ELECTRICAL SYSTEM

SECTION EL

CONTENTS

CONTENTS (Cont'd)

CONTENTS (Cont'd)

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

NAEL0001

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 R50 is as follows:

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

Wiring Diagrams and Trouble Diagnosis

NAEL0002

When you read wiring diagrams, refer to the following:

- GI-11, “HOW TO READ WIRING DIAGRAMS”
- EL-9, “POWER SUPPLY ROUTING” for power distribution circuit

When you perform trouble diagnosis, refer to the following:

- GI-35, “HOW TO FOLLOW TEST GROUPS IN TROUBLE DIAGNOSIS”
- GI-24, “HOW TO PERFORM EFFICIENT DIAGNOSIS FOR AN ELECTRICAL INCIDENT”

Check for any Service bulletins before servicing the vehicle.

Description

NAEL0003

HARNESS CONNECTOR (TAB-LOCKING TYPE)

NAEL0003S01

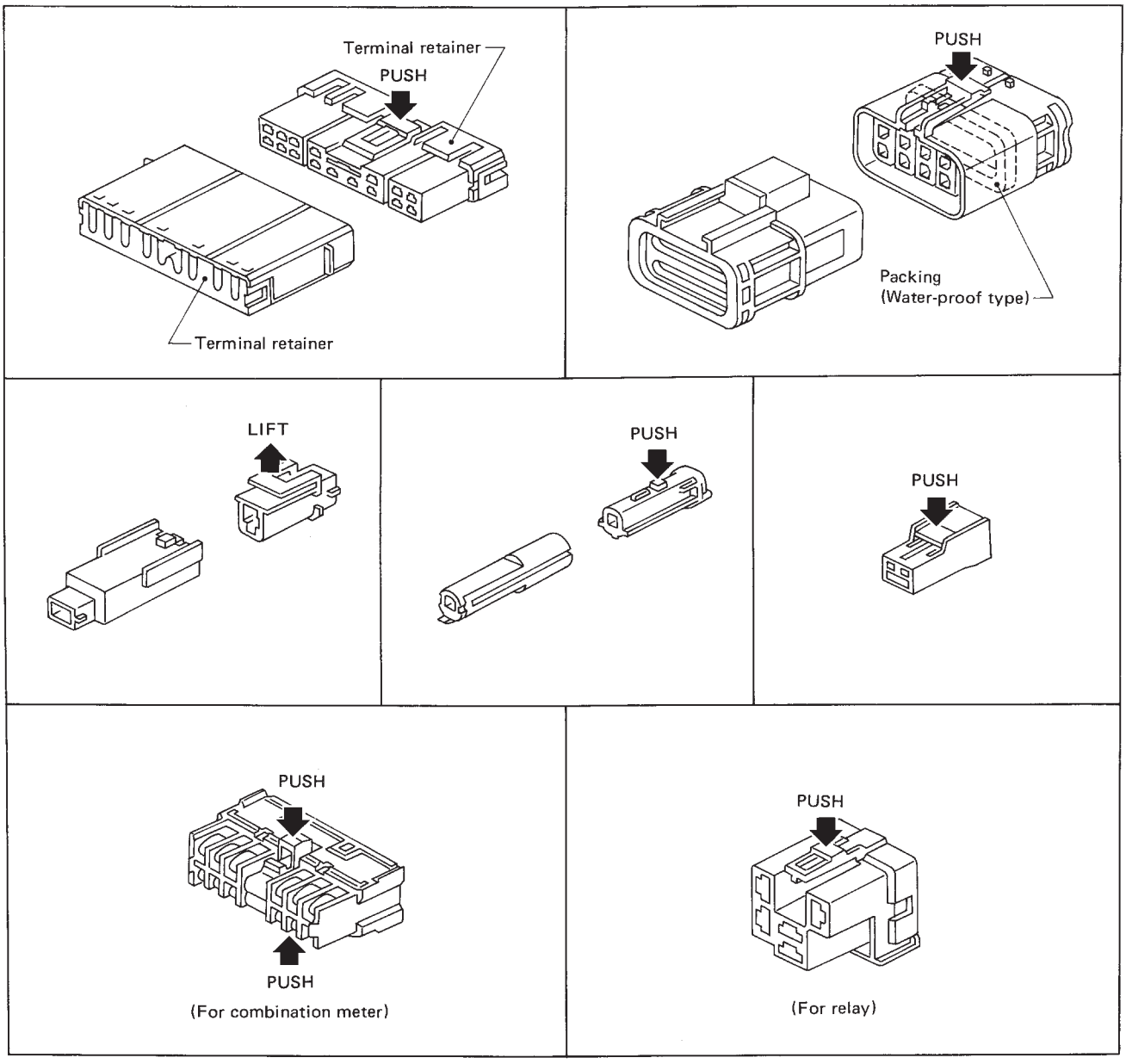
- The tab-locking type connectors help prevent accidental looseness or disconnection.
- The tab-locking type connectors are disconnected by pushing or lifting the locking tab(s). Refer to the illustration below.

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

CAUTION:

Do not pull the harness when disconnecting the connector.

[Example]



SEL769D

Description (Cont'd)

HARNESS CONNECTOR (SLIDE-LOCKING TYPE)

=NAEL0003S02

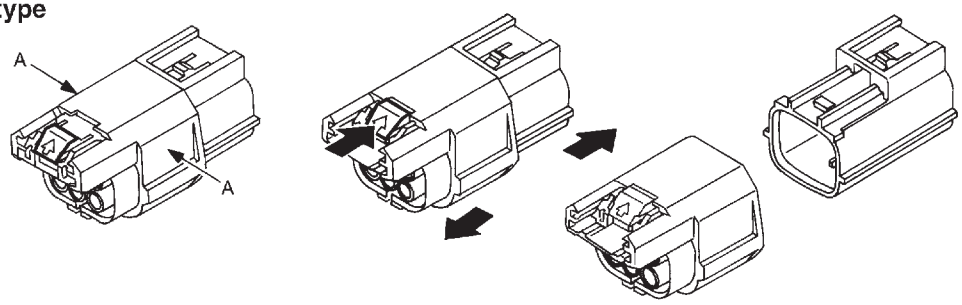
- A new style slide-locking type connector is used on certain systems and components, especially those related to OBD.
- The slide-locking type connectors help prevent incomplete locking and accidental looseness or disconnection.
- The slide-locking type connectors are disconnected by pushing or pulling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

Waterproof type

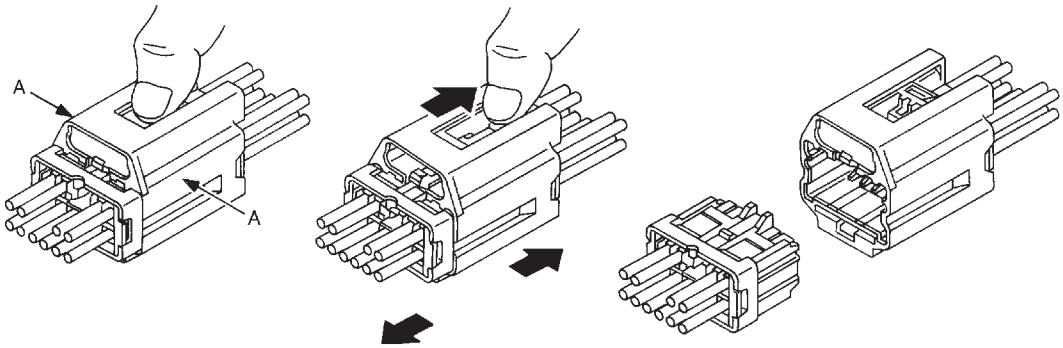


① Firmly grasp shell of connector housing at A.

② Push slider until connector pops or snaps apart.

③ Disconnect harness connector.

Non-waterproof type



① Firmly grasp shell of connector housing at A.

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

③ Disconnect harness connector.

SEL769V

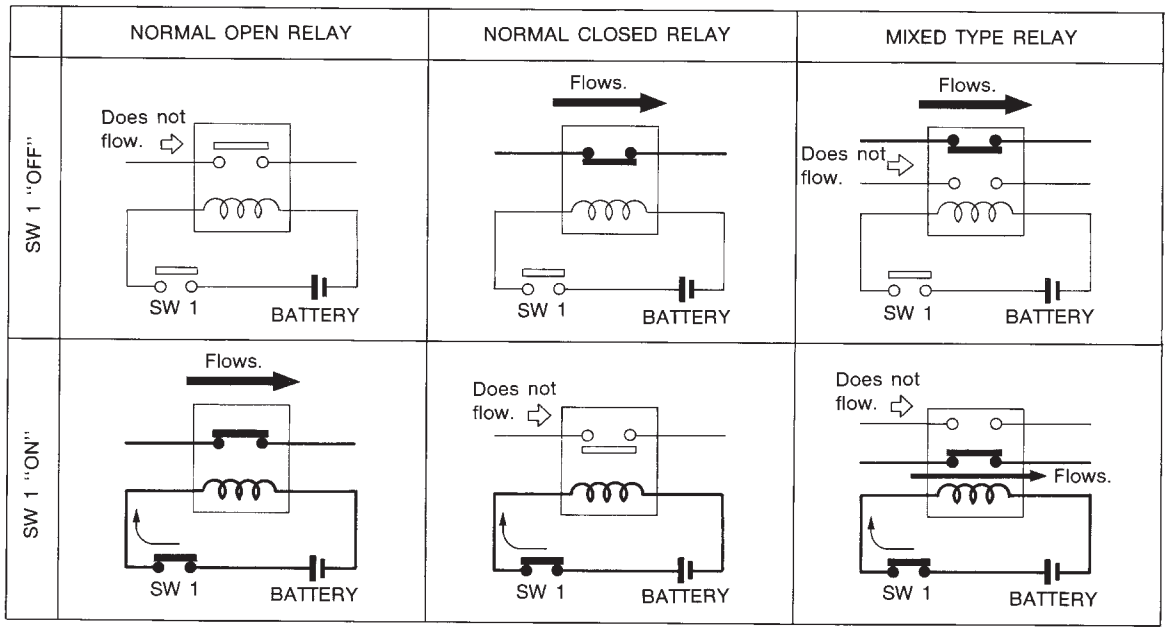
Description

NAEL0004

NORMAL OPEN, NORMAL CLOSED AND MIXED TYPE RELAYS

NAEL0004S01

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

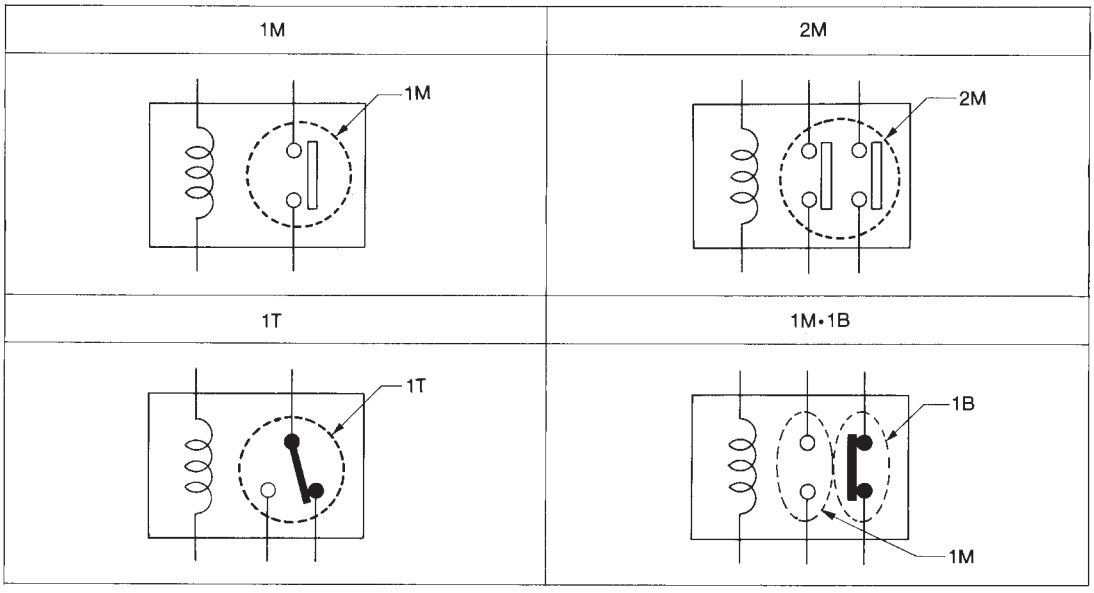


SEL881H

TYPE OF STANDARDIZED RELAYS

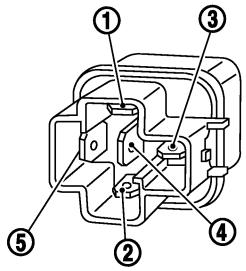
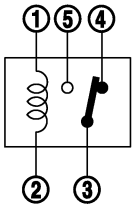
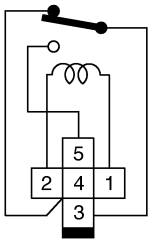
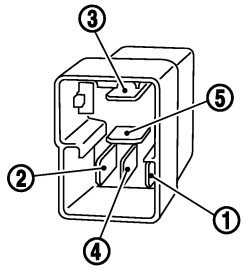
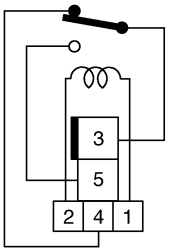
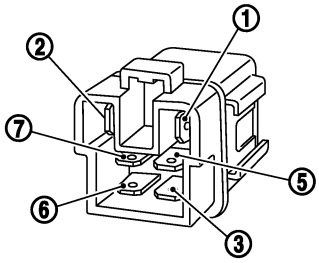
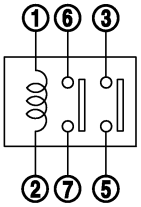
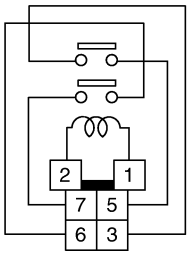
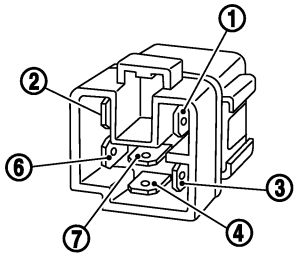
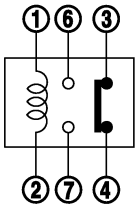
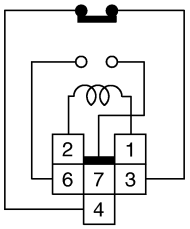
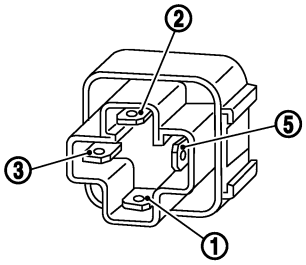
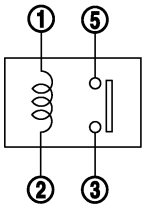
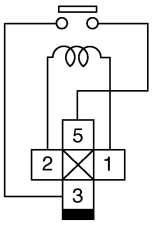
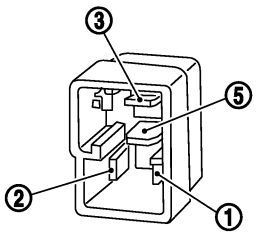
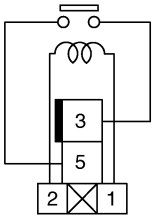
NAEL0004S02

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



SEL882H

Description (Cont'd)

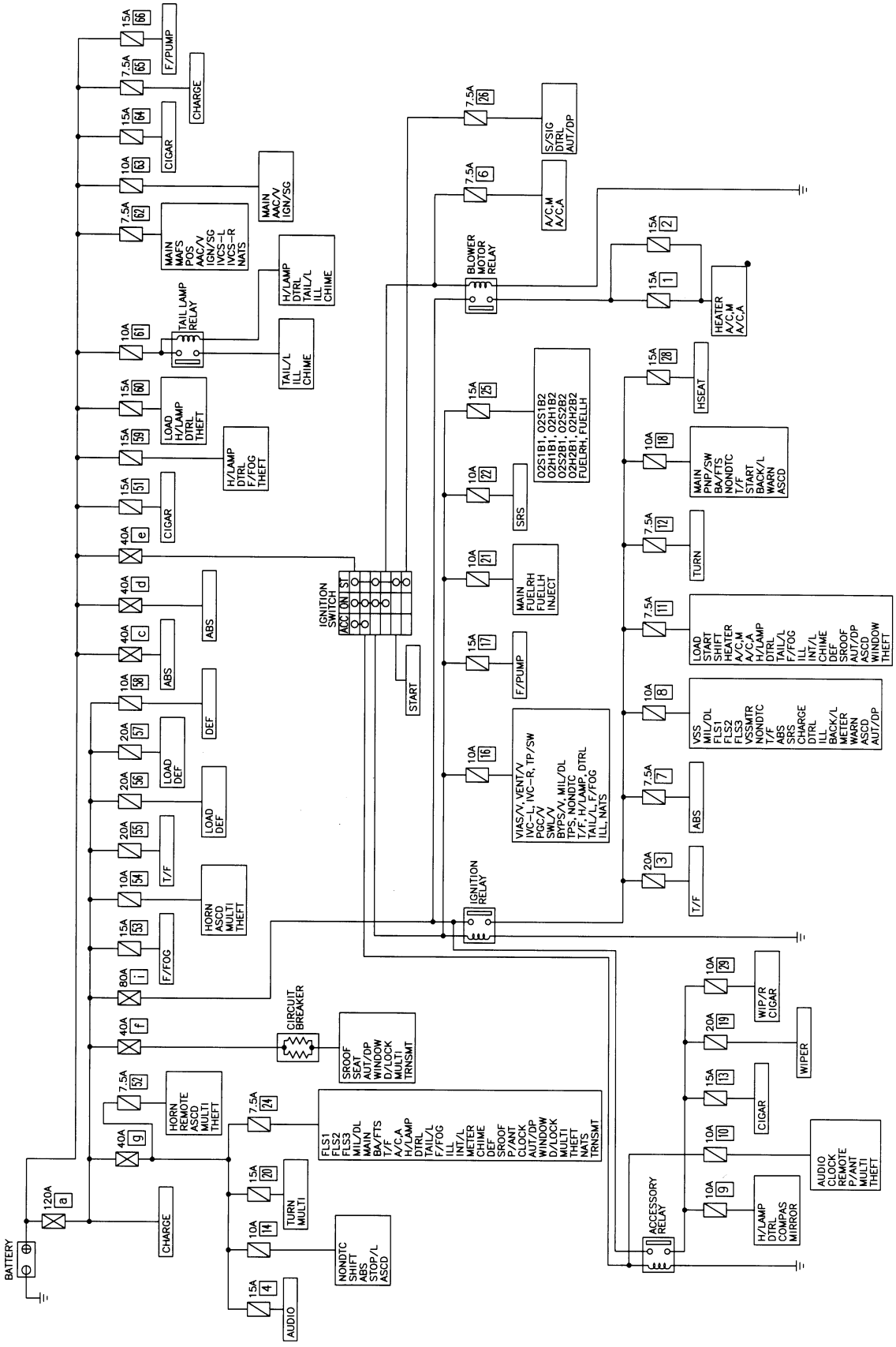
Type	Outer view	Circuit	Connector symbol and connector	Case color
1T				BLACK
				
2M				BROWN
1M•1B				GRAY
1M				BLUE
				

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

GEL264

Schematic

NAEL0005



MEL973L

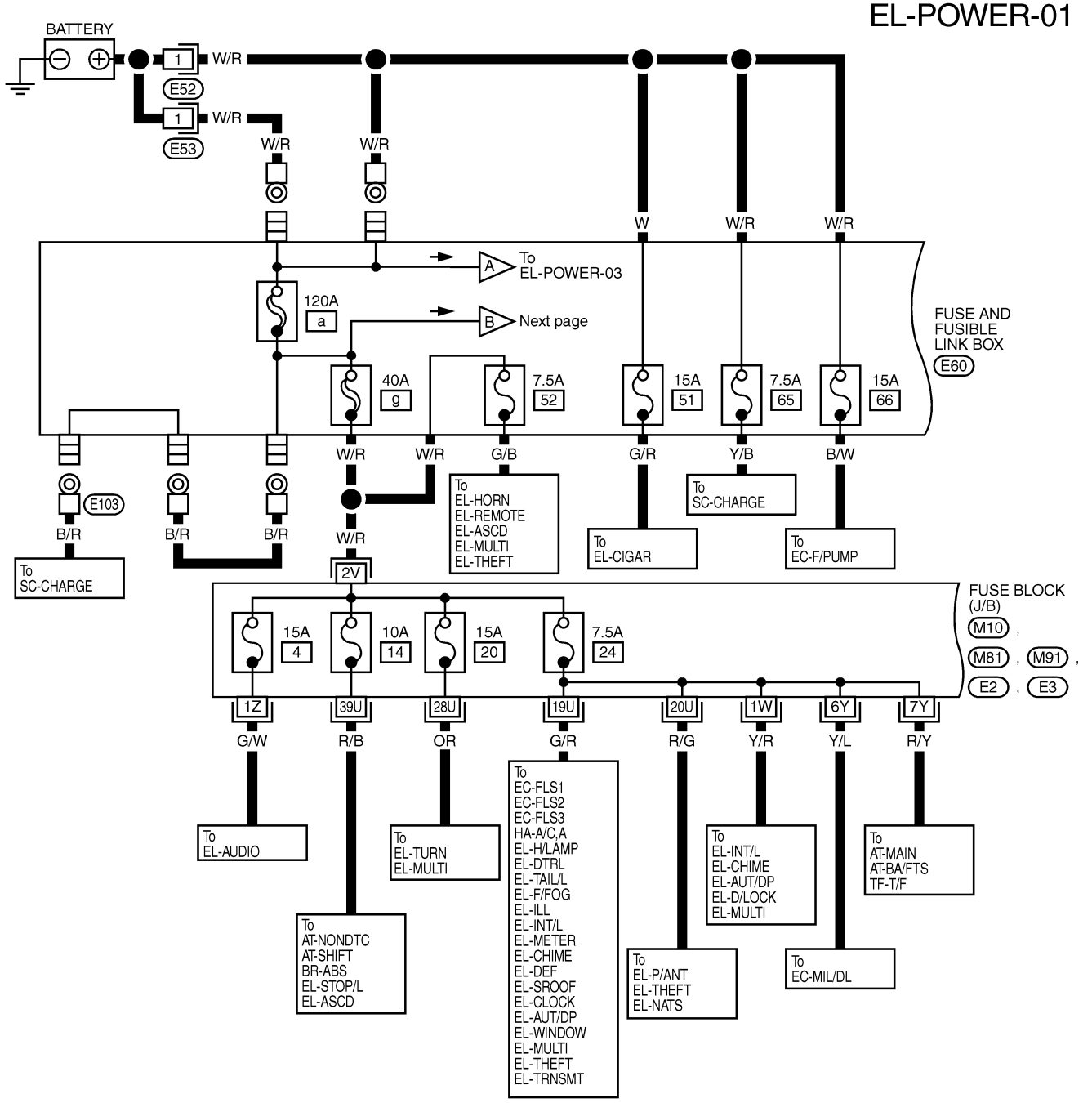
Wiring Diagram — POWER —

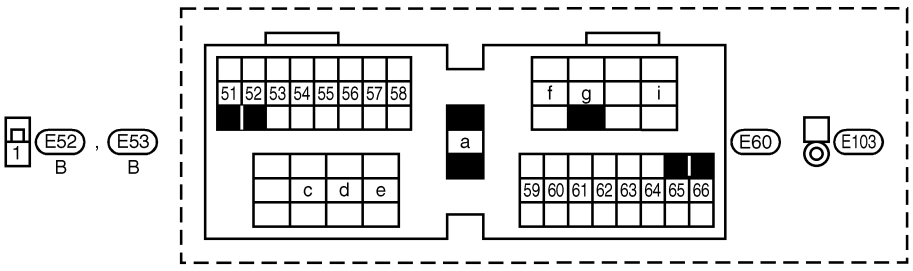
NAEL0006

BATTERY POWER SUPPLY — IGNITION SW. IN ANY POSITION

NAEL0006S01

EL-POWER-01





REFER TO THE FOLLOWING.

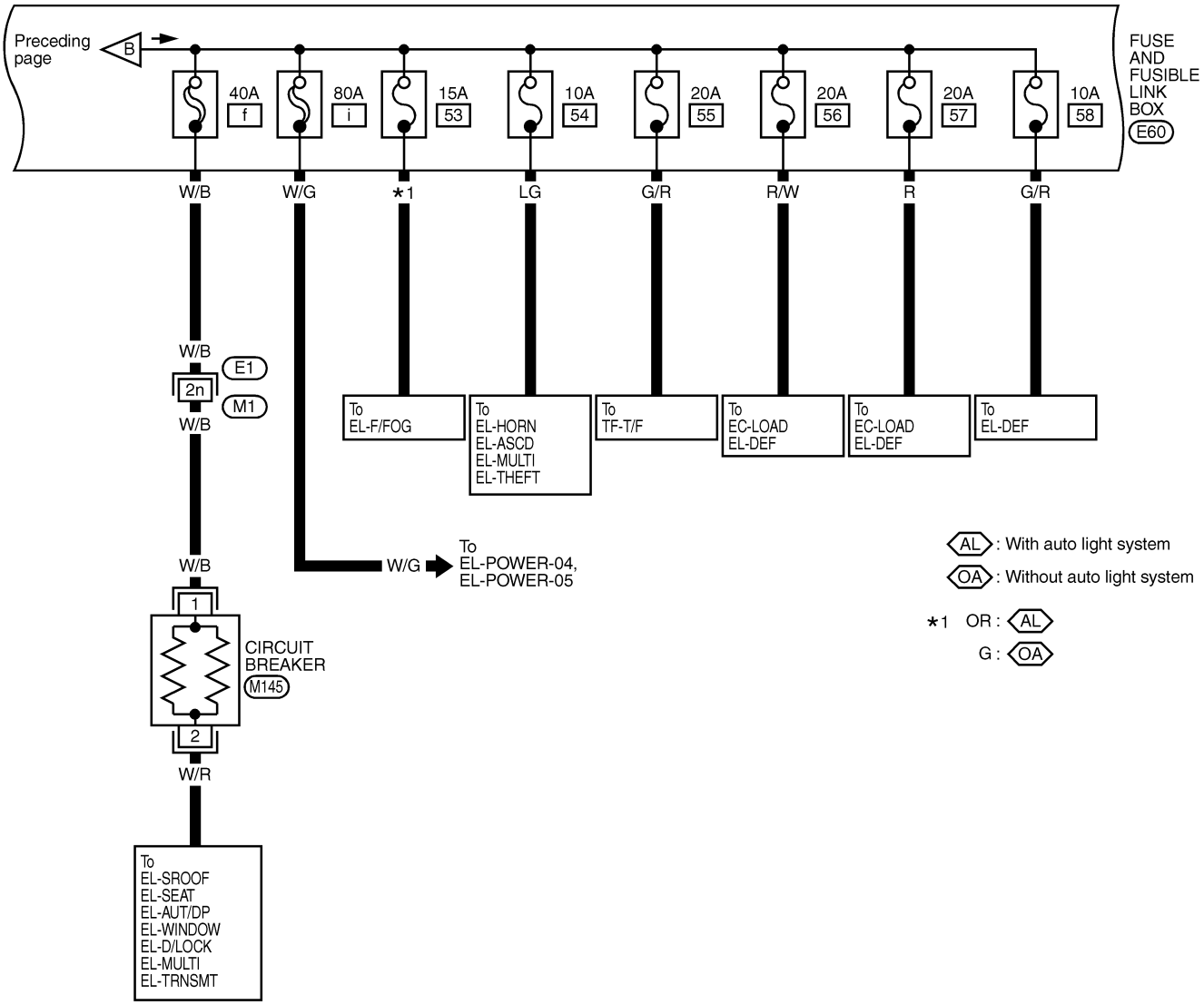
M10 , M81 , M91 , E2 , E3

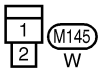
-FUSE BLOCK-
JUNCTION BOX (J/B)

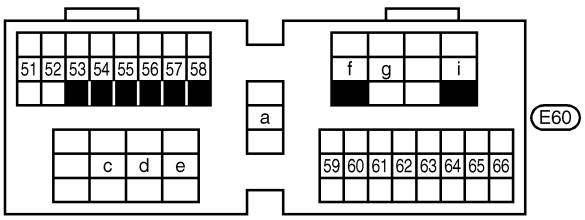
1	2	3	4	
6	7	8	9	10
11	12	13	14	
16	17	18	19	20
21	22			
24	25	26		
	28	29		

MEL974L

EL-POWER-02







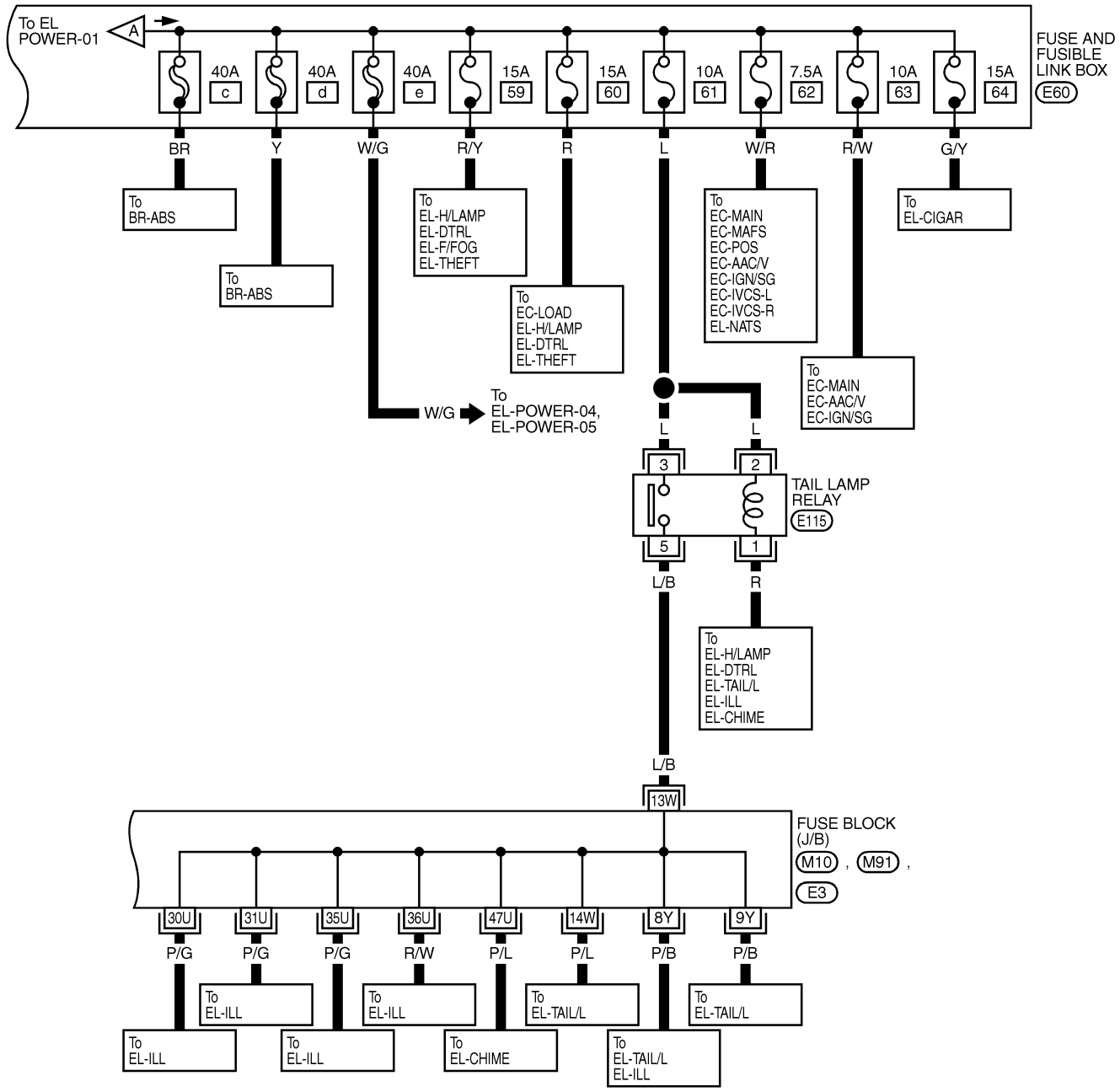
REFER TO THE FOLLOWING.

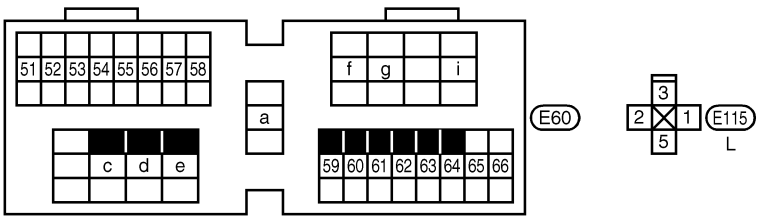
E1 -SUPER MULTIPLE JUNCTION (SMJ)

MEL975L

Wiring Diagram — POWER — (Cont'd)

EL-POWER-03





REFER TO THE FOLLOWING.

M10 , M91 , E3

-FUSE BLOCK-
JUNCTION BOX (J/B)

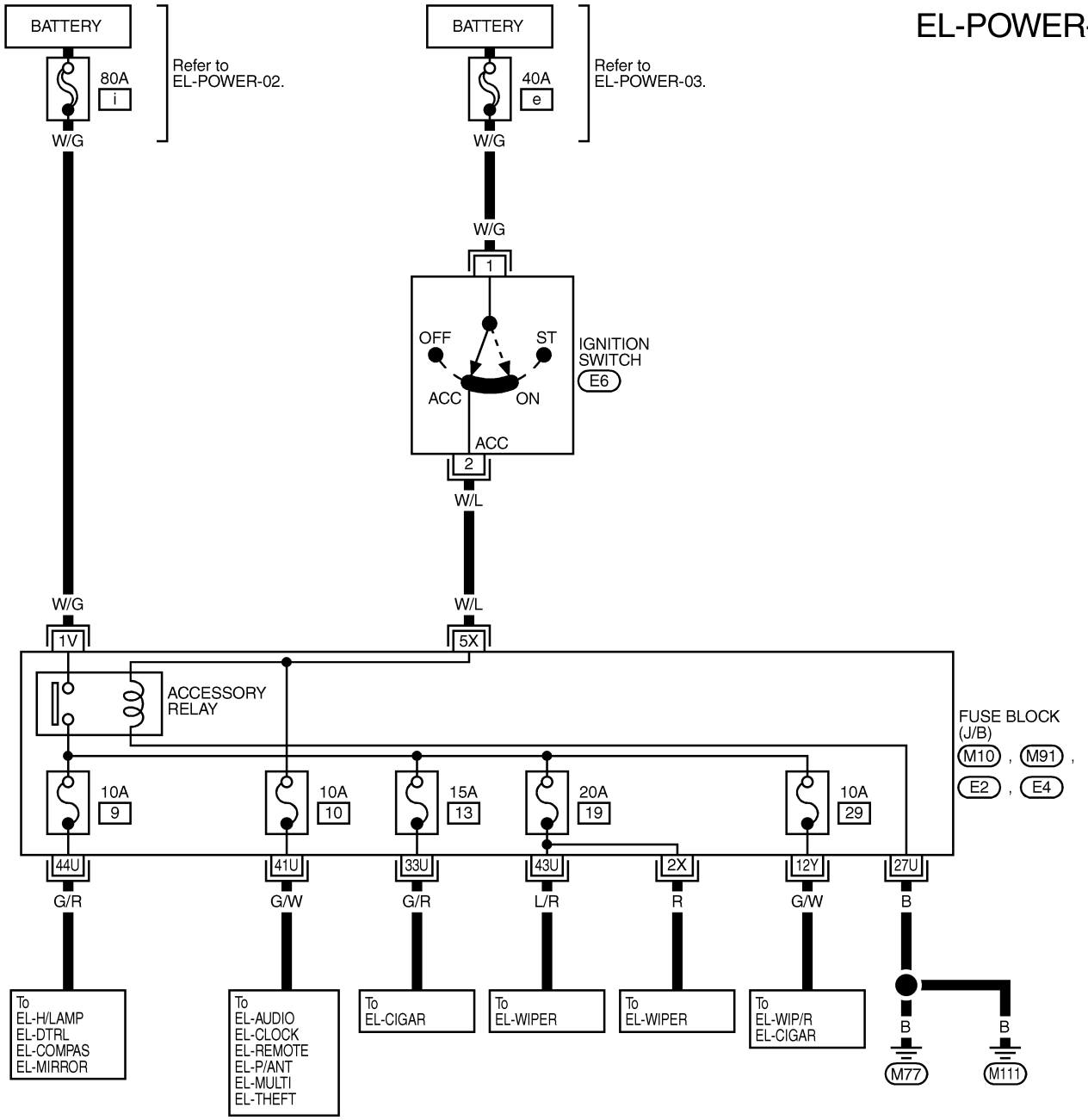
1	2	3	4	
6	7	8	9	10
11	12	13	14	
16	17	18	19	20
21	22			
24	25	26		
	28	29		

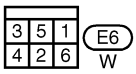
MEL976L

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

NAEL0006S02

EL-POWER-04





REFER TO THE FOLLOWING.

M10 , M91 , E2 , E4

- FUSE BLOCK -
JUNCTION BOX (J/B)

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

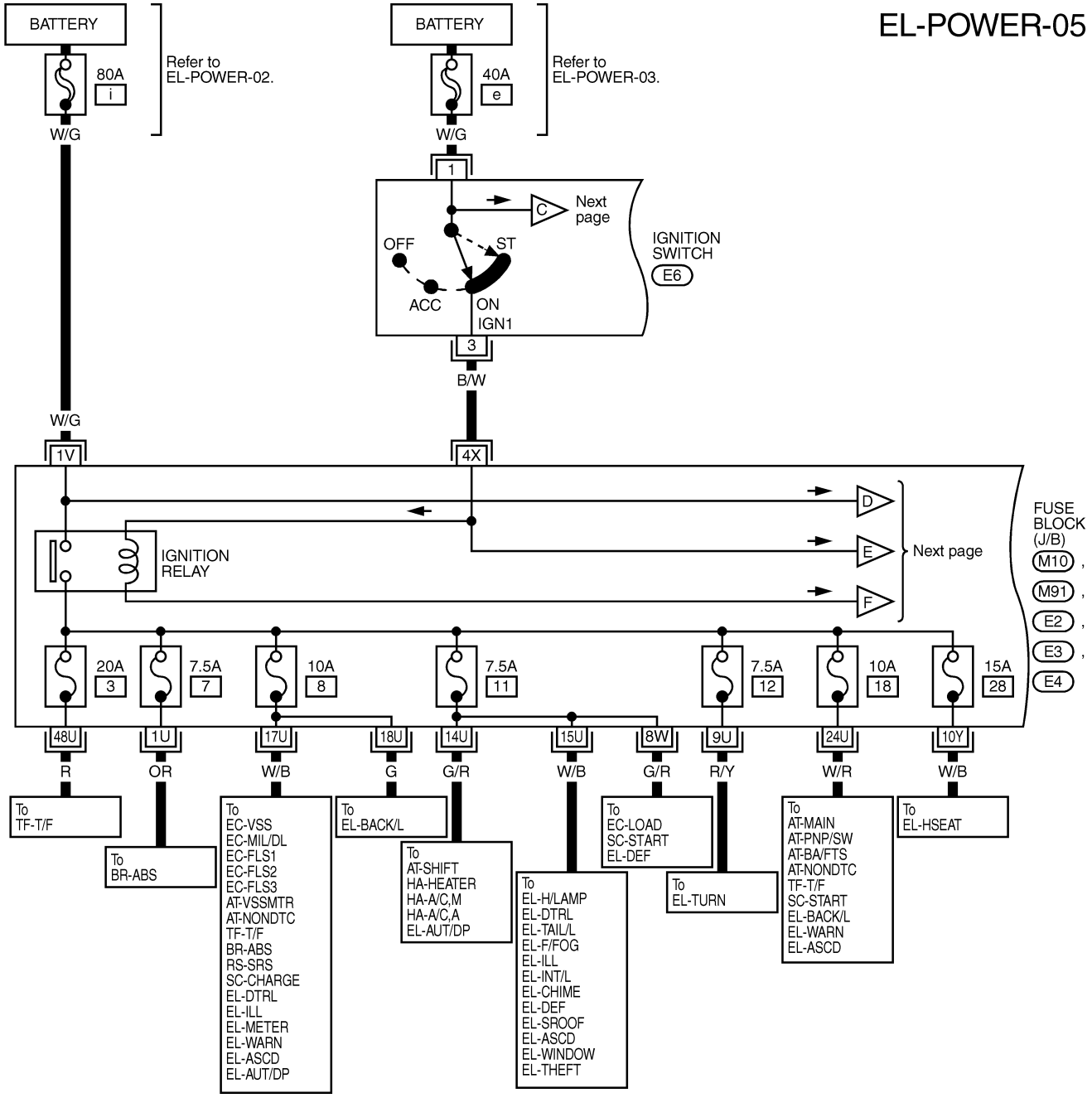
MEL977L

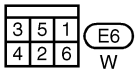
Wiring Diagram — POWER — (Cont'd)

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

NAEL0006S03

EL-POWER-05





REFER TO THE FOLLOWING.

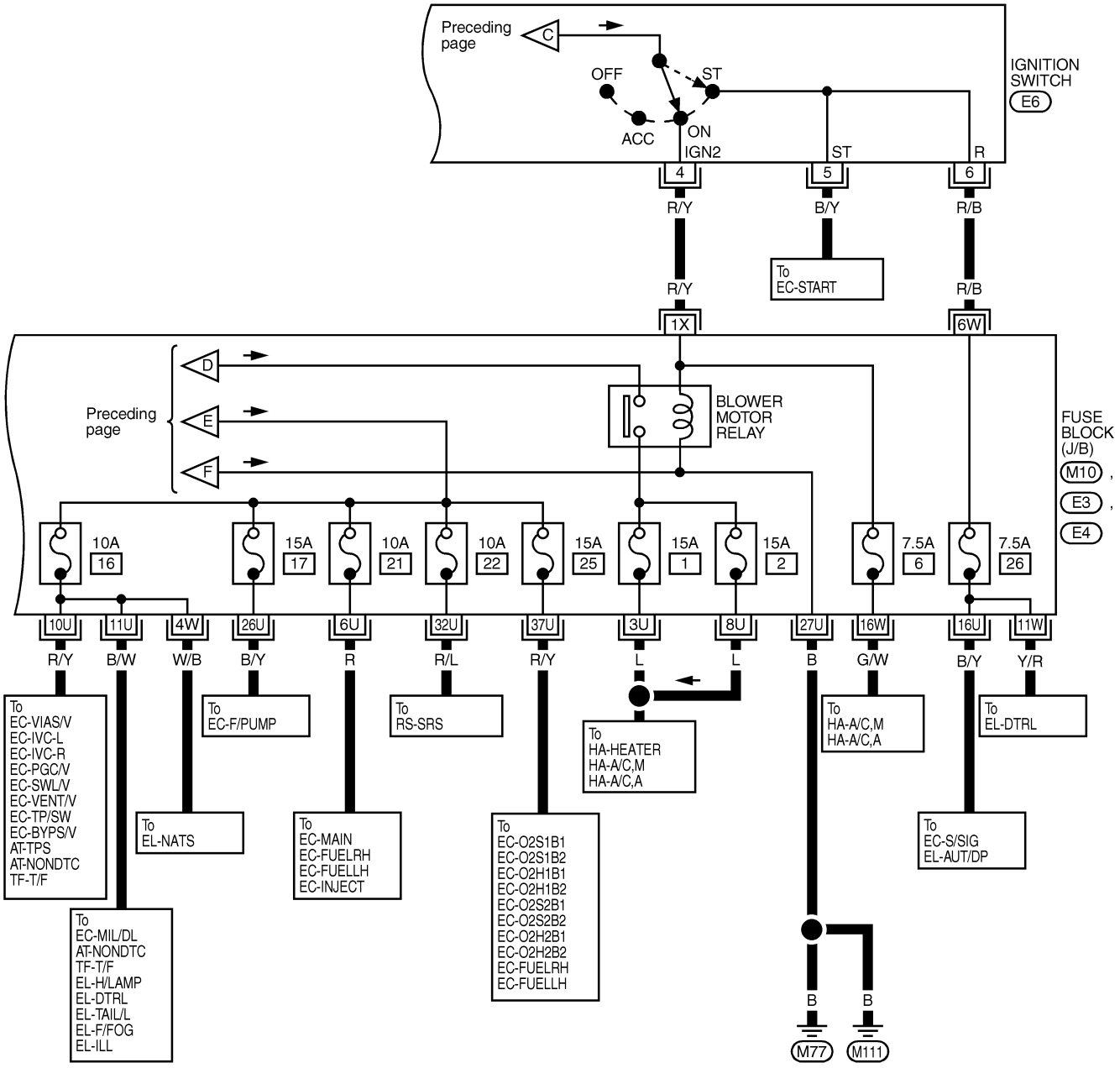
M10 , M91 , E2 , E3 , E4

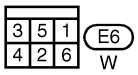
-FUSE BLOCK-
JUNCTION BOX (J/B)

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

MEL978L

EL-POWER-06





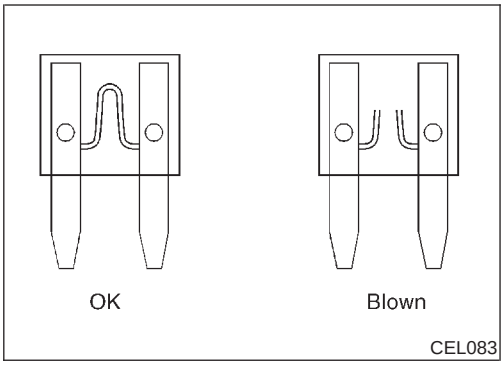
REFER TO THE FOLLOWING.

M10 , E3 , E4

-FUSE BLOCK-
JUNCTION BOX (J/B)

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

MEL979L



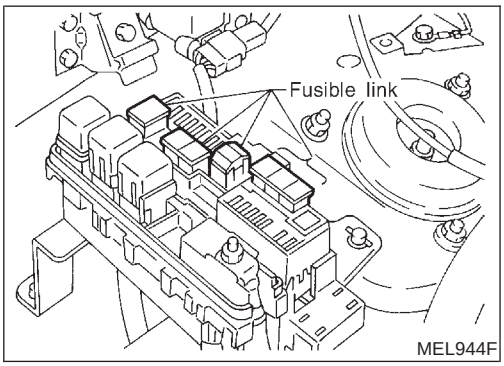
Inspection

NAEL0007

FUSE

NAEL0007S01

- **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.**



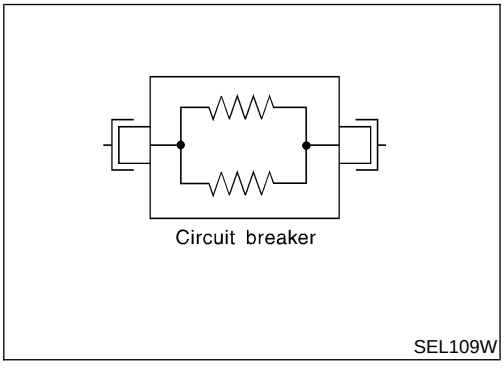
FUSIBLE LINK

NAEL0007S02

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)

NAEL0007S03

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.

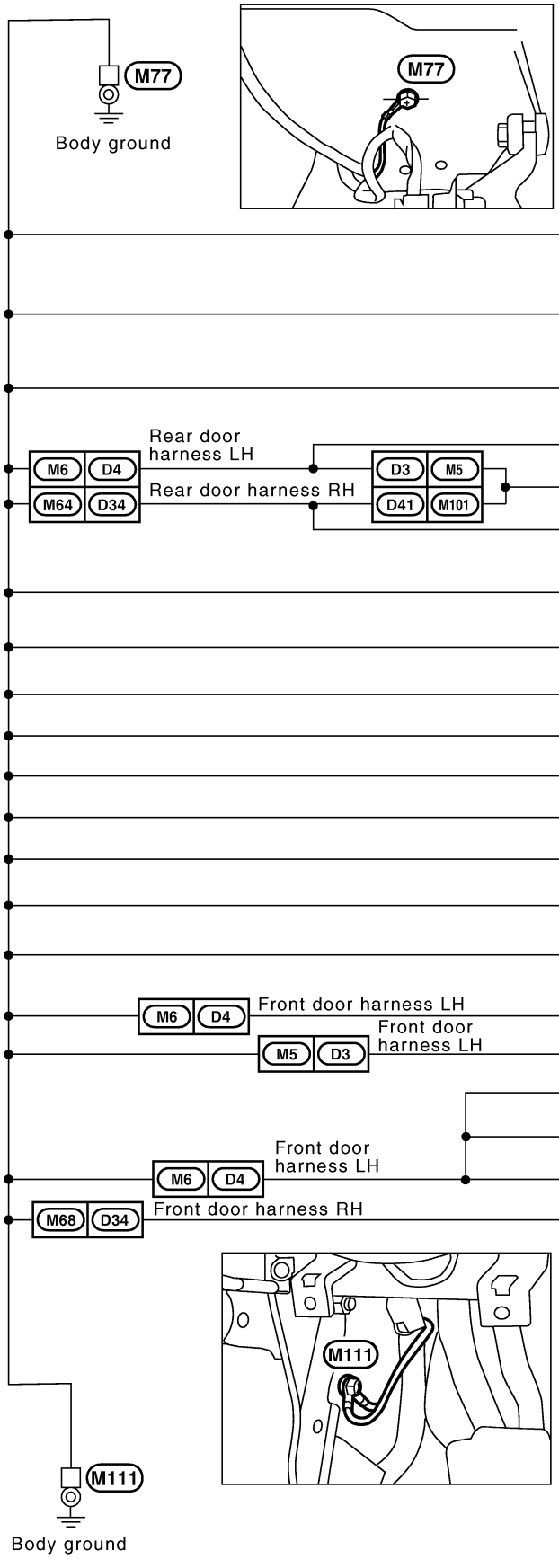
Reduced current flow will cause the element to cool. Resistance falls accordingly and normal circuit current flow is allowed to resume.

Ground Distribution

NAEL0008

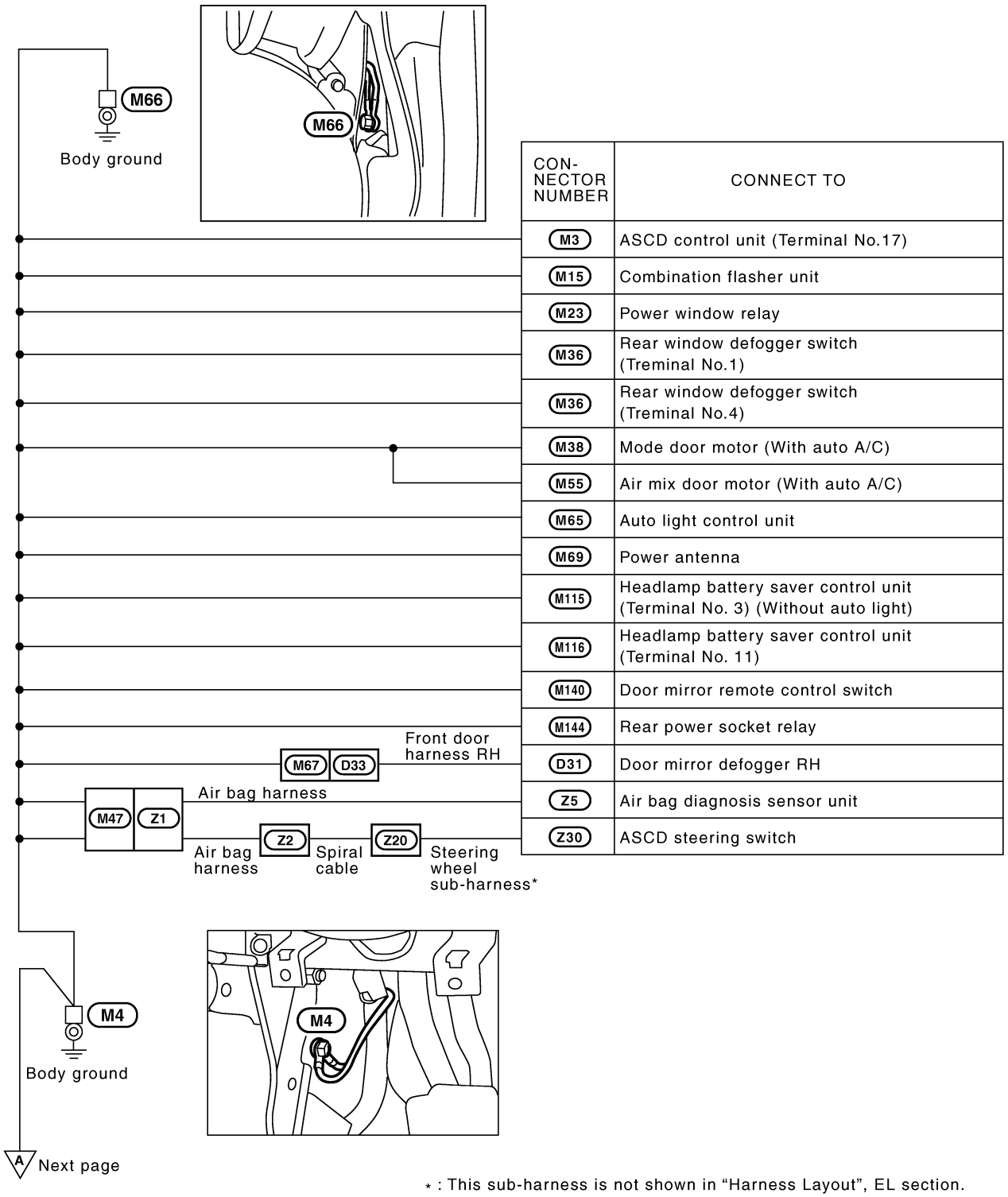
NAEL0008S01

MAIN HARNESS



CONNECTOR NUMBER	CONNECT TO
M9	Data link connector (Terminal No. 4)
M10	Fuse block (J/B) • Accessory relay • Blower motor relay • Ignition relay
M19	Illumination control switch
D12	Front door speaker LH
M48	Shield wire (Audio unit)
D42	Front door speaker RH
M42	Recirculation switch (With heater and manual A/C)
M43	Fan switch (With heater and manual A/C)
M52	Heated seat switch LH
M53	Heated seat switch RH
M56	Cigarette lighter socket
M60	Fan control amp.
M78	Front wiper motor
M115	Headlamp battery saver control unit (Terminal No. 4)
M121	Smart entrance control unit
D1	Door mirror defogger LH
D7	Front door lock actuator LH
D6	Front power window main switch
D9	Front door key cylinder switch LH
D16	Seat memory switch
D37	Front door lock actuator RH

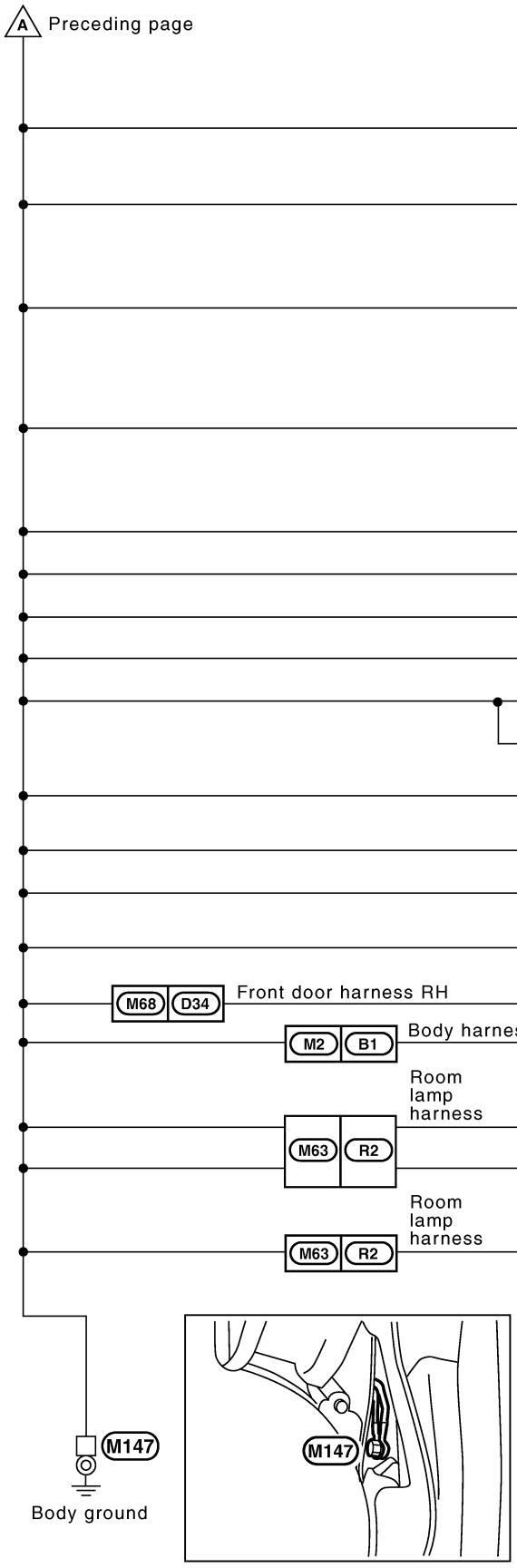
MEL253M



CON-NECTOR NUMBER	CONNECT TO
M3	ASCD control unit (Terminal No.17)
M15	Combination flasher unit
M23	Power window relay
M36	Rear window defogger switch (Treminal No.1)
M36	Rear window defogger switch (Treminal No.4)
M38	Mode door motor (With auto A/C)
M55	Air mix door motor (With auto A/C)
M65	Auto light control unit
M69	Power antenna
M115	Headlamp battery saver control unit (Terminal No. 3) (Without auto light)
M116	Headlamp battery saver control unit (Terminal No. 11)
M140	Door mirror remote control switch
M144	Rear power socket relay
D31	Door mirror defogger RH
Z5	Air bag diagnosis sensor unit
Z30	ASCD steering switch

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

MEL254M

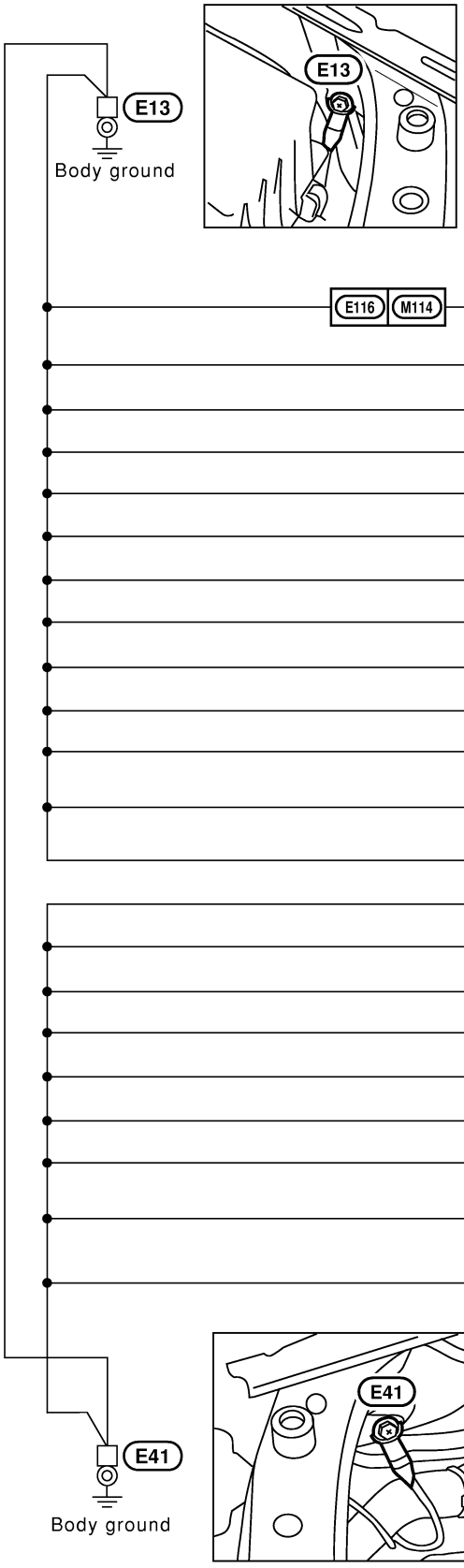


CONNECTOR NUMBER	CONNECT TO
M17	Memory seat cancel switch
M25	Combination meter (Terminal No. 30) • Turn signal RH • Turn signal LH • ABS warning lamp
M26	Combination meter (Terminal No. 53) • 4WD warning lamp (With part-time 4-wheel drive)
M26	Combination meter (Terminal No. 59) • Vehicle speed sensor • Water temp. gauge • Fuel gauge • Air bag warning lamp • Unified meter control unit
M28	Clutch interlock switch (With M/T)
M30	Glove box lamp
M40	Clock
M41	Steering wheel receiver control switch
M102	A/C auto amp. (With auto A/C)
M103	A/C auto amp. (For Canada) (With auto A/C)
M116	Headlamp battery saver control unit (Terminal No. 9) (Without auto light)
M125	CD auto changer
M138	Intake door motor (With auto A/C)
M142	Transfer control unit (Terminal No. 3) (With all-mode 4-wheel drive)
D43	Front power window switch RH
B47	Audio amp. relay
R3	Vanity mirror RH illumination
R4	Compass and thermometer
R5	Integrated home link transmitter
R5	Vanity mirror LH illumination
R6	Spot lamp
R11	Sunroof motor

MEL255M

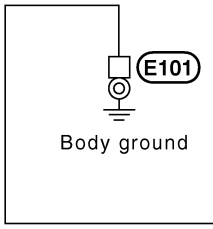
ENGINE ROOM HARNESS

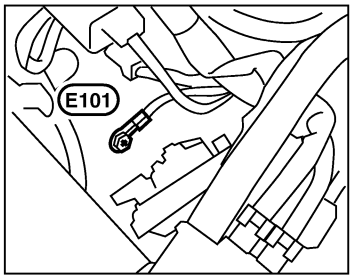
NAEL0008S02



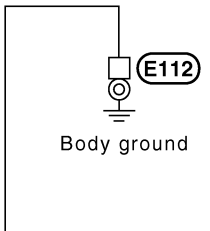
CON-NECTOR NUMBER	CONNECT TO
M25	Combination meter (Terminal No. 27) • High beam indicator (Without auto light)
E7	Combination switch
E8	Combination switch
E9	Combination switch (front wiper switch)
E12	Parking lamp LH, Front turn signal lamp LH
E24	ATP relay (With A/T and part-time 4-wheel drive)
E28	Brake fluid level switch
E29	Headlamp LH
E31	Hood switch
E45	Daytime light control unit (With auto light)
E62	Front fog lamp RH
E63	Combination switch (Front fog lamp switch) (Without auto light)
E114	Combination switch (rear wiper switch)
E38	Headlamp RH
E40	Parking lamp RH, Front turn signal lamp RH
E42	Washer level switch
E43	Rear washer motor
E45	Daytime light control unit (Without auto light)
E54	Fuel pump relay-2
E61	Front fog lamp LH
E95	Transfer shift Hi relay (With all-mode 4-wheel drive)
E99	Transfer shift Low relay (With all-mode 4-wheel drive)

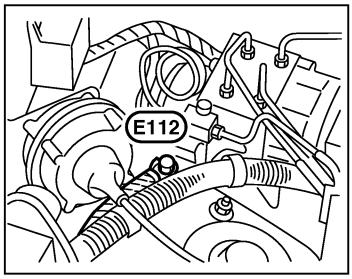
MEL420N





CON-NECTOR NUMBER	CONNECT TO
E105	Alternator
E110	Power steering oil pressure switch



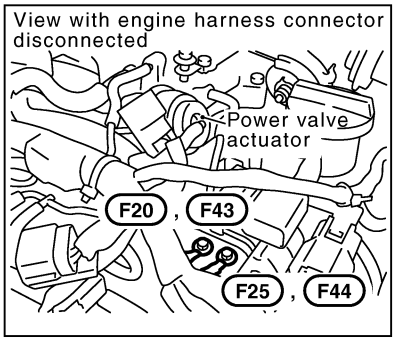


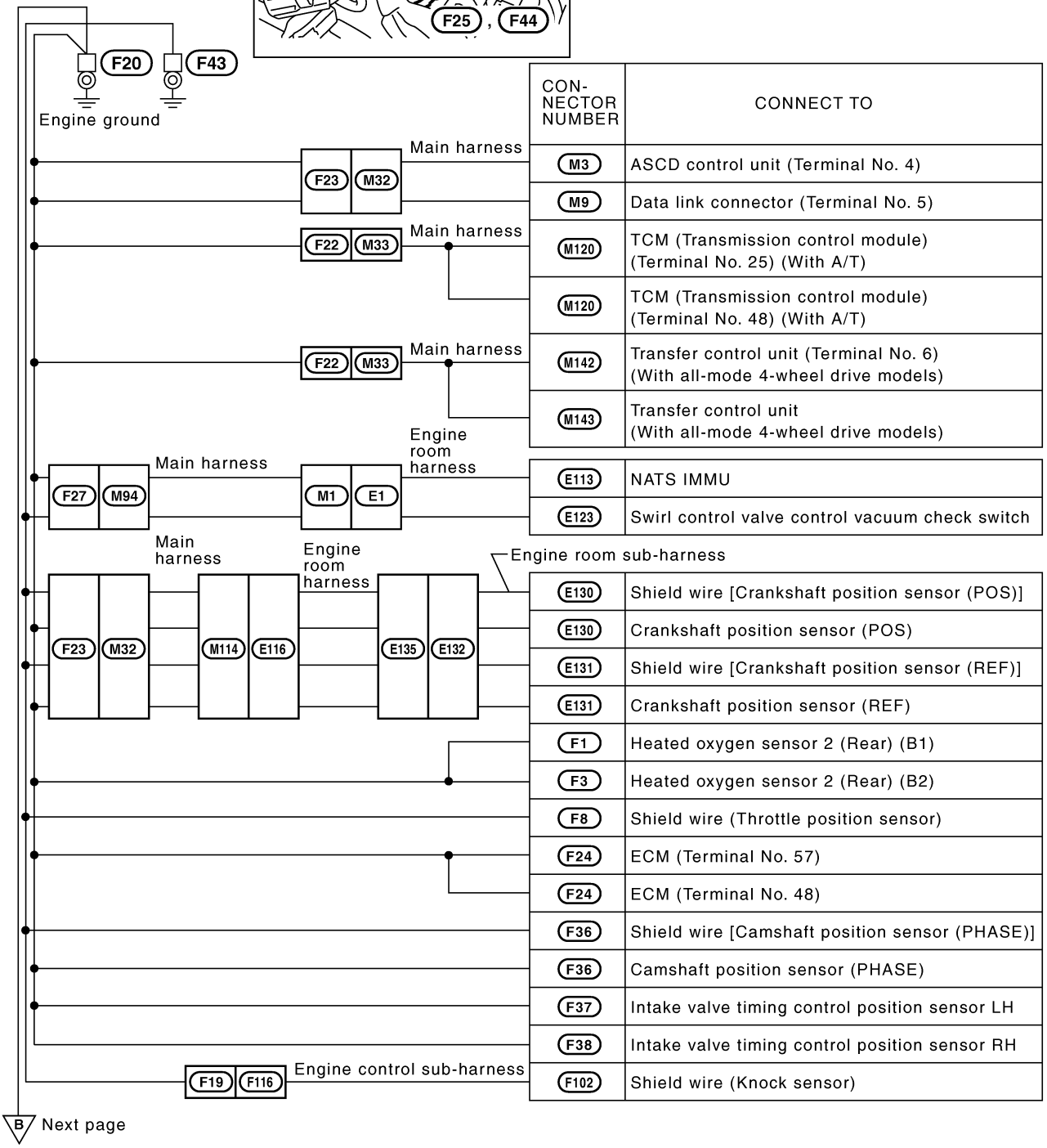
CON-NECTOR NUMBER	CONNECT TO
E111	ABS actuator and electric control unit (Terminal No. 19)
E111	ABS actuator and electric control unit (Terminal No. 16)
E111	Shield wire (ABS actuator and electric control unit)

MEL146M

ENGINE CONTROL HARNESS

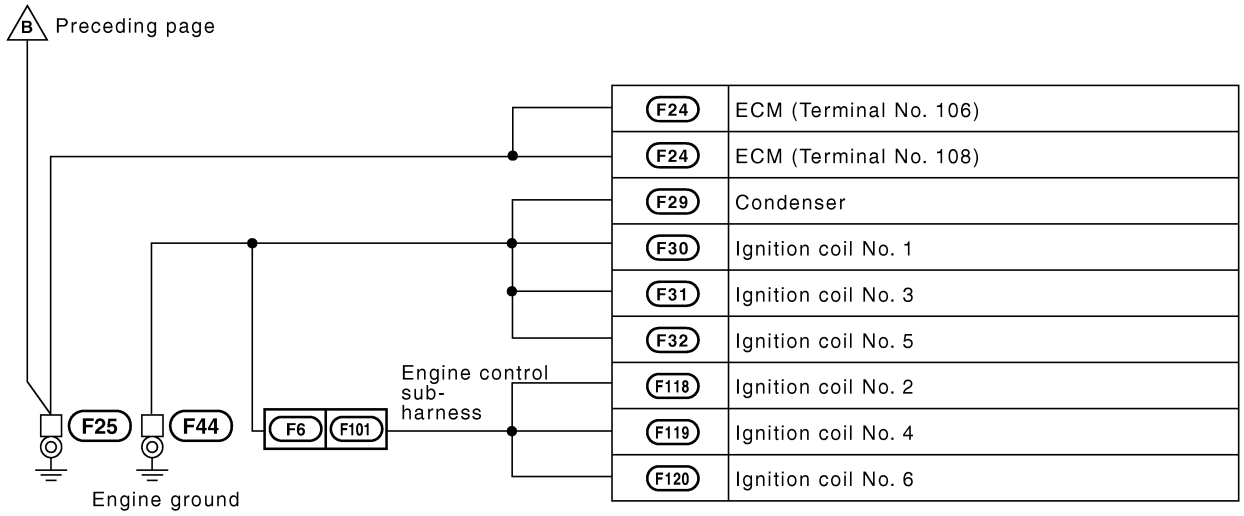
NAEL0008S03





CONNECTOR NUMBER	CONNECT TO
M3	ASCD control unit (Terminal No. 4)
M9	Data link connector (Terminal No. 5)
M120	TCM (Transmission control module) (Terminal No. 25) (With A/T)
M120	TCM (Transmission control module) (Terminal No. 48) (With A/T)
M142	Transfer control unit (Terminal No. 6) (With all-mode 4-wheel drive models)
M143	Transfer control unit (With all-mode 4-wheel drive models)
E113	NATS IMMU
E123	Swirl control valve control vacuum check switch
E130	Shield wire [Crankshaft position sensor (POS)]
E130	Crankshaft position sensor (POS)
E131	Shield wire [Crankshaft position sensor (REF)]
E131	Crankshaft position sensor (REF)
F1	Heated oxygen sensor 2 (Rear) (B1)
F3	Heated oxygen sensor 2 (Rear) (B2)
F8	Shield wire (Throttle position sensor)
F24	ECM (Terminal No. 57)
F24	ECM (Terminal No. 48)
F36	Shield wire [Camshaft position sensor (PHASE)]
F36	Camshaft position sensor (PHASE)
F37	Intake valve timing control position sensor LH
F38	Intake valve timing control position sensor RH
F102	Shield wire (Knock sensor)

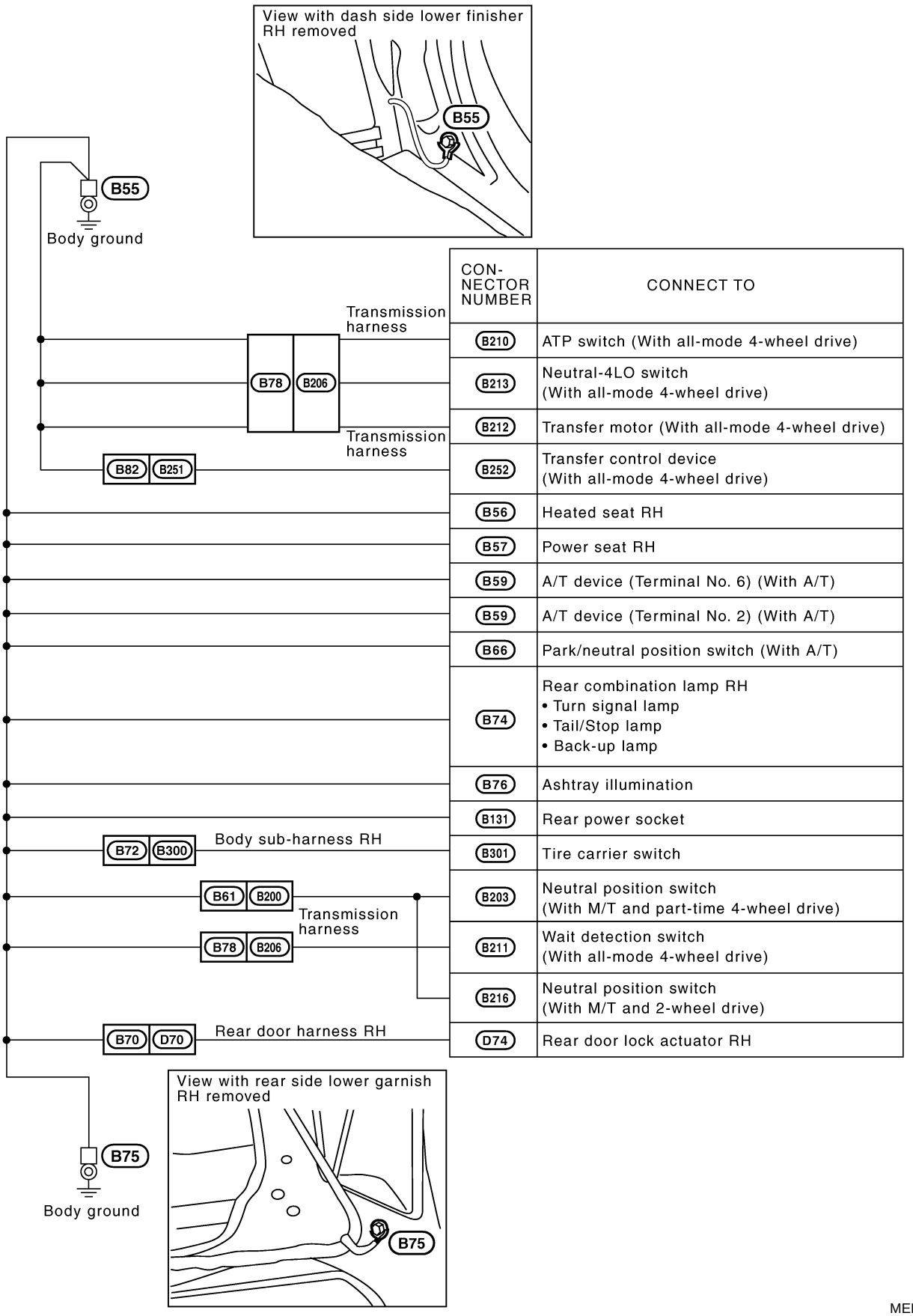
MEL257M


B
Preceding page
F25
F44
F6
F101
Engine control sub-harness
Engine ground
F24
ECM (Terminal No. 106)
F24
ECM (Terminal No. 108)
F29
Condenser
F30
Ignition coil No. 1
F31
Ignition coil No. 3
F32
Ignition coil No. 5
F118
Ignition coil No. 2
F119
Ignition coil No. 4
F120
Ignition coil No. 6

MEL233M

BODY HARNESS RH

NAEL0008S04

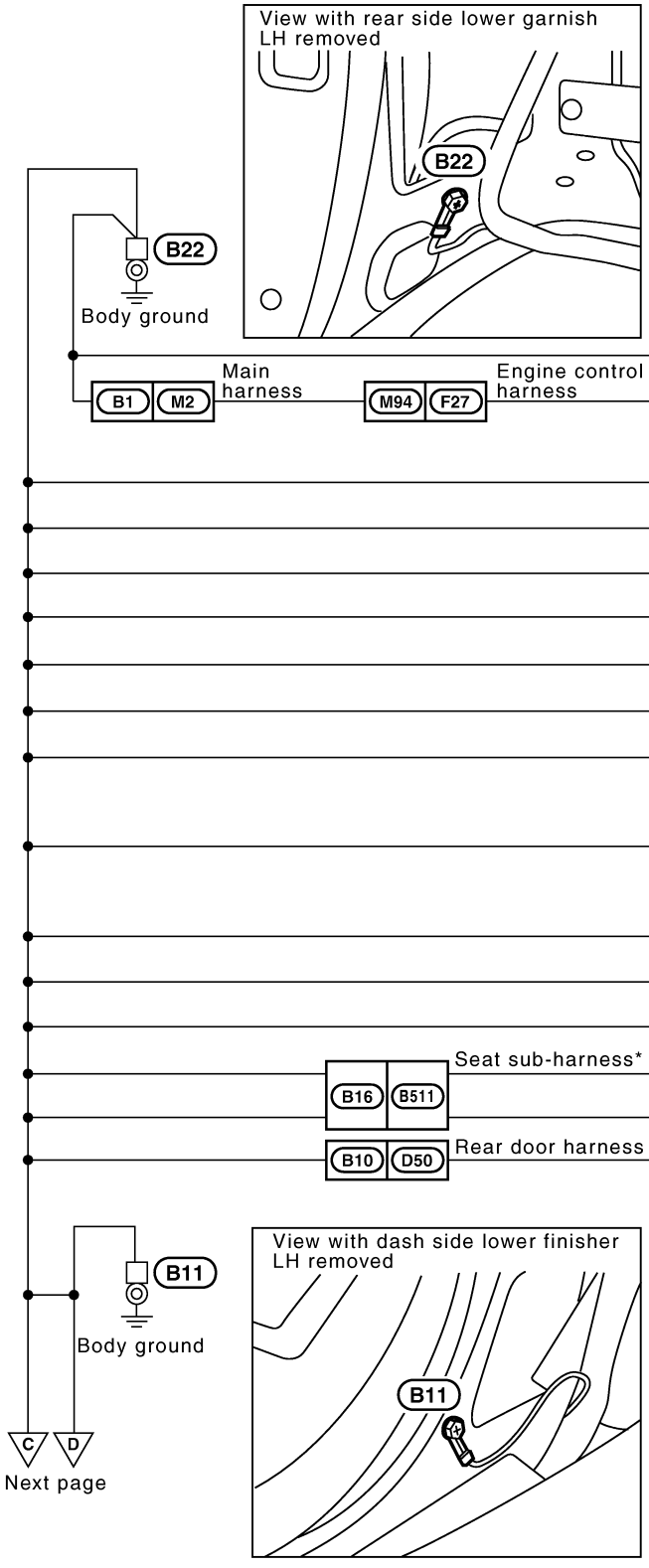


CONNECTOR NUMBER	CONNECT TO
B210	ATP switch (With all-mode 4-wheel drive)
B213	Neutral-4LO switch (With all-mode 4-wheel drive)
B212	Transfer motor (With all-mode 4-wheel drive)
B252	Transfer control device (With all-mode 4-wheel drive)
B56	Heated seat RH
B57	Power seat RH
B59	A/T device (Terminal No. 6) (With A/T)
B59	A/T device (Terminal No. 2) (With A/T)
B66	Park/neutral position switch (With A/T)
B74	Rear combination lamp RH • Turn signal lamp • Tail/Stop lamp • Back-up lamp
B76	Ashtray illumination
B131	Rear power socket
B301	Tire carrier switch
B203	Neutral position switch (With M/T and part-time 4-wheel drive)
B211	Wait detection switch (With all-mode 4-wheel drive)
B216	Neutral position switch (With M/T and 2-wheel drive)
D74	Rear door lock actuator RH

MEL258M

BODY HARNESS LH

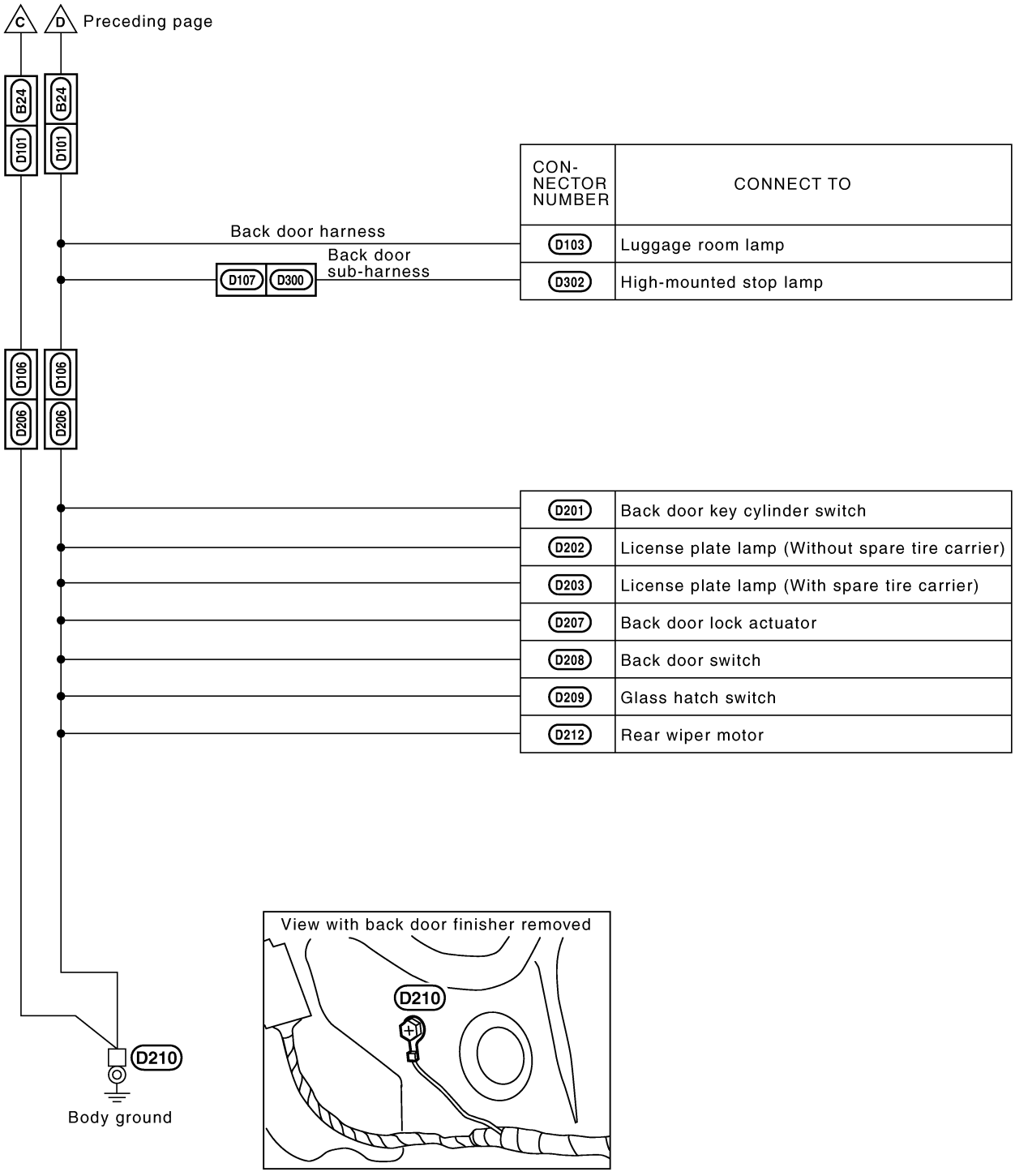
NAEL0008S05



CONNECTOR NUMBER	CONNECT TO
B12	Fuel level sensor unit
F24	ECM
B4	Power socket
B5	Front heated seat LH
B6	Seat belt buckle switch
B7	Power seat LH
B9	Front door switch LH
B13	Fuel pump
B14	Rear wiper amp.
B26	Rear combination lamp LH • Turn signal lamp • Tail/Stop lamp • Back-up lamp
B46	Rear speaker amp.
B111	Power socket relay
B112	Door mirror defogger relay
B512	Seat control unit LH (Terminal No.33)
B513	Seat control unit LH (Terminal No.16)
D54	Rear door lock actuator LH

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

MEL259M

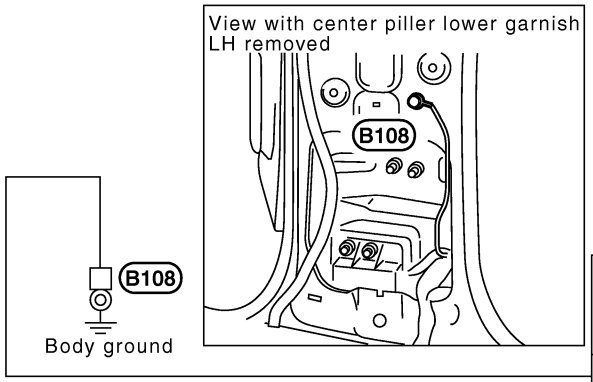


CON-NECTOR NUMBER	CONNECT TO
D103	Luggage room lamp
D302	High-mounted stop lamp
D201	Back door key cylinder switch
D202	License plate lamp (Without spare tire carrier)
D203	License plate lamp (With spare tire carrier)
D207	Back door lock actuator
D208	Back door switch
D209	Glass hatch switch
D212	Rear wiper motor

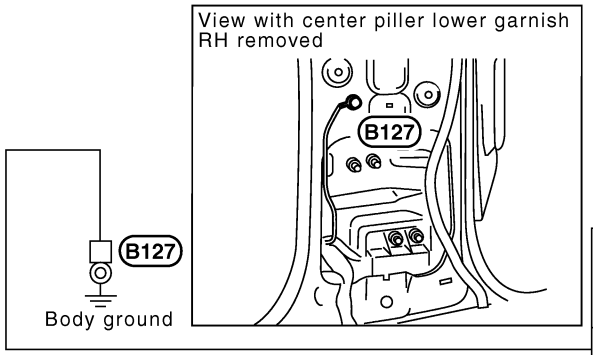
MEL260M

BODY HARNESS

NAEL0008S07

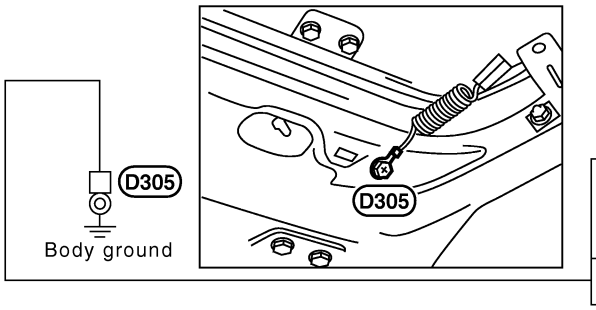


CONNECTOR NUMBER	CONNECT TO
B107	Shield wire (Satellite sensor LH)



CONNECTOR NUMBER	CONNECT TO
B128	Shield wire (Satellite sensor RH)

MEL151M



CONNECTOR NUMBER	CONNECT TO
D304	Rear window defogger

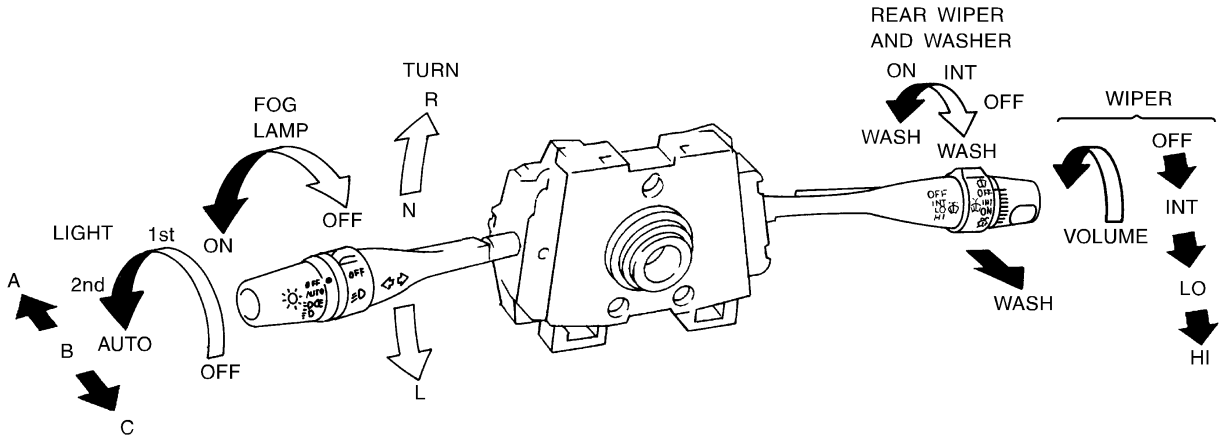
MEL152M

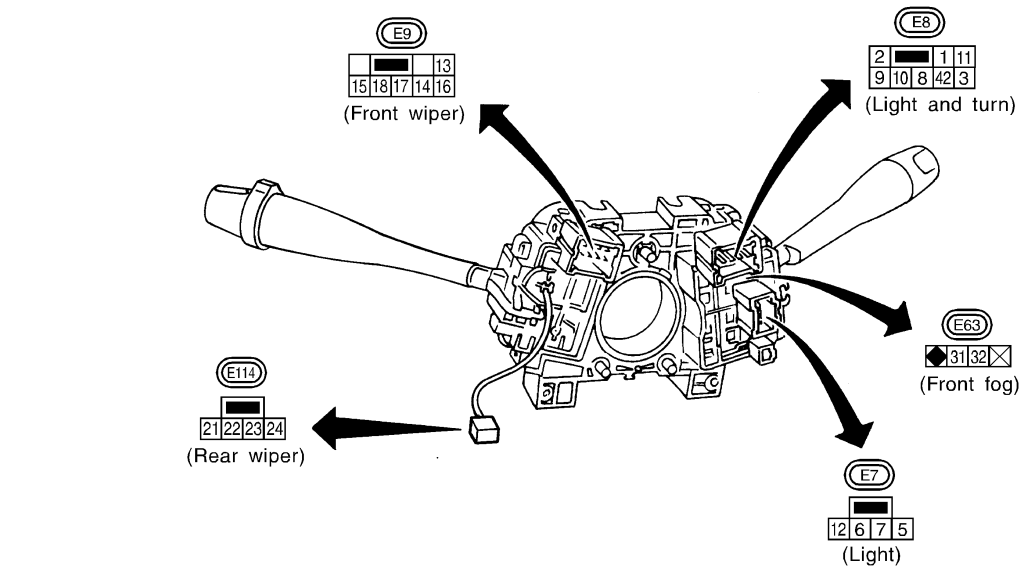
Check

WITH AUTO LIGHT SYSTEM

NAEL0009

NAEL0009S01





LIGHTING SWITCH

	OFF	AUTO	1ST	2ND
5			○	○
11			○	○
8				○
12				○
42		○		
(8)		○		

	A	B	C
(5)	○	○	○
7		○	
6	○		○
(8)	○	○	○
10		○	
9	○		○
(12)			○

FRONT WIPER AND WASHER SWITCH

VARIABLE INTERMITTENT WIPER VOLUME

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

WIPER AMP.

⑭ ⑮ ⑬ ⑯ ⑰ ⑱

FOG LAMP SWITCH

	OFF	ON
31		○
32		○

TURN SIGNAL LAMP SWITCH

	L	N	R
1	○		○
2			○
3	○		

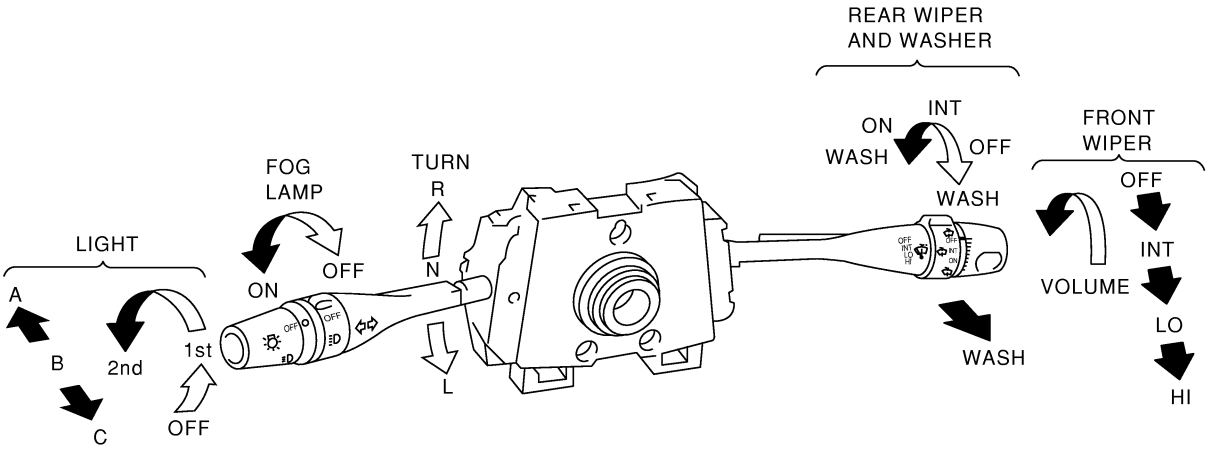
REAR WIPER SWITCH

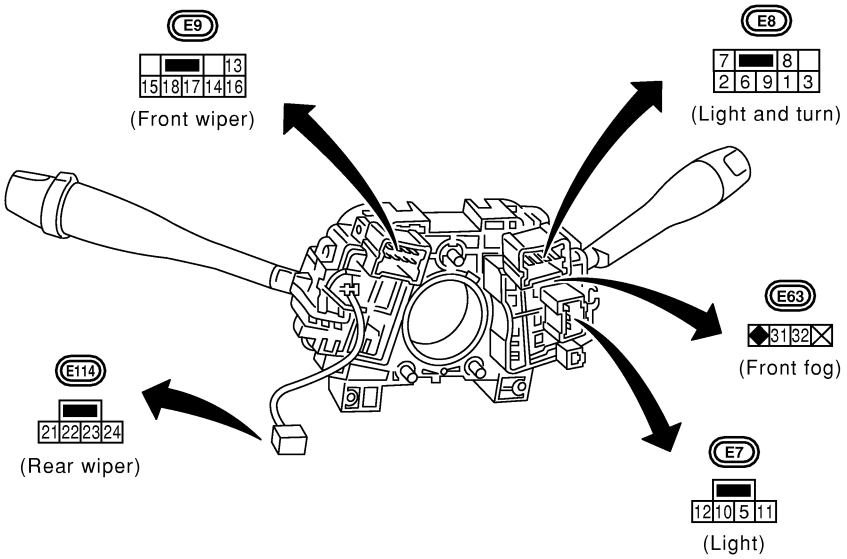
	WASH	OFF	INT	ON	WASH
21			○		
22				○	○
23	○				○
24	○		○	○	○

MEL132M

WITHOUT AUTO LIGHT SYSTEM

NAEL0009S02





LIGHTING SWITCH

	OFF	1ST	2ND
11		○	○
12		○	○
			○
5			○
			○
8			○

	A	B	C
	○	○	○
6	○		○
7		○	
(5)			○
	○	○	○
9	○		○
10		○	
(8)			○

FRONT WIPER AND WASHER SWITCH

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

WIPER AMP.

14 15 13 16 17 18

VARIABLE INTERMITTENT WIPER VOLUME

FOG LAMP SWITCH

	OFF	ON
31		○
32		○

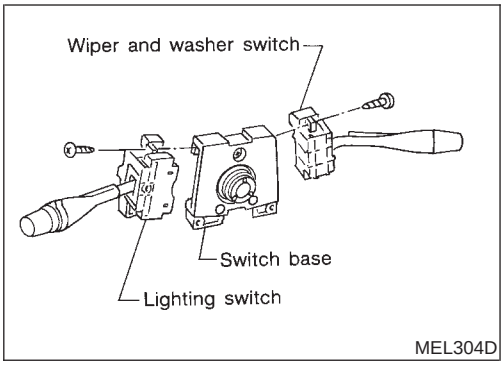
TURN SIGNAL LAMP SWITCH

	L	N	R
1	○		○
2			○
3	○		

REAR WIPER SWITCH

	WASH	OFF	INT	ON	WASH
21			○		
22				○	○
23	○				○
24	○		○	○	○

MEL249M

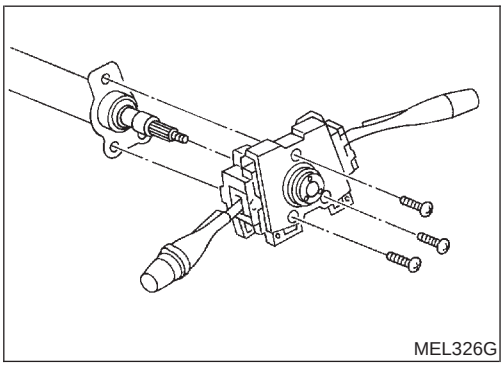


Replacement

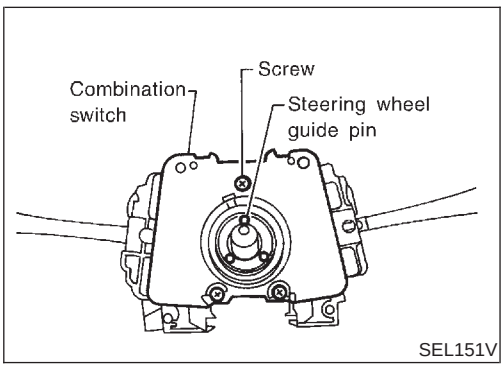
NAEL0010

For removal and installation of spiral cable, refer to RS-18, “Installation — Air Bag Module and Spiral Cable”.

- Each switch can be replaced without removing combination switch base.



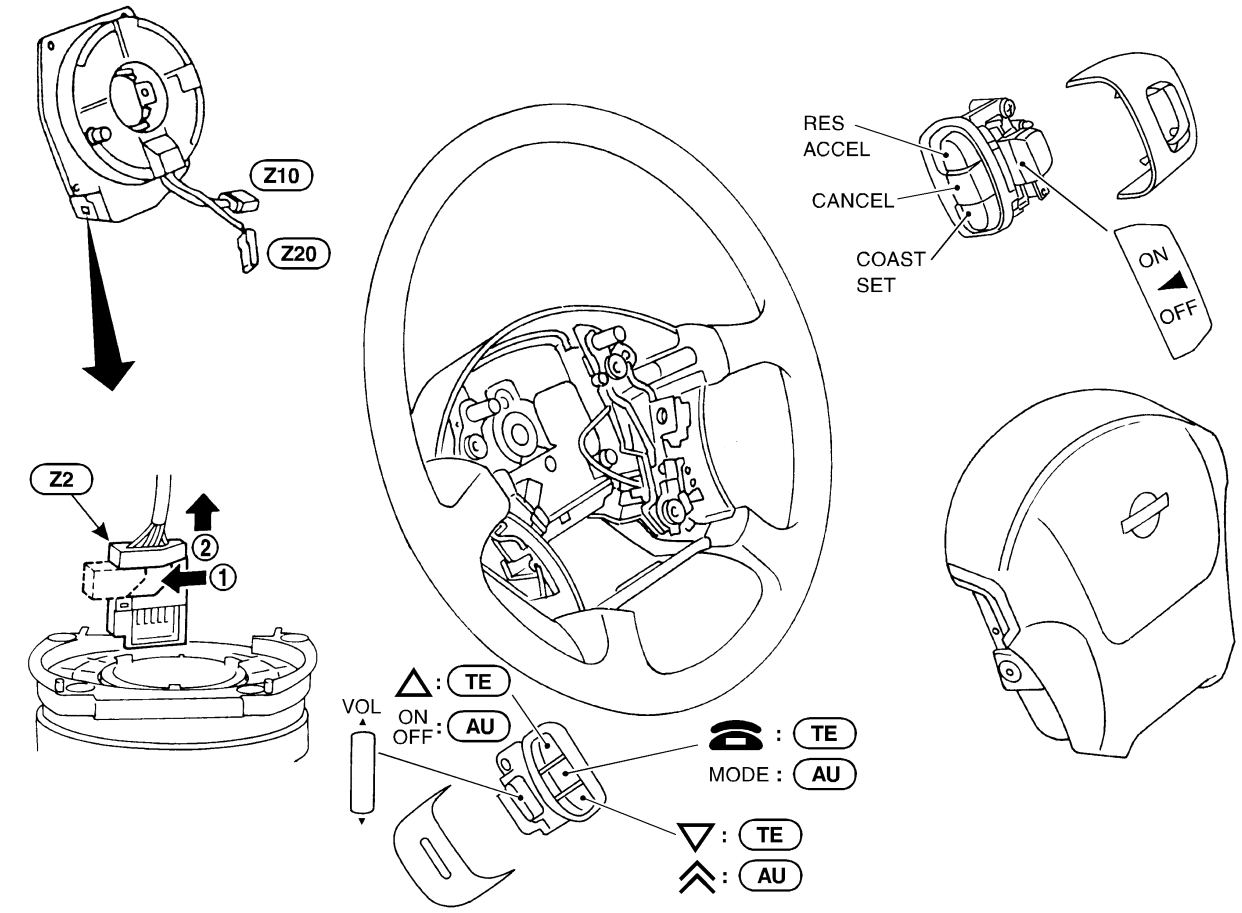
- To remove combination switch base, remove base attaching screw.

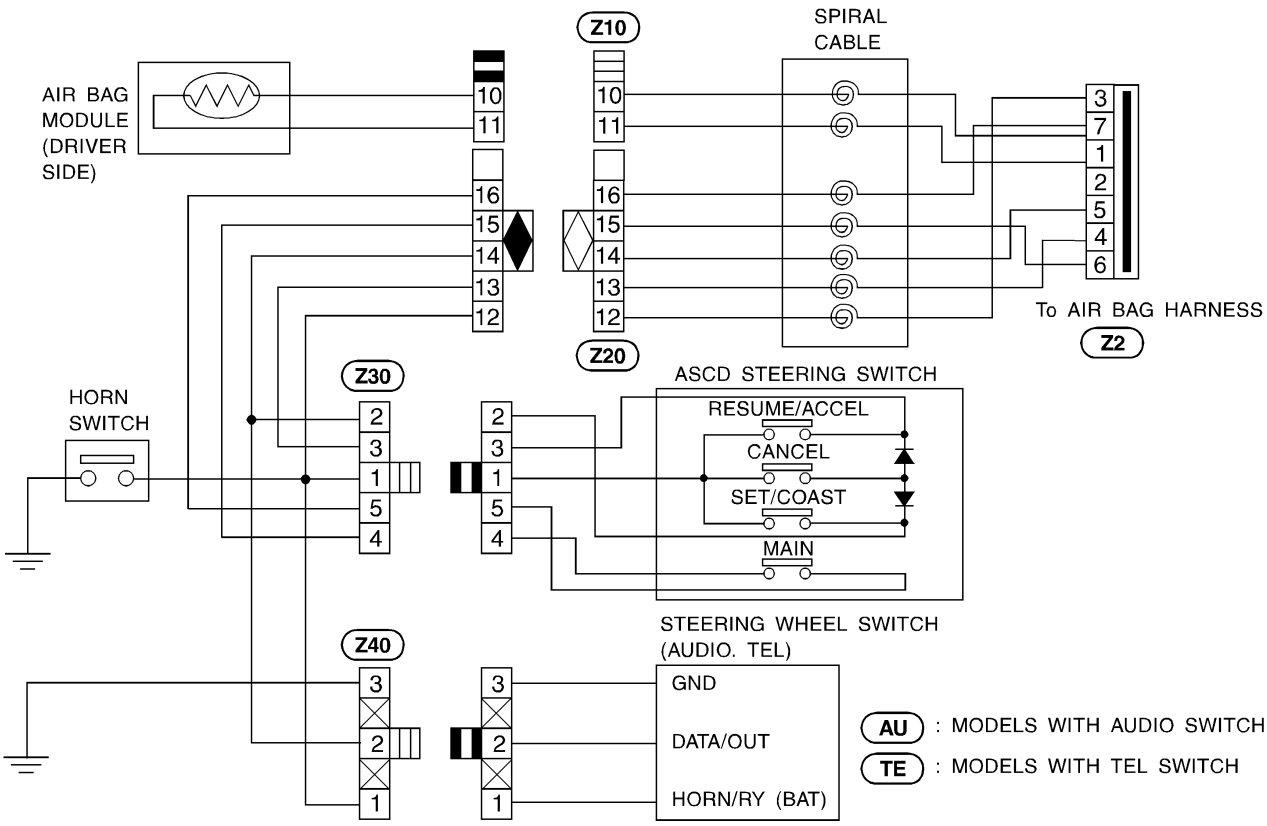


- Before installing the steering wheel, align the steering wheel guide pins with the screws which secure the combination switch as shown in the left figure.

Check

NAEL0011

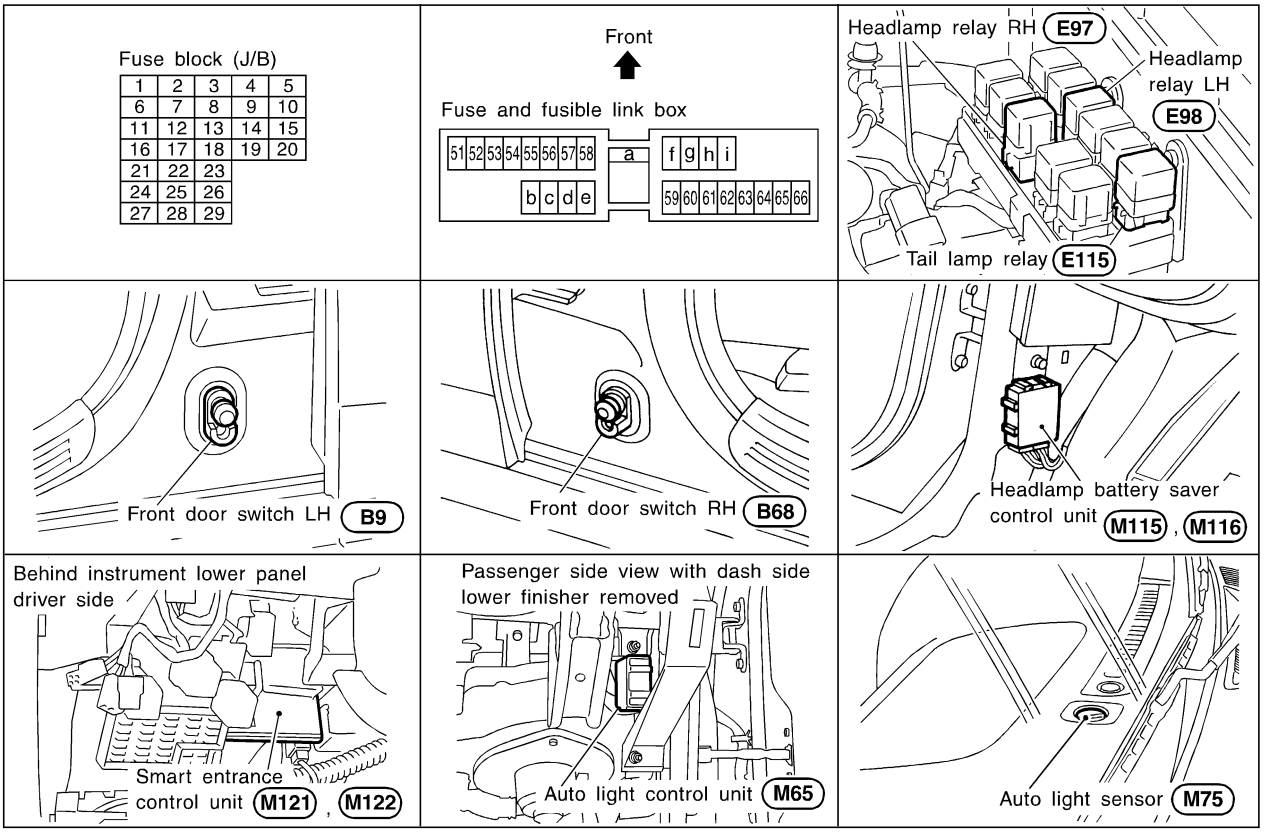




MEL133M

Component Parts and Harness Connector Location

NAEL0159



SEL460X

System Description

NAEL0188

WITH AUTO LIGHT SYSTEM

NAEL0188S08

The headlamp operation is controlled by the lighting switch which is built into the combination switch and headlamp battery saver control unit. And the headlamp battery saver system is controlled by the headlamp battery saver control unit and smart entrance control unit.

Outline

NAEL0188S0801

Power is supplied at all times

- to headlamp LH relay terminals 2 and 3
- through 15A fuse (No. 60, located in the fuse and fusible link box), and
- to headlamp RH relay terminals 2 and 3
- through 15A fuse (No. 59, located in the fuse and fusible link box), and
- to headlamp battery saver control unit terminal 7, and
- to smart entrance control unit terminal 10
- through 7.5A fuse [No. 24, located in the fuse block (J/B)].

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

- to headlamp battery saver control unit terminal 1
- through 10A fuse [No. 16, located in the fuse block (J/B)], and
- to headlamp battery saver control unit terminal 10,
- to auto light control unit terminal 1 and
- to smart entrance control unit terminal 33
- through 7.5A fuse [No. 11, located in the fuse block (J/B)].

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

- to auto light control unit terminal 2
- through 10A fuse [No. 9, located in the fuse block (J/B)]

Ground is supplied
- to headlamp battery saver control unit terminals 4 and 11
- through body grounds M77 and M111, and M4, M66 and M147
- to auto light control unit terminal 5
- through body grounds M4, M66 and M147.

Power Supply to Low Beam and High Beam
When lighting switch is in 2ND or PASS position, ground is supplied
- to headlamp relay (LH and RH) terminal 2 from headlamp battery saver control unit terminals 2 and 8
- through headlamp battery saver control unit terminals 3 and 9,
- from lighting switch terminal 12.

Headlamp relays (LH and RH) are energized and then power is supplied to headlamps (LH and RH).

Low Beam Operation
NAEL0188S0802

When the lighting switch is turned to the 2ND position and placed in LOW ("B") position, power is supplied
- from terminal 5 of each headlamp relay
- to terminal 3 of each headlamp

Ground is supplied
- to headlamp LH terminal 2
- through lighting switch terminals 7 and 5
- through body grounds E13 and E41.
- to headlamp RH terminal 2
- through lighting switch terminals 10 and 8
- through body grounds E13 and 41.

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

High Beam Operation/Flash-to-pass Operation
NAEL0188S0803

When the lighting switch is turned to the 2ND position and placed in HIGH ("A") position or PASS ("C") position, power is supplied
- from terminal 5 of headlamp LH relay
- to terminal 3 of headlamp LH and
- to combination meter terminal 26 for the HIGH BEAM indicator
- from terminal 5 of headlamp RH relay
- to terminal 3 of headlamp RH.

Ground is supplied
- to headlamp LH terminal 1 and
- to combination meter terminal 27 for the HIGH BEAM indicator
- through lighting switch terminals 6 and 5
- through body grounds E13 and E41, and
- to headlamp RH terminal 1
- through lighting switch terminals 9 and 8
- through body grounds E13 and E41.

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

Battery Saver Control
NAEL0188S0804

When the ignition switch is turned from ON (or START) to OFF (or ACC) positions while headlamps illuminate, the RAP signal is supplied to terminal 10 of the headlamp battery saver control unit from smart entrance control unit terminal 5.
After counting 45 seconds by the RAP signal from the smart entrance control unit to headlamp battery saver control unit, the ground supply to terminal 1 of the headlamp LH and RH relay from headlamp battery saver control unit terminals 2 and 8 is terminated.
Then the headlamps are turned off.
The headlamps are turned off when driver or passenger side door is opened even if 45 seconds have not

passed after ignition switch is turned from ON (or START) to OFF (or ACC) positions while headlamps are illuminated.
When the lighting switch is turned from OFF to 2ND after headlamps are turned to off by the battery saver control, ground is supplied

- to headlamp LH and RH relays terminal 1 from headlamp battery saver control unit terminals 2 and 8
- through headlamp battery saver control unit terminals 3 and 9, and
- through lighting switch terminal 12.

Then headlamps illuminate again.

Auto Light Operation

NAEL0188S0805

When lighting switch is in "AUTO" position, ground is supplied

- to auto light control unit terminal 10
- from lighting switch terminal 42.

When ignition switch is turn to "ON" or "START" position and outside brightness is darker than prescribed level. Ground is supplied

- to headlamp relay LH and RH terminals 1
- through battery saver control unit
- from auto light control unit terminal 6, and
- to tail lamp relay terminal 1
- through battery saver control unit
- from auto light control unit terminal 7.

Then both headlamp relays and tail lamp relay are energized, headlamps (low or high) and tail lamps are illuminate according to switch position.
Auto light operation allows headlamps and tail lamps to go off when

- Ignition switch is turned to "OFF" position or
- Outside brightness is brighter than prescribed level.

NOTE:
The delay time varies up to maximum of 20 seconds as the outside brightness changes.

For parking license and tail lamp auto operation, refer to "PARKING, LICENSE AND TAIL LAMPS".

Theft Warning System

NAEL0188S0806

The theft warning system will flash the low beams if the system is triggered. Refer to "THEFT WARNING SYSTEM" (EL-314).

WITHOUT AUTO LIGHT SYSTEM

=NAEL0188S09

The headlamp operation is controlled by the lighting switch which is built into the combination switch and headlamp battery saver control unit. And the headlamp battery saver system is controlled by the headlamp battery saver control unit and smart entrance control unit.

Outline

NAEL0188S0901

Power is supplied at all times

- to headlamp LH relay terminals 2 and 3
- through 15A fuse (No. 60, located in the fuse and fusible link box), and
- to headlamp RH relay terminals 2 and 3
- through 15A fuse (No. 59, located in the fuse and fusible link box), and
- to headlamp battery saver control unit terminal 7
- to smart entrance control unit terminal 10
- through 7.5A fuse [No. 24, located in the fuse block (J/B)].

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

- to headlamp battery saver control unit terminal 1
- through 10A fuse [No. 16, located in the fuse block (J/B)], and
- to headlamp battery saver control unit terminal 10, and
- to smart entrance control unit terminal 33
- through 7.5A fuse [No. 11, located in the fuse block (J/B)]

Ground is supplied

- to headlamp battery saver control unit terminals 4, and 3, 9 and 11.
- through body grounds M77 and M111, and M4, M66 and M147.

When Ignition Switch is in ON or START Position

Ground is supplied

- to headlamp LH relay terminal 1 from headlamp battery saver control unit terminal 2
- through headlamp battery saver control unit terminals 3 and 11, and
- through body grounds M4, M66 and M147, and
- to headlamp RH relay terminal 1 from headlamp battery saver control unit terminal 8
- through headlamp battery saver control unit terminals 4 and 9, and
- through body grounds M77 and M111, and M4, M66 and M147.

Headlamp relays (LH and RH) are then energized.

When Ignition Switch is in OFF or ACC Position

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

- to headlamp battery saver control unit terminals 5 and 13
- from lighting switch terminal 11.

And then, ground is also supplied to headlamp LH and RH relays terminal 1 from headlamp battery saver control unit. Headlamp relays (LH and RH) are then energized.

Low Beam Operation

NAEL0188S0902

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

- from lighting switch terminal 10
- to terminal 2 of the headlamp LH, and
- from lighting switch terminal 7
- to terminal 2 of the headlamp RH.

Terminal 3 of each headlamp supplies ground through body grounds E13 and E41.
With power and ground supplied, the headlamp(s) will illuminate.

High Beam Operation/Flash-to-pass Operation

NAEL0188S0903

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

- from lighting switch terminal 6
- to terminal 1 of the headlamp RH, and
- from lighting switch terminal 9

- to terminal 1 of the headlamp LH, and
- to combination meter terminal 26 for the high beam indicator.

Ground is supplied to terminal 27 of the combination meter terminal 3 of each headlamp through body grounds E13 and E41.
With power and ground supplied, the high beams and the high beam indicator illuminate.

Battery Saver Control

NAEL0188S0904

When the ignition switch is turned from ON (or START) to OFF (or ACC) positions while headlamps illuminate, the RAP signal is supplied to terminal 10 of the headlamp battery saver control unit from smart entrance control unit terminal 5.
After counting 45 seconds by the RAP signal from the smart entrance control unit to headlamp battery saver control unit, the ground supply to terminal 1 of the headlamp LH and RH relay from headlamp battery saver control unit terminals 2 and 8 is terminated.
Then the headlamps are turned off.
The headlamps are turned off when driver or passenger side door is opened even if 45 seconds have not passed after ignition switch is turned from ON (or START) to OFF (or ACC) positions while headlamps are illuminated.
When the lighting switch is turned from OFF to 2ND after headlamps are turned to off by the battery saver control, ground is supplied

- to headlamp battery saver control unit terminals 5 and 13 from lighting switch terminal 11, and
- to headlamp LH and RH relays terminal 1 from headlamp battery saver control unit terminals 2 and 8.

Then headlamps illuminate again.

Theft Warning System

NAEL0188S0905

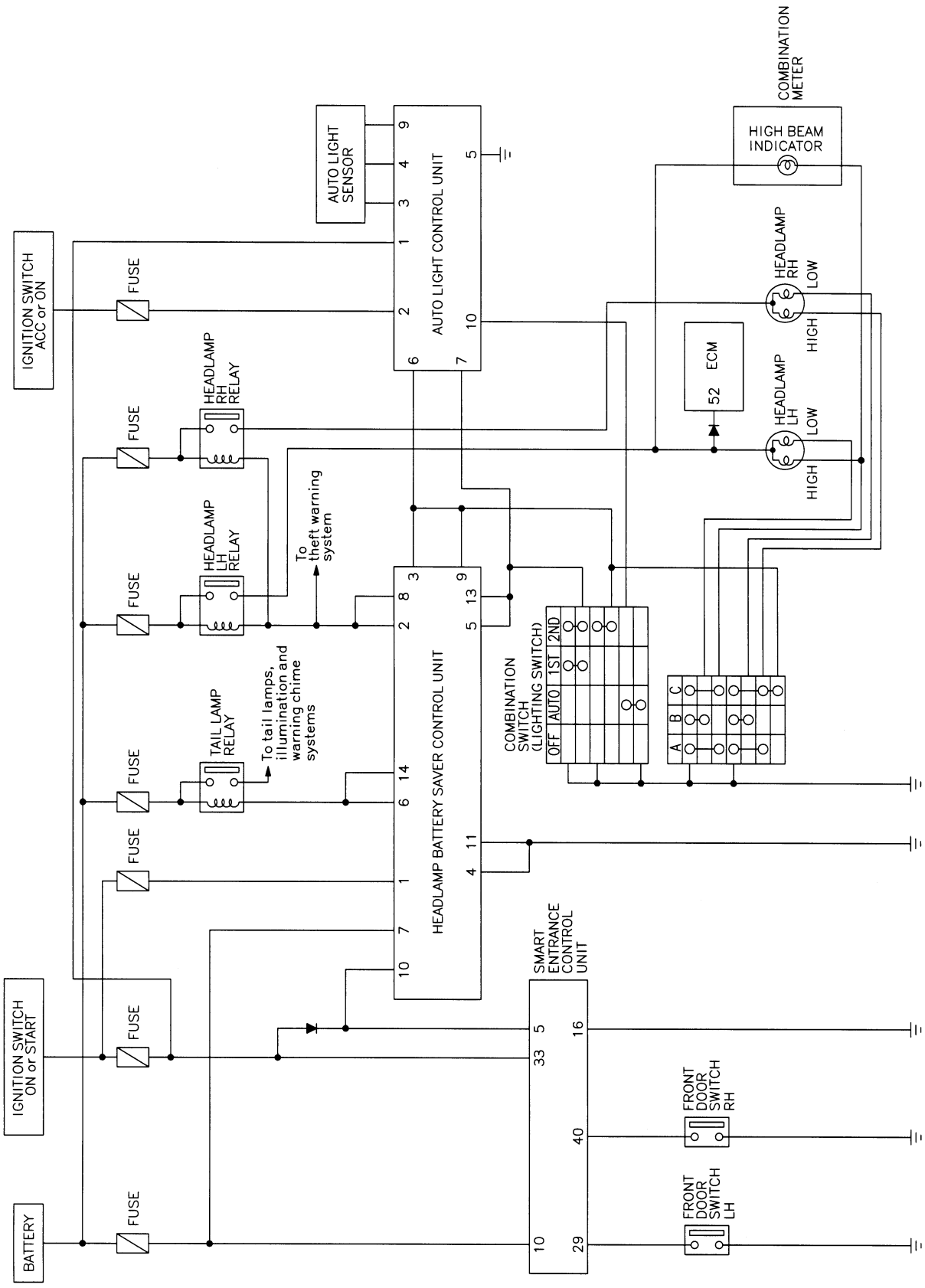
The theft warning system will flash the high beams if the system is triggered. Refer to "THEFT WARNING SYSTEM" (EL-313).

Schematic

NAEL0160

NAEL0160S01

WITH AUTO LIGHT SYSTEM

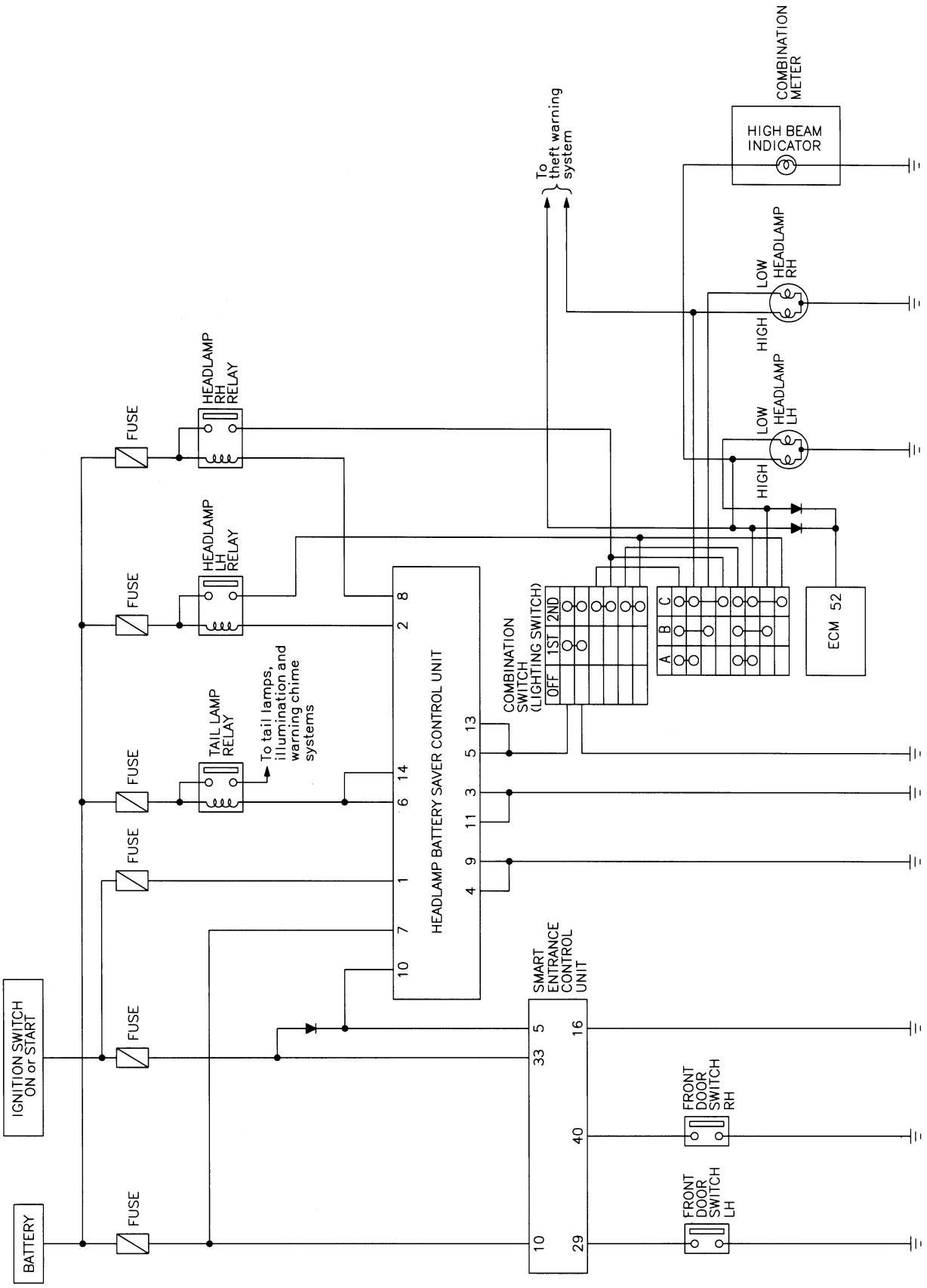


MEL980L

Schematic (Cont'd)

WITHOUT AUTO LIGHT SYSTEM

NAEL0160S02



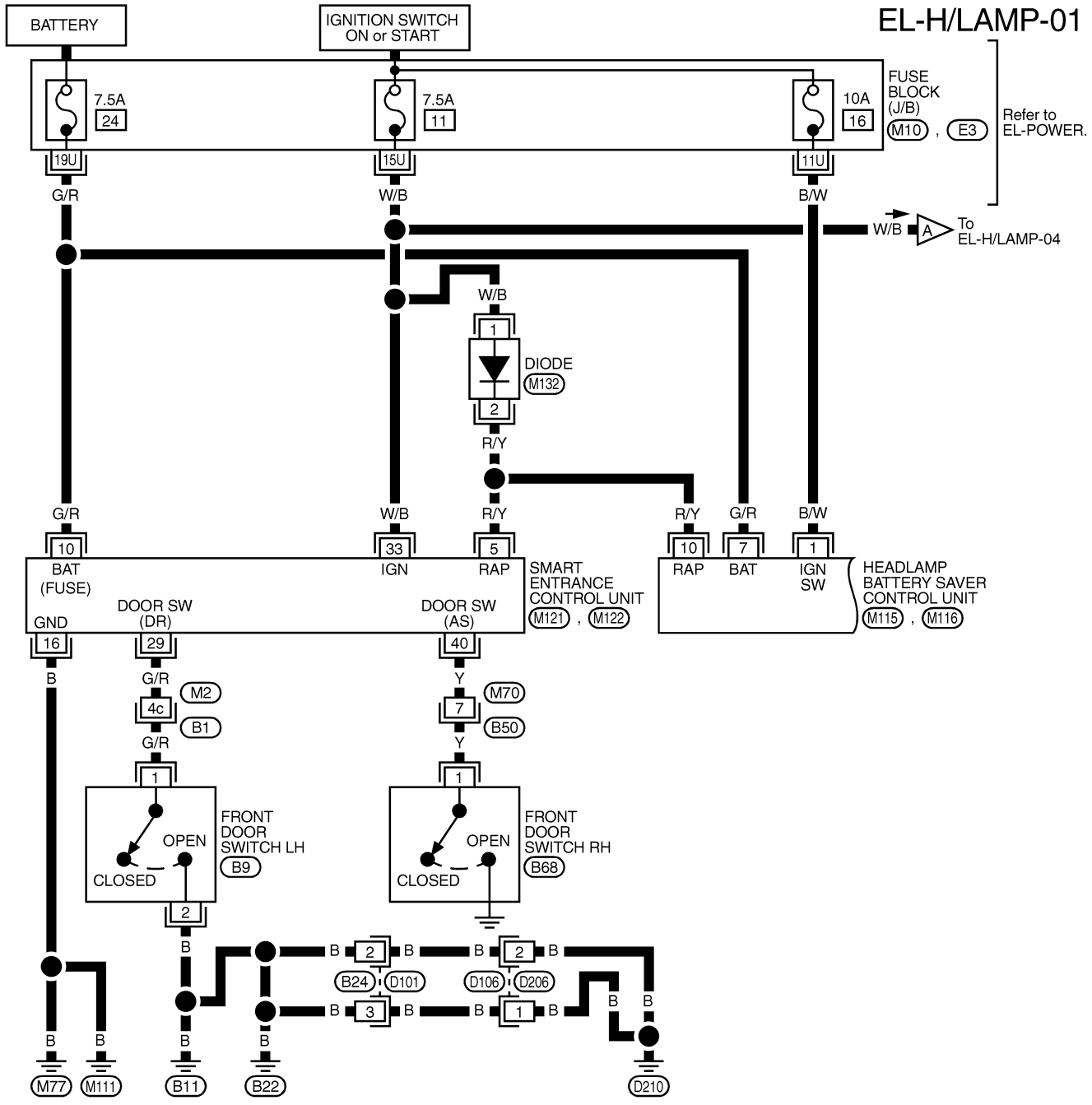
MEL985L

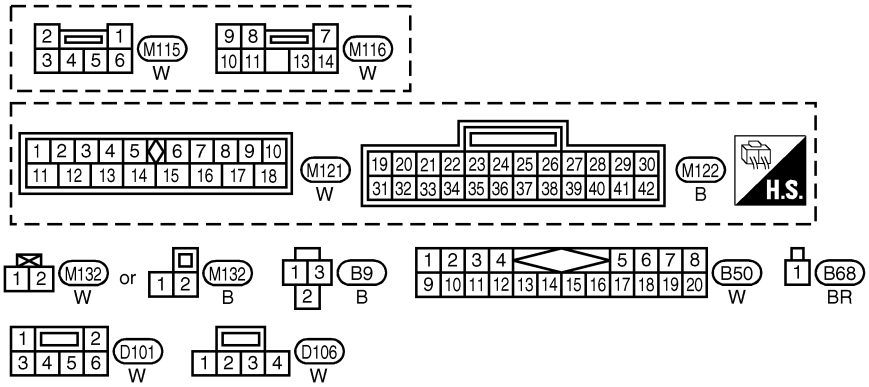
Wiring Diagram — H/LAMP —

NAEL0013

WITH AUTO LIGHT SYSTEM

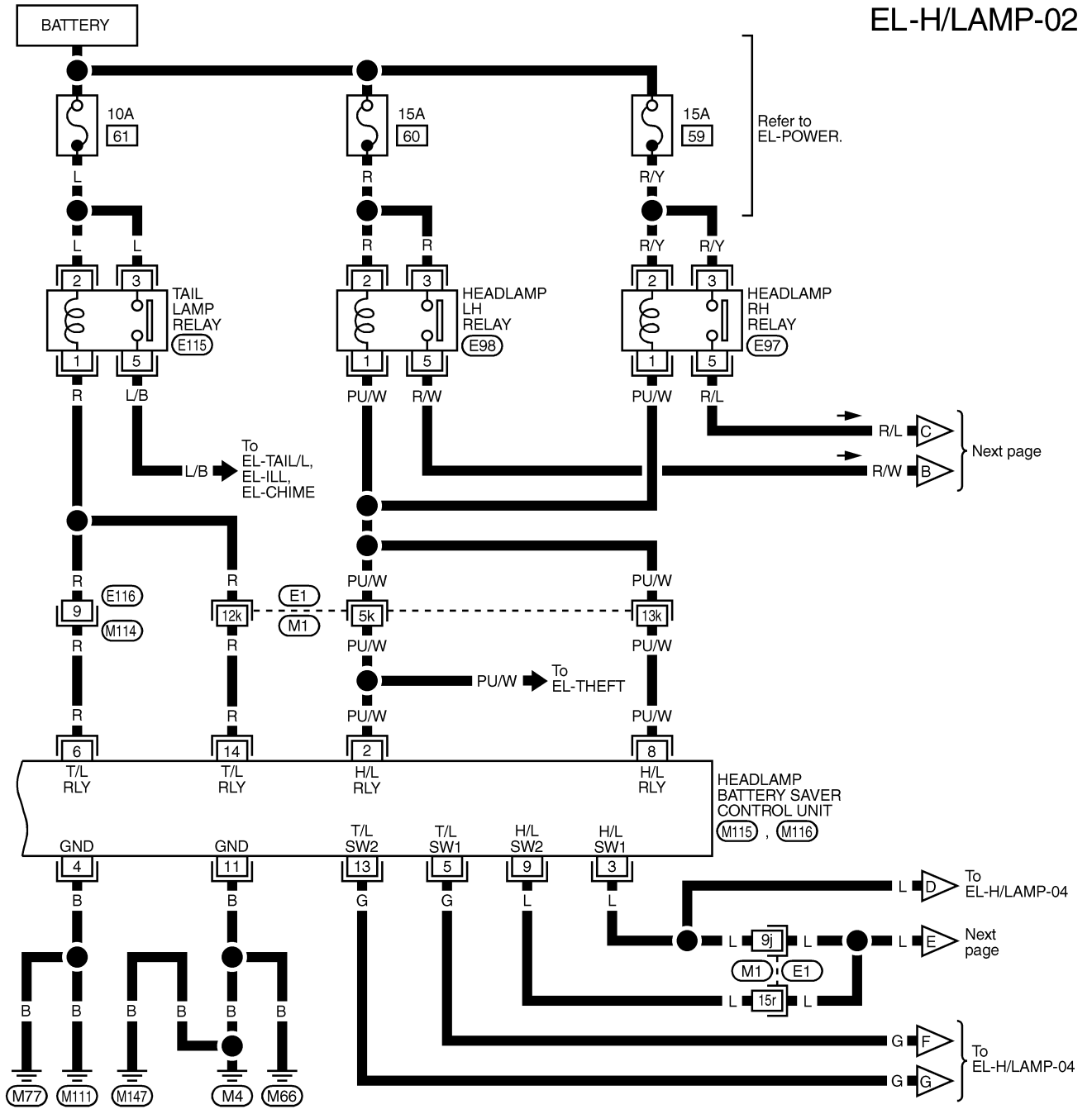
NAEL0013S01

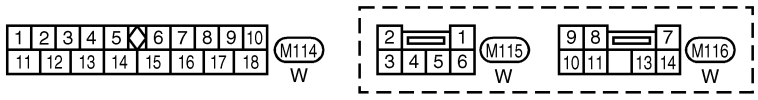


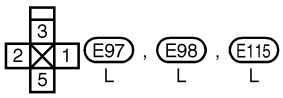


REFER TO THE FOLLOWING.
B1 -SUPER MULTIPLE JUNCTION (SMJ)
M10 , E3 -FUSE BLOCK-JUNCTION BOX (J/B)

MEL011O





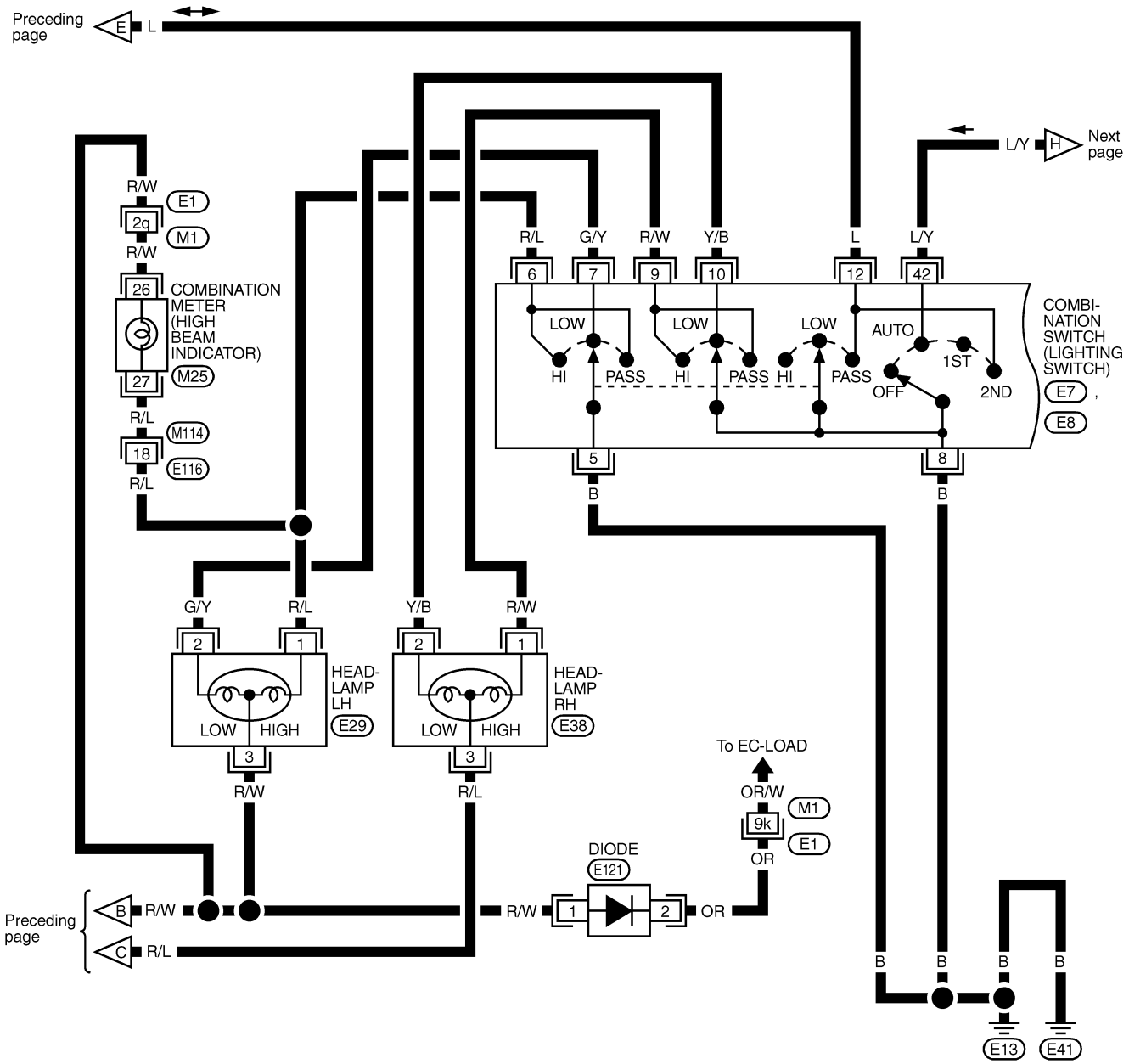


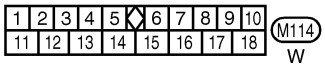
REFER TO THE FOLLOWING.

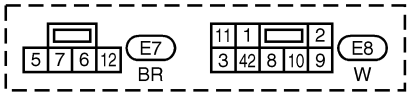
E1 -SUPER MULTIPLE JUNCTION (SMJ)

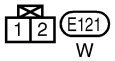
MEL982L

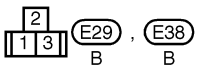
EL-H/LAMP-03







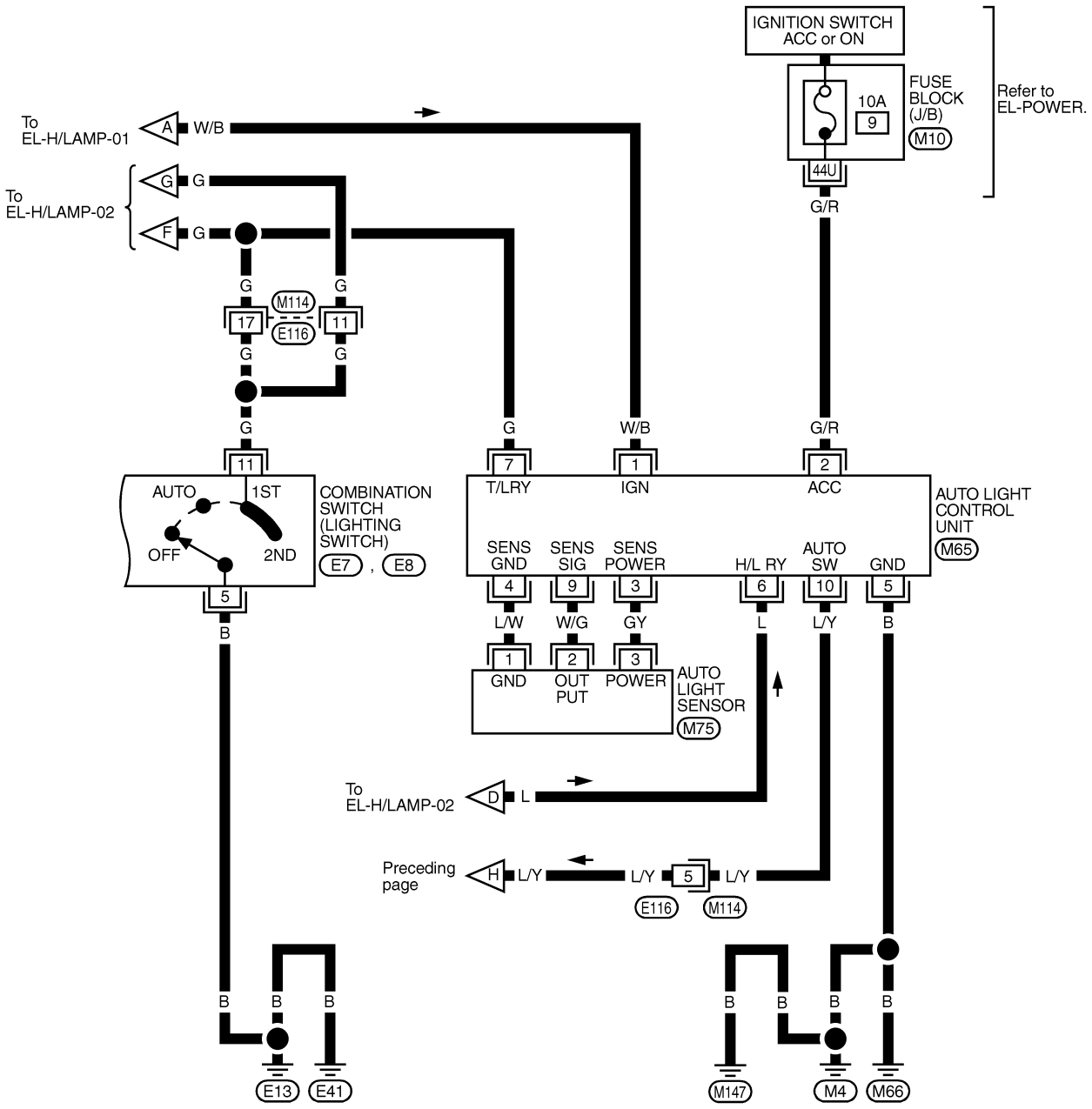


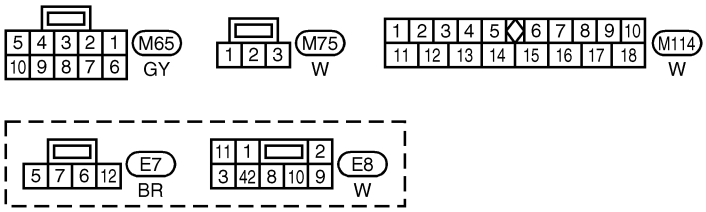


REFER TO THE FOLLOWING.
E1 -SUPER MULTIPLE JUNCTION (SMJ)

MEL983L

EL-H/LAMP-04



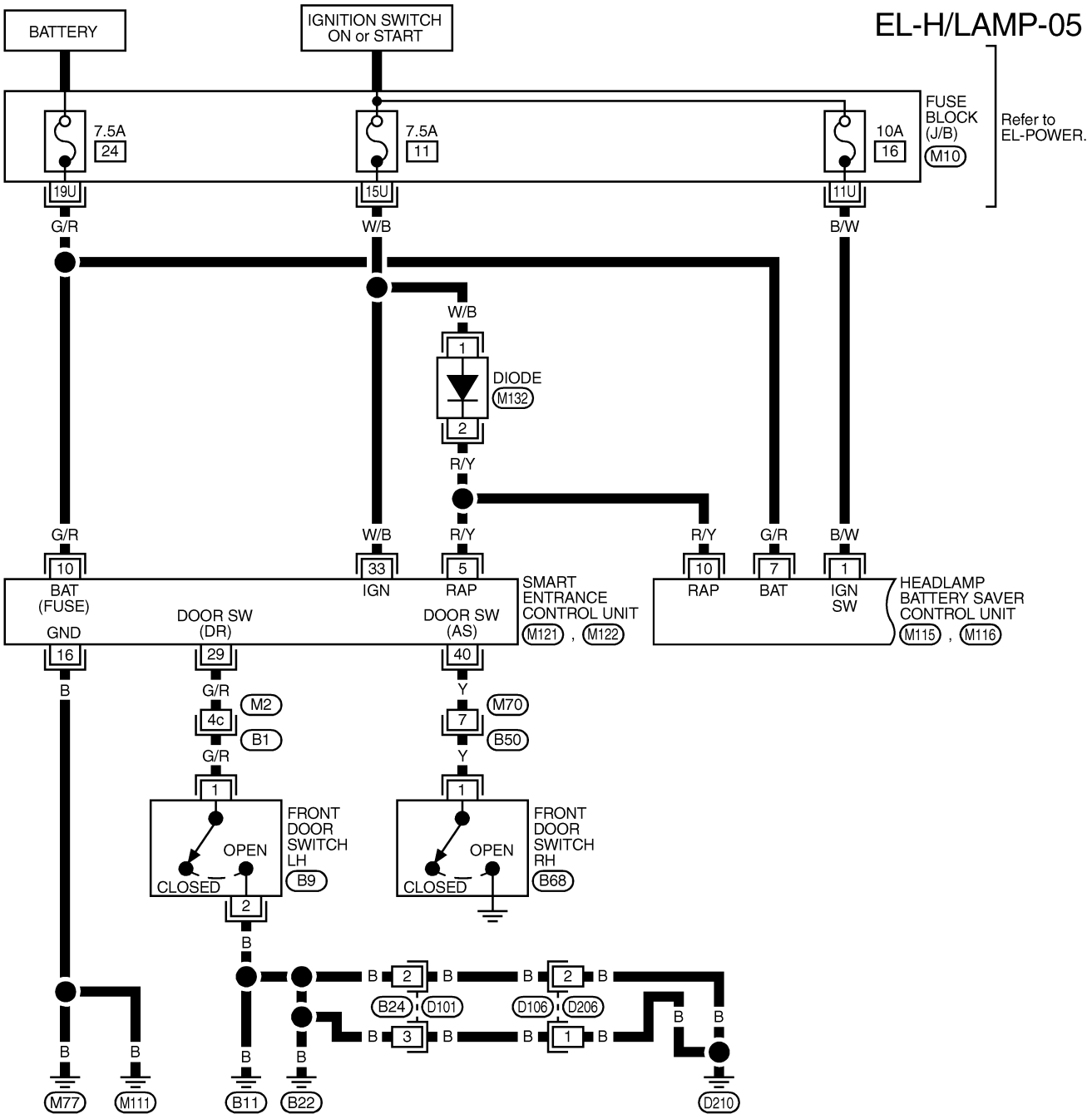


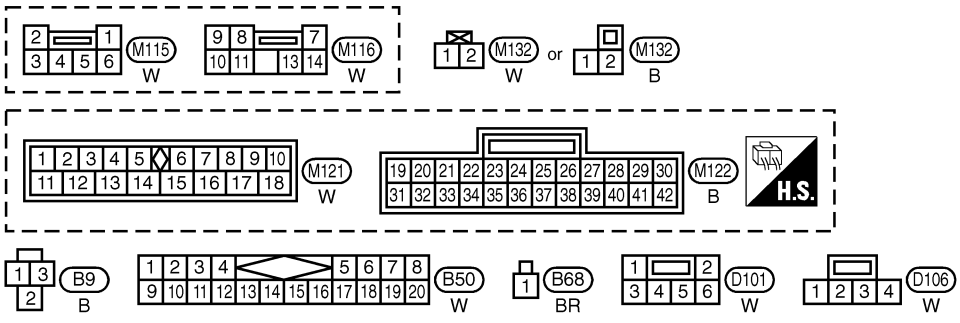
REFER TO THE FOLLOWING.
M10 -FUSE BLOCK-
JUNCTION BOX (J/B)

MEL984L

WITHOUT AUTO LIGHT SYSTEM

NAEL0013S02





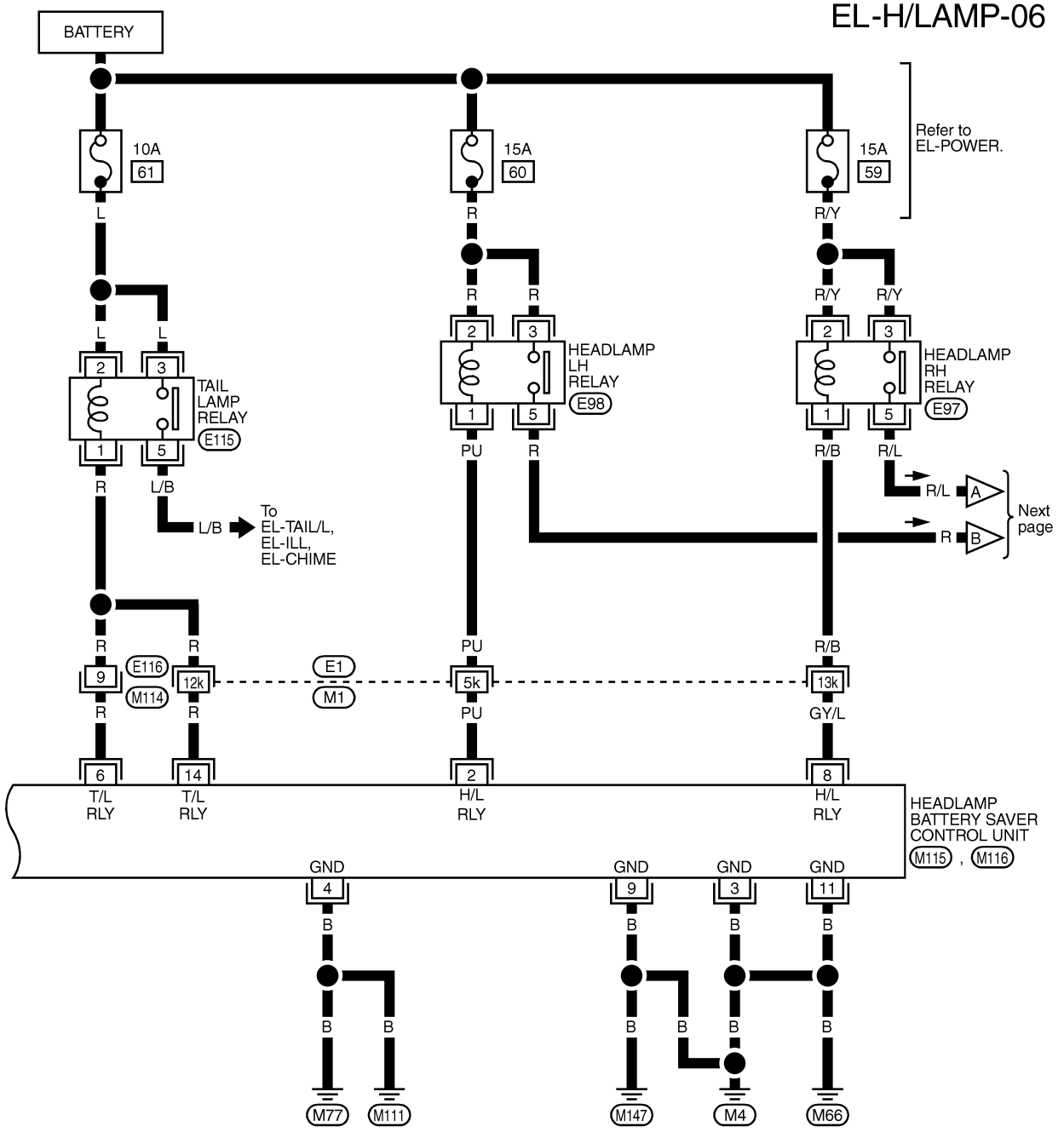
REFER TO THE FOLLOWING.

