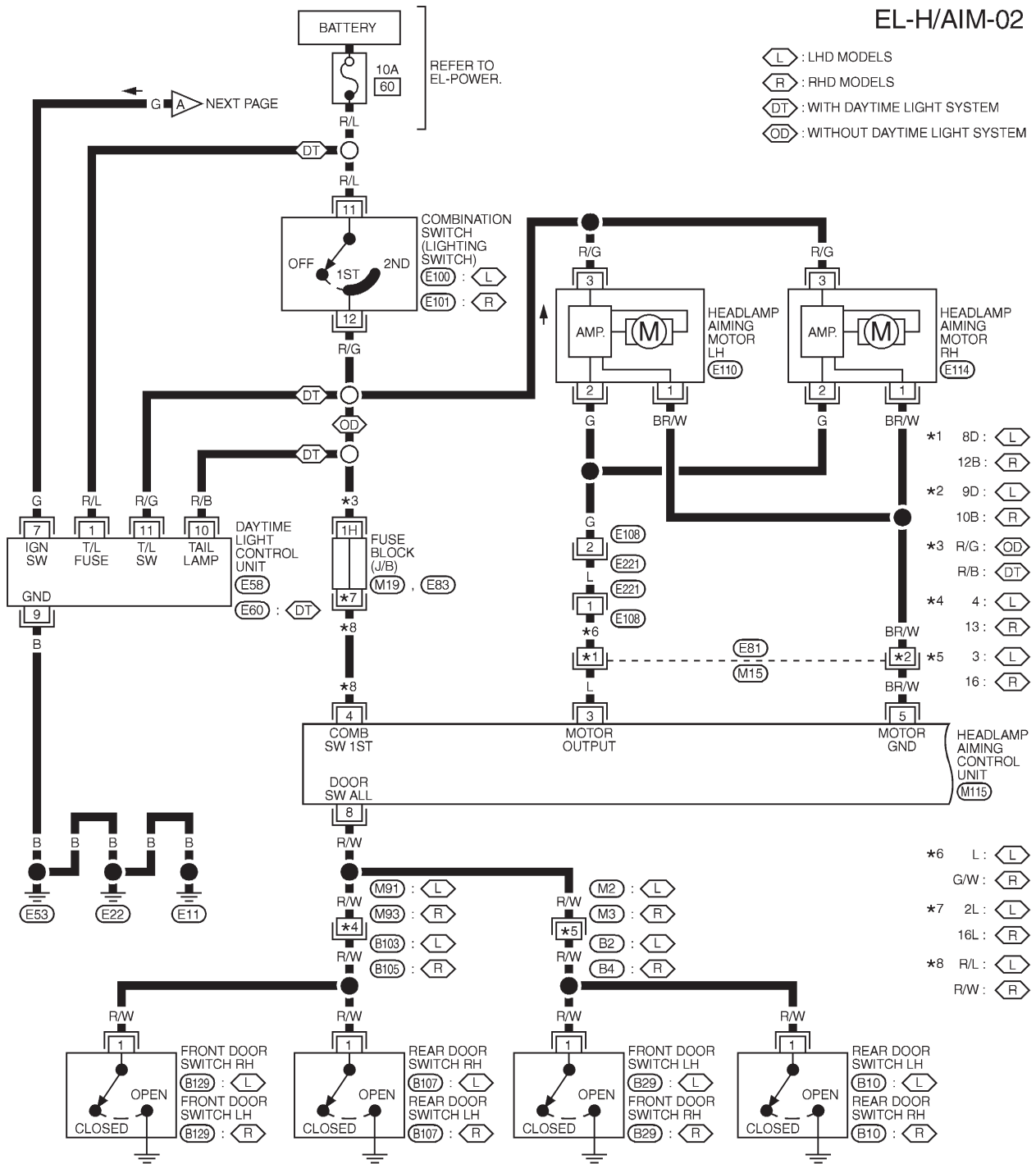
Wiring Diagram — H/AIM — (Cont'd)

WITH AUTO AIMING

NFEL0293S02

EL-H/AIM-02

- ⬡ : LHD MODELS
- ⬢ : RHD MODELS
- ⬤ : WITH DAYTIME LIGHT SYSTEM
- ⬥ : WITHOUT DAYTIME LIGHT SYSTEM



REFER TO THE FOLLOWING.

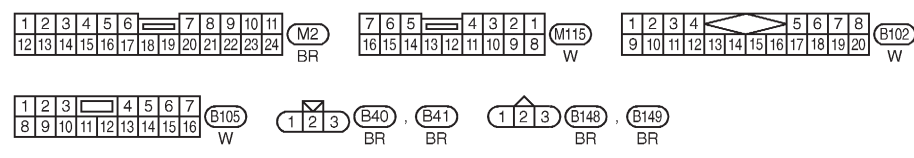
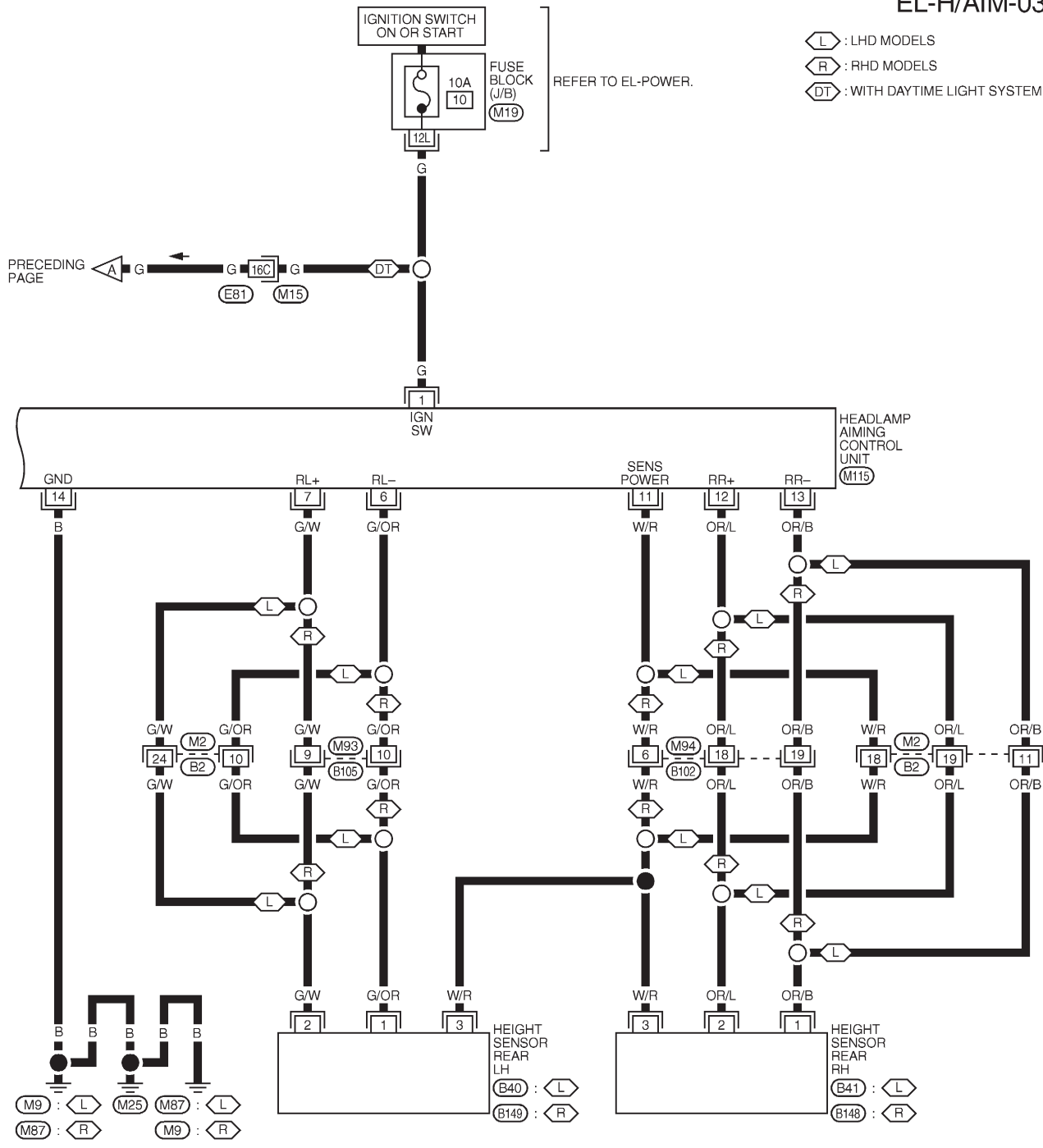
- ⬡ - SUPER
- MULTIPLE JUNCTION (SMJ)
- ⬡ - FUSE BLOCK-JUNCTION BOX (J/B)

MEL828M

HEADLAMP — HEADLAMP AIMING CONTROL —

Wiring Diagram — H/AIM — (Cont'd)

EL-H/AIM-03



REFER TO THE FOLLOWING.
 (M15) -SUPER
 MULTIPLE JUNCTION (SMJ)
 (M19) -FUSE BLOCK-
 JUNCTION BOX (J/B)

MEL829M

HEADLAMP — HEADLAMP AIMING CONTROL —

Trouble Diagnosis for Auto Aiming System

Trouble Diagnosis for Auto Aiming System

NFEL0315

PRELIMINARY CHECK

NFEL0315S02

1. Park the vehicle on a level surface.
2. Remove all baggage from the cabin and the trunk.
3. Get in the vehicle, and check that all doors are closed.
4. Turn the ignition switch ON.
5. Turn lighting switch to 2ND position, and check that the headlamps turn on.
6. Turn lighting switch to OFF position, and check that the headlamps turn off.

CHECK MODE

NFEL0315S03

1. Turn ignition switch ON.
2. Open the driver's door (alternatively door switch can be operated manually) and turn the lighting switch from OFF to 2ND position repeatedly ten times or more. At the end, turn the switch to 2ND position.

NOTE:

Perform these steps 1 and 2 within 5 seconds.

3. Check that the optical axis changes as shown in the left.

CAUTION:

When the vehicle height sensor indicates abnormal value (when input value is out of 0.5 to 4.5V), the optical axis does not change.

- When the optical axis changes gradually in the order of "0", "1", "2", "3", "4", and then "5", it is judged that the system is in normal status.
- To perform initialization after the check, refer to "Initialization."
- When performing the system check only, turn the ignition switch OFF to terminate the check mode.

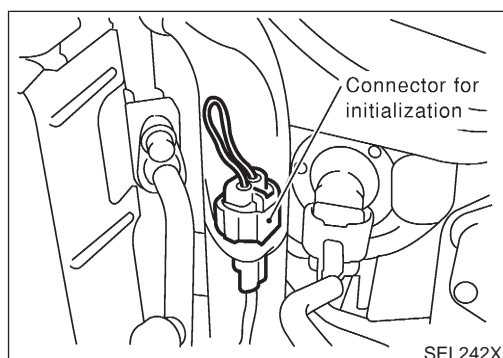
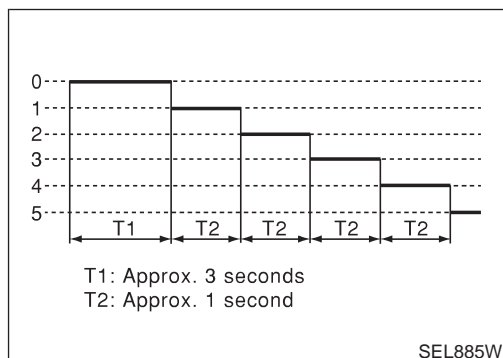
INITIALIZATION

NFEL0315S04

CAUTION:

The control is carried out on the basis of the voltage after initialization. Therefore, be sure to perform initialization after the following operations:

- When the control unit is replaced
- When the vehicle height sensor is replaced or reinstalled
- When the suspension is repaired



Before initialization, perform "PRELIMINARY CHECK" and use "CHECK MODE" to check that the system operates normally.

1. Perform CHECK MODE procedure.
2. Get off the vehicle. (Keep the driver's door open.)

CAUTION:

Do not get in the vehicle during initialization.

3. Disconnect the joint connector for initialization (located behind the RH headlamp).
4. Wait 5 seconds or more.
5. Reconnect the connector.
6. Turn lighting switch to OFF position.

HEADLAMP — HEADLAMP AIMING CONTROL —

Trouble Diagnosis for Auto Aiming System (Cont'd)

7. Wait 5 seconds or more. (Voltage value of the vehicle height sensor is read.)

CAUTION:

When the voltage is unstable, the value cannot be read. Avoid applying force to the vehicle so as not to change the vehicle position.

8. Turn the lighting switch to 2ND position.
9. Check that the optical axis moves to "0" then stops.

CAUTION:

- **When the vehicle height sensor indicates abnormal value (when input value is out of 0.5 to 4.5V), the optical axis does not change.**
- **When initialization is not completed, the optical axis does not change.**
- **Only when initialization is completed, data is updated.**
- **Returns to normal operation if the "IGN SW ON" and "Driver's Door Open" conditions are not available during either the "Check mode" or "Initialization" condition.**

SYMPTOM CHART

NFEL0315S05

PROCEDURE	Diagnostic procedure				
REFERENCE PAGE (EL-)	77	79	80	82	83
SYMPTOM	DIAGNOSTIC PROCEDURE 1 (Power supply and ground circuit for headlamp aiming control unit)	DIAGNOSTIC PROCEDURE 2 (Door switch circuit check)	DIAGNOSTIC PROCEDURE 3 (Height sensor and circuit check)	DIAGNOSTIC PROCEDURE 4 (Headlamp aiming control unit output signal check)	DIAGNOSTIC PROCEDURE 5 (Headlamp aiming motor and circuit check)
1	X	X	X	X	X
2			X	X	

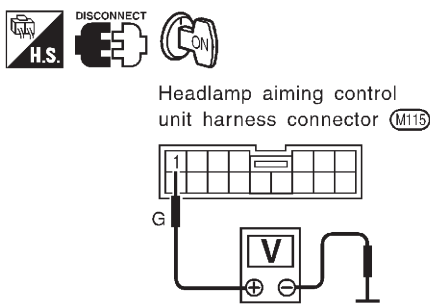
X: Applicable

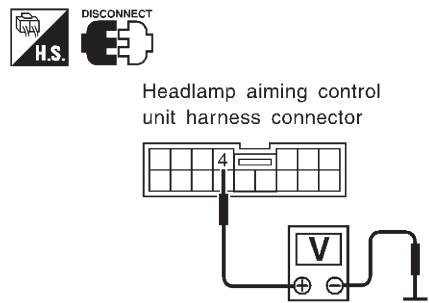
HEADLAMP — HEADLAMP AIMING CONTROL —

Trouble Diagnosis for Auto Aiming System (Cont'd)

DIAGNOSTIC PROCEDURE 1 (POWER SUPPLY AND GROUND CIRCUIT FOR HEADLAMP AIMING CONTROL UNIT)

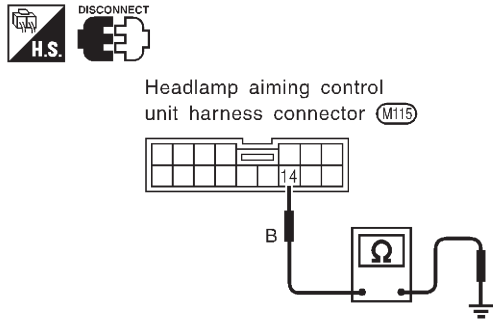
=NFEL0315S08

1	CHECK POWER SUPPLY CIRCUIT FOR HEADLAMP AIMING CONTROL UNIT (IGNITION SWITCH ON SIGNAL)																			
<p>1. Disconnect headlamp aiming control unit harness connector. 2. Turn ignition switch ON. 3. Check voltage between headlamp aiming control unit harness connector terminal 1 and ground.</p>																				
<div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="width: 45%;">  <p style="text-align: center;">Headlamp aiming control unit harness connector (M115)</p> </div> <div style="width: 45%;"> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th colspan="2" rowspan="2">Terminals</th> <th colspan="3">Ignition switch position</th> </tr> <tr> <th>OFF</th> <th>ACC</th> <th>ON</th> </tr> </thead> <tbody> <tr> <th>(+)</th> <th>(-)</th> <td>0V</td> <td>0V</td> <td>Battery voltage</td> </tr> <tr> <td>1</td> <td>Ground</td> <td>0V</td> <td>0V</td> <td>Battery voltage</td> </tr> </tbody> </table> </div> </div>			Terminals		Ignition switch position			OFF	ACC	ON	(+)	(-)	0V	0V	Battery voltage	1	Ground	0V	0V	Battery voltage
Terminals		Ignition switch position																		
		OFF	ACC	ON																
(+)	(-)	0V	0V	Battery voltage																
1	Ground	0V	0V	Battery voltage																
SEL891W																				
OK or NG																				
OK	▶	GO TO 2.																		
NG	▶	Check the following. <ul style="list-style-type: none"> ● 10A fuse [No. 10, located in the fuse block (J/B)] ● Check harness for open or short between fuse and headlamp aiming control unit. 																		

2	CHECK POWER SUPPLY CIRCUIT FOR HEADLAMP AIMING CONTROL UNIT (IGNITION SWITCH ON SIGNAL)																			
<p>1. Turn lighting switch 1st position. 2. Check voltage between headlamp aiming control unit harness connector M115 terminal 4 (R/L for LHD models or R/W for RHD models) and ground.</p>																				
<div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="width: 45%;">  <p style="text-align: center;">Headlamp aiming control unit harness connector</p> </div> <div style="width: 45%;"> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th colspan="2" rowspan="2">Terminals</th> <th colspan="3">Lighting switch position</th> </tr> <tr> <th>OFF</th> <th>1ST</th> <th>2ND</th> </tr> </thead> <tbody> <tr> <th>(+)</th> <th>(-)</th> <td>0V</td> <td>Battery voltage</td> <td>Battery voltage</td> </tr> <tr> <td>4</td> <td>Ground</td> <td>0V</td> <td>Battery voltage</td> <td>Battery voltage</td> </tr> </tbody> </table> </div> </div>			Terminals		Lighting switch position			OFF	1ST	2ND	(+)	(-)	0V	Battery voltage	Battery voltage	4	Ground	0V	Battery voltage	Battery voltage
Terminals		Lighting switch position																		
		OFF	1ST	2ND																
(+)	(-)	0V	Battery voltage	Battery voltage																
4	Ground	0V	Battery voltage	Battery voltage																
SEL892WA																				
OK or NG																				
OK	▶	GO TO 3.																		
NG	▶	Check the following. <ul style="list-style-type: none"> ● 10A fuse (No. 60, located in the fuse and fusible link box) ● Lighting switch ● Check harness for open or short between lighting switch and headlamp aiming control unit. ● Check harness for open or short between lighting switch and fuse. 																		

HEADLAMP — HEADLAMP AIMING CONTROL —

Trouble Diagnosis for Auto Aiming System (Cont'd)

3	CHECK GROUND CIRCUIT FOR HEADLAMP AIMING CONTROL UNIT
<p>Check continuity between headlamp aiming control unit harness connector terminal 14 and ground.</p> <div></div> <p>Continuity should exist.</p> <p>SEL893W</p>	
OK or NG	
OK	▶ Headlamp aiming control unit power supply and ground circuit is OK.
NG	▶ Repair harness or connector.

HEADLAMP — HEADLAMP AIMING CONTROL —

Trouble Diagnosis for Auto Aiming System (Cont'd)

DIAGNOSTIC PROCEDURE 2 (DOOR SWITCH CHECK)

=NFEL0315S10

1	CHECK DOOR SWITCH SIGNAL																
<p>Check voltage between headlamp aiming control unit harness connector terminal 8 and ground.</p>																	
<div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="width: 45%;"> <p>Headlamp aiming control unit harness connector (M115)</p> </div> <div style="width: 50%;"> <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]</th> </tr> <tr> <th>(+)</th> <th>(-)</th> </tr> </thead> <tbody> <tr> <td rowspan="2">All door switches</td> <td rowspan="2">8</td> <td rowspan="2">Ground</td> <td>Open</td> <td>0</td> </tr> <tr> <td>Closed</td> <td>Approx. 5</td> </tr> </tbody> </table> </div> </div>					Terminals		Condition	Voltage [V]	(+)	(-)	All door switches	8	Ground	Open	0	Closed	Approx. 5
	Terminals		Condition		Voltage [V]												
	(+)	(-)															
All door switches	8	Ground	Open	0													
			Closed	Approx. 5													
SEL900W																	
OK or NG																	
OK	▶	Door switch signal circuit is OK.															
NG	▶	GO TO 2.															

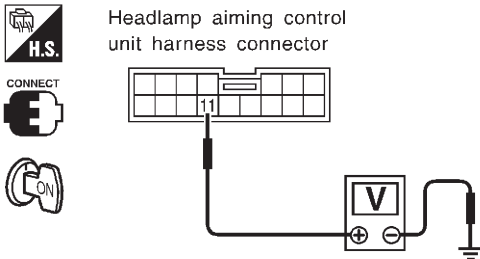
2	CHECK DOOR SWITCH																
<p>1. Disconnect door switch harness connector. 2. Check continuity between door switch connector terminal 1 and ground.</p>																	
<div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="width: 45%;"> <p>Front door switch (B129, B29) Rear door switch (B107, B10)</p> </div> <div style="width: 50%;"> <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">Continuity</th> </tr> <tr> <th>1 -</th> <th>Ground</th> </tr> </thead> <tbody> <tr> <td rowspan="2">All door switches</td> <td rowspan="2">1 -</td> <td rowspan="2">Ground</td> <td>Closed</td> <td>No</td> </tr> <tr> <td>Open</td> <td>Yes</td> </tr> </tbody> </table> </div> </div>					Terminals		Condition	Continuity	1 -	Ground	All door switches	1 -	Ground	Closed	No	Open	Yes
	Terminals		Condition		Continuity												
	1 -	Ground															
All door switches	1 -	Ground	Closed	No													
			Open	Yes													
SEL901W																	
OK or NG																	
OK	▶	<p>Check the following.</p> <ul style="list-style-type: none"> ● Door switch ground condition. ● Check harness for open or short between door switch and headlamp aiming control unit. 															
NG	▶	Replace door switch.															

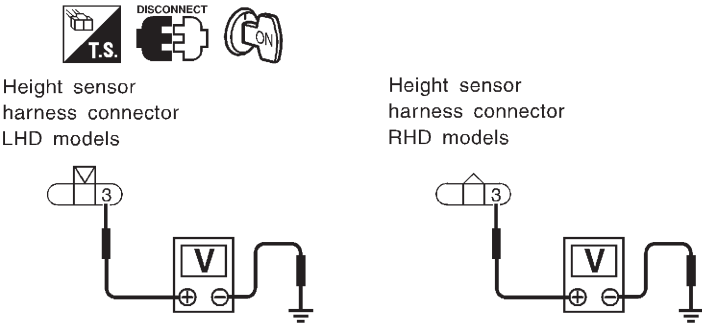
HEADLAMP — HEADLAMP AIMING CONTROL —

Trouble Diagnosis for Auto Aiming System (Cont'd)

DIAGNOSTIC PROCEDURE 3 (HEIGHT SENSOR AND CIRCUIT CHECK)

NFEL0315S09

1	CHECK HEIGHT SENSOR POWER SUPPLY-1	
<p>1. Turn ignition switch ON. 2. Check voltage between headlamp aiming control unit harness connector M115 terminal 11 (W/R) and ground.</p>		
 <p style="text-align: right;">Voltage [V]: Approx. 5</p>		
SEL959X		
OK or NG		
OK	▶	GO TO 2.
NG	▶	Replace headlamp aiming control unit. [Before replacing control unit, perform "DIAGNOSTIC PROCEDURE 1 (POWER SUPPLY AND GROUND CIRCUIT FOR HEADLAMP AIMING CONTROL UNIT)".]

2	CHECK HEIGHT SENSOR POWER SUPPLY-2	
<p>1. Disconnect height sensor harness connector. 2. Turn ignition switch ON. 3. Check the following.</p> <ul style="list-style-type: none"> • Voltage between height sensor harness connector B149 (LH) or B148 (RH) terminal 3 (W/R) for RHD models and ground • Voltage between height sensor harness connector B40 (LH) or B41 (RH) terminal 3 (W/R) for LHD models and ground 		
 <p style="text-align: right;">Voltage [V]: Approx. 5</p>		
SEL520XA		
OK or NG		
OK	▶	GO TO 3.
NG	▶	Check harness for open or short between height sensor and headlamp aiming control unit.

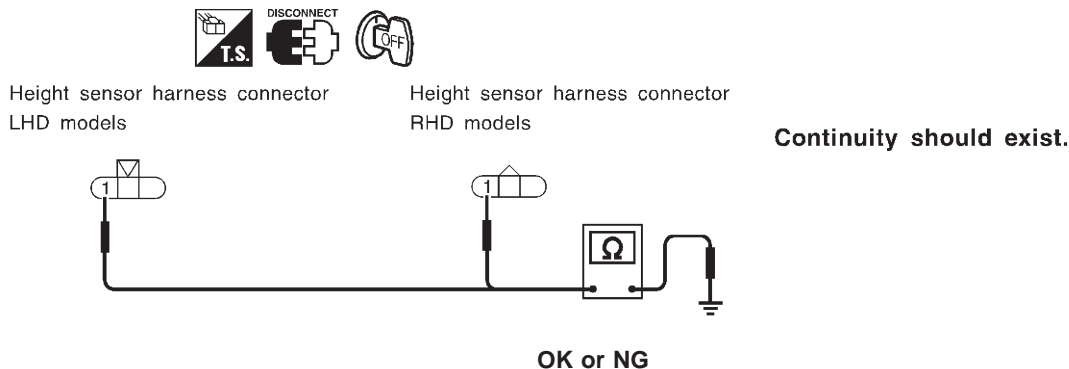
HEADLAMP — HEADLAMP AIMING CONTROL —

Trouble Diagnosis for Auto Aiming System (Cont'd)

3 CHECK HEIGHT SENSOR GROUND CIRCUIT

Check the following.

- Voltage between height sensor harness connector B149 (LH) or B148 (RH) terminal 1 (G/OR or OR/B) for RHD models and ground.
- Voltage between height sensor harness connector B40 (LH) or B41 (RH) terminal 1 (G/OR or OR/B) for LHD models and ground.

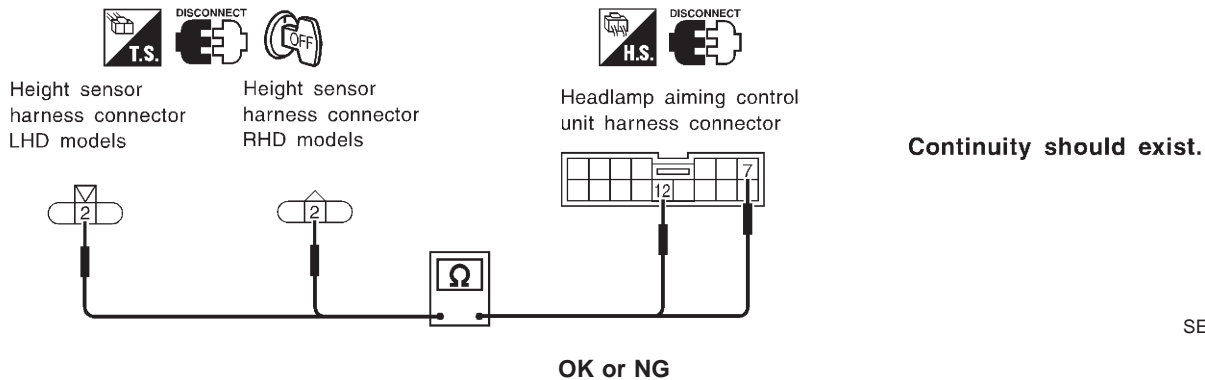


SEL521XA

OK	▶	GO TO 4.
NG	▶	Repair harness or connector.

4 CHECK HEIGHT SENSOR OUTPUT SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect headlamp aiming control unit harness connector.
3. Check the following.
 - Continuity between height sensor harness connector B149 (LH) or B148 (RH) terminal 2 (G/W or OR/L) for RHD models and headlamp aiming control unit harness connector M115 terminal 7 (LH: G/W) or 12 (RH: OR/L)
 - Continuity between height sensor harness connector B40 (LH) or B41 (RH) terminal 2 (G/W or OR/L) for LHD models and headlamp aiming control unit harness connector M115 terminal 7 (LH: G/W) or 12 (RH: OR/L)


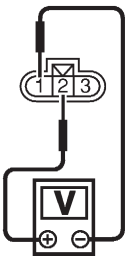
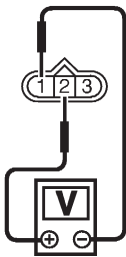
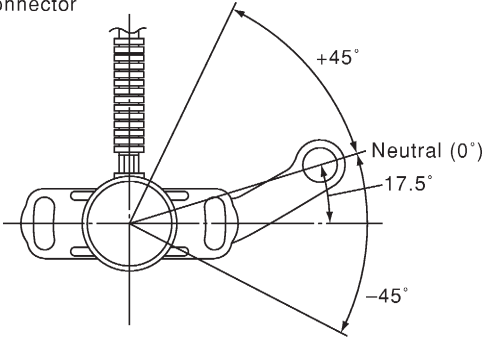


SEL522XA

OK	▶	GO TO 5.
NG	▶	Repair harness or connector.


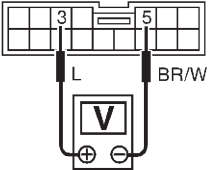
HEADLAMP — HEADLAMP AIMING CONTROL —

Trouble Diagnosis for Auto Aiming System (Cont'd)

5	CHECK HEIGHT SENSOR OUTPUT SIGNAL									
<p>1. Remove height sensor from rear suspension member. 2. Check the following when moving sensor arm.</p> <ul style="list-style-type: none"> ● Voltage between height sensor harness connector B149 (LH) or B148 (RH) terminals 1 (G/OR or OR/B) and 2 (GW or OR/L) for RHD models ● Voltage between height sensor harness connector B40 (LH) or B41 (RH) terminals 1 (G/OR or OR/B) and 2 (GW or OR/B) and 2 (GW or OR/L) for LHD models 										
										
Height sensor connector LHD models	Height sensor connector RHD models									
										
		<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Sensor arm degree</th> <th>Voltage [V]</th> </tr> </thead> <tbody> <tr> <td>-45° (High)</td> <td>Approx. 5</td> </tr> <tr> <td>0° (Neutral)</td> <td>Approx. 2.5</td> </tr> <tr> <td>+45° (Low)</td> <td>Approx. 0.5</td> </tr> </tbody> </table>	Sensor arm degree	Voltage [V]	-45° (High)	Approx. 5	0° (Neutral)	Approx. 2.5	+45° (Low)	Approx. 0.5
Sensor arm degree	Voltage [V]									
-45° (High)	Approx. 5									
0° (Neutral)	Approx. 2.5									
+45° (Low)	Approx. 0.5									
SEL523XA										
OK or NG										
OK	▶	Height sensor and circuit is OK.								
NG	▶	Replace height sensor.								

DIAGNOSTIC PROCEDURE 4 (HEADLAMP AIMING CONTROL UNIT OUTPUT SIGNAL CHECK)

NFEL0315S07

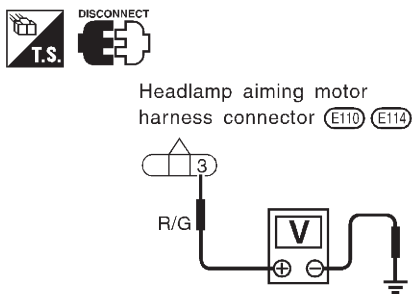
1	CHECK HEADLAMP AIMING CONTROL UNIT OUTPUT SIGNAL																	
<p>Check voltage between headlamp aiming control unit terminals 3 and 5 when performing "CHECK MODE".</p>																		
																		
Headlamp aiming control unit harness connector (M115)																		
	<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Terminals</th> <th>Optical axis position</th> <th>Voltage (V)</th> </tr> </thead> <tbody> <tr> <td rowspan="6" style="text-align: center; vertical-align: middle;">3 - 5</td> <td style="text-align: center;">0</td> <td style="text-align: center;">10.4</td> </tr> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">9.3</td> </tr> <tr> <td style="text-align: center;">2</td> <td style="text-align: center;">8.3</td> </tr> <tr> <td style="text-align: center;">3</td> <td style="text-align: center;">7.3</td> </tr> <tr> <td style="text-align: center;">4</td> <td style="text-align: center;">6.2</td> </tr> <tr> <td style="text-align: center;">5</td> <td style="text-align: center;">5.1</td> </tr> </tbody> </table>	Terminals	Optical axis position	Voltage (V)	3 - 5	0	10.4	1	9.3	2	8.3	3	7.3	4	6.2	5	5.1	
Terminals	Optical axis position	Voltage (V)																
3 - 5	0	10.4																
	1	9.3																
	2	8.3																
	3	7.3																
	4	6.2																
	5	5.1																
SEL889W																		
OK or NG																		
OK	▶	Headlamp aiming control unit output signal is OK.																
NG	▶	Replace headlamp aiming control unit. [Before replacing headlamp aiming control unit, perform "DIAGNOSTIC PROCEDURE 1 (POWER SUPPLY AND GROUND CIRCUIT FOR HEADLAMP AIMING CONTROL UNIT)" and "DIAGNOSTIC PROCEDURE 2 (DOOR SWITCH CHECK)".]																

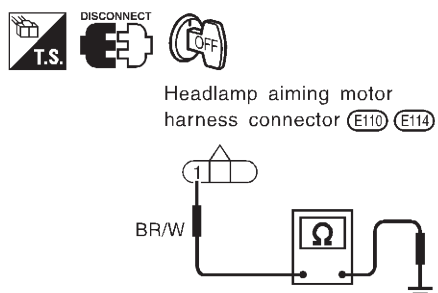
HEADLAMP — HEADLAMP AIMING CONTROL —

Trouble Diagnosis for Auto Aiming System (Cont'd)

DIAGNOSTIC PROCEDURE 5 (HEADLAMP AIMING MOTOR AND CIRCUIT CHECK)


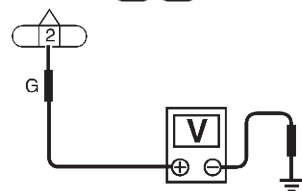
=NFEL0315S06

1	CHECK POWER SUPPLY CIRCUIT FOR HEADLAMP AIMING MOTOR																
<p>1. Disconnect headlamp aiming motor harness connector. 2. Turn lighting switch 1st position. 3. Check voltage between headlamp aiming motor harness connector terminal 3 and ground.</p>																	
<div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="width: 45%;">  <p>Headlamp aiming motor harness connector (E110) (E114)</p> </div> <div style="width: 45%;"> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th colspan="2" style="text-align: left;">Terminals</th> <th colspan="3" style="text-align: left;">Lighting switch position</th> </tr> <tr> <th style="text-align: left;">(+)</th> <th style="text-align: left;">(-)</th> <th style="text-align: left;">OFF</th> <th style="text-align: left;">1ST</th> <th style="text-align: left;">2ND</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">3</td> <td style="text-align: center;">Ground</td> <td style="text-align: center;">0V</td> <td style="text-align: center;">Battery voltage</td> <td style="text-align: center;">Battery voltage</td> </tr> </tbody> </table> </div> </div>			Terminals		Lighting switch position			(+)	(-)	OFF	1ST	2ND	3	Ground	0V	Battery voltage	Battery voltage
Terminals		Lighting switch position															
(+)	(-)	OFF	1ST	2ND													
3	Ground	0V	Battery voltage	Battery voltage													
SEL887W																	
OK or NG																	
OK	▶	GO TO 2.															
NG	▶	<p>Check the following.</p> <ul style="list-style-type: none"> ● 10A fuse (No. 60, located in the fuse and fusible link box) ● Check harness for open or short between lighting switch and headlamp aiming motor. ● Check harness for open or short between fuse and lighting switch. 															

2	CHECK GROUND CIRCUIT FOR HEADLAMP AIMING MOTOR	
<p>Check voltage between headlamp aiming motor harness connector terminal 1 and ground.</p>		
<div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="width: 45%;">  <p>Headlamp aiming motor harness connector (E110) (E114)</p> </div> <div style="width: 45%; text-align: center;"> <p>Continuity should exist.</p> </div> </div>		
SEL888W		
OK or NG		
OK	▶	GO TO 3.
NG	▶	Repair harness or connector.

HEADLAMP — HEADLAMP AIMING CONTROL —

Trouble Diagnosis for Auto Aiming System (Cont'd)

3	CHECK HEADLAMP AIMING CONTROL UNIT OUTPUT SIGNAL CIRCUIT																
<p>1. Disconnect headlamp aiming motor harness connector.</p> <p>2. Check voltage between headlamp aiming motor harness connector terminal 2 and ground when performing "CHECK MODE".</p>																	
<div style="display: flex; align-items: center;"> <div style="margin-right: 20px;">  <p>Headlamp aiming motor harness connector (E110) (E114)</p> </div> <div style="margin-right: 20px;">  </div> <table border="1" style="border-collapse: collapse;"> <thead> <tr> <th style="width: 20%;">Terminal</th> <th style="width: 20%;">Optical axis position</th> <th style="width: 60%;">Voltage [V]</th> </tr> </thead> <tbody> <tr> <td rowspan="6" style="text-align: center; vertical-align: middle;">2 and ground</td> <td style="text-align: center;">0</td> <td style="text-align: center;">10.4</td> </tr> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">9.3</td> </tr> <tr> <td style="text-align: center;">2</td> <td style="text-align: center;">8.3</td> </tr> <tr> <td style="text-align: center;">3</td> <td style="text-align: center;">7.3</td> </tr> <tr> <td style="text-align: center;">4</td> <td style="text-align: center;">6.2</td> </tr> <tr> <td style="text-align: center;">5</td> <td style="text-align: center;">5.1</td> </tr> </tbody> </table> </div>		Terminal	Optical axis position	Voltage [V]	2 and ground	0	10.4	1	9.3	2	8.3	3	7.3	4	6.2	5	5.1
Terminal	Optical axis position	Voltage [V]															
2 and ground	0	10.4															
	1	9.3															
	2	8.3															
	3	7.3															
	4	6.2															
	5	5.1															
SEL245X																	
OK or NG																	
OK	▶	GO TO 4.															
NG	▶	Repair harness or connector.															

4	CHECK HEADLAMP AIMING MOTOR OPERATION	
<p>Perform "CHECK MODE" and check headlamp aiming motor operation. Refer to EL-75.</p>		
OK or NG		
OK	▶	Headlamp aiming motor and circuit is OK
NG	▶	Replace headlamp aiming motor.

System Description

NFEL0207

The clearance, license and tail lamp operation is controlled by the lighting switch which is built into the combination switch.

Power is supplied at all times

- to lighting switch terminal 11
- through 10A fuse (No. 60, located in the fuse and fusible link box).

With daytime light system

- to daytime light control unit terminal 1
- through 10A fuse (No. 60, located in the fuse and fusible link box).

LIGHTING OPERATION

NFEL0207S01

When lighting switch is in 1ST (or 2ND) position, power is supplied

- from lighting switch terminal 12
- through daytime light control unit terminal 11 and 10 (with daytime light system)
- to the clearance, license and tail lamps.

With power and ground supplied, the clearance, license and tail lamps illuminate.

With daytime light system

When daytime light control is operated, power is supplied

- through daytime light control unit terminal 1 and 10
- to the clearance, license and tail lamps.

With power and ground supplied, the clearance, license and tail lamps illuminate.

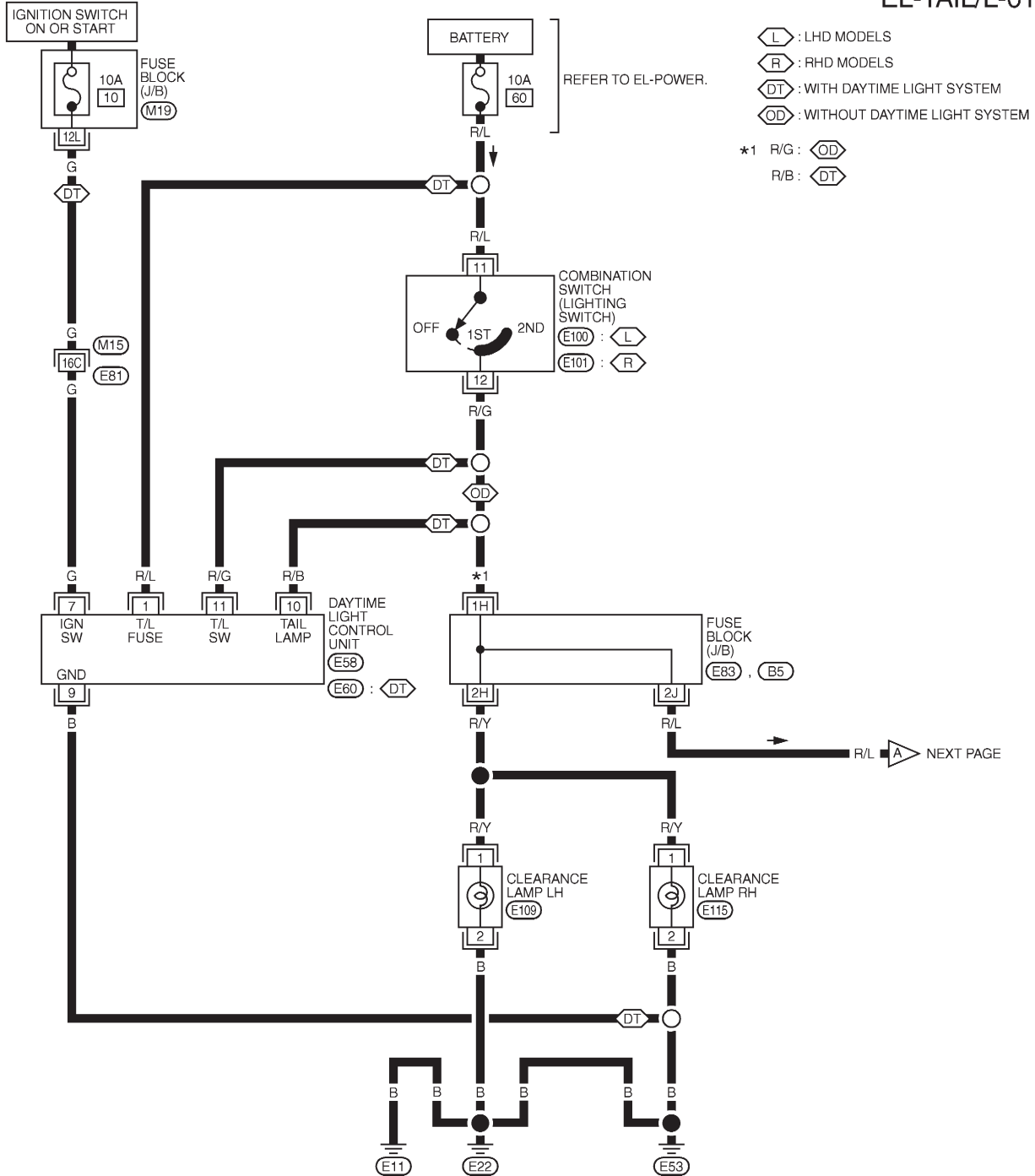
CLEARANCE, LICENSE AND TAIL LAMPS

Wiring Diagram — TAIL/L —

Wiring Diagram — TAIL/L —

NFEL0024

EL-TAIL/L-01



REFER TO THE FOLLOWING.

- (M15) -SUPER
- MULTIPLE JUNCTION (SMJ)
- (M19) , (E83) , (B5)
- FUSE BLOCK-
- JUNCTION BOX (J/B)

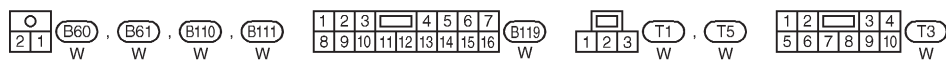
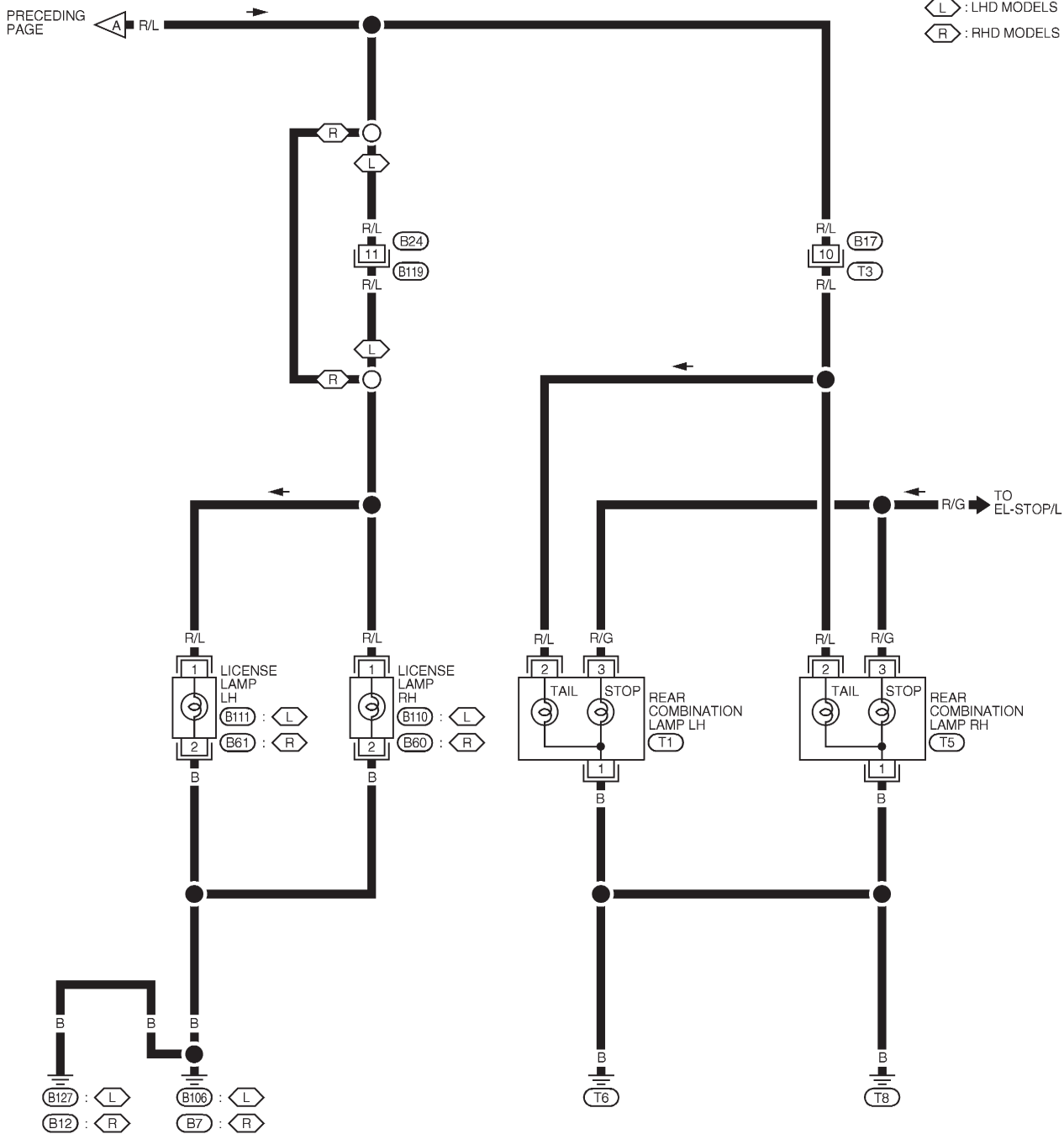
MEL508L

CLEARANCE, LICENSE AND TAIL LAMPS

Wiring Diagram — TAIL/L — (Cont'd)

EL-TAIL/L-02

L : LHD MODELS
R : RHD MODELS



MEL104M

STOP LAMP

Wiring Diagram — STOP/L —

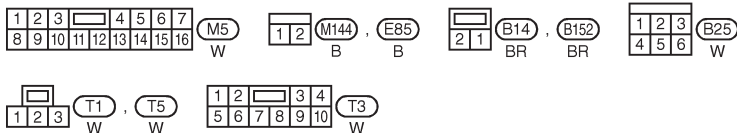
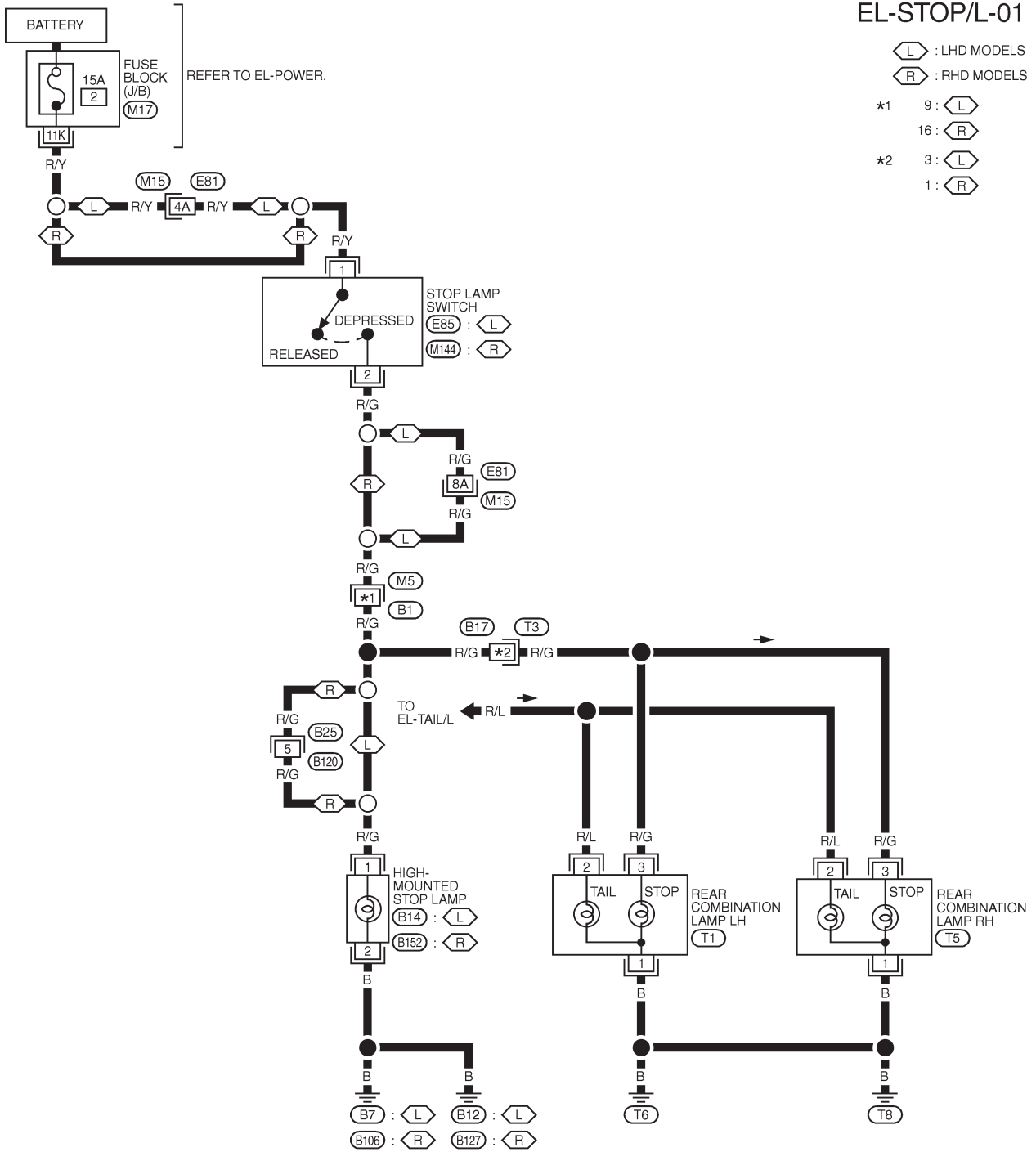
Wiring Diagram — STOP/L —

NFEL0025

EL-STOP/L-01

⬡ : LHD MODELS
⬢ : RHD MODELS

*1 9: ⬡
16: ⬢
*2 3: ⬡
1: ⬢



REFER TO THE FOLLOWING.

⬢ -SUPER
MULTIPLE JUNCTION (SMJ)
⬢ -FUSE BLOCK-
JUNCTION BOX (J/B)

MEL830M

BACK-UP LAMP

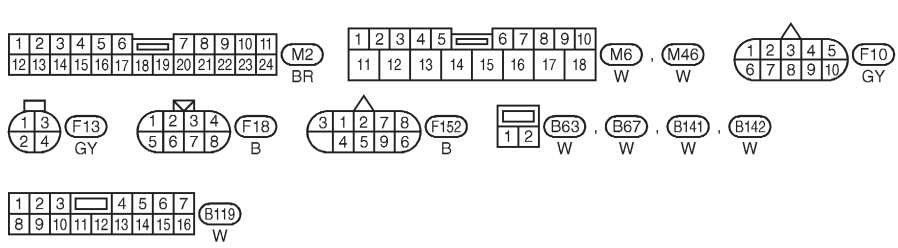
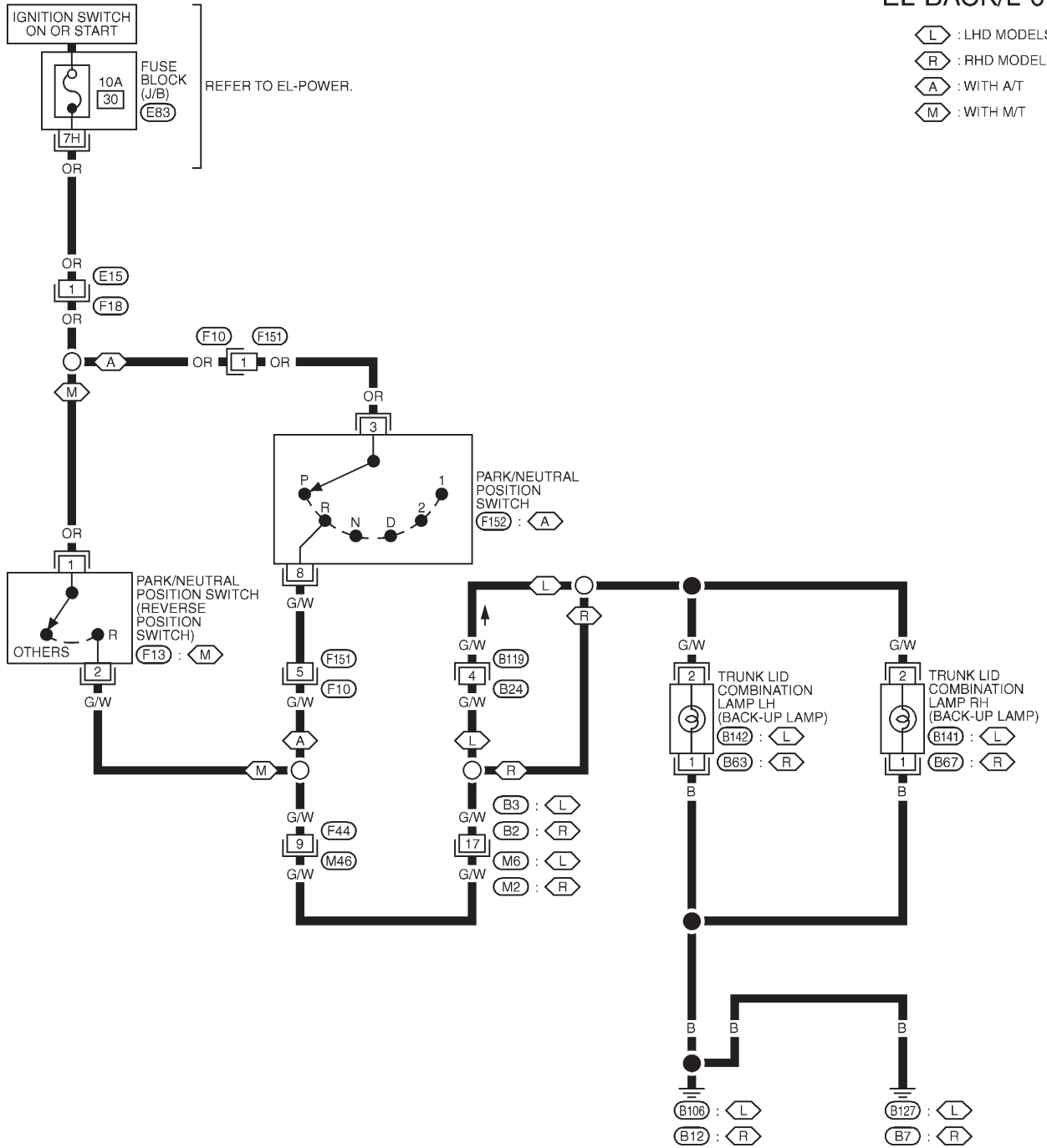
Wiring Diagram — BACK/L —

Wiring Diagram — BACK/L —

NFEL0026

EL-BACK/L-01

- L : LHD MODELS
- R : RHD MODELS
- A : WITH A/T
- M : WITH M/T



REFER TO THE FOLLOWING.
E83 - FUSE BLOCK-
 JUNCTION BOX (J/B)

MEL765K

FRONT FOG LAMP

System Description

System Description

NFEL0164

OUTLINE

NFEL0164S01

Power is supplied at all times

- to lighting switch terminal 11
- through 10A fuse (No. 60, located in the fuse and fusible link box), and
- to front fog lamp relay terminal 3
- through 15A fuse [No. 6, located in the fuse block (J/B)].

When lighting switch is in 1ST or 2ND position, power is supplied

- to fog lamp switch terminal 28
- from lighting switch terminal 12.

FOG LAMP OPERATION

NFEL0164S02

The fog lamp switch is built into the combination switch. The lighting switch must be in the 1ST or 2ND position for fog lamp operation.

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

- to fog lamp switch terminal 29
- through the fog lamp relay and body grounds E11, E22 and E53.

The fog lamp relay is energized and power is supplied

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

Ground is supplied to terminal 2 of each fog lamp through body grounds E11, E22 and E53.

With power and ground supplied, the fog lamps illuminate.

FRONT FOG LAMP

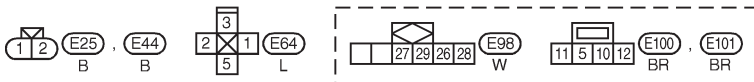
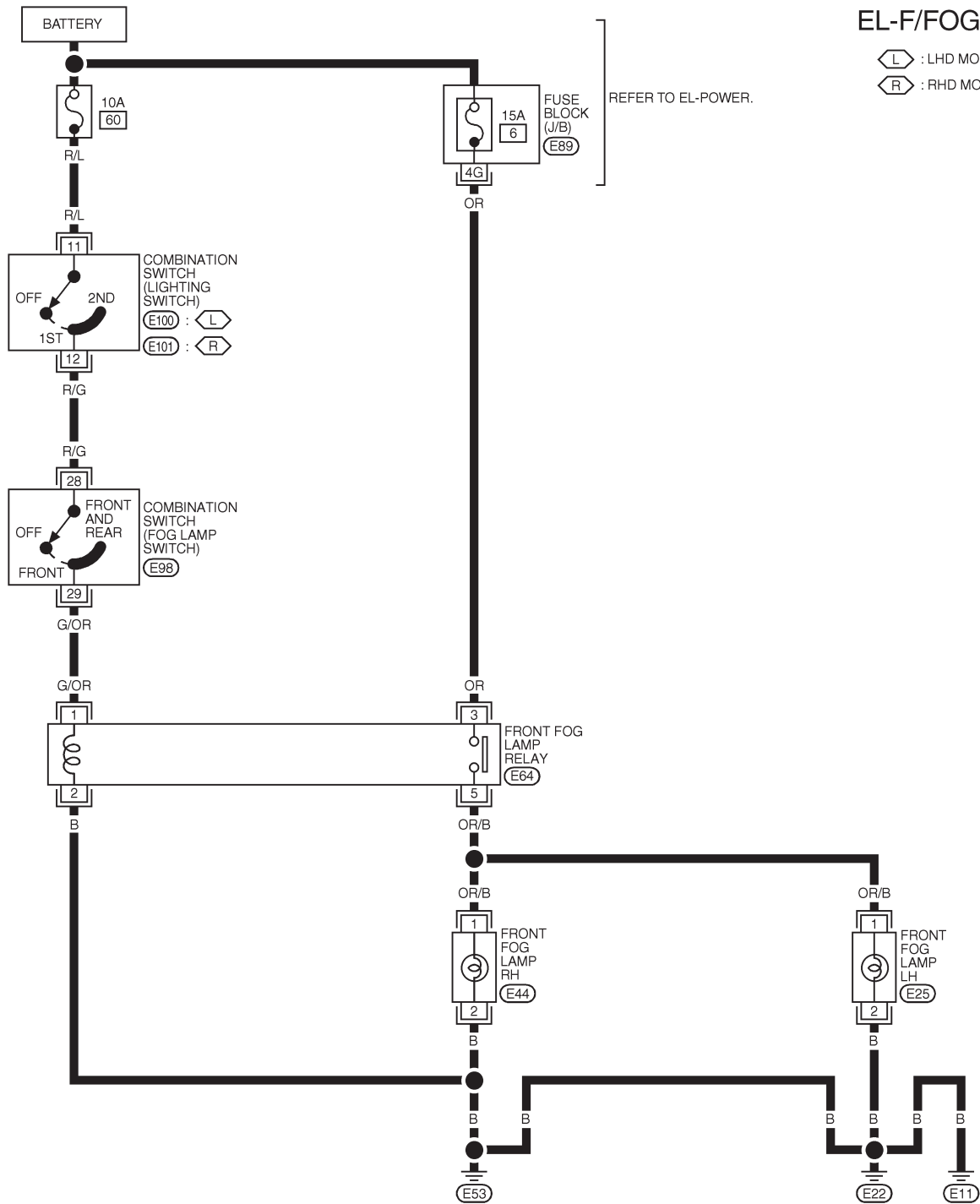
Wiring Diagram — F/FOG —

Wiring Diagram — F/FOG —

NFEL0028

EL-F/FOG-01

- L : LHD MODELS
- R : RHD MODELS

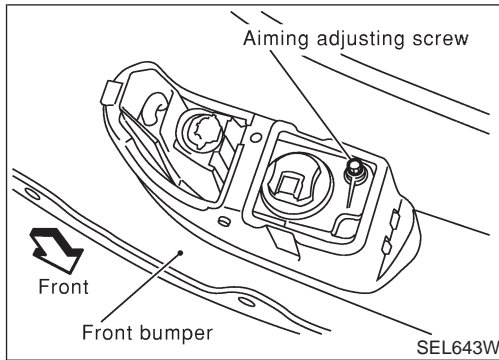


REFER TO THE FOLLOWING.
E89 - FUSE BLOCK-JUNCTION BOX (J/B)

MEL509L

FRONT FOG LAMP

Aiming Adjustment



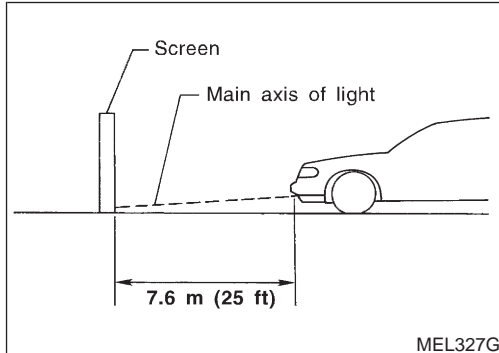
Aiming Adjustment

=NFEL0029

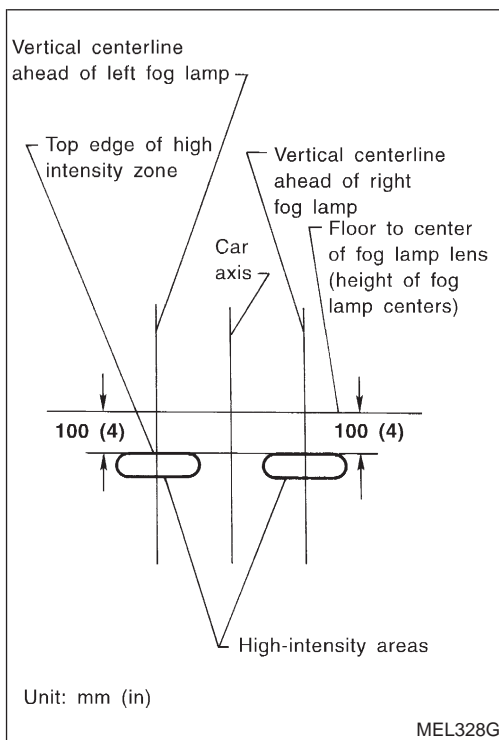
Before performing aiming adjustment, make sure of the following.

- 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's seat.

Adjust aiming in the vertical direction by turning the adjusting screw.



1. Set the distance between the screen and the center of the fog lamp lens as shown at left.
2. Remove front fog lamp rim. For detail, refer to "BODY END" in BT section.
3. Turn front fog lamps ON.



4. Adjust front fog lamps so that the top edge of the high intensity zone is 100 mm (4 in) below the height of the fog lamp centers as shown at left.
- When performing adjustment, if necessary, cover the headlamps and opposite fog lamp.

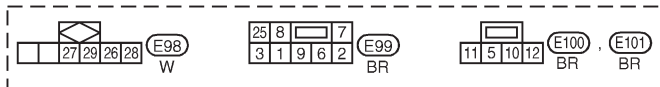
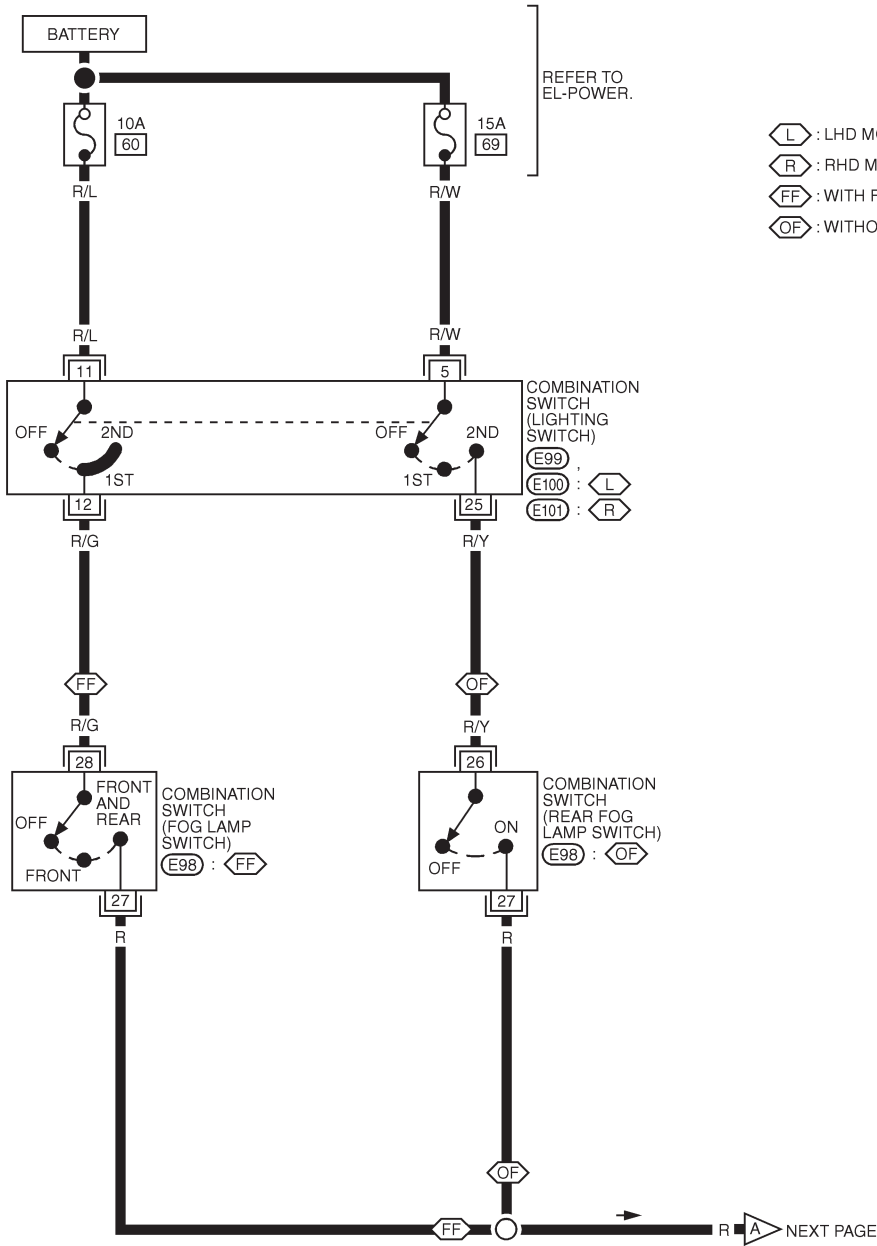
REAR FOG LAMP

Wiring Diagram — R/FOG —

Wiring Diagram — R/FOG —

NFEL0294

EL-R/FOG-01



MEL134L

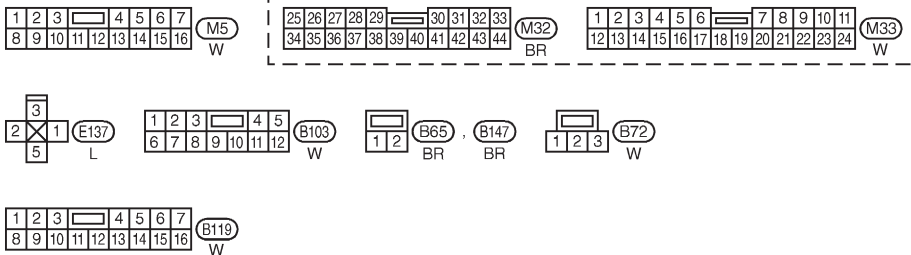
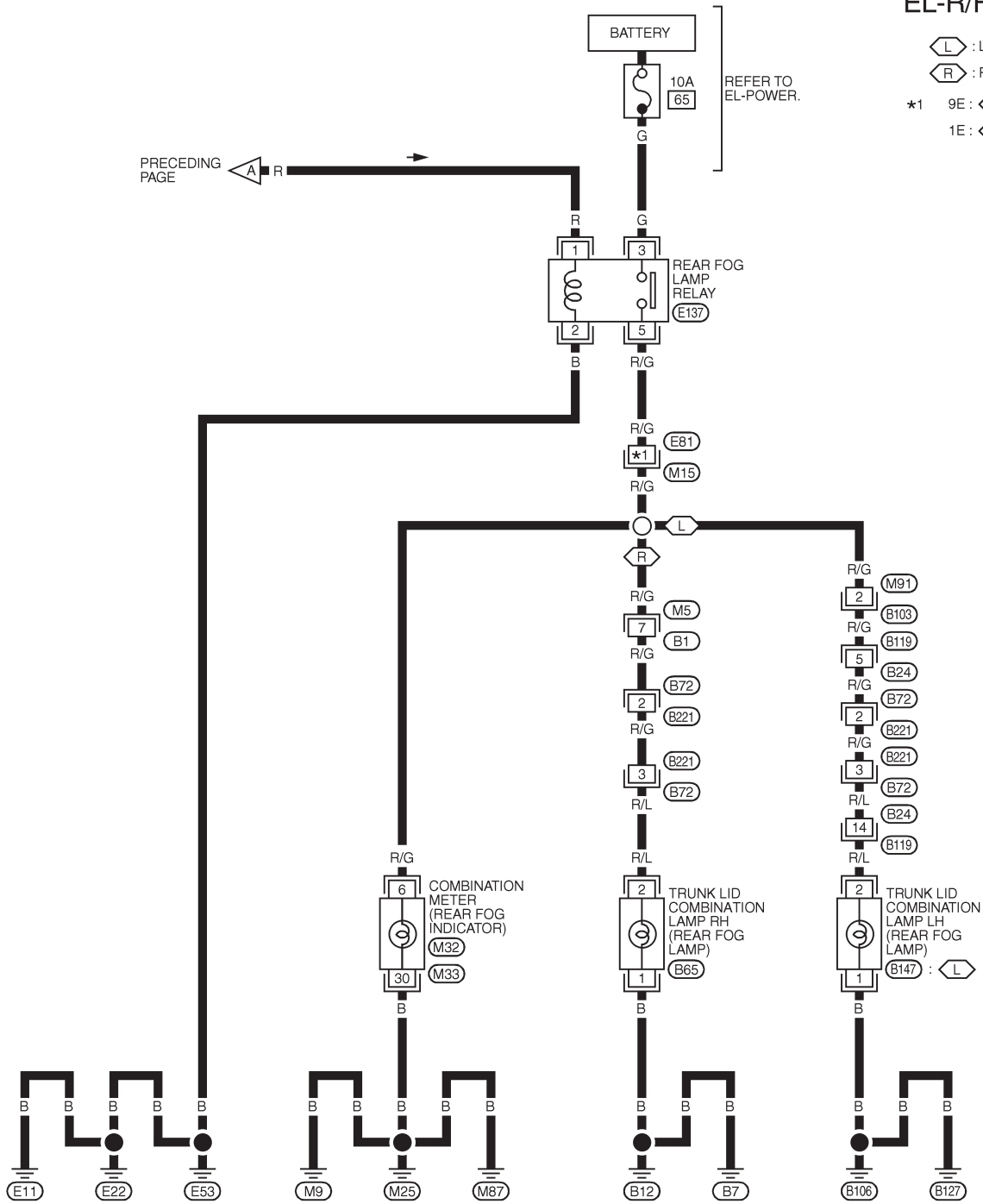
REAR FOG LAMP

Wiring Diagram — R/FOG — (Cont'd)

EL-R/FOG-02

L : LHD MODELS
R : RHD MODELS

*1 9E: L
 1E: R



REFER TO THE FOLLOWING.

M15 -SUPER
 MULTIPLE JUNCTION (SMJ)

MEL831M

System Description

NFEL0030

TURN SIGNAL OPERATION

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

NFEL0030S01

- through 10A fuse [No. 26, located in the fuse block (J/B)]
- to hazard switch terminal 2
- through terminal 1 of the hazard switch
- to combination flasher unit terminal 1
- through terminal 3 of the combination flasher unit
- to turn signal switch terminal 1

Ground is supplied to combination flasher unit terminal 2 through body grounds M9, M25 and M87.

LH Turn

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

NFEL0030S0101

- front turn signal lamp LH terminal 1,
- side turn signal lamp LH terminal 2,
- combination meter terminal 25 and
- rear combination lamp LH terminal 2.

Ground is supplied to the front turn signal lamp LH terminal 2 and side turn signal lamp LH terminal 1 through body grounds E11, E22 and E53.

Ground is supplied to the rear combination lamp LH terminal 1 through body grounds T6 and T8.

Ground is supplied to combination meter terminal 30 through body grounds M9, M25 and M87.

With power and ground supplied, the combination flasher unit controls the flashing of the LH turn signal lamps.

RH Turn

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

NFEL0030S0102

- front turn signal lamp RH terminal 1,
- side turn signal lamp RH terminal 2,
- combination meter terminal 29 and
- rear combination lamp RH terminal 2.

Ground is supplied to the front turn signal lamp RH terminal 2 and side turn signal lamp RH terminal 1 through body grounds E11, E22 and E53.

Ground is supplied to the rear combination lamp RH terminal 1 through body grounds T6 and T8.

Ground is supplied to combination meter terminal 30 through body grounds M9, M25 and M87.

With power and ground supplied, the combination flasher unit controls the flashing of the RH turn signal lamps.

HAZARD LAMP OPERATION

Power is supplied at all times to hazard switch terminal 3 through:

NFEL0030S02

- 15A fuse [No. 5, located in the fuse block (J/B)].

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

- through terminal 1 of the hazard switch
- to combination flasher unit terminal 1
- through terminal 3 of the combination flasher unit
- to hazard switch terminal 4.

Ground is supplied to combination flasher unit terminal 2 through body grounds M9, M25 and M87.

Power is supplied through terminal 5 of the hazard switch to

- front turn signal lamp LH terminal 1,
- side turn signal lamp LH terminal 2,
- combination meter terminal 25 and
- rear combination lamp LH terminal 2.

Power is supplied through terminal 6 of the hazard switch to

- front turn signal lamp RH terminal 1,
- side turn signal lamp RH terminal 2,

TURN SIGNAL AND HAZARD WARNING LAMPS

System Description (Cont'd)

- combination meter terminal 29 and
- rear combination lamp RH terminal 2.

Ground is supplied to terminal 2 of each front turn signal lamp and terminal 1 of each side turn signal lamp through body grounds E11, E22 and E53.

Ground is supplied to terminal 1 of each rear combination lamp through body grounds T6 and T8.

Ground is supplied to combination meter terminal 30 through body grounds M9, M25 and M87.

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

MULTI-REMOTE CONTROL SYSTEM OPERATION

NFEL0030S03

When the multi-remote control system is triggered through the multi-remote control unit, power is supplied from multi-remote control unit

- to each front turn signal lamp terminal 1,
- each side turn signal lamp terminal 2,
- to combination meter terminal 25 and 29,
- to each rear combination lamp terminal 2.

Ground is supplied to terminal 2 of each front turn signal lamp and terminal 1 of each side turn signal lamp through body grounds E11, E22 and E53.

Ground is supplied to terminal 1 of each rear combination lamp through body grounds T6 and T8.

Ground is supplied to combination meter terminal 30 through body grounds M9, M25 and M87.

With power and ground supplied, the multi-remote control unit controls the flashing of the hazard warning lamps.

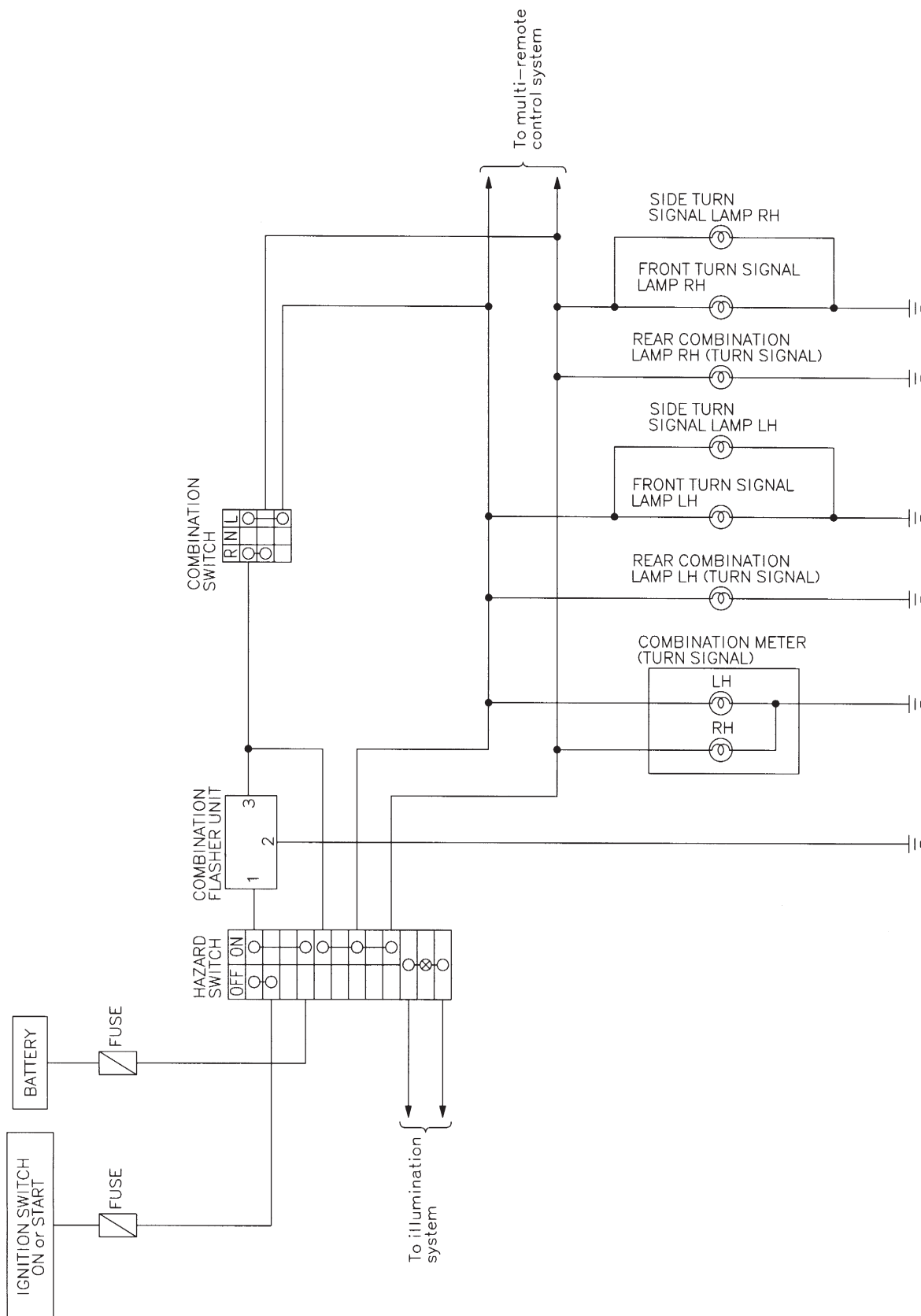
For details, refer to "MULTI-REMOTE CONTROL SYSTEM", EL-271.

TURN SIGNAL AND HAZARD WARNING LAMPS

Schematic

Schematic

NFEL0295



MEL510L

TURN SIGNAL AND HAZARD WARNING LAMPS

Wiring Diagram — TURN —

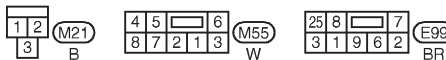
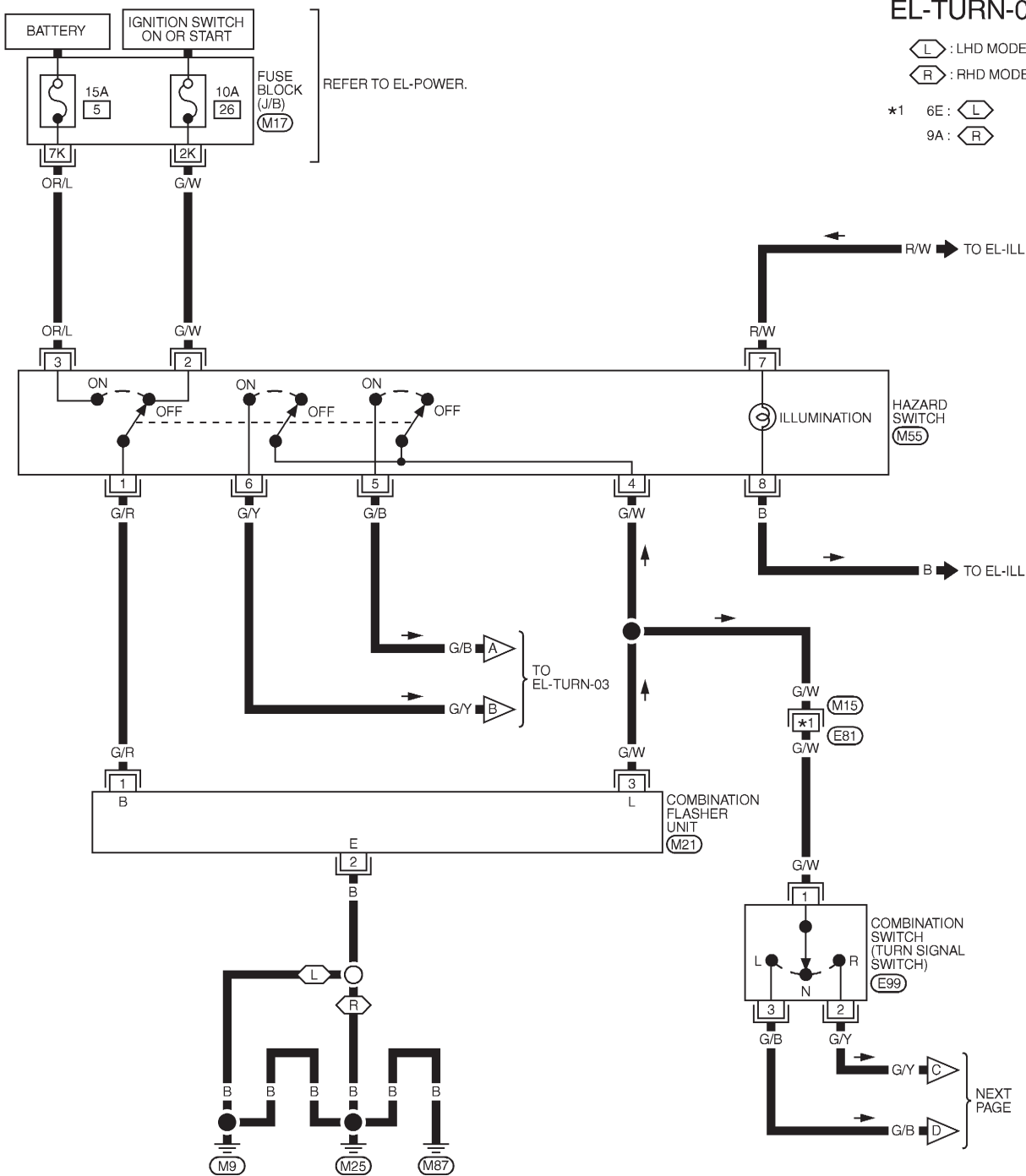
Wiring Diagram — TURN —

NFEL0032

EL-TURN-01

⬅ L : LHD MODELS
➡ R : RHD MODELS

*1 6E: ⬅ L
9A: ➡ R



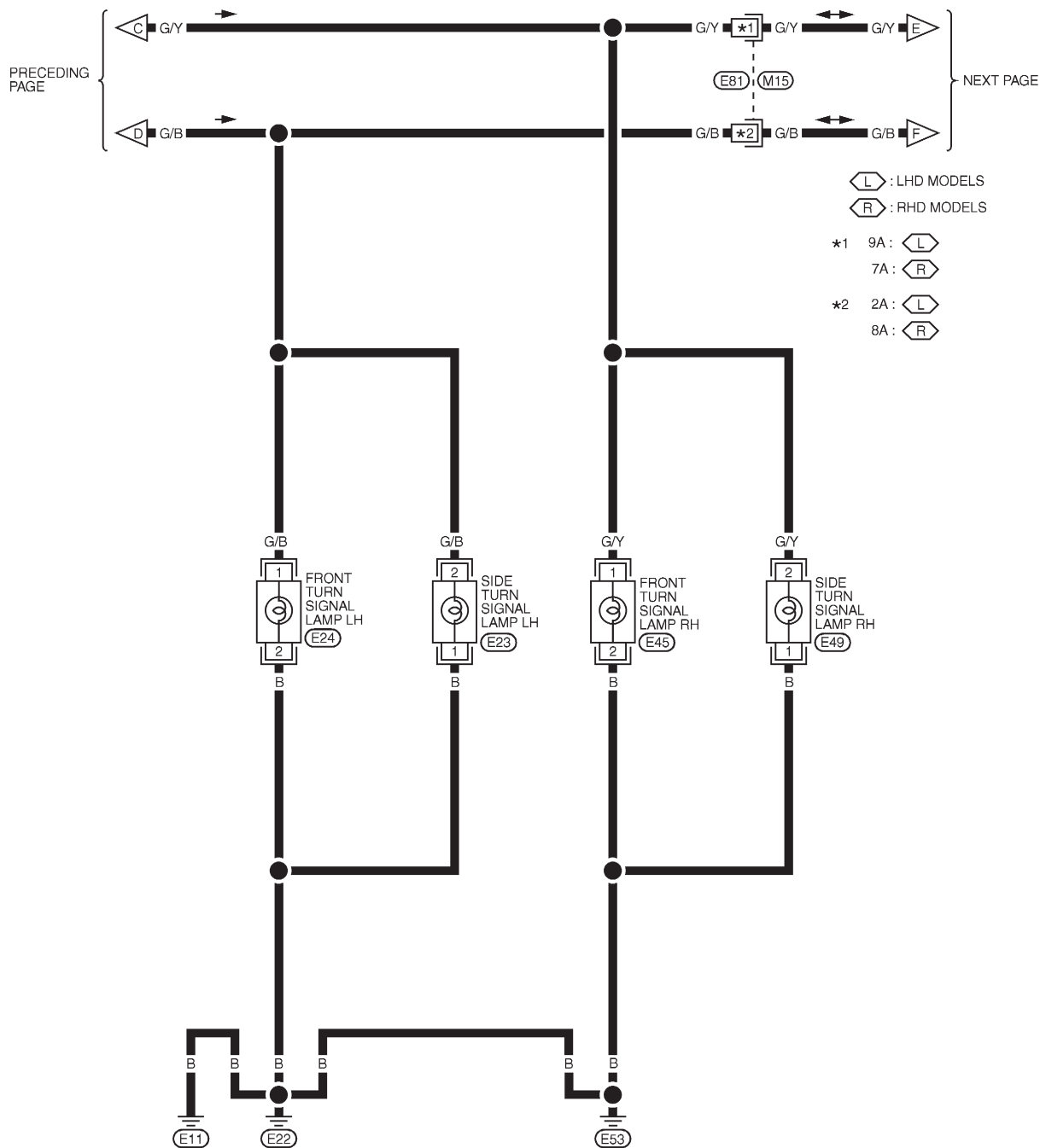
REFER TO THE FOLLOWING.
 (M15) - SUPER
 MULTIPLE JUNCTION (SMJ)
 (M17) - FUSE BLOCK-
 JUNCTION BOX (J/B)

MEL511L

TURN SIGNAL AND HAZARD WARNING LAMPS

Wiring Diagram — TURN — (Cont'd)

EL-TURN-02



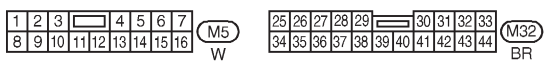
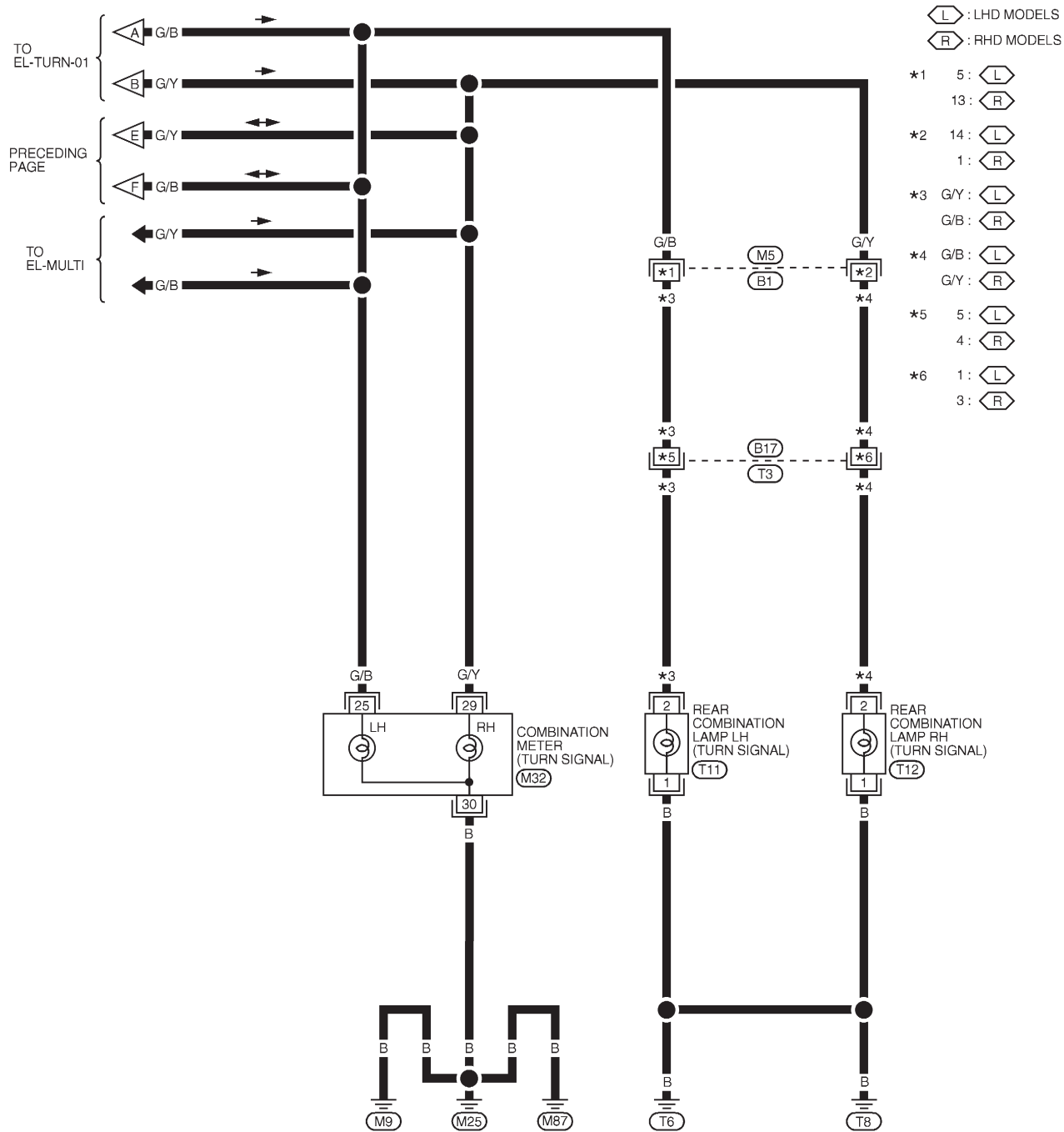
REFER TO THE FOLLOWING.
 (M15) -SUPER
 MULTIPLE JUNCTION (SMJ)

MEL512L

TURN SIGNAL AND HAZARD WARNING LAMPS

Wiring Diagram — TURN — (Cont'd)

EL-TURN-03



MEL513L

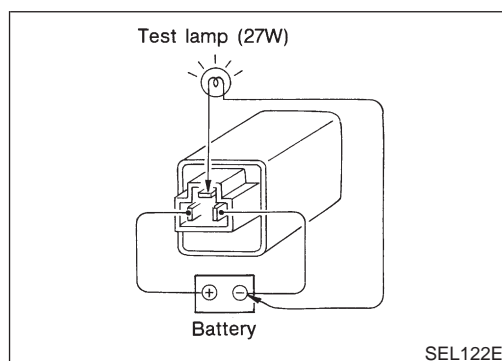
TURN SIGNAL AND HAZARD WARNING LAMPS

Trouble Diagnoses

Trouble Diagnoses

NFEL0033

Symptom	Possible cause	Repair order
Turn signal and hazard warning lamps do not operate.	<ol style="list-style-type: none"> 1. Hazard switch 2. Combination flasher unit 3. Open in combination flasher unit circuit 	<ol style="list-style-type: none"> 1. Check hazard switch. 2. Refer to combination flasher unit check. 3. Check wiring to combination flasher unit for open circuit.
Turn signal lamps do not operate but hazard warning lamps operate.	<ol style="list-style-type: none"> 1. 10A fuse 2. Hazard switch 3. Turn signal switch 4. Open in turn signal switch circuit 	<ol style="list-style-type: none"> 1. Check 10A fuse [No. 26, located in fuse block (J/B)]. Turn ignition switch ON and verify battery positive voltage is present at terminal 2 of hazard switch. 2. Check hazard switch. 3. Check turn signal switch. 4. Check the wire between combination flasher unit terminal 3 and turn signal switch terminal 1 for open circuit.
Hazard warning lamps do not operate but turn signal lamps operate.	<ol style="list-style-type: none"> 1. 15A fuse 2. Hazard switch 3. Open in hazard switch circuit 	<ol style="list-style-type: none"> 1. Check 15A fuse [No. 5, located in fuse block (J/B)]. Verify battery positive voltage is present at terminal 3 of hazard switch. 2. Check hazard switch. 3. Check the wire between combination flasher unit terminal 3 and hazard switch terminal 4 for open circuit.
Front turn signal lamp LH or RH does not operate.	<ol style="list-style-type: none"> 1. Bulb 2. Ground circuit for front turn signal lamp 3. Front turn signal lamp circuit 	<ol style="list-style-type: none"> 1. Check bulb. 2. Check ground circuit for front turn signal lamp. 3. Check the wire between front turn signal lamp and turn signal switch.
Rear turn signal lamp LH or RH does not operate.	<ol style="list-style-type: none"> 1. Bulb 2. Ground circuit for rear turn signal lamp 3. Rear turn signal lamp circuit 	<ol style="list-style-type: none"> 1. Check bulb. 2. Check ground circuit for rear turn signal lamp. 3. Check the wire between rear turn signal lamp and turn signal switch.
LH and RH turn indicators do not operate.	<ol style="list-style-type: none"> 1. Ground circuit for turn indicator 	<ol style="list-style-type: none"> 1. Check ground circuit for turn indicator.
LH or RH turn indicator does not operate.	<ol style="list-style-type: none"> 1. Bulb 2. Turn indicator circuit 	<ol style="list-style-type: none"> 1. Check bulb in combination meter. 2. Check the wire between hazard switch and turn indicator.



Electrical Components Inspection COMBINATION FLASHER UNIT CHECK

NFEL0034

NFEL0034S01

- 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.

ILLUMINATION

System Description

System Description

NFEL0035

The illumination lamp operation is controlled by the lighting switch which is built into the combination switch. Power is supplied at all times

- to lighting switch terminal 11
- through 10A fuse (No. 60, located in the fuse and fusible link box).

Power is supplied at all times (RHD models)

- to power window relay terminal 3, and
- to power window main switch terminal 3
- through 40A fusible link (letter I, located in the fuse and fusible link box).

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

- to terminal 6 of front power window switch (passenger side) and
- rear power window switch LH and RH and,
- to power window relay terminal 1 (RHD models), and
- to power window main switch terminal 6 (LHD models)
- through 10A fuse [No. 10, located in the fuse block (J/B)].
- to combination meter terminal 24
- through 10A fuse [No. 30, located in the fuse block (J/B)].

Ground is supplied

- to terminal 7 of front power window switch (passenger side),
- to power window relay terminal 2 (RHD models), and
- to power window main switch terminal 13 (LHD models)
- through body grounds M9, M25 and M87.
- to terminal 7 of rear power window switch LH and RH,
- through body grounds B7 and B12 or B106 and B127.

With power and ground supplied, power window switch illumination lamps illuminate and power window relay is energized.

Power is supplied (RHD models)

- from power window relay terminal 5
- to power window main switch terminal 12.

Ground is supplied (RHD models)

- to power window main switch terminal 19
- through body grounds M9, M25 and M87.

Power window main switch illumination lamps illuminate.

LIGHTING OPERATION

NFEL0035S01

When lighting switch is in 1ST (or 2ND) position, power is supplied

- to illumination lamps
- through lighting switch terminal 12.

Ground is supplied and illumination lamps illuminate.

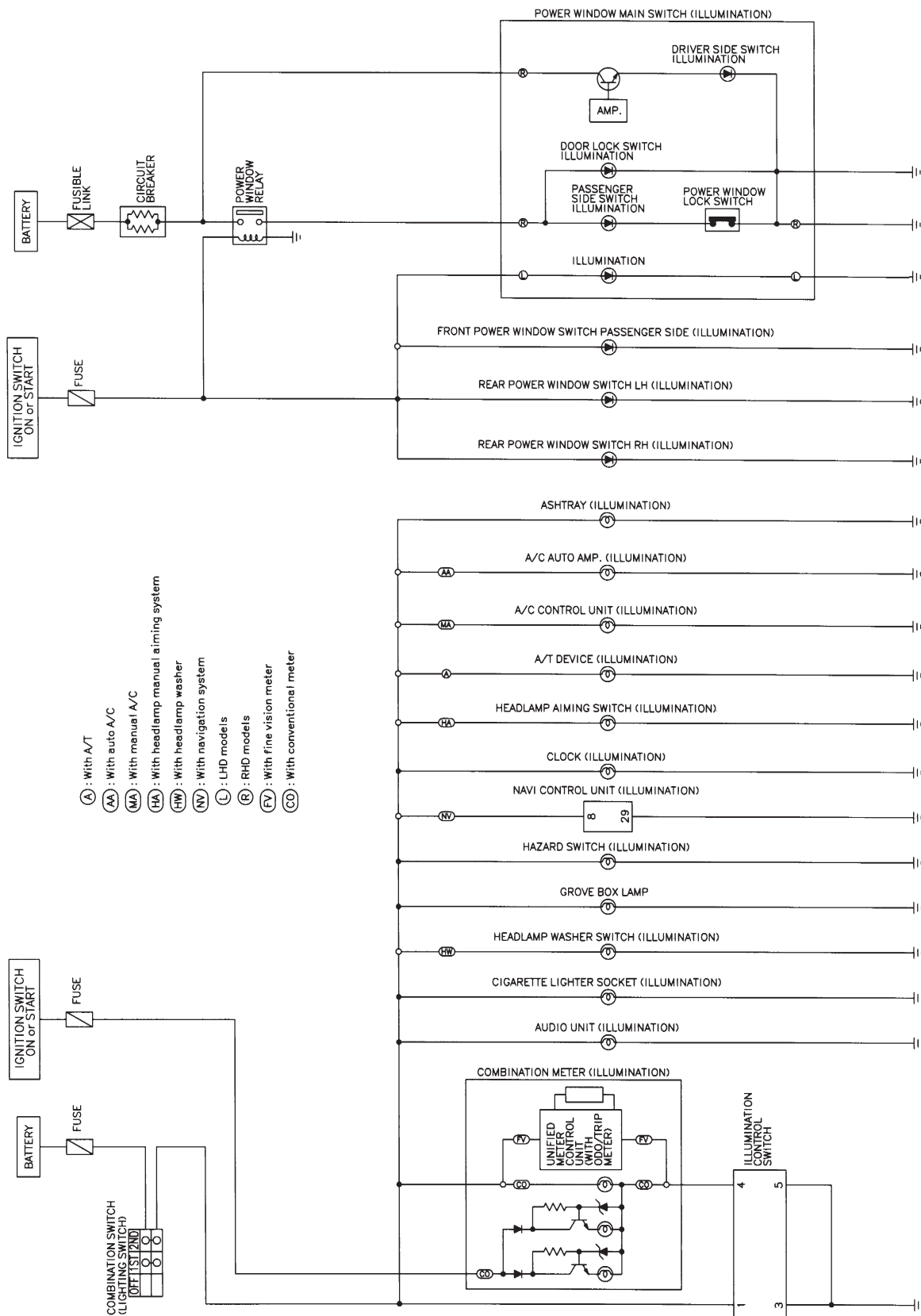
The illumination control switch that controls the amount of current to the illumination system. As the amount of current increases, the illumination becomes brighter.

ILLUMINATION

Schematic

Schematic

NFEL0036



MEL832M

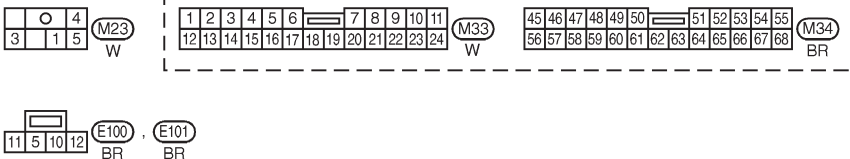
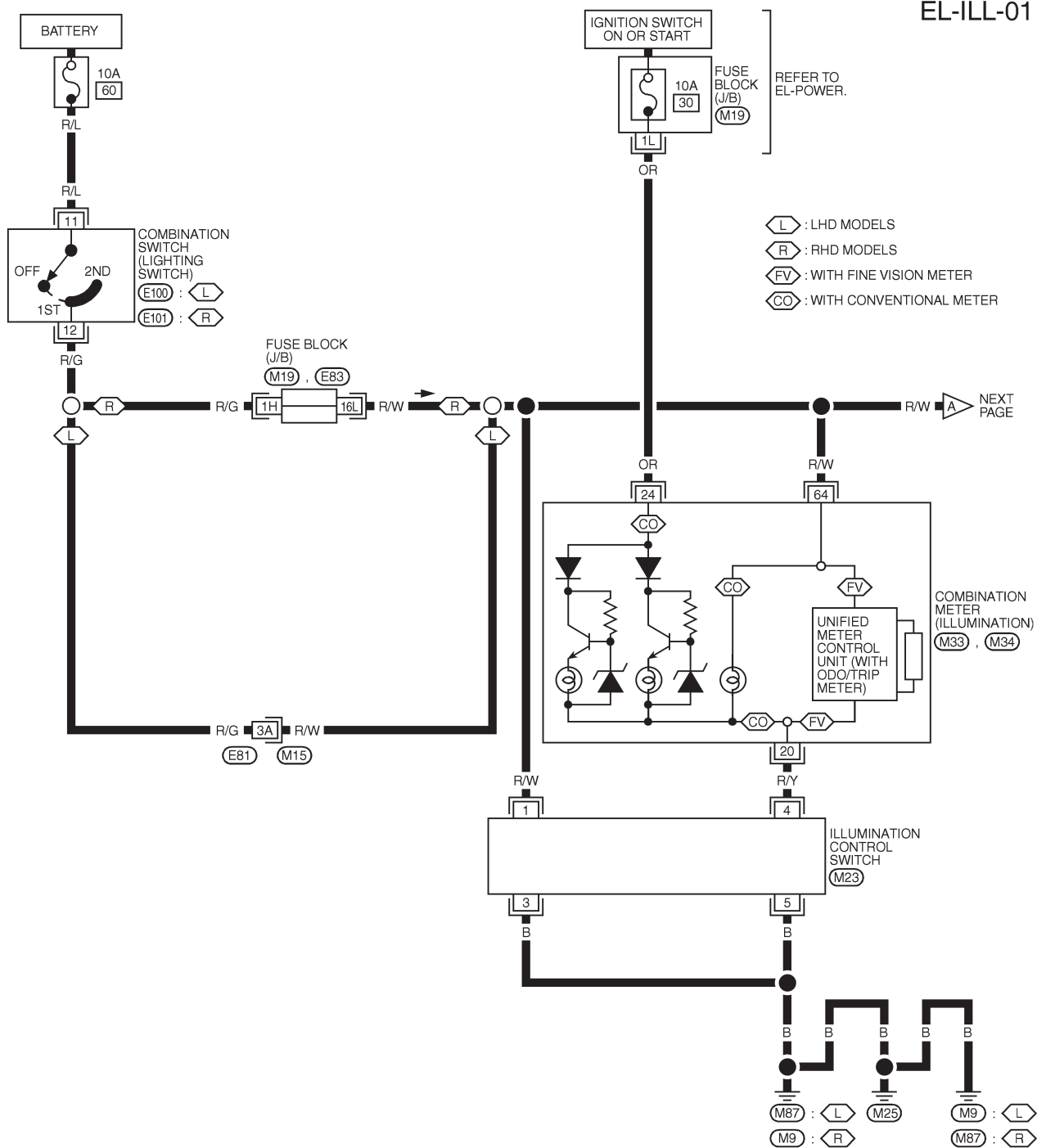
ILLUMINATION

Wiring Diagram — ILL —

Wiring Diagram — ILL —

NFEL0037

EL-ILL-01



REFER TO THE FOLLOWING.

- (M15) -SUPER
- MULTIPLE JUNCTION (SMJ)
- (M19), (E83) -FUSE BLOCK-JUNCTION BOX (J/B)

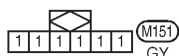
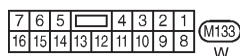
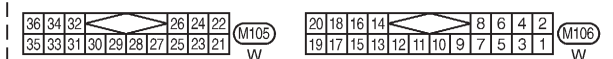
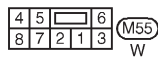
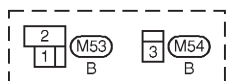
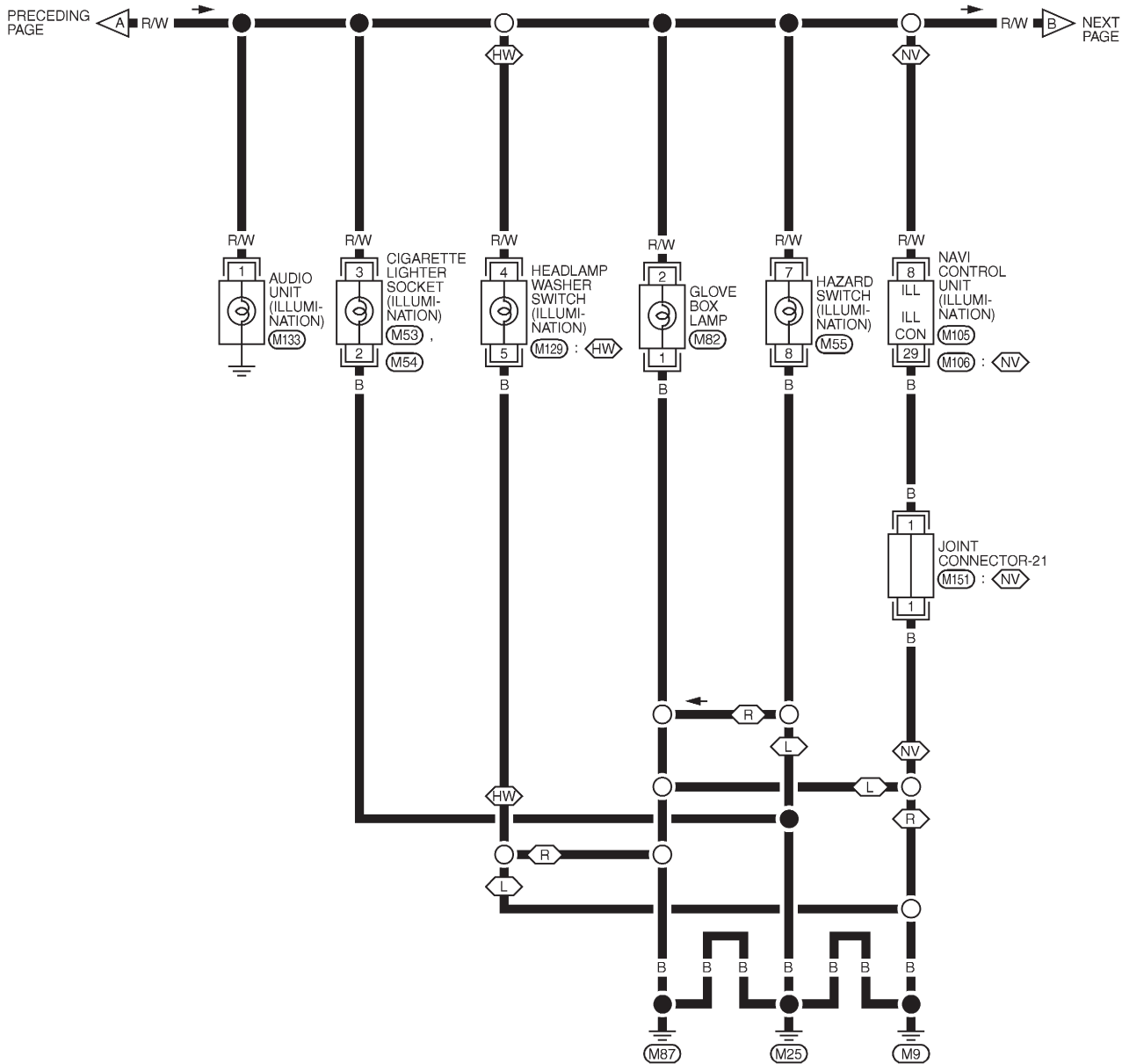
MEL833M

ILLUMINATION

Wiring Diagram — ILL — (Cont'd)

EL-ILL-02

- L : LHD MODELS
- R : RHD MODELS
- HW : WITH HEADLAMP WASHER
- NV : WITH NAVIGATION SYSTEM



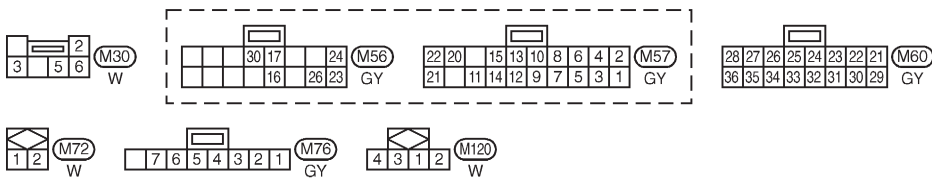
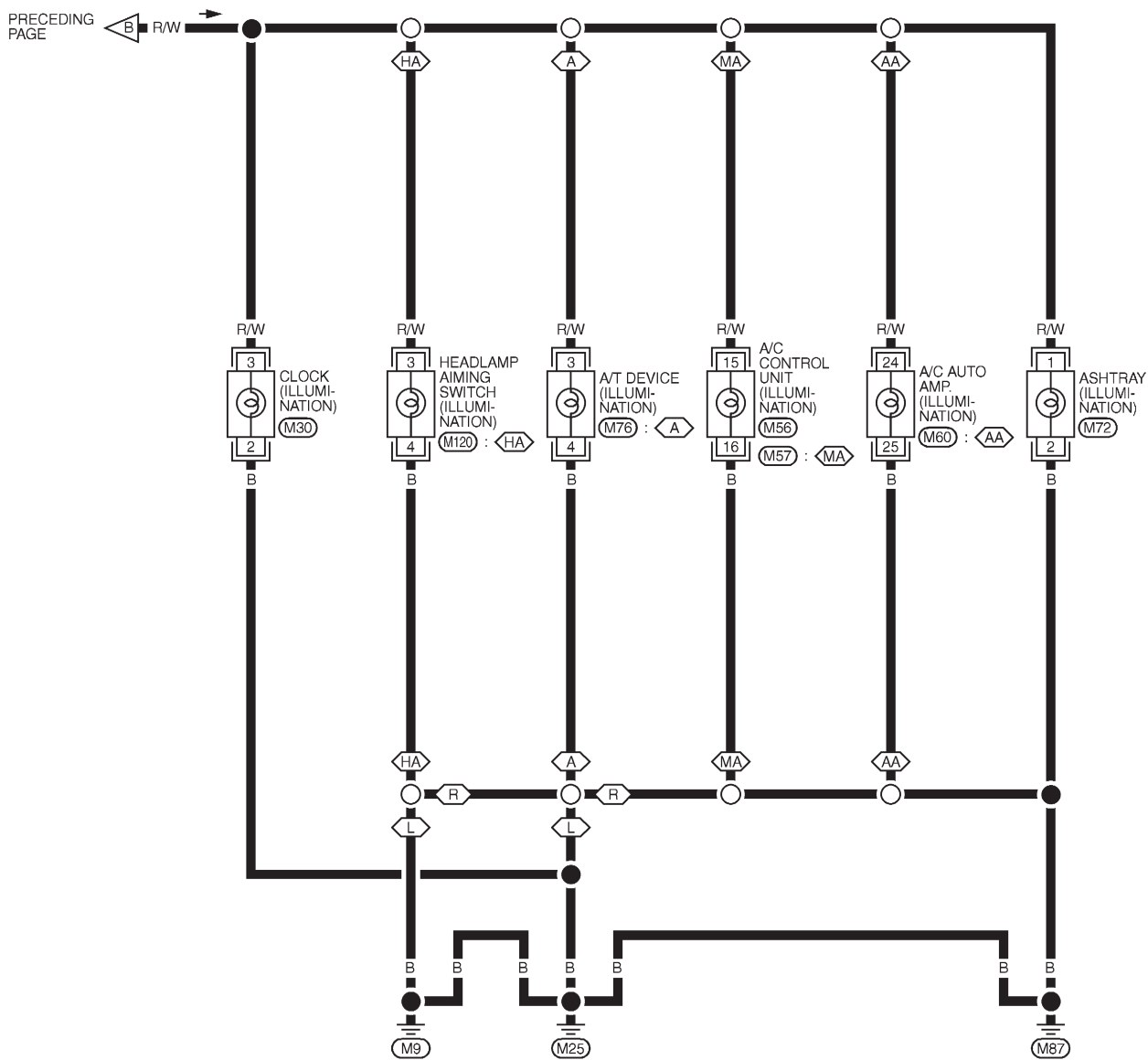
MEL834M

ILLUMINATION

Wiring Diagram — ILL — (Cont'd)

EL-ILL-03

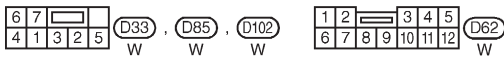
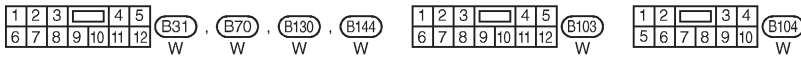
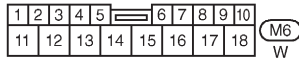
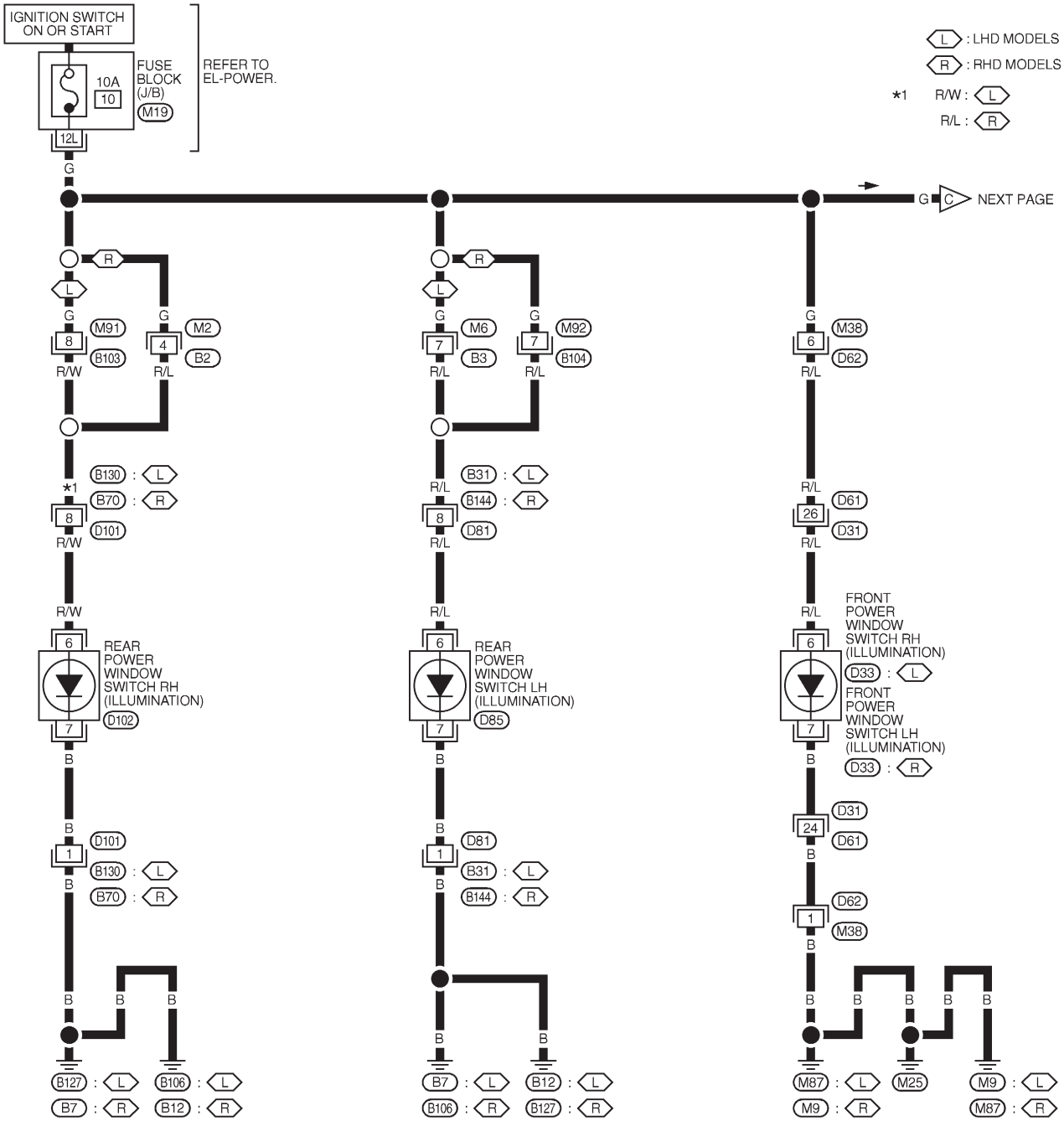
- L : LHD MODELS
- R : RHD MODELS
- A : WITH A/T
- AA : WITH AUTO A/C
- MA : WITH MANUAL A/C
- HA : WITH HEADLAMP
MANUAL AIMING SYSTEM



MEL107M

ILLUMINATION

EL-ILL-04



REFER TO THE FOLLOWING.

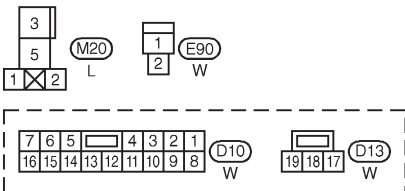
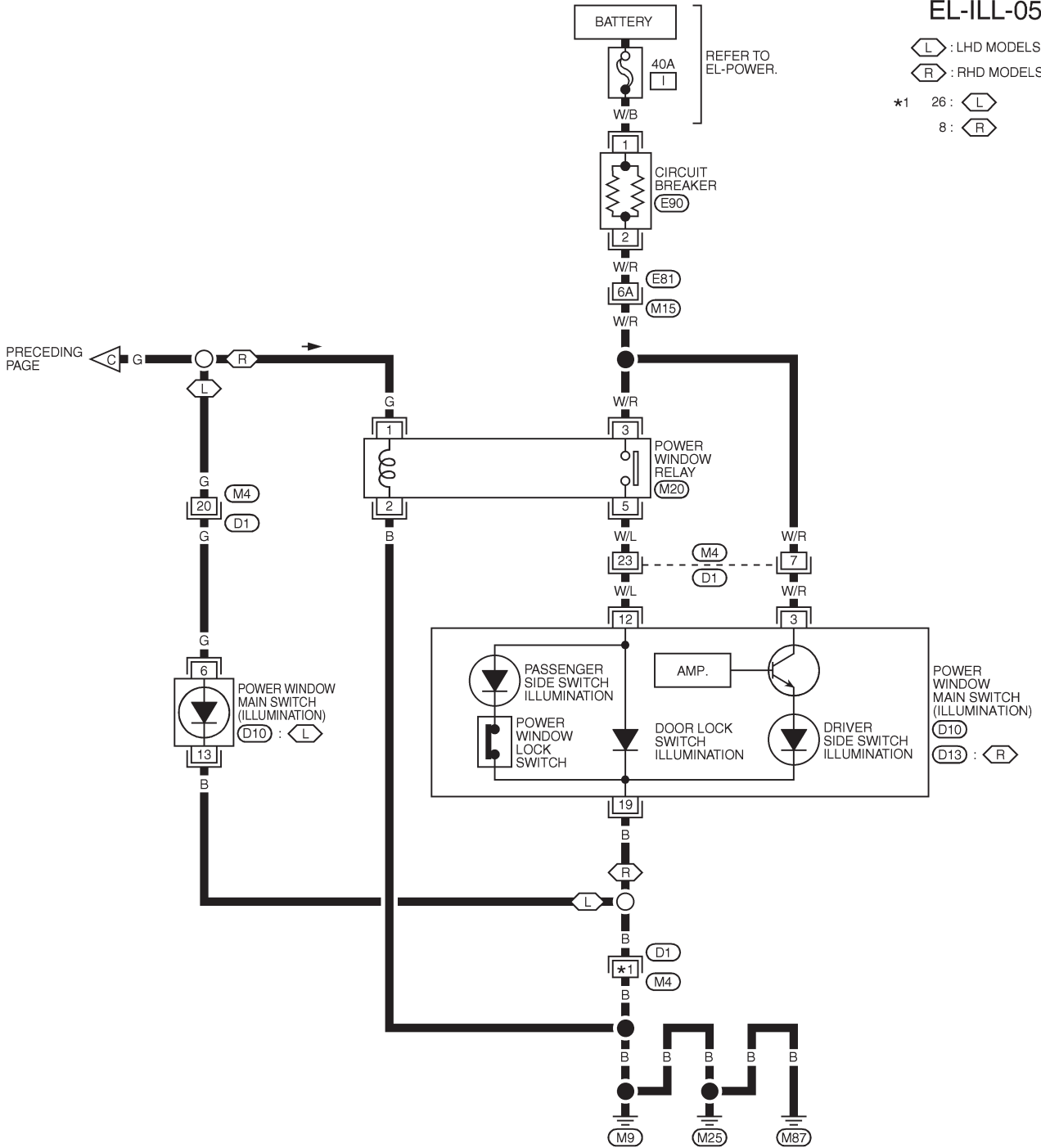
- D31 - SUPER
- MULTIPLE JUNCTION (SMJ)
- M19 - FUSE BLOCK-JUNCTION BOX (J/B)

ILLUMINATION

Wiring Diagram — ILL — (Cont'd)

EL-ILL-05

L : LHD MODELS
R : RHD MODELS
 *1 26 : L
8 : R



REFER TO THE FOLLOWING.
M15 , D1 -SUPER
 MULTIPLE JUNCTION (SMJ)

MEL836M

System Description

NFEL0165

NFEL0165S01

POWER SUPPLY AND GROUND

Power is supplied at all times:

- through 40A fusible link (Letter I, located in the fuse and fusible link box)
- to circuit breaker terminal 1
- through circuit breaker terminal 2
- to time control unit terminal 10.

Power is supplied at all times:

- through 10A fuse [No. 12, located in the fuse block (J/B)]
- to key switch terminal 2 and
- to time control unit terminal 1
- through 10A fuse [No. 13, located in the fuse block (J/B)]
- to interior lamp, key hole illumination, front step lamp (LH and RH), spot lamp, vanity mirror (LH and RH) and trunk room lamp.

When the key is removed from ignition key cylinder, power is interrupted:

- through key switch terminal 1
- to time control unit terminal 18.

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

- through 10A fuse [No. 10, located in the fuse block (J/B)]
- to time control unit terminal 17.

Ground is supplied:

- to time control unit terminal 16
- through body grounds terminals M9, M25 and M87.

When the front driver side door is opened, ground is supplied:

- through body grounds B12 and B30 (LHD models) or B7 (RHD models)
- to front door switch (driver side) terminal 3
- from front door switch (driver side) terminal 2
- to time control unit terminal 30.

When any other door is opened, ground is supplied:

- through case ground of each door switch
- to each door switch terminal 1
- to time control unit terminal 31.

When the front driver side door is unlocked, time control unit receives a ground signal:

- through body grounds terminals M9, M25 and M87
- to front door lock actuator (door unlock sensor) (driver side) terminal 5.
- from front door lock actuator (door unlock sensor) (driver side) terminal 2.
- to time control unit terminal 28.

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

- through time control unit terminal 26
- to interior lamp terminal 2 and key hole illumination terminal 1.

With power and ground supplied, the interior lamp and key hole illumination illuminate.

SWITCH OPERATION

When interior lamp switch is ON, ground is supplied:

- through case grounds of interior lamp
- to interior lamp.

When spot lamp (LH and/or RH) is ON, ground is supplied:

- through body grounds M9, M25 and M87
- to spot lamp terminal 2.

When vanity mirror illumination (LH and/or RH) is ON, ground is supplied:

- through body grounds M9, M25 and M87
- to vanity mirror illuminations (LH and RH) terminals 2.

NFEL0165S02

INTERIOR, STEP, SPOT, VANITY MIRROR AND TRUNK ROOM LAMPS

System Description (Cont'd)

When any door switch is ON (door is opened), ground is supplied:

- through case ground of each door switch
- from each door switch terminal 1
- to front step lamp LH and RH terminals 2.

When trunk room lamp switch is ON (trunk lid is opened), ground is supplied:

- through body grounds T6 and T8
- to trunk room lamp switch terminal 2
- from trunk room lamp switch terminal 1
- to trunk room lamp terminal 2

With power and ground supplied, interior lamps turn ON.

INTERIOR LAMP TIMER OPERATION

When interior lamp switch is in the "DOOR" position, the time control unit keeps the interior lamp and key hole illumination are illuminated for about 30 seconds when:

NFEL0165S03

- unlock signal is supplied from driver's door unlock sensor while all doors are closed and key is out of ignition key cylinder
- key is removed from ignition key cylinder while all doors are closed
- driver's door is opened and then closed while key is out of the ignition key cylinder. (However, if the driver's door is closed with the key inserted in the ignition key cylinder after the driver's door is opened with the key removed, the timer is operated.)

The timer is canceled when:

- driver's door is locked,
- driver's door is opened, or
- ignition switch is turned ON.

ON-OFF CONTROL

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

NFEL0165S04

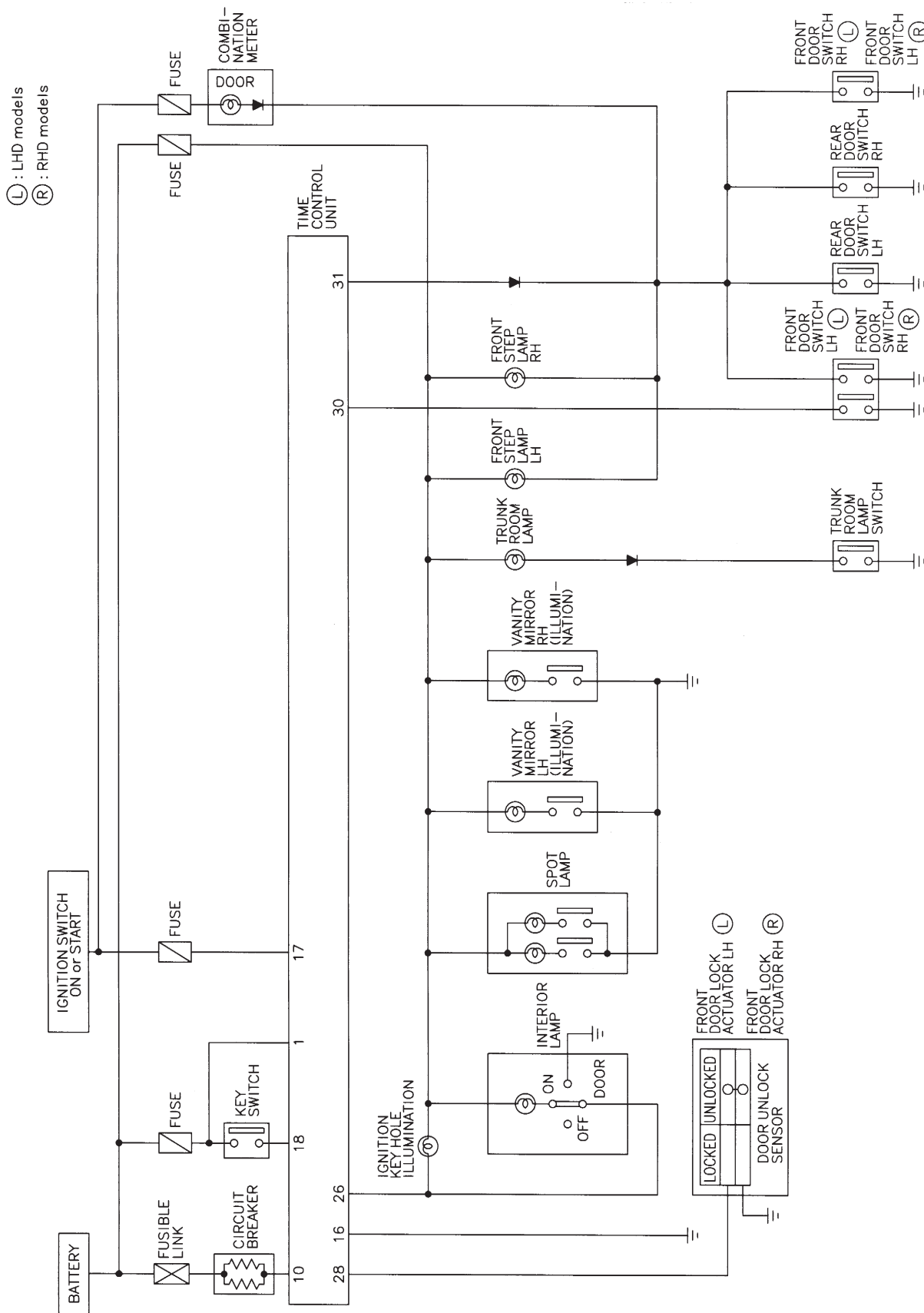
When any door is opened, step lamps turn ON.

