ELECTRICAL SYSTEM

SECTION EL

CONTENTS

CONTENTS (Cont'd)

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 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), side curtain air bag module (locating in the headliner side of front and rear 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).

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.**
- **Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harness connector (and by yellow harness protector or yellow insulation tape before the harness connectors).**

Precautions for SRS “AIR BAG” and “SEAT BELT PRE-TENSIONER” Service

NAEL0485

- Do not use electrical test equipment to check SRS circuits unless instructed to in this Service Manual.
- Before servicing the SRS, turn ignition switch “OFF”, disconnect battery ground cable and wait at least 3 minutes.
  For approximately 3 minutes after the cables are removed, it is still possible for the air bag and seat belt pre-tensioner to deploy. Therefore, do not work on any SRS connectors or wires until at least 3 minutes have passed.
- Diagnosis sensor unit must always be installed with their arrow marks “⇐” pointing towards the front of the vehicle for proper operation. Also check diagnosis sensor unit for cracks, deformities or rust before installation and replace as required.
- The spiral cable must be aligned with the neutral position since its rotations are limited. Do not attempt to turn steering wheel or column after removal of steering gear.
- Handle air bag module carefully. Always place driver and passenger air bag modules with the pad side facing upward and side air bag module standing with the stud bolt side setting bottom.
- Conduct self-diagnosis to check entire SRS for proper function after replacing any components.
- After air bag inflates, the front instrument panel assembly should be replaced if damaged.

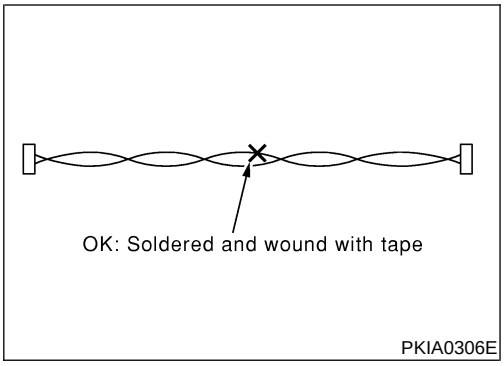
Precautions for Trouble Diagnosis

NAEL0458

CAN SYSTEM

NAEL0458S01

- Do not apply voltage of 7.0V or higher to the measurement terminals.
- Use the tester with its open terminal voltage being 7.0V or less.



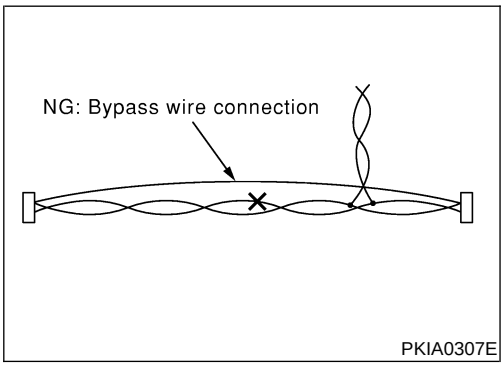
Precautions for Harness Repair

NAEL0459

CAN SYSTEM

NAEL0459S01

- Solder the repaired parts, and wrap with tape. [Frays of twisted line must be within 110 mm (4.33 in)]



- Do not perform bypass wire connections for the repair parts. (The spliced wire will become separated and the characteristics of twisted line will be lost.)

Wiring Diagrams and Trouble Diagnosis

NAEL0002

When you read wiring diagrams, refer to the following:

- GI-11, “HOW TO READ WIRING DIAGRAMS”
- EL-11, “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 DIAGNOSES”
- 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

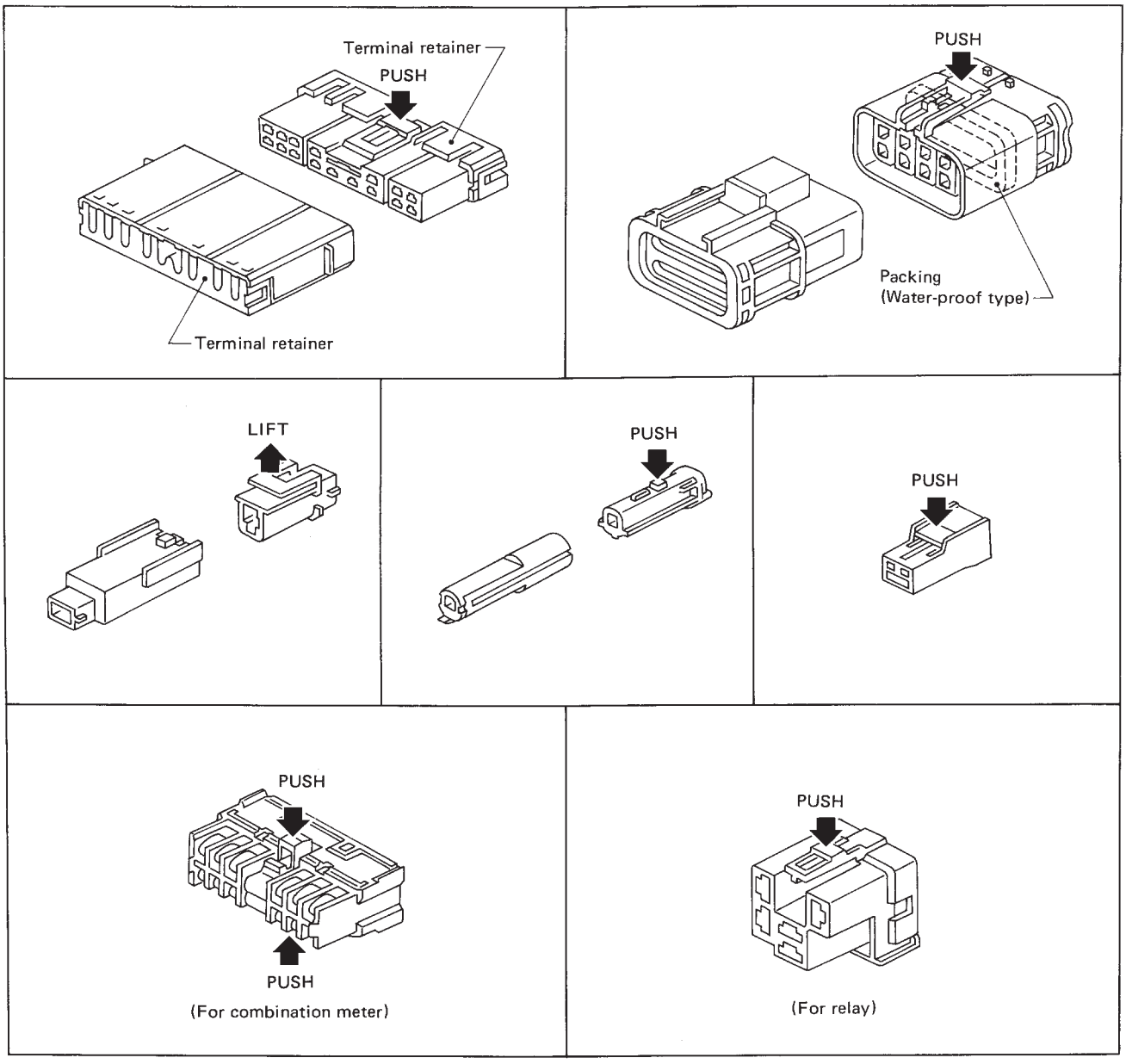
- The tab-locking type connectors help prevent accidental looseness or disconnection.
- The tab-locking type connectors are disconnected by pushing or lifting the locking tab(s). Refer to the illustration below.

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

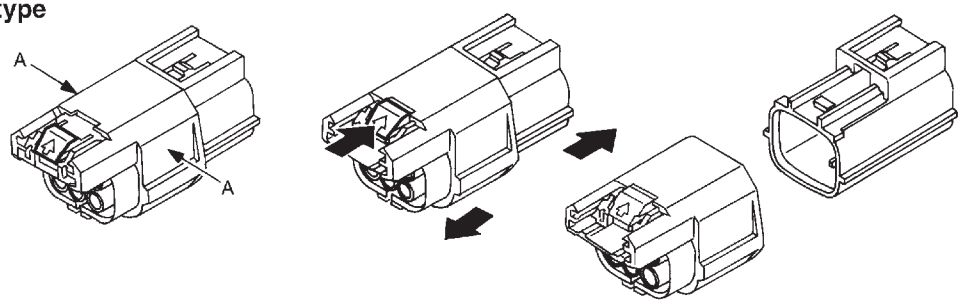
- A new style slide-locking type connector is used on certain systems and components, especially those related to OBD.
- The slide-locking type connectors help prevent incomplete locking and accidental looseness or disconnection.
- The slide-locking type connectors are disconnected by pushing or pulling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

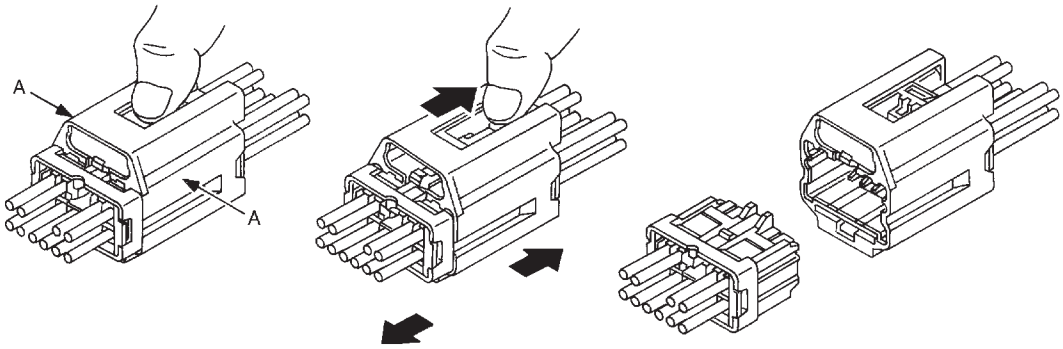


① Firmly grasp shell of connector housing at A.

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

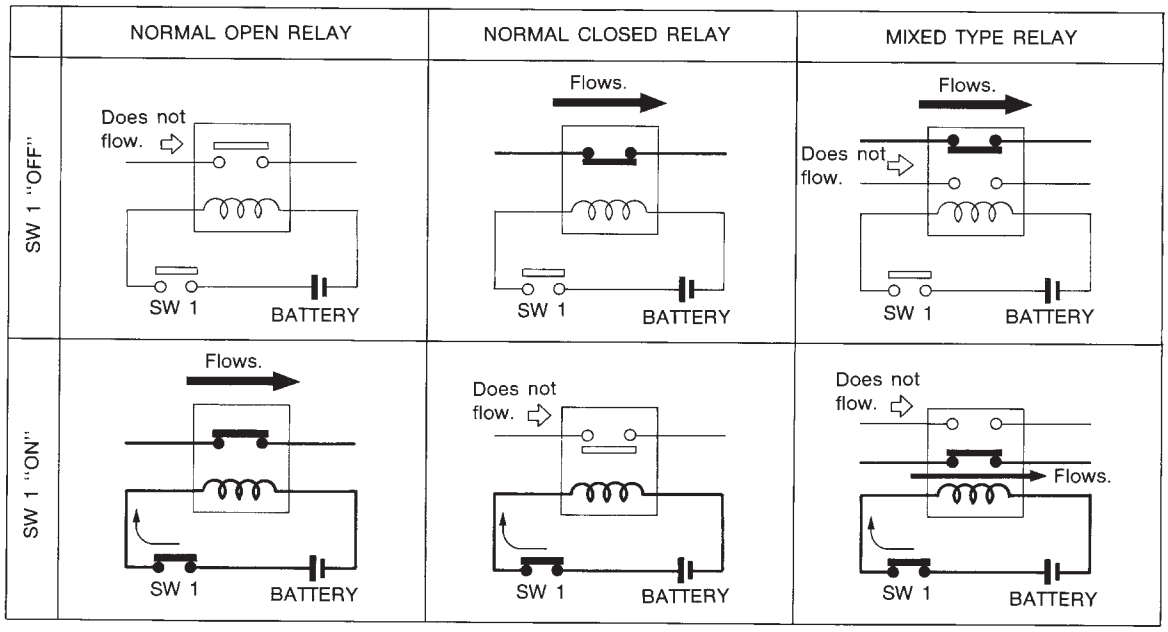
Description

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.

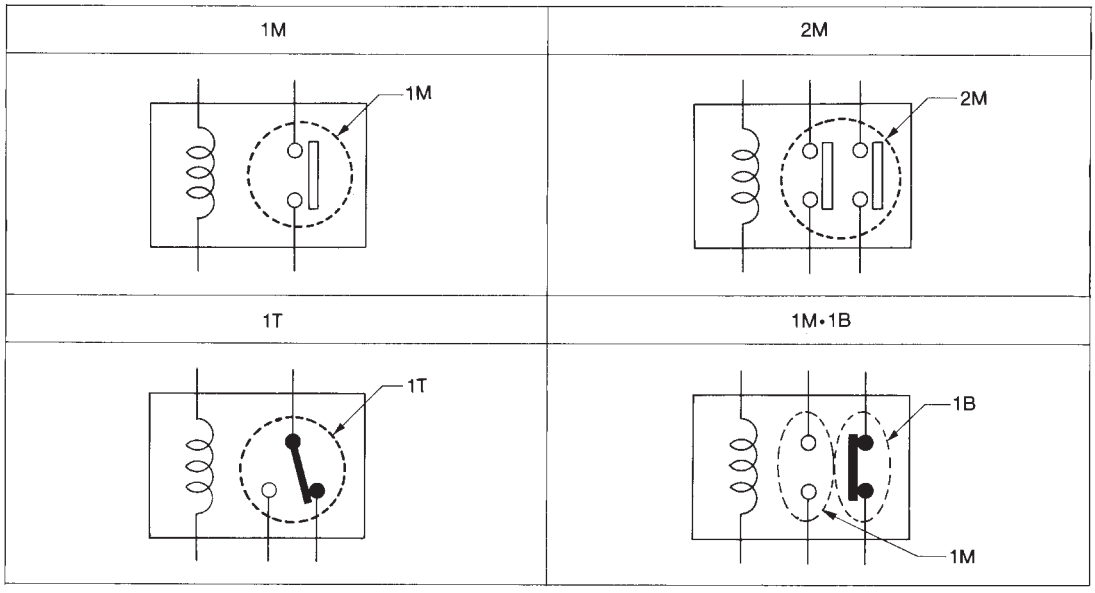


SEL881H

TYPE OF STANDARDIZED RELAYS

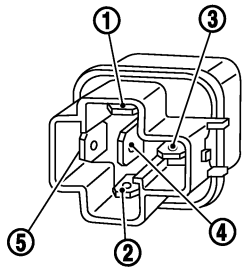
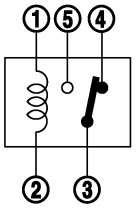
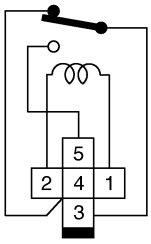
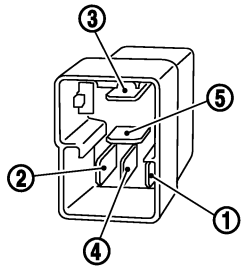
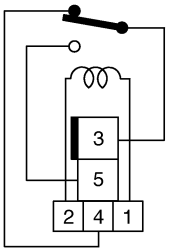
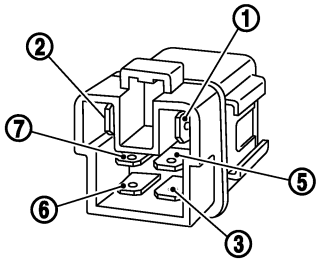
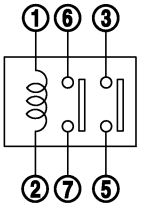
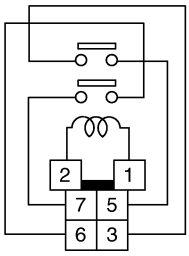
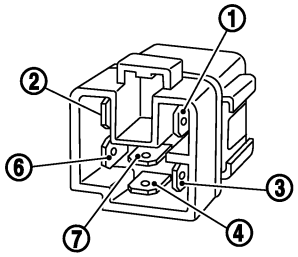
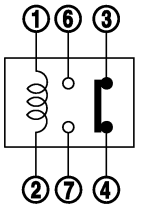
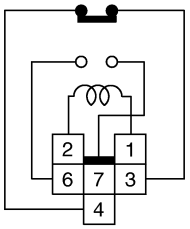
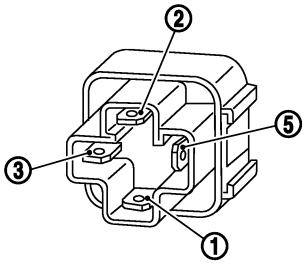
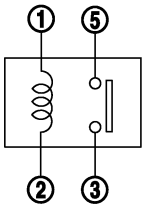
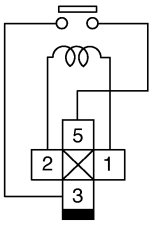
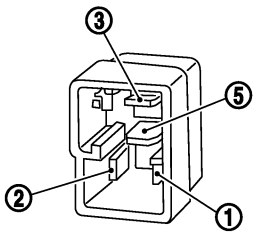
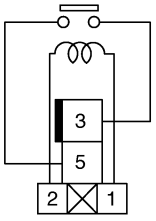
NAEL0004S02

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



SEL882H

Description (Cont'd)

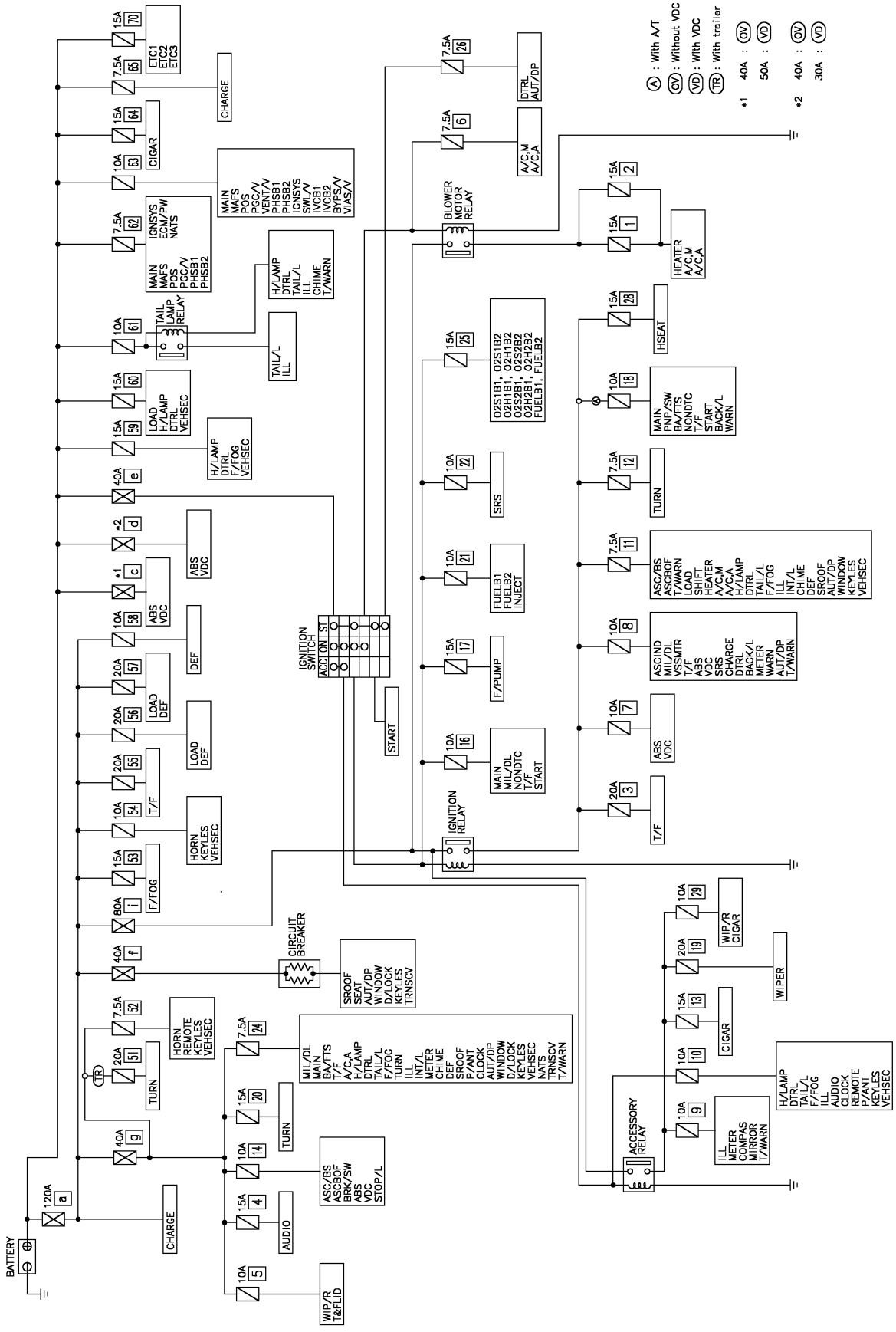
Type	Outer view	Circuit	Connector symbol and connector	Case color
1T				BLACK
				
2M				BROWN
1M•1B				GRAY
1M				BLUE
				

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

GEL264

Schematic

NAEL0247



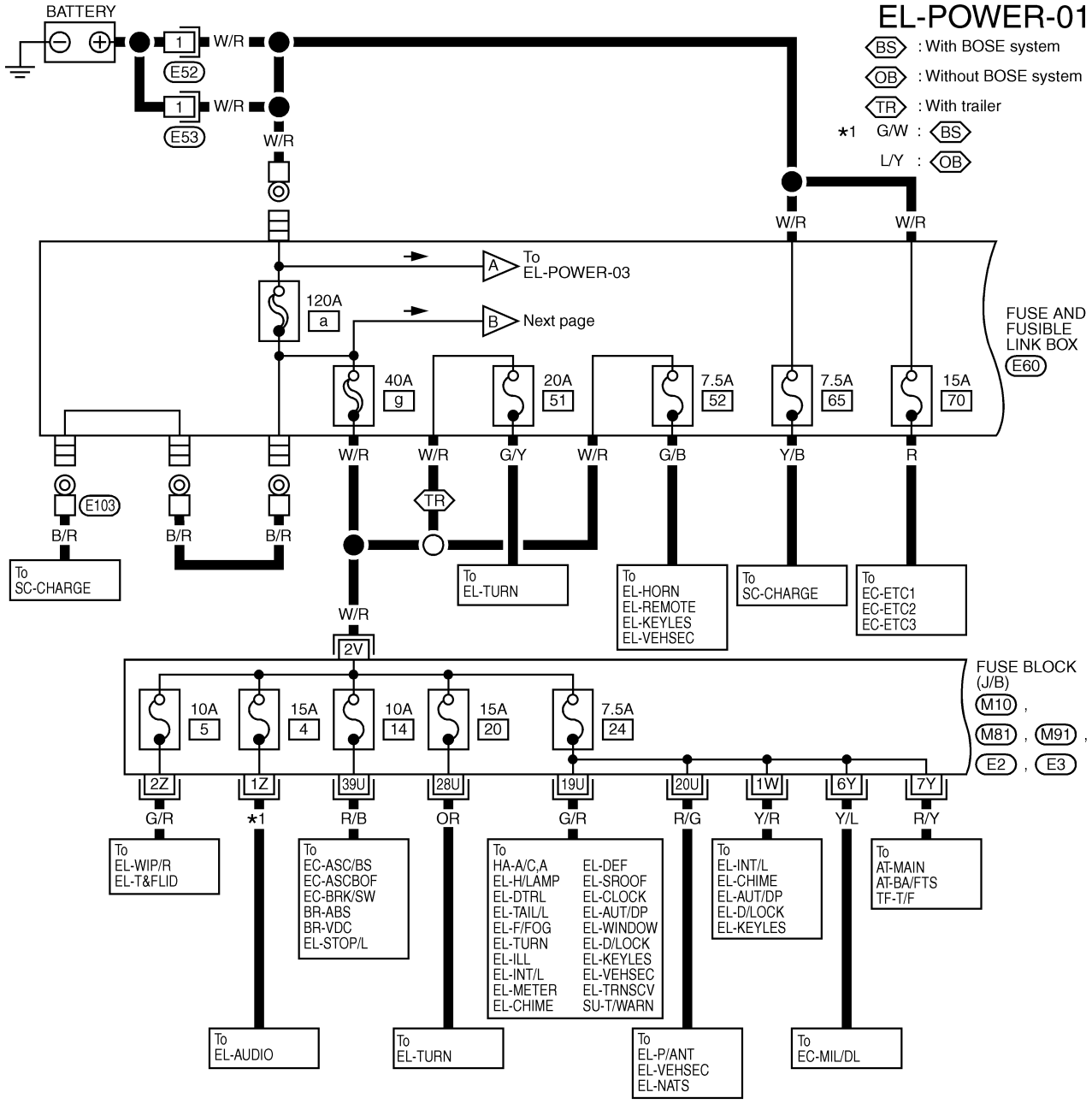
MEL085S

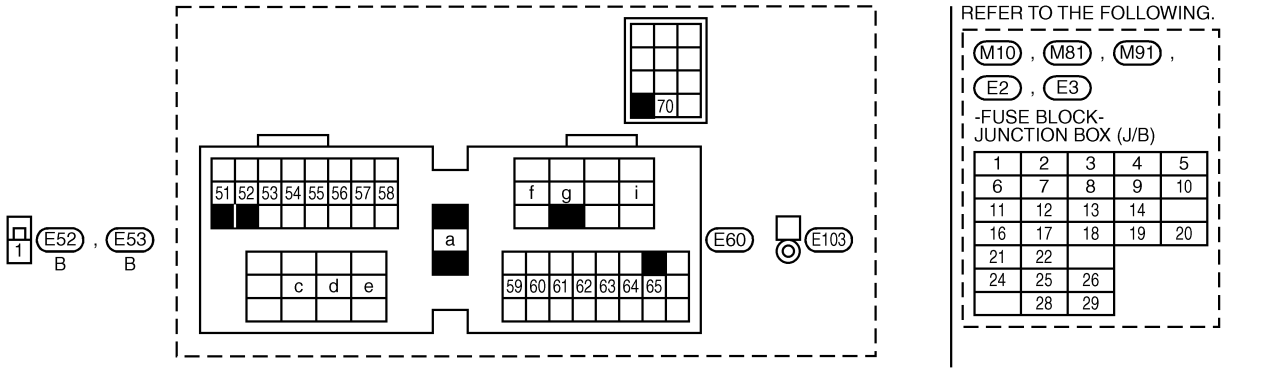
Wiring Diagram — POWER —

NAEL0248

BATTERY POWER SUPPLY — IGNITION SW. IN ANY POSITION

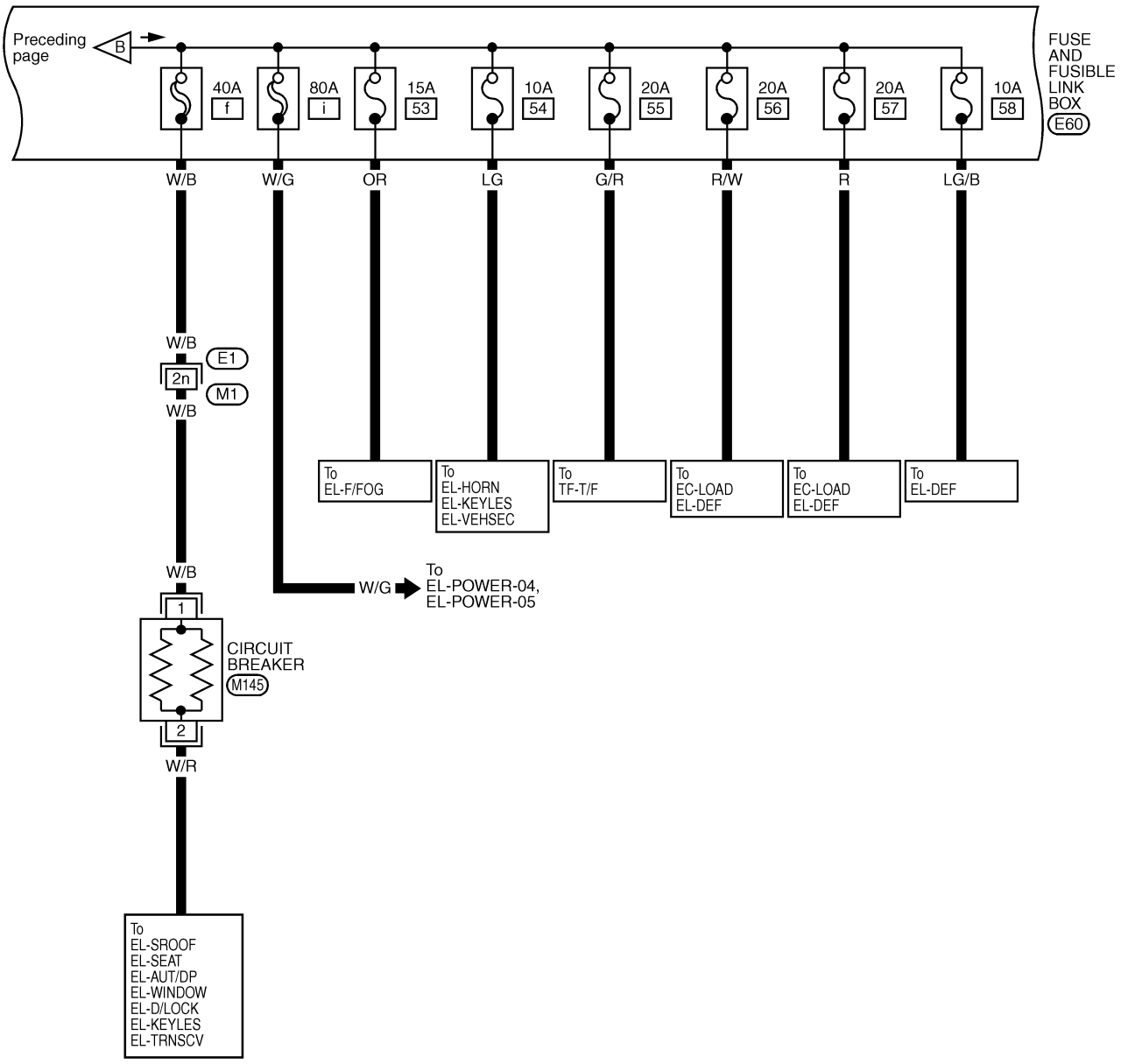
NAEL0248S01

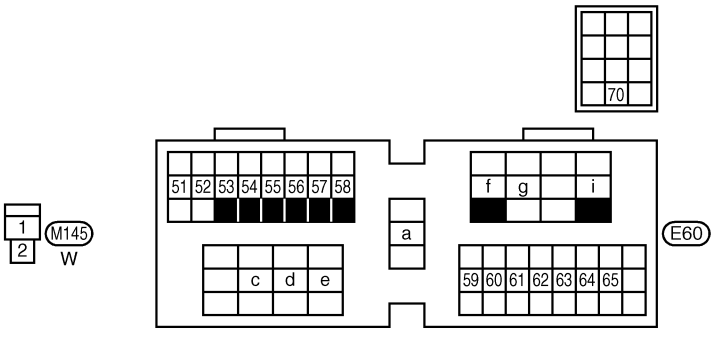




MEL086S

EL-POWER-02

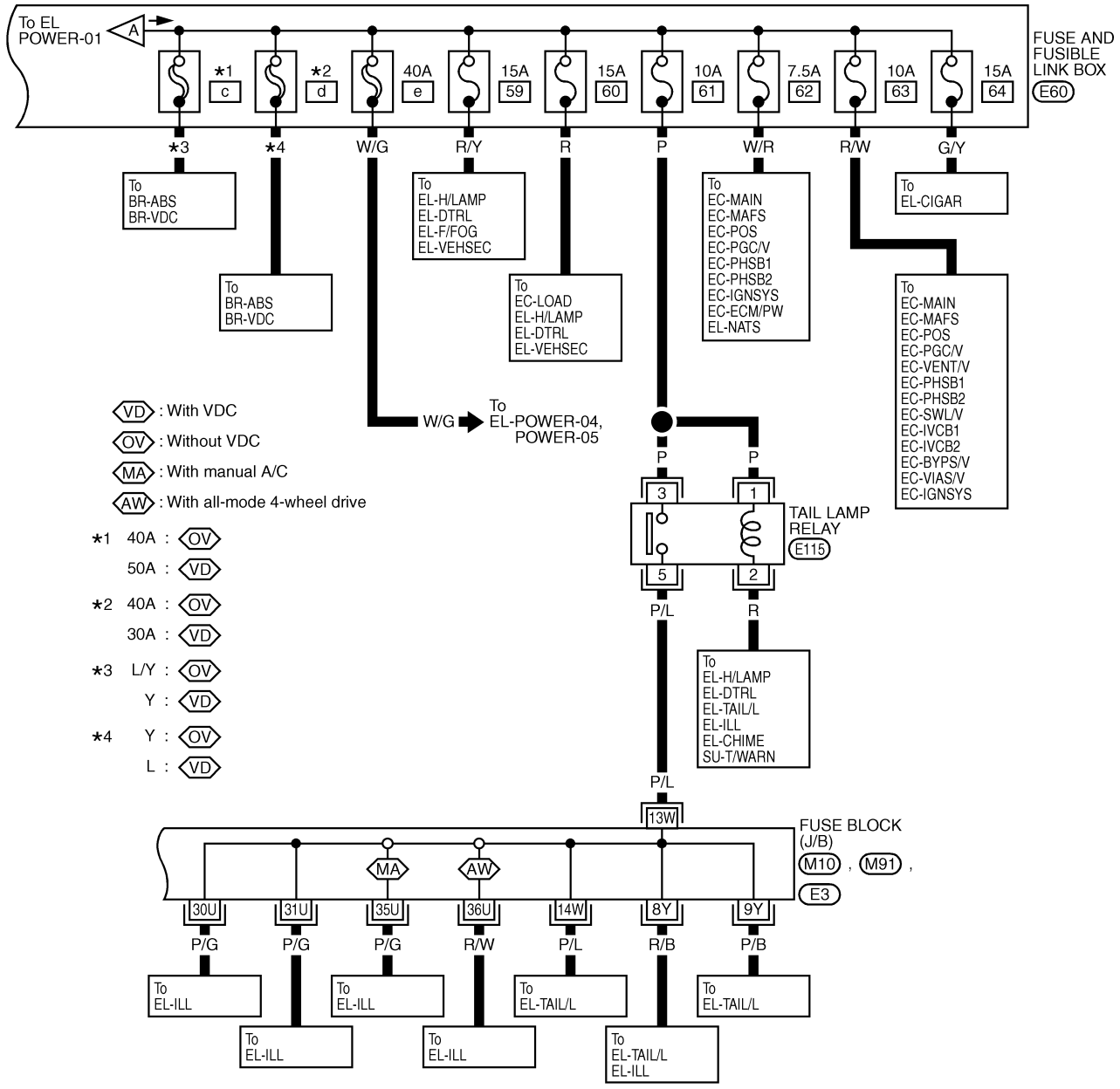


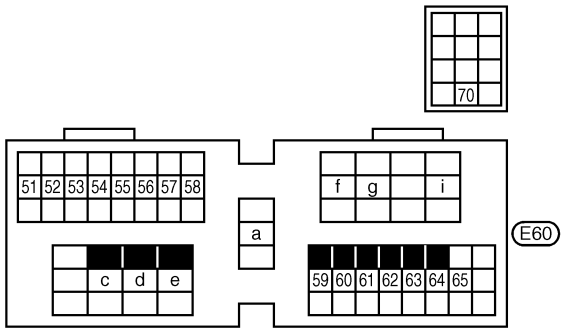


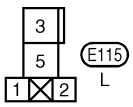
REFER TO THE FOLLOWING.
E1 -SUPER MULTIPLE JUNCTION (SMJ)

MEL128S

EL-POWER-03







REFER TO THE FOLLOWING.

M10 , M91 , E3

-FUSE BLOCK- JUNCTION BOX (J/B)

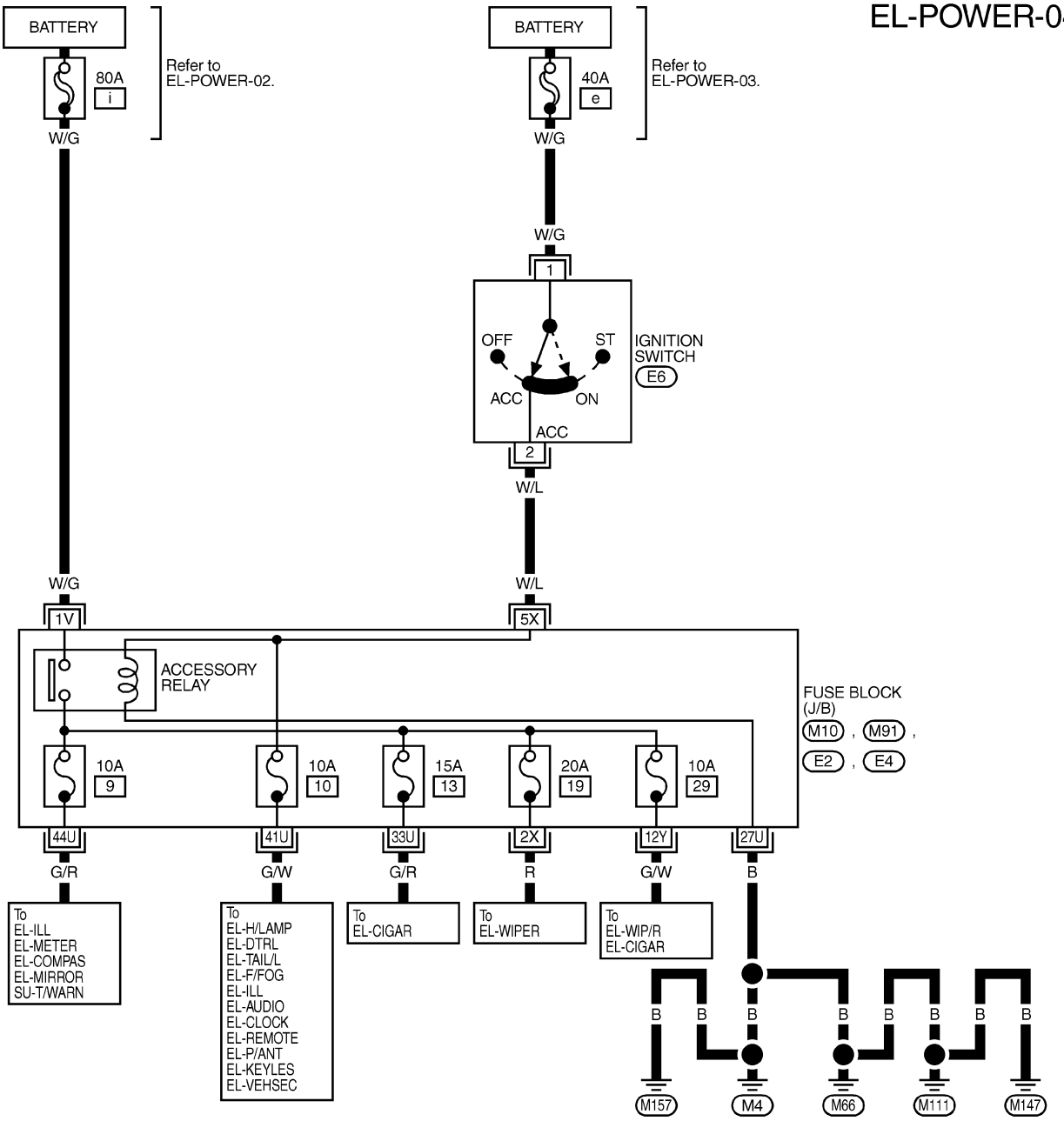
1	2	3	4	5
6	7	8	9	10
11	12	13	14	
16	17	18	19	20
21	22			
24	25	26		
	28	29		

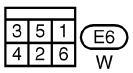
MEL087S

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

NAEL0248S02

EL-POWER-04





REFER TO THE FOLLOWING.

M10 , M91 , E2 , E4

- FUSE BLOCK -
JUNCTION BOX (J/B)

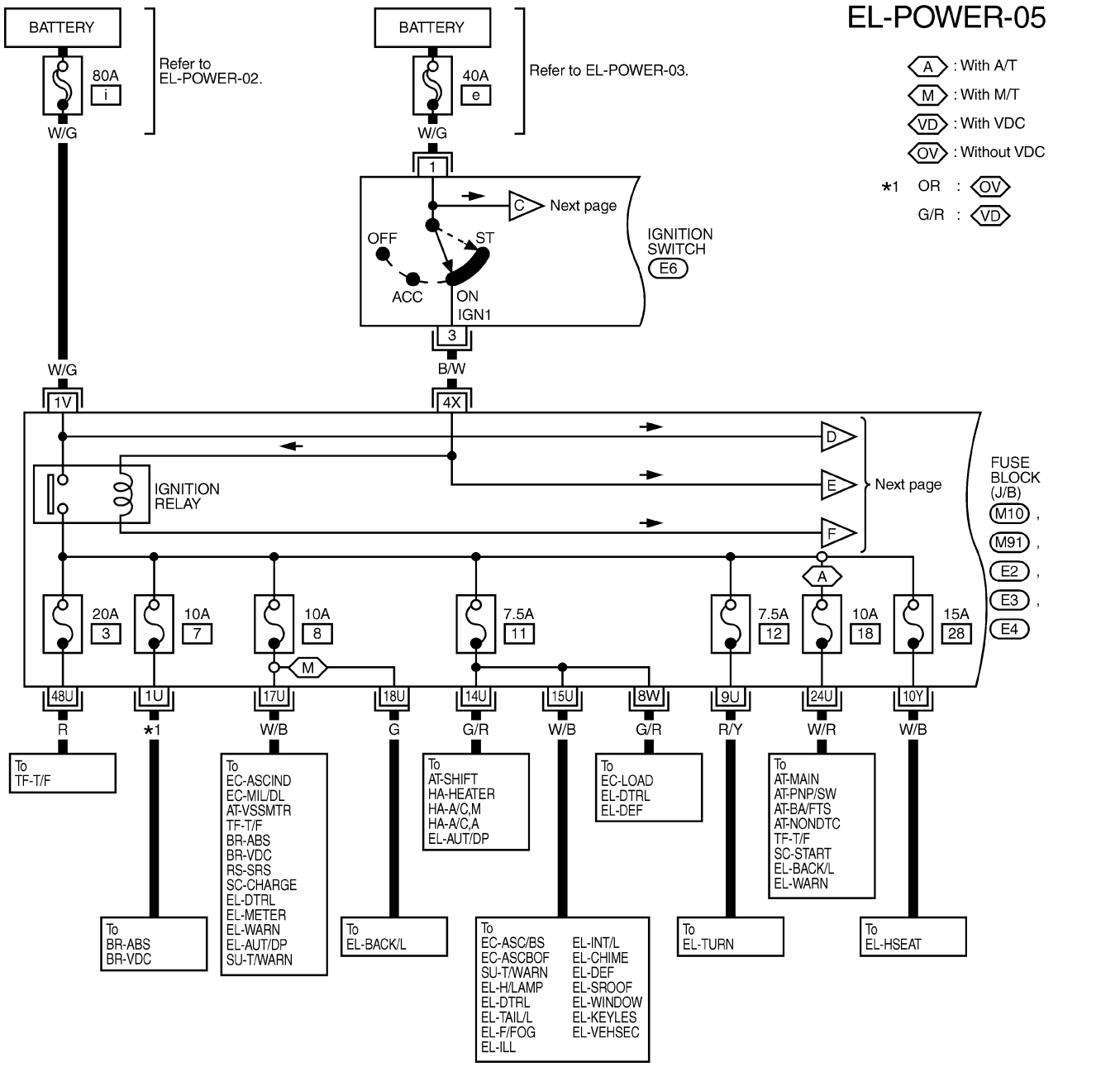
1	2	3	4	5
6	7	8	9	10
11	12	13	14	
16	17	18	19	20
21	22			
24	25	26		
	28	29		

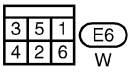
MEL088S

Wiring Diagram — POWER — (Cont'd)

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

NAEL0248S03





REFER TO THE FOLLOWING.

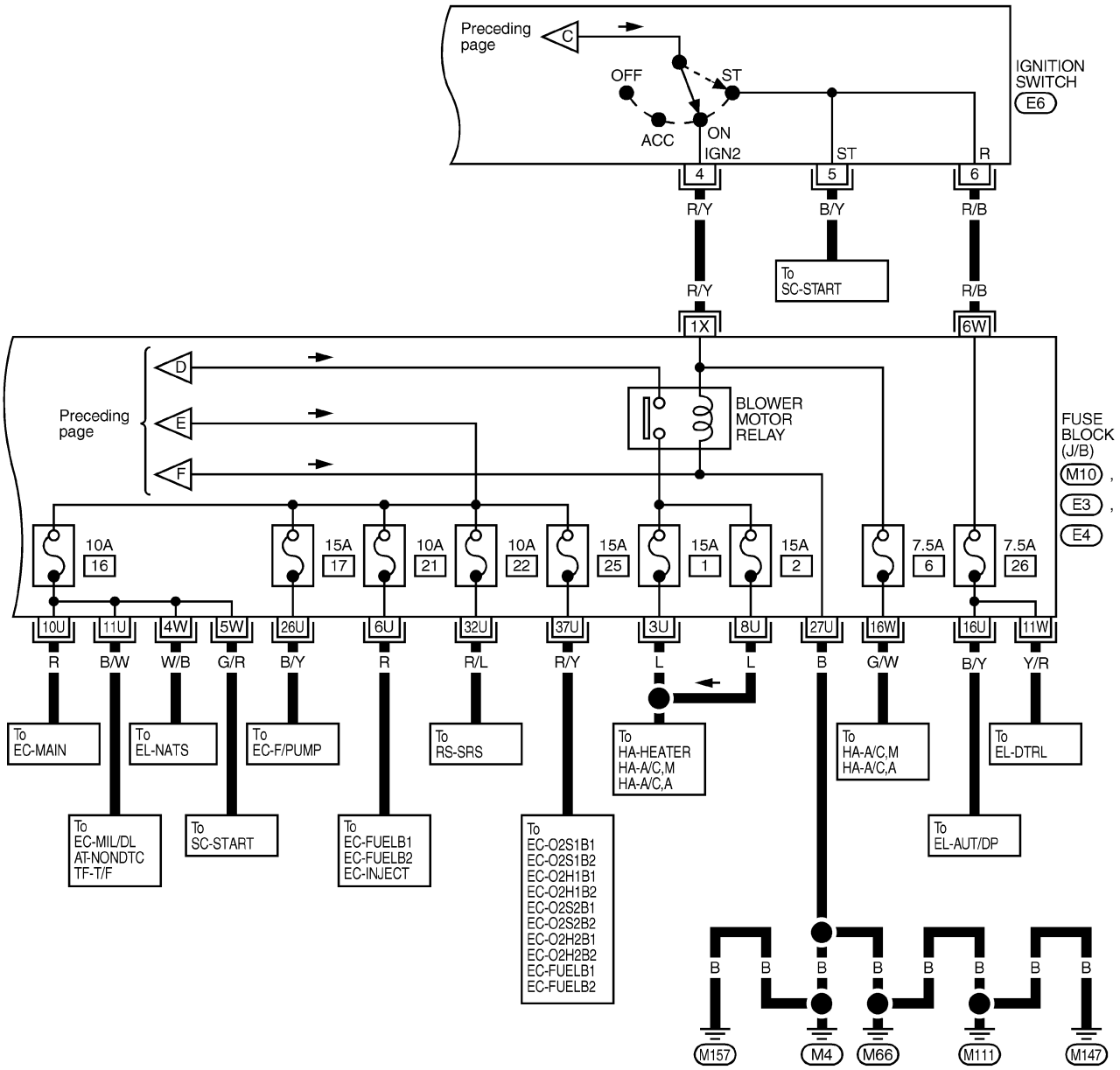
M10 , M91 , E2 , E3 , E4

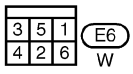
-FUSE BLOCK-
JUNCTION BOX (J/B)

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

MEL089S

EL-POWER-06





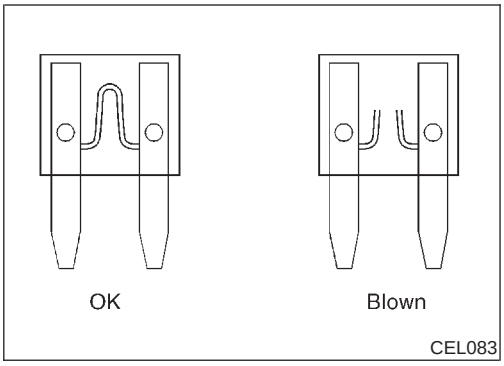
REFER TO THE FOLLOWING.

M10 , E3 , E4

-FUSE BLOCK-
JUNCTION BOX (J/B)

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

MEL090S



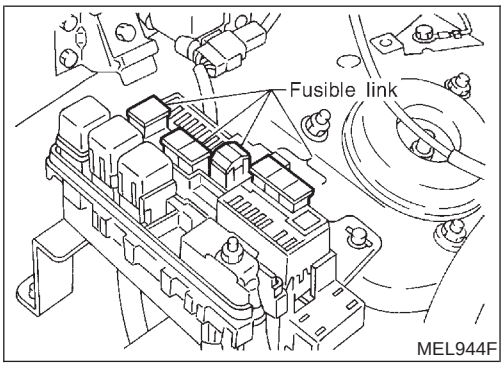
Inspection

NAEL0249

FUSE

NAEL0249S01

- **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.**



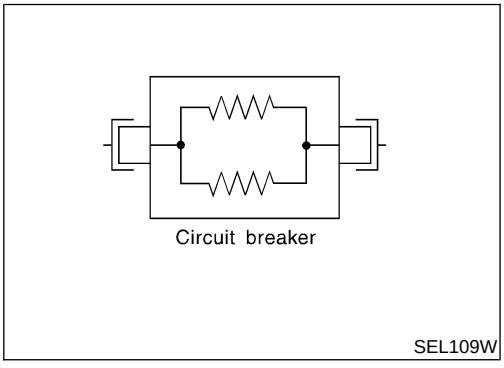
FUSIBLE LINK

NAEL0249S02

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)

NAEL0249S03

The PTC thermister generates heat in response to current flow. The temperature (and resistance) of the thermister 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.

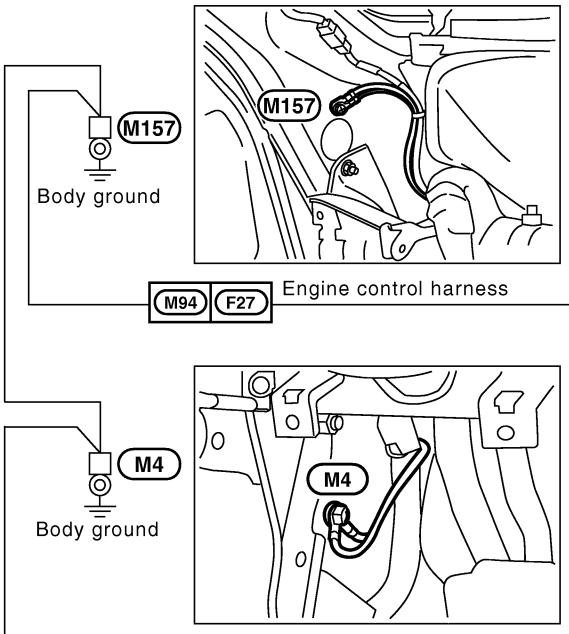
Reduced current flow will cause the element to cool. Resistance falls accordingly and normal circuit current flow is allowed to resume.

Ground Distribution

NAEL0250

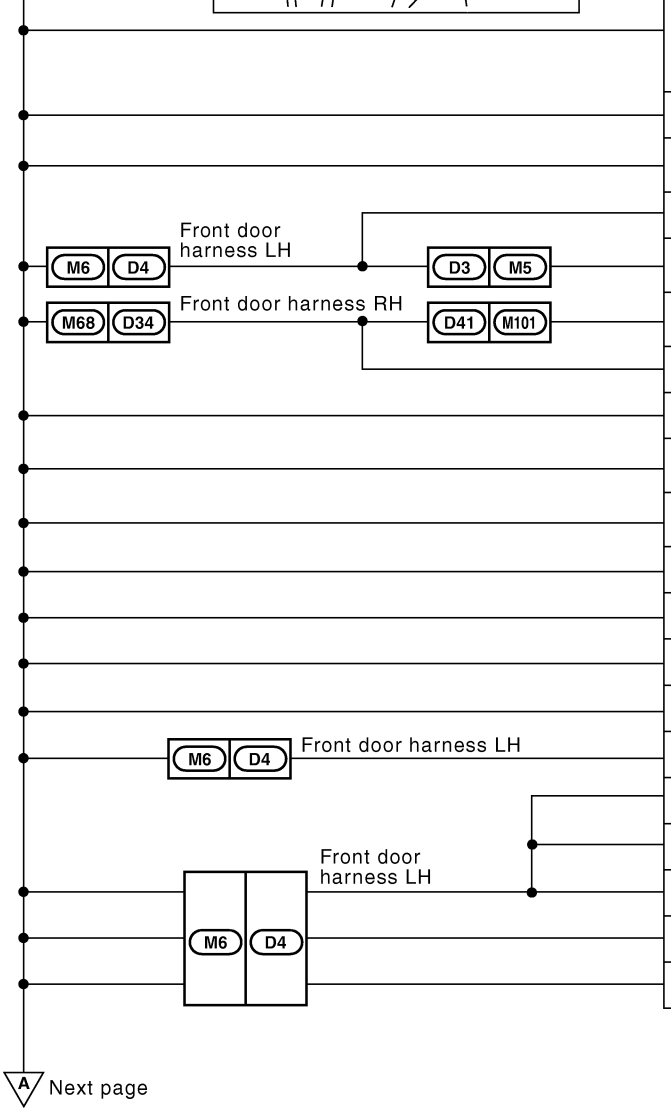
MAIN HARNESS

NAEL0250S01

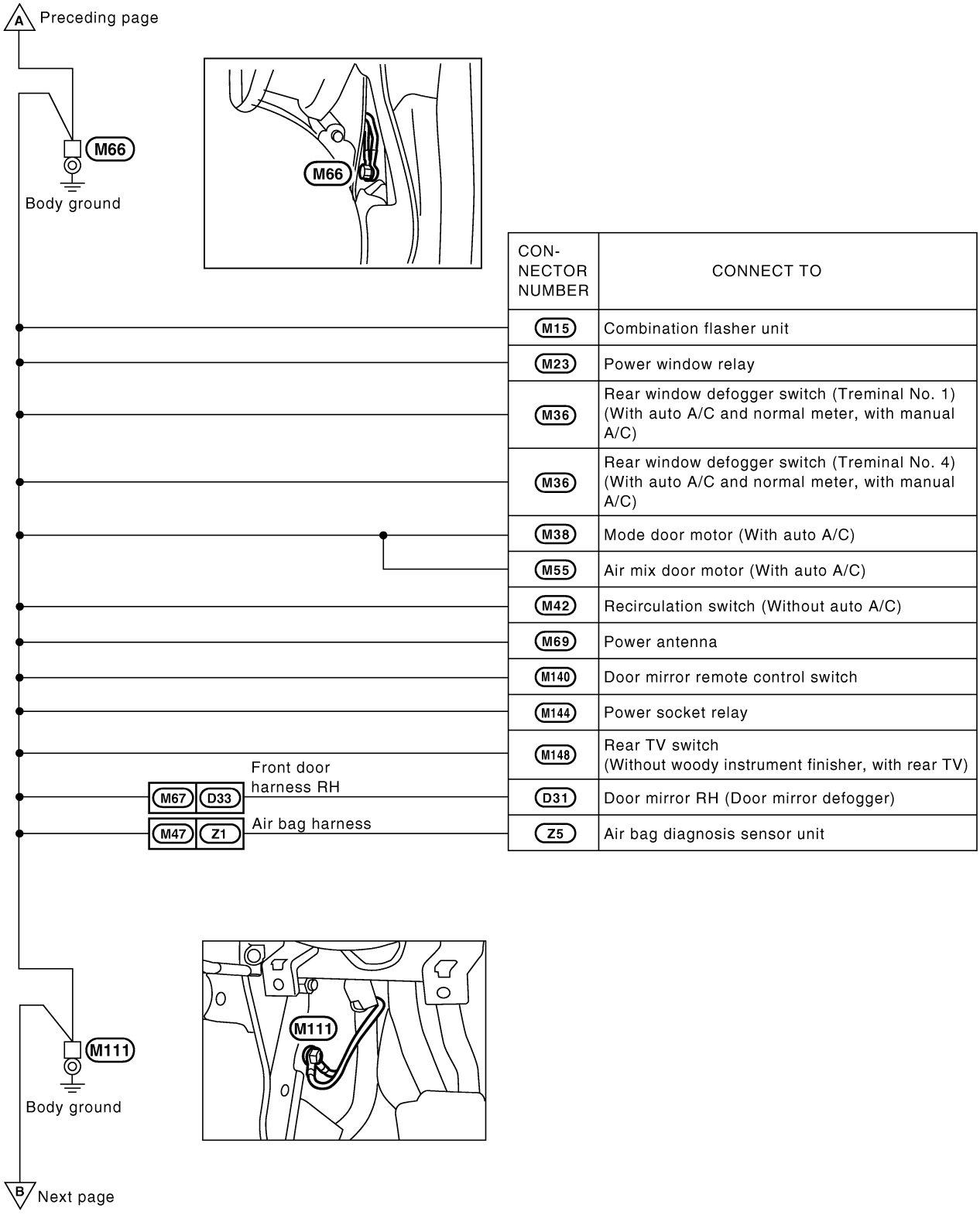


CON-NECTOR NUMBER	CONNECT TO
F203	ECM (Terminal No. 1)
F210	Shield wire [Electric throttle control actuator (Throttle position sensor)]
F210	Shield wire [Electric throttle control actuator (Throttle control motor)]

CON-NECTOR NUMBER	CONNECT TO
M10	Fuse block (J/B) • Accessory relay • Blower motor relay • Ignition relay
M19	Illumination control switch
M26	Combination meter (Terminal No. 65) (With fine vision meter)
D12	Front door speaker LH (With BOSE system)
D12	Shield wire (Front door speaker LH) (With BOSE system)
D42	Shield wire (Front door speaker RH) (With BOSE system)
D42	Front door speaker RH (With BOSE system)
M43	Fan switch (Without auto A/C)
M52	Heated seat switch LH (Without woody instrument finisher)
M53	Heated seat switch RH (Without woody instrument finisher)
M56	Cigarette lighter socket
M60	Fan control amp. (With auto A/C)
M122	Smart entrance control unit (Terminal No. 43)
M123	Smart entrance control unit (Terminal No. 64)
D1	Door mirror LH (Door mirror defogger)
D9	Front door key cylinder switch LH
D15	Power window main switch
D16	Seat memory switch
D17	Fuel lid opener switch (Terminal No. 2)
D17	Trunk lid opener switch (Terminal No. 4)

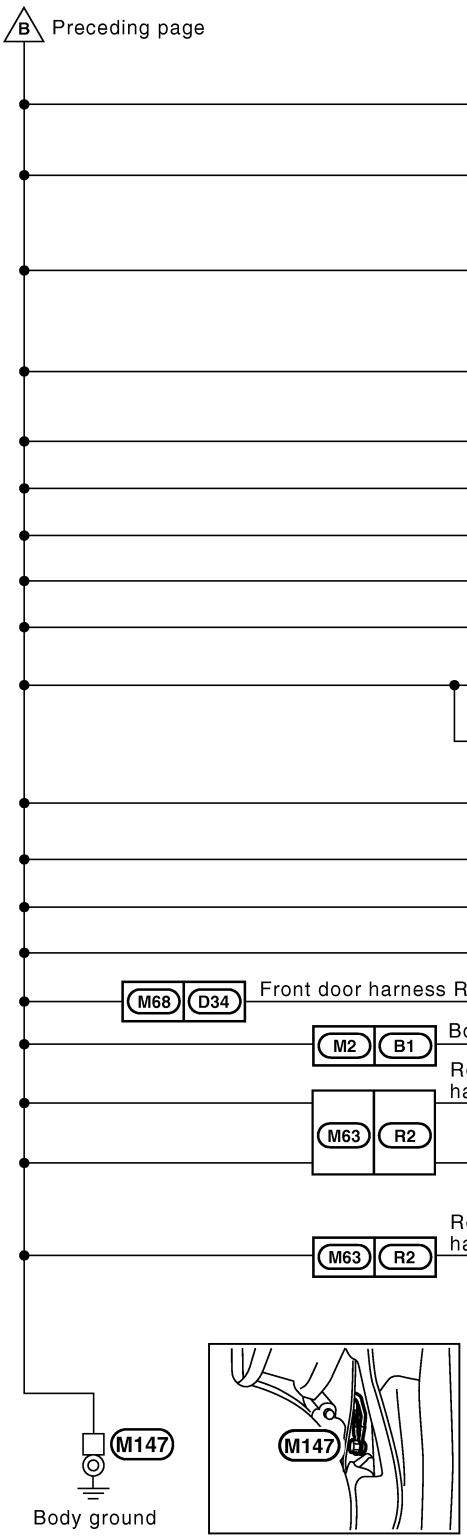


MEL091S



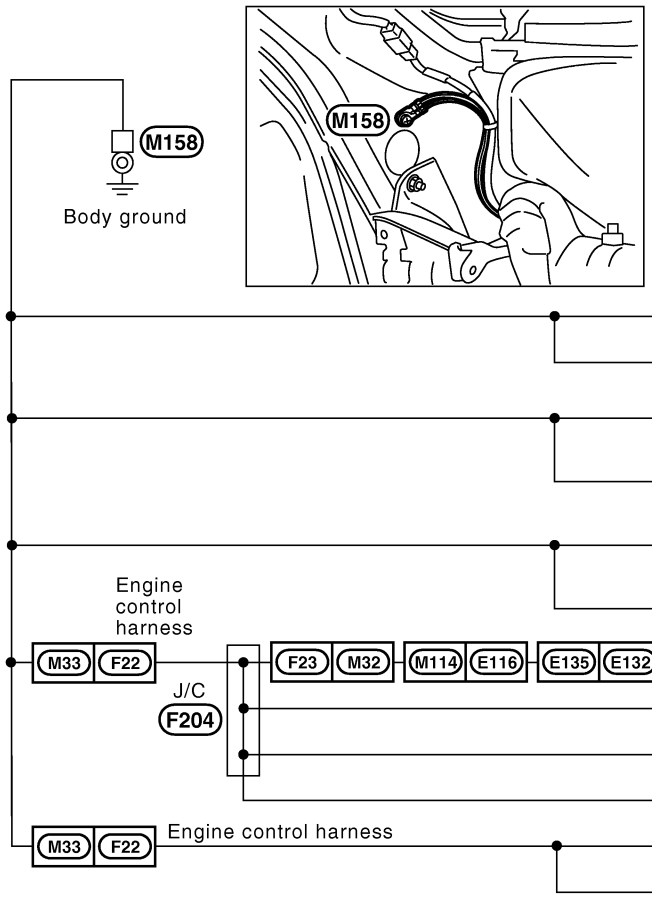
CONNECTOR NUMBER	CONNECT TO
M15	Combination flasher unit
M23	Power window relay
M36	Rear window defogger switch (Treminal No. 1) (With auto A/C and normal meter, with manual A/C)
M36	Rear window defogger switch (Treminal No. 4) (With auto A/C and normal meter, with manual A/C)
M38	Mode door motor (With auto A/C)
M55	Air mix door motor (With auto A/C)
M42	Recirculation switch (Without auto A/C)
M69	Power antenna
M140	Door mirror remote control switch
M144	Power socket relay
M148	Rear TV switch (Without woody instrument finisher, with rear TV)
D31	Door mirror RH (Door mirror defogger)
Z5	Air bag diagnosis sensor unit

MEL092S



CON-NECTOR NUMBER	CONNECT TO
M17	Memory seat cancel switch
M25	Combination meter (Terminal No. 30) • Turn signal RH • Turn signal LH
M26	Combination meter (Terminal No. 54) • 4WD warning lamp (With part-time 4-wheel drive)
M26	Combination meter (Terminal No. 59) • 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
M59	Intake door motor (With auto A/C)
M102	A/C auto amp. (With auto A/C) (With auto A/C and fine vision meter)
M103	A/C auto amp. (For Canada) (With auto A/C)
M142	Transfer control unit (Terminal No. 3) (With all-mode 4-wheel drive)
M151	VDC off switch (With VDC)
M155	Ashtray illumination (With woody instrument finisher)
M156	Tire pressure warning control unit
D44	Front power window switch RH
B47	Audio amp. relay (With BOSE system)
R4	Compass and thermometer (With compass and themometer)
R5	Home link universal transceiver
R3	Vanity mirror RH illumination
R5	Vanity mirror LH illumination
R6	Spot lamp
R11	Sunroof motor

MEL093S

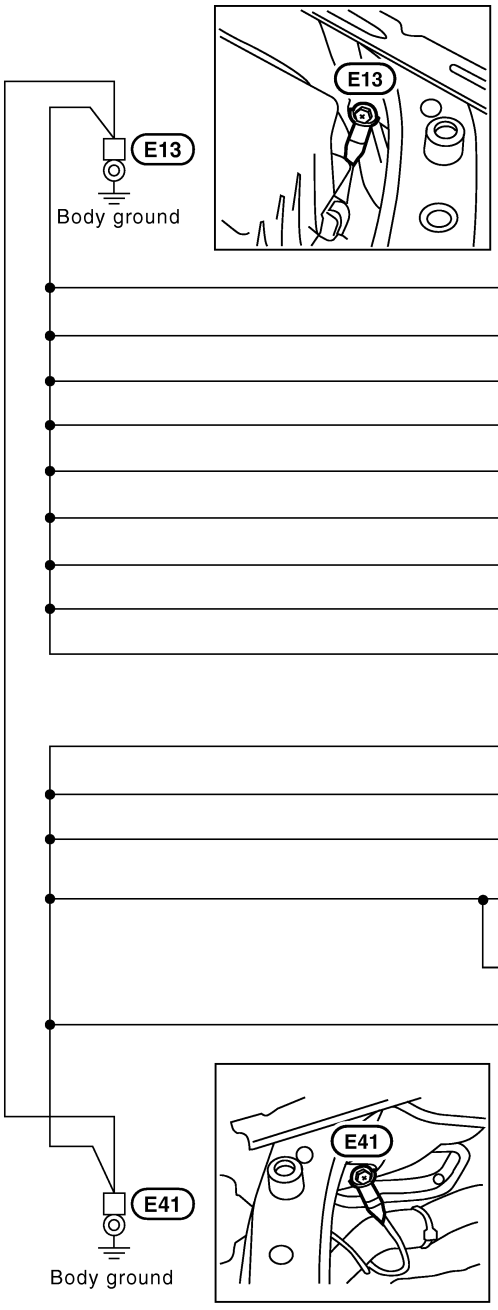


CONNECTOR NUMBER	CONNECT TO
M9	Data link connector (Terminal No. 4)
M9	Data link connector (Terminal No. 5)
M120	TCM (Transmission control module) (Terminal No. 25) (With A/T)
M120	TCM (Transmission control module) (Terminal No. 48) (With A/T)
M142	Transfer control unit (Terminal No. 6) (With all-mode 4-wheel drive)
M143	Transfer control unit (Terminal No. 45) (With all-mode 4-wheel drive)
E146	Crankshaft position sensor (POS)
F37	Camshaft position sensor (PHASE) (Bank 2)
F38	Camshaft position sensor (PHASE) (Bank 1)
F203	ECM (Terminal No. 115)
F102	Shield wire (Knock sensor)
F203	ECM (Terminal No. 116)

MEL094S

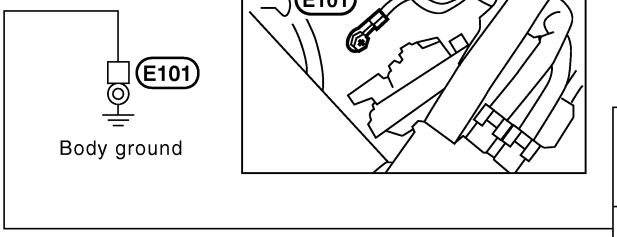
ENGINE ROOM HARNESS

NAEL0250S02

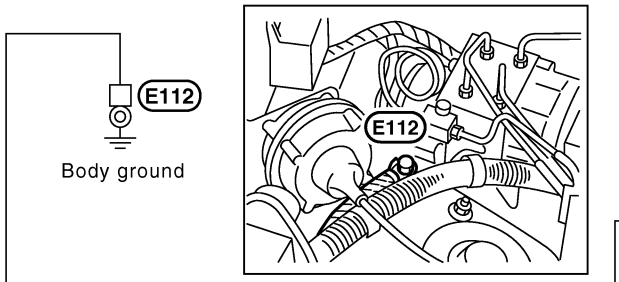


CON-NECTOR NUMBER	CONNECT TO
E7	Combination switch (Lighting switch)
E8	Combination switch (Lighting switch)
E9	Combination switch (front wiper switch)
E12	Parking lamp LH, Front turn signal lamp LH
E24	ATP relay (With A/T and part-time 4-wheel drive)
E28	Brake fluid level switch
E45	Daytime light control unit
E62	Front fog lamp RH
E114	Combination switch (rear wiper switch)
E40	Parking lamp RH, Front turn signal lamp RH
E42	Washer level switch (For Canada)
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)
E140	Front wiper motor

MEL129S



CONNECTOR NUMBER	CONNECT TO
E105	Alternator

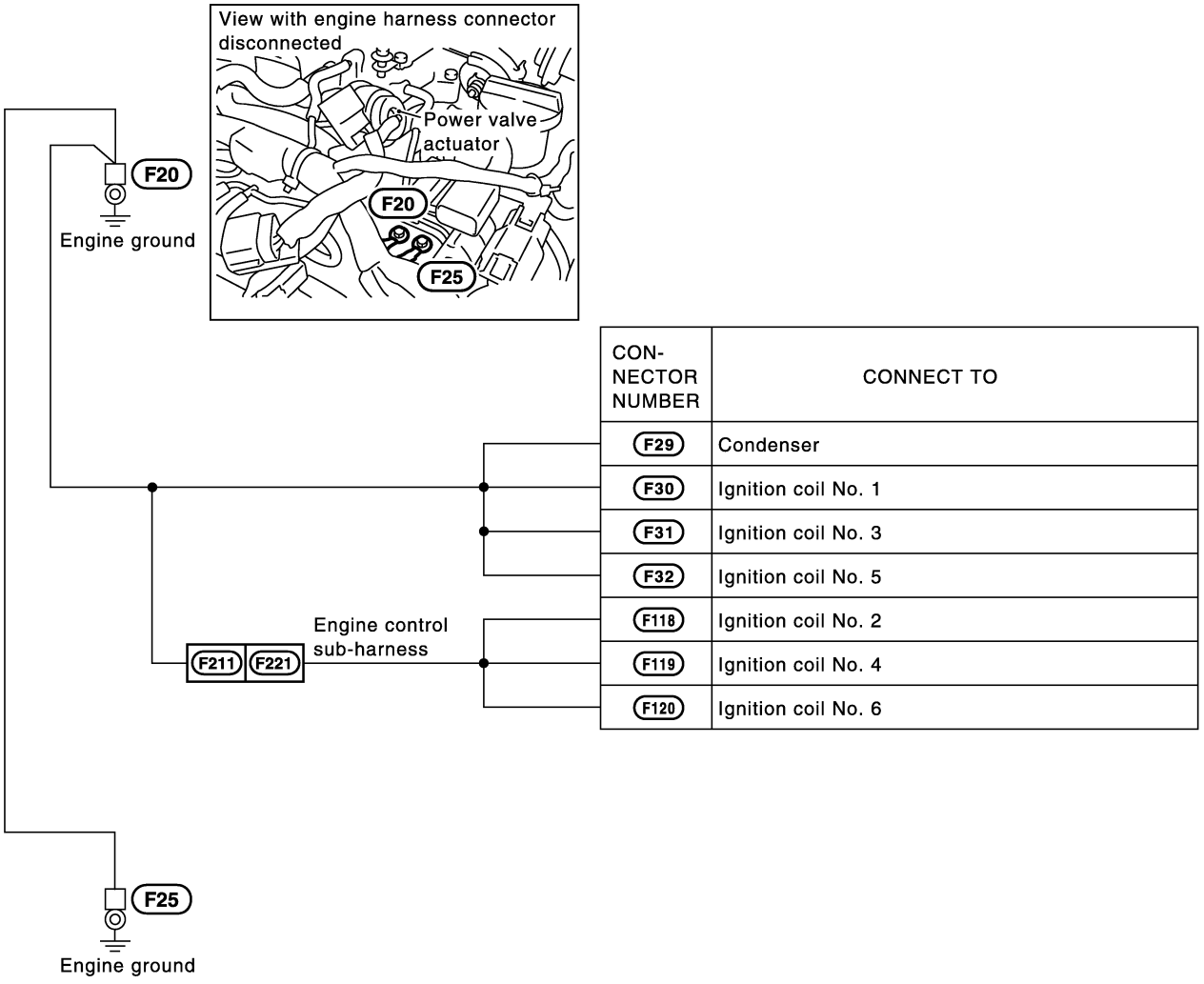


CONNECTOR NUMBER	CONNECT TO
E111	ABS actuator and electric control unit (Terminal No. 16) (Without VDC)
E111	ABS actuator and electric control unit (Terminal No. 20) (With 4-wheel drive) (Without VDC)
E111	ABS actuator and electric control unit (Terminal No. 30) (Without VDC)
E136	Steering angle sensor
E142	ABS actuator and electric unit (Terminal No. 16) (With VDC)
E142	ABS actuator and electric unit (Terminal No. 47) (With VDC)

MEL095S

ENGINE CONTROL HARNESS

NAEL0250S03

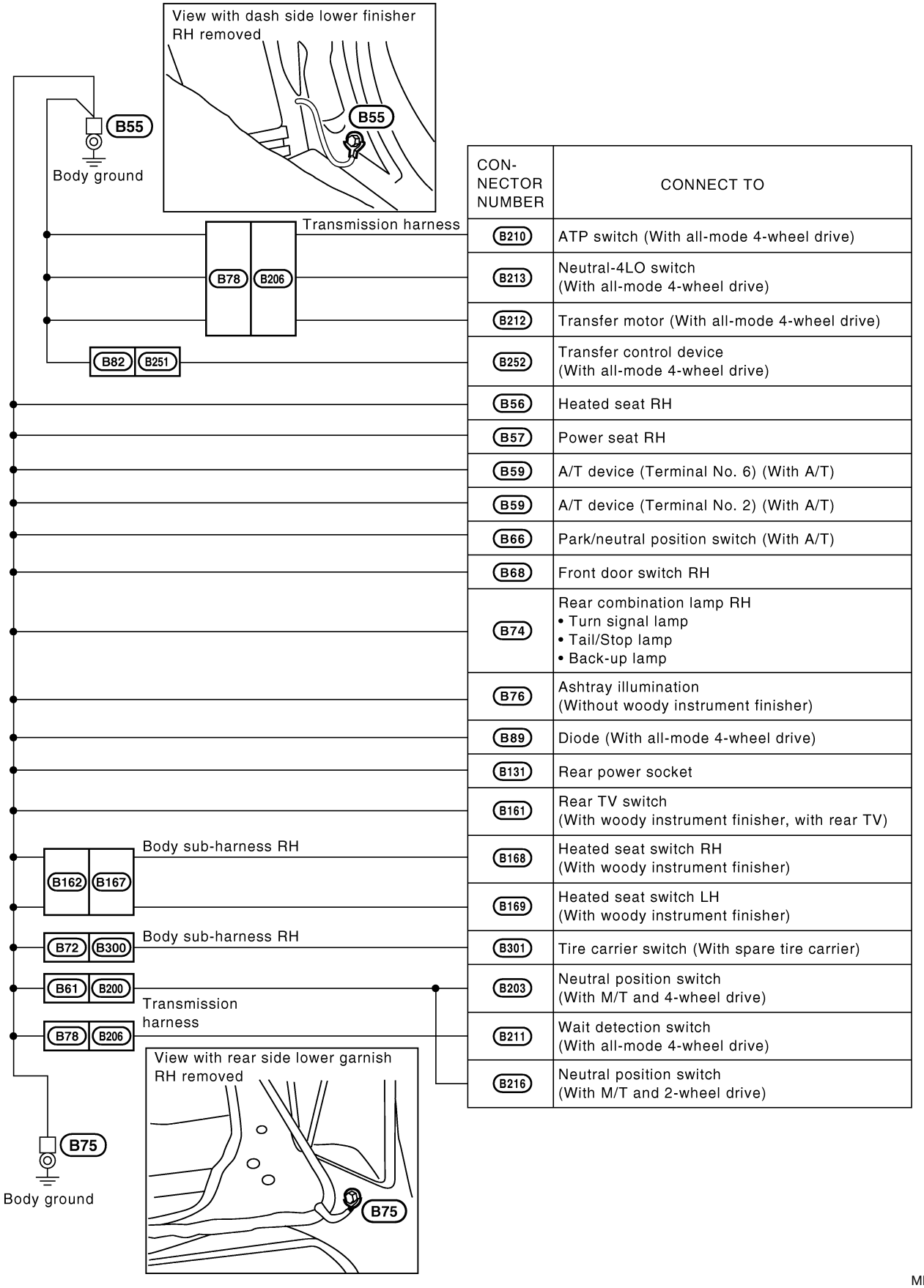


CON-NECTOR NUMBER	CONNECT TO
F29	Condenser
F30	Ignition coil No. 1
F31	Ignition coil No. 3
F32	Ignition coil No. 5
F118	Ignition coil No. 2
F119	Ignition coil No. 4
F120	Ignition coil No. 6

MEL080Q

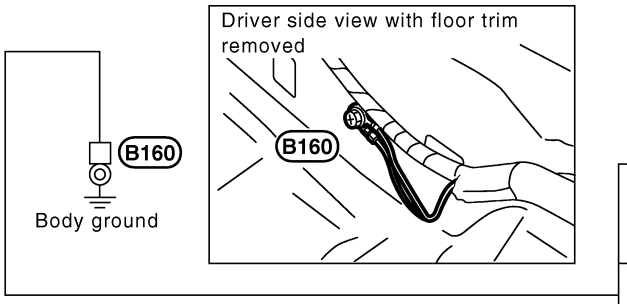
BODY HARNESS RH

NAEL0250S04



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)
B68	Front door switch RH
B74	Rear combination lamp RH • Turn signal lamp • Tail/Stop lamp • Back-up lamp
B76	Ashtray illumination (Without woody instrument finisher)
B89	Diode (With all-mode 4-wheel drive)
B131	Rear power socket
B161	Rear TV switch (With woody instrument finisher, with rear TV)
B168	Heated seat switch RH (With woody instrument finisher)
B169	Heated seat switch LH (With woody instrument finisher)
B301	Tire carrier switch (With spare tire carrier)
B203	Neutral position switch (With M/T and 4-wheel drive)
B211	Wait detection switch (With all-mode 4-wheel drive)
B216	Neutral position switch (With M/T and 2-wheel drive)

MEL096S

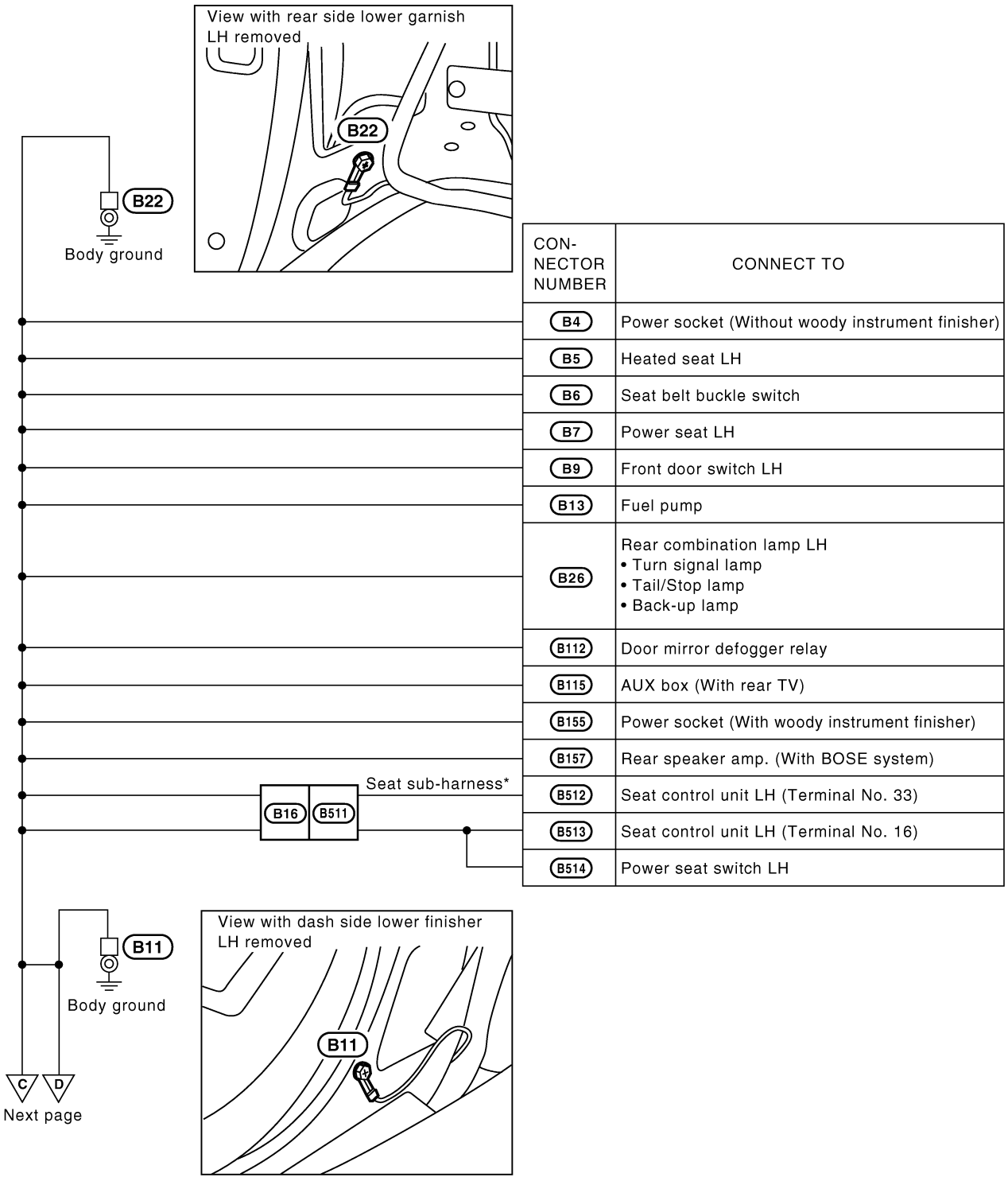


CON-NECTOR NUMBER	CONNECT TO
B128	Shield wire (Satellite sensor RH) (With side air bag)

MEL097S

BODY HARNESS LH

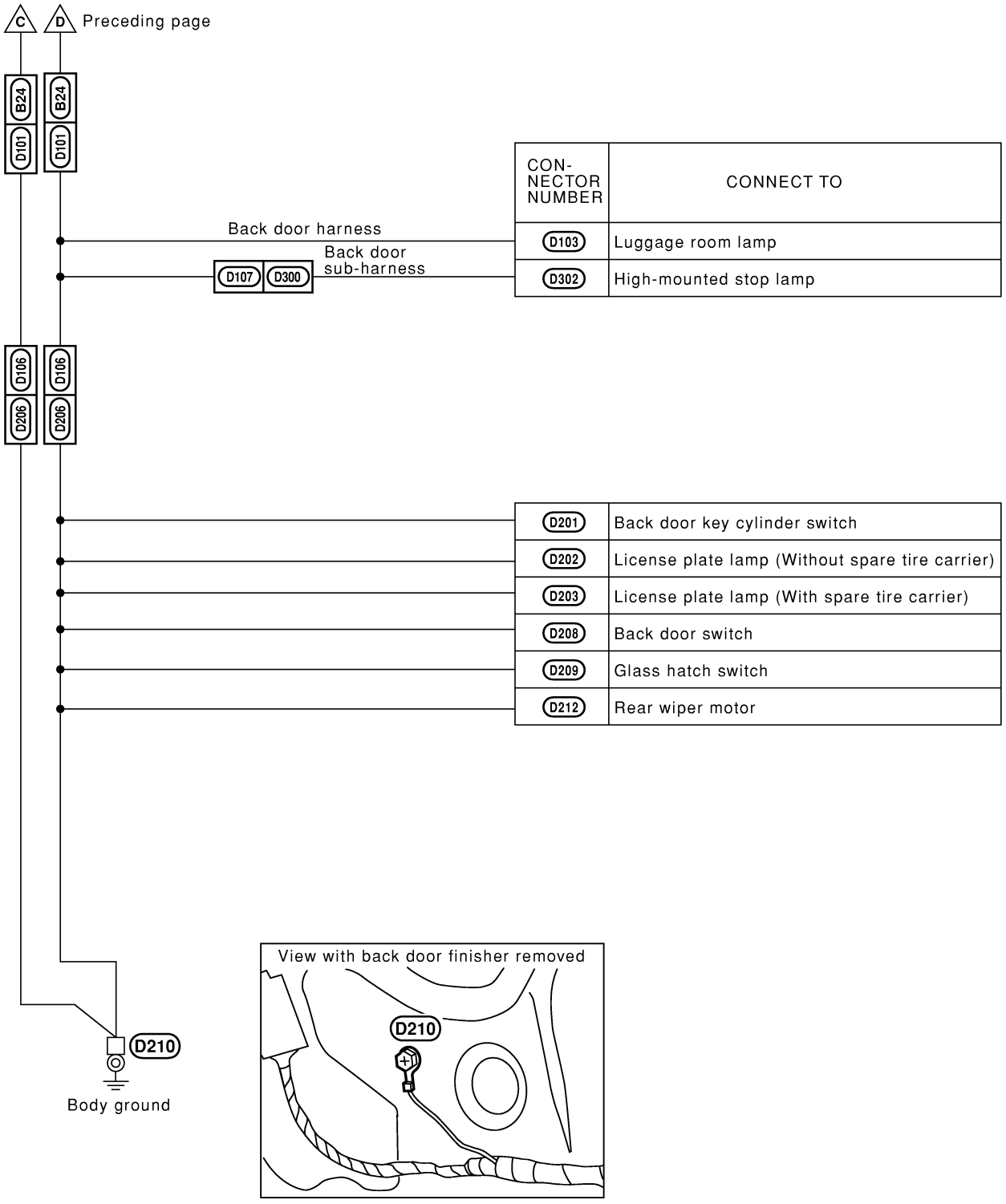
NAEL0250S05



CONNECTOR NUMBER	CONNECT TO
B4	Power socket (Without woody instrument finisher)
B5	Heated seat LH
B6	Seat belt buckle switch
B7	Power seat LH
B9	Front door switch LH
B13	Fuel pump
B26	Rear combination lamp LH • Turn signal lamp • Tail/Stop lamp • Back-up lamp
B112	Door mirror defogger relay
B115	AUX box (With rear TV)
B155	Power socket (With woody instrument finisher)
B157	Rear speaker amp. (With BOSE system)
B512	Seat control unit LH (Terminal No. 33)
B513	Seat control unit LH (Terminal No. 16)
B514	Power seat switch LH

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

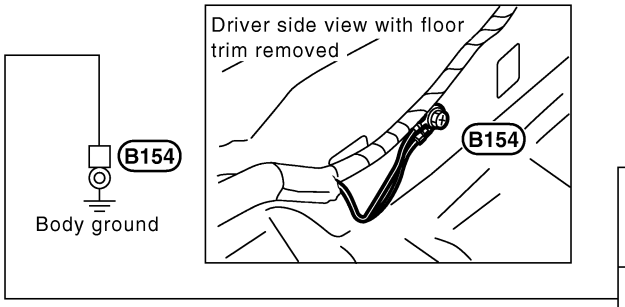
MEL098S



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)
D208	Back door switch
D209	Glass hatch switch
D212	Rear wiper motor

MEL911N

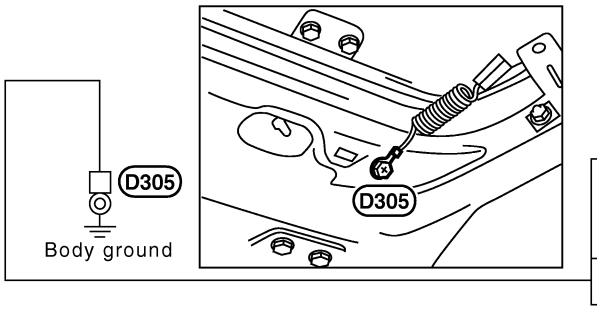


CONNECTOR NUMBER	CONNECT TO
B107	Shield wire (Satellite sensor LH) (With side air bag)

MEL099S

BODY HARNESS

=NAEL0250S06

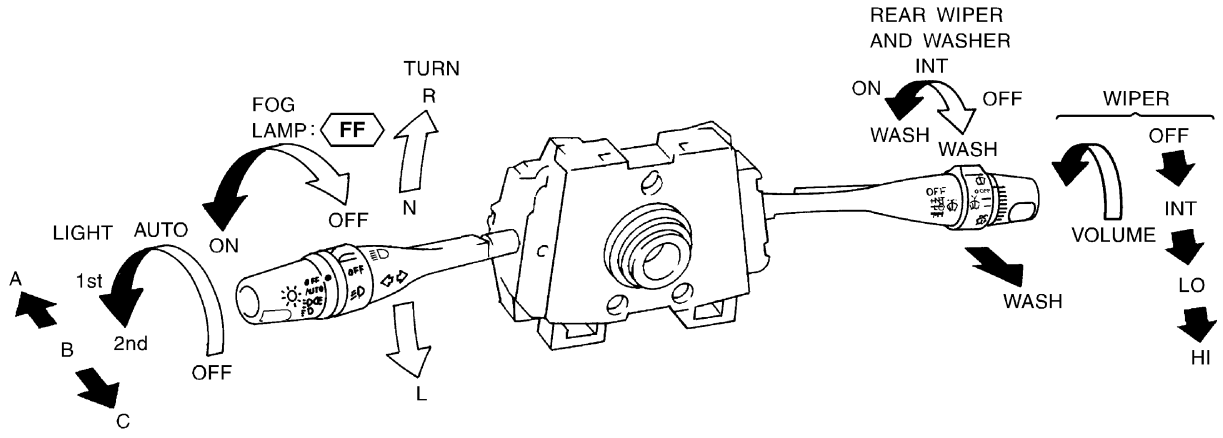


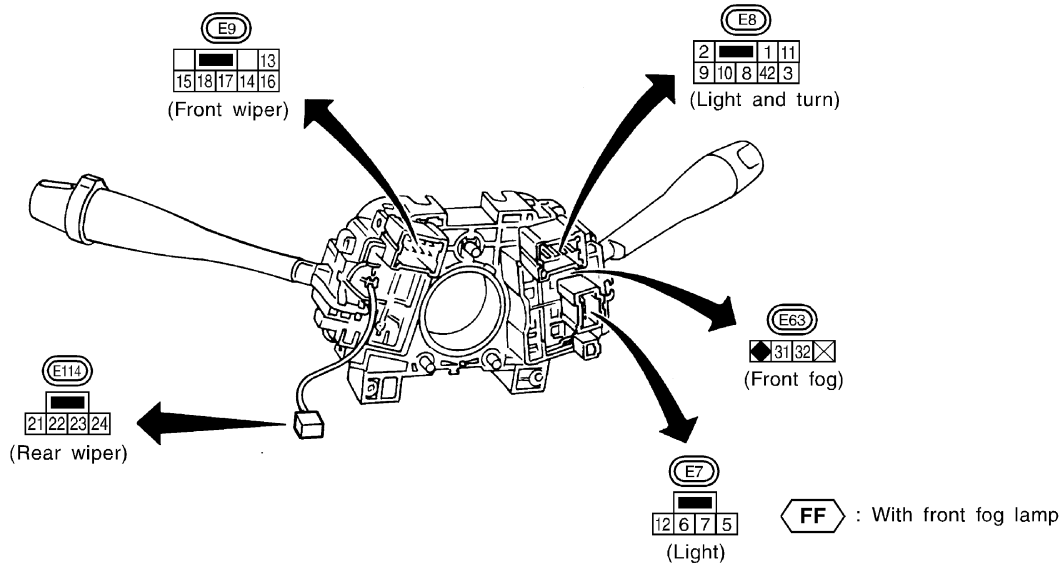
CON-NECTOR NUMBER	CONNECT TO
D304	Rear window defogger

MEL152M

Check

NAEL0251





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

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

VARIABLE
INTERMITTENT
WIPER VOLUME

WIPER AMP.

14 15 13 16 17 18

REAR WIPER AND
WASHER SWITCH

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

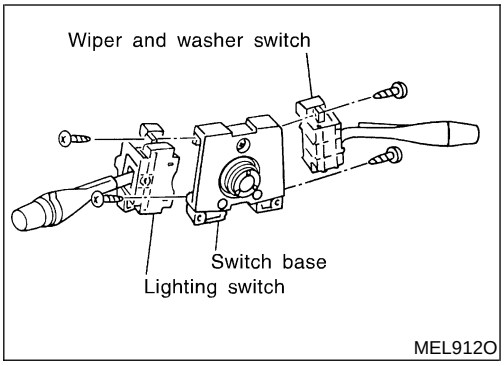
FOG LAMP
SWITCH

	OFF	ON
31		○
32		○

TURN SIGNAL
LAMP SWITCH

	L	N	R
1	○		○
2			○
3	○		

MEL070Q

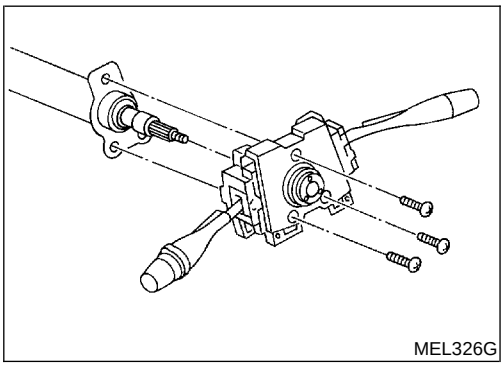


Replacement

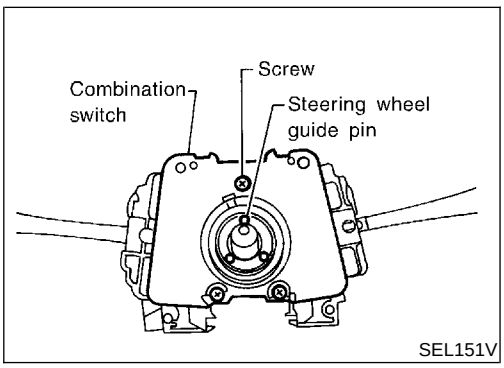
NAEL0252

For removal and installation of spiral cable, refer to RS-19, “Installation — Air Bag Module and Spiral Cable”.

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



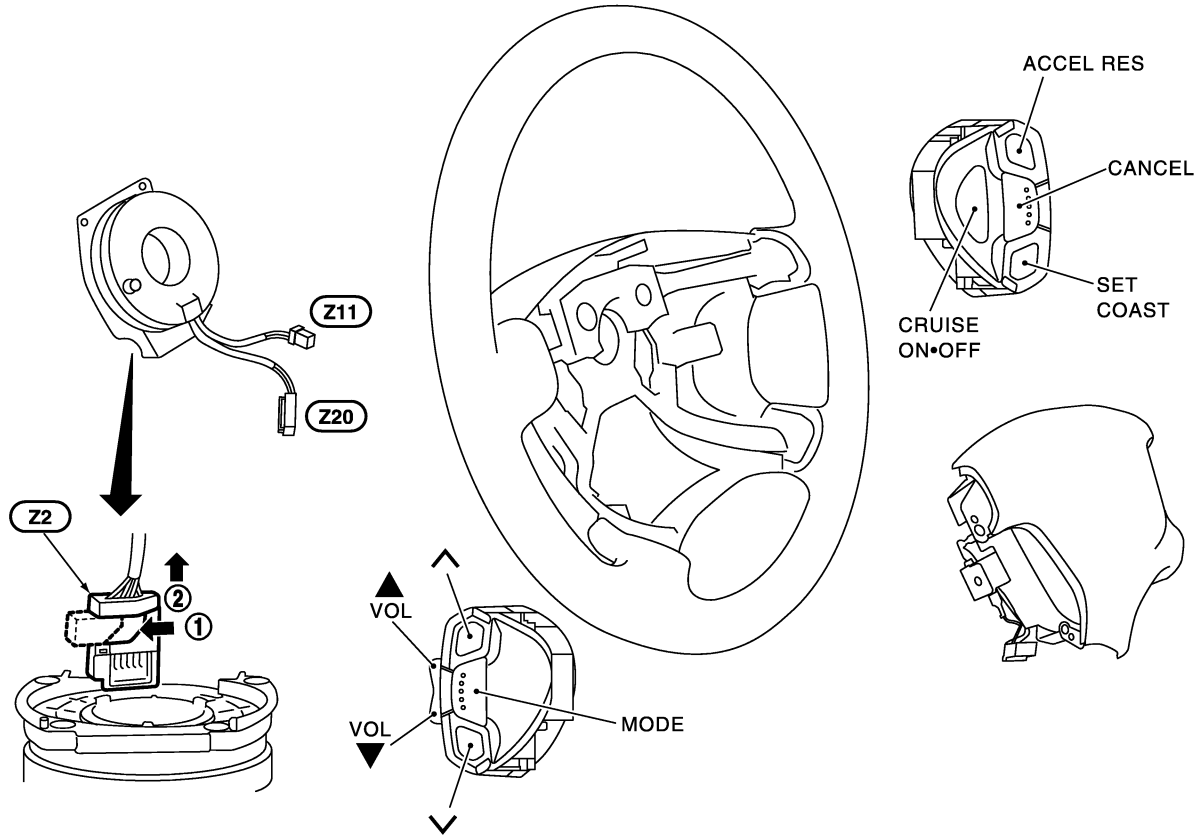
- To remove combination switch base, remove base attaching screw.

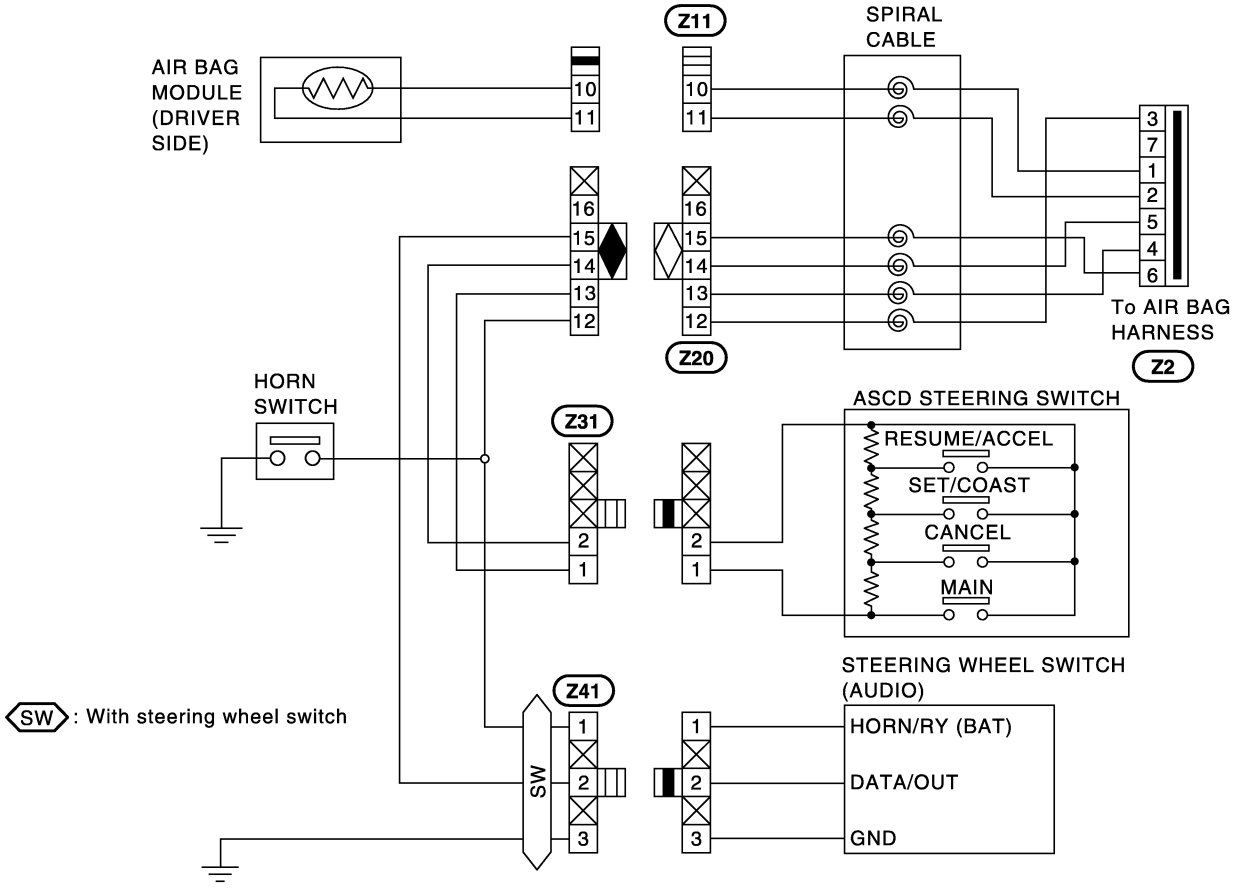


- Before installing the steering wheel, align the steering wheel guide pins with the screws which secure the combination switch as shown in the left figure.

Check

NAEL0253

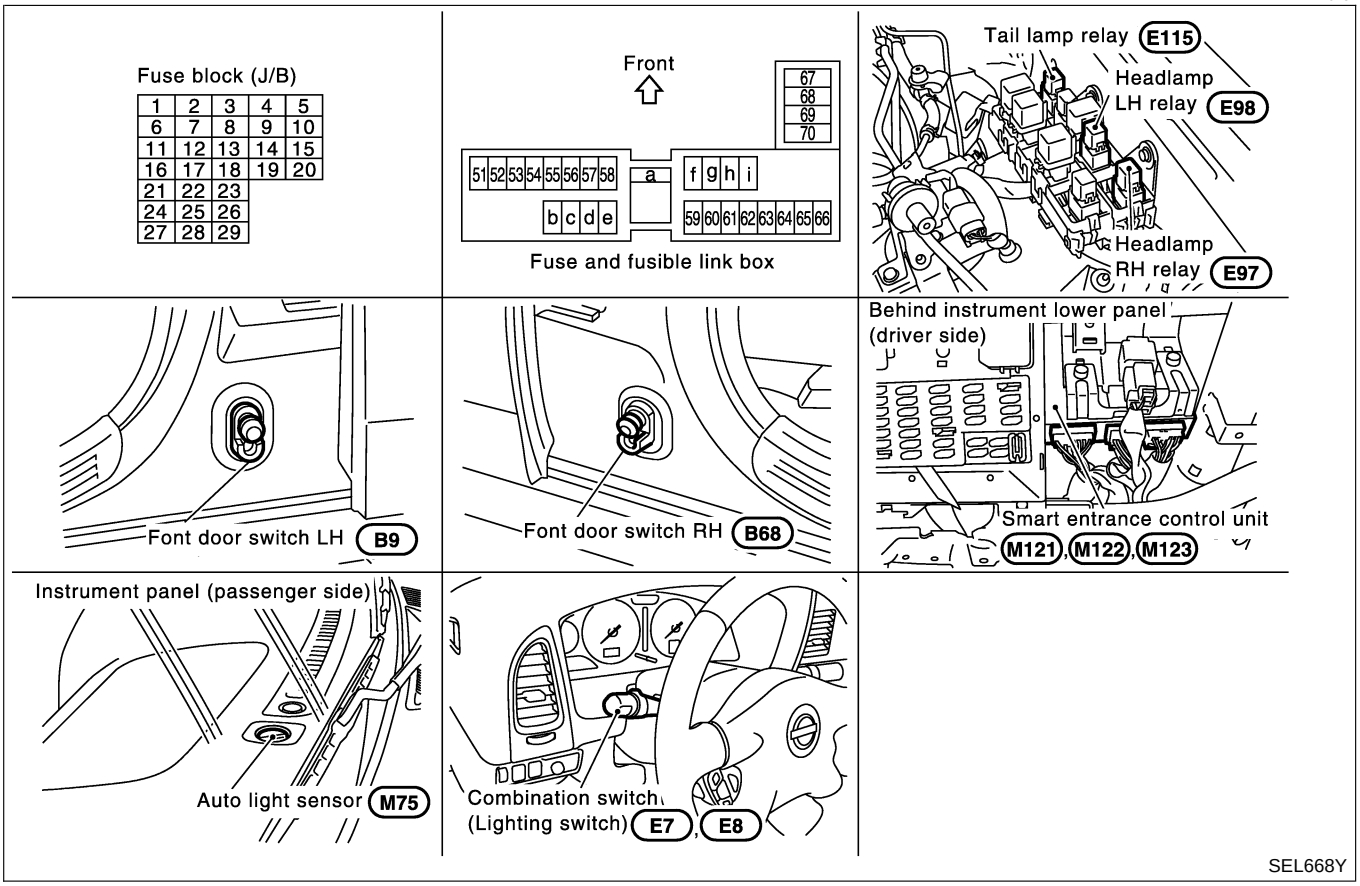




MEL071Q

Component Parts and Harness Connector Location

NAEL0254



System Description

NAEL0255

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

OUTLINE

NAEL0255S01

Power is supplied at all times

- to headlamp LH relay terminals 1 and 3
- through 15A fuse (No. 60, located in the fuse and fusible link box), and
- to headlamp RH relay terminals 1 and 3
- through 15A fuse (No. 59, located in the fuse and fusible link box), and
- to smart entrance control unit terminal 49
- 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 smart entrance control unit terminal 27
- 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 smart entrance control unit terminal 26
- through 10A fuse [No. 10, located in the fuse block (J/B)]

Ground is supplied

- to smart entrance control unit terminals 43 and 64
- through body grounds M4, M66, M111, M147 and M157.

POWER SUPPLY TO LOW BEAM AND HIGH BEAM

NAEL0255S02

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

- to headlamp relay (LH and RH) terminal 2 from smart entrance control unit terminals 21 and 59

- through smart entrance control unit terminals 22 and 60,
- 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

NAEL0255S03

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, and
- to headlamp RH terminal 2
- through lighting switch terminal 10 and 8
- through body grounds E13 and E41.

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

HIGH BEAM OPERATION/FLASH-TO-PASS OPERATION

NAEL0255S04

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 each headlamp relay
- to terminal 3 of each headlamp, and
- to combination meter terminal 26 for the HIGH BEAM indicator.

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.

EXTERIOR LAMP BATTERY SAVER CONTROL

NAEL0255S05

Except for Auto Light Control Operation

NAEL0255S0501

Headlamps will remain on for a short while after the ignition switch is turned from ON (or ACC) to OFF.
Continuity between terminals 21 and 22, and between terminals 59 and 60 of smart entrance control unit will be disturbed after 5 minutes, then the headlamps will be turned off.
When the lighting switch is turned from OFF to 2ND after headlamps are turned to off by the exterior lamp battery saver control, ground is supplied

- to smart entrance control unit terminals 20 and 58 from lighting switch terminal 11, and then,
- to headlamp LH and RH relays terminal 2 from smart entrance control unit terminals 21 and 59,
- through smart entrance control unit terminals 22 and 60 and
- through lighting switch terminal 12.

Then headlamps illuminate again.

Auto light control operation

NAEL0255S0502

While the headlamps are turned ON by "AUTO" operation, the exterior lamp battery saver is activated for 5 minutes when the ignition switch is turned from ON (or ACC) to OFF, and either LH or RH front door switch is opened.
The smart entrance control unit controls exterior lamp battery saver activation as follows:

- When the door switch signal changes from ON to OFF while the exterior lamp battery saver is activated, the operation is discontinued, and restarts and lasts for 45 seconds, then the headlamps will be turned off.
- When the door switch signal changes from OFF to ON while the exterior lamp battery saver is activated, the operation discontinued, restarts and lasts for 45 seconds, then the headlamps will be turned off.

- When the one of four door switch signals changes from OFF to ON while the exterior lamp battery saver is activated, the operation is discontinued, restarts and lasts for 5 minutes, then the headlamps will be turned off.
- When all the door switch ON signals are input while the exterior lamp battery saver is activated, the saver is discontinued and restarts and lasts for 45 seconds, then the headlamps will be turned off.

Exterior lamp battery saver control time can be changed using "WORK SUPPORT" mode in "HEADLAMP".

When the lighting switch is turned from OFF to 2ND after headlamps are turned to off by the exterior lamp battery saver control, ground is supplied

- to smart entrance control unit terminals 20 and 58 from lighting switch terminal 11, and then,
- to headlamp LH and RH relays terminal 2 from smart entrance control unit terminals 21 and 59,
- through smart entrance control unit terminals 22 and 60 and
- through lighting switch terminal 12.

Then headlamps illuminate again.

AUTO LIGHT OPERATION

NAEL0255S06

The auto light control system has an auto light sensor inside instrument mask that detects outside brightness.

- to smart entrance control unit terminal 23
- from lighting switch terminal 42.

When ignition switch is turned to ″ON″ or "START" position and

- Outside brightness is darker than prescribed level.

After 3 seconds delay, outside brightness becomes darker than prescribed level.
Ground is supplied

- to headlamp relay LH and RH terminals 2
- through smart entrance control unit terminals 21, 59 and 43, 64.

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

- Outside brightness is brighter than prescribed level, or
- After 5 seconds delay, outside brightness is brighter than prescribed level.
- Ignition switch is turned to "OFF" position. (Headlamp will be turned OFF by exterior lamp battery saver control system. Refer to EL-36.)

NOTE:
The delay time changes (maximum of 20 seconds) as the outside brightness changes.

For parking license and tail lamp auto operation, refer to "PARKING, LICENSE AND TAIL LAMPS" (EL-66).

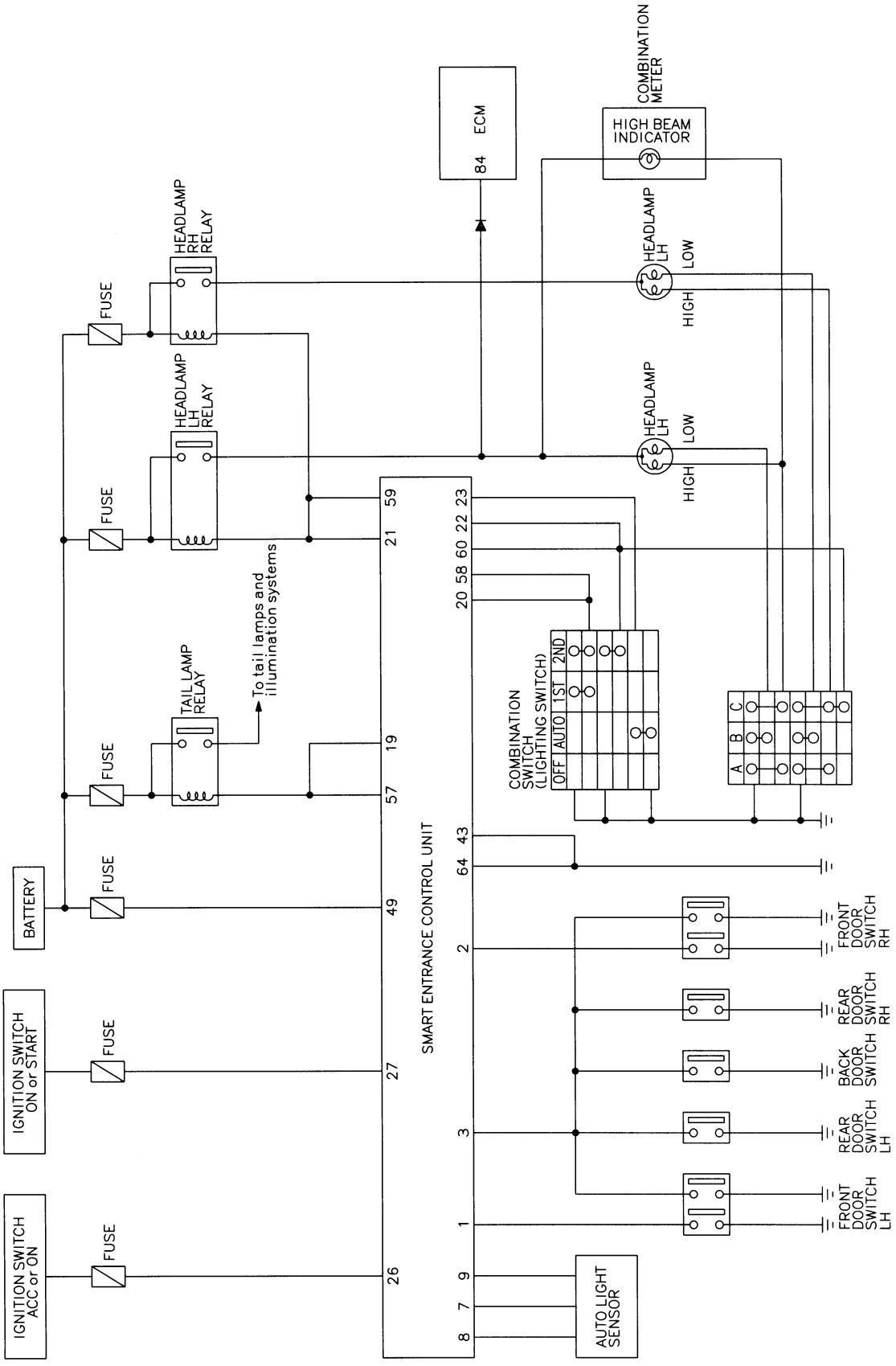
VEHICLE SECURITY SYSTEM

NAEL0255S07

The vehicle security system will flash the high beams if the system is triggered. Refer to "VEHICLE SECURITY (THEFT WARNING) SYSTEM" (EL-346).

Schematic

NAEL0256

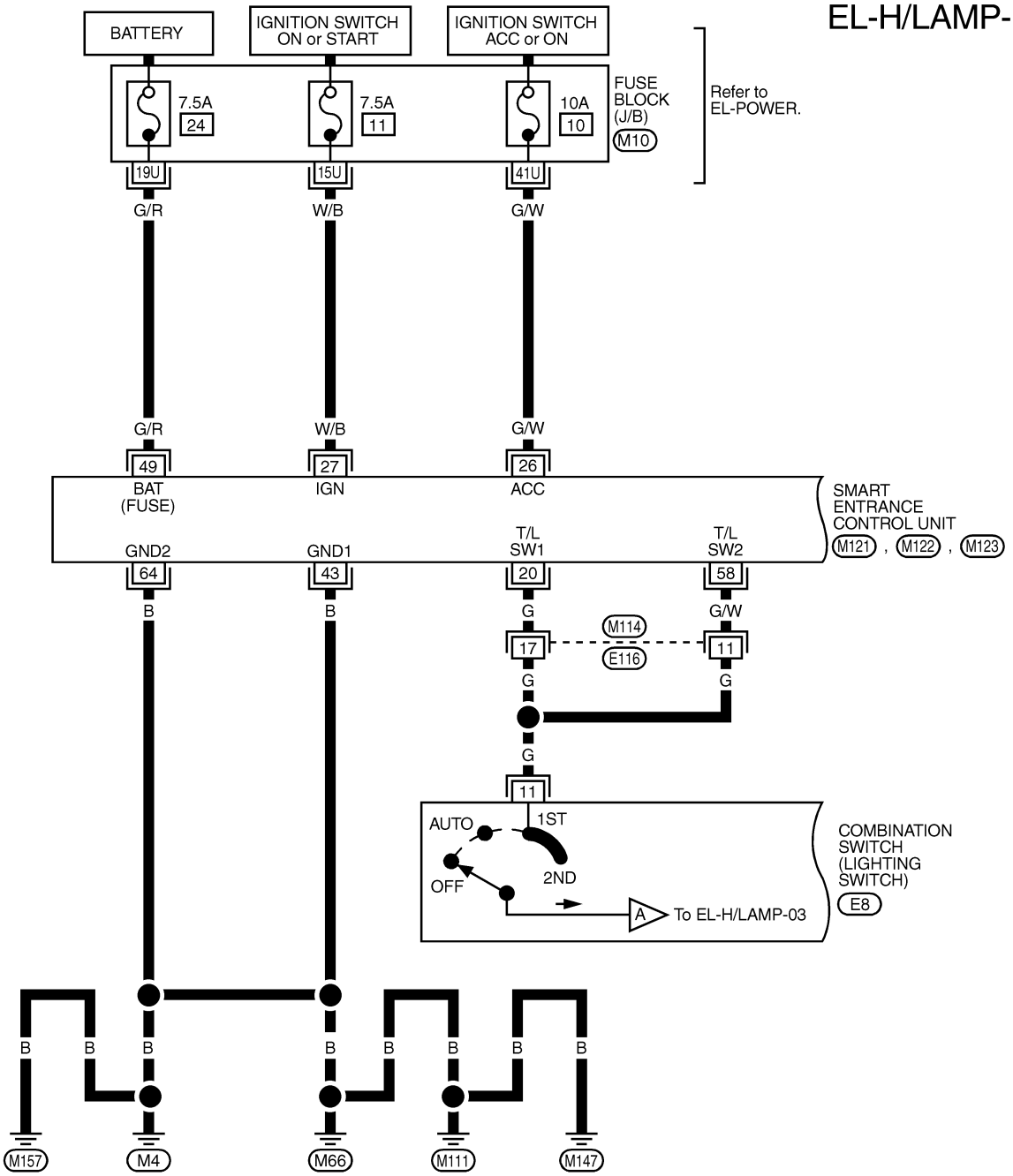


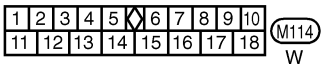
MEL946P

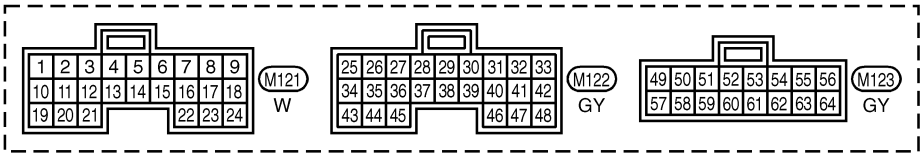
Wiring Diagram — H/LAMP —

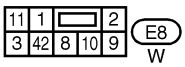
NAEL0257

EL-H/LAMP-01



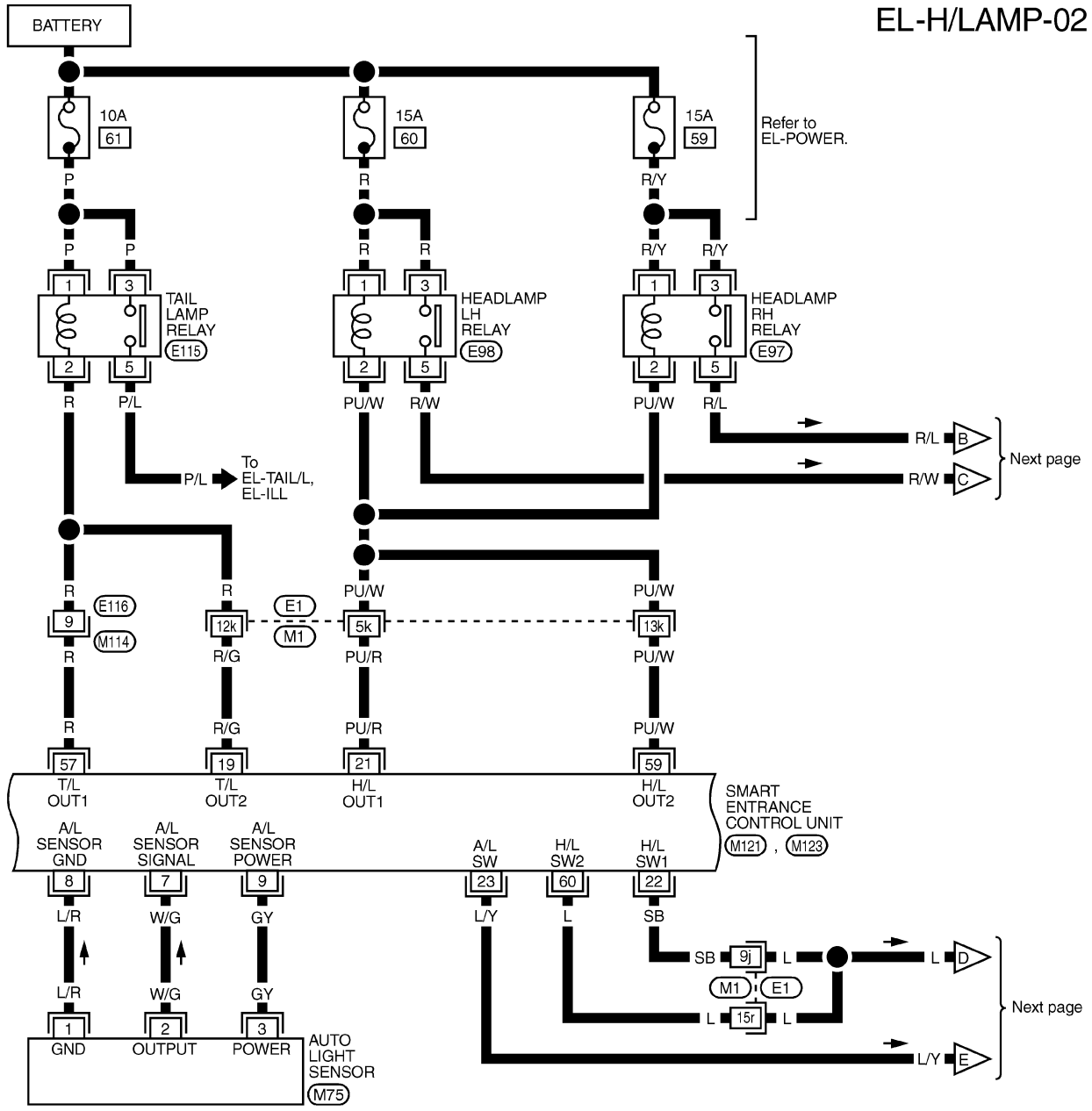


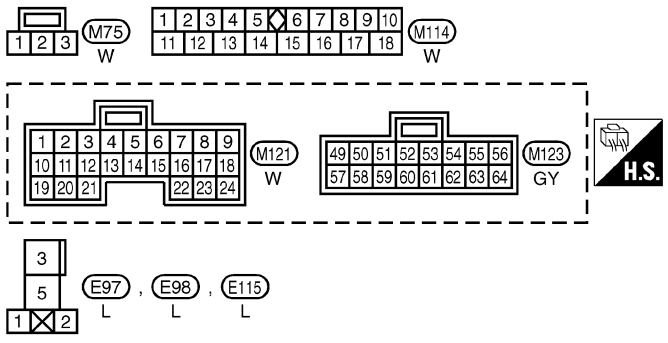




REFER TO THE FOLLOWING.
M10 -FUSE BLOCK-JUNCTION BOX (J/B)

MEL947P

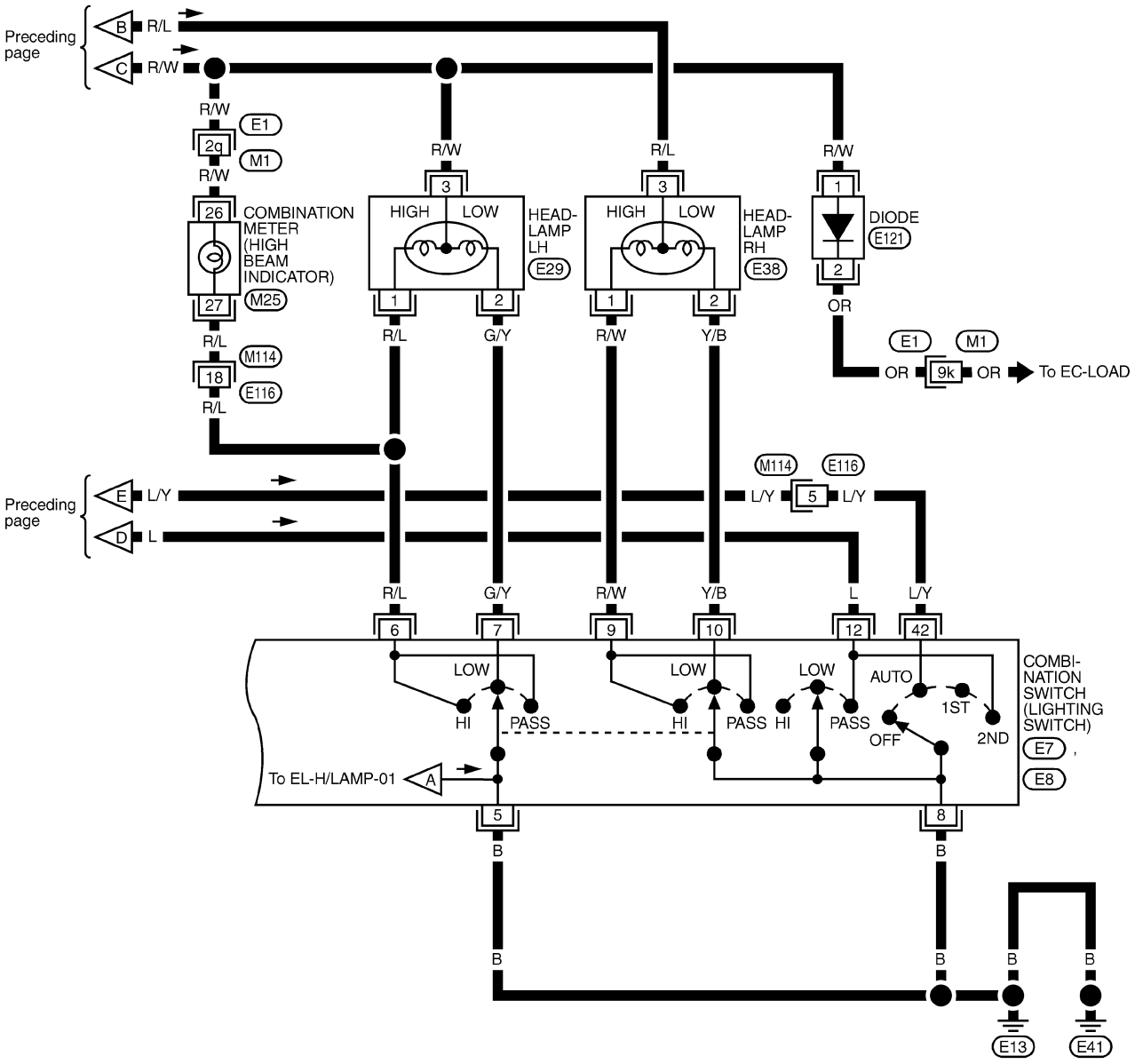


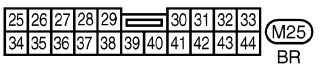


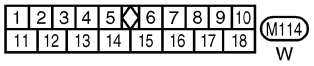
REFER TO THE FOLLOWING.
E1 -SUPER MULTIPLE JUNCTION (SMJ)

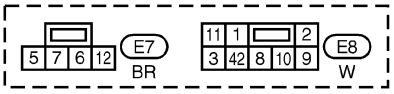
MEL930R

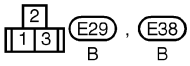
EL-H/LAMP-03

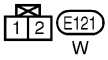








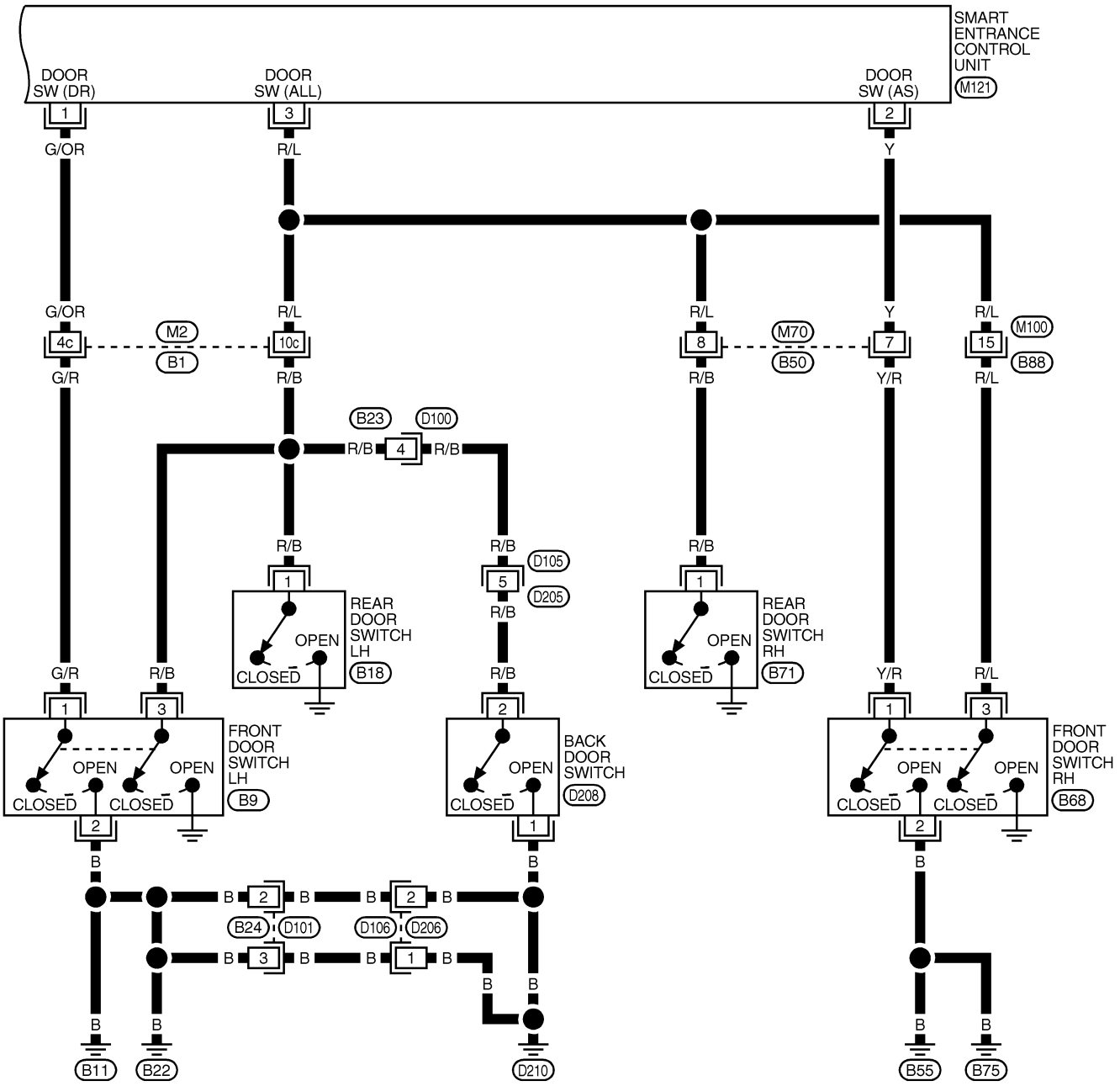


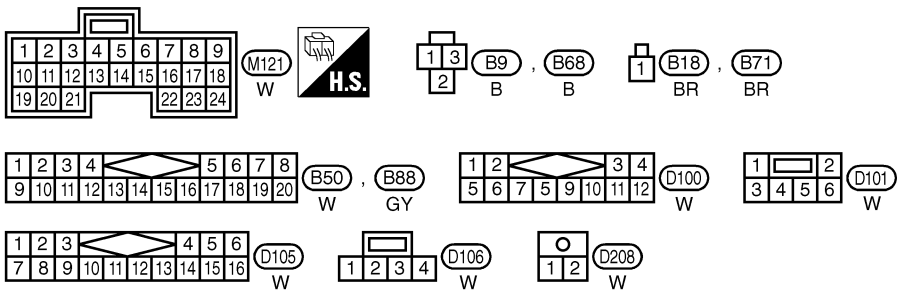


REFER TO THE FOLLOWING.
E1 -SUPER MULTIPLE JUNCTION (SMJ)

MEL931R

EL-H/LAMP-04

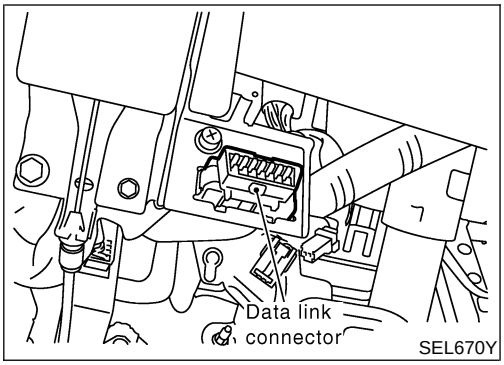




REFER TO THE FOLLOWING.

B1 -SUPER MULTIPLE JUNCTION (SMJ)

MEL950P



SEL670Y

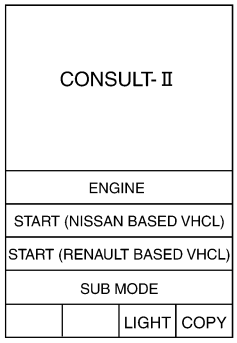
CONSULT-II Inspection Procedure

NAEL0258

“HEADLAMP”

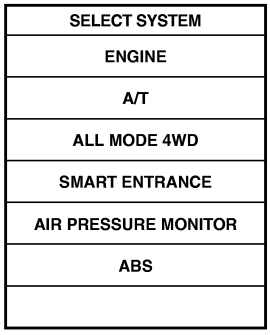
NAEL0258S01

1. Turn ignition switch “OFF”.
2. Connect “CONSULT-II” and “CONSULT-II CONVERTER” to the data link connector.



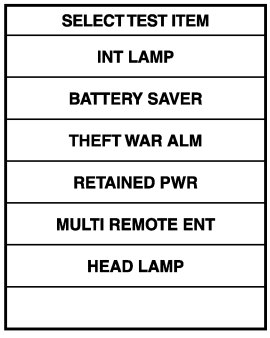
SKIA3098E

3. Turn ignition switch “ON”.
4. Touch “START (NISSAN BASED VHCL)”.



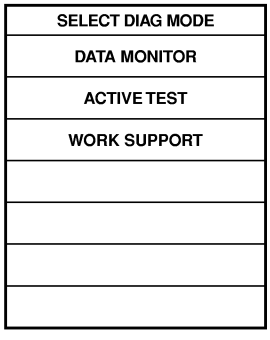
SEL669Y

5. Touch “SMART ENTRANCE”.
   If “SMART ENTRANCE” is not indicated, go to GI-42, “CONSULT-II Data Link Connector (DLC) Circuit”.



SEL751Y

6. Touch “HEADLAMP”.



SEL400Y

7. Select diagnosis mode.
   “DATA MONITOR”, “ACTIVE TEST” and “WORK SUPPORT” are available.

CONSULT-II Application Items

NAEL0453

"HEAD LAMP"

NAEL0453S01

Data Monitor

NAEL0453S0101

Monitored Item	Description
IGN ON SW	Indicates [ON/OFF] condition of ignition switch in ON position.
ACC ON SW	Indicates [ON/OFF] condition of ignition switch in ACC position.
AUTO LIGT SW	Displays status of the lighting switch as judged from the lighting switch signal. (AUTO position: ON/Other than AUTO position: OFF)
AUTO LIGT SENS	Displays "Illumination outside of the vehicle (close to 5V when light/close to 0V when dark)" as judged from the auto light sensor signal.
LIGHT SW 1ST	Displays status of the lighting switch as judged from the lighting switch signal. (1ST or 2ND position: ON/Other than 1ST and 2ND position: OFF)
LIGHT SW 2ND	Displays status of the lighting switch as judged from the lighting switch signal. (2ND position: ON/Other than 2ND position: OFF)
DOOR SW-DR	Indicates [ON/OFF] condition of front door switch LH.
DOOR SW-AS	Indicates [ON/OFF] condition of door switch RH.
DOOR SW-RR	Indicates [ON/OFF] condition of rear door switch.

Active Test

NAEL0453S0102

Test Item	Description
TAIL LAMP	Tail lamp relay can be operated by on-off operation of the tail lamp.
HEAD LAMP	Headlamp relay can be operated by on-off operation of the headlamp.
AUTO LIGHT	Night time dimming signal can be operated by on-off operation.

Work Support

NAEL0453S0103

Work Item	Description
AUTO LIGHT SET	Auto light sensitivity can be changed in this mode. Sensitivity can be adjusted in four modes. ● NORMAL/MODE 2 (Sensitive)/MODE 3 (Desensitized)/MODE 4 (Insensitive)
BATTERY SAVER SET	Exterior lamp battery saver control mode can be changed in this mode. Selects exterior lamp battery saver control mode between two modes. ● MODE 1 (ON)/MODE 2 (OFF)
ILL DELAY SET	Exterior lamp battery saver control time can be changed in this mode. Selects exterior lamp battery saver control time among eight modes. ● MODE 1 (45 sec.)/MODE 2 (OFF)/MODE 3 (30 sec.)/MODE 4 (60 sec.)/ MODE 5 (90 sec.)/ MODE 6 (120 sec.)/MODE 7 (150 sec.)/MODE 8 (180 sec.)

Trouble Diagnoses

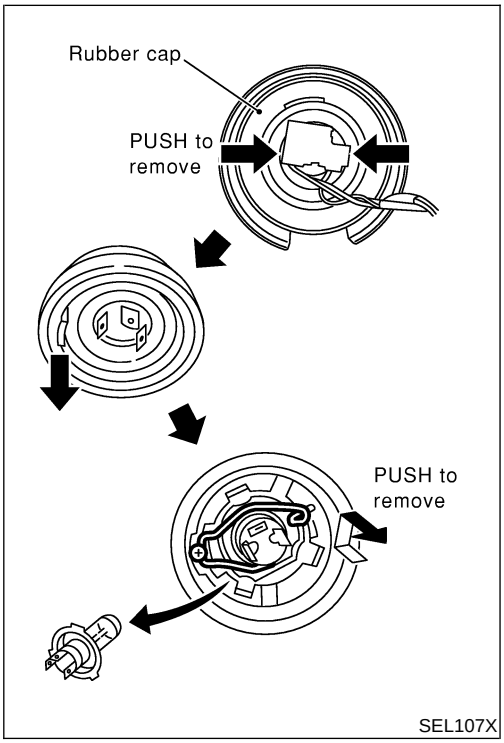
NAEL0260

Symptom	Possible cause	Repair order
Neither headlamp operates.	1. 7.5A fuse 2. Headlamp relay circuit 3. Lighting switch 4. Smart entrance control unit	1. Check 7.5A fuse [No. 24, located in fuse block (J/B)]. Verify battery positive voltage is present at terminal 49 of smart entrance control unit. 2. Check between smart entrance control unit and headlamp relays (LH and RH). 3. Check Lighting switch. 4. Check smart entrance control unit. (EL-382)

Symptom	Possible cause	Repair order
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 4. Lighting switch ground circuit	1. Check 15A fuse (No. 60, located in fusible link and fuse box). Verify battery positive voltage is present at terminals 1 and 3 of headlamp LH relay. 2. Check headlamp LH relay. 3. Check the following. ● Harness between headlamp LH relay and headlamp LH ● Harness between headlamp LH relay and smart entrance control unit 4. Check harness between lighting switch and ground.
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 1 and 3 of headlamp RH relay. 2. Check headlamp RH relay. 3. Check the following. ● Harness between headlamp RH relay and headlamp RH ● Harness between headlamp RH relay and smart entrance control unit 4. Check harness between lighting switch and ground.
LH high beam does not operate, but LH low beam operates.	1. Bulb 2. Open in the LH high beam circuit 3. Lighting switch	1. Check bulb. 2. Check harness between headlamp LH and lighting switch for open circuit. 3. Check lighting switch.
LH low beam does not operate, but LH high beam operates.	1. Bulb 2. Open in LH low beam circuit 3. Lighting switch	1. Check bulb. 2. Check harness between headlamp LH and lighting switch for open circuit. 3. Check lighting switch.
RH high beam does not operate, but RH low beam operates.	1. Bulb 2. Open in the RH high beam circuit 3. Lighting switch	1. Check bulb. 2. Check harness between headlamp RH and lighting switch for open circuit. 3. Check lighting switch.
RH low beam does not operate, but RH high beam operates.	1. Bulb 2. Open in RH low beam circuit 3. Lighting switch	1. Check bulb. 2. Check harness between headlamp RH and lighting switch for open circuit. 3. Check lighting switch.
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
Battery saver control does not operate properly.	1. Door switch LH or RH circuit 2. Lighting switch circuit 3. Smart entrance control unit	1. 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. 2. Check the following. a. Harness between smart entrance control unit terminals 20 or 58 and lighting switch terminal 11 for open or short circuit b. Harness between lighting switch terminal 5 and ground c. Lighting switch 3. Check smart entrance control unit. (EL-382)

Symptom	Possible cause	Repair order
When outside is dark, neither tail lamp nor headlamp turn on by auto light operation.	1. 7.5A fuse 2. Lighting switch "AUTO" check 3. Lighting switch circuit check 4. Lighting switch ground circuit check 5. Auto light sensor check 6. Auto light sensor circuit check	1. Check 7.5A fuse [NO. 11 located in fuse block (J/B)]. Verify battery positive voltage is present at terminal 27 of smart entrance control unit. 2. Check lighting switch (AUTO) input signal with "CONSULT-II" in "DATA MONITOR" mode. When lighting switch is in AUTO: **AUTO LIGHT SWITCH ON** When lighting switch is in OFF: **AUTO LIGHT SWITCH OFF** 3. Check harness for open or short between smart entrance control unit and lighting switch. 4. Check harness for lighting switch and ground. 5. Check auto light sensor input signal. (With CONSULT-II) See "AUTO LIGHT SENSOR" in DATA MONITOR mode. When auto light sensor in stuck by light: **More than 3V** When auto light sensor is not stuck by light: **Approx. 0.5V** (Without CONSULT-II) Check voltage between smart entrance control unit terminal 7 and ground. Refer to smart entrance control unit. (EL-382) 6. Check the following. a. Harness for open or short between smart entrance control unit terminal 8 and auto light sensor terminal 1 b. Harness for open or short between smart entrance control unit terminal 7 and auto light sensor terminal 2 c. Harness for open or short between smart entrance control unit terminal 9 and auto light sensor terminal 3
When outside is dark, tail lamp turns on but headlamp does not turn on by auto light operation.	Auto light output check	Check auto light output. (With CONSULT-II) See "HEADLAMP" and "TAIL LAMP" in ACTIVE TEST mode, and headlamp switch to AUTO position. **Headlamp and tail lamp should turn on.** (Without CONSULT-II) Check voltage between smart entrance control unit terminals 19, 21, 57, 59 and ground. Refer to smart entrance control unit. (EL-382)
When outside is dark, headlamp turns on but tail lamp does not turn on by auto light operation.	Auto light output check	Check auto light output. (With CONSULT-II) See "HEADLAMP" and "TAIL LAMP" in ACTIVE TEST mode, and headlamp switch to AUTO position. **Headlamp and tail lamp should turn on.** (Without CONSULT-II) Check voltage between smart entrance control unit terminals 19, 21, 57, 59 and ground. Refer to smart entrance control unit. (EL-382)
Light does not turn off when ignition key switch is turned to "OFF" (exterior lamp battery saver control is canceled).	1. 7.5A fuse 2. IGN switch circuit	1. Check 7.5A fuse [NO. 11 located in fuse block (J/B)]. Verify battery positive voltage is present at terminal 27 of smart entrance control unit. 2. Check harness for open or short between smart entrance control unit and fuse.

Symptom	Possible cause	Repair order
When outside is bright, neither tail lamps nor headlamps turn off by auto light operation.	Auto light sensor check	Check auto light sensor input signal. (With CONSULT-II) See "AUTO LIGHT SENSOR" in DATA MONITOR mode. When auto light sensor in stuck by light: **More than 3V** When auto light sensor is not stuck by light: **Approx. 0.5V** (Without CONSULT-II) Check voltage between smart entrance control unit terminal 7 (W/G) and ground. Refer to smart entrance control unit. (EL-382)



Bulb Replacement

NAEL0261

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

NAEL0262

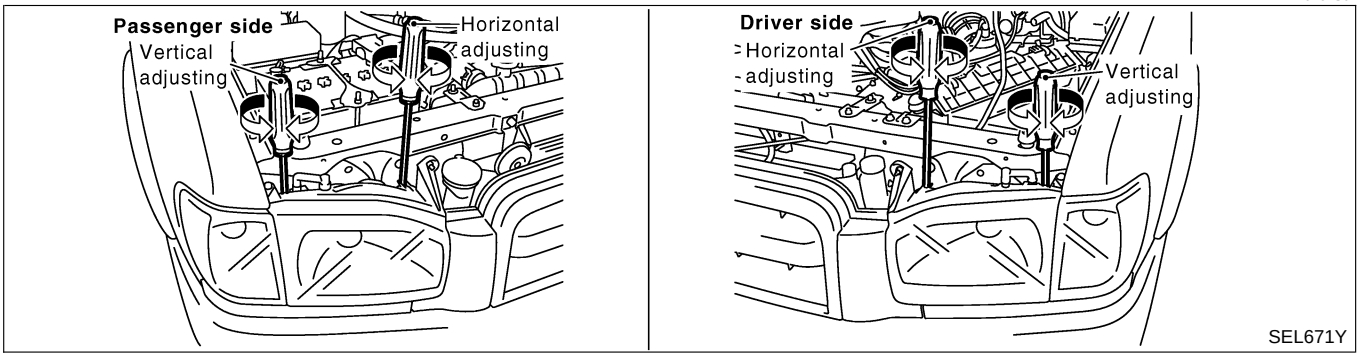
Before performing aiming adjustment, check the following.

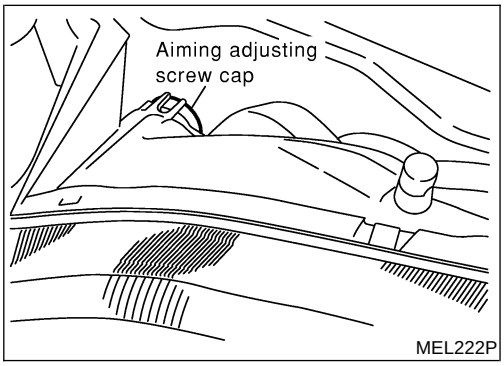
For details, refer to the regulations in your own country.

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

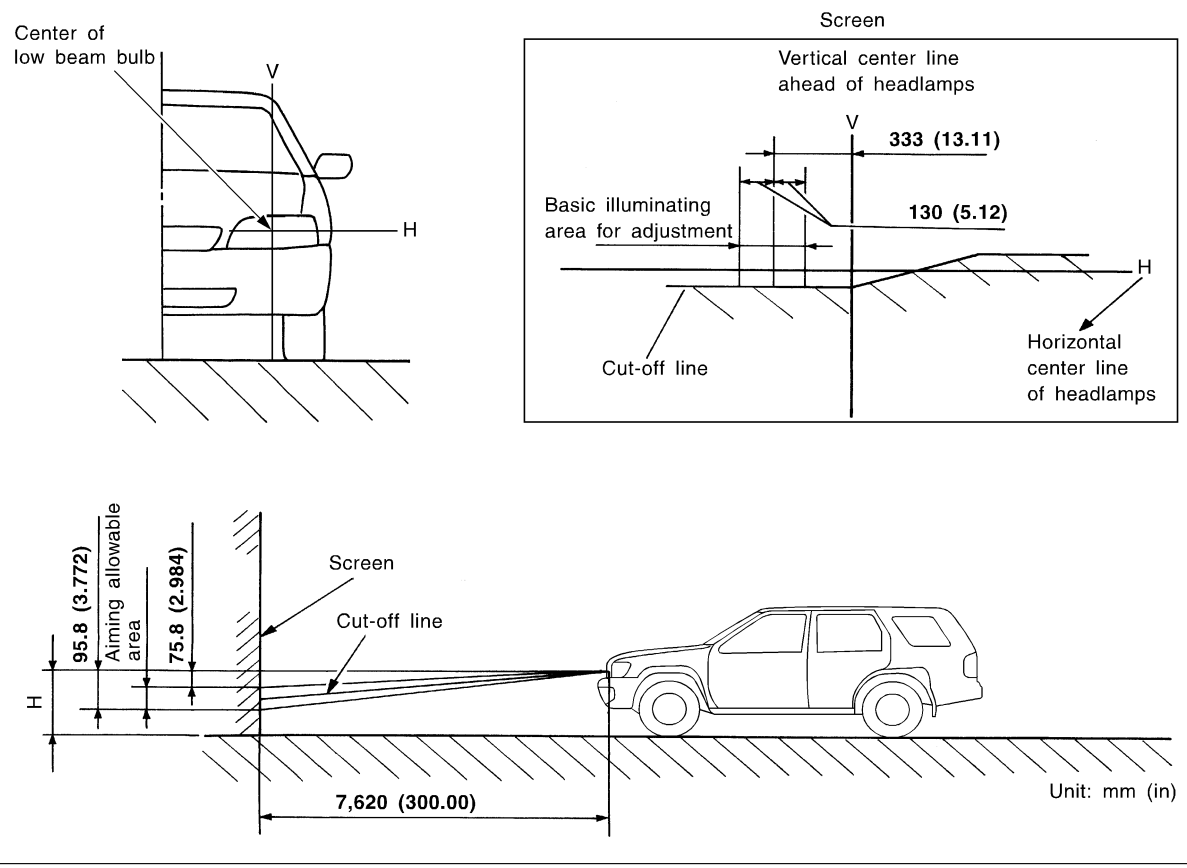
NAEL0262S01





1. Remove aiming adjusting screw cap.
2. Turn headlamp low beam on.
3. Use adjusting screws to perform aiming adjustment.