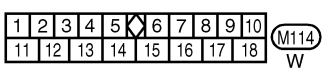
B1 -SUPER MULTIPLE JUNCTION (SMJ)

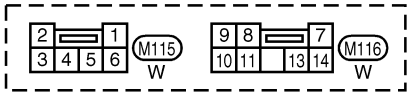
M10 -FUSE BLOCK-JUNCTION BOX (J/B)

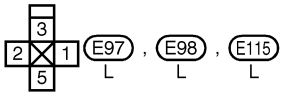
MEL012O

EL-H/LAMP-06







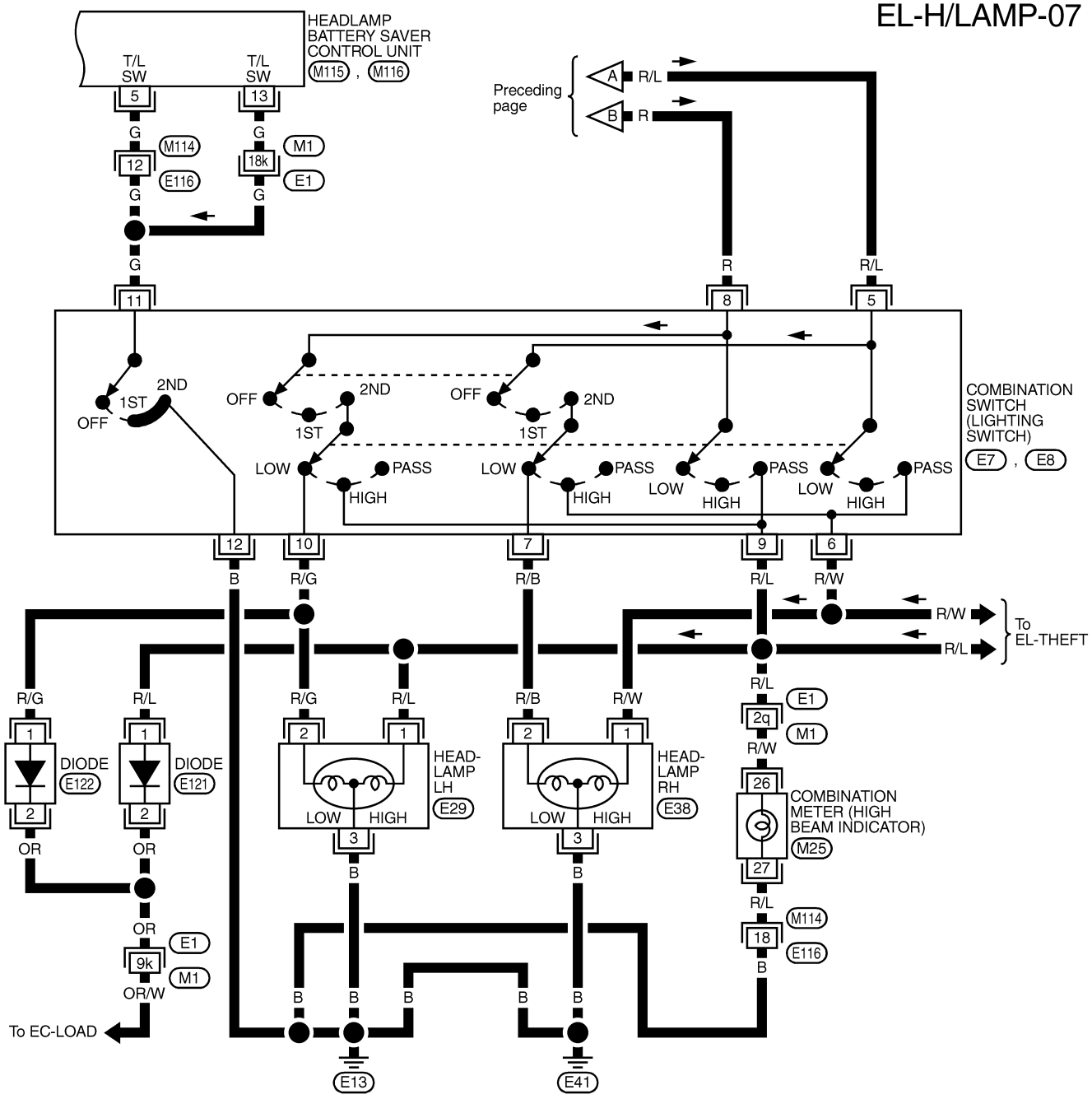


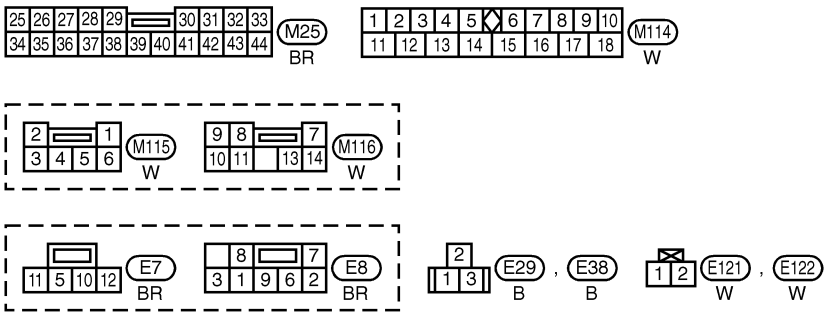
REFER TO THE FOLLOWING.

E1 -SUPER MULTIPLE JUNCTION (SMJ)

MEL987L

EL-H/LAMP-07





REFER TO THE FOLLOWING.
E1 -SUPER MULTIPLE JUNCTION (SMJ)

MEL988L

Trouble Diagnoses

NAEL0189

WITH AUTO LIGHT SYSTEM

NAEL0189S02

Symptom	Possible cause	Repair order
Neither headlamp operates.	1. 7.5A fuse 2. Headlamp relay circuit 3. Lighting switch 4. Lighting switch ground circuit 5. Headlamp battery saver control unit	1. Check 7.5A fuse [No. 24, located in fuse block (J/B)]. Verify battery positive voltage is present at terminal 7 of headlamp battery saver control unit. 2. Check between battery saver control unit and headlamp relays (LH and RH). 3. Check Lighting switch. 4. Check harness between lighting switch terminal 8 and ground. 5. Check headlamp battery saver control unit.
Headlamp LH (low and high beam) does not operate, but headlamp RH (low and high beam) does operate.	1. 15A fuse 2. Headlamp LH relay 3. Headlamp LH relay circuit	1. Check 15A fuse (No. 60, located in fusible link and fuse box). Verify battery positive voltage is present at terminals 2 and 3 of headlamp LH relay. 2. Check headlamp LH relay. 3. Check harness between headlamp LH relay and headlamp battery saver control unit.
Headlamp RH (low and high beam) does not operate, but headlamp LH (low and high beam) does operate.	1. 15A fuse 2. Headlamp RH relay 3. Headlamp RH relay circuit	1. Check 15A fuse (No. 59, located in fusible link and fuse box). Verify battery positive voltage is present at terminals 2 and 3 of headlamp RH relay. 2. Check headlamp RH relay. 3. Check harness between headlamp RH relay and headlamp battery saver control unit.
LH high beam does not operate, but LH low beam operates.	1. Bulb 2. Open in the LH high beams circuit 3. Lighting switch 4. Lighting switch ground circuit	1. Check bulb. 2. Check harness between headlamp LH and lighting switch for open circuit. 3. Check lighting switch. 4. Check harness between lighting switch and ground.
LH low beam does not operate, but LH high beam operates.	1. Bulb 2. Open in the LH low beam circuit 3. Lighting switch 4. Lighting switch ground circuit	1. Check bulb. 2. Check harness between headlamp LH and lighting switch for open circuit. 3. Check lighting switch. 4. Check harness between lighting switch and ground.
RH high beam does not operate, but RH low beam operates.	1. Bulb 2. Open in the RH high beams circuit 3. Lighting switch 4. Lighting switch ground circuit	1. Check bulb. 2. Check harness between headlamp RH and lighting switch for open circuit. 3. Check lighting switch. 4. Check harness between lighting switch and ground.
RH low beam does not operate, but RH high beam operates.	1. Bulb 2. Open in the RH low beam circuit 3. Lighting switch 4. Lighting switch ground circuit	1. Check bulb. 2. Check harness between headlamp RH and lighting switch for open circuit. 3. Check lighting switch. 4. Check harness between lighting switch and ground.
High beam indicator does not work.	1. Bulb 2. Open in high beam circuit	1. Check bulb in combination meter. 2. Check the following. a. Harness between headlamp LH relay and combination meter for an open circuit b. Harness between high beam indicator and lighting switch

Symptom	Possible cause	Repair order
Battery saver control does not operate properly.	1. RAP signal circuit 2. Door switch LH or RH circuit 3. Lighting switch circuit 4. Headlamp battery saver control unit 5. Smart entrance control unit	1. Check harness between headlamp battery saver control unit terminal 10 and smart entrance control unit terminal 5 for open or short circuit. 2. Check the following. a. Harness between smart entrance control unit and LH or RH door switch for open or short circuit. b. LH or RH door switch ground circuit. c. LH or RH door switch. 3. Check the following. a. Harness between headlamp battery saver control unit terminals 5 or 13 and lighting switch terminal 11 for open or short circuit. b. Harness between lighting switch terminal 5 and ground. c. Lighting switch. 4. Check headlamp battery saver control unit. 5. Check smart entrance control unit. (EL-348)

Battery Saver Control Unit Inspection Table

NAEL0189S0201

Terminal No.	Wire color	Item	Condition			Voltage (Approximate value)
1	B/W	Ignition ON power supply	Ignition switch	OFF or ACC		Less than 1V
				ON or START		Battery voltage
2	PU/W	Headlamp relays (LH and RH)	Ignition switch (with lighting switch except OFF or 1ST)	OFF or ACC	More than 45 seconds after ignition switch is turned OFF or ACC	Battery voltage
					Within 45 seconds after ignition switch is turned OFF or ACC	Less than 1V
				ON or START		Less than 1V
			Headlamps illuminate by auto light control.			Less than 1V
3	L	Headlamp switch	Ignition switch ON	Lighting switch	Except PASS or 2ND	Battery voltage
					PASS or 2ND	Less than 1V
			Headlamps illuminate by auto light control.			Less than 1V
4	B	Ground	—			—
5	G	Tail lamp switch	Lighting switch	OFF		Battery voltage
				1ST or 2ND		Less than 1V
6	R	Tail lamp relay	Ignition switch (with lighting switch 1ST or 2ND)	OFF or ACC	More than 45 seconds after ignition switch is turned OFF or ACC	Battery voltage
					Within 45 seconds after ignition switch is turned OFF or ACC	Less than 1V
				ON or START		Less than 1V
			Headlamps illuminate by auto light control.			Less than 1V
7	G/R	Power supply	—			Battery voltage

Terminal No.	Wire color	Item	Condition			Voltage (Approximate value)
8	PU/W	Headlamp relays (LH and RH)	Ignition switch (with lighting switch except OFF or 1ST)	OFF or ACC	More than 45 seconds after ignition switch is turned OFF or ACC	Battery voltage
					Within 45 seconds after ignition switch is turned OFF or ACC	Less than 1V
				ON or START		Less than 1V
			Headlamps illuminate by auto light control.			Less than 1V
9	L	Headlamp switch	Ignition switch ON	Lighting switch	Except PASS or 2ND	Battery voltage
					PASS or 2ND	Less than 1V
			Headlamps illuminate by auto light control.			Less than 1V
10	R/Y	RAP signal	Ignition switch	OFF or ACC (After more than 45 seconds with ignition switch turned OFF or ACC)		Less than 1V
				ON or START		Battery voltage
11	B	Ground	—			—
13	G	Tail lamp switch	Lighting switch	OFF		Battery voltage
				1ST or 2ND		Less than 1V
14	R	Tail lamp relay	Ignition switch (with lighting switch 1ST or 2ND)	OFF or ACC	More than 45 seconds after ignition switch is turned OFF or ACC	Battery voltage
					Within 45 seconds after ignition switch is turned OFF or ACC	Less than 1V
				ON or START		Less than 1V
			Headlamps illuminate by auto light control.			Less than 1V

WITHOUT AUTO LIGHT SYSTEM

=NAEL0189S03

Symptom	Possible cause	Repair order
Neither headlamp operates.	1. 7.5A fuse 2. Lighting switch 3. Headlamp battery saver control unit	1. Check 7.5A fuse [No. 24, located in fuse block (J/B)]. Verify battery positive voltage is present at terminal 7 of headlamp battery saver control unit. 2. Check Lighting switch. 3. Check headlamp battery saver control unit.
Headlamp LH (low and high beam) does not operate, but headlamp RH (low and high beam) does operate.	1. Bulb 2. Headlamp LH ground circuit 3. 15A fuse 4. Headlamp LH relay 5. Headlamp LH relay circuit 6. Lighting switch 7. Headlamp battery saver control unit	1. Check bulb. 2. Check harness between headlamp LH and ground. 3. Check 15A fuse (No. 60, located in fusible link and fuse box). Verify battery positive voltage is present at terminals 2 and 3 of headlamp LH relay. 4. Check headlamp LH relay. 5. Check the following. a. Harness between headlamp LH relay and lighting switch. b. Harness between headlamp LH relay and headlamp battery saver control unit. 6. Check lighting switch. 7. Check headlamp battery saver control unit.
Headlamp RH (low and high beam) does not operate, but headlamp LH (low and high beam) does operate.	1. Bulb 2. Headlamp RH ground circuit 3. 15A fuse 4. Headlamp RH relay 5. Headlamp RH relay circuit 6. Lighting switch 7. Headlamp battery saver control unit	1. Check bulb. 2. Check harness between headlamp RH and ground. 3. Check 15A fuse (No. 59, located in fusible link and fuse box). Verify battery positive voltage is present at terminals 2 and 3 of headlamp RH relay. 4. Check headlamp RH relay. 5. Check the following. a. Harness between headlamp RH relay and lighting switch. b. Harness between headlamp RH relay and headlamp battery saver control unit. 6. Check lighting switch. 7. Check headlamp battery saver control unit.
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 harness between lighting switch and headlamp LH for an open circuit. 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 harness between lighting switch and headlamp LH for an open circuit. 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 harness between lighting switch and headlamp RH for an open circuit. 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 harness between lighting switch and headlamp RH for an open circuit. 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 the following. a. Harness between high beam indicator and ground. b. Harness between lighting switch and combination meter for an open circuit.

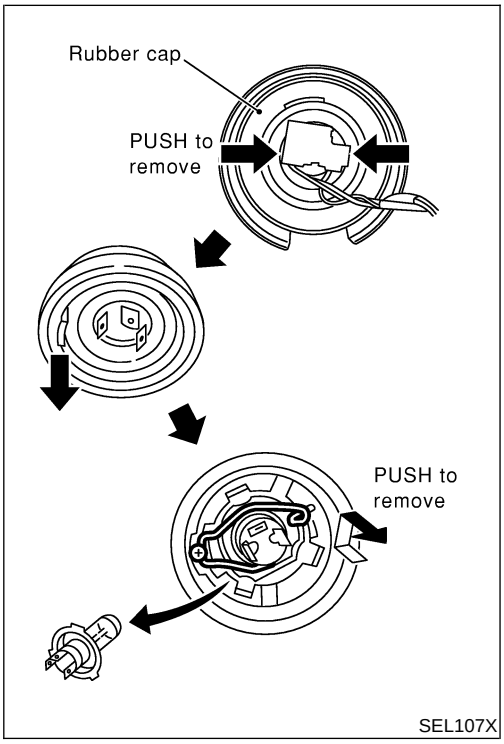
Symptom	Possible cause	Repair order
Battery saver control does not operate properly.	1. RAP signal circuit 2. Driver or passenger side door switch circuit 3. Lighting switch circuit 4. Headlamp battery saver control unit 5. Smart entrance control unit	1. Check harness between headlamp battery saver control unit terminal 10 and smart entrance control unit terminal 5 for open or short circuit. 2. Check the following. a. Harness between smart entrance control unit and driver or passenger side door switch for open or short circuit. b. Driver or passenger side door switch ground circuit. c. Driver or passenger side door switch. 3. Check the following. a. Harness between headlamp battery saver control unit terminals 5 or 13 and lighting switch terminal 11 for open or short circuit. b. Harness between lighting switch terminal 12 and ground. c. Lighting switch. 4. Check headlamp battery saver control unit. 5. Check smart entrance control unit. (EL-348)

Battery Saver Control Unit Inspection Table

NAEL0189S0301

Terminal No.	Item	Condition		Voltage (Approximate value)
1	Ignition ON power supply	Ignition switch	OFF or ACC	Less than 1V
			ON or START	Battery voltage
2	Headlamp LH relay	Ignition switch (with lighting switch OFF)	OFF or ACC	Battery voltage
			ON or START	Less than 1V
		Lighting switch (with ignition switch OFF)	OFF	Battery voltage
			1ST or 2ND	Less than 1V
3	Ground	—		—
4	Ground	—		—
5	Tail lamp switch	Lighting switch	OFF	Battery voltage
			1ST or 2ND	Less than 1V
6	Tail lamp relay	Ignition switch (with lighting switch OFF)	OFF or ACC	Battery voltage
			ON or START	Less than 1V
		Lighting switch (with ignition switch OFF)	OFF	Battery voltage
			1ST or 2ND	Less than 1V
7	Power supply	—		Battery voltage
8	Headlamp RH relay	Ignition switch (with lighting switch OFF)	OFF or ACC	Battery voltage
			ON or START	Less than 1V
		Lighting switch (with ignition switch OFF)	OFF	Battery voltage
			1ST or 2ND	Less than 1V
9	Ground	—		—

Terminal No.	Item	Condition		Voltage (Approximate value)
10	RAP signal	Ignition switch	OFF or ACC (After more than 45 seconds with ignition switch turned OFF or ACC)	Less than 1V
			ON or START	Battery voltage
11	Ground	—		—
13	Tail lamp switch	Lighting switch	OFF	Battery voltage
			1ST or 2ND	Less than 1V
14	Tail lamp relay	Ignition switch (with lighting switch OFF)	OFF or ACC	Battery voltage
			ON or START	Less than 1V
		Lighting switch (with ignition switch OFF)	OFF	Battery voltage
			1ST or 2ND	Less than 1V



Bulb Replacement

NAEL0190

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. Pull off the rubber cap.
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.

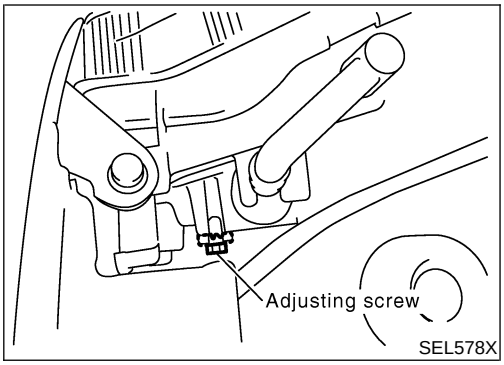
Aiming Adjustment

NAEL0191

Before performing aiming adjustment, check the following.

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

1) Keep all tires inflated to correct pressures.
2) Place vehicle 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).

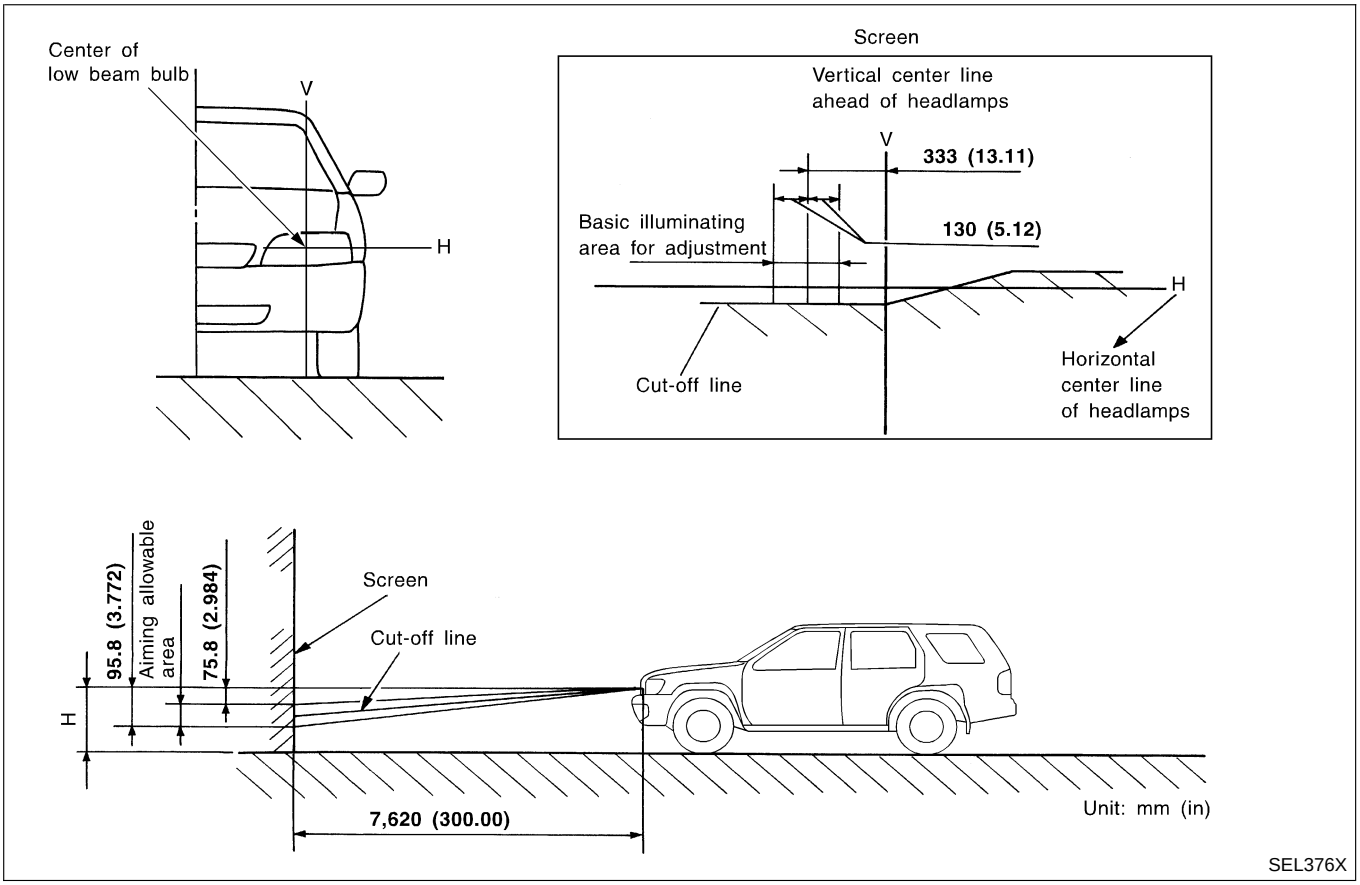


LOW BEAM

NAEL0191S01

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.**

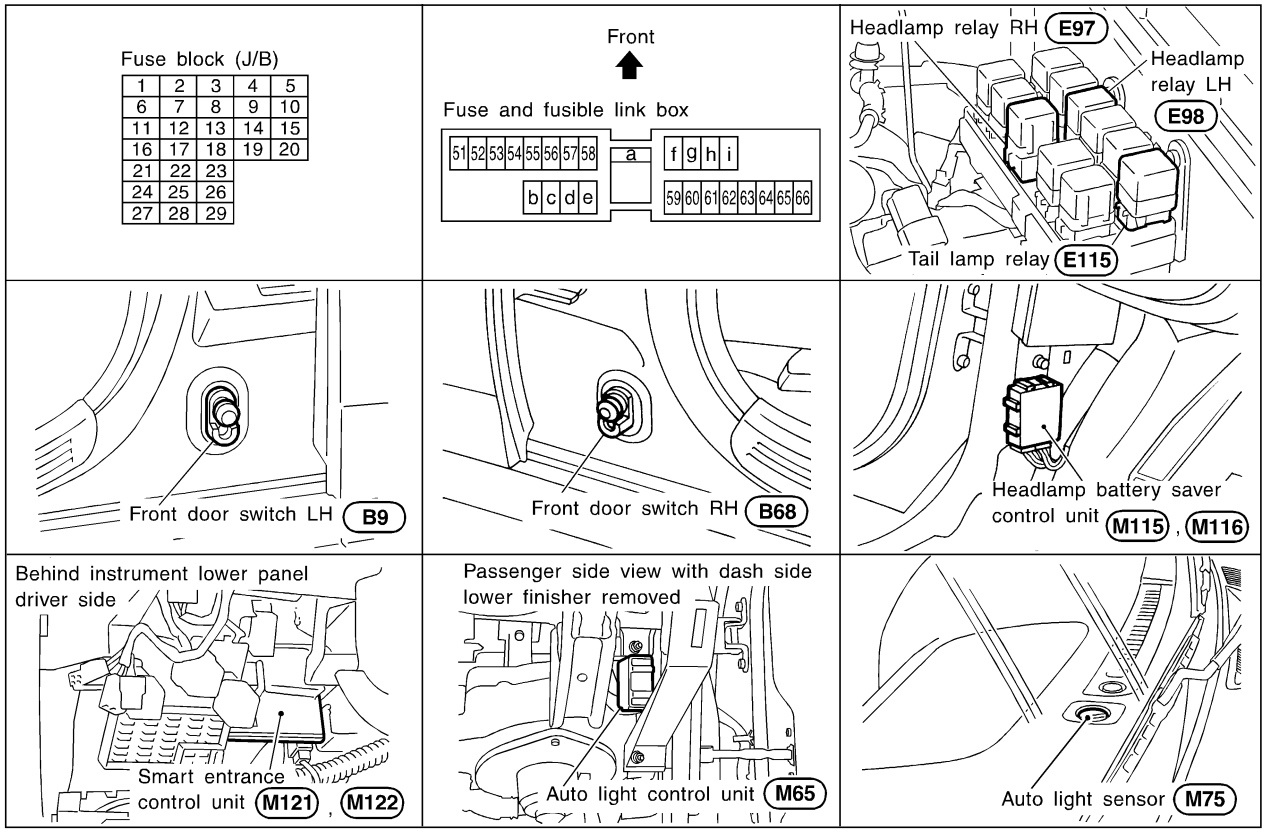


If the vehicle front body has been repaired and/or the headlamp assembly has been replaced, check aiming. Use the aiming chart shown in the figure.

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

Component Parts and Harness Connector Location

NAEL0161



SEL460X

System Description

NAEL0192

WITH AUTO LIGHT SYSTEM

NAEL0192S06

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

And battery saver system is controlled by the headlamp battery saver control unit and smart entrance control unit.

Power is supplied at all times

- to headlamp LH relay terminals 2 and 3
- through 15A fuse (No. 60, located in the fuse and fusible link box), and
- to headlamp RH relay terminals 2 and 3
- through 15A fuse (No. 59, located in the fuse and fusible link box), and
- to headlamp battery saver control unit terminal 7, and
- to smart entrance control unit terminal 10
- through 7.5A fuse [No. 24, located in the fuse block (J/B)].

Ground is supplied

- to daytime light control unit terminal 16,
- to auto light control unit terminal 5 and
- to headlamp battery saver control unit terminals 4 and 11.

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

- to daytime light control unit terminal 3,
- to auto light control unit terminal 1,
- to headlamp battery saver control unit terminal 10, and

- to smart entrance control unit terminal 33
- through 7.5A fuse [No. 11, located in the fuse block (J/B)], and
- to headlamp battery saver control unit terminal 1
- through 10A fuse [No. 16, 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 2
- through 7.5A fuse [No. 26, located in the fuse block (J/B)].

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

- to auto light control unit terminal 2
- through 10A fuse [No. 9, located in the fuse block (J/B)].

Headlamp Operation

NAEL0192S0601

Power Supply to Low Beam and High Beam

When lighting switch is in 2ND or PASS position, ground is supplied

- to headlamp relay (LH and RH) terminal 1 from headlamp battery saver control unit terminals 2 and 8
- through headlamp battery saver control unit terminal 3 and 9
- from lighting switch terminal 12.

Headlamp relays (LH and RH) are energized.

Low Beam Operation

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

- to terminal 3 of headlamp LH
- through daytime light control unit terminals 6 and 5
- from headlamp relay LH terminal 5, and
- to terminal 3 of headlamp RH
- through daytime light control unit terminals 7 and 4
- from headlamp relay RH terminal 5.

Ground is supplied

- to terminal 2 of headlamp LH
- through daytime light control unit terminals 11 and 12
- through lighting switch terminals 10 and 8,
- through body grounds E13 and E41, and
- to terminal 2 of headlamp RH
- through daytime light control unit terminals 8 and 15
- through lighting switch terminals 9 and 8

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

High Beam Operation/Flash-to-pass Operation

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

- to terminal 3 of headlamp LH
- through daytime light control unit terminals 6 and 5
- from headlamp relay LH terminal 5
- to terminal 3 of headlamp RH
- through daytime light control unit terminals 7 and 4
- from headlamp relay RH terminal 5, and
- to combination meter terminal 26 for HIGH BEAM indicator
- from headlamp LH relay terminal 5.

Ground is supplied

- to terminal 1 of headlamp LH
- through daytime light control unit terminals 10 and 13, and
- to combination meter terminal 27 for the HIGH BEAM indicator
- through lighting switch terminals 6 and 5
- through body grounds E13 and E41, and
- to terminal 1 of headlamp RH
- through daytime light control unit terminals 9 and 14

- through lighting switch terminals 9 and 8
- through body grounds E13 and E41.

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

Battery Saver Control

NAEL0192S0602

When the ignition switch is turned from ON (or START) to OFF (or ACC) positions while headlamps are illuminated, The RAP signal is supplied to terminal 10 of the headlamp battery saver control unit from smart entrance control unit terminal 5.
After counting 45 seconds by the RAP signal from the smart entrance control unit to headlamp battery saver control unit, the ground supply to terminal 2 of headlamp LH and RH relays from headlamp battery saver control unit terminals 2 and 8 is terminated.
Then headlamps are turned off.
The headlamps are turned off when LH or RH door is opened even if 45 seconds have not passed after the ignition switch is turned from ON (or START) to OFF (or ACC) positions while headlamps are illuminated.
When the lighting switch is turned from OFF to 2ND after headlamps are turned to off by the battery saver control, ground is supply

- to headlamp battery saver control unit terminals 5 and 13 from lighting switch terminal 11, and
- to headlamp LH and RH relays terminal 2 from headlamp battery saver control unit terminals 2 and 8
- through headlamp battery saver control unit terminals 3 and 9, and
- through lighting switch terminal 12.

Then headlamps illuminate again.

Auto Light Operation

NAEL0192S0603

For auto light operation, refer to "HEADLAMP" (EL-34).

Daytime Light Operation

NAEL0192S0604

With the engine running, the lighting switch in the OFF or 1ST position and parking brake released, power is supplied

- through daytime light control unit terminals 3 and 7
- to terminal 3 of headlamp RH
- through terminal 1 of headlamp RH
- to daytime light control unit terminal 9
- through daytime light control unit terminal 6
- to terminal 3 of headlamp LH.

Ground is supplied to terminal 1 of headlamp LH.

- through daytime light control unit terminals 10 and 16
- through body grounds E13 and E41.

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

Operation

=NAEL0192S0605

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

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

A: "HIGH BEAM" position

B: "LOW BEAM" position

C: "FLASH TO PASS" position

O : Lamp "ON"

X : Lamp "OFF"

△ : Lamp dims. (Added functions)

*: When starting the engine with the parking brake released, the daytime light will come ON.
When starting the engine with the parking brake pulled, the daytime light won't come ON.

WITHOUT AUTO LIGHT SYSTEM

=NAEL0192S07

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

And battery saver system is controlled by the headlamp battery saver control unit and smart entrance control unit.

Power is supplied at all times

- to daytime light control unit terminal 3, and
- to headlamp LH relay terminals 2 and 3
- through 15A fuse (No. 60, located in the fuse and fusible link box), and
- to daytime light control unit terminal 2 and
- to headlamp RH relay terminals 2 and 3
- through 15A fuse (No. 59, located in the fuse and fusible link box), and
- to headlamp battery saver control unit terminal 7 and
- to smart entrance control unit terminal 10
- through 7.5A fuse [No. 24, located in the fuse block (J/B)].

Ground is supplied

- to daytime light control unit terminal 9
- through body grounds E13 and E41, and
- to headlamp battery saver control unit terminals 4, and 3, 9 and 11
- through body grounds M77 and M111, and M4, M66 and M147.

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

- to daytime light control unit terminal 12,
- to headlamp battery saver control unit terminal 10, and
- to smart entrance control unit terminal 33
- through 7.5A fuse [No. 11, located in the fuse block (J/B)], and
- to headlamp battery saver control unit terminal 1
- through 10A fuse [No. 16, 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 1
- through 7.5A fuse [No. 26, located in the fuse block (J/B)].

Headlamp Operation

NAEL0192S0701

When Ignition Switch is in ON or START Position

Ground is supplied

- to headlamp LH relay terminal 1 from headlamp battery saver control unit terminal 2
- through headlamp battery saver control unit terminal 3, and
- to headlamp RH relay terminal 1 from headlamp battery saver control unit terminal 8
- through headlamp battery saver control unit terminal 9, and
- through body grounds M4, M66 and M147.

Headlamp relays (LH and RH) are then energized.

When Ignition Switch is in OFF or ACC Position

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

- to headlamp battery saver control unit terminals 5 and 13
- from lighting switch terminal 11.

And then, ground is also supplied to headlamp LH and RH relays terminal 1 from headlamp battery saver control unit. Headlamp relays (LH and RH) are then energized.

Low Beam Operation

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

- from lighting switch terminal 7
- to headlamp RH terminal 2
- to daytime light control unit terminal 4.

Ground is supplied to headlamp RH terminal 3 through body grounds E13 and E41.
Also, when the lighting switch is turned to the 2ND position and placed in LOW ("B") position, power is supplied

- from lighting switch terminal 10
- to headlamp LH terminal 2.

Ground is supplied

- to headlamp LH terminal 3
- from daytime light control unit terminal 7
- through daytime light control unit terminal 9
- through body grounds E13 and E41.

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

High Beam Operation/Flash-to-pass Operation

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

- from lighting switch terminal 6
- to terminal 1 of RH headlamp, and
- from lighting switch terminal 9
- to daytime light control terminal 5
- to combination meter terminal 26 for the high beam indicator, and
- through daytime light control terminal 5
- to terminal 1 of headlamp LH.

Ground is supplied in the same manner as low beam operation.
Ground is supplied to terminal 19 of the combination meter through body grounds M77 and M111.
With power and ground supplied, the high beam headlamps and HI BEAM indicator illuminate.

Battery Saver Control

NAEL0192S0702

When the ignition switch is turned from ON (or START) to OFF (or ACC) positions while headlamps are illuminated, The RAP signal is supplied to terminal 10 of the headlamp battery saver control unit from smart entrance control unit terminal 5.
After counting 45 seconds by the RAP signal from the smart entrance control unit to headlamp battery saver control unit, the ground supply to terminal 1 of headlamp LH and RH relays from headlamp battery saver control unit terminals 2 and 8 is terminated.
Then headlamps are turned off.
The headlamps are turned off when driver or passenger side door is opened even if 45 seconds have not passed after the ignition switch is turned from ON (or START) to OFF (or ACC) positions while headlamps are illuminated.
When the lighting switch is turned from OFF to 2ND after headlamps are turned to off by the battery saver control, ground is supply

- to headlamp battery saver control unit terminals 5 and 13 from lighting switch terminal 11, and
- to headlamp LH and RH relays terminal 1 from headlamp battery saver control unit terminals 2 and 8.

Then headlamps illuminate again.

Daytime Light Operation

NAEL0192S0703

With the engine running, the lighting switch in the OFF or 1ST position and parking brake released, power is supplied

- through daytime light control unit terminal 6
- to terminal 1 of headlamp LH, and
- through terminal 3 of headlamp LH
- to daytime light control unit terminal 7, and
- through daytime light control unit terminal 8
- to terminal 1 of headlamp RH.

Ground is supplied to terminal 3 of headlamp RH through body grounds E13 and E41.
Because the high beam headlamps are now wired in series, they operate at half illumination.

Operation

=NAEL0192S0704

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

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

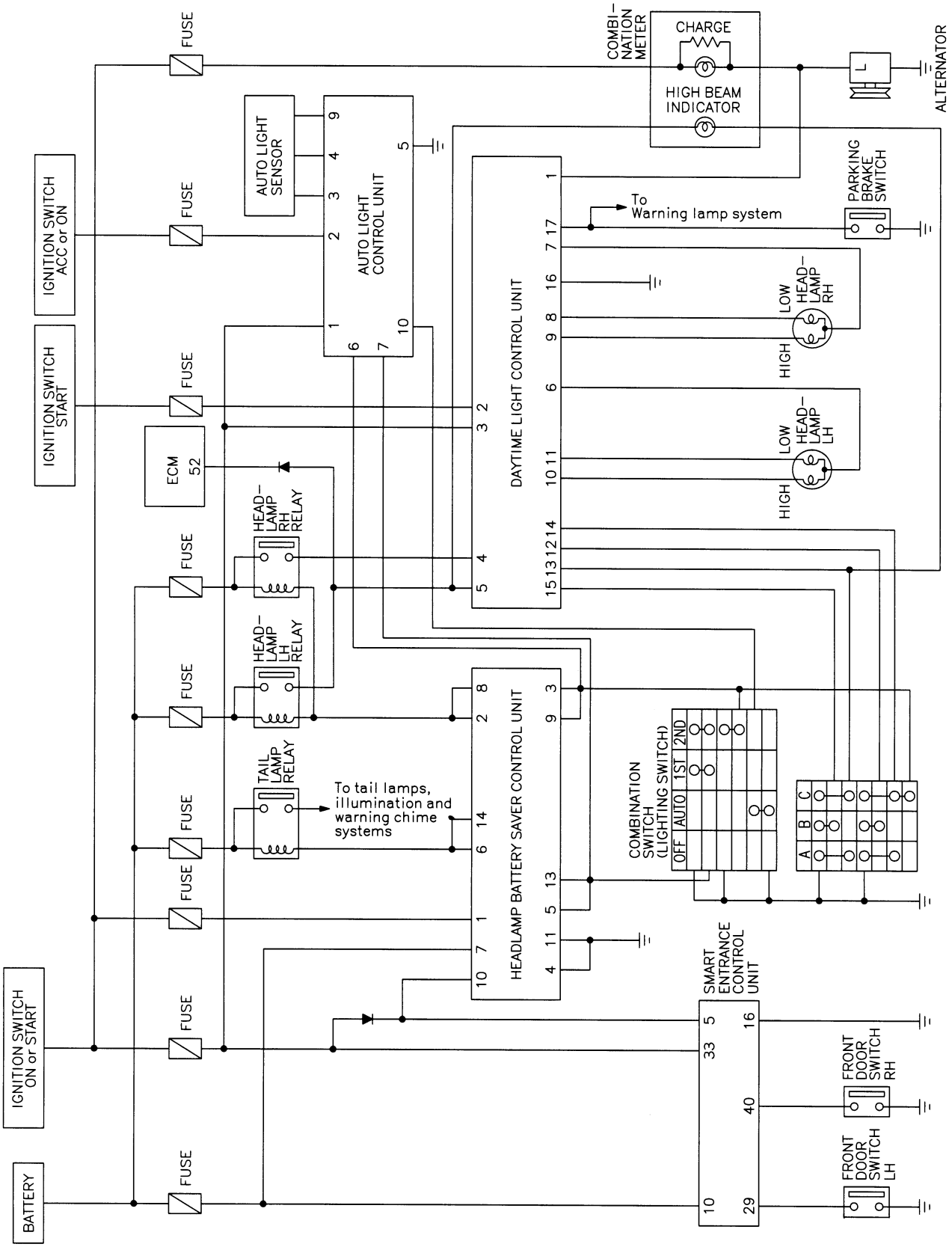
A: "HIGH BEAM" position
B: "LOW BEAM" position
C: "FLASH TO PASS" position
O : Lamp "ON"
X : Lamp "OFF"
△ : Lamp dims. (Added functions)
*: When starting the engine with the parking brake released, the daytime light will come ON.
When starting the engine with the parking brake pulled, the daytime light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

Schematic

NAEL0019

WITH AUTO LIGHT SYSTEM

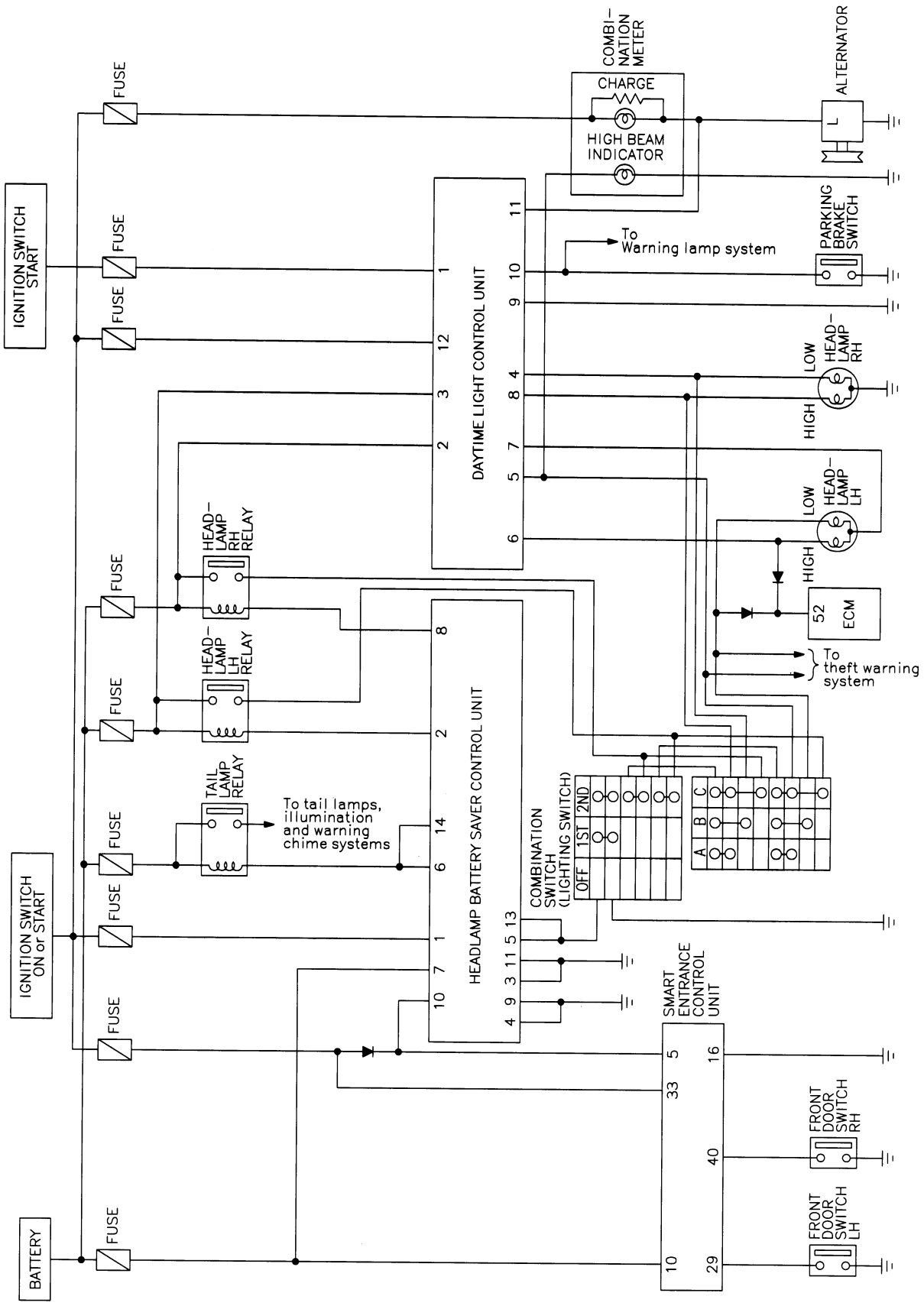
NAEL0019S01



MEL989L

WITHOUT AUTO LIGHT SYSTEM

NAEL0019S02



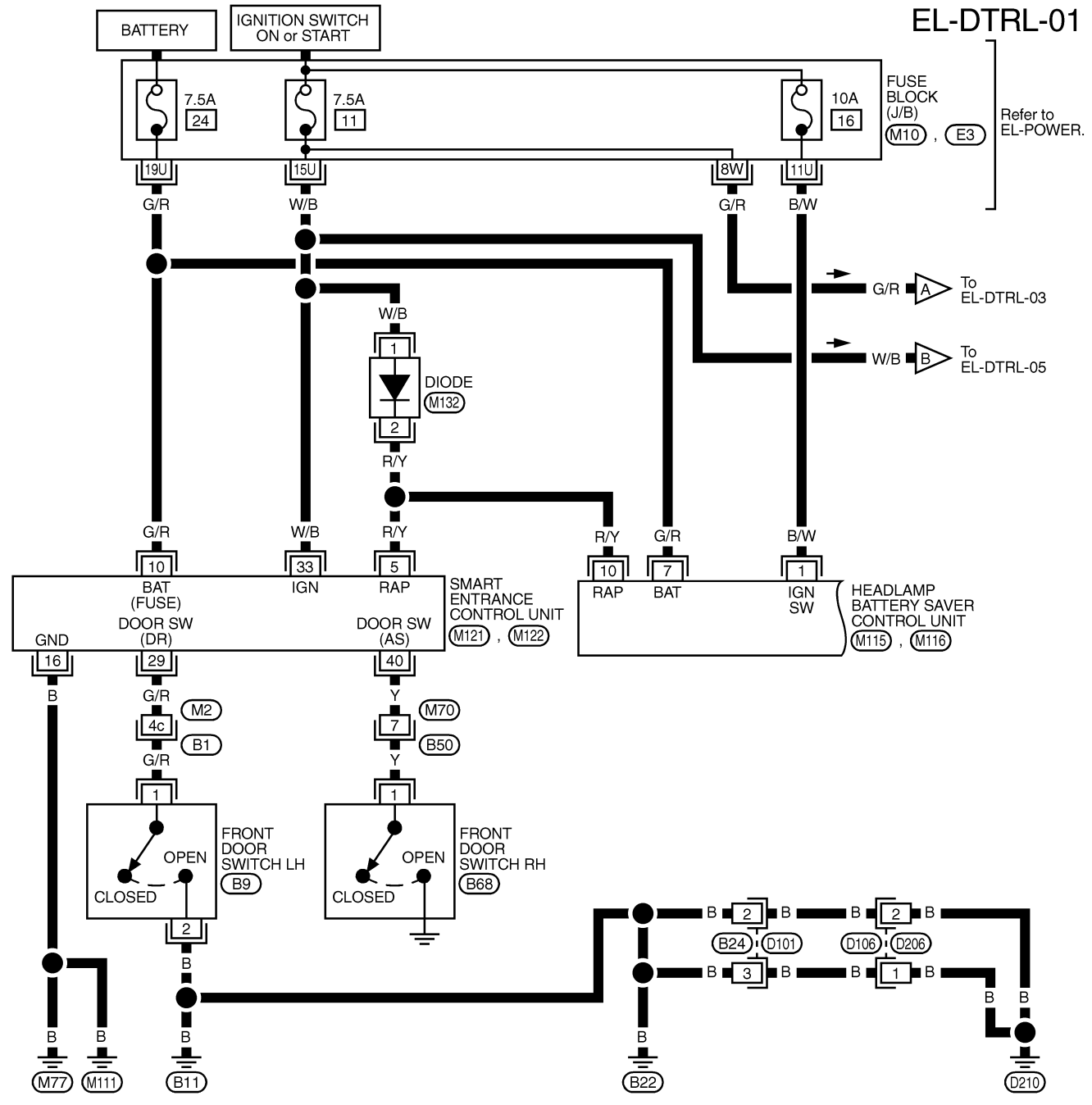
MEL994L

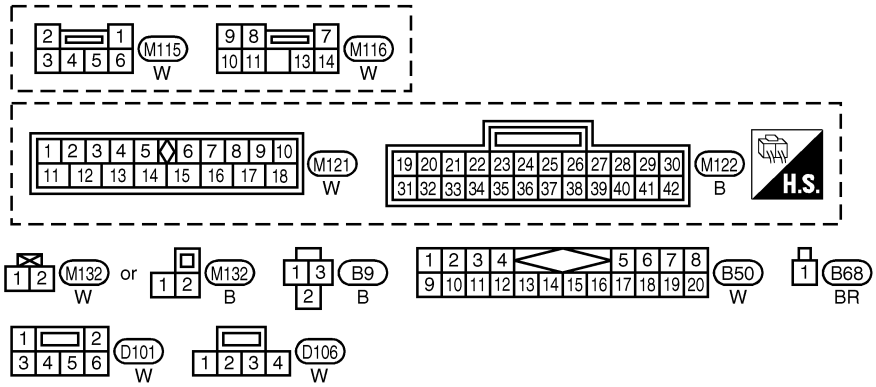
Wiring Diagram — DTRL —

NAEL0020

WITH AUTO LIGHT SYSTEM

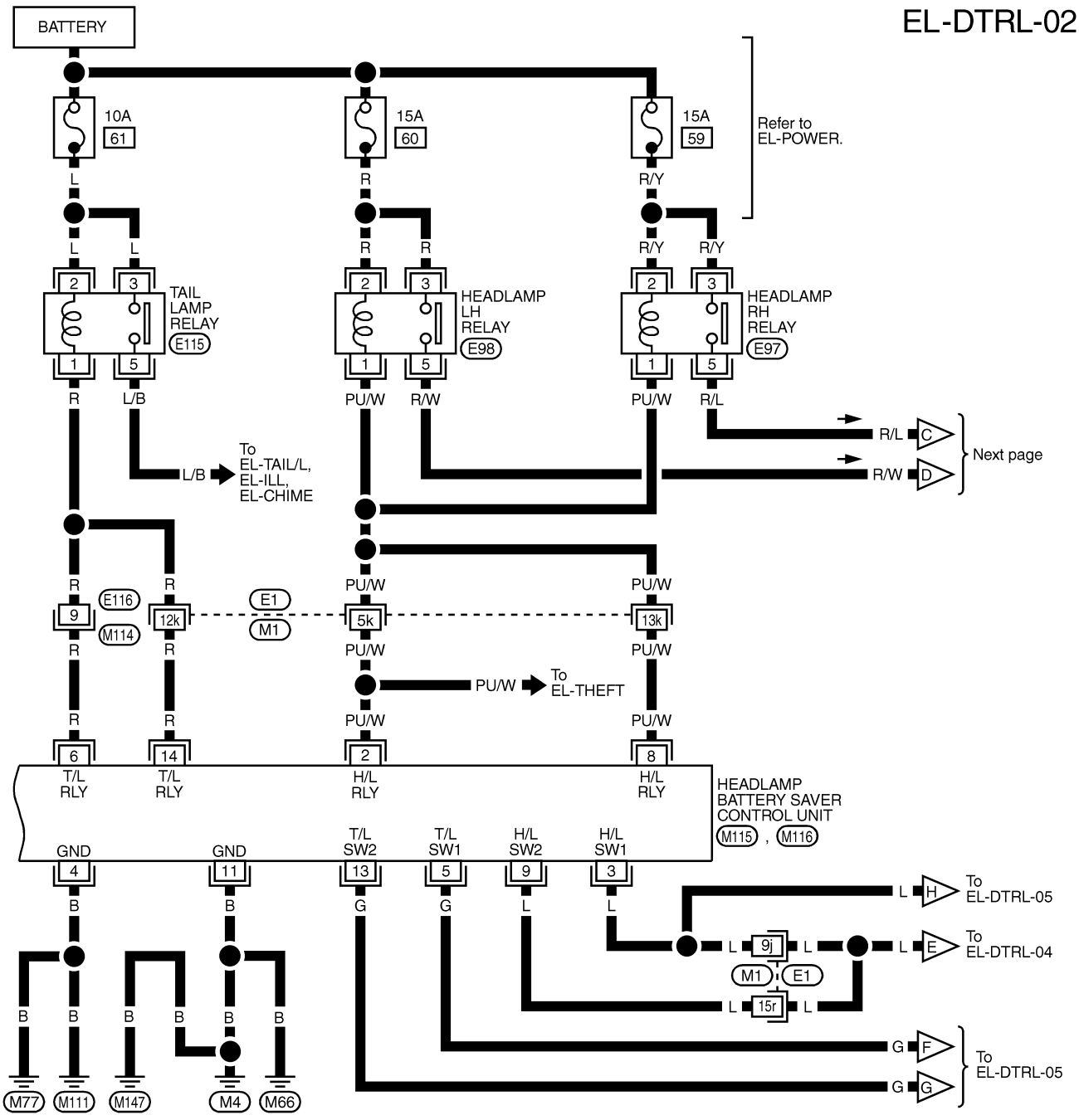
NAEL0020S01

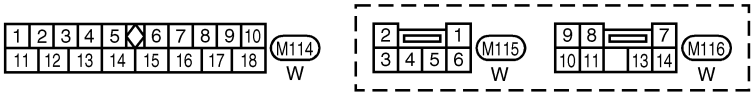


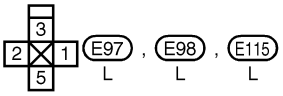


REFER TO THE FOLLOWING.
B1 -SUPER MULTIPLE JUNCTION (SMJ)
M10 , E3 -FUSE BLOCK-JUNCTION BOX (J/B)

MEL013O





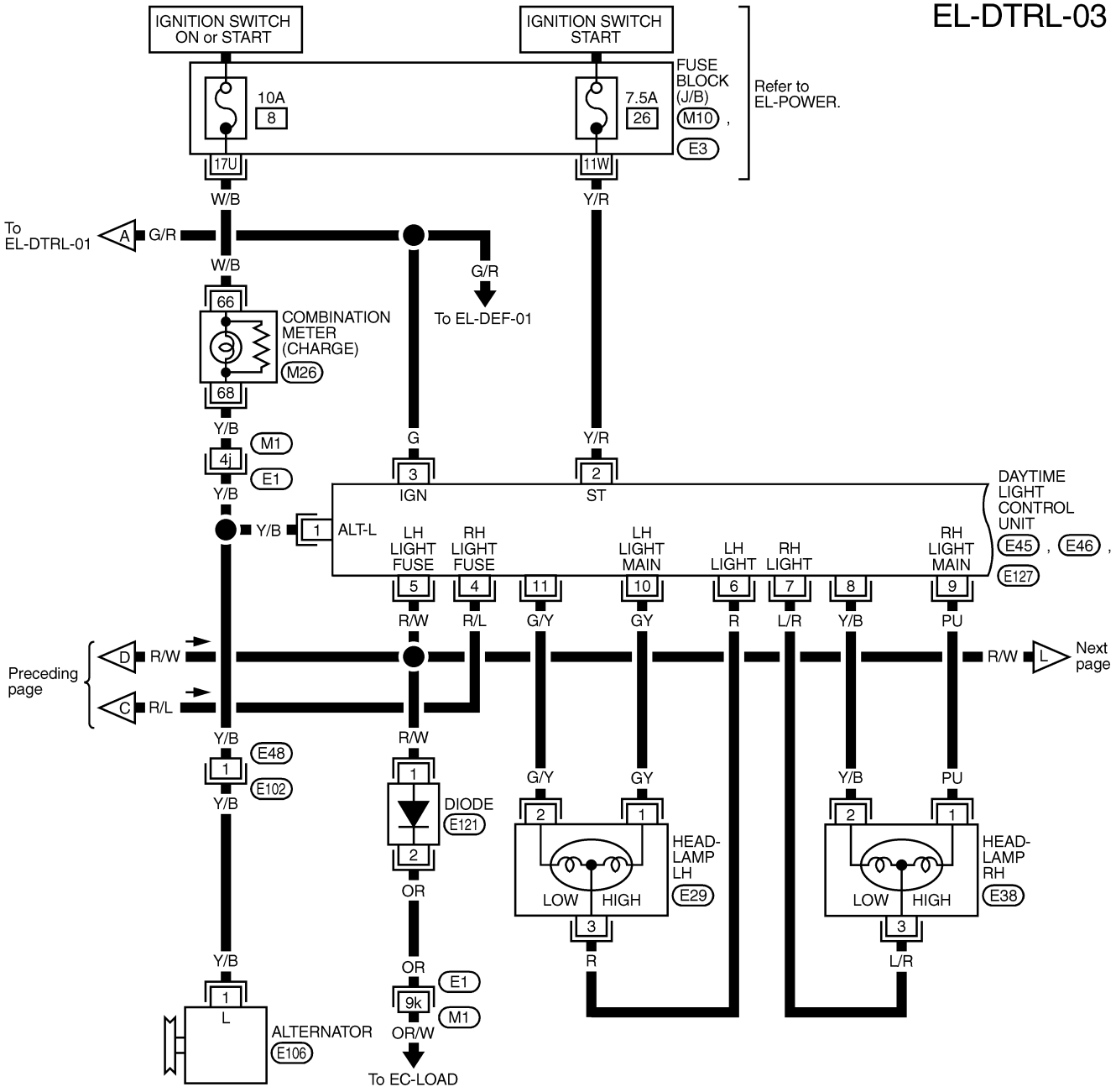


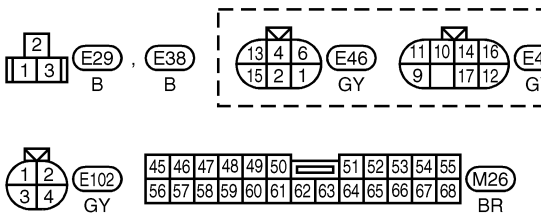
REFER TO THE FOLLOWING.
E1 -SUPER
MULTIPLE JUNCTION (SMJ)

MEL990L

Wiring Diagram — DTRL — (Cont'd)

EL-DTRL-03

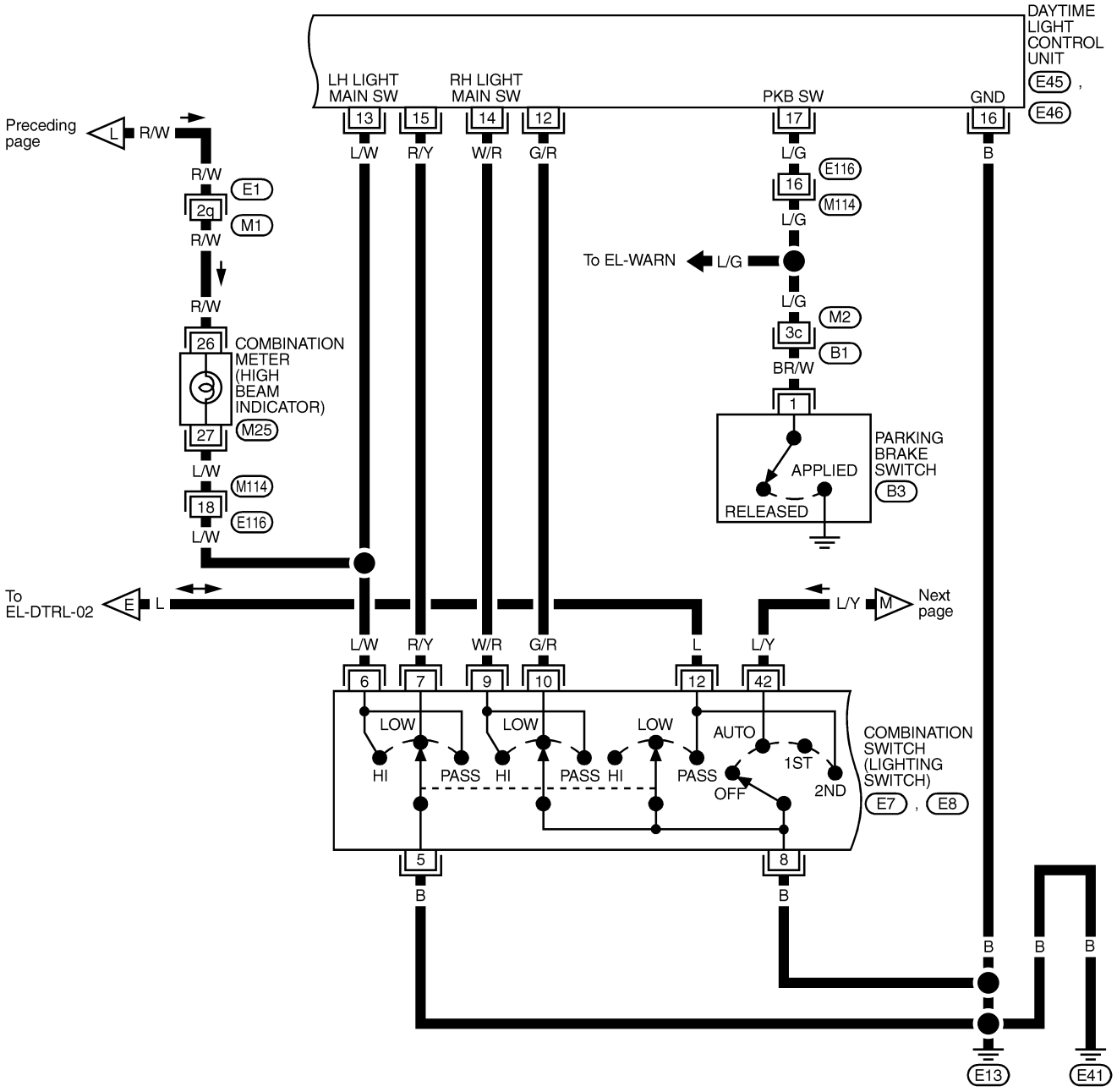


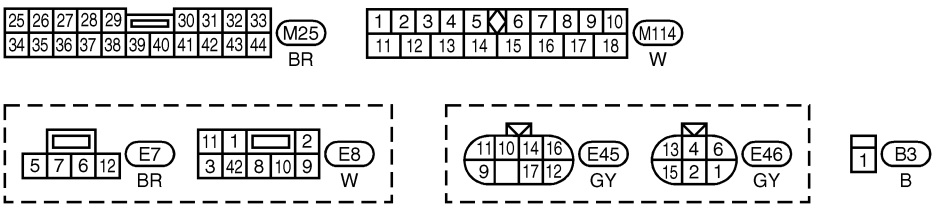


REFER TO THE FOLLOWING.
E1 -SUPER MULTIPLE JUNCTION (SMJ)
M10 , E3 -FUSE BLOCK-JUNCTION (J/B)

MEL991L

EL-DTRL-04

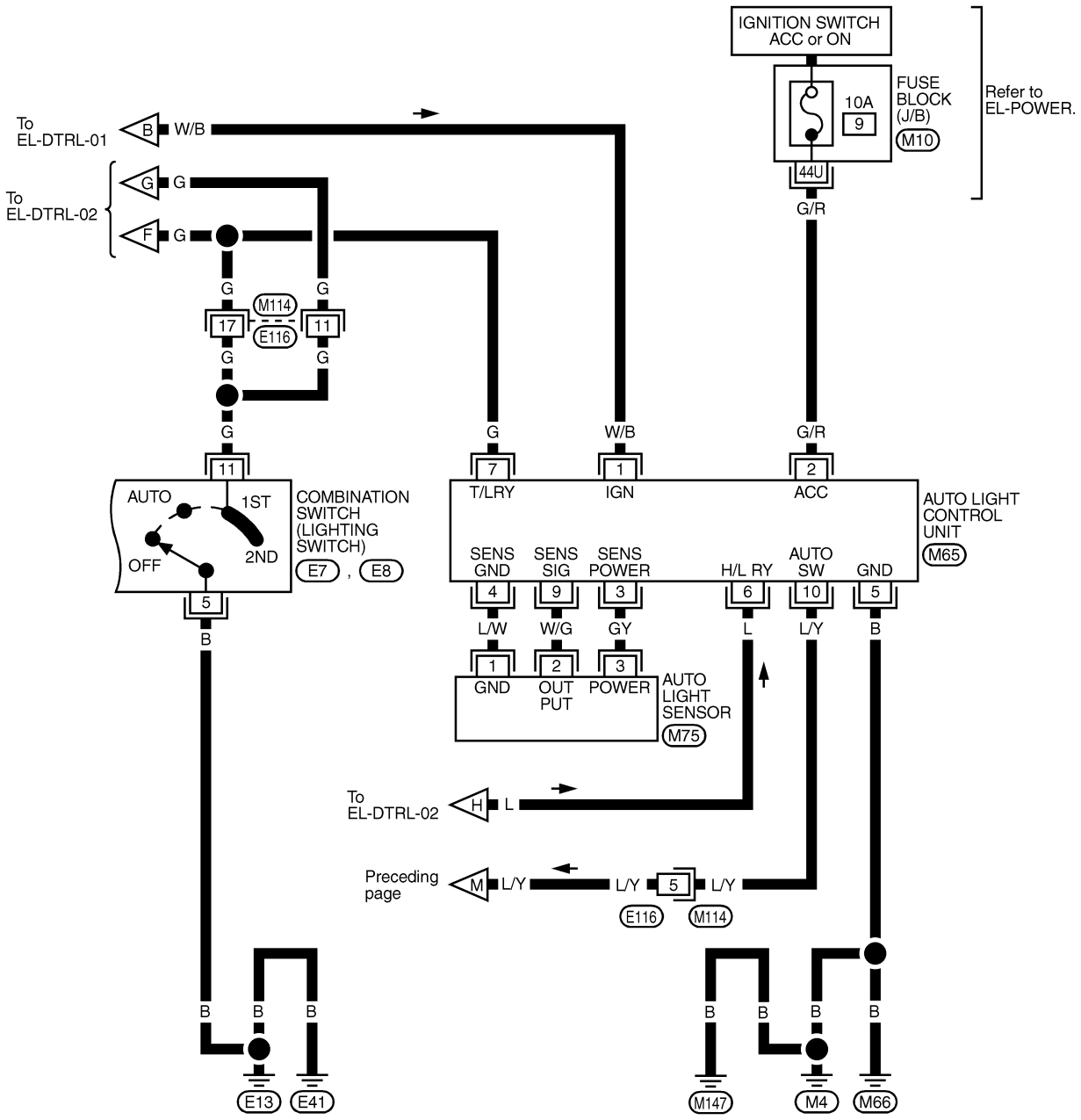


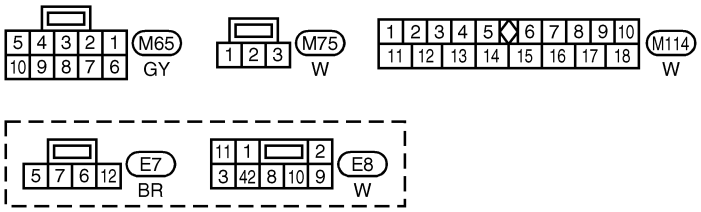


REFER TO THE FOLLOWING.
E1 , B1 -SUPER MULTIPLE JUNCTION (SMJ)

MEL992L

EL-DTRL-05



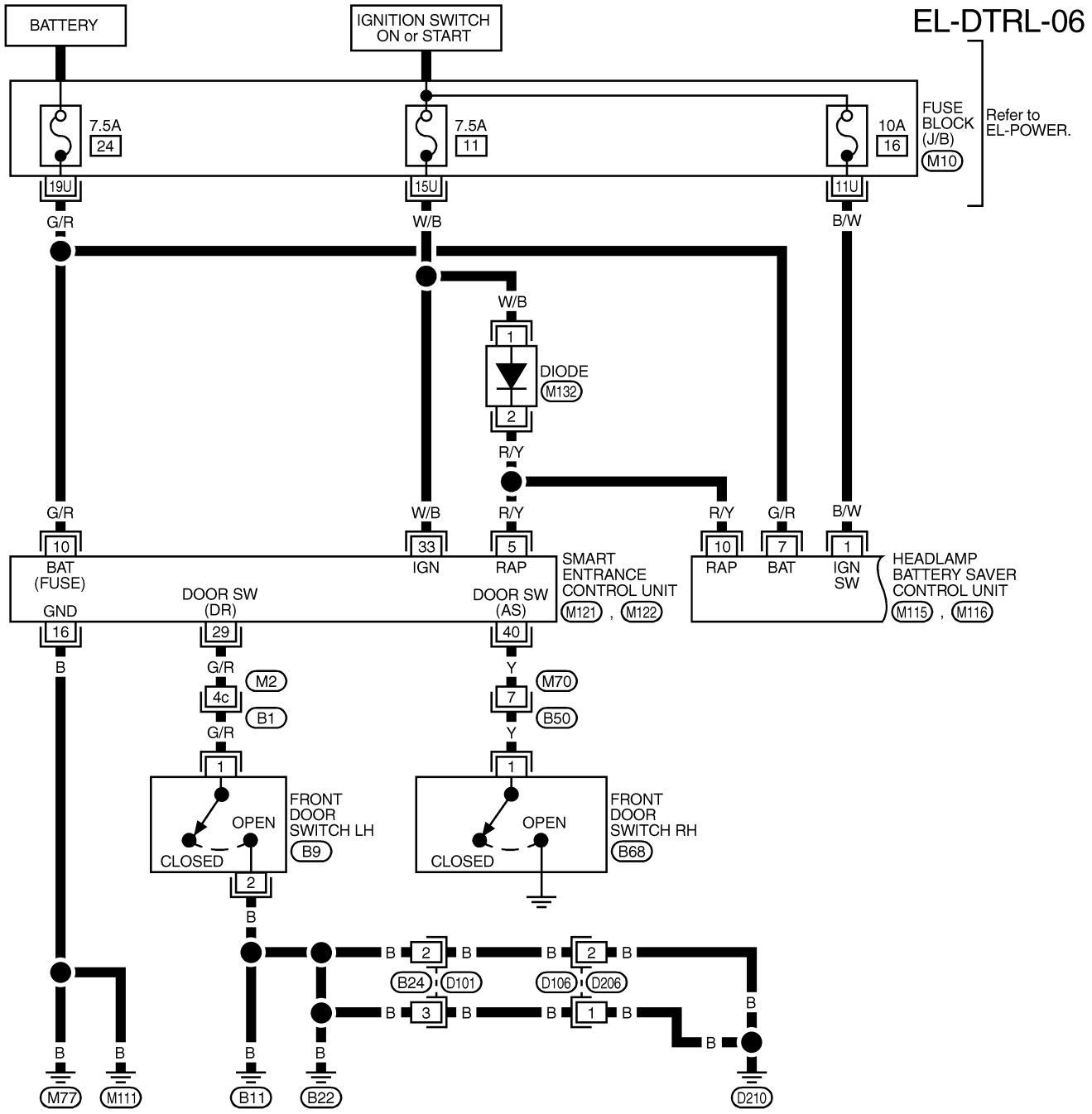


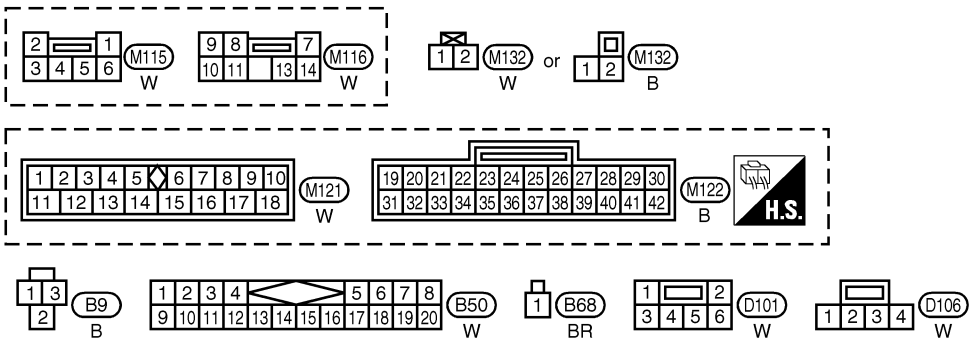
REFER TO THE FOLLOWING.
M10 -FUSE BLOCK-
JUNCTION BOX (J/B)

MEL993L

WITHOUT AUTO LIGHT SYSTEM

NAEL0020S02



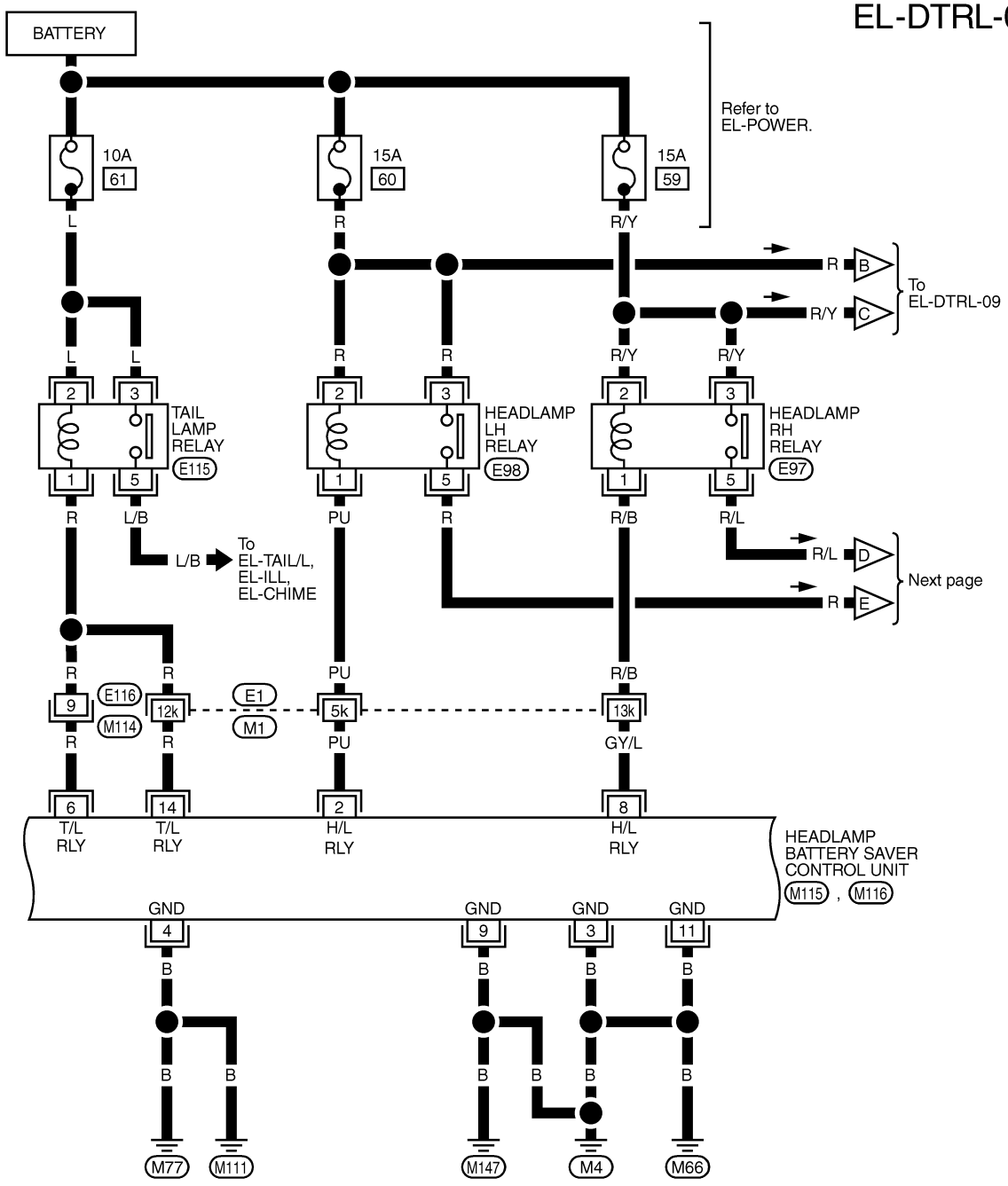


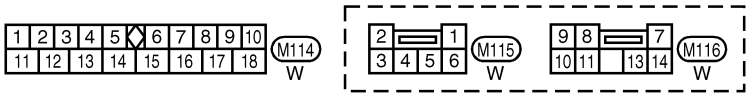
REFER TO THE FOLLOWING.
B1 -SUPER MULTIPLE JUNCTION (SMJ)
M10 -FUSE BLOCK-JUNCTION BOX (J/B)

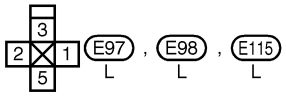
MEL014O

Wiring Diagram — DTRL — (Cont'd)

EL-DTRL-07





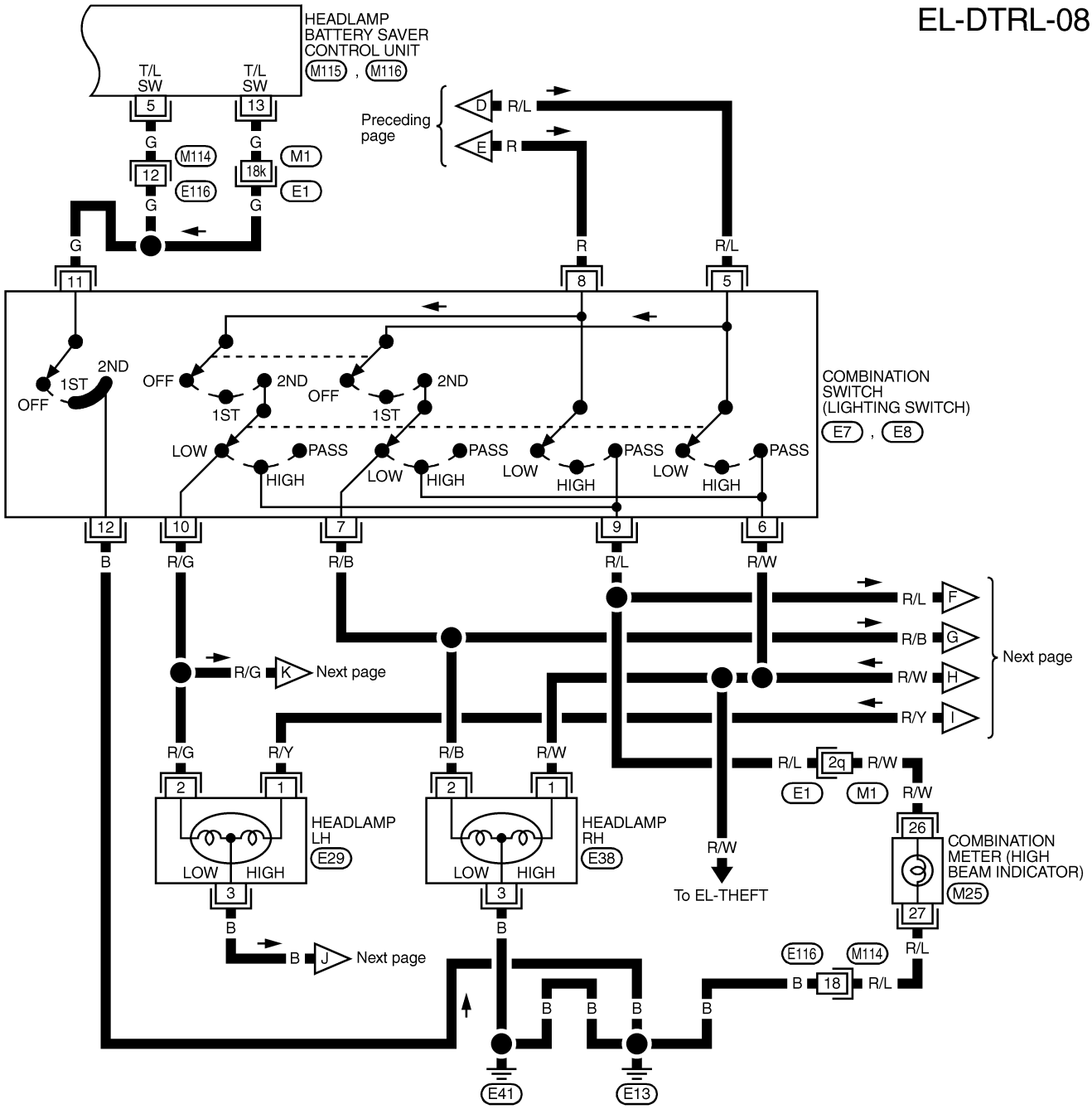


REFER TO THE FOLLOWING.

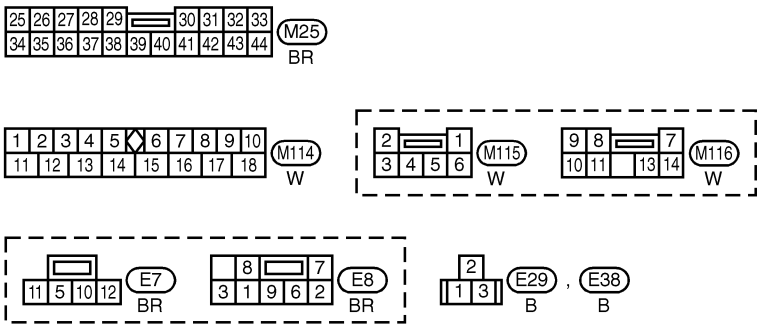
E1 -SUPER MULTIPLE JUNCTION (SMJ)

MEL996L

EL-DTRL-08

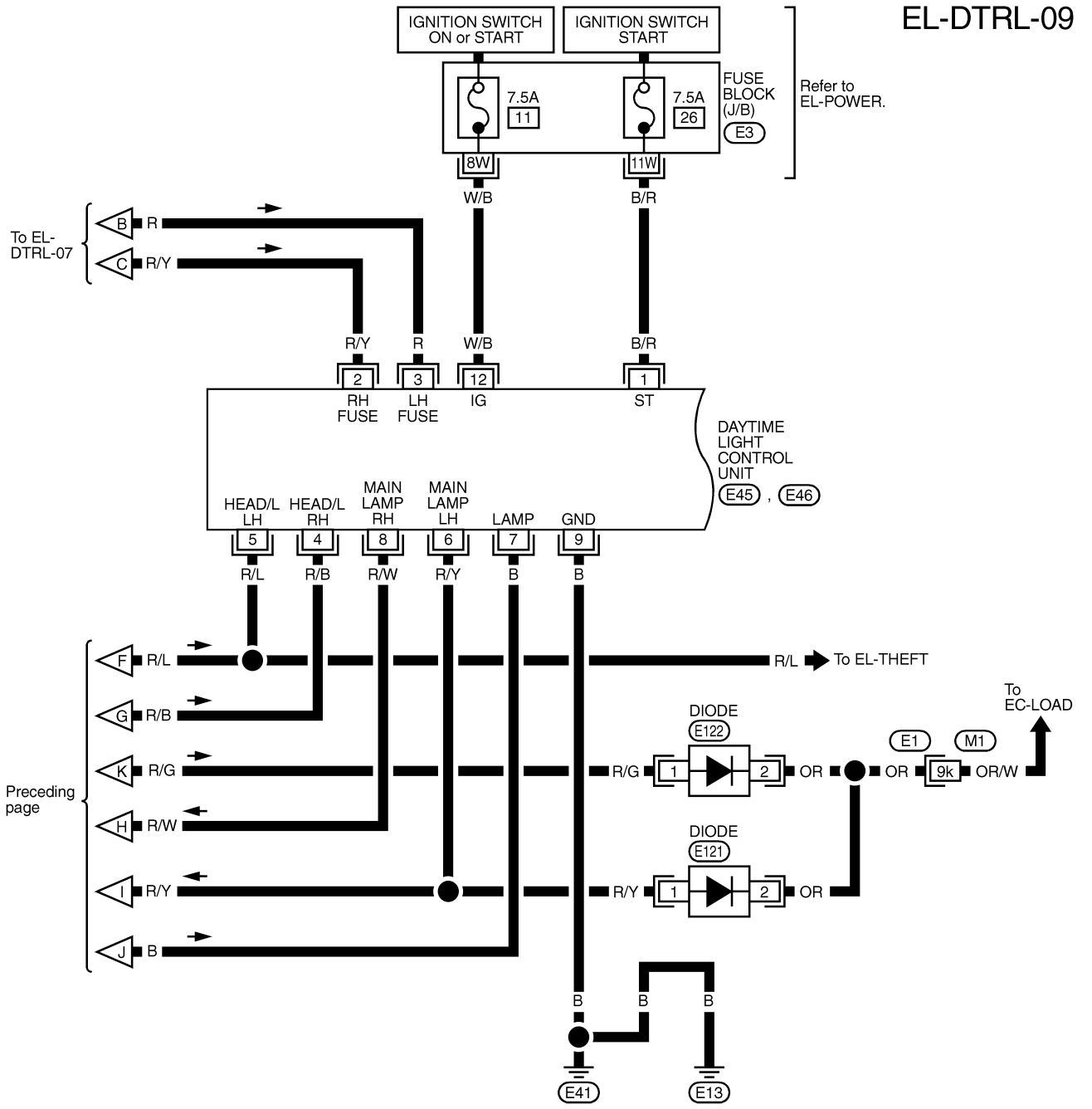


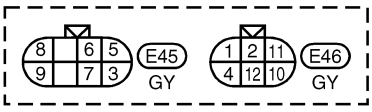
REFER TO THE FOLLOWING.
E1 -SUPER MULTIPLE JUNCTION (SMJ)

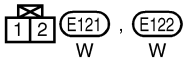


MEL997L

Wiring Diagram — DTRL — (Cont'd)



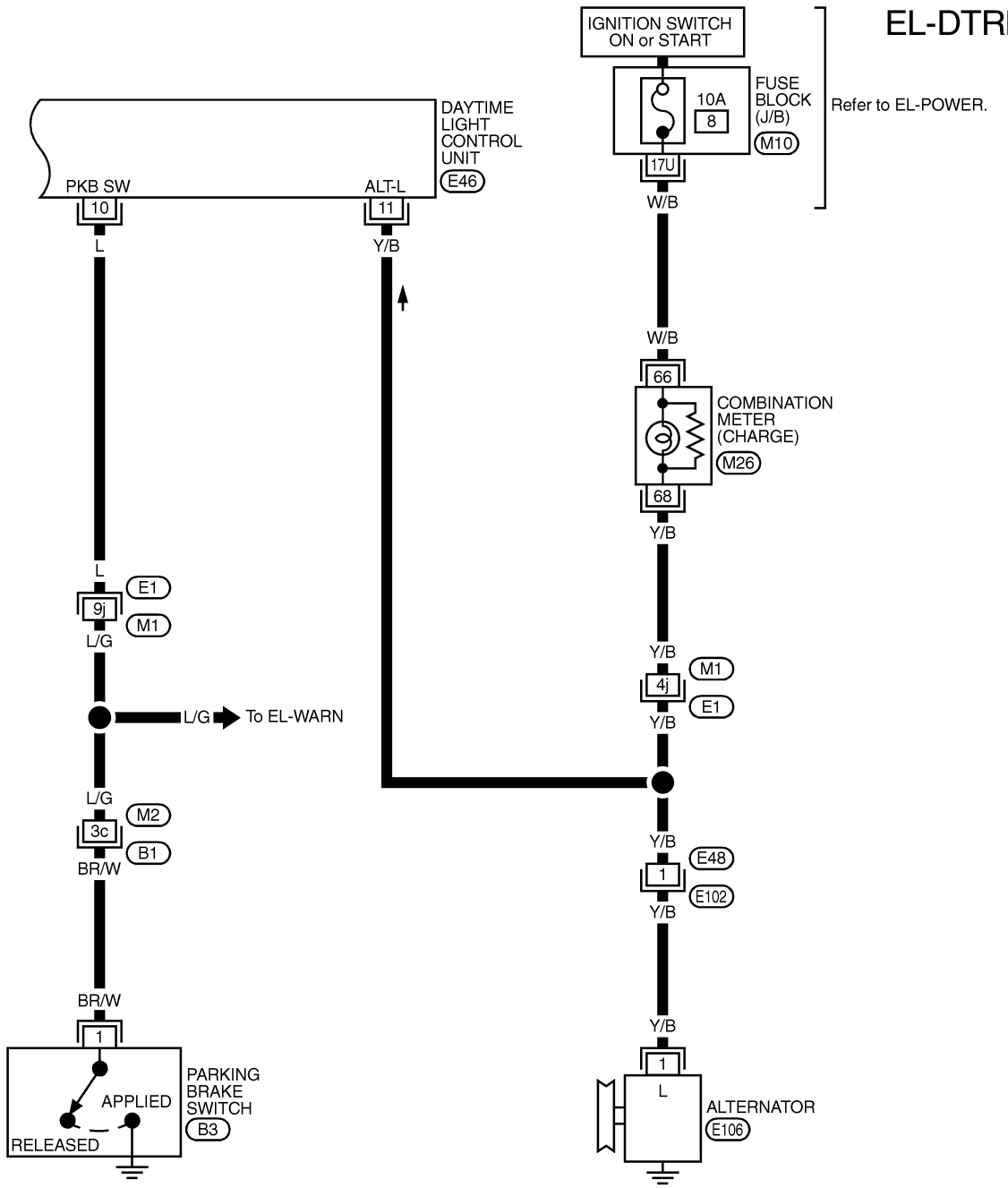


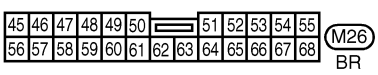


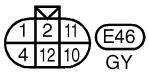
REFER TO THE FOLLOWING.
E1 -SUPER MULTIPLE JUNCTION (SMJ)
E3 -FUSE BLOCK-JUNCTION BOX (J/B)

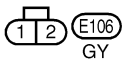
MEL998L

EL-DTRL-10









REFER TO THE FOLLOWING.
(E1) , (B1) -SUPER MULTIPLE JUNCTION (SMJ)
(M10) -FUSE BLOCK-JUNCTION BOX (J/B)

MEL999L

Trouble Diagnoses

NAEL0193

NAEL0193S03

WITH AUTO LIGHT SYSTEM

Daytime Light Control Unit Inspection Table

NAEL0193S0301

Terminal No.	Wire color	Item	Condition		Voltage (Approximate values)
1	Y/B	Alternator		When turning ignition switch to “ON”	Less than 1V
				When engine is running	Battery voltage
				When turning ignition switch to “OFF”	Less than 1V
2	Y/R	Start signal		When turning ignition switch to “ST”	Battery voltage
				When turning ignition switch to “ON” from “ST”	Less than 1V
				When turning ignition switch to “OFF”	Less than 1V
3	G	Power source		When turning ignition switch to “ON”	Battery voltage
				When turning ignition switch to “ST”	Battery voltage
				When turning ignition switch to “OFF”	Less than 1V
4	R/L	Power source		When turning ignition switch to “ON”	Battery voltage
				When turning ignition switch to “OFF”	Battery voltage
5	R/W	Power source		When turning ignition switch to “ON”	Battery voltage
				When turning ignition switch to “OFF”	Battery voltage
6	R	LH hi beam		When lighting switch is turned to the 2ND position with “HI BEAM” position	Battery voltage
				When releasing parking brake with engine running and turning lighting switch to “OFF” (daytime light operation) **CAUTION:** **Block wheels and ensure selector lever is in N or P position.**	Approx. half battery voltage

Terminal No.	Wire color	Item	Condition		Voltage (Approximate values)
7	L/R	RH hi beam		When lighting switch is turned to the 2ND position with "HI BEAM" position	Battery voltage
				When releasing parking brake with engine running and turning lighting switch to "OFF" (daytime light operation) **CAUTION:** **Block wheels and ensure selector lever is in N or P position.**	Approx. half battery voltage
9	PU	RH hi beam (ground)		When lighting switch is turned to the 2ND position with "HI BEAM" position	Less than 1V
				When releasing parking brake with engine running and turning lighting switch to "OFF" (daytime light operation) **CAUTION:** **Block wheels and ensure selector lever is in N or P position.**	Approx. half battery voltage
10	GY	LH hi beam (ground)		When lighting switch is turned to the 2ND position with "HI BEAM" position	Less than 1V
				When releasing parking brake with engine running and turning lighting switch to "OFF" (daytime light operation) **CAUTION:** **Block wheels and ensure selector lever is in N or P position.**	Approx. half battery voltage
13 14	L/W W/R	Lighting switch (Hi beam)		When turning lighting switch to "HI BEAM"	Battery voltage
				When turning lighting switch to "FLASH TO PASS"	Battery voltage
16	B	Ground		—	—
17	L/G	Parking brake switch		When parking brake is released	Battery voltage
				When parking brake is set	Less than 1.5V

Battery Saver Control Unit Inspection Table

NAEL0193S0302

Refer to "HEADLAMP (FOR USA)" EL-47.

WITHOUT AUTO LIGHT SYSTEM

Daytime Light Control Unit Inspection Table

=NAEL0193S04

NAEL0193S0401

Terminal No.	Item	Condition		Voltage (Approximate values)
1	Start signal		When turning ignition switch to "ST"	Battery voltage
			When turning ignition switch to "ON" from "ST"	Less than 1V
			When turning ignition switch to "OFF"	Less than 1V
2	Power source		When turning ignition switch to "ON"	Battery voltage
			When turning ignition switch to "OFF"	Battery voltage
3	Power source		When turning ignition switch to "ON"	Battery voltage
			When turning ignition switch to "OFF"	Battery voltage
4	Lighting switch (Lo beam)		When lighting switch is turned to the 2ND position with "LOW BEAM" position	Battery voltage
5	Lighting switch (Hi beam)		When turning lighting switch to "HI BEAM"	Battery voltage
			When turning lighting switch to "FLASH TO PASS"	Battery voltage
6	LH hi beam		When turning lighting switch to "HI BEAM"	Battery voltage
			When releasing parking brake with engine running and turning lighting switch to "OFF" (daytime light operation) **CAUTION:** **Block wheels and ensure selector lever is in N or P position.**	Battery voltage
7	LH headlamp control (ground)		When lighting switch is turned to the 2ND position with "LOW BEAM" position	Less than 1V
			When releasing parking brake with engine running and turning lighting switch to "OFF" (daytime light operation) **CAUTION:** **Block wheels and ensure selector lever is in N or P position.**	Approx. half battery voltage
8	RH hi beam		When lighting switch is turned to the 2ND position with "HI BEAM" position	Battery voltage
			When releasing parking brake with engine running and turning lighting switch to "OFF" (daytime light operation) **CAUTION:** **Block wheels and ensure selector lever is in N or P position.**	Approx. half battery voltage
9	Ground		—	—

Terminal No.	Item	Condition		Voltage (Approximate values)
10	Parking brake switch		When parking brake is released	Battery voltage
			When parking brake is set	Less than 1.5V
11	Alternator		When turning ignition switch to "ON"	Less than 1V
			When engine is running	Battery voltage
			When turning ignition switch to "OFF"	Less than 1V
12	Power source		When turning ignition switch to "ON"	Battery voltage
			When turning ignition switch to "ST"	Battery voltage
			When turning ignition switch to "OFF"	Less than 1V

Battery Saver Control Unit Inspection Table

NAEL0193S0402

Refer to "HEADLAMP (FOR USA)" EL-50.

Bulb Replacement

NAEL0194

Refer to "HEADLAMP (FOR USA)" (EL-51).

Aiming Adjustment

NAEL0195

Refer to "HEADLAMP (FOR USA)" (EL-51).

System Description

NAEL0162

The parking, license and tail lamp operation is controlled by the lighting switch which is built into the combination switch and headlamp battery saver control unit. The battery saver system is controlled by the headlamp battery saver control unit and smart entrance control unit.
Power is supplied at all times

- to tail lamp relay terminals 2 and 3
- through 10A fuse (No. 61, located in the fuse and fusible link box), and
- to headlamp battery saver control unit terminal 7, and
- to smart entrance control unit terminal 10
- through 7.5A fuse [No. 24, located in the fuse block (J/B)].

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

- to headlamp battery saver control unit terminal 1
- through 10A fuse [No. 16, located in the fuse block (J/B)], and
- to headlamp battery saver control unit terminal 10, and
- to smart entrance control unit terminal 33
- through 7.5A fuse [No. 11, located in the fuse block (J/B)].

Ground is supplied to headlamp battery saver control unit terminals 4 and 11 (with auto light system) or headlamp battery saver control unit terminals 4, and 3, 9 and 11 (without auto light system).

LIGHTING OPERATION BY LIGHTING SWITCH

NAEL0162S01

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

- to tail lamp relay terminal 1 from headlamp battery saver control unit terminals 6 and 14
- through headlamp battery saver control unit terminals 5 and 13, and
- to lighting switch terminal 11
- through lighting switch terminal 5 (with auto light system), or lighting switch terminal 12 (without auto light system)
- through body grounds E13 and E41.

Tail lamp relay is then energized and the parking, license and tail lamps illuminate.

LIGHTING OPERATION BY AUTO LIGHT CONTROL SYSTEM

NAEL0162S03

When auto light control system is operated, ground is supplied

- to tail lamp relay terminal 1 from headlamp battery saver control unit terminals 6 and 14
- through headlamp battery saver control unit terminals 5 and 13, and
- through auto light control unit terminal 7.

Tail lamp relay is then energized and the parking, license and tail lamps illuminate.

BATTERY SAVER CONTROL

NAEL0162S02

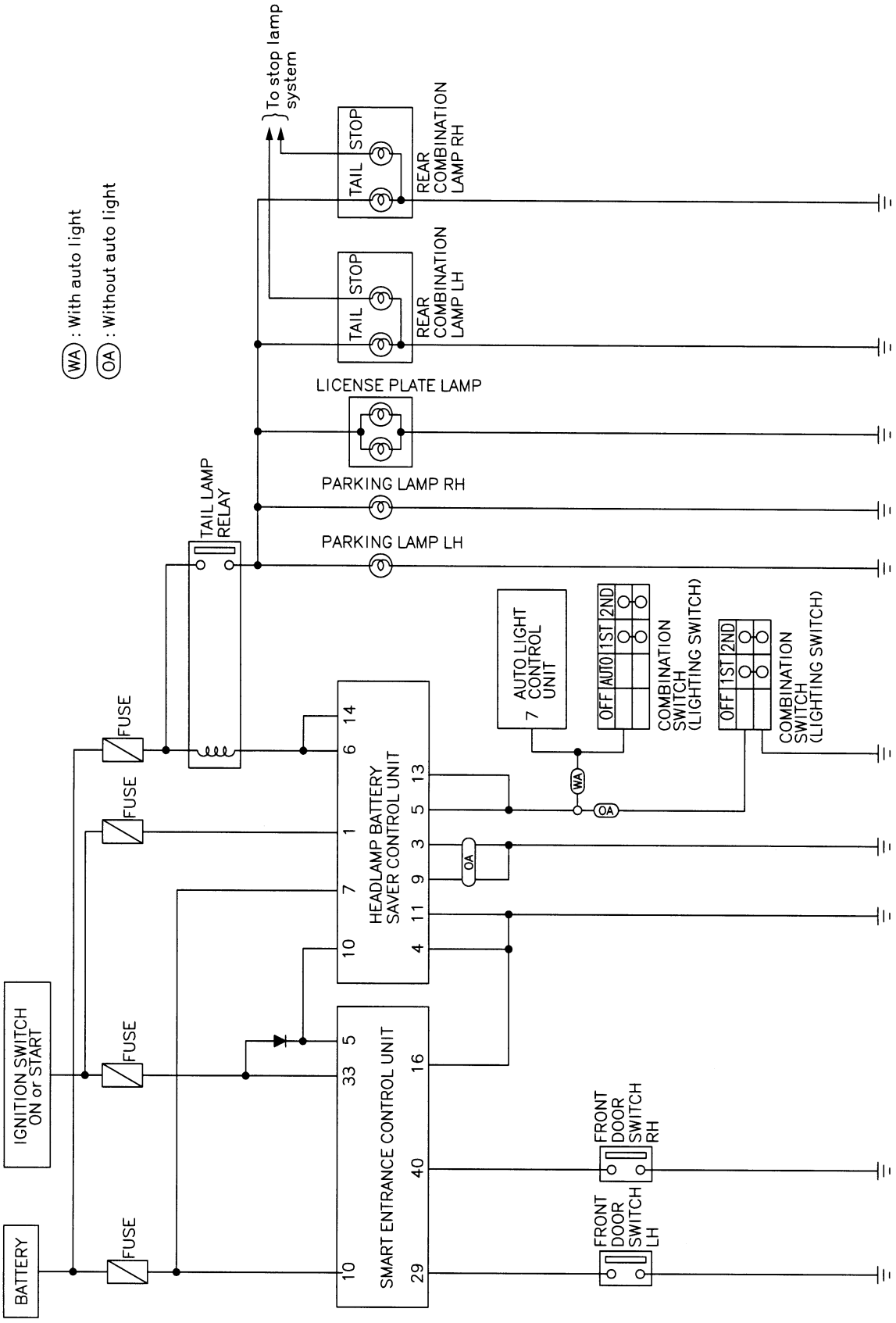
When the ignition switch is turned from ON (or START) to OFF (or ACC) positions while parking, license and tail lamps are illuminated, the RAP signal is supplied to terminal 10 of the headlamp battery saver control unit from smart entrance control unit terminal 5.
After counting 45 seconds by the RAP signal from the smart entrance control unit to headlamp battery saver control unit, the ground supply to terminal 1 of the tail lamp relay from headlamp battery saver control unit terminals 6 and 14 is terminated.
Then the parking, license and tail lamps are turned off.
The parking, license and tail lamps are turned off when driver or passenger side door is opened even if 45 seconds have not passed after the ignition switch is turned from ON (or START) to OFF (or ACC) positions while parking, license and tail lamps are illuminated.
When the lighting switch is turned from OFF to 1ST (or 2ND) after the parking, license and tail lamps are turned off by the battery saver control, ground is supplied.

- to headlamp battery saver control unit terminals 5 and 13 from lighting switch terminal 11, and
- to tail lamp relay terminal 1 from headlamp battery saver control unit terminals 6 and 14.

Then the parking, license and tail lamps illuminate again.

Schematic

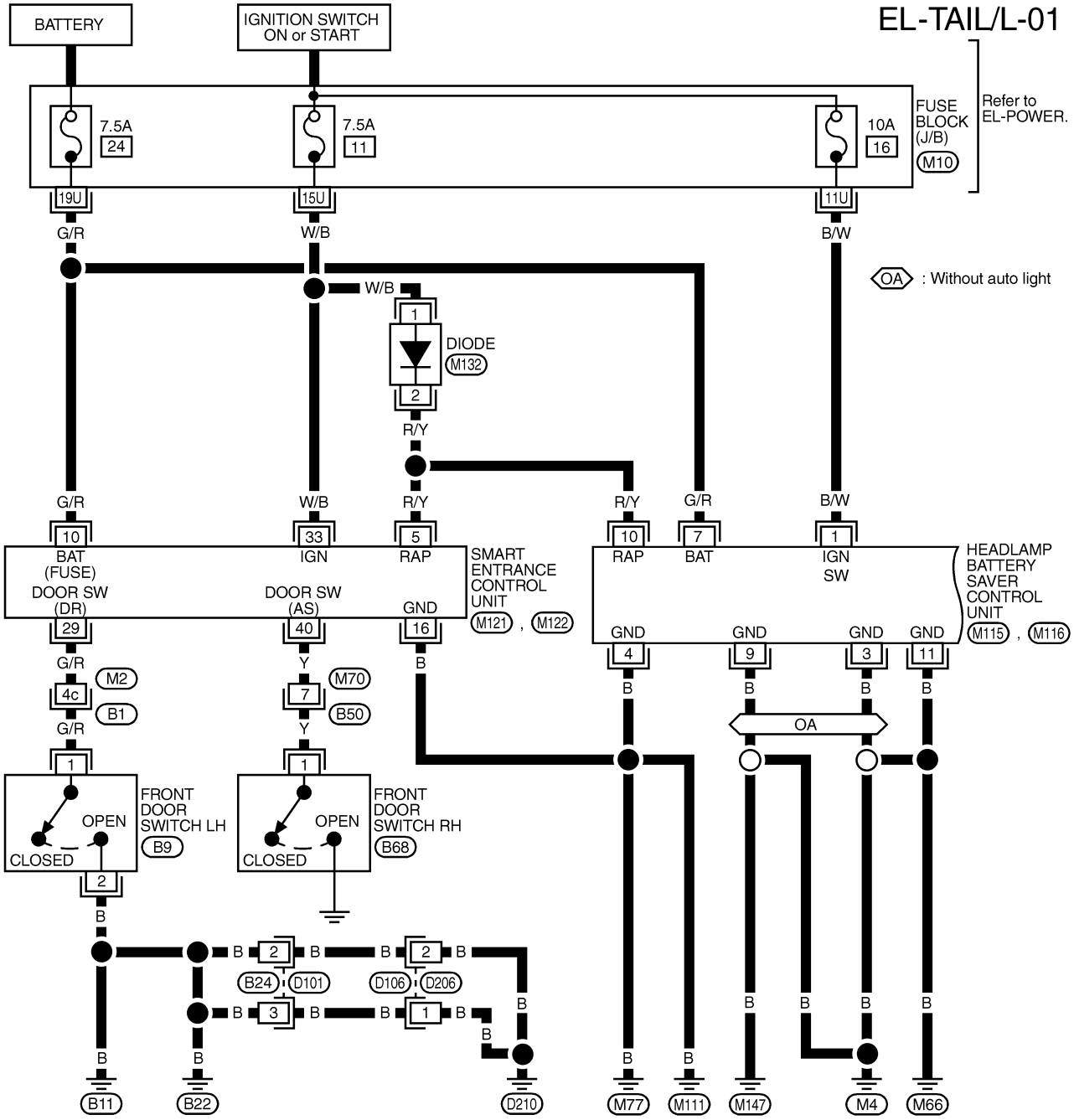
NAEL0163

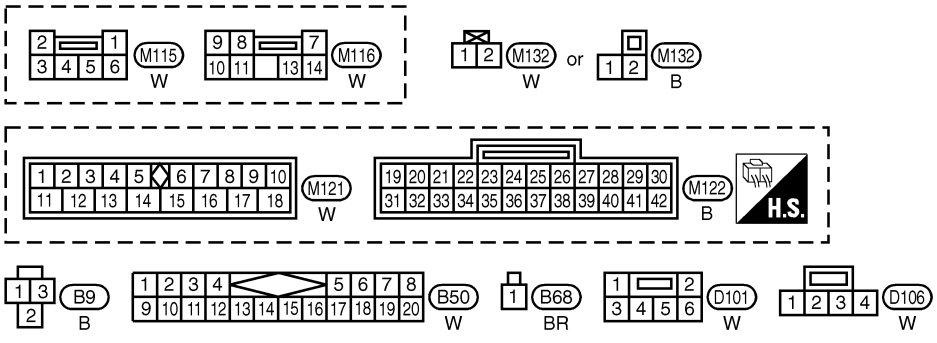


MEL001M

Wiring Diagram — TAIL/L —

NAEL0024





REFER TO THE FOLLOWING.

B1 -SUPER MULTIPLE JUNCTION (SMJ)

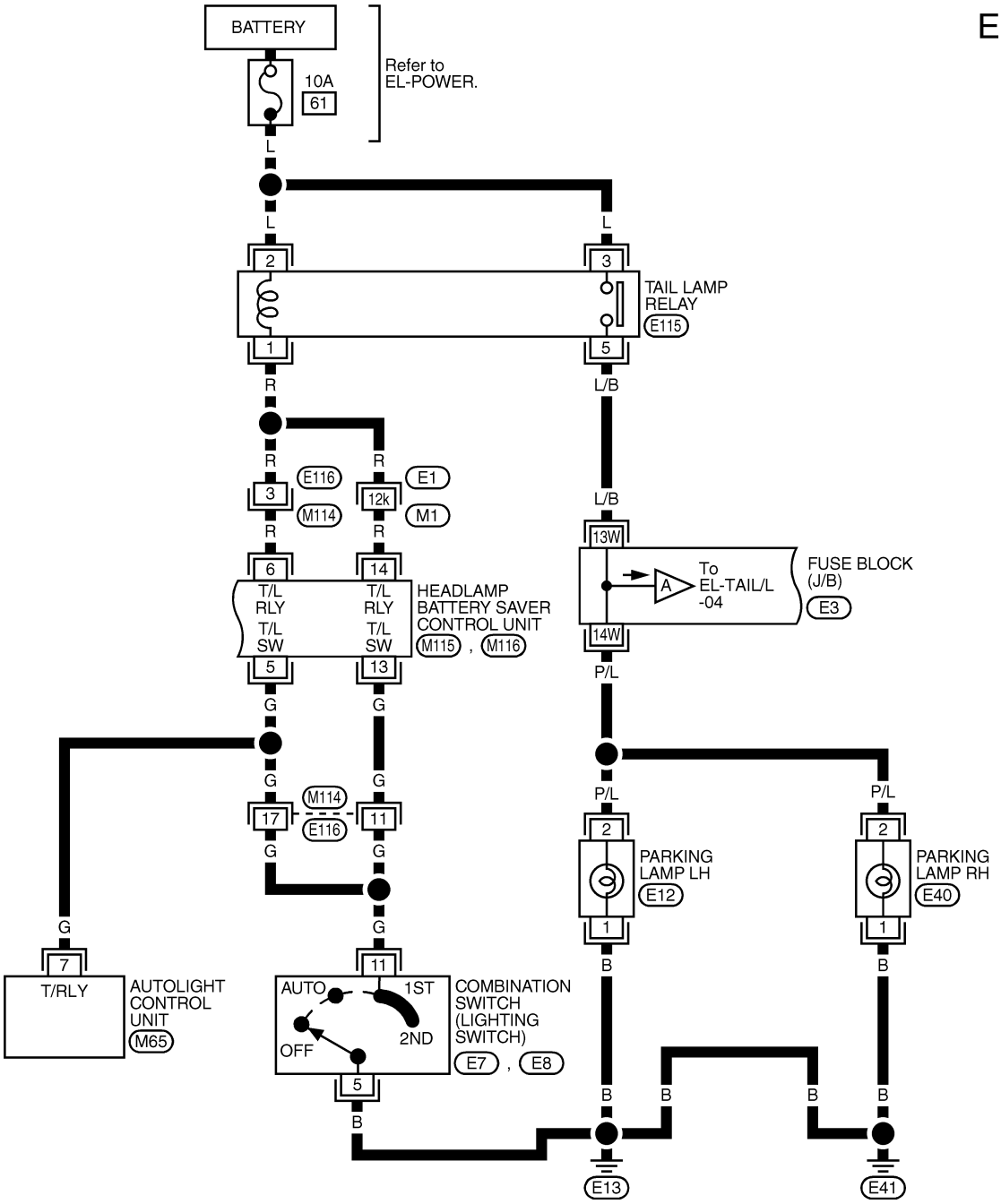
M10 -FUSE BLOCK-JUNCTION BOX (J/B)

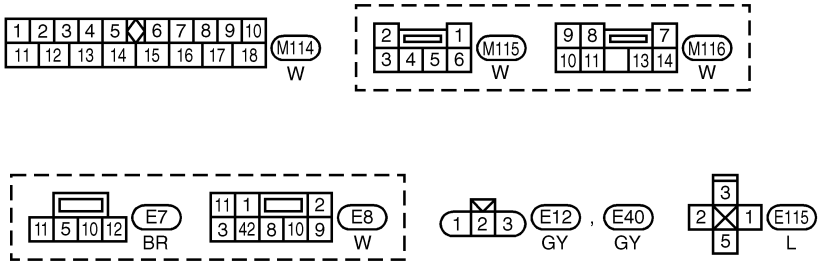
MEL015O

WITH AUTO LIGHT SYSTEM

NAEL0024S01

EL-TAIL/L-02





REFER TO THE FOLLOWING.
E1 -SUPER MULTIPLE JUNCTION (SMJ)
E3 -FUSE BLOCK-JUNCTION BOX (J/B)

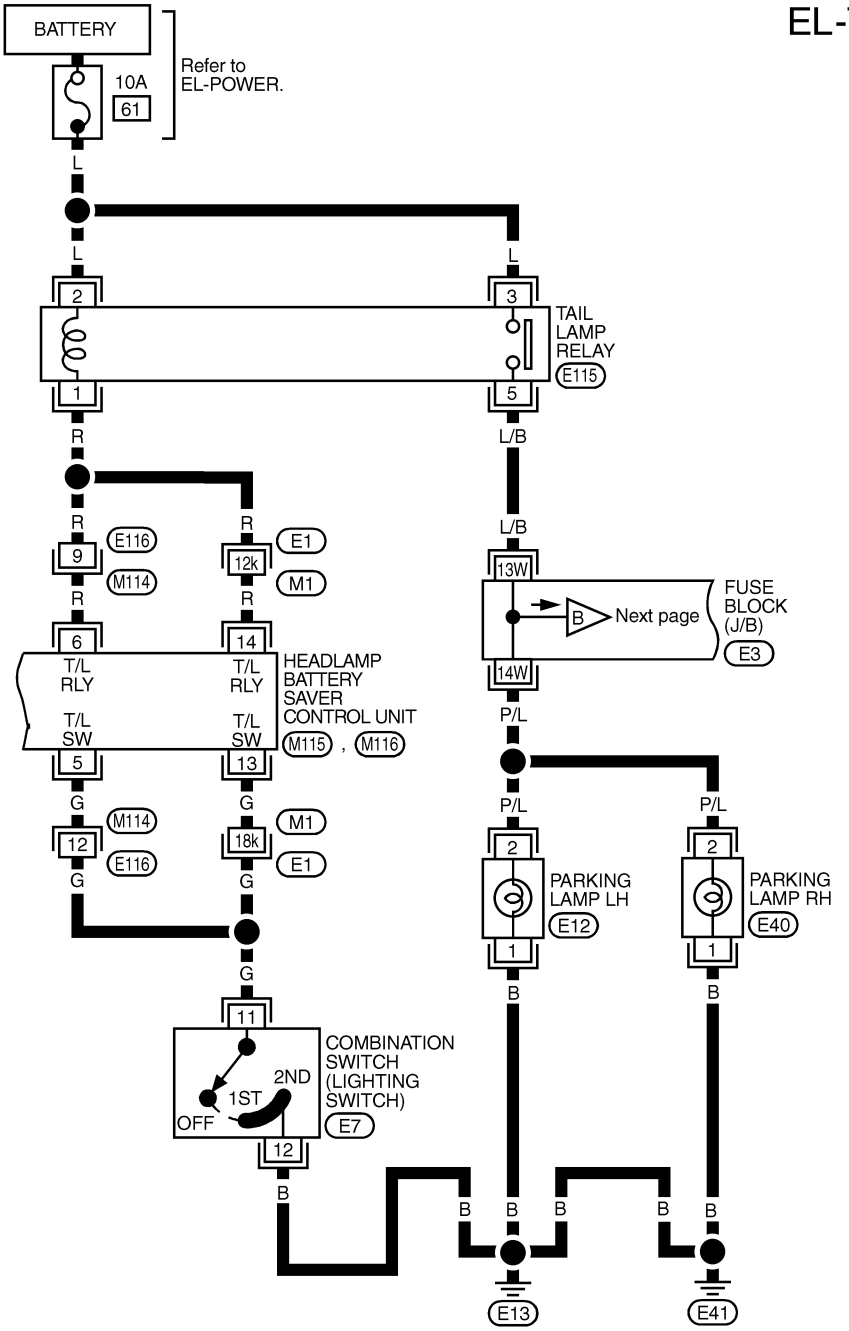
MEL003M

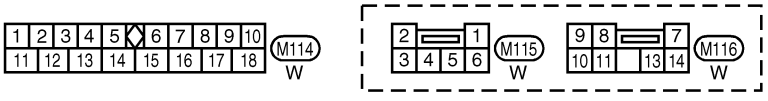
Wiring Diagram — TAIL/L — (Cont'd)

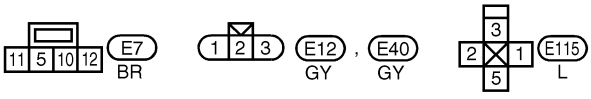
WITHOUT AUTO LIGHT SYSTEM

NAEL0024S02

EL-TAIL/L-03







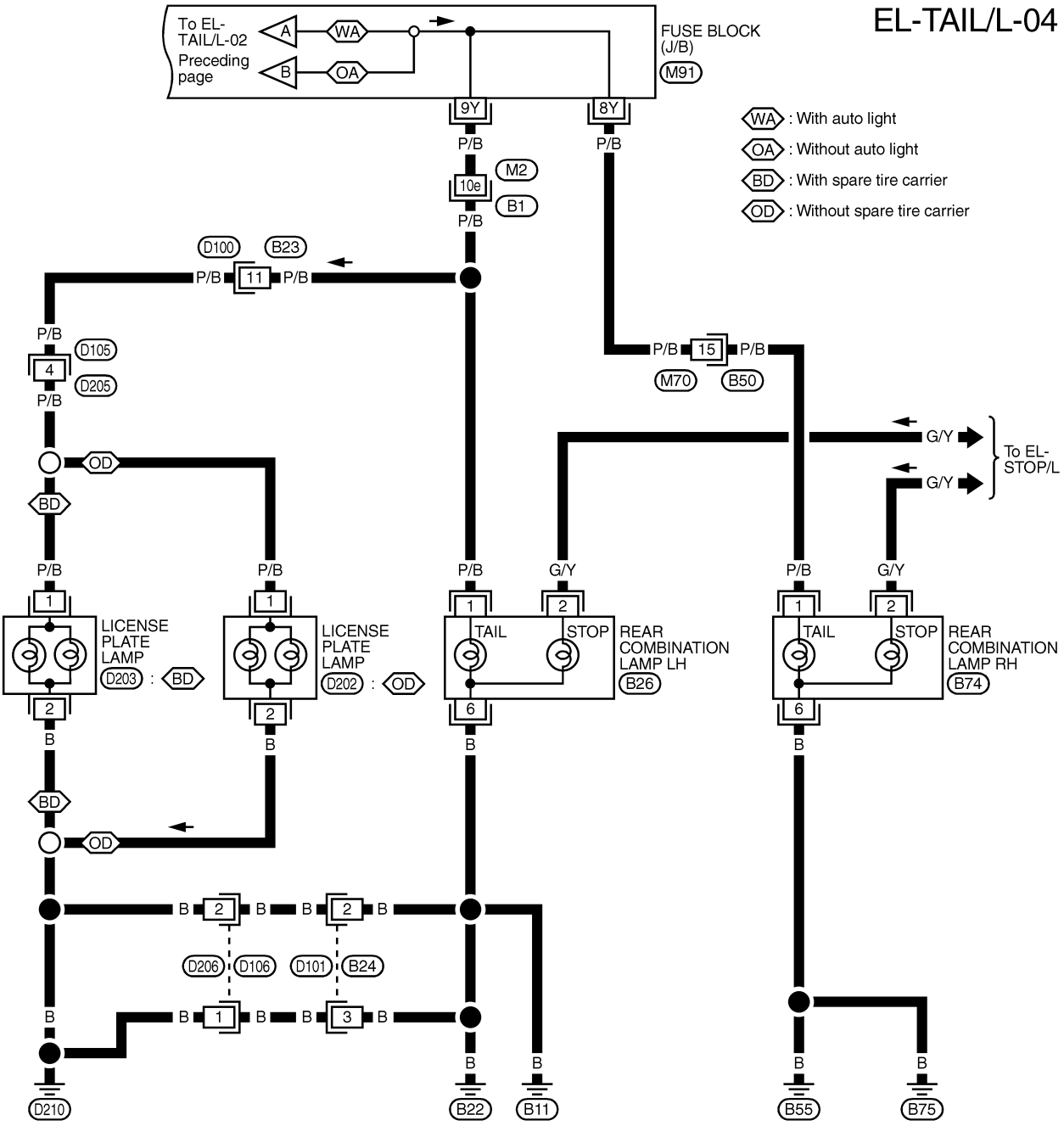
REFER TO THE FOLLOWING.

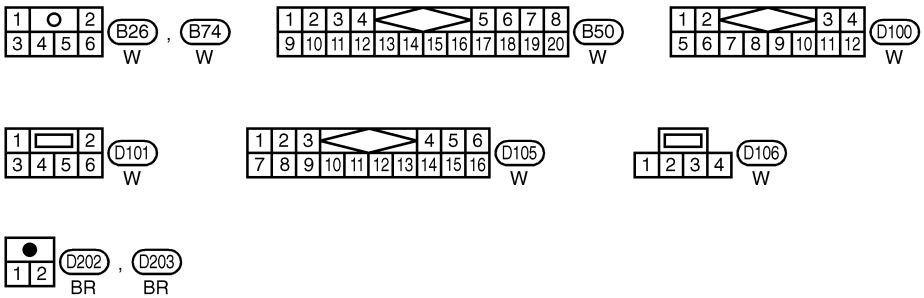
E1 -SUPER MULTIPLE JUNCTION (SMJ)

E3 -FUSE BLOCK-JUNCTION BOX (J/B)

MEL004M

EL-TAIL/L-04





REFER TO THE FOLLOWING.
B1 -SUPER MULTIPLE JUNCTION (SMJ)
M91 -FUSE BLOCK- JUNCTION BOX (J/B)

MEL005M

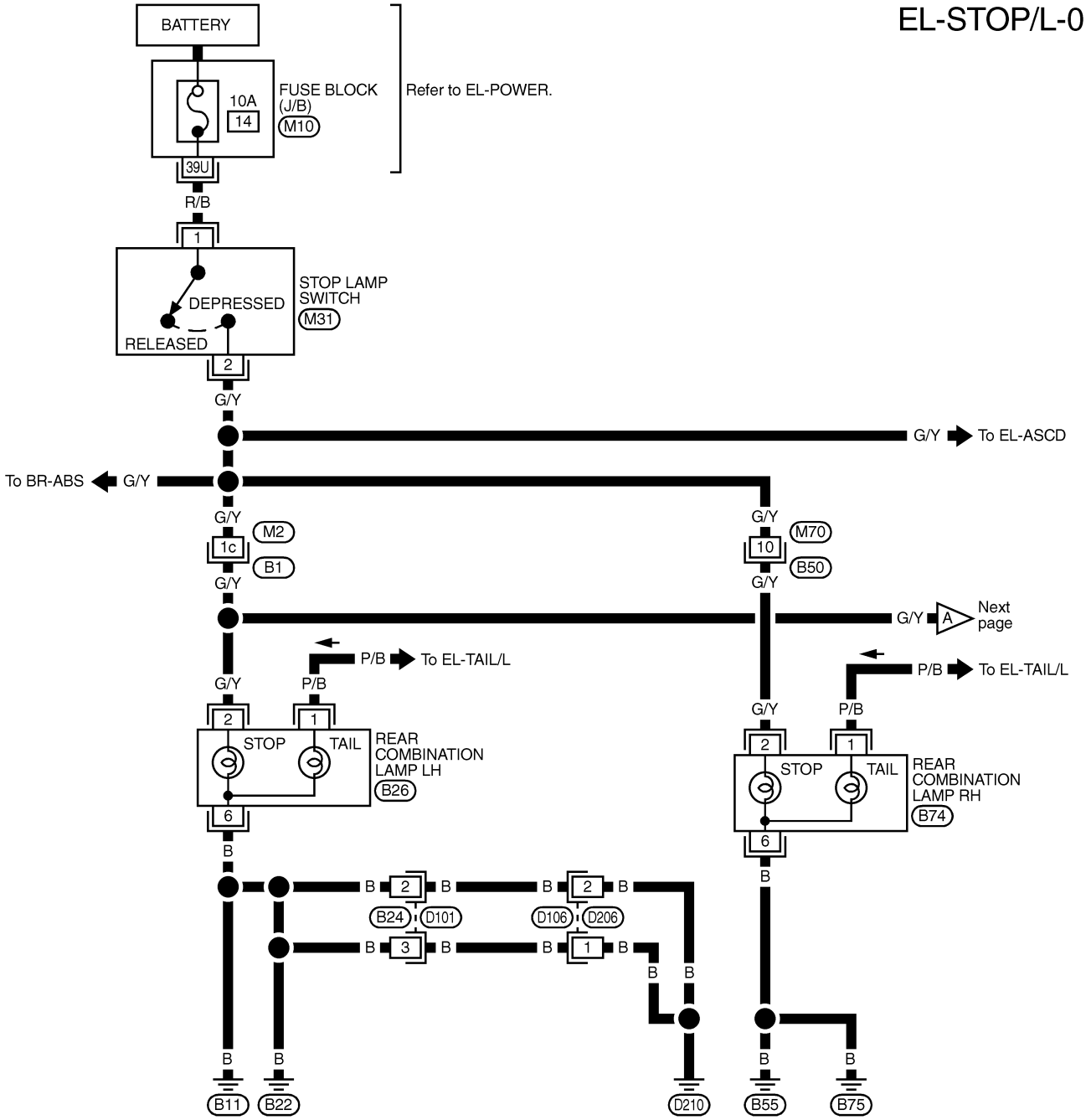
Trouble Diagnoses

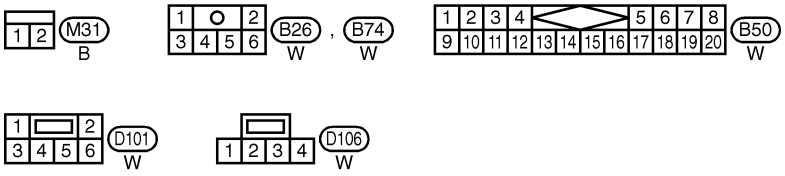
NAEL0164

Symptom	Possible cause	Repair order
No lamps operate (including headlamps).	1. 7.5A fuse 2. Lighting switch 3. Headlamp battery saver control unit	1. Check 7.5A fuse [No. 24, lacated in fuse block (J/B)]. Verify battery positive voltage is present at terminal 7 of headlamp battery saver control unit. 2. Check lighting switch. 3. Check headlamp battery saver control unit. (EL-47)
No parking, license and tail lamps operate, but headlamps do operate.	1. 10A fuse 2. Tail lamp relay 3. Tail lamp relay circuit 4. Lighting switch 5. Lighting switch circuit 6. Headlamp battery saver control unit	1. Check 10A fuse (No. 61, located in fusible and fuse block). Verify battery positive voltage is present at terminals 2 and 3 of tail lamp relay. 2. Check tail lamp relay. 3. Check the following. a. Harness between headlamp battery saver control unit terminals 6 and 14 and tail lamp relay terminal 1 b. Harness between tail lamp relay terminal 5 and fuse block 4. Check lighting switch. 5. Check the following. a. Harness between lighting switch terminal 11 and headlamp battery saver control unit terminals 5 and 13 b. Harness between lighting switch terminal 5 (with auto light system) or lighting switch terminal 12 (without auto light system) and ground 6. Check headlamp battery saver control unit. (EL-47)
Battery saver control does not operate properly.	1. RAP signal circuit 2. Driver or passenger side door switch circuit 3. Lighting switch circuit 4. Headlamp battery saver control unit 5. Smart entrance control unit	1. Check harness between headlamp battery saver control unit terminal 10 and smart entrance control unit terminal 5 for open or short circuit. 2. Check the following. a. Harness between smart entrance control unit and driver or passenger side door switch for open or short circuit b. Driver or passenger side door switch ground circuit c. Driver or passenger side door switch. 3. Check the following. a. Harness between headlamp battery saver control unit terminals 5 or 13 and lighting switch terminal 11 for open or short circuit b. Harness between lighting switch terminal 5 and ground c. Lighting switch 4. Check headlamp battery saver control unit. (EL-47) 5. Check smart entrance control unit. (EL-348)

Wiring Diagram — STOP/L —

NAEL0025





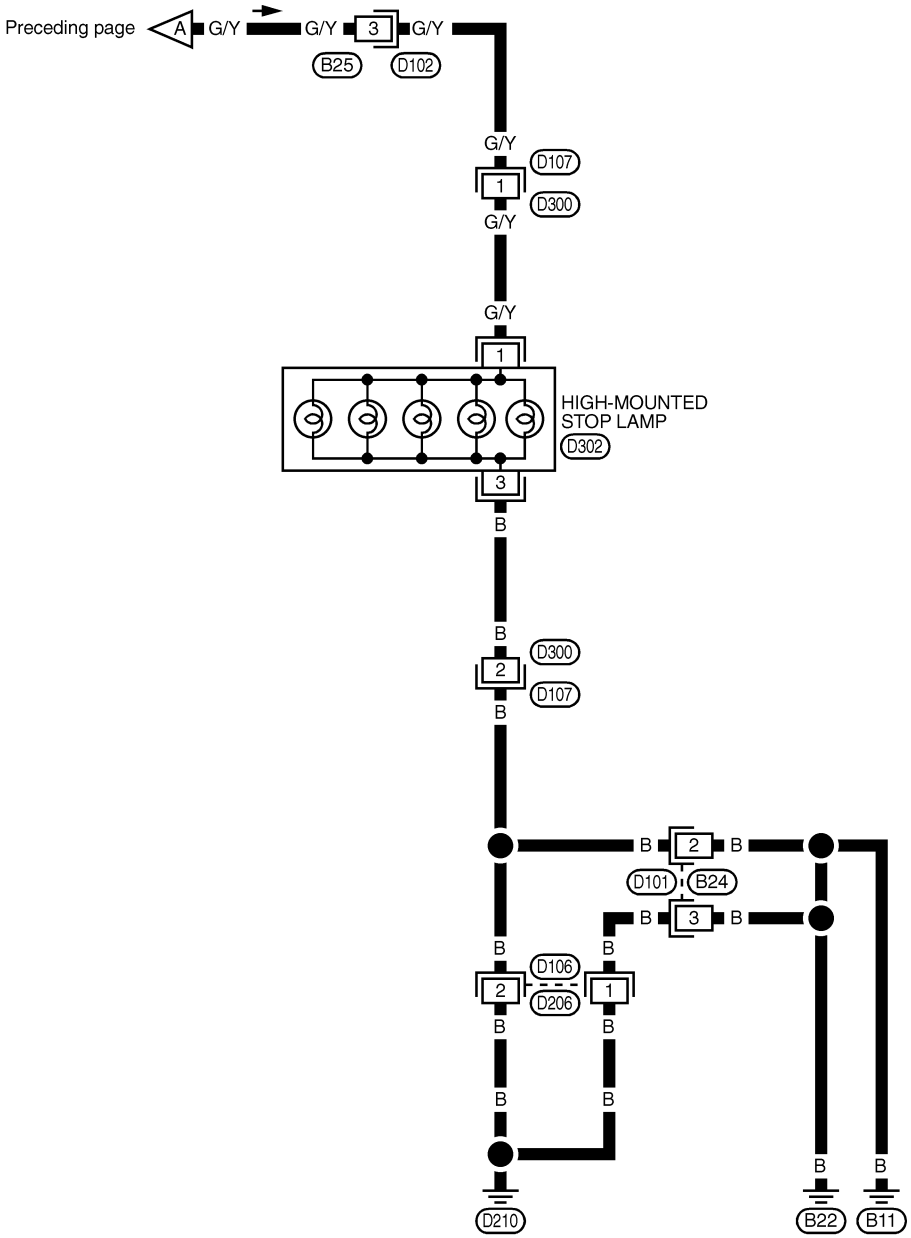
REFER TO THE FOLLOWING.

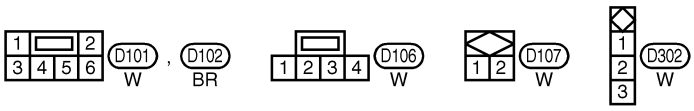
B1 -SUPER MULTIPLE JUNCTION (SMJ)

M10 -FUSE BLOCK-JUNCTION BOX (J/B)

MEL777L

EL-STOP/L-02



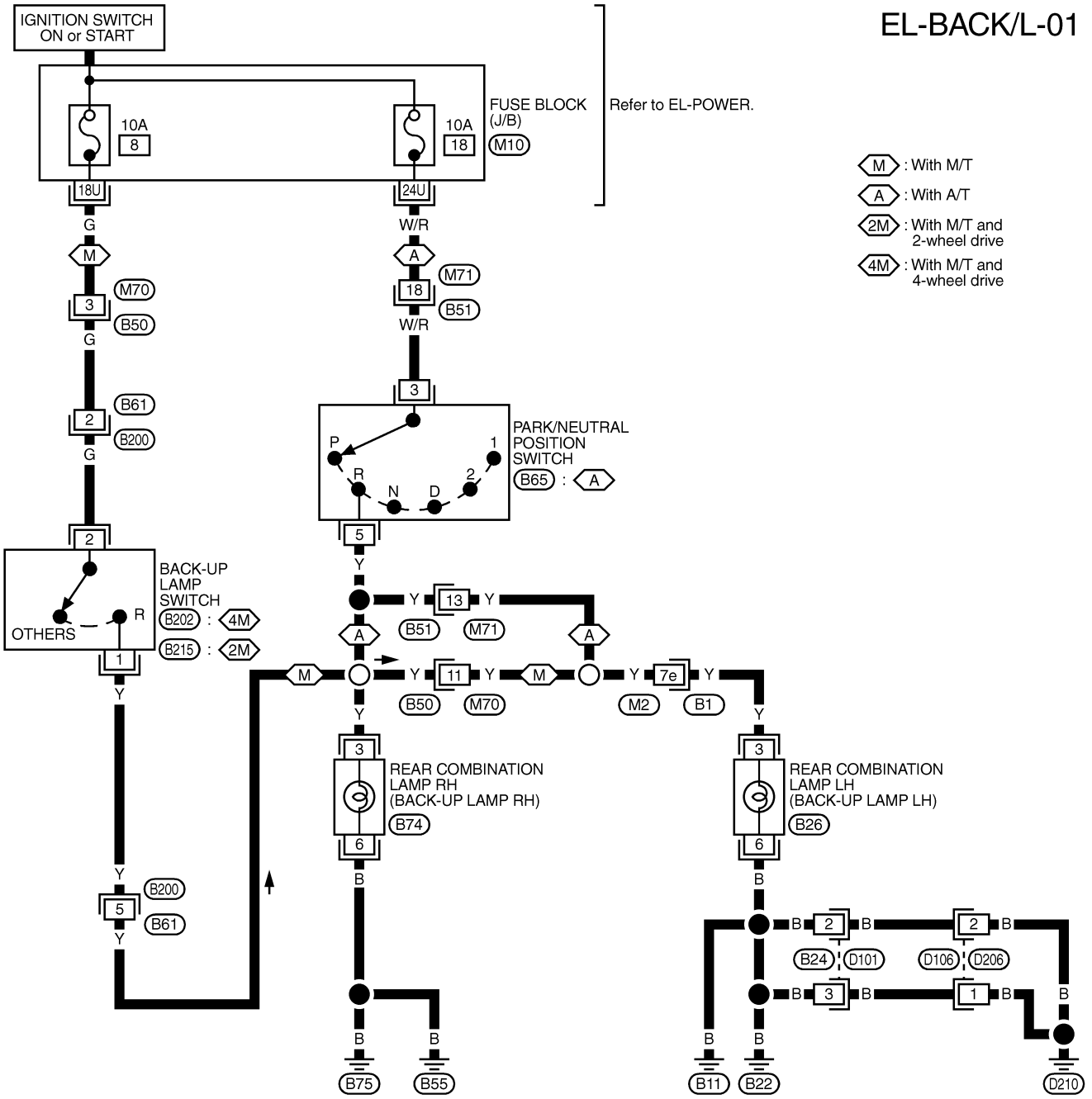


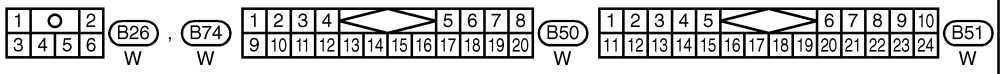
MEL262M

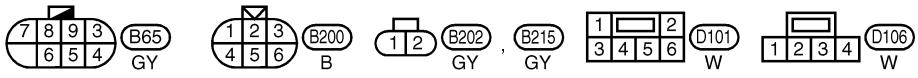
Wiring Diagram — BACK/L —

NAEL0026

EL-BACK/L-01







REFER TO THE FOLLOWING.

B1 -SUPER MULTIPLE JUNCTION (SMJ)

M10 -FUSE BLOCK- JUNCTION BOX (J/B)

MEL006M

System Description

NAEL0027

WITH AUTO LIGHT SYSTEM

NAEL0027S04

Outline

NAEL0027S0401

Power is supplied at all times

- to headlamp RH relay terminals 1 and 3
- through 15A fuse (No. 59, located in the fuse and fusible link box), and
- to headlamp battery saver control unit terminal 7
- to smart entrance control unit terminal 10
- through 7.5A fuse [No. 24, located in the fuse block (J/B)], and
- to front fog lamp relay terminal 3
- through 15A fuse (No. 53, located in the fuse and fusible link box).

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

- to headlamp battery saver control unit terminal 1
- through 10A fuse [No. 16, located in the fuse block (J/B)], and
- to headlamp battery saver control unit terminal 10, and
- to smart entrance control unit terminal 33
- through 7.5A fuse [No. 11, located in the fuse block (J/B)].

Ground is supplied to headlamp battery saver control unit terminals 4 and 11.
When lighting system is in 2ND position, ground is supplied

- to headlamp RH relay terminal 2 from headlamp battery saver control unit terminals 2 and 8
- through headlamp battery saver control unit terminals 3 and 9,
- through lighting switch terminal 11, and
- through body grounds E13 and E41.

Headlamp RH relay is then energized.

Fog Lamp Operation

NAEL0027S0402

The fog lamp switch is built into the combination switch. The lighting switch must be in the 2ND position and LOW (“B”) position for fog lamp operation.
With the fog lamp switch in the ON position, ground is supplied

- to fog lamp relay terminal 2
- through the fog lamp switch, lighting switch and body grounds E13 and E41.

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 E13 and E41.
With power and ground supplied, the fog lamps illuminate.

Battery Saver Control

NAEL0027S0403

When the ignition switch is turned from ON (or START) to OFF (or ACC) positions while fog lamps are illuminated, the RAP signal is supplied to terminal 10 of the headlamp battery saver control unit from smart entrance control unit terminal 5.
After counting 45 seconds by the RAP signal from the smart entrance control unit to headlamp battery saver control unit, the ground supply to terminal 2 of headlamp RH relay from headlamp battery saver control unit teminals 2 and 8 are terminated. Then fog lamps are turned to off.
Fog lamps are turned off when driver or passenger side door is opened even if 45 seconds have not passed after the ignition switch is turned from ON (or START) to OFF (or ACC) positions while fog lamps are illuminated.
When the lighting switch is turned from OFF to 2ND after fog lamps are turned off by the battery saver control, ground is supplied

- to headlamp battery saver control unit terminals 5 and 13 from lighting switch terminal 11, and
- to headlamp RH relay terminal 2 from headlamp battery saver control unit terminals 2 and 8
- through headlamp battery saver control unit terminals 3 and 9, and
- through lighting switch terminal 11.

Then the fog lamps illuminate again.

NOTE:
For Trouble Diagnoses for battery saver control, refer to "HEADLAMP (FOR USA)" EL-46.

WITHOUT AUTO LIGHT SYSTEM

NAEL0027S05

Outline

NAEL0027S0501

Power is supplied at all times

- to headlamp RH relay terminals 2 and 3
- through 15A fuse (No. 59, located in the fuse and fusible link box), and
- to headlamp battery saver control unit terminal 7
- through 7.5A fuse [No. 24, located in the fuse block (J/B)], and
- to front fog lamp relay terminal 3
- through 15A fuse (No. 53, located in the fuse and fusible link box).

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

- to headlamp battery saver control unit terminal 1
- through 10A fuse [No. 16, located in the fuse block (J/B)], and
- to headlamp battery saver control unit terminal 10, and
- to smart entrance control unit terminal 33
- through 7.5A fuse [No. 11, located in the fuse block (J/B)].

Ground is supplied to headlamp battery saver control unit terminals 3, 4, 9 and 11.
When Ignition Switch is in ON or START Position
Ground is supplied

- to headlamp RH relay terminal 1 from headlamp battery saver control unit terminal 8.
- through headlamp battery saver control unit terminal 9, and
- through body grounds M4, M66 and M147.

Headlamp RH relay is then energized.
When Ignition Switch is in OFF or ACC Position
When lighting switch is in 2ND (or 1ST) position, ground is supplied

- to headlamp battery saver control unit terminals 5 and 13
- from lighting switch terminal 11.

And then, ground is also supplied to headlamp RH relay terminal 1 from the headlamp battery saver control unit. The headlamp RH relay is then energized.

Fog Lamp Operation

NAEL0027S0502

The fog lamp switch is built into the combination switch. The lighting switch must be in the 2ND position and LOW ("B") position for fog lamp operation.
With the fog lamp switch in the ON position, ground is supplied

- to fog lamp relay terminal 2
- through the fog lamp switch and body grounds E13 and E41.

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 E13 and E41.
With power and ground supplied, the fog lamps illuminate.

Battery Saver Control

NAEL0027S0503

When the ignition switch is turned from ON (or START) to OFF (or ACC) positions while fog lamps are illuminated, the RAP signal is supplied to terminal 10 of the headlamp battery saver control unit from smart entrance control unit terminal 5.
After counting 45 seconds by the RAP signal from the smart entrance control unit to headlamp battery saver control unit, the ground supply to terminal 1 of headlamp RH relay from headlamp battery saver control unit teminal 8 is terminated.
Then fog lamps are turned to off.
Fog lamps are turned off when driver or passenger side door is opened even if 45 seconds have not passed

after the ignition switch is turned from ON (or START) to OFF (or ACC) positions while fog lamps are illuminated.
When the lighting switch is turned from OFF to 2ND after fog lamps are turned off by the battery saver control, ground is supplied

- to headlamp battery saver control unit terminals 5 and 13 from lighting switch terminal 11, and
- to headlamp RH relay terminal 1 from headlamp battery saver control unit terminal 8.

Then the fog lamps illuminate again.