INTERIOR, STEP, SPOT, VANITY MIRROR AND TRUNK ROOM LAMPS

Schematic

Schematic

NFEL0212



MEL837M

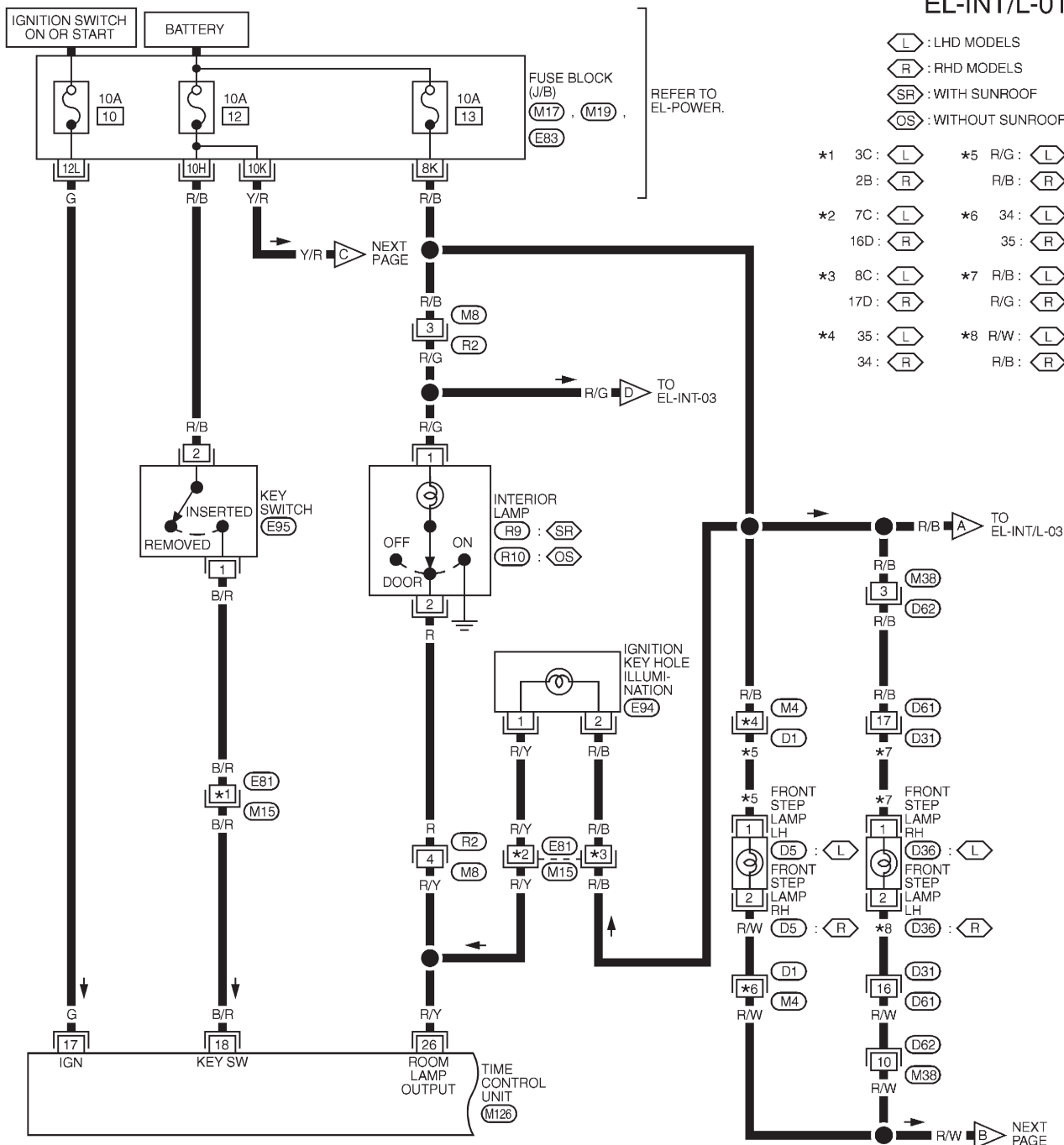
INTERIOR, STEP, SPOT, VANITY MIRROR AND TRUNK ROOM LAMPS

Wiring Diagram — INT/L —

Wiring Diagram — INT/L —

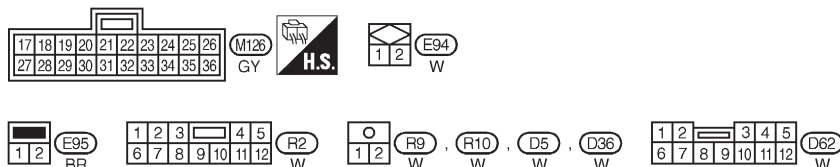
NFEL0163

EL-INT/L-01



- ⬡ : LHD MODELS
- ⬢ : RHD MODELS
- ⬤ : WITH SUNROOF
- ⬥ : WITHOUT SUNROOF

- | | |
|----------|-----------|
| *1 3C: ⬡ | *5 R/G: ⬡ |
| 2B: ⬢ | R/VB: ⬢ |
| *2 7C: ⬡ | *6 34: ⬡ |
| 16D: ⬢ | 35: ⬢ |
| *3 8C: ⬡ | *7 R/B: ⬡ |
| 17D: ⬢ | R/G: ⬢ |
| *4 35: ⬡ | *8 R/W: ⬡ |
| 34: ⬢ | R/B: ⬢ |

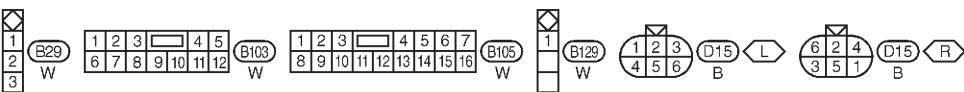
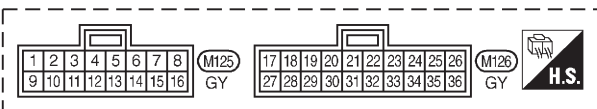
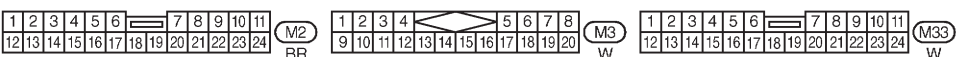
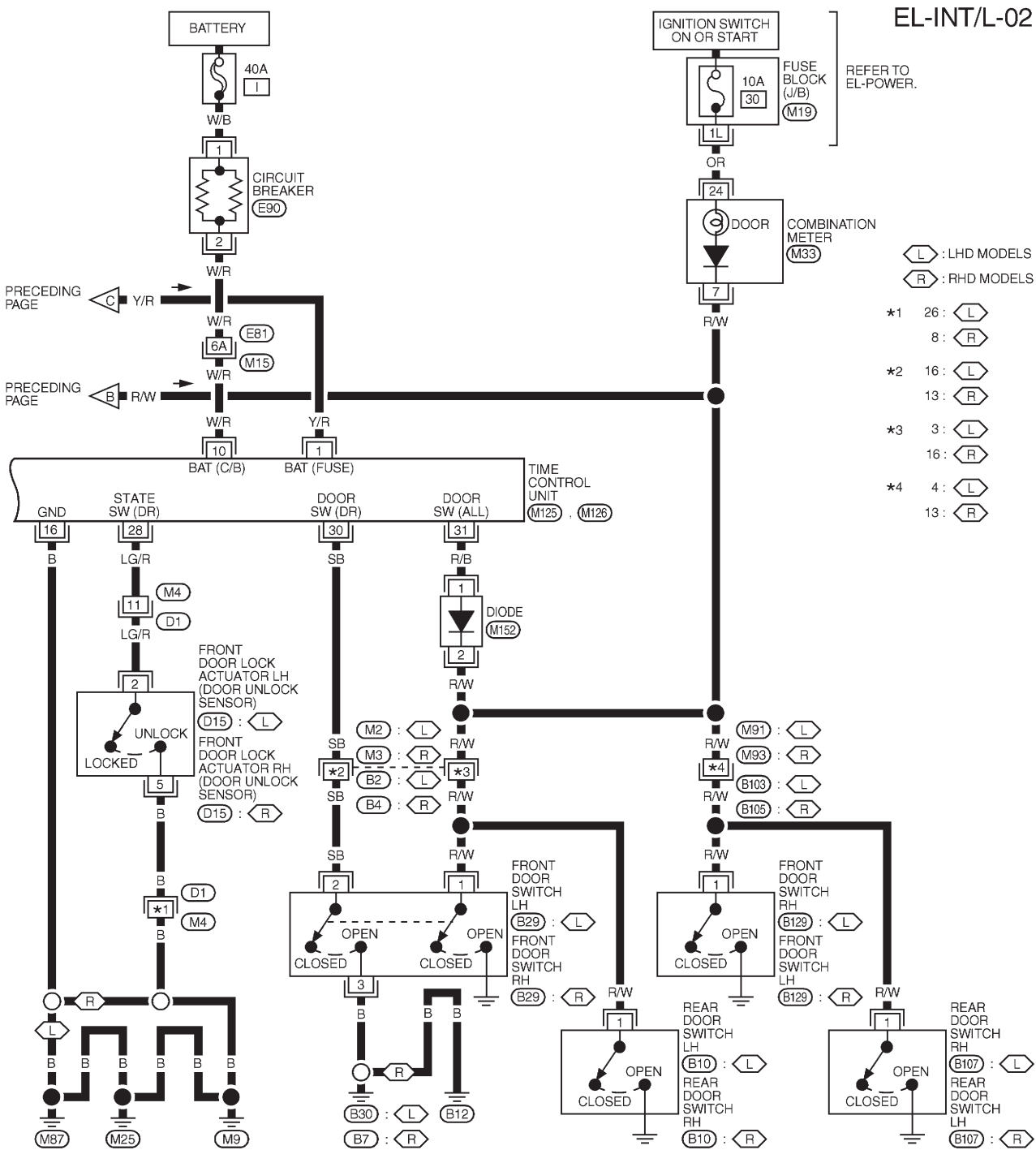


REFER TO THE FOLLOWING.
 (M15), (D1), (D31) -SUPER
 MULTIPLE JUNCTION (SMJ)
 (M17), (M19), (E83)
 -FUSE BLOCK-
 JUNCTION BOX (J/B)

MEL838M

INTERIOR, STEP, SPOT, VANITY MIRROR AND TRUNK ROOM LAMPS

Wiring Diagram — INT/L — (Cont'd)



REFER TO THE FOLLOWING.
 (M15), (D1) -SUPER
 MULTIPLE JUNCTION (SMJ)
 (M19) -FUSE BLOCK-
 JUNCTION BOX (J/B)

EL-INT/L-02

(L) : LHD MODELS
 (R) : RHD MODELS

- *1 26 : (L)
8 : (R)
- *2 16 : (L)
13 : (R)
- *3 3 : (L)
16 : (R)
- *4 4 : (L)
13 : (R)

INTERIOR, STEP, SPOT, VANITY MIRROR AND TRUNK ROOM LAMPS

Wiring Diagram — INT/L — (Cont'd)

EL-INT/L-03

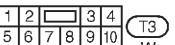
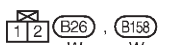
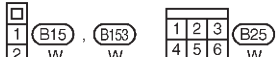
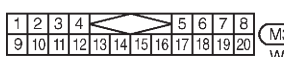
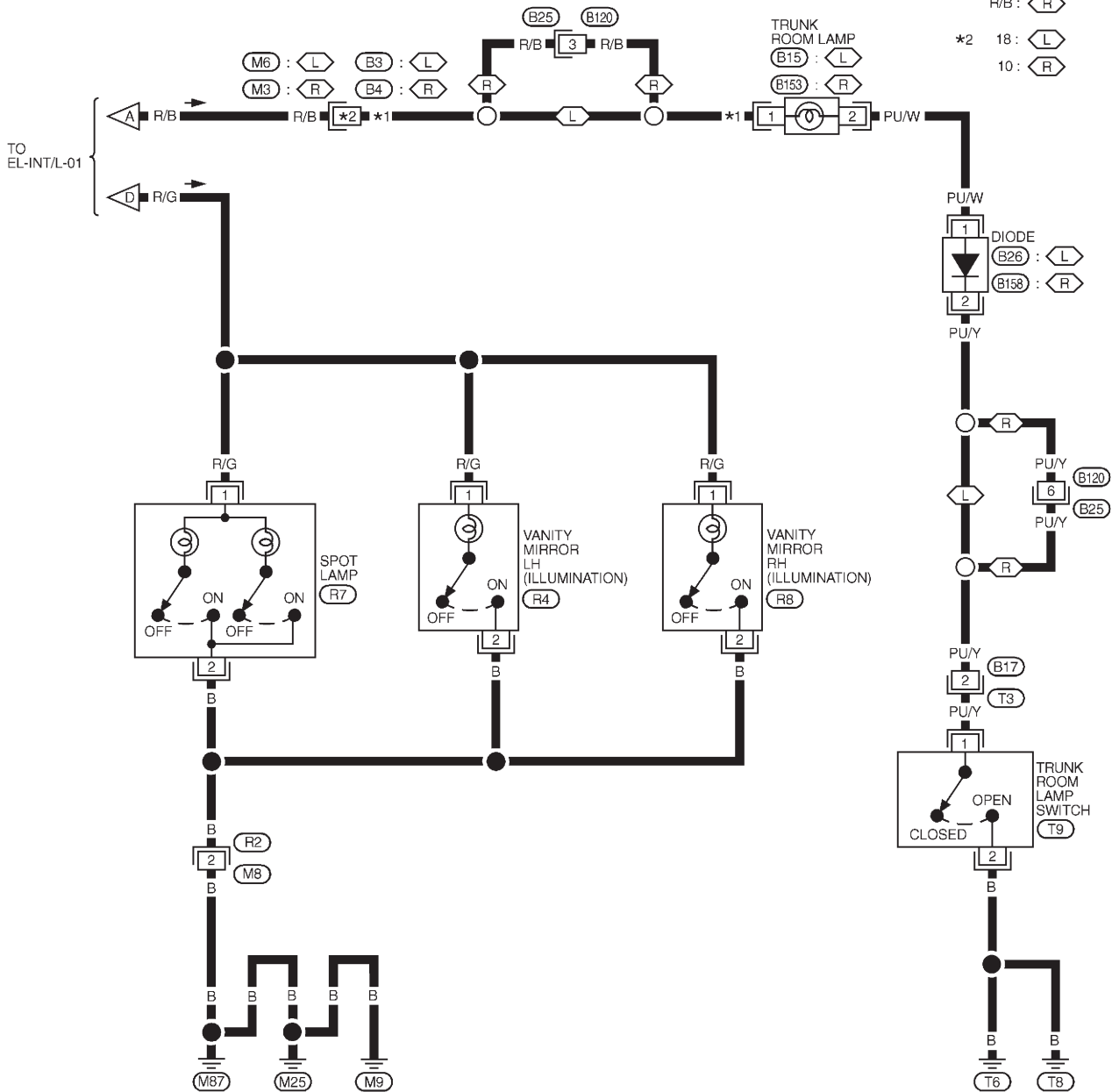
◻ : LHD MODELS
 ◻ : RHD MODELS

*1 R/G: ◻

R/B: ◻

*2 18: ◻

10: ◻



MEL839M

INTERIOR, STEP, SPOT, VANITY MIRROR AND TRUNK ROOM LAMPS

Trouble Diagnoses for Interior Lamp Timer


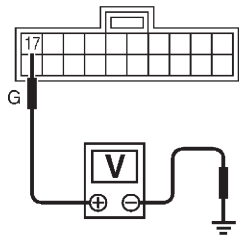
Trouble Diagnoses for Interior Lamp Timer


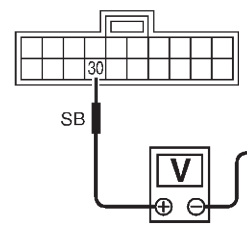
=NFEL0215

DIAGNOSTIC PROCEDURE 1

NFEL0215S01

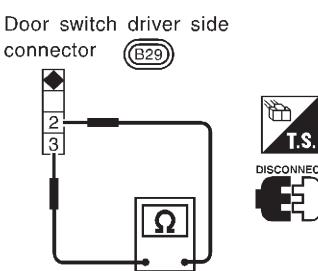
SYMPTOM: Interior lamp timer does not operate.

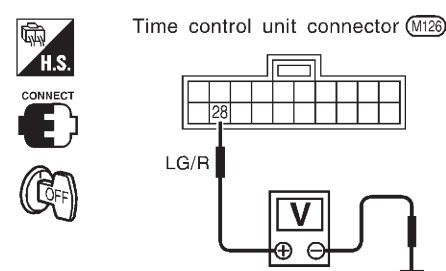
1	CHECK IGNITION ON SIGNAL																		
Check voltage between time control unit terminal 17 and ground.																			
<div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="width: 20%;">  </div> <div style="width: 30%;"> <p>Time control unit connector (M126)</p>  </div> <div style="width: 45%;"> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th colspan="2">Terminals</th> <th colspan="3">Ignition switch position</th> </tr> <tr> <th>(+)</th> <th>(-)</th> <th>OFF</th> <th>ACC</th> <th>ON</th> </tr> </thead> <tbody> <tr> <td>17</td> <td>Ground</td> <td>0V</td> <td>0V</td> <td>Battery voltage</td> </tr> </tbody> </table> </div> </div>					Terminals		Ignition switch position			(+)	(-)	OFF	ACC	ON	17	Ground	0V	0V	Battery voltage
Terminals		Ignition switch position																	
(+)	(-)	OFF	ACC	ON															
17	Ground	0V	0V	Battery voltage															
SEL257X																			
OK or NG																			
OK	▶	GO TO 2.																	
NG	▶	Check the following. <ul style="list-style-type: none"> ● 10A fuse [No. 10, located in fuse block (J/B)] ● Harness for open or short between time control unit and fuse 																	

2	CHECK DOOR SWITCH INPUT SIGNAL			
Check voltage between time control unit terminal 30 and ground.				
<div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="width: 20%;">  </div> <div style="width: 30%;"> <p>Time control unit connector (M126)</p>  </div> <div style="width: 45%;"> <p>Voltage [V]:</p> <p>Condition of driver's door: CLOSED Approx. 5</p> <p>Condition of driver's door: OPENED 0</p> </div> </div>				
SEL258X				
OK or NG				
OK	▶	GO TO 4.		
NG	▶	GO TO 3.		

INTERIOR, STEP, SPOT, VANITY MIRROR AND TRUNK ROOM LAMPS


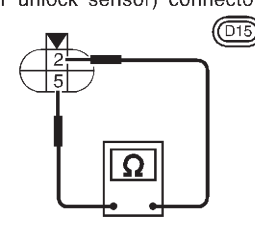
Trouble Diagnoses for Interior Lamp Timer (Cont'd)


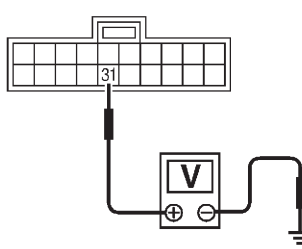
3	CHECK DRIVER SIDE DOOR SWITCH	<p>Check continuity between door switch terminals 2 and 3.</p> <div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="width: 45%;"> <p>Door switch driver side connector (B29)</p>  </div> <div style="width: 50%; text-align: center;"> <p>Continuity: Door switch is pushed. No Door switch is released. Yes</p> </div> </div> <p style="text-align: right; font-size: small;">SEL325W</p> <p style="text-align: center; margin-top: 10px;">OK or NG</p>		
OK	▶	<p>Check the following.</p> <ul style="list-style-type: none"> Driver side door switch ground circuit and condition Harness for open or short between time control unit and driver side door switch 		
NG	▶	<p>Replace driver side door switch.</p>		

4	CHECK FRONT DOOR UNLOCK SENSOR INPUT SIGNAL	<p>Check voltage between time control unit terminal 28 and ground.</p> <div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="width: 45%;"> <p>Time control unit connector (M126)</p>  </div> <div style="width: 50%;"> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th rowspan="2">Unit</th> <th colspan="2">Terminals</th> <th rowspan="2">Condition (Driver's door)</th> <th rowspan="2">Voltage [V]</th> </tr> <tr> <th>(+)</th> <th>(-)</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Time control unit</td> <td rowspan="2">28</td> <td rowspan="2">Ground</td> <td>Locked</td> <td>Approx. 5</td> </tr> <tr> <td>Unlocked</td> <td>0</td> </tr> </tbody> </table> </div> </div> <p style="text-align: right; font-size: small;">SEL259X</p> <p style="text-align: center; margin-top: 10px;">OK or NG</p>			Unit	Terminals		Condition (Driver's door)	Voltage [V]	(+)	(-)	Time control unit	28	Ground	Locked	Approx. 5	Unlocked	0
Unit	Terminals		Condition (Driver's door)	Voltage [V]														
	(+)	(-)																
Time control unit	28	Ground	Locked	Approx. 5														
			Unlocked	0														
OK	▶	<p>GO TO 6.</p>																
NG	▶	<p>GO TO 5.</p>																

INTERIOR, STEP, SPOT, VANITY MIRROR AND TRUNK ROOM LAMPS

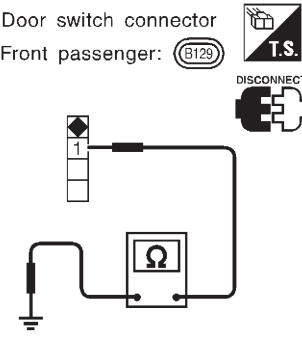
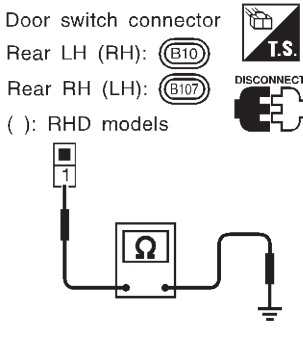
Trouble Diagnoses for Interior Lamp Timer (Cont'd)

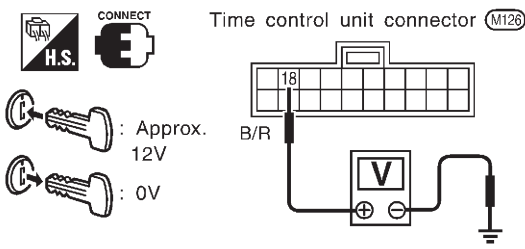
5	CHECK FRONT DOOR UNLOCK SENSOR		
<p>1. Disconnect front door unlock sensor harness connector. 2. Check continuity between door unlock sensor terminals.</p>			
<div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="width: 15%;">  <p style="font-size: small;">DISCONNECT</p> </div> <div style="width: 30%;"> <p>Front door lock actuator for (door unlock sensor) connector</p>  </div> <div style="width: 40%;"> <p>Continuity: Condition: Locked No Condition: Unlocked Yes</p> </div> </div>			
SEL260X			
OK or NG			
OK	▶	<p>Check the following.</p> <ul style="list-style-type: none"> ● Door unlock sensor ground circuit ● Harness for open or short between time control unit and door unlock sensor 	
NG	▶	Replace door unlock sensor.	

6	CHECK DOOR SWITCHES INPUT SIGNAL																
Check voltage between time control unit connector M126 terminal 31 (R/B) and ground.																	
<div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="width: 15%;">  <p style="font-size: small;">CONNECT</p> </div> <div style="width: 30%;"> <p>Time control unit connector</p>  </div> <div style="width: 40%;"> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th rowspan="2">Unit</th> <th colspan="2">Terminals</th> <th rowspan="2">Condition (All doors)</th> <th rowspan="2">Voltage [V]</th> </tr> <tr> <th>(+)</th> <th>(-)</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Time control unit</td> <td rowspan="2">31</td> <td rowspan="2">Ground</td> <td>Open</td> <td>0</td> </tr> <tr> <td>Closed</td> <td>Approx. 5</td> </tr> </tbody> </table> </div> </div>				Unit	Terminals		Condition (All doors)	Voltage [V]	(+)	(-)	Time control unit	31	Ground	Open	0	Closed	Approx. 5
Unit	Terminals		Condition (All doors)		Voltage [V]												
	(+)	(-)															
Time control unit	31	Ground	Open	0													
			Closed	Approx. 5													
SEL261XA																	
OK or NG																	
OK	▶	GO TO 8.															
NG	▶	GO TO 7.															

INTERIOR, STEP, SPOT, VANITY MIRROR AND TRUNK ROOM LAMPS

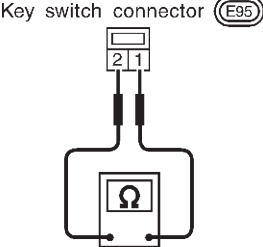
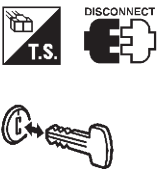
Trouble Diagnoses for Interior Lamp Timer (Cont'd)

7	CHECK DOOR SWITCHES											
<p>1. Disconnect door switch harness connector. 2. Check continuity between door switch terminal 1 and ground.</p>												
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>Door switch connector Front passenger: (B129)</p>  </div> <div style="width: 45%;"> <p>Door switch connector Rear LH (RH): (B10) Rear RH (LH): (B107) (): RHD models</p>  </div> </div> <div style="text-align: right; margin-top: 20px;"> <table border="1" style="border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;"></th> <th style="width: 20%;">Terminals</th> <th style="width: 15%;">Condition</th> <th style="width: 15%;">Continuity</th> </tr> </thead> <tbody> <tr> <td rowspan="2" style="text-align: center;">Door switches</td> <td rowspan="2" style="text-align: center;">1 - Ground</td> <td style="text-align: center;">Closed</td> <td style="text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Open</td> <td style="text-align: center;">Yes</td> </tr> </tbody> </table> </div>				Terminals	Condition	Continuity	Door switches	1 - Ground	Closed	No	Open	Yes
	Terminals	Condition	Continuity									
Door switches	1 - Ground	Closed	No									
		Open	Yes									
SEL794W												
OK or NG												
OK	▶	<p>Check the following.</p> <ul style="list-style-type: none"> ● Door switch ground circuit or door switch ground condition ● Harness for open or short between time control unit and door switch 										
NG	▶	Replace door switch.										

8	CHECK KEY SWITCH INPUT SIGNAL	
Check voltage between time control unit terminal 18 and ground.		
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>Time control unit connector (M126)</p>  <p>CONNECT H.S. (H.S. icon)</p> <p>DISCONNECT (DISCONNECT icon)</p> <p>Key inserted: Approx. 12V Key removed: 0V</p> </div> <div style="width: 45%;"> <p>Voltage [V]:</p> <p>Condition of key switch: Key is inserted. Approx. 12</p> <p>Condition of key switch: Key is removed. 0</p> </div> </div>		
SEL262X		
OK or NG		
OK	▶	Replace time control unit.
NG	▶	GO TO 9.

INTERIOR, STEP, SPOT, VANITY MIRROR AND TRUNK ROOM LAMPS

Trouble Diagnoses for Interior Lamp Timer (Cont'd)

9	CHECK KEY SWITCH (INSERT)
<p>Check continuity between terminals 1 and 2.</p> <div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="width: 45%;"> <p>Key switch connector (E95)</p>  <p style="text-align: center;">T.S.</p> <p style="text-align: center;">DISCONNECT</p>  </div> <div style="width: 45%; padding-left: 20px;"> <p>Continuity:</p> <p>Condition of key switch: Key is inserted. Yes</p> <p>Condition of key switch: Key is removed. No</p> </div> </div> <p style="text-align: right; margin-top: 20px;">SEL311W</p> <p style="text-align: center; margin-top: 10px;">OK or NG</p>	
OK	<p>▶ Check the following.</p> <ul style="list-style-type: none"> ● 10A fuse [No. 12, located in fuse block (J/B)] ● Harness for open or short between key switch and fuse ● Harness for open or short between time control unit and key switch
NG	<p>▶ Replace key switch.</p>


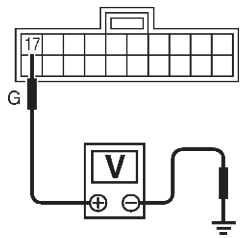
INTERIOR, STEP, SPOT, VANITY MIRROR AND TRUNK ROOM LAMPS


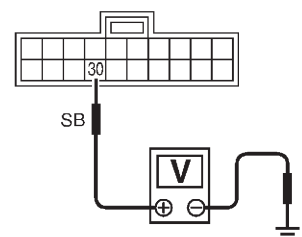
Trouble Diagnoses for Interior Lamp Timer (Cont'd)

DIAGNOSTIC PROCEDURE 2

=NFEL0215S02

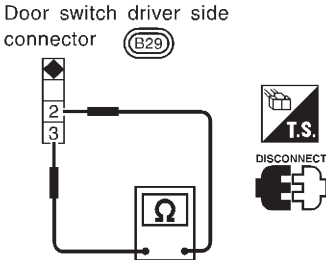
SYMPTOM: Interior lamp timer does not cancel properly.

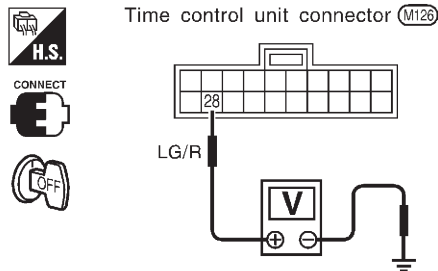
1	CHECK IGNITION ON SIGNAL																
Check voltage between time control unit terminal 17 and ground.																	
	Time control unit connector (M126) 	<table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="text-align: center;">Terminals</th> <th colspan="3" style="text-align: center;">Ignition switch position</th> </tr> <tr> <th style="text-align: center;">(+)</th> <th style="text-align: center;">(-)</th> <th style="text-align: center;">OFF</th> <th style="text-align: center;">ACC</th> <th style="text-align: center;">ON</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">17</td> <td style="text-align: center;">Ground</td> <td style="text-align: center;">0V</td> <td style="text-align: center;">0V</td> <td style="text-align: center;">Battery voltage</td> </tr> </tbody> </table>	Terminals		Ignition switch position			(+)	(-)	OFF	ACC	ON	17	Ground	0V	0V	Battery voltage
Terminals		Ignition switch position															
(+)	(-)	OFF	ACC	ON													
17	Ground	0V	0V	Battery voltage													
SEL257X																	
OK or NG																	
OK	▶	GO TO 2.															
NG	▶	Check the following. <ul style="list-style-type: none"> 10A fuse [No. 10, located in fuse block (J/B)] Harness for open or short between time control unit and fuse 															

2	CHECK DOOR SWITCH INPUT SIGNAL	
Check voltage between time control unit terminal 30 and ground.		
	Time control unit connector (M126) 	Voltage [V]: Condition of driver's door: CLOSED Approx. 5 Condition of driver's door: OPENED 0
SEL258X		
OK or NG		
OK	▶	GO TO 4.
NG	▶	GO TO 3.

INTERIOR, STEP, SPOT, VANITY MIRROR AND TRUNK ROOM LAMPS


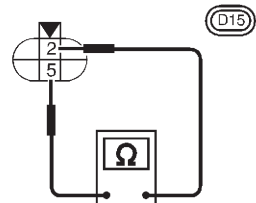
Trouble Diagnoses for Interior Lamp Timer (Cont'd)

3	CHECK DRIVER SIDE DOOR SWITCH		
Check continuity between terminals 2 and 3.			
		<p>Continuity: Door switch is pushed. No Door switch is released. Yes</p>	
SEL325W			
OK or NG			
OK	▶	Check the following. <ul style="list-style-type: none"> ● Driver side door switch ground circuit and condition ● Harness for open or short between time control unit and driver side door switch 	
NG	▶	Replace driver side door switch.	

4	CHECK FRONT DOOR UNLOCK SENSOR INPUT SIGNAL																
Check voltage between time control unit terminal 28 and ground.																	
		<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">Unit</th> <th colspan="2">Terminals</th> <th rowspan="2">Condition (Driver's door)</th> <th rowspan="2">Voltage [V]</th> </tr> <tr> <th>(+)</th> <th>(-)</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Time control unit</td> <td rowspan="2">28</td> <td rowspan="2">Ground</td> <td>Locked</td> <td>Approx. 5</td> </tr> <tr> <td>Unlocked</td> <td>0</td> </tr> </tbody> </table>		Unit	Terminals		Condition (Driver's door)	Voltage [V]	(+)	(-)	Time control unit	28	Ground	Locked	Approx. 5	Unlocked	0
Unit	Terminals		Condition (Driver's door)		Voltage [V]												
	(+)	(-)															
Time control unit	28	Ground	Locked	Approx. 5													
			Unlocked	0													
SEL259X																	
OK or NG																	
OK	▶	Replace time control unit.															
NG	▶	GO TO 5.															

INTERIOR, STEP, SPOT, VANITY MIRROR AND TRUNK ROOM LAMPS

Trouble Diagnoses for Interior Lamp Timer (Cont'd)

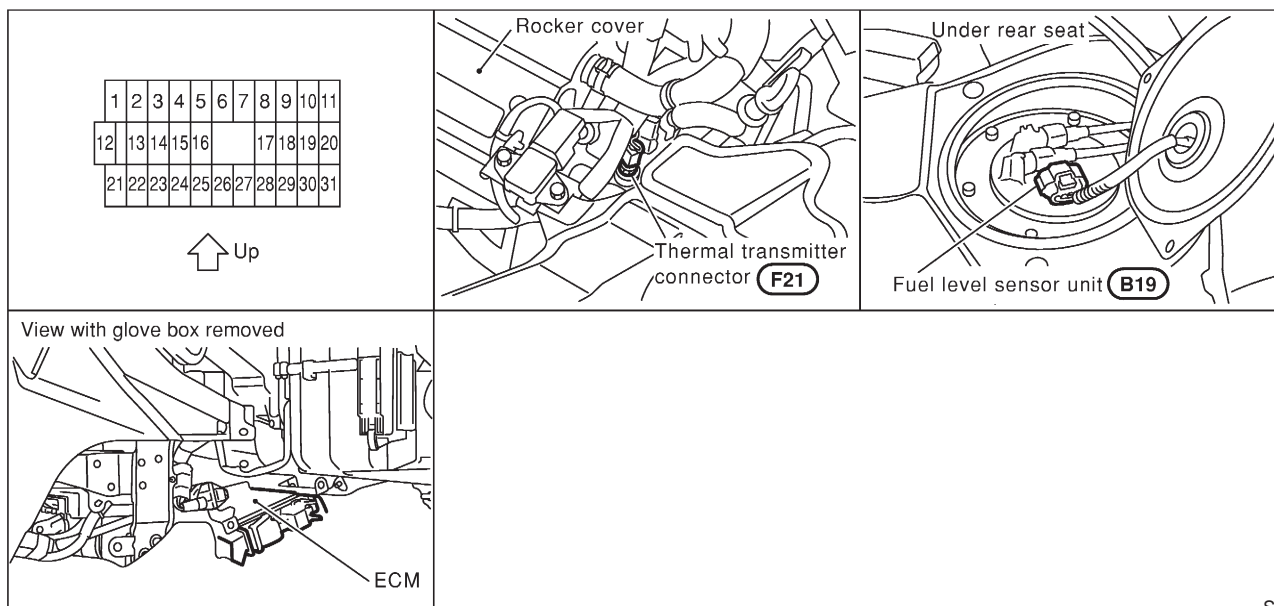
5	CHECK FRONT DOOR UNLOCK SENSOR
<p>1. Disconnect front door unlock sensor harness connector. 2. Check continuity between door unlock sensor terminals.</p> <div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="width: 20%;">  </div> <div style="width: 30%;"> <p>Front door lock actuator for (door unlock sensor) connector</p>  </div> <div style="width: 40%; text-align: center;"> <p>Continuity: Condition: Locked No Condition: Unlocked Yes</p> </div> </div> <p style="text-align: right; margin-top: 20px;">SEL260X</p>	
OK	<p style="text-align: center;">▶ Check the following.</p> <ul style="list-style-type: none"> ● Door unlock sensor ground circuit ● Harness for open or short between time control unit and door unlock sensor
NG	<p style="text-align: center;">▶ Replace door unlock sensor.</p>

METERS AND GAUGES

Component Parts and Harness Connector Location

Component Parts and Harness Connector Location

NFEL0041



SEL168W

System Description

NFEL0042

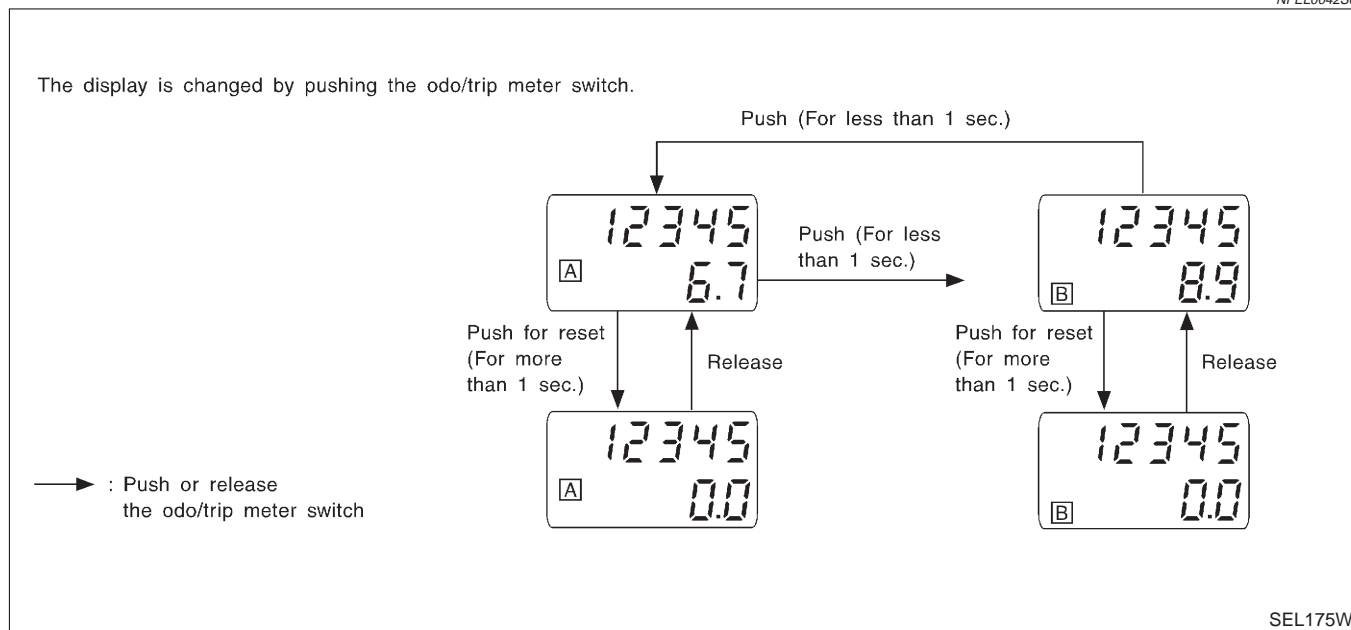
UNIFIED CONTROL METER

NFEL0042S06

- Speedometer, odo/trip meter, tachometer, fuel gauge and water temperature gauge are controlled totally by control unit built-in combination meter.
- Digital meter is adopted for odo/trip meter.*
*The record of the odo meter is kept even if the battery cable is disconnected. The record of the trip meter is erased when the battery cable is disconnected.
- Odo/trip meter is indicated for about 30 seconds after ignition switch has been turned OFF.
- Odo/trip meter segment can be checked in diagnosis mode.
- Meter/gauge can be checked in diagnosis mode.

HOW TO CHANGE THE DISPLAY FOR ODO/TRIP METER

NFEL0042S07



SEL175W

NOTE:

Turn ignition switch to the "ON" position to operate odo/trip meter.

METERS AND GAUGES

System Description (Cont'd)

POWER SUPPLY AND GROUND CIRCUIT

NFEL0042S08

Power is supplied at all times

- through 10A fuse [No. 12, located in the fuse block (J/B)]
- to combination meter terminal 23.

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

- through 10A fuse [No. 14, located in the fuse block (J/B)]
- to combination meter terminal 31.

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

- through 10A fuse [No. 30, located in the fuse block (J/B)]
- to combination meter terminal 24.

Ground is supplied

- to combination meter terminal 22
- through body grounds M9, M25 and M87.

WATER TEMPERATURE GAUGE

NFEL0042S01

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 18 of the combination meter for the water temperature gauge. The needle on the gauge moves from "C" to "H".

TACHOMETER

NFEL0042S02

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

The tachometer is regulated by a signal

- from terminal 25 of the ECM
- to combination meter terminal 16 for the tachometer.

FUEL GAUGE

NFEL0042S03

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

The fuel gauge is regulated by a variable ground signal supplied

- to combination meter terminal 17 for the fuel gauge
- from terminal 2 of the fuel level sensor unit
- through terminal 5 of the fuel level sensor unit and
- through body grounds B7 and B12.

SPEEDOMETER

NFEL0042S04

The combination meter receives a signal from the ABS actuator and electric unit for the speedometer.

The voltage is supplied

- from combination meter terminal 15 for the speedometer
- to terminal 19 of ABS actuator and electric unit.

The speedometer converts the voltage into the vehicle speed displayed.

METERS AND GAUGES

Combination Meter

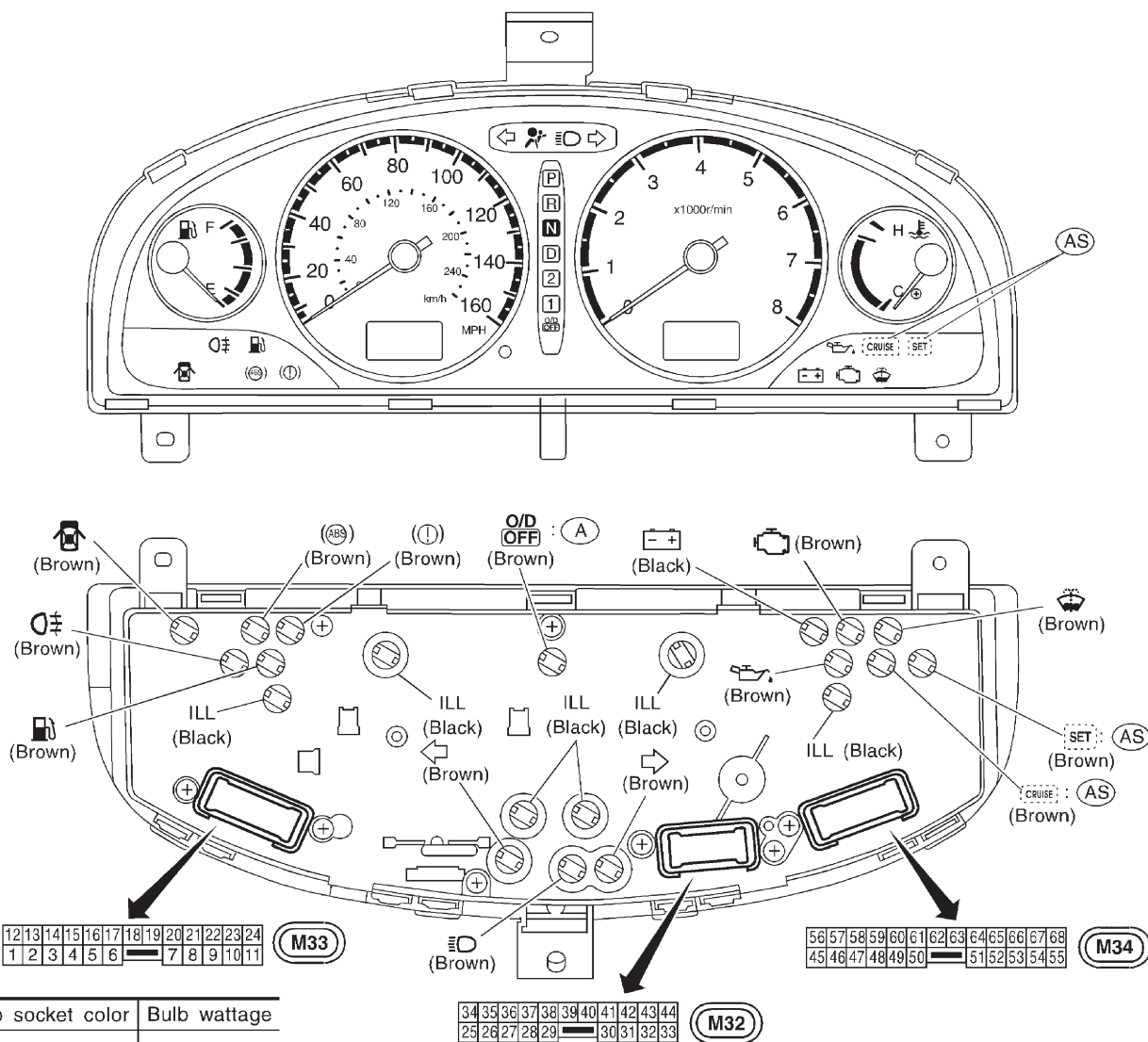
CHECK Conventional Type

NFEL0043

NFEL0043S01

NFEL0043S0103

Combination Meter



Bulb socket color	Bulb wattage
Brown	1.4W
Black	3.0W

(): Warning bulb socket color

(A) : With A/T

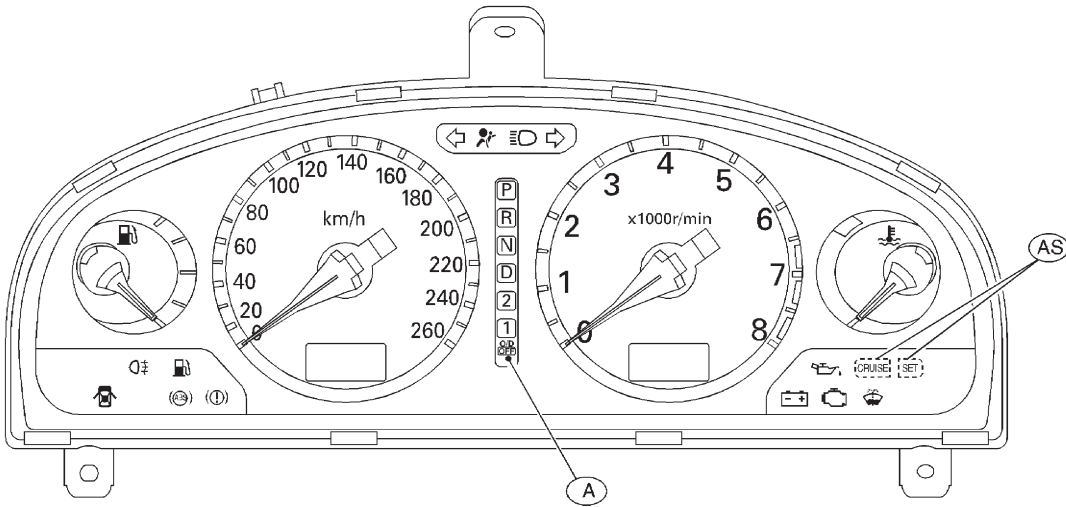
(AS) : With ASCD

METERS AND GAUGES

Combination Meter (Cont'd)

Fine Vision Type

NFEL0043S0104



- A : With A/T
AS : With ASCD

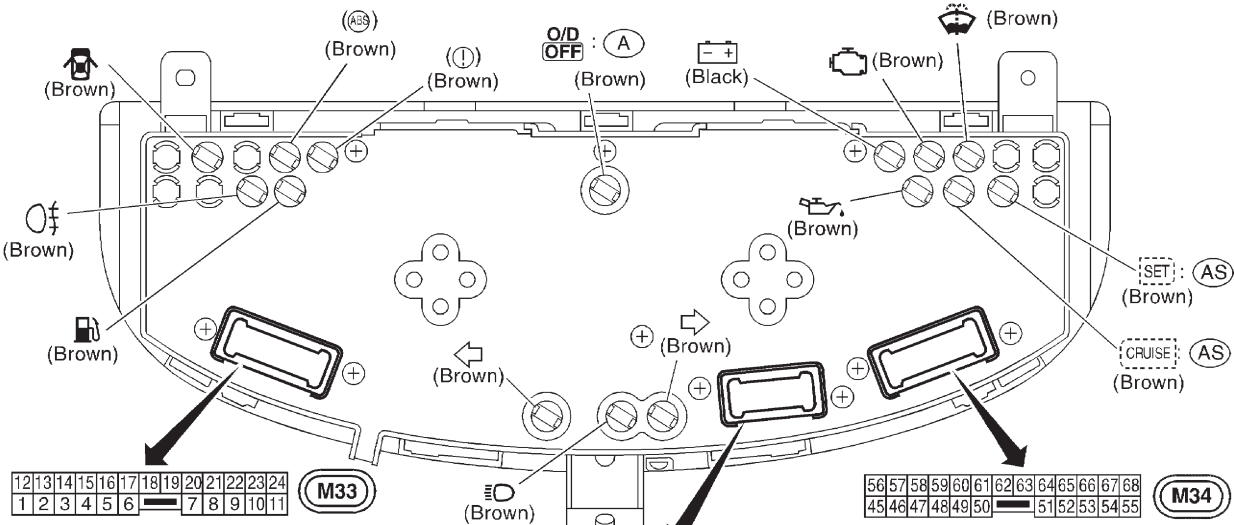


Table with 2 columns: Bulb socket color, Bulb wattage. Rows for Brown (1.4W) and Black (3.0W).

(): Warning bulb socket color

MEL841M

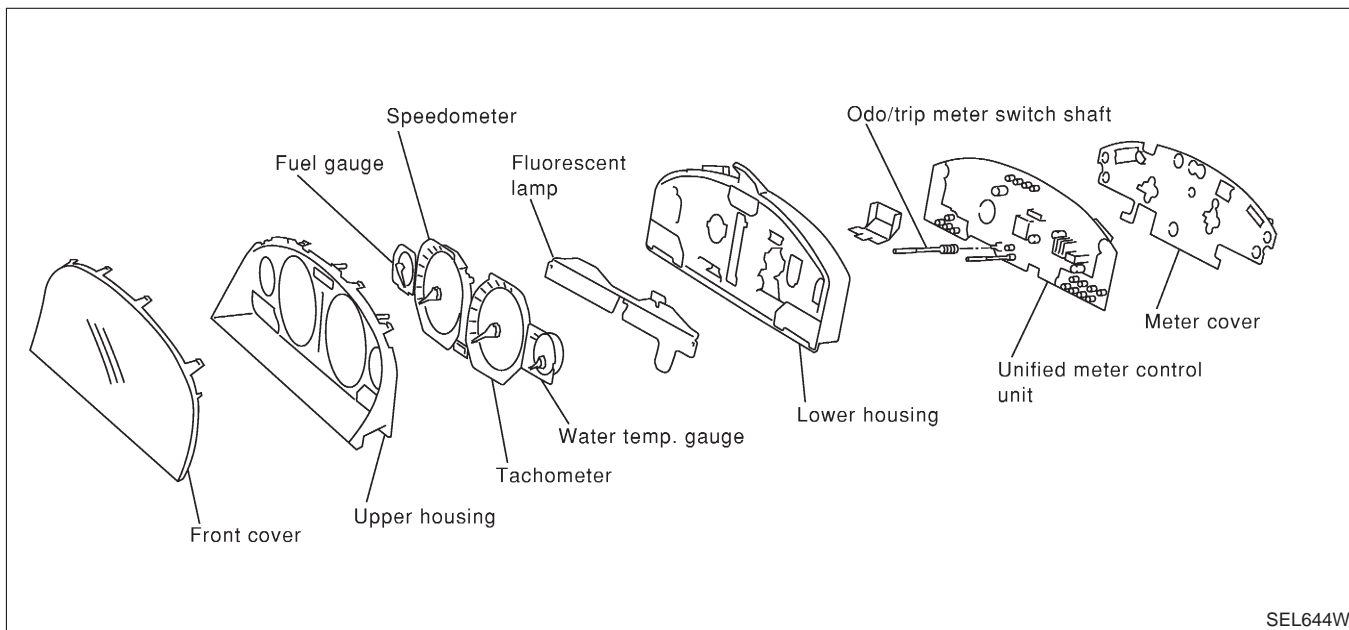
METERS AND GAUGES

Combination Meter (Cont'd)

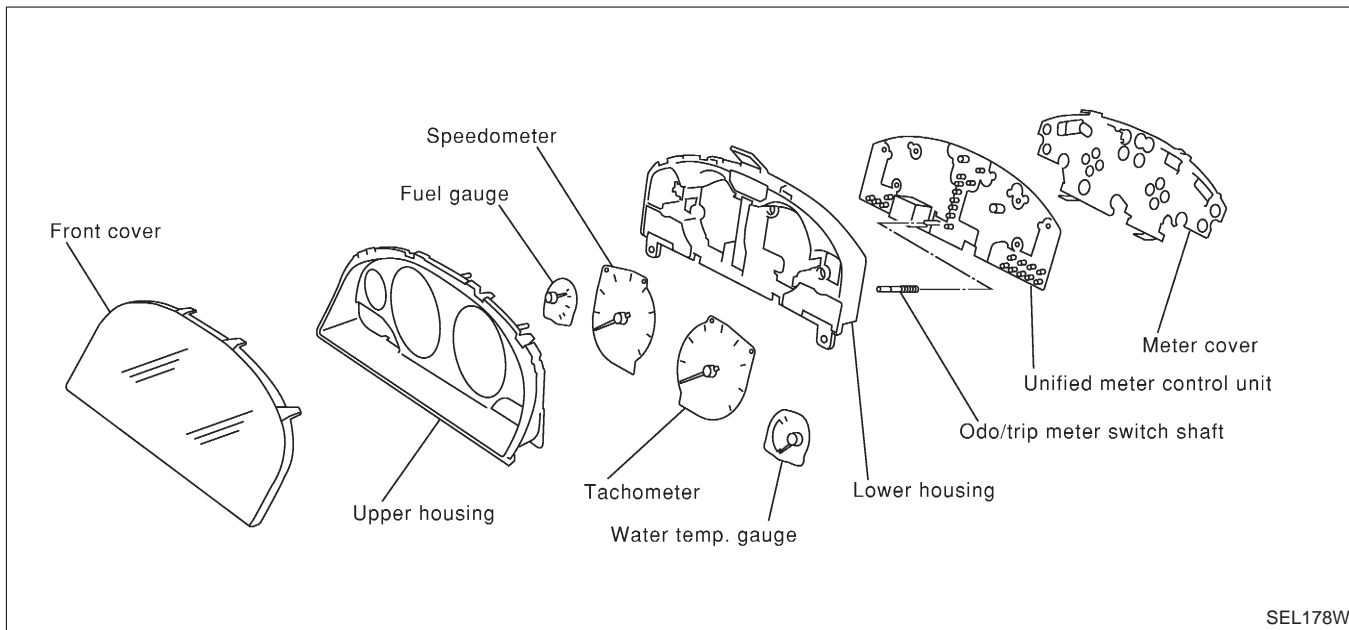
CONSTRUCTION

Fine vision type

NFEL0043S02



Conventional type



METERS AND GAUGES

Schematic

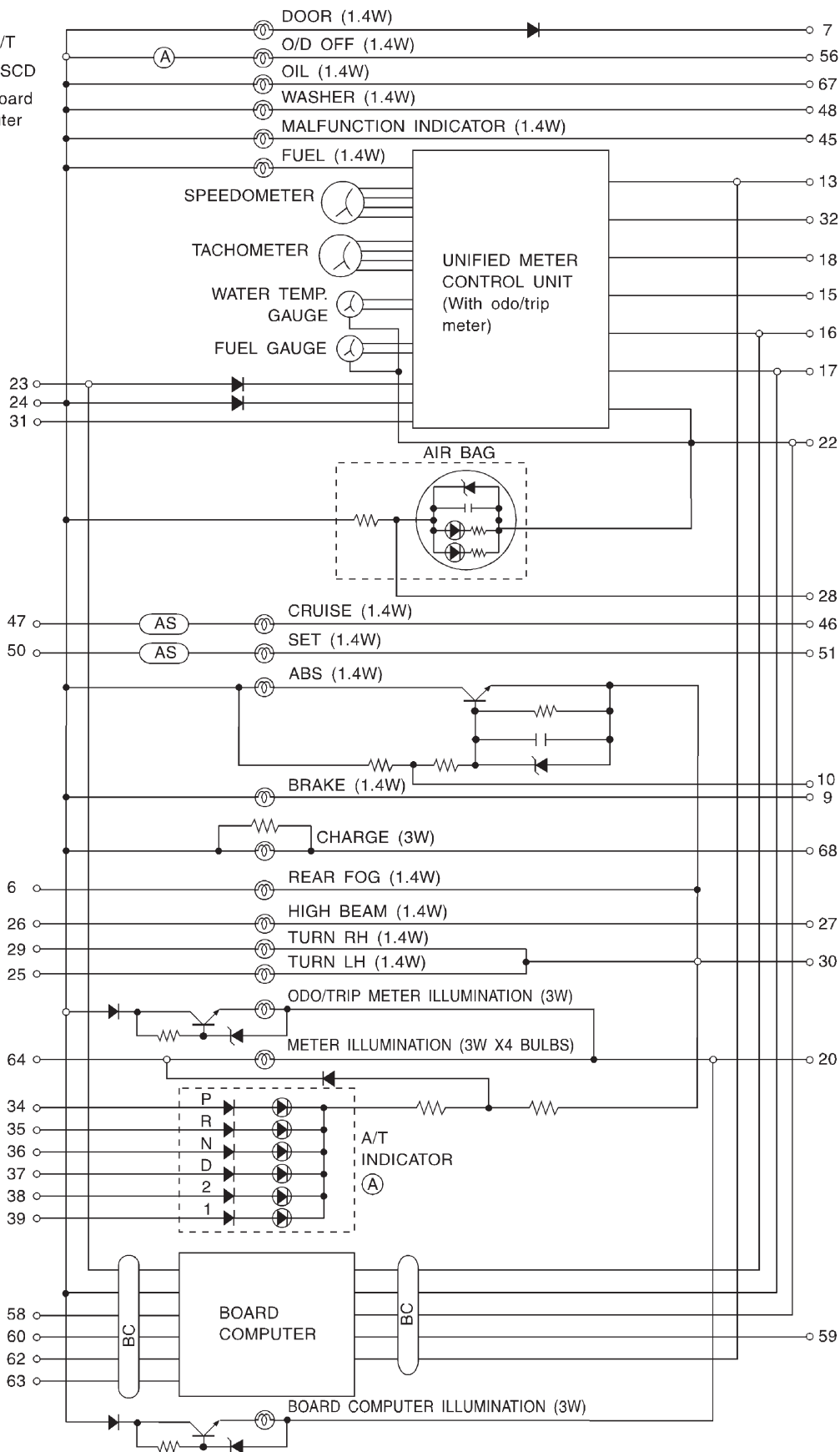
Schematic

NFEL0349

NFEL0349S01

CONVENTIONAL TYPE

- (A) : With A/T
- (AS) : With ASCD
- (BC) : With board computer



MEL842M

METERS AND GAUGES

Schematic (Cont'd)

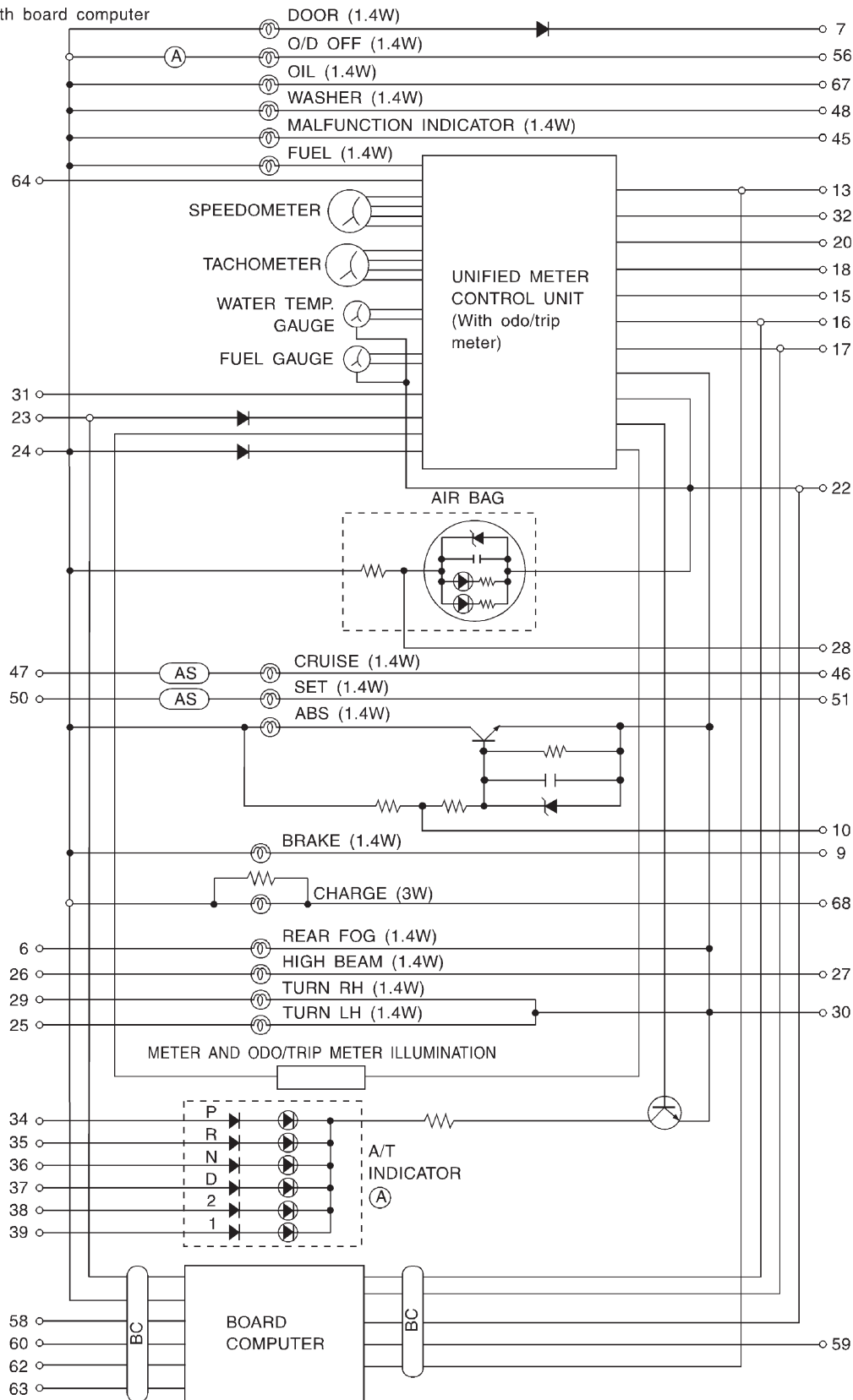
FIVE VISION TYPE

NFEL0349S02

Ⓐ : With A/T

AS : With ASCD

BC : With board computer



MEL843M

METERS AND GAUGES

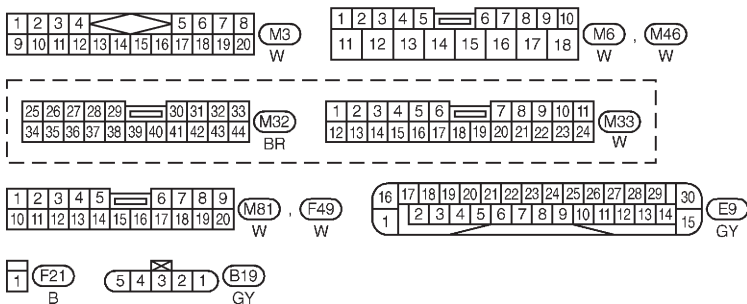
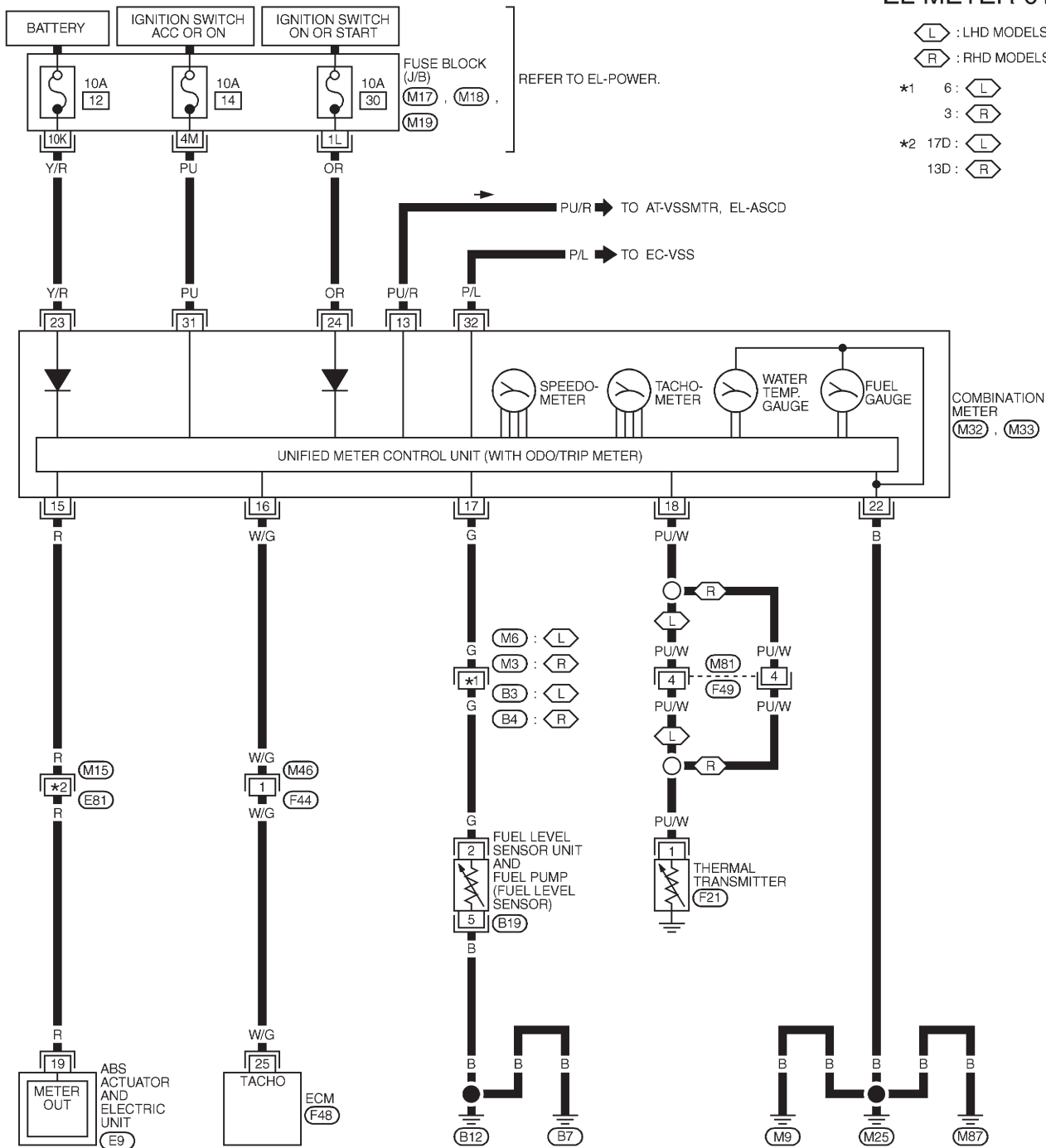
Wiring Diagram — METER —

Wiring Diagram — METER —

NFEL0045

EL-METER-01

- ⬡ : LHD MODELS
- ⬢ : RHD MODELS
- *1 6: ⬡
- 3: ⬢
- *2 17D: ⬡
- 13D: ⬢



REFER TO THE FOLLOWING.

- ⬢ -SUPER
- MULTIPLE JUNCTION (SMJ)
- ⬢, ⬢, ⬢
- FUSE BLOCK-JUNCTION BOX (J/B)
- ⬢ -ELECTRICAL UNITS

MEL844M

METERS AND GAUGES

Meter/Gauge Operation and Odo/Trip Meter Segment Check in Diagnosis Mode

Meter/Gauge Operation and Odo/Trip Meter Segment Check in Diagnosis Mode

NFEL0151

DIAGNOSIS FUNCTION

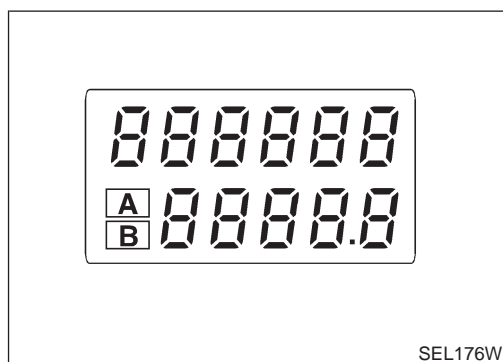
NFEL0151S01

- Odo/trip meter segment can be checked in diagnosis mode.
- Meters/gauges can be checked in diagnosis mode.

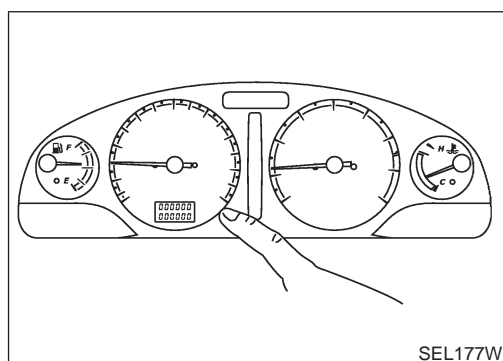
HOW TO ALTERNATE DIAGNOSIS MODE

NFEL0151S02

1. Turn ignition switch to ON and change odo/trip meter to "TRIP A".
2. Turn ignition switch to OFF.
3. Turn ignition switch to ON when pushing odo/trip meter switch.
4. Release odo/trip meter switch 1 second after ignition switch is turned ON.
5. Push odo/trip meter switch more than three times within 5 seconds.



SEL176W



SEL177W

6. All odo/trip meter segments should be turned on.

NOTE:

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

At this point, the unified control meter is turned to diagnosis mode.

7. Push odo/trip meter switch. Indication of each meter/gauge should be as shown left during pushing odo/trip meter switch if it is no malfunctioning.

NOTE:

It takes about a few seconds for indication of fuel gauge and water temperature gauge to become stable.

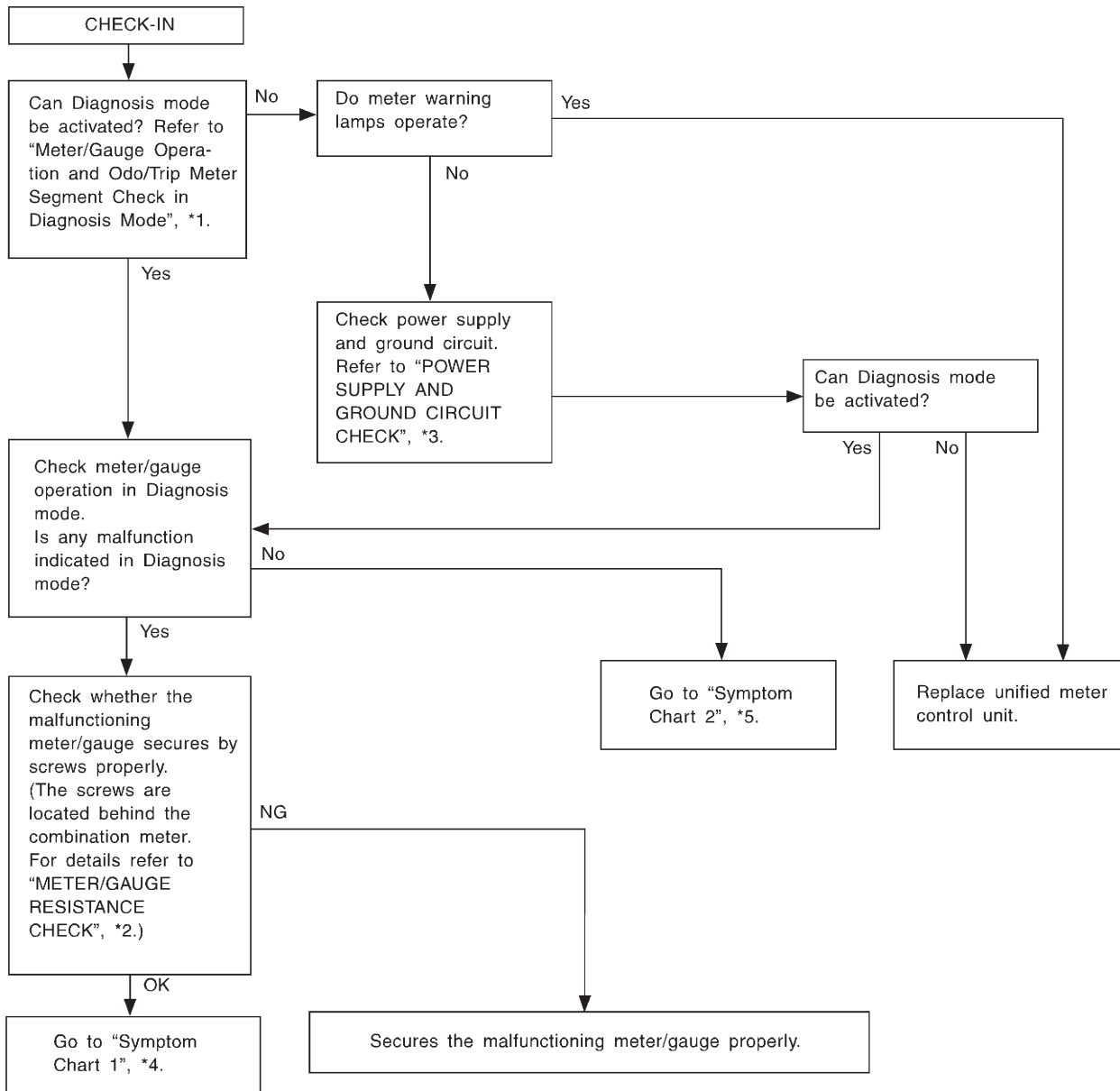
METERS AND GAUGES

Trouble Diagnoses

Trouble Diagnoses PRELIMINARY CHECK

NFEL0046

NFEL0046S04



SEL361W

*1: Meter/Gauge Operation and Odo/Trip Meter Segment Check in Diagnosis Mode (EL-131)
 *2: METER/GAUGE RESISTANCE CHECK (EL-138)

*3: POWER SUPPLY AND GROUND CIRCUIT CHECK (EL-134)
 *4: Symptom Chart 1 (EL-133)

*5: Symptom Chart 2 (EL-133)

METERS AND GAUGES

Trouble Diagnoses (Cont'd)

SYMPTOM CHART Symptom Chart 1 (Malfunction is Indicated in Diagnosis Mode)

NFEL0046S10

NFEL0046S1001

Symptom	Possible causes	Repair order
Odo/trip meter indicate(s) malfunction in Diagnosis mode.	Unified meter control unit	Replace unified meter control unit.
Multiple meter/gauge indicate malfunction in Diagnosis mode.		
One of speedometer/tachometer/fuel gauge/water temp. gauge indicates malfunction in Diagnosis mode.	<ol style="list-style-type: none"> 1. Meter/Gauge 2. Unified meter control unit 	<ol style="list-style-type: none"> 1. Check resistance of meter/gauge indicating malfunction. If the resistance is NG, replace the meter/gauge. Refer to "METER/GAUGE RESISTANCE CHECK", EL-138. 2. If the resistance of meter/gauge is OK, replace unified meter control unit.

Symptom Chart 2 (No Malfunction is Indicated in Diagnosis Mode)

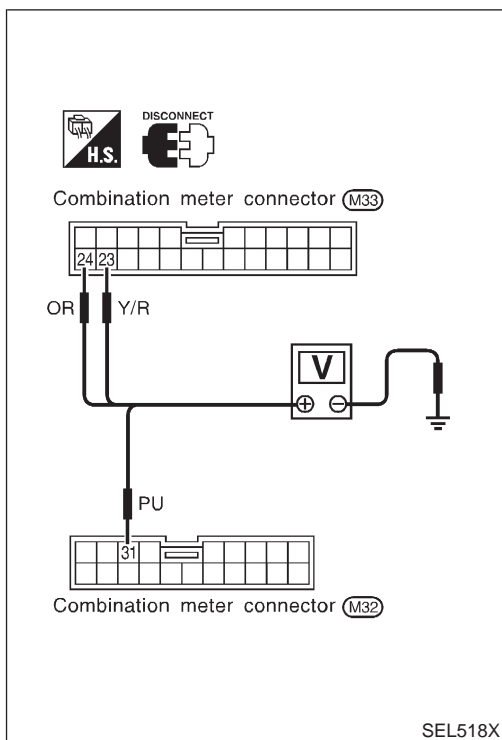
NFEL0046S1002

Symptom	Possible causes	Repair order
One of speedometer/tachometer/fuel gauge/water temp. gauge is malfunctioning.	<ol style="list-style-type: none"> 1. Sensor signal <ul style="list-style-type: none"> - Vehicle speed signal - Engine revolution signal - Fuel gauge - Water temp. gauge 2. Unified meter control unit 	<ol style="list-style-type: none"> 1. Check the sensor for malfunctioning meter/gauge. INSPECTION/VEHICLE SPEED SIGNAL (Refer to EL-135.) INSPECTION/ENGINE REVOLUTION SIGNAL (Refer to EL-135.) INSPECTION/FUEL LEVEL SENSOR UNIT (Refer to EL-136.) INSPECTION/THERMAL TRANSMITTER (Refer to EL-137.) 2. Replace unified meter control unit.
Multiple meter/gauge are malfunctioning. (except odo/trip meter)		

Before starting trouble diagnoses below, perform PRELIMINARY CHECK, EL-132.

METERS AND GAUGES

Trouble Diagnoses (Cont'd)



POWER SUPPLY AND GROUND CIRCUIT CHECK

=NFEL0046S07

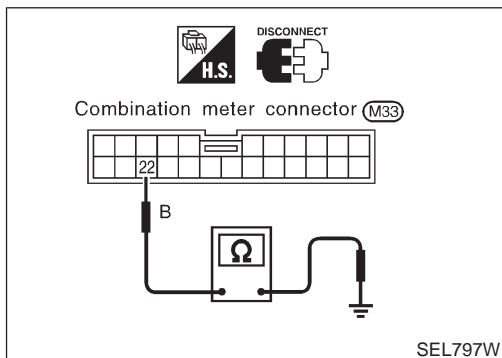
Power Supply Circuit Check

NFEL0046S0701

Terminals		Ignition switch position		
(+)	(-)	OFF	ACC	ON
23	Ground	Battery voltage	Battery voltage	Battery voltage
24	Ground	0V	0V	Battery voltage
31	Ground	0V	Battery voltage	Battery voltage

If NG, check the following.

- 10A fuse [No. 12, located in fuse block (J/B)]
- 10A fuse [No. 14, located in fuse block (J/B)]
- 10A fuse [No. 30, located in fuse block (J/B)]
- Harness for open or short between fuse and combination meter



Ground Circuit Check

NFEL0046S0702

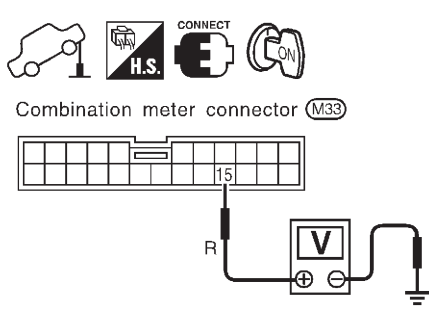
Terminals	Continuity
22 - Ground	Yes

METERS AND GAUGES

Trouble Diagnoses (Cont'd)

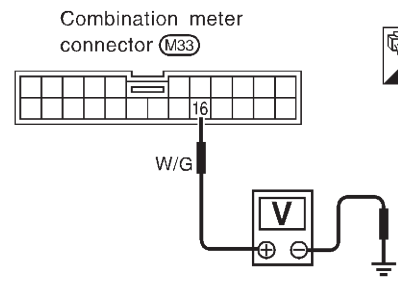
INSPECTION/VEHICLE SPEED SIGNAL

=NFEL0046S03

1	CHECK ABS ACTUATOR AND ELECTRIC UNIT OUTPUT	
<p>1. Lift up drive wheel. 2. Turn ignition switch "ON". 3. Check voltage between combination meter terminal 15 and ground when rotating wheel by hand.</p> <div style="display: flex; justify-content: space-around; align-items: center;">  <div style="text-align: right;"> <p>Voltage: Approx. 0 - 5V</p> </div> </div> <p style="text-align: right;">SEL902W</p>		
OK or NG		
OK	▶	ABS actuator and electric unit output signal is OK.
NG	▶	<p>Check the following.</p> <ul style="list-style-type: none"> ● Harness for open or short between ABS actuator and electric unit and combination meter. ● ABS actuator and electric unit. Refer to BR-41, "ABS Actuator and Electric Unit".

INSPECTION/ENGINE REVOLUTION SIGNAL

NFEL0046S02

1	CHECK ECM OUTPUT	
<p>1. Start engine. 2. Check voltage between combination meter terminals 16 and ground at idle and 2,000 rpm.</p> <div style="display: flex; justify-content: space-around; align-items: center;">  <div style="text-align: right;"> <p>Higher rpm = Higher voltage Lower rpm = Lower voltage Voltage should change with rpm.</p> </div> </div> <p style="text-align: right;">SEL364W</p>		
OK or NG		
OK	▶	Engine revolution signal is OK.
NG	▶	Harness for open or short between ECM and combination meter

METERS AND GAUGES

Trouble Diagnoses (Cont'd)

INSPECTION/FUEL LEVEL SENSOR UNIT

=NFEL0046S08

1	CHECK GROUND CIRCUIT FOR FUEL LEVEL SENSOR UNIT	
<p>Check harness continuity between fuel level sensor unit and fuel pump connector terminal 5 and ground.</p> <div style="text-align: center;"> <p>Fuel level sensor unit and fuel pump connector (B19)</p> <p>Continuity should exist.</p> <p>SEL182W</p> </div> <p style="text-align: center;">OK or NG</p>		
OK	▶	GO TO 2.
NG	▶	Repair harness or connector.

2	CHECK FUEL LEVEL SENSOR UNIT	
<p>Refer to "FUEL LEVEL SENSOR UNIT CHECK" (EL-138).</p> <p style="text-align: center;">OK or NG</p>		
OK	▶	GO TO 3.
NG	▶	Replace fuel level sensor unit.

3	CHECK HARNESS FOR OPEN OR SHORT	
<p>1. Disconnect combination meter connector and fuel level sensor unit and fuel pump connector.</p> <p>2. Check continuity between combination meter terminal 17 and fuel level sensor unit and fuel pump connector terminal 2.</p> <p style="color: blue;">Continuity should exist.</p> <p>3. Check continuity between combination meter terminal 17 and ground.</p> <p style="color: blue;">Continuity should not exist.</p> <div style="text-align: center;"> <p>Combination meter connector (M33)</p> <p>Fuel level sensor unit and fuel pump connector (B19)</p> <p>SEL183W</p> </div> <p style="text-align: center;">OK or NG</p>		
OK	▶	Fuel level sensor unit is OK.
NG	▶	Repair harness or connector.

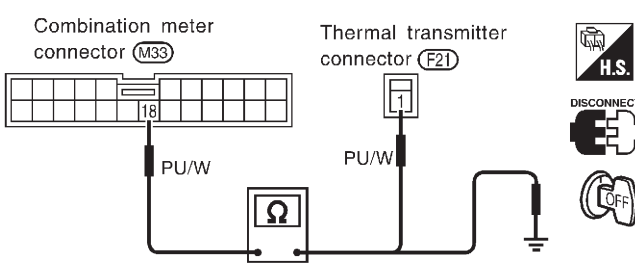
METERS AND GAUGES

Trouble Diagnoses (Cont'd)

INSPECTION/THERMAL TRANSMITTER

=NFEL0046S09

1	CHECK THERMAL TRANSMITTER	
Refer to "THERMAL TRANSMITTER CHECK" (EL-138).		
OK or NG		
OK	▶	GO TO 2.
NG	▶	Replace.

2	CHECK HARNESS FOR OPEN OR SHORT	
<ol style="list-style-type: none"> 1. Disconnect combination meter connector and thermal transmitter connector. 2. Check continuity between combination meter terminal 18 and thermal transmitter terminal 1. Continuity should exist. 3. Check continuity between combination meter terminal 18 and ground. Continuity should not exist. 		
		
SEL184W		
OK or NG		
OK	▶	Thermal transmitter is OK.
NG	▶	Repair harness or connector.

METERS AND GAUGES

Electrical Components Inspection

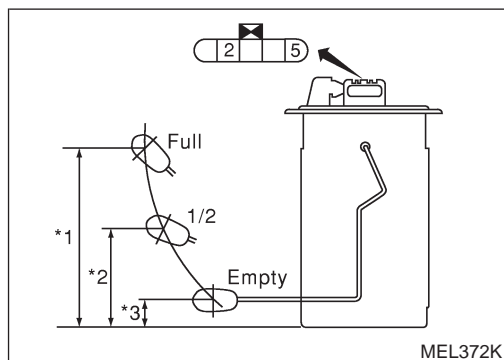
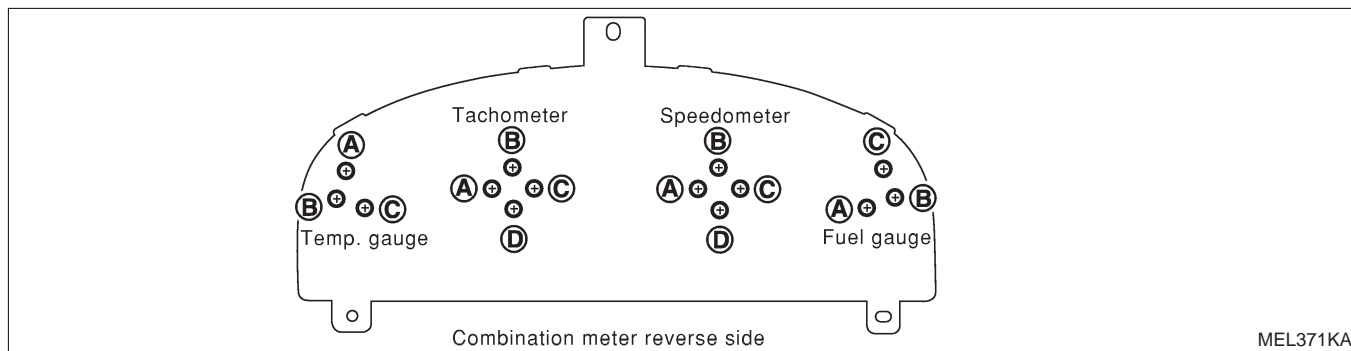
=NFEL0047

METER/GAUGE RESISTANCE CHECK

NFEL0047S04

Check resistance between installation screws of meter/gauge.

Screws		Resistance Ω
Tacho/Speedometer	Fuel/Temp. gauge	
A - C	A - C	Approx. 190 - Approx. 260
B - D	B - C	Approx. 230 - Approx. 310



FUEL LEVEL SENSOR UNIT CHECK

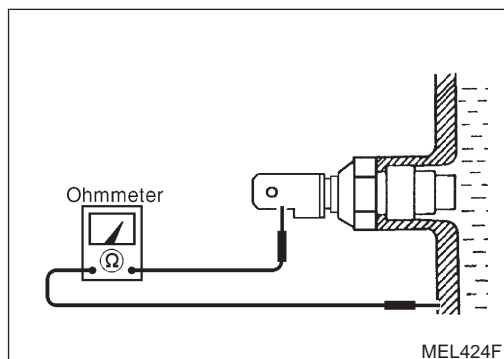
NFEL0047S01

• For removal, refer to FE section.

Check the resistance between terminals 2 and 5.

Ohmmeter		Float position		mm (in)	Resistance value Ω
(+)	(-)				
2	5	*1	Full	152 (5.98)	Approx. 4 - 6
		*2	1/2	87 (3.43)	27 - 35
		*3	Empty	22 (0.87)	78 - 85

*1 and *3: When float rod is in contact with stopper.



THERMAL TRANSMITTER CHECK

NFEL0047S02

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

Water temperature	Resistance
60°C (140°F)	Approx. 170 - 210 Ω
100°C (212°F)	Approx. 47 - 53 Ω

System Description

NFEL0296

NFEL0296S01

FUNCTION

This board computer can indicate following items.

- Outside air temperature
- Range (Cruising possible distance)
- Journey distance (trip)
- Journey time (hour meter)
- Average fuel consumption
- Average vehicle speed

Outside air temperature indication

- This indicator shows indication of outside air temperature while ignition switch is in ON position.
- Ambient sensor is used commonly by auto air conditioner and this board computer. When auto air conditioner operates, board computer will correct ambient sensor signal based on positive voltage signal to terminal 60 of board computer from A/C auto amp.
- Indication range is between -30 and $+55^{\circ}\text{C}$ (-22 and 131°F). (When outside temperature is less than -30°C (-22°F), display shows "...". When outside temperature is more than $+55^{\circ}\text{C}$ (131°F), indication will be blank.)
- When outside temperature is less than 3°C (37°F) continuously, display will blink as a warning. In this case, the display will change to the OUTSIDE AIR TEMPERATURE mode even though the display is showing a different item. (See NOTE.)

Range (Cruising possible distance) indication

- The range indication provides driver with an estimation of the distance that can be driven before refueling. The range is conducted by fuel tank gauge unit (fuel remaining), ECM pulse signal (fuel consumption) and vehicle speed signal.
- Indication will be refreshed every 30 seconds.
- When fuel remaining is less than approx. 10 ℓ (8-3/4 Imp qt), indication will blink as a warning. If the fuel remaining less than approx. 8 ℓ (7 Imp qt), indication will show "...". In this case, the display will change to the RANGE mode automatically even though the display is showing a different item. (See NOTE.)

Journey distance

- Journey distance indication is conducted by vehicle speed signal.
- If journey distance is reset, journey time will be reset at the same time.

Journey time

- Journey time indication is conducted by integration of ignition ON time.
- If journey time is reset, journey distance will be reset at the same time.

Average fuel consumption

- Average fuel consumption indication is conducted by ECM pulse signal and vehicle speed signal after system is reset.
- Indication will be refreshed every 30 seconds.
- If average fuel consumption is reset, average vehicle speed will be reset at the same time.
- After reset operation, the display shows "... " until the vehicle is driven 500 m (1,600 ft) and 30 seconds has passed.

Average vehicle speed

- Average vehicle speed indication is conducted by running distance and running time.
- Indication will be refreshed every 30 seconds.
- If average vehicle speed is reset, average fuel consumption will be reset at the same time.
- After reset operation, the displays shows "... " for 30 seconds.

HOW TO CHANGE/RESET INDICATION

NFEL0296S02

- Indication can be changed by in following order by pushing board computer steering switch.
OUTSIDE AIR TEMPERATURE → RANGE → JOURNEY DISTANCE → JOURNEY TIME → AVERAGE FUEL CONSUMPTION → AVERAGE VEHICLE SPEED
- Continuous pushing the switch (more than 0.8 second) can reset the indication of journey distance (trip), journey time (hour meter), average vehicle speed and average fuel consumption.

BOARD COMPUTER

System Description (Cont'd)

NOTE:

- After the display changes automatically, the indication can be changed to the last mode by pushing the board computer steering switch. In this case, the ("...") will blink as a warning.
- When the OUTSIDE AIR TEMPERATURE warning and the RANGE warning match warning conditions at the same time, the display automatically indicates the OUTSIDE AIR TEMPERATURE.

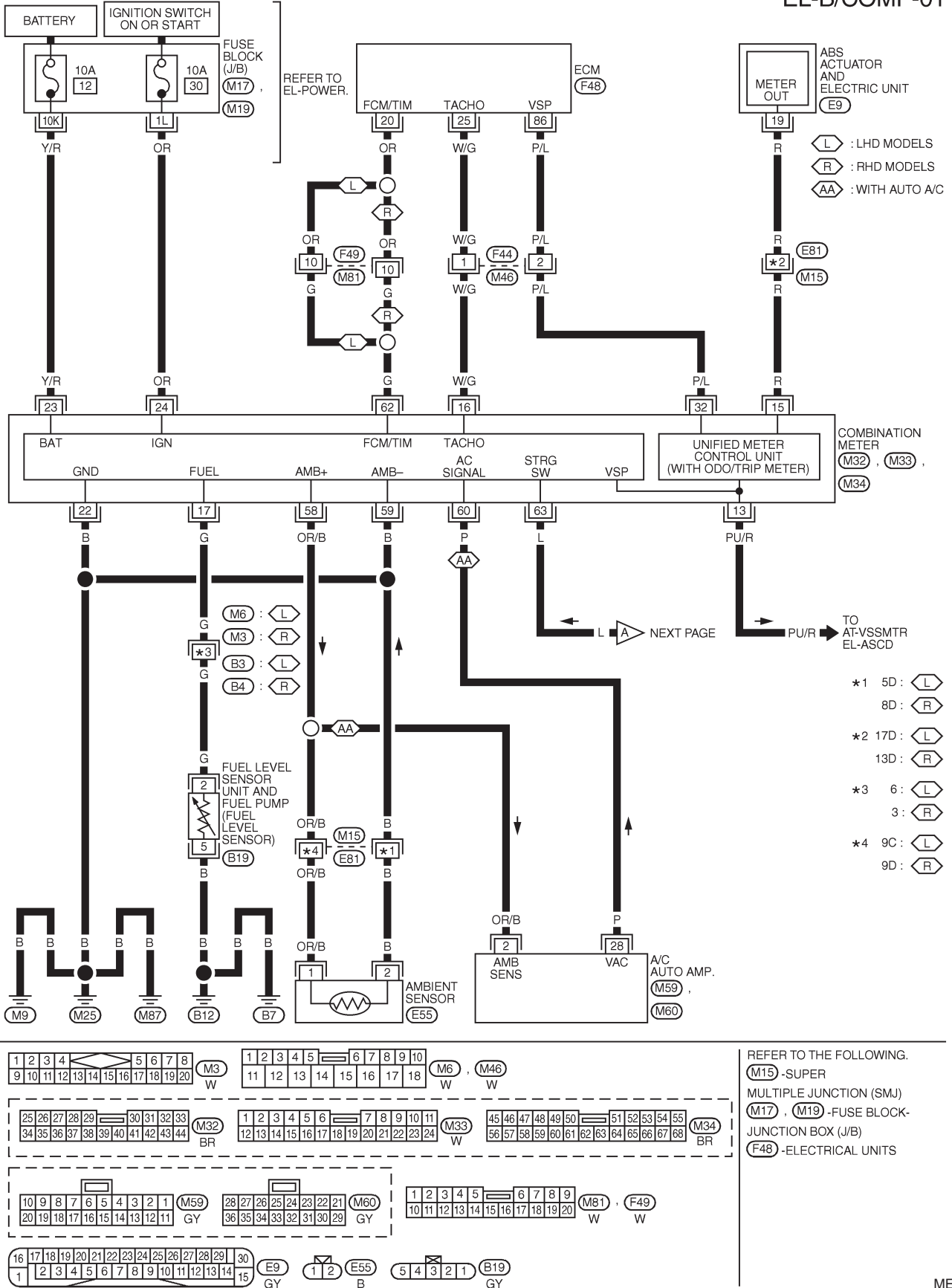
BOARD COMPUTER

Wiring Diagram — B/COMP —

Wiring Diagram — B/COMP —

NFEL0297

EL-B/COMP-01



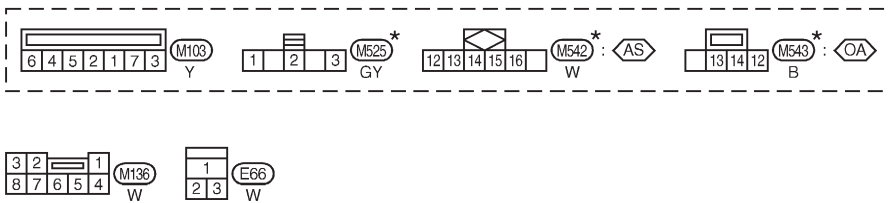
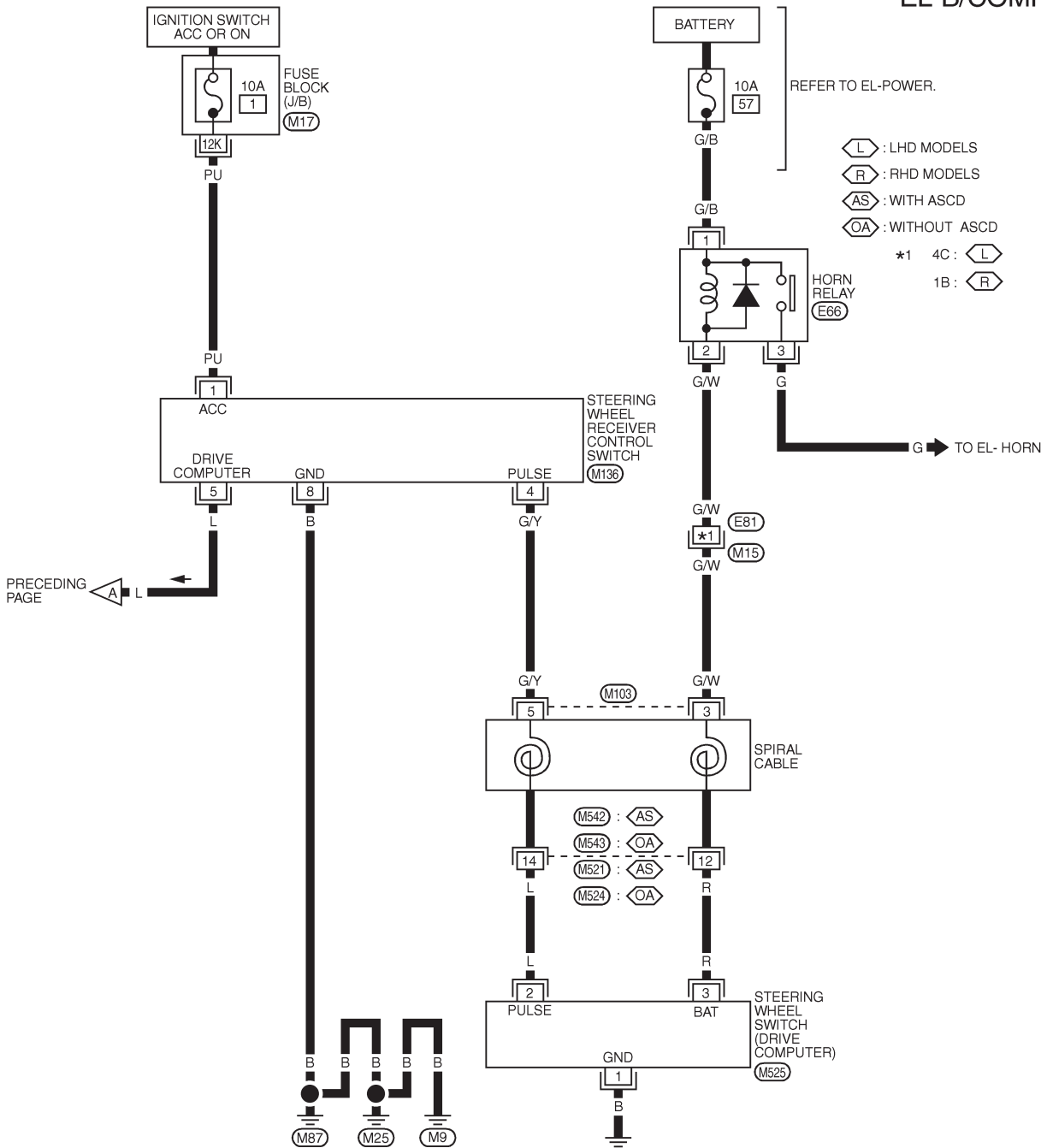
REFER TO THE FOLLOWING.
(M15) -SUPER
MULTIPLE JUNCTION (SMJ)
(M17) , (M19) -FUSE BLOCK-
JUNCTION BOX (J/B)
(F48) -ELECTRICAL UNITS

MEL520L

BOARD COMPUTER

Wiring Diagram — B/COMP — (Cont'd)

EL-B/COMP-02



REFER TO THE FOLLOWING.
 (M15) -SUPER
 MULTIPLE JUNCTION (SMJ)
 (M17) -FUSE BLOCK-
 JUNCTION BOX (J/B)

* : THIS CONNECTOR IS NOT SHOW IN "HARNESS LAYOUT", EL SECTION.

MEL521L

Trouble Diagnoses

=NFEL0298

NFEL0298S01

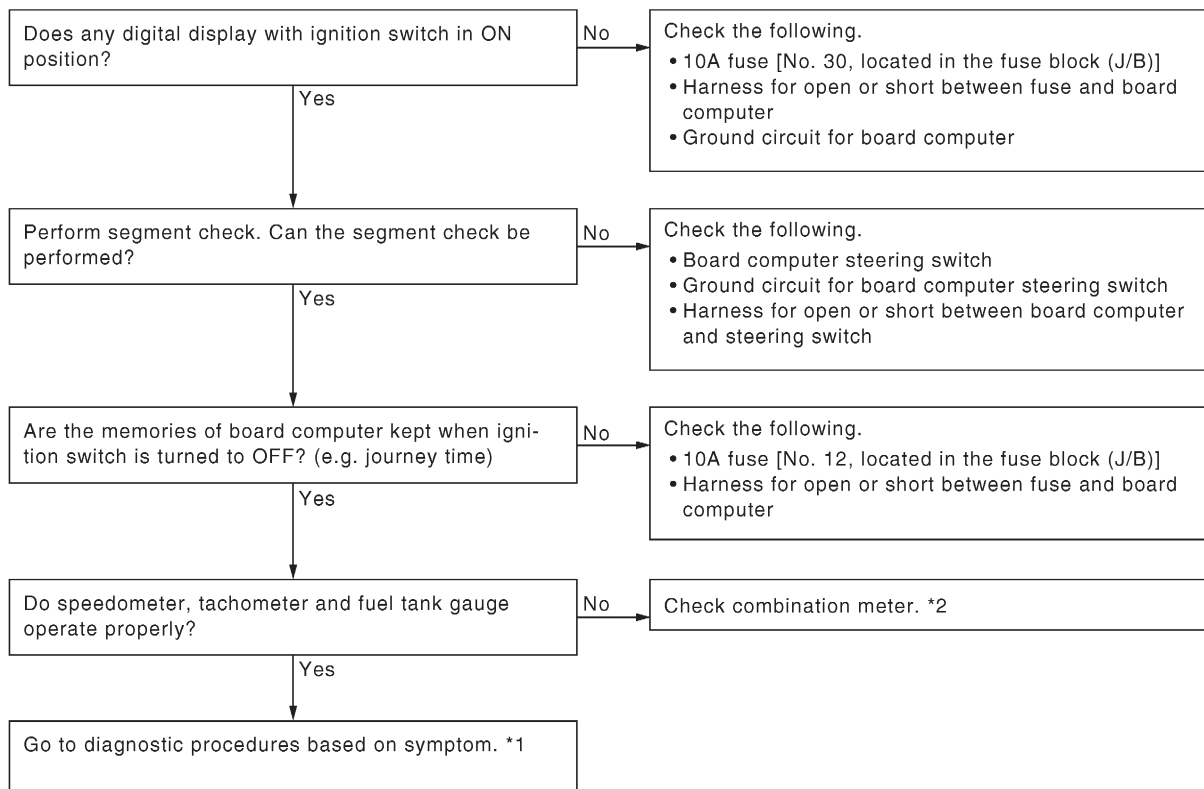
SEGMENT CHECK

Board computer display segment can be checked by the procedure shown below.

1. Turn ignition switch to ON position with pushing board computer steering switch. Then segment check will start.
2. Segment check will end after 1 cycle of segment check is performed or any of following conditions exists.
 - Ignition switch is returned to ACC or OFF position.
 - Vehicle speed signal is input.

PRELIMINARY CHECK

NFEL0298S02



SEL831W

*1 EL-143

*2 EL-131

DIAGNOSES PROCEDURE

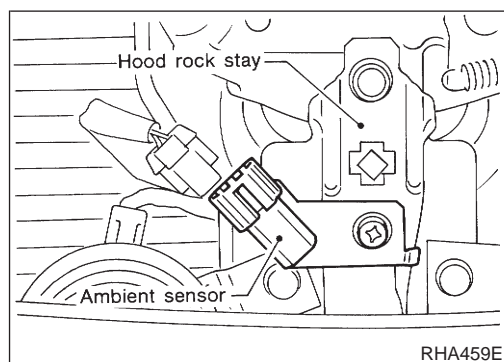
NFEL0298S03

Symptom	Possible cause	Repair order
Outside air temperature is not displayed properly. (It may take a short time to steady the indication after ignition switch is turned to ON.)	<ol style="list-style-type: none"> 1. Ambient sensor 2. Ambient sensor circuit 3. A/C on signal (For models with auto A/C) 4. Vehicle speed sensor signal 	<ol style="list-style-type: none"> 1. Check ambient sensor. Refer to "Electrical Components Inspection", EL-144. 2. Check harness for open or short between ambient sensor and board computer. 3. Verify more than 4V is present at terminal 60 of board computer when A/C is operated. 4. Make sure journey distance (trip) is displayed properly. If NG, check journey distance (trip) display.
Range (Cruising possible distance) is not displayed properly.	<ol style="list-style-type: none"> 1. Average fuel consumption display 2. Fuel tank gauge signal circuit 	<ol style="list-style-type: none"> 1. Make sure fuel consumption is displayed properly. If NG, check fuel consumption display. 2. Make sure fuel gauge operates properly. If NG, check fuel gauge. Refer to EL-136.

BOARD COMPUTER

Trouble Diagnoses (Cont'd)

Symptom	Possible cause	Repair order
Journey distance (trip) is not indicated properly.	1. Vehicle speed sensor signal circuit	1. Check harness for open or short between combination meter terminal 15 and ABS actuator and electric unit terminal 19.
Journey time (hour meter) is not indicated properly.	1. 10A fuse	1. 10A fuse [No. 12, located in the fuse block (J/B)]. Verify battery voltage is present at terminal 23 of combination meter.
Average fuel consumption is not displayed properly.	1. Journey distance (trip) display 2. Fuel consumption signal	1. Make sure journey distance is displayed properly. If NG, check journey distance display. 2. Check harness for open or short between ECM terminals (20, 25) and combination meter terminals (62, 16).
Average vehicle speed is not indicated properly.	1. Journey distance (trip) display 2. Journey time (hour meter) display	1. Make sure journey distance is displayed properly. If NG, check journey distance display. 2. Make sure journey time is displayed properly. If NG, check journey time display.



Electrical Components Inspection

NFEL0299

AMBIENT SENSOR

NFEL0299S01

The ambient sensor is attached to the radiator core support. It detects ambient temperature and converts it into a resistance value which is then input to A/C auto amp. and board computer. After disconnecting ambient sensor harness connector, measure resistance between terminals 1 and 2, using the table below.

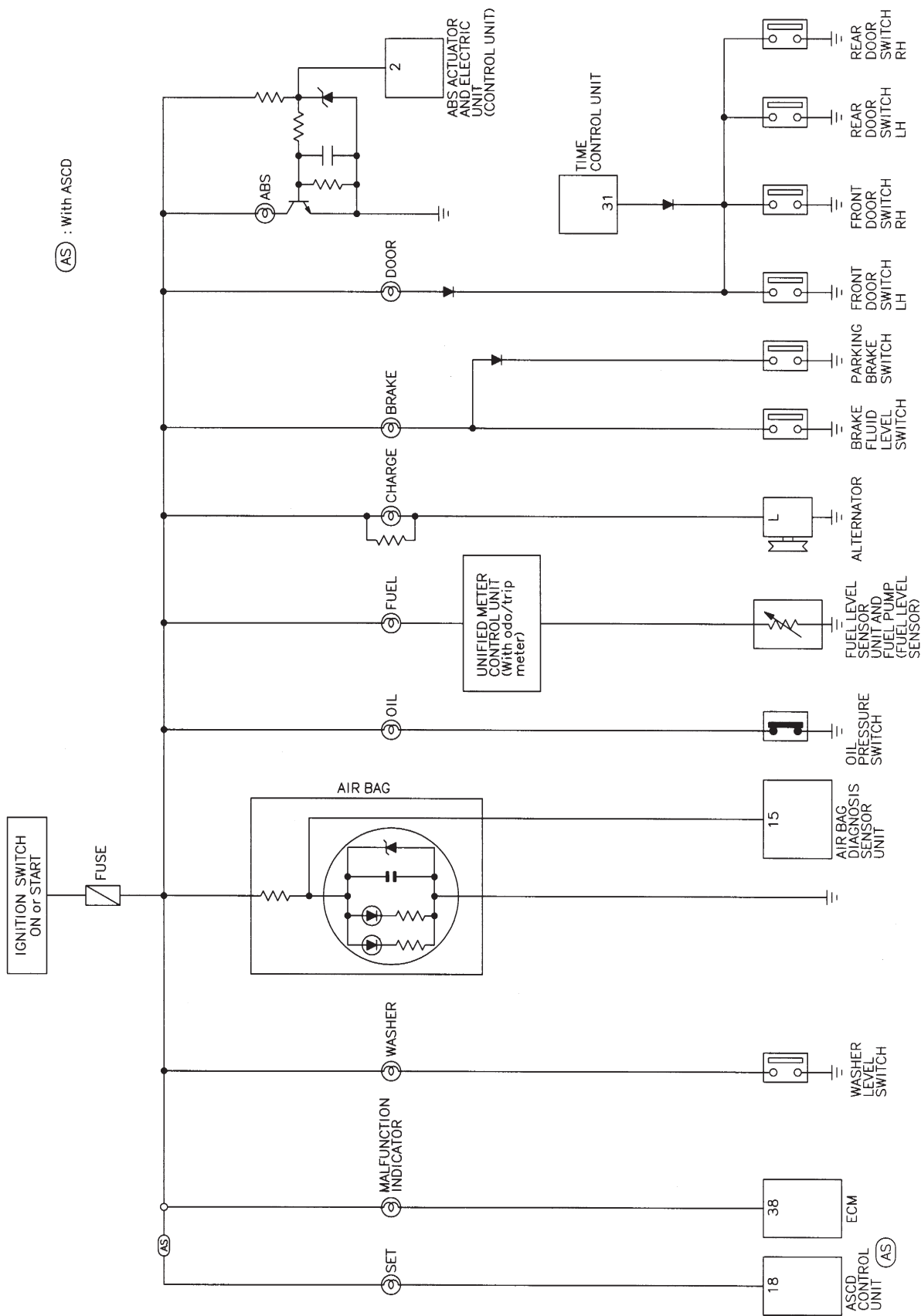
Temperature °C (°F)	Resistance kΩ
-30 (-22)	28.62
-20 (-4)	16.50
-10 (14)	9.92
0 (32)	6.19
10 (50)	3.99
20 (68)	2.65
30 (86)	1.81
40 (104)	1.27
50 (122)	0.91
55 (131)	0.77

WARNING LAMPS

Schematic

Schematic

NFEL0049



MEL522L

WARNING LAMPS

Wiring Diagram — WARN —

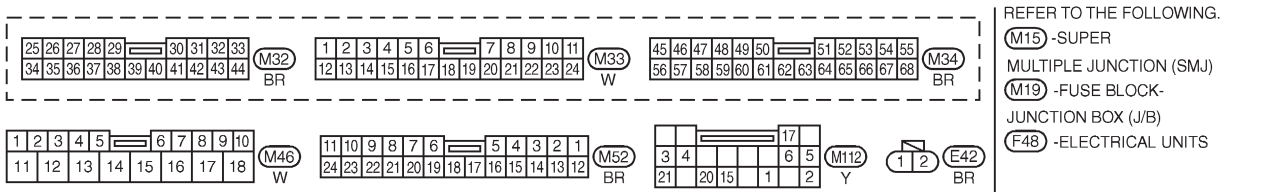
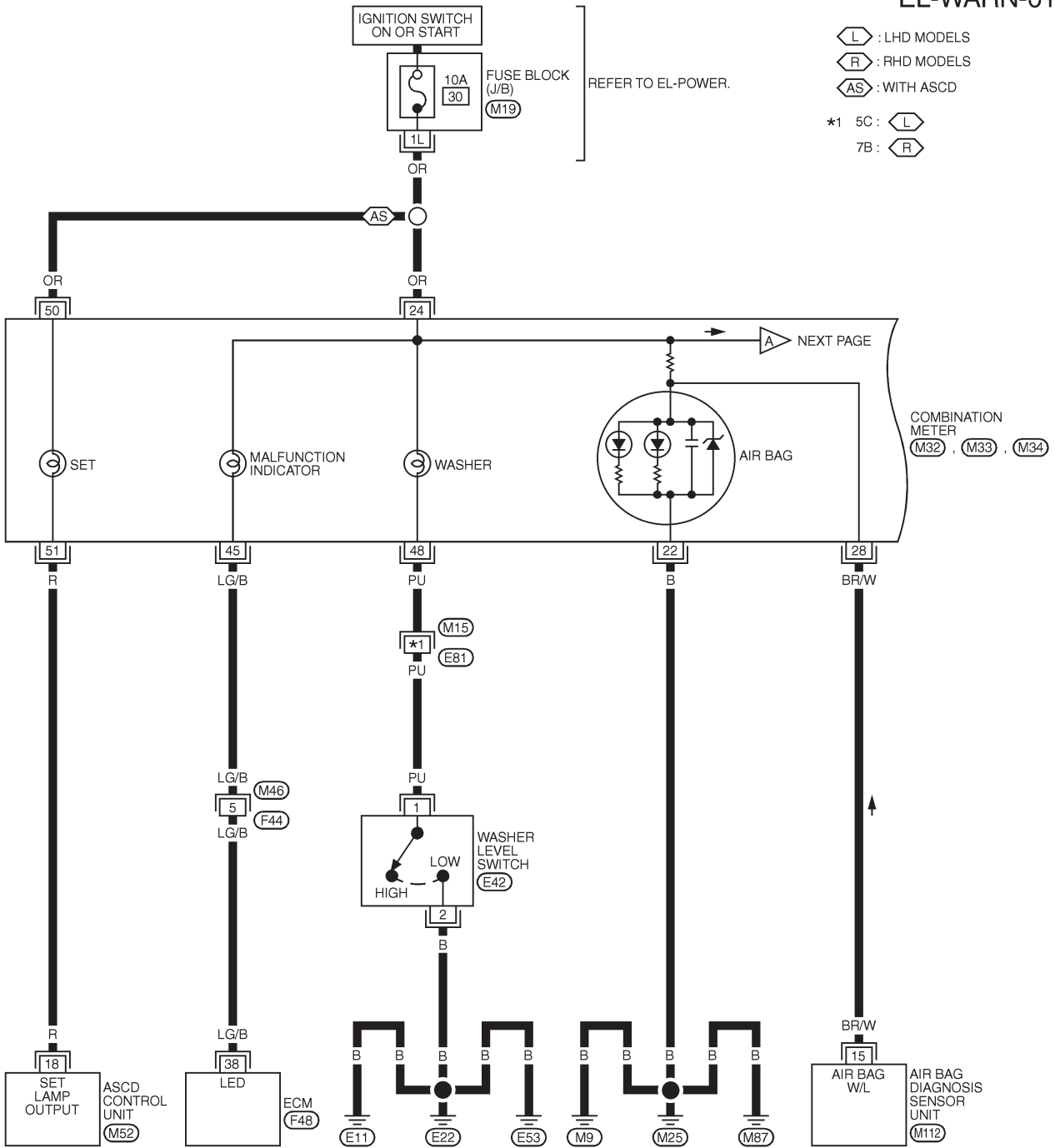
Wiring Diagram — WARN —

NFEL0050

EL-WARN-01

- ⬡ : LHD MODELS
- ⬢ : RHD MODELS
- ⬢ AS : WITH ASCD
- *1 5C: ⬡
- 7B: ⬢

REFER TO EL-POWER.

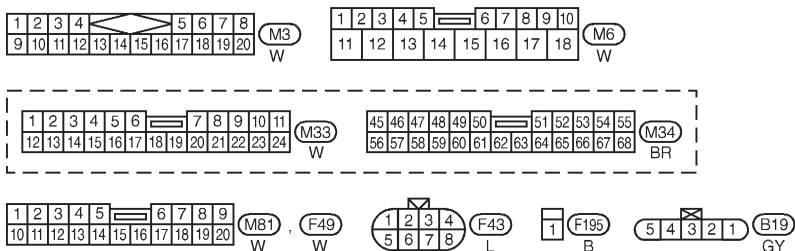
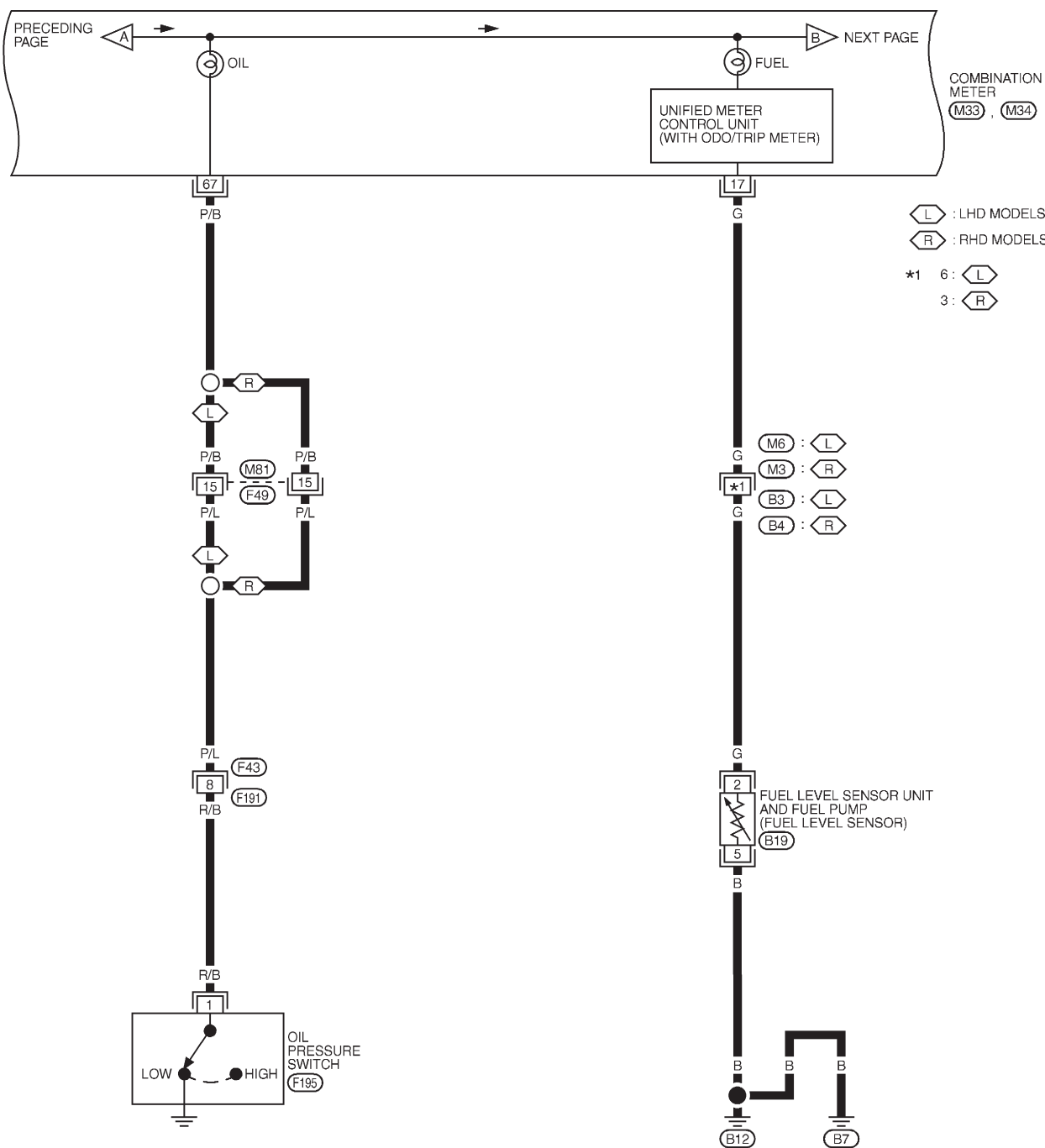


MEL523L

WARNING LAMPS

Wiring Diagram — WARN — (Cont'd)

EL-WARN-02

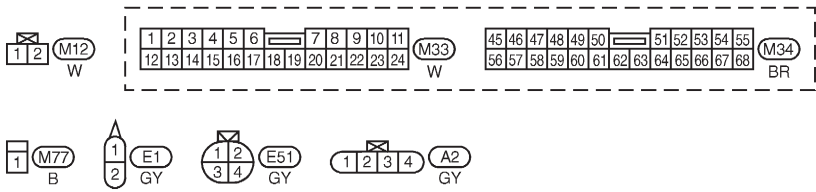
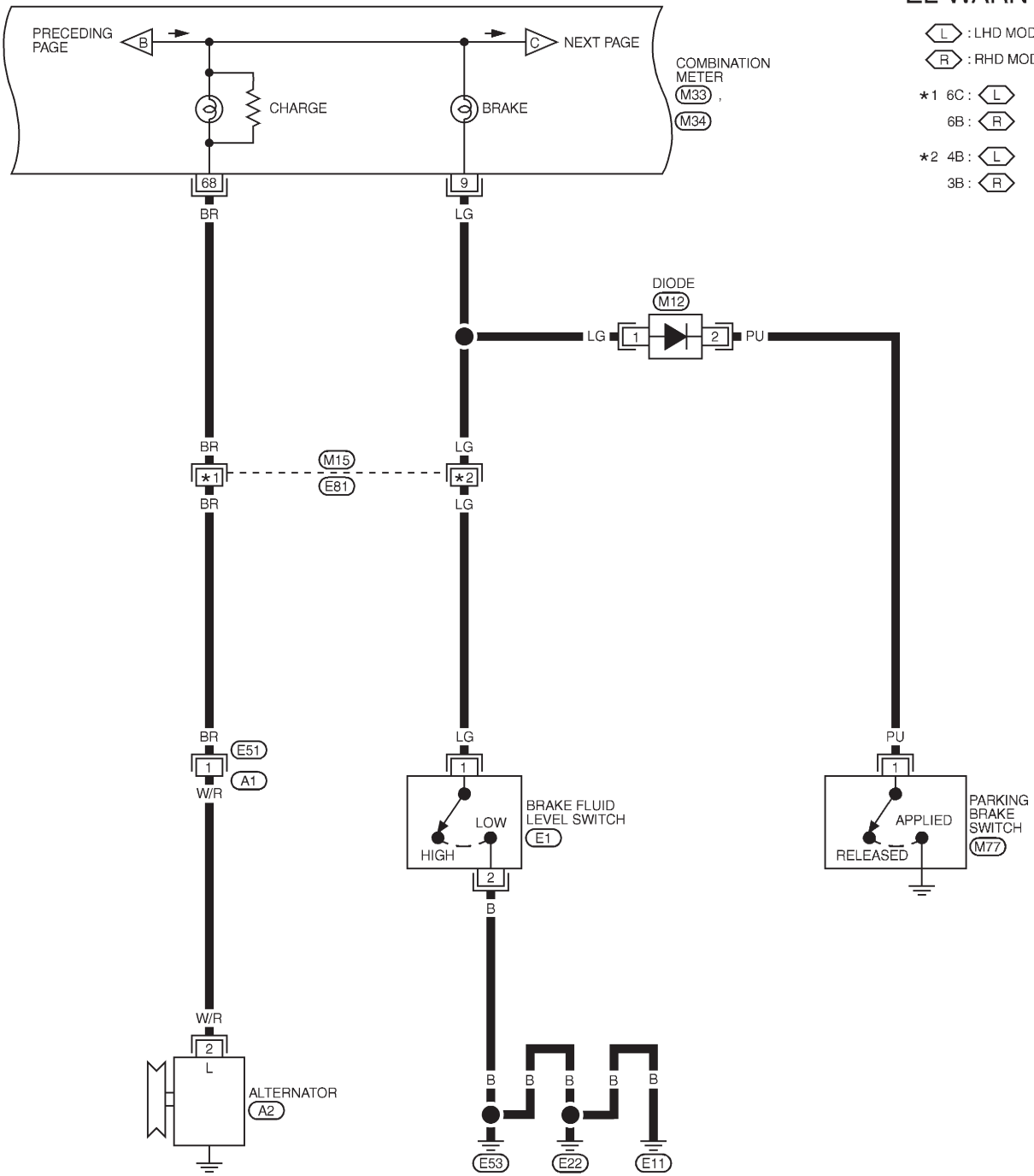


MEL111M

WARNING LAMPS

Wiring Diagram — WARN — (Cont'd)

EL-WARN-03



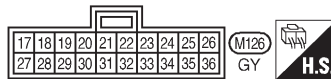
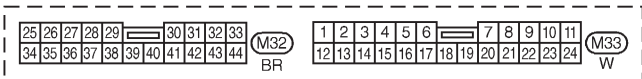
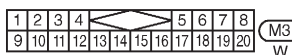
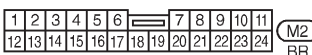
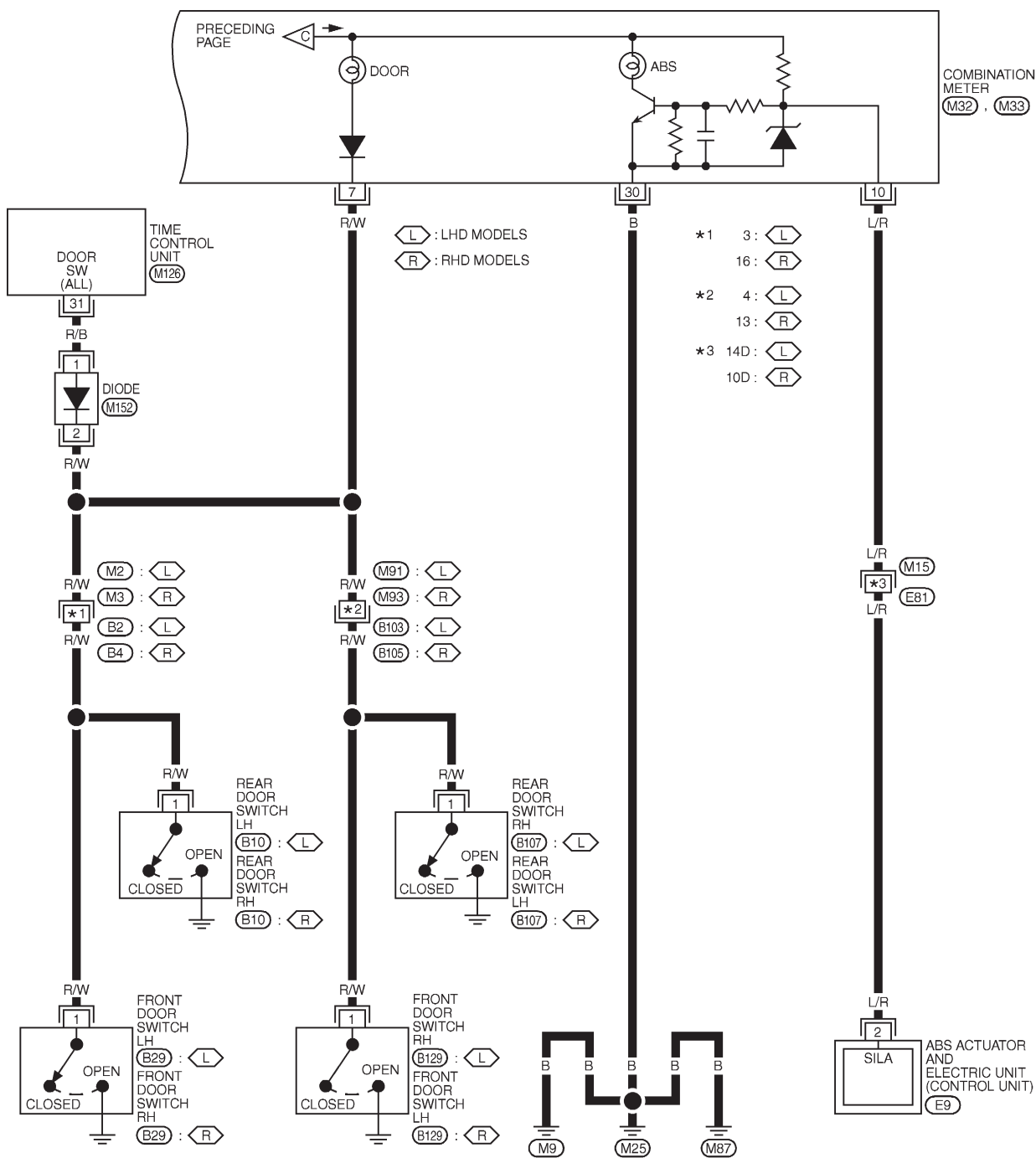
REFER TO THE FOLLOWING.
 ◻ M15 - SUPER
 MULTIPLE JUNCTION (SMJ)

MEL845M

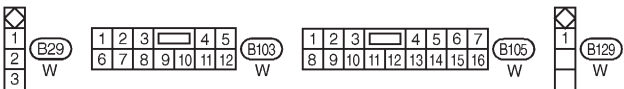
WARNING LAMPS

Wiring Diagram — WARN — (Cont'd)

EL-WARN-04



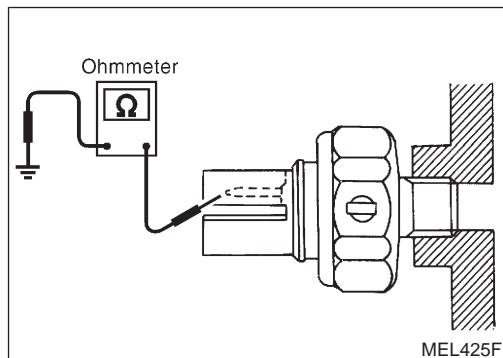
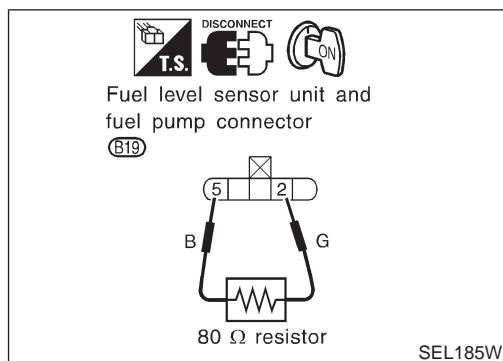
REFER TO THE FOLLOWING.
M15 -SUPER
 MULTIPLE JUNCTION (SMJ)



MEL524L

WARNING LAMPS

Electrical Components Inspection



Electrical Components Inspection FUEL WARNING LAMP OPERATION CHECK

NFEL0051

NFEL0051S01

1. Turn ignition switch "OFF".
2. Disconnect fuel level sensor unit and fuel pump harness connector B19.
3. Connect a resistor (80 Ω) between fuel level sensor unit and fuel pump harness connector terminals 2 and 5.
4. Turn ignition switch "ON".

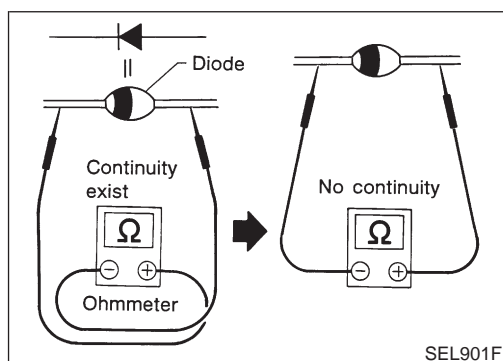
The fuel warning lamp should come on.

OIL PRESSURE SWITCH CHECK

NFEL0051S02

	Oil pressure kPa (bar, kg/cm ² , psi)	Continuity
Engine running	More than 10 - 20 (0.10 - 0.20, 0.1 - 0.2, 1 - 3)	No
Engine not running	Less than 10 - 20 (0.10 - 0.20, 0.1 - 0.2, 1 - 3)	Yes

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



DIODE CHECK

NFEL0051S03

- 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" under "WARNING LAMPS", EL-146.