- **First tighten the adjusting screw all the way and then make adjustment by loosening the screw.**

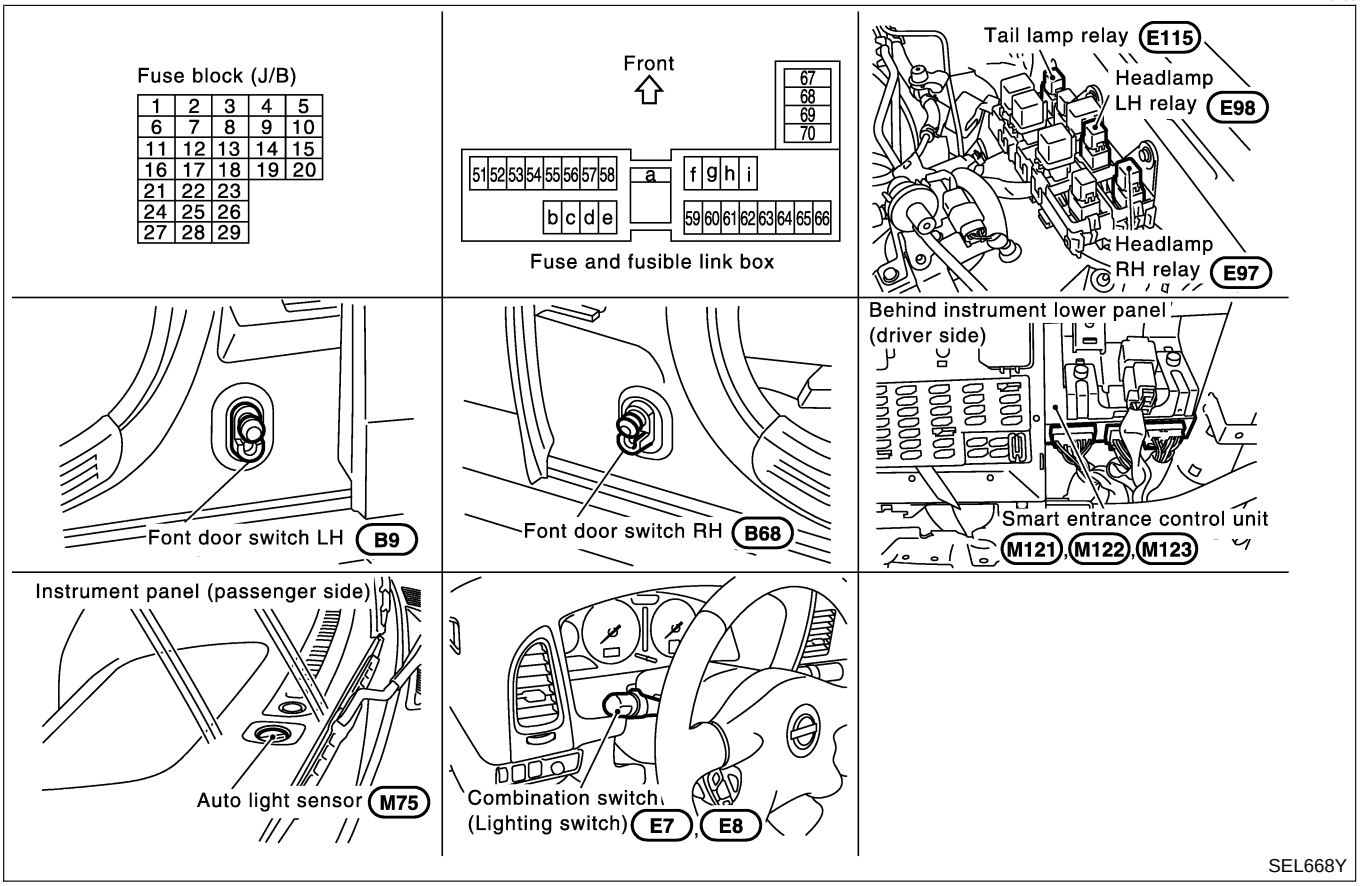


If the vehicle front body has been repaired and/or the headlamp assembly has been replaced, check aiming. Use the aiming chart shown in the figure.

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

Component Parts and Harness Connector Location

NAEL0263



System Description

NAEL0264

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 smart entrance control unit.

Power is supplied at all times

- to headlamp LH relay terminals 1 and 3
- through 15A fuse (No. 60, located in the fuse and fusible link box), and
- to headlamp RH relay terminals 1 and 3
- through 15A fuse (No. 59, located in the fuse and fusible link box), and
- to smart entrance control unit terminal 49
- through 7.5A fuse [No. 24, located in the fuse block (J/B)].

Ground is supplied

- to daytime light control unit terminal 16
- through body grounds E13 and E41
- to smart entrance control unit terminals 43 and 64
- through body grounds M4, M66, M111, M147 and M157.

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

- to daytime light control unit terminal 3, and
- to smart entrance control unit terminal 27
- 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 smart entrance control unit terminal 26

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

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

- to daytime light control unit terminal 2
- through 7.5A fuse [No. 26, located in the fuse block (J/B)].

HEADLAMP OPERATION

NAEL0264S01

Power Supply to Low Beam and High Beam

NAEL0264S0101

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

- to headlamp relay (LH and RH) terminal 2 from smart entrance control unit terminals 21 and 59
- through smart entrance control unit terminals 22 and 60
- 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

NAEL0264S0102

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

- to terminal 2 of the headlamp LH
- through daytime light control unit terminals 11 and 15
- through lighting switch terminals 7 and 5
- through body grounds E13 and E41.

Ground is also supplied

- to terminal 2 of the headlamp RH
- through daytime light control unit terminals 8 and 12
- through lighting switch terminals 10 and 8
- through body grounds E13 and E41.

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

High Beam Operation/Flash-to-pass Operation

NAEL0264S0103

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

Ground is also supplied

- 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.

EXTERIOR LAMP BATTERY SAVER CONTROL

NAEL0264S02

Except for Auto Light Control Operation

NAEL0264S0201

Headlamps will remain on for a short while after the ignition switch is turned from ON (or ACC) to OFF.
Continuity between terminals 21 and 22, and between terminals 59 and 60 of smart entrance control unit will be disturbed after 5 minutes, then the headlamps will be turned off.
When the lighting switch is turned from OFF to 2ND after headlamps are turned to off by the exterior lamp battery saver control, ground is supplied

- to smart entrance control unit terminals 20 and 58 from lighting switch terminal 11, and then,
- to headlamp LH and RH relays terminal 2 from smart entrance control unit terminals 21 and 59,
- through smart entrance control unit terminals 22 and 60 and
- through lighting switch terminal 12.

Then headlamps illuminate again.

System Description (Cont'd)

Auto light control operation

NAEL0264S0202

While the headlamps are turned ON by "AUTO" operation, the exterior lamp battery saver is activated for 5 minutes when the ignition switch is turned from ON (or ACC) to OFF, and either LH or RH front door switch is opened.

The smart entrance control unit controls exterior lamp battery saver activation as follows:

- When the door switch signal changes from ON to OFF while the exterior lamp battery saver is activated, the operation is discontinued, restarts and lasts for 45 seconds, then the headlamps will be turned off.
- When the door switch signal changes from OFF to ON while the exterior lamp battery saver is activated, the operation is discontinued, restarts and lasts for 45 seconds, then the headlamps will be turned off.
- When the one of four door switch signals changes from OFF to ON while the exterior lamp battery saver is activated, the operation is discontinued, restarts and lasts for 5 minutes, then the headlamps will be turned off.
- When all the door switch ON signals are input while the exterior lamp battery saver is activated, the saver is discontinued and restarts and lasts for 45 seconds, then the headlamps will be turned off.

Exterior lamp battery saver control time can be changed using "WORK SUPPORT" mode in "HEADLAMP".

When the lighting switch is turned from OFF to 2ND after headlamps are turned to off by the exterior lamp battery saver control, ground is supplied

- to smart entrance control unit terminals 20 and 58 from lighting switch terminal 11, and then,
- to headlamp LH and RH relays terminal 2 from smart entrance control unit terminals 21 and 59,
- through smart entrance control unit terminals 22 and 60 and
- through lighting switch terminal 12.

Then headlamps illuminate again.

AUTO LIGHT OPERATION

NAEL0264S03

For auto light operation, refer to "HEADLAMP" (EL-37).

DAYTIME LIGHT OPERATION

NAEL0264S04

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 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

NAEL0264S05

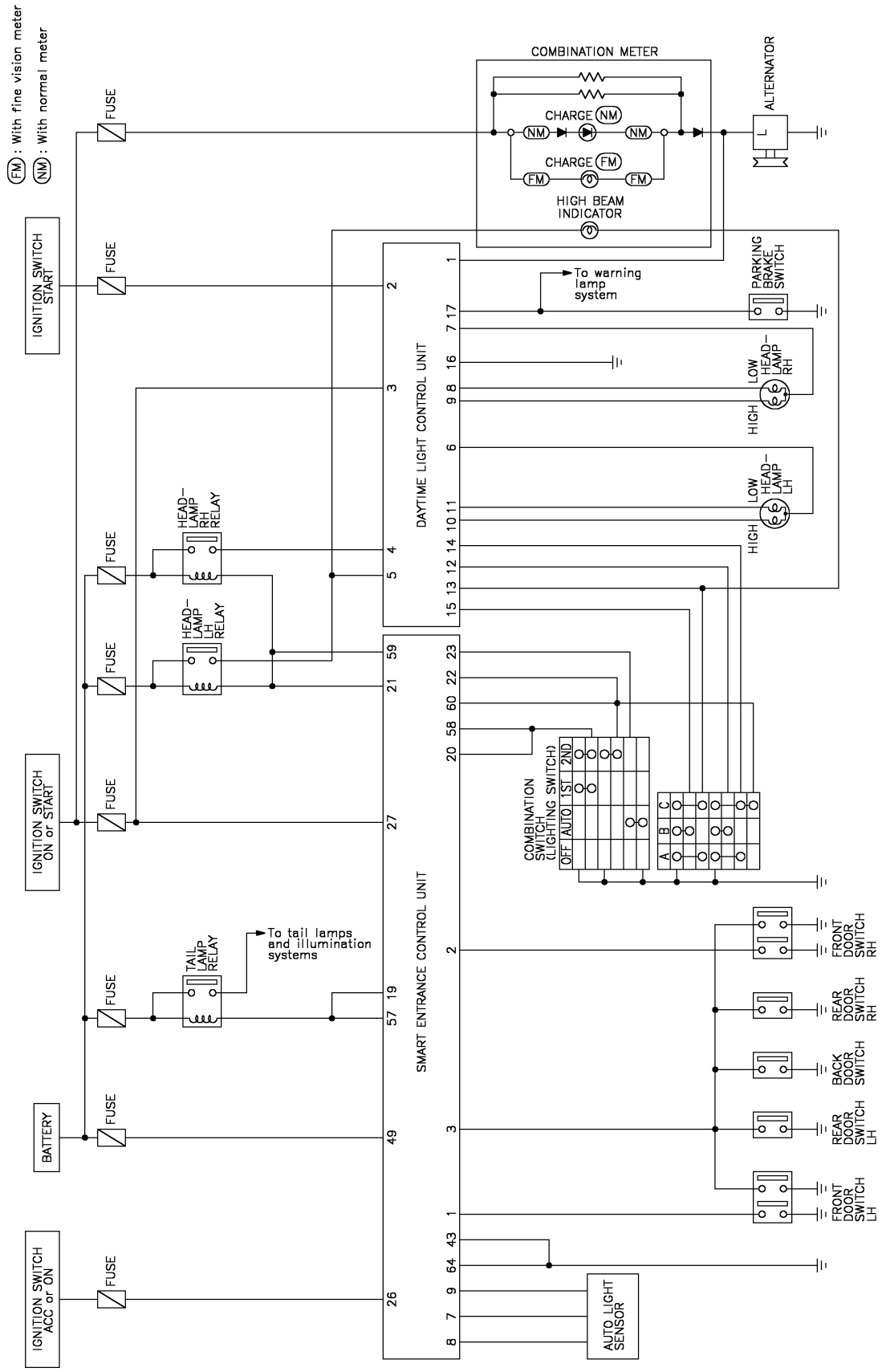
After starting the engine with the lighting switch in the "OFF" or "1ST" position, the headlamp high beam automatically turns on. Lighting switch operations other than the above are the same as conventional light systems.

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

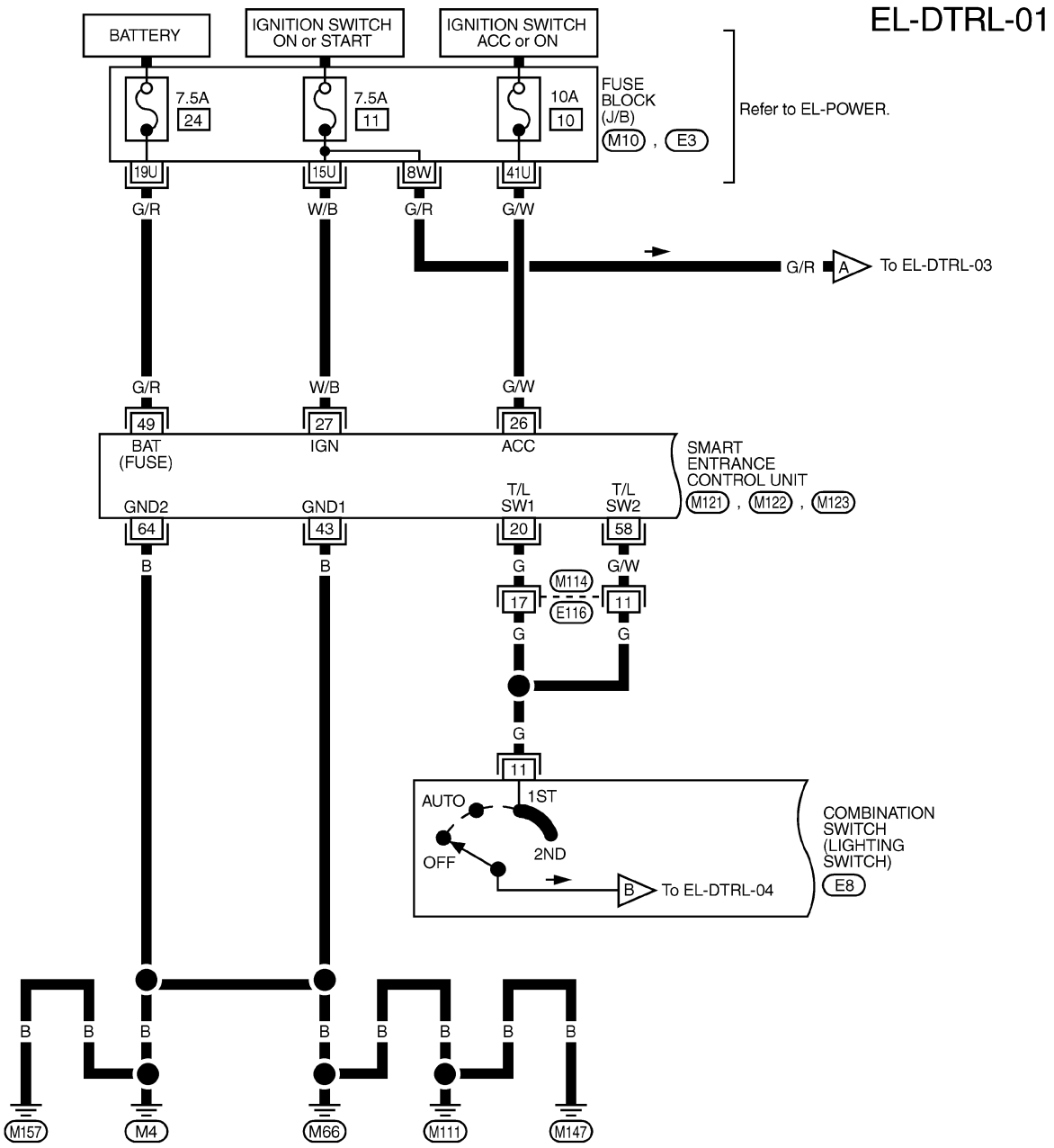
NAEL0265

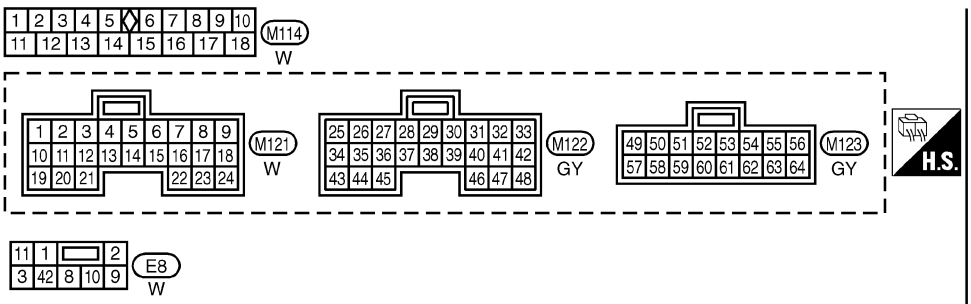


MEL960R

Wiring Diagram — DTRL —

NAEL0266

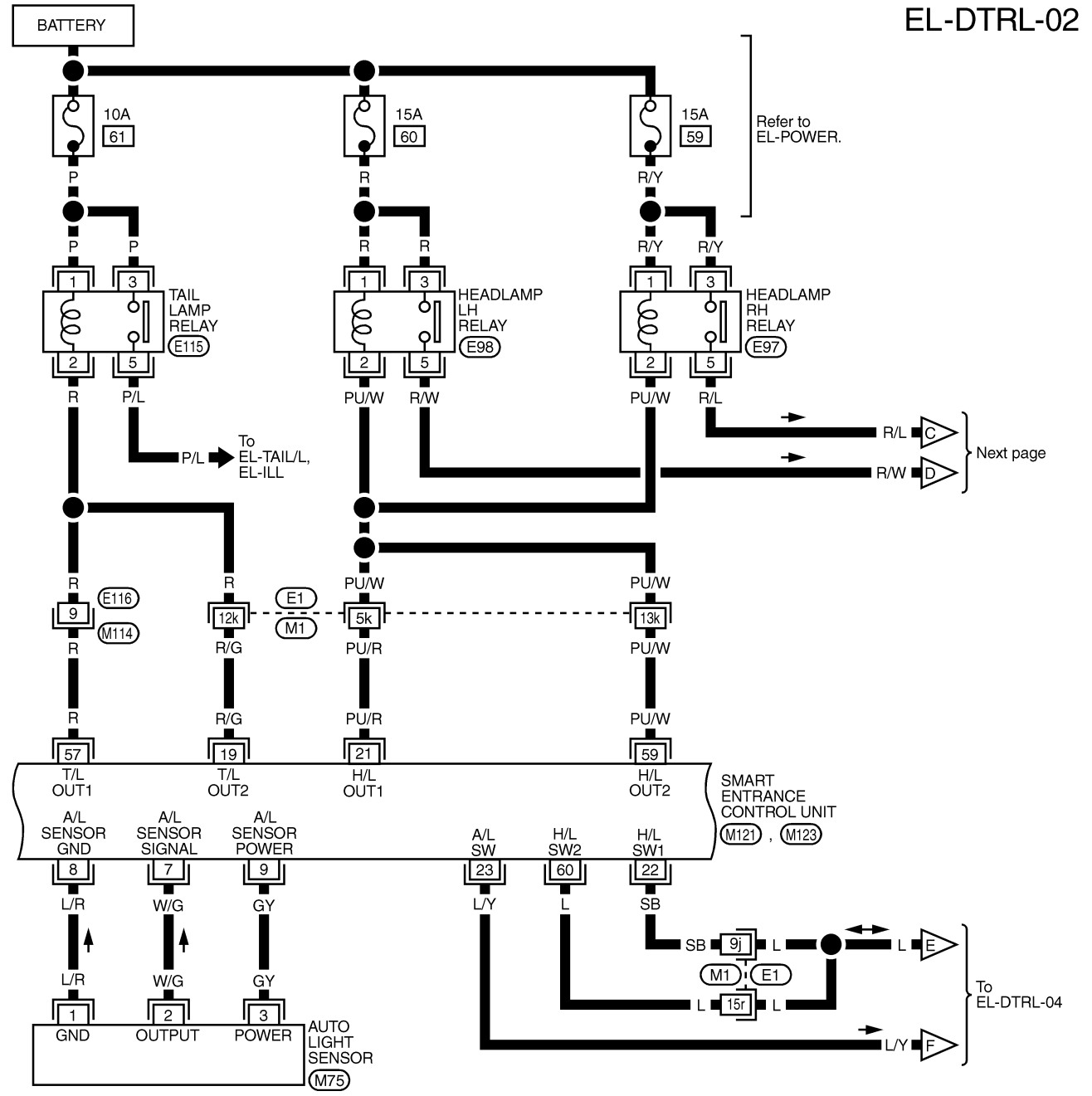


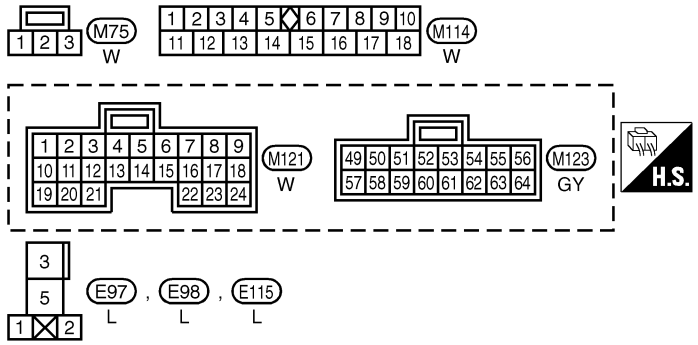


REFER TO THE FOLLOWING.
M10 , E3 -FUSE BLOCK-JUNCTION BOX (J/B)

MEL932R

Wiring Diagram — DTRL — (Cont'd)

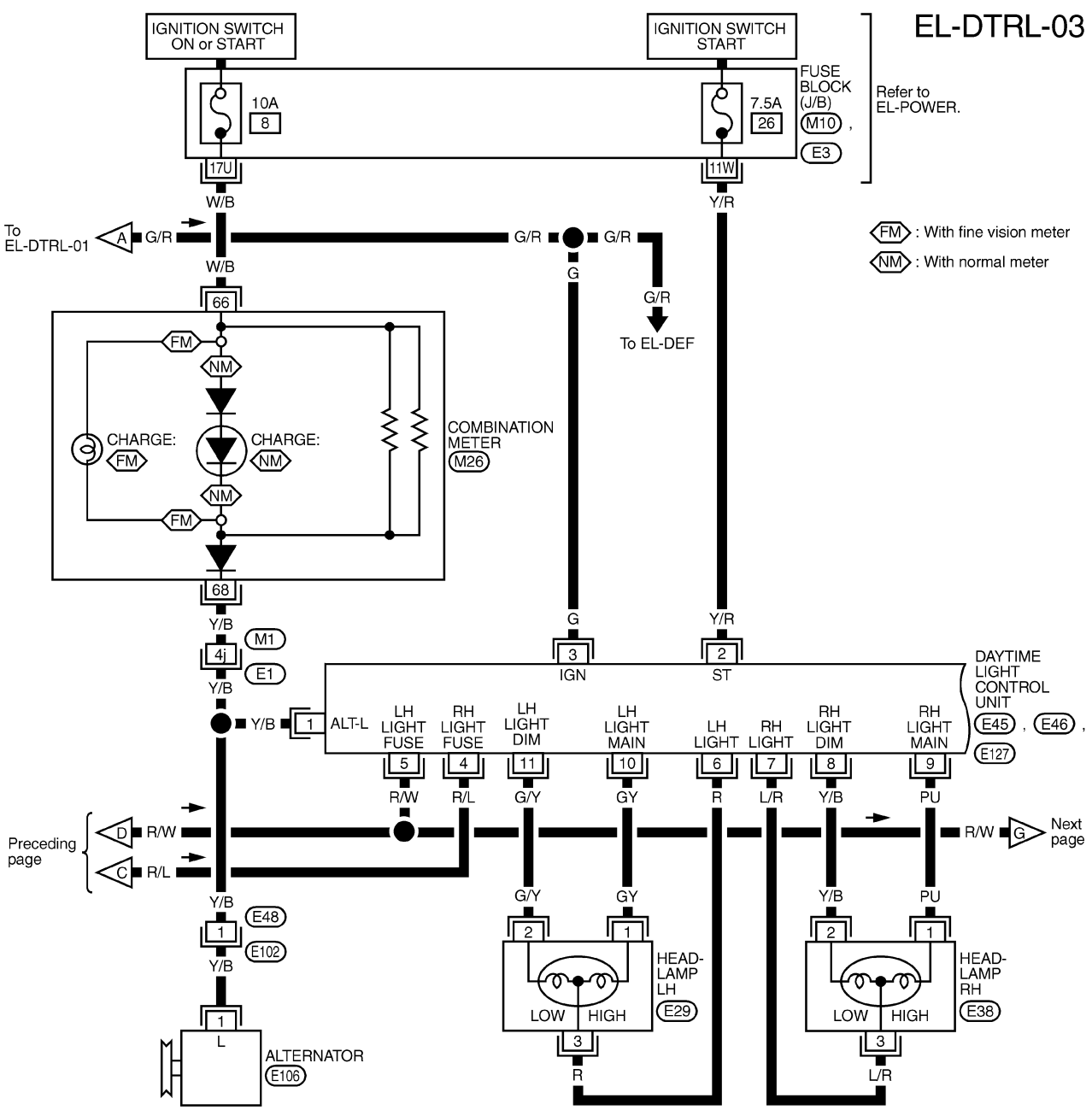


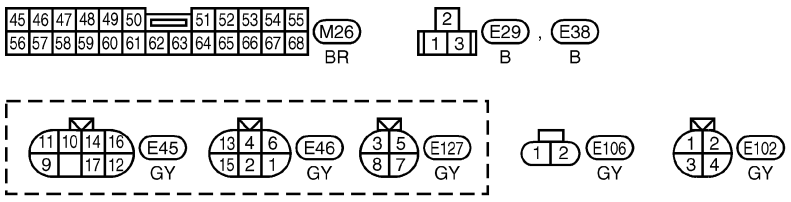


REFER TO THE FOLLOWING.

E1 -SUPER MULTIPLE JUNCTION (SMJ)

MEL953P

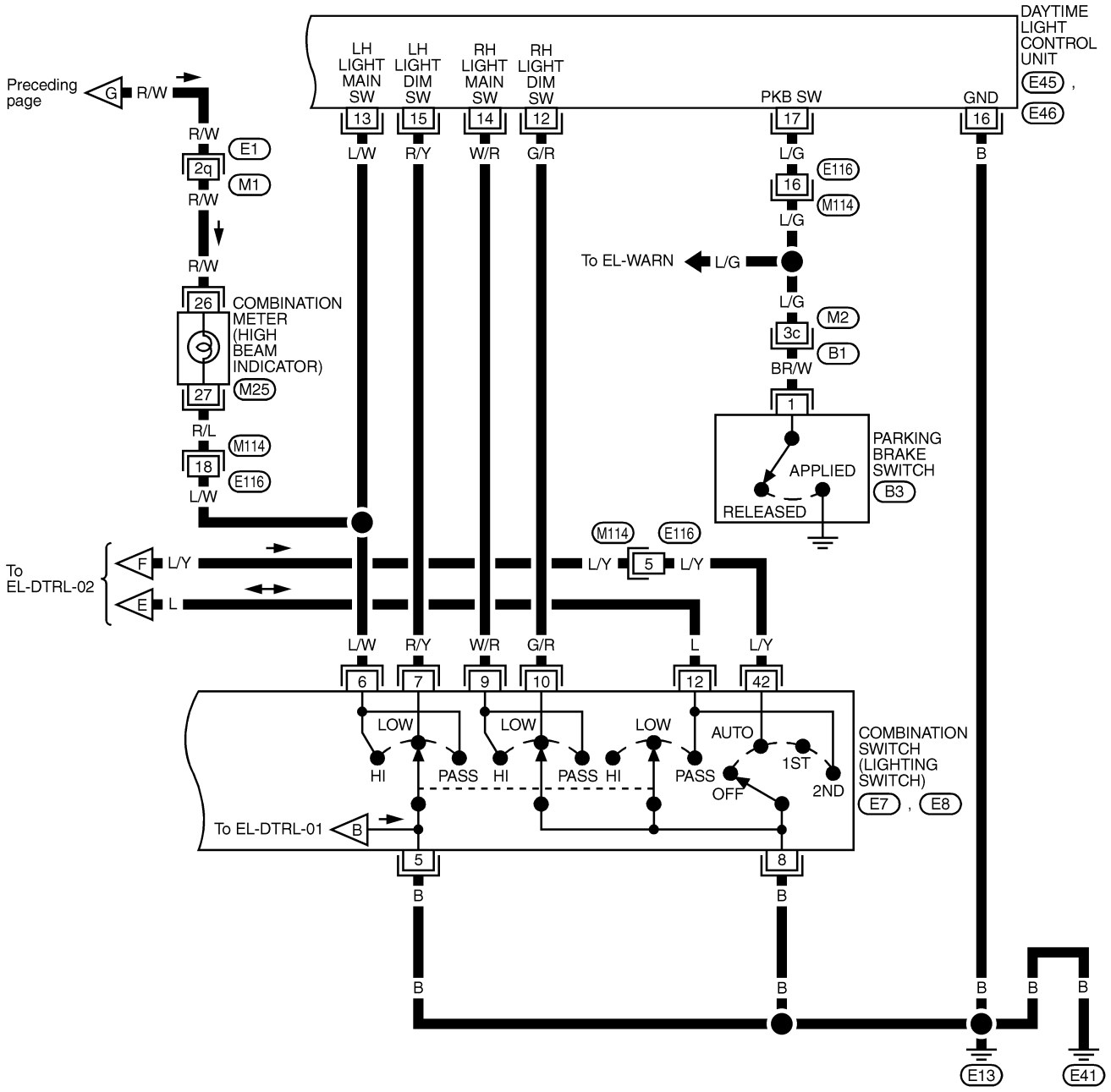


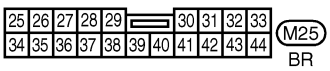


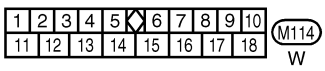
REFER TO THE FOLLOWING.
E1 -SUPER MULTIPLE JUNCTION (SMJ)
M10 , E3 -FUSE BLOCK-JUNCTION (J/B)

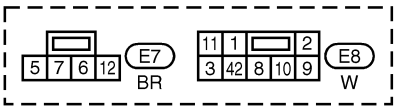
MEL961R

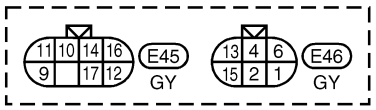
EL-DTRL-04







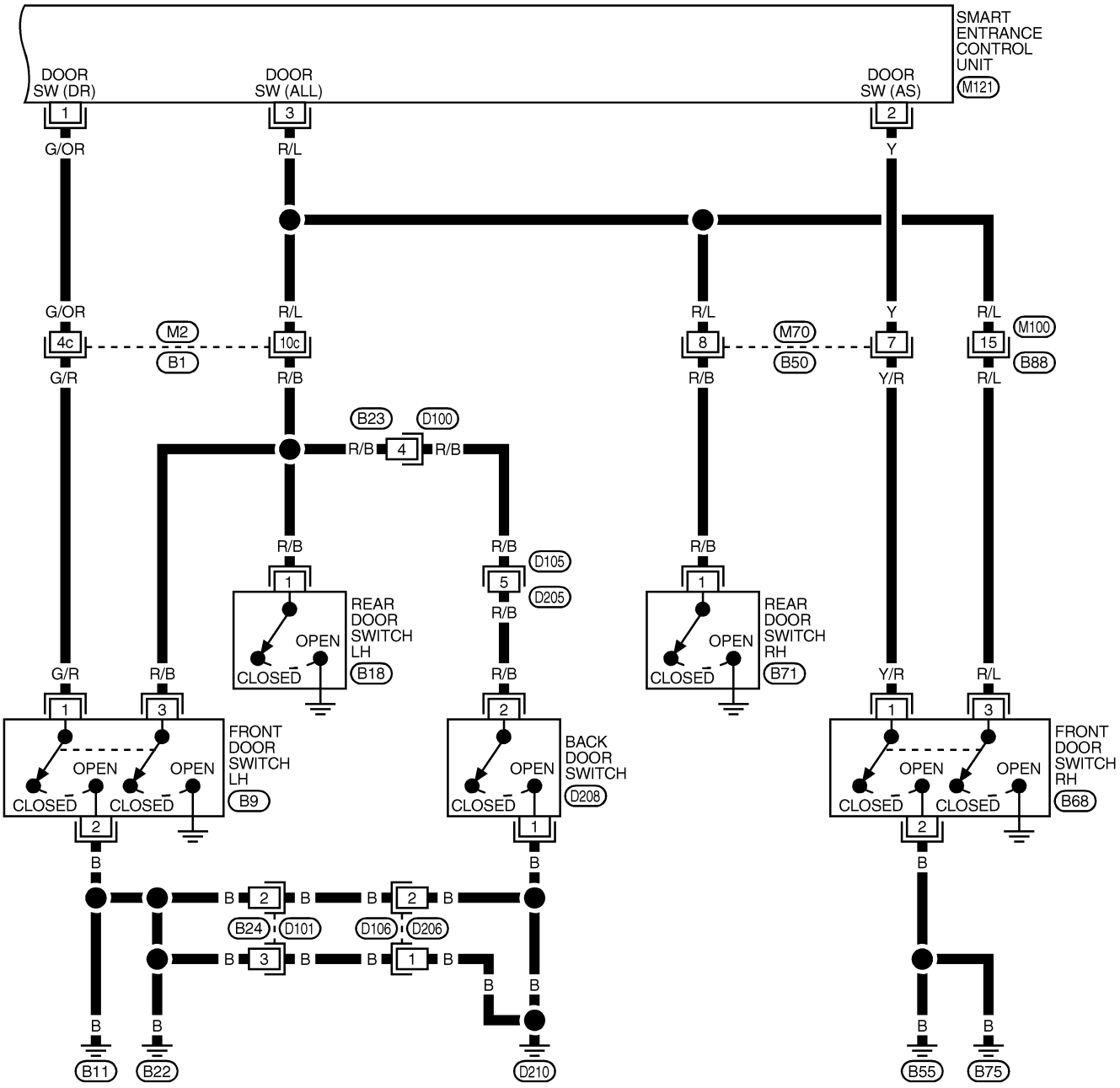


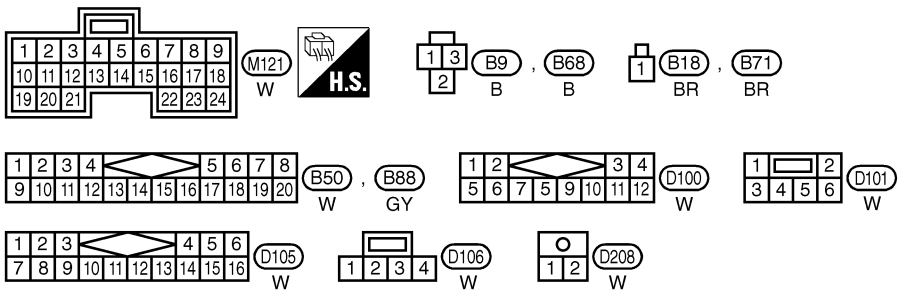


REFER TO THE FOLLOWING.
E1 , B1 -SUPER MULTIPLE JUNCTION (SMJ)

MEL955P

EL-DTRL-05





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

MEL956P

CONSULT-II Inspection Procedure

NAEL0267

“HEADLAMP”

NAEL0267S01

Refer to “HEADLAMP (FOR USA)” (EL-43).

CONSULT-II Application Items

NAEL0268

“HEADLAMP”

NAEL0268S01

Refer to “HEADLAMP (FOR USA)” (EL-44).

Trouble Diagnoses

NAEL0269

Symptom	Possible cause	Repair order
Neither headlamp operates.	1. 7.5A fuse 2. Lighting switch 3. Daytime light control unit 4. Smart entrance control unit	1. Check the following. a. 7.5A fuse [No. 24, located in fuse block (J/B)] Verify battery positive voltage is present at terminal 49 of smart entrance control unit. b. 7.5A fuse [No. 11, located in fuse block (J/B)] Verify battery positive voltage is present at terminal 3 of daytime light control unit. 2. Check lighting switch. 3. Check daytime light control unit (EL-63). 4. Check smart entrance control unit. (EL-382)
LH headlamp (low and high beam) does not operate, but RH headlamp (low and high beam) does operate.	1. 15A fuse 2. Headlamp LH relay 3. Headlamp LH relay circuit 4. Headlamp LH ground circuit 5. Lighting switch circuit 6. Daytime light control unit 7. Smart entrance control unit	1. Check 15A fuse (No. 60, located in fusible link and fuse box). Verify battery positive voltage is present at terminal 1 and 3 of headlamp LH relay. 2. Check headlamp LH relay. 3. Check the following. a. Harness between headlamp LH relay and daytime light control unit b. Harness between headlamp LH relay and smart entrance control unit 4. Check harness between headlamp LH and daytime light control unit. 5. Check harness between smart entrance control unit and lighting switch. 6. Check daytime light control unit. (EL-63) 7. Check smart entrance control unit. (EL-382)

Symptom	Possible cause	Repair order
RH headlamp (low and high beam) does not operate, but LH headlamp (low and high beam) does operate.	1. 15A fuse 2. Headlamp RH relay 3. Headlamp RH relay circuit 4. Headlamp RH ground circuit 5. Lighting switch circuit 6. Daytime light control unit 7. Smart entrance control unit	1. Check 15A fuse (No. 59, located in fusible link and fuse box). Verify battery positive voltage is present at terminals 1 and 3 of headlamp RH relay. 2. Check headlamp RH relay. 3. Check the following. a. Harness between headlamp RH relay and daytime light control unit b. Harness between headlamp RH relay and smart entrance control unit 4. Check harness between headlamp RH and daytime light control unit. 5. Check harness between smart entrance control unit and lighting switch. 6. Check daytime light control unit. (EL-63) 7. Check smart entrance control unit. (EL-382)
LH high beam does not operate, but LH low beam operates.	1. Bulb 2. Headlamp LH high beams circuit 3. Lighting switch 4. Lighting switch circuit 5. Daytime light control unit	1. Check bulb. 2. Check harness between LH headlamp and daytime light control unit. 3. Check lighting switch. 4. Check harness between daytime light control unit and lighting switch. 5. Check daytime light control unit. (EL-63)
LH low beam does not operate, but LH high beam operates.	1. Bulb 2. Headlamp LH high beams circuit 3. Lighting switch 4. Lighting switch circuit 5. Daytime light control unit	1. Check bulb. 2. Check harness between LH headlamp and daytime light control unit. 3. Check lighting switch. 4. Check harness between daytime light control unit and lighting switch. 5. Check daytime light control unit. (EL-63)
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 circuit 5. Daytime light control unit	1. Check bulb. 2. Check harness between RH headlamp and daytime light control unit. 3. Check lighting switch. 4. Check harness between daytime light control unit and lighting switch. 5. Check daytime light control unit. (EL-63)
RH low beam does not operate, but RH high beam operates.	1. Bulb 2. Open in the RH high beams circuit 3. Lighting switch 4. Lighting switch circuit 5. Daytime light control unit	1. Check bulb. 2. Check harness between RH headlamp and daytime light control unit. 3. Check lighting switch. 4. Check harness between daytime light control unit and lighting switch. 5. Check daytime light control unit. (EL-63)
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
Battery saver control does not operate properly.	1. Door switch LH or RH circuit 2. Smart entrance control unit	1. 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 2. Check smart entrance control unit. (EL-382)

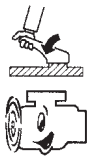
Symptom	Possible cause	Repair order
Daytime light control does not operate properly.	1. Fuse check 2. Parking brake switch 3. Parking brake switch circuit 4. Alternator circuit 5. Daytime light control unit	1. Check the following. a. 7.5A fuse [No. 11, located in fuse block (J/B)] Verify battery positive voltage is present at terminal 3 of daytime light control unit. b. 7.5A fuse [No. 26, located in fuse block (J/B)] Verify battery positive voltage is present at terminal 2 of daytime light control unit. 2. Check parking brake switch. 3. Check harness between parking brake switch and daytime light control unit. 4. Check harness between alternator and daytime light control unit. 5. Check daytime light control unit. (EL-63)
When outside is dark, neither tail lamp nor headlamp turn on by auto light operation.	1. 7.5A fuse 2. Lighting switch "AUTO" check 3. Lighting switch circuit check 4. Lighting switch ground circuit check 5. Auto light sensor check 6. Auto light sensor circuit check	1. Check 7.5A fuse [NO. 11 located in fuse block (J/B)]. Verify battery positive voltage is present at terminal 27 of smart entrance control unit. 2. Check lighting switch (AUTO) input signal with "CONSULT-II" in "DATA MONITOR" mode. When lighting switch is in AUTO: **AUTO LIGHT SWITCH ON** When lighting switch is in OFF: **AUTO LIGHT SWITCH OFF** 3. Check harness for open or short between smart entrance control unit and lighting switch. 4. Check harness for lighting switch and ground. 5. Check auto light sensor input signal. (With CONSULT-II) See "AUTO LIGHT SENSOR" in DATA MONITOR mode. When auto light sensor in stuck by light: **More than 3V** When auto light sensor is not stuck by light: **Approx. 0.5V** (Without CONSULT-II) Check voltage between smart entrance control unit terminal 7 and ground. Refer to smart entrance control unit. (EL-382) 6. Check the following. a. Harness for open or short between smart entrance control unit terminal 8 and auto light sensor terminal 1 b. Harness for open or short between smart entrance control unit terminal 7 and auto light sensor terminal 2 c. Harness for open or short between smart entrance control unit terminal 9 and auto light sensor terminal 3
When outside is dark, tail lamp turns on but headlamp does not turn on by auto light operation.	Auto light output check	Check auto light output. (With CONSULT-II) See "HEADLAMP" and "TAIL LAMP" in ACTIVE TEST mode, and headlamp switch to AUTO position. **Headlamp and tail lamp should turn on.** (Without CONSULT-II) Check voltage between smart entrance control unit terminals 19, 21, 57, 59 and ground. Refer to smart entrance control unit. (EL-382)
When outside is dark, headlamp turns on but tail lamp does not turn on by auto light operation.	Auto light output check	Check auto light output. (With CONSULT-II) See "HEADLAMP" and "TAIL LAMP" in ACTIVE TEST mode, and headlamp switch to AUTO position. **Headlamp and tail lamp should turn on.** (Without CONSULT-II) Check voltage between smart entrance control unit terminals 19, 57 and ground. Refer to smart entrance control unit. (EL-382)

Symptom	Possible cause	Repair order
Light does not turn off when ignition key switch is turned to "OFF" (exterior lamp battery saver control is canceled).	1. 7.5A fuse 2. IGN switch circuit	1. Check 7.5A fuse [NO. 11 located in fuse block (J/B)]. Verify battery positive voltage is present at terminal 27 of smart entrance control unit. 2. Check harness for open or short between smart entrance control unit and fuse.
When outside is bright, neither tail lamps nor headlamps turn off by auto light operation.	Auto light sensor check	Check auto light sensor input signal. (With CONSULT-II) See "AUTO LIGHT SENSOR" in DATA MONITOR mode. When auto light sensor in stuck by light: **More than 3V** When auto light sensor is not stuck by light: **Approx. 0.5V** (Without CONSULT-II) Check voltage between smart entrance control unit terminal 7 (W/G) and ground. Refer to smart entrance control unit. (EL-382)

DAYTIME LIGHT CONTROL UNIT INSPECTION TABLE

NAEL0269S01

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	12V
				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

Terminal No.	Wire color	Item	Condition		Voltage (Approximate values)
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	12V
				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. 6V
7	L/R	RH hi beam		When lighting switch is turned to the 2ND position with "HI BEAM" position	12V
				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
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. 6V
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.**	Less than 1V
13 14	L/W W/R	Lighting switch (Hi beam)		When turning lighting switch to "HI BEAM"	Less than 1V
				When turning lighting switch to "FLASH TO PASS"	Less than 1V
16	B	Ground		—	—
17	L/G	Parking brake switch		When parking brake is released	12V
				When parking brake is set	Less than 1.5V

Bulb Replacement

NAEL0270

Refer to “HEADLAMP (FOR USA)” (EL-47).

Aiming Adjustment

NAEL0271

Refer to “HEADLAMP (FOR USA)” (EL-47).

System Description

NAEL0272

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

Power is supplied at all times

- to tail lamp relay terminals 1 and 3
- through 10A fuse (No. 61, located in the fuse and fusible link box), and
- to smart entrance control unit terminal 49
- 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 smart entrance control unit terminal 27
- 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 smart entrance control unit terminal 26
- through 10A fuse [No. 10, located in the fuse block (J/B)].

Ground is supplied

- to smart entrance control unit terminals 43 and 64
- through body grounds M4, M66, M111, M147 and M157.

LIGHTING OPERATION BY LIGHTING SWITCH

NAEL0272S01

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

- to tail lamp relay terminal 2 from smart entrance control unit terminals 19 and 57
- through smart entrance control unit terminals 20 and 58, and
- through lighting switch and 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

NAEL0272S02

When lighting switch is in AUTO position, ground is supplied

- to tail lamp relay terminal 2 from smart entrance control unit terminals 19 and 57
- through smart entrance control unit terminals 43 and 64, and
- to body grounds M4, M66, M111, M147 and M157.

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

EXTERIOR LAMP BATTERY SAVER CONTROL

NAEL0272S03

Except for Auto Light Control Operation

NAEL0272S0301

Parking, license and tail lamps will remain on for a short while after the ignition switch is turned from ON (or ACC) to OFF.

Continuity between terminals 19 and 20, and between terminals 57 and 58 of smart entrance control unit will be disturbed after 5 minutes, then the parking, license and tail lamps will be turned off.

When the lighting switch is turned from OFF to 2ND after parking, license and tail lamps are turned to off by the exterior lamp battery saver control, ground is supplied

- to smart entrance control unit terminals 20 and 58 from lighting switch terminal 11, and then,
- to tail lamp relay terminal 2 from smart entrance control unit terminals 19 and 57.

Then parking, license and tail lamps illuminate again.

Auto light control operation

NAEL0272S0302

While the parking, license and tail lamps are turned ON by “AUTO” operation, the exterior lamp battery saver is activated for 5 minutes when the ignition switch is turned from ON (or ACC) to OFF, and either LH or RH front door switch is opened.

The smart entrance control unit controls exterior lamp battery saver activation as follows:

- When the door switch signal changes from ON to OFF while the exterior lamp battery saver is activated, the operation is discontinued, restarts and lasts for 45 seconds, then the parking, license and tail lamps will be turned off.
- When the door switch signal changes from OFF to ON while the exterior lamp battery saver is activated, the operation is discontinued, restarts and lasts for 45 seconds, then the parking, license and tail lamps will be turned off.

- When the one of four door switch signals changes from OFF to ON while the exterior lamp battery saver is activated, the operation is discontinued, restarts and lasts for 5 minutes seconds, then the parking, license and tail lamps will be turned off.
- When all the door switch ON signals are input while the exterior lamp battery saver is activated, the operation is discontinued, restarts and lasts for 45 seconds, then the parking, license and tail lamps will be turned off.

Exterior lamp battery saver control time can be changed using "WORK SUPPORT" mode in "HEADLAMP".

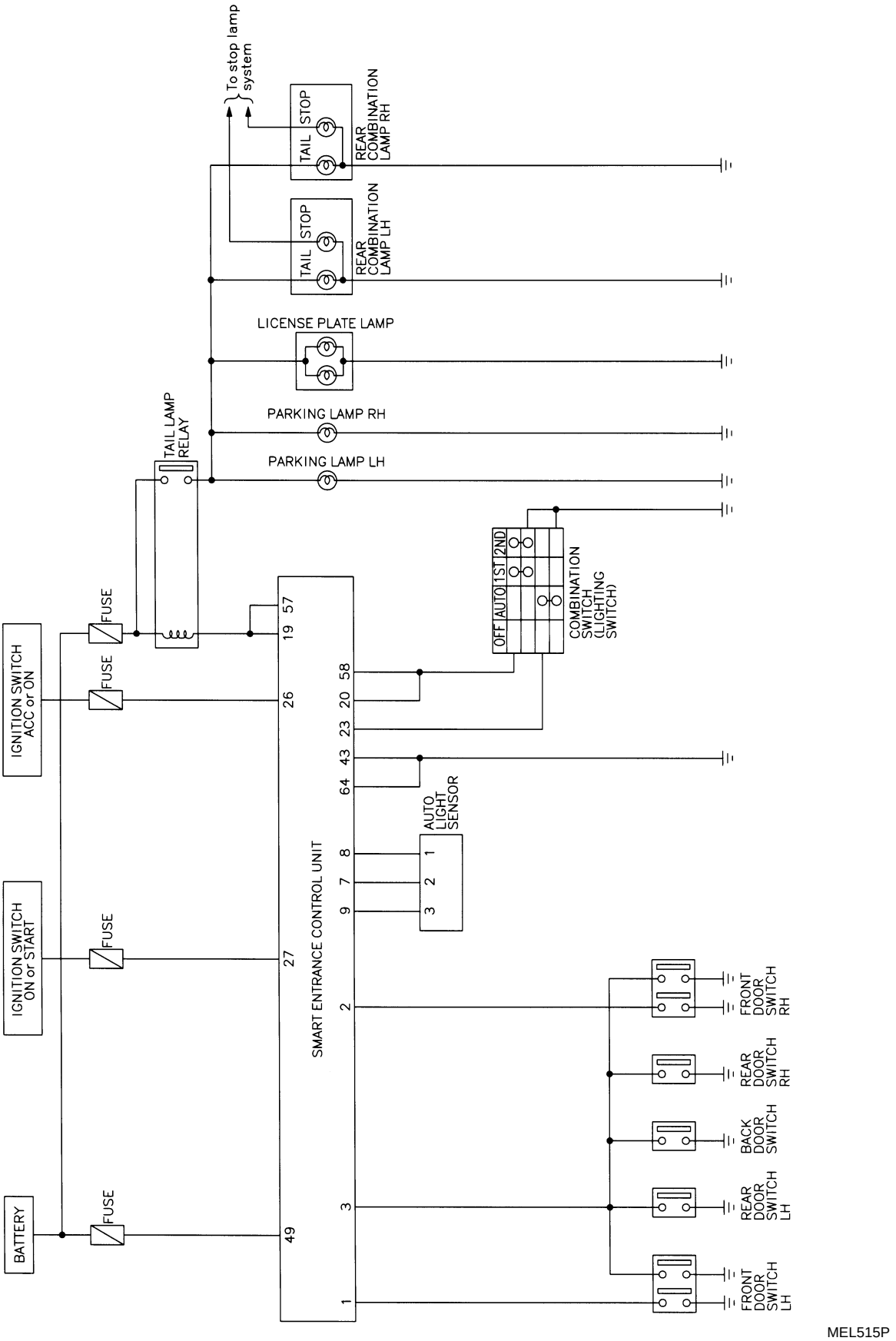
When the lighting switch is turned from OFF to 2ND after parking, license and tail lamps are turned to off by the exterior lamp battery saver control, ground is supplied

- to smart entrance control unit terminals 20 and 58 from lighting switch terminal 11, and then,
- to tail lamp relays terminal 2 from smart entrance control unit terminals 19 and 57.

Then parking, license and tail lamps illuminate again.

Schematic

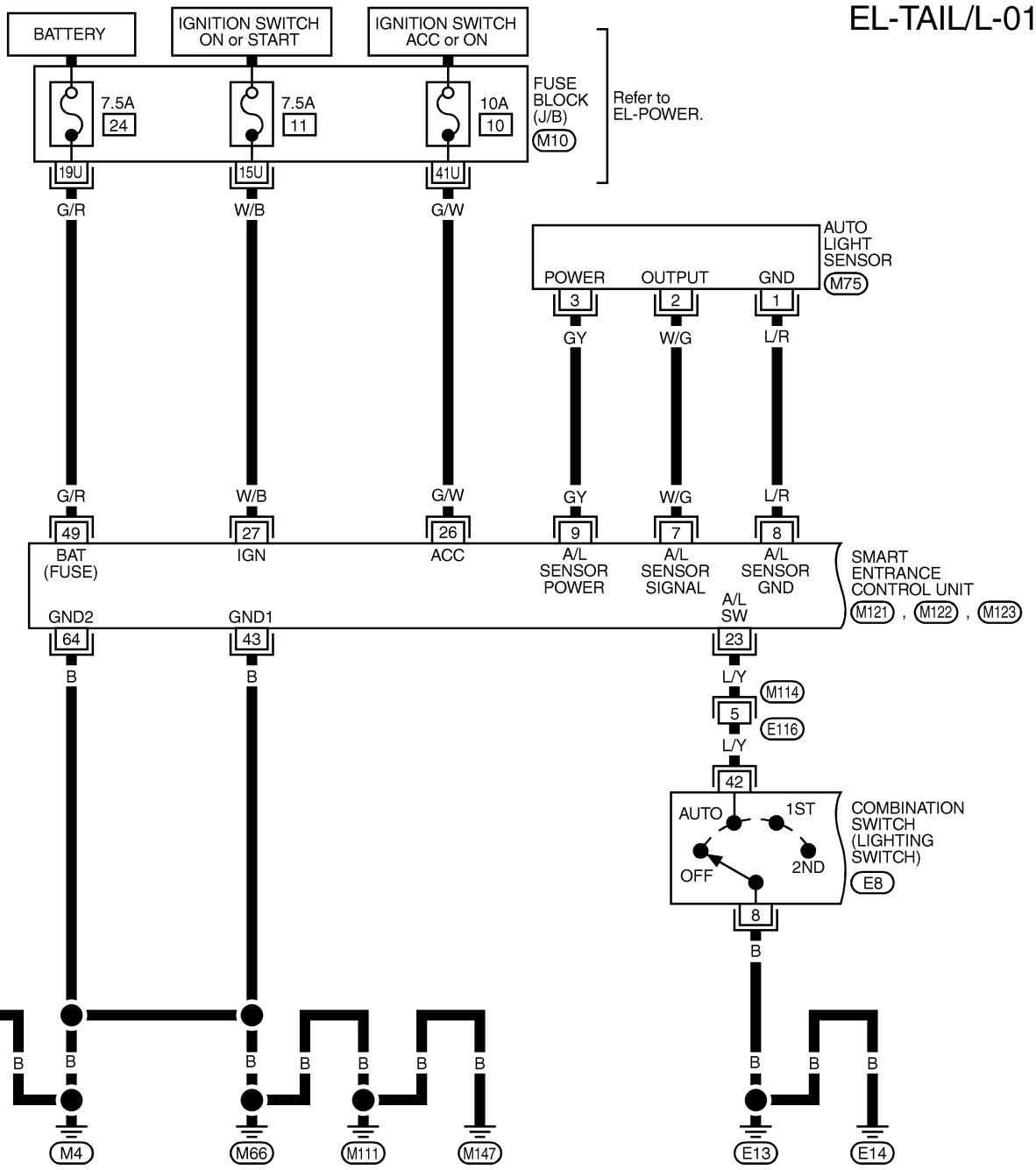
NAEL0273

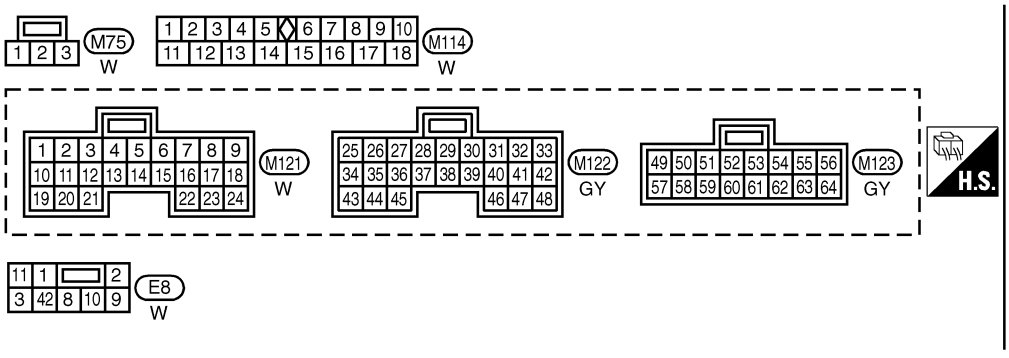


MEL515P

Wiring Diagram — TAIL/L —

NAEL0274



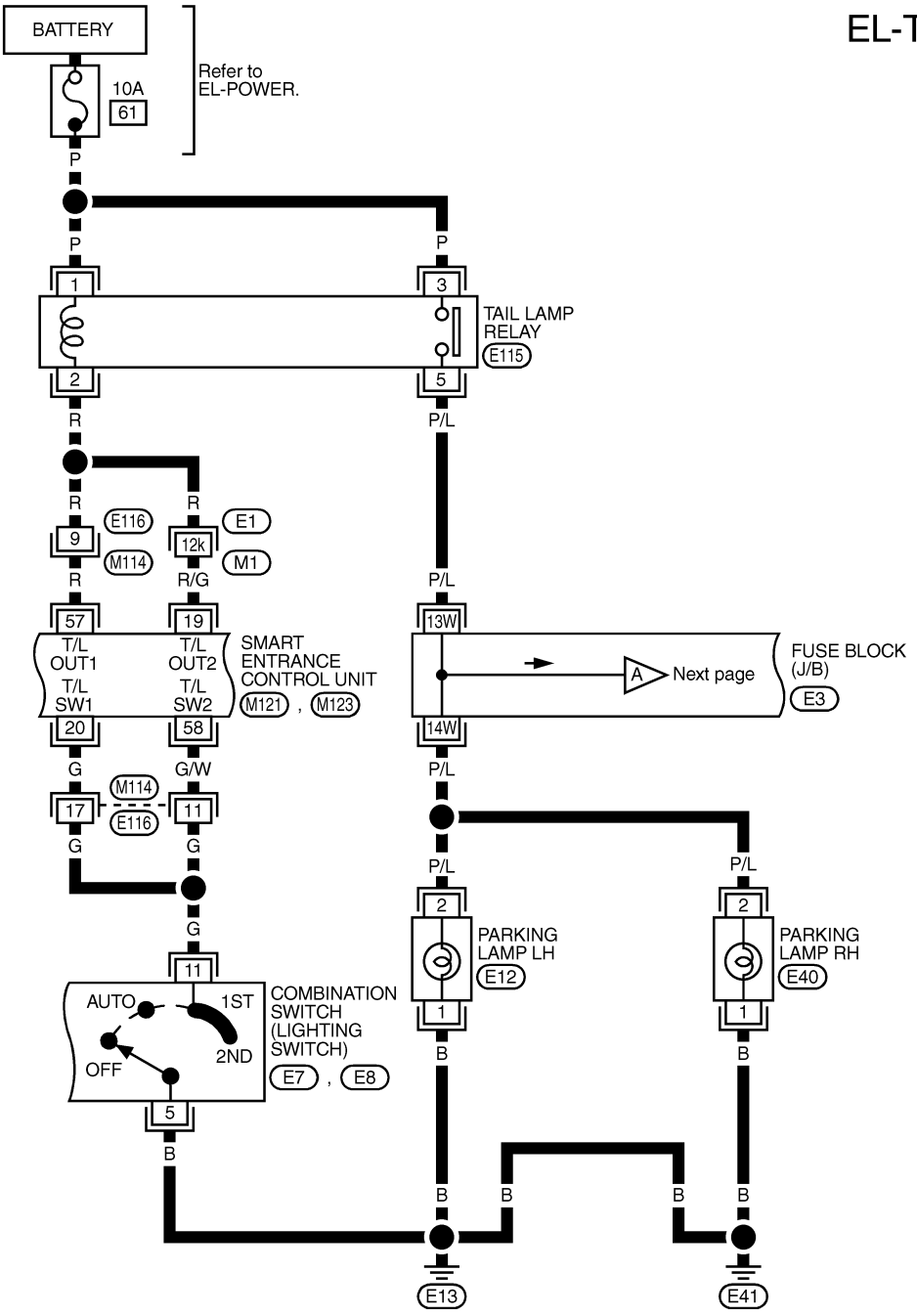


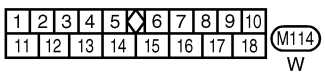
REFER TO THE FOLLOWING.
M10 -FUSE BLOCK-
JUNCTION BOX (J/B)

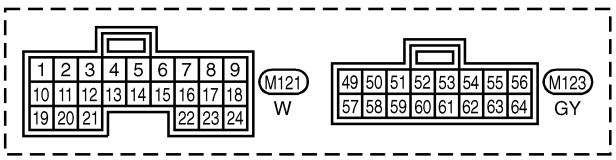
MEL957P

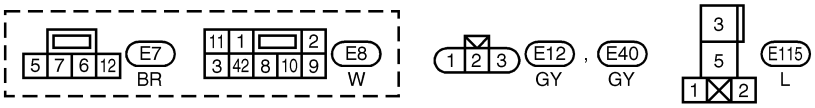
Wiring Diagram — TAIL/L — (Cont'd)

EL-TAIL/L-02







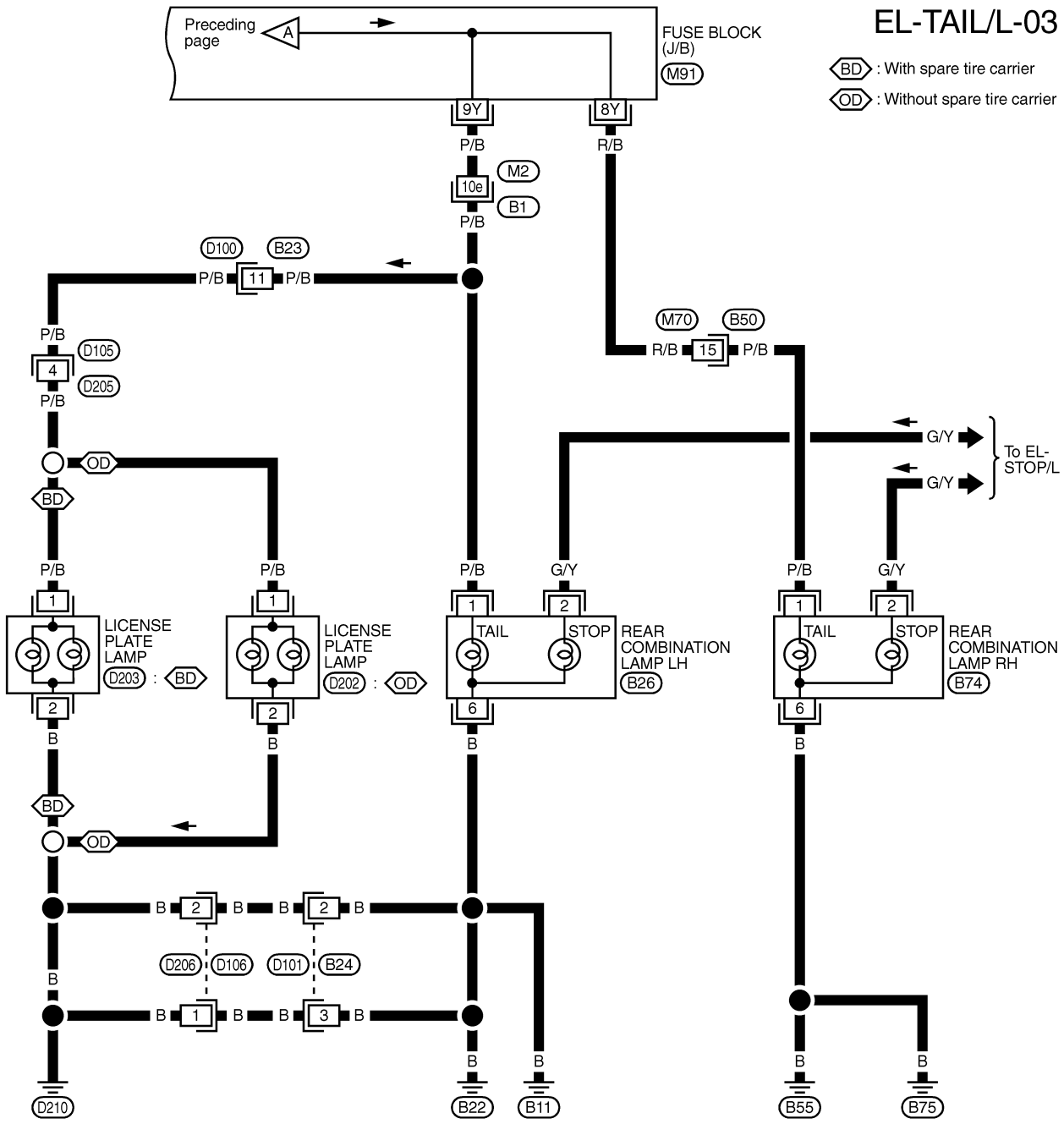


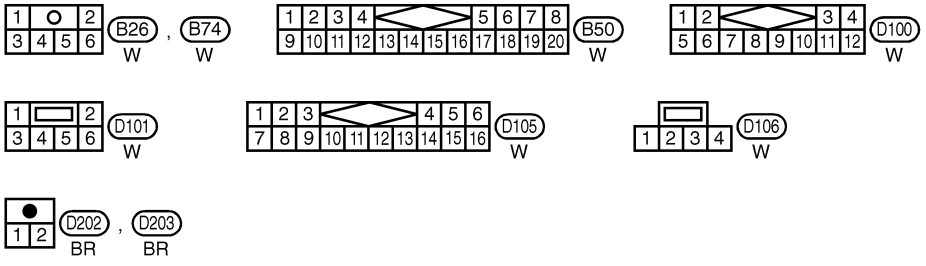
REFER TO THE FOLLOWING.

E1 -SUPER MULTIPLE JUNCTION (SMJ)

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

MEL958P

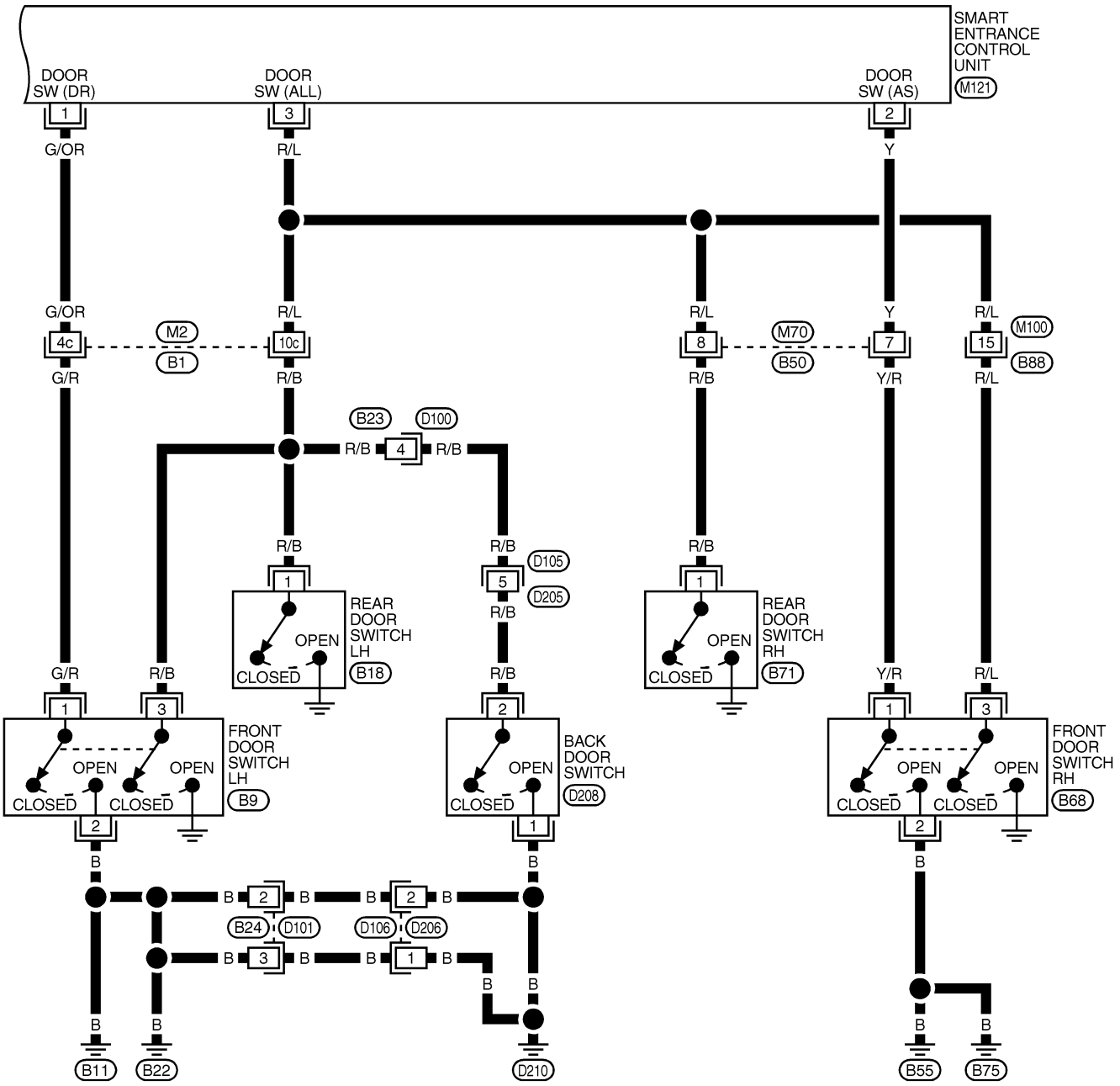


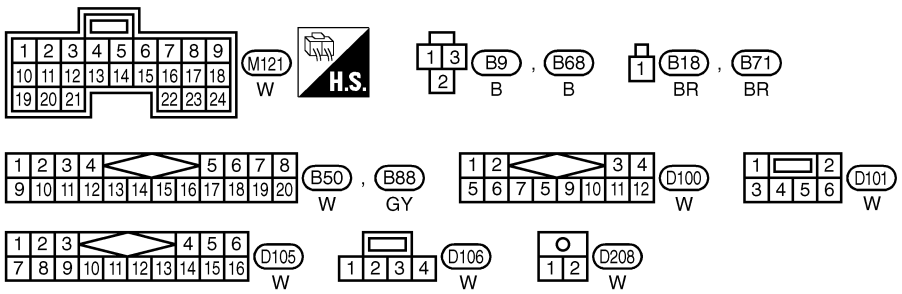


REFER TO THE FOLLOWING.
B1 -SUPER MULTIPLE JUNCTION (SMJ)
M91 -FUSE BLOCK- JUNCTION BOX (J/B)

MEL959P

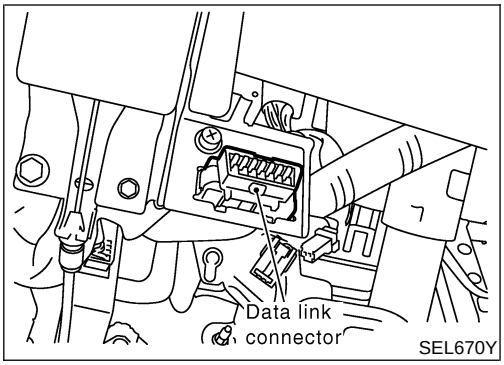
EL-TAIL/L-04





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

MEL960P



SEL670Y

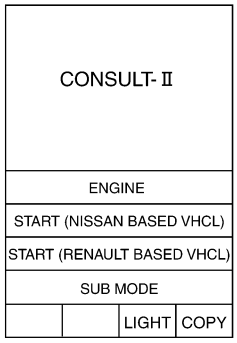
CONSULT-II Inspection Procedure

NAEL0275

“HEADLAMP”

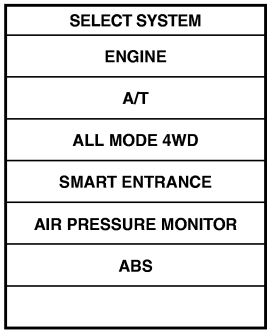
NAEL0275S01

1. Turn ignition switch “OFF”.
2. Connect “CONSULT-II” and “CONSULT-II CONVERTER” to the data link connector.



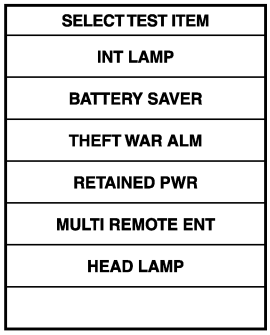
SKIA3098E

3. Turn ignition switch “ON”.
4. Touch “START (NISSAN BASED VHCL)”.



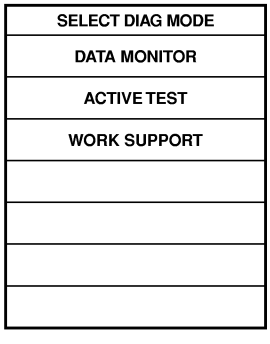
SEL669Y

5. Touch “SMART ENTRANCE”.
   If “SMART ENTRANCE” is not indicated, go to GI-42, “CONSULT-II Data Link Connector (DLC) Circuit”.



SEL751Y

6. Touch “HEADLAMP”.



SEL400Y

7. Select diagnosis mode.
   “DATA MONITOR”, “ACTIVE TEST” and “WORK SUPPORT” are available.

CONSULT-II Application Items

NAEL0454

"HEAD LAMP"

NAEL0454S01

Data Monitor

NAEL0454S0101

Monitored Item	Description
IGN ON SW	Indicates [ON/OFF] condition of ignition switch in ON position.
ACC ON SW	Indicates [ON/OFF] condition of ignition switch in ACC position.
AUTO LIGT SW	Displays status of the lighting switch as judged from the lighting switch signal. (AUTO position: ON/Other than AUTO position: OFF)
AUTO LIGT SENS	Displays "Illumination outside of the vehicle (close to 5V when light/close to 0V when dark)" as judged from the optical sensor signal.
LIGHT SW 1ST	Displays status of the lighting switch as judged from the lighting switch signal. (1ST or 2ND position: ON/Other than 1ST and 2ND position: OFF)
LIGHT SW 2ND	Displays status of the lighting switch as judged from the lighting switch signal. (2ND position: ON/Other than 2ND position: OFF)
DOOR SW-DR	Indicates [ON/OFF] condition of front door switch LH.
DOOR SW-AS	Indicates [ON/OFF] condition of door switch RH.
DOOR SW-RR	Indicates [ON/OFF] condition of rear door switch.

Active Test

NAEL0454S0102

Test Item	Description
TAIL LAMP	Tail lamp relay can be operated by on-off operation of the tail lamp.
HEAD LAMP	Headlamp relay can be operated by on-off operation of the headlamp.
AUTO LIGHT	Night time dimming signal can be operated by on-off operation.

Work Support

NAEL0454S0103

Work Item	Description
AUTO LIGHT SET	Auto light sensitivity can be changed in this mode. Sensitivity can be adjusted in four modes. ● NORMAL/MODE 2 (Sensitive)/MODE 3 (Desensitized)/MODE 4 (Insensitive)
BATTERY SAVER SET	Exterior lamp battery saver control mode can be changed in this mode. Selects exterior lamp battery saver control mode between two modes. ● MODE 1 (ON)/MODE 2 (OFF)
ILL DELAY SET	Auto light delay off timer period can be changed in this mode. Selects auto light delay off timer period among eight modes. ● MODE 1 (45 sec.)/MODE 2 (OFF)/MODE 3 (30 sec.)/MODE 4 (60 sec.)/ MODE 5 (90 sec.)/ MODE 6 (120 sec.)/MODE 7 (150 sec.)/MODE 8 (180 sec.)

Trouble Diagnoses

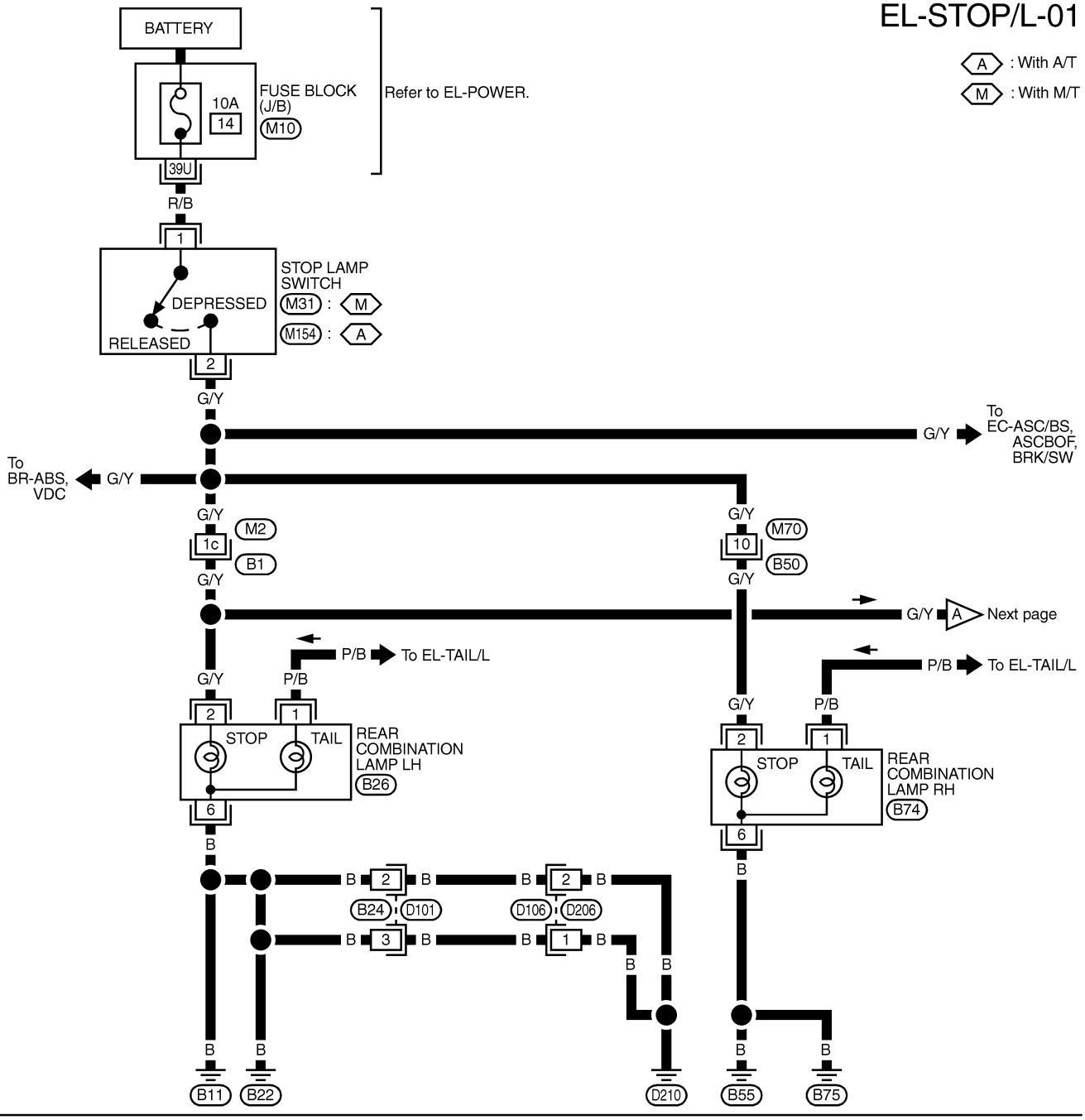
NAEL0277

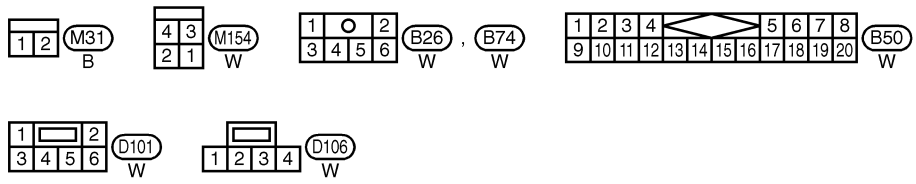
Symptom	Possible cause	Repair order
No lamps operate (including headlamps).	1. 7.5A fuse 2. Lighting switch 3. Smart entrance control unit	1. Check 7.5A fuse [No. 24, lacated in fuse block (J/B)]. Verify battery positive voltage is present at terminal 49 of smart entrance control unit. 2. Check lighting switch. 3. Check smart entrance control unit. (EL-382)

Symptom	Possible cause	Repair order
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. Smart entrance control unit	1. Check 10A fuse (No. 61, located in fusible and fuse block). Verify battery positive voltage is present at terminals 1 and 3 of tail lamp relay. 2. Check tail lamp relay. 3. Check the following. a. Harness between smart entrance control unit terminals 19 and 57 and tail lamp relay terminal 2 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 smart entrance control unit terminals 20 and 58 b. Harness between lighting switch terminal 5 and ground 6. Check smart entrance control unit. (EL-382)
Exterior lamp battery saver control does not operate properly.	1. Driver, passenger or rear door switch circuit 2. Smart entrance control unit	1. Check the following. a. Harness between smart entrance control unit and driver, passenger or rear door switch for open or short circuit b. Driver passenger or rear door switch ground circuit c. Driver, passenger or rear door switch 2. Check smart entrance control unit. (EL-382)
Auto light malfunctioning	—	Refer to trouble diagnosis in "HEADLAMP". (EL-44)

Wiring Diagram — STOP/L —

NAEL0278





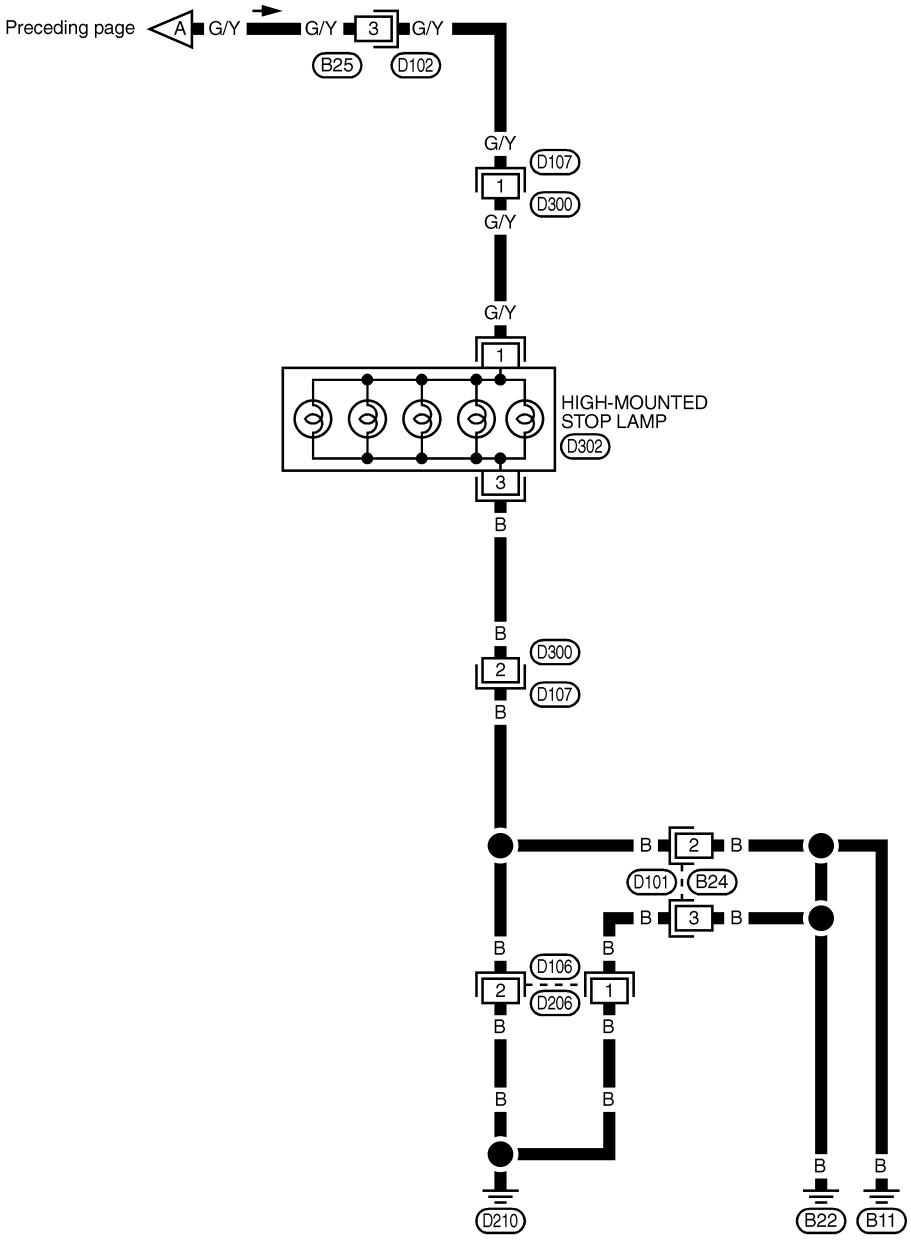
REFER TO THE FOLLOWING.

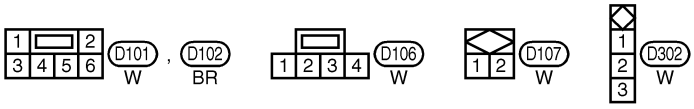
B1 -SUPER MULTIPLE JUNCTION (SMJ)

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

MEL961P

EL-STOP/L-02

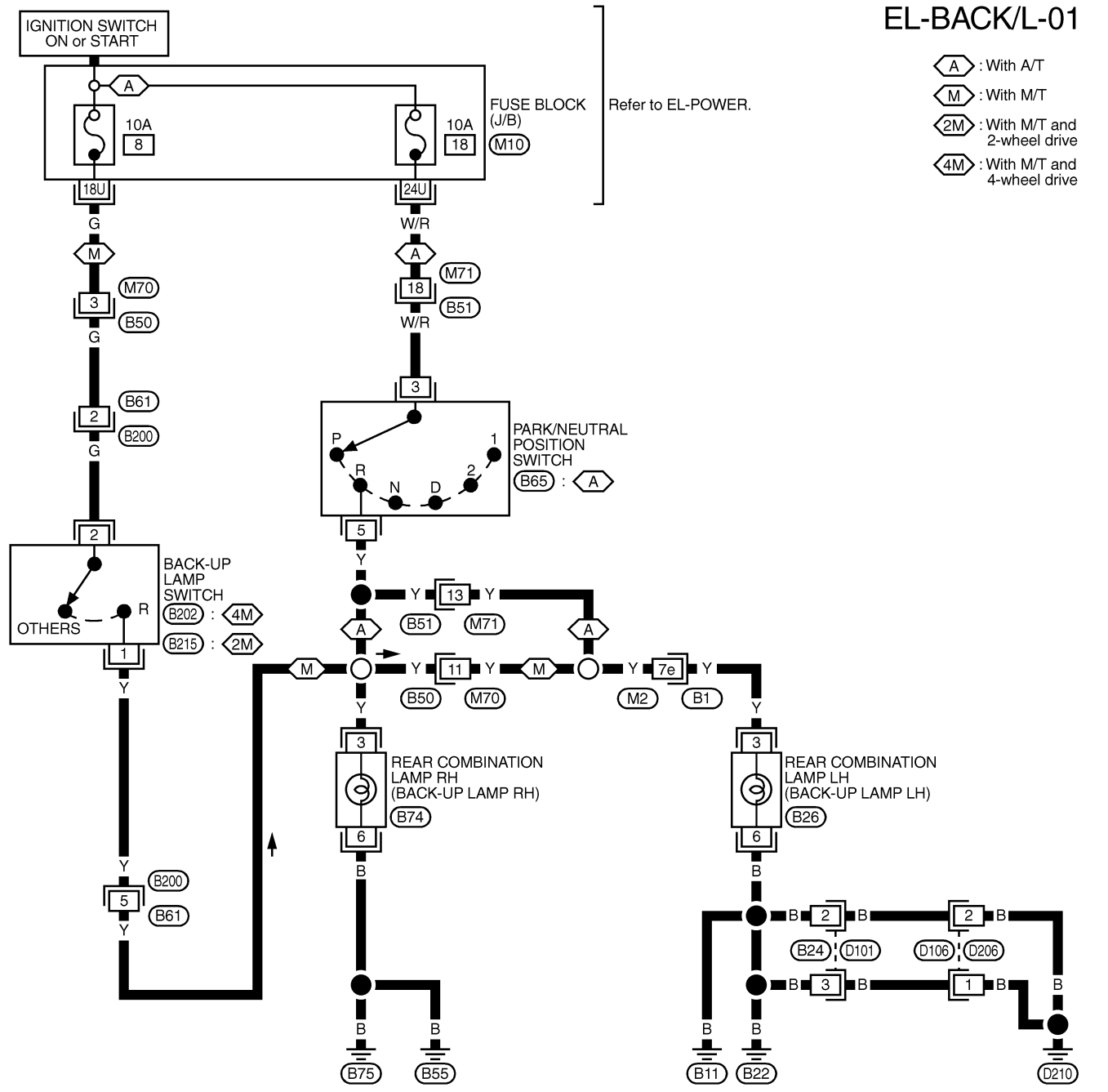


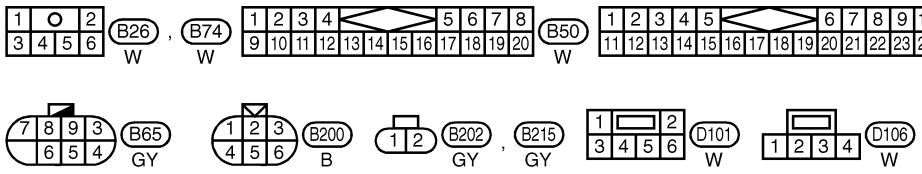


MEL262M

Wiring Diagram — BACK/L —

NAEL0279





REFER TO THE FOLLOWING.

B1 -SUPER MULTIPLE JUNCTION (SMJ)

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

MEL085Q

System Description

NAEL0280

OUTLINE

NAEL0280S01

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 smart entrance control unit terminal 49
- 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 smart entrance control unit terminal 27
- 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 smart entrance control unit terminal 26
- through 10A fuse [No. 10, located in the fuse block (J/B)].

Ground is supplied
- to smart entrance control unit terminals 43 and 64
- through body grounds M4, M66, M111, M147 and M157.

When lighting switch is in 2ND position, ground is supplied
- to headlamp RH relay terminal 2 from smart entrance control unit terminals 21 and 59.
- through smart entrance control unit terminals 22 and 60,
- through lighting switch terminal 12, and
- through body grounds E13 and E41.

Headlamp RH relay is then energized.

FOG LAMP OPERATION

NAEL0280S02

The front fog lamp switch is built into the combination switch. The lighting switch must be in the 2ND position and LOW (“B”) position for front fog lamp operation.
With the front fog lamp switch in the ON position, ground is supplied
- to front fog lamp relay terminal 1
- through the front fog lamp switch, lighting switch and body grounds E13 and E41.

The front fog lamp relay is energized and power is supplied
- from front fog lamp relay terminal 5
- to terminal 1 of each front fog lamp.

Ground is supplied to terminal 2 of each front fog lamp through body grounds E13 and E41.
With power and ground supplied, the front fog lamps illuminate.

EXTERIOR LAMP BATTERY SAVER CONTROL

NAEL0280S03

Front fog lamps will remain on for a short while after the ignition switch is turned from ON (or ACC) to OFF. Continuity between terminals 21 and 22, and between terminals 59 and 60 of smart entrance control unit will be disturbed after 5 minutes, then the front fog lamps will be turned off.
When the lighting switch is turned from OFF to 2ND after front fog lamps are turned off by the battery saver control, ground is supplied
- to smart entrance control unit terminals 20 and 58 from lighting switch terminal 11, and then
- to headlamp RH relay terminal 2 from smart entrance control unit terminal 21 and 59
- through smart entrance control unit terminal 22 and 60 from lighting switch terminal 12.

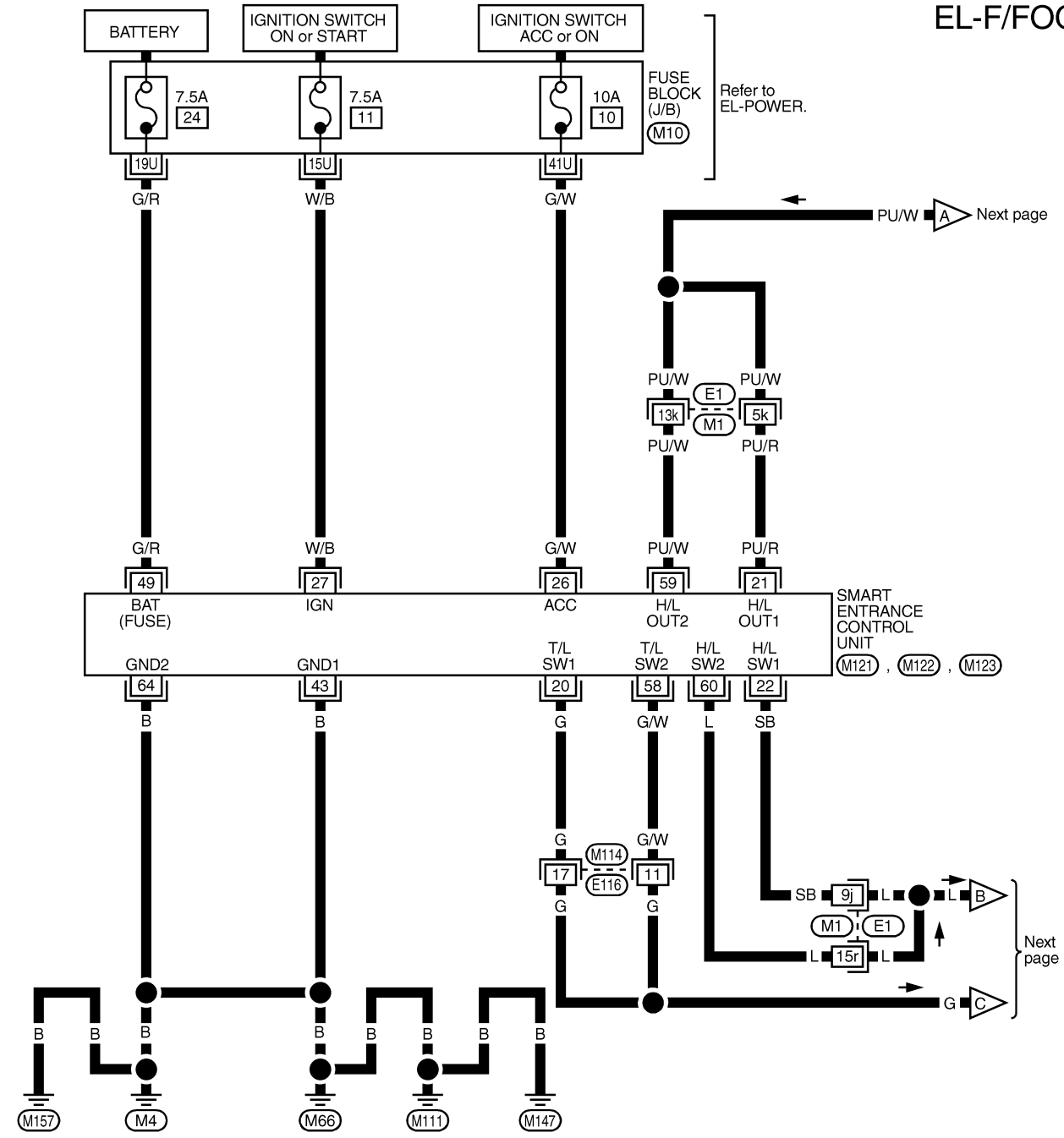
Then the front fog lamps illuminate again.

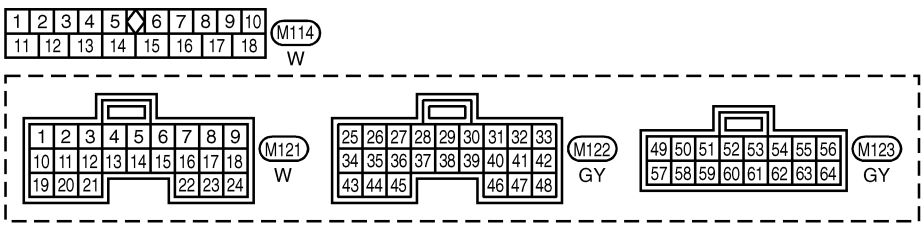
NOTE:
For Trouble Diagnoses for battery saver control, refer to “HEADLAMP (FOR USA)”, EL-44.

Wiring Diagram — F/FOG —

NAEL0281

EL-F/FOG-01

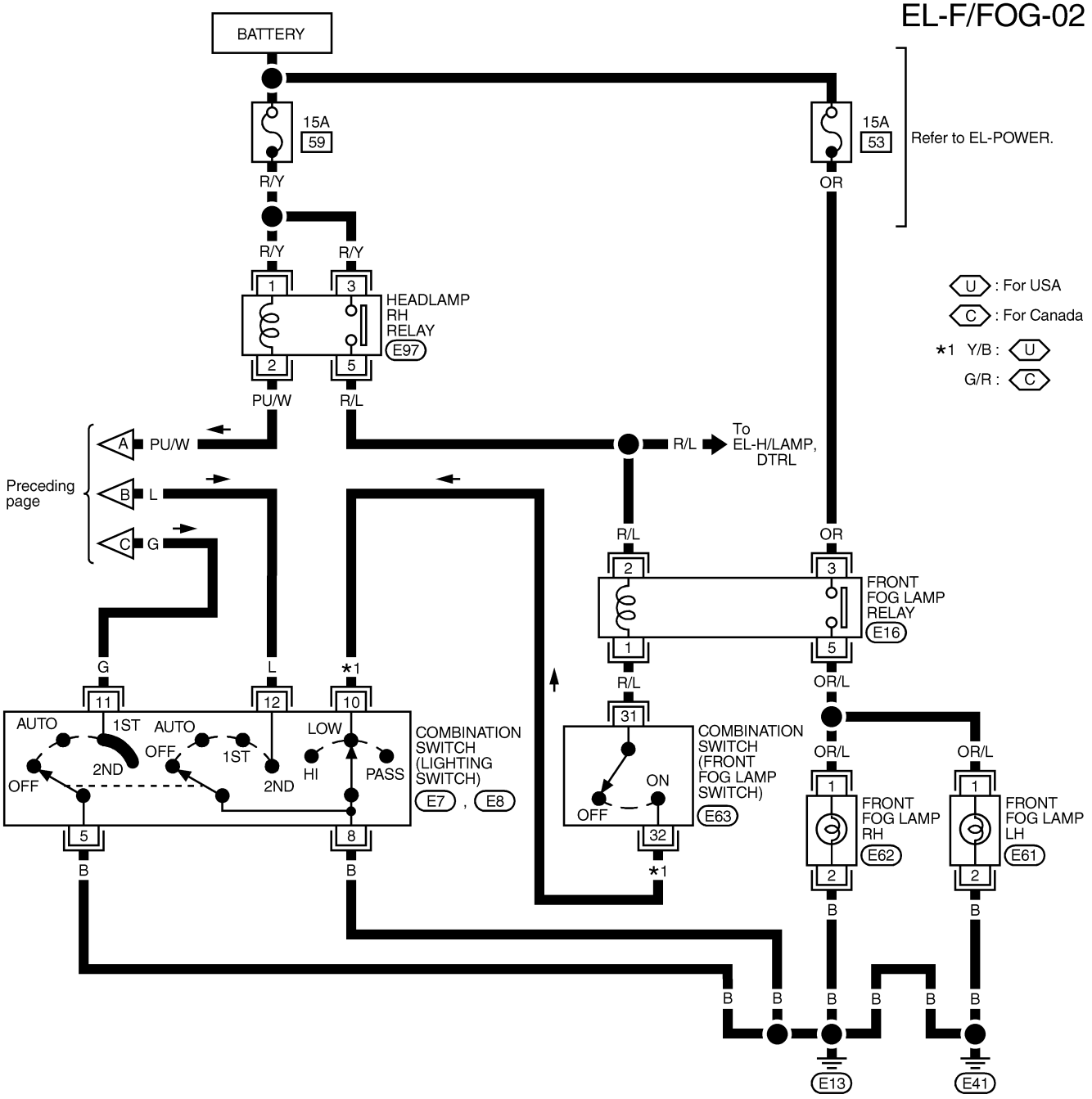


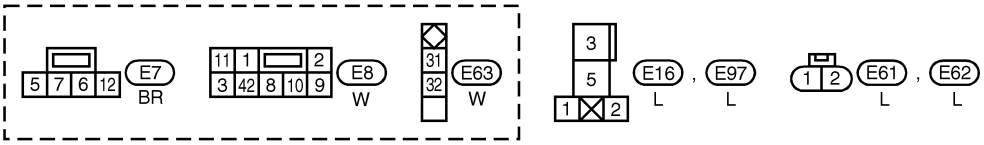


REFER TO THE FOLLOWING.
E1 -SUPER MULTIPLE JUNCTION (SMJ)
M10 -FUSE BLOCK-JUNCTION BOX (J/B)

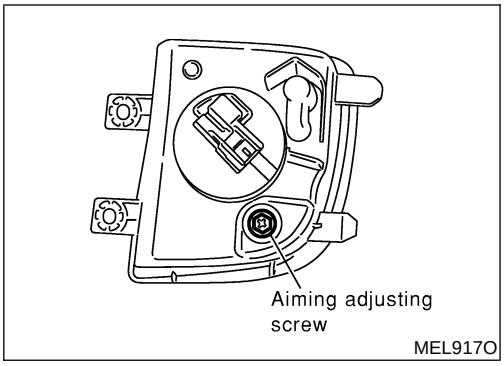
MEL962P

EL-F/FOG-02





MEL963P



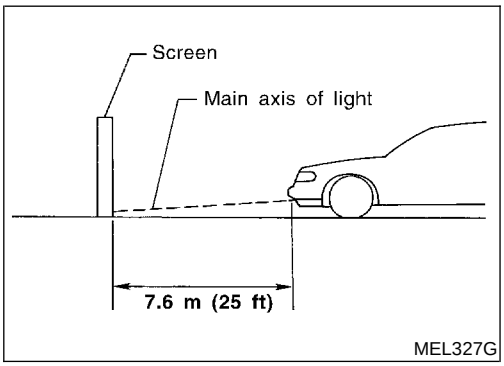
Aiming Adjustment

NAEL0282

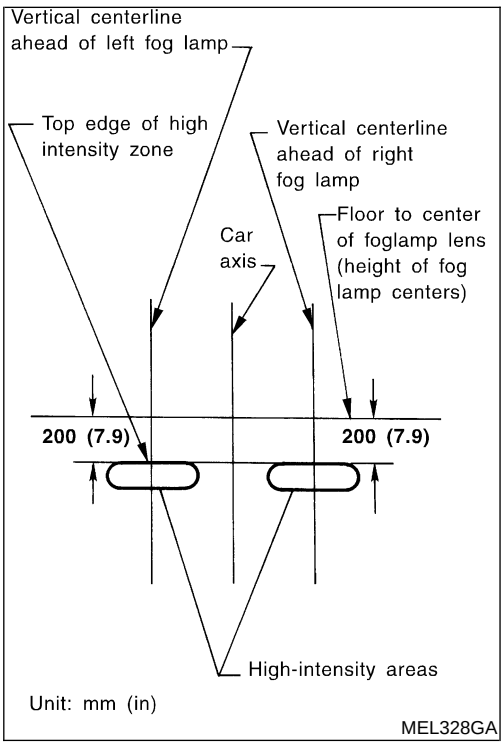
Before performing aiming adjustment, make sure of the following.

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

NAEL0283

TURN SIGNAL OPERATION

NAEL0283S01

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, M111, M147 and M157.

LH Turn

NAEL0283S0101

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
- combination meter terminal 25
- rear combination lamp LH terminal 5.

Ground is supplied to the front 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, M111, M147 and M157.
With power and ground supplied, the combination flasher unit controls the flashing of the LH turn signal lamps.

RH Turn

NAEL0283S0102

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
- combination meter terminal 29
- rear combination lamp RH terminal 5.

Ground is supplied to the front turn signal lamp RH terminal 1 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, M111, M147 and M157.
With power and ground supplied, the combination flasher unit controls the flashing of the RH turn signal lamps.

HAZARD LAMP OPERATION

NAEL0283S02

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, M111, M147 and M157.
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.

Power is supplied 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 1 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, M111, M147 and M157.
With power and ground supplied, the combination flasher unit controls the flashing of the hazard warning lamps.

REMOTE KEYLESS ENTRY SYSTEM OPERATION

NAEL0283S03

Power is supplied at all times

- to smart entrance control unit terminal 49
- through 7.5A fuse [No. 24, located in the fuse block (J/B)].

Ground is supplied

- to smart entrance control unit terminal 43 and 64
- through body ground M4, M66, M111, M147 and M157.

Refer to "REMOTE KEYLESS ENTRY SYSTEM", EL-314.
When smart entrance control unit receives LOCK or UNLOCK signal from keyfob with all doors closed, power is supplied

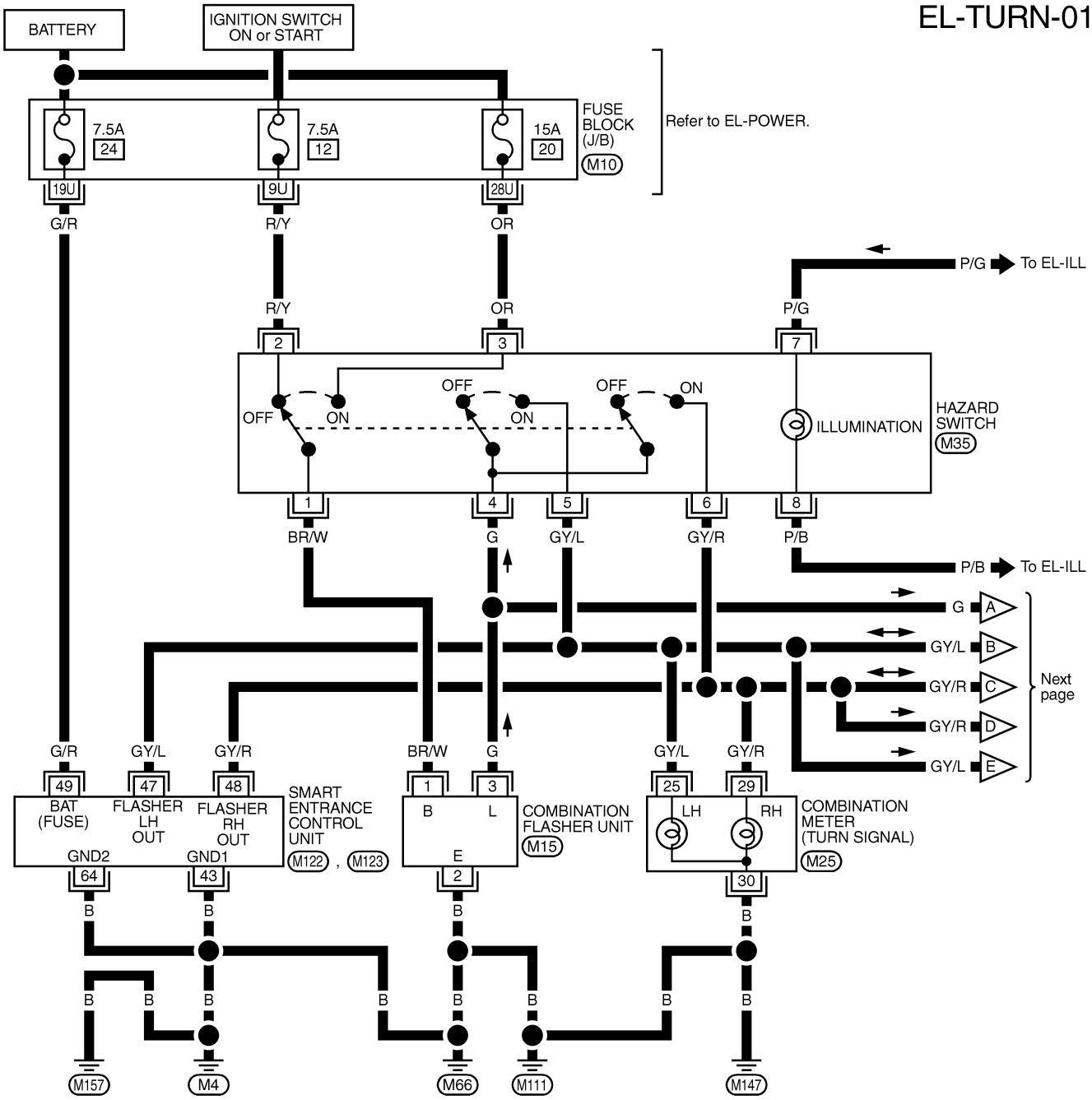
- through terminal 47 of smart entrance control unit
- to front turn signal lamp LH terminal 3
- to combination meter terminal 25
- to rear combination lamp LH terminal 5, and
- through terminal 48 of smart entrance control unit
- to front turn signal lamp RH terminal 3
- to combination meter terminal 29
- to rear combination lamp RH terminal 5.

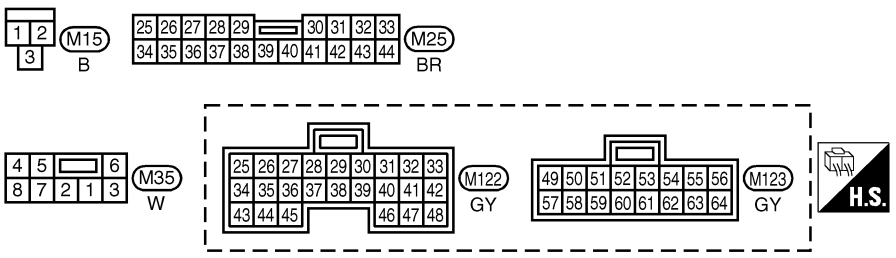
Ground is supplied to terminal 1 of each front turn signal lamp through body grounds E13 and E41.
Ground is supplied to terminal 6 of the rear combination lamp LH through body grounds B11, B22 and D210.
Ground is supplied to terminal 6 of the rear combination lamp RH through body grounds B55 and B75.
Ground is supplied to combination meter terminal 30 through body grounds M4, M66, M111, M147 and M157.
With power and ground supplied, the smart entrance control unit controls the flashing of the hazard warning lamps.

Wiring Diagram — TURN —

NAEL0284

EL-TURN-01

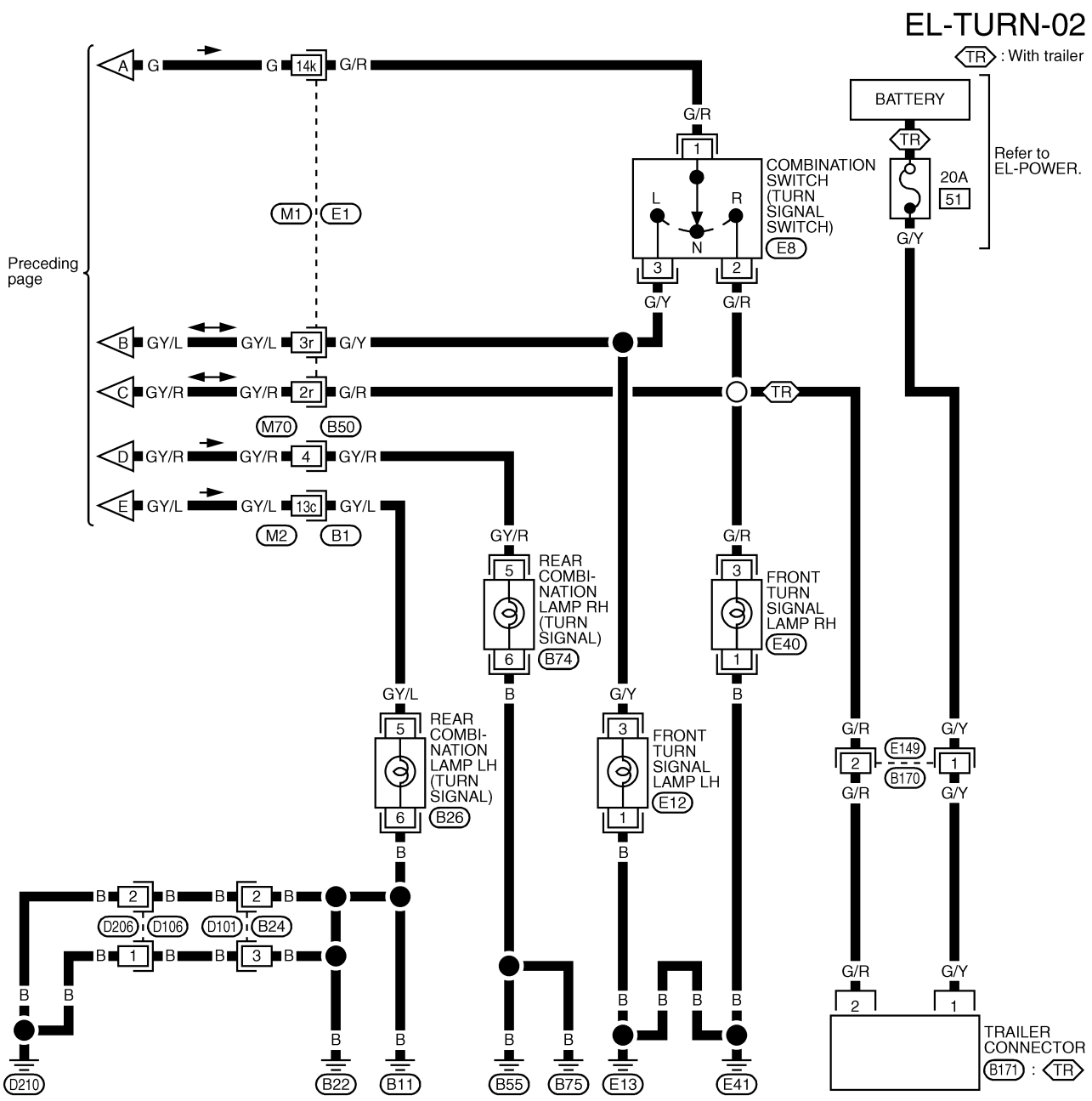


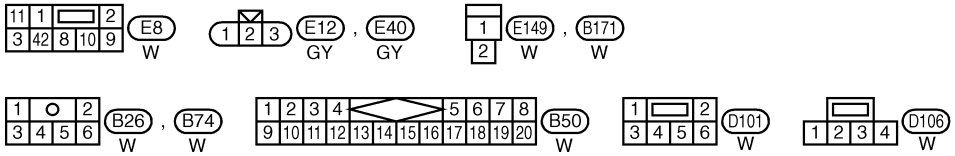


REFER TO THE FOLLOWING.
M10 -FUSE BLOCK-
JUNCTION BOX (J/B)

MEL964P

Wiring Diagram — TURN — (Cont'd)





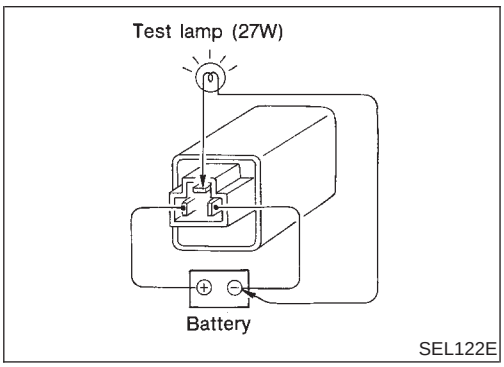
REFER TO THE FOLLOWING.
E1 , B1 -SUPER MULTIPLE JUNCTION (SMJ)

MEL125S

Trouble Diagnoses

NAEL0285

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 lamps 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.	Grounds M4, M66, M111, M147 and M157	Check grounds M4, M66, M111, M147 and M157.
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

NAEL0286

COMBINATION FLASHER UNIT CHECK

NAEL0286S01

- 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

NAEL0287

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

- to tail lamp relay terminals 1 and 3
- through 10A fuse (No. 61, located in the fuse and fusible link box), and
- to smart entrance control unit terminal 49
- 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 smart entrance control unit terminal 27
- through 7.5A fuse [No. 11, located in the fuse block (J/B)].

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

- to smart entrance control unit terminal 26
- through 10A fuse [No. 10, located in the fuse block (J/B)].

Ground is supplied

- to smart entrance control unit terminals 43 and 64
- through body grounds M4, M66, M111, M147 and M157.

LIGHTING OPERATION BY LIGHTING SWITCH

NAEL0287S01

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

- to tail lamp relay terminal 2 from smart entrance control unit terminals 19 and 57
- through smart entrance control unit terminals 20 and 58, and
- through lighting switch and 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.
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 ground for all of the components except for grove box lamp, ashtray and compass and thermometer are controlled through terminals 2 and 3 of the illumination control switch and body grounds M4, M66, M111, M145 and M157.

LIGHTING OPERATION BY AUTO LIGHT CONTROL SYSTEM

NAEL0287S02

When auto light operation is operated, ground is supplied

- to tail lamp relay terminal 2 from smart entrance control unit terminals 19 and 57
- through smart entrance control unit terminals 43 and 64, and
- to body grounds M4, M66, M111, M147 and M157.

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
4WD shift switch	M141	7	8
Ashtray (without woody instrument finisher)	B76	1	2
Ashtray (with woody instrument finisher)	M155		
A/T device	B59	3	4
Cigarette lighter	M57	3	4
Audio unit	M48	8	7
Compass and thermometer	R4	5	2
Hazard switch	M35	7	8

Component	Connector No.	Power terminal	Ground terminal
Rear window defogger switch	M36	5	6
CD player	M92, M93	3	5
A/C switch illumination	M45	2	1
A/C auto amp.	M102	24	25
Clock	M40	3	4
Globe box lamp	M30	1	2
Combination meter (with normal meter)	M26	64	65
Combination meter (with fine vision meter)	M26	64	49
VDC off switch	M151	4	5

The ground for all of the components except for compass and thermometer, glove box lamp and ashtray are controlled through terminals 2 and 3 of the illumination control switch and body grounds M4, M66, M111, M147 and M157.

EXTERIOR LAMP BATTERY SAVER CONTROL

NAEL0287S03

Except for Auto Light Control Operation

NAEL0287S0301

Illumination lamps will remain on for a short while after the ignition switch is turned from ON (or ACC) to OFF. Continuity between terminals 19 and 20, and between terminals 57 and 58 of smart entrance control unit will be disturbed after 5 minutes, then the illumination lamp will be turned off.
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 smart entrance control unit terminals 20 and 58 from lighting switch terminal 11, and
- to tail lamp relay terminal 2 from smart entrance control unit terminals 19 and 57.

Then illumination lamps illuminate again.

Auto light control operation

NAEL0287S0302

While the illumination lamps are turned ON by "AUTO" operation, the exterior lamp battery saver is activated for 5 minutes when the ignition switch is turned from ON (or ACC) to OFF, and either LH or RH front door switch is opened.
The smart entrance control unit controls exterior lamp battery saver activation as follows:

- When the door switch signal changes from ON to OFF while the exterior lamp battery saver is activated, the operation is discontinued, restarts and lasts for 45 seconds, then the illumination lamps will be turned off.
- When the door switch signal changes from OFF to ON while the exterior lamp battery saver is activated, the operation is discontinued, restarts and lasts for 45 seconds, then the illumination lamps will be turned off.
- When the one of four door switch signals changes from OFF to ON while the exterior lamp battery saver is activated, the operation is discontinued, restarts and lasts for 5 minutes seconds, then the illumination lamps will be turned off.
- When all the door switch ON signals are input while the exterior lamp battery saver is activated, the operation is discontinued, restarts and lasts for 45 seconds, then the illumination lamps will be turned off.

Exterior lamp battery saver control time can be changed using "WORK SUPPORT" mode in "HEADLAMP".
When the lighting switch is turned from OFF to 2ND after illumination lamps are turned to off by the exterior lamp battery saver control, ground is supplied

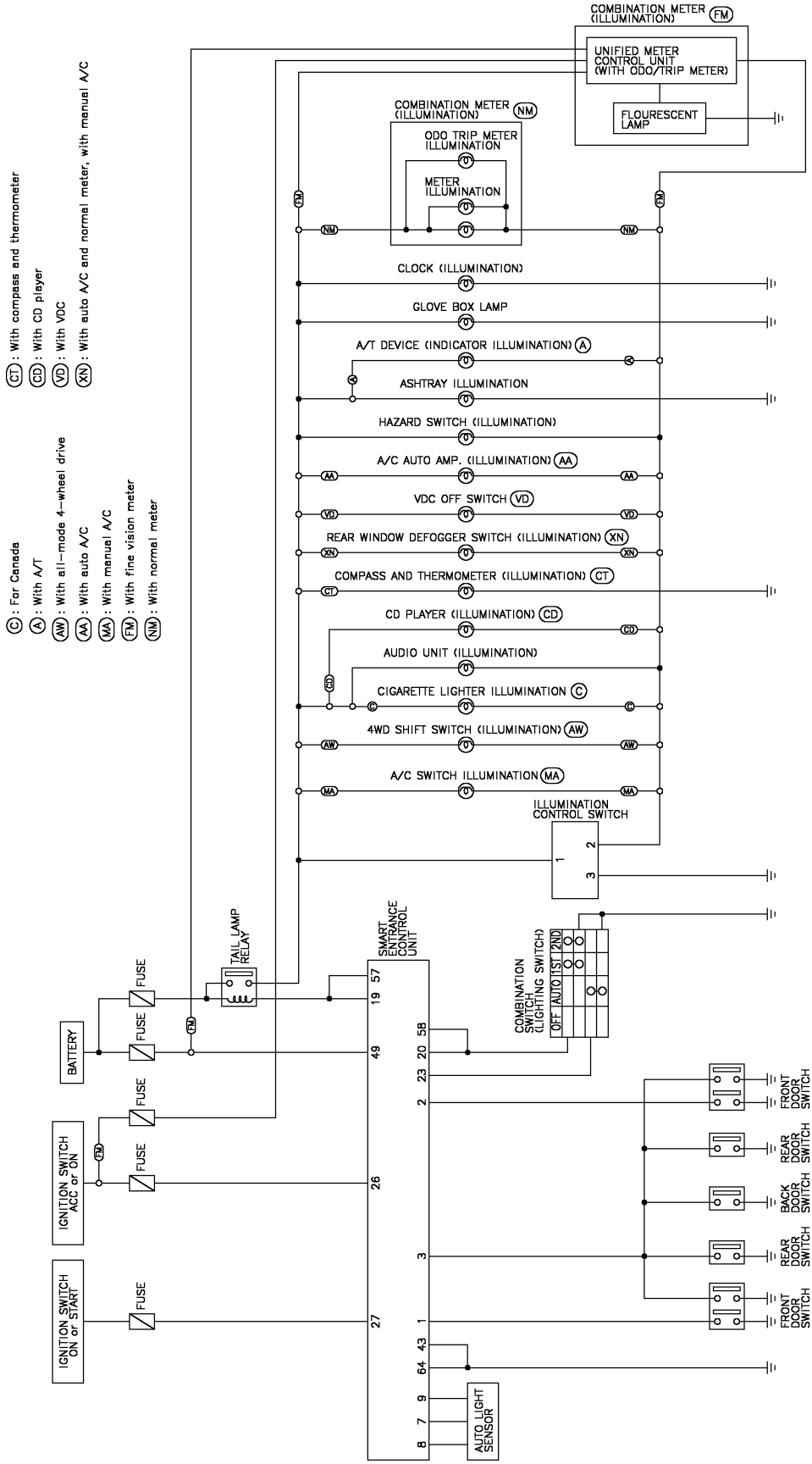
- to smart entrance control unit terminals 20 and 58 from lighting switch terminal 11, and then,
- to tail lamp relays terminal 2 from smart entrance control unit terminals 19 and 57.

Then illumination lamps illuminate again.

NOTE:
For Trouble Diagnoses for battery saver control, refer to "PARKING, LICENSE AND TAIL LAMPS" (EL-74).

Schematic

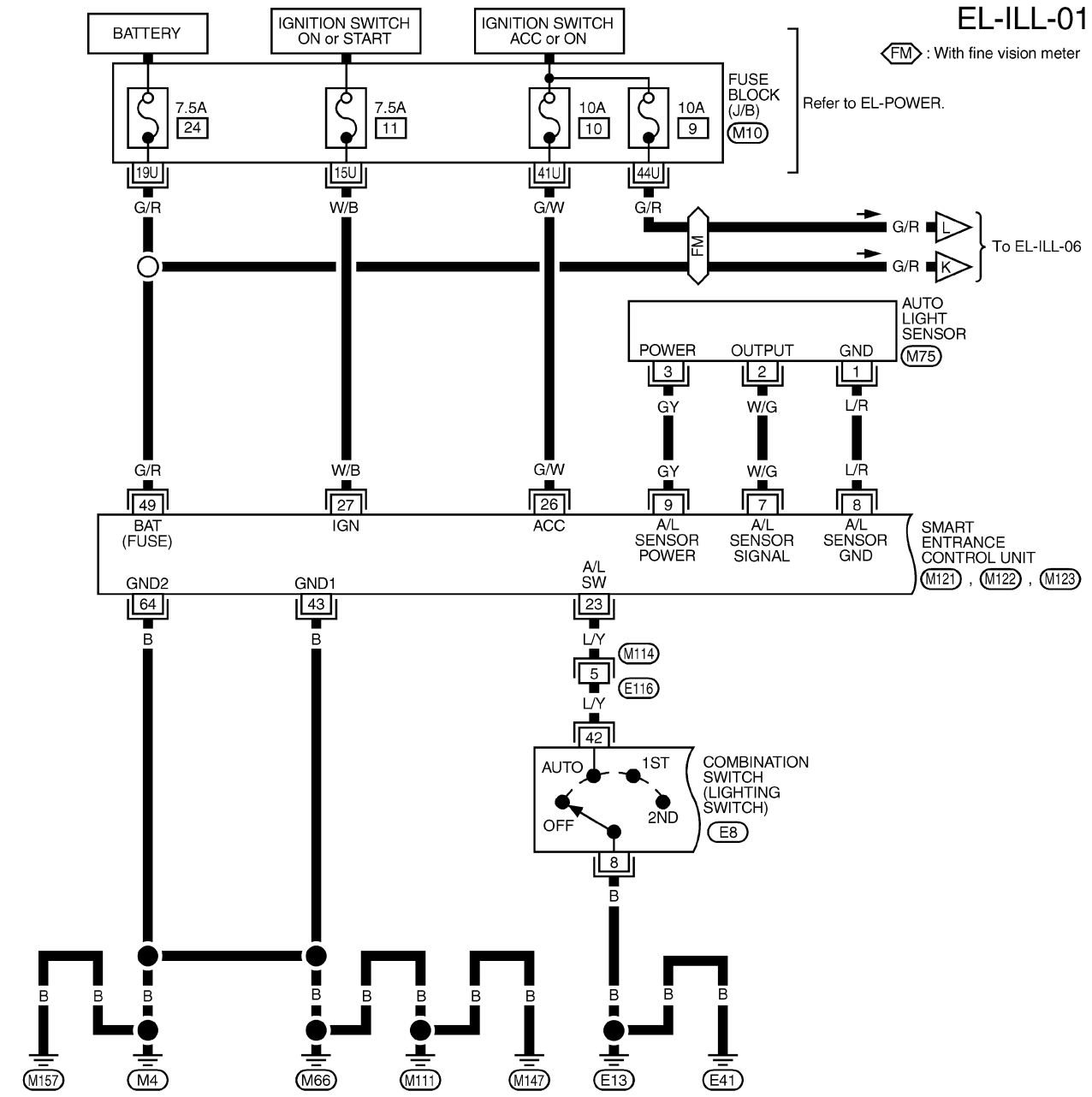
NAEL0288

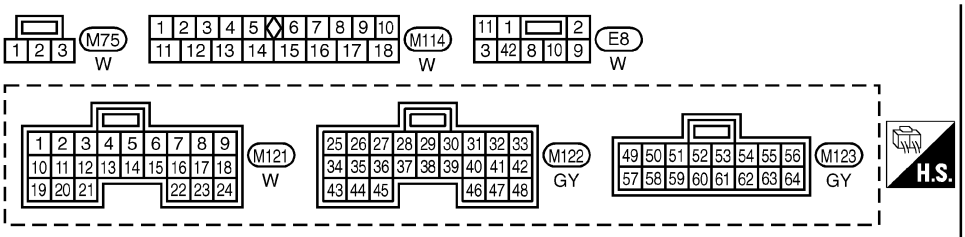


MEL933R

Wiring Diagram — ILL —

NAEL0289

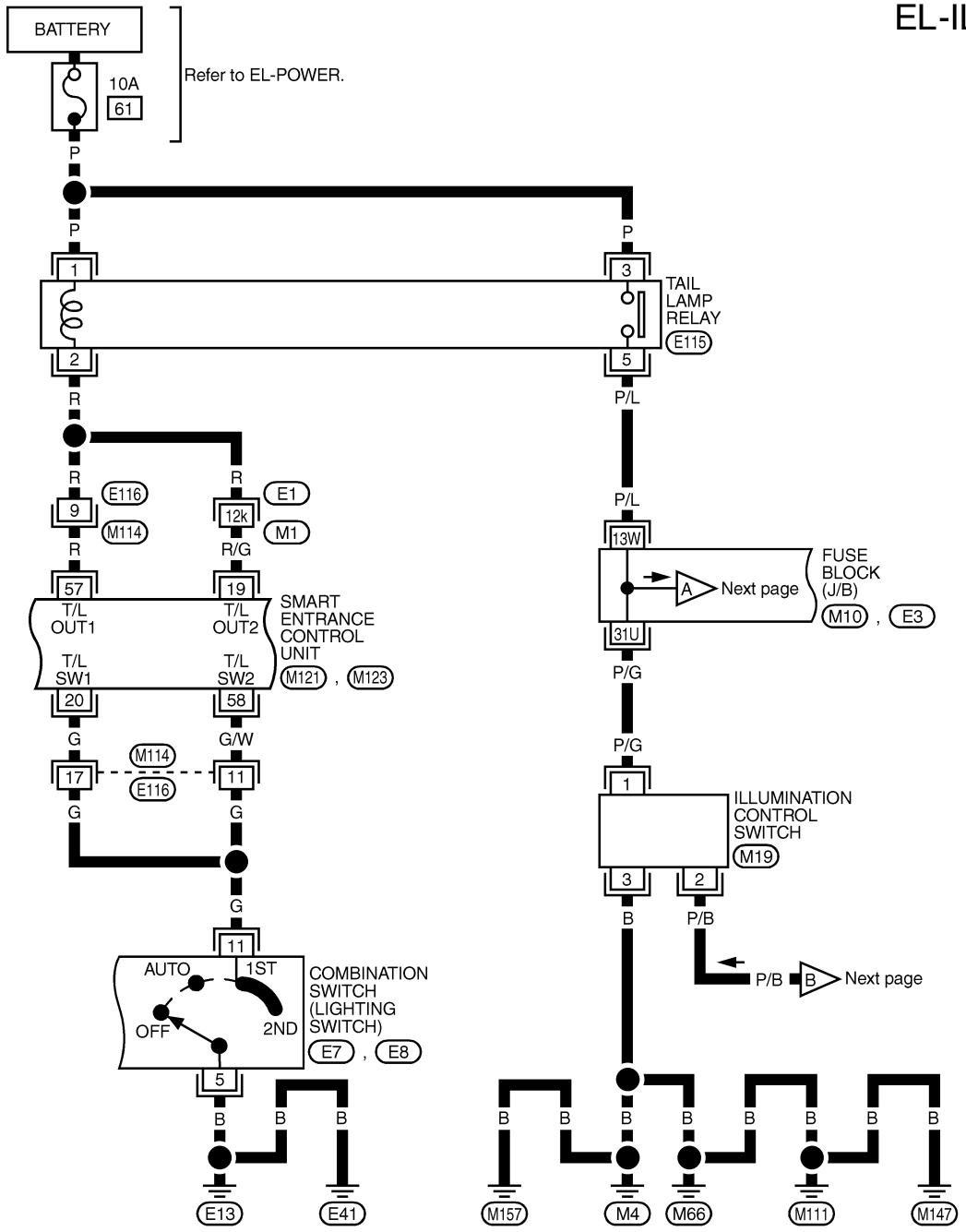


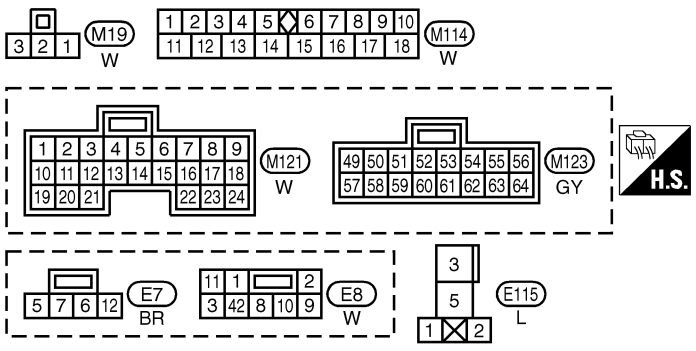


REFER TO THE FOLLOWING.
M10 -FUSE BLOCK-
JUNCTION BOX (J/B)

MEL934R

EL-ILL-02

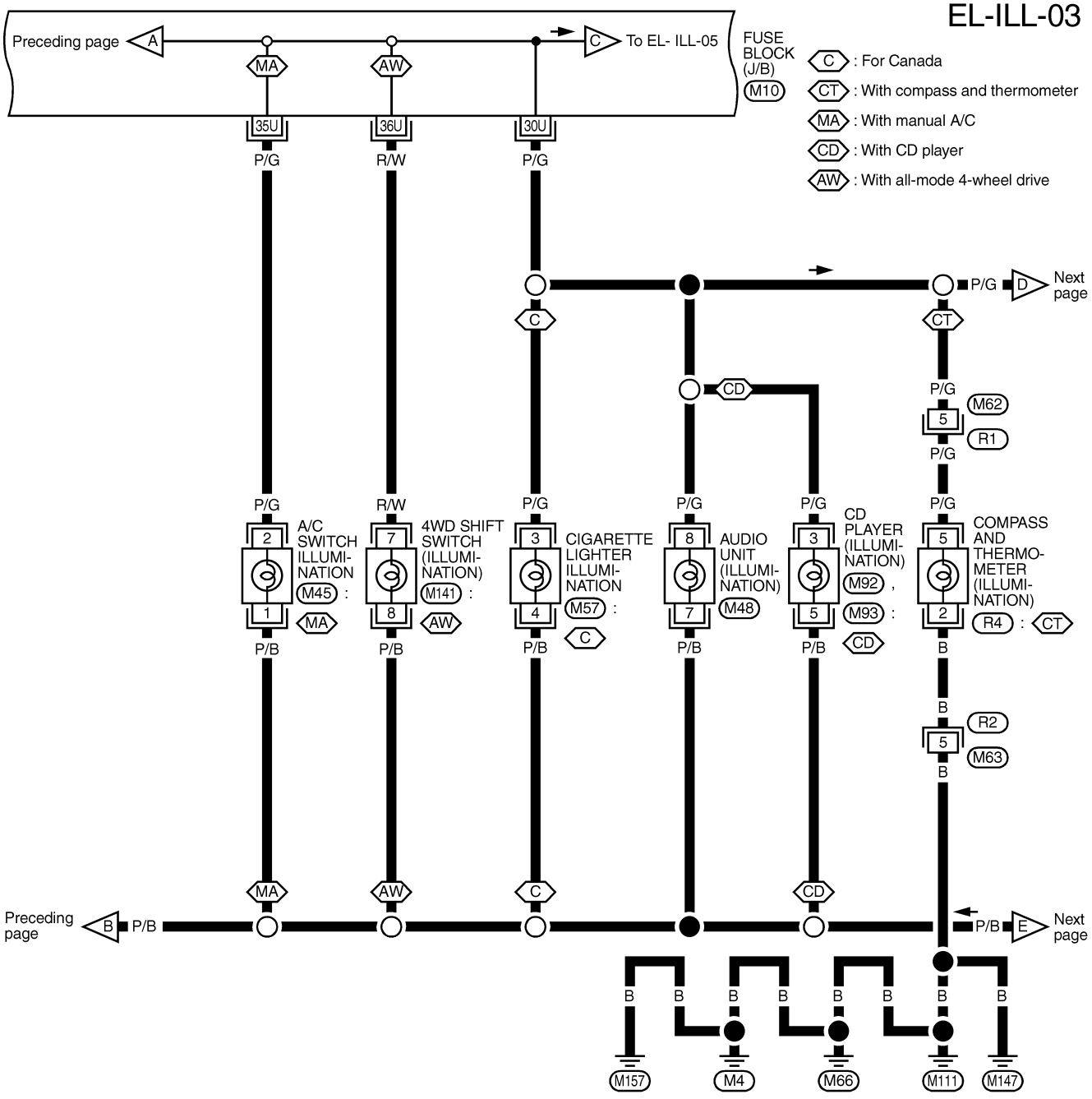


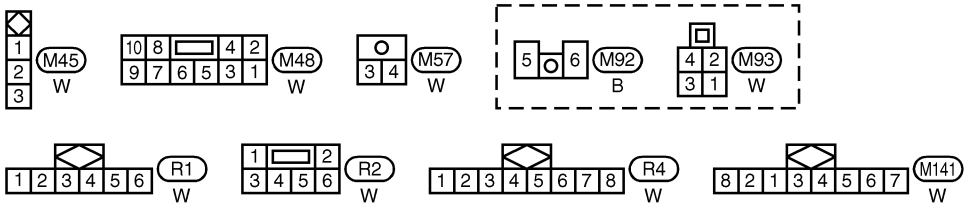


REFER TO THE FOLLOWING.
E1 -SUPER MULTIPLE JUNCTION (SMJ)
M10 , E3 -FUSE BLOCK-JUNCTION BOX (J/B)

MEL968P

EL-ILL-03

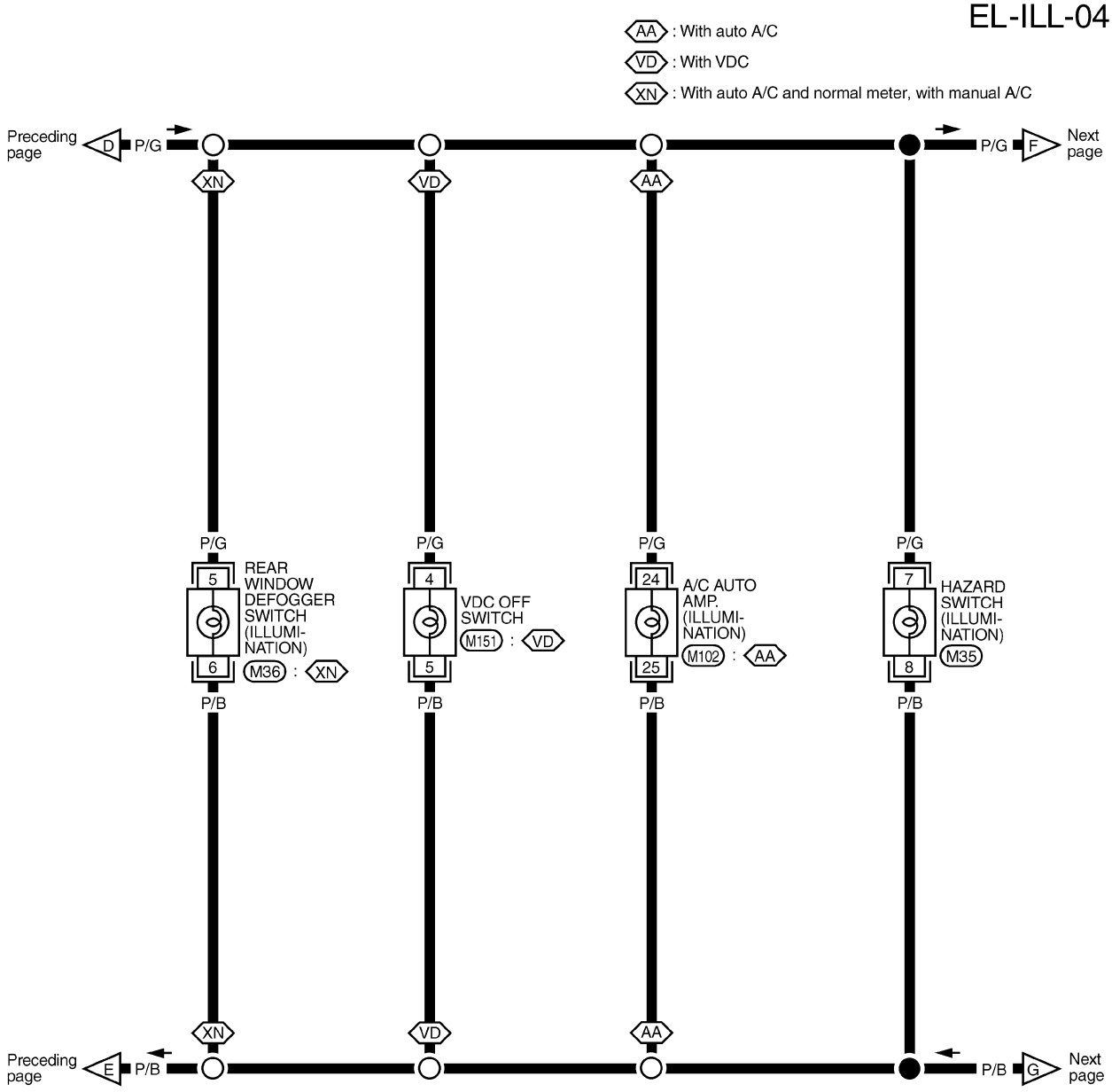


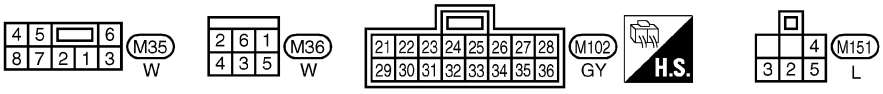


REFER TO THE FOLLOWING.
M10 -FUSE BLOCK-
JUNCTION BOX (J/B)

MEL969P

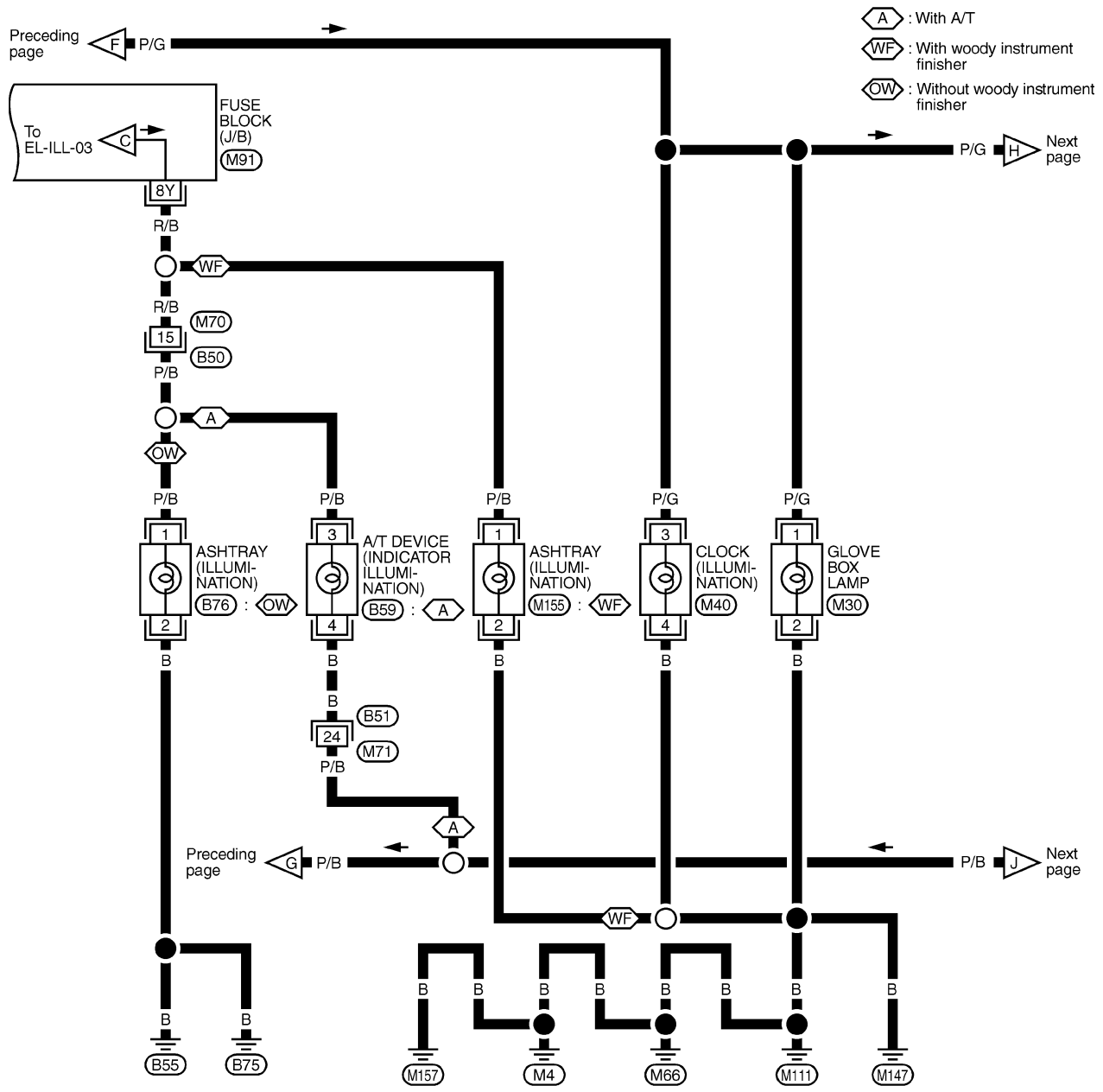
EL-ILL-04

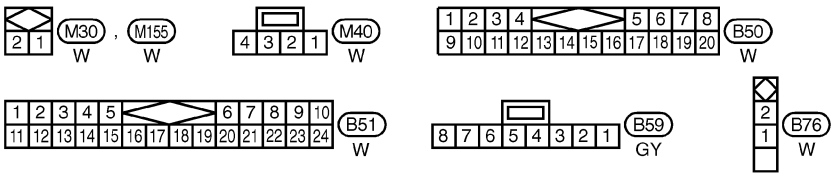




MEL935R

EL-ILL-05

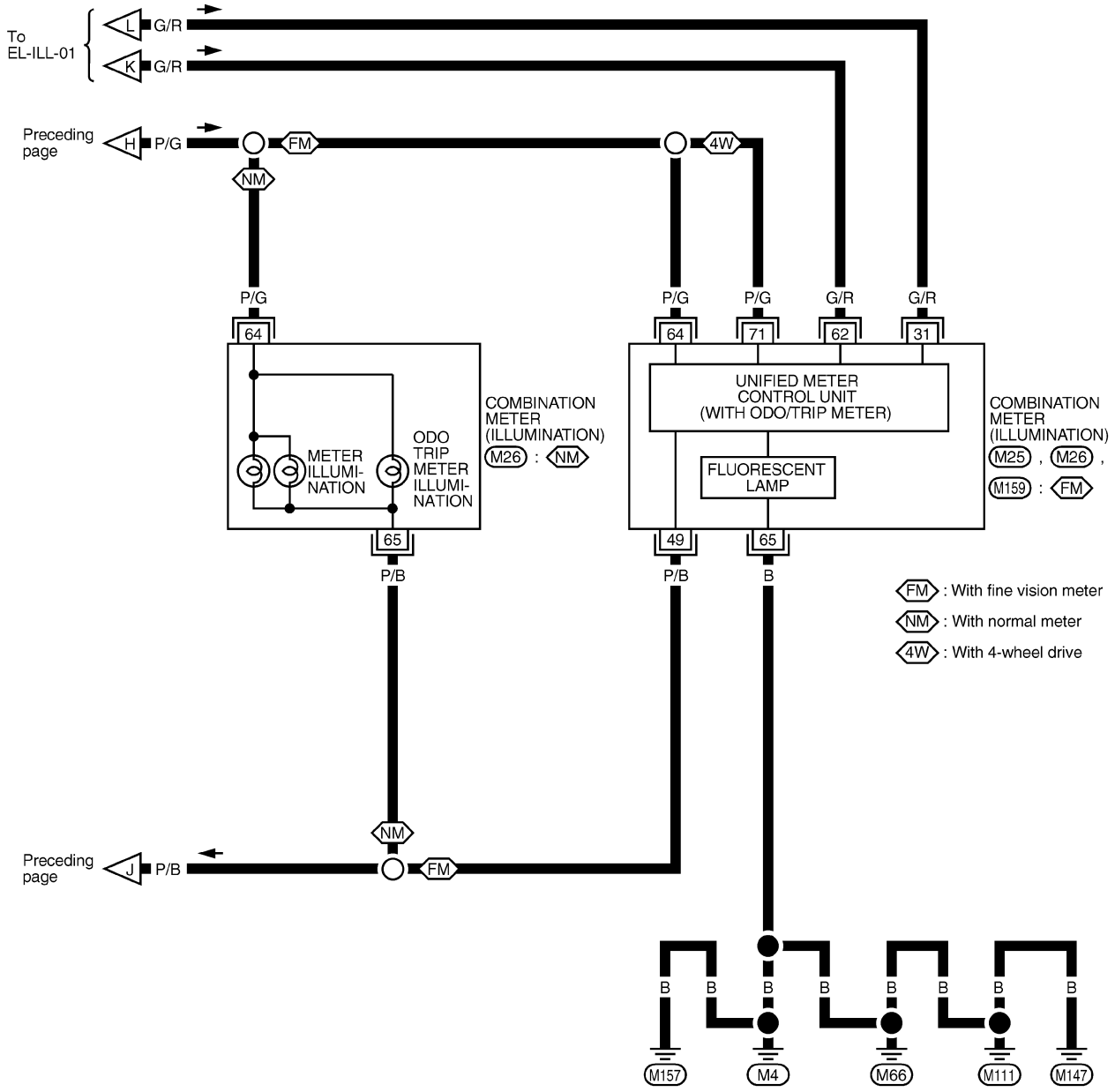


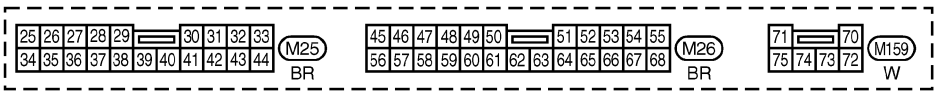


REFER TO THE FOLLOWING.
M91 -FUSE BLOCK-JUNCTION BOX (J/B)

MEL936R

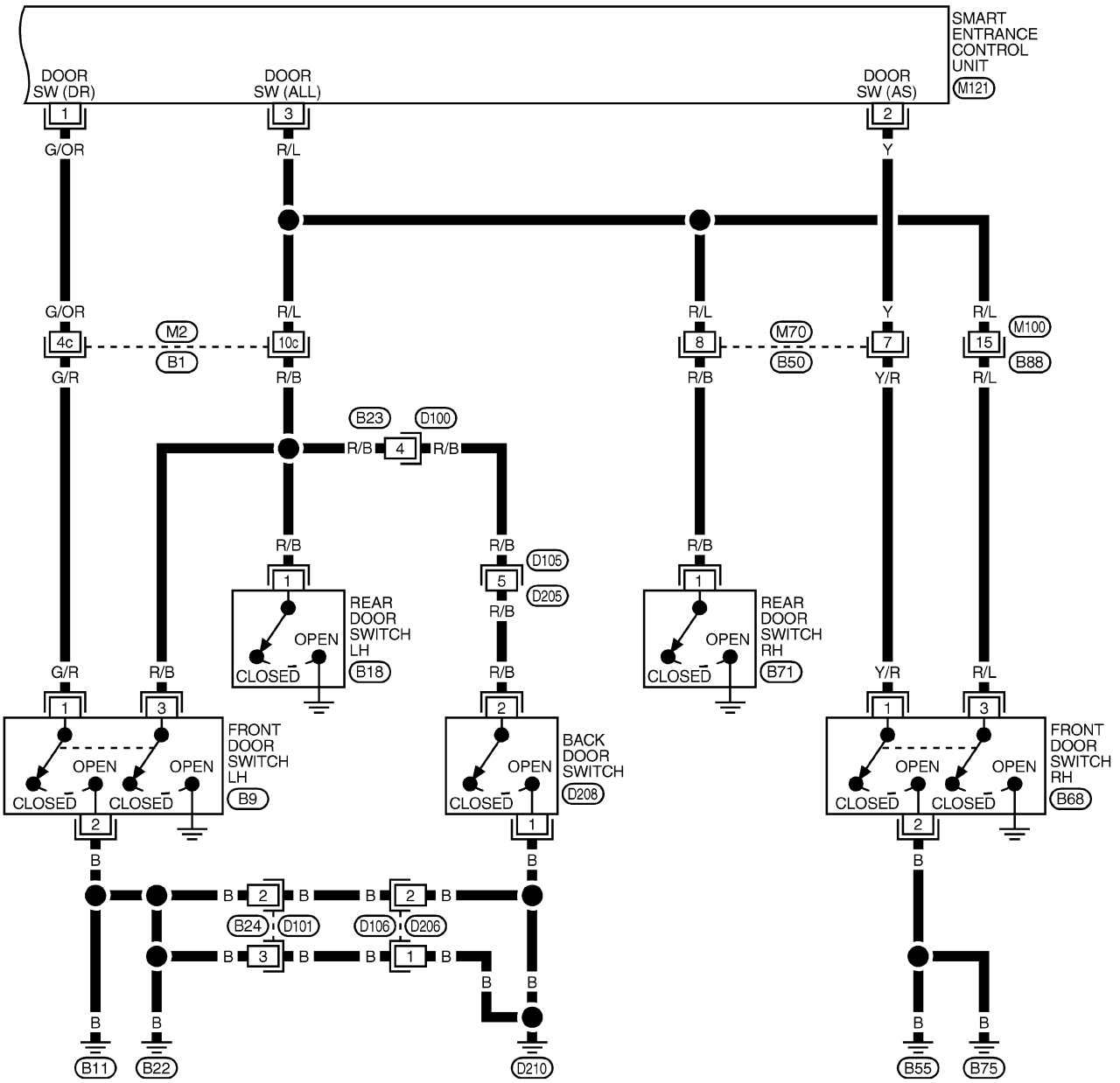
EL-ILL-06

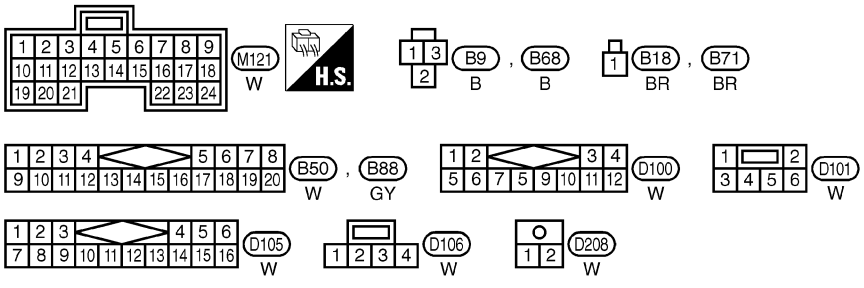




MEL937R

EL-ILL-07





REFER TO THE FOLLOWING.