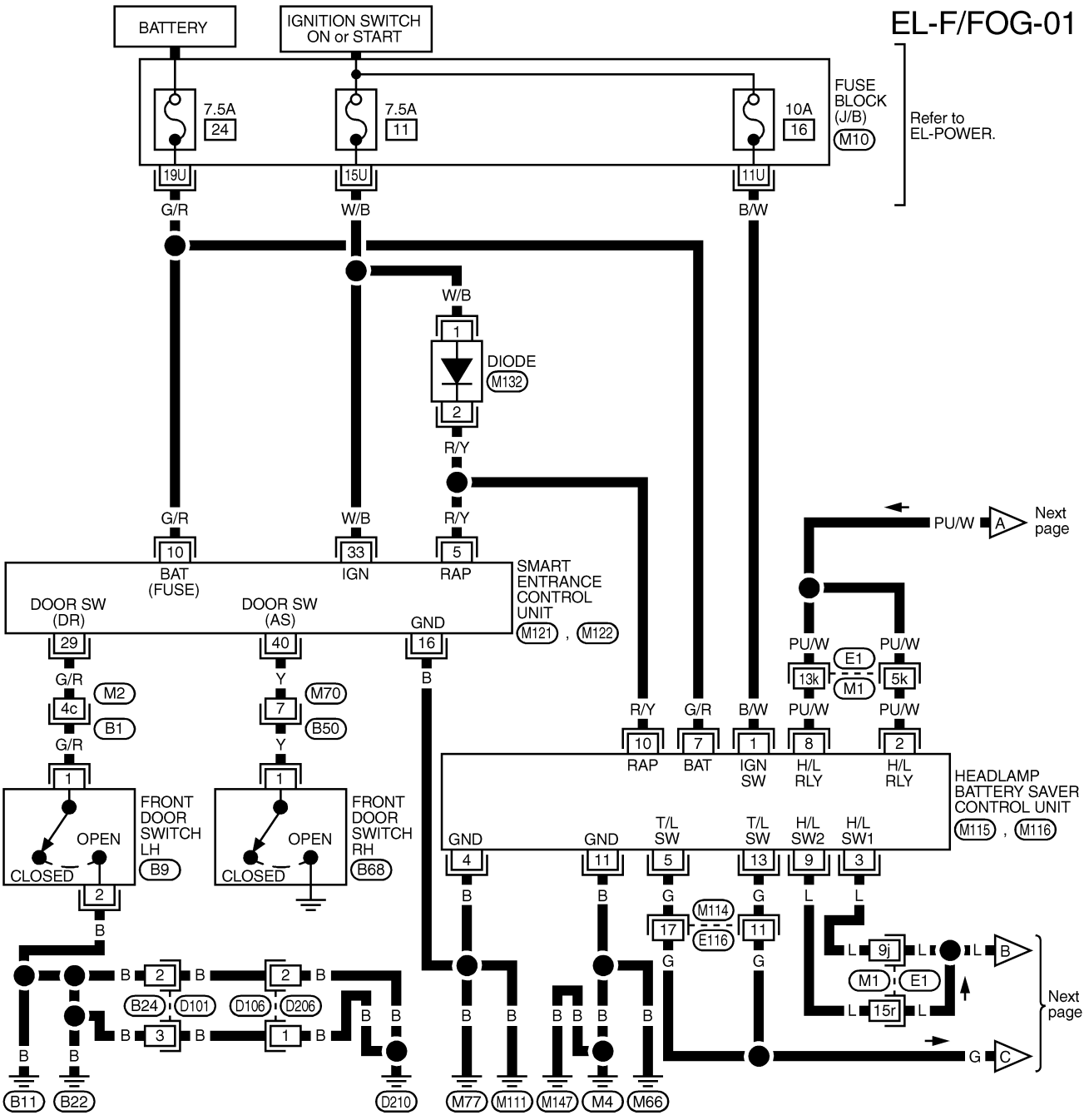
NOTE:
F**or Trouble Diagnoses for battery saver control, refer to "HEADLAMP (FOR USA)" (EL-49).**

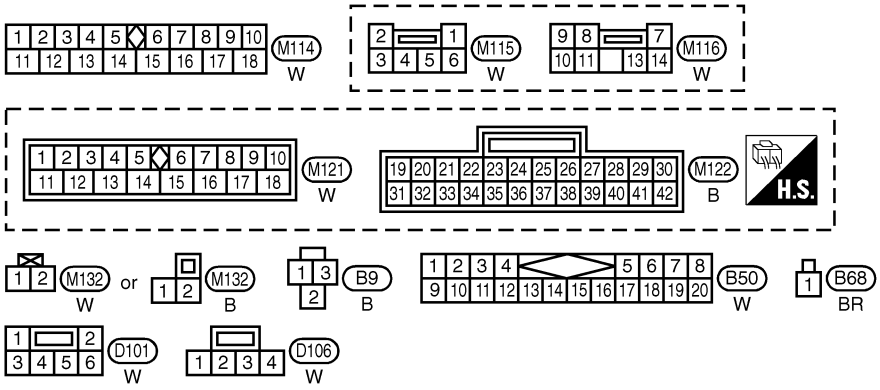
Wiring Diagram — F/FOG —

NAEL0028

WITH AUTO LIGHT SYSTEM

NAEL0028S01

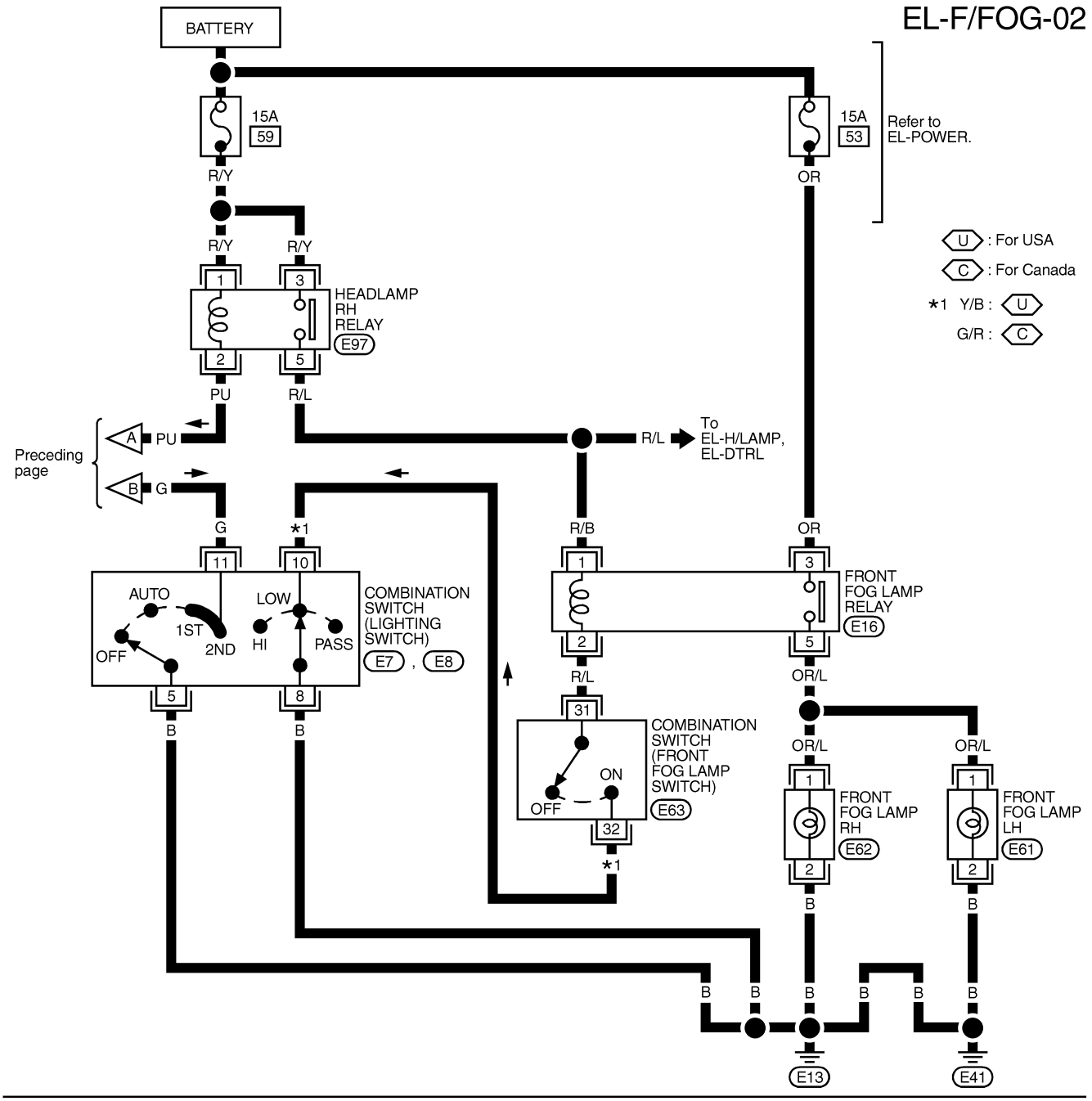


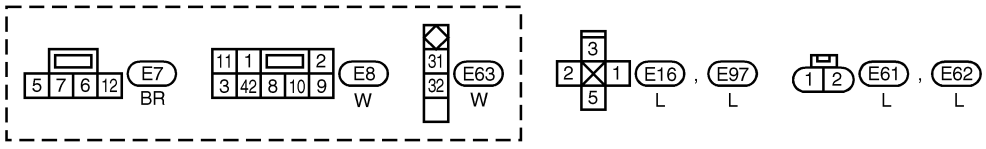


REFER TO THE FOLLOWING.
E1 , B1 -SUPER MULTIPLE JUNCTION (SMJ)
M10 -FUSE BLOCK-JUNCTION BOX (J/B)

MEL016O

Wiring Diagram — F/FOG — (Cont'd)

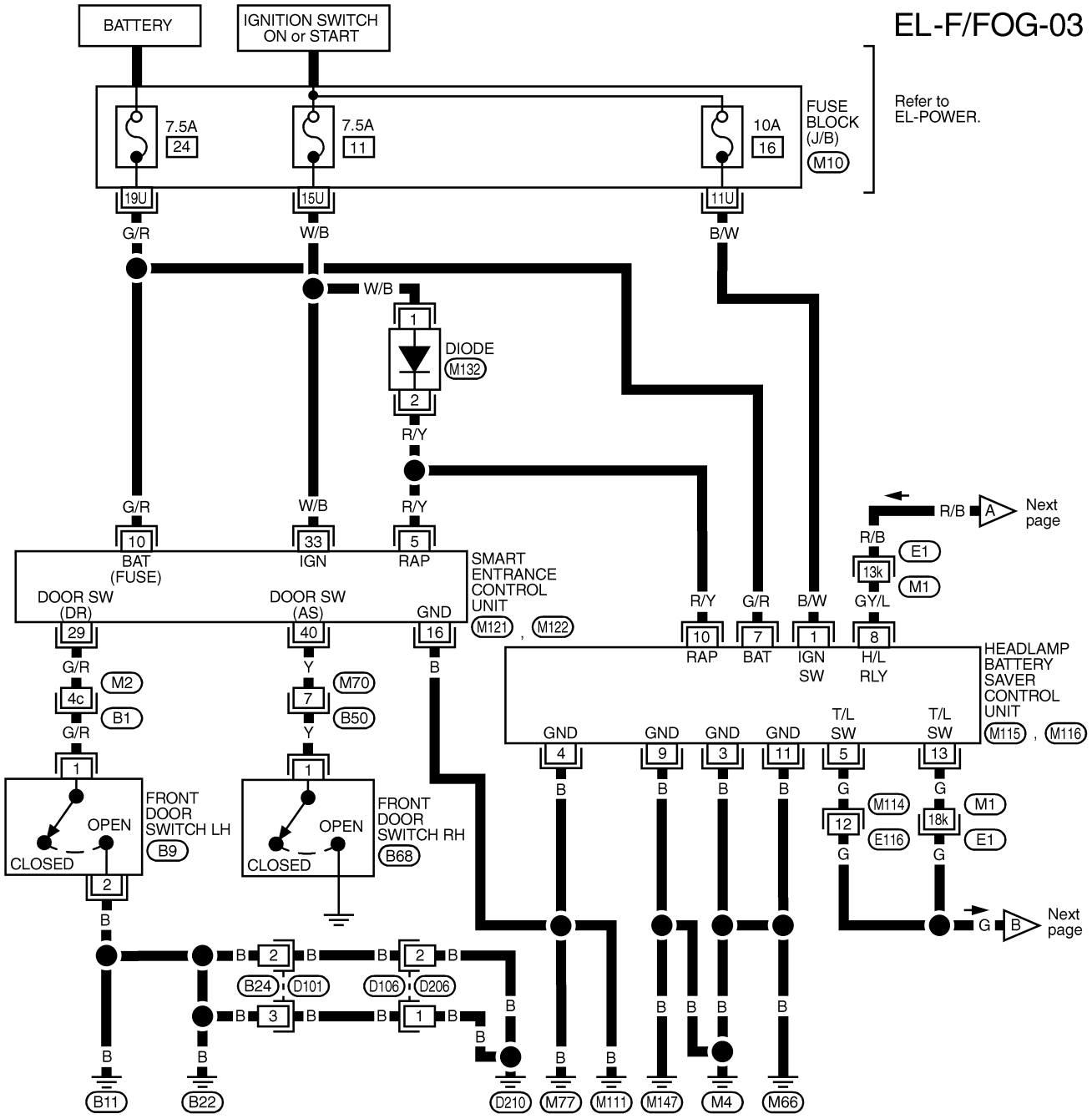


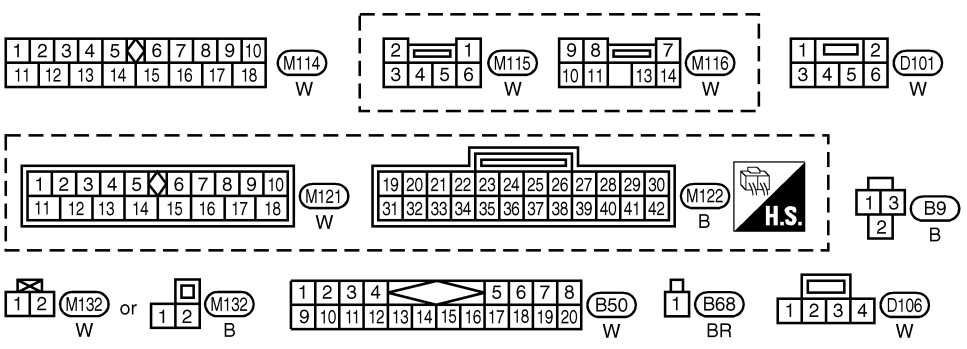


MEL421N

WITHOUT AUTO LIGHT SYSTEM

NAEL0028S02





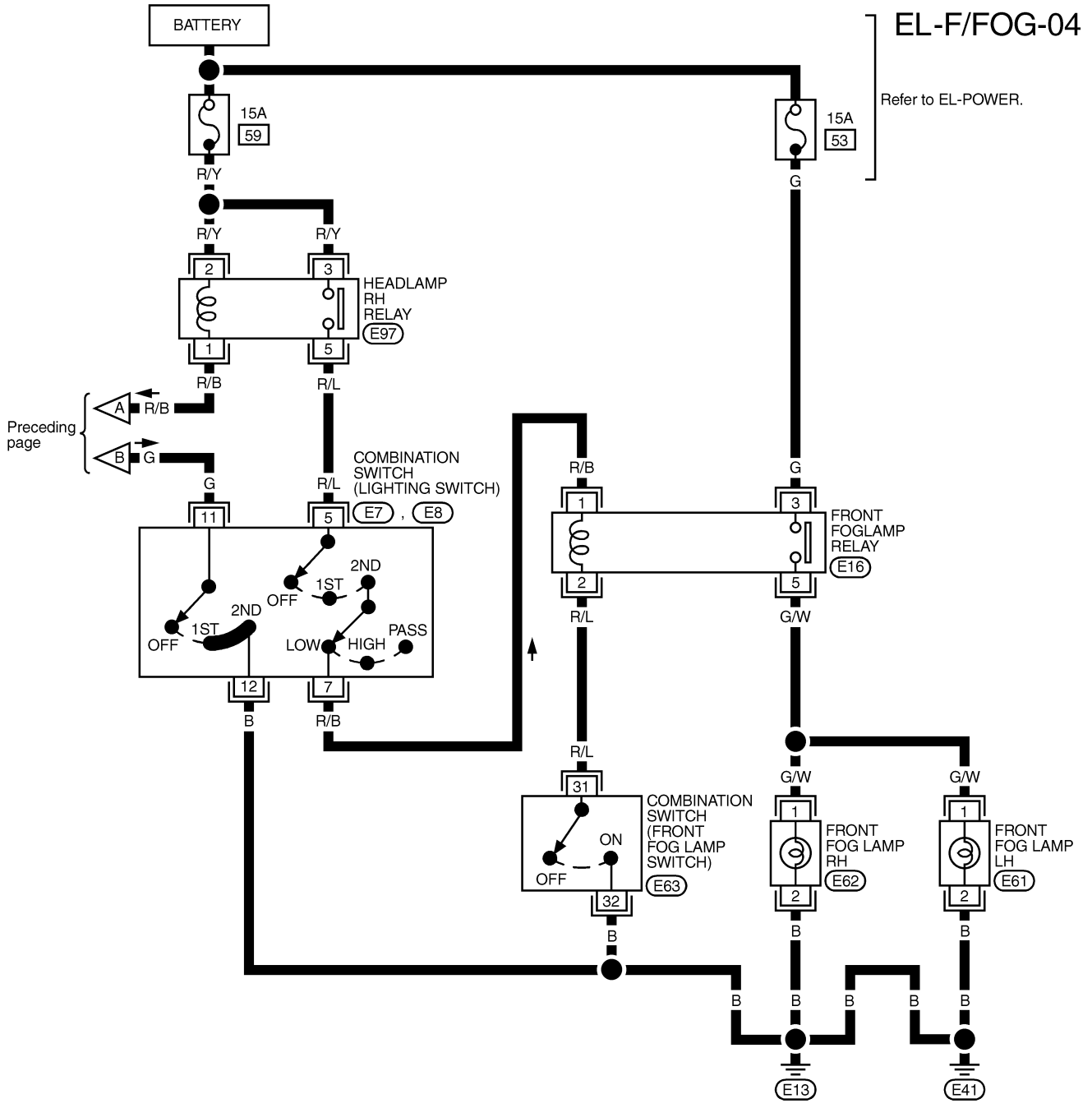
REFER TO THE FOLLOWING.

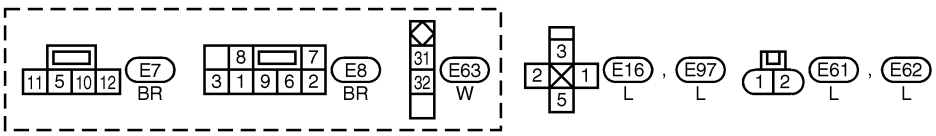
E1 , B1 -SUPER MULTIPLE JUNCTION (SMJ)

M10 -FUSE BLOCK- JUNCTION BOX (J/B)

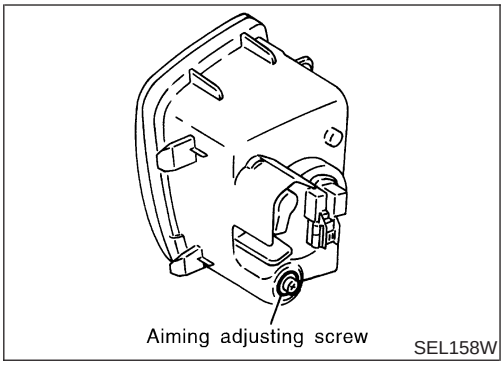
MEL017O

Wiring Diagram — F/FOG — (Cont'd)





MEL422N



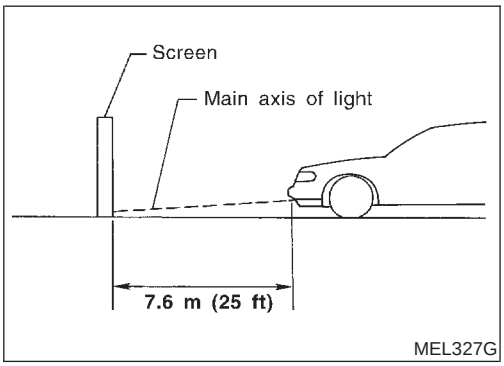
Aiming Adjustment

NAEL0029

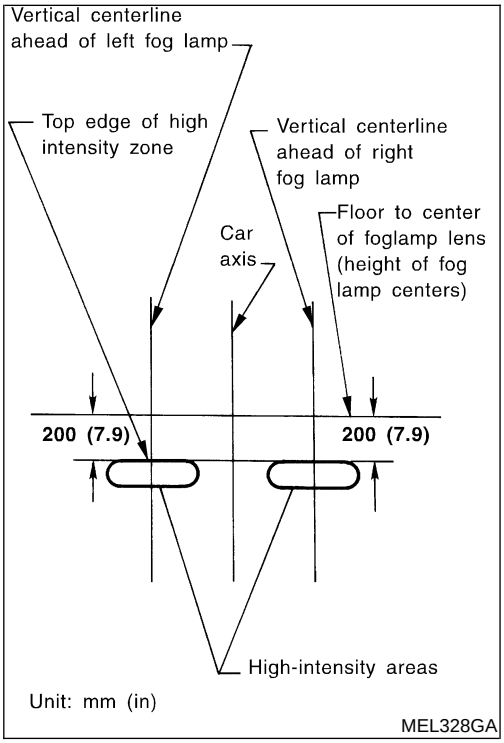
Before performing aiming adjustment, make sure of the following.

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. Turn front fog lamps ON.



3. Adjust front fog lamps so that the top edge of the high intensity zone is 200 mm (7.9 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.

System Description

NAEL0030

TURN SIGNAL OPERATION

NAEL0030S01

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

- through 7.5A fuse [No. 12, 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 M4, M66 and M147.

LH Turn

NAEL0030S0101

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

- to front turn signal lamp LH terminal 3
- to combination meter terminal 25
- to rear combination lamp LH terminal 5.

Ground is supplied to the turn signal lamp LH terminal 1 through body grounds E13 and E41.
Ground is supplied to the rear combination lamp LH terminal 6 through body grounds B11, B22 and D210.
Ground is supplied to combination meter terminal 30 through body grounds M4, M66 and M147.
With power and ground supplied, the combination flasher unit controls the flashing of the LH turn signal lamps.

RH Turn

NAEL0030S0102

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

- to front turn signal lamp RH terminal 3
- to combination meter terminal 29
- to rear combination lamp RH terminal 5.

Ground is supplied to turn signal terminal 3 through body grounds E13 and E41.
Ground is supplied to the rear combination lamp RH terminal 6 through body grounds B55 and B75.
Ground is supplied to combination meter terminal 30 through body grounds M4, M66 and M147.
With power and ground supplied, the combination flasher unit controls the flashing of the RH turn signal lamps.

HAZARD LAMP OPERATION

NAEL0030S02

Power is supplied at all times

- to hazard switch terminal 3
- through 15A fuse [No. 20, 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 M4, M66 and M147.

Power is supplied

- through terminal 5 of the hazard switch
- to front turn signal lamp LH terminal 3
- combination meter terminal 25
- rear combination lamp LH terminal 5, and
- through terminal 6 of the hazard switch
- to front turn signal lamp RH terminal 3
- combination meter terminal 29
- rear combination lamp RH terminal 5.

Ground is supplied to terminal 3 of each front turn signal lamp through body grounds E13 and E41.
Ground is supplied to terminal 6 of the rear combination lamp LH through body grounds B11, B22 and D210.
Ground is supplied to terminal 6 of the rear combination lamp RH through body grounds B55 and B75.
Ground is supplied to combination meter terminal 30 through body grounds M4, M66 and M147.
With power and ground supplied, the combination flasher unit controls the flashing of the hazard warning lamps.

MULTI-REMOTE CONTROL SYSTEM OPERATION

NAEL0030S03

Power is supplied at all times

- through 15A fuse [No. 20, located in the fuse block (J/B)]
- to multi-remote control relay terminals 1, 3 and 6.

Ground is supplied to multi-remote control relay terminal 2, when the multi-remote control system is triggered through the smart entrance control unit.
Refer to "MULTI-REMOTE CONTROL SYSTEM", EL-288.
The multi-remote control relay is energized.
Power is supplied through terminal 7 of the multi-remote control relay

- to front turn signal lamp LH terminal 2
- to combination meter terminal 25
- to rear combination lamp LH terminal 5.

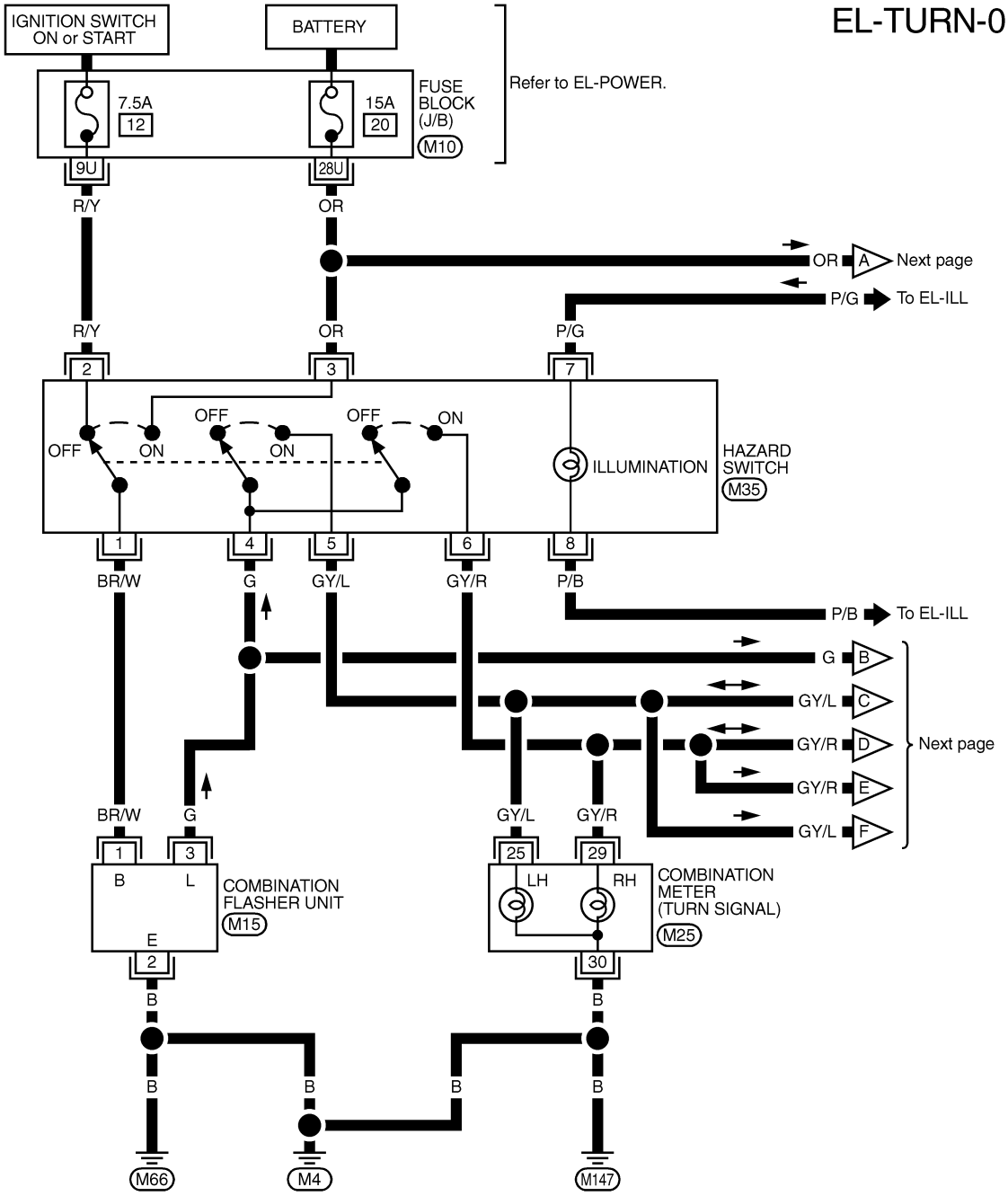
Power is supplied through terminal 5 of the multi-remote control relay

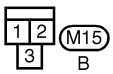
- to front turn signal lamp RH terminal 2
- to combination meter terminal 29
- to rear combination lamp RH terminal 5.

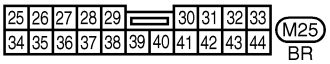
Ground is supplied to terminal 3 of each front turn signal lamp through body grounds E13 and E41.
Ground is supplied to terminal 6 of the rear combination lamp LH through body grounds B11, B22 and D210.
Ground is supplied to terminal 6 of the rear combination lamp RH through body grounds B55 and B75.
Ground is supplied to combination meter terminal 30 through body grounds M4, M66 and M147.
With power and ground supplied, the smart entrance control unit controls the flashing of the hazard warning lamps.

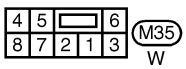
Wiring Diagram — TURN —

NAEL0032







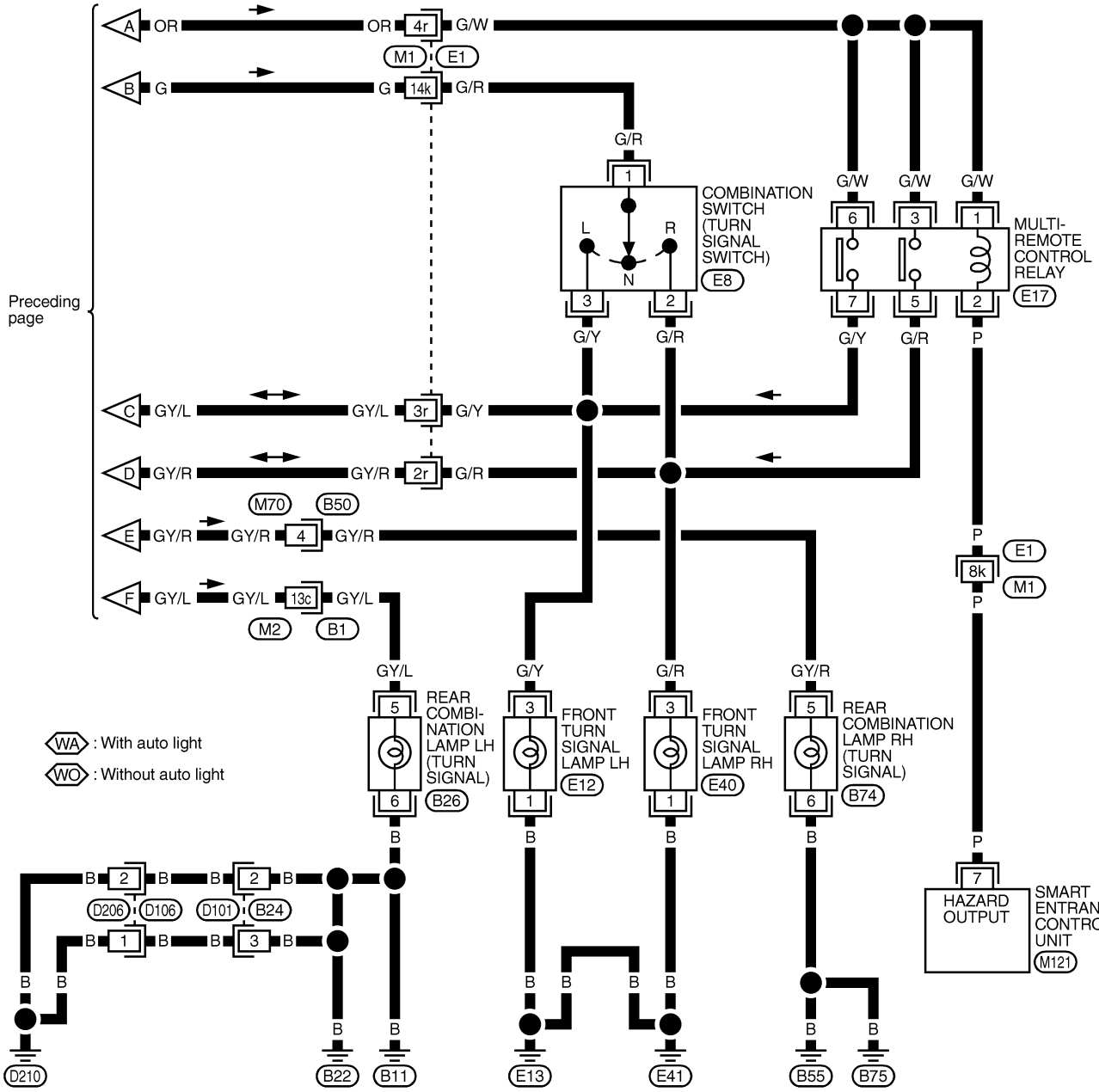


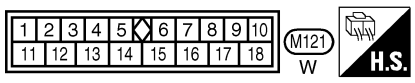
REFER TO THE FOLLOWING.

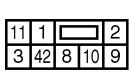
M10 -FUSE BLOCK-JUNCTION BOX (J/B)

MEL010M

EL-TURN-02







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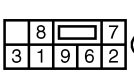
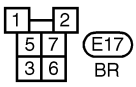
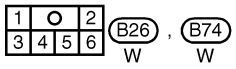


: WO

, E40 GY





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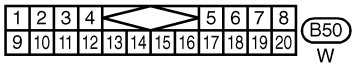
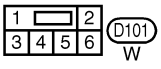
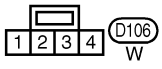






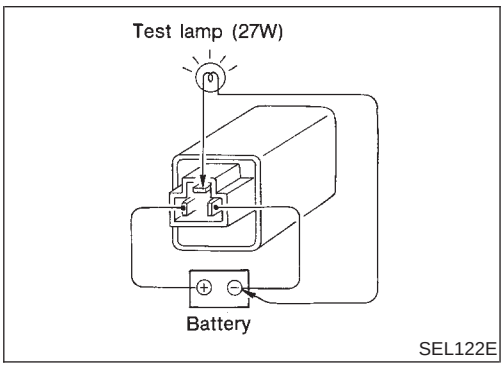
REFER TO THE FOLLOWING.
E1 , B1 -SUPER MULTIPLE JUNCTION (SMJ)

MEL011M

Trouble Diagnoses

NAEL0033

Symptom	Possible cause	Repair order
Turn signal and hazard warning lamps do not operate.	1. Hazard switch 2. Combination flasher unit 3. Open in combination flasher unit circuit	1. Check hazard switch. 2. Refer to combination flasher unit check. 3. Check wiring to combination flasher unit for open circuit.
Turn signal lamps do not operate but hazard warning lamps operate.	1. 7.5A fuse 2. Hazard switch 3. Combination switch (turn signal) 4. Open in combination switch (turn signal) circuit	1. Check 7.5A fuse [No. 12, 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 combination switch (turn signal). 4. Check the wire between combination flasher unit terminal 3 and combination switch (turn signal) terminal 1 for open circuit.
Hazard warning lamps do not operate but turn signal operate.	1. 15A fuse 2. Hazard switch 3. Open in hazard switch circuit	1. Check 15A fuse [No. 20, 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.	1. Bulb 2. Grounds E13 and E41 3. Open in front turn signal lamp circuit	1. Check bulb. 2. Check grounds E13 and E41. 3. Check harness between front turn signal lamp and combination switch.
Rear combination lamp LH does not operate.	1. Bulb 2. Grounds B11, B22 and D210 3. Open in rear combination lamp LH circuit	1. Check bulb. 2. Check grounds B11, B22 and D210. 3. Check harness between rear combination lamp LH and hazard switch.
Rear combination lamp RH does not operate.	1. Bulb 2. Grounds B55 and B75 3. Open in rear combination lamp RH circuit	1. Check bulb. 2. Check grounds B55 and B75. 3. Check harness between rear combination lamp RH and hazard switch.
LH and RH turn indicators do not operate.	1. Ground	1. Check grounds M4, M66 and M147.
LH or RH turn indicator does not operate.	1. Bulb 2. Open in turn indicator circuit	1. Check bulb in combination meter. 2. Check harness between combination meter and hazard switch.



SEL122E

Electrical Components Inspection

NAEL0034

COMBINATION FLASHER UNIT CHECK

NAEL0034S01

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

System Description

NAEL0035

The illumination lamp operation is controlled by the lighting switch which is built into the combination switch and headlamp battery saver control unit. The battery saver system is controlled by the headlamp battery saver control unit and smart entrance control unit.
Power is supplied at all times

- to tail lamp relay terminals 2 and 3
- through 10A fuse (No. 61, located in the fuse and fusible link box), and
- to headlamp battery saver control unit terminal 7, and
- to smart entrance control unit terminal 10
- through 7.5A fuse [No. 24, located in the fuse block (J/B)].

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

- to headlamp battery saver control unit terminal 1
- through 10A fuse [No. 16, located in the fuse block (J/B)], and
- to headlamp battery saver control unit terminal 10, and
- to smart entrance control unit terminal 33
- through 7.5A fuse [No. 11, located in the fuse block (J/B)].

Ground is supplied to headlamp battery saver control unit terminals 4 and 11.

LIGHTING OPERATION BY LIGHTING SWITCH

NAEL0035S01

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

- to tail lamp relay terminal 1 from headlamp battery saver control unit terminals 6 and 14
- through headlamp battery saver control unit terminals 5 and 13, and
- through body grounds E13 and E41.

Tail lamp relay is then energized and illumination lamps illuminate.
The lighting switch must be in the 1ST or 2ND position for illumination.

LIGHTING OPERATION BY AUTO LIGHT CONTROL SYSTEM

NAEL0035S03

When auto light operation is operated, ground is supplied

- to tail lamp relay terminal 1 from headlamp battery saver control unit terminals 6 and 14
- through headlamp battery saver control unit terminals 5 and 13, and
- through auto light control unit terminal 7.

Tail lamp relay is then energized and the 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.
The following chart shows the power and ground connector terminals for the components included in the illumination system.

Component	Connector No.	Power terminal	Ground terminal
Illumination control switch	M19	1	3
A/C switch	M45	2	1
4WD shift switch	M141	7	8
Ashtray	M54	1	2
A/T indicator	B59	3	4
Cigarette lighter	M57	3	4
Audio unit	M48	8	7
CD player	M92, M93	3	5
Compass and thermometer	R4	5	2
Hazard switch	M35	7	8
Rear window defogger switch	M36	5	6
CD auto changer	M125	2	9

Component	Connector No.	Power terminal	Ground terminal
Headlamp aiming switch	M16	3	4
Power window main switch	D6	16	18
Front power window switch RH	D36	10	17
A/C auto amp.	M102	24	25
Clock	M39	3	4
Globe box lamp	M30	1	2

The ground for all of the components except for compass, glove box lamp and ashtray are controlled through terminals 2 and 3 of the illumination control switch and body grounds M77 and M111.

BATTERY SAVER CONTROL

NAEL0035S02

When the ignition switch is turned from ON (or START) to OFF (or ACC) positions while illumination lamps are illuminated, the RAP signal is supplied to terminal 10 of the headlamp battery saver control unit from smart entrance control unit terminal 5.

After counting 45 seconds by the RAP signal from the smart entrance control unit to headlamp battery saver control unit, the ground supply to terminal 1 of the tail lamp relay from headlamp battery saver control unit teminals 6 and 14 is terminated.

Then illumination lamps are turned off.

Illumination lamps are turned off when driver or passenger side door is opened even if 45 seconds have not passed after the ignition switch is turned from ON (or START) to OFF (or ACC) positions while illumination lamps are illuminated.

When the lighting switch is turned from OFF to 1ST (or 2ND) after illumination lamps are turned off by the battery saver control, ground is supplied

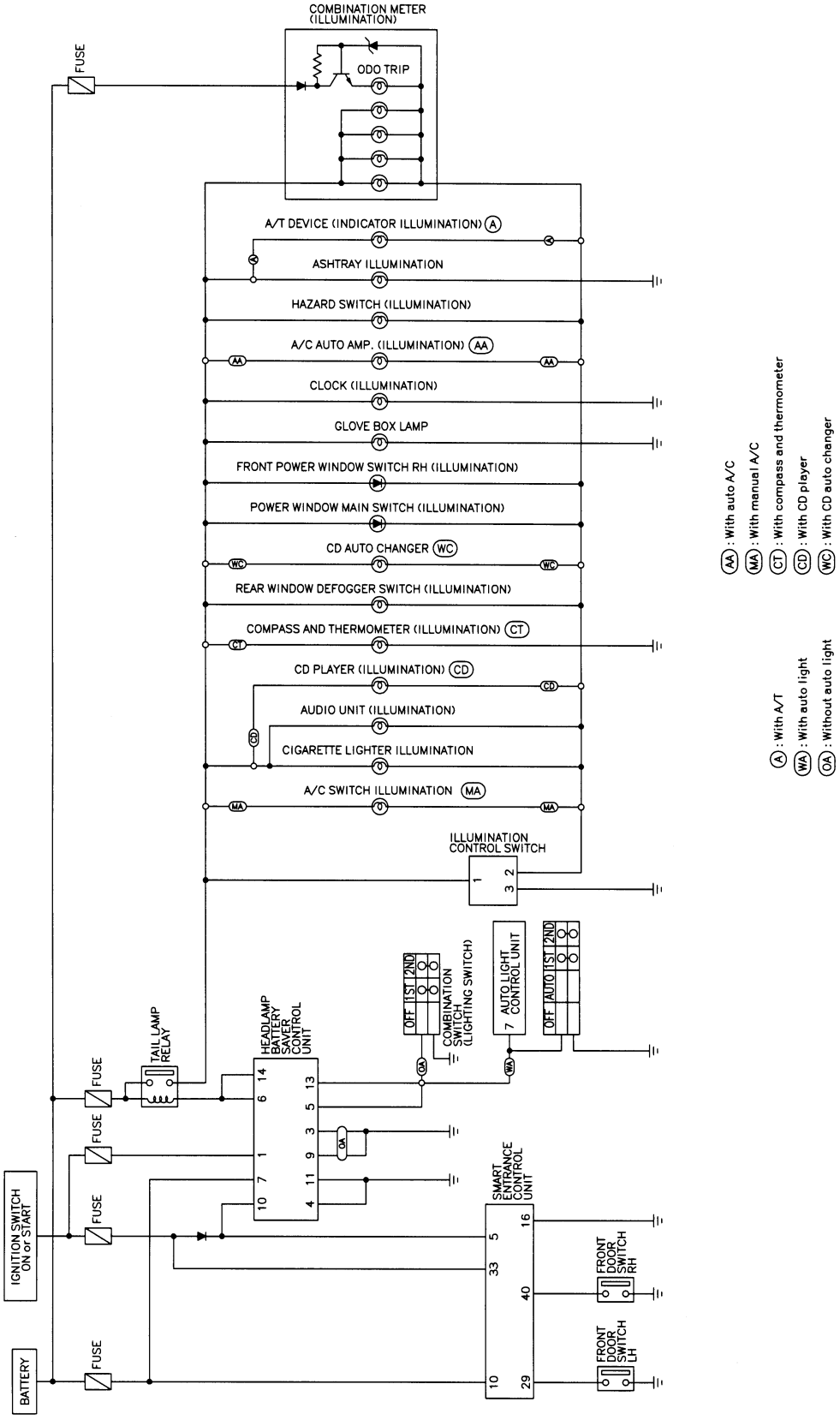
- to headlamp battery saver control unit terminals 5 and 13 from lighting switch terminal 11, and
- to tail lamp relay terminal 1 from headlamp battery saver control unit terminals 6 and 14.

Then illumination lamps illuminate again.

NOTE:
For Trouble Diagnoses for battery saver control, refer to "PARKING, LICENSE AND TAIL LAMPS" (EL-82).

Schematic

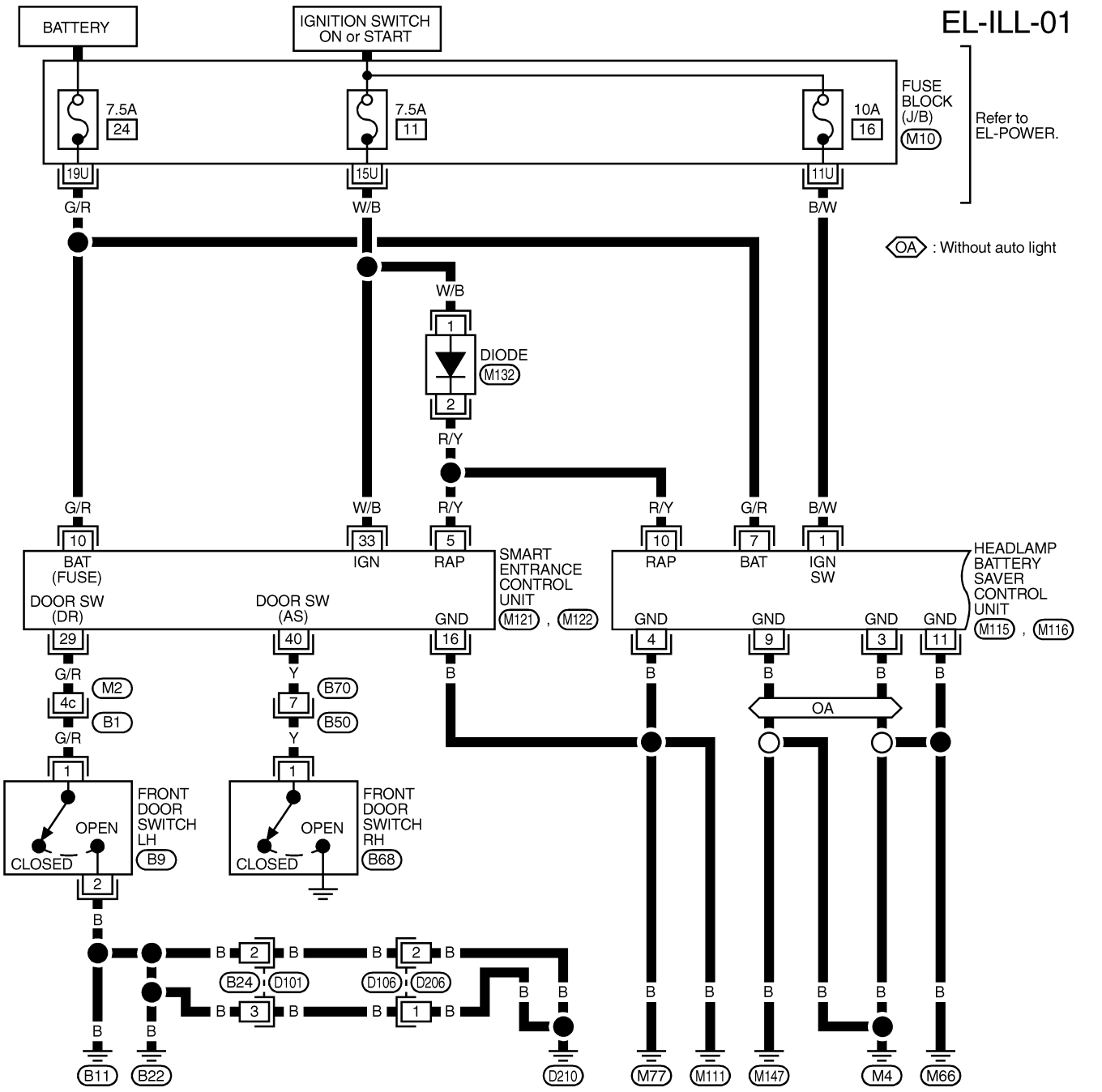
NAEL0036

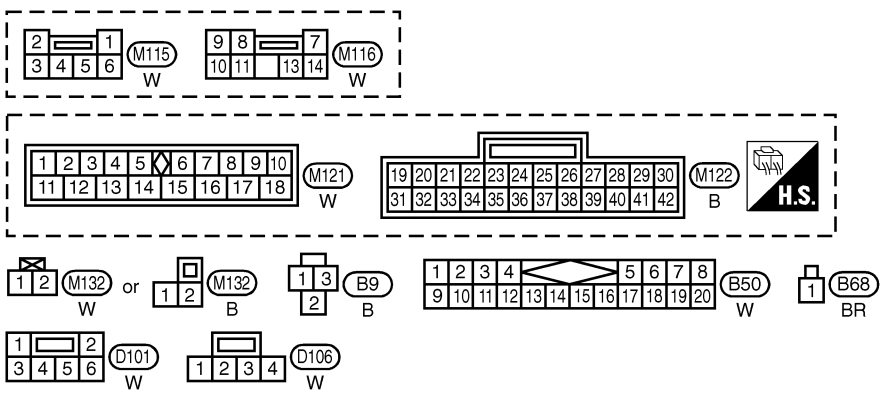


MEL012M

Wiring Diagram — ILL —

NAEL0037





REFER TO THE FOLLOWING.

B1 -SUPER MULTIPLE JUNCTION (SMJ)

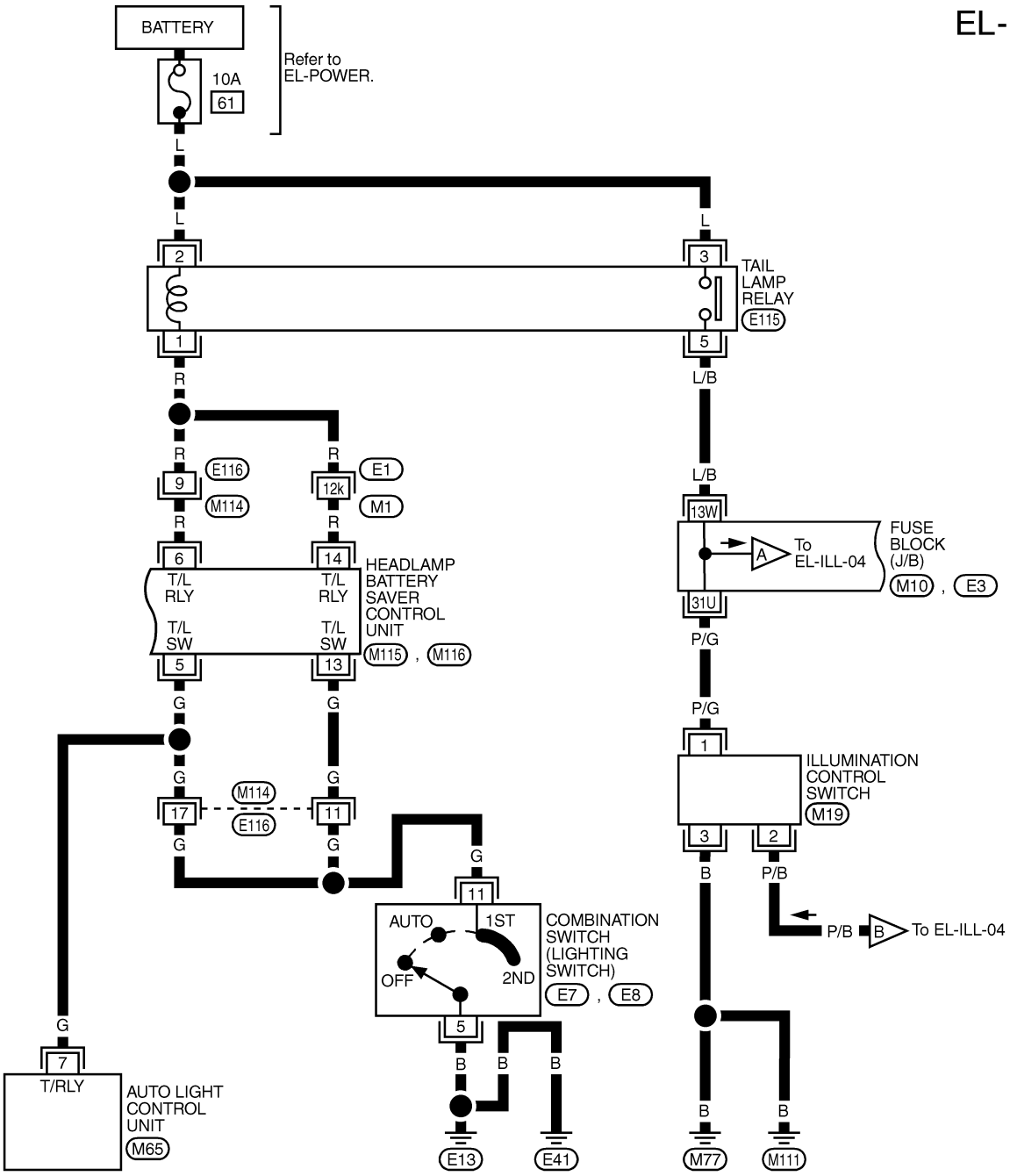
M10 -FUSE BLOCK- JUNCTION BOX (J/B)

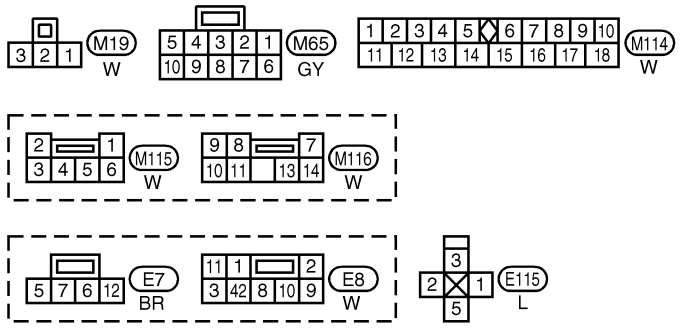
MEL018O

WITH AUTO LIGHT SYSTEM

NAEL0037S01

EL-ILL-02





REFER TO THE FOLLOWING.
E1 -SUPER MULTIPLE JUNCTION (SMJ)
M10 , E3 -FUSE BLOCK-JUNCTION BOX (J/B)

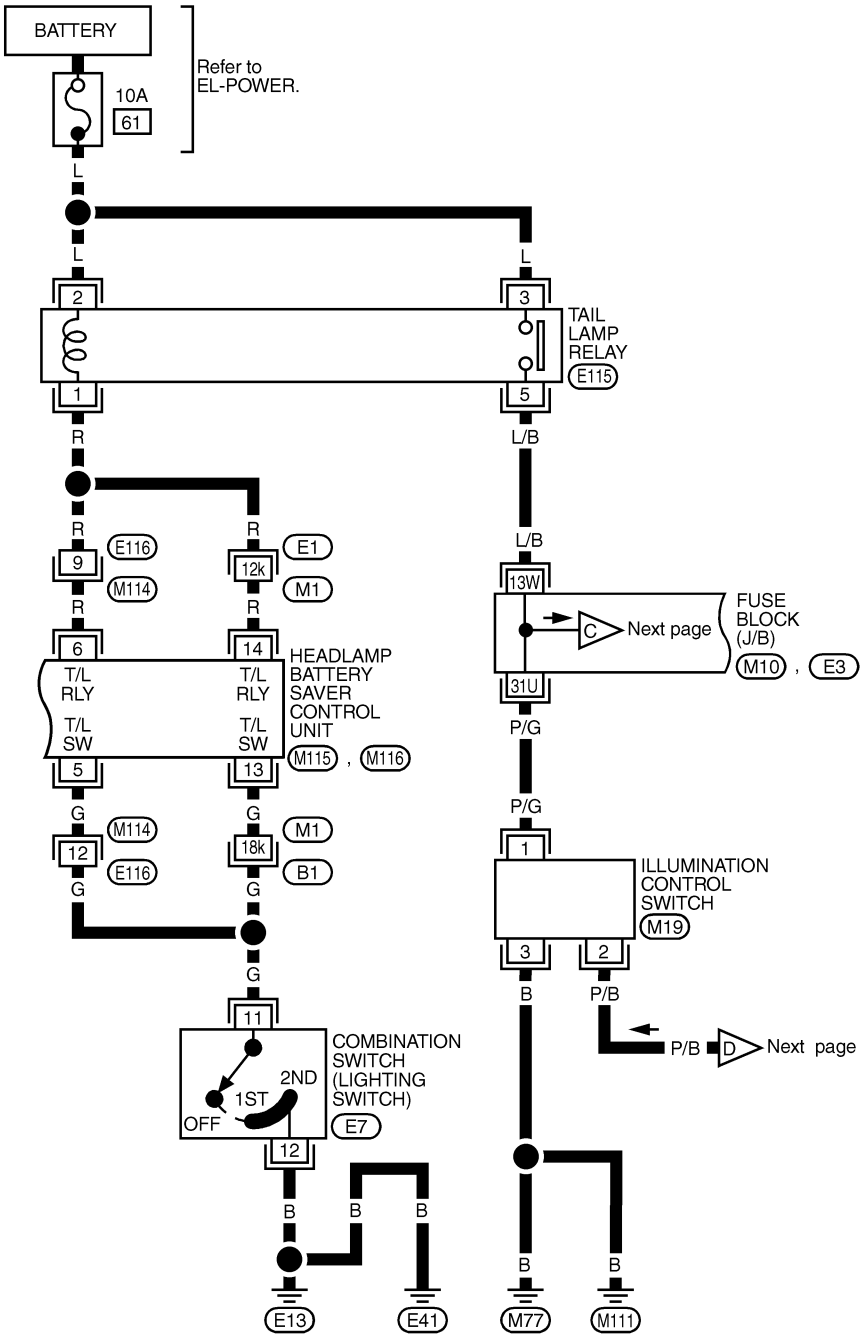
MEL014M

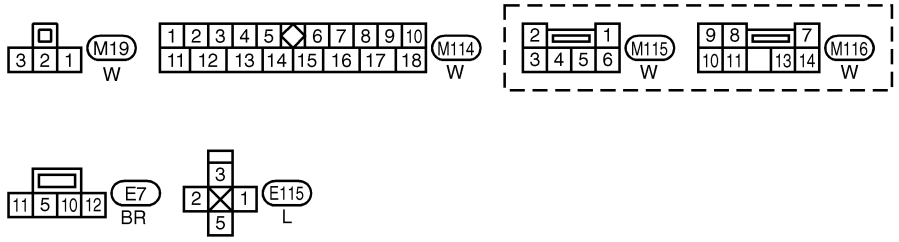
Wiring Diagram — ILL — (Cont'd)

WITHOUT AUTO LIGHT SYSTEM

NAEL0037S02

EL-ILL-03



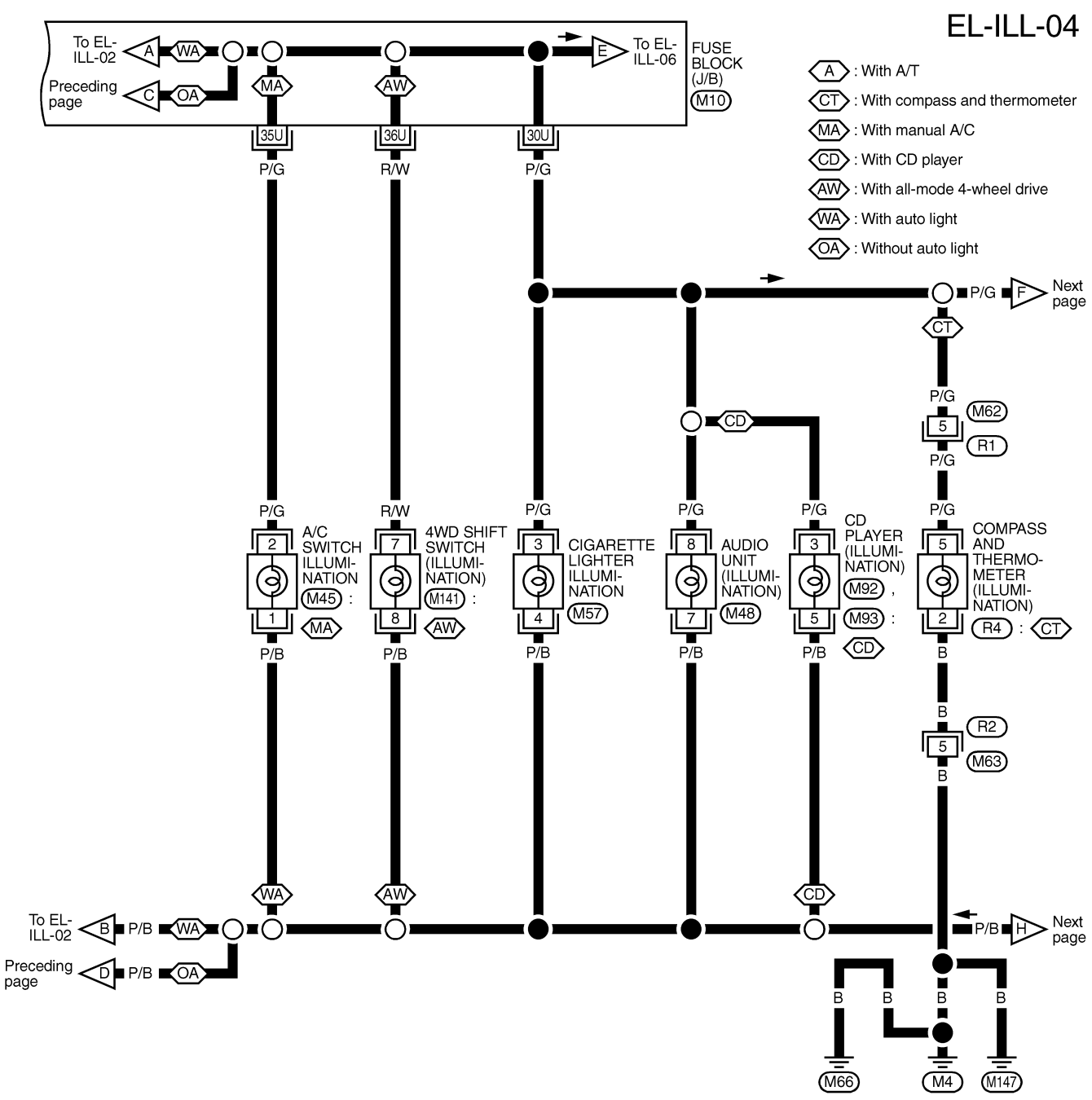


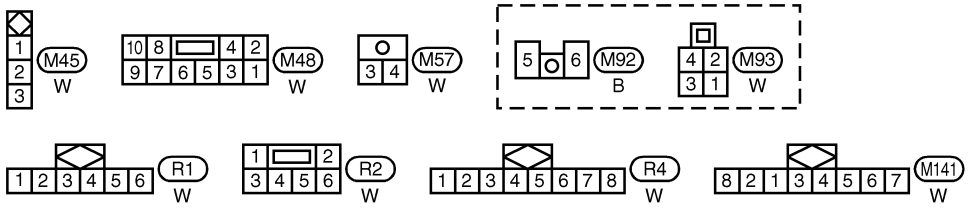
REFER TO THE FOLLOWING.

E1 , B1 -SUPER MULTIPLE JUNCTION (SMJ)

M10 , E3 -FUSE BLOCK-JUNCTION BOX (J/B)

MEL015M

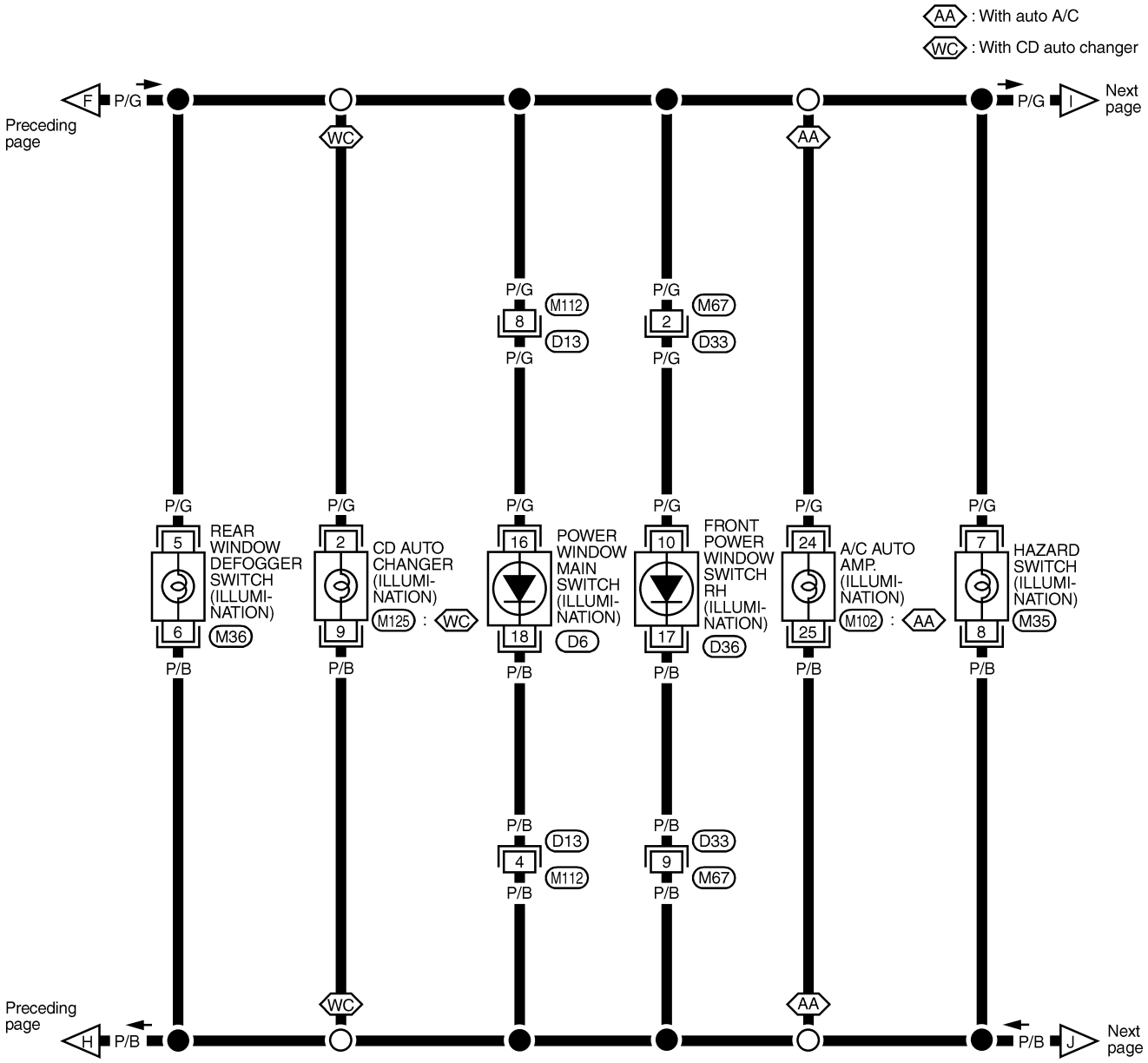


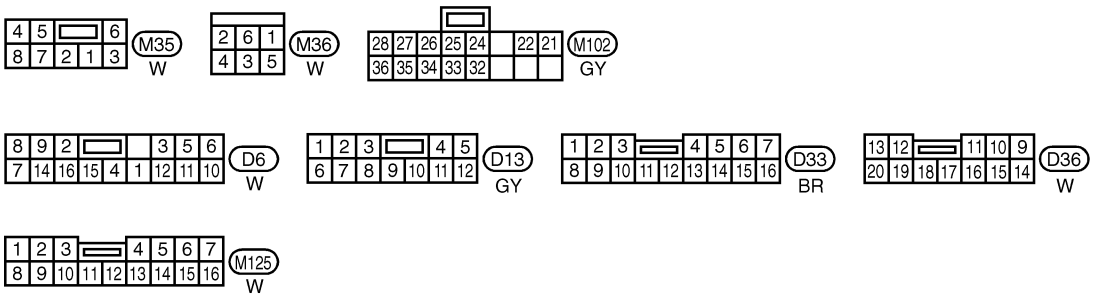


REFER TO THE FOLLOWING.
M10 -FUSE BLOCK-JUNCTION BOX (J/B)

MEL016M

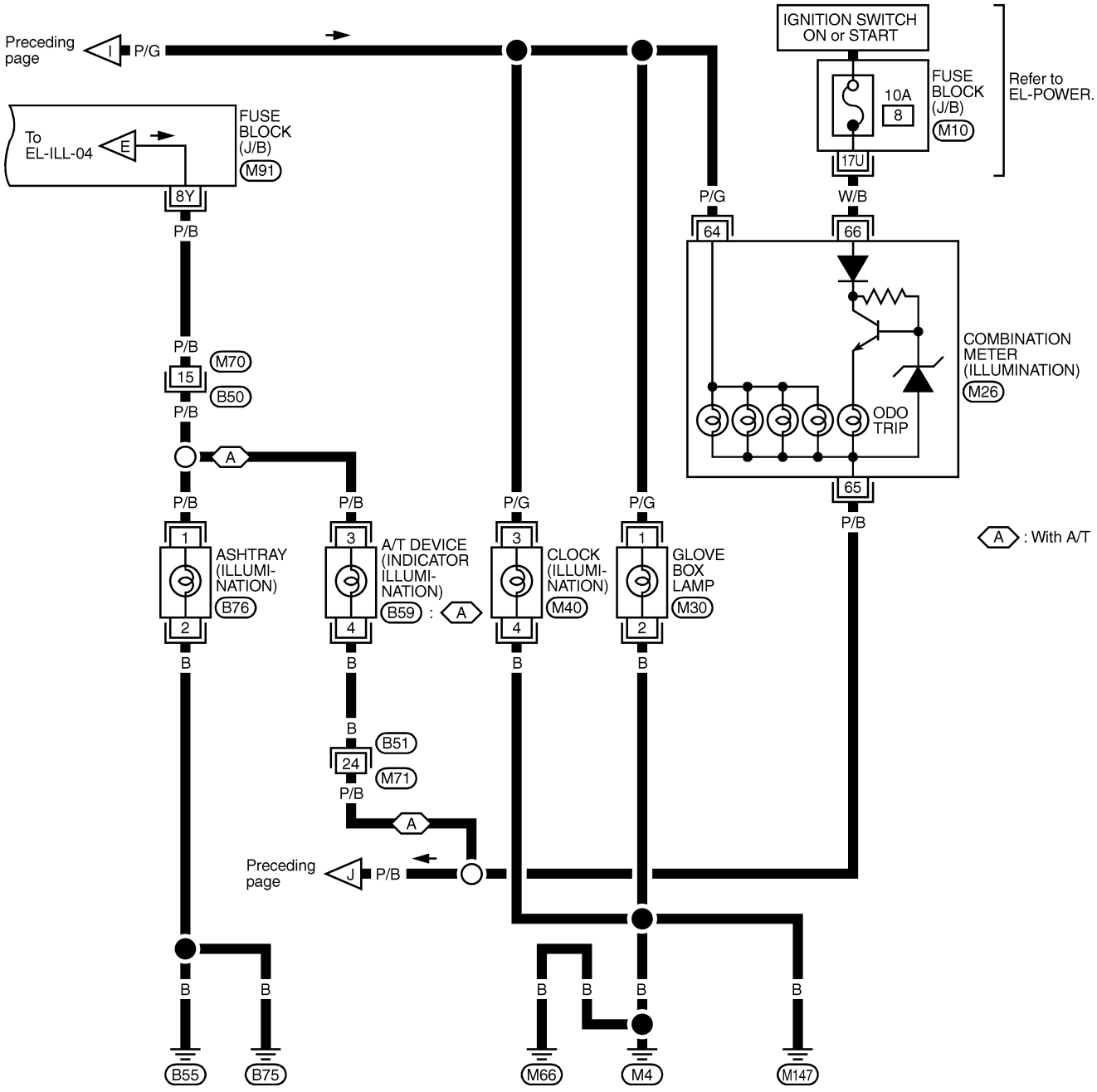
EL-ILL-05

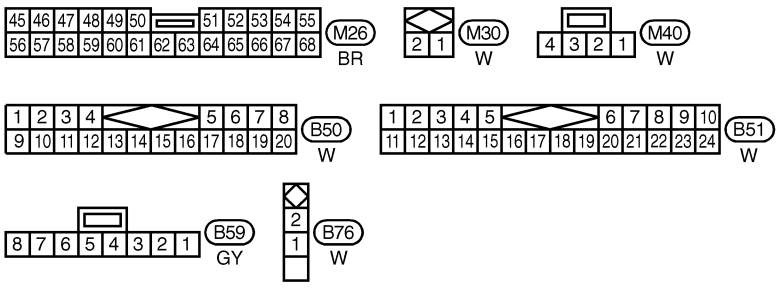




MEL017M

EL-ILL-06





REFER TO THE FOLLOWING.
M10 , M91 -FUSE BLOCK-JUNCTION BOX (J/B)

MEL018M

System Description

NAEL0038

POWER SUPPLY AND GROUND

NAEL0038S06

Power is supplied at all times:

- through 7.5A fuse [No. 24, located in the fuse block (J/B)]
- to key switch terminal 2 and
- to smart entrance control unit terminal 10.

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

- through key switch terminal 1
- to smart entrance control unit terminal 32.

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

- through 7.5A fuse [No. 11, located in the fuse block (J/B)]
- to smart entrance control unit terminal 33.

Ground is supplied:

- to smart entrance control unit terminal 16
- through body grounds terminals M77 and M111.

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

- through body grounds B11, B22 and D210
- to front door switch (LH) terminal 2
- from front door switch (LH) terminal 1
- to smart entrance control unit terminal 29.

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

- through case ground of front door switch (RH)
- from front door switch (RH) terminal 1
- to smart entrance control unit terminal 40.

When any other door (except front door) is opened, ground is supplied to smart entrance control unit terminal 28 in the same manner as the front door switch (front passenger side).
When the front driver side door is unlocked, the smart entrance control unit receives a ground signal:

- through body grounds terminals M77 and M111
- to front door lock actuator (driver side unlock sensor) terminal 2
- from front door lock actuator (driver side unlock sensor) terminal 4
- to smart entrance control unit terminal 36.

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

- through smart entrance control unit terminal 8
- to interior lamp terminal 2.

With power and ground supplied, the interior lamp illuminates.

SWITCH OPERATION

NAEL0038S07

When interior lamp switch is ON, ground is supplied:

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

And power is supplied:

- to interior lamp terminal 1
- from smart entrance control unit terminal 17.

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

- through body grounds M4, M66 and M147
- to spot lamp terminal 2.

And power is supplied:

- to spot lamp terminal 1
- from smart entrance control unit terminal 17.

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

- through body grounds M4, M66 and M147
- to vanity mirror illuminations (LH and RH) terminals 2.

And power is supplied:

- to vanity mirror illuminations (LH and RH) terminals 1
- from smart entrance control unit terminal 17.

With power and ground supplied, interior lamps turn ON.

INTERIOR LAMP TIMER OPERATION

NAEL0038S08

When interior lamp switch is in the "DOOR" position, the smart entrance control unit keeps the interior lamp illuminated for about 30 seconds when:

- unlock signal is supplied from driver's door unlock sensor while all doors are closed and key is removed from ignition key cylinder
- unlock signal is supplied from multi-remote controller while all doors are closed and driver's door is locked
- key is removed from ignition key cylinder while all doors are closed
- driver's door is opened and then closed while key is removed from the iginition key cylinder. (However, if the driver's door is closed with the key insered 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

NAEL0038S09

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

BATTERY SAVER

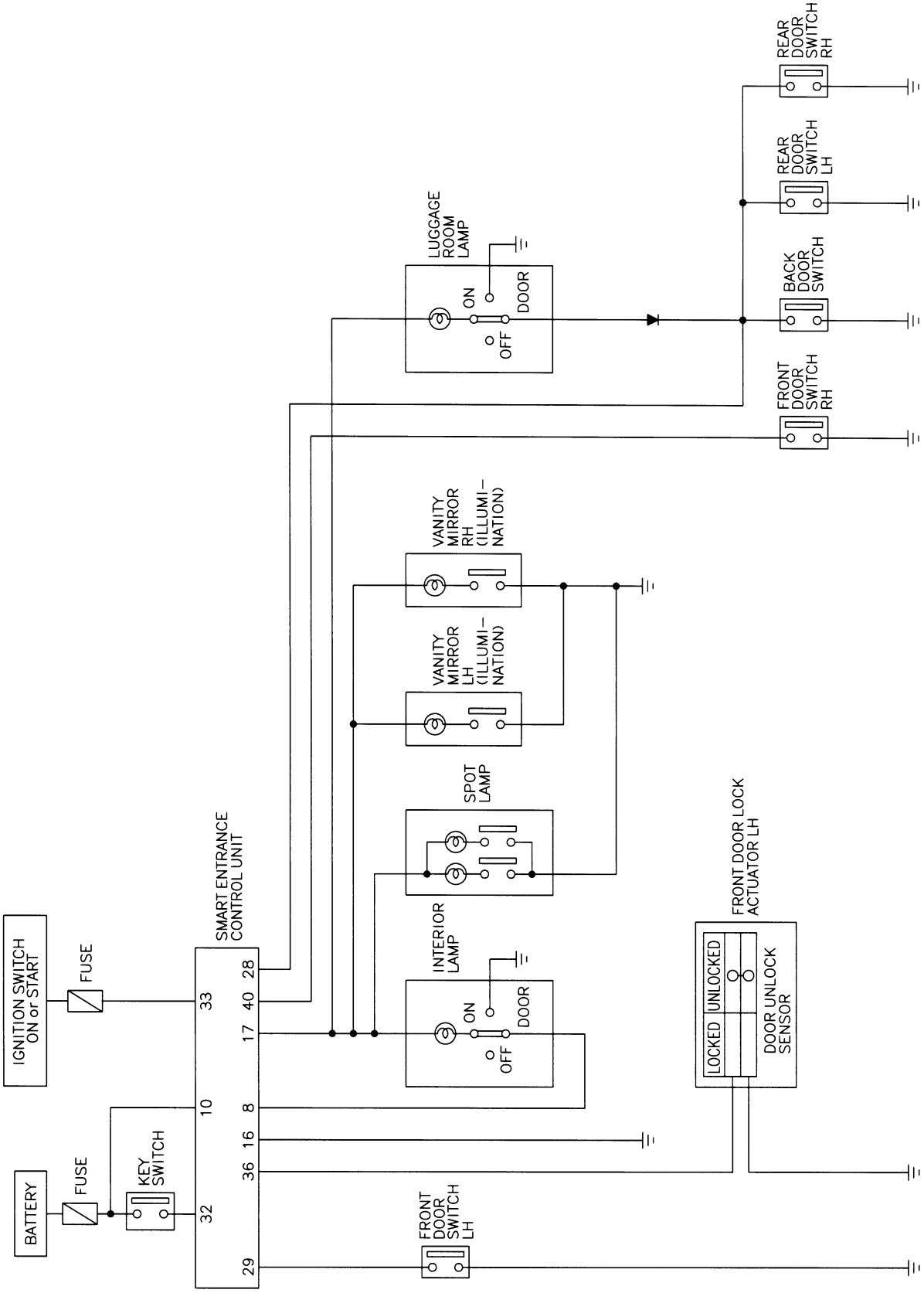
NAEL0038S10

The lamp turns off automatically when interior lamp, luggage room lamp, spot lamp and/or vanity mirror illumination is illuminated with the ignition key is in OFF position, if the lamp remains lit by the door switch open signal or if the lamp switch is in ON position for more than 10 minutes.
After lamps turn OFF by the battery saver system, the lamps illuminate again when:

- driver's door is locked or unlocked,
- door is opened or closed,
- key is inserted or removed in ignition key cylinder.

Schematic

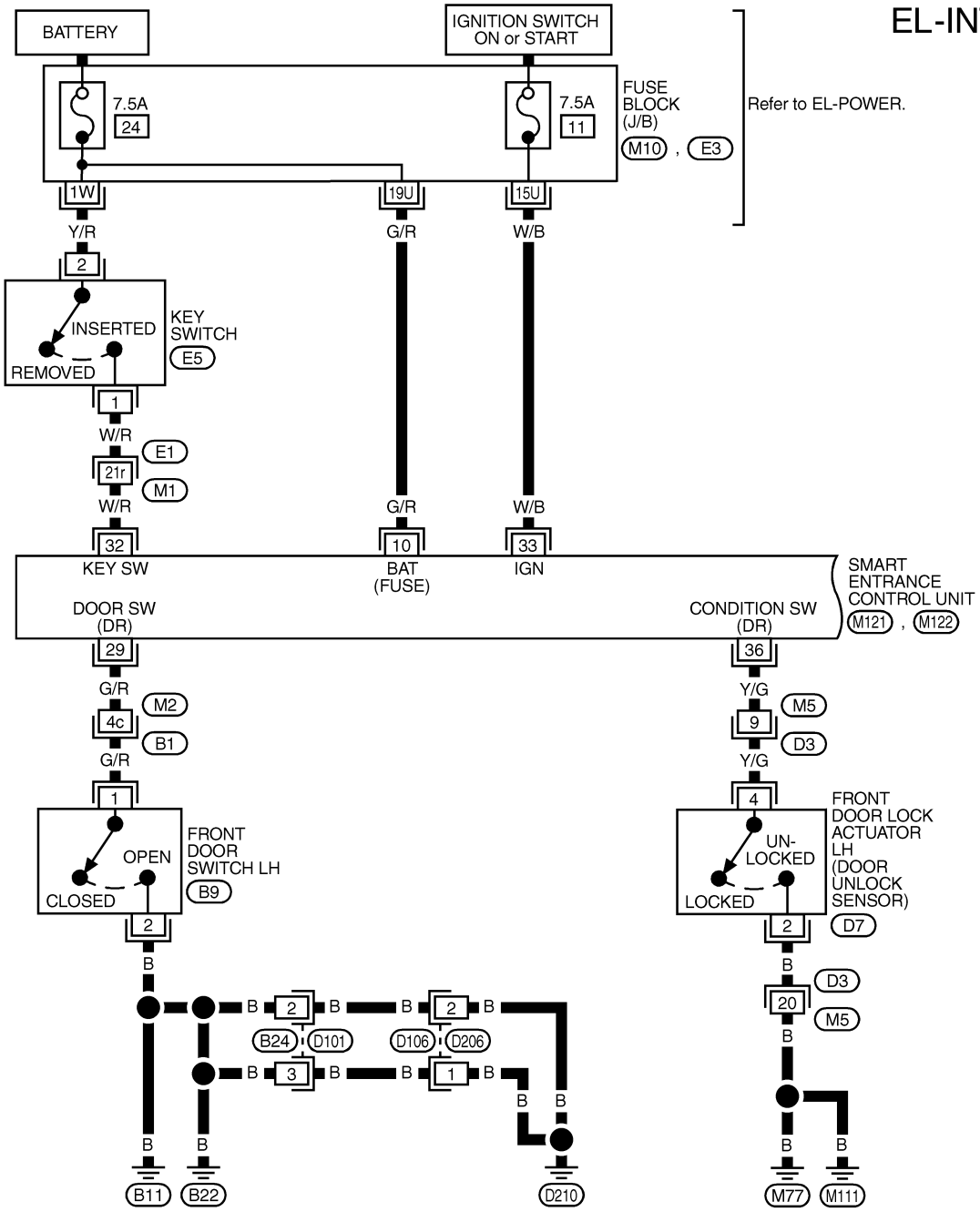
NAEL0158

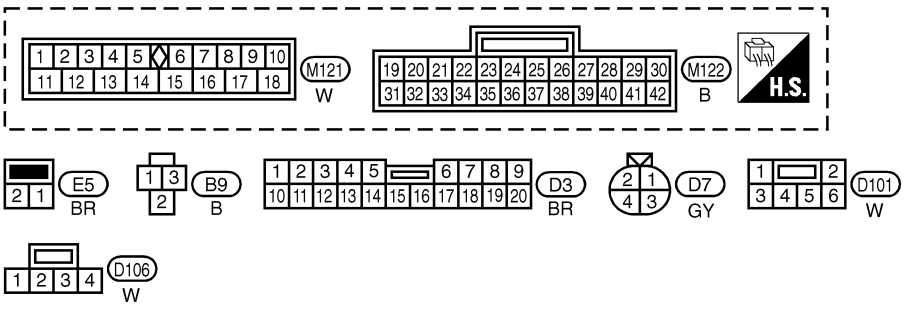


MEL209M

Wiring Diagram — INT/L —

NAEL0040

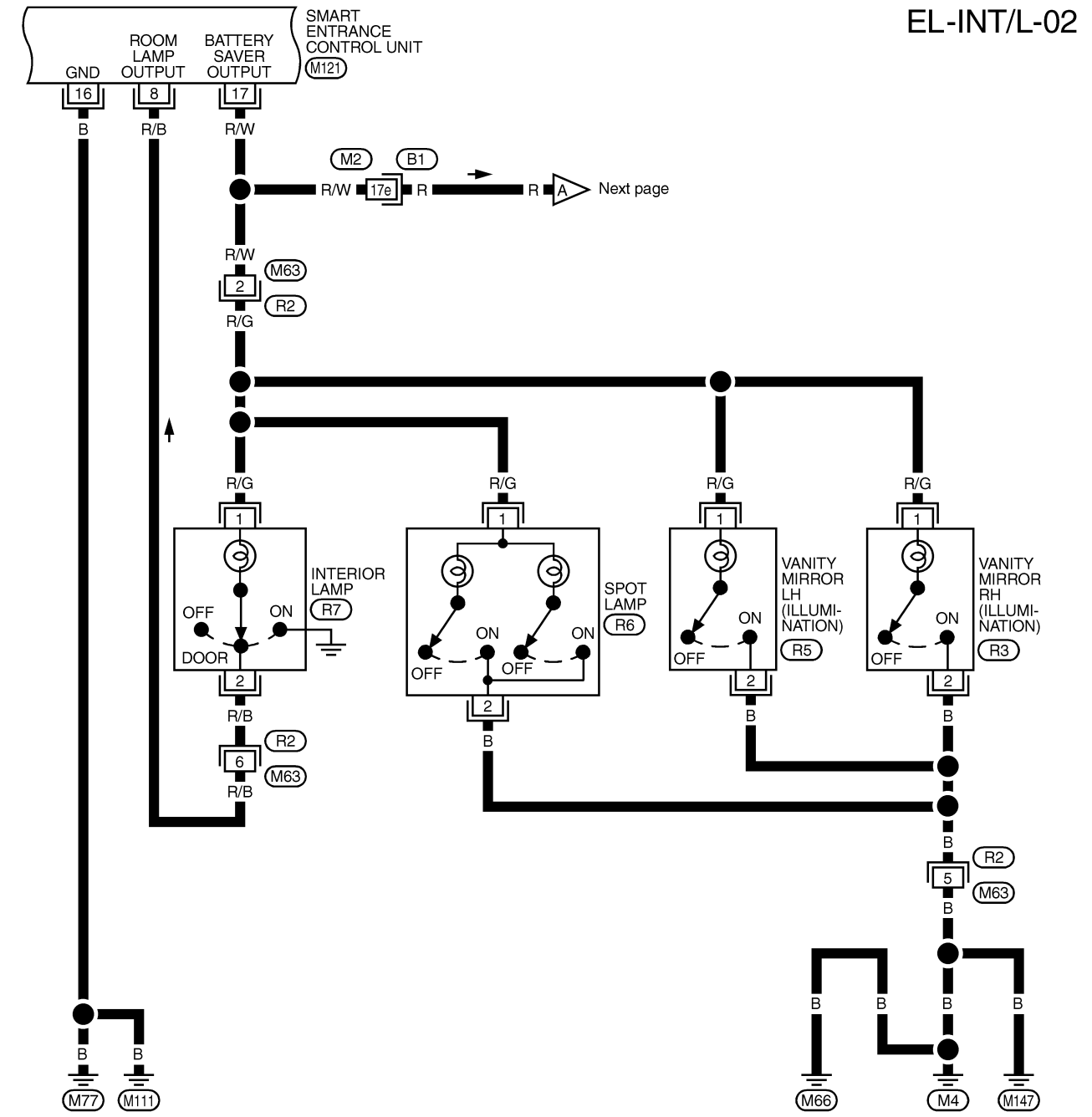


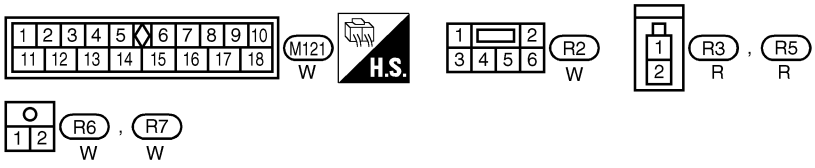


REFER TO THE FOLLOWING.
E1 , B1 -SUPER MULTIPLE JUNCTION (SMJ)
M10 , E3 -FUSE BLOCK-JUNCTION BOX (J/B)

MEL789L

Wiring Diagram — INT/L — (Cont'd)



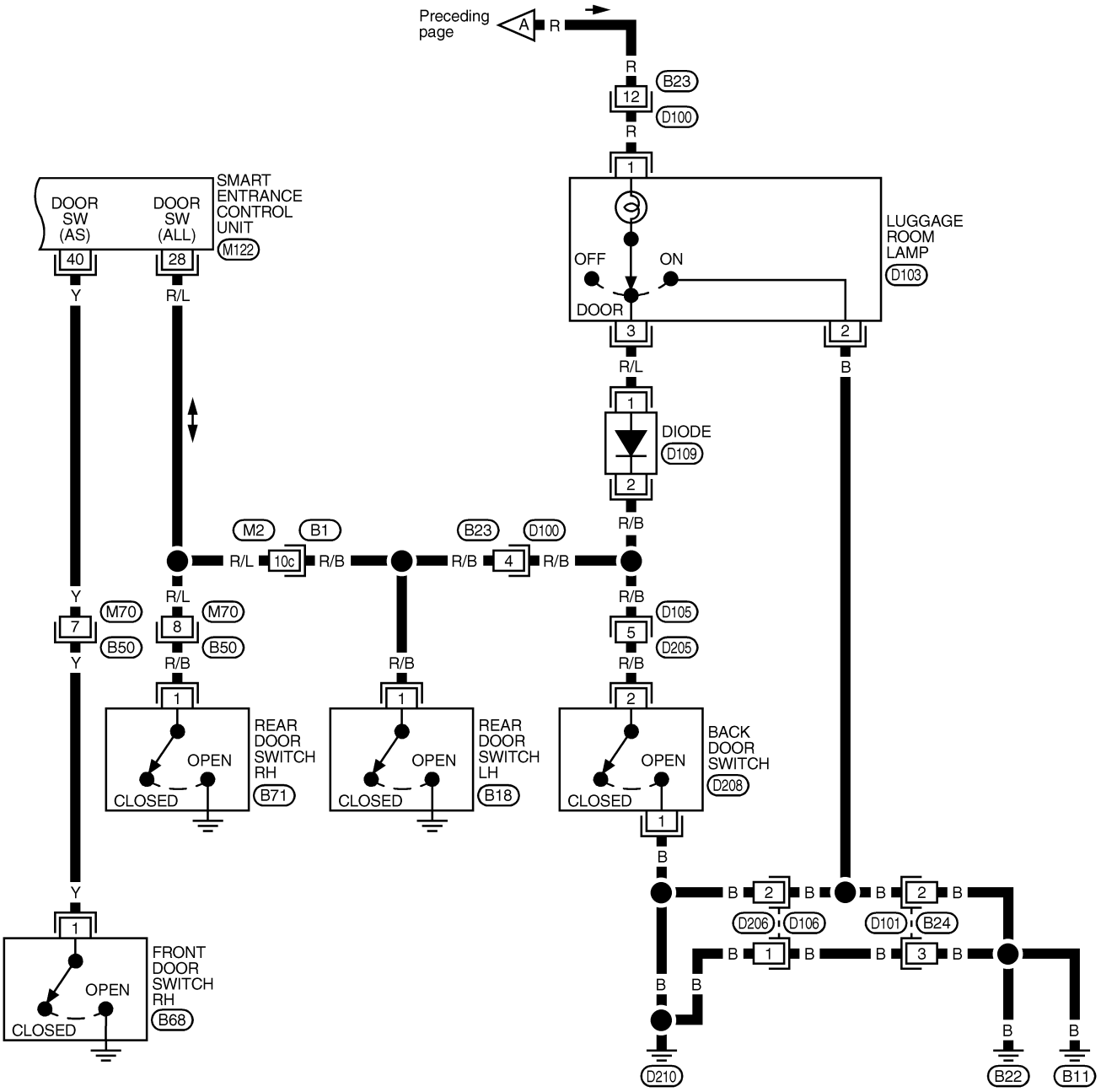


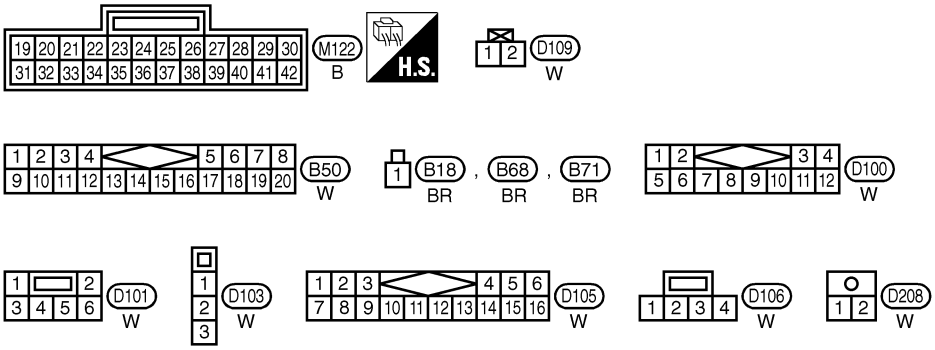
REFER TO THE FOLLOWING.

B1 -SUPER MULTIPLE JUNCTION (SMJ)

MEL790L

EL-INT/L-03



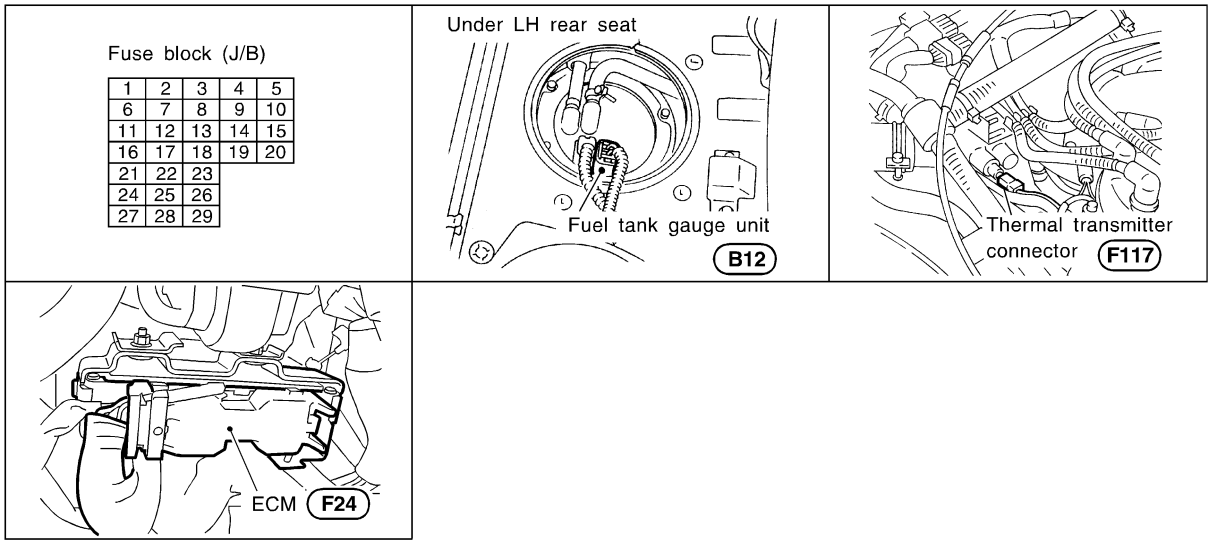


REFER TO THE FOLLOWING.
B1 -SUPER MULTIPLE JUNCTION (SMJ)

MEL791L

Component Parts and Harness Connector Location

NAEL0041



SEL351X

System Description

NAEL0042

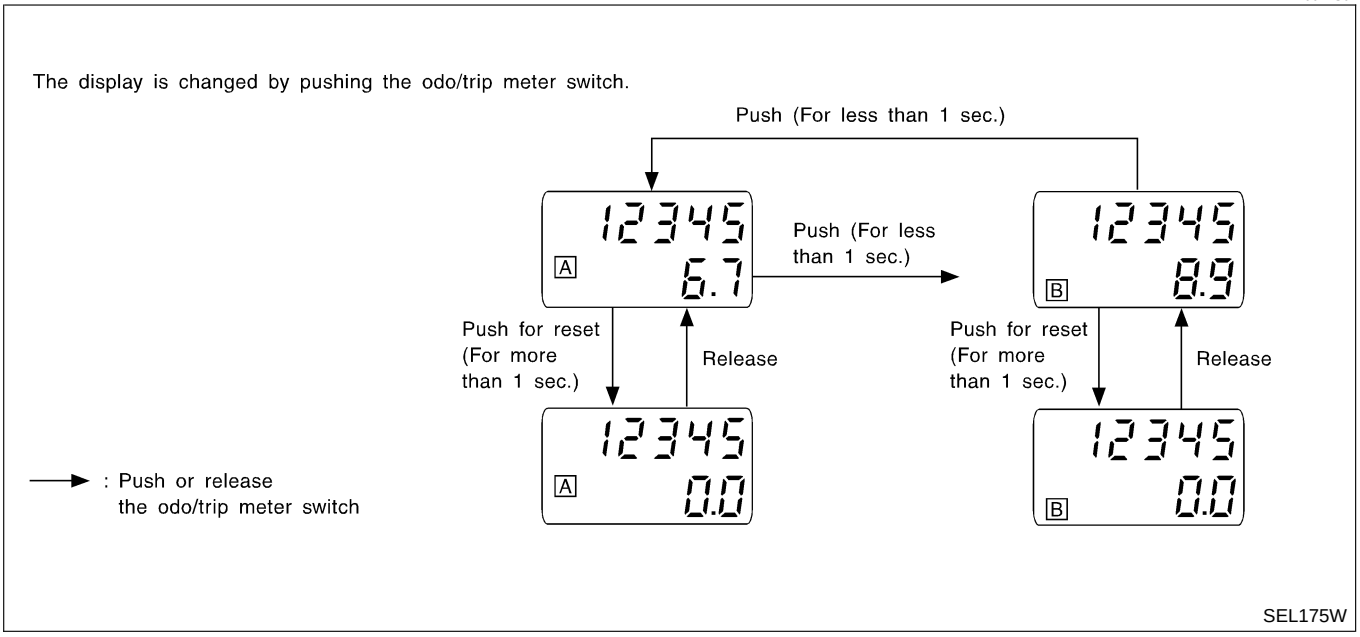
UNIFIED CONTROL METER

NAEL0042S06

- Speedometer, odo/trip meter, tachometer, fuel gauge and water temperature gauge are controlled totally by control unit.
- 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

NAEL0042S07



SEL175W

NOTE:
Turn ignition switch to the “ON” position to operate odo/trip meter.

POWER SUPPLY AND GROUND CIRCUIT

NAEL0042S08

Power is supplied at all times

- through 7.5A fuse [No. 24, located in the fuse block (J/B)]
- to combination meter terminal 62.

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

- through 10A fuse [No. 8, located in the fuse block (J/B)]
- to combination meter terminal 66.

Ground is supplied

- to combination meter terminal 59
- through body grounds M4, M66 and M147.

WATER TEMPERATURE GAUGE

NAEL0042S01

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

NAEL0042S02

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

NAEL0042S03

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 3 of the fuel level sensor unit
- through terminal 2 of the fuel level sensor unit and
- through body grounds B11, B22 and D210.

SPEEDOMETER

NAEL0042S04

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

The voltage is supplied

- from combination meter terminal 15 for the speedometer
- to terminal 2 of the vehicle speed sensor.

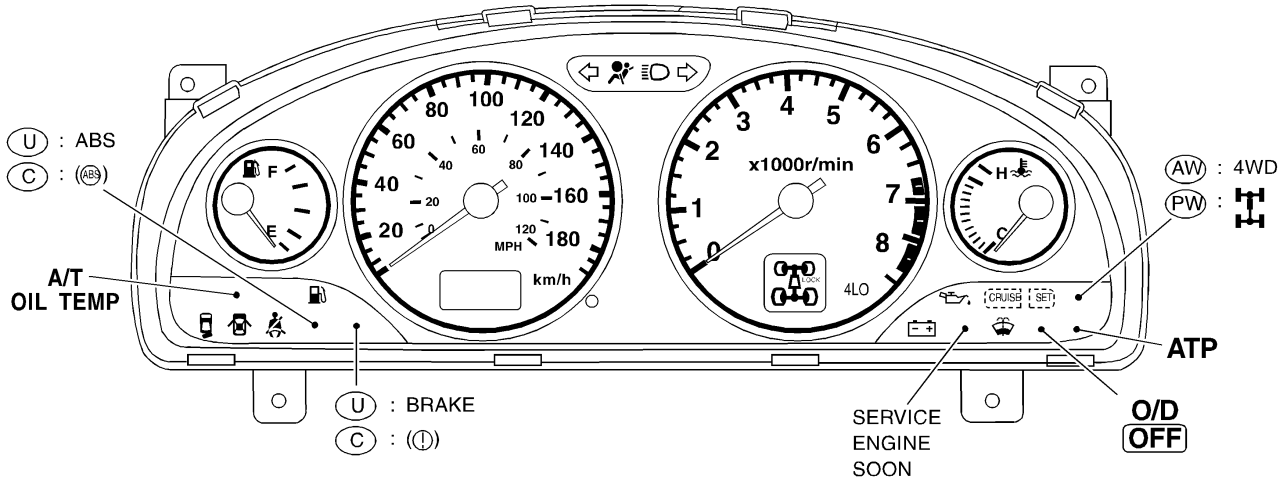
The speedometer converts the voltage into the vehicle speed displayed.

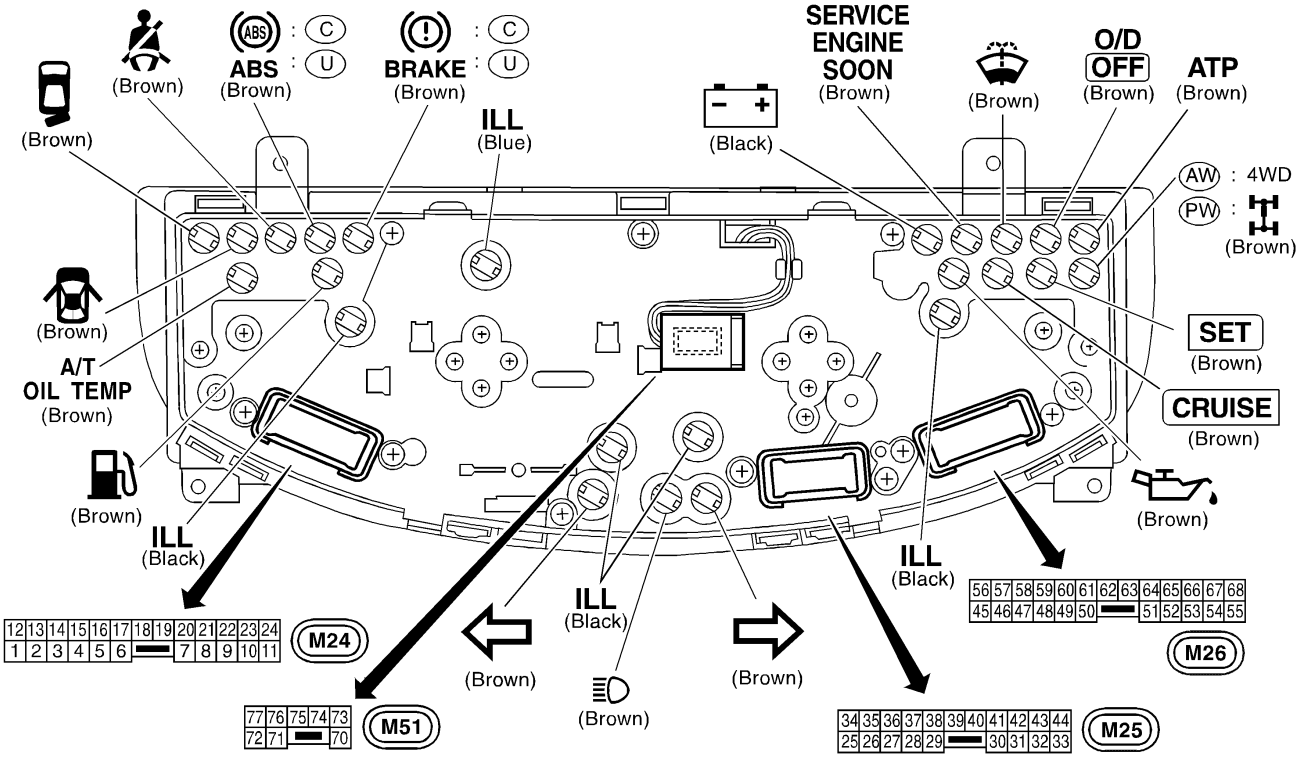
Combination Meter

CHECK

NAEL0043

NAEL0043S01





Bulb socket color	Bulb wattage
Brown	1.4W
Blue	2.0W
Black	3.0W

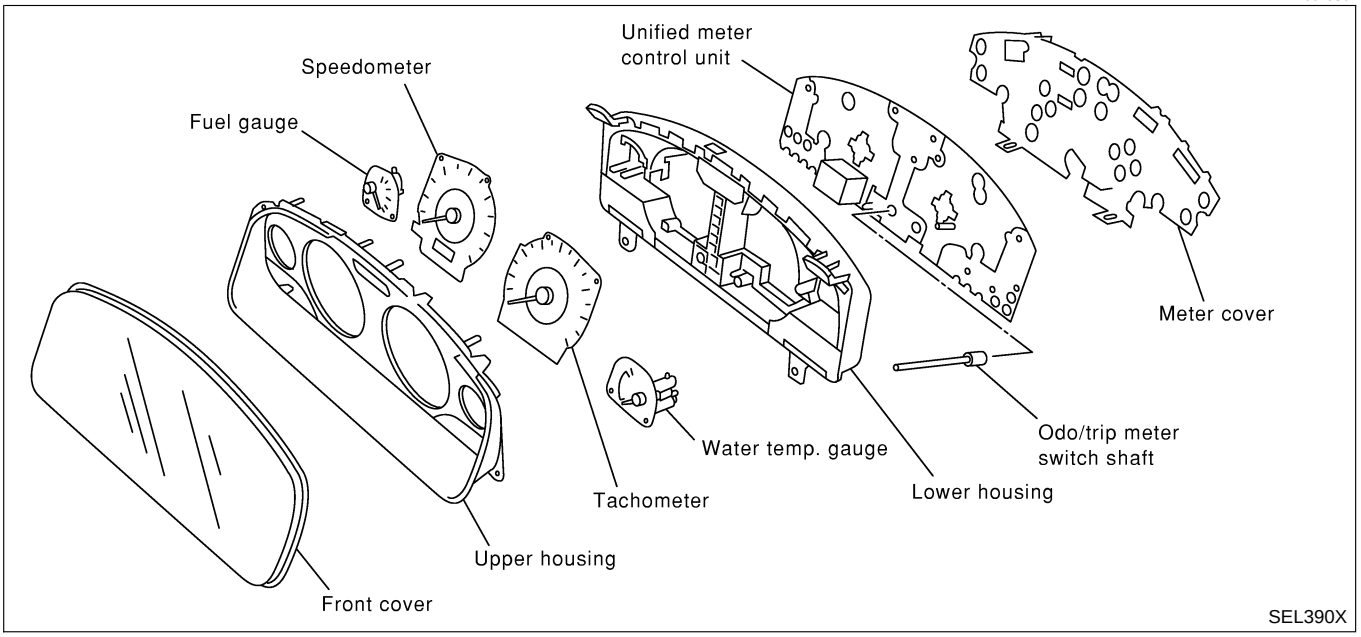
( ): Warning bulb socket color

(U): For USA
(C): For Canada
(AW): With all-mode 4-wheel drive
(PW): With part-time 4-wheel drive

MEL247M

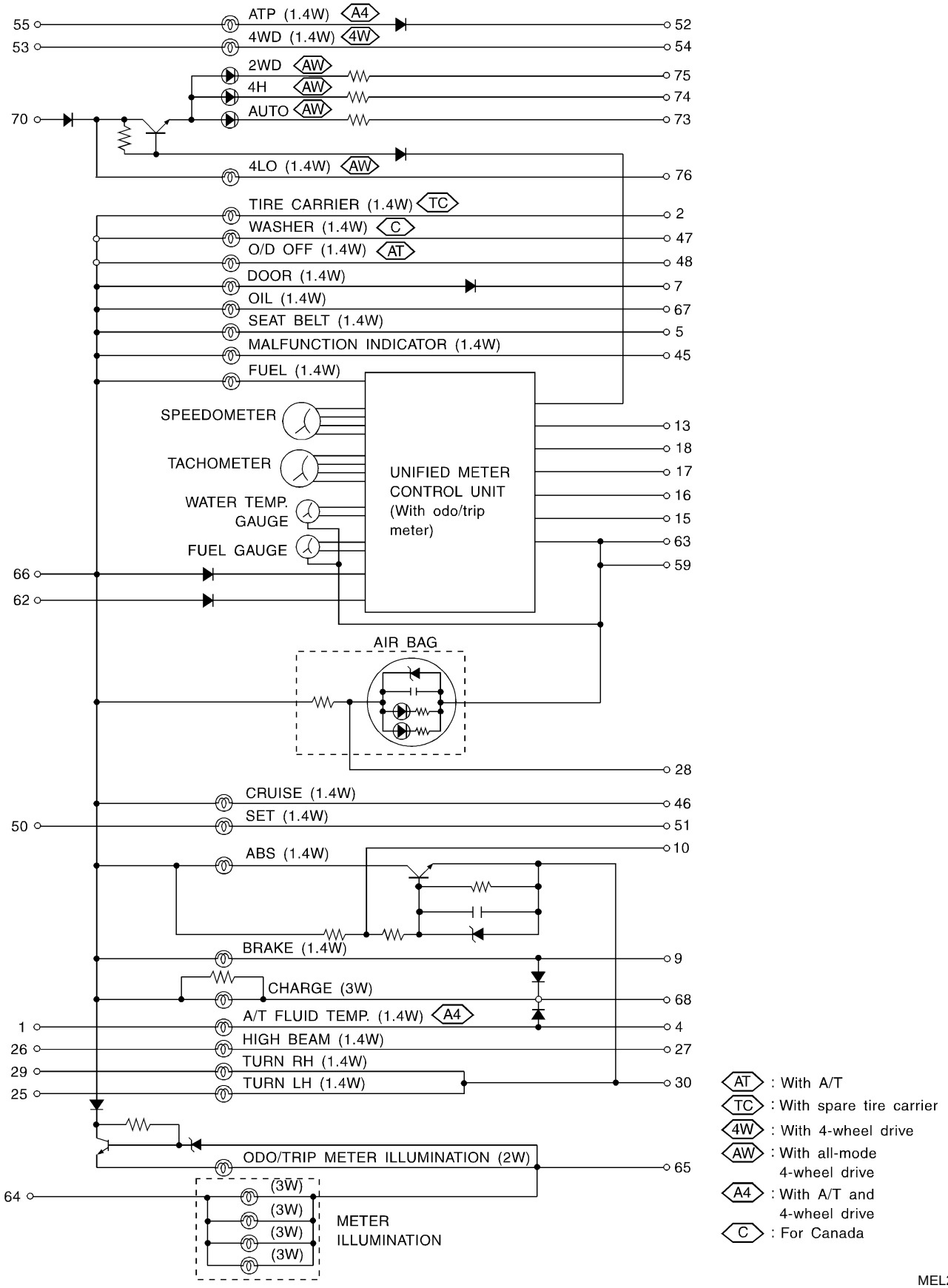
CONSTRUCTION

NAEL0043S02



Schematic

NAEL0199

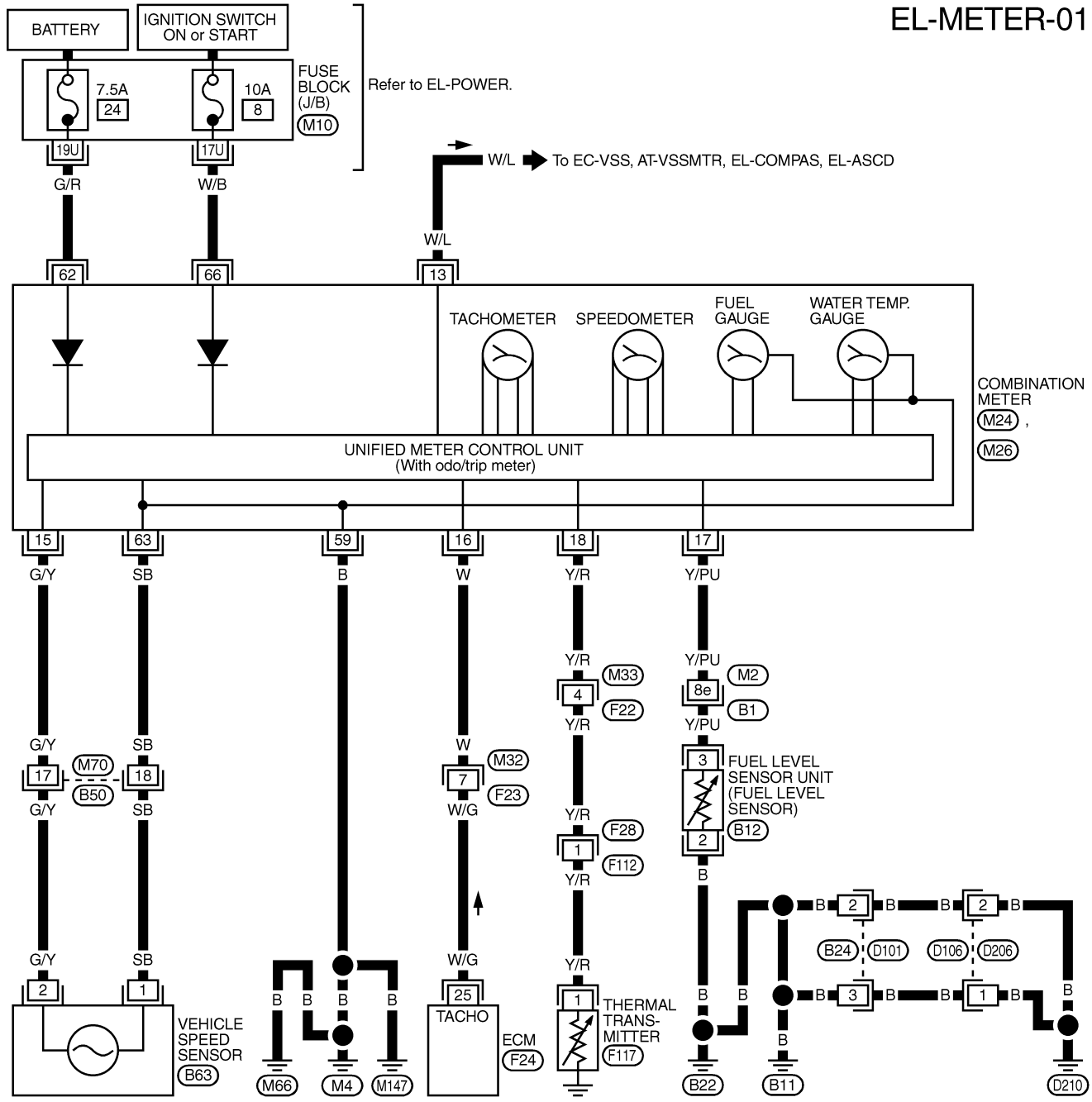


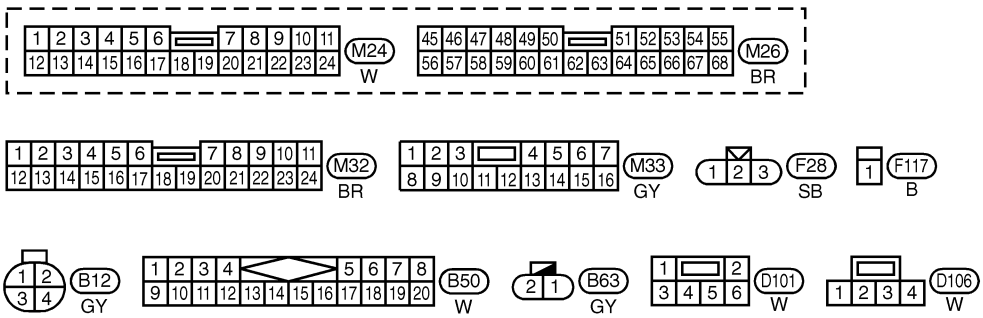
MEL248M

Wiring Diagram — METER —

NAEL0045

EL-METER-01





REFER TO THE FOLLOWING.
B1 -SUPER MULTIPLE JUNCTION (SMJ)
M10 -FUSE BLOCK-JUNCTION BOX (J/B)
F24 -ELECTRICAL UNITS-

MEL020M

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

NAEL0200

DIAGNOSIS FUNCTION

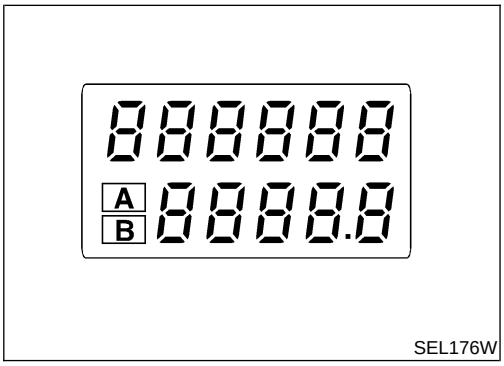
NAEL0200S01

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

HOW TO ALTERNATE DIAGNOSIS MODE

NAEL0200S02

1. Turn ignition switch to ON and change odo/trip meter to “TRIP A” or “TRIP B”.
2. Turn ignition switch to OFF.
3. Turn ignition switch to ON when pushing odo/trip meter switch.
4. Push odo/trip meter switch 1 second.
5. Release odo/trip meter switch.
6. Push odo/trip meter switch more than three times within 7 seconds.

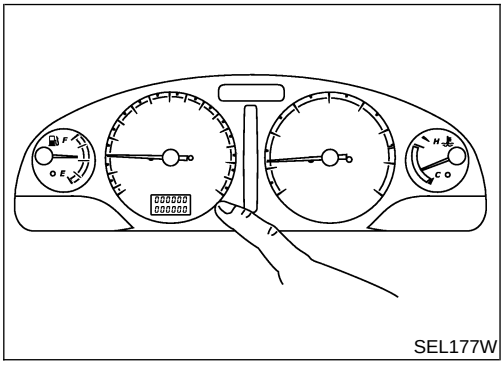


SEL176W

7. 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.


SEL177W

8. 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.

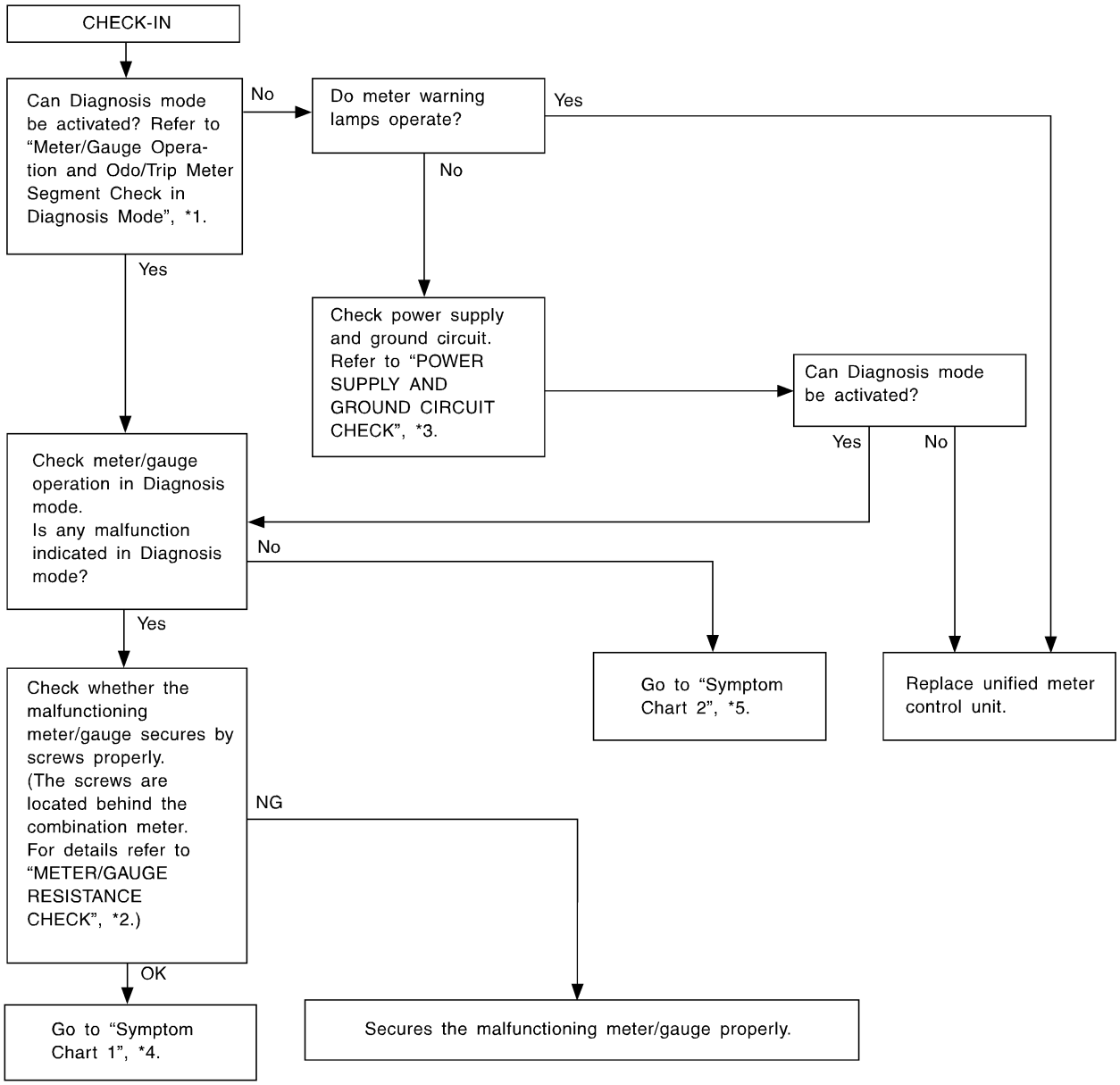
NOTE:
It takes about a few seconds for indication of fuel gauge and water temperature gauge to become stable.

Trouble Diagnoses

NAEL0201

PRELIMINARY CHECK

NAEL0201S01



SEL361W

*1: Meter/Gauge Operation and Odo/Trip Meter Segment Check in Diagnosis Mode (EL-120)

*2: METER/GAUGE RESISTANCE CHECK (EL-128)

*3: POWER SUPPLY AND GROUND CIRCUIT CHECK (EL-123)

*4: Symptom Chart 1 (EL-122)

*5: Symptom Chart 2 (EL-122)

Trouble Diagnoses (Cont'd)

SYMPTOM CHART

NAEL0201S02

Symptom Chart 1 (Malfunction is Indicated in Diagnosis Mode)

NAEL0201S0201

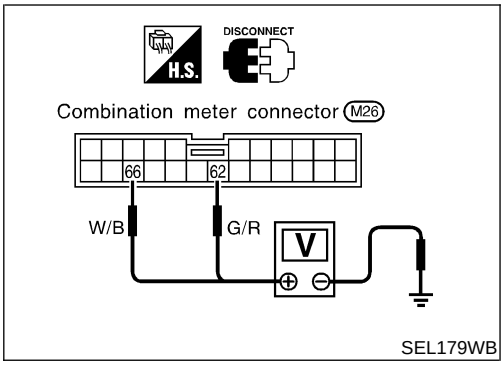
Symptom	Possible causes	Repair order
Odo/trip meter indicate(s) malfunction in Diagnosis mode.	Unified meter control unit	Replace unified meter control unit.
Multiple meter/gauge indicate malfunction in Diagnosis mode.		
One of speedometer/ tachometer/fuel gauge/ water temp. gauge indicates malfunction in Diagnosis mode.	1. Meter/Gauge 2. Unified meter control unit	1. Check resistance of meter/gauge indicating malfunction. If the resistance is NG, replace the meter/ gauge. Refer to "METER/GAUGE RESISTANCE CHECK", EL-128. 2. If the resistance of meter/gauge is OK, replace unified meter control unit.

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

NAEL0201S0202

Symptom	Possible causes	Repair order
One of speedometer/ tachometer/fuel gauge/ water temp. gauge is malfunctioning.	1. Sensor signal - Vehicle speed signal - Engine revolution signal - Fuel gauge - Water temp. gauge 2. Unified meter control unit	1. Check the sensor for malfunctioning meter/gauge. INSPECTION/VEHICLE SPEED SENSOR (Refer to EL-124.) INSPECTION/ENGINE REVOLUTION SIGNAL (Refer to EL-125.) INSPECTION/FUEL LEVEL SENSOR UNIT (Refer to EL-126.) INSPECTION/THERMAL TRANSMITTER (Refer to EL-127.) 2. Replace unified meter control unit.
Multiple meter/gauge are malfunctioning. (except odo/trip meter)		

Before starting trouble diagnoses below, perform PRELIMINARY CHECK, EL-121.



POWER SUPPLY AND GROUND CIRCUIT CHECK

=NAEL0201S03

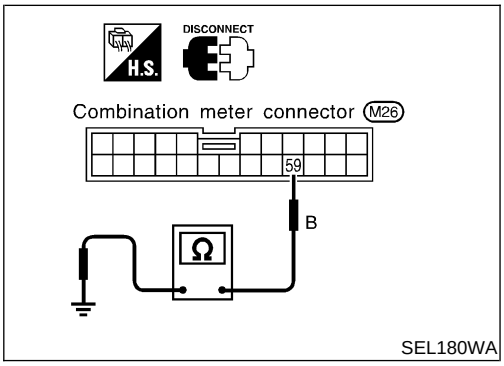
Power Supply Circuit Check

NAEL0201S0301

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

If NG, check the following.

- 10A fuse [No. 12, 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

NAEL0201S0302

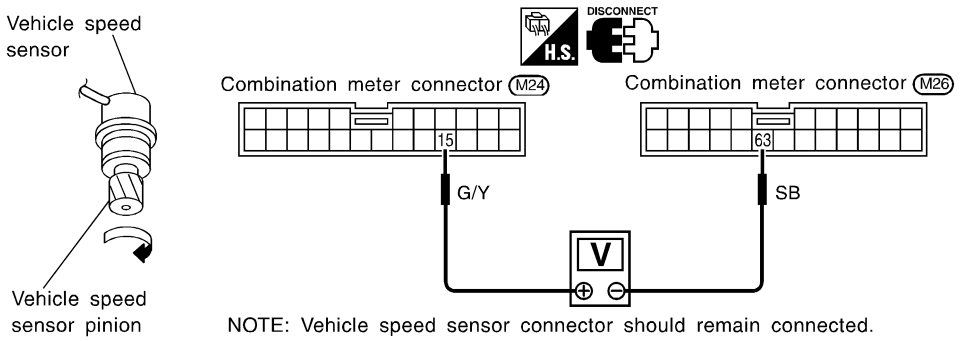
Terminals	Continuity
59 - Ground	Yes

INSPECTION/VEHICLE SPEED SENSOR

=NAEL0201S04

1	CHECK VEHICLE SPEED SENSOR OUTPUT

1. Remove vehicle speed sensor from transmission.
2. Check voltage between combination meter terminals 15 and 63 while quickly turning speed sensor pinion.



Voltage: Approx. 0.5V

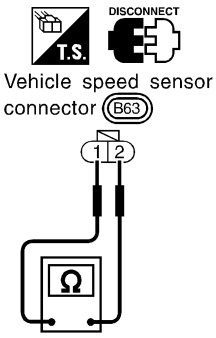
SEL297X

OK or NG

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

2	CHECK VEHICLE SPEED SENSOR

Check resistance between vehicle speed sensor terminals 1 and 2.



Resistance: Approx. 250Ω

SEL298X

OK or NG

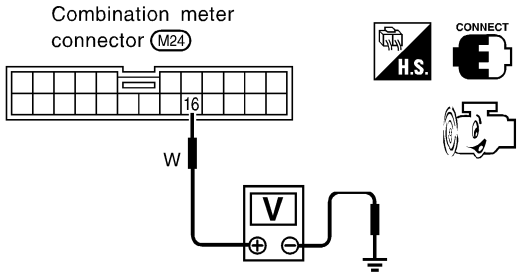
OK	▶	Check harness or connector between speedometer and vehicle speed sensor.
NG	▶	Replace vehicle speed sensor.

INSPECTION/ENGINE REVOLUTION SIGNAL

NAEL0201S05

1	CHECK ECM OUTPUT

1. Start engine.
2. Check voltage between combination meter terminals 16 and ground at idle and 2,000 rpm.



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

SEL364WB

OK or NG

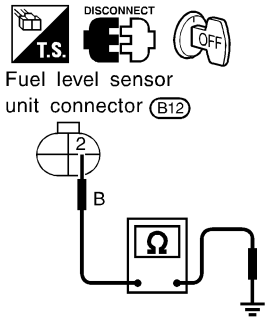
OK	▶	Engine revolution signal is OK.
NG	▶	Harness for open or short between ECM and combination meter

INSPECTION/FUEL LEVEL SENSOR UNIT

=NAEL0201S06

1	CHECK GROUND CIRCUIT FOR FUEL LEVEL SENSOR UNIT

Check harness continuity between fuel level sensor unit terminal 2 and ground.



Continuity should exist.

SEL299X

OK or NG

OK	▶	GO TO 2.
NG	▶	Repair harness or connector.

2	CHECK FUEL LEVEL SENSOR UNIT

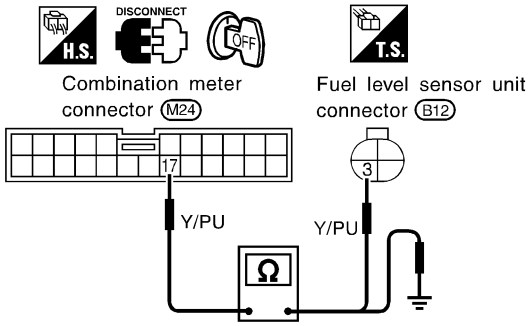
Refer to "FUEL LEVEL SENSOR UNIT CHECK" (EL-128).

OK or NG

OK	▶	GO TO 3.
NG	▶	Replace fuel level sensor unit.

3	CHECK HARNESS FOR OPEN OR SHORT

1. Disconnect combination meter connector and fuel level sensor unit connector.
2. Check continuity between combination meter terminal 17 and fuel level sensor unit terminal 3.
3. Check continuity between combination meter terminal 17 and ground.



Continuity:
Combination meter terminal 17 and fuel level sensor unit terminal 3
Yes
Combination meter terminal 17 and ground
No

SEL300X

OK or NG

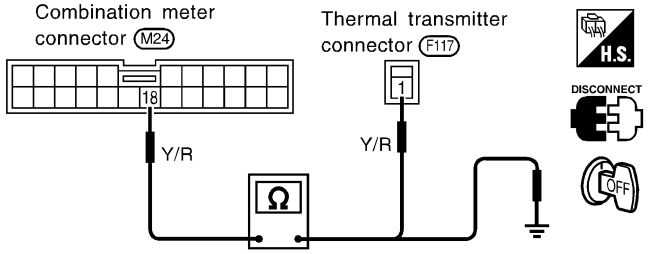
OK	▶	Fuel level sensor unit is OK.
NG	▶	Repair harness or connector.

INSPECTION/THERMAL TRANSMITTER

=NAEL0201S07

1	CHECK THERMAL TRANSMITTER	
Refer to "THERMAL TRANSMITTER CHECK" (EL-128).		
OK or NG		
OK	▶	GO TO 2.
NG	▶	Replace.

2	CHECK HARNESS FOR OPEN OR SHORT	
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.**		
OK or NG		
OK	▶	Thermal transmitter is OK.
NG	▶	Repair harness or connector.



SEL184WA

Electrical Components Inspection

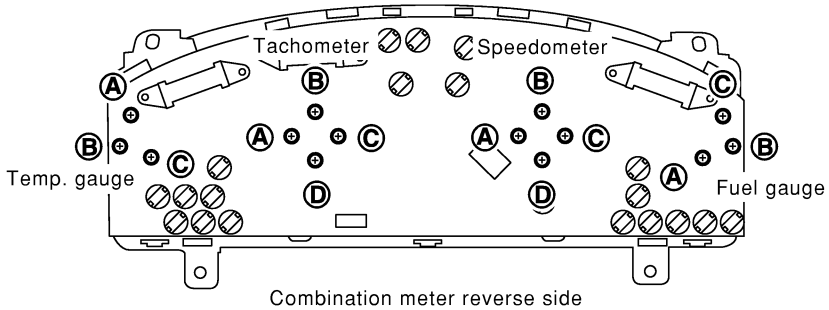
=NAEL0202

METER/GAUGE RESISTANCE CHECK

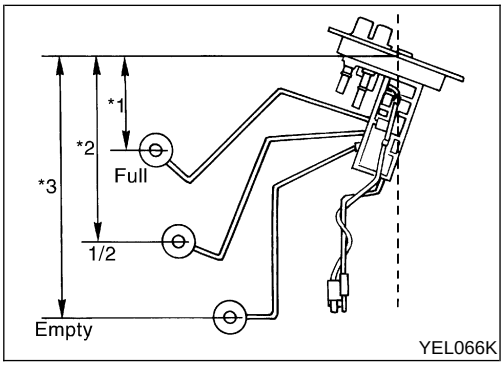
NAEL0202S01

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



SEL391X



YEL066K

FUEL LEVEL SENSOR UNIT CHECK

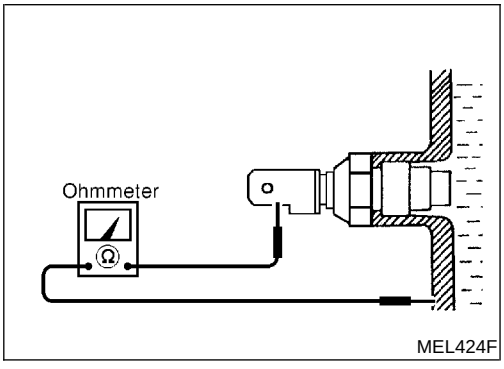
NAEL0202S02

- For removal, refer to FE-4, “FUEL SYSTEM”.

Check the resistance between terminals 3 and 2.

Ohmmeter		Float position mm (in)			Resistance value Ω
(+)	(−)				
3	2	*1	Full	95 (3.74)	Approx. 4 - 6
		*2	1/2	184 (7.24)	31 - 34
		*3	Empty	265 (10.43)	80 - 83

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



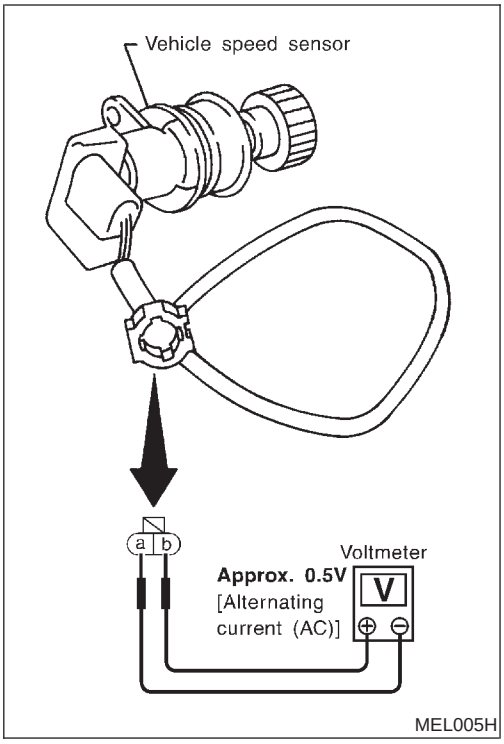
MEL424F

THERMAL TRANSMITTER CHECK

NAEL0202S03

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

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



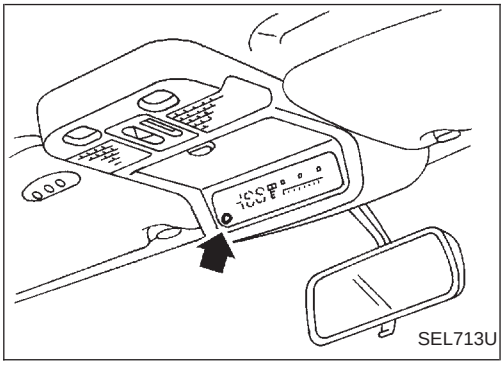
VEHICLE SPEED SENSOR SIGNAL CHECK

NAEL0202S04

1. Remove vehicle speed sensor from transmission.
2. Turn vehicle speed sensor pinion quickly and measure voltage across a and b.

System Description

NAEL0153



This unit displays following items:

- Earth magnetism and heading direction of vehicle.
- Outside air temperature.
- Caution for frozen road surfaces.

OUTSIDE TEMPERATURE DISPLAY

NAEL0153S01

Push the switch when the ignition key is in the “ACC” or “ON” position. The outside temperature will be displayed in “°F”.

- Selecting the indication range
  Push the switch to change from “°F” to “°C”.
- When the outside temperature drops below freezing point, ICE is displayed on the unit.
- When the outside temperature is between 55°C (130°F) and 70°C (158°F), the display shows 55°C (130°F).
- When the outside temperature is lower than −30°C (−20°F) or higher than 70°C (158°F), the display shows only “---” though it is operating. This is not a problem.
- The indicated temperature on the thermometer is not readily affected by engine heat. It changes only when one of the following conditions is present.

a) The temperature detected by the ambient air temperature sensor is lower than the indicated temperature on the thermometer.

b) The difference in temperature detected during a period of 40 seconds is less than 1°C (1.8°F) when vehicle speed has been greater than 24 km/h (15 MPH) for more than 100 seconds.
(This is to prevent the indicated temperature from being affected by engine heat or cooling fan operation during low-speed driving.)

c) The ignition key has been turned to the “OFF” position for more than 4 hours. (The engine is cold.)

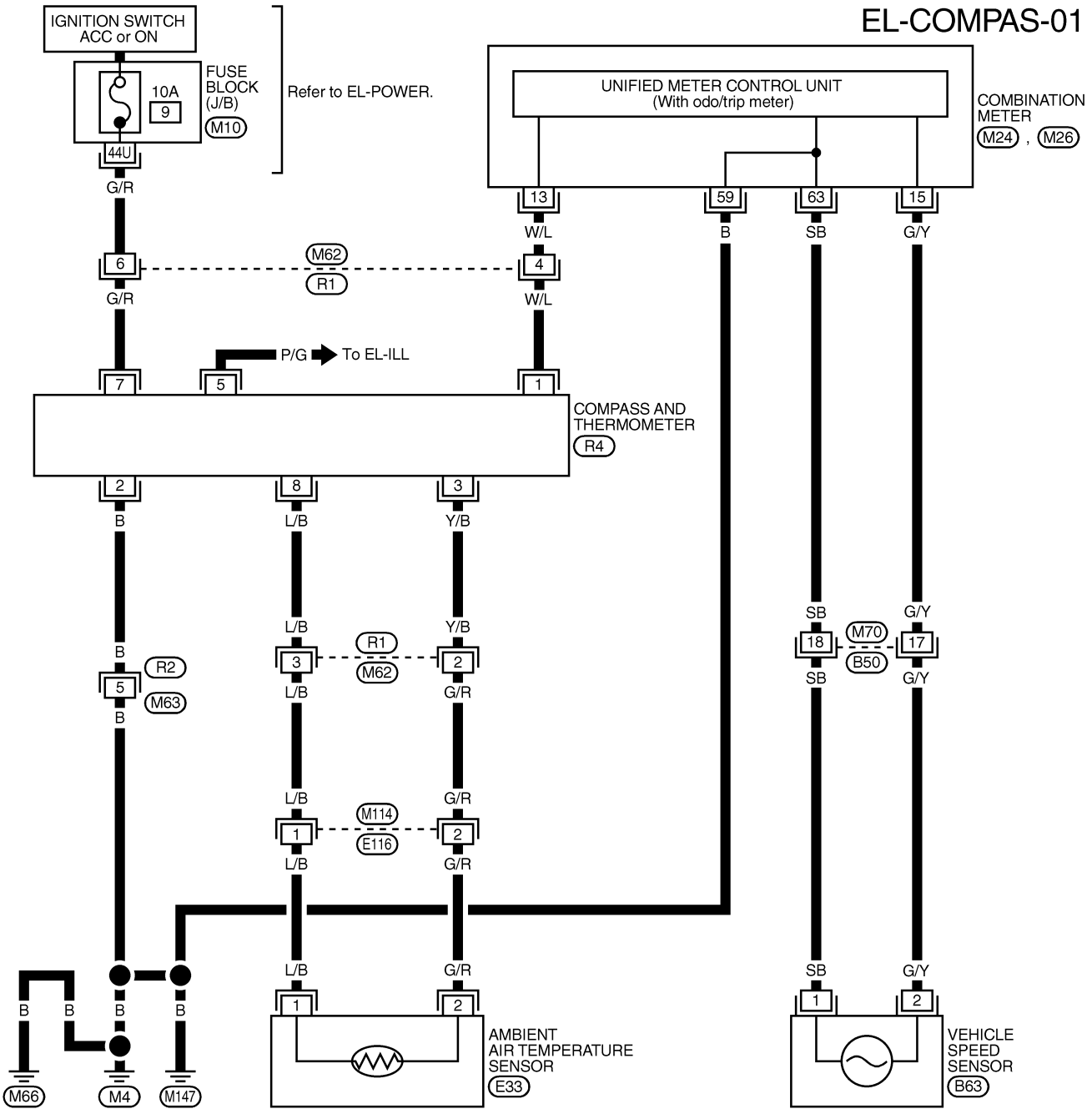
DIRECTION DISPLAY

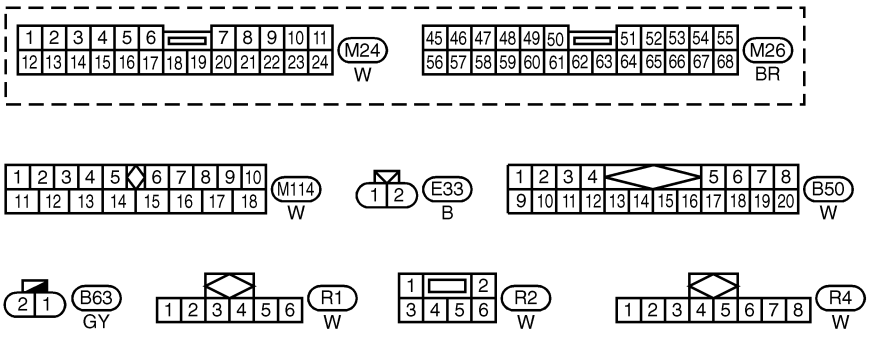
NAEL0153S02

Push the switch when the ignition key is in the “ACC” or “ON” position. The direction will be displayed.

Wiring Diagram — COMPAS —

NAEL0154





REFER TO THE FOLLOWING.
M10 -FUSE BLOCK-JUNCTION BOX (J/B)

MEL029M

Trouble Diagnoses

NAEL0048

PRELIMINARY CHECK FOR THERMOMETER

NAEL0048S02

1	COOL DOWN CHECK	
1. Turn the ignition key switch to the “ACC” position. 2. Cool down the ambient air temperature sensor with water or ice, so that the indicated temperature falls. **Does the indicated temperature fall?**		
Yes	▶	GO TO 2.
No	▶	The system is malfunctioning. Check the system following “INSPECTION/COMPASS AND THERMOMETER”.

2	WARM UP CHECK	
1. Leave the vehicle for 10 minutes, so that the indicated temperature rises. 2. With the ignition key in the “ACC” position, disconnect and reconnect the ambient air temperature sensor connector. **Does the indicated temperature rise?**		
Yes	▶	The system is OK.
No	▶	The system is malfunctioning. Check the system following “INSPECTION/COMPASS AND THERMOMETER”.

NOTE:

- When the outside temperature is between 55°C (130°F) and 70°C (158°F), the display shows 55°C (130°F). When the outside temperature is lower than −30°C (−20°F) or higher than 70°C (158°F), the display shows only “---”.
- The indicated temperature on the thermometer is not readily affected by engine heat. It changes only when one of the following conditions is present.

a) The temperature detected by the ambient air temperature sensor is lower than the indicated temperature on the thermometer.

b) The difference in temperature detected during a period of 40 seconds is less than 1°C (1.8°F) when vehicle speed has been greater than 24 km/h (15 MPH) for more than 100 seconds.
(This is to prevent the indicated temperature from being affected by engine heat or cooling fan operation during low-speed driving.)

c) The ignition key has been turned to the “OFF” position for more than 4 hours. (The engine is cold.)

INSPECTION/COMPASS AND THERMOMETER

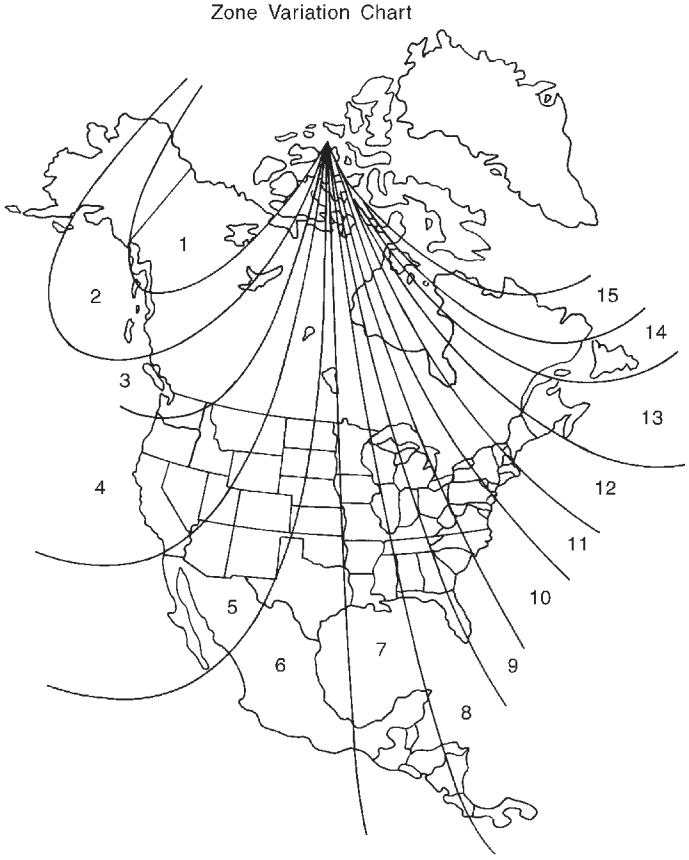
NAEL0048S01

Symptom	Possible causes	Repair order
No display at all	1. 10A fuse 2. Ground circuit 3. Compass and thermometer	1. Check 10A fuse [No. 9, located in fuse block (J/B)]. Turn the ignition switch ON and verify that battery positive voltage is at terminal 7 of compass and thermometer. 2. Check ground circuit for compass and thermometer. 3. Replace compass and thermometer.
Forward direction indication slips off the mark or incorrect.	1. In manual correction mode (Bar and display vanish.) 2. Zone variation change is not done.	1. Drive the vehicle and turn at an angle of 90°. 2. Perform the zone variation change.
Compass reading remains unchanged.	1. Vehicle speed sensor is not entered. 2. Compass and thermometer	1. Check harness for open or short between combination meter terminal 13 and compass and thermometer terminal 1. 2. Replace compass and thermometer.
Displays wrong temperature when ambient temperature is between −30°C (−20°F) and 55°C (130°F). (See NOTE above.)	1. Check operation 2. Ambient air temperature sensor circuit 3. Vehicle speed sensor is not entered. 4. Ambient air temperature sensor 5. Compass and thermometer	1. Perform preliminary check shown above. 2. Check harness for open or short between ambient air temperature sensor and compass and thermometer. 3. Check harness for open or short between combination meter terminal 13 and compass and thermometer terminal 1. 4. Replace ambient air temperature sensor. 5. Replace compass and thermometer.

Calibration Procedure for Compass

=NAEL0155

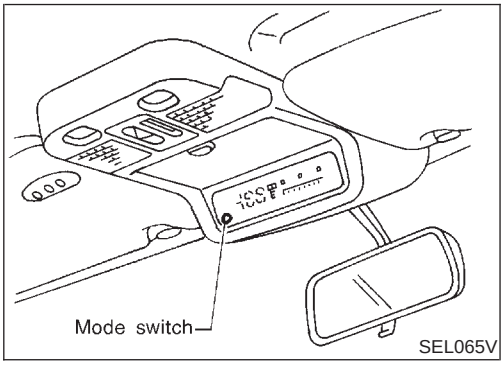
The difference between magnetic North and geographical North can sometimes be great enough to cause false compass readings. In order for the compass to operate accurately in a particular zone, it must be calibrated using the following procedure.



1. Determine your location on the zone map. Record your zone number.
2. Turn the ignition switch to ACC or ON position.
3. Push the "Mode" switch continuously for five seconds until the current zone entry number is displayed.
4. Press the "Mode" switch repeatedly until the desired zone number is displayed.

Once the desired zone number is displayed, stop pressing the "Mode" switch and the display will show compass direction after a few seconds.

SEL738UA



SEL065V

CORRECTION FUNCTIONS OF COMPASS

NAEL0155S01

The direction display is equipped with automatic correction function. If the direction is not shown correctly, carry out initial correction.

INITIAL CORRECTION PROCEDURE FOR COMPASS

NAEL0155S02

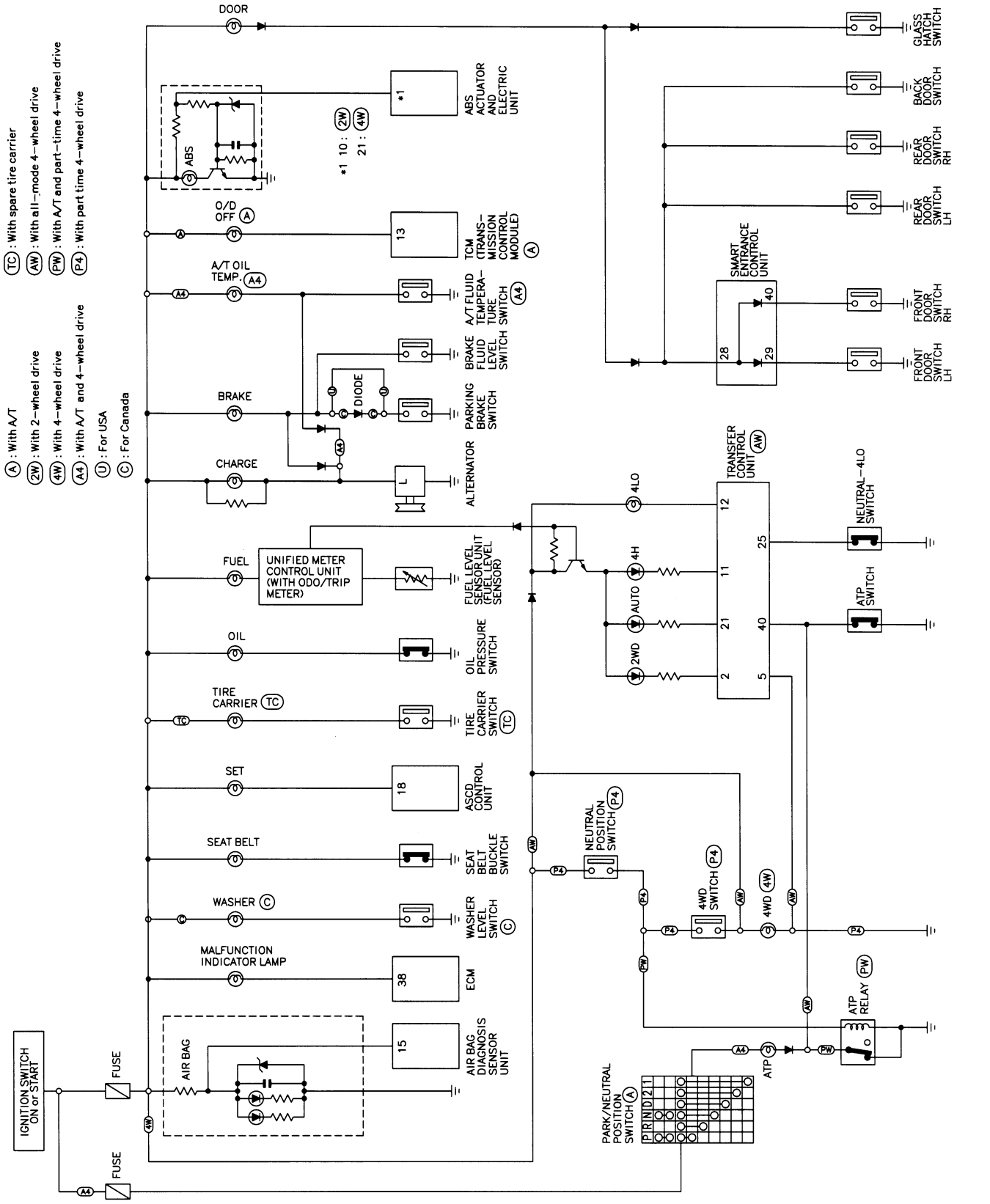
1. Pushing the "Mode" switch for about 10 seconds will enter the initial correction mode. The direction bar starts blinking.
2. Turn the vehicle slowly in an open, safe place. The initial correction is completed in one or two turns.