NOTE:

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

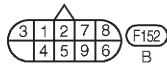
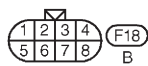
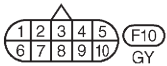
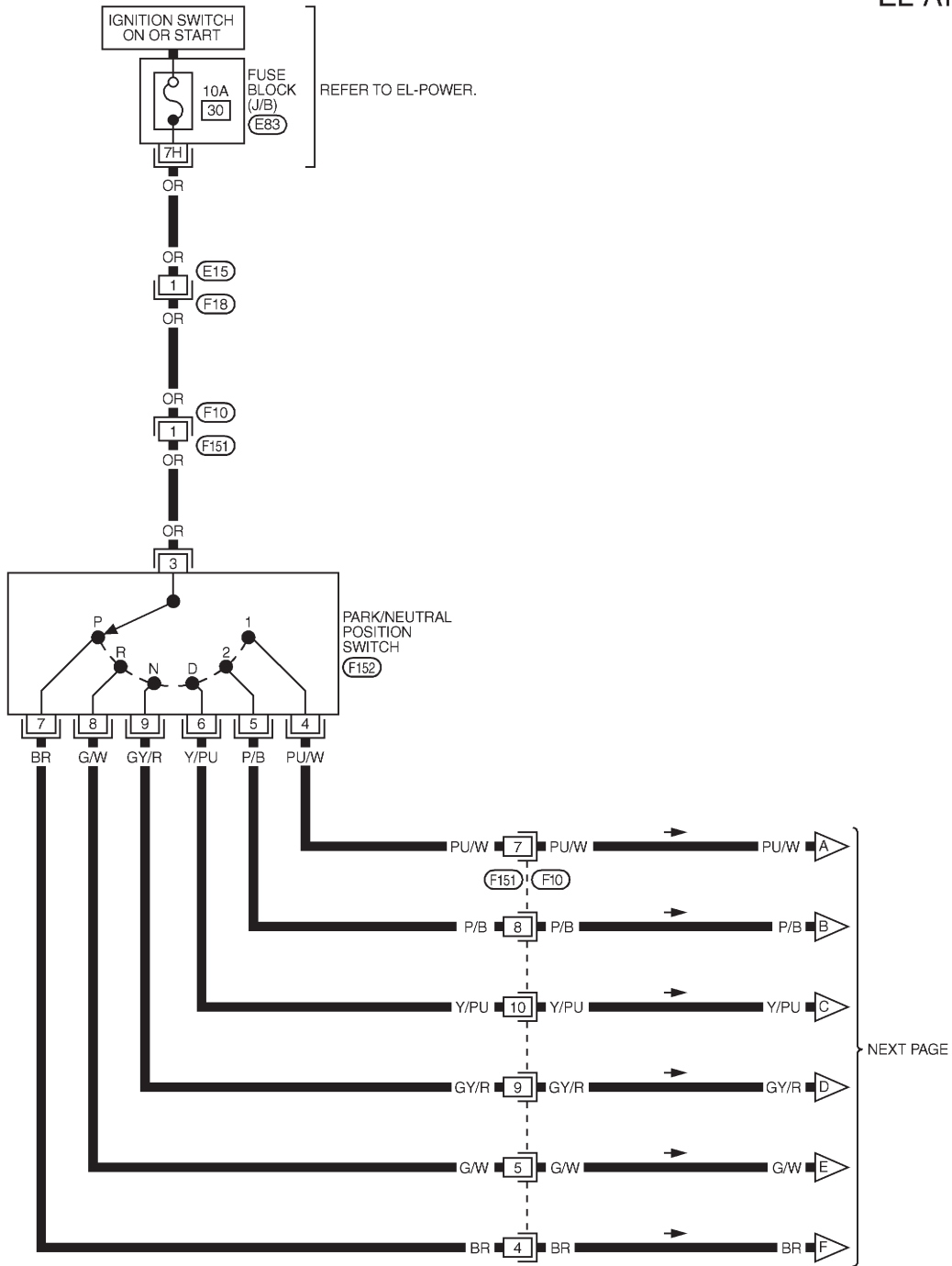
A/T INDICATOR

Wiring Diagram — AT/IND —

Wiring Diagram — AT/IND —

NFEL0159

EL-AT/IND-01

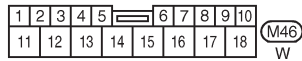
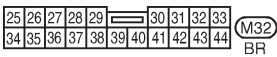
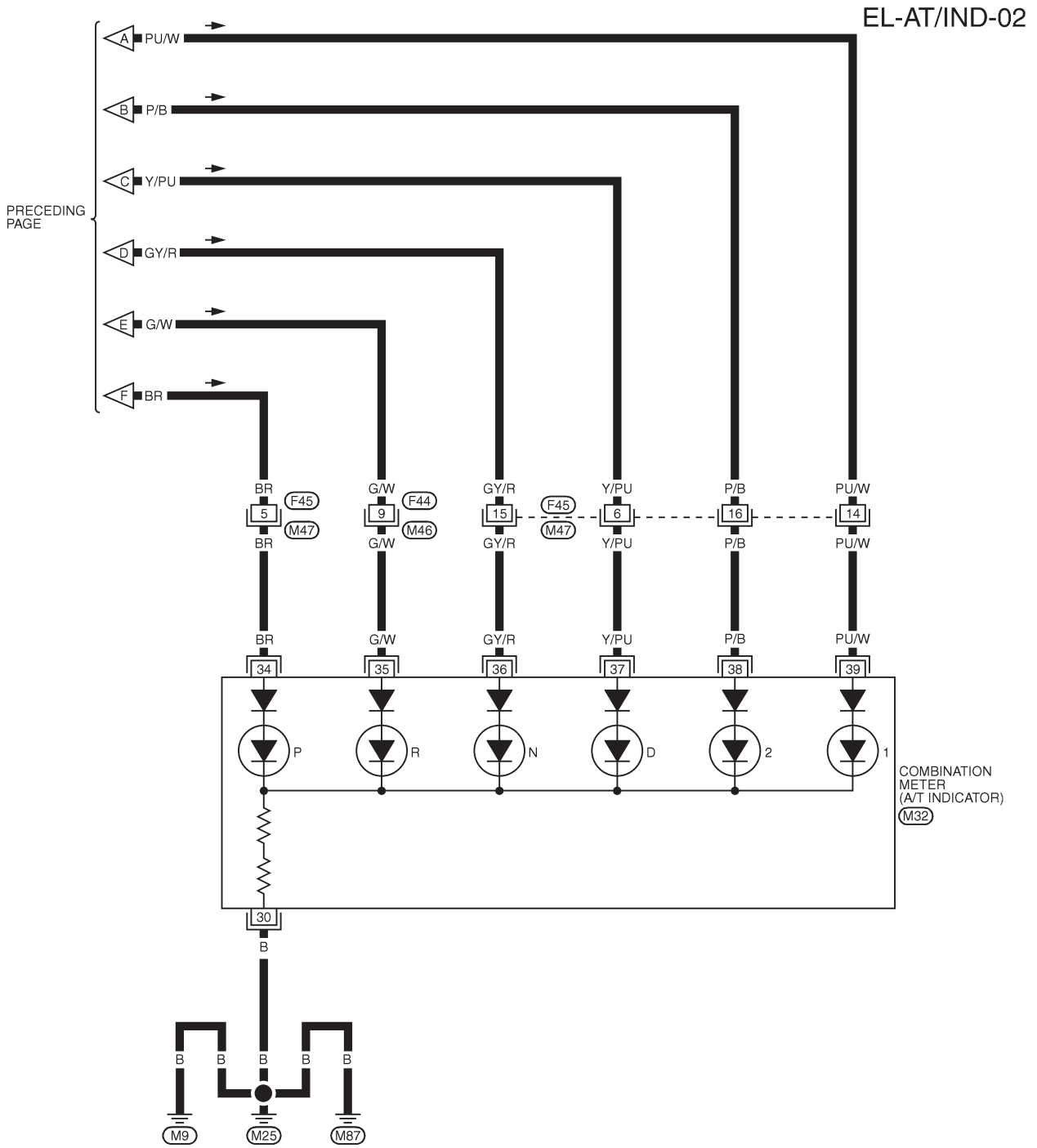


REFER TO THE FOLLOWING.
 (E83) - FUSE BLOCK-
 JUNCTION BOX (J/B)

MEL270K

A/T INDICATOR

Wiring Diagram — AT/IND — (Cont'd)



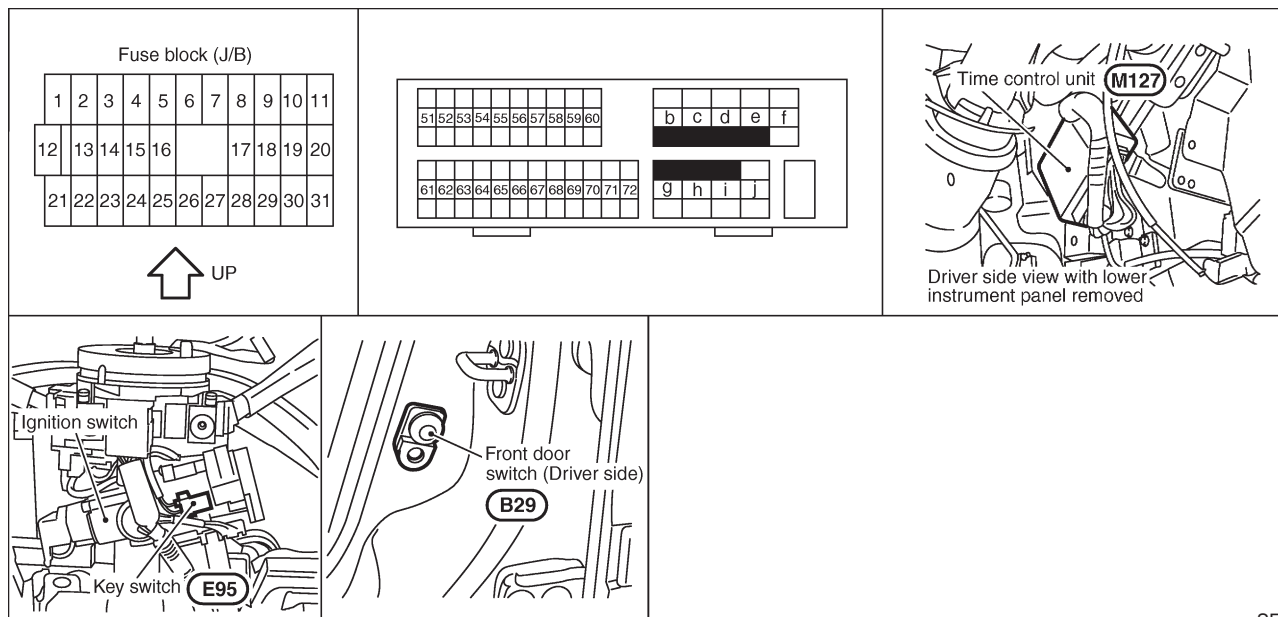
MEL785K

WARNING CHIME

Component Parts and Harness Connector Location

Component Parts and Harness Connector Location

NFEL0052



SEL798WA

System Description

NFEL0053

The warning chime is controlled by time control unit.

The warning chime is located in time control unit.

Power is supplied at all times

- through 10A fuse [No. 12, located in the fuse block (J/B)]
- to key switch terminal 2,
- to time control unit terminal 1
- through 40A fusible link (Letter I, located in the fuse and fusible link box)
- to circuit breaker terminal 1
- through circuit breaker terminal 2
- to time control unit terminal 10.
- through 10A fuse (No. 60, located in the fuse and fusible link box)
- to lighting switch terminal 11.

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

- through 10A fuse [No. 10, located in the fuse block (J/B)]
- to time control unit terminal 17.

Ground is supplied to time control unit terminal 16 through body grounds M9, M25 and M87.

When a signal, or combination of signals, is received by time control unit, the warning chime will sound.

IGNITION KEY WARNING CHIME

NFEL0053S01

When driver side door is locked with the key in the ignition switch in the OFF position and the driver's door open, the warning chime will sound.

Power is supplied

- from key switch terminal 1
- to time control unit terminal 18.

Ground is supplied

- to time control unit terminal 30.
- through front door switch (driver side) terminals 2 and 3
- through body grounds B30 (LHD models) or B7 (RHD models) and B12, and
- to time control unit terminal 28
- through door unlock sensor (driver side) terminals 2 and 5
- through body grounds M9, M25 and M87.

WARNING CHIME

System Description (Cont'd)

LIGHT WARNING CHIME

With ignition switch OFF, driver's door open, and lighting switch in 1ST or 2ND position, warning chime will sound. Power is supplied NFEL0053S02

- from lighting switch terminal 12 to time control unit terminal 19.

Ground is supplied

- from front door switch (driver side) terminal 2
- to time control unit terminal 30.

Front door switch (driver side) terminal 3 is grounded through body grounds B30 (LHD models) or B7 (RHD models) and B12.

WARNING CHIME

Wiring Diagram — CHIME —

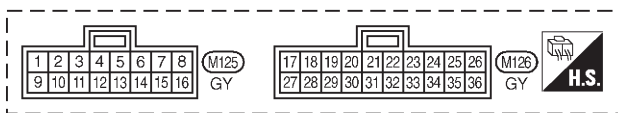
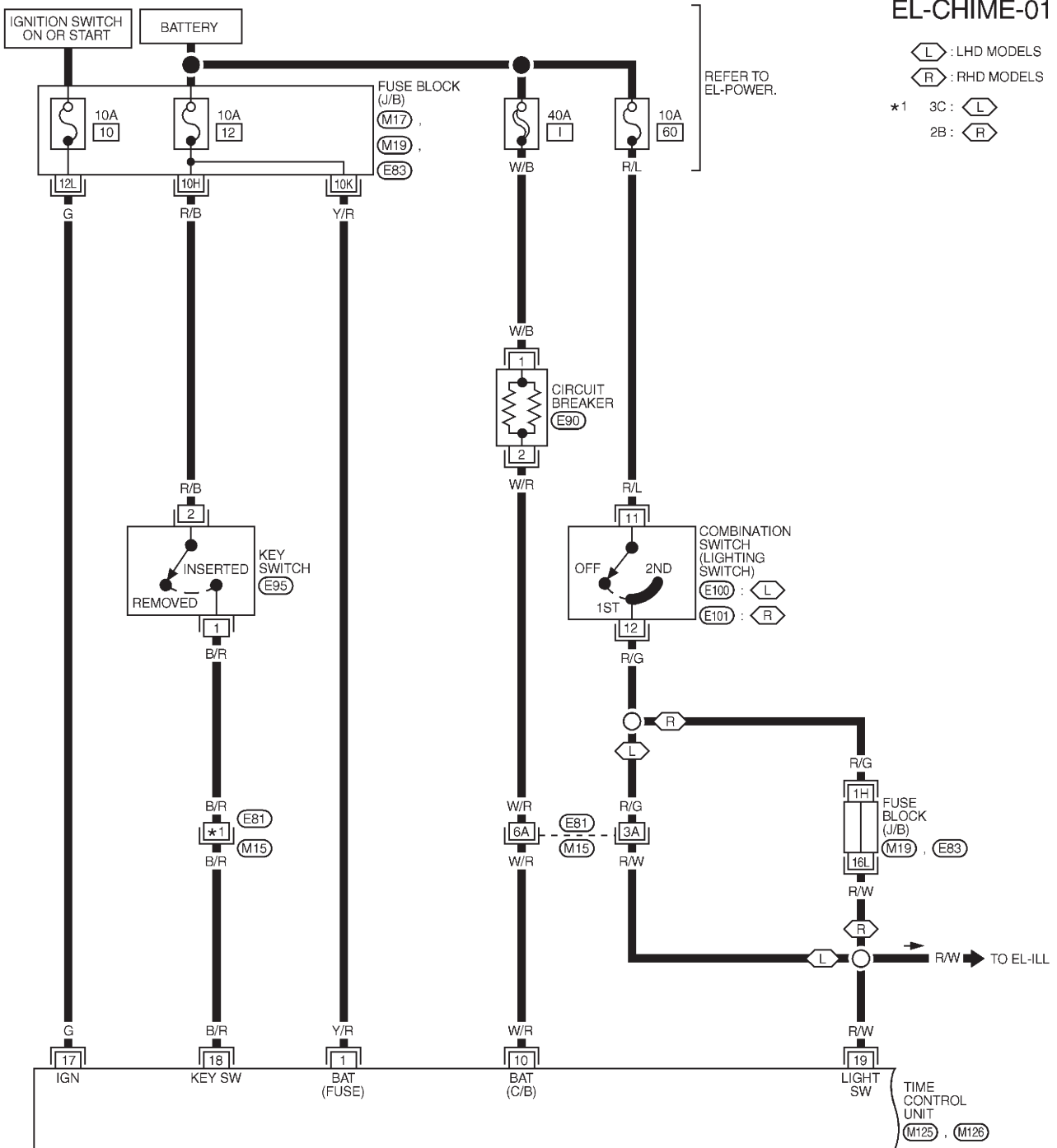
Wiring Diagram — CHIME —

NFEL0054

EL-CHIME-01

L : LHD MODELS
R : RHD MODELS

*1 3C : L
 2B : R



REFER TO THE FOLLOWING.

M15 -SUPER
 MULTIPLE JUNCTION (SMJ)

M17, M19, E83

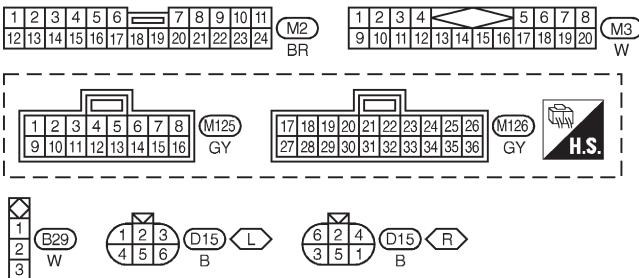
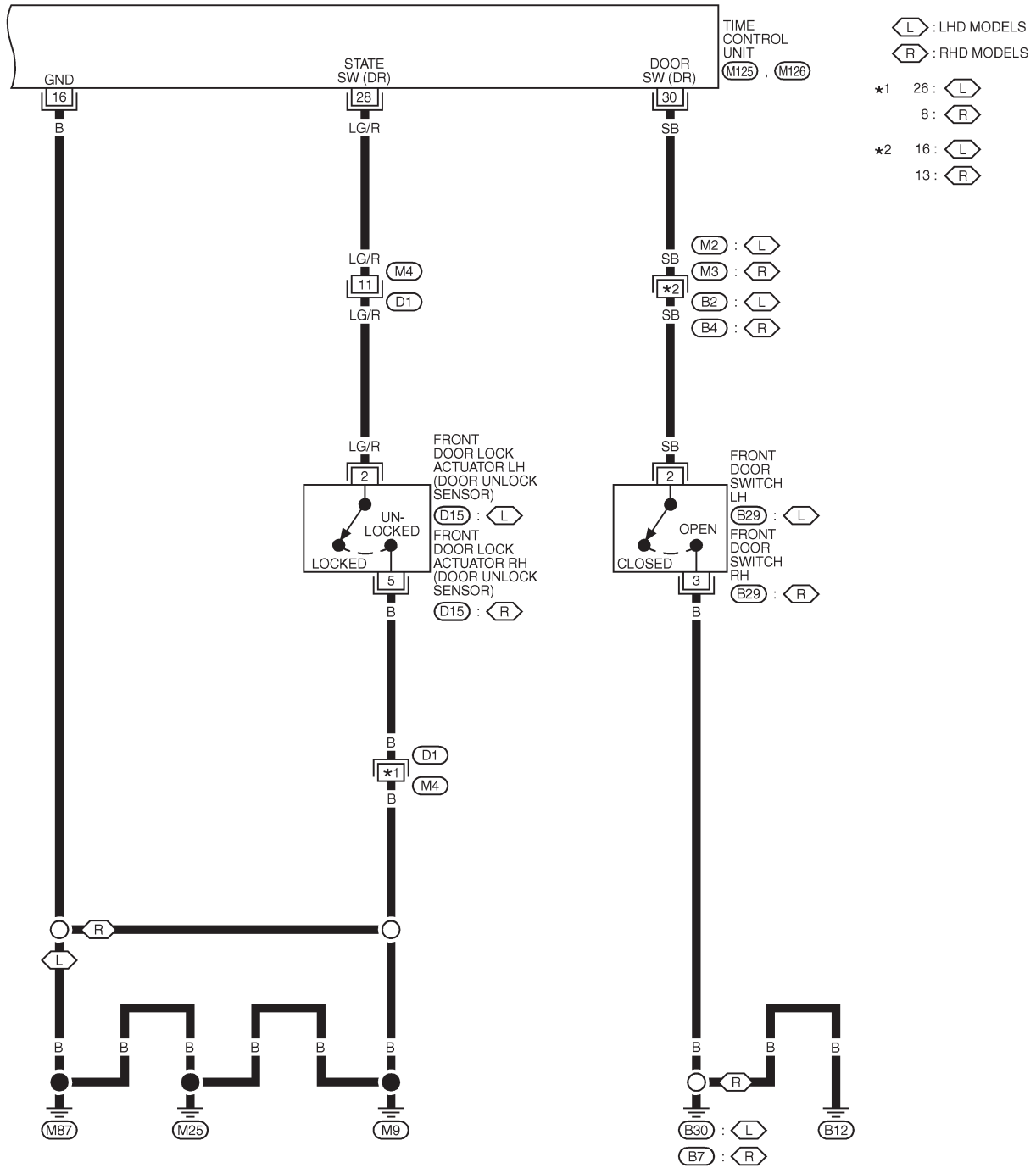
-FUSE BLOCK-
 JUNCTION BOX (J/B)

MEL846M

WARNING CHIME

Wiring Diagram — CHIME — (Cont'd)

EL-CHIME-02



REFER TO THE FOLLOWING.
 (D1) -SUPER
 MULTIPLE JUNCTION (SMJ)

MEL526L

WARNING CHIME

Trouble Diagnoses

Trouble Diagnoses SYMPTOM CHART

NFEL0055


NFEL0055S01

REFERENCE PAGE (EL-)	157	158	159	160	161
SYMPTOM	POWER SUPPLY AND GROUND CIRCUIT CHECK	DIAGNOSTIC PROCEDURE 1 (LIGHTING SWITCH INPUT SIGNAL CHECK)	DIAGNOSTIC PROCEDURE 2 (KEY SWITCH INSERT SIGNAL CHECK)	DIAGNOSTIC PROCEDURE 3 (DOOR UNLOCK SENSOR CHECK)	DIAGNOSTIC PROCEDURE 4
Light warning chime does not activate.	X	X			X
Ignition key warning chime does not activate.	X		X	X	X
All warning chimes do not activate.	X				X

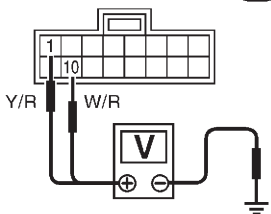
POWER SUPPLY AND GROUND CIRCUIT CHECK Power Supply Circuit Check

NFEL0055S02

NFEL0055S0201



Time control unit connector (M125)





Unit	Terminals		Ignition switch position		
	(+)	(-)	OFF	ACC	ON
Time control unit	1, 10	Ground	Battery voltage	Battery voltage	Battery voltage

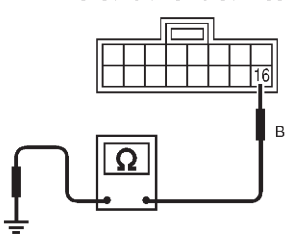
SEL246X

Ground Circuit Check

NFEL0055S0202

Time control unit connector (M125)






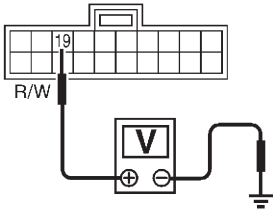
SEL247X

WARNING CHIME

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 1 (LIGHTING SWITCH INPUT SIGNAL CHECK)

=NFEL0055S03

1 CHECK LIGHTING SWITCH INPUT SIGNAL	
Check voltage between time control unit terminal 19 and ground.	
  	<p>Time control unit connector (M120)</p>  <p>Voltage [V]: Condition of lighting switch: 1ST or 2ND Approx. 12 Condition of lighting switch: OFF 0</p>
SEL248X	
OK or NG	
OK	▶ Lighting switch is OK.
NG	▶ Check the following. <ul style="list-style-type: none">● 10A fuse (No. 60, located in the fuse and fusible link box)● Harness for open or short between time control unit and lighting switch

WARNING CHIME

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 2 (KEY SWITCH INSERT SIGNAL CHECK)

=NFEL0055S04

1	CHECK KEY SWITCH INPUT SIGNAL	
<p>Check voltage between time control unit terminal 18 and ground.</p> <div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="width: 30%;"> <p>Time control unit connector (M126)</p> <p>CONNECT H.S.</p> <p>Key is inserted : Approx. 12V</p> <p>Key is removed : 0V</p> </div> <div style="width: 40%; text-align: center;"> <p>Voltage [V]:</p> <p>Condition of key switch: Key is inserted. Approx. 12</p> <p>Condition of key switch: Key is removed. 0</p> </div> <div style="width: 25%; text-align: right;"> <p>SEL249X</p> </div> </div> <p style="text-align: center; margin-top: 10px;">OK or NG</p>		
OK	▶	Key switch is OK.
NG	▶	GO TO 2.


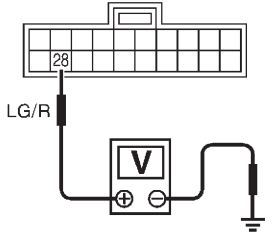
2	CHECK KEY SWITCH (INSERT)	
<p>Check continuity between terminals 1 and 2.</p> <div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="width: 30%;"> <p>Key switch connector (E95)</p> <p>DISCONNECT T.S.</p> </div> <div style="width: 40%; text-align: center;"> <p>Continuity:</p> <p>Condition of key switch: Key is inserted. Yes</p> <p>Condition of key switch: Key is removed. No</p> </div> <div style="width: 25%; text-align: right;"> <p>SEL311W</p> </div> </div> <p style="text-align: center; margin-top: 10px;">OK or NG</p>		
OK	▶	<p>Check the following.</p> <ul style="list-style-type: none"> ● 10A fuse [No. 12, located in fuse block (J/B)] ● Harness for open or short between key switch and fuse ● Harness for open or short between control unit and key switch
NG	▶	Replace key switch.


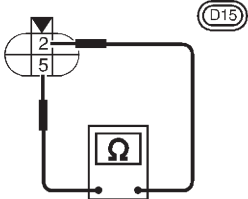
WARNING CHIME

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 3 (DOOR UNLOCK SENSOR CHECK)

NFEL0055S08

1	CHECK FRONT DOOR UNLOCK SENSOR INPUT SIGNAL																
Check voltage between time control unit terminal 28 and ground.																	
	Time control unit connector (M126) 	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">Unit</th> <th colspan="2">Terminals</th> <th rowspan="2">Condition (Driver's door)</th> <th rowspan="2">Voltage [V]</th> </tr> <tr> <th>(+)</th> <th>(-)</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Time control unit</td> <td rowspan="2">28</td> <td rowspan="2">Ground</td> <td>Locked</td> <td>Approx. 5</td> </tr> <tr> <td>Unlocked</td> <td>0</td> </tr> </tbody> </table>	Unit	Terminals		Condition (Driver's door)	Voltage [V]	(+)	(-)	Time control unit	28	Ground	Locked	Approx. 5	Unlocked	0	SEL259X
Unit	Terminals			Condition (Driver's door)	Voltage [V]												
	(+)	(-)															
Time control unit	28	Ground	Locked	Approx. 5													
			Unlocked	0													
OK or NG																	
OK	▶	Door unlock sensor is OK.															
NG	▶	GO TO 2.															


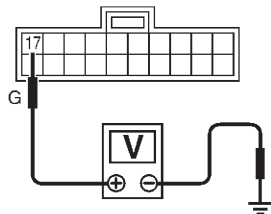
2	CHECK FRONT DOOR UNLOCK SENSOR		
1. Disconnect front door unlock sensor harness connector. 2. Check continuity between door unlock sensor terminals.			
	Front door lock actuator for (door unlock sensor) connector (D15) 	Continuity: Condition: Locked No Condition: Unlocked Yes	SEL260X
OK or NG			
OK	▶	Check the following. <ul style="list-style-type: none"> ● Door unlock sensor ground circuit ● Harness for open or short between time control unit and door unlock sensor 	
NG	▶	Replace door unlock sensor.	



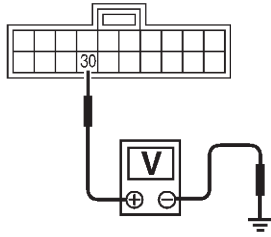
WARNING CHIME

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 4

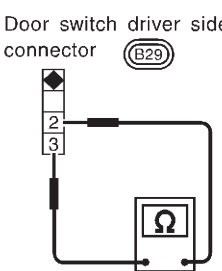

NFEL0055S06

1	CHECK IGNITION ON SIGNAL																
Check voltage between time control unit terminal 17 and ground.																	
	<p>Time control unit connector (M126)</p> 	<table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="text-align: center;">Terminals</th> <th colspan="3" style="text-align: center;">Ignition switch position</th> </tr> <tr> <th style="text-align: center;">(+)</th> <th style="text-align: center;">(-)</th> <th style="text-align: center;">OFF</th> <th style="text-align: center;">ACC</th> <th style="text-align: center;">ON</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">17</td> <td style="text-align: center;">Ground</td> <td style="text-align: center;">0V</td> <td style="text-align: center;">0V</td> <td style="text-align: center;">Battery voltage</td> </tr> </tbody> </table>	Terminals		Ignition switch position			(+)	(-)	OFF	ACC	ON	17	Ground	0V	0V	Battery voltage
Terminals		Ignition switch position															
(+)	(-)	OFF	ACC	ON													
17	Ground	0V	0V	Battery voltage													
SEL250X																	
OK or NG																	
OK	▶	GO TO 2.															
NG	▶	Check the following. <ul style="list-style-type: none"> ● 10A fuse [No. 10, located in fuse block (J/B)] ● Harness for open or short between control unit and fuse 															

2	CHECK DOOR SWITCH INPUT SIGNAL	
Check voltage between time control unit terminal 30 and ground.		
 	<p>Time control unit connector (M126)</p> 	<p>Voltage [V]:</p> <p>Condition of driver's door: CLOSED Approx. 5</p> <p>Condition of driver's door: OPENED 0</p>
SEL251X		
OK or NG		
OK	▶	System is OK.
NG	▶	GO TO 3.

WARNING CHIME

Trouble Diagnoses (Cont'd)

3 CHECK DRIVER SIDE DOOR SWITCH	
<p>Check continuity between terminals 2 and 3.</p> <div style="display: flex; align-items: center;"><div style="flex: 1;"><p>Door switch driver side connector (B29)</p><div style="margin-left: 20px;"></div></div><div style="flex: 1; padding-left: 20px;"><p>Continuity: Door switch is pushed. No Door switch is released. Yes</p></div></div> <p style="text-align: right;">SEL325W</p> <p style="text-align: center;">OK or NG</p>	
OK	<p>▶ Check the following.</p> <ul style="list-style-type: none">● Driver side door switch ground circuit and condition● Harness for open or short between control unit and driver side door switch
NG	<p>▶ Replace driver side door switch.</p>

System Description

WIPER OPERATION

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

- LO speed
- HI speed
- INT (Intermittent)

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

- through 20A fuse [No. 25, located in the fuse block (J/B)]
- to wiper motor terminal 4.

Low and High Speed Wiper Operation

Ground is supplied to wiper switch terminal 17 through body grounds E11, E22 and E53.

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

- through terminal 14 of the wiper switch
- to wiper motor terminal 3.

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

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

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

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

Auto Stop Operation

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

When wiper arms are not located at base of windshield with wiper switch OFF, ground is provided

- from terminal 14 of the wiper switch
- to wiper motor terminal 3, in order to continue wiper motor operation at low speed.

Ground is also supplied

- through terminal 13 of the wiper switch
- to wiper motor terminal 2
- through terminal 6 of the wiper motor, and
- through body grounds E11, E22 and E53.

When wiper arms reach base of windshield, wiper motor terminals 2 and 4 are connected instead of terminals 2 and 6. Wiper motor will then stop wiper arms at the STOP position.

Intermittent Operation

The wiper motor operates the wiper arms one time at low speed at a set interval of approximately 3 to 13 seconds. This feature is controlled by the wiper amplifier (INT SW) combined with wiper switch.

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

The desired interval time is input to wiper amplifier (INT VR) from wiper volume switch combined with wiper switch.

Then intermittent ground is supplied

- to wiper motor terminal 3
- from terminal 14 of wiper switch
- through wiper amplifier (OUTPUT).

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

WASHER OPERATION

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

- through 20A fuse [No. 25, located in the fuse block (J/B)]
- to washer motor terminal 1.

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

- to washer motor terminal 2, and
- from terminal 18 of the wiper switch
- through terminal 17 of the wiper switch, and

NFEL0057

NFEL0057S01

NFEL0057S0101

NFEL0057S0102

NFEL0057S0103

NFEL0057S02

FRONT WIPER AND WASHER

System Description (Cont'd)

- through body grounds E11, E22 and E53.

With power and ground supplied, the washer motor operates.

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

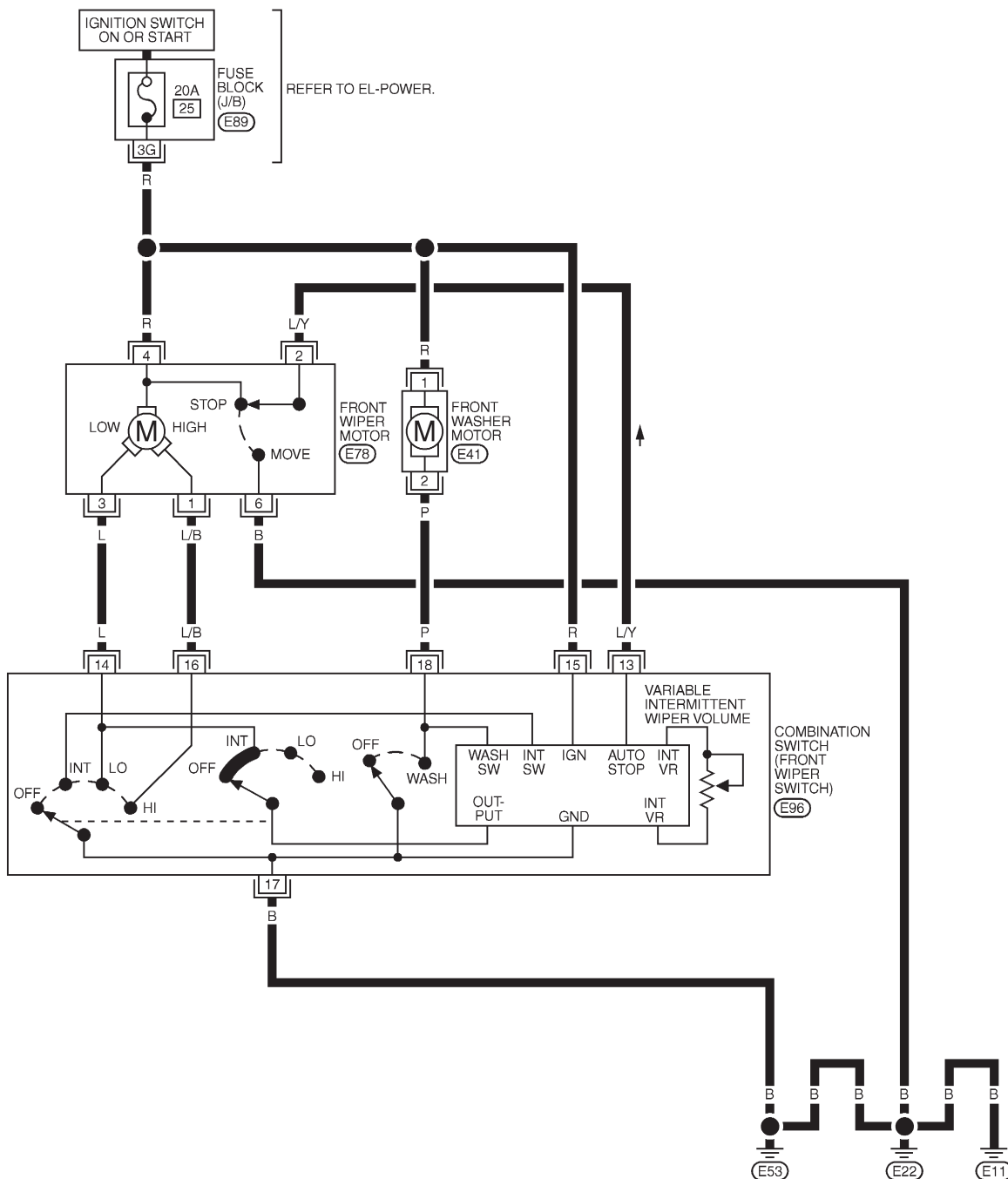
FRONT WIPER AND WASHER

Wiring Diagram — WIPER —

Wiring Diagram — WIPER —

NFEL0058

EL-WIPER-01

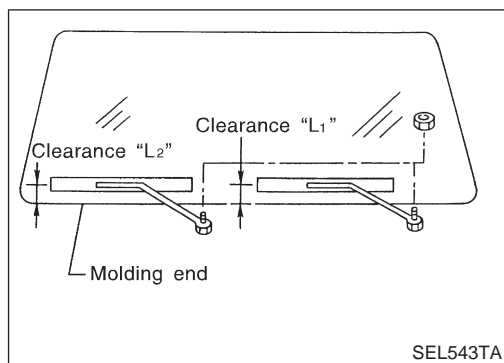


REFER TO THE FOLLOWING.
 E89 - FUSE BLOCK-JUNCTION BOX (J/B)

MEL527L

FRONT WIPER AND WASHER

Removal and Installation



Removal and Installation

NFEL0060

WIPER ARMS

NFEL0060S01

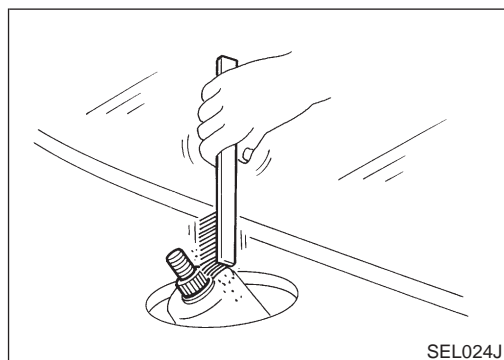
1. Prior to wiper arm installation, turn on wiper switch to operate wiper motor and then turn it "OFF" (Auto Stop).
2. Lift the blade up and then set it down onto glass surface to set the blade center to clearance "L₁" & "L₂" immediately before tightening nut.
3. Eject washer fluid. Turn on wiper switch to operate wiper motor and then turn it "OFF".
4. Ensure that wiper blades stop within clearance "L₁" & "L₂".

Clearance "L₁": 40 - 56 mm (1.57 - 2.20 in)

Clearance "L₂": 48 - 64 mm (1.89 - 2.52 in)

- Tighten wiper arm nuts to specified torque.

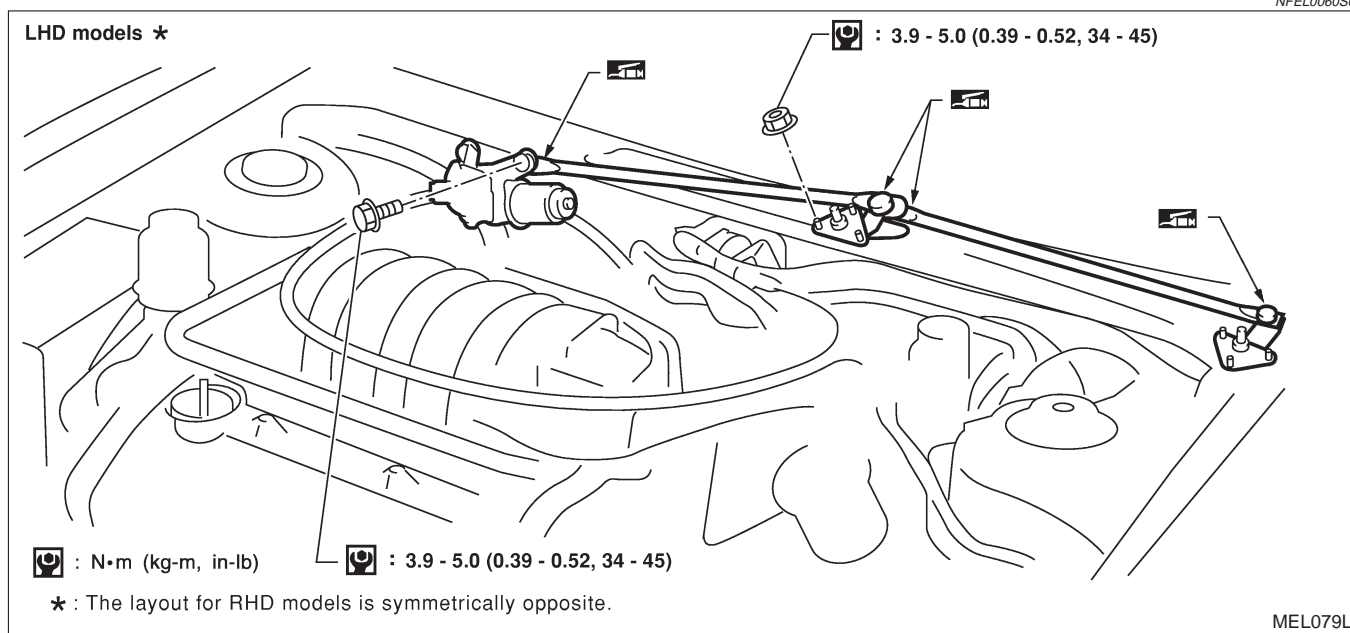
Front wiper: 21 - 26 N·m (2.1 - 2.7 kg·m, 16 - 19 ft·lb)



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

WIPER LINKAGE

NFEL0060S02



FRONT WIPER AND WASHER

Removal and Installation (Cont'd)

Removal

NFEL0060S0201

1. Remove 4 bolts that secure wiper motor.
2. Detach wiper motor from wiper linkage at ball joint.
3. Remove wiper linkage.

Be careful not to break ball joint rubber boot.

Installation

NFEL0060S0202

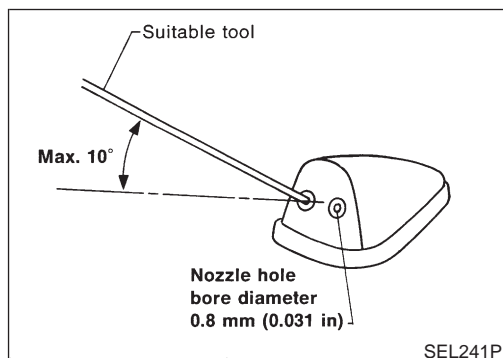
- Grease ball joint portion before installation.
1. Installation is the reverse order of removal.

Washer Nozzle Adjustment

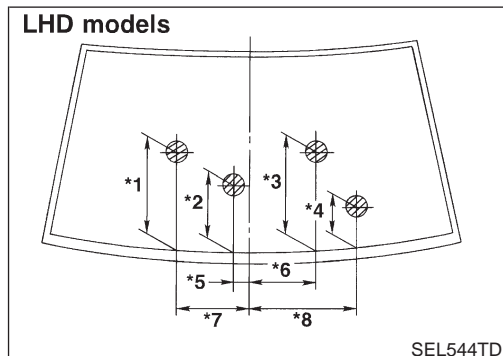
NFEL0061

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

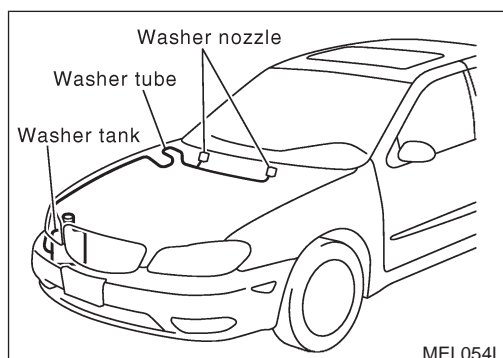
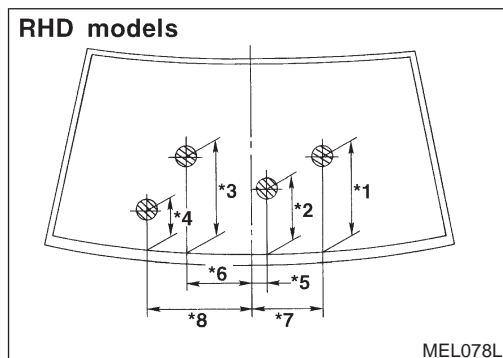
Adjustable range: $\pm 10^\circ$



LHD models



RHD models



Unit: mm (in)

*1	341 (13.43)	*5	154 (6.06)
*2	286 (11.26)	*6	203 (7.99)
*3	285 (11.22)	*7	382 (15.04)
*4	152 (5.98)	*8	385 (15.16)

*: The diameters of these circles are less than 80 mm (3.15 in).

Washer Tube Layout

NFEL0062

HEADLAMP WASHER

System Description

System Description

NFEL0317

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

- through 30A fusible link (letter **F**, located in fuse and fusible link box)
- to headlamp washer motor terminal 1, and
- through 10A fuse (No. 60, located in fuse and fusible link box)
- to lighting switch terminal 11.

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

- through 10A fuse [No. 10, located in fuse block (J/B)]
- to headlamp washer control unit terminal 5.

Ground is supplied to headlamp washer control unit terminal 6 through body grounds E11, E22 and E53.

When headlamp washer switch is pushed during lighting switch is in 1st or 2ND position, ground is supplied

- to headlamp washer control unit terminal 3
- through headlamp washer switch and body grounds M9, M25 and M87, and
- to headlamp washer motor terminal 2
- through headlamp washer control unit terminal 1.

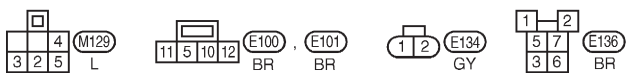
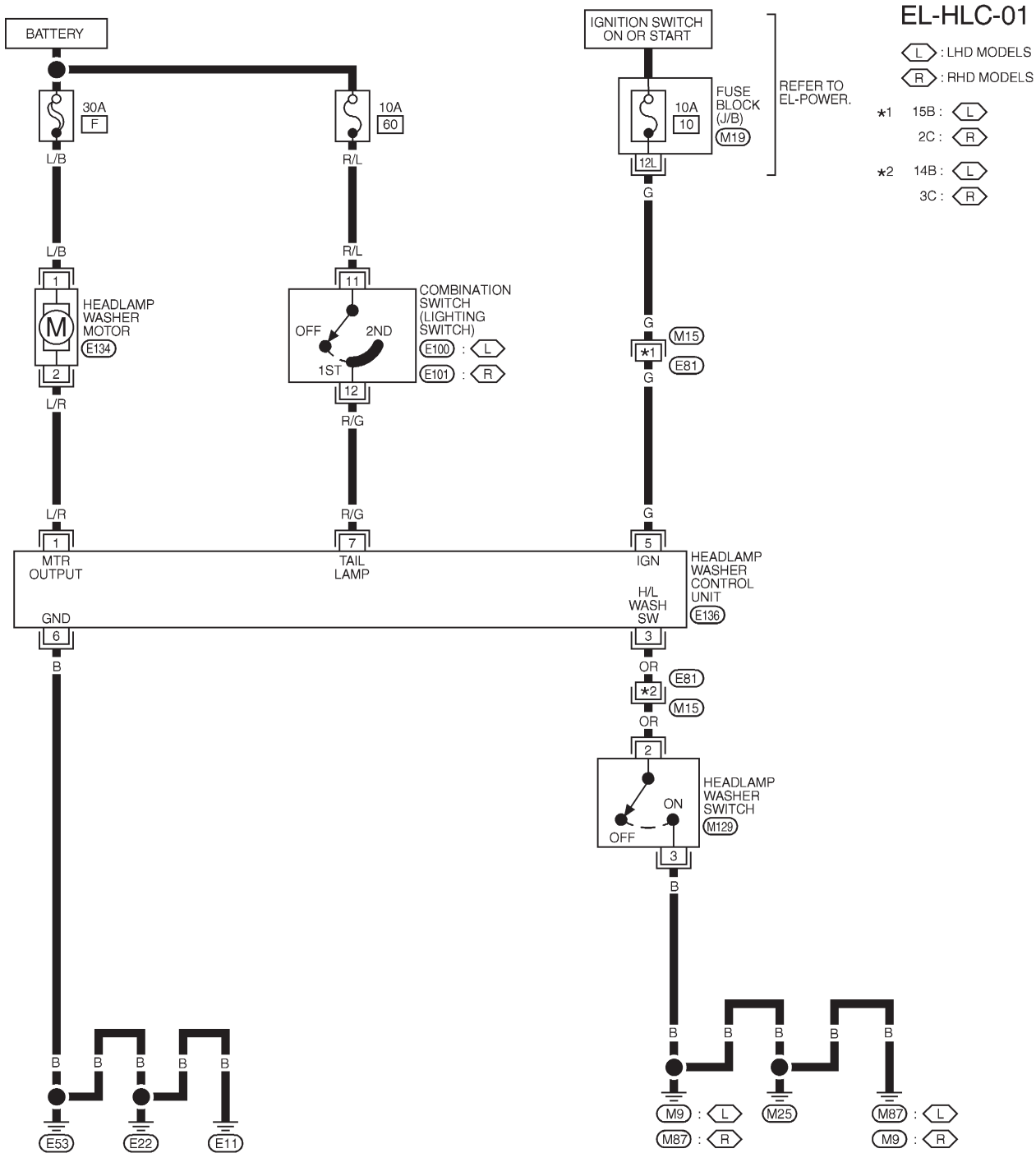
With power and ground supplied, the headlamp washer motor operates.

HEADLAMP WASHER

Wiring Diagram — HLC —

Wiring Diagram — HLC —

NFEL0318



REFER TO THE FOLLOWING.

M15 - SUPER
 MULTIPLE JUNCTION (SMJ)
 M19 - FUSE BLOCK-
 JUNCTION BOX (J/B)

MEL847M

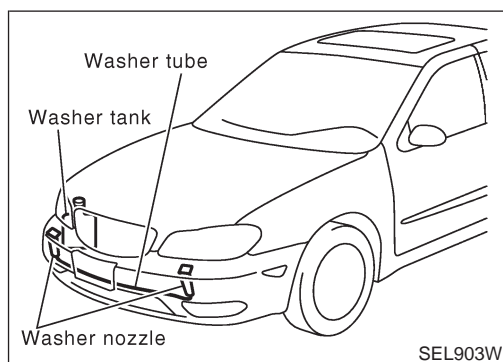
HEADLAMP WASHER

Trouble Diagnoses

Trouble Diagnoses

NFEL0319

Symptom	Possible cause	Repair order
Headlamp washer does not operate.	<ol style="list-style-type: none"> 1. 10A fuse 2. 30A fusible link 3. Headlamp washer switch circuit 4. Headlamp washer switch 5. Lighting switch circuit 6. Washer motor circuit 7. Washer motor 8. Headlamp washer control unit 	<ol style="list-style-type: none"> 1. Check 10A fuse [No. 10, located in fuse block (J/B)]. Verify battery voltage is present at terminal 5 of headlamp washer control unit. 2. Check 30A fusible link (letter F, located in fuse and fusible link box). Verify battery voltage is present at terminal 1 of headlamp washer motor. 3. Check harness for open or short between headlamp washer switch and control unit. Check harness for open or short between headlamp washer switch and ground. 4. Check headlamp washer switch. 5. Check harness for open or short between lighting switch and control unit. 6. Check harness for open or short between headlamp washer motor and control unit. 7. Check headlamp washer motor. 8. Replace headlamp washer control unit.



Washer Tube Layout

NFEL0320

HORN

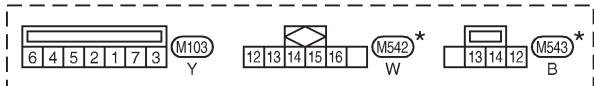
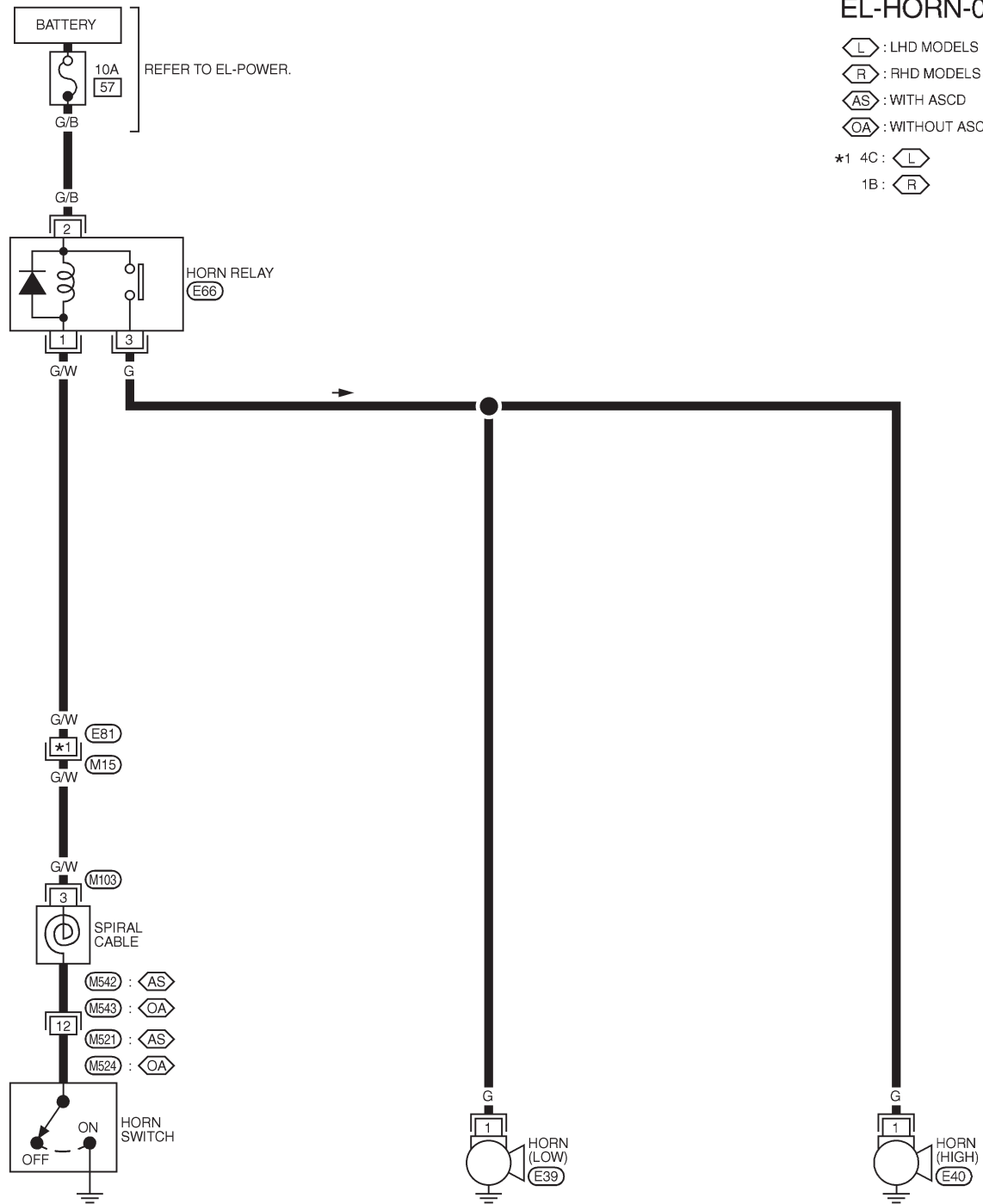
Wiring Diagram — HORN —

Wiring Diagram — HORN —

NFEL0071

EL-HORN-01

- ◻ L : LHD MODELS
- ◻ R : RHD MODELS
- ◻ AS : WITH ASCD
- ◻ OA : WITHOUT ASCD
- *1 4C: ◻ L
- 1B: ◻ R



* : THIS CONNECTOR IS NOT SHOWN IN "HARNES LAYOUT", EL SECTION.

REFER TO THE FOLLOWING.
 M15 -SUPER
 MULTIPLE JUNCTION (SMJ)

MEL190M

CIGARETTE LIGHTER

Wiring Diagram — CIGAR —

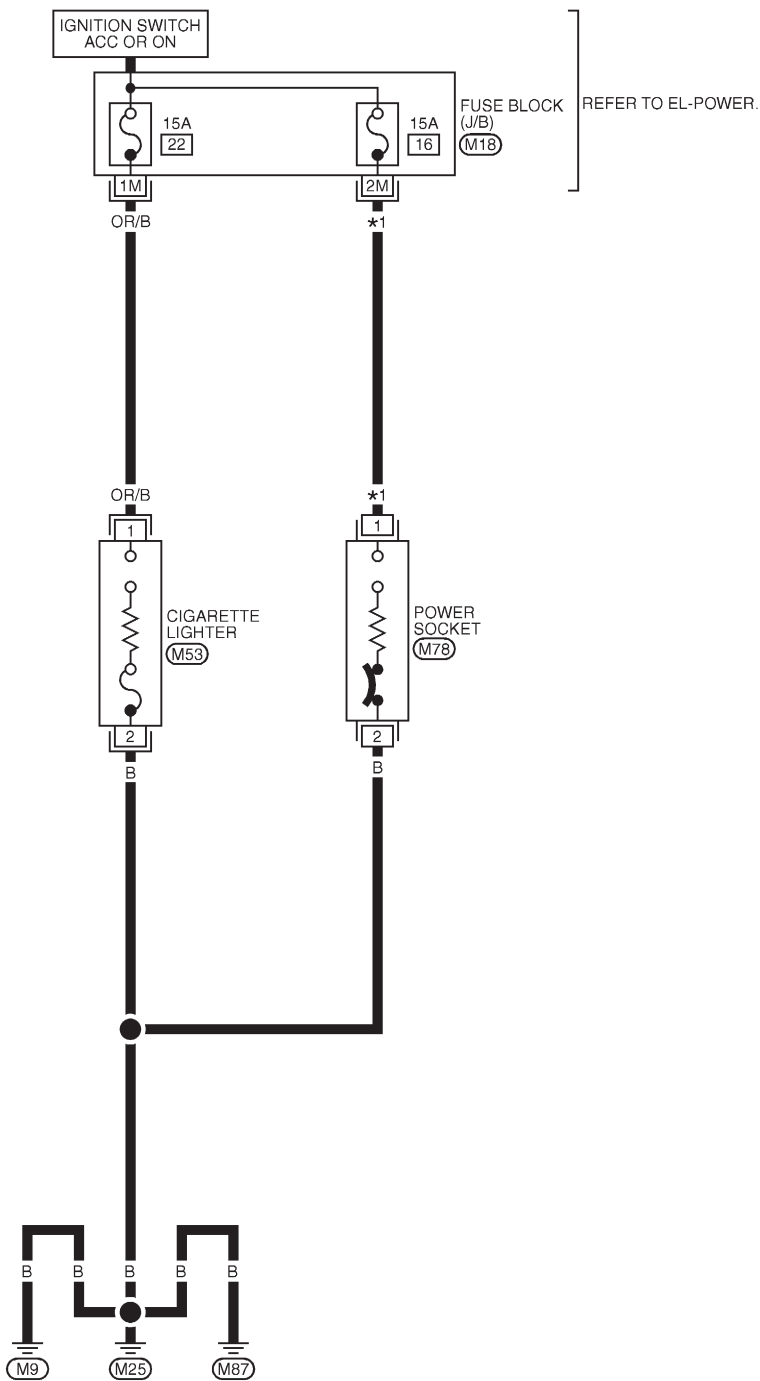
Wiring Diagram — CIGAR —

NFEL0156

EL-CIGAR-01

L : LHD MODELS
R : RHD MODELS

*1 OR/B : L
 R : R



REFER TO THE FOLLOWING.
M18 - FUSE BLOCK-JUNCTION BOX (J/B)

MEL790K

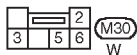
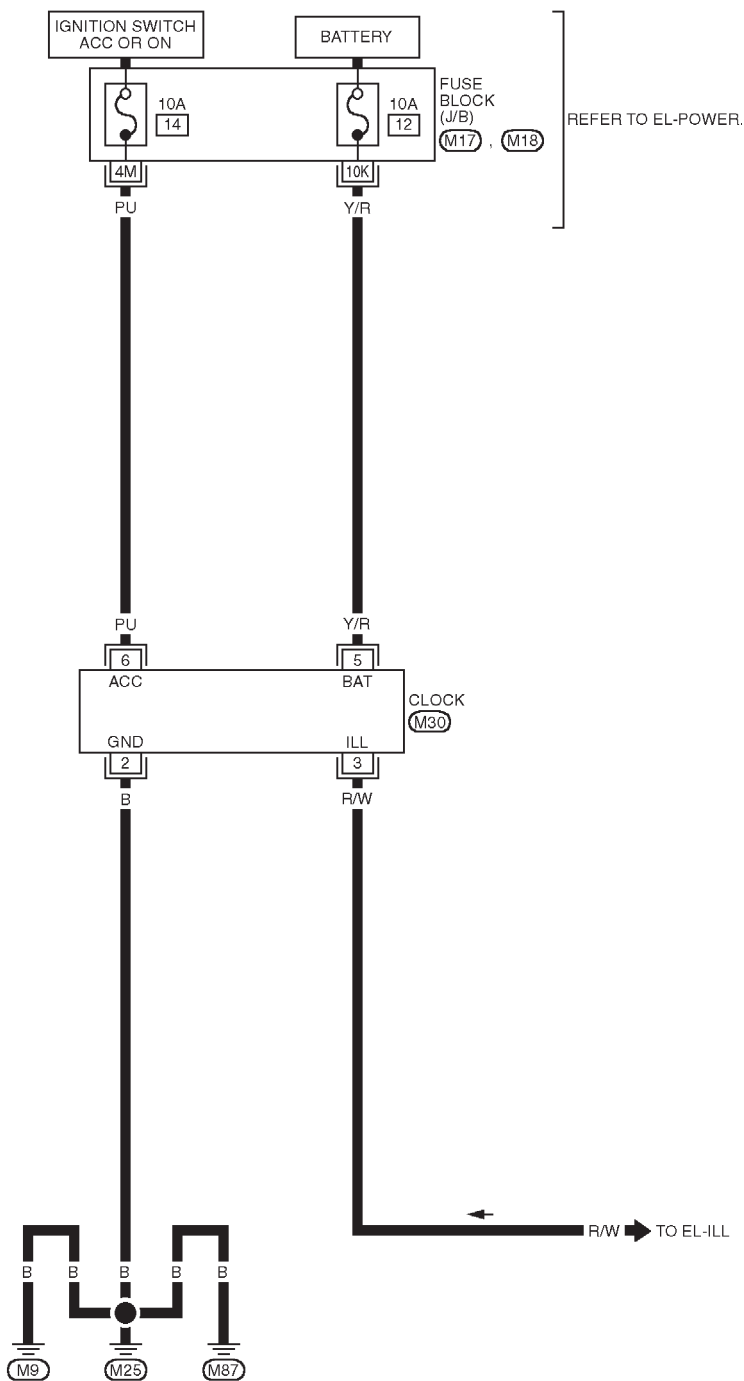
CLOCK

Wiring Diagram — CLOCK —

Wiring Diagram — CLOCK —

NFEL0166

EL-CLOCK-01



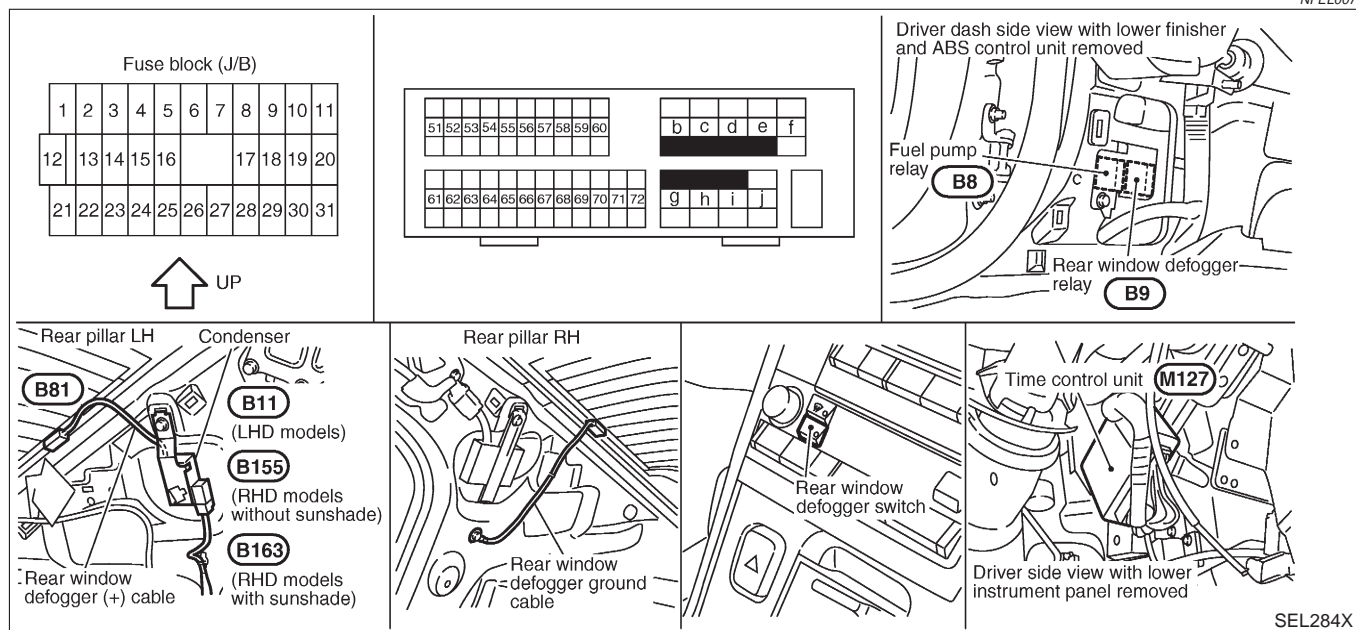
REFER TO THE FOLLOWING.
 (M17) , (M18) -FUSE BLOCK-
 JUNCTION BOX (J/B)

MEL791K

REAR WINDOW DEFOGGER

Component Parts and Harness Connector Location

Component Parts and Harness Connector Location



System Description

NFEL0073

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

Power is supplied at all times

- to rear window defogger relay terminal 3
- through 20A fuse (No. 7, located in the fuse and fusible link box) and
- to rear window defogger relay terminal 6
- through 10A fuse (No. 13, located in the fuse and fusible link box).
- to time control unit terminal 1
- through 10A fuse (No. 12, located in the fuse and fusible link box).
- to time control unit terminal 10
- through circuit breaker
- through 40A fusible link (Letter I, located in the fuse and fusible link box).

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

- through 10A fuse [No. 10, located in the fuse block (J/B)]
- to the rear window defogger relay terminal 1 and
- to time control unit terminal 17.

Ground is supplied to terminals 32 (with auto A/C) or 17 (with manual A/C) of the rear defogger switch through body grounds M9, M25 and M87.

When the rear defogger switch is turned ON, ground is supplied

- through terminal 31 (with auto A/C) or terminal 9 (with manual A/C) of the rear defogger switch
- to time control unit terminal 35.

Terminal 27 of time control unit then supplies ground to the rear window defogger relay terminal 2.

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

Power is supplied

- through terminals 5 and 7 of the rear window defogger relay
- to the rear window defogger and door mirror defogger.

The rear window defogger has an independent ground.

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

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

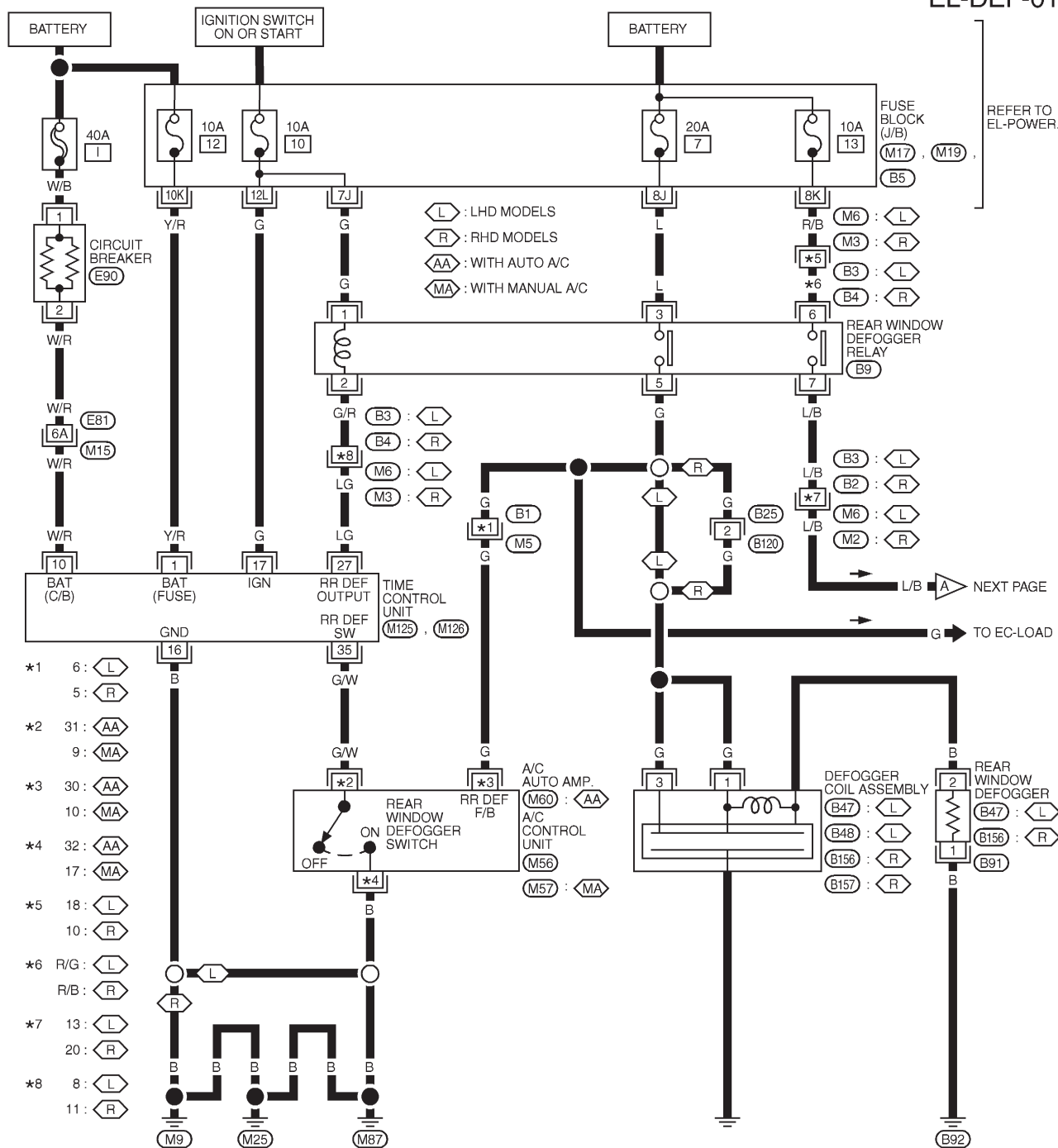
REAR WINDOW DEFOGGER

Wiring Diagram — DEF —

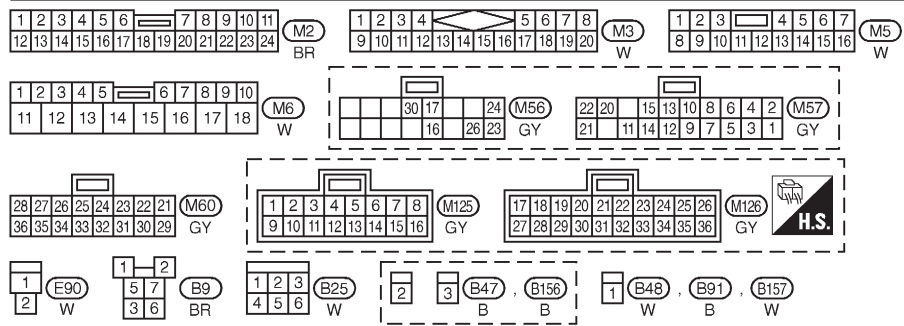
Wiring Diagram — DEF —

=NFEL0074

EL-DEF-01



- *1 6: (L)
5: (R)
- *2 31: (AA)
9: (MA)
- *3 30: (AA)
10: (MA)
- *4 32: (AA)
17: (MA)
- *5 18: (L)
10: (R)
- *6 R/G: (L)
R/B: (R)
- *7 13: (L)
20: (R)
- *8 8: (L)
11: (R)

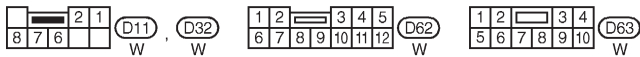
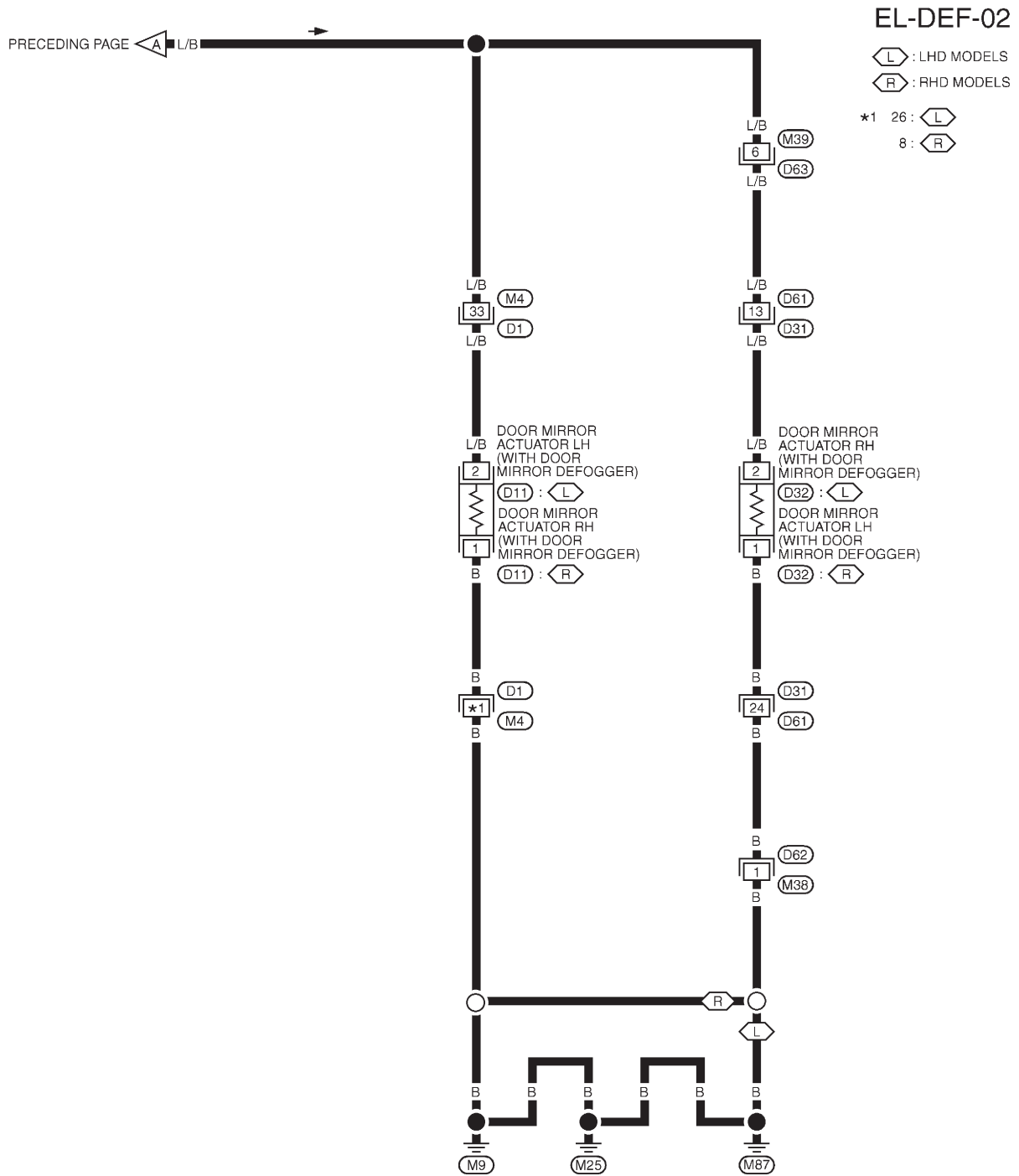


REFER TO THE FOLLOWING.
 (M15) -SUPER
 MULTIPLE JUNCTION (SMJ)
 (M17, M19, B5)
 -FUSE BLOCK-
 JUNCTION BOX (J/B)

MEL529L

REAR WINDOW DEFOGGER

Wiring Diagram — DEF — (Cont'd)



REFER TO THE FOLLOWING.
D1 , D31 -SUPER
 MULTIPLE JUNCTION (SMJ)

MEL530L

REAR WINDOW DEFOGGER


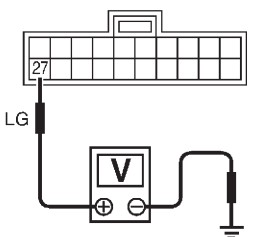
Trouble Diagnoses


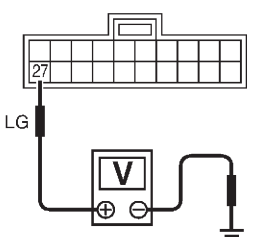
Trouble Diagnoses DIAGNOSTIC PROCEDURE

NFEL0075

NFEL0075S01


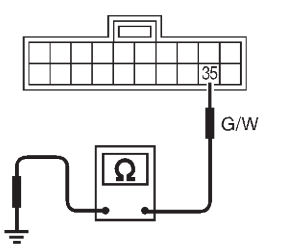
SYMPTOM: Rear window defogger does not activate, or does not go off after activating.


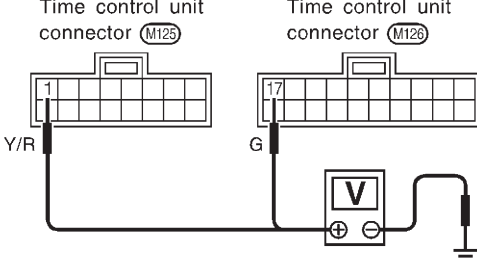
1	CHECK REAR WINDOW DEFOGGER OUTPUT SIGNAL	<p>1. Turn ignition switch to ON position. 2. Check voltage between time control unit terminal 27 and ground.</p> <div style="display: flex; align-items: center;"> <div style="margin-right: 20px;">  </div> <div style="margin-right: 20px;"> <p>Time control unit connector (M126)</p>  </div> <div> <p>Voltage [V]: Rear window defogger switch is "OFF". Approx. 12 Rear window defogger switch is "ON". 0</p> </div> </div> <p style="text-align: right;">SEL252X</p>
OK or NG		
OK	▶	<p>Check the following.</p> <ul style="list-style-type: none"> ● Rear window defogger relay (Refer to EL-180.) ● Rear window defogger circuit ● Rear window defogger filament (Refer to EL-181.)
NG	▶	GO TO 2.

2	CHECK DEFOGGER RELAY COIL SIDE CIRCUIT	<p>1. Disconnect control unit connector. 2. Turn ignition switch to ON position. 3. Check voltage between time control unit terminal 27 and ground.</p> <div style="display: flex; align-items: center;"> <div style="margin-right: 20px;">  </div> <div style="margin-right: 20px;"> <p>Time control unit connector (M126)</p>  </div> <div> <p>Battery voltage should exist.</p> </div> </div> <p style="text-align: right;">SEL253X</p>
OK or NG		
OK	▶	GO TO 3.
NG	▶	<p>Check the following.</p> <ul style="list-style-type: none"> ● 10A fuse [No. 10, located in the fuse block (J/B)] ● Rear window defogger relay ● Harness for open or short between fuse and rear window defogger relay ● Harness for open or short between rear window defogger relay and control unit

REAR WINDOW DEFOGGER

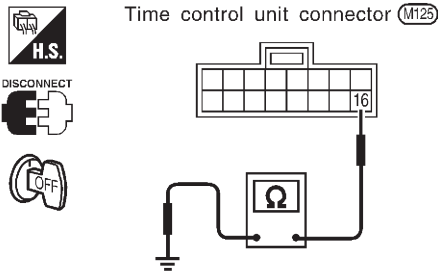
Trouble Diagnoses (Cont'd)

3	CHECK REAR WINDOW DEFOGGER SWITCH INPUT SIGNAL	
<p>Check continuity between time control unit terminal 35 and ground.</p>		
<div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="width: 30%;">  <p>Time control unit connector (M126)</p>  </div> <div style="width: 60%;"> <p>Continuity:</p> <p>Rear window defogger switch is pushed. Continuity should exist.</p> <p>Rear window defogger switch is released. Continuity should not exist.</p> </div> </div>		
SEL254X		
OK or NG		
OK	▶	GO TO 4.
NG	▶	<p>Check the following.</p> <ul style="list-style-type: none"> ● Rear window defogger switch (Refer to EL-180.) ● Harness for open or short between control unit and rear window defogger switch ● Rear window defogger switch ground circuit

4	CHECK POWER SUPPLY AND IGNITION INPUT SIGNAL																					
<p>Check voltage between time control unit terminals 1 and 17 and ground.</p>																						
<div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="width: 45%;">  <p>Time control unit connector (M125) Time control unit connector (M126)</p>  </div> <div style="width: 50%;"> <p>Time control unit</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th colspan="2" style="border-bottom: none;">Terminals</th> <th colspan="3" style="border-bottom: none;">Ignition switch position</th> </tr> <tr> <th style="border-top: none;">(+)</th> <th style="border-top: none;">(-)</th> <th style="border-top: none;">OFF</th> <th style="border-top: none;">ACC</th> <th style="border-top: none;">ON</th> </tr> </thead> <tbody> <tr> <td style="border-bottom: none;">1</td> <td style="border-bottom: none;">Ground</td> <td style="border-bottom: none;">Battery voltage</td> <td style="border-bottom: none;">Battery voltage</td> <td style="border-bottom: none;">Battery voltage</td> </tr> <tr> <td style="border-bottom: none;">17</td> <td style="border-bottom: none;">Ground</td> <td style="border-bottom: none;">0V</td> <td style="border-bottom: none;">0V</td> <td style="border-bottom: none;">Battery voltage</td> </tr> </tbody> </table> </div> </div>			Terminals		Ignition switch position			(+)	(-)	OFF	ACC	ON	1	Ground	Battery voltage	Battery voltage	Battery voltage	17	Ground	0V	0V	Battery voltage
Terminals		Ignition switch position																				
(+)	(-)	OFF	ACC	ON																		
1	Ground	Battery voltage	Battery voltage	Battery voltage																		
17	Ground	0V	0V	Battery voltage																		
SEL255X																						
OK or NG																						
OK	▶	GO TO 5.																				
NG	▶	<p>Check the following.</p> <ul style="list-style-type: none"> ● 10A fuse [No. 10 or No. 12, located in the fuse block (J/B)] ● Harness for open or short between control unit and fuse 																				

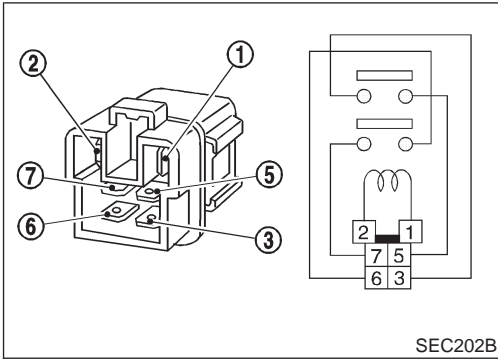
REAR WINDOW DEFOGGER

Trouble Diagnoses (Cont'd)

5	CHECK CONTROL UNIT GROUND CIRCUIT
<p>Check continuity between time control unit terminal 16 and ground.</p> <div><p>Time control unit connector (M125)</p><p>Continuity should exist.</p></div> <p>SEL256X</p> <p>OK or NG</p>	
OK	▶ Replace control unit.
NG	▶ Repair harness or connectors.

REAR WINDOW DEFOGGER

Electrical Components Inspection



Electrical Components Inspection

=NFEL0076

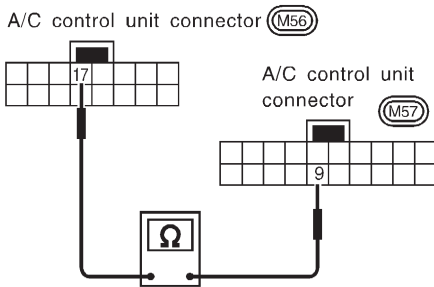
REAR WINDOW DEFOGGER RELAY

NFEL0076S01

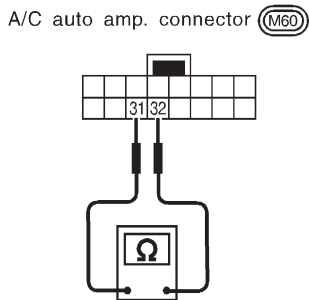
Check continuity between terminals 3 and 5, 6 and 7.

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

With manual A/C



With auto A/C



REAR WINDOW DEFOGGER SWITCH

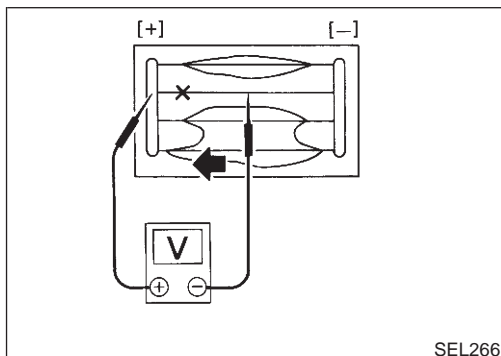
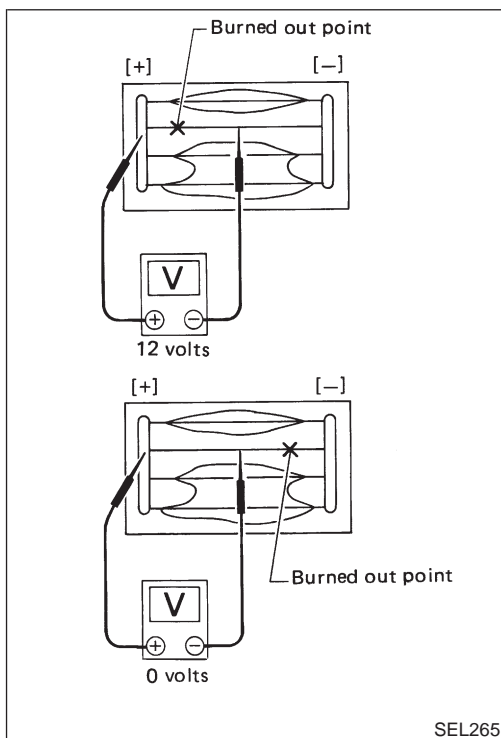
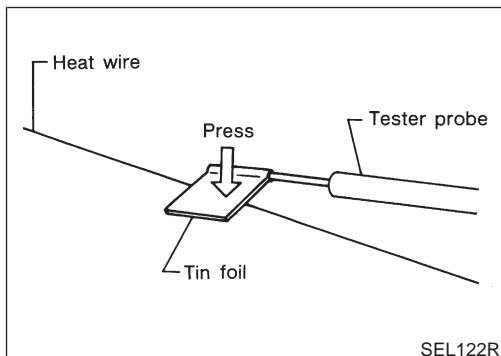
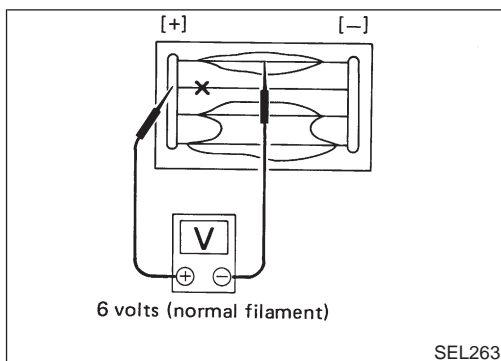
NFEL0076S02

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

Terminals	Condition	Continuity
9 - 17 (with manual A/C) 31 - 32 (with auto A/C)	Rear window defogger switch is pushed.	Yes
	Rear window defogger switch is released.	No

REAR WINDOW DEFOGGER

Filament Check



Filament Check

1. Attach probe circuit tester (in volt range) to middle portion of each filament. =NFEL0077

- 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.

REAR WINDOW DEFOGGER

Filament Repair

NFEL0078

REPAIR EQUIPMENT

NFEL0078S01

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

REPAIRING PROCEDURE

NFEL0078S02

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

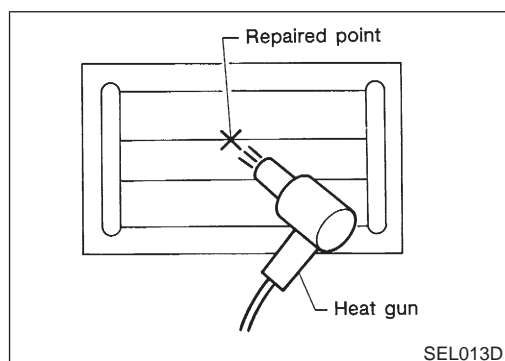
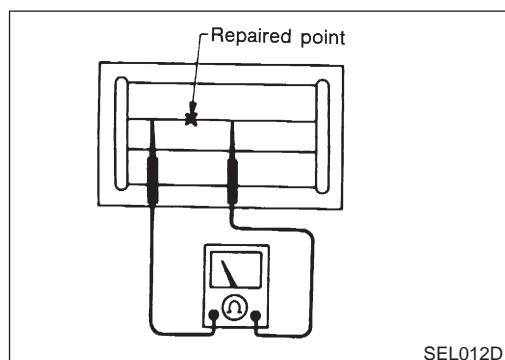
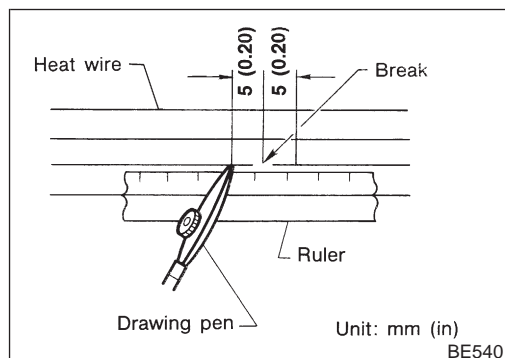
Shake silver composition container before use.

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

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

Do not touch repaired area while test is being conducted.

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



System Description

NFEL0079

NFEL0079S03

BASE SYSTEM

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

Power is supplied at all times

- through 15A fuse [No. 56, located in the fuse block (J/B)]
- to audio unit terminal 9,
- to CD player terminal 24 (with CD player) and
- to CD auto changer terminal 3.

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

- through 10A fuse [No. 1, located in the fuse block (J/B)]
- to audio unit terminal 3,
- to CD player terminal 21 (with CD player) and
- to CD auto changer terminal 1 and
- to telephone speaker relay terminal 2.

Ground is supplied through the case of the audio unit.

Audio signals are supplied

- through audio terminals 7, 10, 11, 12, 13, 14, 15 and 16
- to terminals 1 and 2 of front door speaker LH and RH
- to terminals 1 and 2 of rear door speaker LH and RH
- to terminals 1 and 2 of tweeter LH and RH

When the telephone control system is triggered,

Ground is supplied

- through telephone control unit terminal 4
- to telephone speaker relay terminal 1 and,
- to audio unit terminal 2

With power and ground supplied, the relays are energized, and then the audio system is muted and the audio signal is interrupted to the front door speaker RH (LHD models) or LH (RHD models), and pillar tweeter RH (LHD models) or LH (RHD models).

When the navigation system is triggered,

power is supplied

- through navi control unit terminal 46
- to speaker relay terminal 2

Ground is supplied

- to guide speaker relay terminal 1
- through body grounds M9, M25 and M87.

With power and ground supplied, the relay is energized, and then audio signal is interrupted to front door speaker LH (LHD models) or RH (RHD models), and pillar tweeter LH (LHD models) or RH (RHD models)

For detailed, refer to "NAVIGATION SYSTEM".

NATS AUDIO LINK

NFEL0079S04

Description

NFEL0079S0401

The link with the NATS IMMU implies that the audio unit can basically only be operated if connected to the matching NATS IMMU to which the audio unit was initially fitted on the production line.

Since radio operation is impossible after the link with the NATS is disrupted theft of the audio unit is basically useless since special equipment is required to reset the audio unit.

Initialization Process for Audio Units That are Linked to the NATS IMMU

NFEL0079S0402

New audio units will be delivered to the factories in the "NEW" state, i.e. ready to be linked with the vehicle's NATS. When the audio unit in "NEW" state is first switched on at the factory, it will start up communication with the vehicle's immobiliser control unit (IMMU) and send a code (the "audio unit Code") to the IMMU. The IMMU will then store this code, which is unique to each audio unit, in its (permanent) memory.

Upon receipt of the code by the IMMU, the NATS will confirm correct receipt of the audio unit code to the audio

AUDIO

System Description (Cont'd)

unit. Hereafter, the audio unit will operate as normal.

During the initialisation process, "NEW" is displayed on the audio unit display. Normally though, communication between audio unit and IMMU takes such a short time (300 ms) that the audio unit seems to switch on directly without showing "NEW" on its display.

Normal Operation

Each time the audio unit is switched on afterwards, the audio unit code will be verified between the audio unit and the NATS before the audio unit becomes operational. During the code verification process, "WAIT" is shown on the audio unit display. Again, the communication takes such a short time (300 ms) that the audio unit seems to switch on directly without showing "WAIT" on its display. NFEL0079S0403

When the Radio is Locked

In case of a audio unit being linked with the vehicle's NATS (immobilizer system), disconnection of the link between the audio unit and the IMMU will cause the audio unit to switch into the lock ("SECURE") mode in which the audio unit is fully inoperative. Hence, repair of the audio unit is basically impossible, unless the audio unit is reset to the "NEW" state for which special decoding equipment is required. NFEL0079S0404

Clarion has provided their authorized service representatives with so called "decoder boxes" which can bring the audio unit back to the "NEW" state, enabling the audio unit to be switched on after which repair can be carried out. Subsequently, when the repaired audio unit is delivered to the final user again, it will be in the "NEW" state as to enable re-linking the audio unit to the vehicle's immobiliser system. As a result of the above, repair of the audio unit can only be done by an authorized Clarion representative.

SPEED DEPENDENT VOLUME CONTROL

Description

If activated, the radio output volume will be automatically adjusted to compensate for increasing driving noises at higher driving speeds. NFEL0079S05

The radio receives a speed signal from the vehicle speed sensor (VSS) and selects the output volume. NFEL0079S0501

PERSONAL AUDIO SETTINGS

Description

The radio is designed to store several settings (volume, bass, treble, preset stations and level of speed dependent volume control) with every NATS ignition key used. Up to a maximum of 4 NATS keys can be registered. During the communication as mentioned under "Anti-theft System", the radio will recognize the used ignition key and select the accompanying settings. NFEL0079S06
NFEL0079S0601

AUDIO

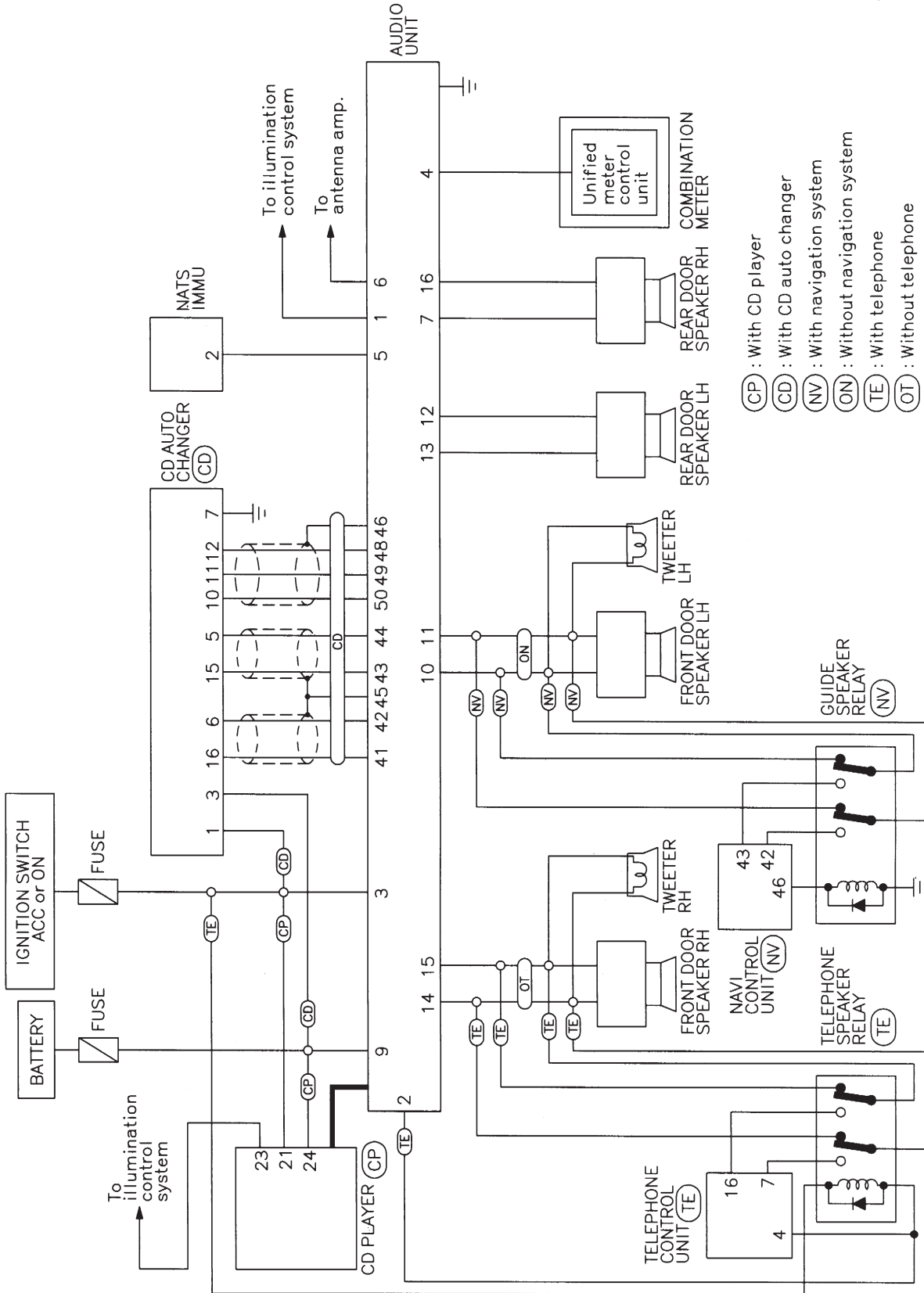
Schematic

LHD MODELS

Schematic

NFEL0167

NFEL0167S02



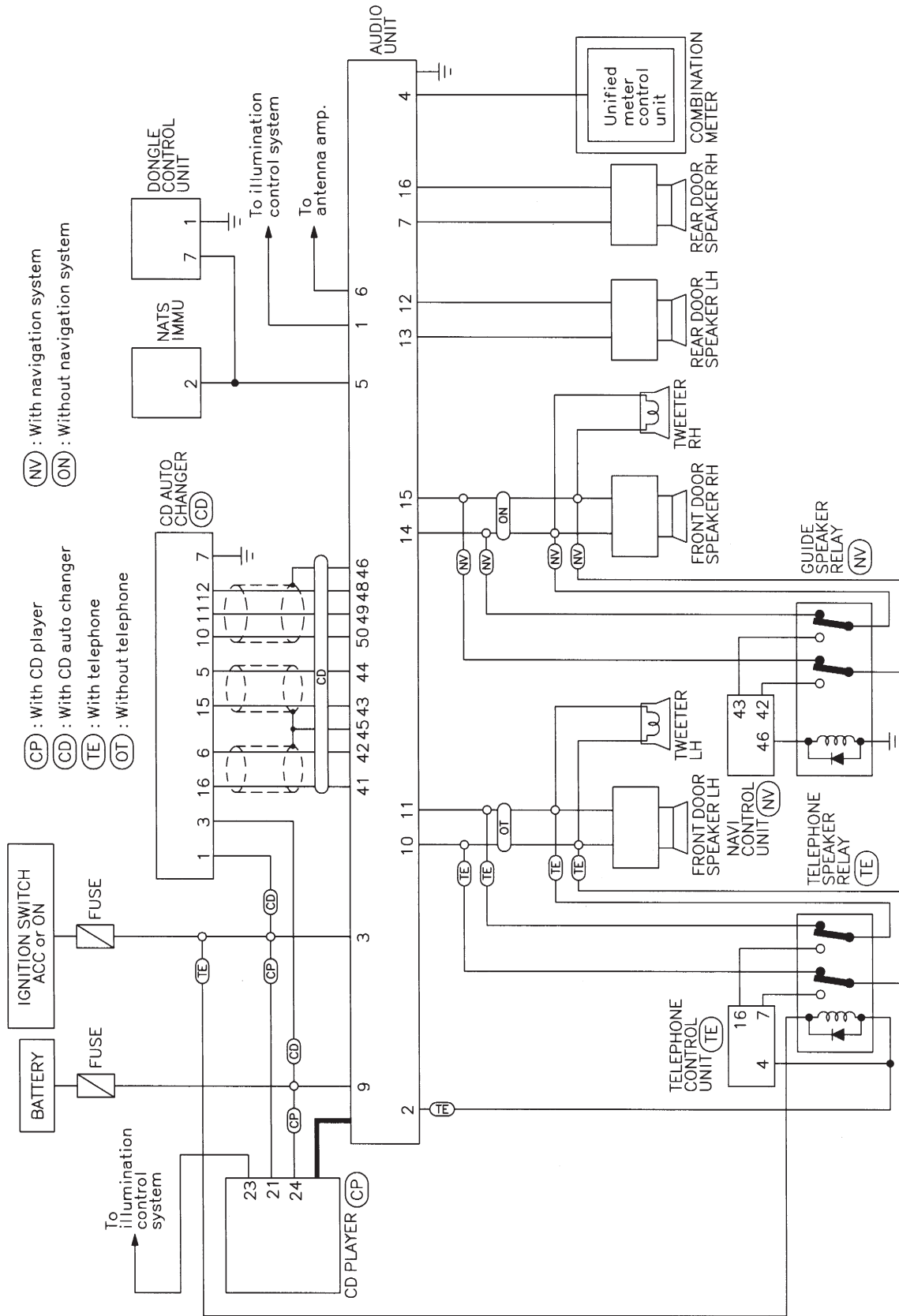
MEL848M

AUDIO

Schematic (Cont'd)

RHD MODELS

NFEL0167S03



MEL849M

AUDIO

Wiring Diagram — AUDIO —

Wiring Diagram — AUDIO —

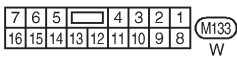
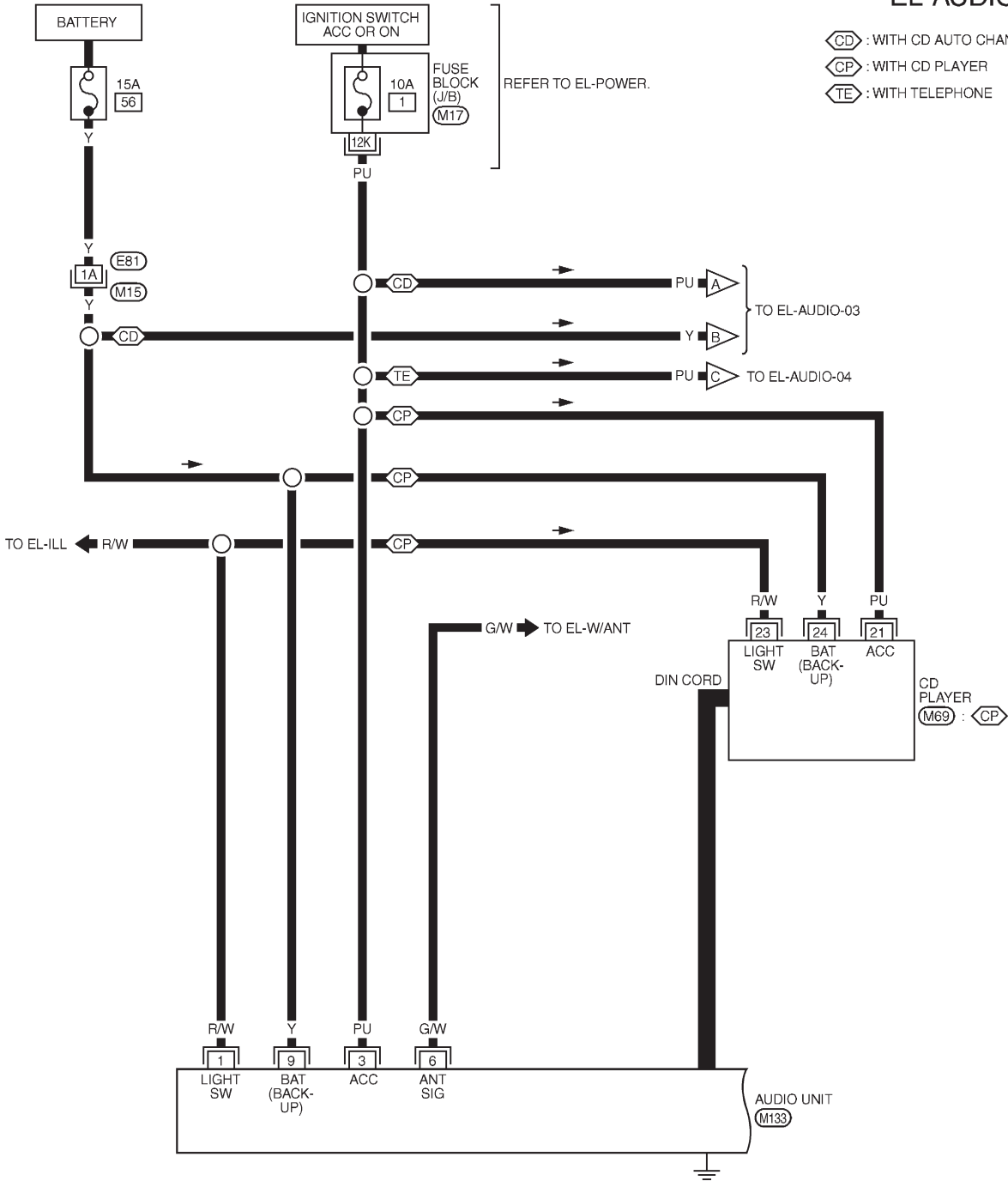
LHD MODELS

NFEL0081

NFEL0081S03

EL-AUDIO-01

- ⬡CD⬡ : WITH CD AUTO CHANGER
- ⬡CP⬡ : WITH CD PLAYER
- ⬡TE⬡ : WITH TELEPHONE



REFER TO THE FOLLOWING.

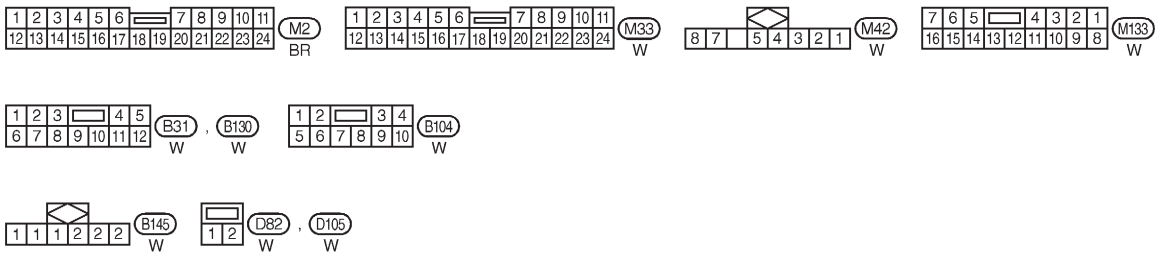
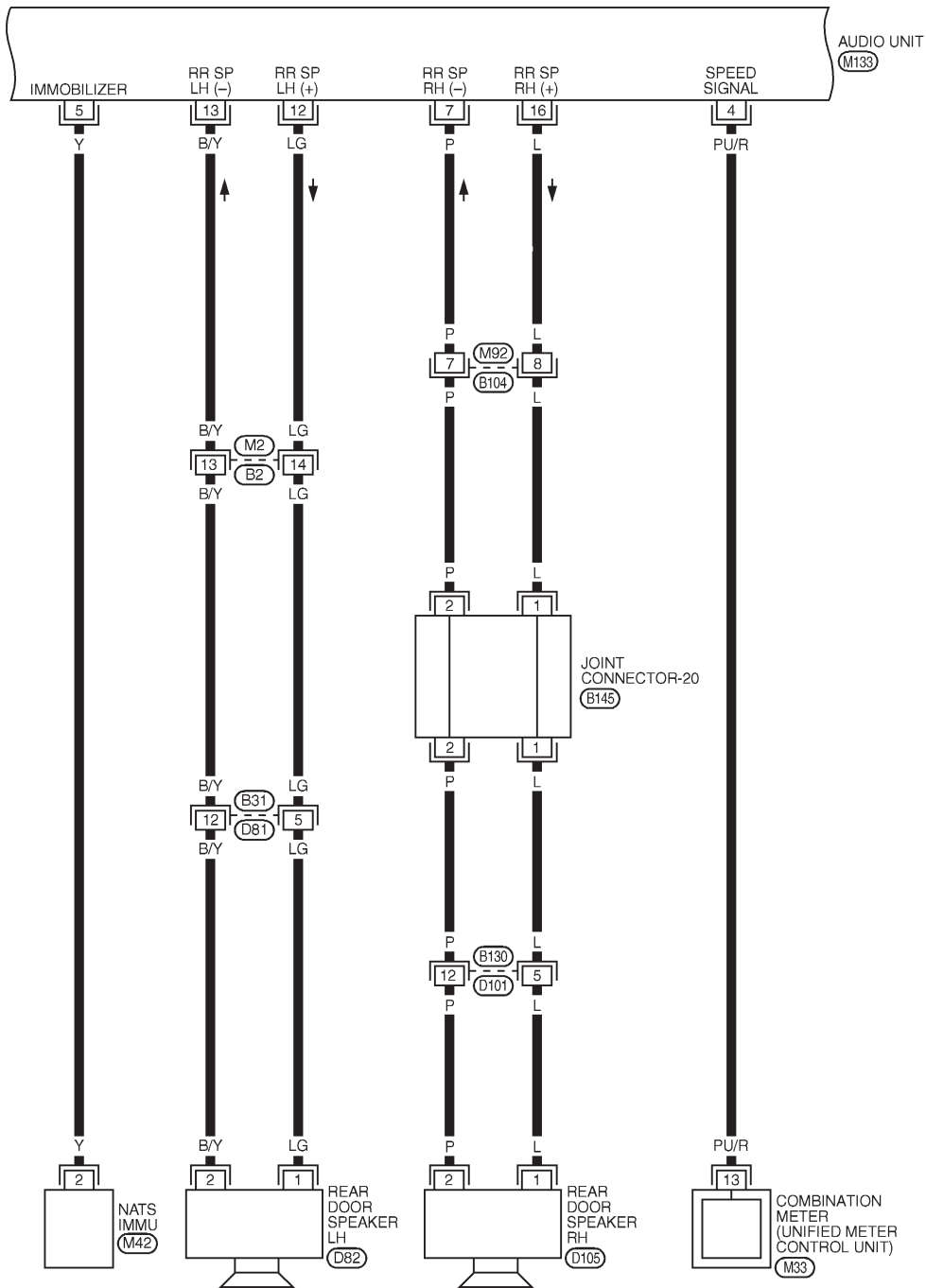
- ⬡M15⬡ -SUPER
- MULTIPLE JUNCTION (SMJ)
- ⬡M17⬡ -FUSE BLOCK-
- JUNCTION BOX (J/B)

MEL850M

AUDIO

Wiring Diagram — AUDIO — (Cont'd)

EL-AUDIO-02



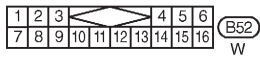
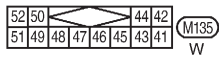
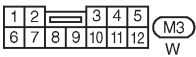
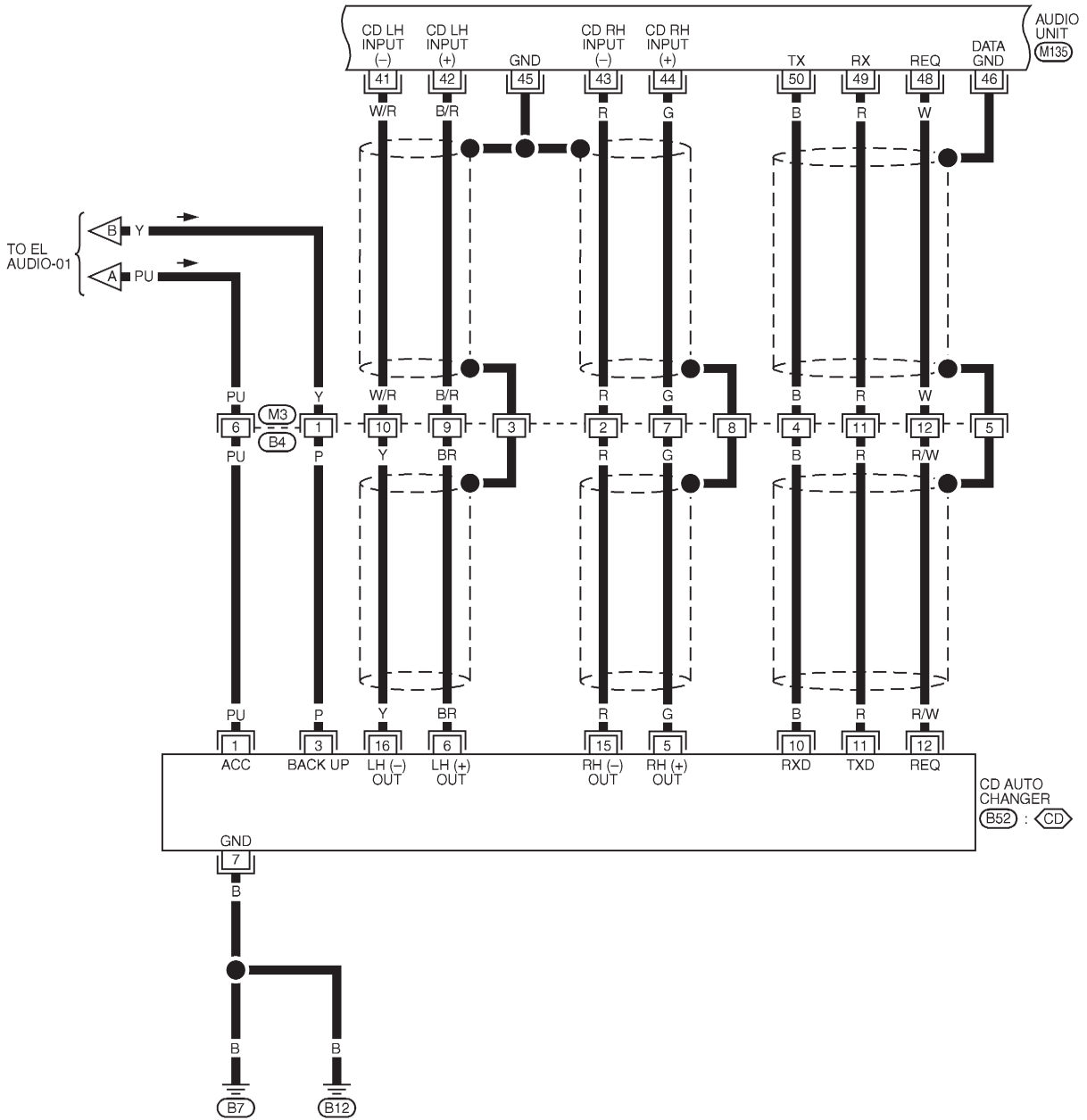
MEL535L

AUDIO

Wiring Diagram — AUDIO — (Cont'd)

EL-AUDIO-03

Ⓢ : WITH CD AUTO CHANGER

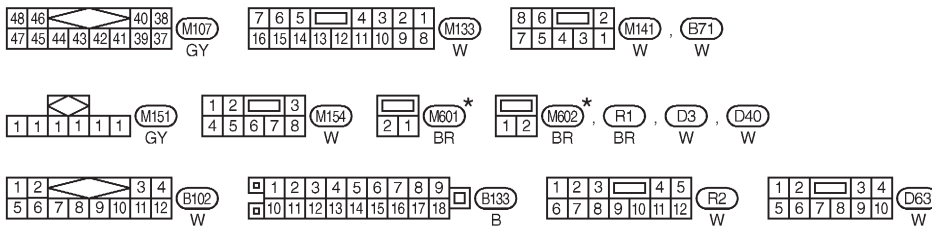
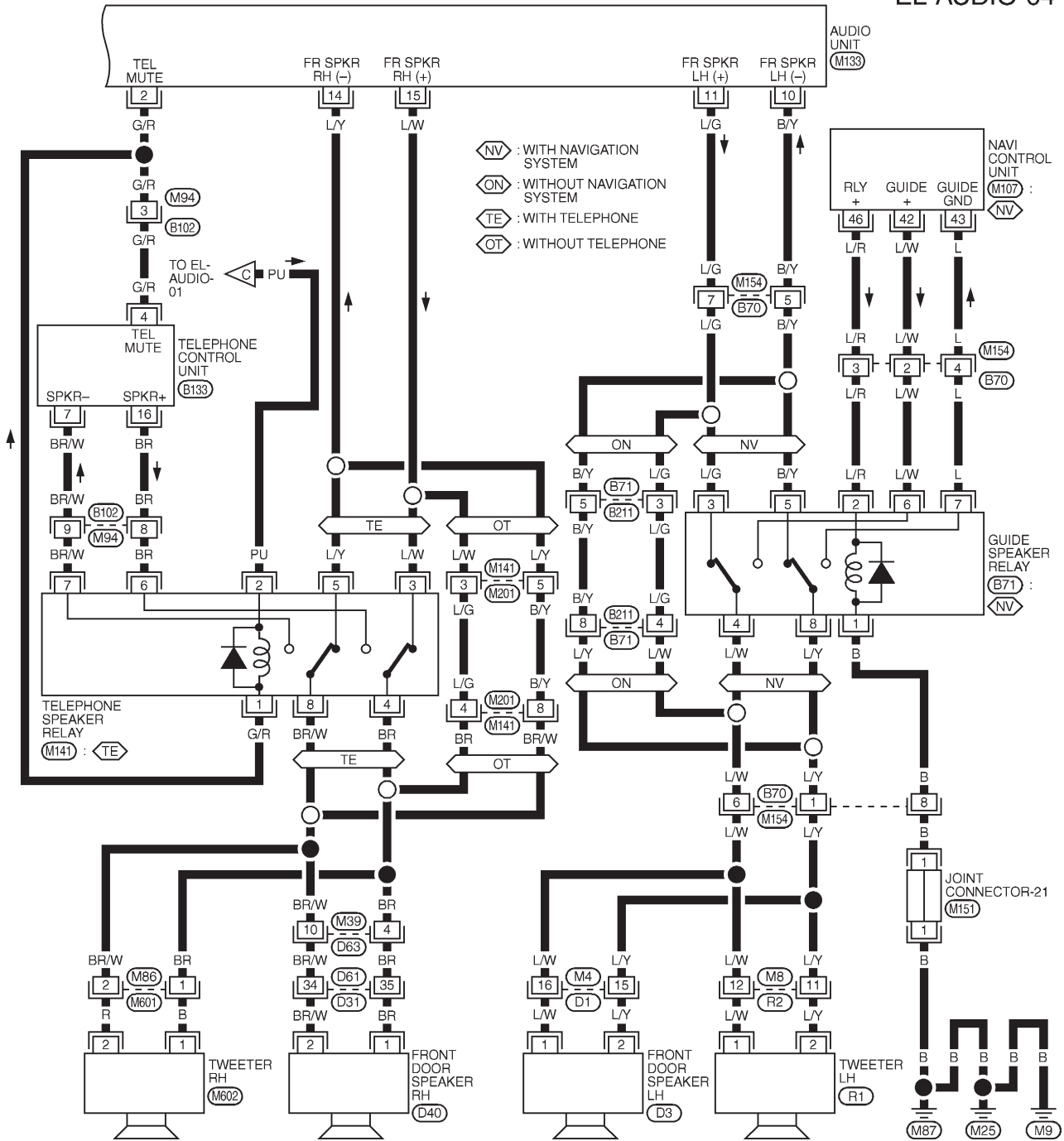


MEL851M

AUDIO

Wiring Diagram — AUDIO — (Cont'd)

EL-AUDIO-04



*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", EL SECTION.

REFER TO THE FOLLOWING.

D1 , D31 -SUPER
 MULTIPLE JUNCTION (SMJ)

MEL852M

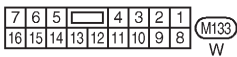
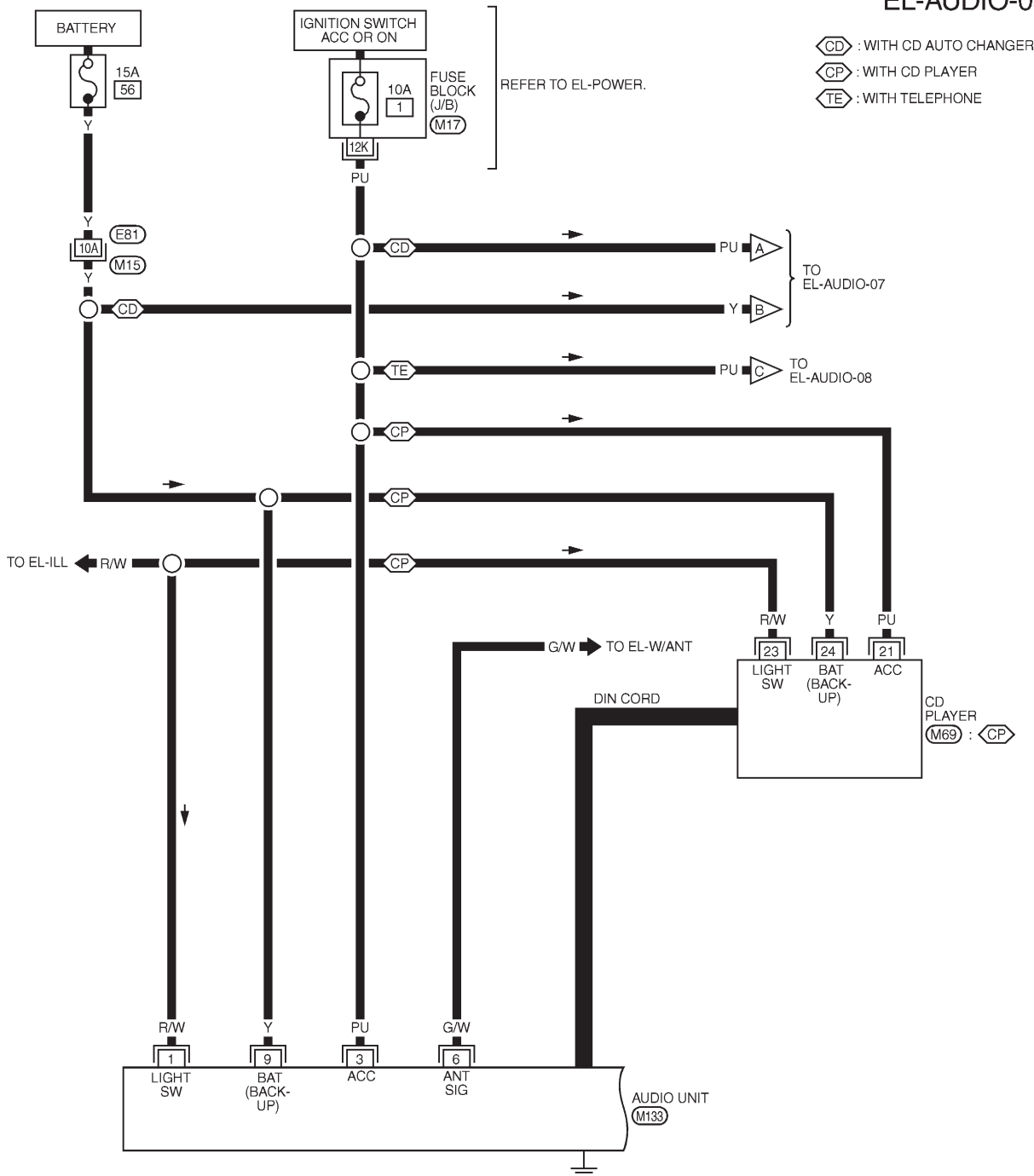
AUDIO

Wiring Diagram — AUDIO — (Cont'd)

RHD MODELS

NFEL0081S04

EL-AUDIO-05



REFER TO THE FOLLOWING.

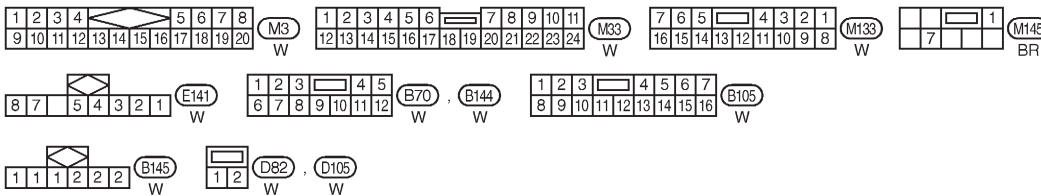
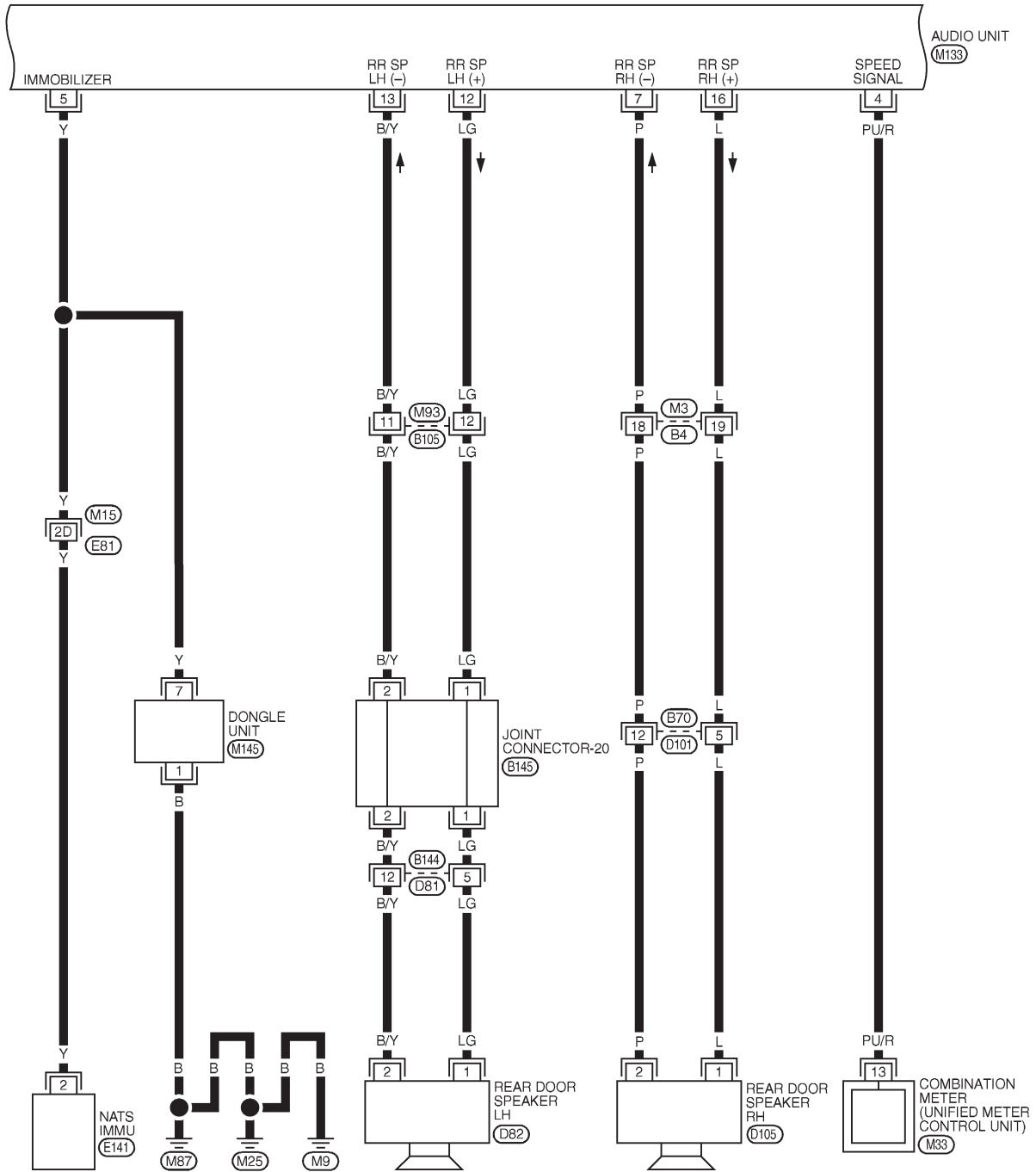
- (M15) - SUPER
- MULTIPLE JUNCTION (SMJ)
- (M17) - FUSE BLOCK-
- JUNCTION BOX (J/B)

MEL853M

AUDIO

Wiring Diagram — AUDIO — (Cont'd)

EL-AUDIO-06



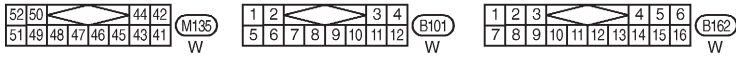
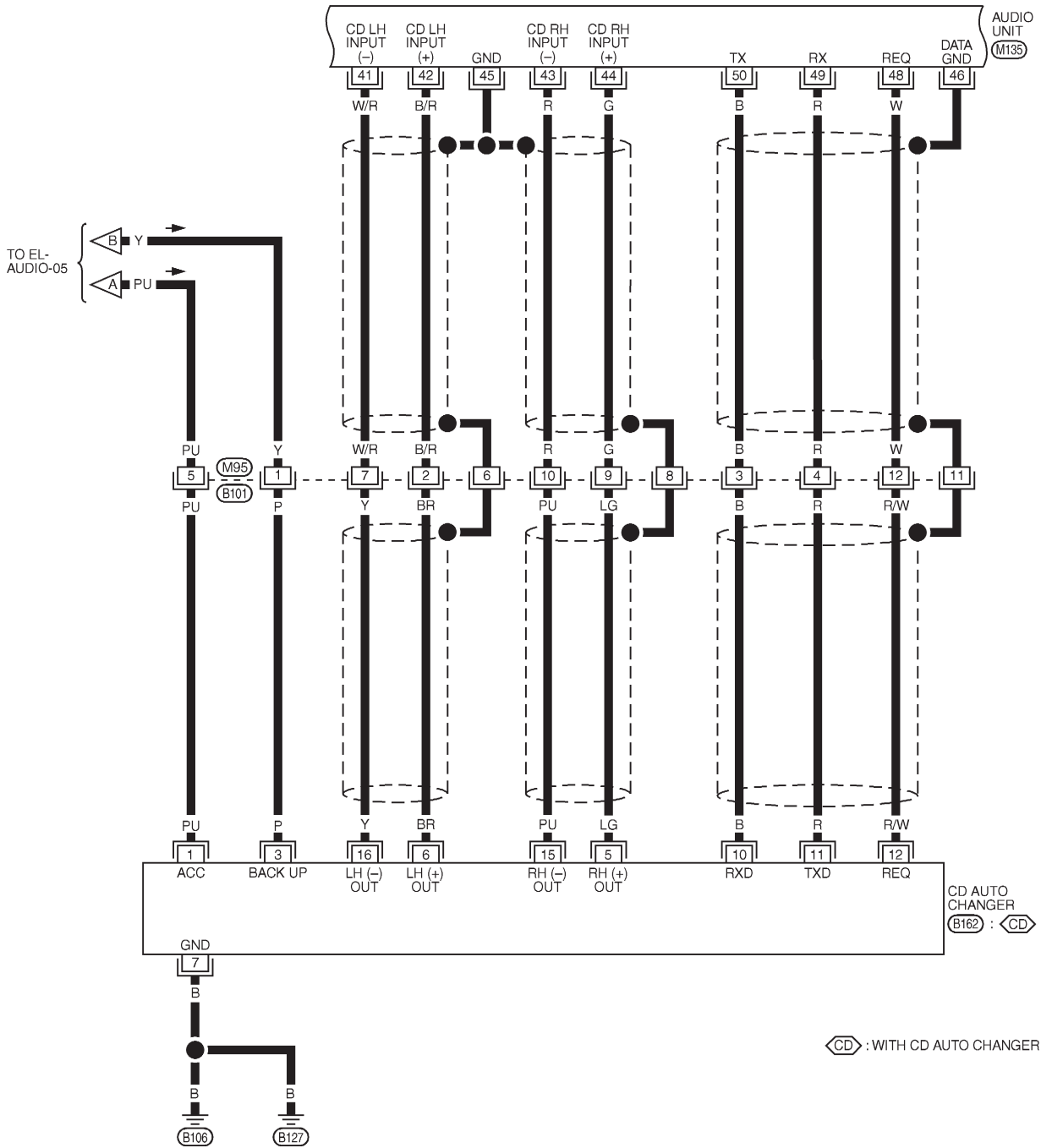
REFER TO THE FOLLOWING.
 (M15) -SUPER
 MULTIPLE JUNCTION (SMJ)

MEL540L

AUDIO

Wiring Diagram — AUDIO — (Cont'd)

EL-AUDIO-07

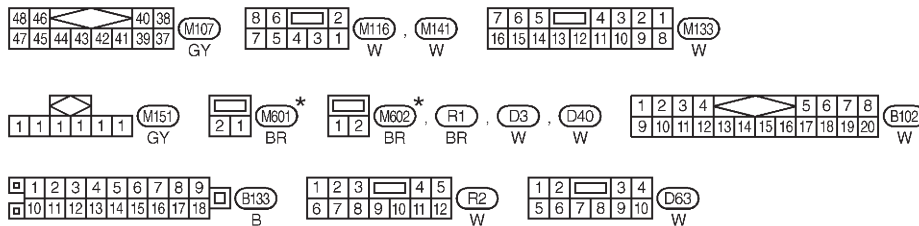
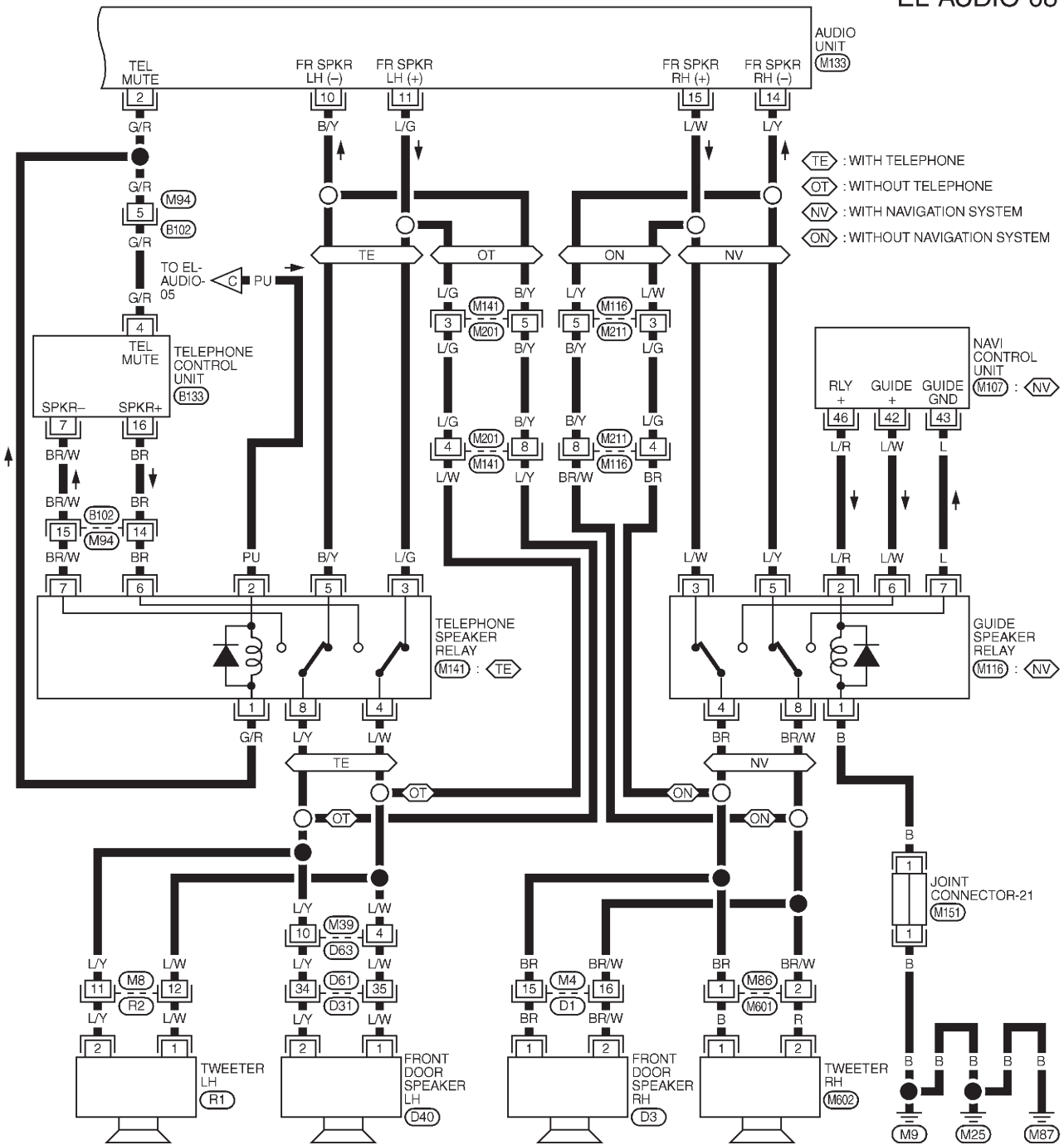


MEL541L

AUDIO

Wiring Diagram — AUDIO — (Cont'd)

EL-AUDIO-08



REFER TO THE FOLLOWING.

(D1), (D31) - SUPER
MULTIPLE JUNCTION (SMJ)

* : THIS CONNECTOR IS NOT SHOWN IN "HARNES LAYOUT", EL SECTION.