B1 -SUPER MULTIPLE JUNCTION (SMJ)

MEL938R

System Description

NAEL0290

POWER SUPPLY AND GROUND

NAEL0290S01

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 49.

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

- through key switch terminal 1
- to smart entrance control unit terminal 25.

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 27.

Ground is supplied:

- to smart entrance control unit terminals 43 and 64
- through body grounds M4, M66, M111, M147 and M157.

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 1.

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

- through body grounds terminals B55 and B75
- to front door switch (RH) terminal 2
- from front door switch (RH) terminal 1
- to smart entrance control unit terminal 2.

When any other door (except front door) is opened, ground is supplied to smart entrance control unit terminal 3 in the same manner as the front door switch.
When the front LH door is unlocked by front door key cylinder switch, ground is supplied

- through body grounds M4, M66, M111, M147 and M157
- to front door key cylinder switch terminal 2
- through front key cylinder switch terminal 1
- to power window main switch terminal 6.

Power window main switch terminal 14 send unlock signal to smart entrance control unit terminal 33 with serial link communication line.
When back door is unlocked by back door key cylinder switch, ground is supplied

- through body grounds B11, B22 and D210
- to back door key cylinder switch terminal 4
- from back door key cylinder terminal 2
- to smart entrance control unit terminal 10.

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

- through smart entrance control unit terminal 31
- to interior lamp terminal 2.

With power and ground supplied, the interior lamp illuminates.

SWITCH OPERATION

NAEL0290S02

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 50.

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

- through body grounds M4, M66, M111, M147 and M157
- to spot lamp terminal 2.

And power is supplied:

- to spot lamp terminal 1
- from smart entrance control unit terminal 50.

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

- through body grounds M4, M66, M111 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 50.

With power and ground supplied, interior lamps turn ON.

INTERIOR LAMP TIMER OPERATION

NAEL0290S03

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

The timer is canceled when:

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

When driver's door is locked, interior room lamp timer is canceled as described before.

ON-OFF CONTROL

NAEL0290S04

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

INTERIOR LAMP BATTERY SAVER

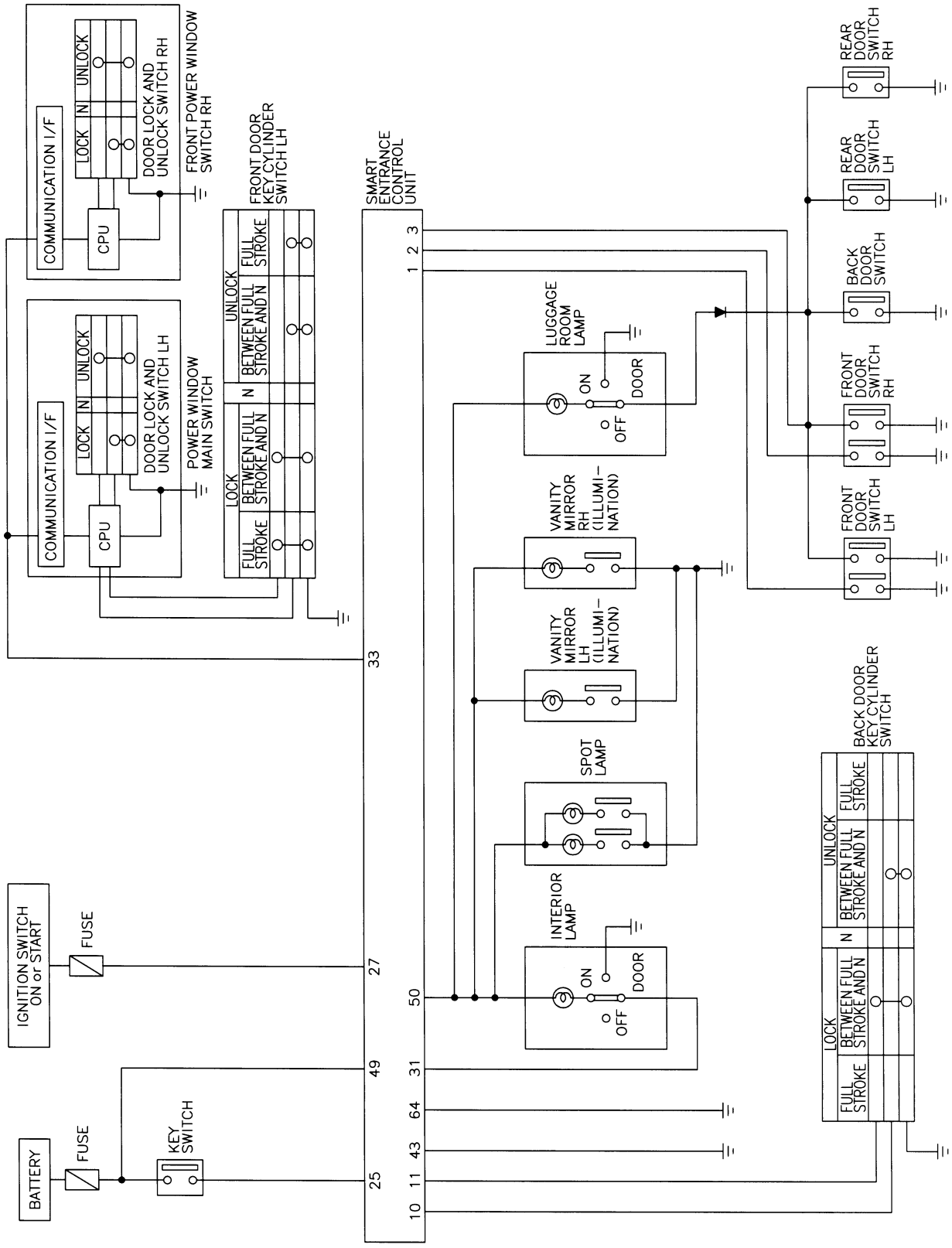
NAEL0290S05

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 30 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 removed from ignition key cylinder or inserted in ignition key cylinder.

Schematic

NAEL0291

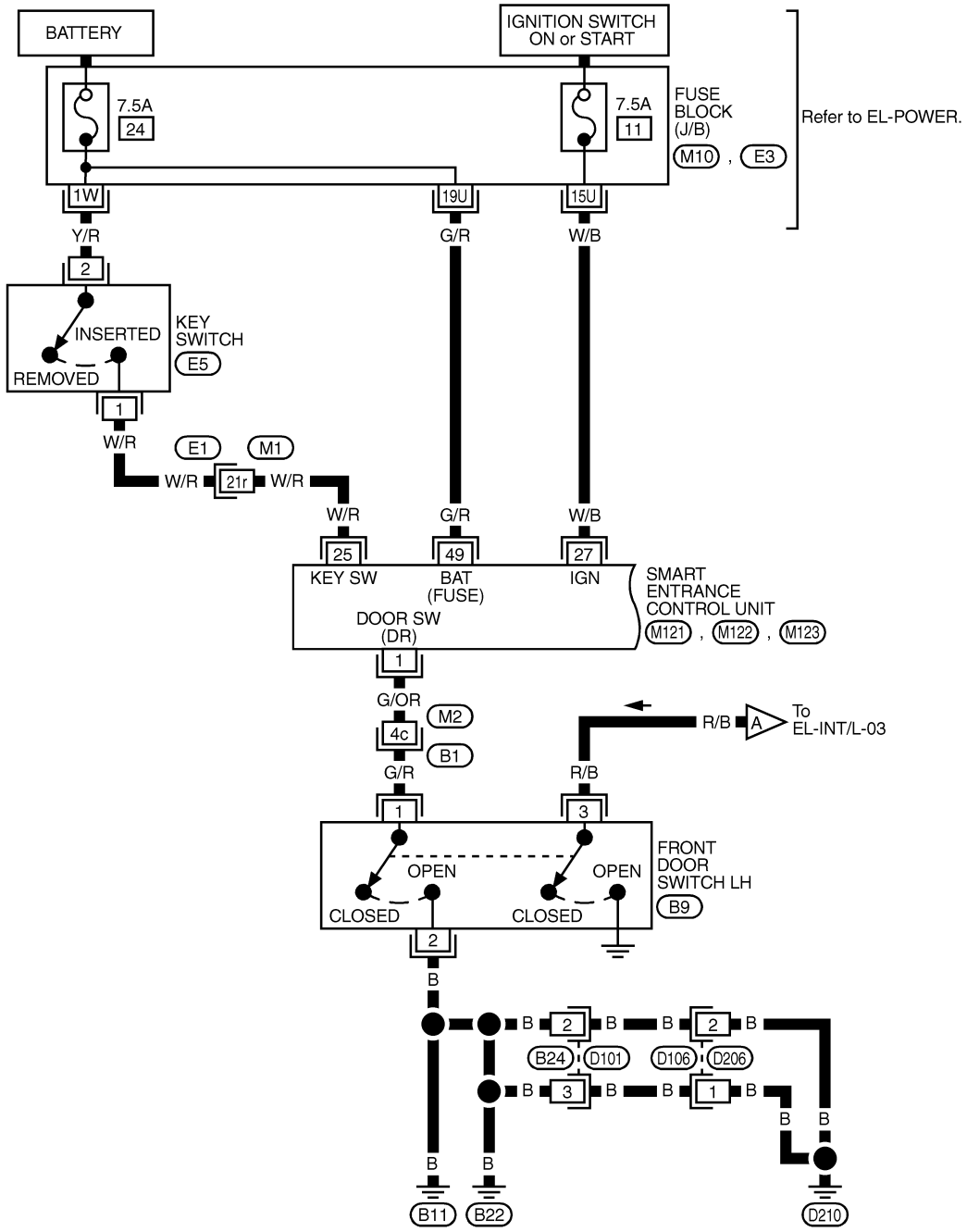


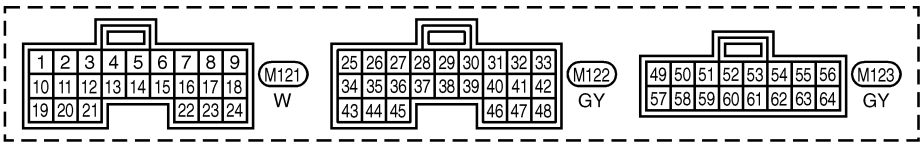
MEL407P

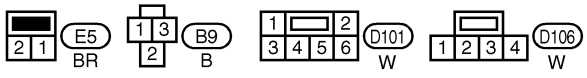
Wiring Diagram — INT/L —

NAEL0292

EL-INT/L-01



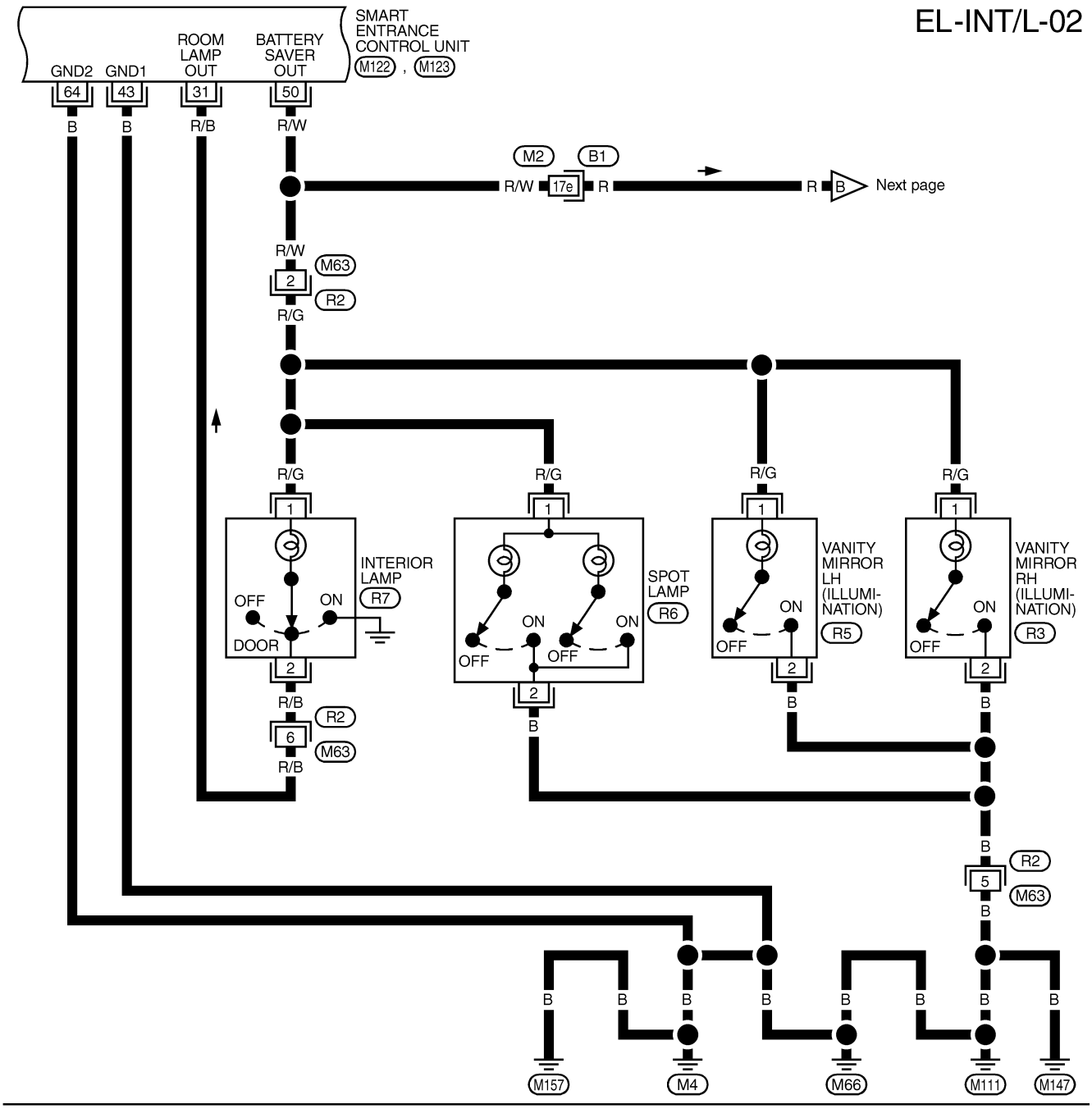


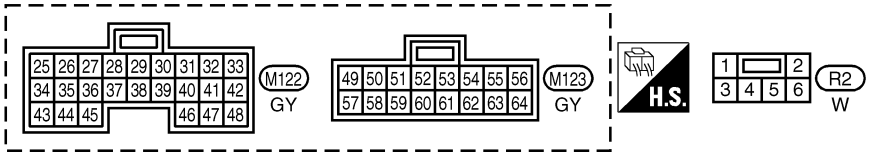


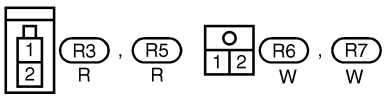
REFER TO THE FOLLOWING.
E1 , B1 -SUPER MULTIPLE JUNCTION (SMJ)
M10 , E3 -FUSE BLOCK-JUNCTION BOX (J/B)

MEL973P

Wiring Diagram — INT/L — (Cont'd)



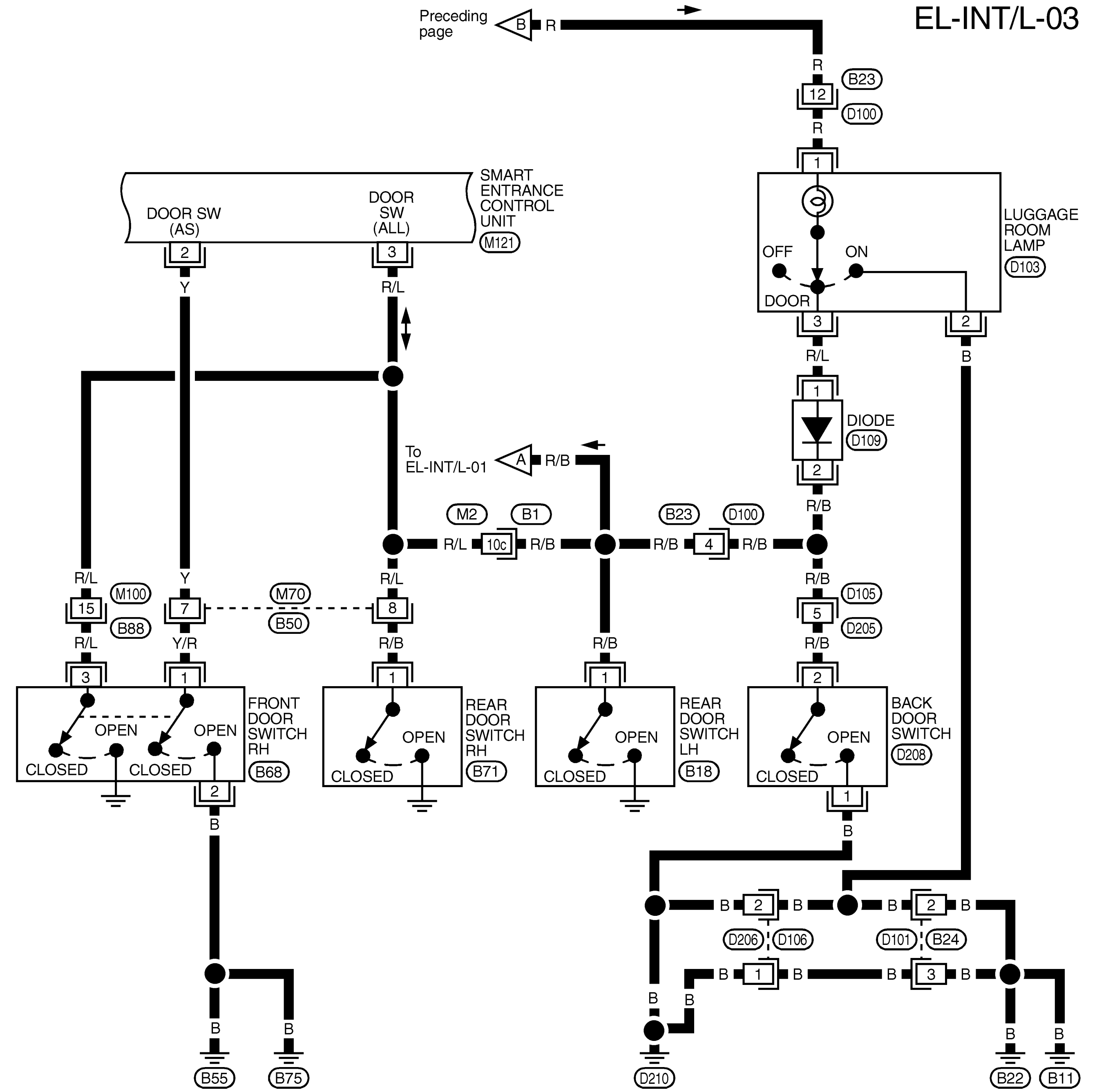


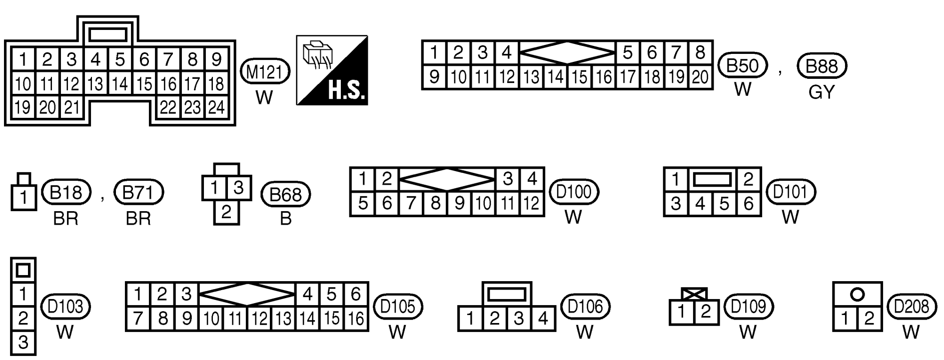


REFER TO THE FOLLOWING.
B1 -SUPER MULTIPLE JUNCTION (SMJ)

MEL974P

EL-INT/L-03

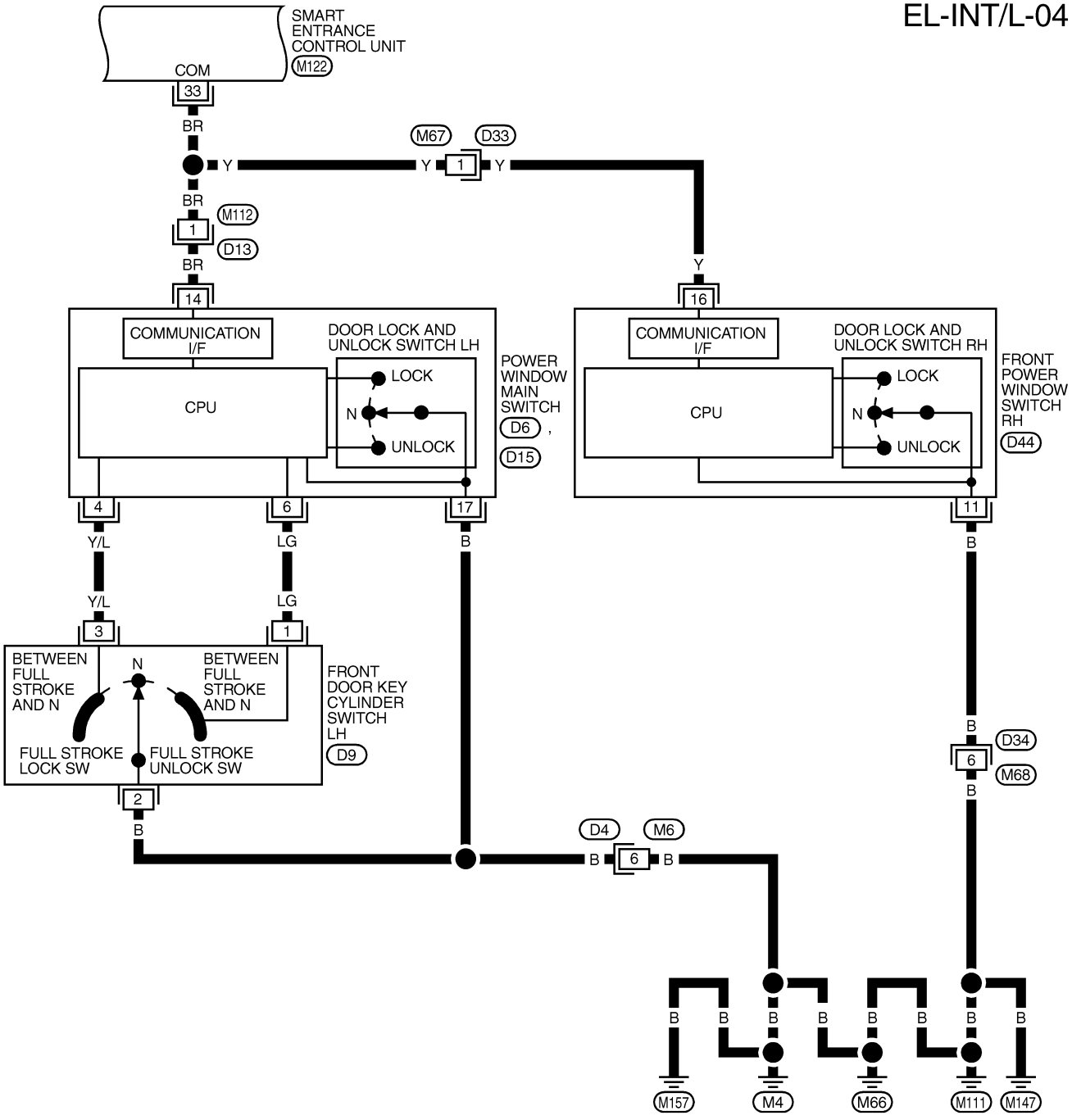


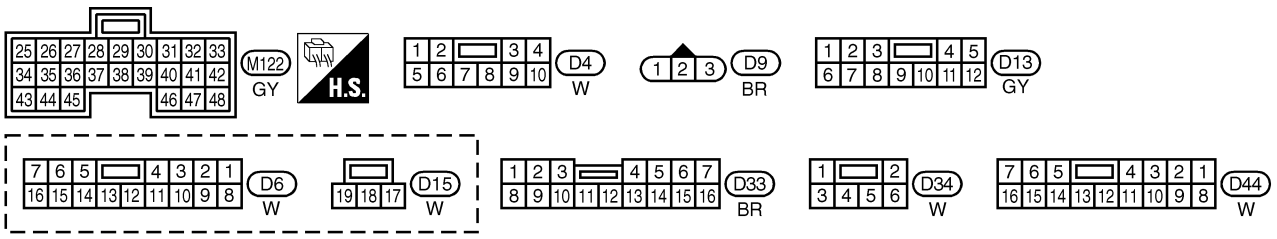


REFER TO THE FOLLOWING.
B1 -SUPER MULTIPLE JUNCTION (SMJ)

MEL975P

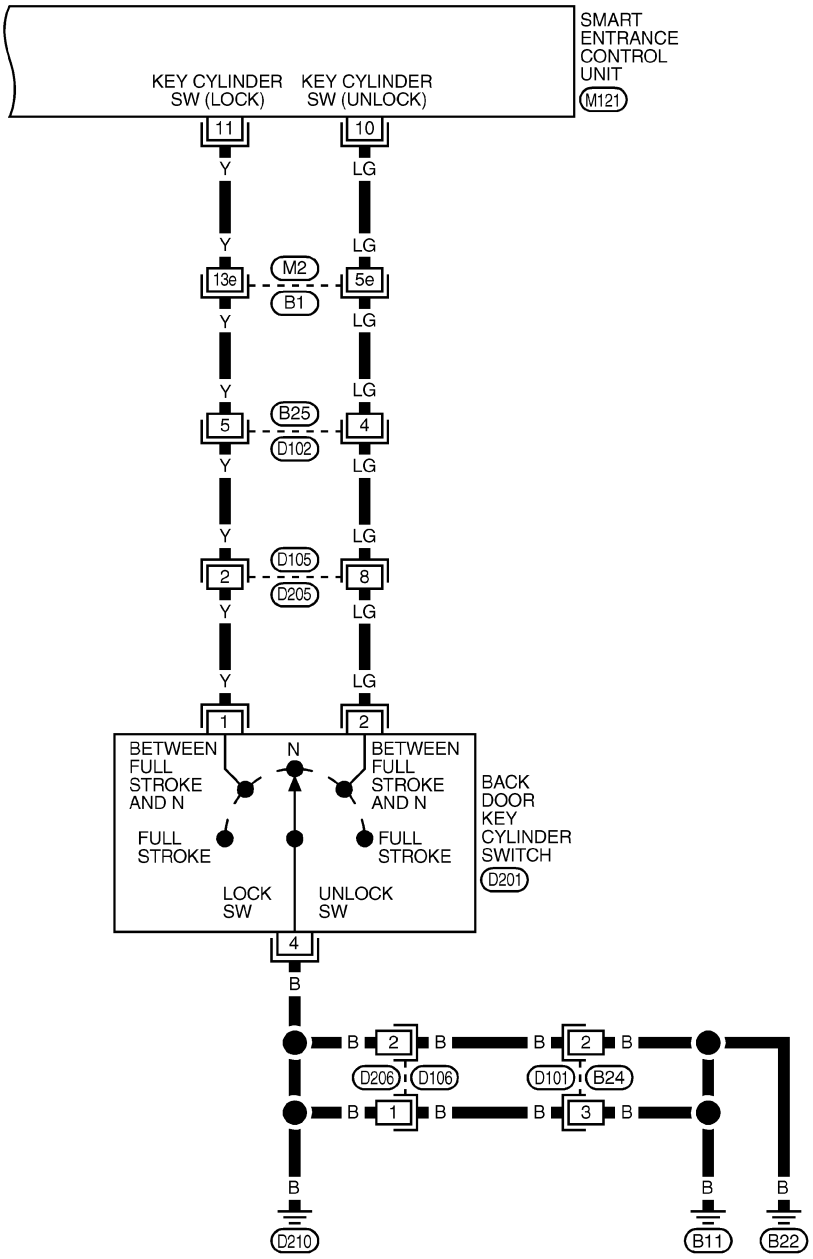
EL-INT/L-04

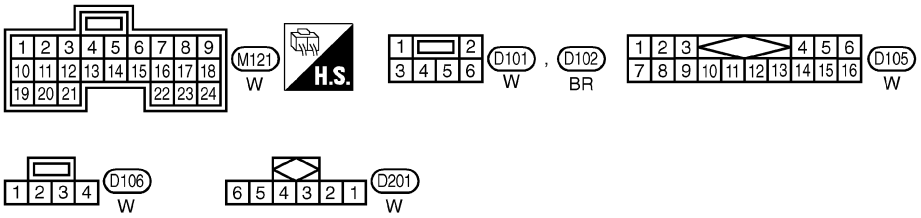




MEL976P

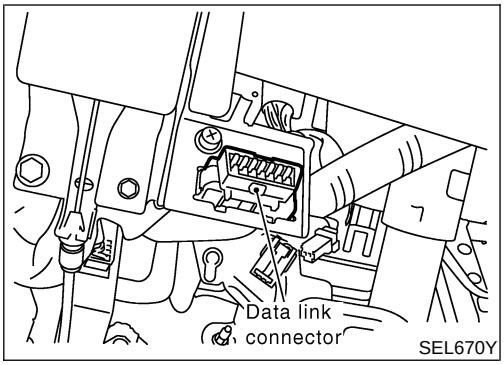
EL-INT/L-05





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

MEL939R



SEL670Y

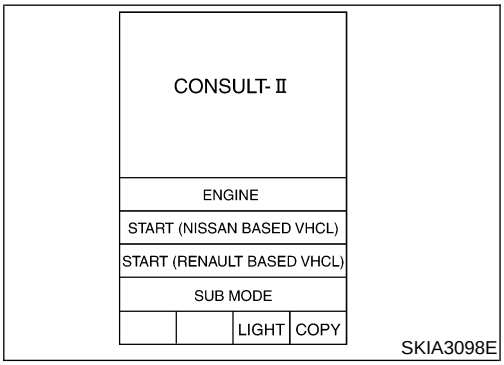
CONSULT-II Inspection Procedure

=NAEL0293

"INT LAMP"/"BATTERY SAVER"

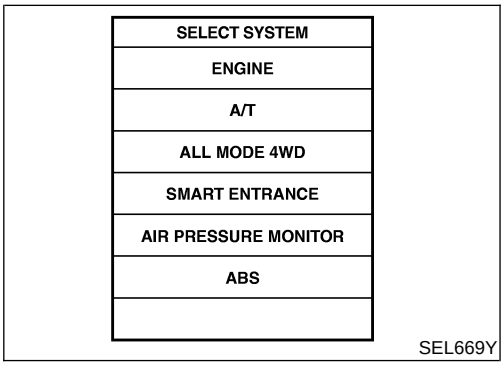
NAEL0293S01

1. Turn ignition switch "OFF".
2. Connect "CONSULT-II" and "CONSULT-II CONVERTER" to the data link connector.



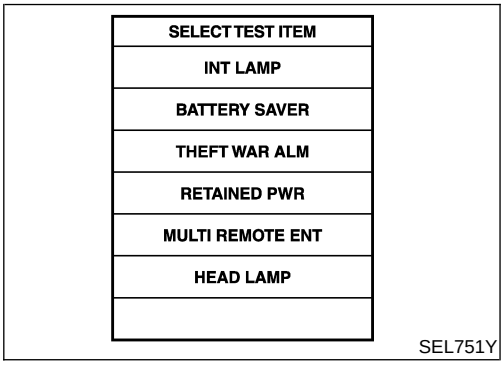
SKIA3098E

3. Turn ignition switch "ON".
4. Touch "START (NISSAN BASED VHCL)".



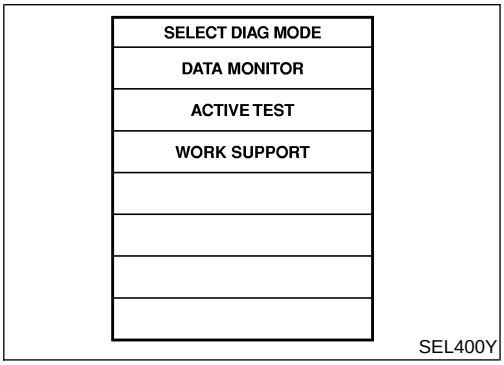
SEL669Y

5. Touch "SMART ENTRANCE".
   If "SMART ENTRANCE" is not indicated, go to GI-42, "CONSULT-II Data Link Connector (DLC) Circuit".



SEL751Y

6. Touch "INT LAMP" or "BATTERY SAVER".



SEL400Y

7. Select diagnosis mode.
   "DATA MONITOR", "ACTIVE TEST" and "WORK SUPPORT" are available for "INT LAMP" and "BATTERY SAVER".

CONSULT-II Application Items

NAEL0294

"INT LAMP"
Data Monitor

NAEL0294S01

NAEL0294S0101

Monitored Item	Description
IGN ON SW	Indicates [ON/OFF] condition of ignition switch.
DOOR SW-RR	Indicates [ON/OFF] condition of ignition switch.
KEY ON SW	Indicates [ON/OFF] condition of key switch.
DOOR SW-DR	Indicates [ON/OFF] condition of front door switch LH.
DOOR SW-AS	Indicates [ON/OFF] condition of front door switch RH.
LOCK SW DR/AS	Indicates [ON/OFF] condition of front door lock switch.
UNLK SW DR/AS	Indicates [ON/OFF] condition of front door lock switch.
KEY CYL LK-SW	Indicates [ON/OFF] condition of front door key cylinder switch.
KEY CYL UN-SW	Indicates [ON/OFF] condition of front door key cylinder switch.
LK BUTTON/SIG	Indicates [ON/OFF] condition of unlock signal from keyfob.
UN BUTTON/SIG	Indicates [ON/OFF] condition of unlock signal from keyfob.

Active Test

NAEL0294S0102

Test Item	Description
INT LAMP	This test enables to check interior lamp operation. When "ON" on CONSULT-II screen is touched: ● Interior lamp turns on when the switch is at DOOR. (Smart entrance control unit supplies power and ground to interior lamp.)
IGN ILLUM	This test enables to check ignition key hole illumination operation. The illumination turns on when "ON" on CONSULT-II screen is touched.
STEP LAMP	This test enables to check step lamp operation. The illumination turns on when "ON" on CONSULT-II screen is touched.

NOTE:
Even though ignition key hole illumination and step lamp are actually displayed on the CONSULT-II screen, those are not equipped, therefore, they cannot be activated.

Work Support

NAEL0294S0103

Work Item	Description
ROOM LAMP TIMER SET	Interior lamp timer mode can be changed by mode setting. Selects ON-OFF of the room lamp illumination at the time the driver door is unlocked. ● MODE 1 (ON)/MODE 2 (OFF) **NOTE:** Even though ignition keyhole illumination and step lamp are actually displayed on the CONSULT-II screen, those are not equipped, therefore, they cannot be activated.

"BATTERY SAVER"
Data Monitor

NAEL0294S02

NAEL0294S0201

Monitored Item	Description
IGN ON SW	Indicates [ON/OFF] condition of ignition switch.
DOOR SW-RR	Indicates [ON/OFF] condition of ignition switch.
KEY ON SW	Indicates [ON/OFF] condition of key switch.
DOOR SW-DR	Indicates [ON/OFF] condition of front door switch LH.

CONSULT-II Application Items (Cont'd)

Monitored Item	Description
DOOR SW-AS	Indicates [ON/OFF] condition of front door switch RH.
LOCK SW DR/AS	Indicates [ON/OFF] condition of front door lock switch.
UNLK SW DR/AS	Indicates [ON/OFF] condition of front door lock switch.
KEY CYL LK-SW	Indicates [ON/OFF] condition of front door key cylinder switch.
KEY CYL UN-SW	Indicates [ON/OFF] condition of front door key cylinder switch.
LK BUTTON/SIG	Indicates [ON/OFF] condition of unlock signal from keyfob.
UN BUTTON/SIG	Indicates [ON/OFF] condition of unlock signal from keyfob.

Active Test

NAEL0294S0202

Test Item	Description
BATTERY SAVER	This test enables to check interior lamp and spot lamp and vanity mirror illuminations operations. When touch "ON" on CONSULT-II screen. ● Interior lamp turns on when the switch is in ON. (Smart entrance control unit supplies power to interior lamp.) ● Spot lamp and vanity mirror illuminations turn on when the switch is in ON. (Smart entrance control unit supplies power to spot lamp, and vanity mirror illuminations.)

Work Support

NAEL0294S0203

Work Item	Description
ROOM LAMP BAT SAV SET	Interior lamp battery saver control period can be changed by mode setting. Selects interior lamp battery saver control period between two modes. ● MODE 1 (30 minutes)/MODE 2 (60 minutes)

Trouble Diagnoses for Interior Lamp Timer

=NAEL0295

DIAGNOSTIC PROCEDURE 1

NAEL0295S01

SYMPTOM: Interior lamp timer does not operate.

1	CHECK IGNITION ON SIGNAL

With CONSULT-II

Check ignition switch ON signal (“IGN ON SW”) in “DATA MONITOR” mode with CONSULT-II.

DATA MONITOR	
MONITOR	
IGN ON SW	ON

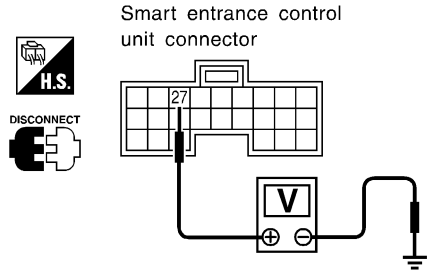
When ignition switch is ON:
IGN ON SW ON

When ignition switch is OFF:
IGN ON SW OFF

SEL318W

Without CONSULT-II

Check voltage between smart entrance control unit harness connector M122 terminal 27 (W/B) and ground.



Terminals		Ignition switch position		
(+)	(–)	OFF	ACC	ON
27	Ground	0V	0V	Battery voltage

SEL003Y

OK or NG

OK	▶	GO TO 2.
NG	▶	**Check the following.** ● 7.5A fuse [No. 11, located in fuse block (J/B)] ● Harness for open or short between smart entrance control unit and fuse

2	CHECK FRONT DOOR SWITCH LH INPUT SIGNAL

With CONSULT-II

Check front door switch LH signal ("DOOR SW-DR") in "DATA MONITOR" mode with CONSULT-II.

DATA MONITOR	
MONITOR	
DOOR SW-DR	OFF

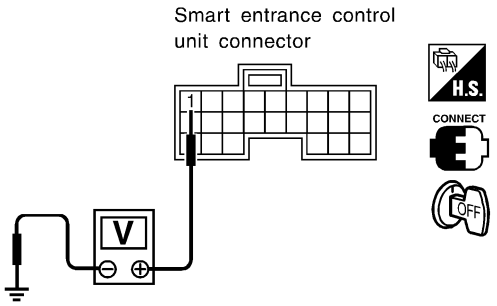
When front door LH is open:
DOOR SW-DR ON

When front door LH is closed:
DOOR SW-DR OFF

SEL319WB

Without CONSULT-II

Check voltage between smart entrance control unit harness connector M121 terminal 1 (G/OR) and ground.



Voltage [V]:
Condition of front door LH: CLOSED
Approx. 5
Condition of front door LH: OPENED
0

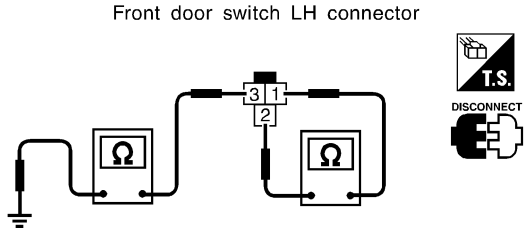
SEL004YD

OK or NG

OK	▶	GO TO 4.
NG	▶	GO TO 3.

3	CHECK FRONT DOOR SWITCH LH

Check the following.
- Continuity between front door switch LH connector B9 terminals 1 and 2
- Continuity between front door switch LH connector B9 terminal 3 and ground



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

SEL277YA

OK or NG

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

4	CHECK FRONT DOOR SWITCH RH INPUT SIGNAL

With CONSULT-II

Check front door switch RH signal ("DOOR SW-AS") in "DATA MONITOR" mode with CONSULT-II.

DATA MONITOR	
MONITOR	
DOOR SW-AS	OFF

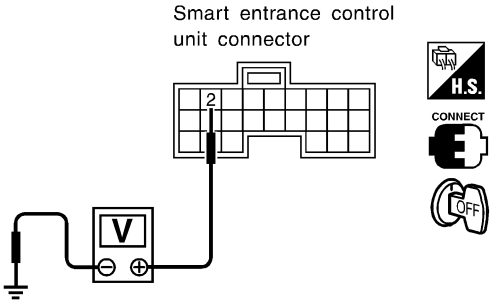
When front door RH is open:
DOOR SW-AS ON

When front door RH is closed:
DOOR SW-AS OFF

SEL153YA

Without CONSULT-II

Check voltage between smart entrance control unit harness connector M121 terminal 2 (Y) and ground.



Voltage [V]:
Condition of front door RH: CLOSED
Approx. 5
Condition of front door RH: OPENED
0

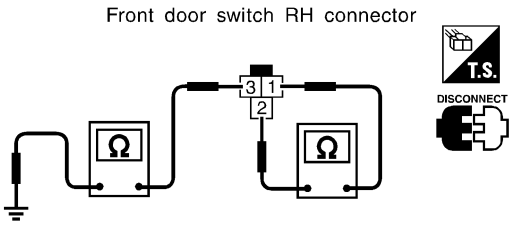
SEL152YB

OK or NG

OK	▶	GO TO 6.
NG	▶	GO TO 5.

5	CHECK FRONT DOOR SWITCH RH

Check the following.
- Continuity between front door switch RH connector B68 terminals 1 and 2
- Continuity between front door switch RH connector B68 terminal 3 and ground



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

SEL278YA

OK or NG

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

6	CHECK REAR AND BACK DOOR SWITCHES INPUT SIGNAL

With CONSULT-II

Check door switches ("DOOR SW-RR") in "DATA MONITOR" mode with CONSULT-II.

DATA MONITOR	
MONITOR	
DOOR SW-RR	OFF

When rear door LH, RH and/or back door is open:

DOOR SW-RR ON

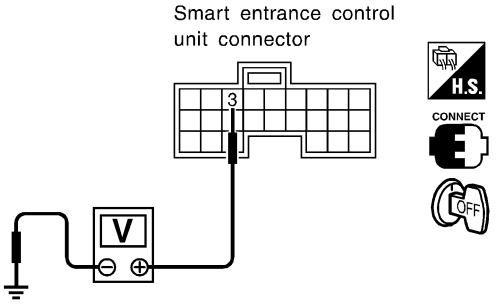
When rear door LH, RH and/or back door is closed:

DOOR SW-RR OFF

SEL154YB

Without CONSULT-II

Check voltage between smart entrance control unit harness connector M121 terminal 3 (R/L) and ground.



Voltage [V]:

Condition of rear door LH, RH and/or back door: CLOSED

Approx. 5

Condition of rear door LH, RH and/or back door: OPENED

0

SEL155YB

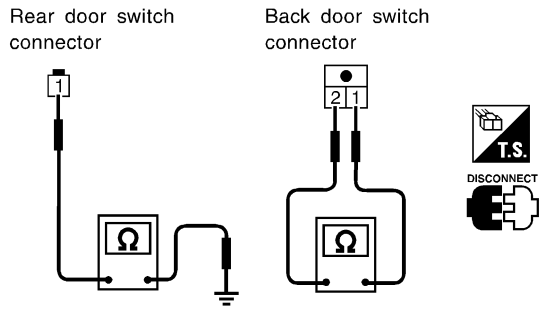
OK or NG

OK	▶	GO TO 8.
NG	▶	GO TO 7.

7	CHECK REAR AND BACK DOOR SWITCHES

1. Disconnect door switch harness connector.
2. Check the following.

- Continuity between rear door switches connector B18 and B71 terminal 1 and ground
- Continuity between back door switch connector D208 terminals 1 and 2



Continuity:

Door switch is pushed.

No

Door switch is released.

Yes

SEL279Y

OK or NG

OK	▶	**Check the following.** • Rear LH, RH and/or back door switch ground circuit or door switch ground condition • Harness for open or short between smart entrance control unit and rear LH, RH and/or back door switch
NG	▶	Replace rear LH, RH and/or back door switch.

8	CHECK KEY SWITCH INPUT SIGNAL

With CONSULT-II

Check key switch ("KEY ON SW") in "DATA MONITOR" mode with CONSULT-II.

DATA MONITOR	
MONITOR	
KEY ON SW	ON

When key is inserted to ignition key cylinder:

KEY ON SW ON

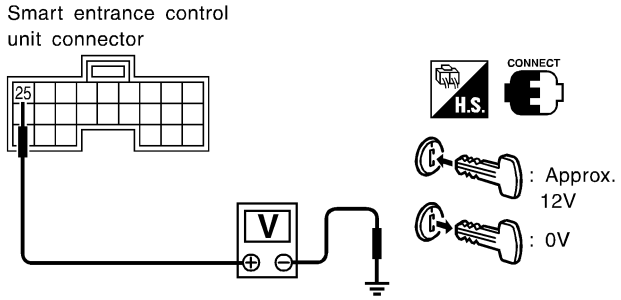
When key is removed from ignition key cylinder:

KEY ON SW OFF

SEL315W

Without CONSULT-II

Check voltage between smart entrance control unit harness connector M122 terminal 25 (W/R) and ground.



Voltage [V]:

Condition of key switch: Key is inserted.

Approx. 12

Condition of key switch: Key is removed.

0

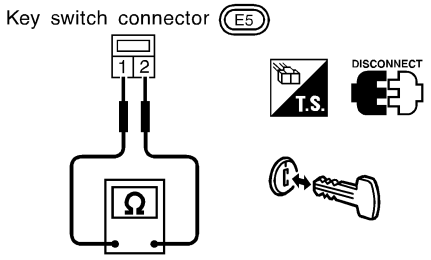
SEL011Y

OK or NG

OK	▶	GO TO 10.
NG	▶	GO TO 9.

9	CHECK KEY SWITCH (INSERT)

Check continuity between key switch connector 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.

10	CHECK DOOR LOCK/UNLOCK SWITCH INPUT SIGNAL

With CONSULT-II

Check door lock/unlock switch ("LOCK SW DR/AS"/"UNLK SW DR/AS") in "DATA MONITOR" mode with CONSULT-II.

DATA MONITOR	
MONITOR	
LOCK SW DR/AS	OFF
UNLK SW DR/AS	OFF

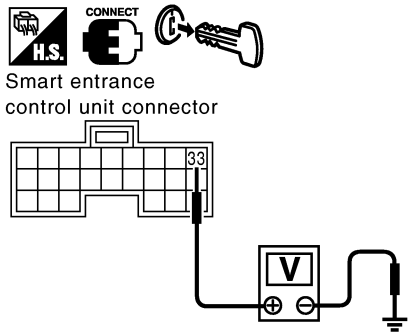
When lock/unlock switch is turned to LOCK:
LOCK SW DR/AS ON

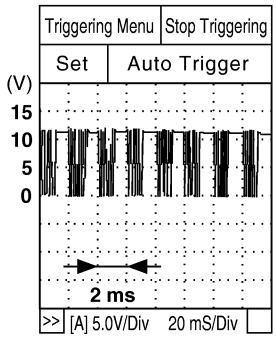
When lock/unlock switch is turned to UNLOCK:
UNLK SW DR/AS ON

SEL341W

Without CONSULT-II

1. Remove key from ignition key cylinder.
2. Check the signal between smart entrance control unit harness connector M122 terminal 33 (BR) and ground with oscilloscope when door lock/unlock switch is turned "LOCK" or "UNLOCK".
3. Make sure signals which are shown in the figure below can be detected during 10 sec. just after door lock/unlock switch is turned "LOCK" or "UNLOCK".





Voltage:
12V → 9V (10 sec.) measurement by analog circuit tester.

SEL699YA

OK or NG

OK	▶	Door lock/unlock switch is OK.
NG	▶	**Check the following.** ● Ground circuit for each front power window switch ● Harness for open or short between each front power window switch and smart entrance control unit connector If above systems are normal, replace the power window main switch.

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

With CONSULT-II

Check front door key cylinder switch ("KEY CYL LK-SW"/"KEY CYL UN-SW") in "DATA MONITOR" mode with CONSULT-II.

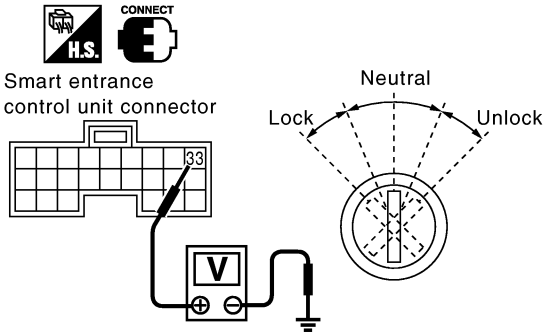
DATA MONITOR	
MONITOR	
KEY CYL LK-SW	OFF
KEY CYL UN-SW	OFF

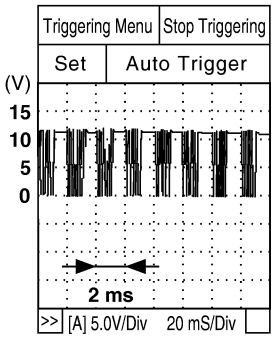
When key inserted in front key cylinder is turned to LOCK:
KEY CYL LK-SW ON
When key inserted in front key cylinder is turned to UNLOCK:
KEY CYL UN-SW ON

SEL342W

Without CONSULT-II

1. Check the signal between smart entrance control unit harness connector M122 terminal 33 (BR) and ground with oscilloscope when key inserted in front key cylinder is turned "LOCK" or "UNLOCK".
2. Make sure signals which are shown in the figure below can be detected during 10 sec. just after key is turned "LOCK" or "UNLOCK".





Voltage:
12V → 9V (10 sec.) measurement by analog circuit tester.

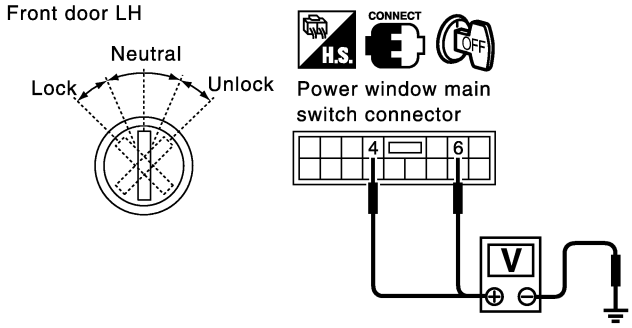
SEL700YA

OK or NG

OK	▶	Door key cylinder switch LH is OK.
NG	▶	GO TO 12.

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

Check voltage between power window main switch harness connector D6 terminals 4 (Y/L) or 6 (LG) and ground.



Door	Terminals (+)	Terminals (−)	Key position	Voltage V
Front door LH	4	Ground	Neutral/Unlock	Approx. 5
			Lock	0
	6	Ground	Neutral/Lock	Approx. 5
			Unlock	0

SEL792Y

OK or NG

OK	▶	Replace smart entrance control unit.
NG	▶	GO TO 13.

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

With CONSULT-II

Check back door key cylinder switch ("KEY CYL LK-SW"/"KEY CYL UN-SW") in "DATA MONITOR" mode with CONSULT-II.

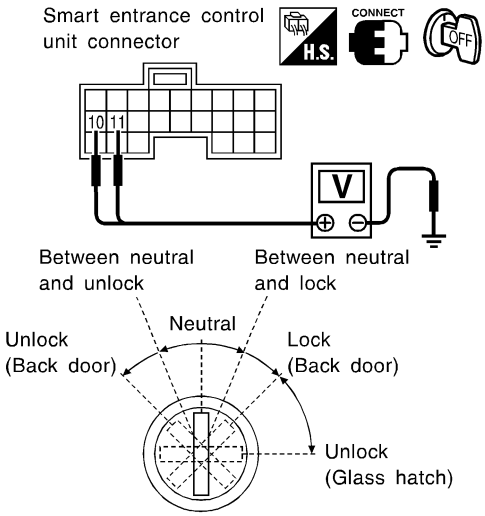
DATA MONITOR	
MONITOR	
KEY CYL LK-SW	OFF
KEY CYL UN-SW	OFF

When key inserted in back key cylinder is turned to LOCK:
KEY CYL LK-SW ON
When key inserted in back key cylinder is turned to UNLOCK:
KEY CYL UN-SW ON

SEL342WB

Without CONSULT-II

Check voltage between smart entrance control unit harness connector M121 terminals 10 (LG), 11 (Y) and ground.



	Terminals (+)	Terminals (−)	Key position	Voltage [V]
Back door	11	Ground	Between neutral and lock	0
			Other positions	Approx. 5
	10	Ground	Between neutral and unlock	0
			Other positions	Approx. 5

SEL680Y

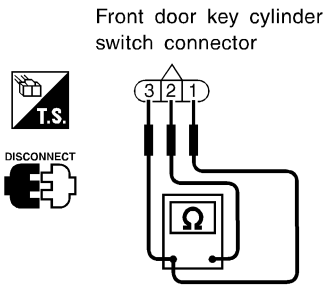
OK or NG

OK	▶	Replace smart entrance control unit.
NG	▶	GO TO 14.

14 CHECK DOOR KEY CYLINDER SWITCH

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

- Front door key cylinder switch LH harness connector D9

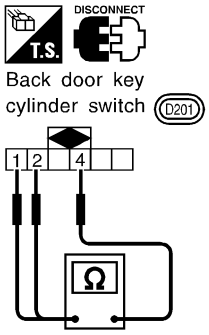


① : Door unlock switch terminal
② : Ground terminal
③ : Door lock switch terminal

Terminals	Key position	Continuity
③ - ②	Neutral/Unlock	No
	Lock	Yes
① - ②	Neutral/Lock	No
	Unlock	Yes

SEL793Y

- Back door key cylinder switch harness connector D201



Key position	Terminals		
	1	2	4
Between neutral and lock (Back door)	○		○
Between neutral and unlock (Back door)		○	○

SEL315X

OK or NG

OK	▶	**Check the following.** • Front or back door key cylinder switch ground circuit • Harness for open or short between back door key cylinder switch and smart entrance control unit connector • Harness for open or short between front door key cylinder switch LH and power window main switch
NG	▶	Replace front or back door key cylinder switch.

DIAGNOSTIC PROCEDURE 2

=NAEL0295S02

SYMPTOM: Interior lamp timer does not cancel properly.

1	CHECK IGNITION ON SIGNAL

With CONSULT-II

Check ignition switch ON signal ("IGN ON SW") in "DATA MONITOR" mode with CONSULT-II.

DATA MONITOR	
MONITOR	
IGN ON SW	ON

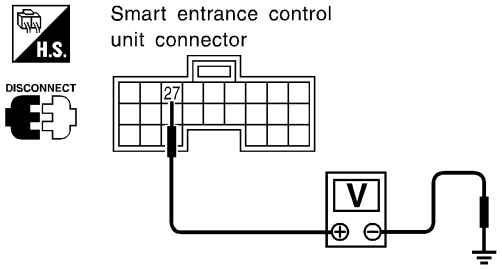
When ignition switch is ON:
IGN ON SW ON

When ignition switch is OFF:
IGN ON SW OFF

SEL318W

Without CONSULT-II

Check voltage between smart entrance control unit harness connector M122 terminal 27 (W/B) and ground.



Terminals		Ignition switch position		
(+)	(–)	OFF	ACC	ON
27	Ground	0V	0V	Battery voltage

SEL995X

OK or NG

OK	▶	GO TO 2.
NG	▶	**Check the following.** ● 7.5A fuse [No. 11, located in fuse block (J/B)] ● Harness for open or short between smart entrance control unit and fuse

2	CHECK FRONT LH DOOR SWITCH INPUT SIGNAL

With CONSULT-II

Check driver door switch signal ("DOOR SW-DR") in "DATA MONITOR" mode with CONSULT-II.

DATA MONITOR	
MONITOR	
DOOR SW-DR	OFF

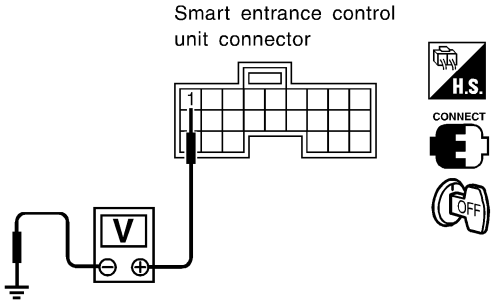
When front door LH is open:
DOOR SW-DR ON

When front door LH is closed:
DOOR SW-DR OFF

SEL319WB

Without CONSULT-II

Check voltage between smart entrance control unit harness connector M121 terminal 1 (G/OR) and ground.



Voltage [V]:
Condition of front door LH: CLOSED
Approx. 5
Condition of front door LH: OPENED
0

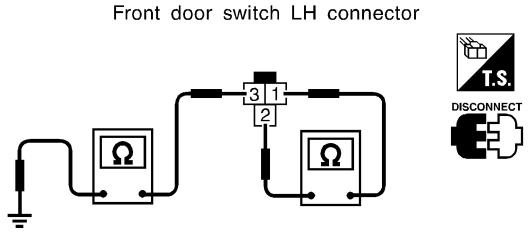
SEL004YD

OK or NG

OK	▶	GO TO 4.
NG	▶	GO TO 3.

3	CHECK FRONT DOOR SWITCH LH

Check the following.
- Continuity between front door switch LH connector B9 terminals 1 and 2
- Continuity between front door switch LH connector B9 terminal 3 and ground



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

SEL277YA

OK or NG

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

4	CHECK DOOR LOCK/UNLOCK SWITCH INPUT SIGNAL

With CONSULT-II

Check door lock/unlock switch ("LOCK SW DR/AS"/"UNLK SW DR/AS") in "DATA MONITOR" mode with CONSULT-II.

DATA MONITOR	
MONITOR	
LOCK SW DR/AS	OFF
UNLK SW DR/AS	OFF

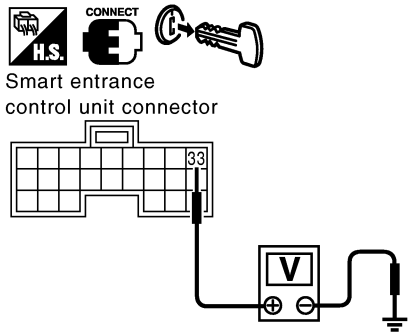
When lock/unlock switch is turned to LOCK:
LOCK SW DR/AS ON

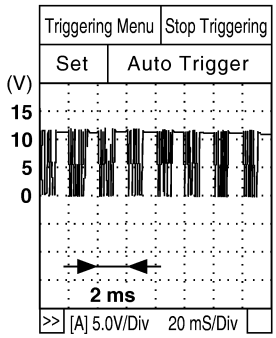
When lock/unlock switch is turned to UNLOCK:
UNLK SW DR/AS ON

SEL341W

Without CONSULT-II

1. Remove key from ignition key cylinder.
2. Check the signal between smart entrance control unit harness connector M122 terminal 33 (BR) and ground with oscilloscope when door lock/unlock switch is turned "LOCK" or "UNLOCK".
3. Make sure signals which are shown in the figure below can be detected during 10 sec. just after door lock/unlock switch is turned "LOCK" or "UNLOCK".





Voltage:
12V → 9V (10 sec.) measurement by analog circuit tester.

SEL699YA

OK or NG

OK	▶	Door lock/unlock switch is OK.
NG	▶	**Check the following.** ● Ground circuit for each front power window switch ● Harness for open or short between each front power window switch and smart entrance control unit connector If above systems are normal, replace the front power window switch.

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

With CONSULT-II

Check front door key cylinder switch ("KEY CYL LK-SW"/"KEY CYL UN-SW") in "DATA MONITOR" mode with CONSULT-II.

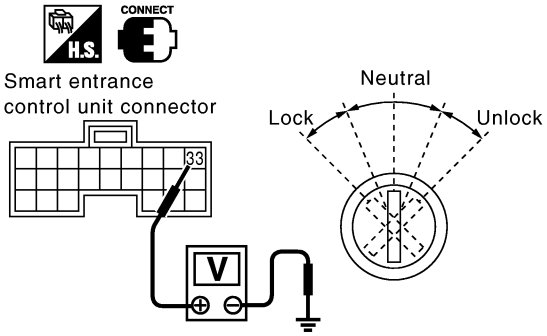
DATA MONITOR	
MONITOR	
KEY CYL LK-SW	OFF
KEY CYL UN-SW	OFF

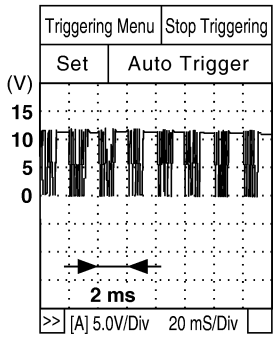
When key inserted in front key cylinder is turned to LOCK:
KEY CYL LK-SW ON
When key inserted in front key cylinder is turned to UNLOCK:
KEY CYL UN-SW ON

SEL342W

Without CONSULT-II

1. Check the signal between smart entrance control unit harness connector M122 terminal 33 (BR) and ground with oscilloscope when key inserted in front key cylinder is turned "LOCK" or "UNLOCK".
2. Make sure signals which are shown in the figure below can be detected during 10 sec. just after key is turned "LOCK" or "UNLOCK".





Voltage:
12V → 9V (10 sec.) measurement by analog circuit tester.

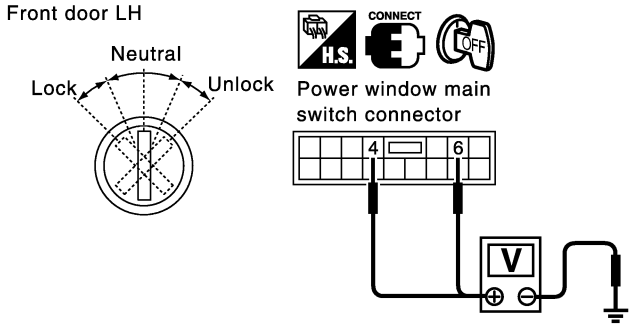
SEL700YA

OK or NG

OK	▶	Door key cylinder switch LH is OK.
NG	▶	GO TO 6.

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

Check voltage between power window main switch harness connector D6 terminals 4 (Y/L) or 6 (LG) and ground.



Door	Terminals (+)	Terminals (–)	Key position	Voltage V
Front door LH	4	Ground	Neutral/Unlock	Approx. 5
			Lock	0
	6	Ground	Neutral/Lock	Approx. 5
			Unlock	0

SEL792Y

OK or NG

OK	▶	Replace smart entrance control unit.
NG	▶	GO TO 7.

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

With CONSULT-II

Check back door key cylinder switch ("KEY CYL LK-SW"/"KEY CYL UN-SW") in "DATA MONITOR" mode with CONSULT-II.

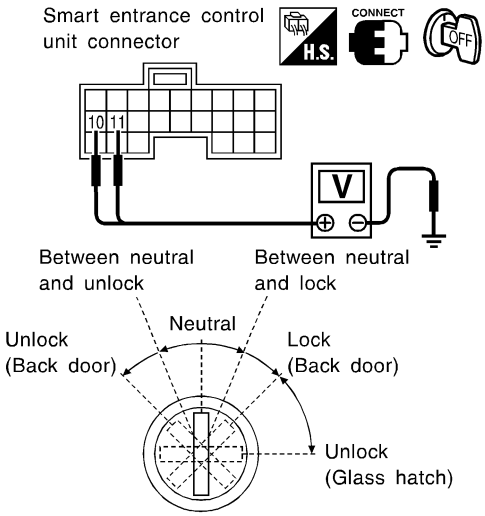
DATA MONITOR	
MONITOR	
KEY CYL LK-SW	OFF
KEY CYL UN-SW	OFF

When key inserted in back key cylinder is turned to LOCK:
KEY CYL LK-SW ON
When key inserted in back key cylinder is turned to UNLOCK:
KEY CYL UN-SW ON

SEL342WB

Without CONSULT-II

Check voltage between smart entrance control unit harness connector M121 terminals 10 (LG), 11 (Y) and ground.



	Terminals (+)	Terminals (−)	Key position	Voltage [V]
Back door	11	Ground	Between neutral and lock	0
			Other positions	Approx. 5
	10	Ground	Between neutral and unlock	0
			Other positions	Approx. 5

SEL680Y

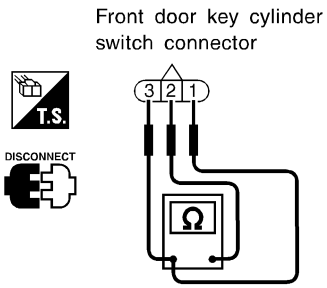
OK or NG

OK	▶	Replace smart entrance control unit.
NG	▶	GO TO 8.

8 CHECK DOOR KEY CYLINDER SWITCH

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

- Front door key cylinder switch harness connector D9

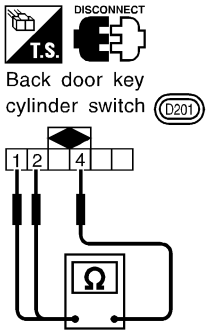


① : Door unlock switch terminal
② : Ground terminal
③ : Door lock switch terminal

Terminals	Key position	Continuity
③ - ②	Neutral/Unlock	No
	Lock	Yes
① - ②	Neutral/Lock	No
	Unlock	Yes

SEL793Y

- Back door key cylinder switch harness connector D201



Key position	Terminals		
	1	2	4
Between neutral and lock (Back door)	○		○
Between neutral and unlock (Back door)		○	○

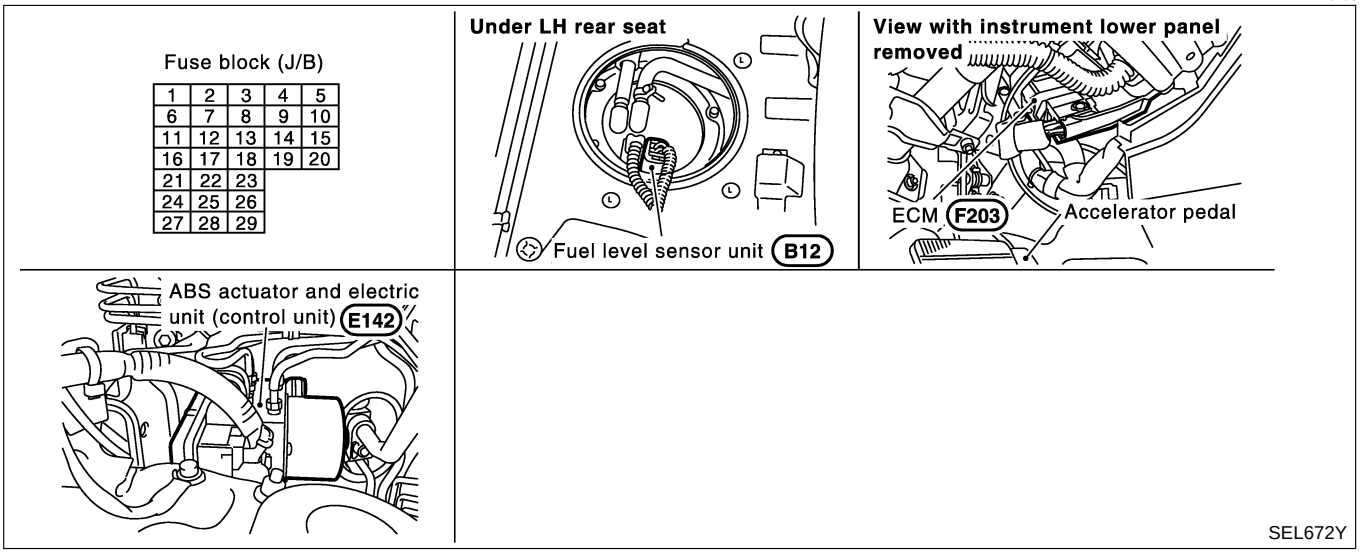
SEL315X

OK or NG

OK	▶	**Check the following.** • Front or back door key cylinder switch ground circuit • Harness for open or short between back door key cylinder switch and smart entrance control unit connector • Harness for open or short between front door key cylinder switch and power window main switch
NG	▶	Replace front or back door key cylinder switch.

Component Parts and Harness Connector Location

NAEL0296



System Description

NAEL0297

UNIFIED CONTROL METER

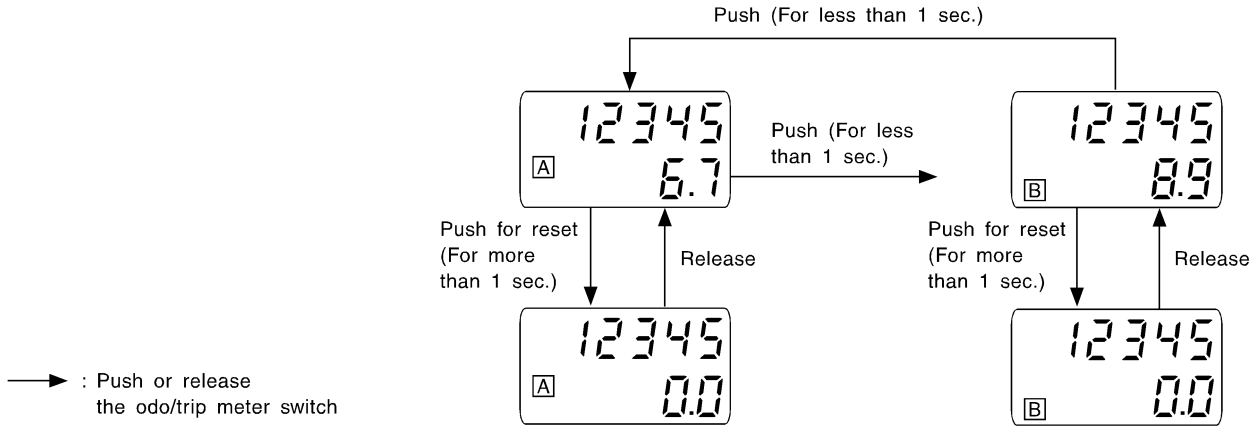
NAEL0297S01

- 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 segment can be checked in diagnosis mode.
- Meter/gauge can be checked in diagnosis mode.

HOW TO CHANGE THE DISPLAY FOR ODO/TRIP METER

NAEL0297S02

The display is changed by pushing the odo/trip meter switch.



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

POWER SUPPLY AND GROUND CIRCUIT

NAEL0297S03

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, M111, M147 and M157.

WATER TEMPERATURE GAUGE

NAEL0297S04

The water temperature gauge indicates the engine coolant temperature. ECM provides an engine coolant temperature signal to the combination meter for the water temperature gauge with CAN communication line. The needle on the gauge moves from "C" to "H".

TACHOMETER

NAEL0297S05

The tachometer indicates engine speed in revolutions per minute (rpm).
ECM provides an engine speed signal to the combination meter for the tachometer with CAN communication line.

FUEL GAUGE

NAEL0297S06

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 combination meter terminal 23.

SPEEDOMETER

NAEL0297S07

Without VDC

NAEL0297S0701

The ABS actuator and electric unit (control unit) 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 19 of the ABS actuator and electric unit (control unit).

The speedometer converts the voltage into the vehicle speed displayed.

With VDC

NAEL0297S0702

The ABS actuator and electric unit (control unit) provides a vehicle speed signal to the combination meter for the speedometer with CAN communication line.

CAN COMMUNICATION SYSTEM

NAEL0297S09

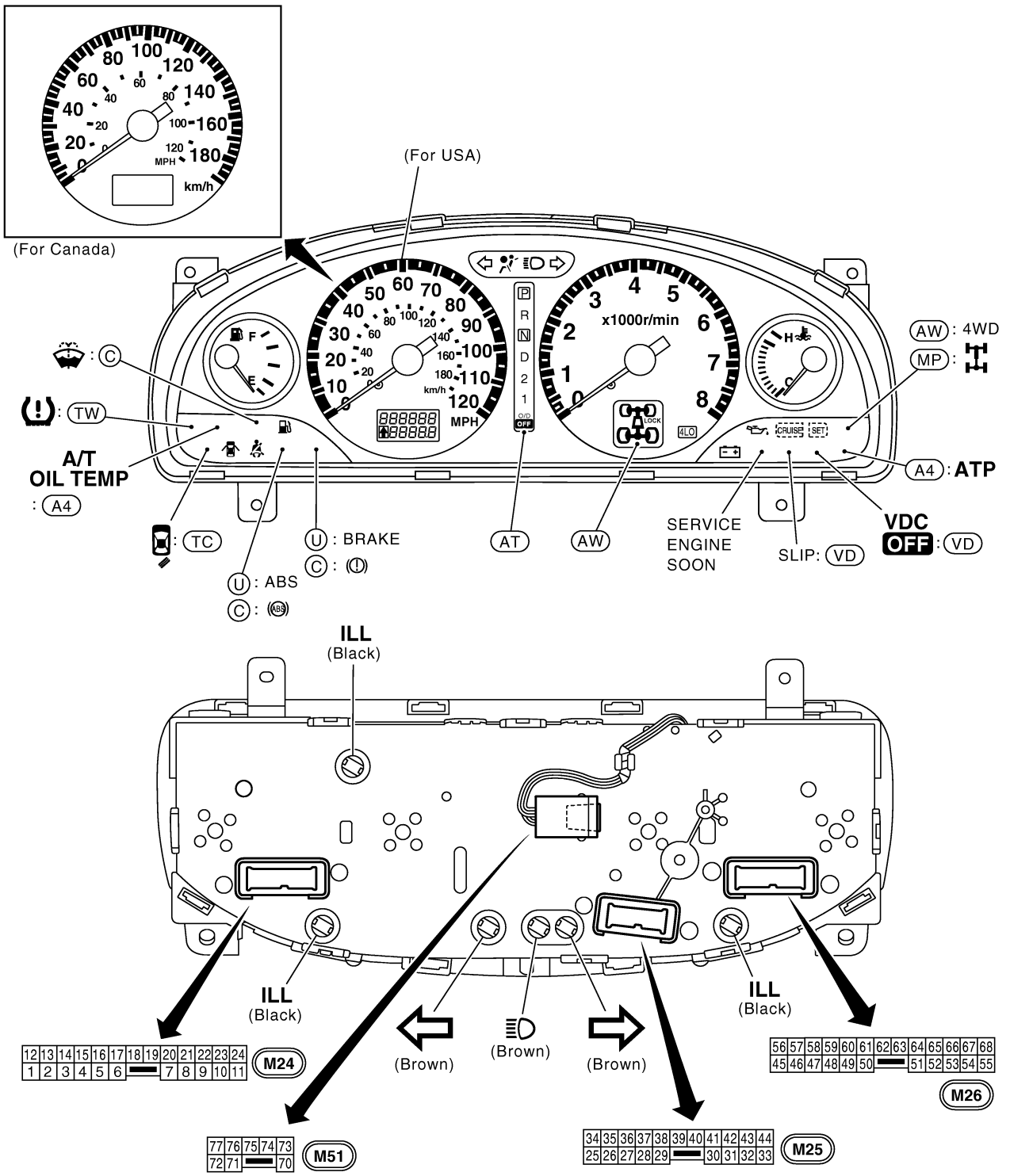
Combination meter recieves vehicle speed signal and engine coolant temperature signal etc. from some control units with can communication line. Refer to "CAN COMMUNICATION" (EL-409).

Combination Meter/With Normal Meter

NAEL0298

CHECK

NAEL0298S01



Bulb socket color	Bulb wattage
Brown	1.4W
Black	3.0W

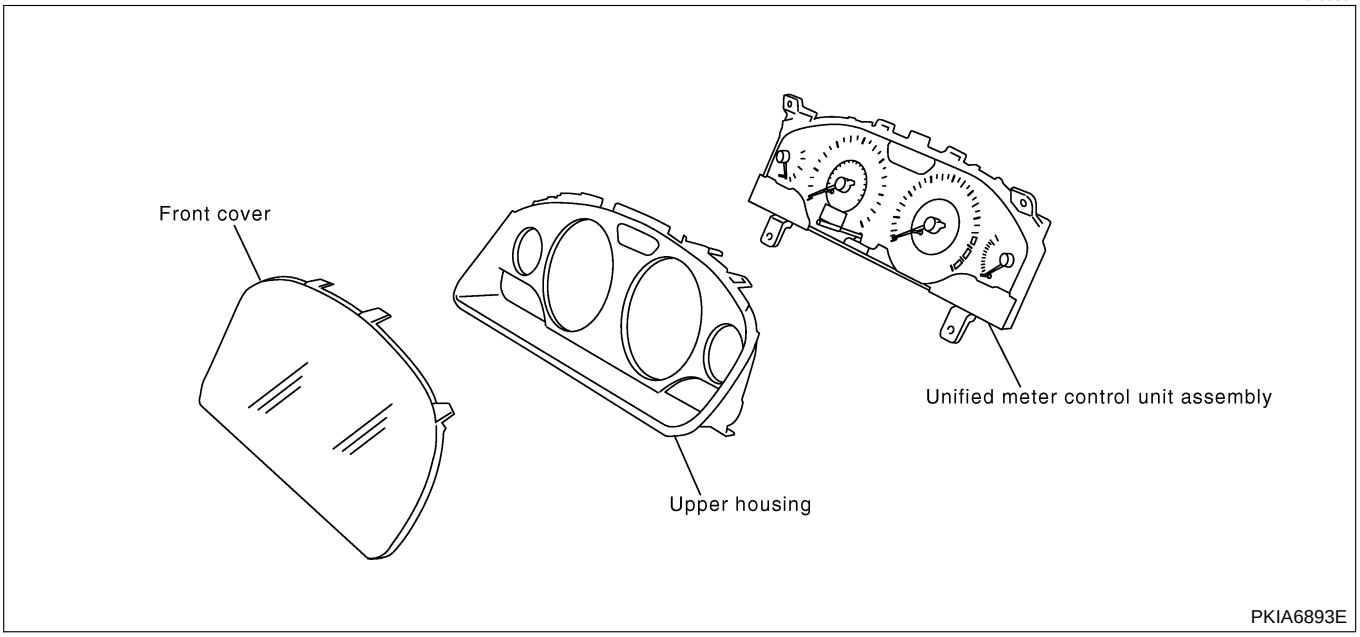
( ): Bulb socket color

U : For USA
C : For Canada
AW : With all-mode 4-wheel drive
MP : With M/T and part-time 4-wheel drive
A4 : With A/T and 4-wheel drive
TC : With spare tire carrier
TW : With low tire pressure warning system
AT : With A/T
VD : With VDC

MEL970R

CONSTRUCTION

NAEL0298S02

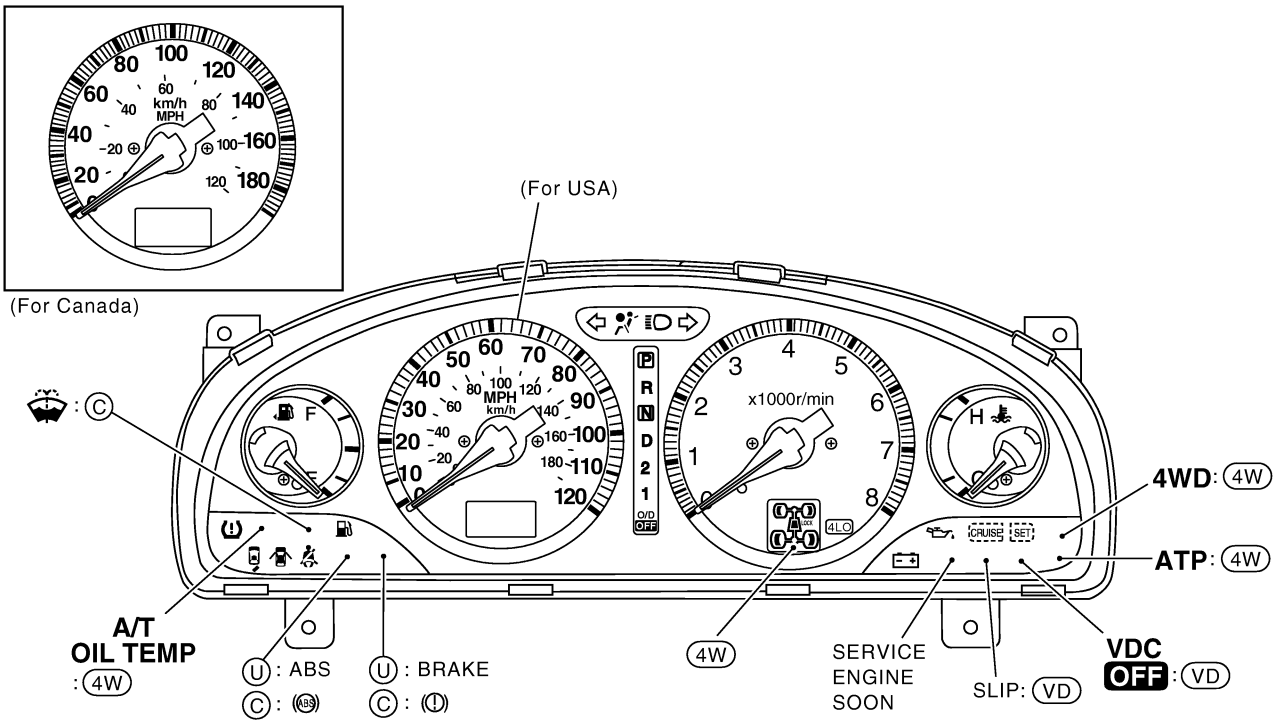


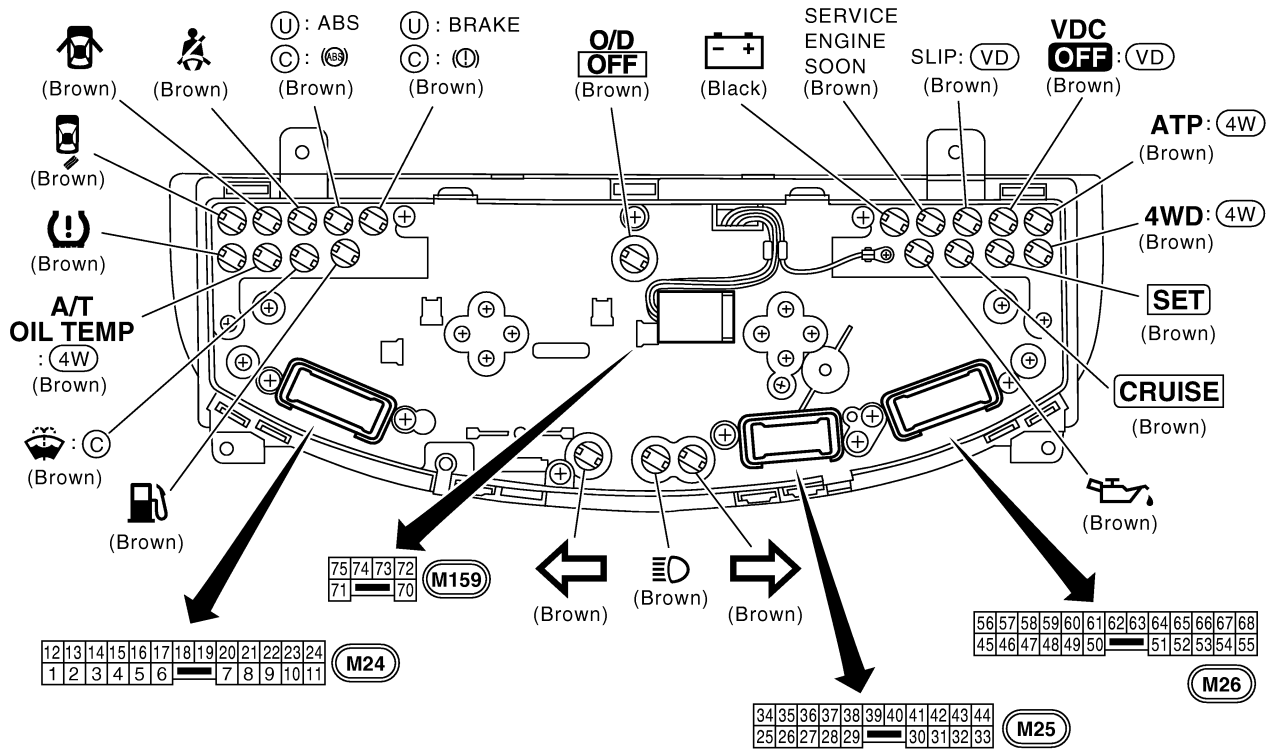
Combination Meter/With Fine Vision Meter

NAEL0486

CHECK

NAEL0486S01





Bulb socket color	Bulb wattage
Brown	1.4W
Black	3.0W

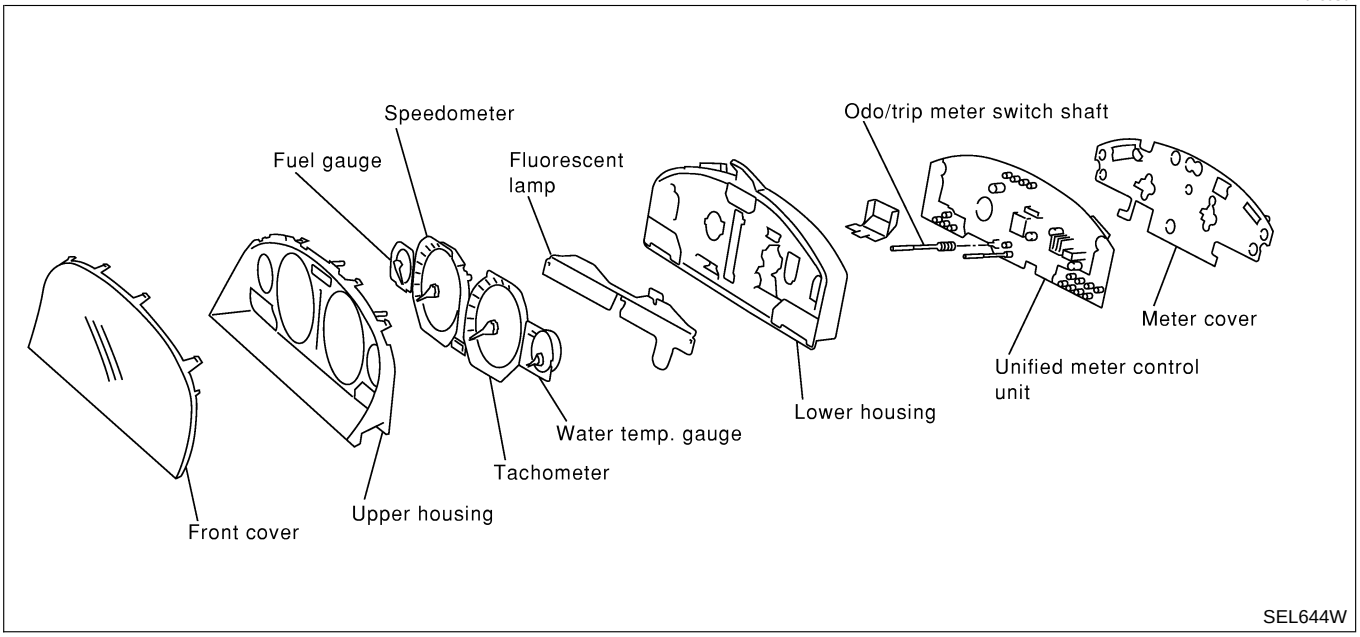
( ) : Bulb socket color

U : For USA
C : For Canada
4W : With 4-wheel drive
VD : With VDC

MEL971R

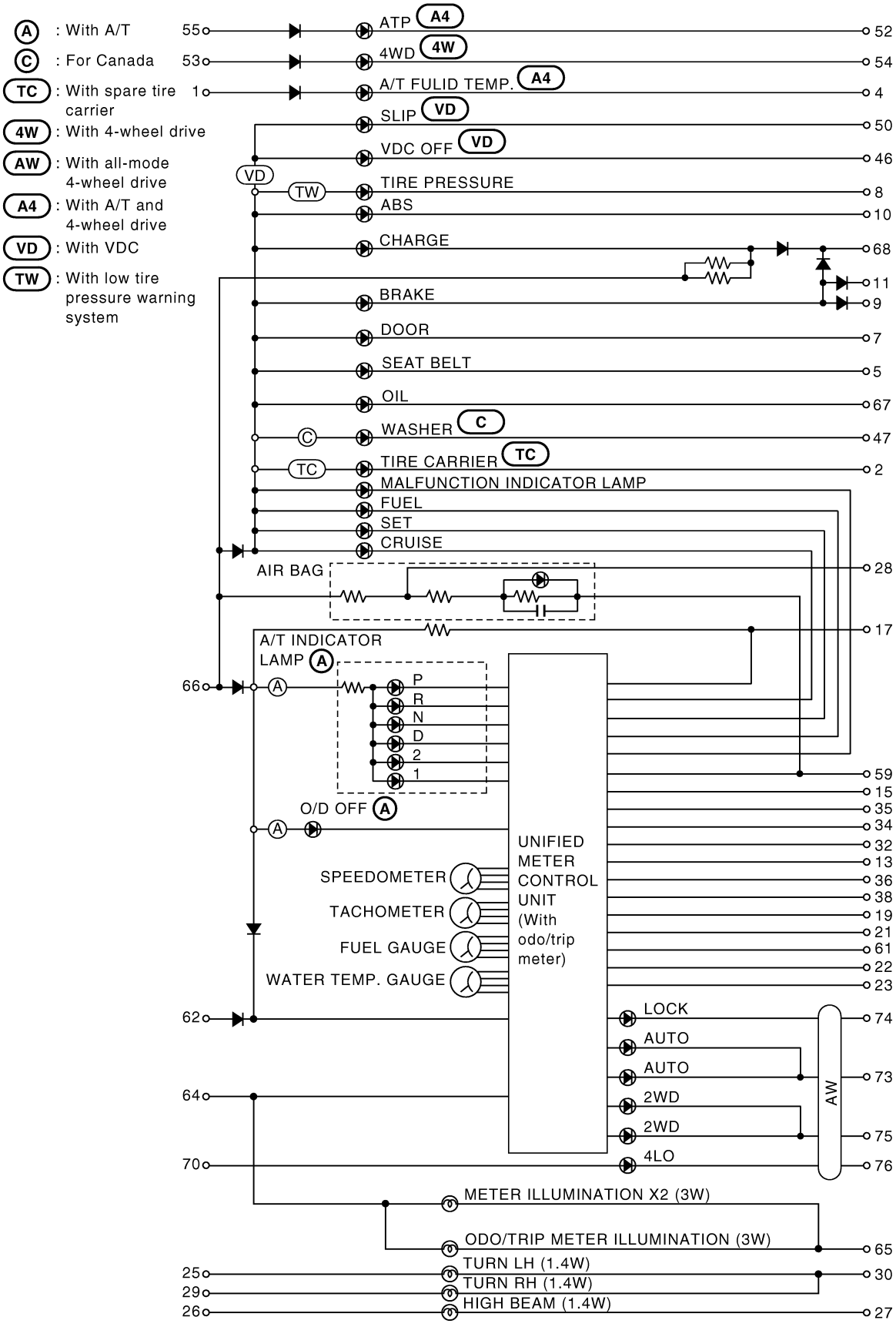
CONSTRUCTION

NAEL0486S02



Schematic/With Normal Meter

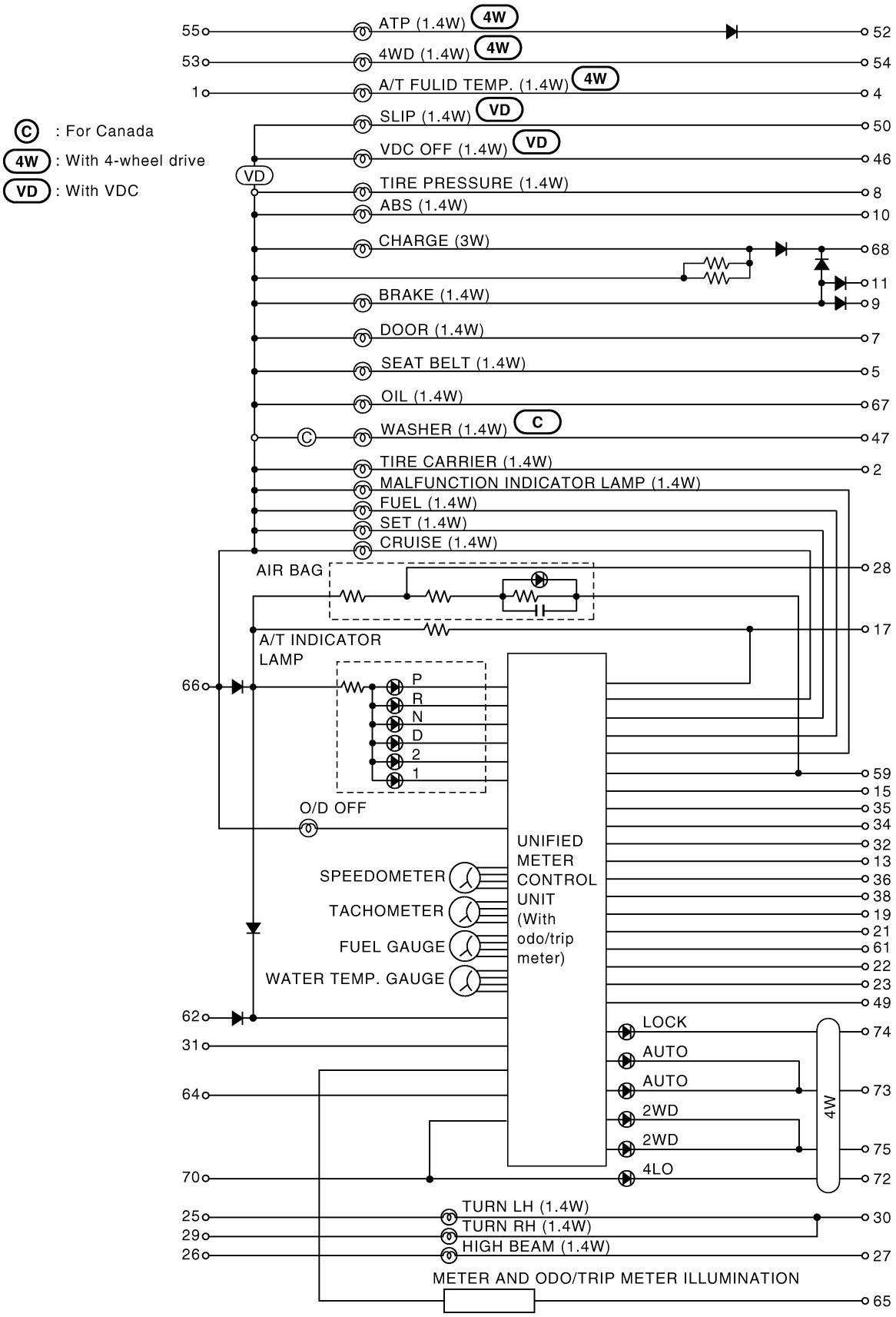
NAEL0299



MEL972R

Schematic/With Fine Vision Meter

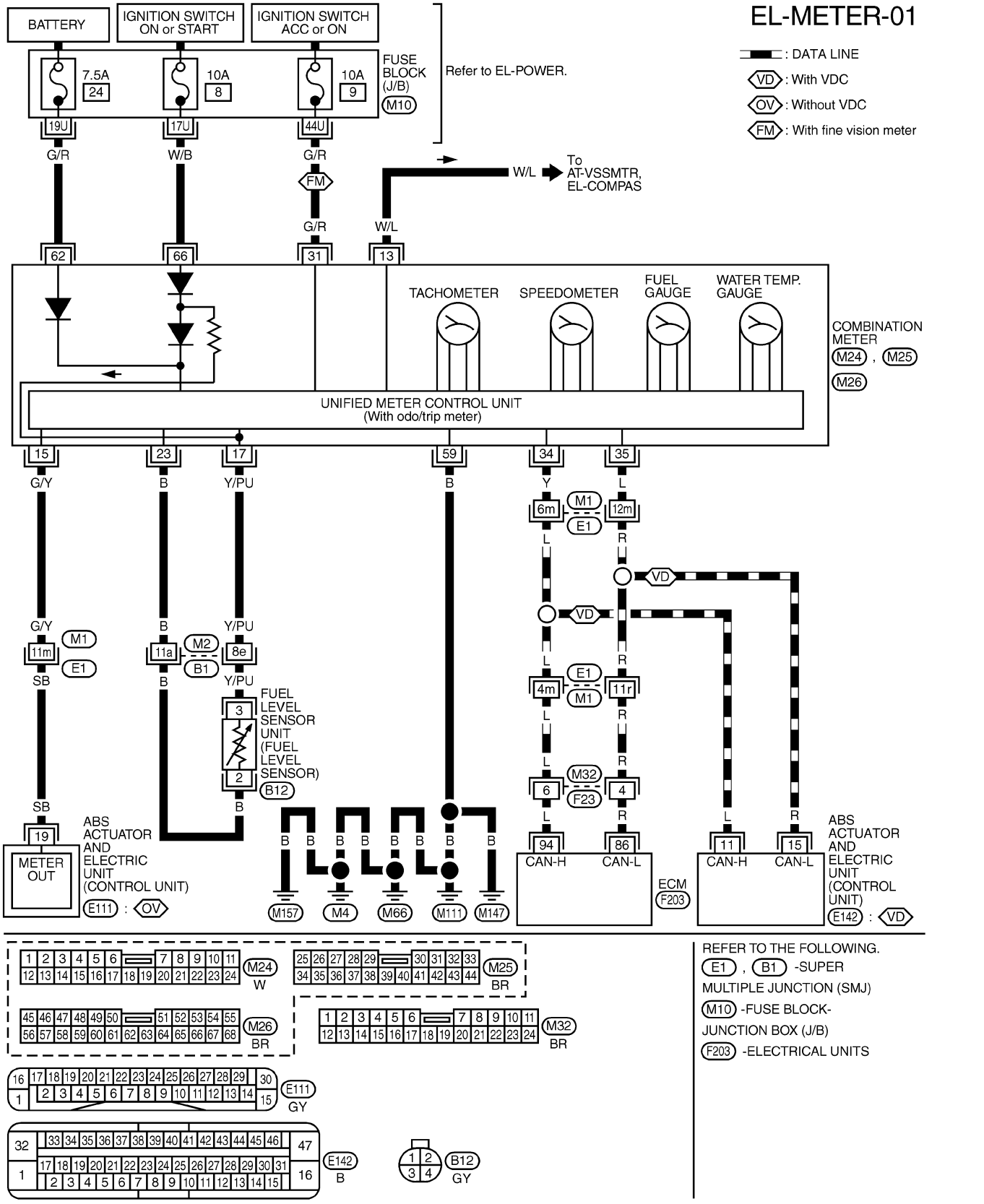
NAEL0487



MEL973R

Wiring Diagram — METER —

NAEL0300



MEL940R

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

NAEL0301

DIAGNOSIS FUNCTION

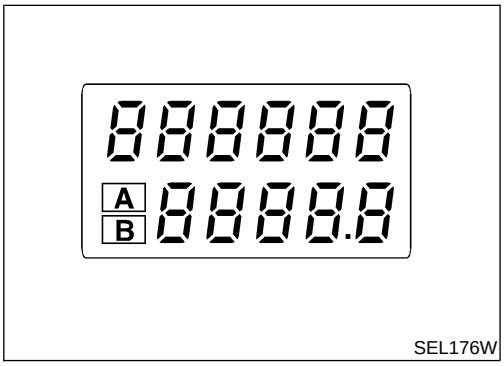
NAEL0301S01

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

HOW TO ALTERNATE DIAGNOSIS MODE

NAEL0301S02

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 after the ignition switch is turned ON.)

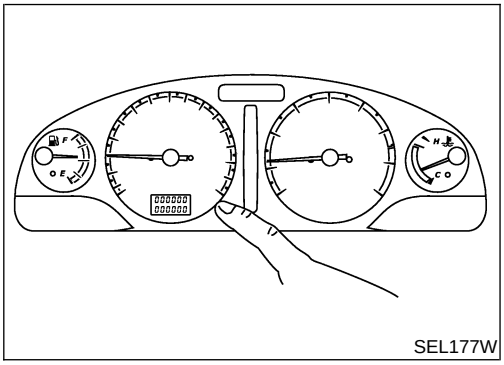


SEL176W

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.

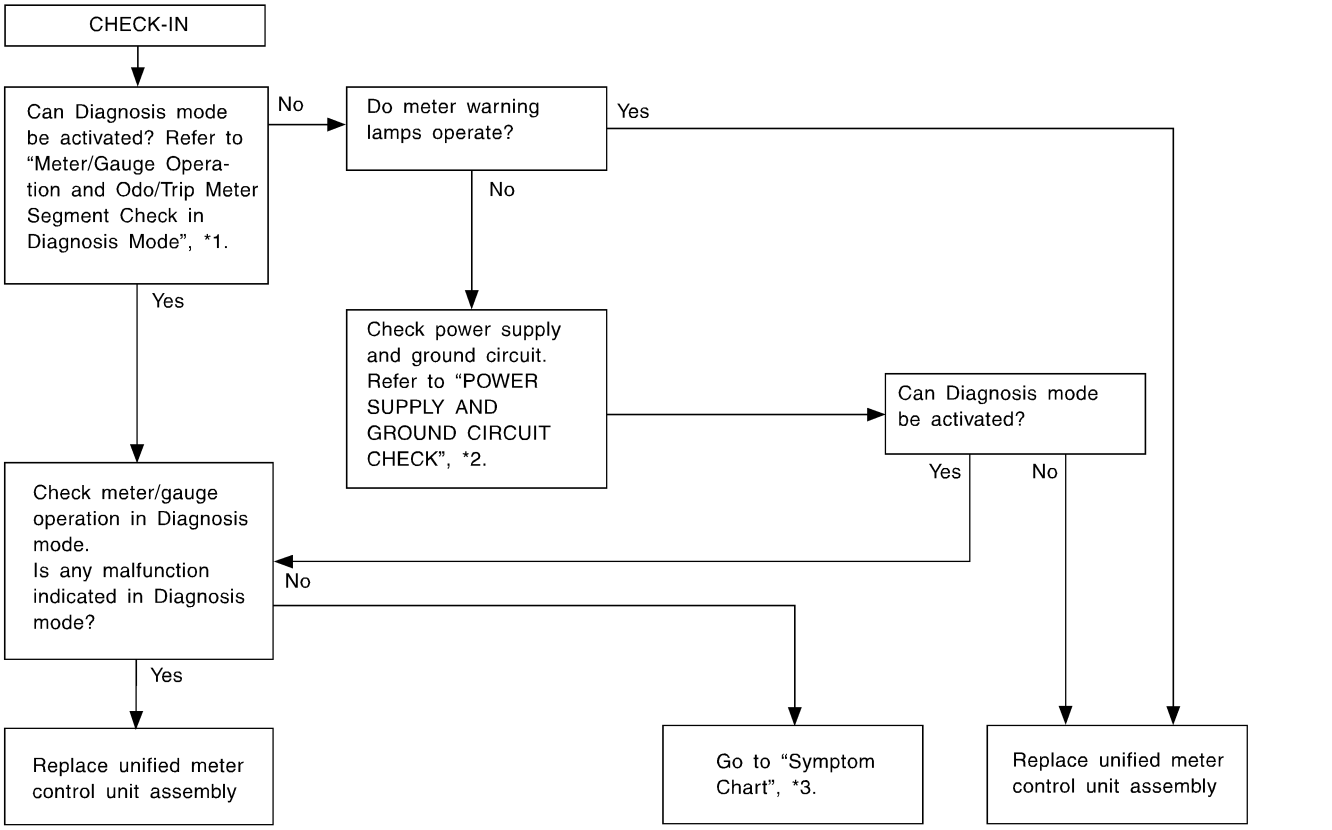
NOTE:
It takes about a few seconds for indication of fuel gauge and water temperature gauge to become stable.

Trouble Diagnoses

NAEL0302

PRELIMINARY CHECK FOR NORMAL METER

NAEL0302S01



SEL494Y

*1: Meter/Gauge Operation and Odo/Trip Meter Segment Check in Diagnosis Mode (EL-133)

*2: POWER SUPPLY AND GROUND CIRCUIT CHECK (EL-137)

*3: Symptom Chart (EL-134)

SYMPTOM CHART FOR NORMAL METER

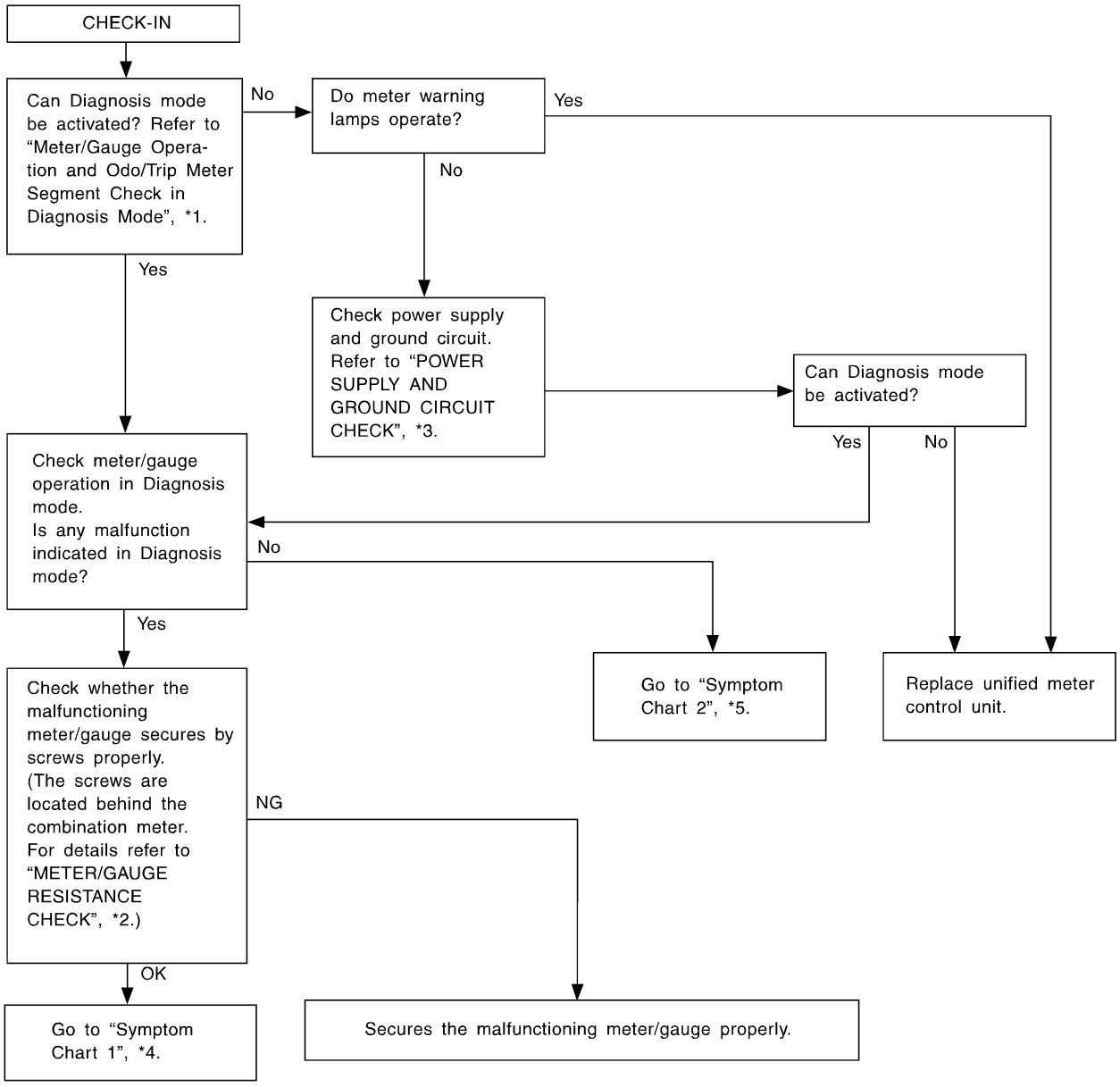
NAEL0302S02

Symptom	Possible causes	Repair order
One of speedometer/ tachometer/fuel gauge/ water temp. gauge is malfunctioning.	1. Sensor signal - Vehicle speed signal - Engine speed signal - Fuel gauge - Water temp. gauge 2. Unified meter control unit	1. Check the sensor for malfunctioning meter/gauge. INSPECTION/VEHICLE SPEED SIGNAL WITH VDC (Refer to EL-137.) INSPECTION/VEHICLE SPEED SIGNAL WITHOUT VDC (Refer to EL-138.) INSPECTION/ENGINE SPEED SIGNAL (Refer to EL-138.) INSPECTION/FUEL LEVEL SENSOR UNIT (Refer to EL-139.) INSPECTION/WATER TEMPERATURE SIGNAL (Refer to EL-140.) 2. Replace unified meter control unit assembly.
Multiple meter/gauge are malfunctioning. (except odo/trip meter)		

Before starting trouble diagnoses below, perform PRELIMINARY CHECK FOR NORMAL METER, EL-134.

PRELIMINARY CHECK FOR FINE VISION METER

NAEL0302S12



SEL361W

*1: Meter/Gauge Operation and Odo/Trip Meter Segment Check in Diagnosis Mode (EL-133)

*2: METER/GAUGE RESISTANCE CHECK FOR FINE VISION METER (EL-140)

*3: POWER SUPPLY AND GROUND CIRCUIT CHECK (EL-137)

*4: Symptom Chart 1 (EL-136)

*5: Symptom Chart 2 (EL-136)

Trouble Diagnoses (Cont'd)

SYMPTOM CHART FOR FINE VISION METER

NAEL0302S13

Symptom Chart 1 (Malfunction is Indicated in Diagnosis Mode)

NAEL0302S1301

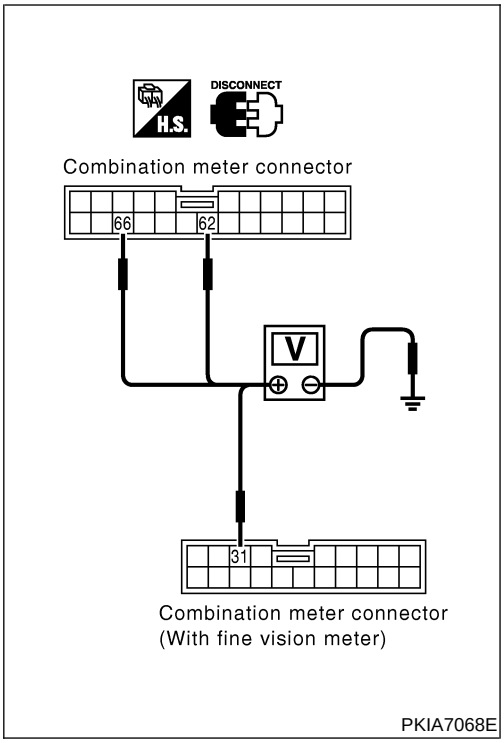
Symptom	Possible causes	Repair order
Odo/trip meter indicate(s) malfunction in Diagnosis mode.	Unified meter control unit	Replace unified meter control unit.
Multiple meter/gauge indicate malfunction in Diagnosis mode.		
One of speedometer/ tachometer/fuel gauge/ water temp. gauge indicates malfunction 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 FOR FINE VISION METER", EL-140. 2. If the resistance of meter/gauge is OK, replace unified meter control unit.

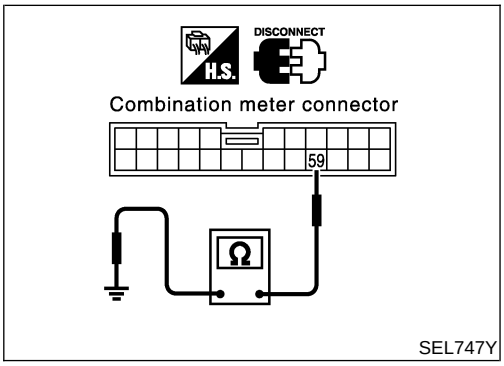
Symptom Chart 2 (No Malfunction is Indicated in Diagnosis Mode)

NAEL0302S1302

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 SIGNAL WITH VDC (Refer to EL-137.) INSPECTION/VEHICLE SPEED SIGNAL WITHOUT VDC (Refer to EL-138.) INSPECTION/ENGINE SPEED SIGNAL (Refer to EL-138.) INSPECTION/FUEL LEVEL SENSOR UNIT (Refer to EL-139.) INSPECTION/WATER TEMPERATURE SIGNAL (Refer to EL-140.) 2. Replace unified meter control unit assembly.
Multiple meter/gauge are malfunctioning. (except odo/trip meter)		

Before starting trouble diagnoses below, perform PRELIMINARY CHECK FOR FINE VISION METER, EL-135.





POWER SUPPLY AND GROUND CIRCUIT CHECK

=NAEL0302S03

Power Supply Circuit Check

NAEL0302S0301

Terminals			Ignition switch position		
(+)		(−)	OFF	ACC	ON
Connector	Terminal (wire color)				
M25*	31 (G/R)	Ground	0V	Battery voltage	Battery voltage
M26	62 (G/R)	Ground	Battery voltage	Battery voltage	Battery voltage
	66 (W/B)	Ground	0V	0V	Battery voltage

*: With fine vision meter

If NG, check the following.

- 7.5A fuse [No. 24, located in fuse block (J/B)]
- 10A fuse [No. 8, located in fuse block (J/B)]
- 10A fuse [No. 9, located in fuse block (J/B)]
- Harness for open or short between fuse and combination meter

Ground Circuit Check

NAEL0302S0302

Terminals			Continuity
(+)		(−)	
Connector	Terminal (wire color)		
M26	59 (B)	Ground	Yes

INSPECTION/VEHICLE SPEED SIGNAL WITH VDC

NAEL0302S11

1	CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) OUTPUT	
Perform ABS actuator and electric unit (control unit) self-diagnosis. Refer to BR-103, "CONSULT-II Functions".		
OK or NG		
OK	▶	Replace combination meter.
NG	▶	Check ABS actuator and electric unit (control unit). Refer to BR-91, "Trouble Diagnosis".

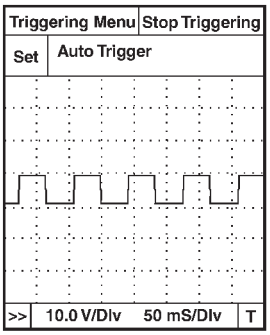
INSPECTION/VEHICLE SPEED SIGNAL WITHOUT VDC

=NAEL0302S04

1	CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) OUTPUT SIGNAL

With CONSULT-II

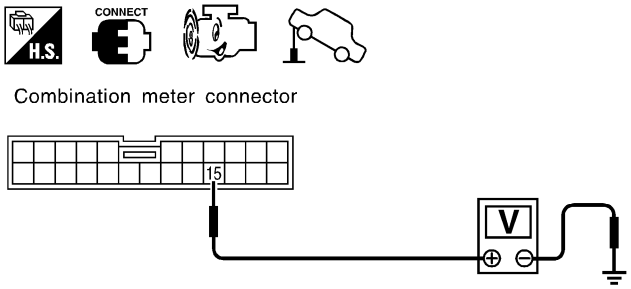
1. Lift up drive wheels.
2. Start engine and drive vehicle at more than 20 km/h (12 MPH).
3. Check signal between combination meter harness connector M24 terminal 15 (G/Y) and ground when rotating wheels with engine at idle. (Use "SIMPLE OSCILLOSCOPE" in "SUB MODE" with CONSULT-II.)



SEL938W

Without CONSULT-II

1. Lift up drive wheels.
2. Start engine and drive vehicle at more than 20 km/h (12 MPH).
3. Check voltage between combination meter harness connector M24 terminal 15 (G/Y) and ground when rotating wheels with engine at idle.



Voltage: Approx. 0 - 5V

SEL939WB

OK or NG

OK	▶	ABS actuator and electric unit (control unit) is OK.
NG	▶	**Check the following.** ● Harness for open or short between ABS actuator and electric unit (control unit) and combination meter. ● ABS actuator and electric unit (control unit). Refer to BR-56, "Wheel Sensor or Rotor".

INSPECTION/ENGINE SPEED SIGNAL

NAEL0302S05

1	CHECK ECM SELF-DIAGNOSIS

Perform ECM self-diagnosis. Refer to EC-78, "Emission-related Diagnostic Information".

OK or NG

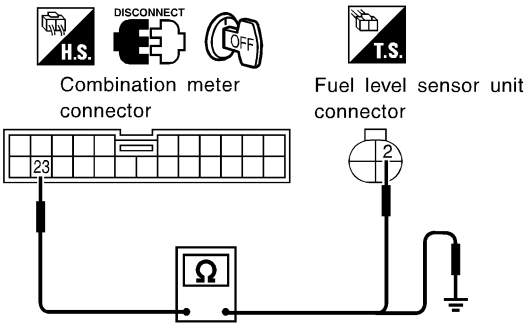
OK	▶	Replace combination meter.
NG	▶	Perform "Diagnostic Procedure" for displayed DTC.

INSPECTION/FUEL LEVEL SENSOR UNIT

=NAEL0302S06

1	CHECK GROUND CIRCUIT FOR FUEL LEVEL SENSOR UNIT

1. Turn ignition switch to OFF position.
2. Disconnect combination meter connector and fuel level sensor connector.
3. Check continuity between combination meter harness connector M24 terminal 23 (B) and fuel level sensor unit harness connector B12 terminal 2 (B).
4. Check continuity between combination meter harness connector M24 terminal 23 (B) and ground.



Continuity:
Combination meter terminal 23 and fuel level sensor unit terminal 2
Yes
Combination meter terminal 23 and ground
No

SEL794Y

OK or NG

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

2	CHECK FUEL LEVEL SENSOR UNIT

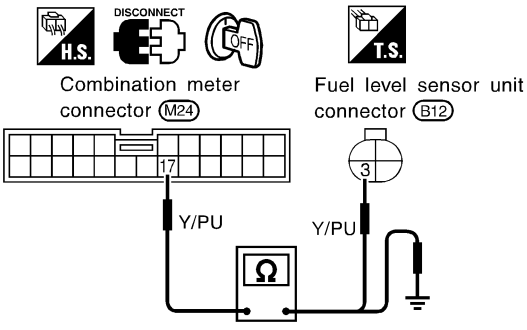
Refer to "FUEL LEVEL SENSOR UNIT CHECK" (EL-140).

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 harness connector terminal 17 and fuel level sensor unit harness connector terminal 3.
3. Check continuity between combination meter harness connector 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/WATER TEMPERATURE SIGNAL

NAEL0302S07

1	CHECK ECM SELF-DIAGNOSIS	
Perform ECM self-diagnosis. Refer to EC-78, "Emission-related Diagnostic Information".		
OK or NG		
OK	▶	Replace combination meter.
NG	▶	Perform "Diagnostic Procedure" for display DTC.

Electrical Components Inspection

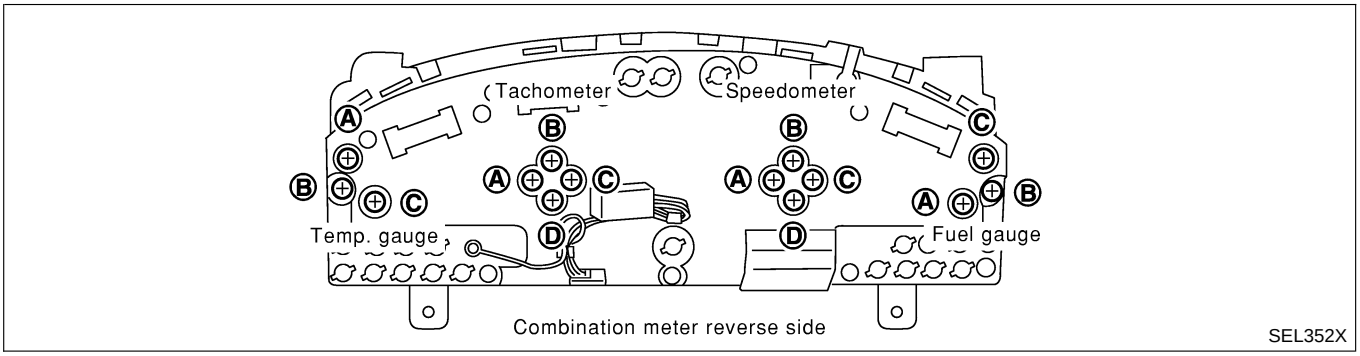
NAEL0303

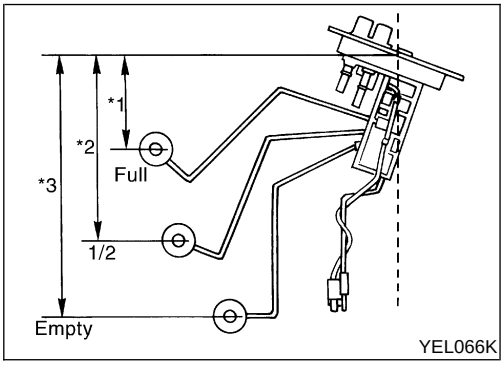
METER/GAUGE RESISTANCE CHECK FOR FINE VISION METER

NAEL0303S05

Check resistance between installation screws of meter/gauge.

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





FUEL LEVEL SENSOR UNIT CHECK

NAEL0303S02

- For removal, refer to FE-4, "FUEL SYSTEM".

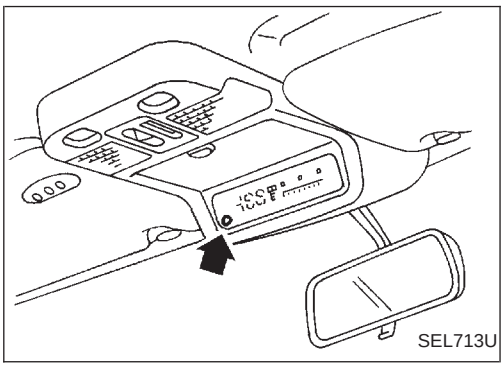
Check the resistance between terminals 3 and 2.

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

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

System Description

NAEL0304



This unit displays following items:

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

OUTSIDE TEMPERATURE DISPLAY

NAEL0304S01

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.)

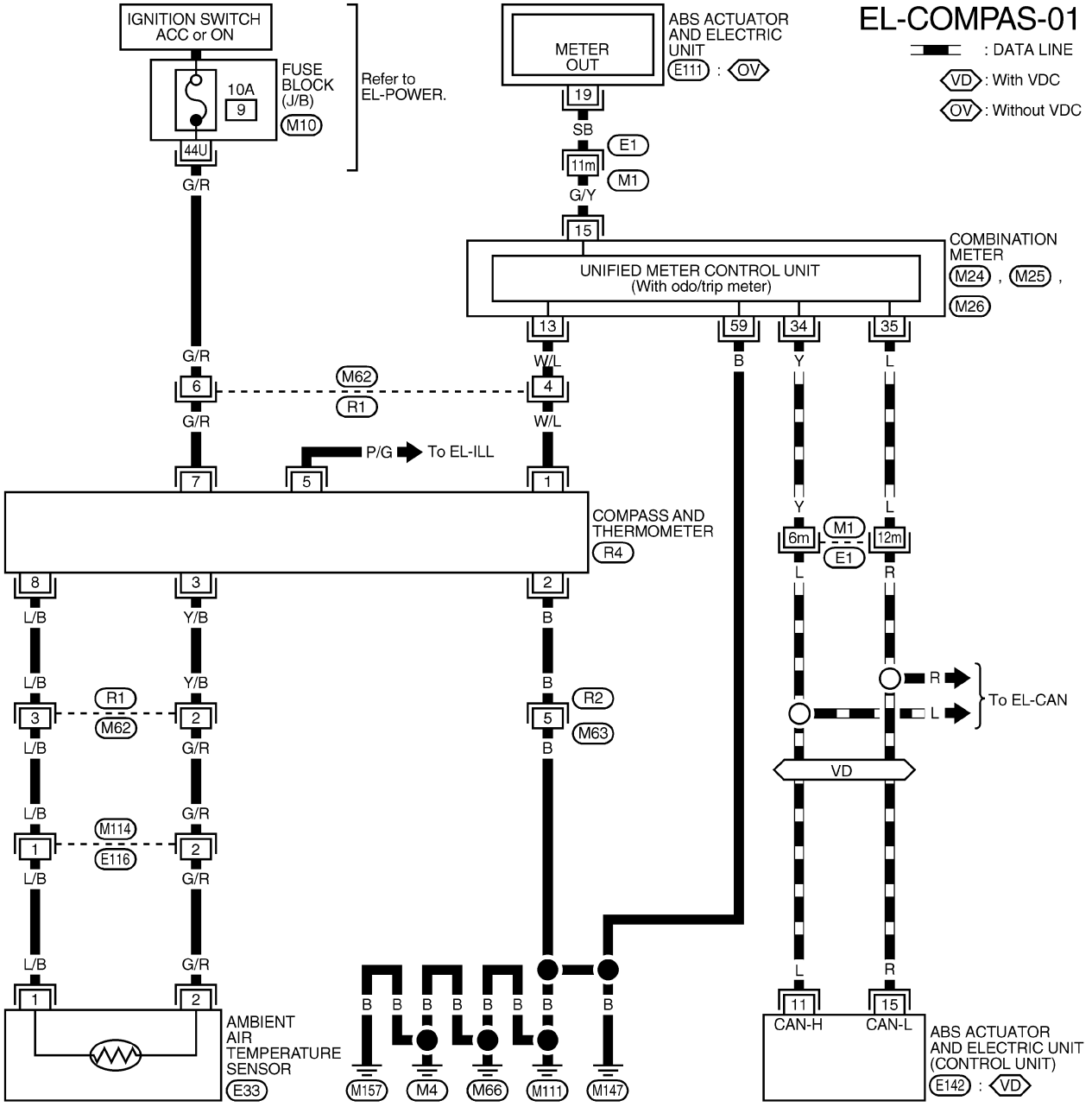
DIRECTION DISPLAY

NAEL0304S02

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

Wiring Diagram — COMPAS —

NAEL0305



MEL941R

Trouble Diagnoses

NAEL0306

PRELIMINARY CHECK FOR THERMOMETER

NAEL0306S01

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

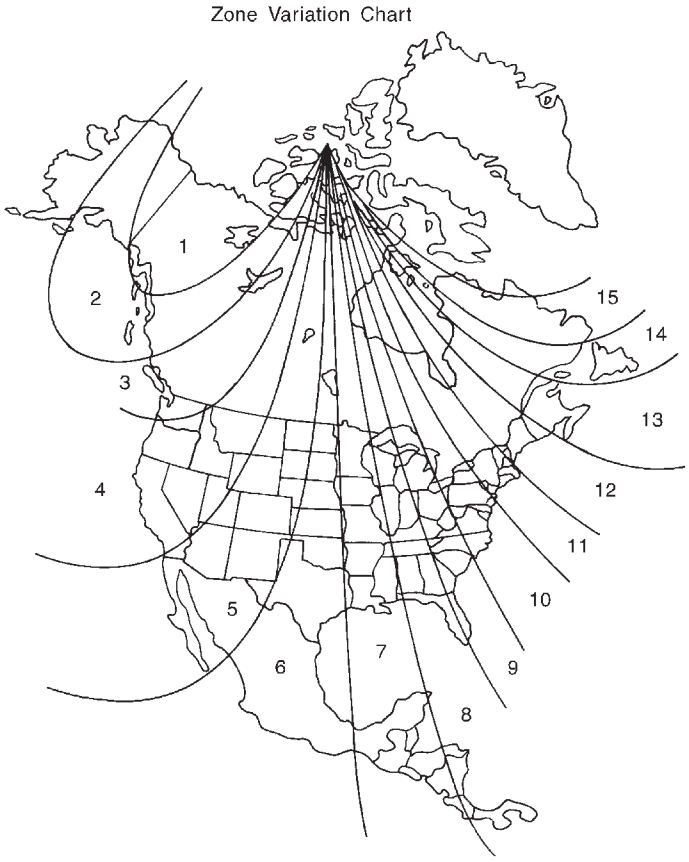
NAEL0306S02

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 signal 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 signal 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

=NAEL0307

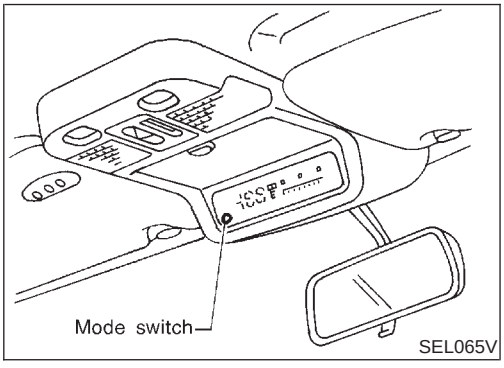
The difference between magnetic North and geographical North can sometimes be great enough to cause false compass readings. In order for the compass to operate accurately in a particular zone, it must be calibrated using the following procedure.



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



CORRECTION FUNCTIONS OF COMPASS

NAEL0307S01

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

NAEL0307S02

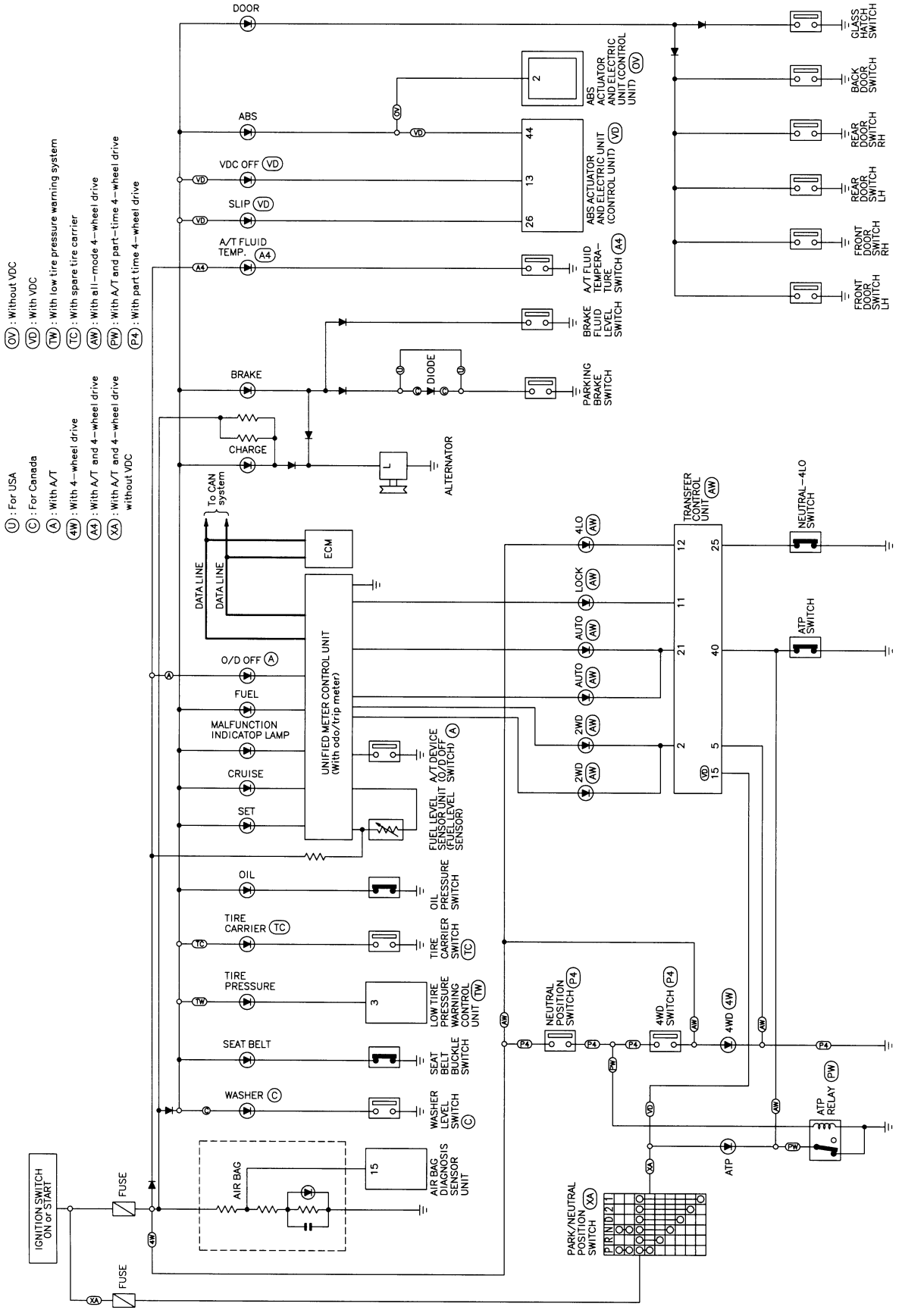
1. Pushing the "Mode" switch for about 10 seconds will enter the initial correction mode. The direction bar starts blinking.
2. Turn the vehicle slowly in an open, safe place. The initial correction is completed in one or two turns.