NOTE:

In places where the terrestrial magnetism is extremely disturbed, the initial correction may start automatically.

Schematic

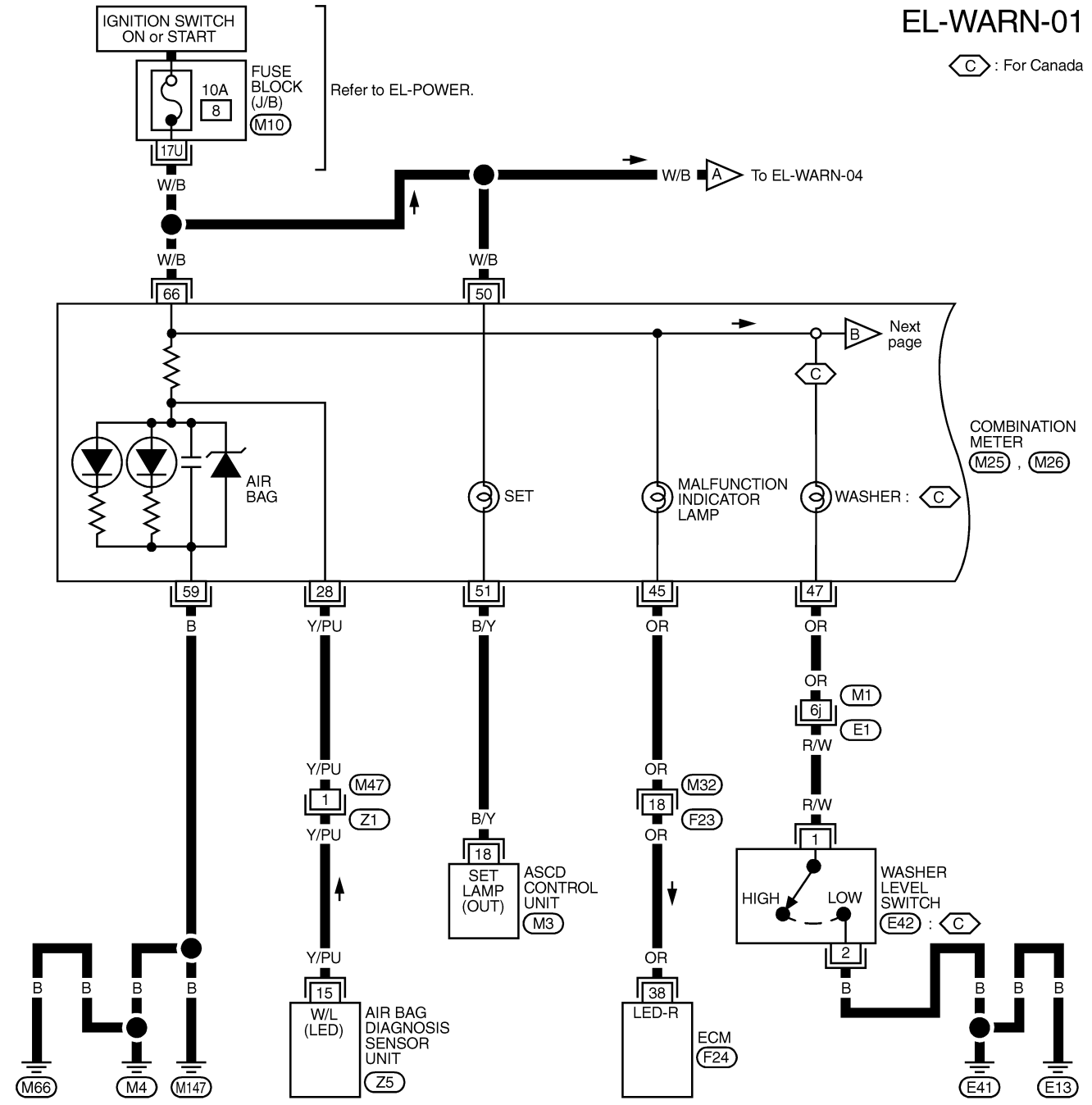
NAEL0049

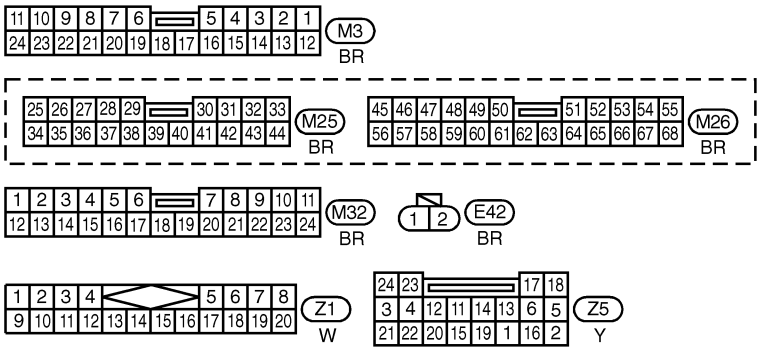


MEL021M

Wiring Diagram — WARN —

NAEL0050

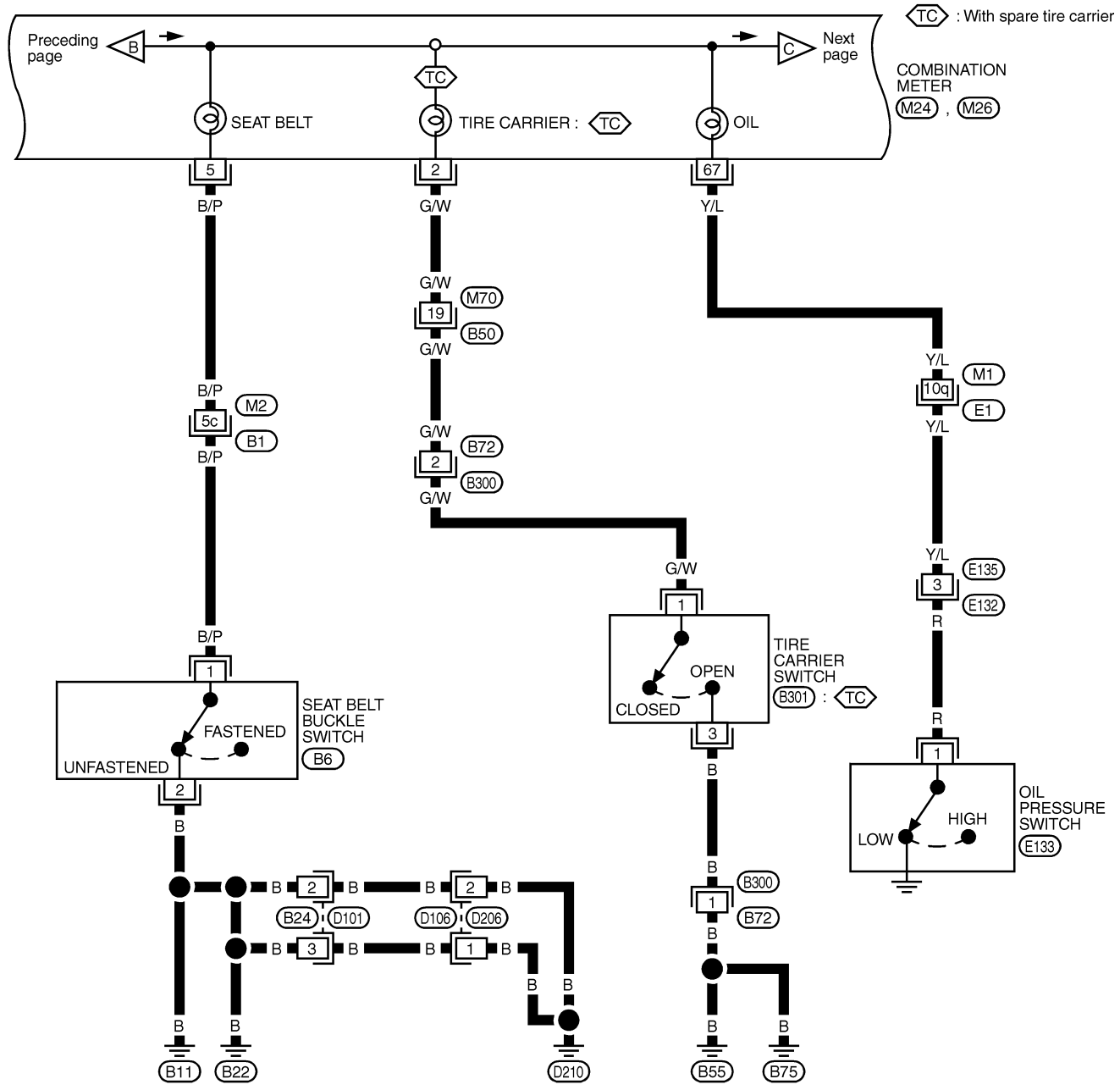


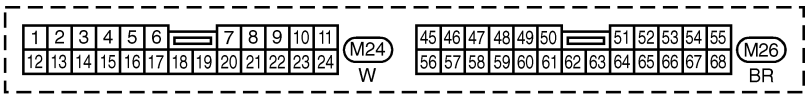


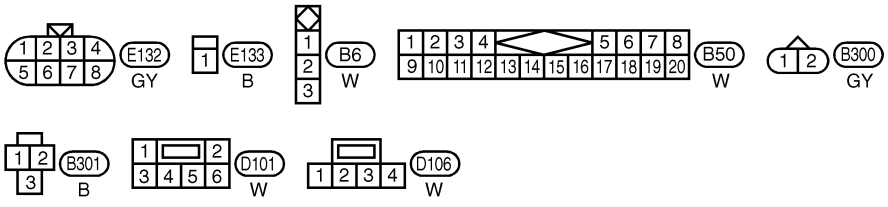
REFER TO THE FOLLOWING.
E1 -SUPER MULTIPLE JUNCTION (SMJ)
M10 -FUSE BLOCK-JUNCTION BOX (J/B)
F24 -ELECTRICAL UNITS-

MEL022M

EL-WARN-02

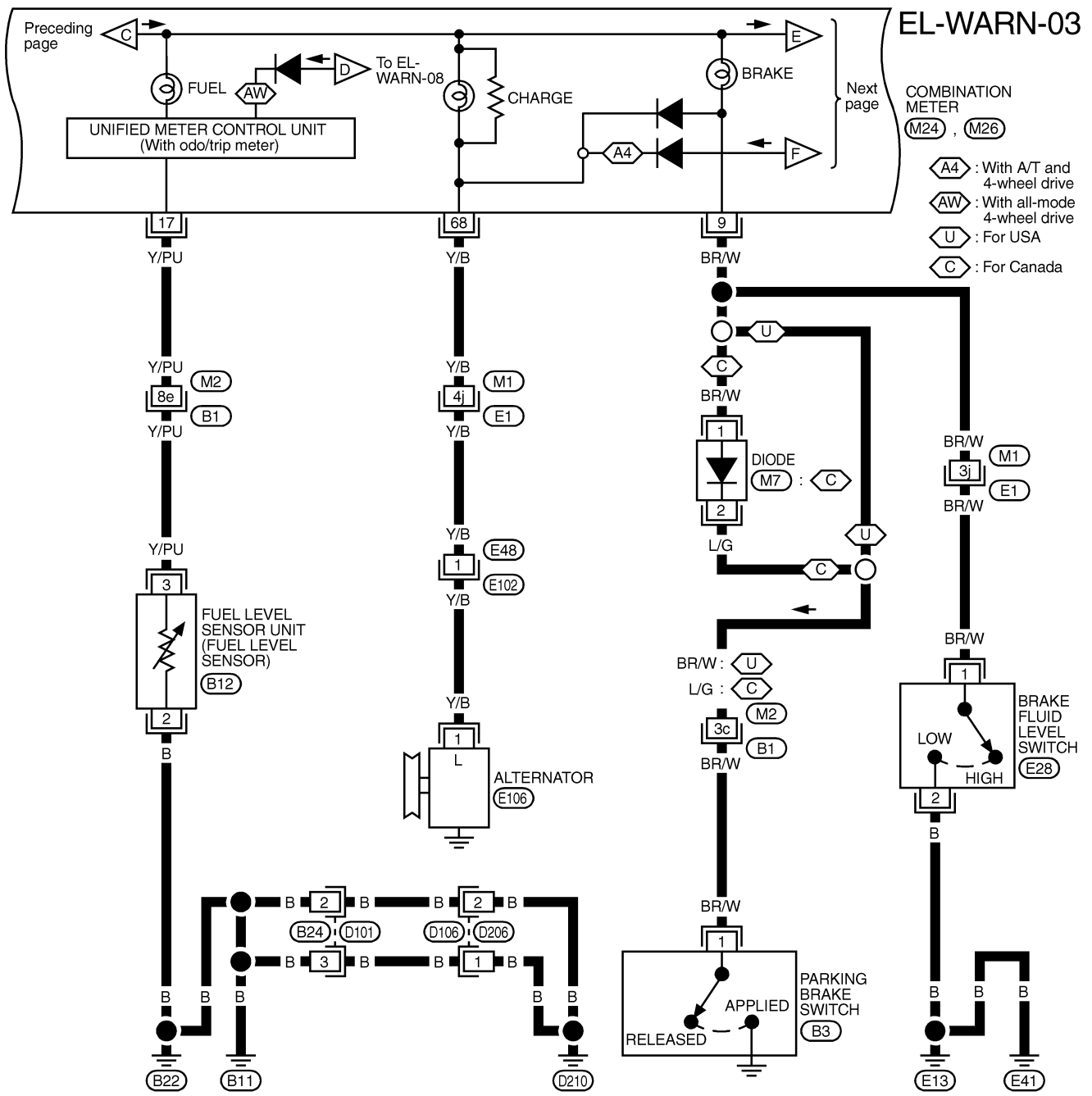


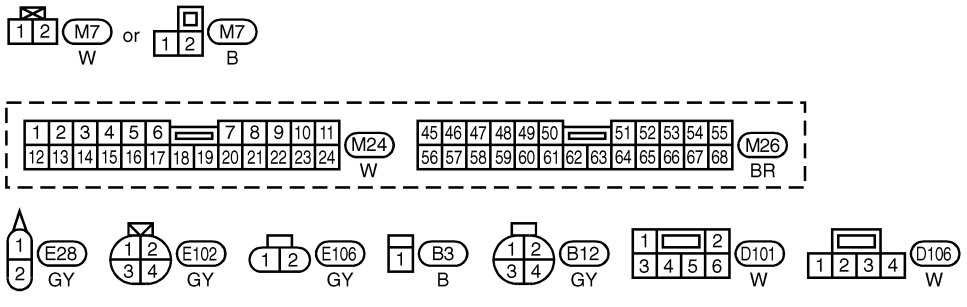




REFER TO THE FOLLOWING.
E1 , B1 -SUPER MULTIPLE JUNCTION (SMJ)

MEL023M

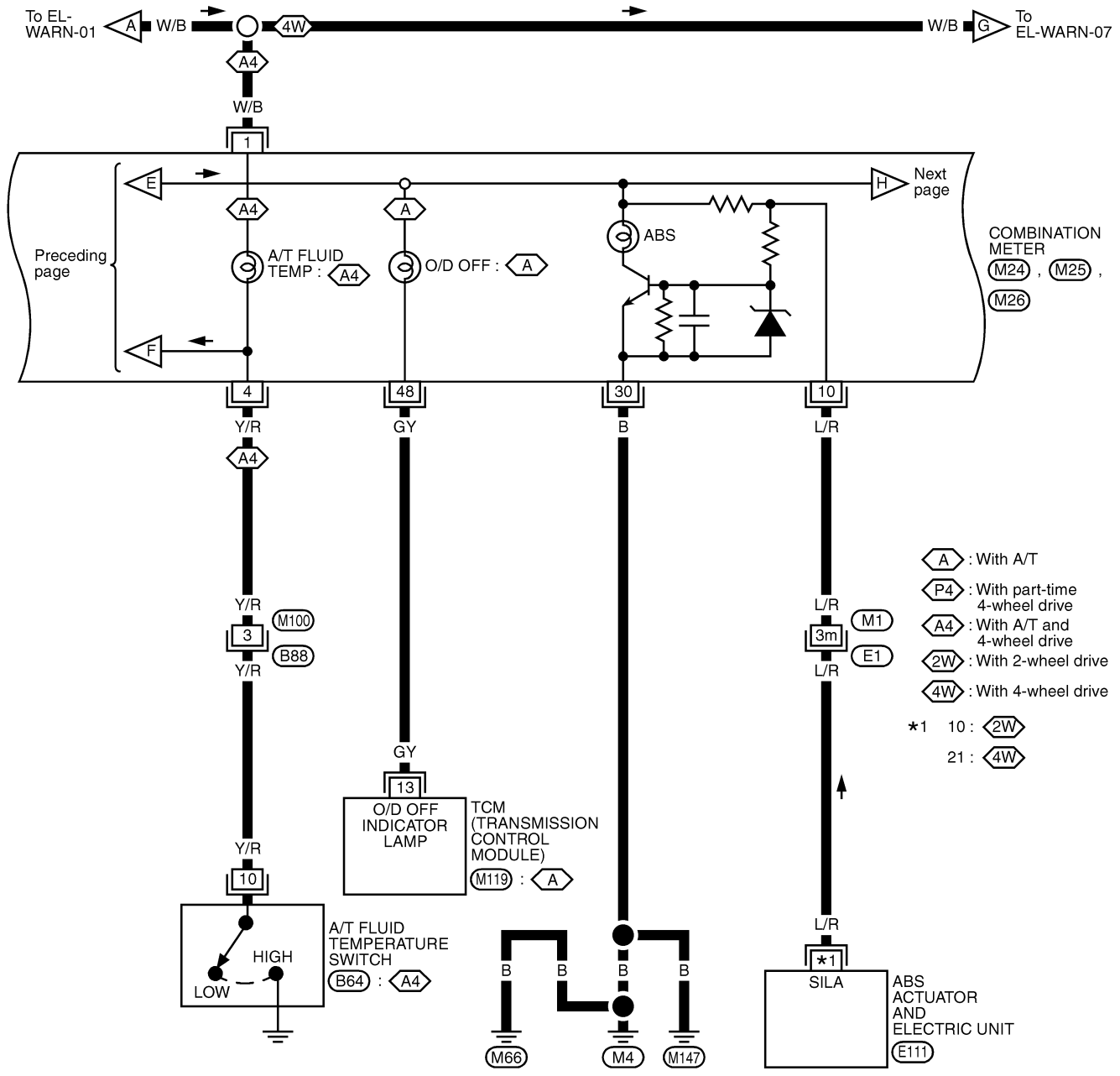


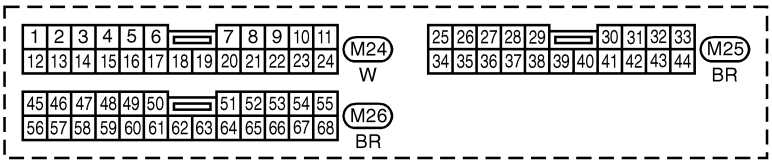


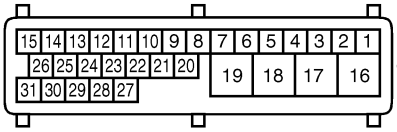
REFER TO THE FOLLOWING.
E1 , B1 -SUPER MULTIPLE JUNCTION (SMJ)

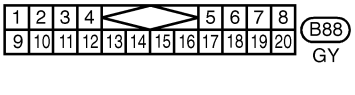
MEL019O

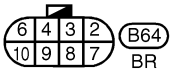
EL-WARN-04







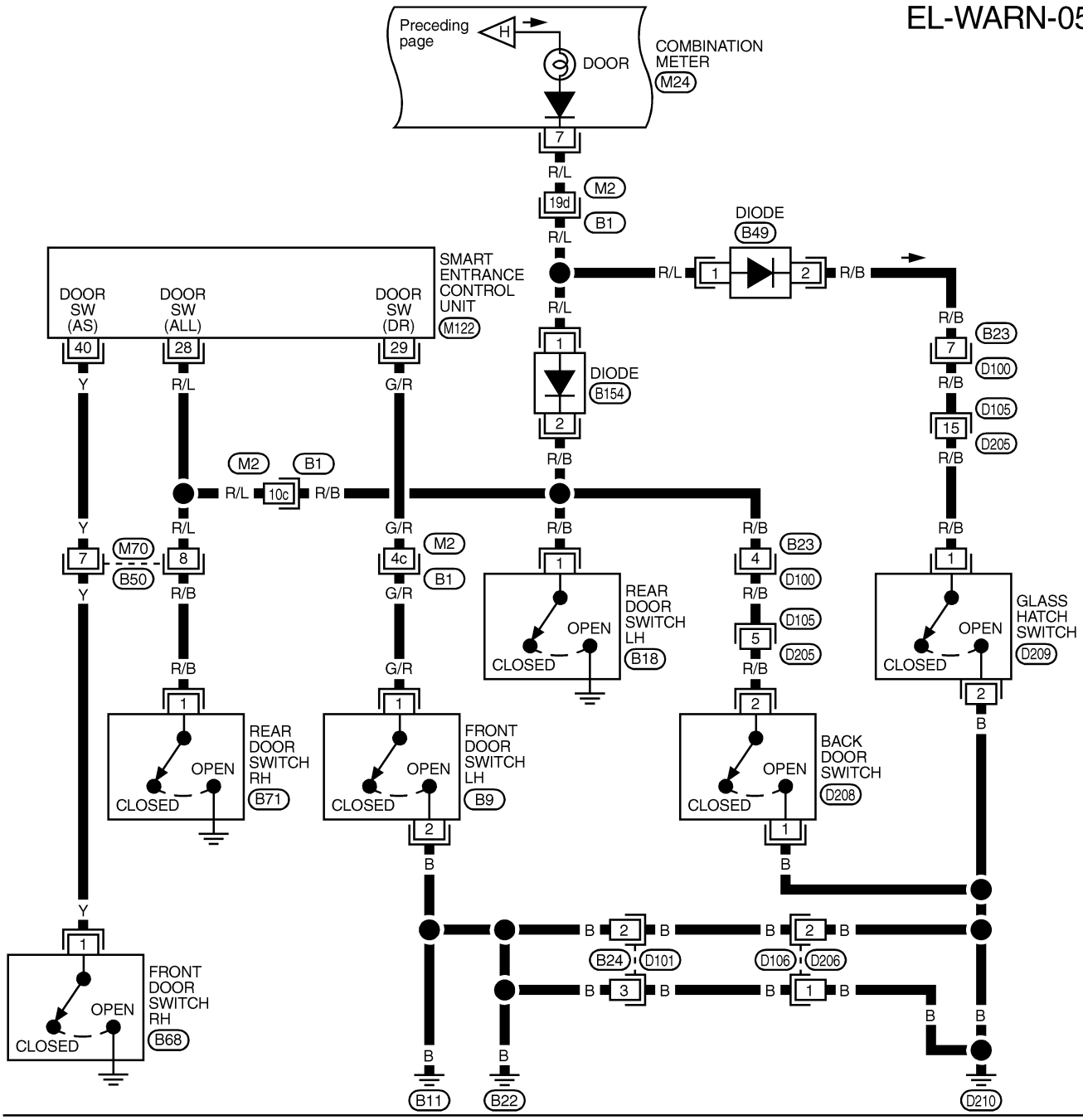


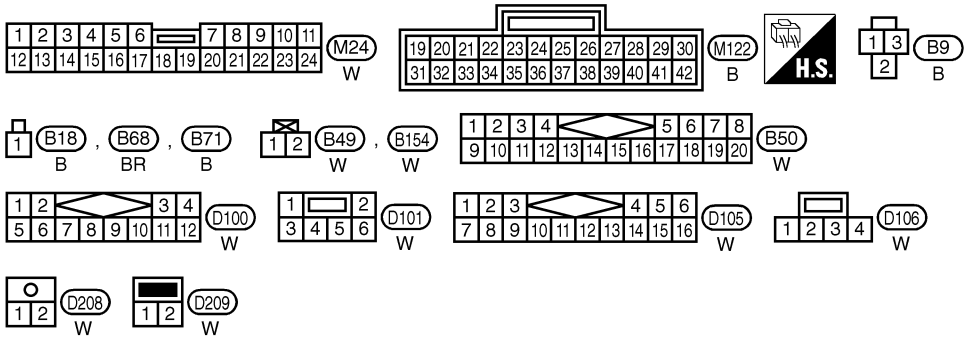


REFER TO THE FOLLOWING.
E1 -SUPER MULTIPLE JUNCTION (SMJ)
M119 -ELECTRICAL UNIT-

MEL025M

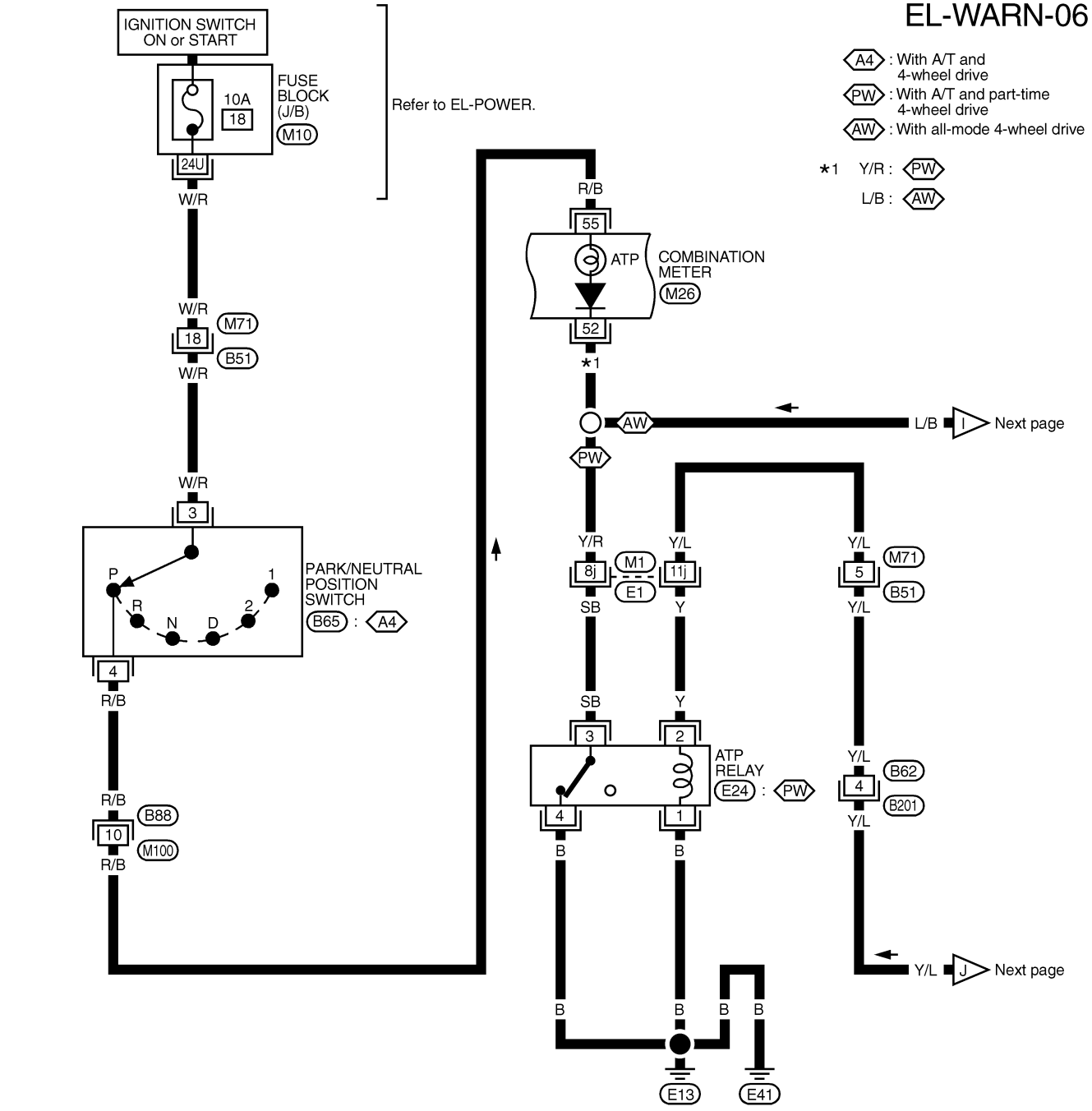
EL-WARN-05

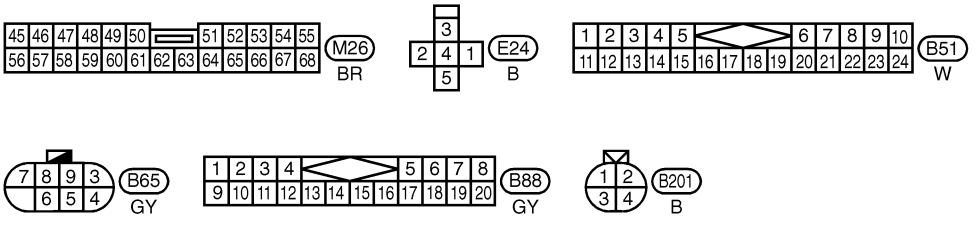




REFER TO THE FOLLOWING.
B1 -SUPER MULTIPLE JUNCTION (SMJ)

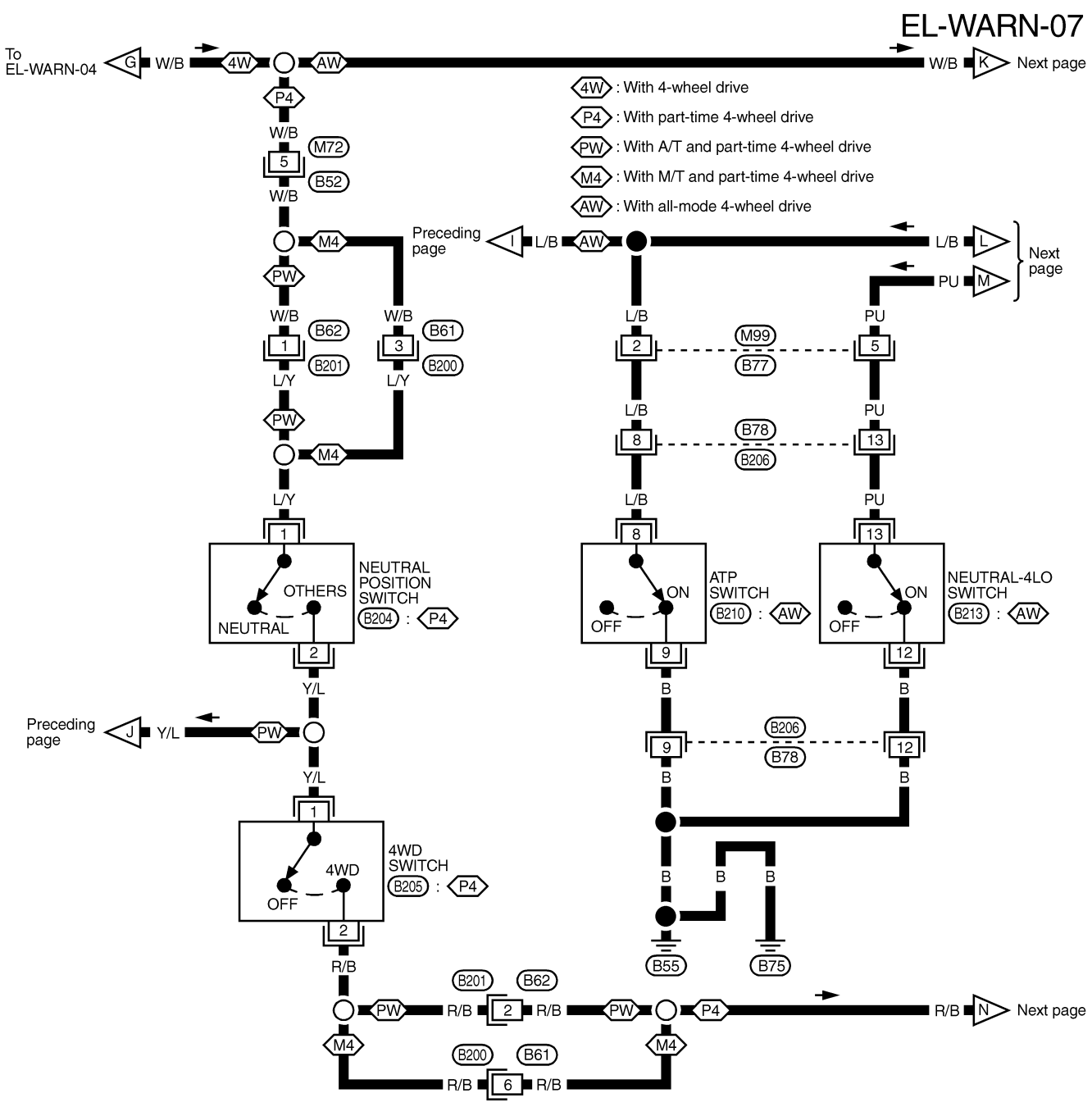
MEL246M

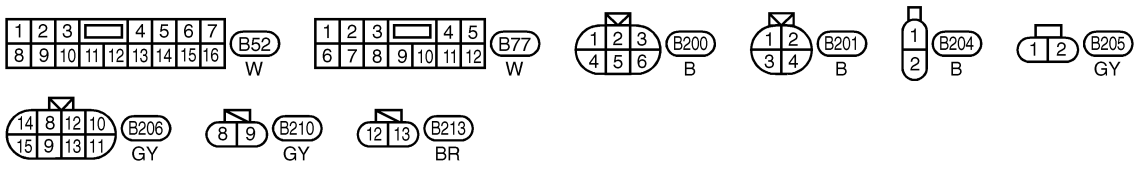




REFER TO THE FOLLOWING.
E1 -SUPER MULTIPLE JUNCTION (SMJ)
M10 -FUSE BLOCK-JUNCTION BOX (J/B)

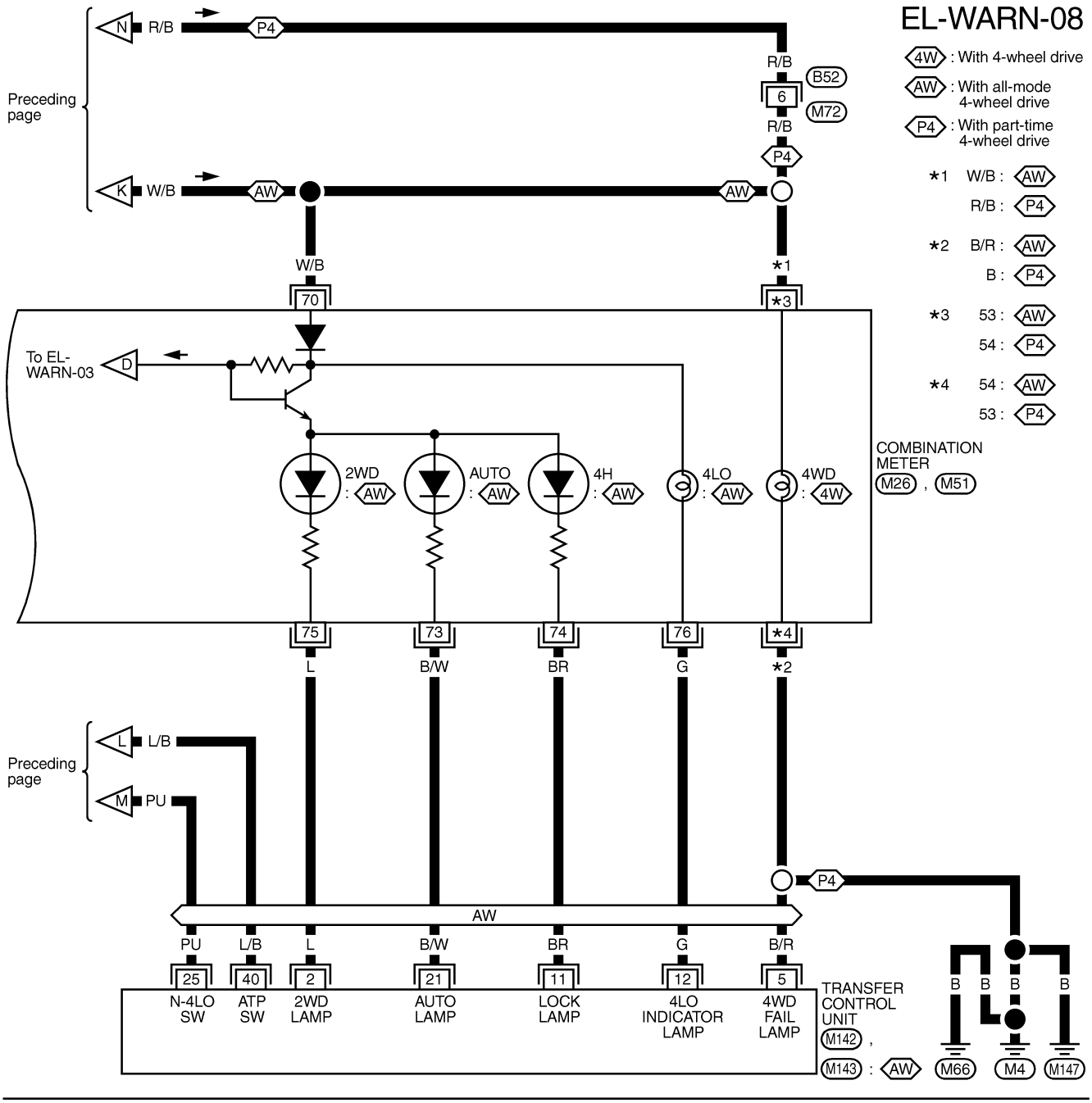
MEL026M


EL-WARN-07
To EL-WARN-04
G
W/B
4W
AW
W/B
K
Next page
4W : With 4-wheel drive
P4 : With part-time 4-wheel drive
PW : With A/T and part-time 4-wheel drive
M4 : With M/T and part-time 4-wheel drive
AW : With all-mode 4-wheel drive
P4
W/B
5
M72
B52
W/B
M4
Preceding page
I
L/B
AW
L/B
L
PU
M
Next page
PW
W/B
1
B62
B201
L/Y
W/B
3
B61
B200
L/Y
L/B
2
M99
B77
PU
5
L/B
8
B78
B206
PU
13
PW
M4
L/Y
1
L/B
8
PU
13
NEUTRAL POSITION SWITCH
OTHERS
NEUTRAL
B204 : P4
ATP SWITCH
ON
OFF
B210 : AW
NEUTRAL-4LO SWITCH
ON
OFF
B213 : AW
2
9
12
Y/L
B
B
Preceding page
J
Y/L
PW
B206
B78
9
12
Y/L
B
B
1
4WD SWITCH
4WD
OFF
B205 : P4
2
B
B
B
R/B
B55
B75
B201
B62
PW
R/B
2
R/B
PW
P4
R/B
N
Next page
M4
M4
B200
B61
R/B
6
R/B

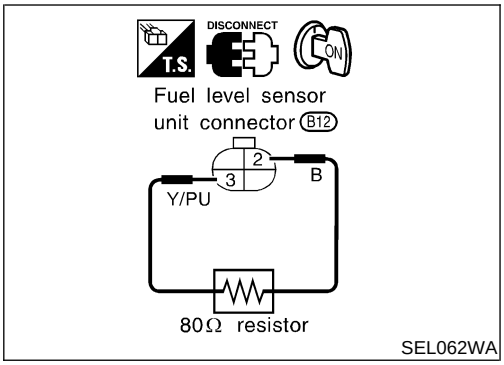

B52 W
B77 W
B200 B
B201 B
B204 B
B205 GY
B206 GY
B210 GY
B213 BR

MEL027M

Wiring Diagram — WARN — (Cont'd)



MEL028M



SEL062WA

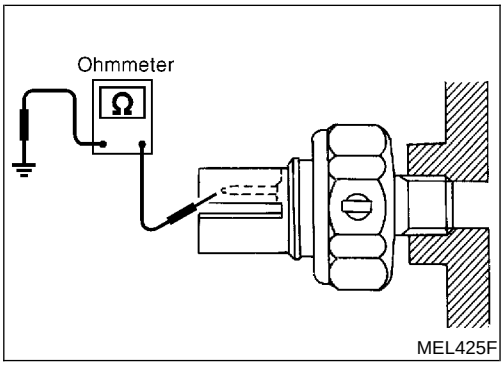
Fuel Warning Lamp Sensor Check

NAEL0166

1. Turn ignition switch “OFF”.
2. Disconnect fuel level sensor unit harness connector B12.
3. Connect a resistor (80Ω) between fuel tank gauge unit harness connector terminals 2 and 3.
4. Turn ignition switch “ON”.

The fuel warning lamp should come on.

NOTE:
ECM might store the 1st trip DTC P0180 during this inspection.
If the DTC is stored in ECM memory, erase the DTC after reconnecting fuel tank gauge unit harness connector.
Refer to EC-73, “HOW TO ERASE EMISSION-RELATED DIAGNOSTIC INFORMATION”.



MEL425F

Electrical Components Inspection

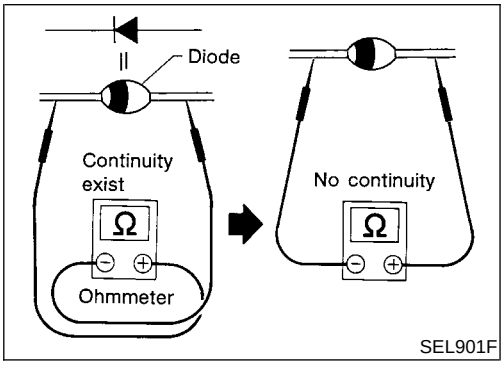
NAEL0051

OIL PRESSURE SWITCH CHECK

NAEL0051S02

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

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



SEL901F

DIODE CHECK

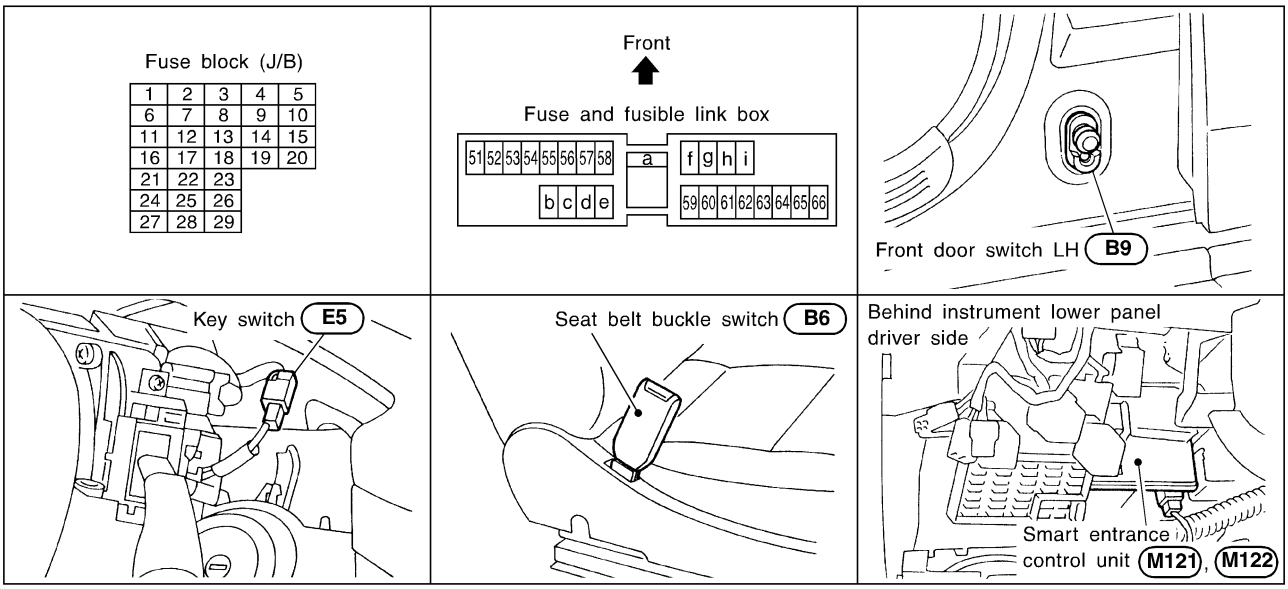
NAEL0051S03

- 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 checking them on the combination meter assembly. Refer to EL-135, “WARNING LAMP” wiring diagrams.

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.

Component Parts and Harness Connector Location

NAEL0052



SEL046W

System Description

NAEL0053

The warning chime is controlled by the smart entrance control unit.
The warning chime is located in the smart entrance control unit.
Power is supplied at all times

- through 7.5A fuse [No. 24, located in the fuse block (J/B)]
- to smart entrance control unit terminal 10, and
- to key switch terminal 2, and
- through 10A fuse [No. 61, located in the fuse block (J/B)]
- to tail lamp relay terminals 2 and 3.

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

- through 7.5A fuse [No. 11, located in the fuse block (J/B)]
- to smart entrance control unit terminal 33.

Ground is supplied to smart entrance control unit terminal 16 through body grounds M77 and M111.

IGNITION KEY WARNING CHIME

NAEL0053S01

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

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

Ground is supplied

- from front door switch LH terminal 1
- to smart entrance control unit terminal 29.

Front door switch LH terminal 2 is grounded through body grounds B11, B22 and D210.

LIGHT WARNING CHIME

NAEL0053S02

With ignition switch OFF or ACC, driver's door open, warning chime will sound. [Except when headlamp battery saver control operates (for 45 seconds after ignition switch is turned to OFF or ACC position) and headlamps do not illuminate.] Power is supplied.

- from tail lamp relay terminal 5
- to smart entrance control unit terminal 34.

Ground is supplied

- from front door switch LH terminal 1

- to smart entrance control unit terminal 29.

Front door switch LH terminal 2 is grounded through body grounds B11, B22 and D210.

SEAT BELT WARNING CHIME

NAEL0053S03

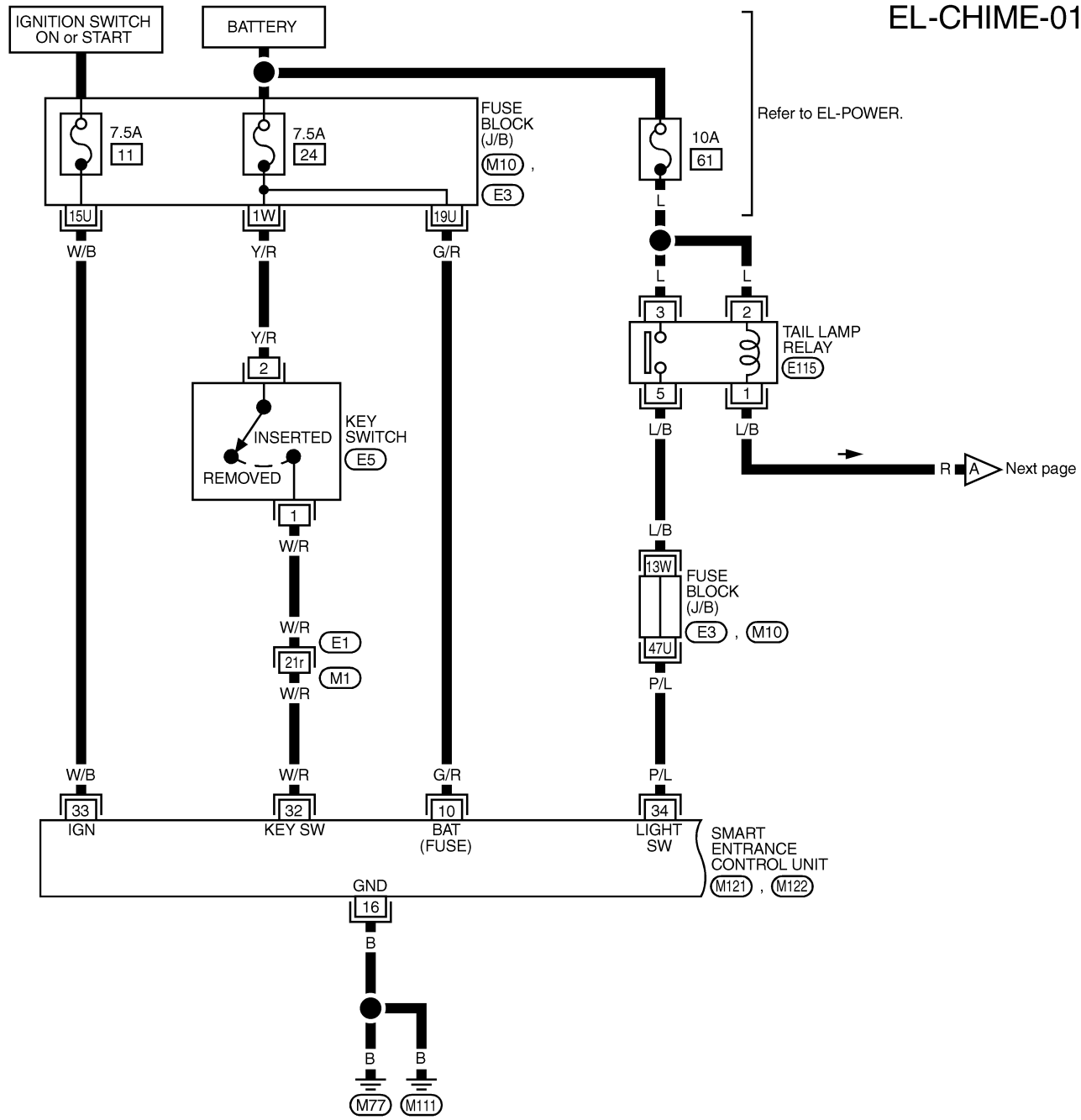
With ignition switch turned ON and seat belt unfastened (seat belt switch ON), warning chime will sound for approximately 6 seconds.
Ground is supplied

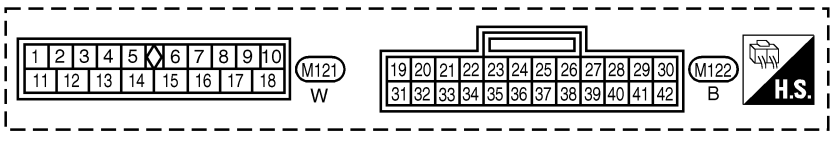
- from seat belt switch terminal 1
- to smart entrance control unit terminal 22.

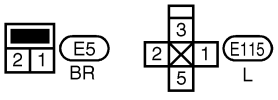
Seat belt switch terminal 2 is grounded through body grounds B11, B22 and D210.

Wiring Diagram — CHIME —

NAEL0054



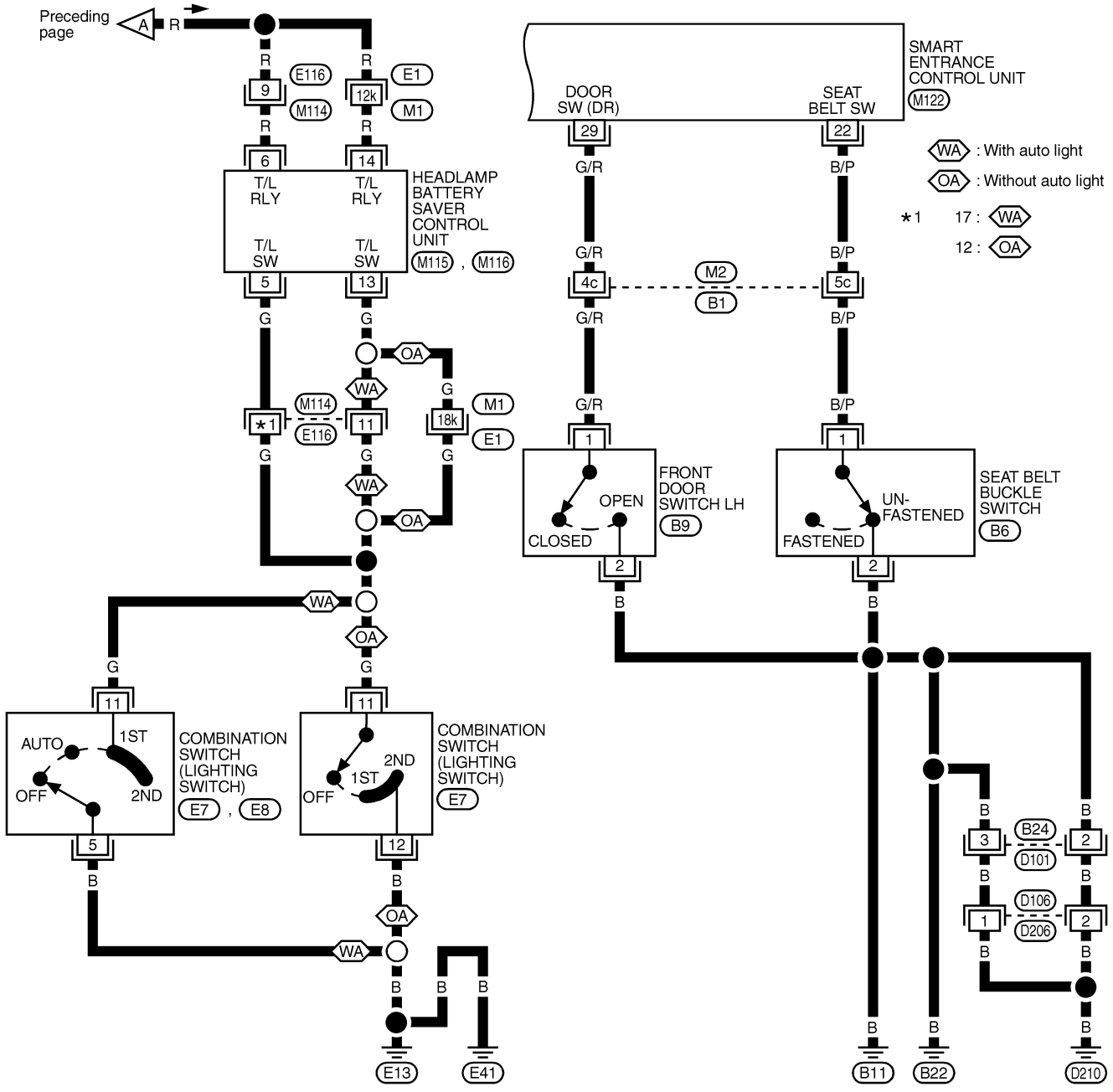


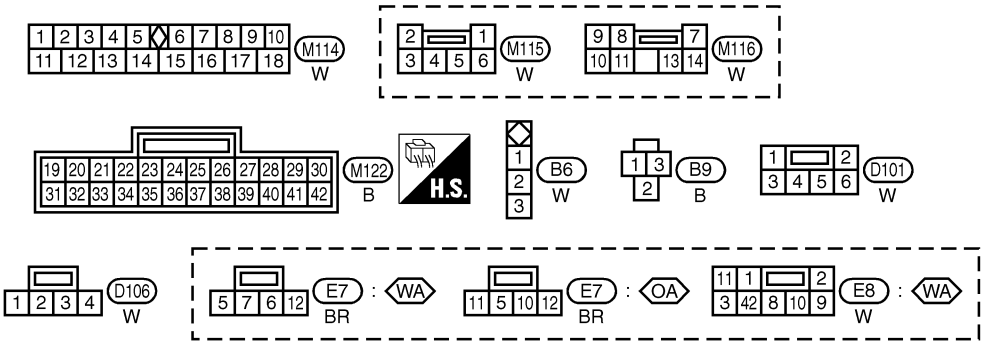


REFER TO THE FOLLOWING.
E1 - SUPER MULTIPLE JUNCTION (SMJ)
M10 , E3 - FUSE BLOCK - JUNCTION BOX (J/B)

MEL804L

EL-CHIME-02





REFER TO THE FOLLOWING.
E1 , B1 -SUPER MULTIPLE JUNCTION (SMJ)

MEL030M

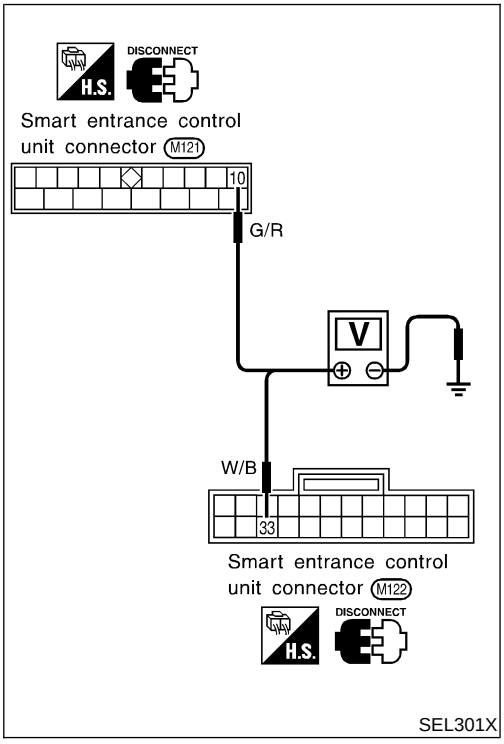
Trouble Diagnoses

NAEL0055

SYMPTOM CHART

NAEL0055S01

REFERENCE PAGE (EL-)	148	150	152	153	154
SYMPTOM	POWER SUPPLY AND GROUND CIRCUIT CHECK	LIGHTING SWITCH INPUT SIGNAL CHECK	KEY SWITCH (INSERT) CHECK	SEAT BELT BUCKLE SWITCH CHECK	DRIVER SIDE DOOR SWITCH CHECK
Light warning chime does not activate.	X	X			X
Ignition key warning chime does not activate.	X		X		X
Seat belt warning chime does not activate.	X			X	
All warning chimes do not activate.	X				



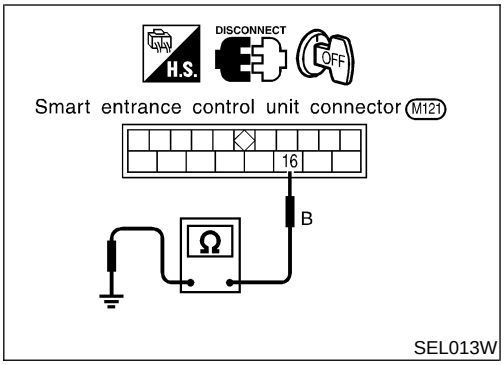
POWER SUPPLY AND GROUND CIRCUIT CHECK

NAEL0055S02

Power Supply Circuit Check

NAEL0055S0201

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



Ground Circuit Check

NAEL0055S0202

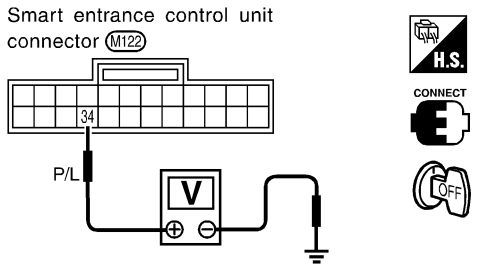
Terminals	Continuity
16 - Ground	Yes

LIGHTING SWITCH INPUT SIGNAL CHECK

=NAEL0055S03

1	CHECK LIGHTING SWITCH INPUT SIGNAL

Check voltage between smart entrance control unit terminal 34 and ground.



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

SEL377X

OK or NG

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

2	CHECK FUSE

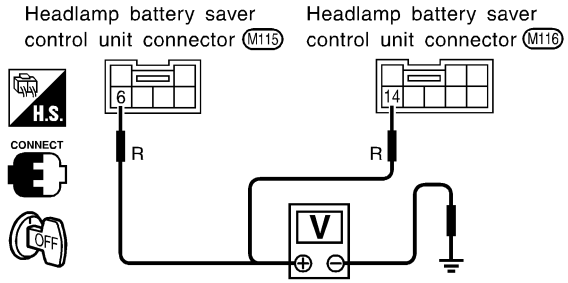
Is 10A fuse (No. 61, located in the fuse and fusible link box) OK?

OK or NG

OK	▶	GO TO 3.
NG	▶	Replace fuse.

3	CHECK TAIL LAMP RELAY CIRCUIT

Check voltage between headlamp battery saver control unit terminal 6, 14 and ground.



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

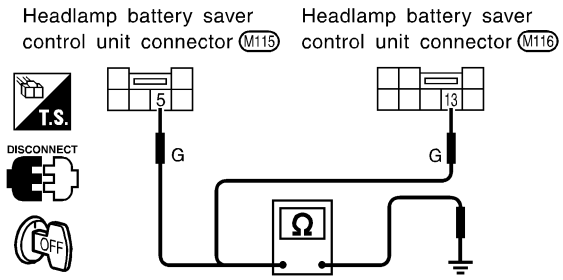
SEL378X

OK or NG

OK	▶	**Check the following.** • Tail lamp relay • Harness for open or short between smart entrance control unit and tail lamp relay.
NG	▶	GO TO 4.

4	CHECK TAIL LAMP SWITCH GROUND CIRCUIT

1. Disconnect headlamp battery saver control unit connector.
2. Check continuity between headlamp battery saver control unit terminal 5, 13 and ground.



Continuity:
Condition of lighting switch: 1ST or 2ND
Yes
Condition of lighting switch: OFF
No

SEL379X

OK or NG

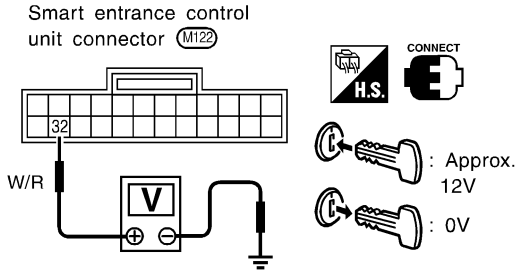
OK	▶	Check headlamp battery saver control unit. Refer to EL-47.
NG	▶	**Check the following.** ● Lighting switch ● Harness for open or short between headlamp battery saver control unit terminal 5, 13 and lighting switch terminal 11 ● Harness between lighting switch terminal 5 (with auto light system) or lighting switch terminal 12 (without auto light system) and ground

KEY SWITCH (INSERT) CHECK

=NAEL0055S04

1	CHECK KEY SWITCH INPUT SIGNAL

Check voltage between smart entrance control unit terminal 32 and ground.



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

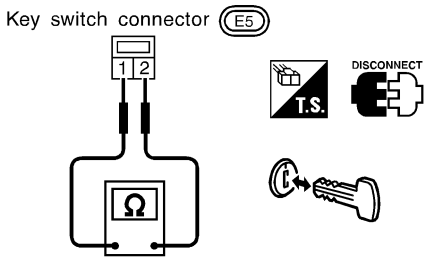
SEL307X

OK or NG

OK	▶	Key switch is OK.
NG	▶	GO TO 2.

2	CHECK KEY SWITCH (INSERT)

Check continuity between terminals 1 and 2.



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

SEL308X

OK or NG

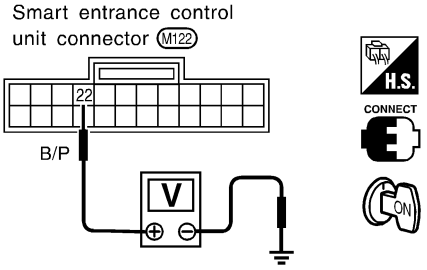
OK	▶	**Check the following.** ● 7.5A fuse [No. 24, located in fuse block (J/B)] ● Harness for open or short between key switch and fuse ● Harness for open or short between smart entrance control unit and key switch
NG	▶	Replace key switch.

SEAT BELT BUCKLE SWITCH CHECK

=NAEL0055S05

1	CHECK SEAT BELT BUCKLE SWITCH INPUT SIGNAL

1. Turn ignition switch "ON".
2. Check voltage between smart entrance control unit terminal 22 and ground.



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

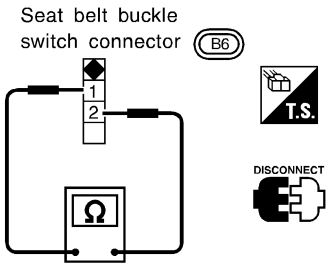
SEL380X

OK or NG

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

2	CHECK SEAT BELT BUCKLE SWITCH

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



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

SEL381X

OK or NG

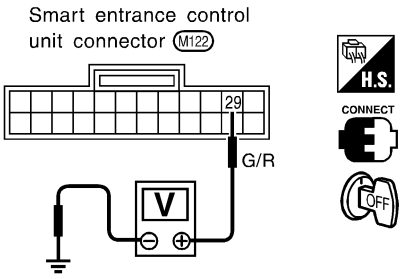
OK	▶	**Check the following.** ● Seat belt buckle switch ground circuit ● Harness for open or short between smart entrance control unit and seat belt buckle switch
NG	▶	Replace seat belt buckle switch.

DRIVER SIDE DOOR SWITCH CHECK

NAEL0055S06

1	CHECK DOOR SWITCH INPUT SIGNAL

Check voltage between smart entrance control unit terminal 29 and ground.



Voltage [V]:
Condition of driver's door: CLOSED
Approx. 5
Condition of driver's door: OPENED
0

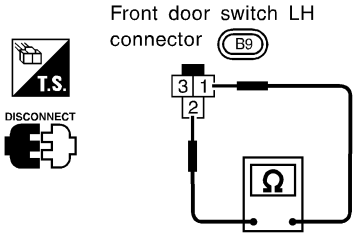
SEL382X

OK or NG

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

2	CHECK DRIVER SIDE DOOR SWITCH

Check continuity between terminals 1 and 2.



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

SEL383X

OK or NG

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

System Description

NAEL0057

WIPER OPERATION

NAEL0057S01

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

- LO speed
- HI speed
- INT (Intermittent)

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

- through 20A fuse [No. 19, located in the fuse block (J/B)]
- to front wiper motor terminal 4, and
- to front wiper switch terminal 15.

Low and High Speed Wiper Operation

NAEL0057S0101

Ground is supplied to front wiper switch terminal 17 through body grounds E13 and E41.
When the wiper switch is placed in the LO position, ground is supplied

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

With power and ground supplied, the front wiper motor operates at low speed.
When the front wiper switch is placed in the HI position, ground is supplied

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

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

Auto Stop Operation

NAEL0057S0102

With front wiper switch turned OFF, front wiper motor will continue to operate until wiper arms reach windshield base.
When wiper arms are not located at base of windshield with front wiper switch OFF, ground is provided

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

Ground is also supplied

- to terminal 13 of the front wiper switch
- through front wiper motor terminal 2
- through terminal 6 of the front wiper motor, and
- through body grounds M77 and M111.

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

Intermittent Operation

NAEL0057S0103

The front wiper motor operates the wiper arms one time at low speed at a set interval of approximately 2 to 13 seconds. This feature is controlled by the wiper amplifier built in the front wiper switch.
When the front wiper switch is placed in the INT position, ground is supplied

- to wiper amplifier (INT SW)
- from front wiper switch terminal 17
- through body grounds E13 and E41, and
- to front wiper motor terminal 3
- through the front wiper switch terminal 14
- through wiper amplifier (OUTPUT)

WASHER OPERATION

NAEL0057S02

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

- through 20A fuse [No. 19, located in the fuse block (J/B)]
- to front washer motor terminal 1.

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

- to front washer motor terminal 2
- through terminal 18 of the front wiper switch

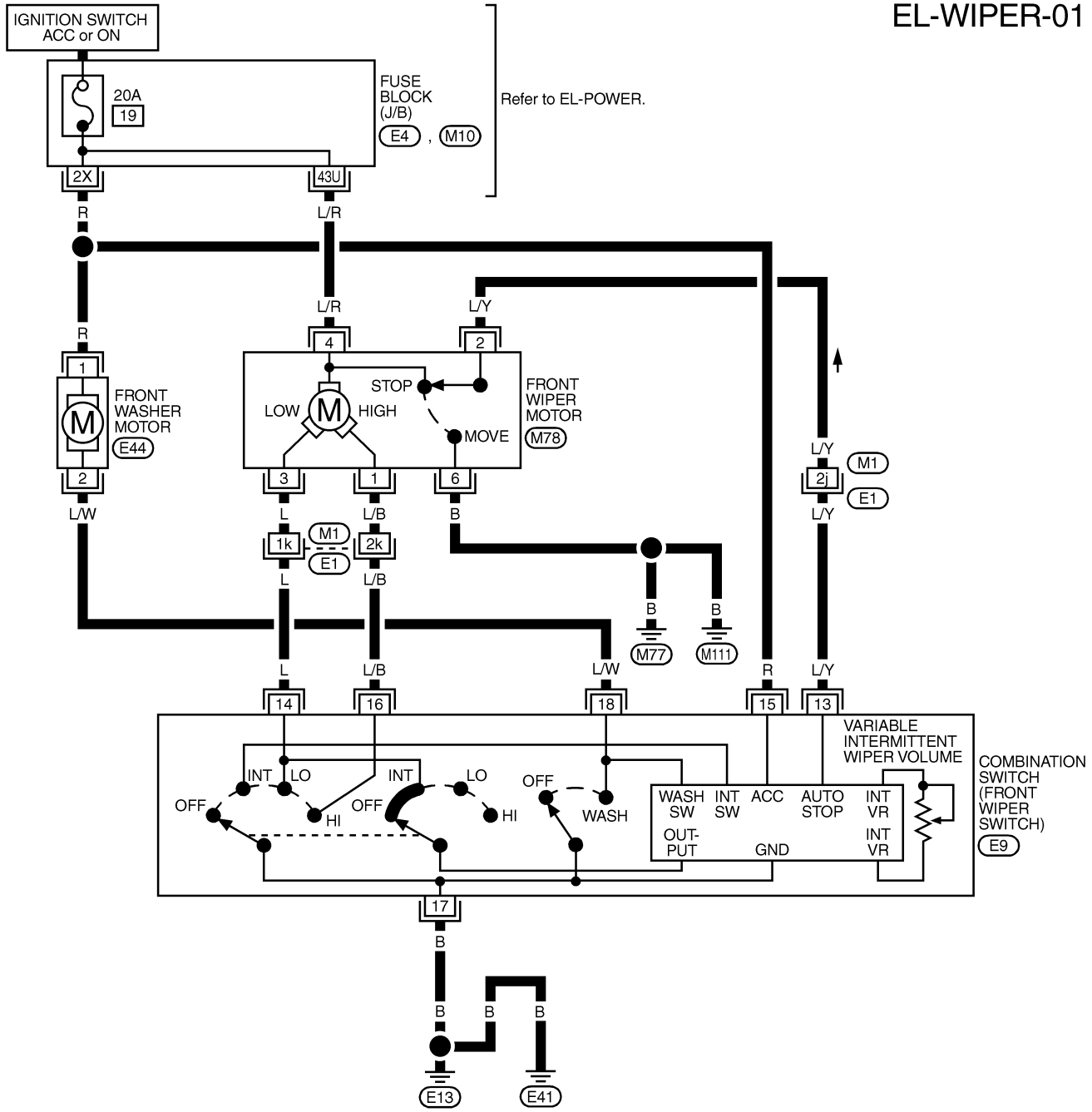
- through terminal 17 of the front wiper switch, and
- through body grounds E13 and E41.

With power and ground supplied, the front washer motor operates.
When the lever is pulled to the WASH position for one second or more, the front 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.

Wiring Diagram — WIPER —

NAEL0058

EL-WIPER-01



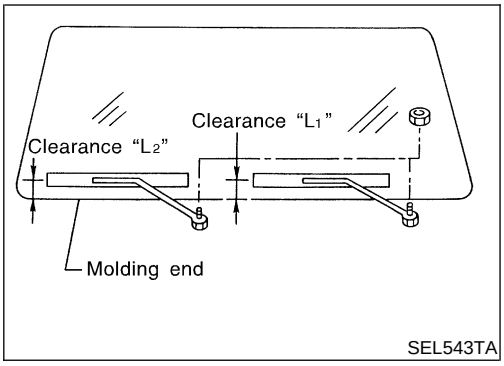
M78 GY

E9 GY

E44 GY

REFER TO THE FOLLOWING.
E1 -SUPER MULTIPLE JUNCTION (SMJ)
M10 , E4 -FUSE BLOCK-JUNCTION BOX (J/B)

MEL806L



Removal and Installation

NAEL0060

WIPER ARMS

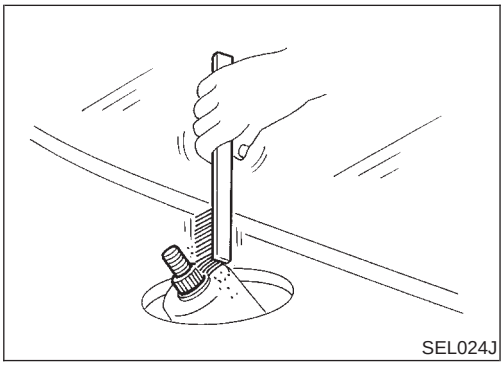
NAEL0060S01

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 "L_1" & "L_2" 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 "L_1" & "L_2".

Clearance "L_1": 29 - 30 mm (1.14 - 1.18 in)
Clearance "L_2": 32 - 42 mm (1.26 - 1.65 in)

- Tighten wiper arm nuts to specified torque.

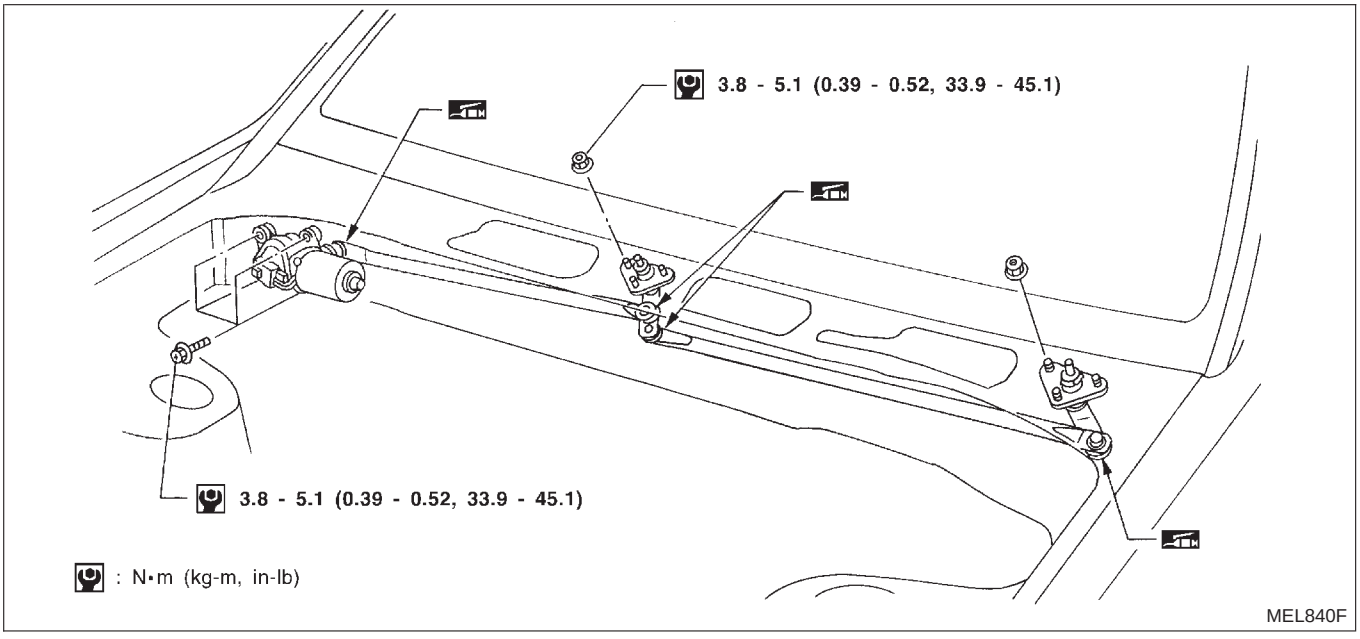
Front wiper: 21 - 26 N·m (2.1 - 2.7 kg-m, 15 - 20 ft-lb)



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

WIPER LINKAGE

NAEL0060S02



Removal

NAEL0060S0201

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

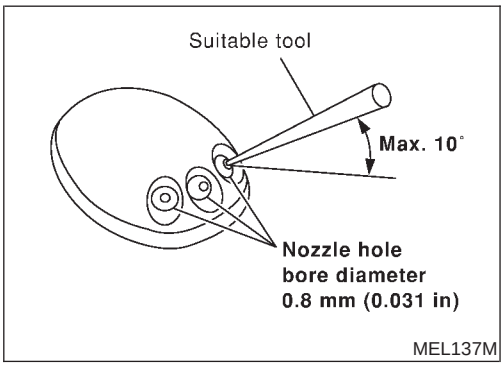
Be careful not to break ball joint rubber boot.

Installation

NAEL0060S0202

- Grease ball joint portion before installation.

1. Installation is the reverse order of removal.



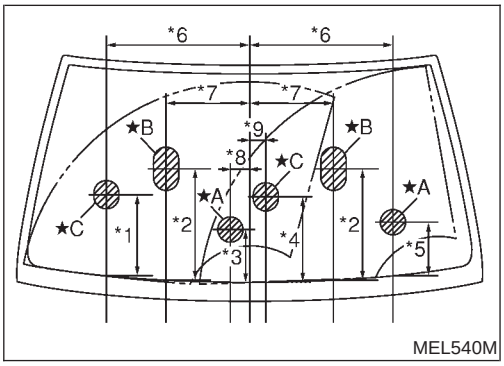
MEL137M

Washer Nozzle Adjustment

NAEL0061

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

Adjustable range: ±10°



MEL540M

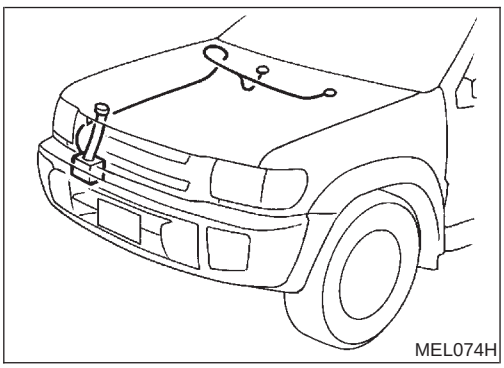
Unit: mm (in)

*1	251 (9.88)	*6	459 (18.07)
*2	351 (13.82)	*7	256 (10.08)
*3	165 (6.50)	*8	67 (2.64)
*4	269 (10.59)	*9	42 (1.65)
*5	167 (6.57)		

*A: The diameters of these circles are less than 80 mm (3.15 in).
*B: The diameter of this circle is less than 138 × 80 mm (5.43 × 3.15 in).
*C: The diameter of this circle is less than 96 × 80 mm (3.78 × 3.15 in).

Washer Tube Layout

NAEL0062


MEL074H

System Description

NAEL0063

WIPER OPERATION

NAEL0063S01

Power Supply and Ground

NAEL0063S0101

With ignition switch in the ACC or ON position, power is supplied
- through 10A fuse [No. 29, located in the fuse block (J/B)]
- to rear wiper amp. terminal 6.

When the glass hatch switch is OPEN, ground is supplied
- to rear wiper amp. terminal 3
- through glass hatch switch terminal 1 and 2
- through body grounds B11, B22 and D210.

Ground is supplied
- to rear wiper amp. terminal 9
- through body grounds B11, B22 and D210.

Low Speed Wiper Operation

NAEL0063S0103

When the rear wiper switch is turned ON, ground is supplied
- to rear wiper amp. terminal 2
- through combination switch terminals 22 and 24
- through body grounds E13 and E41.

Then, power is supplied
- through rear wiper amp. terminal 11
- to rear wiper motor terminal 4.

Ground is supplied
- to rear wiper motor terminal 3
- through rear wiper amp. terminal 8.

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

Auto Stop Operation

NAEL0063S0104

With rear wiper switch turned OFF, rear wiper motor will continue to operate until wiper arm reaches rear wiper stopper.
When rear wiper arm is not located at bottom with wiper switch OFF, ground is supplied
- to rear wiper amp. terminal 10
- through wiper motor terminals 7 and 8
- through body grounds B11, B22 and D210.

Then rear wiper motor continues to operate until wiper arm reaches bottom.
When wiper arm reaches bottom, power is supplied
- through 10A fuse [No. 29, located in the fuse block (J/B)]
- through rear wiper motor terminals 6 and 7 and
- through rear wiper amp. terminals 10 and 8
- to rear wiper motor terminal 3.

Ground is supplied
- to rear wiper motor 4
- through rear wiper amp. terminal 11.

Then wiper motor turns the other way and wiper arm moves once until wiper arm reaches stopper.

Intermittent Operation

NAEL0063S0105

The rear wiper motor operates the wiper arms at low speed approximately every 7 seconds. This feature is controlled by the wiper amp.
When the wiper switch is placed in the INT position, ground is supplied
- to wiper amp. terminal 4
- through rear combination switch terminal 21 and 24
- through body grounds E13 and E41.

Then, power is supplied
- through rear wiper amp. terminal 11

- to rear wiper motor terminal 4.

Ground is supplied

- to rear wiper motor terminal 3
- through rear wiper amp. terminal 8.

With power and ground supplied, rear wiper operates at low speed intermittent.

WIPER OPERATION PROHIBIT CONTROL

NAEL0063S03

When glass hatch is open with back door key cylinder while rear wiper is operated, wiper operation is stopped. (Wiper operation prohibit control)
When glass hatch is closed and rear wiper switch turns from OFF and then rear wiper switch is turned to ON, wiper operation prohibit control is canceled.

WASHER OPERATION

NAEL0063S02

When the rear wiper switch is turned to WASH position, ground is supplied

- to rear wiper amp. terminal 1
- through terminals 23 and 24
- through body grounds E13 and E41.

Then, power is supplied

- through rear wiper amp. terminal 7
- to rear washer motor terminal 2.

Ground is supplied

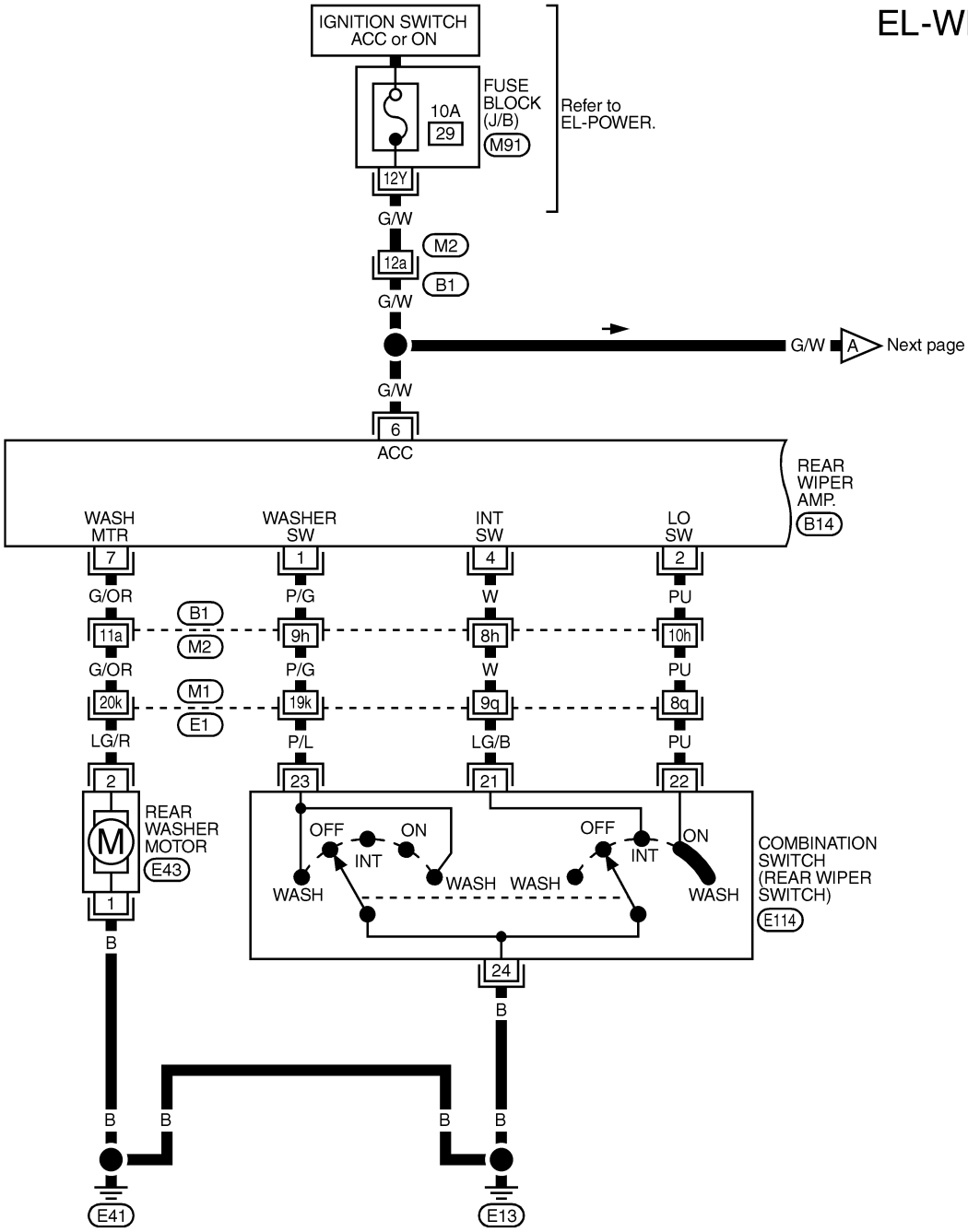
- to rear washer motor terminal 1
- through body grounds E13 and E41.

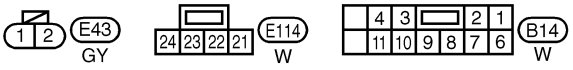
With power and ground supplied, the rear washer motor operates.
When the rear wiper switch is turned to WASH position for one second or more, the rear wiper motor operates at low speed for approximately 3 seconds after the rear wiper switch is released. This feature is controlled by the rear wiper amp. in the same manner as the low speed operation.

Wiring Diagram — WIP/R —

NAEL0065

EL-WIP/R-01

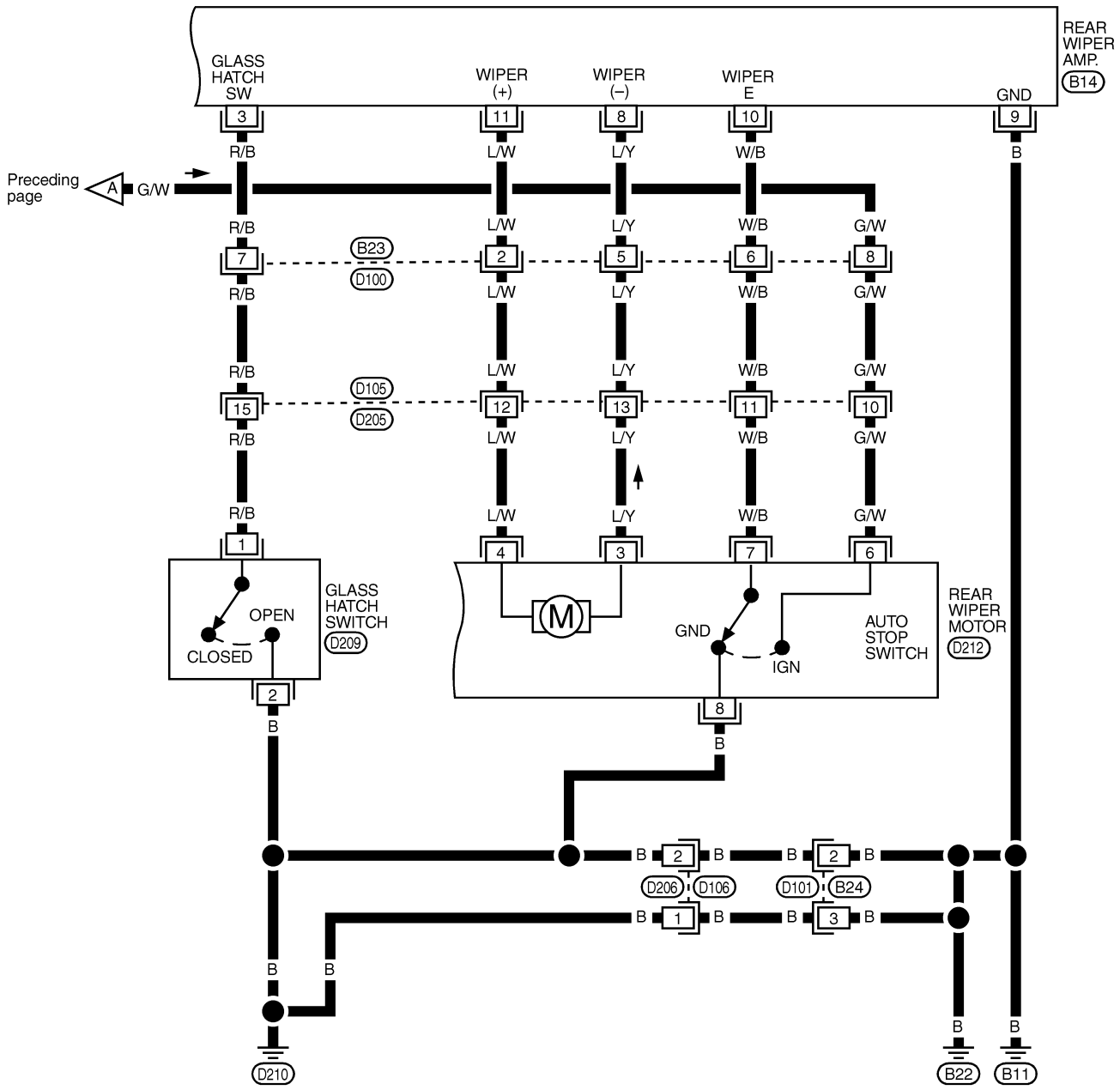


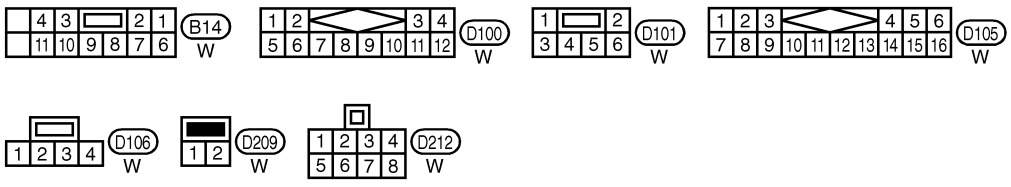


REFER TO THE FOLLOWING.
B1 , E1 -SUPER MULTIPLE JUNCTION (SMJ)
M91 -FUSE BLOCK-JUNCTION BOX (J/B)

MEL031M

EL-WIP/R-02





MEL032M

Trouble Diagnoses

NAEL0066

REAR WIPER AMP. INSPECTION TABLE

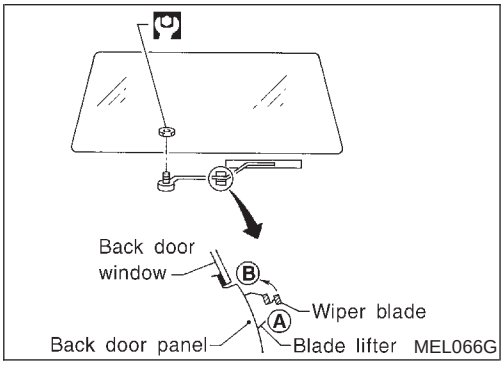
NAEL0066S01

(Data are reference values.)

Terminal No.	Item	Condition			Voltage (Approximate value)
1	Washer switch		Rear wiper switch	WASH	Less than 1V
				OFF, ON or INT	Battery voltage
2	Low switch		Rear wiper switch	ON	Less than 1V
				OFF or INT	Battery voltage
3	Glass hatch switch		Glass hatch	Open	Less than 1V
				Closed	Battery voltage
4	Intermittent switch		Rear wiper switch	INT	Less than 1V
				OFF, ON or WASH	Battery voltage
6	Power supply (ACC)		—		Battery voltage
7	Washer motor		Rear washer switch	WASH	Battery voltage
				OFF, ON or INT	Less than 1V
8	Rear wiper motor		Wiper is moving (except final drive)		Less than 1V
			Wiper stop		Less than 1V
			During wiper final drive		Battery voltage
9	Ground	—			—
10	Auto stop switch		Rear wiper switch should be at “INT” to inspect the value for wiper movement.	Wiper is moving	Less than 1V
				Wiper stop	Battery voltage
11	Rear wiper motor		Wiper is moving (except final drive)		Battery voltage
			Wiper stop		Battery voltage
			During wiper final drive		Less than 1V

NOTE:

Power to the rear wiper amp. will be interrupted when the rear glass hatch is opened. In that case, conduct the inspection of the rear wiper amp. with the rear glass hatch closed, unless otherwise indicated.



Removal and Installation

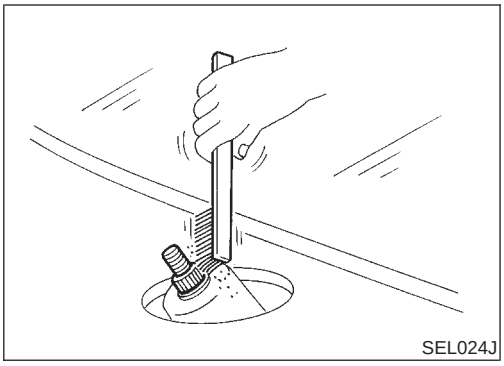
NAEL0067

WIPER ARMS

NAEL0067S01

1. Prior to wiper arm installation, turn on wiper switch to operate wiper motor and then turn it “OFF” (Auto Stop).
2. Install wiper arm to portion A as in figure below and tighten wiper arm nut to specification.
3. Then, set wiper arm to portion B.

: 13 - 18 N·m (1.3 - 1.8 kg-m, 9 - 13 ft-lb)



SEL024J

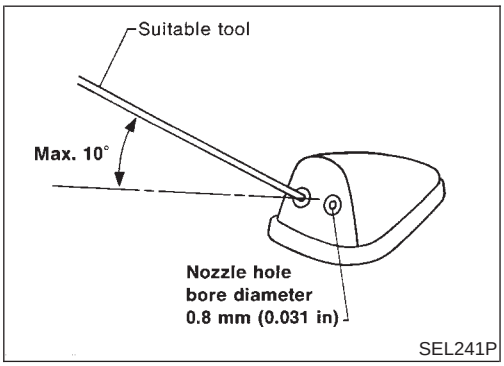
- **Before reinstalling wiper arm, clean up the pivot area as illustrated. This will reduce possibility of wiper arm looseness.**

Washer Nozzle Adjustment

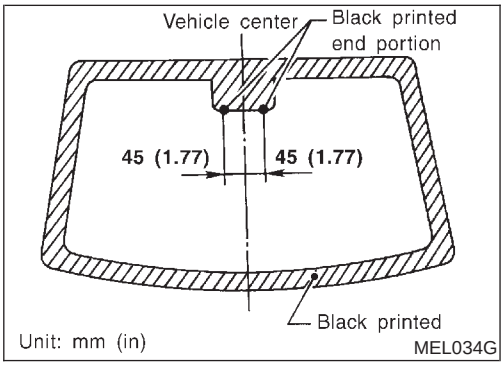
NAEL0068

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

  Adjustable range: ±10° (In any direction)



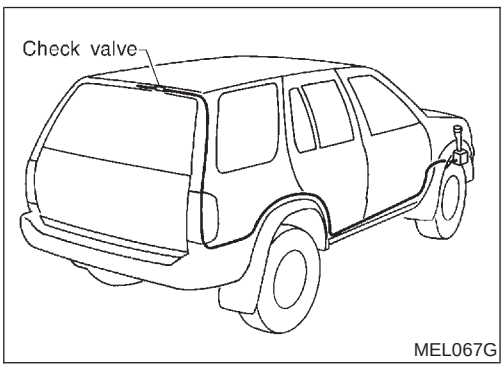
SEL241P



MEL034G

Washer Tube Layout

NAEL0069

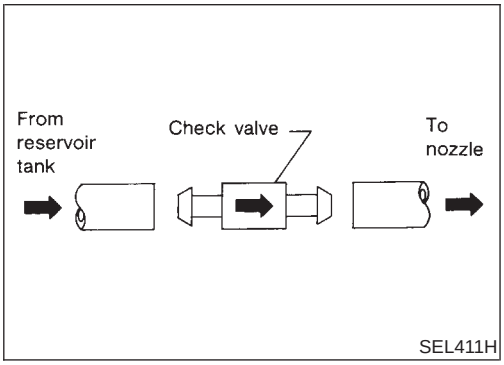


MEL067G

Check Valve

NAEL0070

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

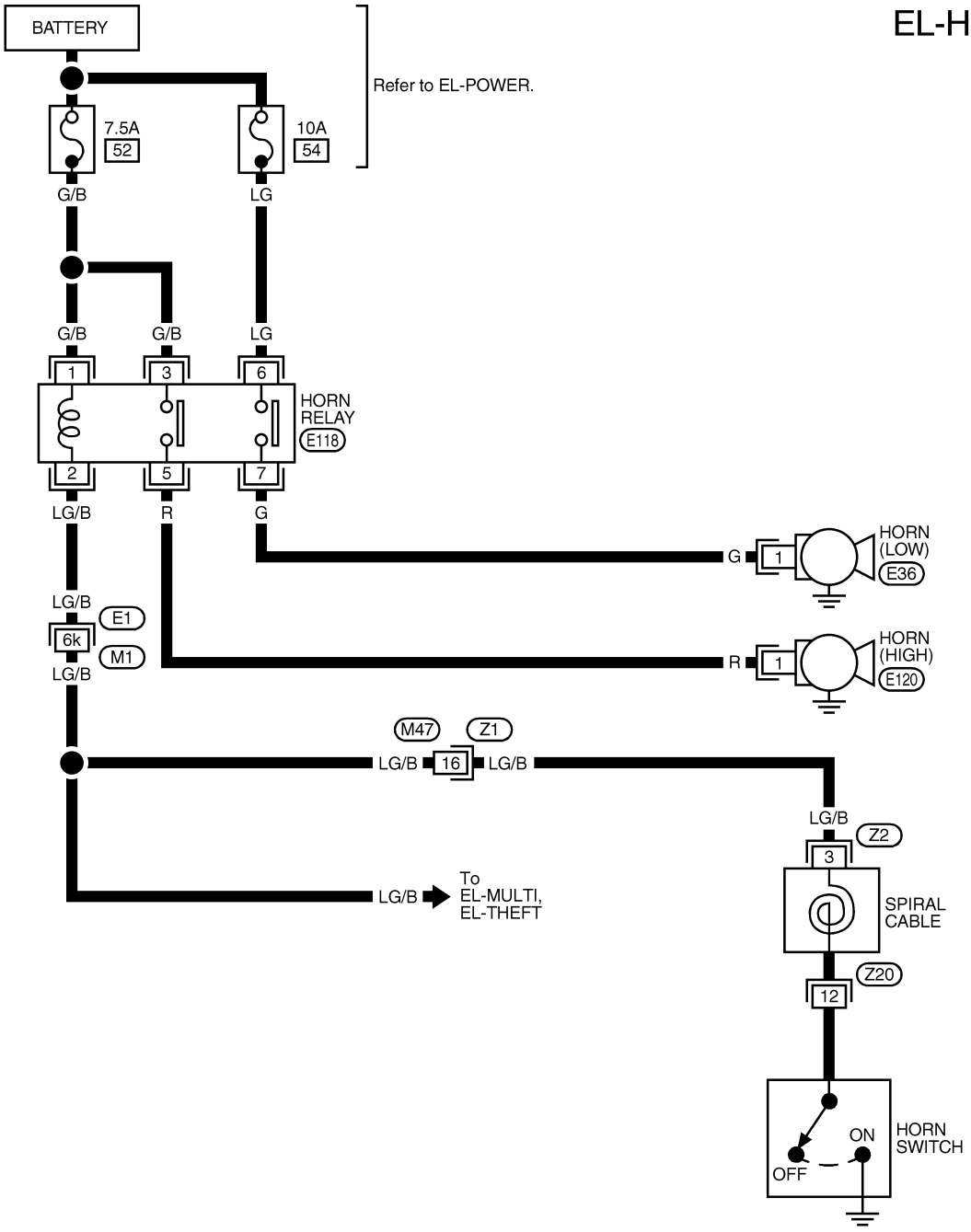


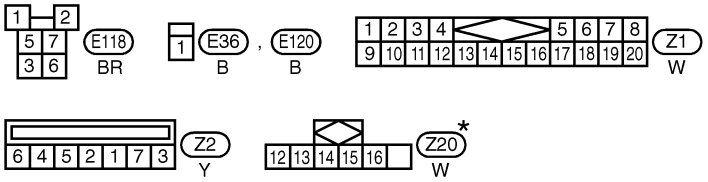
SEL411H

Wiring Diagram — HORN —

NAEL0071

EL-HORN-01





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

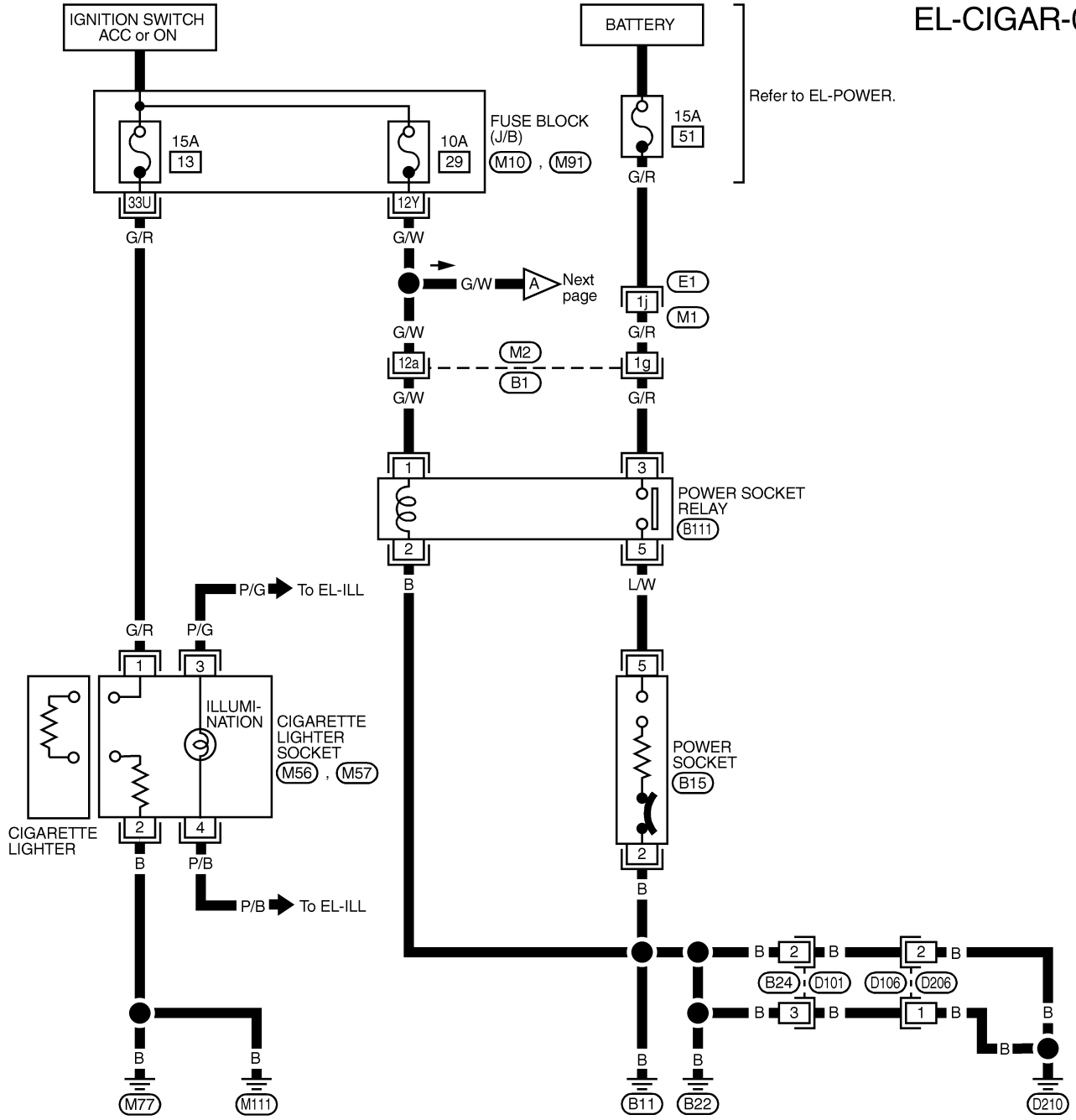
REFER TO THE FOLLOWING.
E1 -SUPER MULTIPLE JUNCTION (SMJ)

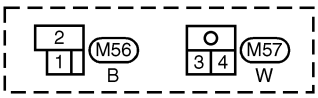
MEL033M

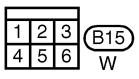
Wiring Diagram — CIGAR —

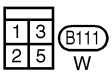
NAEL0156

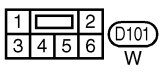
EL-CIGAR-01

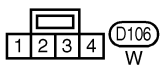












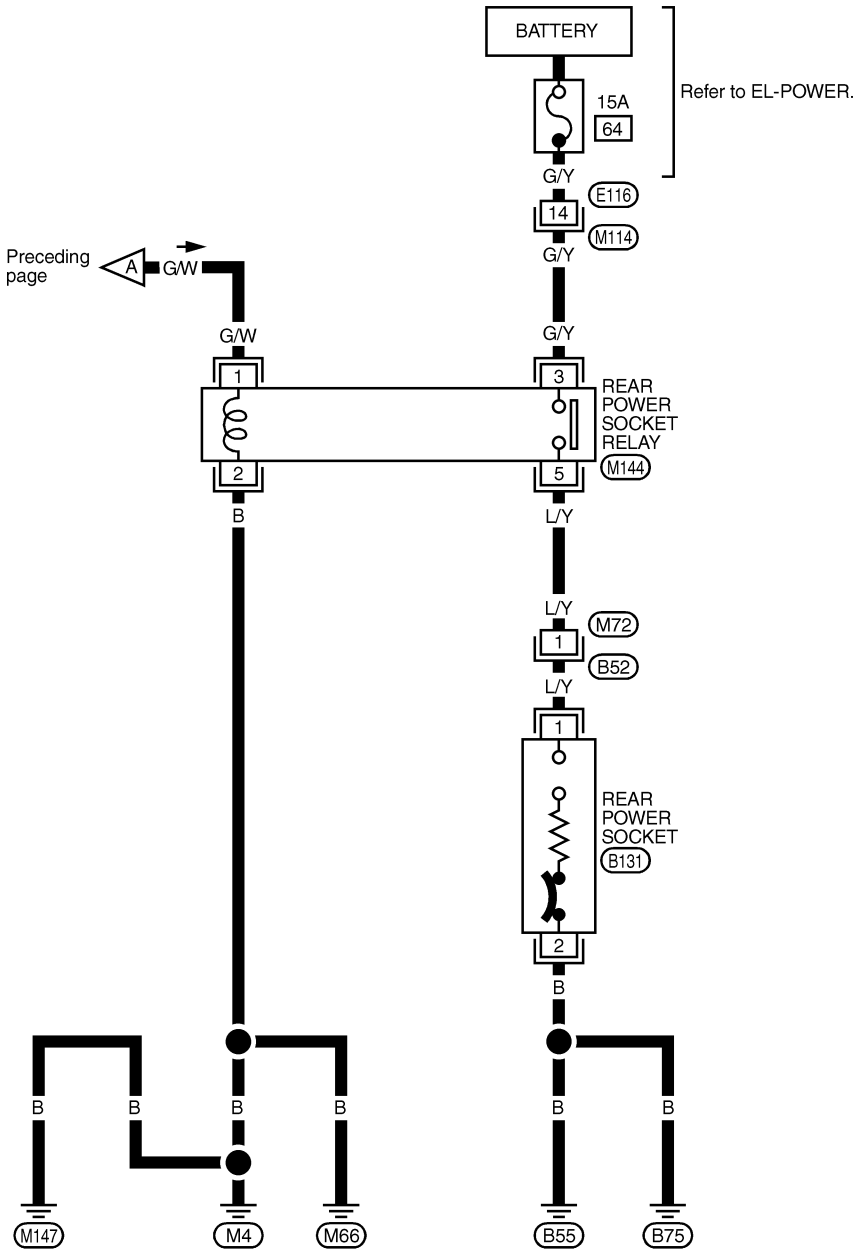
REFER TO THE FOLLOWING.

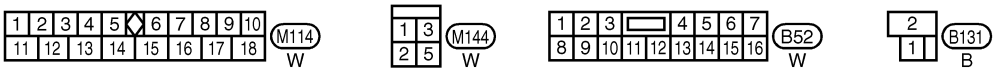
E1 , B1 - SUPER MULTIPLE JUNCTION (SMJ)

M10 , M91 - FUSE BLOCK - JUNCTION BOX (J/B)

MEL812L

EL-CIGAR-02

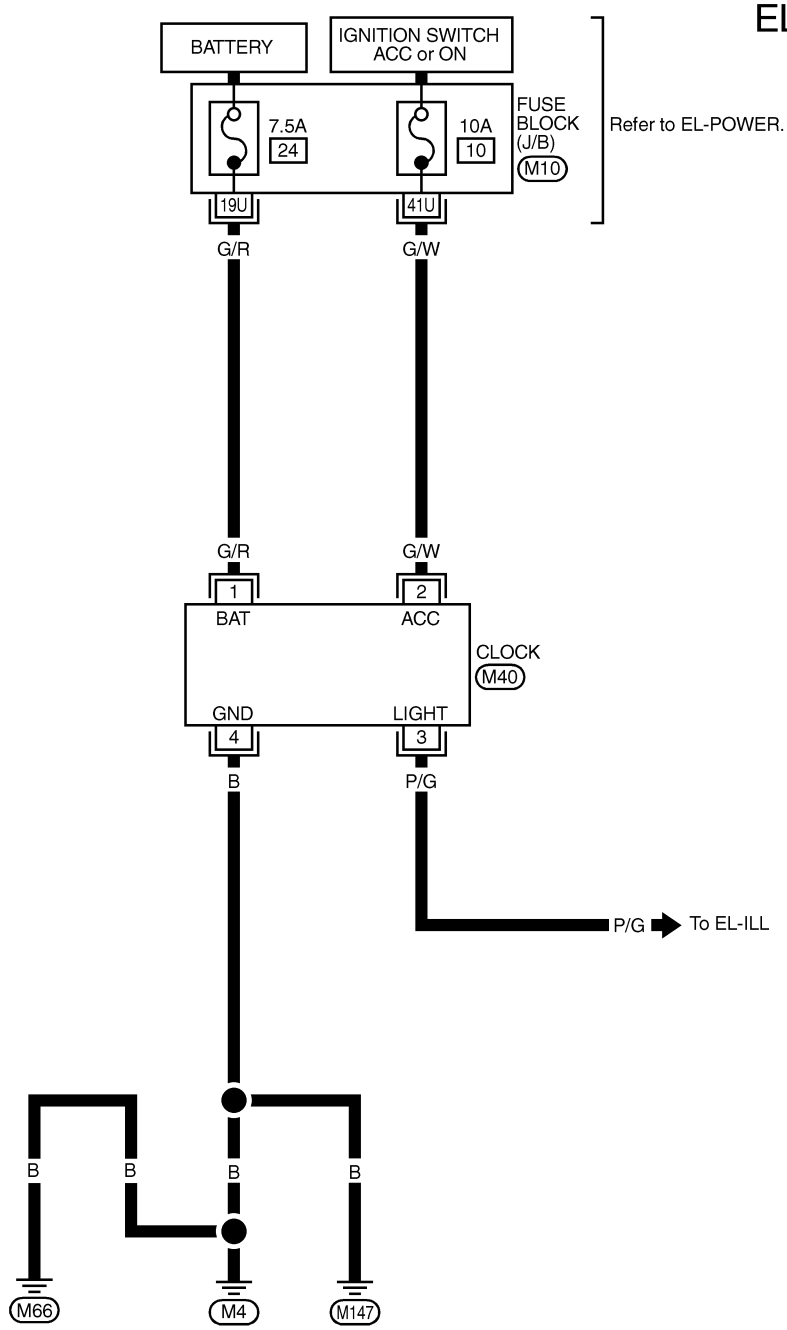


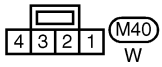


MEL034M

Wiring Diagram — CLOCK —

NAEL0204



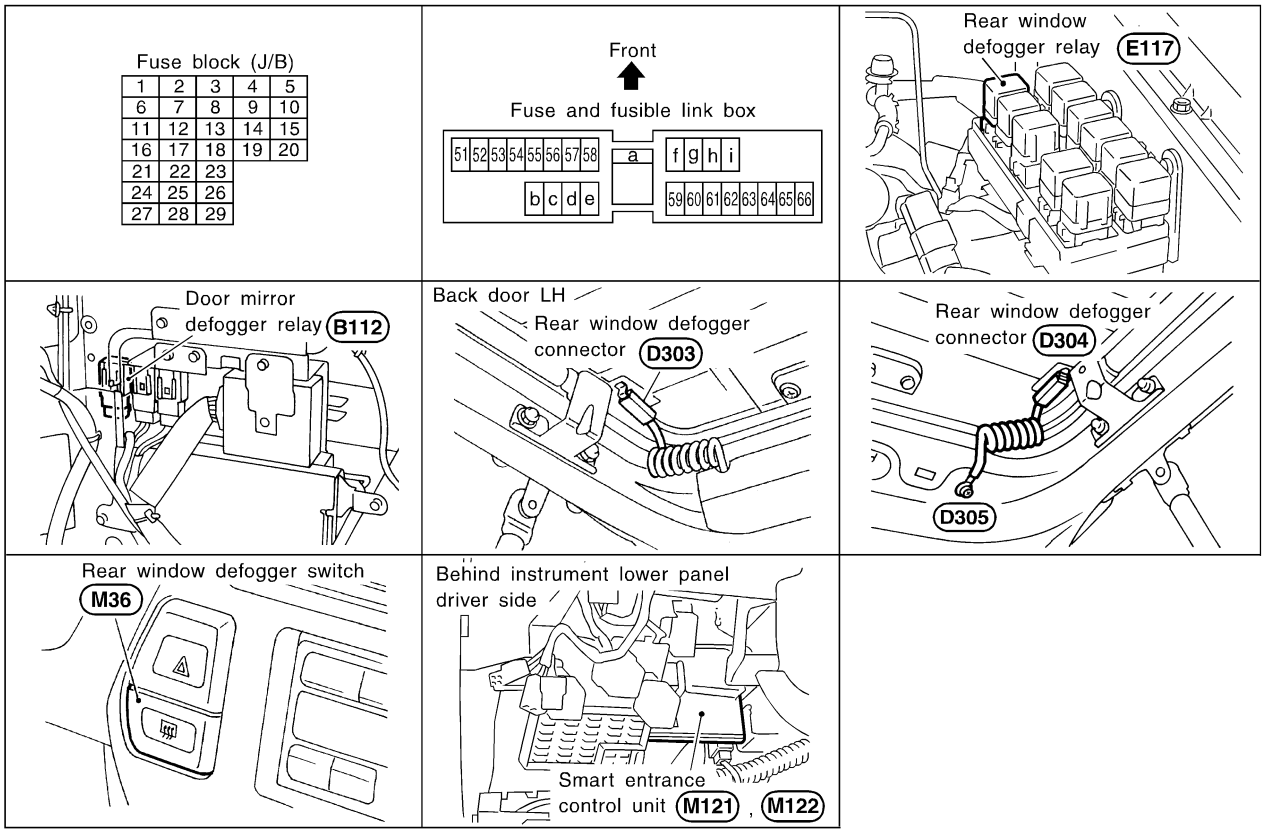


REFER TO THE FOLLOWING.
M10 -FUSE BLOCK-
JUNCTION BOX (J/B)

MEL035M

Component Parts and Harness Connector Location

NAEL0072



SEL465XA

System Description

NAEL0073

The rear window defogger system is controlled by the smart entrance 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. 56, located in the fuse and fusible link box) and
- to rear window defogger relay terminal 6
- through 20A fuse (No. 57, located in the fuse and fusible link box)
- to smart entrance control unit terminal 10
- through 7.5A [No. 24, located in fuse block (J/B)]

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

- through 7.5A fuse [No. 11, located in the fuse block (J/B)]
- to the rear window defogger relay terminal 1, and
- to smart entrance control unit terminal 33.

Ground is supplied

- to terminal 1 of the rear window defogger switch
- through body grounds M4, M66 and M147
- to smart entrance control unit terminal 16
- through body grounds M77 and M111.

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

- through terminal 2 of the rear window defogger switch
- to smart entrance control unit terminal 39.

Terminal 2 of the smart entrance 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.

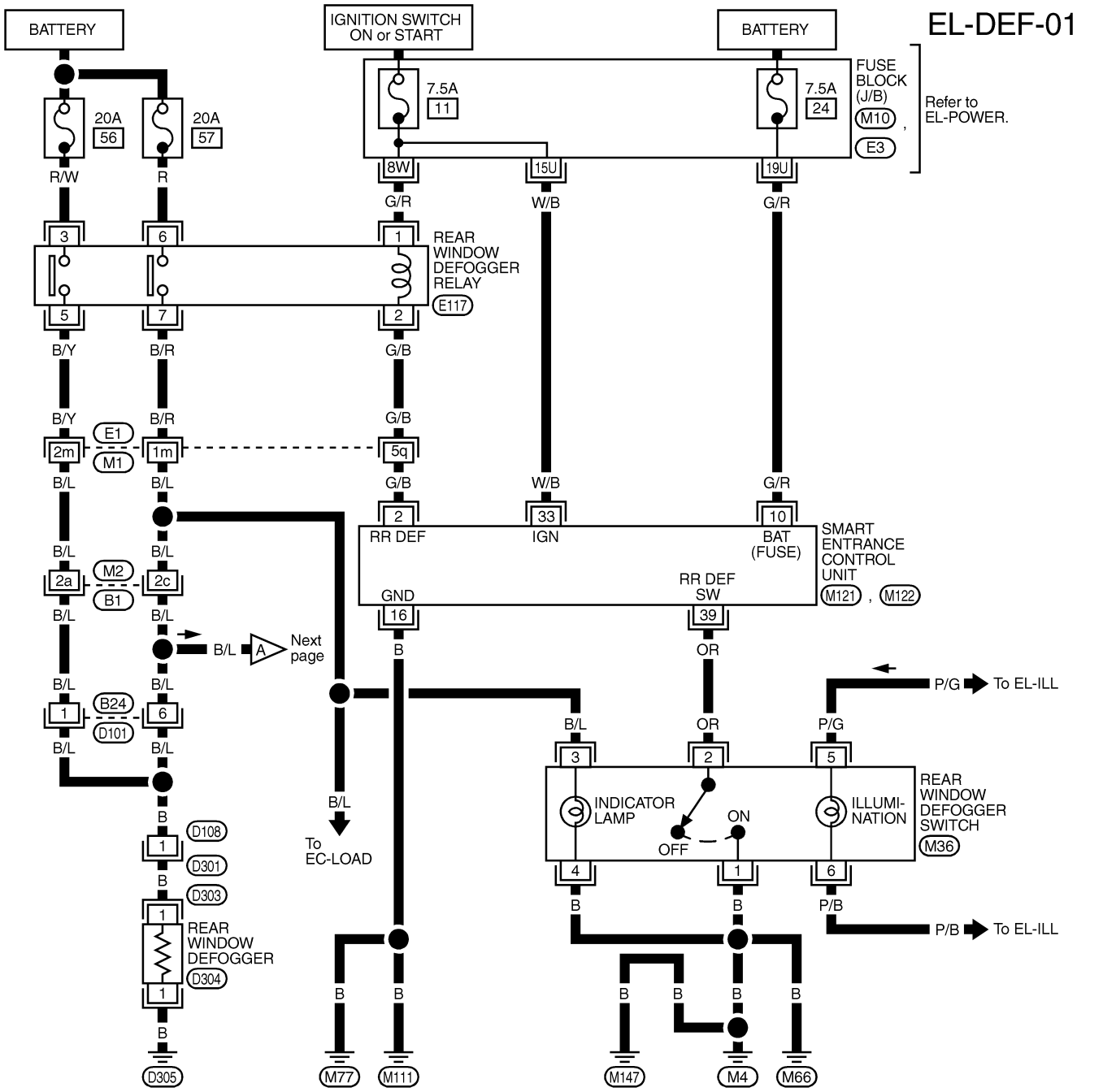
The rear window defogger has an independent ground.
With power and ground supplied, the rear window defogger filaments heat and defog the rear window.
When the system is activated, the rear window defogger indicator illuminates in the rear window defogger switch.
Power is supplied

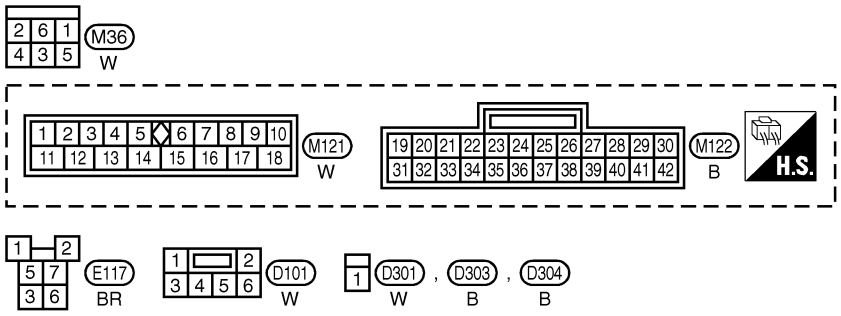
- to terminal 3 of the rear window defogger switch
- from terminal 7 of the rear window defogger relay.

Terminal 4 of the rear window defogger switch is grounded through body grounds M4, M66 and M147.

Wiring Diagram — DEF —

NAEL0074

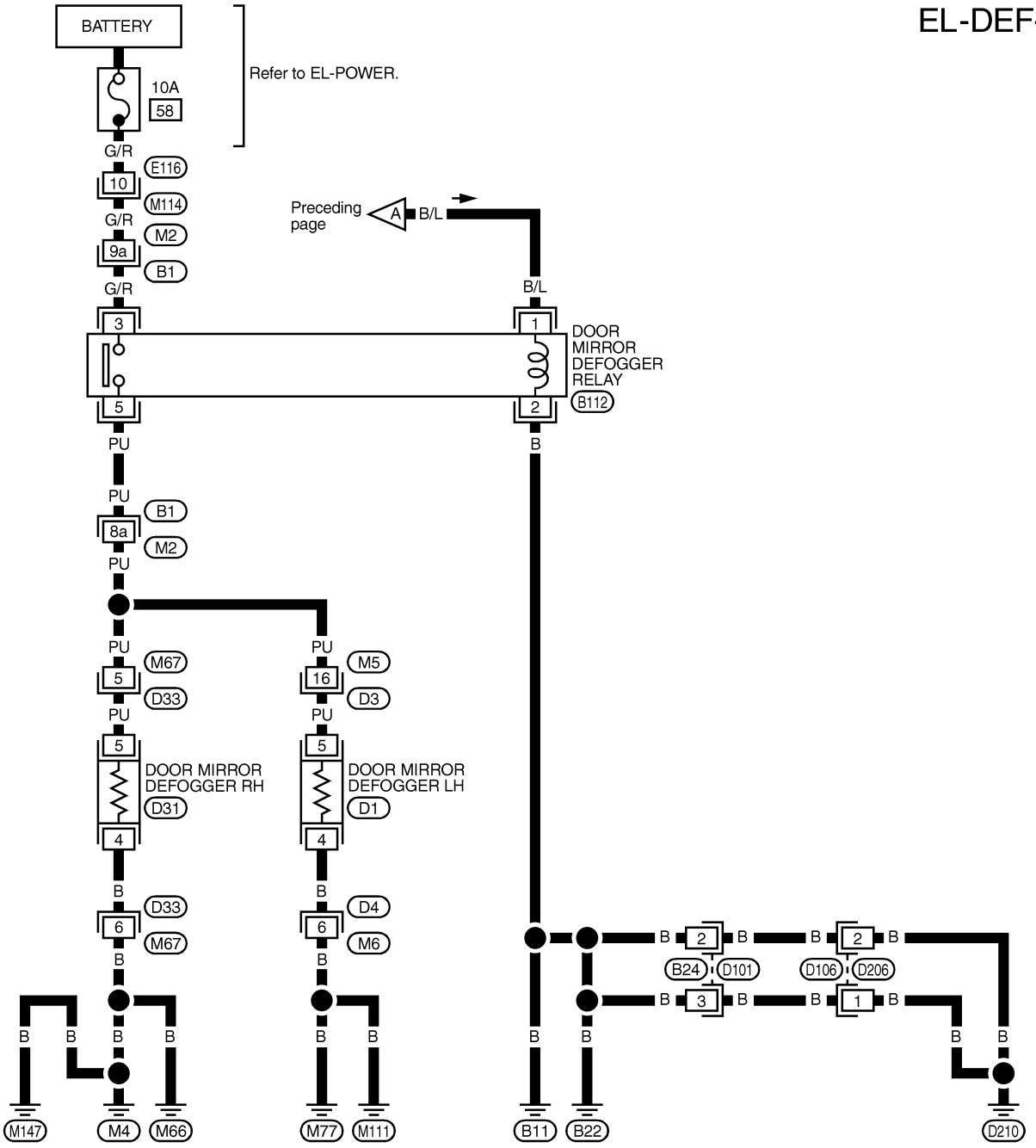


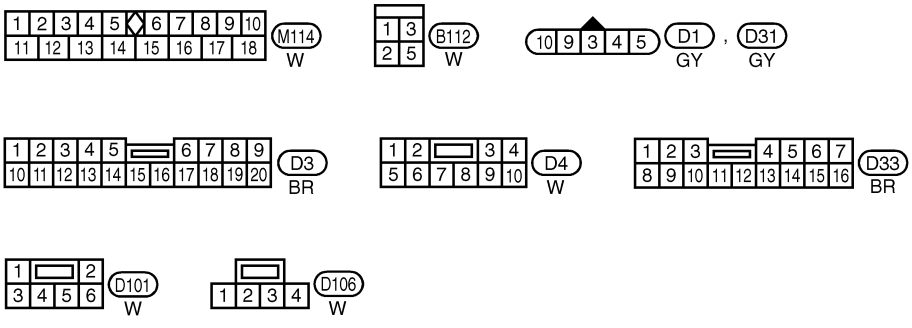


REFER TO THE FOLLOWING.
E1 , B1 -SUPER MULTIPLE JUNCTION (SMJ)
M10 , E3 -FUSE BLOCK-JUNCTION BOX (J/B)

MEL036M

EL-DEF-02





REFER TO THE FOLLOWING.

B1 - SUPER MULTIPLE JUNCTION (SMJ)

MEL816L

Trouble Diagnoses

NAEL0075

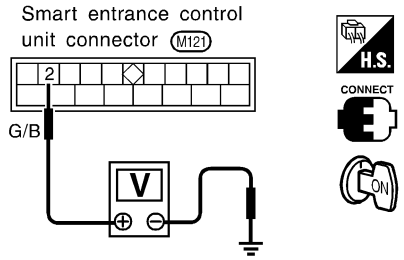
DIAGNOSTIC PROCEDURE

NAEL0075S01

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

1	CHECK REAR WINDOW DEFOGGER OUTPUT SIGNAL

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



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

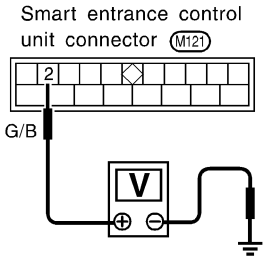
SEL384X

OK or NG

OK	▶	**Check the following.** ● Rear window defogger relay (Refer to EL-176.) ● Rear window defogger circuit ● Rear window defogger filament (Refer to EL-176.)
NG	▶	GO TO 2.

2	CHECK DEFOGGER RELAY COIL SIDE CIRCUIT

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



Battery voltage should exist.

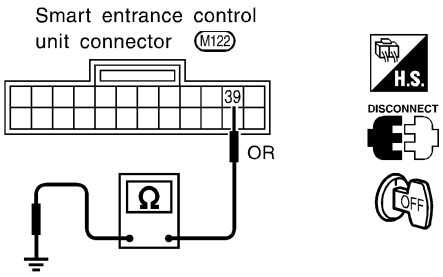
SEL385X

OK or NG

OK	▶	GO TO 3.
NG	▶	**Check the following.** ● 7.5A fuse [No. 11, located in the fuse block (J/B)] ● Rear window defogger relay ● Harness for open or short between rear window defogger relay and smart entrance control unit

3	CHECK REAR WINDOW DEFOGGER SWITCH INPUT SIGNAL

Check continuity between smart entrance control unit terminal 39 and ground.



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

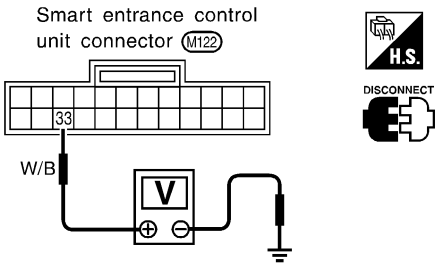
SEL386X

OK or NG

OK	▶	GO TO 4.
NG	▶	**Check the following.** ● Rear window defogger switch (with navigation system) (Refer to EL-176.) ● Harness for open or short between smart entrance control unit and rear window defogger switch ● Rear window defogger switch ground circuit

4	CHECK IGNITION INPUT SIGNAL

Check voltage between smart entrance control unit terminal 33 and ground.



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

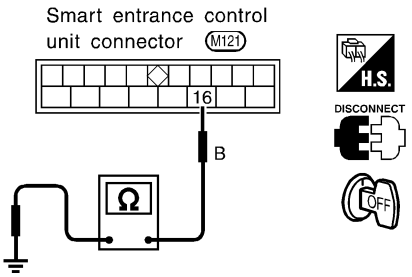
SEL387X

OK or NG

OK	▶	GO TO 5.
NG	▶	**Check the following.** ● 7.5A fuse [No. 11, located in the fuse block (J/B)] ● Harness for open or short between smart entrance control unit and fuse

5	CHECK SMART ENTRANCE CONTROL UNIT GROUND CIRCUIT

Check continuity between smart entrance control unit terminal 16 and ground.

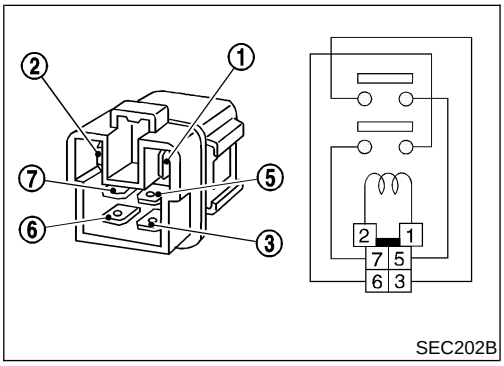


Continuity should exist.

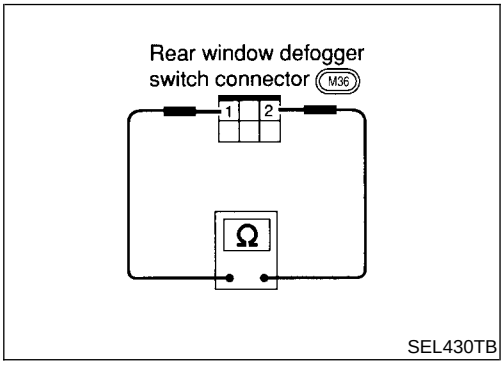
SEL388X

OK or NG

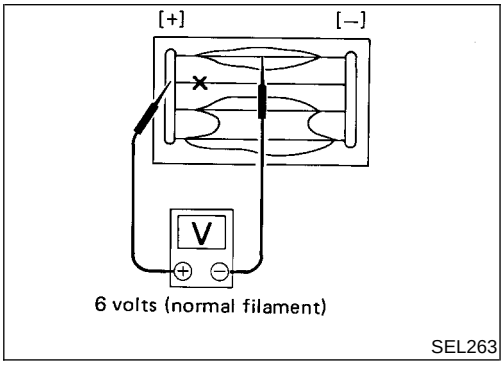
OK	▶	Replace smart entrance control unit.
NG	▶	Repair harness or connectors.



SEC202B



SEL430TB



SEL263

Electrical Components Inspection

NAEL0076

REAR WINDOW DEFOGGER RELAY

NAEL0076S01

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

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

REAR WINDOW DEFOGGER SWITCH

NAEL0076S02

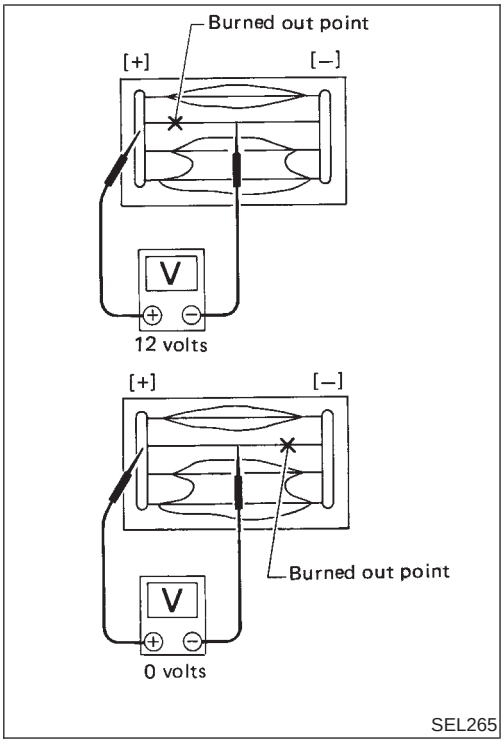
Check continuity between terminals when rear window defogger switch is pushed and released.

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

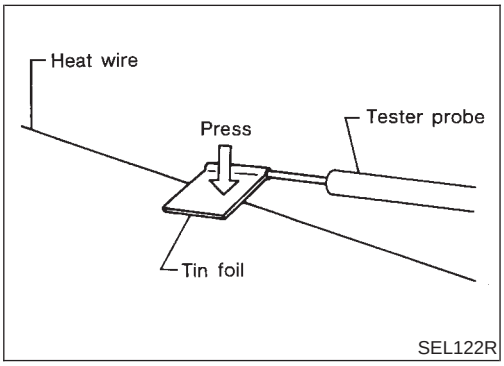
Filament Check

NAEL0077

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



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.



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

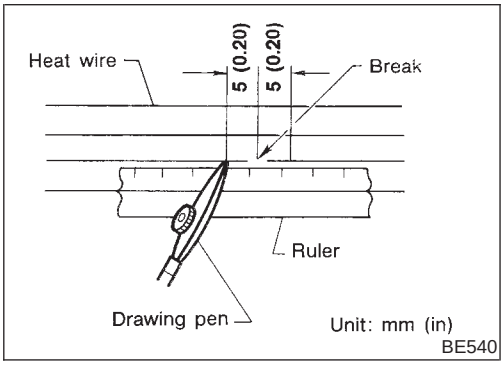
Filament Repair

NAEL0078

REPAIR EQUIPMENT

NAEL0078S01

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

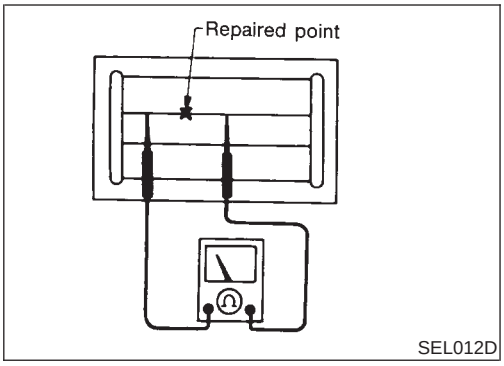
NAEL0078S02

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.

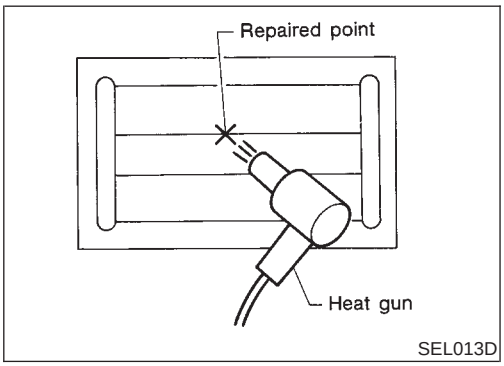
3. Place ruler on glass along broken line. Deposit conductive silver composition on break with drawing pen. Slightly overlap existing heat wire on both sides [preferably 5 mm (0.20 in)] of the break.

Filament Repair (Cont'd)



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

Do not touch repaired area while test is being conducted.



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

System Description

NAEL0226

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

BASE SYSTEM

NAEL0226S01

Power is supplied at all times

- through 15A fuse [No. 4, located in the fuse block (J/B)]
- to audio unit terminal 6.

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

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

Ground is supplied through the case of the audio unit.
When the audio unit power knob is pushed to the ON position, audio signals are supplied

- through audio unit terminals 1, 2, 3, 4, 13, 14, 15 and 16
- to the front and rear speakers.

BOSE SYSTEM

NAEL0226S02

Power is supplied at all times

- through 15A fuse [No. 4, located in the fuse block (J/B)]
- to audio unit terminal 6,
- to audio amp. relay terminal 3 and
- to rear speaker amp. terminal 11.

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

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

Ground is supplied through the case of the audio unit.
Ground is supplied

- to audio amp. relay terminal 2,
- through body grounds M4, M66 and M147
- to front door speaker LH terminal 5 and
- to front door speaker RH terminal 5
- through body grounds M77 and M111
- to rear speaker amp. terminal 24
- through body grounds B11, B22 and D210.

When the audio unit POWER button is pressed, power is supplied to rear speaker amp. terminal 9 and audio amp. relay terminal 1 from audio unit terminal 12. Then audio amp. relay is energized and power is supplied

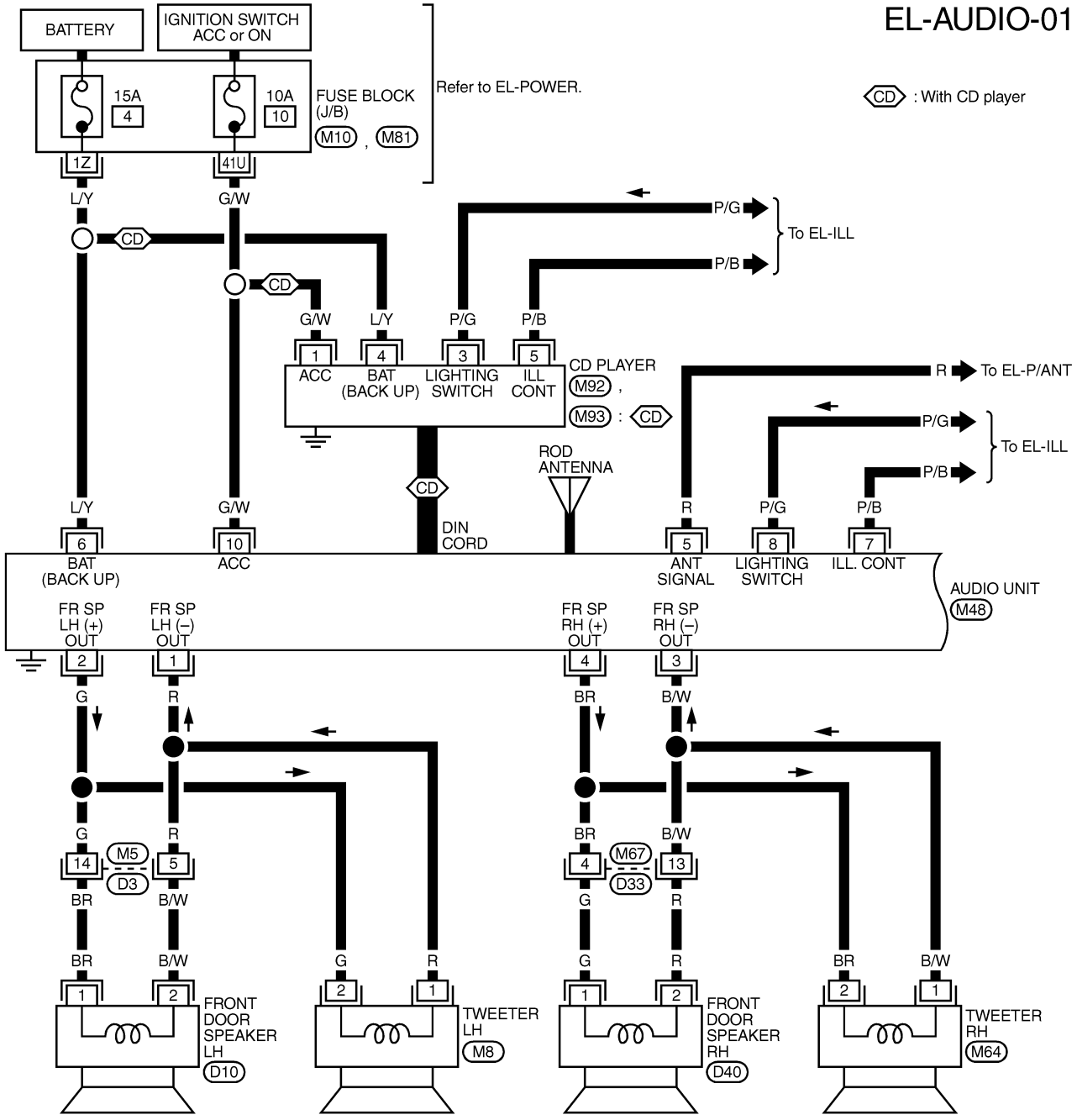
- to front door speaker LH terminal 4 and
- to front door speaker RH terminal 4.

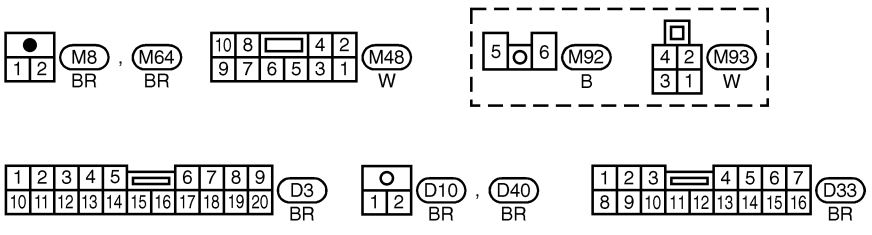
Audio signals are supplied

- through audio unit terminals 1, 2, 3, 4, 13, 14, 15 and 16
- to terminals 2 and 6 of the LH and RH front speakers and terminals 5, 7, 18 and 20 of the rear speaker amp.
- to LH and RH tweeters through terminals 1 and 3 of the front speakers
- to rear LH and RH speakers through terminals 1, 2, 25 and 26 of the rear speaker amp.