MEL854M

AUDIO

Trouble Diagnoses

Trouble Diagnoses

NFEL0220

AUDIO UNIT

NFEL0220S01

Symptom	Possible cause	Repair order
Audio unit inoperative (no digital display and no sound from speakers).	<ol style="list-style-type: none">10A fusePoor audio unit case groundAudio unit	<ol style="list-style-type: none">Check 10A fuse [No. 1, located in fuse block (J/B)]. Turn ignition switch ON and verify that battery positive voltage is present at terminal 3 of audio unit.Check audio unit case ground.Remove audio unit for repair.
Audio unit presets are lost when ignition switch is turned OFF.	<ol style="list-style-type: none">15A fuseAudio unit	<ol style="list-style-type: none">Check 15A fuse [No. 56, located in fuse block (J/B)] and verify that battery positive voltage is present at terminal 9 of audio unit.Remove audio unit for repair.
AM/FM stations are weak or noisy.	<ol style="list-style-type: none">Window antennaAudio unit groundAudio unit	<ol style="list-style-type: none">Check window antenna.Check audio unit ground condition.Remove audio unit for repair.
Audio unit generates noise in AM and FM modes with engine running.	<ol style="list-style-type: none">Poor audio unit groundLoose or missing ground bonding strapsIgnition condenser or rear window defogger noise suppressor condenserIgnition coil or secondary wiringAudio unit	<ol style="list-style-type: none">Check audio unit ground.Check ground bonding straps.Replace ignition condenser or rear window defogger noise suppressor condenser.Check ignition coil and secondary wiring.Remove audio unit for repair.
Audio unit generates noise in AM and FM modes with accessories on (switch pops and motor noise).	<ol style="list-style-type: none">Poor audio unit groundAntennaAccessory groundFaulty accessory	<ol style="list-style-type: none">Check audio unit ground.Check antenna.Check accessory ground.Replace accessory.
Individual speaker is noisy or inoperative.	<ol style="list-style-type: none">SpeakerAudio unit outputSpeaker circuitAudio unit	<ol style="list-style-type: none">Check speaker.Check audio unit output voltages.Check wires for open or short between audio unit and speaker.Remove audio unit for repair.

AUDIO

Inspection

Inspection

=NFEL0221

AUDIO UNIT AND AMP.

NFEL0221S01

All voltage inspections are made with:

- Ignition switch ON or ACC
- Audio unit ON
- Audio unit and amps. connected (If audio unit or amp. is removed for inspection, supply a ground to the case using a jumper wire.)

ANTENNA

NFEL0221S02

Using a jumper wire, clip an auxiliary ground between antenna and body.

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

AUDIO

Wiring Diagram — REMOTE —

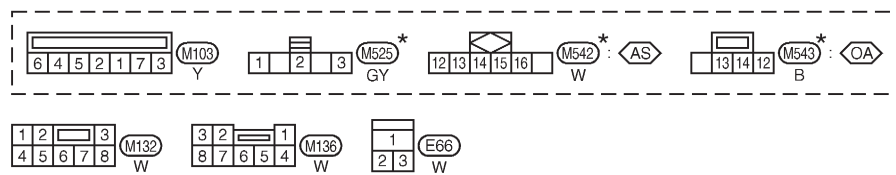
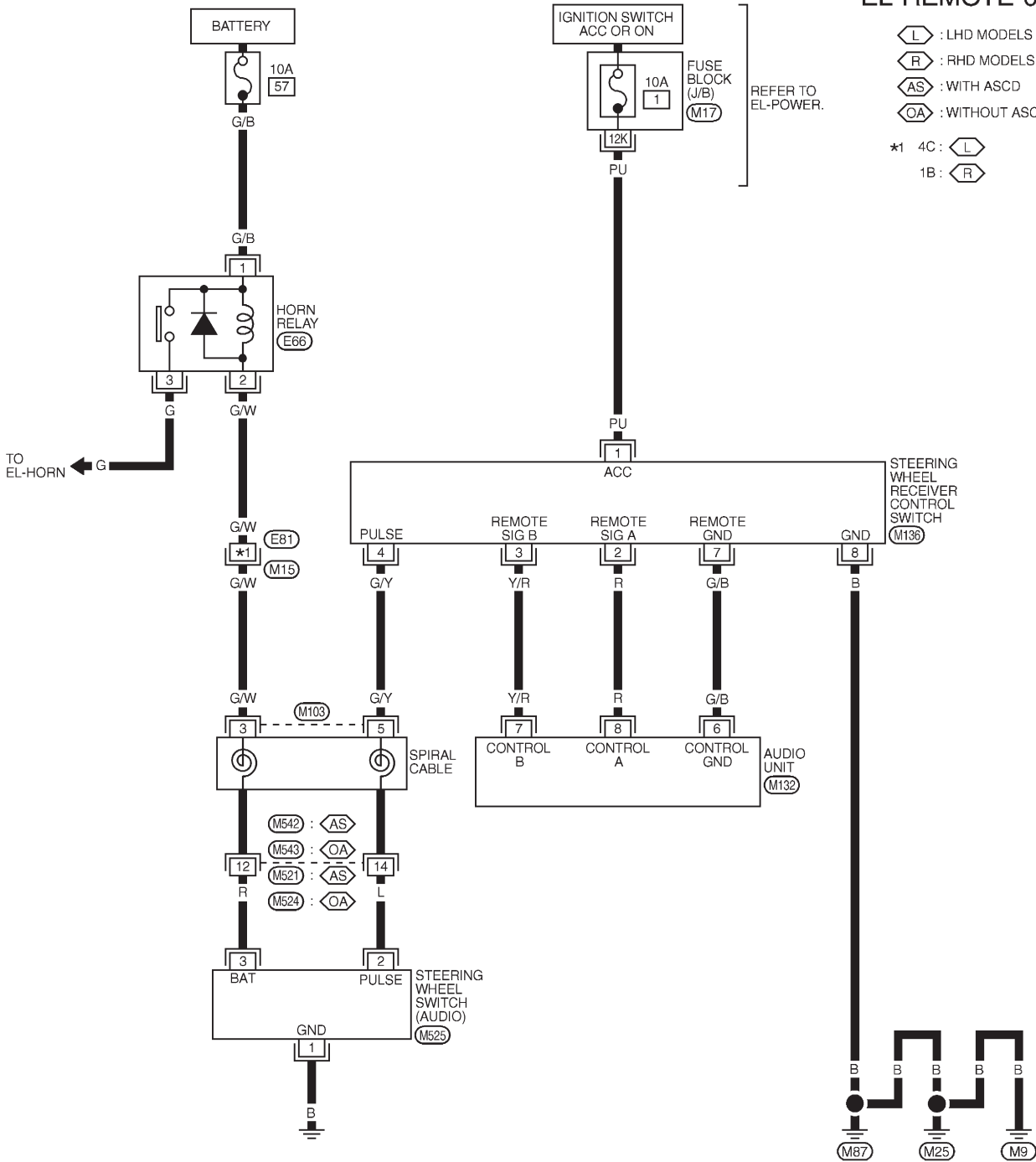
Wiring Diagram — REMOTE —

=NFEL0306

EL-REMOTE-01

- L : LHD MODELS
- R : RHD MODELS
- AS : WITH ASCD
- OA : WITHOUT ASCD

- *1 4C: L
- 1B: R



*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", EL SECTION.

REFER TO THE FOLLOWING.
M13 -SUPER
 MULTIPLE JUNCTION (SMJ)
M17 -FUSE BLOCK-
 JUNCTION BOX (J/B)

MEL113M

AUDIO ANTENNA

System Description

System Description

NFEL0084

With the ignition switch turned to ACC or ON, power is supplied

- through 10A fuse [No. 1, located in the fuse block (J/B)]
- to audio unit terminal 3.

Ground is supplied through the case of antenna amp.

When the audio switch is turned ON, antenna signal is supplied

- through audio unit 6
- to antenna amp.

Then the antenna amp. is activated.

The amplified radio signals are supplied to the audio unit, through antenna amp.

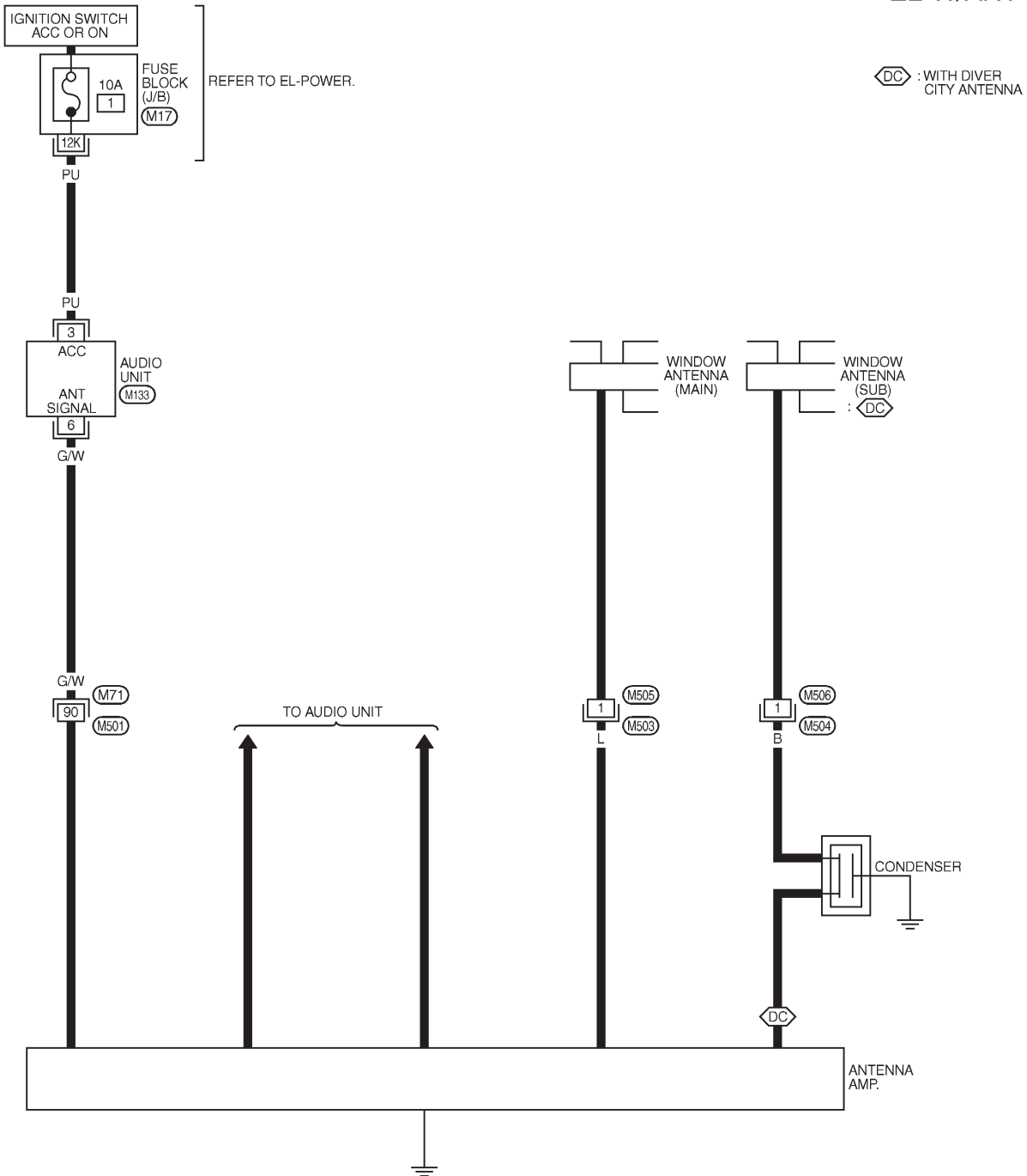
AUDIO ANTENNA

Wiring Diagram — W/ANT —

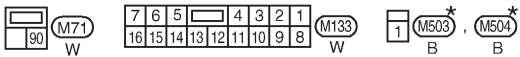
Wiring Diagram — W/ANT —

NFEL0085

EL-W/ANT-01



⬡DC⬡ : WITH DIVER CITY ANTENNA



* : THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", EL SECTION.

REFER TO THE FOLLOWING.
 (M17) - FUSE BLOCK-JUNCTION BOX (J/B)

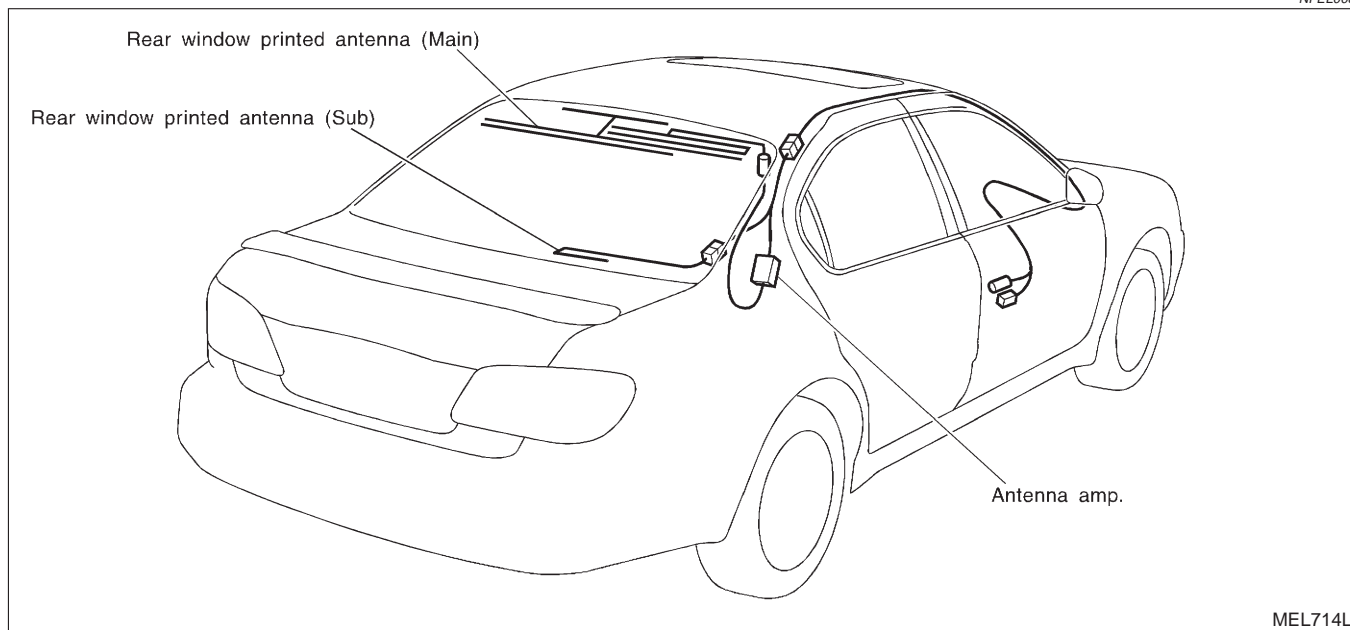
MEL547L

AUDIO ANTENNA

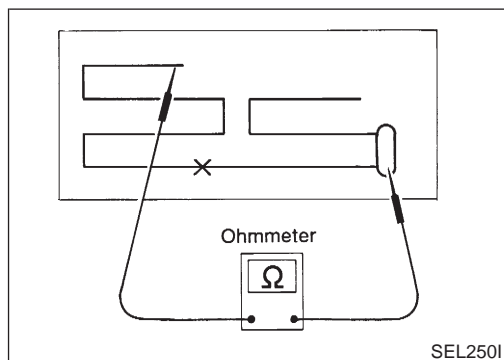
Location of Antenna

Location of Antenna

NFEL0087



MEL714L



SEL250I

Window Antenna Repair

NFEL0250

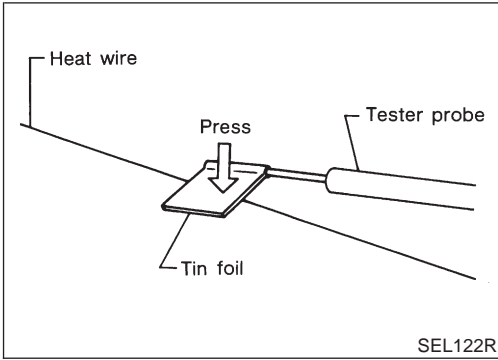
ELEMENT CHECK

NFEL0250S01

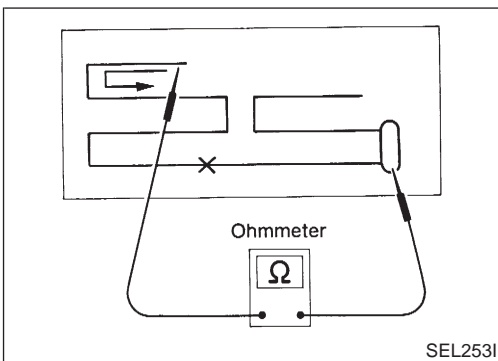
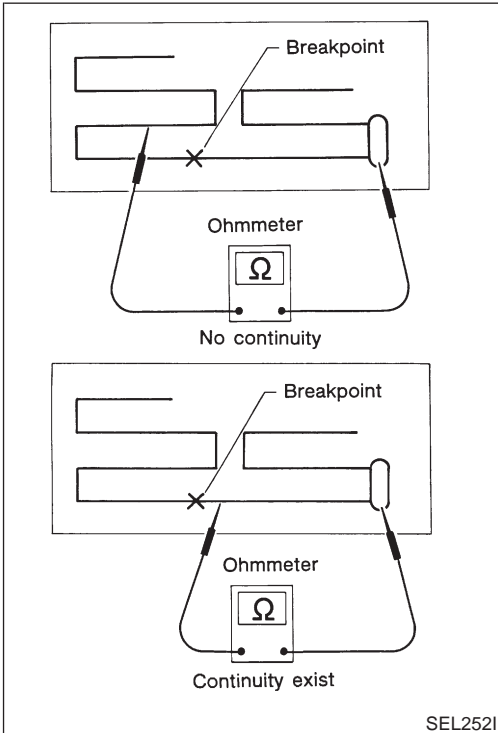
1. Attach probe circuit tester (in ohm range) to antenna terminal on each side.
If an element is OK, continuity should exist.
If an element is broken, no continuity should exist. Go to step 2.

AUDIO ANTENNA

Window Antenna Repair (Cont'd)



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



2. To locate broken point, move probe along element. Tester needle will swing abruptly when probe passes the point.

ELEMENT REPAIR

Refer to "Filament Repair", "REAR WINDOW DEFOGGER"^{NFEL0250S02} (EL-182).

POWER SUNROOF

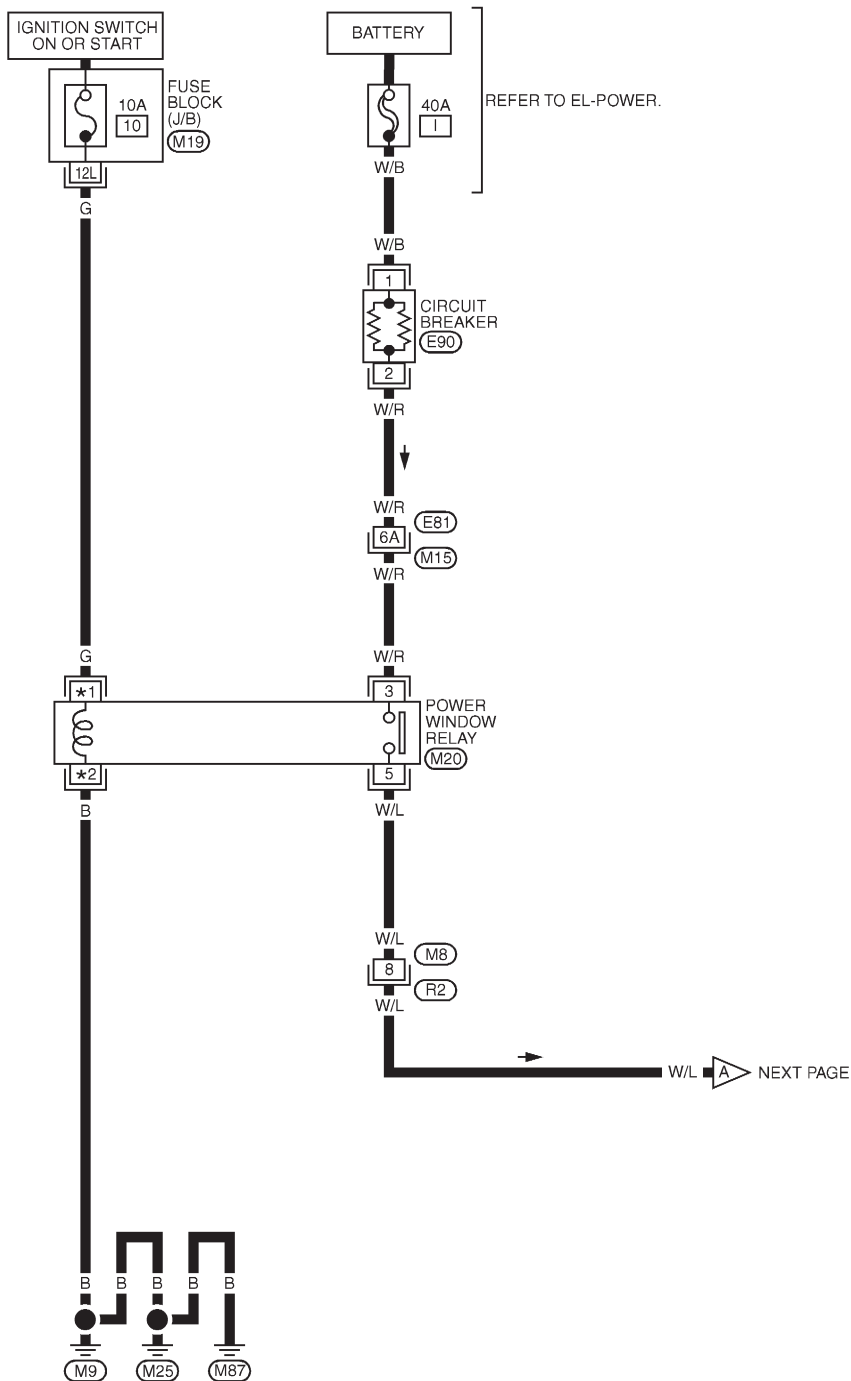
Wiring Diagram — SROOF —

Wiring Diagram — SROOF —

NFEL0089

EL-SROOF-01

- ⬡ L : LHD MODELS
- ⬡ R : RHD MODELS
- *1 2 : ⬡ L
- 1 : ⬡ R
- *2 1 : ⬡ L
- 2 : ⬡ R



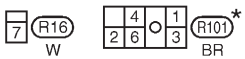
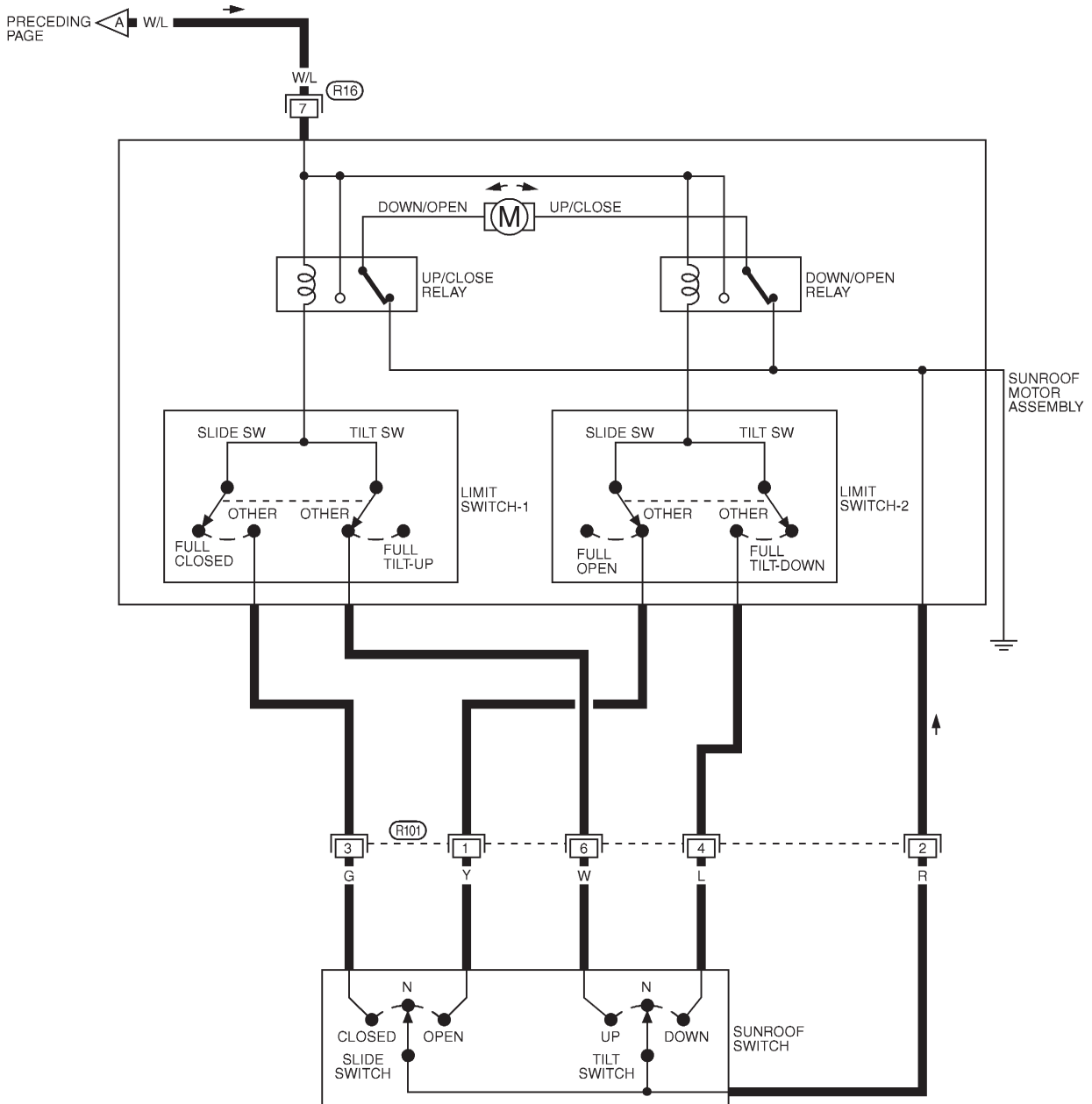
REFER TO THE FOLLOWING.
 ⬡ M15 -SUPER
 MULTIPLE JUNCTION (SMJ)
 ⬡ M19 -FUSE BLOCK-
 JUNCTION BOX (J/B)

MEL812K

POWER SUNROOF

Wiring Diagram — SROOF — (Cont'd)

EL-SROOF-02



*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", EL SECTION.

MEL813K

DOOR MIRROR

Wiring Diagram — MIRROR —

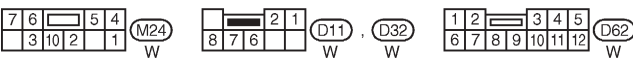
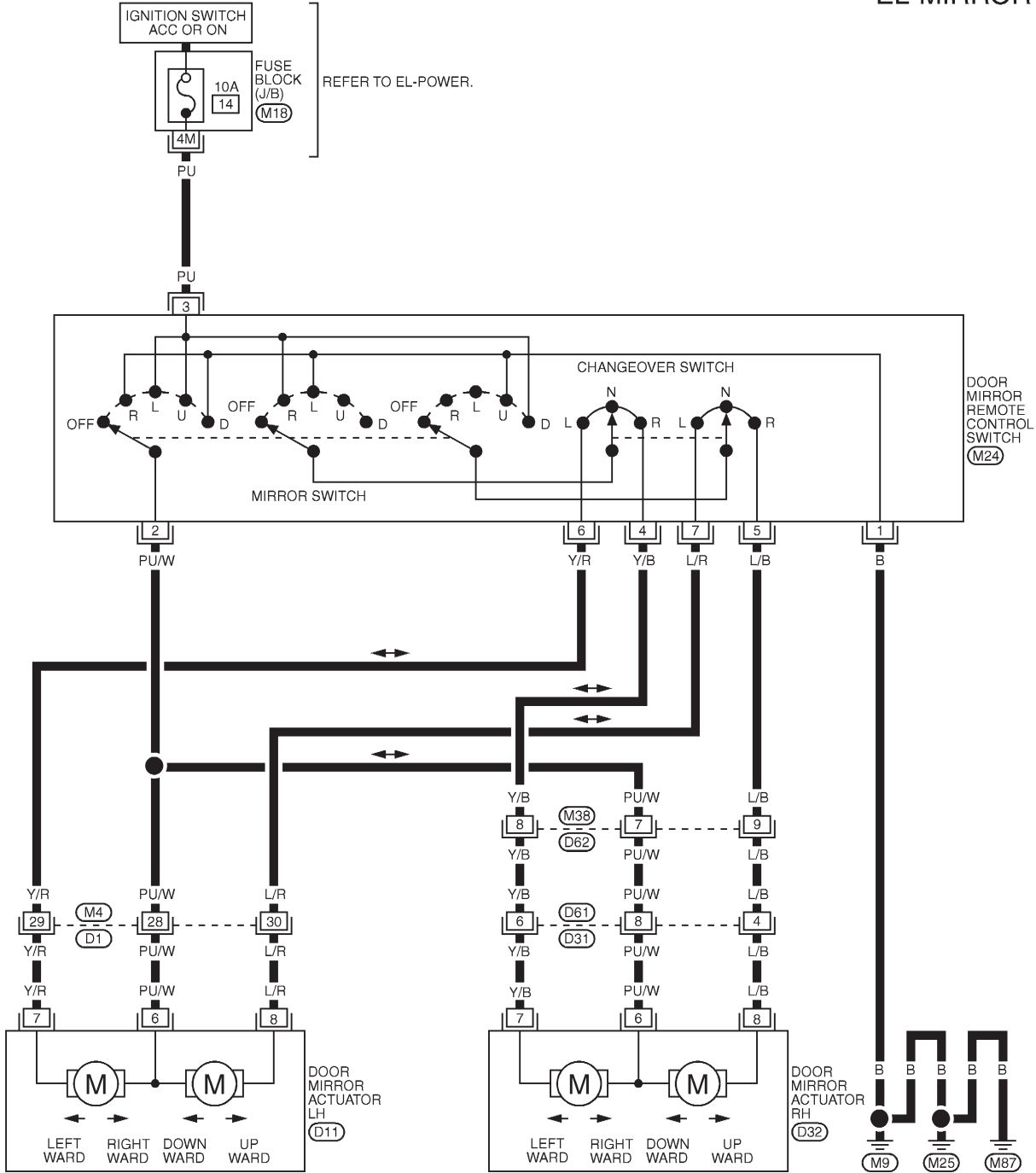
Wiring Diagram — MIRROR —

NFEL0090

LHD MODELS

NFEL0090S01

EL-MIRROR-01



REFER TO THE FOLLOWING.
 (D1), (D31) -SUPER
 MULTIPLE JUNCTION (SMJ)
 (M18) -FUSE BLOCK-
 JUNCTION BOX (J/B)

MEL814K

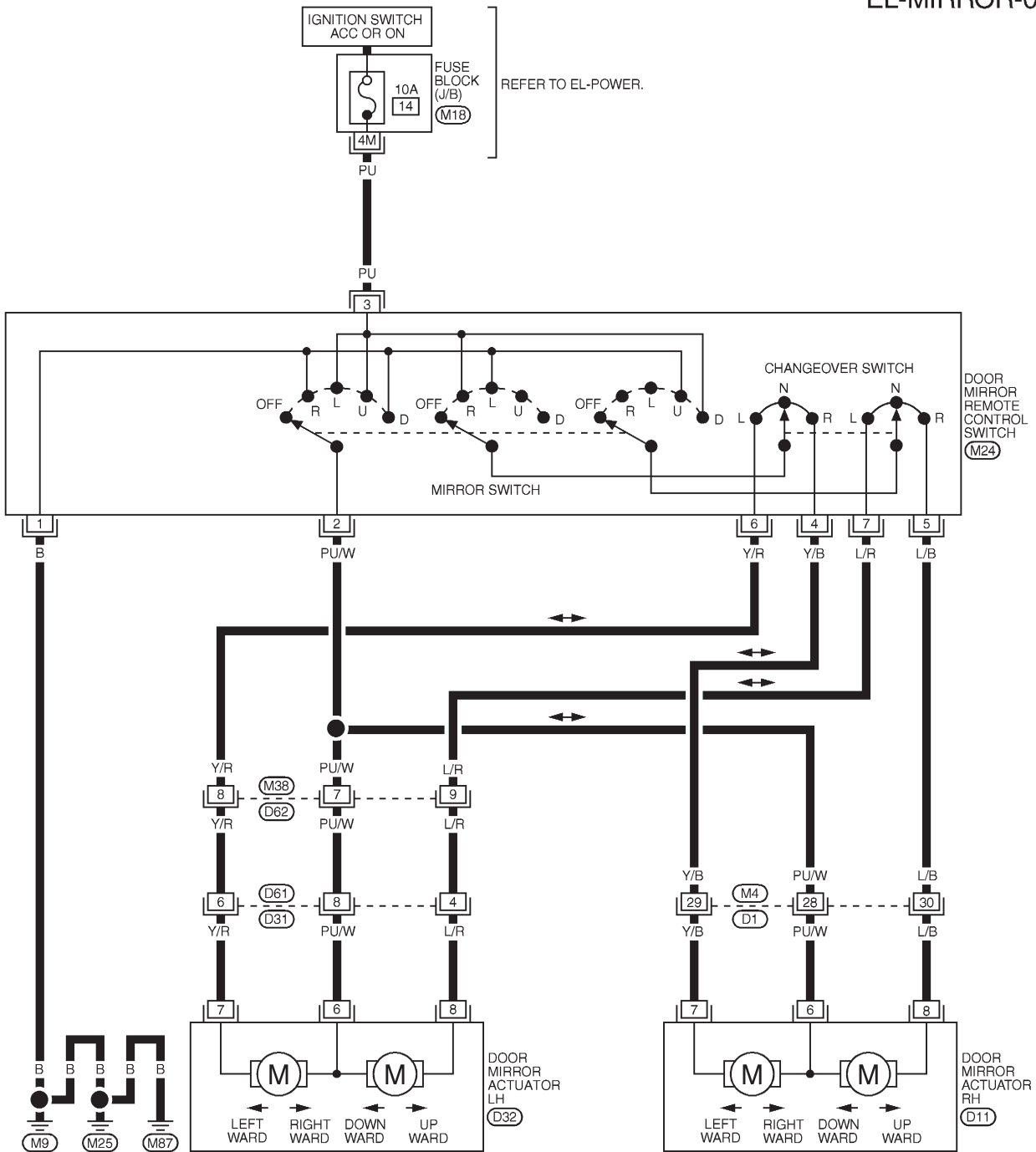
DOOR MIRROR

Wiring Diagram — MIRROR — (Cont'd)

RHD MODELS

NFEL0090S02

EL-MIRROR-02



REFER TO THE FOLLOWING.

- (D1), (D31) -SUPER
- MULTIPLE JUNCTION (SMJ)
- (M18) -FUSE BLOCK-
- JUNCTION BOX (J/B)

MEL114M

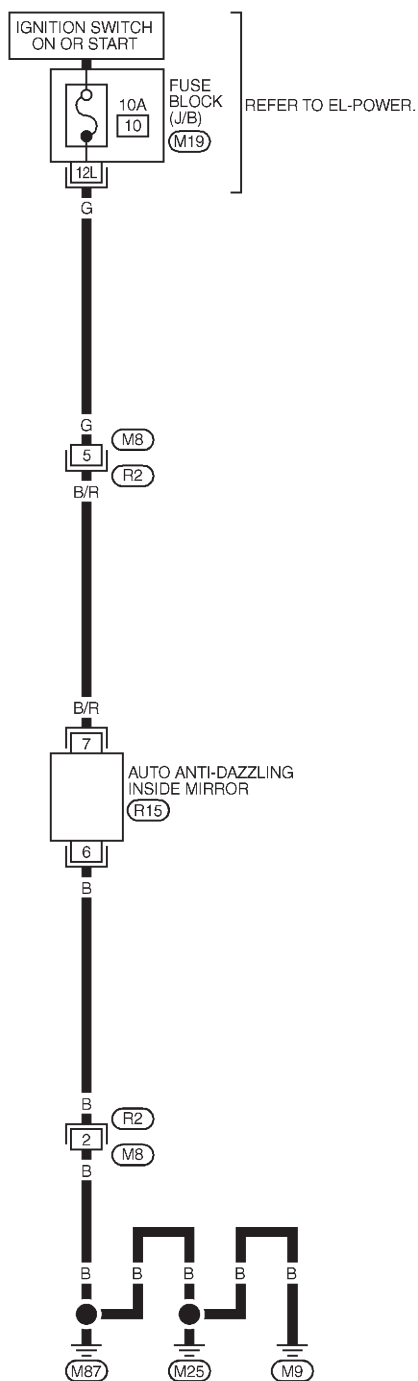
AUTO ANTI-DAZZLING INSIDE MIRROR

Wiring Diagram — I/MIRR —

Wiring Diagram — I/MIRR —

NFEL0332

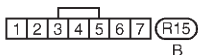
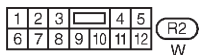
EL-I/MIRR-01



REFER TO EL-POWER.

AUTO ANTI-DAZZLING
INSIDE MIRROR
(R15)

REFER TO THE FOLLOWING.
 (M19) - FUSE BLOCK -
 JUNCTION BOX (J/B)



MEL516N

TRUNK LID AND FUEL FILLER LID OPENER

Wiring Diagram — T&FLID —

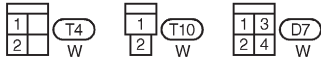
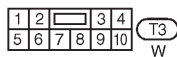
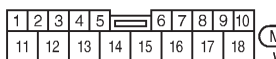
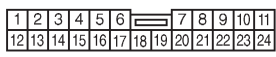
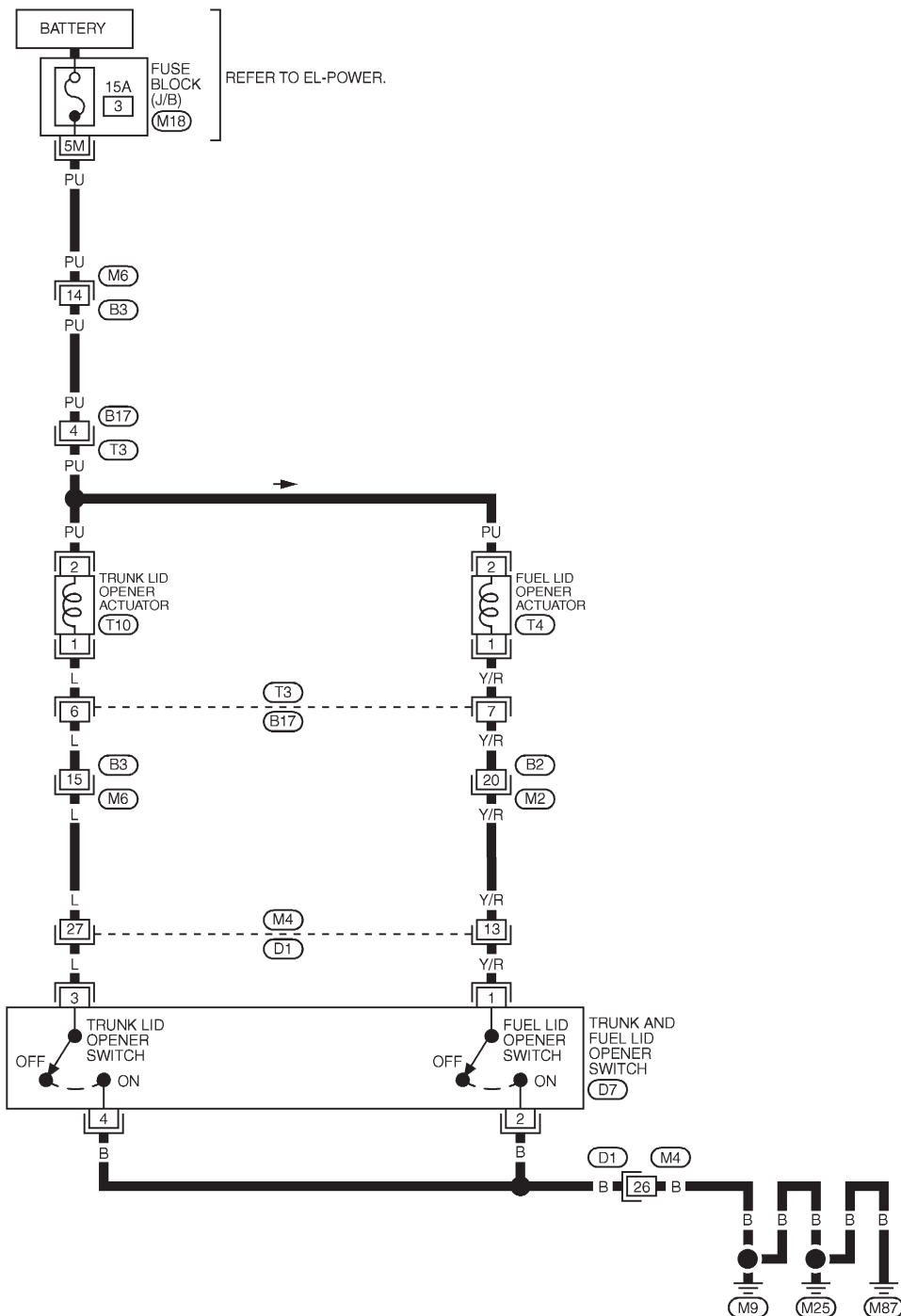
Wiring Diagram — T&FLID —

NFEL0312

NFEL0312S01

EL-T&FLID-01

LHD MODELS



REFER TO THE FOLLOWING.

- (D1) -SUPER
- MULTIPLE JUNCTION (SMJ)
- (M18) -FUSE BLOCK-JUNCTION BOX (J/B)

MEL517N

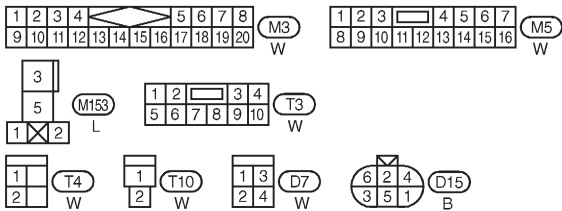
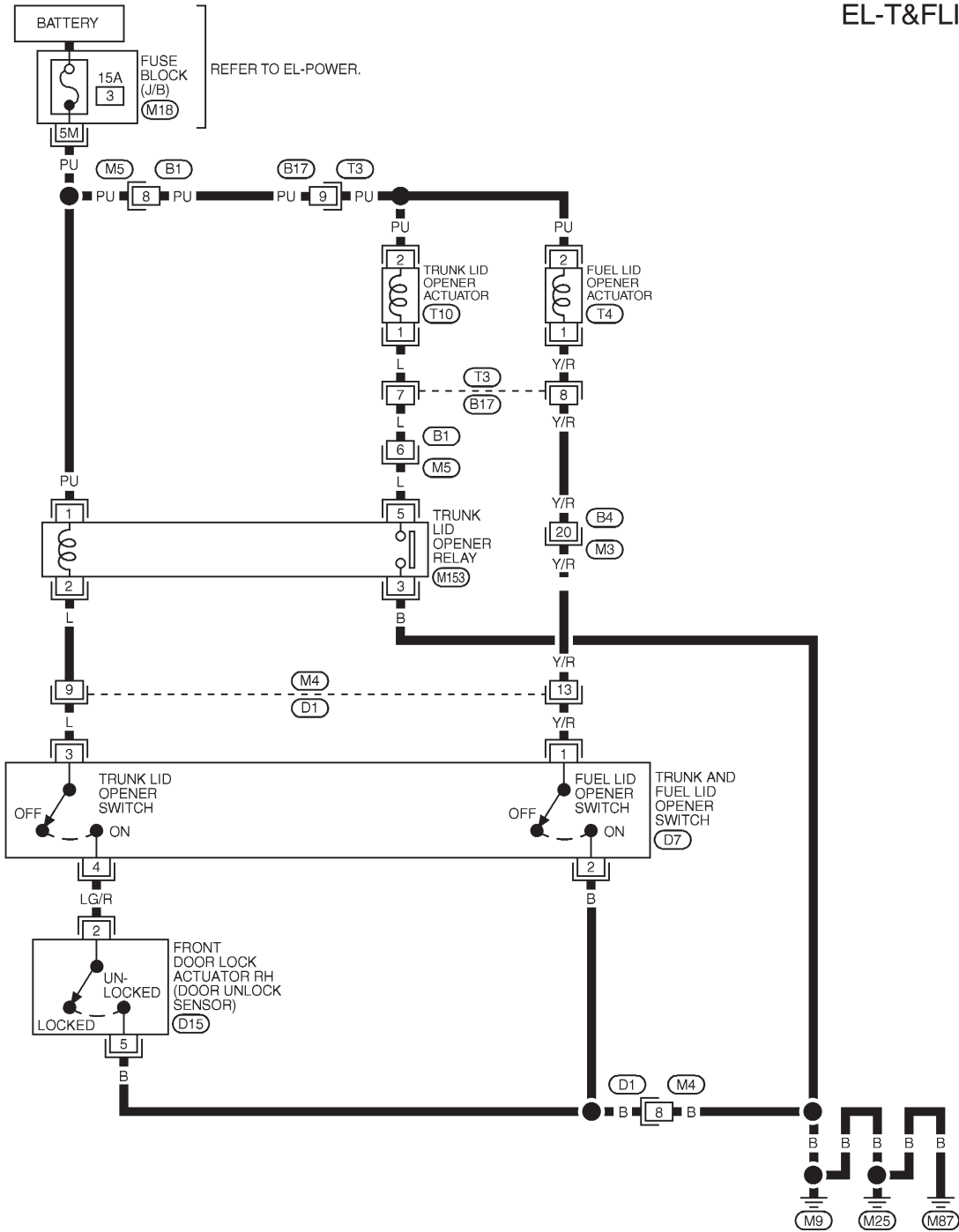
TRUNK LID AND FUEL FILLER LID OPENER

Wiring Diagram — T&FLID — (Cont'd)

RHD MODELS

NFEL0312S02

EL-T&FLID-02



REFER TO THE FOLLOWING.
 (D1) -SUPER
 MULTIPLE JUNCTION (SMJ)
 (M18) -FUSE BLOCK-
 JUNCTION BOX (J/B)

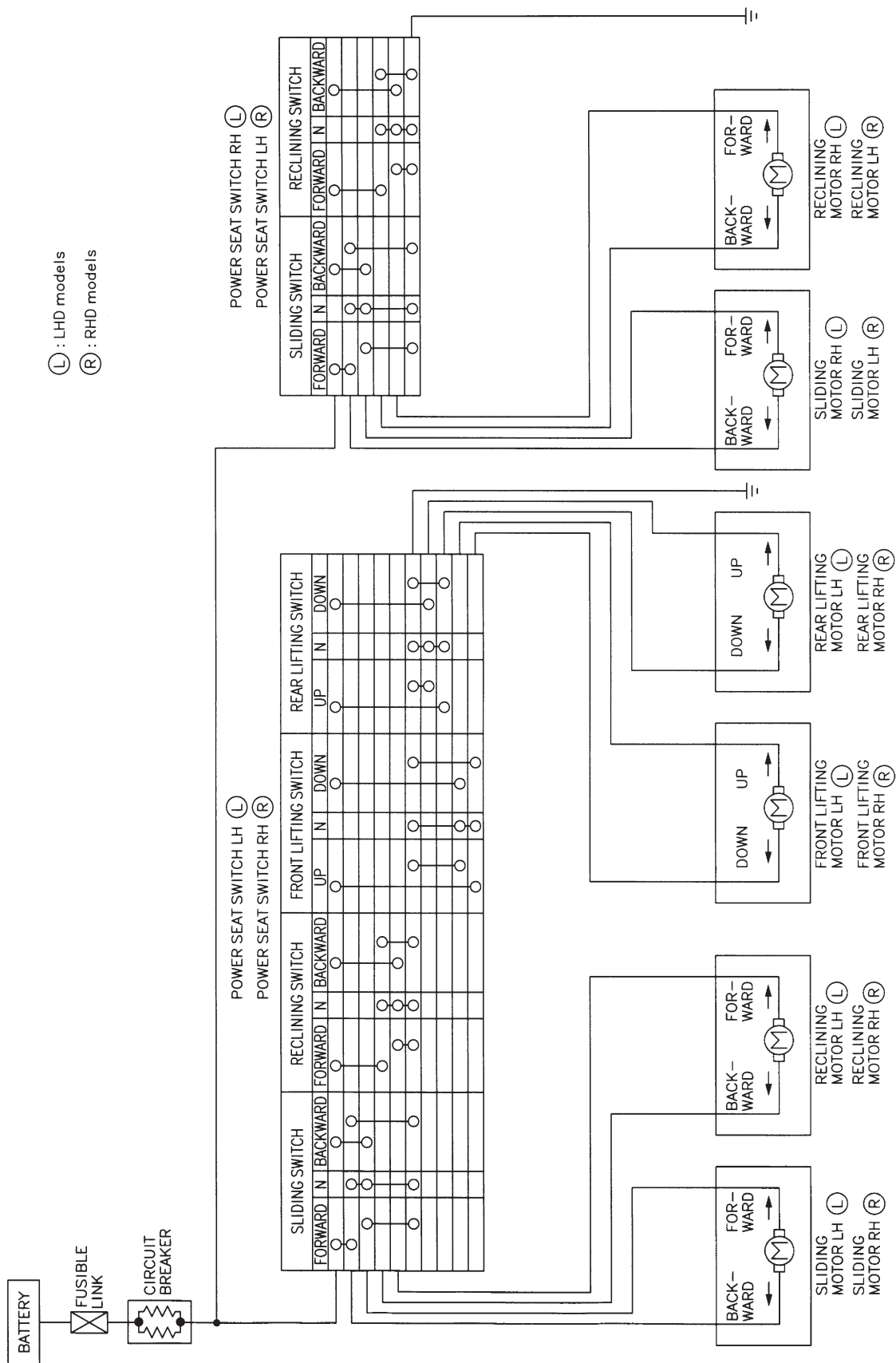
MEL518N

POWER SEAT

Schematic

Schematic

NFEL0251



MEL819K

POWER SEAT

Wiring Diagram — SEAT —

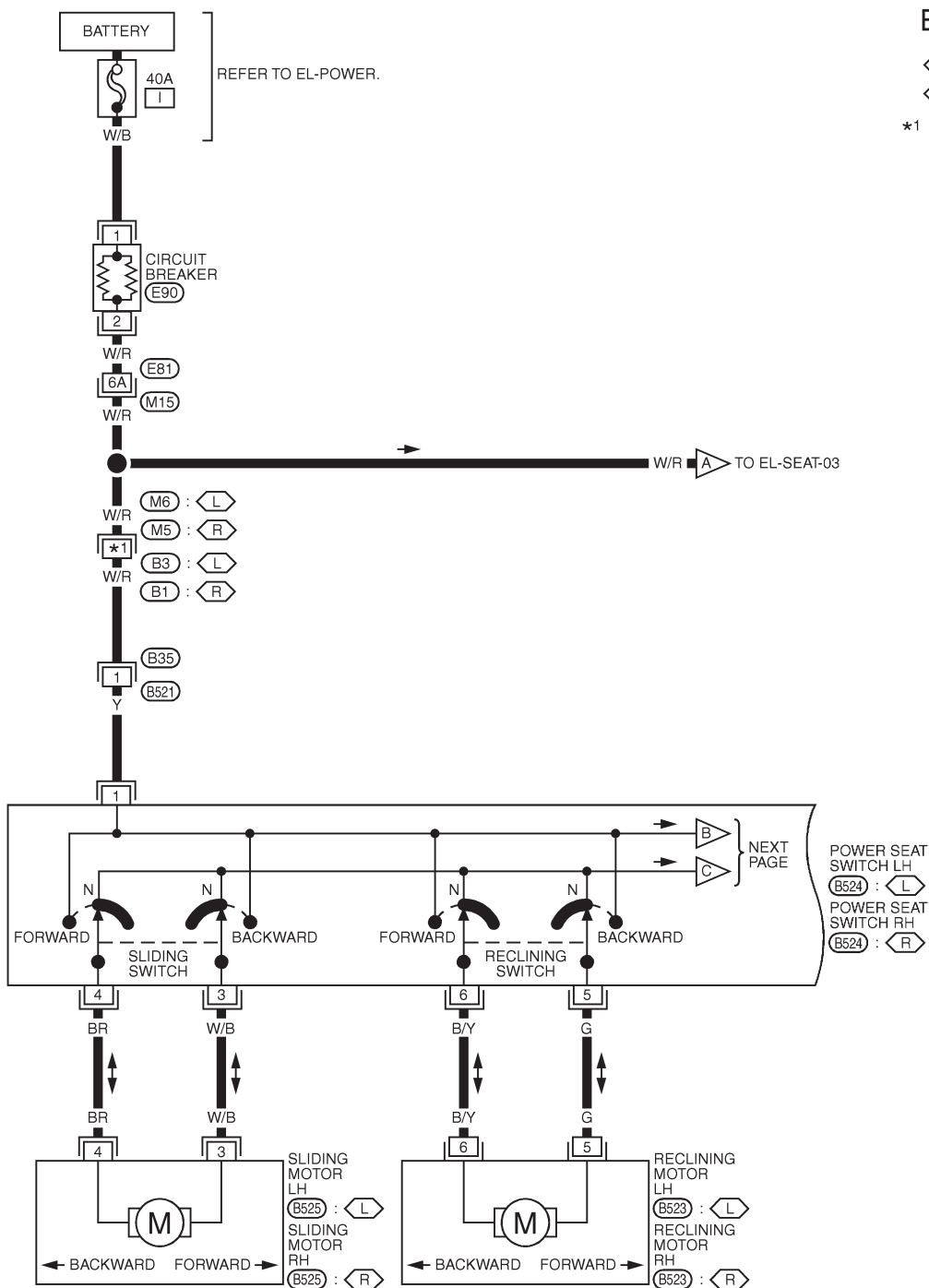
Wiring Diagram — SEAT —

NFEL0092

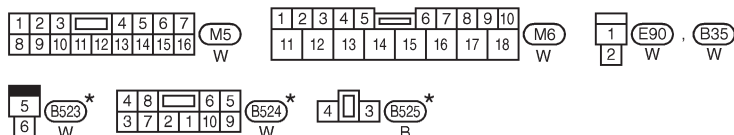
EL-SEAT-01

⬅ L : LHD MODELS
 ➡ R : RHD MODELS

*1 16 : ⬅ L
 4 : ➡ R



POWER SEAT SWITCH LH
 B524 : ⬅ L
 POWER SEAT SWITCH RH
 B524 : ➡ R



REFER TO THE FOLLOWING.
 M15 - SUPER
 MULTIPLE JUNCTION (SMJ)

* : THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", EL SECTION.

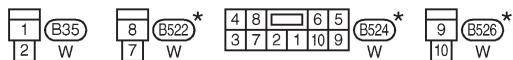
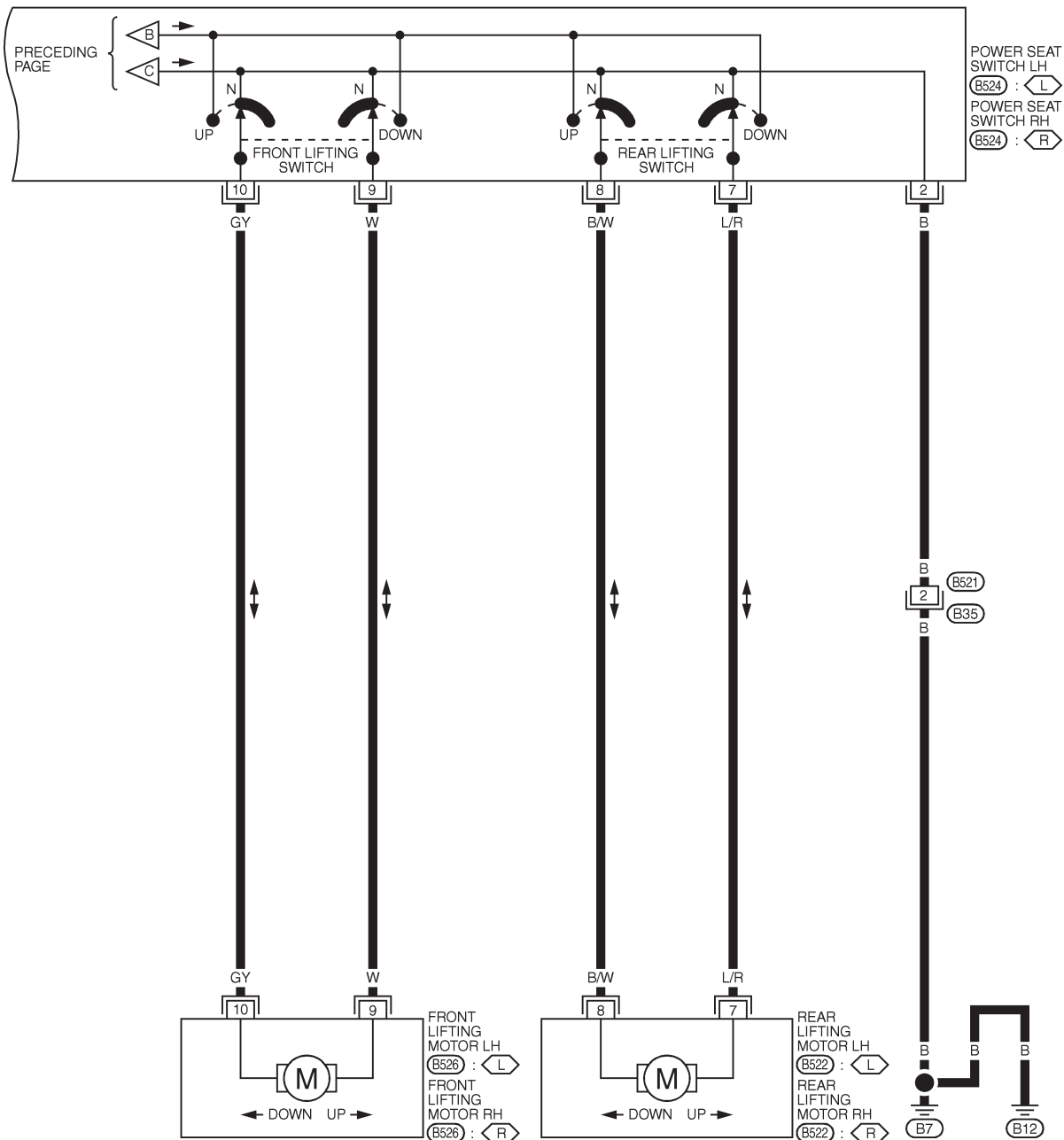
MEL820K

POWER SEAT

Wiring Diagram — SEAT — (Cont'd)

EL-SEAT-02

⬅ : LHD MODELS
➡ : RHD MODELS



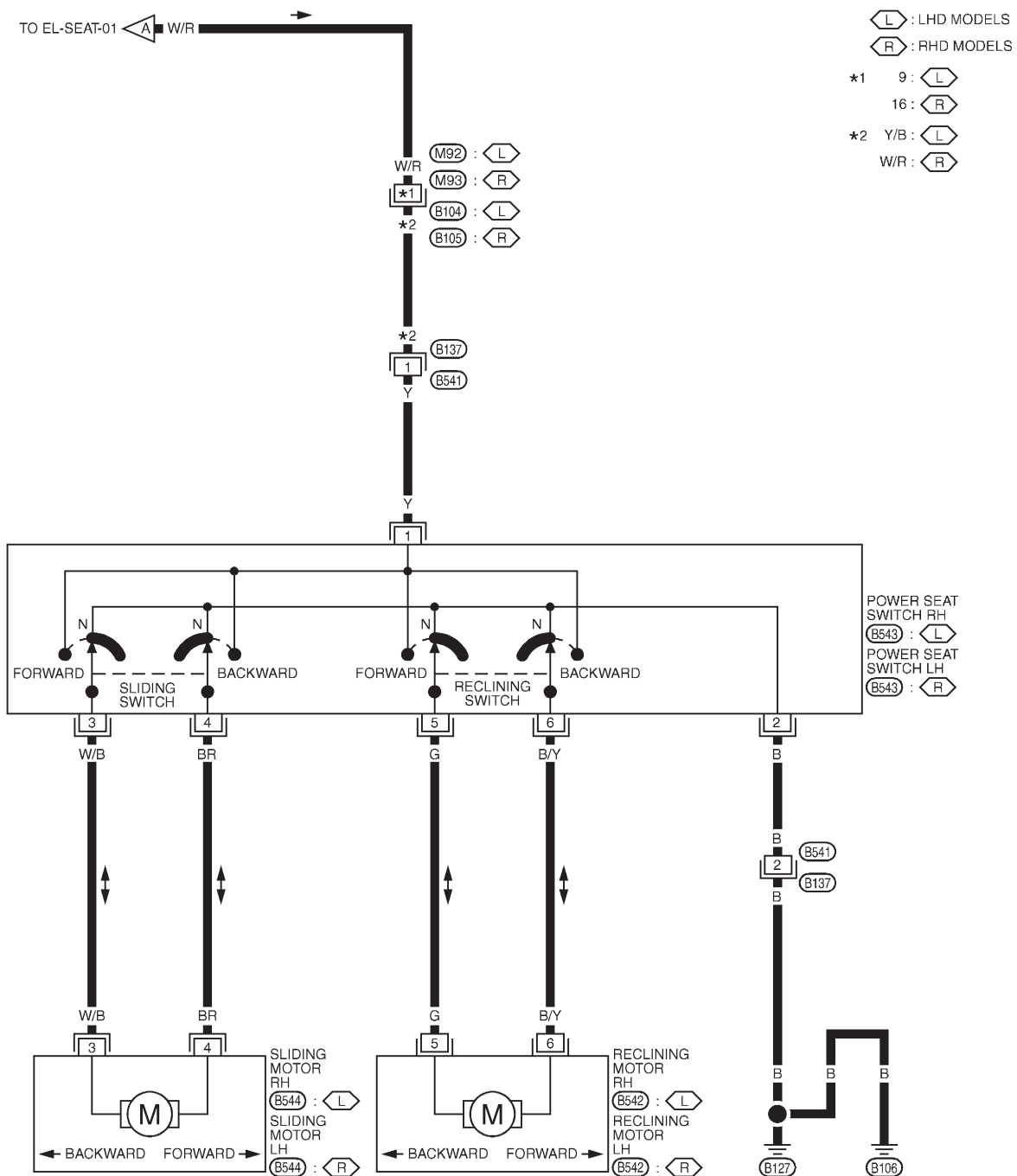
* : THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", EL SECTION.

MEL115M

POWER SEAT

Wiring Diagram — SEAT — (Cont'd)

EL-SEAT-03



MEL822K

HEATED SEAT

Wiring Diagram — HSEAT —

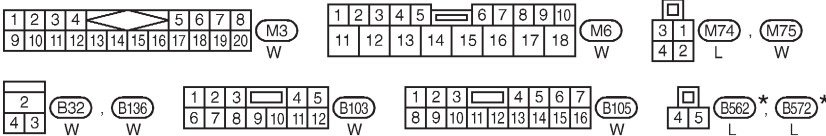
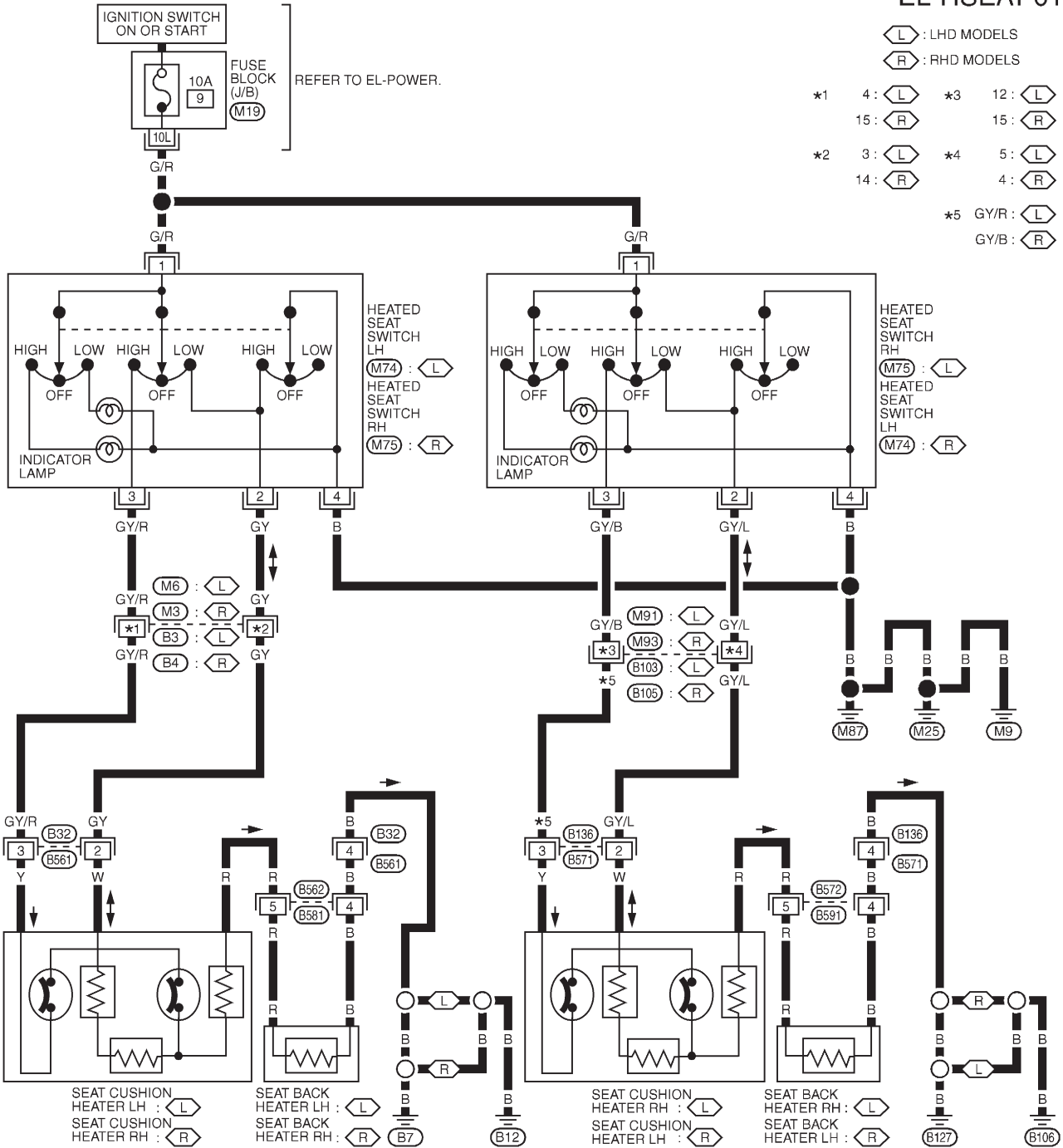
Wiring Diagram — HSEAT —

NFEL0093

EL-HSEAT-01

L : LHD MODELS
R : RHD MODELS

- *1 4: L *3 12: L
- 15: R 15: R
- *2 3: L *4 5: L
- 14: R 4: R
- *5 GY/R: L
- GY/B: R



* : THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", EL SECTION.

REFER TO THE FOLLOWING.
 M19 - FUSE BLOCK-
 JUNCTION BOX (J/B)

MEL629L

TELEPHONE (PRE WIRE)

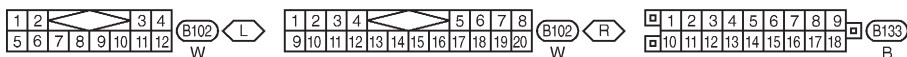
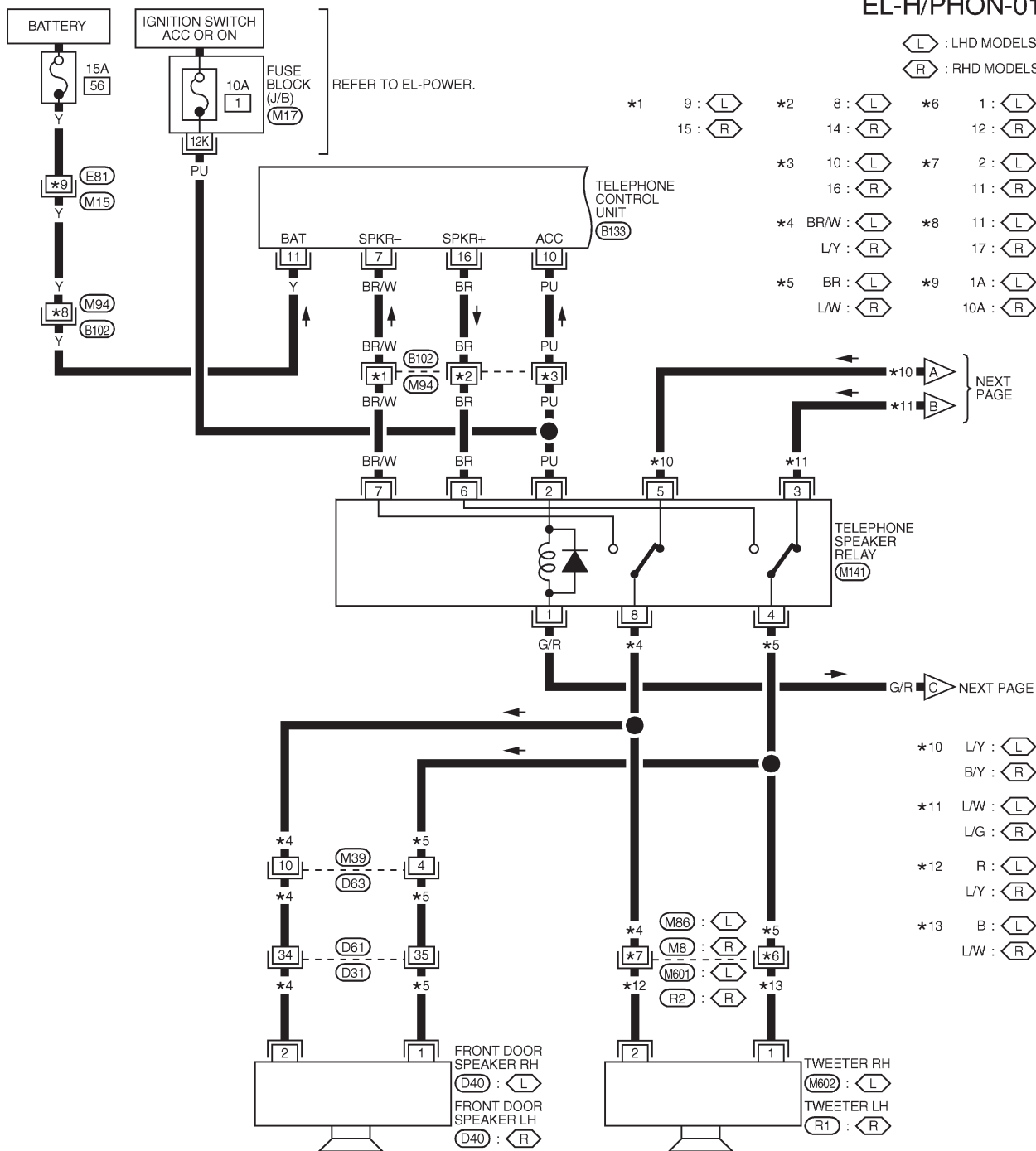
Wiring Diagram — H/PHON —

Wiring Diagram — H/PHON —

NFEL0333

EL-H/PHON-01

◻ : LHD MODELS
◻ : RHD MODELS



REFER TO THE FOLLOWING.
 (M15), (D31) -SUPER
 MULTIPLE JUNCTION (SMJ)
 (M17) -FUSE BLOCK-
 JUNCTION BOX (J/B)

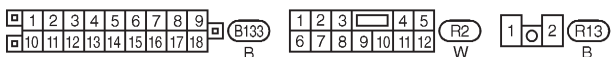
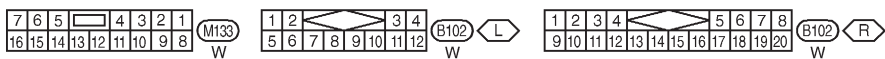
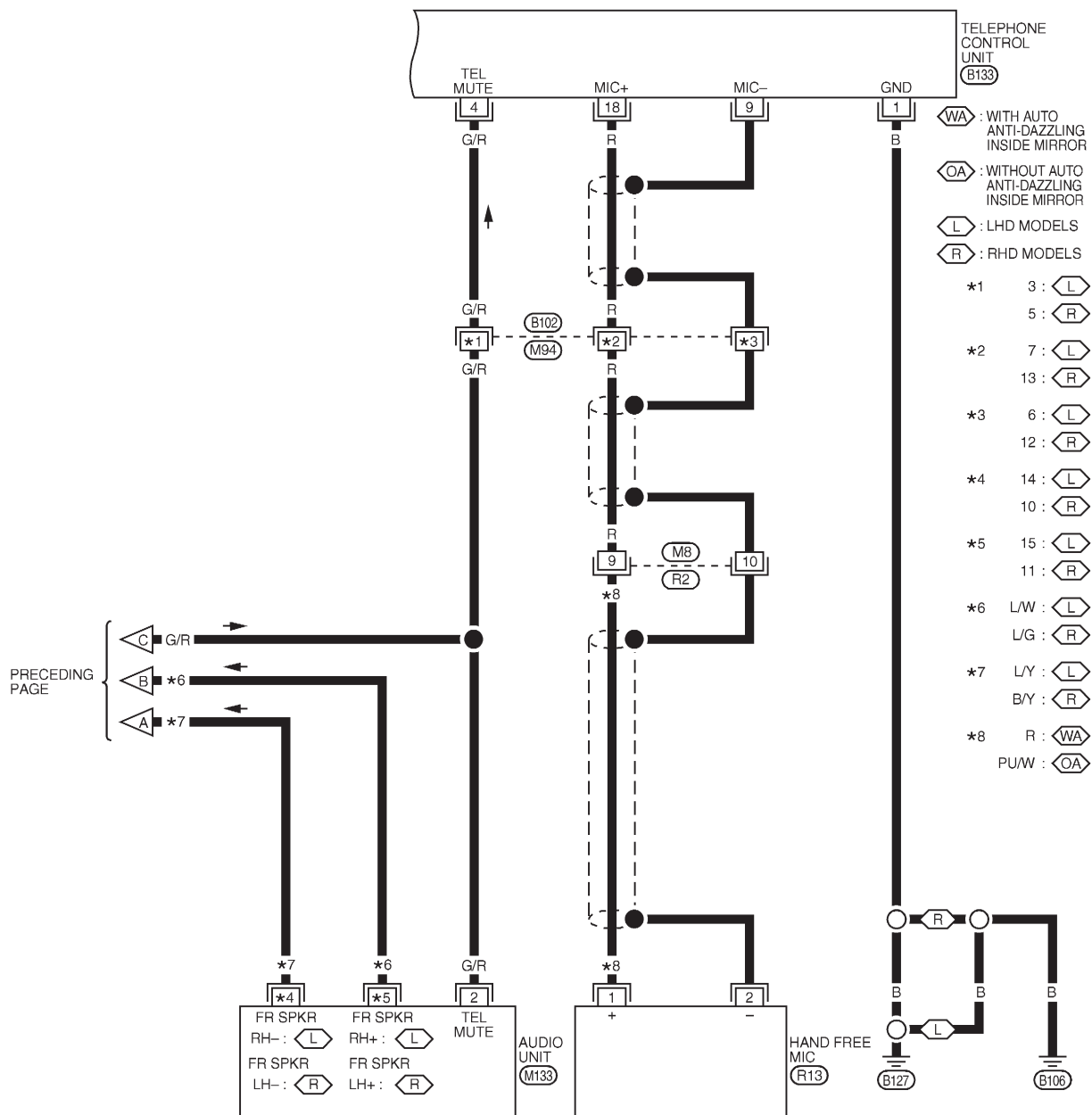
* : THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", EL SECTION.

MEL855M

TELEPHONE (PRE WIRE)

Wiring Diagram — H/PHON — (Cont'd)

EL-H/PHON-02



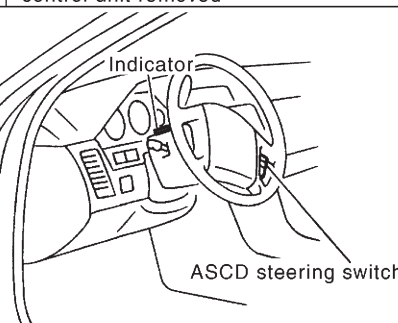
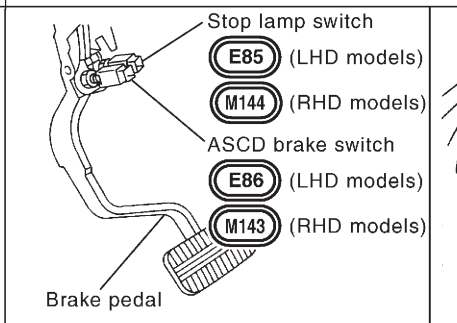
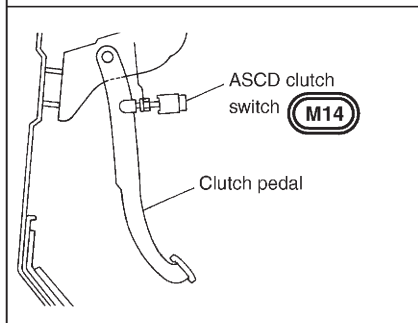
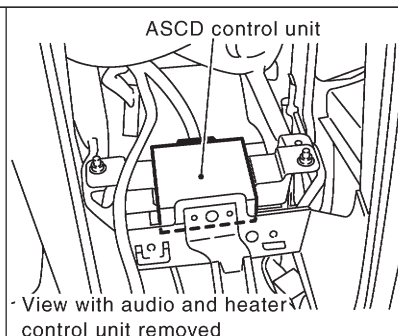
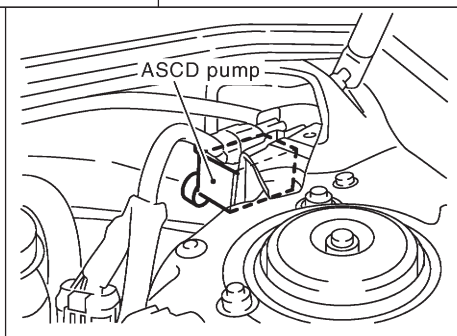
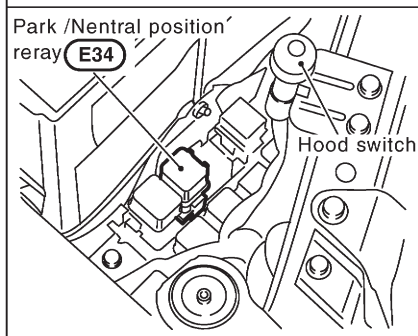
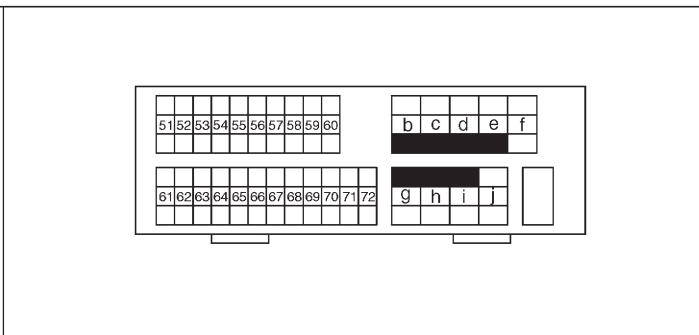
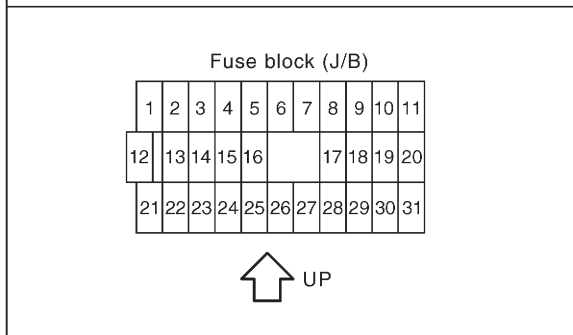
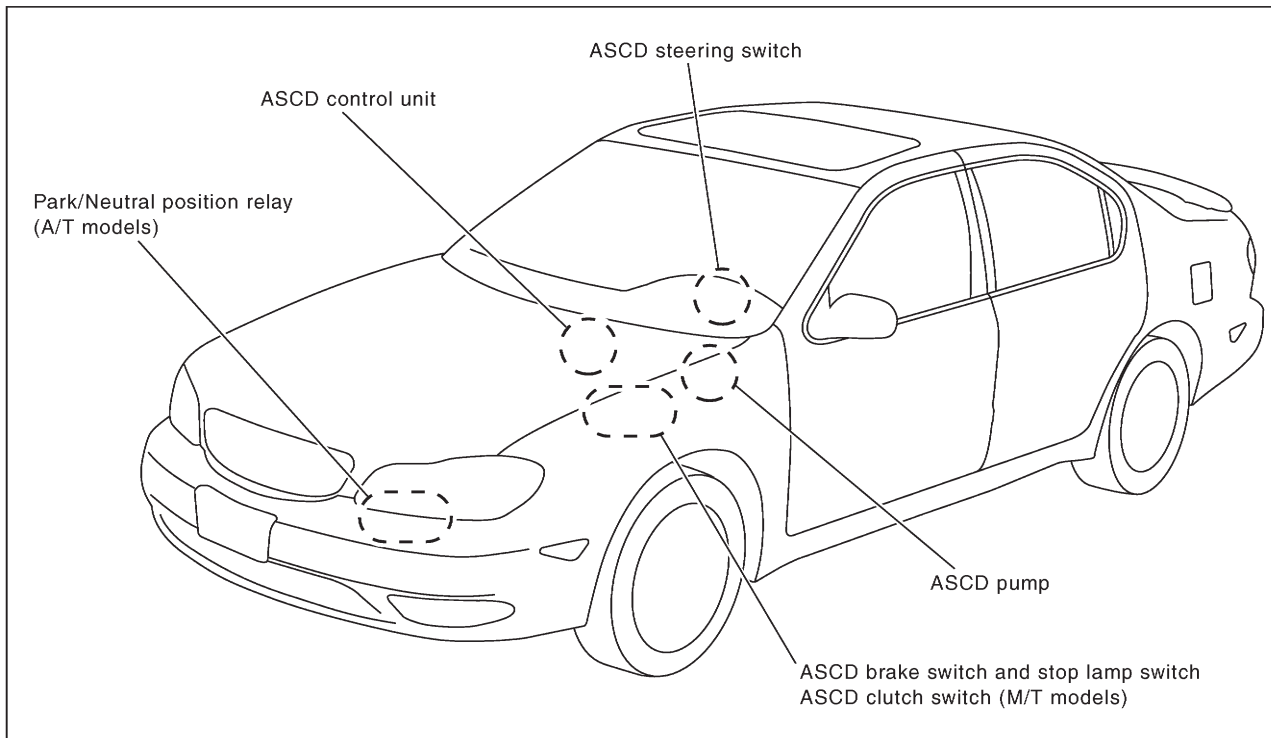
MEL856M

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Component Parts and Harness Connector Location

Component Parts and Harness Connector Location

NFEL0094



SEL809W

System Description

NFEL0190

Refer to Owner's Manual for ASCD operating instructions.

POWER SUPPLY AND GROUND

NFEL0190S01

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

- through 10A fuse [No. 30, located in the fuse block (J/B)]
- to ASCD brake switch terminal 1 (LHD models) and
- to combination meter terminals 47 and 50.
- through 15A fuse [No. 20, located in the fuse block (J/B)]
- to park/neutral position relay terminal 1 (A/T models),
- through 10A fuse [No. 10, located in the fuse block (J/B)]
- to ASCD control unit terminal 5, and
- to ASCD brake switch terminal 1 (RHD models)

Power is supplied at all times:

- through 15A fuse [No. 2, located in the fuse block (J/B)]
- to the stop lamp switch terminal 1, and
- through 10A fuse [No. 57, located in the fuse block (J/B)]
- to the horn relay terminal 2.

When park/neutral position is in the P or N position (A/T models), ground is supplied:

- to park/neutral position relay terminal 2
- through park/neutral position switch and body grounds F41 and F39.

When ASCD main switch is depressed (ON), ground is supplied:

- to ASCD control unit terminal 9
- from ASCD steering switch terminal 4
- to ASCD steering switch terminal 5
- through body grounds M9, M25 and M87

then ASCD control unit holds CRUISE condition.

OPERATION

NFEL0190S02

Set Operation

NFEL0190S0201

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

- ASCD main switch is ON position.
- Power supply to ASCD control unit terminal 8 [Brake and clutch pedal are released (M/T models)/Brake pedal is released and A/T selector lever is in other than P and N position (A/T models).]
- Vehicle speed is more than 40 km/h (25 MPH). (Signal from combination meter)

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

- from ASCD steering switch terminal 2
- to ASCD control unit terminal 11.

And then ASCD pump is activated to control throttle wire and ASCD control unit supply ground

- to combination meter terminals 51 to illuminate SET indicator.

A/T Overdrive Control during Cruise Control Driving (A/T models)

NFEL0190S0202

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 (transmission control module) cancels overdrive.

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

ASCD Shifting Control

NFEL0190S0207

During ASCD cruise, ASCD control unit controls A/T shifting to avoid uncomfortable shifting.

This is used to control the signals below.

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

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

System Description (Cont'd)

Coast Operation

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. And then ASCD will keep the new set speed. NFEL0190S0203

Accel Operation

When the RESUME/ACCEL switch is depressed, power is supplied NFEL0190S0204

- from ASCD steering switch terminal 3
- to ASCD control unit terminal 24.

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. And then ASCD will keep the new set speed.

Cancel Operation

When any of following condition exists, cruise operation will be canceled. NFEL0190S0205

- CANCEL switch is depressed. (Power supply to ASCD control unit terminals 11 and 24)
- Brake pedal is depressed. (Power supply to ASCD control unit terminal 23 from stop lamp switch)
- Brake or clutch pedal is depressed (M/T models)/Brake pedal is depressed or A/T selector lever is shifted to P or N position (A/T models). (Power supply to ASCD control unit terminal 8 is interrupted.)

If MAIN switch is turned to OFF during ASCD is activated, all of ASCD operation will be canceled and vehicle speed memory will be erased.

Resume Operation

When the RESUME/ACCEL switch is depressed after cancel operation other than depressing MAIN switch is performed, vehicle speed will return to last set speed. To resume vehicle set speed, vehicle condition must meet following conditions. NFEL0190S0206

- Brake pedal is released.
- Clutch pedal is released (M/T models).
- A/T selector lever is in other than P and N position (A/T models).
- Vehicle speed is more than 40 km/h (25 MPH).

ASCD PUMP OPERATION

The ASCD pump consists of a vacuum motor, an air valve and a release valve. When the ASCD activates, power is supplied NFEL0190S03

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

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

The pump is connected to ASCD actuator by vacuum hose. When the ASCD pump is activated, the ASCD pump vacuum the diaphragm of ASCD actuator to control throttle cable.

		Air valve (*1)	Release valve (*1)	Vacuum motor	Actuator inner pressure
ASCD not operating		Open	Open	Stopped	Atmosphere
ASCD operating	Releasing throttle cable	Open	Closed	Stopped	Vacuum
	Holding throttle position	Closed	Closed	Stopped	Vacuum (*2)
	Pulling throttle cable	Closed	Closed	Operated	Vacuum

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

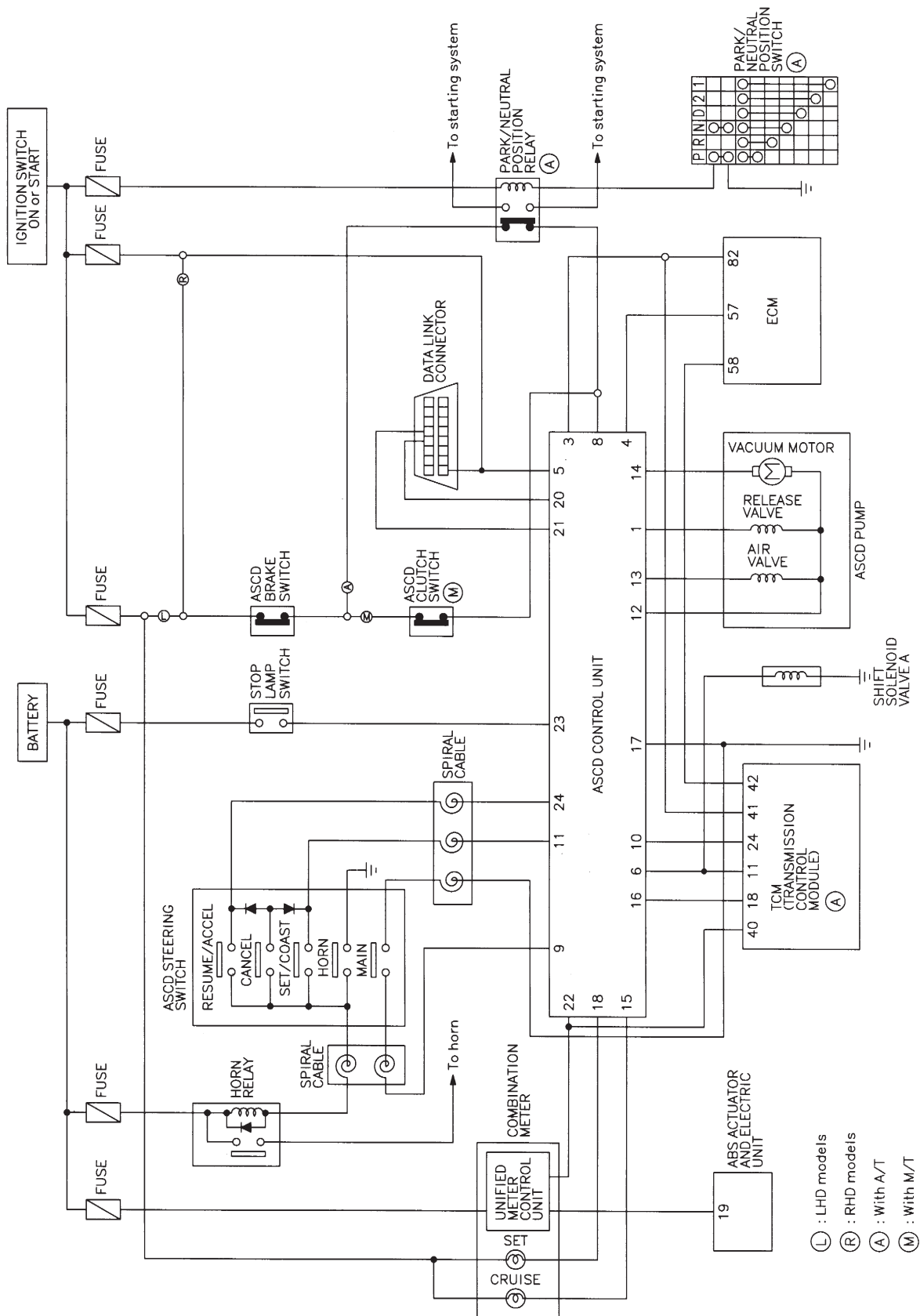
*2: Set position held.

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Schematic

NFEL0096

Schematic



MEL857M

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Wiring Diagram — ASCD —

Wiring Diagram — ASCD —

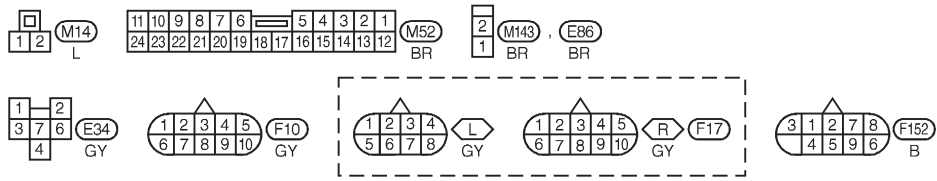
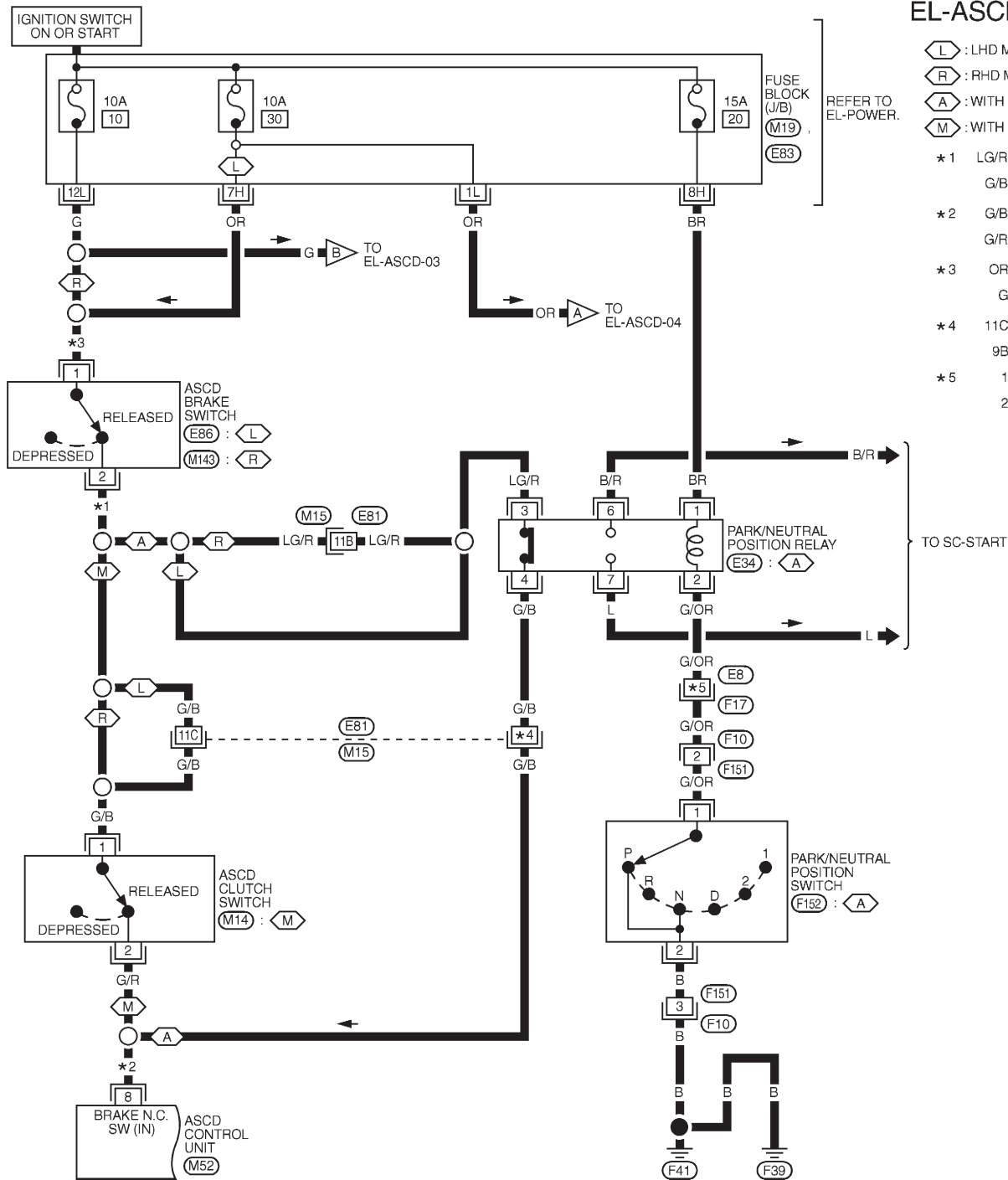
NFEL0097

NFEL0097S01

FIG. 1

EL-ASCD-01

- (L) : LHD MODELS
- (R) : RHD MODELS
- (A) : WITH A/T
- (M) : WITH M/T
- * 1 LG/R: (A)
G/B: (M)
- * 2 G/B: (A)
G/R: (M)
- * 3 OR: (L)
G: (R)
- * 4 11C: (L)
9B: (R)
- * 5 1: (L)
2: (R)



REFER TO THE FOLLOWING.
 (M15) -SUPER
 MULTIPLE JUNCTION (SMJ)
 (M19) , (E83) -FUSE BLOCK-
 JUNCTION BOX (J/B)

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

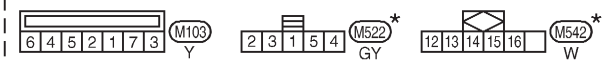
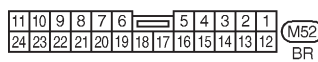
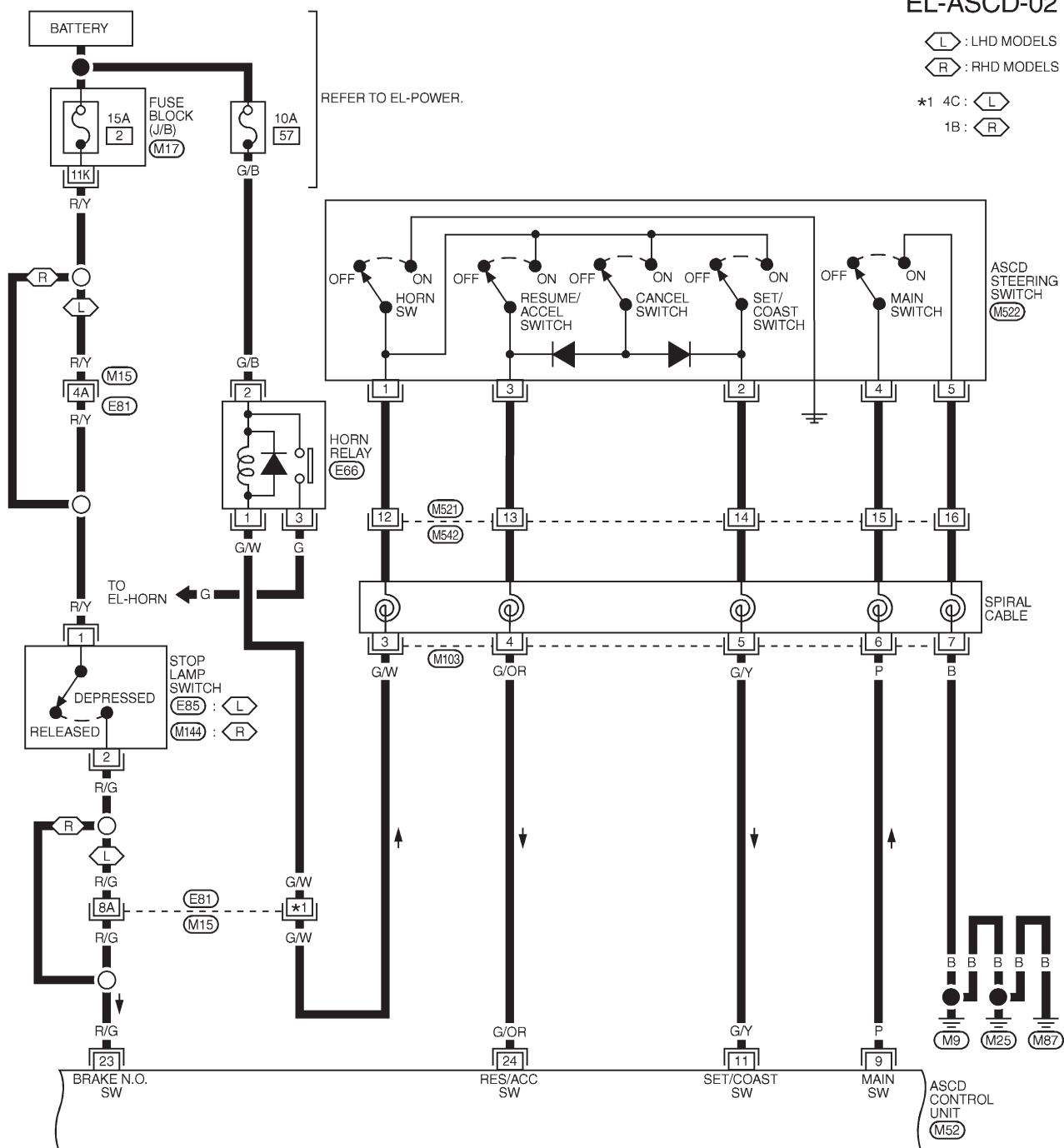
Wiring Diagram — ASCD — (Cont'd)

FIG. 2

NFEL0097S02

EL-ASCD-02

- ◁ : LHD MODELS
- ▷ : RHD MODELS
- *1 4C: ◁
- 1B: ▷



- REFER TO THE FOLLOWING.
- M15 - SUPER MULTIPLE JUNCTION (SMJ)
 - M17 - FUSE BLOCK-JUNCTION BOX (J/B)

* : THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", EL SECTION.

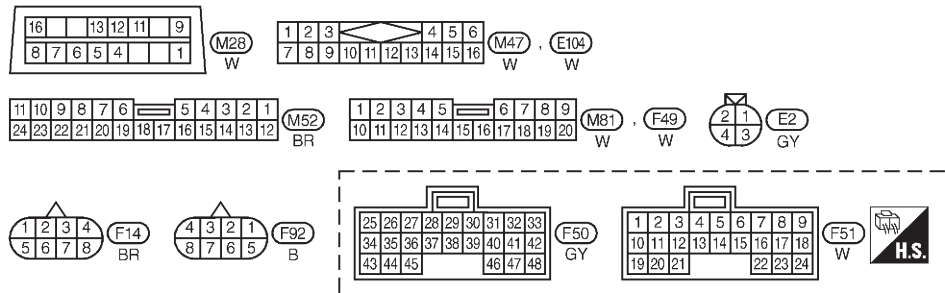
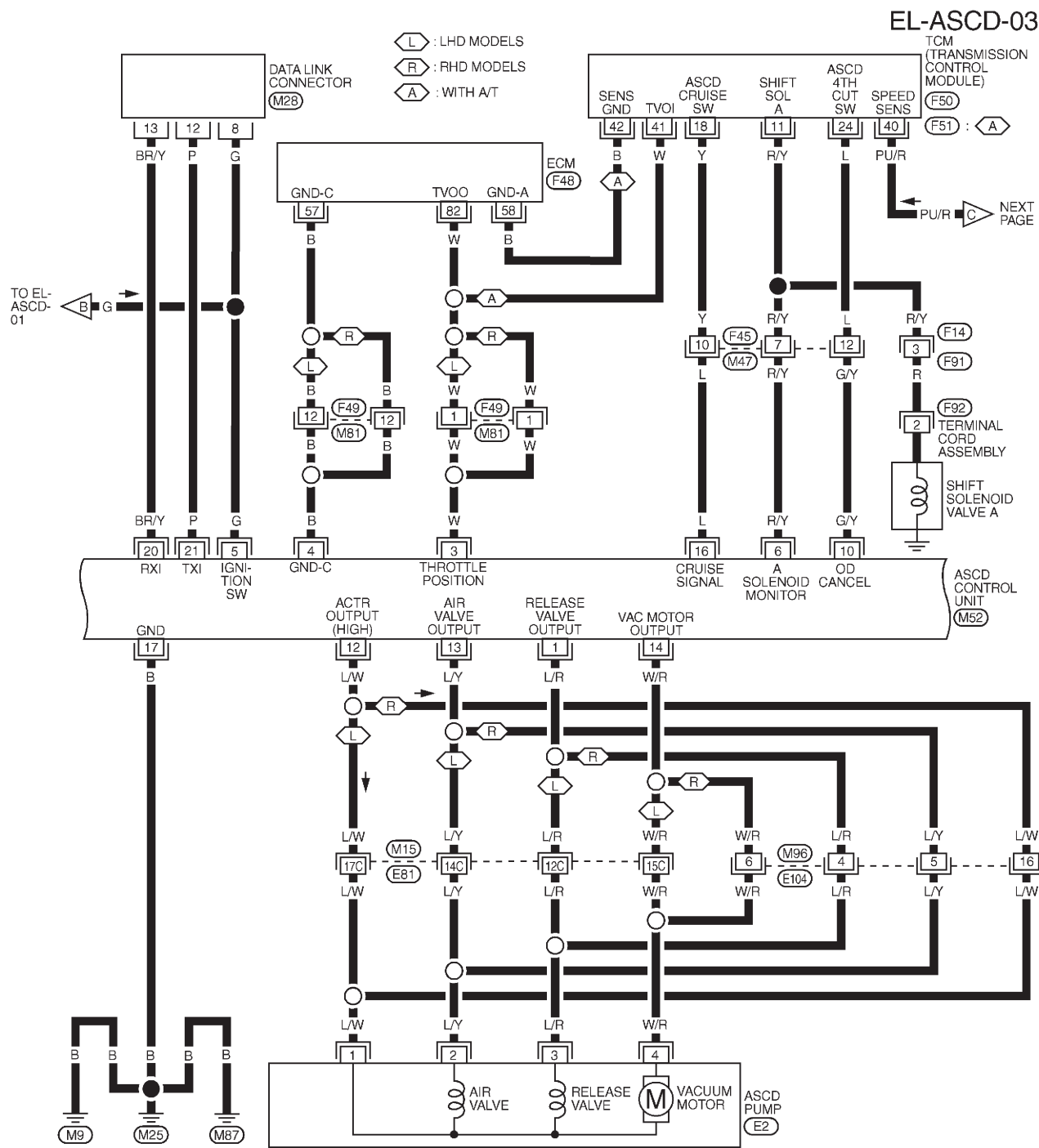
MEL859M

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Wiring Diagram — ASCD — (Cont'd)

FIG. 3

NFEL0097S03



REFER TO THE FOLLOWING.
 (M15) -SUPER
 MULTIPLE JUNCTION (SMJ)
 (F48) -ELECTRICAL UNITS

MEL860M

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Wiring Diagram — ASCD — (Cont'd)

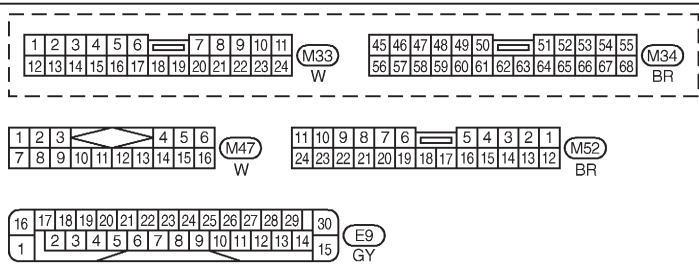
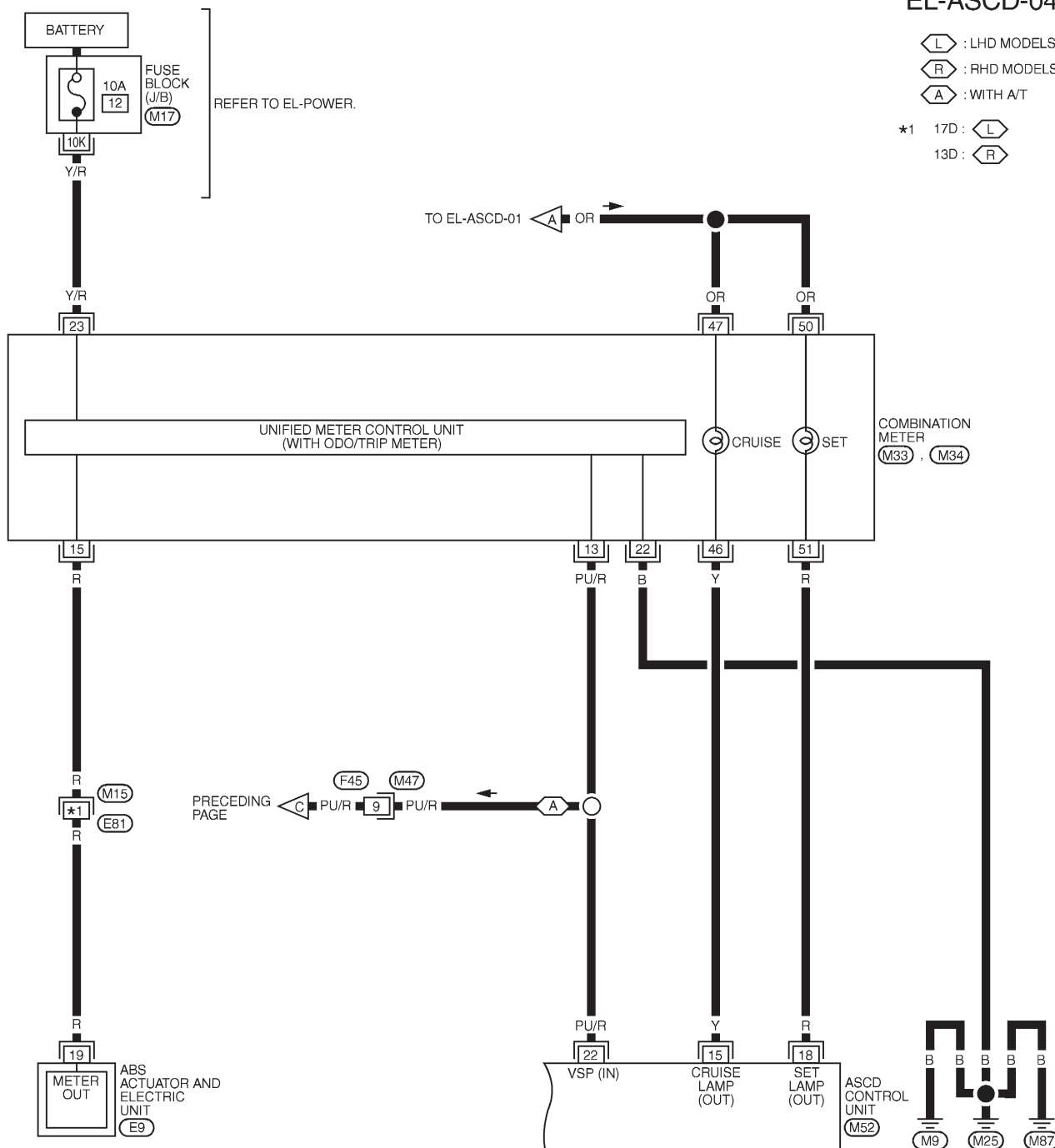
FIG. 4

NFEL0097S04

EL-ASCD-04

- L : LHD MODELS
- R : RHD MODELS
- A : WITH AT

- *1 17D: L
- 13D: R

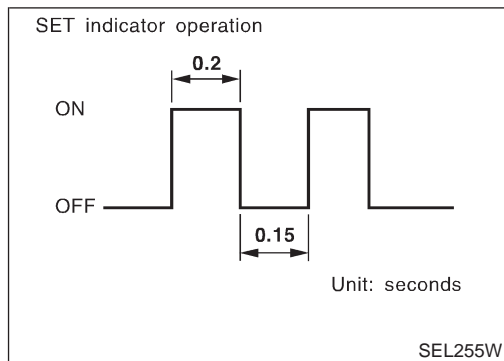


REFER TO THE FOLLOWING.
M15 - SUPER
 MULTIPLE JUNCTION (SMJ)
M17 - FUSE BLOCK-
 JUNCTION BOX (J/B)

MEL861M

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Fail-safe System



Fail-safe System

NFEL0228

DESCRIPTION

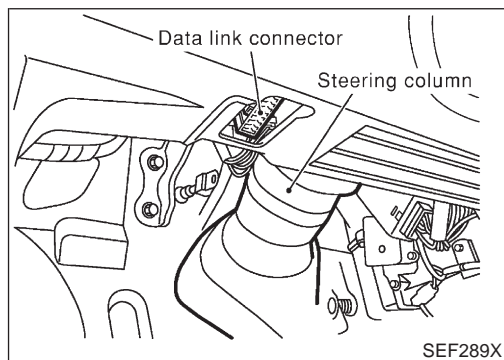
NFEL0228S01

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

MALFUNCTION DETECTION CONDITIONS

NFEL0228S02

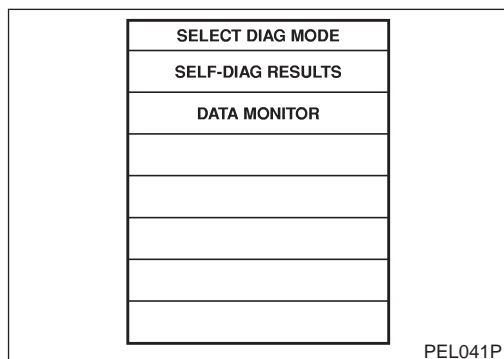
Detection conditions	ASCD operation during malfunction detection
<ul style="list-style-type: none"> ASCD steering (RESUME/ACCEL, CANCEL, SET/COAST) switch is stuck. Vacuum motor ground circuit or power circuit is open or shorted. Air valve ground circuit or power circuit is open or shorted. Release valve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



CONSULT-II Inspection Procedure

NFEL0229

1. Turn ignition switch OFF.
2. Connect CONSULT-II to data link connector.



3. Turn ignition switch ON.
4. Turn ASCD main switch ON.
5. Touch START (on CONSULT-II display).
6. Touch ASCD.
7. Touch SELF-DIAG RESULTS.

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

CONSULT-II Inspection Procedure (Cont'd)

SELF-DIAG RESULTS	
DTC RESULTS	TIME
NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED.	

PFA021B

- Self-diagnostic results are shown on display. Refer to table on the next page.

SELECT MONITOR ITEM
ALL SIGNALS
SELECTION FROM MENU

PEL043P

8. Touch "DATA MONITOR".

DATA MONITOR	
MONITOR	
BRAKE SW	OFF
STOP LAMP SW	ON
SET SW	ON
RESUME/ACC SW	OFF
CANCEL SW	OFF
VHCL SPEED SE	XXX mph
SET VHCL SPD	XXX mph
VACUUM PUMP	XXX msec
AIR VALVE	XXX msec

PEL811S

- Touch START.
- Data monitor results are shown on display. Refer to table on the next page.

For further information, read the CONSULT-II Operation Manual.

CONSULT-II Self-diagnostic Results

NFEL0230

Diagnostic item	Description	Repair/Check order
NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED.	<ul style="list-style-type: none"> ● Even if no malfunction is indicated, further testing may be required as far as the customer complains. 	—
POWER SUPPLY-VALVE	<ul style="list-style-type: none"> ● The power supply circuit for the ASCD pump is open. (An abnormally high voltage is entered.) 	ASCD PUMP CIRCUIT CHECK (EL-235)
VACUUM PUMP	<ul style="list-style-type: none"> ● The vacuum motor circuit is open or shorted. (An abnormally high or low voltage is entered.) 	ASCD PUMP CIRCUIT CHECK (EL-235)
AIR VALVE	<ul style="list-style-type: none"> ● The air valve circuit is open or shorted. (An abnormally high or low voltage is entered.) 	ASCD PUMP CIRCUIT CHECK (EL-235)
RELEASE VALVE	<ul style="list-style-type: none"> ● The release valve circuit is open or shorted. (An abnormally high or low voltage is entered.) 	ASCD PUMP CIRCUIT CHECK (EL-235)
VHCL SP-S/FAILSAFE	<ul style="list-style-type: none"> ● The vehicle speed sensor is malfunctioning. 	VEHICLE SPEED SENSOR CHECK (EL-234)
CONTROL UNIT	<ul style="list-style-type: none"> ● The ASCD control unit is malfunctioning. 	Replace ASCD control unit.
BRAKE SW/STOP/L SW	<ul style="list-style-type: none"> ● The brake switch or stop lamp switch circuit is malfunctioning. 	ASCD BRAKE/STOP LAMP SWITCH CHECK (EL-230)

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

CONSULT-II Self-diagnostic Results (Cont'd)

Diagnostic item	Description	Repair/Check order
COMMAND SW	<ul style="list-style-type: none"> The steering switch (set/coast switch, resume/accel switch or cancel switch) is malfunctioning. 	ASCD STEERING SWITCH CHECK (EL-232)
ECM	<ul style="list-style-type: none"> ECM is malfunctioning. 	THROTTLE POSITION SENSOR SIGNAL CHECK (EL-238)

CONSULT-II Data Monitor

NFEL0231

Monitored item	Description
BRAKE SW	<ul style="list-style-type: none"> Indicates [ON/OFF] condition of the brake switch, and ASCD clutch switch (M/T models) or park/neutral position relay (A/T models).
AT OD MONITOR	<ul style="list-style-type: none"> Indicates [ON/OFF] condition of A/T O/D (shift solenoid valve A).
STOP LAMP SW	<ul style="list-style-type: none"> Indicates [ON/OFF] condition of the stop lamp switch.
MAIN SW	<ul style="list-style-type: none"> Indicates [ON/OFF] condition of main switch.
SET SW	<ul style="list-style-type: none"> Indicates [ON/OFF] condition of the set switch.
RESUME/ACC SW	<ul style="list-style-type: none"> Indicates [ON/OFF] condition of the resume/accelerate switch.
CANCEL SW	<ul style="list-style-type: none"> Indicates [ON/OFF] condition of the cancel.
VHCL SPEED SE	<ul style="list-style-type: none"> The present vehicle speed computed from the vehicle speed sensor signal is displayed.
SET VHCL SPD	<ul style="list-style-type: none"> The preset vehicle speed is displayed.
VACUUM PUMP	<ul style="list-style-type: none"> The operation time of the vacuum pump is displayed.
AIR VALVE	<ul style="list-style-type: none"> The operation time of the air valve is displayed.
PW SUP-VALVE	<ul style="list-style-type: none"> Indicates [ON/OFF] condition of the circuit for the air valve and the release valve.
MAIN LAMP	<ul style="list-style-type: none"> Indicates [ON/OFF] condition of cruise lamp.
A/T-OD CANCEL	<ul style="list-style-type: none"> Indicates [ON/OFF] condition of the OD cancel.
FAIL SAFE-LOW	<ul style="list-style-type: none"> The fail-safe (LOW) circuit function is displayed.
FAIL SAFE-SPD	<ul style="list-style-type: none"> The fail-safe (SPEED) circuit function is displayed.
TCS MONITOR	<ul style="list-style-type: none"> Indicates [ON/OFF] condition of TCS.
THRTL POS SEN	<ul style="list-style-type: none"> The voltage of throttle position sensor is displayed.

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses

Trouble Diagnoses SYMPTOM CHART

NFEL0232

NFEL0232S01

PROCEDURE	Diagnostic procedure						
REFERENCE PAGE (EL-)	228	229	230	232	234	235	237
SYMPTOM	FAIL-SAFE SYSTEM CHECK	POWER SUPPLY AND GROUND CIRCUIT CHECK	ASCD BRAKE/STOP LAMP SWITCH CHECK	ASCD STEERING SWITCH CHECK	VEHICLE SPEED SIGNAL CHECK	ASCD PUMP CIRCUIT CHECK	ASCD ACTUATOR/PUMP CHECK
ASCD cannot be set. ("CRUISE" indicator lamp does not ON.)		X		X★3			
ASCD cannot be set. ("SET" indicator lamp does not blink.)			X	X	X		
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 RESUME/ACCEL switch has been pressed.				X			X
System is not released after CANCEL switch (steering) has been pressed.				X			X
Large difference between set speed and actual vehicle speed.					X	X	X
Deceleration is greatest immediately after ASCD has been set.					X	X	X

★1: It indicates that system is in fail-safe. After completing diagnostic procedures, perform "FAIL-SAFE SYSTEM CHECK" (EL-228) 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 ASCD 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.

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses (Cont'd)



SEL417V

SET/COAST
switch "ON"



SEL767P

Brake pedal



SAT797A

FAIL-SAFE SYSTEM CHECK

=NFEL0232S02

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, check the following.
 - ASCD steering switch. Refer to EL-232.
3. Drive the vehicle at more than 40 km/h (25 MPH) and push SET/COAST switch.
If the indicator lamp blinks, check the following.
 - Vehicle speed sensor. Refer to EL-234.
 - ASCD pump circuit. Refer to EL-235.
 - Replace control unit.
4. Depress brake pedal slowly (brake pedal should be depressed more than 5 seconds).
If the indicator lamp blinks, check the following.
 - ASCD brake/stop lamp switch. Refer to EL-230.
5. END. (System is OK.)

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses (Cont'd)

POWER SUPPLY AND GROUND CIRCUIT CHECK

=NFEL0232S03

1	CHECK POWER SUPPLY CIRCUIT FOR ASCD CONTROL UNIT	
<p>1. Disconnect ASCD control unit harness connector. 2. Turn ignition switch ON. 3. Check voltage between ASCD control unit harness connector terminal 5 and ground.</p> <div style="text-align: center;"> <p>ASCD control unit connector (M52)</p> </div> <p style="text-align: right;">Does battery voltage exist?</p> <p style="text-align: right;">SEL256W</p>		
Refer to wiring diagram in EL-222.		
Yes	▶	GO TO 2.
No	▶	Check the following. <ul style="list-style-type: none"> ● 10A fuse (No. 10 located in the fuse block) ● Harness for open or short

2	CHECK GROUND CIRCUIT FOR ASCD CONTROL UNIT	
<p>Check continuity between ASCD control unit harness connector terminal 17 and body ground.</p> <div style="text-align: center;"> <p>ASCD control unit connector (M52)</p> </div> <p style="text-align: right;">Does continuity exist?</p> <p style="text-align: right;">SEL257W</p>		
Refer to wiring diagram in EL-222.		
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

=NFEL0232S06

1	CHECK ASCD BRAKE SWITCH CIRCUIT									
<p> With CONSULT-II See "BRAKE SW" in "DATA MONITOR" mode.</p>										
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 40%; border: 1px solid black; padding: 5px; text-align: center;"> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="2" style="text-align: center;">DATA MONITOR</th> </tr> <tr> <th style="width: 50%;">MONITOR</th> <th style="width: 50%;"></th> </tr> <tr> <td style="text-align: center;">BRAKE SW</td> <td style="text-align: center;">OFF</td> </tr> </table> </td> <td style="padding: 5px;"> <p>A/T models When brake pedal is depressed or A/T selector lever is in "N" or "P" range: BRAKE SW OFF When brake pedal is released and A/T selector lever is not in "N" or "P" range: BRAKE SW ON</p> <p>M/T models When clutch pedal or brake pedal is depressed: BRAKE SW OFF When clutch pedal and brake pedal are released: BRAKE SW ON</p> </td> </tr> </table>			<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="2" style="text-align: center;">DATA MONITOR</th> </tr> <tr> <th style="width: 50%;">MONITOR</th> <th style="width: 50%;"></th> </tr> <tr> <td style="text-align: center;">BRAKE SW</td> <td style="text-align: center;">OFF</td> </tr> </table>	DATA MONITOR		MONITOR		BRAKE SW	OFF	<p>A/T models When brake pedal is depressed or A/T selector lever is in "N" or "P" range: BRAKE SW OFF When brake pedal is released and A/T selector lever is not in "N" or "P" range: BRAKE SW ON</p> <p>M/T models When clutch pedal or brake pedal is depressed: BRAKE SW OFF When clutch pedal and brake pedal are released: BRAKE SW ON</p>
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="2" style="text-align: center;">DATA MONITOR</th> </tr> <tr> <th style="width: 50%;">MONITOR</th> <th style="width: 50%;"></th> </tr> <tr> <td style="text-align: center;">BRAKE SW</td> <td style="text-align: center;">OFF</td> </tr> </table>	DATA MONITOR		MONITOR		BRAKE SW	OFF	<p>A/T models When brake pedal is depressed or A/T selector lever is in "N" or "P" range: BRAKE SW OFF When brake pedal is released and A/T selector lever is not in "N" or "P" range: BRAKE SW ON</p> <p>M/T models When clutch pedal or brake pedal is depressed: BRAKE SW OFF When clutch pedal and brake pedal are released: BRAKE SW ON</p>			
DATA MONITOR										
MONITOR										
BRAKE SW	OFF									
SEL286W										
<p> Without CONSULT-II</p> <ol style="list-style-type: none"> 1. Disconnect ASCD control unit harness connector. 2. Turn ignition switch ON. 3. Check voltage between ASCD control unit harness connector terminal 8 and ground. 										
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 40%; padding: 5px;"> <p style="font-size: small;">G/R: M/T models G/B: A/T models</p> </td> <td style="padding: 5px;"> <p>When brake or clutch pedal is depressed (M/T), or when brake pedal is depressed or A/T selector lever is in "N" or "P" range (A/T): Approx. 0V When brake and clutch pedal are released (M/T), or when both brake pedal is released and A/T selector lever is not in "N" or "P" range (A/T): Battery voltage should exist.</p> </td> </tr> </table>			<p style="font-size: small;">G/R: M/T models G/B: A/T models</p>	<p>When brake or clutch pedal is depressed (M/T), or when brake pedal is depressed or A/T selector lever is in "N" or "P" range (A/T): Approx. 0V When brake and clutch pedal are released (M/T), or when both brake pedal is released and A/T selector lever is not in "N" or "P" range (A/T): Battery voltage should exist.</p>						
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SEL258W										
OK or NG										
OK	▶	GO TO 2.								
NG	▶	<p>Check the following.</p> <ul style="list-style-type: none"> ● ASCD brake switch Refer to "Electrical Component Inspection" (EL-239). ● Park/neutral position switch Refer to "Electrical Component Inspection" (EL-239). ● Park/neutral position relay ● ASCD clutch switch Refer to "Electrical Component Inspection" (EL-239). ● Harness for open or short 								

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses (Cont'd)

2 CHECK STOP LAMP SWITCH CIRCUIT

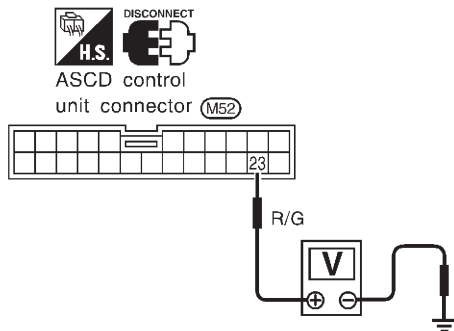
With CONSULT-II
See "STOP LAMP SW" in "DATA MONITOR" mode.

DATA MONITOR	
MONITOR	
STOP LAMP SW	OFF

When brake pedal is released:
STOP LAMP SW OFF
When brake pedal is depressed:
STOP LAMP SW ON

SEL287W

- Without CONSULT-II**
1. Disconnect ASCD control unit harness connector.
 2. Check voltage between ASCD control unit harness connector terminal 23 and ground.



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

Refer to wiring diagram in EL-221.

SEL259W

OK or NG

OK	▶	ASCD brake/stop lamp switch is OK.
NG	▶	<p>Check the following.</p> <ul style="list-style-type: none"> ● 15A fuse [No. 2, located in the fuse block (J/B)] ● Harness for open or short between ASCD control unit and stop lamp switch ● Harness for open or short between fuse and stop lamp switch ● Stop lamp switch <p>Refer to "Electrical Component Inspection" (EL-239).</p>

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses (Cont'd)

ASCD STEERING SWITCH CHECK

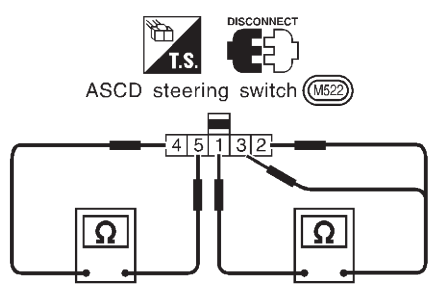
=NFEL0232S07

1	CHECK ASCD STEERING SWITCH CIRCUIT FOR ASCD CONTROL UNIT																														
<p> With CONSULT-II See "MAIN SW", "RESUME/ACC SW", "SET SW" and "CANCEL SW" in "DATA MONITOR" mode.</p>																															
<table border="1" style="margin: auto; border-collapse: collapse;"> <thead> <tr> <th colspan="2">DATA MONITOR</th> </tr> <tr> <th>MONITOR</th> <th></th> </tr> </thead> <tbody> <tr> <td>MAIN SW</td> <td style="text-align: center;">OFF</td> </tr> <tr> <td>SET SW</td> <td style="text-align: center;">OFF</td> </tr> <tr> <td>RESUME/ACC SW</td> <td style="text-align: center;">OFF</td> </tr> <tr> <td>CANCEL SW</td> <td style="text-align: center;">OFF</td> </tr> </tbody> </table>		DATA MONITOR		MONITOR		MAIN SW	OFF	SET SW	OFF	RESUME/ACC SW	OFF	CANCEL SW	OFF	<p>MAIN SW, RESUME/ACC SW, SET SW and CANCEL SW When switch is pressed: ON When switch is released: OFF</p>																	
DATA MONITOR																															
MONITOR																															
MAIN SW	OFF																														
SET SW	OFF																														
RESUME/ACC SW	OFF																														
CANCEL SW	OFF																														
SEL288W																															
<p> Without CONSULT-II Check voltage and continuity between ASCD control unit harness connector terminals and ground.</p>																															
		<table border="1" style="margin: auto; border-collapse: collapse;"> <thead> <tr> <th rowspan="2"></th> <th colspan="2">Terminal No.</th> <th colspan="2">Switch condition</th> </tr> <tr> <th>(+)</th> <th>(-)</th> <th>Pressed</th> <th>Released</th> </tr> </thead> <tbody> <tr> <td>SET/COAST SW</td> <td style="text-align: center;">11</td> <td style="text-align: center;">Ground</td> <td style="text-align: center;">12V</td> <td style="text-align: center;">0V</td> </tr> <tr> <td>RESUME/ACC SW</td> <td style="text-align: center;">24</td> <td style="text-align: center;">Ground</td> <td style="text-align: center;">12V</td> <td style="text-align: center;">0V</td> </tr> <tr> <td rowspan="2">CANCEL SW</td> <td style="text-align: center;">11</td> <td style="text-align: center;">Ground</td> <td style="text-align: center;">12V</td> <td style="text-align: center;">0V</td> </tr> <tr> <td style="text-align: center;">24</td> <td style="text-align: center;">Ground</td> <td style="text-align: center;">12V</td> <td style="text-align: center;">0V</td> </tr> </tbody> </table>			Terminal No.		Switch condition		(+)	(-)	Pressed	Released	SET/COAST SW	11	Ground	12V	0V	RESUME/ACC SW	24	Ground	12V	0V	CANCEL SW	11	Ground	12V	0V	24	Ground	12V	0V
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	24	Ground	12V	0V																											
SEL263X																															
		<p>When main switch is pressed: Continuity should exist.</p> <p>When main switch is released: Continuity should not exist.</p>																													
SEL264X																															
<p>Refer to wiring diagram in EL-221.</p>																															
OK or NG																															
OK	▶	ASCD steering switch is OK.																													
NG	▶	GO TO 2.																													

2	CHECK POWER SUPPLY FOR ASCD STEERING SWITCH		
Does horn work?			
Yes	▶	GO TO 3.	
No	▶	<p>Check the following.</p> <ul style="list-style-type: none"> ● 10A fuse (No. 57, located in the relay box) ● Horn relay ● Harness for open or short between horn and fuse 	

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses (Cont'd)

3	CHECK ASCD STEERING SWITCH																																														
<p>1. Disconnect ASCD steering switch. 2. Check continuity between terminals by pushing each switch.</p>																																															
																																															
<table border="1" style="margin: auto;"> <thead> <tr> <th rowspan="2">Switch</th> <th rowspan="2">Condition</th> <th colspan="5">Terminal</th> </tr> <tr> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>5</th> </tr> </thead> <tbody> <tr> <td>MAIN</td> <td>ON</td> <td></td> <td></td> <td></td> <td>○</td> <td>○</td> </tr> <tr> <td>RESUME/ACCEL</td> <td>ON</td> <td>○</td> <td></td> <td>○</td> <td></td> <td></td> </tr> <tr> <td>SET/COAST</td> <td>ON</td> <td>○</td> <td>○</td> <td></td> <td></td> <td></td> </tr> <tr> <td rowspan="2">CANCEL</td> <td rowspan="2">ON</td> <td>○</td> <td>▶</td> <td>○</td> <td></td> <td></td> </tr> <tr> <td>○</td> <td>▶</td> <td>○</td> <td></td> <td></td> </tr> </tbody> </table>			Switch	Condition	Terminal					1	2	3	4	5	MAIN	ON				○	○	RESUME/ACCEL	ON	○		○			SET/COAST	ON	○	○				CANCEL	ON	○	▶	○			○	▶	○		
Switch	Condition	Terminal																																													
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SET/COAST	ON	○	○																																												
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		○	▶	○																																											
SEL265X																																															
OK or NG																																															
OK	▶	Check harness for open or short between ASCD steering switch and ASCD control unit.																																													
NG	▶	Replace ASCD steering switch.																																													

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses (Cont'd)

VEHICLE SPEED SIGNAL CHECK

=NFEL0232S08

1	CHECK SPEEDOMETER OPERATION	
Refer to wiring diagram in EL-223.		
Does speedometer operate normally?		
Yes	▶	GO TO 2.
No	▶	Check speedometer and vehicle speed signal circuit. Refer to EL-135.

2	CHECK VEHICLE SPEED INPUT
----------	----------------------------------

With CONSULT-II

See "VHCL SPEED SE" in "DATA MONITOR" mode while driving.

NOTE:

- This test may be conducted with the drive wheels lifted in the shop or by driving the vehicle. If a road test is excepted to be easier, it is unnecessary to lift the vehicle.
- Always drive vehicle in safe speed and manner according to traffic conditions and obey all traffic laws.



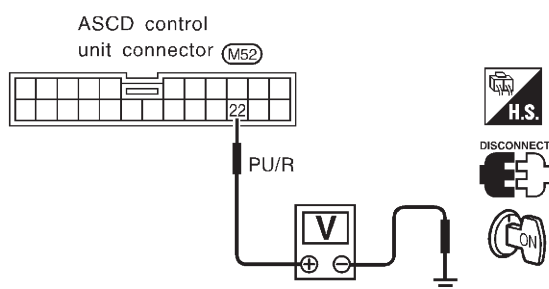
DATA MONITOR	
MONITOR	
VHCL SPEED SE	0 km/h

Is actual vehicle speed indicated?

SEL289W

Without CONSULT-II

1. Apply wheel chocks and jack up drive wheel.
2. Disconnect ASCD control unit harness connector.
3. Check voltage between control unit terminal 22 and ground with turning drive wheel slowly by hand.



Does voltage pointer deflect?

SEL263W




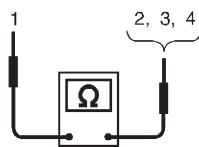
Yes	▶	Vehicle speed signal is OK.
No	▶	Check harness for open or short between ASCD control unit terminal 22 and combination meter terminal 13.




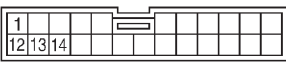



AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses (Cont'd)

ASCD PUMP CIRCUIT CHECK







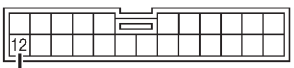
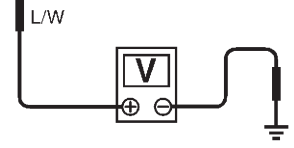
NFEL0232S09

1	CHECK ASCD PUMP																	
<p>1. Disconnect ASCD pump connector.</p> <p>2. Measure resistance between ASCD pump terminals 1 and 2, 3, 4.</p> <p style="text-align: center;">ASCD pump connector (E2)</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>1, 2, 3, 4</p> </div> <div style="text-align: center;">  <p>T.S.</p> </div> <div style="text-align: center;">  <p>DISCONNECT</p> </div> </div> <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 20px;"> <div style="text-align: center;">  </div> <table border="1" style="border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Terminals</th> <th style="text-align: center;">Resistance Ω</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td></td> <td style="text-align: center;">3</td> </tr> <tr> <td></td> <td style="text-align: center;">4</td> </tr> </tbody> </table> </div> <div style="text-align: right; margin-top: 20px;"> <table border="1" style="border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Terminals</th> <th style="text-align: center;">Resistance Ω</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td></td> <td style="text-align: center;">3</td> </tr> <tr> <td></td> <td style="text-align: center;">4</td> </tr> </tbody> </table> </div>			Terminals	Resistance Ω	1	2		3		4	Terminals	Resistance Ω	1	2		3		4
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	4																	
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SEL262W																		
Refer to wiring diagram in EL-222.																		
OK or NG																		
OK	▶	GO TO 2.																
NG	▶	Replace ASCD pump.																