NOTE:

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

Schematic/With Normal Meter

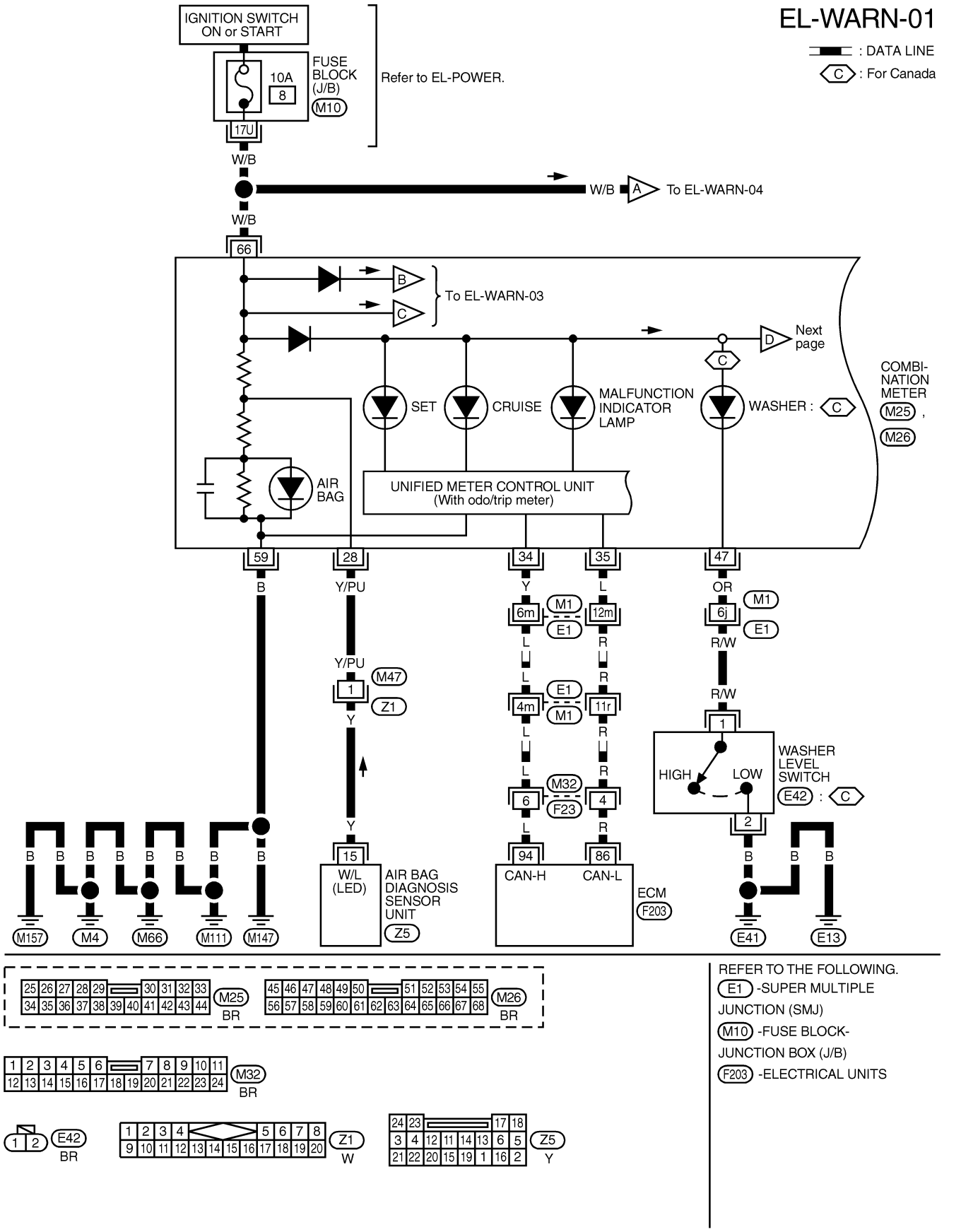
NAEL0308

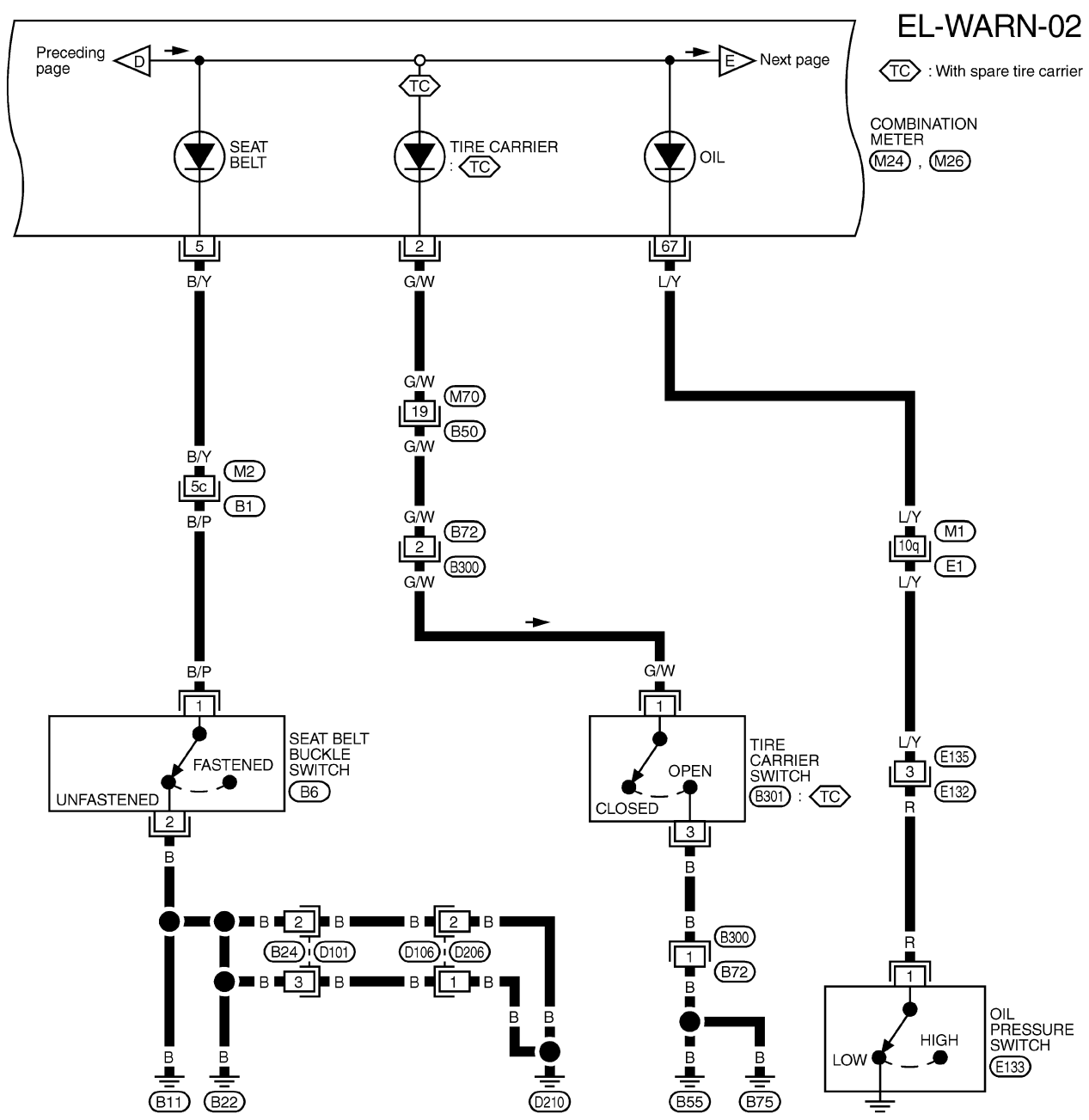


MEL980P

Wiring Diagram — WARN —/With Normal Meter

NAEL0309

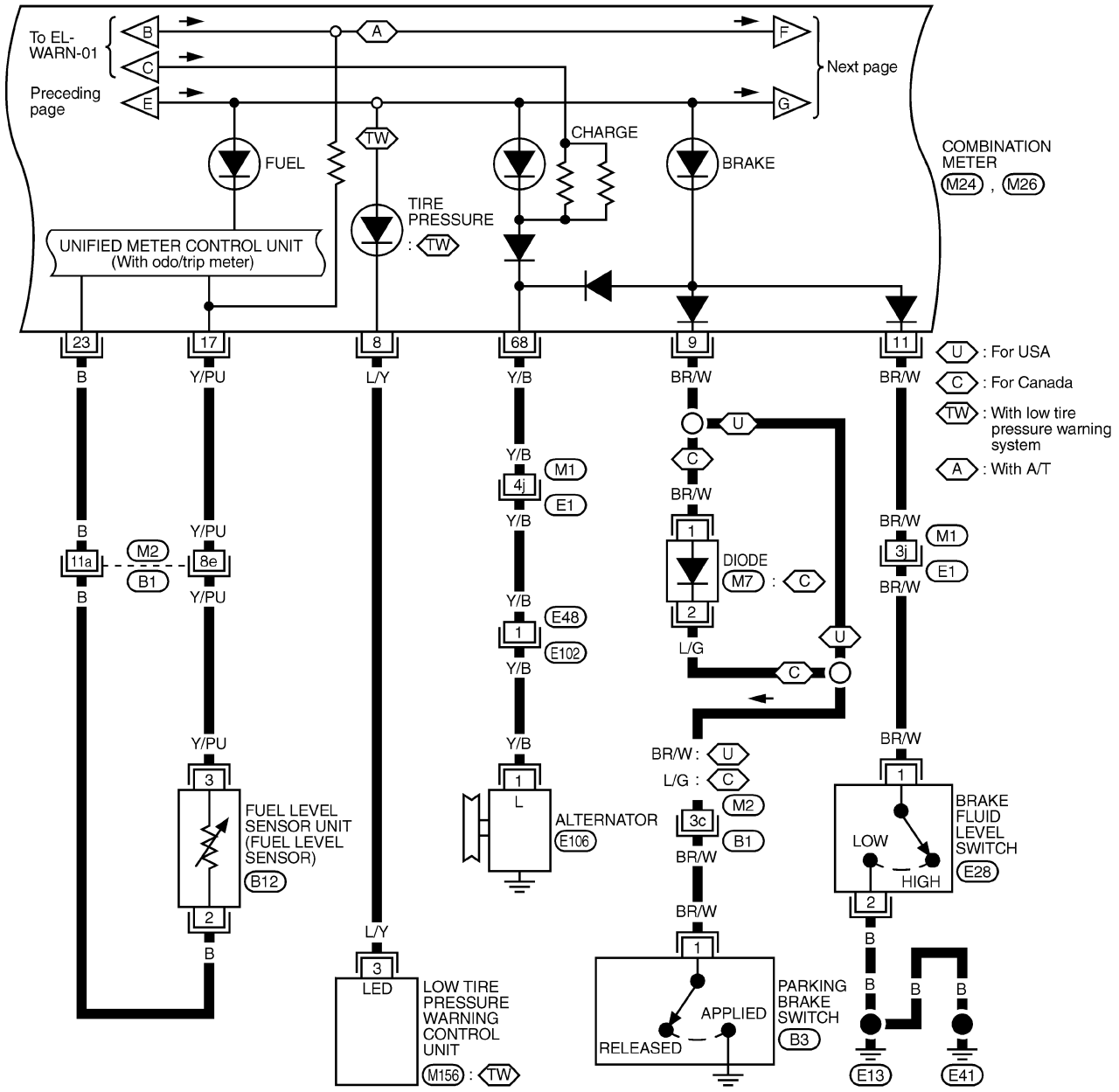


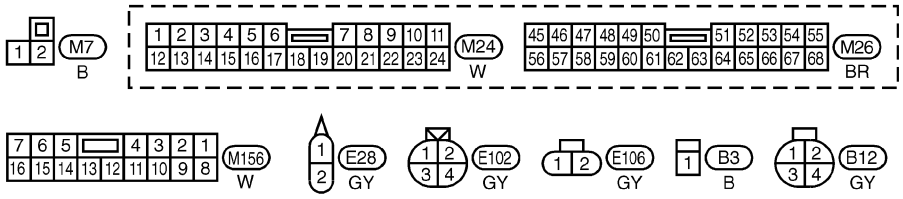


REFER TO THE FOLLOWING.
E1 , B1 -SUPER MULTIPLE JUNCTION (SMJ)

MEL942R

EL-WARN-03

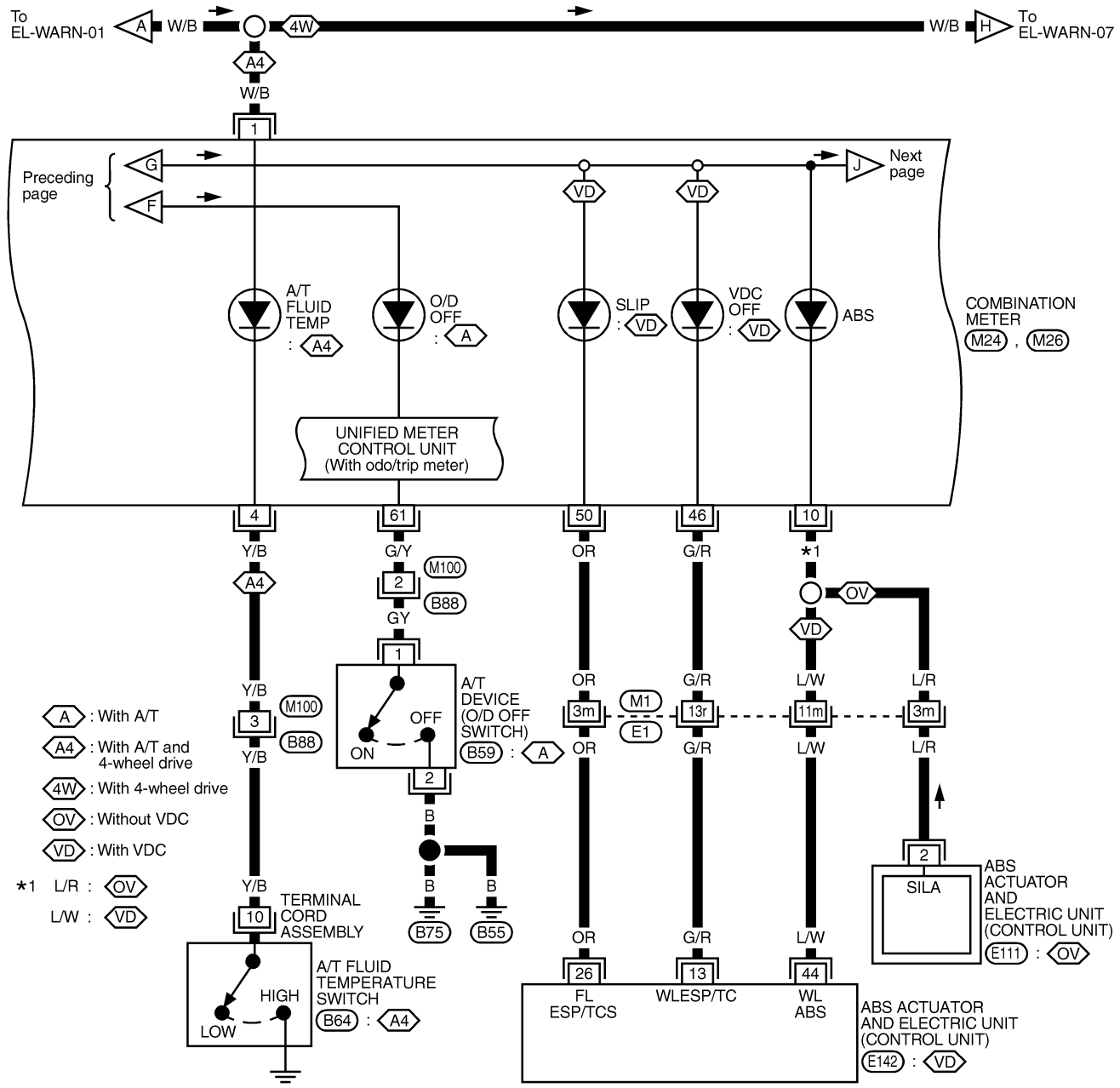


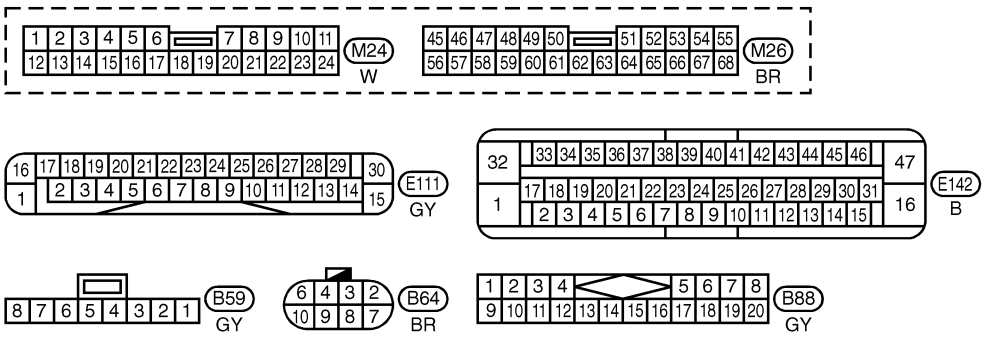


REFER TO THE FOLLOWING.
E1 , B1 -SUPER MULTIPLE JUNCTION (SMJ)

MEL943R

EL-WARN-04

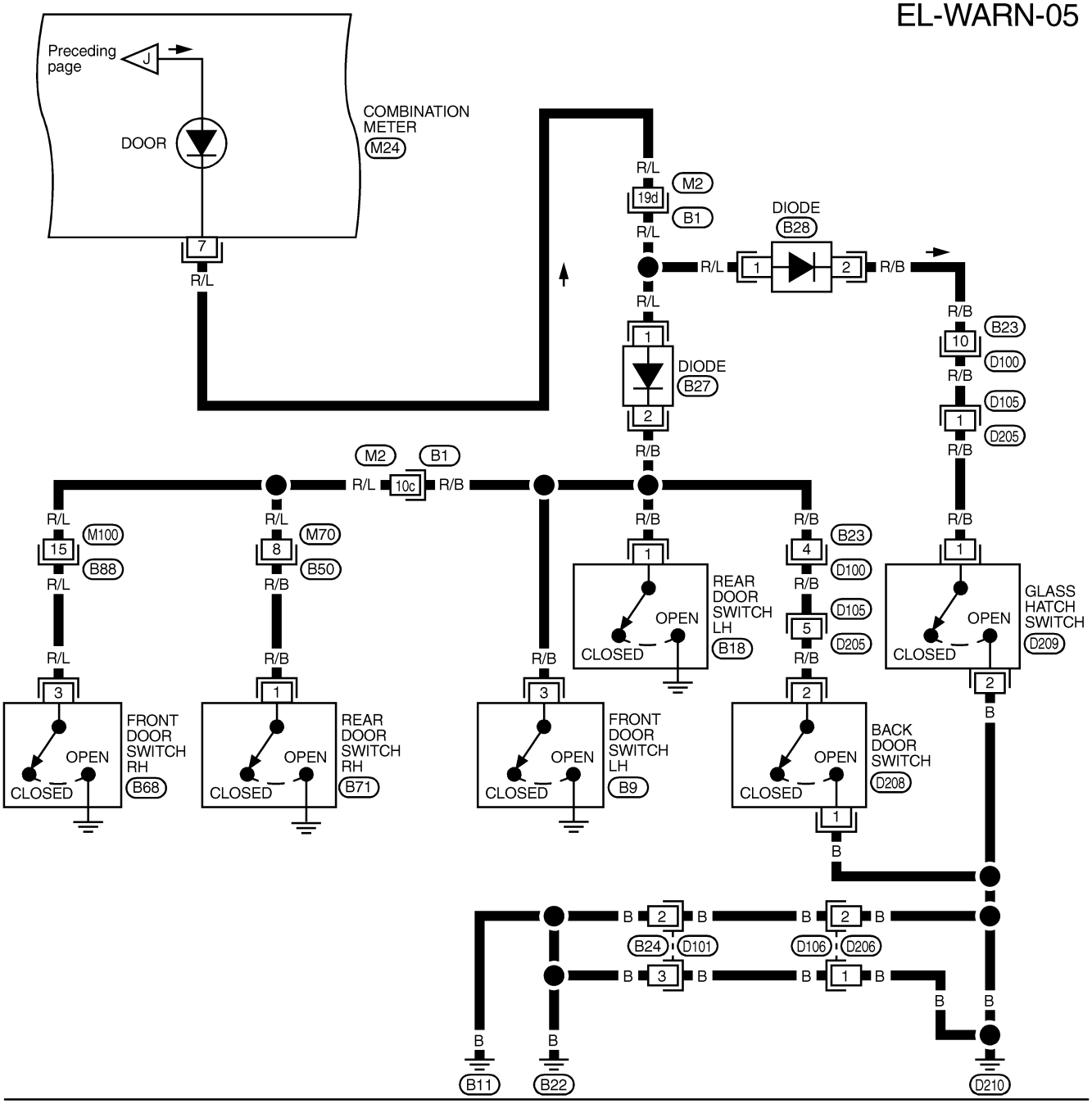


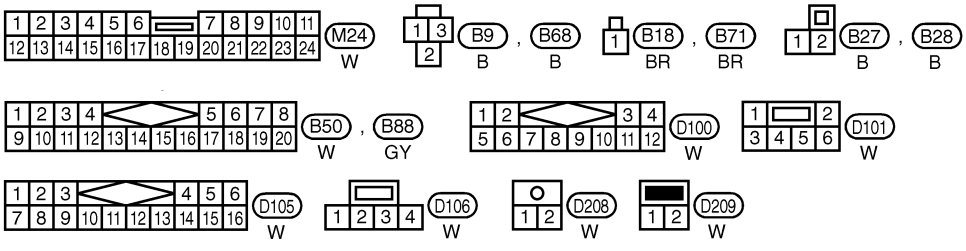


REFER TO THE FOLLOWING.
E1 -SUPER MULTIPLE JUNCTION (SMJ)

MEL984P

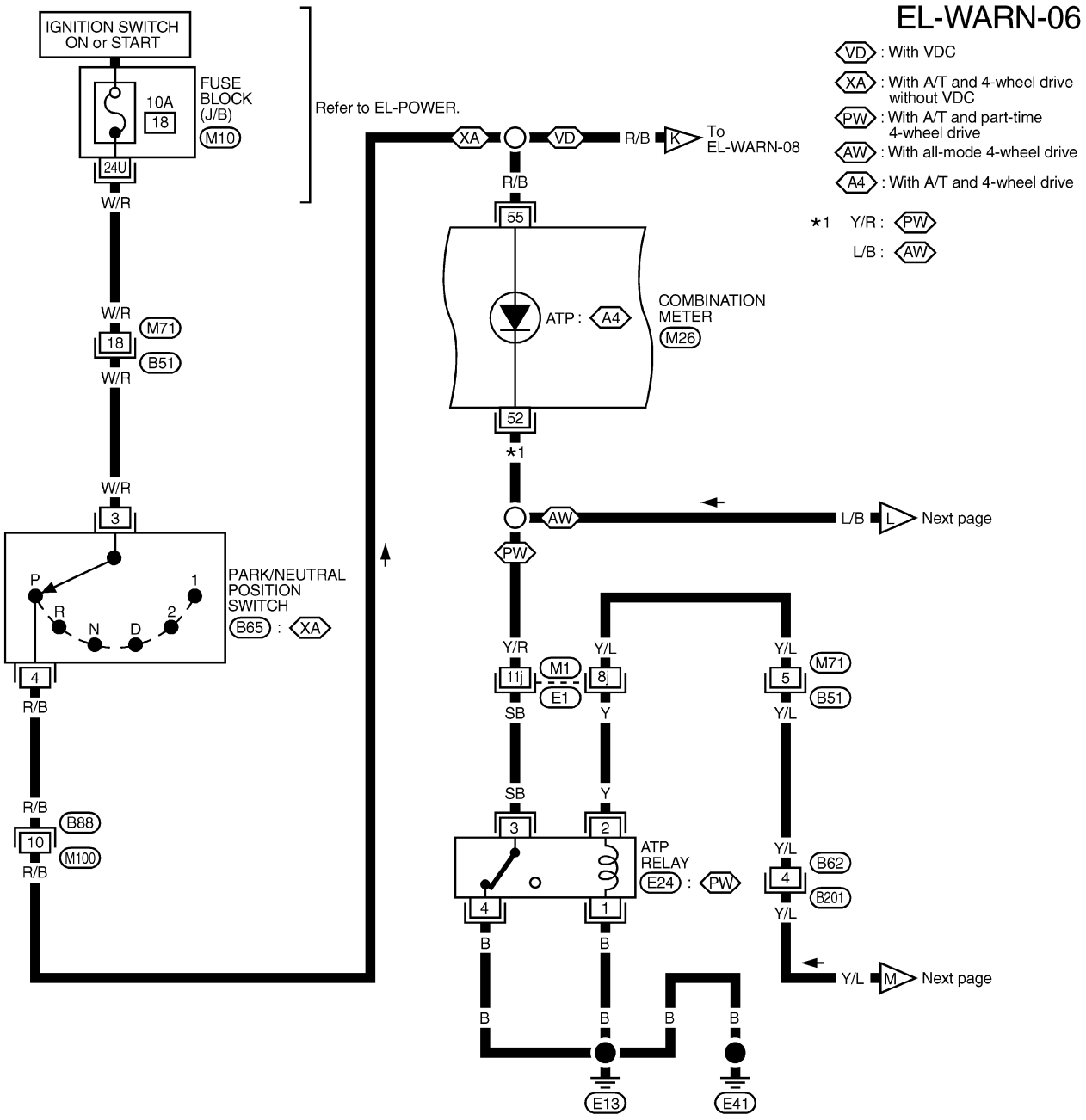
EL-WARN-05

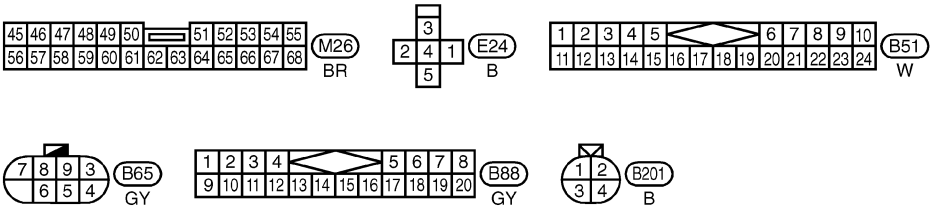




REFER TO THE FOLLOWING.
B1 -SUPER MULTIPLE JUNCTION (SMJ)

MEL985P

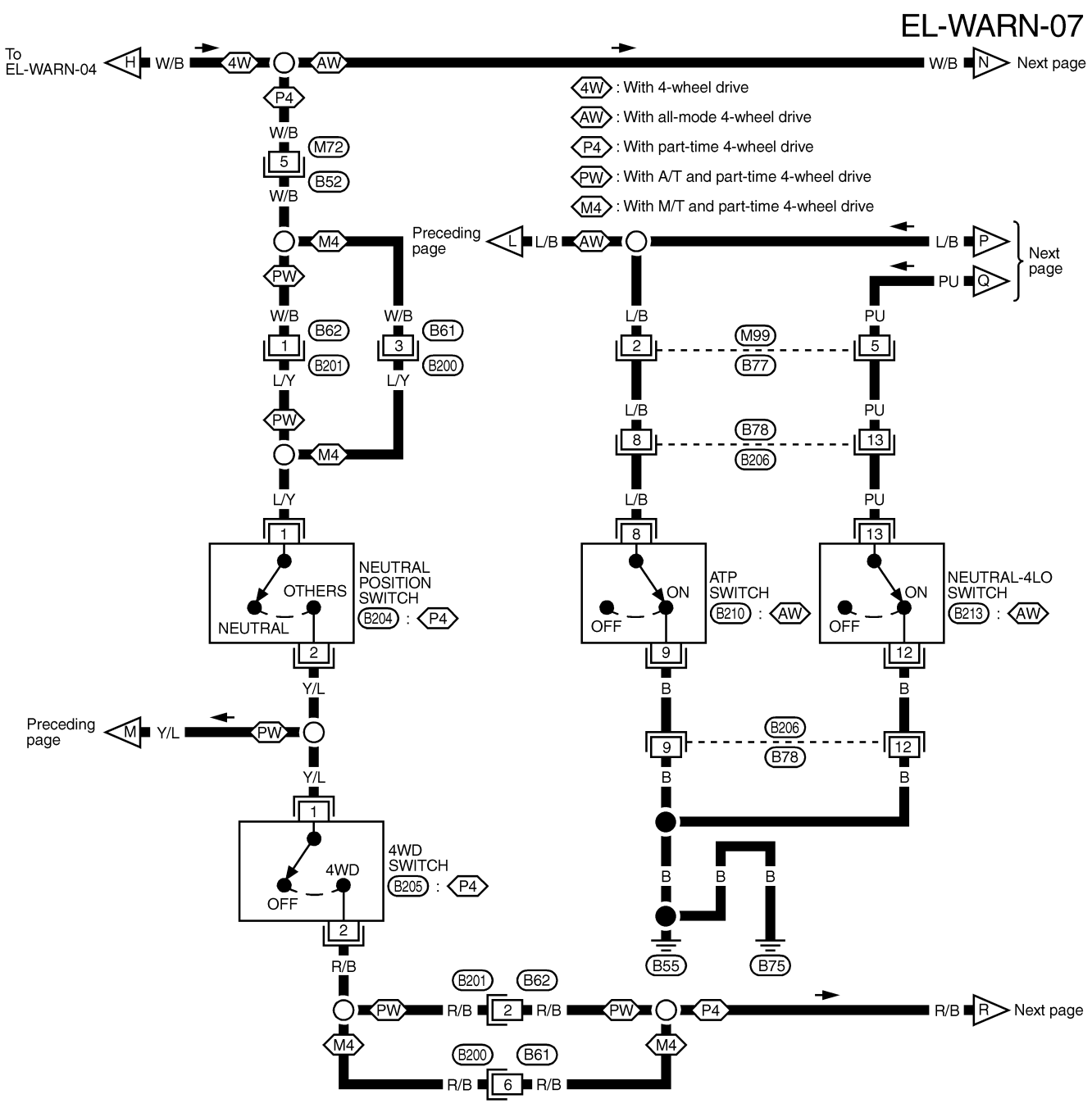


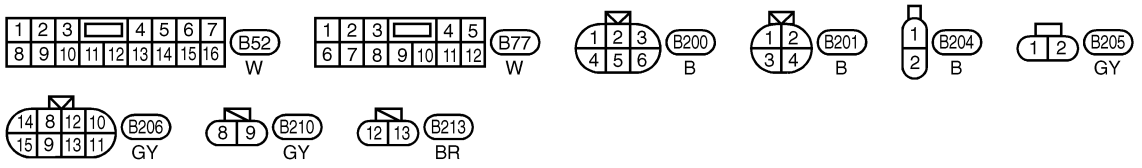


REFER TO THE FOLLOWING.
E1 -SUPER MULTIPLE JUNCTION (SMJ)
M10 -FUSE BLOCK-JUNCTION BOX (J/B)

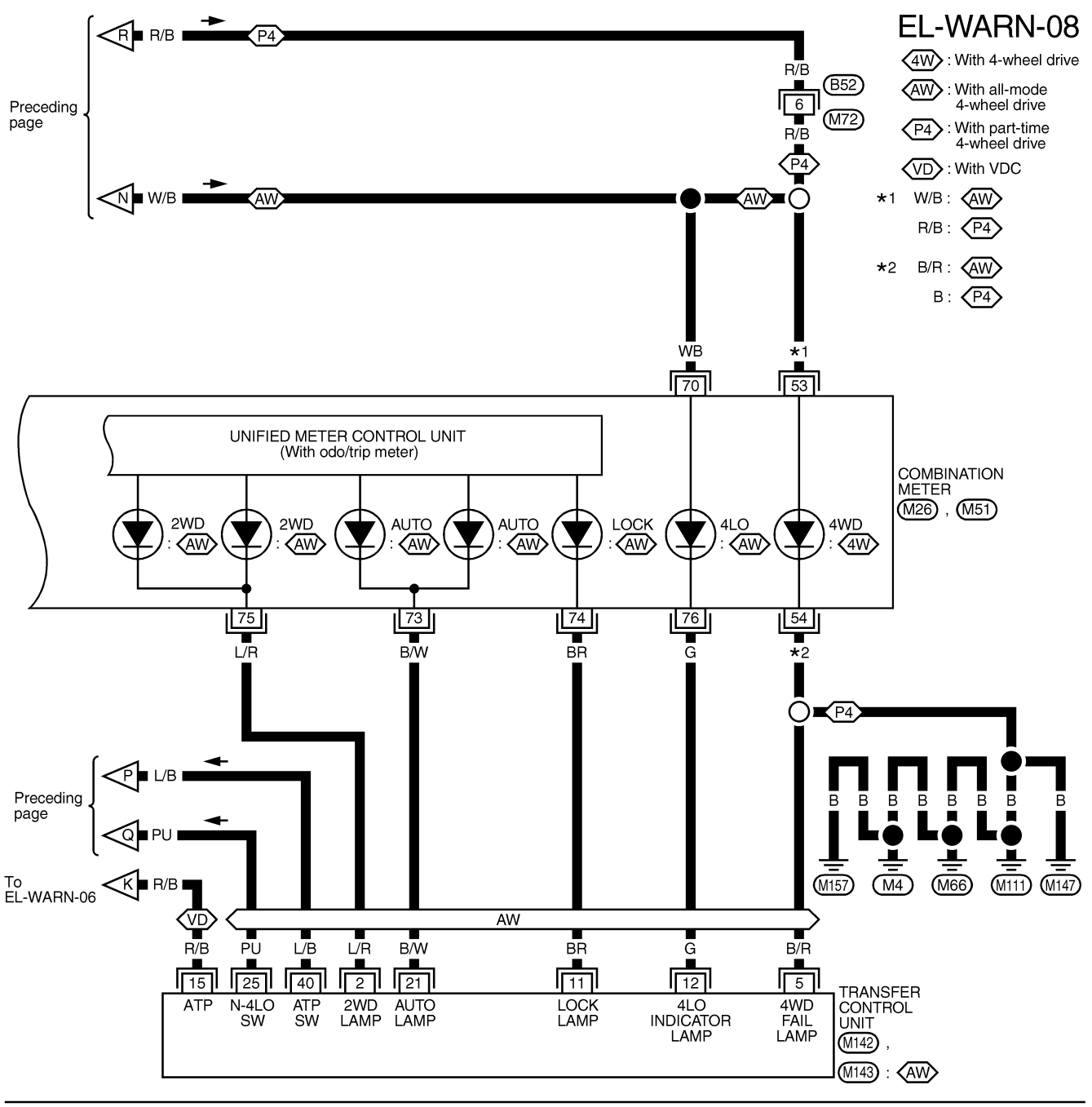
MEL944R

Wiring Diagram — WARN —/With Normal Meter (Cont'd)





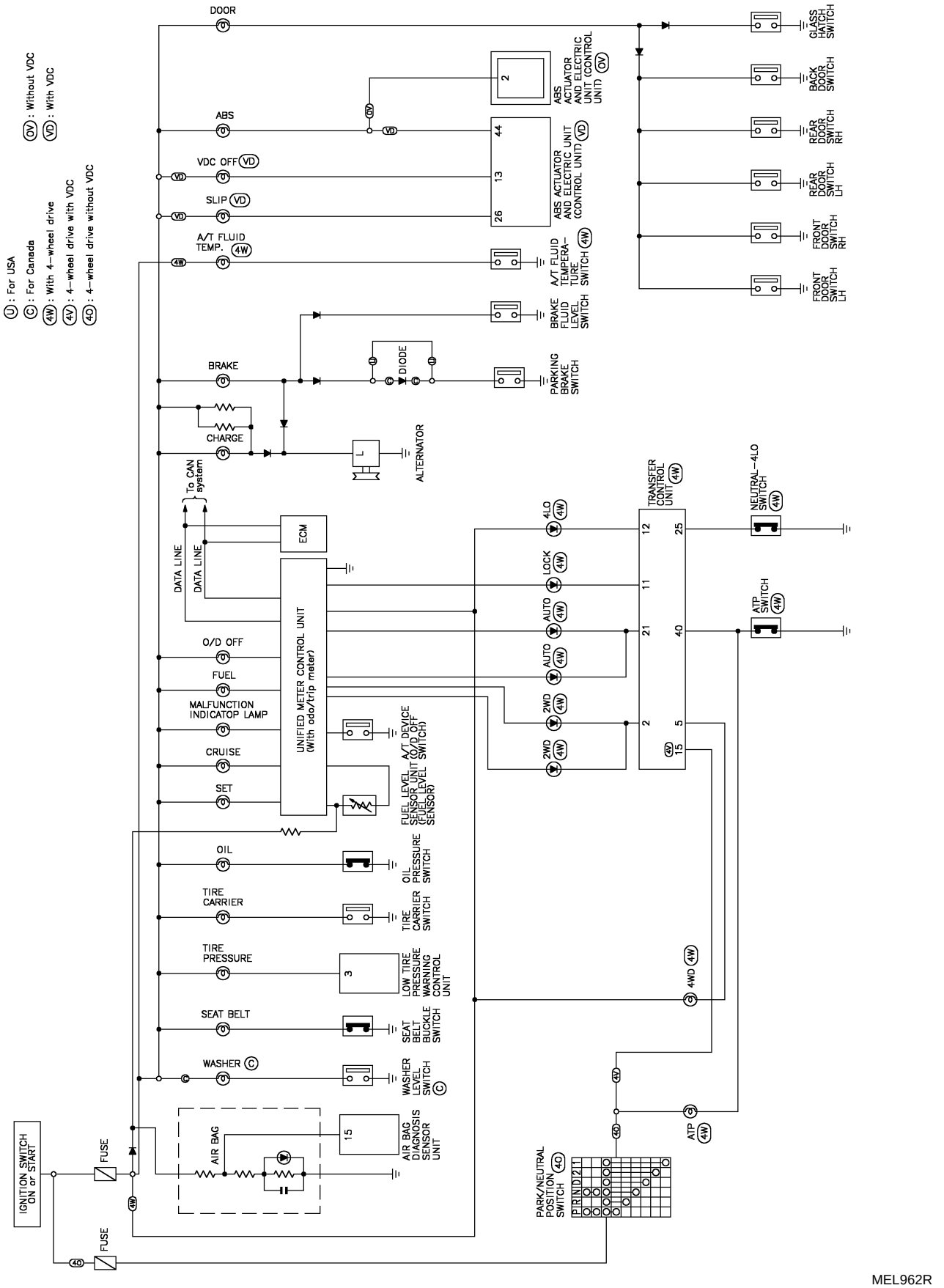
MEL987P


EL-WARN-08
4W : With 4-wheel drive
AW : With all-mode 4-wheel drive
P4 : With part-time 4-wheel drive
VD : With VDC
*1 W/B : AW
R/B : P4
*2 B/R : AW
B : P4
Preceding page
R R/B P4
N W/B AW
R/B B52 6 M72
R/B P4
AW
WB *1
70 53
UNIFIED METER CONTROL UNIT
(With odo/trip meter)
COMBINATION METER M26 , M51
2WD : AW
2WD : AW
AUTO : AW
AUTO : AW
LOCK : AW
4LO : AW
4WD : 4W
75 73 74 76 54
L/R B/W BR G *2
P4
Preceding page
P L/B
Q PU
To EL-WARN-06
K R/B
VD
AW
B B B B B B B B
M157 M4 M66 M111 M147
R/B PU L/B L/R B/W BR G B/R
15 25 40 2 21 11 12 5
ATP
N-4LO SW
ATP SW
2WD LAMP
AUTO LAMP
LOCK LAMP
4LO INDICATOR LAMP
4WD FAIL LAMP
TRANSFER CONTROL UNIT M142 , M143 : AW
45 46 47 48 49 50 51 52 53 54 55
56 57 58 59 60 61 62 63 64 65 66 67 68
M26 BR
72 71 70
77 76 75 74 73
M51 W
1 2 3 4 5 6 7 8 9
10 11 12 13 14 15 16 17 18
19 20 21 22 23 24
M142 L
25 26 27 28 29 30 31 32 33
34 35 36 37 38 39 40 41 42
43 44 45 46 47 48
M143 G
H.S.
1 2 3 4 5 6 7
8 9 10 11 12 13 14 15 16
B52 W

MEL988P

Schematic/With Fine Vision Meter

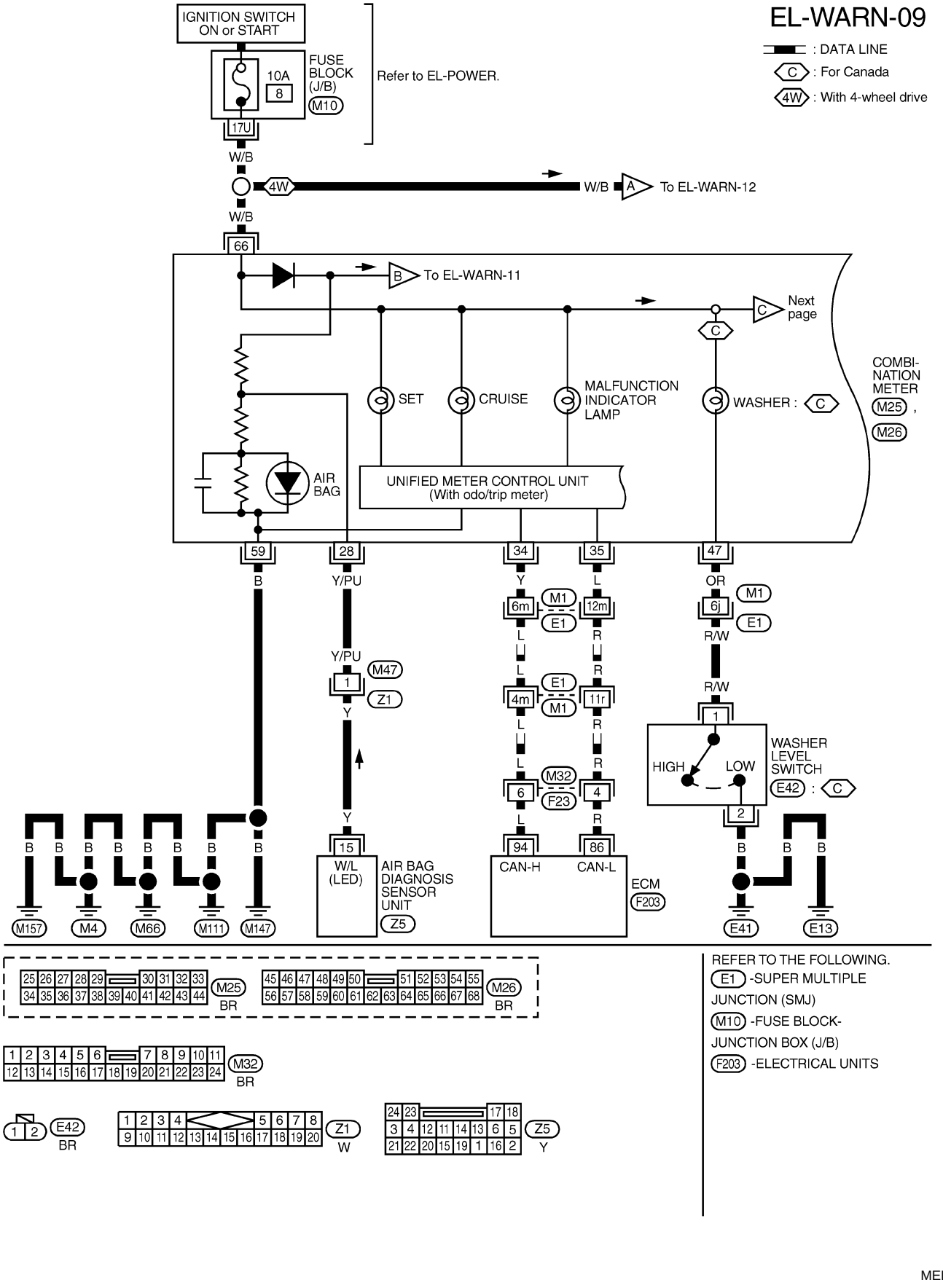
NAEL0488



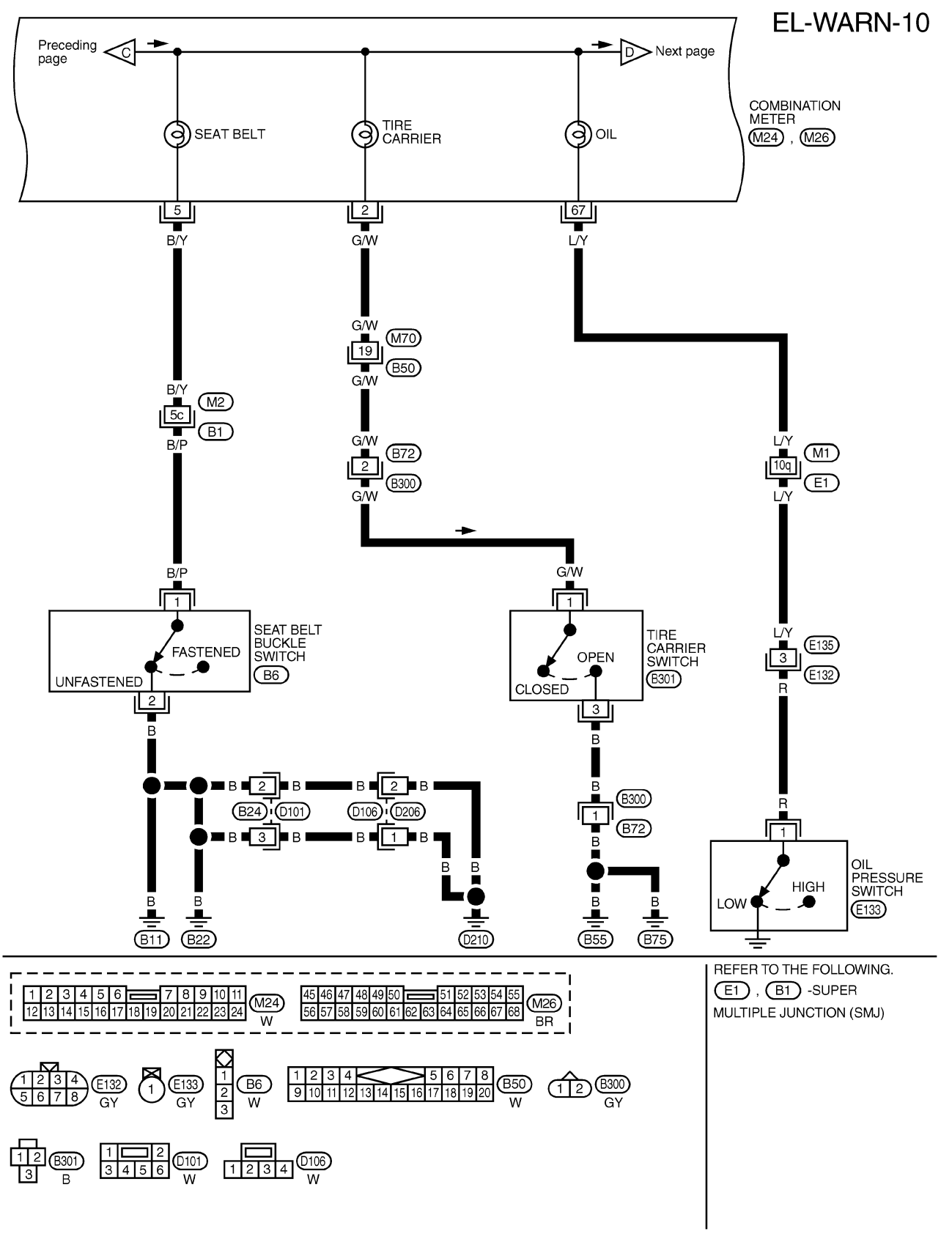
MEL962R

Wiring Diagram — WARN —/With Fine Vision Meter

NAEL0489

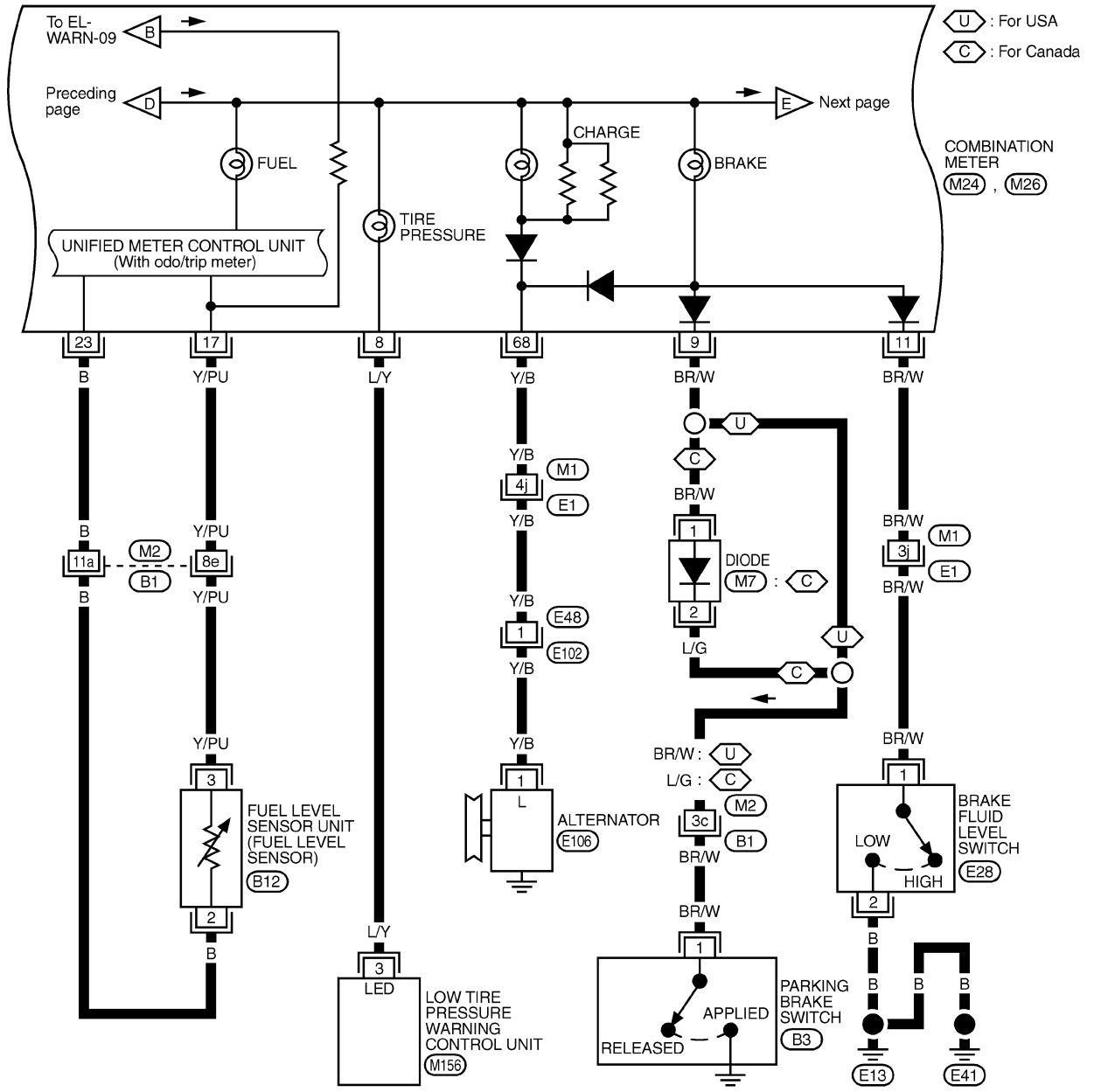


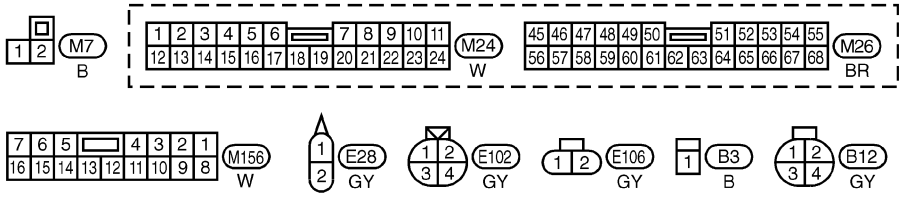
MEL963R


EL-WARN-10
Preceding page
C
D
Next page
SEAT BELT
TIRE CARRIER
OIL
COMBINATION METER
M24 , M26
5
2
67
B/Y
G/W
L/Y
M70
19
B50
M2
5c
B1
B72
2
B300
M1
10q
E1
B/P
1
FASTENED
UNFASTENED
SEAT BELT BUCKLE SWITCH
B6
OPEN
CLOSED
TIRE CARRIER SWITCH
B301
E135
3
E132
R
B24
D101
D106
D206
B11
B22
D210
B55
B75
HIGH
LOW
OIL PRESSURE SWITCH
E133
M24
W
M26
BR
E132
GY
E133
GY
B6
W
B50
W
B300
GY
B301
B
D101
W
D106
W
REFER TO THE FOLLOWING.
E1 , B1 -SUPER MULTIPLE JUNCTION (SMJ)

MEL964R

EL-WARN-11

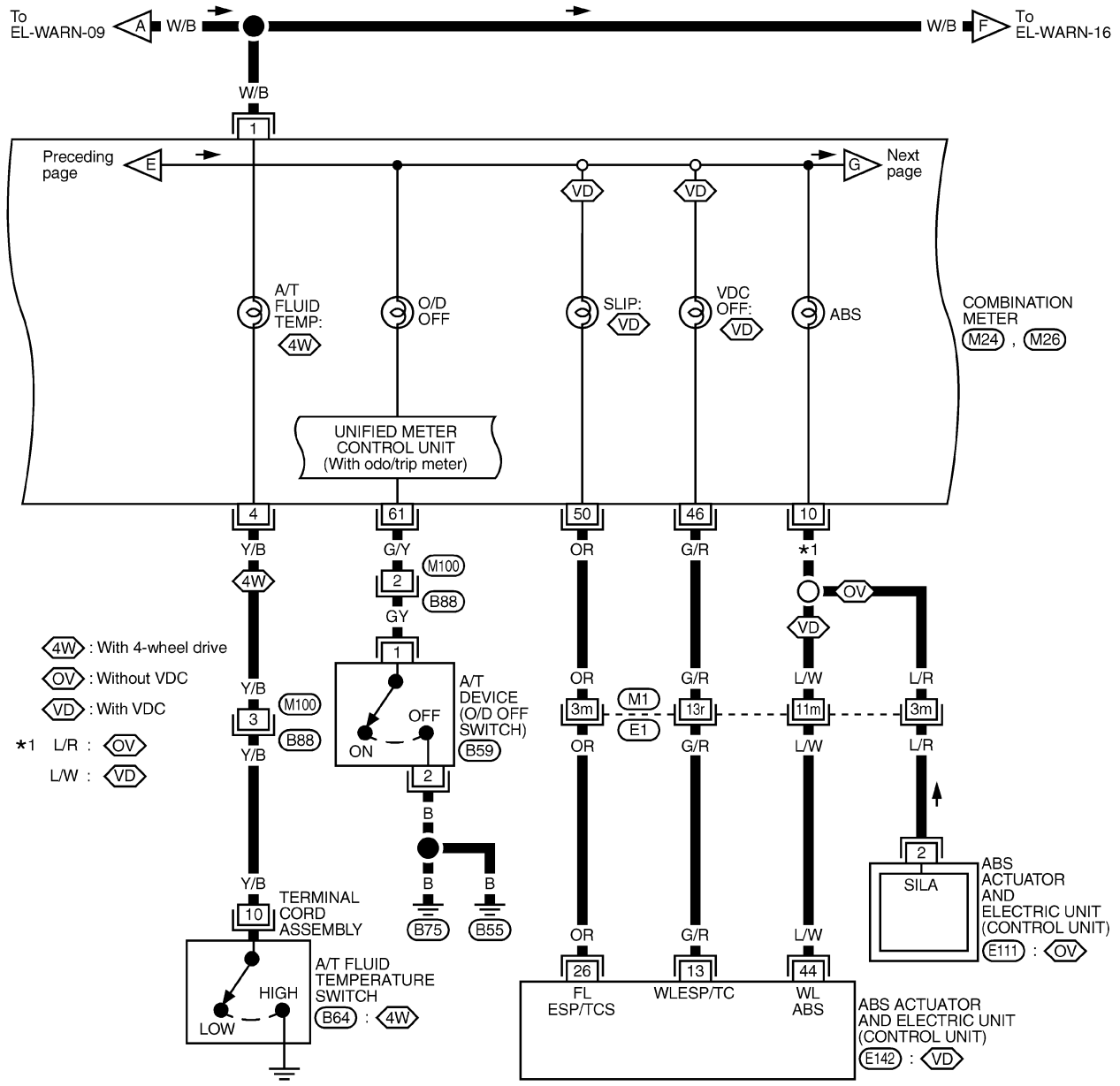


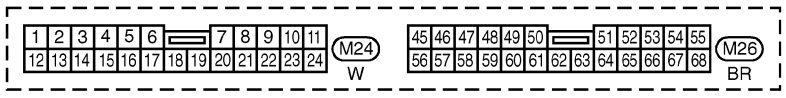


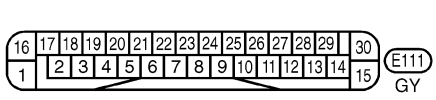
REFER TO THE FOLLOWING.
E1 , B1 -SUPER MULTIPLE JUNCTION (SMJ)

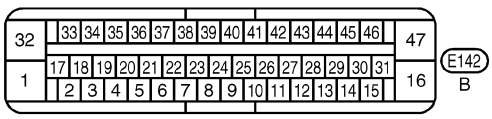
MEL965R

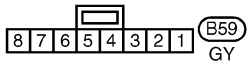
EL-WARN-12

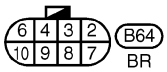


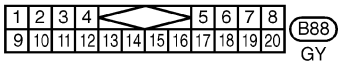








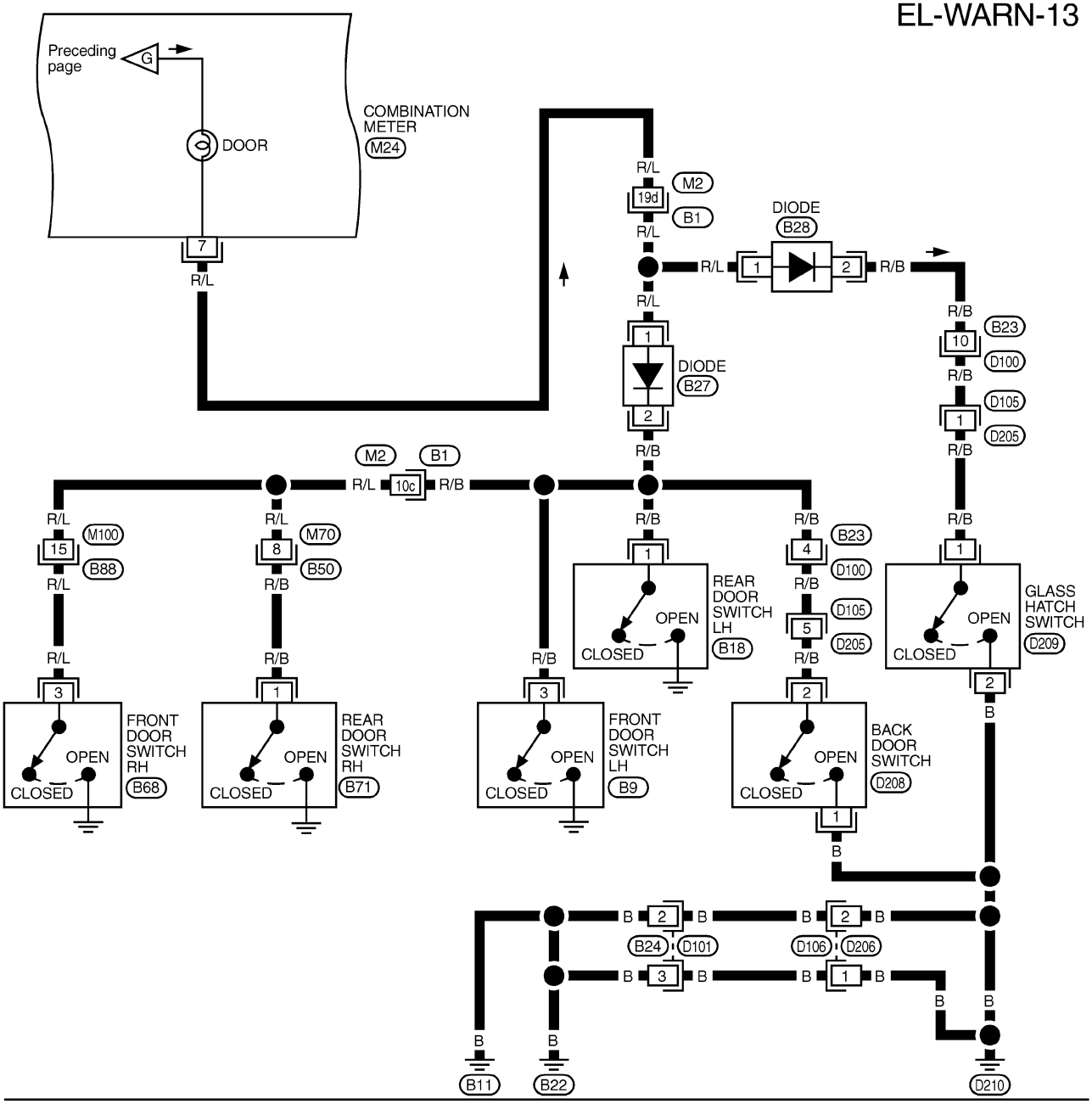


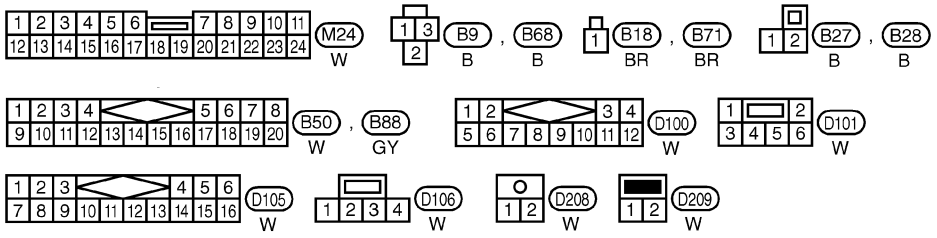


REFER TO THE FOLLOWING.
E1 -SUPER MULTIPLE JUNCTION (SMJ)

MEL966R

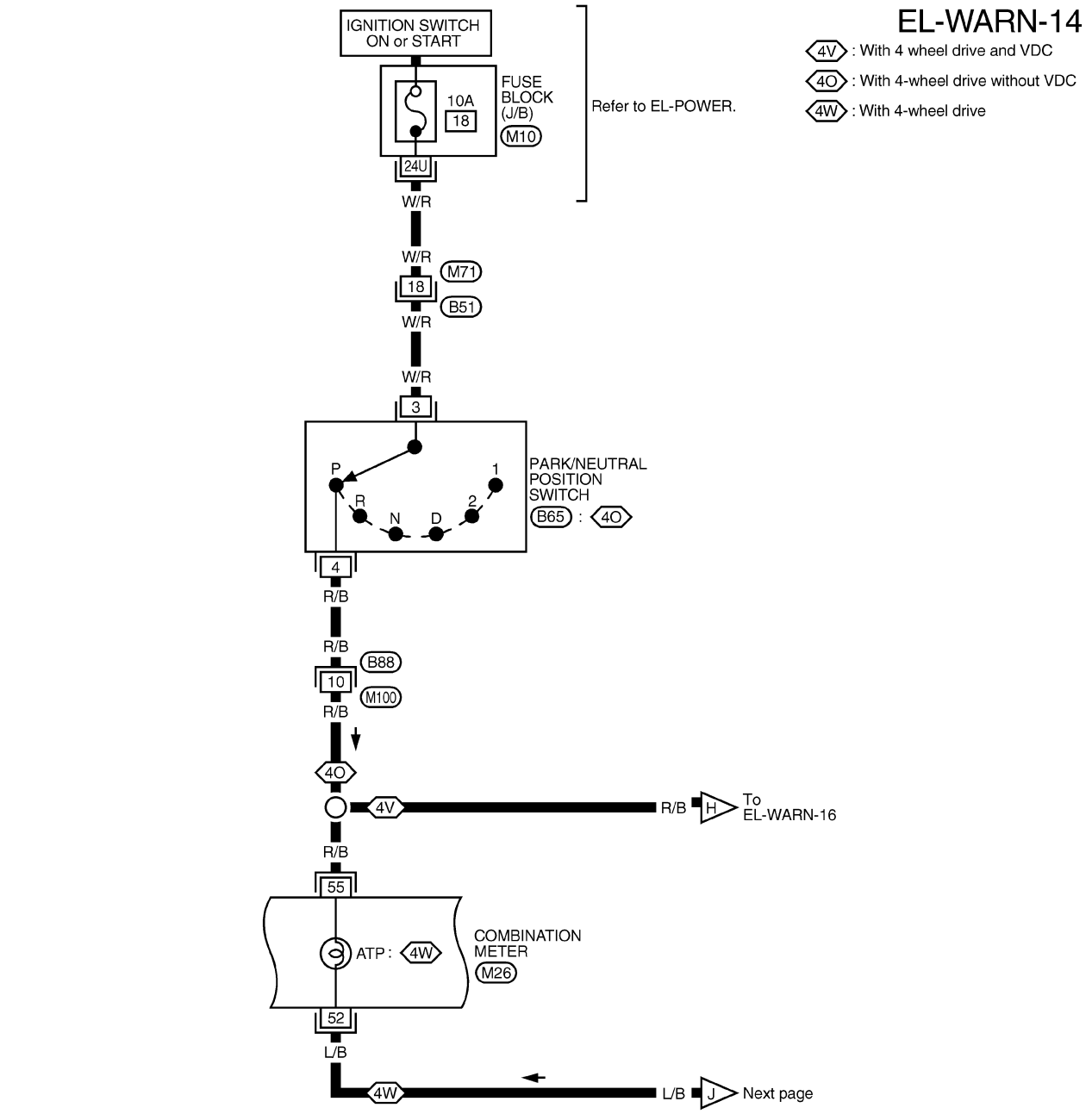
EL-WARN-13

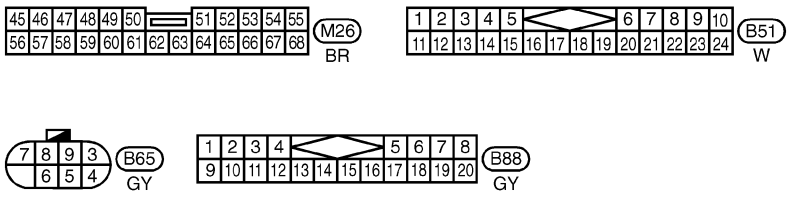




REFER TO THE FOLLOWING.
B1 -SUPER MULTIPLE JUNCTION (SMJ)

MEL967R



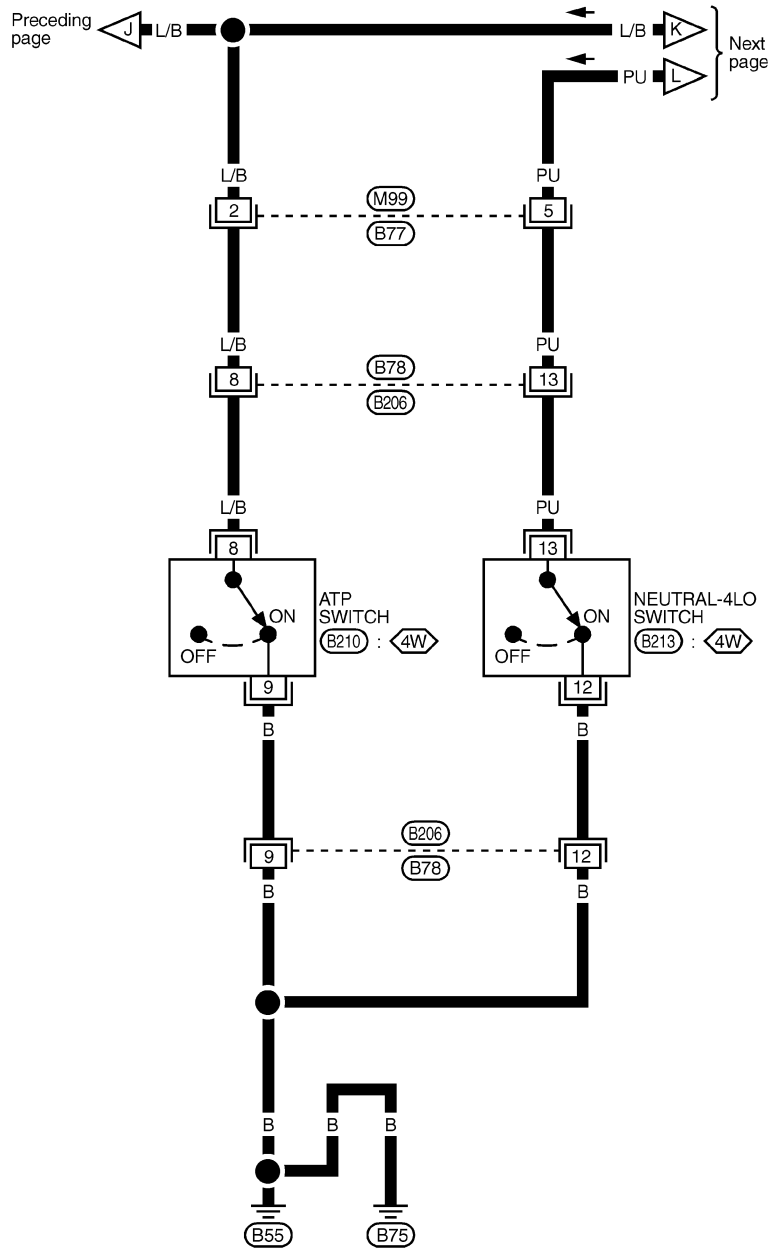


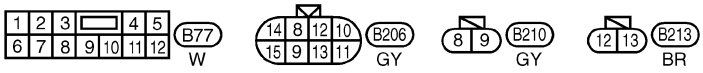
REFER TO THE FOLLOWING.
M10 -FUSE BLOCK-
JUNCTION BOX (J/B)

MEL968R

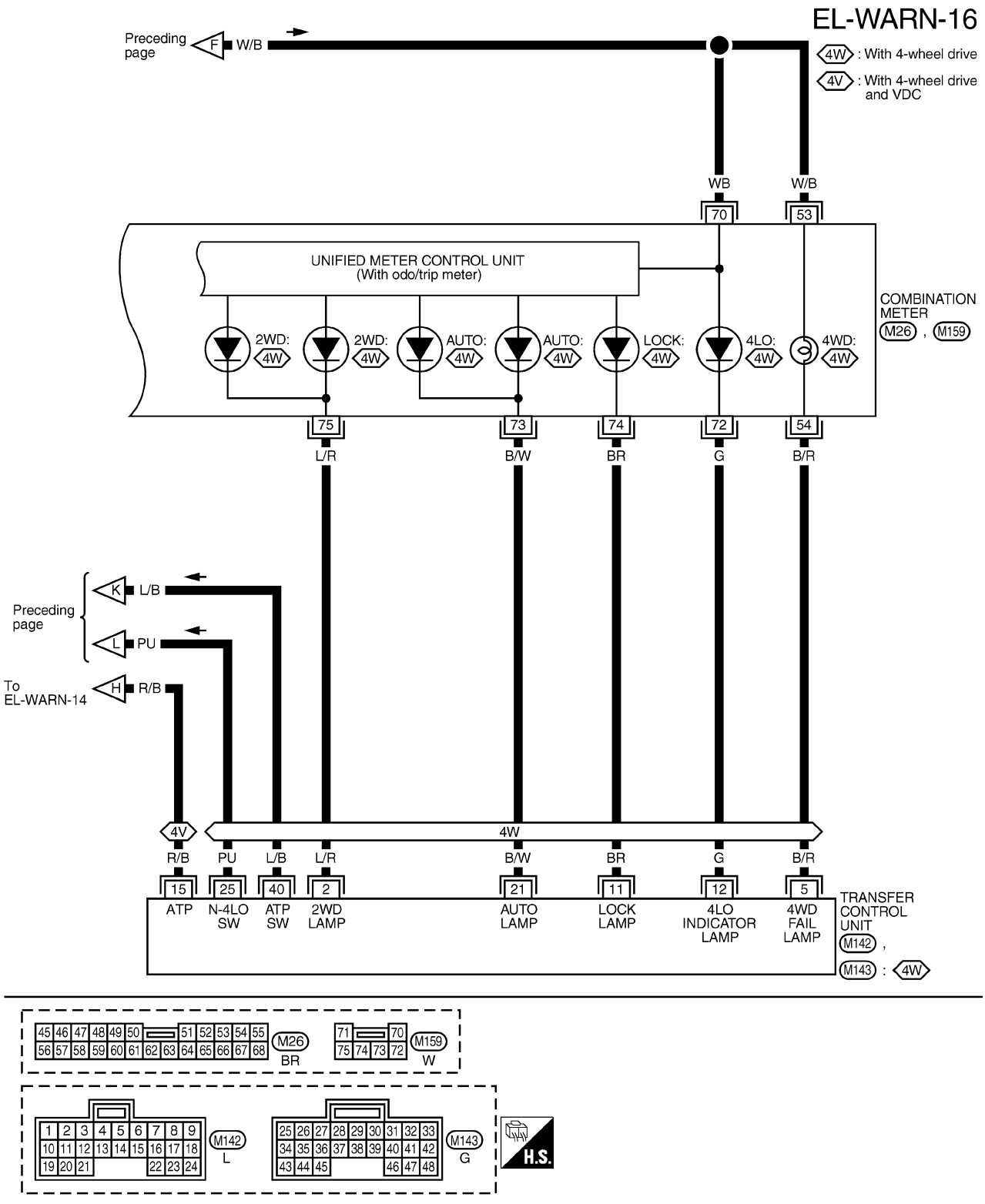
EL-WARN-15

4W : With 4-wheel drive

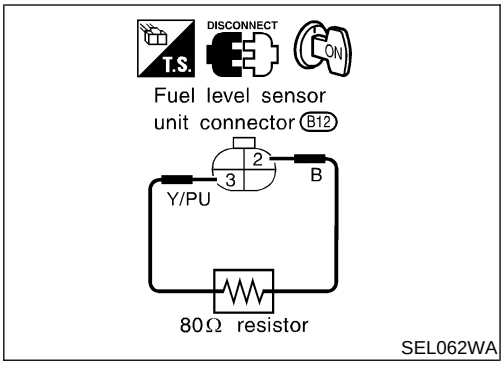




MEL969R


EL-WARN-16
Preceding page
F
W/B
4W : With 4-wheel drive
4V : With 4-wheel drive and VDC
WB
W/B
70
53
UNIFIED METER CONTROL UNIT
(With odo/trip meter)
COMBINATION METER
M26 , M159
2WD: 4W
2WD: 4W
AUTO: 4W
AUTO: 4W
LOCK: 4W
4LO: 4W
4WD: 4W
75
73
74
72
54
L/R
B/W
BR
G
B/R
Preceding page
K
L/B
L
PU
To EL-WARN-14
H
R/B
4V
4W
R/B
PU
L/B
L/R
B/W
BR
G
B/R
15
25
40
2
21
11
12
5
ATP
N-4LO SW
ATP SW
2WD LAMP
AUTO LAMP
LOCK LAMP
4LO INDICATOR LAMP
4WD FAIL LAMP
TRANSFER CONTROL UNIT
M142 ,
M143 : 4W
45 46 47 48 49 50 51 52 53 54 55
56 57 58 59 60 61 62 63 64 65 66 67 68
M26
BR
71 70
75 74 73 72
M159
W
1 2 3 4 5 6 7 8 9
10 11 12 13 14 15 16 17 18
19 20 21 22 23 24
M142
L
25 26 27 28 29 30 31 32 33
34 35 36 37 38 39 40 41 42
43 44 45 46 47 48
M143
G
H.S.

MEL945R



SEL062WA

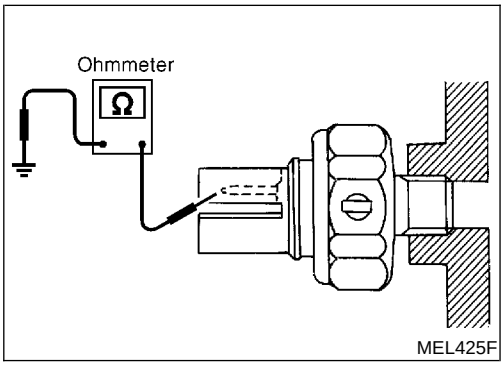
Fuel Warning Lamp Sensor Check

NAEL0310

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-78, “HOW TO ERASE EMISSION-RELATED DIAGNOSTIC INFORMATION”.



MEL425F

Electrical Components Inspection

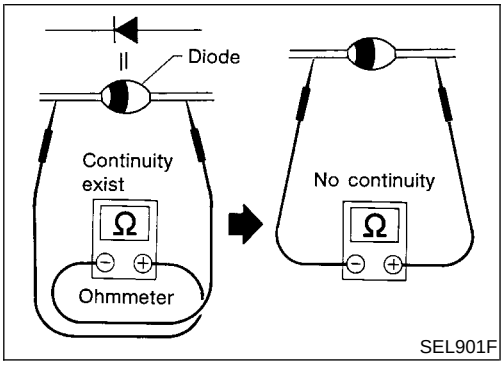
NAEL0311

OIL PRESSURE SWITCH CHECK

NAEL0311S01

Condition	Oil pressure kPa (kg/cm^2, psi)	Continuity
Engine running	More than 10 - 20 (0.1 - 0.2, 1 - 3)	No
Engine stopped	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

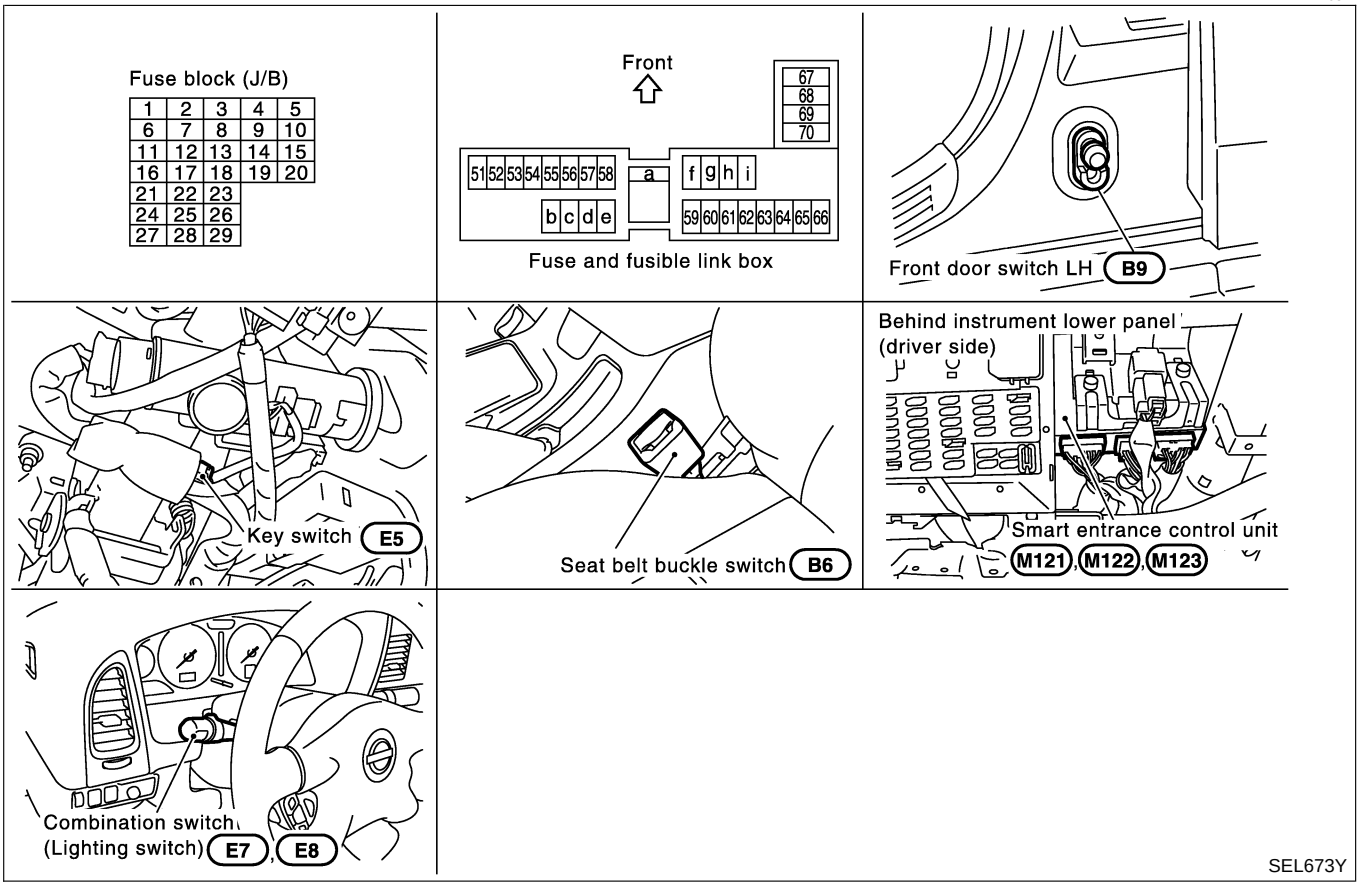
NAEL0311S02

- 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-146, “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

NAEL0312



System Description

NAEL0313

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 fuse block (J/B)]
- to smart entrance control unit terminal 49 and
- to key switch terminal 2,
- through 10A fuse (No. 61, located in the fuse and fusible link box
- to tail lamp relay terminals 1 and 3.

When 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 27.

Ground is supplied

- to smart entrance control unit terminals 43 and 64
- through body grounds M4, M66, M111, M147 and M157.

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

IGNITION KEY WARNING CHIME

NAEL0313S01

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

- from key switch terminal 1
- to smart entrance control unit terminal 25.

Ground is supplied

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

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

LIGHT WARNING CHIME

NAEL0313S02

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

- from tail lamp relay terminal 2
- to smart entrance control unit terminal 19 and 57.

Ground is supplied

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

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

SEAT BELT WARNING CHIME

NAEL0313S03

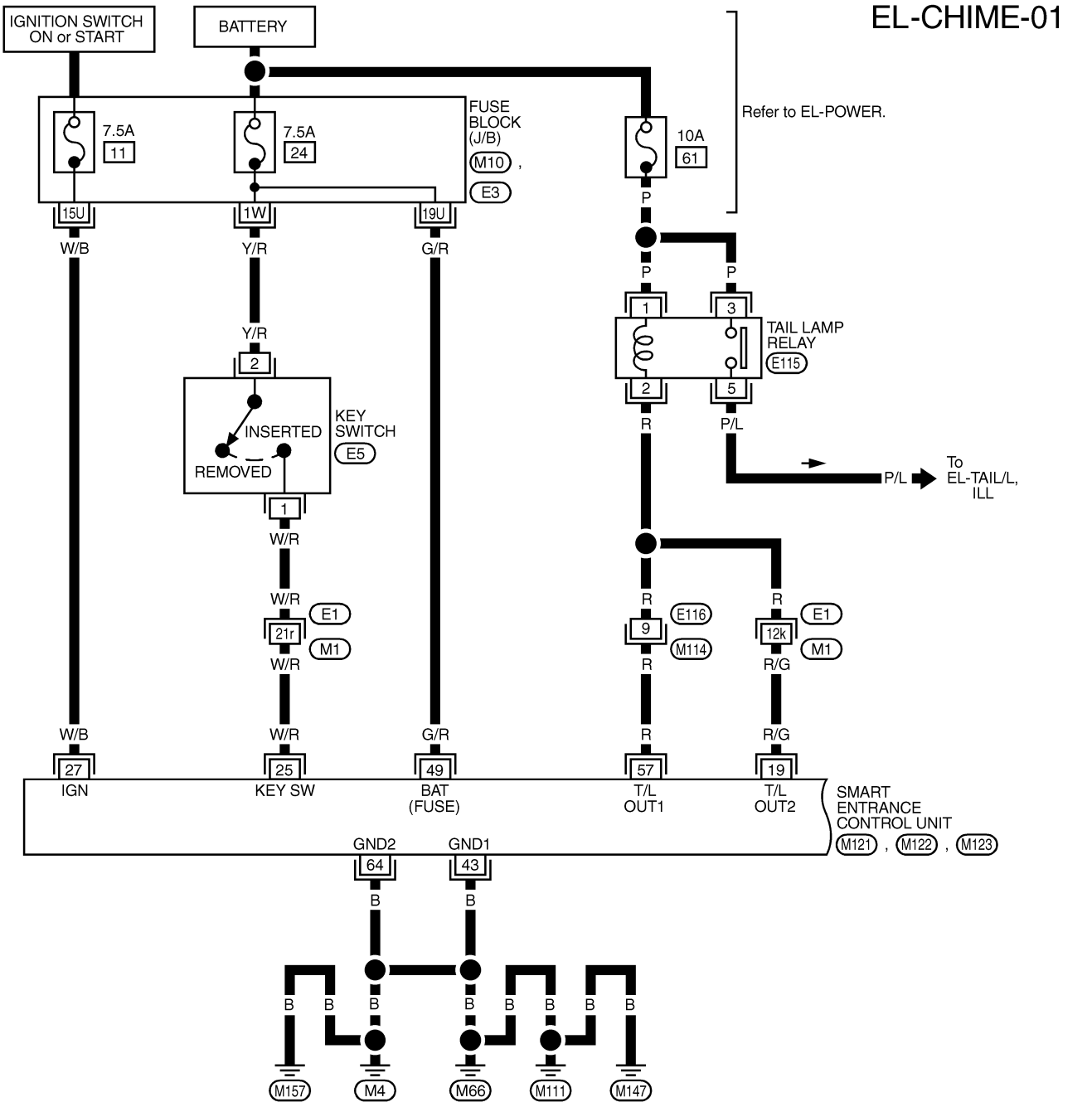
With ignition switch turned ON and seat belt unfastened (seat belt buckle switch ON), warning chime will sound for approximately 6 seconds.
Ground is supplied

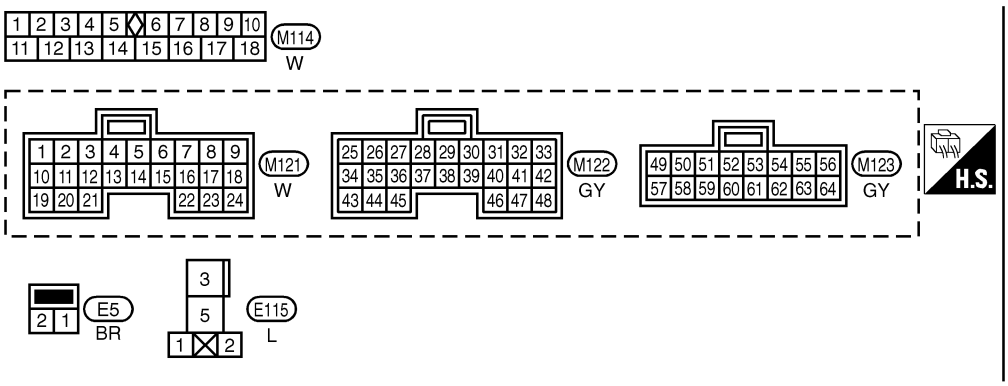
- from seat belt buckle switch terminal 1
- to smart entrance control unit terminal 28.

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

Wiring Diagram — CHIME —

NAEL0314

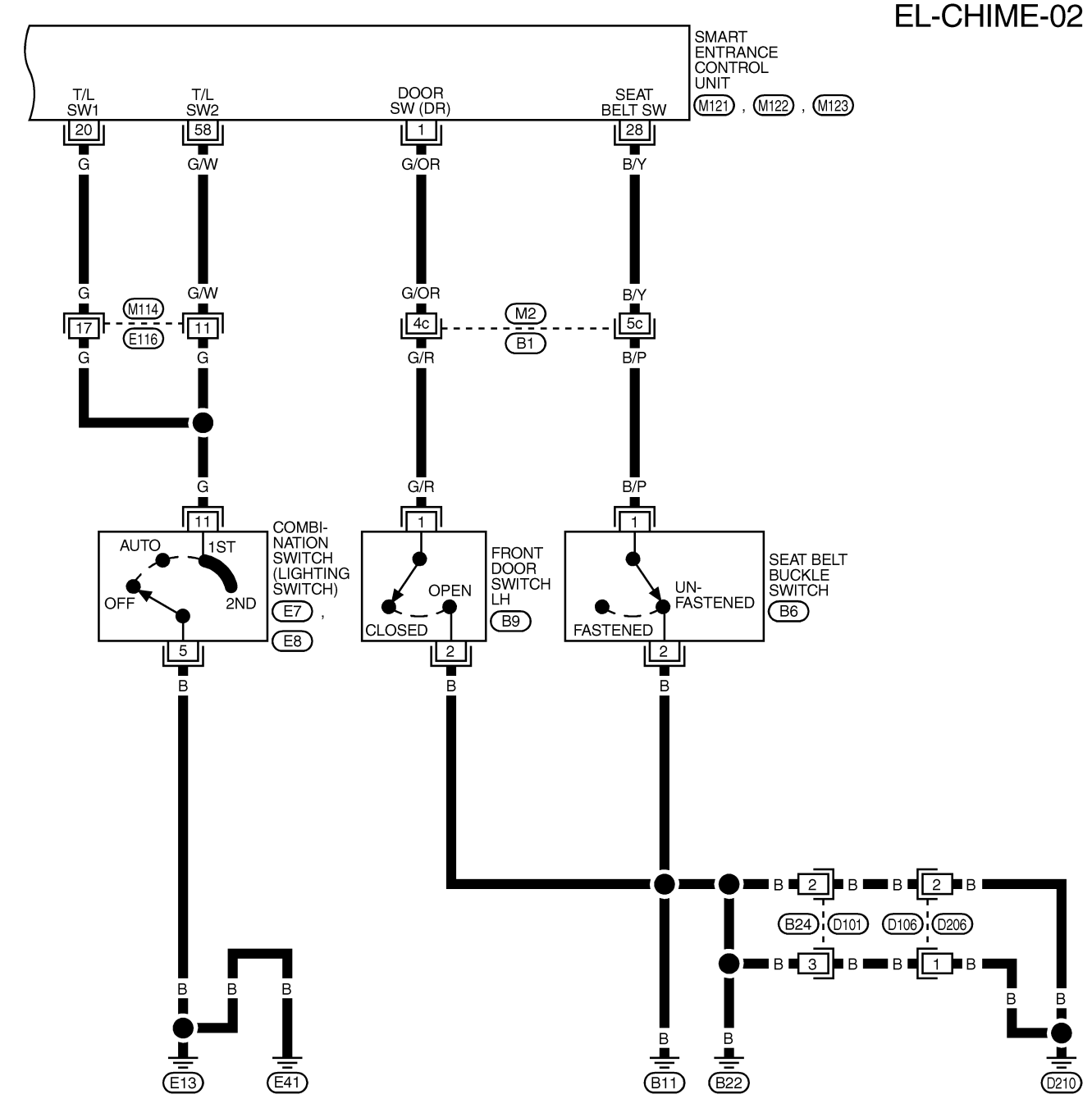


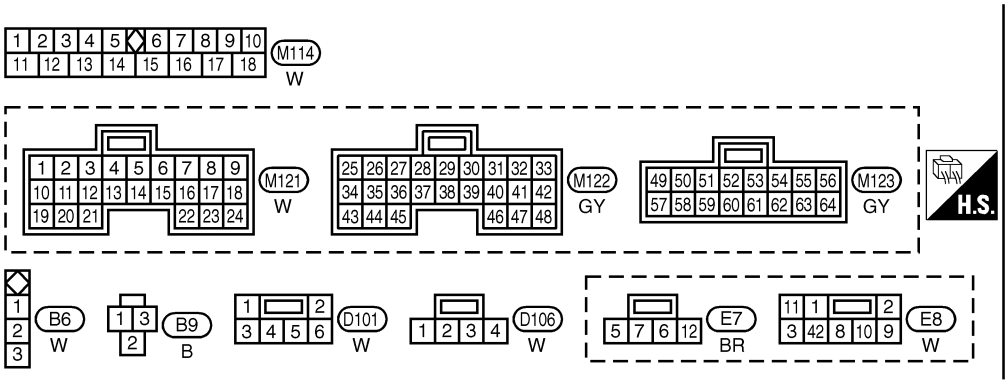


REFER TO THE FOLLOWING.
E1 - SUPER MULTIPLE JUNCTION (SMJ)
M10 , E3 - FUSE BLOCK - JUNCTION BOX (J/B)

MEL989P

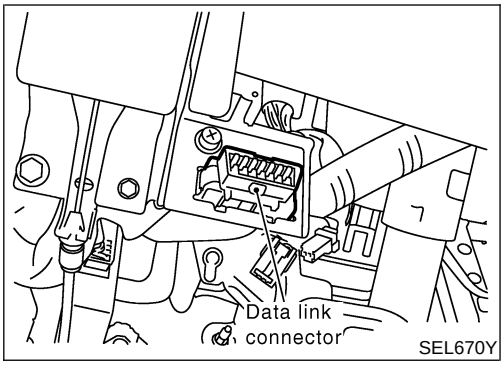
EL-CHIME-02





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

MEL990P



SEL670Y

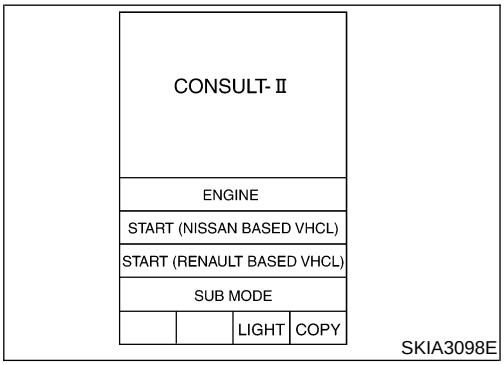
CONSULT-II Inspection Procedure

=NAEL0315

"KEY WARN ALM"/"LIGHT WARN ALM"/"SEAT BELT ALM"

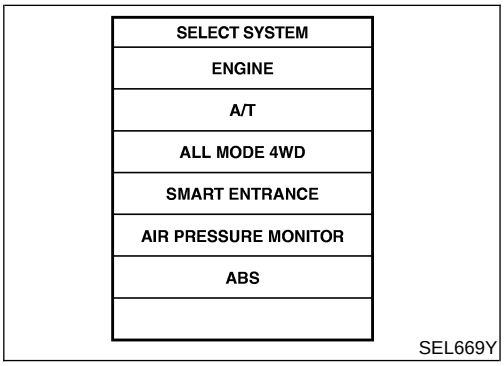
NAEL0315S01

1. Turn ignition switch "OFF".
2. Connect "CONSULT-II" and "CONSULT-II CONVERTER" to the data link connector.



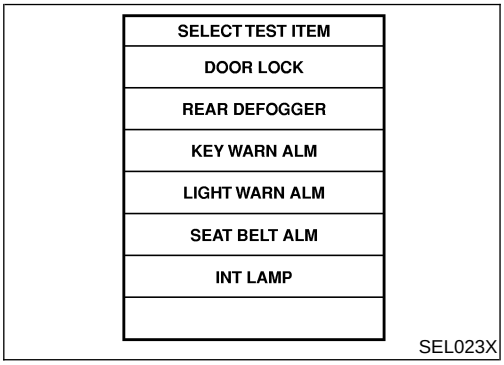
SKIA3098E

3. Turn ignition switch "ON".
4. Touch "START (NISSAN BASED VHCL)".



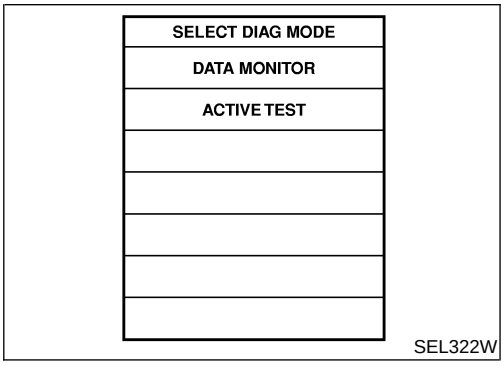
SEL669Y

5. Touch "SMART ENTRANCE".
   If "SMART ENTRANCE" is not indicated, go to GI-42, "CONSULT-II Data Link Connector (DLC) Circuit".



SEL023X

6. Touch "KEY WARN ALM", "LIGHT WARN ALM" or "SEAT BELT ALM".



SEL322W

7. Select diagnosis mode.
   "DATA MONITOR" and "ACTIVE TEST" are available for the warning chime.

CONSULT-II Application Items

NAEL0316

“KEY WARNING ALARM”
Data Monitor

NAEL0316S01

NAEL0316S0101

Monitored Item	Description
IGN ON SW	Indicates [ON/OFF] condition of ignition switch.
KEY ON SW	Indicates [ON/OFF] condition of key switch.
DOOR SW DR	Indicates [ON/OFF] condition of front door switch LH.

Active Test

NAEL0316S0102

Test Item	Description
CHIME	This test is able to check key warning chime operation. Key warning chime sounds for 2 seconds after touching “ON” on CONSULT-II screen.

“LIGHT WARN ALM”
Data Monitor

NAEL0316S02

NAEL0316S0201

Monitored Item	Description
LIGHT SW 1ST	Indicates [ON/OFF] condition of lighting switch.
IGN ON SW	Indicates [ON/OFF] condition of ignition switch.
DOOR SW-DR	Indicates [ON/OFF] condition of front door switch LH.

Active Test

NAEL0316S0202

Test Item	Description
CHIME	This test is able to check light warning chime operation. Light warning chime sounds for 2 seconds after touching “ON” on CONSULT-II screen.

“SEAT BELT WARM ALM”
Data Monitor

NAEL0316S03

NAEL0316S0301

Monitored Item	Description
IGN ON SW	Indicates [ON/OFF] condition of ignition switch.
SEAT BELT SW	Indicates [ON/OFF] condition of seat belt switch.

Active Test

NAEL0316S0302

Test Item	Description
CHIME	This test is able to check seat belt warning chime operation. Seat belt warning chime sounds for 2 seconds after touching “ON” on CONSULT-II screen.

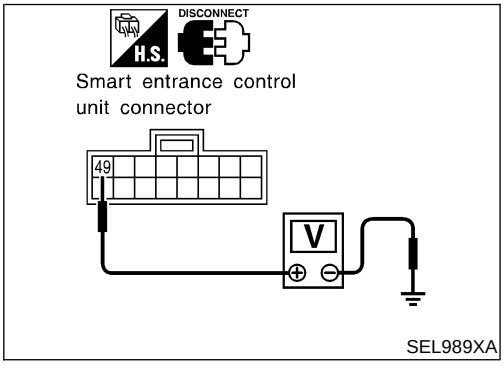
Trouble Diagnoses

NAEL0317

SYMPTOM CHART

NAEL0317S01

REFERENCE PAGE (EL-)	170	172	173	174	175
SYMPTOM	POWER SUPPLY AND GROUND CIRCUIT CHECK	DIAGNOSTIC PROCEDURE 1 (LIGHTING SWITCH INPUT SIGNAL CHECK)	DIAGNOSTIC PROCEDURE 2 (KEY SWITCH INSERT SIGNAL CHECK)	DIAGNOSTIC PROCEDURE 3 (SEAT BELT BUCKLE SWITCH CHECK)	DIAGNOSTIC PROCEDURE 4
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	X
All warning chimes do not activate.	X				X



POWER SUPPLY AND GROUND CIRCUIT CHECK

NAEL0317S02

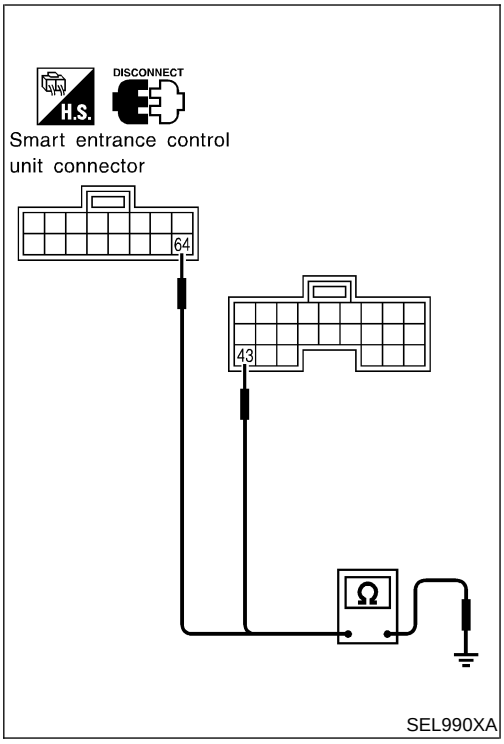
Power Supply Circuit Check

NAEL0317S0201

Terminals			Voltage
(+)		(–)	
Connector	Terminal (Wire color)		
M123	49 (G/R)	Ground	Battery voltage

If NG, check the following.

- 7.5A fuse [No. 24, located in fuse block (J/B)]
- Harness for open or short between smart entrance control unit and fuse



Ground Circuit Check

NAEL0317S0202

Terminals			Continuity
(+)		(–)	
Connector	Terminal (Wire color)		
M122	43 (B)	Ground	Yes
M123	64 (B)		

DIAGNOSTIC PROCEDURE 1 (LIGHTING SWITCH INPUT SIGNAL CHECK)

=NAEL0317S03

1	CHECK LIGHTING SWITCH INPUT SIGNAL

With CONSULT-II

Check lighting switch ("LIGHT SW 1ST") in "DATA MONITOR" mode with CONSULT-II.

DATA MONITOR	
MONITOR	
LIGHT SW 1ST	OFF

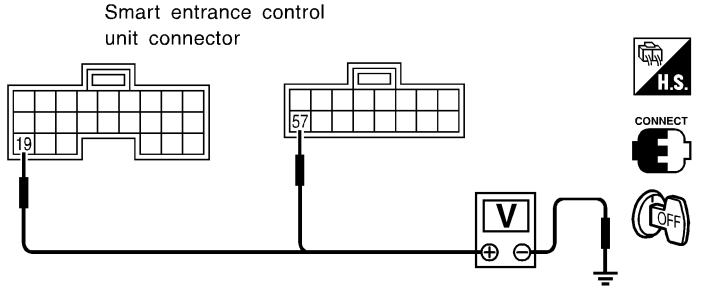
When lighting switch is in 1st or 2nd position:
LIGHT SW 1ST ON

When lighting switch is in OFF position:
LIGHT SW 1ST OFF

SEL991X

Without CONSULT-II

Check voltage between smart entrance control unit harness connector M121 terminal 19 (R/G), connector M123 terminal 57 (R) and ground.



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

SEL992XA

OK or NG

OK	▶	Replace smart entrance control unit.
NG	▶	**Check the following.** ● 10A fuse (No. 61, located in the fuse and fusible link box) ● Harness for open or short between smart entrance control unit and tail lamp relay

DIAGNOSTIC PROCEDURE 2 (KEY SWITCH INSERT SIGNAL CHECK)

=NAEL0317S04

1	CHECK KEY SWITCH INPUT SIGNAL

With CONSULT-II

Check key switch ("KEY ON SW") in "DATA MONITOR" mode with CONSULT-II.

DATA MONITOR	
MONITOR	
KEY ON SW	ON

When key is inserted to ignition key cylinder:

KEY ON SW ON

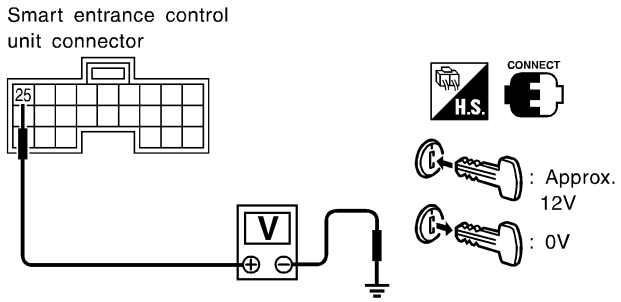
When key is removed from ignition key cylinder:

KEY ON SW OFF

SEL315W

Without CONSULT-II

Check voltage between smart entrance control unit harness connector M122 terminal 25 (W/R) and ground.



Voltage [V]:

Condition of key switch: Key is inserted.

Approx. 12

Condition of key switch: Key is removed.

0

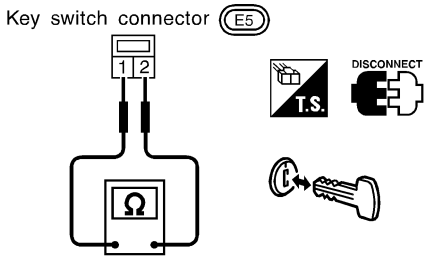
SEL011Y

OK or NG

OK	▶	Replace smart entrance control unit.
NG	▶	GO TO 2.

2	CHECK KEY SWITCH (INSERT)

Check continuity between key switch connector 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.

DIAGNOSTIC PROCEDURE 3 (SEAT BELT BUCKLE SWITCH CHECK)

=NAEL0317S05

1	CHECK SEAT BELT BUCKLE SWITCH INPUT SIGNAL

With CONSULT-II

Check seat belt buckle switch ("SEAT BELT SW") in "DATA MONITOR" mode with CONSULT-II.

DATA MONITOR	
MONITOR	
SEAT BELT SW	ON

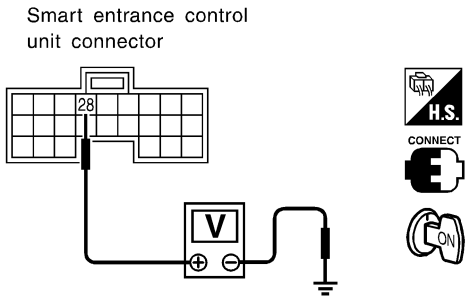
When seat belt is fastened:
SEAT BELT SW ON

When seat belt is released:
SEAT BELT SW OFF

SEL317W

Without CONSULT-II

1. Turn ignition switch "ON".
2. Check voltage between smart entrance control unit harness connector M122 terminal 28 (B/Y) and ground.



Voltage [V]:
Condition of seat belt buckle switch: Fastened
Approx. 5
Condition of seat belt buckle switch: Unfastened
0

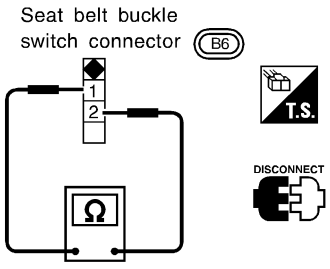
SEL994X

OK or NG

OK	▶	Replace smart entrance control unit.
NG	▶	GO TO 2.

2	CHECK SEAT BELT BUCKLE SWITCH

Check continuity between seat belt buckle switch connector 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.

DIAGNOSTIC PROCEDURE 4

NAEL0317S06

1	CHECK IGNITION ON SIGNAL

With CONSULT-II

Check ignition switch ON signal ("IGN ON SW") in "DATA MONITOR" mode with CONSULT-II.

DATA MONITOR	
MONITOR	
IGN ON SW	ON

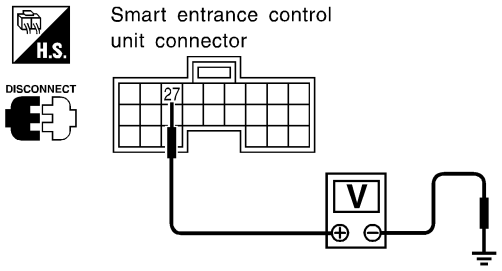
When ignition switch is ON:
IGN ON SW ON

When ignition switch is OFF:
IGN ON SW OFF

SEL318W

Without CONSULT-II

Check voltage between smart entrance control unit harness connector M122 terminal 27 (W/B) and ground.



Terminals		Ignition switch position		
(+)	(–)	OFF	ACC	ON
27	Ground	0V	0V	Battery voltage

SEL995X

OK or NG

OK	▶	GO TO 2.
NG	▶	**Check the following.** ● 7.5A fuse [No. 11, located in fuse block (J/B)] ● Harness for open or short between smart entrance control unit and fuse

2	CHECK DOOR SWITCH INPUT SIGNAL

With CONSULT-II

Check driver door switch signal ("DOOR SW-DR") in "DATA MONITOR" mode with CONSULT-II.

DATA MONITOR	
MONITOR	
DOOR SW-DR	OFF

When driver's door is open:

DOOR SW-DR ON

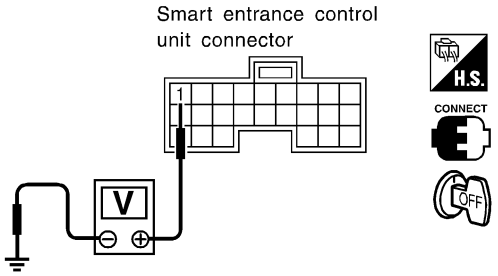
When driver's door is closed:

DOOR SW-DR OFF

SEL319W

Without CONSULT-II

Check voltage between smart entrance control unit harness connector M121 terminal 1 (G/OR) and ground.



Voltage [V]:

Condition of driver's door: CLOSED

Approx. 5

Condition of driver's door: OPENED

0

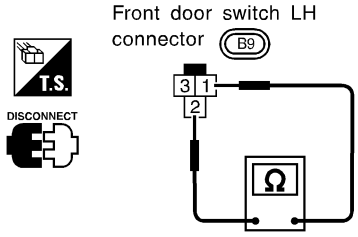
SEL996X

OK or NG

OK	▶	GO TO 4.
NG	▶	GO TO 3.

3	CHECK DRIVER SIDE DOOR SWITCH

Check continuity between front door switch LH connector terminals 1 and 2.



Continuity:

Door switch is pushed.

No

Door switch is released.

Yes

SEL383X

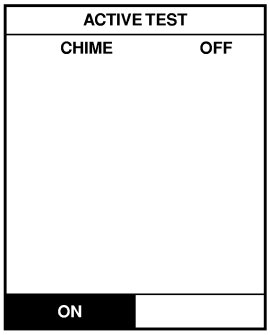
OK or NG

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

4	CHECK WARNING CHIME

With CONSULT-II

Perform "CHIME" in "ACTIVE TEST" mode with CONSULT-II.



Warning chime should operate.

SEL320W

OK or NG

OK	▶	System is OK.
NG	▶	Replace smart entrance control unit.

System Description

NAEL0318

WIPER OPERATION

NAEL0318S01

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 1, and
- to front wiper switch terminal 15.

Low and High Speed Wiper Operation

NAEL0318S0101

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 5.

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 3.

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

Auto Stop Operation

NAEL0318S0102

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 5, 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 4
- through terminal 6 of the front wiper motor, and
- through body grounds E13 and E41.

When wiper arms reach base of windshield, front wiper motor terminals 1 and 4 are connected instead of terminals 4 and 6. Wiper motor will then stop wiper arms at the PARK position.

Intermittent Operation

NAEL0318S0103

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,
- to front wiper motor terminal 5
- through the front wiper switch terminal 14 and
- through wiper amplifier (OUTPUT).

WASHER OPERATION

NAEL0318S02

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

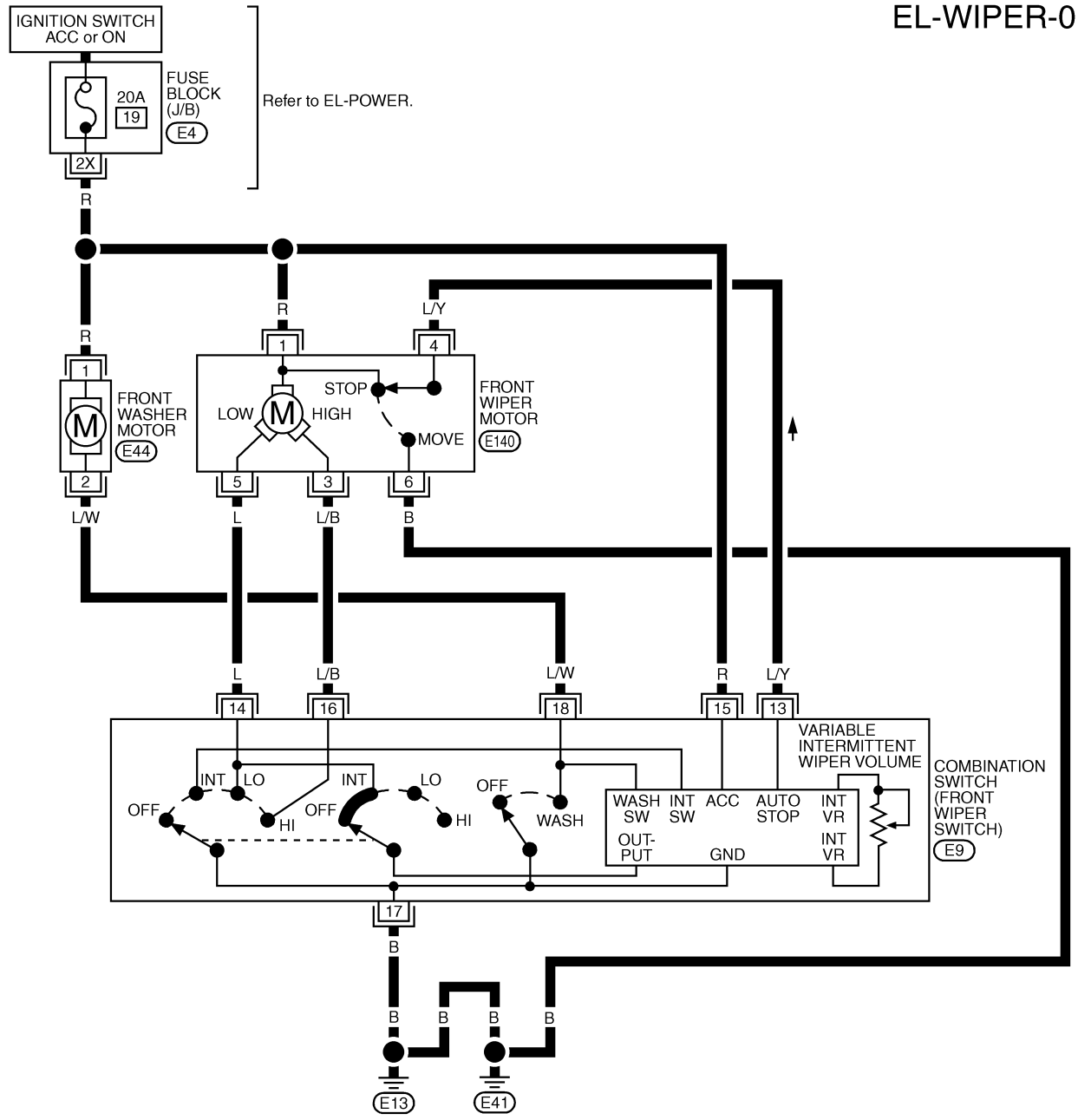
- through terminal 17 of the front wiper switch, and
- through body grounds E13 and E41.

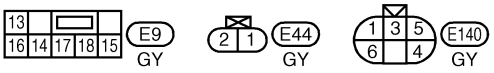
With power and ground supplied, the front washer motor operates.
When the lever is pulled to the WASH position for one second or more, the front wiper motor operates at low speed for approximately 3 seconds to clean windshield. This feature is controlled by the wiper amplifier in the same manner as the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

Wiring Diagram — WIPER —

NAEL0319

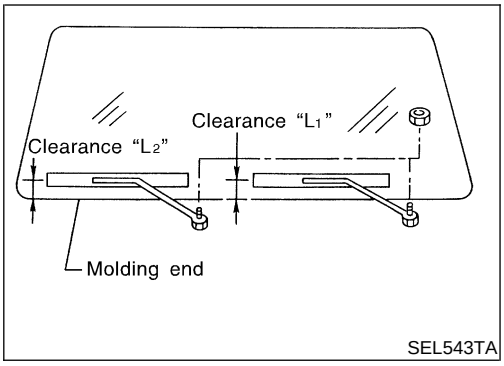
EL-WIPER-01





REFER TO THE FOLLOWING.
E4 -FUSE BLOCK-
JUNCTION BOX (J/B)

MEL121S



Removal and Installation

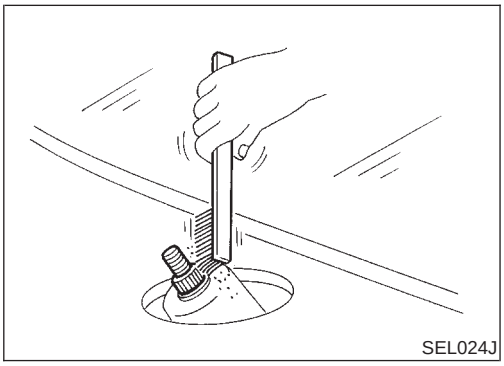
NAEL0320

WIPER ARMS

NAEL0320S01

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 - 39 mm (1.14 - 1.54 in)
   Clearance "L_2": 32 - 42 mm (1.26 - 1.65 in)

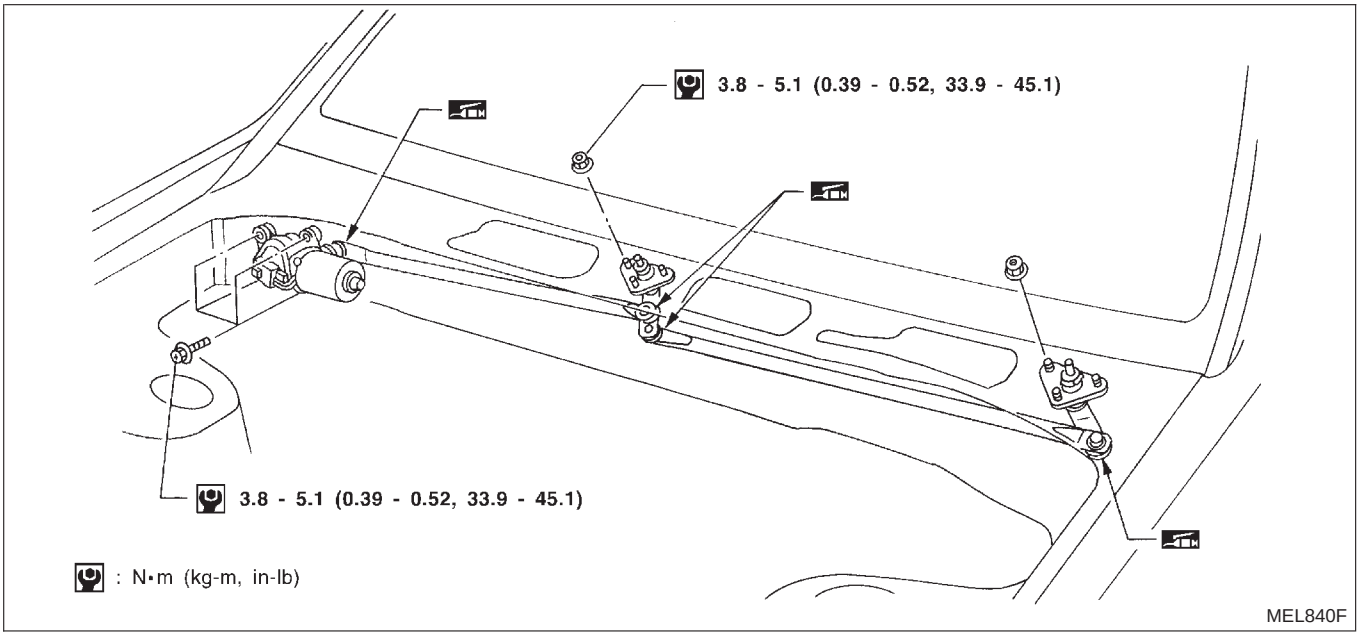
- Tighten wiper arm nuts to specified torque.
  Front wiper: 21 - 26 N·m (2.1 - 2.7 kg-m, 15 - 20 ft-lb)



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

WIPER LINKAGE

NAEL0320S02



Removal

NAEL0320S0201

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

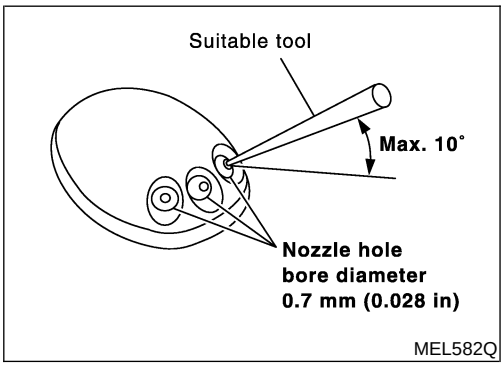
Be careful not to break ball joint rubber boot.

Installation

NAEL0320S0202

- Grease ball joint portion before installation.

Installation is the reverse order of removal.



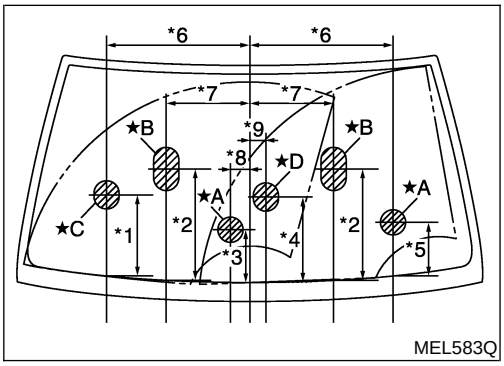
MEL582Q

Washer Nozzle Adjustment

NAEL0321

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

Adjustable range: ±10°



MEL583Q

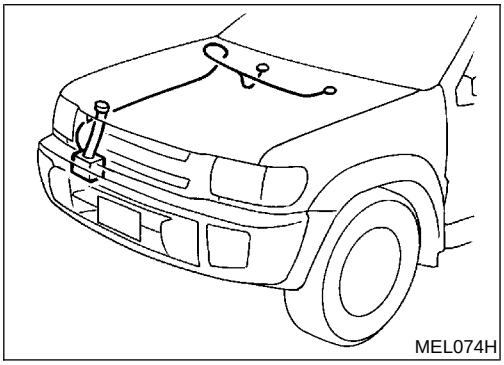
Unit: mm (in)

*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 diameters of these circles are less than 138 × 80 mm (5.43 × 3.15 in).
*C: The diameters of these circles are less than 96 × 80 mm (3.78 × 3.15 in).
*D: The diameters of these circles are less than 90 × 80 mm (3.54 × 3.15 in).

Washer Tube Layout

NAEL0322


MEL074H

System Description

NAEL0323

WIPER OPERATION

NAEL0323S01

Power Supply and Ground

NAEL0323S0101

Power is supplied at all times

- through 10A fuse [No. 5, located in fuse block (J/B)]
- to rear wiper motor terminal 1.

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 motor terminal 4.

When the glass hatch switch is OPEN, ground is supplied

- to rear wiper motor terminal 6
- through glass hatch switch terminals 1 and 2
- through body grounds B11, B22 and D210.

Ground is supplied

- to rear wiper motor terminal 8
- through body grounds B11, B22 and D210.

Wiper Operation

NAEL0323S0102

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

- to rear wiper motor terminal 2
- through combination switch terminals 22 and 24
- through body grounds E13 and E41.

Then, power is supplied

- to rear wiper motor terminal 4.

Ground is supplied

- to rear wiper motor terminal 8
- through body grounds B11, B22 and D210.

With power and ground supplied, the wiper motor operates.

Auto Stop Operation

NAEL0323S0103

With rear wiper switch turned OFF, rear wiper motor will continue to operate until wiper arm reaches rear wiper stopper.
Then wiper motor turns the other way and wiper arm moves once until wiper arm reaches stopper.

Intermittent Operation

NAEL0323S0104

The rear wiper motor operates the wiper arms at low speed approximately every 7 seconds.
When the wiper switch is placed in the INT position, ground is supplied

- to rear wiper motor terminal 3
- through rear wiper switch terminals 21 and 24
- through body grounds E13 and E41.

Then, power is supplied

- to rear wiper motor terminal 4.

Ground is supplied

- to rear wiper motor terminal 8
- through body grounds B11, B22 and D210.

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

WIPER OPERATION PROHIBIT CONTROL

NAEL0323S02

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

NAEL0323S03

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

System Description (Cont'd)

- to rear wiper motor terminal 5
- through terminals 23 and 24
- through body grounds E13 and E41.

Then, power is supplied

- to rear washer motor terminal 2
- through 10 A fuse [No. 29, located in the fuse block (J/B)].

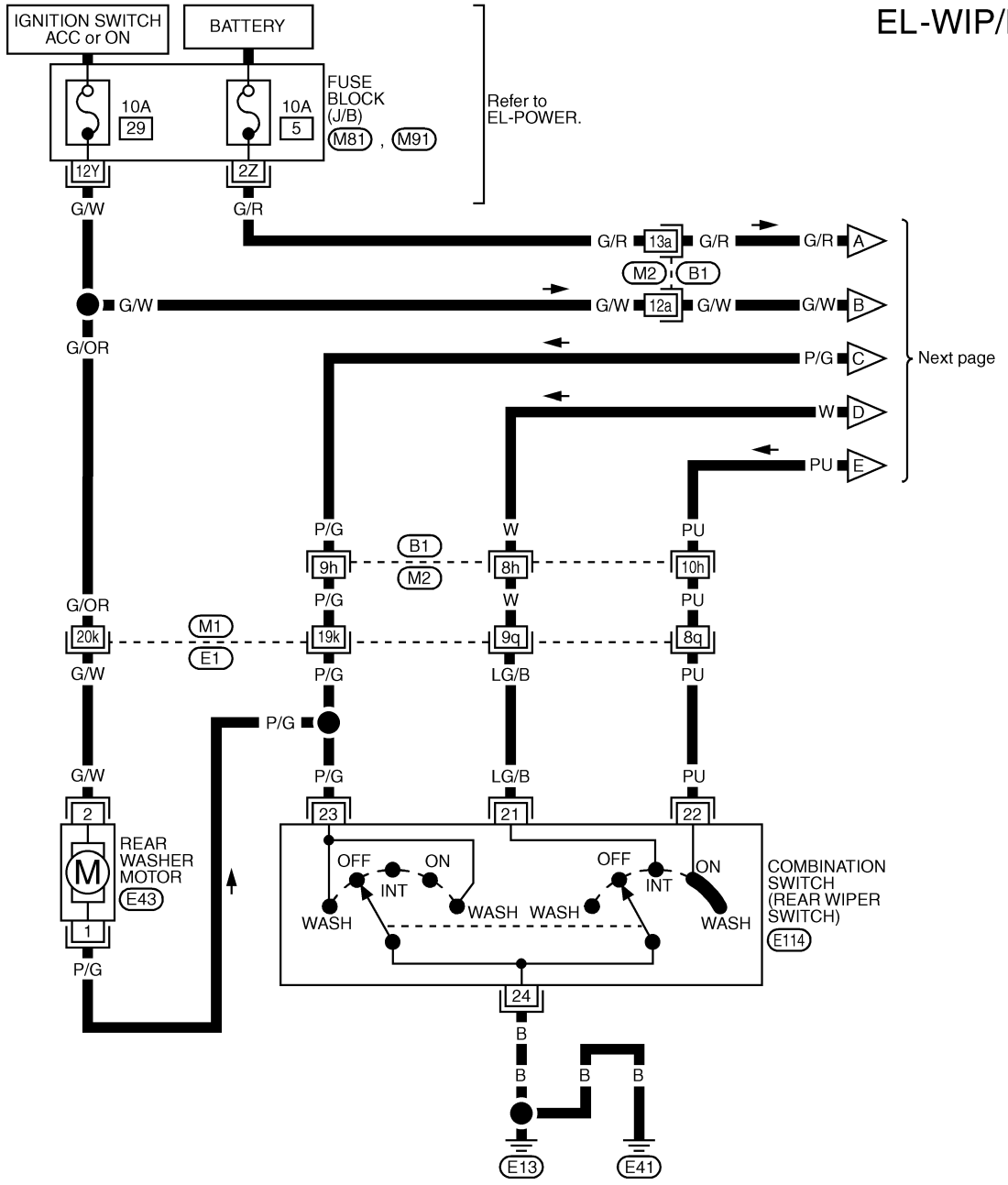
Ground is supplied

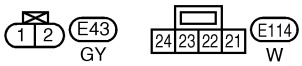
- to rear washer motor terminal 1
- through rear wiper switch terminals 23 and 24
- through body grounds E13 and E41.

With power and ground supplied, the rear washer motor operates.
When the rear wiper switch is turned to WASH position for 0.4 seconds or more, the rear wiper motor operates approximately 3 times after the rear wiper switch is released.

Wiring Diagram — WIP/R —

NAEL0324

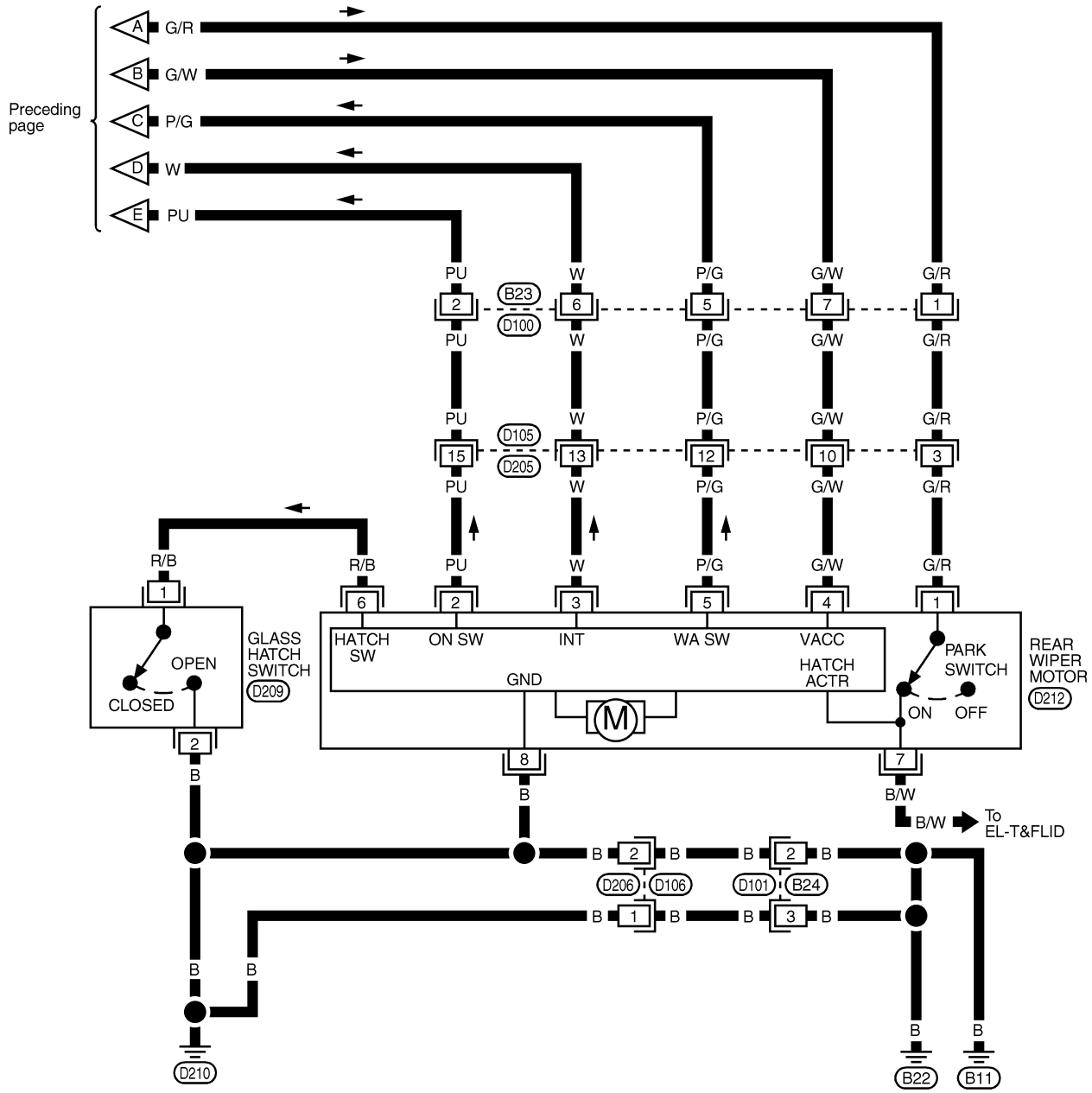


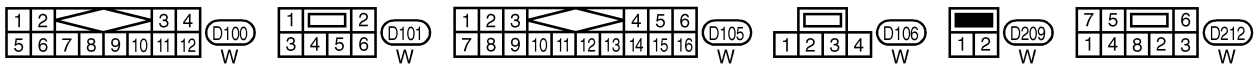


REFER TO THE FOLLOWING.
E1 , B1 -SUPER MULTIPLE JUNCTION (SMJ)
M81 , M91 -FUSE BLOCK-JUNCTION BOX (J/B)

MEL122S

EL-WIP/R-02





MEL993P

Trouble Diagnoses

NAEL0325

REAR WIPER MOTOR INSPECTION TABLE

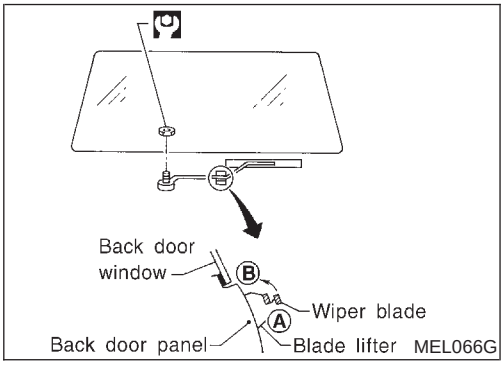
NAEL0325S01

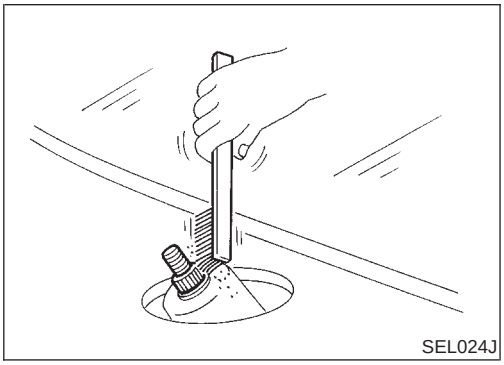
(Data are reference values.)

Terminal No.	Item	Condition			Voltage (Approximate value)
1	Power supply (BAT)	OFF	—		Battery voltage
2	ON switch	ACC	Rear wiper switch	ON	Less than 1V
				OFF or INT	12V
3	Intermittent switch	ACC	Rear wiper switch	INT	Less than 1V
				OFF, ON or WASH	12V
4	Power supply (ACC)	ACC	—		Battery voltage
5	Washer switch	ACC	Rear wiper switch	WASH	Less than 1V
				OFF, ON or INT	12V
6	Glass hatch switch	ACC	Glass hatch	Open	Less than 1V
				Closed	5V
7	Park switch	OFF	Trunk lid opener switch	ON	11.5V
				OFF	Battery voltage
8	Ground	—			—

NOTE:

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





Removal and Installation

NAEL0326

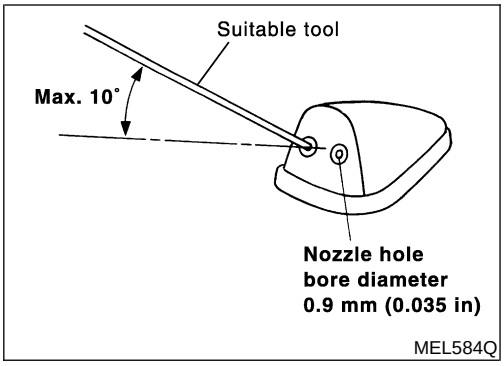
WIPER ARMS

NAEL0326S01

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)

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

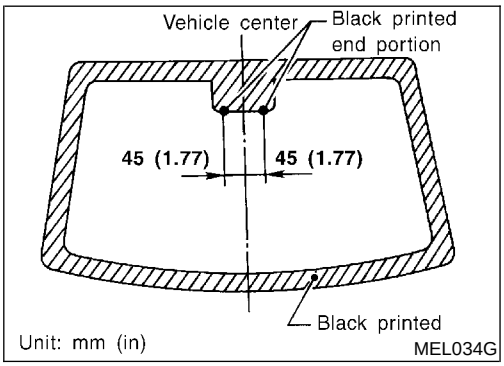


Washer Nozzle Adjustment

NAEL0327

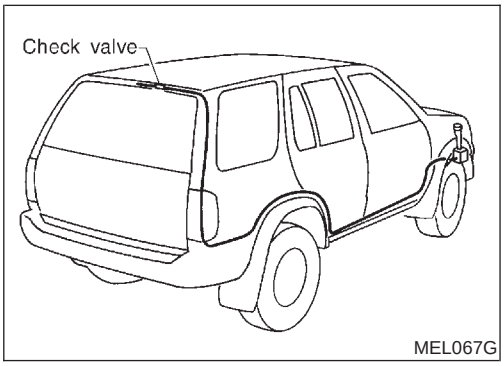
- Adjust washer nozzle with suitable tool as shown in the figure at left.

  Adjustable range: ±10° (In any direction)



Washer Tube Layout

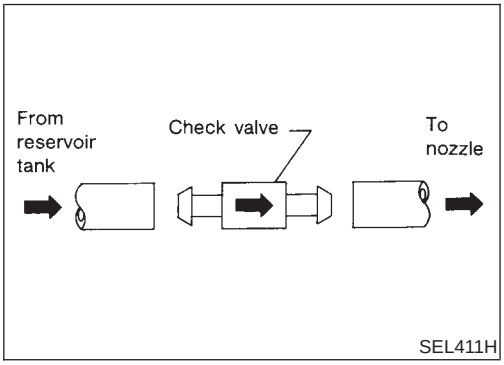
NAEL0328



Check Valve

NAEL0329

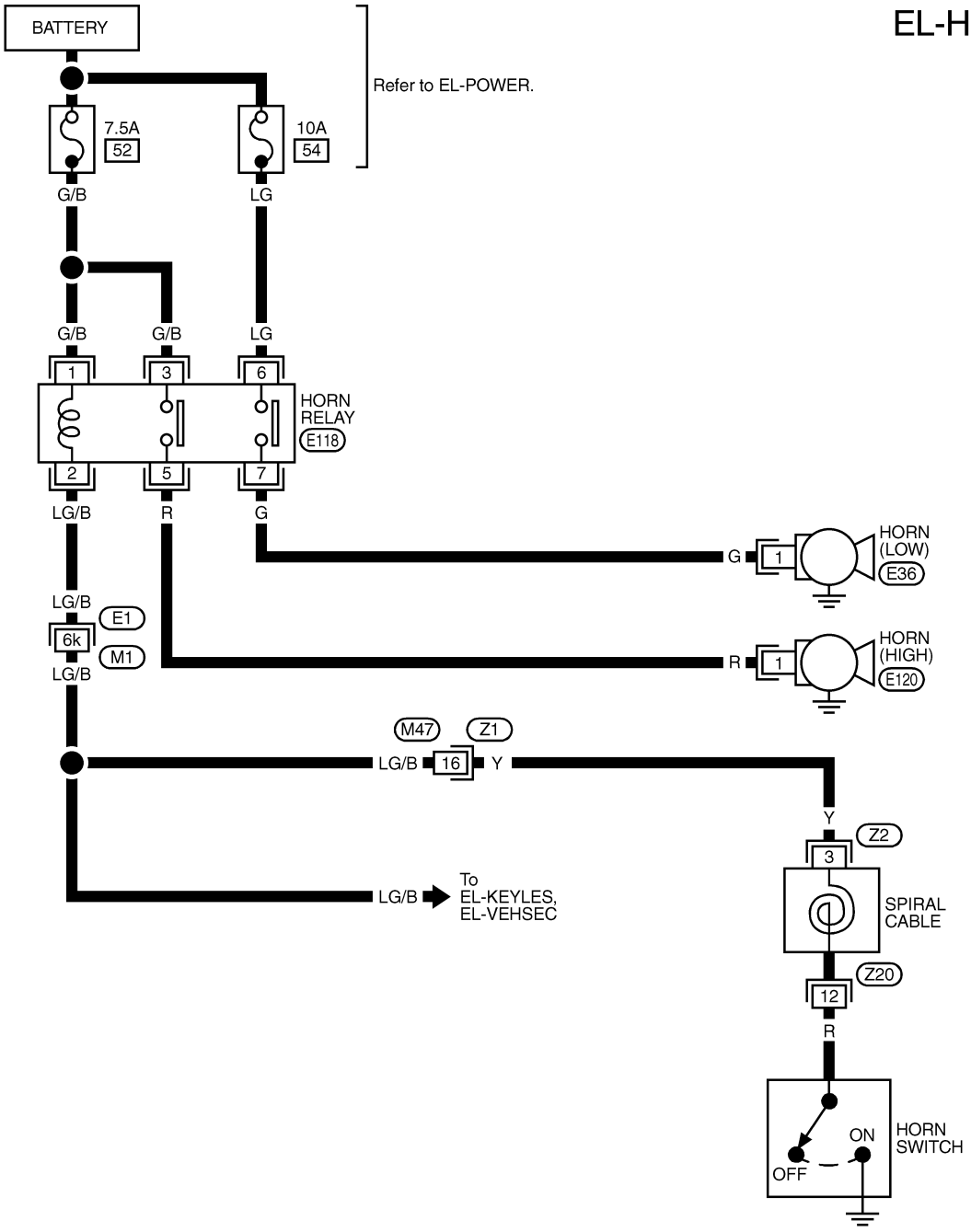
- A check valve is provided in the washer fluid line. Be careful not to connect check valve to washer tube in the wrong direction.

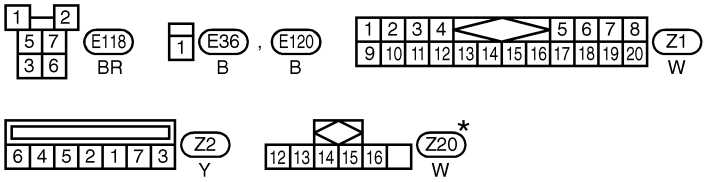


Wiring Diagram — HORN —

NAEL0330

EL-HORN-01





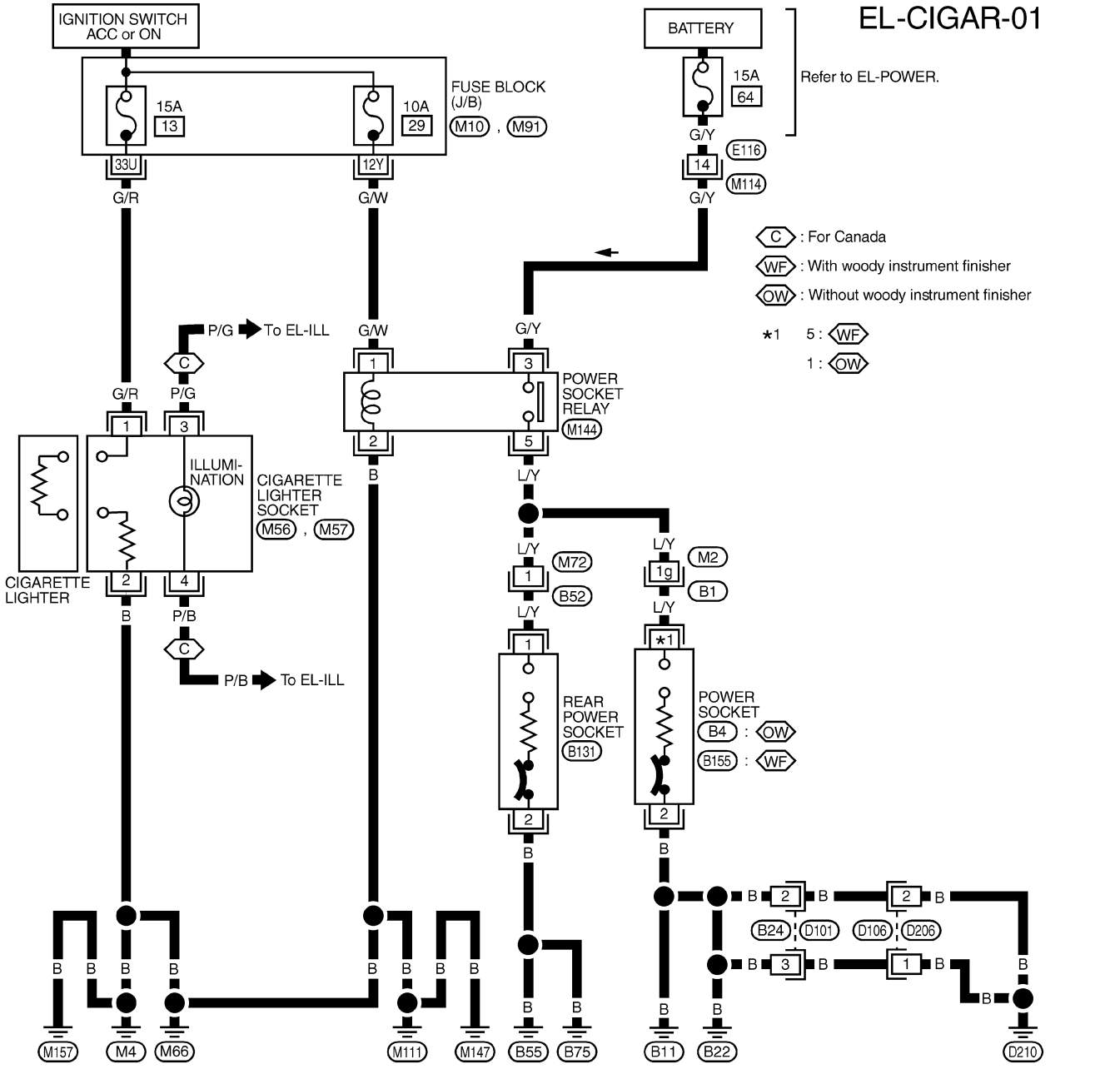
∗ : This connector is not shown in "HARNESS LAYOUT", EL section.

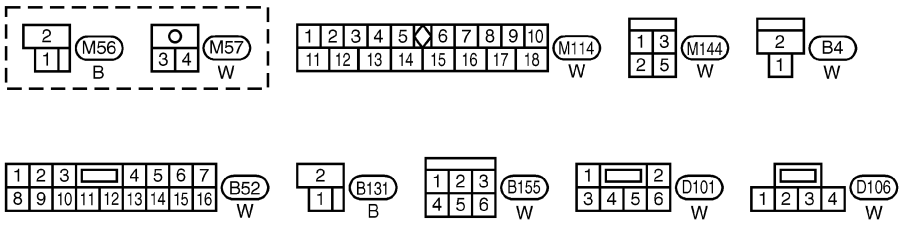
REFER TO THE FOLLOWING.
E1 -SUPER MULTIPLE JUNCTION (SMJ)

MEL994P

Wiring Diagram — CIGAR —

NAEL0331





REFER TO THE FOLLOWING.

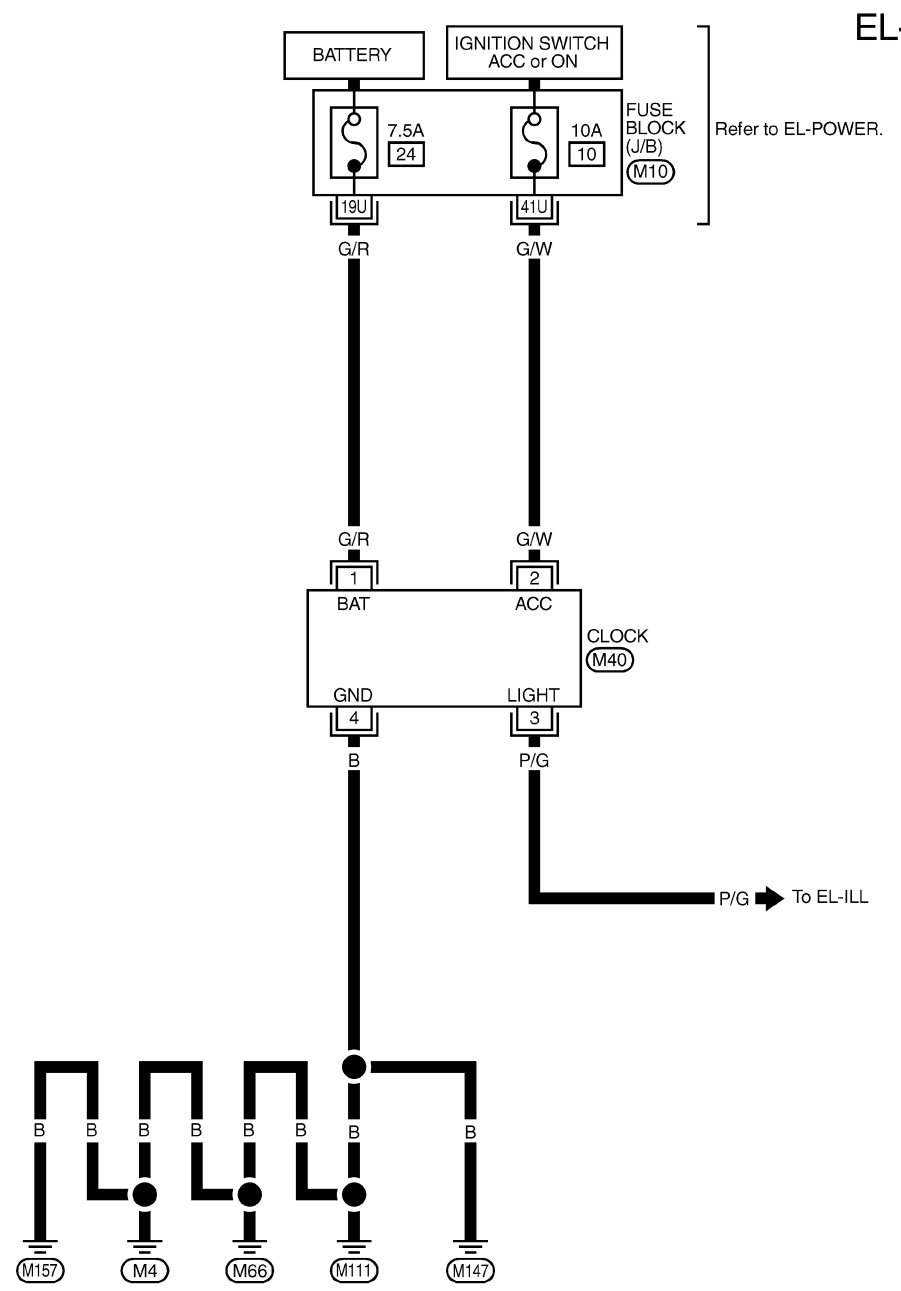
B1 - SUPER MULTIPLE JUNCTION (SMJ)

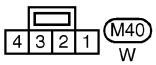
M10 , M91 - FUSE BLOCK - JUNCTION BOX (J/B)

MEL946R

Wiring Diagram — CLOCK —

NAEL0332



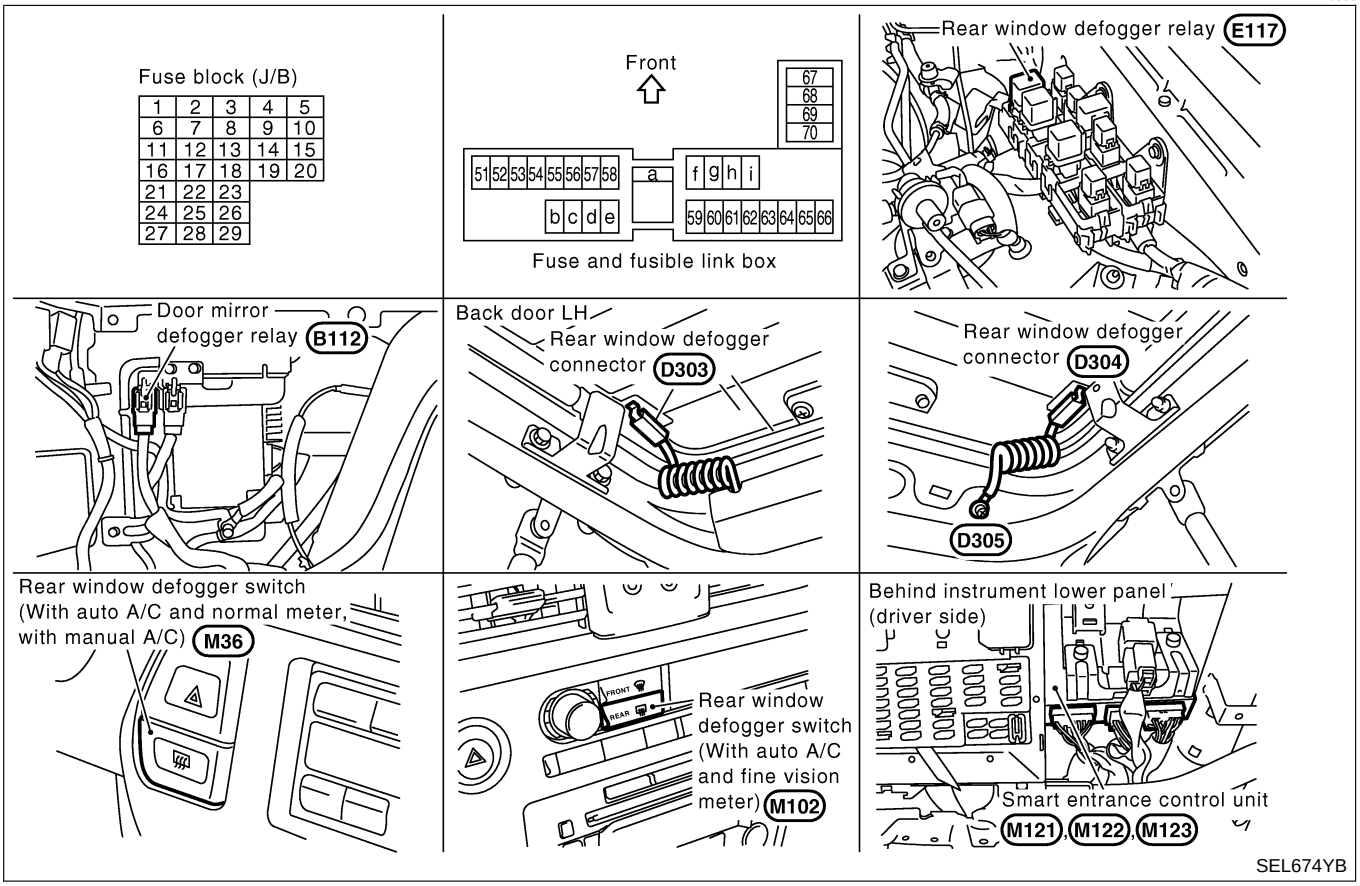


REFER TO THE FOLLOWING.
M10 -FUSE BLOCK-
JUNCTION BOX (J/B)

MEL947R

Component Parts and Harness Connector Location

NAEL0333



System Description

NAEL0334

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 49
- 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 27.

Ground is supplied

- to terminal 1 of the rear window defogger switch (with auto A/C and normal meter, with manual A/C) or
- to terminal 32 of A/C auto amp. (with auto A/C and fine vision meter) and
- to smart entrance control unit terminals 43 and 64
- through body grounds M4, M66, M111, M147 and M157.

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

- through terminal 2 of the rear window defogger switch (with auto A/C and normal meter, with manual A/C) or
- through terminal 31 of A/C auto amp. (with auto A/C and fine vision meter)
- to smart entrance control unit terminal 14.

Terminal 37 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 (with auto A/C and normal meter, with manual A/C) or
- to terminal 30 of A/C auto amp. (with auto A/C and fine vision meter)
- from terminal 7 of the rear window defogger relay.

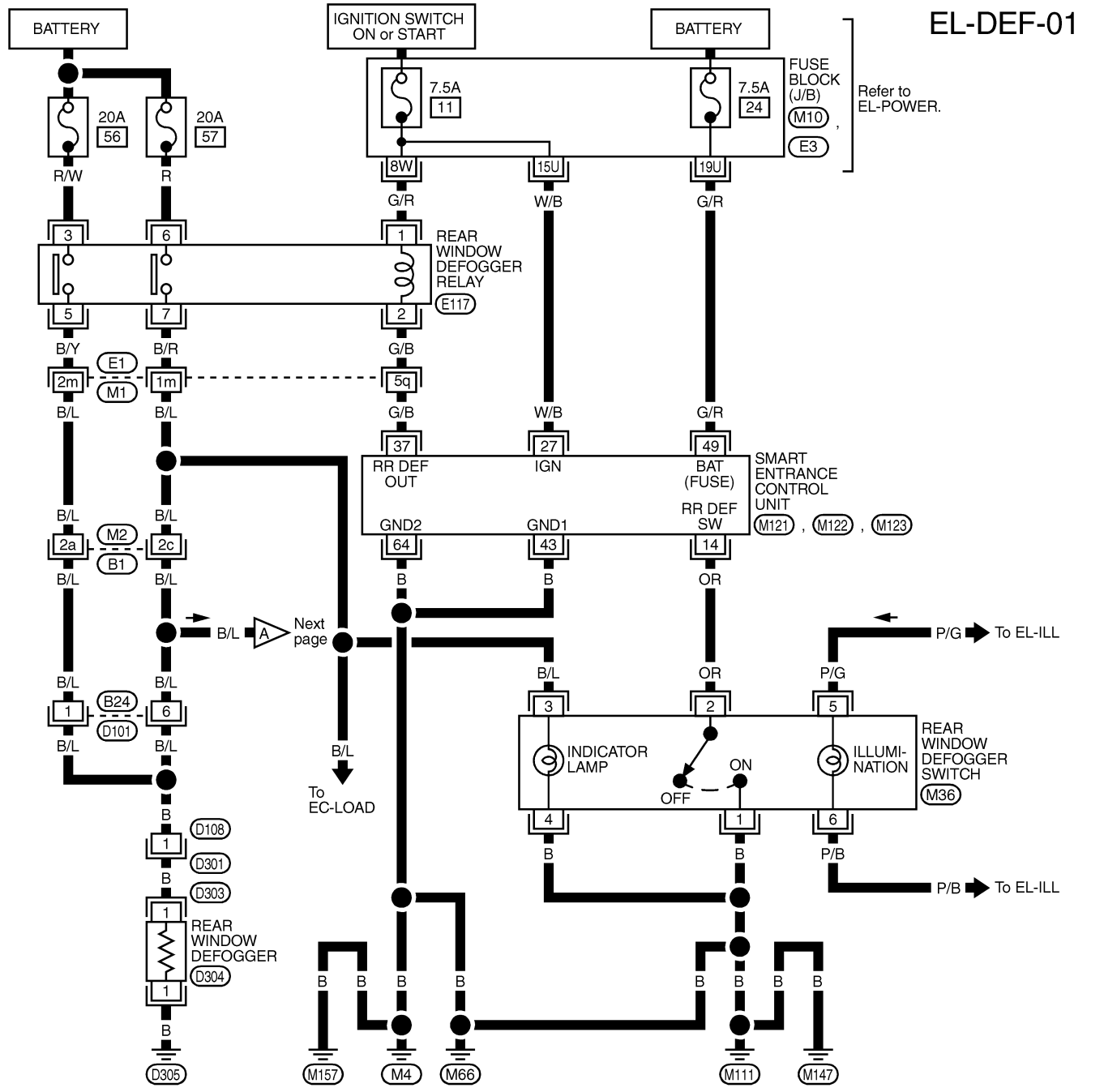
Terminal 4 of the rear window defogger switch (with auto A/C and normal meter, with manual A/C) or terminal 32 of A/C auto amp. (with auto A/C and fine vision meter) is grounded through body grounds M4, M66, M111, M147 and M157.

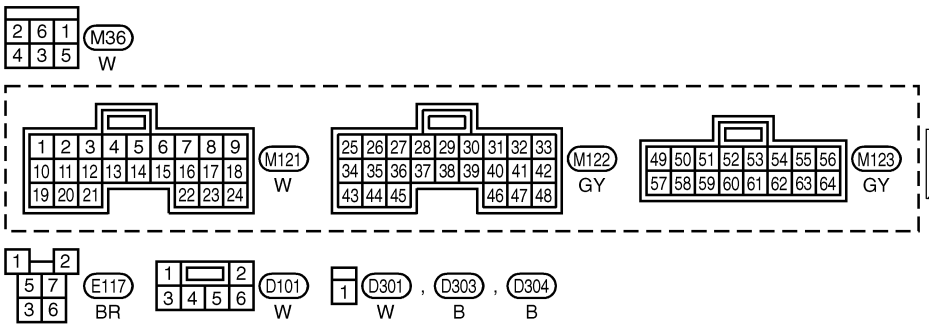
Wiring Diagram — DEF —

NAEL0335

WITH AUTO A/C AND NORMAL METER, WITH MANUAL A/C

NAEL0335S01

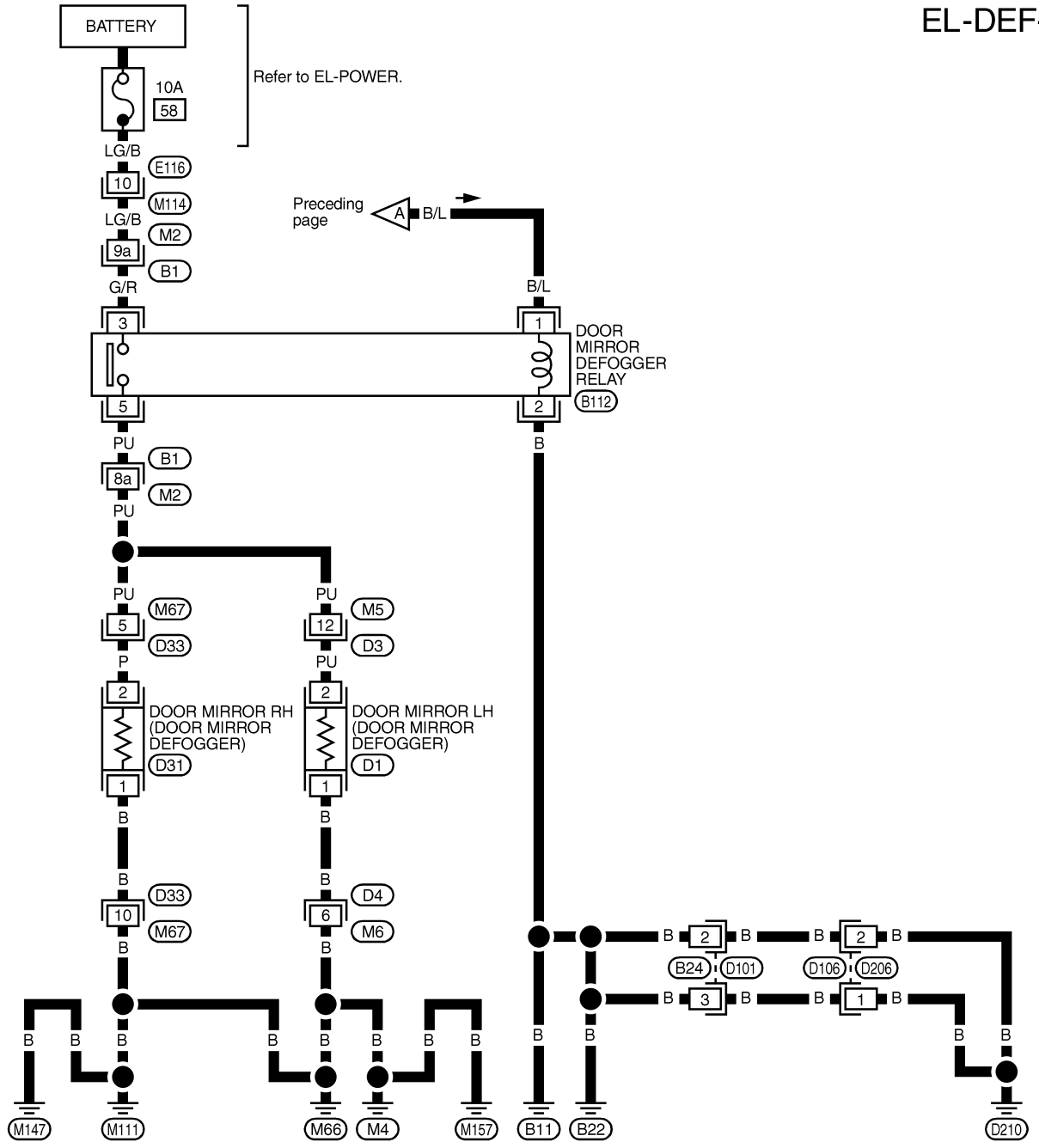


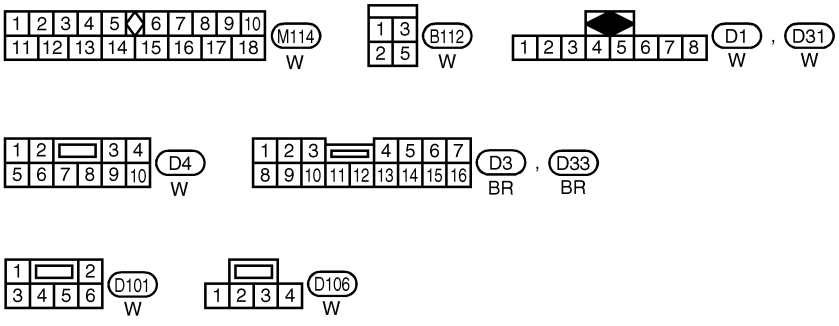


REFER TO THE FOLLOWING.
E1 , B1 -SUPER MULTIPLE JUNCTION (SMJ)
M10 , E3 -FUSE BLOCK-JUNCTION BOX (J/B)

MEL997P

EL-DEF-02





REFER TO THE FOLLOWING.