Wiring Diagram — AUDIO —/Base System

NAEL0227

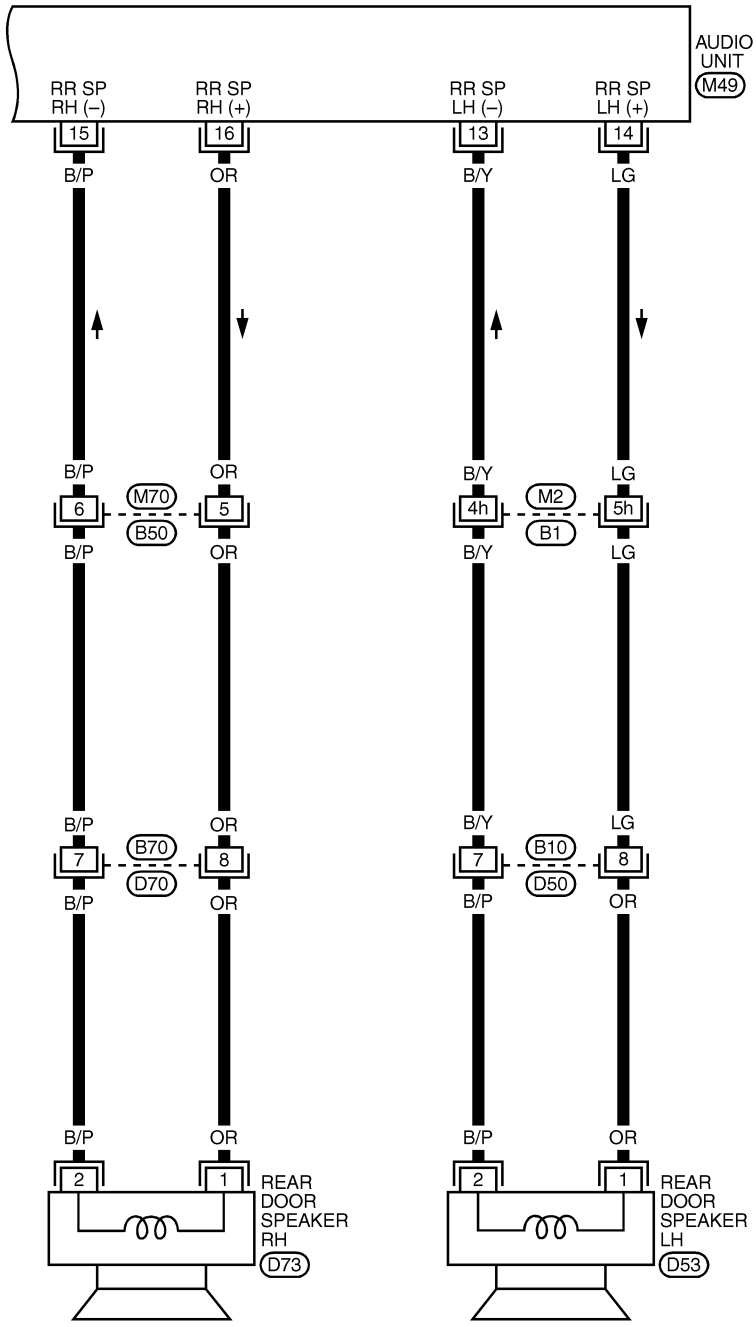


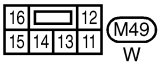


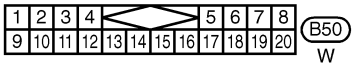
REFER TO THE FOLLOWING.
M10 , M81 -FUSE BLOCK-JUNCTION BOX (J/B)

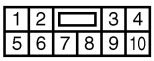
MEL037M

EL-AUDIO-02




M49
W


B50
W


D50 , D70
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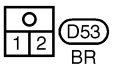
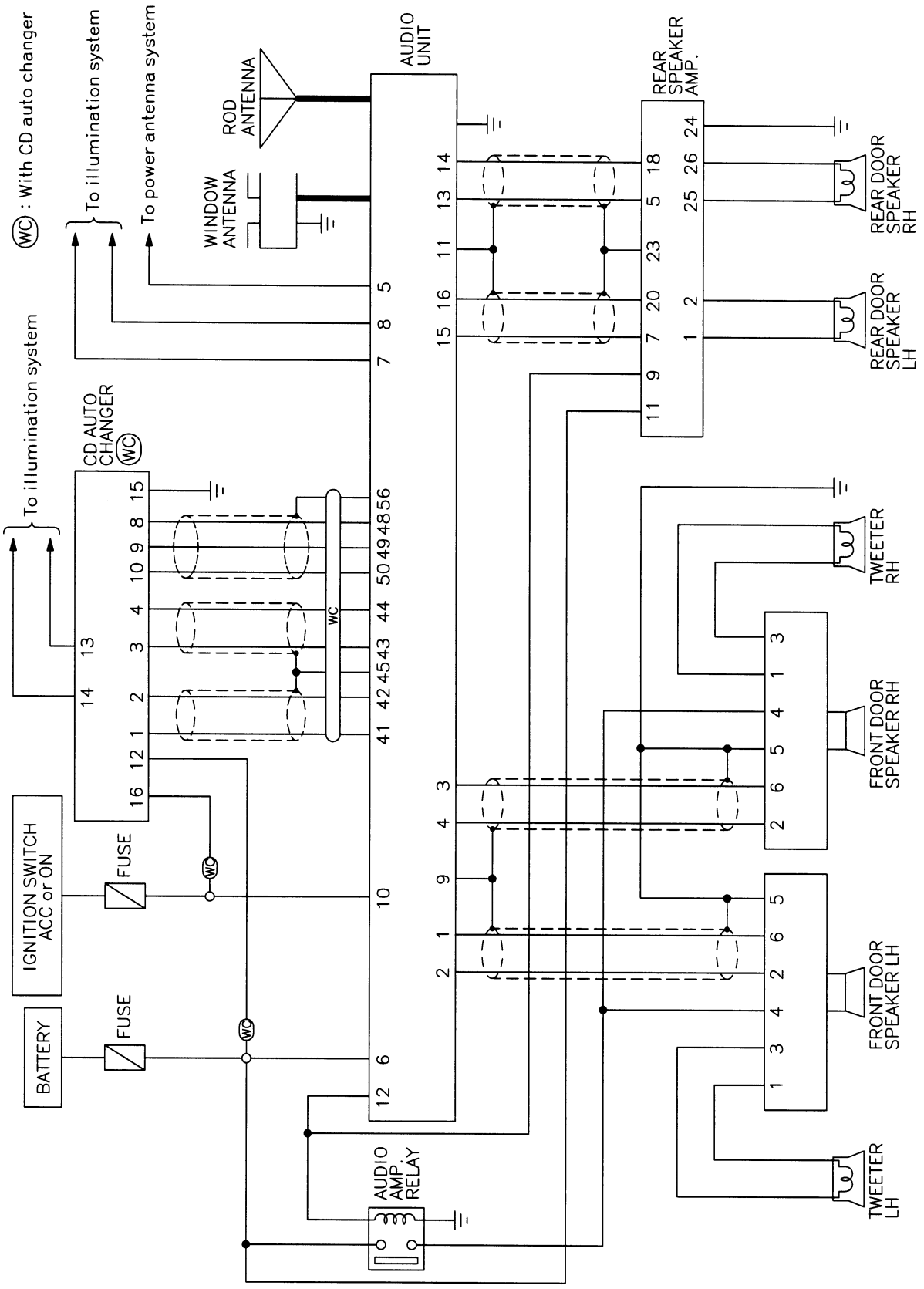

D53 , D73
BR BR

REFER TO THE FOLLOWING.
B1 -SUPER MULTIPLE JUNCTION (SMJ)

MEL038M

Schematic/BOSE System

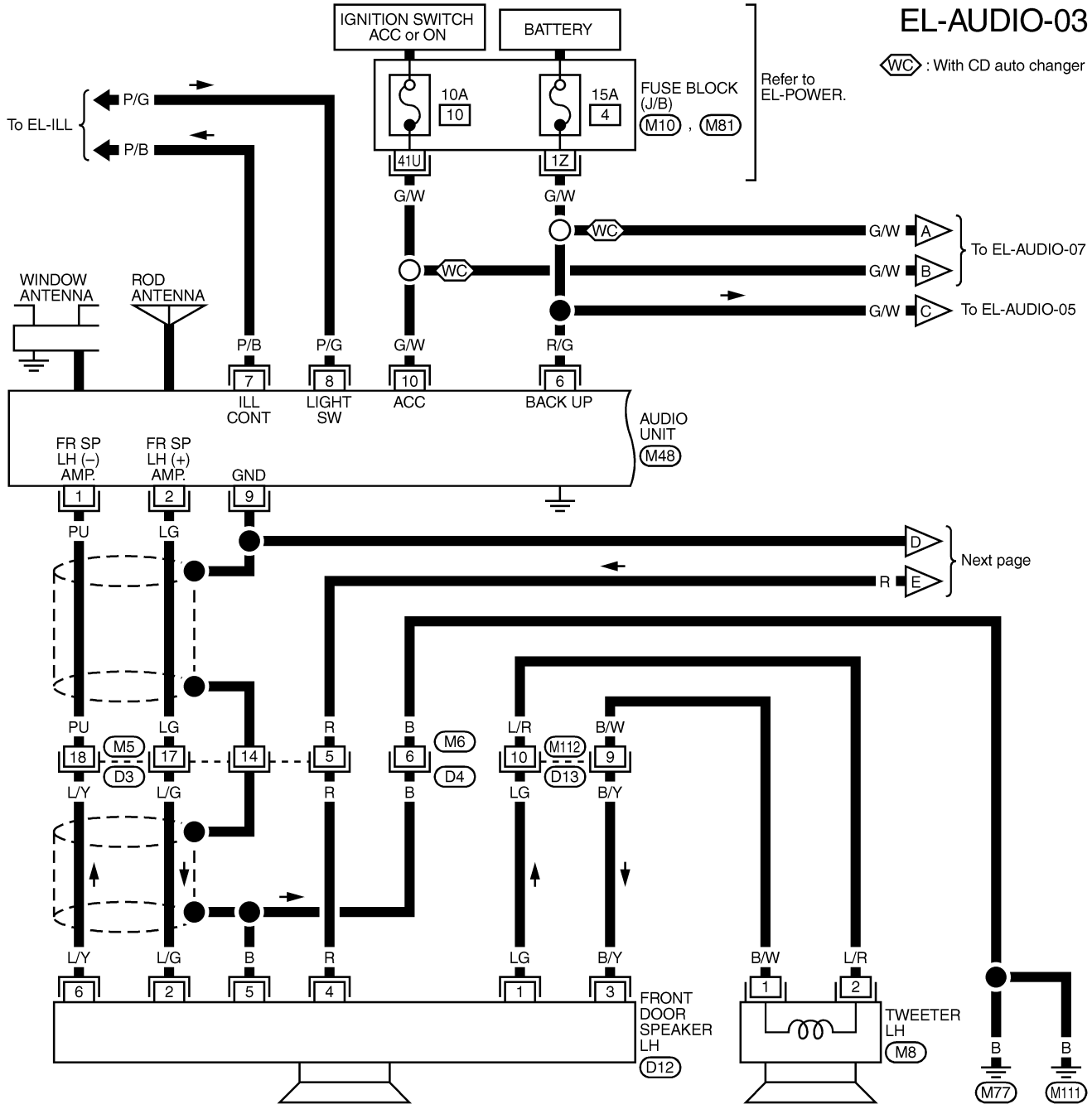
NAEL0080

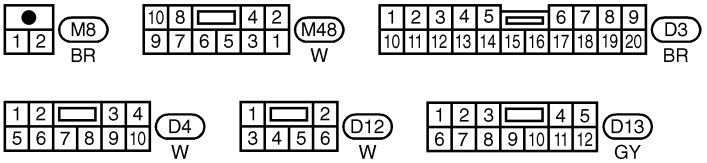


MEL039M

Wiring Diagram — AUDIO —/BOSE System

NAEL0081

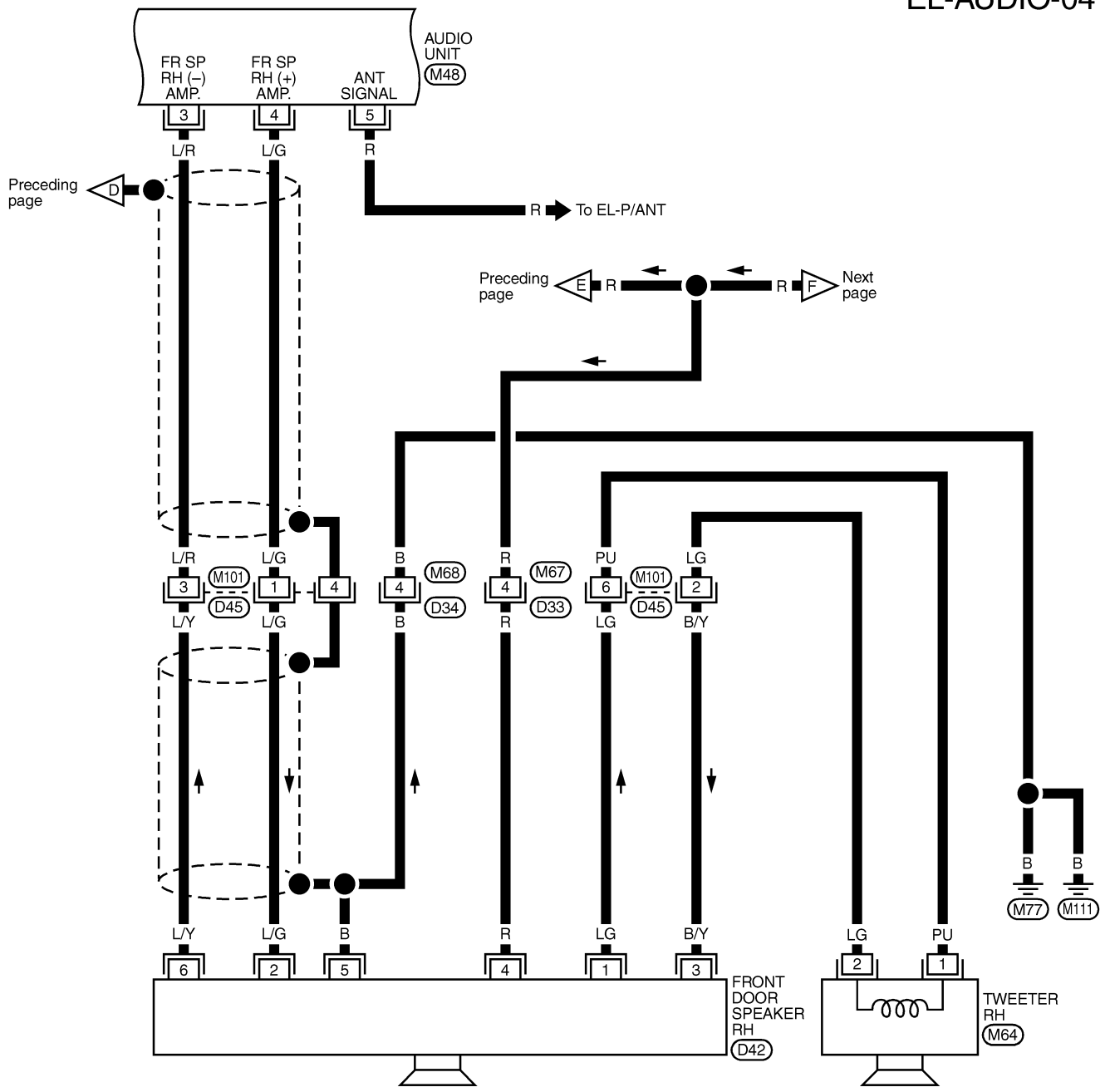


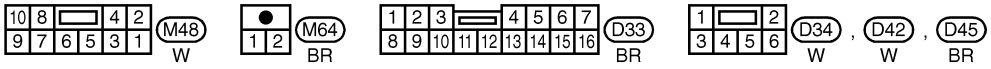


REFER TO THE FOLLOWING.
M10 , M81 -FUSE BLOCK-JUNCTION BOX (J/B)

MEL040M

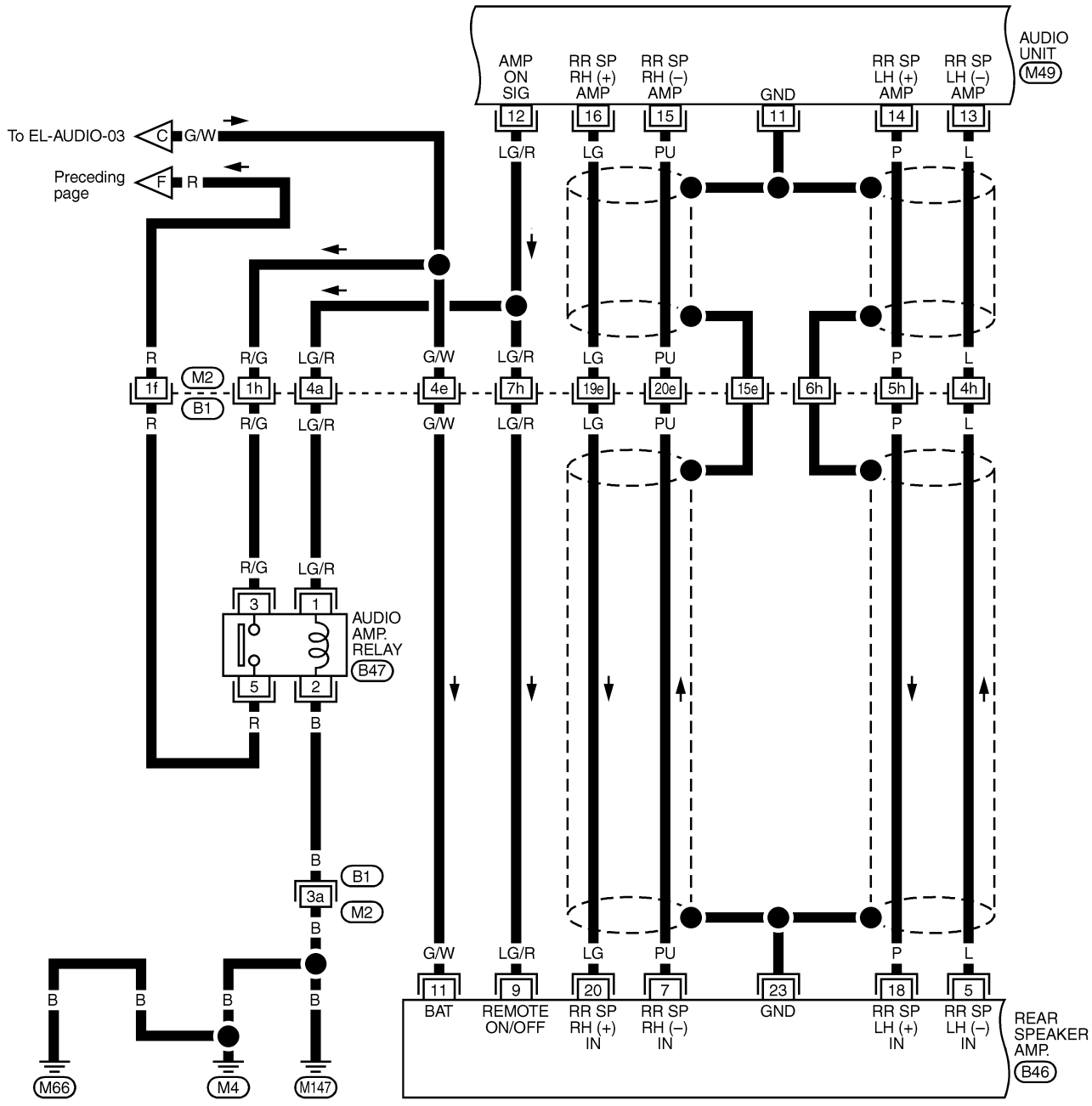
EL-AUDIO-04

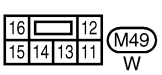


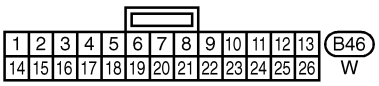


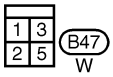
MEL041M

EL-AUDIO-05







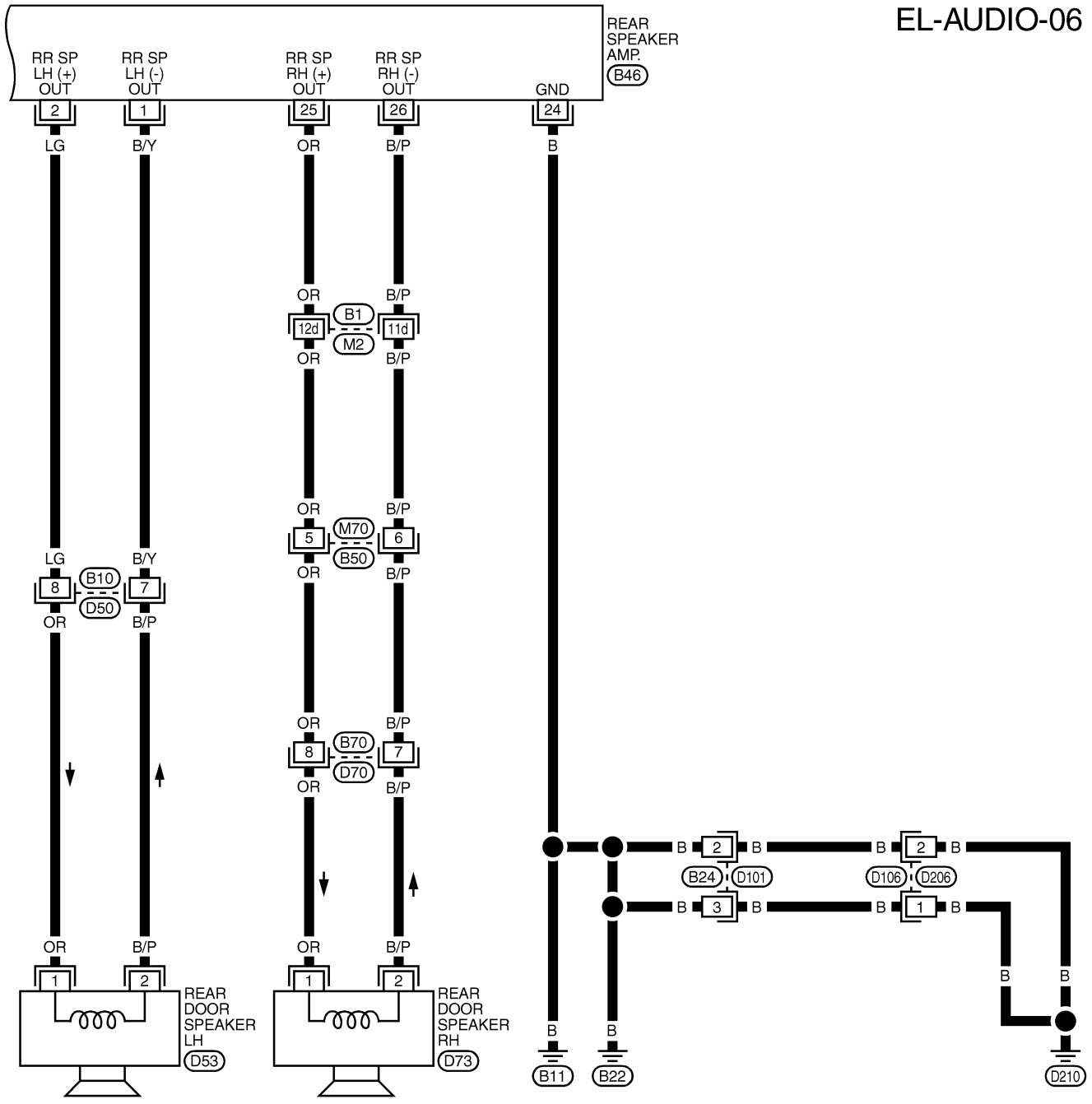


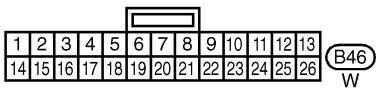
REFER TO THE FOLLOWING.

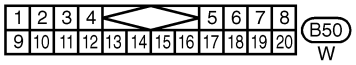
B1 - SUPER MULTIPLE JUNCTION (SMJ)

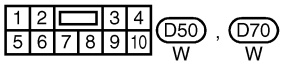
MEL042M

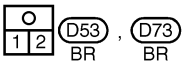
EL-AUDIO-06

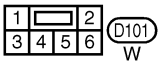


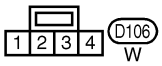










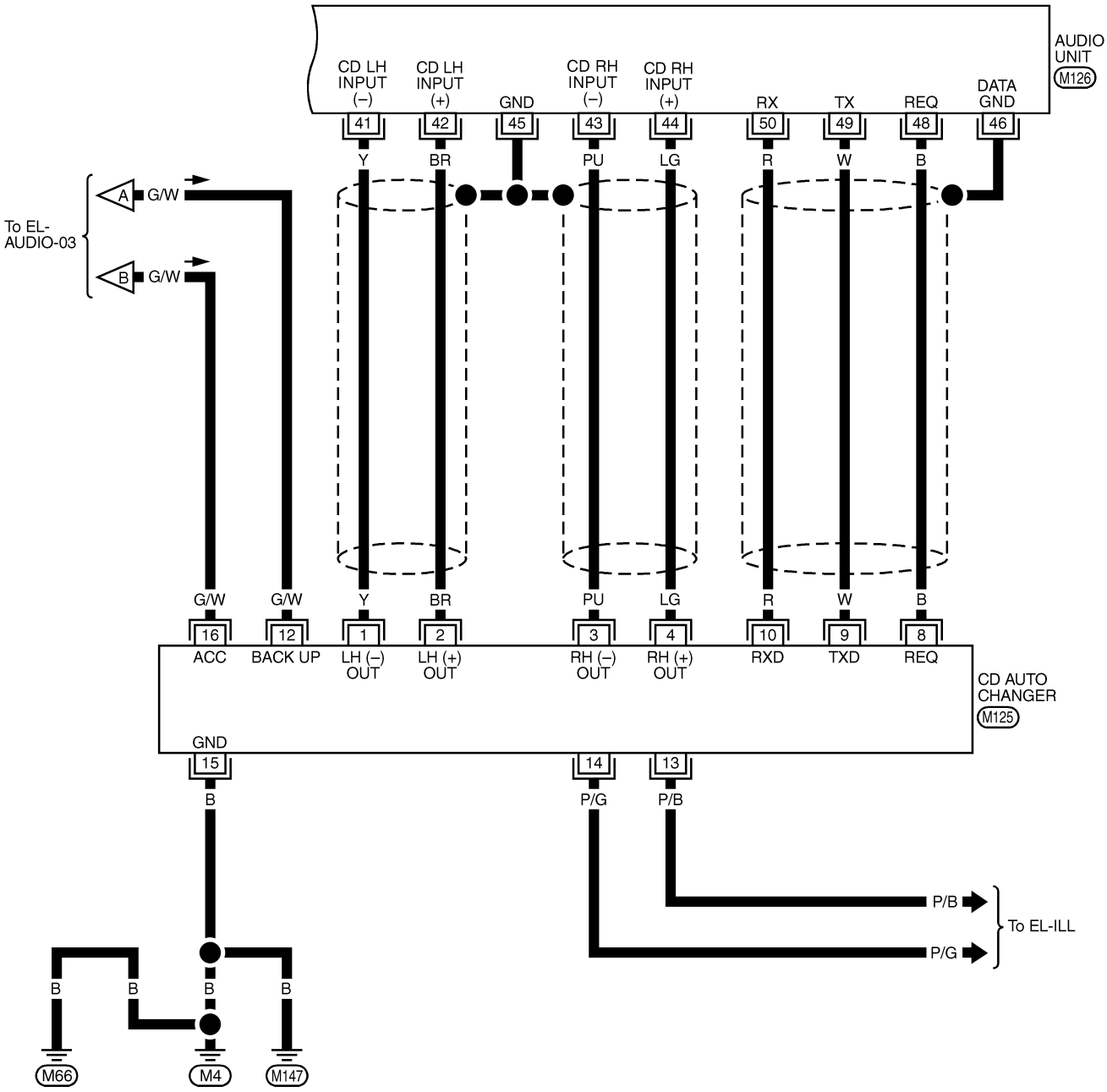


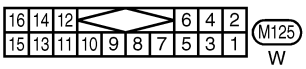
REFER TO THE FOLLOWING.

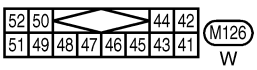
B1 - SUPER MULTIPLE JUNCTION (SMJ)

MEL043M

EL-AUDIO-07







MEL044M

Trouble Diagnoses

NAEL0228

AUDIO UNIT

NAEL0228S01

Symptom	Possible causes	Repair order
Audio unit inoperative (no digital display and no sound from speakers).	1. 10A fuse 2. Poor audio unit case ground 3. Audio unit	1. Check 10A fuse [No. 10, located in fuse block (J/B)]. Turn ignition switch ON and verify that battery positive voltage is present at terminal 10 of audio unit. 2. Check audio unit case ground. 3. Remove audio unit for repair.
Audio unit presets are lost when ignition switch is turned OFF.	1. 15A fuse 2. Audio unit	1. Check 15A fuse [No. 4, located in fuse block (J/B)] and verify that battery positive voltage is present at terminal 6 of audio unit. 2. Remove audio unit for repair.
AM stations are weak or noisy (FM stations OK).	1. Antenna 2. Poor audio unit ground 3. Audio unit	1. Check antenna. 2. Check audio unit ground. 3. Remove audio unit for repair.
FM stations are weak or noisy (AM stations OK).	1. Window antenna 2. Audio unit	1. Check window antenna. 2. Remove audio unit for repair.
Audio unit generates noise in AM and FM modes with engine running.	1. Poor audio unit ground 2. Loose or missing ground bonding straps 3. Ignition condenser or rear window defogger noise suppressor condenser 4. Alternator 5. Ignition coil or secondary wiring 6. Audio unit	1. Check audio unit ground. 2. Check ground bonding straps. 3. Replace ignition condenser or rear window defogger noise suppressor condenser. 4. Check alternator. 5. Check ignition coil and secondary wiring. 6. Remove audio unit for repair.
Audio unit generates noise in AM and FM modes with accessories on (switch pops and motor noise).	1. Poor audio unit ground 2. Antenna 3. Accessory ground 4. Faulty accessory	1. Check audio unit ground. 2. Check antenna. 3. Check accessory ground. 4. Replace accessory.

BASE SYSTEM

NAEL0228S02

Symptom	Possible causes	Repair order
Individual speaker is noisy or inoperative.	1. Speaker 2. Audio unit output 3. Speaker circuit 4. Audio unit	1. Check speaker. 2. Check audio unit output voltages. 3. Check wires for open or short between audio unit and speaker. 4. Remove audio unit for repair.

BOSE SYSTEM

NAEL0228S03

Symptom	Possible causes	Repair order
Audio unit controls are operational, but no sound is heard from any speaker.	1. 15A fuse 2. Audio unit output 3. Audio unit	1. Check 15A fuse [No. 4, located in fuse block (J/B)]. Verify battery positive voltage is present at terminal 2 of audio amp. relay. 2. Check audio unit output voltage (Terminal 12). 3. Remove audio unit for repair.
All front speakers are inoperative.	1. Audio amp. relay 2. Audio amp. relay ground 3. Amp. ON signal	1. Check audio amp. relay. 2. Check audio amp. relay ground (Terminal 3). 3. Turn ignition switch ACC and audio unit ON. Verify battery positive voltage is present at terminal 1 of audio amp. relay.
Individual front speaker is noisy or inoperative.	1. Speaker ground 2. Power supply 3. Audio unit output 4. Speaker	1. Check speaker ground (Terminal 5). 2. Check power supply for speaker (Terminal 4). 3. Check audio unit output voltage for speaker. 4. Replace speaker.

Symptom	Possible causes	Repair order
Both rear speakers are inoperative.	1. Poor rear speaker amp. ground 2. Power supply 3. Amp. ON signal 4. Rear speaker amp.	1. Check rear speaker amp. ground circuit. 2. Check power supply for rear speaker amp. (Terminal 11). 3. Turn ignition switch ACC and audio unit ON. Verify battery positive voltage is present at terminal 9 of rear speaker amp. 4. Remove rear speaker amp. for repair.
Individual rear speaker is noisy or inoperative.	1. Speaker 2. Audio unit/amp. output 3. Speaker circuit 4. Audio unit	1. Check speaker. 2. Check audio unit/amp. output. 3. Check wires for open or short between audio unit/amp. and speakers. 4. Remove audio unit for repair.

Inspection

NAEL0229

AUDIO UNIT AND AMP.

NAEL0229S01

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

NAEL0229S02

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

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

Audio Unit Removal and Installation

NAEL0230

1. Lock the CD changer unit mechanism (if so equipped) prior to removing a malfunctioning CD changer unit. Refer to "LOCKING CD CHANGER UNIT MECHANISM", EL-189.
2. Remove CD changer unit. Refer to BT-22, "INSTRUMENT PANEL ASSEMBLY".

LOCKING CD CHANGER UNIT MECHANISM

NAEL0230S01

CAUTION:

- **Prior to removing a malfunctioning CD changer unit that will be shipped for repair, the changer mechanism MUST BE LOCKED to prevent the mechanism from being damaged during shipping.**
- **If a CD is jammed or unable to be removed from the unit, do NOT lock the changer mechanism. If the unit is to be shipped for repair, carefully package the unit to prevent vibration and shock.**

1. Eject and remove any CDs from the CD changer unit.
2. Turn ignition switch OFF. Wait until CD changer unit display is off and mechanism stops moving (mechanism sound stops).
3. Press any one of the disc selection buttons once. When a display shows on the CD changer unit, press the same disc selection button again within 5 seconds.

- The changer mechanism will lock itself within 10 seconds.

4. After mechanism stops moving (mechanism sound stops), disconnect the CD changer unit connectors.

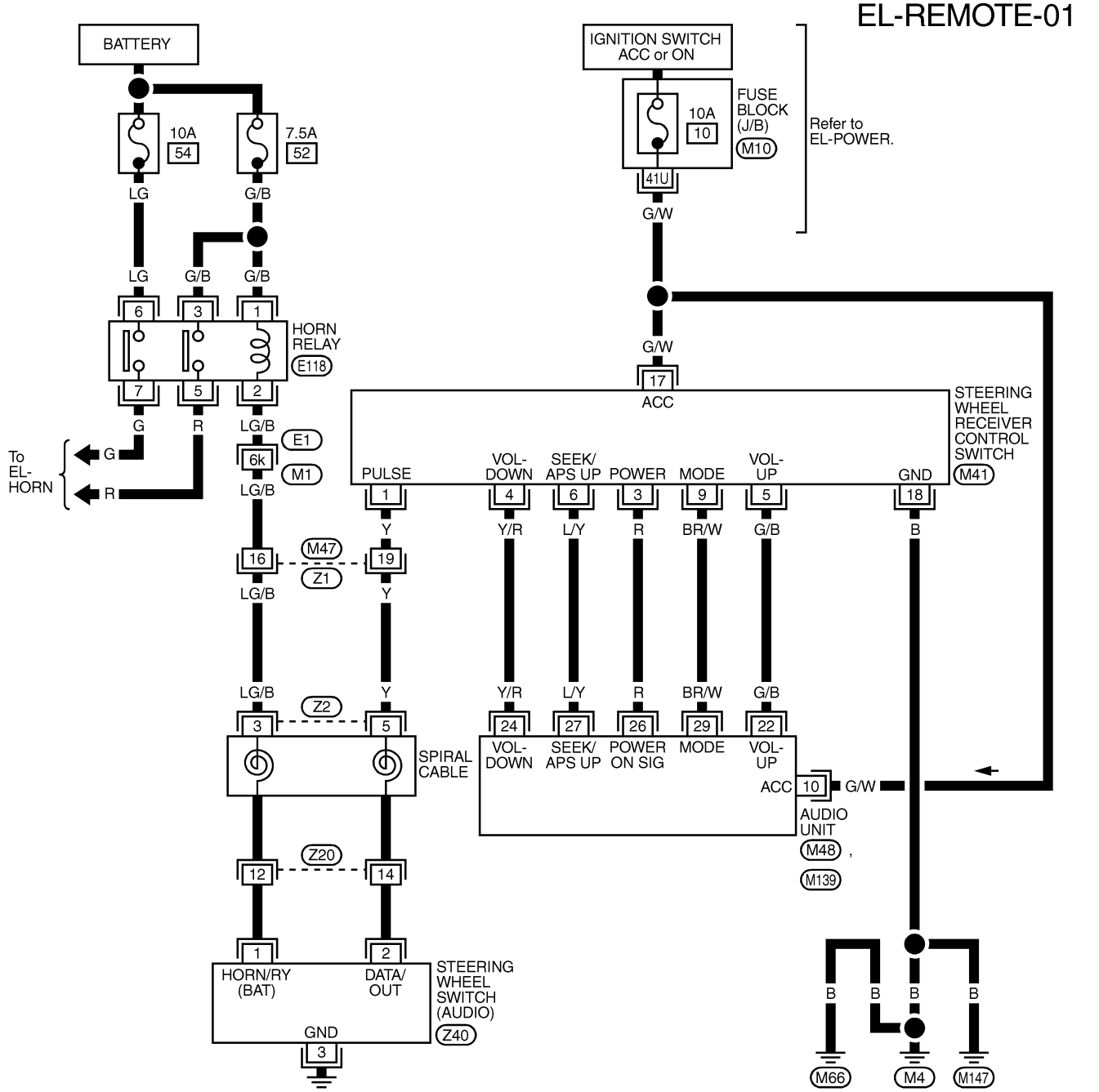
NOTE:

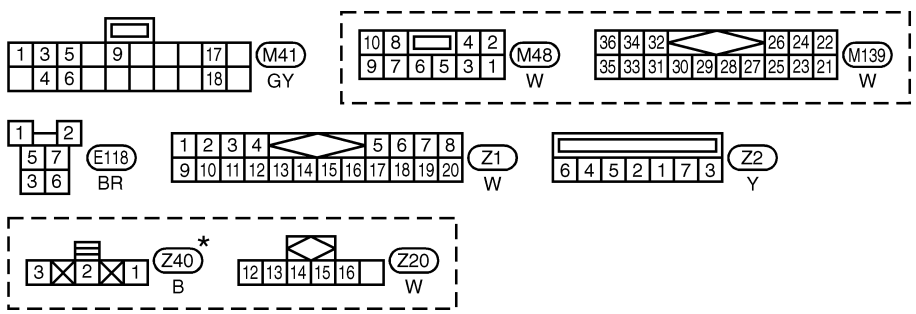
After installing a new or remanufactured CD changer unit, switching the CD changer unit ON will automatically unlock the mechanism. A special unlocking procedure is not required.

Wiring Diagram — REMOTE —

NAEL0205

EL-REMOTE-01





* : This connector is not shown in “HARNESS LAYOUT”, EL section.

REFER TO THE FOLLOWING.

E1 -SUPER MULTIPLE JUNCTION (SMJ)

M10 -FUSE BLOCK-JUNCTION BOX (J/B)

MEL822L

System Description

NAEL0084

Power is supplied at all times

- through 7.5A fuse [No. 24, located in the fuse block (J/B)]
- to power antenna terminal 6.

Ground is supplied to the power antenna terminal 2 through body grounds M4, M66 and M147.
When the audio unit is turned to the ON position, battery positive voltage is supplied

- through audio unit terminal 5
- to power antenna terminal 4.

The antenna raises and is held in the extended position.
When the audio unit is turned to the OFF position, battery positive voltage is interrupted

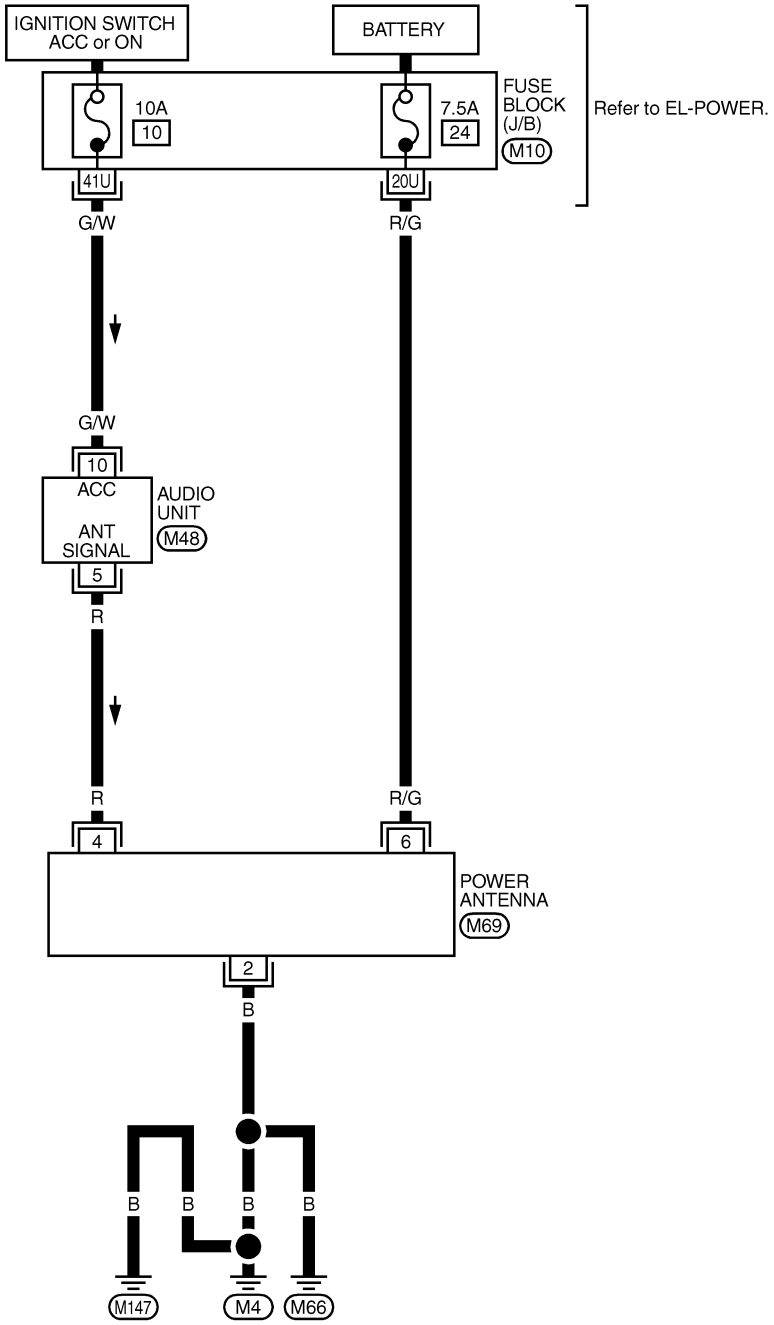
- from audio unit terminal 5
- to power antenna terminal 4.

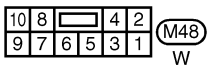
The antenna retracts.

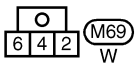
Wiring Diagram — P/ANT —

NAEL0085

EL-P/ANT-01







REFER TO THE FOLLOWING.
M10 - FUSE BLOCK - JUNCTION BOX (J/B)

MEL824L

Trouble Diagnoses

NAEL0086

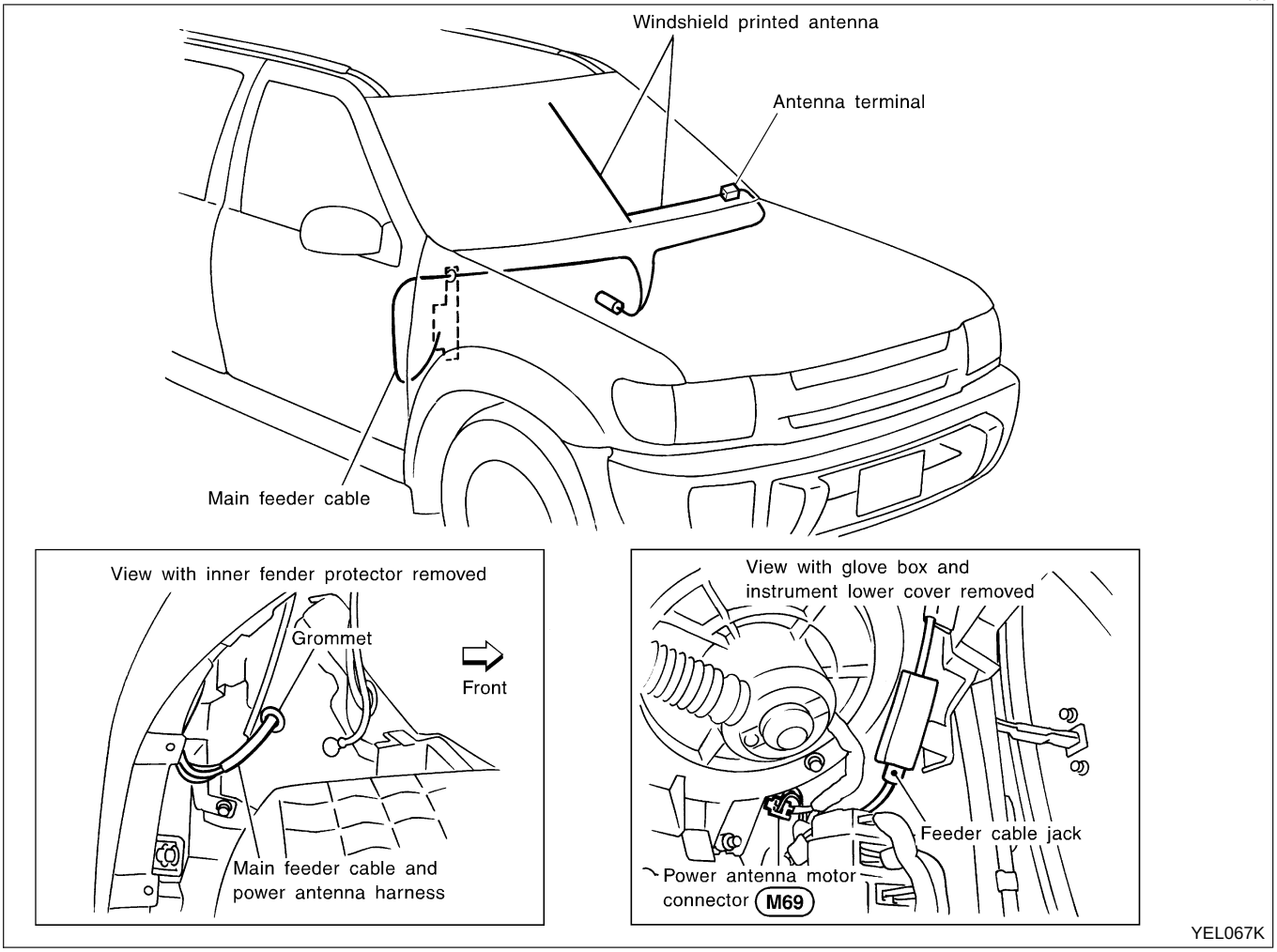
POWER ANTENNA

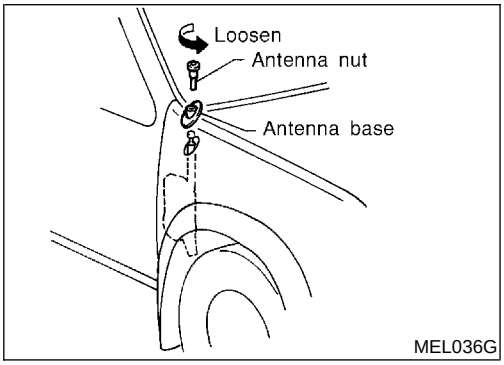
NAEL0086S01

Symptom	Possible causes	Repair order
Power antenna does not operate.	1. 7.5A fuse 2. Audio unit signal 3. Grounds M4, M66 and M147	1. Check 7.5A fuse [No. 24, located in fuse block (J/B)]. Verify that battery positive voltage is present at terminal 6 of power antenna. 2. Turn ignition switch and audio unit ON. Verify that battery positive voltage is present at terminal 4 of power antenna. 3. Check grounds M4, M66 and M147.

Location of Antenna

NAEL0087





Antenna Rod Replacement

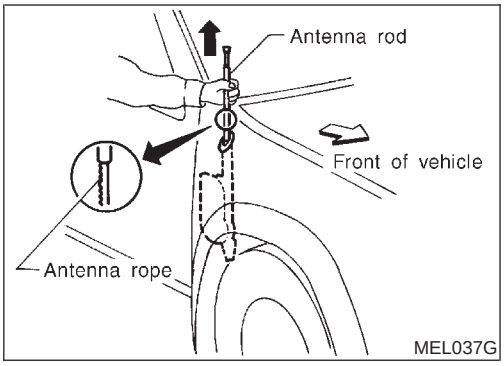
NAEL0088

REMOVAL

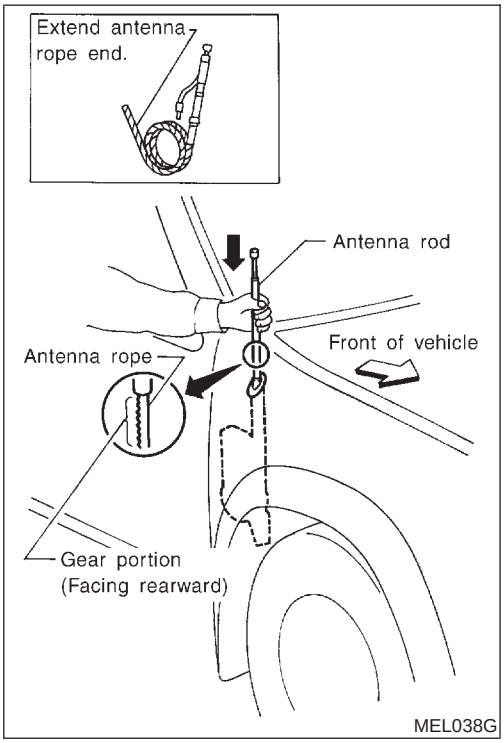
NAEL0088S01

1. Remove antenna nut and antenna base.

Antenna Rod Replacement (Cont'd)



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



INSTALLATION

NAEL0088S02

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

System Description

NAEL0206

OUTLINE

NAEL0206S01

Electric sunroof system consists of

- Sunroof switch
- Sunroof motor
- Power window relay
- Smart entrance control unit

Smart entrance control unit controls retained power operation.

OPERATION

NAEL0206S02

The sunroof can be opened or closed and tilted up or down with the sunroof switch.

AUTO OPERATION

NAEL0206S03

The power sunroof AUTO feature makes it possible to open and close the sunroof without holding the sunroof switch in the down or up position.

RETAINED POWER OPERATION

NAEL0206S04

When the ignition switch is turned to OFF position from ON or START position, power is supplied for 45 seconds

- to power window relay terminal 2
- from smart entrance control unit terminal 5.

Ground is always supplied

- to power window relay terminal 1
- through body grounds.

When power and ground are supplied, power window relay continues to be energized, and the electrical sunroof can be operated.
The retained power operation is canceled when the driver or passenger side door is opened.

INTERRUPTION DETECTION FUNCTION

NAEL0206S05

The CPU of sunroof motor monitors the sunroof motor operation and the sunroof position (full closed or other) for sunroof by the signals from encoder and limit switch in sunroof motor.
When sunroof motor detects interruption during the following close operation,

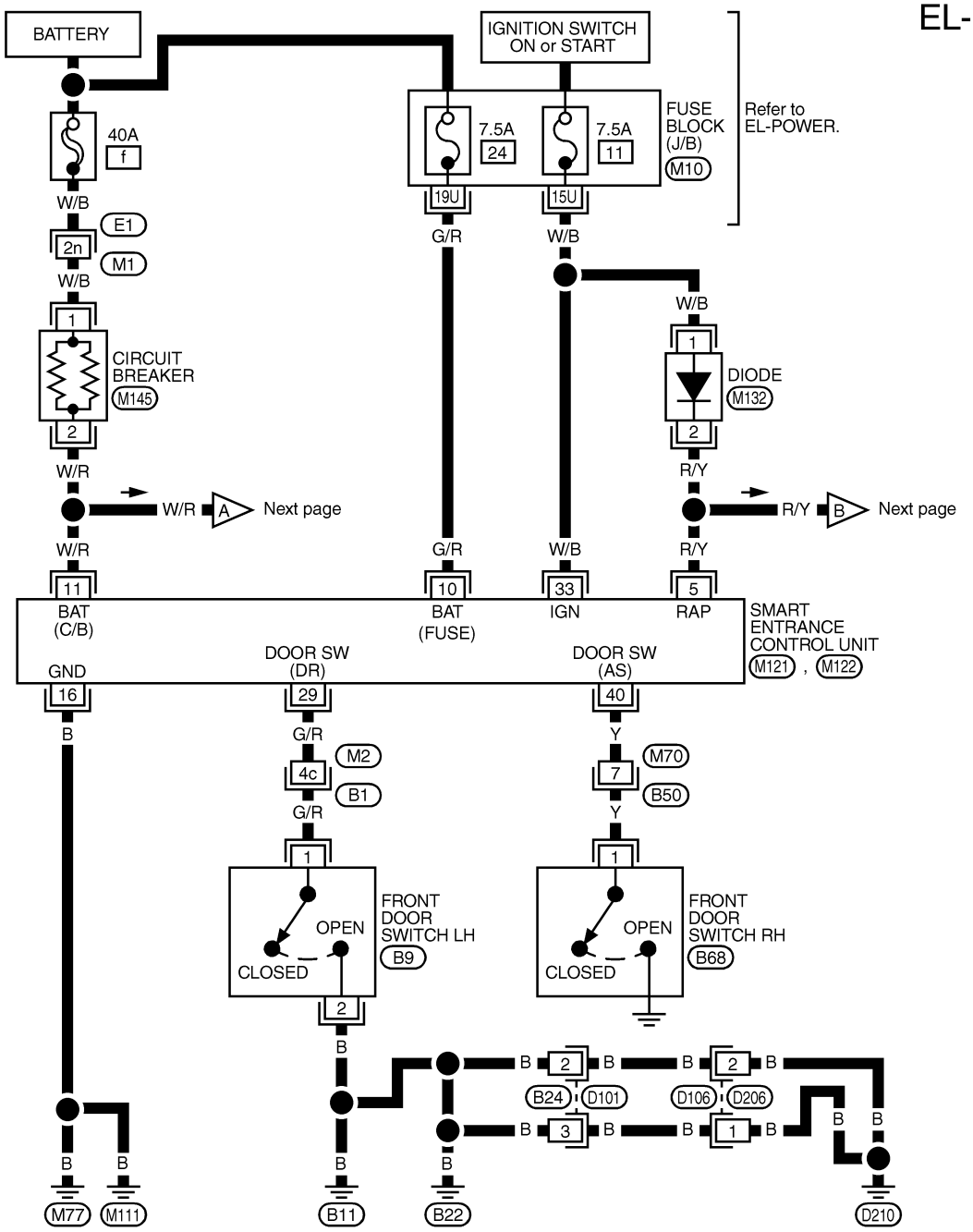
- automatic close operation when ignition switch is in the “ON” position
- automatic close operation during retained power operation

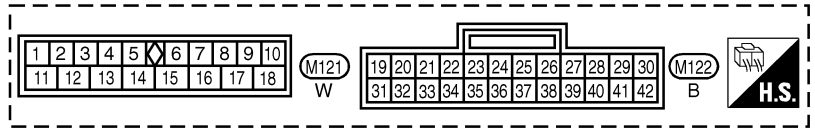
sunroof switch controls the motor for open and the sunroof will operate about 150 mm (5.91 in).

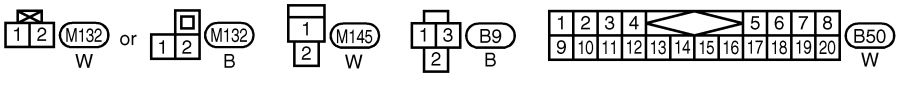
Wiring Diagram — SROOF —

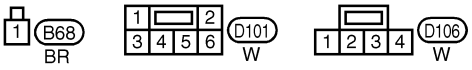
NAEL0089

EL-SROOF-01









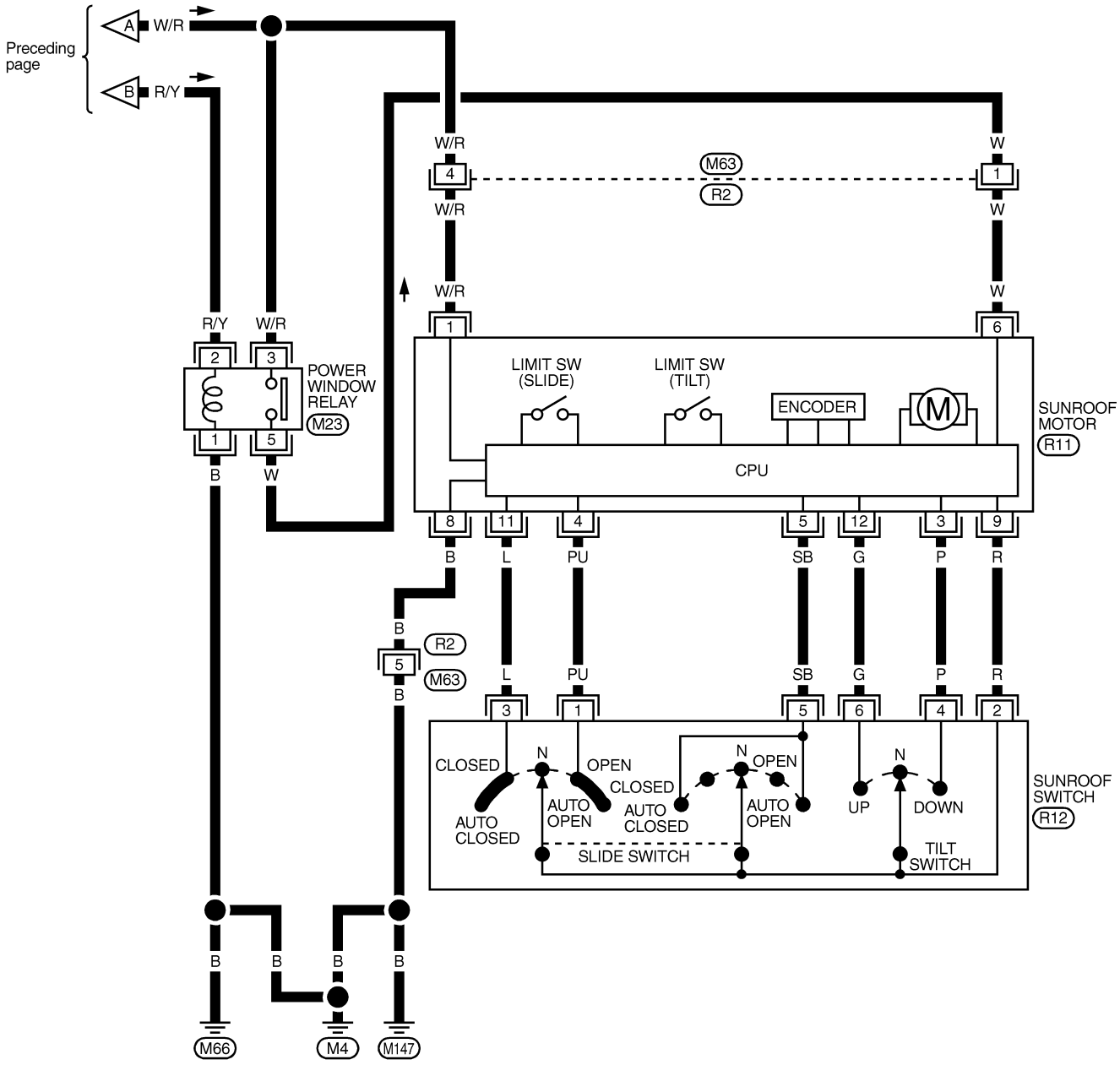
REFER TO THE FOLLOWING.

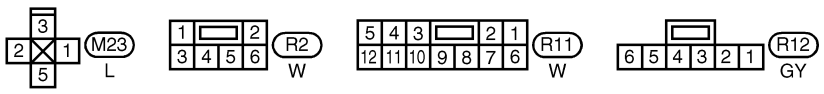
E1 , B1 - SUPER MULTIPLE JUNCTION (SMJ)

M10 - FUSE BLOCK - JUNCTION BOX (J/B)

MEL020O

EL-SROOF-02





MEL826L

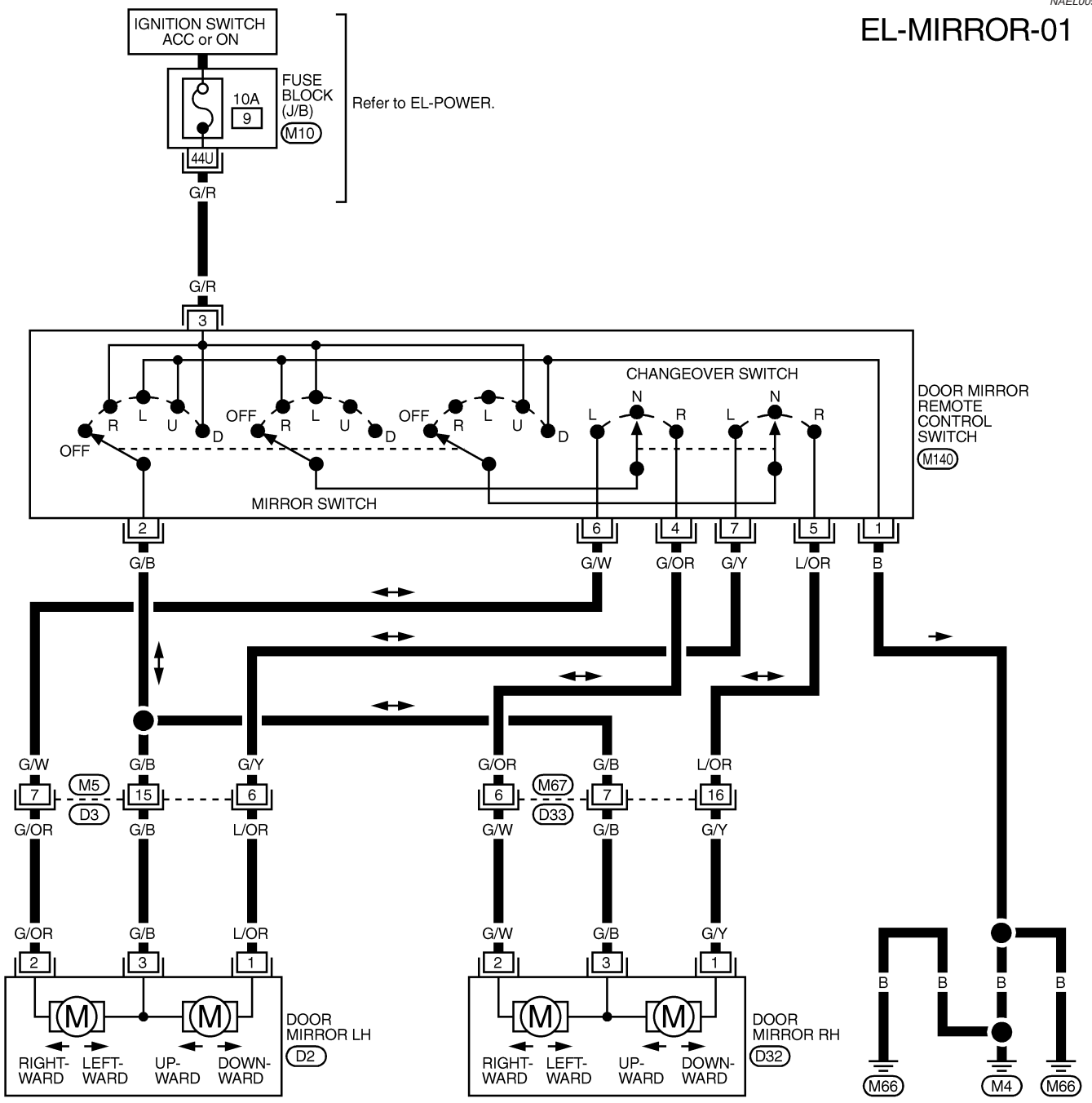
Trouble Diagnoses

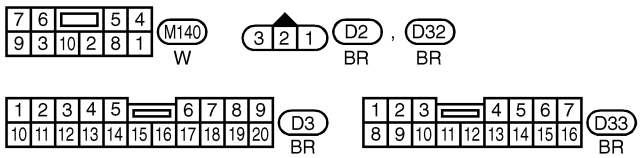
NAEL0207

Symptom	Possible cause	Repair order
Power sunroof cannot be operated using any switch.	1. 7.5A fuse, 40A fusible link and M145 circuit breaker 2. Power window relay ground circuit 3. Sunroof motor ground circuit 4. Power window relay 5. Sunroof motor circuit 6. Sunroof switch 7. Sunroof switch circuit 8. Sunroof motor	1. Check 7.5A fuse [No. 11, located in fuse block (J/B)], 40A fusible link (letter **f**, located in fuse and fusible link box) and M145 circuit breaker. Turn ignition switch “ON” and verify battery positive voltage is present at terminals 2 and 3 of power window relay and terminal 1 of sunroof motor. 2. Check power window relay ground circuit. 3. Check sunroof motor ground circuit. 4. Check power window relay. 5. Check the wire between power window relay and sunroof motor. 6. Check sunroof switch. 7. Check harness between sunroof switch and sunroof motor. 8. Check sunroof motor.
Power sunroof cannot be operated using one of the sunroof switches.	1. Sunroof switch 2. Sunroof switch circuit	1. Check sunroof switch. 2. Check the harness between sunroof motor and sunroof switch.
Power sunroof auto function cannot be operated properly.	1. Sunroof slide mechanism 2. Sunroof switch 3. Sunroof switch circuit 4. Sunroof motor	1. Check the following. a. Check obstacles in sunroof, etc. b. Check worn or deformed sunroof. c. Check sunroof sash tilted too far inward or outward. 2. Check sunroof switch. 3. Check harness between sunroof motor and sunroof switch. 4. Replace sunroof motor.
Retained power operation does not operate properly.	1. RAP signal circuit 2. Driver or passenger side door switch circuit 3. Smart entrance control unit	1. Check harness between power window relay terminal 2 and smart entrance control unit terminal 5. 2. Check the following. a. Harness between smart entrance control unit and driver or passenger side door switch for short circuit b. Driver or passenger side door switch ground circuit c. Driver or passenger side door switch 3. Check smart entrance control unit. (EL-348)

Wiring Diagram — MIRROR —

NAEL0090





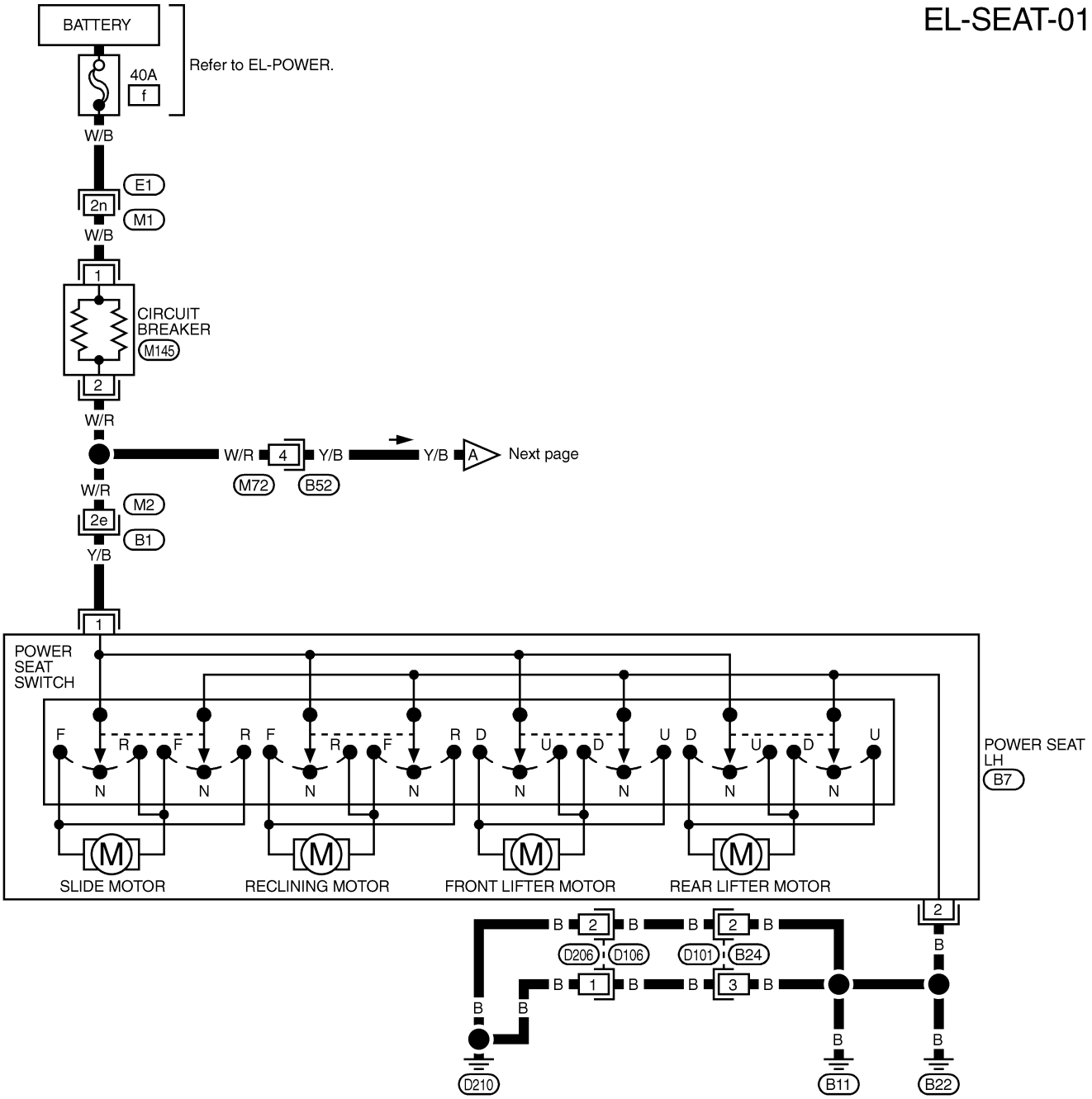
REFER TO THE FOLLOWING.
M10 -FUSE BLOCK-
JUNCTION BOX (J/B)

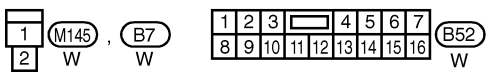
MEL045M

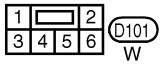
Wiring Diagram — SEAT —

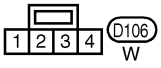
NAEL0092

EL-SEAT-01





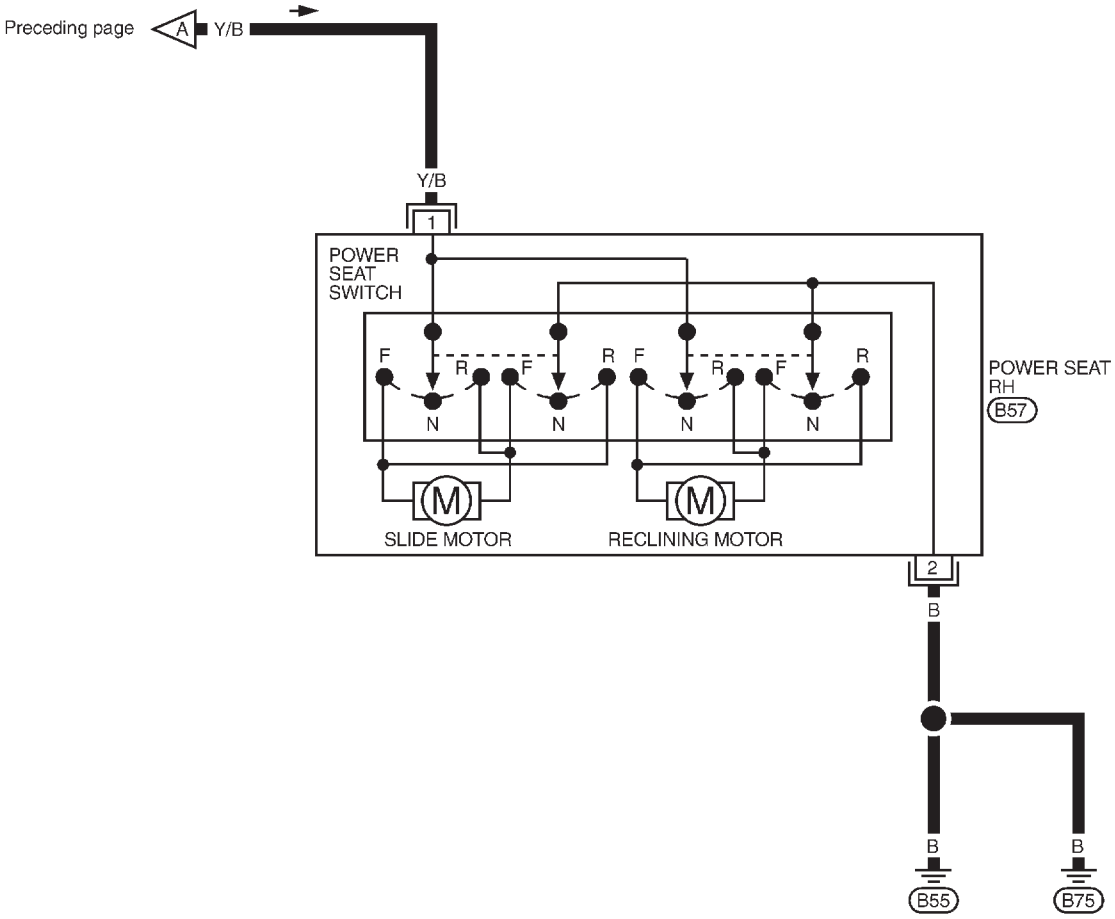


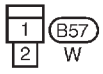


REFER TO THE FOLLOWING.

E1 , B1 - SUPER MULTIPLE JUNCTION (SMJ)

MEL830L


Preceding page
A
Y/B
Y/B
1
POWER SEAT SWITCH
F
R
N
SLIDE MOTOR
RECLINING MOTOR
POWER SEAT RH
B57
2
B
B55
B75

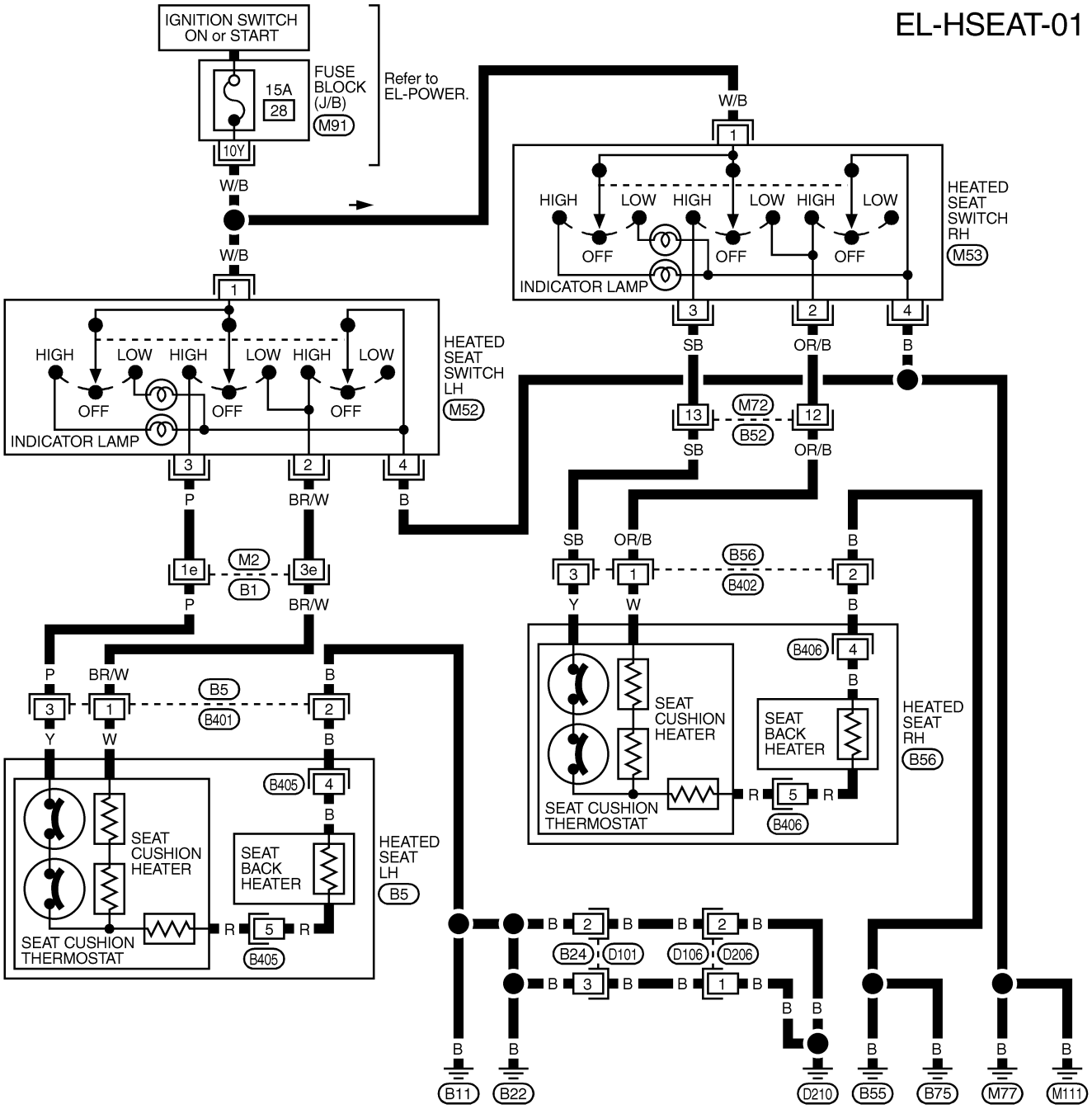

1
2
B57
W

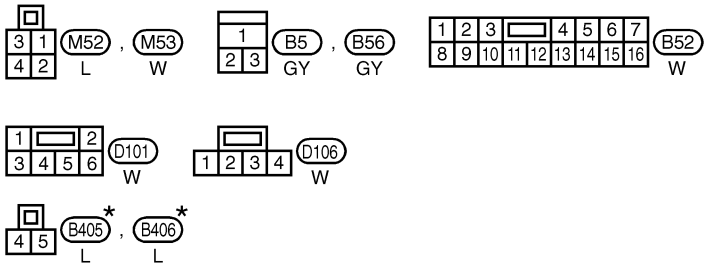
MEL601F

Wiring Diagram — HSEAT —

NAEL0093

EL-HSEAT-01





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

REFER TO THE FOLLOWING.

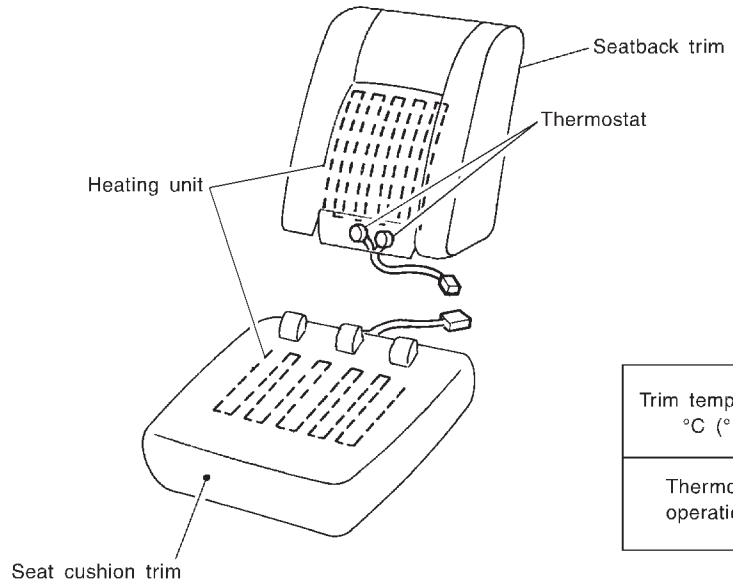
B1 -SUPER MULTIPLE JUNCTION (SMJ)

M91 -FUSE BLOCK-JUNCTION BOX (J/B)

MEL046M

Seatback Heating Unit

NAEL0215

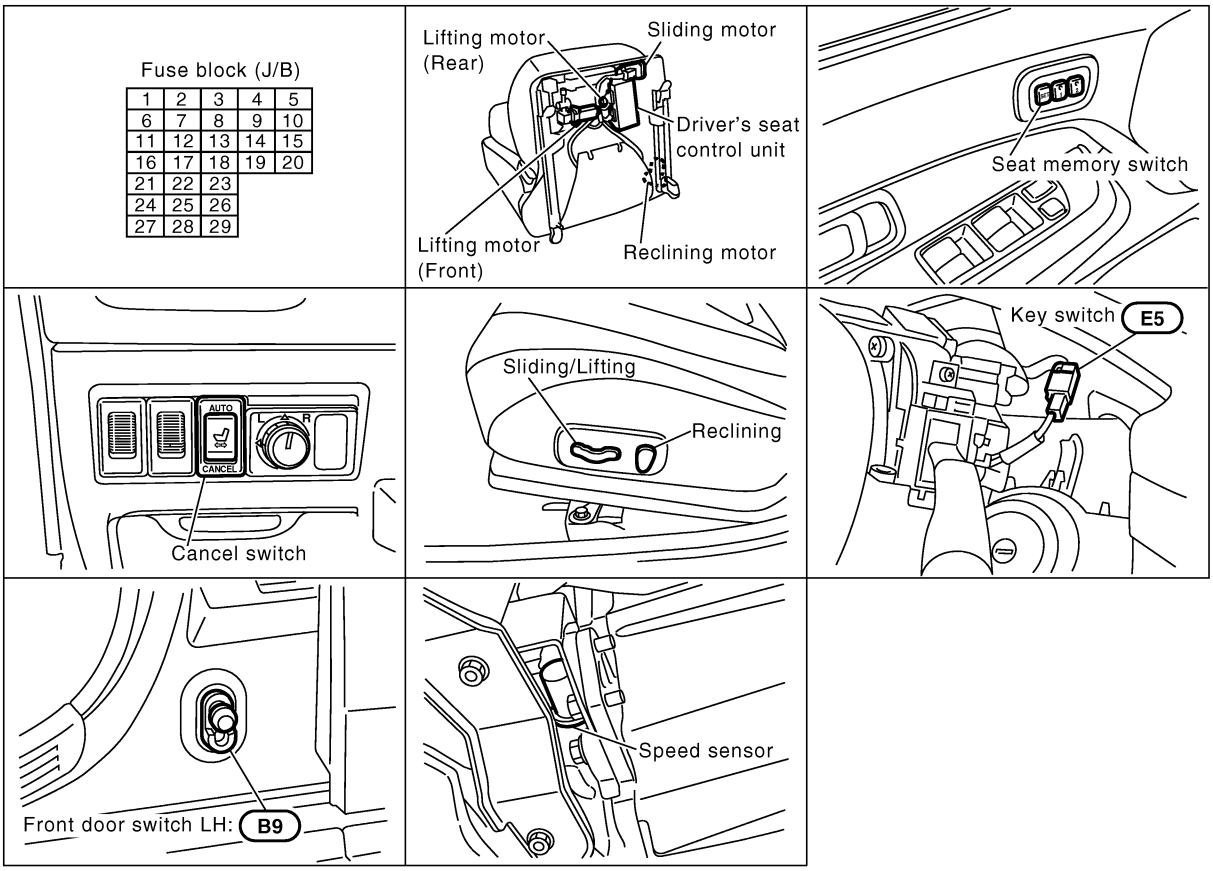


Trim temperature °C (°F)	Increasing to 35 - 45 (95 - 113)	Decreasing to 25 - 35 (77 - 95)
Thermostat operation	OFF	ON

SBT314

Component Parts and Harness Connector Location

NAEL0209



SEL353X

System Description

=NAEL0210

OPERATIVE CONDITION

NAEL0210S01

The drive position can be set in 2 ways, manually and automatically.

Manual Operation

NAEL0210S0101

The driver's seat can be adjusted for sliding, reclining, front cushion height and rear cushion height with the LH power seat switches. The manual operation can be adjusted with the IGN key in any position.

Automatic Operation

NAEL0210S0102

The driver's seat is adjusted to the proper positions for the driver automatically, in 3 different ways: MEMORY AUTOMATIC SET, AUTOMATIC EXITING SETTING and AUTOMATIC SET RETURN. (Automatic Drive Positioner = ADP)

CONDITIONS INHIBITING AUTOMATIC OPERATION

NAEL0210S02

Automatic memory setting procedures are suspended under any of the following conditions:

1) When vehicle speed is more than 7 km/h (4 MPH).
2) When driver's side power seat switch is turned on.
3) When any two of the switches (set switch and memory switches 1 and 2) are turned ON.
4) When cancel switch is turned on.
5) When selector lever is in any position other than "P".
6) When ignition switch is turned to "START" position.
   (Operation resumes when ignition switch is returned to "ON".)
7) When detention switch malfunction is detected:

- Detention switch failure is sensed when detention switch remains off for at least 2 seconds at a vehicle speed of greater than 7 km/h (4 MPH).

FAIL-SAFE SYSTEM

NAEL0210S03

Output Failure

NAEL0210S0301

When the ignition switch is in the ON position, if any of the parts (indicated in the following chart) move more than the specified amount within a period "T2" when no "ON" input is sent from any of the switches (indicated in the following chart), or an output from the automatic drive positioner is not produced, an output failure is sensed. Motor operation will be suspended automatically, and all automatic operations will be ineffective. (In this case, the motor will not operate manually.)

OPERATED PORTION	T2	Allowable measurement
Seat sliding	Approx. 2.5 sec.	Within 6 mm (0.24 in)
Seat reclining	Same as above	Change angle within 1°

Absolving

NAEL0210S0302

When moving selector lever back to "P" position after having moved it to any position except "P", fail-safe operation will be canceled.

INITIALIZATION

NAEL0210S04

After reconnecting battery cable, perform initialization procedure A or B. If initialization has not been performed, automatic drive positioner will not operate.

PROCEDURE A

1) Insert key in the ignition key cylinder. (Ignition switch is in "OFF" position.)
2) Open → close → open driver side door. (Do not perform with the door switch operation.)
3) End

PROCEDURE B

1) Drive the vehicle at more than 25 km/h (16 MPH).
2) End

MEMORY AUTOMATIC SET

=NAEL0210S05

Two drive positions can be retained in the memory. Press memory switch to set driver's seat to preset position.

PROCEDURE FOR STORING MEMORY

Adjust the position of driver's seat with manual set operations.

↓ Ignition switch "ON".

Touch set switch.	Indicator LEDs
	(1) Indicator LED for which driver's seat positions are already retained in memory illuminates for 5 seconds.
	(2) Indicator LED for which driver's seat positions are not entered in memory illuminates for 0.5 seconds.

↓ Within 5 seconds.

Press memory switch for which driver's seat positions are to be entered in memory for more than 0.5 seconds. (2 driver's seat positions can be memorized.)	Indicator LEDs
	(1) To modify driver's seat positions, press memory switch. Indicator LED will then go out for 0.5 seconds and then illuminate for 5 seconds.
	(2) To enter driver's seat positions in blank memory, indicator LED illuminates for 5 seconds after memory switch is pressed.

↓

END OF MEMORY SETTING

SEL592W

NOTE:

- When memory switch for which driver's seat positions are already retained in memory is pressed, new seat positions will be retained in memory in place of the previously set positions.
- Drive position is erased from the memory when battery cable is disconnected more than 30 seconds. After connecting battery cable, perform initialization procedures.

SELECTING THE MEMORIZED POSITION

PROCEDURE-A
Turn ignition switch "ON" and press desired memory switch for more than 0.3 seconds. (Indicator LED illuminates.)

PROCEDURE-B
Open driver's door and withdraw key from ignition key cylinder. Then press desired memory switch for more than 0.3 seconds. (Indicator LED illuminates.) (See NOTE 2.)

(See NOTE 1.)

↓ Within 1 minute

Insert key into ignition key cylinder.
(Memory indicator illuminates.)

↓

The driver's seat will move to the memorized position.
(During adjustments, indicator LED flashes, then illuminates for 5 seconds after adjustment.)

(See NOTE 3.)

SEL593W

NOTE:

1) Do not keep cancel switch pressed as it will not operate.
2) Automatic exiting setting will be performed.
3) The driver's seat position (see the following Table) operates in the order of priority.

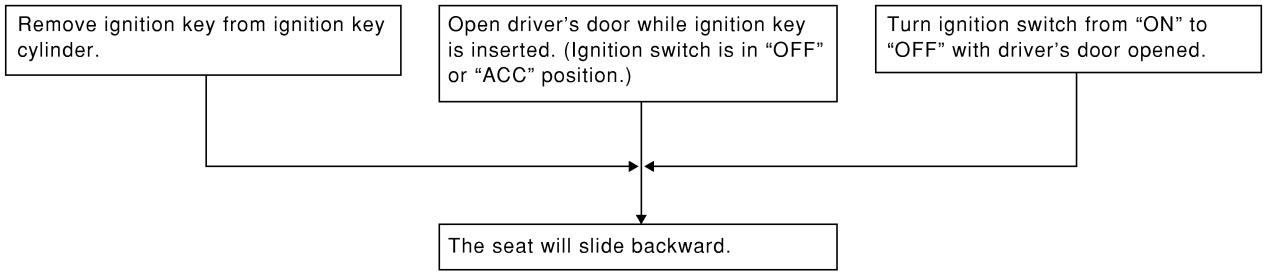
The order of priority	Operated portion
1	Seat sliding
2	Seat reclining
3	Seat front lifting
4	Seat rear lifting

AUTOMATIC EXITING SETTING

NAEL0210S06

"Exiting" positions:

Driver's seat ... Slides about 40 mm (1.57 in) rear from normal sitting position.

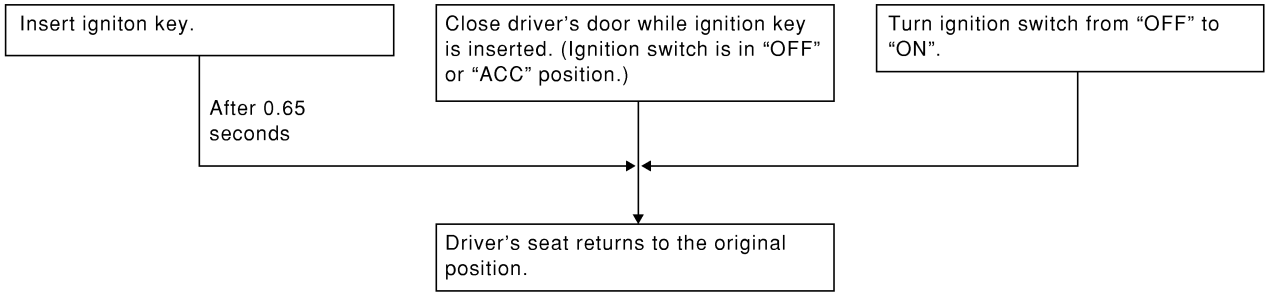


SEL594W

AUTOMATIC SET RETURN

NAEL0210S07

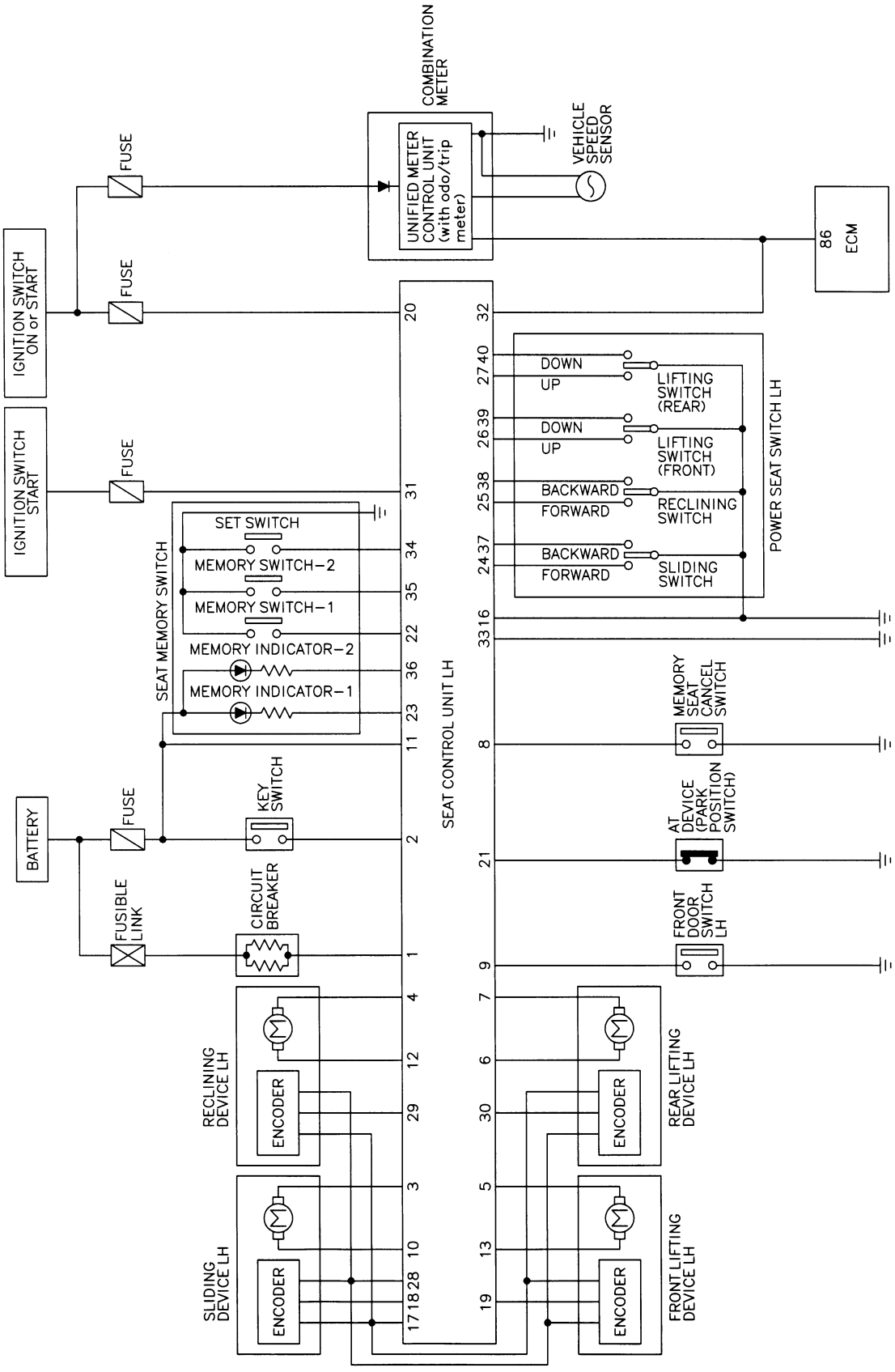
With driver's seat set to the "exiting" position, operating one of the following procedures moves it to the position previously retained in memory.



SEL595W

Schematic

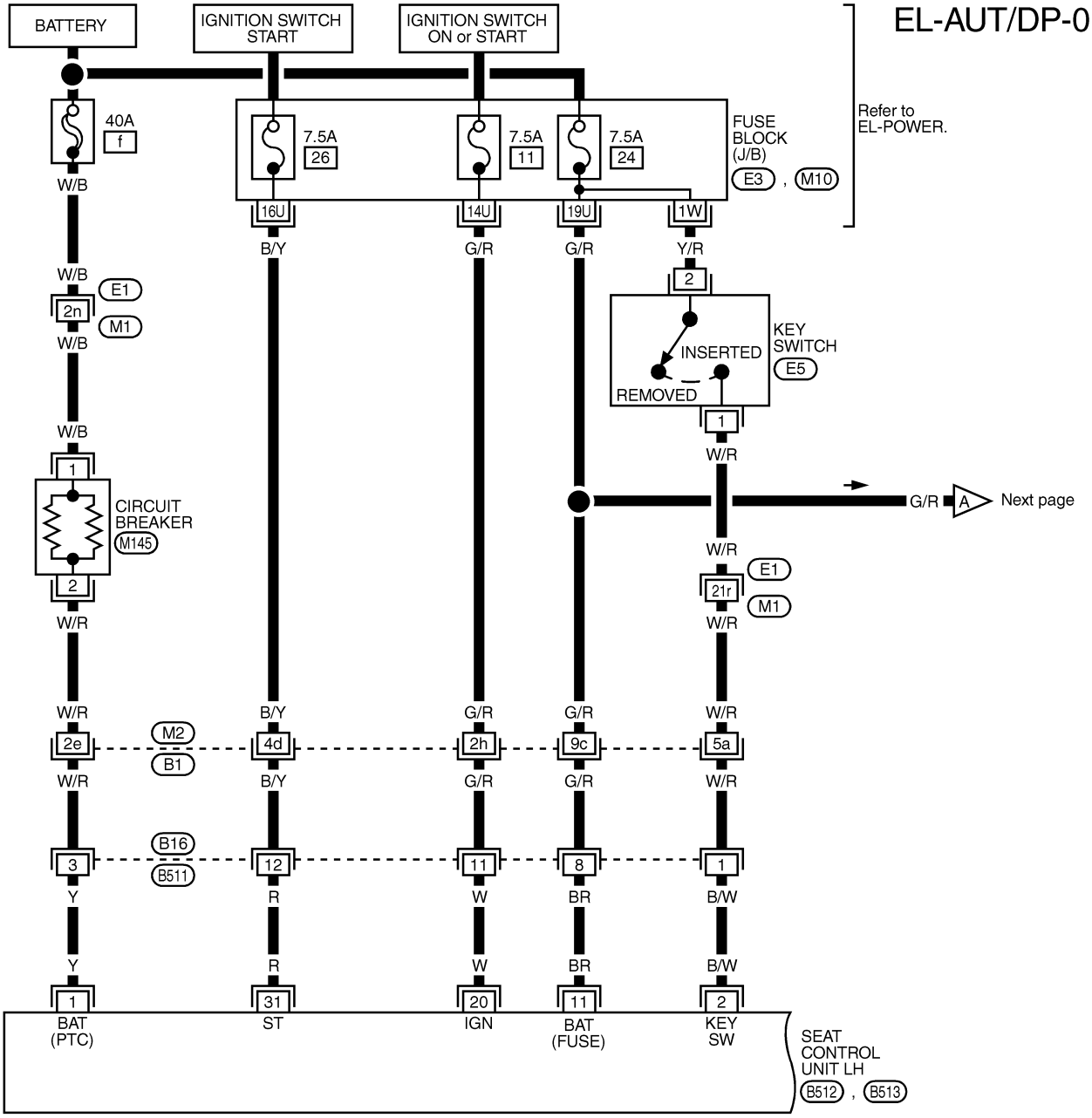
NAEL0211

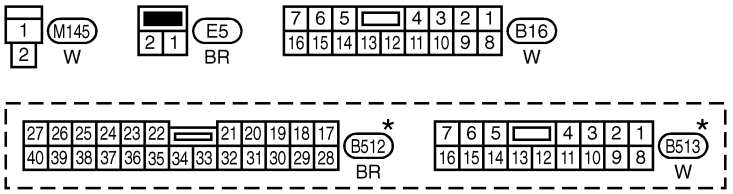


MEL833L

Wiring Diagram — AUT/DP —

NAEL0212



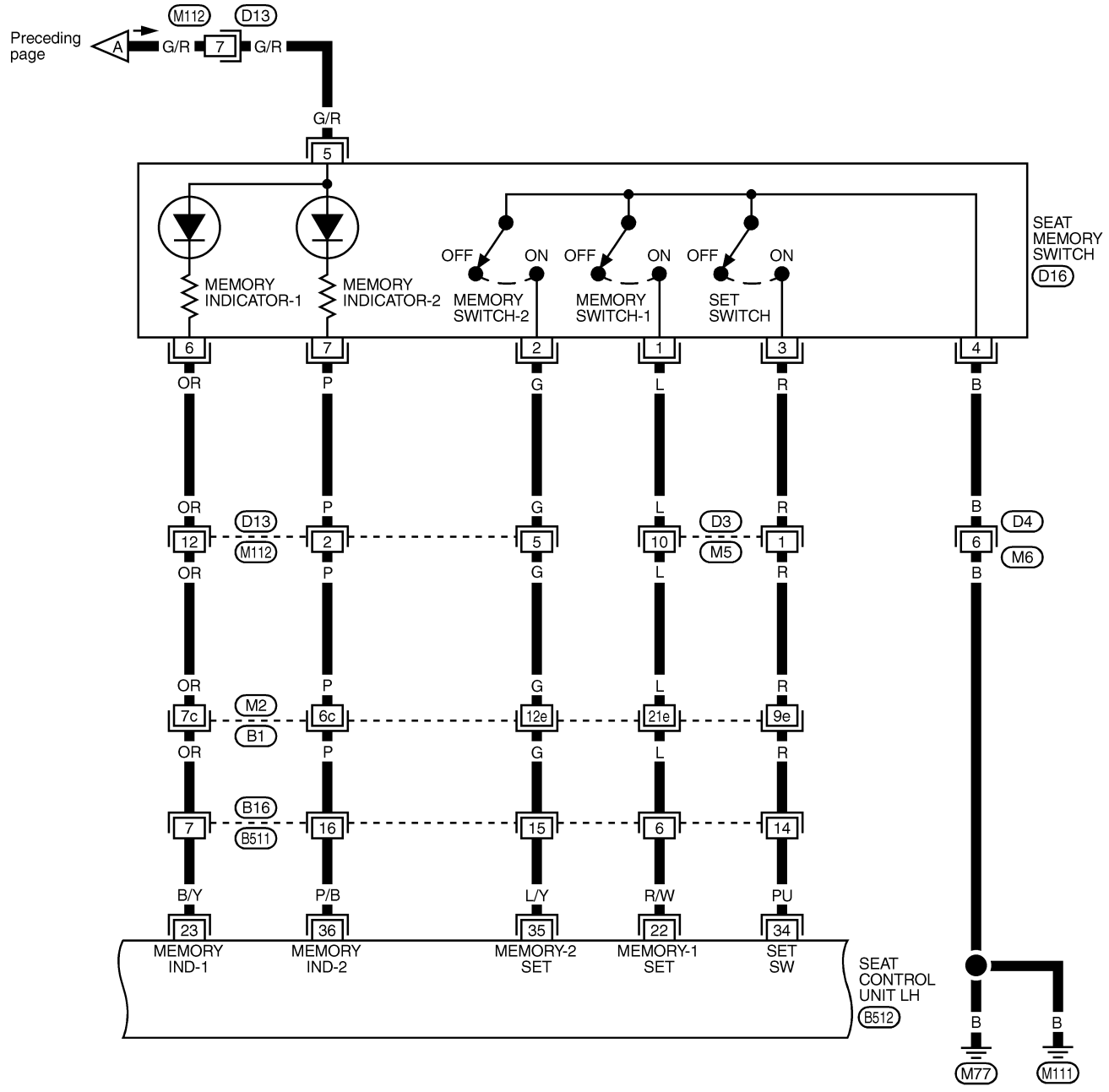


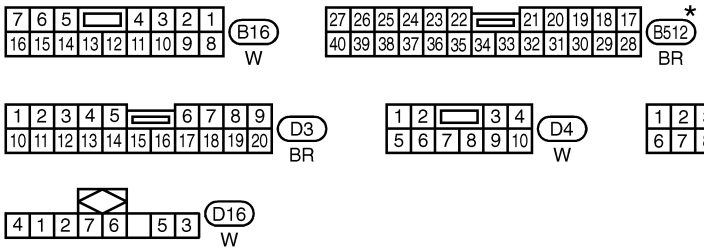
REFER TO THE FOLLOWING.
E1 , B1 -SUPER MULTIPLE JUNCTION (SMJ)
M10 , E3 -FUSE BLOCK-JUNCTION BOX (J/B)

★ : This connector is not shown in "HARNESS LAYOUT", EL section.

MEL834L

EL-AUT/DP-02



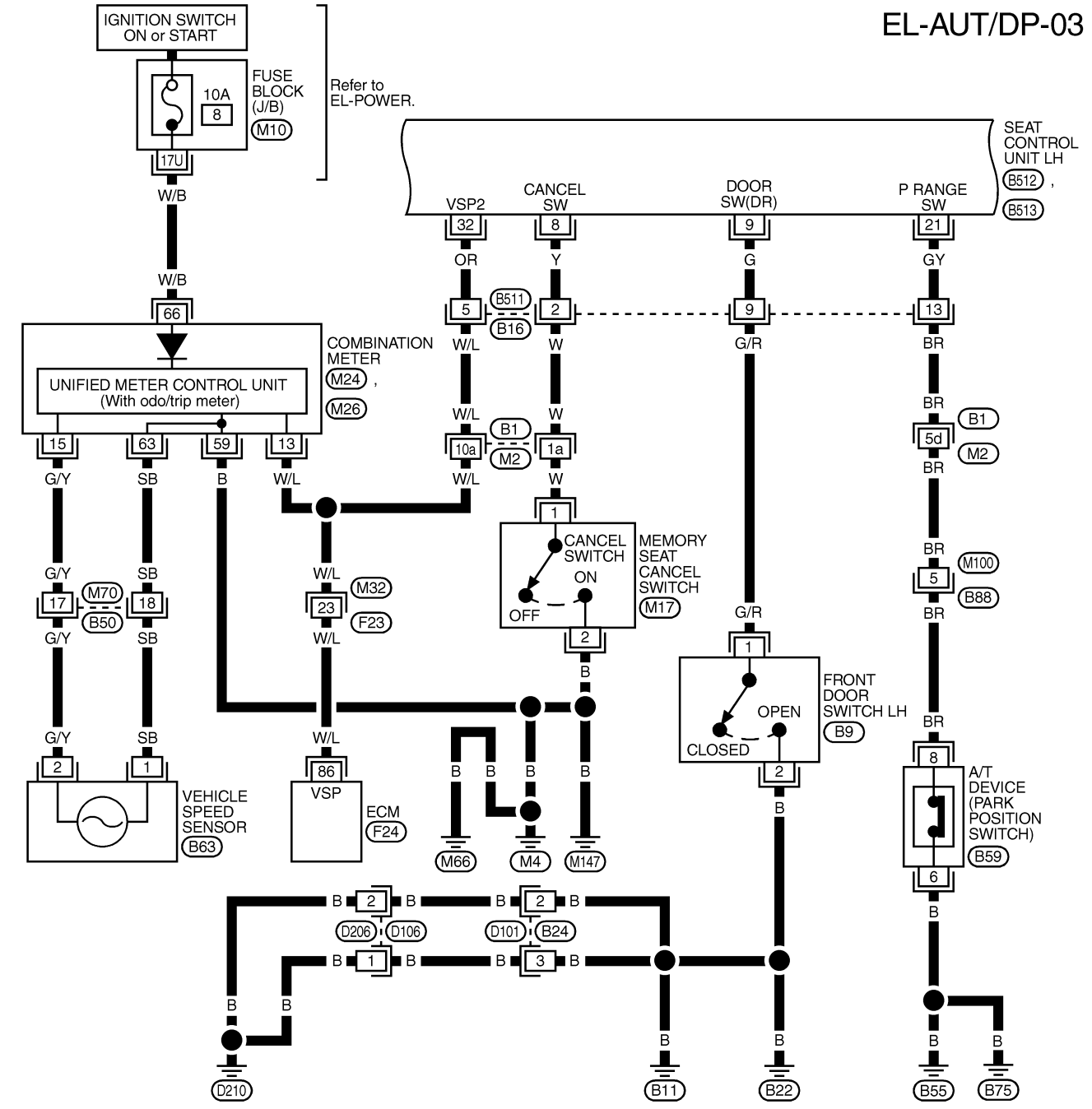


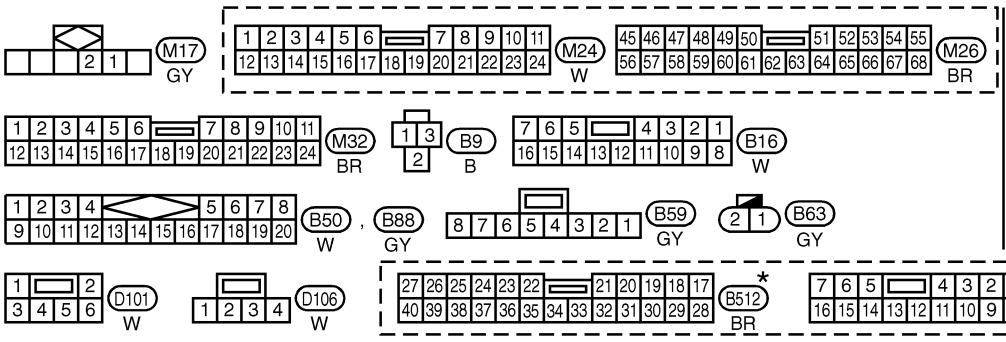
∗ : This connector is not shown in "HARNESS LAYOUT", EL section.

REFER TO THE FOLLOWING.
B1 -SUPER MULTIPLE JUNCTION (SMJ)

MEL835L

EL-AUT/DP-03



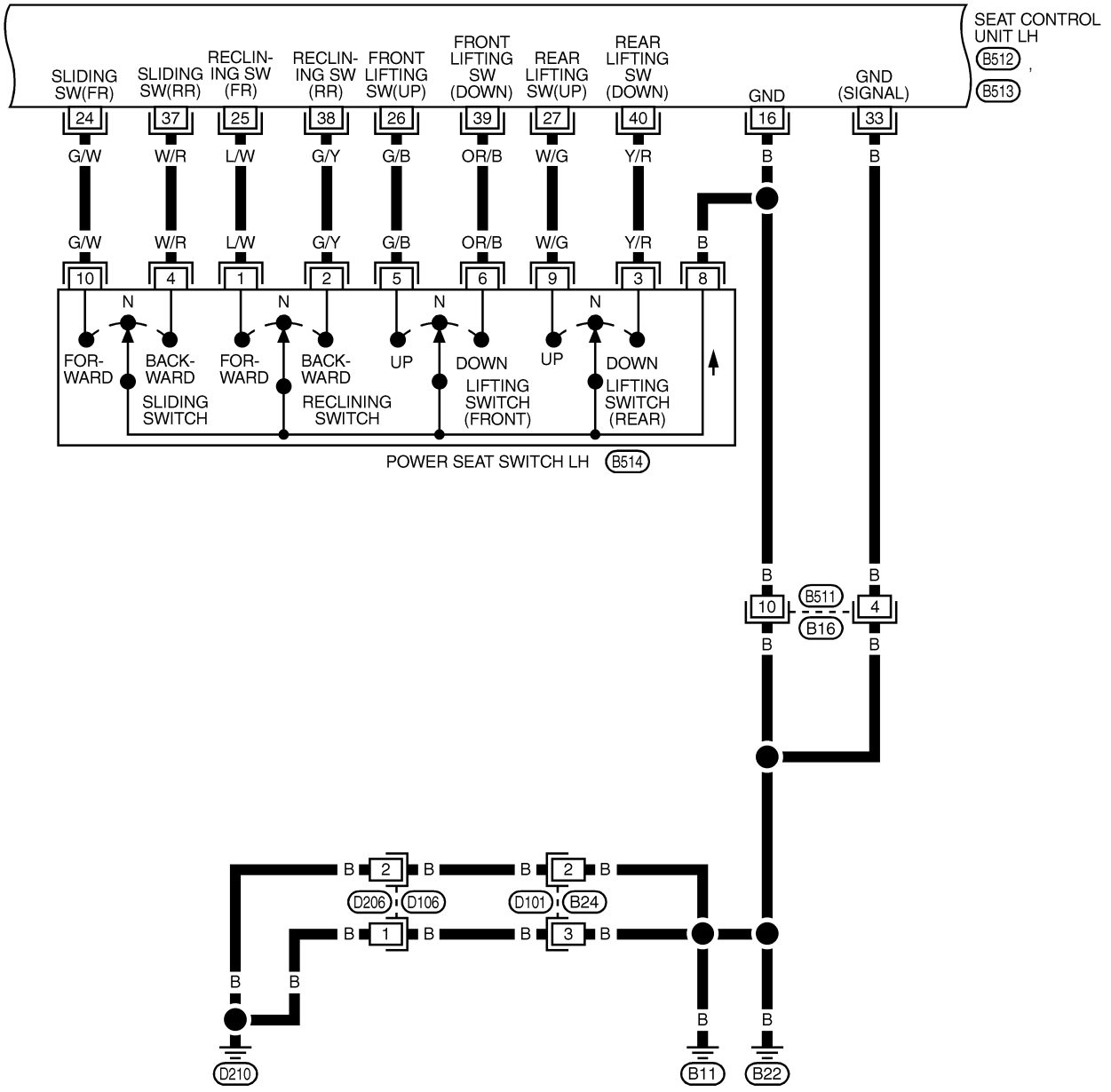


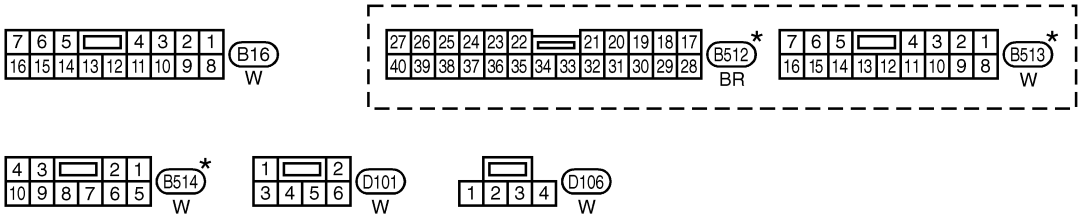
REFER TO THE FOLLOWING.
B1 - SUPER MULTIPLE JUNCTION (SMJ)
M10 - FUSE BLOCK - JUNCTION BOX (J/B)
F24 - ELECTRICAL UNITS

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

MEL836L

EL-AUT/DP-04

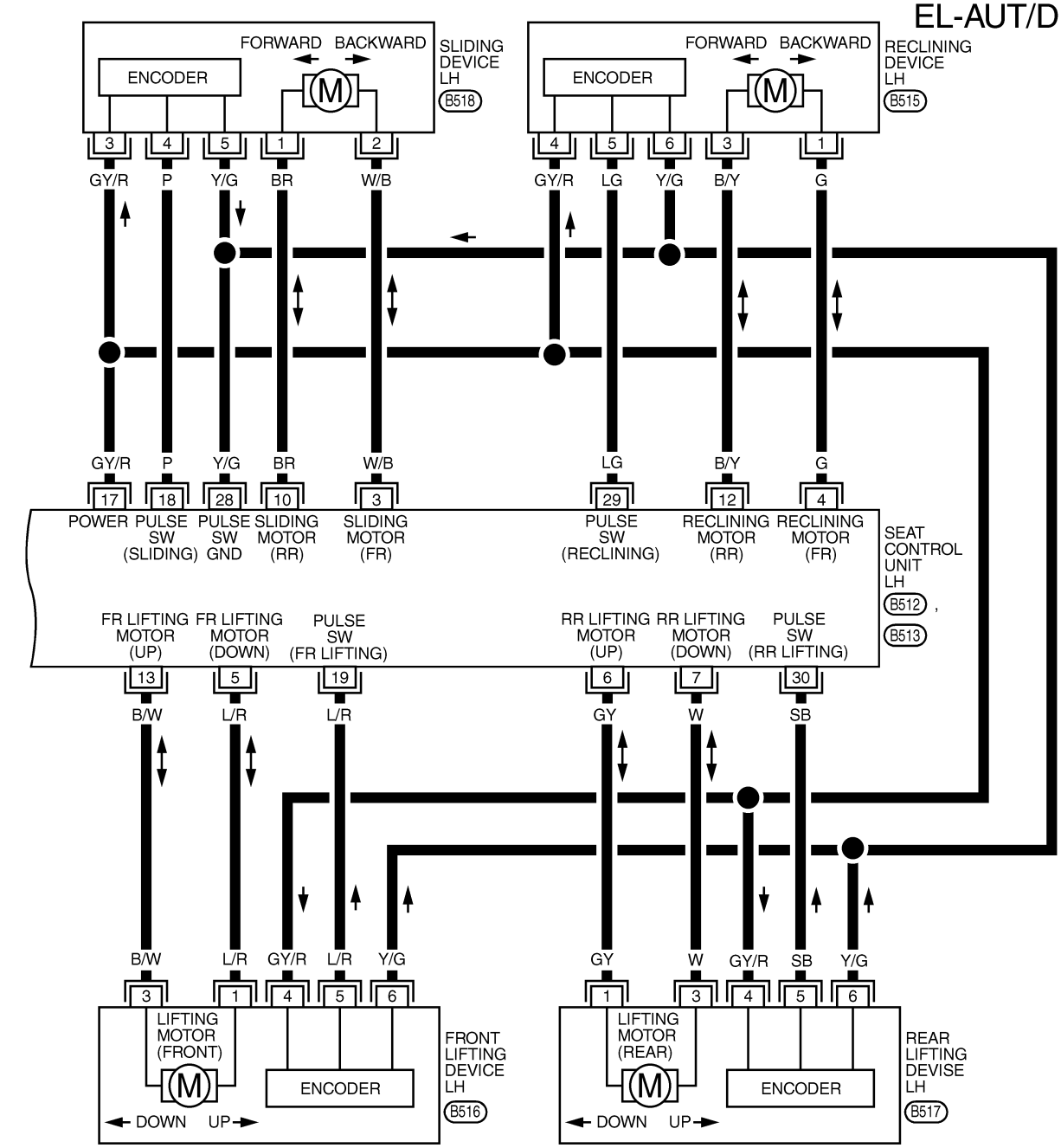


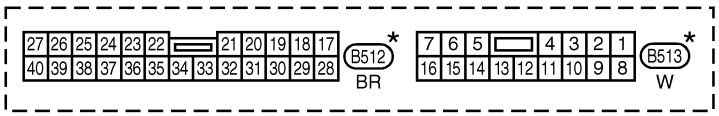


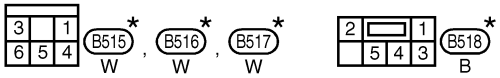
∗ : This connector is not shown in "HARNESS LAYOUT", EL section.

MEL186M

EL-AUT/DP-05





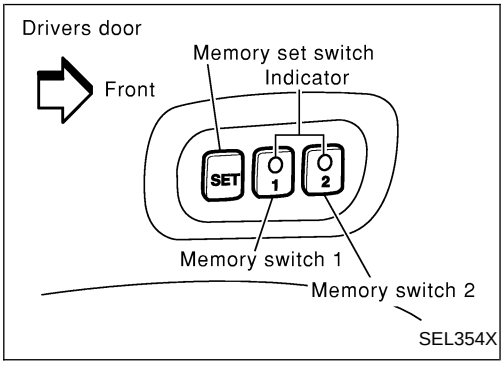


∗ : This connector is not shown in "HARNESS LAYOUT", EL section.

MEL187M

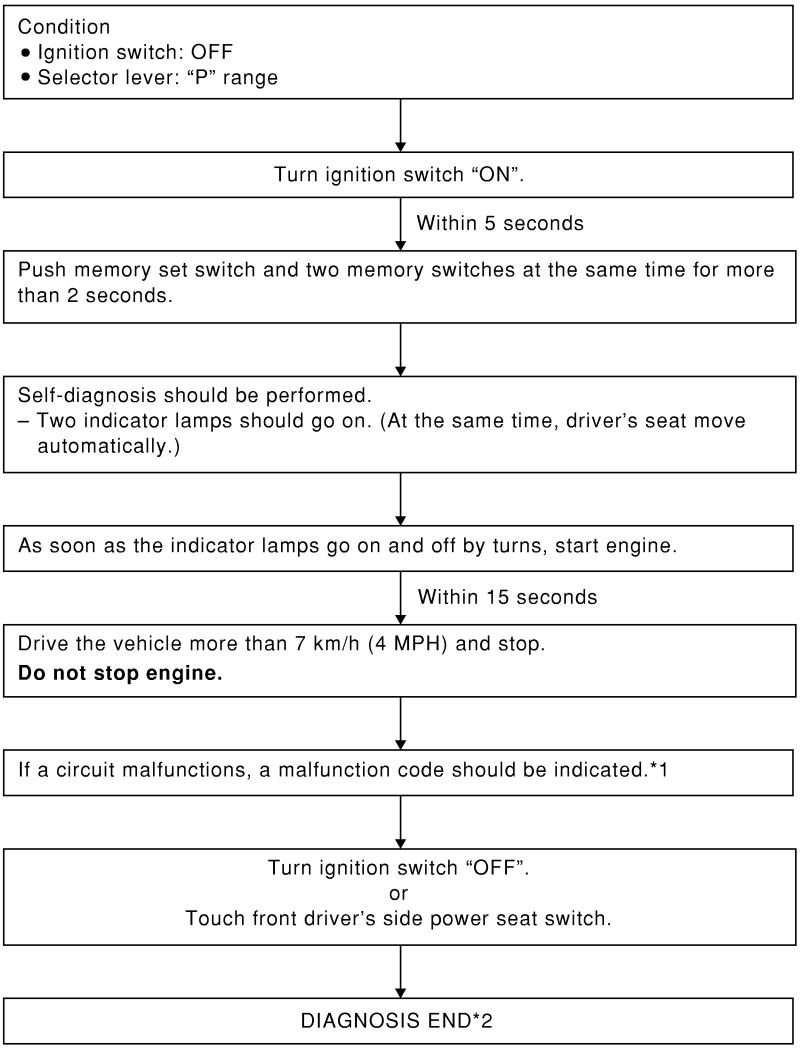
On Board Diagnosis

NAEL0213



HOW TO PERFORM SELF-DIAGNOSIS

NAEL0213S01



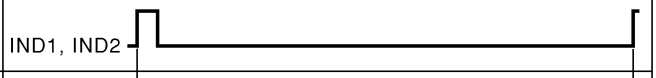
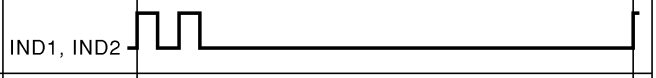
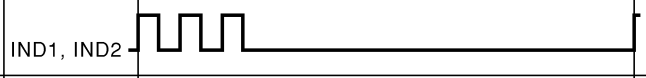
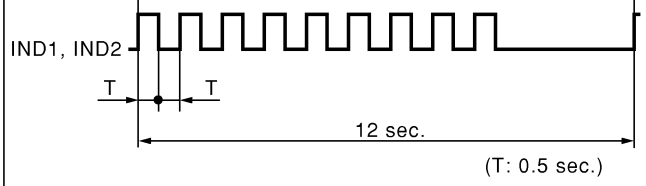
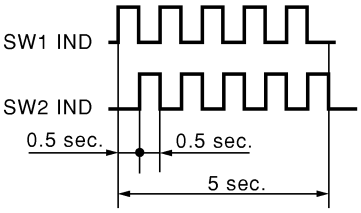
SEL596W

*1: If no malfunction is indicated, self-diagnosis will end after the vehicle speed sensor diagnosis is performed.
*2: Diagnosis ends after self-diagnostic results have been indicated for 10 minutes if left unattended.

MALFUNCTION CODE TABLE

=NAEL0213S02

In this mode, a malfunction code is indicated by the number of flashes from the automatic drive positioner indicator lamps (indicator lamp 1, indicator lamp 2) as shown below.

Code No.	Detected items	Indication of seat memory switches 1 and 2	Explanation
1	Seat sliding		While the seat motors are moving for 2.5 seconds, if the number of seat sliding/reclining/lifting encoder pulses changes 2 times or less, the seat device is determined to be malfunctioning.
2	Seat reclining		
3	Seat lifting front		
4	Seat lifting rear		
9	Vehicle speed sensor circuit		If the vehicle speed sensor output of less than 7 km/h (4 MPH) is detected, the vehicle speed sensor is determined to be malfunctioning.
–	No malfunction in the above items		—

SEL597W

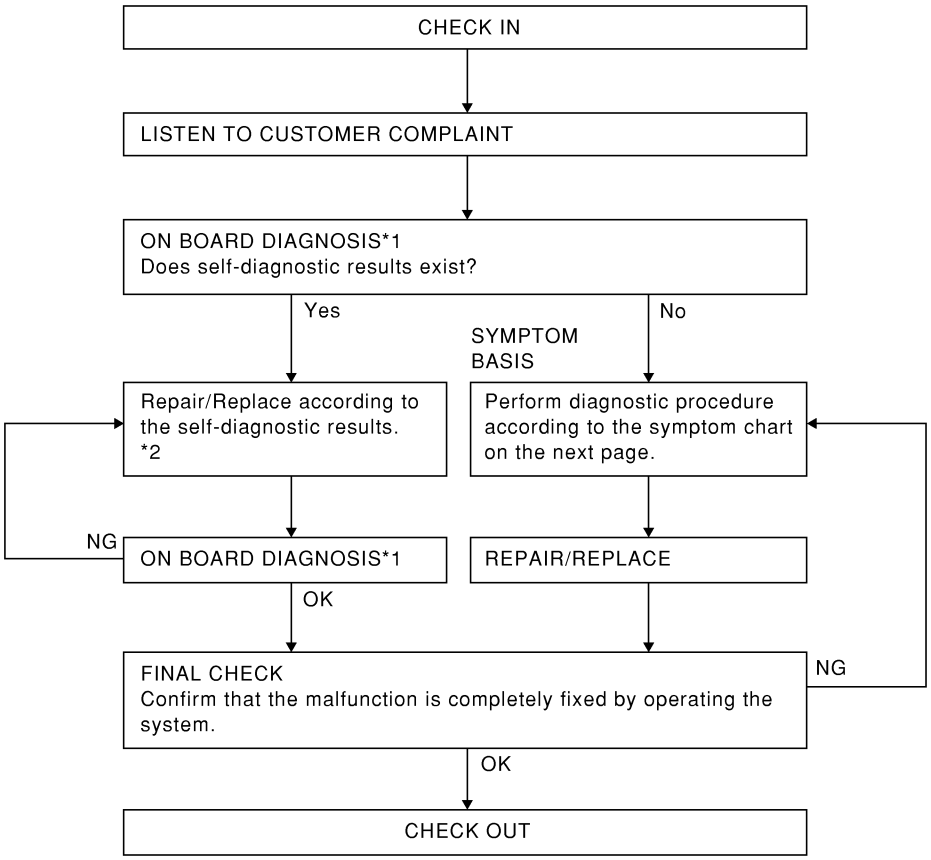
Code No.	Detected items	Diagnostic procedure	Reference page	Code No.	Detected items	Diagnostic procedure	Reference page
1	Seat sliding	PROCEDURE 2 (Sliding encoder check) PROCEDURE 6 (Sliding motor check)	EL-221 EL-229	4	Seat lifting rear	PROCEDURE 5 [Lifting encoder (rear) check] PROCEDURE 9 [Lifting motor (rear) check]	EL-227 EL-232
2	Seat reclining	PROCEDURE 3 (Reclining encoder check) PROCEDURE 7 (Reclining motor check)	EL-223 EL-230	9	Vehicle speed sensor	PROCEDURE 12 (Vehicle speed sensor check)	EL-235
3	Seat lifting front	PROCEDURE 4 [Lifting encoder (front) check] PROCEDURE 8 [Lifting motor (front) check]	EL-225 EL-231				

Trouble Diagnoses

NAEL0214

WORK FLOW

NAEL0214S01

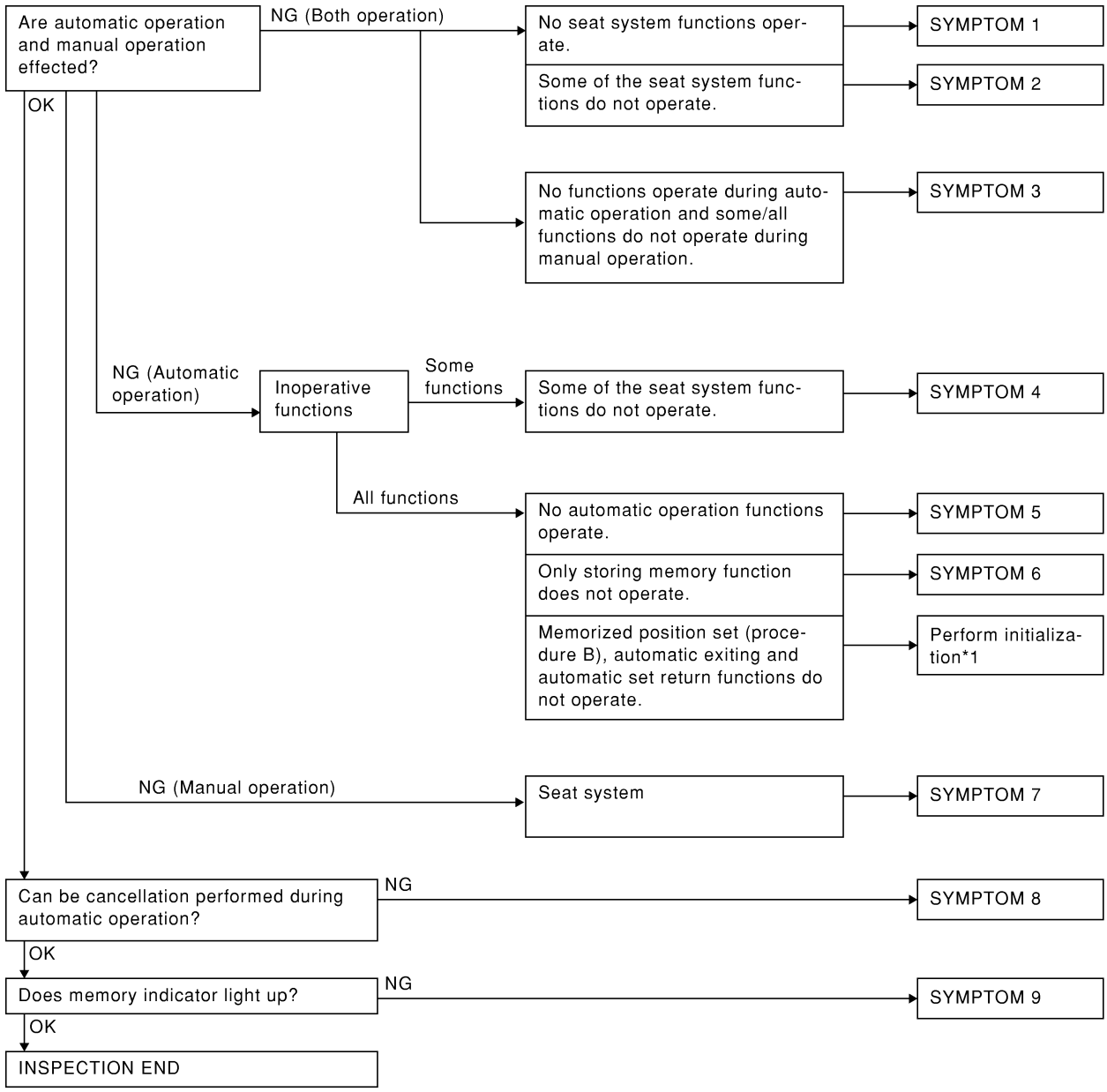


SEL599W

*1 EL-214 *2 EL-215

PRELIMINARY CHECK

NAEL0214S02



SEL600W

*1: After reconnecting battery cable, perform initialization procedure A or B.
If initialization has not been performed, automatic drive positioner will not operate.

PROCEDURE A

1) Insert key in the ignition key cylinder. (Ignition switch is in "OFF" position.)
2) Open → close → open driver side door. (Do not perform with the door switch operation.)
3) End

PROCEDURE B

1) Drive the vehicle at more than 30 km/h (19 MPH).

2) End

After performing preliminary check, go to symptom chart below.

Before starting trouble diagnoses below, perform preliminary check, EL-217. Symptom numbers in the symptom chart correspond with those of preliminary check.

SYMPTOM CHART

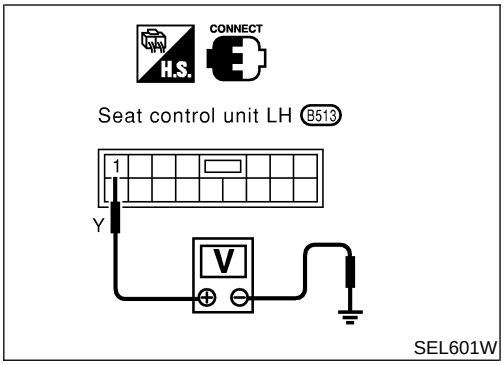
NAEL0214S03

PROCEDURE			Diagnostic procedure						
REFERENCE PAGE (EL-)			220	221	223	225	227	229	230
SYMPTOM			DIAGNOSTIC PROCEDURE 1 (Power supply and ground circuit for Driver's seat control unit)	DIAGNOSTIC PROCEDURE 2 (Sliding encoder check)	DIAGNOSTIC PROCEDURE 3 (Reclining encoder check)	DIAGNOSTIC PROCEDURE 4 [Lifting encoder (front) check]	DIAGNOSTIC PROCEDURE 5 [Lifting encoder (rear) check]	DIAGNOSTIC PROCEDURE 6 (Sliding motor check)	DIAGNOSTIC PROCEDURE 7 (Reclining motor check)
1	No seat system functions operate.		X						
2	Some of the seat system functions do not operate during automatic/ manual operation.	Sliding						X	
		Reclining							X
		Lifting (Front)							
		Lifting (Rear)							
3	No functions operate during automatic operation, and some/all functions do not during manual operation.								
4	Some of the seat system functions do not operate during automatic operation.	Sliding		X					
		Reclining			X				
		Lifting (Front)				X			
		Lifting (Rear)					X		
5	No automatic operation functions operate.								
6	Drive position cannot be retained in the memory.								
7	Does not operate during manual operation. (Operates during automatic operation.)	Sliding							
		Reclining							
		Lifting (Front)							
		Lifting (Rear)							
8	Automatic operation cannot be canceled.								
9	Memory indicator does not light up.								

X : Applicable

PROCEDURE			Diagnostic procedure						
REFERENCE PAGE (EL-)			231	232	233	234	235	238	238
SYMPTOM			DIAGNOSTIC PROCEDURE 8 [Lifting motor (front) check]	DIAGNOSTIC PROCEDURE 9 [Lifting motor (rear) check]	DIAGNOSTIC PROCEDURE 10 (Power seat switch check)	DIAGNOSTIC PROCEDURE 11 (Cancel switch check)	DIAGNOSTIC PROCEDURE 12 (Key, park position, door switch and vehicle speed sensor check)	DIAGNOSTIC PROCEDURE 13 (Seat memory switch check)	DIAGNOSTIC PROCEDURE 14 (Memory indicator check)
1	No seat system functions operate.								
2	Some of the seat system functions do not operate during automatic/ manual operation.	Sliding							
		Reclining							
		Lifting (Front)	X						
		Lifting (Rear)		X					
3	No functions operate during automatic operation, and some/all functions do not during manual operation.				X		X (ACC, ON START signal)		
4	Some of the seat system functions do not operate during automatic operation.	Sliding							
		Reclining							
		Lifting (Front)							
		Lifting (Rear)							
5	No automatic operation functions operate.					X	X		
6	Drive position cannot be retained in the memory.						X (IGN ON signal)	X	
7	Does not operate during manual operation. (Operates during automatic operation.)	Sliding			X				
		Reclining			X				
		Lifting (Front)			X				
		Lifting (Rear)			X				
8	Automatic operation cannot be canceled.					X			
9	Memory indicator does not light up.								X

X : Applicable



DIAGNOSTIC PROCEDURE 1

=NAEL0214S04

(Power supply and ground circuit for driver's seat control unit)

Power Supply Circuit Check

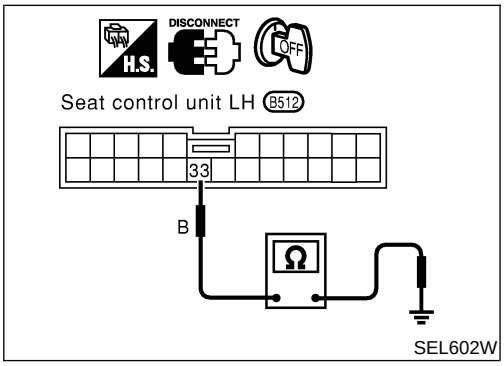
NAEL0214S0401

Check voltage between seat control unit LH terminal 1 and ground.

Terminals	Ignition switch position			
	OFF	ACC	ON	START
1 - Ground	Battery voltage			

If NG, check the following.

- 40A fusible link (letter **f**, located in the fuse and fusible link box)
- Circuit breaker
- Harness for open or short between circuit breaker and seat control unit LH



Ground Circuit Check

NAEL0214S0402

Check continuity between seat control unit LH terminal 33 and ground.

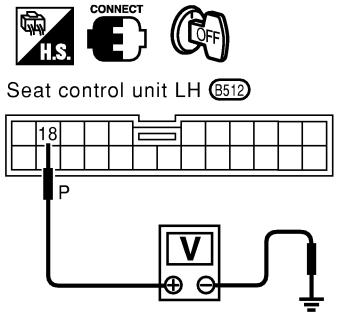
Terminals	Continuity
33 - Ground	Yes

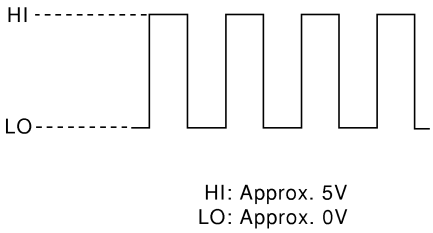
DIAGNOSTIC PROCEDURE 2
(Sliding encoder check)

=NAEL0214S05

1	CHECK SLIDING ENCODER OUTPUT SIGNAL

Measure voltage between seat control unit LH terminal 18 and ground with CONSULT-II or oscilloscope when power seat slide is operated.





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

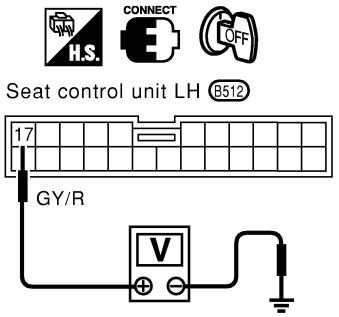
SEL603W

OK or NG

OK	▶	Sliding encoder is OK.
NG	▶	GO TO 2.

2	CHECK SLIDING ENCODER INPUT SIGNAL

Check voltage between seat control unit LH terminal 17 and ground.



Battery voltage should exist.

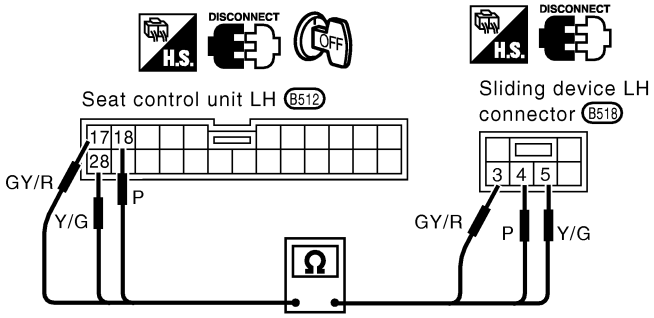
SEL604W

OK or NG

OK	▶	GO TO 3.
NG	▶	Replace seat control unit LH.

3	CHECK SLIDING ENCODER OPEN CIRCUIT

1. Disconnect seat control unit LH connector and sliding device LH connector.
2. Check harness continuity between seat control unit LH connector and sliding device LH connector.



Terminals		Continuity
Seat control unit LH	Sliding device LH (Sliding encoder)	
17	3	Yes
18	4	
28	5	

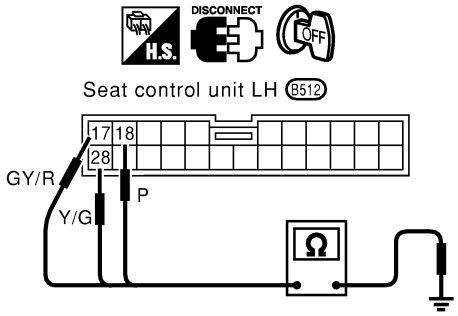
SEL605WA

OK or NG

OK	▶	GO TO 4.
NG	▶	Repair harness.

4	CHECK SLIDING ENCODER SHORT CIRCUIT

Check harness continuity between seat control unit LH connector and ground.



Terminals	Continuity
17 - Ground	No
18 - Ground	
28 - Ground	

SEL606W

OK or NG

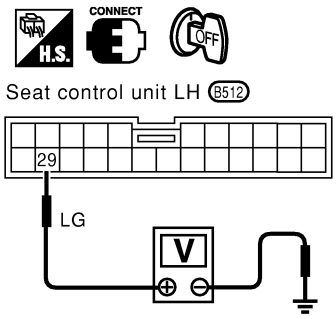
OK	▶	Replace sliding encoder.
NG	▶	Repair harness.

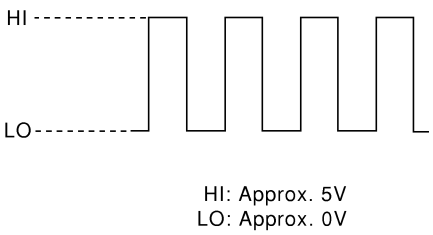
DIAGNOSTIC PROCEDURE 3
(Reclining encoder check)

=NAEL0214S06

1	CHECK RECLINING ENCODER OUTPUT SIGNAL

Measure voltage between seat control unit LH terminal 29 and ground with CONSULT-II or oscilloscope when power seat reclining is operated.





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

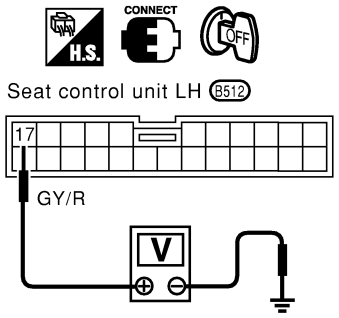
SEL607W

OK or NG

OK	▶	Reclining encoder is OK.
NG	▶	GO TO 2.

2	CHECK RECLINING ENCODER INPUT SIGNAL

Check voltage between seat control unit LH terminal 17 and ground.



Battery voltage should exist.

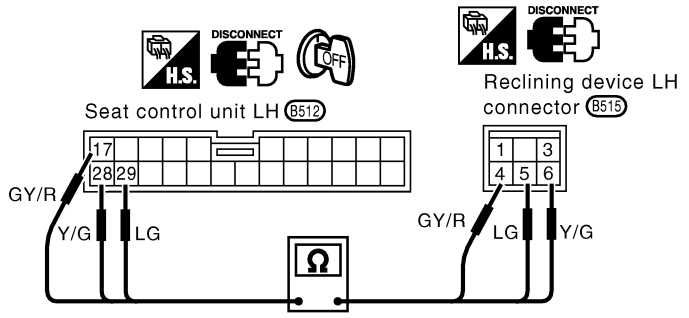
SEL608W

OK or NG

OK	▶	GO TO 3.
NG	▶	Replace seat control unit LH.

3	CHECK RECLINING ENCODER OPEN CIRCUIT

1. Disconnect seat control unit LH connector and reclining device LH connector.
2. Check harness continuity between seat control unit LH connector and reclining LH connector.



Terminals		Continuity
Seat control unit LH	Reclining device LH (Reclining encoder)	
17	4	Yes
28	6	
29	5	

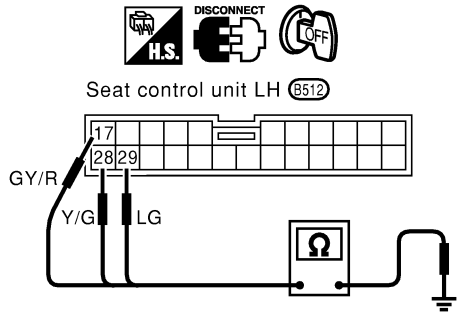
SEL609WA

OK or NG

OK	▶	GO TO 4.
NG	▶	Repair harness.

4	CHECK RECLINING ENCODER SHORT CIRCUIT

Check harness continuity between seat control unit LH connector and ground.



Terminals	Continuity
17 - Ground	No
28 - Ground	
29 - Ground	

SEL610W

OK or NG

OK	▶	Replace reclining encoder.
NG	▶	Repair harness.

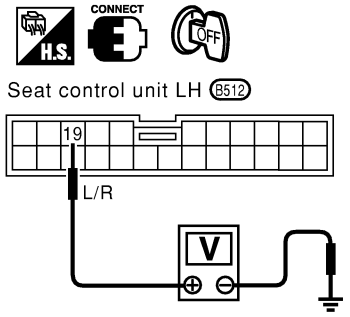
DIAGNOSTIC PROCEDURE 4

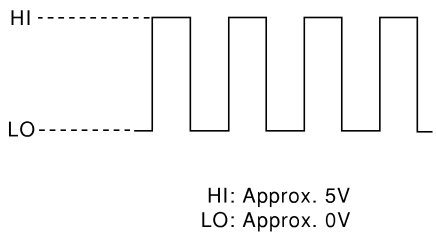
=NAEL0214S07

[Lifting encoder (front) check]

1	CHECK LIFTING ENCODER (FRONT) OUTPUT SIGNAL

Measure voltage between seat control unit LH terminal 19 and ground with CONSULT-II or oscilloscope when power seat lifting (front) is operated.





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

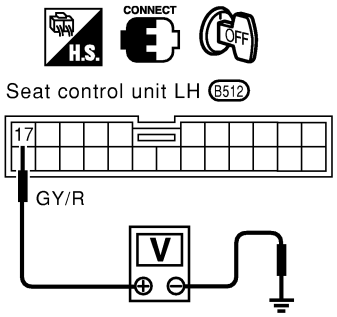
SEL611W

OK or NG

OK	▶	Lifting encoder (front) is OK.
NG	▶	GO TO 2.

2	CHECK LIFTING ENCODER (FRONT) INPUT SIGNAL

Check voltage between seat control unit LH terminal 17 and ground.



Battery voltage should exist.

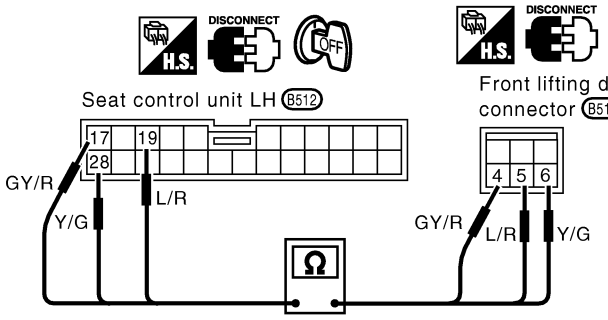
SEL612W

OK or NG

OK	▶	GO TO 3.
NG	▶	Replace seat control unit LH.

3	CHECK LIFTING ENCODER (FRONT) OPEN CIRCUIT

1. Disconnect seat control unit LH connector and front lifting device LH connector.
2. Check harness continuity between seat control unit LH connector and front lifting device LH connector.



Terminals		Continuity
Seat control unit LH	Front lifting device LH Lifing encoder (front)	
17	4	Yes
19	5	
28	6	

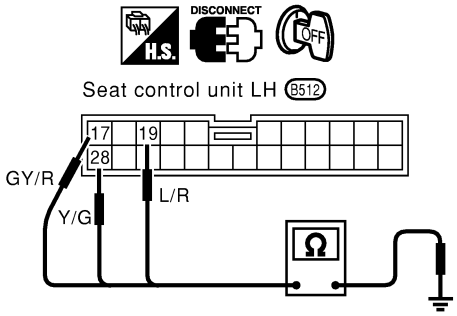
SEL613WA

OK or NG

OK	▶	GO TO 4.
NG	▶	Repair harness.

4	CHECK LIFTING ENCODER (FRONT) SHORT CIRCUIT

Check harness continuity between seat control unit LH connector and ground.



Terminals	Continuity
17 - Ground	No
19 - Ground	
28 - Ground	

SEL614W

OK or NG

OK	▶	Replace lifting encoder (front).
NG	▶	Repair harness.

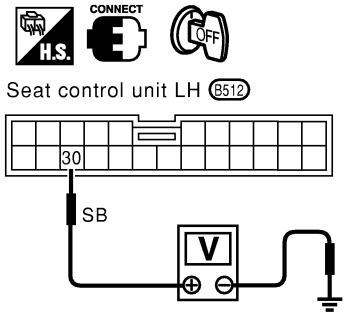
DIAGNOSTIC PROCEDURE 5

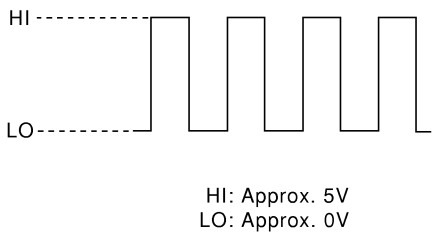
=NAEL0214S08

[Lifting encoder (rear) check]

1	CHECK LIFTING ENCODER (REAR) OUTPUT SIGNAL

Measure voltage between seat control unit LH terminal 30 and ground with CONSULT-II or oscilloscope when power seat lifting (rear) is operated.





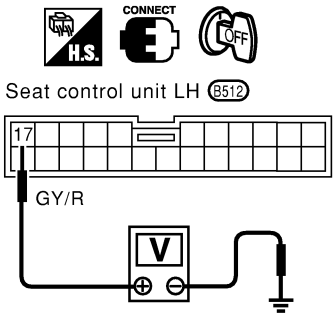
SEL615W

OK or NG

OK	▶	Lifting encoder (rear) is OK.
NG	▶	GO TO 2.

2	CHECK LIFTING ENCODER (REAR) INPUT SIGNAL

Check voltage between seat control unit LH terminal 17 and ground.



Battery voltage should exist.

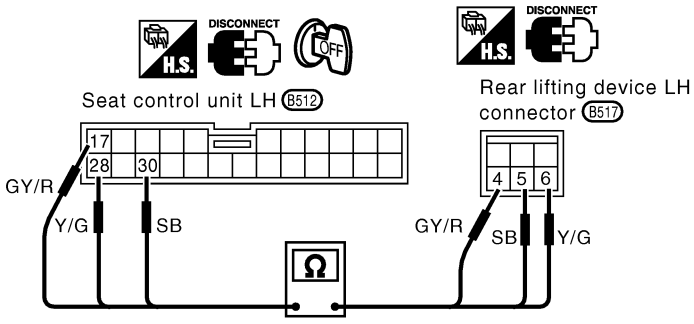
SEL616W

OK or NG

OK	▶	GO TO 3.
NG	▶	Replace seat control unit LH.

3	CHECK LIFTING ENCODER (REAR) OPEN CIRCUIT

1. Disconnect seat control unit LH connector and rear lifting device LH connector.
2. Check harness continuity between seat control unit LH connector and rear lifting device LH connector.



Terminals		Continuity
Seat control unit LH	Rear lifting device LH Lifing encoder (rear)	
17	4	Yes
28	6	
30	5	

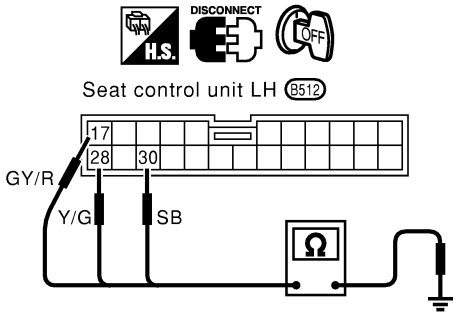
SEL617WA

OK or NG

OK	▶	GO TO 4.
NG	▶	Repair harness.

4	CHECK LIFTING ENCODER (REAR) SHORT CIRCUIT

Check harness continuity between seat control unit LH connector and ground.



Terminals	Continuity
17 - Ground	No
28 - Ground	
30 - Ground	

SEL618W

OK or NG

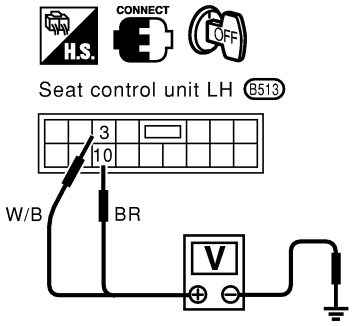
OK	▶	Replace lifting encoder (rear).
NG	▶	Repair harness.

DIAGNOSTIC PROCEDURE 6
(Sliding motor check)

=NAEL0214S09

1	CHECK OUTPUT SIGNAL TO SLIDING MOTOR

Check voltage between seat control unit LH terminals 3 or 10 and ground.



Condition of sliding switch	Terminals		Voltage [V]
	+	–	
Forward	3	Ground	Approx. 12
Backward	10	Ground	Approx. 12

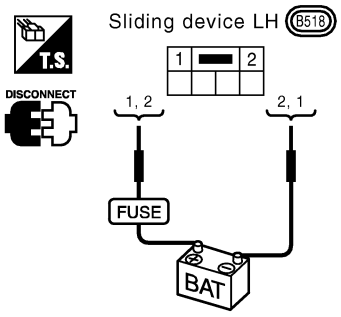
SEL619W

OK or NG

OK	▶	GO TO 2.
NG	▶	Replace seat control unit LH.

2	CHECK SLIDING MOTOR

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



Terminals		Operation
+	–	
2	1	Forward
1	2	Backward

SEL620WA

OK or NG

OK	▶	Check harness for operation between seat control unit LH and sliding motor.
NG	▶	Replace sliding motor.

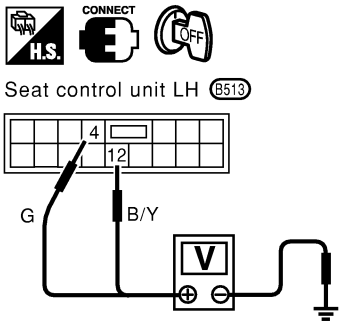
DIAGNOSTIC PROCEDURE 7

=NAEL0214S10

(Reclining motor check)

1	CHECK OUTPUT SIGNAL TO RECLINING MOTOR

Check voltage between seat control unit LH terminals 4 or 12 and ground.