2	CHECK ASCD PUMP CIRCUIT																		
<p>1. Disconnect ASCD control unit harness connector.</p> <p>2. Check harness for open or short between ASCD control unit and ASCD pump.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>H.S.</p> </div> <div style="text-align: center;">  <p>DISCONNECT</p> </div> <div style="text-align: center;">  <p>OFF</p> </div> </div> <p style="text-align: center;">ASCD control unit connector (M52)</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>1, 12, 13, 14</p> </div> <div style="text-align: center;">  <p>T.S.</p> </div> <div style="text-align: center;">  <p>DISCONNECT</p> </div> </div> <p style="text-align: center;">ASCD pump connector (E2)</p> <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 20px;"> <div style="text-align: center;">  </div> <table border="1" style="border-collapse: collapse;"> <thead> <tr> <th rowspan="2" style="text-align: center;">Circuit</th> <th colspan="2" style="text-align: center;">Terminal</th> </tr> <tr> <th style="text-align: center;">ASCD control unit</th> <th style="text-align: center;">ASCD pump</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">ASCD pump power supply</td> <td style="text-align: center;">12</td> <td style="text-align: center;">1</td> </tr> <tr> <td style="text-align: center;">Air valve</td> <td style="text-align: center;">13</td> <td style="text-align: center;">2</td> </tr> <tr> <td style="text-align: center;">Release valve</td> <td style="text-align: center;">1</td> <td style="text-align: center;">3</td> </tr> <tr> <td style="text-align: center;">Vacuum motor</td> <td style="text-align: center;">14</td> <td style="text-align: center;">4</td> </tr> </tbody> </table> </div> <p style="text-align: right; margin-top: 20px;">Continuity should exist.</p>			Circuit	Terminal		ASCD control unit	ASCD pump	ASCD pump power supply	12	1	Air valve	13	2	Release valve	1	3	Vacuum motor	14	4
Circuit	Terminal																		
	ASCD control unit	ASCD pump																	
ASCD pump power supply	12	1																	
Air valve	13	2																	
Release valve	1	3																	
Vacuum motor	14	4																	
SEL269W																			
OK or NG																			
OK	▶	GO TO 3.																	
NG	▶	Repair harness.																	

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses (Cont'd)

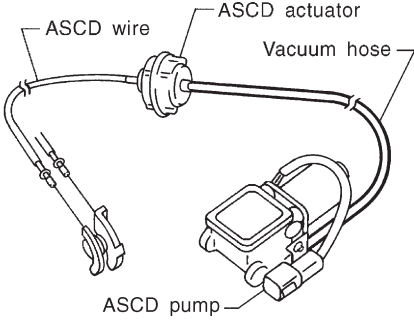
3	CHECK ASCD PUMP POWER SUPPLY						
<p> With CONSULT-II</p> <ol style="list-style-type: none"> 1. Jack up the drive wheels. 2. See "PW SUP-VALVE" in "DATA MONITOR" mode. 3. Maintain the conditions below. <ul style="list-style-type: none"> ● Vehicle speed is more than 40 km/h (25 MPH). ● Main switch (CRUISE lamp) is ON. ● Set/coast switch (SET lamp) is ON. 	<div style="display: flex; align-items: center; justify-content: center;"> <table border="1" style="border-collapse: collapse; text-align: center; margin-right: 20px;"> <thead> <tr> <th colspan="2">DATA MONITOR</th> </tr> <tr> <th colspan="2">MONITOR</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;">PW SUP-VALVE</td> <td style="padding: 5px;">OFF</td> </tr> </tbody> </table> <div style="text-align: center;"> <p>"PW SUP-VALVE" should be ON.</p> </div> </div> <div style="text-align: right; margin-top: 20px;">SEL290W</div>	DATA MONITOR		MONITOR		PW SUP-VALVE	OFF
DATA MONITOR							
MONITOR							
PW SUP-VALVE	OFF						
<p> Without CONSULT-II</p> <ol style="list-style-type: none"> 1. Jack-up the drive wheels. 2. Maintain the conditions below. <ul style="list-style-type: none"> ● Vehicle speed is more than 40 km/h (25 MPH). ● Main switch (CRUISE lamp) is ON. ● Set/coast switch (SET lamp) is ON. <p>Check voltage between ASCD control unit harness connector terminal 12 and ground.</p>	<div style="text-align: center; margin-bottom: 10px;">     </div> <p style="text-align: center;">ASCDC control unit connector (M52)</p> <div style="display: flex; align-items: center; justify-content: center;">  <div style="margin-left: 20px;"> <p>Battery voltage should exist.</p> </div> </div> <div style="text-align: center; margin-top: 20px;">  </div> <div style="text-align: right; margin-top: 20px;">SEL381W</div>						
OK or NG							
OK	▶ ASCD pump power supply is OK.						
NG	▶ Replace ASCD control unit.						

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

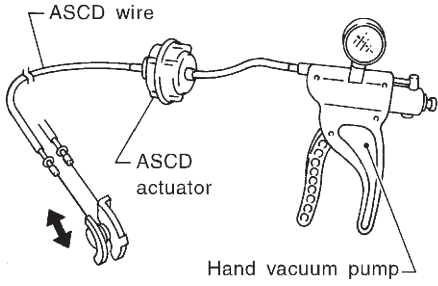
Trouble Diagnoses (Cont'd)

ASCD ACTUATOR/PUMP CHECK

=NFEL0232S10

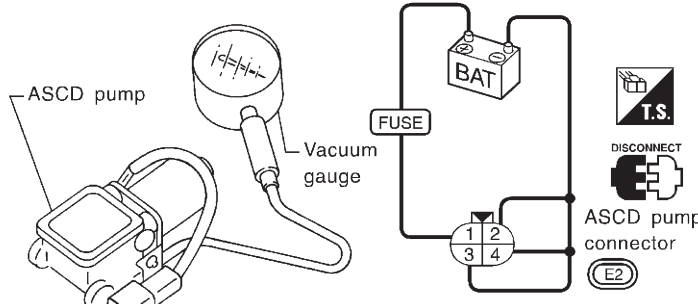
1	CHECK VACUUM HOSE	
<p>Check vacuum hose (between ASCD actuator and ASCD pump) for breakage, cracks or fracture.</p> <div style="text-align: center;">  </div> <p style="text-align: right;">MEL402G</p> <p style="text-align: center;">OK or NG</p>		
OK	▶	GO TO 2.
NG	▶	Repair or replace hose.

2	CHECK ASCD WIRE	
<p>Check wire for improper installation, rust formation or breaks.</p> <p style="text-align: center;">OK or NG</p>		
OK	▶	GO TO 3.
NG	▶	Repair or replace wire. Refer to "ASCD Wire Adjustment" (EL-240).

3	CHECK ASCD ACTUATOR	
<p>1. Disconnect vacuum hose from ASCD actuator. 2. Connect the hose of hand vacuum pump to ASCD actuator.</p> <div style="display: flex; align-items: center;"> <div style="flex: 1;">  </div> <div style="flex: 2; padding-left: 20px;"> <p>Apply -40 kPa (-0.402 bar, -0.41 kg/cm², -5.8 psi) vacuum to ASCD actuator with hand vacuum pump. ASCD wire should move to pull throttle drum. Wait 10 seconds and check for decrease in vacuum pressure.</p> <p style="text-align: center;">Vacuum pressure decrease: Less than 2.7 kPa (0.0275 bar, 0.028 kg/cm², 0.40 psi)</p> </div> </div> <p style="text-align: right;">SEL264WA</p> <p style="text-align: center;">OK or NG</p>		
OK	▶	GO TO 4.
NG	▶	Replace ASCD actuator.

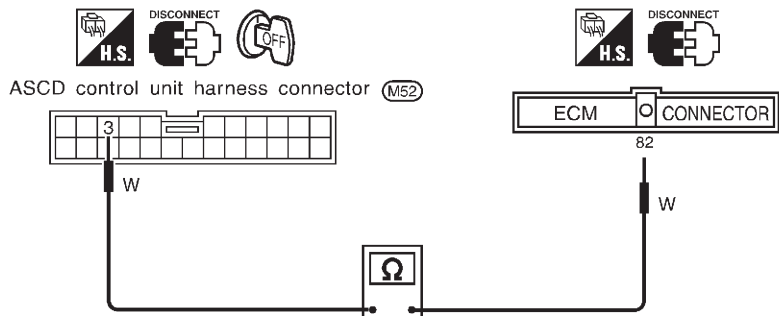
AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses (Cont'd)

4	CHECK ASCD PUMP																			
<ol style="list-style-type: none"> 1. Disconnect vacuum hose from ASCD pump and ASCD pump connector. 2. If necessary remove ASCD pump. 3. Connect vacuum gauge to ASCD pump. 4. Apply 12V direct current to ASCD pump and check operation. 																				
		<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th rowspan="2"></th> <th colspan="2">12V direct current supply terminals</th> <th rowspan="2">Operation</th> </tr> <tr> <th>(+)</th> <th>(-)</th> </tr> </thead> <tbody> <tr> <td>Air valve</td> <td rowspan="3" style="text-align: center; vertical-align: middle;">1</td> <td style="text-align: center;">2</td> <td style="text-align: center;">Close</td> </tr> <tr> <td>Release valve</td> <td style="text-align: center;">3</td> <td style="text-align: center;">Close</td> </tr> <tr> <td>Vacuum motor</td> <td style="text-align: center;">4</td> <td style="text-align: center;">Operate</td> </tr> </tbody> </table> <p style="text-align: center; font-size: small;">A vacuum pressure of at least -40 kPa (-0.402 bar, -0.41 kg/cm^2, -5.8 psi) should be generated.</p>				12V direct current supply terminals		Operation	(+)	(-)	Air valve	1	2	Close	Release valve	3	Close	Vacuum motor	4	Operate
	12V direct current supply terminals		Operation																	
	(+)	(-)																		
Air valve	1	2	Close																	
Release valve		3	Close																	
Vacuum motor		4	Operate																	
SEL265WA																				
OK or NG																				
OK	▶	INSPECTION END																		
NG	▶	Replace ASCD pump.																		

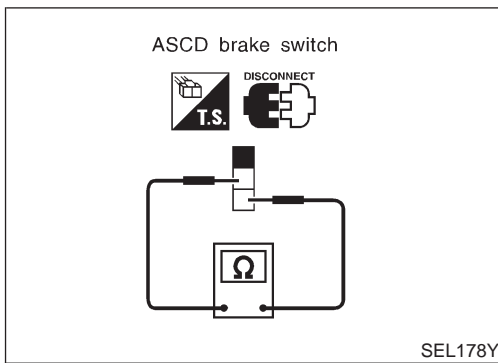
THROTTLE POSITION SENSOR SIGNAL CHECK

NFEL0232S11

1	CHECK THROTTLE POSITION SENSOR SIGNAL CIRCUIT			
<ol style="list-style-type: none"> 1. Disconnect ECM harness connector and ASCD control unit harness connector. 2. Check continuity between ECM terminal 82 and ASCD control unit terminal 3. 				
		<p style="font-size: large; font-weight: bold;">Continuity should exist.</p>		
SEL268W				
OK or NG				
OK	▶	Refer to "TROUBLE DIAGNOSIS FOR INTERMITTENT INCIDENT" in EC section. (EC-126)		
NG	▶	Repair harness.		

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Electrical Component Inspection



Electrical Component Inspection

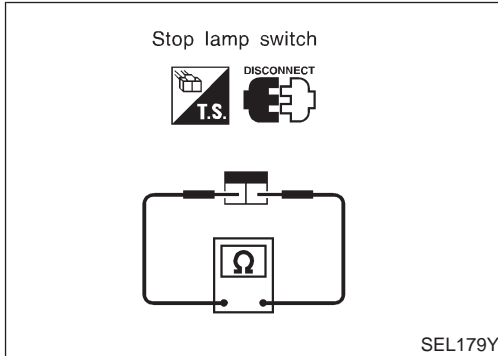
=NFEL0100

ASCD BRAKE SWITCH

NFEL0100S02

Connector	Condition	Continuity
E86 (LHD models) M143 (RHD models)	When brake pedal is depressed	No
	When brake pedal is released	Yes

Check switch after adjusting brake pedal — refer to BR-12, “BRAKE PEDAL AND BRACKET”.

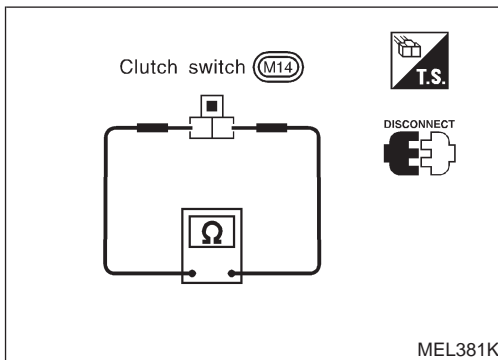


STOP LAMP SWITCH

NFEL0100S06

Connector	Condition	Continuity
E85 (LHD models) M144 (RHD models)	When brake pedal is depressed	Yes
	When brake pedal is released	No

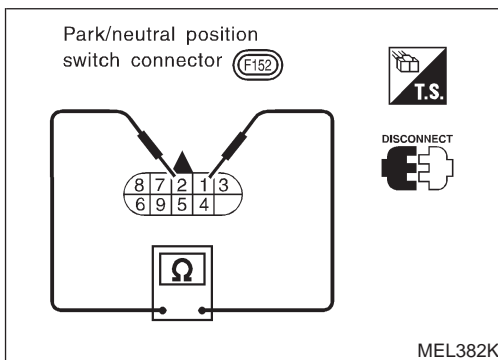
Check switch after adjusting brake pedal — refer to BR-12, “BRAKE PEDAL AND BRACKET”.



ASCD CLUTCH SWITCH (FOR M/T MODELS)

NFEL0100S05

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



PARK/NEUTRAL POSITION SWITCH (FOR A/T MODELS)

NFEL0100S03

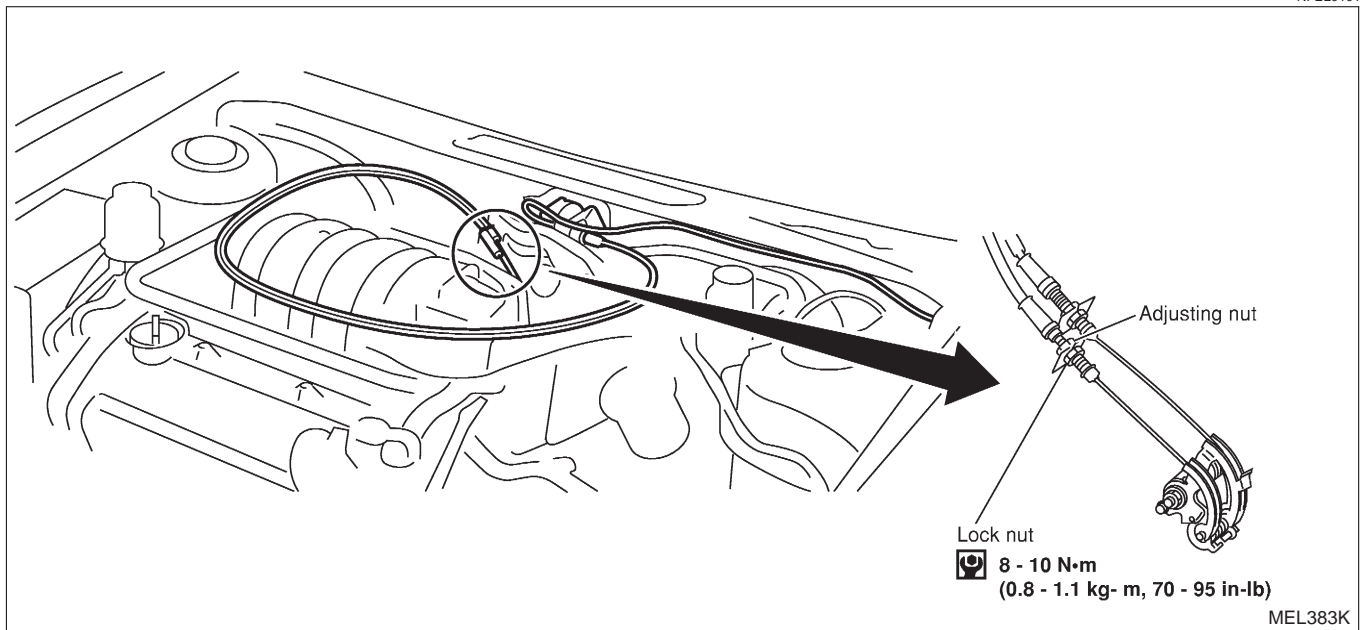
A/T selector lever position	Continuity
	Between terminals 1 and 2
“P”	Yes
“N”	Yes
Except “P” and “N”	No

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

ASCD Wire Adjustment

ASCD Wire Adjustment

NFEL0101



MEL383K

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 again 1/2 to 1 turn.
5. Tighten lock nut.

System Description

NFEL0191

Power is supplied at all times

- from 40A fusible link (letter I, located in the fuse and fusible link box)
- to circuit breaker terminal 1
- through circuit breaker terminal 2
- to power window relay terminal 3 and
- to power window main switch terminal 5 (LHD models) or 3 (RHD models).

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

- through 10A fuse [No. 10, located in the fuse block (J/B)]
- to power window relay terminal 2 (LHD models) or 1 (RHD models), and

Ground is supplied to power window relay terminal 1 (LHD models) or 2 (RHD models)

- through body grounds M9, M25 and M87.

The power window relay is energized and power is supplied

- through power window relay terminal 5
- to front power window main switch terminal 12,
- to front power window switch (passenger side) terminal 5,
- to rear power window switch LH and RH terminals 5.

MANUAL OPERATION

Front Door (Driver Side)

NFEL0191S01

NFEL0191S0101

Ground is supplied

- to power window main switch terminal 13 (LHD models) and/or 19
- through body grounds M9, M25 and M87.

WINDOW UP

When the driver's window switch in the power window main switch is pressed in the up position, power is supplied

- to front power window regulator LH (LHD models) or RH (RHD models) terminal 1
- through power window main switch terminal 2 (LHD models) or 6 (RHD models).

Ground is supplied

- to front power window regulator LH (LHD models) or RH (RHD models) terminal 3
- through power window main switch terminal 1 (LHD models) or 7 (RHD models).

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

WINDOW DOWN

When the driver's window switch in the power window main switch is pressed in the down position, power is supplied

- to front power window regulator LH (LHD models) or RH (RHD models) terminal 3
- through power window main switch terminal 1 (LHD models) or 7 (RHD models).

Ground is supplied

- to front power window regulator LH (LHD models) or RH (RHD models) terminal 1
- through power window main switch terminal 2 (LHD models) or 6 (RHD models).

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

Front Door (Passenger Side)

NFEL0191S0102

Ground is supplied

- to power window main switch terminal 19 (RHD models)
- through body grounds M9, M25 and M87.

NOTE:

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

POWER WINDOW MAIN SWITCH OPERATION

Power is supplied

- through power window main switch (4, 3) (LHD models) or (4, 5) (RHD models)
- to front power window switch RH (LHD models) or LH (RHD models) (3, 4).

POWER WINDOW

System Description (Cont'd)

The subsequent operation is the same as the front power window switch RH (LHD models) or LH (RHD models) operation.

FRONT POWER WINDOW SWITCH RH (LHD models) or LH (RHD models) OPERATION

Power is supplied

- through front power window switch RH or LH (1, 2)
- to front power window regulator RH or LH (1, 2).

Ground is supplied

- to front power window regulator RH (LHD models) or LH (RHD models) (2, 1)
- through front power window switch RH (LHD models) or LH (RHD models) (1, 2)
- to front power window switch RH (LHD models) or LH (RHD models) (3, 4)
- through power window main switch (3, 4) (LHD models) or (5, 4) (RHD models).

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

Rear Door

Rear door windows will raise and lower in the same manner as front passenger's door window.

NFEL0191S0103

AUTO OPERATION

The power window AUTO feature enables the driver to open or close the driver's window without holding the window switch in the down or up position.

NFEL0191S02

The AUTO feature operates on the driver's window.

POWER WINDOW LOCK

The power window lock is designed to lock operation of all windows except for driver's door window.

NFEL0191S03

When the lock switch is pressed to lock position, ground of the sub-switches in the front power window main switch is disconnected. This prevents the power window motors from operating.

INTERRUPTION DETECTION FUNCTION

Front power window main switch monitors the power window regulator motor operation and the power window position (full closed or other) for driver's power window by the signals from encoder and limit switch in front power window regulator.

NFEL0191S05

When front power window main switch detects interruption during the following close operation in the driver's side door,

- automatic close operation when ignition switch is in the "ON" position
- automatic close operation during retained power operation

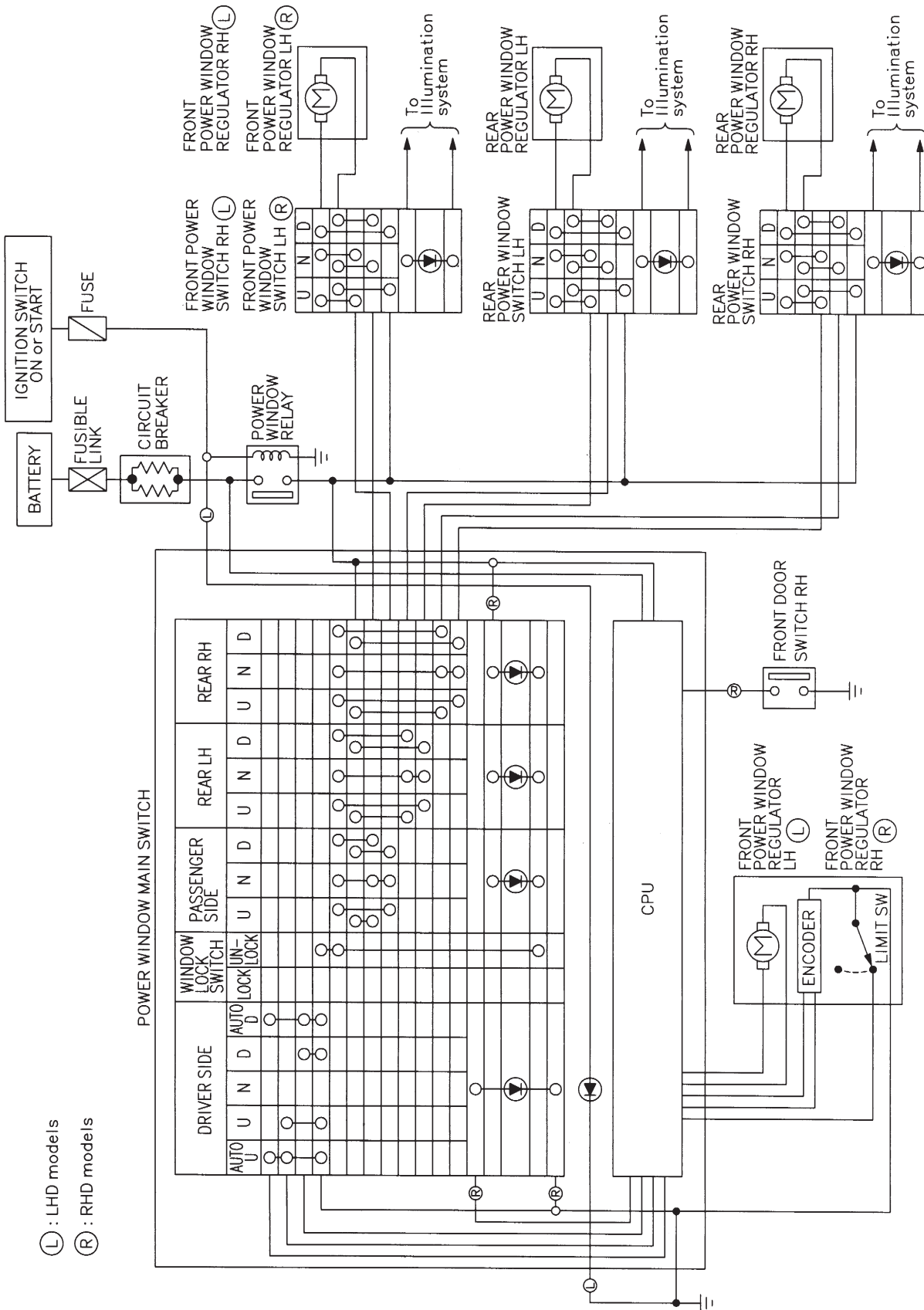
front power window main switch controls driver's power window regulator motor for open and the power window will be lowered about 150 mm (5.91 in).

POWER WINDOW

Schematic

NFEL0103

Schematic



(L) : LHD models
 (R) : RHD models

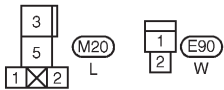
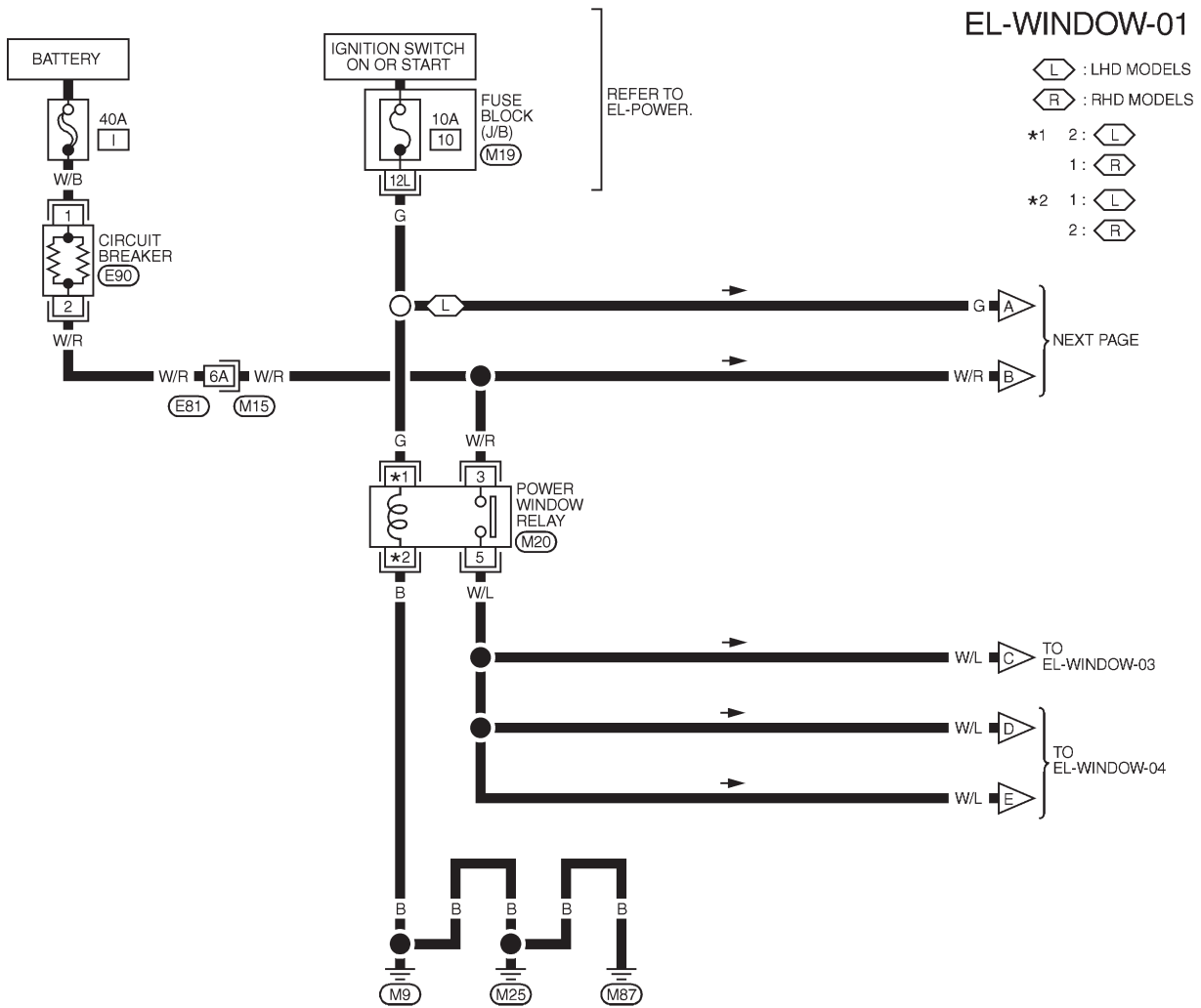
MEL862M

POWER WINDOW

Wiring Diagram — WINDOW —

Wiring Diagram — WINDOW —

NFEL0104



REFER TO THE FOLLOWING.

- ◊ M15 -SUPER
- ◊ MULTIPLE JUNCTION (SMJ)
- ◊ M19 -FUSE BLOCK-JUNCTION BOX (J/B)

MEL863M

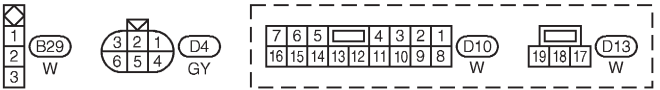
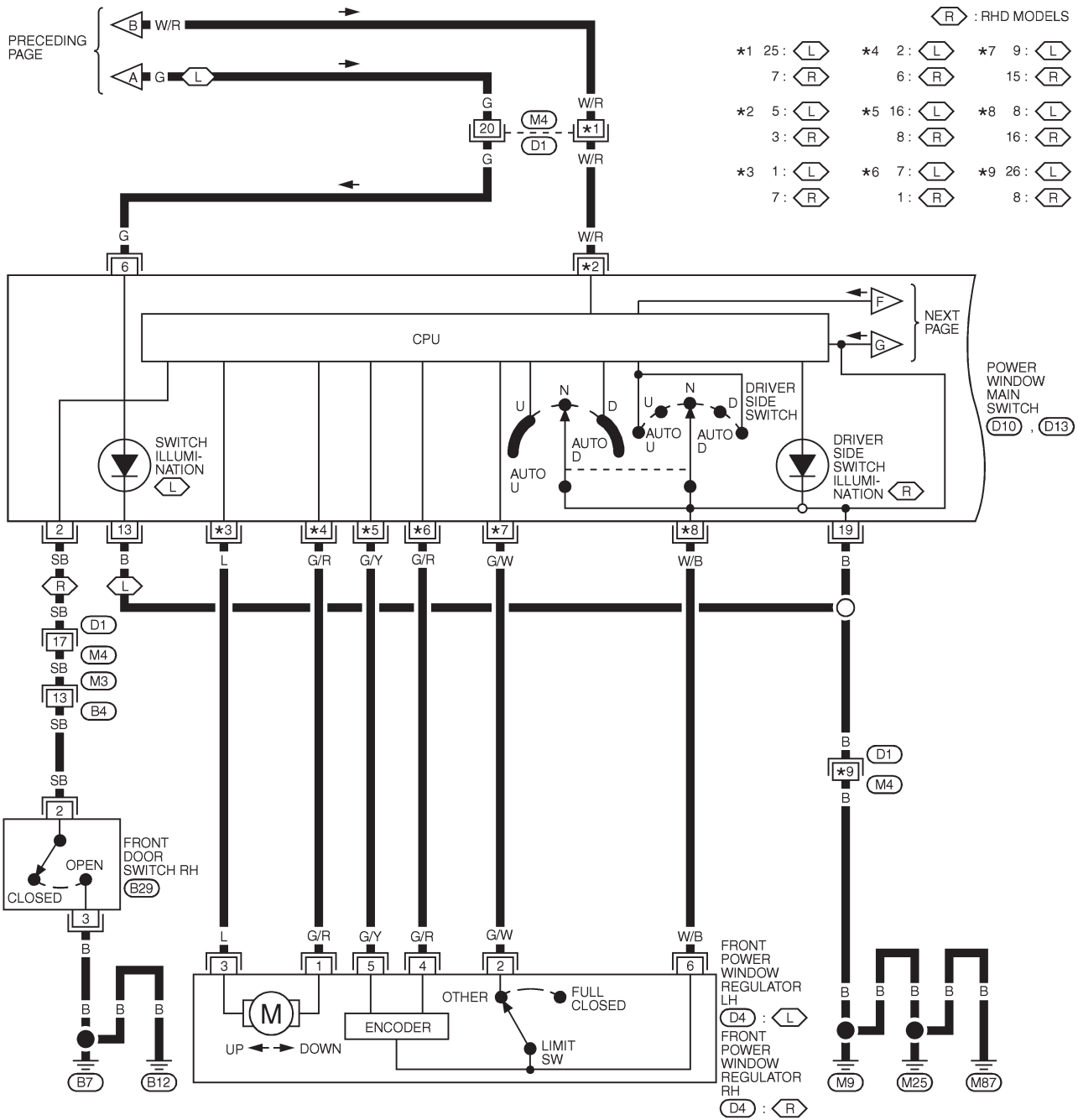
POWER WINDOW

Wiring Diagram — WINDOW — (Cont'd)

EL-WINDOW-02

L : LHD MODELS
R : RHD MODELS

- | | | |
|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| *1 25: L | *4 2: L | *7 9: L |
| 7: R | 6: R | 15: R |
| *2 5: L | *5 16: L | *8 8: L |
| 3: R | 8: R | 16: R |
| *3 1: L | *6 7: L | *9 26: L |
| 7: R | 1: R | 8: R |

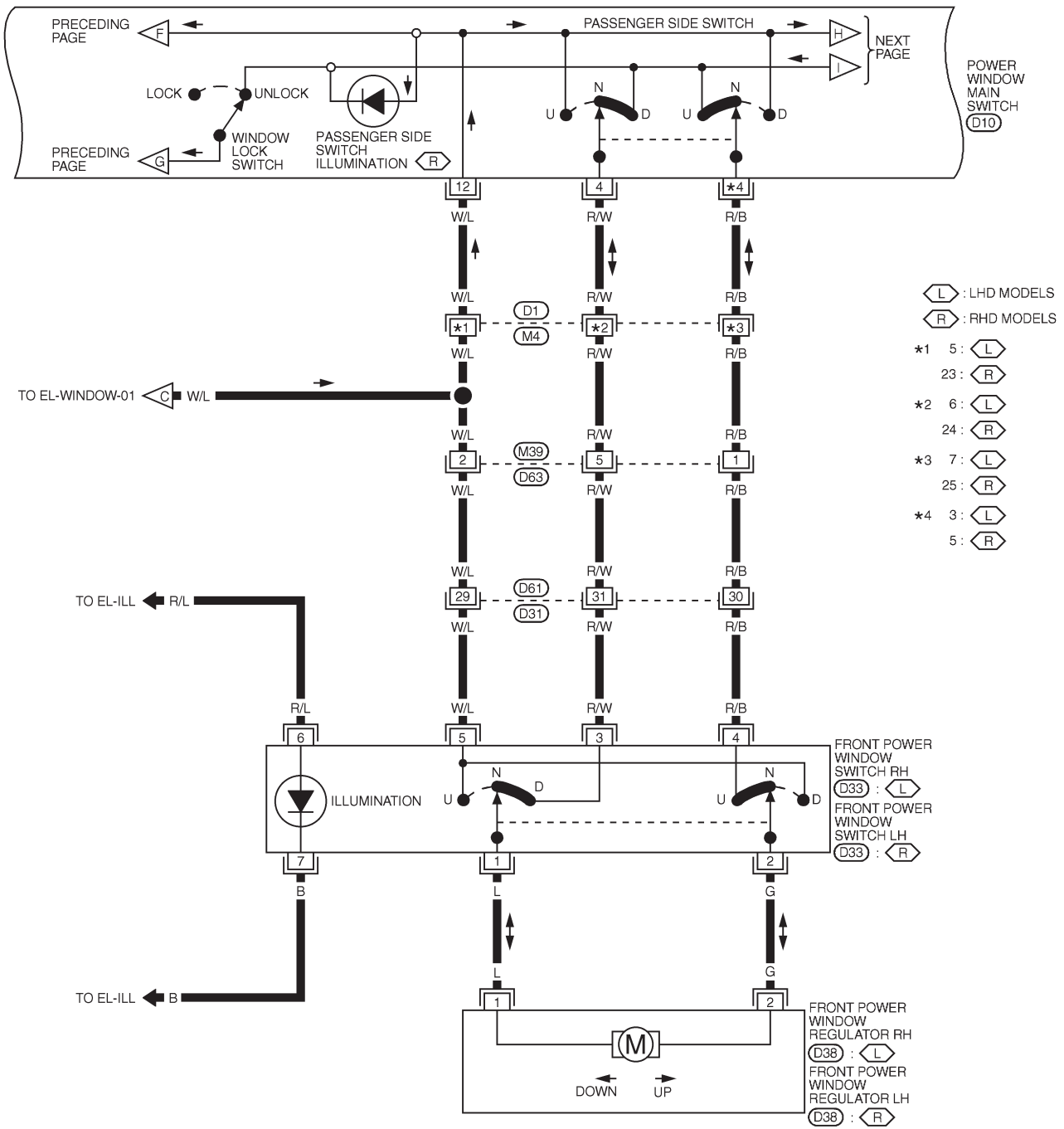


REFER TO THE FOLLOWING.
D1 -SUPER
 MULTIPLE JUNCTION (SMJ)

POWER WINDOW

Wiring Diagram — WINDOW — (Cont'd)

EL-WINDOW-03



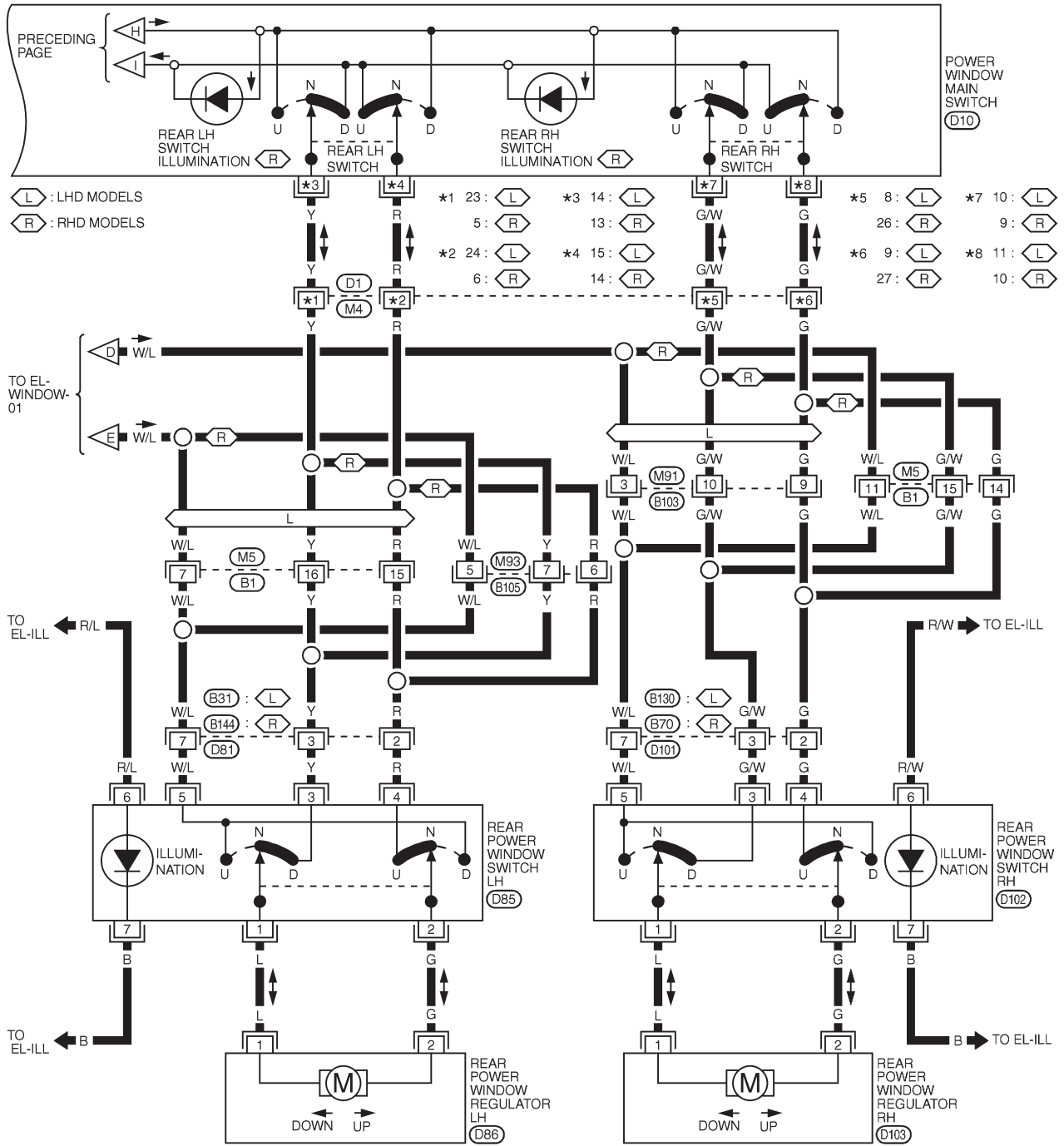
REFER TO THE FOLLOWING.
 (D1) , (D31) -SUPER
 MULTIPLE JUNCTION (SMJ)

MEL865M

POWER WINDOW

Wiring Diagram — WINDOW — (Cont'd)

EL-WINDOW-04



L : LHD MODELS
R : RHD MODELS

- | | | | |
|----------|----------|---------|----------|
| *1 23: L | *3 14: L | *5 8: L | *7 10: L |
| 5: R | 13: R | 26: R | 9: R |
| *2 24: L | *4 15: L | *6 9: L | *8 11: L |
| 6: R | 14: R | 27: R | 10: R |

1 2 3 4 5 6 7	M5	B105	1 2 3 4 5	B31	B70	B103	B130	B144
8 9 10 11 12 13 14 15 16	W	W	6 7 8 9 10 11 12	W	W	W	W	W
7 6 5 4 3 2 1	D10	6 7	D85	D102	1 2	D86	D103	
16 15 14 13 12 11 10 9 8	W	4 1 3 2 5	W	W	BR	BR		

REFER TO THE FOLLOWING.
D1 - SUPER
MULTIPLE JUNCTION (SMJ)

MEL866M

POWER WINDOW

Trouble Diagnoses

Trouble Diagnoses

NFEL0105

Symptom	Possible cause	Repair order
None of the power windows can be operated using any switch.	<ol style="list-style-type: none"> 1. 10A fuse, 40A fusible link 2. E90 circuit breaker 3. Power window relay 4. E90 circuit breaker circuit 5. Power window relay circuit 6. Ground circuit 7. Power window main switch 	<ol style="list-style-type: none"> 1. Check 10A fuse [No. 10, located in fuse block (J/B)], 40A fusible link (letter I, located in fuse and fusible link box). 2. Check E90 circuit breaker. 3. Check power window relay. 4. Check the following. <ol style="list-style-type: none"> a. Check harness between E90 circuit breaker and 40A fusible link (letter I, located in fuse and fusible link box). b. Check harness between E90 circuit breaker and power window main switch terminal 5 (LHD models) or 3 (RHD models). 5. Check the following. <ol style="list-style-type: none"> a. Check harness between E90 circuit breaker and power window relay. b. Check harness between fuse and power window relay. 6. Check the following. <ol style="list-style-type: none"> a. Check ground circuit of power window main switch. b. Check power window relay ground circuit. 7. Check power window main switch.
Driver side power window cannot be operated but other windows can be operated.	<ol style="list-style-type: none"> 1. Driver side power window regulator circuit 2. Driver side power window regulator 3. Power window main switch 	<ol style="list-style-type: none"> 1. Check harness between power window main switch and driver side power window regulator for open or short circuit. 2. Check driver side power window regulator. 3. Check power window main switch.
One or more power windows except driver's side window cannot be operated.	<ol style="list-style-type: none"> 1. Power window switches 2. Power window regulators 3. Power window main switch 4. Power window circuit 	<ol style="list-style-type: none"> 1. Check power window switch. 2. Check power window regulator. 3. Check power window main switch. 4. Check the following. <ol style="list-style-type: none"> a. Check harness between the power window switch terminal 5 and power window relay. b. Check harnesses between power window main switch and power window switch for open/short circuit. c. Check harnesses between power window switch and power window regulator for open/short circuit.
Power windows except driver's side window cannot be operated using power window main switch but can be operated by power window switch.	<ol style="list-style-type: none"> 1. Power window main switch 	<ol style="list-style-type: none"> 1. Check power window main switch.
Driver side power window automatic operation does not function properly.	<ol style="list-style-type: none"> 1. Power window main switch 2. Encoder and limit switch 	<ol style="list-style-type: none"> 1. Check power window main switch. 2. Check encoder and limit switch. (EL-249)

POWER WINDOW

Trouble Diagnoses (Cont'd)

ENCODER AND LIMIT SWITCH CHECK

=NFEL0105S01






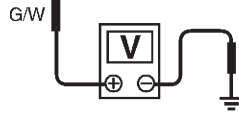
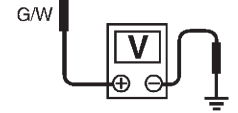
1	CHECK DOOR WINDOW SLIDE MECHANISM	
<p>Check the following.</p> <ul style="list-style-type: none"> ● Obstacles in window, glass molding, etc. ● Worn or deformed glass molding ● Door sash tilted too far inward or outward ● Door window regulator <p style="text-align: center;">OK or NG</p>		
OK	▶	GO TO 2.
NG	▶	Remove obstacles or repair door window slide mechanism.




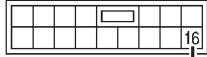

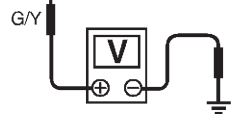
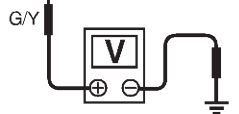
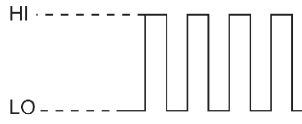
2	CHECK POWER SUPPLY TO LIMIT SWITCH	
<p>1. Disconnect front power window regulator LH (LHD models) or RH (RHD models) connector. 2. Check voltage between power window main switch terminal 9 (LHD models) or 15 (RHD models) and ground.</p>		
<div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <p>LHD models Power window main switch connector (D10)</p> </div> <div style="text-align: center;"> <p>RHD models Power window main switch connector (D10)</p> </div> </div> <p style="text-align: right;">Voltage: 5V</p> <p>NOTE: Check voltage when front power window regulator LH or RH harness connector is disconnected.</p> <p style="text-align: right;">SEL811WA</p> <p style="text-align: center;">OK or NG</p>		
OK	▶	GO TO 3.
NG	▶	Replace power window main switch.

3	CHECK LIMIT SWITCH OPERATION										
<p>1. Connect front power window regulator LH (LHD models) or RH (RHD models) connector. 2. Check voltage between power window main switch terminal 9 (LHD models) or 15 (RHD models) and ground during power window closing operation.</p>											
<div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <p>LHD models Power window main switch connector (D10)</p> </div> <div style="text-align: center;"> <p>RHD models Power window main switch connector (D10)</p> </div> </div> <table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Terminal No.</th> <th style="text-align: center;">Condition</th> <th style="text-align: center;">Voltage (DCV)</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Power window main switch: 9 (LHD models) 15 (RHD models)</td> <td style="text-align: center;">Approx. 15 mm (0.59 in) below the full closed position to full closed position</td> <td style="text-align: center;">Approx. 5</td> </tr> <tr> <td></td> <td style="text-align: center;">Other positions</td> <td style="text-align: center;">Approx. 0</td> </tr> </tbody> </table> <p style="text-align: right;">SEL812WA</p> <p style="text-align: center;">OK or NG</p>			Terminal No.	Condition	Voltage (DCV)	Power window main switch: 9 (LHD models) 15 (RHD models)	Approx. 15 mm (0.59 in) below the full closed position to full closed position	Approx. 5		Other positions	Approx. 0
Terminal No.	Condition	Voltage (DCV)									
Power window main switch: 9 (LHD models) 15 (RHD models)	Approx. 15 mm (0.59 in) below the full closed position to full closed position	Approx. 5									
	Other positions	Approx. 0									
OK	▶	GO TO 5.									
NG	▶	GO TO 4.									

POWER WINDOW

Trouble Diagnoses (Cont'd)

4	RESET LIMIT SWITCH										
<p>Reset limit switch. Refer to BT-13, "Front Door Glass Limit Switch Reset". Then check voltage between power window main switch terminal 9 (LHD models) or 15 (RHD models) and ground during power window closing operation at least ten times.</p>											
  	<p>LHD models Power window main switch connector (D10)</p> 	<p>RHD models Power window main switch connector (D10)</p> 									
											
		<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Terminal No.</th> <th>Condition</th> <th>Voltage (DCV)</th> </tr> </thead> <tbody> <tr> <td>Power window main switch: 9 (LHD models) 15 (RHD models)</td> <td>Approx. 15 mm (0.59 in) below the full closed position to full closed position</td> <td>Approx. 5</td> </tr> <tr> <td></td> <td>Other positions</td> <td>Approx. 0</td> </tr> </tbody> </table>	Terminal No.	Condition	Voltage (DCV)	Power window main switch: 9 (LHD models) 15 (RHD models)	Approx. 15 mm (0.59 in) below the full closed position to full closed position	Approx. 5		Other positions	Approx. 0
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Power window main switch: 9 (LHD models) 15 (RHD models)	Approx. 15 mm (0.59 in) below the full closed position to full closed position	Approx. 5									
	Other positions	Approx. 0									
SEL812WA											
OK or NG											
OK	▶	GO TO 5.									
NG	▶	Replace power window regulator motor (front driver side).									

5	CHECK ENCODER	
<p>Measure voltage between power window main switch terminal 16 (LHD models) or 8 (RHD models) and ground with oscilloscope when power window is in automatic closing operation.</p>		
  	<p>LHD models Power window main switch connector (D10)</p> 	<p>RHD models Power window main switch connector (D10)</p> 
		
		 <p>HI: Approx. 5V LO: Approx. 0V</p>
SEL813WA		
OK or NG		
OK	▶	Replace power window main switch.
NG	▶	Replace power window regulator motor (front driver side).

System Description

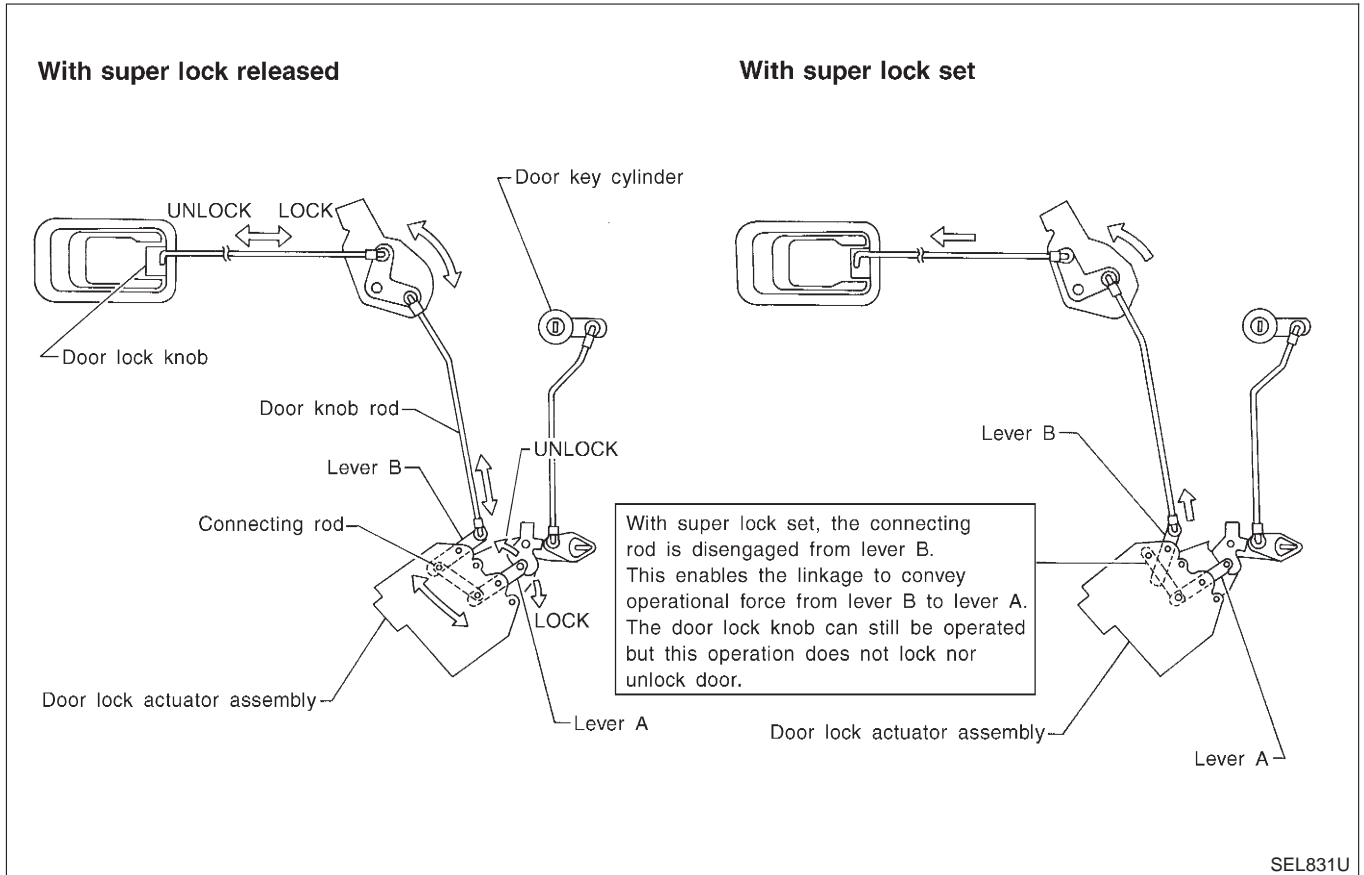
NFEL0345

OUTLINE

NFEL0345S01

Power door lock system with super lock and key reminder is controlled by time control unit. Super lock has a higher anti-theft performance than conventional power door lock systems.

When super lock is in released condition, lock knob operation locks or unlocks door.
When super lock is in set condition, lock knob operation cannot lock nor unlock door.



OPERATION

NFEL0345S02

Power Door Lock/Unlock and Super Lock Set/Release Operation by Door Key Cylinder

NFEL0345S0201

- With the key inserted into front door key cylinder, turning it to LOCK locks all doors and set super lock. (Super lock is not set while key is inserted in the ignition key cylinder.)
- With the key inserted into front door key cylinder, turning it to UNLOCK unlocks all doors and release super lock.

Power Door Lock/Unlock and Super Lock Set/Release Operation by Multi-Remote Controller

NFEL0345S0202

- Pressing multi-remote controller LOCK button locks all doors and set super lock. (Super lock is not set while key is inserted in the ignition key cylinder.)
- Pressing multi-remote controller UNLOCK button once unlocks driver door and release super lock. Then, if an unlock signal is sent from the remote controller again within 5 seconds, all other doors are unlocked.

Power Door Lock and Super Lock Release Operation (by NATS IMMU Signal)

NFEL0345S0203

- When the super lock is set, turning the ignition key switch to ON releases the super lock and all doors unlock once, but then immediately lock again.

Power Door Lock/Unlock Operation by Lock and Unlock Switch

NFEL0345S0204

- With lock and unlock switch on driver door trim setting to LOCK locks all doors.
- With lock and unlock switch on driver door trim setting to UNLOCK unlocks all doors.

Lock and unlock switch operation cannot control super lock. Key Reminder System

NFEL0345S0205

- If the ignition key is in the ignition key cylinder and driver door is open, setting lock and unlock switch,

POWER DOOR LOCK — SUPER LOCK —

System Description (Cont'd)

lock knob, key or multi-remote controller to "LOCK" locks the door once but then immediately unlocks all doors. (signal from door unlock sensor driver side)

System Initialization

- System initialization is required when battery cables are reconnected. Conduct the following to release super lock once;
— insert the key into ignition key cylinder and turn it to ON.
— LOCK/UNLOCK operation using door key cylinder or multi-remote controller.

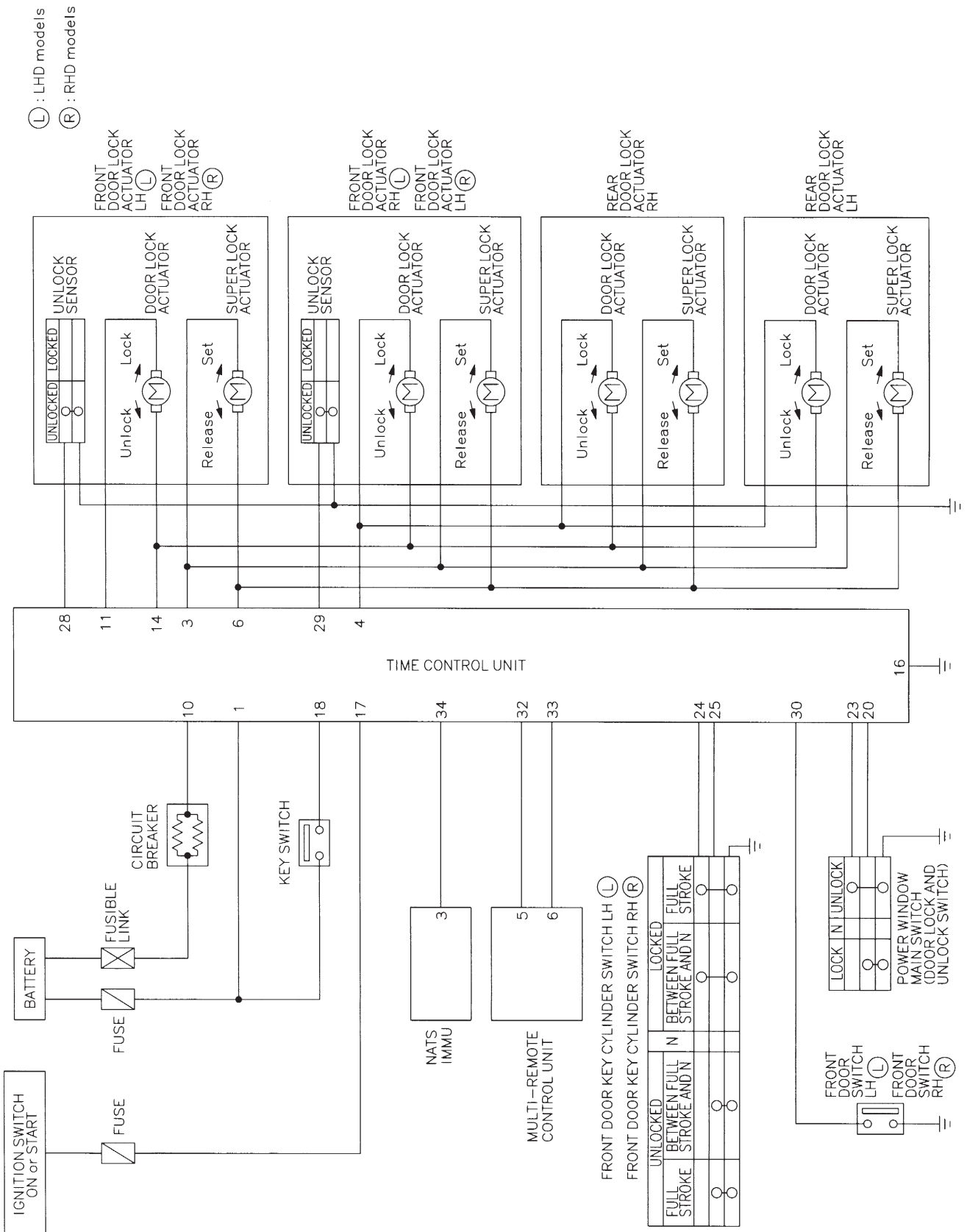
NFEL0345S0206

POWER DOOR LOCK — SUPER LOCK —

Schematic

Schematic

NFEL0346



MEL582L

POWER DOOR LOCK — SUPER LOCK —

Wiring Diagram — S/LOCK —

Wiring Diagram — S/LOCK —

NFEL0347

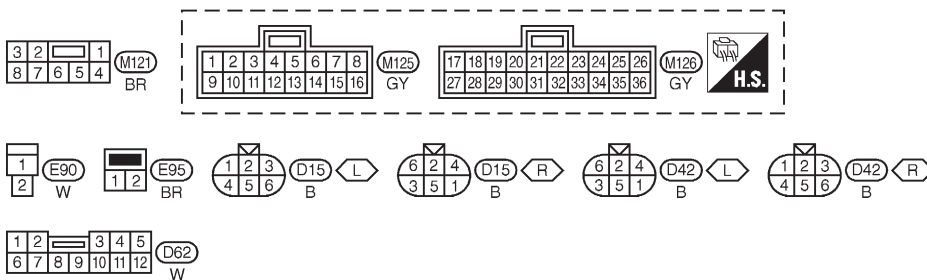
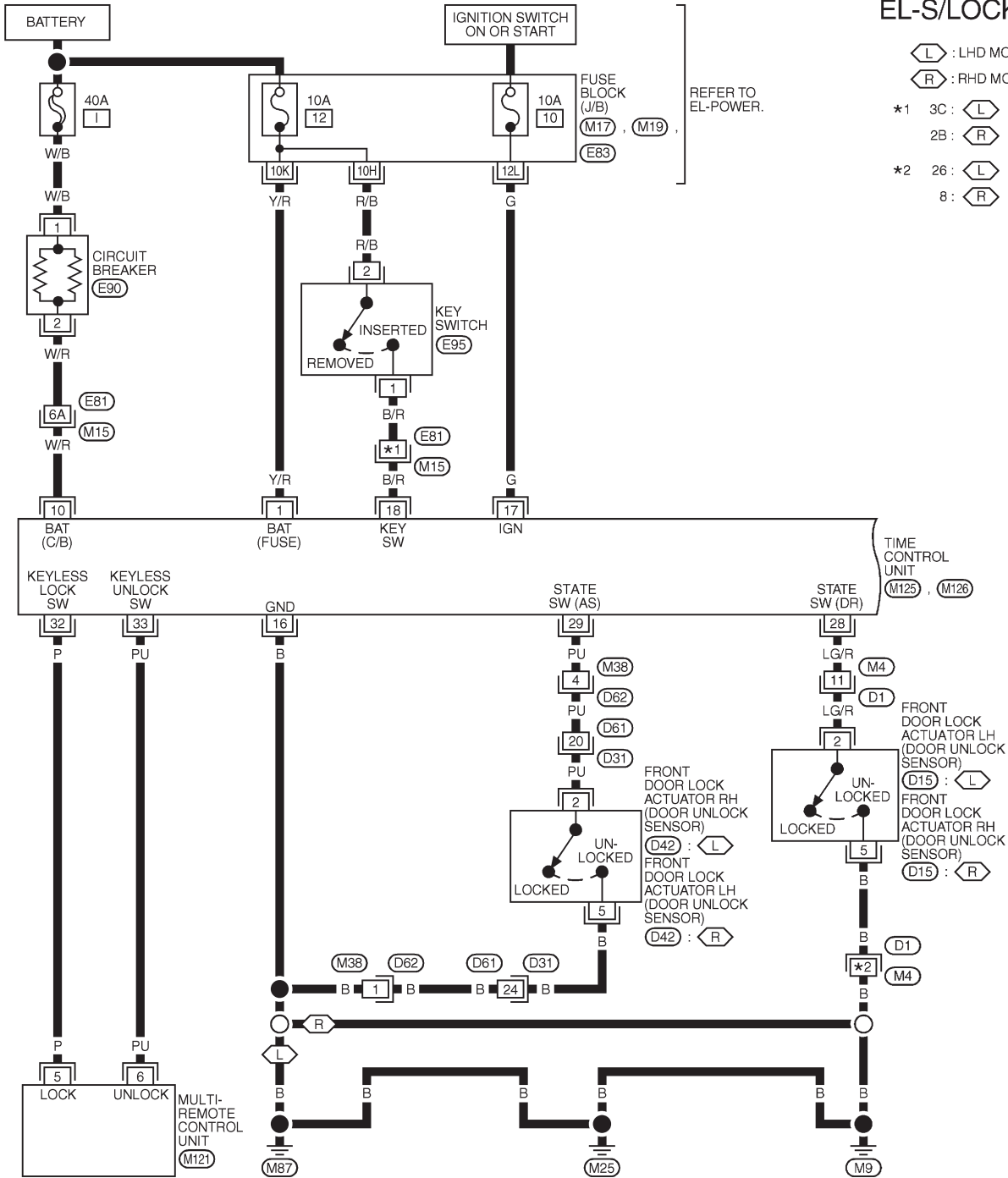
NFEL0347S01

FIG. 1

EL-S/LOCK-01

⬅ (L) : LHD MODELS
 ➡ (R) : RHD MODELS

*1 3C : ⬅ (L)
 2B : ➡ (R)
 *2 26 : ⬅ (L)
 8 : ➡ (R)



REFER TO THE FOLLOWING.
 (M15), (D1), (B31) -SUPER
 MULTIPLE JUNCTION (SMJ)
 (M17), (M19), (E83)
 -FUSE BLOCK-
 JUNCTION BOX (J/B)

MEL583L

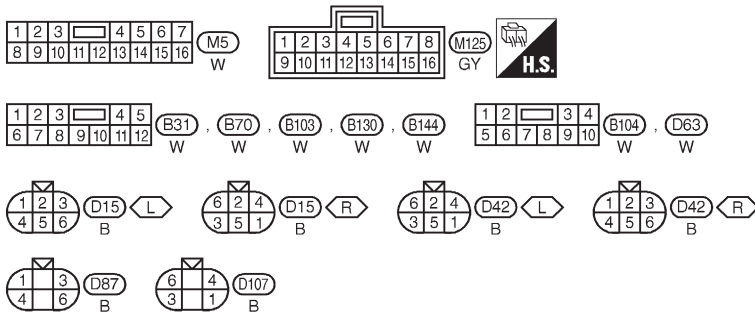
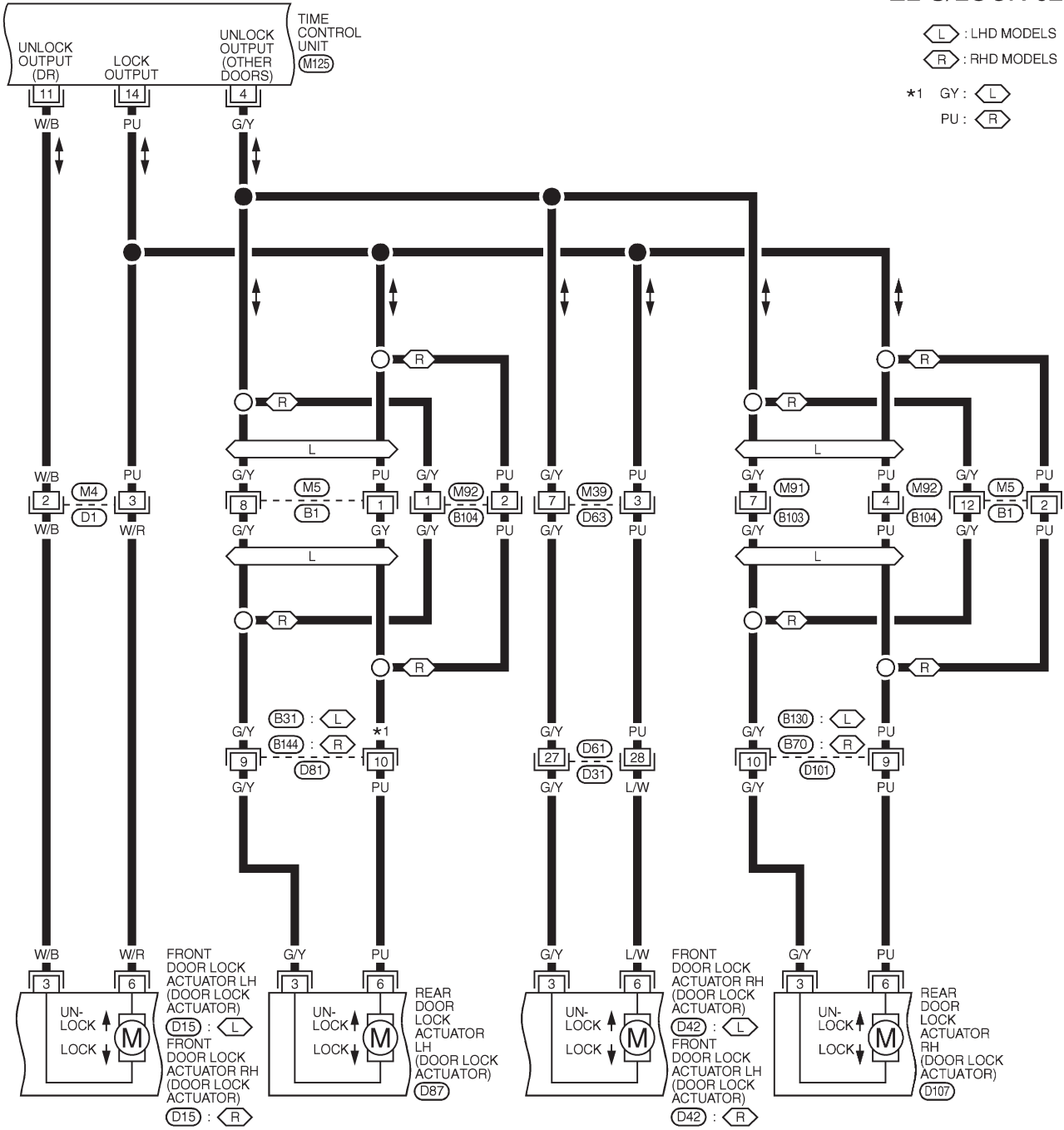
POWER DOOR LOCK — SUPER LOCK —

Wiring Diagram — S/LOCK — (Cont'd)

FIG. 2

NFEL0347S02

EL-S/LOCK-02



REFER TO THE FOLLOWING.

◻, ◻ -SUPER
 MULTIPLE JUNCTION (SMJ)

MEL584L

POWER DOOR LOCK — SUPER LOCK —

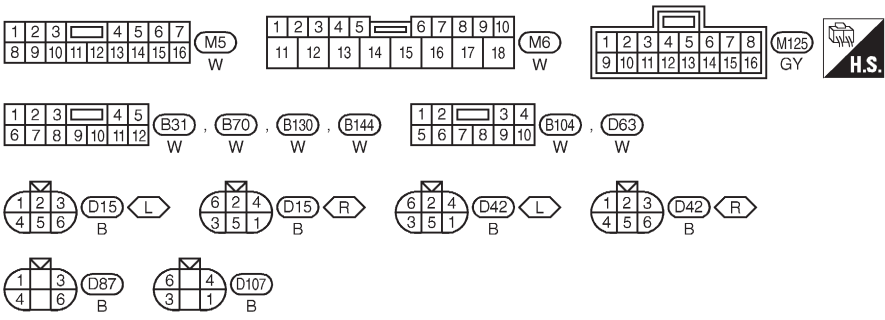
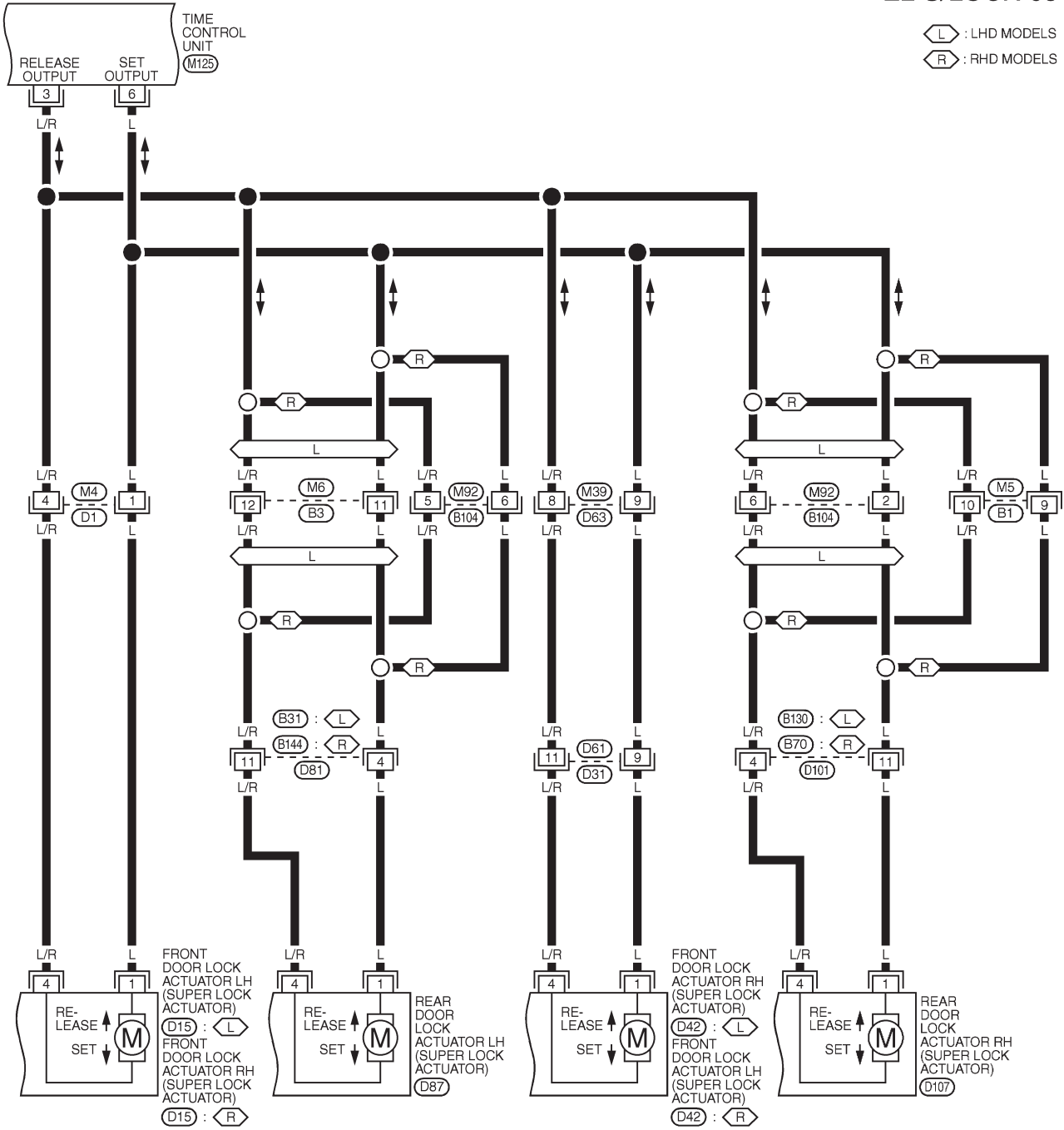
Wiring Diagram — S/LOCK — (Cont'd)

FIG. 3

NFEL0347S03

EL-S/LOCK-03

◻ L : LHD MODELS
◻ R : RHD MODELS



REFER TO THE FOLLOWING.
D1, D31 -SUPER
MULTIPLE JUNCTION (SMJ)

MEL585L

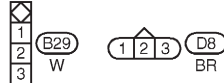
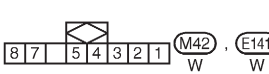
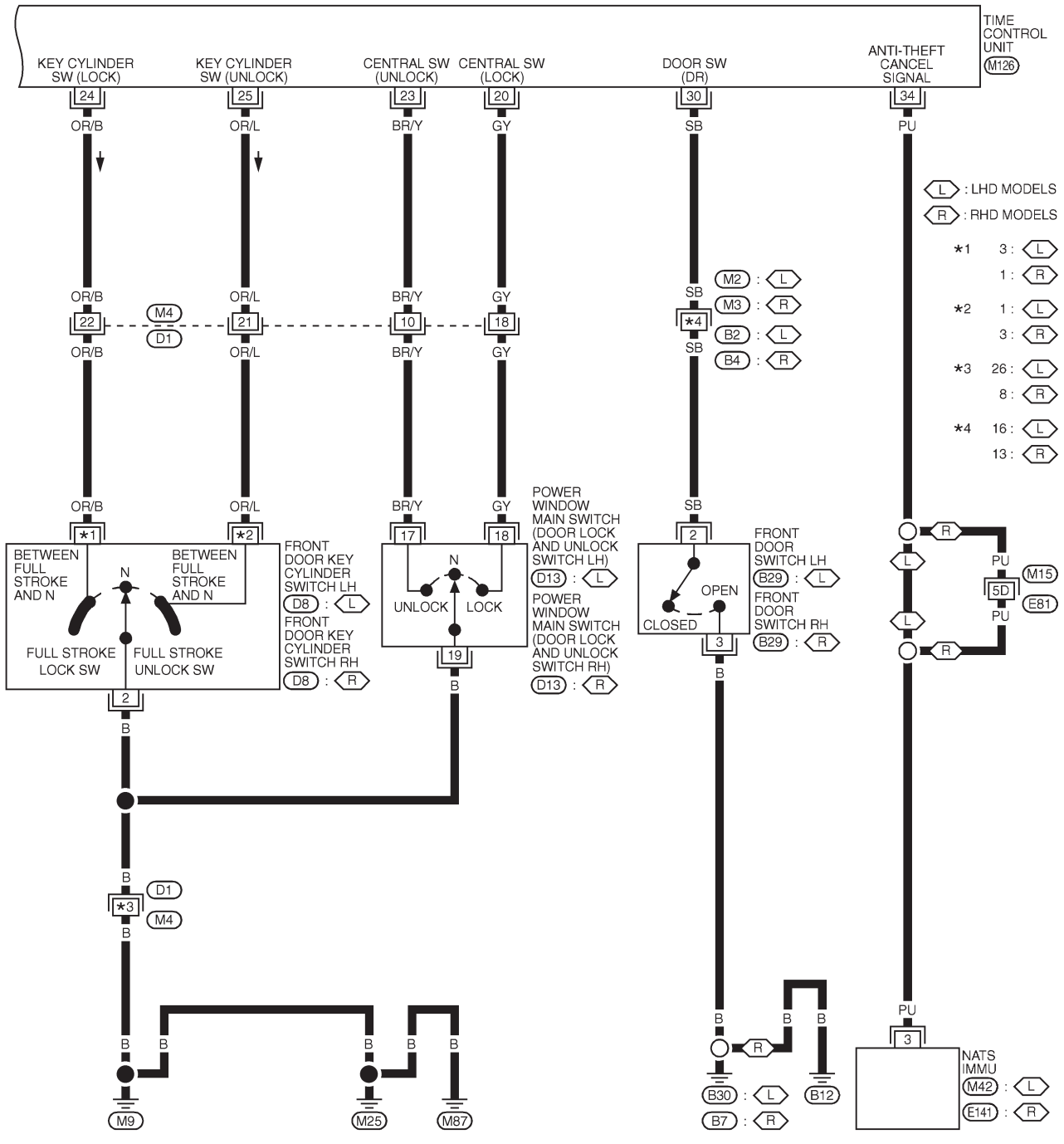
POWER DOOR LOCK — SUPER LOCK —

Wiring Diagram — S/LOCK — (Cont'd)

FIG. 4

NFEL0347S04

EL-S/LOCK-04



REFER TO THE FOLLOWING.
 (M15), (D1) -SUPER
 MULTIPLE JUNCTION (SMJ)

MEL586L

POWER DOOR LOCK — SUPER LOCK —

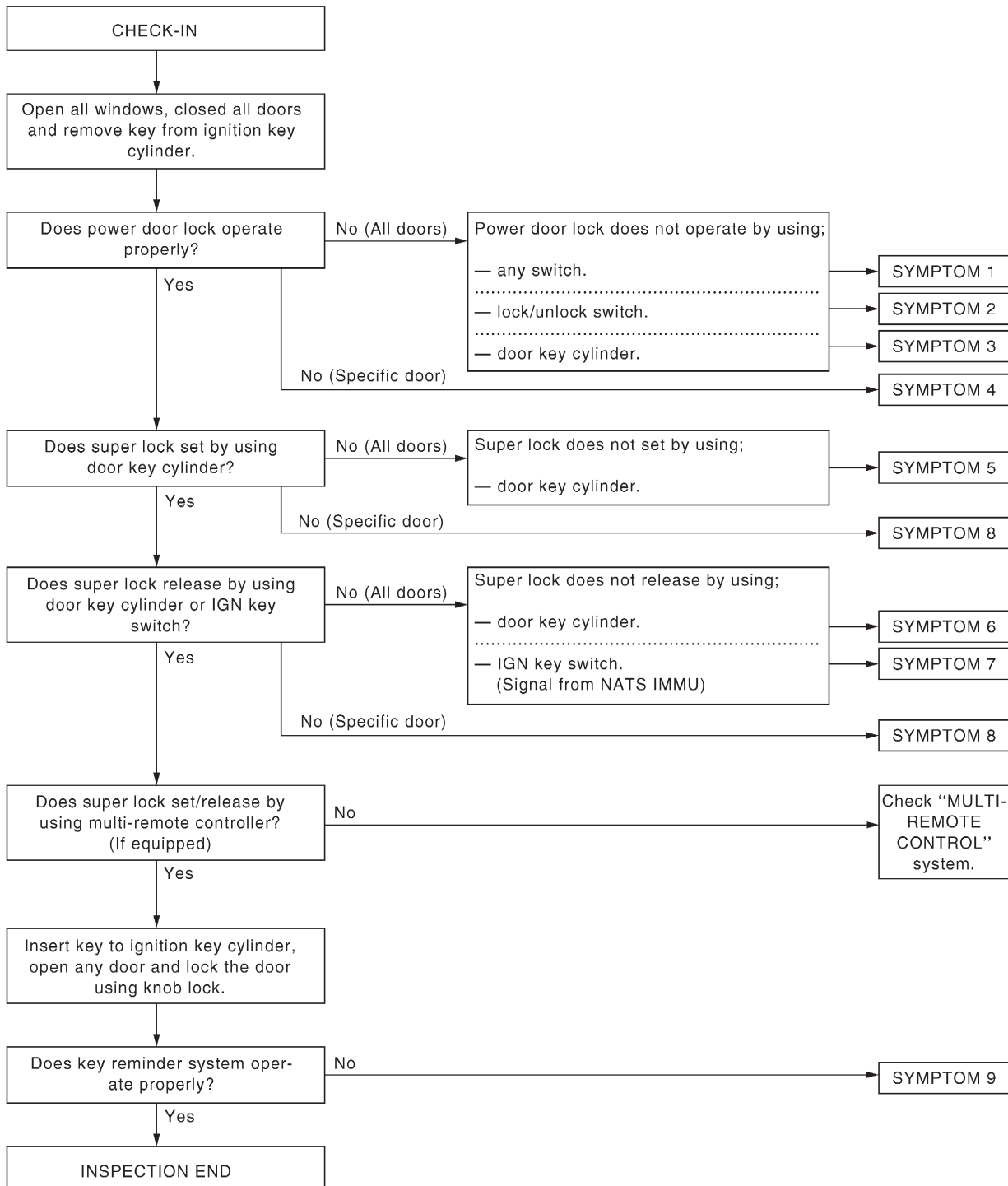
Trouble Diagnoses

Trouble Diagnoses

NFEL0348

NFEL0348S01

PRELIMINARY CHECK



SEL513X

After performing preliminary check, go to symptom chart on the next page.
 Before starting trouble diagnoses below, perform preliminary check, EL-258.
 Symptom numbers in the symptom chart correspond with those of Preliminary check.

POWER DOOR LOCK — SUPER LOCK —

Trouble Diagnoses (Cont'd)

SYMPTOM CHART

NFEL0348S02

REFERENCE PAGE (EL-)	260	261	262	263	265	266	267	268	269	270
SYMPTOM	Power supply and ground circuit check	Door lock and unlock switch check	Door key cylinder switch check	Door lock actuator check	Super lock actuator check	Door switch check	Door unlock sensor check	NATS release signal check	Key switch (insert) check	Ignition switch "ON" circuit check
1	Power door lock does not operate using any switch.	X		X						
2	Power door lock does not operate with lock and unlock switch.		X							
3	Power door lock does not operate with door key cylinder switch.		X							
4	Specific door lock actuator does not operate.			X						
5	Super lock cannot be set by door key cylinder.		X		X				X	X
6	*Super lock cannot be released by door key cylinder.		X		X					
7	*Super lock cannot be released by ignition key switch. (Signal from NATS IMMU)				X		X	X		
8	Specific super lock actuator does not operate.				X					
9	*Key reminder system does not operate.					X	X		X	

X: Applicable

*: Make sure the power door lock system operates properly.

POWER DOOR LOCK — SUPER LOCK —


Trouble Diagnoses (Cont'd)

MAIN POWER SUPPLY AND GROUND CIRCUIT CHECK

=NFEL0348S03

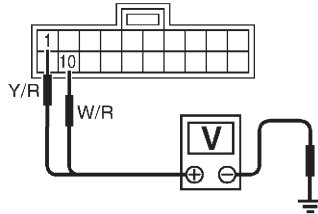
Main Power Supply Circuit Check

NFEL0348S0301



H.S.
DISCONNECT

Time control unit connector (M125)




Terminals		Ignition switch position		
		OFF	ACC	ON
(+)	(-)			
1	Ground	Battery voltage		
10				

SEL206X

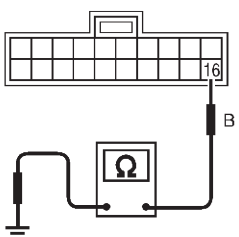
Ground Circuit Check

NFEL0348S0302



H.S.
DISCONNECT

Time control unit connector (M125)



Continuity should exist.



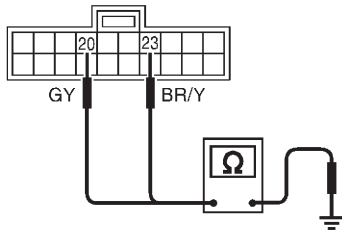
SEL207X



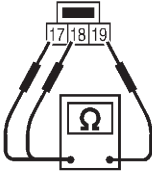
POWER DOOR LOCK — SUPER LOCK —

Trouble Diagnoses (Cont'd)

DOOR LOCK AND UNLOCK SWITCH CHECK

=NFEL0348S04

1	CHECK DOOR LOCK AND UNLOCK SWITCH INPUT SIGNAL														
<p>1. Disconnect time control unit harness connector. 2. Check continuity between time control unit harness connector terminal 20 or 23 and ground.</p>															
<div style="display: flex; align-items: flex-start;"> <div style="margin-right: 20px;">  <p>H.S. DISCONNECT</p> </div> <div style="margin-right: 20px;">  <p>OFF</p> </div> <div style="flex-grow: 1;"> <p>Time control unit connector (M126)</p>  </div> <div style="margin-left: 20px;"> <table border="1" style="border-collapse: collapse; text-align: center;"> <thead> <tr> <th style="padding: 5px;">Terminals</th> <th style="padding: 5px;">Door lock/unlock switch condition</th> <th style="padding: 5px;">Continuity</th> </tr> </thead> <tbody> <tr> <td rowspan="2" style="padding: 5px;">20 - Ground</td> <td style="padding: 5px;">Lock</td> <td style="padding: 5px;">Yes</td> </tr> <tr> <td style="padding: 5px;">N and Unlock</td> <td style="padding: 5px;">No</td> </tr> <tr> <td rowspan="2" style="padding: 5px;">23 - Ground</td> <td style="padding: 5px;">Unlock</td> <td style="padding: 5px;">Yes</td> </tr> <tr> <td style="padding: 5px;">N and Lock</td> <td style="padding: 5px;">No</td> </tr> </tbody> </table> </div> </div>			Terminals	Door lock/unlock switch condition	Continuity	20 - Ground	Lock	Yes	N and Unlock	No	23 - Ground	Unlock	Yes	N and Lock	No
Terminals	Door lock/unlock switch condition	Continuity													
20 - Ground	Lock	Yes													
	N and Unlock	No													
23 - Ground	Unlock	Yes													
	N and Lock	No													
SEL208X															
Refer to wiring diagram in EL-257.															
OK or NG															
OK	▶	Door lock/unlock switch is OK.													
NG	▶	GO TO 2.													

2	CHECK DOOR LOCK AND UNLOCK SWITCH																				
<p>1. Disconnect door lock and unlock switch harness connector. 2. Check continuity between each door lock and unlock switch terminals.</p>																					
<div style="display: flex; align-items: flex-start;"> <div style="margin-right: 20px;">  <p>T.S. DISCONNECT</p> </div> <div style="margin-right: 20px;">  <p>OFF</p> </div> <div style="flex-grow: 1;"> <p>P/W main switch connector (D13)</p>  </div> <div style="margin-left: 20px;"> <table border="1" style="border-collapse: collapse; text-align: center;"> <thead> <tr> <th rowspan="2" style="padding: 5px;">Condition</th> <th colspan="3" style="padding: 5px;">Terminals</th> </tr> <tr> <th style="padding: 5px;">19</th> <th style="padding: 5px;">18</th> <th style="padding: 5px;">17</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;">Lock</td> <td style="padding: 5px;">○</td> <td style="padding: 5px;">○</td> <td style="padding: 5px;">○</td> </tr> <tr> <td style="padding: 5px;">N</td> <td colspan="3" style="padding: 5px;">No continuity</td> </tr> <tr> <td style="padding: 5px;">Unlock</td> <td style="padding: 5px;">○</td> <td style="padding: 5px;">○</td> <td style="padding: 5px;">○</td> </tr> </tbody> </table> </div> </div>			Condition	Terminals			19	18	17	Lock	○	○	○	N	No continuity			Unlock	○	○	○
Condition	Terminals																				
	19	18	17																		
Lock	○	○	○																		
N	No continuity																				
Unlock	○	○	○																		
SEL209X																					
OK or NG																					
OK	▶	<p>Check the following.</p> <ul style="list-style-type: none"> ● Ground circuit for door lock and unlock switch ● Harness for open or short between door lock and unlock switch and time control unit connector 																			
NG	▶	Replace door lock and unlock switch.																			

POWER DOOR LOCK — SUPER LOCK —

Trouble Diagnoses (Cont'd)

DOOR KEY CYLINDER SWITCH CHECK

=NFEL0348S05

1	CHECK DOOR KEY CYLINDER SWITCH INPUT SIGNAL (LOCK/UNLOCK SIGNAL)																				
Check voltage between time control unit harness connector M126 terminals 24 (OR/B) or 25 (OR/L) and ground.																					
<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="2">Terminals</th> <th rowspan="2">Key position</th> <th rowspan="2">Voltage [V]</th> </tr> <tr> <th>(+)</th> <th>(-)</th> </tr> </thead> <tbody> <tr> <td rowspan="2" style="text-align: center;">24</td> <td rowspan="2" style="text-align: center;">Ground</td> <td style="text-align: center;">Neutral/Unlock</td> <td style="text-align: center;">Approx. 5</td> </tr> <tr> <td style="text-align: center;">Lock</td> <td style="text-align: center;">0</td> </tr> <tr> <td rowspan="2" style="text-align: center;">25</td> <td rowspan="2" style="text-align: center;">Ground</td> <td style="text-align: center;">Neutral/Lock</td> <td style="text-align: center;">Approx. 5</td> </tr> <tr> <td style="text-align: center;">Unlock</td> <td style="text-align: center;">0</td> </tr> </tbody> </table>				Terminals		Key position	Voltage [V]	(+)	(-)	24	Ground	Neutral/Unlock	Approx. 5	Lock	0	25	Ground	Neutral/Lock	Approx. 5	Unlock	0
Terminals		Key position	Voltage [V]																		
(+)	(-)																				
24	Ground	Neutral/Unlock	Approx. 5																		
		Lock	0																		
25	Ground	Neutral/Lock	Approx. 5																		
		Unlock	0																		
SEL210XA																					
Refer to wiring diagram in EL-257.																					
OK or NG																					
OK	▶	Door key cylinder switch is OK.																			
NG	▶	GO TO 2.																			

2	CHECK DOOR KEY CYLINDER SWITCH																										
1. Disconnect door key cylinder switch harness connector. 2. Check continuity between door key cylinder switch terminals.																											
<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="2"></th> <th style="text-align: center;">(L): LHD models</th> <th style="text-align: center;">(R): RHD models</th> </tr> <tr> <th>Terminals</th> <th>Key position</th> <th colspan="2">Continuity</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">② - ③: (L)</td> <td style="text-align: center;">Neutral/Unlock</td> <td colspan="2" style="text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">① - ②: (R)</td> <td style="text-align: center;">Lock</td> <td colspan="2" style="text-align: center;">Yes</td> </tr> <tr> <td style="text-align: center;">① - ②: (L)</td> <td style="text-align: center;">Neutral/Lock</td> <td colspan="2" style="text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">② - ③: (R)</td> <td style="text-align: center;">Unlock</td> <td colspan="2" style="text-align: center;">Yes</td> </tr> </tbody> </table>						(L): LHD models	(R): RHD models	Terminals	Key position	Continuity		② - ③: (L)	Neutral/Unlock	No		① - ②: (R)	Lock	Yes		① - ②: (L)	Neutral/Lock	No		② - ③: (R)	Unlock	Yes	
		(L): LHD models	(R): RHD models																								
Terminals	Key position	Continuity																									
② - ③: (L)	Neutral/Unlock	No																									
① - ②: (R)	Lock	Yes																									
① - ②: (L)	Neutral/Lock	No																									
② - ③: (R)	Unlock	Yes																									
SEL211X																											
OK or NG																											
OK	▶	Check the following. <ul style="list-style-type: none"> ● Door key cylinder switch ground circuit ● Harness for open or short between time control unit and door key cylinder switch 																									
NG	▶	Replace door key cylinder switch.																									

POWER DOOR LOCK — SUPER LOCK —

Trouble Diagnoses (Cont'd)

DOOR LOCK ACTUATOR CHECK

=NFEL0348S06

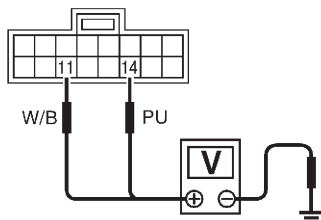
1 CHECK DOOR LOCK ACTUATOR CIRCUIT

Check voltage for door lock actuator.

- Door lock actuator front (Driver's door)



Time control unit connector (M125)



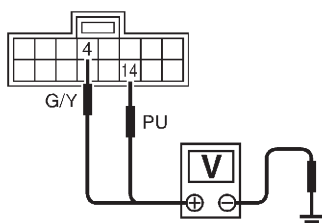
Door lock and unlock switch condition	Terminals		Voltage [V]
	(+)	(-)	
Lock	14	Ground	Approx. 12
Unlock	11	Ground	

SEL212X

- Door lock actuator front (Passenger's door) and rear



Time control unit connector (M125)



Door lock and unlock switch condition	Terminals		Voltage [V]
	(+)	(-)	
Lock	14	Ground	Approx. 12
Unlock	4	Ground	

SEL213X

Refer to wiring diagram in EL-255.

OK or NG

OK	▶	GO TO 2.
NG	▶	Replace time control unit. (Before replacing the control unit, perform "DOOR LOCK/ UNLOCK SWITCH CHECK".)

POWER DOOR LOCK — SUPER LOCK —

Trouble Diagnoses (Cont'd)


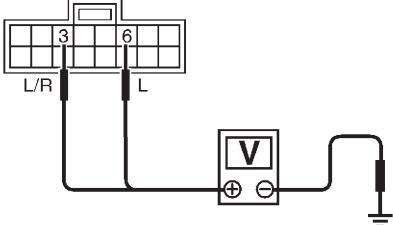
2	CHECK DOOR LOCK ACTUATOR
<p>1. Disconnect door lock actuator harness connector. 2. Apply 12V direct current to door lock actuator and check operation.</p>	
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>Door lock actuator connector</p> <p>(D15): Front LH (LHD models) (D42): Front LH (RHD models) (D87): Rear LH</p> </div> <div style="width: 45%;"> <p>Door lock actuator connector</p> <p>(D15): Front RH (RHD models) (D42): Front RH (LHD models) (D107): Rear RH</p> </div> </div> <div style="text-align: center; margin: 10px 0;"> </div> <div style="text-align: right; margin-top: 10px;"> <p>Door lock actuator operation: Terminals between 6 (+) and 3 (-) Unlocked → Locked Terminals between 3 (+) and 6 (-) Locked → Unlocked</p> </div>	
SEL214X	
OK or NG	
OK	▶ Check harness for open or short between time control unit connector and door lock actuator.
NG	▶ Replace door lock actuator.

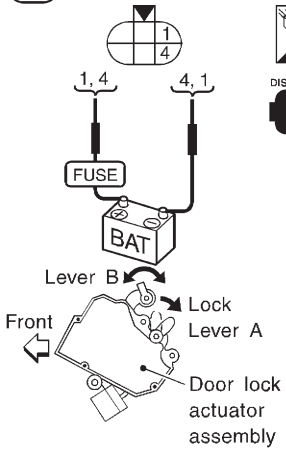
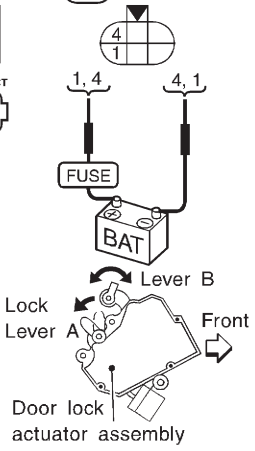
POWER DOOR LOCK — SUPER LOCK —

Trouble Diagnoses (Cont'd)

SUPER LOCK ACTUATOR CHECK

=NFEL0348S07

1	CHECK OUTPUT SIGNAL FOR SUPER LOCK ACTUATOR														
<p>Check voltage for super lock actuator.</p> <div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="width: 30%;">  </div> <div style="width: 40%; text-align: center;"> <p>Time control unit connector (M125)</p>  </div> <div style="width: 25%;"> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">Door key cylinder switch condition</th> <th colspan="2">Terminals</th> <th rowspan="2">Voltage [V]</th> </tr> <tr> <th>(+)</th> <th>(-)</th> </tr> </thead> <tbody> <tr> <td>Lock (Set)</td> <td>6</td> <td>Ground</td> <td rowspan="2" style="text-align: center;">Approx. 12</td> </tr> <tr> <td>Unlock (Released)</td> <td>3</td> <td>Ground</td> </tr> </tbody> </table> </div> </div> <p style="text-align: right;">SEL215X</p>			Door key cylinder switch condition	Terminals		Voltage [V]	(+)	(-)	Lock (Set)	6	Ground	Approx. 12	Unlock (Released)	3	Ground
Door key cylinder switch condition	Terminals			Voltage [V]											
	(+)	(-)													
Lock (Set)	6	Ground	Approx. 12												
Unlock (Released)	3	Ground													
Refer to wiring diagram in EL-256.															
OK or NG															
OK	▶	GO TO 2.													
NG	▶	Replace time control unit.													


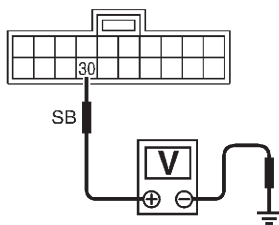
2	CHECK SUPER LOCK ACTUATOR															
<ol style="list-style-type: none"> 1. Disconnect door lock actuator assembly connector. 2. Set lever A in lock position. 3. Apply 12V direct current to door lock actuator assembly and check operation. 																
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>Super lock actuator connector</p> <p>(D15): Front LH (LHD models)</p> <p>(D42): Front LH (RHD models)</p> <p>(D87): Rear LH</p> </div> <div style="width: 45%;"> <p>Super lock actuator connector</p> <p>(D15): Front RH (RHD models)</p> <p>(D42): Front RH (LHD models)</p> <p>(D107): Rear RH</p> </div> </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="width: 45%;">  </div> <div style="width: 45%;">  </div> </div> <div style="text-align: right; margin-top: 10px;"> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">Super lock actuator operation</th> <th colspan="2">Terminals</th> <th rowspan="2">Connection from lever B to lever A</th> </tr> <tr> <th>(+)</th> <th>(-)</th> </tr> </thead> <tbody> <tr> <td>Released → Set</td> <td>1</td> <td>4</td> <td>Disconnect</td> </tr> <tr> <td>Set → Release</td> <td>4</td> <td>1</td> <td>Connect</td> </tr> </tbody> </table> </div> <p style="text-align: right;">SEL216X</p>			Super lock actuator operation	Terminals		Connection from lever B to lever A	(+)	(-)	Released → Set	1	4	Disconnect	Set → Release	4	1	Connect
Super lock actuator operation	Terminals			Connection from lever B to lever A												
	(+)	(-)														
Released → Set	1	4	Disconnect													
Set → Release	4	1	Connect													
OK or NG																
OK	▶	Check harness between time control unit and super lock actuator.														
NG	▶	Replace super lock actuator.														


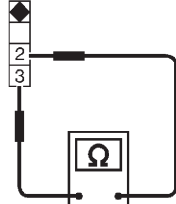
POWER DOOR LOCK — SUPER LOCK —

Trouble Diagnoses (Cont'd)

DOOR SWITCH CHECK

=NFEL0348S08

1	CHECK DOOR SWITCH INPUT SIGNAL	
<p>Check voltage between time control unit harness connector terminals 30 and ground.</p>		
	<p>Time control unit connector (M126)</p> 	<p>Voltage [V]: Condition of driver's door: CLOSED Approx. 5 Condition of driver's door: OPEN 0</p>
SEL217X		
Refer to wiring diagram in EL-257.		
OK or NG		
OK	▶	Door switch is OK.
NG	▶	GO TO 2.




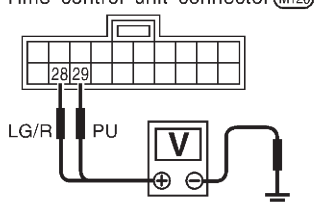
2	CHECK DOOR SWITCH											
<p>1. Disconnect door switch harness connector. 2. Check continuity between door switch terminals.</p>												
	<p>Driver side door switch connector (B29)</p> 	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th style="width: 30%;"></th> <th style="width: 20%;">Terminals</th> <th style="width: 20%;">Condition</th> <th style="width: 30%;">Continuity</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Driver side door switch</td> <td rowspan="2">2 - 3</td> <td>Closed</td> <td>No</td> </tr> <tr> <td>Open</td> <td>Yes</td> </tr> </tbody> </table>		Terminals	Condition	Continuity	Driver side door switch	2 - 3	Closed	No	Open	Yes
	Terminals	Condition	Continuity									
Driver side door switch	2 - 3	Closed	No									
		Open	Yes									
SEL218X												
OK or NG												
OK	▶	<p>Check the following.</p> <ul style="list-style-type: none"> ● Door switch ground circuit or door switch ground condition ● Harness for open or short between time control unit and door switch 										
NG	▶	Replace door switch.										



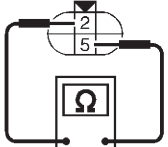
POWER DOOR LOCK — SUPER LOCK —

Trouble Diagnoses (Cont'd)

DOOR UNLOCK SENSOR CHECK

=NFEL0348S13

1	CHECK DOOR UNLOCK SENSOR INPUT SIGNAL																							
Check voltage between time control unit terminals 28 and 29.																								
  	Time control unit connector (M128) 	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2"></th> <th colspan="2">Terminals</th> <th rowspan="2">Condition</th> <th rowspan="2">Voltage [V]</th> </tr> <tr> <th>(+)</th> <th>(-)</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Driver side</td> <td rowspan="2">28</td> <td rowspan="2">Ground</td> <td>Locked</td> <td>Approx. 5</td> </tr> <tr> <td>Unlocked</td> <td>0</td> </tr> <tr> <td rowspan="2">Front passenger side</td> <td rowspan="2">29</td> <td rowspan="2">Ground</td> <td>Locked</td> <td>Approx. 5</td> </tr> <tr> <td>Unlocked</td> <td>0</td> </tr> </tbody> </table>			Terminals		Condition	Voltage [V]	(+)	(-)	Driver side	28	Ground	Locked	Approx. 5	Unlocked	0	Front passenger side	29	Ground	Locked	Approx. 5	Unlocked	0
	Terminals		Condition		Voltage [V]																			
	(+)	(-)																						
Driver side	28	Ground	Locked	Approx. 5																				
			Unlocked	0																				
Front passenger side	29	Ground	Locked	Approx. 5																				
			Unlocked	0																				
SEL514X																								
Refer to wiring diagram in EL-254.																								
OK or NG																								
OK	▶	Door unlock sensor is OK.																						
NG	▶	GO TO 2.																						

2	CHECK DOOR UNLOCK SENSOR								
1. Disconnect door unlock sensor. 2. Check continuity between door unlock sensor terminals 2 and 5.									
 	Door unlock sensor connector (D15) : Driver side (D42) : Front passenger side 	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Condition</th> <th>Continuity</th> </tr> </thead> <tbody> <tr> <td>Locked</td> <td>No</td> </tr> <tr> <td>Unlocked</td> <td>Yes</td> </tr> </tbody> </table>		Condition	Continuity	Locked	No	Unlocked	Yes
Condition	Continuity								
Locked	No								
Unlocked	Yes								
SEL515X									
OK or NG									
OK	▶	Check the following. <ul style="list-style-type: none"> ● Door unlock sensor ground circuit ● Harness for open or short between time control unit and door unlock sensor 							
NG	▶	Replace door unlock sensor.							

POWER DOOR LOCK — SUPER LOCK —

Trouble Diagnoses (Cont'd)

NATS RELEASE SIGNAL CHECK

=NFEL0348S09

1	CHECK NATS SIGNAL CIRCUIT	
<p>Disconnect time control unit connector and NATS IMMU connector.</p>		
<div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="width: 45%;"> <p>Time control unit connector (M126) NATS IMMU (M42): LHD models (E141): RHD models</p> </div> <div style="width: 50%;"> <p>Check continuity between time control unit terminal 34 and NATS IMMU terminal 3. Continuity should exist.</p> <p>Check continuity between time control unit terminal 34 and ground. Continuity should not exist.</p> </div> </div>		
SEL219X		
Refer to wiring diagram in EL-257.		
OK or NG		
OK	▶	GO TO 2.
NG	▶	Repair harness.


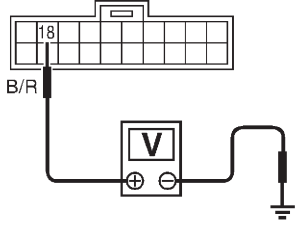
2	CHECK NATS RELEASE SIGNAL	
<p>1. Connect time control unit connector and NATS IMMU connector. 2. Check voltage between time control unit terminal 34 and ground.</p>		
<div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="width: 45%;"> <p>Time control unit connector (M126)</p> </div> <div style="width: 50%;"> </div> </div>		
SEL220X		
OK or NG		
OK	▶	Replace time control unit.
NG	▶	Check NATS system.

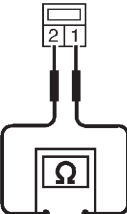


POWER DOOR LOCK — SUPER LOCK —

Trouble Diagnoses (Cont'd)

KEY SWITCH (INSERT) CHECK

=NFEL0348S10

1	CHECK KEY SWITCH INPUT SIGNAL	
<p>Check voltage between time control unit terminal 18 and ground.</p> <div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="width: 30%;">  <p>H.S. CONNECT</p> <p>ST : Approx. 12V Key : 0V</p> </div> <div style="width: 40%; text-align: center;"> <p>Time control unit connector (M126)</p>  </div> <div style="width: 25%;"> <p>Voltage [V]: Condition of switch: Key is inserted. Approx. 12 Condition of switch: Key is removed. 0</p> </div> </div> <p style="text-align: right;">SEL221X</p> <p>Refer to wiring diagram in EL-254.</p> <p style="text-align: center;">OK or NG</p>		
OK	▶	Key switch is OK.
NG	▶	GO TO 2.


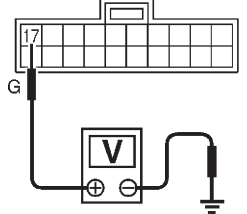
2	CHECK KEY SWITCH (INSERT)	
<p>Check continuity between key switch terminals 1 and 2.</p> <div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="width: 30%;"> <p>Key switch connector (E95)</p>  </div> <div style="width: 30%; text-align: center;">  <p>T.S. DISCONNECT</p>  </div> <div style="width: 35%;"> <p>Continuity: Condition of key switch: Key is inserted. Yes Condition of key switch: Key is removed. No</p> </div> </div> <p style="text-align: right;">SEL194W</p> <p style="text-align: center;">OK or NG</p>		
OK	▶	<p>Check the following.</p> <ul style="list-style-type: none"> ● 10A fuse [No. 12, located in fuse block (J/B)] ● Harness for open or short between key switch and fuse ● Harness for open or short between time control unit and key switch
NG	▶	Replace key switch.

POWER DOOR LOCK — SUPER LOCK —

Trouble Diagnoses (Cont'd)

IGNITION SWITCH "ON" CIRCUIT CHECK

NFEL0348S11

1	CHECK IGNITION ON SIGNAL																		
Check voltage between time control unit terminal 17 and ground.																			
<div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="text-align: center;">  <p>H.S. DISCONNECT</p> </div> <div style="text-align: center;"> <p>Time control unit connector (M126)</p>  </div> <div style="border: 1px solid black; padding: 5px;"> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th colspan="2">Terminals</th> <th colspan="3">Ignition switch position</th> </tr> <tr> <th>(+)</th> <th>(-)</th> <th>OFF</th> <th>ACC</th> <th>ON</th> </tr> </thead> <tbody> <tr> <td>17</td> <td>Ground</td> <td>0V</td> <td>0V</td> <td>Battery voltage</td> </tr> </tbody> </table> </div> </div>					Terminals		Ignition switch position			(+)	(-)	OFF	ACC	ON	17	Ground	0V	0V	Battery voltage
Terminals		Ignition switch position																	
(+)	(-)	OFF	ACC	ON															
17	Ground	0V	0V	Battery voltage															
SEL222X																			
OK or NG																			
OK	▶	Ignition switch "ON" circuit is OK.																	
NG	▶	<p>Check the following.</p> <ul style="list-style-type: none"> ● 10A fuse [No. 10, located in fuse block (J/B)] ● Harness for open or short between time control unit and fuse 																	

System Description

NFEL0338

OPERATED PROCEDURE

NFEL0338S02

Power Door Lock Operation

NFEL0338S0201

When multi-remote control unit receives a LOCK signal from remote controller with ignition switch in OFF position, ground is supplied

- to multi-remote control unit terminal 5
- through time control unit terminal 32.

Then, the time control unit locks all doors and sets the super lock. (Super lock is not set while key is inserted in the ignition key cylinder.)

When the multi-remote control unit receives an UNLOCK signal from the remote controller once, ground is supplied

- to multi-remote control unit terminal 6
- through time control unit terminal 33.

The time control unit unlocks the driver's door and releases the super lock. Then, if the multi-remote control unit receives an UNLOCK signal from the remote controller again within 5 seconds, all other doors are unlocked.

Hazard Reminder

NFEL0338S0202

When multi-remote control unit receives LOCK/UNLOCK signal from remote controller, ground is interrupted/supplied

- to multi-remote control unit terminal 7
- through door unlock sensor terminal 2 and 5
- through body grounds M9, M25 and M87, and then

power is supplied

- through multi-remote control unit terminals 3 and 8
- to the hazard warning lamp.

Then hazard warning lamps flash as follows.

- Lock operation: Flash once
- Unlock operation: Flash twice

MULTI-REMOTE CONTROL SYSTEM

Wiring Diagram — MULTI —

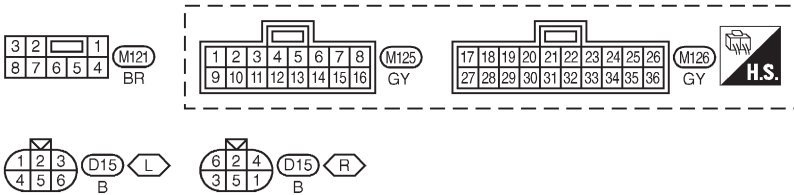
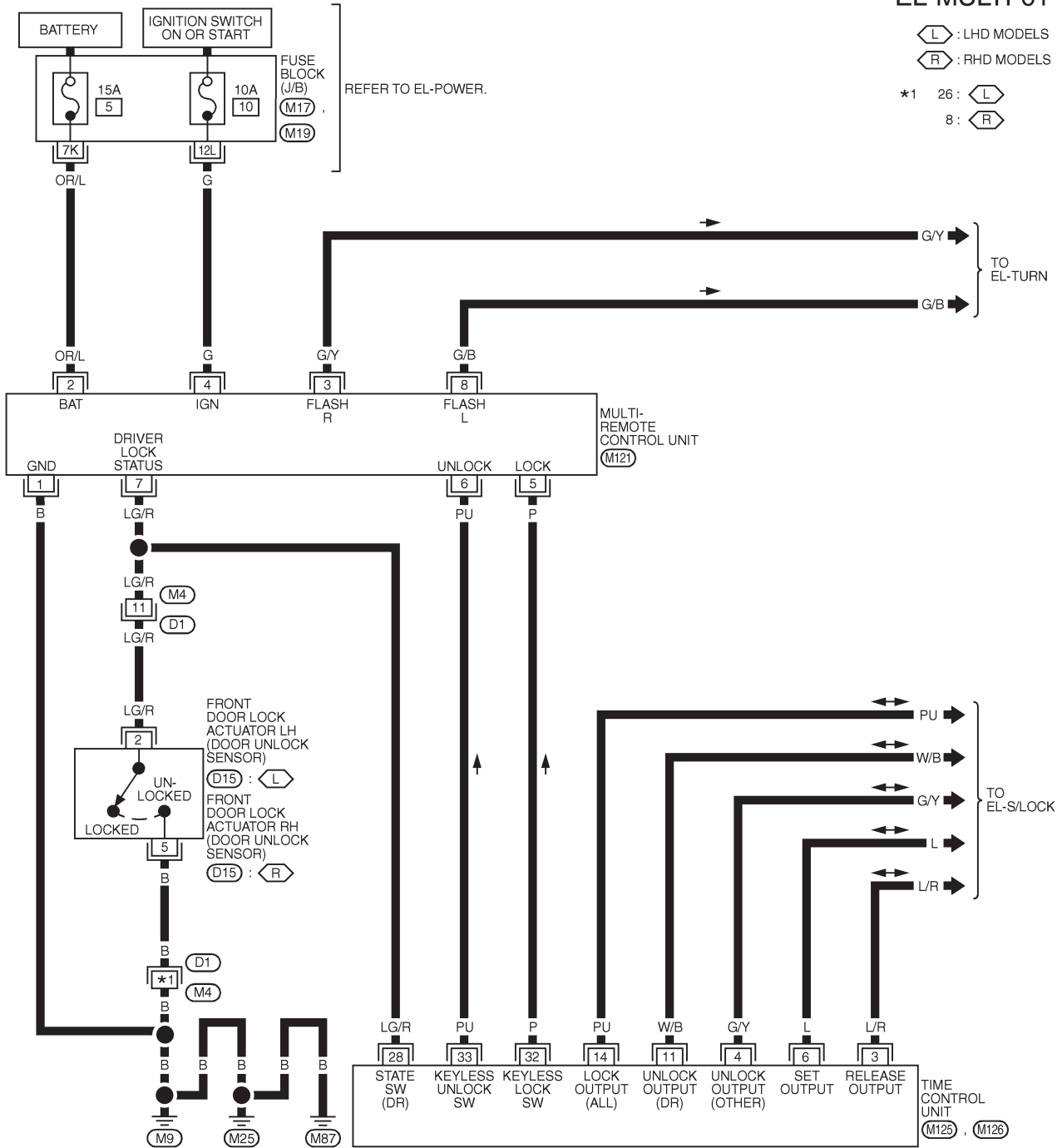
Wiring Diagram — MULTI —

NFEL0339

EL-MULTI-01

⬡ : LHD MODELS
⬢ : RHD MODELS

*1 26 : ⬡
8 : ⬢



REFER TO THE FOLLOWING.

- ⬢ -SUPER
- MULTIPLE JUNCTION (SMJ)
- ⬢, ⬢ -FUSE BLOCK-
- JUNCTION BOX (J/B)

MEL559L

MULTI-REMOTE CONTROL SYSTEM

Trouble Diagnoses

Trouble Diagnoses

SYMPTOM CHART

NFEL0340

NFEL0340S01

NOTE:

- Always check remote controller battery before replacing remote controller.

Symptom	Diagnoses/service procedure	Reference page (EL-)
All function of multi-remote control system do not operate.	1. Remote controller battery	274
	2. Power supply and ground circuit check	275
	3. Replace remote controller. Refer to ID Code Entry Procedure.	279
The new ID of remote controller cannot be entered.	1. Remote controller battery	274
	2. Power supply and ground circuit check	275
	3. Ignition ON signal check	276
	4. Replace remote controller. Refer to ID Code Entry Procedure.	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-258.)	1. Remote controller battery	274
	2. Replace remote controller. Refer to ID Code Entry Procedure.	279
Hazard reminder does not activate properly when pressing lock or unlock button of remote controller.	1. Remote controller battery	274
	2. Hazard reminder operation check	277
	3. Replace remote controller. Refer to ID Code Entry Procedure.	279

MULTI-REMOTE CONTROL SYSTEM

Trouble Diagnoses (Cont'd)

REMOTE CONTROLLER BATTERY AND FUNCTION CHECK

=NFEL0340S02

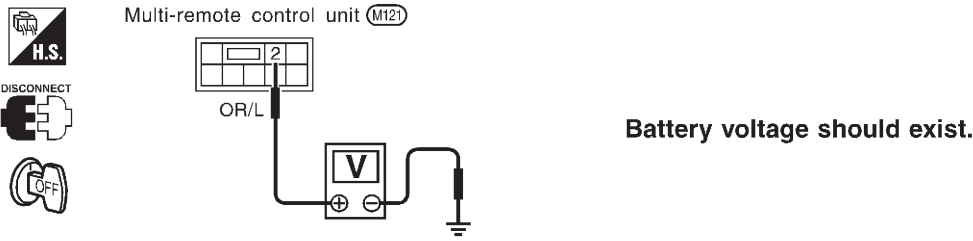
1	CHECK REMOTE CONTROLLER BATTERY
<p>Remove battery (refer to EL-280) and measure voltage across battery positive and negative terminals, (+) and (-).</p> <p>Voltage [V]: 2.5 - 3.0</p> <p>NOTE: Remote controller does not function if battery is not set correctly.</p> <div><p>The diagram shows a battery with a '+' sign on its positive terminal. A voltmeter, represented by a square with a 'V' inside, is connected in parallel with a 300Ω resistor. The voltmeter's positive terminal is connected to the positive terminal of the battery. The negative terminal of the voltmeter is connected to the negative terminal of the battery. A label 'Stamped (+)' points to the positive terminal of the battery.</p></div> <p style="text-align: right;">SEL237W</p>	
OK or NG	
OK	▶ Check remote controller battery terminals for corrosion or damage.
NG	▶ Replace battery.

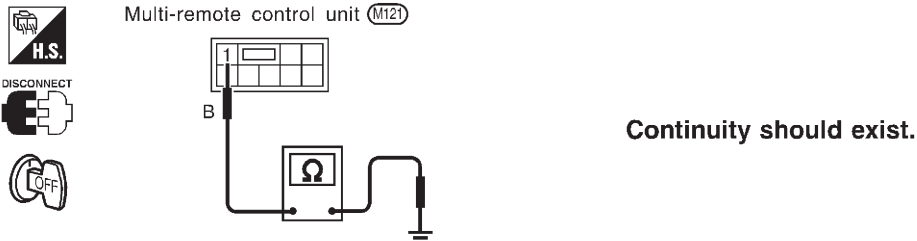
MULTI-REMOTE CONTROL SYSTEM

Trouble Diagnoses (Cont'd)

POWER SUPPLY AND GROUND CIRCUIT CHECK

=NFEL0340S03

1	CHECK POWER SUPPLY CIRCUIT	
<p>1. Disconnect multi-remote control unit harness connector. 2. Check voltage between multi-remote control unit harness connector terminal 2 and ground.</p>		
		
SEL268X		
OK or NG		
OK	▶	GO TO 2.
NG	▶	Check the following. <ul style="list-style-type: none"> ● 15A fuse [No. 5, located in fuse block (J/B)] ● Harness for open or short between multi-remote control unit and fuse


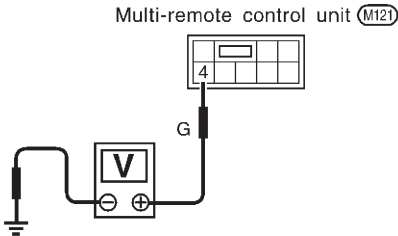
2	CHECK GROUND CIRCUIT	
<p>Check continuity between multi-remote control unit terminal 1 and ground.</p>		
		
SEL272X		
OK or NG		
OK	▶	Power supply and ground circuits are OK.
NG	▶	Check ground harness.

MULTI-REMOTE CONTROL SYSTEM

Trouble Diagnoses (Cont'd)

IGNITION ON SIGNAL CHECK

NFEL0340S14

1	CHECK IGNITION ON SIGNAL		
		<p>Check voltage between multi-remote control unit harness connector terminal 4 and ground.</p> <div style="display: flex; align-items: center; justify-content: space-around;"> <div style="text-align: center;">  </div> <div style="text-align: center;">  <p>Multi-remote control unit (M121)</p> </div> <div style="text-align: center;"> <p>Battery voltage should exist.</p> </div> </div>	
		Refer to wiring diagram in EL-272.	SEL269X
		OK or NG	
OK	▶	Ignition ON signal is OK.	
NG	▶	<p>Check the following.</p> <ul style="list-style-type: none"> ● 10A fuse [No. 10, located in fuse block (J/B)] ● Harness for open or short between multi-remote control unit and fuse 	

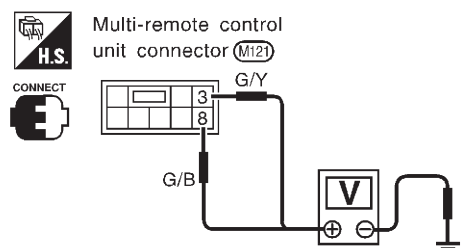
MULTI-REMOTE CONTROL SYSTEM

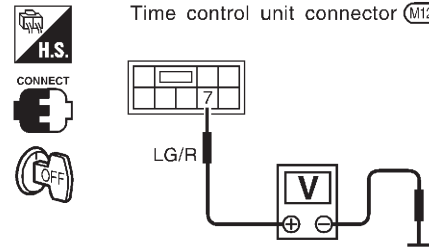
Trouble Diagnoses (Cont'd)

HAZARD REMINDER OPERATION CHECK

=NFEL0340S15


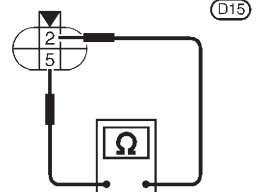
1	CHECK HAZARD WARNING LAMP	
Check if hazard warning lamp flashes with hazard switch.		
Does hazard warning lamp operate?		
Yes	▶	GO TO 2.
No	▶	Check hazard warning lamp circuit.

2	CHECK POWER SUPPLY FOR HAZARD WARNING LAMP																			
Check voltage between multi-remote control unit terminals 3 or 8 and ground.																				
<div style="display: flex; align-items: center;"> <div style="margin-right: 20px;">  <p>Multi-remote control unit connector (M121)</p> </div> <table border="1" style="border-collapse: collapse; text-align: center;"> <thead> <tr> <th colspan="2">Terminals</th> <th rowspan="2">Condition of remote controller</th> <th rowspan="2">Voltage [V]</th> </tr> <tr> <th>(+)</th> <th>(-)</th> </tr> </thead> <tbody> <tr> <td rowspan="2">3</td> <td rowspan="2">Ground</td> <td>LOCK/UNLOCK button is pushed</td> <td>Approx. 12</td> </tr> <tr> <td>Conditions other than those above</td> <td>0</td> </tr> <tr> <td rowspan="2">8</td> <td rowspan="2">Ground</td> <td>LOCK/UNLOCK button is pushed</td> <td>Approx. 12</td> </tr> <tr> <td>Conditions other than those above</td> <td>0</td> </tr> </tbody> </table> </div>			Terminals		Condition of remote controller	Voltage [V]	(+)	(-)	3	Ground	LOCK/UNLOCK button is pushed	Approx. 12	Conditions other than those above	0	8	Ground	LOCK/UNLOCK button is pushed	Approx. 12	Conditions other than those above	0
Terminals		Condition of remote controller	Voltage [V]																	
(+)	(-)																			
3	Ground	LOCK/UNLOCK button is pushed	Approx. 12																	
		Conditions other than those above	0																	
8	Ground	LOCK/UNLOCK button is pushed	Approx. 12																	
		Conditions other than those above	0																	
SEL516X																				
OK or NG																				
OK	▶	Check harness between multi-remote control unit and hazard warning lamp.																		
NG	▶	GO TO 3.																		

3	CHECK FRONT DRIVER'S DOOR UNLOCK SENSOR INPUT SIGNAL													
Check voltage between time control unit harness connector terminal 7 and ground.														
<div style="display: flex; align-items: center;"> <div style="margin-right: 20px;">  <p>Time control unit connector (M126)</p> </div> <table border="1" style="border-collapse: collapse; text-align: center;"> <thead> <tr> <th colspan="2">Terminals</th> <th rowspan="2">Condition</th> <th rowspan="2">Voltage [V]</th> </tr> <tr> <th>(+)</th> <th>(-)</th> </tr> </thead> <tbody> <tr> <td rowspan="2">7</td> <td rowspan="2">Ground</td> <td>Locked</td> <td>Approx. 5</td> </tr> <tr> <td>Unlocked</td> <td>0</td> </tr> </tbody> </table> </div>			Terminals		Condition	Voltage [V]	(+)	(-)	7	Ground	Locked	Approx. 5	Unlocked	0
Terminals		Condition	Voltage [V]											
(+)	(-)													
7	Ground	Locked	Approx. 5											
		Unlocked	0											
SEL276X														
Refer to wiring diagram in EL-272.														
OK or NG														
OK	▶	Replace multi-remote control unit.												
NG	▶	GO TO 4.												

MULTI-REMOTE CONTROL SYSTEM

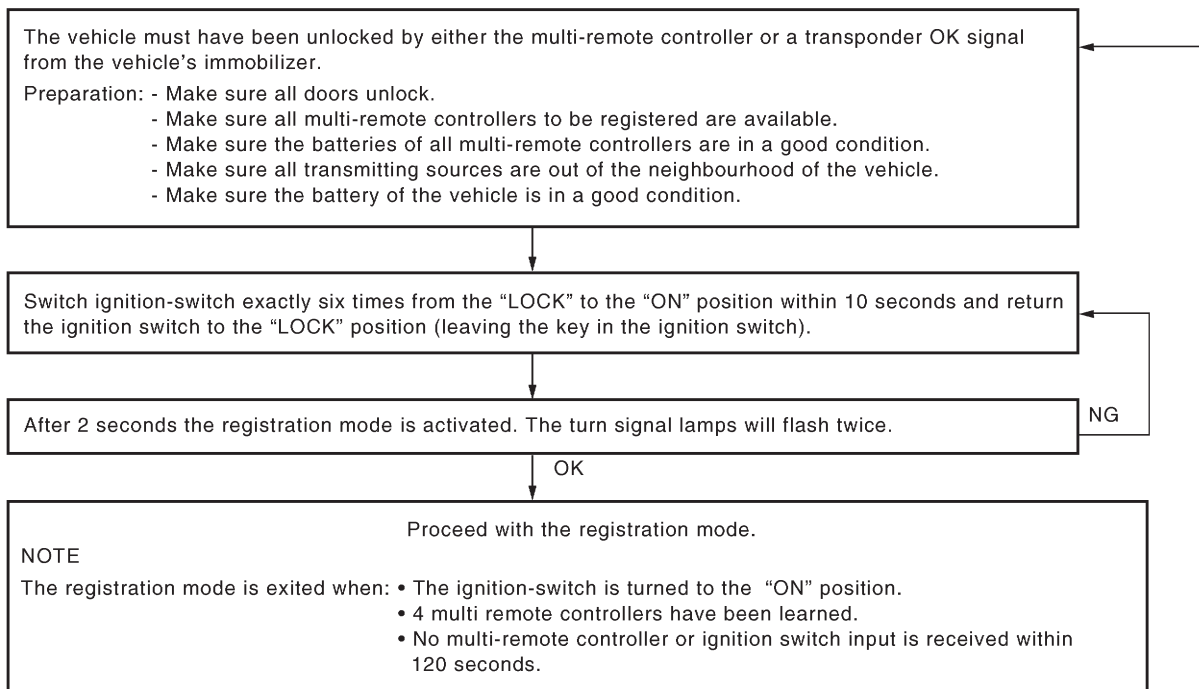
Trouble Diagnoses (Cont'd)

4	CHECK FRONT DOOR UNLOCK SENSOR	
<p>1. Disconnect front door unlock sensor harness connector. 2. Check continuity between front door unlock sensor terminals.</p> <div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="width: 30%;">  <p style="font-size: small;">Front door lock actuator (door unlock sensor) connector</p>  </div> <div style="width: 40%; padding-left: 20px;"> <p>Continuity: Condition: Locked No Condition: Unlocked Yes</p> </div> <div style="width: 25%; text-align: right; font-size: small;">SEL277X</div> </div> <p style="text-align: center; margin-top: 10px;">OK or NG</p>		
OK	▶	<p>Check the following.</p> <ul style="list-style-type: none"> ● Door unlock sensor ground circuit ● Harness for open or short between multi-remote control unit and door unlock sensor
NG	▶	<p>Replace door unlock sensor.</p>

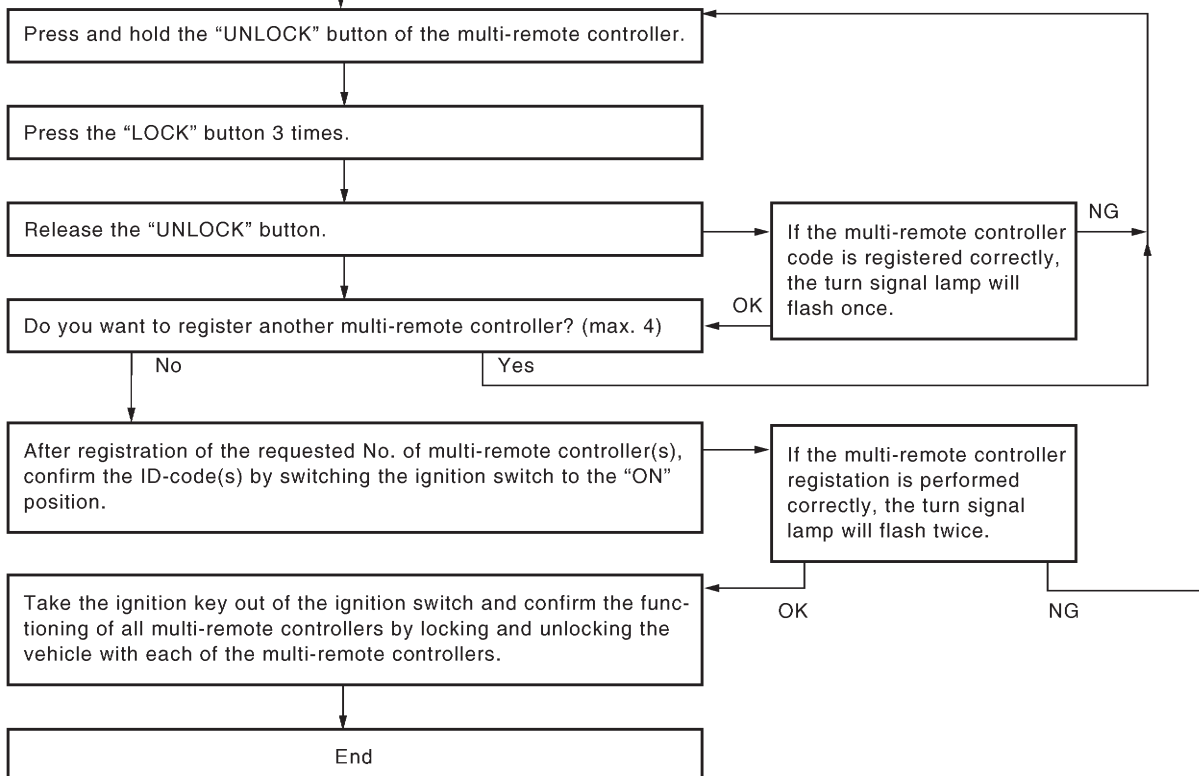
ID Code Entry Procedure

=NFEL0341

Activation of the registration mode:



Registration mode



MULTI-REMOTE CONTROL SYSTEM

ID Code Entry Procedure (Cont'd)

NOTE:

- If you need to activate more than two additional new remote controllers, repeat the procedure.
- Entry of maximum four ID codes is allowed and any attempt to enter more codes will be ignored.
- Even if the same ID code that is already in the memory is input, the enter signal will be ignored.

Remote Controller Battery Replacement

NFEL0342

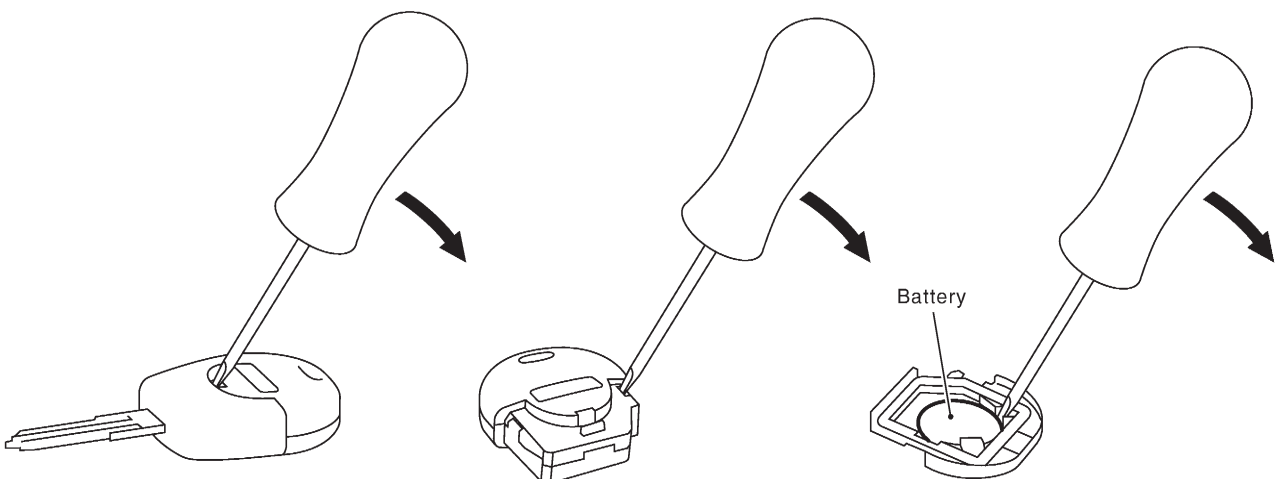
NOTE:

- 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 it dry.
- Push the remote controller button two or three times to check its operation after replacing battery.