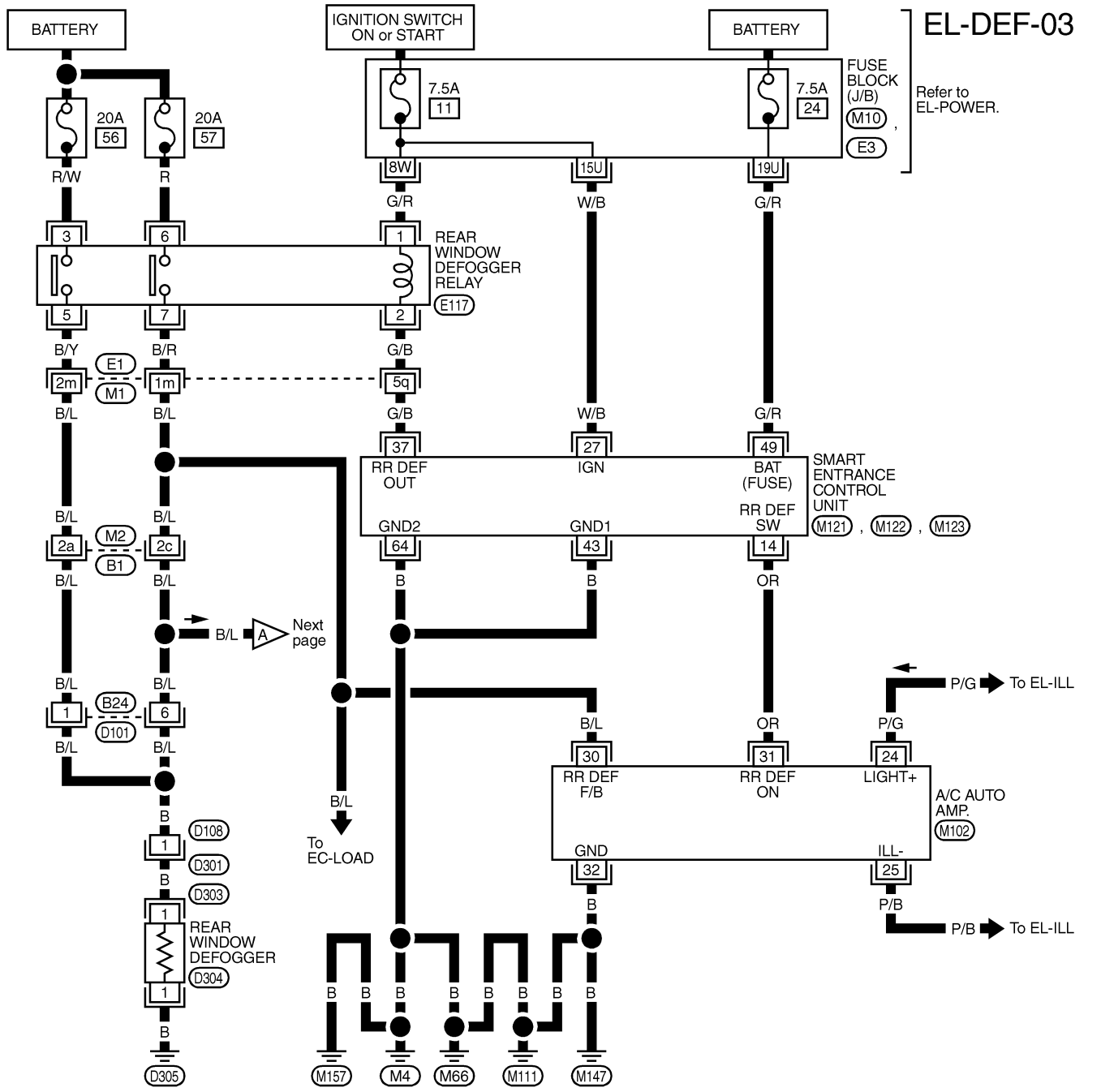
B1 - SUPER MULTIPLE JUNCTION (SMJ)

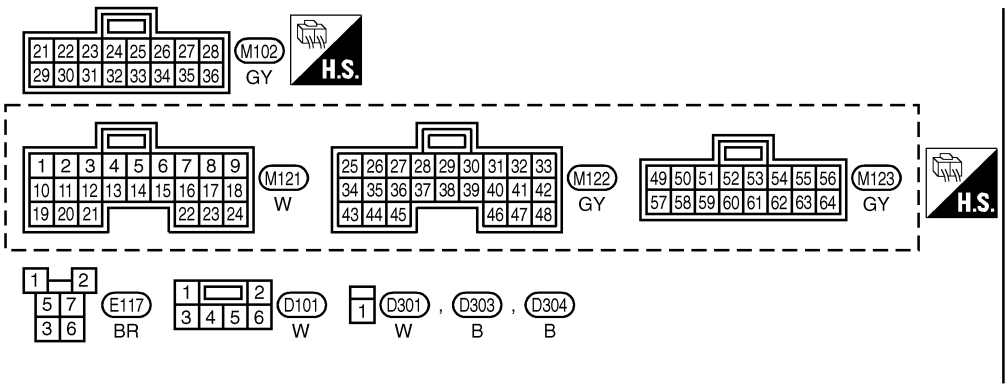
MEL998P

Wiring Diagram — DEF — (Cont'd)

WITH AUTO A/C AND FINE VISION METER

NAEL0335S02

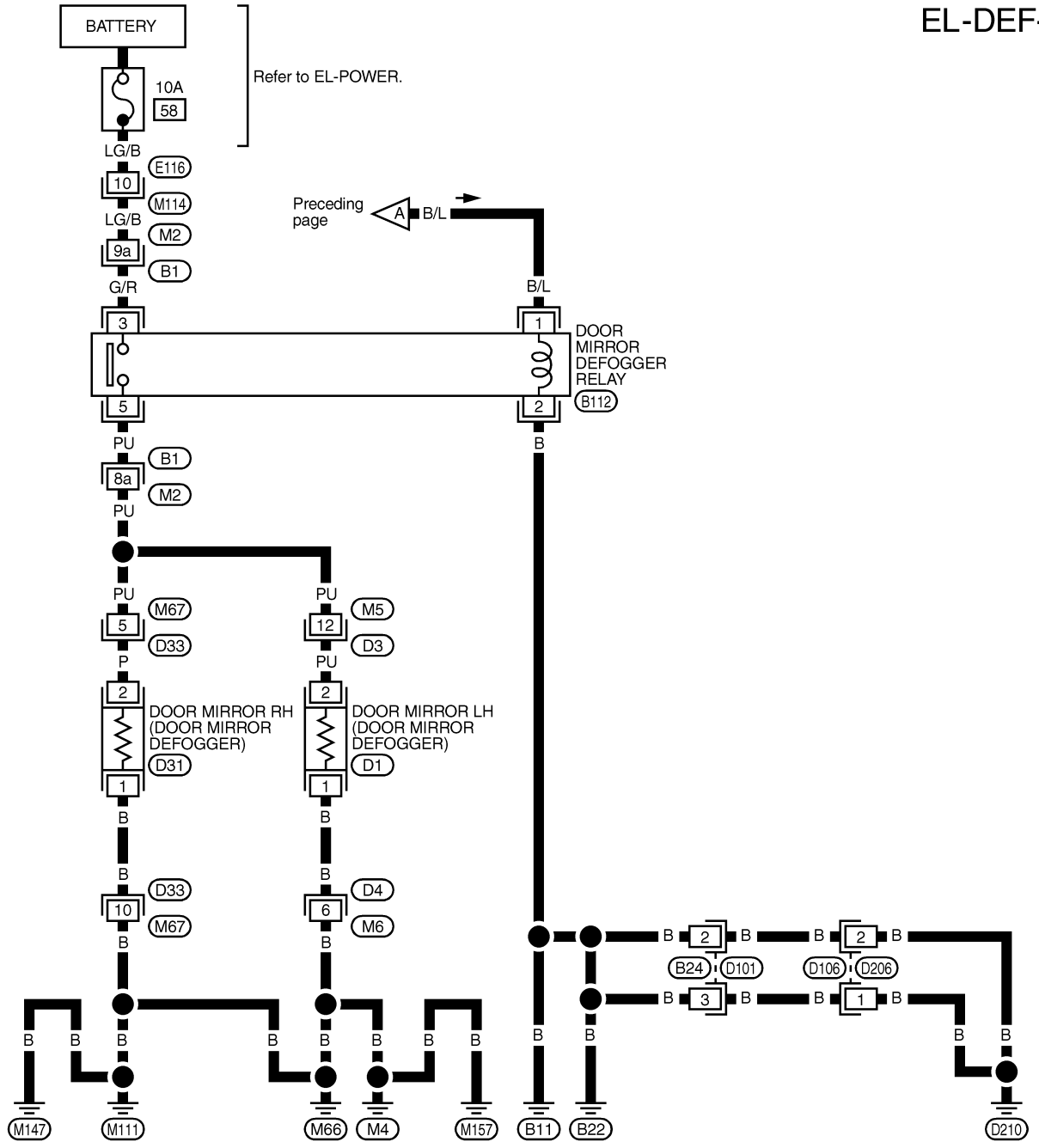


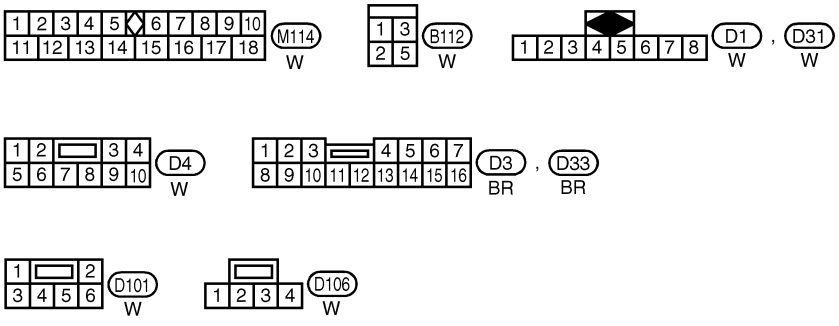


REFER TO THE FOLLOWING.
E1 , B1 -SUPER MULTIPLE JUNCTION (SMJ)
M10 , E3 -FUSE BLOCK-JUNCTION BOX (J/B)

MEL999P

EL-DEF-04

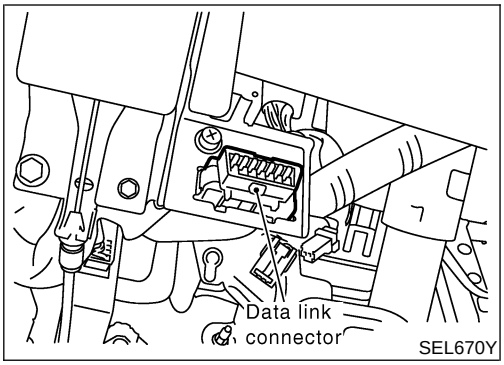




REFER TO THE FOLLOWING.

B1 - SUPER MULTIPLE JUNCTION (SMJ)

MEL001Q



SEL670Y

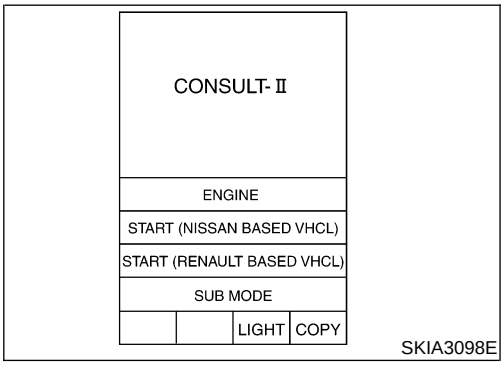
CONSULT-II Inspection Procedure

NAEL0336

"REAR DEFOGGER"

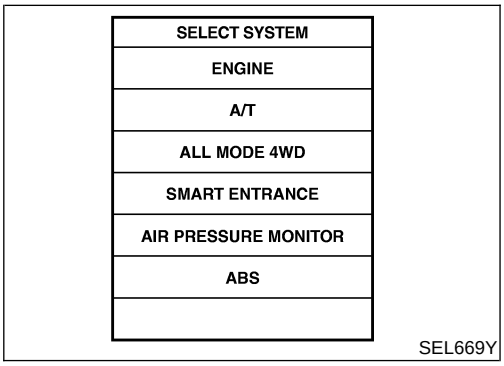
NAEL0336S01

1. Turn ignition switch "OFF".
2. Connect "CONSULT-II" and "CONSULT-II CONVERTER" to the data link connector.



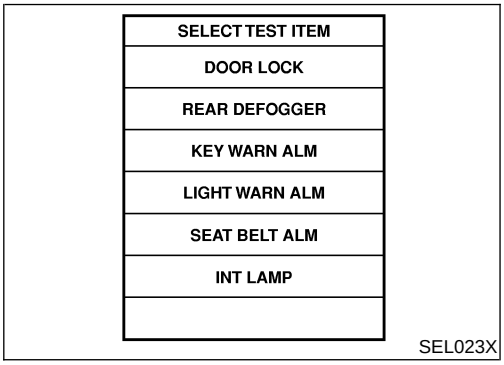
SKIA3098E

3. Turn ignition switch "ON".
4. Touch "START (NISSAN BASED VHCL)".



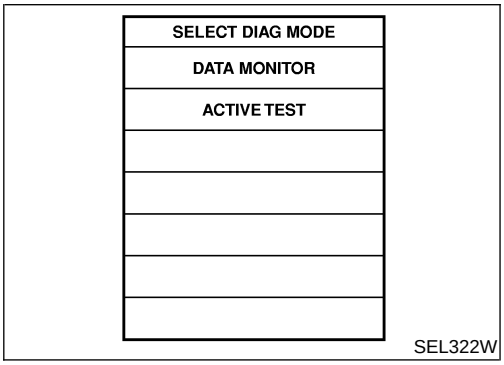
SEL669Y

5. Touch "SMART ENTRANCE".
   If "SMART ENTRANCE" is not indicated, go to GI-42, "CONSULT-II Data Link Connector (DLC) Circuit".



SEL023X

6. Touch "REAR DEFOGGER".



SEL322W

7. Select diagnosis mode.
   "DATA MONITOR" and "ACTIVE TEST" are available.

CONSULT-II Application Items

NAEL0337

“REAR DEFOGGER”

NAEL0337S01

Data Monitor

NAEL0337S0101

Monitored Item	Description
IGN ON SW	Indicates [ON/OFF] condition of ignition switch.
REAR DEF SW	Indicates [ON/OFF] condition of rear window defogger switch.

Active Test

NAEL0337S0102

Test Item	Description
REAR DEFOGGER	This test is able to check rear window defogger operation. Rear window defogger activates when “ON” on CONSULT-II screen is touched.

Trouble Diagnoses

NAEL0338

DIAGNOSTIC PROCEDURE

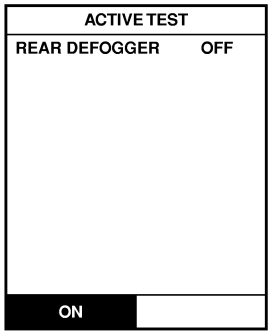
NAEL0338S01

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

1	CHECK REAR WINDOW DEFOGGER OUTPUT SIGNAL

With CONSULT-II

Select “ACTIVE TEST” in “REAR DEFOGGER” with CONSULT-II.

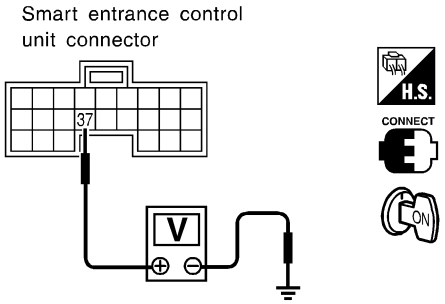


Rear window defogger and rear window defogger switch indicator should operate when the “ON” button on the CONSULT-II screen is touched.

SEL353W

Without CONSULT-II

1. Turn ignition switch to ON position.
2. Check voltage between smart entrance control unit harness connector M122 terminal 37 (G/B) and ground.



Voltage [V]:

Rear window defogger switch is “OFF”.
Approx. 12

Rear window defogger switch is “ON”.
0

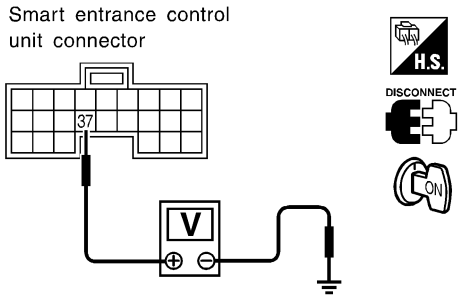
SEL997X

OK or NG

OK	▶	**Check the following.** ● Rear window defogger relay (Refer to EL-203.) ● Rear window defogger circuit ● Rear window defogger filament (Refer to EL-204.)
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 harness connector M122 terminal 37 (G/B) and ground.



Battery voltage should exist.

SEL998X

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 fuse and 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

With CONSULT-II

Select "REAR DEF SW" in "DATA MONITOR" mode with CONSULT-II.

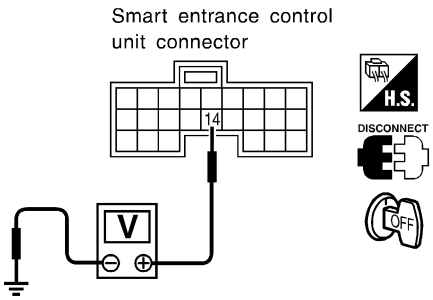
DATA MONITOR	
MONITOR	
REAR DEF SW	ON

When rear window defogger switch is pushed:
REAR DEF SW should be ON.

SEL352W

Without CONSULT-II

Check voltage between smart entrance control unit harness connector M121 terminal 14 (OR) and ground.



Voltage [V]:
Rear window defogger switch is pushed.
Approx. 5
Rear window defogger switch is released.
0

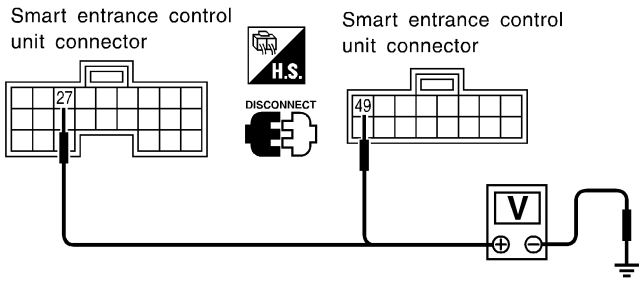
SEL685Y

OK or NG

OK	▶	GO TO 4.
NG	▶	**Check the following.** ● Rear window defogger switch (Refer to EL-203.) ● Harness for open or short between smart entrance control unit and rear window defogger switch ● Rear window defogger switch ground circuit

4	CHECK POWER SUPPLY AND IGNITION INPUT SIGNAL

Check voltage between smart entrance control unit harness connector M122 terminal 27 (W/B), M123 terminal 49 (G/R) and ground.



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

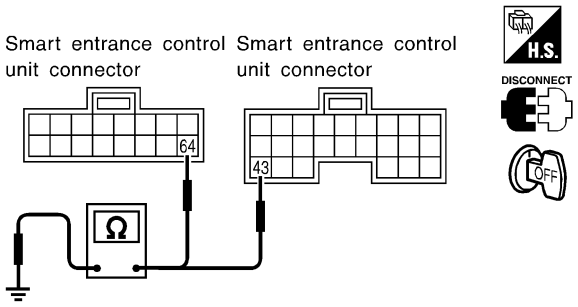
SEL001Y

OK or NG

OK	▶	GO TO 5.
NG	▶	**Check the following.** ● 7.5A fuse [No. 11 or No. 24, located in the fuse block (J/B)] ● Harness for open or short between smart entrance control unit and fuse

5	CHECK CONTROL UNIT GROUND CIRCUIT

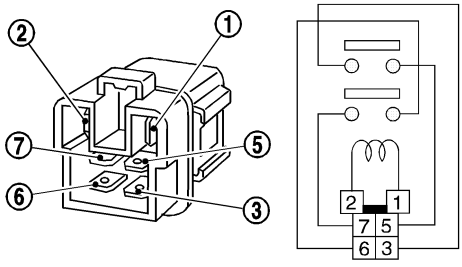
Check continuity between smart entrance control unit harness connector M122 terminal 43 (B), M123 terminal 64 (B) and ground.



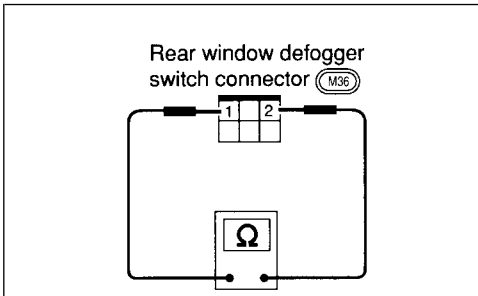
Continuity should exist.

SEL002Y

Yes	▶	Replace smart entrance control unit.
No	▶	Repair harness or connectors.



SEC202B



SEL430TB

Electrical Components Inspection

NAEL0339

REAR WINDOW DEFOGGER RELAY

NAEL0339S01

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

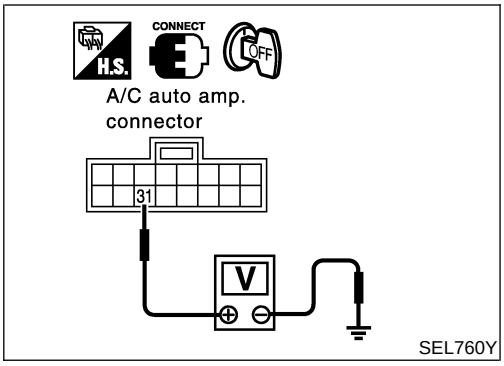
NAEL0339S02

With Auto A/C and Normal Meter, and With Manual A/C

NAEL0339S0201

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

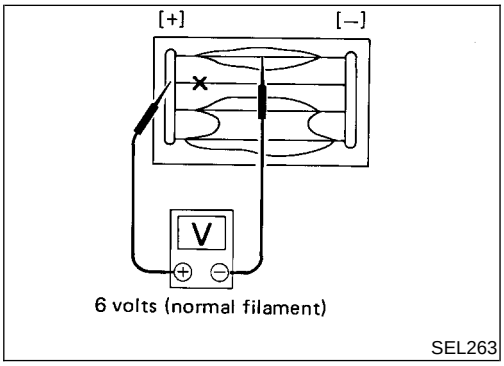


With Auto A/C and Fine Vision Meter

=NAEL0339S0202

Check voltage between A/C auto amp. and ground, when rear window switch is pushed and released.

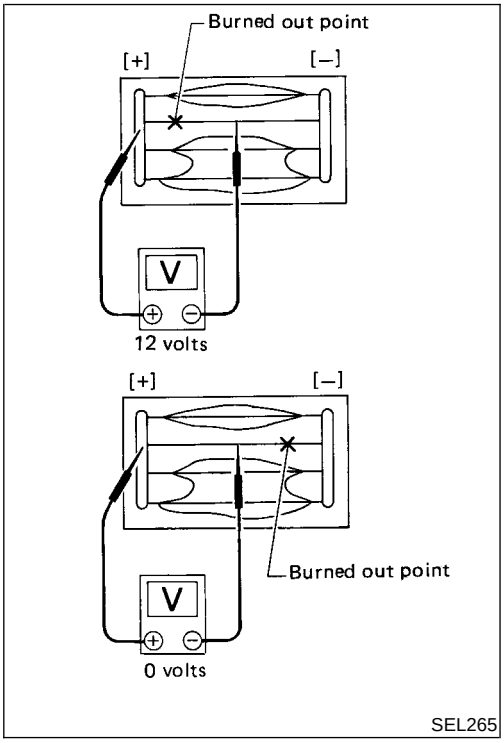
Terminals			Condition	Voltage (V)
(+)		(−)		
Connector	Terminal (Wire color)			
M102	31 (OR)	Ground	Rear window defogger switch is pushed	0
			Rear window defogger switch is released	12



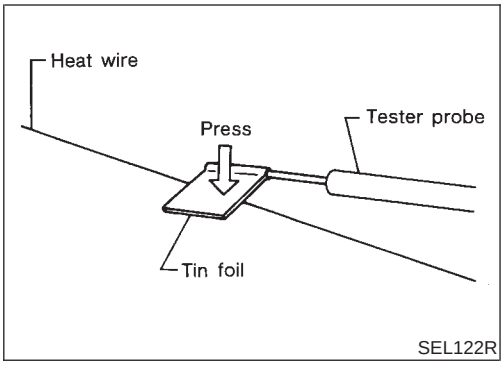
Filament Check

NAEL0340

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.**

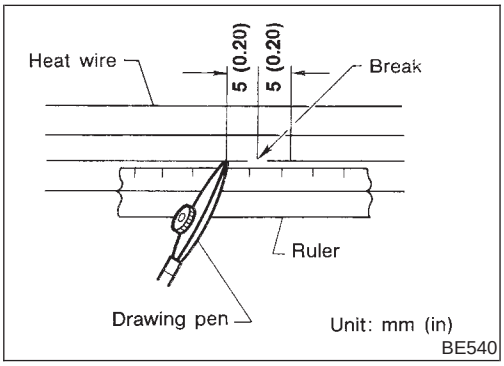
Filament Repair

NAEL0341

REPAIR EQUIPMENT

NAEL0341S01

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



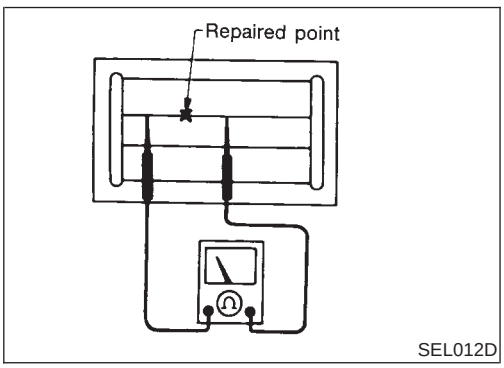
REPAIRING PROCEDURE

NAEL0341S02

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

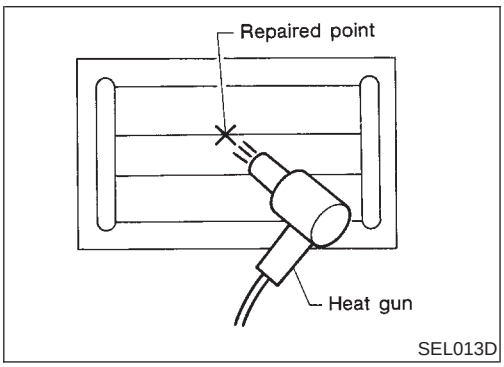
Shake silver composition container before use.

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



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

Do not touch repaired area while test is being conducted.



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

System Description

NAEL0342

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

BASE SYSTEM

NAEL0342S01

Power is supplied at all times

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

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, and
- to CD player terminal 1 (with CD player).

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

NAEL0342S02

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,
- to rear speaker amp. terminal 11 and
- to AUX box terminal 7 (with rear TV).

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,
- to AUX box terminal 6 (with rear TV).

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

- to audio amp. relay terminal 2,
- to front door speaker LH terminal 5 and
- to front door speaker RH terminal 5
- through body grounds M4, M66, M111, M147 and M157
- to rear speaker amp. terminal 24 and
- to AUX box terminal 8 (with rear TV)
- through body grounds B11, B22 and D210
- to rear TV switch terminal 3
- through body grounds M4, M66, M111, M147 and M157.

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

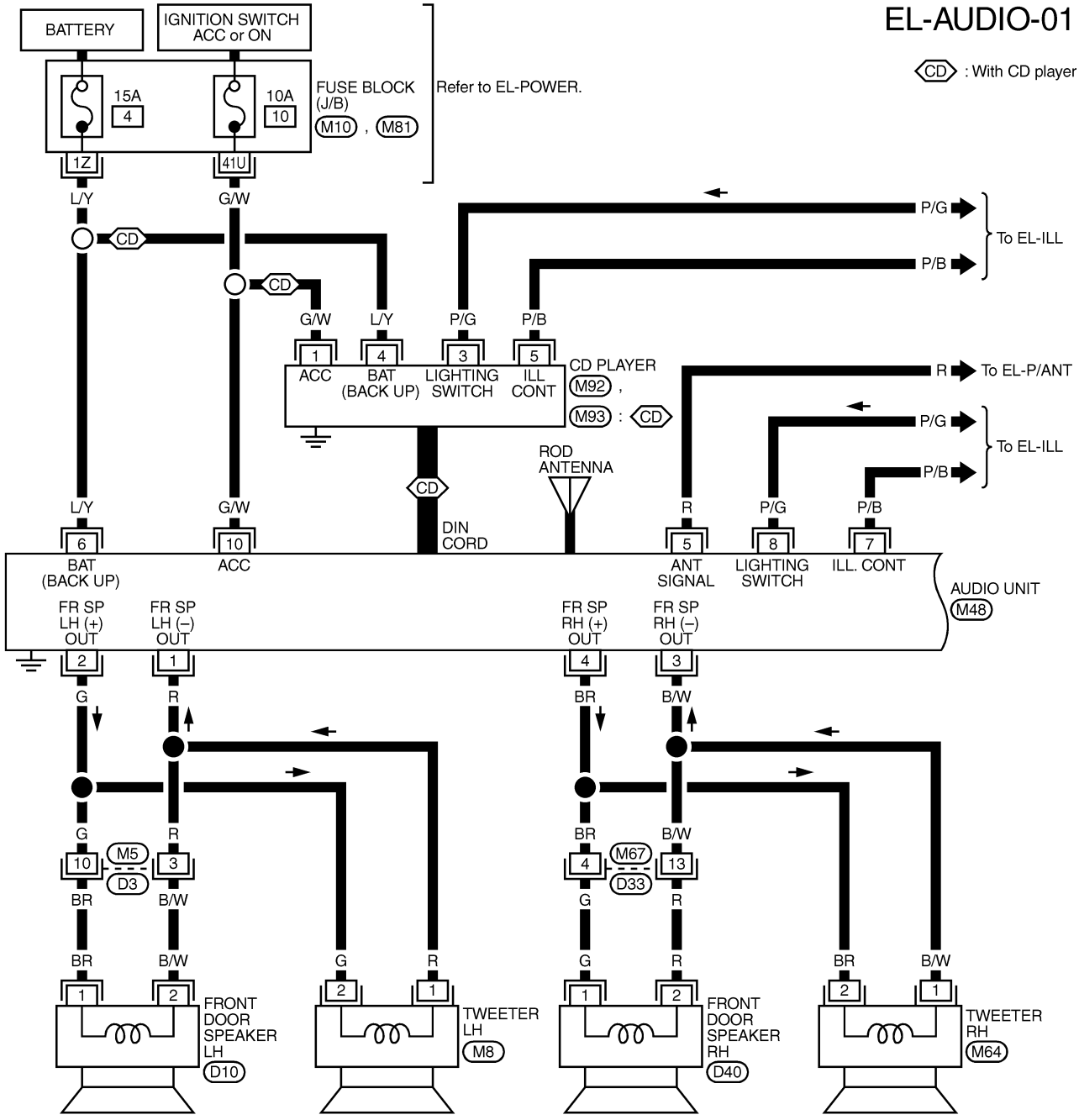
- to front door speaker LH terminal 4 and
- to front door speaker RH terminal 4.

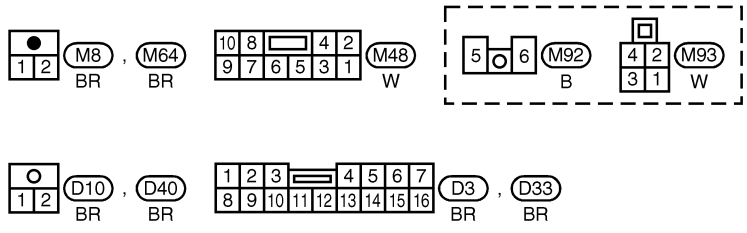
Audio signals are supplied

- 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 door speakers
- to rear LH and RH speakers through terminals 1, 2, 25 and 26 of the rear speaker amp.

Wiring Diagram — AUDIO —/Base System

NAEL0343

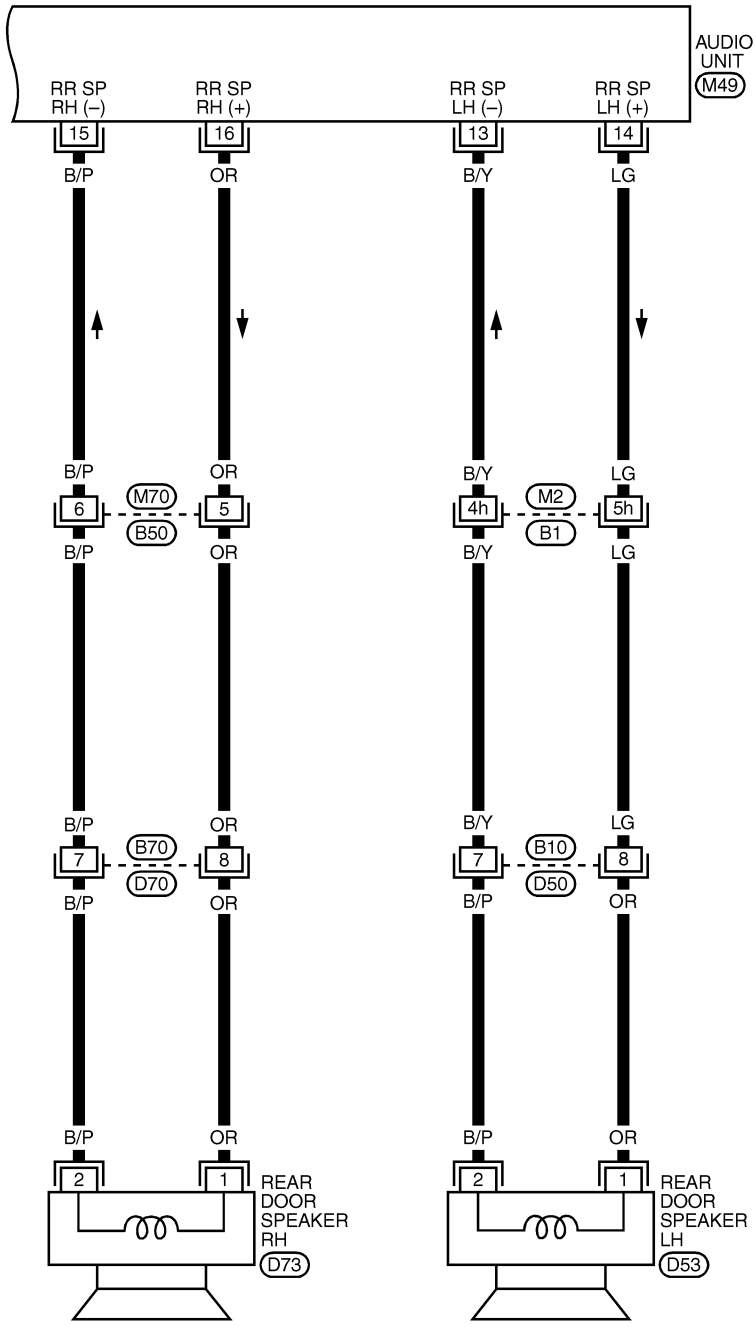


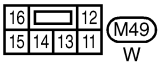


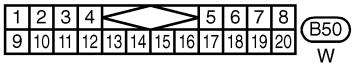
REFER TO THE FOLLOWING.
M10 , M81 -FUSE BLOCK-JUNCTION BOX (J/B)

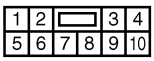
MEL355N

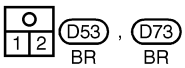
EL-AUDIO-02









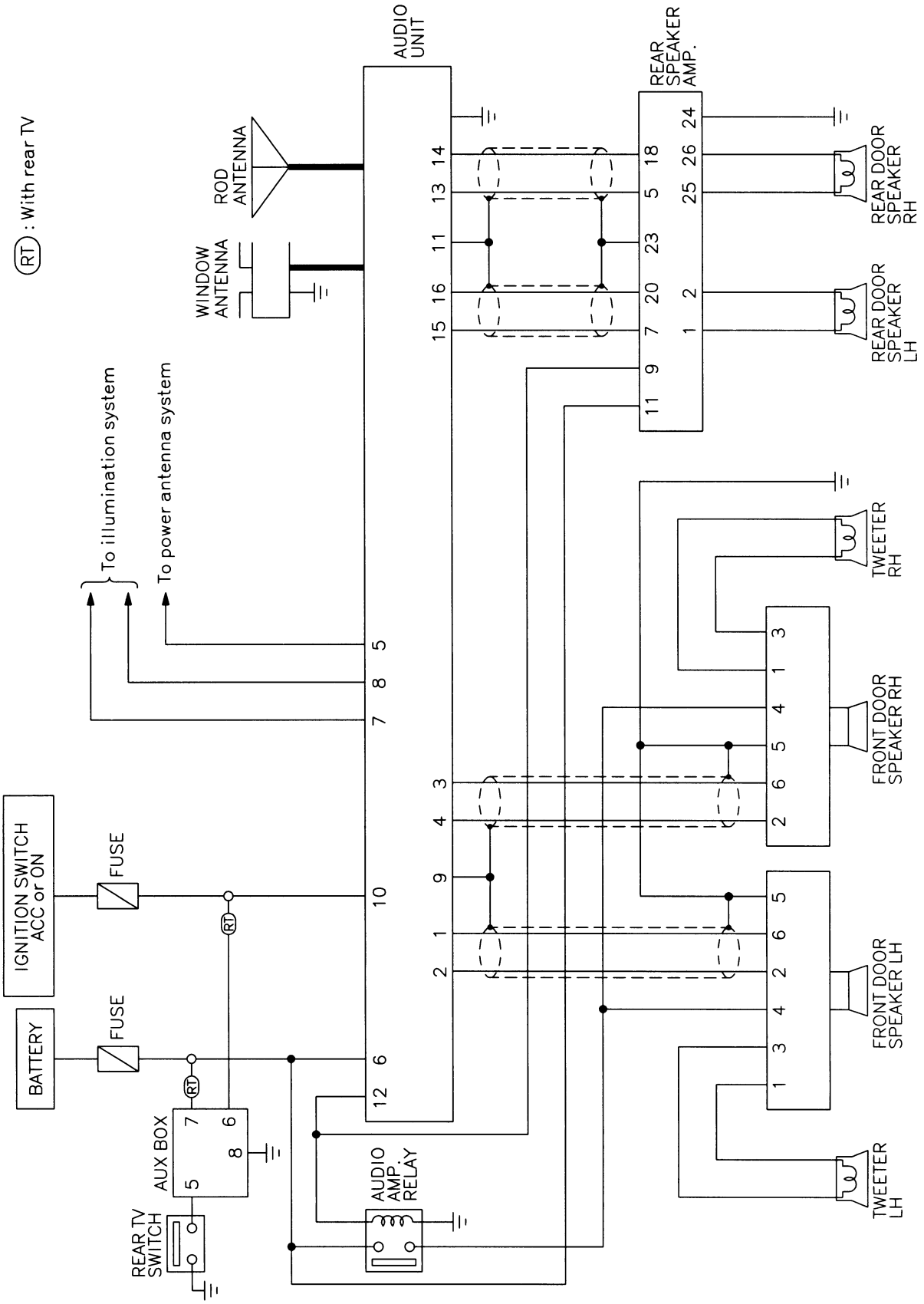


REFER TO THE FOLLOWING.
(B1) -SUPER MULTIPLE JUNCTION (SMJ)

MEL038M

Schematic/BOSE System

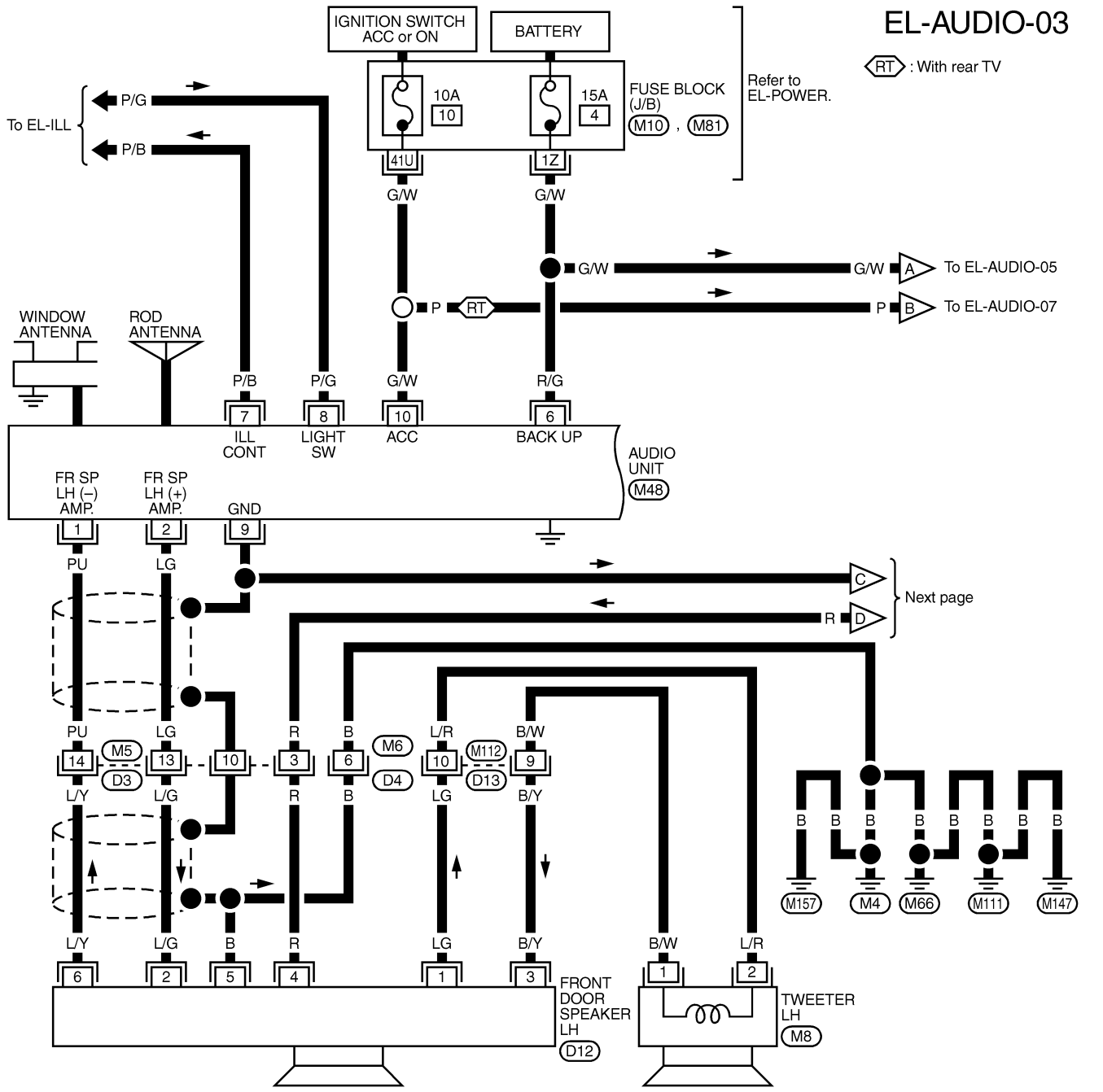
NAEL0344

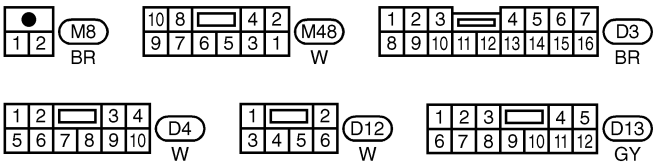


MEL002Q

Wiring Diagram — AUDIO —/BOSE System

NAEL0345

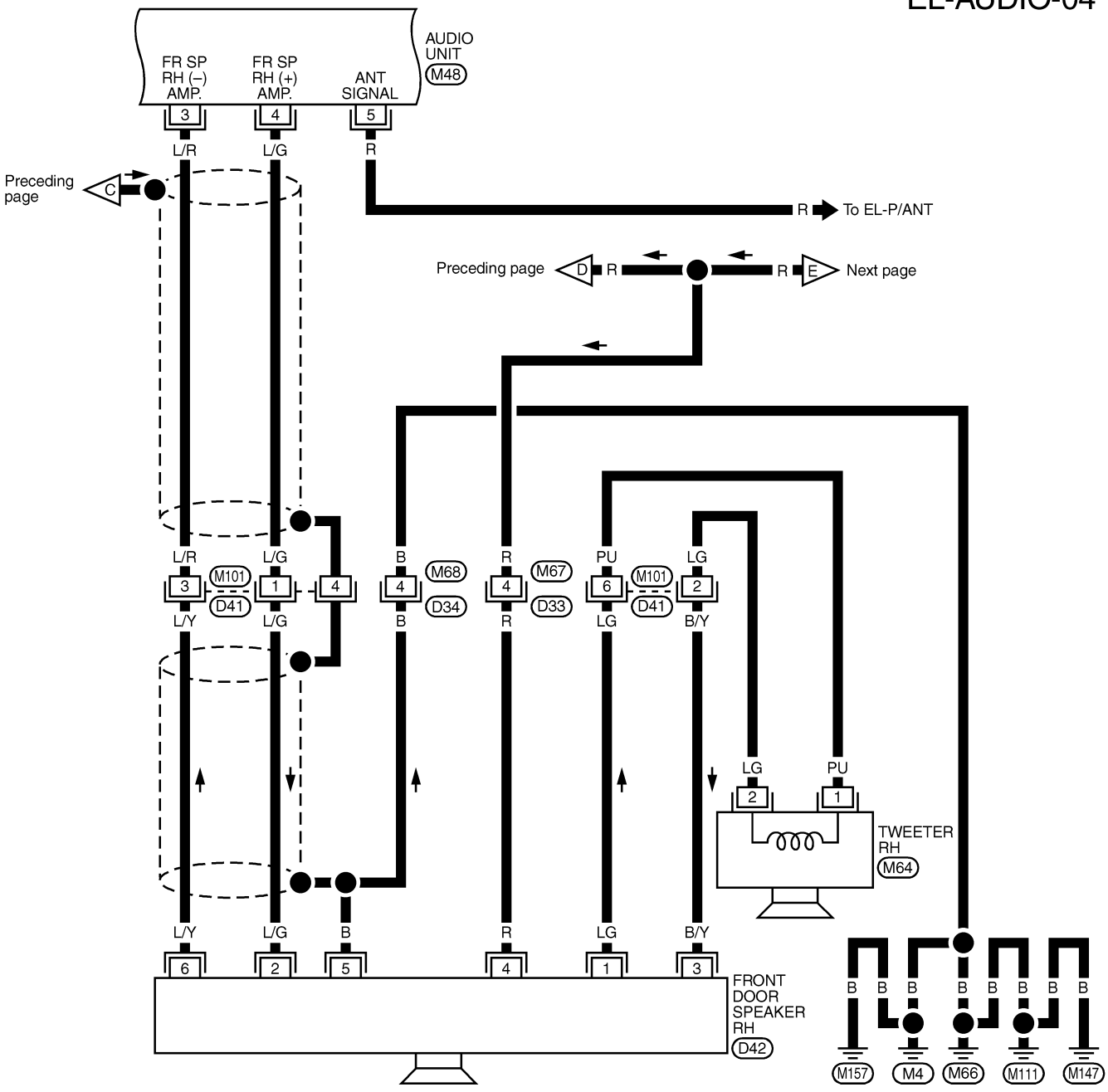


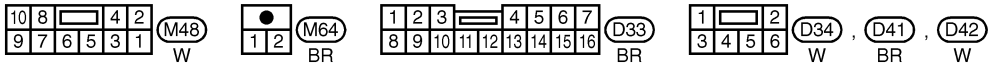


REFER TO THE FOLLOWING.
M10 , M81 -FUSE BLOCK-JUNCTION BOX (J/B)

MEL003Q

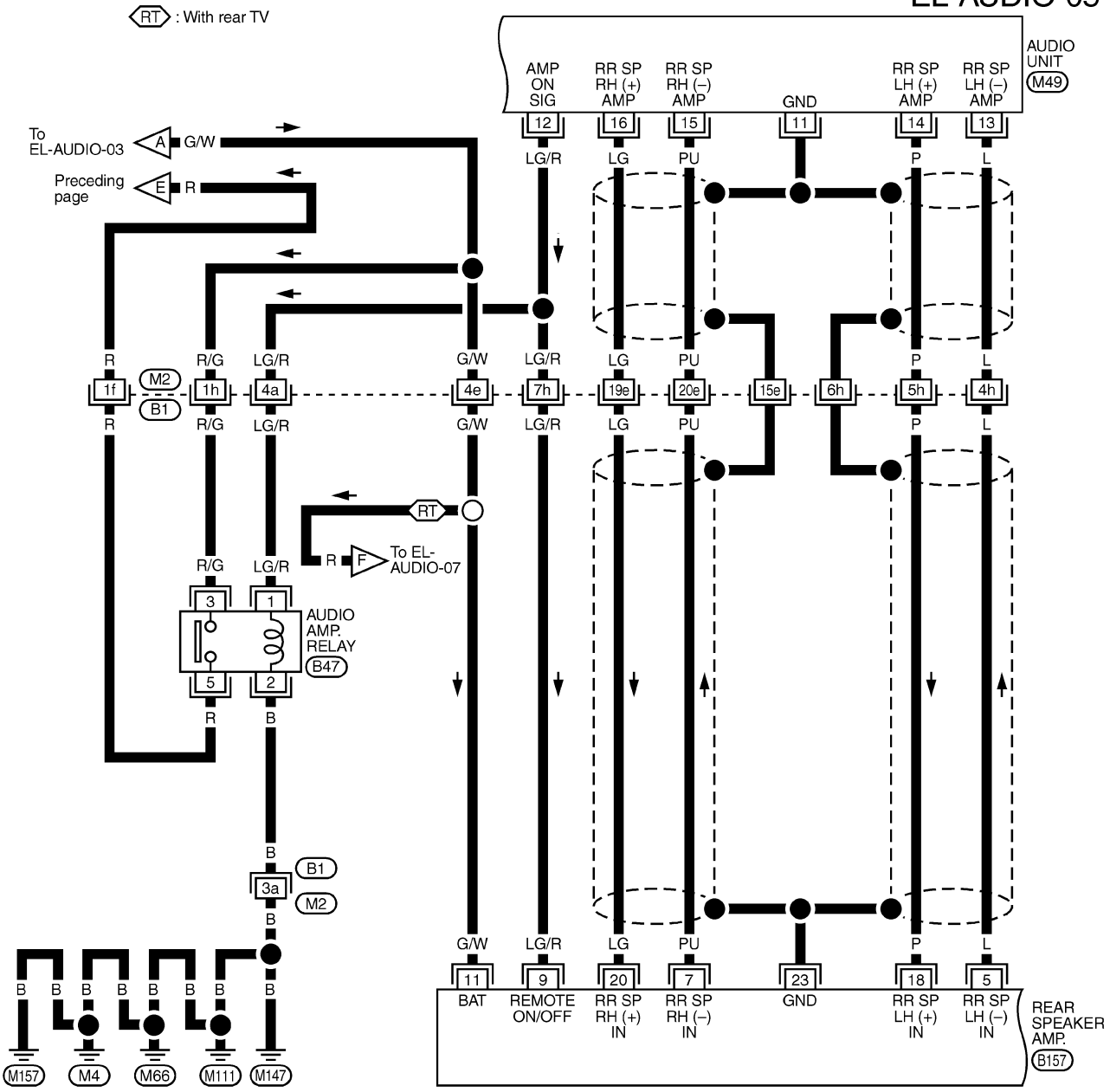
EL-AUDIO-04

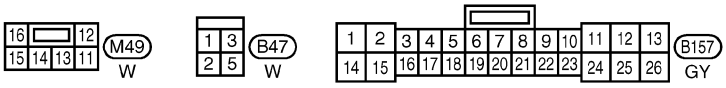




MEL004Q

EL-AUDIO-05

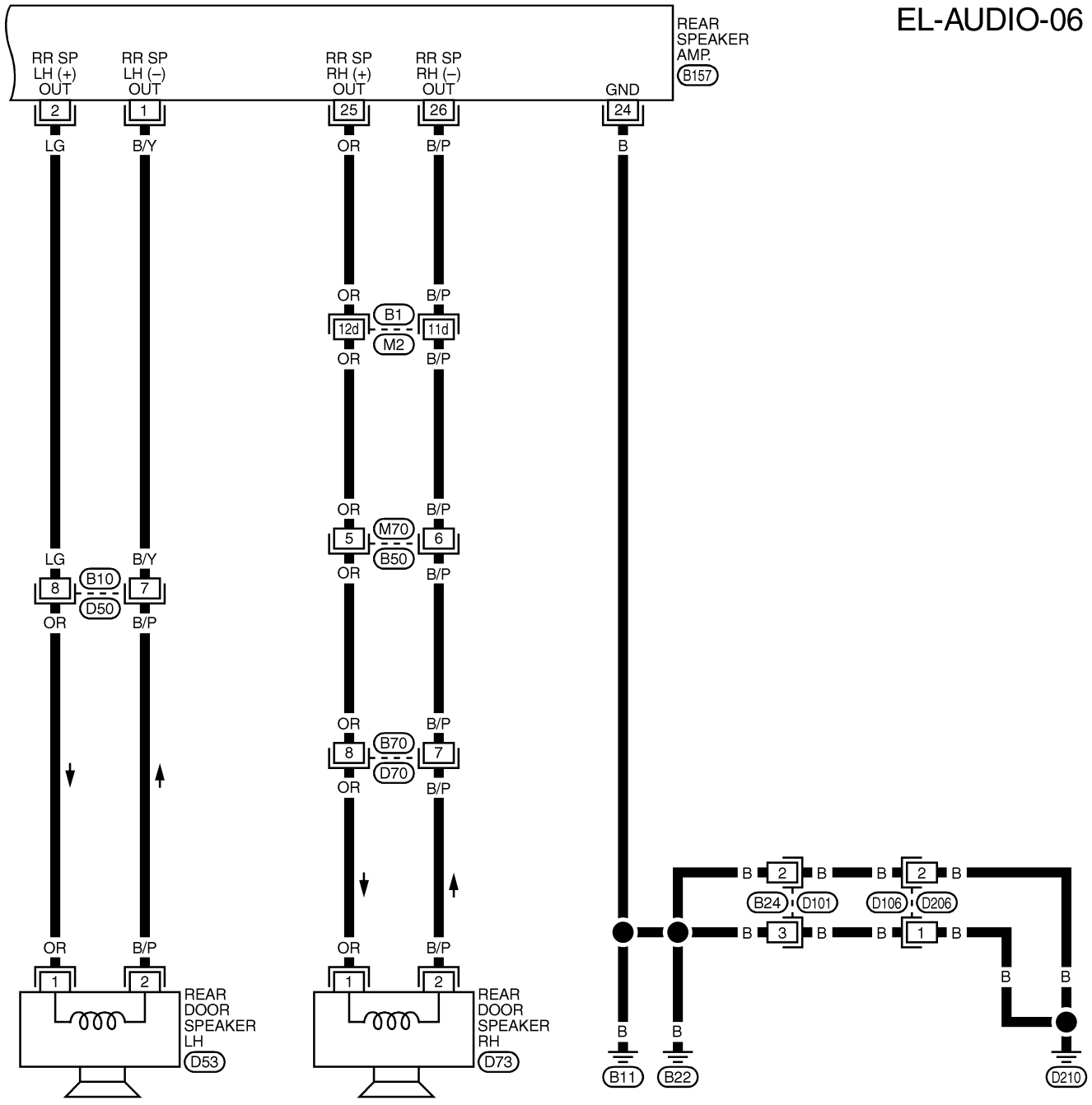


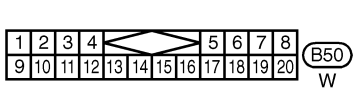


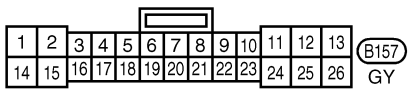
REFER TO THE FOLLOWING.
B1 - SUPER MULTIPLE JUNCTION (SMJ)

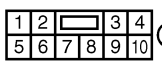
MEL948R

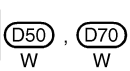
EL-AUDIO-06

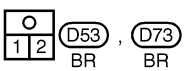


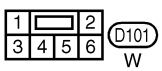


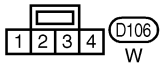








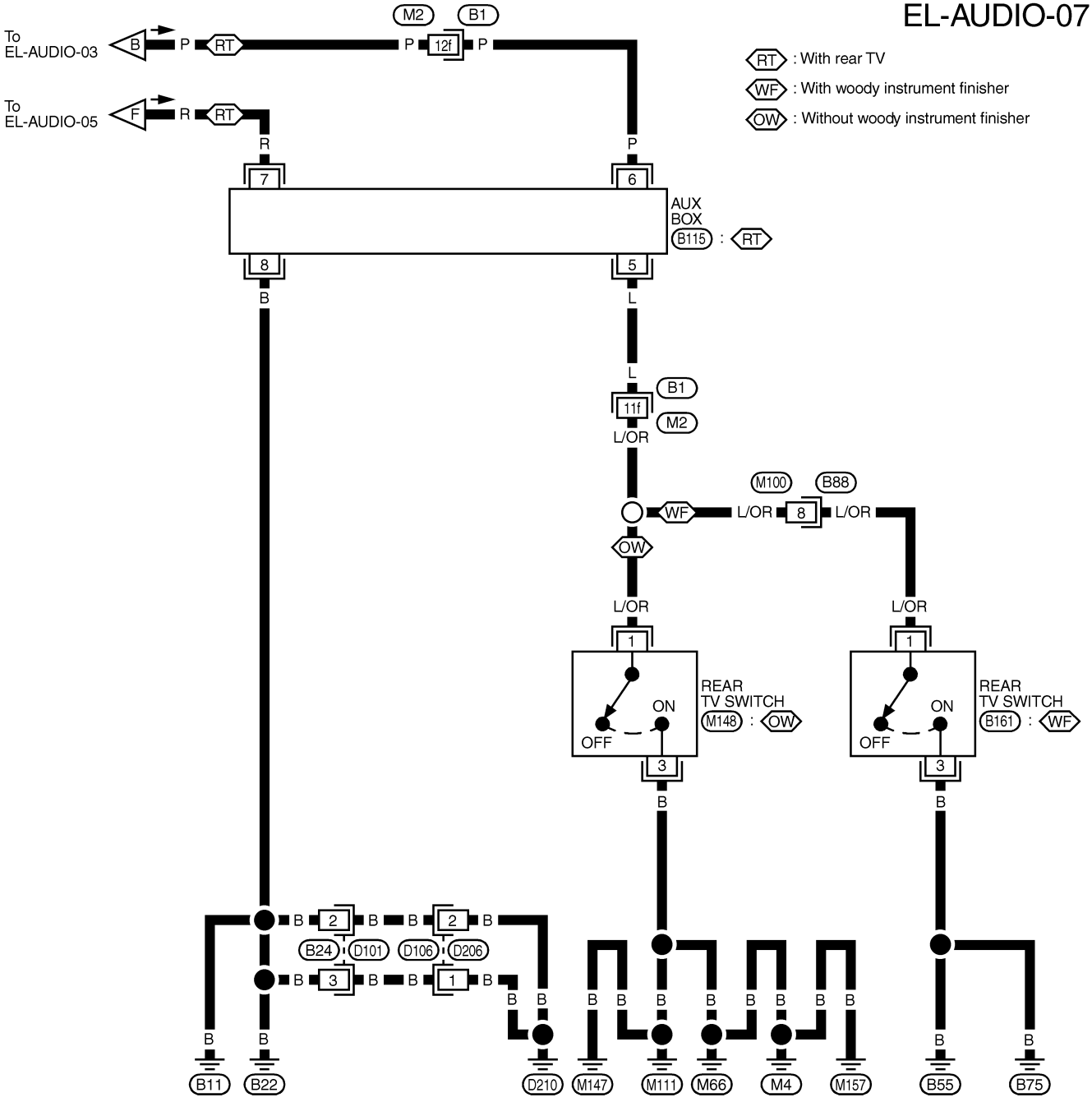


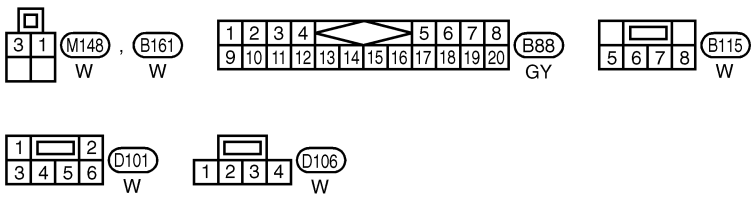


REFER TO THE FOLLOWING.
B1 - SUPER MULTIPLE JUNCTION (SMJ)

MEL006Q

EL-AUDIO-07





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

MEL007Q

Trouble Diagnoses

NAEL0346

AUDIO UNIT

NAEL0346S01

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

NAEL0346S02

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

NAEL0346S03

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 3 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 2). 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.

Trouble Diagnoses (Cont'd)

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

NAEL0347

AUDIO UNIT AND AMP.

NAEL0347S01

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

NAEL0347S02

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

NAEL0348

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-216.
2. Remove CD changer unit. Refer to BT-24, "INSTRUMENT PANEL ASSEMBLY".

LOCKING CD CHANGER UNIT MECHANISM

NAEL0348S01

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.**

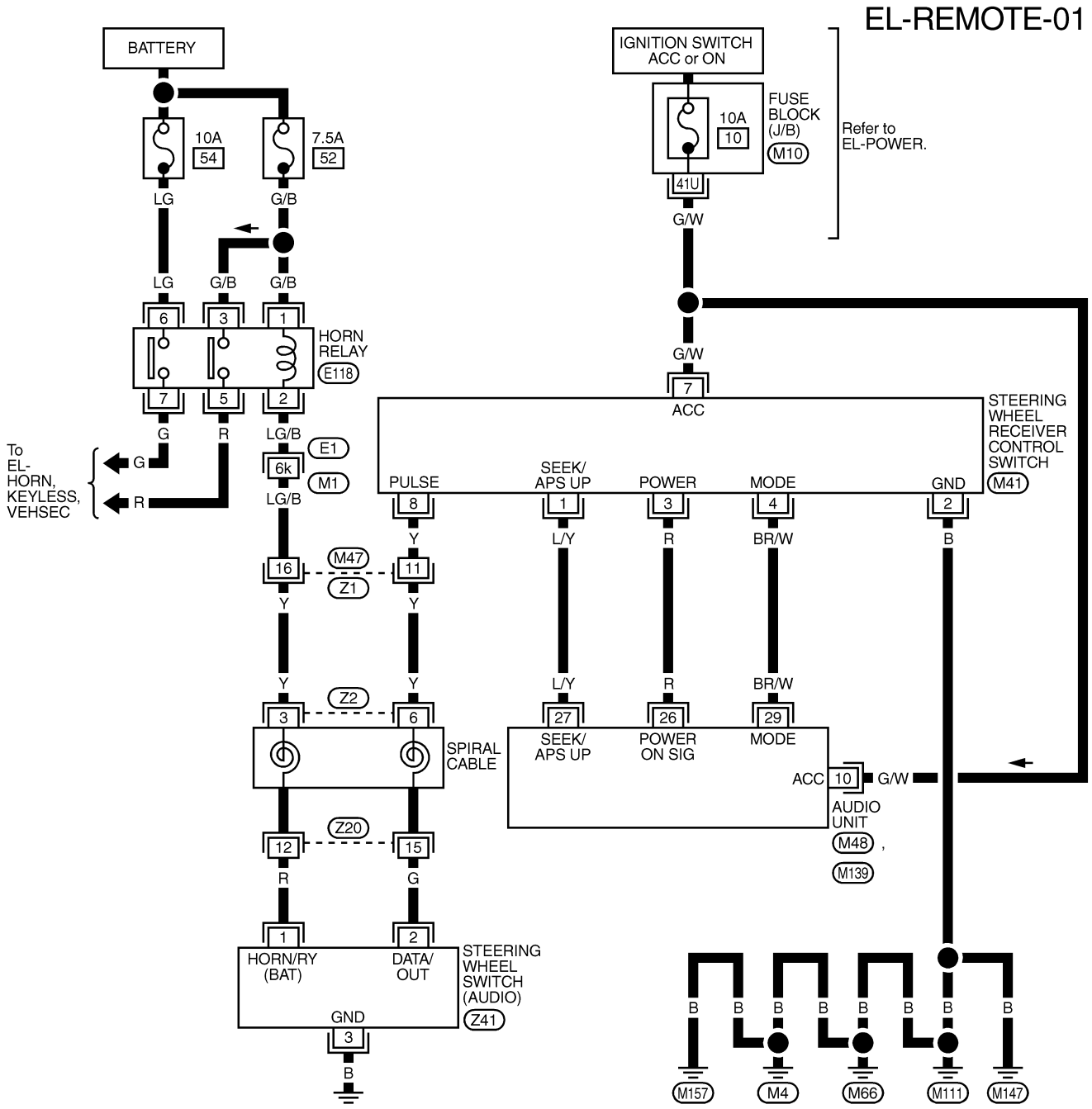
1. Eject and remove any CDs from the CD changer unit.
2. Turn ignition switch OFF. Wait until CD changer unit display is off and mechanism stops moving (mechanism sound stops).
3. Press any one of the disc selection buttons once. When a display shows on the CD changer unit, press the same disc selection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

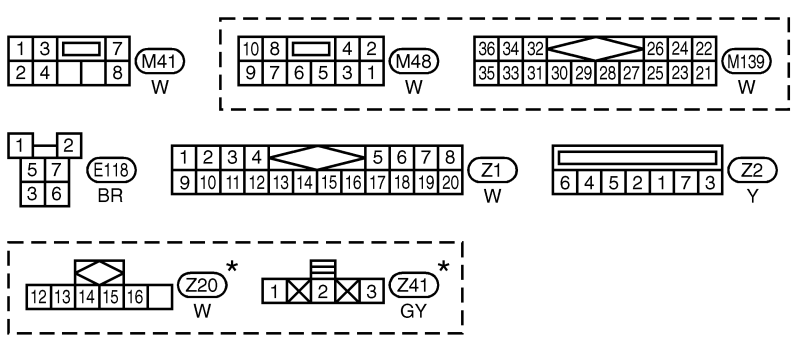
NOTE:

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 —

NAEL0349





* : 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)

MEL008Q

System Description

NAEL0350

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, M111, M147 and M157.
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

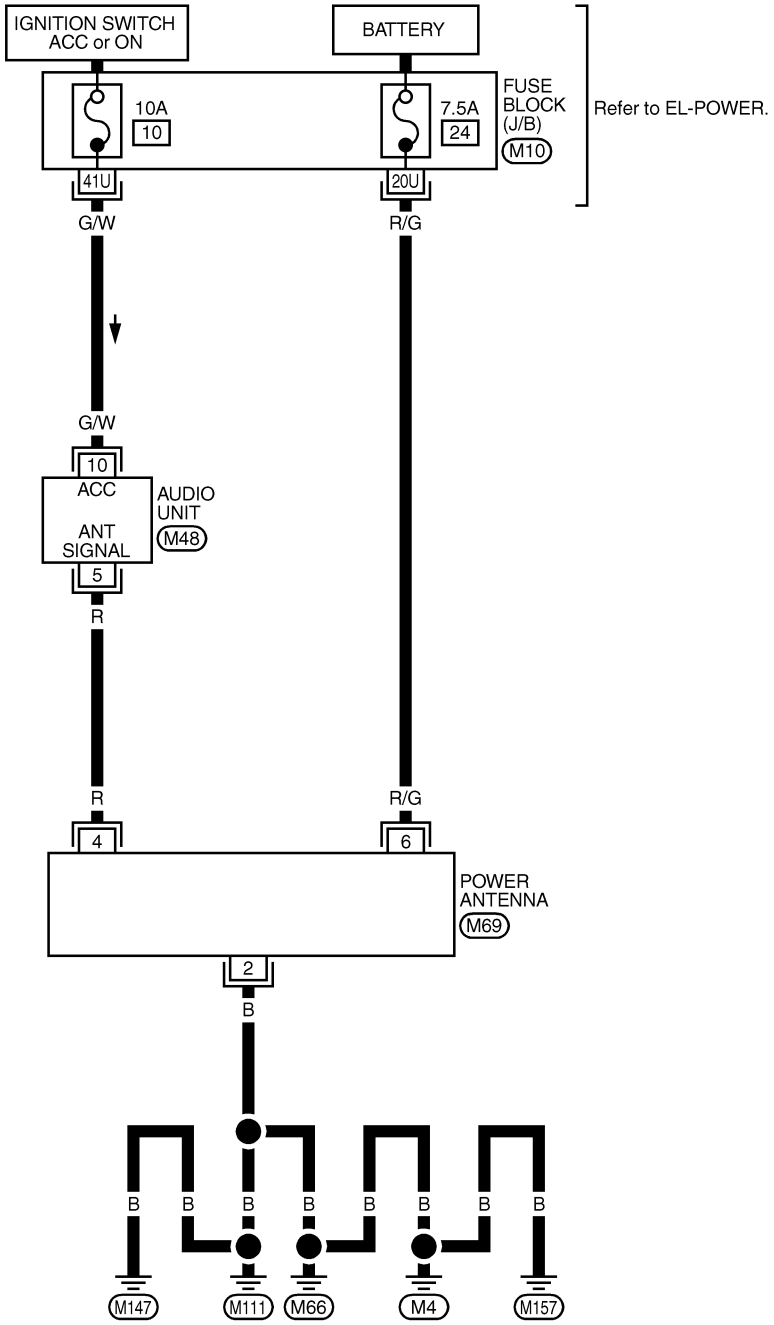
- from audio unit terminal 5
- to power antenna terminal 4.

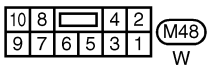
The antenna retracts.

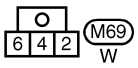
Wiring Diagram — P/ANT —

NAEL0351

EL-P/ANT-01







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

MEL009Q

Trouble Diagnoses

NAEL0352

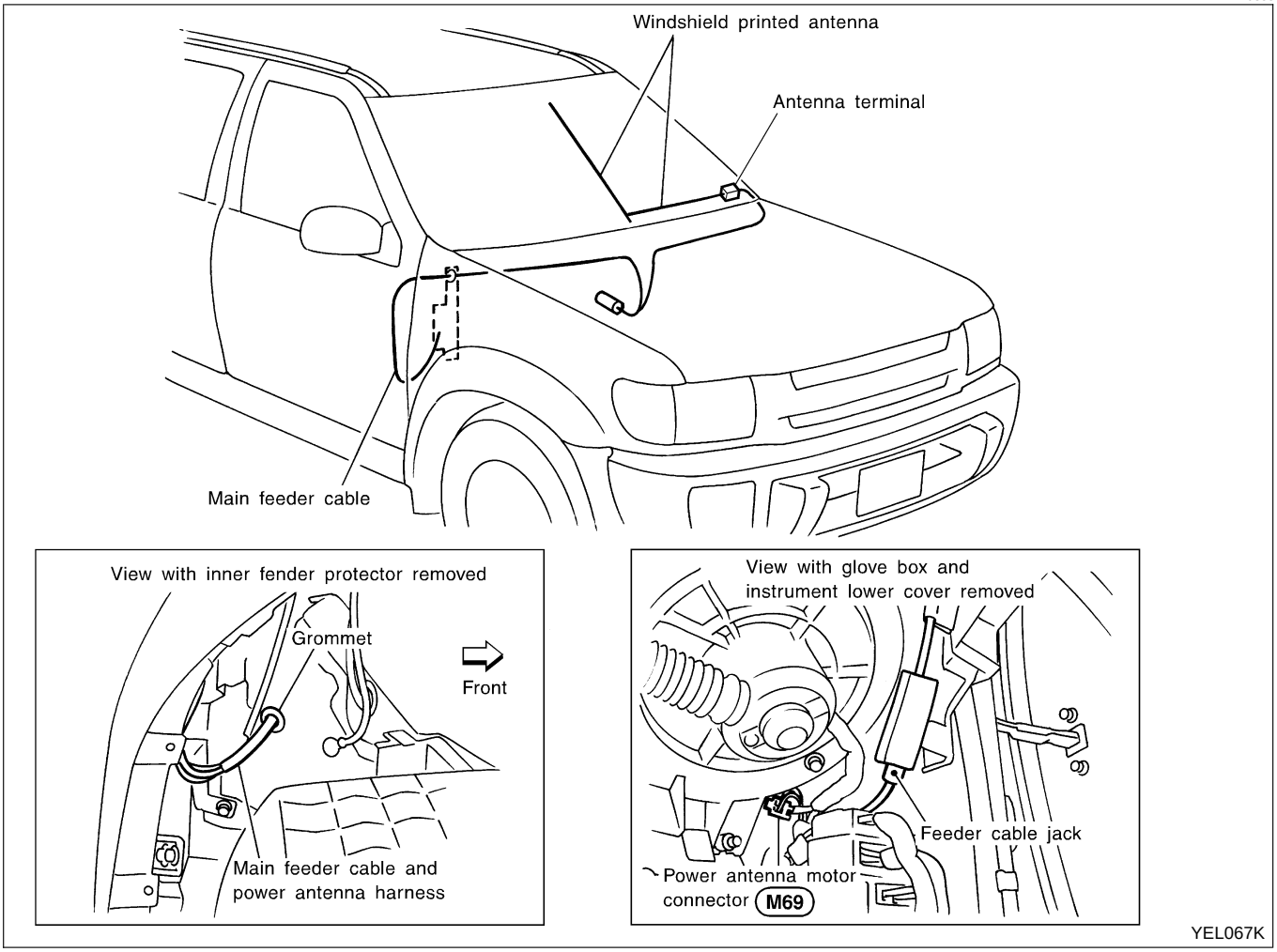
POWER ANTENNA

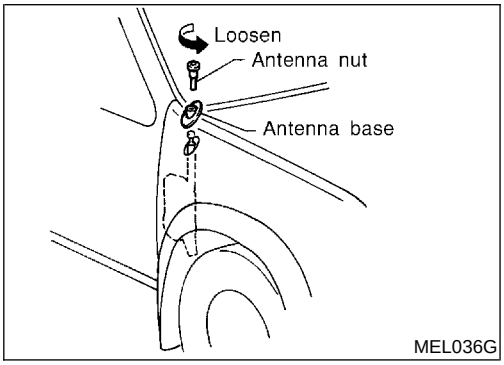
NAEL0352S01

Symptom	Possible causes	Repair order
Power antenna does not operate.	1. 7.5A fuse 2. Audio unit signal 3. Grounds M4, M66, M111, M147 and M157	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, M111, M147 and M157.

Location of Antenna

NAEL0353





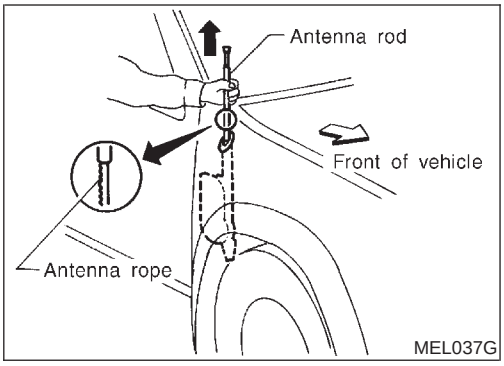
Antenna Rod Replacement

NAEL0354

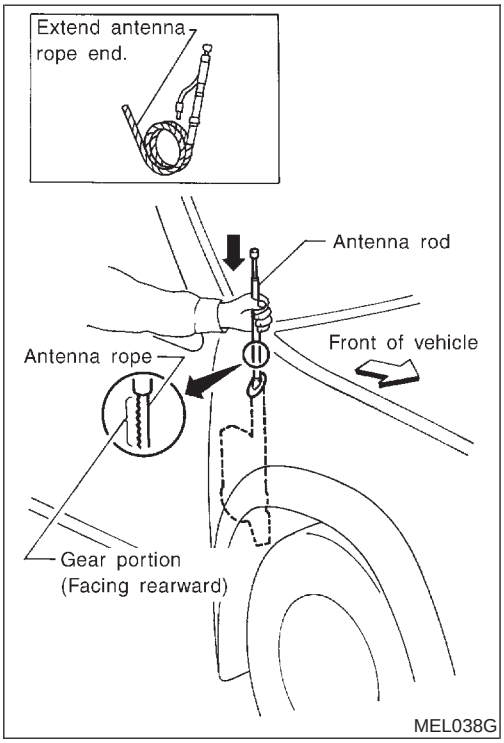
REMOVAL

NAEL0354S01

1. Remove antenna nut and antenna base.



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



INSTALLATION

NAEL0354S02

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

NAEL0355

OUTLINE

NAEL0355S01

Electric sunroof system consists of

- Sunroof switch
- Sunroof motor
- Smart entrance control unit

Smart entrance control unit controls retained power operation.

OPERATION

NAEL0355S02

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

RETAINED POWER OPERATION

NAEL0355S04

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 46.

Ground is always supplied

- to power window relay terminal 1
- through body grounds M4, M66, M111, M147 and M157.

When power and ground are supplied, power window relay continues to be energized, and the electrical sunroof can be operated.
When power is supplied, the electrical sunroof can be operated.
The retained power operation is canceled when the driver or passenger side door is opened.
RAP signal period can be changed by CONSULT-II. (EL-226)

INTERRUPTION DETECTION FUNCTION

NAEL0355S05

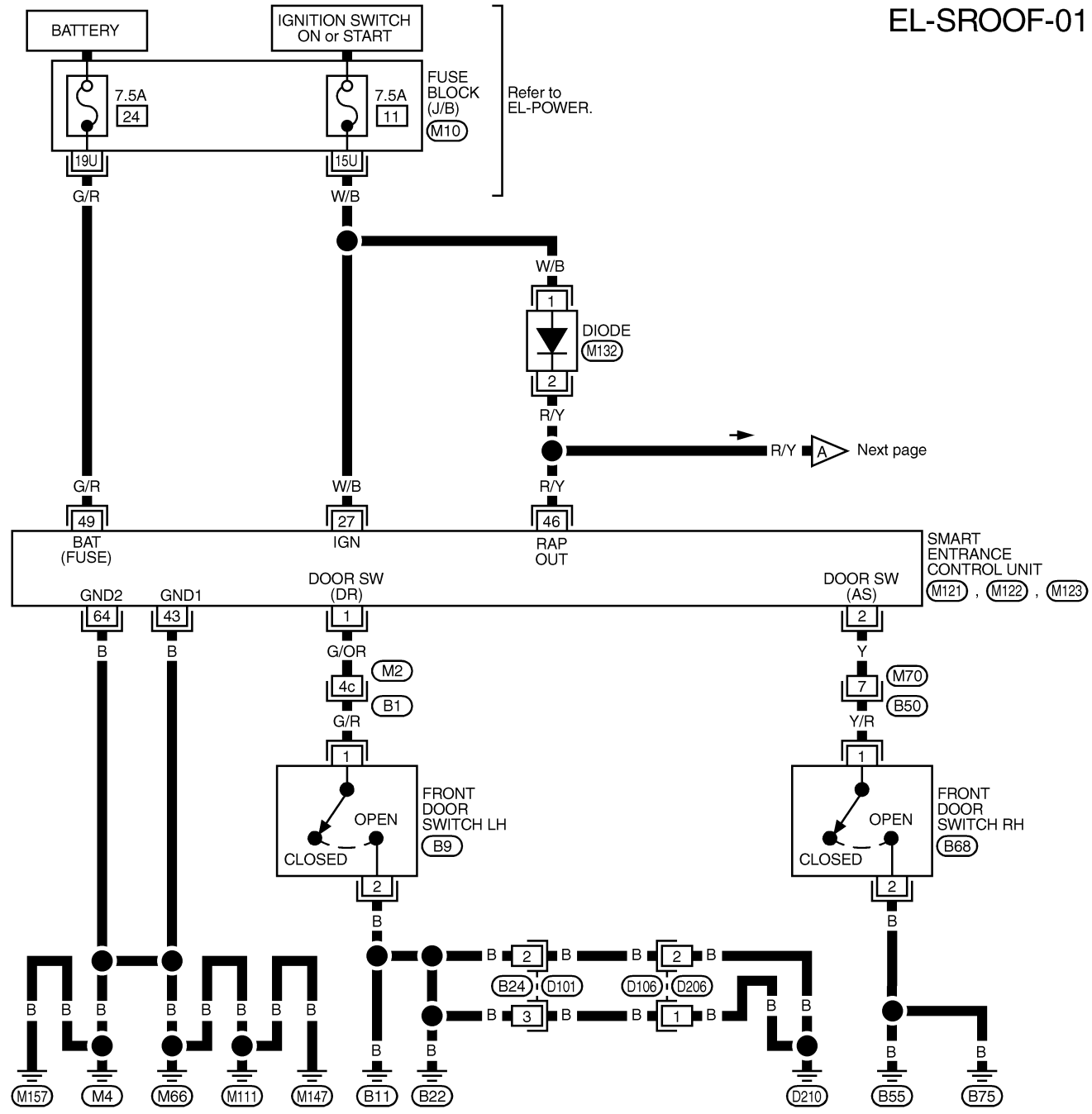
The CPU of sunroof motor monitors the sunroof motor operation and the sunroof position (full closed or other) for sunroof by the signals from encoder and limit switch in sunroof motor.
When sunroof motor detects interruption during the following close operation,

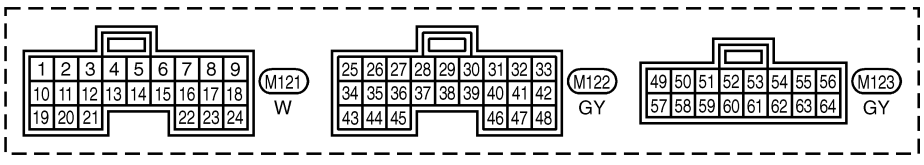
- automatic close operation when ignition switch is in the “ON” position
- automatic close operation during retained power operation

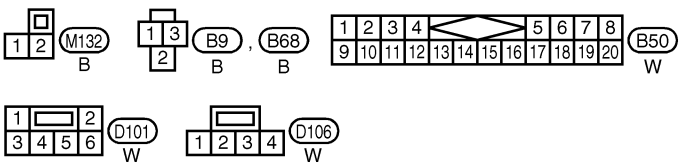
sunroof switch controls the motor for open and the sunroof will operate about 150 mm (5.91 in).

Wiring Diagram — SROOF —

NAEL0356







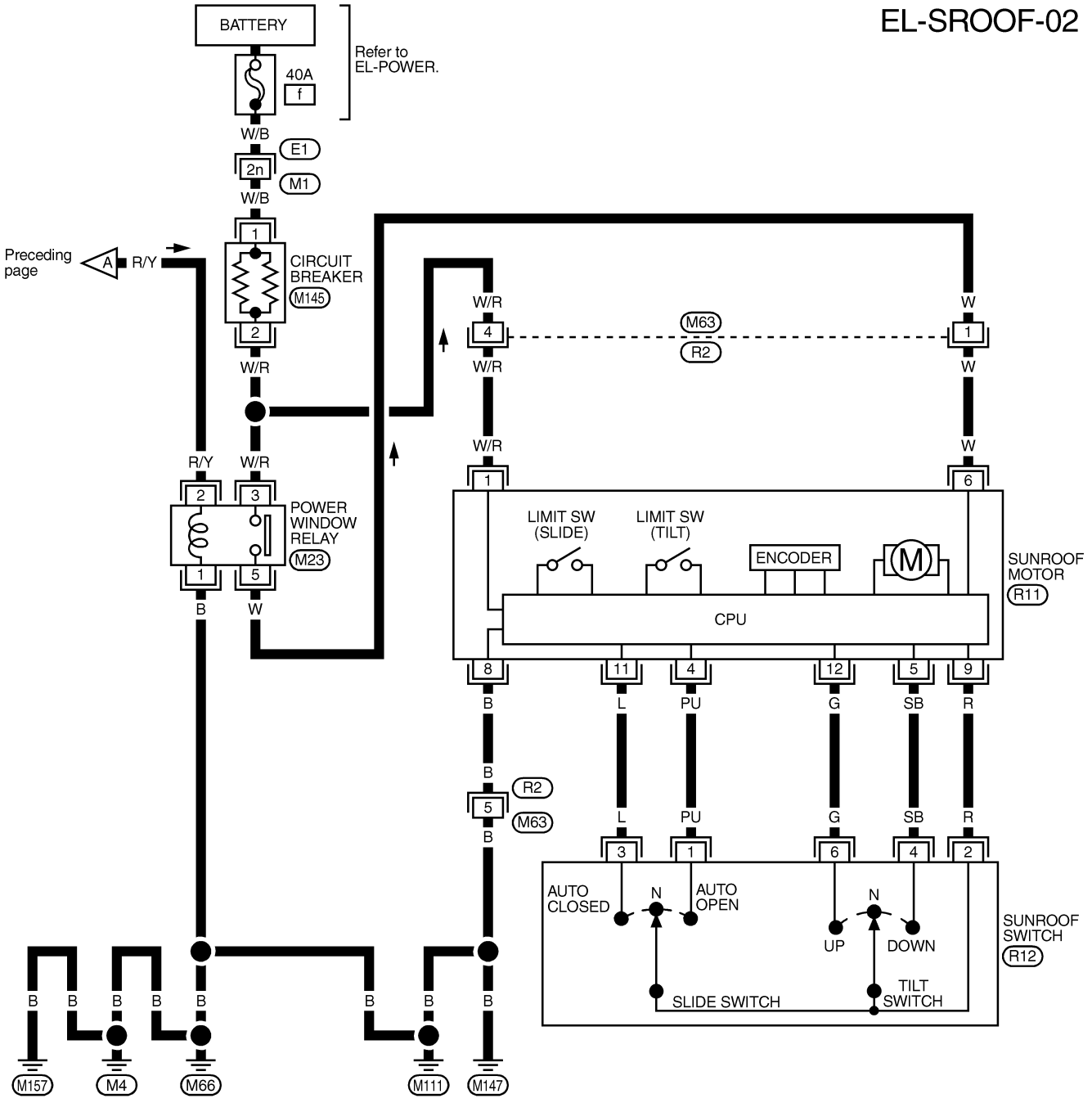
REFER TO THE FOLLOWING.

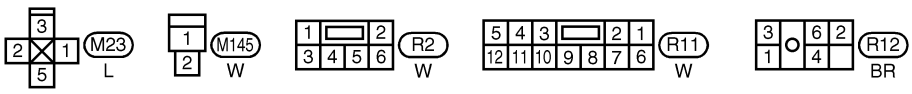
B1 - SUPER MULTIPLE JUNCTION (SMJ)

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

MEL010Q

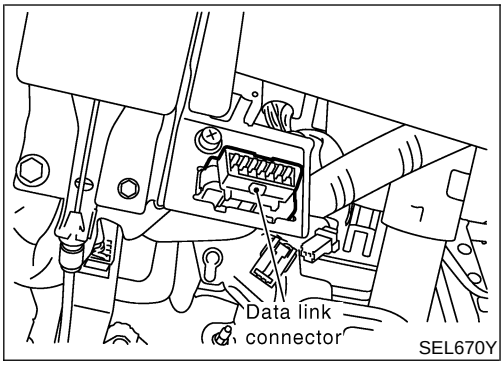
EL-SROOF-02





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

MEL011Q



SEL670Y

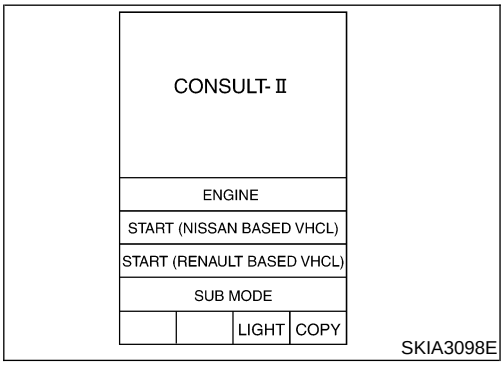
CONSULT-II Inspection Procedure

=NAEL0357

"RETAINED PWR"

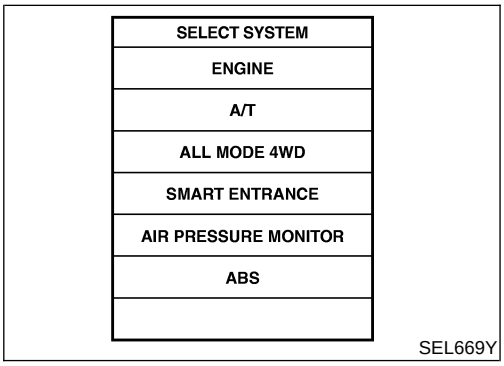
NAEL0357S01

1. Turn ignition switch "OFF".
2. Connect "CONSULT-II" and "CONSULT-II CONVERTER" to the data link connector.



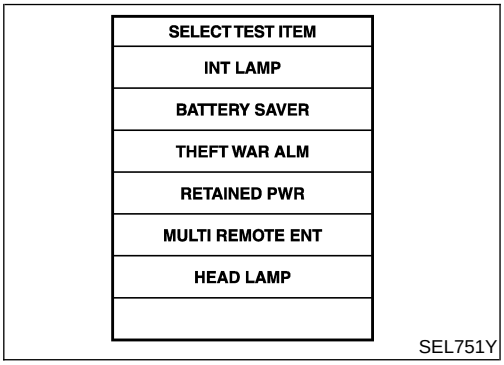
SKIA3098E

3. Turn ignition switch "ON".
4. Touch "START (NISSAN BASED VHCL)".



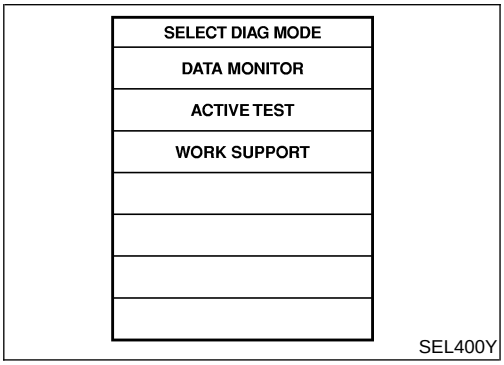
SEL669Y

5. Touch "SMART ENTRANCE".
   If "SMART ENTRANCE" is not indicated, go to GI-42, "CONSULT-II Data Link Connector (DLC) Circuit".



SEL751Y

6. Touch "RETAINED PWR".



SEL400Y

7. Select diagnosis mode.
   "DATA MONITOR", "ACTIVE TEST" and "WORK SUPPORT" are available.

CONSULT-II Application Items

NAEL0455

"RETAINED PWR" Data Monitor

NAEL0455S01

NAEL0455S0101

Monitored Item	Description
IGN ON SW	Indicates [ON/OFF] condition of ignition switch.
DOOR SW-DR	Indicates [ON/OFF] condition of front door switch LH.
DOOR SW-AS	Indicates [ON/OFF] condition of front door switch RH.

Active Test

NAEL0455S0102

Test Item	Description
RETAINED PWR	This test is able to supply RAP signal (power) from smart entrance control unit to power window system, power sunroof system. Those systems can be operated when turning on "RETAINED PWR" on CONSULT-II screen even if the ignition switch is tuned OFF. **NOTE:** **During this test, CONSULT-II can be operated with ignition switch "OFF" position. "RETAINED PWR" should be turned "ON" or "OFF" on CONSULT-II screen when ignition switch is ON. Then turn ignition switch OFF for checking retained power operation. CONSULT-II might be stuck if "RETAINED PWR" is turned "ON" or "OFF" on CONSULT-II screen when ignition switch is OFF.**

Work Support

NAEL0455S0103

Work Item	Description
RETAINED PWR SET	RAP signal's power supply period can be changed by mode setting. Selects RAP signal's power supply period between three steps. ● MODE 1 (45 sec.)/MODE 2 (OFF)/MODE 3 (2 min.)

Trouble Diagnoses

NAEL0456

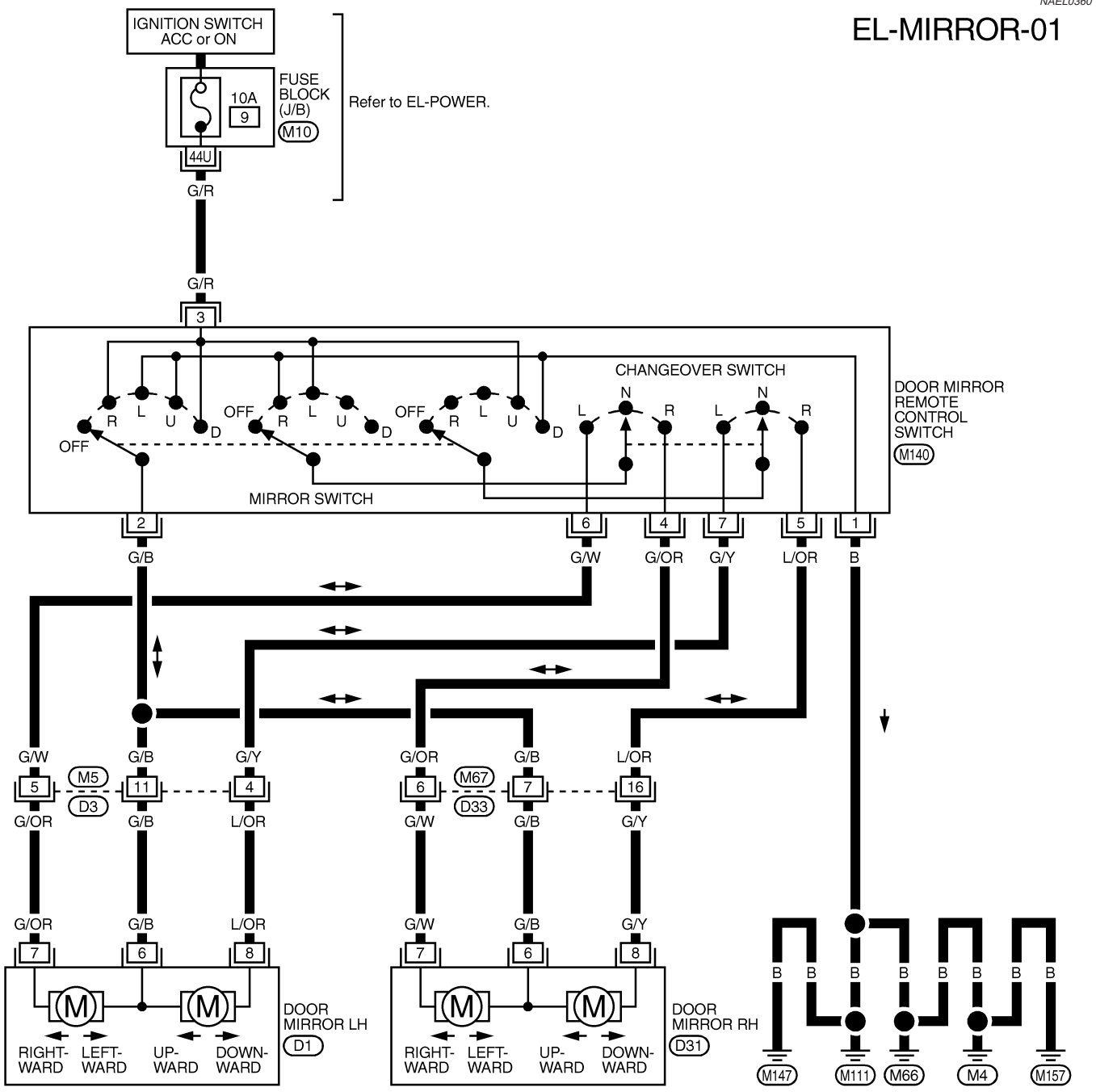
Symptom	Possible cause	Repair order
Power sunroof cannot be operated using any switch.	1. 7.5A fuse, 40A fusible link and M145 circuit breaker 2. Power window relay ground circuit 3. Sunroof motor ground circuit 4. Power window relay 5. Sunroof motor circuit 6. Sunroof switch 7. Sunroof switch circuit 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.

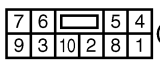
Symptom	Possible cause	Repair order
Power sunroof cannot be opened or closed fully.	1. Full closed position not initialized 2. Sunroof slide mechanism 3. Sunroof switch 4. Sunroof switch circuit 5. Sunroof motor	1. Initialize full closed position. 2. Check the following. a. Check obstacles in sunroof, etc. b. Check worn or deformed sunroof. c. Check sunroof sash tilted too far inward or outward. 3. Check sunroof switch. 4. Check harness between sunroof motor and sunroof switch. 5. 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 RAP signal. a. (With CONSULT-II) Check RAP signal with CONSULT-II. Use "ACTIVE TEST" mode, "RETAINED PWR" in "SMART ENTRANCE". (Refer to EL-226.) If NG, go to the step b. below. b. Verify 12 positive voltage from smart entrance control unit is present at terminal 2 of power window relay: ● Within 45 seconds after ignition switch turns off. ● When front door LH and RH is closed. 2. Check harness between smart entrance control unit and driver or passenger side door switch. Check driver or passenger side door switch. Check driver or passenger side door switch. 3. Check smart entrance control unit. (EL-382)

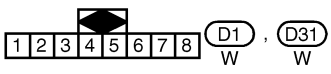
Wiring Diagram — MIRROR —

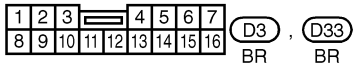
NAEL0360

EL-MIRROR-01









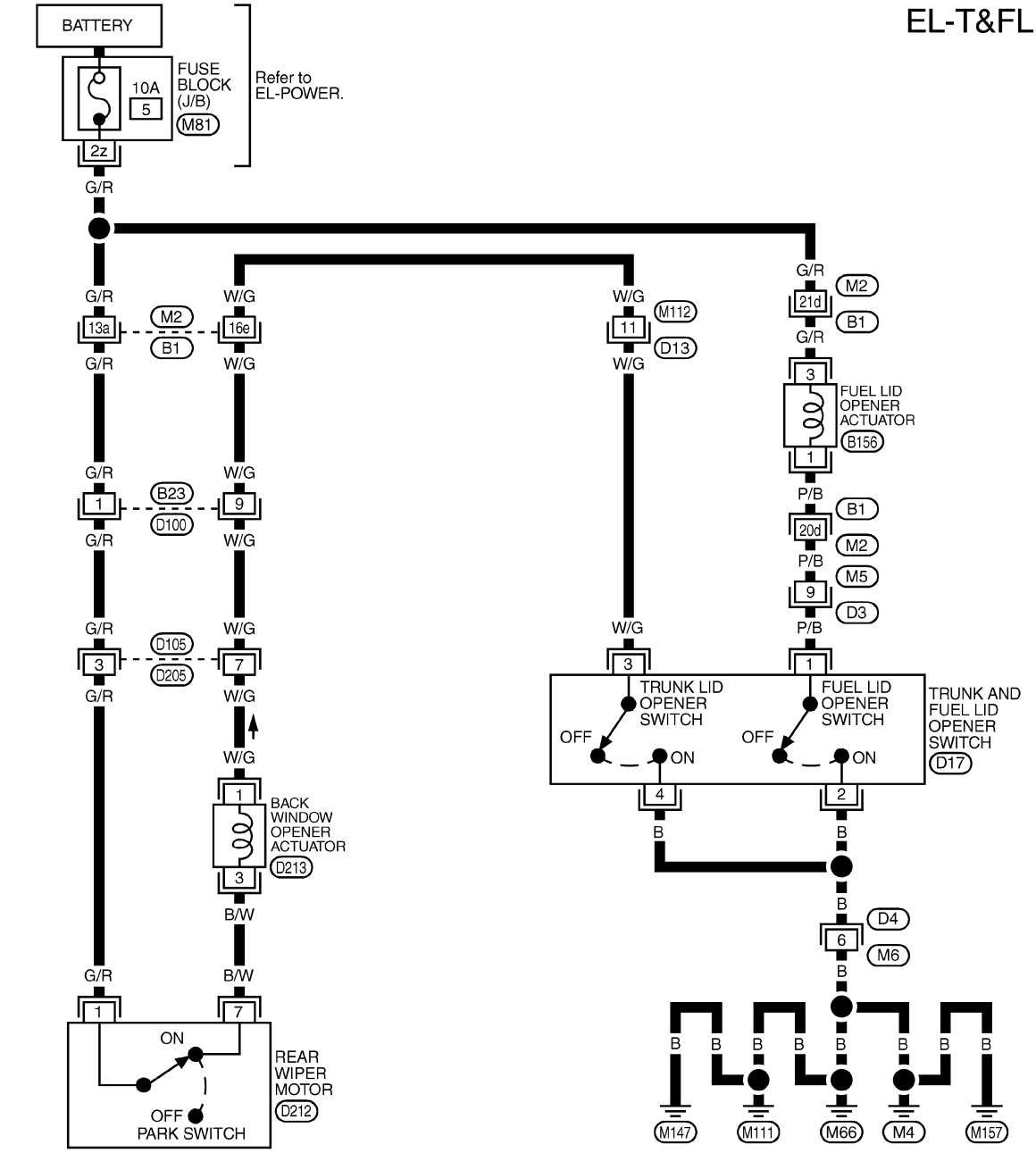
REFER TO THE FOLLOWING.
M10 -FUSE BLOCK-
JUNCTION BOX (J/B)

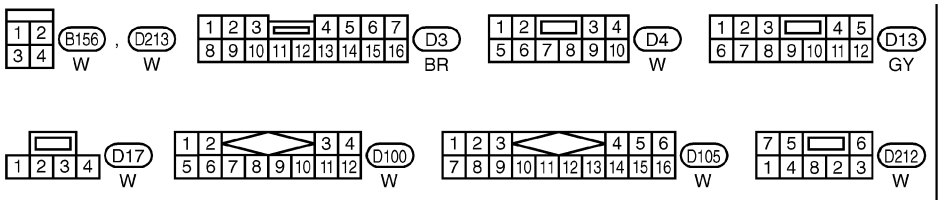
MEL012Q

Wiring Diagram — T&FLID —

NAEL0460

EL-T&FLID-01



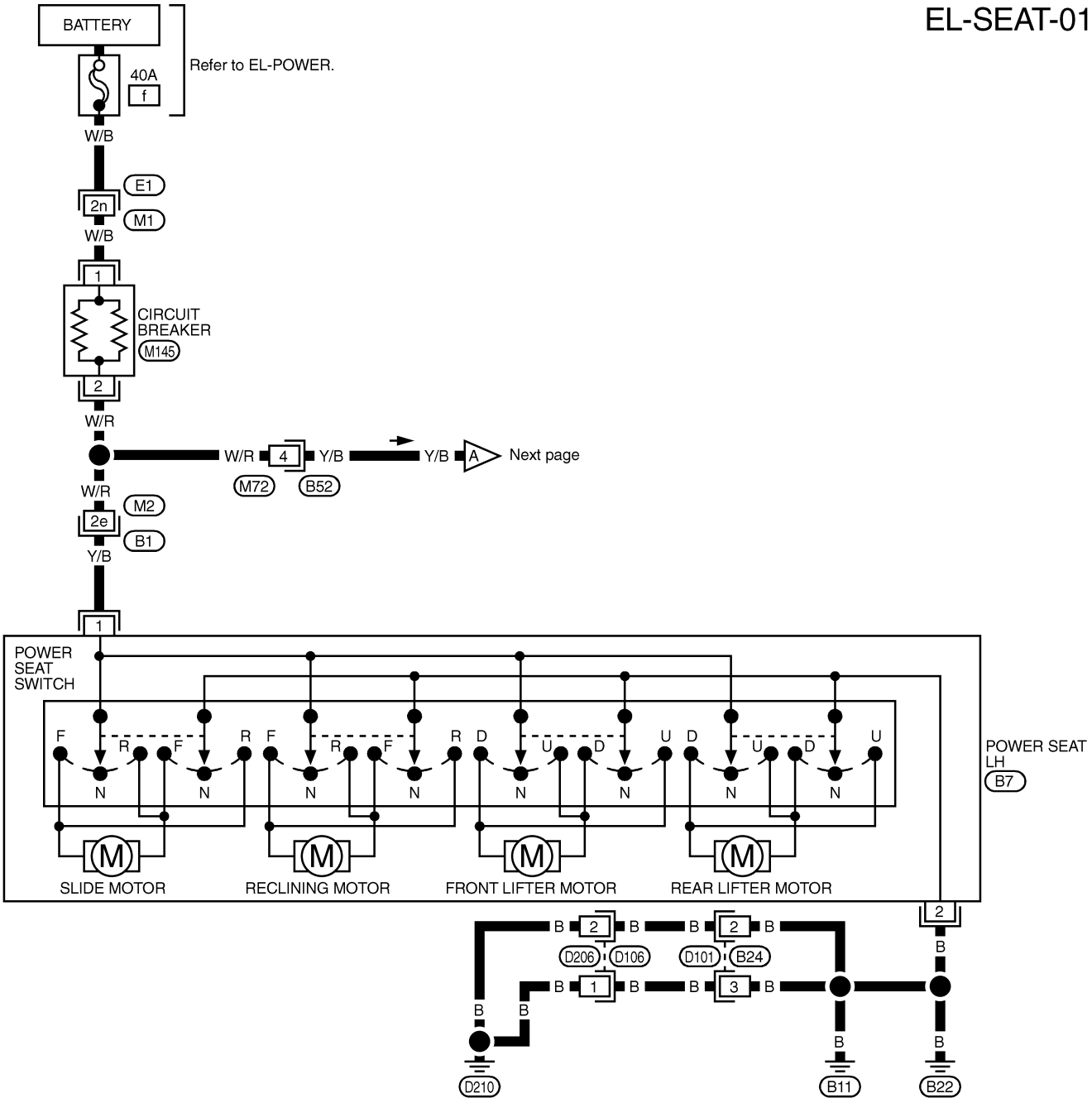


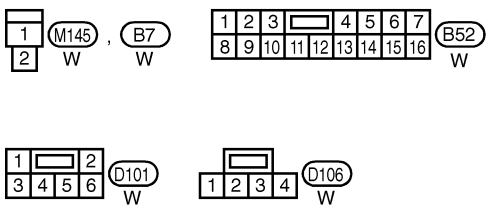
REFER TO THE FOLLOWING.
B1 -SUPER MULTIPLE JUNCTION (SMJ)
M81 -FUSE BLOCK-JUNCTION BOX (J/B)

MEL949R

Wiring Diagram — SEAT —

NAEL0361

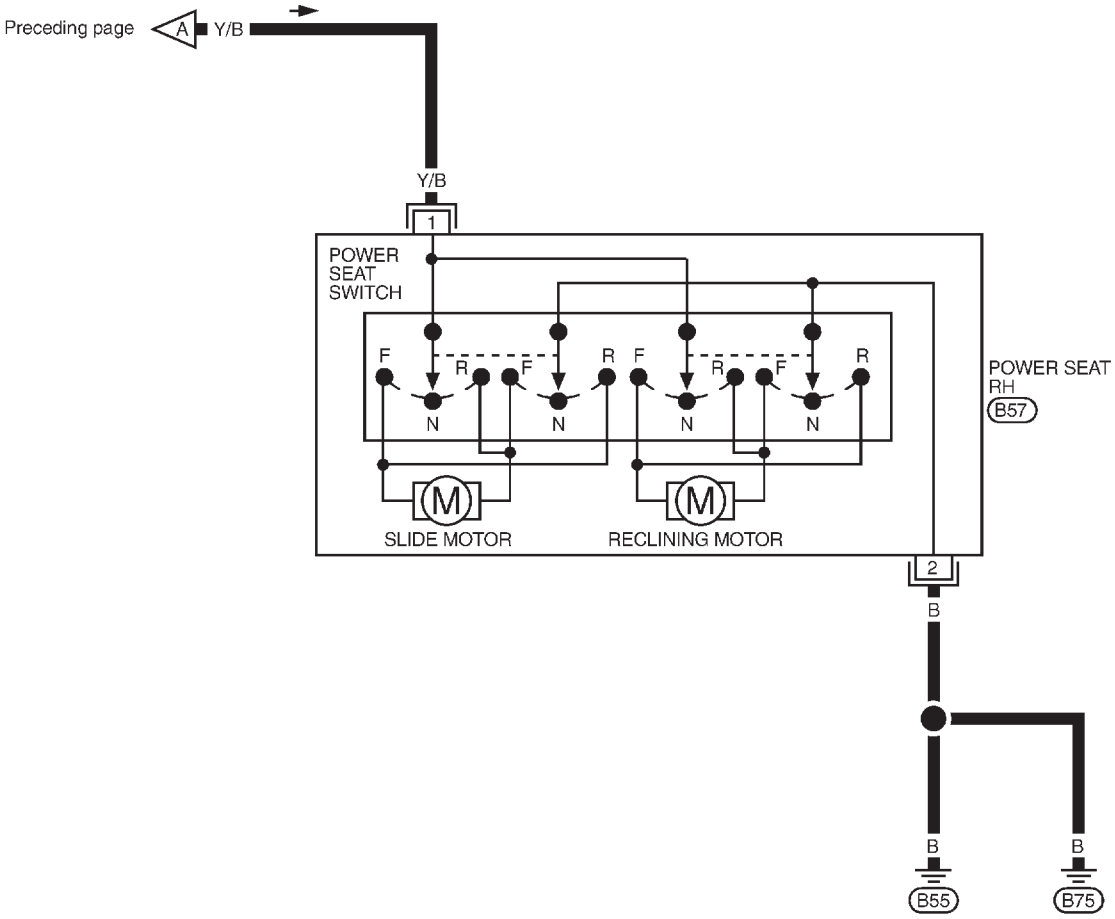


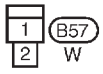


REFER TO THE FOLLOWING.

E1 , B1 - SUPER MULTIPLE JUNCTION (SMJ)

MEL830L


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

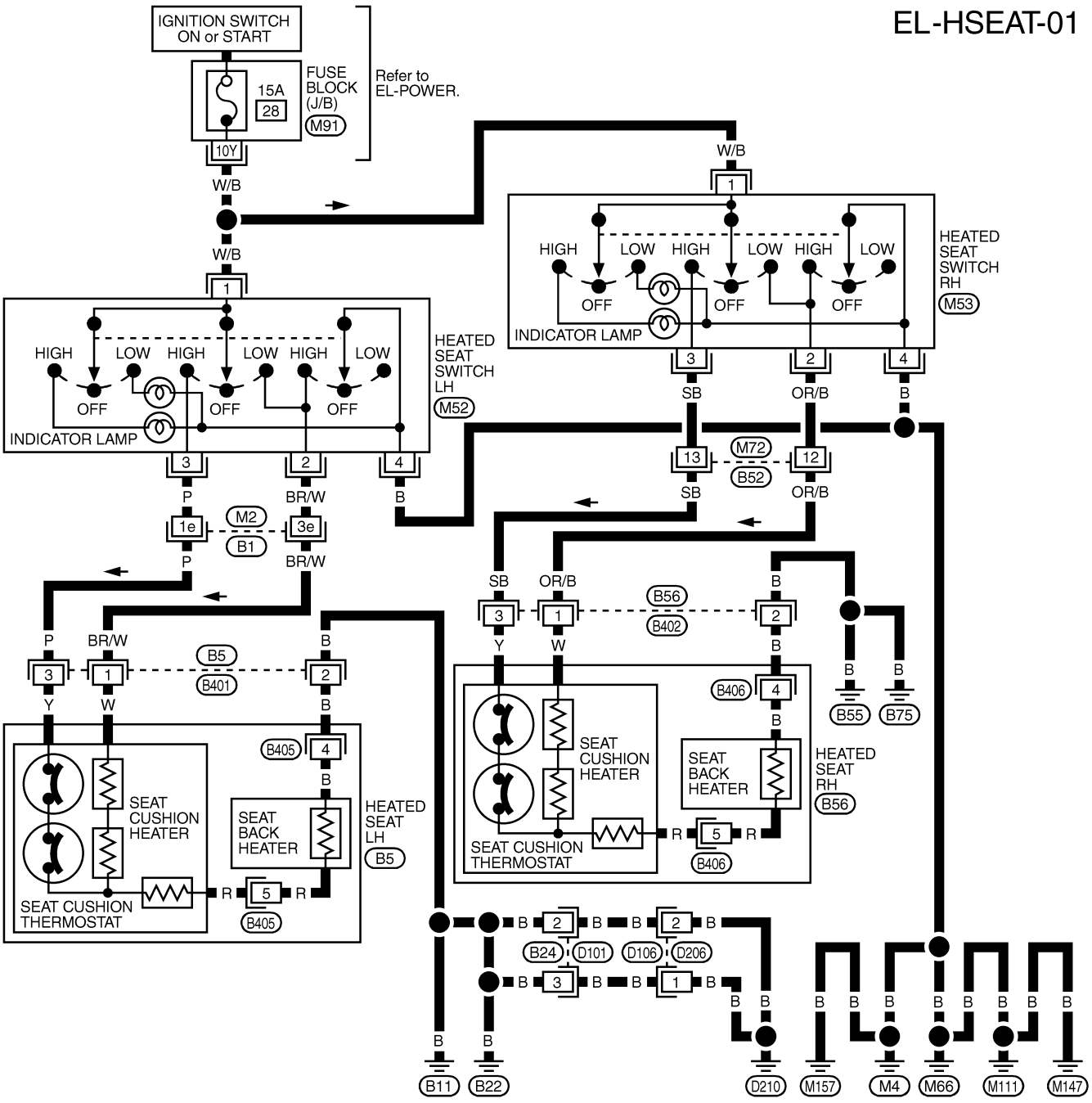

1
2
B57
W

MEL601F

Wiring Diagram — HSEAT —

NAEL0362

EL-HSEAT-01



M52 L , M53 W

B5 GY , B56 GY

B52 W

D101 W

D106 W

B405* L , B406* L

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

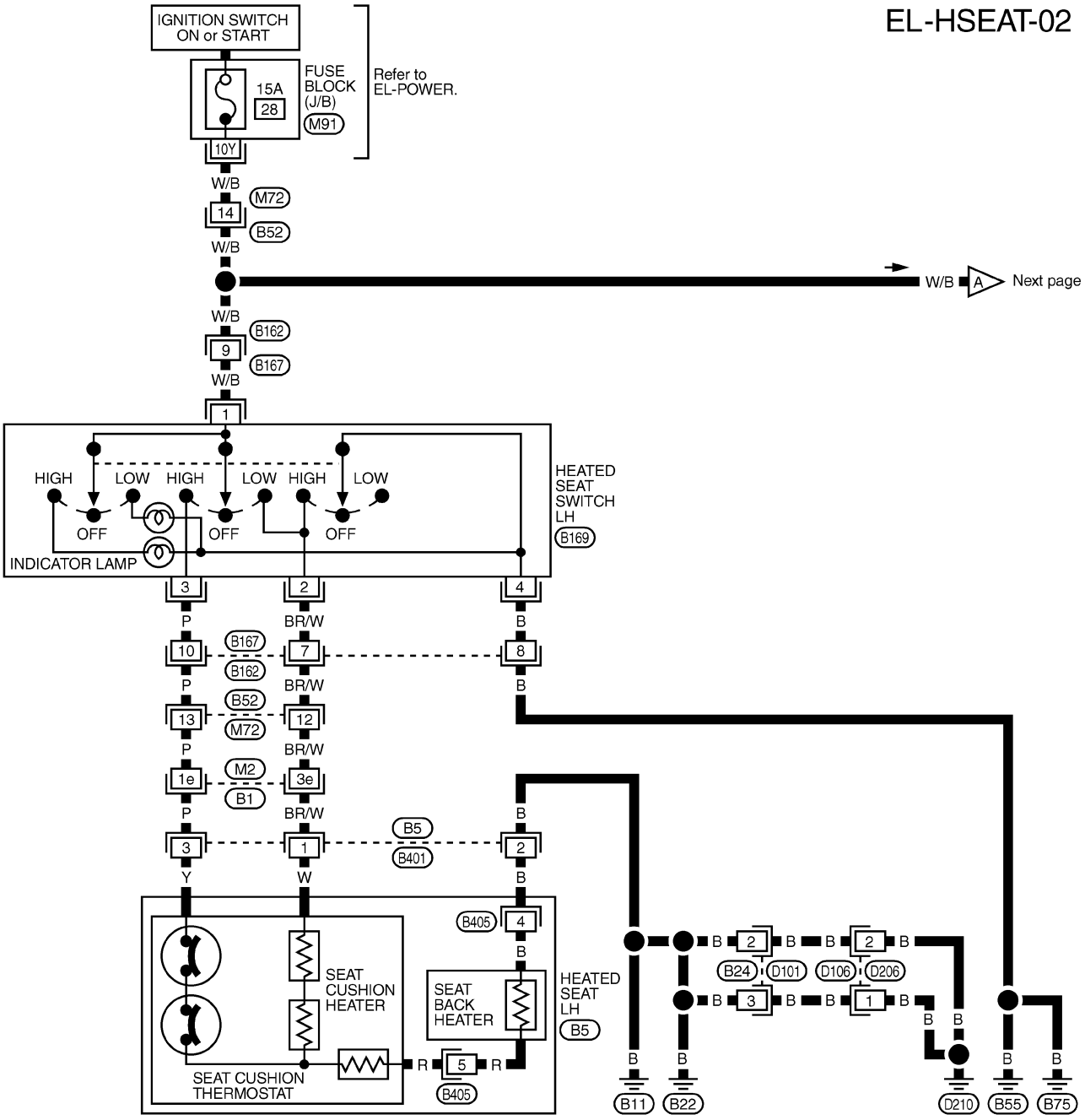
REFER TO THE FOLLOWING.

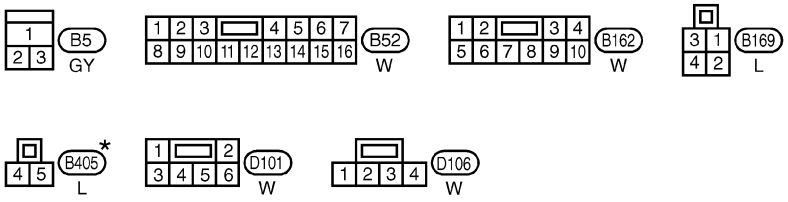
B1 -SUPER MULTIPLE JUNCTION (SMJ)

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

MEL013Q

EL-HSEAT-02



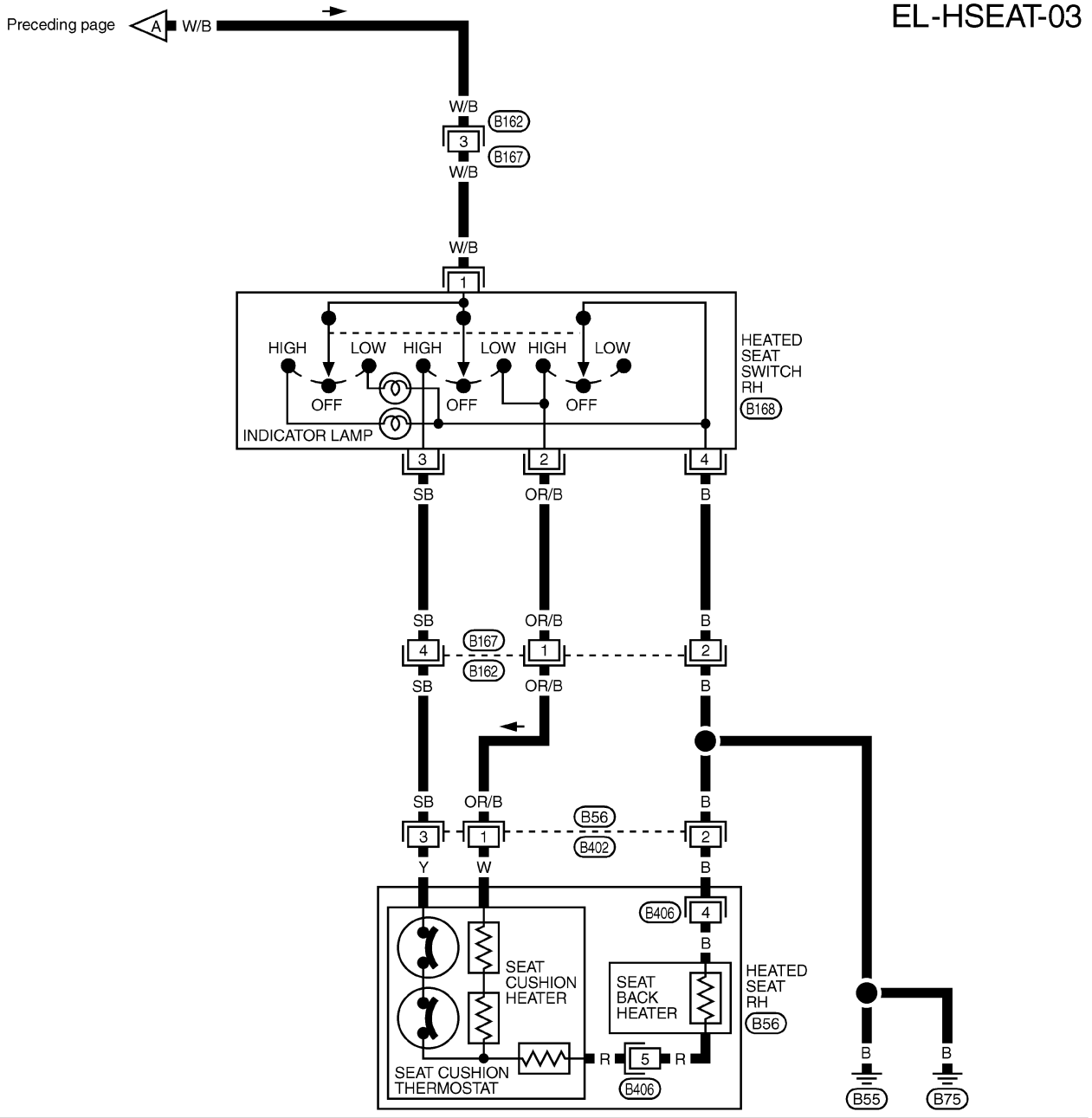


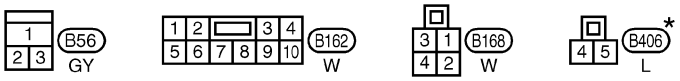
REFER TO THE FOLLOWING.
B1 -SUPER MULTIPLE JUNCTION (SMJ)
M91 -FUSE BLOCK-JUNCTION BOX (J/B)

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

MEL950R

Wiring Diagram — HSEAT — (Cont'd)



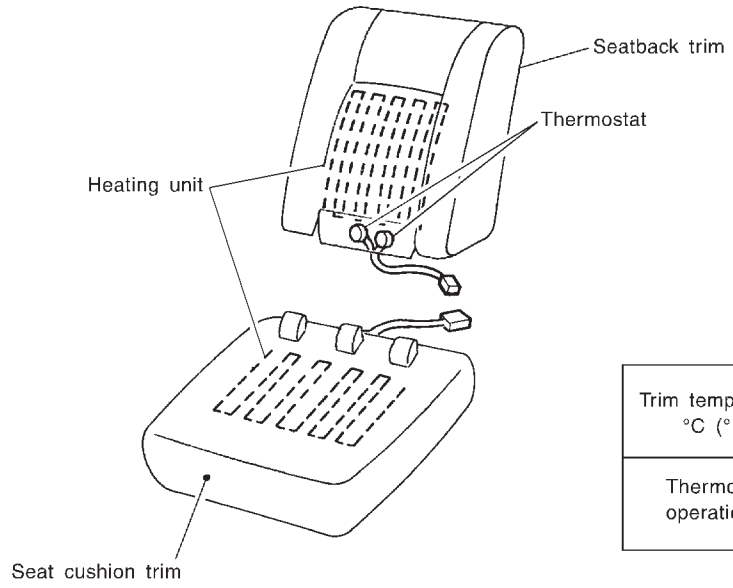


* : This connector is not shown in "HARNESS LAYOUT", EL section.

MEL951R

Seatback Heating Unit

NAEL0363

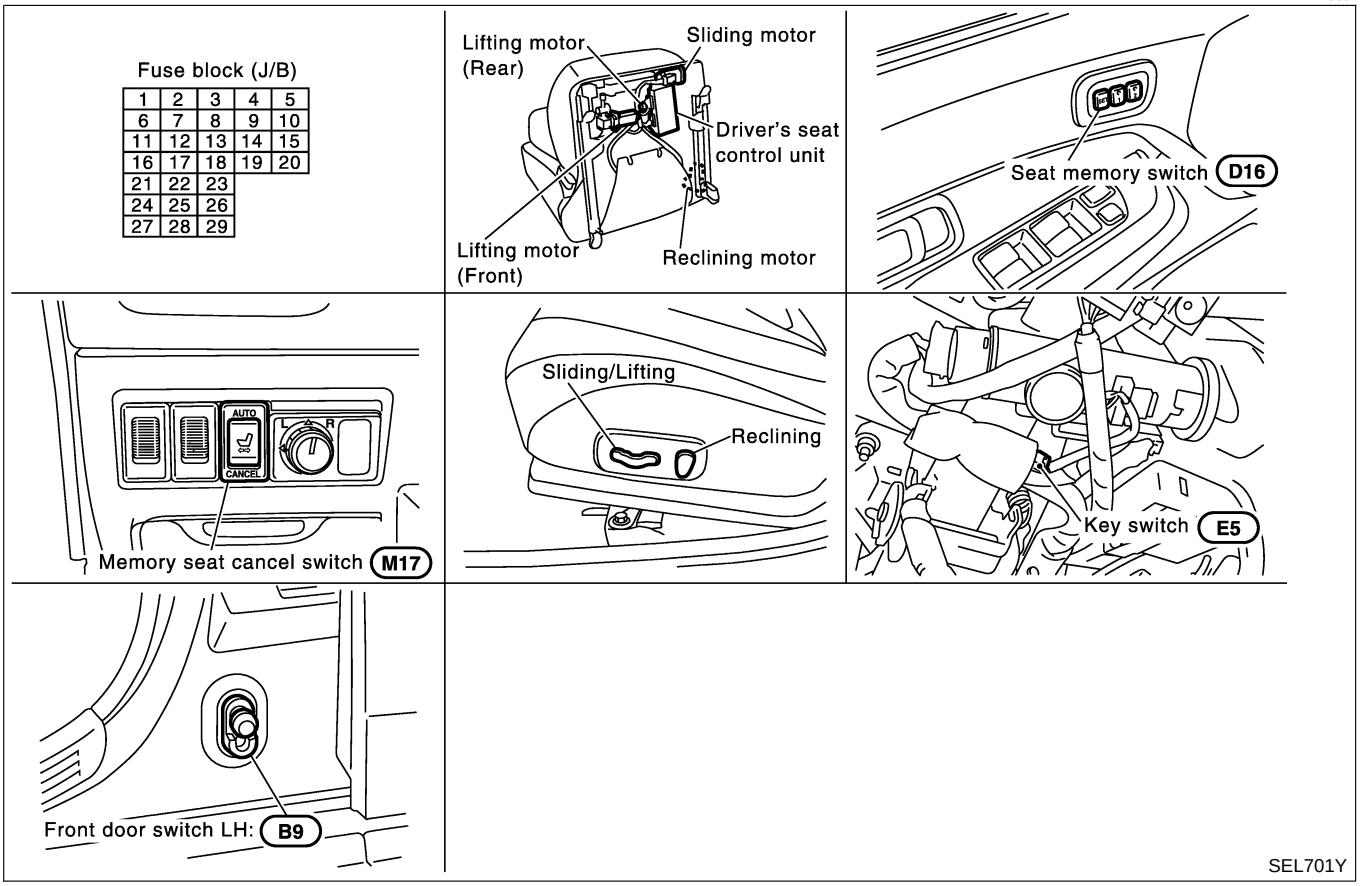


Trim temperature °C (°F)	Increasing to 35 - 45 (95 - 113)	Decreasing to 25 - 35 (77 - 95)
Thermostat operation	OFF	ON

SBT314

Component Parts and Harness Connector Location

NAEL0364



System Description

=NAEL0365

OPERATIVE CONDITION

NAEL0365S01

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

Manual Operation

NAEL0365S0101

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

NAEL0365S0102

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

NAEL0365S02

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

NAEL0365S03

Output Failure

NAEL0365S0301

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

NAEL0365S0302

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

INITIALIZATION

NAEL0365S04

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

=NAEL0365S05

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.

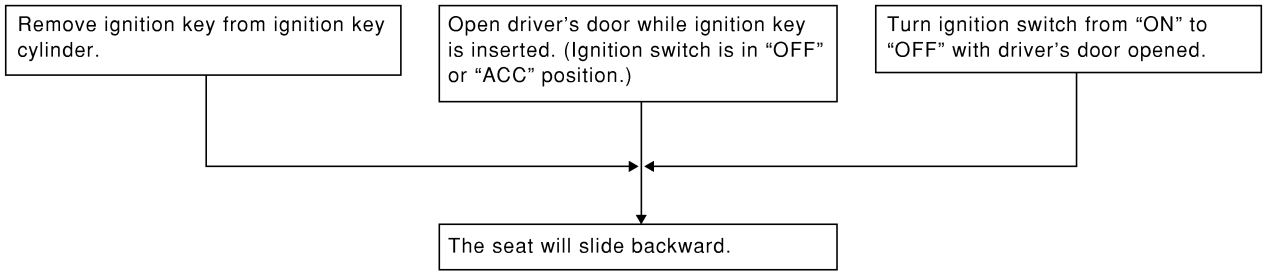
The order of priority	Operated portion
1	Seat sliding
2	Seat reclining
3	Seat front lifting
4	Seat rear lifting

AUTOMATIC EXITING SETTING

NAEL0365S06

"Exiting" positions:

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

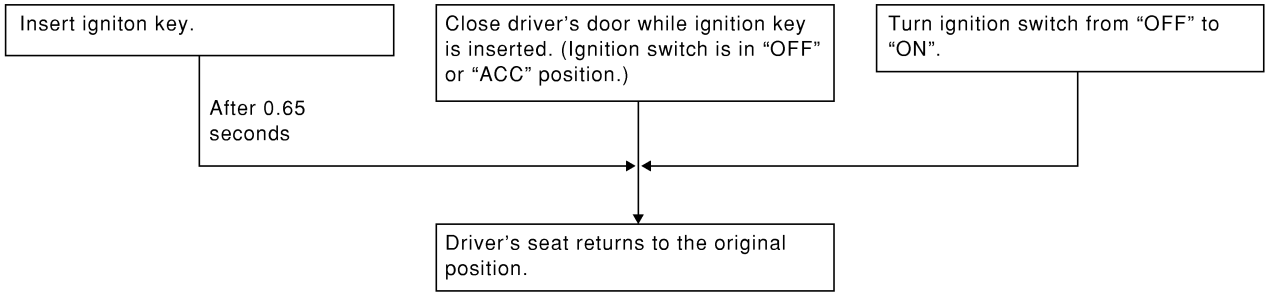


SEL594W

AUTOMATIC SET RETURN

NAEL0365S07

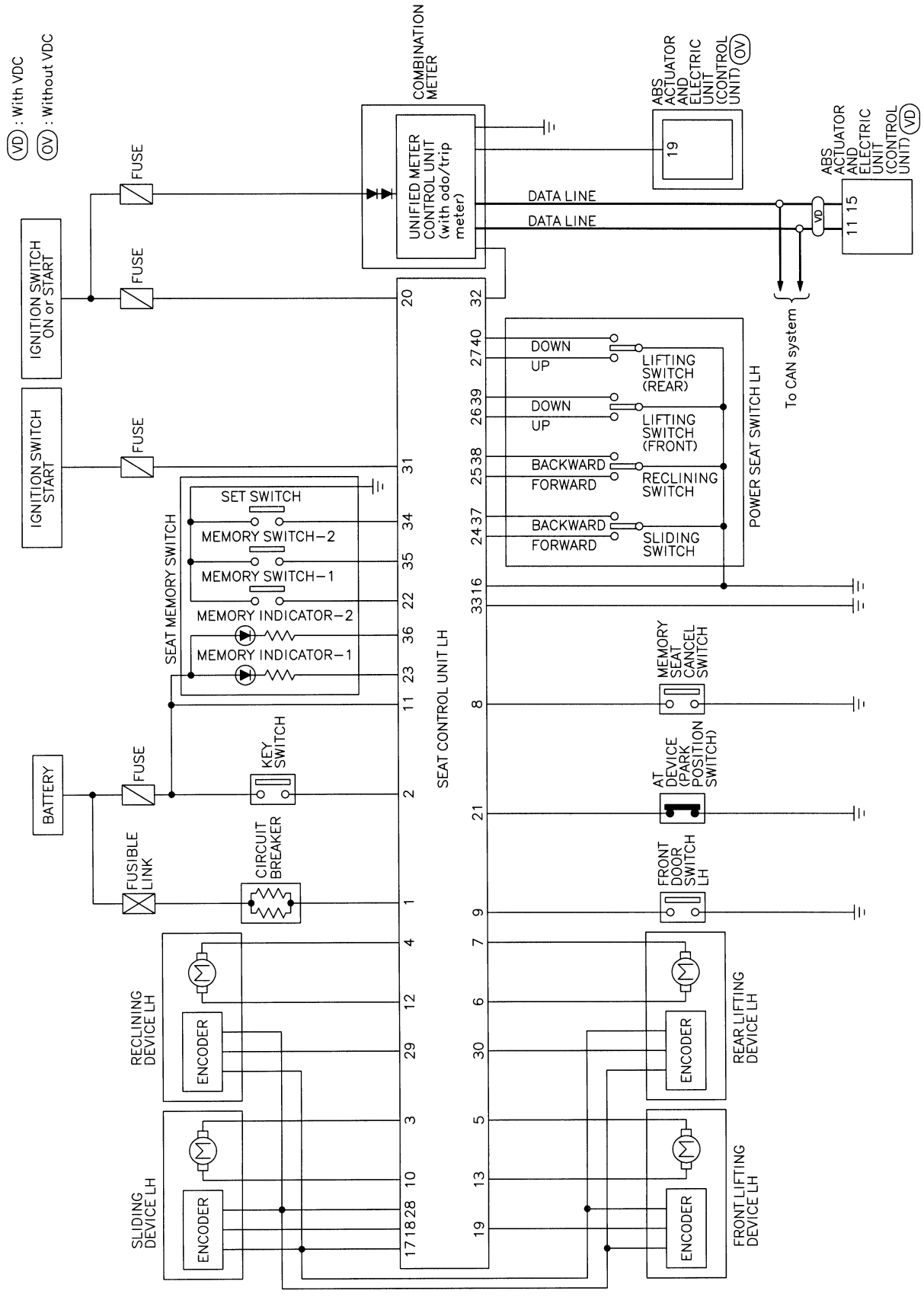
With driver's seat set to the "exiting" position, operating one of the following procedures moves it to the position previously retained in memory.



SEL595W

Schematic

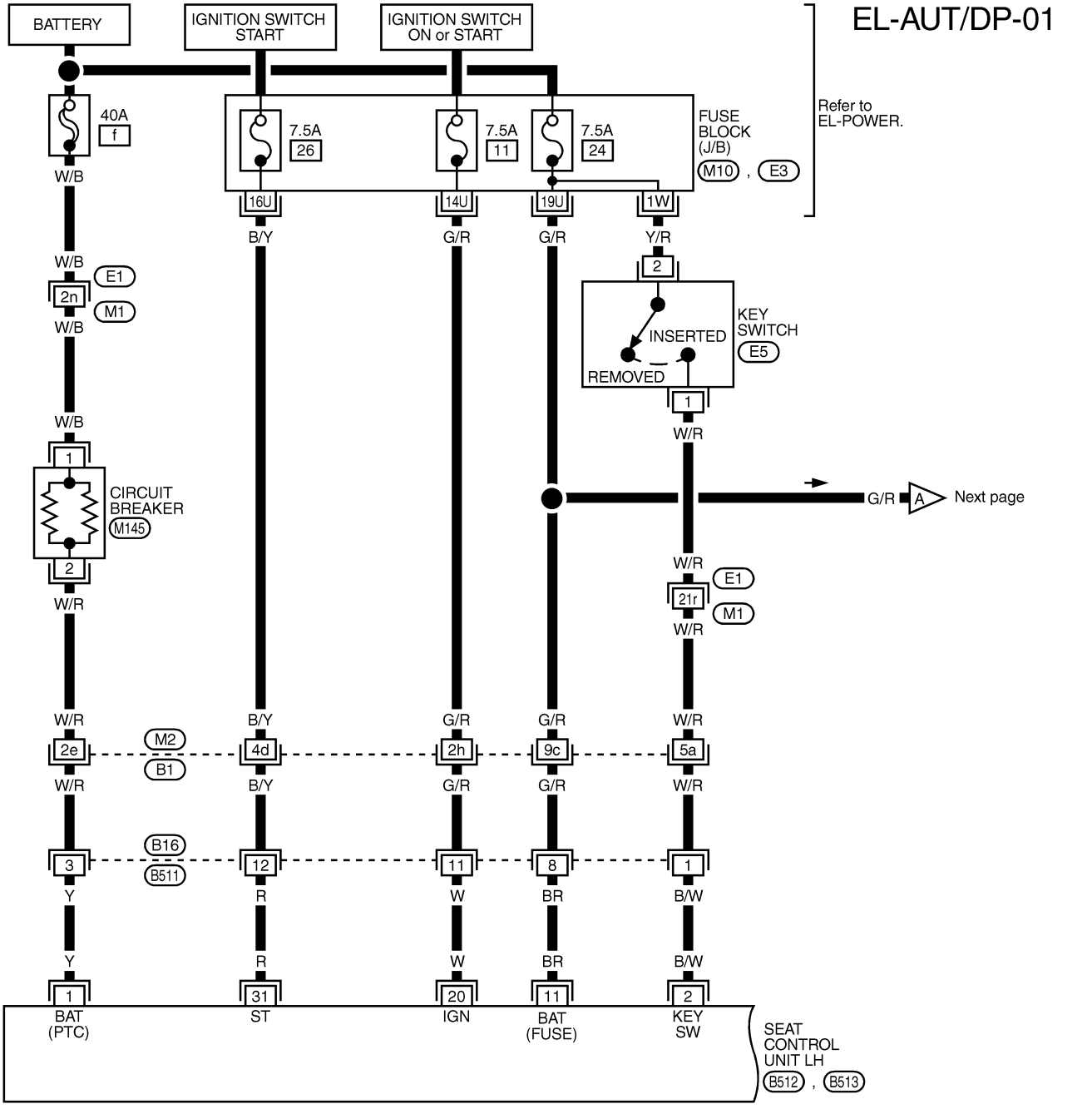
NAEL0366

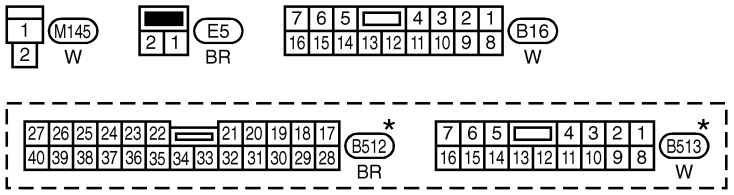


MEL016Q

Wiring Diagram — AUT/DP —

NAEL0367



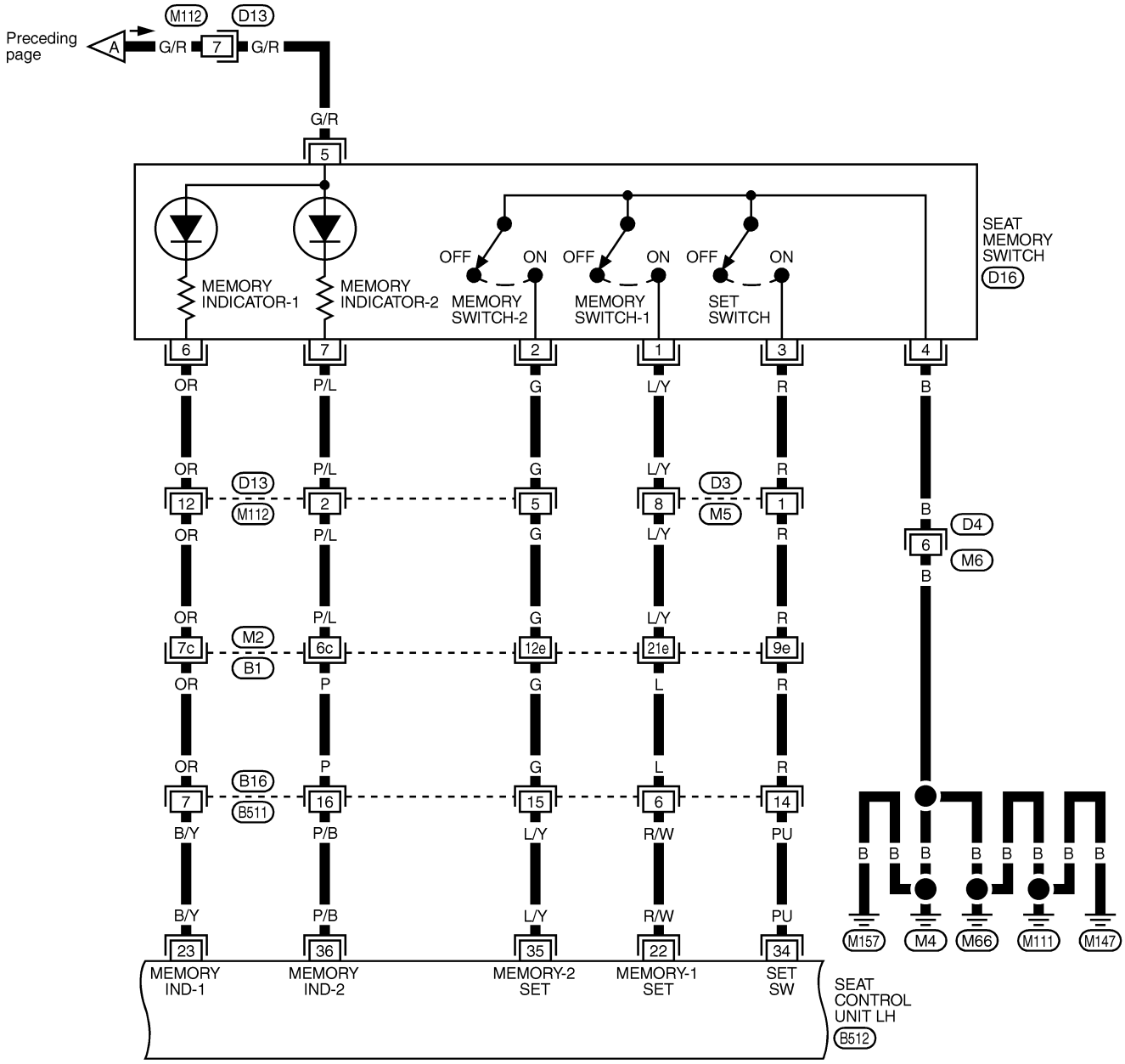


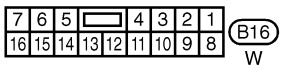
★ : This connector is not shown in "HARNESS LAYOUT", EL section.

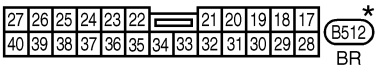
REFER TO THE FOLLOWING.
E1 , B1 -SUPER MULTIPLE JUNCTION (SMJ)
M10 , E3 -FUSE BLOCK-JUNCTION BOX (J/B)

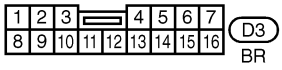
MEL017Q

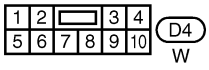
EL-AUT/DP-02

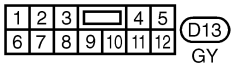


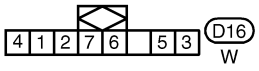








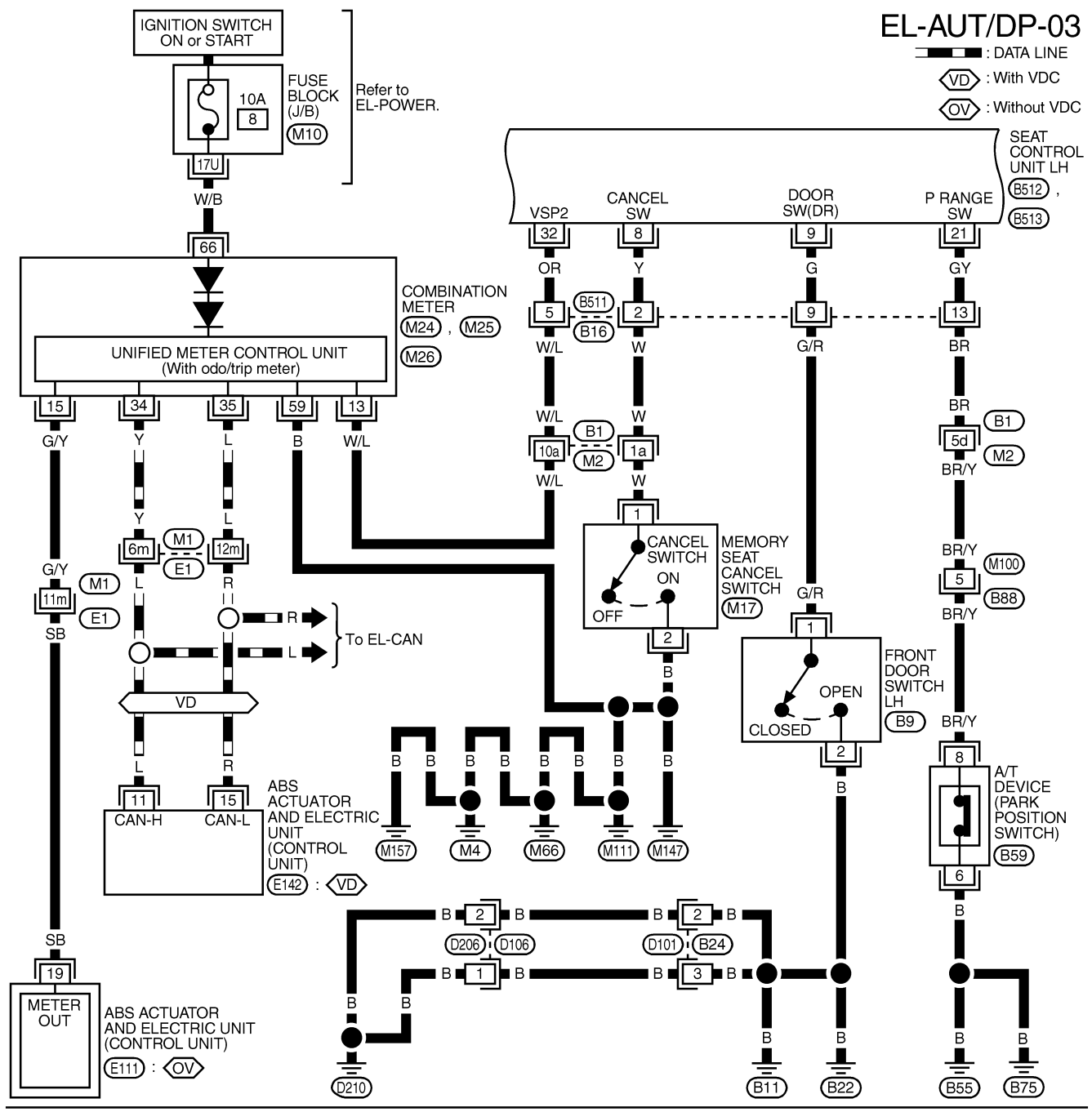




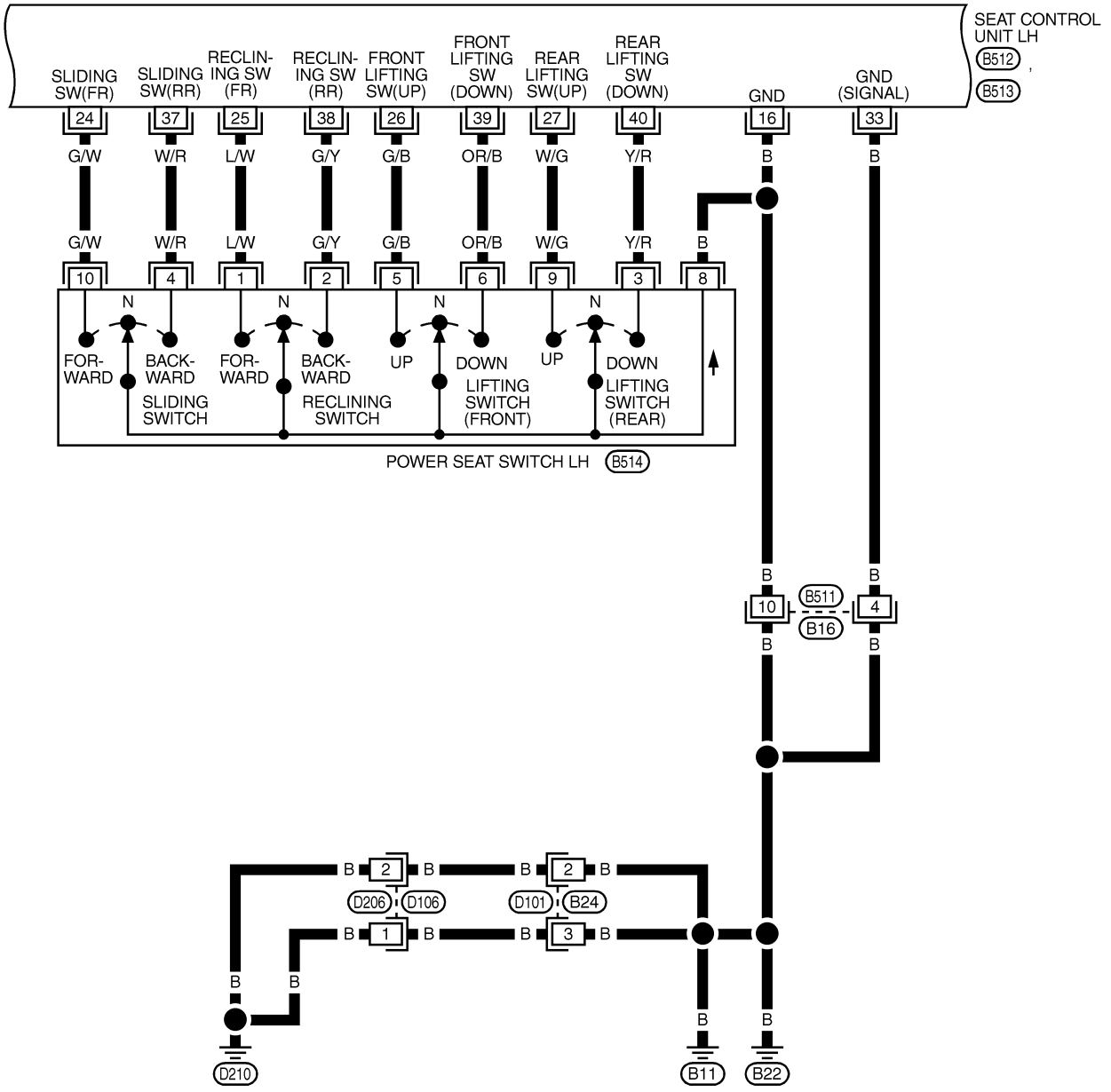
∗ : This connector is not shown in "HARNESS LAYOUT", EL section.