Condition of reclining switch	Terminals		Voltage [V]
	+	–	
Forward	4	Ground	Approx. 12
Backward	12	Ground	Approx. 12

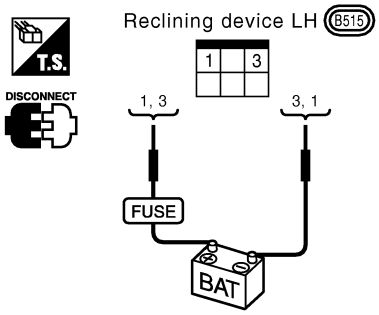
SEL621W

OK or NG

OK	▶	GO TO 2.
NG	▶	Replace seat control unit LH.

2	CHECK RECLINING MOTOR

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



Terminals		Operation
+	–	
1	3	Forward
3	1	Backward

SEL622WA

OK or NG

OK	▶	Check harness for operation between seat control unit LH and reclining motor.
NG	▶	Replace reclining motor.

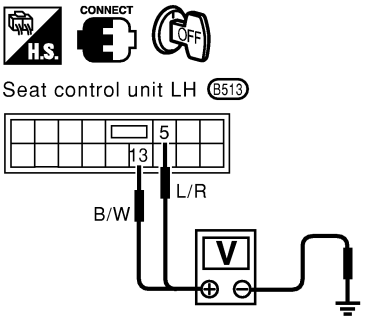
DIAGNOSTIC PROCEDURE 8

=NAEL0214S11

[Lifting motor (front) check]

1	CHECK OUTPUT SIGNAL TO LIFTING MOTOR (FRONT)

Check voltage between seat control unit LH terminals 5 or 13 and ground.



Condition of lifting switch (front)	Terminals		Voltage [V]
	+	–	
Up	13	Ground	Approx. 12
Down	5	Ground	Approx. 12

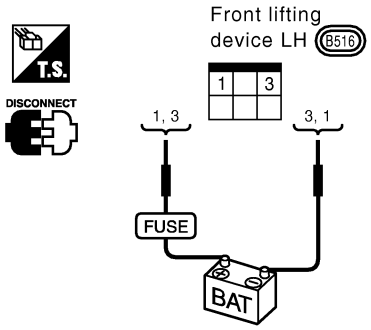
SEL623W

OK or NG

OK	▶	GO TO 2.
NG	▶	Replace seat control unit LH.

2	CHECK LIFTING MOTOR (FRONT)

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



Terminals		Operation
+	–	
3	1	Up
1	3	Down

SEL624WA

OK or NG

OK	▶	Check harness for operation between seat control unit LH and lifting motor (front).
NG	▶	Replace lifting motor (front).

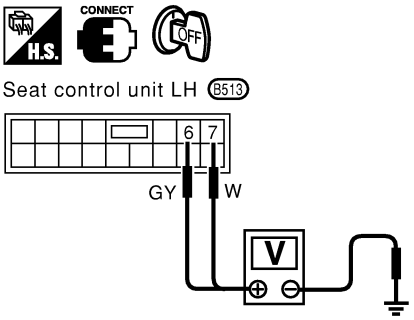
DIAGNOSTIC PROCEDURE 9

=NAEL0214S12

[Lifting motor (rear) check]

1	CHECK OUTPUT SIGNAL TO LIFTING MOTOR (REAR)

Check voltage between seat control unit LH terminals 6 or 7 and ground.



Condition of lifting switch (rear)	Terminals		Voltage [V]
	+	–	
Up	6	Ground	Approx. 12
Down	7	Ground	Approx. 12

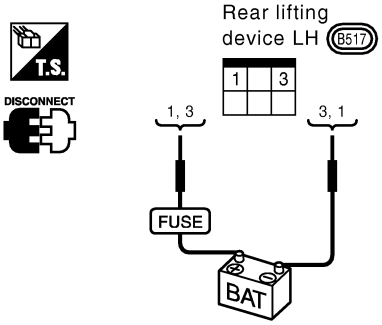
SEL625W

OK or NG

OK	▶	GO TO 2.
NG	▶	Replace seat control unit LH.

2	CHECK LIFTING MOTOR (REAR)

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



Terminals		Operation
+	–	
1	3	Up
3	1	Down

SEL626WA

OK or NG

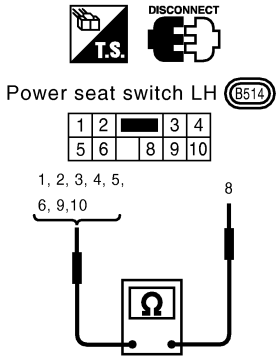
OK	▶	Check harness for operation between seat control unit LH and lifting motor (rear).
NG	▶	Replace lifting motor (rear).

DIAGNOSTIC PROCEDURE 10
(Power seat switch check)

=NAEL0214S13

1	CHECK POWER SEAT SWITCH

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



Switch	Condition	Terminals								
		8	1	2	3	4	5	6	9	10
Sliding	Forward	○								○
	Backward	○								
Reclining	Forward	○								
	Backward	○		○						
Lifting (Front)	Up	○					○			
	Down	○						○		
Lifting (Rear)	Up	○							○	
	Down	○			○					

SEL569X

OK or NG

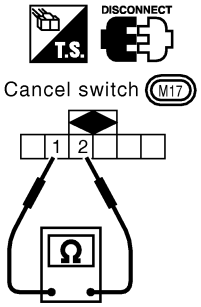
OK	▶	**Check the following.** ● Ground circuit for power seat switch ● Harness for open or short between seat control unit LH and power seat switch
NG	▶	Replace power seat switch.

DIAGNOSTIC PROCEDURE 11
(Cancel switch check)

=NAEL0214S14

1	CHECK CANCEL SWITCH

1. Disconnect cancel switch connector.
2. Check continuity between cancel switch terminals.



Terminals	Cancel switch condition	Continuity
1-2	ON	Yes
	OFF	No

SEL628WA

OK or NG

OK	▶	**Check the following.** ● Ground circuit for cancel switch ● Harness for open or short between seat control unit LH and cancel switch
NG	▶	Replace cancel switch.

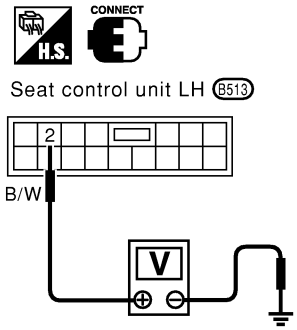
DIAGNOSTIC PROCEDURE 12

=NAEL0214S15

(Key, detention, door switch and vehicle speed sensor check)

1	CHECK KEY SWITCH INPUT SIGNAL

Check voltage between seat control unit LH terminal 2 and ground.



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

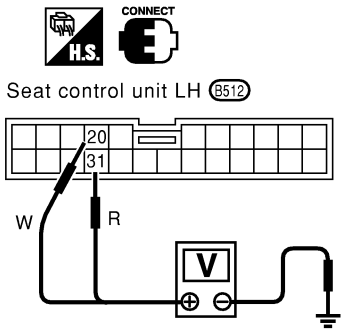
SEL629W

OK or NG

OK	▶	GO TO 2.
NG	▶	**Check the following.** ● 7.5A fuse [No. 24, located in fuse block (J/B)] ● Key switch ● Harness for open or short between key switch and fuse ● Harness for open or short between seat control unit LH and key switch

2	CHECK IGNITION SWITCH INPUT SIGNAL (ON AND START)

Check voltage between seat control unit LH terminals and ground.



Terminals		Ignition switch position		
+	–	OFF	ON	START
20	Ground	Approx. 0V	Battery voltage	
31	Ground	Approx. 0V		Battrery voltage

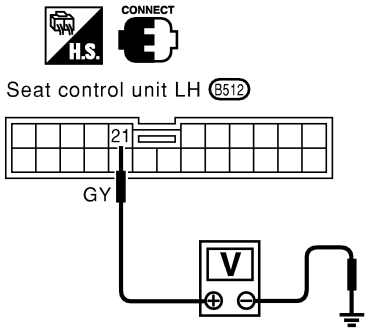
SEL630W

OK or NG

OK	▶	GO TO 3.
NG	▶	**Check the following.** ● 7.5A fuse [No. 11, located in fuse block (J/B)] ● 7.5A fuse [No. 26, located in fuse block (J/B)] ● Harness for open or short between seat control unit LH and fuse

3	CHECK PARK POSITION SWITCH INPUT SIGNAL

Check voltage between seat control unit LH terminal 21 and ground.



Condition	Voltage [V]
Selector lever is in "P" position	0
Except above	Approx. 12

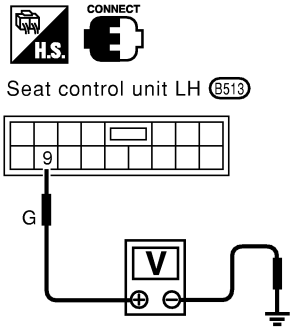
SEL631W

OK or NG

OK	▶	GO TO 4.
NG	▶	**Check the following.** ● Park position switch ● Park position switch ground circuit ● Harness for open or short between seat control unit LH and park position switch

4	CHECK DRIVER DOOR SWITCH INPUT SIGNAL

Check voltage between seat control unit LH terminal 9 and ground.



Condition	Voltage [V]
Driver's door is open	0
Driver's door is closed	Approx. 12

SEL632W

OK or NG

OK	▶	GO TO 5.
NG	▶	**Check the following.** ● Driver door switch ● Driver door switch ground circuit ● Harness for open or short between seat control unit LH and driver door switch

5	CHECK VEHICLE SPEED SENSOR

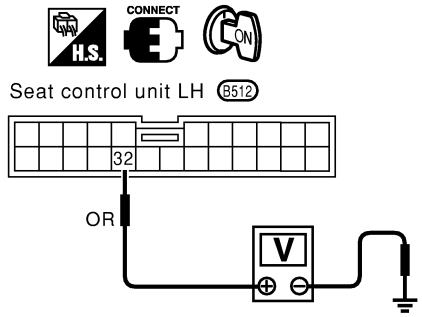
Does speedometer operate normally?

Yes or No

OK	▶	GO TO 6.
NG	▶	Check speedometer and vehicle speed sensor circuit. Refer to EL-124.

6	CHECK VEHICLE SPEED SENSOR PULL UP VOLTAGE

1. Turn ignition switch "ON".
2. Check voltage between seat control unit LH terminal 32 and ground.



Approx. 5V should exist.

SEL633W

OK or NG

OK	▶	Harness for open or short between seat control unit LH and combination meter.
NG	▶	Repair harness.

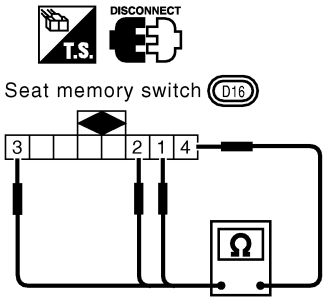
DIAGNOSTIC PROCEDURE 13

=NAEL0214S16

(Seat memory switch check)

1	CHECK SEAT MEMORY SWITCH

1. Disconnect seat memory switch connector.
2. Check continuity between seat memory switch terminals.



Switch	Condition	Terminals			
		1	2	3	4
Memory-1	ON	○			○
Memory-2	ON		○		○
Set	ON			○	○

SEL634WA

OK or NG

OK	▶	**Check the following.** ● Ground circuit for seat memory switch ● Harness for open or short between seat control unit LH and seat memory switch
NG	▶	Replace seat memory switch.

DIAGNOSTIC PROCEDURE 14

NAEL0214S17

(Memory indicator check)

1	CHECK INDICATOR LAMP

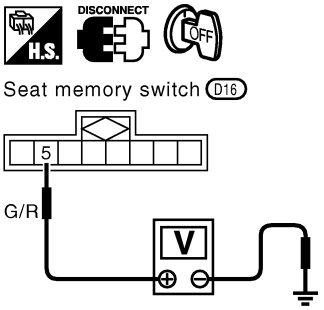
Check indicator lamp illumination.

OK or NG

OK	▶	GO TO 2.
NG	▶	Replace seat memory switch (indicator lamp).

2	CHECK POWER SUPPLY CIRCUIT FOR INDICATOR LAMP

1. Disconnect seat memory switch connector.
2. Check voltage between seat memory switch terminal and ground.



Battery voltage should exist.

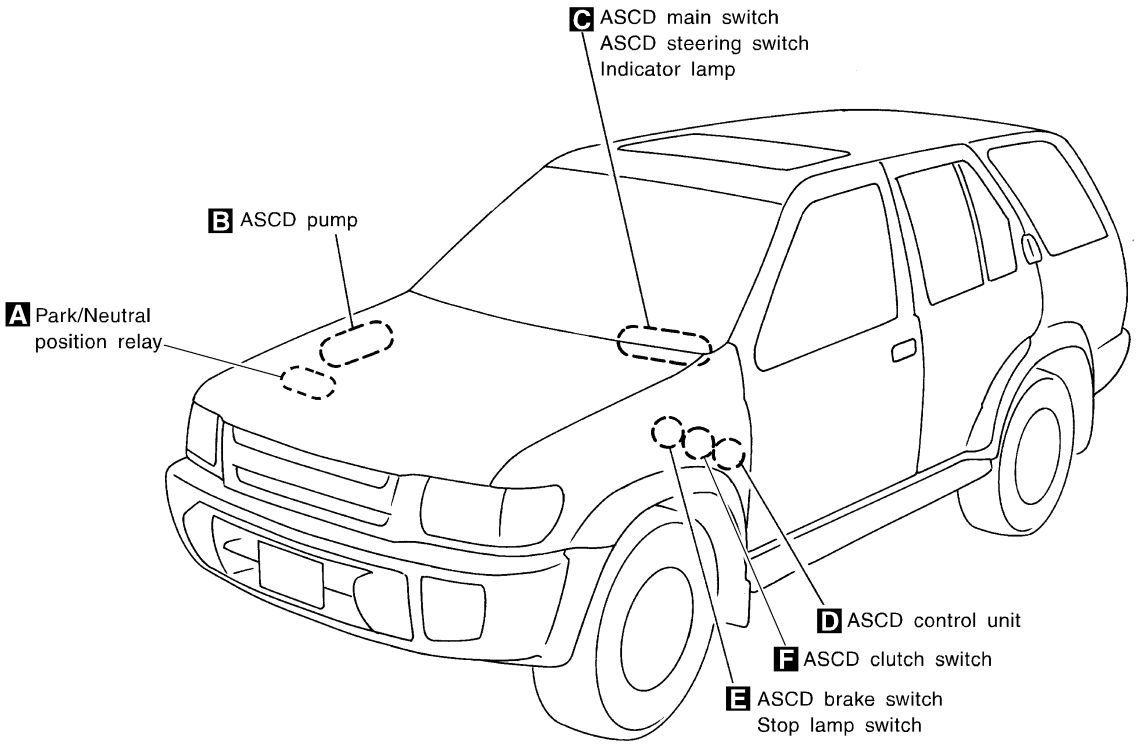
SEL635WA

OK or NG

OK	▶	Check harness for open or short between seat control unit LH and seat memory switch
NG	▶	**Check the following.** ● 7.5A fuse [No. 24 located in the fuse block (J/B)] ● Harness for open or short between fuse and indicator lamp

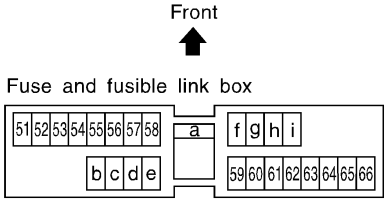
Component Parts and Harness Connector Location

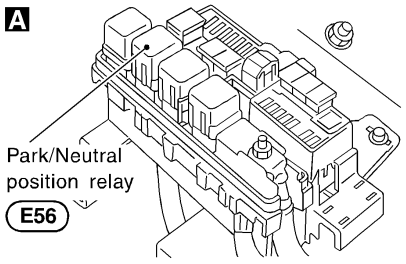
NAEL0094

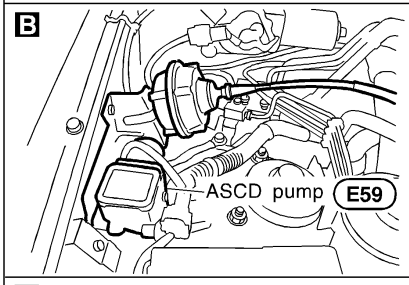


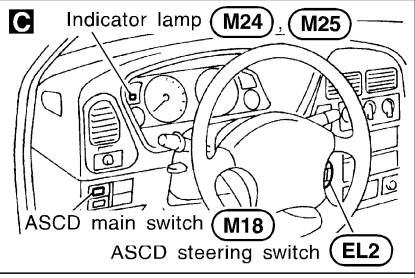
Fuse block (J/B)

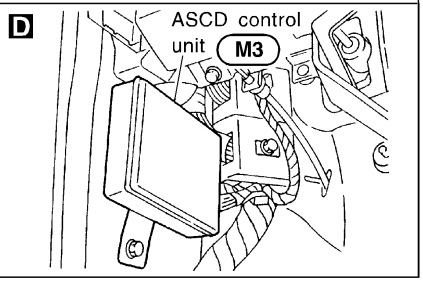
1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20
21	22	23		
24	25	26		
27	28	29		

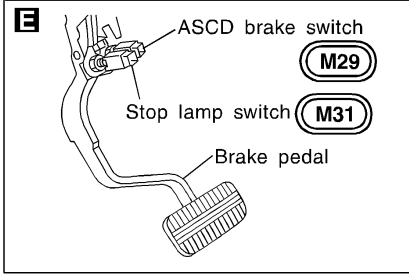


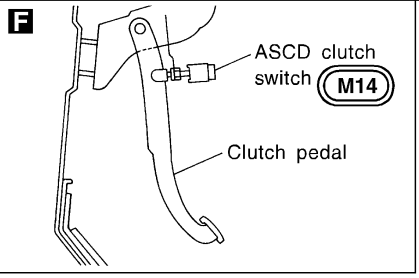












SEL634X

System Description

NAEL0216

Refer to Owner's Manual for ASCD operating instructions.

POWER SUPPLY AND GROUND

NAEL0216S01

Power is supplied at all times:

- through 10A fuse [No. 14, located in the fuse block (J/B)]
- to the stop lamp switch terminal 1, and
- through 7.5A fuse (No. 52, located in fuse and fusible link box)
- to the horn relay terminals 1 and 3.

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

- through 7.5A fuse [No. 11, located in the fuse block (J/B)]
- to ASCD brake switch terminal 1 and
- to ASCD control unit terminal 5,
- through 10A fuse [No. 18, located in the fuse block (J/B)]
- to park/neutral position relay terminal 1,
- through 10A fuse [No. 8, located in the fuse block (J/B)]
- to combination meter terminal 66, and

When park/neutral position switch 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 B55 and B75.

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 M4, M66 and M147

then ASCD control unit holds CRUISE condition and illuminates CRUISE indicator.
Ground is supplied:

- from ASCD control unit terminal 15
- to combination meter terminal 46.

OPERATION

NAEL0216S02

Set Operation

NAEL0216S0201

To activate the ASCD, all following conditions must exist.

- Ground is supplied to ASCD control unit terminal 9 (Main switch is in ON position.)
- Power is supplied to ASCD control unit terminal 8 [Brake pedal and clutch pedal are released (M/T models) and brake pedal is released and A/T selector lever is in other than P and N position (A/T models)].
- Vehicle speed is between 40 km/h (25 MPH) and 144 km/h (89 MPH). (Signal from combination meter)

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

- from ASCD steering switch terminal 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)

NAEL0216S0202

When the vehicle speed is approximately 3 km/h (2 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 1 km/h (1 MPH) below set speed, overdrive is reactivated.

ASCD Shifting Control (A/T models)

NAEL0216S0203

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

Coast Operation

NAEL0216S0204

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.

Accel Operation

NAEL0216S0205

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

- 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

NAEL0216S0206

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

- 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 pedal 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

NAEL0216S0207

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.

- 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 between 40 km/h (25 MPH) and 144 km/h (89 MPH).

ASCD PUMP OPERATION

NAEL0216S03

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

- 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.

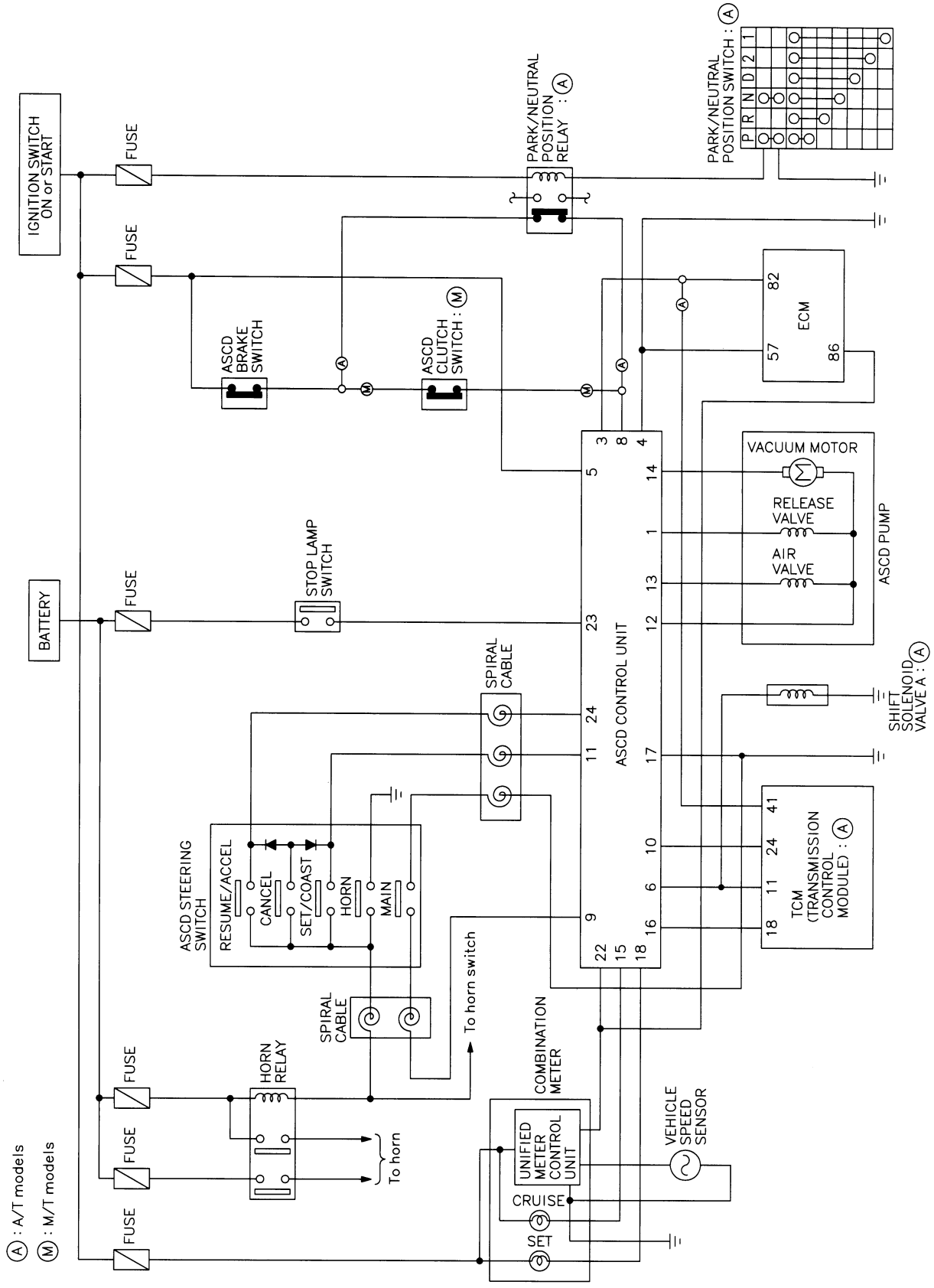
		Air valve (*1)	Release valve (*1)	Vacuum motor	Actuator inner pressure
ASCD not operating		Open	Open	Stopped	Atmosphere
ASCD operating	Releasing throttle cable	Open	Closed	Stopped	Vacuum
	Holding throttle position	Closed	Closed	Stopped	Vacuum (*2)
	Pulling throttle cable	Closed	Closed	Operated	Vacuum

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

*2: Set position held.

Schematic

NAEL0096



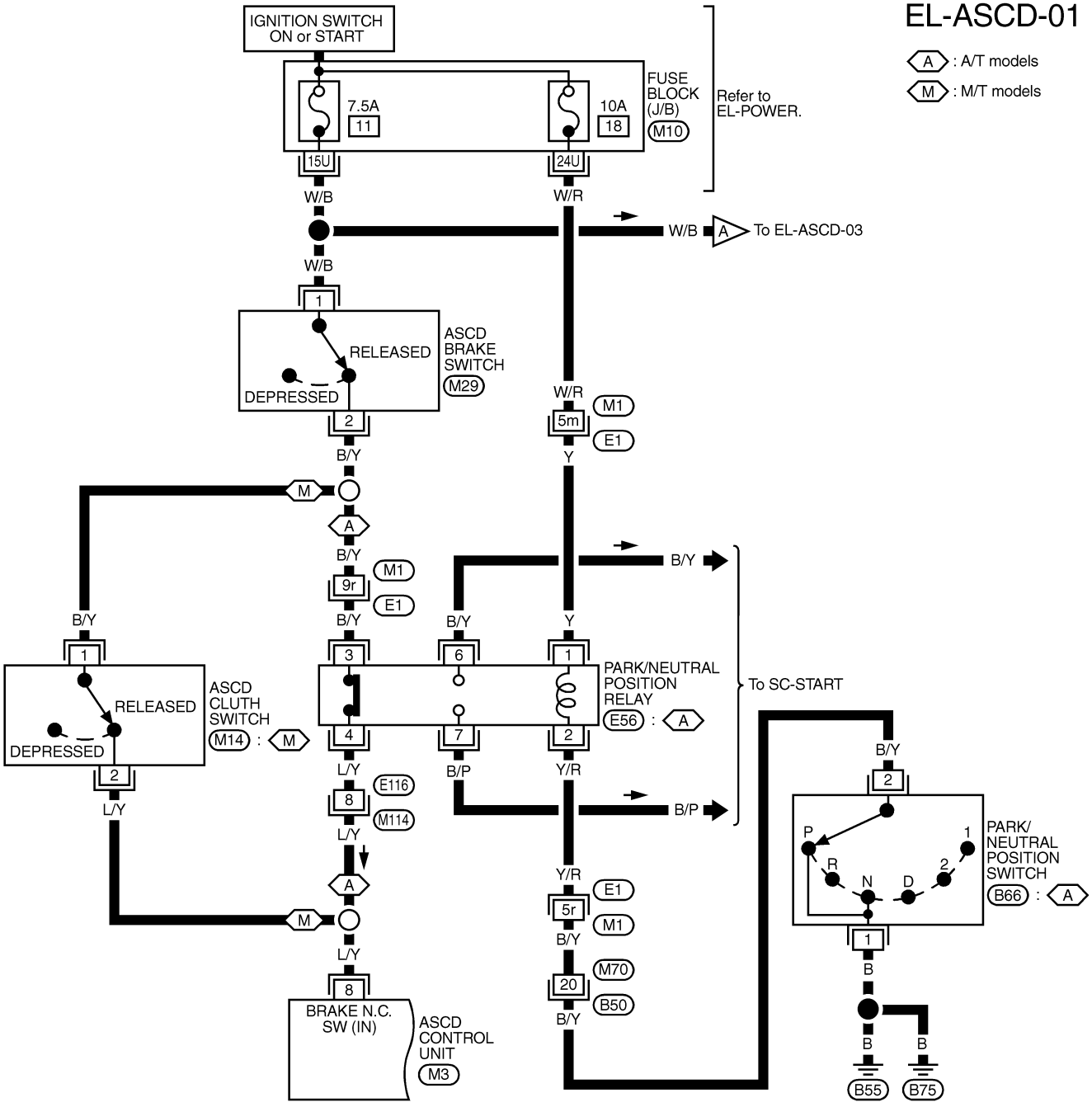
MEL047M

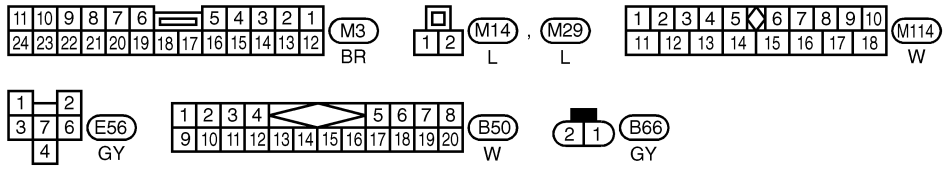
Wiring Diagram — ASCD —

NAEL0097

FIG. 1

NAEL0097S01





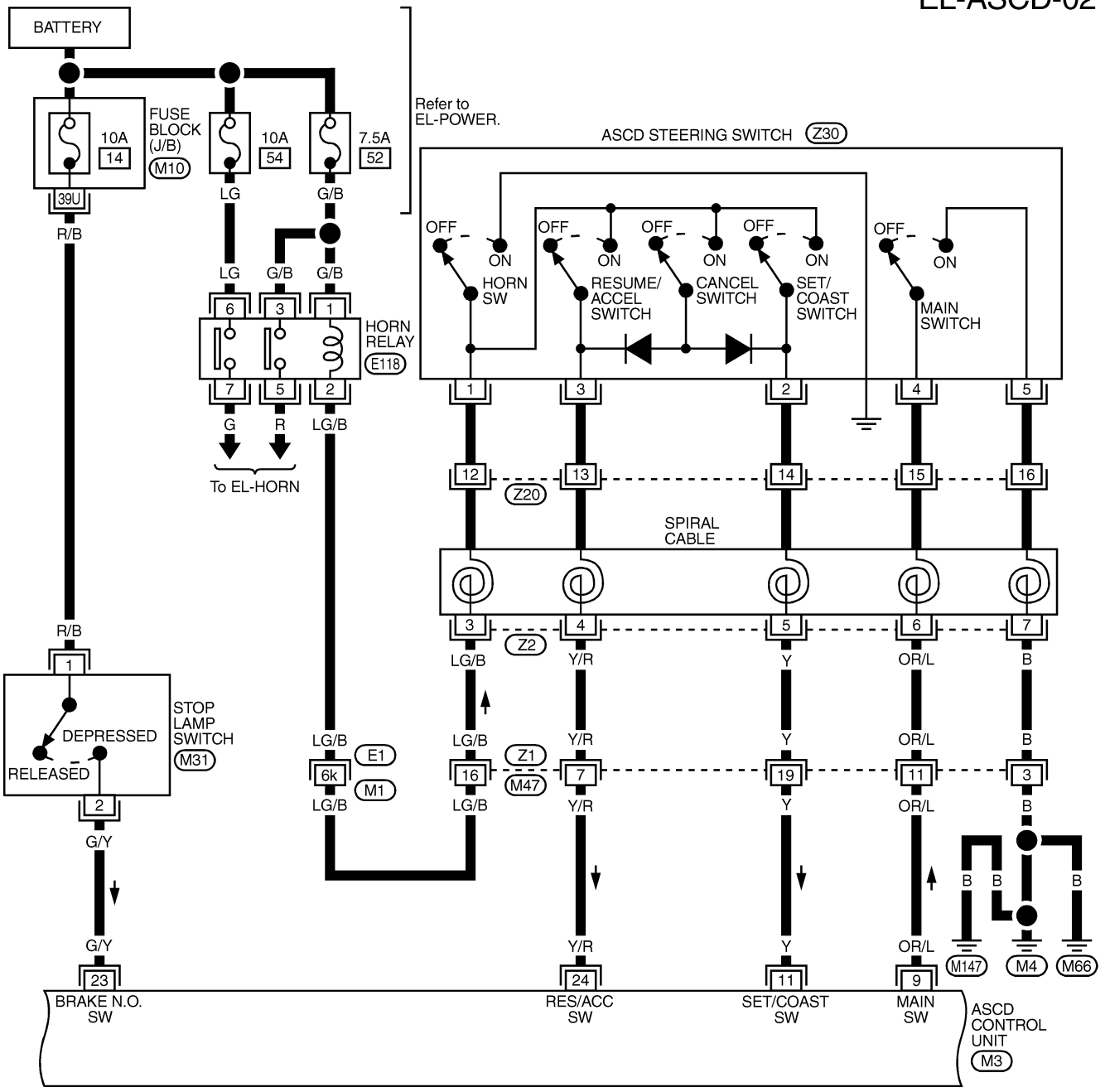
REFER TO THE FOLLOWING.
E1 -SUPER MULTIPLE JUNCTION (SMJ)
M10 -FUSE BLOCK- JUNCTION BOX (J/B)

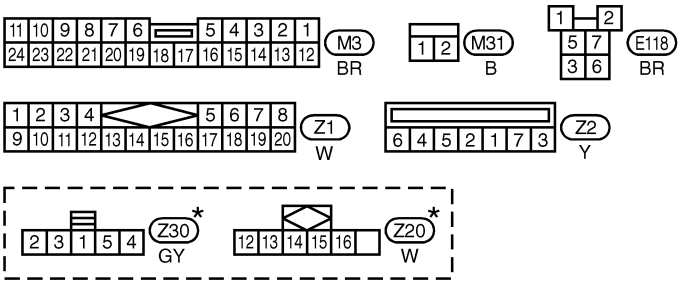
MEL048M

FIG. 2

NAEL0097S02

EL-ASCD-02





REFER TO THE FOLLOWING.
E1 -SUPER MULTIPLE JUNCTION (SMJ)
M10 -FUSE BLOCK- JUNCTION BOX (J/B)

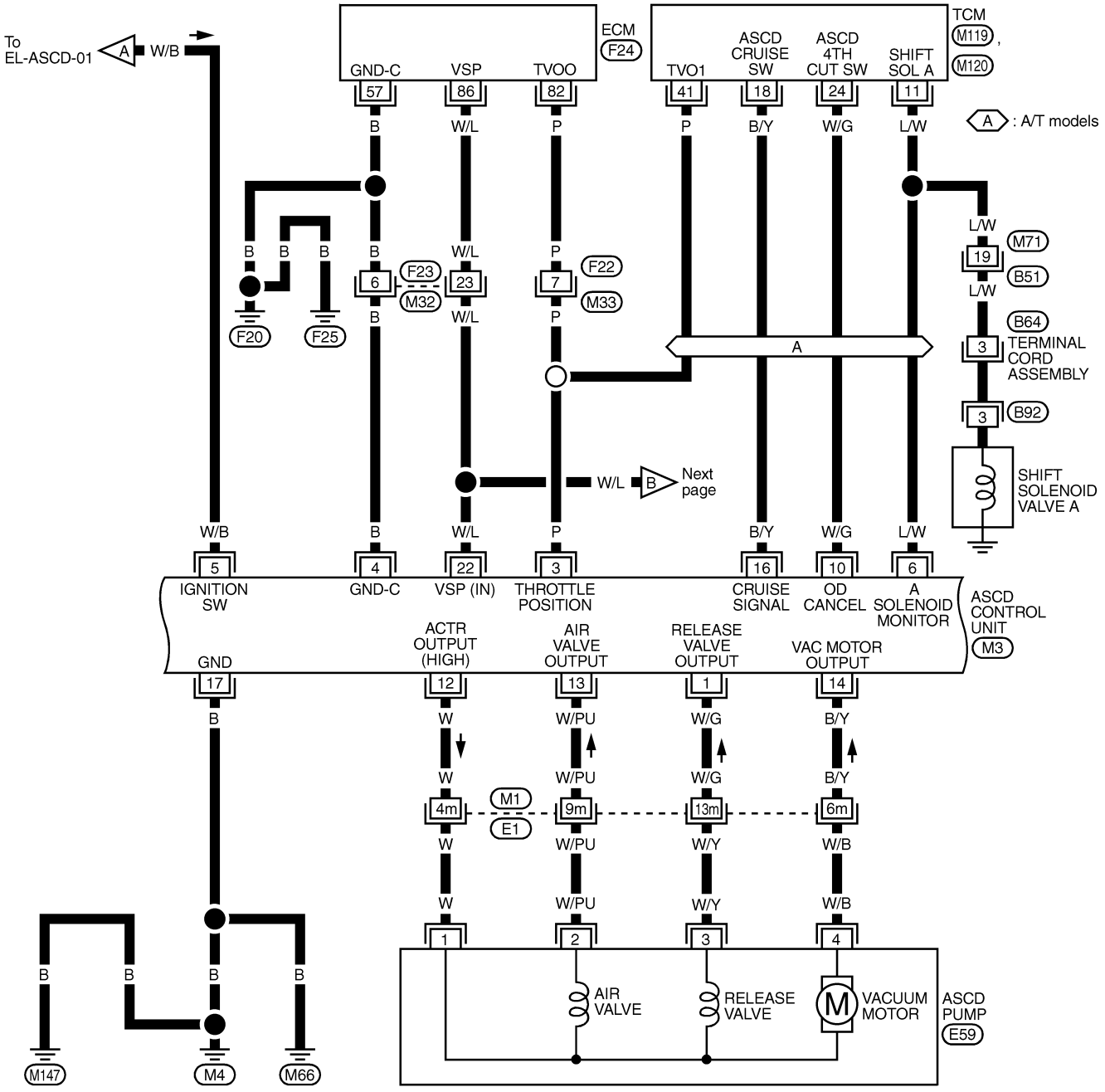
* : This connector is not shown in "HARNESS LAYOUT", EL section.

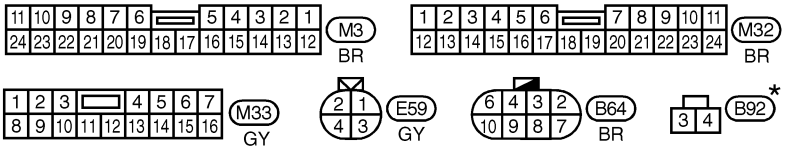
MEL839L

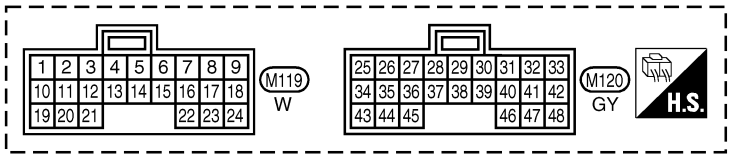
FIG. 3

NAEL0097S03

EL-ASCD-03







REFER TO THE FOLLOWING.
E1 -SUPER MULTIPLE JUNCTION (SMJ)
F24 -ELECTRICAL UNITS

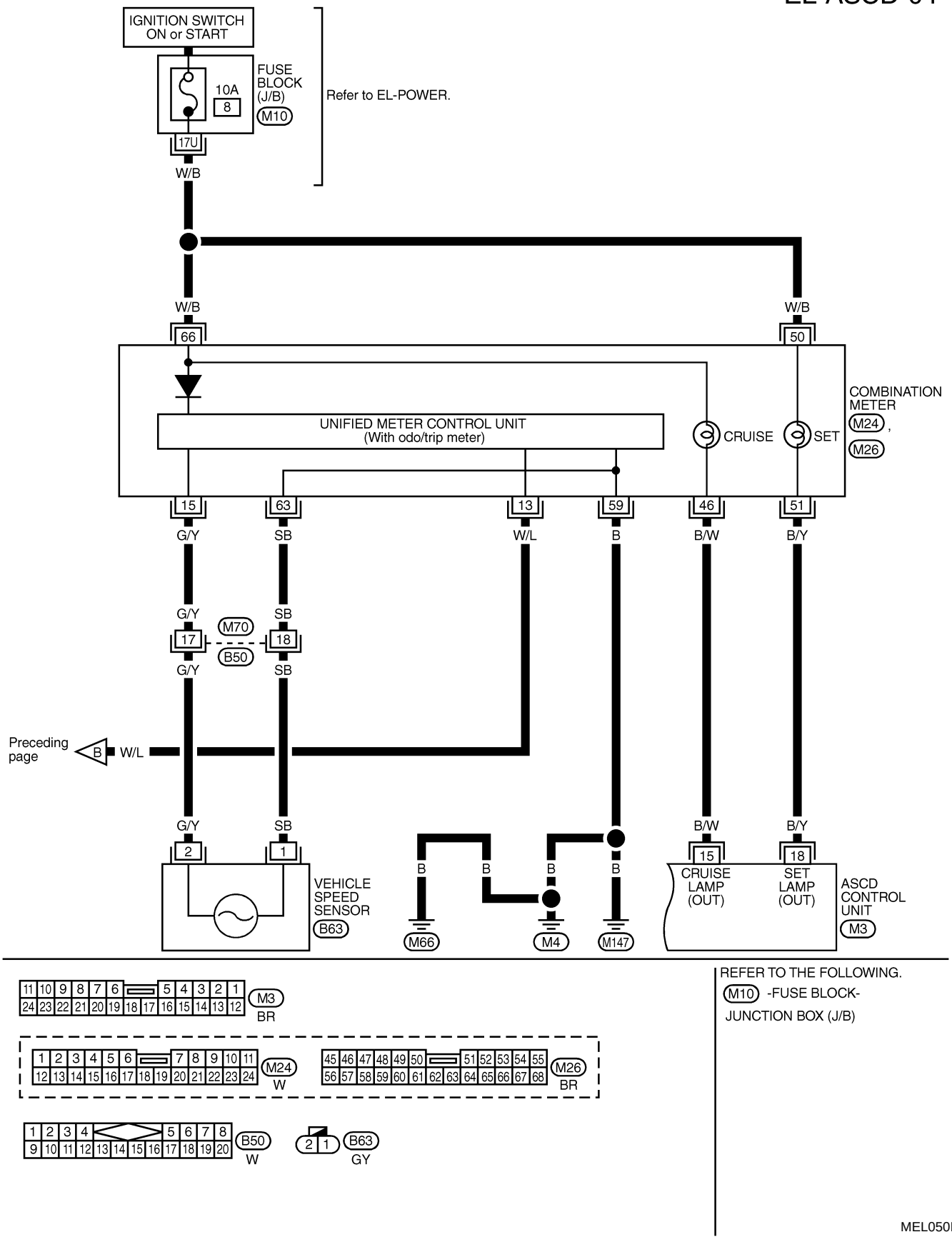
* : This connector is not shown in "HARNESS LAYOUT", EL section.

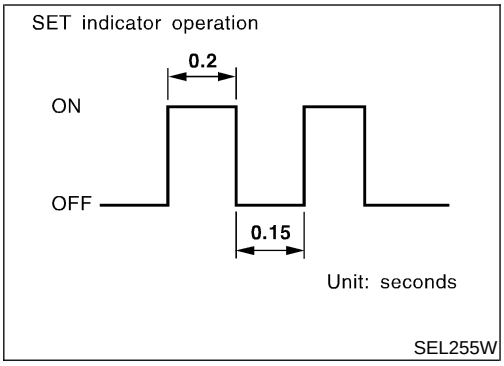
MEL049M

FIG. 4

NAEL0097S04

EL-ASCD-04





Fail-safe System

NAEL0217

DESCRIPTION

NAEL0217S01

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

NAEL0217S02

Detection conditions	ASCD operation during malfunction detection
• 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.	• ASCD is deactivated. • Vehicle speed memory is canceled.
• ASCD brake switch or stop lamp switch is faulty.	• ASCD is deactivated. • Vehicle speed memory is not canceled.

Trouble Diagnoses

NAEL0218

SYMPTOM CHART

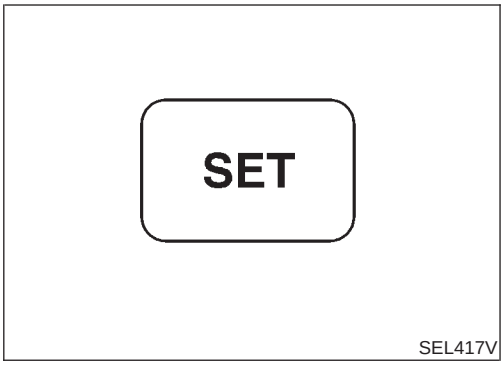
NAEL0218S01

PROCEDURE	Diagnostic procedure						
REFERENCE PAGE (EL-)	249	250	251	252	253	253	255
SYMPTOM	FAIL-SAFE SYSTEM CHECK	POWER SUPPLY AND GROUND CIRCUIT CHECK	ASCD BRAKE/STOP LAMP SWITCH CHECK	ASCD STEERING SWITCH CHECK	VEHICLE SPEED SENSOR CHECK	ASCD 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-249) 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.

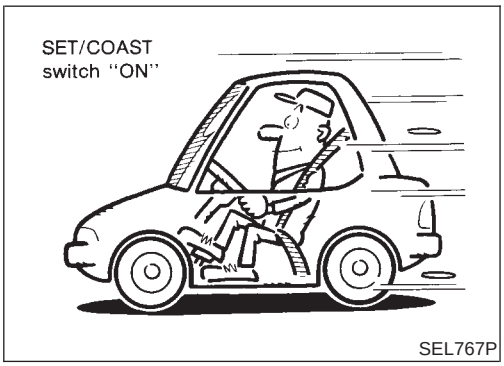


SEL417V

FAIL-SAFE SYSTEM CHECK

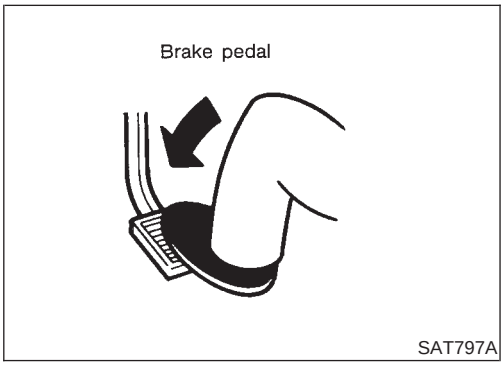
=NAEL0218S02

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-252.



SEL767P

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-253.
- ASCD pump circuit. Refer to EL-253.
- Replace control unit.



SAT797A

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-251.

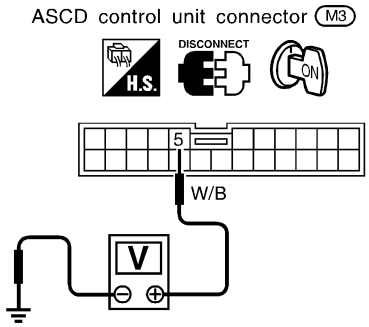
5. END. (System is OK.)

POWER SUPPLY AND GROUND CIRCUIT CHECK

=NAEL0218S03

1	CHECK POWER SUPPLY CIRCUIT FOR ASCD CONTROL UNIT

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.



Does battery voltage exist?

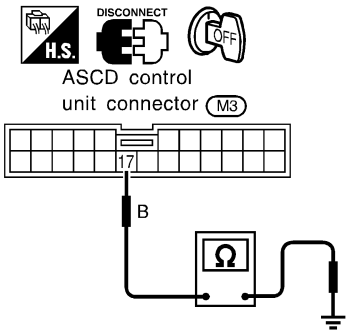
SEL256WB

Refer to wiring diagram in EL-245.

Yes	▶	GO TO 2.
No	▶	**Check the following.** ● 7.5A fuse (No. 11 located in the fuse block) ● Harness for open or short

2	CHECK GROUND CIRCUIT FOR ASCD CONTROL UNIT

Check continuity between ASCD control unit harness connector terminal 17 and body ground.



Does continuity exist?

SEL257WB

Refer to wiring diagram in EL-245.

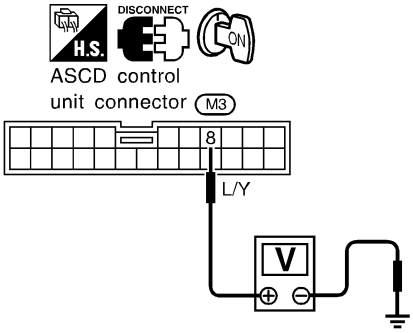
Yes	▶	Power supply and ground circuit is OK.
No	▶	Repair harness.

ASCD BRAKE/STOP LAMP SWITCH CHECK

=NAEL0218S04

1	CHECK ASCD BRAKE SWITCH CIRCUIT

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.



When brake pedal is depressed or A/T selector lever is in "N" or "P" range:
Apporox. 0V
When both brake pedal is released and A/T selector lever is not in "N" or "P" range:
Battery voltage should exist.

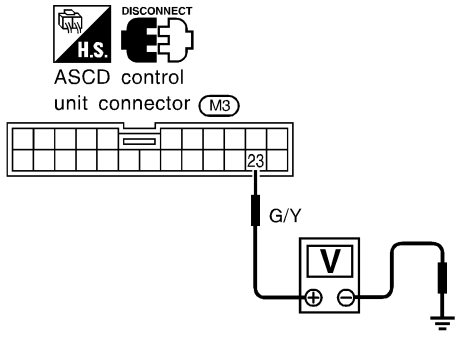
SEL258WD

OK or NG

OK	▶	GO TO 2.
NG	▶	**Check the following.** ● ASCD brake switch Refer to "Electrical Component Inspection" (EL-257). ASCD clutch switch (M/T models) Refer to "Electrical Component Inspection" (EL-257). ● Park/neutral position switch (A/T models) Refer to "Electrical Component Inspection" (EL-257). ● Park/neutral position relay (A/T models) ● Harness for open or short

2	CHECK STOP LAMP SWITCH CIRCUIT

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

SEL259WB

Refer to wiring diagram in EL-244.

OK or NG

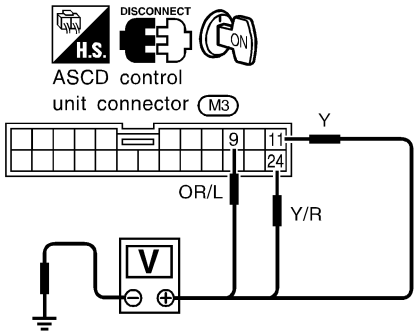
OK	▶	ASCD brake/stop lamp switch is OK.
NG	▶	**Check the following.** ● 10A fuse [No. 14, located in the fuse block (J/B)] ● Harness for open or short between ASCD control unit and stop lamp switch ● Harness for open or short between fuse and stop lamp switch ● Stop lamp switch Refer to "Electrical Component Inspection" (EL-257).

ASCD STEERING SWITCH CHECK

=NAEL0218S05

1 **CHECK ASCD STEERING SWITCH CIRCUIT FOR ASCD CONTROL UNIT**

Check voltage between ASCD control unit harness connector terminals and ground.



	Terminal No.		Switch condition	
	(+)	(–)	Pressed	Released
MAIN SW	9	Ground	0V	Approx. 9V
SET/COAST SW	11	Ground	12V	0V
RESUME/ACC SW	24	Ground	12V	0V
CANCEL SW	11	Ground	12V	0V
	24	Ground	12V	0V

SEL260WC

Refer to wiring diagram in EL-244.

OK or NG

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

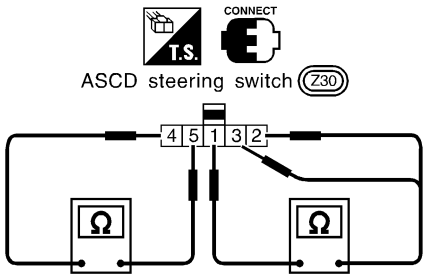
2 **CHECK POWER SUPPLY FOR ASCD STEERING SWITCH**

Does horn work?

Yes	▶	GO TO 3.
No	▶	**Check the following.** ● 7.5A fuse (No. 52, located in the relay box) ● Horn relay ● Horn circuit

3 **CHECK ASCD STEERING SWITCH**

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



Switch	Condition	Terminal				
		1	2	3	4	5
MAIN	ON				○——	——○
RESUME/ACCEL	ON	○——		——○		
SET/COAST	ON	○——	——○			
CANCEL	ON	○——	▶——○			
		○——	——▶	——○		

SEL764WA

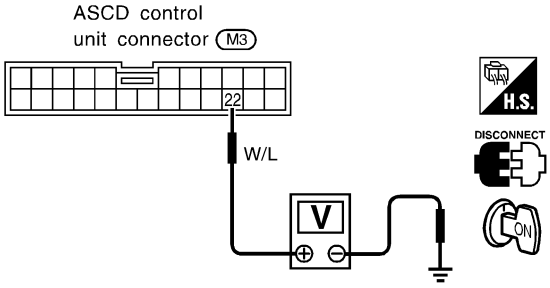
OK or NG

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

VEHICLE SPEED SENSOR CHECK

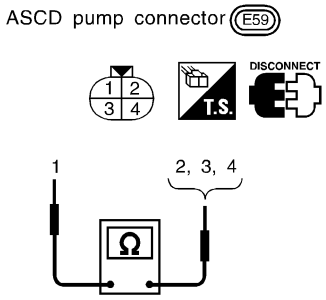
=NAEL0218S06

1	CHECK SPEEDOMETER OPERATION	
Does speedometer operate normally?		
Yes	▶	GO TO 2.
No	▶	Check speedometer and vehicle speed sensor circuit. Refer to wiring diagram in EL-246.

2	CHECK VEHICLE SPEED INPUT	
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?** SEL263WB		
Refer to wiring diagram in EL-245.		
Yes	▶	Vehicle speed sensor is OK.
No	▶	Check harness for open or short between ASCD control unit terminal 22 and combination meter terminal 13.

ASCD PUMP CIRCUIT CHECK

NAEL0218S07

1	CHECK ASCD PUMP	
1. Disconnect ASCD pump connector. 2. Measure resistance between ASCD pump terminals 1 and 2, 3, 4.		
 SEL262WB		

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

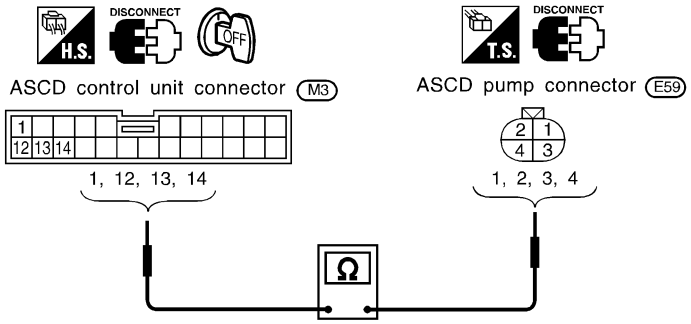
Refer to wiring diagram in EL-245.

OK or NG

OK	▶	GO TO 2.
NG	▶	Replace ASCD pump.

2	CHECK ASCD PUMP CIRCUIT

1. Disconnect ASCD control unit harness connector.
2. Check harness for open or short between ASCD control unit and ASCD pump.



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

Continuity should exist.

SEL269WB

OK or NG

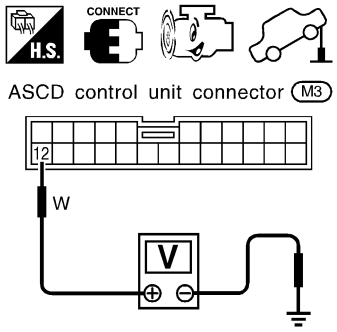
OK	▶	GO TO 3.
NG	▶	Repair harness.

3	CHECK ASCD PUMP POWER SUPPLY

1. Jack-up the drive wheels.
2. Maintain the conditions below.

- Vehicle speed is more than 40 km/h (25 MPH).
- Main switch (CRUISE lamp) is ON.
- Set/coast switch (SET lamp) is ON.

Check voltage between ASCD control unit harness connector terminal 12 and ground.



Battery voltage should exist.

SEL381WB

OK or NG

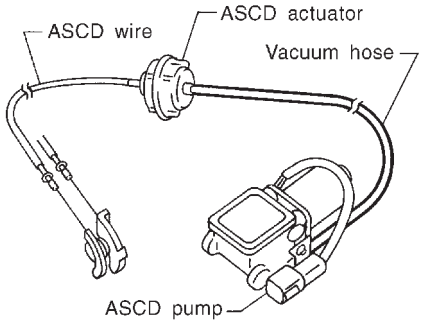
OK	▶	ASCD pump power supply is OK.
NG	▶	Replace ASCD control unit.

ASCD ACTUATOR/PUMP CHECK

=NAEL0218S08

1	CHECK VACUUM HOSE

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



MEL402G

OK or NG

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

2	CHECK ASCD WIRE

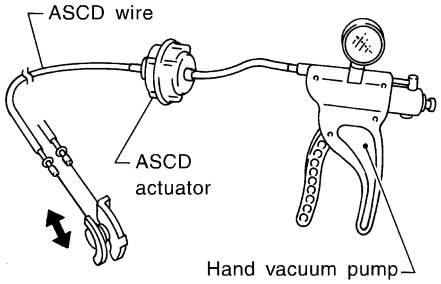
Check wire for improper installation, rust formation or breaks.

OK or NG

OK	▶	GO TO 3.
NG	▶	Repair or replace wire. Refer to "ASCD Wire Adjustment" (EL-258).

3	CHECK ASCD ACTUATOR

1. Disconnect vacuum hose from ASCD actuator.
2. Connect the hose of hand vacuum pump to ASCD actuator.



Apply –40 kPa (–0.41 kg/cm^2, –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.

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

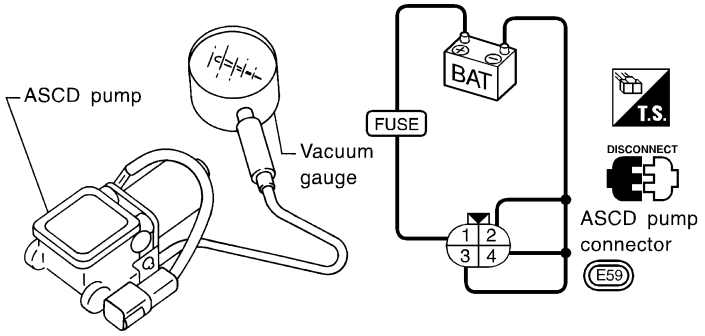
SEL264W

OK or NG

OK	▶	GO TO 4.
NG	▶	Replace ASCD actuator.

4	CHECK ASCD PUMP

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



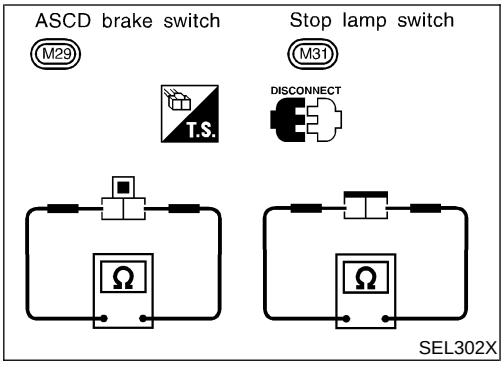
	12V direct current supply terminals		Operation
	(+)	(−)	
Air valve	1	2	Close
Release valve		3	Close
Vacuum motor		4	Operate

A vacuum pressure of at least –40 kPa (–0.41 kg/cm^2, –5.8 psi) should be generated.

SEL265WB

OK or NG

OK	▶	INSPECTION END
NG	▶	Replace ASCD pump.



Electrical Component Inspection

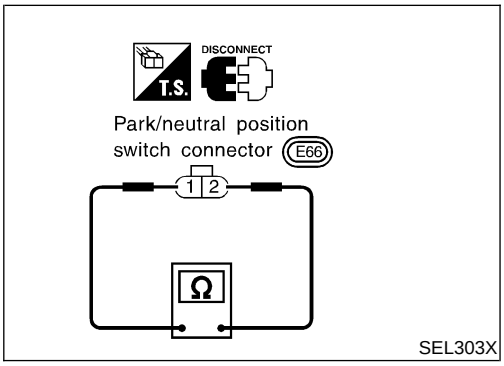
=NAEL0219

ASCD BRAKE SWITCH AND STOP LAMP SWITCH

NAEL0219S02

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

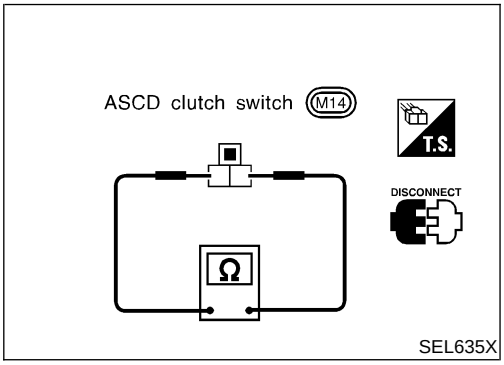
Check each switch after adjusting brake pedal — refer to BR-14, "BRAKE PEDAL AND BRACKET".



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

NAEL0219S03

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



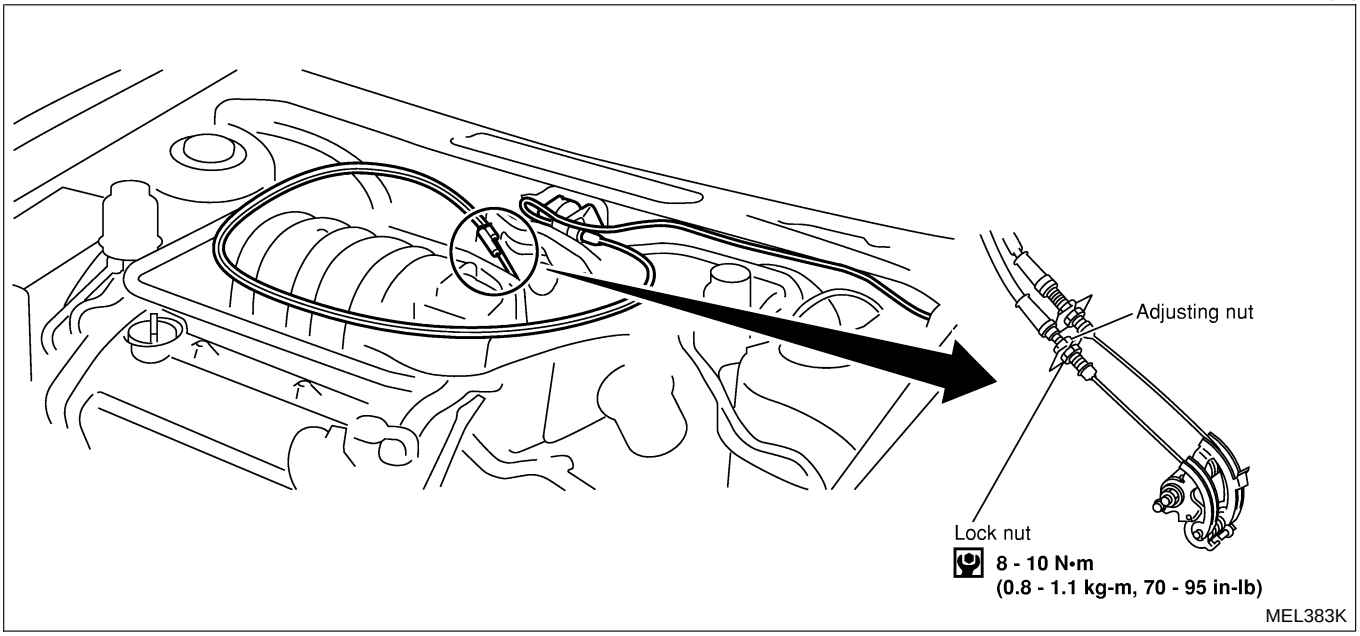
ASCD CLUTCH SWITCH (FOR M/T MODELS)

NAEL0219S05

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

ASCD Wire Adjustment

=NAEL0220



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

NAEL0102

Power is supplied at all times
- from 40A fusible link (letter **f**, located in the fuse and fusible link box)
- to circuit breaker terminal 1
- through circuit breaker terminal 2
- to power window relay terminal 3,
- to front power window main switch terminal 4, and
- to front power window switch RH terminal 6.

With ignition switch in ON or START position, power is supplied
- through 7.5A fuse [No. 11, located in the fuse block (J/B)]
- to power window relay terminal 2, and
- to smart entrance control unit terminal 33.

Ground is supplied to power window relay terminal 1
- through body grounds M4, M66 and M147.

The power window relay is energized and power is supplied
- through power window relay terminal 5
- to front power window main switch terminal 11,
- to front power window switch RH terminal 13,
- to rear power window switch LH and RH terminals 5.

MANUAL OPERATION

NAEL0102S01

Front Door LH

NAEL0102S0101

Ground is supplied
- to front power window main switch terminal 5
- through body grounds M77 and M111.

WINDOW UP
When the front LH switch in the front power window main switch is pressed in the up position, power is supplied
- to front power window regulator LH terminal 1
- through front power window main switch terminal 2.

Ground is supplied
- to front power window regulator LH terminal 3
- through front power window main switch terminal 3.

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

WINDOW DOWN
When the LH switch in the front power window main switch is pressed in the down position, power is supplied
- to front power window regulator LH terminal 3
- through front power window main switch terminal 3.

Ground is supplied
- to front power window regulator LH terminal 1
- through front power window main switch terminal 2.

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

Front Door RH

NAEL0102S0102

Ground is supplied
- to front power window main switch terminal 5
- through body grounds M77 and M111.

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

FRONT POWER WINDOW MAIN SWITCH OPERATION
When front RH switch in the front power window main switch is pressed UP or DOWN position, a signal is supplied

- through front power window main switch terminal 8
- to front power window switch RH terminal 11.

The subsequent operation is the same as the front power window switch RH operation.
FRONT POWER WINDOW SWITCH RH OPERATION
Power is supplied

- through front power window switch RH (5, 4)
- to front power window regulator RH (1, 3).

Ground is supplied

- to front power window regulator RH (3, 1)
- through front power window switch RH (4, 5)
- to front power window switch RH terminal 12
- through front power window main switch terminal 1.

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

Rear Door LH

NAEL0102S0104

Ground is supplied

- to front power window main switch terminal 5
- through body grounds the M77 and M111.

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

FRONT POWER WINDOW MAIN SWITCH OPERATION
Power is supplied

- through front power window main switch terminal (13, 12)
- to rear power window switch LH terminal (3, 4)

The subsequent operation is the same as the rear power window switch LH operation.
REAR POWER WINDOW SWITCH LH
Power is supplied

- through rear power window switch LH (1, 2)
- to rear power window regulator LH (1, 2)

Ground is supplied

- to rear power window regulator LH (2, 1)
- through rear power window switch LH (2, 1)
- to rear power window switch LH terminal (4, 3)
- through front power window main switch terminal (12, 13)

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

Rear Door RH

NAEL0102S0105

Rear door RH windows will rise and lower in the same manner as the rear door LH window.

AUTO OPERATION

NAEL0102S02

The power window AUTO feature enables the driver or front passenger to open or close the driver's and front passenger's window without holding the window switch in the up or down position.
The AUTO feature only operates on the driver's and front passenger's window upward and downward movement.

POWER WINDOW LOCK

NAEL0102S03

The power window lock is designed to lock operation of all windows except for driver's door window.
When the lock switch is pressed to lock position, the ground of the front and rear power window switches, in the power window main switch, is disconnected. This prevents the power window motors from operating.

RETAINED POWER OPERATION

NAEL0102S04

When the ignition switch is turned to OFF position from ON or START position, power is supplied for 45 seconds

- to power window relay terminal 2
- from smart entrance control unit terminal 5.

Ground is always supplied

- to power window relay terminal 1
- through body grounds.

When power and ground are supplied, the power window relay continues to be energized, and the power window can be operated.
The retained power operation is canceled when the driver or passenger side door is opened.

INTERRUPTION DETECTION FUNCTION

NAEL0102S05

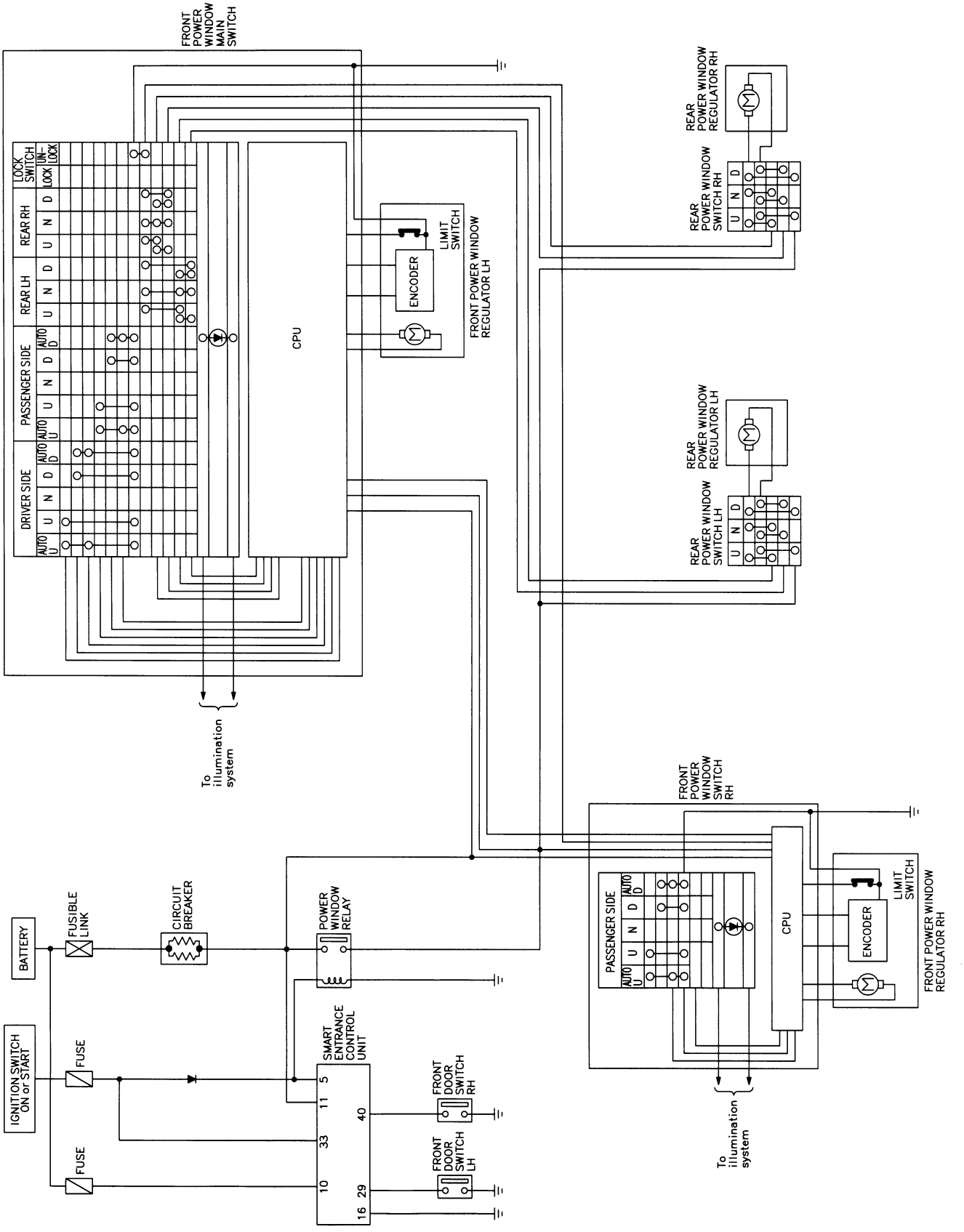
Front power window main switch and front power window switch RH monitor the power window regulator motor operation and the power window position (full closed or other) for driver's and passenger's power window by the signals from encoder and limit switch in front power window regulator LH or RH.
When front power window main switch or front power window switch RH detects interruption during the following close operation in the driver's or front passenger'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 or front power window switch RH controls driver's or front passenger's power window regulator motor for open and the power window will be lowered about 150 mm (5.91 in).

Schematic

NAEL0103

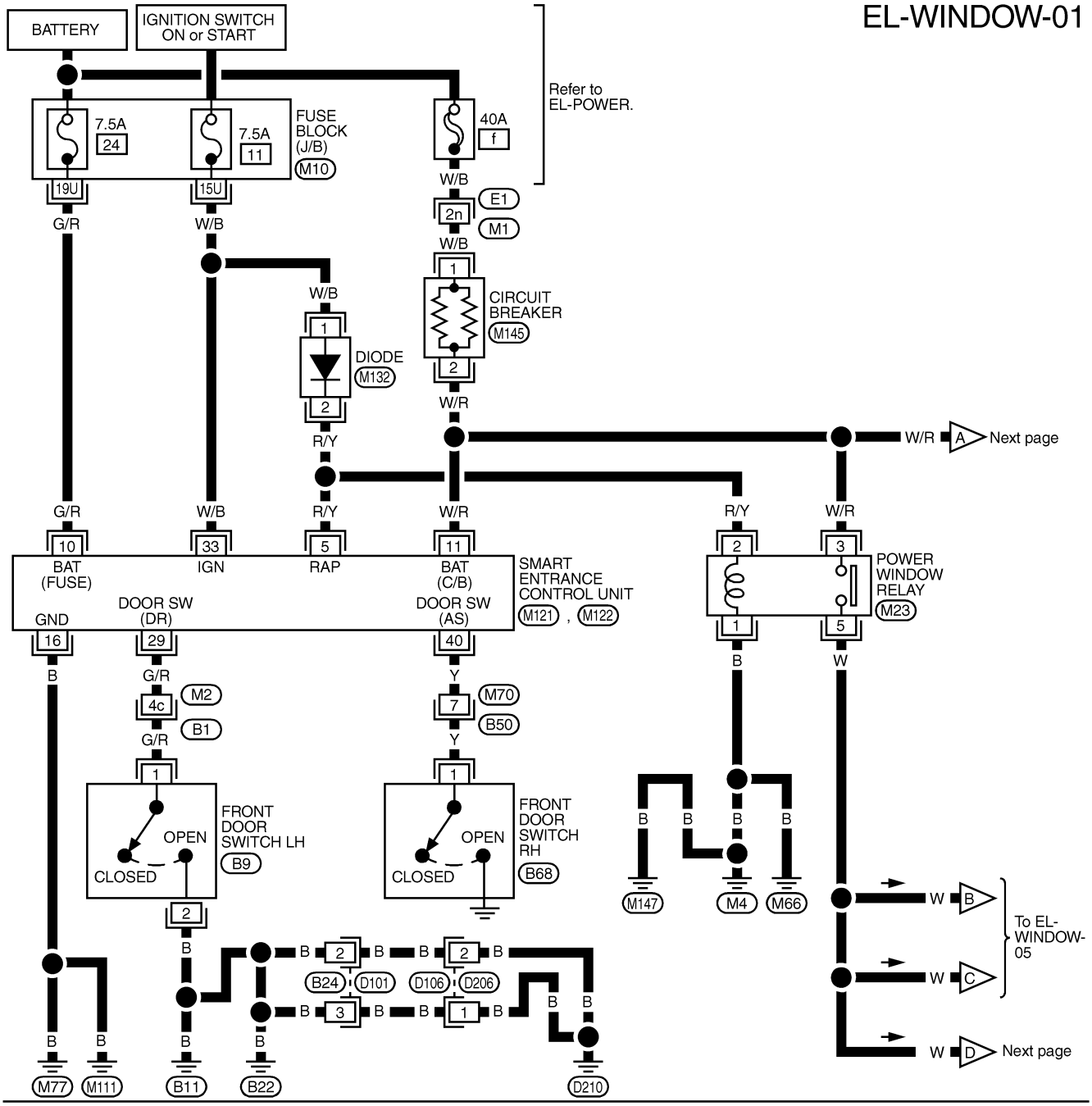


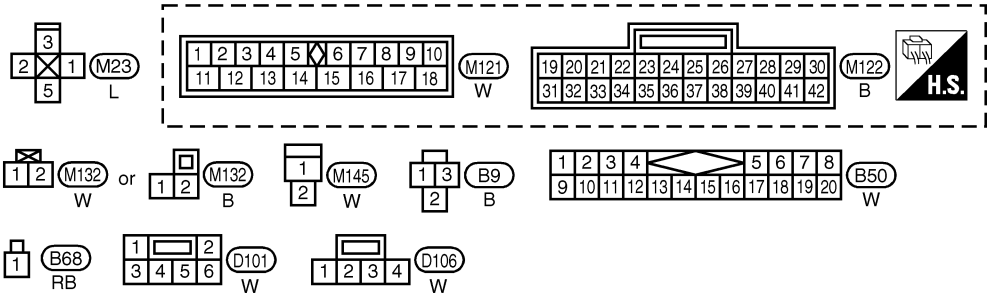
MEL842L

Wiring Diagram — WINDOW —

NAEL0104

EL-WINDOW-01

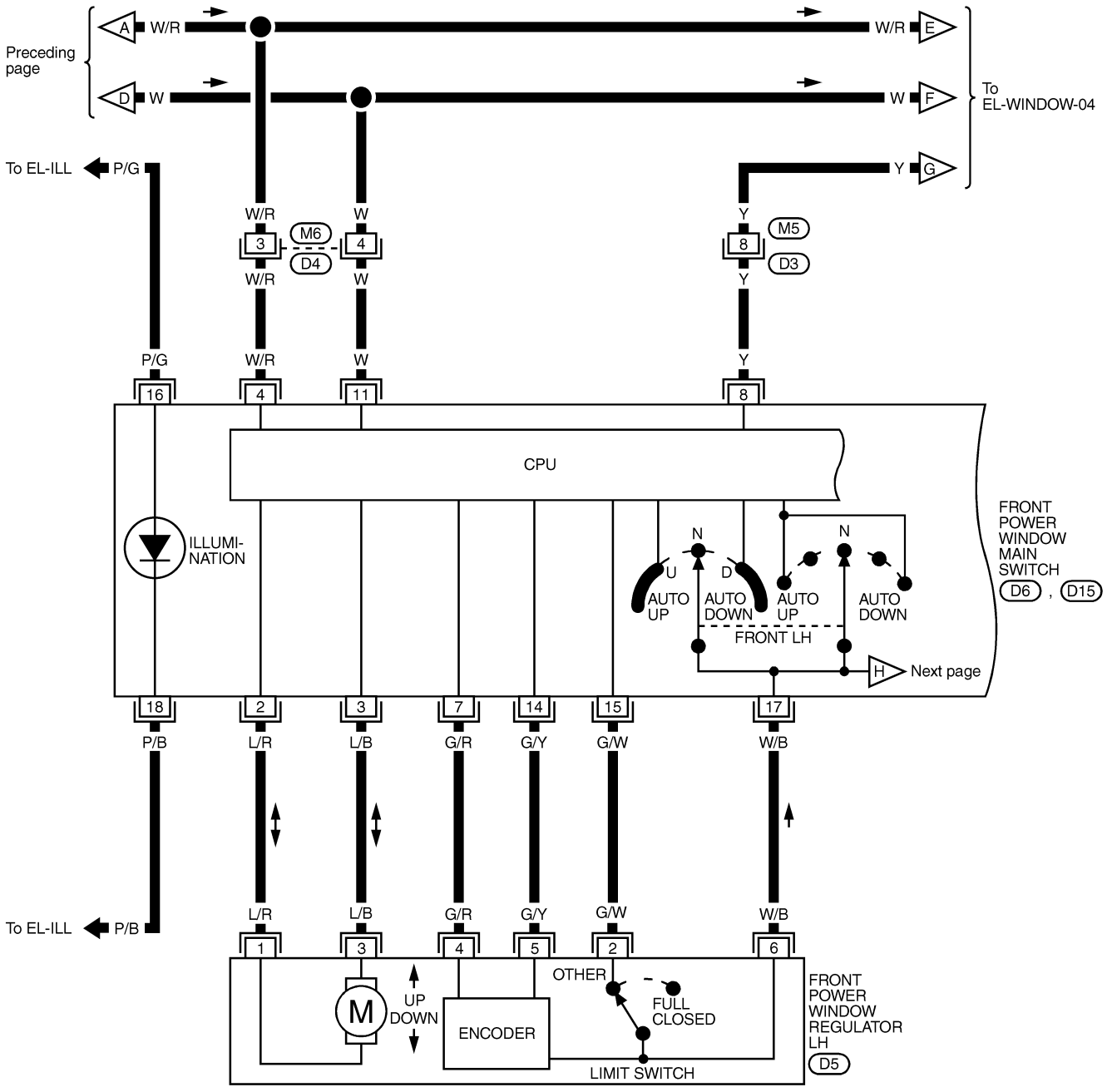


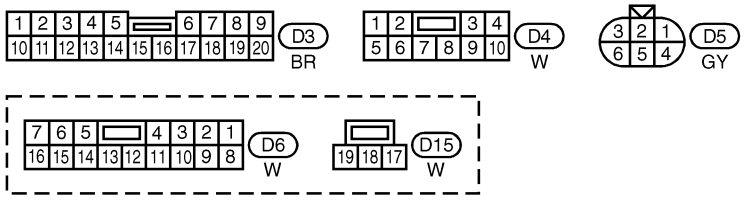


REFER TO THE FOLLOWING.
E1 , B1 -SUPER MULTIPLE JUNCTION (SMJ)
M10 -FUSE BLOCK - JUNCTION BOX (J/B)

MEL021O

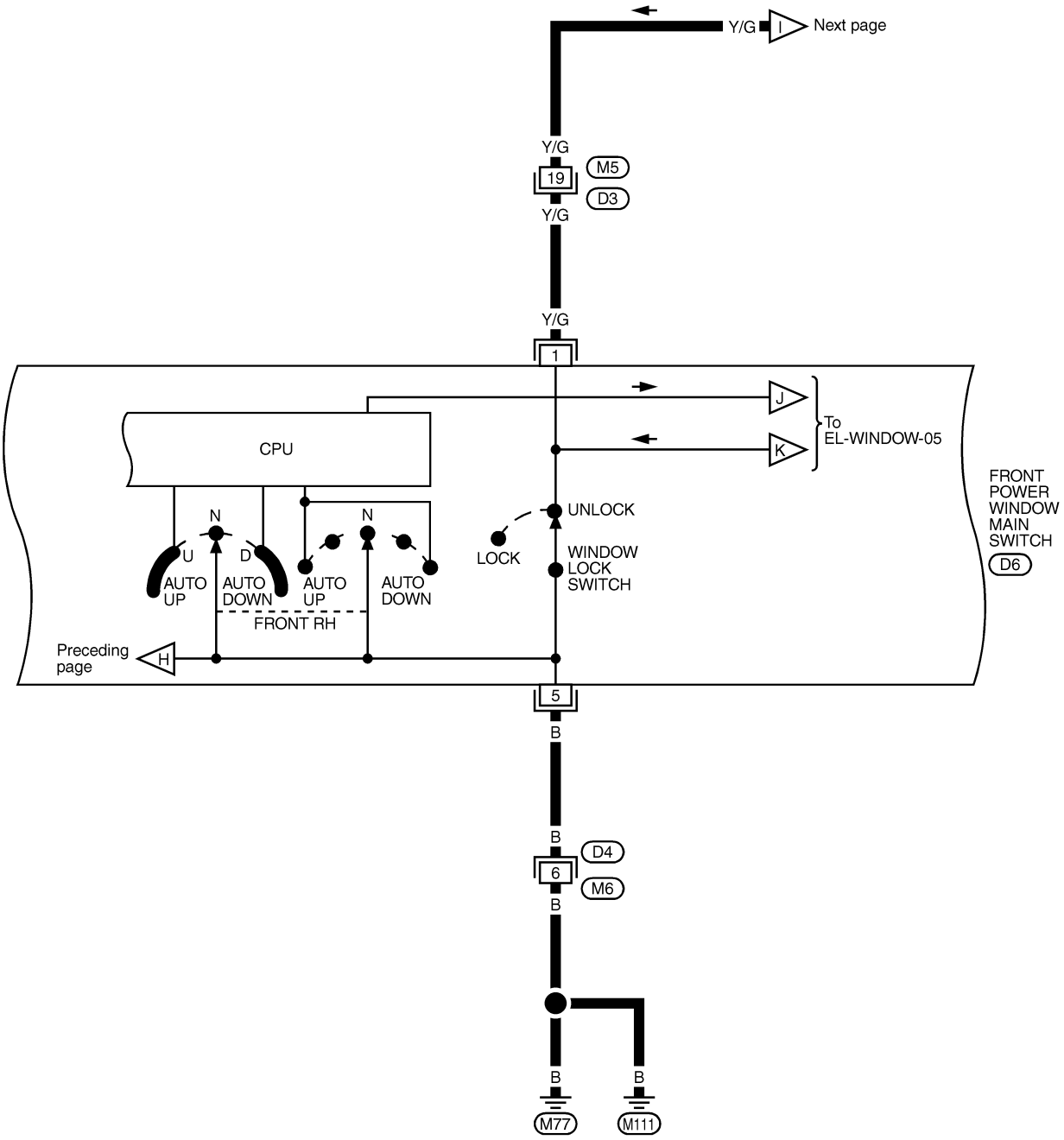
EL-WINDOW-02

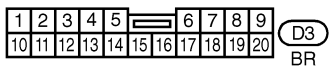


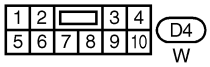


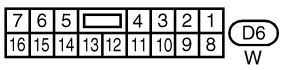
MEL844L

EL-WINDOW-03



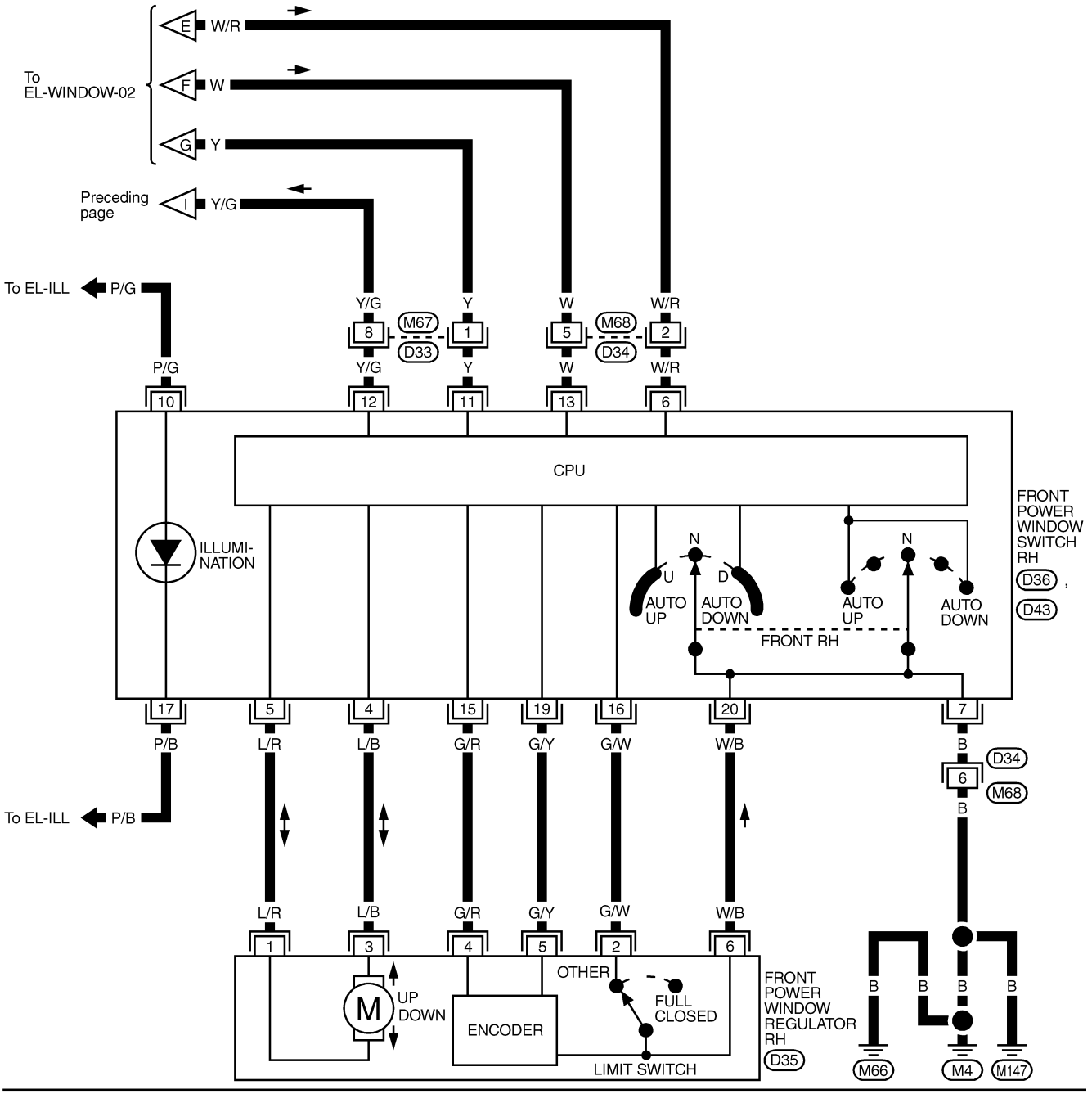


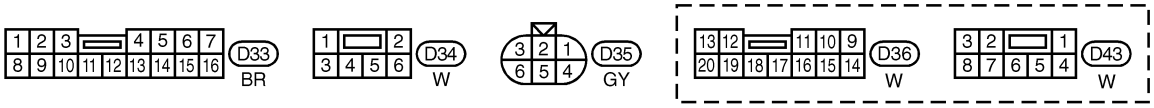




MEL845L

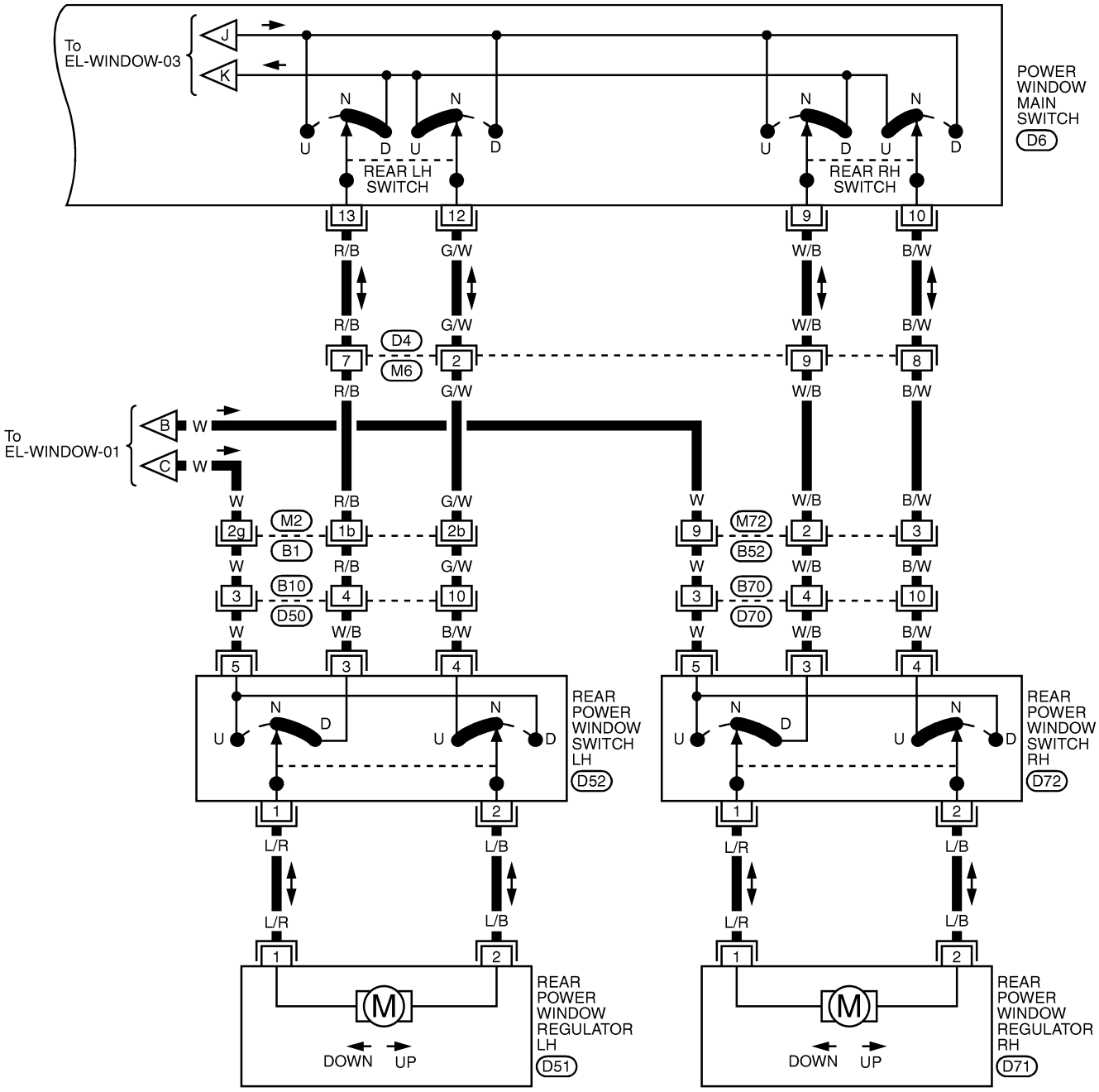
EL-WINDOW-04

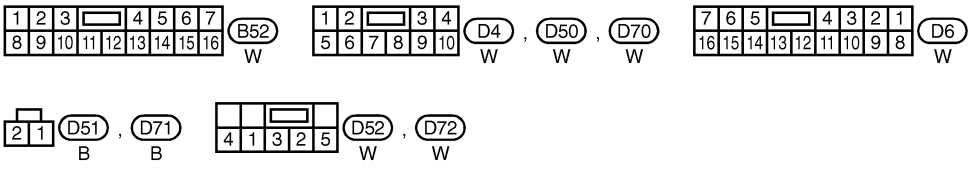




MEL846L

EL-WINDOW-05





REFER TO THE FOLLOWING.

(B1) -SUPER MULTIPLE JUNCTION (SMJ)

MEL847L

Trouble Diagnoses

NAEL0221

Symptom	Possible cause	Repair order
None of the power windows can be operated using any switch.	1. 7.5A fuse, 40A fusible link 2. M145 circuit breaker 3. Power window relay 4. M145 circuit breaker circuit 5. Power window relay circuit 6. Ground circuit 7. Power window main switch	1. Check 7.5A fuse [No. 11, located in fuse block (J/B)], 40A fusible link (letter **f**, located in fuse and fusible link box). 2. Check M145 circuit breaker. 3. Check power window relay. 4. Check the following. a. Harness between M145 circuit breaker and 40A fusible link b. Harness between M145 circuit breaker and front power window main switch 5. Check the following. a. Harness between 7.5A fuse and power window relay b. Harness between M145 circuit breaker and power window relay 6. Check the following. a. Ground circuit of power window main switch terminal 5 b. Power window relay ground circuit 7. Check power window main switch.
Driver side power window cannot be operated but other windows can be operated.	1. Driver side power window regulator circuit 2. Driver side power window regulator 3. Power window main switch	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.
Passenger side power window cannot be operated but other window can be operated.	1. Power supply for front power window switch RH 2. Front power window switch RH ground circuit 3. Front power window switch RH circuit 4. Front power window regulator RH circuit 5. Front power window regulator RH 6. Front power window main switch 7. Front power window switch RH	1. Check power supply for front power window switch RH terminals 6 and 13. 2. Check front power window switch RH ground circuit. 3. Check harness between front power window switch RH and power window main switch. 4. Check harness between front power window switch RH and front power window regulator RH for open or short circuit. 5. Check front power window regulator RH. 6. Check front power window main switch. 7. Check front power window switch RH.
One or more rear power windows except front window cannot be operated.	1. Rear power window switches 2. Rear power window regulators 3. Power window main switch 4. Rear power window circuit	1. Check rear power window switches. 2. Check rear power window regulator. 3. Check power window main switch. 4. Check the following. a. Harness between the rear power window switches terminal 5 and power window relay b. Harnesses between power window main switch and rear power window switches for open/short circuit c. Harnesses between rear power window switches and rear 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 switches.	1. Power window main switch	1. Check power window main switch.
Driver side power window automatic operation does not function properly.	1. Power window main switch 2. Encoder and limit switch	1. Check power window main switch. 2. Check encoder and limit switch. (EL-270)

Symptom	Possible cause	Repair order
Front passenger side power window automatic operation does not function properly.	1. Front power window switch RH 2. Encoder and limit switch	1. Check front power window switch RH. 2. Check encoder and limit switch. (EL-270)
Retained power operation does not operate properly.	1. RAP signal circuit 2. Driver or passenger side door switch circuit 3. Smart entrance control unit	1. Check harness between power window relay terminal 2 and smart entrance control unit terminal 5 for open or short circuit. 2. Check the following. a. Harness between smart entrance control unit and driver or passenger side door switch for short circuit b. Driver or passenger side door switch ground circuit c. Driver or passenger side door switch 3. Check smart entrance control unit. (EL-348)

ENCODER AND LIMIT SWITCH CHECK

=NAEL0221S01

1	CHECK DOOR WINDOW SLIDE MECHANISM

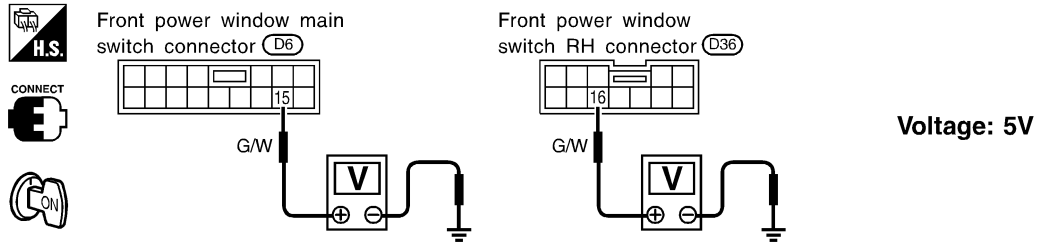
Check the following.
- Obstacles in window, glass molding, etc.
- Worn or deformed glass molding
- Door sash tilted too far inward or outward
- Door window regulator

OK or NG

OK	▶	GO TO 2.
NG	▶	Remove obstacles or repair door window slide mechanism.

2	CHECK POWER SUPPLY TO LIMIT SWITCH

1. Disconnect front power window regulator LH or RH harness connector.
2. Check voltage between front power window main switch terminal 15 or front power window switch RH terminal 16 and ground.



Voltage: 5V

NOTE: Check voltage when front power window regulator LH or RH harness connector is disconnected.

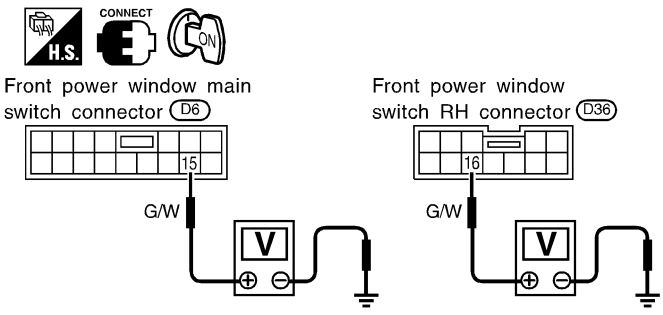
SEL725WA

OK or NG

OK	▶	GO TO 3.
NG	▶	Replace power window main switch or front power window switch RH.

3	CHECK LIMIT SWITCH OPERATION

1. Connect front power window regulator LH or RH harness connector.
2. Check voltage between front power window main switch terminal 15 or front power window switch RH terminal 16 and ground during power window closing operation.



Terminal No.	Condition	Voltage (DCV)
Front power window main switch: 15 Front power window switch RH: 16	Approx.15 mm (0.59 in) below the full closed position to full closed position	Approx. 5
	Other positions	Approx. 0

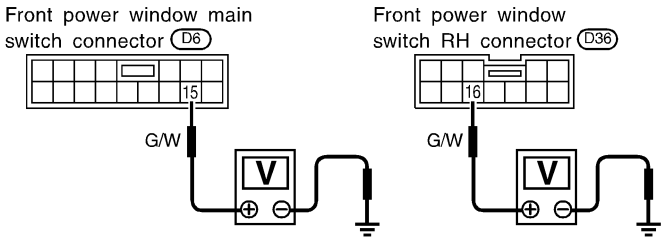
SEL726WA

OK or NG

OK	▶	GO TO 5.
NG	▶	GO TO 4.

4	RESET LIMIT SWITCH

Reset limit switch. Refer to BT-20, "Front Door Glass Limit Switch Reset". Then check voltage between front power window main switch terminal 15 or front power window switch RH terminal 16 and ground during power window closing operation at least ten times.



Terminal No.	Condition	Voltage (DCV)
Front power window main switch: 15 Front power window switch RH: 16	Approx.15 mm (0.59 in) below the full closed position to full closed position	Approx. 5
	Other positions	Approx. 0

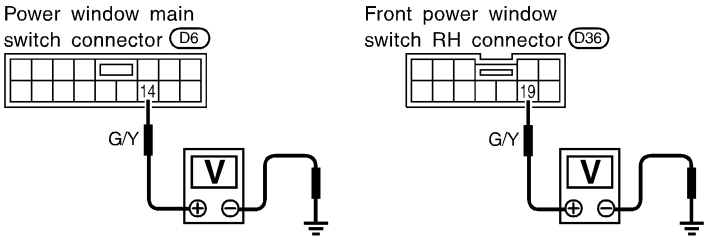
SEL726WA

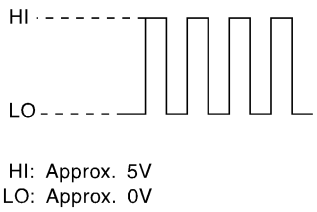
OK or NG

OK	▶	GO TO 5.
NG	▶	Replace power window regulator motor.

5	CHECK ENCODER

Measure voltage between front power window main switch terminal 14 or front power window switch RH terminal 19 and ground with oscilloscope when power window is in automatic closing operation.





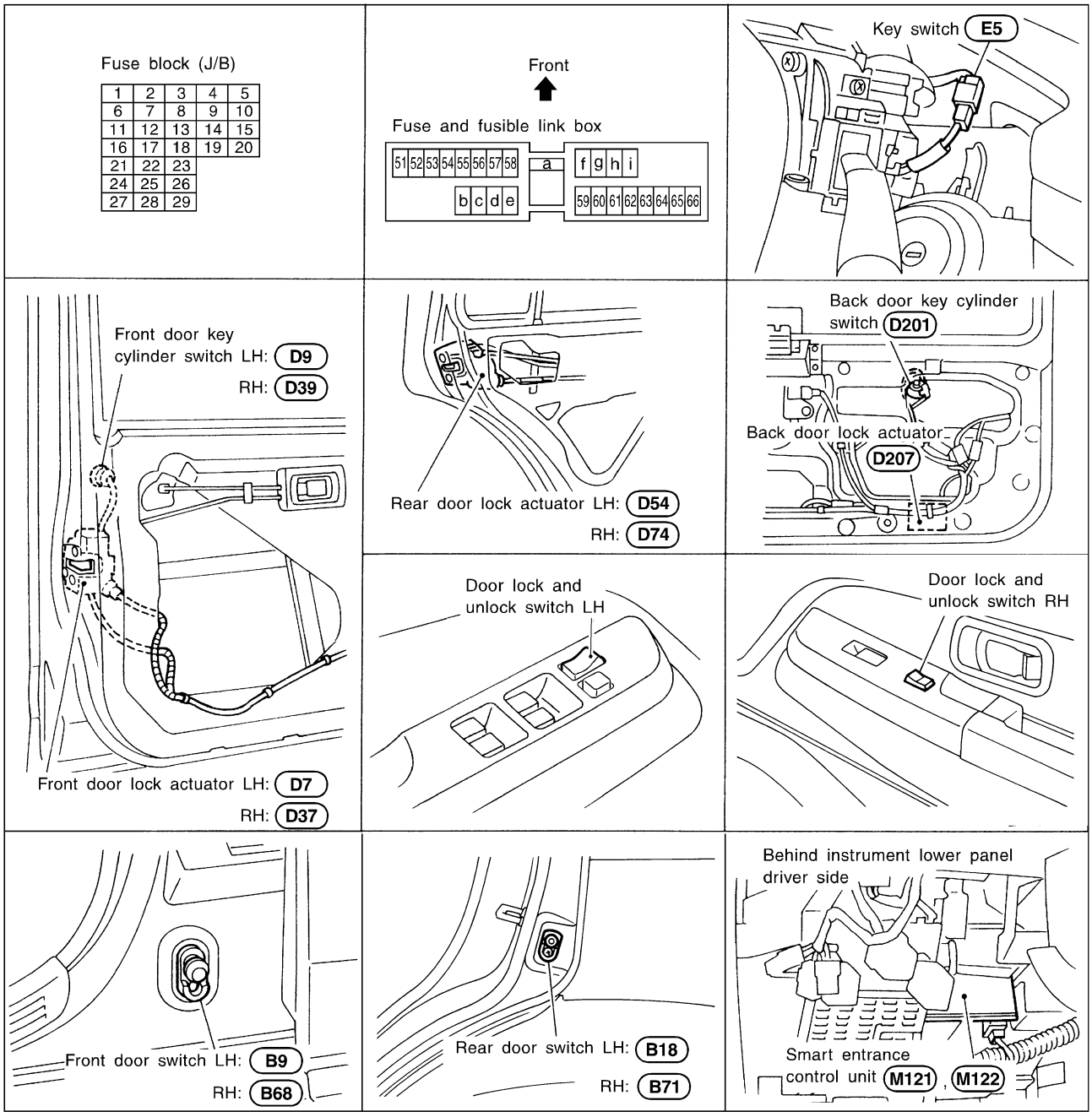
SEL727WA

OK or NG

OK	▶	Replace power window main switch.
NG	▶	Replace power window regulator motor.

Component Parts and Harness Connector Location

NAEL0106



SEL065W

System Description

NAEL0107

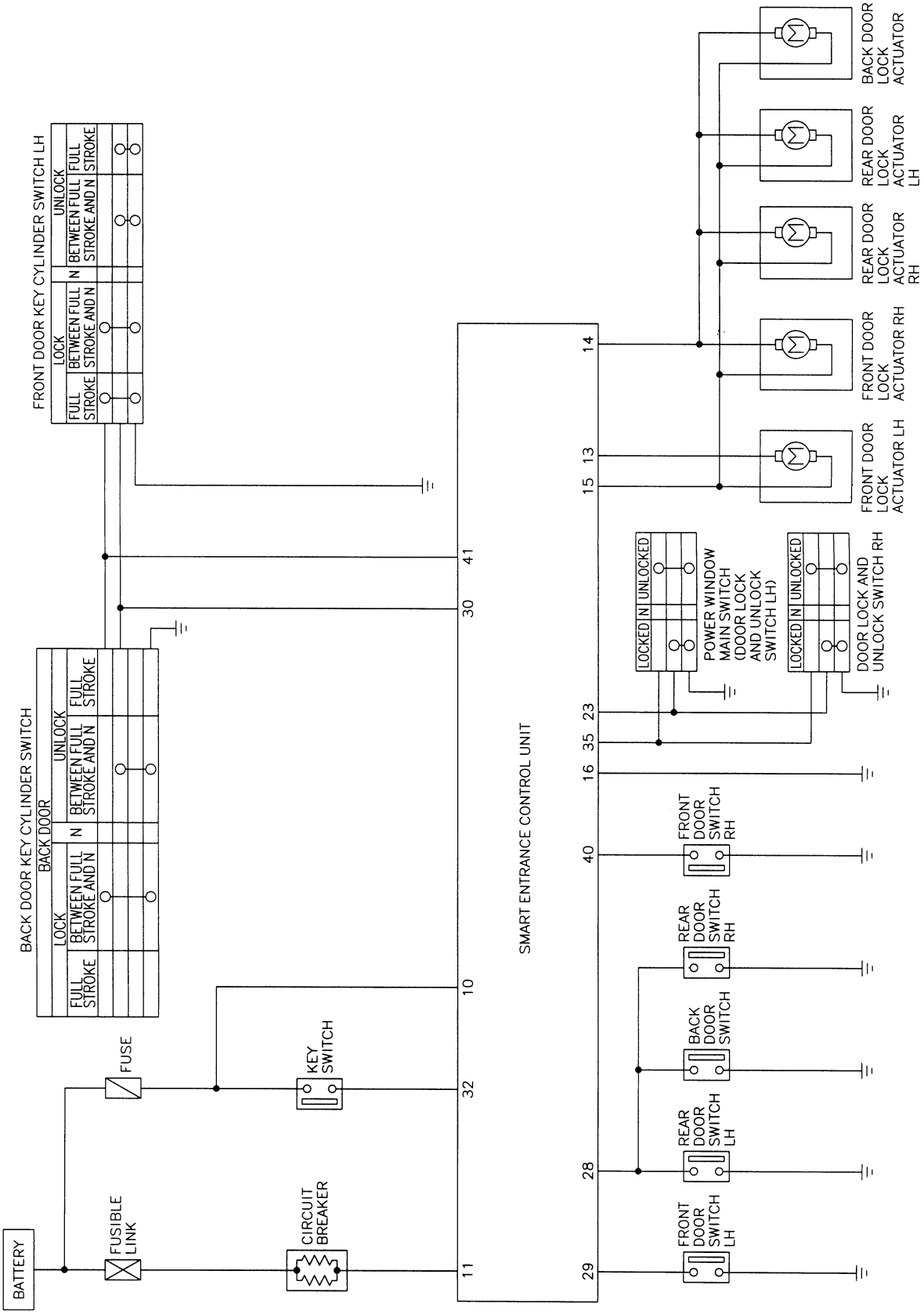
OPERATION

NAEL0107S04

- The lock/unlock switch (LH and RH) on door trim can lock and unlock all doors.
- With the door key inserted in the key cylinder on front LH, RH or back door, turning it to “LOCK”, will lock all doors; turning it to “UNLOCK” once unlocks the corresponding door; turning it to “UNLOCK” again within 5 seconds after the first unlock operation unlocks all of the other doors. (Signals from door key cylinder switch)
- If the ignition key is in the ignition key cylinder and one or more of doors are open, setting the lock/unlock switch to “LOCK” locks the doors once but then immediately unlock them. (Combination signals from key switch and door switches) - (KEY REMINDER DOOR SYSTEM)

Schematic

NAEL0108



MEL211M

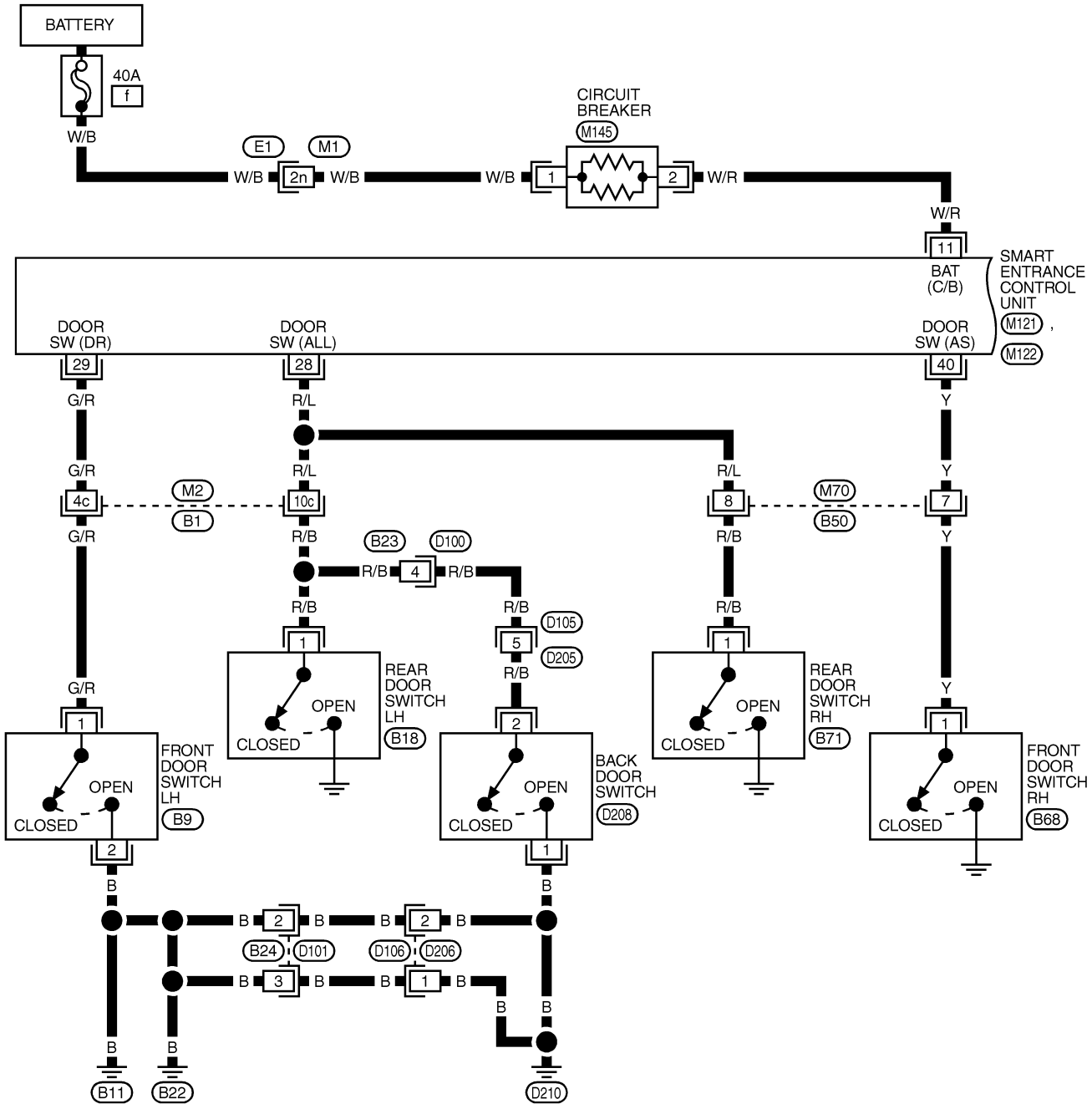
Wiring Diagram — D/LOCK —

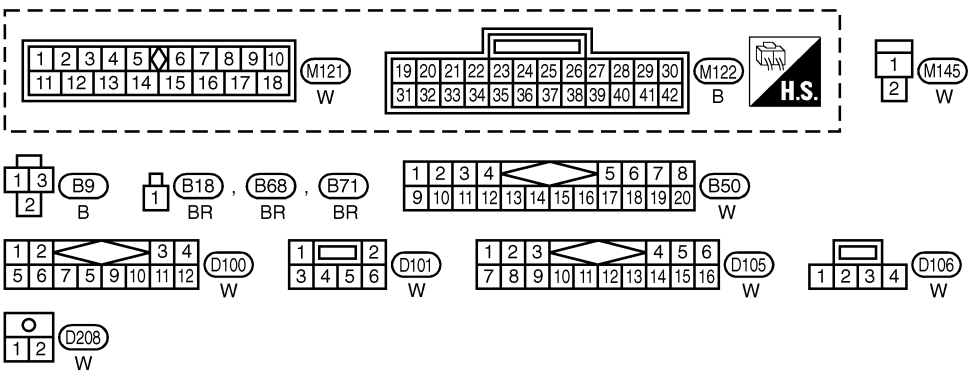
NAEL0109

FIG. 1

NAEL0109S01

EL-D/LOCK-01



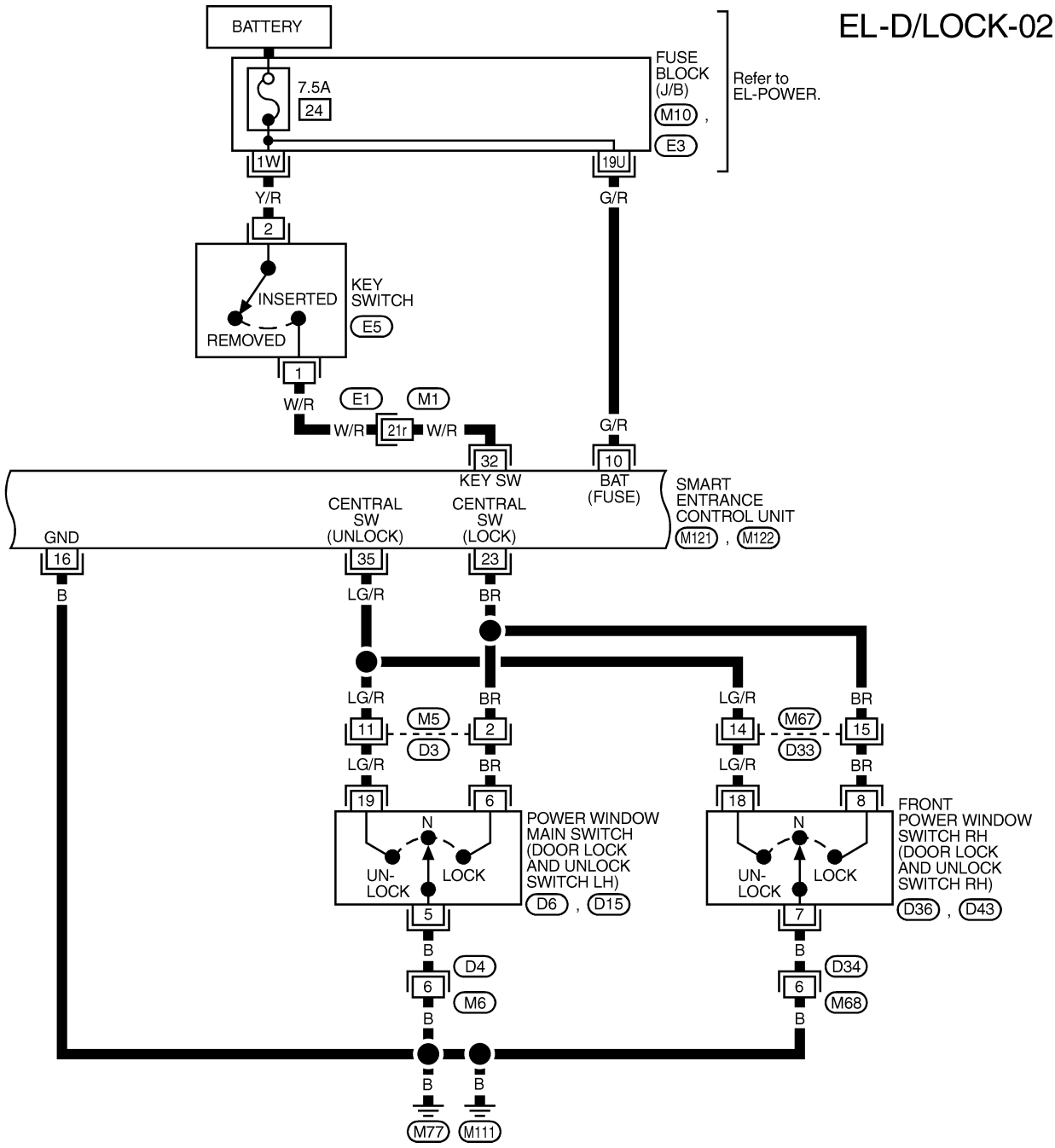


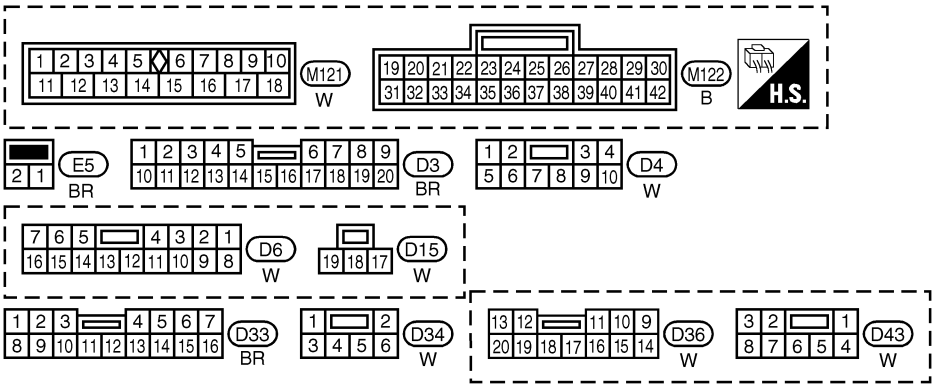
REFER TO THE FOLLOWING.
E1 , B1 -SUPER MULTIPLE JUNCTION (SMJ)

MEL848L

FIG. 2

NAEL0109S02





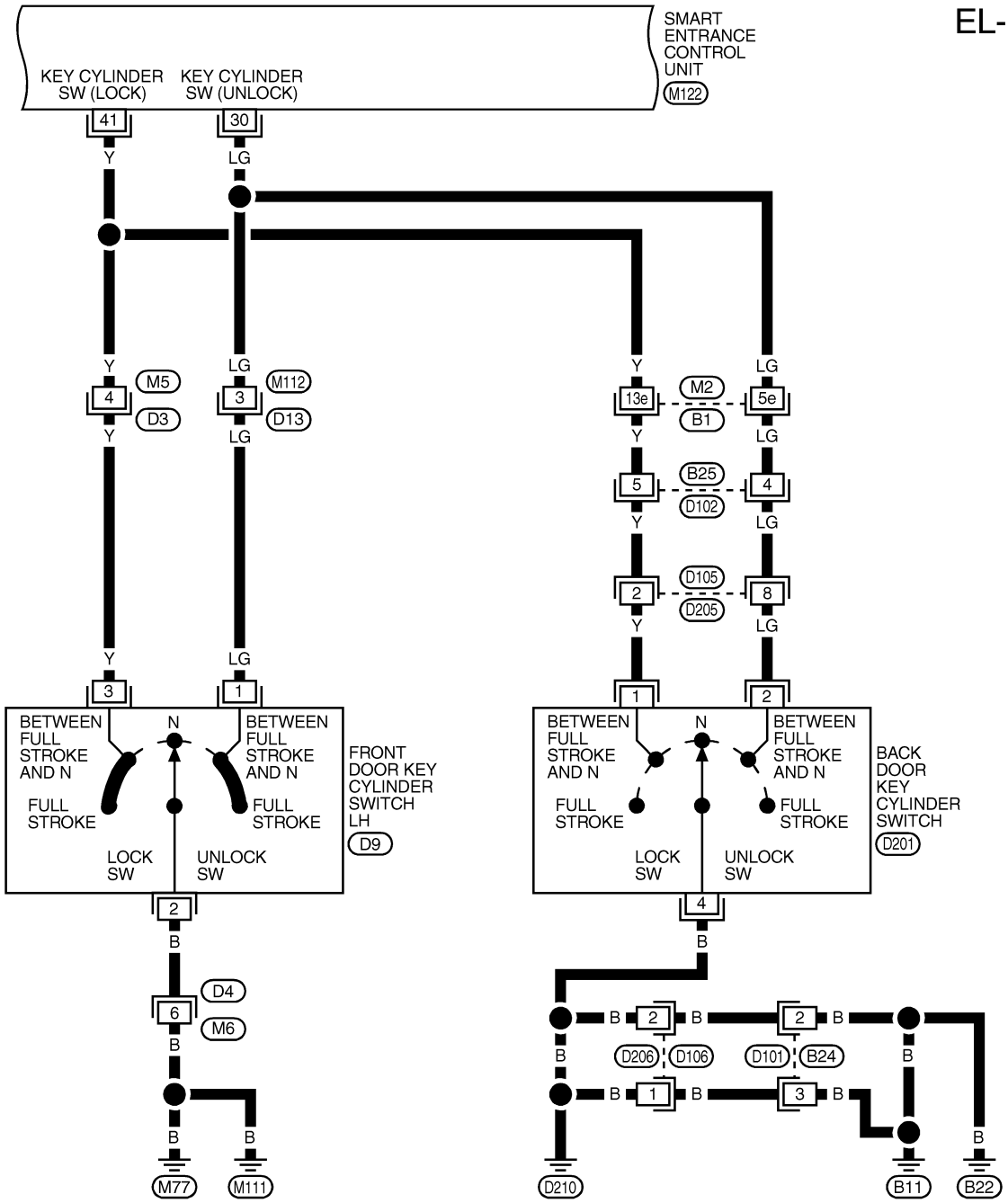
REFER TO THE FOLLOWING.
E1 -SUPER MULTIPLE JUNCTION (SMJ)
M10 , E3 -FUSE BLOCK-JUNCTION BOX (J/B)

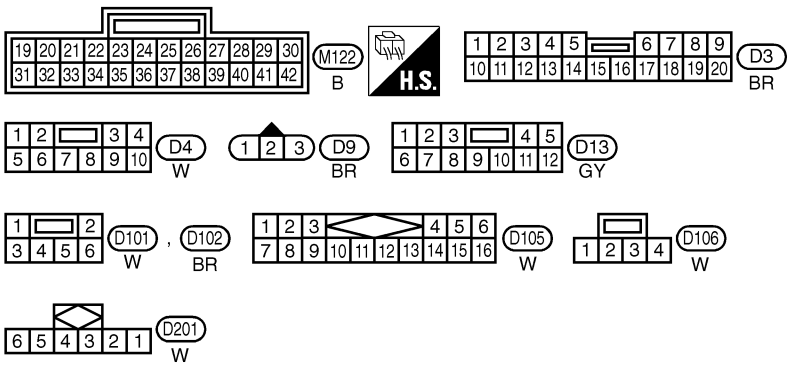
MEL849L

FIG. 3

NAEL0109S03

EL-D/LOCK-03





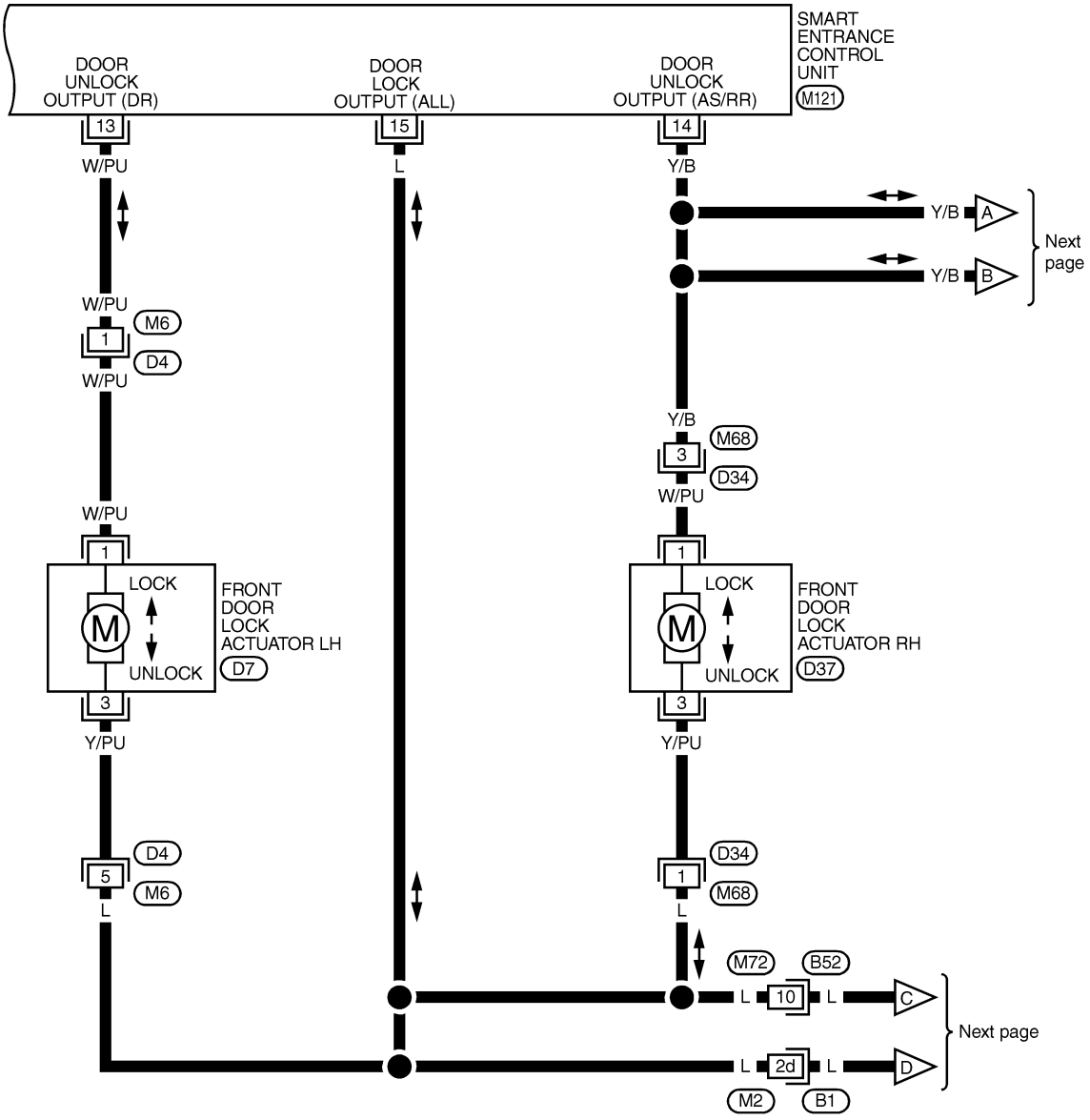
REFER TO THE FOLLOWING.
B1 - SUPER MULTIPLE JUNCTION (SMJ)

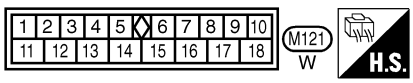
MEL850L

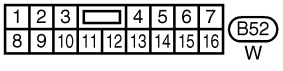
FIG. 4

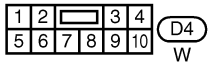
NAEL0109S04

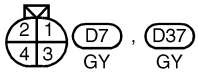
EL-D/LOCK-04

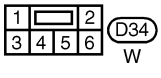












REFER TO THE FOLLOWING.
(B1) - SUPER MULTIPLE JUNCTION (SMJ)

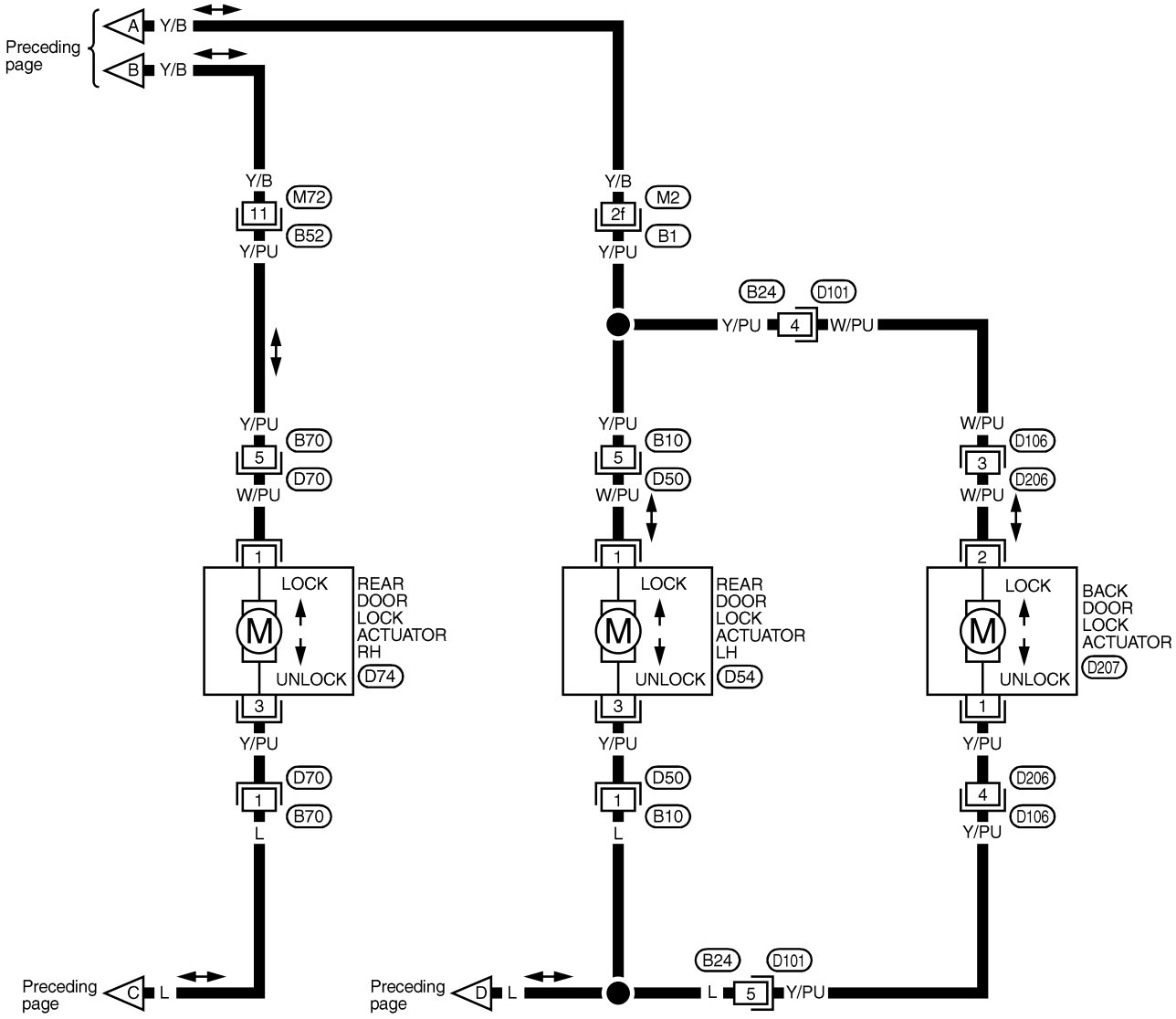
MEL851L

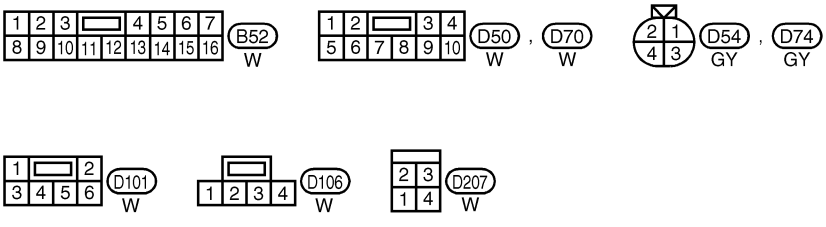
Wiring Diagram — D/LOCK — (Cont'd)

FIG. 5

NAEL0109S05

EL-D/LOCK-05





REFER TO THE FOLLOWING.
(B1) - SUPER MULTIPLE JUNCTION (SMJ)

MEL852L

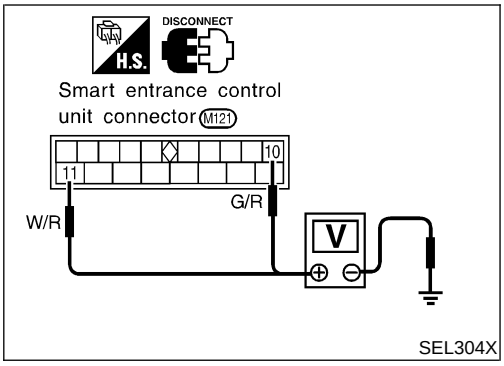
Trouble Diagnoses

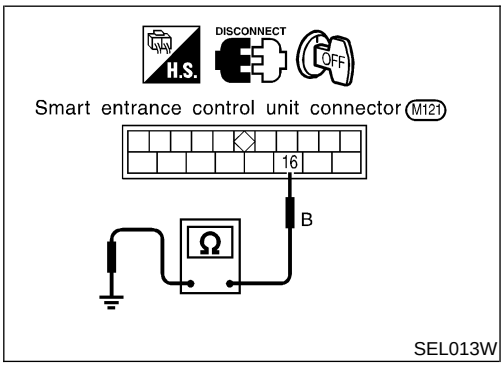
SYMPTOM CHART

NAEL0110

NAEL0110S01

REFERENCE PAGE (EL-)	280	281	282	283	284	285	286
SYMPTOM	MAIN POWER SUPPLY AND GROUND CIRCUIT CHECK	DOOR SWITCH CHECK	KEY SWITCH (INSERT) CHECK	DOOR LOCK/UNLOCK SWITCH CHECK	FRONT DOOR KEY CYLINDER SWITCH CHECK	BACK DOOR KEY CYLINDER SWITCH CHECK	DOOR LOCK ACTUATOR CHECK
Key reminder door system does not operate properly.	X	X	X				X
Specific door lock actuator does not operate.	X						X
Power door lock does not operate with door lock and unlock switch (LH and RH) on door trim.	X			X			
Power door lock does not operate with front door key cylinder operation.	X				X		
Power door lock does not operate with back door key cylinder operation.	X					X	





MAIN POWER SUPPLY AND GROUND CIRCUIT CHECK

=NAEL0110S02

Main Power Supply Circuit Check

NAEL0110S0201

Terminal		Ignition switch		
(+)	(−)	OFF	ACC	ON
10	Ground	Battery voltage	Battery voltage	Battery voltage
11				

Ground Circuit Check

NAEL0110S0202

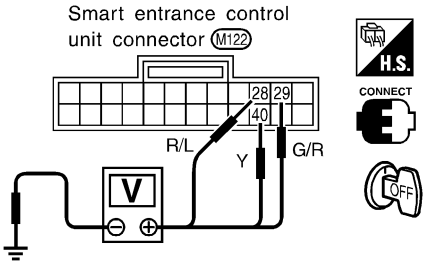
Terminals	Continuity
16 - Ground	Yes

DOOR SWITCH CHECK

=NAEL0110S05

1 CHECK DOOR SWITCH INPUT SIGNAL

Check voltage between smart entrance control unit terminals 28, 29 or 40 and ground.



	Terminals		Condition	Voltage [V]
	(+)	(−)		
Front LH door switch	29	ground	Open	0
			Closed	Approx. 5
Front RH door switch	40	ground	Open	0
			Closed	Approx. 5
Rear and back door switches	28	ground	Open	0
			Closed	Approx. 5

SEL305X

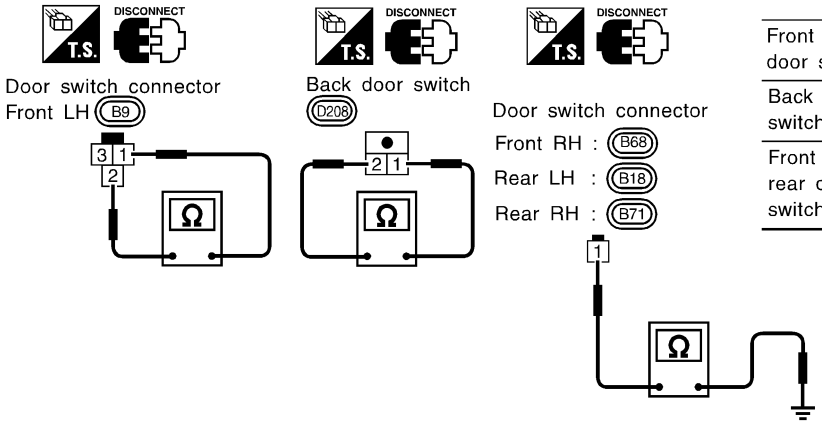
Refer to wiring diagram in EL-274.

OK or NG

OK	▶	Door switch is OK.
NG	▶	GO TO 2.

2 CHECK DOOR SWITCH

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



	Terminals	Condition	Continuity
Front LH door switch	1 - 2	Closed	No
		Open	Yes
Back door switch	1 - 2	Closed	No
		Open	Yes
Front RH and rear door switches	1 - ground	Closed	No
		Open	Yes

SEL306X

OK or NG

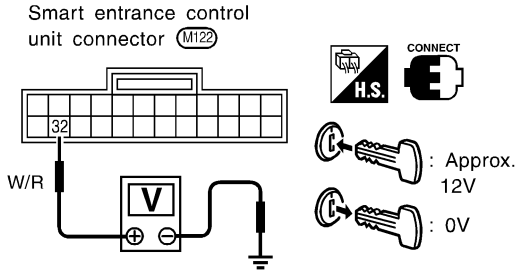
OK	▶	**Check the following.** • Door switch ground circuit (Front LH, back door) or door switch ground condition • Harness for open or short between smart entrance control unit and door switch
NG	▶	Replace door switch.

KEY SWITCH (INSERT) CHECK

=NAEL0110S06

1	CHECK KEY SWITCH INPUT SIGNAL

Check voltage between smart entrance control unit terminal 32 and ground.



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

SEL307X

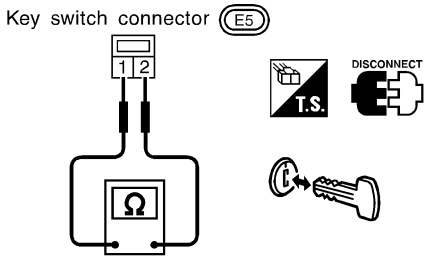
Refer to wiring diagram in EL-275.

OK or NG

OK	▶	Key switch is OK.
NG	▶	GO TO 2.

2	CHECK KEY SWITCH (INSERT)

Check continuity between terminals 1 and 2.



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

SEL308X

OK or NG

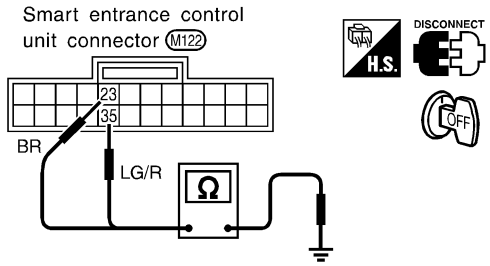
OK	▶	**Check the following.** ● 7.5A fuse [No. 24, located in fuse block (J/B)] ● Harness for open or short between key switch and fuse ● Harness for open or short between smart entrance control unit and key switch
NG	▶	Replace key switch.

DOOR LOCK/UNLOCK SWITCH CHECK

=NAEL0110S03

1 CHECK DOOR LOCK/UNLOCK SWITCH INPUT SIGNAL

1. Disconnect smart entrance control unit connector.
2. Check continuity between control unit terminal 23 or 35 and ground.



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

SEL309X

Refer to wiring diagram in EL-275.

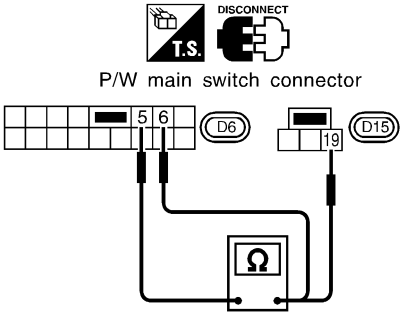
OK or NG

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

2 CHECK DOOR LOCK/UNLOCK SWITCH

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

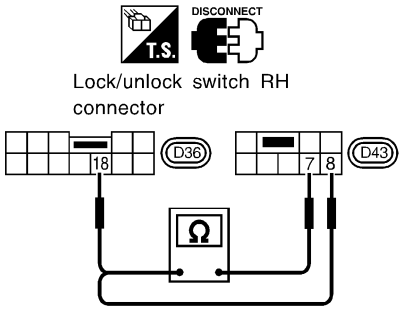
- Power window main switch (Door lock/unlock switch LH)



Condition	Terminals		
	5	19	6
Lock	○		○
N	No continuity		
Unlock	○	○	

SEL310X

- Door lock/unlock switch RH



Condition	Terminals		
	7	18	8
Lock	○		○
N	No continuity		
Unlock	○	○	

SEL311X

OK or NG

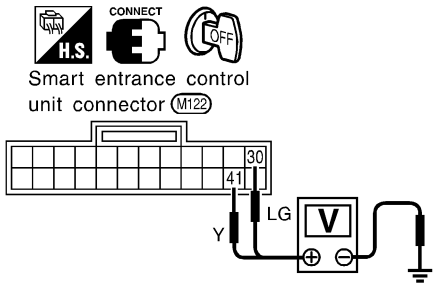
OK	▶	**Check the following.** • Ground circuit for door lock/unlock switch • Harness for open or short between door lock/unlock switch and smart entrance control unit connector
NG	▶	Replace door lock/unlock switch.

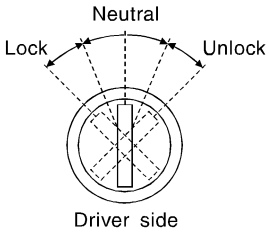
FRONT DOOR KEY CYLINDER SWITCH CHECK

=NAEL0110S07

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

Check voltage between smart entrance control unit terminals 30 or 41 and ground.





Terminals		Key position	Voltage [V]
(+)	(–)		
41	Ground	Neutral/Unlock	Approx. 5
		Lock	0
30	Ground	Neutral/Lock	Applox. 5
		Unlock	0

SEL312X

Refer to wiring diagram in EL-276.

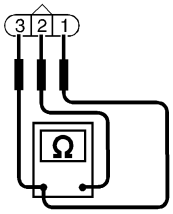
OK or NG

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

2 **CHECK DOOR KEY CYLINDER SWITCH**

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

Door key cylinder switch LH connector D9



① : Door unlock switch terminal
② : Ground terminal
③ : Door lock switch terminal

Terminals	Key position	Continuity
LH: 3 - 2	Neutral/Unlock	No
	Lock	Yes
LH: 1 - 2	Neutral/Lock	No
	Unlock	Yes

SEL313X

OK or NG

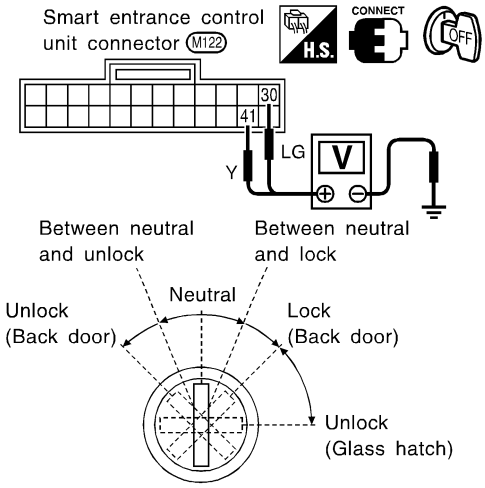
OK	▶	**Check the following.** ● Door key cylinder switch ground circuit ● Harness for open or short between smart entrance control unit and door key cylinder switch
NG	▶	Replace door key cylinder switch.

BACK DOOR KEY CYLINDER SWITCH CHECK

=NAEL0110S08

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

Check voltage between smart entrance control unit terminals 30 or 41 and ground.



	Terminals (+)	Terminals (−)	Key position	Voltage [V]
Back door	41	Ground	Between neutral and lock	0
			Other positions	Applox. 5
	30	Ground	Between neutral and unlock	0
			Other positions	Applox. 5

SEL314X

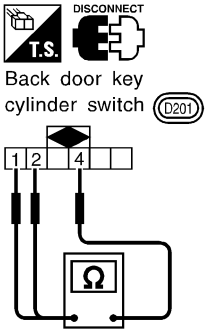
Refer to wiring diagram in EL-276.

OK or NG

OK	▶	Back door key cylinder switch is OK.
NG	▶	GO TO 2.

2 **CHECK BACK DOOR KEY CYLINDER SWITCH**

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



Key position	Terminals 1	Terminals 2	Terminals 4
Between neutral and lock (Back door)	○		○
Between neutral and unlock (Back door)		○	○

SEL315X

OK or NG

OK	▶	**Check the following.** ● Back door key cylinder switch ground circuit ● Harness for open or short between smart entrance control unit and back door key cylinder switch
NG	▶	Replace back door key cylinder switch.

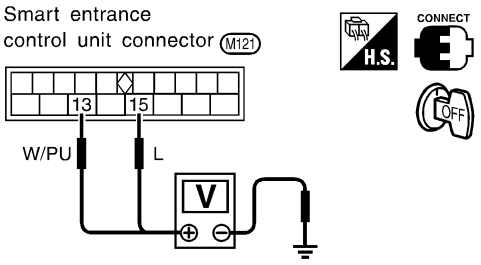
DOOR LOCK ACTUATOR CHECK

=NAEL0110S04

1 CHECK DOOR LOCK ACTUATOR CIRCUIT

Check voltage for door lock actuator.

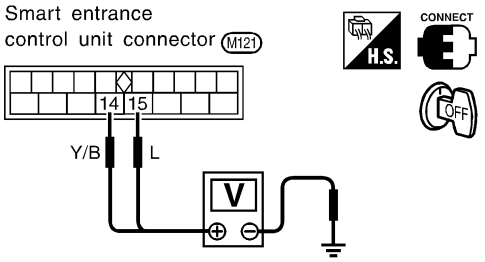
- Door lock actuator front LH



Door lock/unlock switch condition	Terminal No. (+)	Terminal No. (–)	Voltage (V)
Lock	15	ground	Approx. 12
Unlock	13	ground	

SEL316X

- Door lock actuator front RH, rear and back



Door lock/unlock switch condition	Terminal No. (+)	Terminal No. (–)	Voltage (V)
Lock	15	ground	Approx. 12
Unlock	14	ground	

SEL317X

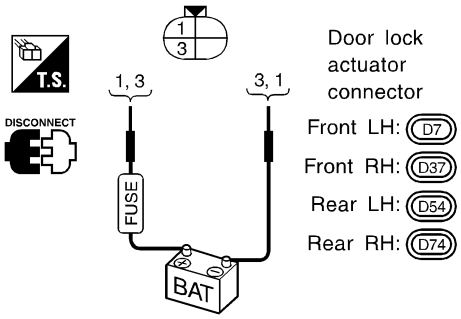
Refer to wiring diagram in EL-277.