STEP 1

STEP 2

STEP 3



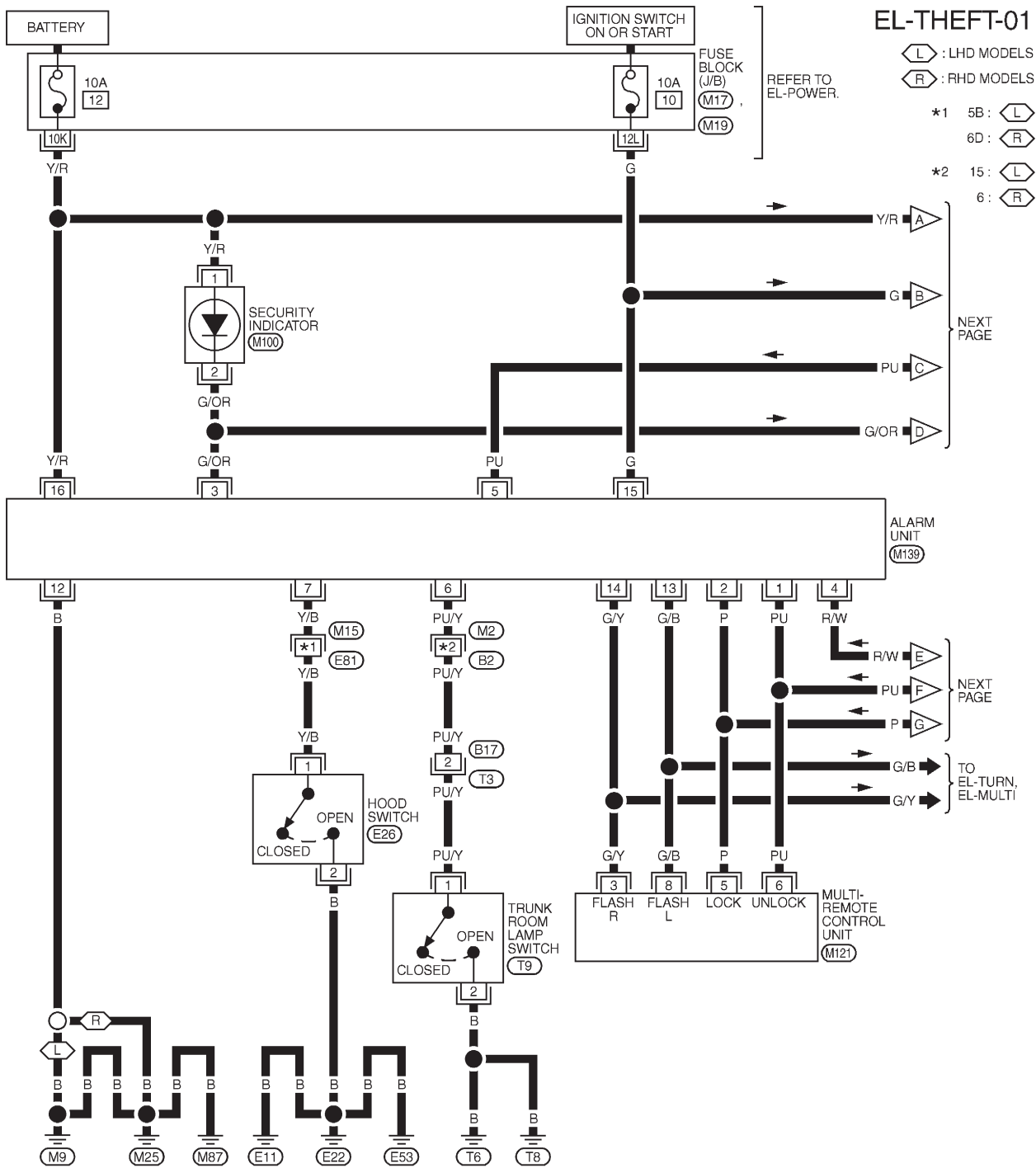
SEL241X

THEFT WARNING SYSTEM (PRE WIRE)

Wiring Diagram — THEFT —

Wiring Diagram — THEFT —

NFEL0350



EL-THEFT-01

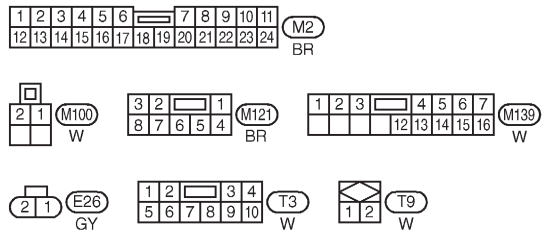
⬅ (L) : LHD MODELS
 ➡ (R) : RHD MODELS

*1 5B: (L)
 6D: (R)

*2 15: (L)
 6: (R)

REFER TO EL-POWER.

ALARM UNIT (M139)



REFER TO THE FOLLOWING.

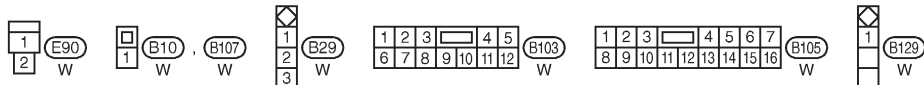
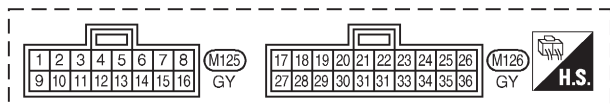
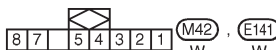
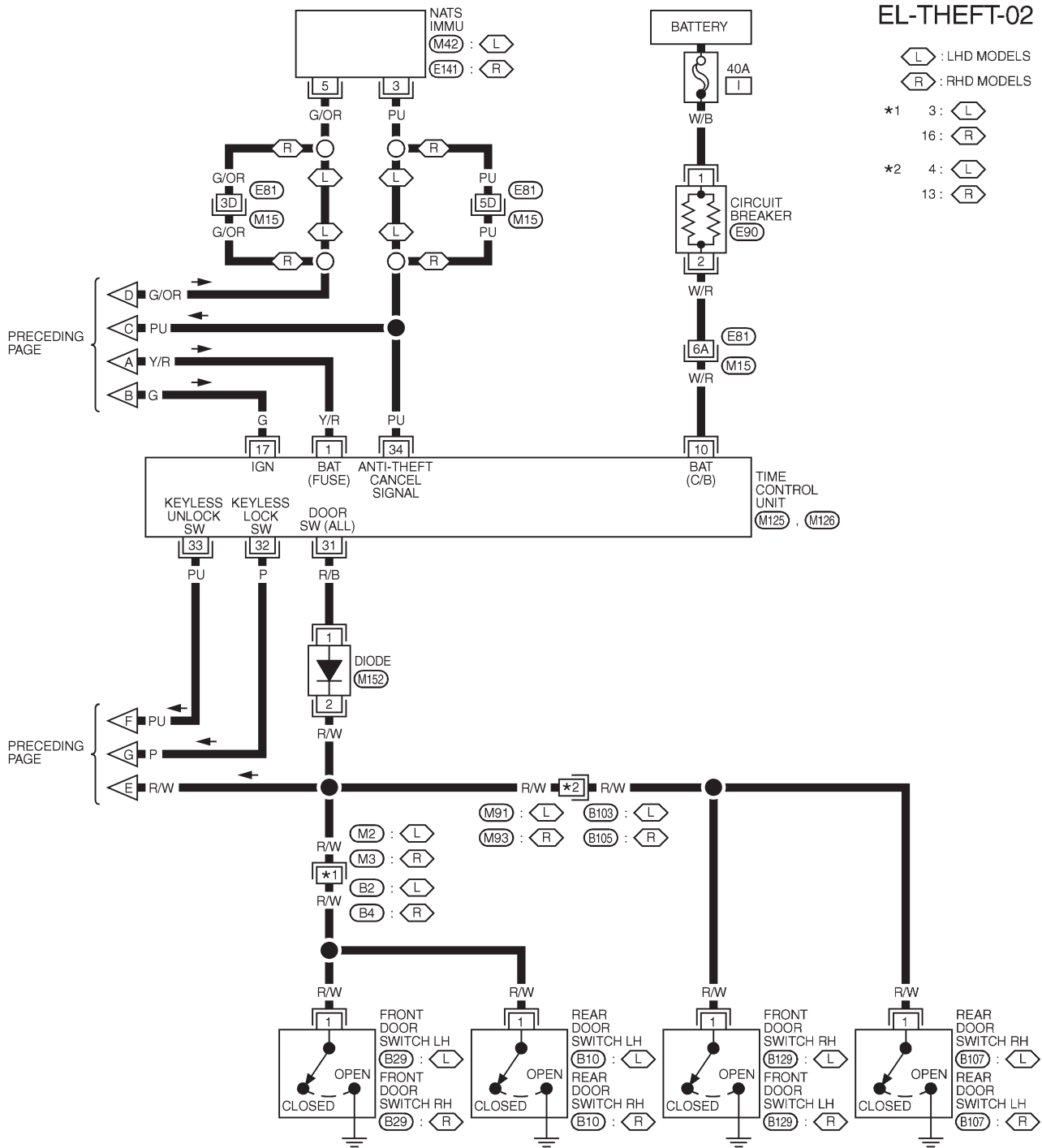
(M15) -SUPER
 MULTIPLE JUNCTION (SMJ)
 (M17), (M19)
 -FUSE BLOCK-
 JUNCTION BOX (J/B)

MEL867M

THEFT WARNING SYSTEM (PRE WIRE)

Wiring Diagram — THEFT — (Cont'd)

EL-THEFT-02



REFER TO THE FOLLOWING.

M15 - SUPER
 MULTIPLE JUNCTION (SMJ)

MEL594L

TIME CONTROL UNIT

Description

Description

NFEL0308

OUTLINE

The time control unit totally controls the following body electrical system operations.

NFEL0308S01

- Warning chime
- Rear defogger and door mirror defogger timer
- Power door lock — super lock —
- Interior lamp timer

INPUT/OUTPUT

NFEL0308S02

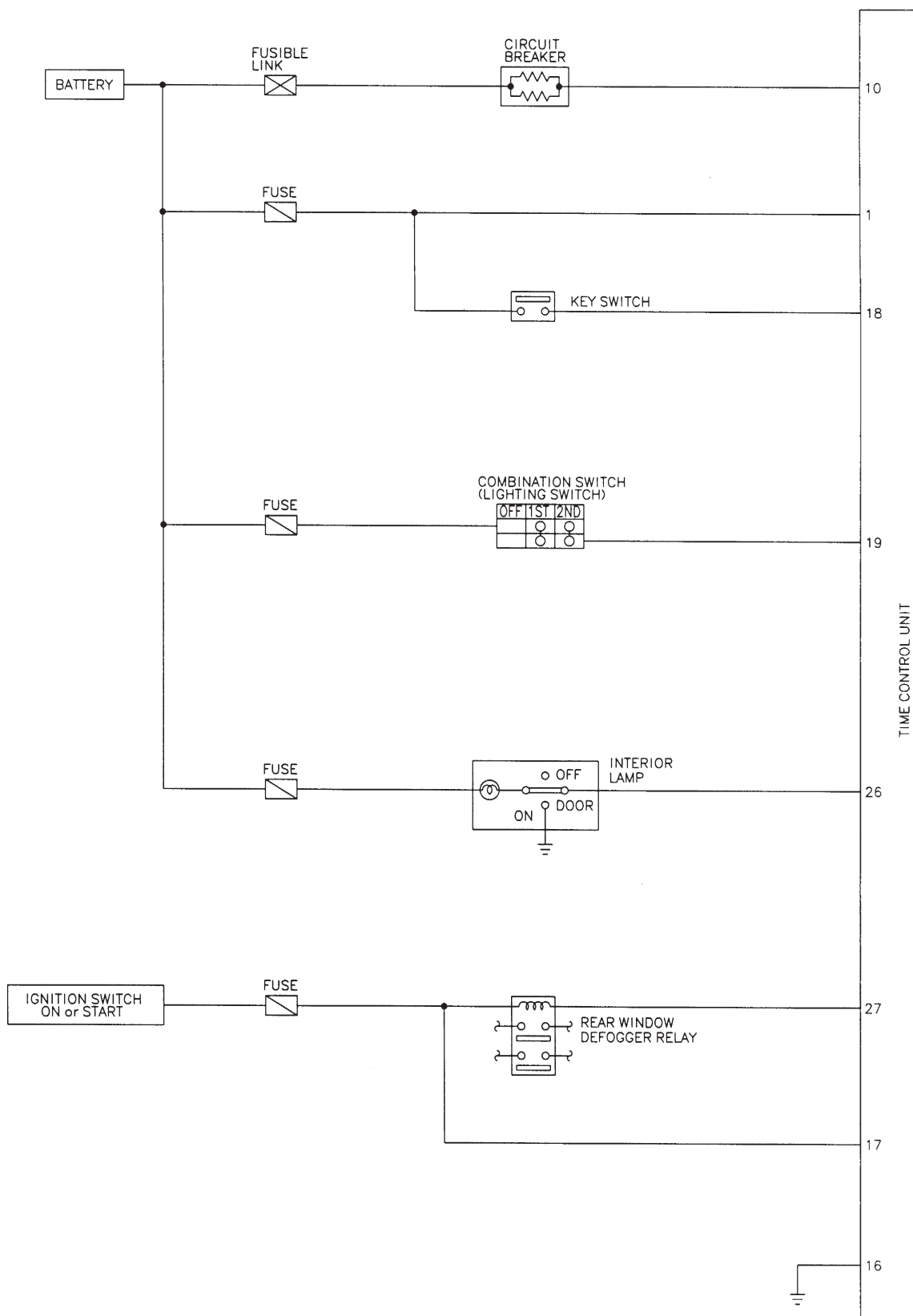
System	Input	Output
Power door lock — super lock —	Door lock and unlock switch Front door switch (Driver side) Key switch (Insert) Ignition switch (ON) Front door key cylinder switch (Driver side) Front door unlock sensor NATS release signal	Door lock actuator Super lock actuator
Warning chime	Key switch (Insert) Ignition switch (ON) Lighting switch (1st) Front door switch (Driver side) Front door unlock sensor (Driver side)	Warning chime (located in smart entrance control unit)
Rear window defogger and door mirror defogger timer	Ignition switch (ON) Rear window defogger switch	Rear window defogger relay
Interior lamp timer	Door switches Front door unlock sensor Ignition switch (ON) Key switch (Insert)	Interior lamp Key hole illumination

TIME CONTROL UNIT

Schematic

Schematic

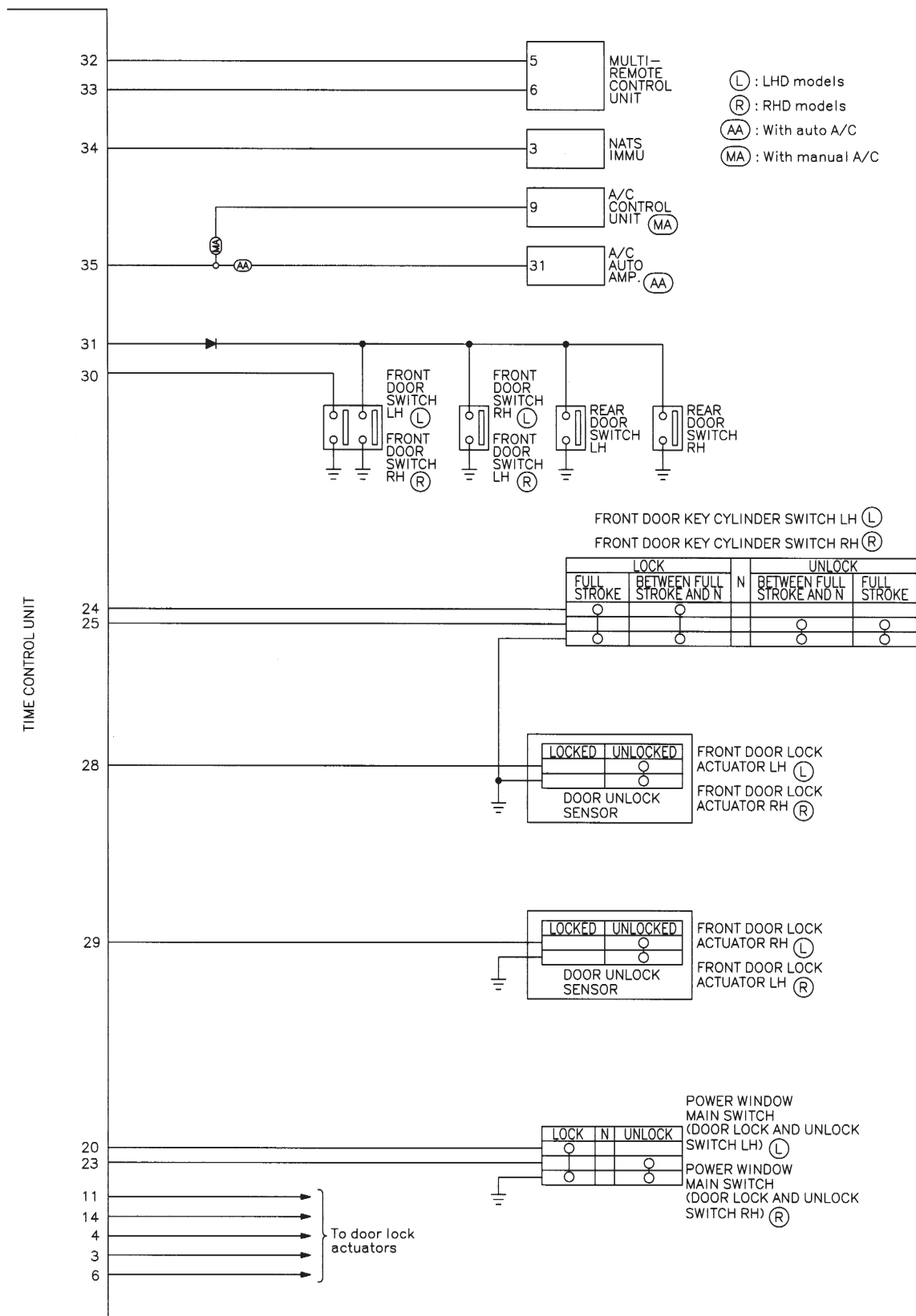
NFEL0309



MEL868M

TIME CONTROL UNIT

Schematic (Cont'd)



MEL588L

TIME CONTROL UNIT

Time Control Unit Inspection Table

Time Control Unit Inspection Table

NFEL0310

Terminal No.	Wire color	Connections	Operated condition	Voltage (Approximate values)	
1	Y/R	Power source (FUSE)	—	12V	
3	L/R	Door lock actuator (unlock)	Door lock/unlock switch	Set	0V
				Release	5V
4	G/Y	Door lock actuator from other door (Unlock)	Door lock/unlock switch	Free	12V
				Locked	0V
6	L	Door lock actuator (lock)	Door lock/unlock switch	Set	12V
				Release	0V
10	W/R	Power source (C/B)	—	12V	
11	W/B	Door lock actuator from driver's door (unlock)	Door lock/unlock switch	Unlock	12V
				Locked	0V
14	PU	Door lock actuator (lock)	Door lock/unlock switch	Free	0V
				Locked	12V
16	B	Ground	—	—	
17	G	Ignition switch (ON)	Ignition key is in "ON" position	12V	
18	B/R	Ignition key switch (insert)	Key inserted → Key removed from IGN key cylinder	12V → 0V	
19	R/W	Tail lamp relay and lighting switch	1st, 2nd position: ON → OFF	12V → 0V	
20	GY	Central switch (Lock)	Door lock/unlock switch	Unlock	5V
				Free	5V
				Locked	0V
23	BR/Y	Central switch (Unlock)	Door lock/unlock switch	Unlock	0V
				Free	5V
				Locked	5V
26	R/Y	Interior lamp	When interior lamp is operated with driver's door is unlocked. (Lamp switch in "Door" position)	Unlock	0V
				Locked	12V
28	LG/R	Driver door unlock sensor	Driver door: Locked → Unlock	12V → 0V	
29	PU	Passenger door unlock sensor	Passenger door: Locked → Unlocked	5V → 0V	
30	SB	Door switch (Driver's door)	Driver's door is open → Closed	0V → 12V	
31	R/W	Door switch (Other's door)	Other's door are open → Closed	0V → 12V	
32	P	Key less switch (Lock)	Unlocked → Locked	5V → 0V	
33	PU	Key less switch (Unlock)	Locked → Unlocked	5V → 0V	
35	G/W	Rear defogger switch	ON → OFF	0V → 5V	

NATS (NISSAN ANTI-THEFT SYSTEM)

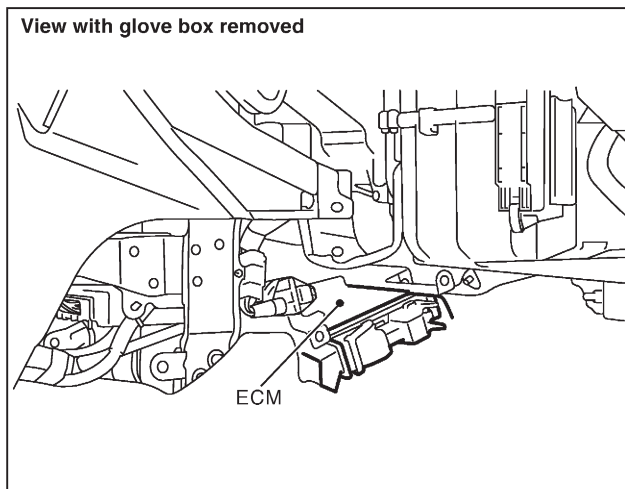
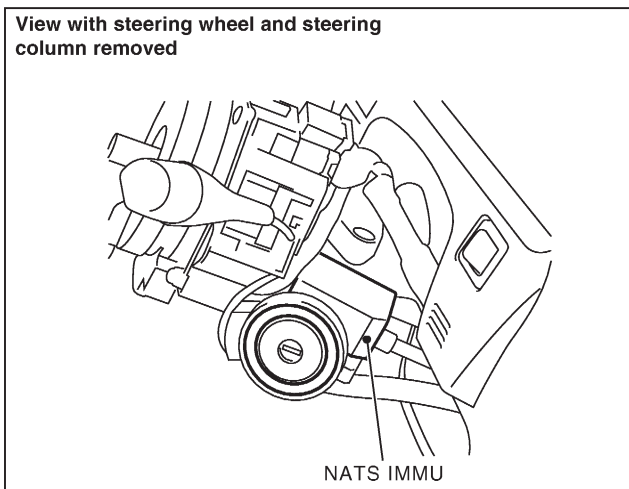
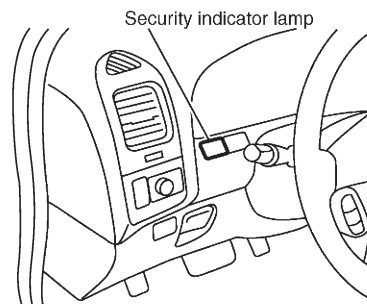
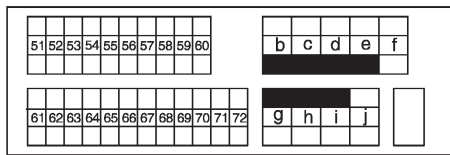
Component Parts and Harness Connector Location

Component Parts and Harness Connector Location

NFEL0172

Fuse block (J/B)

1	2	3	4	5	6	7	8	9	10	11
12	13	14	15	16			17	18	19	20
21	22	23	24	25	26	27	28	29	30	31



SEL656WA

NOTE:

If customer reports a “No Start” condition, request ALL KEYS to be brought to a NISSAN dealer in case of a NATS malfunction.

NATS (NISSAN ANTI-THEFT SYSTEM)

System Description

System Description

=NFEL0173

NATS (Nissan Anti-theft System) has the following immobilizer functions:

- Since only NATS ignition keys, whose ID nos. have been registered into the ECM and IMMU of NATS, allow the engine to run, operation of a stolen vehicle without a NATS registered key is prevented by NATS. That is to say, NATS will immobilize the engine if someone tries to start it without the registered key of NATS.
- This version of NATS has dongle unit to improve its anti-theft performance (RHD models). Dongle unit has its own ID which is registered into NATS IMMU. So if dongle unit is replaced, initialization must be carried out.
- When malfunction of dongle unit is detected:
 - The security indicator lamp illuminates for about 15 minutes after ignition switch is turned to ON.
 - When dongle unit has a malfunction, and the indicator lamp is illuminated, engine can not be started. However engine can be started only one time when security indicator lamp turns off in about 15 minutes after ignition switch is turned to ON.
- All of the originally supplied ignition key IDs have been NATS registered. If requested by the vehicle owner, a maximum of five key IDs can be registered into the NATS components.
- The security indicator blinks when the ignition switch is in “OFF” or “ACC” position. Therefore, NATS warns outsiders that the vehicle is equipped with the anti-theft system.
- When NATS detects trouble, the security indicator and/or the malfunction indicator (MIL) blinks/lights up as follows.

Condition IGN ON and	With dongle unit		Without dongle unit	
	MIL	Security indicator	MIL	Security indicator
NATS malfunction (except dongle unit) is detected	—	1. 6 times blinking 2. Staying ON after ignition switch is turned ON	—	Staying ON
Only malfunction of dongle unit is detected.	—	Staying ON for about 15 minutes after ignition switch is turned ON.	—	—
Malfunction of NATS and engine related parts are detected	Staying ON	1. 6 times blinking 2. Staying On after ignition switch is turned ON	Staying ON	Staying ON
Only engine related part malfunction is detected	Staying ON	—	Staying ON	—
Just after initialization of NATS	—	6 times blinking	—	—

- NATS trouble diagnoses, system initialization and additional registration of other NATS ignition key IDs must be carried out using CONSULT-II hardware and CONSULT-II NATS software. Regarding the procedures of NATS initialization and NATS ignition key ID registration, refer to CONSULT-II operation manual, NATS.
- **When servicing a malfunction of the NATS (indicated by lighting up of Security Indicator Lamp) or registering another NATS ignition key ID no., it may be necessary to re-register original key identification. Therefore, be sure to receive ALL KEYS from vehicle owner.**

NATS (NISSAN ANTI-THEFT SYSTEM)

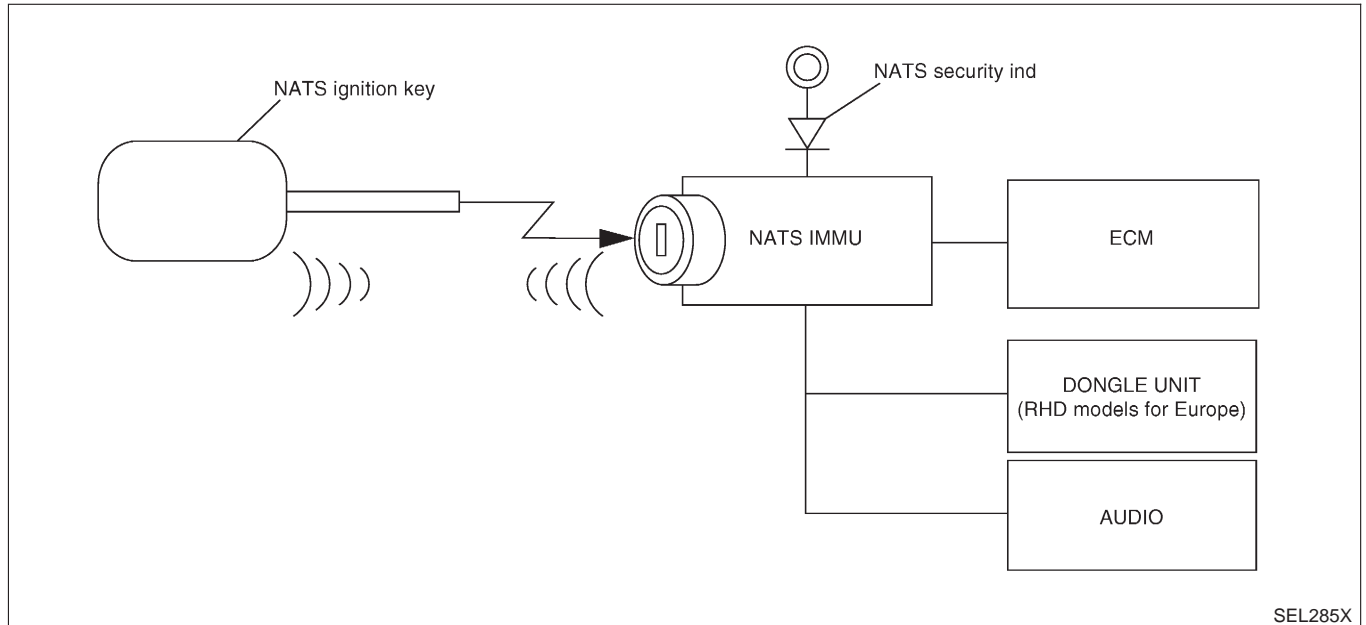
System Composition

System Composition

=NFEL0174

The immobilizer function of the NATS consists of the following:

- NATS ignition key
- NATS immobilizer control unit (NATS IMMU) located in the ignition key cylinder
- Engine control module (ECM)
- Dongle unit (RHD models)
- Security indicator



NATS (NISSAN ANTI-THEFT SYSTEM)

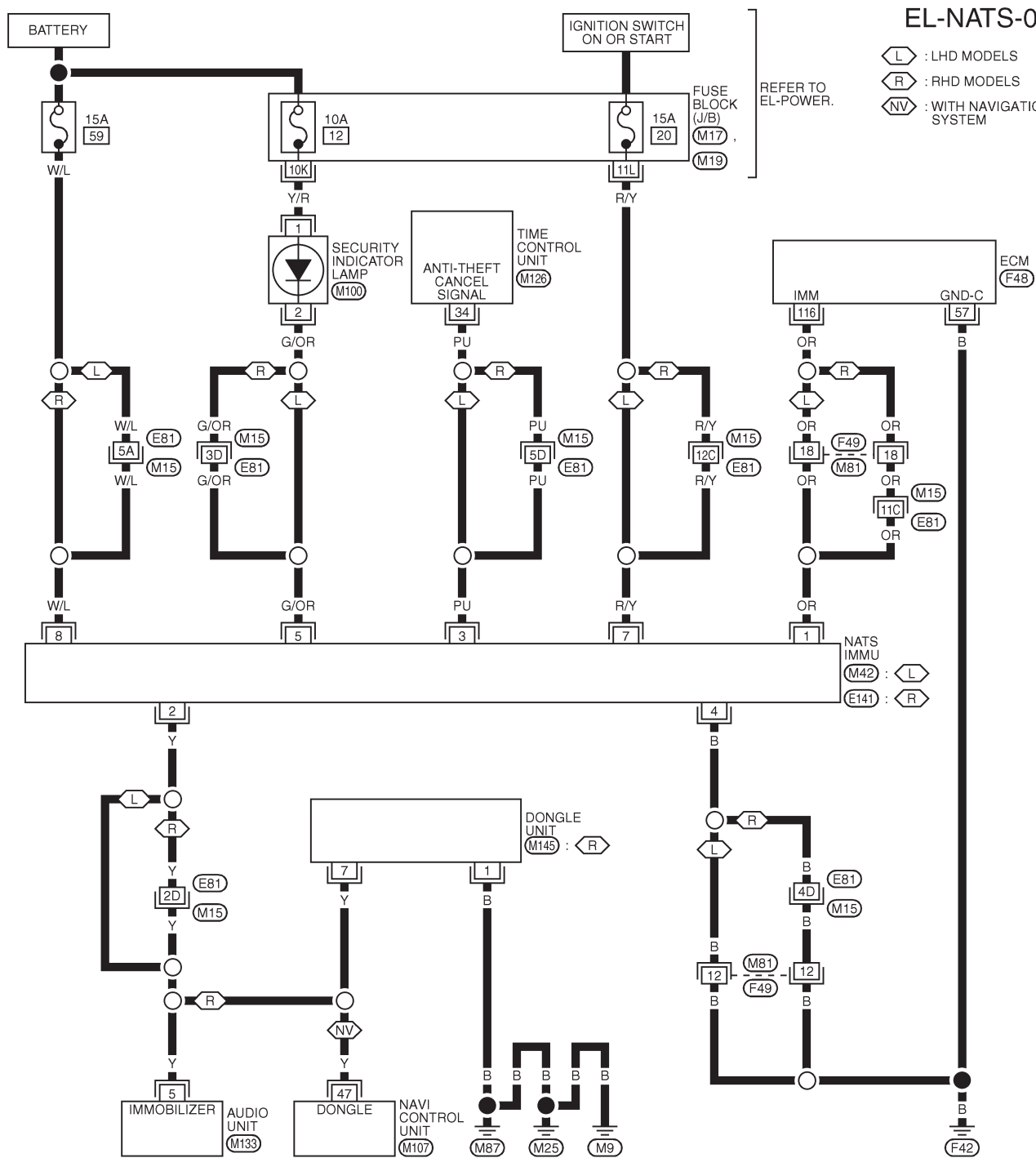
Wiring Diagram — NATS —

Wiring Diagram — NATS —

NFEL0175

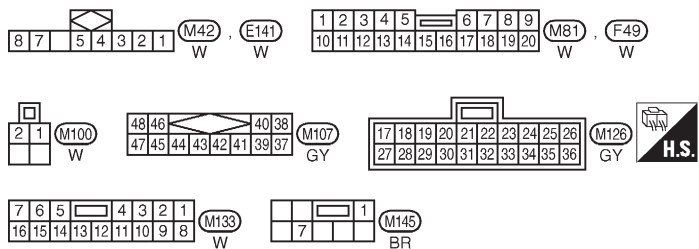
EL-NATS-01

- L : LHD MODELS
- R : RHD MODELS
- NV : WITH NAVIGATION SYSTEM



REFER TO EL-POWER.

NATS IMMU
M42 : L
E141 : R

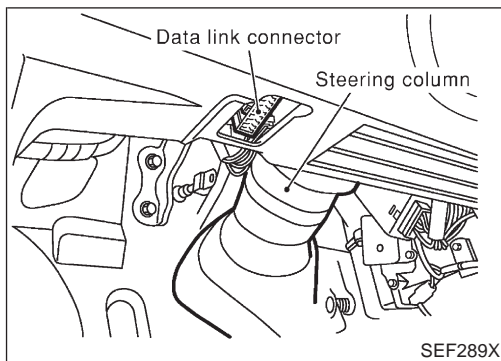


REFER TO THE FOLLOWING.
M15 -SUPER
 MULTIPLE JUNCTION (SMJ)
M17 , M19 -FUSE BLOCK-JUNCTION BOX (J/B)
F48 -ELECTRICAL UNITS

MEL562L

NATS (NISSAN ANTI-THEFT SYSTEM)

CONSULT-II

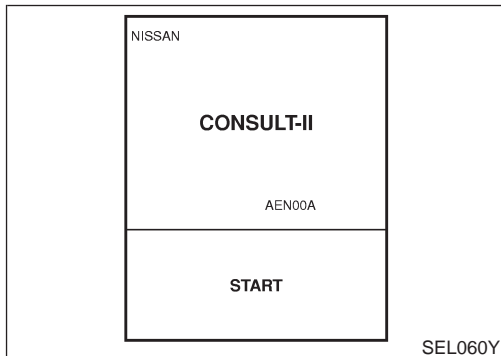


CONSULT-II CONSULT-II INSPECTION PROCEDURE

NFEL0176

NFEL0176S01

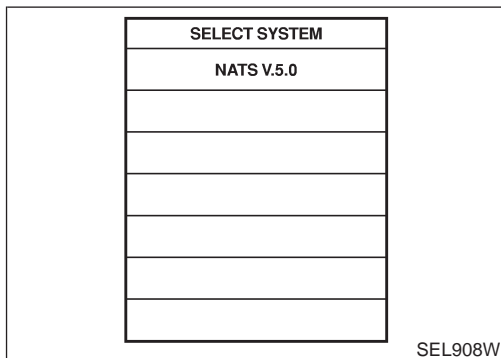
1. Turn ignition switch OFF.
2. Connect CONSULT-II to Data link connector.



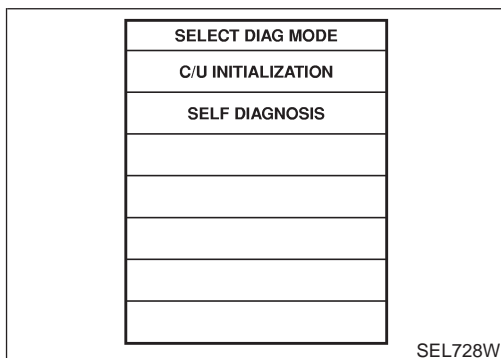
3. Insert NATS program card into CONSULT-II.

◆ : Program card
NATS (AEN00A)

4. Turn ignition switch ON.
5. Touch "START".



6. Select "NATS V.5.0".



7. Perform each diagnostic test mode according to each service procedure.

For further information, see the CONSULT-II Operation Manual, NATS.

CONSULT-II DIAGNOSTIC TEST MODE FUNCTION

NFEL0176S02

CONSULT-II DIAGNOSTIC TEST MODE	Description
C/U INITIALIZATION	When replacing any of the following components, C/U initialization and re-registration of all NATS ignition keys are necessary. [NATS ignition key/IMMU/ECM/Dongle unit]
SELF-DIAG RESULTS	Detected items (screen terms) are as shown in the chart EL-292.

NATS (NISSAN ANTI-THEFT SYSTEM)

CONSULT-II (Cont'd)

NOTE:

- When any initialization is performed, all ID previously registered will be erased and all NATS ignition keys must be registered again.
- The engine cannot be started with an unregistered key. In this case, the system may show "DIFFERENCE OF KEY" or "LOCK MODE" as a self-diagnostic result on the CONSULT-II screen.
- When initialization is performed for RHD models, security indicator will flash six times to demonstrate recognition of dongle ID.
- In rare case, "CHAIN OF ECM-IMMU" might be stored as a self-diagnostic result during key registration procedure, even if the system is not malfunctioning.

HOW TO READ SELF-DIAGNOSTIC RESULTS

NFEL0176S03

Result display screen (When no malfunction is detected)

SELF DIAGNOSIS	
DTC RESULTS	TIME
NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED.	
	PRINT

Result display screen (When malfunction is detected)

SELF DIAGNOSIS	
DTC RESULTS	TIME
CHAIN OF ECM-IMMU	0
DIFFERENCE OF KEY	1
Scroll down	
ERASE	PRINT

Detected items →

If "Scroll Down" is indicated, there are four or more malfunctions.

When touched, the results stored in the engine control module (ECM) are erased.

← Time data
This indicates how many times the vehicle was driven after the last detection of a malfunction. If the malfunction is detected currently, the time data will be "0".

← When touched, the results are printed out.

SEL308W

NATS SELF-DIAGNOSTIC RESULTS ITEM CHART

NFEL0176S04

Detected items (NATS program card screen terms)	P No. Code (Self-diagnostic result of "ENGINE")	Malfunction is detected when	Reference page
ECM INT CIRC-IMMU	NATS MAL-FUNCTION P1613	The malfunction of ECM internal circuit of IMMU communication line is detected.	EL-297
CHAIN OF ECM-IMMU	NATS MAL-FUNCTION P1612	Communication impossible between ECM and IMMU (In rare case, "CHAIN OF ECM-IMMU" might be stored during key registration procedure, even if the system is not malfunctioning.)	EL-297
DIFFERENCE OF KEY	NATS MAL-FUNCTION P1615	IMMU can receive the key ID signal but the result of ID verification between key ID and IMMU is NG.	EL-302
CHAIN OF IMMU-KEY	NATS MAL-FUNCTION P1614	<ul style="list-style-type: none"> • IMMU cannot receive the key ID signal. • Dongle unit is malfunctioning. (If dongle unit is equipped.) 	EL-303

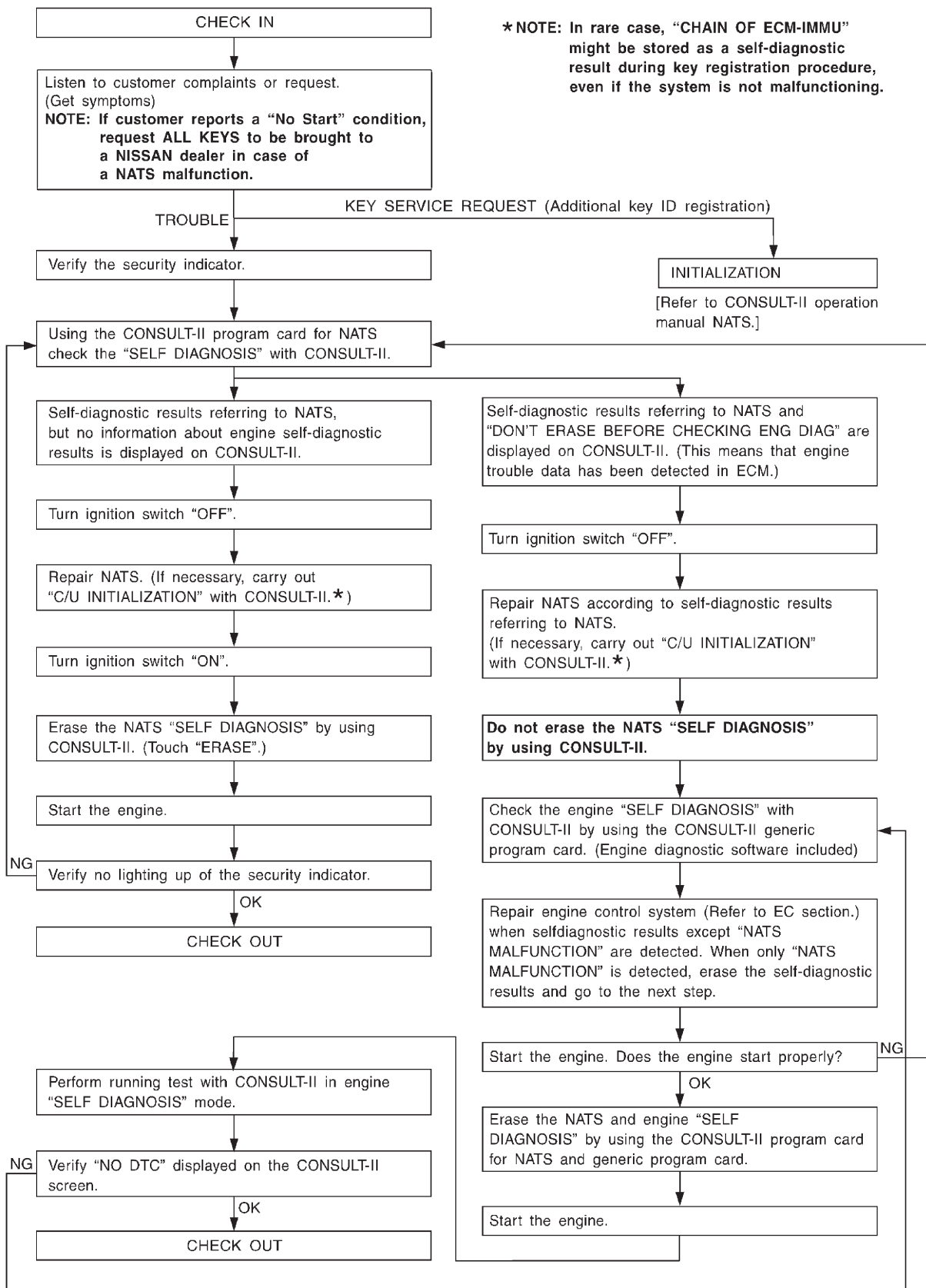
NATS (NISSAN ANTI-THEFT SYSTEM)

CONSULT-II (Cont'd)

Detected items (NATS program card screen terms)	P No. Code (Self-diagnostic result of "ENGINE")	Malfunction is detected when	Reference page
ID DISCORD, IMM-ECM	NATS MAL-FUNCTION P1611	The result of ID verification between IMMU and ECM is NG. System initialization is required.	EL-305
LOCK MODE	NATS MAL-FUNCTION P1610	When the starting operation is carried out five or more times consecutively under the following conditions, NATS will shift the mode to one which prevents the engine from being started. <ul style="list-style-type: none">● Unregistered ignition key is used.● IMMU or ECM's malfunctioning.	EL-308
DON'T ERASE BEFORE CHECKING ENG DIAG	—	All engine trouble codes except NATS trouble code has been detected in ECM.	EL-294

NATS (NISSAN ANTI-THEFT SYSTEM)

Trouble Diagnoses WORK FLOW



NATS (NISSAN ANTI-THEFT SYSTEM)

Trouble Diagnoses (Cont'd)

SYMPTOM MATRIX CHART 1 (Self-diagnosis related item)

NFEL0177S02

SYMPTOM	Displayed "SELF-DIAG RESULTS" on CONSULT-II screen.	DIAGNOSTIC PROCEDURE (Reference page)	SYSTEM (Malfunctioning part or mode)	REFERENCE PART NO. OF ILLUSTRATION IN DIAGNOSTIC SYSTEM DIAGRAM
<ul style="list-style-type: none"> ● Security indicator lighting up* ● Engine hard to start 	ECM INT CIRC-IMMU	PROCEDURE 1 (EL-297)	ECM	B
	CHAIN OF ECM-IMMU	PROCEDURE 2 (EL-297)	In rare case, "CHAIN OF ECM-IMMU" might be stored during key registration procedure, even if the system is not malfunctioning.	—
			Open circuit in battery voltage line of IMMU circuit	C1
			Open circuit in ignition line of IMMU circuit	C2
			Open circuit in ground line of IMMU circuit	C3
			Open circuit in communication line between IMMU and ECM	C4
			Short circuit between IMMU and ECM communication line and battery voltage line	C4
			Short circuit between IMMU and ECM communication line and ground line	C4
			ECM	B
			IMMU	A
			DIFFERENCE OF KEY	PROCEDURE 3 (EL-302)
			IMMU	A
	CHAIN OF IMMU-KEY	PROCEDURE 4 (EL-303)	Malfunction of key ID chip	E
			IMMU	A
			Open circuit in ground line of dongle circuit	C6
			Open or short circuit in communication line between IMMU and dongle unit	C5
			Dongle unit	G
	ID DISCORD, IMM-ECM	PROCEDURE 5 (EL-305)	System initialization has not yet been completed.	F
			ECM	B
	LOCK MODE	PROCEDURE 7 (EL-308)	LOCK MODE	D

NATS (NISSAN ANTI-THEFT SYSTEM)

Trouble Diagnoses (Cont'd)

SYMPTOM	Displayed "SELF-DIAG RESULTS" on CONSULT-II screen.	DIAGNOSTIC PROCEDURE (Reference page)	SYSTEM (Malfunctioning part or mode)	REFERENCE PART NO. OF ILLUSTRATION IN DIAGNOSTIC SYSTEM DIAGRAM
<ul style="list-style-type: none"> MIL staying ON Security indicator lighting up* 	DON'T ERASE BEFORE CHECKING ENG DIAG	WORK FLOW (EL-294)	Engine trouble data and NATS trouble data have been detected in ECM	—

*: When NATS detects trouble, the security indicator lights up while ignition key is in the "ON" position.

When the vehicle is equipped with a dongle unit (for Europe), the security indicator blinks 6 times just after the ignition switch is turned to ON. Then the security indicator lights up while ignition key is in the "ON" position.

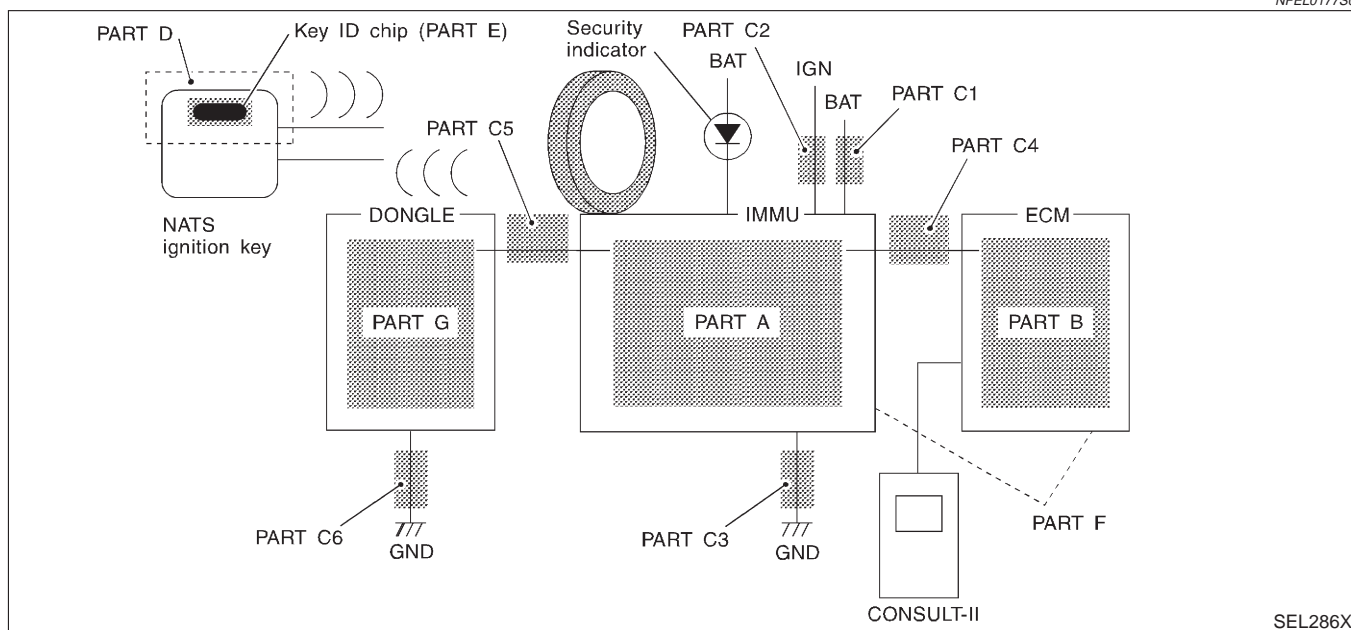
SYMPTOM MATRIX CHART 2 (Non self-diagnosis related item)

NFEL0177S03

SYMPTOM	DIAGNOSTIC PROCEDURE (Reference page)	SYSTEM (Malfunctioning part or mode)	REFERENCE PART NO. OF ILLUSTRATION IN DIAGNOSTIC SYSTEM DIAGRAM
Security ind. does not light up.	PROCEDURE 6 (EL-306)	Security ind.	—
		Open circuit between Fuse and IMMU	—
		Continuation of initialization mode	—
		IMMU	A
Security ind. does not blink just after initialization even if the vehicle is equipped with dongle unit.	PROCEDURE 8 (EL-310)	NATS might be initialized without connecting dongle unit properly.	—
		Open circuit in ground line of dongle circuit	C6
Security ind. does not blink just after ignition switch is turned to ON when some malfunction related to NATS is detected even if the vehicle is equipped with dongle unit.		Open or short circuit in communication line between IMMU and dongle unit	C5
		Dongle unit	G

DIAGNOSTIC SYSTEM DIAGRAM

NFEL0177S04



NATS (NISSAN ANTI-THEFT SYSTEM)

Trouble Diagnoses (Cont'd)

SELF DIAGNOSIS	
DTC RESULTS	TIME
ECM INT CIRC-IMMU	0

SEL314W

DIAGNOSTIC PROCEDURE 1

NFEL0177S06

Self-diagnostic results:

“ECM INT CIRC-IMMU” displayed on CONSULT-II screen

1. Confirm SELF-DIAGNOSTIC RESULTS “ECM INT CIRC-IMMU” displayed on CONSULT-II screen. Ref. part No. B.
2. Replace ECM.
3. Perform initialization with CONSULT-II.
For initialization, refer to “CONSULT-II operation manual NATS”.

DIAGNOSTIC PROCEDURE 2

NFEL0177S07

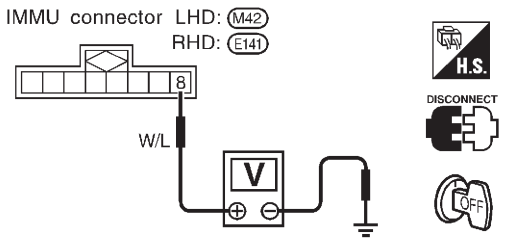
Self-diagnostic results:

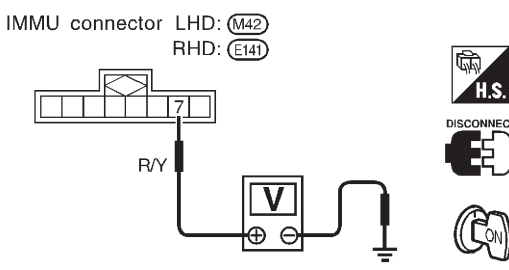
“CHAIN OF ECM-IMMU” displayed on CONSULT-II screen

1	CONFIRM SELF-DIAGNOSTIC RESULTS										
<p>Confirm SELF-DIAGNOSTIC RESULTS “CHAIN OF ECM-IMMU” displayed on CONSULT-II screen.</p> <p>NOTE: In rare case, “CHAIN OF ECM-IMMU” might be stored during key registration procedure, even if the system is not malfunctioning.</p>											
<table border="1" style="margin: auto; border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="text-align: center;">SELF DIAGNOSIS</th> </tr> <tr> <th style="text-align: center;">DTC RESULTS</th> <th style="text-align: center;">TIME</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">CHAIN OF ECM-IMMU</td> <td style="text-align: center;">0</td> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> </tbody> </table>		SELF DIAGNOSIS		DTC RESULTS	TIME	CHAIN OF ECM-IMMU	0				
SELF DIAGNOSIS											
DTC RESULTS	TIME										
CHAIN OF ECM-IMMU	0										
SEL292W											
Is CONSULT-II screen displayed as above?											
Yes	▶ GO TO 2.										
No	▶ GO TO SYMPTOM MATRIX CHART 1.										

NATS (NISSAN ANTI-THEFT SYSTEM)

Trouble Diagnoses (Cont'd)

2	CHECK POWER SUPPLY CIRCUIT FOR IMMU	
<p>1. Disconnect IMMU connector. 2. Check voltage between terminal 8 of IMMU and ground with CONSULT-II or tester.</p>		
 <div style="display: flex; justify-content: space-between; align-items: center; margin-top: 10px;"> <div style="text-align: center;"> <p>IMMU connector LHD: (M42) RHD: (E141)</p> </div> <div style="text-align: center;"> <p>Battery voltage should exist.</p> </div> </div>		
SEL302WC		
OK or NG		
OK	▶	GO TO 3.
NG	▶	<p>Check the following</p> <ul style="list-style-type: none"> ● 15A fuse (No. 59, located in the fuse and fusible link box) ● Harness for open or short between fuse and IMMU connector <p>Ref. Part No. C1</p>

3	CHECK IGN SW. ON SIGNAL	
<p>1. Turn ignition switch ON. 2. Check voltage between terminal 7 of IMMU and ground with CONSULT-II or tester.</p>		
 <div style="display: flex; justify-content: space-between; align-items: center; margin-top: 10px;"> <div style="text-align: center;"> <p>IMMU connector LHD: (M42) RHD: (E141)</p> </div> <div style="text-align: center;"> <p>Battery voltage should exist.</p> </div> </div>		
SEL303WD		
OK or NG		
OK	▶	GO TO 4.
NG	▶	<p>Check the following</p> <ul style="list-style-type: none"> ● 15A fuse [No. 20, located in the fuse block (J/B)] ● Harness for open or short between fuse and IMMU connector <p>Ref. part No. C2</p>

NATS (NISSAN ANTI-THEFT SYSTEM)

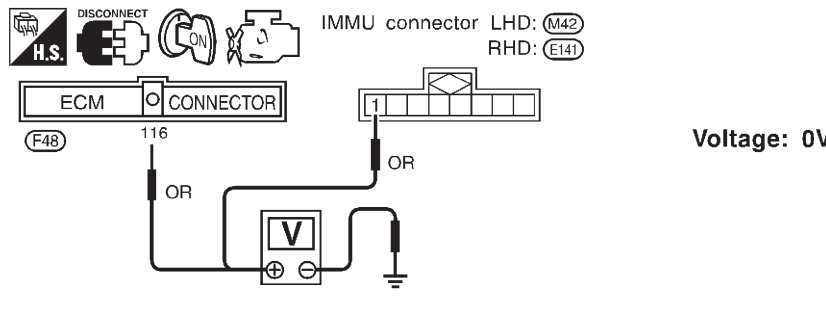
Trouble Diagnoses (Cont'd)

4	CHECK GROUND CIRCUIT FOR IMMU		
<p>1. Turn ignition OFF. 2. Check harness continuity between IMMU terminal 4 and ground.</p>			
SEL304WC			
OK or NG			
OK	▶	GO TO 5.	
NG	▶	Repair harness. Ref. part No. C3	

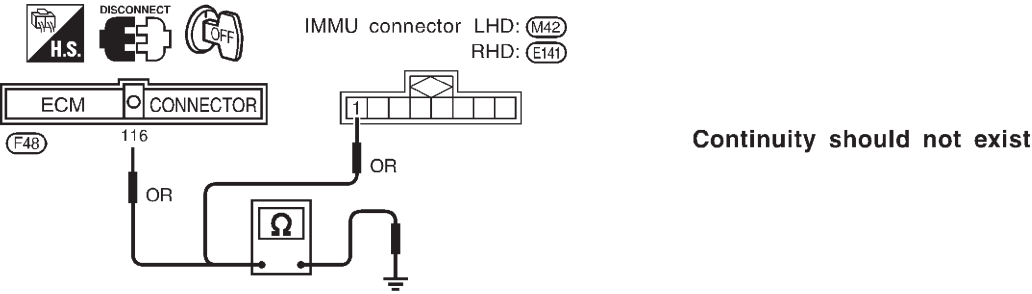
5	CHECK COMMUNICATION LINE OPEN CIRCUIT		
<p>1. Disconnect ECM connector. 2. Check harness continuity between ECM terminal 116 and IMMU terminal 1.</p>			
SEL305WC			
OK or NG			
OK	▶	GO TO 6.	
NG	▶	Repair harness or connector. Ref. part No. C4	

NATS (NISSAN ANTI-THEFT SYSTEM)

Trouble Diagnoses (Cont'd)

6	CHECK COMMUNICATION LINE BATTERY SHORT CIRCUIT
<p>1. Turn ignition ON. 2. Check voltage between ECM terminal 116 or IMMU terminal 1 and ground.</p>	
	
<p>OK or NG</p>	
OK	▶ GO TO 7.
NG	▶ Communication line is short-circuited with battery voltage line or ignition switch ON line. Repair harness or connectors. Ref. part No. C4

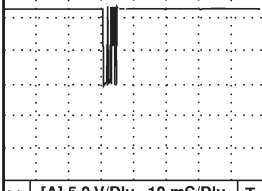
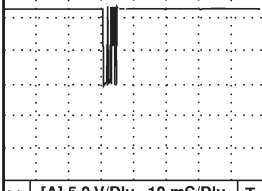
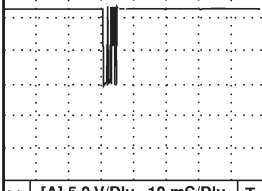
SEL306WC

7	CHECK COMMUNICATION LINE GROUND SHORT CIRCUIT
<p>1. Turn ignition switch OFF. 2. Check continuity between ECM terminal 116 or IMMU terminal 1 and ground.</p>	
	
<p>OK or NG</p>	
OK	▶ GO TO 8.
NG	▶ Communication line is short-circuited with ground line. Repair harness or connectors. Ref. part No. C4

SEL307WC

NATS (NISSAN ANTI-THEFT SYSTEM)

Trouble Diagnoses (Cont'd)

8	SIGNAL FROM ECM TO IMMU CHECK									
<p>1. Check the signal between ECM terminal 116 and ground with CONSULT-II or oscilloscope when ignition switch is turned "ON".</p> <p>2. Make sure signals which are shown in the figure below can be detected during 750 msec. just after ignition switch is turned "ON".</p>										
<table border="1" style="margin: auto; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">Triggering Menu</th> <th style="width: 50%;">Stop Triggering</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Set</td> <td style="text-align: center;">Auto Trigger</td> </tr> <tr> <td colspan="2" style="text-align: center;">  </td> </tr> <tr> <td colspan="2" style="text-align: center;"> <small>>> [A] 5.0 V/Div 10 ms/Div T</small> </td> </tr> </tbody> </table>			Triggering Menu	Stop Triggering	Set	Auto Trigger			<small>>> [A] 5.0 V/Div 10 ms/Div T</small>	
Triggering Menu	Stop Triggering									
Set	Auto Trigger									
										
<small>>> [A] 5.0 V/Div 10 ms/Div T</small>										
SEL730W										
OK or NG										
OK	▶	IMMU is malfunctioning. Replace IMMU. Ref. part No. A Perform initialization with CONSULT-II. For the operation of initialization, refer to "CONSULT-II Operation Manual NATS".								
NG	▶	ECM is malfunctioning. Replace ECM. Ref. part No. B Perform initialization with CONSULT-II. For the operation of initialization, refer to "CONSULT-II Operation Manual NATS".								

NATS (NISSAN ANTI-THEFT SYSTEM)

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 3

=NFEL0177S08

Self-diagnostic results:

“DIFFERENCE OF KEY” displayed on CONSULT-II screen

1	CONFIRM SELF-DIAGNOSTIC RESULTS											
<p>Confirm SELF-DIAGNOSTIC RESULTS “DIFFERENCE OF KEY” displayed on CONSULT-II screen.</p> <div style="text-align: center; margin: 10px 0;"> <table border="1" style="border-collapse: collapse;"> <thead> <tr> <th colspan="2">SELF DIAGNOSIS</th> </tr> <tr> <th>DTC RESULTS</th> <th>TIME</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">DIFFERENCE OF KEY</td> <td style="text-align: center;">0</td> </tr> <tr> <td style="height: 20px;"> </td> <td> </td> </tr> <tr> <td style="height: 20px;"> </td> <td> </td> </tr> </tbody> </table> </div> <p style="text-align: right; margin-right: 20px;">SEL293W</p> <p style="text-align: center; margin-top: 10px;">Is CONSULT-II screen displayed as above?</p>			SELF DIAGNOSIS		DTC RESULTS	TIME	DIFFERENCE OF KEY	0				
SELF DIAGNOSIS												
DTC RESULTS	TIME											
DIFFERENCE OF KEY	0											
Yes	▶	GO TO 2.										
No	▶	GO TO SYMPTOM MATRIX CHART 1.										

2	PERFORM INITIALIZATION WITH CONSULT-II				
<p>Perform initialization with CONSULT-II. Re-register all NATS ignition key IDs. For initialization and registration of NATS ignition key IDs, refer to “CONSULT-II operation manual NATS”.</p> <div style="text-align: center; margin: 10px 0;"> <table border="1" style="border-collapse: collapse;"> <thead> <tr> <th>IMMU INITIALIZATION</th> </tr> </thead> <tbody> <tr> <td style="text-align: center; padding: 10px;"> <p>INITIALIZATION FAIL</p> </td> </tr> <tr> <td style="text-align: center; padding: 10px;"> <p>THEN IGN KEY SW ‘OFF’ AND ‘ON’, AFTER CONFIRMING SELF-DIAG AND PASSWORD, PERFORM C/U INITIALIZATION AGAIN.</p> </td> </tr> </tbody> </table> </div> <p style="text-align: right; margin-right: 20px;">SEL297W</p> <p>NOTE: If the initialization is not completed or fails, CONSULT-II shows above message on the screen.</p> <p style="text-align: center; margin-top: 10px;">Can the system be initialized and can the engine be started with re-registered NATS ignition key?</p>			IMMU INITIALIZATION	<p>INITIALIZATION FAIL</p>	<p>THEN IGN KEY SW ‘OFF’ AND ‘ON’, AFTER CONFIRMING SELF-DIAG AND PASSWORD, PERFORM C/U INITIALIZATION AGAIN.</p>
IMMU INITIALIZATION					
<p>INITIALIZATION FAIL</p>					
<p>THEN IGN KEY SW ‘OFF’ AND ‘ON’, AFTER CONFIRMING SELF-DIAG AND PASSWORD, PERFORM C/U INITIALIZATION AGAIN.</p>					
Yes	▶	Ignition key ID was unregistered. Ref. part No. D			
No	▶	IMMU is malfunctioning. Replace IMMU. Ref. part No. A Perform initialization with CONSULT-II. For initialization, refer to “CONSULT-II operation manual NATS”.			

NATS (NISSAN ANTI-THEFT SYSTEM)

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 4

=NFEL0177S09

**Self-diagnostic results:
"CHAIN OF IMMU-KEY" displayed on CONSULT-II screen**

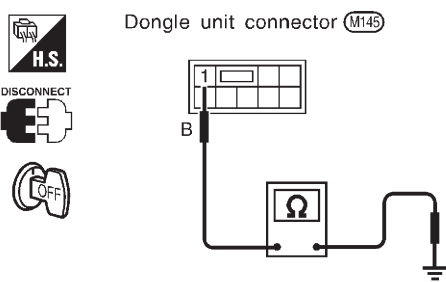
1	CONFIRM SELF-DIAGNOSTIC RESULTS											
Confirm SELF-DIAGNOSTIC RESULTS "CHAIN OF IMMU-KEY" displayed on CONSULT-II screen.												
<table border="1" style="margin: auto; border-collapse: collapse;"> <thead> <tr> <th colspan="2">SELF DIAGNOSIS</th> </tr> <tr> <th>DTC RESULTS</th> <th>TIME</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">CHAIN OF IMMU-KEY</td> <td style="text-align: center;">0</td> </tr> <tr> <td style="height: 20px;"> </td> <td> </td> </tr> <tr> <td style="height: 20px;"> </td> <td> </td> </tr> </tbody> </table>			SELF DIAGNOSIS		DTC RESULTS	TIME	CHAIN OF IMMU-KEY	0				
SELF DIAGNOSIS												
DTC RESULTS	TIME											
CHAIN OF IMMU-KEY	0											
SEL294W												
Is CONSULT-II screen displayed as above?												
Yes	▶	GO TO 2.										
No	▶	GO TO SYMPTOM MATRIX CHART 1.										

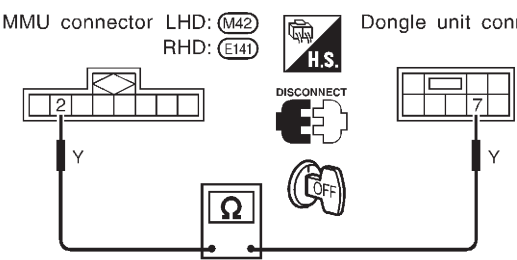
2	CHECK NATS IGNITION KEY ID CHIP	
Start engine with another registered NATS ignition key.		
Does the engine start?		
Yes	▶	Ignition key ID chip is malfunctioning. Replace the ignition key. Ref. part No. E Perform initialization with CONSULT-II. For initialization, refer to "CONSULT-II Operation Manual NATS".
No (With Dongle unit)	▶	GO TO 3.
No (Without Dongle unit)	▶	IMMU is malfunctioning. Replace IMMU. Ref. part No. A Perform initialization with CONSULT-II. For initialization, refer to "CONSULT-II Operation Manual NATS".

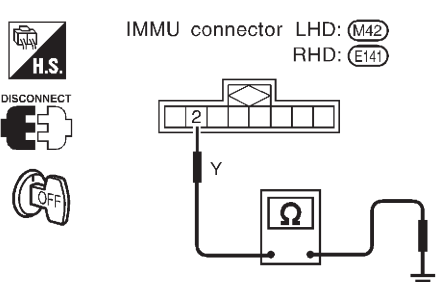
3	PERFORM INITIALIZATION WITH CONSULT-II	
1. Check harness connector connection E81/M15 and M145. 2. Initialize NATS. For initialization, refer to "CONSULT-II Operation Manual NATS".		
Does the security indicator blink just after the initialization?		
Yes	▶	System is OK.
No	▶	GO TO 4.

NATS (NISSAN ANTI-THEFT SYSTEM)

Trouble Diagnoses (Cont'd)

4	CHECK GROUND CIRCUIT FOR DONGLE UNIT	
<p>Check continuity between dongle unit terminal 1 and ground.</p>		
		
SEL281X		
Yes	▶	GO TO 5.
No	▶	Repair harness or connector.

5	CHECK INTERFACE OPEN CIRCUIT	
<p>Check continuity between IMMU terminal 2 and dongle unit terminal 7.</p>		
		
SEL280X		
Yes	▶	GO TO 6.
No	▶	Repair harness or connector.

6	CHECK INTERFACE SHORT CIRCUIT	
<p>Check continuity between IMMU terminal 2 and ground.</p>		
		
SEL282X		
Yes	▶	<p>Dongle unit is malfunctioning. Replace dongle unit. Ref. part No. G Perform initialization with CONSULT-II. For the initialization procedure, refer to "CONSULT-II operation manual NATS".</p>
No	▶	Repair harness or connector.

NATS (NISSAN ANTI-THEFT SYSTEM)

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 5

=NFEL0177S10

**Self-diagnostic results:
"ID DISCORD, IMM-ECM" displayed on CONSULT-II screen**

1	CONFIRM SELF-DIAGNOSTIC RESULTS											
<p>Confirm SELF-DIAGNOSTIC RESULTS "ID DISCORD, IMM-ECM" displayed on CONSULT-II screen.</p>												
<table border="1" style="margin: auto;"> <thead> <tr> <th colspan="2">SELF DIAGNOSIS</th> </tr> <tr> <th>DTC RESULTS</th> <th>TIME</th> </tr> </thead> <tbody> <tr> <td>ID DISCORD, IMM-ECM</td> <td style="text-align: center;">0</td> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> </tbody> </table>			SELF DIAGNOSIS		DTC RESULTS	TIME	ID DISCORD, IMM-ECM	0				
SELF DIAGNOSIS												
DTC RESULTS	TIME											
ID DISCORD, IMM-ECM	0											
SEL298W												
<p>NOTE: "ID DISCORD IMM-ECM": Registered ID of IMM-ECM is in discord with that of ECM.</p>												
Is CONSULT-II screen displayed as above?												
Yes	▶	GO TO 2.										
No	▶	GO TO SYMPTOM MATRIX CHART 1.										

2	PERFORM INITIALIZATION WITH CONSULT-II				
<p>Perform initialization with CONSULT-II. Re-register all NATS ignition key IDs. For initialization, refer to "CONSULT-II operation manual NATS".</p>					
<table border="1" style="margin: auto;"> <thead> <tr> <th>IMMU INITIALIZATION</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">INITIALIZATION FAIL</td> </tr> <tr> <td style="text-align: center;">THEN IGN KEY SW 'OFF' AND 'ON', AFTER CONFIRMING SELF-DIAG AND PASSWORD, PERFORM C/U INITIALIZATION AGAIN.</td> </tr> </tbody> </table>			IMMU INITIALIZATION	INITIALIZATION FAIL	THEN IGN KEY SW 'OFF' AND 'ON', AFTER CONFIRMING SELF-DIAG AND PASSWORD, PERFORM C/U INITIALIZATION AGAIN.
IMMU INITIALIZATION					
INITIALIZATION FAIL					
THEN IGN KEY SW 'OFF' AND 'ON', AFTER CONFIRMING SELF-DIAG AND PASSWORD, PERFORM C/U INITIALIZATION AGAIN.					
SEL297W					
<p>NOTE: If the initialization is not completed or fails, CONSULT-II shows above message on the screen.</p>					
Can the system be initialized?					
Yes	▶	Start engine. (END) (System initialization had not been completed. Ref. part No. F)			
No	▶	ECM is malfunctioning. Replace ECM. Ref. part No. B Perform initialization with CONSULT-II. For initialization, refer to "CONSULT-II operation manual NATS".			

NATS (NISSAN ANTI-THEFT SYSTEM)

Trouble Diagnoses (Cont'd)

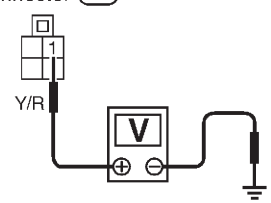



DIAGNOSTIC PROCEDURE 6

“SECURITY INDICATOR LAMP DOES NOT LIGHT UP”

=NFEL0177S12

1	CHECK FUSE	
Check 10A fuse [No. 12, located in the fuse block (J/B)].		
Is 10A fuse OK?		
Yes	▶	GO TO 2.
No	▶	Replace fuse.

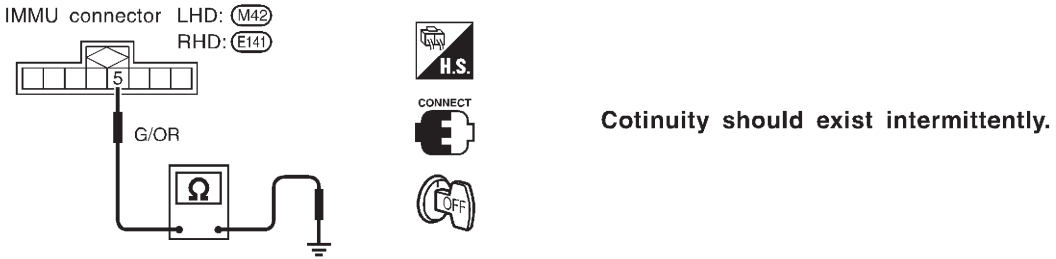
2	CHECK SECURITY INDICATOR LAMP	
1. Install 10A fuse. 2. Perform initialization with CONSULT-II. For initialization, refer to “CONSULT-II Operation Manual NATS”. 3. Turn ignition switch OFF. 4. Start engine and turn ignition switch OFF. 5. Check the security indicator lamp lighting. Security indicator lamp should be light up.		
OK or NG		
OK	▶	INSPECTION END
NG	▶	GO TO 3.

3	CHECK SECURITY INDICATOR LAMP POWER SUPPLY CIRCUIT	
1. Disconnect security indicator lamp connector. 2. Check voltage between security indicator lamp connector terminal 1 and ground.		
<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>Clock (Security indicator lamp) connector (M100)</p>  </div> <div style="text-align: center;">    </div> <div style="text-align: center;"> <p>Battery voltage should exist.</p> </div> </div>		
SEL653W		
OK or NG		
OK	▶	GO TO 4.
NG	▶	Check harness for open or short between fuse and security indicator lamp.

4	CHECK SECURITY INDICATOR LAMP	
Check security indicator lamp.		
Is security indicator lamp OK?		
Yes	▶	GO TO 5.
No	▶	Replace security indicator lamp.

NATS (NISSAN ANTI-THEFT SYSTEM)

Trouble Diagnoses (Cont'd)

5	CHECK IMMU FUNCTION		
<p>1. Connect IMMU connector. 2. Disconnect security indicator lamp connector. 3. Check continuity between IMMU terminal 5 and ground.</p>			
			
SEL300WD			
OK or NG			
OK	▶	Check harness for open or short between security indicator lamp and IMMU.	
NG	▶	IMMU is malfunctioning. Replace IMMU. Ref. part No. A Perform initialization with CONSULT-II. For initialization, refer to "CONSULT-II operation manual NATS".	

NATS (NISSAN ANTI-THEFT SYSTEM)

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 7

=NFEL0177S13

**Self-diagnostic results:
"LOCK MODE" displayed on CONSULT-II screen**

1	CONFIRM SELF-DIAGNOSTIC RESULTS											
Confirm SELF-DIAGNOSTIC RESULTS "LOCK MODE" is displayed on CONSULT-II screen.												
<table border="1" style="margin: auto; border-collapse: collapse;"> <thead> <tr> <th colspan="2">SELF DIAGNOSIS</th> </tr> <tr> <th>DTC RESULTS</th> <th>TIME</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">LOCK MODE</td> <td style="text-align: center;">0</td> </tr> <tr> <td style="height: 20px;"> </td> <td> </td> </tr> <tr> <td style="height: 20px;"> </td> <td> </td> </tr> </tbody> </table>			SELF DIAGNOSIS		DTC RESULTS	TIME	LOCK MODE	0				
SELF DIAGNOSIS												
DTC RESULTS	TIME											
LOCK MODE	0											
SEL295W												
Is CONSULT-II screen displayed as above?												
Yes	▶	GO TO 2.										
No	▶	GO TO SYMPTOM MATRIX CHART 1.										

2	ESCAPE FROM LOCK MODE	
1. Turn ignition switch OFF. 2. Turn ignition switch ON with registered key. (Do not start engine.) Wait 5 seconds. 3. Return the key to OFF position. 4. Repeat steps 2 and 3 twice (total of three cycles). 5. Start the engine.		
Does engine start?		
Yes	▶	System is OK. (Now system is escaped from "LOCK MODE".)
No	▶	GO TO 3.

3	CHECK IMMU ILLUSTRATION	
Check IMMU installation. Refer to "How to Replace IMMU" in EL-311.		
OK or NG		
OK	▶	GO TO 4.
NG	▶	Reinstall IMMU correctly.

NATS (NISSAN ANTI-THEFT SYSTEM)

Trouble Diagnoses (Cont'd)

4	PERFORM INITIALIZATION WITH CONSULT-II				
<p>Perform initialization with CONSULT-II. For initialization, refer to "CONSULT-II operation manual NATS".</p> <div style="text-align: center; border: 1px solid black; padding: 5px; margin: 10px auto; width: fit-content;"> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center; padding: 2px;">IMMU INITIALIZATION</td> </tr> <tr> <td style="text-align: center; padding: 5px;">INITIALIZATION FAIL</td> </tr> <tr> <td style="text-align: center; padding: 2px;">THEN IGN KEY SW 'OFF' AND 'ON', AFTER CONFIRMING SELF-DIAG AND PASSWORD, PERFORM C/U INITIALIZATION AGAIN.</td> </tr> </table> </div> <p style="text-align: right; margin-top: 10px;">SEL297W</p> <p>NOTE: If the initialization is not completed or fails, CONSULT-II shows the above message on the screen.</p> <p style="text-align: center;">Can the system be initialized?</p>			IMMU INITIALIZATION	INITIALIZATION FAIL	THEN IGN KEY SW 'OFF' AND 'ON', AFTER CONFIRMING SELF-DIAG AND PASSWORD, PERFORM C/U INITIALIZATION AGAIN.
IMMU INITIALIZATION					
INITIALIZATION FAIL					
THEN IGN KEY SW 'OFF' AND 'ON', AFTER CONFIRMING SELF-DIAG AND PASSWORD, PERFORM C/U INITIALIZATION AGAIN.					
Yes	▶	System is OK.			
No	▶	GO TO DIAGNOSTIC PROCEDURE 5 to check "CHAIN OF IMMU-KEY", refer to EL-303.			

NATS (NISSAN ANTI-THEFT SYSTEM)

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 8

=NFEL0177S14


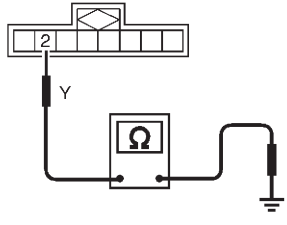
1	PERFORM INITIALIZATION WITH CONSULT-II	
1. Check harness connector connection E81/M15 and M145. 2. Initialize NATS. For initialization, refer to "CONSULT-II Operation Manual NATS".		
Does the security indicator blink just after the initialization?		
Yes	▶	System is OK.
No	▶	GO TO 2.

2	CHECK GROUND CIRCUIT FOR DONGLE UNIT	
Check continuity between dongle unit terminal 1 and ground.		
Continuity should exist.		
SEL281X		
Yes	▶	GO TO 3.
No	▶	Repair harness or connector.

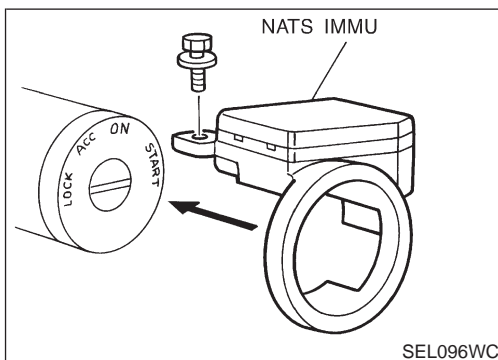
3	CHECK INTERFACE OPEN CIRCUIT	
Check continuity between IMMU terminal 2 and dongle unit terminal 7.		
Continuity should exist.		
SEL280X		
Yes	▶	GO TO 4.
No	▶	Repair harness or connector.

NATS (NISSAN ANTI-THEFT SYSTEM)

Trouble Diagnoses (Cont'd)

4	CHECK INTERFACE SHORT CIRCUIT	
<p>Check continuity between IMMU terminal 2 and ground.</p> <div style="display: flex; align-items: center; justify-content: space-between;"> <div style="width: 30%;">  <p>IMMU connector LHD: (M42) RHD: (E141)</p> </div> <div style="width: 40%; text-align: center;">  </div> <div style="width: 25%; text-align: right;"> <p>Continuity should not exist.</p> </div> </div>		
Yes	▶	<p>Dongle unit is malfunctioning. Replace dongle unit. Ref. part No. G Perform initialization with CONSULT-II. For the initialization procedure, refer to "CONSULT-II Operation Manual NATS".</p>
No	▶	<p>Repair harness or connector.</p>

SEL282X



How to Replace NATS IMMU

NFEL0178

NOTE:

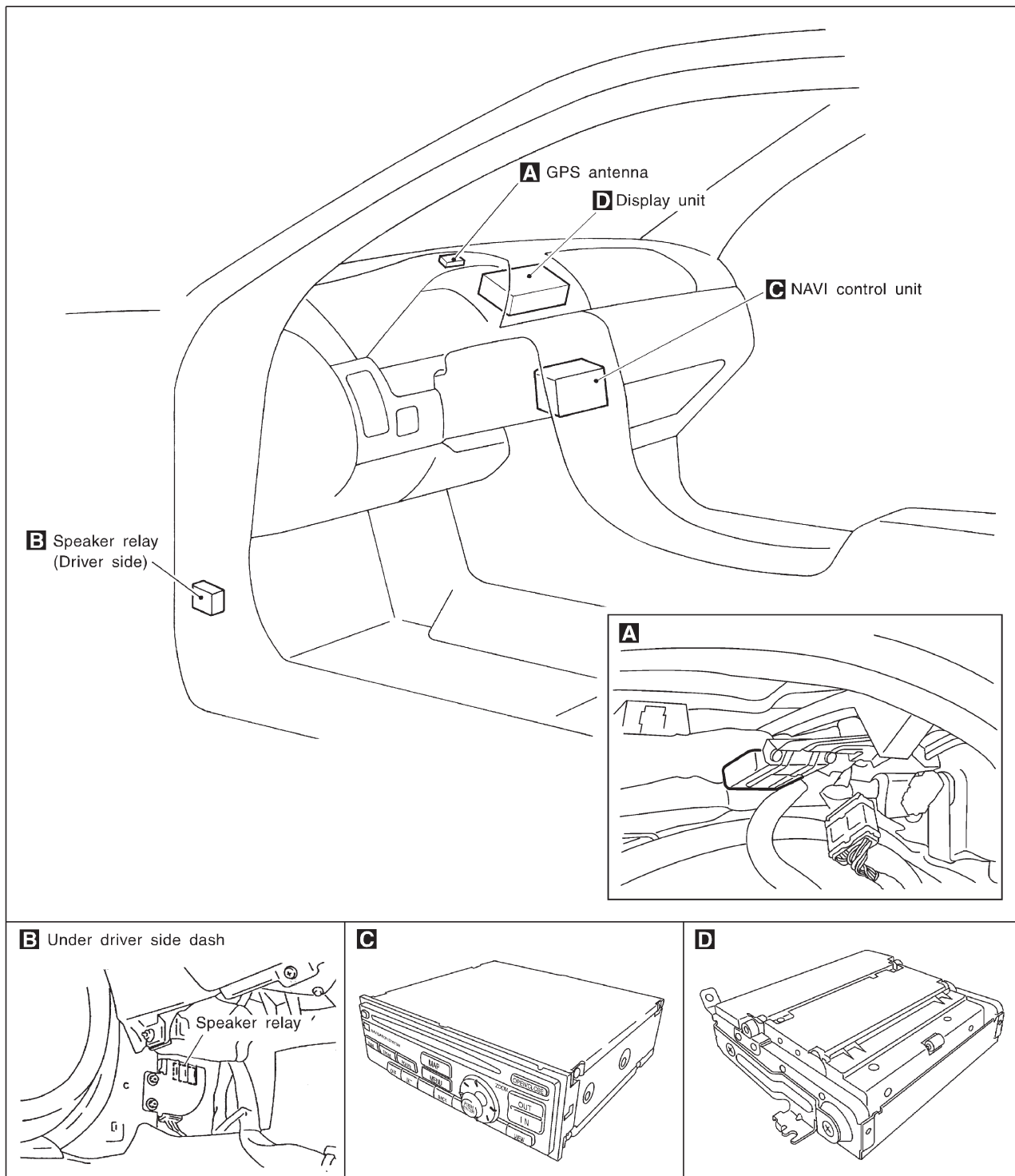
- If NATS IMMU is not installed correctly, NATS system will not operate properly and SELF-DIAG RESULTS on CONSULT-II screen will show "LOCK MODE".

NAVIGATION SYSTEM

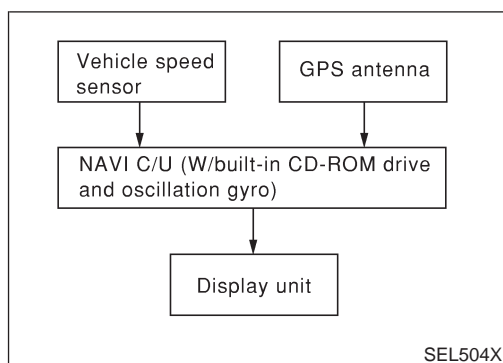
Component Parts Location

Component Parts Location

NFEL0352



SEL505X



System Description

NFEL0353

OUTLINE

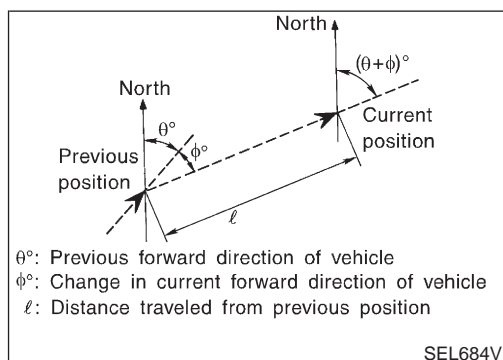
NFEL0353S01

The Navigation System (Multi-AV System) relies upon three sensing devices in order to determine vehicle location at regular time intervals.

1. Vehicle speed sensor: Determines the distance the vehicle has traveled.
2. Gyro (Angular velocity sensor): Determines vehicle steering angle and directional change.
3. GPS antenna (GPS data): Determines vehicle forward movement and direction.

The data provided by the three sensing functions together with a comparison of the mapping information read from the CD-ROM drive permit accurate determination of the vehicle's current location and subsequent course (map matching). The information appears on a liquid crystal display.

This comparison of GPS data (vehicle position sensing) and map matching permits precise determination of vehicle location.



Position Sensor Operating Principles

NFEL0353S0101

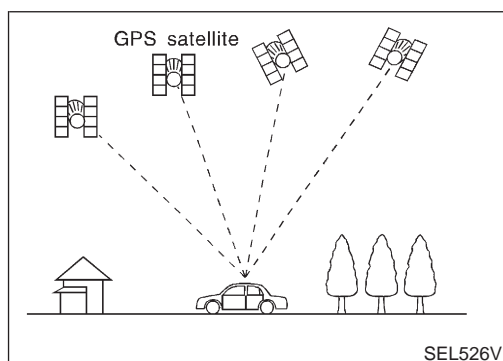
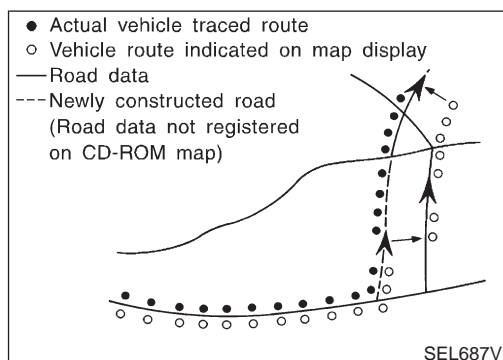
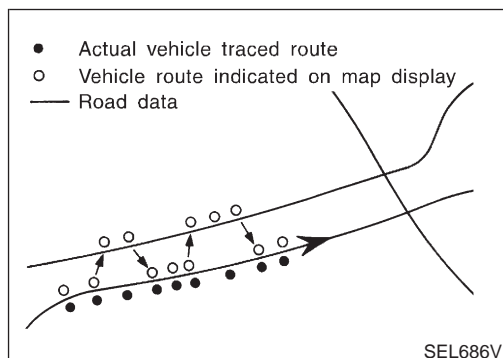
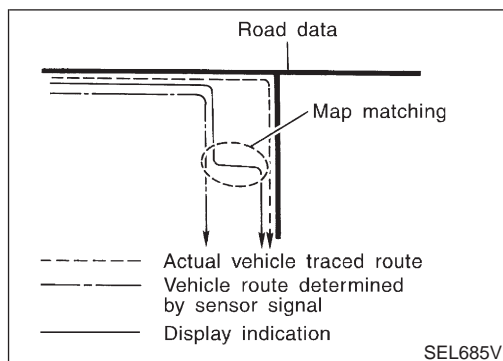
The sensor determines current vehicle location by calculating the previously sensed position, the distance traveled from this position, and the directional changes occurring during this travel.

1. Distance traveled
The distance traveled is calculated using signals received from the vehicle speed sensor. The sensor automatically compensates for the slightly reduced wheel and tire diameter resulting from tire wear.
2. Forward movement (Direction)
Changes in the direction of forward movement are calculated by the gyro (angular velocity sensor) and the GPS antenna (GPS data). Each of these functions has its advantage and disadvantages. Depending upon conditions, one function takes precedence over the other to accurately determine the direction of forward movement.

Function type	Advantage	Disadvantage
Gyro (Angular velocity sensor)	<ul style="list-style-type: none"> • Able to accurately detect minute changes in steering angle and direction. 	<ul style="list-style-type: none"> • Calculation errors may accumulate over a long period of continuous vehicle travel.
GPS antenna (GPS data)	<ul style="list-style-type: none"> • Able to sense vehicle travel in four general directions (North, South, East, and West) 	<ul style="list-style-type: none"> • Unable to detect direction of vehicle travel at low vehicle speeds.

NAVIGATION SYSTEM

System Description (Cont'd)



Map Matching

NFEL0353S0102

Map matching allows the driver to compare the sensed vehicle location data with the road map contained in the CD-ROM drive. Vehicle position is marked on the CD-ROM map. This permits the driver to accurately determine his/her present position on the highway and to make appropriate course decisions.

When GPS data reception is poor during travel, the vehicle position is not amended. At this time, manual manipulation of the CD-ROM map position marker is required.

Map matching permits the driver to make priority judgments about possible appropriate roads other than the one currently being traveled.

If there is an error in the distance or direction of travel, there will also be an error in the relative position of other routes. When two routes are closely parallel to one another, the indicated position for both routes will be nearly the same priority. This is so that, slight changes in the steering direction may cause the marker to indicate both routes alternately.

Newly constructed roads may not appear on the CD-ROM map. In this case, map matching is not possible. Changes in the course of a road will also prevent accurate map matching.

When driving on a road not shown on the CD-ROM map, the position marker used for map matching may indicate a different route. Even after returning to a route shown on the map, the position marker may jump to the position currently detected.

GPS (Global Positioning System)

NFEL0353S0103

GPS is the global positioning system developed and operated by the US Department of Defense. GPS satellites (NAVSTAR) transmit radio waves and orbit around the earth at an altitude of approximately 21,000 km (13,000 miles).

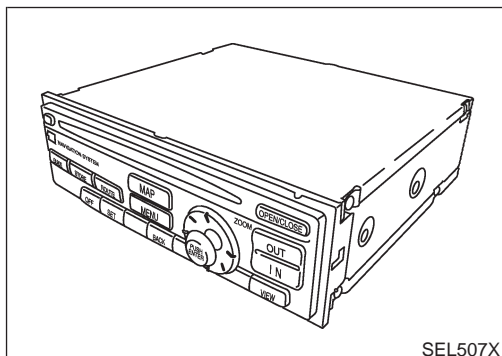
GPS receiver calculates the three-dimensional position of the vehicle (latitude, longitude, and altitude from the sea level) by the time difference of the radio wave arriving from more than four GPS satellites (three-dimensional positioning).

When the radio wave is received from only three GPS satellites, the two-dimensional position (latitude and longitude) is calculated, using the altitude from the sea level data calculated by using four GPS satellites (two-dimensional positioning).

Positioning capability is degraded in the following cases.

- In two-dimensional positioning, when the vehicle's altitude from the sea level changes, the precision becomes lower.
- The location detection performance can have an error of about 100 m (300 ft) even in three-dimensional positioning with high precision. Because the precision is influenced by the location of GPS satellites used for positioning, the location detection performance may drop depending on the location of GPS satellites.
- When the radio wave from GPS satellites cannot be received,

for example, when the vehicle is in a tunnel, in a parking lot inside building, under an elevated superhighway or near strong power lines, the location may not be detected. Turbulent/electric weather conditions may also affect positioning performance. If something is placed on the antenna, the radio wave from GPS satellites may not be received.



SEL507X

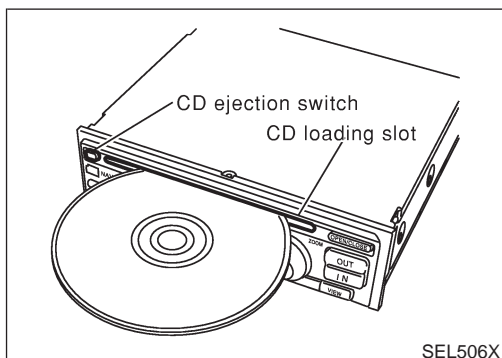
COMPONENT DESCRIPTION

NAVI Control Unit

NFEL0353S02

NFEL0353S0201

- The gyro (angular speed sensor) and the CD-ROM drive are built-in units that control the navigation functions.
- Signals are received from the gyro, the vehicle speed sensor, and the GPS antenna. Vehicle location is determined by combining this data with the data contained in the CD-ROM map. Locational information is shown on liquid crystal display panel.



SEL506X

CD-ROM Driver

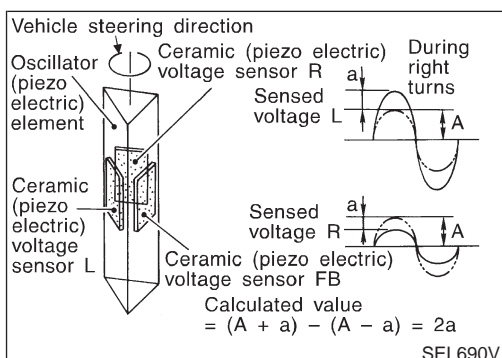
NFEL0353S0202

Maps, traffic control regulations, and other pertinent information can be easily read from the CD-ROM disc.

Map CD-ROM

NFEL0353S0203

- The map CD-ROM has maps, traffic control regulations, and other pertinent information.
- To improve CD-ROM map matching and route determination functions, the CD-ROM uses an exclusive Nissan format. Therefore, the use of a CD-ROM provided by other manufacturers cannot be used.



SEL690V

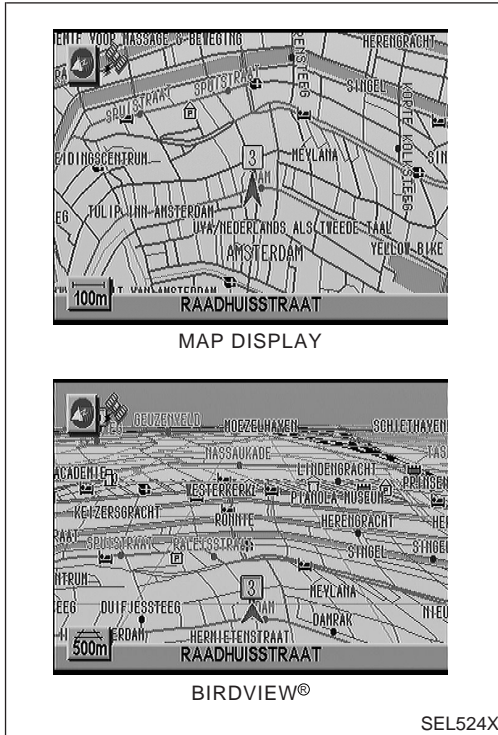
Gyro (Angular Speed Sensor)

NFEL0353S0204

- The oscillator gyro sensor is used to detect changes in vehicle steering angle.
- The oscillator gyro periodically senses oscillatory variation at the oscillation terminals. This variation is caused by changes in the vehicle angular velocity. Voltage variations are sensed by ceramic voltage sensors at the left and right sides of the terminals. Vehicle angular velocity corresponds directly with these changes in voltage.
- The gyro is built into the navigation (NAVI) control unit.

NAVIGATION SYSTEM

System Description (Cont'd)

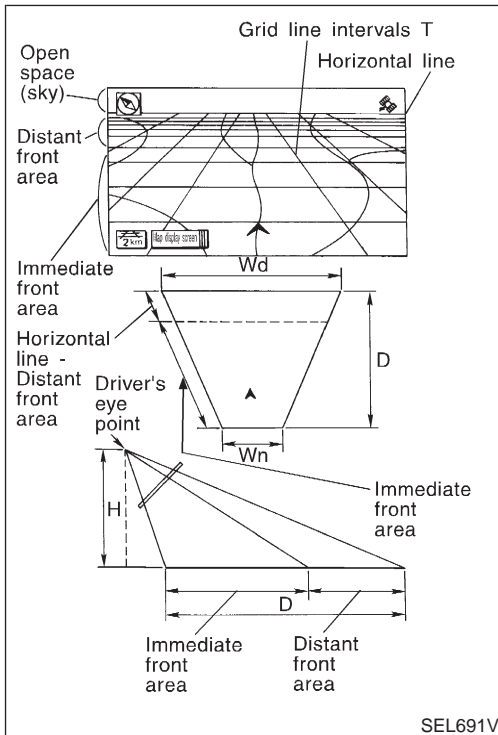


SEL524X

BIRDVIEW®

NFEL0353S0205

The BIRDVIEW® provides a detailed and easily seen display of road conditions covering the vehicle's immediate to distant area.



SEL691V

Description

NFEL0353S0206

- Display area: Trapezoidal representation showing approximate distances (W_n , D , and W_d).
- Ten horizontal grid lines indicate display width while six vertical grid lines indicate display depth and direction.
- Drawing line area shows open space, depth, and immediate front area. Each area is to a scale of approximately 5:6:25.
- Pushing the "ZOOM IN" button during operation displays the scale change and the view point height on the left side of the screen.

The height of the view point increases or decreases when "ZOOM" or "WIDE" is selected with the joystick.

MAP DISPLAY

=NFEL0353S03



SEL525X

Function of each icon is as follows:

- 1) Azimuth indication.
- 2) Position marker
The tip of the arrow shows the current position. The shaft of the arrow indicates the direction in which the vehicle is traveling.
- 3) GPS reception signal (indicates current reception conditions)
- 4) Distance display (shows the distance in a reduced scale)

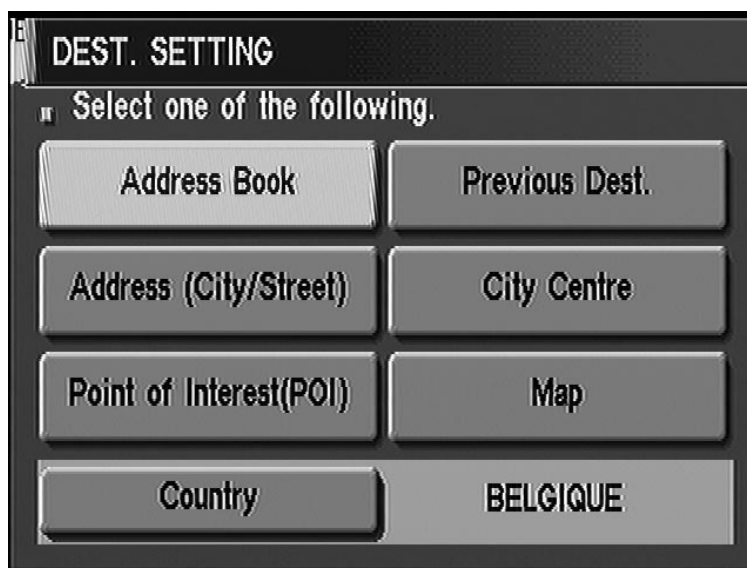
NAVIGATION SYSTEM

System Description (Cont'd)

FUNCTION OF PANEL SWITCH Display with Pushed "DEST" Switch

=NFEL0353S04

NFEL0353S0401



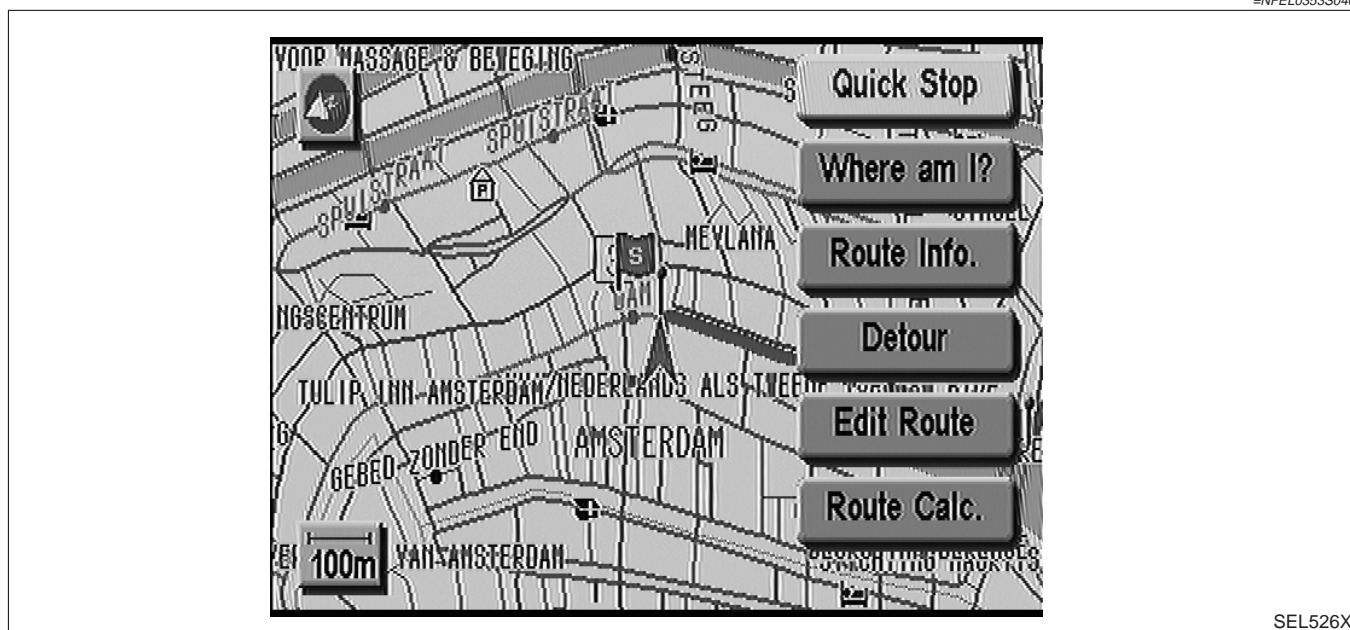
SEL615X

The function of each icon is as follows:

Icon	Description
Address Book	Favorite place can be saved to memory.
Address (City/Street)	The destination can be searched from the address.
Point of Interest (POI)	The destination of favorite facility can be searched.
Previous Dest.	The previous ten destinations stored in memory are displayed.
City Centre	The destination can be searched from city name.
Map	The destination can be searched from the map.
Country	When two or more countries are included in one CD-ROM, the destination can be searched for under the country name.

Display with Pushed "ROUTE" Switch

=NFEL0353S0402



SEL526X

The function of each icon is as follows:

Icon	Description
Quick Stop	The selected facility is set as the destination or way-point. (Route guidance has been turned OFF or the destination has been reached)
Where am I?	Next, current and previous street names can be displayed.
Route Info.*	The following items can be set. <ul style="list-style-type: none"> ● Complete Route ● Turn List ● Route Simulation (Displayed only when the destination area has been set.)
Detour*	Based on the selected distance, an alternative route is searched. [Displayed only when the recommended route (not its reverse) is followed.]
Edit Route*	Change the destination or add the transit points of the route set in the route guide. (Displayed only when the automatic reroute function has been turned OFF and the recommended route is not followed.)
Route Calc.	Search for a recommended route between the vehicle's current location and the destination area. (Displayed only when the destination area has been set.)

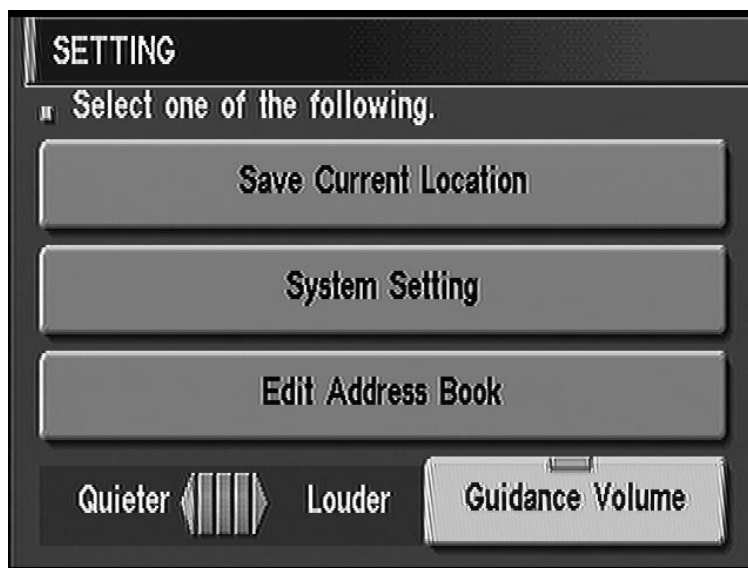
*: When destinations have been entered, route guidance has been turned OFF or destination has been reached, "Route Info.", "Detour", "Edit Route" and "Route Clac." are not displayed.

NAVIGATION SYSTEM

System Description (Cont'd)

Display with Pushed "SETTING" Switch

=NFEL0353S0403



SEL614X

The function of each icon is as follows:

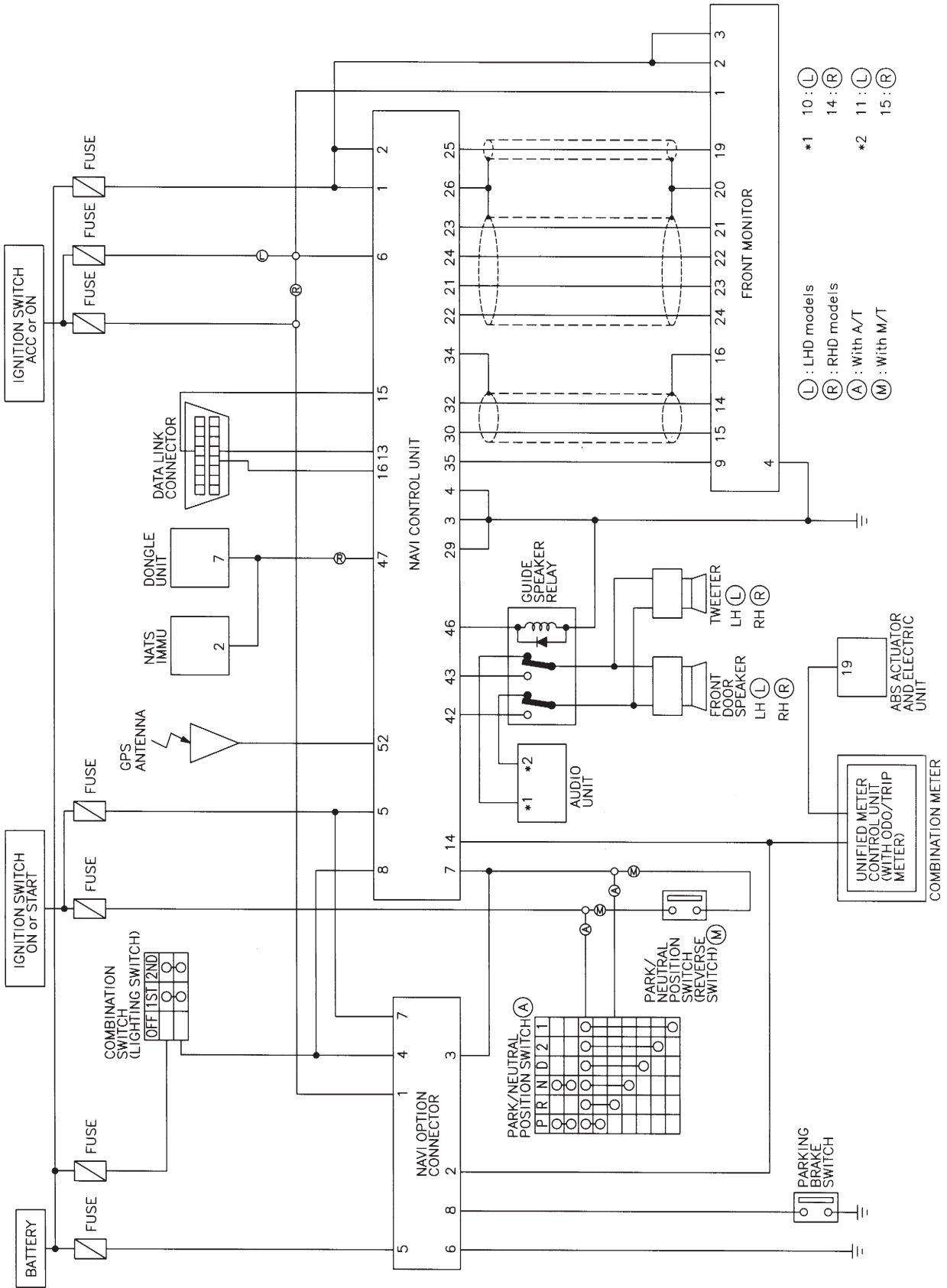
Icon	Description
Save Current Location	The current location can be stored in the Address Book.
System Setting	Many adjustments and settings can be made for maximum driving pleasure and convenience.
Edit Address Book	The Address Book data can be edited.
Quieter Louder	The volume and/or on/off of voice prompt can be controlled by the joystick.

NAVIGATION SYSTEM

Schematic

NFEL0354

Schematic



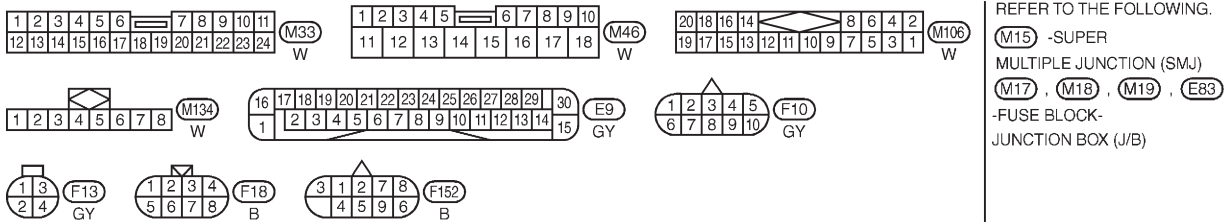
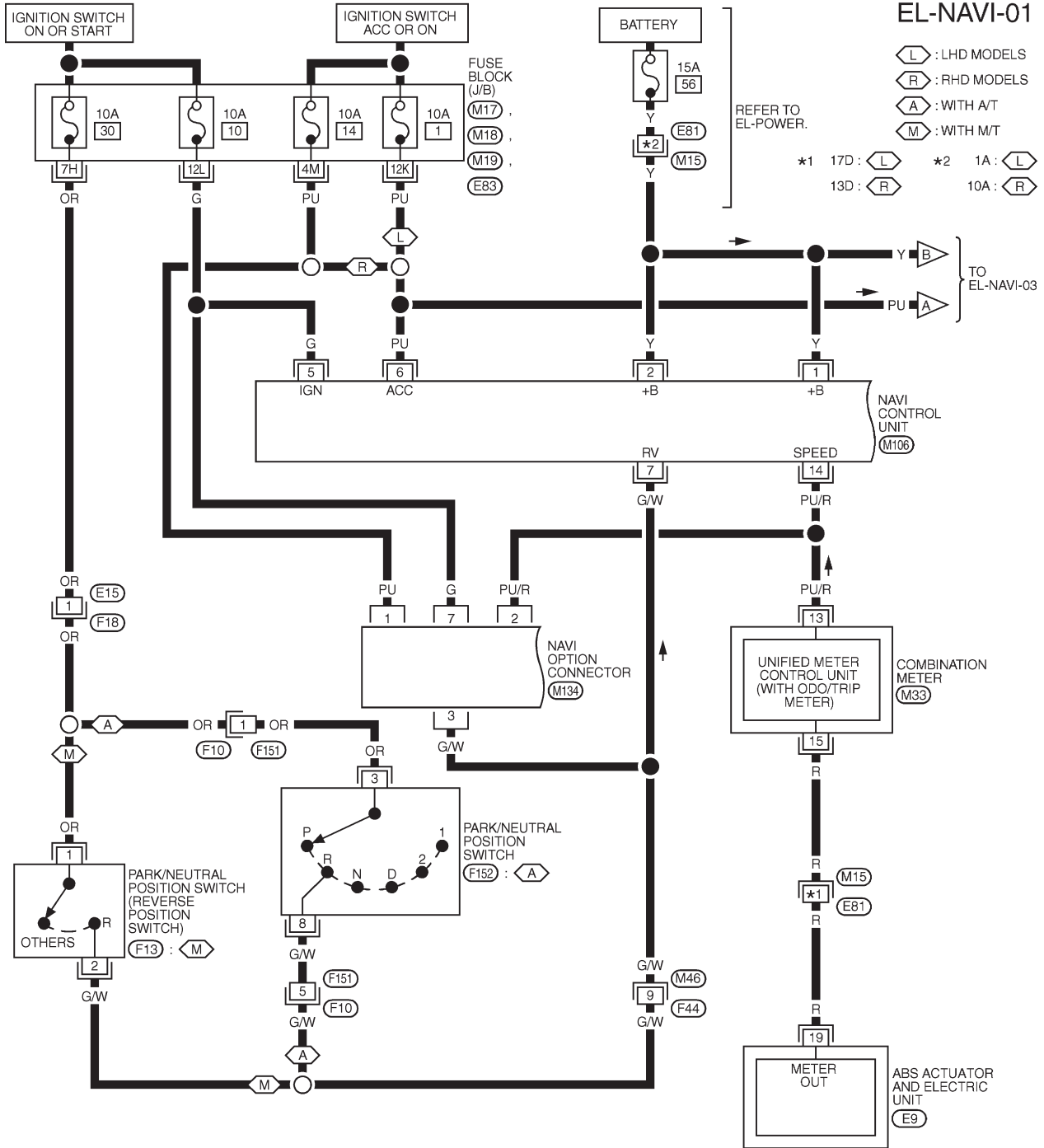
MEL869M

NAVIGATION SYSTEM

Wiring Diagram — NAVI —

Wiring Diagram — NAVI —

NFEL0355



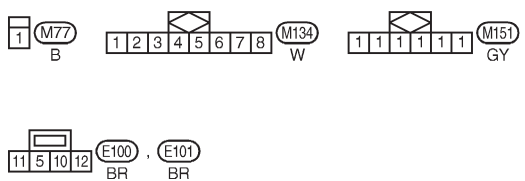
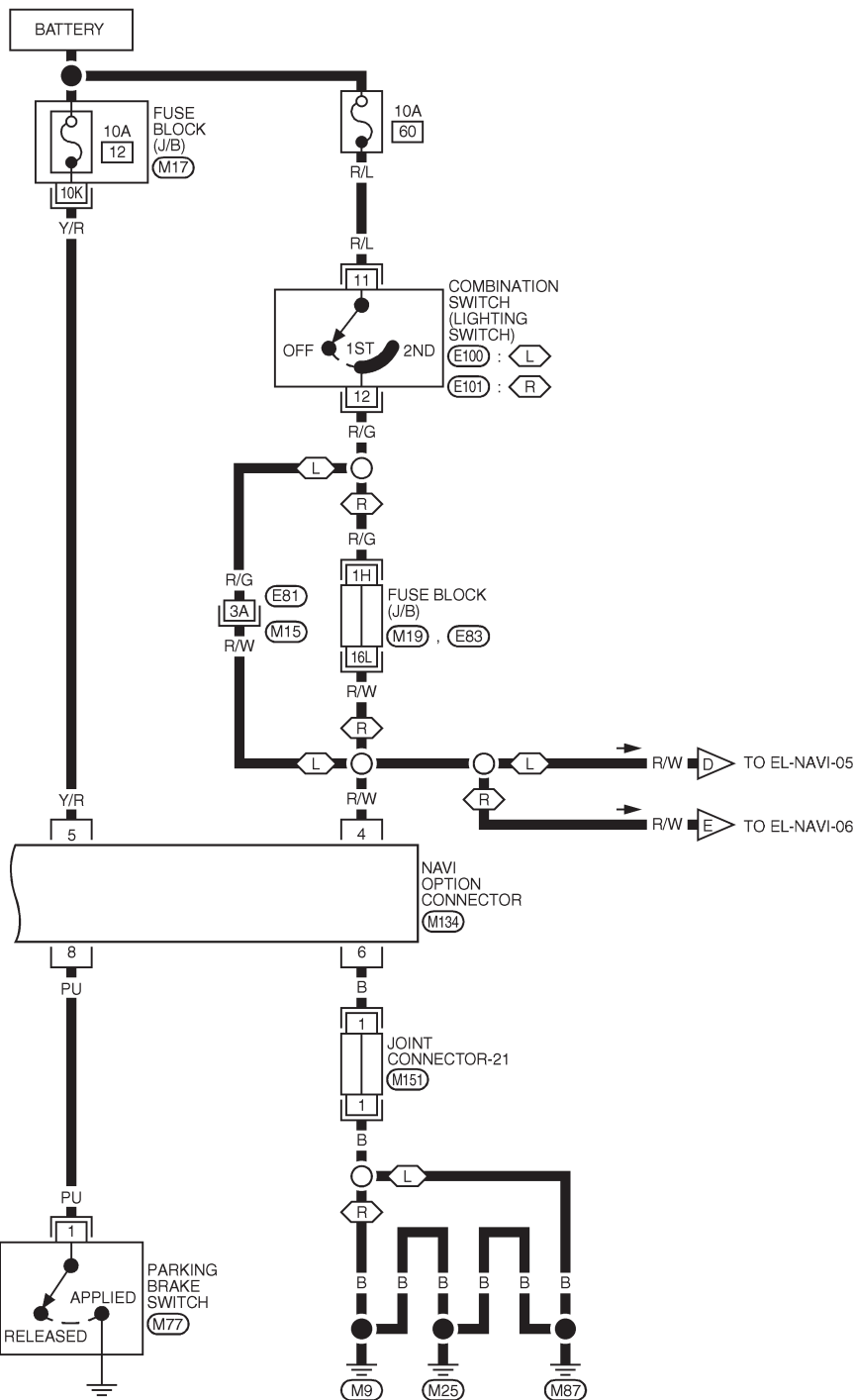
MEL870M

NAVIGATION SYSTEM

Wiring Diagram — NAVI — (Cont'd)

EL-NAVI-02

L : LHD MODELS
R : RHD MODELS



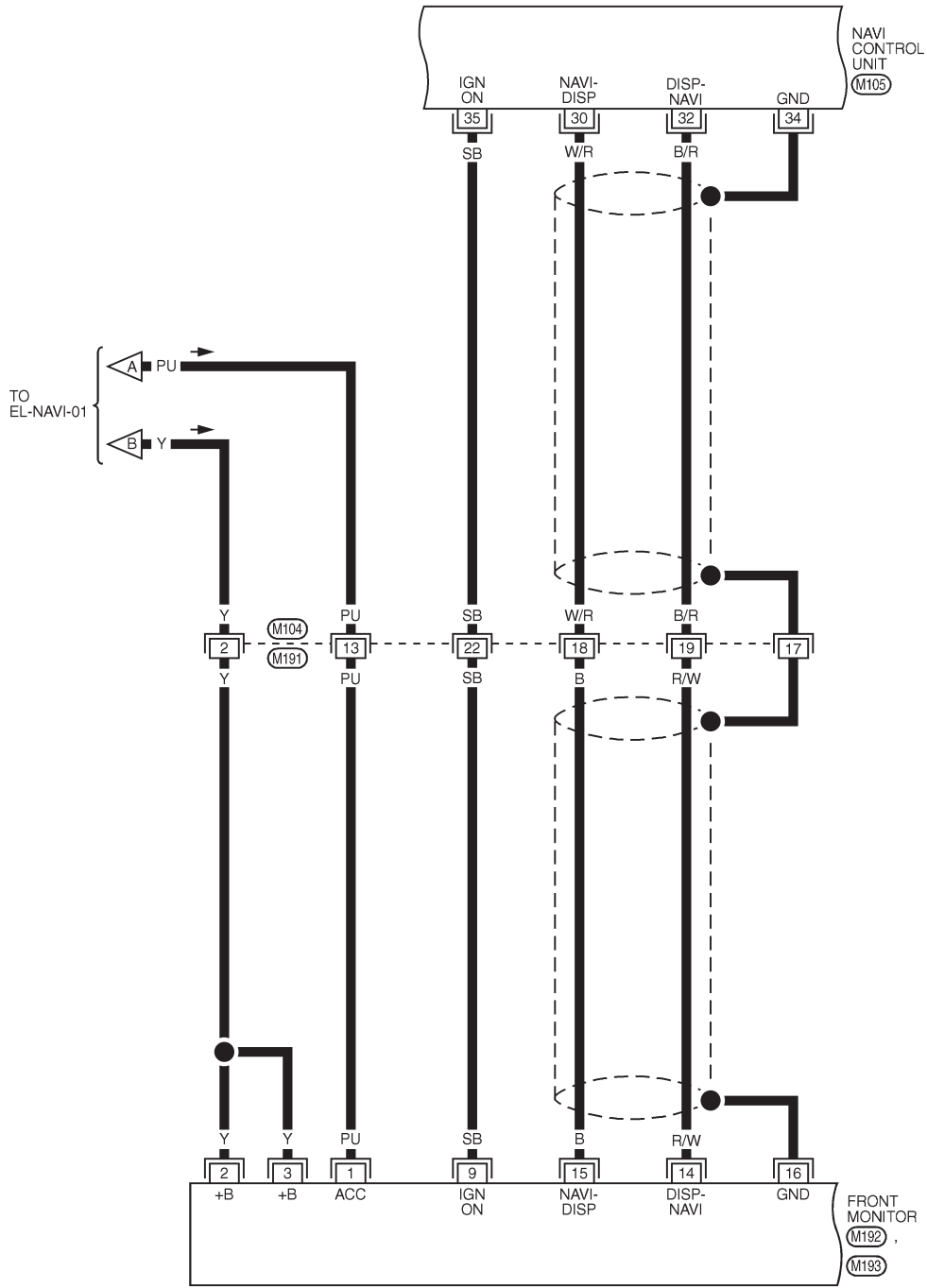
REFER TO THE FOLLOWING.
 (M15) -SUPER
 MULTIPLE JUNCTION (SMJ)
 (M17), (M19), (E83)
 -FUSE BLOCK-
 JUNCTION BOX (J/B)

MEL871M

NAVIGATION SYSTEM

Wiring Diagram — NAVI — (Cont'd)

EL-NAVI-03



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

(M104)
BR

36	34	32	26	24	22				
35	33	31	30	29	28	27	25	23	21

(M105)
W

24	22	20	18	16	12	10	8	6		
23	21	19	17	15	14	13	11	9	7	5

(M192)
W

4	3	2	1
---	---	---	---

(M193)
W

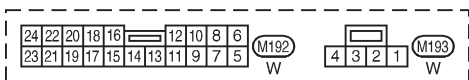
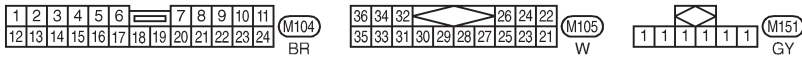
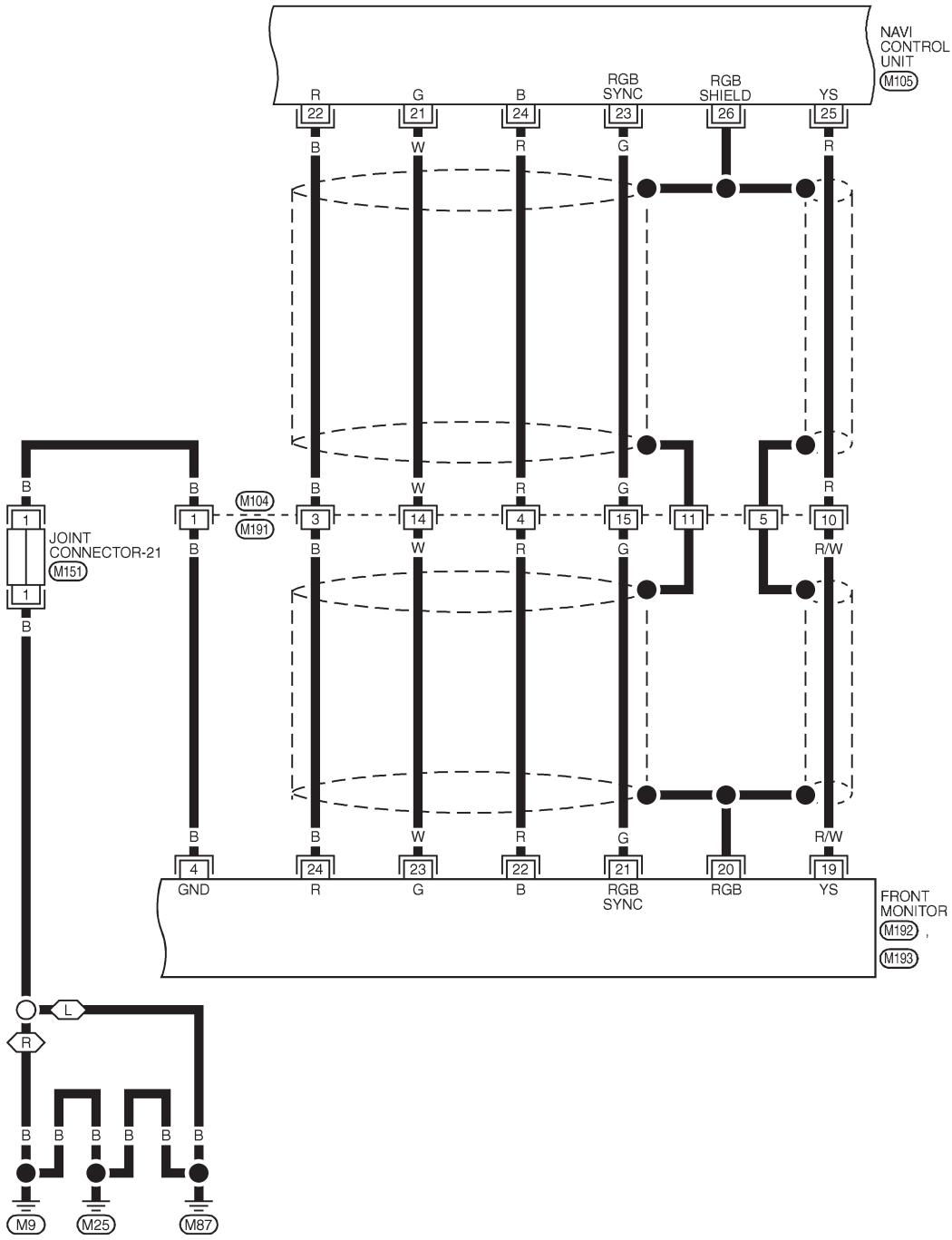
MEL578L

NAVIGATION SYSTEM

Wiring Diagram — NAVI — (Cont'd)

EL-NAVI-04

L : LHD MODELS
R : RHD MODELS



MEL579L

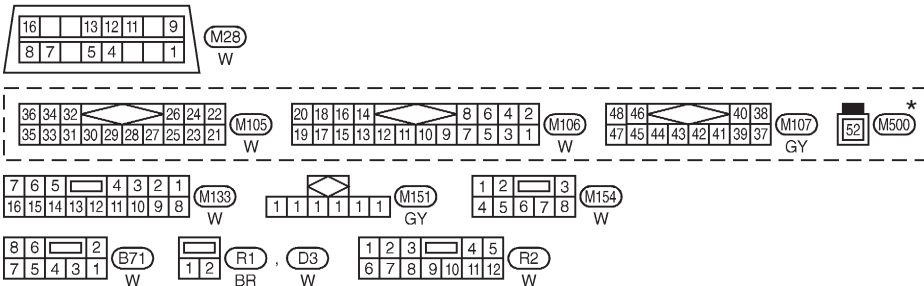
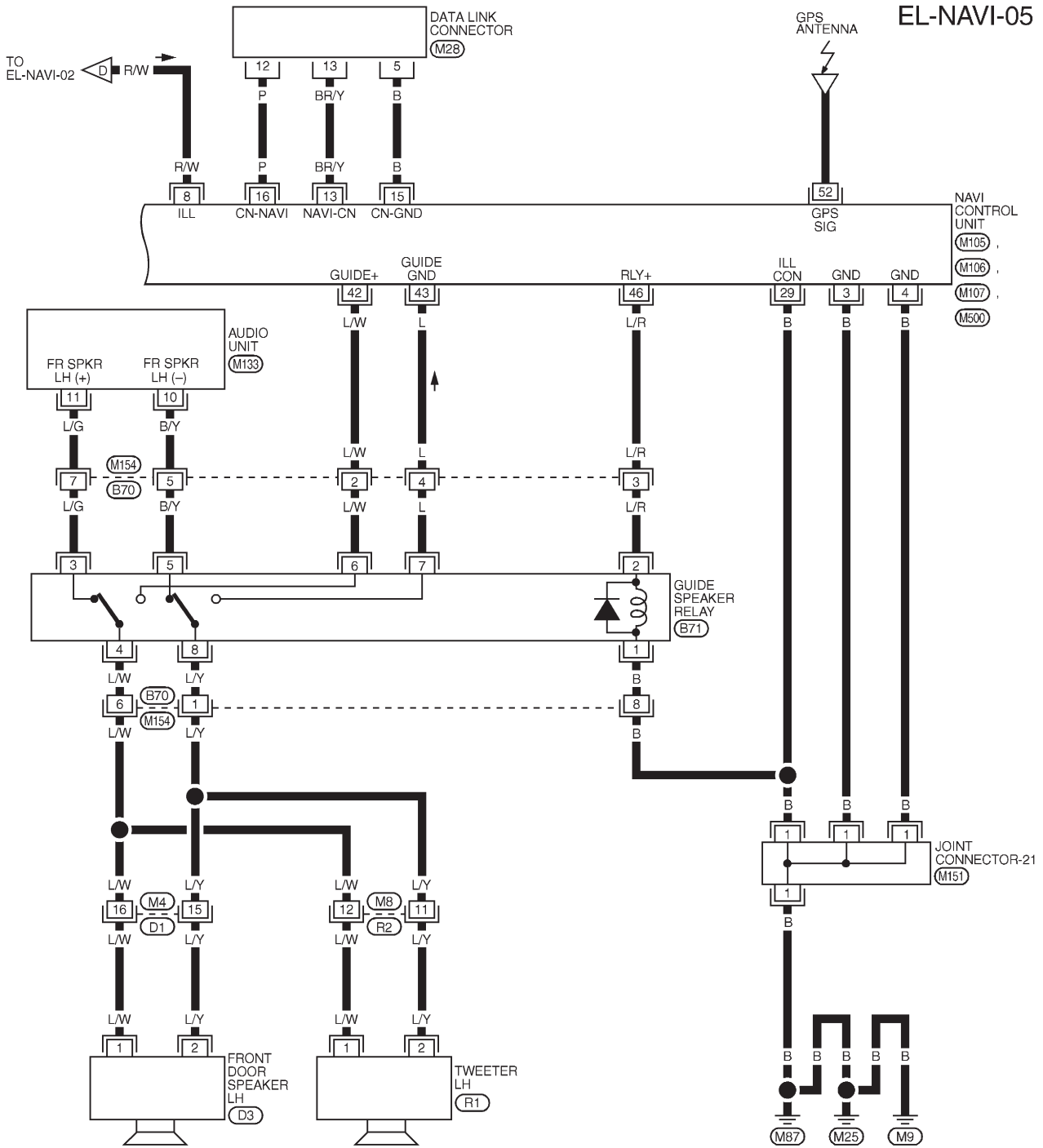
NAVIGATION SYSTEM

Wiring Diagram — NAVI — (Cont'd)

LHD MODELS

NFEL0355S01

EL-NAVI-05



REFER TO THE FOLLOWING.
 (D1) -SUPER
 MULTIPLE JUNCTION (SMJ)

* : THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", EL SECTION.