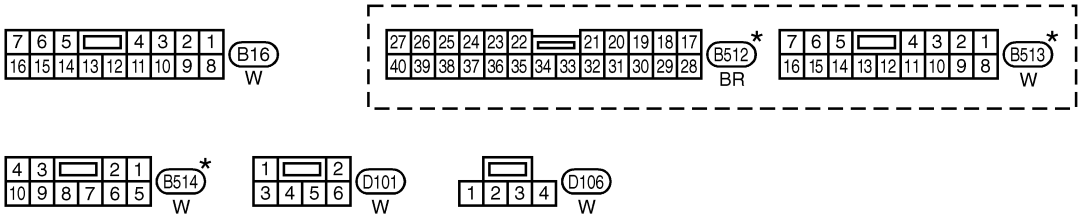
REFER TO THE FOLLOWING.
B1 -SUPER MULTIPLE JUNCTION (SMJ)

MEL018Q


EL-AUT/DP-03
: DATA LINE
VD : With VDC
OV : Without VDC
IGNITION SWITCH ON or START
FUSE BLOCK (J/B) M10
10A 8
17U
Refer to EL-POWER.
W/B
66
COMBINATION METER M24 , M25
M26
UNIFIED METER CONTROL UNIT (With odo/trip meter)
SEAT CONTROL UNIT LH B512 , B513
VSP2 32
CANCEL SW 8
DOOR SW(DR) 9
P RANGE SW 21
OR
Y
G
GY
B511
B16
W/L
W
G/R
BR
B1
M2
10a
1a
CANCEL SWITCH
MEMORY SEAT CANCEL SWITCH M17
ON
OFF
FRONT DOOR SWITCH LH B9
OPEN
CLOSED
M100
B88
BR/Y
G/Y
SB
M1
E1
11m
6m
12m
R
L
To EL-CAN
VD
CAN-H
CAN-L
ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) E142 : VD
M157
M4
M66
M111
M147
A/T DEVICE (PARK POSITION SWITCH) B59
D206
D106
D101
B24
D210
B11
B22
B55
B75
19
METER OUT
ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) E111 : OV
REFER TO THE FOLLOWING.
E1 , B1 - SUPER MULTIPLE JUNCTION (SMJ)
M10 - FUSE BLOCK - JUNCTION BOX (J/B)
E142 - ELECTRICAL UNITS
M17 GY
E111 GY
B9 B
B16 W
B59 GY
B88 GY
D101 W
D106 W
B512 BR
B513 W
M24 W
M25 BR
M26 BR
* : This connector is not shown in "HARNESS LAYOUT", EL section.
MEL019Q

EL-AUT/DP-04

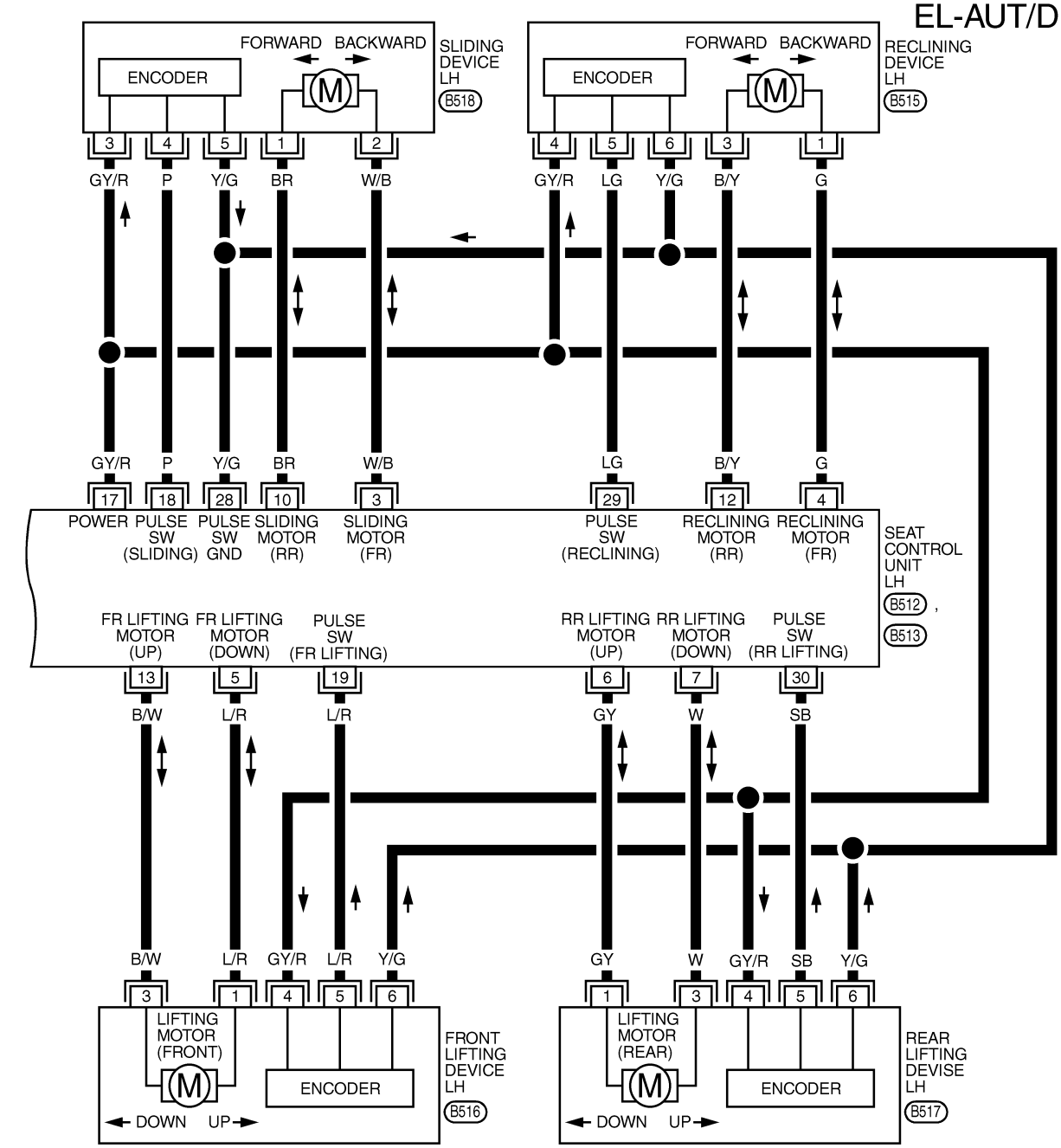


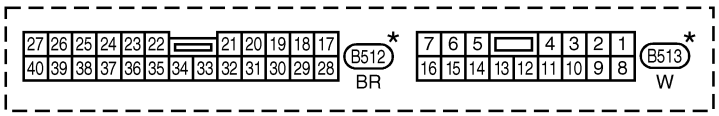


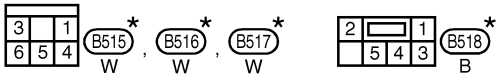
∗ : This connector is not shown in "HARNESS LAYOUT", EL section.

MEL186M

EL-AUT/DP-05





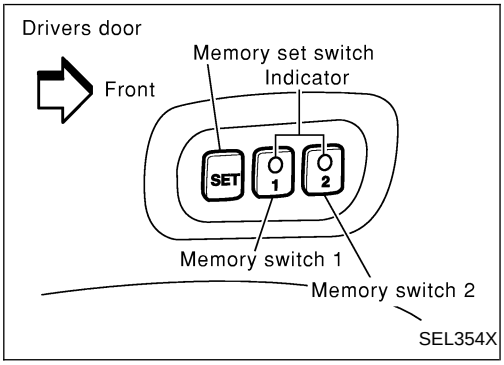


∗ : This connector is not shown in "HARNESS LAYOUT", EL section.

MEL187M

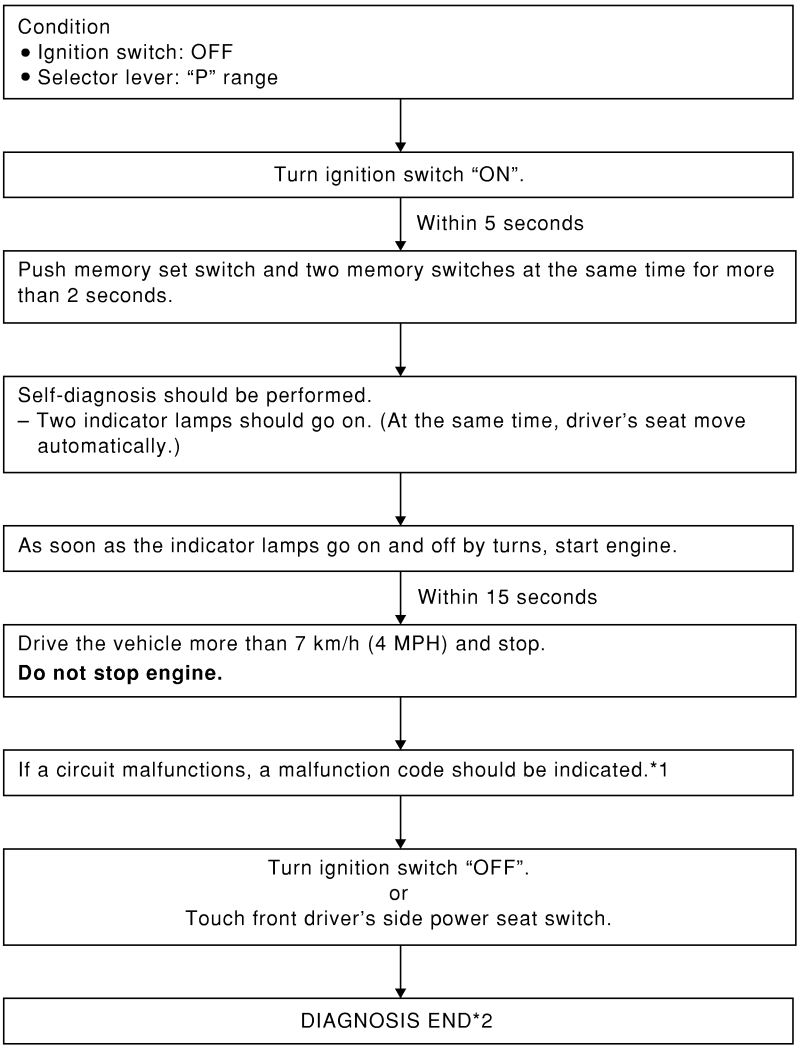
On Board Diagnosis

NAEL0368



HOW TO PERFORM SELF-DIAGNOSIS

NAEL0368S01



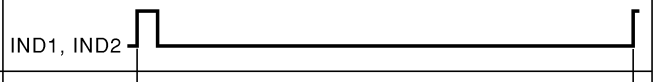
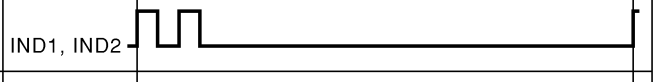
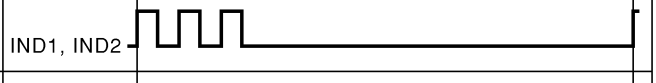
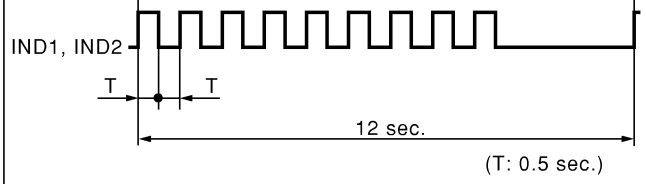
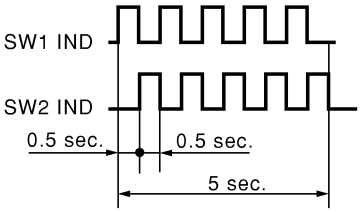
SEL596W

*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

=NAEL0368S02

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 signal circuit		If the vehicle speed signal output of less than 7 km/h (4 MPH) is detected, the ABS actuator and electric unit is determined to be malfunctioning.
–	No malfunction in the above items		—

SEL597WA

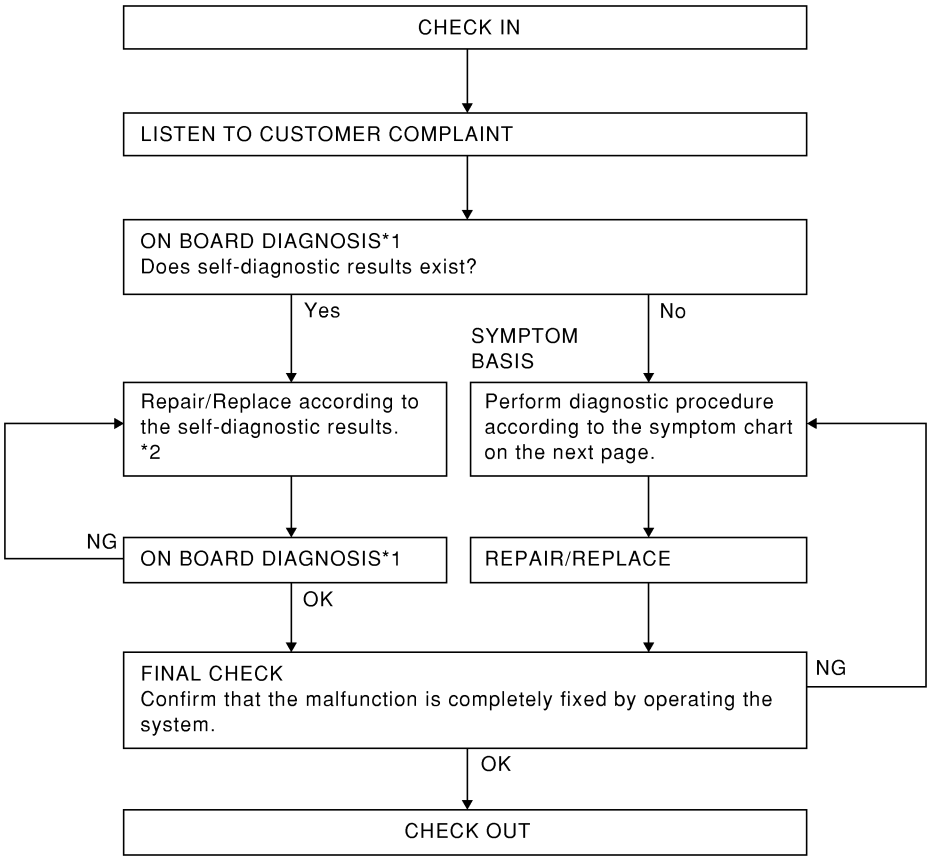
Code No.	Detected items	Diagnostic procedure	Reference page	Code No.	Detected items	Diagnostic procedure	Reference page
1	Seat sliding	PROCEDURE 2 (Sliding encoder check) PROCEDURE 6 (Sliding motor check)	EL-253 EL-261	4	Seat lifting rear	PROCEDURE 5 [Lifting encoder (rear) check] PROCEDURE 9 [Lifting motor (rear) check]	EL-259 EL-264
2	Seat reclining	PROCEDURE 3 (Reclining encoder check) PROCEDURE 7 (Reclining motor check)	EL-255 EL-262	9	Vehicle speed sensor	PROCEDURE 12 (Vehicle speed sensor check)	EL-267
3	Seat lifting front	PROCEDURE 4 [Lifting encoder (front) check] PROCEDURE 8 [Lifting motor (front) check]	EL-257 EL-263				

Trouble Diagnoses

NAEL0369

WORK FLOW

NAEL0369S01

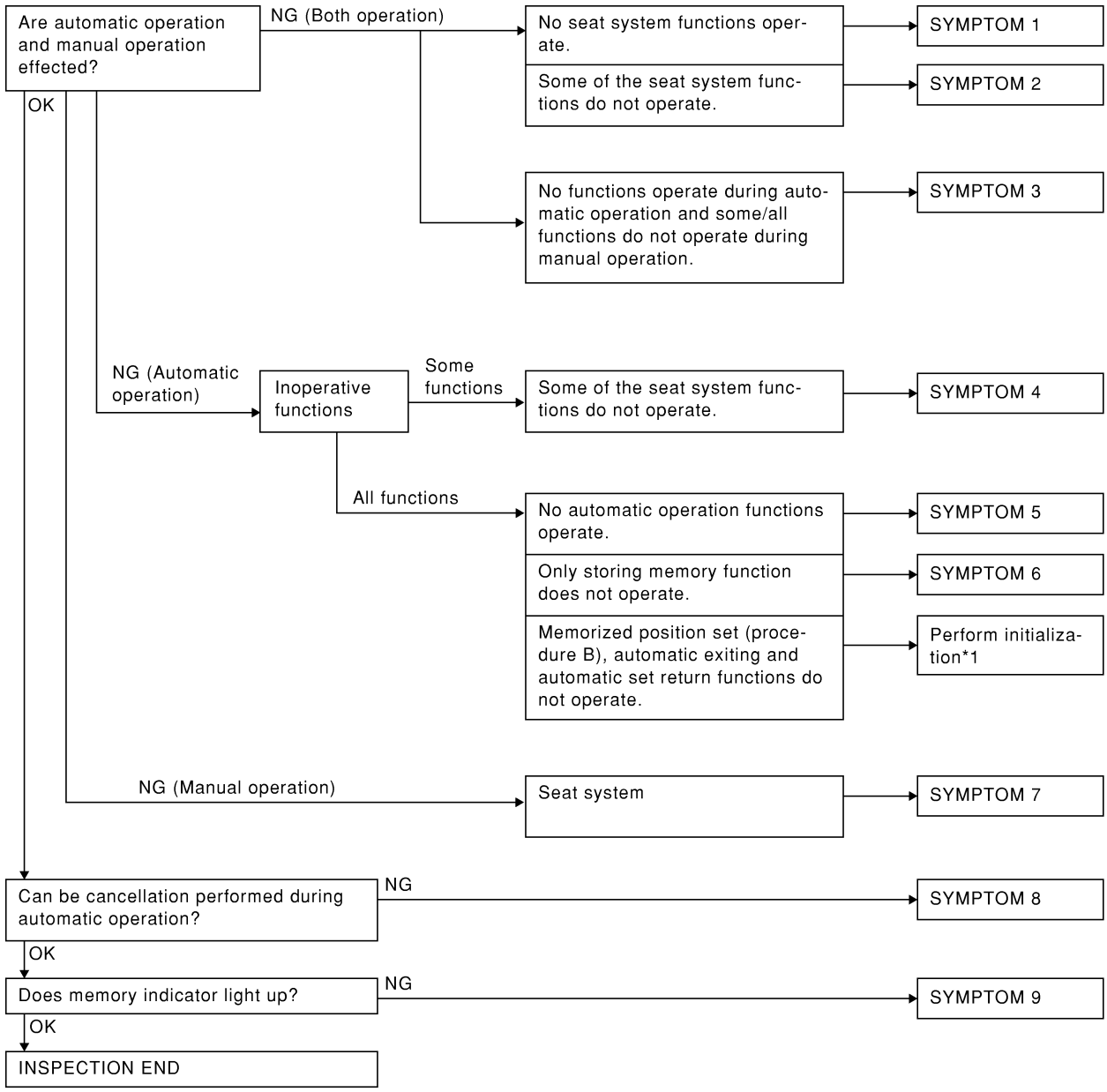


SEL599W

*1 EL-246 *2 EL-247

PRELIMINARY CHECK

NAEL0369S02



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-249. Symptom numbers in the symptom chart correspond with those of preliminary check.

SYMPTOM CHART

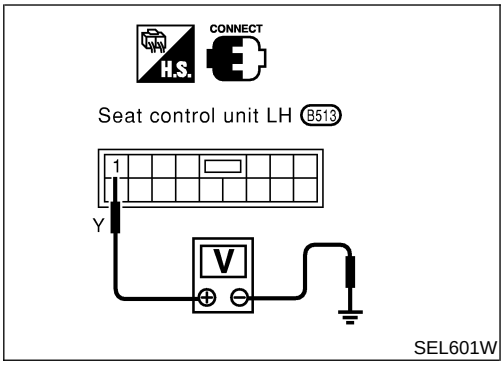
NAEL0369S03

PROCEDURE			Diagnostic procedure						
REFERENCE PAGE (EL-)			252	253	255	257	259	261	262
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-)			263	264	265	266	267	270	270
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

=NAEL0369S04

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

Power Supply Circuit Check

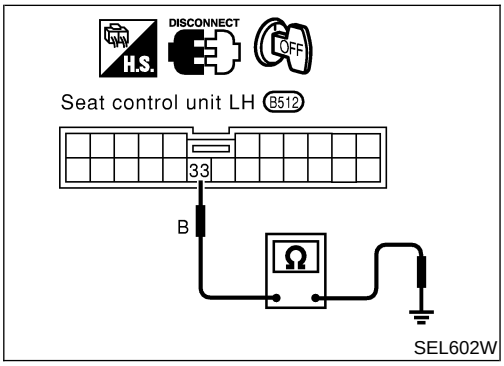
NAEL0369S0401

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

NAEL0369S0402

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

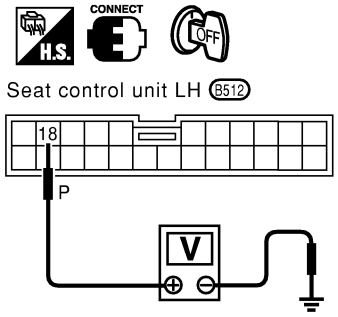
Terminals	Continuity
33 - Ground	Yes

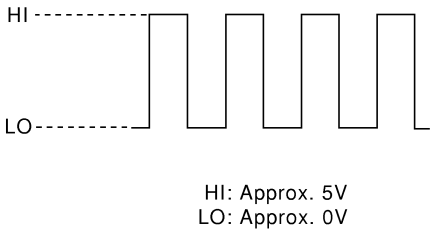
DIAGNOSTIC PROCEDURE 2
(Sliding encoder check)

=NAEL0369S05

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

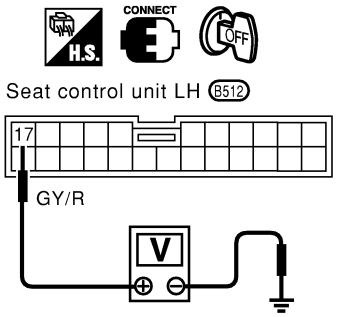
SEL603W

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.

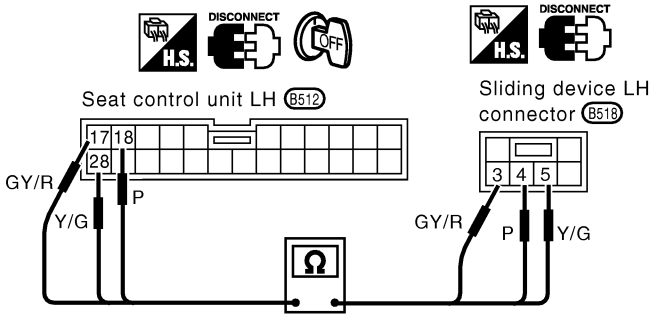
SEL604W

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	

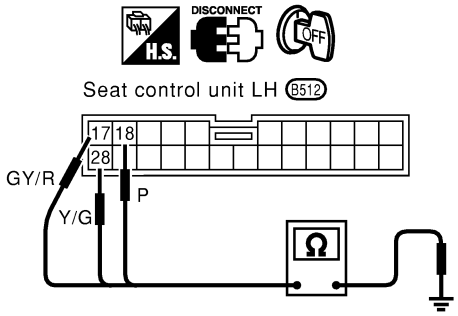
SEL605WA

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

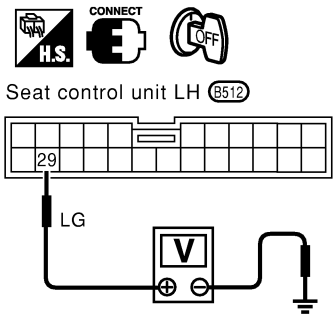
OK	▶	Replace sliding encoder.
NG	▶	Repair harness.

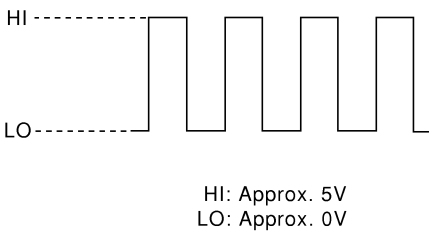
DIAGNOSTIC PROCEDURE 3
(Reclining encoder check)

=NAEL0369S06

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

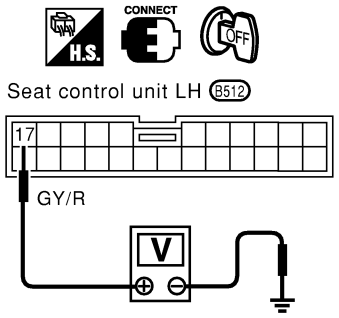
SEL607W

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.

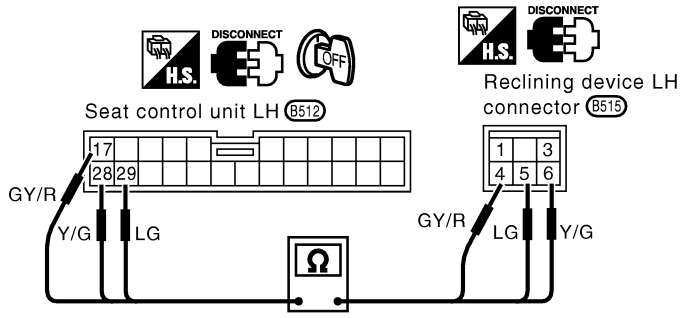
SEL608W

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	

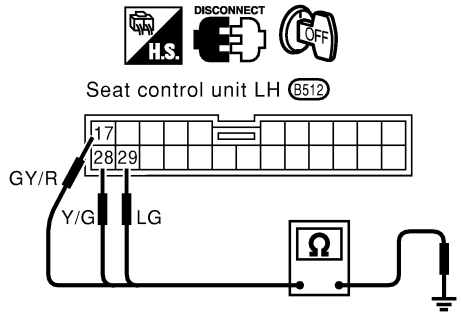
SEL609WA

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.

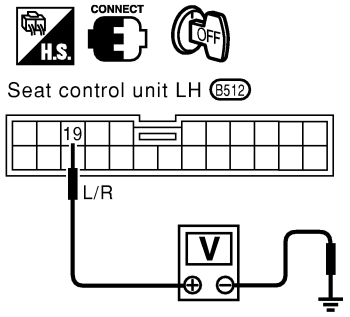
DIAGNOSTIC PROCEDURE 4

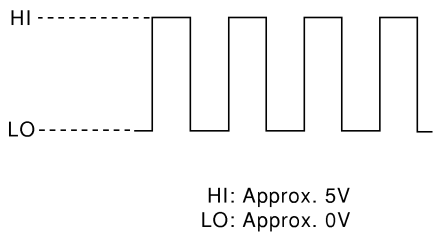
=NAEL0369S07

[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

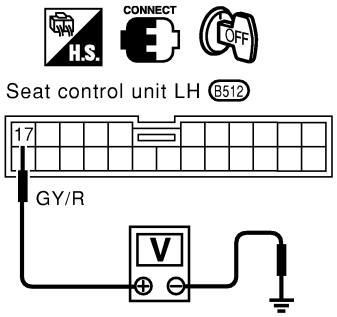
SEL611W

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.

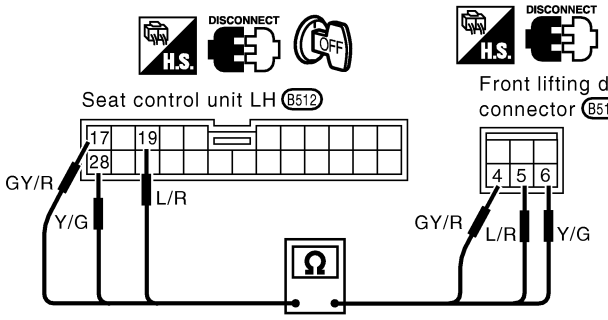
SEL612W

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	

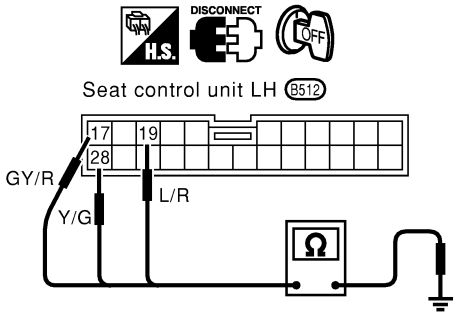
SEL613WA

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.

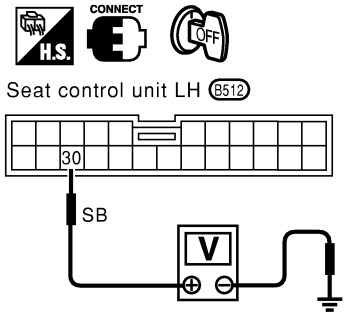
DIAGNOSTIC PROCEDURE 5

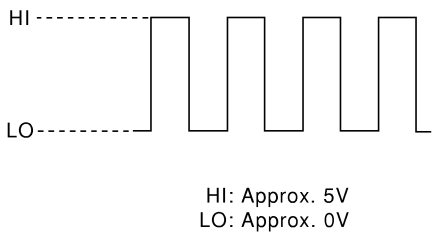
=NAEL0369S08

[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.





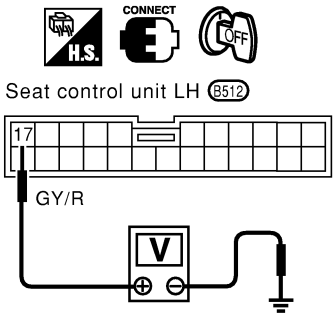
SEL615W

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.

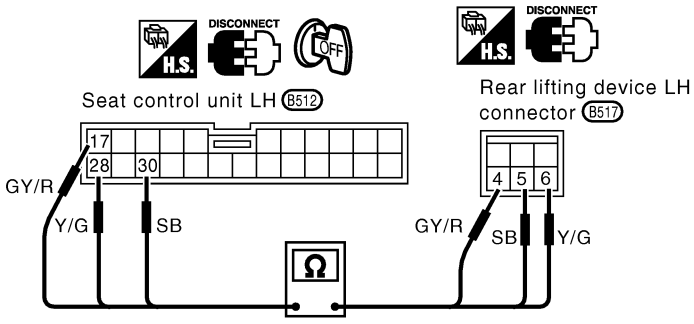
SEL616W

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	

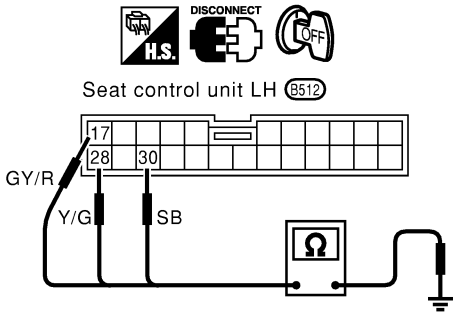
SEL617WA

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

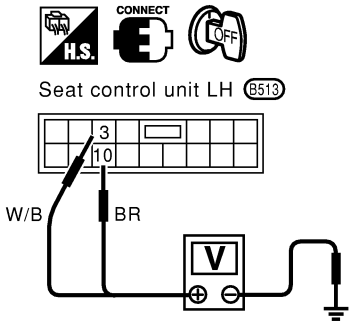
OK	▶	Replace lifting encoder (rear).
NG	▶	Repair harness.

DIAGNOSTIC PROCEDURE 6
(Sliding motor check)

=NAEL0369S09

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

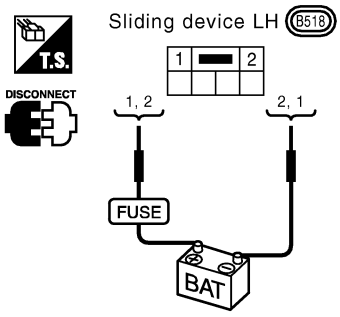
SEL619W

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.

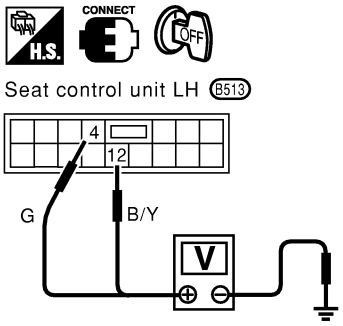
DIAGNOSTIC PROCEDURE 7

=NAEL0369S10

(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

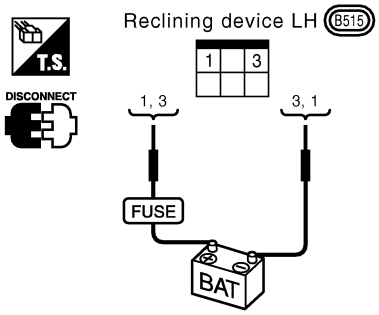
SEL621W

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.

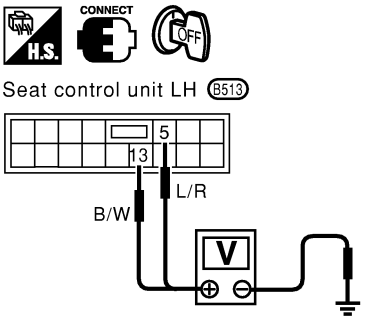
DIAGNOSTIC PROCEDURE 8

=NAEL0369S11

[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

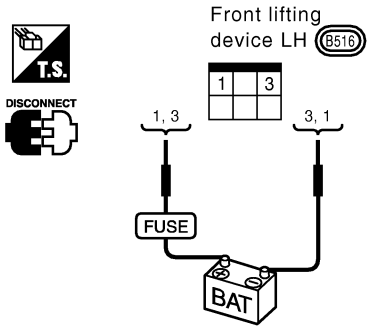
SEL623W

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).

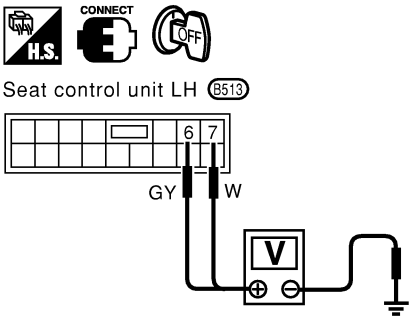
DIAGNOSTIC PROCEDURE 9

=NAEL0369S12

[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

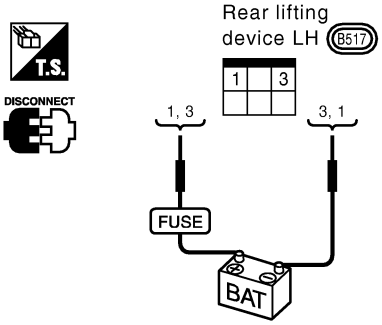
SEL625W

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

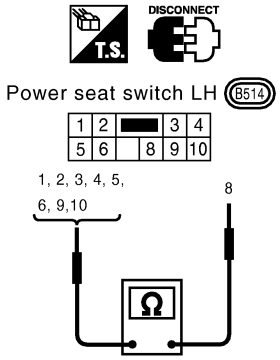
OK	▶	Check harness for operation between seat control unit LH and lifting motor (rear).
NG	▶	Replace lifting motor (rear).

DIAGNOSTIC PROCEDURE 10
(Power seat switch check)

=NAEL0369S13

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

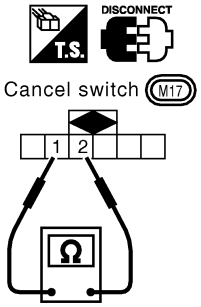
OK	▶	**Check the following.** ● Ground circuit for power seat switch ● Harness for open or short between seat control unit LH and power seat switch
NG	▶	Replace power seat switch.

DIAGNOSTIC PROCEDURE 11
(Cancel switch check)

=NAEL0369S14

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.

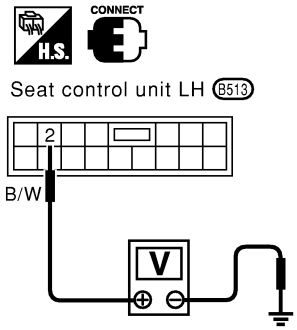
DIAGNOSTIC PROCEDURE 12

=NAEL0369S15

(Key, detention, door switch and vehicle speed signal 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

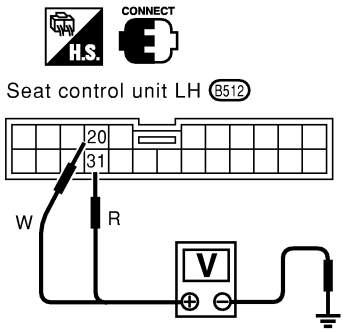
SEL629W

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

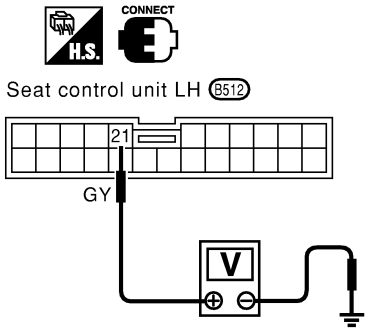
SEL630W

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

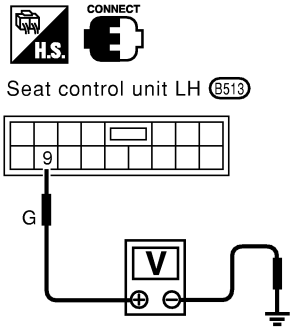
SEL631W

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 SIGNAL

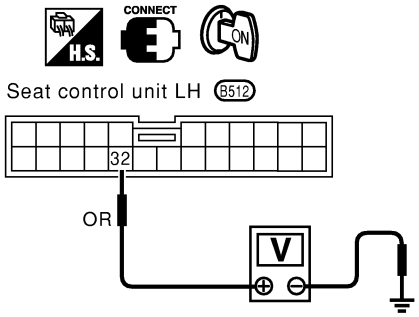
Does speedometer operate normally?

Yes or No

OK	▶	GO TO 6.
NG	▶	Check speedometer and ABS actuator and electric unit circuit. Refer to EL-138.

6	CHECK VEHICLE SPEED SIGNAL 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.

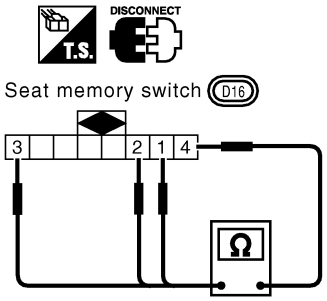
DIAGNOSTIC PROCEDURE 13

=NAEL0369S16

(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

NAEL0369S17

(Memory indicator check)

1	CHECK INDICATOR LAMP

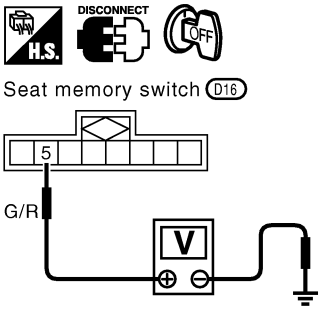
Check indicator lamp illumination.

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

System Description

NAEL0461

Refer to EC-73, “Automatic Speed Control Device (ASCD) System” in “ENGINE AND EMISSION CONTROL SYSTEM”. BASIC DESCRIPTION

System Description

NAEL0378

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 power window main switch terminal 19, and
- to front power window switch RH terminal 10.

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 smart entrance control unit terminal 27
- to smart entrance control unit terminal 46 and
- to power window relay terminal 2.

Ground is supplied to power window relay terminal 1
- through body grounds M4, M66, M111, M147 and M157.

The power window relay is energized and power is supplied
- through power window relay terminal 5
- to power window main switch terminal 10,
- to front power window switch RH terminal 14 and
- to rear power window switch LH and RH terminals 4.

MANUAL OPERATION

NAEL0378S01

Front Door LH

NAEL0378S0101

Ground is supplied
- to power window main switch terminal 17
- through body grounds M4, M66, M111, M147 and M157.

WINDOW UP
When the front LH switch in the power window main switch is pressed in the up position, power is supplied
- to front power window motor LH terminal 1
- through power window main switch terminal 8.

Ground is supplied
- to front power window motor LH terminal 3
- through power window main switch terminal 11.

Then, the motor raises the window until the switch is released.
WINDOW DOWN
When the LH switch in the power window main switch is pressed in the down position, power is supplied
- to front power window motor LH terminal 3
- through power window main switch terminal 11.

Ground is supplied
- to front power window motor LH terminal 1
- through power window main switch terminal 8.

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

Front Door RH

NAEL0378S0102

Ground is supplied
- to power window main switch terminal 17
- through body grounds M4, M66, M111, M147 and M157.

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

POWER WINDOW MAIN SWITCH OPERATION
When front RH switch in the power window main switch is pressed UP or DOWN, power window main switch sends window up or down signal to front power window switch RH with power window serial link communication line. Refer to "POWER WINDOW SERIAL LINK" (EL-274). Signals are supplied

- through power window main switch terminal 14
- to front power window switch RH terminal 16.

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 (8, 9)
- to front power window motor RH (1, 3).

Ground is supplied

- to front power window motor RH (3, 1)
- through front power window switch RH (9, 8)
- to front power window RH terminal 11
- through body grounds M4, M66, M111, M147 and M157.

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

Rear Door LH

NAEL0378S0103

Ground is supplied

- to power window main switch terminal 17
- through body grounds the M4, M66, M111, M147 and M157.

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

POWER WINDOW MAIN SWITCH OPERATION
Power is supplied

- through power window main switch terminal (1, 3)
- to rear power window switch LH terminal (5, 2)

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, 3)
- to rear power window motor LH (1, 2)

Ground is supplied

- to rear power window motor LH (2, 1)
- through rear power window switch LH (3, 1)
- to rear power window switch LH terminal (2, 5)
- through power window main switch terminal (3, 1)

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

Rear Door RH

NAEL0378S0104

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

AUTO OPERATION

NAEL0378S02

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

NAEL0378S03

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

NAEL0378S04

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 46.

Ground is always supplied

- to power window relay terminal 1
- through body grounds M4, M66, M111, M147 and M157.

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.
RAP signal's period can be changed by CONSULT-II. (EL-282)

INTERRUPTION DETECTION FUNCTION

NAEL0378S05

Power window main switch and front power window switch RH monitor the power window 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 motor LH or RH.
When 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

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

POWER WINDOW OPENED/CLOSED OPERATION WITH KEY CYLINDER

NAEL0378S06

When ignition key switch is OFF, front power window can be opened or closed by turning the front door key cylinder LH to UNLOCK/LOCK position.

- Power window can be opened as the door key cylinder is kept fully turning to the UNLOCK position.
- Power window can be closed as the door key cylinder is kept fully turning to the LOCK position.

The power window opening stops when the following operations are carried out:

- While performing open/close the window, power window is stopped at the position as the door key cylinder is placed on Neutral.
- When the ignition switch is turned ON while the power window opening is operated.

POWER WINDOW SERIAL LINK

NAEL0378S07

Power window main switch, front power window switch RH and smart entrance control unit transmit and receive the signal by power window serial link.
The under-mentioned signal is transmitted from smart entrance control unit to power window main switch or front power window switch RH.

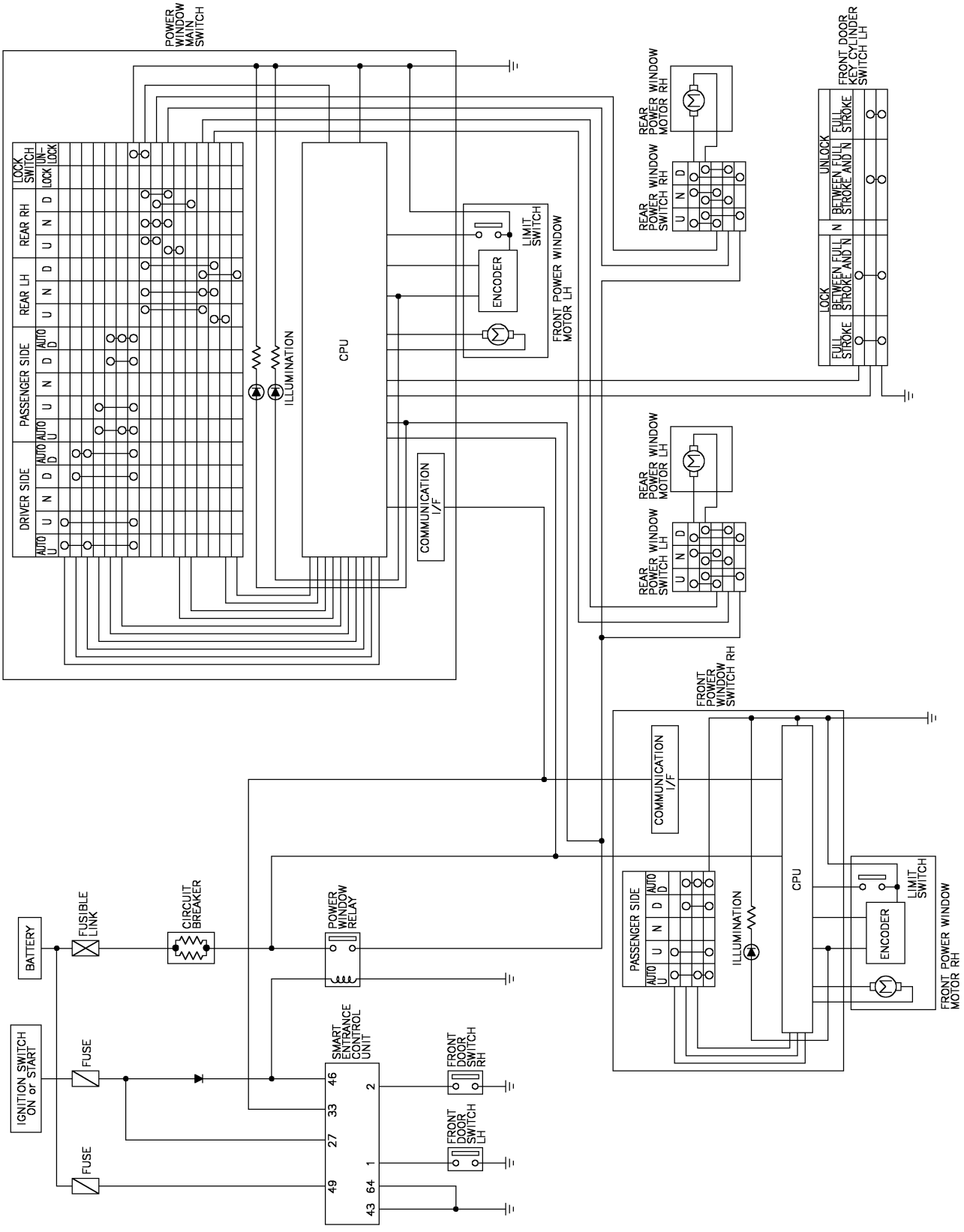
- Door lock or unlock signal (remote keyless entry system)
- Power window down signal (remote keyless entry system)

The under-mentioned signal is transmitted from power window main switch to front power window switch RH.

- Door lock or unlock signal (remote keyless entry system)
- Power window open/closed operation signal by key cylinder
- Power window lock signal

Schematic

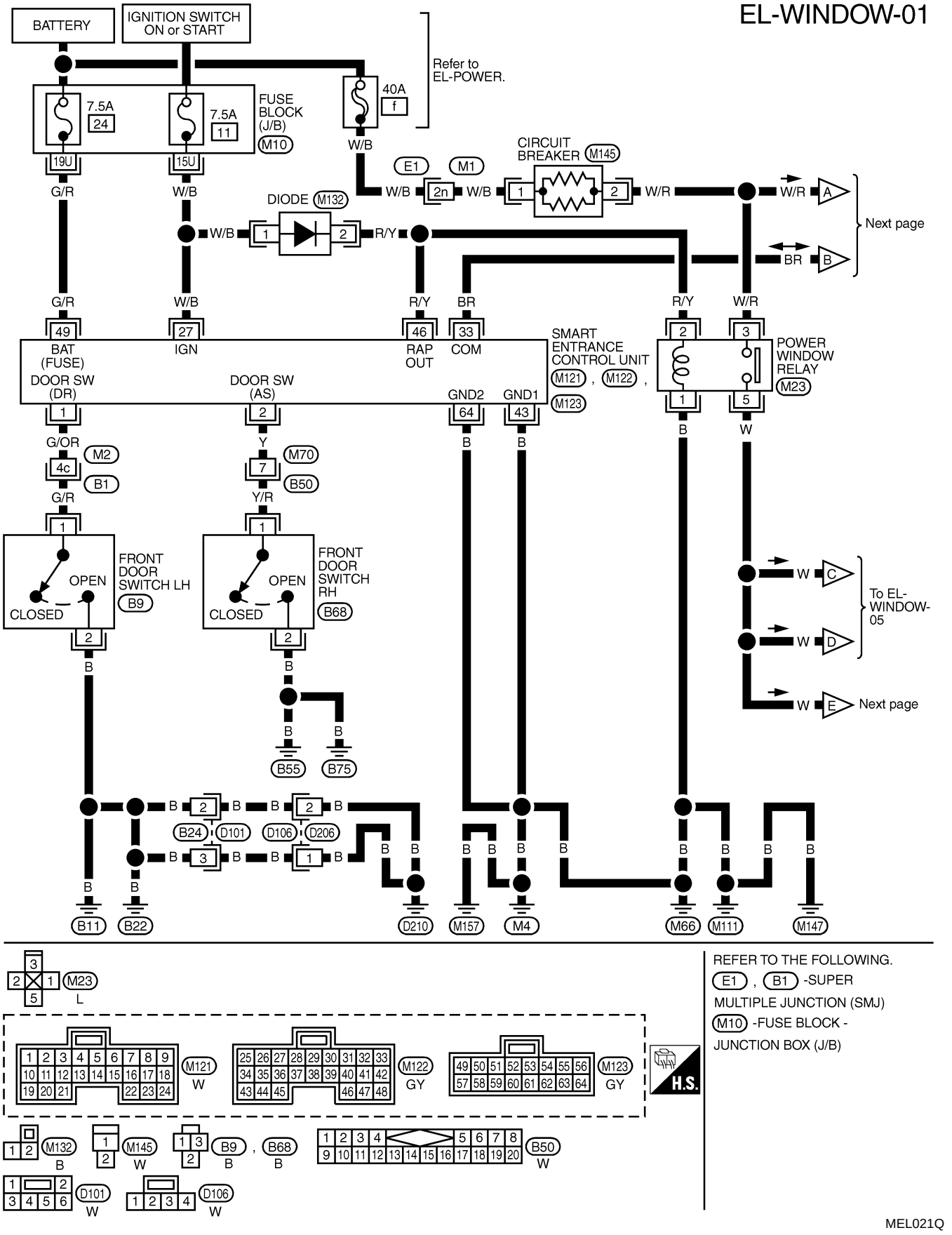
NAEL0379



MEL952R

Wiring Diagram — WINDOW —

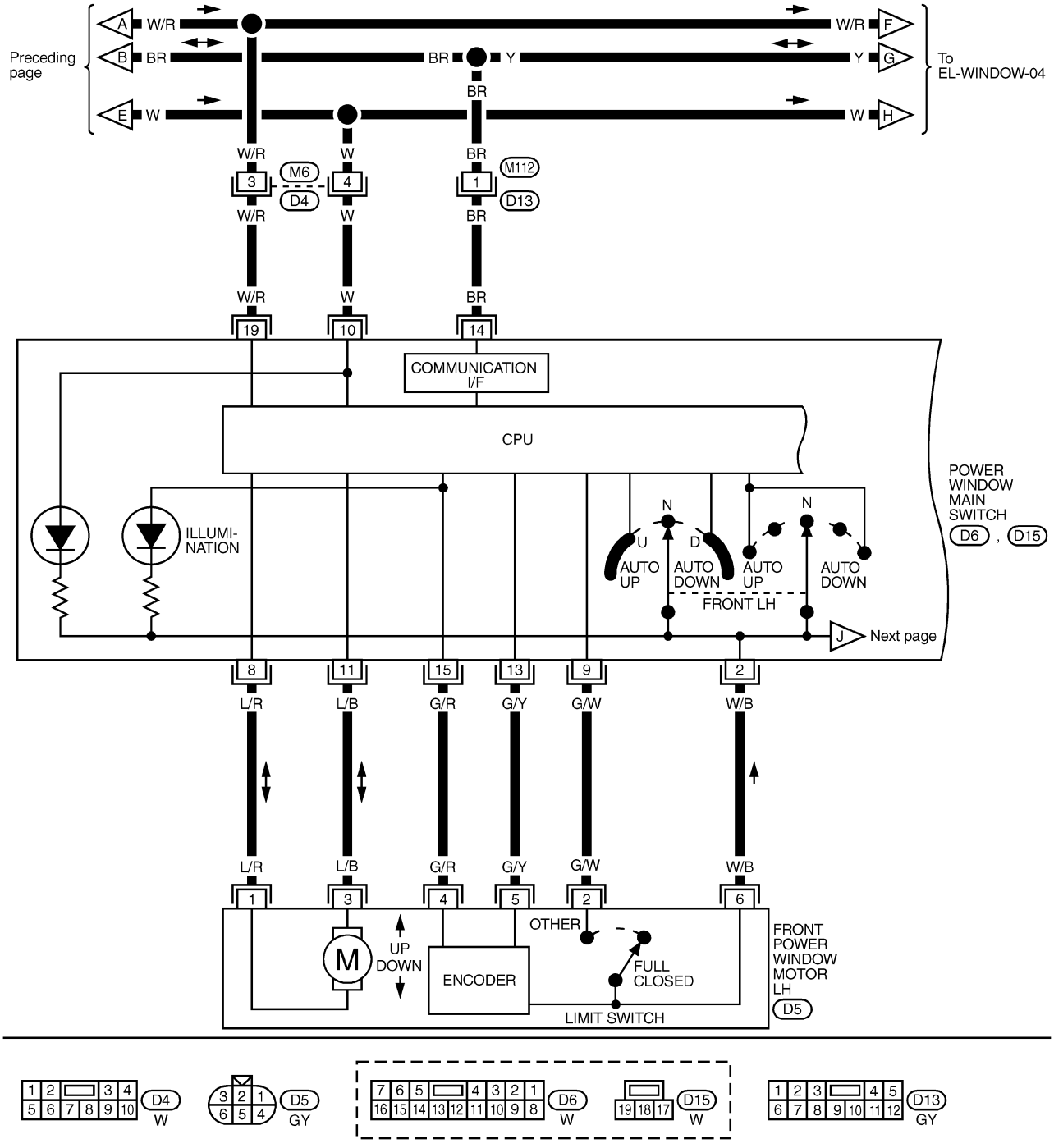
NAEL0380



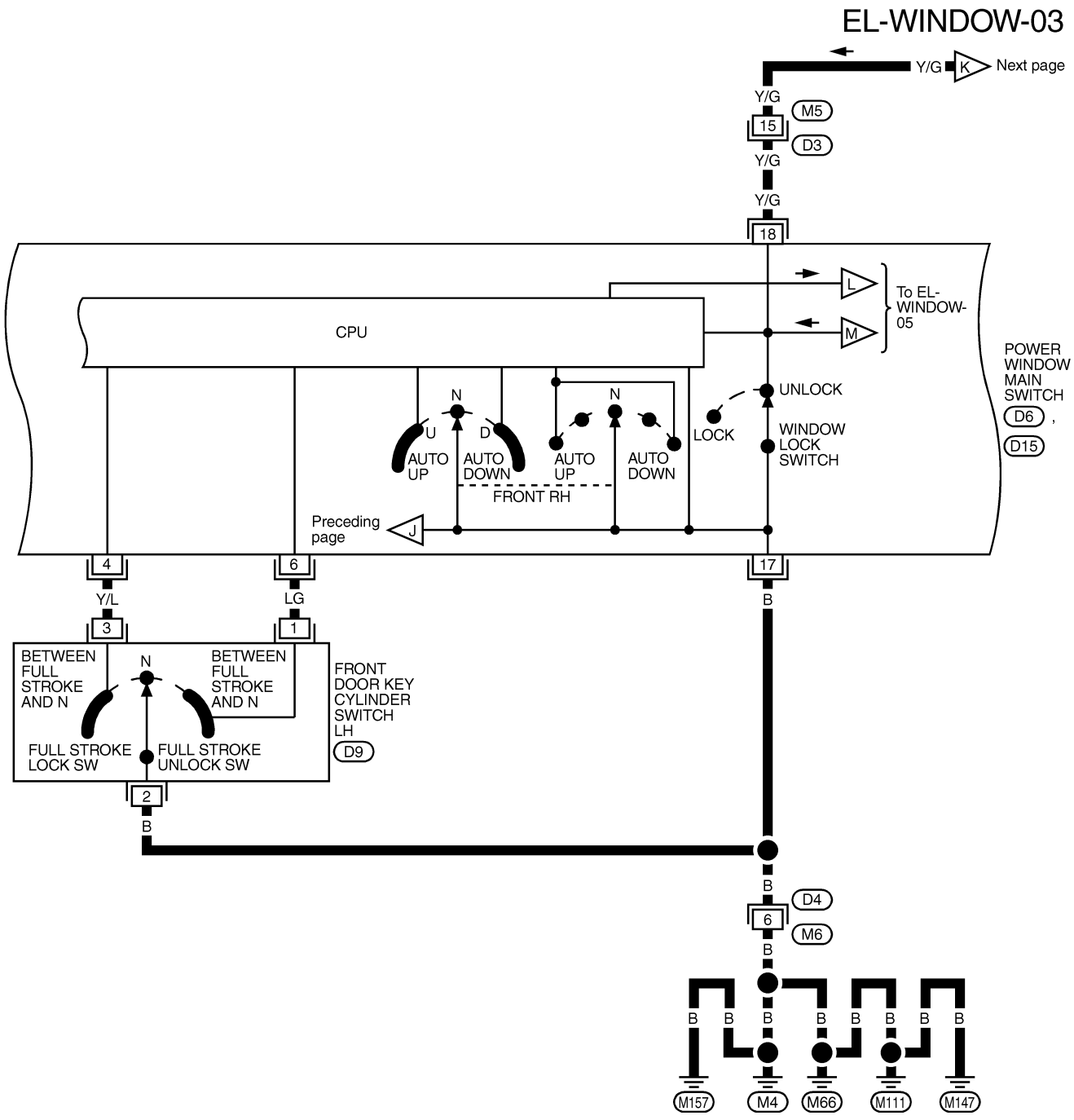
REFER TO THE FOLLOWING.
E1 , B1 -SUPER MULTIPLE JUNCTION (SMJ)
M10 -FUSE BLOCK - JUNCTION BOX (J/B)

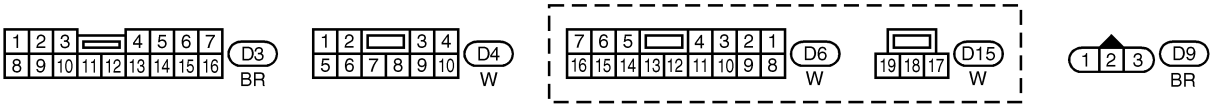
MEL021Q

EL-WINDOW-02



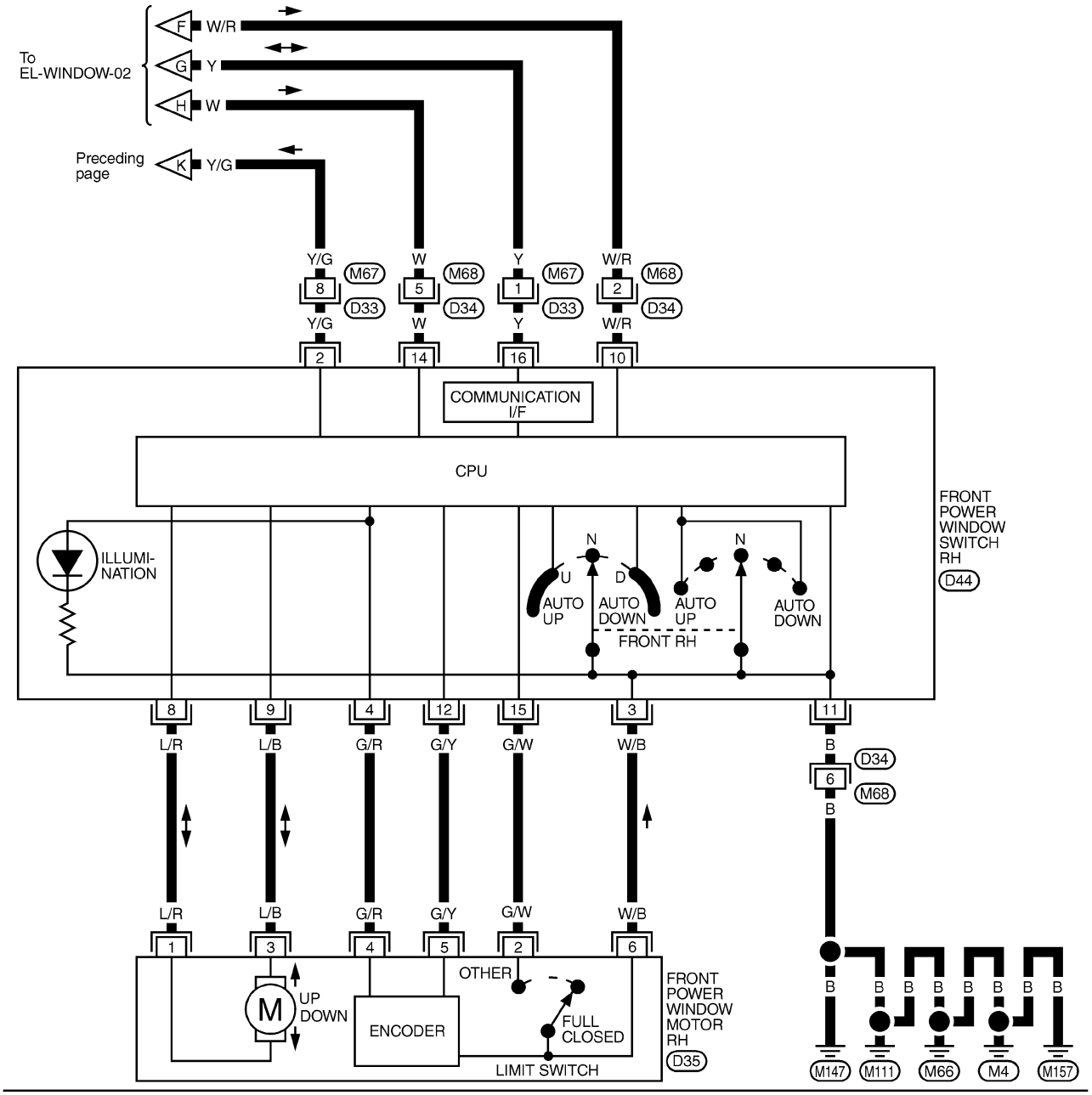
MEL953R

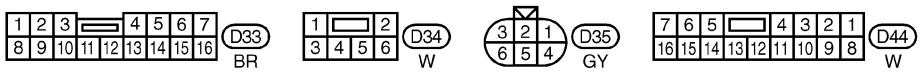

EL-WINDOW-03
Y/G
K
Next page
Y/G
M5
15
D3
Y/G
Y/G
18
L
M
To EL-WINDOW-05
CPU
POWER WINDOW MAIN SWITCH
D6
,
D15
N
U
D
AUTO UP
AUTO DOWN
N
AUTO UP
AUTO DOWN
FRONT RH
LOCK
UNLOCK
WINDOW LOCK SWITCH
Preceding page
J
4
6
17
Y/L
LG
B
3
1
BETWEEN FULL STROKE AND N
N
BETWEEN FULL STROKE AND N
FULL STROKE LOCK SW
FULL STROKE UNLOCK SW
FRONT DOOR KEY CYLINDER SWITCH LH
D9
2
B
B
D4
6
M6
B
B B B B B B B B
M157
M4
M66
M111
M147


1 2 3 4 5 6 7
8 9 10 11 12 13 14 15 16
D3
BR
1 2 3 4
5 6 7 8 9 10
D4
W
7 6 5 4 3 2 1
16 15 14 13 12 11 10 9 8
D6
W
19 18 17
D15
W
1 2 3
D9
BR

MEL023Q

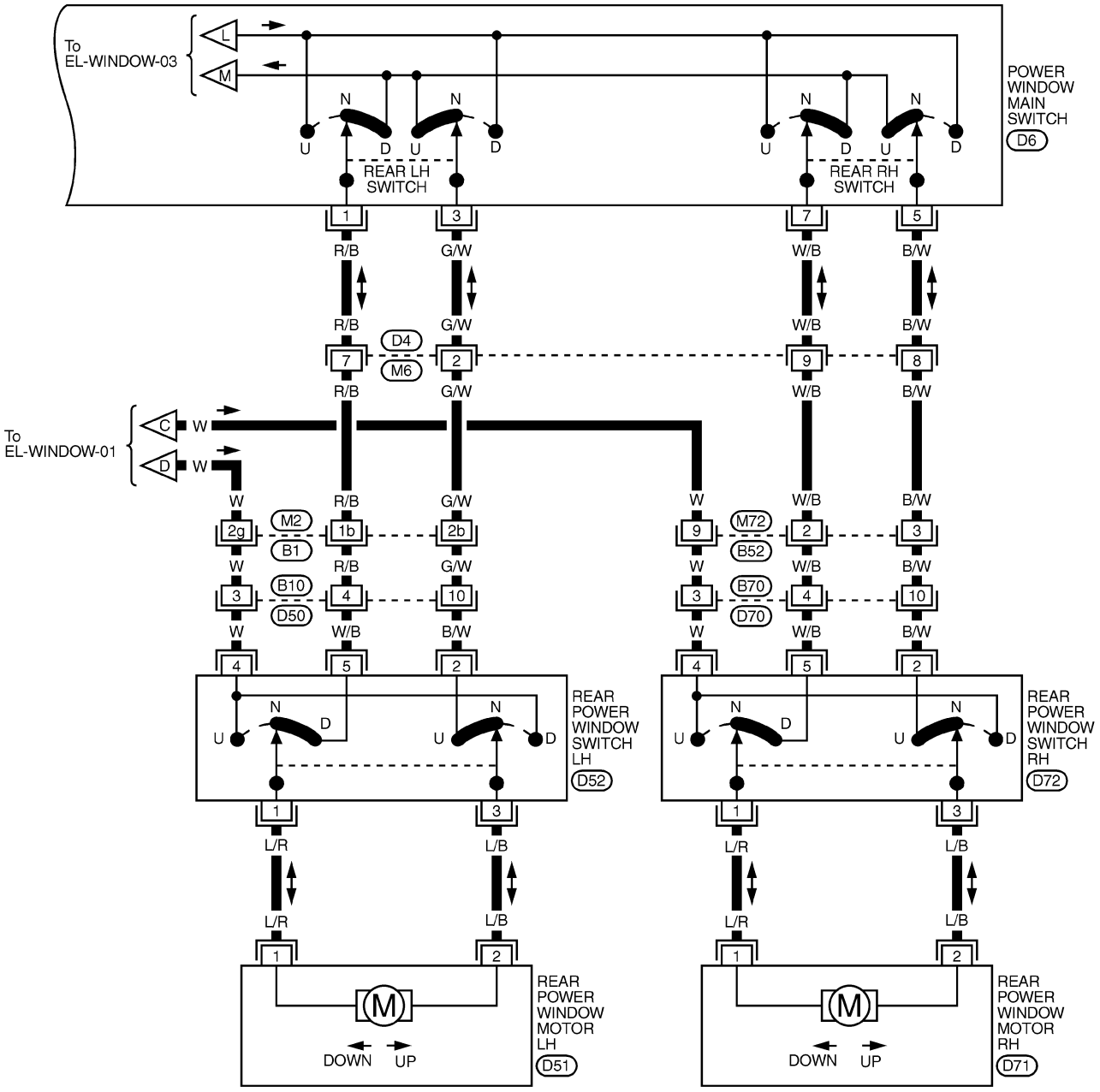
EL-WINDOW-04

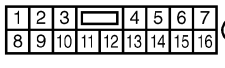


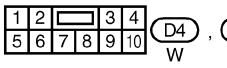


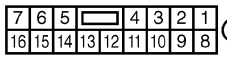
MEL954R

EL-WINDOW-05

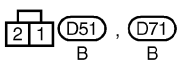


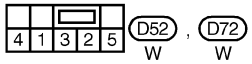

B52 W


D4 , D50 , D70 W W W

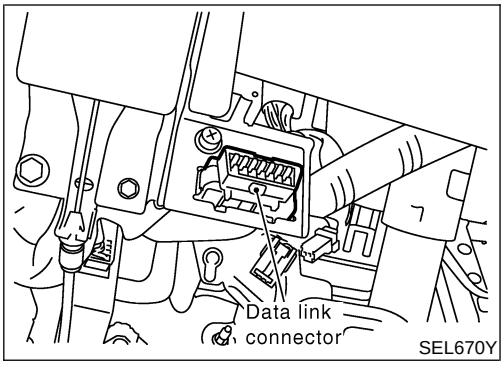

D6 W

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


D51 , D71 B B


D52 , D72 W W

MEL955R



SEL670Y

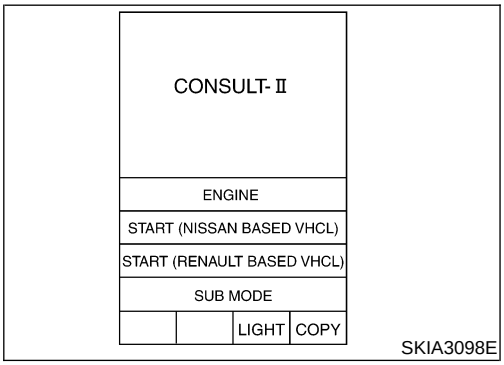
CONSULT-II Inspection Procedure

NAEL0381

“RETAINED PWR”

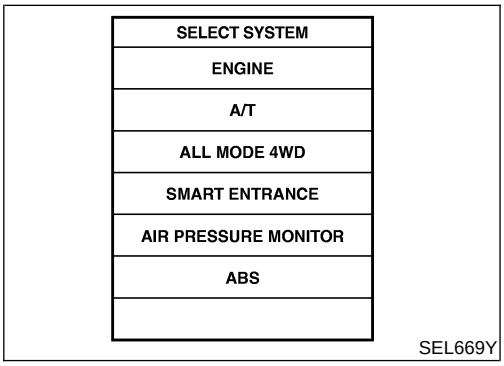
NAEL0381S01

1. Turn ignition switch “OFF”.
2. Connect “CONSULT-II” and “CONSULT-II CONVERTER” to the data link connector.



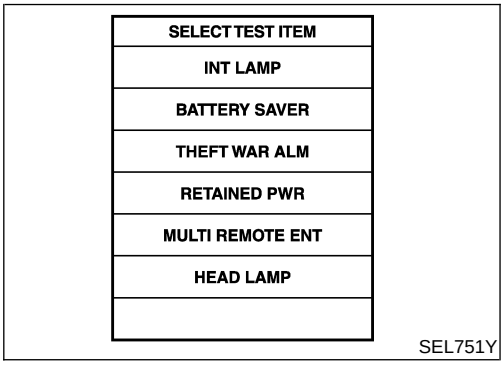
SKIA3098E

3. Turn ignition switch “ON”.
4. Touch “START (NISSAN BASED VHCL)”.



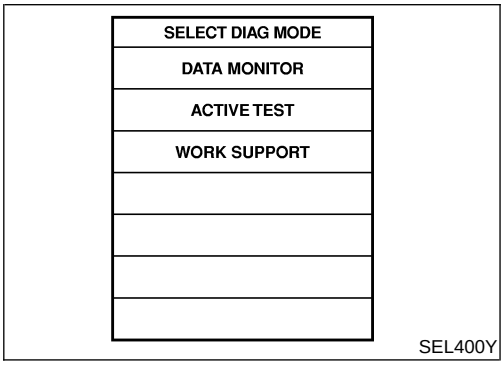
SEL669Y

5. Touch “SMART ENTRANCE”.
   If “SMART ENTRANCE” is not indicated, go to GI-42, “CONSULT-II Data Link Connector (DLC) Circuit”.



SEL751Y

6. Touch “RETAINED PWR”.



SEL400Y

7. Select diagnosis mode.
   “DATA MONITOR”, “ACTIVE TEST” and “WORK SUPPORT” are available.

CONSULT-II Application Items

NAEL0382

“RETAINED PWR” Data Monitor

NAEL0382S01

NAEL0382S0101

Monitored Item	Description
IGN ON SW	Indicates [ON/OFF] condition of ignition switch.
DOOR SW-DR	Indicates [ON/OFF] condition of front door switch LH.
DOOR SW-AS	Indicates [ON/OFF] condition of front door switch RH.

Active Test

NAEL0382S0102

Test Item	Description
RETAINED PWR	This test is able to supply RAP signal (power) from smart entrance control unit to power window system, power sunroof system and headlamp battery saver control unit. Those systems can be operated when turning on “RETAINED PWR” on CONSULT-II screen even if the ignition switch is tuned OFF. **NOTE:** **During this test, CONSULT-II can be operated with ignition switch in “OFF” position. “RETAINED PWR” should be turned “ON” or “OFF” on CONSULT-II screen when ignition switch is ON. Then turn ignition switch OFF to check retained power operation. CONSULT-II might be stuck if “RETAINED PWR” is turned “ON” or “OFF” on CONSULT-II screen when ignition switch is OFF.**

Work Support

NAEL0382S0103

Work Item	Description
RETAINED PWR SET	Rap signal’s power supply period can be changed by mode setting. Selects rap signal’s power supply period between three steps. ● MODE 1 (45 sec.)/MODE 2 (OFF)/MODE 3 (2 min.)

Trouble Diagnoses

NAEL0383

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 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 17 b. Power window relay ground circuit 7. Check power window main switch.

Symptom	Possible cause	Repair order
Driver side power window cannot be operated but other windows can be operated.	1. Front power window motor LH circuit 2. Front power window motor LH 3. Power window main switch	1. Check harness between power window main switch and front power window motor LH for open or short circuit. 2. Check front power window motor LH. 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 motor RH circuit 5. Front power window motor RH 6. Power window main switch 7. Front power window switch RH	1. Check power supply for front power window switch RH terminals 10 and 14. 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 motor RH for open or short circuit. 5. Check front power window motor RH. 6. Check 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 motors 3. Power window main switch 4. Rear power window circuit	1. Check rear power window switches. 2. Check rear power window motor. 3. Check power window main switch. 4. Check the following. a. Harness between the rear power window switches (LH and RH) terminal 5 and power window relay terminal 4 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 motor 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.	Power window main switch	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-285)
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-285)
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 RAP signal. a. (With CONSULT-II) ● Check RAP signal with CONSULT-II. Use "WORK SUPPORT" mode, "RETAINED PWR" in "SMART ENTRANCE". (Refer to EL-282.) ● Check RAP signal with CONSULT-II. Use "ACTIVE TEST" mode, "RETAINED PWR" in "SMART ENTRANCE". (Refer to EL-281.) If NG, go to the step b. below. b. Verify 12 positive voltage from smart entrance control unit terminal 46 is present at terminal 2 of power window relay: ● Within 45 seconds after ignition switch turns off.*1 ● When front door LH and RH is closed. 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-382)

Trouble Diagnoses (Cont'd)

Symptom	Possible cause	Repair order
Passenger side power window cannot be operated using power window main switch but can be operated by passenger side power window switch.	1. Power window main switch 2. Power window main switch circuit	1. Check power window main switch. (EL-287) 2. Check harness for open or short circuit between power window main switch terminal 14 and front power window switch RH terminal 16.
Rear LH power window cannot be operated using power window main switch but can be operated by rear LH power window switch.	Power window main switch	Check power window main switch. (EL-287)
Rear RH power window cannot be operated using power window main switch but can be operated by rear RH power window switch.	Power window main switch	Check power window main switch. (EL-287)
Power window open/close operation with key cylinder does not operate properly.	1. Front door key cylinder switch LH 2. Front door key cylinder switch LH circuit 3. Power window main switch	1. Check front door key cylinder switch LH. 2. Check harness for open or short circuit between front door key cylinder switch LH and power window main switch. 3. Check power window main switch.

*1: RAP signal's period can be changed by CONSULT-II. (EL-282)

ENCODER AND LIMIT SWITCH CHECK

=NAEL0383S01

1	CHECK DOOR WINDOW SLIDE MECHANISM

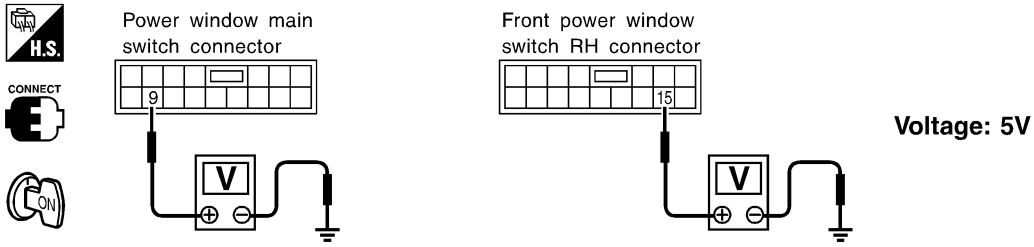
Check the following.
- Obstacles in window, glass molding, etc.
- Worn or deformed glass molding
- Door sash tilted too far inward or outward
- Door window motor

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 motor LH or RH harness connector.
2. Check voltage between power window main switch harness connector D6 terminal 9 (G/W) or front power window switch RH harness connector D44 terminal 15 (G/W) and ground.



Voltage: 5V

NOTE: Check voltage when front power window motor LH or RH harness connector is disconnected.

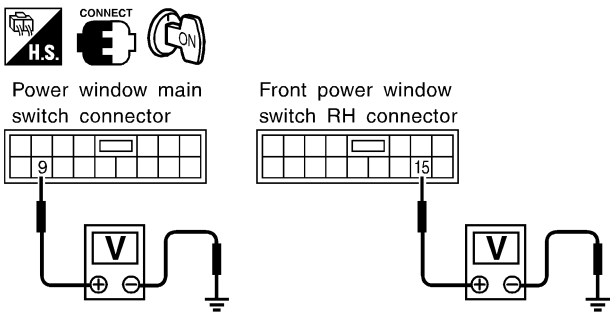
SEL686YA

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 motor LH or RH harness connector.
2. Check voltage between power window main switch harness connector D6 terminal 9 (G/W) or front power window switch RH harness connector D44 terminal 15 (G/W) and ground during power window closing operation.



Terminal No.	Condition	Voltage (DCV)
Power window main switch: 9 Front power window switch RH: 15	Approx.15 mm (0.59 in) below the full closed position to full closed position	Approx. 5
	Other positions	Approx. 0

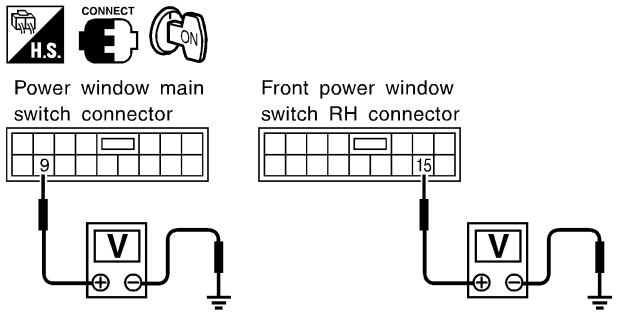
SEL687Y

OK or NG

OK	▶	GO TO 5.
NG	▶	GO TO 4.

4	RESET LIMIT SWITCH

Reset limit switch. Refer to BT-22, "Front Door Glass Limit Switch Reset". Then check voltage between power window main switch harness connector D6 terminal 9 (G/W) or front power window switch RH harness connector D44 terminal 15 (G/W) and ground during power window closing operation at least ten times.



Terminal No.	Condition	Voltage (DCV)
Power window main switch: 9 Front power window switch RH: 15	Approx.15 mm (0.59 in) below the full closed position to full closed position	Approx. 5
	Other positions	Approx. 0

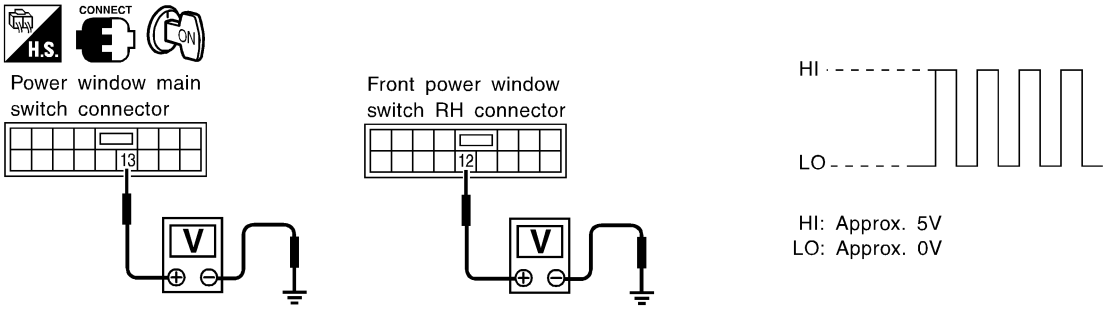
SEL687Y

OK or NG

OK	▶	GO TO 5.
NG	▶	Replace front power window motor.

5	CHECK ENCODER

Measure voltage between power window main switch harness connector D6 terminal 13 (G/Y) or front power window switch RH harness connector D44 terminal 12 (G/Y) and ground with oscilloscope when power window is in automatic closing operation.



SEL688Y

OK or NG

OK	▶	Replace power window main switch.
NG	▶	Replace front power window motor.

MAIN SWITCH OPERATION CHECK
Passenger Side Operation

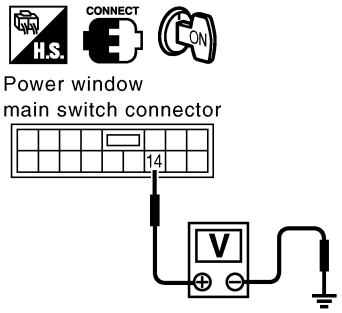
=NAEL0383S02

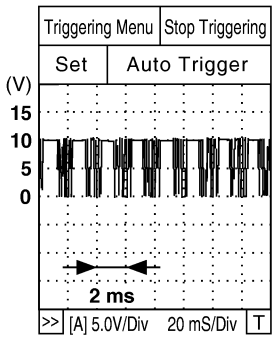
NAEL0383S0201

1	CHECK POWER WINDOW MAIN SWITCH OUTPUT SIGNAL

With CONSULT-II

1. Turn ignition switch to ON position.
2. Turn power window main switch to ON (UP or DOWN).
3. Check signal between power window main switch harness connector D6 terminal 14 (BR) and ground when power window is in open or close operation. (Use "SIMPLE OSCILLOSCOPE" in "SUB MODE" with CONSULT-II.)



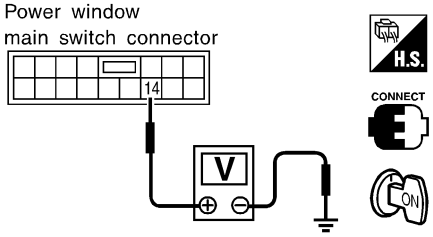


Voltage:
12V → 9V (10 sec.) measurement by analog circuit tester.

SEL689YB

Without CONSULT-II

1. Turn ignition switch to ON position.
2. Turn power window main switch to ON (UP or DOWN).
3. Check signal between power window main switch harness connector D6 terminal 14 (BR) and ground when power window is in open or close operation.



Voltage:
12V → 9V (10 sec.) measurement by analog circuit tester.

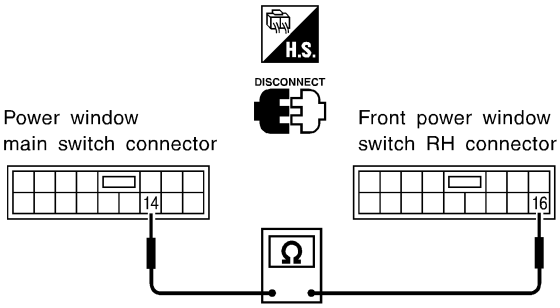
SEL690YB

OK or NG

OK	▶	GO TO 2.
NG	▶	Replace power window main switch.

2	CHECK SIGNAL CIRCUIT

1. Check continuity between power window switch harness connector D6 terminal 14 (BR) and front power window switch RH harness connector D44 terminal 16 (Y).



Continuity should exist.

SEL691YB

Yes or No

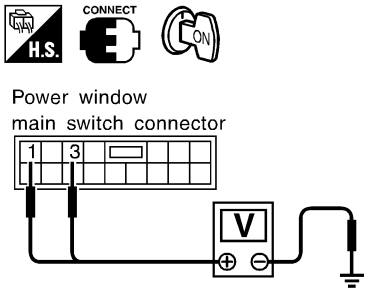
Yes	▶	INSPECTION END
No	▶	Repair harness or connectors.

Rear LH Side Window Operation

=NAEL0383S0202

1 CHECK POWER WINDOW MAIN SWITCH OUTPUT SIGNAL

1. Turn ignition switch to ON position.
2. Check voltage between power window main switch harness connector D6 terminal 1 (R/B) or 3 (G/W) and ground when rear power window LH side is in open or close operation.



Terminals		Main switch condition	
(+)	(–)	Open	Close
1	Ground	0V	12V
3	Ground	0V	12V

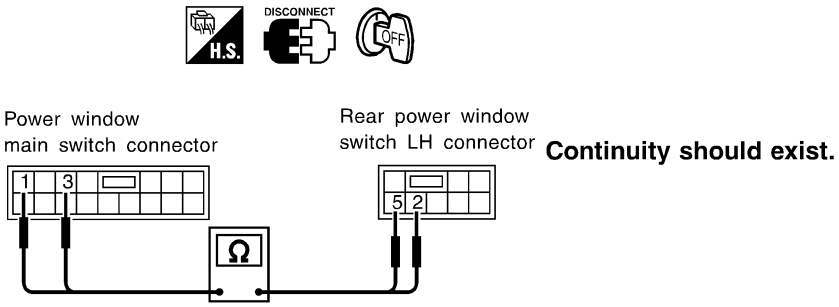
SEL692YA

OK or NG

OK	▶	GO TO 2.
NG	▶	Replace power window main switch.

2 CHECK SIGNAL CIRCUIT

1. Turn ignition switch to OFF position.
2. Disconnect power window main switch connector and rear power window switch LH connector.
3. Check continuity between power window main switch harness connector D6 terminal 3 (G/W) and rear power window switch LH harness connector D52 terminal 2 (B/W).
4. Check continuity between power window main switch harness connector D6 terminal 1 (R/B) and rear power window switch LH harness connector D52 terminal 5 (W/B).



Continuity should exist.

SEL796YA

Yes or No

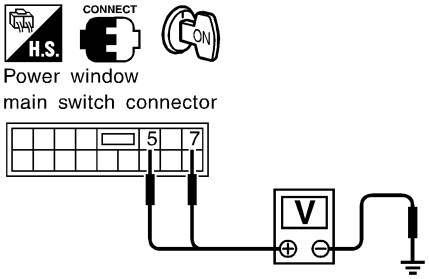
Yes	▶	INSPECTION END
No	▶	Repair harness or connectors.

Rear RH Side Window Operation

=NAEL0383S0203

1 CHECK POWER WINDOW MAIN SWITCH OUTPUT

1. Turn ignition switch to ON position.
2. Check voltage between power window main switch harness connector D6 terminal 5 (B/W) or 7 (W/B) and ground when rear power window RH side is in open or close operation.



Terminals		Main switch condition	
(+)	(–)	Open	Close
5	Ground	0V	12V
7	Ground	0V	12V

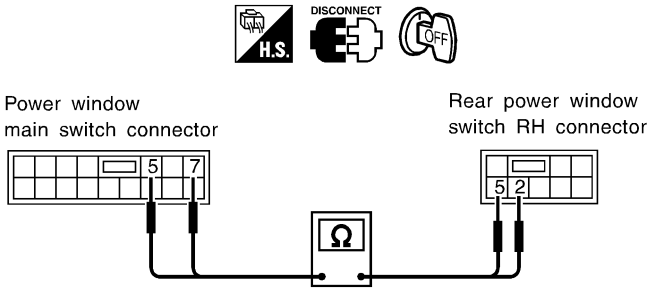
SEL694YA

OK or NG

OK	▶	GO TO 2.
NG	▶	Replace power window main switch.

2 CHECK SIGNAL CIRCUIT

1. Turn ignition switch to OFF position.
2. Disconnect power window main switch connector and rear power window switch RH connector.
3. Check continuity between power window main switch harness connector D6 terminal 7 (W/B) and rear power window switch RH harness connector D72 terminal 5 (W/B).
4. Check continuity between power window main switch harness connector D6 terminal 5 (B/W) and rear power window switch RH harness connector D72 terminal 2 (B/W).



Continuity should exist.

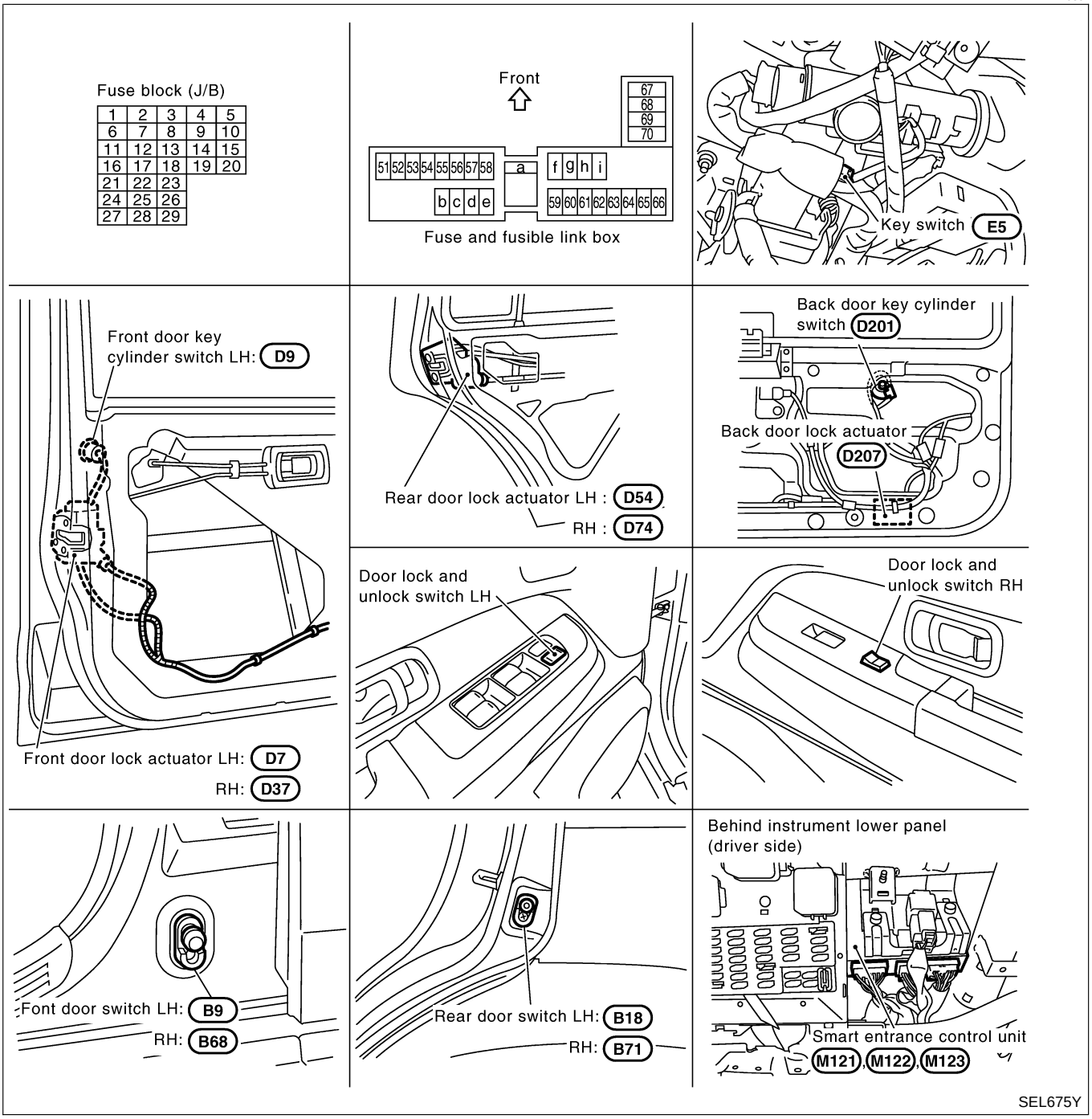
SEL795YA

Yes or No

Yes	▶	INSPECTION END
No	▶	Repair harness or connectors.

Component Parts and Harness Connector Location

NAEL0384



SEL675Y

System Description

NAEL0385

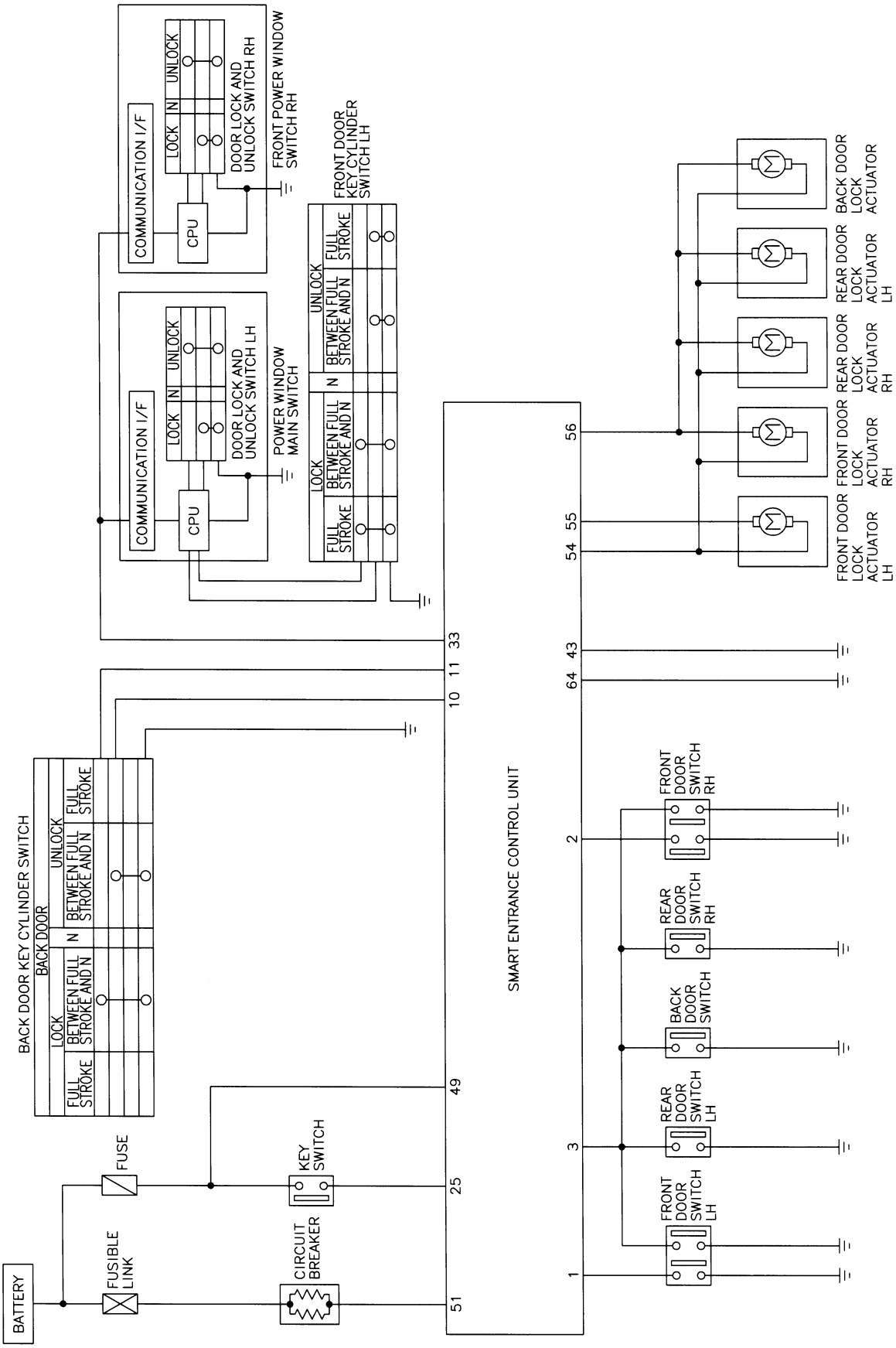
OPERATION

NAEL0385S01

- 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 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

NAEL0386



MEL431P

Wiring Diagram — D/LOCK —

NAEL0387

FIG. 1

NAEL0387S01

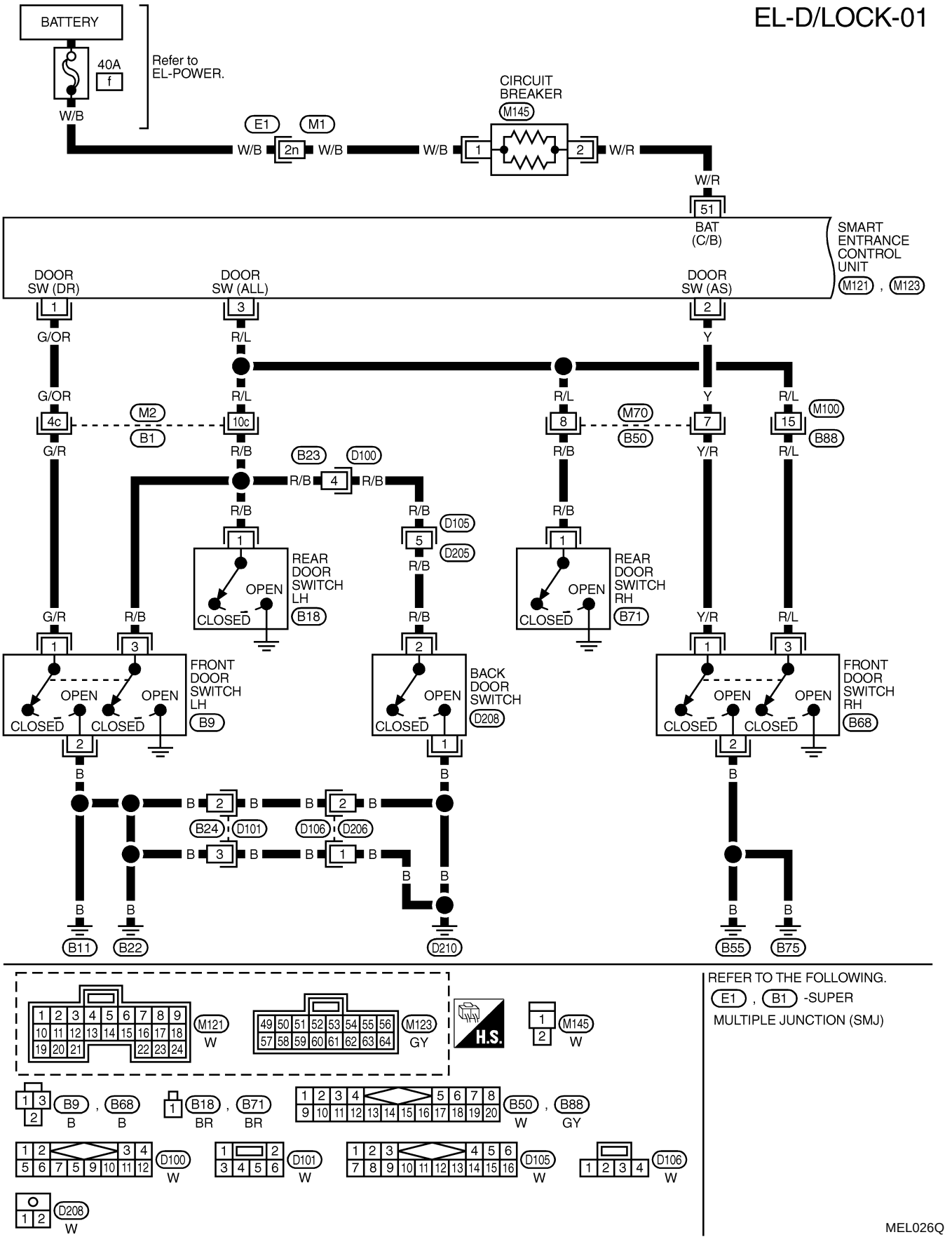
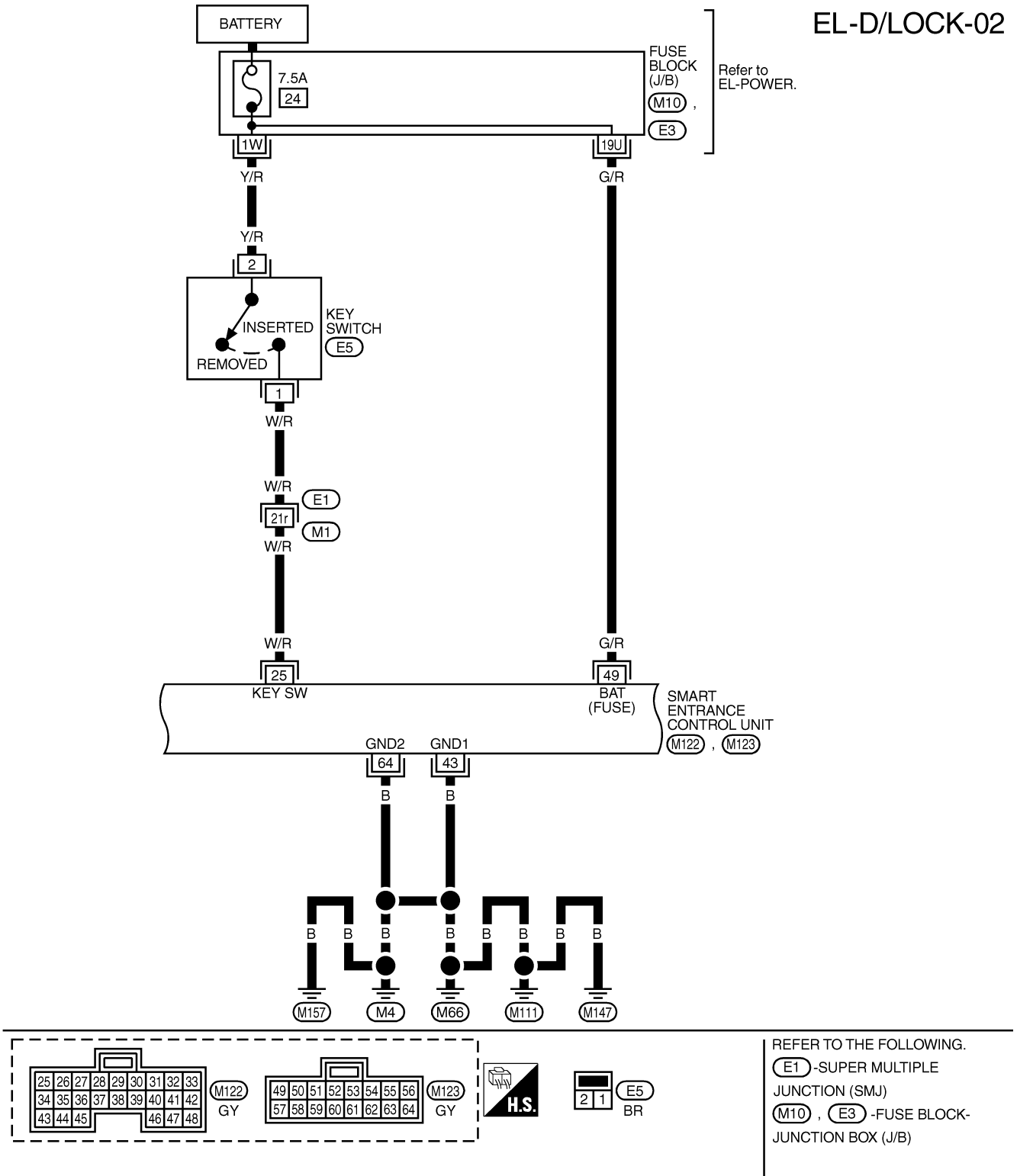


FIG. 2

NAEL0387S02



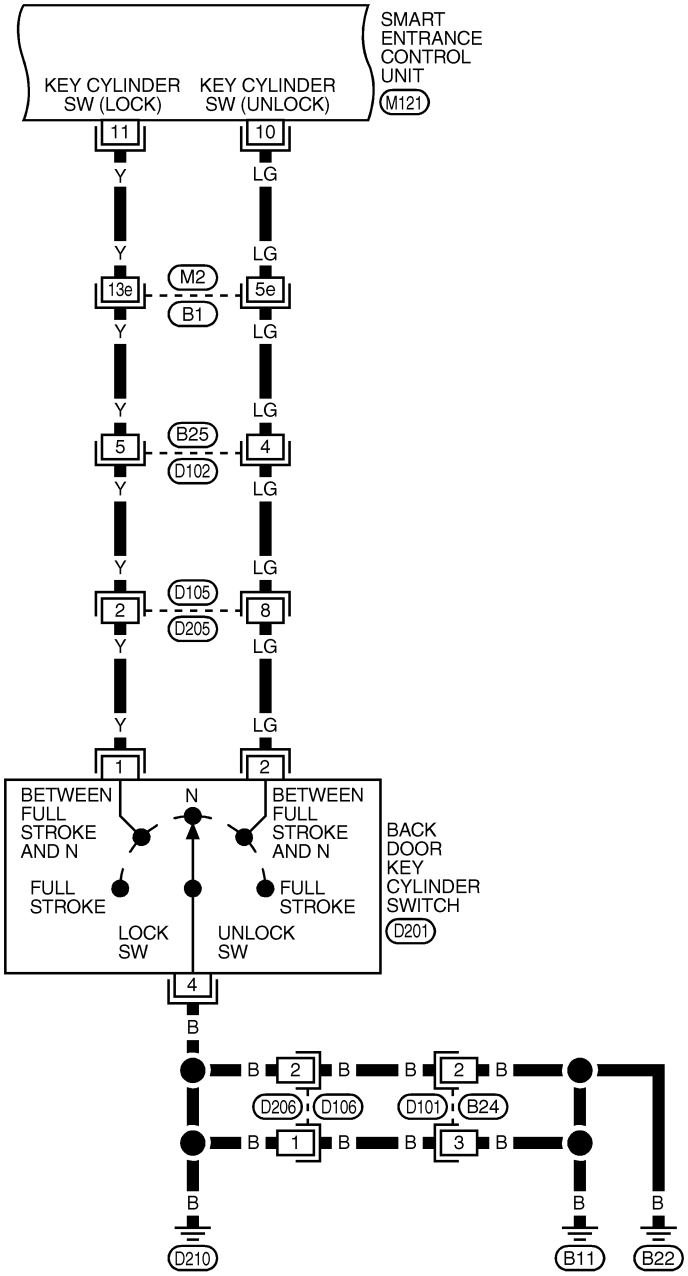
REFER TO THE FOLLOWING.
E1 -SUPER MULTIPLE JUNCTION (SMJ)
M10 , E3 -FUSE BLOCK-JUNCTION BOX (J/B)

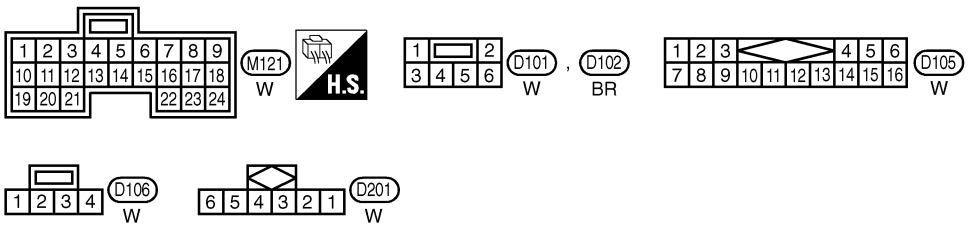
MEL027Q

FIG. 3

NAEL0387S03

EL-D/LOCK-03





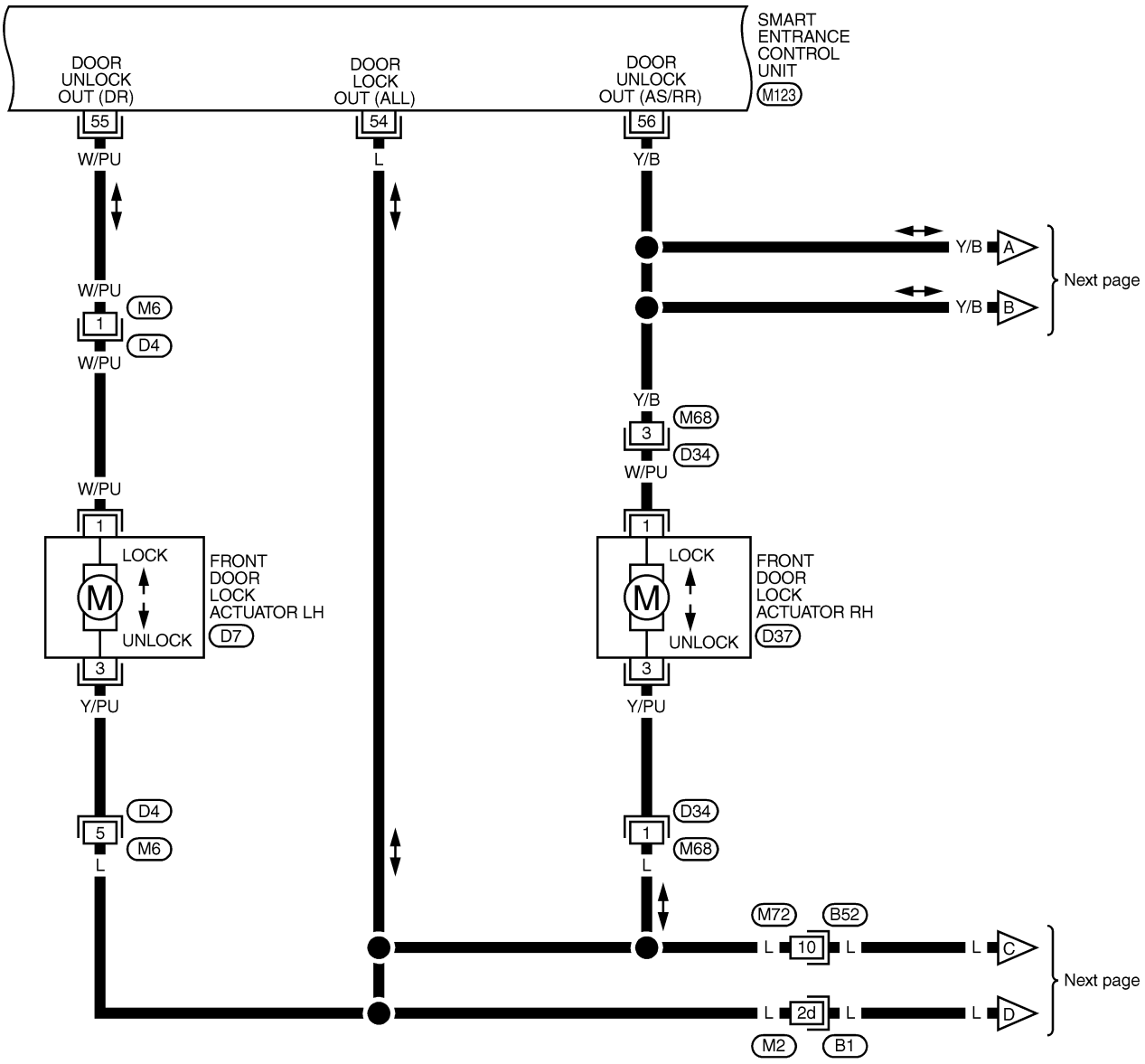
REFER TO THE FOLLOWING.
(B1) - SUPER MULTIPLE JUNCTION (SMJ)

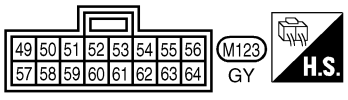
MEL028Q

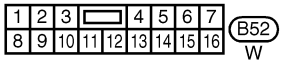
FIG. 4

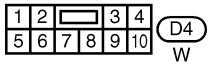
NAEL0387S04

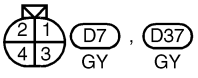
EL-D/LOCK-04

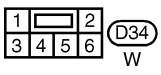












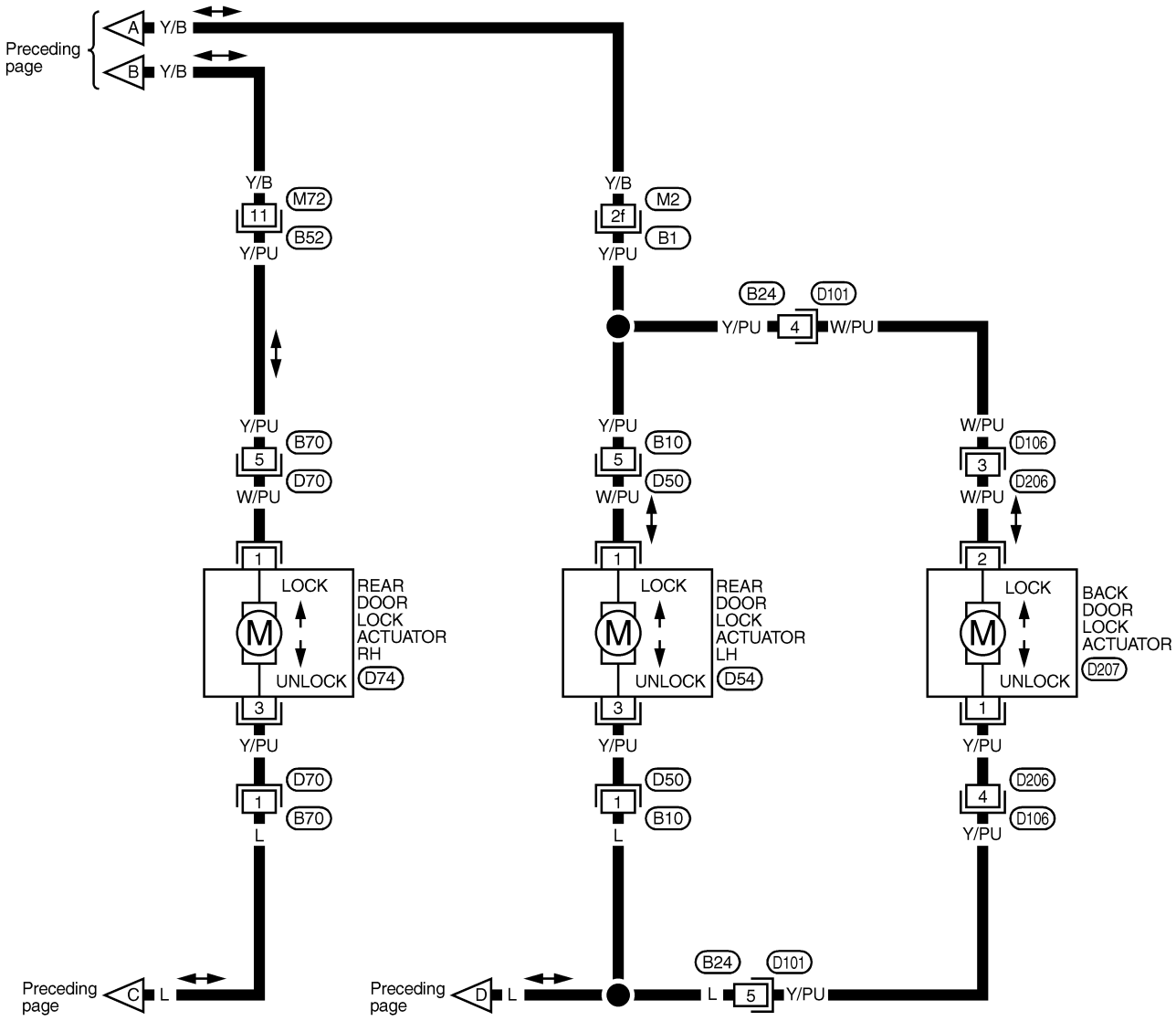
REFER TO THE FOLLOWING.
B1 - SUPER MULTIPLE JUNCTION (SMJ)

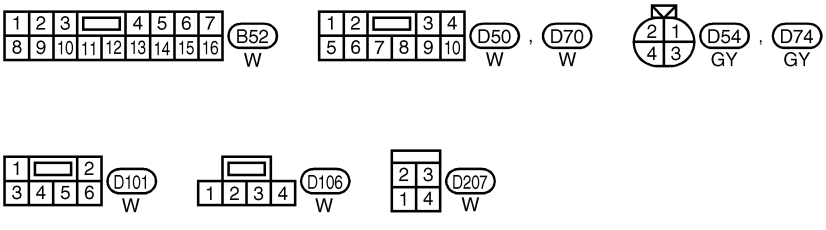
MEL434P

FIG. 5

NAEL0387S05

EL-D/LOCK-05





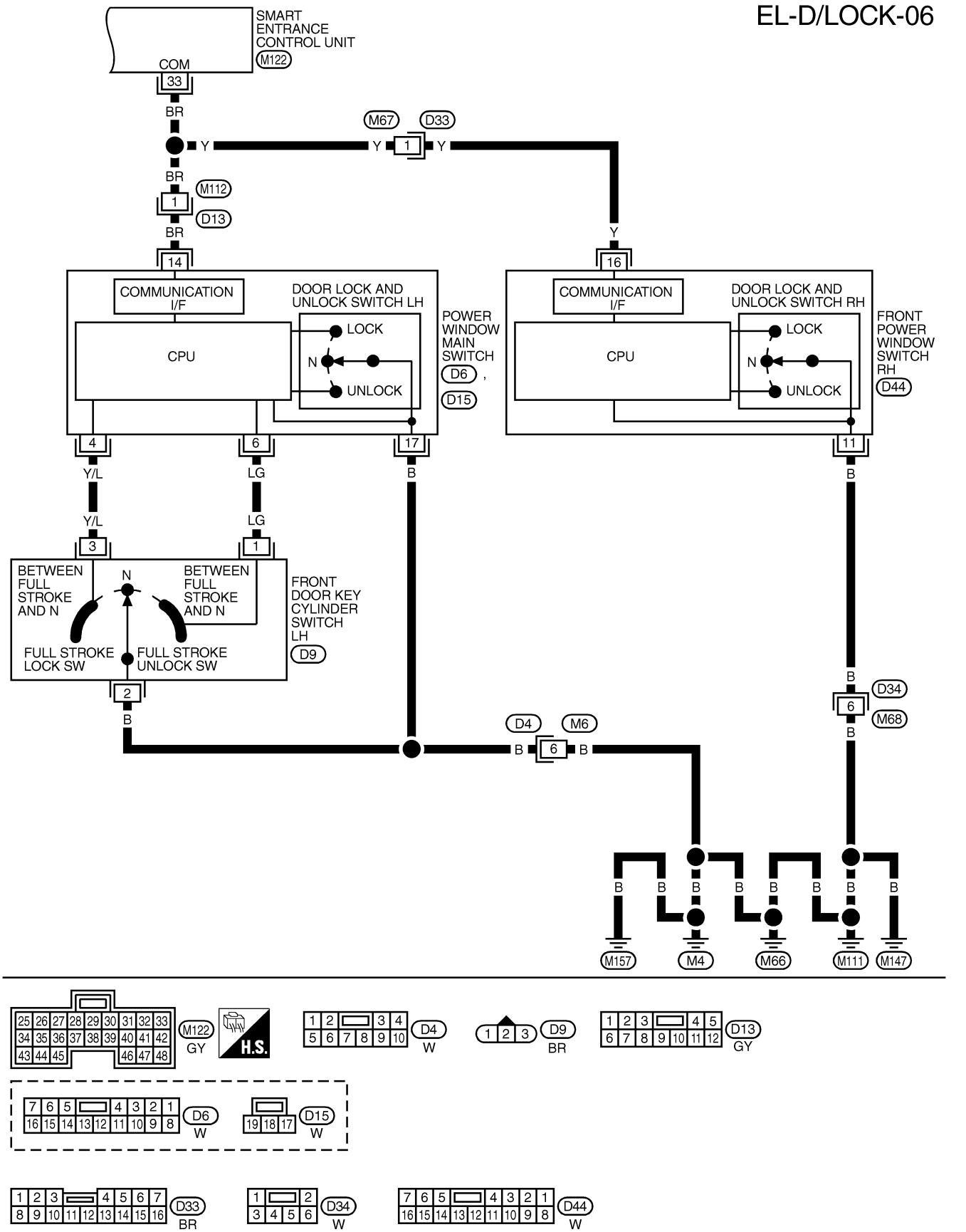
REFER TO THE FOLLOWING.
(B1) - SUPER MULTIPLE JUNCTION (SMJ)

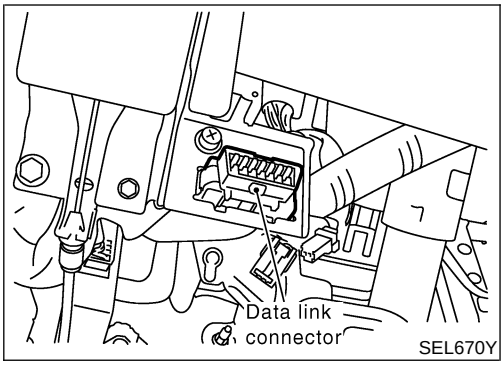
MEL852L

Wiring Diagram — D/LOCK — (Cont'd)

FIG. 6

NAEL0387S06





SEL670Y

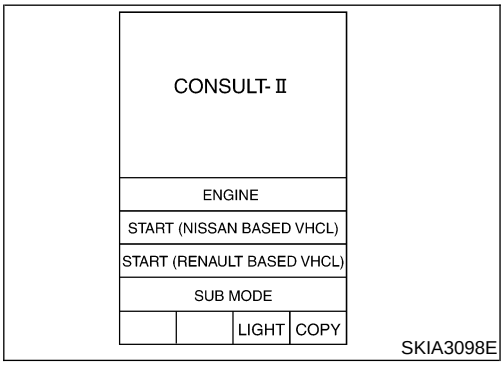
CONSULT-II Inspection Procedure

=NAEL0388

“DOOR LOCK”

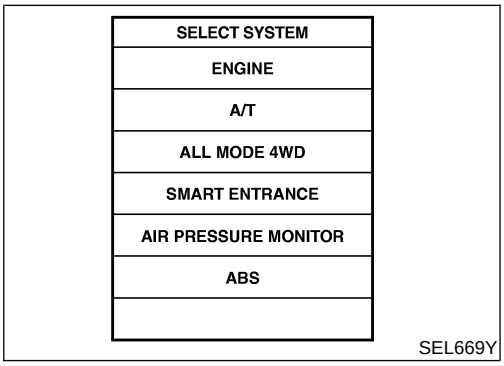
NAEL0388S01

1. Turn ignition switch “OFF”.
2. Connect “CONSULT-II” and “CONSULT-II CONVERTER” to the data link connector.



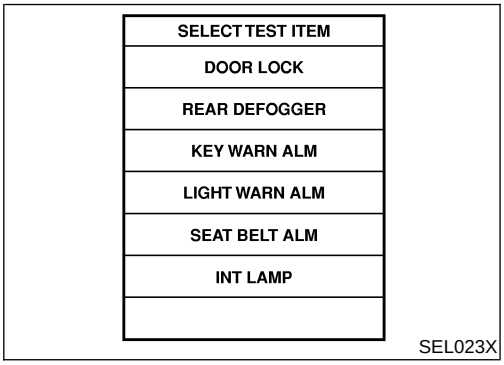
SKIA3098E

3. Turn ignition switch “ON”.
4. Turn “START (NISSAN BASED VHCL)”.



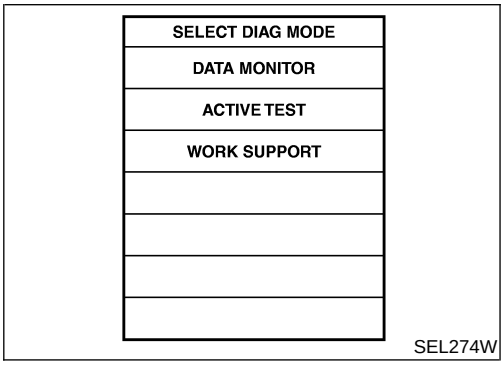
SEL669Y

5. Touch “SMART ENTRANCE”.
   If “SMART ENTRANCE” is not indicated, go to GI-42, “CONSULT-II Data Link Connector (DLC) Circuit”.



SEL023X

6. Touch “DOOR LOCK”.



SEL274W

7. Select diagnosis mode.
   “DATA MONITOR”, “ACTIVE TEST” and “WORK SUPPORT” are available.

CONSULT-II Application Items

NAEL0389

"DOOR LOCK"

NAEL0389S01

Data Monitor

NAEL0389S0101

Monitored Item	Description
KEY ON SW	Indicates [ON/OFF] condition of key switch.
LOCK SW DR/AS	Indicates [ON/OFF] condition of lock signal from lock/unlock switch LH and RH.
DOOR SW-RR	Indicates [ON/OFF] condition of door switch (Rear).
UNLK SW DR/AS	Indicates [ON/OFF] condition of unlock signal from lock/unlock switch LH and RH.
KEY CYL LK-SW	Indicates [ON/OFF] condition of lock signal from key cylinder.
KEY CYL UN-SW	Indicates [ON/OFF] condition of unlock signal from key cylinder.
LK BUTTON/SIG	Indicates [ON/OFF] condition of lock signal from keyfob.
UN BUTTON/SIG	Indicates [ON/OFF] condition of unlock signal from keyfob.
IGN ON SW	Indicates [ON/OFF] condition of ignition switch.
DOOR SW-DR	Indicates [ON/OFF] condition of front door switch LH.
DOOR SW-AS	Indicates [ON/OFF] condition of front door switch RH.

Active Test

NAEL0389S0102

Test Item	Description
ALL D/LK MTR	This test is able to check all door lock actuators lock operation. These actuators lock when "ON" on CONSULT-II screen is touched.
DR D/UN MTR	This test is able to check front door lock actuator LH unlock operation. The actuator unlocks when "ON" on CONSULT-II screen is touched.
NON DR D/UN	This test is able to check door lock actuators (except front door lock actuator LH) unlock operation. These actuators unlock when "ON" on CONSULT-II screen is touched.

Work Support

NAEL0389S0103

Work Item	Description
DOOR LOCK-UNLOCK SET	Select unlock mode can be changed in this mode. Selects ON-OFF of select unlock mode. ● MODE 1 (ON)/MODE 2 (OFF)
ANTI-LOCK OUT SET	Key reminder door mode can be changed in this mode. Selects ON-OFF of key reminder door mode. ● MODE 1 (ON)/MODE 2 (OFF)

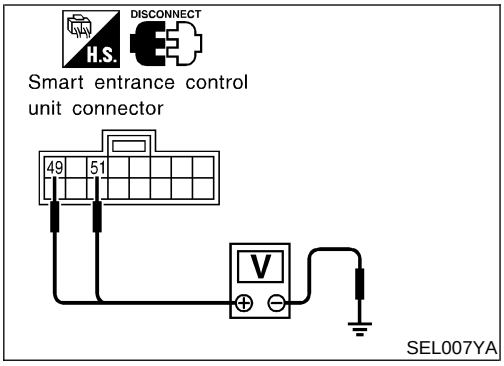
Trouble Diagnoses

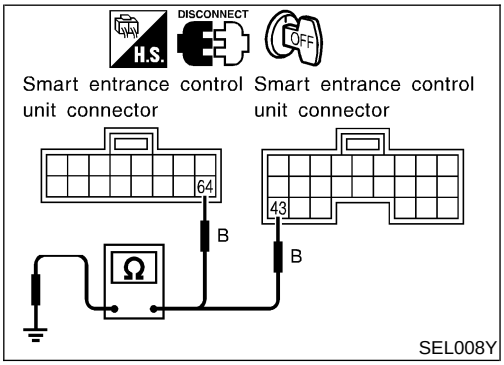
SYMPTOM CHART

NAEL0390

NAEL0390S01

REFERENCE PAGE (EL-)	302	303	305	306	307	309	311
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

=NAEL0390S02

Main Power Supply Circuit Check

NAEL0390S0201

Terminals			Ignition switch		
(+)		(–)	OFF	ACC	ON
Connector	Terminal (Wire color)				
M123	49 (G/R)	Ground	Battery voltage	Battery voltage	Battery voltage
	51 (W/R)				

Ground Circuit Check

NAEL0390S0202

Terminals			Continuity
(+)		(–)	
Connector	Terminal (Wire color)		
M122	43 (B)	Ground	Yes
M123	64 (B)		

DOOR SWITCH CHECK

=NAEL0390S03

1 **CHECK DOOR SWITCH INPUT SIGNAL**

With CONSULT-II

Check door switches ("DOOR SW-DR", "DOOR SW-AS", "DOOR SW-RR") in "DATA MONITOR" mode with CONSULT-II.

DATA MONITOR	
MONITOR	
DOOR SW-RR	OFF
DOOR SW-DR	OFF
DOOR SW-AS	OFF

When any doors are open:
DOOR SW-DR ON
DOOR SW-AS ON
DOOR SW-RR ON

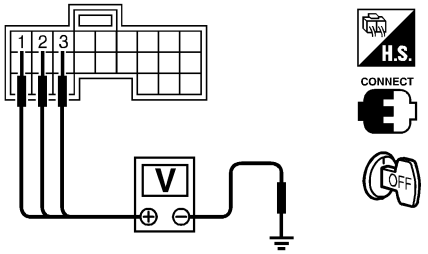
When any doors are closed:
DOOR SW-DR OFF
DOOR SW-AS OFF
DOOR SW-RR OFF

SEL009Y

Without CONSULT-II

Check voltage between smart entrance control unit harness connector M121 terminals 1 (G/OR), 2 (Y) or 3 (R/L) and ground.

Smart entrance control unit connector



	Terminals (+)	Terminals (–)	Condition	Voltage [V]
Front LH door switch	1	Ground	Open	0
			Closed	Approx. 5
Front RH door switch	2	Ground	Open	0
			Closed	Approx. 5
Rear door switches	3	Ground	Open	0
			Closed	Approx. 5

SEL010Y

Refer to wiring diagram in EL-293.

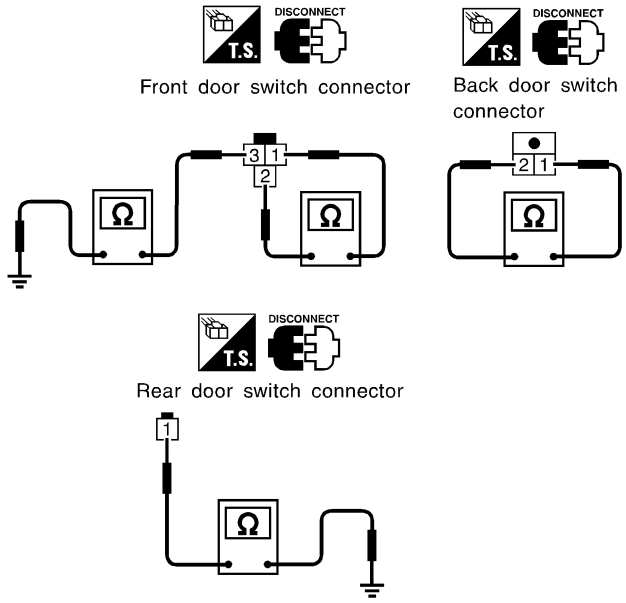
OK or NG

OK	▶	Door switch is OK.
NG	▶	GO TO 2.

2	CHECK DOOR SWITCH

1. Disconnect door switch connector.
2. Check the following.

- Continuity between front door switch connector B9 (LH) or B68 (RH) terminals 1 and 2
- Continuity between front door switch connector B9 (LH) or B68 (RH) terminal 3 and ground
- Continuity between back door switch connector D208 terminals 1 and 2
- Continuity between rear door switch connector B18 (LH) or B71 (RH) terminal 1 and ground



	Terminals	Condition	Continuity
Front door switches	1 - 2	Closed	No
	3 - Ground	Open	Yes
Back door switch	1 - 2	Closed	No
		Open	Yes
Rear door switches	1 - Ground	Closed	No
		Open	Yes

SEL287YA

OK or NG

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

KEY SWITCH (INSERT) CHECK

=NAEL0390S04

1	CHECK KEY SWITCH INPUT SIGNAL

With CONSULT-II

Check key switch ("KEY ON SW") in "DATA MONITOR" mode with CONSULT-II.

DATA MONITOR	
MONITOR	
KEY ON SW	ON

When key is inserted to ignition key cylinder:

KEY ON SW ON

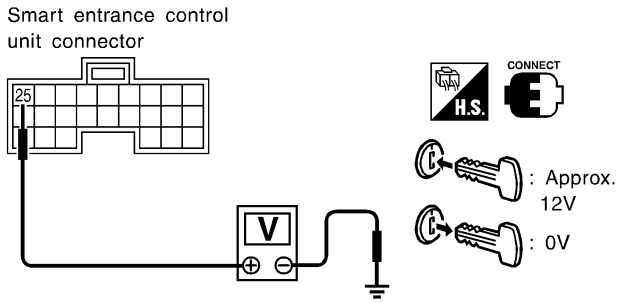
When key is removed from ignition key cylinder:

KEY ON SW OFF

SEL315W

Without CONSULT-II

Check voltage between smart entrance control unit harness connector M122 terminal 25 (W/R) and ground.



Voltage [V]:

Condition of key switch: Key is inserted.

Approx. 12

Condition of key switch: Key is removed.

0

SEL011Y

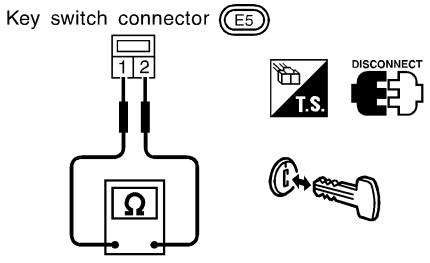
Refer to wiring diagram in EL-294.

OK or NG

OK	▶	Key switch is OK.
NG	▶	GO TO 2.

2	CHECK KEY SWITCH (INSERT)

Check continuity between key switch connector 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

=NAEL0390S05

1 CHECK DOOR LOCK/UNLOCK SWITCH INPUT SIGNAL

With CONSULT-II

Check door lock/unlock switch ("LOCK SW DR/AS"/"UNLK SW DR/AS") in "DATA MONITOR" mode with CONSULT-II.

DATA MONITOR	
MONITOR	
LOCK SW DR/AS	OFF
UNLK SW DR/AS	OFF

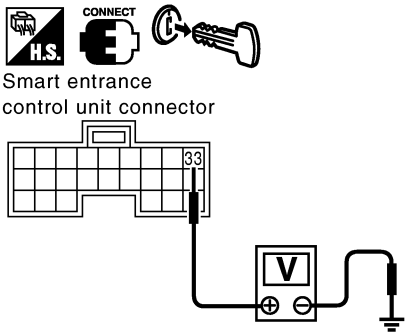
When lock/unlock switch is turned to LOCK:
LOCK SW DR/AS ON

When lock/unlock switch is turned to UNLOCK:
UNLK SW DR/AS ON

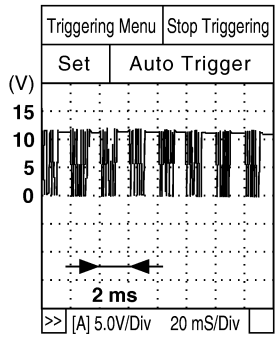
SEL341W

Without CONSULT-II

1. Remove key from ignition key cylinder.
2. Check the signal between smart entrance control unit harness connector M122 terminal 33 (BR) and ground with oscilloscope when door lock/unlock switch is turned "LOCK" or "UNLOCK".
3. Make sure signals which are shown in the figure below can be detected during 10 sec. just after door lock/unlock switch is turned "LOCK" or "UNLOCK".



Smart entrance control unit connector



Voltage:
12V → 9V (10 sec.) measurement by analog circuit tester.

SEL699YA

Refer to wiring diagram in EL-298.

OK or NG

OK	▶	Door lock/unlock switch is OK.
NG	▶	**Check the following.** ● Ground circuit for each front power window switch ● Harness for open or short between each front power window switch and smart entrance control unit connector If above systems are normal, replace the front power window switch.

FRONT DOOR KEY CYLINDER SWITCH CHECK

=NAEL0390S06

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

With CONSULT-II

Check front door key cylinder switch ("KEY CYL LK-SW"/"KEY CYL UN-SW") in "DATA MONITOR" mode with CONSULT-II.

DATA MONITOR	
MONITOR	
KEY CYL LK-SW	OFF
KEY CYL UN-SW	OFF

When key inserted in front door key cylinder is turned to LOCK:

KEY CYL LK-SW ON

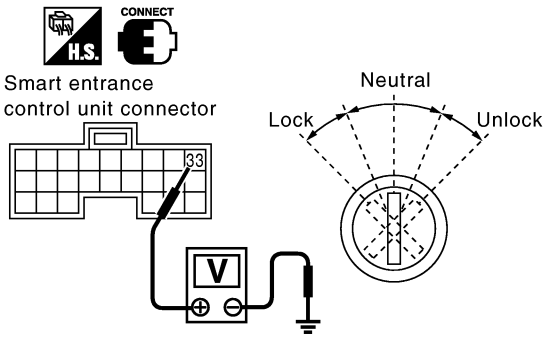
When key inserted in front door key cylinder is turned to UNLOCK:

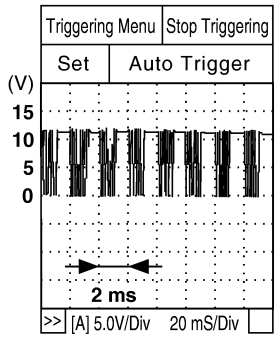
KEY CYL UN-SW ON

SEL342WF

Without CONSULT-II

1. Check the signal between smart entrance control unit harness connector M122 terminal 33 (BR) and ground with oscilloscope when key inserted in front door key cylinder is turned "LOCK" or "UNLOCK".
2. Make sure signals which are shown in the figure below can be detected during 10 sec. just after key is turned "LOCK" or "UNLOCK".





Voltage:
12V → 9V (10 sec.) measurement by analog circuit tester.

SEL700YA

Refer to wiring diagram in EL-298.

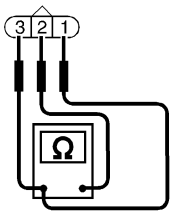
OK or NG

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

2	CHECK FRONT DOOR KEY CYLINDER SWITCH

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

Front 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

SEL313XB

OK or NG

OK	▶	**Check the following.** ● Front door key cylinder switch LH ground circuit ● Harness for open or short between smart entrance control unit and power window main switch ● Harness for open or short between power window main switch and front door key cylinder switch LH
NG	▶	Replace front door key cylinder switch LH.

BACK DOOR KEY CYLINDER SWITCH CHECK

=NAEL0390S07

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

With CONSULT-II

Check back door key cylinder switch ("KEY CYL LK-SW"/"KEY CYL UN-SW") in "DATA MONITOR" mode with CONSULT-II.

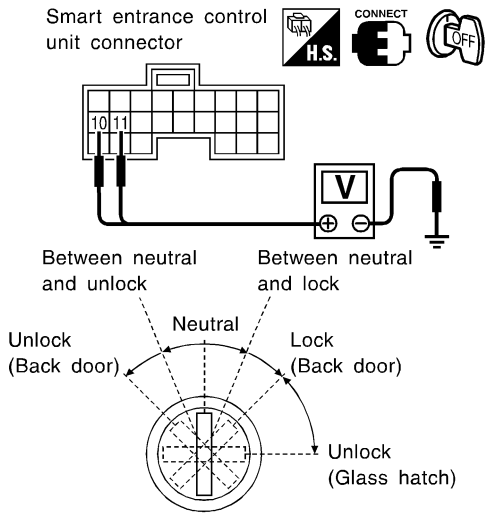
DATA MONITOR	
MONITOR	
KEY CYL LK-SW	OFF
KEY CYL UN-SW	OFF

When key inserted in back door key cylinder is turned to LOCK:
KEY CYL LK-SW ON
When key inserted in back door key cylinder is turned to UNLOCK:
KEY CYL UN-SW ON

SEL342WG

Without CONSULT-II

Check voltage between smart entrance control unit harness connector M121 terminals 10 (LG) or 11 (Y) and ground.



	Terminals (+)	Terminals (−)	Key position	Voltage [V]
Back door	11	Ground	Between neutral and lock	0
			Other positions	Approx. 5
	10	Ground	Between neutral and unlock	0
			Other positions	Approx. 5

SEL286Y

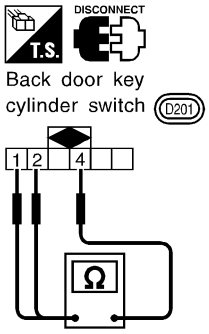
Refer to wiring diagram in EL-295.

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	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.

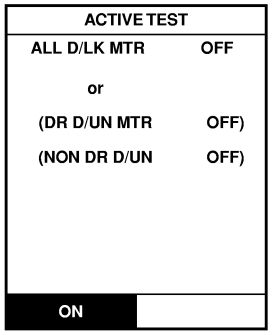
DOOR LOCK ACTUATOR CHECK

=NAEL0390S08

1	CHECK DOOR LOCK ACTUATOR OPERATION

With CONSULT-II

1. Select "ACTIVE TEST" in "DOOR LOCK" with CONSULT-II.
2. Select "ALL D/LK MTR" and touch "ON".
3. Then, select "DR D/UN MTR" and touch "ON".
4. Select "NON DR D/UN" and touch "ON".



Door lock motor should operate.

SEL343W

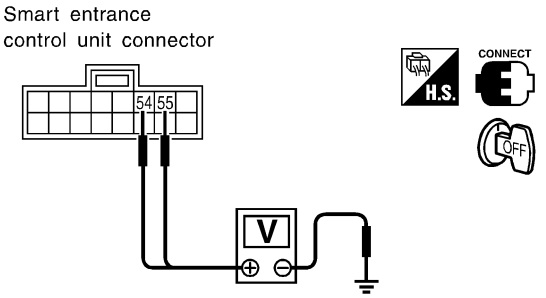
NOTE:
If CONSULT-II is not available, skip this procedure and go to the next step.

OK or NG

OK	▶	Door lock actuator is OK.
NG	▶	GO TO 2.

2	CHECK DOOR LOCK ACTUATOR CIRCUIT

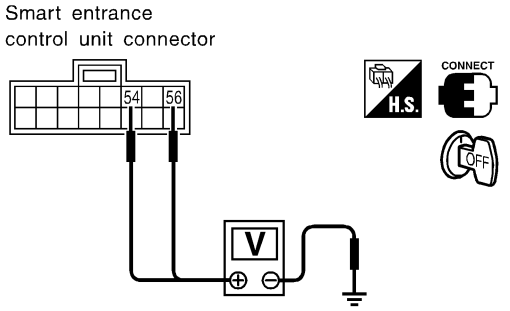
- Door lock actuator front LH
  Check voltage between smart entrance control unit harness connector M123 terminal 54 (L), 55 (W/PU) and ground.



Door lock/unlock switch condition	Terminal No. (+)	Terminal No. (–)	Voltage V
Lock	54	Ground	Approx. 12
Unlock	55	Ground	

SEL014Y

- Door lock actuator front RH and rear
  Chcek voltage between smart entrance control unit harness connector M123 terminal 54 (L), 56 (Y/B) and ground.



Door lock/unlock switch condition	Terminal No. (+)	Terminal No. (–)	Voltage V
Lock	54	Ground	Approx. 12
Unlock	56	Ground	

SEL015Y

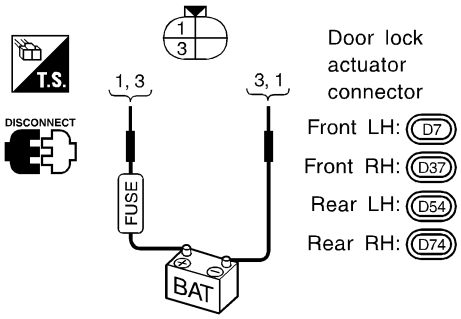
Refer to wiring diagram in EL-296.

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".)

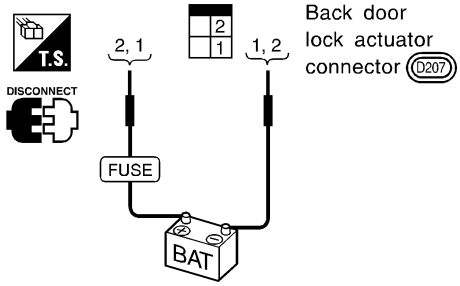
3	CHECK DOOR LOCK ACTUATOR

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

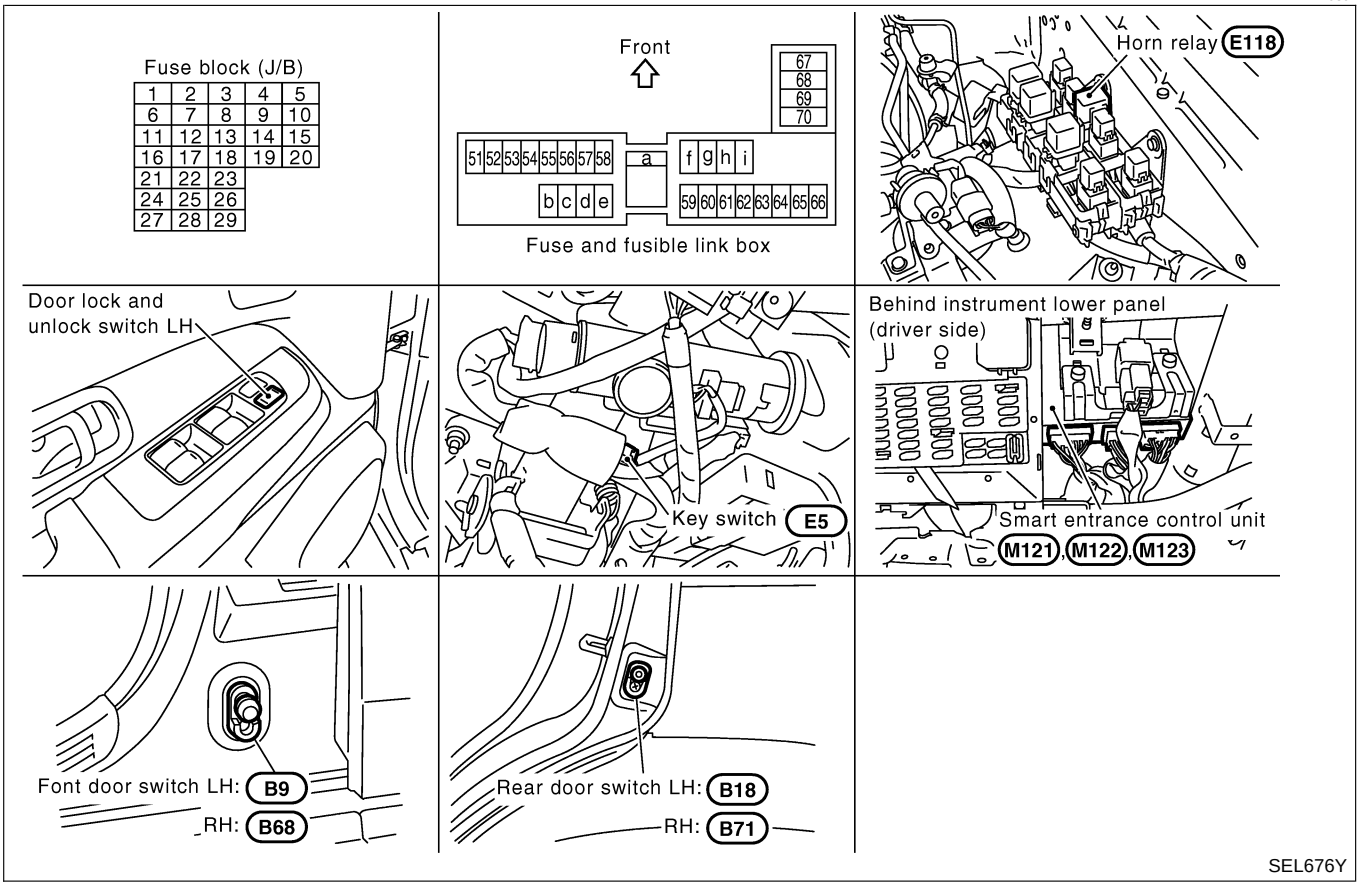
SEL319X

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

NAEL0391



System Description

NAEL0392

INPUTS

NAEL0392S01

Power is supplied at all times

- to smart entrance control unit terminal 49 and
- to key switch terminal 2
- through 7.5A fuse [No. 24, located in the fuse block (J/B)], and
- to smart entrance control unit terminal 51
- through circuit breaker terminals 2 and 1 and
- through 40A fusible link (letter **f**, located in fuse and fusible link box).

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 25.

When the front door switch LH is ON (door is OPEN), ground is supplied

- to smart entrance control unit terminal 1
- 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 ON (door is OPEN), ground is supplied

- to smart entrance control unit terminal 2
- through front door switch RH terminal 1

- to front door switch RH terminal 2
- through body grounds B55 and B75.

When the all doors switches are ON (door is OPEN), ground is supplied

- to smart entrance control unit terminal 3
- through front door switches terminal 3
- to front door switches case grounds, and
- through rear door switches terminal 1
- to rear door switches case grounds, and
- through back door switch terminal 2
- to back door switch terminal 1
- through body grounds B11, B22 and D210.

When lock/unlock switch LH is LOCK/UNLOCK, ground is supplied

- to power window main switch terminal 17
- through body grounds M4, M66, M111, M147 and M157.

Door lock or unlock operation signal is supplied

- through power window main switch terminal 14
- to smart entrance control unit terminal 33.

When lock/unlock switch RH is LOCK/UNLOCK, ground is supplied

- to front power window switch RH terminal 11
- through body grounds M4, M66, M111, M147 and M157.

Door lock or unlock operation signal is supplied

- through power window main switch terminal 14
- to smart entrance control unit terminal 33.

Remote controller signal is inputted to smart entrance control unit (The antenna of the system is combined with smart entrance control unit).
Smart entrance control unit is connected to power window main switch (door lock and unlock switch) and front power window switch RH (door lock and unlock switch) as serial link communication line. Refer to "POWER WINDOW SERIAL LINK" (EL-274).

OPERATION

NAEL0392S02

The remote keyless entry system controls operation of the

- power door lock
- auto door lock
- interior lamp
- panic alarm
- hazard and horn reminder
- power window opener

OPERATED PROCEDURE

NAEL0392S03

Power Door Lock Operation

NAEL0392S0301

Smart entrance control unit receives a LOCK signal from keyfob. Smart entrance control unit locks all doors with input of LOCK signal from keyfob.
When an UNLOCK signal is sent from keyfob once, driver's door will be unlocked.
Then, if an UNLOCK signal is sent from keyfob again within 5 seconds, all other door will be unlocked.
Select unlock mode can be changed by CONSULT-II (EL-324).

Auto Door Lock Operation

NAEL0392S0308

Auto lock function signal is sent for operation when any of the following signals are not sent within 5 minutes after the unlock signal is sent from the keyfob:

- when door switch is turned ON for open.
- when the ignition switch is turned ON.
- when the lock signal is sent from the keyfob.

Auto door lock mode can be changed by CONSULT-II (EL-324).

Hazard and Horn Reminder

NAEL0392S0302

Power is supplied at all times

- to horn relay terminals 1 and 3
- through 7.5A fuse (No. 52, located in the fusible link and fuse box), and
- to horn relay terminal 6
- through 10A fuse (No. 54, located in the fusible link and fuse box)

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

- to horn relay terminal 2
- through smart entrance control unit terminal 42, and
- to smart entrance control unit terminals 47 and 48 from hazard warning lamp system.

Horn relay are now energized, and hazard warning lamp flashes and horn sounds as a reminder.
The hazard and horn reminder has C mode (horn chirp mode) and S mode (non-horn chirp mode).