OK or NG

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

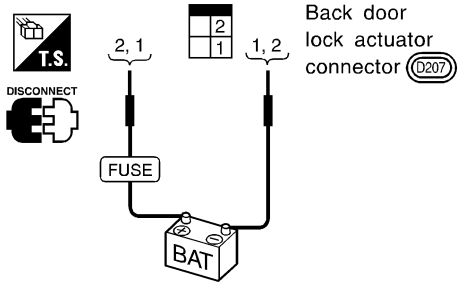
2	CHECK DOOR LOCK ACTUATOR

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



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

SEL318X



- **Back door lock actuator operation:**
  Terminals between (+): 1 and (–): 2
  Unlocked → Locked
  Terminals between (+): 2 and (–): 1
  Locked → Unlocked

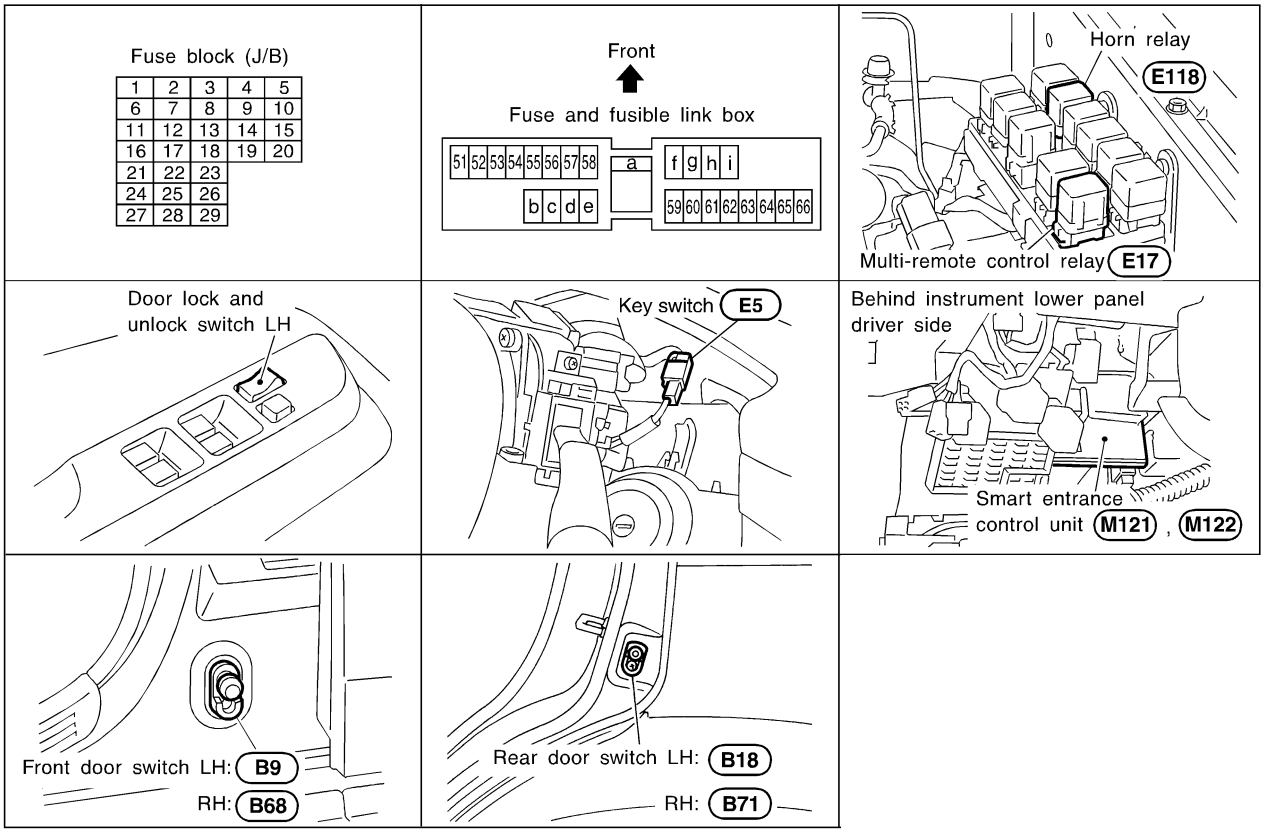
SEL319X

OK or NG

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

Component Parts and Harness Connector Location

NAEL0111



SEL355X

System Description

NAEL0112

INPUTS

NAEL0112S01

Power is supplied at all times

- to smart entrance control unit terminal 11
- through circuit breaker
- through 40A fusible link (letter **f** located in the fuse and fusible link box),
- to key switch terminal 2, and
- to smart entrance control unit terminal 10
- through 7.5A fuse [No. 24, located in the fuse block (J/B)].
- to multi-remote control relay terminals 1, 3 and 6
- through 15A fuse [No. 20, located in the fuse block (J/B)].
- to horn relay terminals 1 and 3
- through 7.5A fuse [No. 52, located in the fuse block (J/B)].
- to horn relay terminal 6
- through 10A fuse [No. 54, located in the fuse block (J/B)].

When the ignition switch is in the ACC or ON position, power is supplied to smart entrance control unit terminal 21.

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

- through key switch terminal 1
- to smart entrance control unit terminal 32.

When the front door switch LH is OPEN, ground is supplied
- to smart entrance control unit terminal 29
- through front door switch LH terminal 1
- to front door switch LH terminal 2
- through body grounds B11, B22 and D210.

When the front door switch RH is OPEN, ground is supplied
- to smart entrance control unit terminal 40
- through front door switch RH body ground.

When the other door switches are OPEN, ground is supplied
- to smart entrance control unit terminal 28
- through other door switches body grounds.

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

OPERATION

NAEL0112S03

The multi-remote control system controls operation of the
- power door lock
- interior lamp
- panic alarm
- hazard and horn reminder

OPERATED PROCEDURE

NAEL0112S02

Power Door Lock Operation

NAEL0112S0201

Smart entrance control unit receives a LOCK signal from remote controller. Smart entrance control unit locks all doors with input of LOCK signal from remote controller.
When an UNLOCK signal is sent from remote controller once, driver's door will be unlocked.
Then, if an UNLOCK signal is sent from remote controller again within 5 seconds, all other door will be unlocked.

Hazard and Horn Reminder

NAEL0112S0204

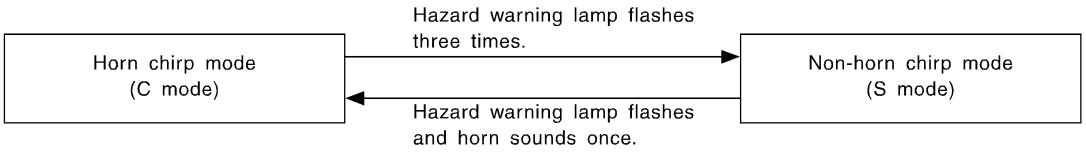
When smart entrance control unit receives LOCK or UNLOCK signal from remote controller with all doors closed, ground is supplied
- to multi-remote control relay terminal 2
- through smart entrance control unit terminal 7, and
- to horn relay terminal 2
- through smart entrance control unit terminal 19

Multi-remote control relay and horn relay are now energized, and hazard warning lamp flashes and horn sounds as a reminder.
The hazard and horn reminder has a horn chirp mode (C mode) and a non-horn chirp mode (S mode).

Operating function of hazard and horn reminder

	Horn chirp mode (C mode)		Non-horn chirp mode (S mode)	
	Hazard warning lamp flash	Horn sound	Hazard warning lamp flash	Horn sound
Lock	Twice	Once	Twice	—
Unlock	Once	—	—	—

How to change hazard and horn reminder mode
When LOCK and UNLOCK signals are sent from the remote controller for more than 2 seconds at the same time, the hazard and horn reminder mode is changed and hazard warning lamp flashes and horn sounds as follows:



SEL153WB

Interior Lamp Operation

NAEL0112S0202

When the following input signals are both supplied:

- door switch CLOSED (when all the doors are closed);
- driver's door LOCKED;

multi-remote control system turns on interior lamp (for 30 seconds) with input of UNLOCK signal from remote controller.
For detailed description, refer to "INTERIOR, SPOT, VANITY MIRROR AND LUGGAGE ROOM LAMPS" (EL-108).

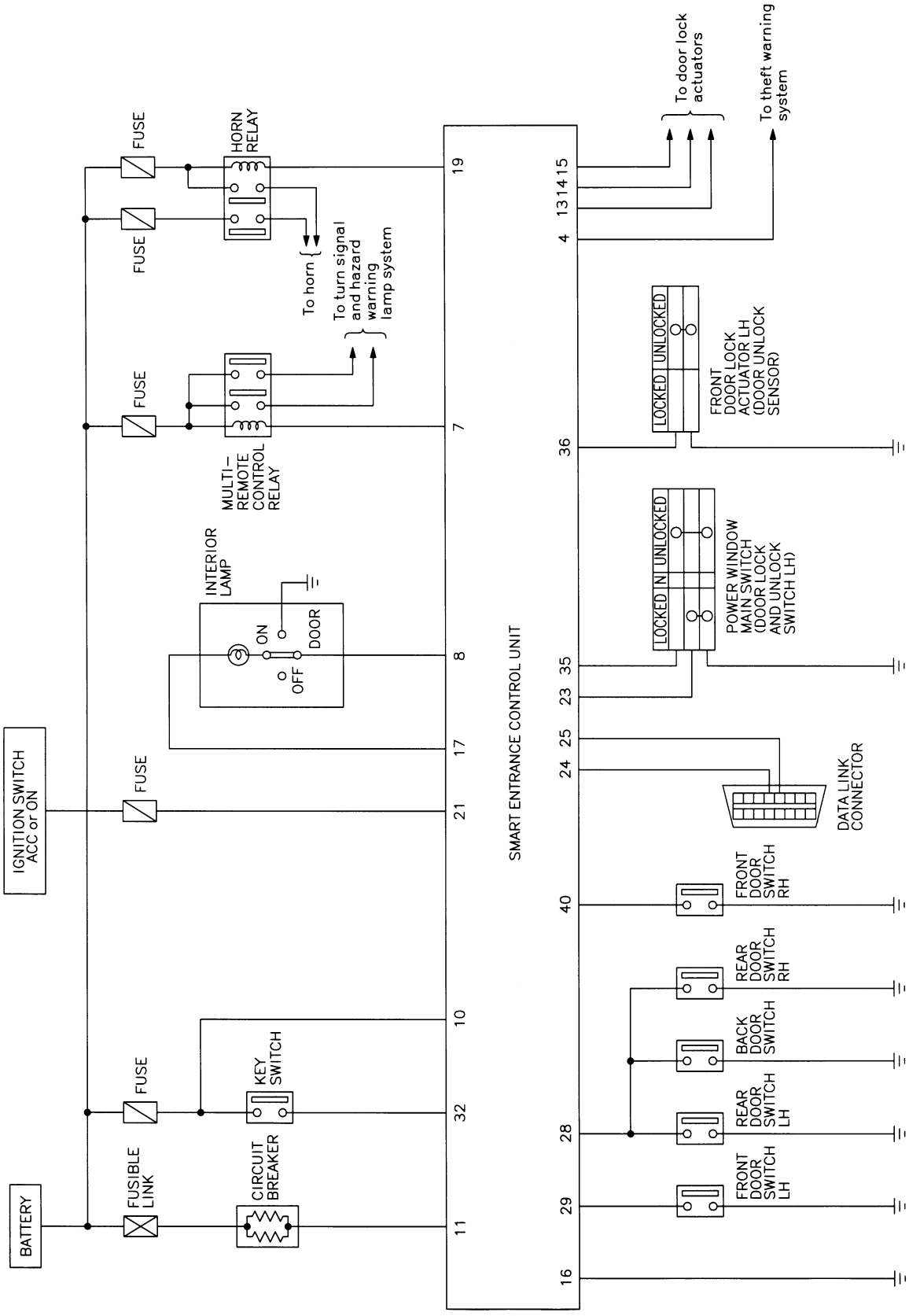
Panic Alarm Operation

NAEL0112S0203

When key switch is OFF (when ignition key is not inserted in key cylinder), multi-remote control system turns on and off horn and headlamp intermittently with input of PANIC ALARM signal from remote controller.
For detailed description, refer to "THEFT WARNING SYSTEM" (EL-315).

Schematic

NAEL0113



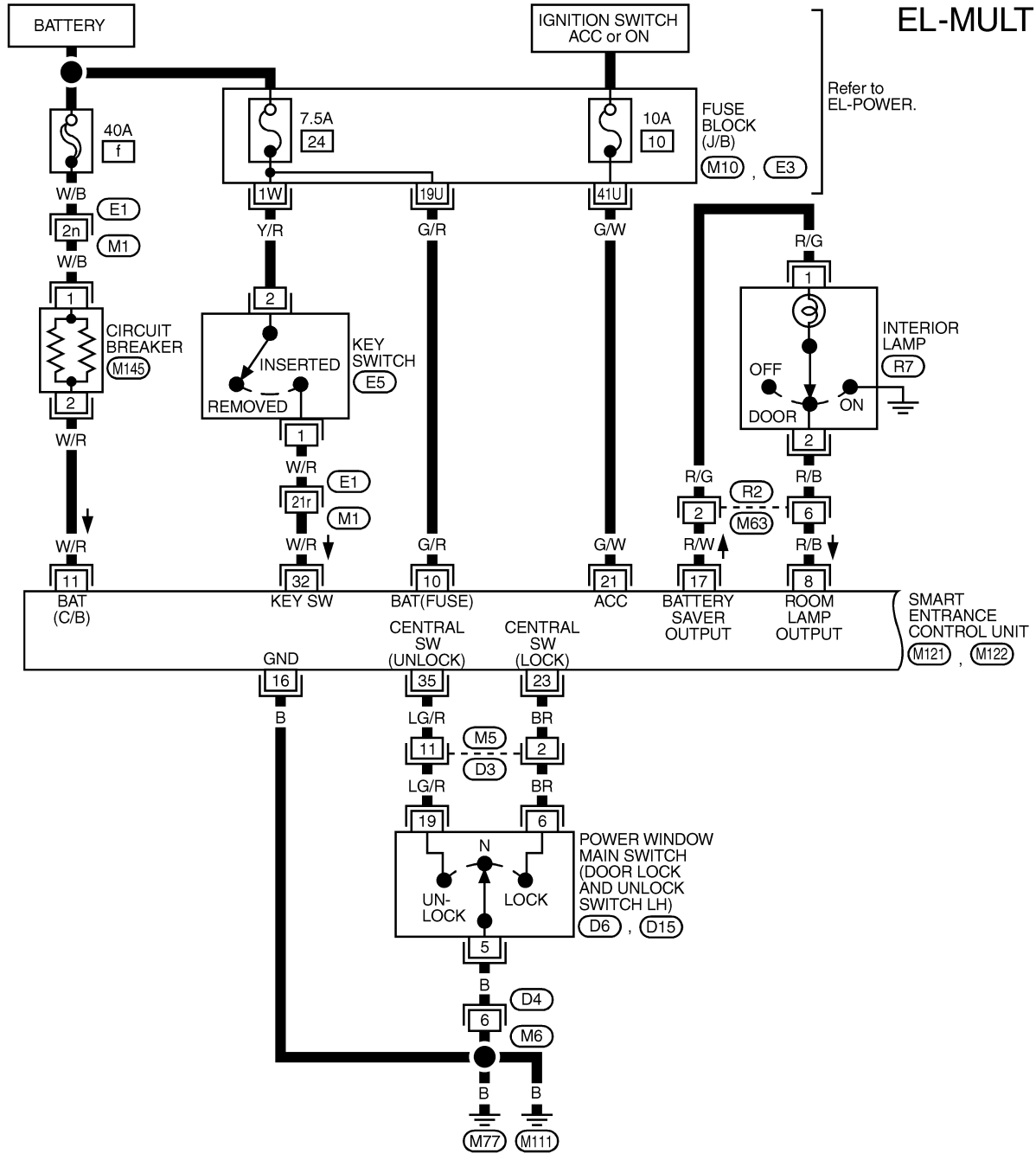
MEL853L

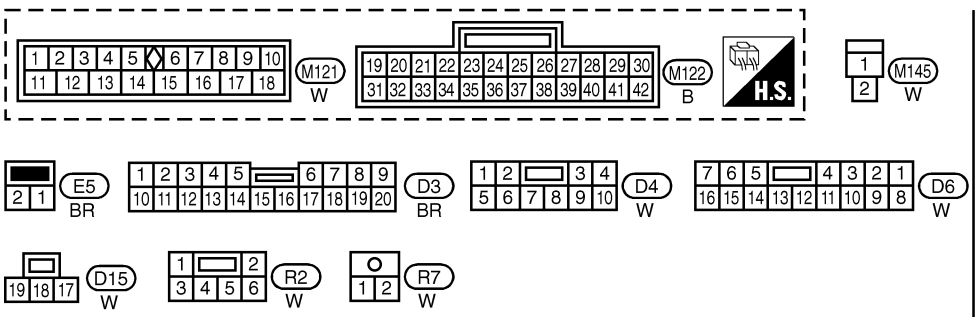
Wiring Diagram — MULTI —

NAEL0114

FIG. 1

NAEL0114S01





REFER TO THE FOLLOWING.

E1 - SUPER MULTIPLE JUNCTION (SMJ)

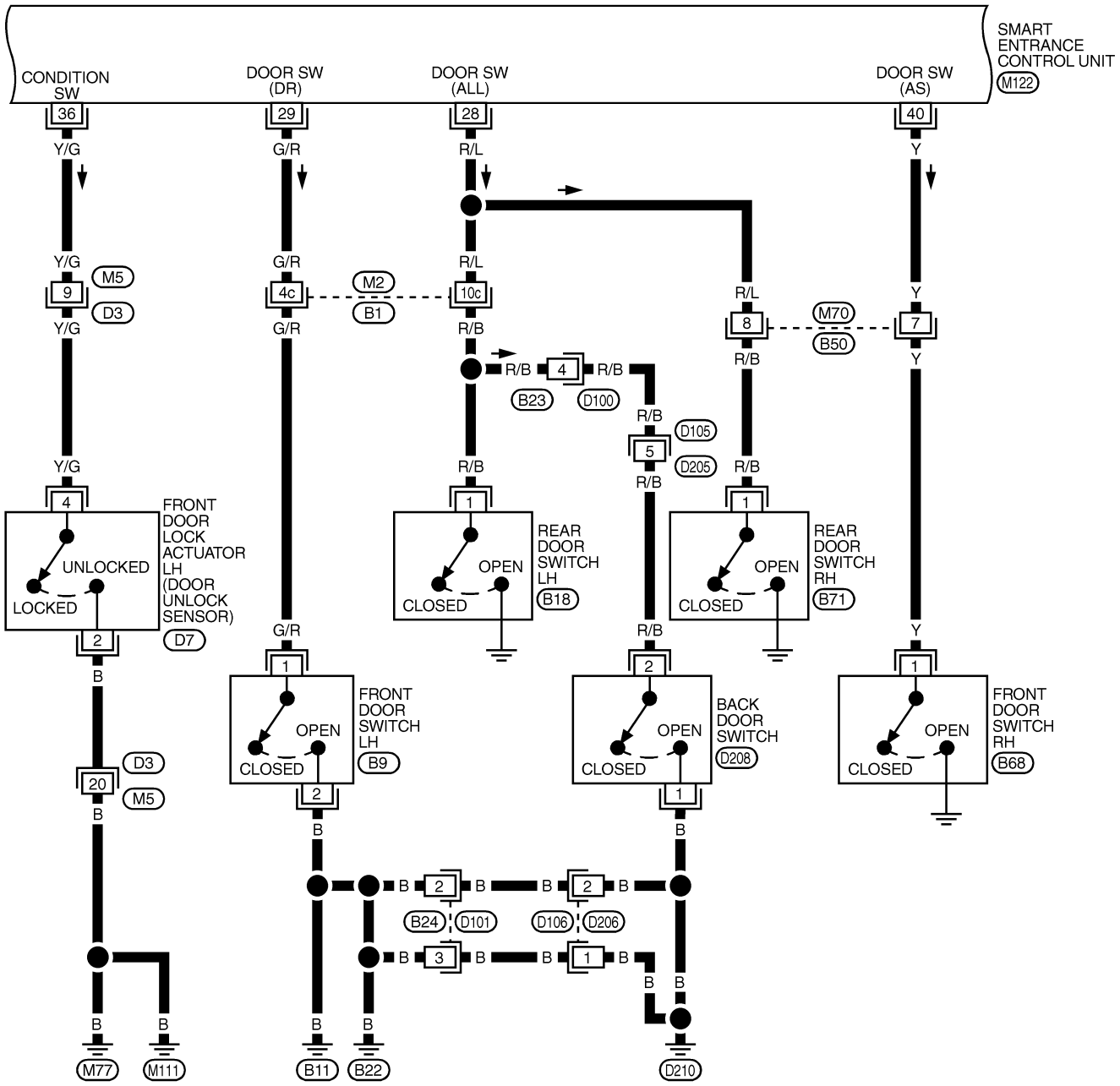
M10 , E3 - FUSE BLOCK - JUNCTION BOX (J/B)

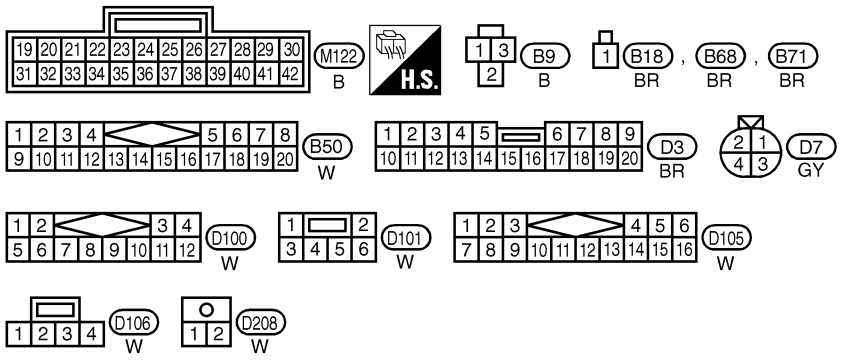
MEL854L

FIG. 2

NAEL0114S02

EL-MULTI-02



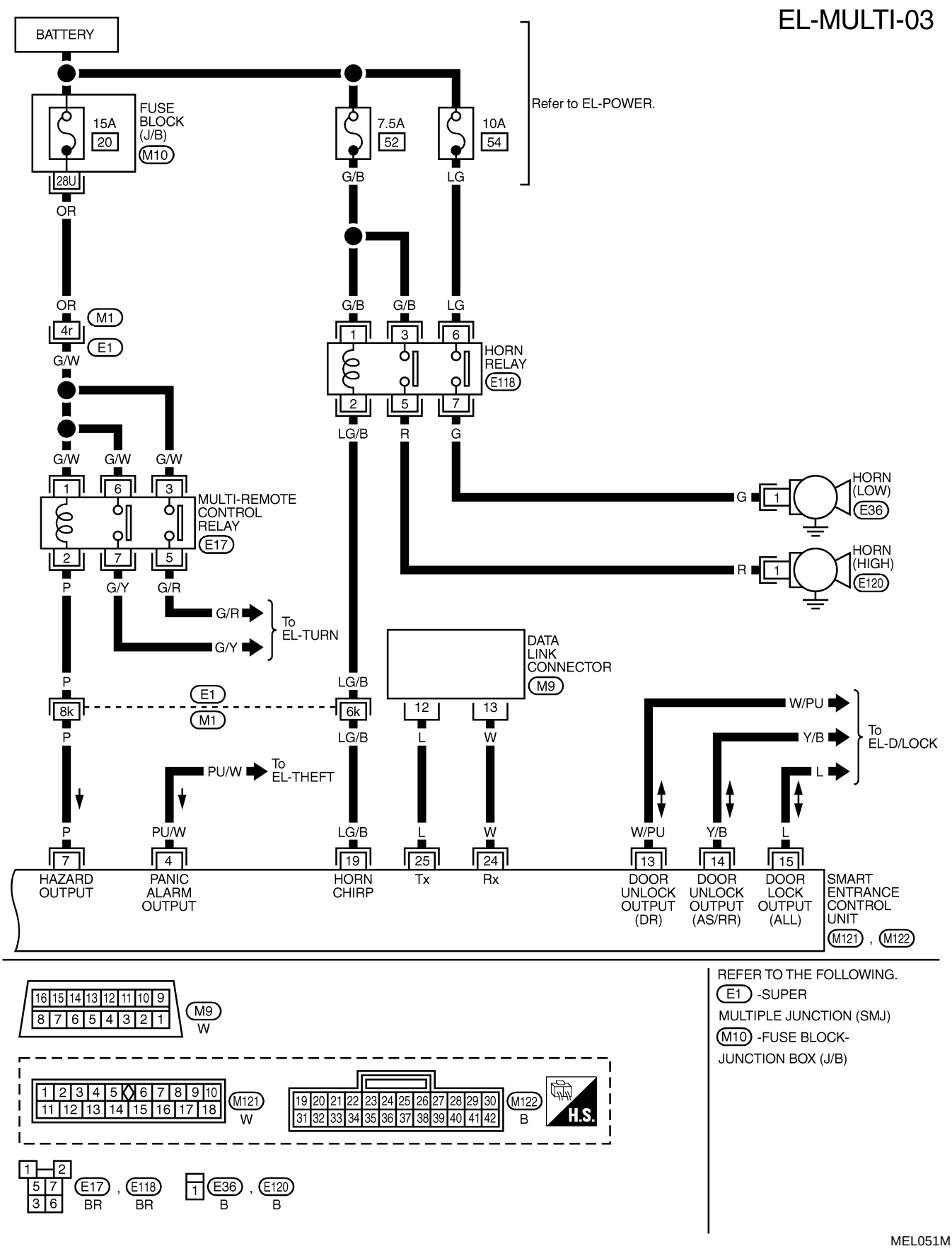


REFER TO THE FOLLOWING.
(B1) -SUPER MULTIPLE JUNCTION (SMJ)

MEL855L

FIG. 3

NAEL0114S03



Trouble Diagnoses

NAEL0115

SYMPTOM CHART

NAEL0115S01

NOTE:

- Always check remote controller battery before replacing remote controller.
- The panic alarm operation of multi-remote control system does not activate with the ignition key inserted in the ignition key cylinder.

Symptom	Diagnoses/service procedure	Reference page (EL-)
All function of multi-remote control system do not operate.	1. Remote controller battery check	296
	2. Power supply and ground circuit for control unit check	297
	3. Replace romote controller. Refer to ID Code Entry Procedure.	309
The new ID of remote controller cannot be entered.	1. Remote controller battery check	296
	2. Key switch (insert) check	300
	3. Door switch check	299
	4. Door lock/unlock switch LH check	301
	5. Power supply and ground circuit for control unit check	297
	6. Replace romote controller. Refer to ID Code Entry Procedure.	309
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-279.)	1. Replace remote controller. Refer to ID Code Entry Procedure.	309
Hazard and horn reminder does not activate properly when pressing lock or unlock button of remote controller.	1. Harzard reminder check	303
	2. Horn reminder check* *: Horn chirp can be activated or deactivated. First check the horn chirp setting. Refer to “System Description”, EL-288.	305
	3. Door switch check	299
	4. Replace remote controller. Refer to ID Code Entry Procedure.	309
Interior lamp operation does not activate properly.	1. Interior room lamp operation check	306
	2. Door switch check	299
	3. Front LH door unlock sensor check	302
Panic alarm (horn and headlamp) does not activate when panic alarm button is continuously pressed.	1. Theft warning operation check. Refer to “PRELIMINALY CHECK” in “THEFT WARNING SYSTEM”.	328
	2. Key switch (insert) check	300
	3. Replace remote controller. Refer to ID Code Entry Procedure.	309

REMOTE CONTROLLER BATTERY CHECK

=NAEL0115S02

1	CHECK REMOTE CONTROLLER BATTERY

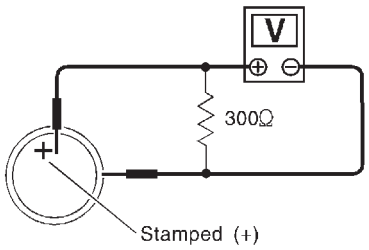
Remove battery (refer to EL-311) and measure voltage across battery positive and negative terminals, (+) and (−).

Voltage [V]:

2.5 - 3.0

NOTE:

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



SEL277V

OK or NG

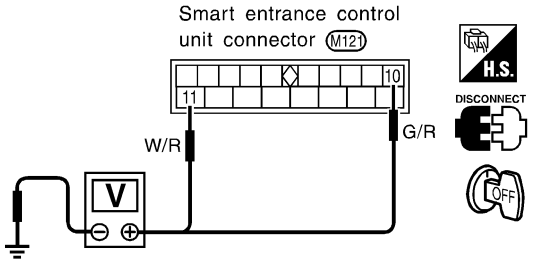
OK	▶	Check remote controller battery terminals for corrosion or damage.
NG	▶	Replace battery.

POWER SUPPLY AND GROUND CIRCUIT CHECK

=NAEL0115S04

1	CHECK MAIN POWER SUPPLY CIRCUIT FOR CONTROL UNIT

1. Disconnect connector from control unit.
2. Check voltage between smart entrance control unit terminal 10 or 11 and ground.



Battery voltage should exist.

SEL320X

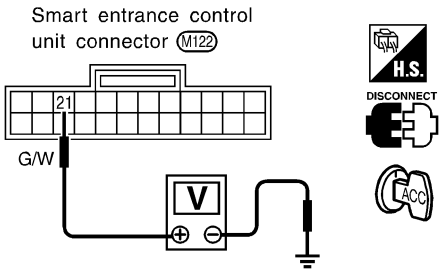
Refer to wiring diagram in EL-292.

OK or NG

OK	▶	GO TO 2.
NG	▶	**Check the following.** ● 40A fusible link (letter **f**, located in fuse and fusible link box) ● 7.5A fuse [No. 24, located in fuse block (J/B)] ● M145 circuit breaker ● Harness for open or short between smart entrance control unit and fuse

2	CHECK IGNITION SWITCH "ACC" CIRCUIT

1. Disconnect smart entrance control unit connector.
2. Check voltage between control unit terminal 21 and ground while ignition switch is "ACC".



Battery voltage should exist.

SEL321X

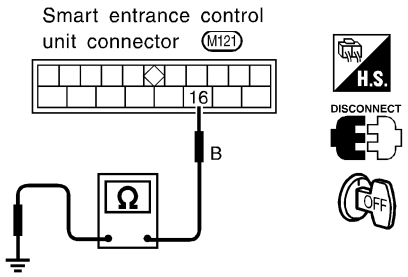
Refer to wiring diagram in EL-292.

OK or NG

OK	▶	GO TO 3.
NG	▶	**Check the following.** ● 10A fuse [No. 10, located in fuse block (J/B)] ● Harness for open or short between smart entrance control unit and fuse

3	CHECK GROUND CIRCUIT FOR CONTROL UNIT

Check continuity between terminal 16 and ground.



Continuity should exist.

SEL322X

Refer to wiring diagram in EL-292.

OK or NG

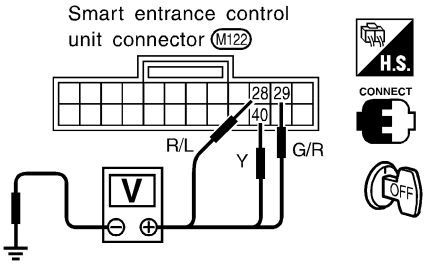
OK	▶	Power supply and ground circuits are OK.
NG	▶	Check ground harness.

DOOR SWITCH CHECK

=NAEL0115S05

1 CHECK DOOR SWITCH INPUT SIGNAL

Check voltage between smart entrance control unit terminals 28, 29 or 40 and ground.



	Terminals		Condition	Voltage [V]
	(+)	(−)		
Front LH door switch	29	ground	Open	0
			Closed	Approx. 5
Front RH door switch	40	ground	Open	0
			Closed	Approx. 5
Rear and back door switches	28	ground	Open	0
			Closed	Approx. 5

SEL305X

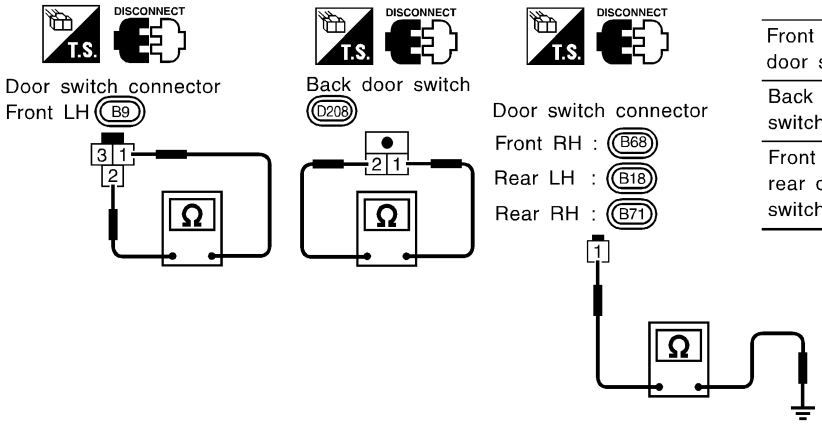
Refer to wiring diagram in EL-293.

OK or NG

OK	▶	Door switch is OK.
NG	▶	GO TO 2.

2 CHECK DOOR SWITCH

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



	Terminals	Condition	Continuity
Front LH door switch	1 - 2	Closed	No
		Open	Yes
Back door switch	1 - 2	Closed	No
		Open	Yes
Front RH and rear door switches	1 - ground	Closed	No
		Open	Yes

SEL306X

OK or NG

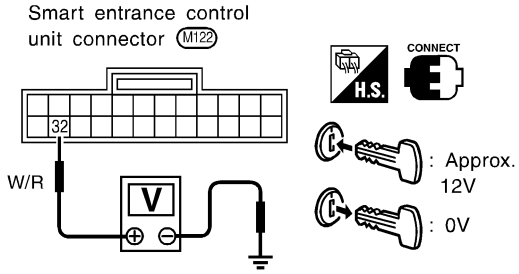
OK	▶	**Check the following.** • Door switch ground circuit (Front, back door) or door switch ground condition • Harness for open or short between smart entrance control unit and door switch
NG	▶	Replace door switch.

KEY SWITCH (INSERT) CHECK

=NAEL0115S07

1	CHECK KEY SWITCH INPUT SIGNAL

Check voltage between smart entrance control unit terminal 32 and ground.



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

SEL307X

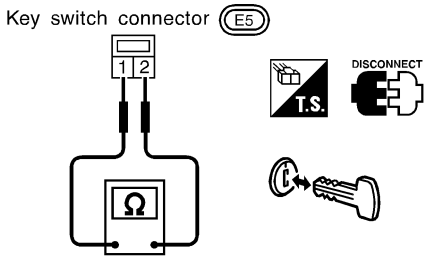
Refer to wiring diagram in EL-292.

OK or NG

OK	▶	Key switch is OK.
NG	▶	GO TO 2.

2	CHECK KEY SWITCH (INSERT)

Check continuity between terminals 1 and 2.



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

SEL308X

OK or NG

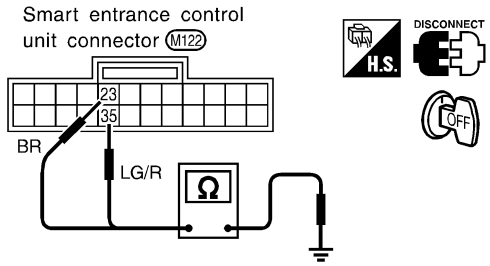
OK	▶	**Check the following.** ● 7.5A fuse [No. 24, located in fuse block (J/B)] ● Harness for open or short between key switch and fuse ● Harness for open or short between smart entrance control unit and key switch
NG	▶	Replace key switch.

DOOR LOCK/UNLOCK SWITCH LH CHECK

=NAEL0115S10

1 CHECK DOOR LOCK/UNLOCK SWITCH INPUT SIGNAL

1. Disconnect smart entrance control unit connector.
2. Check continuity between control unit terminal 23 or 35 and ground.



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

SEL309X

Refer to wiring diagram in EL-292.

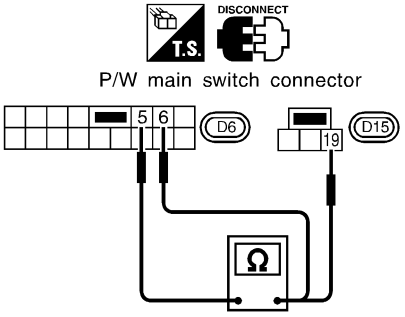
OK or NG

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

2 CHECK DOOR LOCK/UNLOCK SWITCH

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

- Power window main switch (Door lock/unlock switch LH)



Condition	Terminals		
	5	19	6
Lock	○		○
N	No continuity		
Unlock	○	○	

SEL310X

OK or NG

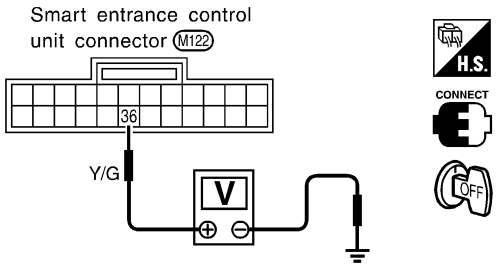
OK	▶	**Check the following.** • Ground circuit for door lock/unlock switch • Harness for open or short between door lock/unlock switch and smart entrance control unit connector
NG	▶	Replace door lock/unlock switch.

FRONT LH DOOR UNLOCK SENSOR CHECK

=NAEL0115S06

1	CHECK FRONT LH DOOR UNLOCK SENSOR INPUT SIGNAL

Check voltage between smart entrance control unit terminal 36 and ground.



	Terminals		Condition	Voltage [V]
	(+)	(–)		
Front LH door	36	Ground	Locked	Approx. 5
			Unlocked	0

SEL323X

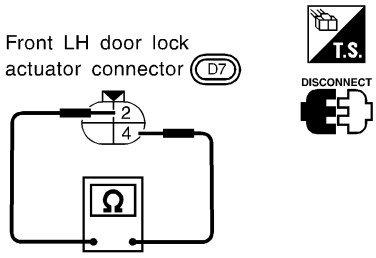
Refer to wiring diagram in EL-293.

OK or NG

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

2	CHECK FRONT LH DOOR UNLOCK SENSOR

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



Continuity:
Condition: Locked
No
Condition: Unlocked
Yes

SEL324X

OK or NG

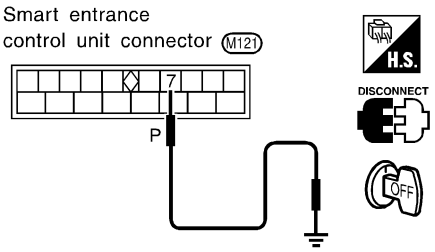
OK	▶	**Check the following.** ● Door unlock sensor ground circuit ● Harness for open or short between smart entrance control unit and door unlock sensor
NG	▶	Replace door unlock sensor.

HAZARD REMINDER CHECK

=NAEL0115S08

1	CHECK HAZARD INDICATOR	
Check if hazard indicator flashes with hazard switch. **Does hazard indicator operate?**		
Yes	▶	GO TO 2.
No	▶	Check "hazard indicator" circuit.

2	CHECK HAZARD REMINDER OPERATION	
1. Disconnect smart entrance control unit connector. 2. Apply ground to control unit terminal 7.		



Hazard indicater illuminate.

SEL325X

Refer to wiring diagram in EL-294.

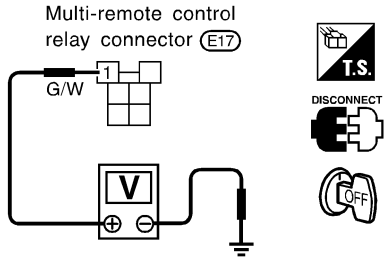
OK or NG

OK	▶	Replace smart entrance control unit.
NG	▶	GO TO 3.

3	CHECK MULTI-REMOTE CONTROL RELAY	
Check multi-remote control relay. **OK or NG**		
OK	▶	GO TO 4.
NG	▶	Replace.

4	CHECK POWER SUPPLY FOR MULTI-REMOTE CONTROL RELAY

1. Disconnect multi-remote control relay connector.
2. Check voltage between terminal 1 and ground.



Battery voltage should exist.

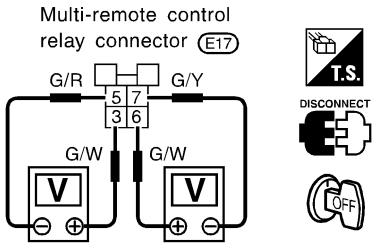
SEL326X

OK or NG

OK	▶	GO TO 5.
NG	▶	**Check the following.** ● 15A fuse [No. 20, located in fuse block (J/B)] ● Harness for open or short between multi-remote control relay and fuse

5	CHECK MULTI-REMOTE CONTROL RELAY CIRCUIT

1. Disconnect multi-remote control relay connector.
2. Check voltage between terminals 3 and 5.
3. Check voltage between terminals 6 and 7.



Battery voltage should exist.

SEL327X

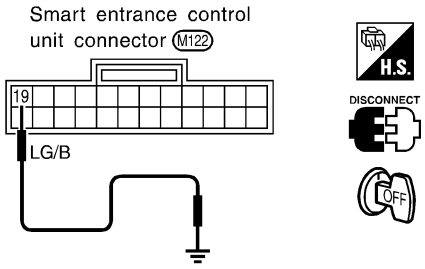
OK or NG

OK	▶	Check harness for open or short between smart entrance control unit and multi-remote control relay.
NG	▶	**Check the following.** ● Harness for open or short between multi-remote control relay and fuse ● Harness for open or short between multi-remote control relay and turn signal lamps

HORN REMINDER CHECK

=NAEL0115S11

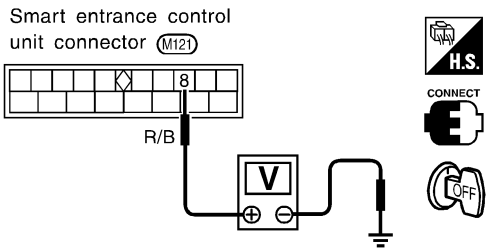
1	CHECK HORN	
Check if horn sounds with horn switch. **Does horn operate?**		
Yes	▶	GO TO 2.
No	▶	Check horn circuit.

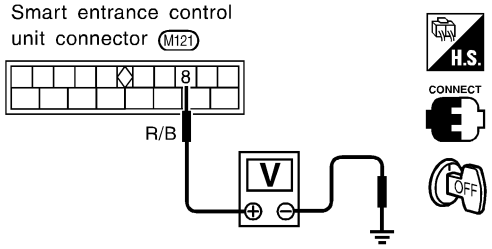
2	CHECK HORN REMINDER OPERATION	
1. Disconnect smart entrance control unit connector. 2. Apply ground to smart entrance control unit terminal 19.  **Horn should sound.** SEL328X Refer to wiring diagram in EL-294. **OK or NG**		
OK	▶	Replace smart entrance control unit.
NG	▶	Check harness for open or short between smart entrance control unit and horn relay.

INTERIOR ROOM LAMP OPERATION CHECK

=NAEL0115S09

1	CHECK INTERIOR ROOM LAMP	
Check if the interior room lamp switch is in the "ON" position and the lamp illuminates. **Does interior room lamp illuminate?**		
Yes	▶	GO TO 2.
No	▶	**Check the following.** ● Harness for open or short between smart entrance control unit and interior room lamp ● Interior room lamp

2	CHECK INTERIOR ROOM LAMP CIRCUIT	
When interior room lamp switch is "DOOR" position, check voltage across smart entrance control unit terminal 8 and ground.  **Battery voltage should exist.** SEL329X Refer to wiring diagram in EL-292. **OK or NG**		
OK	▶	GO TO 3.
NG	▶	Repair harness between smart entrance control unit and interior room lamp.

3	CHECK CONTROL UNIT OUTPUT	
Push unlock button of remote controller with key removed and all doors closed, and check voltage across smart entrance control unit terminal 8 and ground.  **Voltage [V]:** **Unlock button is pushed.** **0 (For approx. 30 seconds.)** **Unlock button is not pushed.** **Battery voltage** SEL330X **OK or NG**		
OK	▶	Check system again.
NG	▶	Replace smart entrance control unit.

ID Code Entry Procedure

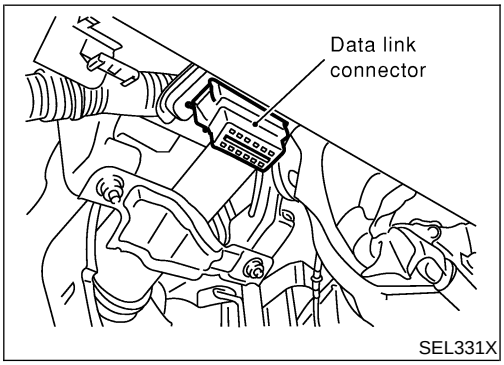
=NAEL0222

REMOTE CONTROLLER ID SET UP WITH CONSULT-II

NAEL0222S01

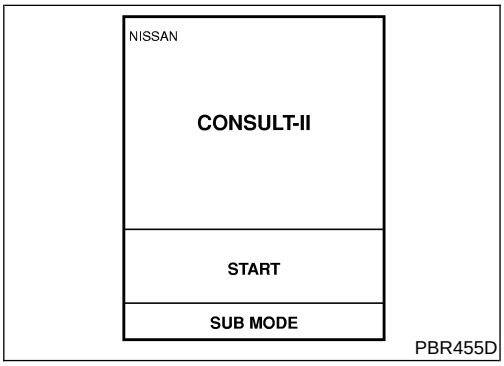
NOTE:

If a remote controller is lost, the ID code of the lost remote controller must be erased to prevent unauthorized use. When the ID code of a lost remote controller is not known, all controller ID codes should be erased. After all ID codes are erased, the ID codes of all remaining and/or new remote controllers must be re-registered.



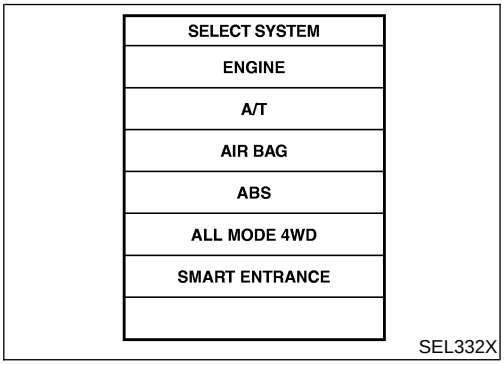
SEL331X

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



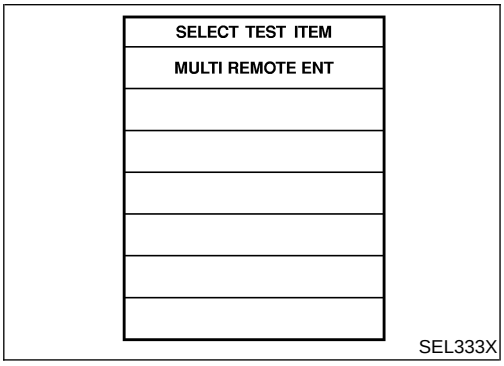
PBR455D

3. Turn ignition switch “ON”.
4. Touch “START”.



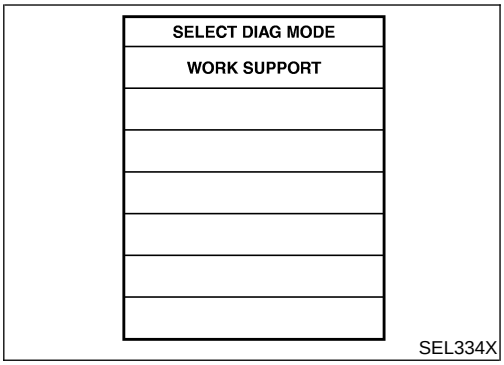
SEL332X

5. Touch “SMART ENTRANCE”.

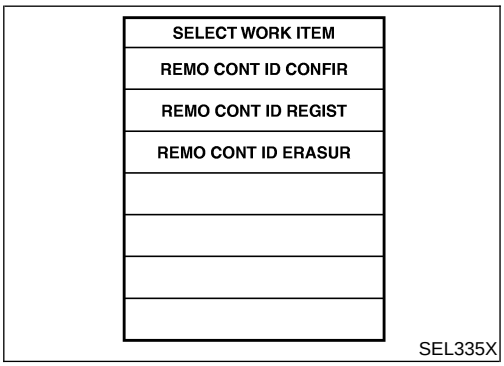


SEL333X

6. Touch “MULTI REMOTE ENT”.



7. Touch "WORK SUPPORT".



8. The items are shown on the figure at left can be set up.

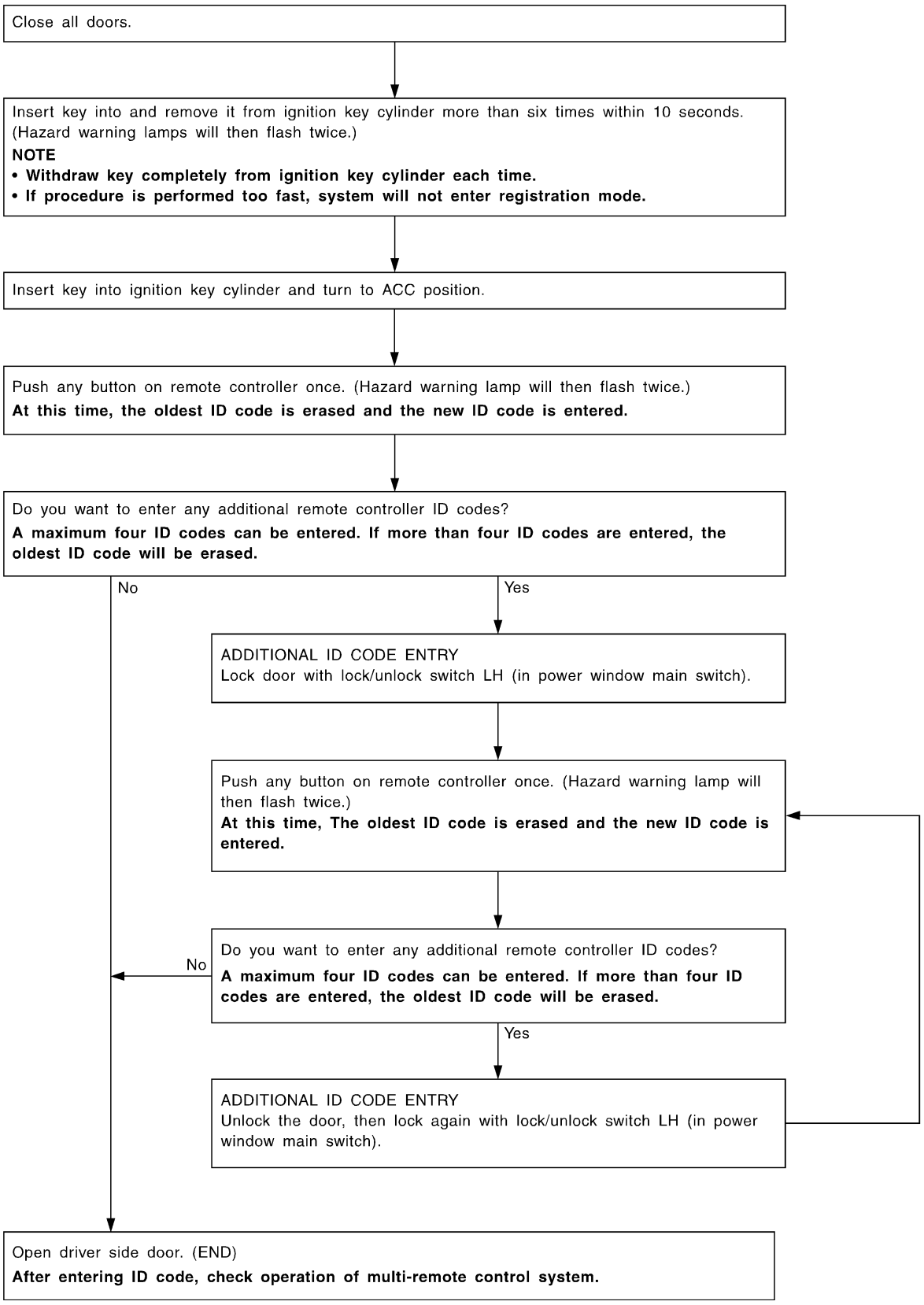
- "REMO CONT ID CONFIR"
  Use this mode to confirm if a remote controller ID code is registered or not.
- "REMO CONT ID REGIST"
  Use this mode to register a remote controller ID code.

NOTE:
Register the ID code when remote controller or smart entrance control unit is replaced, or when additional remote controller is required.

- "REMO CONT ID ERASUR"
  Use this mode to erase a remote controller ID code.

REMOTE CONTROLLER ID SET UP WITHOUT CONSULT-II

NAEL0222S03



SEL332WA

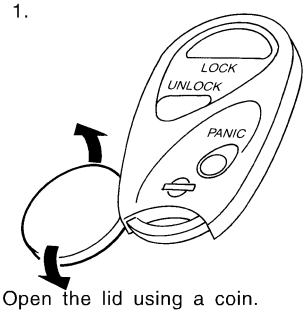
NOTE:

- If a remote controller is lost, the ID code of the lost remote controller must be erased to prevent unauthorized use. A specific ID code can be erased with CONSULT-II. However, when the ID code of a lost remote controller is not known, all controller ID codes should be erased. After all ID codes are erased, the ID codes of all remaining and/or new remote controllers must be re-registered.
  To erase all ID codes in memory, register one ID code (remote controller) four times. After all ID codes are erased, the ID codes of all remaining and/or new remote controllers must be re-registered.
- When registering an additional remote controller, the existing ID codes in memory may or may not be erased. If four ID codes are stored in memory, when an additional code is registered, only the oldest code is erased. If less than four ID codes are stored in memory, when an additional ID code is registered, the new ID code is added and no ID codes are erased.
- If you need to activate more than two additional new remote controllers, repeat the procedure "Additional ID code entry" for each new remote controller.
- Entry of maximum four ID codes is allowed. When more than four ID codes are entered, the oldest ID code will be erased.
- Even if the same ID code that is already in the memory is input, the same ID code can be entered. The code is counted as an additional code.

Remote Controller Battery Replacement

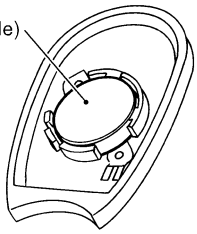
NAEL0118

1.



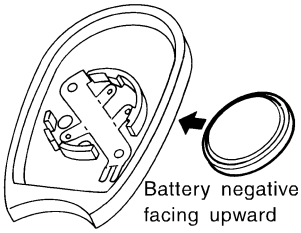
Open the lid using a coin.

2.



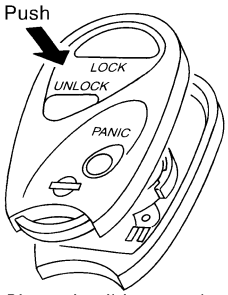
Remove the battery.

3.



Insert the new battery.

4.



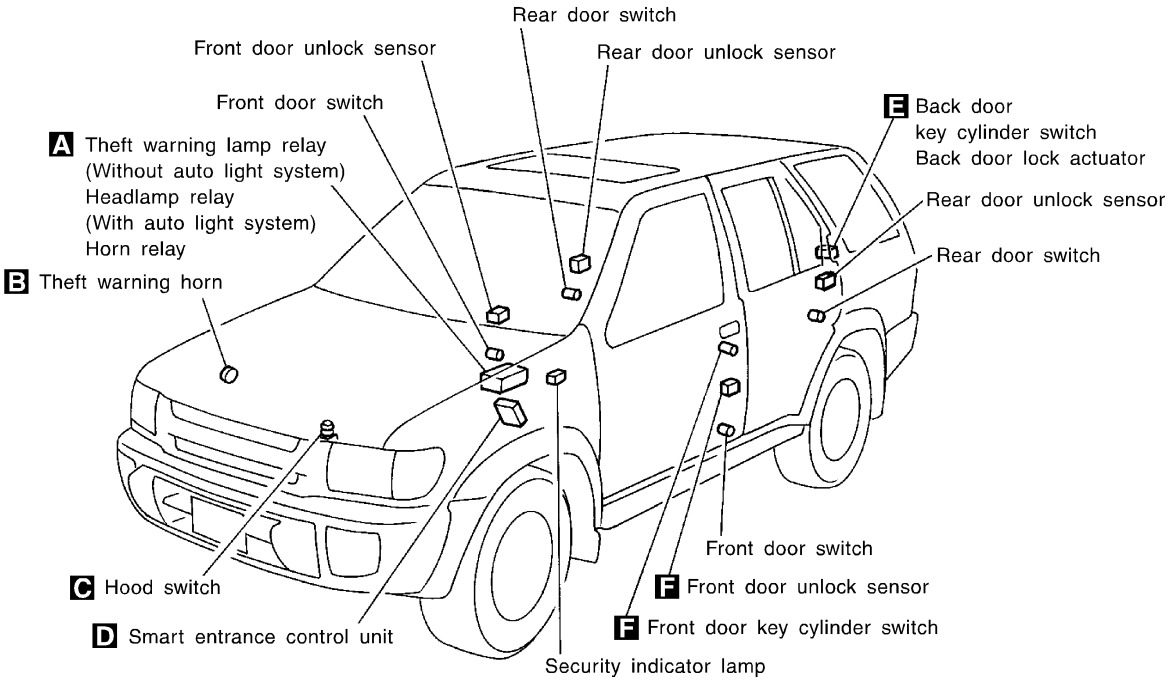
Close the lid securely.
Push the remote controller button two or three times to check its operation.

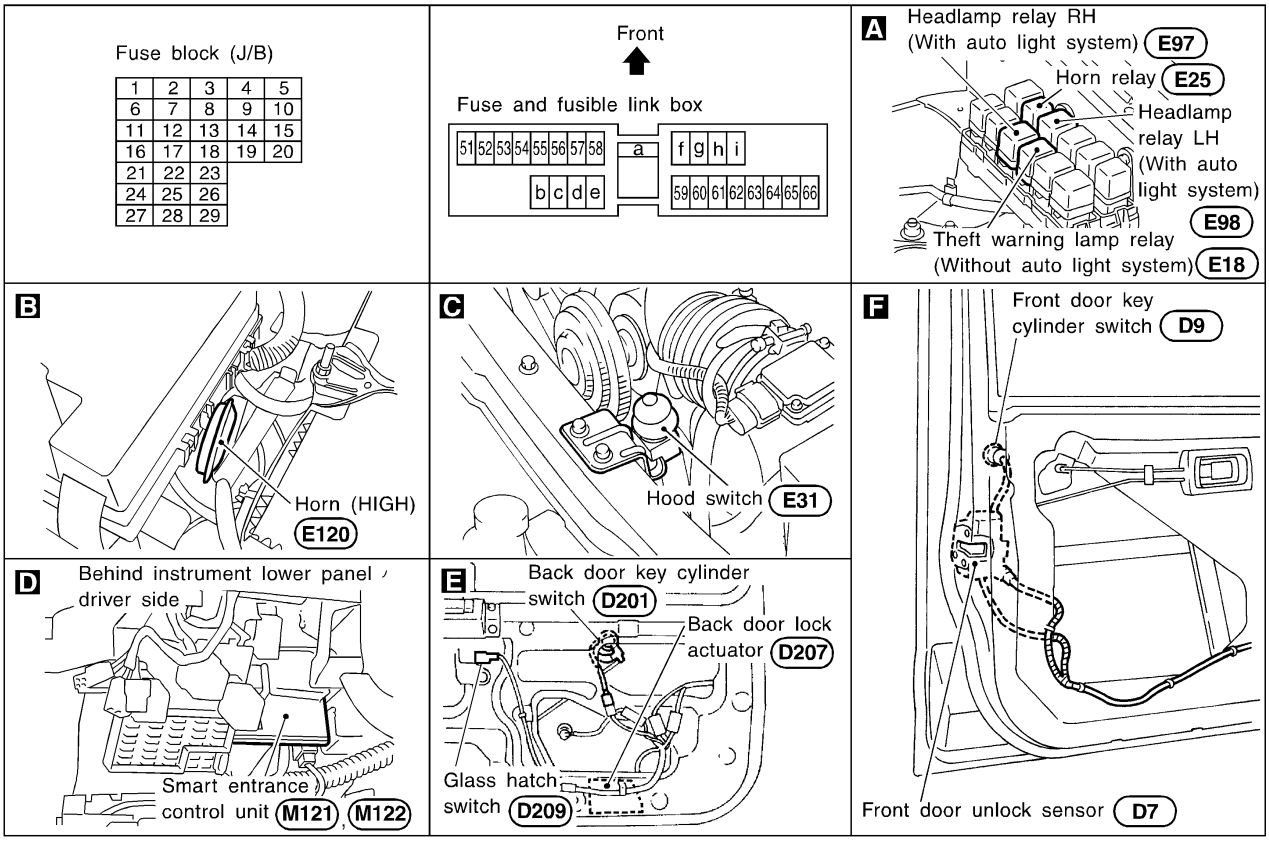
NOTE:
- Be careful not to touch the circuit board or battery terminal.
- The remote controller is water-resistant. However, if it does get wet, immediately wipe it dry.

SEL732W

Component Parts and Harness Connector Location

NAEL0119





SEL572X

System Description

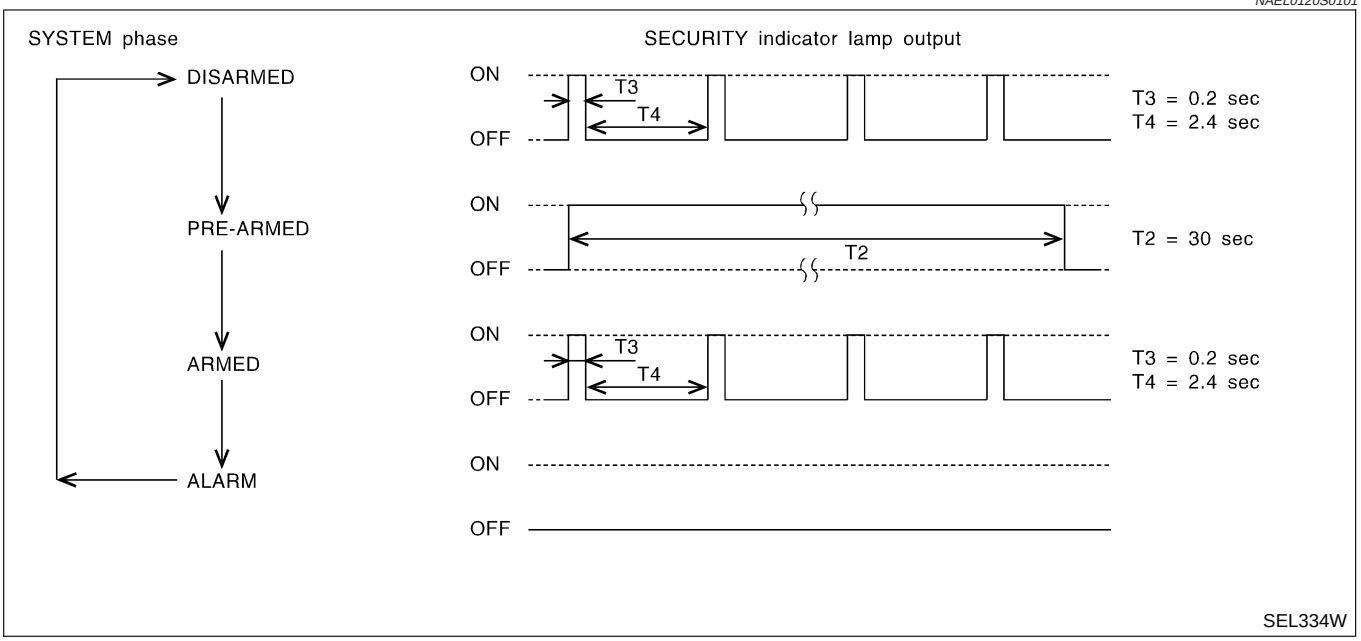
NAEL0120

DESCRIPTION

NAEL0120S01

1. Operation Flow

NAEL0120S0101



2. Setting The Theft Warning System

NAEL0120S0102

Initial condition

1) Close all doors.
2) Close hood and glass hatch.

Disarmed phase

When the theft warning system is in the disarmed phase, the security indicator lamp blinks every 2.6 seconds.

Pre-armed phase and armed phase

The theft warning system turns into the “pre-armed” phase when hood, glass hatch and all doors are closed and the doors are locked by key or multi-remote controller. (The security indicator lamp illuminates.)
After about 30 seconds, the system automatically shifts into the “armed” phase (the system is set). (The security indicator lamp blinks every 2.6 seconds.)

3. Canceling The Set Theft Warning System

NAEL0120S0103

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

1) Unlock the doors with the key or multi-remote controller.
2) Open the glass hatch with the key.

4. Activating The Alarm Operation of The Theft Warning System

NAEL0120S0104

Make sure the system is in the armed phase. (The security indicator lamp blinks every 2.6 seconds.)
When any of the following operations is performed, the system sounds the horns and flashes the headlamps for about 50 seconds.

1) Engine hood, glass hatch or any door is opened before unlocking door with key or multi-remote controller.
2) Door is unlocked without using key or multi-remote controller.
3) Disconnecting and connecting the battery connector before canceling armed phase.

POWER SUPPLY AND GROUND

NAEL0120S07

Power is supplied at all times

- through 7.5A fuse [No. 24, located in the fuse block (J/B)]
- to security indicator lamp terminal 1, and
- to smart entrance control unit terminal 10.

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

- through 7.5A fuse [No. 11, located in the fuse block (J/B)]

- to smart entrance control unit terminal 33.

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

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

Ground is supplied

- to smart entrance control unit terminal 16
- through body grounds M77 and M111.

INITIAL CONDITION TO ACTIVATE THE SYSTEM

NAEL0120S02

The operation of the theft warning system is controlled by the doors, hood and glass hatch.
To activate the theft warning system, the smart entrance control unit must receive signals indicating the doors, hood and glass hatch are closed and the doors are locked.
When a door is open, smart entrance control unit terminal 28, 29 or 40 receives a ground signal from each door switch.
When a door is unlocked, smart entrance control unit terminal 26, 36 or 37 receives a ground signal from terminal 4 of each door unlock sensor or terminal 1 of back door unlock sensor.
When the hood is open, smart entrance control unit terminal 27 receives a ground signal

- from terminal 1 of the hood switch
- through body grounds E13 and E41.

When the glass hatch is open, smart entrance control unit terminal 38 receives a ground signal

- from terminal 1 of the glass hatch switch
- through body grounds D210, B11 and B22.

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

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

NAEL0120S03

If the key is used to lock doors, terminal 41 receives a ground signal

- from terminal 3 of the key cylinder switch LH
- through back grounds M77 and M111
- from terminal 1 of the back door key cylinder switch
- through body grounds B11, B22 and D210.

If this signal or lock signal from remote controller is received by the smart entrance control unit, the theft warning system will activate automatically.
Once the theft warning system has been activated, smart entrance control unit terminal 31 supplies ground to terminal 2 of the security indicator lamp.
The security lamp will illuminate for approximately 30 seconds and then blink.
Now the theft warning system is in armed phase.

THEFT WARNING SYSTEM ALARM OPERATION

NAEL0120S04

The theft warning system is triggered by

- opening a door
- opening the hood or the glass hatch
- unlocking door without using the key or multi-remote controller.

Once the theft warning system is in armed phase, if the smart entrance control unit receives a ground signal at terminal 26, 36, 37 (door unlock sensor), 28, 29, 40 (door switch), 38 (glass hatch switch) or 27 (hood switch), the theft warning system will be triggered. The headlamps flash and the horn sounds intermittently.
Power is supplied at all times

- through 7.5A fuse (No. 52, located in fuse and fusible link box)
- to horn relay terminals 1 and 3 and
- to theft warning lamp relay terminal 1 (without auto light system)
- through 10A fuse (No. 54, located in fuse and fusible link box)
- to horn relay terminal 6.

When the theft warning system is triggered, ground is supplied intermittently

- from terminal 4 of the smart entrance control unit
- to headlamp relay LH and RH terminal 2 (with auto light system), or

- to theft warning lamp relay terminal 2 (without auto light system) and
- from terminal 19 of the smart entrance control unit
- to horn relay terminal 2.

The headlamps flash and the horn sounds intermittently.
The alarm automatically turns off after 50 seconds but will reactivate if the vehicle is tampered with again.

THEFT WARNING SYSTEM DEACTIVATION

NAEL0120S05

To deactivate the theft warning system, a door, the back door or the glass hatch must be unlocked with the key or remote controller.
When the key is used to unlock the door, smart entrance control unit terminal 30 receives a ground signal

- from terminal 1 of the LH key cylinder switch
- from terminal 2 of the back door key cylinder switch.

When the key is used to open the glass hatch, smart entrance control unit terminal 42 receives a ground signal from terminal 3 of the back door key cylinder switch.
When the smart entrance control unit receives either one of these signals or unlock signal from remote controller, the theft warning system is deactivated. (Disarmed phase)

PANIC ALARM OPERATION

NAEL0120S06

Multi-remote control system may or may not operate theft warning system (horn and headlamps) as required.
When the multi-remote control system is triggered, ground is supplied intermittently.

- from smart entrance control unit terminal 4
- to headlamp relay LH and RH terminal 2 (with auto light system), or
- to theft warning lamp relay terminal 2 (without auto light system) and
- from terminal 19 of the smart entrance control unit
- to horn relay terminal 2.

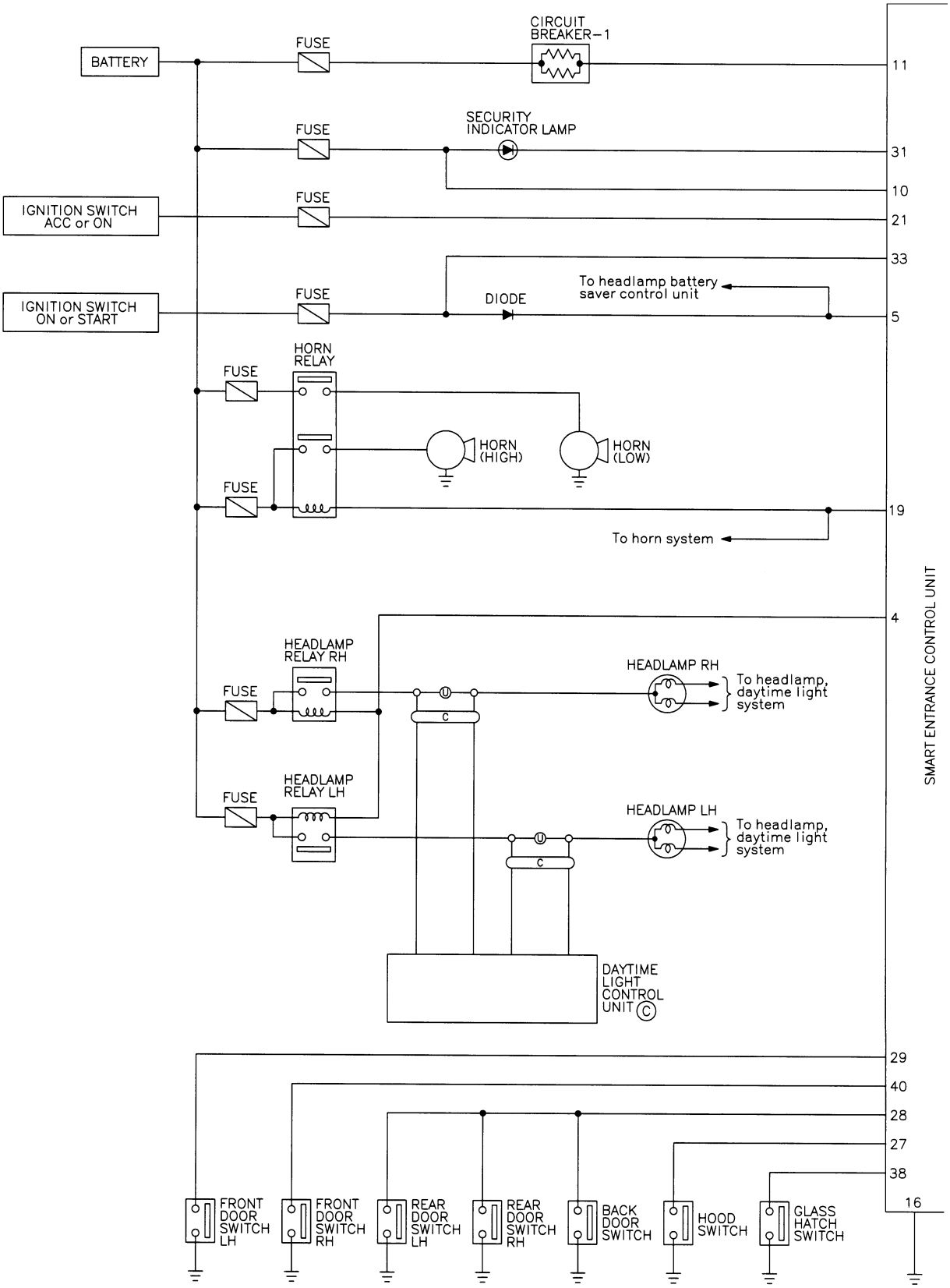
The headlamp flashes and the horn sounds intermittently.
The alarm automatically turns off after 30 seconds or when smart entrance control unit receives any signal from multi-remote controller.

Schematic

NAEL0121

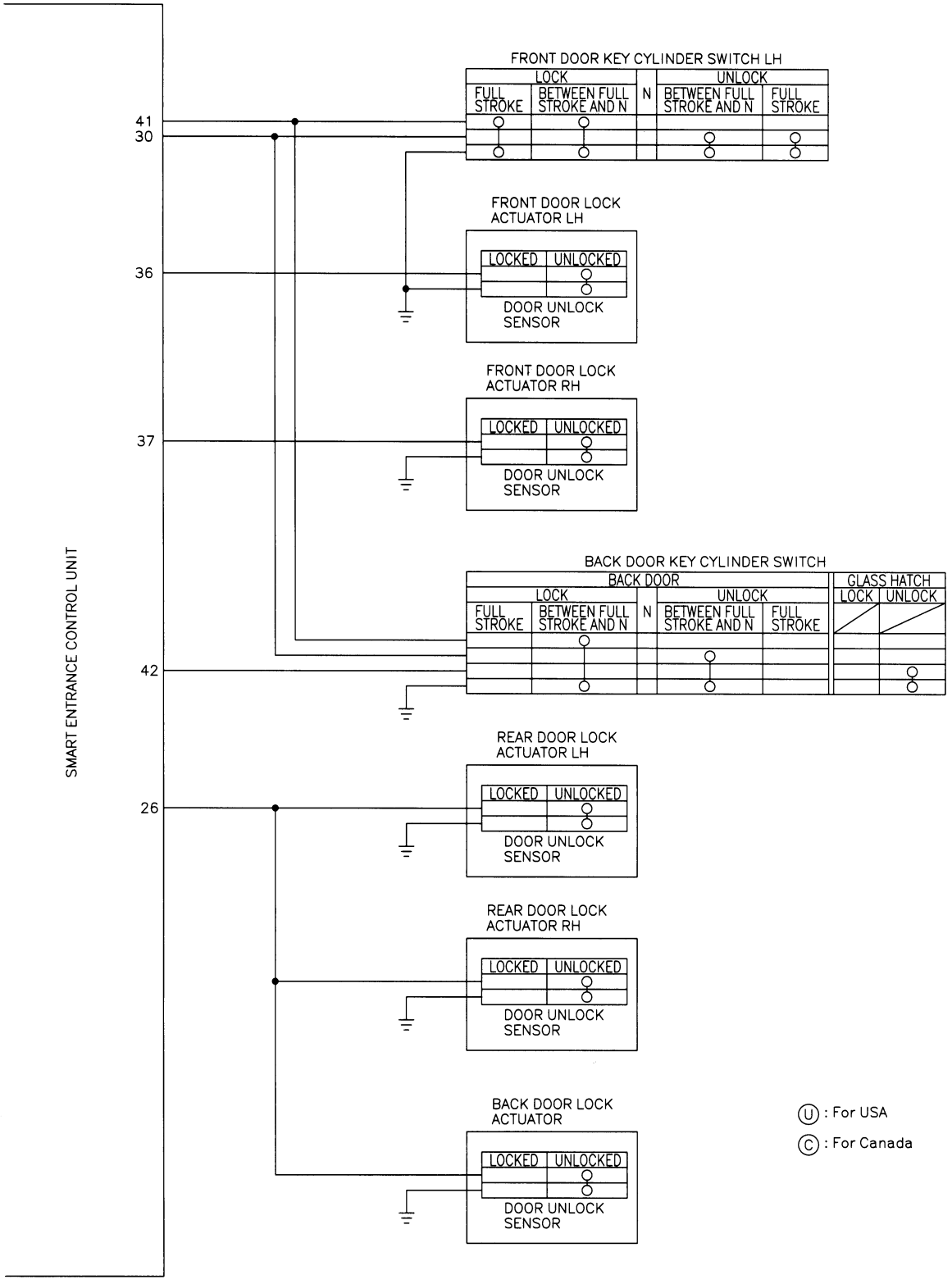
WITH AUTO LIGHT SYSTEM

NAEL0121S01



MEL054M

Schematic (Cont'd)

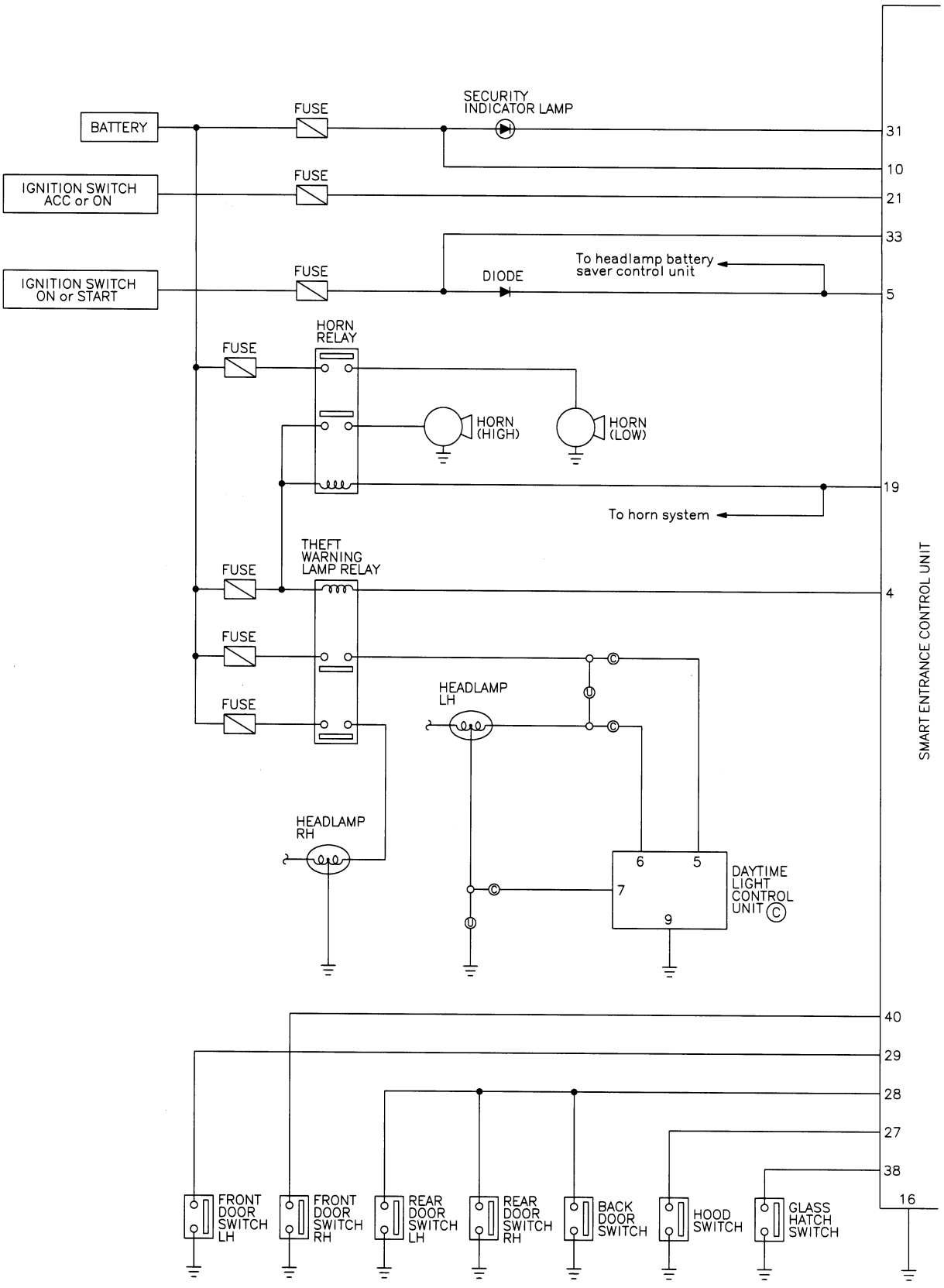


MEL055M

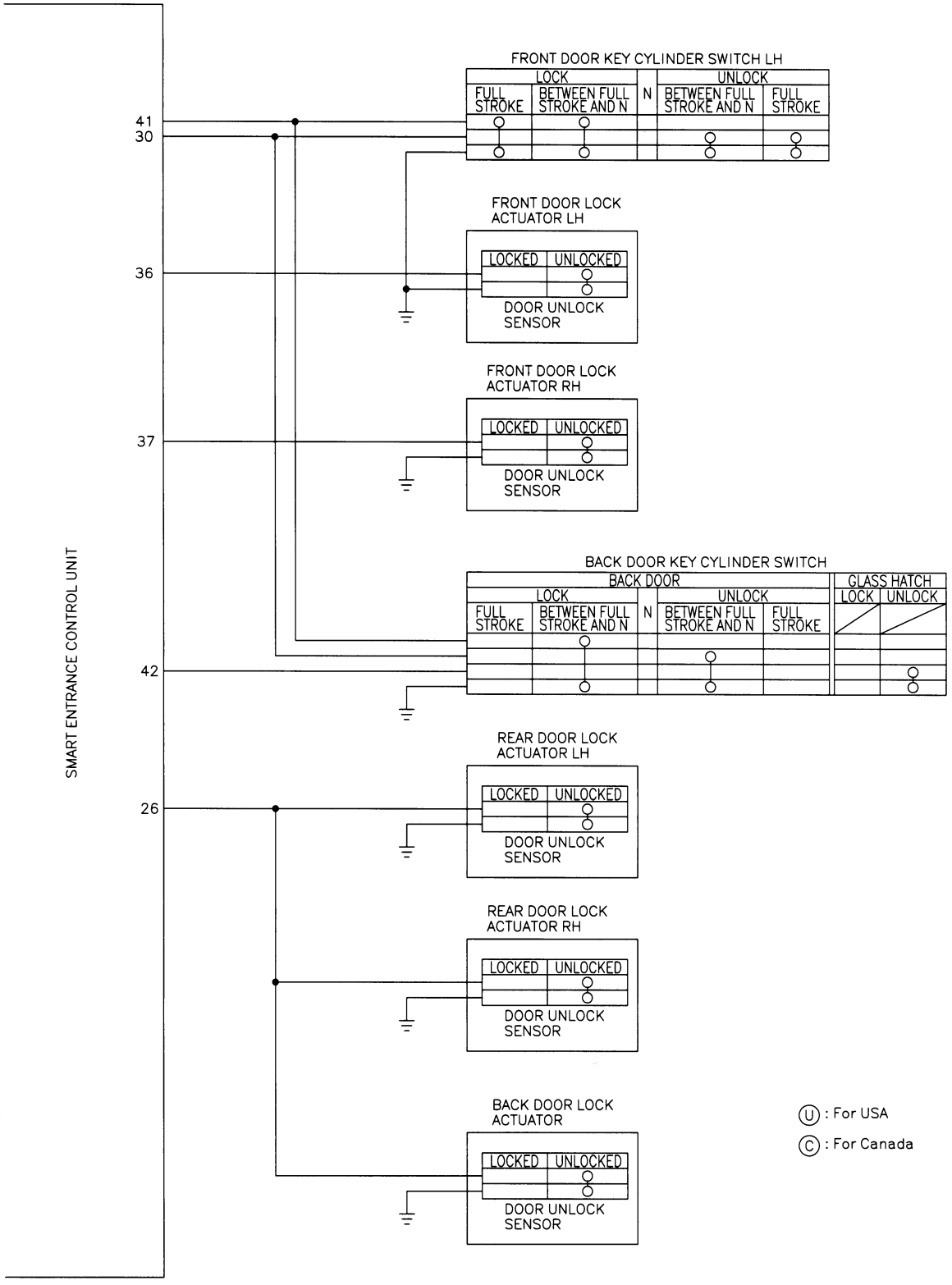
Schematic (Cont'd)

WITHOUT AUTO LIGHT SYSTEM

NAEL0121S02



MEL059M


SMART ENTRANCE CONTROL UNIT
41
30
36
37
42
26
FRONT DOOR KEY CYLINDER SWITCH LH
LOCK
UNLOCK
FULL STROKE
BETWEEN FULL STROKE AND N
N
BETWEEN FULL STROKE AND N
FULL STROKE
FRONT DOOR LOCK ACTUATOR LH
LOCKED
UNLOCKED
DOOR UNLOCK SENSOR
FRONT DOOR LOCK ACTUATOR RH
LOCKED
UNLOCKED
DOOR UNLOCK SENSOR
BACK DOOR KEY CYLINDER SWITCH
BACK DOOR
LOCK
UNLOCK
FULL STROKE
BETWEEN FULL STROKE AND N
N
BETWEEN FULL STROKE AND N
FULL STROKE
GLASS HATCH
LOCK
UNLOCK
REAR DOOR LOCK ACTUATOR LH
LOCKED
UNLOCKED
DOOR UNLOCK SENSOR
REAR DOOR LOCK ACTUATOR RH
LOCKED
UNLOCKED
DOOR UNLOCK SENSOR
BACK DOOR LOCK ACTUATOR
LOCKED
UNLOCKED
DOOR UNLOCK SENSOR
Ⓤ : For USA
Ⓒ : For Canada

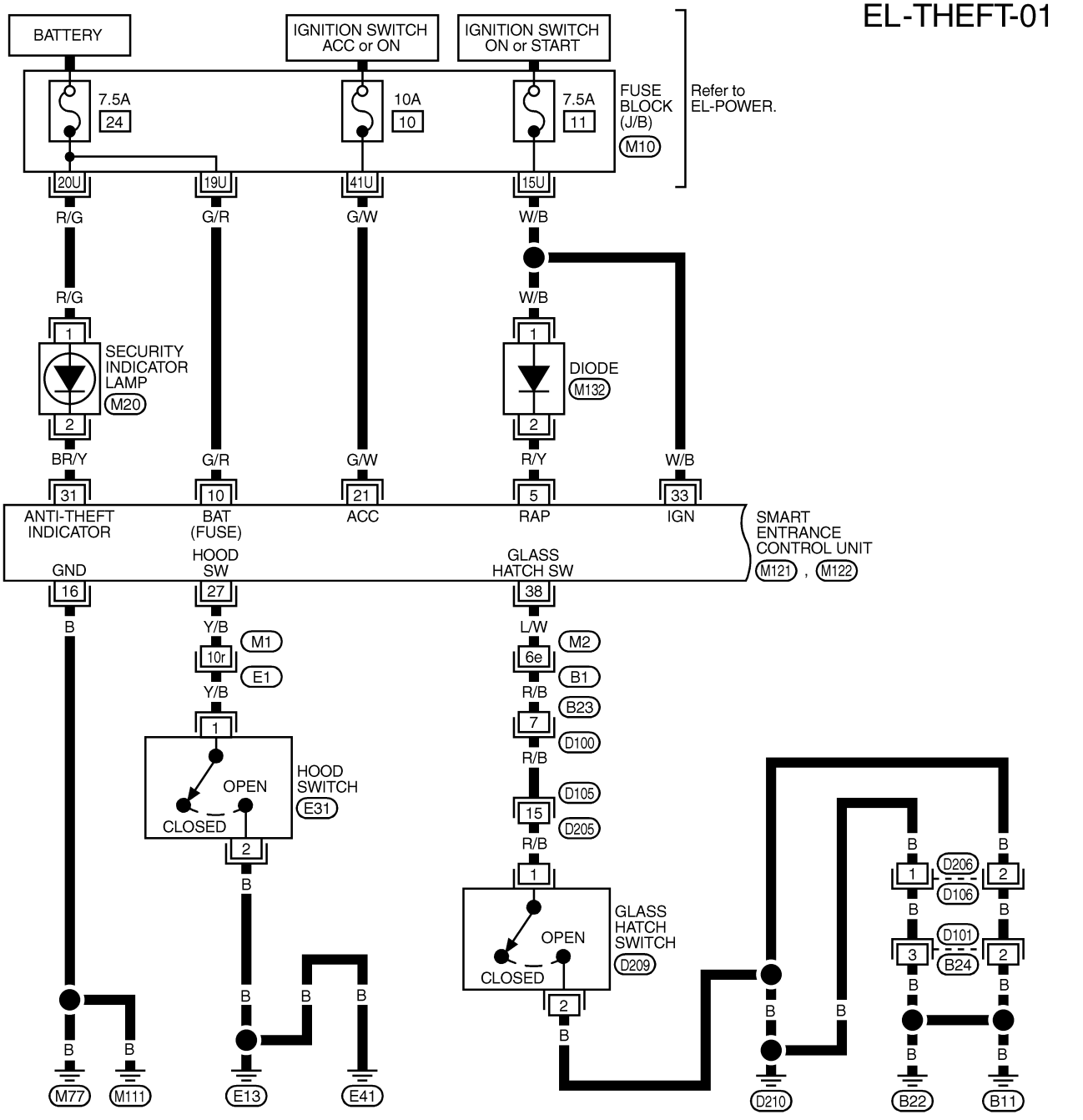
MEL055M

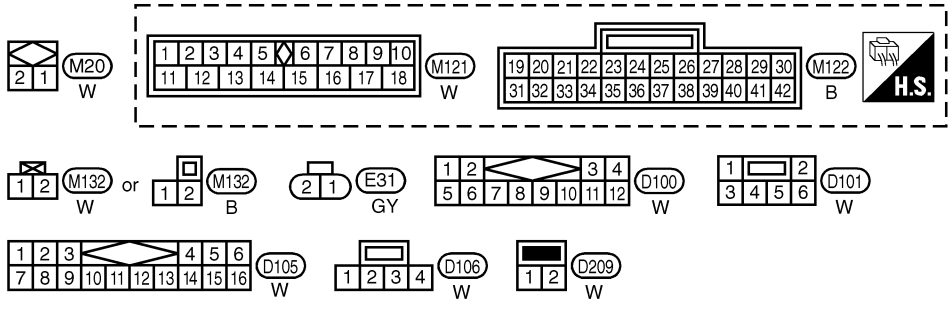
Wiring Diagram — THEFT —

NAEL0122

FIG. 1

NAEL0122S01





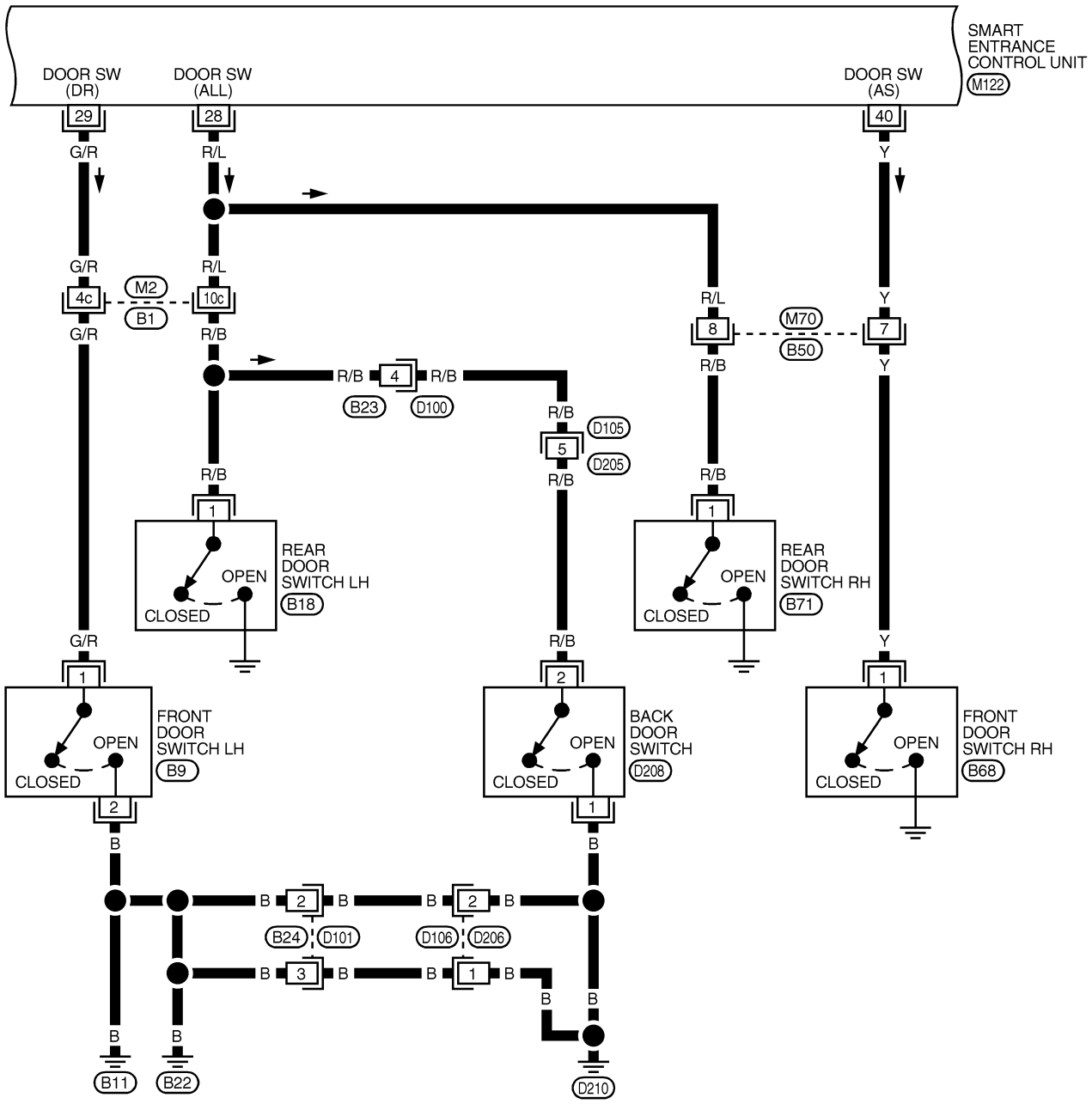
REFER TO THE FOLLOWING.
E1 , B1 -SUPER MULTIPLE JUNCTION (SMJ)
M10 -FUSE BLOCK-JUNCTION BOX (J/B)

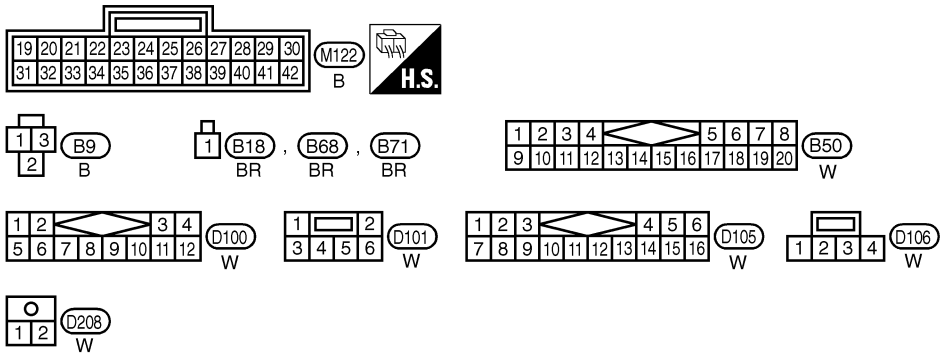
MEL022O

FIG. 2

NAEL0122S02

EL-THEFT-02





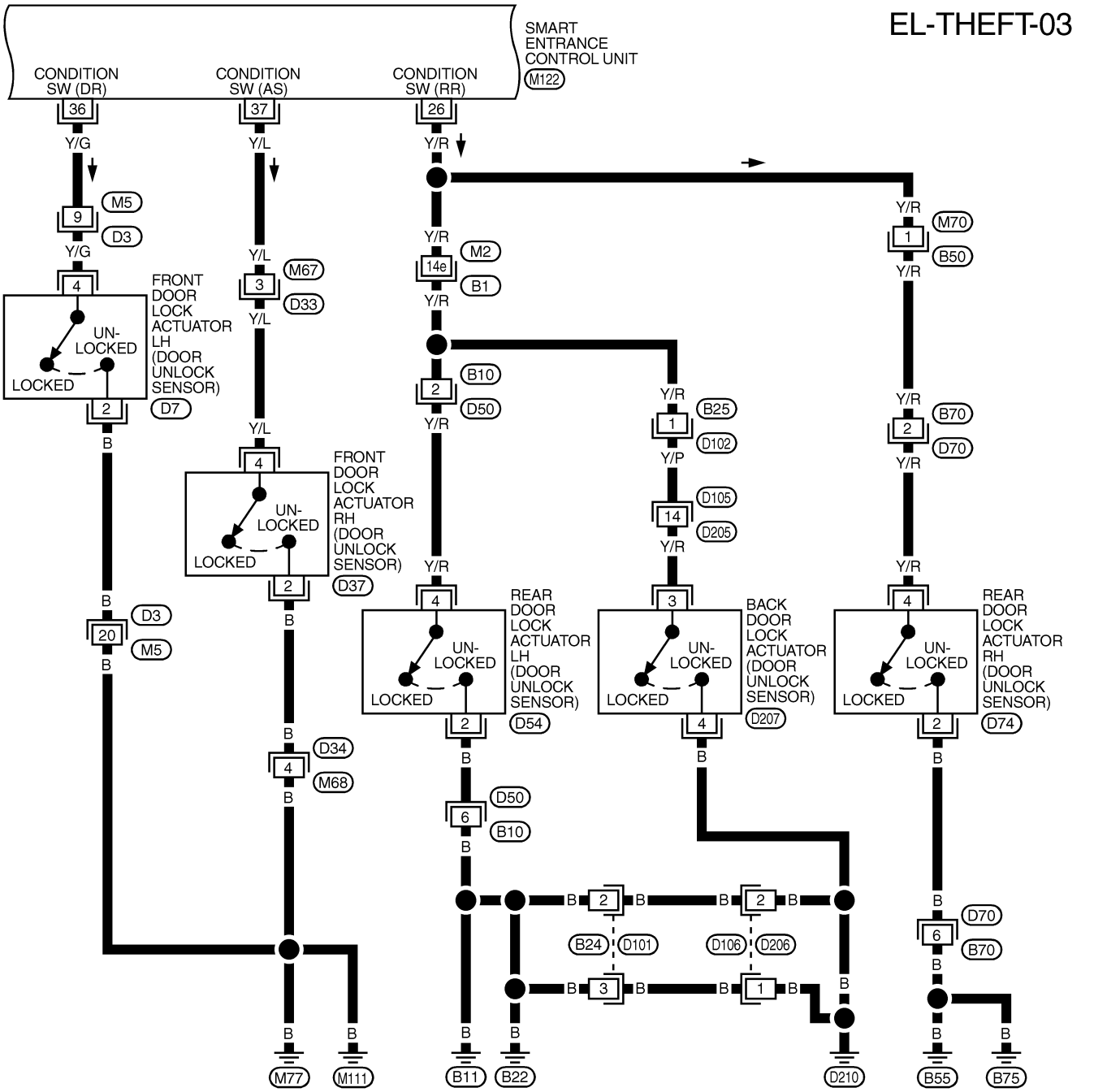
REFER TO THE FOLLOWING.
(B1) -SUPER MULTIPLE JUNCTION (SMJ)

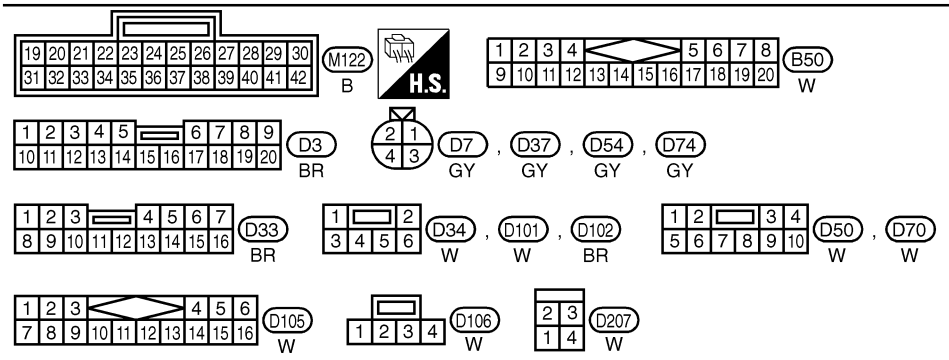
MEL859L

FIG. 3

NAEL0122S03

EL-THEFT-03





REFER TO THE FOLLOWING.

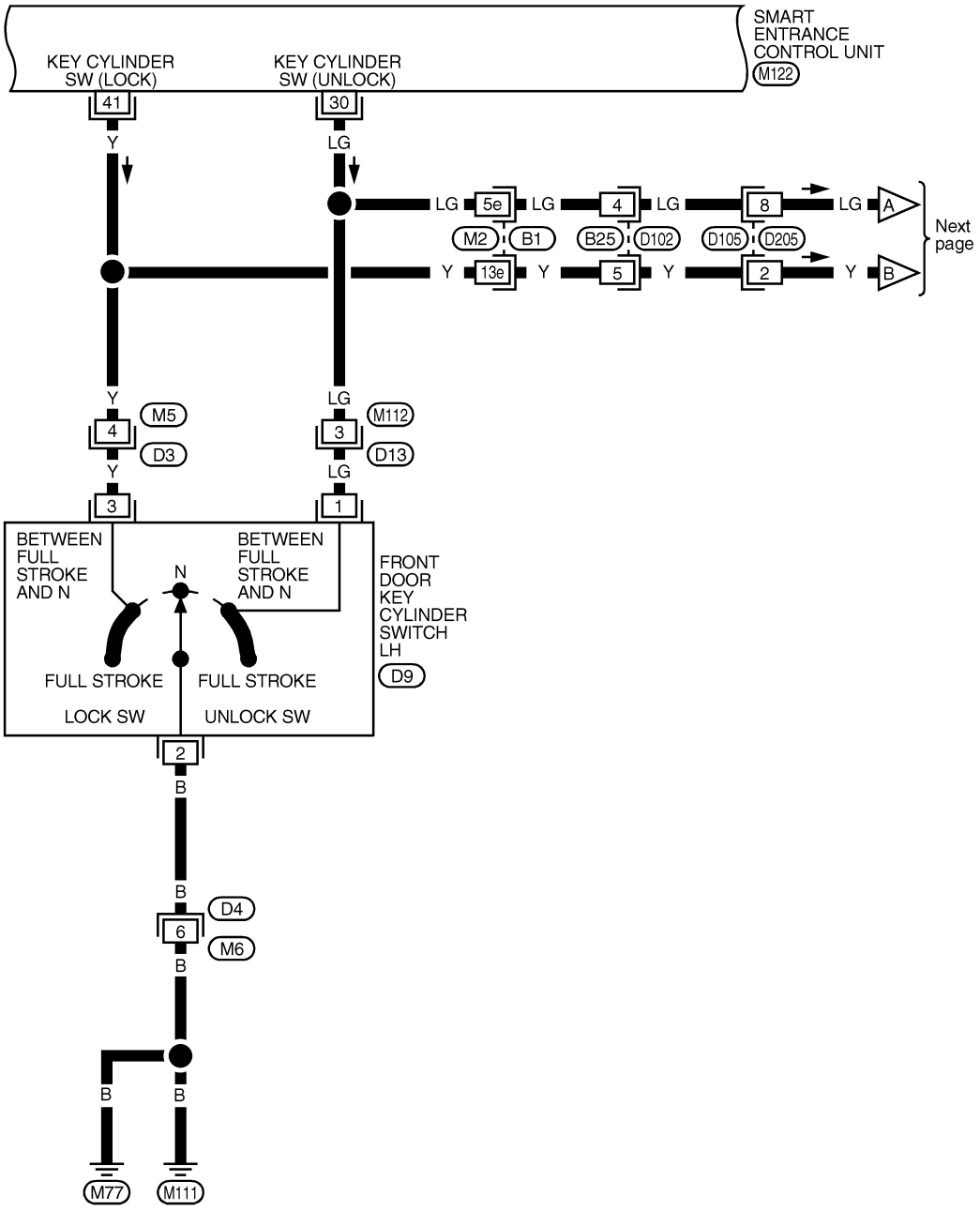
B1 - SUPER MULTIPLE JUNCTION (SMJ)

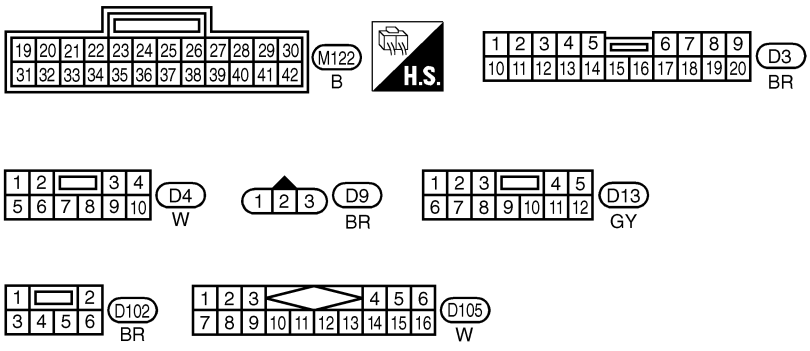
MEL860L

FIG. 4

NAEL0122S04

EL-THEFT-04





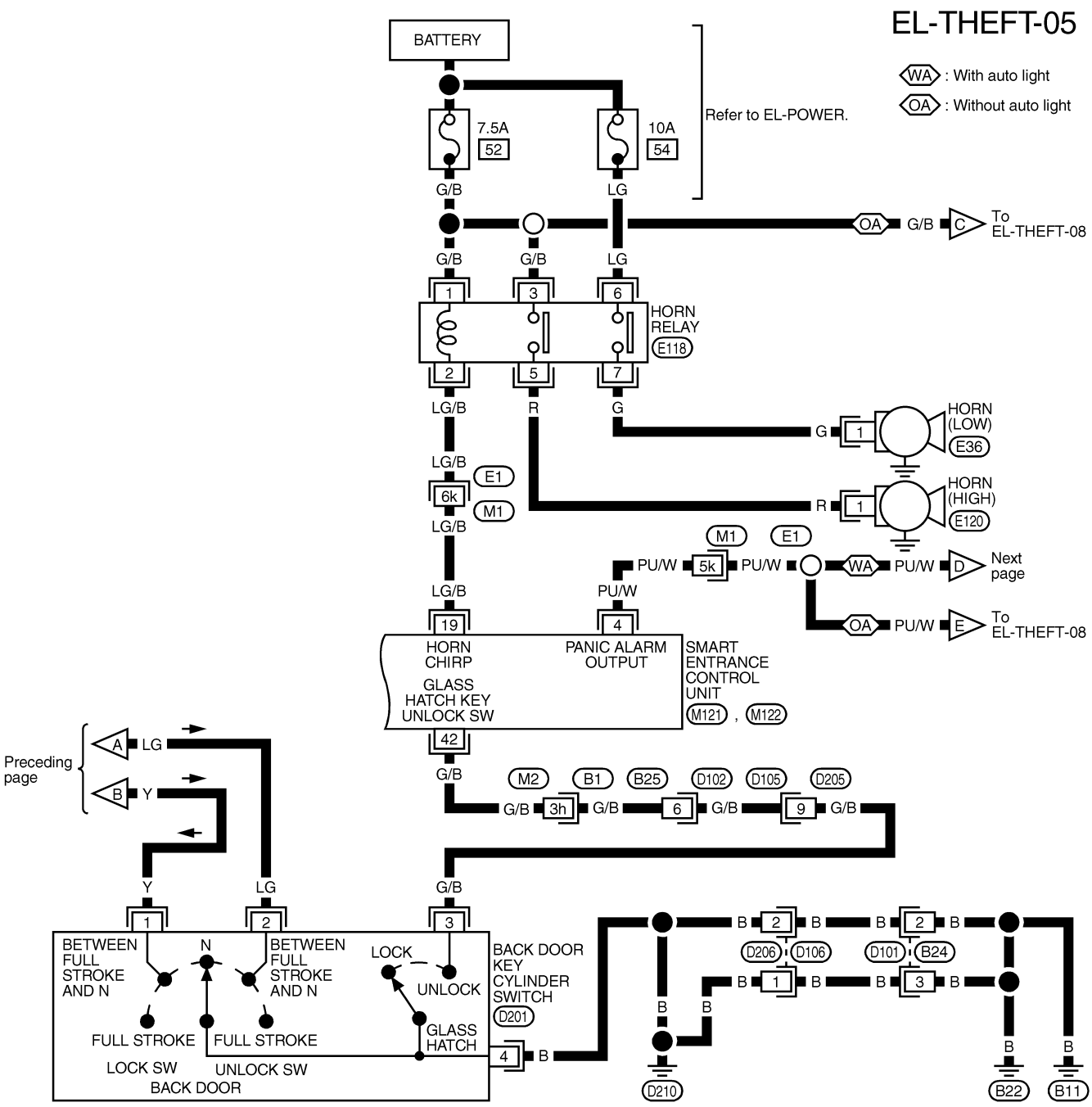
REFER TO THE FOLLOWING.
(B1) - SUPER MULTIPLE JUNCTION (SMJ)

MEL861L

Wiring Diagram — THEFT — (Cont'd)

FIG. 5

NAEL0122S05

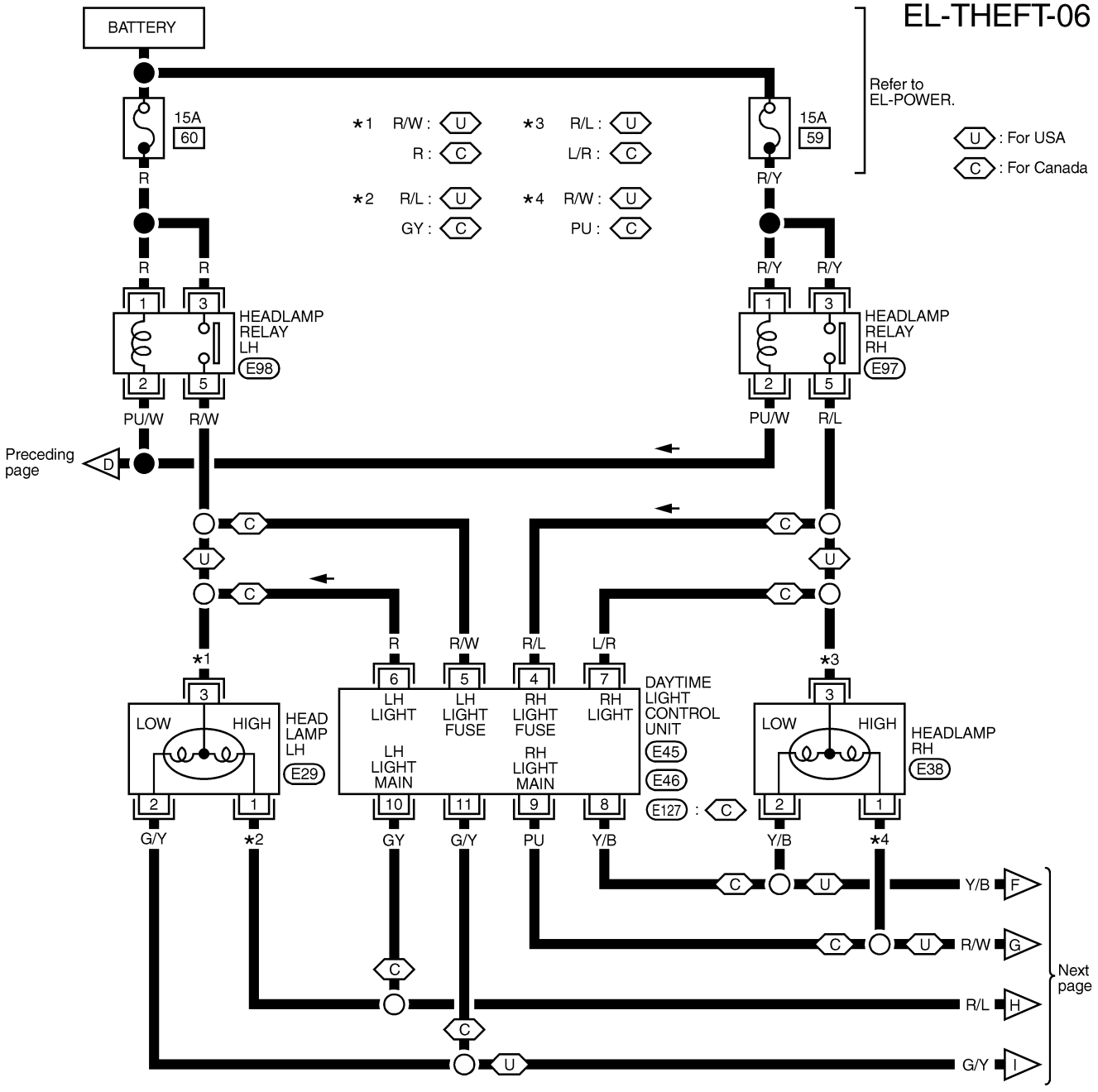


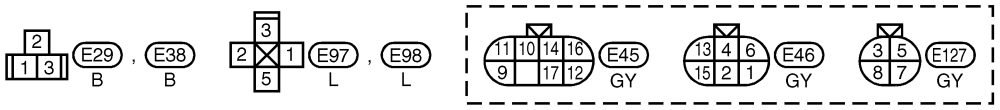
REFER TO THE FOLLOWING.
E1 , B1 -SUPER MULTIPLE JUNCTION (SMJ)

MEL064M

FIG. 6/WITH AUTO LIGHT SYSTEM

NAEL0122S06



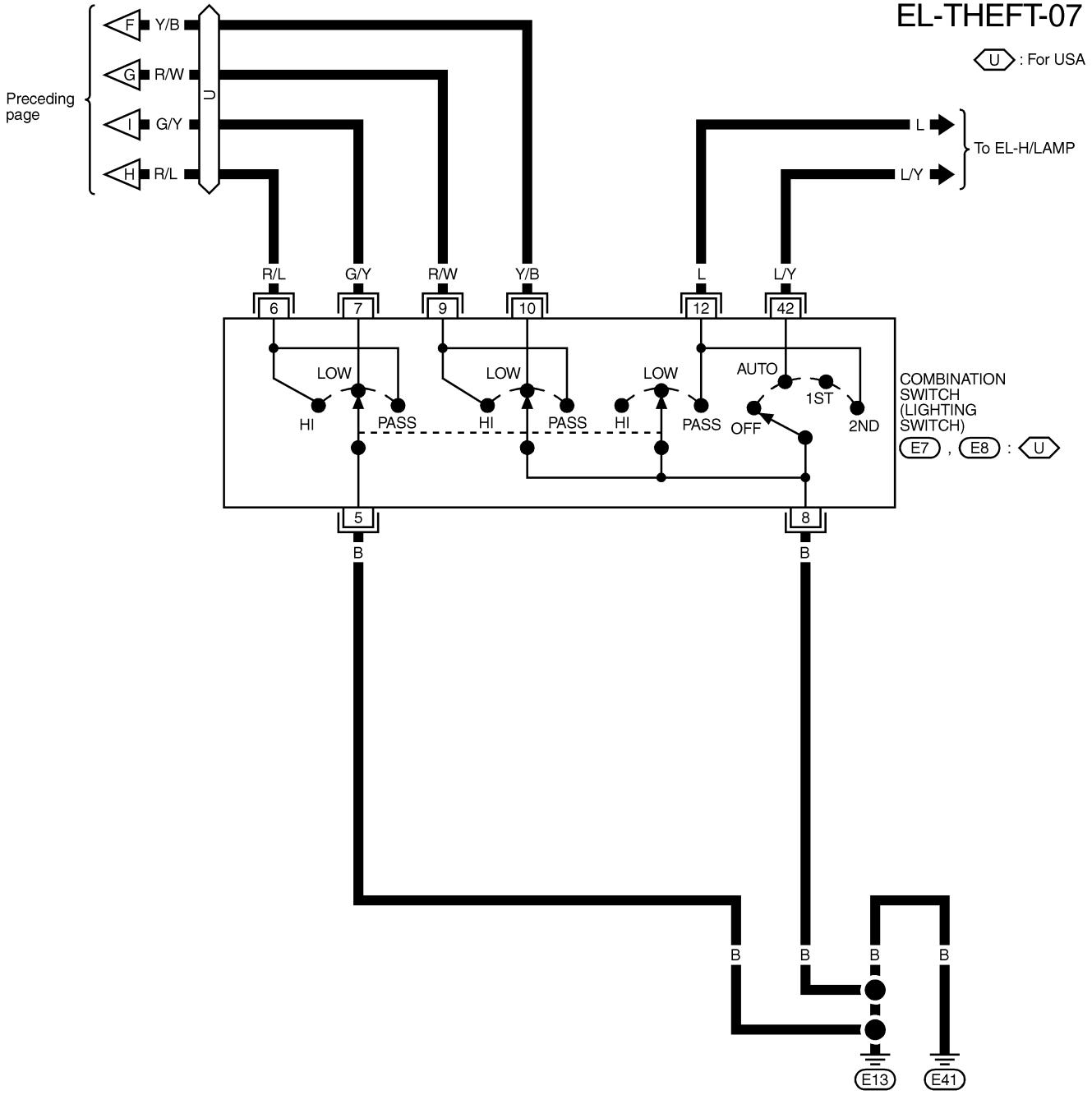


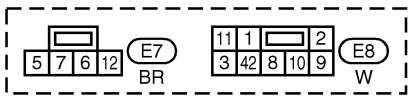
MEL057M

Wiring Diagram — THEFT — (Cont'd)

FIG. 7/WITH AUTO LIGHT SYSTEM

NAEL0122S07

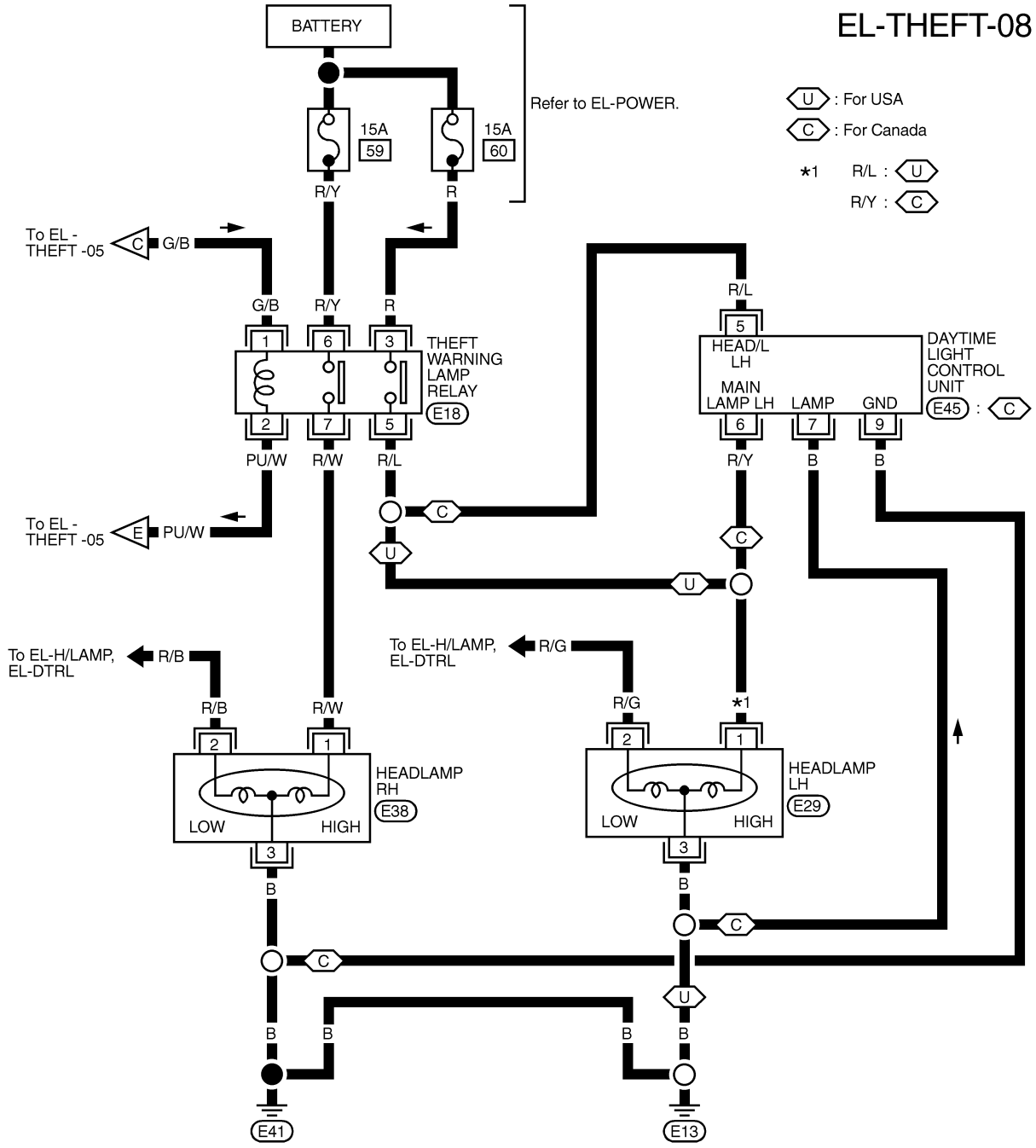


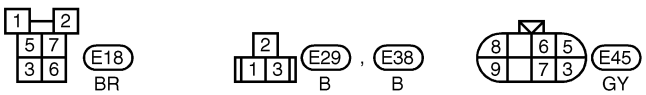


MEL058M

FIG. 8/WITHOUT AUTO LIGHT SYSTEM

NAEL0122S08





MEL065M

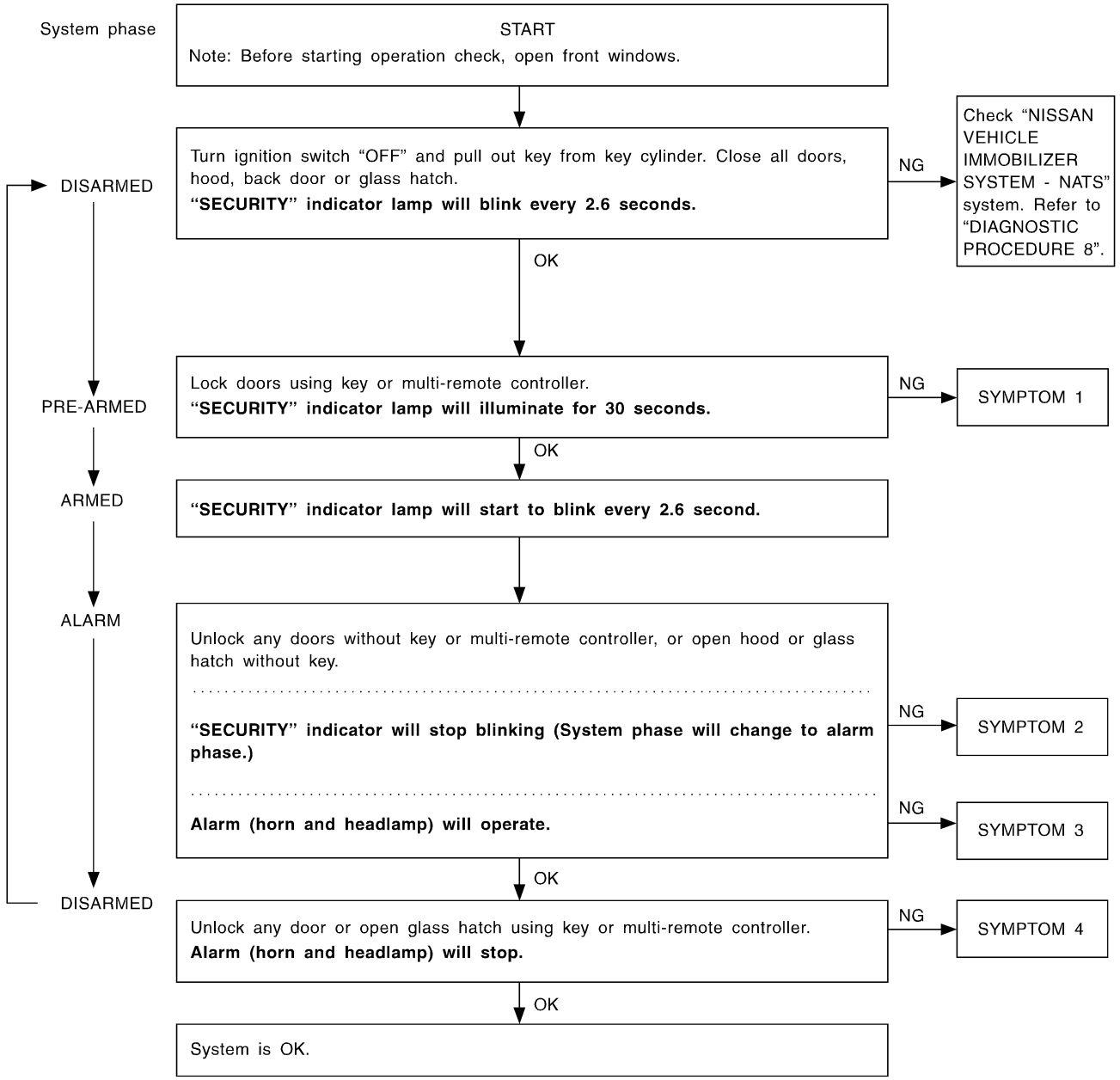
Trouble Diagnoses

NAEL0123

PRELIMINARY CHECK

NAEL0123S01

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



SEL733WC

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

SYMPTOM CHART

NAEL0123S02

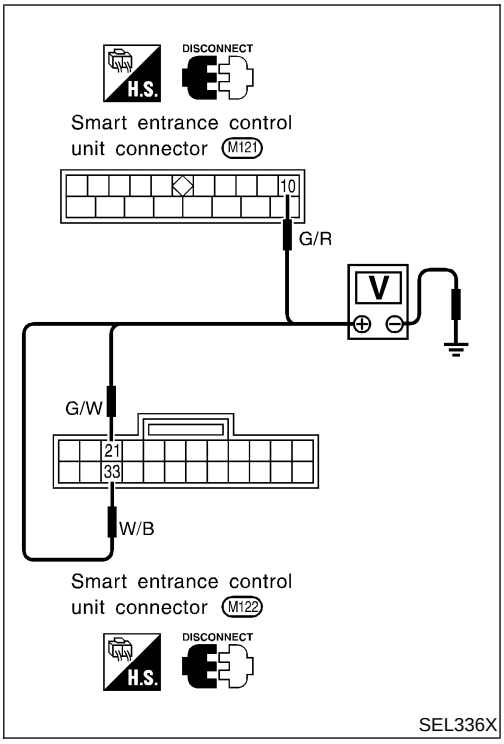
REFERENCE PAGE (EL-)			328	330	331	334	335	336	337	338	340	341	295
SYMPTOM			PRELIMINARY CHECK	POWER SUPPLY AND GROUND CIRCUIT CHECK	DOOR, HOOD AND GLASS HATCH SWITCH CHECK	SECURITY INDICATOR LAMP CHECK	DOOR UNLOCK SENSOR CHECK	DOOR KEY CYLINDER SWITCH CHECK	BACK DOOR KEY CYLINDER SWITCH CHECK	HORN ALARM CHECK	THEFT WARNING HEADLAMP ALARM CHECK (With auto light system)	THEFT WARNING HEADLAMP ALARM CHECK (Without auto light system)	Check "MULTI-REMOTE CONTROL" system.
	Theft warning indicator does not illuminate for 30 seconds.		X	X	X	X							
1	Theft warning system cannot be set by	All items	X	X	X		X						
		Door outside key	X					X					
		Back door key	X						X				
		Multi-remote control	X										X
2	*1 Theft warning system does not alarm when ...	Any door is opened.	X		X								
		Any door is unlocked without using key or multi-remote controller	X				X						
3	Theft warning alarm does not activate.	All function	X		X		X						
		Horn alarm	X							X			
		Headlamp alarm	X								X	X	
4	Theft warning system cannot be canceled by	Door outside key	X					X					
		Back door key	X						X				
		Multi-remote control	X										X

X : Applicable

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

Before starting trouble diagnoses above, perform preliminary check, EL-328.

Symptom numbers in the symptom chart correspond with those of preliminary check.



SEL336X

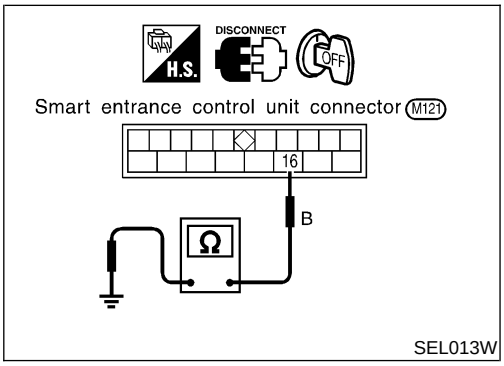
POWER SUPPLY AND GROUND CIRCUIT CHECK

NAEL0123S03

Power Supply Circuit Check

NAEL0123S0301

Terminals		Ignition switch position		
(+)	(−)	OFF	ACC	ON
10	Ground	Battery voltage	Battery voltage	Battery voltage
21	Ground	0V	Battery voltage	Battery voltage
33	Ground	0V	0V	Battery voltage



SEL013W

Ground Circuit Check

NAEL0123S0302

Terminals	Continuity
16 - Ground	Yes

DOOR, HOOD AND GLASS HATCH SWITCH CHECK

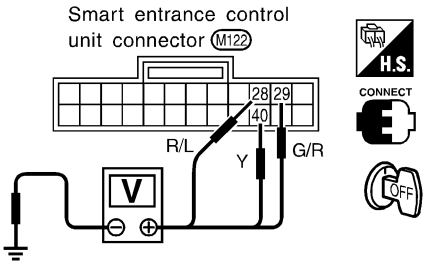
=NAEL0123S04

Door Switch Check

NAEL0123S0401

1 **CHECK DOOR SWITCH INPUT SIGNAL**

Check voltage between smart entrance control unit terminals 28, 29 or 40 and ground.



	Terminals		Condition	Voltage [V]
	(+)	(−)		
Front LH door switch	29	ground	Open	0
			Closed	Approx. 5
Front RH door switch	40	ground	Open	0
			Closed	Approx. 5
Rear and back door switches	28	ground	Open	0
			Closed	Approx. 5

SEL305X

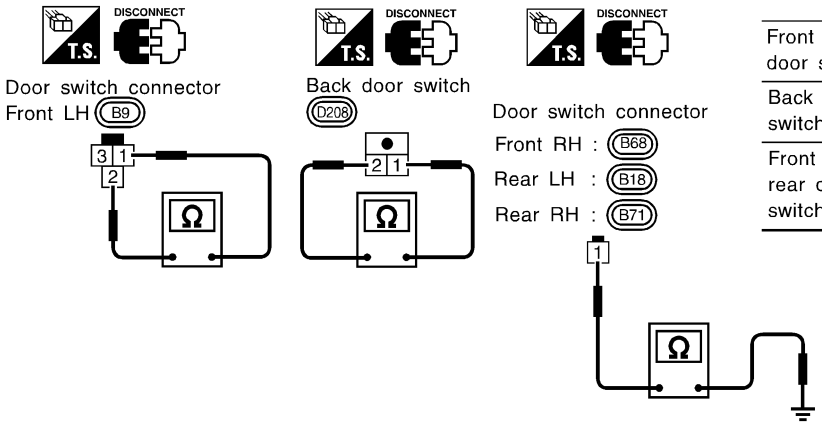
Refer to wiring diagram in EL-321.

OK or NG

OK	▶	Door switch is OK, and go to hood switch check.
NG	▶	GO TO 2.

2 **CHECK DOOR SWITCH**

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



	Terminals	Condition	Continuity
Front LH door switch	1 - 2	Closed	No
		Open	Yes
Back door switch	1 - 2	Closed	No
		Open	Yes
Front RH and rear door switches	1 - ground	Closed	No
		Open	Yes

SEL306X

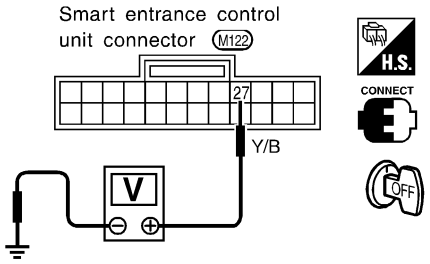
OK or NG

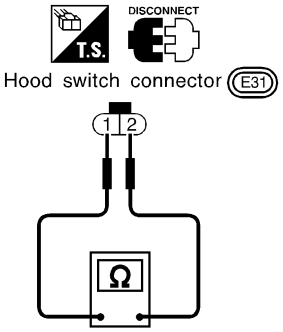
OK	▶	**Check the following.** ● Door switch ground circuit (Front LH, back door) or door switch ground condition ● Harness for open or short between smart entrance control unit and door switch
NG	▶	Replace door switch.

Hood Switch Check

=NAEL0123S0402

1	CHECK HOOD SWITCH FITTING CONDITION	
	OK or NG	
OK	▶	GO TO 2.
NG	▶	Adjust installation of hood switch or hood.

2	CHECK HOOD SWITCH INPUT SIGNAL	
Check voltage between smart entrance control unit terminal 27 and ground.		
		**Voltage [V]:** **Hood is open.** **0** **Hood is closed.** **Approx. 5**
SEL337X		
Refer to wiring diagram in EL-320.		
OK or NG		
OK	▶	Hood switch is OK, and go to glass hatch switch check.
NG	▶	GO TO 3.

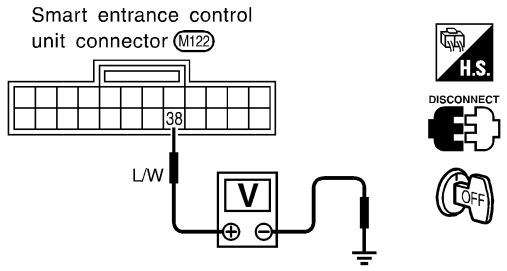
3	CHECK HOOD SWITCH	
1. Disconnect hood switch connector. 2. Check continuity between hood switch terminals 1 and 2.		
		**Continuity:** **Condition: Pushed** **No** **Condition: Released** **Yes**
SEL338X		
OK or NG		
OK	▶	**Check the following.** ● Hood switch ground circuit ● Harness for open or short between smart entrance control unit and hood switch
NG	▶	Replace hood switch.

Glass Hatch Switch Check

=NAEL0123S0403

1	CHECK GLASS HATCH SWITCH INPUT SIGNAL

Check voltage between smart entrance control unit terminal 38 and ground.



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

SEL339X

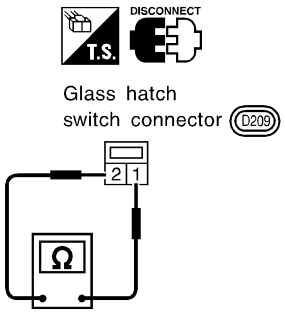
Refer to wiring diagram in EL-320.

OK or NG

OK	▶	Glass hatch switch is OK.
NG	▶	GO TO 2.

2	CHECK GLASS HATCH SWITCH

1. Disconnect glass hatch switch connector.
2. Check continuity between glass hatch switch terminals 1 and 2.



Continuity:
Condition: Closed
No
Condition: Open
Yes

SEL340X

OK or NG

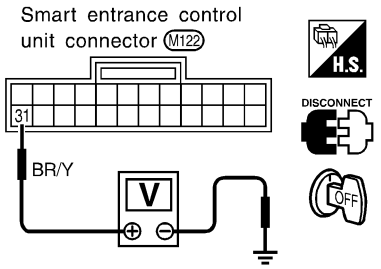
OK	▶	**Check the following.** • Glass hatch switch ground circuit • Harness for open or short between smart entrance control unit and glass hatch switch
NG	▶	Replace glass hatch switch.

SECURITY INDICATOR LAMP CHECK

=NAEL0123S05

1	CHECK INDICATOR LAMP OUTPUT SIGNAL

1. Disconnect smart entrance control unit connector.
2. Check voltage between control unit terminal 31 and ground.



Battery voltage should exist.

SEL341X

Refer to wiring diagram in EL-320.

OK or NG

OK	▶	Security indicator lamp is OK.
NG	▶	GO TO 2.

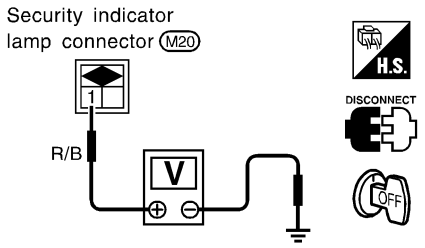
2	CHECK INDICATOR LAMP

OK or NG

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

3	CHECK POWER SUPPLY CIRCUIT FOR INDICATOR LAMP

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



Battery voltage should exist.

SEL342X

OK or NG

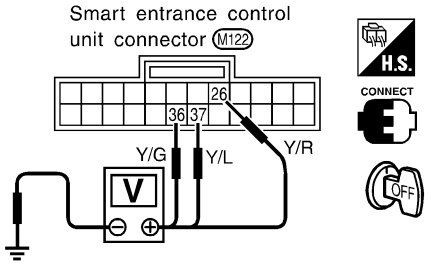
OK	▶	Check harness for open or short between security indicator lamp and control unit.
NG	▶	**Check the following.** ● 7.5A fuse [No. 24, located in fuse block (J/B)] ● Harness for open or short between security indicator lamp and fuse

DOOR UNLOCK SENSOR CHECK

=NAEL0123S06

1	CHECK DOOR UNLOCK SENSOR INPUT SIGNAL

Check voltage between smart entrance control unit terminals 26, 36 or 37 and ground.



	Terminals		Condition	Voltage [V]
	(+)	(−)		
Front LH door	36	Ground	Locked	Approx. 5
			Unlocked	0
Front RH door	37	Ground	Locked	Approx. 5
			Unlocked	0
Rear and back door	26	Ground	Locked	Approx. 5
			Unlocked	0

SEL343X

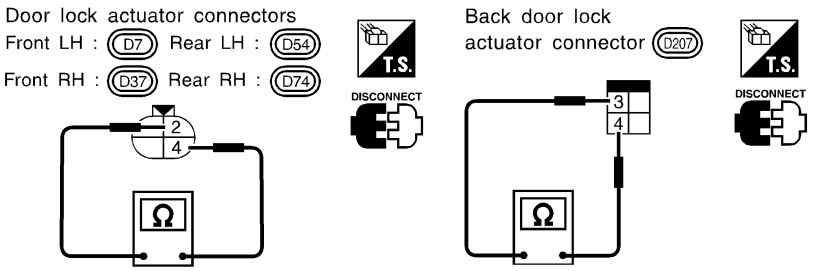
Refer to wiring diagram in EL-324.

OK or NG

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

2	CHECK DOOR UNLOCK SENSOR

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



Continuity:
Condition: Locked
No
Condition: Unlocked
Yes

SEL344X

OK or NG

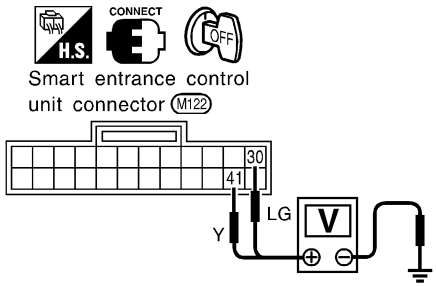
OK	▶	**Check the following.** ● Door unlock sensor ground circuit ● Harness for open or short between smart entrance control unit and door unlock sensor
NG	▶	Replace door unlock sensor.

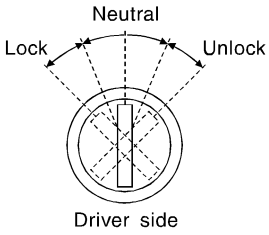
FRONT DOOR KEY CYLINDER SWITCH CHECK

=NAEL0123S07

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

Check voltage between smart entrance control unit terminals 30 or 41 and ground.





Terminals		Key position	Voltage [V]
(+)	(–)		
41	Ground	Neutral/Unlock	Approx. 5
		Lock	0
30	Ground	Neutral/Lock	Applox. 5
		Unlock	0

SEL312X

Refer to wiring diagram in EL-323.

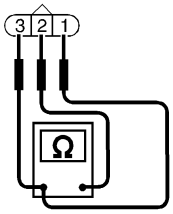
OK or NG

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

2 **CHECK DOOR KEY CYLINDER SWITCH**

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

Door key cylinder switch LH connector D9



① : Door unlock switch terminal
② : Ground terminal
③ : Door lock switch terminal

Terminals	Key position	Continuity
LH: 3 - 2	Neutral/Unlock	No
	Lock	Yes
LH: 1 - 2	Neutral/Lock	No
	Unlock	Yes

SEL313X

OK or NG

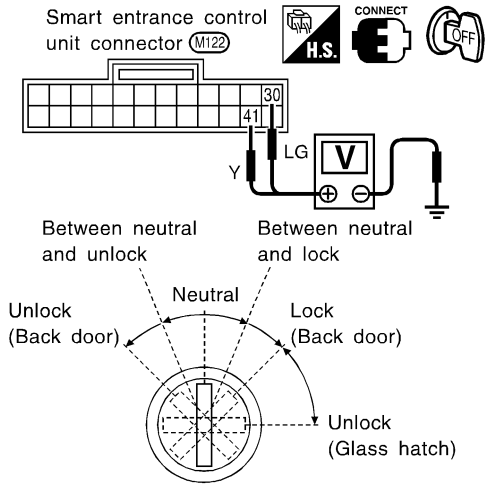
OK	▶	**Check the following.** ● Door key cylinder switch ground circuit ● Harness for open or short between smart entrance control unit and door key cylinder switch
NG	▶	Replace door key cylinder switch.

BACK DOOR KEY CYLINDER SWITCH CHECK

=NAEL0123S08

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

Check voltage between smart entrance control unit terminals 30, 41 or 42 and ground.



	Terminals (+)	Terminals (−)	Key position	Voltage [V]
Back door	41	Ground	Between neutral and lock	0
			Other positions	Applox. 5
	30	Ground	Between neutral and unlock	0
			Other positions	Applox. 5

SEL314X

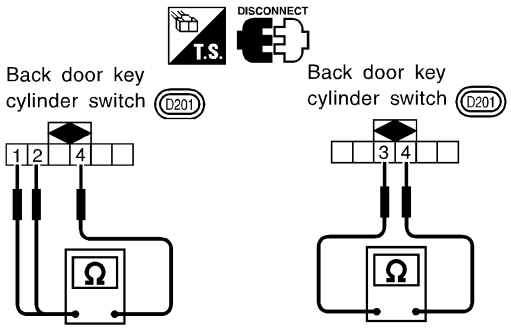
Refer to wiring diagram in EL-324.

OK or NG

OK	▶	Back door key cylinder switch is OK.
NG	▶	GO TO 2.

2	CHECK BACK DOOR KEY CYLINDER SWITCH

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



Key position	Terminals 1	2	3	4
Between neutral and lock (Back door)	○			○
Between neutral and unlock (Back door)		○		○
Between lock (Back door) and unlock (glass hatch)			○	○

SEL345X

OK or NG

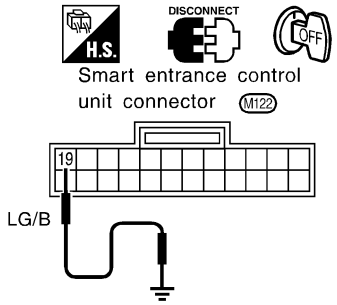
OK	▶	**Check the following.** ● Back door key cylinder switch ground circuit ● Harness for open or short between smart entrance control unit and back door key cylinder switch
NG	▶	Replace back door key cylinder switch.

HORN ALARM CHECK

=NAEL0123S09

1	CHECK HORN ALARM OPERATION

1. Disconnect smart entrance control unit connector.
2. Apply ground to smart entrance control unit terminal 19.



Horn alarm should operate.

SEL346X

Refer to wiring diagram in EL-324.

OK or NG

OK	▶	Horn alarm is OK.
NG	▶	GO TO 2.

2	CHECK HORN RELAY

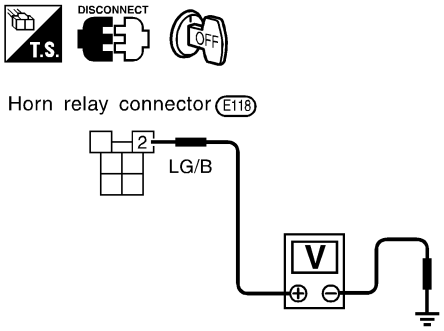
Check horn relay.

OK or NG

OK	▶	GO TO 3.
NG	▶	Replace horn relay.

3	CHECK POWER SUPPLY FOR HORN RELAY

1. Disconnect horn relay connector.
2. Check voltage between terminal 2 and ground.



Battery voltage should exist.

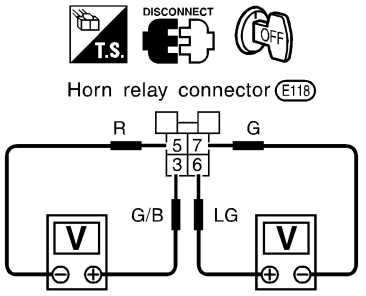
SEL347X

OK or NG

OK	▶	GO TO 4.
NG	▶	**Check the following.** ● 7.5A fuse (No. 52, located in the fuse and fusible link box) ● Harness for open or short between horn relay and fuse

4	CHECK HORN RELAY CIRCUIT

1. Disconnect horn relay connector.
2. Check voltage between terminals 3 and 5.
3. Check voltage between terminals 6 and 7.



Battery voltage should exist.

SEL348X

OK or NG

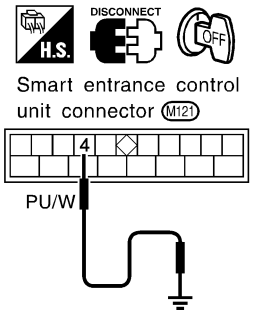
OK	▶	Check harness for open or short between horn relay and smart entrance control unit.
NG	▶	Check harness for open or short.

THEFT WARNING HEADLAMP ALARM CHECK/WITH AUTO LIGHT SYSTEM

=NAEL0123S10

1	CHECK THEFT WARNING HEADLAMP ALARM OPERATION

1. Disconnect smart entrance control unit connector.
2. Apply ground to smart entrance control unit terminal 4.



Headlamp alarm should operate.

SEL570X

Refer to wiring diagram in EL-325.

OK or NG

OK	▶	Headlamp alarm is OK.
NG	▶	GO TO 2.

2	CHECK HEADLAMP OPERATION

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

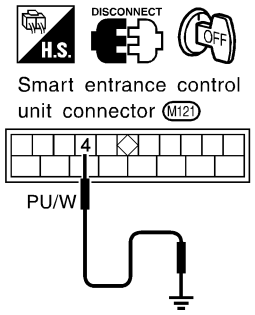
Yes	▶	Check harness for open or short between headlamp relay and smart entrance control unit.
No	▶	Check headlamp system. Refer to "HEADLAMP".

THEFT WARNING HEADLAMP ALARM CHECK/WITHOUT AUTO LIGHT SYSTEM

=NAEL0123S13

1	CHECK THEFT WARNING HEADLAMP ALARM OPERATION

1. Disconnect control unit connector.
2. Apply ground to control unit terminal 4.



Headlamp alarm should operate.

SEL570X

Refer to wiring diagram in EL-327.

Yes	▶	Headlamp alarm is OK.
No	▶	GO TO 2.