MEL577L

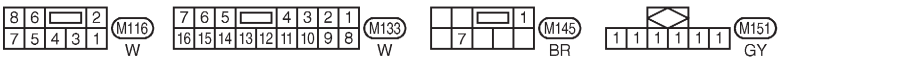
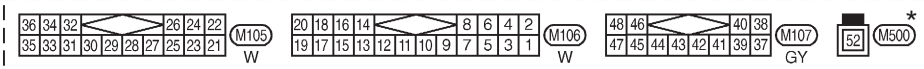
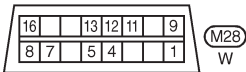
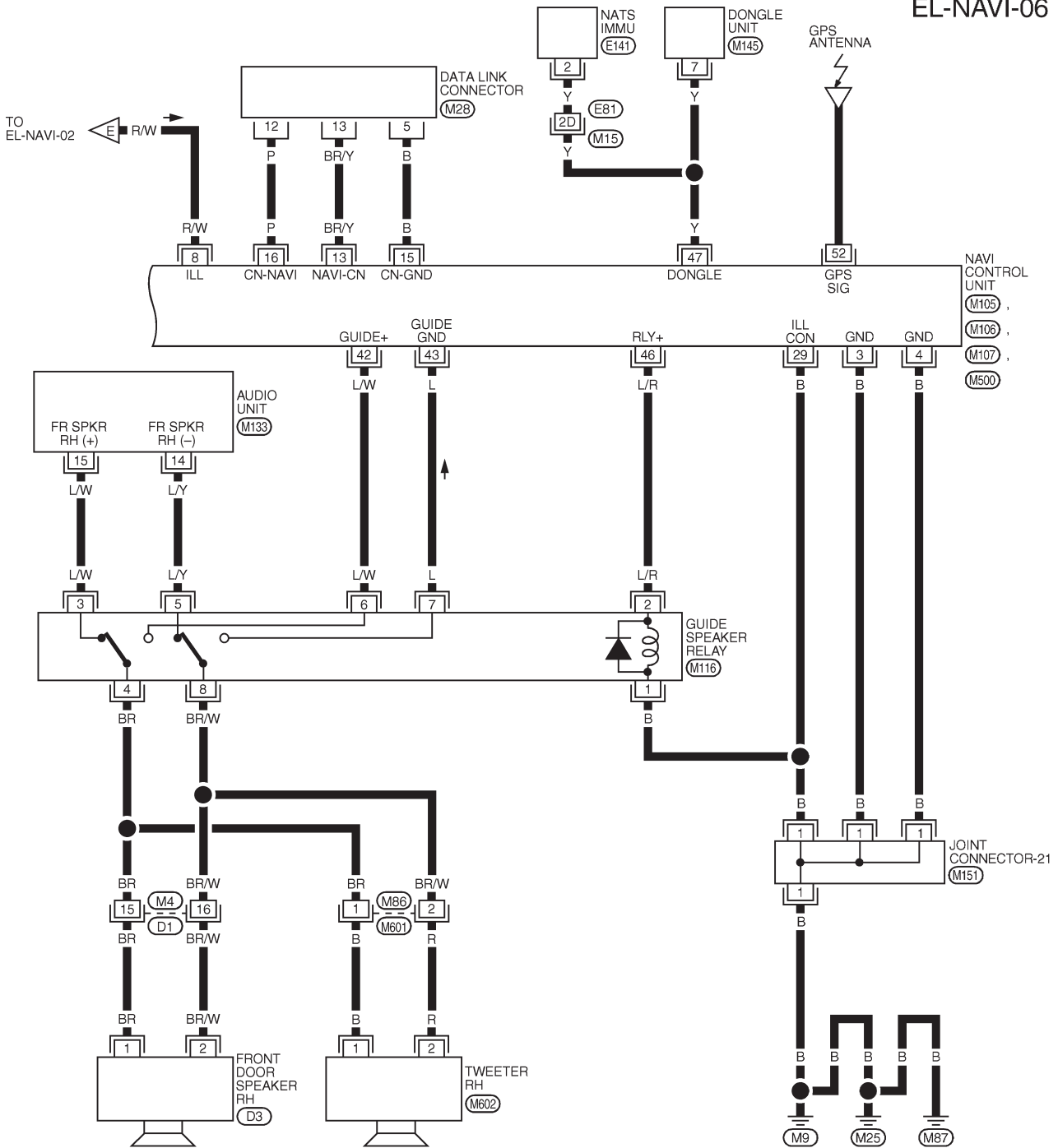
NAVIGATION SYSTEM

Wiring Diagram — NAVI — (Cont'd)

RHD MODELS

NFEL0355S02

EL-NAVI-06



* : THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", EL SECTION.

REFER TO THE FOLLOWING:
 (M15), (D1) -SUPER
 MULTIPLE JUNCTION (SMJ)

MEL220M

NAVIGATION SYSTEM

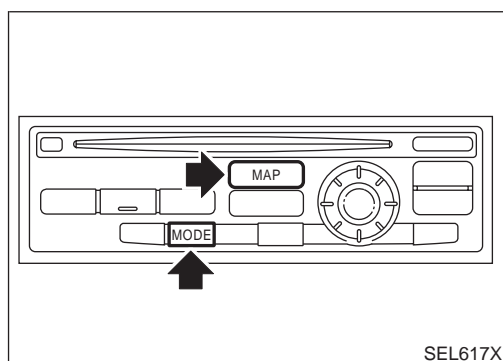
Self-diagnosis Mode

Self-diagnosis Mode APPLICATION ITEMS

NFEL0356

NFEL0356S01

Mode	Description	Reference page		
Self Diagnosis	Self-diagnosis for Navigation, Display and GPS Antenna connection.	EL-329		
Confirmation/ adjustment	Diagnose the Display	Color and gray gradation of display can be checked in this mode.	EL-337	
	Diagnosis for Signals from the Car	Several input signals to NAVI control unit, can be monitored in this mode.	EL-335	
	Navigation	Check the map CD-ROM version	The version (parts number) of inserted CD-ROM can be checked in this model.	EL-336
		Error history	Diagnosis results previously stored in the memory (before turning ignition switch ON) are displayed in this mode. Time and location when/where the errors occurred are also displayed.	EL-331
		Longitude & Latitude	Display the map. Use the joystick to adjust position. Longitude and latitude will be displayed.	EL-338
		Adjust the Angle	Turning angle of the vehicle on the display can be adjusted in this mode.	EL-339
		Speed Calibration	Under ordinary conditions, the navigation system distance measuring function will automatically compensate for minute decreases in wheel and tire diameter caused by tire wear or low pressure. Speed calibration immediately restores system accuracy in cases such as when distance calibration is needed because of the use of tire chains in inclement weather.	EL-340
Initialize Location	This mode is for initializing the current location. Use when the vehicle is transported a long distance on a trailer, etc.	EL-341		



HOW TO PERFORM SELF-DIAGNOSIS MODE

NFEL0356S02

1. Start the engine.
2. Push "OPEN/CLOSE" switch and then open the display.
3. Push both of "MAP" and "MODE" switches at the same time for more than five seconds.
4. Select "Self Diagnosis" or "Confirmation/ adjustment".
 - For further procedure, refer to the following pages which describe each application item of the self-diagnosis mode.

NFEL0356S0201

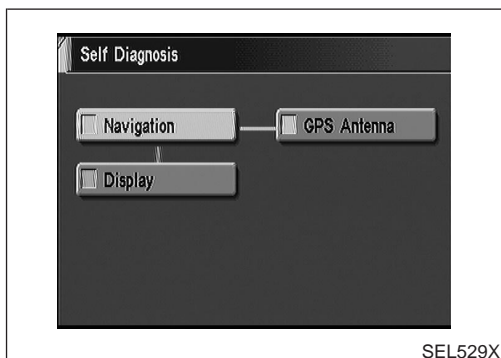
“Self Diagnosis”



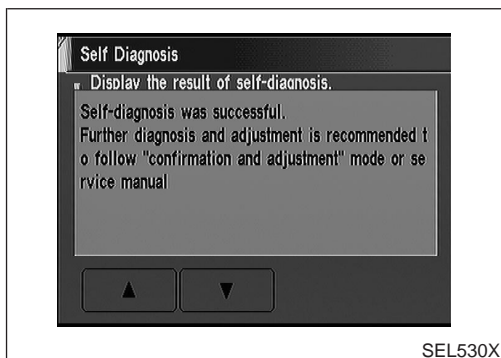
SEL527X



SEL528X



SEL529X



SEL530X

1. Start the engine.
2. Push “OPEN/CLOSE” switch and then open the display.
3. Push both “MAP” and “MODE” switches at the same time for more than 5 seconds.
4. Select “Self Diagnosis”.

5. Self-diagnosis will be performed.

6. Diagnosis results will be displayed. Diagnosis results are indicated by display color. For details refer to EL-330, “SELF-DIAGNOSIS RESULTS”.

To obtain detailed diagnosis results on the screen, touch “Navigation” or “Display” or “GPS Antenna”.

NAVIGATION SYSTEM

Self-diagnosis Mode (Cont'd)

SELF-DIAGNOSIS RESULTS

=NFEL0356S03

Diagnosed item	Displayed color	Detailed result	Description	Diagnoses/service procedure Recheck system at each check or replacement (When malfunction is eliminated, further repair work is not required.)
“GPS Antenna” (GPS antenna connection)	Green	—	GPS antenna is connected to NAVI control unit correctly.	—
	Yellow	Connection to the following unit is abnormal. See the Service Manual for further diagnosis.	GPS antenna connection error is detected.	<ol style="list-style-type: none"> 1. Check GPS antenna feeder cable connection at NAVI control unit. 2. Visually check GPS antenna feeder cable. If NG, replace GPS antenna assembly. 3. Replace GPS antenna.
“Navigation”	Green	—	No failure is detected.	—
	Red	[*** is abnormal.]	NAVI control unit is malfunctioning.	Replace NAVI control unit.
	Gray	Self-diagnosis for CD-ROM DRIVER of NAVI was not conducted due to no insertion of CD-ROM.	Any CD-ROM is not inserted or NAVI control unit is malfunctioning.	<ol style="list-style-type: none"> 1. Confirm that map CD-ROM is not inserted into NAVI control unit. 2. Replace NAVI control unit.
	Yellow	CD-ROM or CD-ROM DRIVER of NAVI is abnormal. See the Service Manual for further diagnosis.	NAVI control unit judges that inserted CD-ROM is malfunctioning. Map CD-ROM or CD-ROM driver of the unit is malfunctioning.	<ol style="list-style-type: none"> 3. Check the disc surface. Are there any scratches, abrasions or pits on the surface? 4. Replace the CD-ROM. 5. Replace NAVI control unit.
		CD-ROM is abnormal. Please check the disc.	Inserted map CD-ROM can not be read. Map CD-ROM or CD-ROM driver of the unit is malfunctioning.	
		Connection to the following unit is abnormal. See the Service Manual for further diagnosis.	GPS antenna connection error is detected.	<ol style="list-style-type: none"> 1. Check GPS antenna feeder cable connection at NAVI control unit. 2. Visually check GPS antenna feeder cable. If NG, replace GPS antenna assembly. 3. Replace GPS antenna.

NOTE:

Connection between NAVI control unit and display unit should be normal. Therefore, “Display connection error” will not occur when the display can be opened or closed properly.

Confirmation/Adjustment Mode

=NFEL0357

“ERROR HISTORY” MODE

NFEL0357S01

Description

NFEL0357S0101

In this mode, historical errors of the system are displayed with the following data.

- How many times the error was detected
- The last time data when the error was detected
- The last place where the error was detected

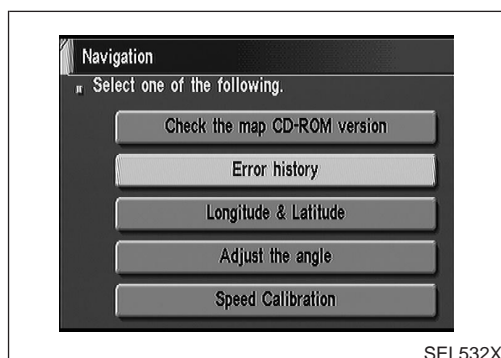
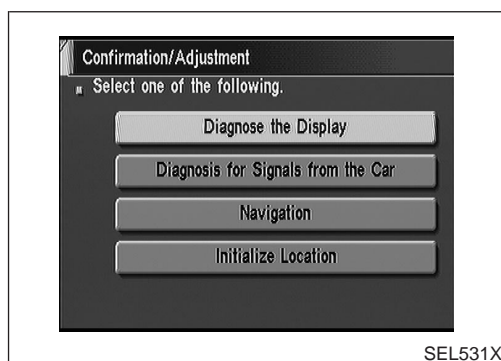
NOTE:

- The number of errors can be counted up to 50 times. More than 51 times will be indicated as 50 times.
- Malfunction of the GPS board (inside the NAVI control unit) will result in the display of incorrect time data.
- When an error occurs, an incorrect position marker appears on the display. The accuracy of the display data (position marker) will be affected.

How to Perform

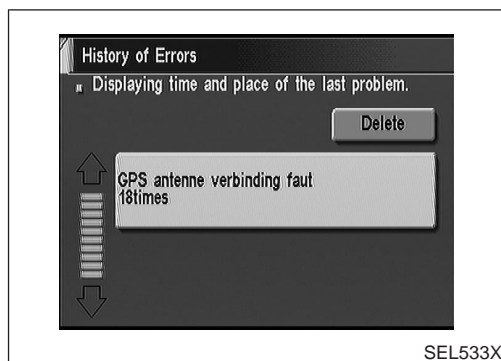
NFEL0357S0102

1. Start the engine.
2. Push “OPEN/CLOSE” switch and then open the display.
3. Push both “MAP” and “MODE” switch at the same time for more than 5 seconds.
4. Select “Confirmation/ adjustment”.
5. Select “Navigation”.
6. Select “Error history”.

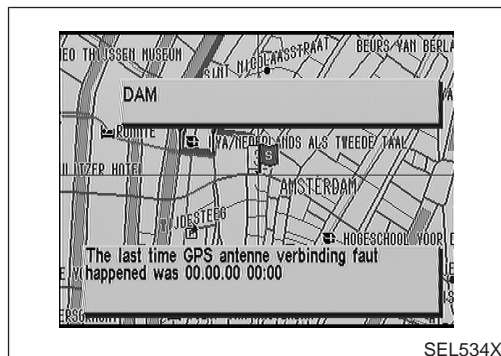


NAVIGATION SYSTEM

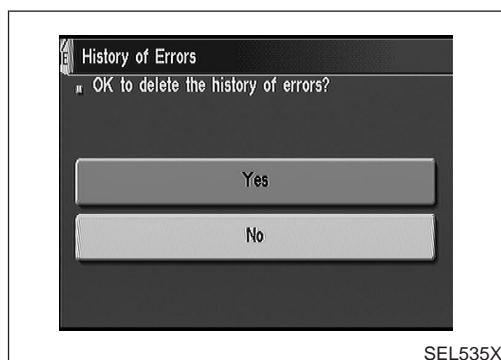
Confirmation/Adjustment Mode (Cont'd)



7. If trouble items are displayed with time count, repair/replace the system according to "ERROR HISTORY" TABLE, EL-333.



8. If necessary, touch error item to display the time when the error was detected and the place where the error was detected.



9. After repairing the system, erase the diagnosis memory.

NOTE:

When the NAVI control unit must be replaced, do not erase the diagnosis memory for further inspection of malfunctions.

- 1) Start the engine.
- 2) Push both "Map" and "MODE" switches at the same time for more than 5 seconds.
- 3) Select "Confirmation/ adjustment".
- 4) Select "Navigation".
- 5) Select "Error history".
- 6) Select "Delete".
- 7) Select "Yes".

NAVIGATION SYSTEM

Confirmation/Adjustment Mode (Cont'd)

“ERROR HISTORY” TABLE

=NFEL0357S02

Detected items	Description	Diagnosis/service procedure	Reference page
Gyro sensor disconnected	Communications malfunction between NAVI control unit and internal gyro	Perform self-diagnosis to confirm whether the NAVI control unit is malfunctioning or not. If no failure is detected, a momentary and/or temporary malfunction may have been caused by strong electromagnetic wave interference.	EL-328
Connection problem of speed sensor	Input malfunction of NAVI control unit and speed sensor	Check vehicle speed sensor signal in “Diagnosis for signals from the car” mode. If the input signal is not detected correctly, check harness for open or short between combination meter and NAVI control unit.	EL-335
GPS disconnected	Communications malfunction between NAVI control unit and GPS board	Perform self-diagnosis to confirm whether the NAVI control unit is malfunctioning or not. If no failure is detected, a momentary and/or temporary malfunction may have been caused by strong electromagnetic wave interference.	EL-328
GPS transmission cable malfunction			
GPS input line connection error			
GPS TCXO over	The transmission circuit of the GPS board frequency synchronization oscillator (inside the NAVI control unit) is sending an oscillation frequency that is greater or less than the set value.	A location error occurs. Strong electromagnetic wave interference may have occurred. The GPS antenna may be in a very hot or very cold environment. This is usually a temporary malfunction.	—
GPS TCXO under			
GPS ROM malfunction	Internal malfunction of GPS board RAM or ROM inside the NAVI control unit.	Perform self-diagnosis to confirm whether the NAVI control unit is malfunctioning or not. If no failure is detected, a momentary and/or temporary malfunction may have been caused by strong electromagnetic wave interference.	EL-328
GPS RAM malfunction			
GPS RTC malfunction	Malfunction of GPS board clock IC inside the NAVI control unit.		
GPS antenna disconnected	—	Perform self-diagnosis to confirm GPS antenna connection. If no failure is detected, a momentary and/or temporary malfunction may have been caused by a strong impact.	EL-328
Low voltage of GPS	Power supply voltage for GPS board inside the NAVI control unit is low.	1. Check power supply circuits for NAVI control unit.	EL-356
		2. Perform self-diagnosis to confirm GPS antenna connection.	EL-328
		3. If above diagnosis results are OK, a momentary and/or temporary malfunction may have been caused by a strong impact.	—
CD-ROM communication error	CD-ROM driver malfunction (inside the NAVI control unit)	Perform self-diagnosis to confirm whether the NAVI control unit is malfunctioning or not. If no failure is detected, a momentary and/or temporary malfunction may have been caused by strong electromagnetic wave interference.	EL-328

NAVIGATION SYSTEM

Confirmation/Adjustment Mode (Cont'd)

Detected items	Description	Diagnosis/service procedure	Reference page
Loading mechanism malfunction	—	Check that whether the disc can be inserted and ejected correctly. If the loading function does not operate correctly, replace NAVI control unit.	—
CD-ROM reading error	It is confirmed that the appropriate CD-ROM disc is positioned in the CD-ROM loader. However, no data can be read.	Perform self-diagnosis to confirm whether the inserted disc is malfunctioning or not.	EL-328
Malfunctioning of error correction for CD-ROM	Erroneous data is read from the CD-ROM. The errors cannot be corrected.		
CD-ROM focus error	CD-ROM data reading beam is out of focus.	Rough road driving might create CD skipping like music CD audio unit.	—
CD-ROM malfunction	—	Perform self-diagnosis to confirm whether the inserted disc is malfunctioning or not.	EL-328

NAVIGATION SYSTEM

Confirmation/Adjustment Mode (Cont'd)

“DIAGNOSIS FOR SIGNALS FROM THE CAR” MODE NFEL0357S03

Description

In “Diagnosis for Signals from the Car” mode, following input signals to the NAVI control unit can be checked on the display. NFEL0357S0301

Item	Indication	Vehicle condition
Vehicle Speed*	ON	Vehicle speed is greater than 0 km/h (0 MPH).
	OFF	Vehicle speed is 0 km/h (0 MPH).
Light	ON	Lighting switch is in 1st or 2nd position.
	OFF	Lighting switch is in “OFF” position.
IGN	ON	Ignition switch is in “ON” position.
	OFF	Ignition switch is in “ACC” position.
Reverse*	ON	Selector/shift lever is in “Reverse” position.
	OFF	Selector/shift lever is in other than “Reverse” position.

*: When ignition switch is in “ACC” position, indication will be changed to “-”.

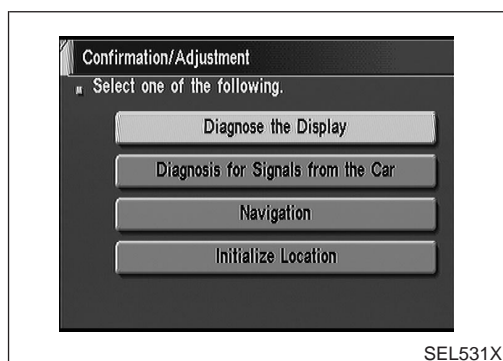
How to Perform

NFEL0357S0302

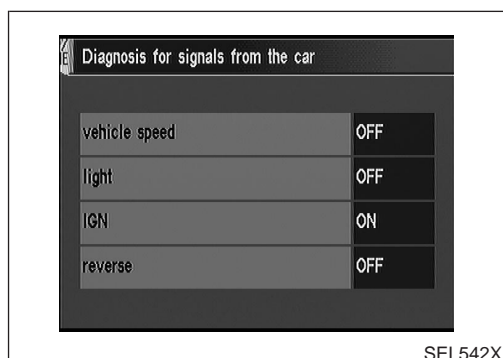
1. Start the engine.
2. Push “OPEN/CLOSE” switch and then open the display.
3. Push both “MAP” and “MODE” switches at the same time for more than 5 seconds.
4. Select “Confirmation/ adjustment”.



SEL527X



SEL531X

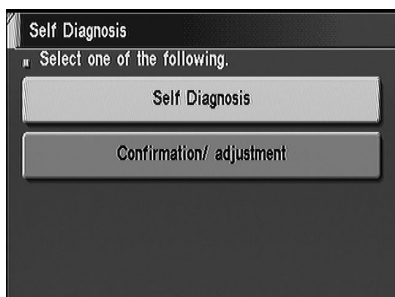


SEL542X

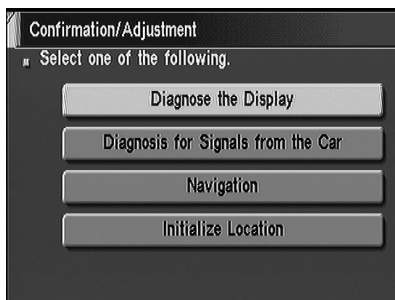
5. Select “Diagnosis for Signals from the Car”.
6. Then “Diagnosis for Signals from the Car” mode is performed.

NAVIGATION SYSTEM

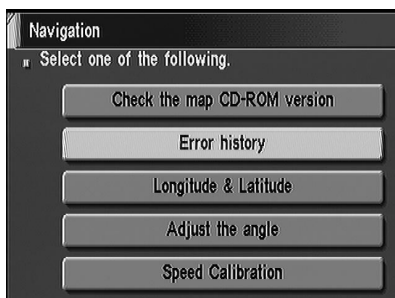
Confirmation/Adjustment Mode (Cont'd)



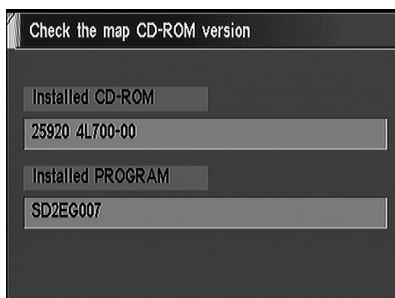
SEL527X



SEL531X



SEL532X



SEL536X

"CHECK THE MAP CD-ROM VERSION" MODE

=NFEL0357S04

How to Perform

NFEL0357S0401

1. Start the engine.
2. Push "OPEN/CLOSE" switch and then open the display.
3. Push both "MAP" and "MODE" switches at the same time for more than 5 seconds.
4. Select "Confirmation/ adjustment".
5. Select "Navigation".
6. Select "Check the map CD-ROM version".
7. The version (parts number) of CD-ROM loaded to the NAVI control unit will be displayed.

“DIAGNOSE THE DISPLAY” MODE

=NFEL0357S05

Description

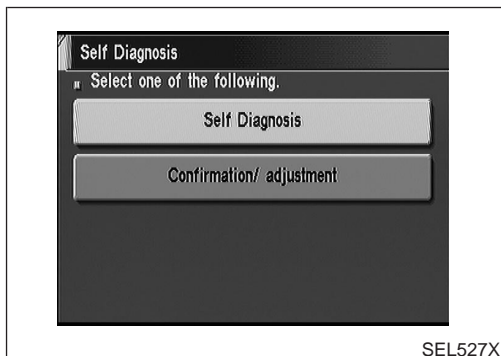
NFEL0357S0501

Use the “Diagnose the Display” mode to check the display color brightness and shading. The NAVI control unit must be replaced if the color brightness and shading are abnormal.

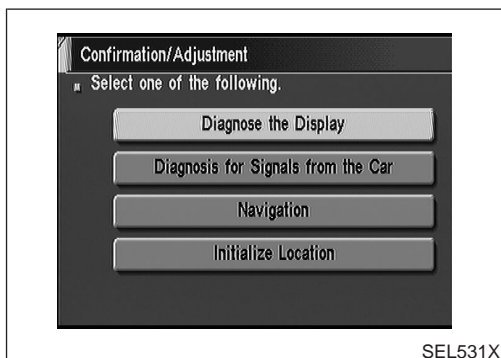
How to Perform

NFEL0357S0502

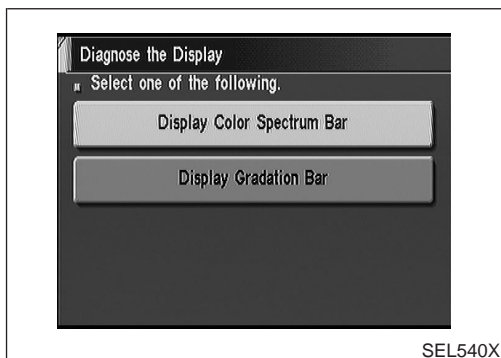
1. Start the engine.
2. Push “OPEN/CLOSE” switch and then open the display.
3. Push both “MAP” and “MODE” switches at the same time for more than 5 seconds.
4. Select “Confirmation/ adjustment”.
5. Select “Diagnose the Display”.
6. Select “Display color spectrum bar” or “Display gradation bar”.
7. Then color bar/gray scale will be displayed.



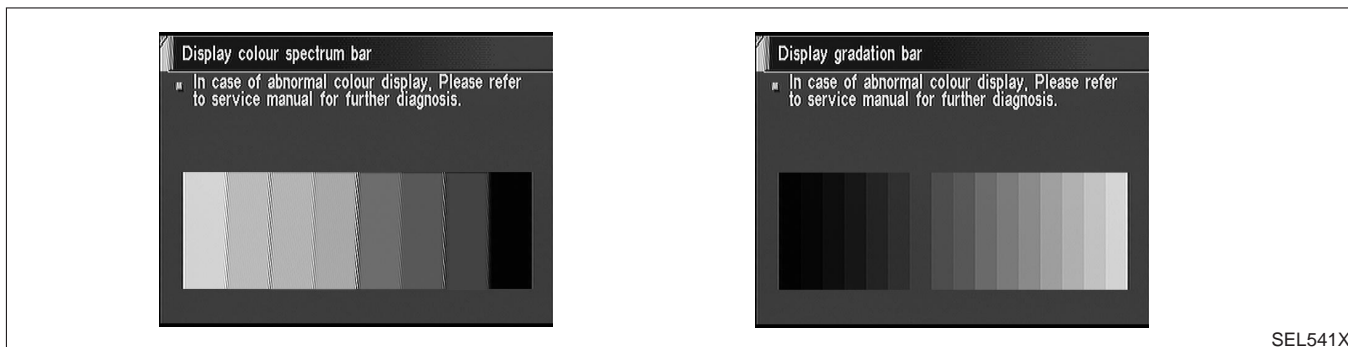
SEL527X



SEL531X



SEL540X



SEL541X

NAVIGATION SYSTEM

Confirmation/Adjustment Mode (Cont'd)

“LONGITUDE & LATITUDE” MODE

NFEL0357S06

Description

NFEL0357S0601

The “Longitude & Latitude” is used to confirm the longitude and latitude of some optional area point.

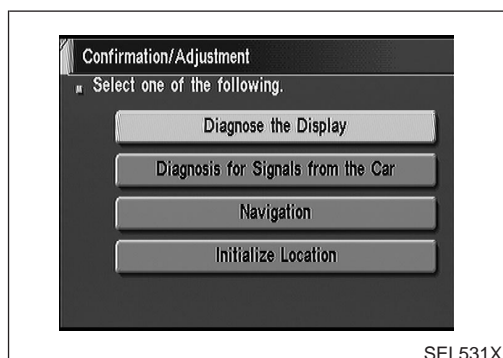
How to Perform

NFEL0357S0602

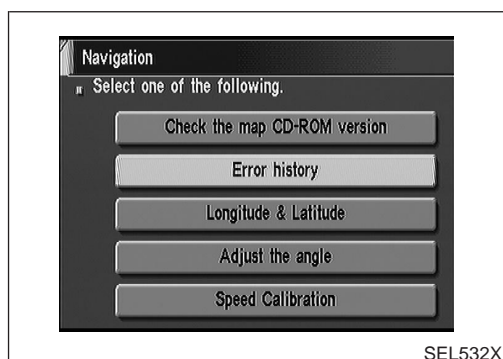
1. Start the engine.
2. Push “OPEN/CLOSE” switch and then open the display.
3. Push both “MAP” and “MODE” switches at the same time for more than 5 seconds.
4. Select “Confirmation/ adjustment”.
5. Select “Navigation”.
6. Select “Longitude & Latitude”.
7. Adjust the pointer with using the joystick and touch “Set”.
8. The longitude and latitude are displayed.



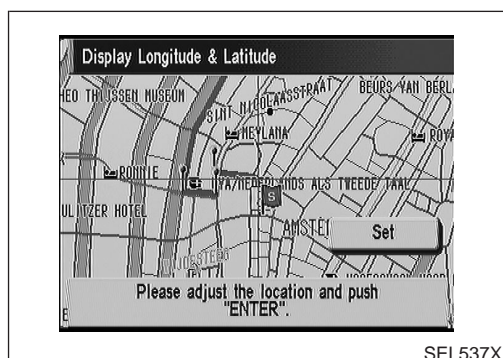
SEL527X



SEL531X



SEL532X



SEL537X

“ADJUST THE ANGLE” MODE

NFEL0357S07

Description

NFEL0357S0701

If the display indicates a larger or smaller turning angle than the actual turning angle, the gyro (angular speed sensor) sensing values must be checked.

In case that the vehicle on the display makes larger angle turn than reality, touch “-”. In case that the vehicle on the display makes smaller angle turn than reality, touch “+”.

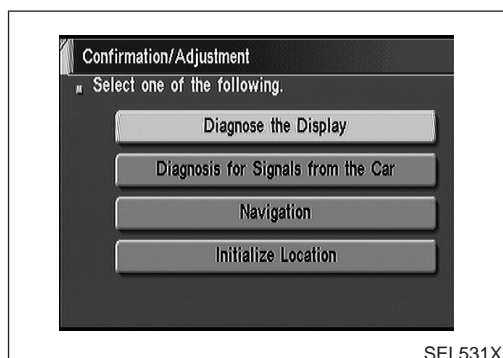
How to Perform

NFEL0357S0702

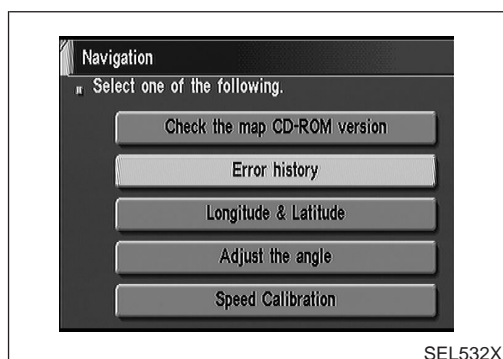
1. Start the engine.
2. Push “OPEN/CLOSE” switch and then open the display.
3. Push both “MAP” and “MODE” switches at the same time for more than 5 seconds.
4. Select “Confirmation/ adjustment”.
5. Select “Navigation”.
6. Select “Adjust the angle”.
7. Select “Left Turn” to adjust the angle to the left. Touch “Right Turn” to adjust the angle to the right.
8. Select “+” to increase the angle change coefficient or “-” to reduce the angle change coefficient.
9. Select “Set” to save the changed values in memory.
10. Then the vehicle turning angle on the display has adjusted.



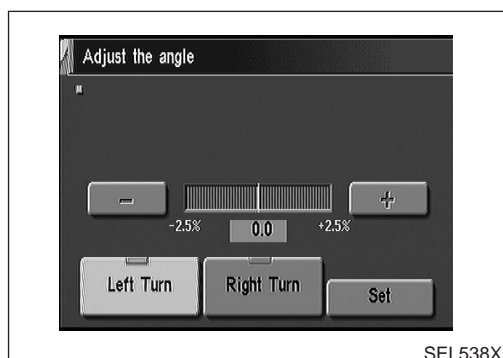
SEL527X



SEL531X



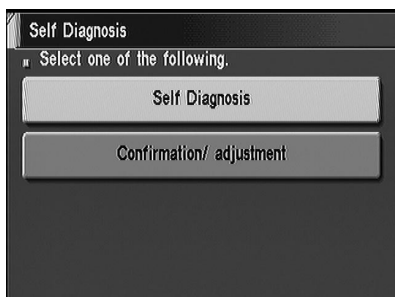
SEL532X



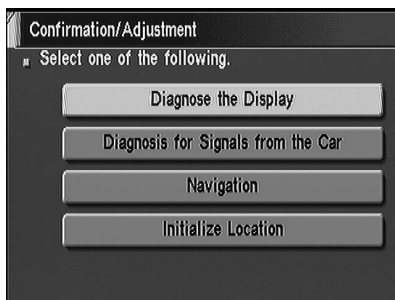
SEL538X

NAVIGATION SYSTEM

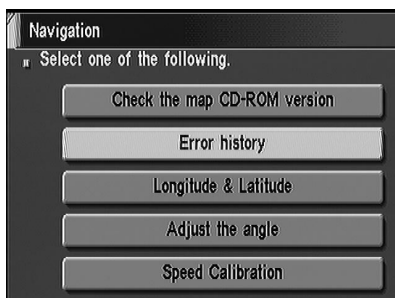
Confirmation/Adjustment Mode (Cont'd)



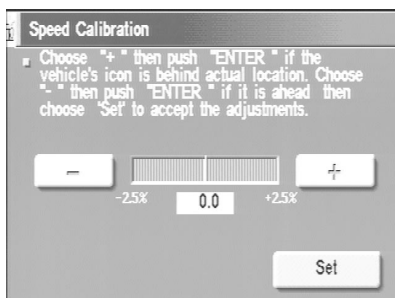
SEL527X



SEL531X



SEL532X



SEL539X

“SPEED CALIBRATION” MODE

=NFEL0357S08

How to Perform

NFEL0357S0801

1. Start the engine.
2. Push “OPEN/CLOSE” switch and then open the display.
3. Push both “MAP” and “MODE” switches at the same time for more than 5 seconds.
4. Select “Confirmation/ adjustment”.
5. Select “Navigation”.
6. Touch “Speed Calibration”.
7. Touch “+” or “-” to adjust the distance change coefficient.
 - To make the distance change coefficient smaller, touch “-”.
 - To make the distance change coefficient larger, touch “+”.
8. Select “Set”.

“INITIALIZE LOCATION” MODE

=NFEL0357S09

This procedure is for initializing the current location. Perform “Initialize Location” when the vehicle is transported a long distance on a trailer, etc.

Map with grey background appears and the vehicle location cannot be adjusted by scrolling the display when the vehicle location in the memory is out of the area of the inserted map data.

Perform “Initialize Location” when this occurs.

NOTE:

- Only initialize the system when the NAVI control unit is replaced. If the system is initialized in other cases, it may cause inaccurate positioning of the position marker for a while.
- Initialize the system outside for receiving the radio wave from the GPS satellite.

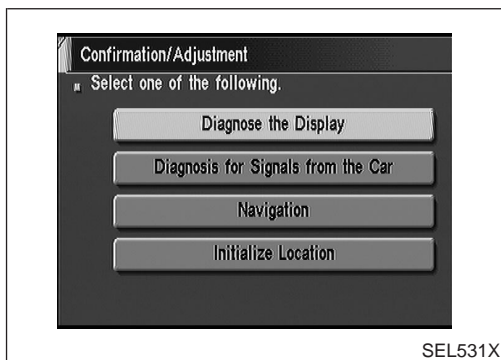
How to Perform

NFEL0357S0901

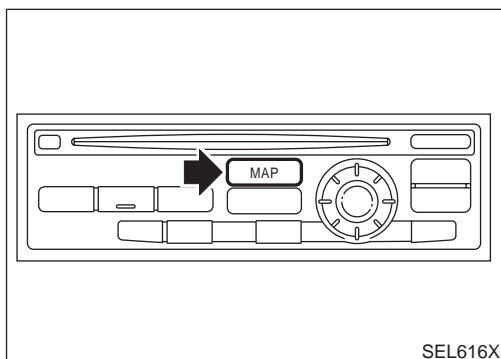
1. Switch the navigation system mode to self-diagnosis by pushing both “MAP” and “MODE” switches at the same time for more than 5 seconds.



2. Select “Confirmation/ adjustment”.



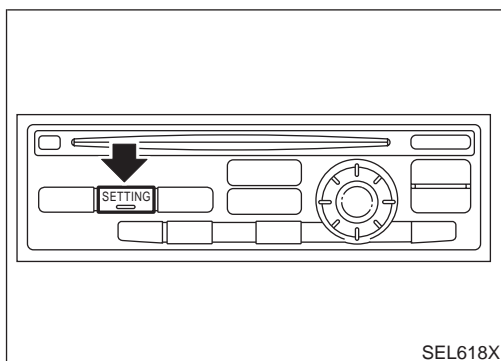
3. Select “Initialize Location”. Then the previous screen is displayed.



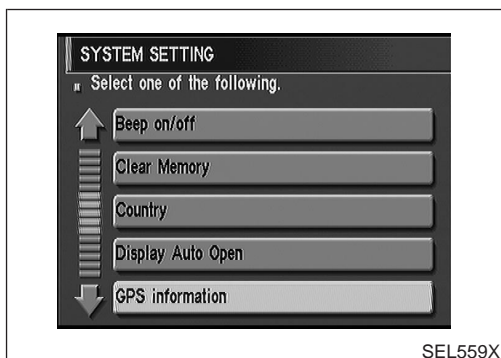
4. Push “MAP” switch.

NAVIGATION SYSTEM

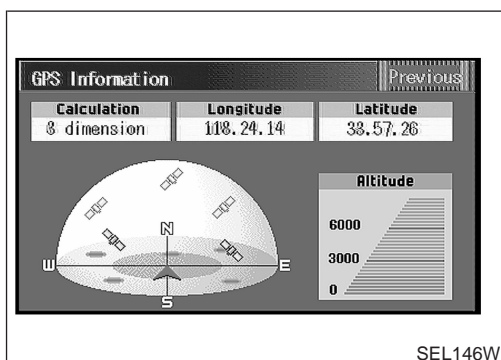
Confirmation/Adjustment Mode (Cont'd)



5. Push "SETTING" switch.
6. Select "System Setting".



7. Select "GPS Information".



8. More than one GPS satellite icon turns green. (It may take 1 to 15 minutes.)

NOTE:

Drive the vehicle for a while* in order to change the receiving condition of the radio wave from the GPS satellite if the GPS icon does not turn green.

* The driving distance which is necessary depends on the receiving condition of the radio wave from the GPS satellite.

9. Push "MAP" switch and check the following.
 - Confirm that the GPS icon on the map turns green.
 - Then the position marker should show the current location.
 - Position marker rotates corresponding to the movement of the vehicle.
10. Initialization is completed.

NAVIGATION SYSTEM

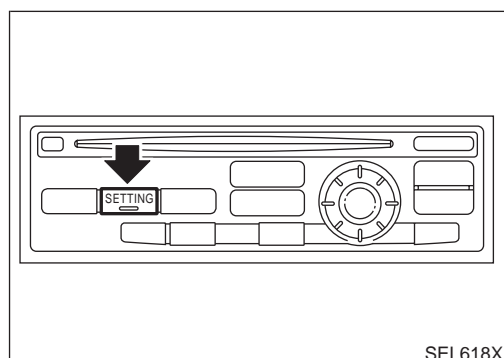
Control Panel Mode

Control Panel Mode APPLICATION ITEMS

=NFEL0358

NFEL0358S01

Mode	Description	Reference page
Display Auto Open	Display can be set to open by either of the following controls. <ul style="list-style-type: none"> ● Display will be opened when OPEN/CLOSE SW is selected with Key SW positioned ACC. ● Display will be automatically opened when Key SW is turned from OFF to ACC. 	EL-344
GPS Information	The GPS data includes longitude, latitude and altitude (distance above sea level) of the present vehicle position, and current date and time for the area in which the vehicle is being driven. Also indicated are the GPS reception conditions and the GPS satellite position.	EL-344
Language	Language can be selected for the display and voice guidance. To change the language, the program CD-ROM is required.	EL-345
Quick Stop Customer Setting	One facility of your selection can be added to your Quick Stop.	EL-345
Route Priorities	Priorities of search request and automatic re-searching can be set for route search.	EL-345
Tracking	Tracking to the present vehicle position can be displayed.	EL-346
Display Setting	The following display settings can be customized. <ul style="list-style-type: none"> ● Display color (Day mode or Night mode) ● Brightness of display 	EL-346
Heading	Heading of the map display can be customized for either north heading or the actual driving direction of the vehicle.	EL-347
Nearby Display Icons	Icons of facilities can be displayed. Facilities to be displayed can be selected from the variety selections.	EL-347
Adjust Current Location	Current location of position marker can be adjusted. Direction of position marker also can be calibrated when heading direction of the vehicle on the display is not matched with the actual direction.	EL-348
Avoid Area Setting	A particular area can be avoided when routing.	—
Beep On/Off	Beep sounds which corresponds to the system operation can be activated/deactivated.	EL-348
Clear Memory	Address book, Previous destination or Avoid area can be deleted.	EL-349
Country	When two or more countries are included in one CD-ROM, the destination can be searched for under the country name.	EL-349



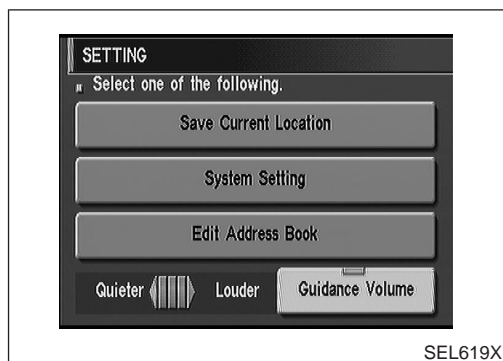
HOW TO PERFORM CONTROL PANEL MODE

NFEL0358S02

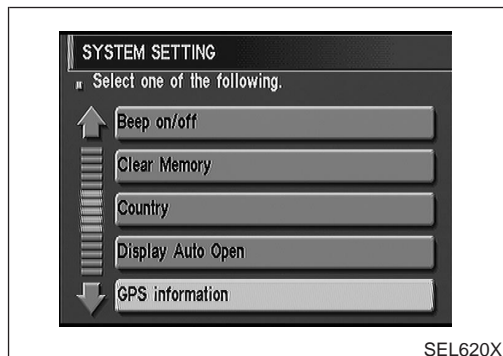
1. Start the engine.
2. Push "OPEN/CLOSE" switch and then open the display.
3. Push "SETTING" switch.
 - For further procedures, refer to the following pages which describe each application item of the control panel mode.

NAVIGATION SYSTEM

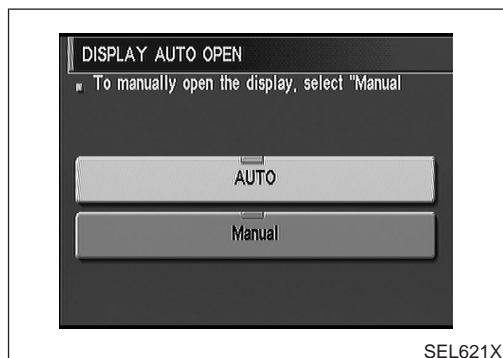
Control Panel Mode (Cont'd)



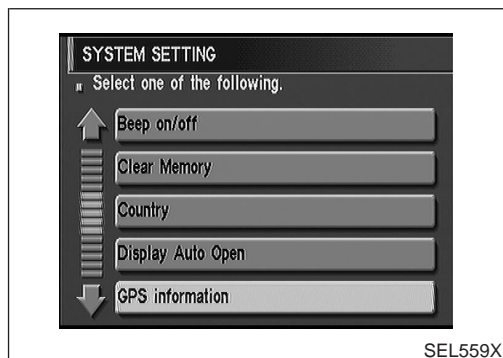
SEL619X



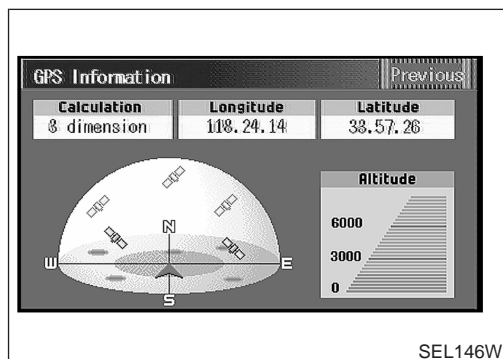
SEL620X



SEL621X



SEL559X



SEL146W

“DISPLAY AUTO OPEN” MODE

NFEL0358S03

1. Start the engine.
2. Push “OPEN/CLOSE” switch and then open the display.
3. Push “SETTING” switch.
4. Select “System Setting”.

5. Select “Display Auto Open”.

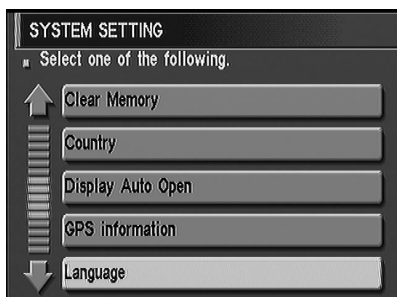
6. Select “Auto” or “Manual” icon.
 - To manually open the display, select “Manual”.
 - To automatically open the display, select “Auto”.
7. Push “MAP” switch, then the display will go back to the current location map.

“GPS INFORMATION” MODE

NFEL0358S04

1. Start the engine.
2. Push “OPEN/CLOSE” switch and then open the display.
3. Push “SETTING” switch.
4. Select “System Setting”.
5. Select “GPS information”.

6. Then GPS information will be displayed.



SEL565X

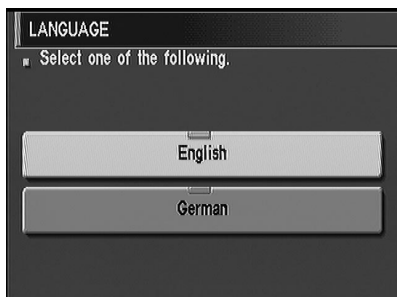
“LANGUAGE” MODE

=NFEL0358S05

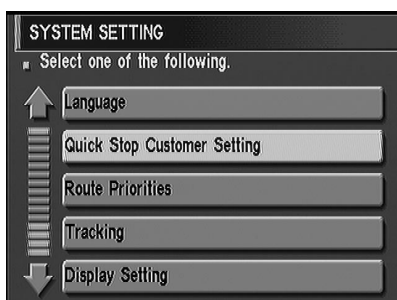
1. Start the engine.
2. Push “OPEN/CLOSE” switch and then open the display.
3. Push “SETTING” switch.
4. Select “System Setting”.
5. Select “Language”.
6. Select “English” or “German” icon.
 - When display indicates English, select “English”.
 - When display indicates German, select “German”.
7. Push “MAP” switch, then the display will go back to the current location map.

NOTE:

To change the language, the program CD-ROM is required.



SEL566X



SEL543X

“QUICK STOP CUSTOMER SETTING” MODE

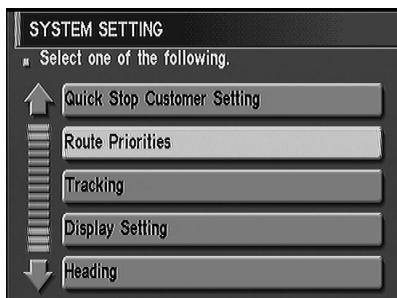
NFEL0358S06

1. Start the engine.
2. Push “OPEN/CLOSE” switch and then open the display.
3. Push “SETTING” switch.
4. Select “System Setting”.
5. Select “Quick Stop Customer Setting”.



SEL544X

6. Select an item from the list.



SEL545X

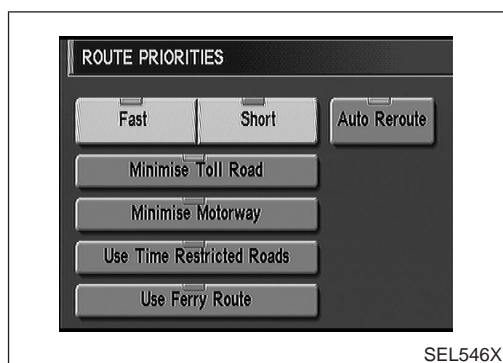
“ROUTE PRIORITIES” MODE

NFEL0358S07

1. Start the engine.
2. Push “OPEN/CLOSE” switch and then open the display.
3. Push “SETTING” switch.
4. Select “System Setting”.
5. Select “Route Priorities”.

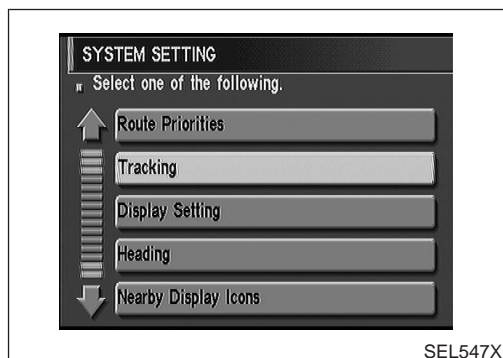
NAVIGATION SYSTEM

Control Panel Mode (Cont'd)



SEL546X

6. Select an item from the list.

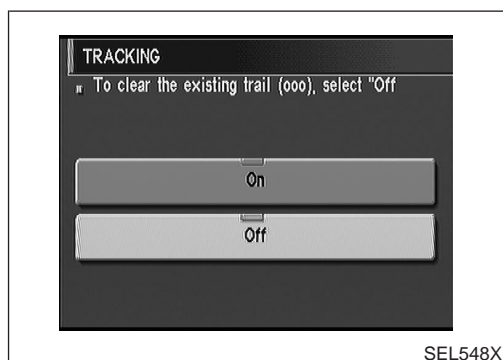


SEL547X

“TRACKING” MODE

NFEL0358S08

1. Start the engine.
2. Push “OPEN/CLOSE” switch and then open the display.
3. Push “SETTING” switch.
4. Select “System Setting”.
5. Select “Tracking”.

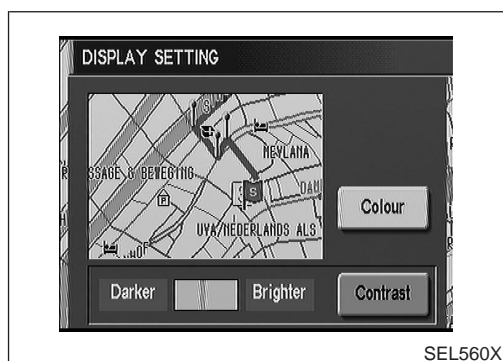


SEL548X

6. Select “On” or “Off” icon.
 - To leave no trail on the map, select “Off”.
 - To leave a trail in the map, select “On”.
7. Push “MAP” switch, then the display will go back to the current location map.

NOTE:

When a trail display is turned OFF, trail data is erased from the memory.



SEL560X

“DISPLAY SETTING” MODE

NFEL0358S09

Display Color Setting

NFEL0358S0901

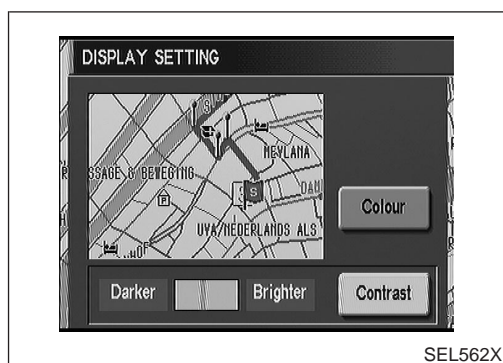
1. Start the engine.
2. Push “OPEN/CLOSE” switch and then open the display.
3. Push “SETTING” switch.
4. Select “System Setting”.
5. Select “Color”. Display color will change to Day mode/Night mode.
6. Select “MAP” switch, then the display will go back to the current location map.

NOTE:

- Display color can be changed independently when lighting switch is turned on and off.
- Initial setting of the color is as follows:
 When lighting switch is turned off: Day mode
 When lighting switch is turned on: Night mode
 Day mode: White background
 Night mode: Black background



SEL561X



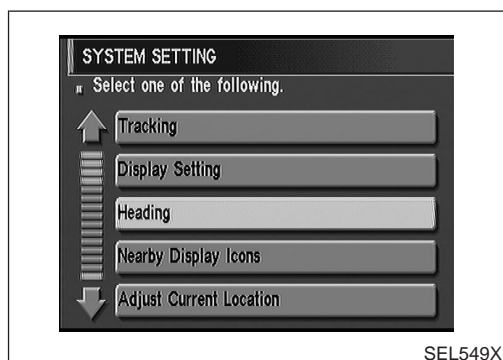
Brightness Setting

NFEL0358S0902

1. Start the engine.
2. Push "OPEN/CLOSE" switch and then open the display.
3. Push "SETTING" switch.
4. Select "System Setting".
5. Select "Bright" or "Dark" to adjust the brightness of display.
6. Select "MAP" switch, then the display will go back to the current location map.

NOTE:

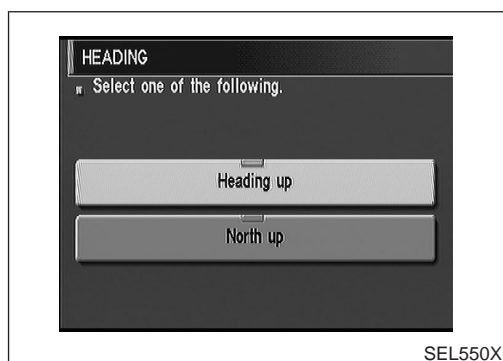
Display brightness can be adjusted independently when lighting switch is turned on and off.



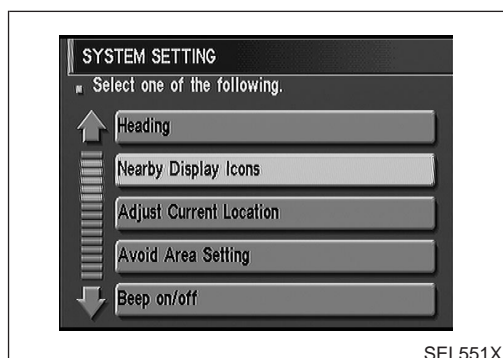
"HEADING" MODE

NFEL0358S10

1. Start the engine.
2. Push "OPEN/CLOSE" switch and then open the display.
3. Push "SETTING" switch.
4. Select "System Setting".
5. Select "Heading".



6. Select "Heading up" or "North up" icon.
 - To display North up, select "North up".
 - To display the car heading up, select "Heading up".
7. Push "MAP" switch, then the display will go back to the current location map.



"NEARBY DISPLAY ICONS" MODE

NFEL0358S11

1. Start the engine.
2. Push "OPEN/CLOSE" switch and then open the display.
3. Push "SETTING" switch.
4. Select "System Setting".
5. Select "Nearby Display Icons".

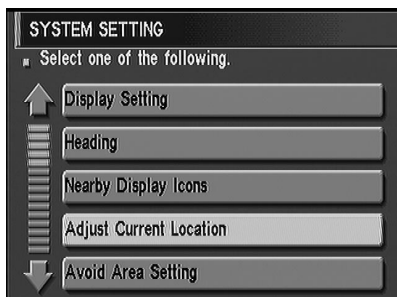
NAVIGATION SYSTEM

Control Panel Mode (Cont'd)



SEL552X

6. Select and touch an item on the list.
7. Push "MAP" switch, then the display will go back to the current location map.

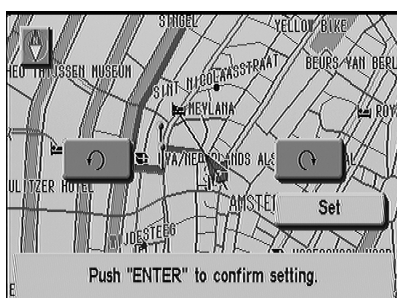


SEL553X

"ADJUST CURRENT LOCATION" MODE

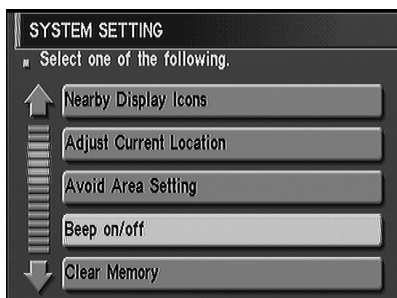
NFEL0358S12

1. Start the engine.
2. Push "OPEN/CLOSE" switch and then open the display.
3. Push "SETTING" switch.
4. Select "System Setting".
5. Select "Adjust Current Location".



SEL554X

6. Select "←" or "→" to calibrate the heading direction. (Arrow marks will rotate corresponding to the calibration key.)
7. Select "Set". Then the vehicle mark will be matched to the arrow mark.
8. Display will show "Heading direction has been calibrated" and then go back to the current location map.

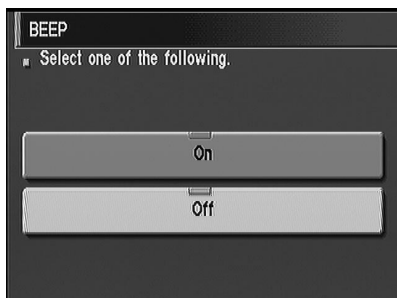


SEL555X

"BEEP ON/OFF" MODE

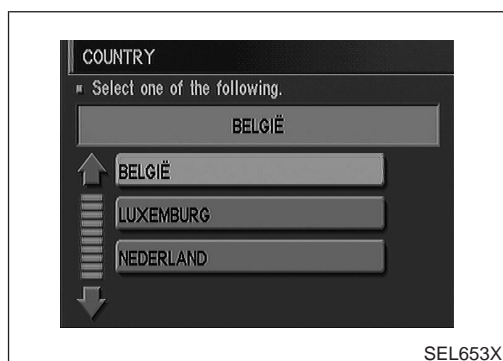
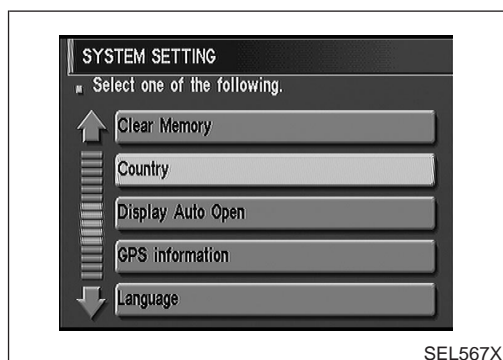
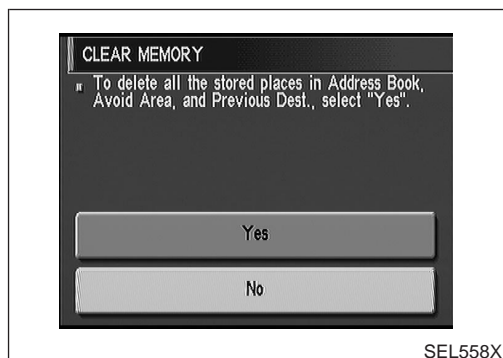
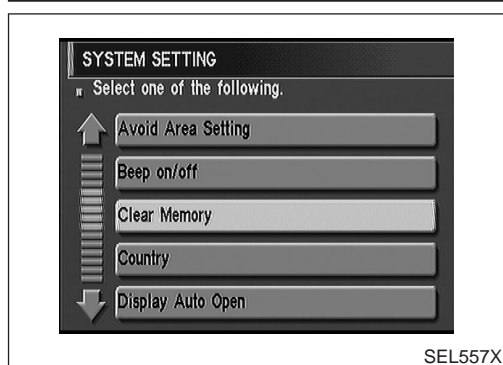
NFEL0358S13

1. Start the engine.
2. Push "OPEN/CLOSE" switch and then open display.
3. Push "SETTING" switch.
4. Select "System Setting".
5. Touch "Beep On/Off".



SEL556X

6. Select "On" or "Off" icon.
 - If you want the beep sound, select "On".
 - If you do not want the beep sound, select "Off".
7. Push "PREVIOUS" switch, then the display will go back to the current location map.



“CLEAR MEMORY” MODE

=NFEL0358S14

1. Start the engine.
 2. Push “OPEN/CLOSE” switch and then open the display.
 3. Push “SETTING” switch.
 4. Select “System Setting”.
 5. Select “Clear Memory”.
-
6. To delete all the stored places in “Address Book”, “Avoid Area” and “Previous Dest”, select “Yes”.

“COUNTRY” MODE

NFEL0358S15

1. Start the engine.
 2. Push “OPEN/CLOSE” switch and then open the display.
 3. Push “SETTING” switch.
 4. Select “System Setting”.
 5. Select “Country”.
-
6. Select and touch an item on the list.

NAVIGATION SYSTEM

Guide Volume Setting

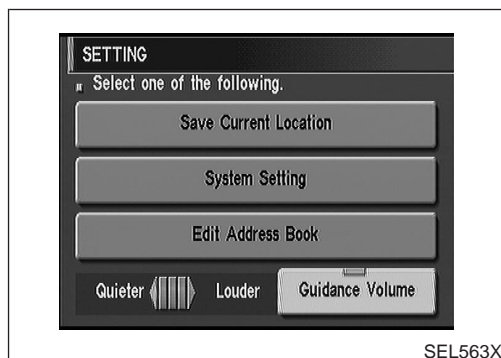
=NFEL0359

DESCRIPTION

NFEL0359S01

Following voice guidance setting can be changed.

- Voice guidance activation/deactivation
- Voice volume of the guidance

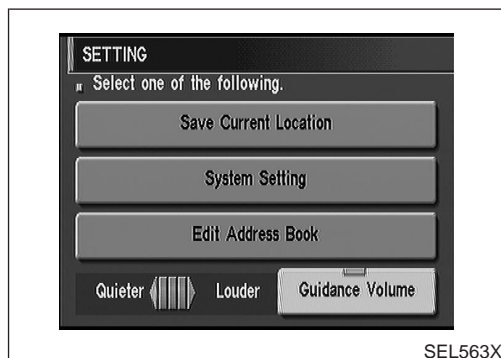


SEL563X

ACTIVATION/DEACTIVATION SETTING

NFEL0359S02

1. Start the engine.
2. Push "OPEN/CLOSE" switch and then open the display.
3. Push "SETTING" switch.
4. The voice prompt can be turned on/off by pressing the "Guidance Volume" button.



SEL563X

VOICE VOLUME SETTING

NFEL0359S03

1. Start the engine.
2. Push "OPEN/CLOSE" switch and then open the display.
3. Push "SETTING" switch.
4. Volume of the voice can be controlled by bending the joystick to left/right.

Anti-theft System

RHD MODELS

=NFEL0360

Description

NFEL0360S01

By integrating the Navigation System in the vehicle's interior and linking it to the vehicle's immobilizer system, the possibility of the Navigation unit being stolen is effectively reduced. Each time the Navigation System is switched on, the Navigation System will start up communication with the vehicle's immobilizer control unit (IMMU) and verify an identification code. If communication cannot be established, or the verified code is incorrect, the Navigation System will lock up showing "ANTI-THEFT FUNCTION" on the Navigation display.

LHD MODELS

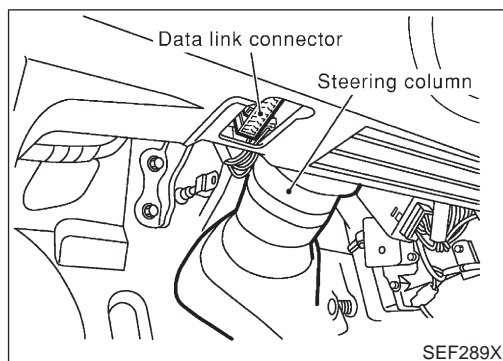
NFEL0360S02

Description

the 4-digit PIN must be entered when the display shows "enter your PIN" at the time the vehicle is purchased.

NAVIGATION SYSTEM

CONSULT-II

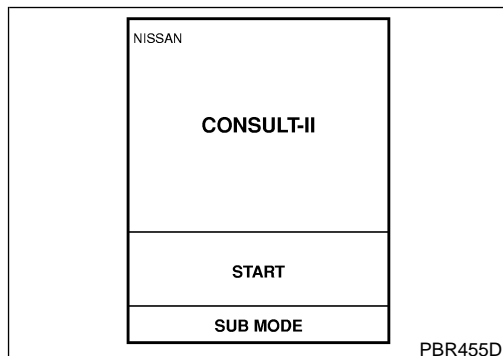


CONSULT-II CONSULT-II INSPECTION PROCEDURE

=NFEL0361

NFEL0361S01

1. Turn ignition switch OFF.
2. Connect CONSULT-II to data link connector.

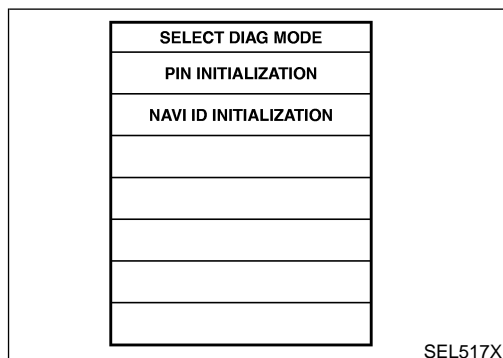


3. Insert NVIS (NATS) program card into CONSULT-II.

← : Program card

NATS-AEN00A

4. Turn ignition switch ON.
5. Touch "START".



6. Perform each diagnostic test mode according to each service procedure.

For further information, see the CONSULT-II Operation Manual, NVIS (NATS).

CONSULT-II DIAGNOSTIC TEST MODE FUNCTION

NFEL0361S02

CONSULT-II DIAGNOSTIC TEST MODE	Description
PIN INITIALIZATION	Navigation system will be locked when the vehicle's owner enters the wrong PIN five consecutive times. To release the lock, use "PIN INITIALIZATION".
NAVI ID INITIALIZATION	In normal times regulation codes are being communicated between Navigation Control Unit and Dongle Control Unit. Use "NAVI ID INITIALIZATION" to match the codes when either one has been replaced due to breakdown or etc.

NOTE:

When any initialization is performed, all NAVI ID and PIN previously registered will be erased and then must be registered again.

NAVIGATION SYSTEM

Trouble Diagnoses

Trouble Diagnoses SYMPTOM CHART

=NFEL0362

NFEL0362S01

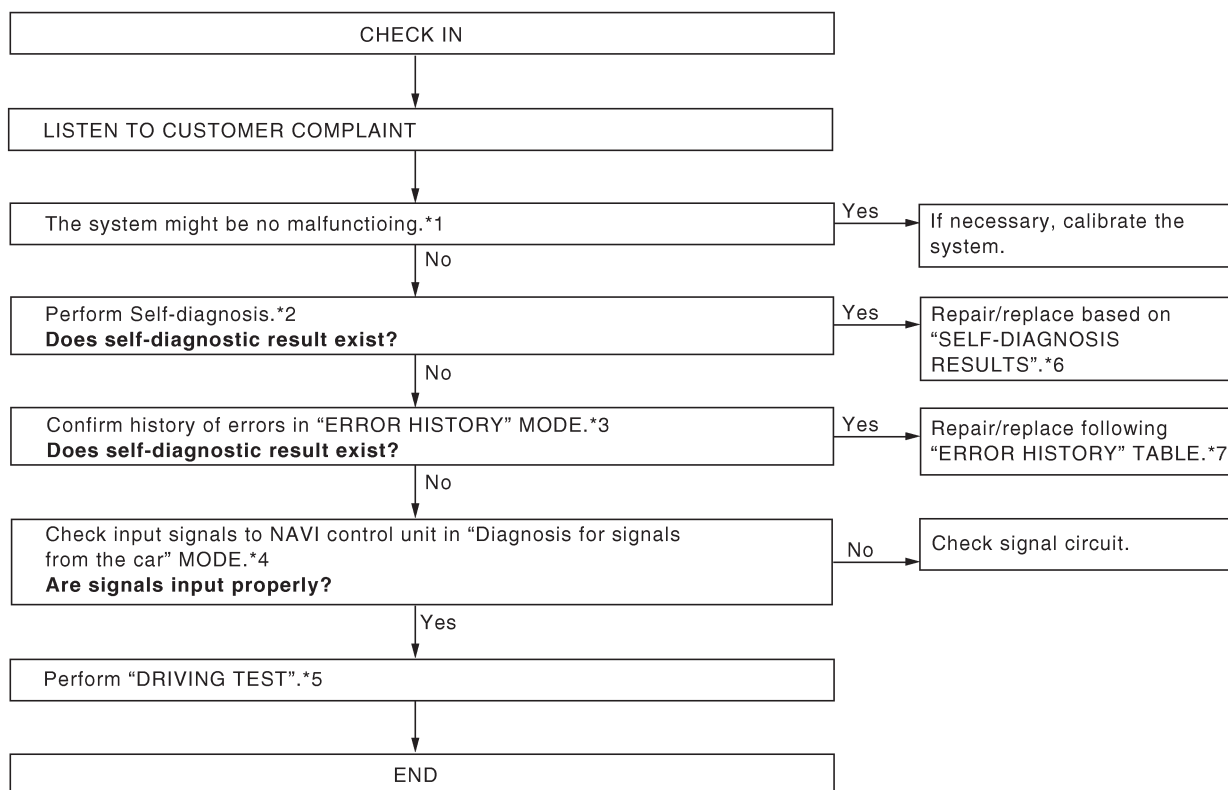
Symptom	Diagnoses/service procedure	Reference page
Any function of the system does not operate.	Check power supply and ground circuit for NAVI control unit.	EL-356
Strange screen color or unusual screen brightness.	1. Check "Display Setting" MODE.	EL-346
	2. Check display in "Diagnose the Display" MODE.	EL-337
The display is not dimmed when turning lighting switch to ON.	1. Check "Display Setting" MODE.	EL-346
	2. Check lighting switch signal input to NAVI control unit correctly in "Diagnosis for the signals from the car" MODE.	EL-335
No navigation guide voice are heard from front driver side speaker.	1. Check "Guide Volume Setting".	EL-350
	2. Check speaker relay.	EL-357
Beep does not sound when the system guides route.	Check "Beep On/Off" MODE.	EL-348
Position marker does not trace along the route being traveled.	Go to "WORK FLOW FOR NAVIGATION INSPECTION".	EL-354
Position marker does not indicate forward or backward movement.	Check reverse signal input to NAVI control unit correctly by "Diagnosis for the signals from the car" MODE.	EL-335
Radio wave of GPS cannot be received. (GPS marker on the display does not become green color.)	1. Is there anything obstructing the GPS antenna on the rear parcel finisher? (GPS antenna located under the rear parcel finisher.)	—
	2. Check GPS radio wave receive condition in "GPS Information MODE".	EL-344
	3. Check GPS antenna in "Self Diagnosis" MODE.	EL-329
Heading direction of position marker does not match vehicle direction.	1. Perform "Adjust Current Location" MODE.	EL-348
	2. Go to "WORK FLOW FOR NAVIGATION INSPECTION".	EL-354
Stored location in the address book and other memory functions are lost when battery is disconnected or becomes discharged.	Stored location in the address book and other memory functions may be lost if the battery is disconnected or becomes discharged. If this should occur, charge or replace the battery as necessary and re-enter the information.	—
Map appears grey and cannot be scrolled.	The current location in the memory is out of the map data area. Perform "Initialize Location".	EL-341

NAVIGATION SYSTEM

Trouble Diagnoses (Cont'd)

WORK FLOW FOR NAVIGATION INSPECTION

=NFEL0362S02



SEL519X

*1: EL-359

*2: EL-328

*3: EL-331

*4: EL-335

*5: EL-355

*6: EL-330

*7: EL-333

DRIVING TEST

During the driving test, diagnose the system by checking the difference of symptoms with each sensor ON or OFF. =NFEL0362S03

Test Pattern 1

Test method in which current position adjustment is not made according to GPS data. NFEL0362S0301

- Remove the GPS antenna connector from the NAVI control unit. Drive the vehicle.
Before driving the vehicle, perform "Adjust Current Location" MODE (EL-348).

Test Pattern 2

Test procedure in which map matching is not used. NFEL0362S0302

- Before driving the vehicle, perform "Adjust Current Location" MODE (EL-348). With the ignition switch OFF and the map CD-ROM removed from the NAVI control unit, drive the vehicle. After driving the vehicle, reinstall the map CD-ROM. Compare the saved driving tracks for the vehicle's current location with roads on the map.

Example

<The position marker consistently indicates the wrong position when driving in the same area. Determine if this is the result of the map matching function or the GPS function.> NFEL0362S0303

→ Perform test pattern 1.

<To verify the accuracy of the road configuration shown on the display>

→ Perform test patterns 1 and 2.

- Compare the map and the saved driving tracks. The precision of the saved driving tracks is within several hundred meters.

<To make distance calibration and adjustments>

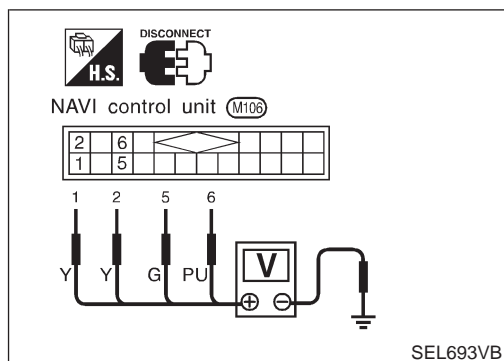
→ Perform test patterns 1 and 2.

- Make adjustments by driving the vehicle over a known course (highway or other road where distances are clearly marked). Calibrate the distance against the known distance. Use the formula below.

Calibration value = Screen display distance/Actual distance

NAVIGATION SYSTEM

Trouble Diagnoses (Cont'd)



POWER SUPPLY AND GROUND CIRCUIT CHECK FOR NAVI CONTROL UNIT

—NFEL0362S04

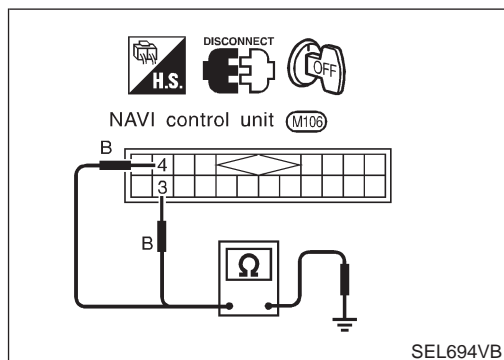
Power Supply Circuit Check

NFEL0362S0401

Terminal		Ignition switch		
(+)	(-)	OFF	ACC	ON
1	Ground	Battery voltage	Battery voltage	Battery voltage
2	Ground	Battery voltage	Battery voltage	Battery voltage
5	Ground	0V	0V	Battery voltage
6	Ground	0V	Battery voltage	Battery voltage

If NG, check the following.

- 10A fuse [No. 10, located in the fuse block (J/B)]
- 10A fuse [No. 14, located in the fuse block (J/B)]
- 10A fuse [No. 1, located in the fuse block (J/B)] for LHD models
- 15A fuse [No. 56, located in the fuse block (J/B)]
- Harness for open or short between fuse and NAVI control unit



Ground Circuit Check

NFEL0362S0402

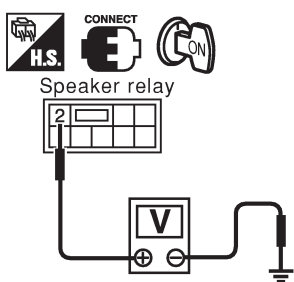
Terminals	Continuity
3 - Ground	Yes
4 - Ground	Yes

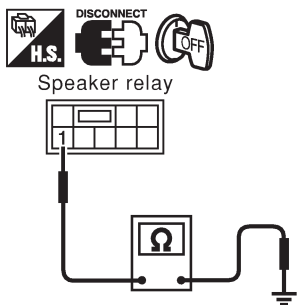
NAVIGATION SYSTEM

Trouble Diagnoses (Cont'd)

SPEAKER RELAY CHECK



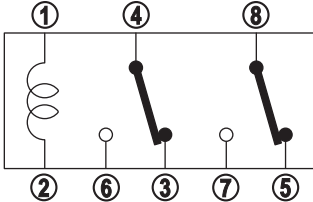
=NFEL0362S05

1	CHECK RELAY ON SIGNAL	
<p>1. Push "VOICE" button. 2. Check voltage between speaker relay B71 (LHD models) or M116 (RHD models) terminal 2 (L/R) and ground.</p>		
		
SEL622XB		
OK or NG		
OK	▶	GO TO 2.
NG	▶	Check harness for open or short between NAVI control unit terminal 46 and speaker relay terminal 2.

2	CHECK GROUND CIRCUIT FOR SPEAKER RELAY	
<p>1. Disconnect speaker relay. 2. Check continuity between speaker relay B71 (LHD models) or M116 (RHD models) terminal 1 (B) and ground.</p>		
		
SEL623XB		
Does continuity exist?		
OK or NG		
OK	▶	GO TO 3.
NG	▶	Repair harness.

NAVIGATION SYSTEM

Trouble Diagnoses (Cont'd)

3	CHECK SPEAKER RELAY																												
<p>Check continuity speaker relay terminals in the condition below.</p> <div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="text-align: center;">   <p>Speaker relay</p>  </div> <div style="border: 1px solid black; padding: 5px;"> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th rowspan="2">Condition</th> <th colspan="6">Terminal</th> </tr> <tr> <th>③</th> <th>④</th> <th>⑤</th> <th>⑥</th> <th>⑦</th> <th>⑧</th> </tr> </thead> <tbody> <tr> <td>5V direct current applied between terminal ① and ②</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>○—○</td> </tr> <tr> <td>Other than above</td> <td>○—○</td> <td></td> <td>○—○</td> <td></td> <td></td> <td>○—○</td> </tr> </tbody> </table> </div> </div>			Condition	Terminal						③	④	⑤	⑥	⑦	⑧	5V direct current applied between terminal ① and ②						○—○	Other than above	○—○		○—○			○—○
Condition	Terminal																												
	③	④	⑤	⑥	⑦	⑧																							
5V direct current applied between terminal ① and ②						○—○																							
Other than above	○—○		○—○			○—○																							
SEL624X																													
OK or NG																													
OK	▶	GO TO 4.																											
NG	▶	Replace speaker relay.																											

4	CHECK SPEAKER OPERATION	
<p>Does front LH speaker sound when audio operates?</p> <p style="text-align: center;">Yes or No</p>		
Yes	▶	Check harness for open or short between speaker relay terminals 6, 7 and also between NAVI control unit terminals 42 and 43.
No	▶	<p>Check the following.</p> <ul style="list-style-type: none"> ● Speaker ● Harness for open or short between audio and speaker relay

NAVIGATION SYSTEM

This Condition Is Not Abnormal

This Condition Is Not Abnormal

=NFEL0363

EXAMPLE OF BASIC OPERATIONAL ERRORS

NFEL0363S01

Symptom	Possible cause	Repair order
No image is displayed.	Monitor brightness control is set to full dark.	Readjust monitor brightness.
Map does not appear on display.	Map CD is not inserted or inserted upside down.	Insert the map CD with the label facing up.
	Map mode is turned OFF.	Press the "MAP" button.
No guide tone is heard.	Voice guide adjustment OFF/Volume is set to the lowest or highest level.	Adjust the voice guide level.
Voice guide volume is too high or too low.		
Dark display/Slow image movement	Low vehicle interior temperature	Wait until vehicle interior temperature rises to appropriate level.
Small black or white dots appear on the screen.	Unique liquid crystal display phenomena	No problem
"Unable to read CD" message appears only during specified operation.	Map CD surface is tainted/CD surface is partially scratched.	Check map CD surface. If dirty, wipe clean with a soft cloth.
		If map CD surface is damaged, replace the CD.

Area place names are not displayed.

If area place names do not appear on the map display, these names may not be available. Use the BIRDVIEW[®] flat surface map display function. Display output may differ. Note the items related to BIRDVIEW[®] below.

- Priority is given to the display of place names in the direction of vehicle travel.
- Extended display of vehicle travel distance for both surfaces and steering angle (flat directional changes). This phenomenon disappears after the display image has been replaced by another one.
- The names of route and area might vary between the immediate front area and distance front area.
- Alphanumeric display characters are limited to maintain display simplicity and clarity. Display details may differ with time and place.
- Identical place and road names may appear on the display at more than one location.

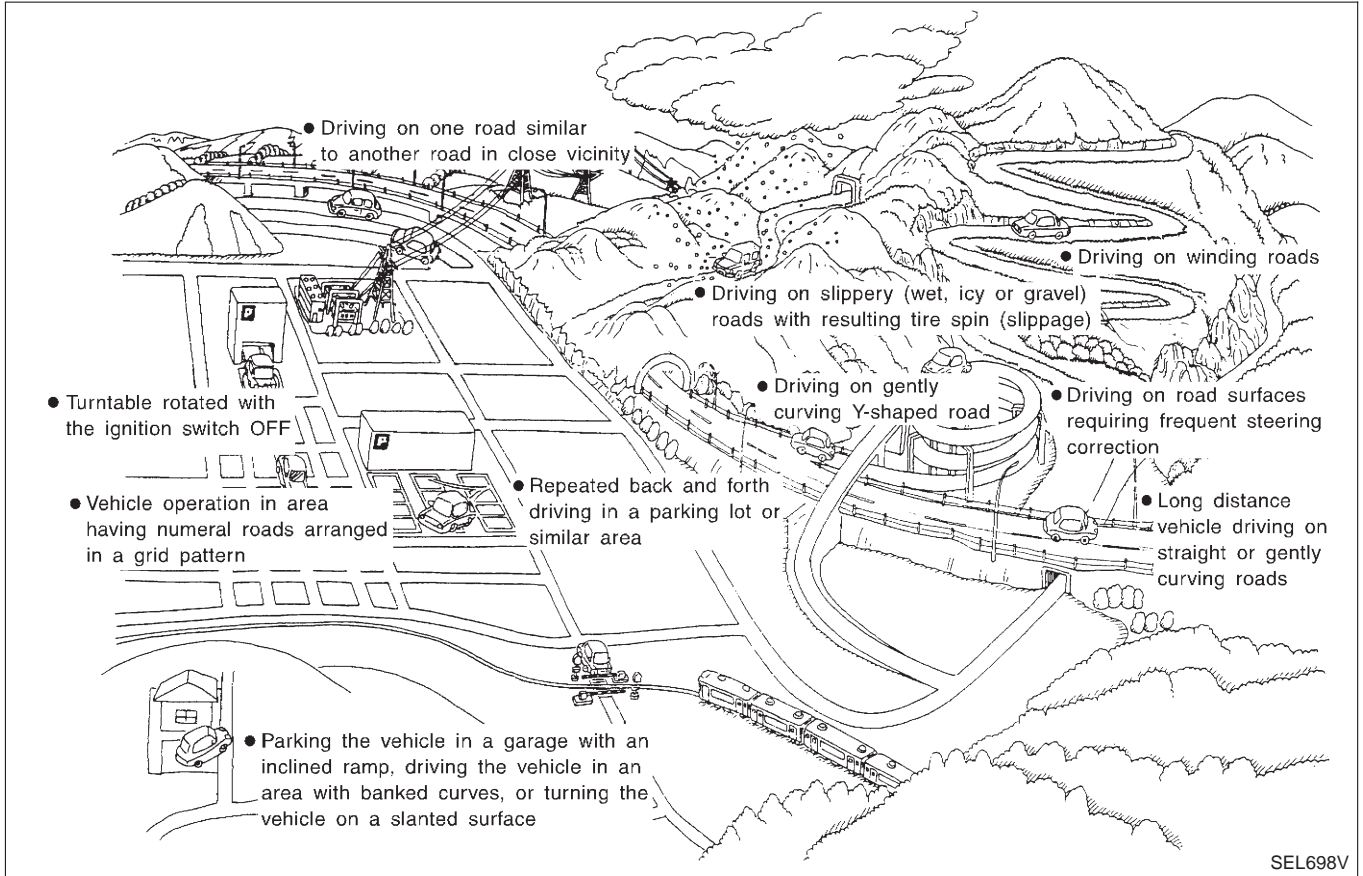
NAVIGATION SYSTEM

This Condition Is Not Abnormal (Cont'd)

EXAMPLE OF CURRENT VEHICLE POSITION MARKER ERROR

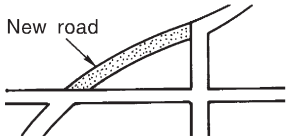

=NFEL0363S02

The navigation system reads the vehicle distance and steering angle data. Because the vehicle is moving, there will be an error in the current position indication. After the error appears, drive the vehicle for a short distance. Stop the vehicle. If the position marker does not return to its original position, perform "Adjust Current Location" MODE (EL-348).



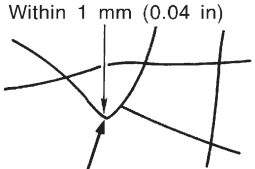
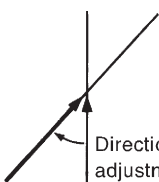
NAVIGATION SYSTEM

This Condition Is Not Abnormal (Cont'd)

	Possible cause	Drive condition	Service procedure	
Area	Slippery road surface	On wet, icy, or gravel road where frequent wheel slippage occurs, distance calculations may be erroneous. The position marker may show the vehicle to be in inaccurate position.	If the position marker does not move to the correct position even after the vehicle has been driven approximately 10 km (6 miles), perform "Adjust Current Location" MODE (EL-348). If necessary, perform "Speed Calibration" (EL-340).	
	Slanted area	Hilly areas where the road has banked curves. When the vehicle enters these banked curves, there may be an error in steering angle measurement. The position marker may show the vehicle to be in inaccurate position.		
Map data	Map display for a given road does not appear.  SEL699V	When the vehicle is driven on a newly constructed road that does not appear on the existing map. Map marking and calibration are not possible. The position marker may indicate inaccurate position in close proximity to the actual position. Subsequently, when the vehicle is driven on a road which is available as map data, the position marker may still indicate an inaccurate position.		
	The vehicle is driven on a road whose course has been altered (usually to improve the road or to eliminate some hazard).  SEL700V	When the map data shown on the display and the actual conditions are different. Map matching will not be possible. The position marker may indicate inaccurate position in close proximity to the actual position. If the vehicle is driven on the indicated road, further errors may occur.		
Vehicle	Use of tire chains (Stormy weather)	Tire chains will affect distance sensing. The position marker may indicate inaccurate position.		If the position marker does not move to the correct position even after the vehicle has been driven approximately 10 km (6 miles), perform "Speed Calibration" (EL-340). After removing the tire chains, sensing accuracy may recover by itself.

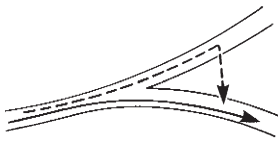
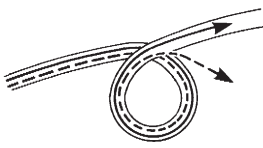
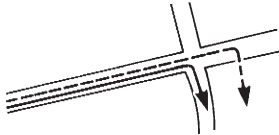
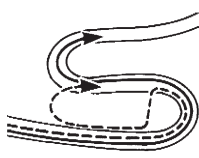

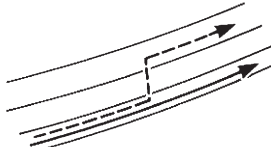
NAVIGATION SYSTEM

This Condition Is Not Abnormal (Cont'd)

	Possible cause	Drive condition	Service procedure
Operation	Driving immediately after starting engine.	The gyro (angular velocity sensor) needs about 15 seconds after the engine is started to precisely sense the angular velocity. Directional sensing errors will occur if the vehicle is moved immediately after starting the engine. The position marker may indicate inaccurate position.	Wait a few moments between starting the engine and actually driving the vehicle.
	Continuous driving for long distances (non-stop)	When the vehicle is driven continuously without stopping over a long distance, errors in directional sensing may occur. The position marker may indicate inaccurate position.	Stop the vehicle. Perform "Speed Calibration" (EL-340).
	Rough or violent driving	Wheel spinning (peeling out) or similar rough driving techniques can adversely affect sensing accuracy. The position marker may indicate inaccurate position.	If the position marker does not move to the correct position even after the vehicle has been driven approximately 10 km (6 miles), perform "Adjust Current Location" MODE (EL-348).
Positional calibration procedures	Positional calibration precision Within 1 mm (0.04 in)  SEL701V	If current vehicle location is roughly set, the system may be unable to locate the road that the vehicle is traveling on. (This is especially true in an area where there are many roads.)	Perform "Adjust Current Location" MODE (EL-348) within a precision standard of 1 mm (0.04 in) on the display. NOTE: During calibration, use the most detailed map possible.
	Position calibration direction  SEL702V	When calibrating the position, check the vehicle direction. If the vehicle direction is not correct, subsequent precision of current location will be affected.	Perform "Adjust Current Location" MODE, refer to EL-348.

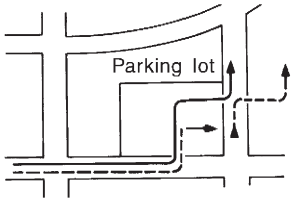
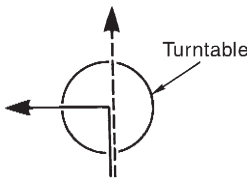
NAVIGATION SYSTEM

This Condition Is Not Abnormal (Cont'd)

Possible cause: —: Vehicle running ---: Indication		Drive condition	Service procedure
Road shapes	<p>Y-intersection</p>  <p style="text-align: right;">SEL703V</p>	<p>In Y-intersections with a very gradual change in course, a directional sensing may be inaccurate. This may result in the position marker giving the wrong road indication.</p>	<p>If the position marker does not move to the correct position even after the vehicle has been driven approximately 10 km (6 miles), perform "Store place". If required, also perform "Adjust Current Location" MODE (EL-348).</p>
	<p>Spiral road</p>  <p style="text-align: right;">SEL704V</p>	<p>On loop bridges and similar structures which result in a large and continuous turn, turning angle may be sensed inaccurately. As a result, the position marker may separate from the route on the map.</p>	
	<p>Straight road</p>  <p style="text-align: right;">SEL705V</p>	<p>In long distance driving on a straight road or road with very gradual curves, map marking inaccuracies may occur. In such cases, the position marker may stray from the route being traveled during subsequent turns due to inaccurate distance calculation.</p>	
	<p>Winding road</p>  <p style="text-align: right;">SEL706V</p>	<p>Directional sensing precision errors may occur when traveling on winding roads. During map matching, the position marker may stray to an adjacent road having a similar shape. Subsequent position marker error may occur.</p>	
	<p>Grid-like road shape</p>  <p style="text-align: right;">SEL707V</p>	<p>Directional sensing and distance sensing, precision errors may occur because of many roads having a similar shape in the immediate area. During map matching, the position marker may stray to an adjacent road having a similar shape. Subsequent position marker error may occur.</p>	
	<p>Parallel roads</p>  <p style="text-align: right;">SEL708V</p>	<p>When driving on a parallel road, map matching errors may occur. Subsequent position marker error may also occur.</p>	

NAVIGATION SYSTEM

This Condition Is Not Abnormal (Cont'd)

	Possible cause: —: Vehicle running ---: Indication	Drive condition	Service procedure
Location	Parking lot or similar area  SEL709V	When the vehicle is driven in a parking lot or similar area, such as in an area not normally marked as a road on map, during map matching, the system may select nearby roads. This error may continue after the vehicle exits the parking area and begins to run on ordinary roads. Vehicle operation in a parking area may involve frequent turns and up and/or down operation. Directional sensing errors may occur leading to subsequent route and position mistakes.	If the position marker does not move to the correct position even after the vehicle has been driven approximately 10 km (6 miles), perform "Store place". If required, also perform "Adjust Current Location" MODE (EL-348).
	Turntable  SEL710V	When the ignition switch is OFF (the usual situation when the vehicle is on a turntable), the navigation system receives no data from the gyro (angular velocity sensor). When the turntable rotates, no directional change is sensed. During subsequent vehicle operation, directional and route errors may occur.	

Position marker displays a completely different location

In circumstances such as those described below, GPS signal reception conditions may result in an erroneous position of the position marker. Perform "Adjust Current Location" MODE (EL-348).

NOTE:

- When GPS satellite signal reception conditions are poor, the position of position marker may be erroneous. If correction is not made immediately, the position marker error will be compounded and a completely different location will be indicated. In an area where GPS satellite signal reception conditions are good, the system can be returned to normal operation.
- The vehicle is driven aboard a car ferry or is towed for some distance with the ignition switch OFF. Vehicle movement is not sensed. Current location calculations do not occur and current location data does not appear on the display screen. Use GPS to accurately determine actual vehicle position. The system can be returned to normal operation when the GPS satellite signal reception conditions are good.

Position marker jumps

In circumstances such as those described below, the position marker may jump as a result of automatic current location corrections made by the system.

During map matching

- During map matching, the position marker may jump from one spot to another. In this case, it may be corrected to a wrong road or to an area where no road exist.

GPS location correcting

- Vehicle current location is sensed using the GPS data. Positional calibration is performed. The position marker continues to be in the wrong position. It may jump about from one area of the screen to another. In this case, it may be corrected to a wrong road or to an area where no road exist.

Position marker indicates that the vehicle is in the middle of an ocean or large river

The navigation system does not distinguish between land and water surfaces. In some cases, a position marker error may cause the display to show the vehicle above a water surface.

Position of position marker varies when the vehicle is repeatedly operated on the same road

Driving lane and steering wheel movement results in a variety of different positions of the position mark when traveling on the same road based on sensing results by the GPS antenna and gyro (angular velocity sensor). Slow locational correction using map matching

- The map matching function requires verification of local data. To make the map matching function, some distance needs to be driven.
- The map matching function may not provide accurate performance in an area where there are numerous parallel roads. Until the system judges the road characteristics, an incorrect position may be shown.

NAVIGATION SYSTEM

This Condition Is Not Abnormal (Cont'd)

GPS signal reception conditions are good. However, the position mark does not return to its proper position.

- The system senses the vehicle location with an error of approximately 100 m (328 ft). Due to the limitation of precision, the position marker may be inaccurate even if the GPS signal reception condition is good.
- The navigation system uses GPS data to determine vehicle location. GPS data is compared with other locational sensing data during the map matching process. The system decides which data is more precise and uses that data.
- When the vehicle is stationary, GPS data cannot be used to make system corrections.

Area designations on the map display and the BIRDVIEW® display differ.

To prevent the display from becoming congested, alphanumeric information is abridged.

[No problem]

Correct position of your vehicle is not displayed.

Vehicle position changed after ignition key was turned to the OFF position (Vehicle is transported on car ferry, car train, or by some other means).

[Operate vehicle for short time under GPS receiving conditions.]

The display does not change to night-time mode even though the light switch has been turned ON.

Lights have been turned on. In "DISPLAY CHANGE" mode, night-time mode on display has been switched to day-time mode and still is.

[Turn lights on again. Set the display to night-time mode. Refer to EL-346.]

Map does not scroll even though the position of your vehicle is changed.

Present area does not appear on the display.

[Press the "MAP" switch.]

Vehicle position marker does not appear.

Present area does not appear on the display.

[Press the "MAP" switch.]

The map surface precision display (GPS satellite marker) still remains gray.

Vehicle is parked inside a building or in the shadow of a large building. This intercepts the GPS signal.

[Move the vehicle to a more open position.]

GPS signal is not received because objects are placed on the rear parcel shelf.

[Remove objects from the rear parcel shelf.]

GPS satellite position is bad.

[Wait until GPS satellite position improves.]

Vehicle position precision is bad.

The map surface precision display (GPS satellite marker) still remains gray.

[Refer to "The map surface precision display (GPS satellite marker) still remains gray" item (Symptoms)]

Vehicle speed and elapsed distance is calculated from the vehicle speed pulse. This pulse is dependent upon tire size. If tire chains are used on the vehicle, accuracy will be affected (pulse rate will be too fast or too slow). The same is true if the system installed to your vehicle is removed and installed on another vehicle.

[Drive the vehicle at a speed higher than 30 km/h (19 MPH) for approximately 30 minutes. Automatic readjustment should occur. If it does not (remains too fast or too slow), distance calibration is required. Or, drive the vehicle for a short distance. Perform "SPEED CALIBRATION" (EL-340). After removing the tire chains, sensing accuracy may recover by itself.]

Bad map data or system defect (same error consistently occurs in the same area)

ROUTE SEARCH/ROUTE GUIDE

NFEL0363S03

- If the present location or the destination location is displayed in the avoid area, it is not possible to search routes.
- If the avoid area is set to wide range area, it may not be possible to find appropriate routes or search for alternate routes.
- The automatic re-route calculates a return to the original route. Because of this, it may not be possible to search appropriate new routes. If you deviate from the original route and wish to select an appropriate new route, touch "Route Calculation".
- The automatic re-route function may sometimes require considerable time.
- Displayed route number and directional information at a highway junction may differ from the information posted on the actual road signs.
- Displayed street name information at a highway exit may differ from the information posted on the actual road signs.
- Street name information displayed on the enlarged intersection map may differ from the information posted on the actual road signs.

NAVIGATION SYSTEM

This Condition Is Not Abnormal (Cont'd)

- The enlarged intersection map may display an “Unknown street” message at some street intersections.
- Because of road configuration, etc. the guide may finish early. If this occurs, follow the marker to reach your destination.
- Destination area side information (left side and right side) may differ from actual conditions because of data error.

Unable to Set Destination, Way Point, and/or menu items

NFEL0363S0301

Symptom	Possible cause	Repair order
Unable to search way points in re-search mode	A way point already crossed or determined to have been crossed.	If you desire to pass through a way point for a second time, reperform route edit.
Turn list is not displayed.	Route search does not occur.	Set designation areas and perform route search.
	Car marker does not appear on recommended route.	Drive on the recommended route.
	Route guide is canceled.	Turn the route guide ON. (Push “VOICE” switch)
Automatic search does not function.	Vehicle is not running on search object route (road indicated by orange, brown or red line).	Drive the vehicle on the search object route or perform a manual route search. Note that all routes will be re-searched at this time.
Unable to select detour route.	Vehicle is not running on recommended route.	Use the “RE-ROUTE” mode to search again or return to the recommended route.
Detour route search results are identical to previous search.	All possible conditions were considered, but results are the same.	This is not abnormal.
Unable to set a way point.	More than five way points have been previously set (and not cleared).	More than five way points cannot be specified at the same time. Break down into smaller segments and perform search.
Unable to select starting point during route edit.	Starting point will normally be your present location during route edit.	This is not abnormal.
Cannot select certain menu items.	While vehicle is running.	Park the vehicle in a safe area and perform operation.

Voice Guide Information

NFEL0363S0302

Symptom	Possible cause	Repair order
Voice guide does not function.	Voice guide is only available at certain intersections (marked with ♯). In some cases, the guide is not available even when the vehicle makes a turn.	This is not abnormal.
	Vehicle is not running on recommended route.	Return to recommended route or reperform route search.
	Voice guide is OFF.	Set voice guide to the ON position.
	Route guide is canceled.	Turn the route guide ON. (Push “VOICE” switch)
The guide content does not correspond to actual conditions.	The content of the voice guide may vary depending on the type of junction.	Operate vehicle following the traffic rules and regulation.

Route Search Information

NFEL0363S0303

Symptom	Possible cause	Repair order
Proceeding in desired direction. However, route search in desired direction does not function.	Unable to find appropriate route in the desired direction.	This is not abnormal.

NAVIGATION SYSTEM

This Condition Is Not Abnormal (Cont'd)

Symptom	Possible cause	Repair order
No route is displayed.	No object route is searched near destination area.	Adjust position to wide road (brown) near destination area. In an area where traffic direction is displayed separately, pay close attention to the direction of travel. Set the destination area and the way point over the road.
	Starting point and destination areas are very near.	Move destination areas away from starting point on the screen.
Recommended route which has been passed disappears from the display.	The recommended route is divided into individual control segments. When way point 1 is passed, the data from the starting point to the way point 1 is erased.	This is not abnormal.
Search recommends roundabout route.	There may be special conditions for roads near the starting point and destination area (one-way traffic, etc.). A roundabout route may be displayed.	Slightly change starting point and destination area settings.
Landmark display does not show actual conditions.	Mistaken or missing map data may result in erroneous display.	Change map CD.
Recommended route drawn slightly away from starting point, way points, and destination area.	Course search data may not exist for closely positioned starting point, way points, and destination area shown on the map. Route guide starting point, way point, and destination point may be separated.	Set the destination area to the general route (indicated by a thick brown line). However, even if the selected route is a major one, appropriate route search data may not be available.

LOCATION OF CAR MARKER

NFEL0363S04

- If the vehicle has been parked in a multi-level parking facility or underground parking facility, the car marker position may be inaccurate immediately after exiting the parking facility.
- The GPS accuracy is within ± 100 m (300 ft). Even when receiving conditions are excellent, further positional correction may not occur.

STREET INDICATION

NFEL0363S05

- Street names displayed on the map may differ from the actual street names.
- An "Unknown street" message may appear on the map in place of street name information.

RESEARCH

NFEL0363S06

- Position may be searched by house number. However, the displayed position and street may differ from the actual position and street.
- When position is searched using POI, the displayed position may differ from the actual position.
- Some data may not be available for new buildings and other structures in a map.

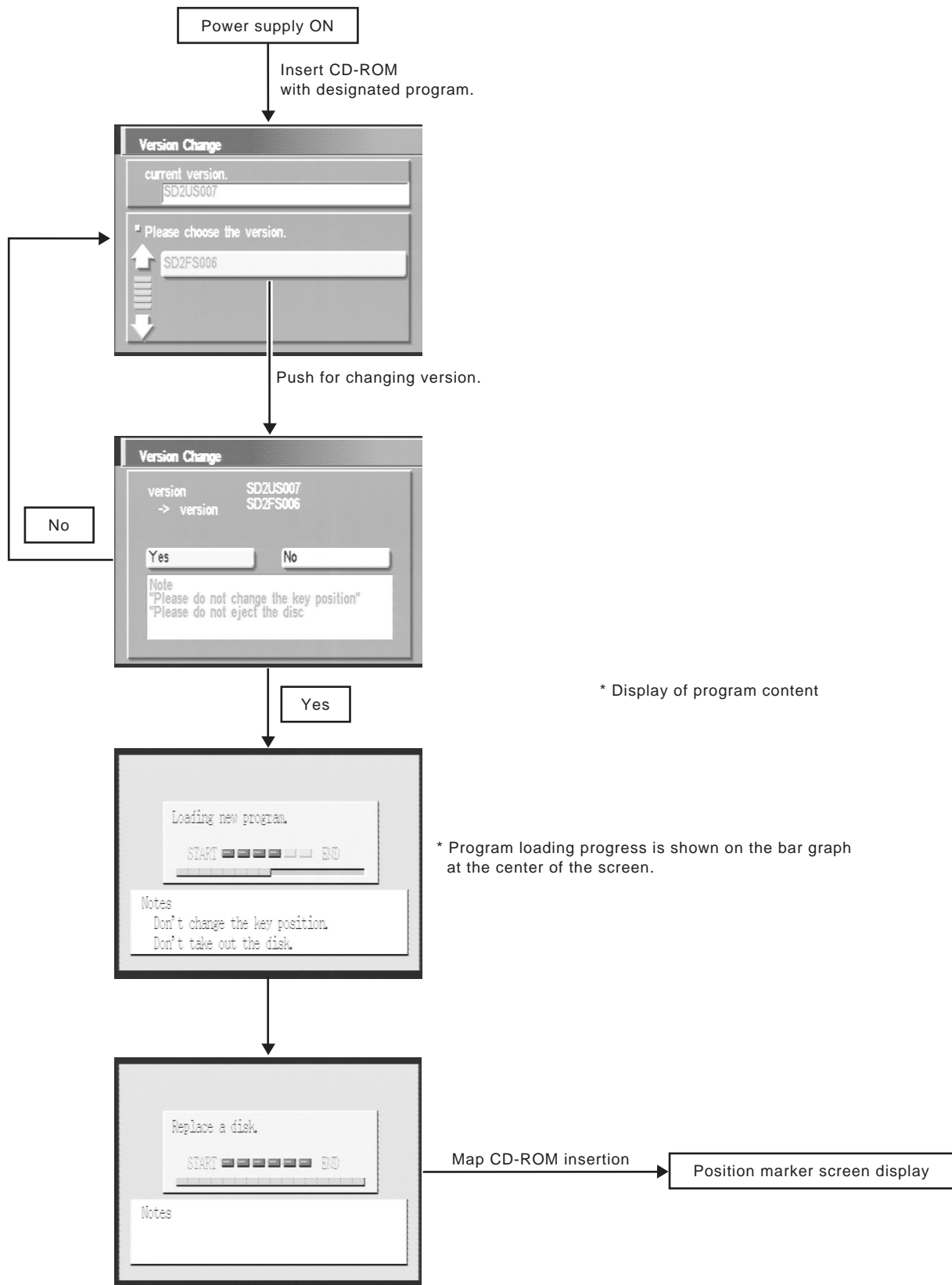
GPS ANTENNA

NFEL0363S07

- Do not place metal objects above the GPS antenna mounted on the rear parcel shelf. This will cause interference with signal reception.
- Do not place mobile telephones or vehicle radio transceivers in close proximity to the GPS antenna mounted on the rear parcel shelf. This may cause interference with signal reception.

NAVIGATION SYSTEM

Program Loading



* Display of program content

* Program loading progress is shown on the bar graph at the center of the screen.

Note: Load the program only after the engine has been started.

SEL564X

ELECTRICAL UNITS LOCATION

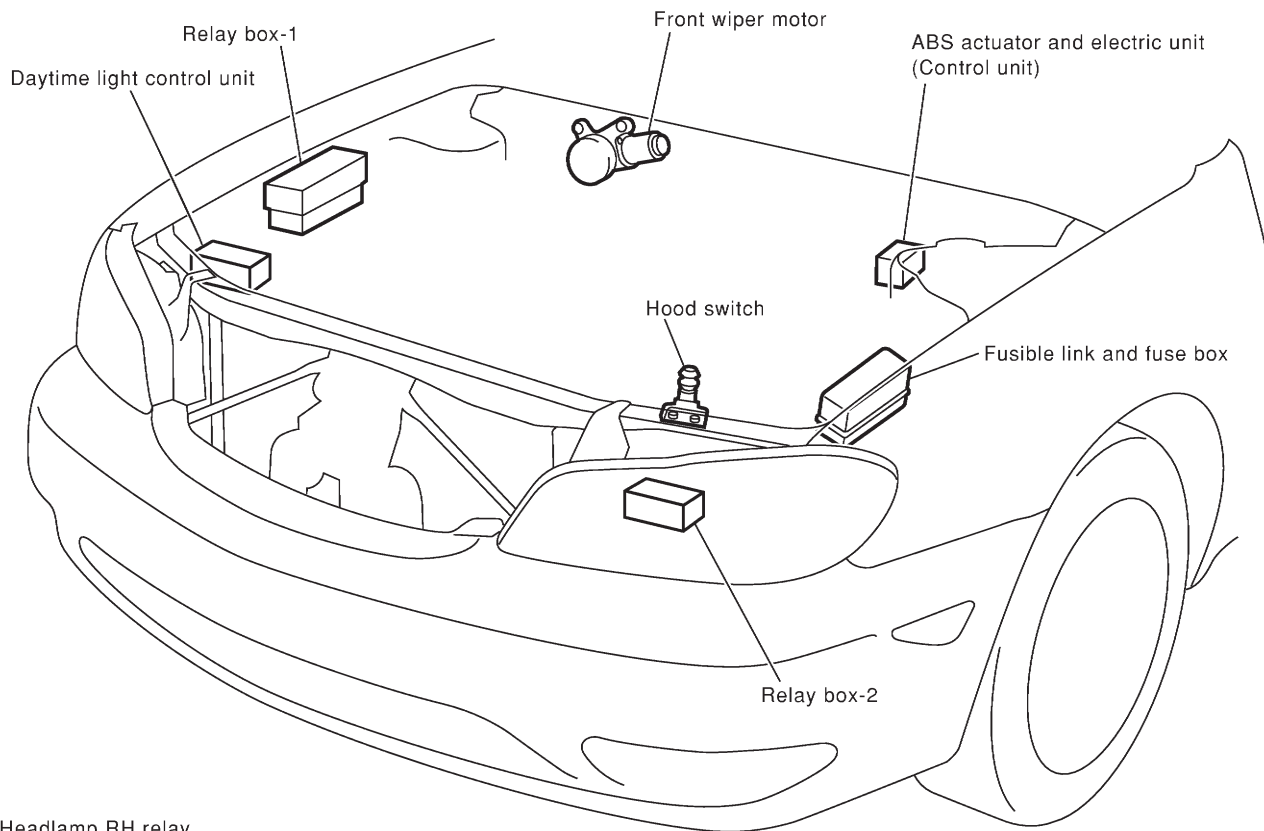
Engine Compartment

Engine Compartment

NFEL0129

NFEL0129S01

LHD MODELS

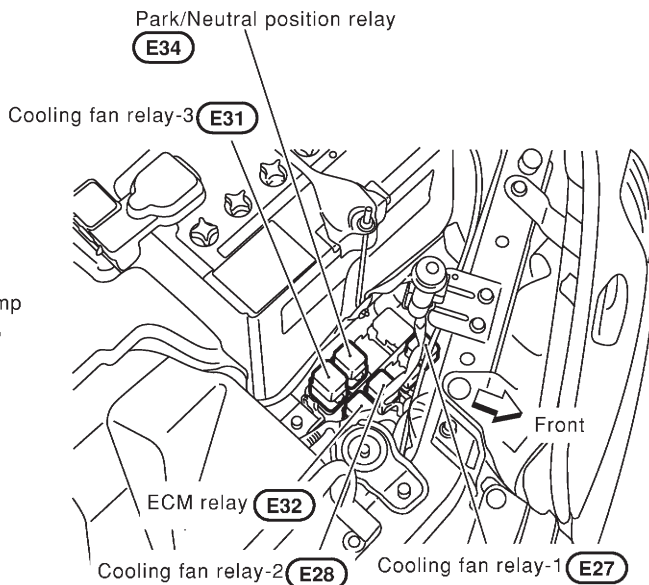
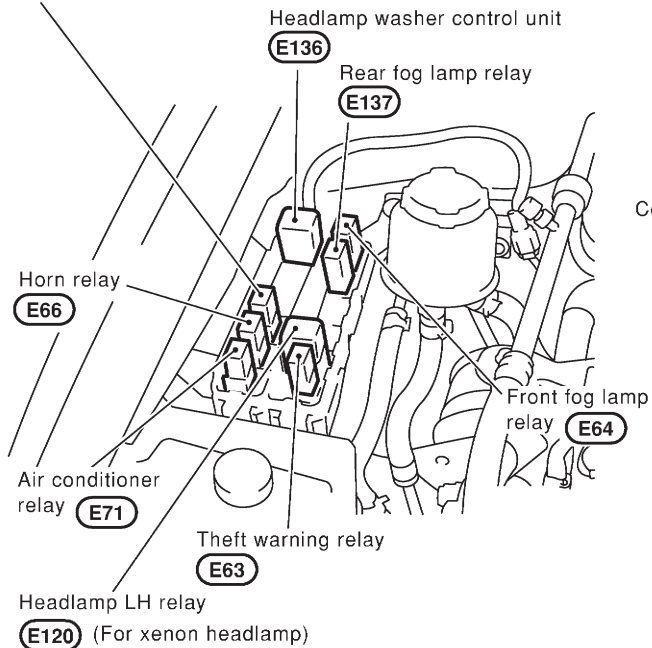


Headlamp RH relay

E123 (For xenon headlamp)

Dimmer relay

E135 (For conventional headlamp)



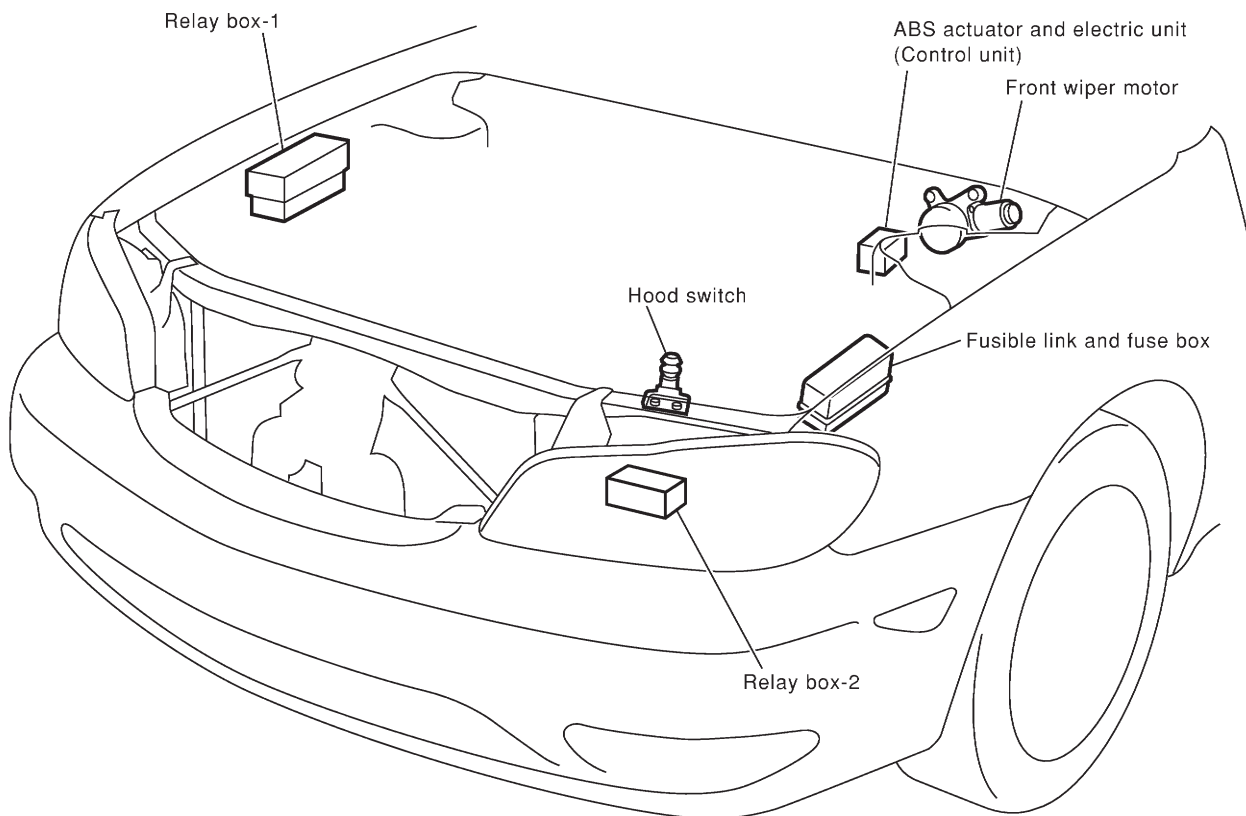
MEL681L

ELECTRICAL UNITS LOCATION

Engine Compartment (Cont'd)

RHD MODELS

NFEL0129S02



Headlamp RH relay

E123 (With xenon headlamp)

Dimmer relay

E135 (Without xenon headlamp)

Rear fog lamp relay

E137

Headlamp washer control unit

E136

Front fog lamp relay

E64

Horn relay

E66

Theft warning relay

E63

Air conditioner relay

E71

Headlamp LH relay

E120 (With xenon headlamp)

Park/Neutral position relay

E34

Blower motor relay

E103

Cooling fan relay-3

E31

ECM relay

E32

Cooling fan relay-2

E28

Cooling fan relay-1

E27

Front

MEL119M

ELECTRICAL UNITS LOCATION

Engine Compartment (Cont'd)

NOTE:

ELECTRICAL UNITS LOCATION

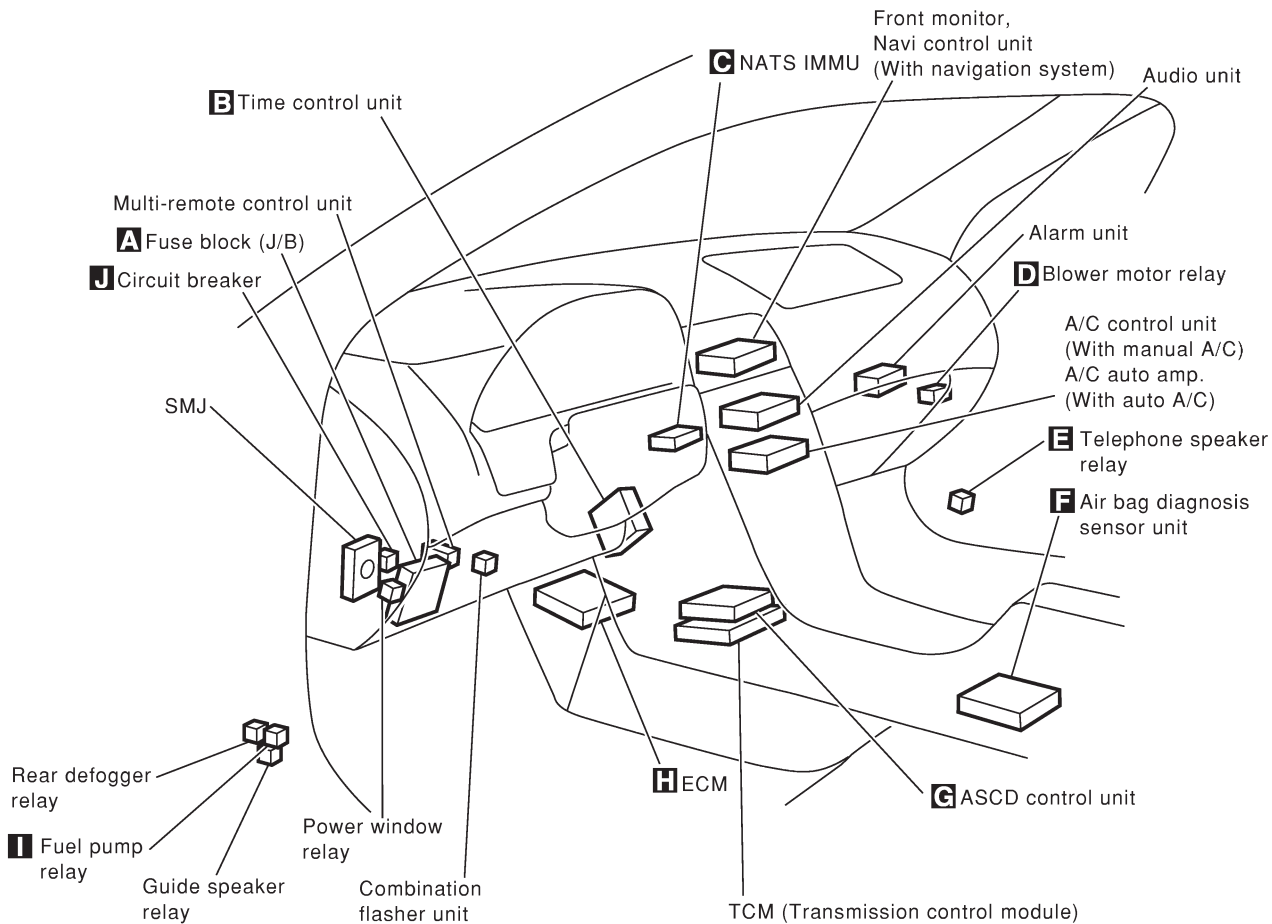
Passenger Compartment

Passenger Compartment

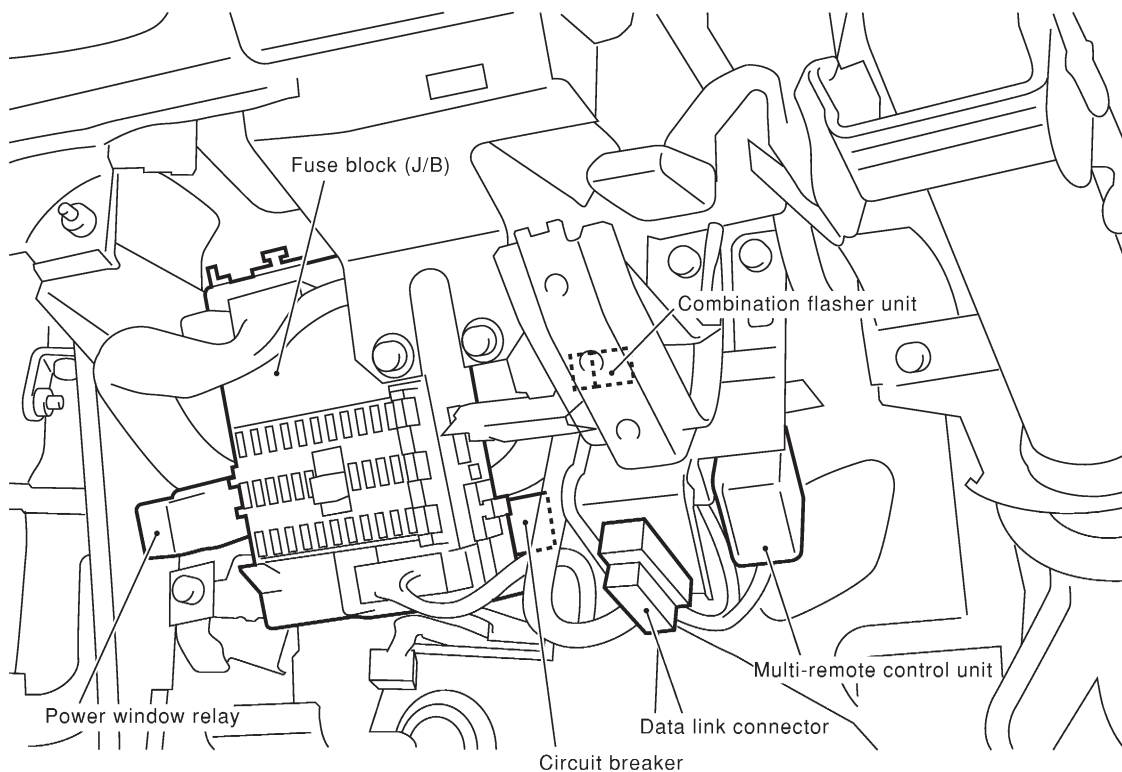
NFEL0130

NFEL0130S01

LHD MODELS



A Instrument panel LH side



MEL682L

ELECTRICAL UNITS LOCATION

Passenger Compartment (Cont'd)

B Driver side view with lower instrument panel removed

Time control unit (M125), (M126)

C View with steering wheel and steering column removed

NATS IMMU (M42)

D Passenger side view with dash side lower finisher removed

Blower motor relay (E103)

E Passenger side view with dash side lower finisher removed

Telephone speaker relay (M141)

F Rear of parking brake

Air bag diagnosis sensor unit
(M112), (B42), (B135)

G View with lower instrument center panel removed

ASCD control unit (M52)
TCM (Transmission control module)
(F50), (F51)

H Passenger side view with lower instrument panel removed

ECM (F48)
Heater unit

I Driver side view with dash side lower finisher removed

Fuel pump relay (B8)
Guide speaker relay (B71)
Rear window defogger relay (B9)

J Driver side view with lower instrument panel removed

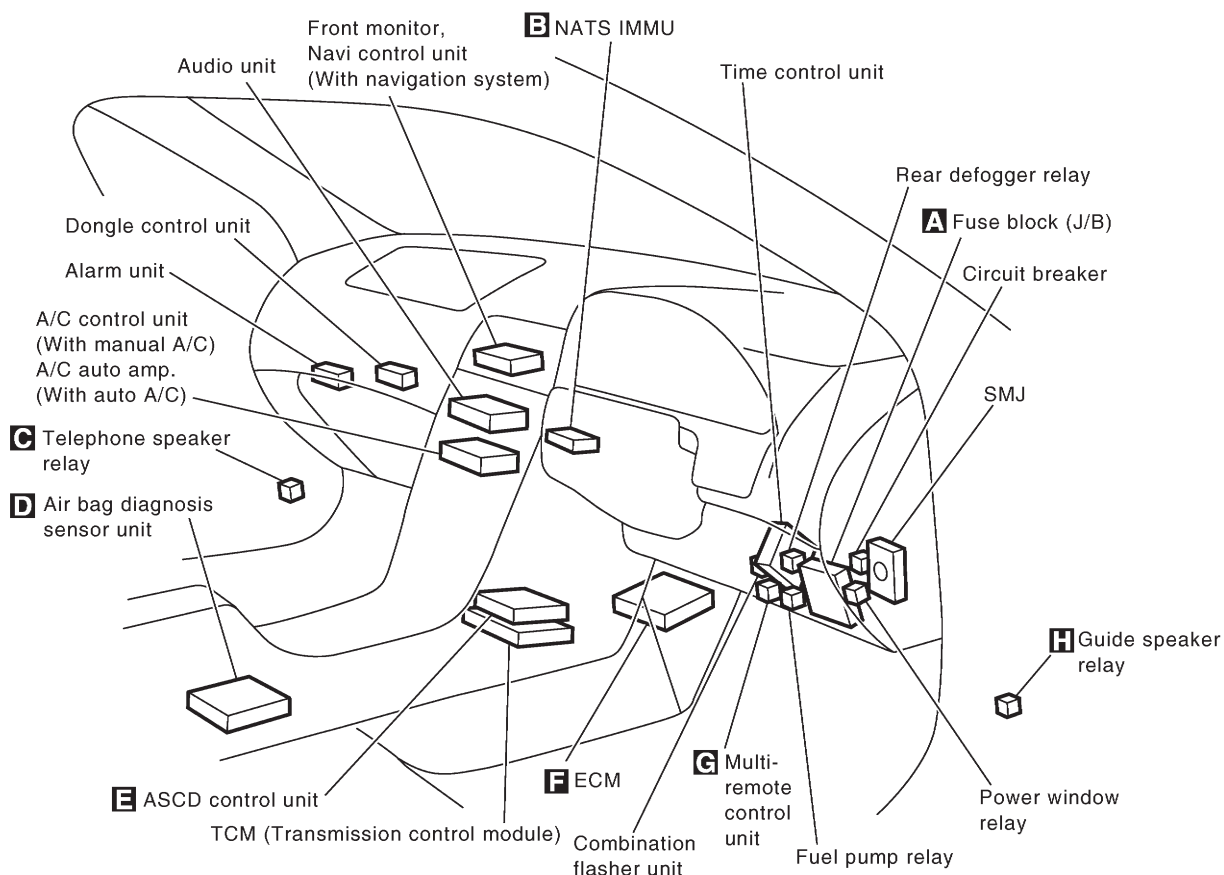
Circuit breaker (E90)

ELECTRICAL UNITS LOCATION

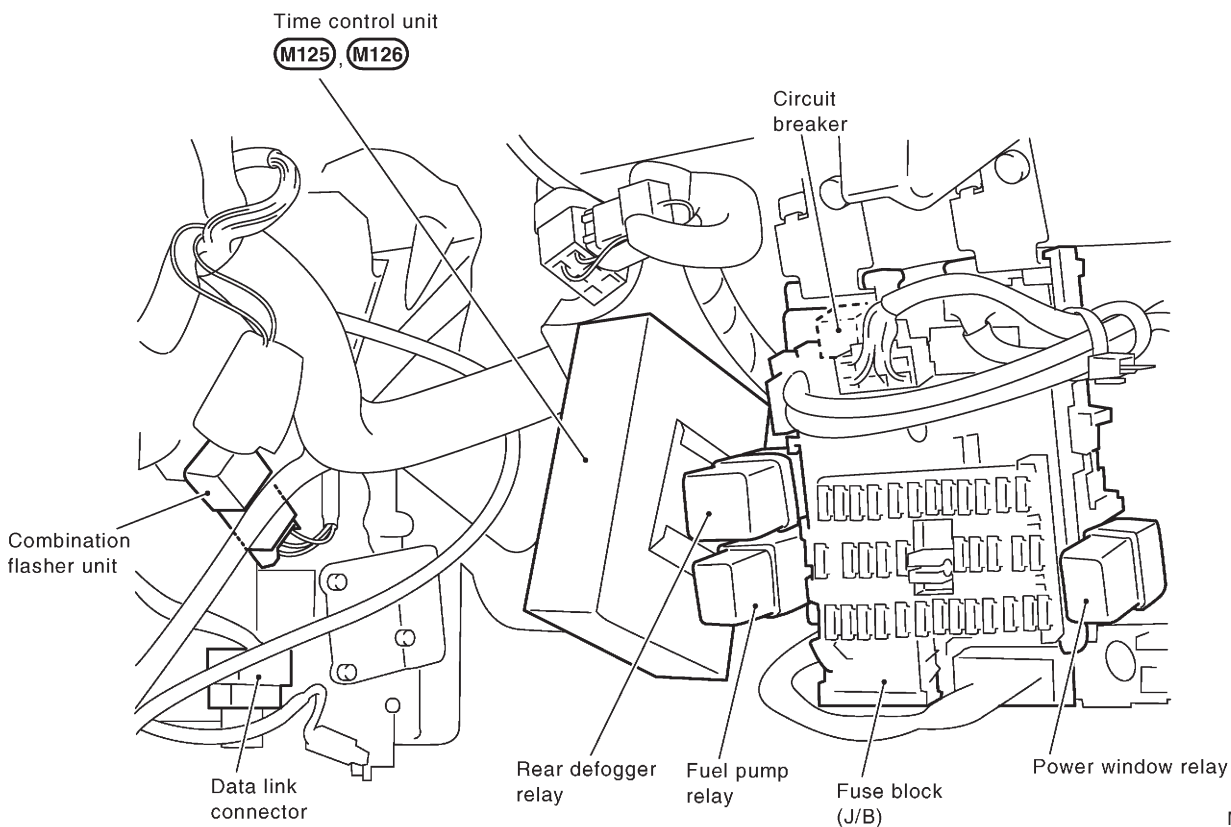
Passenger Compartment (Cont'd)

RHD MODELS

NFEL0130S03



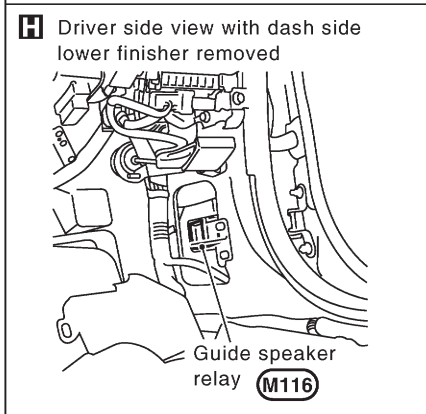
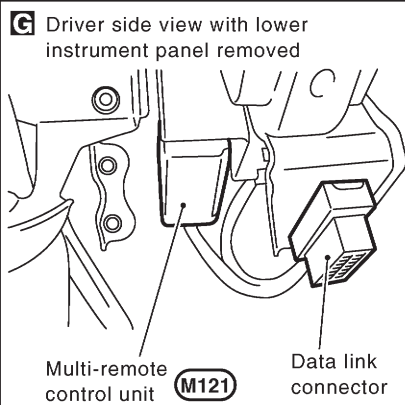
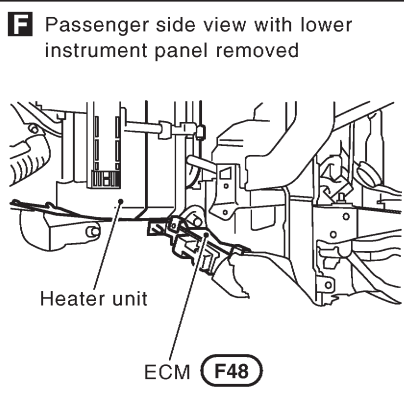
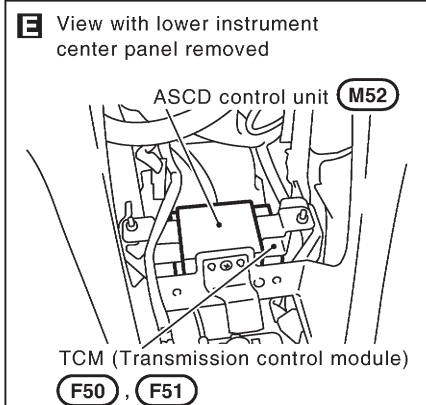
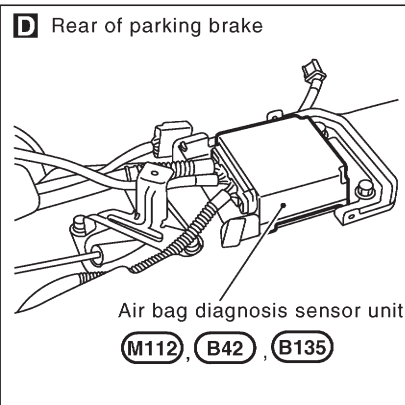
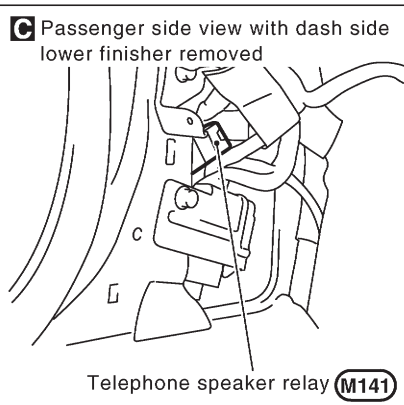
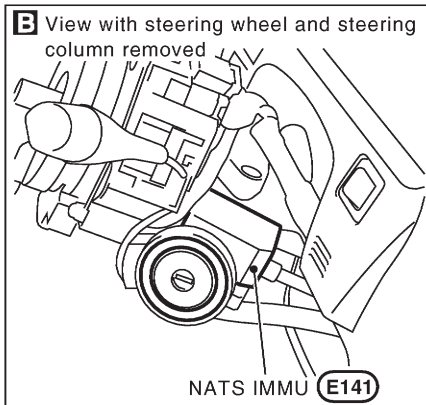
A Instrument panel RH side



MEL684L

ELECTRICAL UNITS LOCATION

Passenger Compartment (Cont'd)

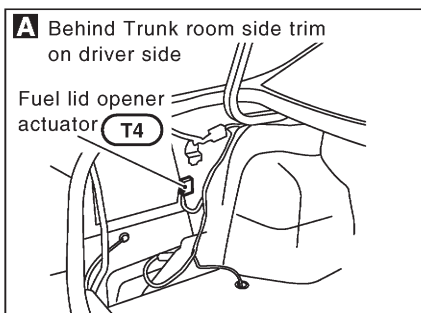
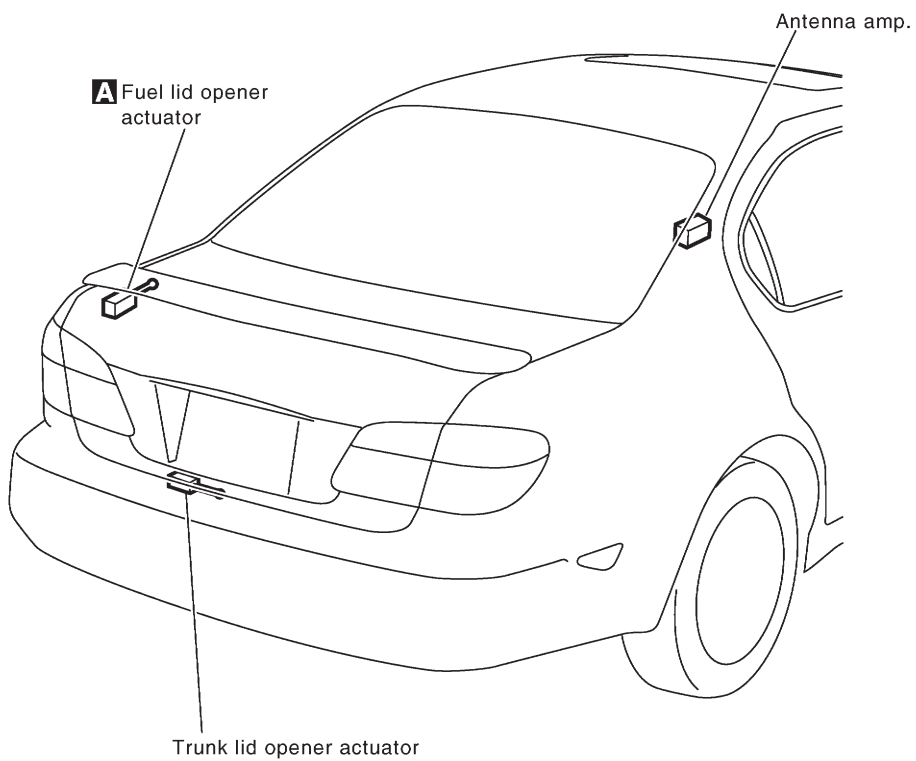


ELECTRICAL UNITS LOCATION

Luggage Compartment

Luggage Compartment

NFEL0321

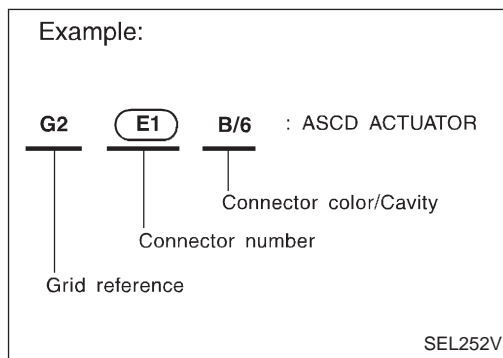


MEL686L

HARNESS LAYOUT

How to Read Harness Layout

NFEL0131



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

- Main Harness
- Engine Room Harness (Engine Compartment)

TO USE THE GRID REFERENCE

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

NFEL0131S01

CONNECTOR SYMBOL

Main symbols of connector (in Harness Layout) are indicated in the below.