Operating function of hazard and horn reminder

	Lock		Unlock	
	Hazard warning lamp flash	Horn sound	Hazard warning lamp flash	Horn sound
C MODE	Twice	Once	Once	—
S MODE	Twice	—	—	—
MODE 3	—	—	—	—
MODE 4	Twice	—	Once	—
MODE 5	Twice	Once	—	—
MODE 6	—	Once	Once	—

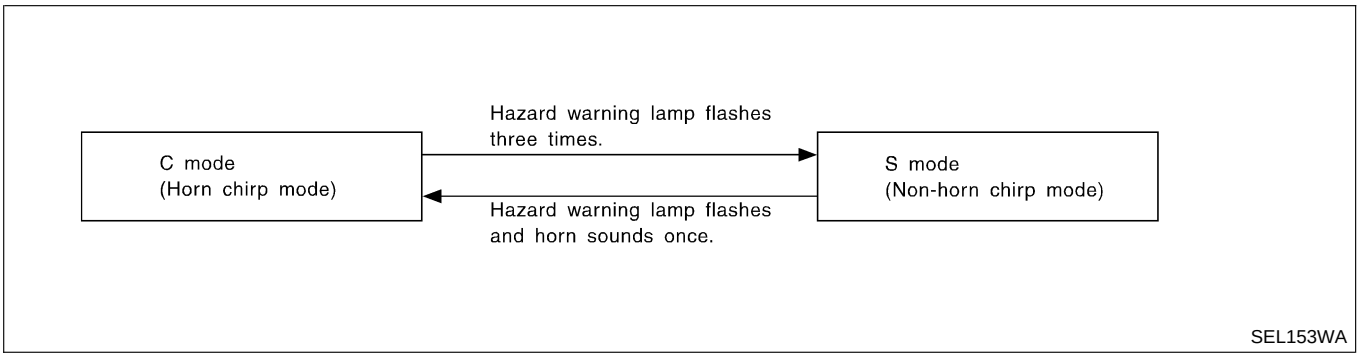
How to change hazard and horn reminder mode

With CONSULT-II

Hazard and horn reminder can be changed by CONSULT-II (EL-324).

Without CONSULT-II

When LOCK and UNLOCK signals are sent from the keyfob 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:



NOTE:
Reminder mode setting cannot be changed without CONSULT-II for MODES 3, 4, 5, and 6. However, C and S MODES can be changed without CONSULT-II.

Interior Lamp Operation

NAEL0392S0303

When the following input signals are both supplied:

- door switch CLOSED (when all the doors are closed);
- driver's door LOCKED;

remote keyless entry system turns on interior lamp and (for 30 seconds) with input of UNLOCK signal from keyfob.
For detailed description, refer to "INTERIOR, STEP, SPOT, VANITY MIRROR AND TRUNK ROOM LAMPS" (EL-98).

Panic Alarm Operation

NAEL0392S0304

When key switch is OFF (when ignition key is not inserted in key cylinder), remote keyless entry system turns horn and headlamp on and off intermittently with input of PANIC ALARM signal from keyfob.
The alarm automatically turns off after 25 seconds or when smart entrance control unit receives any signal from keyfob.
For detailed description, refer to "VEHICLE SECURITY SYSTEM" (EL-347).
The panic alarm button's pressing time on keyfob can be changed with CONSULT-II (EL-324).

Power Window Opener Operation

NAEL0392S0307

The front power windows open when the unlock button on keyfob is activated and kept pressed for more than 3 seconds with the ignition key OFF. The windows keep opening if the unlock button is continuously pressed. The power window opening stops when the following operations are carried out:

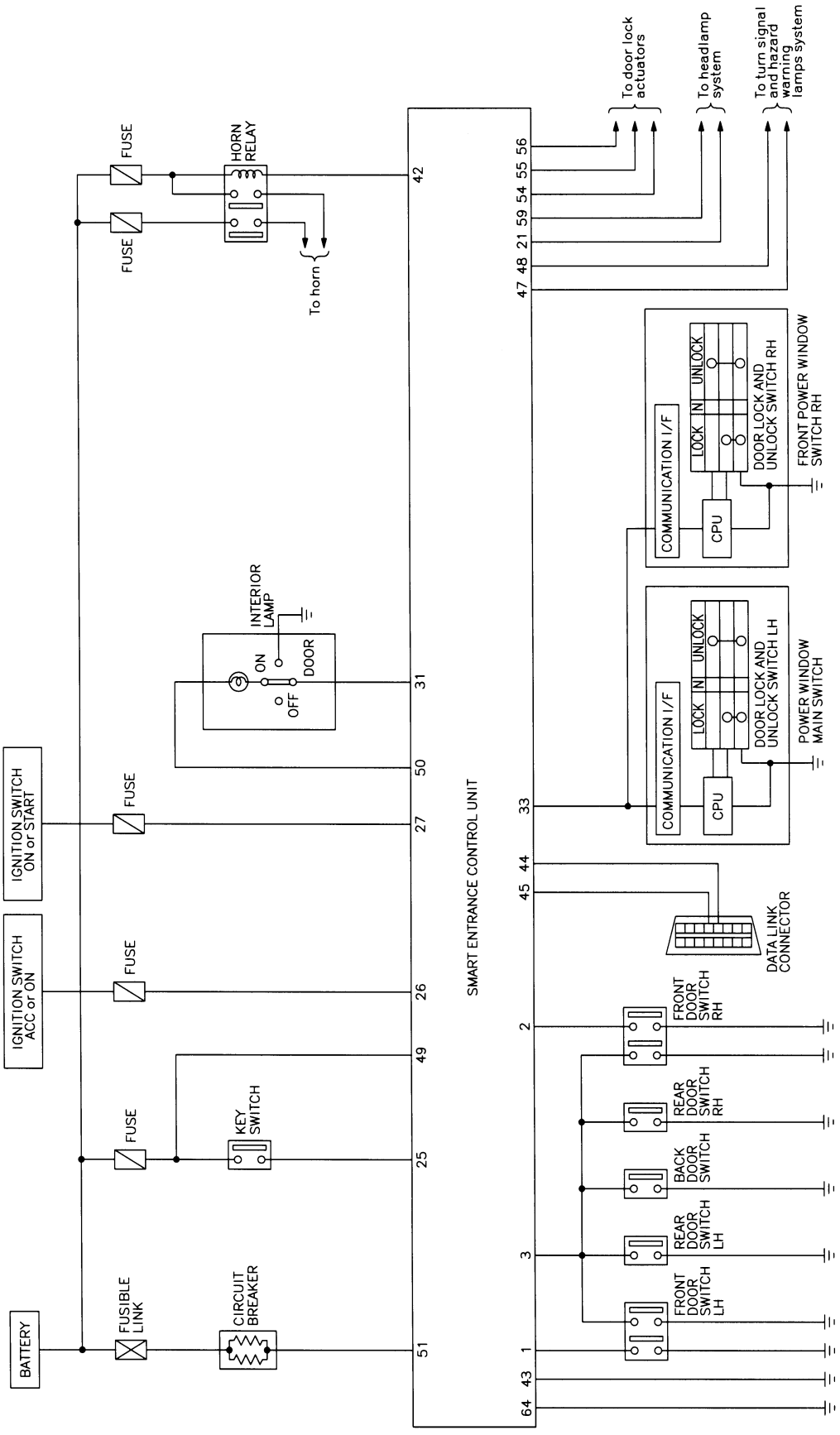
- When the unlock button is kept pressed more than 15 seconds.
- When the ignition switch is turned ON while the power window opening is operated.
- When the unlock button is released.

The unlock button's pressing time can be changed with CONSULT-II (EL-324).
Door Lock/Unlock and front power window down signal is sent from smart entrance control unit to power window main switch with power window serial link communication link. Refer to "POWER WINDOW SERIAL LINK" (EL-274). Signals are supplied

- through smart entrance control unit terminal 33
- to power window main switch terminal 14 and
- to front power window switch RH terminal 16.

Schematic

NAEL0393



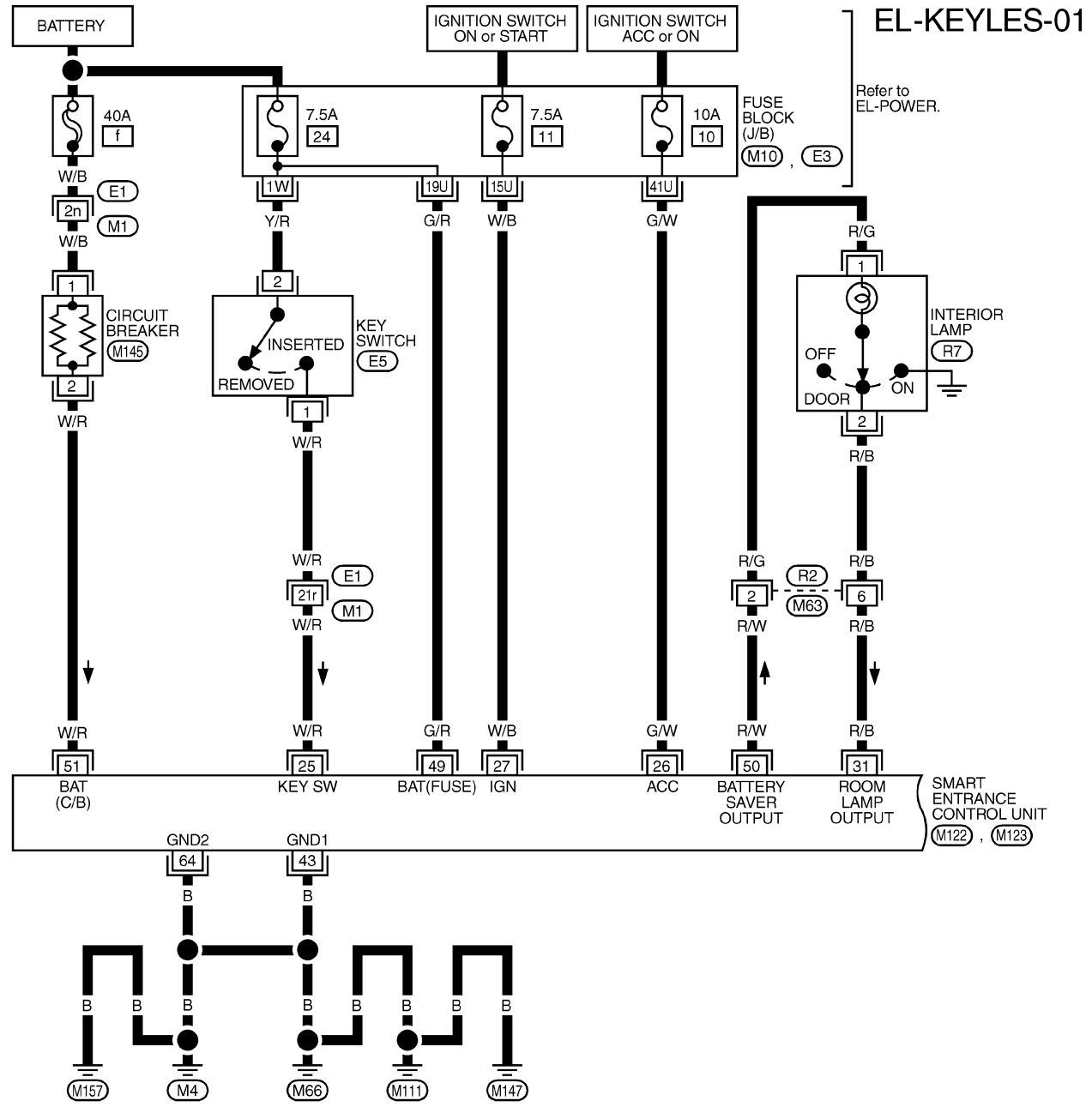
MEL433O

Wiring Diagram — KEYLESS —

NAEL0394

FIG. 1

NAEL0394S01



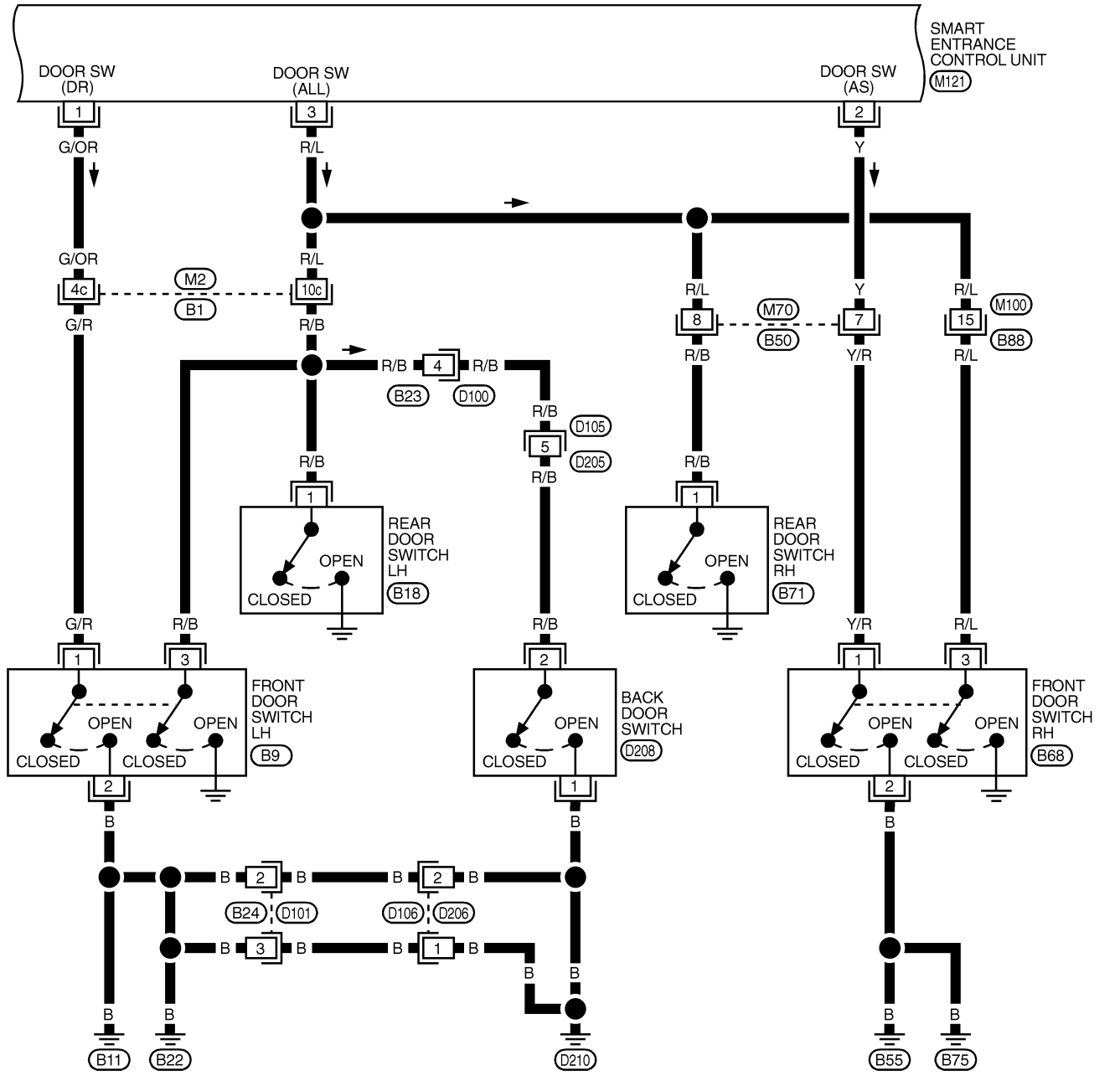
REFER TO THE FOLLOWING.
E1 - SUPER MULTIPLE JUNCTION (SMJ)
M10 , E3 - FUSE BLOCK - JUNCTION BOX (J/B)

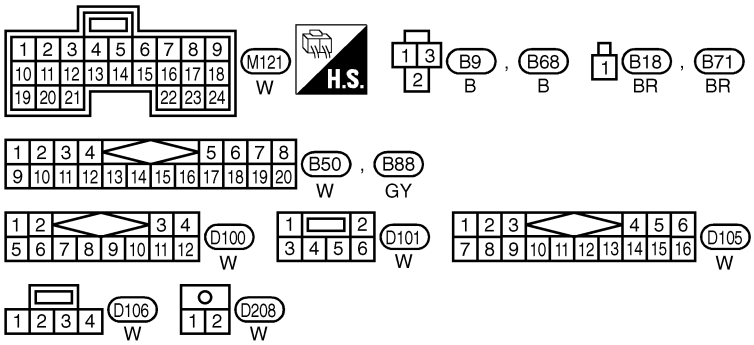
MEL956R

FIG. 2

NAEL0394S02

EL-KEYLES-02





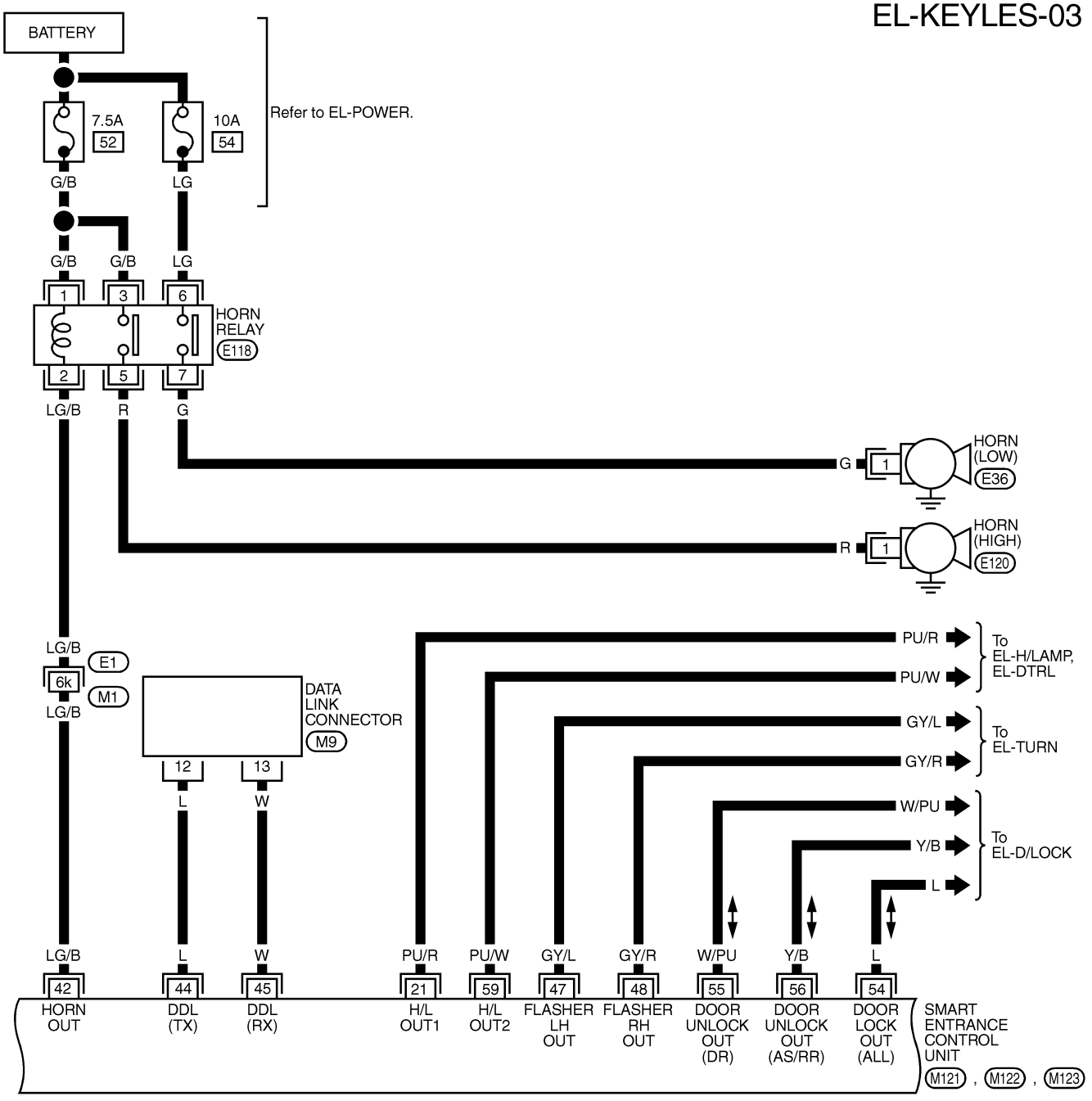
REFER TO THE FOLLOWING.
B1 -SUPER MULTIPLE JUNCTION (SMJ)

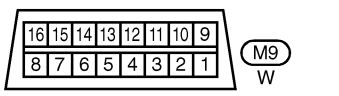
MEL031Q

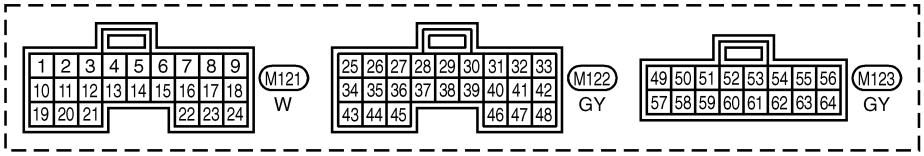
FIG. 3

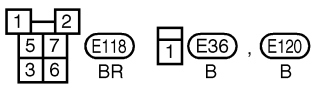
NAEL0394S03

EL-KEYLES-03









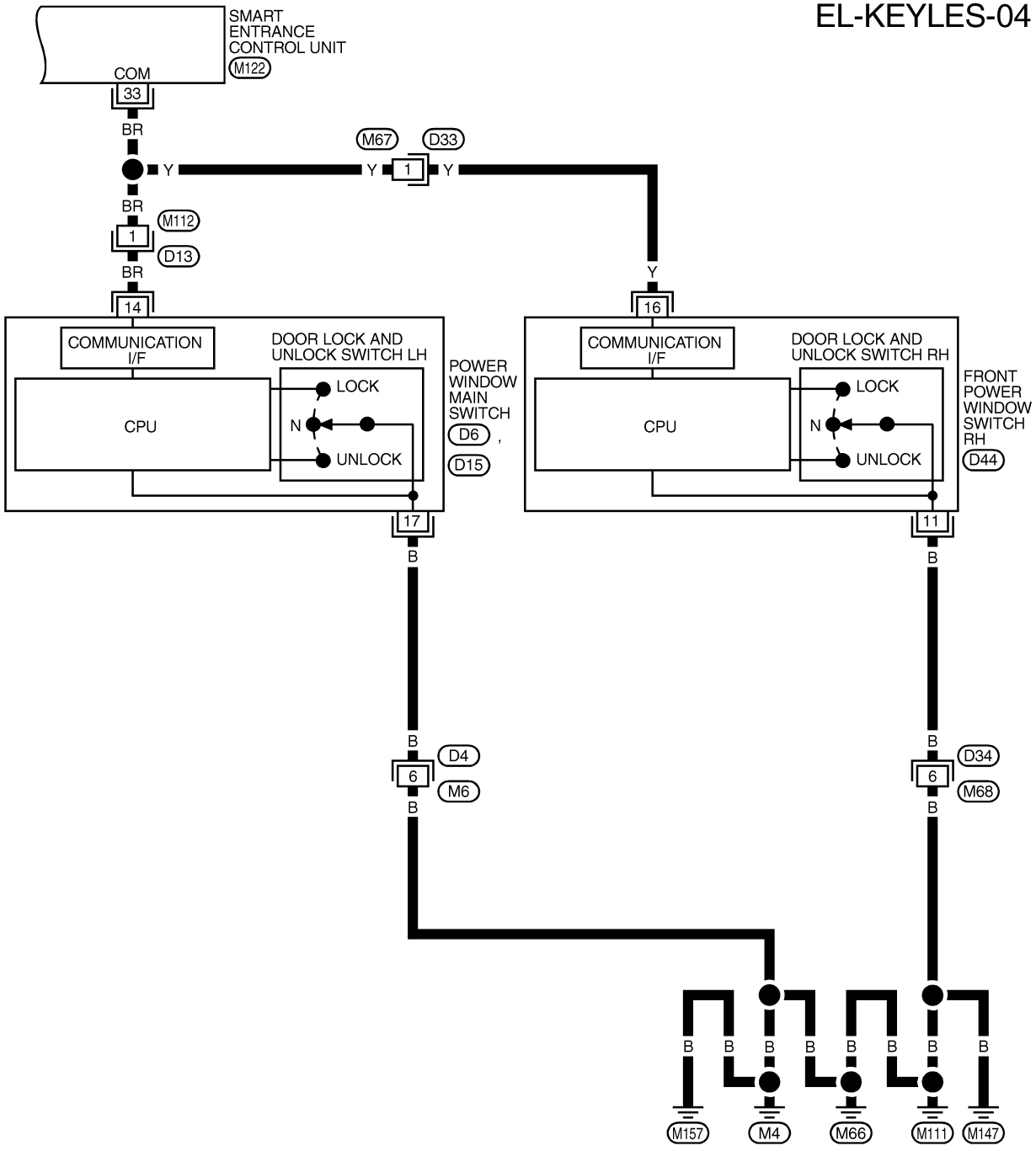
REFER TO THE FOLLOWING.
E1 -SUPER MULTIPLE JUNCTION (SMJ)

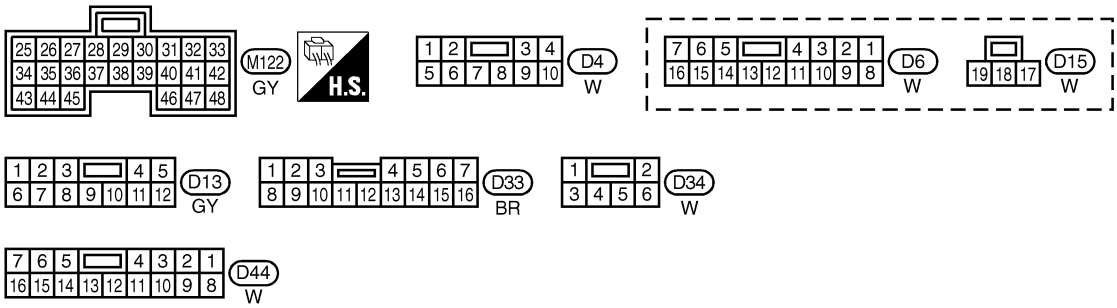
MEL413O

FIG. 4

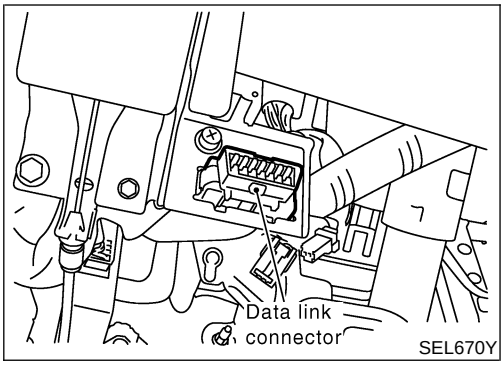
NAEL0394S05

EL-KEYLES-04





MEL032Q



SEL670Y

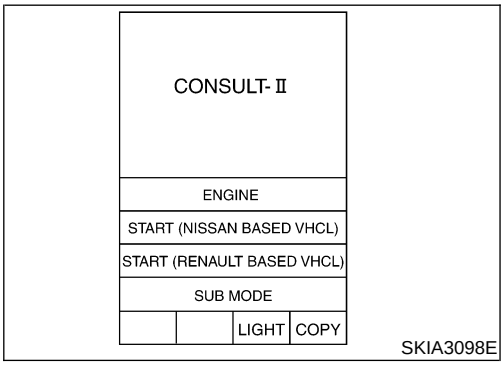
CONSULT-II Inspection Procedure

NAEL0395

"MULTI REMOTE ENT"

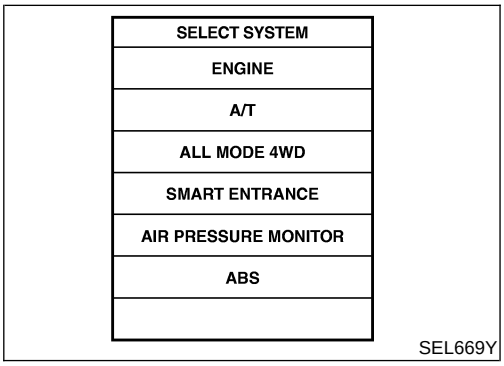
NAEL0395S01

1. Turn ignition switch "OFF".
2. Connect "CONSULT-II" and "CONSULT-II CONVERTER" to the data link connector.



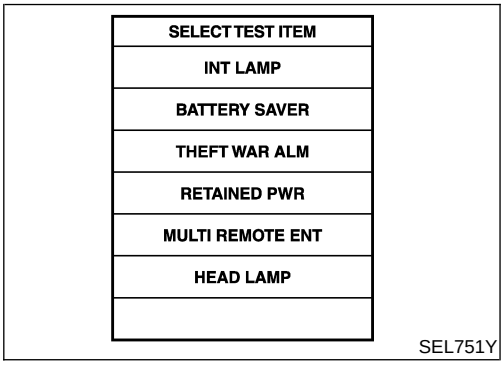
SKIA3098E

3. Turn ignition switch "ON".
4. Touch "START (NISSAN BASED VHCL)".



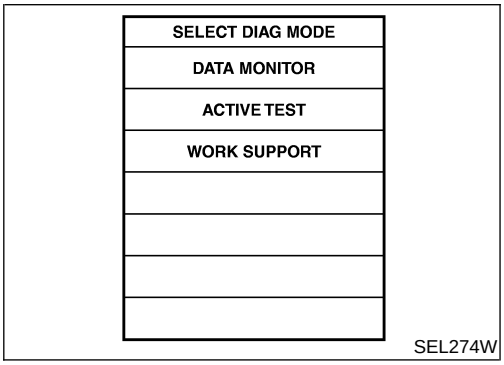
SEL669Y

5. Touch "SMART ENTRANCE".
   If "SMART ENTRANCE" is not indicated, go to GI-42, "CONSULT-II Data Link Connector (DLC) Circuit".



SEL751Y

6. Touch "MULTI REMOTE ENT".



SEL274W

7. Select diagnosis mode.
   "DATA MONITOR", "ACTIVE TEST" and "WORK SUPPORT" are available.

CONSULT-II Application Items

NAEL0457

"MULTI REMOTE ENT"

NAEL0457S01

Data Monitor

NAEL0457S0101

Monitored Item	Description
IGN ON SW	Indicates [ON/OFF] condition of ignition switch in ON position.
ACC ON SW	Indicates [ON/OFF] condition of ignition switch in ACC position.
DOOR SW-RR	Indicates [ON/OFF] condition of rear door switch.
KEY ON SW	Indicates [ON/OFF] condition of key switch.
DOOR SW-DR	Indicates [ON/OFF] condition of front door switch LH.
DOOR SW-AS	Indicates [ON/OFF] condition of door switch RH.
LOCK SW DR/AS	Indicates [ON/OFF] condition of lock signal from lock/unlock switch LH and RH.
UNLK SW DR/AS	Indicates [ON/OFF] condition of unlock signal from lock/unlock switch LH and RH.
KEY CYL LK-SW	Indicates [ON/OFF] condition of lock signal from key cylinder switch.
LK BUTTON/SIG	Indicates [ON/OFF] condition of lock signal from keyfob.
UN BUTTON/SIG	Indicates [ON/OFF] condition of unlock signal from keyfob.
TRUNK BTN/SIG	Indicates [ON/OFF] condition of trunk open signal from keyfob.
PANIC BTN	Indicates [ON/OFF] condition of panic signal from keyfob.
UN BUTTON ON	Indicates [ON/OFF] condition of unlock switch form keyfob.
LK/UN BTN ON	Indicates [ON/OFF] condition of lock/unlock signal at the same time from keyfob.

NOTE:
Even though TRUNK BTN/SIG is actually displayed on the CONSULT-II screen, it is not equipped, therefore, they cannot be activated.

Active Test

NAEL0457S0102

Test Item	Description
INT/IGN ILLUM	This test is able to check interior lamp and ignition key hole illumination operation. The interior lamp and ignition key hole illumination are turned on when "ON" on CONSULT-II screen is touched.
HAZARD	This test is able to check hazard reminder operation. The hazard lamp turns on when "ON" on CONSULT-II screen is touched.
TRUNK OUTPUT	This test is able to check trunk lid opener actuator operation. The trunk is unlocked when "ON" on CONSULT-II screen is touched.
HORN	This test is able to check panic alarm and horn reminder operations. The alarm activate for 0.5 seconds after "ON" on CONSULT-II screen is touched.
HEAD LAMP	This test is able to check headlamps panic alarm operation. The headlamp illuminates for 0.5 seconds after "ON" on CONSULT-II screen is touched.
PW REMOTE DOWN SET	This test is able to check power window open operation. The front power windows activate for 10 seconds after "ON" on CONSULT-II screen is touched.

NOTE:
Even though TRUNK OUTPUT is actually displayed on the CONSULT-II screen, it is not equipped, therefore, they cannot be activated.

Work Support

NAEL0457S0103

Test Item	Description
REMO CONT ID CONFIR	It can be checked whether keyfob ID code is registered or not in this mode.
REMO CONT ID REGIST	Keyfob ID code can be registered.
REMO CONT ID ERASUR	Keyfob ID code can be erased.

CONSULT-II Application Items (Cont'd)

Test Item	Description
MULTI ANSWER BACK SET	Hazard and horn reminder mode can be changed with this mode. Selects hazard and horn reminder mode among six steps (EL-316).
AUTO LOCK SET	Auto door lock mode can be selected among the following periods: ● MODE 1 (5 min.)/MODE 2 (OFF-Mode)/MODE 3 (1 min.)
PANIC ALARM SET	The panic alarm button's pressing time on keyfob can be selected among the following periods: ● MODE 1 (0.5 sec.)/MODE 2 (OFF-Mode)/MODE 3 (1.5 sec.)
TRUNK OPENER	The trunk lid opener button's pressing time on keyfob can be selected among the following periods: ● MODE 1 (0.5 sec.)/MODE 2 (OFF-Mode)/MODE 3 (1.5 sec.)
PW DOWN SET	The unlock button's pressing time on keyfob can be selected among the following periods: ● MODE 1 (3 sec.)/MODE 2 (OFF-Mode)/MODE 3 (5 sec.)

NOTE:
Even though TRUNK OPENER is actually displayed on the CONSULT-II screen, it is not equipped, therefore, they cannot be activated.

Trouble Diagnoses

NAEL0397

SYMPTOM CHART

NAEL0397S01

NOTE:

- Always check keyfob battery before replacing keyfob.
- The panic alarm operation of remote keyless entry system does not activate with the ignition key inserted in the ignition key cylinder.

Symptom	Diagnoses/service procedure	Reference page (EL-)
All functions of remote keyless entry system do not operate.	1. Keyfob battery and function check	327
	2. Power supply and ground circuit for smart entrance control unit check	328
	3. Replace keyfob. Refer to ID Code Entry Procedure. NOTE: If the result of keyfob function check with CONSULT-II is OK, keyfob is not malfunctioning.	340
The new ID of keyfob cannot be entered.	1. Keyfob battery and function check	327
	2. Key switch (insert) check	332
	3. Door switch check	330
	4. Door lock/unlock switch LH check	333
	5. Power supply and ground circuit for smart entrance control unit check	328
	6. Replace keyfob. Refer to ID Code Entry Procedure. NOTE: If the result of keyfob function check with CONSULT-II is OK, keyfob is not malfunctioning.	340
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-301)	1. Keyfob battery and function check	327
	2. Replace keyfob. Refer to ID Code Entry Procedure. NOTE: If the result of keyfob function check with CONSULT-II is OK, keyfob is not malfunctioning.	340

Trouble Diagnoses (Cont'd)

Symptom	Diagnoses/service procedure	Reference page (EL-)
Hazard and horn reminder does not activate properly when pressing lock or unlock button of keyfob.	1. Keyfob battery and function check	327
	2. Hazard reminder check	334
	3. Horn reminder check* *: Horn chirp can be activated or deactivated. First check the horn chirp setting. Refer to "System Description", EL-316.	335
	4. Door switch check	330
	5. Replace keyfob. Refer to ID Code Entry Procedure. NOTE: If the result of keyfob function check with CONSULT-II is OK, keyfob is not malfunctioning.	340
Interior room lamp operation do not activate properly.	1. Interior room lamp operation check	337
	2. Door switch check	330
Panic alarm (horn and headlamp) does not activate when panic alarm button is continuously pressed.	1. Keyfob battery and function check	327
	2. Theft warning operation check. Refer to "PRELIMINARY CHECK" in "VEHICLE SECURITY SYSTEM".	358
	3. Key switch (insert) check	332
	4. Replace keyfob. Refer to ID Code Entry Procedure. NOTE: If the result of keyfob function check with CONSULT-II is OK, keyfob is not malfunctioning.	340

REMOTE CONTROLLER BATTERY AND FUNCTION CHECK

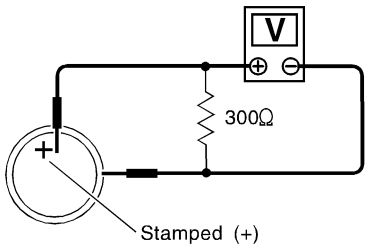
=NAEL0397S02

1	CHECK REMOTE CONTROLLER BATTERY

Remove battery (refer to EL-342) and measure voltage across battery positive and negative terminals, (+) and (−).

Voltage [V]:
2.5 - 3.0

NOTE:
Keyfob does not function if battery is not set correctly.



SEL237W

OK or NG

OK	▶	GO TO 2.
NG	▶	Replace battery.

2	CHECK REMOTE CONTROLLER FUNCTION

With CONSULT-II
Check keyfob function ("LK BUTTON/SIG", "UN BUTTON/SIG", "PANIC BTN", "UN BUTTON ON" and "LK/UN BTN ON") in "DATA MONITOR" mode with CONSULT-II.

DATA MONITOR	
MONITOR	
LK BUTTON/SIG	ON
UN BUTTON/SIG	ON
TRUNK BTN/SIG	ON
PANIC BTN	ON
UN BUTTON ON	ON
LK/UN BTN ON	ON

When pushing each button of keyfob, the corresponding monitor item should be turned as follows.

Condition	Monitor item	
Pushing LOCK	LK BUTTON/SIG	ON
Pushing UNLOCK	UN BUTTON/SIG	ON
Pushing TRUNK	TRUNK BTN/SIG	ON
Pushing PANIC	PANIC BTN/SIG	ON
Pushing UNLOCK	UN BUTTON ON	ON
Pushing LOCK and UNLOCK at the same time	LK/UN BTN ON	ON

SEL423Y

NOTE:
Even though TRUNK BTN/SIG is actually displayed on the CONSULT-II screen, it is not equipped, therefore, they cannot be activated.

OK or NG

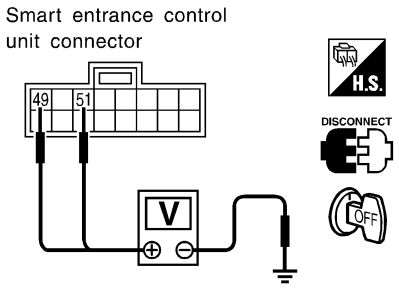
OK	▶	Keyfob is OK. Further inspection is necessary. Refer to "SYMPTOM CHART", EL-325.
NG	▶	Replace keyfob. Refer to ID Code Entry Procedure.

POWER SUPPLY AND GROUND CIRCUIT CHECK

=NAEL0397S03

1	CHECK MAIN POWER SUPPLY CIRCUIT FOR SMART ENTRANCE CONTROL UNIT

1. Disconnect smart entrance control unit harness connector.
2. Check voltage between smart entrance control unit harness connector M123 terminal 49 (G/R) or 51 (W/R) and ground.



Battery voltage should exist.

SEL018Y

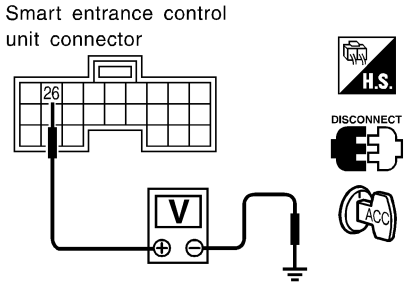
Refer to wiring diagram in EL-319.

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 harness connector.
2. Check voltage between smart entrance control unit harness connector M122 terminal 26 (G/W) and ground while ignition switch is "ACC".



Battery voltage should exist.

SEL019Y

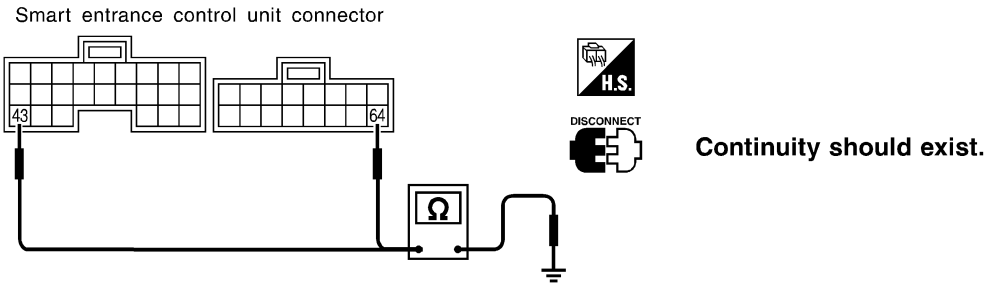
Refer to wiring diagram in EL-319.

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 SMART ENTRANCE CONTROL UNIT

Check continuity between smart entrance control unit harness connector M122 terminal 43 (B) or M123 terminal 64 (B) and ground.



Continuity should exist.

SEL020Y

Refer to wiring diagram in EL-319.

OK or NG

OK	▶	Power supply and ground circuits are OK.
NG	▶	Check ground harness.

DOOR SWITCH CHECK

=NAEL0397S04

1 CHECK DOOR SWITCH INPUT SIGNAL

With CONSULT-II

Check door switches ("DOOR SW-RR", "DOOR SW-DR" and "DOOR SW-AS") in "DATA MONITOR" mode with CONSULT-II.

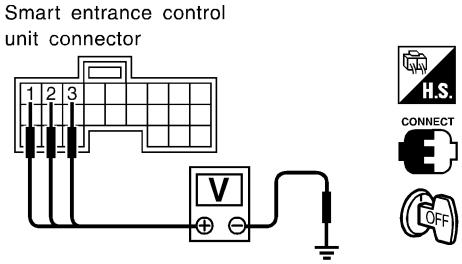
DATA MONITOR	
MONITOR	
DOOR SW-RR	OFF
DOOR SW-DR	OFF
DOOR SW-AS	OFF

	Monitor item	Condition	Condition
DOOR SW-RR	Rear doors switch	Open	ON
		Closed	OFF
DOOR SW-DR	Door switch LH	Open	ON
		Closed	OFF
DOOR SW-AS	Door switch RH	Open	ON
		Closed	OFF

SEL024Y

Without CONSULT-II

Check voltage between smart entrance control unit harness connector M121 terminals 1 (G/OR), 2 (Y) or 3 (R/L) and ground.



	Terminals		Condition	Voltage [V]
	(+)	(–)		
Front door switch LH	1	Ground	Open	0
			Closed	Approx. 12
Front door switch RH	2	Ground	Open	0
			Closed	Approx. 5
Rear and back door switches	3	Ground	Open	0
			Closed	Approx. 5

SEL021YD

Refer to wiring diagram in EL-320.

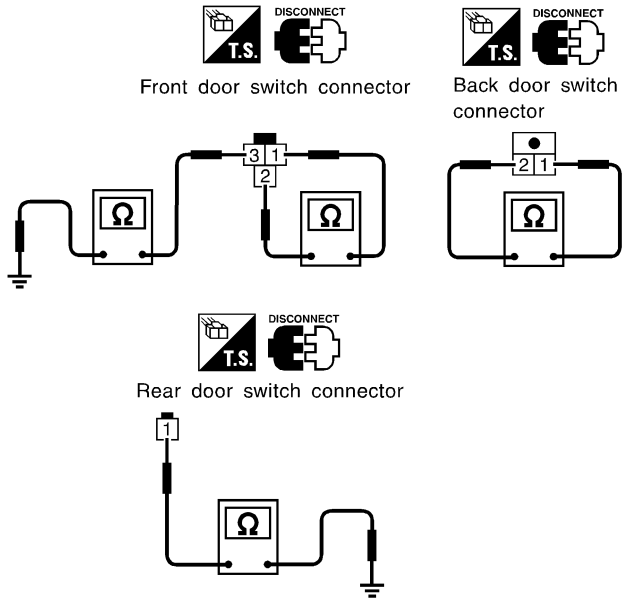
OK or NG

OK	▶	Door switch is OK.
NG	▶	GO TO 2.

2	CHECK DOOR SWITCH

1. Disconnect door switch harness connector.
2. Check the following.

- Continuity between front door switch connector B9 (LH) or B68 (RH) terminals 1 and 2
- Continuity between front door switch connector B9 (LH) or B68 (RH) terminal 3 and ground
- Continuity between back door switch connector D208 terminals 1 and 2
- Continuity between rear door switch connector B18 (LH) or B71 (RH) terminal 1 and ground



	Terminals	Condition	Continuity
Front door switches	1 - 2	Closed	No
	3 - Ground	Open	Yes
Back door switch	1 - 2	Closed	No
		Open	Yes
Rear door switches	1 - Ground	Closed	No
		Open	Yes

SEL287YA

OK or NG

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

KEY SWITCH (INSERT) CHECK

=NAEL0397S05

1	CHECK KEY SWITCH INPUT SIGNAL

With CONSULT-II

Check key switch ("KEY ON SW") in "DATA MONITOR" mode with CONSULT-II.

DATA MONITOR	
MONITOR	
KEY ON SW	ON

When key is inserted to ignition key cylinder:

KEY ON SW ON

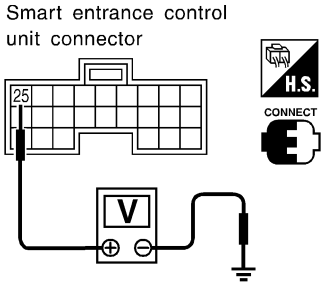
When key is removed from ignition key cylinder:

KEY ON SW OFF

SEL315W

Without CONSULT-II

Check voltage between control unit harness connector M122 terminal 25 (W/R) and ground.



Voltage [V]:

Condition of key switch : Key is inserted.

Approx. 12

Condition of key switch : Key is removed.

0

SEL022Y

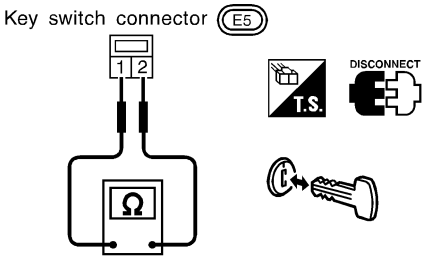
Refer to wiring diagram in EL-319.

OK or NG

OK	▶	Key switch is OK.
NG	▶	GO TO 2.

2	CHECK KEY SWITCH (INSERT)

Check continuity between key switch connector 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

=NAEL0397S06

1 CHECK DOOR LOCK/UNLOCK SWITCH INPUT SIGNAL

With CONSULT-II

Check door lock/unlock switch ("LOCK SW DR/AS"/"UNLK SW DR/AS") in "DATA MONITOR" mode with CONSULT-II.

DATA MONITOR	
MONITOR	
LOCK SW DR/AS	OFF
UNLK SW DR/AS	OFF

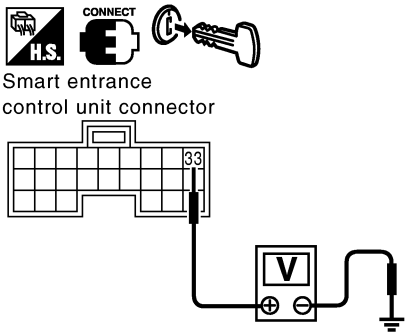
When lock/unlock switch is turned to LOCK:
LOCK SW DR/AS ON

When lock/unlock switch is turned to UNLOCK:
UNLK SW DR/AS ON

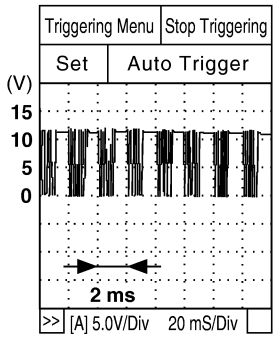
SEL341W

Without CONSULT-II

1. Remove key from ignition key cylinder.
2. Check the signal between smart entrance control unit harness connector M122 terminal 33 (BR) and ground with an oscilloscope when door lock/unlock switch is turned "LOCK" or "UNLOCK".
3. Make sure signals shown in the figure below can be detected during the first 10 sec. just after door lock/unlock switch is turned to "LOCK" or "UNLOCK".



Smart entrance control unit connector



Voltage:
12V → 9V (10 sec.) measurement by analog circuit tester.

SEL699YA

Refer to wiring diagram in EL-319.

OK or NG

OK	▶	Door lock/unlock switch is OK.
NG	▶	**Check the following.** ● Ground circuit for each front power window switch ● Harness for open or short between each front power window switch and smart entrance control unit connector If above systems are normal, replace the front power window switch.

HAZARD REMINDER CHECK

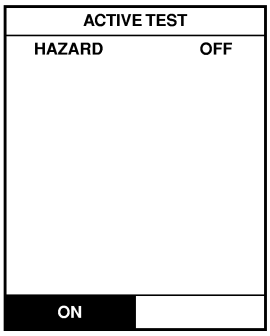
=NAEL0397S07

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 WITH CONSULT-II	

With CONSULT-II

1. Select "ACTIVE TEST" in "MULTI REMOTE ENT" with CONSULT-II.
2. Select "HAZARD" and touch "ON".



Hazard indicator should illuminate.

SEL347W

NOTE: If CONSULT-II is not available, skip this procedure and go to the next step.

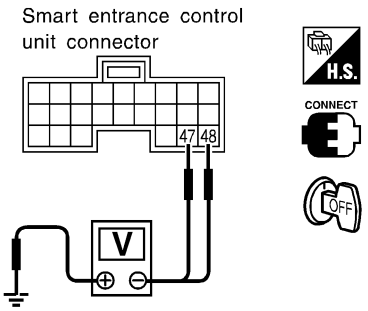
OK or NG

OK	▶	Hazard reminder operation is OK.
NG	▶	Replace smart entrance control unit.

3	CHECK HAZARD REMINDER OPERATION WITHOUT CONSULT-II	

Without CONSULT-II

Apply ground to smart entrance control unit harness connector M122 terminal 47 (GY/L) and 48 (GY/R).



Condition of lock or unlock button	Voltage (V)
Push.	Approx. more than 0 - 12
Do not push.	0

SEL027Y

Refer to wiring diagram in EL-321.

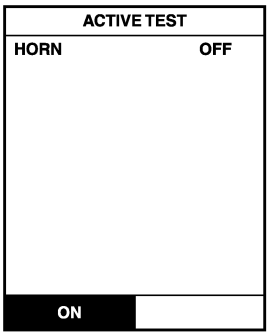
OK or NG

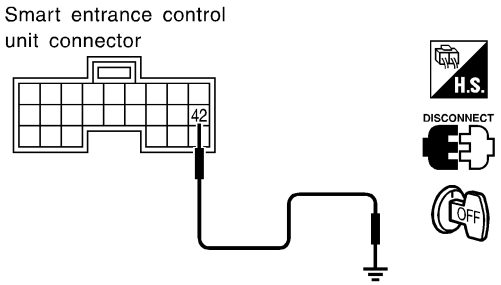
OK	▶	System is OK.
NG	▶	Replace smart entrance control unit.

HORN REMINDER CHECK

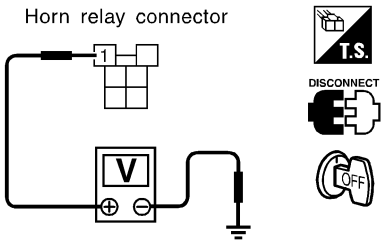
=NAEL0397S08

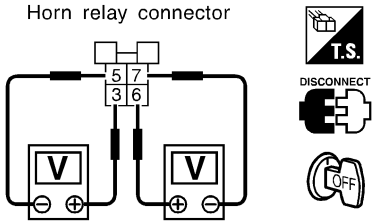
1	CHECK HORN	
Check if horn sounds with horn switch. **Does horn operate?**		
Yes	▶	GO TO 2.
No	▶	Check horn circuit.

2	CHECK HORN REMINDER OPERATION WITH CONSULT-II	
With CONSULT-II 1. Select "ACTIVE TEST" in "MULTI REMOTE ENT" with CONSULT-II. 2. Select "HORN" and touch "ON".  **Horn should sound.** SEL451Y **NOTE: If CONSULT-II is not available, skip this procedure and go to the next step.** **OK or NG**		
OK	▶	Horn reminder operation is OK.
NG	▶	GO TO 4.

3	CHECK HORN REMINDER OPERATION WITHOUT CONSULT-II	
Without CONSULT-II 1. Disconnect smart entrance control unit harness connector. 2. Apply ground to smart entrance control unit harness connector M122 terminal 42 (LG/B).  SEL028Y Refer to wiring diagram in EL-321. **Does horn sound?**		
Yes	▶	Replace smart entrance control unit.
No	▶	GO TO 4.

4	CHECK HORN RELAY
Check horn relay.	
OK or NG	
OK ▶	GO TO 5.
NG ▶	Replace horn relay.

5	CHECK POWER SUPPLY FOR HORN RELAY
1. Disconnect horn relay harness connector. 2. Check voltage between horn relay harness connector E118 terminal 1 (G/B) and ground.	
 SEL326XB	**Battery voltage should exist.**
OK or NG	
OK ▶	GO TO 6.
NG ▶	**Check the following.** ● 7.5A fuse [No. 52, located in fuse block (J/B)] ● Harness for open or short between horn relay and fuse

6	CHECK HORN RELAY CIRCUIT
1. Disconnect horn relay harness connector. 2. Check voltage between horn relay harness connector E118 terminals 3 (G/B) and 5 (R). 3. Check voltage between horn relay harness connector E118 terminals 6 (LG) and 7 (G).	
 SEL327XB	**Battery voltage should exist.**
OK or NG	
OK ▶	Check harness for open or short between smart entrance control unit and horn relay.
NG ▶	**Check the following.** ● Harness for open or short between horn relay and fuse ● 7.5A fuse (No. 52, located in the fuse and fusible link box) ● 10A fuse (No. 54, located in the fuse and fusible link box)

INTERIOR ROOM LAMP OPERATION CHECK

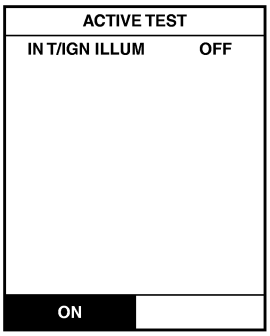
=NAEL0397S09

1	CHECK ROOM INTERIOR 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 OPERATION	

With CONSULT-II

1. Select "ACTIVE TEST" in "MULTI REMOTE ENT" with CONSULT-II.
2. Select "INT/IGN ILLUM" and touch "ON".

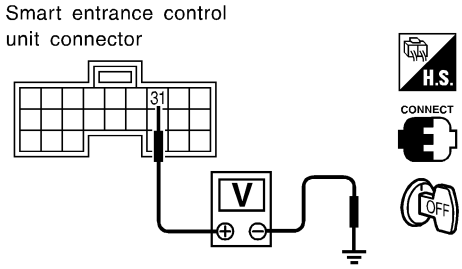


Interior room lamp should illuminate.

SEL312Y

Without CONSULT-II

Push unlock button of keyfob with all doors closed and driver's door locked, and check voltage between smart entrance control unit harness connector M122 terminal 31 (R/B) and ground.



Voltage [V]:
Unlock button is pushed.
0 (For approx. 30 seconds.)
Unlock button is not pushed.
Battery voltage

SEL029Y

Refer to wiring diagram in EL-319.

OK or NG

OK	▶	System is OK.
NG	▶	Check harness for open or short between smart entrance control unit and interior room lamp.

ID Code Entry Procedure

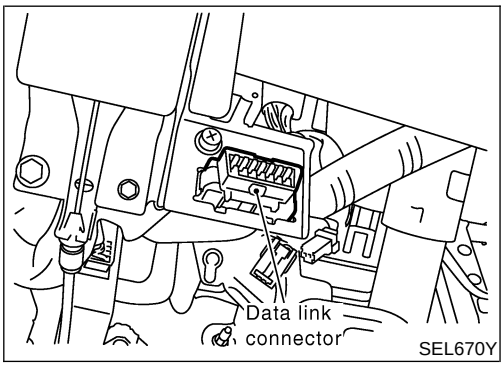
=NAEL0398

KEYFOB ID SET UP WITH CONSULT-II

NAEL0398S01

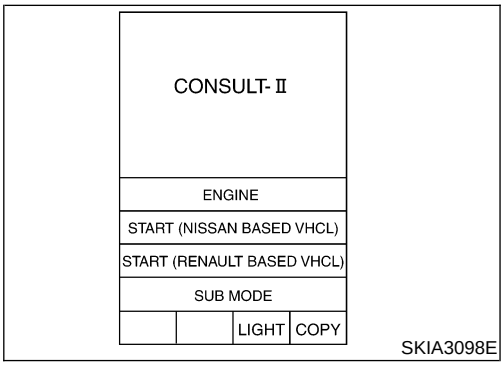
NOTE:

If a keyfob is lost, the ID code of the lost keyfob must be erased to prevent unauthorized use. When the ID code of a lost keyfob is not known, all keyfob ID codes should be erased. After all ID codes are erased, the ID codes of all remaining and/or new keyfob must be re-registered.



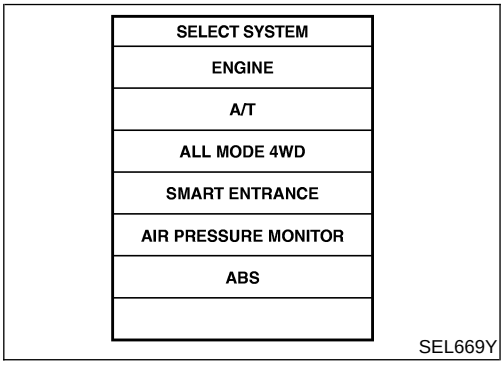
SEL670Y

1. Turn ignition switch “OFF”.
2. Connect “CONSULT-II” and “CONSULT-II CONVERTER” to the data link connector.



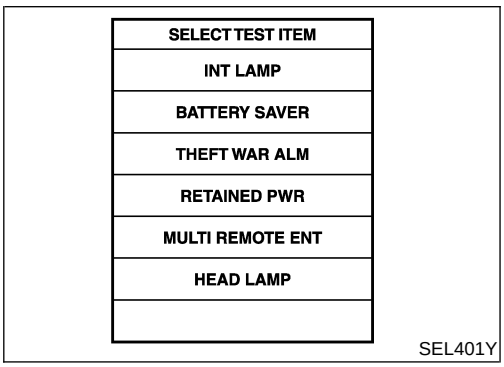
SKIA3098E

3. Turn ignition switch “ON”.
4. Touch “START (NISSAN BASED VHCL)”.



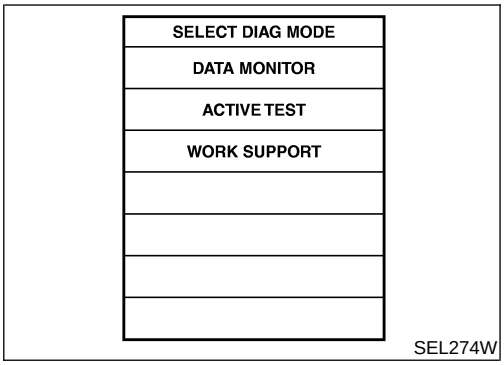
SEL669Y

5. Touch “SMART ENTRANCE”.
   If “SMART ENTRANCE” is not indicated, go to GI-42, “CONSULT-II Data Link Connector (DLC) Circuit”.

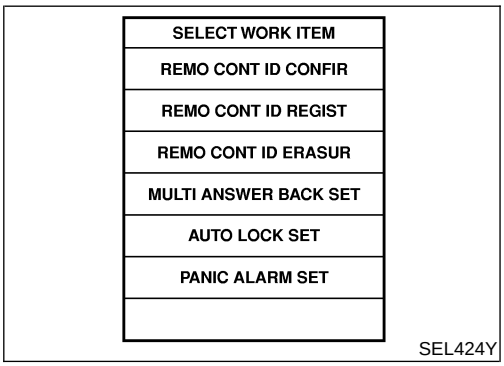


SEL401Y

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 keyfob ID code is registered or not.
- "REMO CONT ID REGIST"
  Use this mode to register a keyfob ID code.

NOTE:
Register the ID code when keyfob or smart entrance control unit is replaced, or when additional keyfob is required.

- "REMO CONT ID ERASUR"
  Use this mode to erase a keyfob ID code.

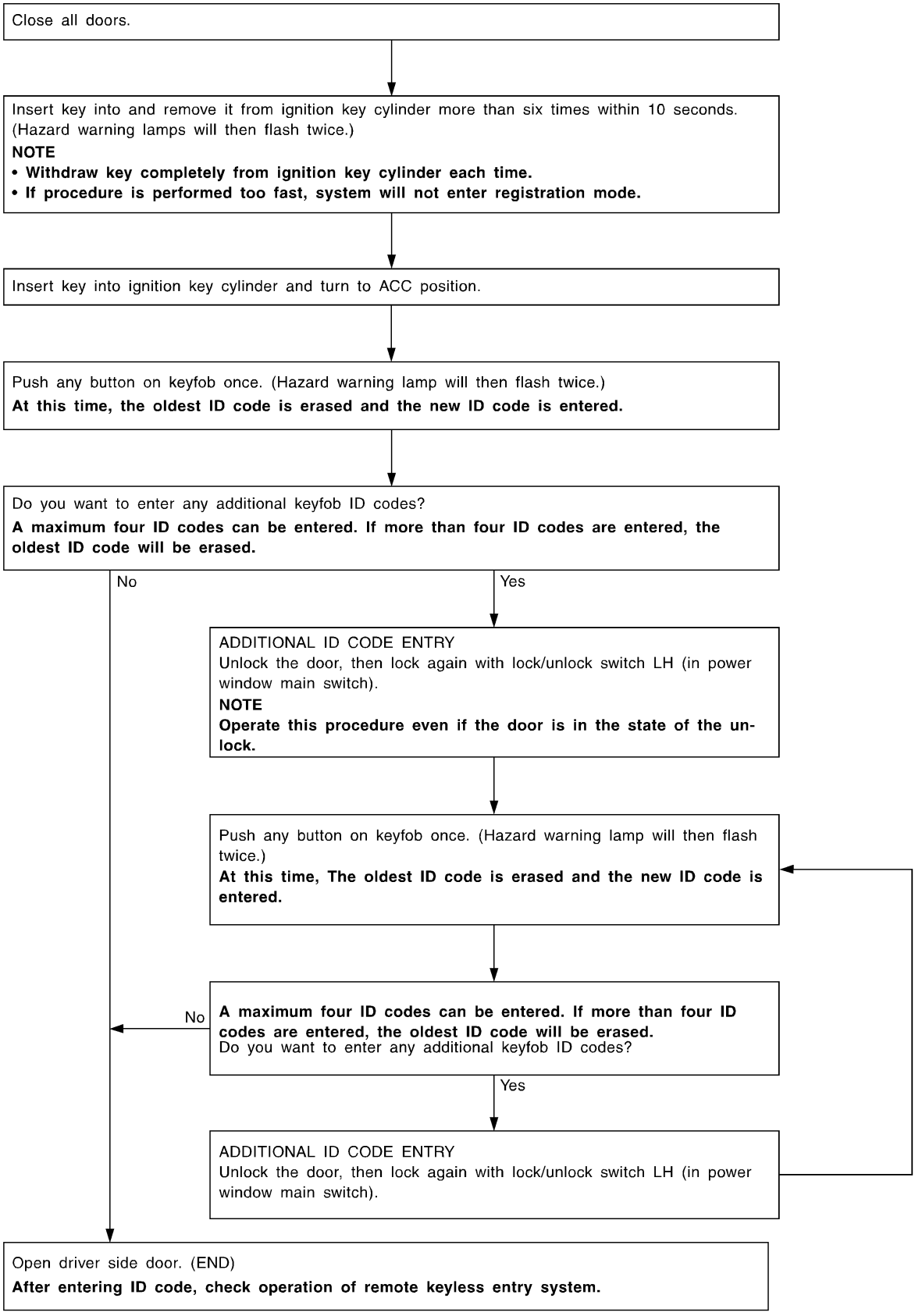
Refer to the EL-324, "WORK SUPPORT" in "CONSULT-II Application Items" for the following items.

- "MULTI ANSWER BACK SET"
- "AUTO LOCK SET"
- "PANIC ALARM SET"
- "TRUNK OPENER"
- "PW DOWN SET"

NOTE:
Even though TRUNK OPENER is actually displayed on the CONSULT-II screen, it is not equipped, therefore, they cannot be activated.

KEYFOB ID SET UP WITHOUT CONSULT-II

NAEL0398S02



SEL170YA

NOTE:

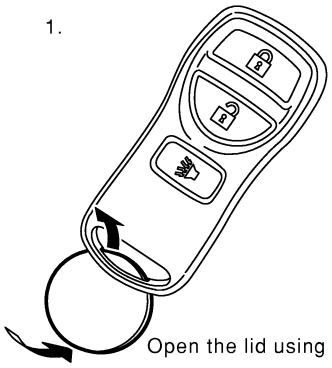
- If a keyfob is lost, the ID code of the lost keyfob must be erased to prevent unauthorized use. A specific ID code can be erased with CONSULT-II. However, when the ID code of a lost keyfob is not known, all keyfob ID codes should be erased. After all ID codes are erased, the ID codes of all remaining and/or new keyfob must be re-registered.
  To erase all ID codes in memory, register one ID code (keyfob) four times. After all ID codes are erased, the ID codes of all remaining and/or new keyfob must be re-registered.
- When registering an additional keyfob, 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 keyfob, repeat the procedure "Additional ID code entry" for each new keyfob.
- 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.

Keyfob Battery Replacement

NAEL0399

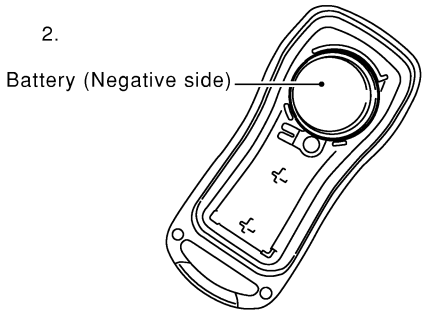
NOTE:
- Be careful not to touch the circuit board or battery terminal.
- The keyfob is water-resistant. However, if it does get wet, immediately wipe it dry.

1.



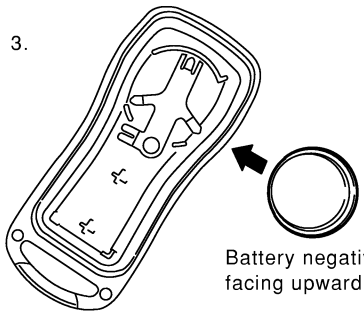
Open the lid using a coin.

2.



Remove the battery.

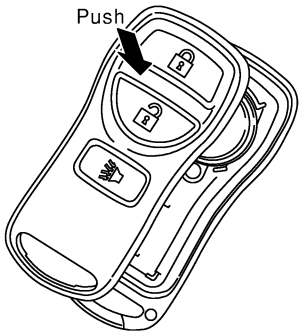
3.



Battery negative side facing upward

Insert the new battery.

4.

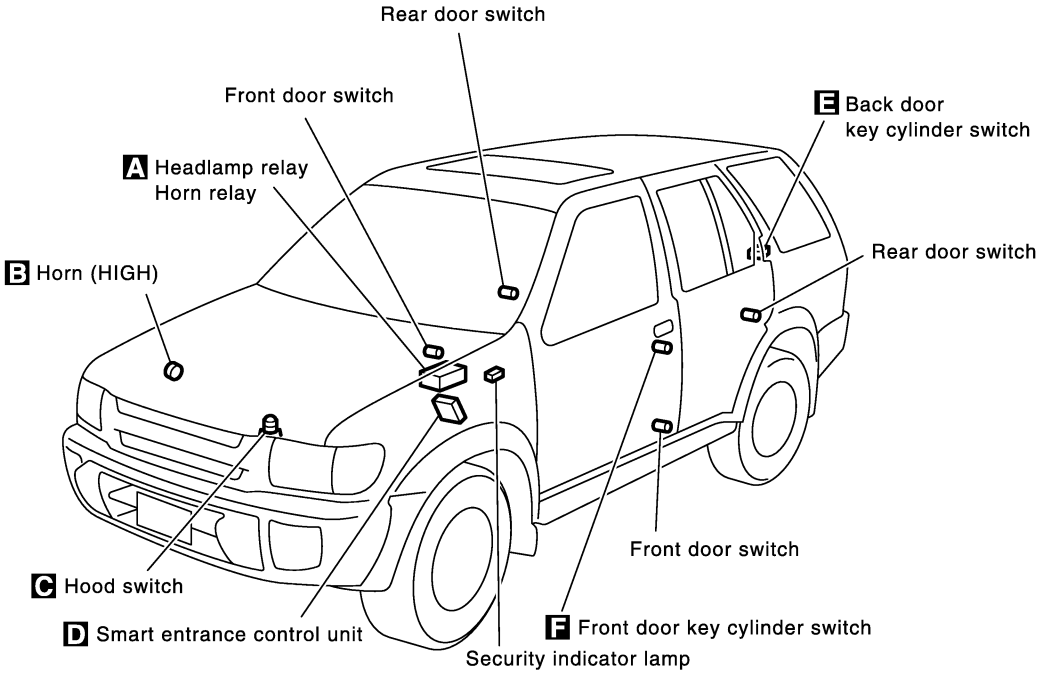


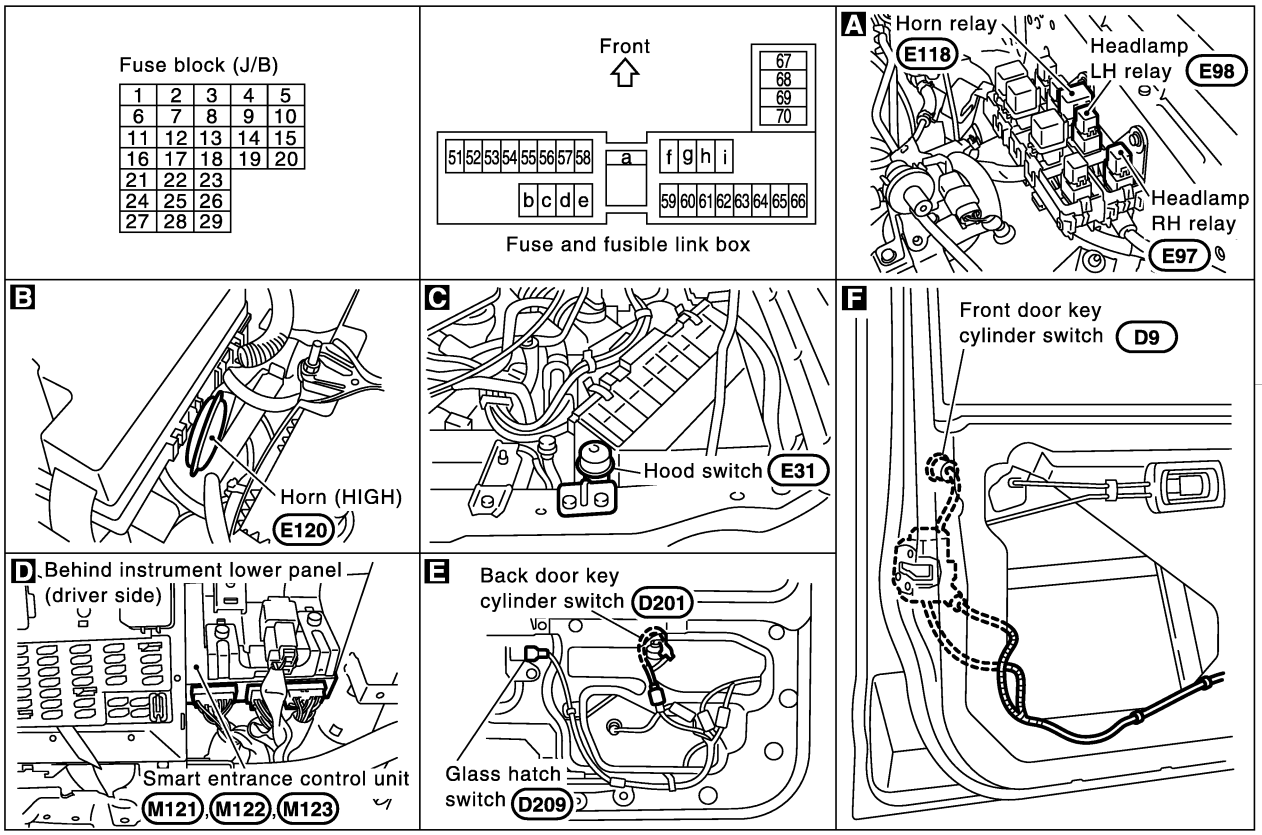
Close the lid securely.
Push the keyfob button two or three times to check its operation.

SEL485Y

Component Parts and Harness Connector Location

NAEL0400





SEL677Y

System Description

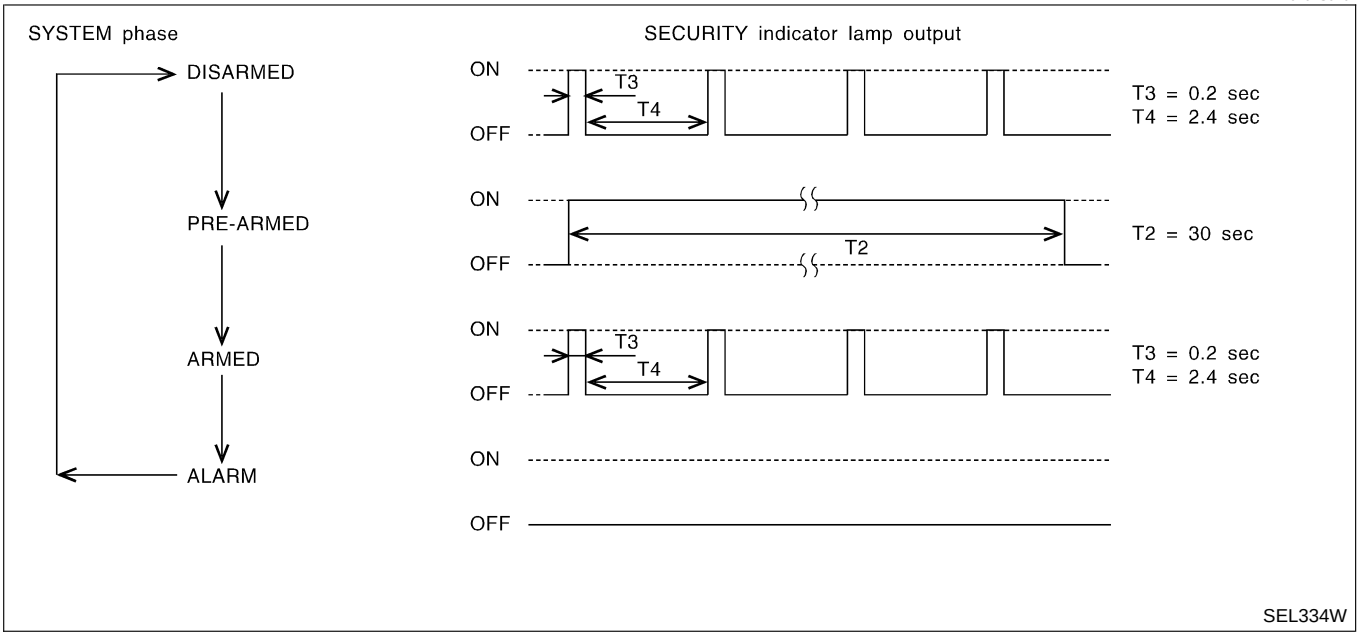
NAEL0401

DESCRIPTION

NAEL0401S01

1. Operation Flow

NAEL0401S0101



2. Setting The Vehicle Security System

NAEL0401S0102

Initial condition

1) Ignition switch is in OFF position.

Disarmed phase

When the vehicle security system is in the disarmed phase, the security indicator lamp blinks every 2.6 seconds.

Pre-armed phase and armed phase

When the following operation 1) or 2) is performed, the vehicle security system turns into the “pre-armed” phase. (The security indicator lamp illuminates.)

1) Smart entrance control unit receives LOCK signal from key cylinder switch or keyfob after hood, glass hatch and all doors are closed.
2) Hood, glass hatch and all doors are closed after front doors are locked by key, lock/unlock switch or multi-remote controller.

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 Vehicle Security System

NAEL0401S0103

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

1) Unlock the doors with the key or keyfob.
2) Open the glass hatch with the key or keyfob.

4. Activating The Alarm Operation of The Vehicle Security System

NAEL0401S0104

Make sure the system is in the armed phase. (The security indicator lamp blinks every 2.6 seconds.)
When the following operation 1) or 2) 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 during armed phase.
2) Disconnecting and connecting the battery connector before canceling armed phase.

POWER SUPPLY AND GROUND

NAEL0401S02

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 49.

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 27.

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 26.

Ground is supplied
- to smart entrance control unit terminals 43 and 64
- through body grounds M4, M66, M111, M147 and M157.

INITIAL CONDITION TO ACTIVATE THE SYSTEM

NAEL0401S03

The operation of the vehicle security system is controlled by the doors, hood and glass hatch.

Pattern A

NAEL0401S0301

To activate the vehicle security system, the smart entrance control unit must receive signals indicating the doors, hood and glass hatch are closed.
When a door is open, smart entrance control unit terminal 1, 2 or 3 receives a ground signal from each door switch.
When the hood is open, smart entrance control unit terminal 6 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 13 receives a ground signal
- from terminal 1 of the glass hatch switch
- through body grounds B11, B22 and D210.

When smart entrance control unit receives LOCK signal from key cylinder switch or keyfob and none of the described conditions exist, the vehicle security system will automatically shift to armed mode.

Pattern B

NAEL0401S0302

To activate the vehicle security system, the smart entrance control unit must receive signal indicating any door (including hood and glass hatch) is opened.
When the front doors are locked with key, lock/unlock switch or keyfob and then all doors are closed, the vehicle security system will automatically shift to armed mode.

VEHICLE SECURITY SYSTEM ACTIVATION

NAEL0401S04

Pattern A

NAEL0401S0401

With all doors (including hood and glass hatch) closed, if the key is used to lock doors, smart entrance control unit terminal 33 receives a signal from power window main switch terminal 14.
When key cylinder switch is in LOCK position, ground is supplied
- to power window main switch terminal 6
- from terminal 3 of the front door key cylinder switch LH
- through terminal 2 of front door key cylinder switch LH
- through body grounds M4, M66, M111, M147 and M157 or

smart entrance control unit terminal 11 receives a ground signal
- from terminal 1 of the back door key cylinder switch
- through body grounds B11, B22 and D210.

If this signal, or lock signal from keyfob is received by the smart entrance control unit, the vehicle security system will activate automatically.

NOTE:
Vehicle security system can be set even though all doors are not locked.

Pattern B

NAEL0401S0402

With any door (including hood and glass hatch) open, if lock/unlock switch is used to lock doors, smart entrance control unit terminal 33 receives a LOCK signal
- from terminal 14 of lock/unlock switch LH or
- from terminal 16 of lock/unlock switch RH, or

With any door (including hood and glass hatch) open if the key is used to lock doors, smart entrance control unit terminal 33 receives a LOCK signal from power window main front switch terminal 14. Refer to power window serial link (EL-274).
When key cylinder switch LOCK signal ground is supplied

- to power window main switch terminal 4
- from terminal 3 of the front door key cylinder switch LH
- through terminal 2 of front door key cylinder switch LH
- through body grounds M4, M66, M111, M147 and M157, or

smart entrance control unit terminal 11 receives a ground signal

- from terminal 1 of the back door key cylinder switch
- through body grounds B11, B22 and D210.

If these signals and lock signal from keyfob are received by the smart entrance control unit, ground signals of terminals 1, 2 and 3 are interrupted and all doors are closed, the vehicle security system will activate automatically.

NOTE:
Vehicle security system can be set even though the rear door is not locked.

Once the vehicle security system has been activated, smart entrance control unit terminal 38 supplies ground to terminal 2 of the security indicator lamp.
The security lamp will illuminate for approximately 30 seconds and then blinks every 2.6 seconds.
Now the vehicle security system is in armed phase.

VEHICLE SECURITY SYSTEM ALARM OPERATION

NAEL0401S05

The vehicle security system is triggered by

- opening a door
- opening the hood or the glass hatch
- detection of battery disconnect and connect.

Once the vehicle security system is in armed phase, if the smart entrance control unit receives a ground signal at terminal 1, 2, 3 (door switch), 13 (glass hatch switch) or 6 (hood switch), the vehicle security 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.
- through 10A fuse (No. 54, located in fuse and fusible link box)
- to horn relay terminal 6.
- through 15A fuse (No. 60, located in fuse and fusible link box)
- to headlamp LH relay terminals 1 and 3,
- through 15A fuse (No. 59, located in fuse and fusible link box)
- to headlamp RH relay terminals 1 and 3.

When the vehicle security system is triggered, ground is supplied intermittently

- to headlamp (LH and RH) relay terminal 2 from smart entrance control unit terminals 21 and 59
- through smart entrance control unit terminals 43 and 64.

When headlamp relays (LH and RH) are energized and then power is supplied to headlamps (LH and RH).
The headlamps flash intermittently.
When the vehicle security system is triggered, ground is supplied intermittently

- from smart entrance control unit terminal 42
- to horn relay terminal 2.

When horn relay are energized, then power is supplied to horn.
The horn sounds intermittently.
The alarm automatically turns off after 50 seconds but will reactivate if the vehicle is tampered with again.

VEHICLE SECURITY SYSTEM DEACTIVATION

NAEL0401S06

To deactivate the vehicle security system, a door or glass hatch must be unlocked with the key or keyfob.
When the key is used to unlock the door, smart entrance control unit terminal 33 receives an UNLOCK signal from power window main switch terminal 14. Refer to "POWER WINDOW SERIAL LINK" (EL-274).
When key cylinder switch is in UNLOCK position, the ground is supplied

- to power window main switch terminal 6
- from the front door key cylinder switch LH terminal 1
- through front door key cylinder switch terminal 2,
- through body grounds M4, M66, M111, M147 and M157.

When the key is used to open the glass hatch, smart entrance control unit terminal 12 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 keyfob, the vehicle security system is deactivated. (Disarmed phase)

PANIC ALARM OPERATION

NAEL0401S07

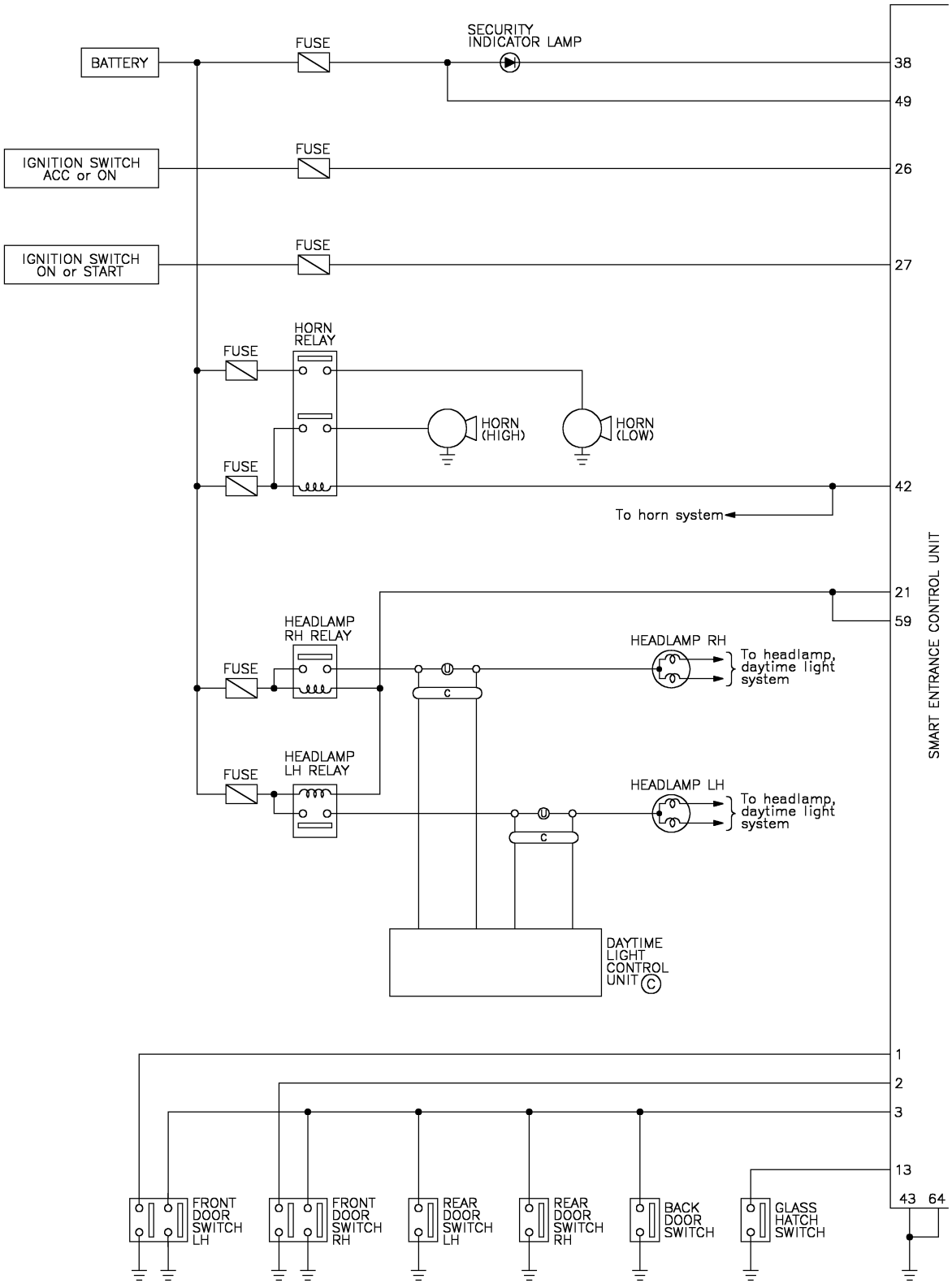
Remote keyless entry system may or may not operate vehicle security system (horn and headlamps) as required.
When the remote keyless entry system (panic alarm) is triggered, ground is supplied intermittently

- from smart entrance control unit terminals 21 and 59
- to headlamp (LH and RH) relay terminal 2, and
- from smart entrance control unit terminal 42
- to horn relay terminal 2.

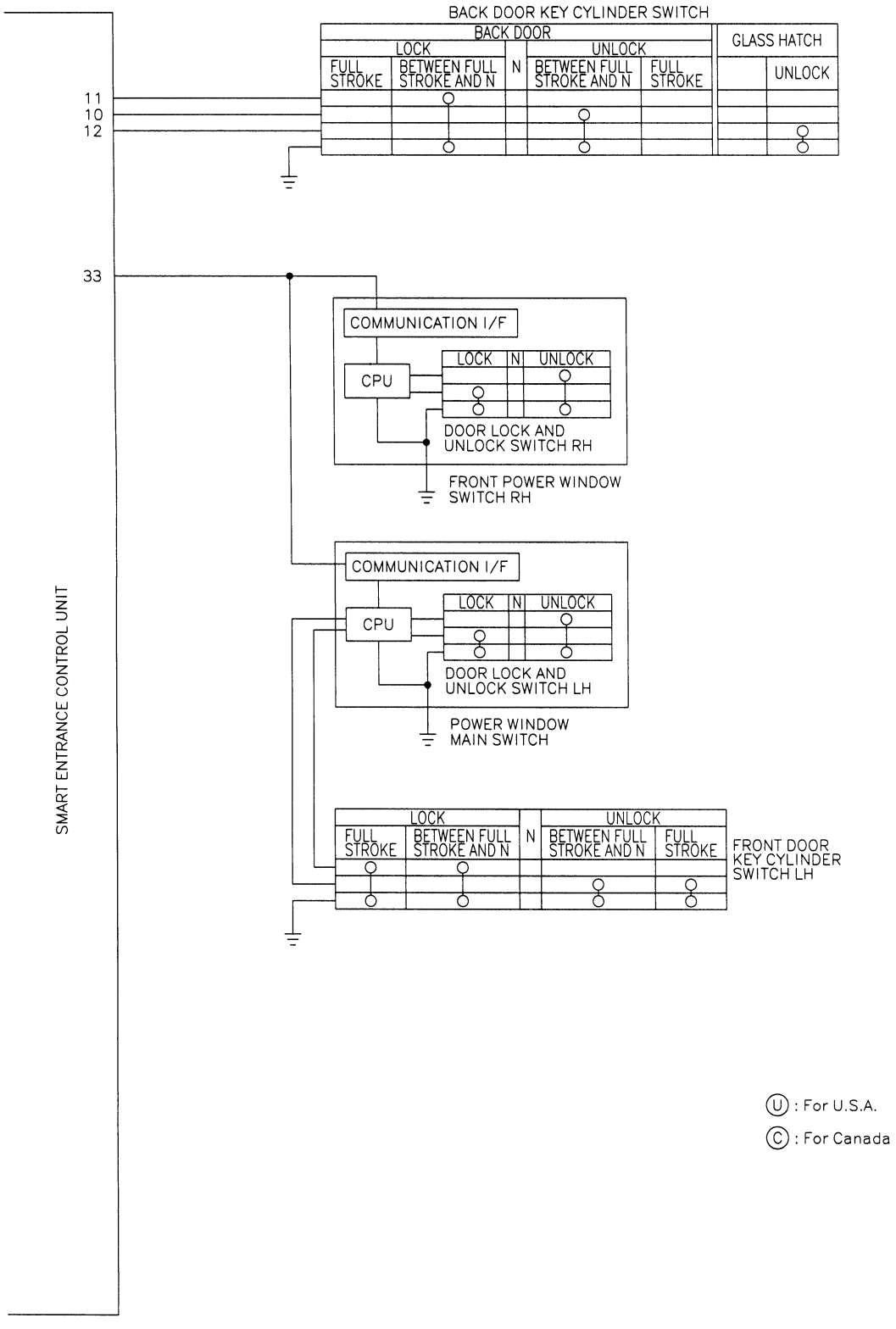
The headlamp flashes and the horn sounds intermittently.
The alarm automatically turns off after 25 seconds or when smart entrance control unit receives any signal from keyfob.

Schematic

NAEL0402



MEL126S


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
UNLOCK
11
10
12
33
SMART ENTRANCE CONTROL UNIT
COMMUNICATION I/F
CPU
LOCK
N
UNLOCK
DOOR LOCK AND UNLOCK SWITCH RH
FRONT POWER WINDOW SWITCH RH
COMMUNICATION I/F
CPU
LOCK
N
UNLOCK
DOOR LOCK AND UNLOCK SWITCH LH
POWER WINDOW MAIN SWITCH
LOCK
UNLOCK
FULL STROKE
BETWEEN FULL STROKE AND N
N
BETWEEN FULL STROKE AND N
FULL STROKE
FRONT DOOR KEY CYLINDER SWITCH LH
Ⓤ : For U.S.A.
Ⓒ : For Canada

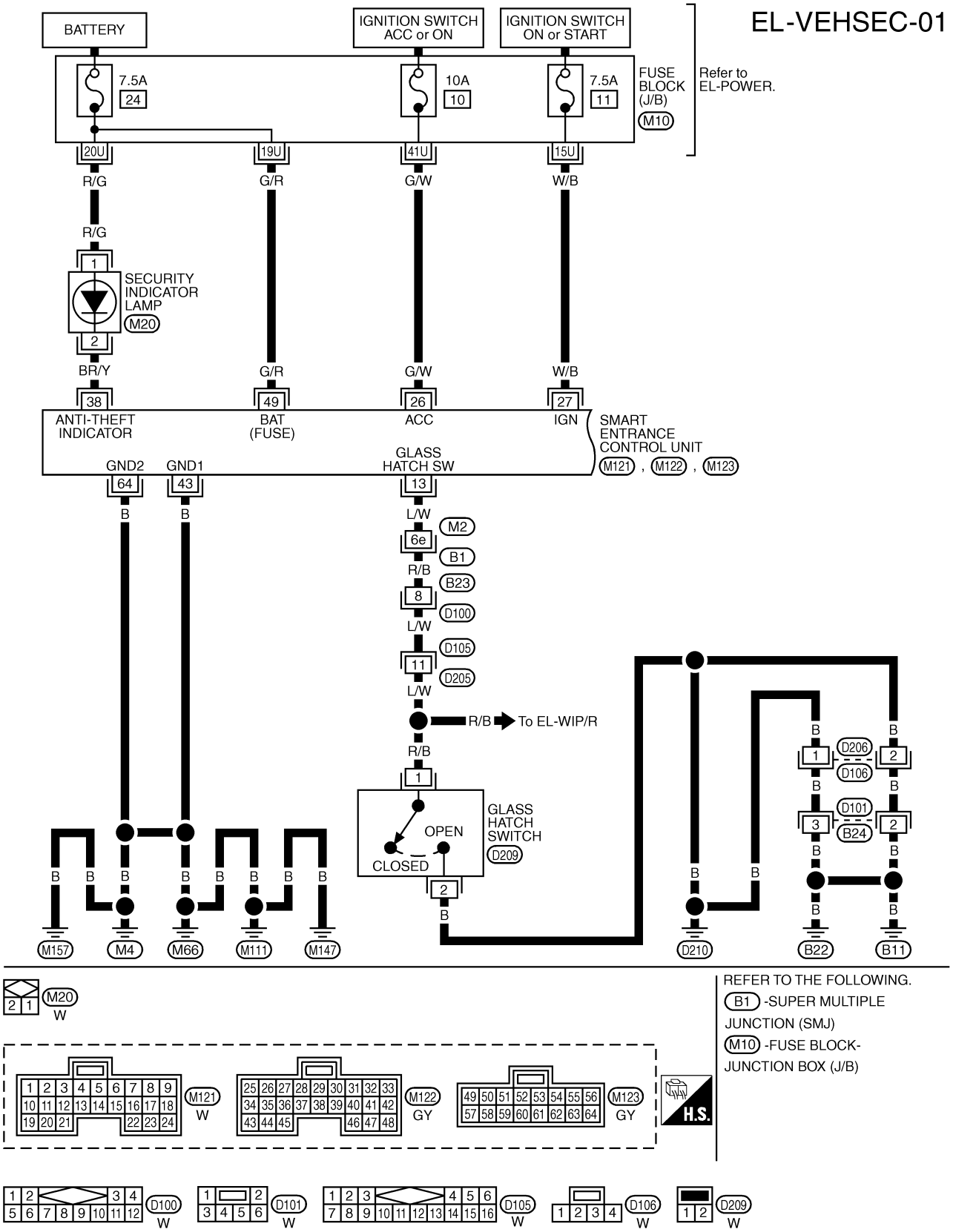
MEL437P

Wiring Diagram — VEHSEC —

NAEL0403

FIG. 1

NAEL0403S01

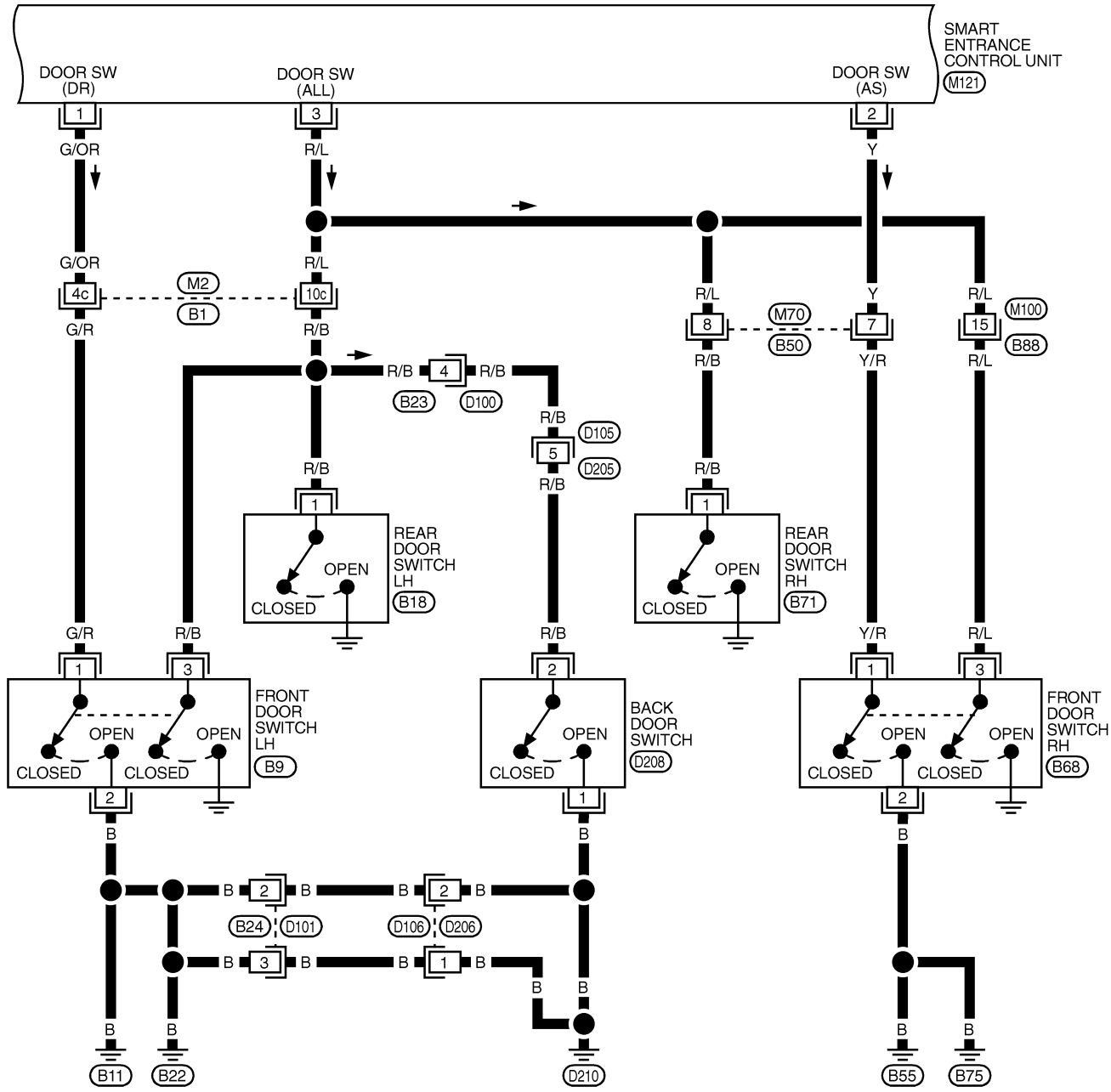


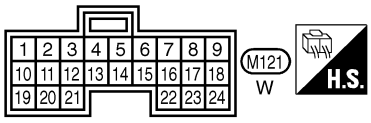
MEL127S

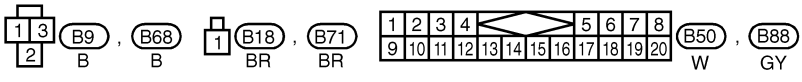
FIG. 2

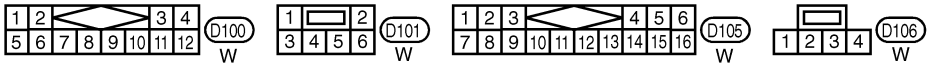
NAEL0403S02

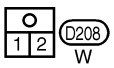
EL-VEHSEC-02









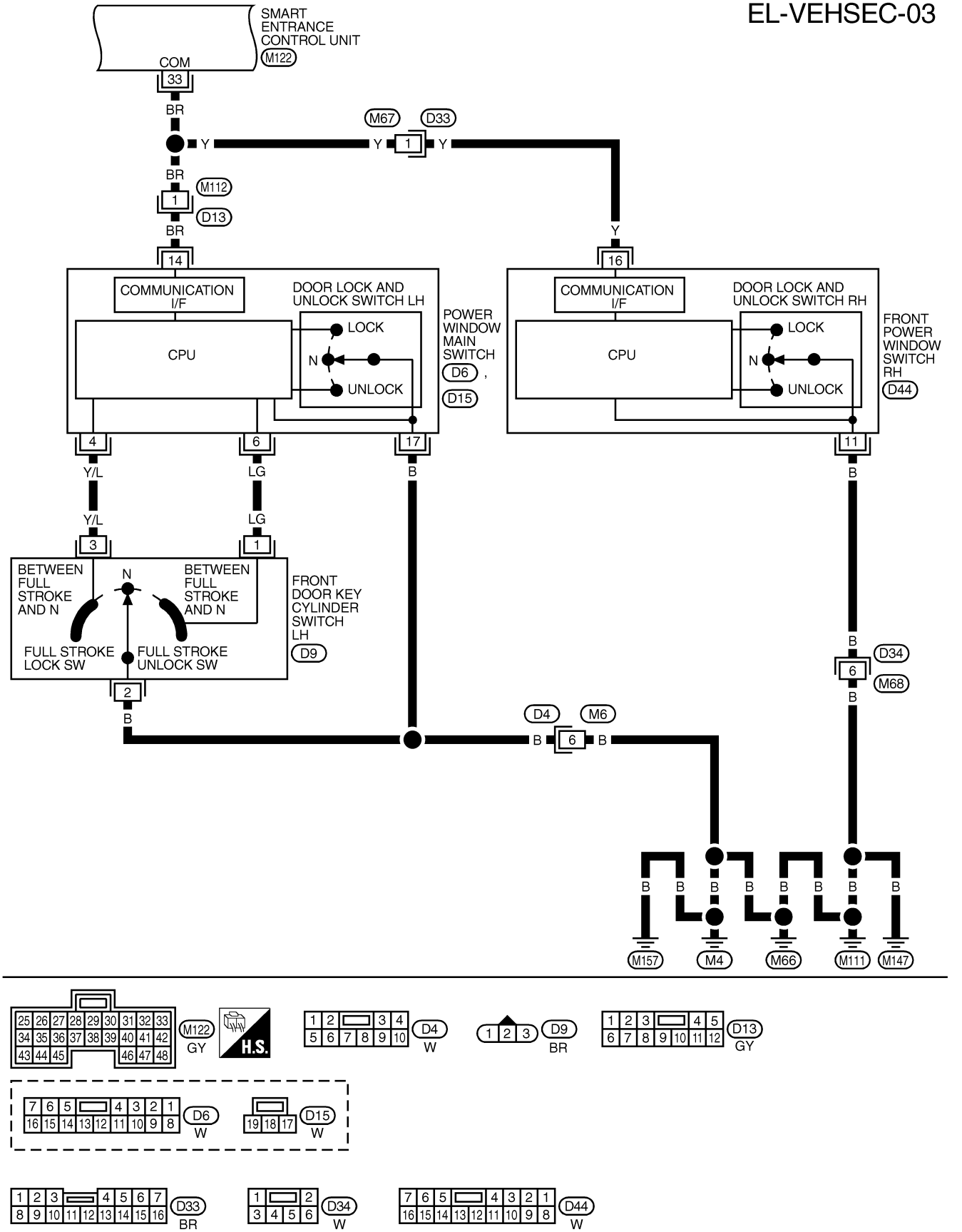


REFER TO THE FOLLOWING.
(B1) -SUPER MULTIPLE JUNCTION (SMJ)

MEL034Q

FIG. 3

NAEL0403S03



MEL035Q

FIG. 4

NAEL0403S04

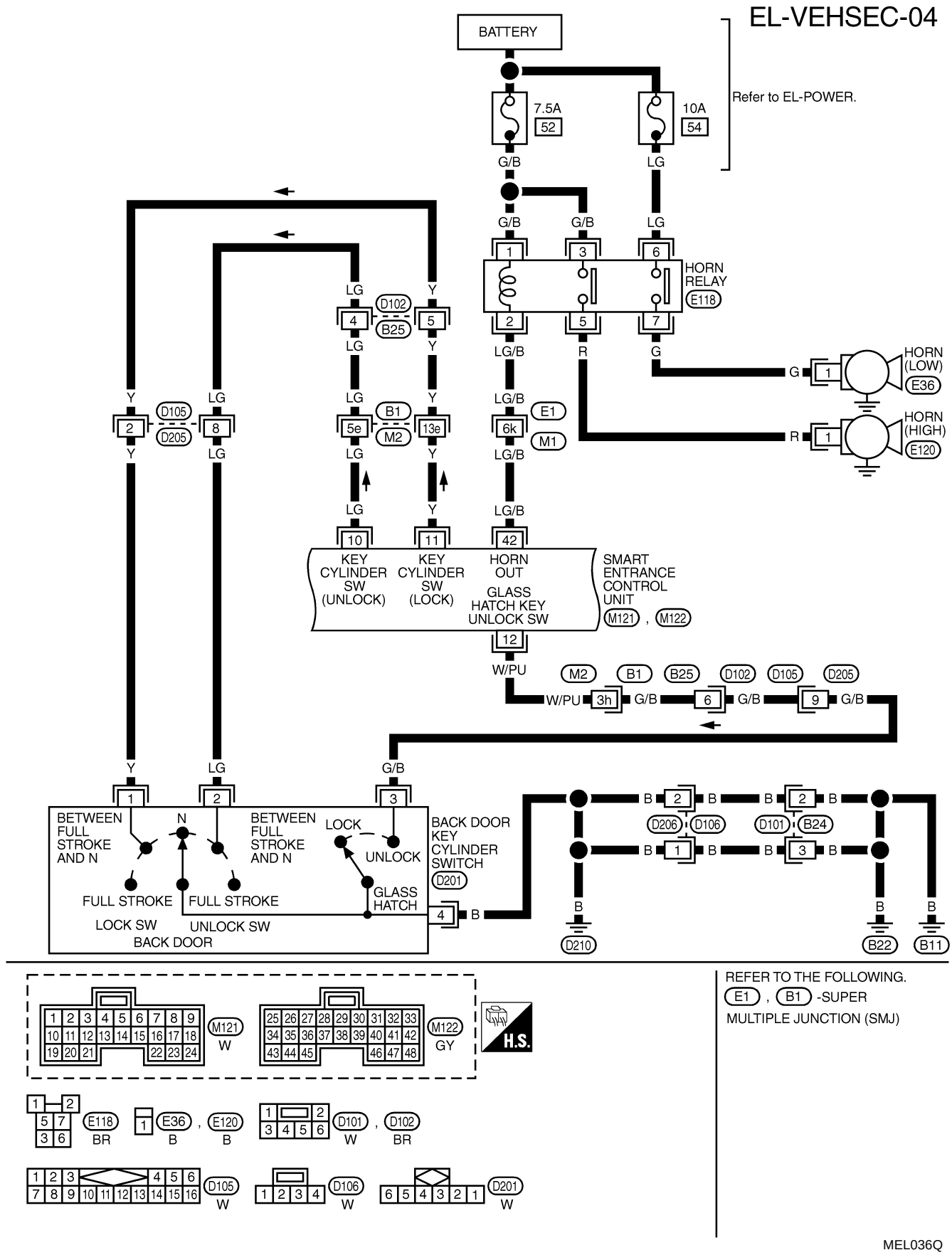
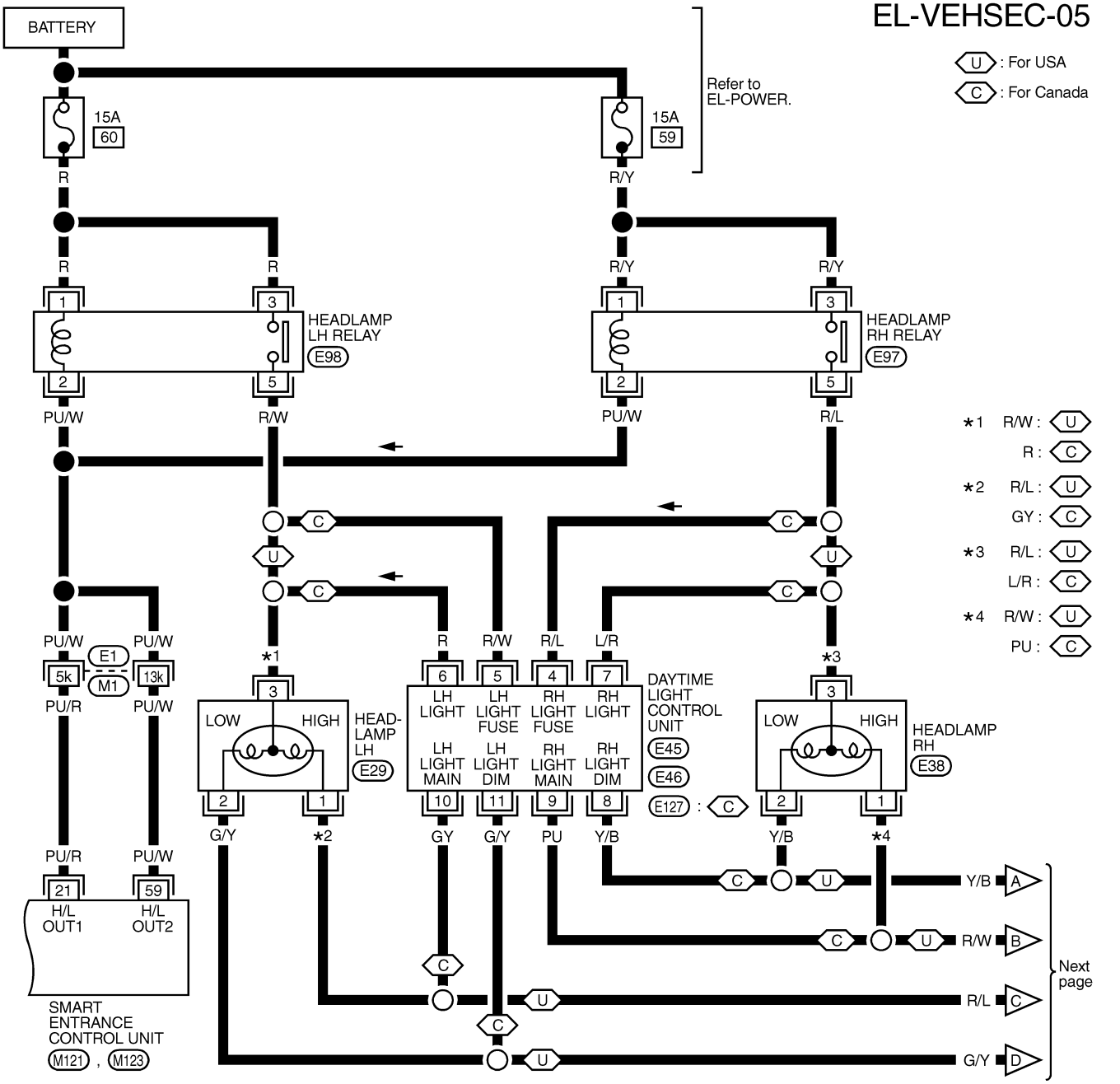
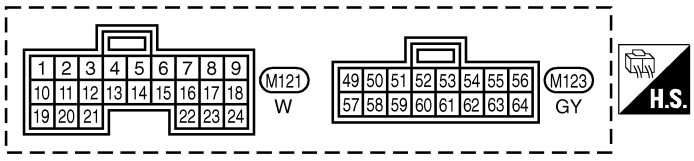
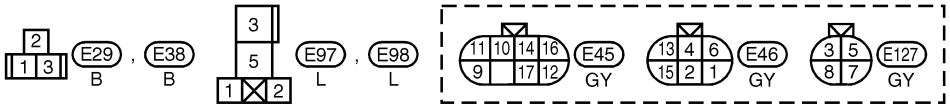


FIG. 5

NAEL0403S05





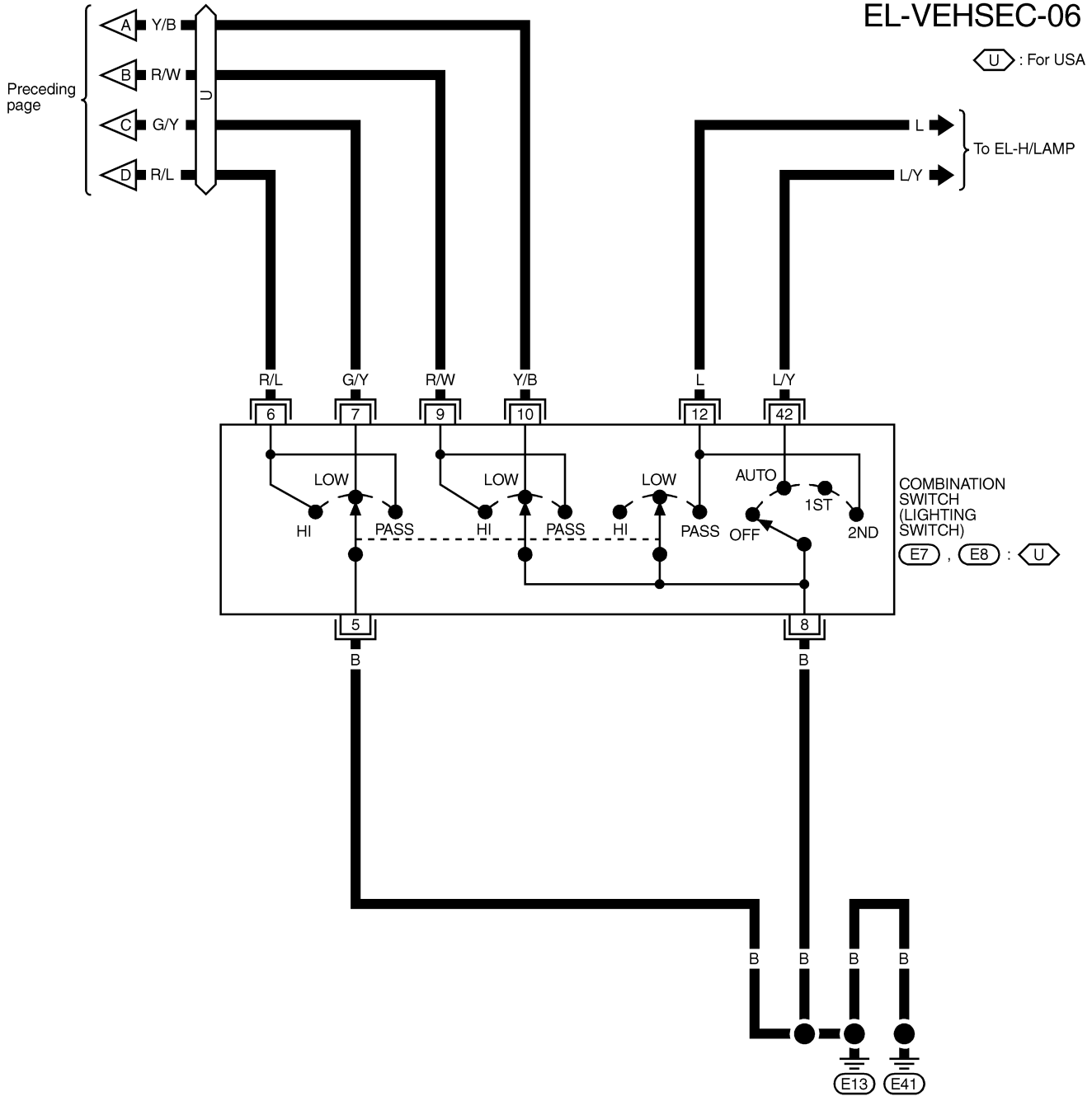


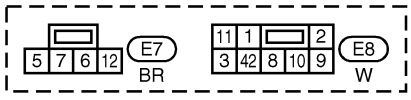
REFER TO THE FOLLOWING.
E1 - SUPER MULTIPLE JUNCTION (SMJ)

MEL037Q

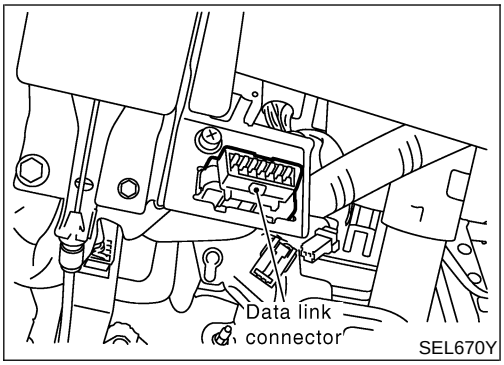
FIG. 6

NAEL0403S06





MEL038Q



SEL670Y

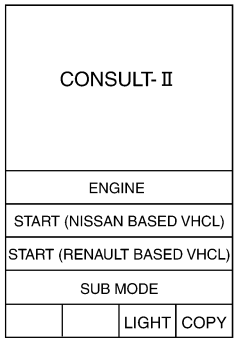
CONSULT-II Inspection Procedure

=NAEL0404

"THEFT WAR ALM"

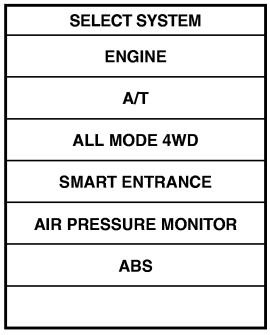
NAEL0404S01

1. Turn ignition switch "OFF".
2. Connect "CONSULT-II" and "CONSULT-II CONVERTER" to the data link connector.



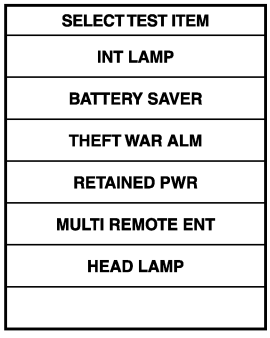
SKIA3098E

3. Turn ignition switch "ON".
4. Touch "START (NISSAN BASED VHCL)".



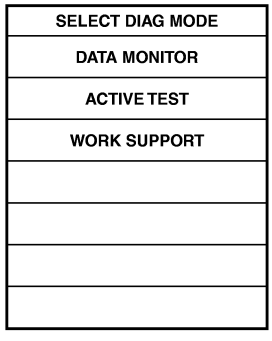
SEL669Y

5. Touch "SMART ENTRANCE".
   If "SMART ENTRANCE" is not indicated, go to GI-42, "CONSULT-II Data Link Connector (DLC) Circuit".



SEL751Y

6. Touch "THEFT WAR ALM".



SEL274W

7. Select diagnosis mode.
   "DATA MONITOR", "ACTIVE TEST" and "WORK SUPPORT" are available.

CONSULT-II Application Item

NAEL0405

"THEFT WAR ALM"

NAEL0405S01

Data Monitor

NAEL0405S0101

Monitored Item	Description
IGN ON SW	Indicates [ON/OFF] condition of ignition switch.
ACC ON SW	Indicates [ON/OFF] condition of ignition switch in ACC position.
DOOR SW-RR	Indicates [ON/OFF] condition of rear door switch.
TRNK OPNR SW	Indicates [ON/OFF] condition of back door switch.
KEY CYL LK SW	Indicates [ON/OFF] condition of lock signal from key cylinder switch.
KEY CYL UN SW	Indicates [ON/OFF] condition of unlock signal from key cylinder switch.
DOOR SW-DR	Indicates [ON/OFF] condition of front door switch LH.
DOOR SW-AS	Indicates [ON/OFF] condition of front door switch RH.
TRNK OPN MNTR	Indicates [ON/OFF] condition of back door switch.
TRUNK KEY SW	Indicates [ON/OFF] condition of back door key cylinder switch.
HOOD SWITCH	Indicates [ON/OFF] condition of hood switch.
LOCK SW DR/AS	Indicates [ON/OFF] condition of lock signal from door lock/unlock switch LH and RH.
UNLK SW DR/AS	Indicates [ON/OFF] condition of unlock signal from door lock/unlock LH and RH.
LK BUTTON/SIG	Indicates [ON/OFF] condition of lock signal from keyfob.
UN BUTTON/SIG	Indicates [ON/OFF] condition of unlock signal from keyfob.
TRUNK BTN/SIG	Indicates [ON/OFF] condition of trunk open signal from keyfob.

NOTE:
Even though TRUNK BTN/SIG is actually displayed on the CONSULT-II screen, it is not equipped, therefore, they cannot be activated.

Active Test

NAEL0405S0102

Test Item	Description
THEFT IND	This test is able to check security indicator lamp operation. The lamp will be turned on when "ON" on CONSULT-II screen is touched.
HORN	This test is able to check vehicle security alarm operation. The alarm will be activated for 0.5 seconds after "ON" on CONSULT-II screen is touched.
HEAD LAMP	This test is able to check vehicle security alarm headlamp operation. The headlamp illuminates for 0.5 seconds after "ON" on CONSULT-II screen is touched.

Work Support

NAEL0405S0103

Test Item	Description
THEFT ALM TRG	The switch which triggered theft warning alarm is recorded. This mode is able to confirm and erase the record of theft waning alarm. The trigger data can be erased by touching "CLEAR" on CONSULT-II screen.
SECURITY ALARM SET	Theft warning alarm mode can be changed in this mode. Selects ON-OFF of theft warning alarm mode. ● MODE 1 (ON)/MODE 2 (OFF)

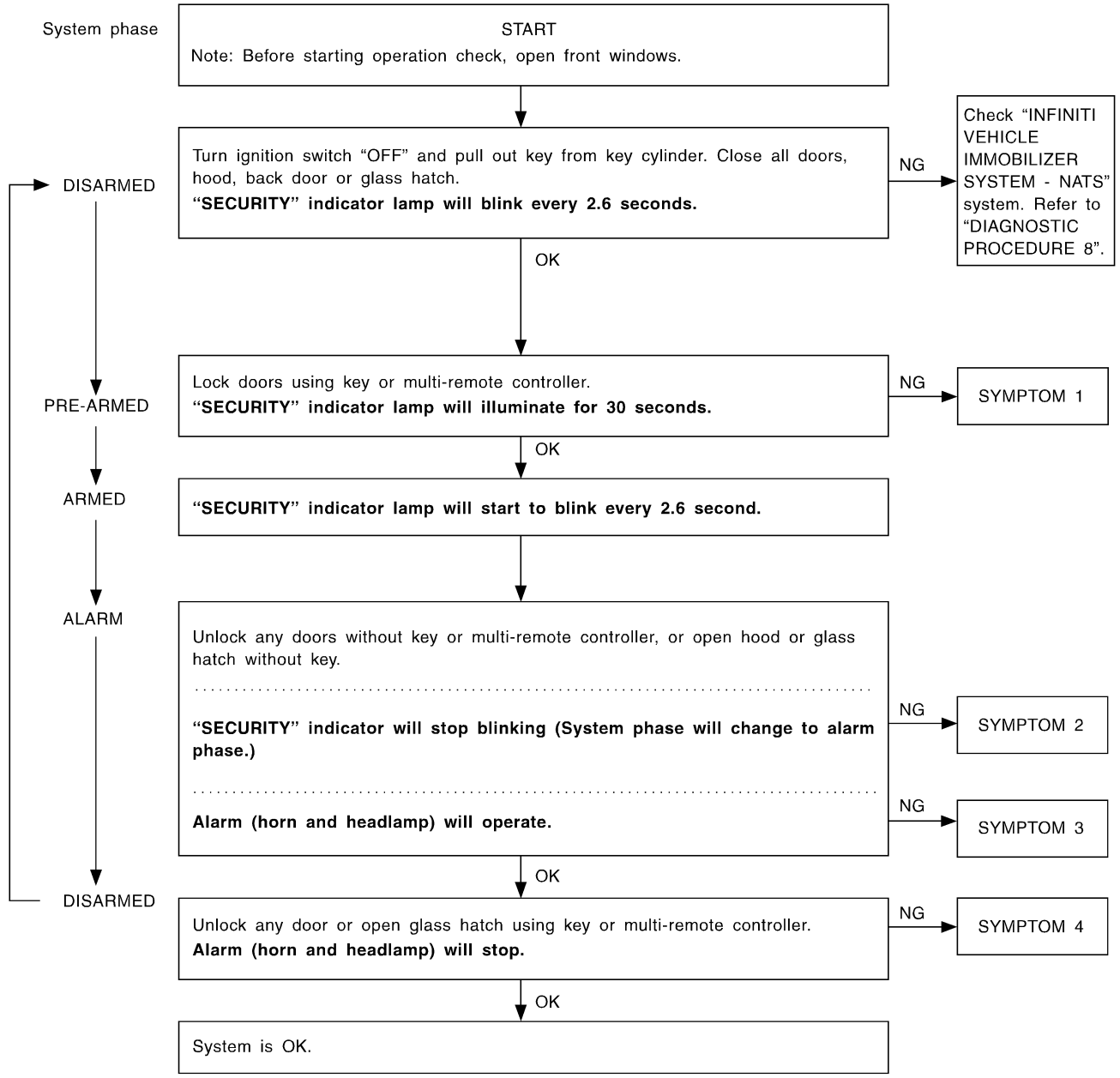
Trouble Diagnoses

=NAEL0406

PRELIMINARY CHECK

NAEL0406S01

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



SEL733W

After performing preliminary check, go to symptom chart below.

SYMPTOM CHART

NAEL0406S02

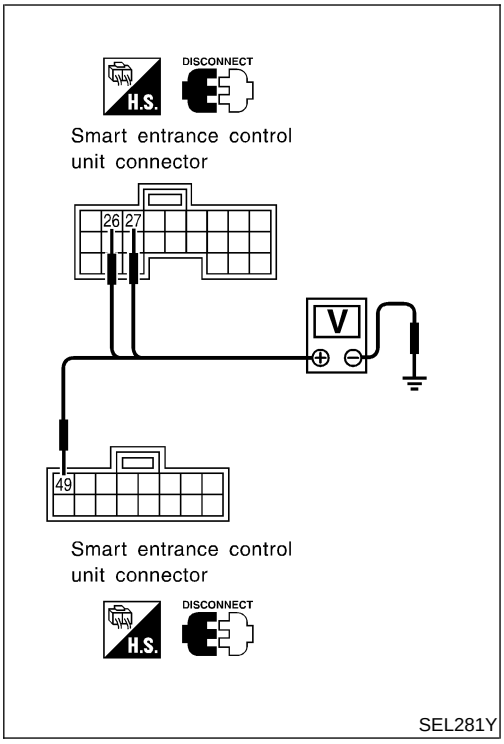
REFERENCE PAGE (EL-)			358	360	361	366	368	370	373	375	325
SYMPTOM			PRELIMINARY CHECK	POWER SUPPLY AND GROUND CIRCUIT CHECK	DOOR, HOOD AND GLASS HATCH SWITCH CHECK	SECURITY INDICATOR LAMP CHECK	DOOR KEY CYLINDER SWITCH CHECK	BACK DOOR KEY CYLINDER SWITCH CHECK	VEHICLE SECURITY HORN ALARM CHECK	VEHICLE SECURITY HEADLAMP ALARM CHECK	Check "MULTI-REMOTE CONTROL" system.
1	Vehicle security indicator does not illuminate for 30 seconds.		X	X	X	X					
	Vehicle security system cannot be set by	All items	X	X	X						
		Door outside key	X				X				
		Back door key	X					X			
		Multi-remote control	X								X
2	*1 Vehicle security system does not alarm when ...	Any door is opened.	X		X						
		Any door is unlocked without using key or multi-remote controller	X								
3	Vehicle security alarm does not activate.	All function	X		X						
		Horn alarm	X						X		
		Headlamp alarm	X							X	
4	Vehicle security system cannot be canceled by	Door outside key	X				X				
		Back door key	X					X			
		Multi-remote control	X								X

X : Applicable

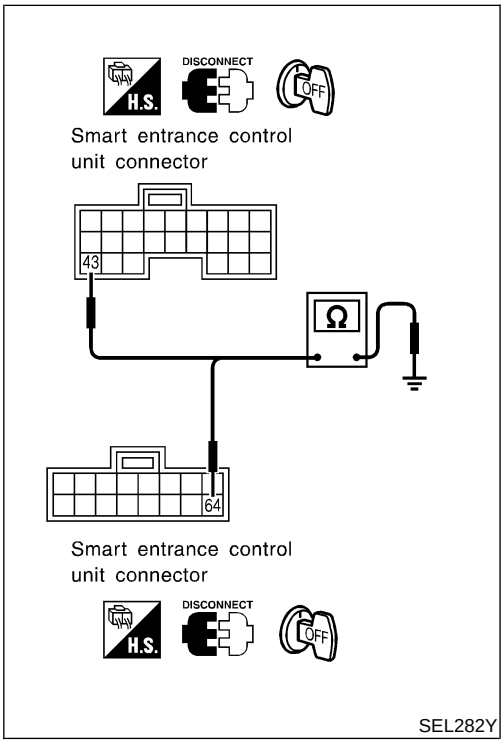
*1: Make sure the system is in the armed phase.

Before starting trouble diagnoses above, perform preliminary check, EL-358.

Symptom numbers in the symptom chart correspond with those of preliminary check.



SEL281Y



SEL282Y

POWER SUPPLY AND GROUND CIRCUIT CHECK

NAEL0406S03

Power Supply Circuit Check

NAEL0406S0301

Terminals			Ignition switch position		
(+)		(−)	OFF	ACC	ON
Connector	Terminal (Wire color)				
M123	49 (G/R)	Ground	Battery voltage	Battery voltage	Battery voltage
M122	26 (G/W)	Ground	0V	Battery voltage	Battery voltage
M122	27 (W/B)	Ground	0V	0V	Battery voltage

If NG, check the following.

- 7.5A fuse [No. 24, located in fuse block (J/B)]
- 7.5A fuse [No. 11, located in fuse block (J/B)]
- 10A fuse [No. 10, located in fuse block (J/B)]
- Harness for open or short between smart entrance control unit and fuse.

Ground Circuit Check

NAEL0406S0302

Terminals			Continuity
(+)		(−)	
Connector	Terminal (Wire color)		
M122	43 (B)	Ground	Yes
M123	64 (B)		

DOOR, HOOD AND GLASS HATCH SWITCH CHECK

=NAEL0406S04

Door Switch Check

NAEL0406S0401

1	PRELIMINARY CHECK

1. Turn ignition switch OFF and remove key from ignition key cylinder.
   "SECURITY" indicator lamp should blink every 2.6 seconds.
2. Close all doors, hood and glass hatch.
3. Lock doors with multi-remote controller from inside the vehicle.
   "SECURITY" indicator lamp should turn on for 30 seconds.
4. Unlock any door with the door lock knob and open the door within 30 seconds after door is locked.
   "SECURITY" indicator lamp should turn off.

OK or NG

OK	▶	Door switch is OK, and go to hood switch check.
NG	▶	GO TO 2.

2	CHECK DOOR SWITCH INPUT SIGNAL

With CONSULT-II

Check door switches ("DOOR SW-RR", "DOOR SW-DR" and "DOOR SW-AS") in "DATA MONITOR" mode with CONSULT-II.

DATA MONITOR	
MONITOR	
DOOR SW-RR	OFF
DOOR SW-DR	OFF
DOOR SW-AS	OFF

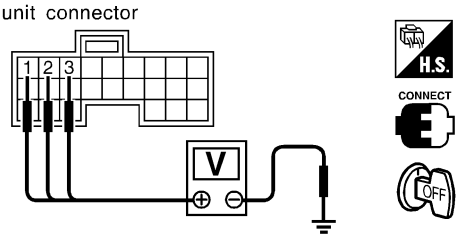
	Monitor item	Condition	Condition
DOOR SW-RR	Rear doors switch	Open	ON
		Closed	OFF
DOOR SW-DR	Door switch LH	Open	ON
		Closed	OFF
DOOR SW-AS	Door switch RH	Open	ON
		Closed	OFF

SEL024Y

Without CONSULT-II

Check voltage between smart entrance control unit harness connector M121 terminals 1 (G/OR), 2 (Y) or 3 (R/L) and ground.

Smart entrance control unit connector



	Terminals (+)	Terminals (–)	Condition	Voltage [V]
Front door switch LH	1	Ground	Open	0
			Closed	Approx. 5
Front door switch RH	2	Ground	Open	0
			Closed	Approx. 5
Rear and back door switches	3	Ground	Open	0
			Closed	Approx. 5

SEL021YA

Refer to wiring diagram in EL-351.

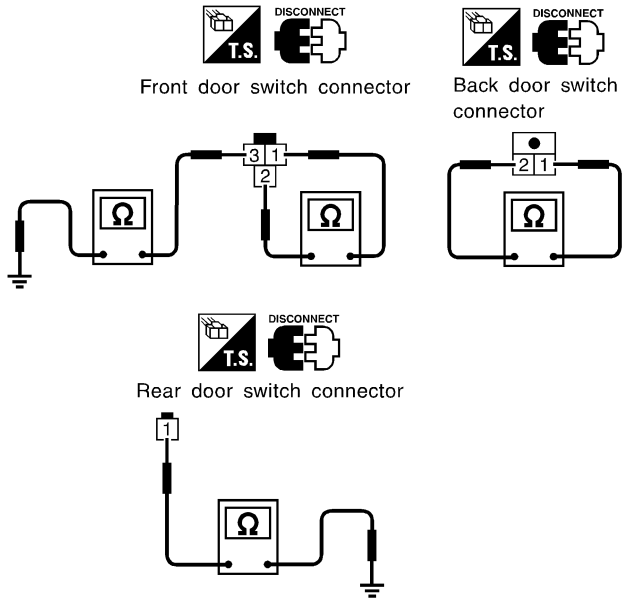
OK or NG

OK	▶	Door switch is OK, and go to hood switch check.
NG	▶	GO TO 3.

3 CHECK DOOR SWITCH

1. Disconnect door switch connector.
2. Check the following.

- Continuity between front door switch connector B9 (LH) or B68 (RH) terminals 1 and 2
- Continuity between front door switch connector B9 (LH) or B68 (RH) terminals 3 and ground
- Continuity between back door switch connector D208 terminals 1 and 2
- Continuity between rear door switch connector B18 (LH) or B71 (RH) terminal 1 and ground



	Terminals	Condition	Continuity
Front door switches	1 - 2	Closed	No
	3 - Ground	Open	Yes
Back door switch	1 - 2	Closed	No
		Open	Yes
Rear door switches	1 - Ground	Closed	No
		Open	Yes

SEL287YA

OK or NG

OK	▶	**Check the following.** ● Door switch ground circuit (Front or back) 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

=NAEL0406S0402

1	PRELIMINARY CHECK

1. Turn ignition switch OFF and remove key from ignition key cylinder.
   "SECURITY" indicator lamp should blink every 2.6 seconds.
2. Close all doors, hood and trunk lid.
3. Lock doors with multi-remote controller from inside the vehicle.
   "SECURITY" indicator lamp should turn on for 30 seconds.
4. Unlock hood with hood opener within 30 seconds after door is locked.
   "SECURITY" indicator lamp should turn off.

OK or NG

OK	▶	Hood switch is OK, and go to trunk room lamp switch check.
NG	▶	GO TO 2.

2	CHECK HOOD SWITCH FITTING CONDITION

OK or NG

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

3	CHECK HOOD SWITCH INPUT SIGNAL

With CONSULT-II

Check hood switch ("HOOD SWITCH") in "DATA MONITOR" mode with CONSULT-II.

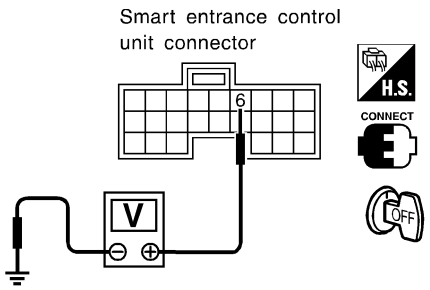
DATA MONITOR	
MONITOR	
HOOD SWITCH	OFF

When hood is open:
HOOD SWITCH ON
When hood is closed:
HOOD SWITCH OFF

SEL354W

Without CONSULT-II

Check voltage between smart entrance control unit harness connector M121 terminal 6 (Y/B) and ground.



Voltage [V]:
Engine hood is open.
0
Engine hood is closed.
Approx. 5

SEL035Y

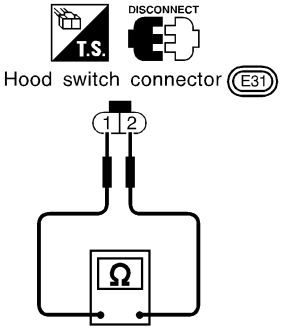
Refer to wiring diagram in EL-350.

OK or NG

OK	▶	Hood switch is OK, and go to glass hatch switch check.
NG	▶	GO TO 4.

4	CHECK HOOD SWITCH

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



Continuity:
Condition: Pushed
No
Condition: Released
Yes

SEL338X

OK or NG

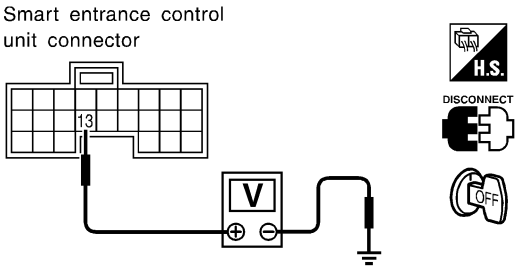
OK	▶	**Check the following.** ● Hood switch ground circuit ● Harness for open or short between smart entrance control unit and hood switch
NG	▶	Replace hood switch.

Glass Hatch Switch Check

=NAEL0406S0403

1	CHECK GLASS HATCH SWITCH INPUT SIGNAL

Check voltage between smart entrance control unit harness connector M121 terminal 13 (L/W) and ground.



Voltage [V]:
Glass hatch is open.
Approx. 5
Glass hatch is closed.
Approx. 0

SEL326YA

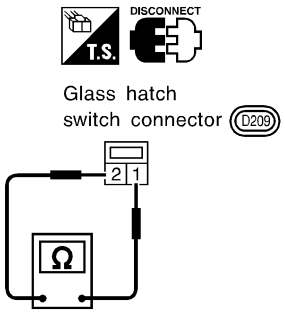
Refer to wiring diagram in EL-350.

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 connector 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.

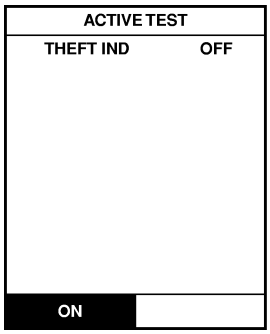
SECURITY INDICATOR LAMP CHECK

=NAEL0406S05

1	CHECK INDICATOR LAMP OPERATION

With CONSULT-II

1. Select "ACTIVE TEST" in "THEFT WAR ALM" with CONSULT-II.
2. Select "THEFT IND" and touch "ON".

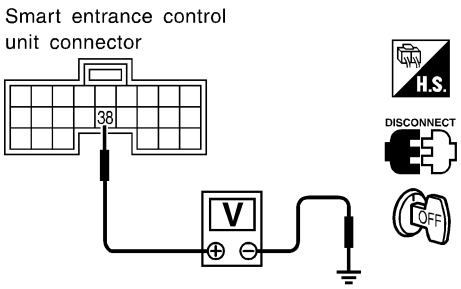


Security indicator lamp should illuminate.

SEL356W

Without CONSULT-II

1. Disconnect smart entrance control unit harness connector.
2. Check voltage between smart entrance control unit harness connector M122 terminal 38 (BR/Y) and ground.



Battery voltage should exist.

SEL037Y

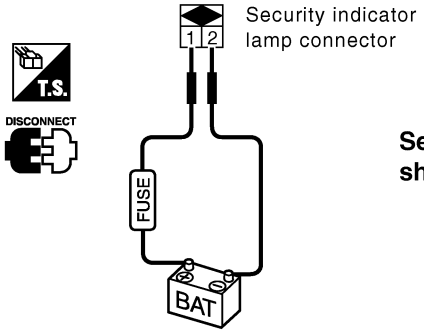
Refer to wiring diagram in EL-350.

OK or NG

OK	▶	Security indicator lamp is OK.
NG	▶	GO TO 2.

2	CHECK SECURITY INDICATOR LAMP

1. Disconnect security indicator lamp connector.
2. Apply 12V direct current to security indicator lamp harness connector M20 terminals 1 and 2.



Security indicator lamp should illuminate.

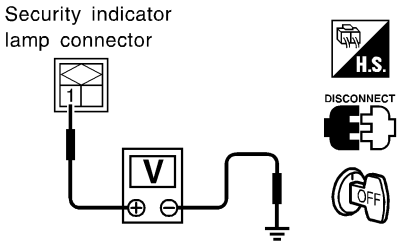
SEL696Y

OK or NG

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

3	CHECK POWER SUPPLY CIRCUIT FOR SECURITY INDICATOR LAMP

1. Disconnect security indicator lamp connector.
2. Check voltage between security indicator lamp harness connector M20 terminal 1 (R/G) and ground.



Battery voltage should exist.

SEL697Y

OK or NG

OK	▶	Check harness for open or short between security indicator lamp and smart entrance 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

FRONT DOOR KEY CYLINDER SWITCH CHECK

=NAEL0406S06

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

With CONSULT-II

Check front door key cylinder switch ("KEY CYL LK-SW"/"KEY CYL UN-SW") in "DATA MONITOR" mode with CONSULT-II.

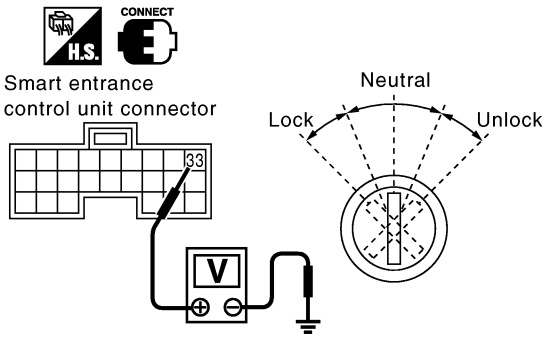
DATA MONITOR	
MONITOR	
KEY CYL LK-SW	OFF
KEY CYL UN-SW	OFF

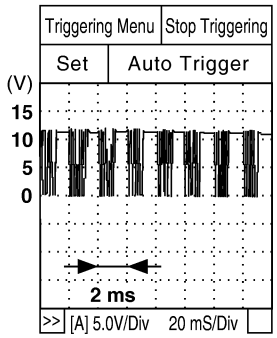
When key inserted in front door key cylinder is turned to LOCK:
KEY CYL LK-SW ON
When key inserted in front door key cylinder is turned to UNLOCK:
KEY CYL UN-SW ON

SEL342WF

Without CONSULT-II

1. Check the signal between smart entrance control unit harness connector M122 terminal 33 (BR) and ground with oscilloscope when key inserted in front key cylinder is turned "LOCK" or "UNLOCK".
2. Make sure signals which are shown in the figure below can be detected during 10 sec. just after key is turned "LOCK" or "UNLOCK".





Voltage:
12V → 9V (10 sec.) measurement by analog circuit tester.

SEL700YA

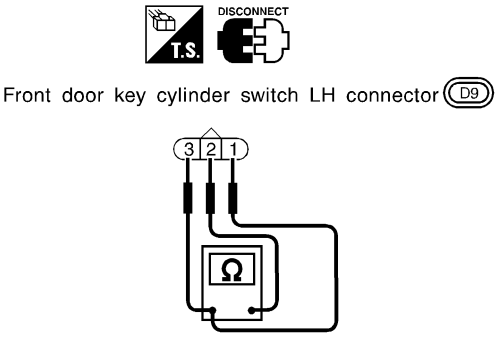
Refer to wiring diagram in EL-352.

OK or NG

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

2	CHECK FRONT DOOR KEY CYLINDER SWITCH

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



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

SEL313XB

OK or NG

OK	▶	**Check the following.** ● Front door key cylinder switch LH ground circuit ● Harness for open or short between power window main switch and front door key cylinder switch LH
NG	▶	Replace front door key cylinder switch LH.

BACK DOOR KEY CYLINDER SWITCH CHECK

=NAEL0406S07

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

With CONSULT-II

Check back door key cylinder switch ("KEY CYL LK-SW"/"KEY CYL UN-SW") in "DATA MONITOR" mode with CONSULT-II.

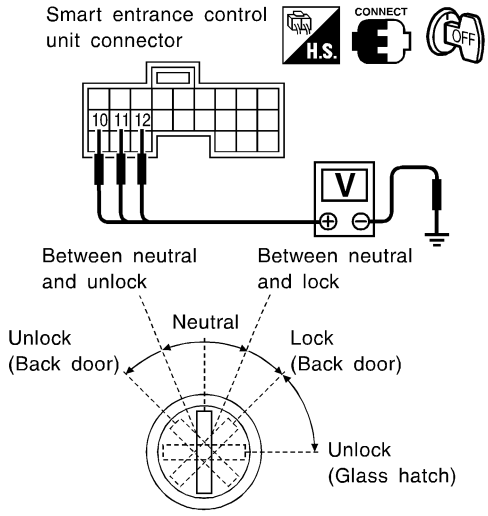
DATA MONITOR	
MONITOR	
KEY CYL LK-SW	OFF
KEY CYL UN-SW	OFF

When key inserted in back door key cylinder is turned to LOCK:
KEY CYL LK-SW ON
When key inserted in back door key cylinder is turned to UNLOCK:
KEY CYL UN-SW ON

SEL342WG

Without CONSULT-II

Check voltage between smart entrance control unit terminals 10 (LG), 11 (Y) or 12 (W/PU) and ground.



	Terminals (+)	Terminals (−)	Key position	Voltage [V]
Back door	11	Ground	Between neutral and lock	0
			Other positions	Approx. 5
	10	Ground	Between neutral and unlock	0
			Other positions	Approx. 5
Glass hatch	12	Ground	Unlock	0
			Other positions	Approx. 5

SEL698Y

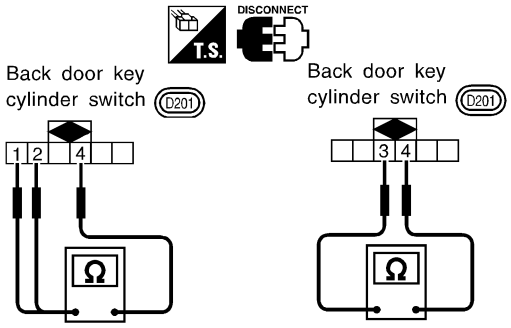
Refer to wiring diagram in EL-353.

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.

DOOR LOCK/UNLOCK SWITCH CHECK

=NAEL0406S08

1 CHECK DOOR LOCK/UNLOCK SWITCH INPUT SIGNAL

With CONSULT-II

Check door lock/unlock switch ("LOCK SW DR/AS"/"UNLK SW DR/AS") in "DATA MONITOR" mode with CONSULT-II.

DATA MONITOR	
MONITOR	
LOCK SW DR/AS	OFF
UNLK SW DR/AS	OFF

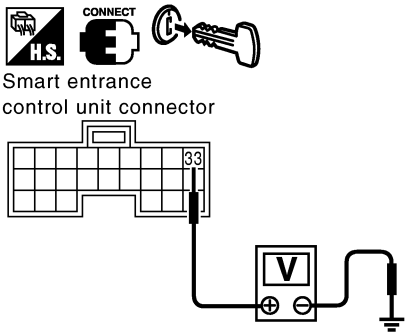
When lock/unlock switch is turned to LOCK:
LOCK SW DR/AS ON

When lock/unlock switch is turned to UNLOCK:
UNLK SW DR/AS ON

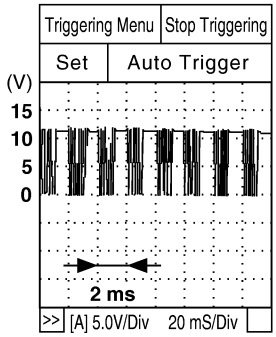
SEL341W

Without CONSULT-II

1. Remove key from ignition key cylinder.
2. Check the signal between smart entrance control unit harness connector M122 terminal 33 (BR) and ground with oscilloscope when door lock/unlock switch is turned "LOCK" or "UNLOCK".
3. Make sure signals which are shown in the figure below can be detected during 10 sec. just after door lock/unlock switch is turned "LOCK" or "UNLOCK".



Smart entrance control unit connector



Voltage:
12V → 9V (10 sec.) measurement by analog circuit tester.

SEL699YA

Refer to wiring diagram in EL-352.

OK or NG

OK	▶	Door lock/unlock switch is OK.
NG	▶	**Check the following.** ● Ground circuit for each front power window switch ● Harness for open or short between each front power window switch and smart entrance control unit connector If above systems are normal, replace the front power window switch.

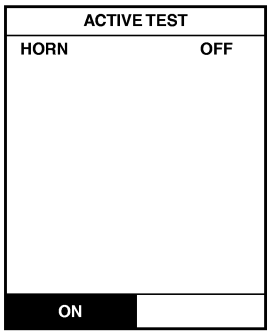
VEHICLE SECURITY HORN ALARM CHECK

=NAEL0406S09

1	CHECK VEHICLE SECURITY HORN

With CONSULT-II

1. Select "ACTIVE TEST" in "THEFT WAR ALM" with CONSULT-II.
2. Select "HORN" and touch "ON".

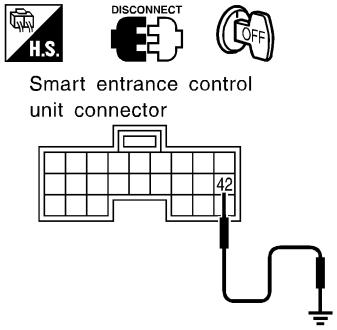


Vehicle security horn alarm should operate.

SEL041Y

Without CONSULT-II

1. Disconnect smart entrance control unit harness connector.
2. Apply ground to smart entrance control unit harness connector M122 terminal 42 (LG/B).



Vehicle security horn alarm should operate.

SEL043YC

Refer to wiring diagram in EL-353.

OK or NG

OK	▶	Horn alarm is OK.
NG	▶	GO TO 2.

2	CHECK HORN RELAY

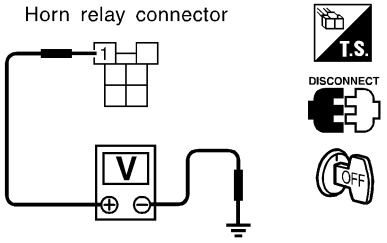
Check horn relay.

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 horn relay harness connector E118 terminal 1 (G/B) and ground.



Battery voltage should exist.

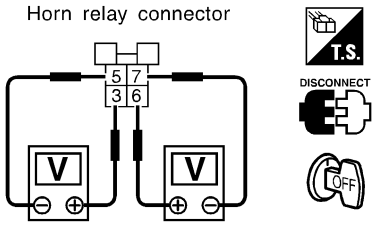
SEL326XB

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 horn relay harness connector E118 terminals 3 (G/B) and 5 (R).
3. Check voltage between horn relay harness connector E118 terminals 6 (LG) and 7 (G).



Battery voltage should exist.