2	CHECK HEADLAMP OPERATION

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

Yes	▶	GO TO 3.
No	▶	Check headlamp system. Refer to "HEADLAMP".

3	CHECK THEFT WARNING LAMP RELAY

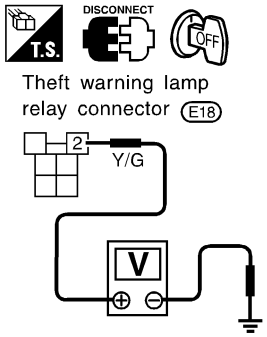
Check theft warning lamp relay.

OK or NG

OK	▶	GO TO 4.
NG	▶	Replace theft warning lamp relay.

4	CHECK POWER SUPPLY FOR THEFT WARNING LAMP RELAY

1. Disconnect theft warning lamp relay connector.
2. Check voltage between terminal 1 and ground.



Battery voltage should exist.

SEL573X

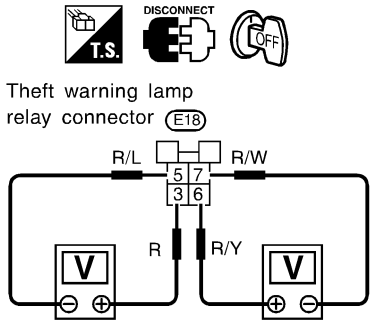
Refer to wiring diagram in EL-327.

Does battery voltage exist?

Yes	▶	GO TO 5.
No	▶	**Check the following.** ● 7.5A fuse (No. 52, located in the fuse and fusible link box) ● Harness for open or short between theft warning lamp relay and fuse

5	CHECK THEFT WARNING LAMP RELAY CIRCUIT

1. Disconnect theft warning lamp relay connector.
2. Check voltage between terminals 3 and 5.
3. Check voltage between terminals 6 and 7.



Battery voltage should exist.

SEL574X

OK or NG

OK	▶	Check harness for open or short between theft warning lamp relay and control unit.
NG	▶	**Check the following.** ● Harness for open or short between fuse and theft warning lamp relay ● Harness for open or short between theft warning lamp relay and headlamps

Description

NAEL0124

The following systems are controlled by the smart entrance control unit.

- Warning chime
- Rear window defogger and door mirror defogger timer
- Power door lock
- Multi-remote control system
- Theft warning system
- Interior lamp timer
- Electric sunroof and power window timer
- Headlamp battery saver
- Battery saver

For detailed description and wiring diagrams, refer to the relevant pages for the each system.
The smart entrance control unit receives data from the switches and sensors to control their corresponding system relays and actuators.

INPUT/OUTPUT

NAEL0124S01

System	Input	Output
Power door lock	Door lock and unlock switch LH and RH Key switch (Insert) Door switches Door key cylinder switches	Door lock actuator
Multi-remote control	Key switch (Insert) Ignition switch (ACC) Door switches Front door unlock sensor LH Door lock and unlock switch LH Remote controller signal	Horn relay Headlamp relay (LH and RH) Interior lamp Multi-remote control relay Door lock actuator
Warning chime	Key switch (Insert) Ignition switch (ON) Lighting switch (1st) Seat belt switch Front door switch LH	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
Theft warning	Ignition switch (ACC, ON) Door switches Hood switch Glass hatch switch Door key cylinder switches (lock/unlock) Door unlock sensores	Horn relay Headlamp relay (LH and RH) (With auto light system) Theft warning lamp relay (Without auto light system) Security indicator
Interior lamp timer	Door switches Front door unlock sensor LH Ignition switch (ON) Key switch (Insert)	Interior lamp
Electric sunroof and power window timer	Front door switches Ignition switch (ON)	Power window relay
Headlamp battery saver timer	Front door switches Ignition switch (ON)	Headlamp battery saver control unit
Battery saver	Ignition switch (ON) Door switches Driver's door unlock sensor Key switch (Insert)	Interior lamp Luggage room lamp Spot lamp Vanity mirror illumination lamp

Description (Cont'd)

BATTERY SAVER

NAEL0124S02

The lamp turns off automatically when the interior lamp, luggage room lamp, spot lamp or/and vanity mirror illumination is illuminated with the ignition key in the OFF position, if the lamp remains lit by the door switch open signal or if the lamp switch is in the ON position for more than 10 minutes.

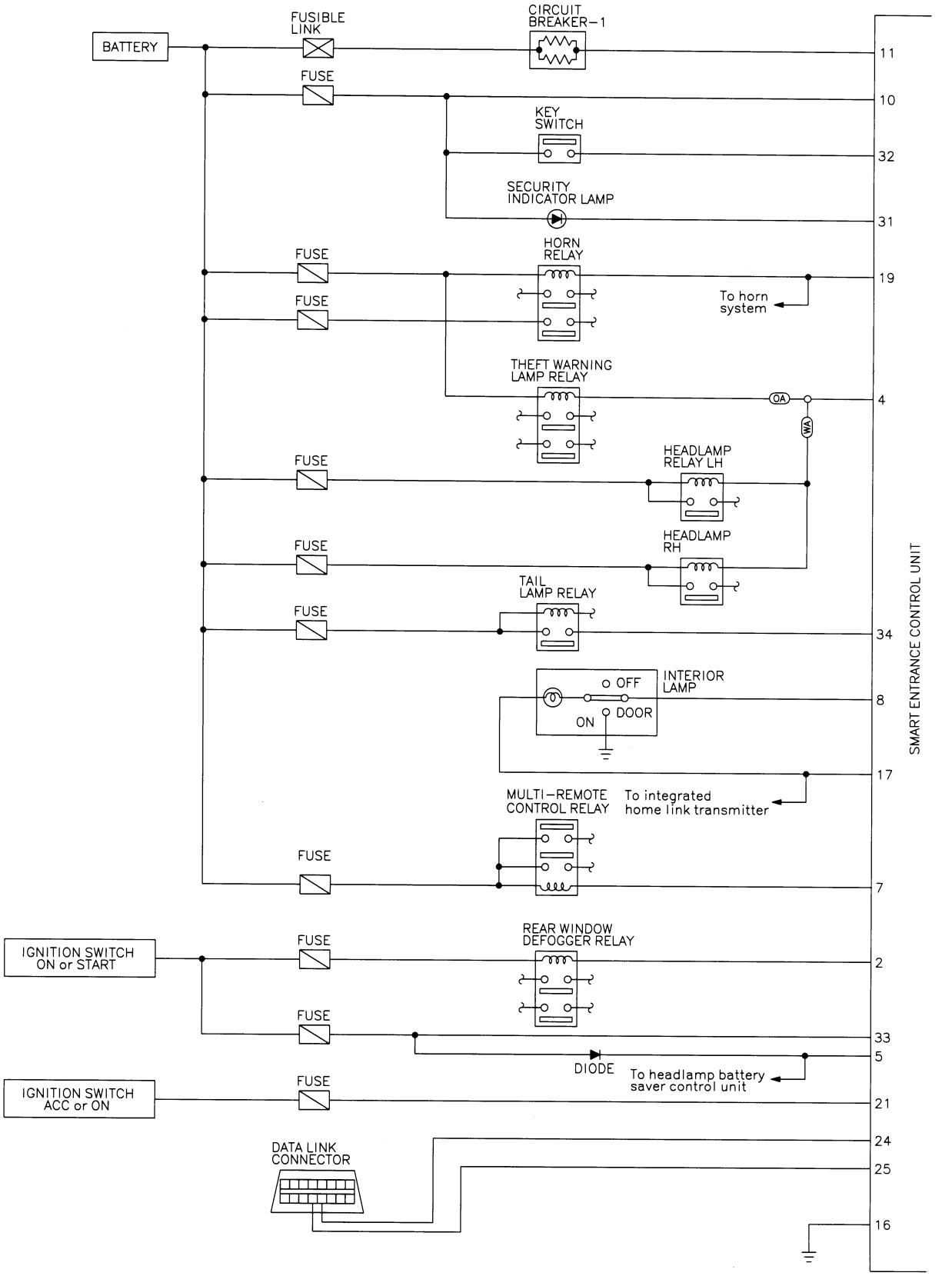
After lamps turn off by the battery saver system, the lamps illuminate again when:

- driver's door is locked or unlocked,
- door is opened or closed,
- key is inserted in ignition key cylinder.

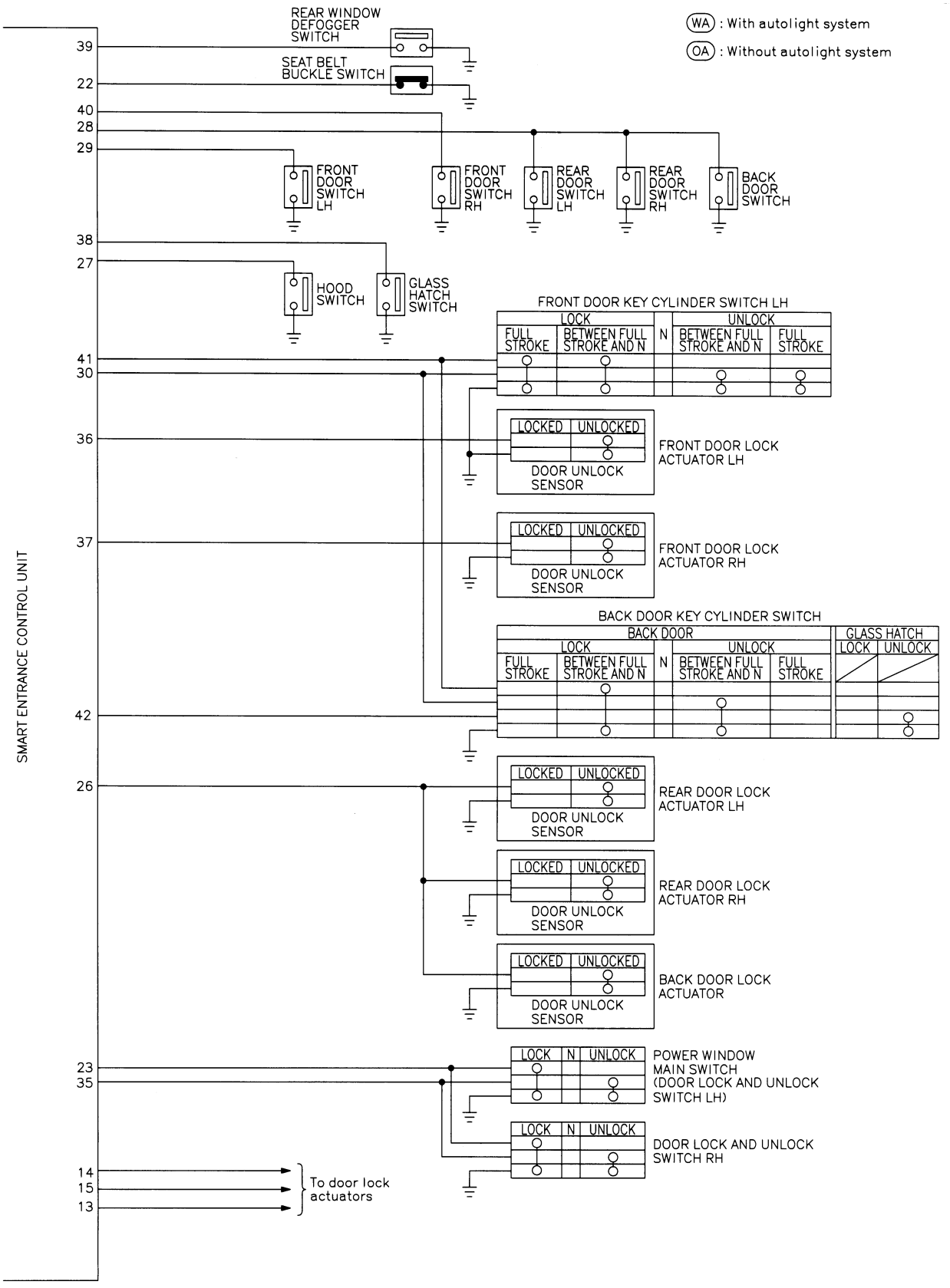
NOTE:

Schematic

NAEL0125



MEL052M


WA : With autolight system
OA : Without autolight system
SMART ENTRANCE CONTROL UNIT
REAR WINDOW DEFOGGER SWITCH
SEAT BELT BUCKLE SWITCH
FRONT DOOR SWITCH LH
FRONT DOOR SWITCH RH
REAR DOOR SWITCH LH
REAR DOOR SWITCH RH
BACK DOOR SWITCH
HOOD SWITCH
GLASS HATCH SWITCH
FRONT DOOR KEY CYLINDER SWITCH LH
LOCK
UNLOCK
FULL STROKE
BETWEEN FULL STROKE AND N
N
BETWEEN FULL STROKE AND N
FULL STROKE
LOCKED
UNLOCKED
DOOR UNLOCK SENSOR
FRONT DOOR LOCK ACTUATOR LH
FRONT DOOR LOCK ACTUATOR RH
BACK DOOR KEY CYLINDER SWITCH
BACK DOOR
GLASS HATCH
REAR DOOR LOCK ACTUATOR LH
REAR DOOR LOCK ACTUATOR RH
BACK DOOR LOCK ACTUATOR
POWER WINDOW MAIN SWITCH (DOOR LOCK AND UNLOCK SWITCH LH)
DOOR LOCK AND UNLOCK SWITCH RH
To door lock actuators
39
22
40
28
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41
30
36
37
42
26
23
35
14
15
13

MEL053M

Smart Entrance Control Unit Inspection Table

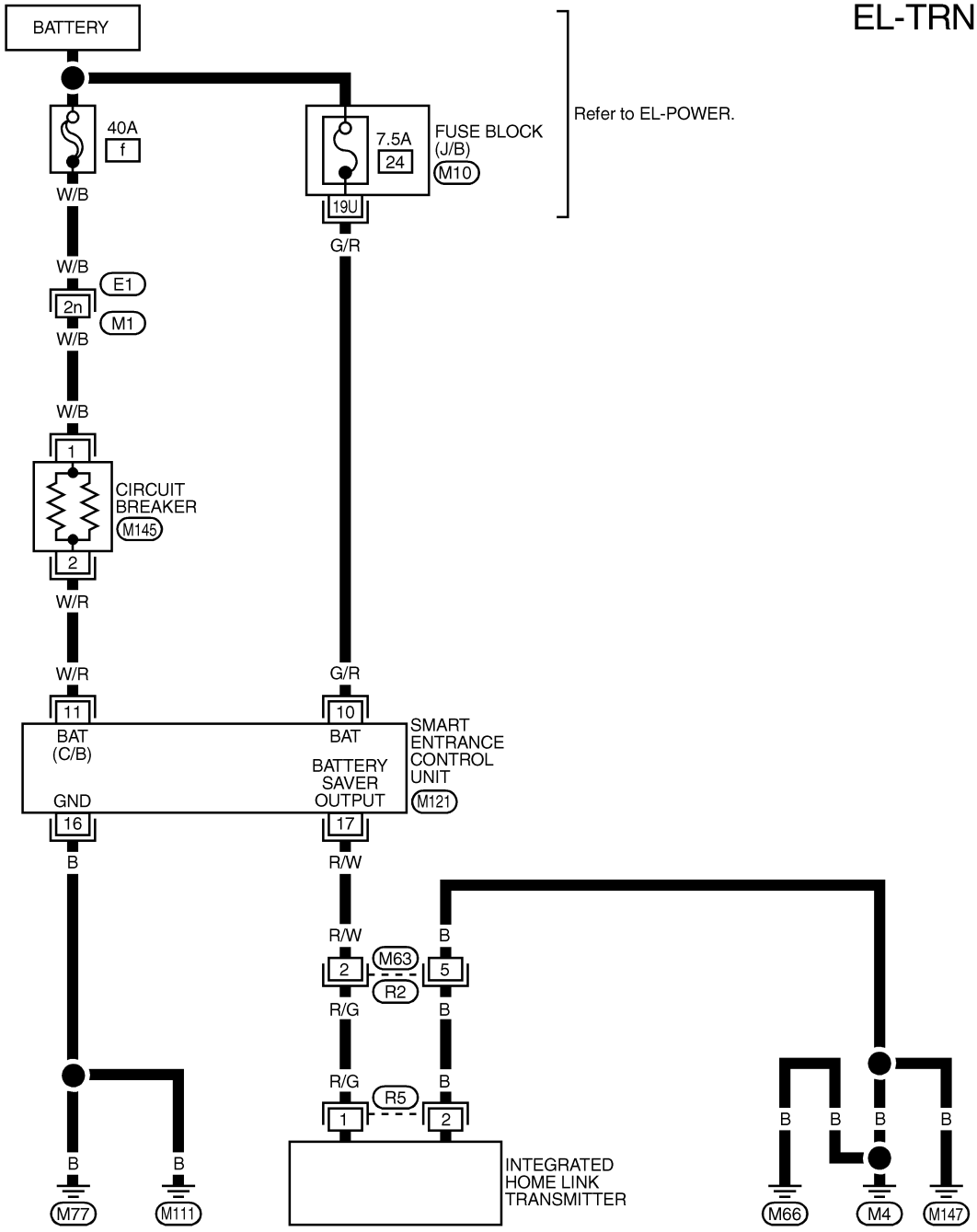
NAEL0126

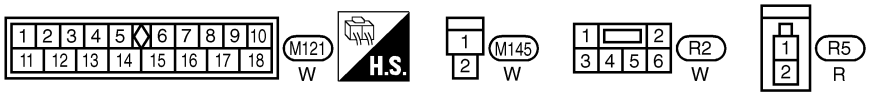
Terminal No.	Wire color	Connections	Operated condition		Voltage (Approximate values)
2	G/B	Rear window defogger relay	OFF → ON (Ignition key is in “ON” position)		0V → 12V
4	PU/W	Theft warning lamp relay	When panic alarm is operated using remote controller		12V → 0V
5	R/Y	Headlamp battery saver control unit	When headlamp battery saver timer is operated		12V
7	P	Multi-remote control relay	When doors are locked using remote controller		12V → 0V
8	R/B	Interior lamp	When interior lamp is operated using remote controller. (Lamp switch in “DOOR” position)		0V → 12V
10	G/R	Power source (Fuse)	—		12V
11	W/R	Power source (C/B)	—		12V
13	W/PU	Driver door lock actuator	Door lock & unlock switch	Free	0V
14	Y/B	Passenger door lock actuator		Unlocked	12V
15	L	Door lock actuators	Door lock & unlock switch	Free	0V
				Locked	12V
16	B	Ground	—		—
17	R/W	Battery saver (Interior lamp)	Battery saver is not operate → Operate		12V → 0V
19	LG/B	Horn relay	When doors are locked using remote controller with horn chirp mode.		12V → 0V
21	G/W	Ignition switch (ACC)	“ACC” position		12V
22	B/P	Seat belt buckle switch	Unfasten → Fasten (Ignition key is in “ON” position)		0V → 12V
23	BR	Door lock & unlock switches	Neutral → Locks		5V → 0V
26	Y/R	Rear and back door unlock sensors	All doors are locked → One or more doors are unlocked		5V → 0V
27	Y/B	Hood open signal	ON (Open) → OFF (Closed)		0V → 5V
28	R/L	Rear and back door switches	OFF (Closed) → ON (Open)		5V → 0V
29	G/R	Driver door switch	OFF (Closed) → ON (Open)		5V → 0V
30	LG	Door key cylinder unlock switch	OFF (Neutral) → ON (Unlocked)		12V → 0V
31	BR/Y	Theft warning indicator	Goes off → Illuminates		12V → 0V
32	W/R	Ignition key switch (Insert)	key inserted → key removed from IGN key cylinder		12V → 0V
33	W/B	Ignition switch (ON)	Ignition key is in “ON” position		12V
35	LG/R	Door lock & unlock switches	Neutral → Unlocks		5V → 0V
36	Y/G	Driver door unlock sensor	Driver door: Locked → Unlocked		5V → 0V
37	Y/L	Passenger door unlock sensor	Passenger door: Locked → Unlocked		5V → 0V
38	L/W	Glass hatch switch	ON (Open) → OFF (Closed)		0V → 12V
39	OR	Rear window defogger switch	OFF → ON		5V → 0V
40	Y	Passenger door switch	OFF (Closed) → ON (Open)		5V → 0V
41	Y	Door key cylinder lock switch	OFF (Neutral) → ON (Locked)		5V → 0V
42	G/B	Back door key unlock switch	OFF (Neutral) → ON (Unlock)		5V → 0V

Wiring Diagram — TRNSMT —

NAEL0127

EL-TRNSMT-01





REFER TO THE FOLLOWING.
(E1) -SUPER MULTIPLE JUNCTION (SMJ)
(M10) -FUSE BLOCK-JUNCTION BOX (J/B)

MEL866L

Trouble Diagnoses

NAEL0128

DIAGNOSTIC PROCEDURE

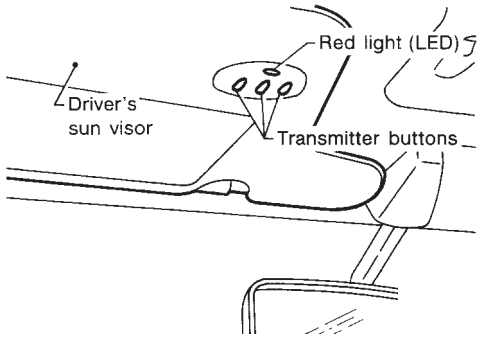
NAEL0128S01

SYMPTOM: Transmitter does not activate receiver.

Before conducting the procedure given below, make sure that system receiver (garage door opener, etc.) operates with original, hand-held transmitter. If NG, receiver or hand-held transmitter is at fault, not vehicle related.

1	PRELIMINARY CHECK

1. Turn ignition switch “OFF”.
2. Does red light (LED) of transmitter illuminate when any button is pressed?



SEL442U

Yes or No

Yes	▶	GO TO 2.
No	▶	GO TO 3.

2	CHECK TRANSMITTER FUNCTION

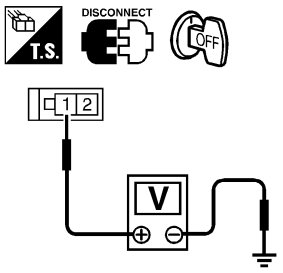
Check transmitter with Tool.
For details, refer to Technical Service Bulletin.

OK or NG

OK	▶	Receiver or handheld transmitter fault, not vehicle related.
NG	▶	Replace transmitter with sun visor assembly.

3	CHECK POWER SUPPLY

1. Disconnect transmitter connector.
2. Turn ignition switch “OFF”.
3. Check voltage between terminal 1 and body ground.



Battery voltage should exist.

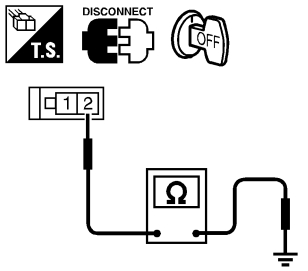
SEL358X

OK or NG

OK	▶	GO TO 4.
NG	▶	GO TO 5.

4	CHECK GROUND CIRCUIT

Check continuity between terminal 2 and ground.



Continuity should exist.

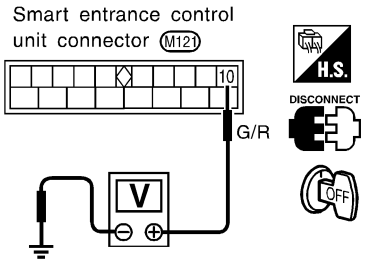
SEL359X

OK or NG

OK	▶	Replace transmitter with sun visor assembly.
NG	▶	Repair harness.

5	CHECK MAIN POWER SUPPLY FOR SMART ENTRANCE CONTROL UNIT

1. Disconnect smart entrance control unit.
2. Check voltage between smart entrance control unit terminal 10 and ground.



Battery voltage should exist.

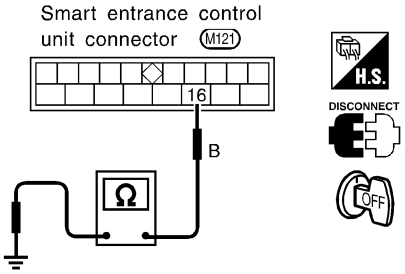
SEL360X

OK or NG

OK	▶	GO TO 6.
NG	▶	**Check the following.** ● 7.5A fuse No. 24, located in fuse block (J/B)

6	CHECK GROUND CIRCUIT FOR SMART ENTRANCE CONTROL UNIT

Check continuity between terminal 16 and ground.



Continuity should exist.

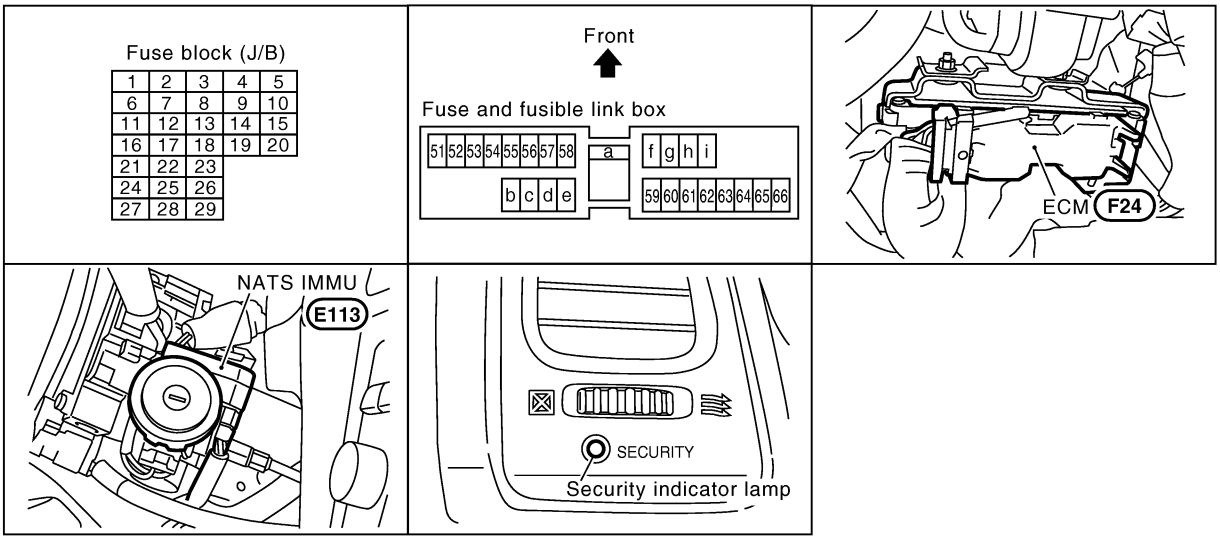
SEL361X

OK or NG

OK	▶	Power supply and ground circuits are OK.
NG	▶	Check ground harness.

Component Parts and Harness Connetor Location

NAEL0170



SEL357X

NOTE:
If customer reports a “No Start” condition, request ALL KEYS to be brought to the Dealer in case of an NVIS (NATS) malfunction.

System Description

=NAEL0171

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

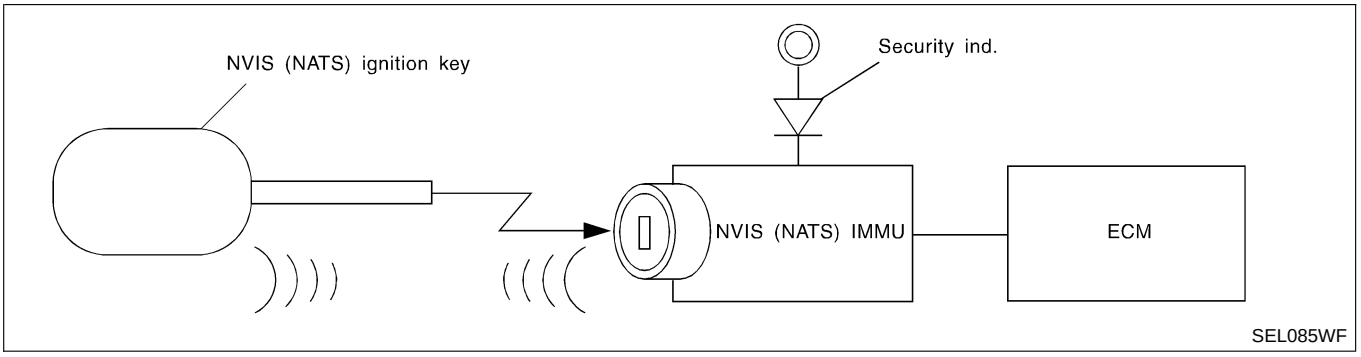
- Since only NVIS (NATS) ignition keys, whose ID nos. have been registered into the ECM and IMMU of NVIS (NATS), allow the engine to run, operation of a stolen vehicle without an NVIS (NATS) registered key is prevented by NVIS (NATS).
  That is to say, NVIS (NATS) will immobilise the engine if someone tries to start it without the registered key of NVIS (NATS).
- All of the originally supplied ignition key IDs (except for card plate key) have been NVIS (NATS) registered.
  If requested by the vehicle owner, a maximum of five key IDs can be registered into the NVIS (NATS) components.
- The security indicator blinks when the ignition switch is in “OFF” or “ACC” position. Therefore, NVIS (NATS) warns outsiders that the vehicle is equipped with the anti-theft system.
- When NVIS (NATS) detects trouble, the security indicator lamp lights up while ignition key is in the “ON” position.
- NVIS (NATS) trouble diagnoses, system initialization and additional registration of other NVIS (NATS) ignition key IDs must be carried out using CONSULT-II hardware and CONSULT-II NVIS (NATS) software. When NVIS (NATS) initialization has been completed, the ID of the inserted ignition key is automatically NVIS (NATS) registered. Then, if necessary, additional registration of other NVIS (NATS) ignition key IDs can be carried out.
  Regarding the procedures of NVIS (NATS) initialization and NVIS (NATS) ignition key ID registration, refer to CONSULT-II operation manual, IVIS/NVIS.
- **When servicing a malfunction of the NVIS (NATS) (indicated by lighting up of Security Indicator Lamp) or registering another NVIS (NATS) ignition key ID no., it is necessary to re-register original key identification. Therefore, be sure to receive ALL KEYS from vehicle owner.**

System Composition

NAEL0172

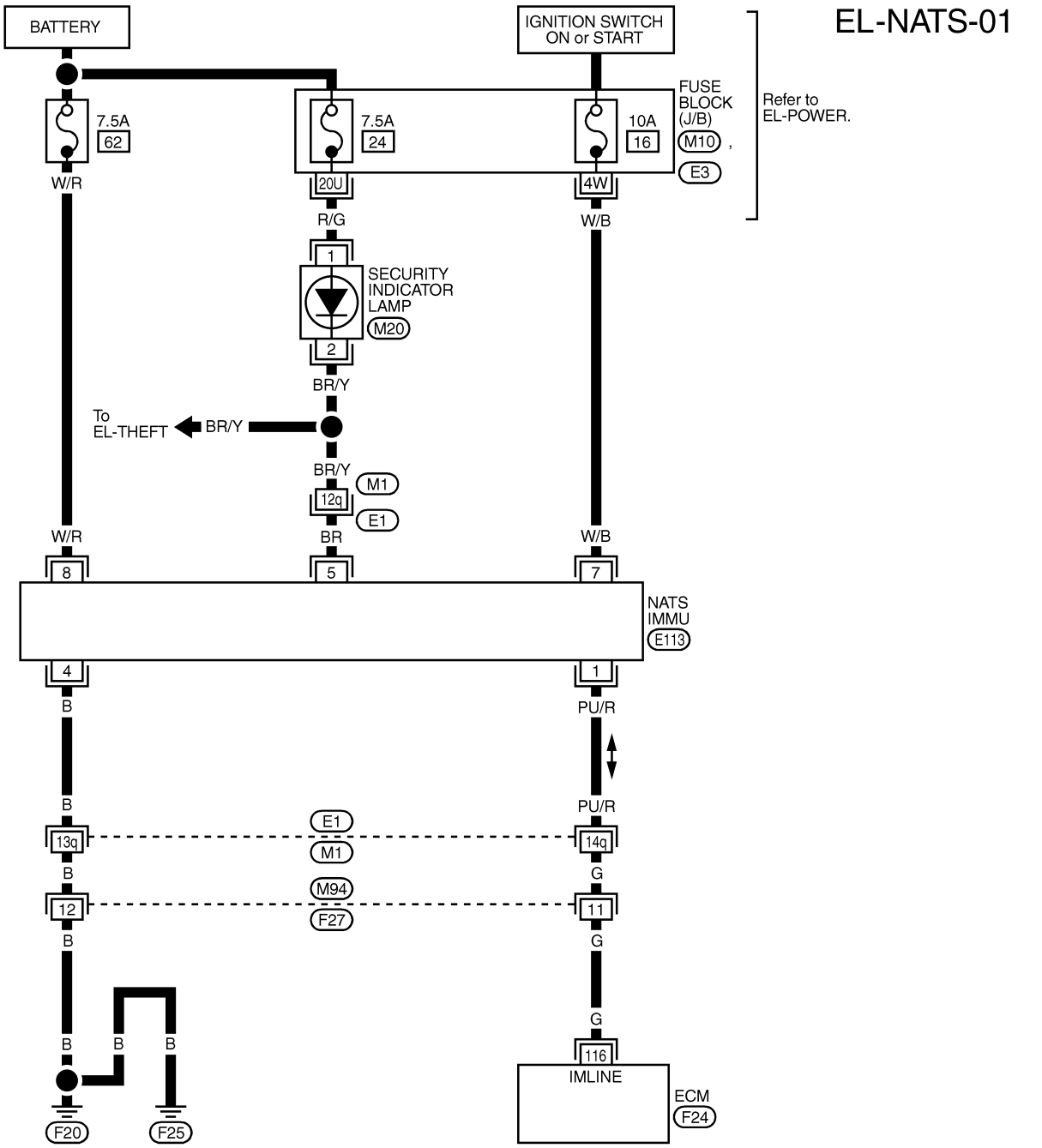
The immobiliser function of the NVIS (NATS) consists of the following:

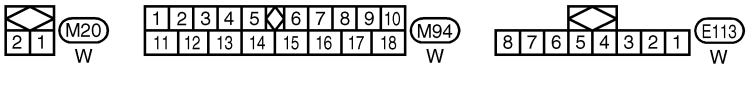
- NVIS (NATS) ignition key
- NVIS (NATS) immobilizer control unit (IMMU) located in the ignition key cylinder
- Engine control module (ECM)
- Security indicator



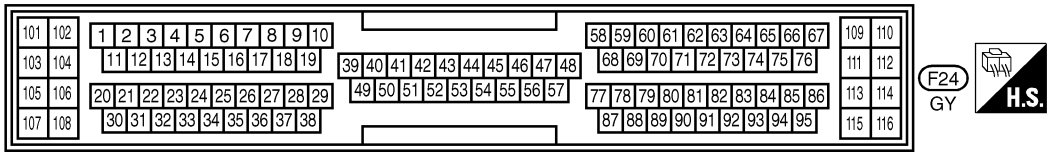
Wiring Diagram — NATS —

NAEL0173

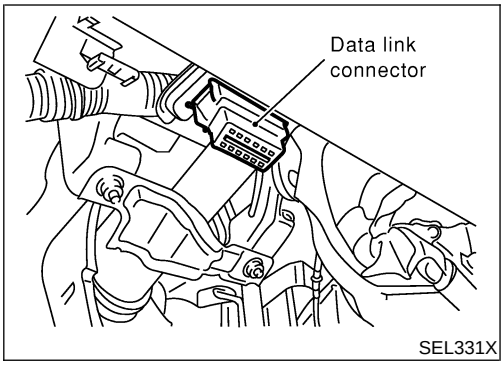




REFER TO THE FOLLOWING.
E1 -SUPER MULTIPLE JUNCTION (SMJ)
M10 , E3 -FUSE BLOCK-JUNCTION BOX (J/B)



MEL865L



SEL331X

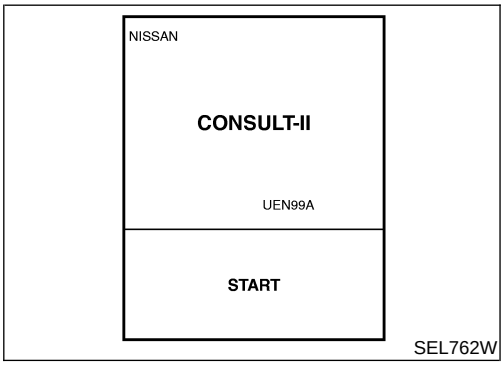
CONSULT-II

NAEL0223

CONSULT-II INSPECTION PROCEDURE

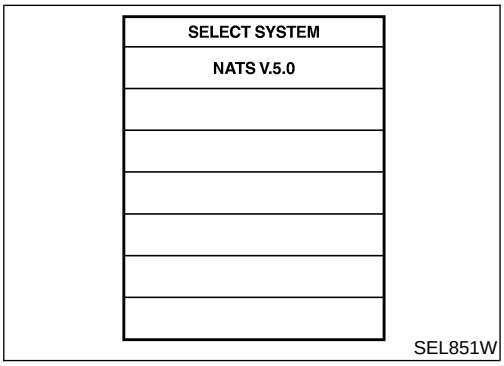
NAEL0223S01

1. Turn ignition switch OFF.
2. Insert NVIS (NATS) program card into CONSULT-II.
   : Program card
   NATS (UEN99A)
3. Connect CONSULT-II to data link connector.



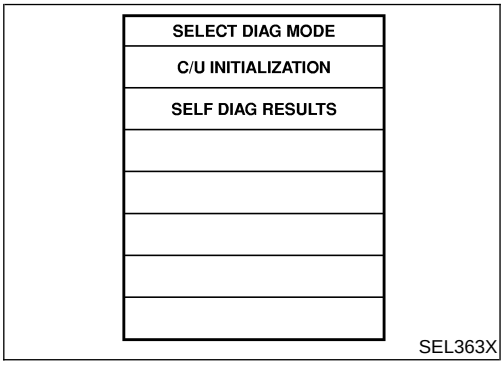
SEL762W

4. Turn ignition switch ON.
5. Touch “START”.



SEL851W

6. Select “NATS V.5.0”.



SEL363X

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

For further information, see the CONSULT-II Operation Manual, IVIS/NVIS.

CONSULT-II DIAGNOSTIC TEST MODE FUNCTION

NAEL0223S02

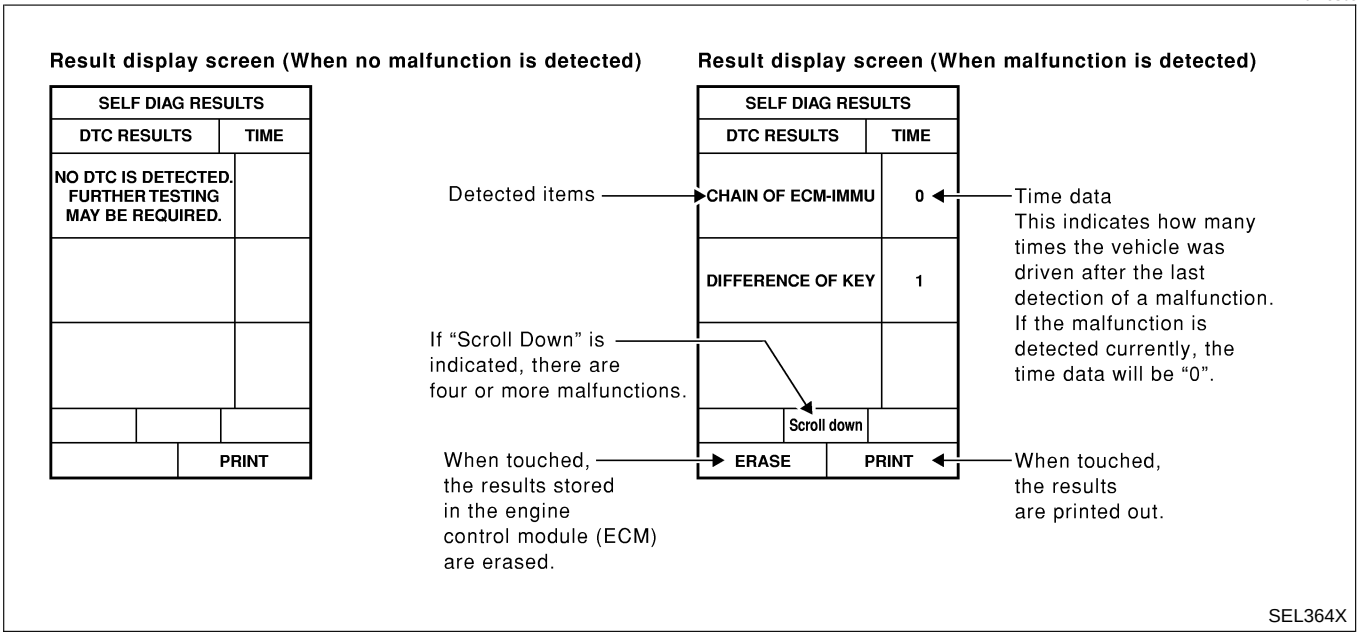
CONSULT-II DIAGNOSTIC TEST MODE	Description
C/U INITIALIZATION	When replacing any of the following three components, C/U initialization and re-registration of all NVIS (NATS) ignition keys are necessary. [NVIS (NATS) ignition key/IMMU/ECM]
SELF-DIAG RESULTS	Detected items (screen terms) are as shown in the chart EL-356.

NOTE:

- **When any initialization is performed, all ID previously registered will be erased and all NVIS (NATS) ignition keys must be registered again.**
- The engine cannot be started with an unregistered key. In this case, the system will show "DIFFERENCE OF KEY" or "LOCK MODE" as a self-diagnostic result on the CONSULT-II screen.
- 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

NAEL0223S03



SEL364X

NVIS (NATS) SELF-DIAGNOSTIC RESULTS ITEM CHART

NAEL0223S04

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 MALFUNCTION P1613	The malfunction of ECM internal circuit of IMMU communication line is detected.	EL-360
CHAIN OF ECM-IMMU	NATS MALFUNCTION 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-361
DIFFERENCE OF KEY	NATS MALFUNCTION P1615	IMMU can receive the key ID signal but the result of ID verification between key ID and IMMU is NG.	EL-365
CHAIN OF IMMU-KEY	NATS MALFUNCTION P1614	IMMU cannot receive the key ID signal.	EL-366
ID DISCORD, IMM-ECM	NATS MALFUNCTION P1611	The result of ID verification between IMMU and ECM is NG. System initialization is required.	EL-367

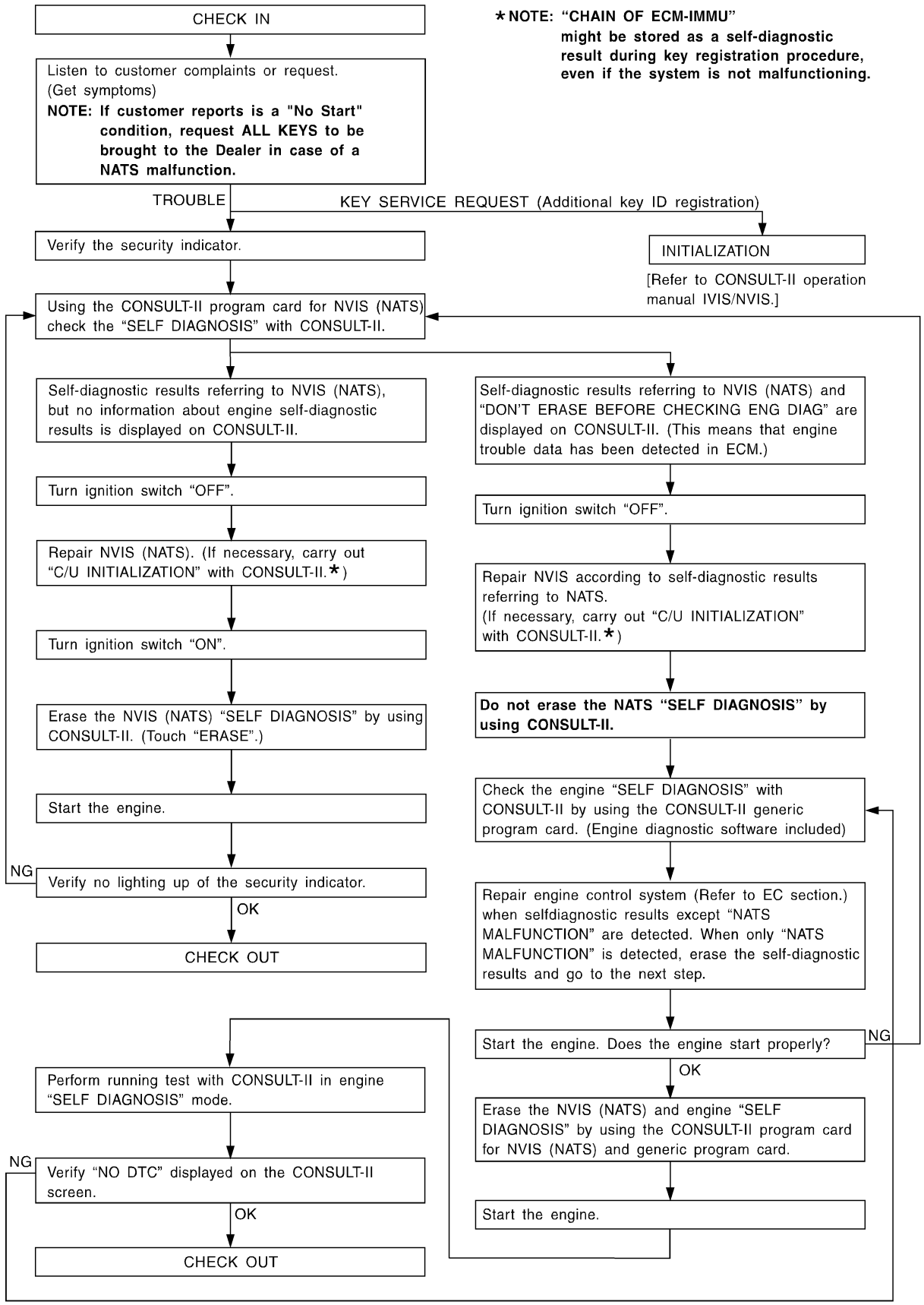
Detected items (NATS program card screen terms)	P No. Code (Self-diagnostic result of "ENGINE")	Malfunction is detected when	Reference page
LOCK MODE	NATS MALFUNCTION P1610	When the starting operation is carried out five or more times consecutively under the following conditions, NVIS (NATS) will shift the mode to one which prevents the engine from being started. ● Unregistered ignition key is used. ● IMMU or ECM's malfunctioning.	EL-370
DON'T ERASE BEFORE CHECKING ENG DIAG	—	All engine trouble codes except NVIS (NATS) trouble code has been detected in ECM.	EL-358

Trouble Diagnoses

NAEL0224

WORK FLOW

NAEL0224S01



SEL004XA

SYMPTOM MATRIX CHART 1
(Self-diagnosis related item)

NAEL0224S02

SYMPTOM	Displayed "SELF-DIAG RESULTS" on CONSULT-II screen.	DIAGNOSTIC PROCEDURE (Reference page)	SYSTEM (Malfunctioning part or mode)	REFERENCE PART NO. OF ILLUSTRATION ON NEXT PAGE
• Security indicator lighting up* • Engine cannot be started.	ECM INT CIRC-IMMU	PROCEDURE 1 (EL-360)	ECM	B
	CHAIN OF ECM-IMMU	PROCEDURE 2 (EL-361)	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-365)	Unregistered key	D
			IMMU	A
	CHAIN OF IMMU-KEY	PROCEDURE 4 (EL-366)	Malfunction of key ID chip	E
			IMMU	A
	ID DISCORD, IMM-ECM	PROCEDURE 5 (EL-367)	System initialization has not yet been completed.	F
			ECM	F
	LOCK MODE	PROCEDURE 7 (EL-370)	LOCK MODE	D
• MIL staying ON • Security indicator lighting up*	DON'T ERASE BEFORE CHECKING ENG DIAG	WORK FLOW (EL-358)	Engine trouble data and NVIS (NATS) trouble data have been detected in ECM	—

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

SYMPTOM MATRIX CHART 2

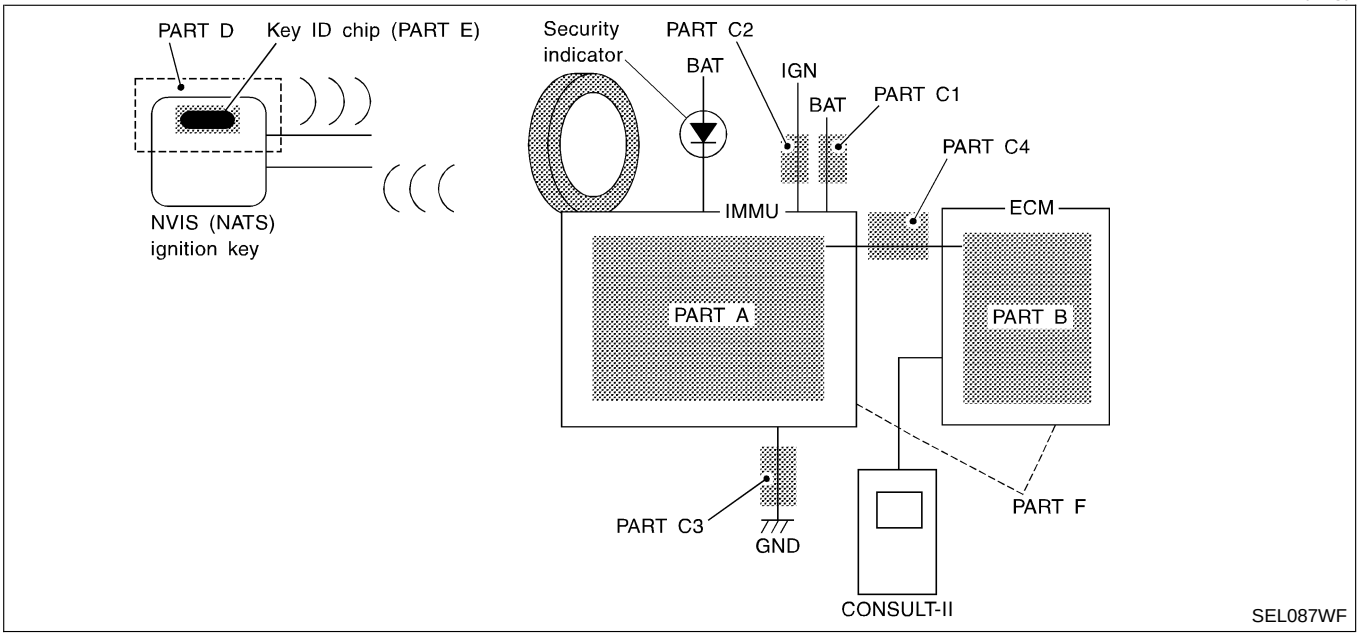
NAEL0224S03

(Non self-diagnosis related item)

SYMPTOM	DIAGNOSTIC PROCEDURE (Reference page)	SYSTEM (Malfunctioning part or mode)
Security ind. does not light up.	PROCEDURE 6 (EL-368)	Security ind.
		Open circuit between Fuse and IMMU
		Continuation of initialization mode
		IMMU

DIAGNOSTIC SYSTEM DIAGRAM

NAEL0224S04



SELF DIAG RESULTS	
DTC RESULTS	TIME
ECM INT CIRC-IMMU	0

SEL365X

DIAGNOSTIC PROCEDURE 1

NAEL0224S05

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 IVIS/NVIS".

DIAGNOSTIC PROCEDURE 2

=NAEL0224S06

Self-diagnostic results:
"CHAIN OF ECM-IMMU" displayed on CONSULT-II screen

1	CONFIRM SELF-DIAGNOSTIC RESULTS

Confirm SELF-DIAGNOSTIC RESULTS "CHAIN OF ECM-IMMU" displayed on CONSULT-II screen.
NOTE:
In rare case, "CHAIN OF ECM-IMMU" might be stored during key registration procedure, even if the system is not malfunctioning.

SELF DIAG RESULTS	
DTC RESULTS	TIME
CHAIN OF ECM-IMMU	0

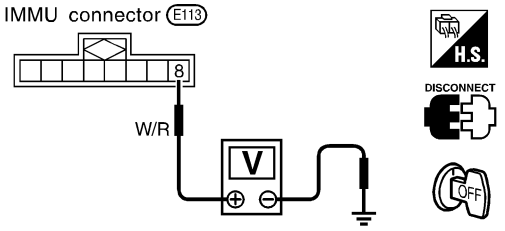
SEL366X

Is CONSULT-II screen displayed as above?

Yes	▶	GO TO 2.
No	▶	GO TO SYMPTOM MATRIX CHART 1.

2	CHECK POWER SUPPLY CIRCUIT FOR IMMU

1. Disconnect IMMU connector.
2. Check voltage between terminal 8 of IMMU and ground with CONSULT-II or tester.



Battery voltage should exist.

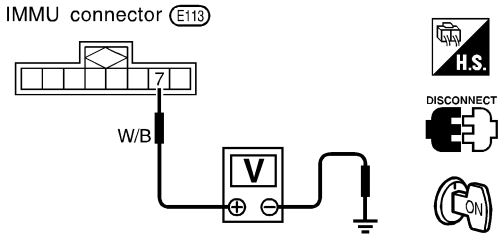
SEL302WD

OK or NG

OK	▶	GO TO 3.
NG	▶	**Check the following** • 7.5A fuse (No. 62, located in the fuse and fusible link box) • Harness for open or short between fuse and IMMU connector **Ref. Part No. C1**

3	CHECK IGN SW. ON SIGNAL

1. Turn ignition switch ON.
2. Check voltage between terminal 7 of IMMU and ground with CONSULT-II or tester.



Battery voltage should exist.

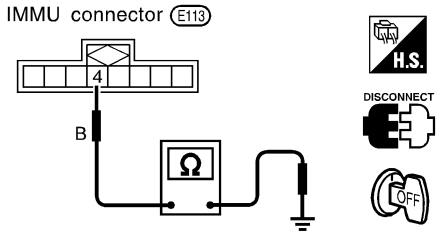
SEL303WF

OK or NG

OK	▶	GO TO 4.
NG	▶	**Check the following** ● 10A fuse [No. 16, located in the fuse block (J/B)] ● Harness for open or short between fuse and IMMU connector **Ref. part No. C2**

4	CHECK GROUND CIRCUIT FOR IMMU

1. Turn ignition OFF.
2. Check harness continuity between IMMU terminal 4 and ground.



Continuity should exist.

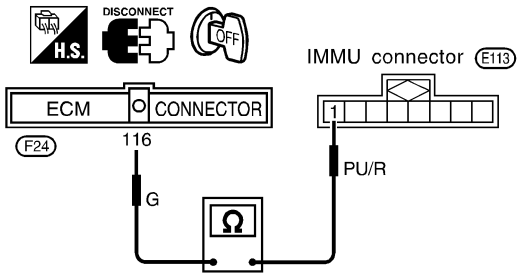
SEL304WD

OK or NG

OK	▶	GO TO 5.
NG	▶	Repair harness. **Ref. part No. C3**

5	CHECK COMMUNICATION LINE OPEN CIRCUIT

1. Disconnect ECM connector.
2. Check harness continuity between ECM terminal 116 and IMMU terminal 1.



Continuity should exist.

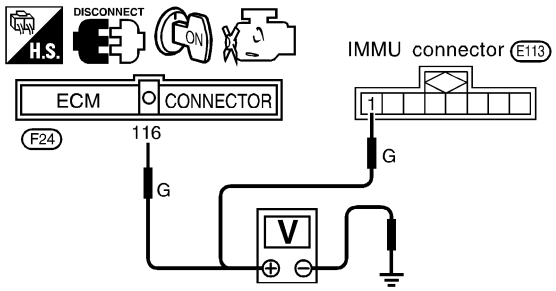
SEL305WD

OK or NG

OK	▶	GO TO 6.
NG	▶	Repair harness or connector. **Ref. part No. C4**

6	CHECK COMMUNICATION LINE BATTERY SHORT CIRCUIT

1. Turn ignition ON.
2. Check voltage between ECM terminal 116 or IMMU terminal 1 and ground.



Voltage: 0V

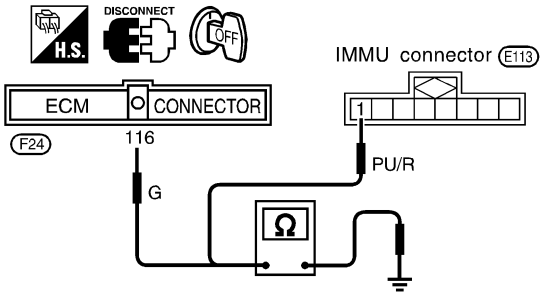
SEL306WD

OK or NG

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**

7	CHECK COMMUNICATION LINE GROUND SHORT CIRCUIT

1. Turn ignition switch OFF.
2. Check continuity between ECM terminal 116 or IMMU terminal 1 and ground.



Continuity should not exist.

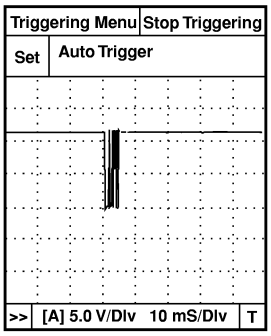
SEL307WD

OK or NG

OK	▶	GO TO 8.
NG	▶	Communication line is short-circuited with ground line. Repair harness or connectors. **Ref. part No. C4**

8	SIGNAL FROM ECM TO IMMU CHECK

1. Check the signal between ECM terminal 116 and ground with CONSULT-II or oscilloscope when ignition switch is turned "ON".
2. Make sure signals which are shown in the figure below can be detected during 750 msec. just after ignition switch is turned "ON".



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 IVIS/NVIS".
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 IVIS/NVIS".

DIAGNOSTIC PROCEDURE 3

=NAEL0224S07

Self-diagnostic results:
"DIFFERENCE OF KEY" displayed on CONSULT-II screen

1	CONFIRM SELF-DIAGNOSTIC RESULTS

Confirm SELF-DIAGNOSTIC RESULTS "DIFFERENCE OF KEY" displayed on CONSULT-II screen.

SELF DIAG RESULTS	
DTC RESULTS	TIME
DIFFERENCE OF KEY	0

SEL367X

Is CONSULT-II screen displayed as above?

Yes	▶	GO TO 2.
No	▶	GO TO SYMPTOM MATRIX CHART 1.

2	PERFORM INITIALIZATION WITH CONSULT-II

Perform initialization with CONSULT-II. Re-register all NVIS (NATS) ignition key IDs.
For initialization and registration of NVIS (NATS) ignition key IDs, refer to "CONSULT-II operation manual NVIS/NVIS".

IMMU INITIALIZATION
INITIALIZATION FAIL
THEN IGN KEY SW 'OFF' AND 'ON', AFTER CONFIRMING SELF-DIAG AND PASSWORD, PERFORM C/U INITIALIZATION AGAIN.

SEL297W

NOTE:
If the initialization is not completed or fails, CONSULT-II shows above message on the screen.

Can the system be initialized and can the engine be started with re-registered NVIS (NATS) ignition key?

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 IVIS/NVIS".

DIAGNOSTIC PROCEDURE 4

=NAEL0224S08

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.

SELF DIAG RESULTS	
DTC RESULTS	TIME
CHAIN OF IMMU-KEY	0

SEL368X

Is CONSULT-II screen displayed as above?

Yes	▶	GO TO 2.
No	▶	GO TO SYMPTOM MATRIX CHART 1.

2	CHECK NVIS (NATS) IGNITION KEY ID CHIP

Start engine with another registered NVIS (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 IVIS/NVIS".
No	▶	GO TO 3.

3	CHECK IMMU INSTALLATION

Check IMMU installation.
Refer to "How to Replace IMMU" in EL-371.

OK or NG

OK	▶	IMMU is malfunctioning. Replace IMMU. **Ref. part No. A** Perform initialization with CONSULT-II. For initialization, refer to "CONSULT-II Operation Manual IVIS/NVIS".
NG	▶	Reinstall IMMU correctly.

DIAGNOSTIC PROCEDURE 5

=NAEL0224S09

Self-diagnostic results:
"ID DISCORD, IMM-ECM" displayed on CONSULT-II screen

1	CONFIRM SELF-DIAGNOSTIC RESULTS

Confirm SELF-DIAGNOSTIC RESULTS "ID DISCORD, IMM-ECM" displayed on CONSULT-II screen.

SELF DIAG RESULTS	
DTC RESULTS	TIME
ID DISCORD, IMM-ECM	0

SEL369X

NOTE:
"ID DISCORD IMMU-ECM":
Registered ID of IMMU is in discord with that of ECM.

Is CONSULT-II screen displayed as above?

Yes	▶	GO TO 2.
No	▶	GO TO SYMPTOM MATRIX CHART 1.

2	PERFORM INITIALIZATION WITH CONSULT-II

Perform initialization with CONSULT-II. Re-register all NVIS (NATS) ignition key IDs.
For initialization, refer to "CONSULT-II operation manual IVIS/NVIS".

IMMU INITIALIZATION
INITIALIZATION FAIL
THEN IGN KEY SW 'OFF' AND 'ON', AFTER CONFIRMING SELF-DIAG AND PASSWORD, PERFORM C/U INITIALIZATION AGAIN.

SEL297W

NOTE:
If the initialization is not completed or fails, CONSULT-II shows above message on the screen.

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. F** Perform initialization with CONSULT-II. For initialization, refer to "CONSULT-II operation manual IVIS/NVIS".

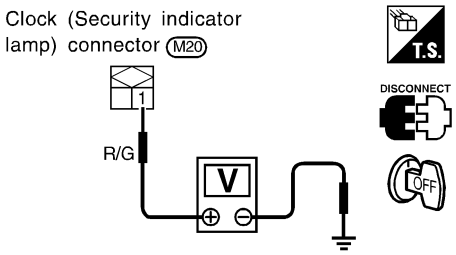
DIAGNOSTIC PROCEDURE 6

=NAEL0224S10

"SECURITY INDICATOR LAMP DOES NOT LIGHT UP"

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.

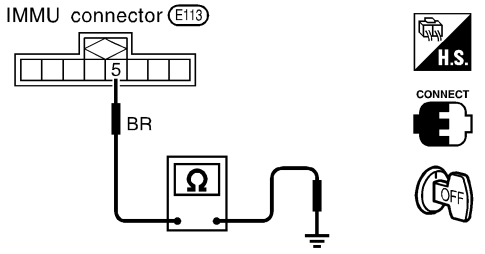
2	CHECK SECURITY INDICATOR LAMP	
1. Install 10A fuse. 2. Perform initialization with CONSULT-II. For initialization, refer to "CONSULT-II Operation Manual IVIS/NVIS". 3. Turn ignition switch OFF. 4. Start engine and turn ignition switch OFF. 5. Check the security indicator lamp lighting. **Security indicator lamp should be blinking.** **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.		
 **Battery voltage should exist.** SEL370X **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.

5	CHECK IMMU FUNCTION

1. Connect IMMU connector.
2. Disconnect security indicator lamp connector.
3. Check continuity between IMMU terminal 5 and ground.



Continuity should exist intermittently.

SEL300WC

OK or NG

OK	▶	Check harness for open or short between security indicator lamp and IMMU.
NG	▶	IMMU is malfunctioning. Replace IMMU. Perform initialization with CONSULT-II. For initialization, refer to "CONSULT-II operation manual IVIS/NVIS".

DIAGNOSTIC PROCEDURE 7

=NAEL0224S11

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.

SELF DIAG RESULTS	
DTC RESULTS	TIME
LOCK MODE	0

SEL371X

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-371.

OK or NG

OK	▶	GO TO 4.
NG	▶	Reinstall IMMU correctly.

4	PERFORM INITIALIZATION WITH CONSULT-II

Perform initialization with CONSULT-II.
For initialization, refer to "CONSULT-II operation manual IVIS/NVIS".

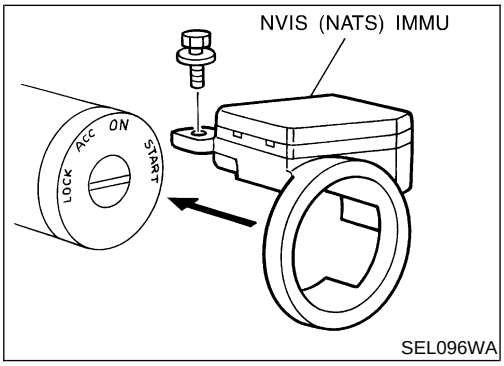
IMMU INITIALIZATION
INITIALIZATION FAIL
THEN IGN KEY SW 'OFF' AND 'ON', AFTER CONFIRMING SELF-DIAG AND PASSWORD, PERFORM C/U INITIALIZATION AGAIN.

SEL297W

NOTE:
If the initialization is not completed or fails, CONSULT-II shows the above message on the screen.

Can the system be initialized?

Yes	▶	System is OK.
No	▶	GO TO DIAGNOSTIC PROCEDURE 4 to check "CHAIN OF IMMU-KEY", refer to EL-366.



SEL096WA

How to Replace NVIS (NATS) IMMU

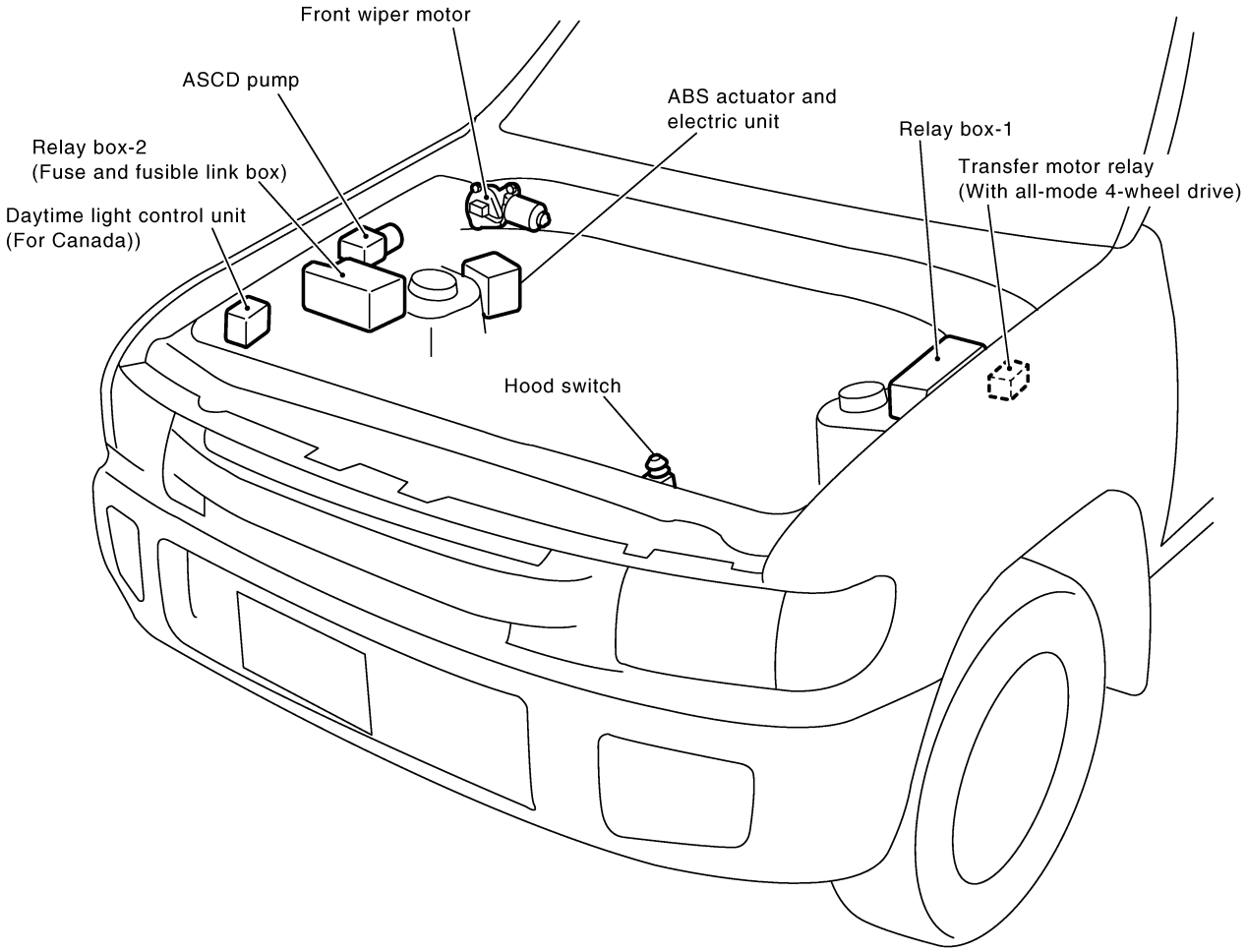
NAEL0225

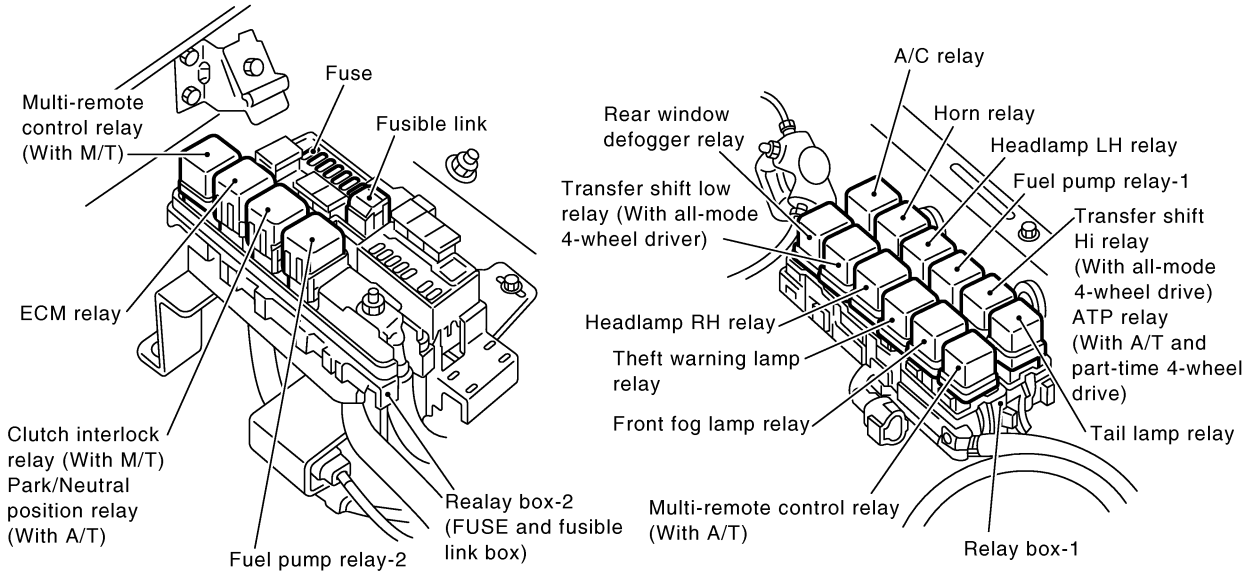
NOTE:

- **If NVIS (NATS) IMMU is not installed correctly, NVIS (NATS) system will not operate properly and SELF-DIAG RESULTS on CONSULT-II screen will show "LOCK MODE".**

Engine Compartment

NAEL0129



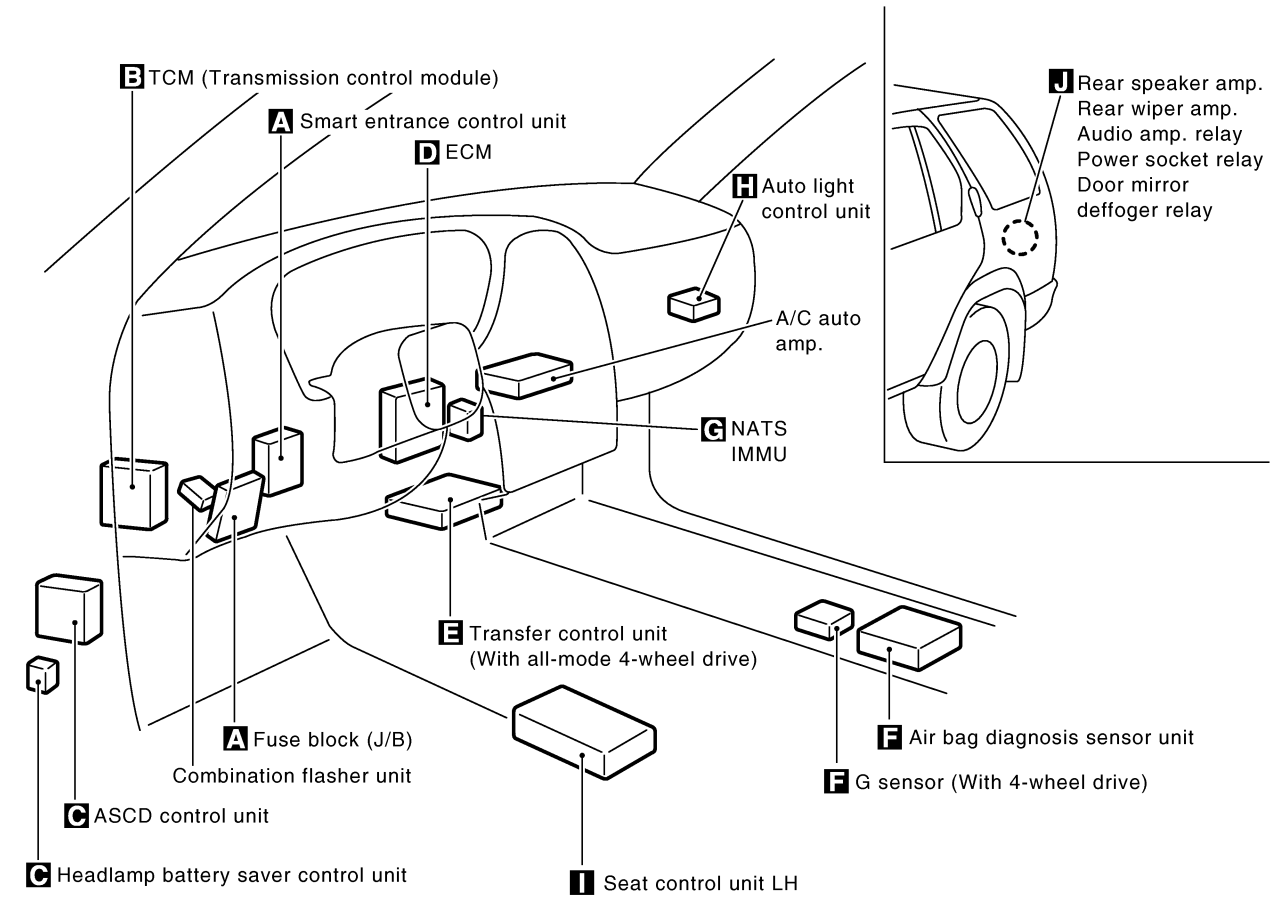


MEL250M

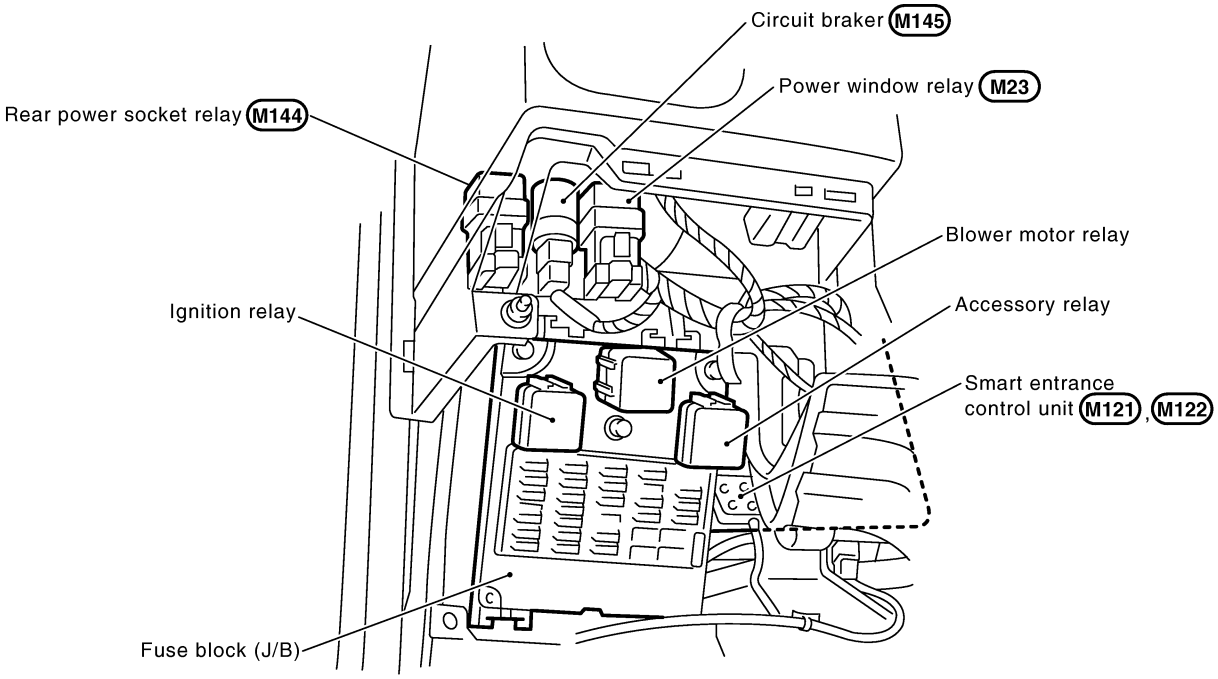
NOTE:

Passenger Compartment

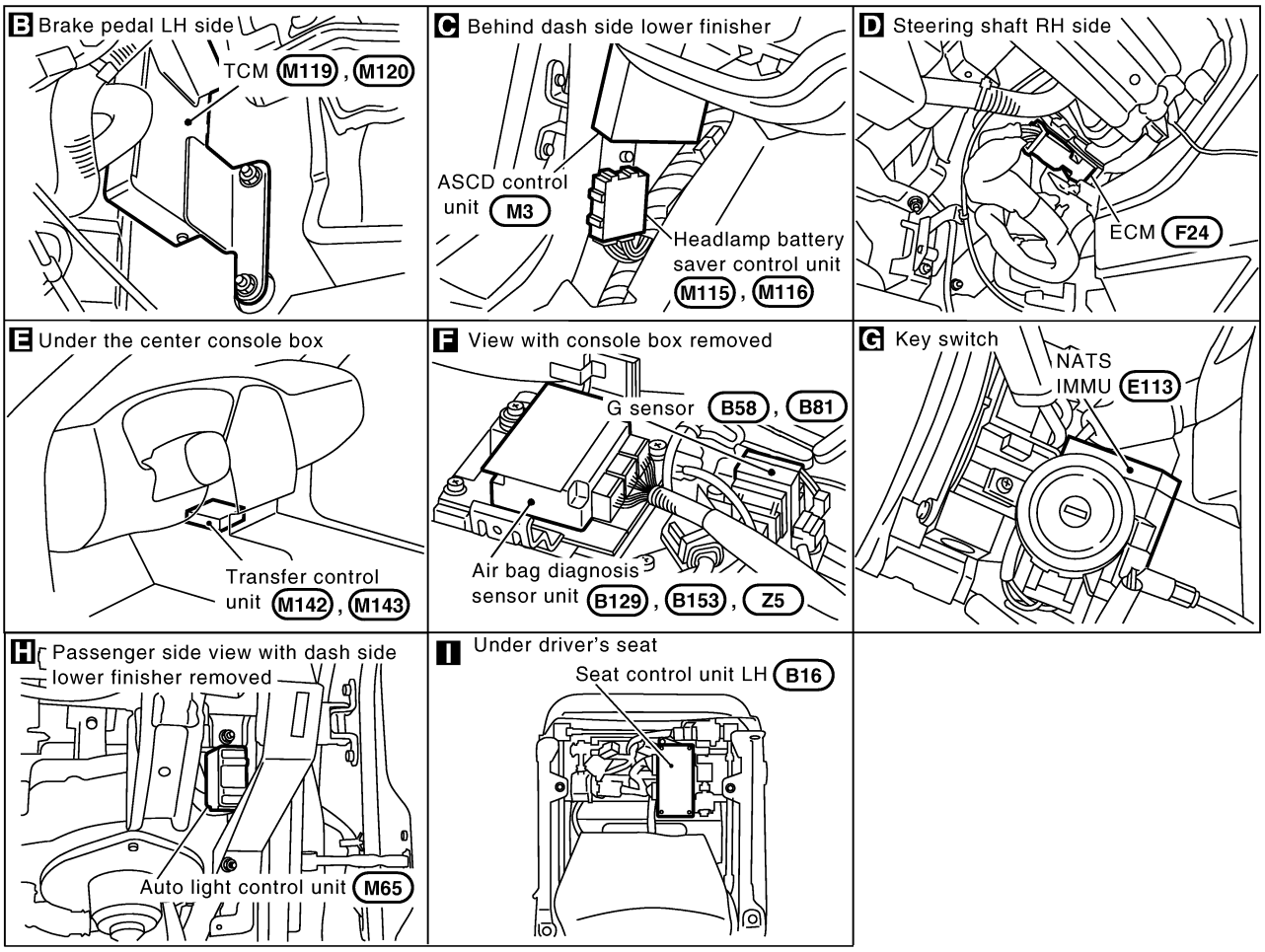
NAEL0130

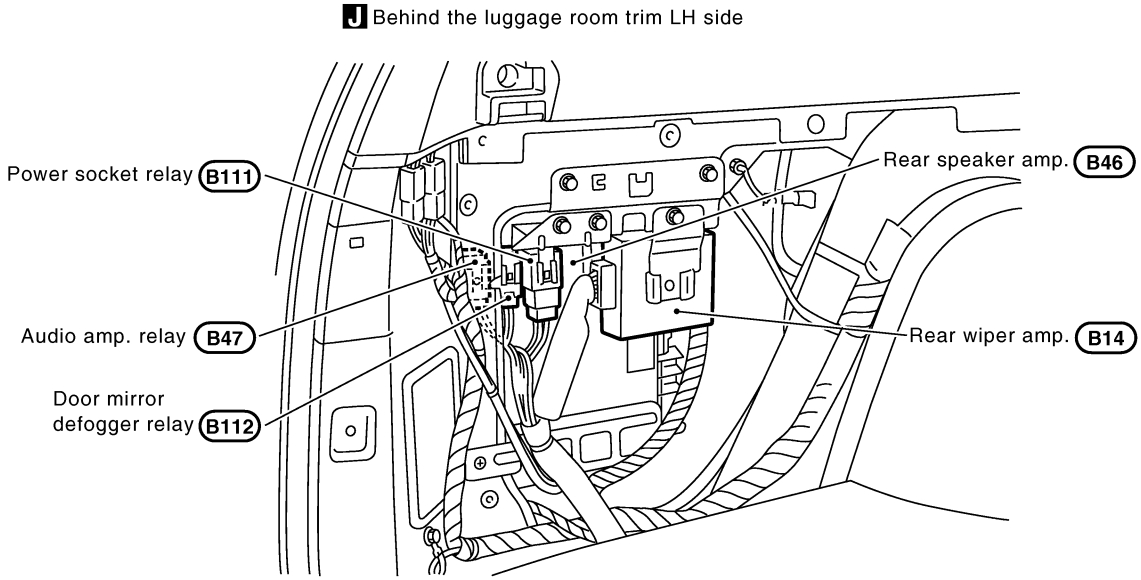


A Instrument panel LH side



MEL251M

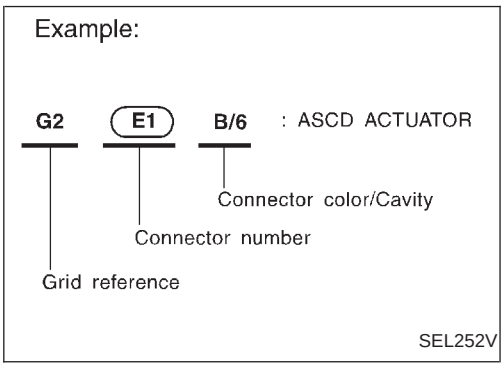

B Brake pedal LH side
TCM M119, M120
C Behind dash side lower finisher
ASCD control unit M3
Headlamp battery saver control unit M115, M116
D Steering shaft RH side
ECM F24
E Under the center console box
Transfer control unit M142, M143
F View with console box removed
G sensor B58, B81
Air bag diagnosis sensor unit B129, B153, Z5
G Key switch
NATS IMMU E113
H Passenger side view with dash side lower finisher removed
Auto light control unit M65
I Under driver's seat
Seat control unit LH B16


J Behind the luggage room trim LH side
Power socket relay B111
Audio amp. relay B47
Door mirror defogger relay B112
Rear speaker amp. B46
Rear wiper amp. B14

MEL252M

How to Read Harness Layout

NAEL0131



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

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

TO USE THE GRID REFERENCE

NAEL0131S01

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

CONNECTOR SYMBOL

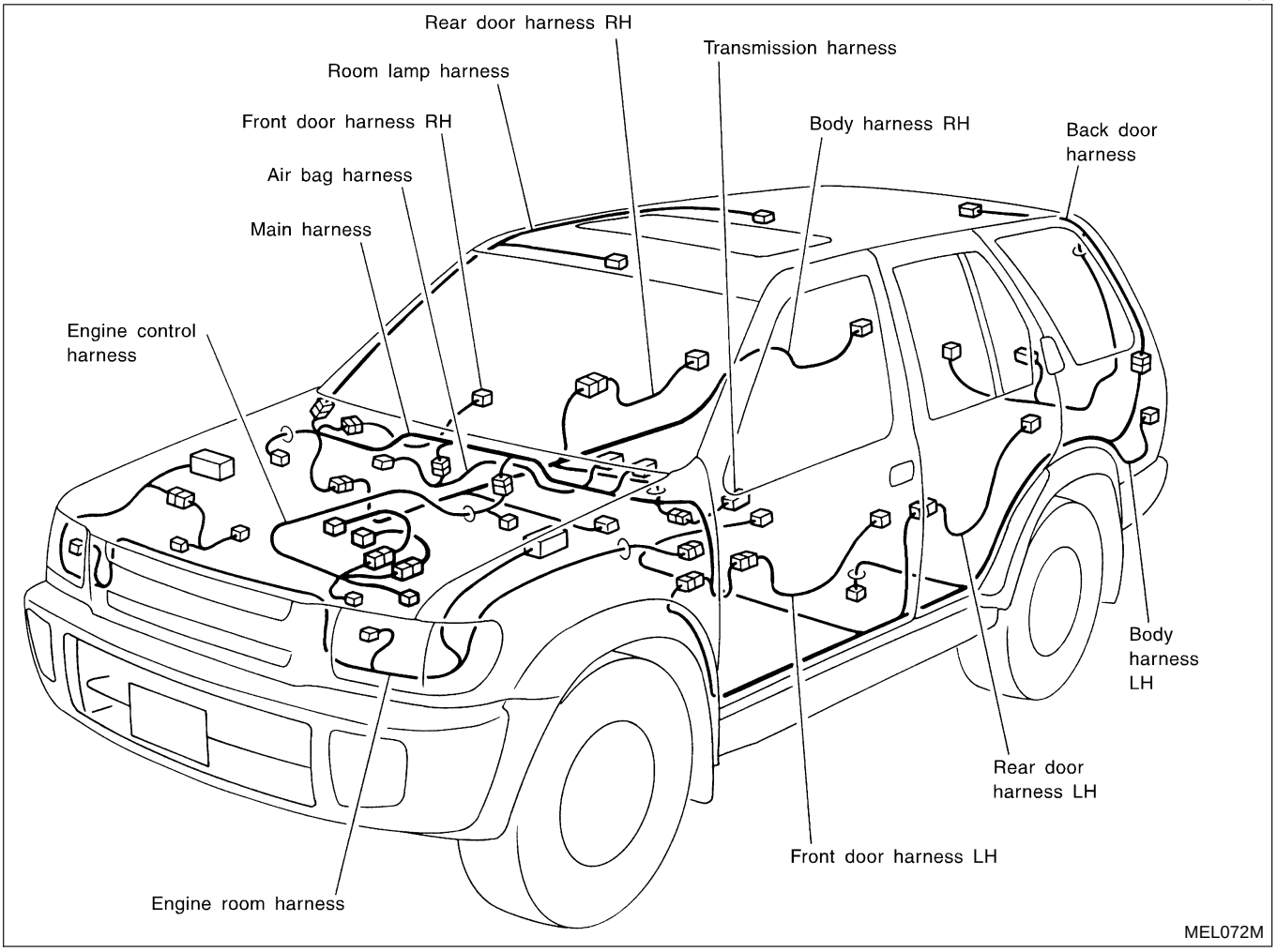
NAEL0131S02

Main symbols of connector (in Harness Layout) are indicated in the below.

Connector type	Water proof type		Standard type	
	Male	Female	Male	Female
• Cavity: Less than 4 • Relay connector				
• Cavity: From 5 to 8				
• Cavity: More than 9	—	—		
• Ground terminal etc.	—			

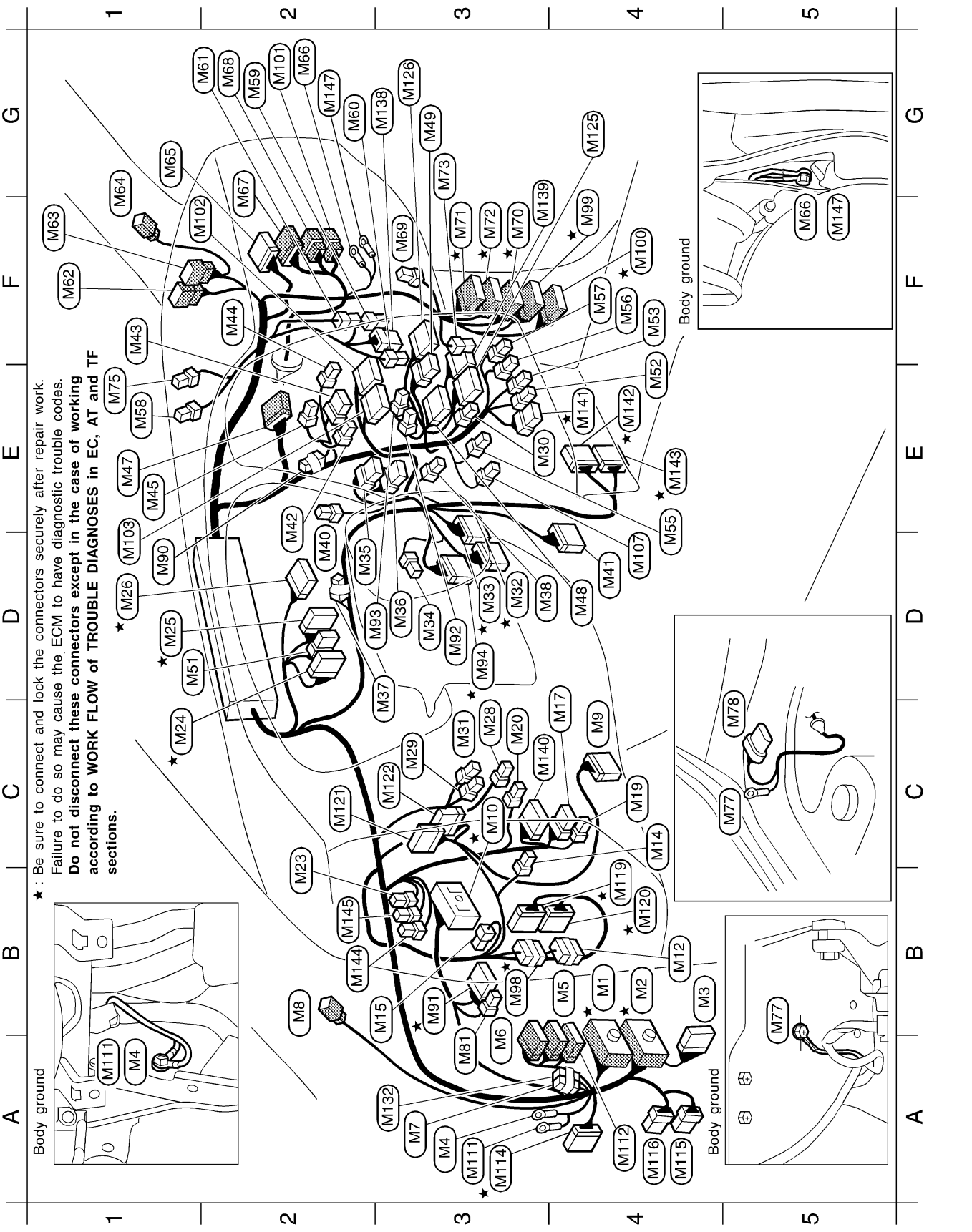
Outline

NAEL0132



Main Harness

NAEL0133



MEL234M

B4★ (M1) SMJ : To (E1) E1 (M47) W/20 : To (Z1)
B4★ (M2) SMJ : To (B1) D4 (M48) W/10 : Audio unit
B4 (M3) BR/24 : ASCD control unit G3 (M49) W/6 : Audio unit
A3 (M4) — : Body ground D1 (M51) W/8 : Combination meter
B4 (M5) BR/20 : To (D3) E4 (M52) L/4 : Heated seat switch LH
A3 (M6) W/10 : To (D4) F4 (M53) W/4 : Heated seat switch RH
A3 (M7) ★1 : Diode E4 (M55) W/3 : Air mix door motor (With auto A/C)
B2 (M8) BR/2 : Tweeter LH F4 (M56) B/2 : Cigarette lighter socket
C4 (M9) W/16 : Data link connector F4 (M57) W/2 : Cigarette lighter illumination
C3★ (M10) SMJ : Fuse block (J/B) E1 (M58) B/2 : Sunload sensor (With auto A/C)
B4 (M12) ★2 : Diode G2 (M59) W/4 : Intake door motor (With manual A/C)
C4 (M14) L/2 : ASCD clutch switch (With M/T) G2 (M60) W/4 : Fan control amp. (With auto A/C)
B3 (M15) B/3 : Combination flasher unit G1 (M61) BR/4 : Fan resistor
C4 (M17) GY/6 : Memory seat cancel switch F1 (M62) W/6 : To (R1)
C4 (M19) W/3 : Illumination control switch F1 (M63) W/6 : To (R2)
C3 (M20) W/2 : Security indicator lamp F1 (M64) BR/2 : Tweeter RH
B2 (M23) L/4 : Power window relay G1 (M65) GY/10 : Auto light control unit
C1★ (M24) W/24 : Combination meter G2 (M66) — : Body ground
D1★ (M25) BR/20 : Combination meter F2 (M67) BR/16 : To (D33)
D1★ (M26) BR/24 : Combination meter G2 (M68) W/6 : To (D34)
C3 (M28) L/2 : Clutch interlock switch (With M/T) F3 (M69) W/3 : Power antenna
C3 (M29) L/2 : ASCD brake switch F3★ (M70) W/20 : To (B50)
E3 (M30) W/2 : Glove box lamp F3★ (M71) W/24 : To (B51)
C3 (M31) B/2 : Stop lamp switch F3★ (M72) W/16 : To (B52)
D3★ (M32) BR/24 : To (F23) G3 (M73) W/2 : Blower motor
D3★ (M33) GY/16 : To (F22) E1 (M75) W/3 : Auto light sensor
D3 (M34) W/2 : In-vehicle sensor (With auto A/C) C5 (M77) — : Body ground
D2 (M35) W/8 : Hazard switch C5 (M78) GY/6 : Front wiper motor
D3 (M36) W/6 : Rear window defogger switch A3 (M81) B/2 : Fuse block (J/B)
C3 (M37) ★1 : Diode D1 (M90) ★1 : Diode (With manual A/C)
D4 (M38) W/3 : Mode door motor (With auto A/C) B3★ (M91) W/12 : Fuse block (J/B)
D2 (M40) W/4 : Clock D3 (M92) B/2 : CD player
D4 (M41) GY/20 : Steering wheel receiver control switch
E2 (M42) W/4 : Recirculation switch
F1 (M43) W/6 : Fan switch
F2 (M44) W/3 : A/C switch (With manual A/C)
E1 (M45) W/3 : A/C switch illumination (With manual A/C)

D2 (M93) W/4 : CD player
D3★ (M94) W/18 : To (F27)
B3★ (M98) GY/6 : Joint connector
F4★ (M99) W/12 : To (B77)
F4★ (M100) GY/20 : To (B88)
G2 (M101) BR/6 : To (D45)
F2 (M102) GY/16 : A/C auto amp. (With auto A/C)
D1 (M103) GY/20 : A/C auto amp. (With auto A/C)
D4 (M107) W/2 : Intake sensor (With auto A/C)
A3 (M111) — : Body ground
A4 (M112) GY/12 : To (D13)
A3★ (M114) W/18 : To (E116)
A4 (M115) W/6 : Headlamp battery saver control unit
A4 (M116) W/8 : Headlamp battery saver control unit
B4★ (M119) W/24 : TCM (Transmission control module) (With A/T)
B4★ (M120) GY/24 : TCM (Transmission control module) (With A/T)
C2 (M121) W/18 : Smart entrance control unit
C3 (M122) B/24 : Smart entrance control unit
G4 (M125) W/16 : CD auto changer
G3 (M126) W/12 : Audio unit (With BOSE system)
A3 (M132) ★1 : Diode
G3 (M138) W/8 : Intake door motor (With auto A/C)
F3 (M139) W/16 : Audio unit
C3 (M140) W/10 : Door mirror remote control switch
E4★ (M141) W/8 : 4WD shift switch (With all-mode 4-wheel drive)
E4★ (M142) L/24 : Transfer control unit (With all-mode 4-wheel drive)
E4★ (M143) G/24 : Transfer control unit (With all-mode 4-wheel drive)
B2 (M144) W/4 : Rear power socket relay
B2 (M145) W/2 : Circuit breaker
G2 (M147) — : Body ground

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

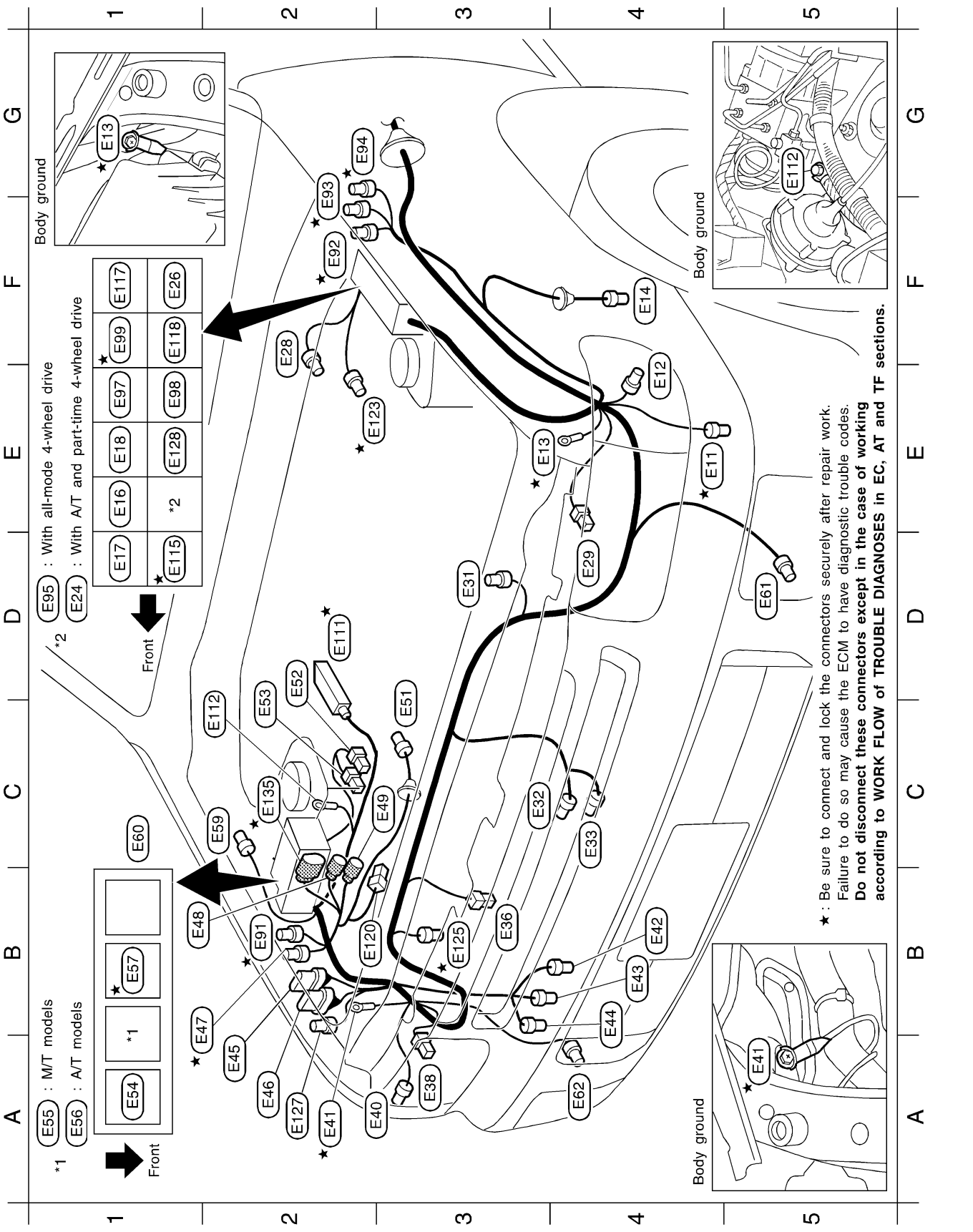
★1 W/2 or B/2 ★2 SB/6 or GY/3

Diode (M7) — Combination meter (Brake warning lamp) — Parking brake switch
Diode (M12) — Park/neutral position switch — TCM (Transmission control module)
Diode (M37) — Rear window defogger relay — ECM
Diode (M90) — Fuse block — Recirculation switch
Diode (M132) — Fuse block — Smart entrance control unit; Headlamp battery saver control unit; Power window relay

MEL023O

Engine Room Harness

NAEL0134



MEL236M

★: 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, AT and TF sections.

★ E1 : SMJ : To M1
E2 : B/2 : Fuse block (J/B)
E3 : W/16 : Fuse block (J/B)
E4 : W/4 : Fuse block (J/B)
★ E5 : BR/2 : Key switch
★ E6 : W/6 : Ignition switch
E7 : BR/4 : Combination switch (Lighting switch)
E8 : W/8 : Combination switch (Lighting & turn signal switch) (With auto light system)
E8 : BR/8 : Combination switch (Lighting & turn signal switch) (Without auto light system)
E9 : GY/8 : Combination switch (Front wiper switch)
★ E11 : GY/2 : Intake air temperature sensor
E12 : GY/3 : Front turn signal and parking lamp LH
★ E13 : — : Body ground
F4 E14 : BR/2 : Front wheel sensor LH
E1 E16 : L/4 : Front fog lamp relay (Relay box-1)
D1 E17 : BR/6 : Multi-remote control relay (Relay box-1 or 2)
E1 E18 : BR/6 : Theft warning lamp relay (Relay box-1)
E1 E24 : B/5 : ATP relay (With A/T and part-time 4-wheel drive) (Relay box-1)
F1 E26 : L/4 : A/C relay
F2 E28 : GY/2 : Brake fluid level switch
D4 E29 : B/3 : Headlamp LH
D3 E31 : GY/2 : Hood switch
C3 E32 : B/2 : Ambient sensor
C4 E33 : B/2 : Ambient air temperature sensor (For thermometer)
B3 E36 : B/1 : Horn (Low)
A3 E38 : B/3 : Headlamp RH
A2 E40 : GY/3 : Front turn signal and parking lamp RH
★ A2 E41 : — : Body ground
B4 E42 : BR/2 : Washer level switch
B4 E43 : GY/2 : Rear washer motor
B4 E44 : GY/2 : Front washer motor
A2 E45 : GY/8 : Daytime light control unit
A2 E46 : GY/6 : Daytime light control unit
★ B1 E47 : GY/2 : A/T dropping resistor
B1 E48 : GY/4 : To E102
C2 E49 : GY/1 : To E104
C3 E51 : GY/2 : Front wheel sensor RH
D2 E52 : B/1 : Battery
D2 E53 : B/1 : Battery
A1 E54 : L/4 : Fuel pump relay-2 (Relay box-2)
B1 E55 : L/4 : Clutch interlock relay (With M/T) (Relay box-2)
B1 E56 : GY/6 : Park/Neutral position relay (With A/T and ASCD) (Relay box-2)
★ B1 E57 : BR/6 : ECM relay (Relay box-2)
C2 E59 : GY/4 : ASCD pump
C1 E60 : — : Fuse and fusible link box
D5 E61 : L/2 : Front fog lamp LH
A4 E62 : L/2 : Front fog lamp RH
E63 : W/3 : Combination switch (Front fog lamp switch)
★ B2 E91 : GY/2 : Transfer dropping resistor (With all-mode 4-wheel drive)
★ F2 E92 : W/1 : Transfer motor relay (With all-mode 4-wheel drive)
★ G2 E93 : W/1 : Transfer motor relay (With all-mode 4-wheel drive)
★ G2 E94 : G/2 : Transfer motor relay (With all-mode 4-wheel drive)
★ E1 E95 : B/5 : Transfer shift Hi relay (With all-mode 4-wheel drive) (Relay box-1)
E1 E97 : L/4 : Headlamp RH relay (Relay box-1)
E1 E98 : L/4 : Headlamp LH relay (Relay box-1)
★ F1 E99 : B/5 : Transfer shift Low relay (Relay box-1)
★ D2 E111 : SMJ : ABS actuator and electric unit
C2 E112 : – : Body ground
E113 : W/8 : NATS IMMU
E114 : W/4 : Combination switch (Rear wiper switch)
D1 E115 : L/4 : Tail lamp relay (Relay box-2)
★ E116 : W/18 : To M114
F1 E117 : BR/6 : Rear window defogger relay (Relay box-1)
F1 E118 : BR/6 : Horn relay
B2 E120 : B/1 : Horn (High)
E121 : W/2 : Diode
E122 : W/2 : Diode
★ E2 E123 : SB/2 : Swirl control valve control vacuum check switch
★ B3 E125 : B/3 : Refrigerant pressure sensor
A2 E127 : GY/4 : Daytime light control unit
E1 E128 : L/4 : Fuel pump relay-1 (Relay box-1)
★ C2 E135 : GY/8 : To E132

Diode E121 (With auto light)

Headlamp LH relay	ECM

Diode E121 (Without auto light)

Daytime light control unit (For Canada) / Combination switch (Lighting switch) (For USA)	ECM

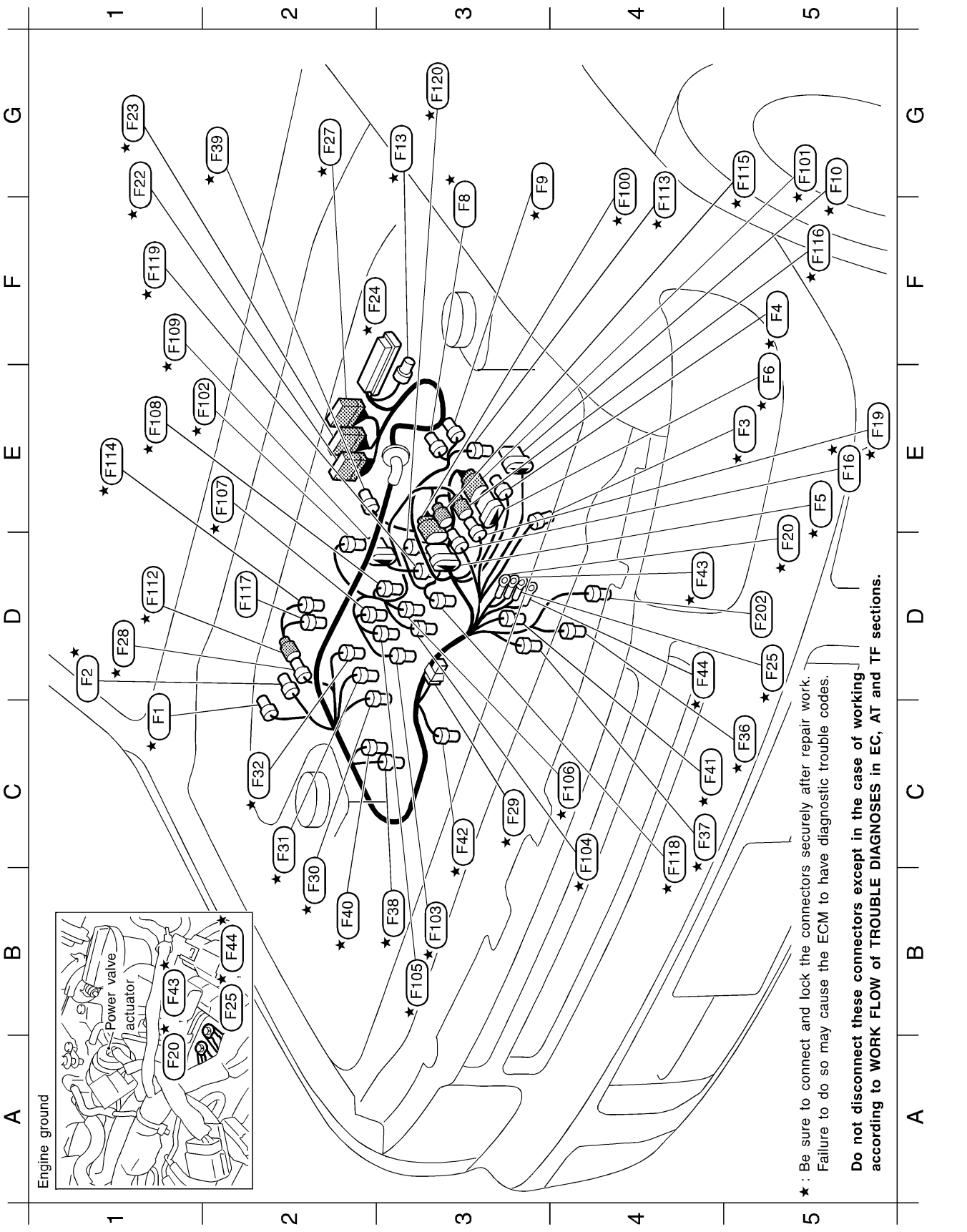
Diode E122 (Without auto light)

Combination switch (Lighting switch)	ECM

MEL237M

Engine Control Harness

NAEL0135



MEL077M

C1 ★ F1 B/4 : Heated oxygen sensor 2 (Rear) (B1)
D1 ★ F2 GY/3 : Heated oxygen sensor 1 (Front) (B1)
E5 ★ F3 GY/4 : Heated oxygen sensor 2 (Rear) (B2)
F5 ★ F4 GY/3 : Heated oxygen sensor 1 (Front) (B2)
D5 ★ F5 L/8 : To F100
E5 ★ F6 G/8 : To F101
F3 ★ F8 BR/3 : Throttle position sensor
G3 ★ F9 GY/3 : Throttle position switch
G5 ★ F10 GY/5 : Mass air flow sensor
G3 ★ F13 GY/3 : Absolute pressure sensor
E5 ★ F16 LGY/2 : To F115
E5 ★ F19 SB/2 : To F116
D5 ★ F20 — : Engine ground
G1 ★ F22 GY/16 : To M33
G1 ★ F23 BR/24 : To M32
F2 ★ F24 SMJ : ECM
D5 ★ F25 — : Engine ground
G2 ★ F27 W/18 : To M94
D1 ★ F28 SB/3 : To F112
C3 ★ F29 W/2 : Condenser
B2 ★ F30 GY/3 : Ignition coil No. 1
C2 ★ F31 GY/3 : Ignition coil No. 3
C2 ★ F32 GY/3 : Ignition coil No. 5
D5 ★ F36 GY/2 : Camshaft position sensor (PHASE)
C4 ★ F37 B/3 : Intake valve timing control position sensor LH
B3 ★ F38 B/3 : Intake valve timing control position sensor RH
G2 ★ F39 G/2 : Intake valve timing control solenoid valve LH
B2 ★ F40 SB/2 : Intake valve timing control solenoid valve RH
C4 ★ F41 G/2 : Swirl control valve control solenoid valve
C3 ★ F42 BR/2 : VIAS control solenoid valve (With A/T)
D4 ★ F43 — : Engine ground
D4 ★ F44 — : Engine ground
F4 ★ F100 L/8 : To F5
G5 ★ F101 G/8 : To F6

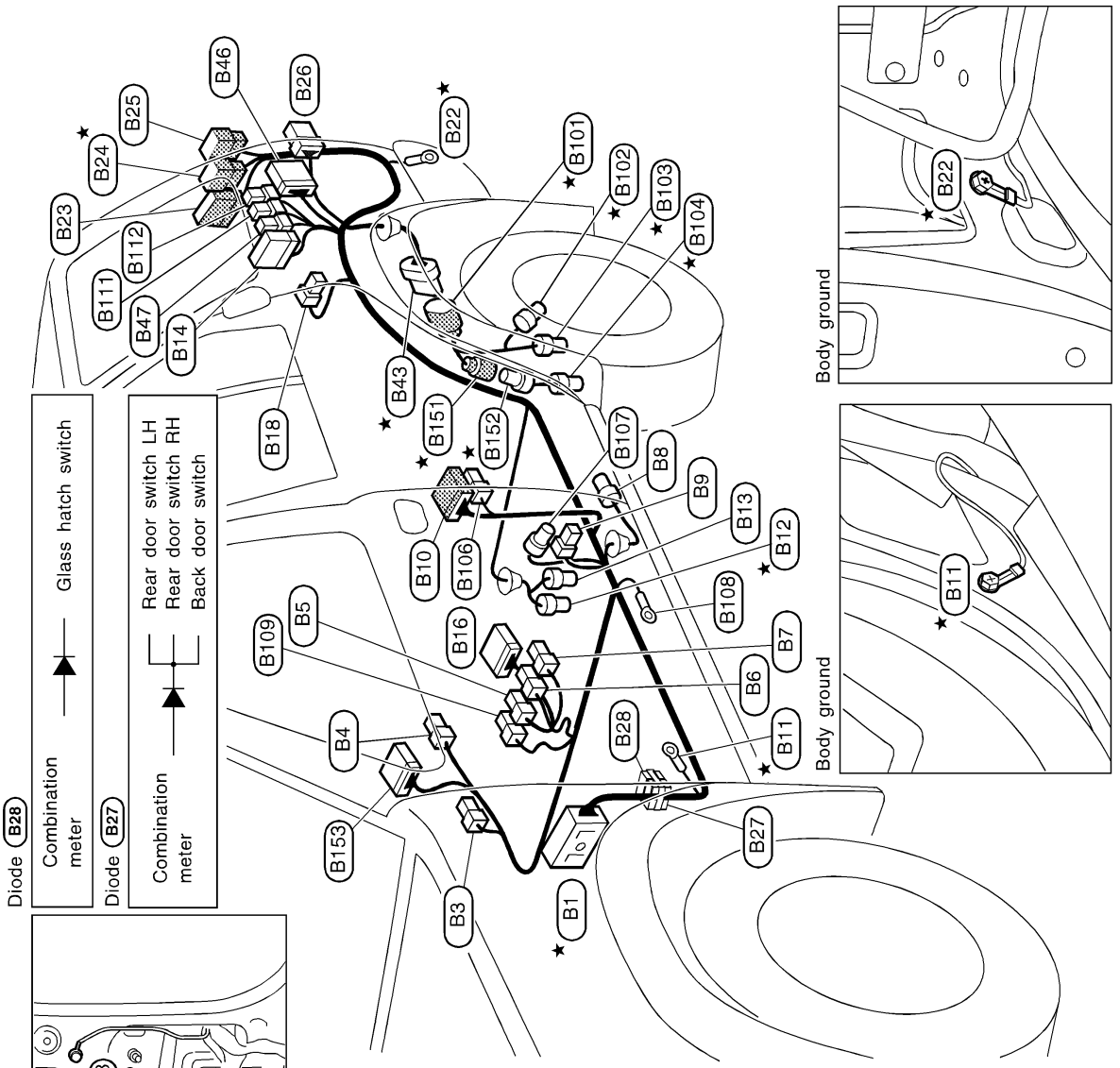
E2 ★ F102 GY/2 : Knock sensor
B3 ★ F103 GY/2 : Injector No. 1
C4 ★ F104 GY/2 : Injector No. 2
B3 ★ F105 GY/2 : Injector No. 3
C4 ★ F106 GY/2 : Injector No. 4
E2 ★ F107 GY/2 : Injector No. 5
E1 ★ F108 GY/2 : Injector No. 6
F1 ★ F109 L/6 : IACV-AAC valve
D1 ★ F112 SB/3 : To F28
F4 ★ F113 L/2 : EVAP canister purge volume control solenoid valve
E1 ★ F114 GY/2 : Engine coolant temperature sensor
G5 ★ F115 LGY/2 : To F16
F5 ★ F116 SB/2 : To F19
D2 F117 B/1 : Thermal transmitter
C4 ★ F118 GY/3 : Ignition coil No. 2
F1 ★ F119 GY/3 : Ignition coil No. 4
G3 ★ F120 GY/3 : Ignition coil No. 6
D5 F202 B/1 : Compressor (Air conditioner)

★ : 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, AT and TF sections.**

MEL238M

Body Harness LH

NAEL0136



★: 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, AT and TF sections.

★ B1	SMJ	: To M2	
B3	B/1	: Parking brake switch	
B4	W/2	: Power socket	
B5	GY/3	: Front heated seat LH (Via sub-harness)	
B6	W/3	: Seat belt buckle switch	
B7	W/2	: Power seat LH	
B8	BR/2	: Rear wheel sensor LH	
B9	B/3	: Front door switch LH	
B10	W/10	: To D50	
★ B11	—	: Body ground	
★ B12	GY/4	: Fuel level sensor unit	
B13	GY/2	: Fuel pump	
B14	W/12	: Rear wiper amp.	
B16	W/16	: Seat control unit LH (Via sub-harness)	
B18	BR/1	: Rear door switch LH	
★ B22	—	: Body ground	
B23	W/12	: To D100	
★ B24	W/6	: To D101	
B25	BR/6	: To D102	
B26	W/6	: Rear combination lamp LH	
B27	W/2	: Diode	
B28	W/2	: Diode	
★ B43	GY/8	: To B101	
B46	W/26	: Rear speaker amp. (With BOSE system)	
B47	W/4	: Audio amp. relay (With BOSE system)	
★ B101	GY/8	: To B43	
★ B102	GY/3	: EVAP control system pressure sensor	
★ B103	B/2	: EVAP canister vent control valve	
★ B104	G/2	: Vacuum cut valve bypass valve	
B106	W/4	: Seat belt pre-tensioner LH	
B107	GY/2	: Satellite sensor LH	
B108	—	: Body ground	
B109	Y/2	: Side air bag module LH	
B111	W/4	: Power socket relay	
B112	W/4	: Door mirror defogger relay	
★ B151	GY/2	: To B152	
★ B152	GY/2	: To B151	
B153	Y/12	: Air bag diagnosis sensor unit	

MEL239M

Body Harness RH

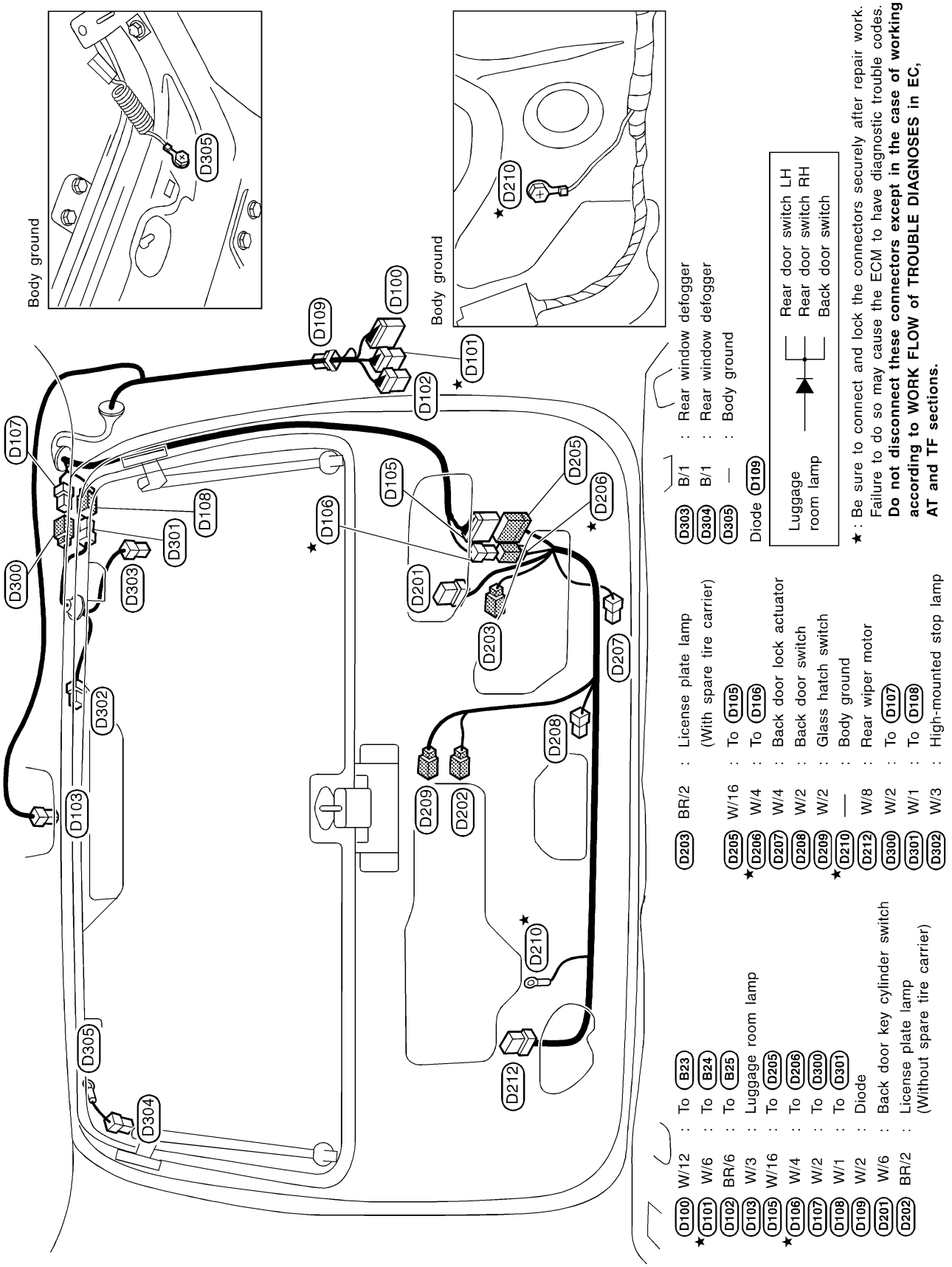
NAEL0137

★: 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 , AT and TF sections.**

MEL240M

Back Door Harness

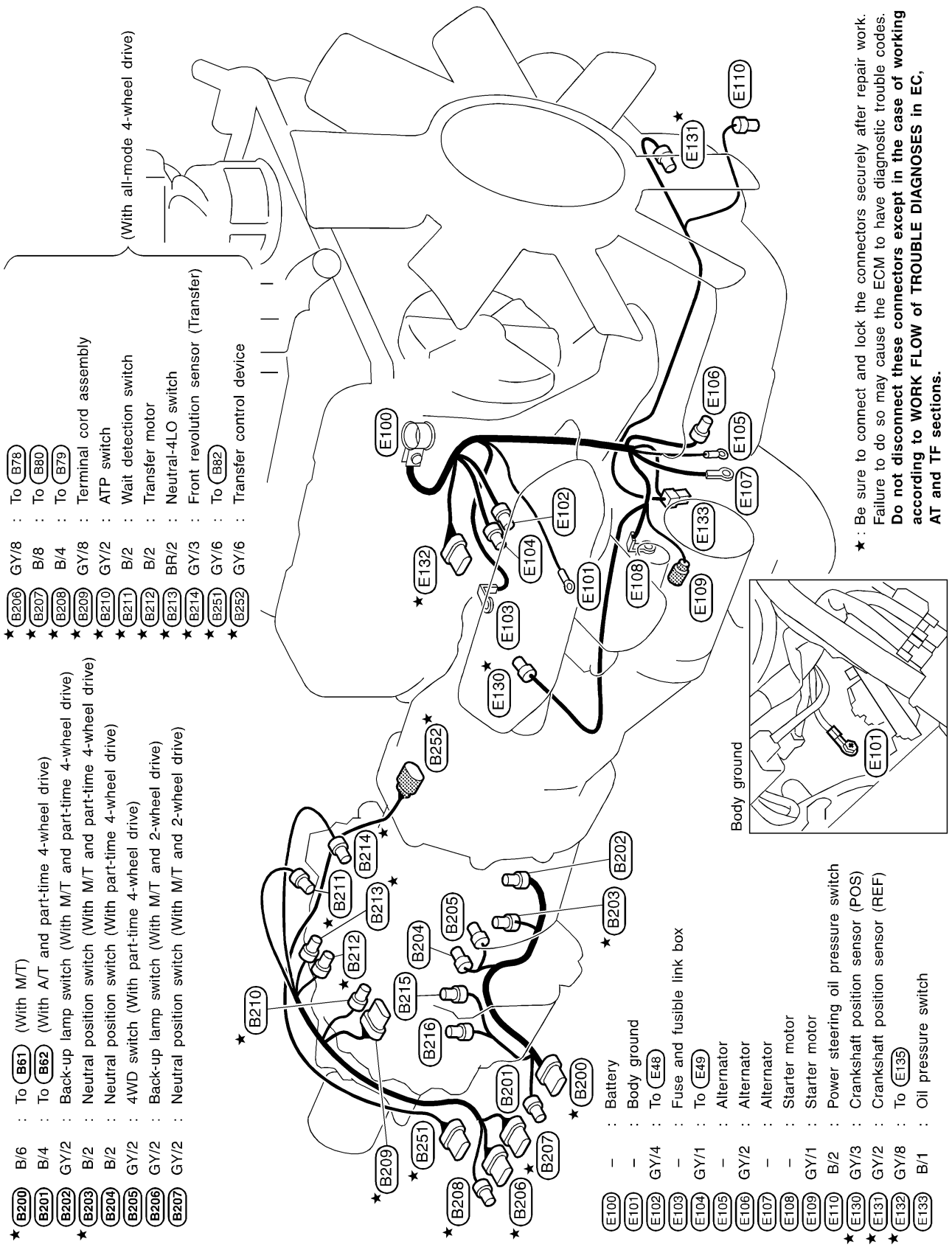
NAEL0138



MEL241M

Engine and Transmission Harness

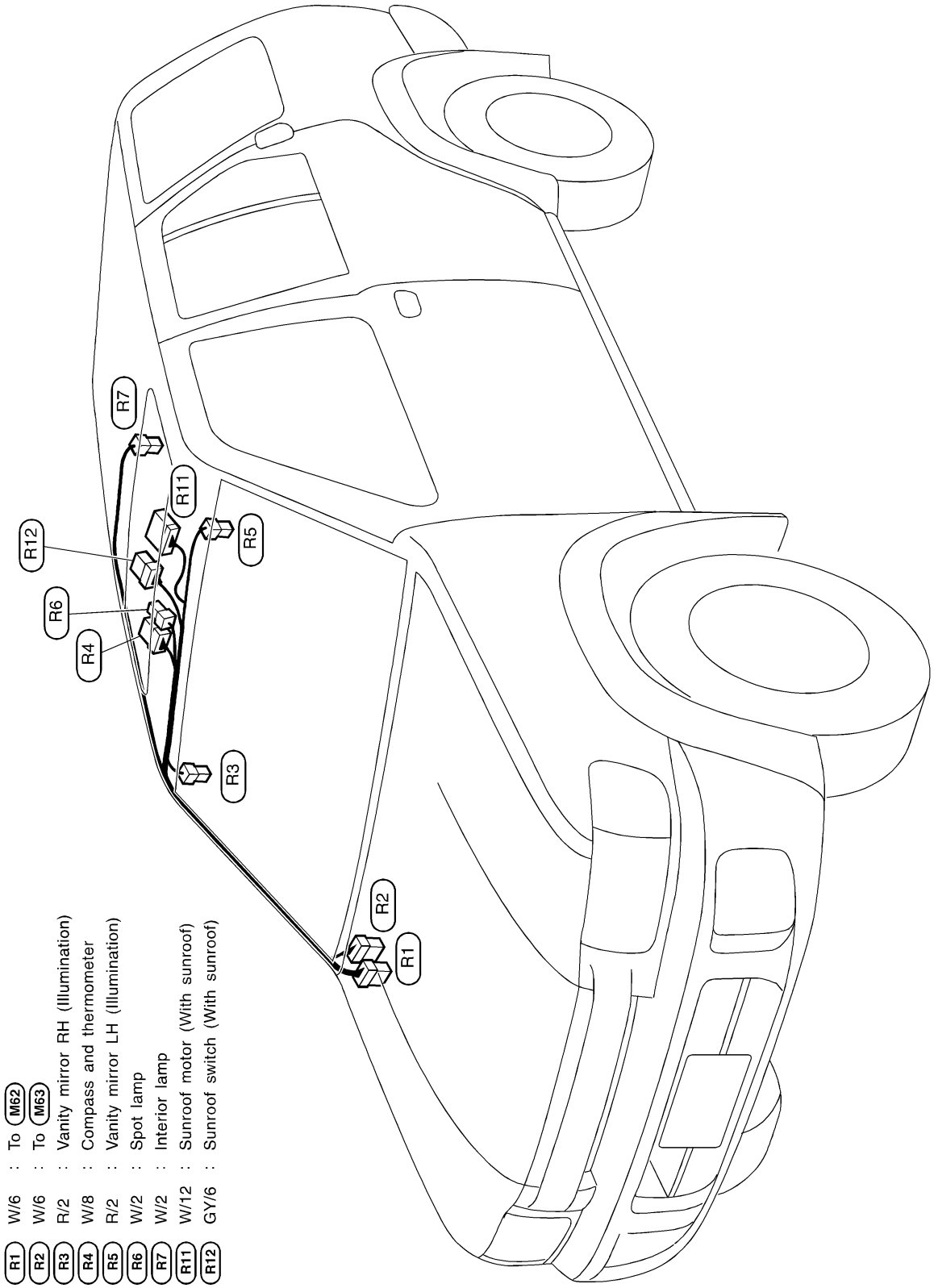
NAEL0139



MEL242M

Room Lamp Harness

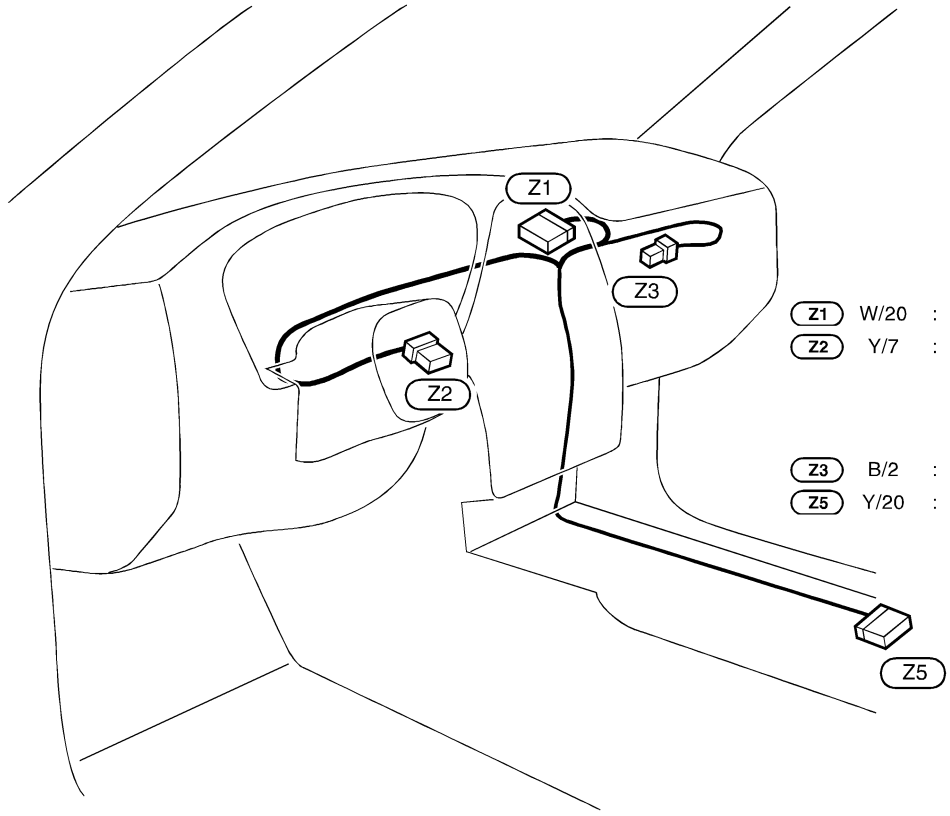
NAEL0140



MEL243M

Air Bag Harness

NAEL0141



Z1 W/20 : To M47
Z2 Y/7 : Air bag module (Driver side), AUDIO switch, ASCD steering switch and horn switch via spiral cable
Z3 B/2 : Air bag module (Passenger side)
Z5 Y/20 : Air bag diagnosis sensor unit

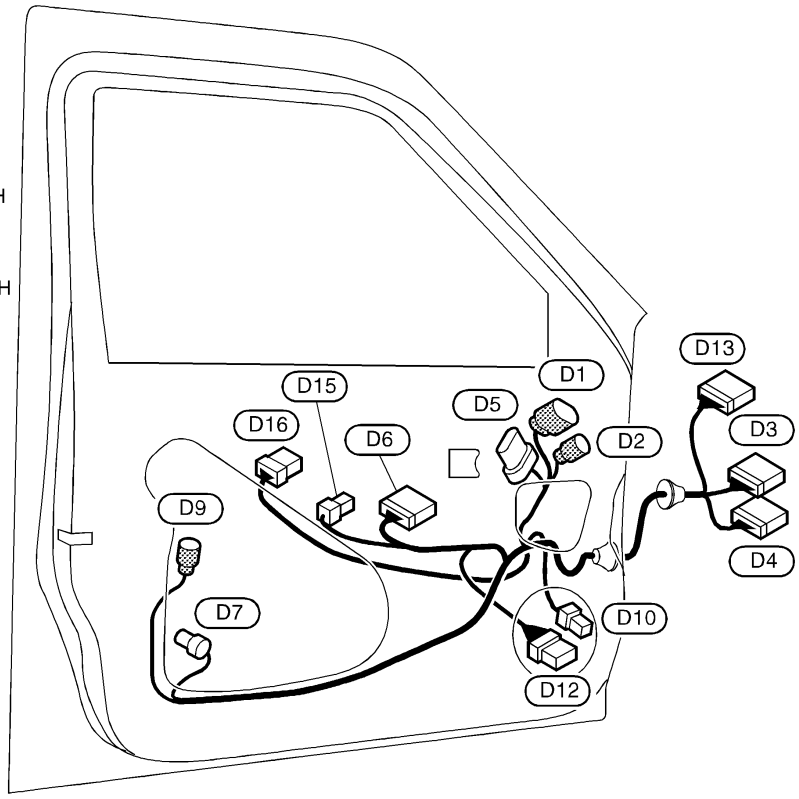
MEL244M

Front Door Harness

NAEL0142

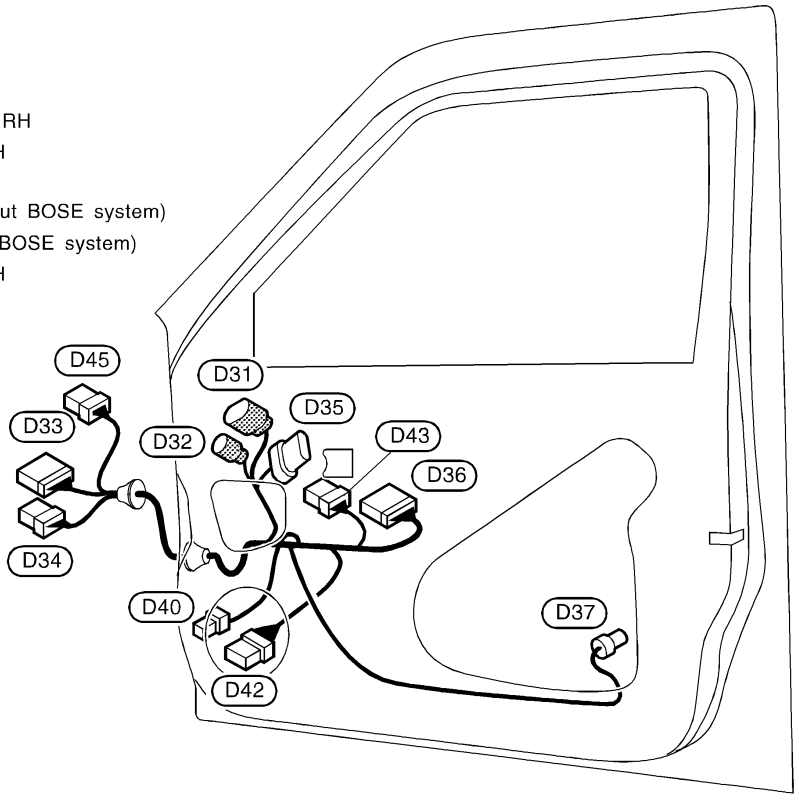
LH side

D1	GY/5	:	Door mirror defogger LH
D2	BR/3	:	Door mirror LH
D3	BR/20	:	To M5
D4	W/10	:	To M6
D5	GY/6	:	Front power window regulator LH
D6	W/16	:	Power window main switch
D7	GY/4	:	Front door lock actuator LH
D9	BR/3	:	Front door key cylinder switch LH
D10	BR/2	:	Front door speaker LH (Without BOSE system)
D12	W/6	:	Front door speaker LH (With BOSE system)
D13	GY/12	:	To M112
D15	W/3	:	Power window main switch
D16	W/8	:	Seat memory switch



RH side

D31	GY/5	:	Door mirror defogger RH
D32	BR/3	:	Door mirror RH
D33	BR/16	:	To M67
D34	W/6	:	To M68
D35	GY/6	:	Front power window regulator RH
D36	W/12	:	Front power window switch RH
D37	GY/4	:	Front door lock actuator RH
D40	BR/2	:	Front door speaker RH (Without BOSE system)
D42	W/6	:	Front door speaker RH (With BOSE system)
D43	W/8	:	Front power window switch RH
D45	BR/6	:	To M101 (With BOSE system)

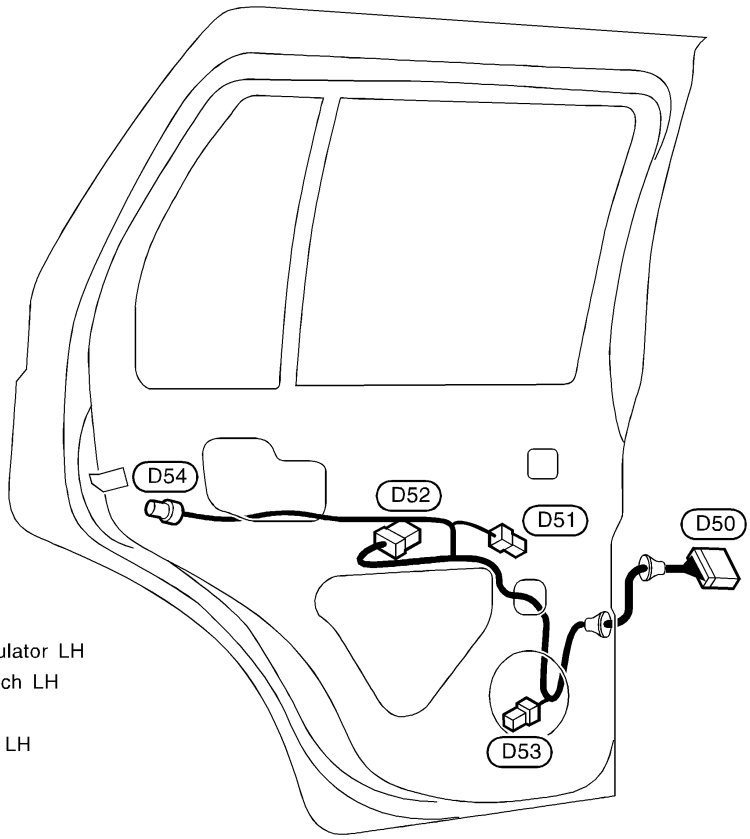


MEL245M

Rear Door Harness

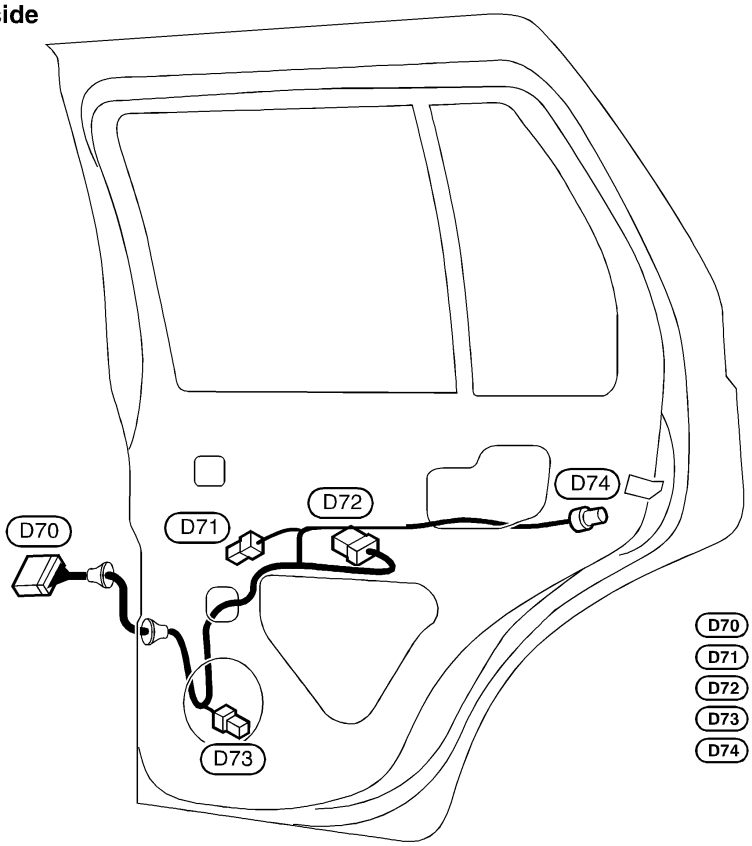
NAEL0143

LH side



D50	W/10	:	To B10
D51	B/2	:	Rear power window regulator LH
D52	W/8	:	Rear power window switch LH
D53	BR/2	:	Rear door speaker LH
D54	GY/4	:	Rear door lock actuator LH

RH side



D70	W/10	:	To B70
D71	B/2	:	Rear power window regulator RH
D72	W/8	:	Rear power window switch RH
D73	BR/2	:	Rear door speaker RH
D74	GY/4	:	Rear door lock actuator RH

MEL261M

BULB SPECIFICATIONS

Headlamp

Headlamp

NAEL0144S03

Item	Wattage W
High/Low (Semi-sealed beam)	60/55 (HB2)

Exterior Lamp

NAEL0144S01

Item		Wattage W
Front fog lamp		55
Front turn signal lamp		21
Parking lamp		5
Rear combination lamp	Turn signal lamp	27
	Stop/Tail lamp	21/5
	Back-up lamp	18
License plate lamp		5
High-mounted stop lamp		5

Interior Lamp

NAEL0144S02

Item	Wattage W
Interior lamp	10
Spot lamp	8
Luggage room lamp	10

WIRING DIAGRAM CODES (CELL CODES)

Use the chart below to find out what each wiring diagram code stands for.
Refer to the wiring diagram code in the alphabetical index to find the location (page number) of each wiring diagram.

Code	Section	Wiring Diagram Name
1STSIG	AT	A/T 1ST Signal
2NDSIG	AT	A/T 2ND Signal
3RDSIG	AT	A/T 3RD Signal
4THSIG	AT	A/T 4TH Signal
A/C, A	HA	Auto Air Conditioner
AAC/V	EC	IACV-AAC Valve
ABS	BR	Anti-lock Brake System
AP/SEN	EC	Absolute Pressure Sensor
ASCD	EL	Automatic Speed Control Device
AT/C	EC	A/T Control
ATDIAG	EC	A/T Diagnosis Communication Line
AUDIO	EL	Audio
AUT/DP	EL	Automatic Drive Positioner
BA/FTS	AT	A/T Fluid Temperature Sensor and TCM Power Supply
BACK/L	EL	Back-up Lamp
BYPS/V	EC	Vacuum Cut Valve Bypass Valve
CHARGE	SC	Charging System
CHIME	EL	Warning Chime
CIGAR	EL	Cigarette Lighter
CLOCK	EL	Clock
COMPAS	EL	Compass and Thermometer
D/LOCK	EL	Power Door Lock
DEF	EL	Rear Window Defogger
DTRL	EL	Headlamp — With Daytime Light System —
ECTS	EC	Engine Coolant Temperature Sensor
ENGSS	AT	Engine Speed Signal
F/FOG	EL	Front Fog Lamp
F/PUMP	EC	Fuel Pump Control
FICD	EC	IACV-FICD Solenoid Valve
FLS1	EC	Fuel Gauge
FLS2	EC	Fuel Gauge
FLS3	EC	Fuel Gauge
FTS	AT	A/T Fluid Temperature Sensor
FUELLH	EC	Fuel Injection System Function (Left Bank)
FUELRH	EC	Fuel Injection System Function (Right Bank)
H/LAMP	EL	Headlamp
HORN	EL	Horn
HSEAT	EL	Heated Seat
IATS	EC	Intake Air Temperature Sensor
IGN/SG	EC	Ignition Signal
ILL	EL	Illumination
INJECT	EC	Injector
INT/L	EL	Interior, Spot, Vanity Mirror, and Luggage Room Lamps
IVC-L	EC	Intake Valve Timing Control Solenoid Valve LH
IVC-R	EC	Intake Valve Timing Control Solenoid Valve RH
IVCS-L	EC	Intake Valve Timing Control Position Sensor LH
IVCS-R	EC	Intake Valve Timing Control Position Sensor RH
KS	EC	Knock Sensor
LAN	AT	A/T Communication Line
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
MIL/DL	EC	MIL and Data Link Connectors
MIRROR	EL	Door Mirror
MULTI	EL	Multi-remote Control System
NATS	EL	NVIS (NISSAN Vehicle Immobilizer 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)

Code	Section	Wiring Diagram Name
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
P/ANT	EL	Power Antenna
PGC/V	EC	EVAP Canister Purge Volume Control Solenoid Valve
PHASE	EC	Camshaft Position Sensor (PHASE)
PNP/SW	EC	Park/Neutral Position Switch
PNP/SW	AT	Park/Neutral Position Switch
POS	EC	Crankshaft Position Sensor (CKPS) (POS)
POWER	EL	Power Supply Routing
PRE/SE	EC	EVAP Control System Pressure Sensor
PST/SW	EC	Power Steering Oil Pressure Switch
REF	EC	Crankshaft Position Sensor (CKPS) (REF)
REMOTE	EL	Audio (Remote Control Switch)
RP/SEN	EC	Refrigerant Pressure
S/SIG	EC	Start Signal
S/VCSW	EC	Swirl Control Valve Control Vacuum Check Switch
SEAT	EL	Power Seat
SHIFT	AT	A/T Shift Lock System
SROOF	EL	Sunroof
SRS	RS	Supplemental Restraint System
SSV/A	AT	Shift Solenoid Valve A
SSV/B	AT	Shift Solenoid Valve B
START	SC	Starting System
STOP/L	EL	Stop lamp
SWL/V	EC	Swirl Control Valve Control Solenoid Valve

Code	Section	Wiring Diagram Name
TAIL/L	EL	Parking, License and Tail Lamps
TCCSIG	AT	A/T TCC Signal (Lock up)
TCV	AT	Torque Converter Clutch Solenoid Valve
T/F	TF	Transfer
TFTS	EC	Tank Fuel Temperature Sensor
THEFT	EL	Theft Warning System
TP/SW	EC	Throttle Position Switch
TPS	AT	Throttle Position Sensor
TPS	EC	Throttle Position Sensor
TRNSMT	EL	Integrated HOMELINK™ Transmitter
TRSA/T	AT	Turbine Revolution Sensor
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)
VSSMTR	AT	Vehicle Speed Sensor MTR
WARN	EL	Warning Lamps
WINDOW	EL	Power Window
WIP/R	EL	Rear Wiper and Washer
WIPER	EL	Front Wiper and Washer