NFEL0131S02

Connector type	Water proof type		Standard type	
	Male	Female	Male	Female
<ul style="list-style-type: none"> ● Cavity: Less than 4 ● Relay connector 				
<ul style="list-style-type: none"> ● Cavity: From 5 to 8 				
<ul style="list-style-type: none"> ● Cavity: More than 9 	—	—		
<ul style="list-style-type: none"> ● Ground terminal etc. 	—			

HARNES LAYOUT

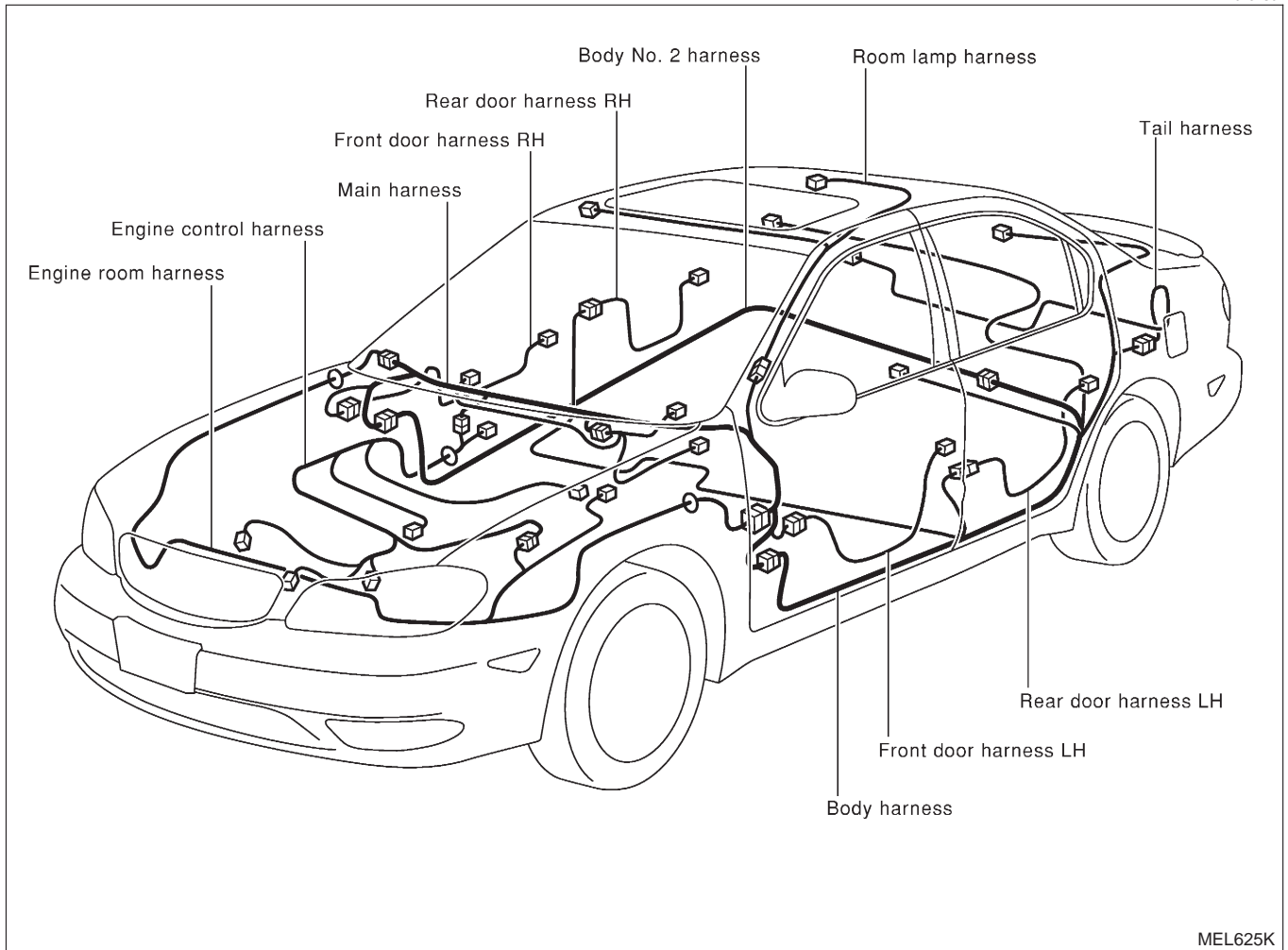
Outline

Outline

NFEL0132

LHD MODELS

NFEL0132S01



NOTE:

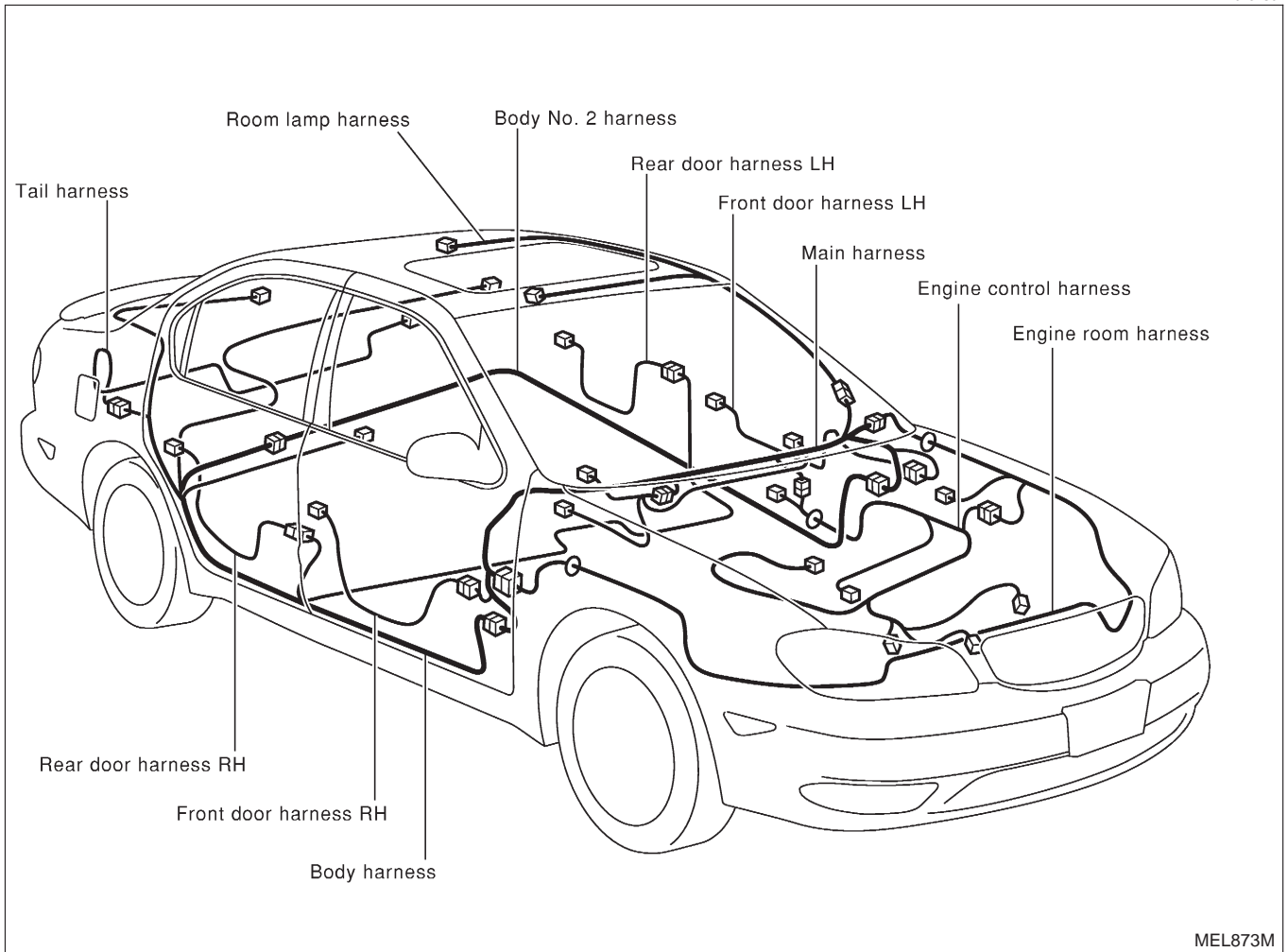
For detailed ground distribution information, refer to "Ground Distribution", "GROUND", EL-18.

HARNESS LAYOUT

Outline (Cont'd)

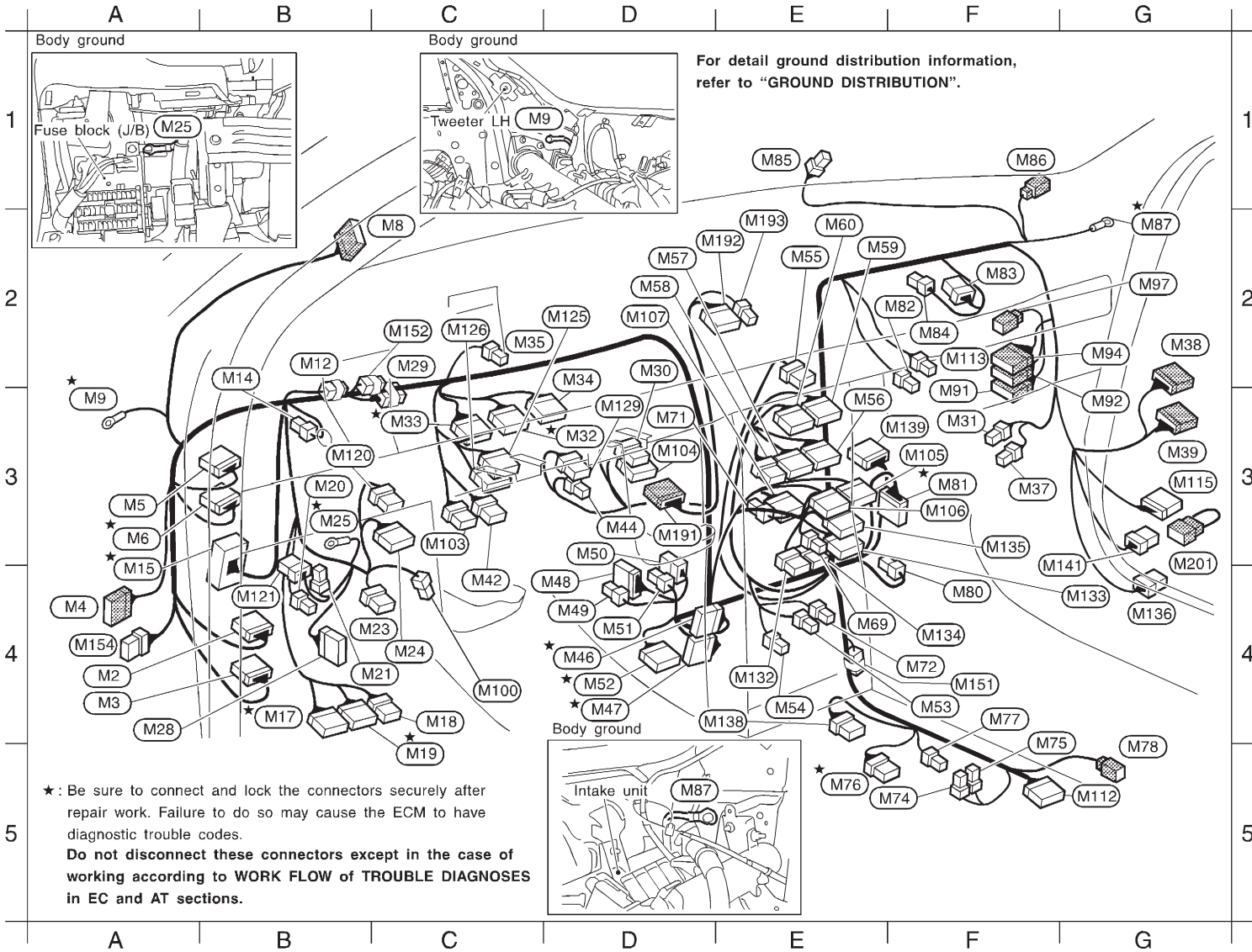
RHD MODELS

NFEL0132S02



NOTE:

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



LHD MODELS

Main Harness

Main Harness

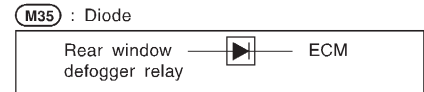
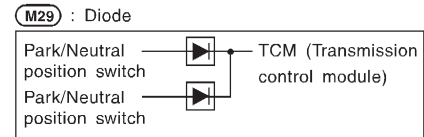
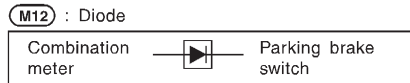
HARNES LAYOUT

Main harness

- A4 (M2) BR/24 : To (B2)
- A4 (M3) W/12 : To (B4) (With CD auto changer)
- A4 (M4) SMJ : To (D1)
- A3 (M5) W/16 : To (B1)
- A3★ (M6) W/18 : To (B3)
- C2 (M8) W/12 : To (R2)
- A3★ (M9) - : Body ground
- B2 (M12) W/2 : Diode
- B2 (M14) L/2 : ASCD clutch switch (With M/T)
- A3★ (M15) SMJ : To (E81)
- B4★ (M17) W/12 : Fuse block (J/B)
- C4 (M18) W/6 : Fuse block (J/B)
- C5★ (M19) W/16 : Fuse block (J/B)
- B3 (M20) L/4 : Power window relay
- C4 (M21) B/3 : Combination flasher unit
- C4 (M23) W/6 : Illumination control switch
- C4 (M24) W/10 : Door mirror remote control switch
- B3★ (M25) - : Body ground
- A4 (M28) W/16 : Data link connector
- C2 (M29) SB/6 : Joint connector-3 (Diode) (With A/T)
- D2 (M30) W/6 : Clock
- F3 (M31) W/4 : Fan control amp. (With auto A/C)
- D3★ (M32) BR/20 : Combination meter
- C3★ (M33) W/24 : Combination meter
- D2 (M34) BR/24 : Combination meter

- C2 (M35) W/2 : Diode
- F3 (M37) BR/4 : Fan resistor (With manual A/C)
- G2 (M38) W/12 : To (D62)
- G3 (M39) W/10 : To (D63)
- C4 (M42) W/8 : NATS IMMU
- D3 (M44) W/2 : In-vehicle sensor (With auto A/C)
- D4★ (M46) W/18 : To (F44)
- D4★ (M47) W/16 : To (F45)
- D4 (M48) BR/10 : Mode door motor (With manual A/C)
- D4 (M49) W/3 : Mode door motor (With auto A/C)
- D3 (M50) B/6 : Air mix door motor (With manual A/C)
- D4 (M51) W/3 : Air mix door motor (With auto A/C)
- D4★ (M52) BR/24 : ASCD control unit
- F4 (M53) B/2 : Cigarette lighter
- E4 (M54) B/1 : Cigarette lighter socket illumination
- E2 (M55) W/8 : Hazard switch
- E3 (M56) GY/16 : A/C control unit (With manual A/C)
- D2 (M57) GY/20 : A/C control unit (With manual A/C)
- D2 (M58) W/6 : Fan switch (With manual A/C)
- E2 (M59) GY/20 : A/C auto amp. (With auto A/C)
- E2 (M60) GY/16 : A/C auto amp. (With auto A/C)

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



Main harness

E4	(M69)	W/4	: CD player
D3	(M71)	W/2	: Antenna amp. (Via sub-harness)
F4	(M72)	W/2	: Ashtray illumination
F5	(M74)	L/4	: Heated seat switch LH
G4	(M75)	W/4	: Heated seat switch RH
E5★	(M76)	GY/8	: A/T device (With A/T)
F4★	(M77)	B/1	: Parking brake switch
G4	(M78)	B/2	: Power socket
F4	(M80)	W/3	: Intake sensor (With auto A/C)
F3★	(M81)	W/20	: To (F49)
F2	(M82)	W/2	: Glove box lamp
F2	(M83)	W/8	: Intake door motor (With manual A/C)
F2	(M84)	W/3	: Intake door motor (With auto A/C)
E1	(M85)	B/2	: Sunload sensor (With auto A/C)
F1	(M86)	BR/2	: Tweeter RH (Via sub-harness)
G2★	(M87)	-	: Body ground
F3	(M91)	W/12	: To (B103)
G3	(M92)	W/10	: To (B104)
G2	(M94)	W/12	: To (B102)
G2	(M97)	G/2	: To (E105)
C4	(M100)	W/4	: Security indicator
C3	(M103)	Y/7	: Spiral cable (Via sub-harness)
D3	(M104)	BR/24	: To (M191) (With navigation system)
F3	(M105)	W/16	: Navi control unit (Via sub-harness)
F3	(M106)	W/20	: Navi control unit (Via sub-harness)
D2	(M107)	GY/12	: Navi control unit (Via sub-harness)
G5	(M112)	Y/20	: Air bag diagnosis sensor unit
F2	(M113)	Y/2	: Passenger air bag module
G3	(M115)	W/16	: Headlamp aiming control unit
B3	(M120)	W/4	: Headlamp aiming switch (With headlamp manual aiming system)
B4	(M121)	BR/8	: Multi-remote control unit

D2	(M125)	GY/16	: Time control unit
C2	(M126)	GY/20	: Time control unit
D3	(M129)	L/6	: Headlamp washer switch
E4	(M132)	W/8	: Audio unit
G4	(M133)	W/16	: Audio unit
F4	(M134)	W/8	: Navi option connector
F3	(M135)	W/12	: Audio unit (With CD auto changer)
G4	(M136)	W/8	: Steering wheel receiver control switch
E4	(M138)	W/8	: A/T mode switch
F3	(M139)	W/16	: Alarm unit
G3	(M141)	W/8	: Telephone speaker relay (With telephone) To (M201) (Without telephone)
F4	(M151)	GY/6	: Joint connector-21 (With navigation system)
C2	(M152)	W/2	: Diode
A4	(M154)	W/8	: To (B70)

Main sub-harness-1

D3	(M191)	BR/24	: To (M104) (With navigation system)
E2	(M192)	W/20	: Front monitor
E2	(M193)	W/4	: Front monitor

Main sub-harness-2

G3	(M201)	W/8	: To (M141)
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(M152) : Diode

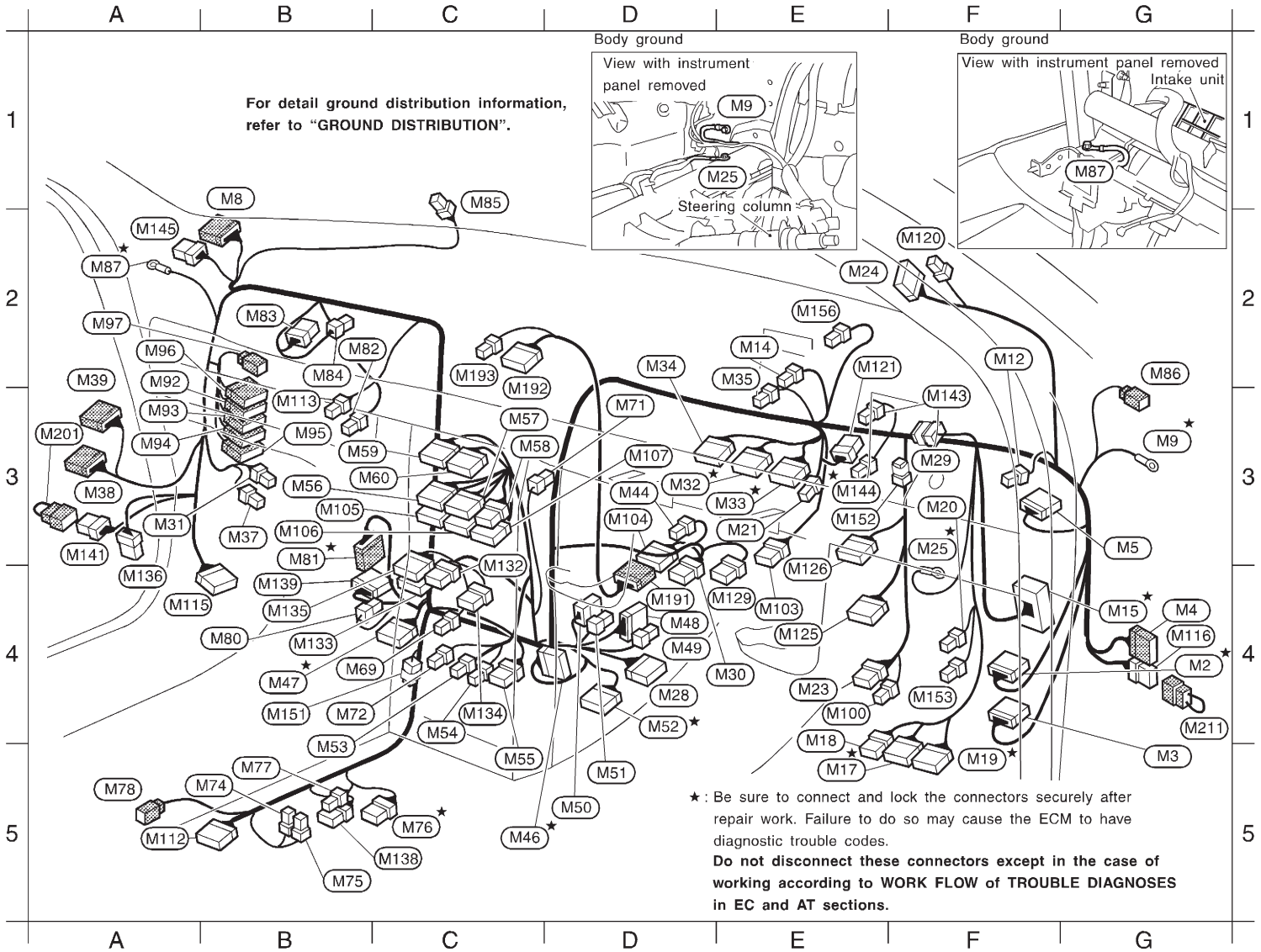


★ : Be sure to connect and lock the connectors securely after repair work. Failure to do so may cause the ECM to have diagnostic trouble codes. Do not disconnect these connectors except in the case of working according to WORK FLOW of TROUBLE DIAGNOSES in EC and AT sections.

HARNES LAYOUT

Main Harness (Cont'd)

NOTE:



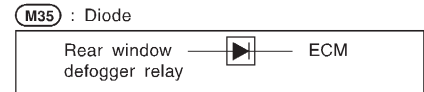
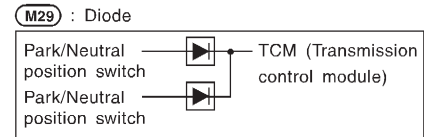
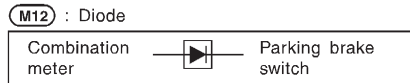
EL-384

Main harness

- G4 ★ (M2) BR/24 : To (B2)
- G4 (M3) W/20 : To (B4)
- G4 (M4) SMJ : To (D1)
- G3 (M5) W/16 : To (B1)
- B1 (M8) W/12 : To (R2)
- G3 ★ (M9) - : Body ground
- F2 (M12) W/2 : Diode
- E2 (M14) L/2 : ASCD clutch switch (With M/T)
- G4 ★ (M15) SMJ : To (E81)
- E5 ★ (M17) W/12 : Fuse block (J/B)
- E4 (M18) W/6 : Fuse block (J/B)
- F5 ★ (M19) W/16 : Fuse block (J/B)
- F3 (M20) L/4 : Power window relay
- E3 (M21) B/3 : Combination flasher unit
- E4 (M23) W/6 : Illumination control switch
- E2 (M24) W/10 : Door mirror remote control switch
- F3 ★ (M25) - : Body ground
- D4 (M28) W/16 : Data link connector
- F3 (M29) SB/6 : Joint connector-3 (Diode) (With A/T)
- E4 (M30) W/6 : Clock
- A3 (M31) W/4 : Fan control amp. (With auto A/C)
- D3 ★ (M32) BR/20 : Combination meter
- E3 ★ (M33) W/24 : Combination meter
- D2 (M34) BR/24 : Combination meter

- E2 (M35) W/2 : Diode
- B3 (M37) BR/4 : Fan resistor (With manual A/C)
- A3 (M38) W/12 : To (D62)
- A3 (M39) W/10 : To (D63)
- D3 (M44) W/2 : In-vehicle sensor (With auto A/C)
- C5 ★ (M46) W/18 : To (F44)
- B4 ★ (M47) W/16 : To (F45)
- D4 (M48) BR/10 : Mode door motor (With manual A/C)
- D4 (M49) W/3 : Mode door motor (With auto A/C)
- D5 (M50) B/6 : Air mix door motor (With manual A/C)
- D5 (M51) W/3 : Air mix door motor (With auto A/C)
- D4 ★ (M52) BR/24 : ASCD control unit
- B4 (M53) B/2 : Cigarette lighter
- C4 (M54) B/1 : Cigarette lighter socket illumination
- C5 (M55) W/8 : Hazard switch
- B3 (M56) GY/16 : A/C control unit (With manual A/C)
- C3 (M57) GY/20 : A/C control unit (With manual A/C)
- C3 (M58) W/6 : Fan switch (With manual A/C)
- B3 (M59) GY/20 : A/C auto amp. (With auto A/C)
- C3 (M60) GY/16 : A/C auto amp. (With auto A/C)

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



Main harness

- B4 (M69) W/4 : CD player
- D3 (M71) W/2 : Antenna amp. (Via sub-harness)
- B4 (M72) W/2 : Ashtray illumination
- B5 (M74) L/4 : Heated seat switch LH
- B5 (M75) W/4 : Heated seat switch RH
- C5★ (M76) GY/8 : A/T device (With A/T)
- B5 (M77) B/1 : Parking brake switch
- A5 (M78) B/2 : Power socket
- B4 (M80) W/3 : Intake sensor (With auto A/C)
- B3★ (M81) W/20 : To (F49)
- B2 (M82) W/2 : Glove box lamp
- B2 (M83) W/8 : Intake door motor (With manual A/C)
- B2 (M84) W/3 : Intake door motor (With auto A/C)
- C1 (M85) B/2 : Sunload sensor (With auto A/C)
- G2 (M86) BR/2 : Tweeter RH (Via sub-harness)
- A2★ (M87) - : Body ground
- A2 (M92) W/10 : To (B104)
- A3 (M93) W/16 : To (B105)
- A3 (M94) W/20 : To (B102)
- B3 (M95) W/12 : To (B101) (With CD auto changer)
- A2 (M96) W/16 : To (E104)
- A2 (M97) W/2 : To (E105)
- E4 (M100) W/4 : Security indicator
- E4 (M103) Y/7 : Spiral cable (Via sub-harness)
- D3 (M104) BR/24 : To (M191) (With navigation system)
- B3 (M105) W/16 : Navi control unit (Via sub-harness)
- B3 (M106) W/20 : Navi control unit (Via sub-harness)
- D3 (M107) GY/12 : Navi control unit (Via sub-harness)
- A5 (M112) Y/20 : Air bag diagnosis sensor unit
- B3 (M113) Y/2 : Passenger air bag module
- A4 (M115) W/16 : Headlamp aiming control unit
- G4 (M116) W/8 : Guide speaker relay (With navigation system)
To (M211) (Without navigation system)
- F2 (M120) W/4 : Headlamp aiming switch
(With headlamp manual aiming system)
- E2 (M121) BR/8 : Multi-remote control unit
- E4 (M125) GY/16 : Time control unit
- E3 (M126) GY/20 : Time control unit
- E4 (M129) L/6 : Headlamp washer switch (With headlamp washer)

- C3 (M132) W/8 : Audio unit
- B4 (M133) W/16 : Audio unit
- C4 (M134) W/8 : Navi option connector
- B4 (M135) W/12 : Audio unit (With CD auto changer)
- A3 (M136) W/8 : Steering wheel reseiver control switch
- C5 (M138) W/8 : A/T mode switch
- B4 (M139) W/16 : Alarm unit
- A3 (M141) W/8 : Telephone speaker relay (With telephone)
To (M201) (Without telephone)
- F3 (M143) BR/2 : ASCD brake switch
- E3★ (M144) B/2 : Stop lamp switch
- A2 (M145) BR/8 : Dongle unit
- B4 (M151) GY/6 : Joint connector-21 (With navigation system)
- E3 (M152) W/2 : Diode
- F4 (M153) L/4 : Trunk lid opener relay
- E2 (M156) B/1 : Not used

Main sub-harness-1

- E4 (M191) BR/24 : To (M104) (With navigation system)
- C3 (M192) W/20 : Front monitor
- C2 (M193) W/4 : Front monitor

Main sub-harness-2

- A3 (M201) W/8 : To (M141)

Main sub-harness-3

- G4 (M211) W/8 : To (M116)

★ : 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.

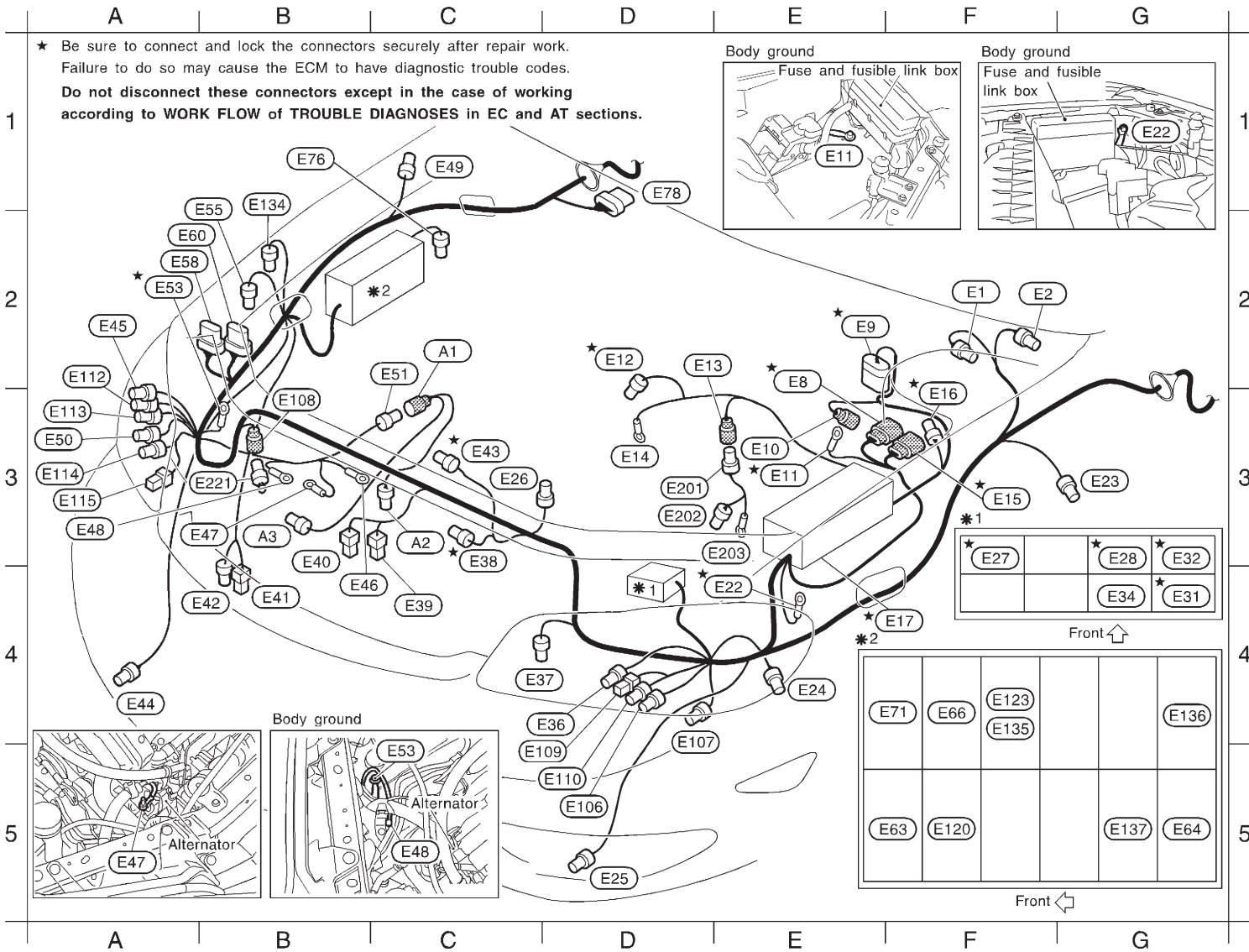
(M152) : Diode



HARNES LAYOUT

Main Harness (Cont'd)

NOTE:



EL-388

Engine room harness

- F2 (E1) GY/2 : Brake fluid level switch
- F2 (E2) GY/4 : ASCD pump
- E3★ (E8) GY/8 : To (F17)
- E2★ (E9) GY/30 : ABS actuator and electric unit (control unit)
- E3 (E10) BR/2 : Front wheel sensor LH
- E3★ (E11) - : Body ground
- D2★ (E12) GY/2 : Intake air temperature sensor
- D2 (E13) GY/1 : To (E201)
- D3 (E14) - : Battery (Fusible link 120A)
- F3★ (E15) B/8 : To (F18)
- F3★ (E16) GY/2 : Dropping resistor (With A/T)
- F4★ (E17) - : Fuse and fusible link box
- E4★ (E22) - : Body ground
- G3 (E23) BR/2 : Side turn signal lamp LH
- E4 (E24) BR/2 : Front turn signal lamp LH
- D5 (E25) B/2 : Front fog lamp LH
- C3 (E26) GY/2 : Hood switch
- F4★ (E27) BR/6 : Cooling fan relay-1
- G4★ (E28) BR/6 : Cooling fan relay-2
- G4★ (E31) BR/6 : Cooling fan relay-3
- G4★ (E32) BR/6 : ECM relay
- G4 (E34) GY/6 : Park/Neutral position relay (With A/T)
- D4 (E36) B/2 : Headlamp LH (High beam)
- C4 (E37) B/3 : Refrigerant pressure sensor
- C4★ (E38) GY/4 : Cooling fan motor-1
- C4 (E39) B/1 : Horn (Low)
- B4 (E40) B/1 : Horn (High)
- B4 (E41) W/2 : Front washer motor
- B4 (E42) BR/2 : Washer level switch
- C3★ (E43) GY/4 : Cooling fan motor-2
- A4 (E44) B/2 : Front fog lamp RH
- A2 (E45) BR/2 : Front turn signal lamp RH
- B4 (E46) - : Alternator
- B3 (E47) - : Alternator
- A3 (E48) - : Body ground
- C1 (E49) BR/2 : Side turn signal lamp RH
- A3 (E50) B/2 : Headlamp RH (High beam)
- C3 (E51) GY/4 : To (A1)
- A2★ (E53) - : Body ground

- B2 (E55) B/2 : Ambient sensor (With auto A/C)
- A2 (E58) GY/8 : Daytime light control unit
- A2 (E60) GY/6 : Daytime light control unit
- F5 (E63) B/5 : Theft warning relay
- G5 (E64) L/4 : Front fog lamp relay
- F4 (E66) W/3 : Horn relay
- F4 (E71) L/4 : Air conditioner relay
- B1 (E76) GY/2 : Front wheel sensor RH
- D2 (E78) GY/6 : Front wiper motor
- D5 (E106) GY/2 : Headlamp LH (Low beam) (With xenon headlamp)
- D5 (E107) BR/2 : Headlamp LH (Low beam) (Without xenon headlamp)
- B3 (E108) B/2 : To (E221)
- D5 (E109) B/2 : Clearance lamp LH
- D5 (E110) B/3 : Headlamp aiming motor LH (With headlamp aiming system)
- A3 (E112) BR/2 : Headlamp RH (Low beam) (Without xenon headlamp)
- A3 (E113) GY/2 : Headlamp RH (Low beam) (With xenon headlamp)
- A3 (E114) B/3 : Headlamp aiming motor RH (With headlamp aiming system)
- A3 (E115) B/2 : Clearance lamp RH
- F5 (E120) L/4 : Headlamp LH relay (With xenon headlamp)
- F4 (E123) L/4 : Headlamp RH relay (With xenon headlamp)
- B2 (E134) GY/2 : Headlamp washer motor
- F4 (E135) BR/6 : Dimmer relay (Without xenon headlamp)
- G4 (E136) BR/6 : Headlamp washer control unit
- G5 (E137) L/4 : Rear fog lamp relay

Engine room sub-harness-1

- D3 (E201) GY/1 : To (E13)
- D3 (E202) GY/1 : Starter motor
- E4 (E203) - : Starter motor

Engine room sub-harness-2

- B3 (E221) B/2 : To (E108)

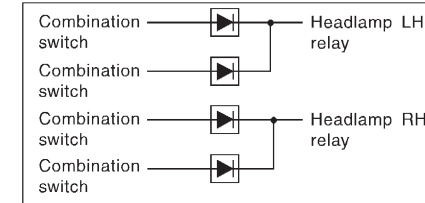
Alternator harness

- C2 (A1) GY/4 : To (E51)
- C3 (A2) GY/4 : Alternator
- B3 (A3) B/1 : Compressor

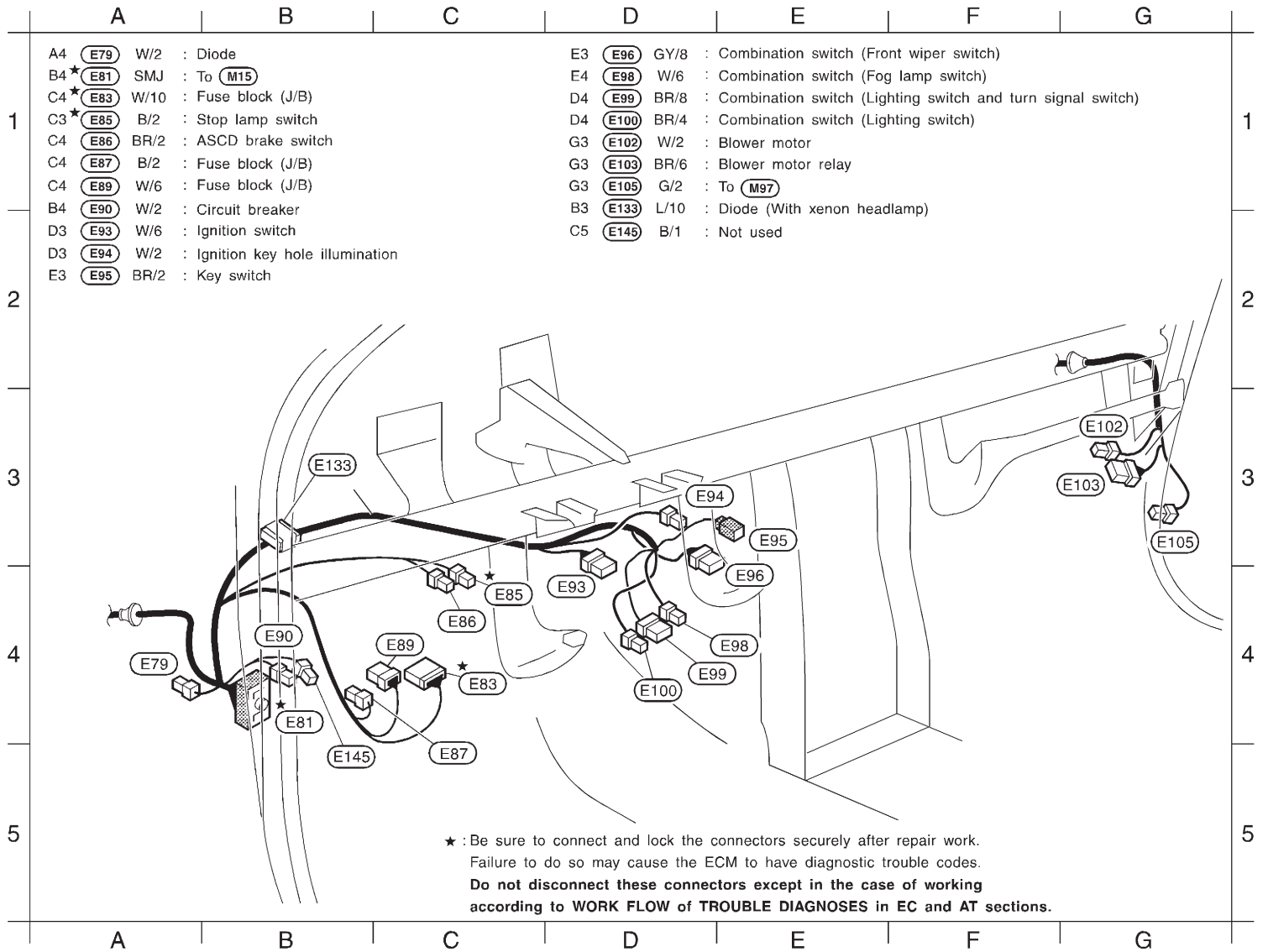
(E79) : Diode



(E133) : Diode



★ : 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.**

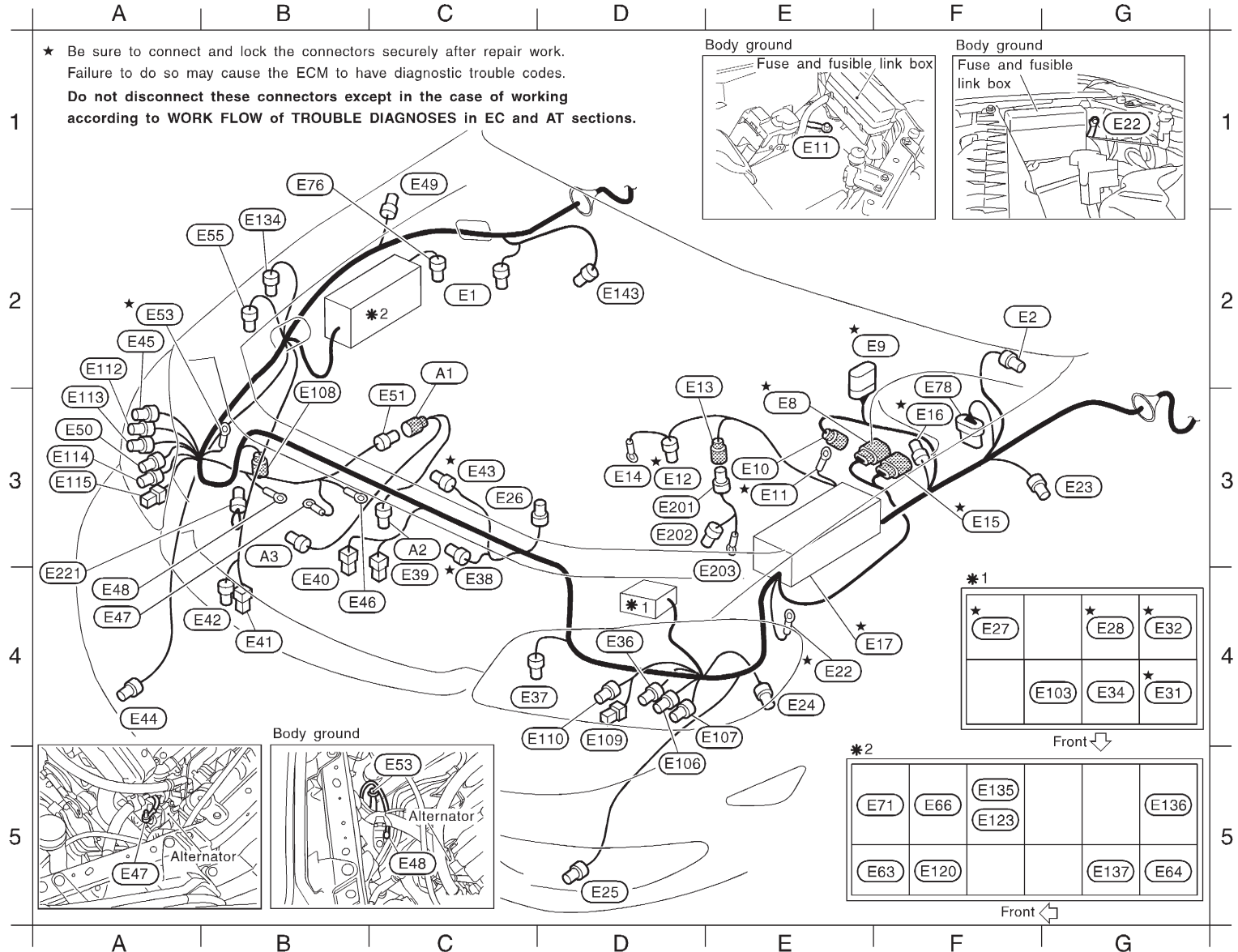
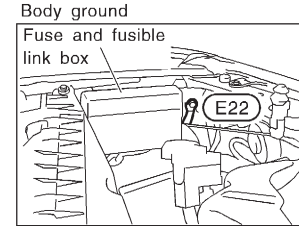
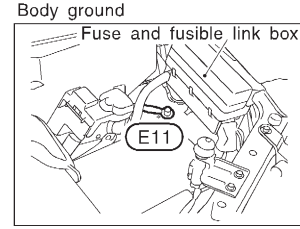


HARNES LAYOUT

Engine Room Harness (Cont'd)

NOTE:

★ 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.



*1

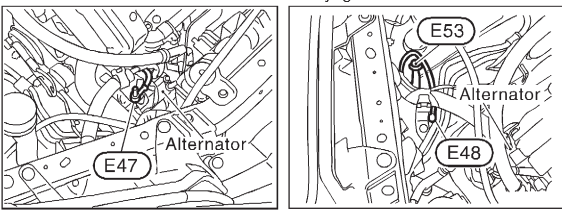
★ E27	★ E28	★ E32
	E103	★ E31

Front ↓

*2

E71	E66	E135		E136
E63	E120		E123	E137
				E64

Front ←



EL-392

Engine room harness

- C2 (E1) GY/2 : Brake fluid level switch
- F2 (E2) GY/4 : ASCD pump
- E3★ (E8) GY/10 : To (F17)
- F2★ (E9) GY/30 : ABS actuator and electric unit (control unit)
- E3 (E10) BR/2 : Front wheel sensor LH
- E3★ (E11) - : Body ground
- D3★ (E12) GY/2 : Intake air temperature sensor
- D2 (E13) GY/1 : To (E201)
- D3 (E14) - : Battery (Fusible link 120A)
- F3★ (E15) B/8 : To (F18)
- F3★ (E16) GY/2 : Dropping resistor (With A/T)
- F4★ (E17) - : Fuse and fusible link box
- E4★ (E22) - : Body ground
- G3 (E23) BR/2 : Side turn signal lamp LH
- E4 (E24) BR/2 : Front turn signal lamp LH
- D5 (E25) B/2 : Front fog lamp LH
- C3 (E26) GY/2 : Hood switch
- F4★ (E27) BR/6 : Cooling fan relay-1
- G4★ (E28) BR/6 : Cooling fan relay-2
- G4★ (E31) BR/6 : Cooling fan relay-3
- G4★ (E32) BR/6 : ECM relay
- G4 (E34) GY/6 : Park/Neutral position relay (With A/T)
- D4 (E36) B/2 : Headlamp LH (High beam)
- C4 (E37) B/3 : Refrigerant pressure sensor
- C4★ (E38) GY/4 : Cooling fan motor-1
- C4 (E39) B/1 : Horn (Low)
- B4 (E40) B/1 : Horn (High)
- B4 (E41) W/2 : Front washer motor
- B4 (E42) BR/2 : Washer level switch
- C3★ (E43) GY/4 : Cooling fan motor-2
- A4 (E44) B/2 : Front fog lamp RH
- A2 (E45) BR/2 : Front turn signal lamp RH
- B4 (E46) - : Alternator
- A4 (E47) - : Alternator
- A4 (E48) - : Body ground
- C1 (E49) BR/2 : Side turn signal lamp RH
- A3 (E50) B/2 : Headlamp RH (High beam)
- C3 (E51) GY/4 : To (A1)
- A2★ (E53) - : Body ground

- B2 (E55) B/2 : Ambient sensor (With auto A/C)
- F5 (E63) B/5 : Theft warning relay
- G5 (E64) L/4 : Front fog lamp relay
- F5 (E66) W/3 : Horn relay
- F5 (E71) L/4 : Air conditioner relay
- B1 (E76) GY/2 : Front wheel sensor RH
- F2 (E78) GY/6 : Front wiper motor
- G4 (E103) BR/6 : Blower motor relay
- D5 (E106) GY/2 : Headlamp LH (Low beam) (With xenon headlamp)
- E4 (E107) BR/2 : Headlamp LH (Low beam) (Without xenon headlamp)
- B3 (E108) B/2 : To (E221) (With headlamp auto aiming system)
- D4 (E109) B/2 : Clearance lamp LH
- D4 (E110) B/3 : Headlamp aiming motor LH (With headlamp aiming system)
- A2 (E112) BR/2 : Headlamp RH (Low beam) (Without xenon headlamp)
- A3 (E113) GY/2 : Headlamp RH (Low beam) (With xenon headlamp)
- A3 (E114) B/3 : Headlamp aiming motor RH (With headlamp aiming system)
- A3 (E115) B/2 : Clearance lamp RH
- F5 (E120) L/4 : Headlamp LH relay (With xenon headlamp)
- F5 (E123) L/4 : Headlamp RH relay (With xenon headlamp)
- B2 (E134) GY/2 : Headlamp washer motor
- F5 (E135) BR/6 : Dimmer relay (Without xenon headlamp)
- G5 (E136) BR/6 : Headlamp washer control unit
- G5 (E137) L/4 : Rear fog lamp relay
- D2 (E143) B/2 : Power steering oil pressure switch

Engine room sub-harness-1

- D3 (E201) GY/1 : To (E13)
- D3 (E202) GY/1 : Starter motor
- E4 (E203) - : Starter motor

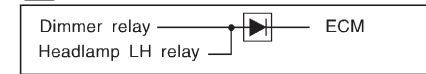
Engine room sub-harness-2

- A4 (E221) B/2 : To (E108) (With headlamp auto aiming system)

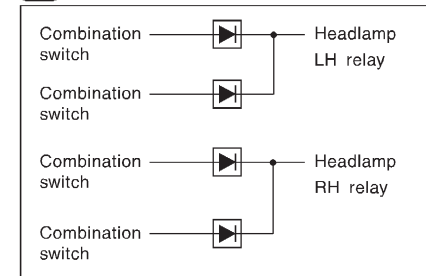
Alternator harness

- C2 (A1) GY/4 : To (E51)
- C3 (A2) GY/4 : Alternator
- B3 (A3) B/1 : Compressor

(E79) : Diode

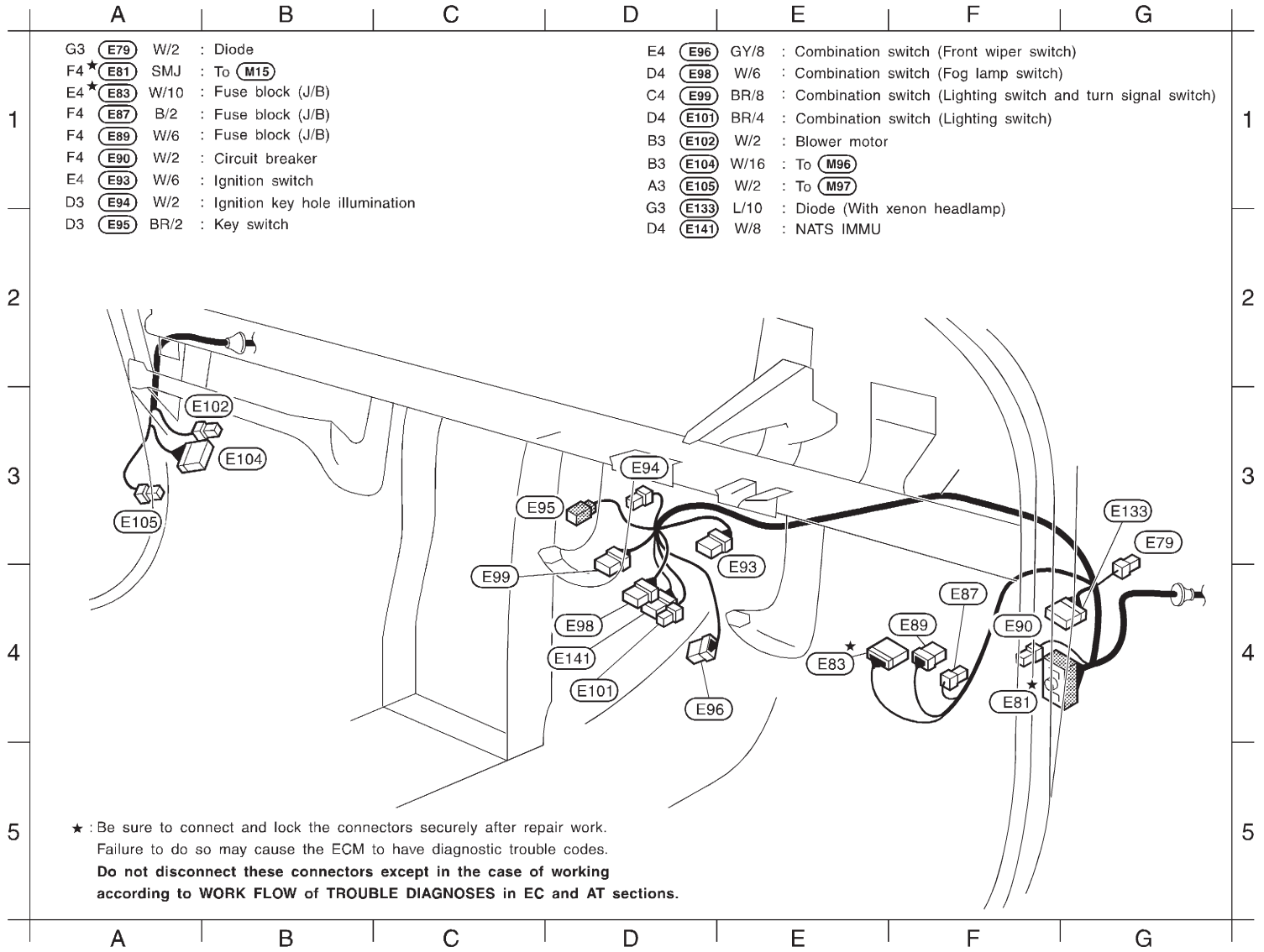


(E133) : Diode



★ : 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.**

HARNES LAYOUT



EL-394

HARNES LAYOUT

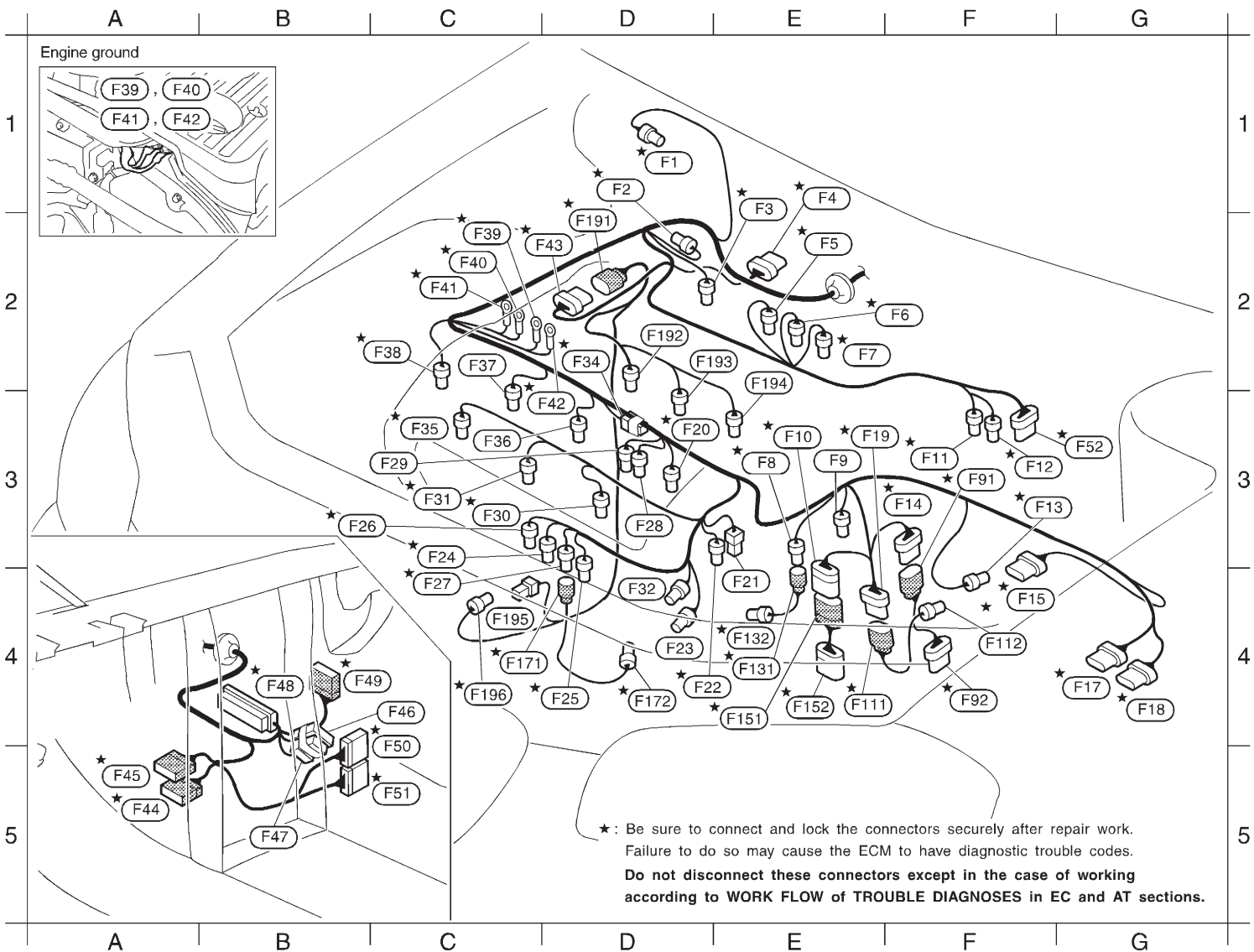
Engine Room Harness (Cont'd)

NOTE:

HARNES LAYOUT

Engine Control Harness

LHD MODELS



*: 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.

EL-396

Engine control harness

D1 (F1) B/2	: Power steering oil pressure switch	D2★ (F34) W/2	: Condenser
D1★ (F2) GY/3	: Heated oxygen sensor 1 (Front) (Bank 1)	C3★ (F35) GY/3	: Ignition coil No. 2
E1★ (F3) GY/3	: Ignition coil No. 1	C3 (F36) GY/2	: Injector No. 4
E1★ (F4) G/8	: Not used	C2 (F37) GY/2	: Injector No. 2
E2★ (F5) GY/3	: Ignition coil No. 3	C2★ (F38) GY/2	: Camshaft position sensor (PHASE)
F2★ (F6) GY/3	: Ignition coil No. 5	C2★ (F39) -	: Engine ground
E2★ (F7) L/2	: EVAP canister purge volume control solenoid valve	C2★ (F40) -	: Engine ground
E3★ (F8) B/2	: To (F131)	C2★ (F41) -	: Engine ground
E3 (F9) BR/3	: Rear electronic controlled engine mount	D3★ (F42) -	: Engine ground
E3★ (F10) GY/10	: To (F151) (With A/T)	D2★ (F43) L/8	: To (F191)
F3★ (F11) BR/3	: Throttle position sensor	A5★ (F44) W/18	: To (M46)
F3★ (F12) GY/3	: Throttle position switch	A5★ (F45) W/16	: To (M47)
G3★ (F13) GY/4	: Park/Neutral position switch (Reverse position switch) (With M/T)	C4 (F46) L/12	: Joint connector-18
F3★ (F14) BR/8	: To (F91) (With A/T)	B5 (F47) GY/6	: Joint connector-17
F4★ (F15) GY/5	: Mass air flow sensor	B4★ (F48) SMJ	: ECM
G4★ (F17) GY/8	: To (E8)	B4★ (F49) W/20	: To (M81)
G4★ (F18) B/8	: To (E15)	C5★ (F50) GY/24	: TCM (Transmission control module)
F3 (F19) GY/6	: To (F111) (With A/T)	C5★ (F51) W/24	: TCM (Transmission control module)
D3★ (F20) BR/2	: Swirl control valve control solenoid valve	G3★ (F52) GY/6	: IACV-AAC valve
E3 (F21) B/1	: Thermal transmitter		
E4★ (F22) GY/2	: Engine coolant temperature sensor		
D4 (F23) BR/3	: Front electronic controlled engine mount		
C3★ (F24) B/4	: Heated oxygen sensor 2 (Rear) (Bank 1)		
D4★ (F25) G/4	: To (F171)		
C3★ (F26) GY/3	: Heated oxygen sensor 1 (Front) (Bank 2)		
C3★ (F27) GY/4	: Heated oxygen sensor 2 (Rear) (Bank 2)		
D3 (F28) GY/2	: Injector No. 6		
C3 (F29) B/2	: VIAS control solenoid valve		
C3★ (F30) GY/3	: Ignition coil No. 6		
C3★ (F31) GY/3	: Ignition coil No. 4		
D4 (F32) GY/3	: Absolute pressure sensor		

Engine control sub-harness-1

F3★ (F91) BR/8	: To (F14) (With A/T)
F4★ (F92) B/8	: Terminal cord assembly (With A/T)

Engine control sub-harness-2

E4★ (F111) GY/6	: To (F19) (With A/T)
F4★ (F112) B/3	: Revolution sensor (With A/T)

Engine control sub-harness-3

E4★ (F131) B/2	: To (F8)
E4★ (F132) GY/2	: Knock sensor

Engine control sub-harness-4

E4★ (F151) GY/10	: To (F10) (With A/T)
E4★ (F152) B/10	: Park/Neutral position switch (With A/T)

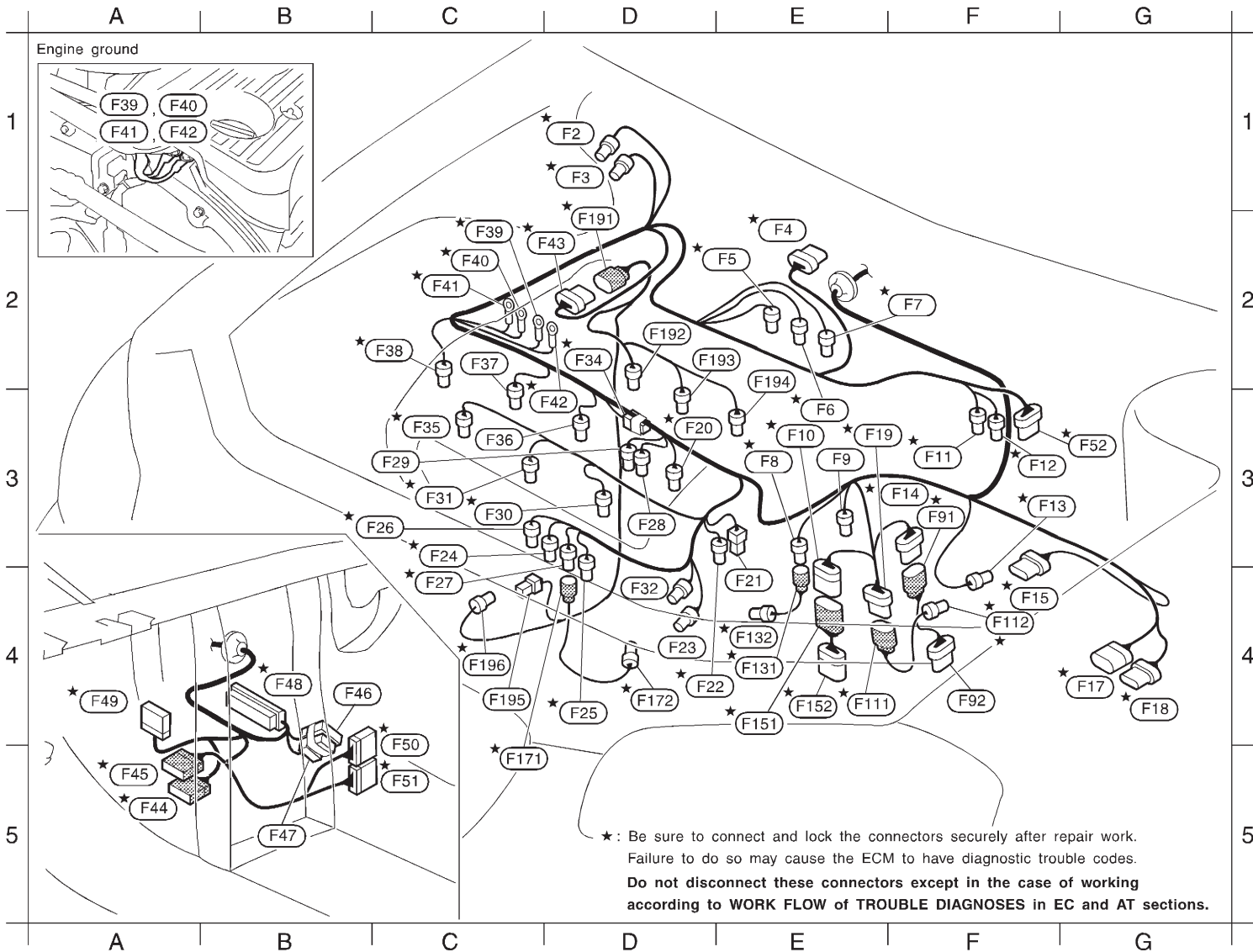
Engine control sub-harness-5

C4★ (F171) G/4	: To (F25)
D4★ (F172) GY/3	: Crankshaft position sensor (POS)

Engine control sub-harness-6

D2★ (F191) L/8	: To (F43)
D2 (F192) GY/2	: Injector No. 1
E2 (F193) GY/2	: Injector No. 3
E2 (F194) GY/2	: Injector No. 5
C4 (F195) B/1	: Oil pressure switch
C4★ (F196) GY/2	: Crankshaft position sensor (REF)

★ : 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.**



EL-398

Engine control harness

D1★ (F2) GY/3	: Heated oxygen sensor 1 (Front) (Bank 1)	D2★ (F34) W/2	: Condenser
D1★ (F3) GY/3	: Ignition coil No. 1	C3★ (F35) GY/3	: Ignition coil No. 2
E2★ (F4) G/8	: Not used	C3 (F36) GY/2	: Injector No. 4
E2★ (F5) GY/3	: Ignition coil No. 3	C2 (F37) GY/2	: Injector No. 2
E3★ (F6) GY/3	: Ignition coil No. 5	C2★ (F38) GY/2	: Camshaft position sensor (PHASE)
F2★ (F7) L/2	: EVAP canister purge volume control solenoid valve	C2★ (F39) -	: Engine ground
E3★ (F8) B/2	: To (F131)	C2★ (F40) -	: Engine ground
E3 (F9) BR/3	: Rear electronic controlled engine mount	C2★ (F41) -	: Engine ground
E3★ (F10) GY/10	: To (F151) (With A/T)	D3★ (F42) -	: Engine ground
F3★ (F11) BR/3	: Throttle position sensor	D2★ (F43) L/8	: To (F191)
F3★ (F12) GY/3	: Throttle position switch	A5★ (F44) W/18	: To (M46)
G3★ (F13) GY/4	: Park/Neutral position switch (Reverse position switch) (With M/T)	A5★ (F45) W/16	: To (M47)
F3★ (F14) BR/8	: To (F91) (With A/T)	C4 (F46) L/12	: Joint connector-18
F4★ (F15) GY/5	: Mass air flow sensor	B5 (F47) GY/6	: Joint connector-17
G4★ (F17) GY/10	: To (E8)	B4★ (F48) SMJ	: ECM
G4★ (F18) B/8	: To (E15)	A4★ (F49) W/20	: To (M81)
E3★ (F19) GY/6	: To (F111) (With A/T)	C5★ (F50) GY/24	: TCM (Transmission control module)
D3★ (F20) BR/2	: Swirl control valve control solenoid valve	C5★ (F51) W/24	: TCM (Transmission control module)
E3 (F21) B/1	: Thermal transmitter	G3★ (F52) GY/6	: IACV-AAC valve
E4★ (F22) GY/2	: Engine coolant temperature sensor		
D4 (F23) BR/3	: Front electronic controlled engine mount		
C3★ (F24) B/4	: Heated oxygen sensor 2 (Rear) (Bank 1)		
D4★ (F25) G/4	: To (F171)		
C3★ (F26) GY/3	: Heated oxygen sensor 1 (Front) (Bank 2)		
C4★ (F27) GY/4	: Heated oxygen sensor 2 (Rear) (Bank 2)		
D3 (F28) GY/2	: Injector No. 6		
C3 (F29) B/2	: VIAS control solenoid valve		
C3★ (F30) GY/3	: Ignition coil No. 6		
C3★ (F31) GY/3	: Ignition coil No. 4		
D4 (F32) GY/3	: Absolute pressure sensor		

Engine control sub-harness-2

F3★ (F91) BR/8	: To (F14) (With A/T)
F4★ (F92) B/8	: Terminal cord assembly (With A/T)

Engine control sub-harness-3

E4★ (F111) GY/6	: To (F19) (With A/T)
F4★ (F112) B/3	: Revolution sensor (With A/T)

Engine control sub-harness-4

E4★ (F131) B/2	: To (F8)
E4★ (F132) GY/2	: Knock sensor

Engine control sub-harness-5

E4★ (F151) GY/10	: To (F10) (With A/T)
E4★ (F152) B/10	: Park/Neutral position switch (With A/T)

Engine control sub-harness-6

C4★ (F171) G/4	: To (F25)
D4★ (F172) GY/3	: Crankshaft position sensor (POS)

Engine control sub-harness-7

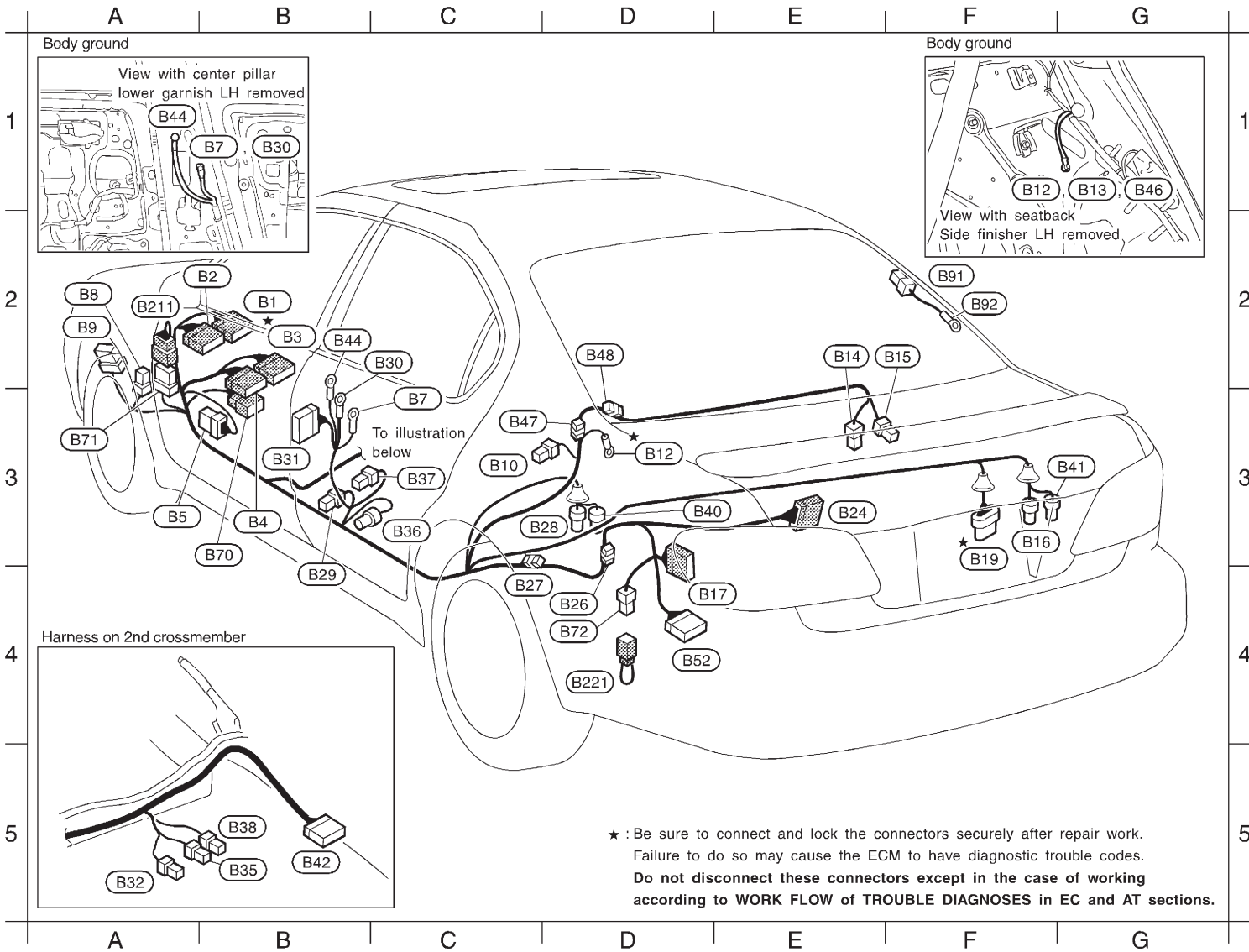
D2★ (F191) L/8	: To (F43)
D2 (F192) GY/2	: Injector No. 1
E2 (F193) GY/2	: Injector No. 3
E2 (F194) GY/2	: Injector No. 5
C4 (F195) B/1	: Oil pressure switch
C4★ (F196) GY/2	: Crankshaft position sensor (REF)

★: 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.**

HARNES LAYOUT

LHD MODELS

Body Harness



EL-400

Body harness

B2	(B1)	W/16	: To (M5)
B2	(B2)	BR/24	: To (M2)
B2*	(B3)	W/18	: To (M6)
B3	(B4)	W/12	: To (M3) (With CD auto changer)
A3	(B5)	W/8	: Fuse block (J/B)
C3	(B7)	-	: Body ground
A2	(B8)	L/4	: Fuel pump relay
A2	(B9)	BR/6	: Rear window defogger relay
C3	(B10)	W/1	: Rear door switch LH
D3*	(B12)	-	: Body ground
E2	(B14)	BR/2	: High-mounted stop lamp (Without rear air spoiler)
F2	(B15)	W/2	: Trunk room lamp
F3	(B16)	GY/2	: Rear wheel sensor RH
E4	(B17)	W/10	: To (T3)
F3*	(B19)	GY/5	: Fuel level sensor unit and fuel pump
E3	(B24)	W/16	: To (B119)
D4	(B26)	W/2	: Diode
C4	(B27)	W/2	: Condenser
D3	(B28)	BR/2	: Rear wheel sensor LH
B3	(B29)	W/3	: Front door switch LH
C2	(B30)	-	: Body ground
B3	(B31)	W/12	: To (DB1)
A4	(B32)	W/3	: Heated seat LH (Via sub-harness)
B5	(B35)	W/2	: Power seat LH (Via sub-harness)
C3	(B36)	OR/2	: Satellite sensor LH (With side air bag system)
C3	(B37)	W/4	: Seat belt pre-tensioner LH
B5	(B38)	Y/2	: Side air bag module LH (With side air bag system)
D3	(B40)	BR/3	: Height sensor rear LH
G3	(B41)	BR/3	: Height sensor rear RH
B5	(B42)	Y/12	: Side air bag diagnosis sensor unit LH (With side air bag system)
B2	(B44)	-	: Body ground (With side air bag system)
C3	(B47)	B/1	: Defogger coil assembly (Condenser)
D2	(B48)	W/1	: Defogger coil assembly (Coil)
D4	(B52)	W/16	: CD auto changer
B3	(B70)	W/8	: To (M154)
A3	(B71)	W/8	: Guide speaker relay (With navigation system) To (B71) (Without navigation system)
D4	(B72)	W/3	: To (B221)

Defogger harness

F2	(B91)	B/1	: Rear window defogger
F2	(B92)	-	: Body ground

Body sub-harness-1

A2	(B211)	W/8	: To (B71)
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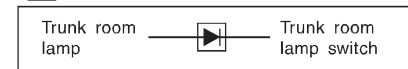
Body sub-harness-2

D4	(B221)	W/3	: To (B72)
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★ : 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.

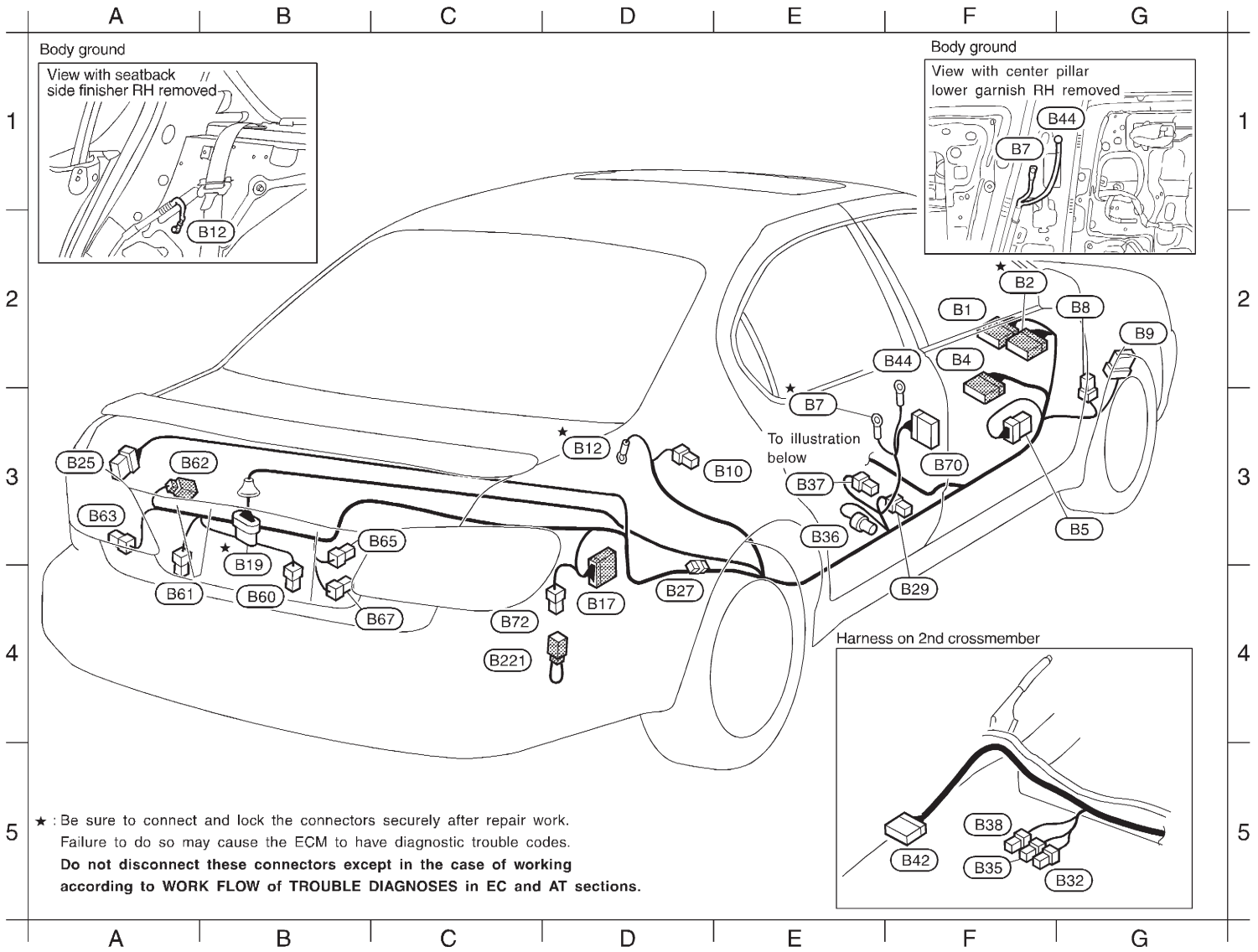
Do not disconnect these connectors except in the case of working according to WORK FLOW of TROUBLE DIAGNOSES in EC and AT sections.

(B26) : Diode



HARNES LAYOUT

RHD MODELS



EL-402

Body harness			
F2	(B1)	W/16	: To (M5)
F2	★(B2)	BR/24	: To (M2)
F2	(B4)	W/20	: To (M3)
G3	(B5)	W/8	: Fuse block (J/B)
E3	★(B7)	-	: Body ground
G2	(B8)	L/4	: Fuel pump relay
G2	(B9)	BR/6	: Rear window defogger relay
E3	(B10)	W/1	: Rear door switch RH
D3	★(B12)	-	: Body ground
D4	(B17)	W/10	: To (T3)
B3	★(B19)	GY/5	: Fuel level sensor unit and fuel pump
A3	(B25)	W/6	: To (B120)
E4	(B27)	W/2	: Condenser
F4	(B29)	W/3	: Front door switch RH
G5	(B32)	W/3	: Heated seat RH (Via sub-harness)
F5	(B35)	W/2	: Power seat RH (Via sub-harness)
E3	(B36)	Y/2	: Satellite sensor RH (With side air bag system)
E3	(B37)	W/4	: Seat belt pre-tensioner RH
F5	(B38)	Y/2	: Side air bag module RH (With side air bag system)
F5	(B42)	Y/12	: Side air bag diagnosis sensor unit RH (With side air bag system)
F2	(B44)	-	: Body ground (With side air bag system)
B4	(B60)	W/2	: Licence lamp RH
A4	(B61)	W/2	: License lamp LH
A3	(B62)	BR/2	: Not used
A3	(B63)	W/2	: Trunk lid combination lamp LH (For reverse)
C3	(B65)	BR/2	: Trunk lid combination lamp RH (For rear fog lamp)
C4	(B67)	W/2	: Trunk lid combination lamp RH (For reverse)
F3	(B70)	W/12	: To (D101)
C4	(B72)	W/3	: To (B221)

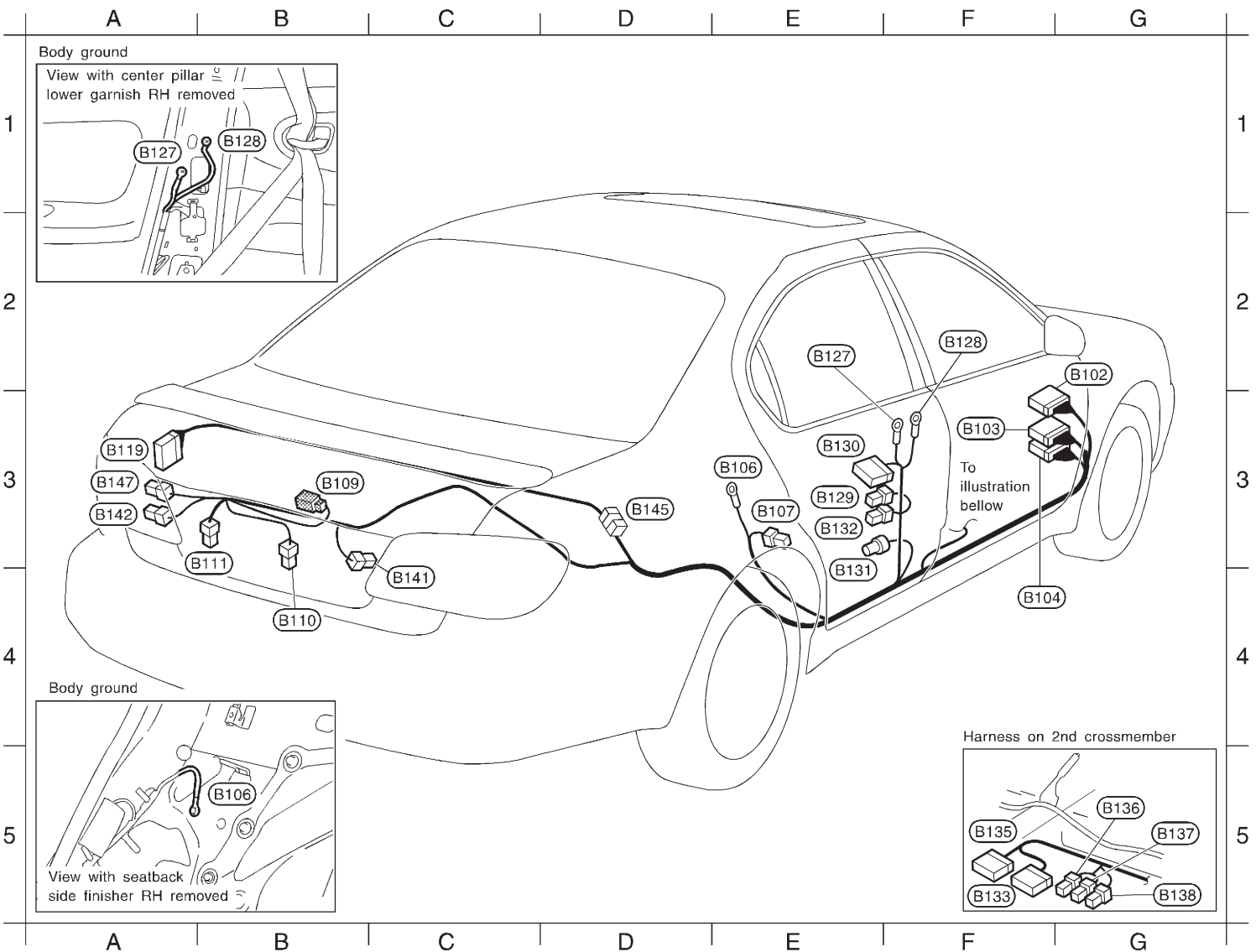
Body sub-harness			
C4	(B221)	W/3	: To (B72)

★ : 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.**

HARNESSES LAYOUT

Body No. 2 Harness

LHD MODELS

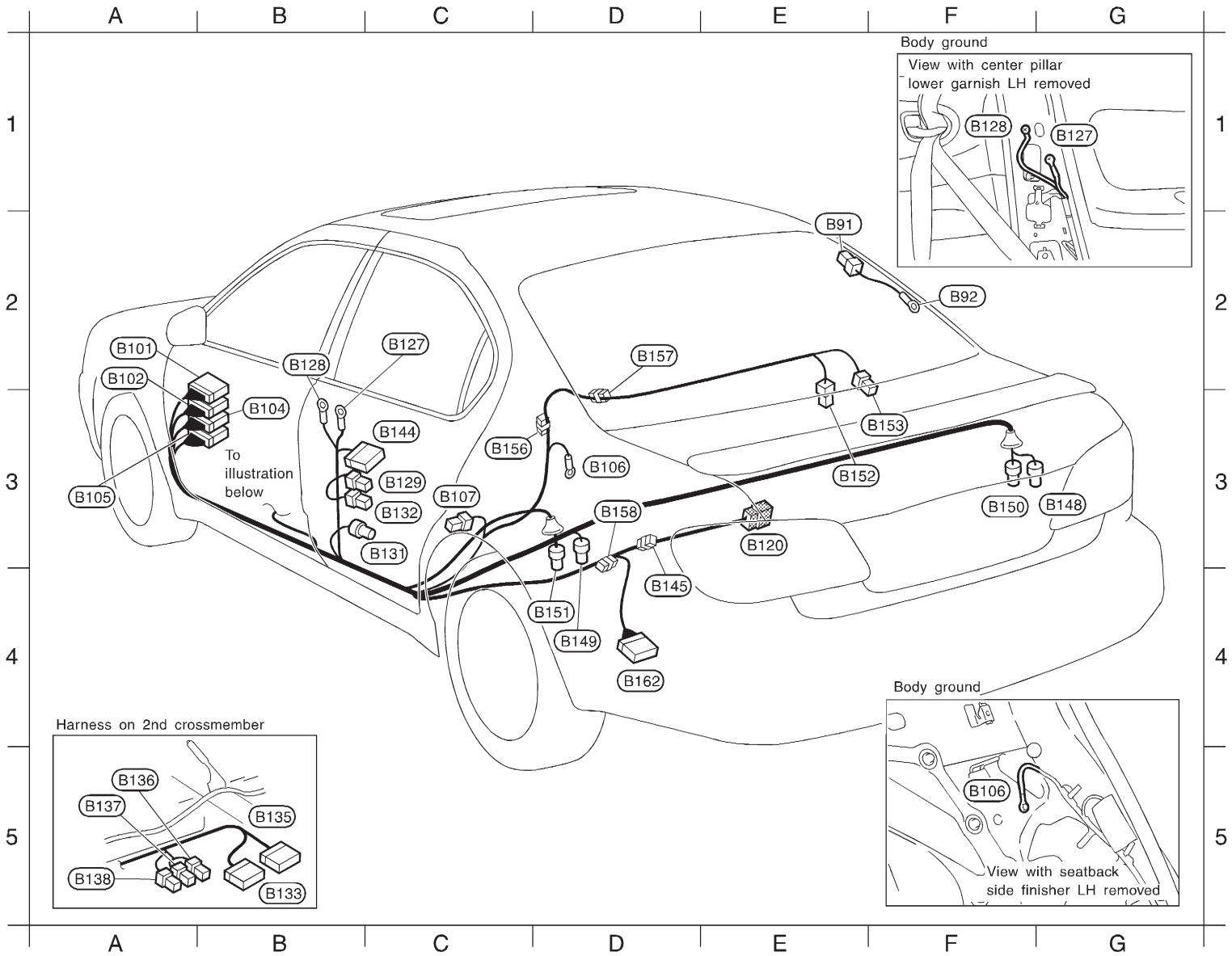


EL-404

Body No. 2 harness

G2	(B102)	W/12	:	To	(M94)
F3	(B103)	W/12	:	To	(M91)
F4	(B104)	W/10	:	To	(M92)
E3	(B106)	-	:	Body ground	
E3	(B107)	W/1	:	Rear door switch RH	
B3	(B109)	BR/2	:	Not used	
B4	(B110)	W/2	:	License lamp RH	
B3	(B111)	W/2	:	License lamp LH	
A3	(B119)	W/16	:	To	(B24)
E2	(B127)	-	:	Body ground	
F2	(B128)	-	:	Body ground (With side air bag system)	
E3	(B129)	W/3	:	Front door switch RH	
E3	(B130)	W/12	:	To	(D101)
E3	(B131)	Y/2	:	Satellite sensor RH (With side air bag system)	
E3	(B132)	W/4	:	Seat belt pre-tensioner RH	
F5	(B133)	B/18	:	Telephone control unit	
F5	(B135)	Y/12	:	Side air bag diagnosis sensor unit RH (With side air bag system)	
G5	(B136)	W/3	:	Heated seat RH (Via sub-harness)	
G5	(B137)	W/2	:	Power seat RH (Via sub-harness)	
G5	(B138)	Y/2	:	Side air bag module RH (With side air bag system)	
C3	(B141)	W/2	:	Trunk lid combination lamp RH (For reverse)	
A3	(B142)	W/2	:	Trunk lid combination lamp LH (For reverse)	
D3	(B145)	W/6	:	Joint connector-20	
A3	(B147)	BR/2	:	Trunk lid combination lamp LH (For rear fog lamp)	

EL-406



RHD MODELS

Body No. 2 Harness (Cont'd)

HARNES LAYOUT

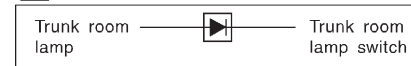
Body No. 2 harness

- A2 (B101) W/12 : To (M95) (With CD auto changer)
- A2 (B102) W/20 : To (M94)
- B3 (B104) W/10 : To (M92)
- A3 (B105) W/16 : To (M93)
- D3 (B106) - : Body ground
- C3 (B107) W/1 : Rear door switch LH
- E3 (B120) W/6 : To (B25)
- C2 (B127) - : Body ground
- B2 (B128) - : Body ground (With side air bag system)
- C3 (B129) W/3 : Front door switch LH
- C3 (B131) OR/2 : Satellite sensor LH (With side air bag system)
- C3 (B132) W/4 : Seat belt pre-tensioner LH
- B5 (B133) B/18 : Telephone control unit
- B5 (B135) Y/12 : Side air bag diagnosis sensor unit LH (With side air bag system)
- A5 (B136) W/3 : Heated seat LH (Via sub-harness)
- A5 (B137) W/2 : Power seat LH (Via sub-harness)
- A5 (B138) Y/2 : Side air bag module LH (With side air bag system)
- C3 (B144) W/12 : To (D81)
- D4 (B145) W/6 : Joint connector-20
- G3 (B148) BR/3 : Height sensor rear RH (With auto aiming control system)
- D4 (B149) BR/3 : Height sensor rear LH (With auto aiming control system)
- F3 (B150) GY/2 : Rear wheel sensor RH
- D4 (B151) BR/2 : Rear wheel sensor LH
- E3 (B152) BR/2 : High-mounted stop lamp (Without rear air spoiler)
- F3 (B153) W/2 : Trunk room lamp
- C3 (B156) B/1 : Defogger coil assembly (Condenser)
- D2 (B157) W/1 : Defogger coil assembly (Coil)
- D3 (B158) W/2 : Diode
- D4 (B162) W/16 : CD auto changer

Defogger harness

- E2 (B91) B/1 : Rear window defogger
- F2 (B92) - : Body ground

(B158) : Diode



HARNES LAYOUT

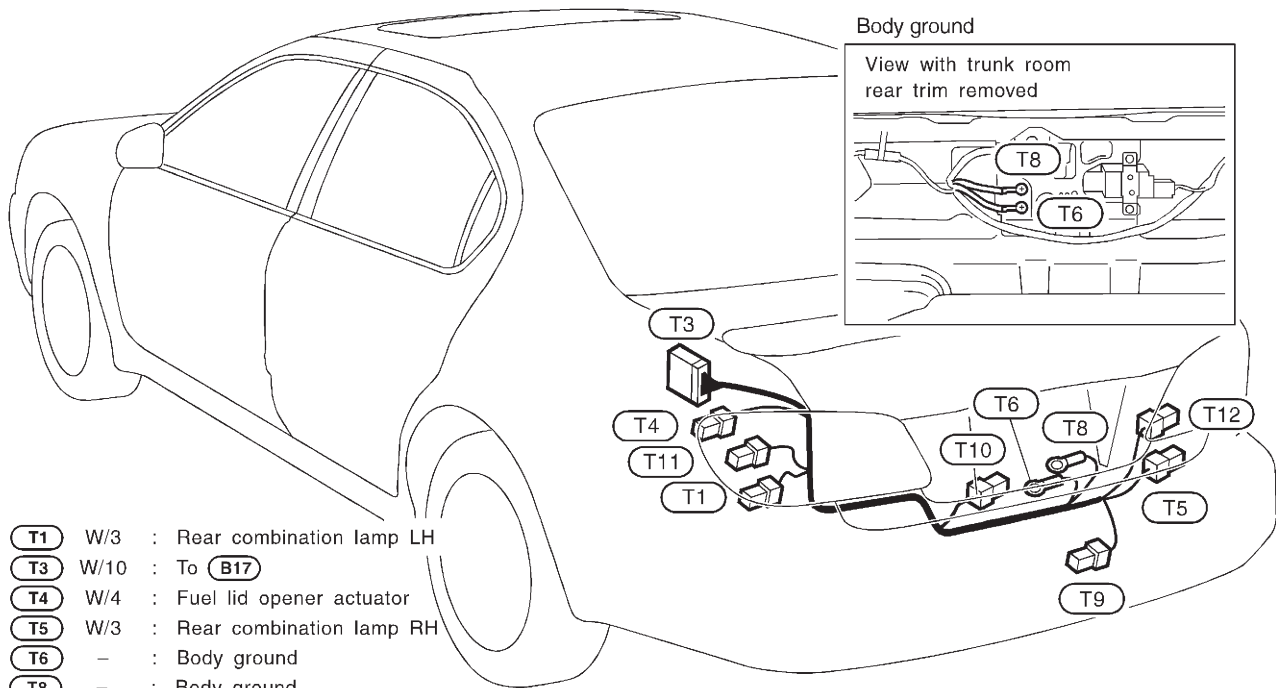
Tail Harness

Tail Harness

NFEL0138

LHD MODELS

NFEL0138S01



- T1** W/3 : Rear combination lamp LH
- T3** W/10 : To **B17**
- T4** W/4 : Fuel lid opener actuator
- T5** W/3 : Rear combination lamp RH
- T6** - : Body ground
- T8** - : Body ground
- T9** W/2 : Trunk room lamp switch
- T10** W/2 : Trunk lid opener actuator
- T11** BR/2 : Rear combination lamp LH
- T12** BR/2 : Rear combination lamp RH

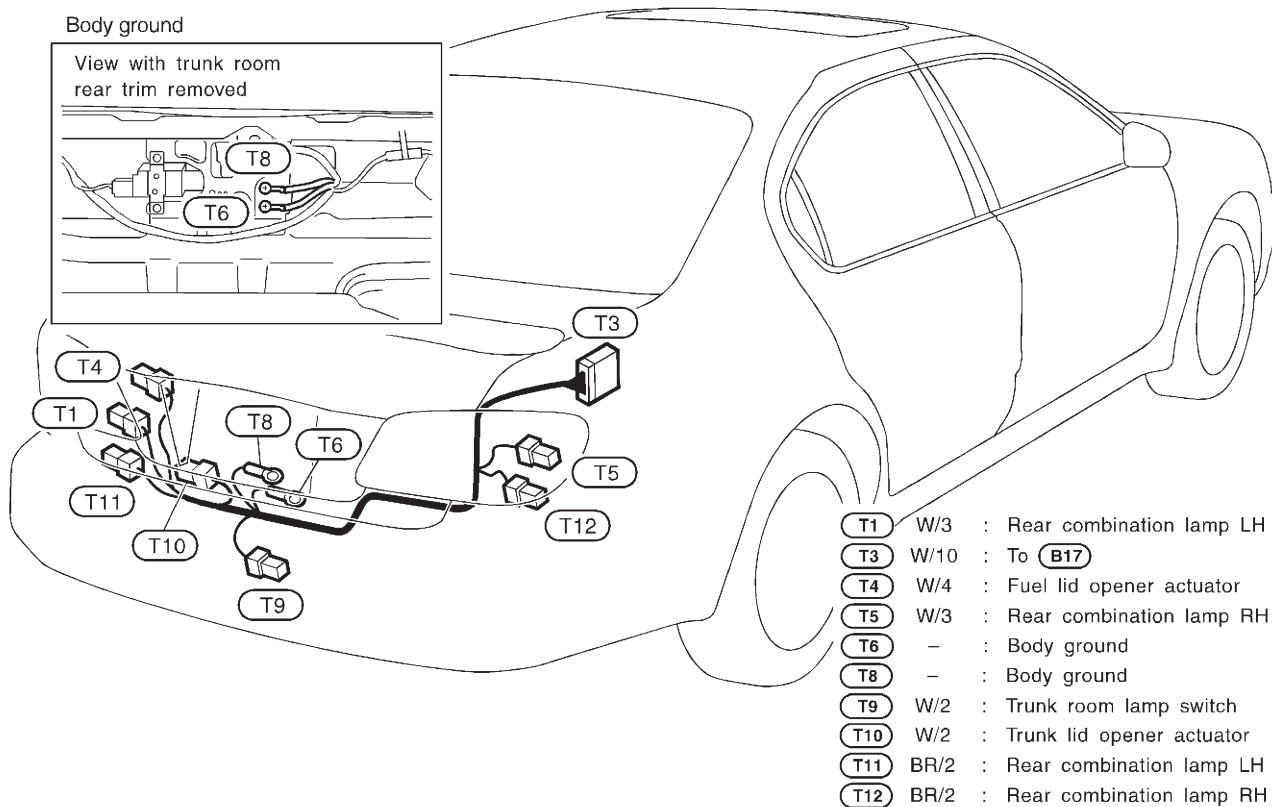
MEL123M

HARNESS LAYOUT

Tail Harness (Cont'd)

RHD MODELS

NFEL0138S03



MEL124M

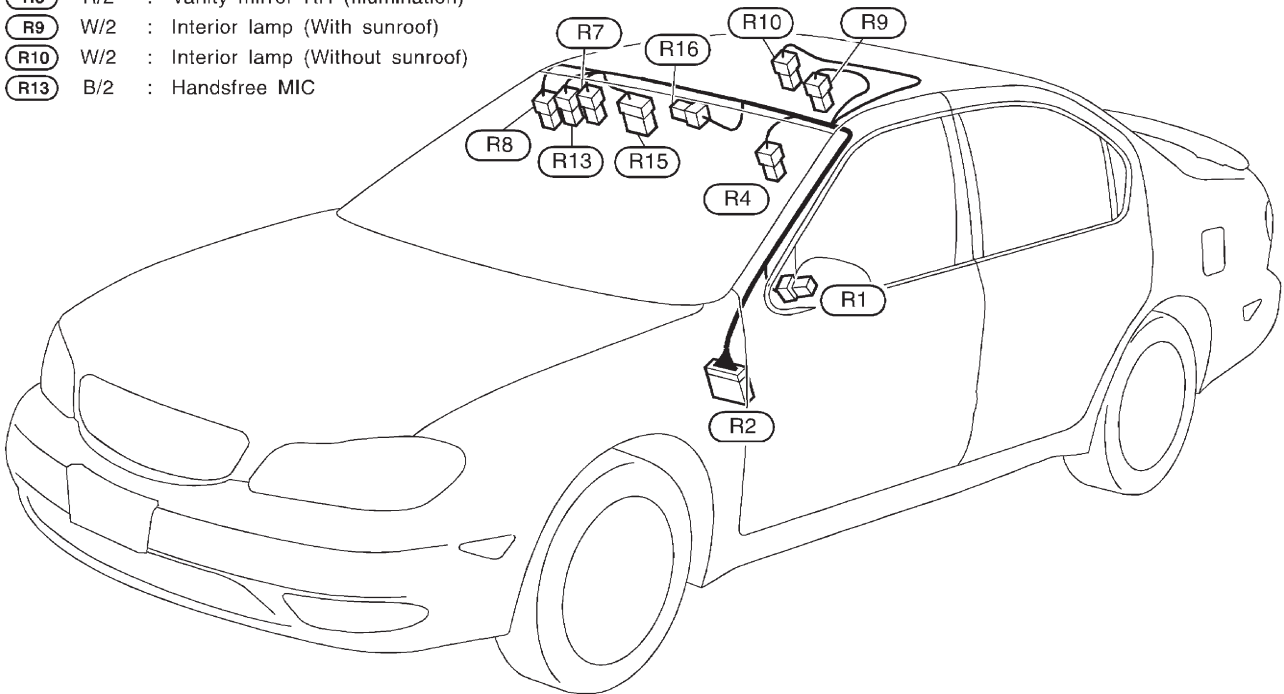
HARNESS LAYOUT

Room Lamp Harness

Room Lamp Harness

NFEL0140

- | | | | |
|----------------|-----------------------------------|----------------|-----------------------------------------------------|
| R1 BR/2 | : Tweeter LH | R15 B/7 | : Auto anti-dazzling inside mirror |
| R2 W/12 | : To M8 | R16 W/1 | : Sunroof motor (With sunroof)
(Via sub-harness) |
| R4 R/2 | : Vanity mirror LH (Illumination) | | |
| R7 W/2 | : Spot lamp | | |
| R8 R/2 | : Vanity mirror RH (Illumination) | | |
| R9 W/2 | : Interior lamp (With sunroof) | | |
| R10 W/2 | : Interior lamp (Without sunroof) | | |
| R13 B/2 | : Handsfree MIC | | |



MEL520N

HARNESS LAYOUT

Front Door Harness

Front Door Harness

NFEL0142

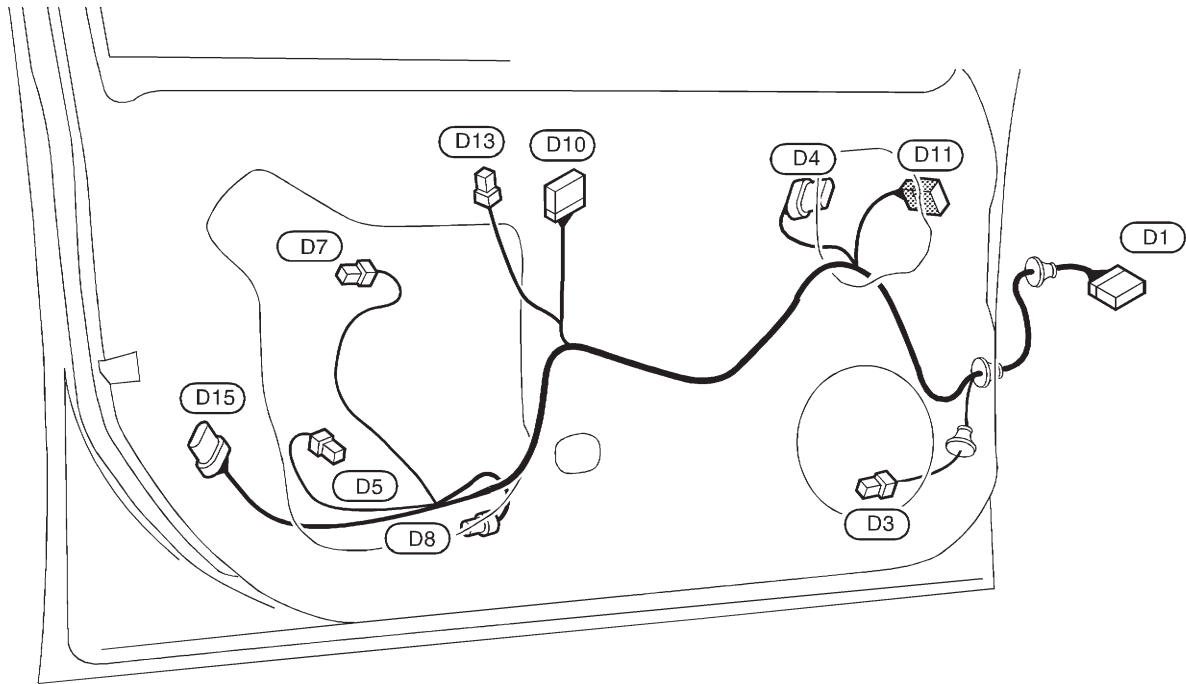
LHD MODELS

NFEL0142S05

LH Side

NFEL0142S0501

- | | |
|----------------------------------------------------|------------------------------------------------------|
| (D1) SMJ : To (M4) | (D8) BR/3 : Front door key cylinder switch LH |
| (D3) W/2 : Front door speaker LH | (D10) W/16 : Power window main switch |
| (D4) GY/6 : Front power window regulator LH | (D11) W/8 : Door mirror actuator LH |
| (D5) W/2 : Front step lamp LH | (D13) W/3 : Power window main switch |
| (D7) W/4 : Trunk and fuel lid opener switch | (D15) B/6 : Front door lock actuator LH |



MEL709L

HARNESS LAYOUT

Front Door Harness (Cont'd)

RH Side

NFEL0142S0502

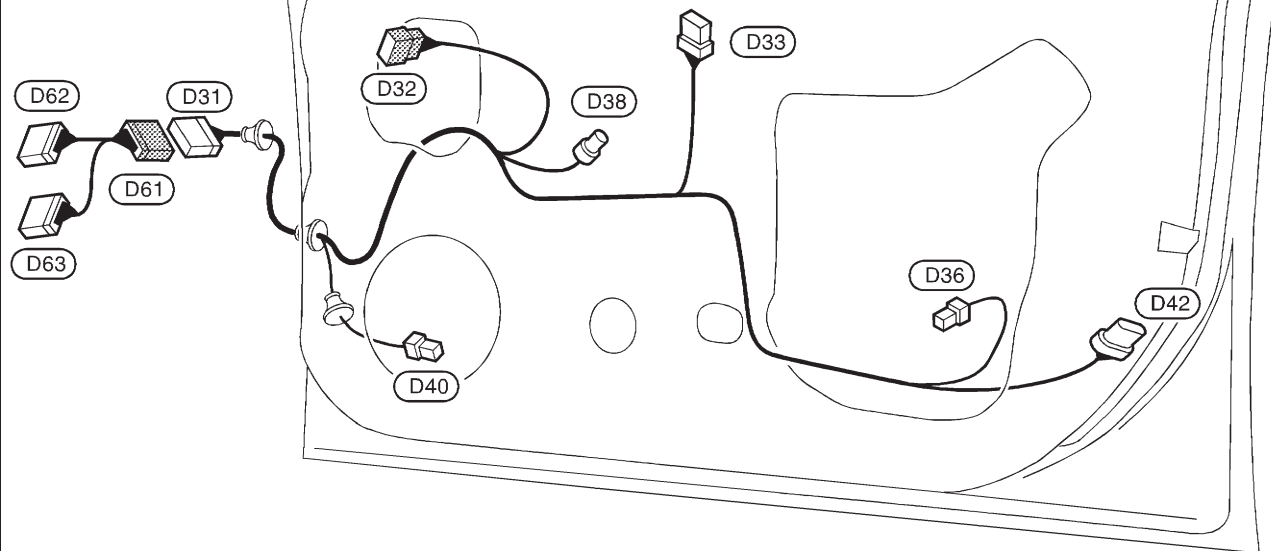
Door harness front RH

- (D31) SMJ : To (D61)
- (D32) W/8 : Door mirror actuator RH
- (D33) W/8 : Front power window switch RH
- (D36) W/2 : Front step lamp RH

- (D38) BR/2 : Front power window regulator RH
- (D40) W/2 : Front door speaker RH
- (D42) B/6 : Front door lock actuator RH

Door sub-harness

- (D61) SMJ : To (D31)
- (D62) W/12 : To (M38)
- (D63) W/10 : To (M39)



MEL711L

HARNESS LAYOUT

Front Door Harness (Cont'd)

RHD MODELS

LH Side

NFEL0142S06

NFEL0142S0602

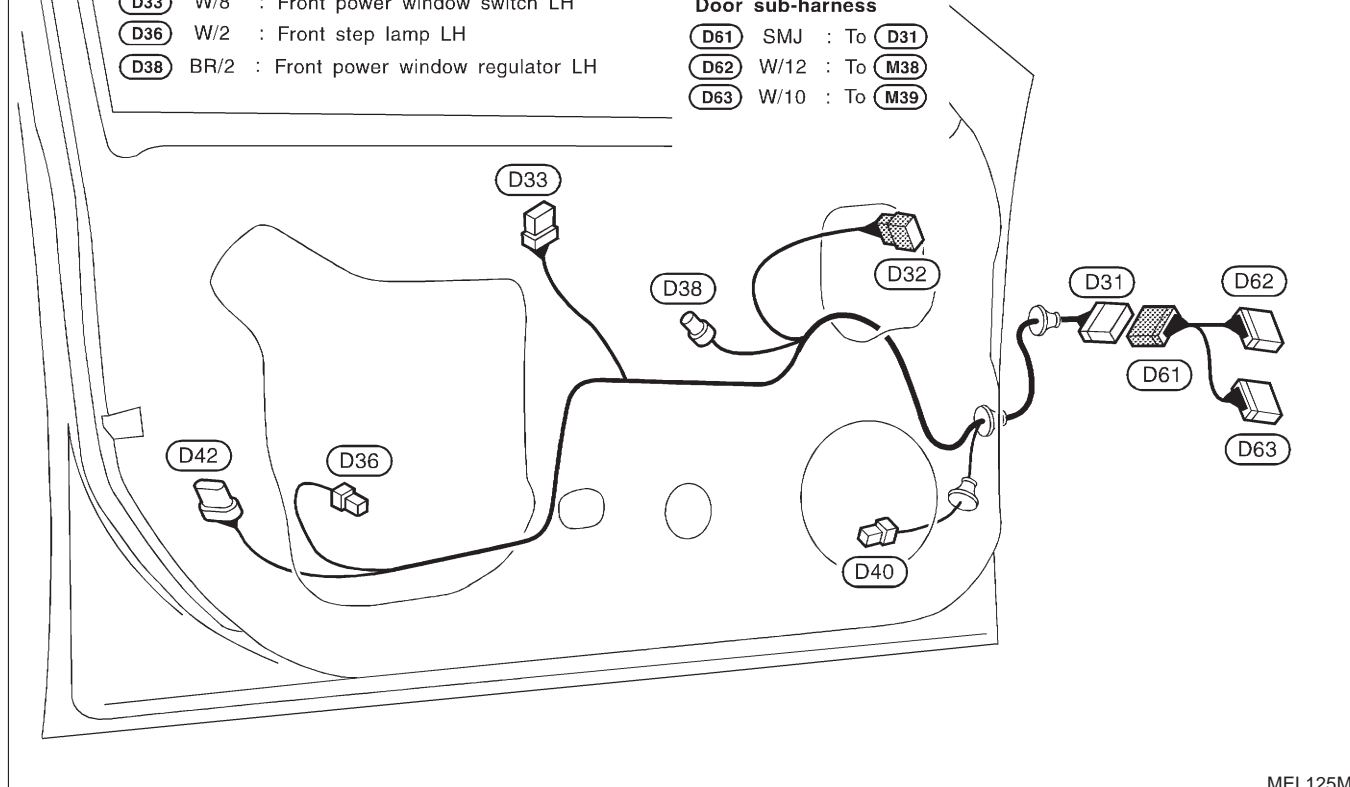
Door harness front LH

- (D31) SMJ : To (D61)
- (D32) W/8 : Door mirror actuator LH
- (D33) W/8 : Front power window switch LH
- (D36) W/2 : Front step lamp LH
- (D38) BR/2 : Front power window regulator LH

- (D40) W/2 : Front door speaker LH
- (D42) B/6 : Front door lock actuator LH

Door sub-harness

- (D61) SMJ : To (D31)
- (D62) W/12 : To (M38)
- (D63) W/10 : To (M39)



MEL125M

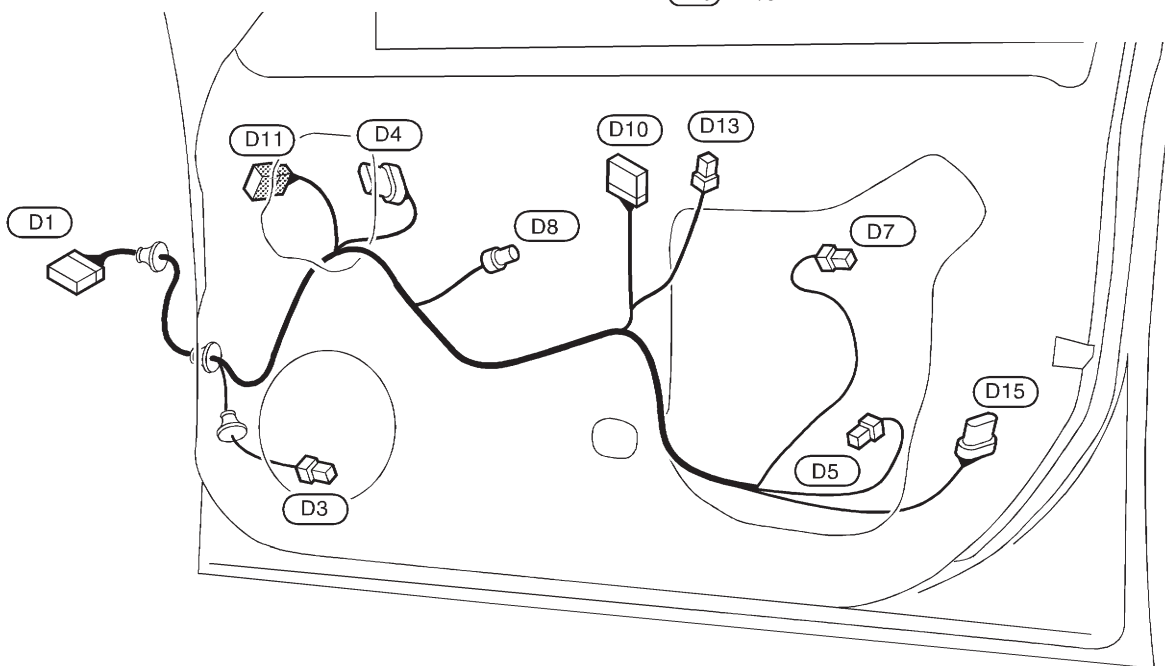
HARNES LAYOUT

Front Door Harness (Cont'd)

RH Side

NFEL0142S0601

- | | |
|--------------------------------------------------|----------------------------------------------------|
| D1 SMJ : To M4 | D7 W/4 : Trunk and Fuel lid opener switch |
| D3 W/2 : Front door speaker RH | D8 BR/3 : Front door key cylinder switch RH |
| D4 GY/6 : Front power window regulator RH | D10 W/16 : Power window main switch |
| D5 W/2 : Front step lamp RH | D11 W/8 : Door mirror actuator RH |
| | D13 W/3 : Power window main switch |
| | D15 B/6 : Front door lock actuator RH |



MEL894M

HARNESS LAYOUT

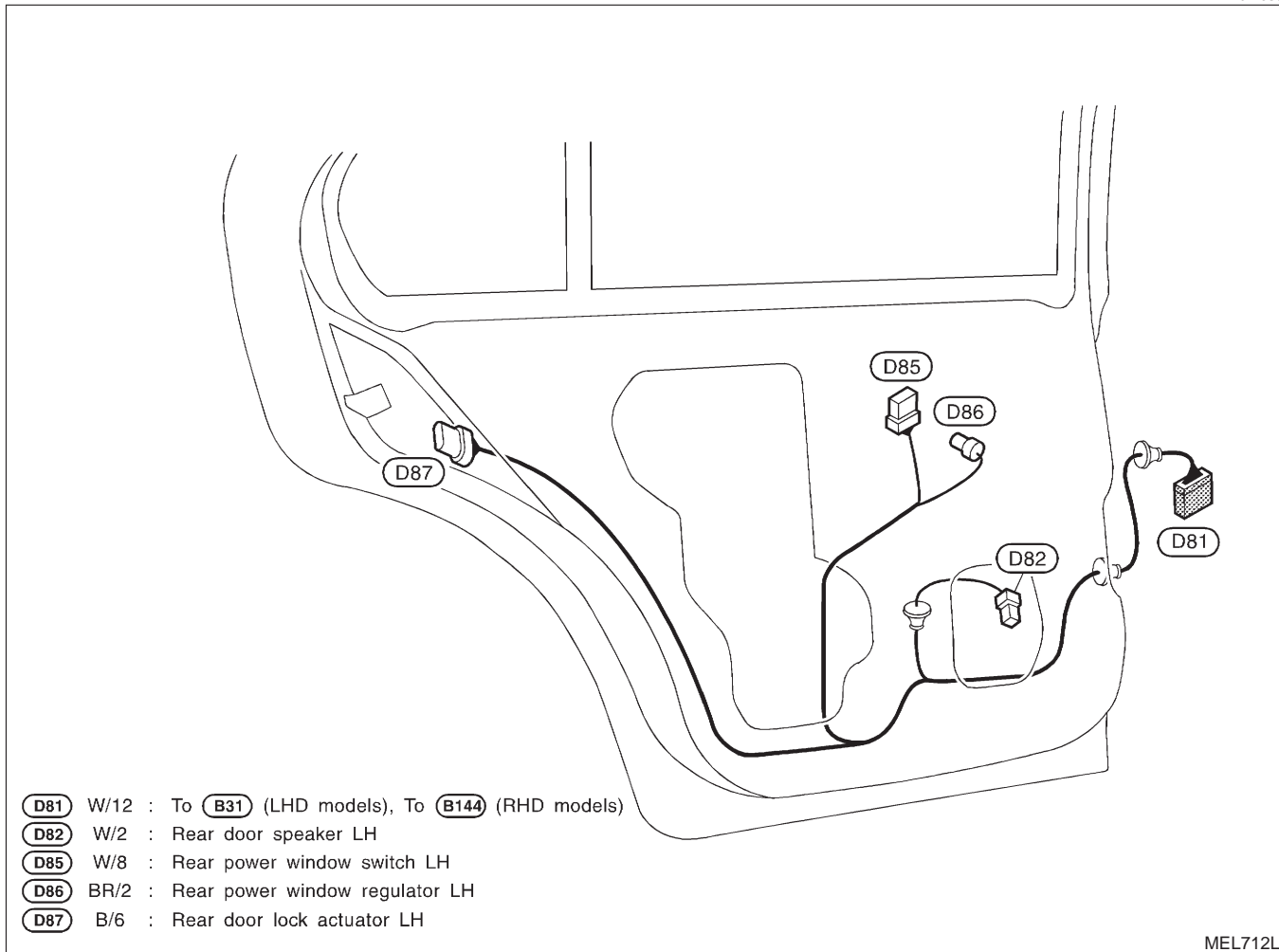
Rear Door Harness

Rear Door Harness

LH SIDE

NFEL0143

NFEL0143S03



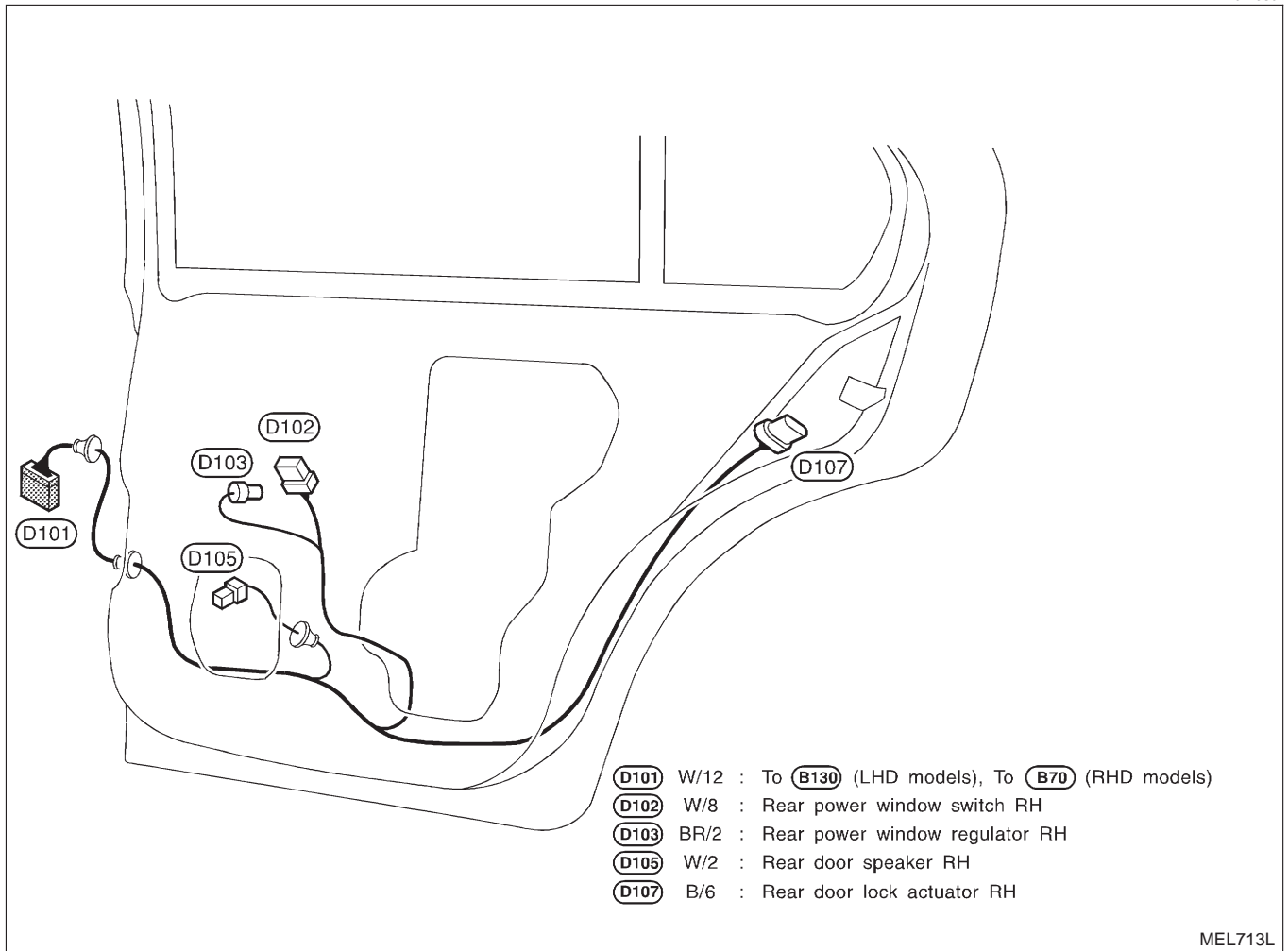
MEL712L

HARNES LAYOUT

Rear Door Harness (Cont'd)

RH SIDE

NFEL0143S04



MEL713L

BULB SPECIFICATIONS

NFEL0144

Headlamp

Headlamp		Wattage (W)
High/Low	Without xenon headlamp	60/51 (HB3/HB4)
	With xenon headlamp	65/35 (HIR1/D2R)

NFEL0144S03

Exterior Lamp

Exterior Lamp		Wattage (W)
Front fog lamp		55 (H3)
Front turn signal lamp		21
Side turn signal lamp		5
Parking lamp		5
Front side marker lamp		5
Rear combination lamp	Turn signal	21
	Stop/Tail	21/5
	Back-up	18
License lamp		5
High-mounted stop lamp	Without rear spoiler	21
	With rear sunshade	5

NFEL0144S01

Interior Lamp

Interior Lamp		Wattage (W)
Interior room lamp		8
Map lamp	With sunroof	5
	Without sunroof	8
Vanity mirror lamp		8
Trunk room lamp		3.4

NFEL0144S02

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
AAC/V	EC	IACV-AAC Valve
AACVLV	EC	IACV-AAC Valve
ABS	BR	Anti-lock Brake System
A/C, A	HA	Auto Air Conditioner
A/C, M	HA	Manual Air Conditioner
AP/SEN	EC	Absolute Pressure Sensor
ASCD	EL	Automatic Speed Control Device (ASCD)
ATCONT	EC	A/T Communication Line
ATDG1	EC	A/T Diagnosis Communication Line
ATDIAG	EC	A/T Diagnosis Communication Line
AT/IND	EL	A/T Indicator
AUDIO	EL	Audio
BACK/L	EL	Back-up Lamp
BA/FTS	AT	A/T Fluid Temperature Sensor and TCM Power Supply
B/COMP	EL	Board Computer
CHARGE	SC	Charging System
CHIME	EL	Warning Chime
CIGAR	EL	Cigarette Lighter
CKPS	EC	Crankshaft Position Sensor (CKPS) (POS)
CLOCK	EL	Clock
COOL/F	EC	Cooling Fan Control
DEF	EL	Rear Window Defogger
DTRL	EL	Daytime Light System
ECTS	EC	Engine Coolant Temperature Sensor
EMNT	EC	Electronic Controlled Engine Mount
ENGSS	AT	Engine Speed Signal

Code	Section	Wiring Diagram Name
F/FOG	EL	Front Fog Lamp
FO2H-L	EC	Heated Oxygen Sensor 1 Heater (Front) (Bank 2)
FO2H-R	EC	Heated Oxygen Sensor 1 Heater (Front) (Bank 1)
FRO2LH	EC	Heated Oxygen Sensor 1 (Front) (Bank 2)
FRO2RH	EC	Heated Oxygen Sensor 1 (Front) (Bank 1)
FTS	AT	A/T Fluid Temperature Sensor
FTTS	EC	Fuel Tank Temperature Sensor
FTTSEN	EC	Fuel Tank Temperature Sensor
FUELLH	EC	Fuel Injection System Function (Bank 2)
FUELRH	EC	Fuel Injection System Function (Bank 1)
H/AIM	EL	Headlamp Aiming Control
HEATER	HA	Heater
H/LAMP	EL	Headlamp
HLC	EL	Headlamp washer
HORN	EL	Horn
H/PHON	EL	Handsfree Telephone
HSEAT	EL	Heated Seat
IATS	EC	Intake Air Temperature Sensor
IATSEN	EC	Intake Air Temperature Sensor
IGN/SG	EC	Ignition Signal
IGNSYS	EC	Ignition Signal
ILL	EL	Illumination
I/MIRR	EL	Auto Anti-Dazzling Inside Mirror
INJECT	EC	Injector
INT/L	EL	Interior, Step, Spot, Vanity Mirror and Trunk Room Lamps
KS	EC	Knock Sensor
LOAD	EC	Electrical Load Signal
LPSV	AT	Line Pressure Solenoid Valve
MAFS	EC	Mass Air Flow Sensor
MAIN	AT	Main Power Supply and Ground Circuit
MAIN	EC	Main Power Supply and Ground Circuit
METER	EL	Speedometer, Tachometer, Temp., Oil, and Fuel Gauges

WIRING DIAGRAM CODES (CELL CODES)

Code	Section	Wiring Diagram Name
MIL/DL	EC	MIL & Data Link Connector
MIRROR	EL	Door Mirror
MULTI	EL	Multi-remote Control System
NATS	EL	NVIS (Nissan Vehicle Immobilizer System — NATS)
NAVI	EL	Navigation System
NONDTC	AT	Non-detectable Items
O2H1B1	EC	Heated Oxygen Sensor 1 Heater (Front) (Bank 1)
O2H1B2	EC	Heated Oxygen Sensor 1 Heater (Front) (Bank 2)
O2H2B1	EC	Heated Oxygen Sensor 2 Heater (Rear) (Bank 1)
O2H2B2	EC	Heated Oxygen Sensor 2 Heater (Rear) (Bank 2)
O2S1B1	EC	Heated Oxygen Sensor 1 (Front) (Bank 1)
O2S1B2	EC	Heated Oxygen Sensor 1 (Front) (Bank 2)
O2S2B1	EC	Heated Oxygen Sensor 2 (Rear) (Bank 1)
O2S2B2	EC	Heated Oxygen Sensor 2 (Rear) (Bank 2)
OVRCSV	AT	Overrun Clutch Solenoid Valve
PGC/V	EC	EVAP Canister Purge Volume Control Solenoid Valve
PHASE	EC	Camshaft Position Sensor (CMPS) (PHASE)
PNP/SW	AT	Park/Neutral Position Switch
PNP/SW	EC	Park/Neutral Position Switch
PNPSW1	EC	Park/Neutral Position Switch
POS	EC	Crankshaft Position Sensor (CKPS) (POS)
POWER	EL	Power Supply Routing
PRGVLV	EC	EVAP Canister Purge Volume Control Solenoid Valve
PST/SW	EC	Power Steering Oil Pressure Switch
REF	EC	Crankshaft Position Sensor (CKPS) (REF)
REMOTE	EL	Audio (Remote Control Switch)
R/FOG	EL	Rear Fog Lamp
RO2H-L	EC	Heated Oxygen Sensor 2 Heater (Rear) (Bank 2)

Code	Section	Wiring Diagram Name
RO2H-R	EC	Heated Oxygen Sensor 2 Heater (Rear) (Bank 1)
RP/SEN	EC	Refrigerant Pressure Sensor
RRO2LH	EC	Heated Oxygen Sensor 2 (Rear) (Bank 2)
RRO2RH	EC	Heated Oxygen Sensor 2 (Rear) (Bank 1)
SEAT	EL	Power Seat
SHIFT	AT	A/T Shift Lock System
S/LOCK	EL	Power Door Lock (Super Lock)
SROOF	EL	Power Sunroof
SRS	RS	Supplemental Restraint System
S/SIG	EC	Start Signal
SSV/A	AT	Shift Solenoid Valve A
SSV/B	AT	Shift Solenoid Valve B
START	SC	Starting System
STOP/L	EL	Stop Lamp
SWL/C	EC	Swirl Control Valve Control Solenoid Valve
SWL/V	EC	Swirl Control Valve Control Solenoid Valve
TAIL/L	EL	Clearance, License and Tail Lamps
TCV	AT	Torque Converter Clutch Solenoid Valve
T&FLID	EL	Trunk Lid and Fuel Filler Lid Opener
THEFT	EL	Theft Warning System
TPS	AT	Throttle Position Sensor
TPS	EC	Throttle Position Sensor
TP/SW	EC	Closed Throttle Position Switch
TP/SW1	EC	Closed Throttle Position Switch
TURN	EL	Turn Signal and Hazard Warning Lamps
VIAS/V	EC	Variable Induction Air Control System
VSS	EC	Vehicle Speed Sensor
VSSA/T	AT	Vehicle Speed Sensor A/T (Revolution Sensor)
VSSSEN	EC	Vehicle Speed Sensor
VSSMTR	AT	Vehicle Speed Sensor MTR
W/ANT	EL	Audio Antenna

WIRING DIAGRAM CODES (CELL CODES)

Code	Section	Wiring Diagram Name
WARN	EL	Warning Lamps
WINDOW	EL	Power Window
WIPER	EL	Front Wiper and Washer