SEL327XB

OK or NG

OK	▶	Check harness for open or short between horn relay and smart entrance control unit.
NG	▶	**Check the following.** ● Harness for open or short between horn relay and fuse ● 7.5A fuse (No. 52, located in the fuse and fusible link box) ● 10A fuse (No. 54, located in the fuse and fusible link box)

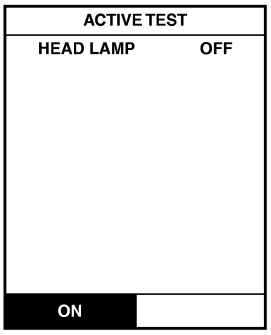
VEHICLE SECURITY HEADLAMP ALARM CHECK

=NAEL0406S10

1	CHECK VEHICLE SECURITY HEADLAMP ALARM OPERATION

With CONSULT-II

1. Select "ACTIVE TEST" in "THEFT WAR ALM" with CONSULT-II.
2. Select "HEADLAMP" and touch "ON".

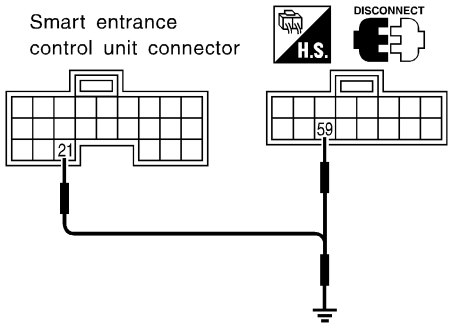


Vehicle security headlamp alarm should operate.

SEL042Y

Without CONSULT-II

1. Disconnect smart entrance control unit connector.
2. Apply ground to smart entrance control unit harness connector M121, M123 terminals 21 (PU/R) and 59 (PU/W).



Vehicle security headlamp alarm should operate.

SEL198Y

Refer to wiring diagram in EL-354.

OK or NG

OK	▶	Headlamp 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".

Description

NAEL0407

OUTLINE

NAEL0407S01

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

- Headlamp auto light control system
- Warning chime
- Rear defogger and door mirror defogger timer
- Power door lock
- Remote keyless entry system
- Vehicle security system
- Interior lamp

In addition, the following timer operations are controlled by the smart entrance control unit.

- Battery saver control
- Retained power control

BATTERY SAVER CONTROL

NAEL0407S02

Headlamps/Parking Lamps/License Lamps/Tail Lamps/Fog Lamps/Illumination Lamps

NAEL0407S0201

While the headlamps (including parking, license, tail, fog and illumination lamps) are turned ON by "1ST" or "2ND" of lighting switch, the exterior lamp battery saver control is activated when the ignition switch signal changes from ON (or ACC) to OFF, and either one of LH or RH front door switch ON signal is received. The headlamps (including parking, license, tail, fog and illumination lamps) are turned off after 5 minutes.

While the headlamps are turned ON by "AUTO" operation, the exterior lamp battery saver control is activated when the ignition switch is turned from ON (or ACC) to OFF, and either LH or RH front door switch ON signal is input.

The smart entrance control unit controls timer activation as follows:

- When the door switch signal changes from ON to OFF while the exterior lamp battery saver is activated, the operation is discontinued, restarts and lasts for 45 seconds, then the headlamps (including parking, license, tail, fog and illumination lamps) will be turned off.
- When the door switch signal changes from OFF to ON while the exterior lamp battery saver is activated, the operation is discontinued, restarts and lasts for 45 seconds, then the headlamps will be turned off.
- When the one of four door switch signals changes from OFF to ON while the exterior lamp battery saver is activated, the operation is discontinued, restarts and lasts for 5 minutes, then the headlamps (including parking, license, tail, fog and illumination lamps) will be turned off.
- When all the door switch ON signals are input while the exterior lamp battery saver is activated, the operation is discontinued, restarts and lasts for 45 seconds, then the headlamps (including parking, license, tail, fog and illumination lamps) will be turned off.

The "45" second timer's duration can be changed with the function setting mode of CONSULT-II.

Interior Lamp/Luggage Room Lamp/Spot Lamp/Vanity Mirror Illumination

NAEL0407S0202

The lamps turn off automatically when the interior lamp, spot lamp or/and vanity mirror illumination are 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 30 minutes.

After lamps are turned off by the battery saver system, the lamps illuminate again when:

- Door is locked or unlocked with keyfob or door lock/unlock switch or door key cylinder.
- Ignition switch ON.
- Door is opened or closed,
- Key is inserted or removed into ignition key cylinder.

Rear Window Defogger/Door Mirror Defogger

NAEL0407S0203

Rear window defogger and door mirror defogger are turned off in approximately 15 minutes after the rear window defogger switch is turned on.

RETAINED POWER CONTROL

NAEL0407S03

When the ignition switch is turned to OFF (or ACC) position from ON or START position, the following systems can be operated for 45 seconds by the RAP signal from the smart entrance control unit terminal 46.

- Electric sunroof
- Power window

The retained power operation is canceled when the driver or passenger side door is opened.

INPUT/OUTPUT

NAEL0407S04

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
Remote keyless entry	Key switch (Insert) Ignition switch (ACC) Door switches Keyfob signal Door lock/unlock switch LH	Horn relay Headlamp relay (LH and RH) Hazard warning lamp Interior lamp Power window main switch Door lock actuator Opener actuator
Warning chime	Key switch (Insert) Ignition switch (ON) Lighting switch (1st) Seat belt switch (driver's seat) Front door switch LH	Warning chime (located in smart entrance control unit)
Rear window defogger and door mirror defogger	Ignition switch (ON) Rear window defogger switch	Rear window defogger relay
Vehicle security	Ignition switch (ACC, ON) Door switches Hood switch Back door switch Glass hatch switch Door lock/unlock switches Door key cylinder switches (lock/unlock)	Horn relay Headlamp relay Security indicator
Interior lamp	Door switches Keyfob signal (lock/unlock) Door lock/unlock switches (lock/unlock) Door key cylinder switch (lock/unlock) Ignition switch (ON) Key switch (Insert)	Interior lamp Step lamp Door indicator
Battery saver control for headlamps/parking lamps/ licence lamps/tail lamps/fog lamps/illumination lamps	Ignition switch (ON) Lighting switches	Headlamps Parking lamps Licence lamps Tail lamps Fog lamps Illumination lamps
Battery saver control for interior lamp/spot lamp/vanity mirror illumination	Ignition switch (ON) Front door switches Lamp switches	Interior lamp Step lamp Spot lamp Vanity mirror illumination
Battery saver control for rear window defogger and door mirror defogger	Ignition switch (ON) Rear window defogger switch	Rear window defogger relay
Retained power control for electric sunroof	Ignition switch (ON) Front door switches	Sunroof motor
Retained power control for power window	Ignition switch (ON) Front door switches	Power window relay
Headlamp auto light control	Auto light sensor Lighting switches	Headlamp relay Tail lamp relay

CONSULT-II

NAEL0408

DIAGNOSTIC ITEMS APPLICATION

NAEL0408S01

Item (CONSULT-II screen terms)	Diagnosed system	DATA MONITOR	ACTIVE TEST	WORK SUPPORT
DOOR LOCK	Power door lock	X	X	X
REAR DEFOGGER	Rear window defogger	X	X	
KEY WARN ALM	Warning chime	X	X	
LIGHT WARN ALM	Warning chime	X	X	
SEAT BELT ALM	Warning chime	X	X	
INT LAMP	Interior lamps	X	X	X
BATTERY SAVER	Battery saver control for interior lamp	X	X	X
THEFT WAR ALM	Vehicle security system	X	X	X
RETAINED PWR	Retained power control	X	X	X
MULTI REMOTE ENT	Remote keyless entry system	X	X	X
HEAD LAMP	Headlamp	X	X	X

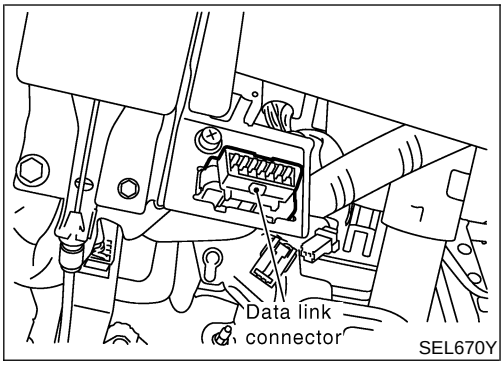
X: Applicable

For diagnostic item in each control system, refer to the relevant pages for each system.

DIAGNOSTIC ITEM DESCRIPTION

NAEL0408S02

MODE	Description
DATA MONITOR	Input/output data in the smart entrance control unit can be read.
ACTIVE TEST	Diagnostic Test Mode in which CONSULT-II drives some systems apart from the smart entrance control unit.
WORK SUPPORT for DOOR LOCK	• Select unlock mode ON-OFF setting can be changed. • Key reminder door mode ON-OFF setting can be changed.
WORK SUPPORT for INT LAMP	Interior lamp timer mode ON-OFF setting can be changed.
WORK SUPPORT for BATTERY SAVER	Interior lamp battery saver period can be changed.
WORK SUPPORT for THEFT WAR ALM	• The recorded trigger signal when vehicle security system was activated can be checked. • Security alarm ON-OFF setting can be changed.
WORK SUPPORT for RETAINED PWR SET	RAP signal's power supply period can be changed.
WORK SUPPORT for MULTI REMOTE ENT	• ID code of keyfob can be registered and erased. • Keyless answer back mode can be changed. • Pressing time of panic alarm, trunk lid opener and door unlock (for power window down operation) buttons on keyfob can be changed. • Auto lock operation starting time can be changed.
WORK SUPPORT for HEADLAMP	• Auto light sensitivity can be changed. • Exterior lamp battery saver control ON-OFF setting can be changed. • Auto light delay off time can be changed.

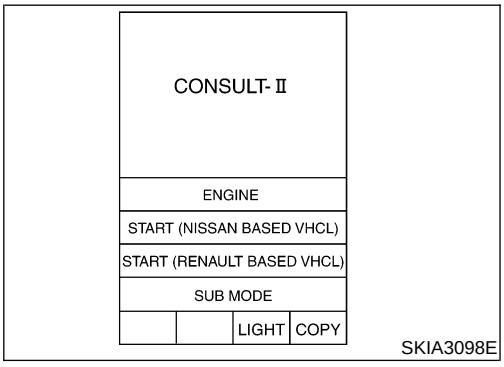


SEL670Y

CONSULT-II INSPECTION PROCEDURE

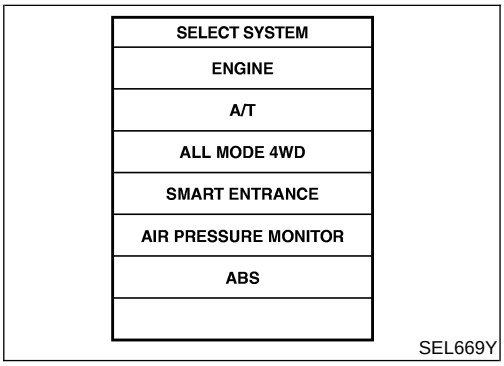
NAEL0408S03

1. Turn the ignition switch "OFF".
2. Connect "CONSULT-II" and "CONSULT-II CONVERTER" to the data link connector.



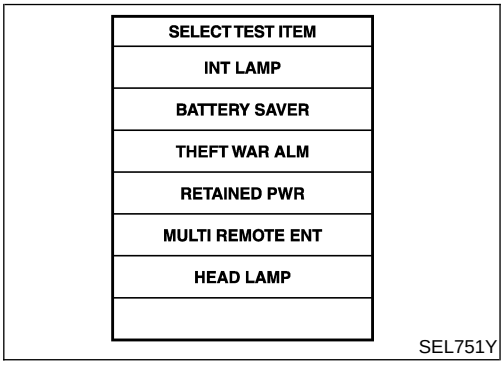
SKIA3098E

3. Turn ignition switch "ON".
4. Touch "START (NISSAN BASED VHCL)".



SEL669Y

5. Touch "SMART ENTRANCE".
   If "SMART ENTRANCE" is not indicated, go to GI-42, "CONSULT-II Data Link Connector (DLC) Circuit".

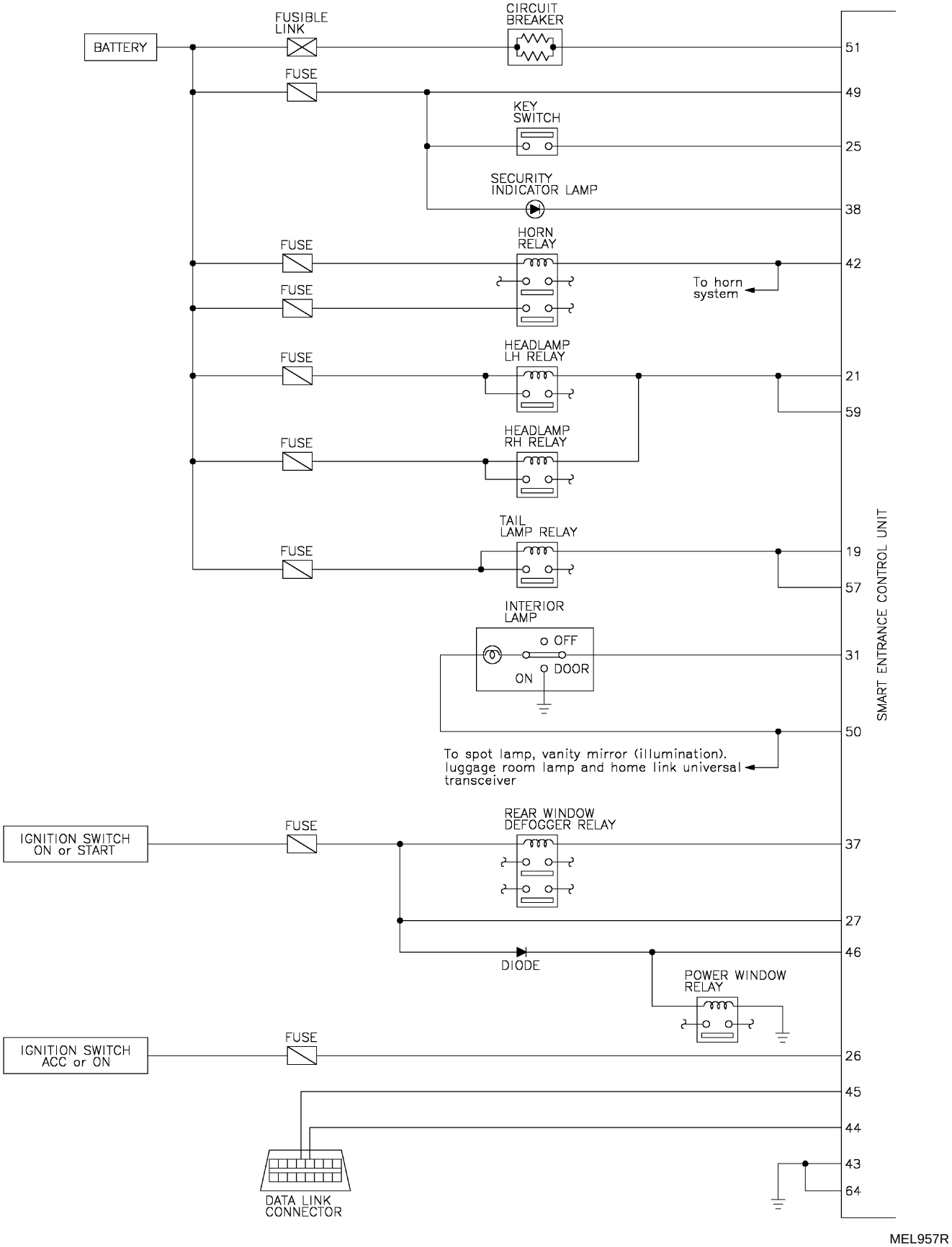


SEL751Y

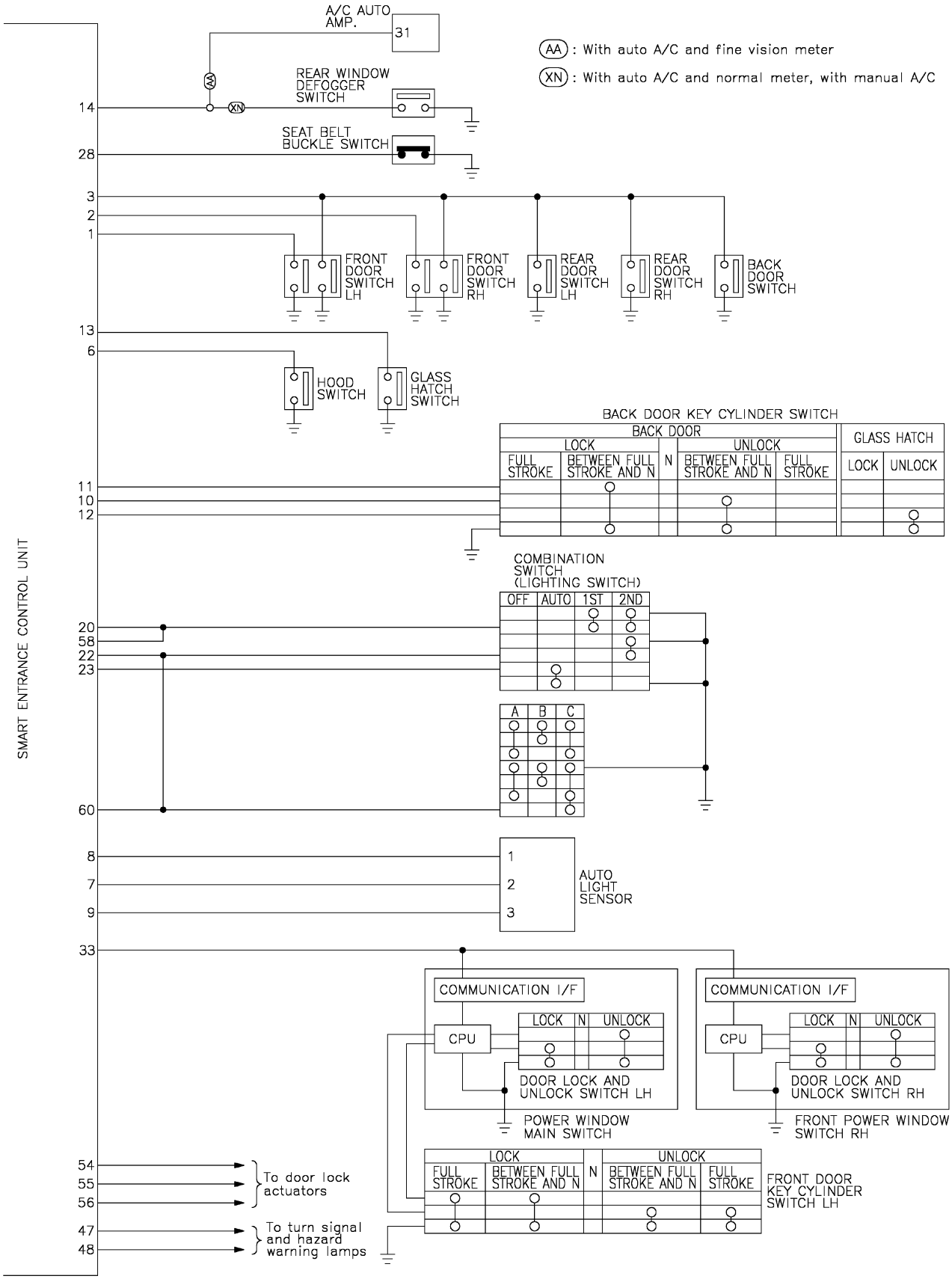
6. Perform each diagnostic item according to "DIAGNOSTIC ITEMS APPLICATION". Refer to EL-378.

Schematic

NAEL0409



MEL957R


A/C AUTO AMP.
31
(AA) : With auto A/C and fine vision meter
(XN) : With auto A/C and normal meter, with manual A/C
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
BACK DOOR KEY CYLINDER SWITCH
BACK DOOR
LOCK
UNLOCK
FULL STROKE
BETWEEN FULL STROKE AND N
N
GLASS HATCH
COMBINATION SWITCH (LIGHTING SWITCH)
OFF
AUTO
1ST
2ND
AUTO LIGHT SENSOR
COMMUNICATION I/F
CPU
DOOR LOCK AND UNLOCK SWITCH LH
DOOR LOCK AND UNLOCK SWITCH RH
POWER WINDOW MAIN SWITCH
FRONT POWER WINDOW SWITCH RH
FRONT DOOR KEY CYLINDER SWITCH LH
To door lock actuators
To turn signal and hazard warning lamps
SMART ENTRANCE CONTROL UNIT

MEL958R

Smart Entrance Control Unit Inspection Table

NAEL0410

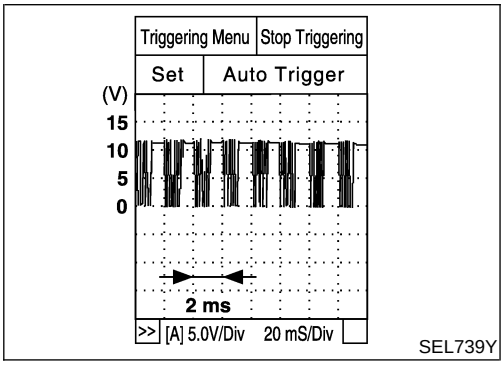
Terminal No.	Wire color	Connections	Operated condition			Voltage (Approximate values)
1	G/OR	Driver door switch	OFF (Closed) → ON (Open)			12V → 0V
2	Y	Passenger door switch	OFF (Closed) → ON (Open)			5V → 0V
3	R/L	Rear door switch	OFF (Closed) → ON (Open)			5V → 0V
6	Y/B	Hood switch	ON (Open) → OFF (Closed)			0V → 12V
7	W/G	Auto light sensor (Signal)	Ignition switch ON position	Light is applied to auto light sensor.		1 to 5V
				Light is not applied to auto light sensor.		Less than 1V
8	L/R	Auto light sensor (GND)	Ignition switch ON position			0V
9	GY	Auto light sensor (Power)	Ignition switch (OFF → ON)			0V → 5V
10	LG	Back door key cylinder unlock switch	OFF (Neutral) → ON (Unlocked)			5V → 0V
11	Y	Back door key cylinder lock switch	OFF (Neutral) → ON (Locked)			5V → 0V
12	W/PU	Back door key cylinder switch	OFF (Neutral) → ON (Unlock)			5V → 0V
13	L/W	Glass hatch switch	ON (Open) → OFF (Closed)			5V → 0V
14	OR	Rear window defogger switch	OFF → ON (Only when pushed)			5V → 0V
19	R/G	Tail lamp relay (Output)	Ignition switch (with lighting switch 1ST or 2ND)	ON or START → OFF position	More than 5 minutes after ignition switch is turned to OFF position	12V
					Within 5 minutes after ignition switch is turned to OFF position	0V
				ON or START position		0V
			Headlamps illuminate by auto light control. (Operate → Not operate)			Less than 1V → 12V
20	G	Tail lamp switch	Light switch (OFF or AUTO → 1ST or 2ND position)			12V → 0V
21	PU/R	Headlamp LH relay	Ignition switch (with lighting switch 2ND)	ON or START → OFF position	More than 5 minutes after ignition switch is turned to OFF position	12V
					Within 5 minutes after ignition switch is turned to OFF position	0V
				ON or START position		0V
			Headlamps illuminate by auto light control. (Operate → Not operate)			Less than 1V → 12V

Smart Entrance Control Unit Inspection Table (Cont'd)

Terminal No.	Wire color	Connections	Operated condition		Voltage (Approximate values)
22	SB	Headlamp switch	Lighting switch	Except PASS or 2ND position	12V
				PASS or 2ND position	0V
			Headlamps illuminate by auto light control. (Operate → Not operate)		10V → 12V
23	L/Y	Headlamp switch	Ignition switch "ON" position	Lighting switch (Except AUTO → AUTO position)	12V → 0V
25	W/R	Ignition key switch (Insert)	Key inserted → Key removed from IGN key cylinder		12V → 0V
26	G/W	Ignition switch (ACC)	"ACC" position		Battery voltage
27	W/B	Ignition switch (ON)	Ignition key is in "ON" position		Battery voltage
28	B/Y	Seat belt buckle switch	Unfastened → Fastened (Ignition key is in "ON" position)		0V → 12V
31	R/B	Interior lamp	When doors are locked using keyfob (Lamp switch in "DOOR" position)		0V → 12V
33	BR	Communication interface	Door lock and unlock switches (Neutral → Lock/unlock)		Refer to EL-384.
			Front door key cylinder switch LH (Neutral → Lock/unlock)		
37	G/B	Rear window defogger relay	OFF → ON (Ignition key is in "ON" position)		12V → 0V
38	BR/Y	Security indicator	Goes off → Illuminates		12V → 0V
42	LG/B	Horn relay	When panic alarm is operated using keyfob (ON → OFF)		12V → 0V
43	B	Ground	Ignition switch ON position		0V
46	R/Y	Power window relay	Retained power operation is operated (ON → OFF)		12V → 0V
47	GY/L	LH turn signal lamp	When door lock or unlock is operated using keyfob (ON → OFF)		12V → 0V
48	GY/R	RH turn signal lamp	When door lock or unlock is operated using keyfob (ON → OFF)		12V → 0V
49	G/R	Power source (Fuse)	—		Battery voltage
50	R/W	Battery saver (Interior lamp)	Battery saver operates → Does not operate (ON → OFF)		12V → 0V
51	W/R	Power source (PTC)	—		Battery voltage
54	L	Door lock actuators	Door lock & unlock switch (Free → Lock)		0V → 12V
55	W/PU	Driver door lock actuator	Door lock & unlock switch (Free → Unlock)		0V → 12V
56	Y/B	Passenger, rear and back doors lock actuator	Door lock & unlock switch (Free → Unlock)		0V → 12V

Smart Entrance Control Unit Inspection Table (Cont'd)

Terminal No.	Wire color	Connections	Operated condition			Voltage (Approximate values)
57	R	Tail lamp relay	Ignition switch (with lighting switch 1ST or 2ND)	ON or START → OFF position	More than 5 minutes after ignition switch is turned to OFF position	12V
					Within 5 minutes after ignition switch is turned to OFF position	0V
				ON or START position		0V
			Headlamps illuminate by auto light control. (Operate → Not operate)			Less than 1V → 12V
58	G/W	Tail lamp switch	Lighting switch OFF or AUTO → 1ST or 2ND			12V → 0V
59	PU/W	Headlamp RH relay	Ignition switch (with lighting switch OFF or 1ST)	ON or START → OFF position	More than 5 minutes after ignition switch is turned to OFF position	12V
					Within 5 minutes after ignition switch is turned to OFF position	0V
				ON or START position		0V
			Headlamps illuminate by auto light control. (Operate → Not operate)			Less than 1V → 12V
60	L	Headlamp switch	Lighting switch	Except PASS or 2ND position		12V
				PASS or 2ND position		0V
			Headlamps illuminate by auto light control. (Operate → Not operate)			10V → 12V
64	B	Ground	Ignition switch ON position			0V



COMMUNICATION INTERFACE SIGNAL

NAEL0410S02

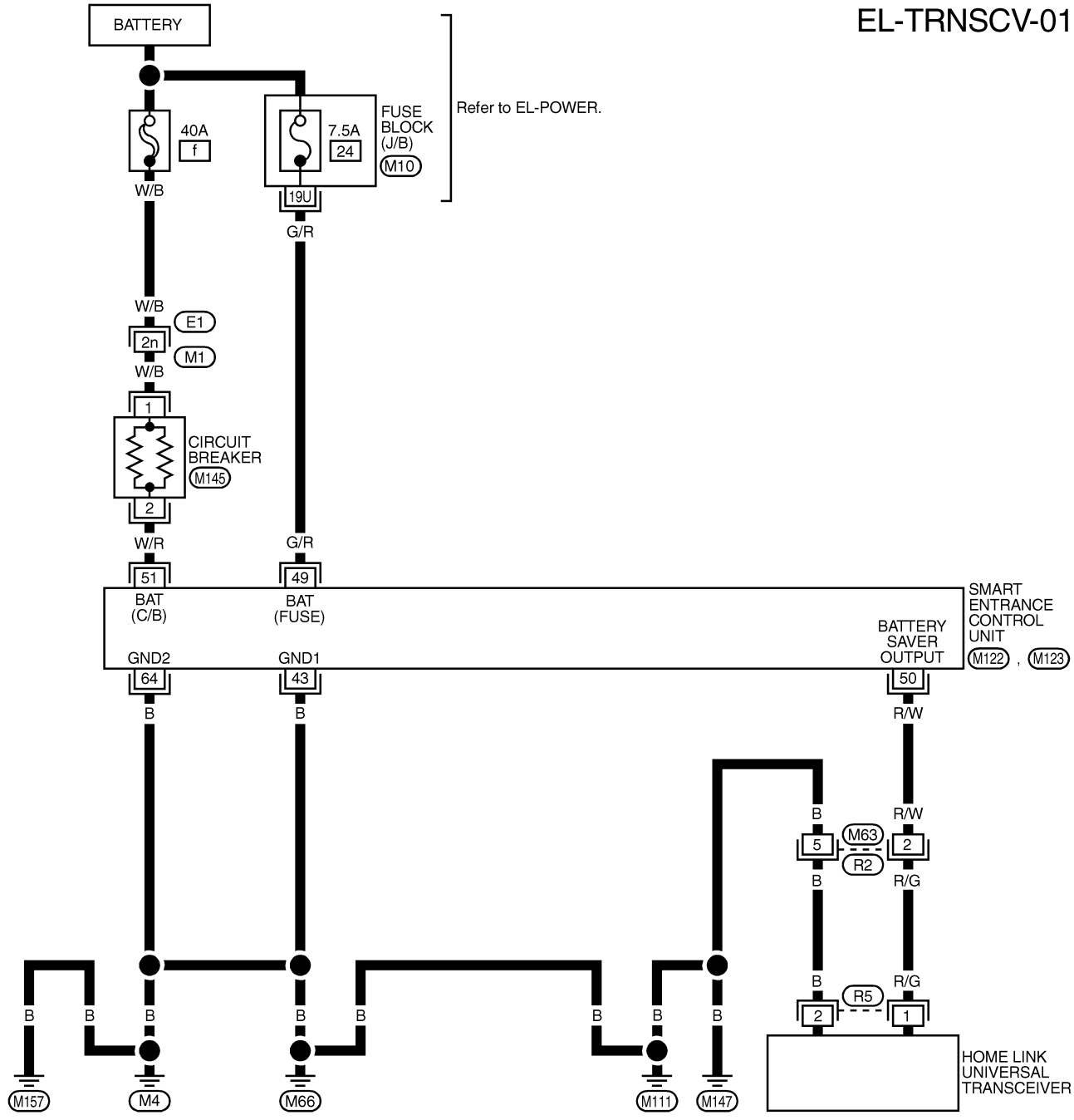
Voltage:

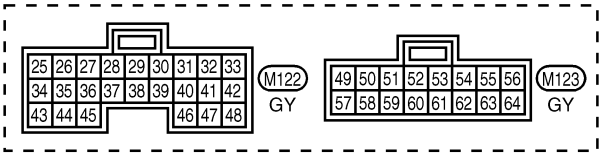
12 V → 9V (10 sec.) measurement by analog circuit tester.

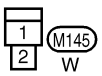
Wiring Diagram — TRNSCV —

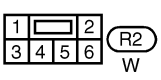
NAEL0411

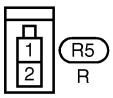
EL-TRNSCV-01











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

MEL040Q

Trouble Diagnoses

NAEL0412

DIAGNOSTIC PROCEDURE

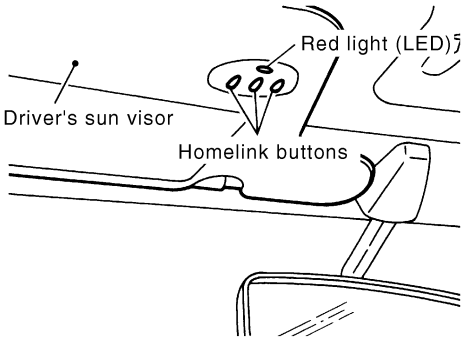
NAEL0412S01

SYMPTOM: Homelink universal transceiver 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 malfunctioning. Condition is not vehicle related.

1	PRELIMINARY CHECK

1. Turn ignition switch “OFF”.
2. Does red light (LED) of homelink universal transceiver illuminate when any button is pressed?



SEL442UA

Yes or No

Yes	▶	GO TO 2.
No	▶	GO TO 3.

2	CHECK HOMELINK UNIVERSAL TRANSCEIVER FUNCTION

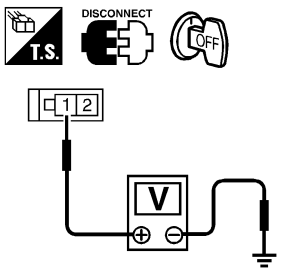
Check homelink universal transceiver with Tool.
For details, refer to Technical Service Bulletin.

OK or NG

OK	▶	Receiver or hand-held transmitter is malfunctioning. Condition is not vehicle related.
NG	▶	Replace homelink universal transceiver with sun visor assembly.

3	CHECK POWER SUPPLY

1. Disconnect homelink universal transceiver connector.
2. Turn ignition switch “OFF”.
3. Check voltage between homelink universal transceiver harness connector R5 terminal 1 (R/G) and ground.



Battery voltage should exist.

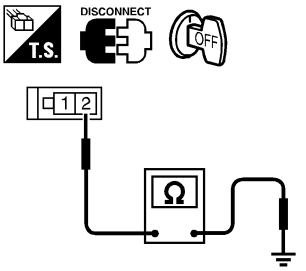
SEL358X

OK or NG

OK	▶	GO TO 4.
NG	▶	GO TO 5.

4	CHECK GROUND CIRCUIT

Check continuity between homelink universal transceiver harness connector R5 terminal 2 (B) and ground.



Continuity should exist.

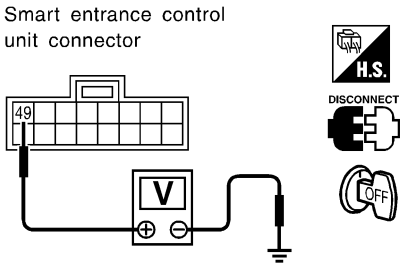
SEL359X

OK or NG

OK	▶	Replace homelink universal transceiver 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 harness connector M123 terminal 49 (G/R) and ground.



Battery voltage should exist.

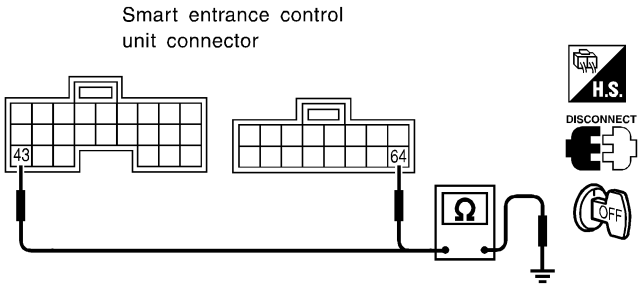
SEL284Y

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 smart entrance control unit harness connector M122 terminal 43 (B) or M123 terminal 64 (B) and ground.



Continuity should exist.

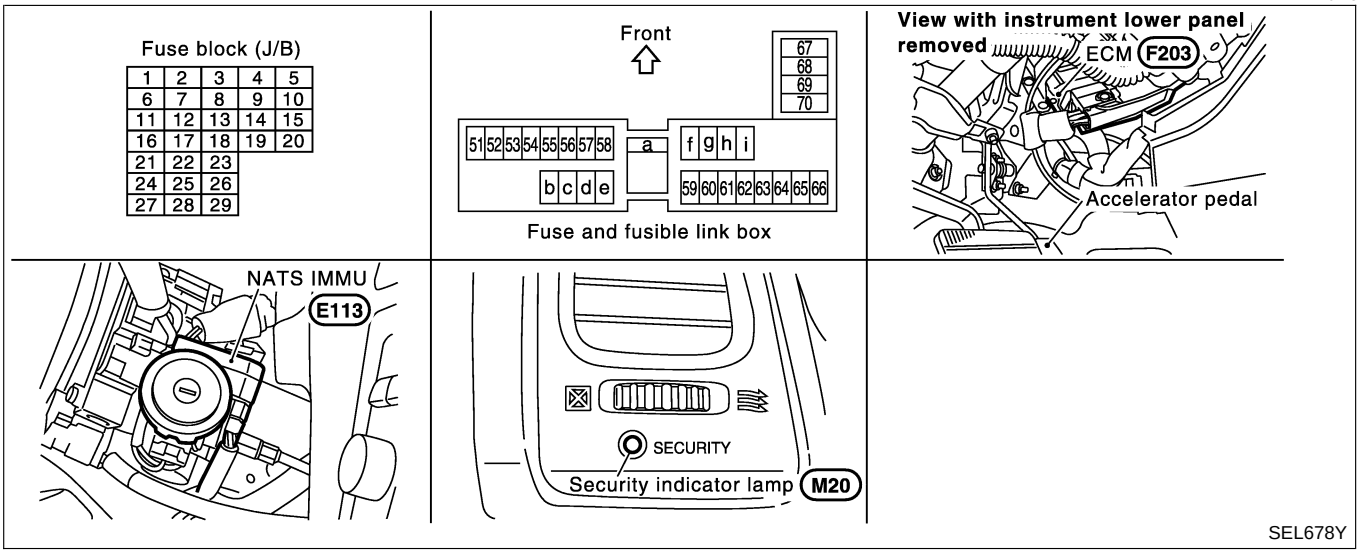
SEL285Y

OK or NG

OK	▶	Power supply and ground circuits are OK.
NG	▶	Check ground harness.

Component Parts and Harness Connetor Location

NAEL0413



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

=NAEL0414

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

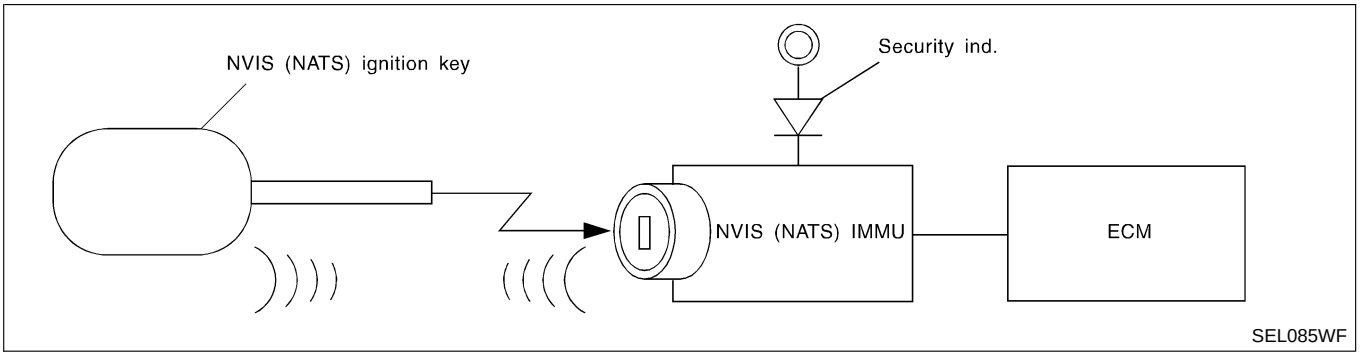
- Since only NVIS (NATS) ignition keys, whose ID nos. have been registered into the ECM and IMMU of NVIS (NATS), allow the engine to run, operation of a stolen vehicle without an NVIS (NATS) registered key is prevented by NVIS (NATS).
  That is to say, NVIS (NATS) will immobilise the engine if someone 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

NAEL0415

The immobiliser function of the NVIS (NATS) consists of the following:

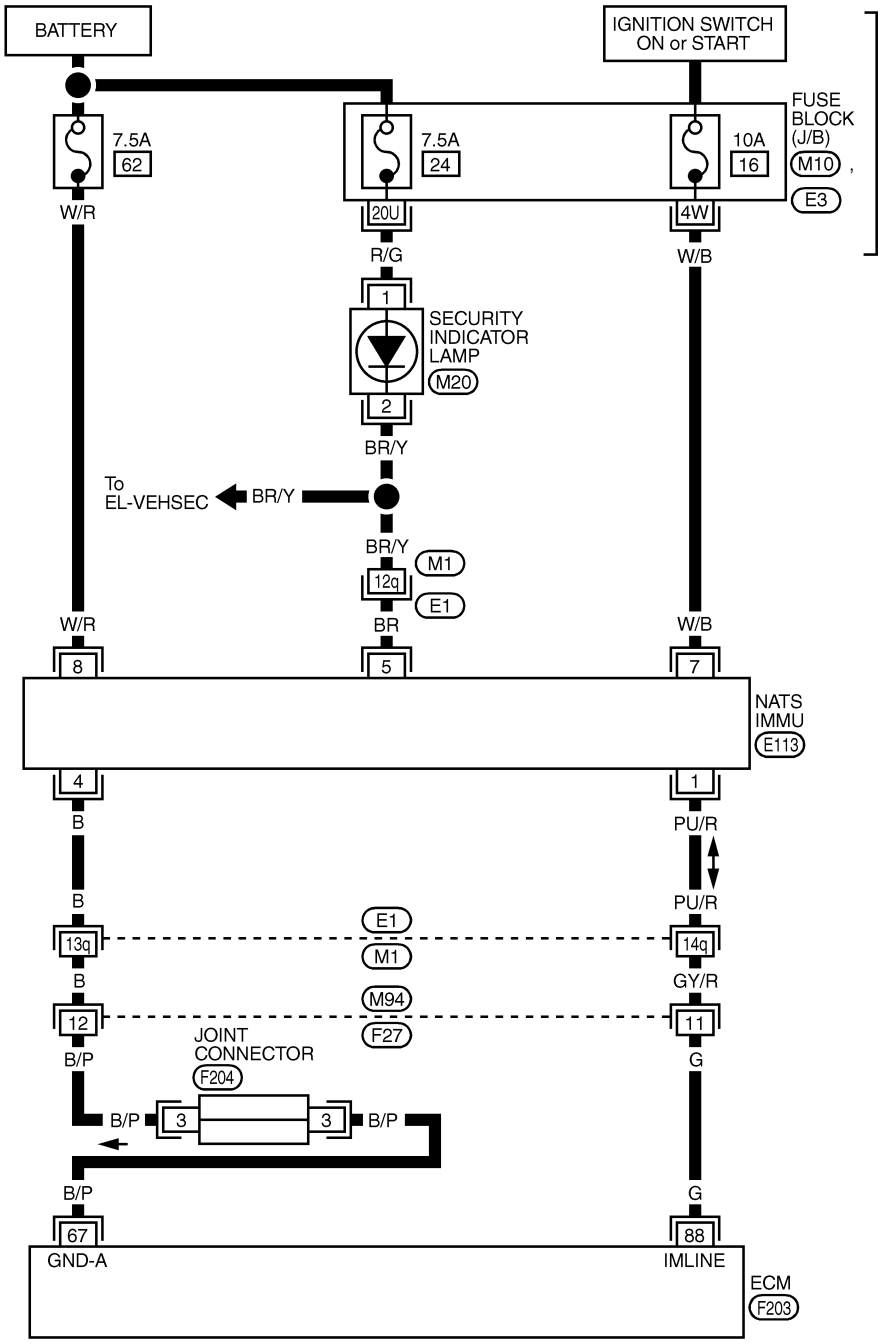
- NVIS (NATS) ignition key
- NVIS (NATS) immobilizer control unit (IMMU) located in the ignition key cylinder
- Engine control module (ECM)
- Security indicator

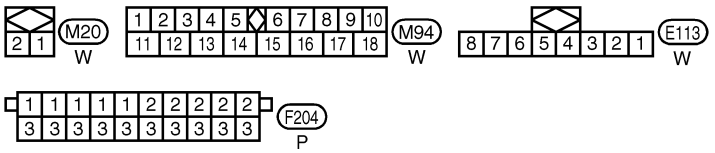


Wiring Diagram — NATS —

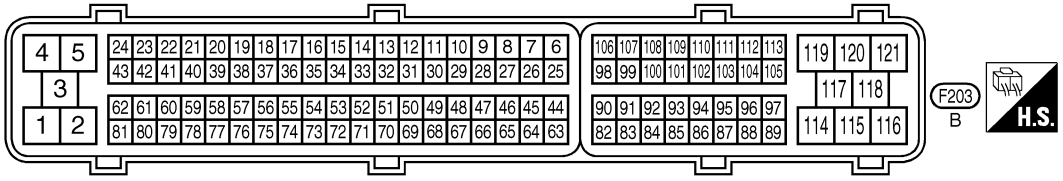
NAEL0416

EL-NATS-01

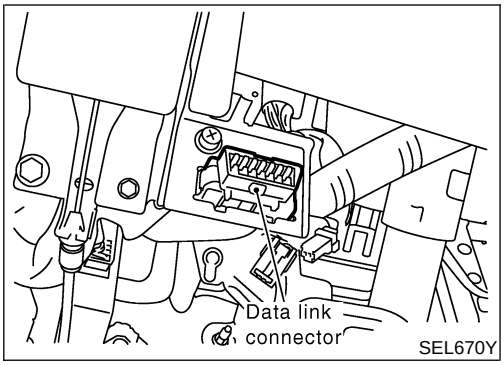




REFER TO THE FOLLOWING.
E1 -SUPER MULTIPLE JUNCTION (SMJ)
M10, E3 -FUSE BLOCK- JUNCTION BOX (J/B)



MEL041Q



SEL670Y

CONSULT-II

NAEL0417

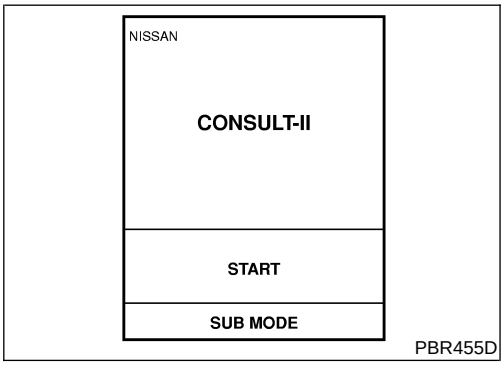
CONSULT-II INSPECTION PROCEDURE

NAEL0417S01

1. Turn ignition switch OFF.
2. Insert NVIS (NATS) program card into CONSULT-II.

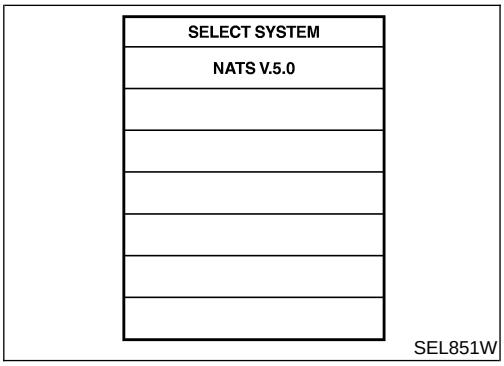
Program card
NATS (AEN02B)

3. Connect “CONSULT-II” and “CONSULT-II CONVERTER” to data link connector.



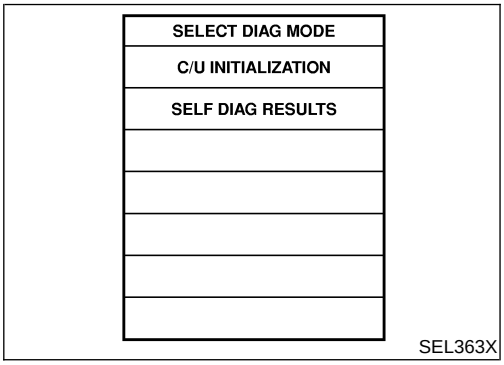
PBR455D

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

NAEL0417S02

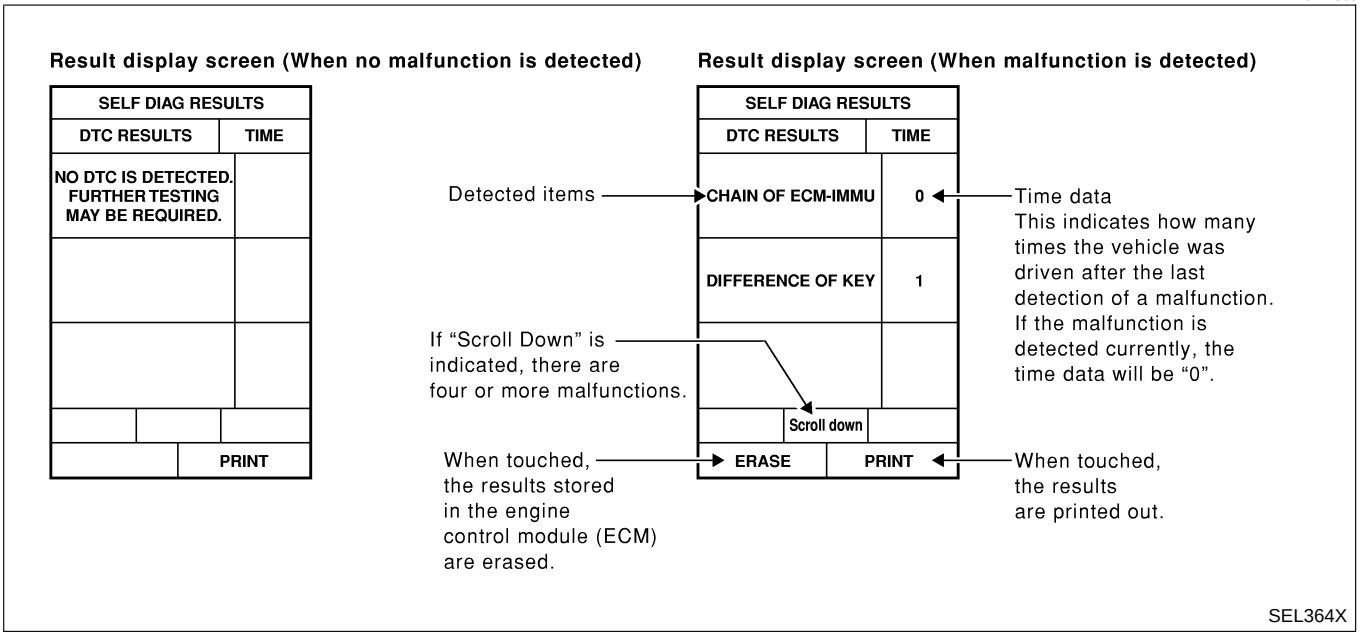
CONSULT-II DIAGNOSTIC TEST MODE	Description
C/U INITIALIZATION	When replacing any of the following three components, C/U initialization and re-registration of all NVIS (NATS) ignition keys are necessary. [NVIS (NATS) ignition key/IMMU/ECM]
SELF-DIAG RESULTS	Detected items (screen terms) are as shown in the chart EL-393.

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

NAEL0417S03



SEL364X

NVIS (NATS) SELF-DIAGNOSTIC RESULTS ITEM CHART

NAEL0417S04

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-397
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-398
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-402
CHAIN OF IMMU-KEY	NATS MALFUNCTION P1614	IMMU cannot receive the key ID signal.	EL-403
ID DISCORD, IMM-ECM	NATS MALFUNCTION P1611	The result of ID verification between IMMU and ECM is NG. System initialization is required.	EL-404

CONSULT-II (Cont'd)

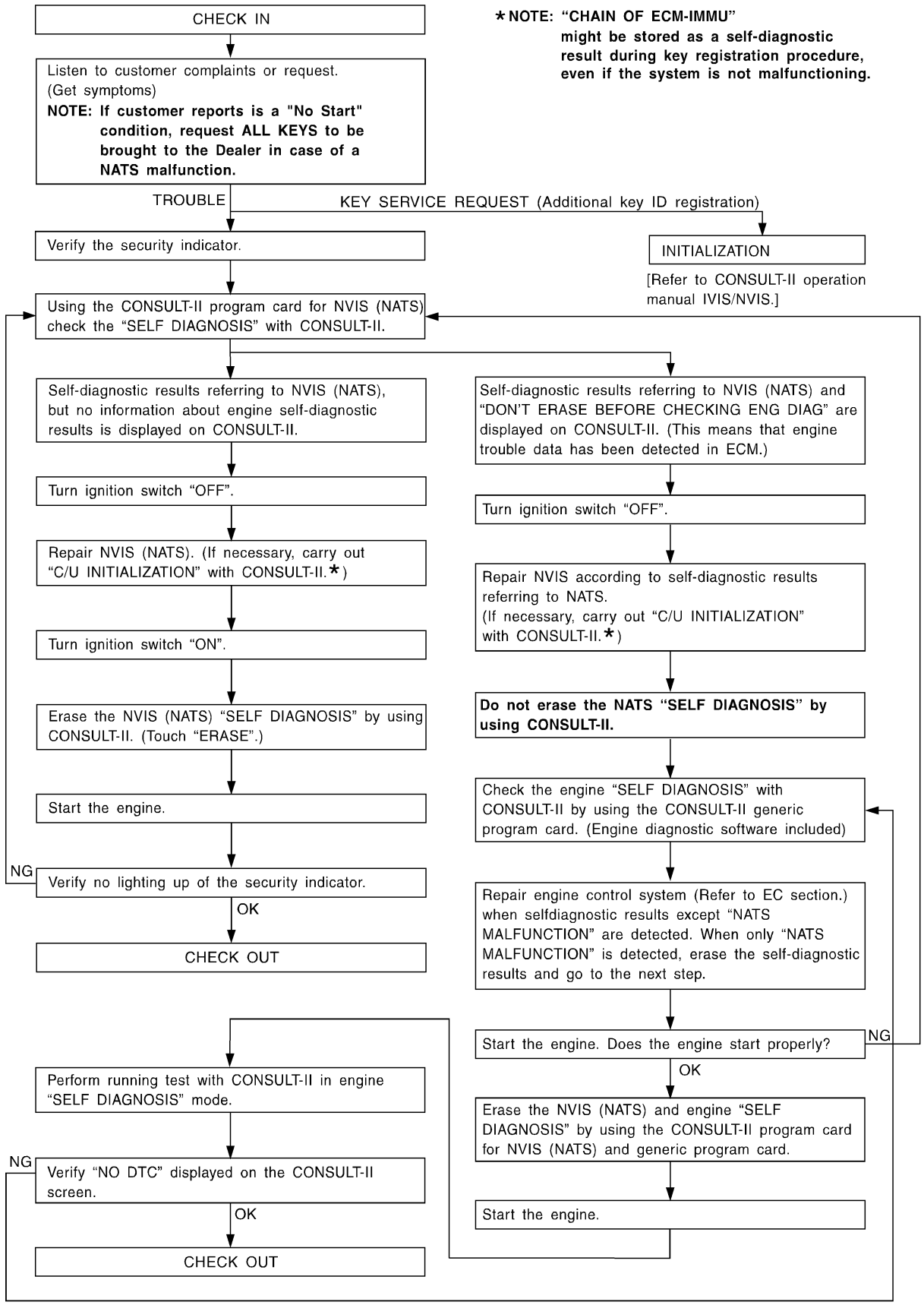
Detected items (NATS program card screen terms)	P No. Code (Self-diagnostic result of "ENGINE")	Malfunction is detected when	Reference page
LOCK MODE	NATS MALFUNCTION P1610	When the starting operation is carried out five or more times consecutively under the following conditions, NVIS (NATS) will shift the mode to one which prevents the engine from being started. ● Unregistered ignition key is used. ● IMMU or ECM's malfunctioning.	EL-407
DON'T ERASE BEFORE CHECKING ENG DIAG	—	All engine trouble codes except NVIS (NATS) trouble code has been detected in ECM.	EL-395

Trouble Diagnoses

NAEL0418

WORK FLOW

NAEL0418S01



SEL004XA

SYMPTOM MATRIX CHART 1
(Self-diagnosis related item)

NAEL0418S02

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-397)	ECM	B
	CHAIN OF ECM-IMMU	PROCEDURE 2 (EL-398)	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-402)	Unregistered key	D
			IMMU	A
	CHAIN OF IMMU-KEY	PROCEDURE 4 (EL-403)	Malfunction of key ID chip	E
			IMMU	A
	ID DISCORD, IMM-ECM	PROCEDURE 5 (EL-404)	System initialization has not yet been completed.	F
			ECM	F
	LOCK MODE	PROCEDURE 7 (EL-407)	LOCK MODE	D
• MIL staying ON • Security indicator lighting up*	DON'T ERASE BEFORE CHECKING ENG DIAG	WORK FLOW (EL-395)	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.

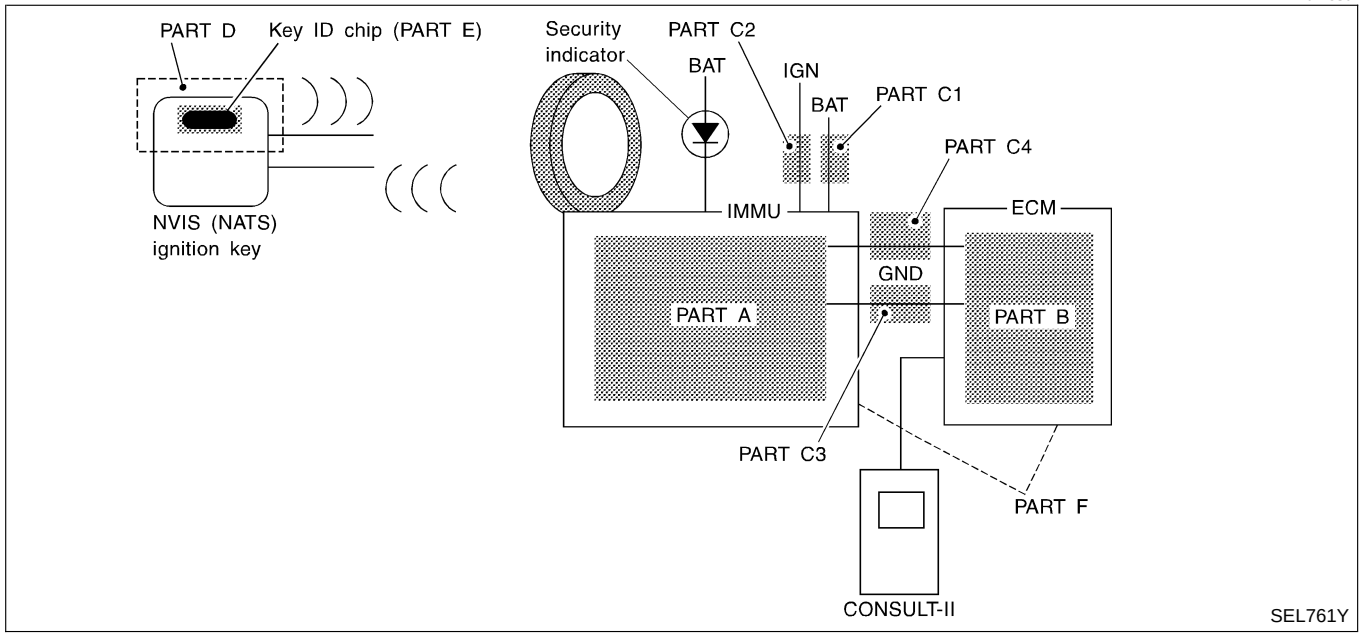
SYMPTOM MATRIX CHART 2
(Non self-diagnosis related item)

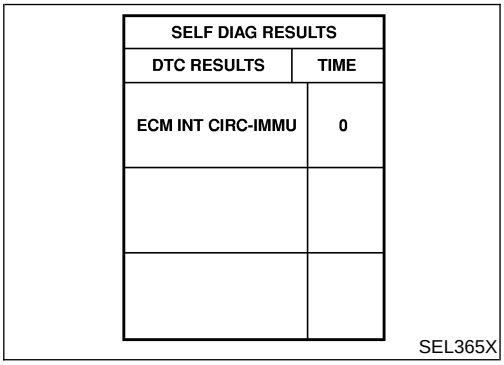
NAEL0418S03

SYMPTOM	DIAGNOSTIC PROCEDURE (Reference page)	SYSTEM (Malfunctioning part or mode)
Security ind. does not light up.	PROCEDURE 6 (EL-405)	Security ind.
		Open circuit between Fuse and IMMU
		Continuation of initialization mode
		IMMU

DIAGNOSTIC SYSTEM DIAGRAM

NAEL0418S04





DIAGNOSTIC PROCEDURE 1

NAEL0418S05

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

=NAEL0418S06

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

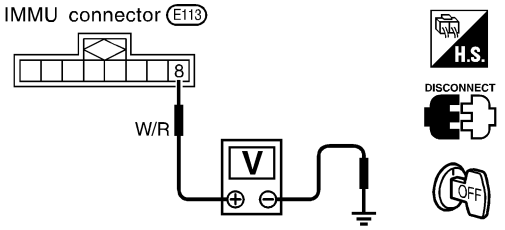
SEL366X

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 IMMU harness connector terminal 8 and ground with CONSULT-II or tester.



Battery voltage should exist.

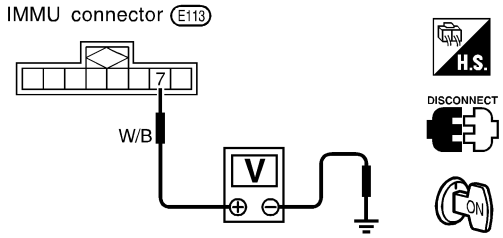
SEL302WD

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 IMMU harness connector terminal 7 and ground with CONSULT-II or tester.



Battery voltage should exist.

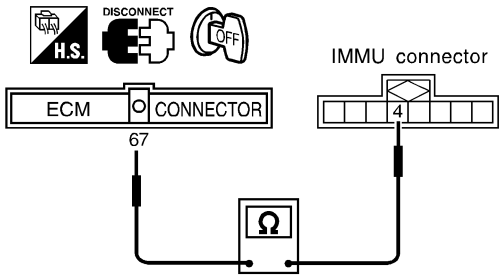
SEL303WF

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 harness connector E113 terminal 4 (B) and ECM harness connector F203 terminal 67 (B/P).



Continuity should exist.

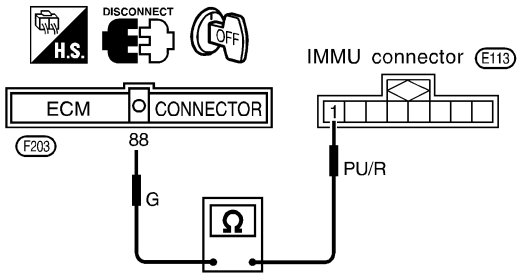
SEL762Y

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 harness connector terminal 88 and IMMU harness connector terminal 1.



Continuity should exist.

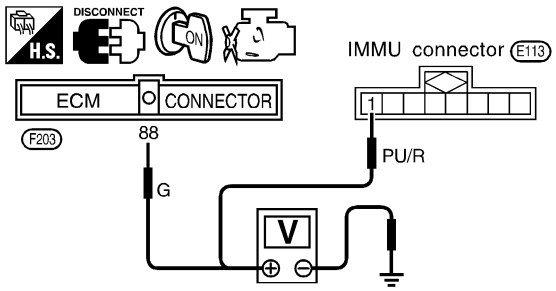
SEL740Y

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 harness connector terminal 88 or IMMU harness connector terminal 1 and ground.



Voltage: 0V

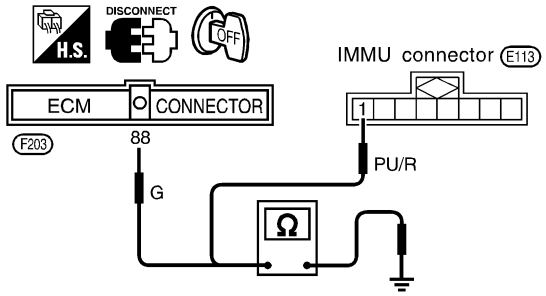
SEL741Y

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 harness connector terminal 88 or IMMU harness connector terminal 1 and ground.



Continuity should not exist.

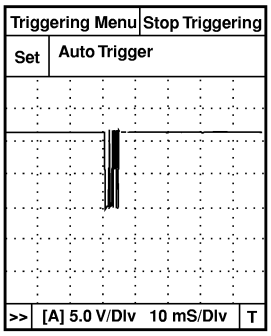
SEL742Y

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 harness connector F203 terminal 88 (G) 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

=NAEL0418S07

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

=NAEL0418S08

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-408.

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

=NAEL0418S09

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".

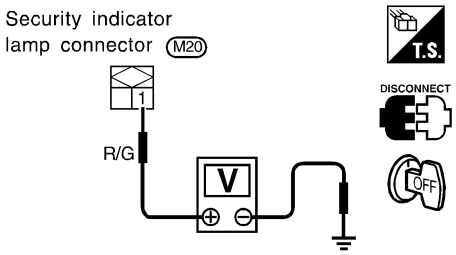
DIAGNOSTIC PROCEDURE 6

=NAEL0418S10

"SECURITY INDICATOR LAMP DOES NOT LIGHT UP"

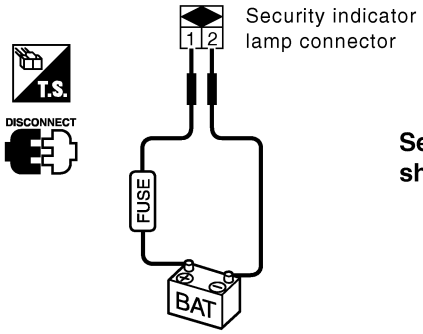
1	CHECK FUSE	
Check 10A fuse [No. 12, located in the fuse block (J/B)].		
Is 10A fuse OK?		
Yes	▶	GO TO 2.
No	▶	Replace fuse.

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 harness connector terminal 1 and ground.		
		**Battery voltage should exist.** SEL370XA
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

1. Disconnect security indicator lamp connector.
2. Apply 12V direct current to security indicator lamp harness connector M20 terminals 1 and 2.



Security indicator lamp should illuminate.

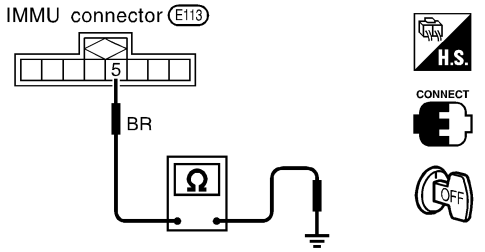
SEL696Y

OK or NG

OK	▶	GO TO 5.
NG	▶	Replace security indicator lamp.

5	CHECK IMMU FUNCTION

1. Connect IMMU connector.
2. Disconnect security indicator lamp connector.
3. Check continuity between IMMU harness connector 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

=NAEL0418S11

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-408.

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".

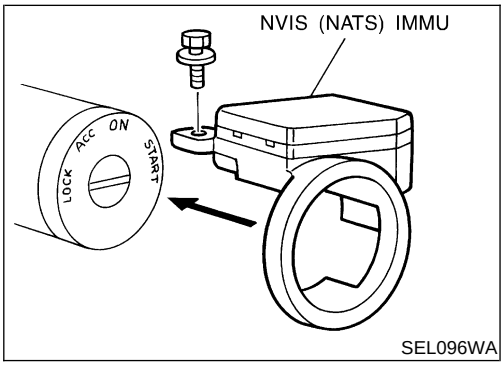
IMMU INITIALIZATION
INITIALIZATION FAIL
THEN IGN KEY SW 'OFF' AND 'ON', AFTER CONFIRMING SELF-DIAG AND PASSWORD, PERFORM C/U INITIALIZATION AGAIN.

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-403.



SEL096WA

How to Replace NVIS (NATS) IMMU

NAEL0419

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".**

System Description

NAEL0462

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

CAN Communication Unit

NAEL0463

Go to CAN system, when selecting your CAN system type from the following table.

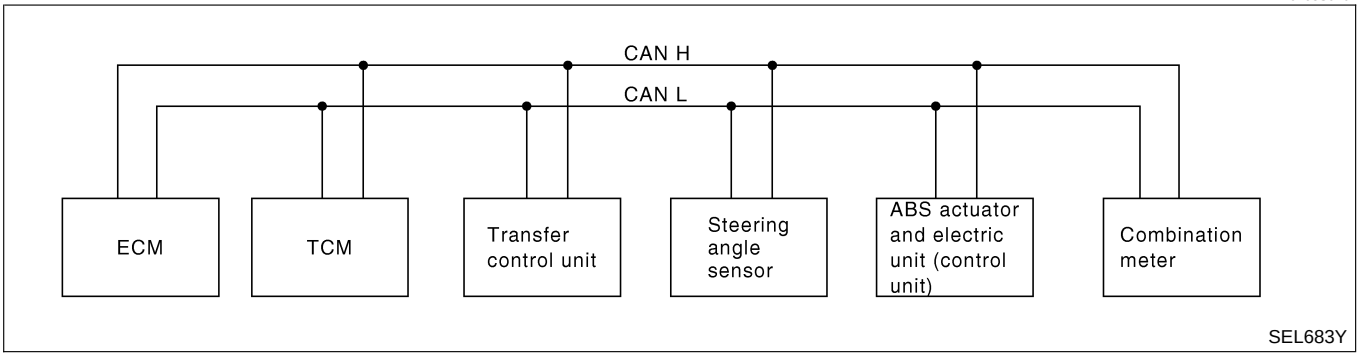
Body type	Wide/Wagon						
Engine	VQ35DE						
Transmission	A/T						M/T
Brake control	VDC			ABS			
Axle	4WD (All-mode)	4WD (Part time)	2WD	4WD (All-mode)	4WD (Part time)	2WD	4WD (Part time)
CAN system type	1	2		3			4
CAN system trouble diagnosis	EL-414	EL-438		EL-460			EL-473

TYPE 1

System Diagram

=NAEL0463S01

NAEL0463S0101



Input/Output Signal Chart

NAEL0463S0102

T: Transmit R: Receive

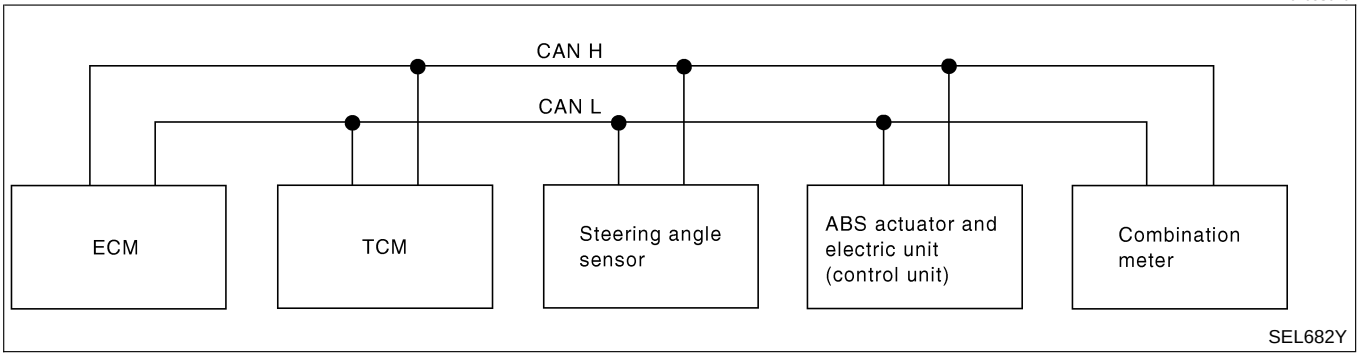
Signals	ECM	TCM	Transfer control unit	Steering angle sensor	ABS actuator and electric unit (control unit)	Combination meter
Engine speed signal	T		R		R	R
Accelerator pedal position signal	T		R		R	
Closed throttle position signal	T	R				
Wide open throttle position signal	T	R				
VDC operation signal			R		T	
TCS operation signal			R		T	
ABS operation signal			R		T	
Output shaft revolution signal	R	T	R			
During shifting signal		T	R		R	
Steering wheel angle sensor signal				T	R	
Wheel speed sensor signal			R		T	
Stop lamp switch signal		R				T
Malfunction indicator lamp signal	T					R
Engine coolant temperature signal	T					R
Vehicle speed signal					T	R
	R					T
Neutral range switch signal		R				T
Parking range switch signal		R				T
Overdrive control switch signal		R				T
A/C compressor feedback signal	T					R
Fuel level sensor signal	R					T
A/T position indicator signal		T				R
O/D OFF indicator signal		T				R

TYPE 2

System Diagram

=NAEL0463S02

NAEL0463S0201



Input/Output Signal Chart

NAEL0463S0202

T: Transmit R: Receive

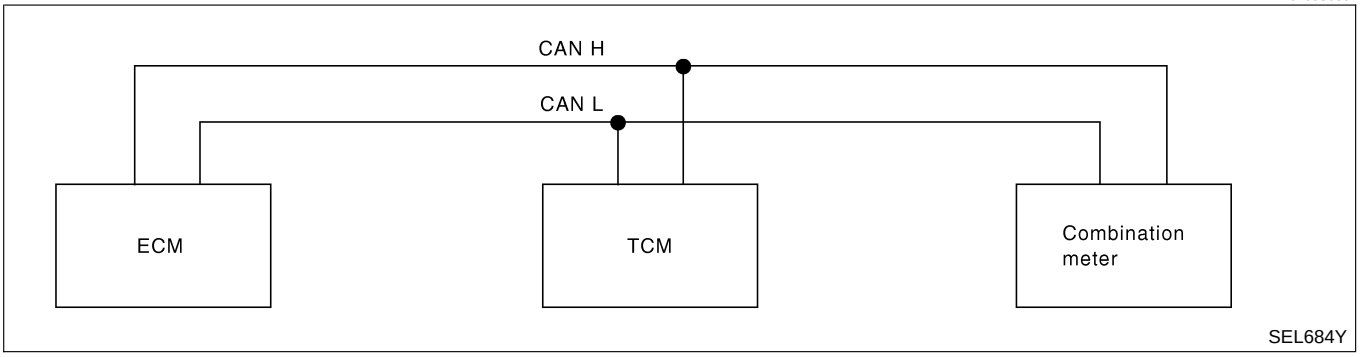
Signals	ECM	TCM	Steering angle sensor	ABS actuator and electric unit (control unit)	Combination meter
Engine speed signal	T			R	R
Accelerator pedal position signal	T			R	
Closed throttle position signal	T	R			
Wide open throttle position signal	T	R			
Steering wheel angle sensor signal			T	R	
Malfunction indicator lamp signal	T				R
Engine coolant temperature signal	T				R
Vehicle speed signal				T	R
	R				T
Stop lamp switch signal		R			T
Neutral range switch signal		R			T
Parking range switch signal		R			T
Overdrive control switch signal		R			T
A/C compressor feedback signal	T				R
Fuel level sensor signal	R				T
A/T position indicator signal		T			R
O/D OFF indicator signal		T			R

TYPE 3

System Diagram

=NAEL0463S03

NAEL0463S0301



Input/Output Signal Chart

NAEL0463S0302

T: Transmit R: Receive

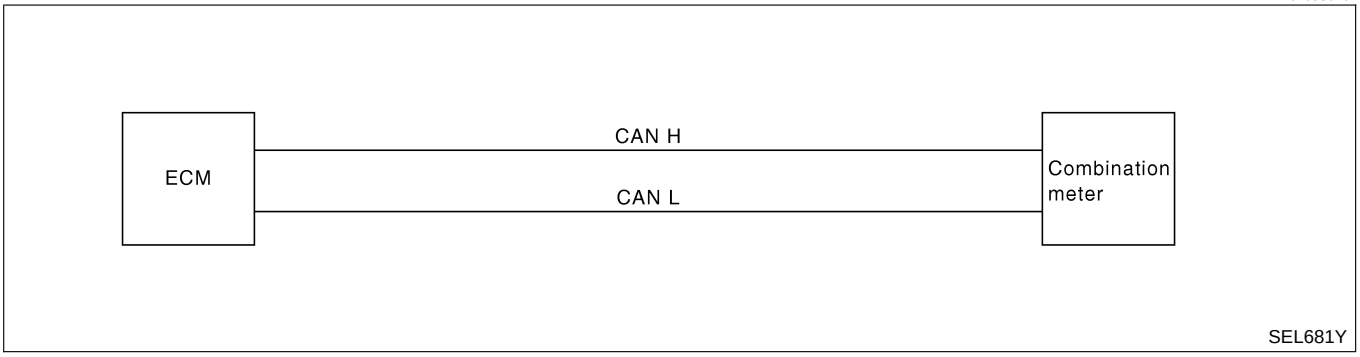
Signals	ECM	TCM	Combination meter
Engine speed signal	T		R
Closed throttle position signal	T	R	
Wide open throttle position signal	T	R	
Stop lamp switch signal		R	T
Neutral range switch signal		R	T
Parking range switch signal		R	T
Overdrive control switch signal		R	T
Malfunction indicator lamp signal	T		R
Engine coolant temperature signal	T		R
Vehicle speed signal	R		T
A/C compressor feedback signal	T		R
Fuel level sensor signal	R		T
A/T position indicator signal		T	R
O/D OFF indicator signal		T	R

TYPE 4

System Diagram

=NAEL0463S04

NAEL0463S0401



Input/Output Signal Chart

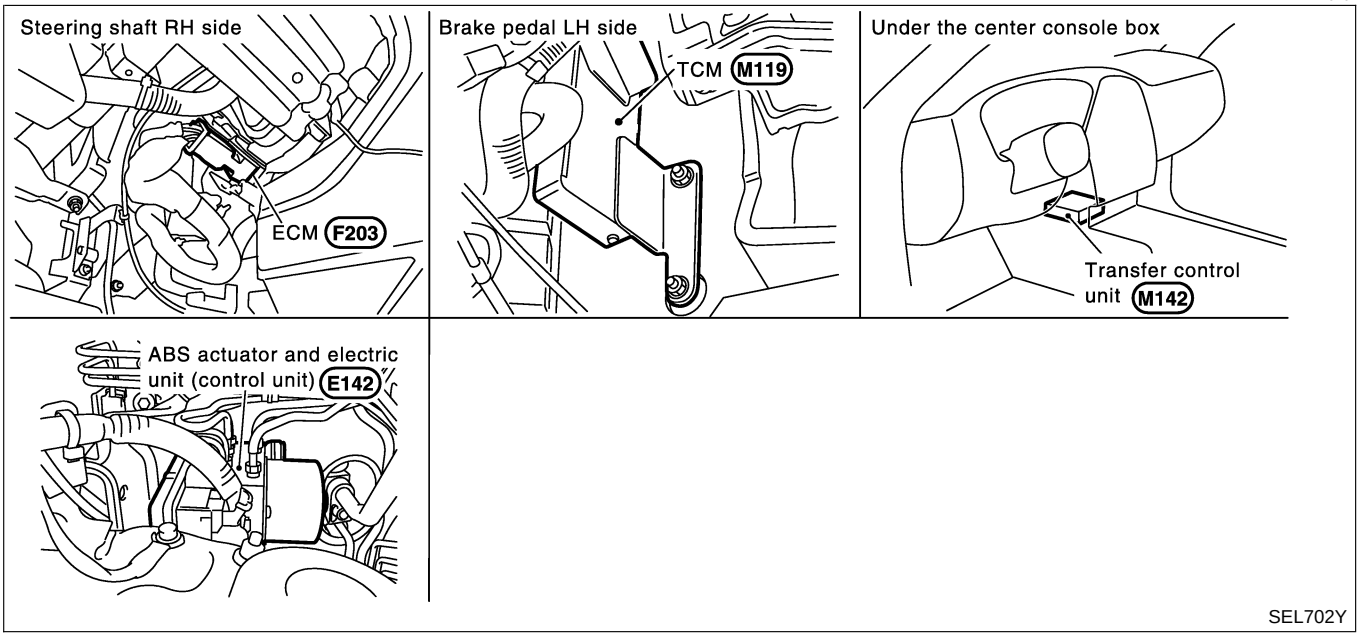
NAEL0463S0402

T: Transmit R: Receive

Signals	ECM	Combination meter
Engine speed signal	T	R
Malfunction indicator lamp signal	T	R
Engine coolant temperature signal	T	R
Vehicle speed signal	R	T
A/C compressor feedback signal	T	R
Fuel level sensor signal	R	T

Component Parts and Harness Connector Location

NAEL0464



System Description

NAEL0465

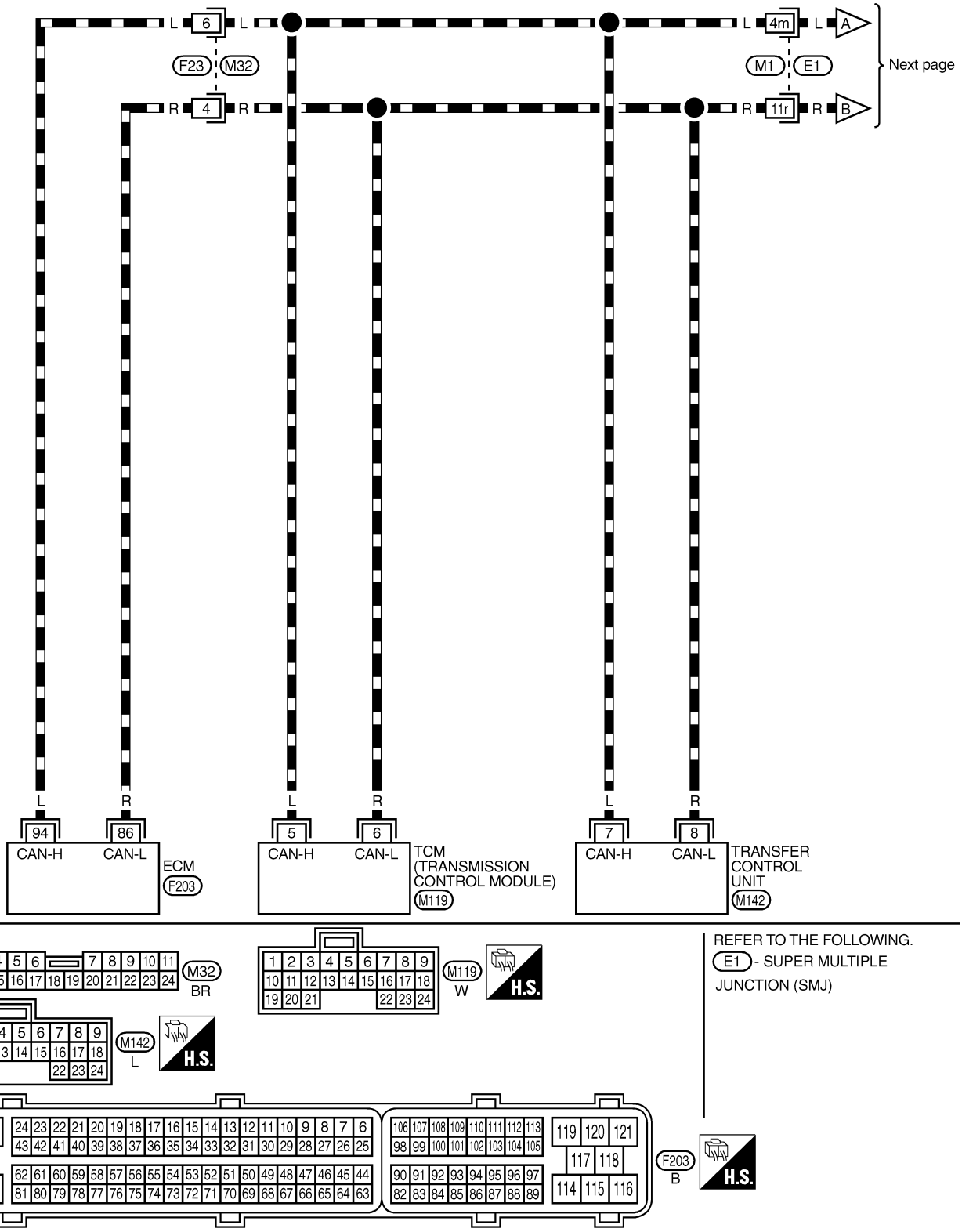
CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

Wiring Diagram — CAN —

NAEL0466

EL-CAN-01

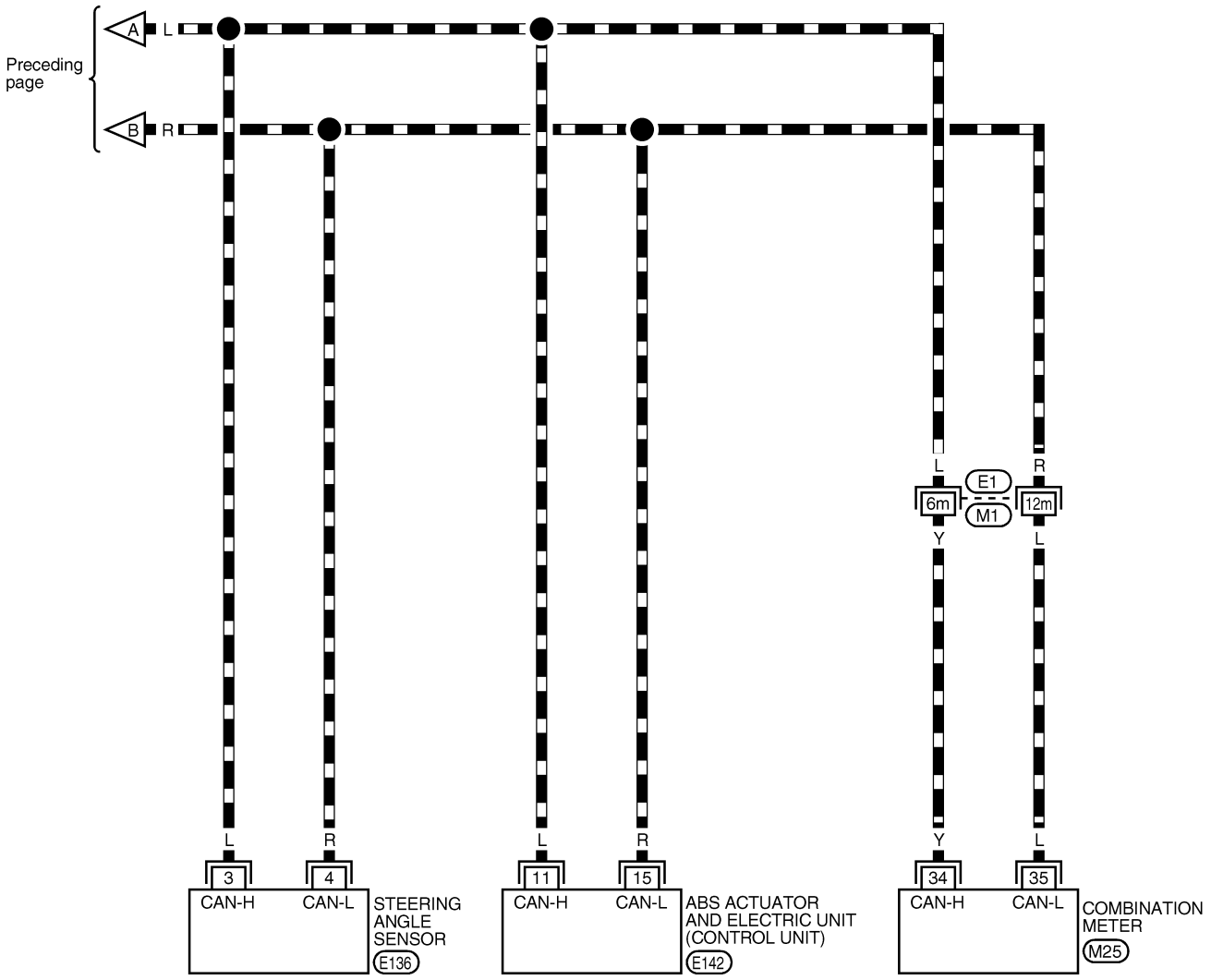
: DATA LINE



MEL578Q

EL-CAN-02

: DATA LINE



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

MEL579Q

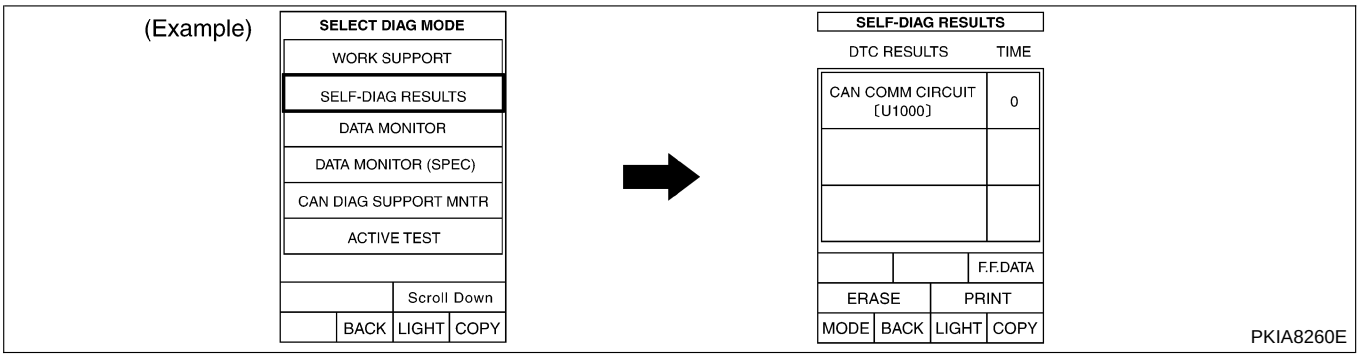
Trouble Diagnoses

NAEL0467

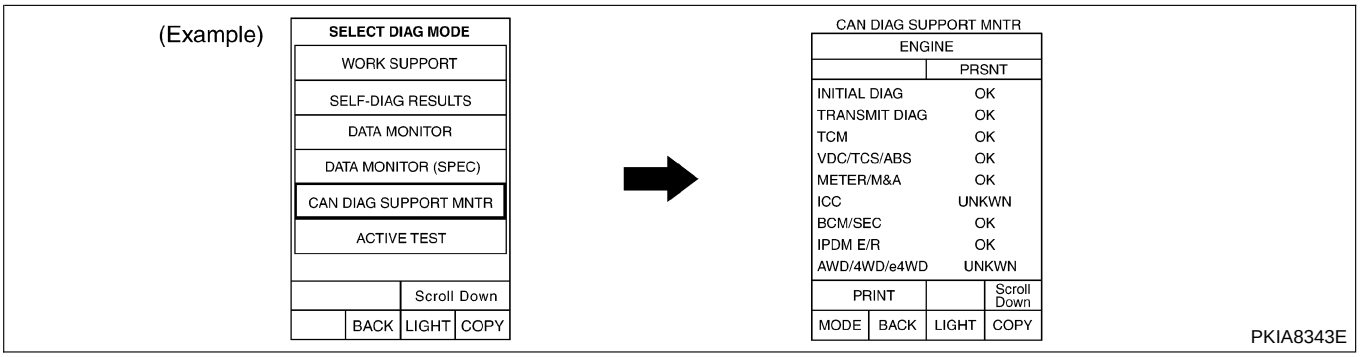
WORK FLOW

NAEL0467S01

1. Print all the data of “SELF-DIAG RESULTS” for “ENGINE”, “A/T”, “ALL MODE AWD/4WD” and “ABS” displayed on CONSULT-II.



2. Print all the data of “CAN DIAG SUPPORT MNTR” for “ENGINE”, “A/T”, “ALL MODE AWD/4WD” and “ABS” displayed on CONSULT-II.



3. Attach the printed sheet of “SELF-DIAG RESULTS” and “CAN DIAG SUPPORT MNTR” onto the check sheet. Refer to “CHECK SHEET” (EL-418).
4. Based on the “CAN DIAG SUPPORT MNTR” results, put “v” marks onto the items with “UNKWN” or “NG” in the check sheet table. Refer to “CHECK SHEET” (EL-418).

NOTE:
If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” as “CAN DIAG SUPPORT MNTR” for the diagnosed control unit, replace the control unit.

5. According to the check sheet results (example), start inspection. Refer to “CHECK SHEET RESULTS (EXAMPLE)” (EL-419).

CHECK SHEET

=NAEL0467S02

NOTE:

If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.

Check sheet table

SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR							
	Initial diagnosis	Transmit diagnosis	Receive diagnosis					
			ECM	TCM	AWD/4WD	STRG	VDC/TCS/ ABS	METER/ M&A
ENGINE	NG	UNKWN	–	UNKWN	–	–	UNKWN	UNKWN
A/T	NG	UNKWN	UNKWN	–	–	–	UNKWN	UNKWN
ALL MODE AWD/4WD	NG	UNKWN	UNKWN	UNKWN	–	UNKWN	UNKWN	–
ABS	NG	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	–	UNKWN

Symptoms:

Attach copy of ENGINE SELF-DIAG RESULTS	Attach copy of A/T SELF-DIAG RESULTS	Attach copy of ALL MODE AWD/4WD SELF-DIAG RESULTS	Attach copy of ABS SELF-DIAG RESULTS
Attach copy of ENGINE CAN DIAG SUPPORT MNTR	Attach copy of A/T CAN DIAG SUPPORT MNTR	Attach copy of ALL MODE AWD/4WD CAN DIAG SUPPORT MNTR	Attach copy of ABS CAN DIAG SUPPORT MNTR

PKIA8707E

CHECK SHEET RESULTS (EXAMPLE)

=NAEL0467S03

NOTE:

If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.

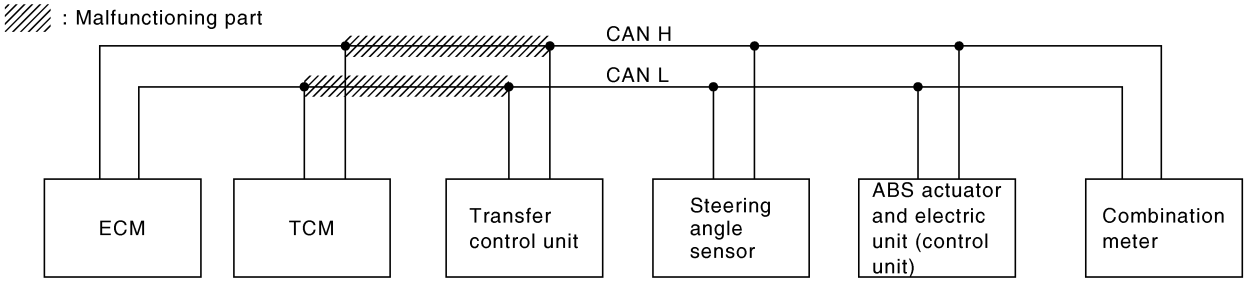
Case 1

NAEL0467S0301

Check harness between TCM and transfer control unit. Refer to "CIRCUIT CHECK BETWEEN TCM AND TRANSFER CONTROL UNIT" (EL-424).

SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR							
	Initial diagnosis	Transmit diagnosis	Receive diagnosis					
			ECM	TCM	AWD/4WD	STRG	VDC/TCS/ ABS	METER/ M&A
ENGINE	NG	UNKWN	–	UNKWN	–	–	UNKWN ✓	UNKWN ✓
A/T	NG	UNKWN	UNKWN	–	–	–	UNKWN ✓	UNKWN ✓
ALL MODE AWD/4WD	NG	UNKWN	UNKWN ✓	UNKWN ✓	–	UNKWN	UNKWN	–
ABS	NG	UNKWN	UNKWN ✓	UNKWN ✓	UNKWN	UNKWN	–	UNKWN

PKIA8711E



PKIA8734E

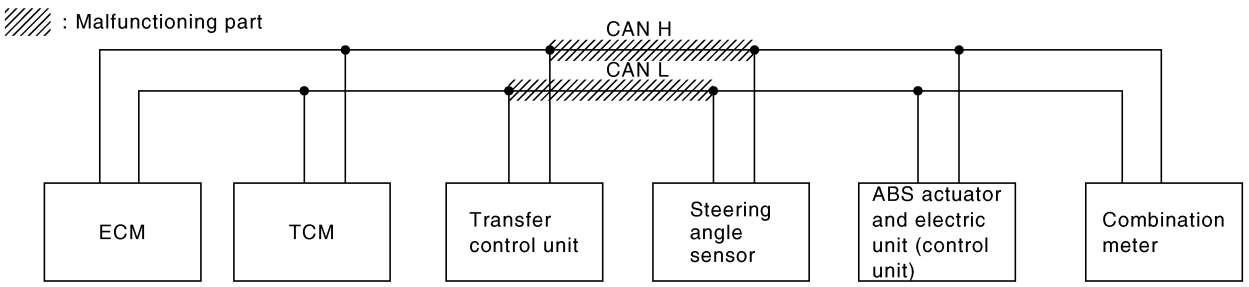
Case 2

NAEL0467S0302

Check harness between transfer control unit and steering angle sensor. Refer to "CIRCUIT CHECK BETWEEN TRANSFER CONTROL UNIT AND STEERING ANGLE SENSOR" (EL-425).

SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR							
	Initial diagnosis	Transmit diagnosis	Receive diagnosis					
			ECM	TCM	AWD/4WD	STRG	VDC/TCS/ ABS	METER/ M&A
ENGINE	NG	UNKWN	–	UNKWN	–	–	UNKWN ✓	UNKWN ✓
A/T	NG	UNKWN	UNKWN	–	–	–	UNKWN ✓	UNKWN ✓
ALL MODE AWD/4WD	NG	UNKWN	UNKWN	UNKWN	–	UNKWN ✓	UNKWN ✓	–
ABS	NG	UNKWN	UNKWN ✓	UNKWN ✓	UNKWN ✓	UNKWN	–	UNKWN

PKIA8712E



PKIA8735E

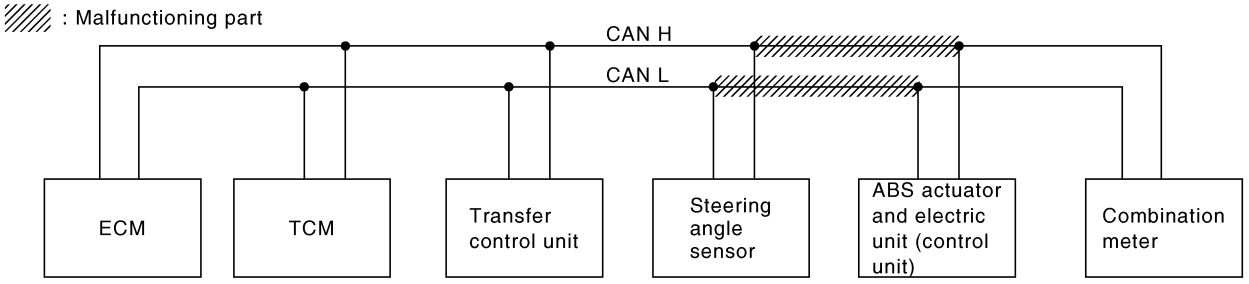
Case 3

NAEL0467S0303

Check harness between steering angle sensor and ABS actuator and electric unit (control unit). Refer to "CIRCUIT CHECK BETWEEN STEERING ANGLE SENSOR AND ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)" (EL-426).

SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR							
	Initial diagnosis	Transmit diagnosis	Receive diagnosis					
			ECM	TCM	AWD/4WD	STRG	VDC/TCS/ ABS	METER/ M&A
ENGINE	NG	UNKWN	–	UNKWN	–	–	UNKWN ✓	UNKWN ✓
A/T	NG	UNKWN	UNKWN	–	–	–	UNKWN ✓	UNKWN ✓
ALL MODE AWD/4WD	NG	UNKWN	UNKWN	UNKWN	–	UNKWN	UNKWN ✓	–
ABS	NG	UNKWN	UNKWN ✓	UNKWN ✓	UNKWN ✓	UNKWN ✓	–	UNKWN

PKIA8713E



PKIA8736E

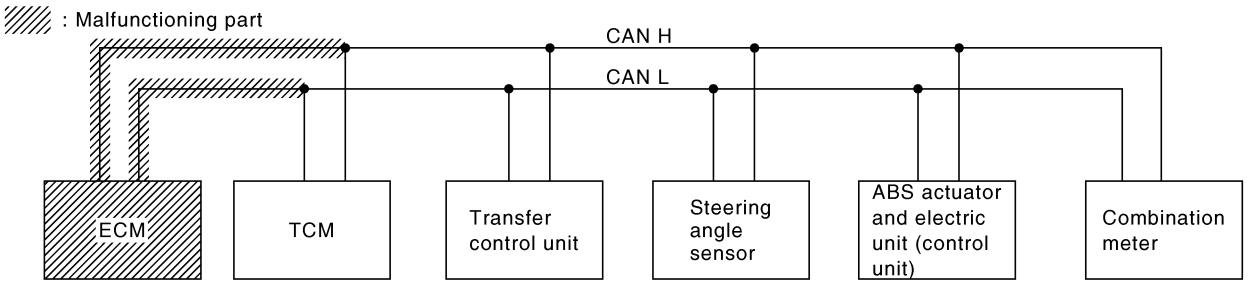
Case 4

NAEL0467S0304

Check ECM circuit. Refer to "ECM CIRCUIT CHECK" (EL-427).

SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR							
	Initial diagnosis	Transmit diagnosis	Receive diagnosis					
			ECM	TCM	AWD/4WD	STRG	VDC/TCS/ ABS	METER/ M&A
ENGINE	NG	UNKWN ✓	–	UNKWN ✓	–	–	UNKWN ✓	UNKWN ✓
A/T	NG	UNKWN	UNKWN ✓	–	–	–	UNKWN	UNKWN
ALL MODE AWD/4WD	NG	UNKWN	UNKWN ✓	UNKWN	–	UNKWN	UNKWN	–
ABS	NG	UNKWN	UNKWN ✓	UNKWN	UNKWN	UNKWN	–	UNKWN

PKIA8714E



PKIA8737E

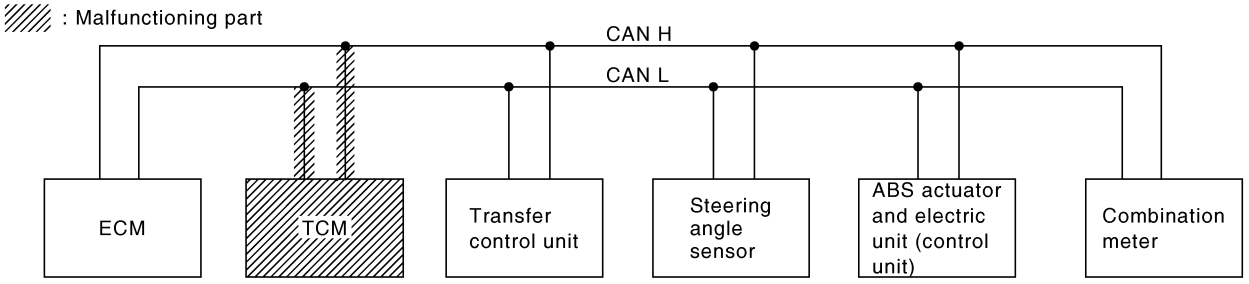
Case 5

=NAEL0467S0305

Check TCM circuit. Refer to "TCM CIRCUIT CHECK" (EL-428).

SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR							
	Initial diagnosis	Transmit diagnosis	Receive diagnosis					
			ECM	TCM	AWD/4WD	STRG	VDC/TCS/ ABS	METER/ M&A
ENGINE	NG	UNKWN	–	UNKWN ✓	–	–	UNKWN	UNKWN
A/T	NG	UNKWN ✓	UNKWN ✓	–	–	–	UNKWN ✓	UNKWN ✓
ALL MODE AWD/4WD	NG	UNKWN	UNKWN	UNKWN ✓	–	UNKWN	UNKWN	–
ABS	NG	UNKWN	UNKWN	UNKWN ✓	UNKWN	UNKWN	–	UNKWN

PKIA8715E



PKIA8738E

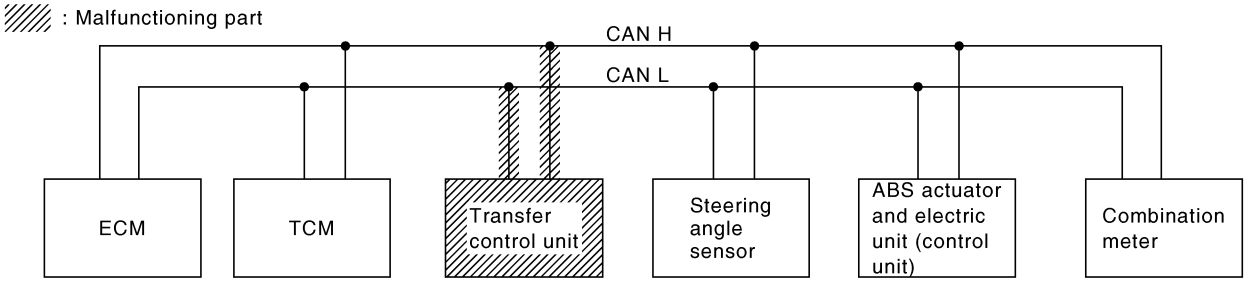
Case 6

NAEL0467S0306

Check transfer control unit circuit. Refer to "TRANSFER CONTROL UNIT CIRCUIT CHECK" (EL-429).

SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR							
	Initial diagnosis	Transmit diagnosis	Receive diagnosis					
			ECM	TCM	AWD/4WD	STRG	VDC/TCS/ ABS	METER/ M&A
ENGINE	NG	UNKWN	–	UNKWN	–	–	UNKWN	UNKWN
A/T	NG	UNKWN	UNKWN	–	–	–	UNKWN	UNKWN
ALL MODE AWD/4WD	NG	UNKWN ✓	UNKWN ✓	UNKWN ✓	–	UNKWN ✓	UNKWN ✓	–
ABS	NG	UNKWN	UNKWN	UNKWN	UNKWN ✓	UNKWN	–	UNKWN

PKIA8716E



PKIA8739E

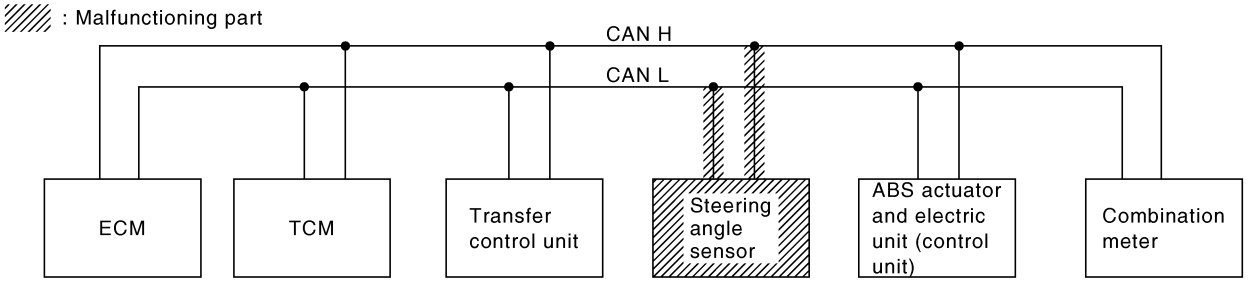
Case 7

=NAEL0467S0307

Check steering angle sensor circuit. Refer to "STEERING ANGLE SENSOR CIRCUIT CHECK" (EL-430).

SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR							
	Initial diagnosis	Transmit diagnosis	Receive diagnosis					
			ECM	TCM	AWD/4WD	STRG	VDC/TCS/ ABS	METER/ M&A
ENGINE	NG	UNKWN	–	UNKWN	–	–	UNKWN	UNKWN
A/T	NG	UNKWN	UNKWN	–	–	–	UNKWN	UNKWN
ALL MODE AWD/4WD	NG	UNKWN	UNKWN	UNKWN	–	UNKWN	UNKWN	–
ABS	NG	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	–	UNKWN

PKIA8717E



PKIA8740E

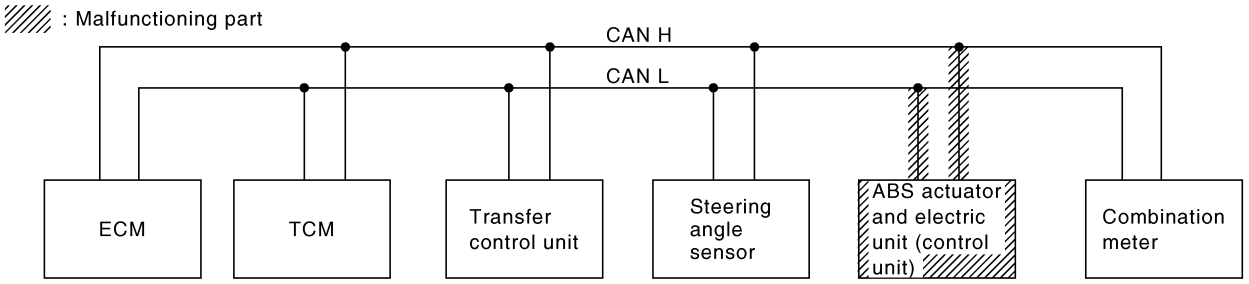
Case 8

NAEL0467S0308

Check ABS actuator and electric unit (control unit) circuit. Refer to "ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) CIRCUIT CHECK" (EL-431).

SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR							
	Initial diagnosis	Transmit diagnosis	Receive diagnosis					
			ECM	TCM	AWD/4WD	STRG	VDC/TCS/ ABS	METER/ M&A
ENGINE	NG	UNKWN	–	UNKWN	–	–	UNKWN	UNKWN
A/T	NG	UNKWN	UNKWN	–	–	–	UNKWN	UNKWN
ALL MODE AWD/4WD	NG	UNKWN	UNKWN	UNKWN	–	UNKWN	UNKWN	–
ABS	NG	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	–	UNKWN

PKIA8718E



PKIA8741E

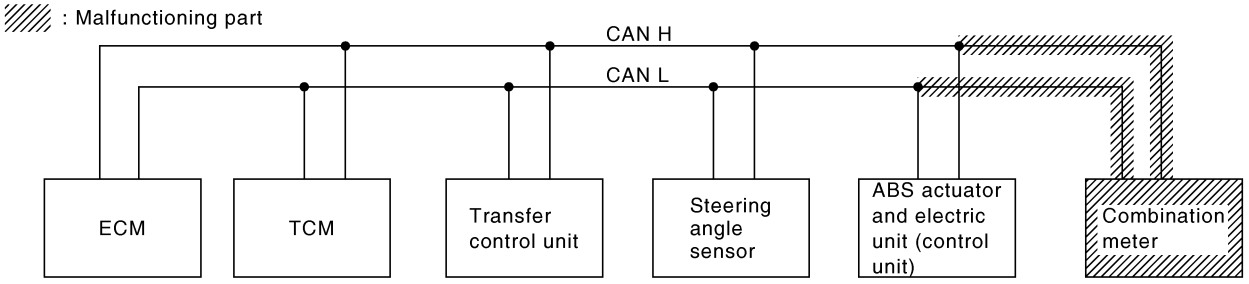
Case 9

=NAEL0467S0309

Check combination meter circuit. Refer to "COMBINATION METER CIRCUIT CHECK" (EL-432).

SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR							
	Initial diagnosis	Transmit diagnosis	Receive diagnosis					
			ECM	TCM	AWD/4WD	STRG	VDC/TCS/ABS	METER/M&A
ENGINE	NG	UNKWN	–	UNKWN	–	–	UNKWN	UNKWN ✓
A/T	NG	UNKWN	UNKWN	–	–	–	UNKWN	UNKWN ✓
ALL MODE AWD/4WD	NG	UNKWN	UNKWN	UNKWN	–	UNKWN	UNKWN	–
ABS	NG	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	–	UNKWN ✓

PKIA8719E



PKIA8742E

Case 10

NAEL0467S0310

Check CAN communication circuit. Refer to "CAN COMMUNICATION CIRCUIT CHECK" (EL-433).

SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR							
	Initial diagnosis	Transmit diagnosis	Receive diagnosis					
			ECM	TCM	AWD/4WD	STRG	VDC/TCS/ABS	METER/M&A
ENGINE	NG	UNKWN ✓	–	UNKWN ✓	–	–	UNKWN ✓	UNKWN ✓
A/T	NG	UNKWN ✓	UNKWN ✓	–	–	–	UNKWN ✓	UNKWN ✓
ALL MODE AWD/4WD	NG	UNKWN ✓	UNKWN ✓	UNKWN ✓	–	UNKWN ✓	UNKWN ✓	–
ABS	NG	UNKWN ✓	UNKWN ✓	UNKWN ✓	UNKWN ✓	UNKWN ✓	–	UNKWN ✓

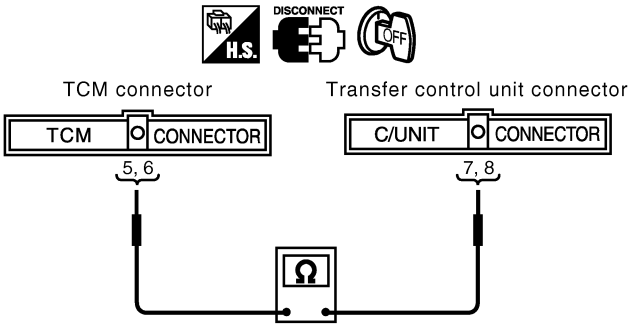
PKIA8720E

CIRCUIT CHECK BETWEEN TCM AND TRANSFER CONTROL UNIT

NAEL0467S05

1	CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect TCM connector, transfer control unit connector and combination meter connector.
2. Check continuity between TCM harness connector M119 terminals 5 (L), 6 (R) and transfer control unit harness connector M142 terminals 7 (L), 8 (R).



Continuity should exist.

SEL707Y

OK or NG

OK	▶	Connect all the connectors and diagnose again. Refer to "Work Flow" (EL-417).
NG	▶	Repair harness.

CIRCUIT CHECK BETWEEN TRANSFER CONTROL UNIT AND STEERING ANGLE SENSOR

=NAEL0467S06

1	CHECK CONNECTOR

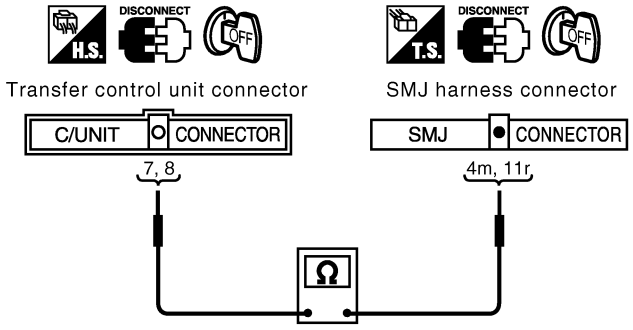
1. Turn ignition switch OFF.
2. Check following terminals and connector for damage, bend and loose connection (connector side and harness side).
- Harness connector M1
- Harness connector E1

OK or NG

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

2	CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect transfer control unit connector and harness connector M1.
2. Check continuity between transfer control unit harness connector M142 terminals 7 (L), 8 (R) and harness connector M1 terminals 4m (L), 11r (R).



Continuity should exist.

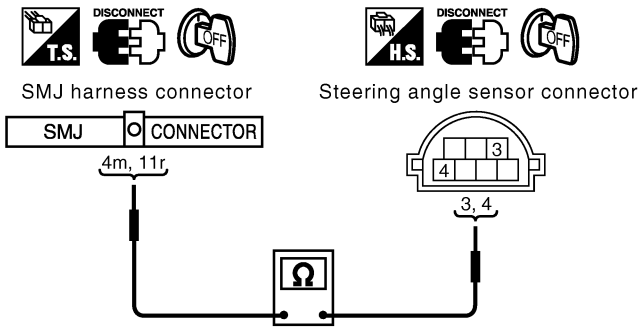
SEL708Y

OK or NG

OK	▶	GO TO 3.
NG	▶	Repair harness.

3	CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect steering angle sensor connector.
2. Check continuity between harness connector E1 terminals 4m (L), 11r (R) and steering angle sensor harness connector E136 terminals 3 (L), 4 (R).



Continuity should exist.

SEL709Y

OK or NG

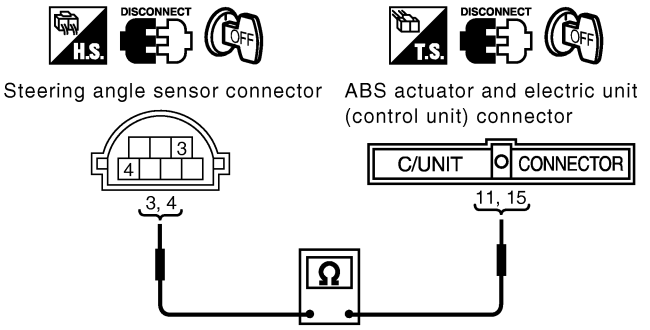
OK	▶	Connect all the connectors and diagnose again. Refer to "Work Flow" (EL-417).
NG	▶	Repair harness.

CIRCUIT CHECK BETWEEN STEERING ANGLE SENSOR AND ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

=NAEL0467S07

1	CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect steering angle sensor connector, ABS actuator and electric unit (control unit) connector and combination meter connector.
2. Check continuity between steering angle sensor harness connector E136 terminals 3 (L), 4 (R) and ABS actuator and electric unit (control unit) harness connector E142 terminals 11 (L), 15 (R).



Continuity should exist.

SEL710Y

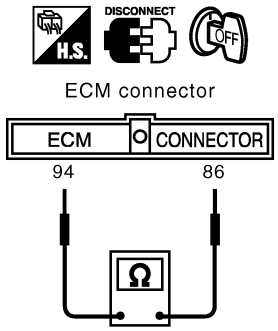
OK or NG

OK	▶	Connect all the connectors and diagnose again. Refer to "Work Flow" (EL-417).
NG	▶	Repair harness.

ECM CIRCUIT CHECK

=NAEL0467S08

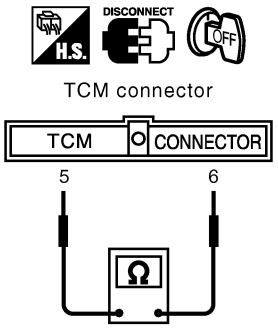
1	CHECK CONNECTOR	
1. Turn ignition switch OFF. 2. Check following terminals and connector for damage, bend and loose connection (control module side and harness side). ● ECM ● Harness connector F23 ● Harness connector M32		
OK or NG		
OK	▶	GO TO 2.
NG	▶	Repair terminal or connector.

2	CHECK HARNESS FOR OPEN CIRCUIT	
1. Disconnect ECM connector. 2. Check resistance between ECM harness connector F203 terminals 94 (L) and 86 (R).		
 SEL711Y	**Approx. 108 - 132 Ω**	
OK or NG		
OK	▶	Replace ECM.
NG	▶	Repair harness between ECM and TCM.

TCM CIRCUIT CHECK

=NAEL0467S09

1	CHECK CONNECTOR	
1. Turn ignition switch OFF. 2. Check the terminals and connector of TCM for damage, bend and loose connection (control module side and harness side). **OK or NG**		
OK	▶	GO TO 2.
NG	▶	Repair terminal or connector.

2	CHECK HARNESS FOR OPEN CIRCUIT	
1. Disconnect TCM connector. 2. Check resistance between TCM harness connector M119 terminals 5 (L) and 6 (R).  **Approx. 54 - 66 Ω** SEL712Y **OK or NG**		
OK	▶	Replace ECM.
NG	▶	Repair harness between TCM and transfer control unit.

TRANSFER CONTROL UNIT CIRCUIT CHECK

=NAEL0467S10

1	CHECK CONNECTOR

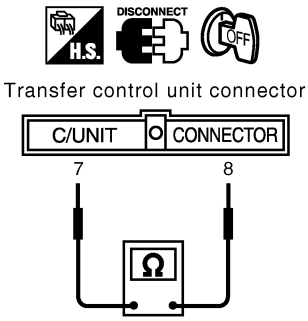
1. Turn ignition switch OFF.
2. Check the terminals and connector of transfer control unit for damage, bend and loose connection (control unit side and harness side).

OK or NG

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

2	CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect transfer control unit connector.
2. Check resistance between transfer control unit harness connector M142 terminals 7 (L) and 8 (R).



Approx. 54 - 66 Ω

SEL713Y

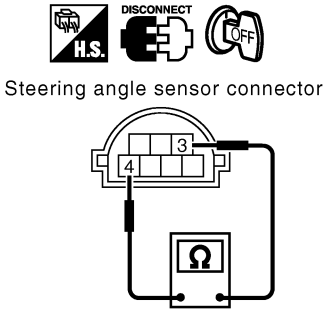
OK or NG

OK	▶	Replace transfer control unit.
NG	▶	Repair harness between transfer control unit and harness connector M1.

STEERING ANGLE SENSOR CIRCUIT CHECK

=NAEL0467S11

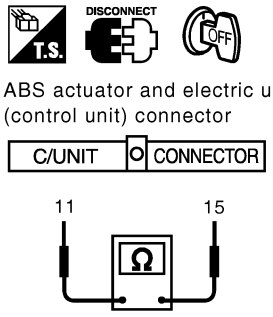
1	CHECK CONNECTOR	
1. Turn ignition switch OFF. 2. Check the terminals and connector of steering angle sensor for damage, bend and loose connection (sensor side and harness side). **OK or NG**		
OK	▶	GO TO 2.
NG	▶	Repair terminal or connector.

2	CHECK HARNESS FOR OPEN CIRCUIT	
1. Disconnect steering angle sensor connector. 2. Check resistance between steering angle sensor harness connector E136 terminals 3 (L) and 4 (R).  **Approx. 54 - 66 Ω** SEL714Y **OK or NG**		
OK	▶	Replace steering angle sensor.
NG	▶	Repair harness between steering angle sensor and ABS actuator and electric unit (control unit).

ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) CIRCUIT CHECK

=NAEL0467S12

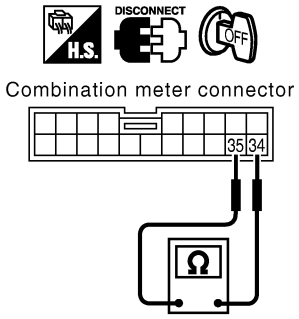
1	CHECK CONNECTOR	
1. Turn ignition switch OFF. 2. Check the terminals and connector of ABS actuator and electric unit (control unit) for damage, bend and loose connection (control unit side and harness side). **OK or NG**		
OK	▶	GO TO 2.
NG	▶	Repair terminal or connector.

2	CHECK HARNESS FOR OPEN CIRCUIT	
1. Disconnect ABS actuator and electric unit (control unit) connector. 2. Check resistance between ABS actuator and electric unit (control unit) harness connector E142 terminals 11 (L) and 15 (R).  **Approx. 54 - 66 Ω** SEL715Y **OK or NG**		
OK	▶	Replace ABS actuator and electric unit (control unit).
NG	▶	Repair harness between ABS actuator and electric unit (control unit) and harness connector E1.

COMBINATION METER CIRCUIT CHECK

=NAEL0467S13

1	CHECK CONNECTOR	
1. Turn ignition switch OFF. 2. Check following terminals and connector for damage, bend and loose connection (meter side and harness side). ● Combination meter. ● Harness connector M1. ● Harness connector E1.		
OK or NG		
OK	▶	GO TO 2.
NG	▶	Repair terminal or connector.

2	CHECK HARNESS FOR OPEN CIRCUIT	
1. Disconnect combination meter connector. 2. Check resistance between combination meter harness connector M25 terminals 34 (Y) and 35 (L).  **Approx. 108 - 132 Ω** SEL716Y		
OK or NG		
OK	▶	Replace combination meter.
NG	▶	Repair harness between combination meter and ABS actuator and electric unit (control unit).

CAN COMMUNICATION CIRCUIT CHECK

=NAEL0467S14

1	CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Check following terminals and connector for damage, bend and loose connection (meter side, control unit side, sensor side, control module side and harness side).

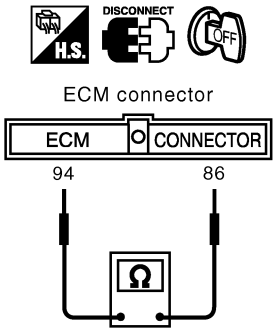
- Combination meter
- ABS actuator and electric unit (control unit)
- Steering angle sensor
- Transfer control unit
- TCM
- ECM
- Between combination meter and ECM

OK or NG

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

2	CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ECM connector and harness connector F23.
2. Check continuity between ECM harness connector F203 terminals 94 (L) and 86 (R).



Continuity should not exist.

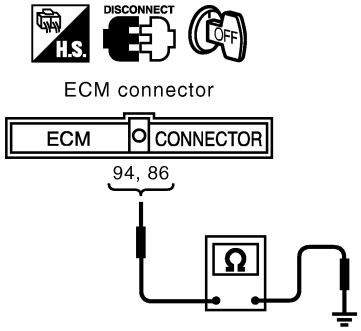
SEL717Y

OK or NG

OK	▶	GO TO 3.
NG	▶	Repair harness between ECM and harness connector F23.

3	CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector F203 terminals 94 (L), 86 (R) and ground.



Continuity should not exist.

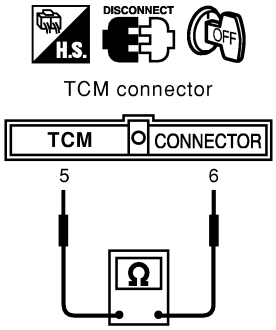
SEL718Y

OK or NG

OK	▶	GO TO 4.
NG	▶	Repair harness between ECM and harness connector F23.

4	CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect TCM connector, transfer control unit connector and harness connector M1.
2. Check continuity between TCM harness connector M119 terminals 5 (L) and 6 (R).



Continuity should not exist.

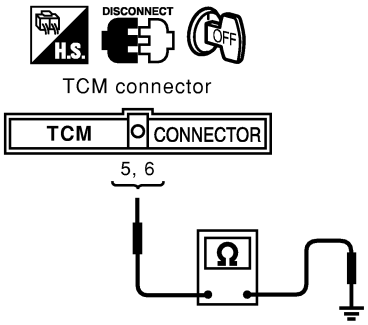
SEL440Y

OK or NG

OK	▶	GO TO 5.
NG	▶	● Repair harness between TCM and harness connector M1. ● Repair harness between TCM and harness connector M32. ● Repair harness between TCM and transfer control unit.

5	CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between TCM harness connector M119 terminals 5 (L), 6 (R) and ground.



Continuity should not exist.

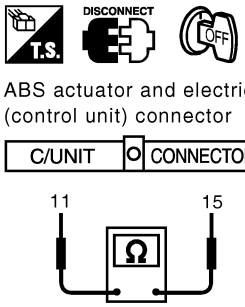
SEL441Y

OK or NG

OK	▶	GO TO 6.
NG	▶	● Repair harness between TCM and harness connector M1. ● Repair harness between TCM and harness connector M32. ● Repair harness between TCM and transfer control unit.

6	CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect steering angle sensor connector and ABS actuator and electric unit (control unit) connector.
2. Check continuity between ABS actuator and electric unit (control unit) harness connector E142 terminals 11 (L) and 15 (R).



Continuity should not exist.

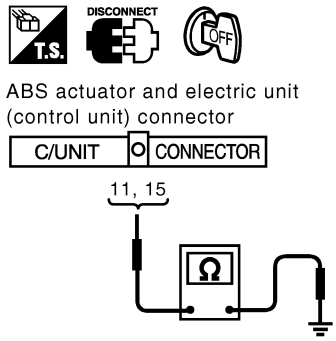
SEL719Y

OK or NG

OK	▶	GO TO 7.
NG	▶	• Repair harness between ABS actuator and electric unit (control unit) and harness connector E1. • Repair harness between ABS actuator and electric unit (control unit) and steering angle sensor.

7	CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ABS actuator and electric unit (control unit) harness connector E142 terminals 11 (L), 15 (R) and ground.



Continuity should not exist.

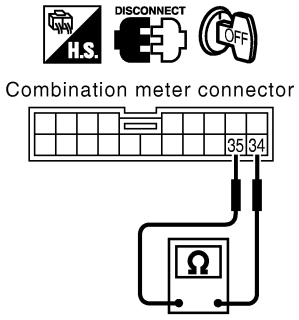
SEL720Y

OK or NG

OK	▶	GO TO 8.
NG	▶	• Repair harness between ABS actuator and electric unit (control unit) and harness connector E1. • Repair harness between ABS actuator and electric unit (control unit) and steering angle sensor.

8	CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect combination meter connector.
2. Check continuity between combination meter harness connector M25 terminals 34 (Y) and 35 (L).



Continuity should not exist.

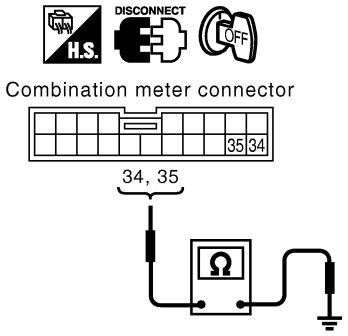
SEL721Y

OK or NG

OK	▶	GO TO 9.
NG	▶	Repair harness between combination meter and harness connector M1.

9	CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between combination meter harness connector M25 terminals 34 (Y), 35 (L) and ground.



Continuity should not exist.

SEL722Y

OK or NG

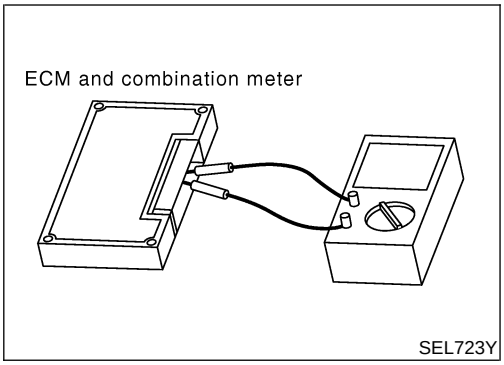
OK	▶	GO TO 10.
NG	▶	Repair harness between combination meter and harness connector M1.

10	ECM/COMBINATION METER INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to "ECM/COMBINATION METER INTERNAL CIRCUIT INSPECTION" (EL-437).

OK or NG

OK	▶	Connect all the connectors and diagnose again. Refer to "Work Flow" (EL-417).
NG	▶	Replace ECM and/or combination meter.



Component Inspection

=NAEL0468

ECM/COMBINATION METER INTERNAL CIRCUIT INSPECTION

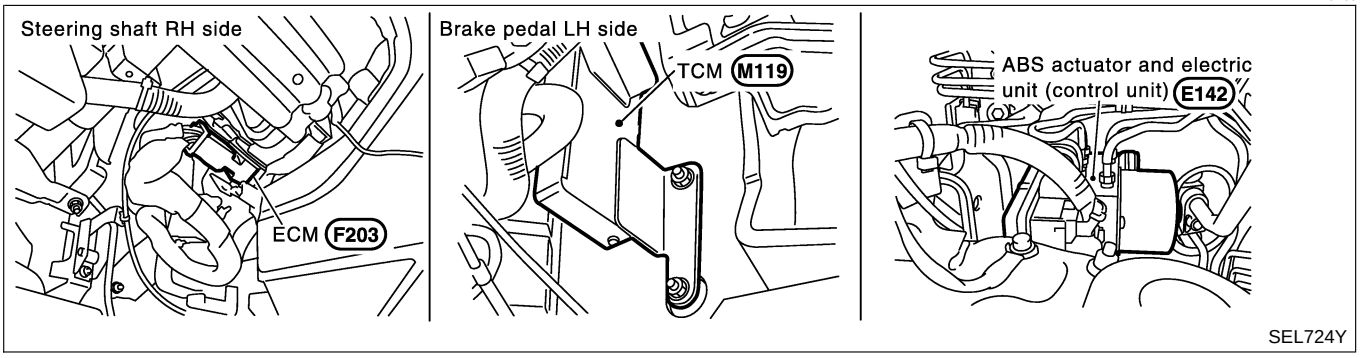
NAEL0468S01

- Remove ECM and combination meter from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between combination meter terminals 34 and 35.

Unit	Terminal	Resistance value (Ω)
ECM	94 - 86	Approx. 108 - 132
Combination meter	34 - 35	

Component Parts and Harness Connector Location

NAEL0469



System Description

NAEL0470

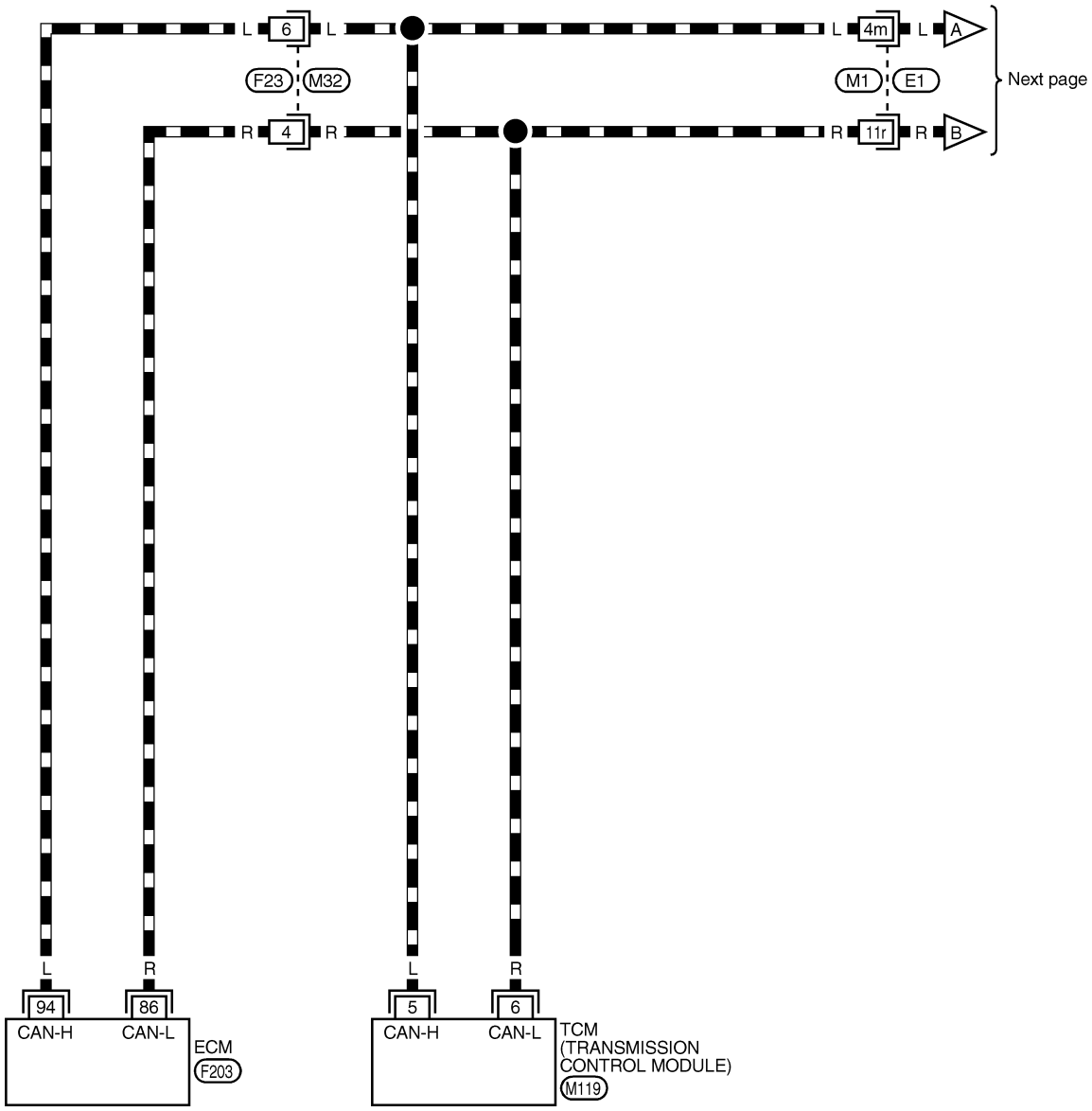
CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electonic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

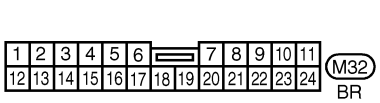
Wiring Diagram — CAN —

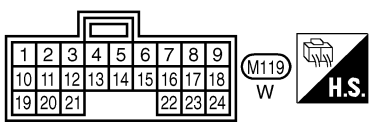
NAEL0471

EL-CAN-03

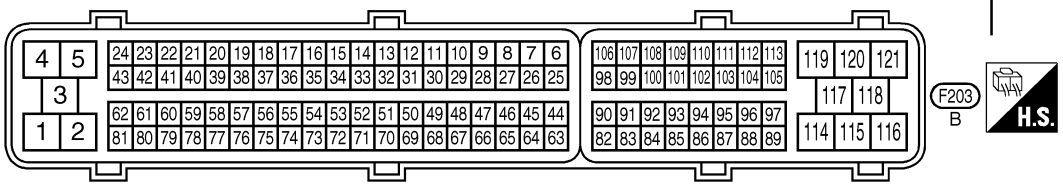
: DATA LINE







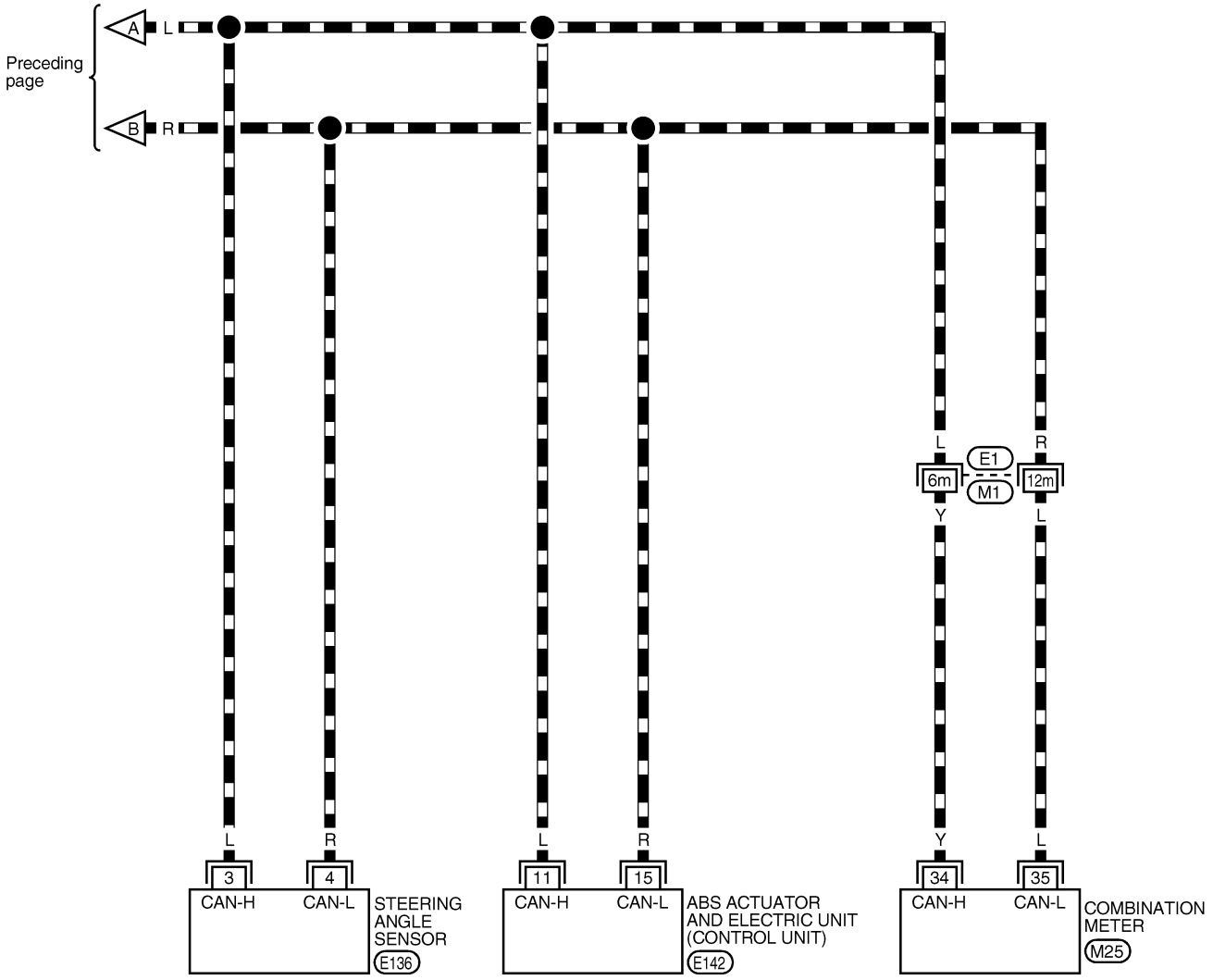
REFER TO THE FOLLOWING.
E1 - SUPER MULTIPLE JUNCTION (SMJ)

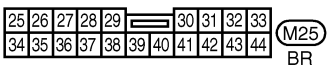


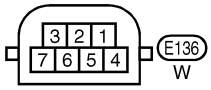
MEL576Q

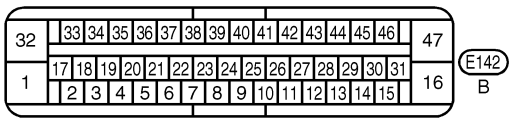
EL-CAN-04

: DATA LINE









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

MEL577Q

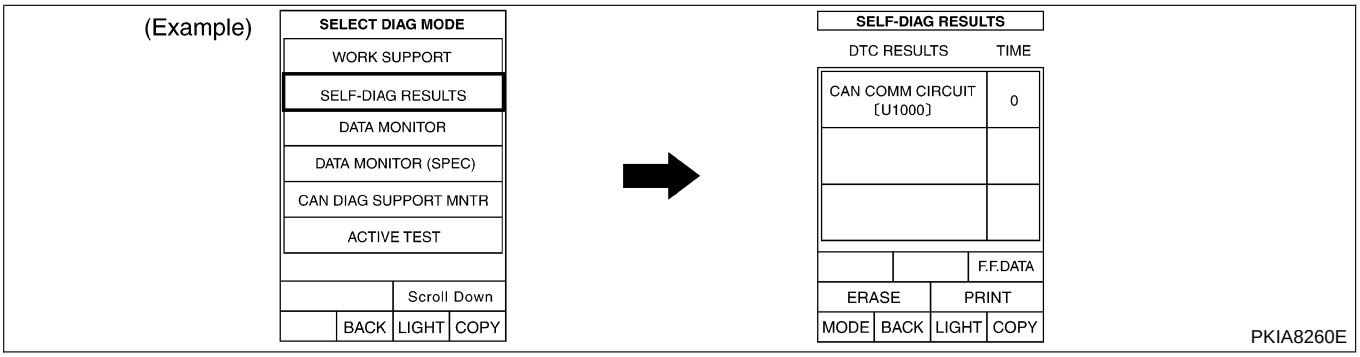
Trouble Diagnoses

NAEL0472

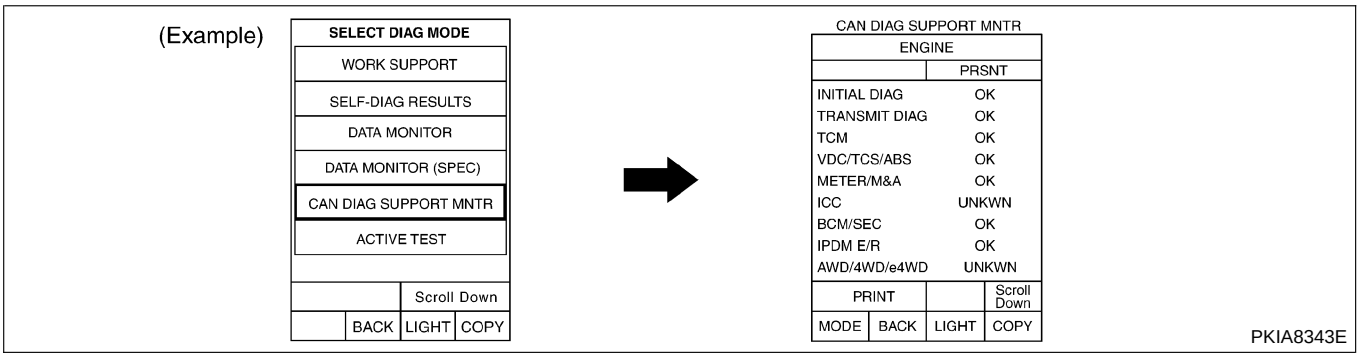
WORK FLOW

NAEL0472S01

1. Print all the data of “SELF-DIAG RESULTS” for “ENGINE”, “A/T” and “ABS” displayed on CONSULT-II.



2. Print all the data of “CAN DIAG SUPPORT MNTR” for “ENGINE”, “A/T” and “ABS” displayed on CONSULT-II.



3. Attach the printed sheet of “SELF-DIAG RESULTS” and “CAN DIAG SUPPORT MNTR” onto the check sheet. Refer to “CHECK SHEET” (EL-442).
4. Based on the “CAN DIAG SUPPORT MNTR” results, put “v” marks onto the items with “UNKWN” or “NG” in the check sheet table. Refer to “CHECK SHEET” (EL-442).

NOTE:
If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” as “CAN DIAG SUPPORT MNTR” for the diagnosed control unit, replace the control unit.

5. According to the check sheet results (example), start inspection. Refer to “CHECK SHEET RESULTS (EXAMPLE)” (EL-443).

CHECK SHEET

=NAEL0472S02

NOTE:

If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.

Check sheet table

SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR						
	Initial diagnosis	Transmit diagnosis	Receive diagnosis				
			ECM	TCM	STRG	VDC/TCS/ ABS	METER/ M&A
ENGINE	NG	UNKWN	–	UNKWN	–	UNKWN	UNKWN
A/T	NG	UNKWN	UNKWN	–	–	UNKWN	UNKWN
ABS	NG	UNKWN	UNKWN	UNKWN	UNKWN	–	UNKWN

Symptoms:

Attach copy of
ENGINE
SELF-DIAG RESULTS

Attach copy of
A/T
SELF-DIAG RESULTS

Attach copy of
ABS
SELF-DIAG RESULTS

Attach copy of
ENGINE
CAN DIAG SUPPORT MNTR

Attach copy of
A/T
CAN DIAG SUPPORT MNTR

Attach copy of
ABS
CAN DIAG SUPPORT MNTR

PKIA8708E

CHECK SHEET RESULTS (EXAMPLE)

=NAEL0472S03

NOTE:

If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.

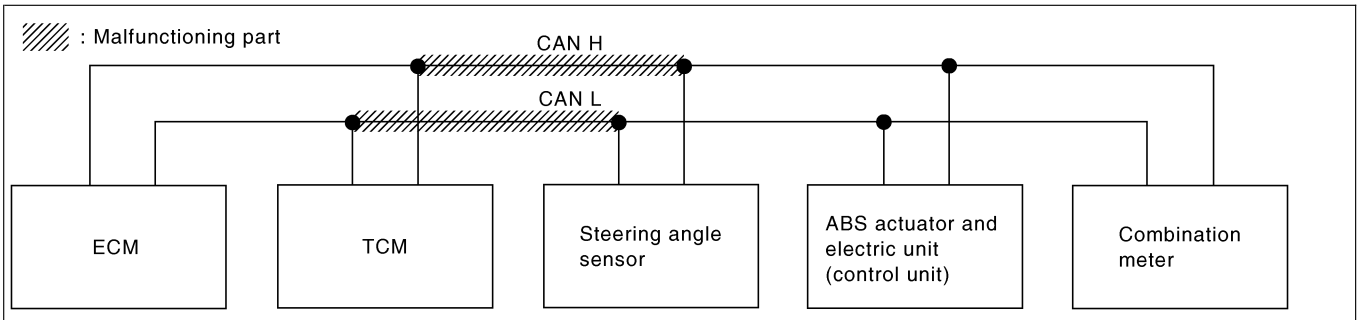
Case 1

NAEL0472S0301

Check harness between TCM and steering angle sensor. Refer to "CIRCUIT CHECK BETWEEN TCM AND STEERING ANGLE SENSOR" (EL-448).

SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR						
	Initial diagnosis	Transmit diagnosis	Receive diagnosis				
			ECM	TCM	STRG	VDC/TCS/ ABS	METER/ M&A
ENGINE	NG	UNKWN	–	UNKWN	–	UNKWN ✓	UNKWN ✓
A/T	NG	UNKWN	UNKWN	–	–	UNKWN ✓	UNKWN ✓
ABS	NG	UNKWN	UNKWN ✓	UNKWN ✓	UNKWN	–	UNKWN

PKIA8721E



PKIA8743E

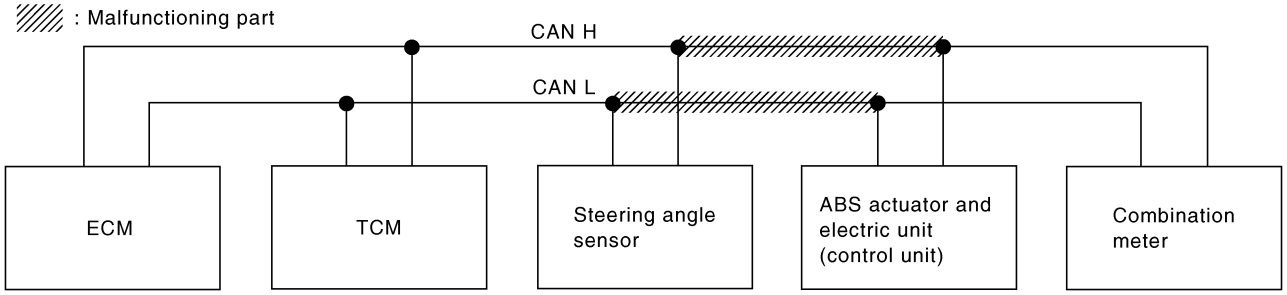
Case 2

=NAEL0472S0302

Check harness between steering angle sensor and ABS actuator and electric unit (control unit). Refer to "CIRCUIT CHECK BETWEEN STEERING ANGLE SENSOR AND ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)" (EL-449).

SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR						
	Initial diagnosis	Transmit diagnosis	Receive diagnosis				
			ECM	TCM	STRG	VDC/TCS/ ABS	METER/ M&A
ENGINE	NG	UNKWN	–	UNKWN	–	UNKWN	UNKWN
A/T	NG	UNKWN	UNKWN	–	–	UNKWN	UNKWN
ABS	NG	UNKWN	UNKWN	UNKWN	UNKWN	–	UNKWN

PKIA8722E



PKIA8744E

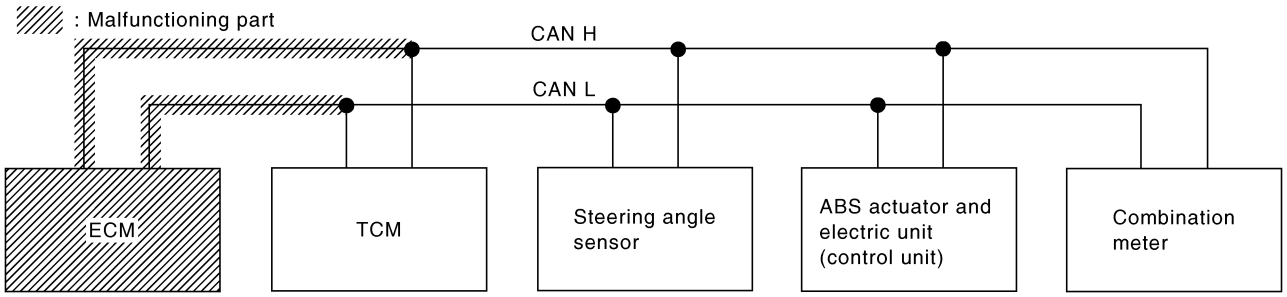
Case 3

NAEL0472S0303

Check ECM circuit. Refer to "ECM CIRCUIT CHECK" (EL-450).

SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR						
	Initial diagnosis	Transmit diagnosis	Receive diagnosis				
			ECM	TCM	STRG	VDC/TCS/ ABS	METER/ M&A
ENGINE	NG	UNKWN	–	UNKWN	–	UNKWN	UNKWN
A/T	NG	UNKWN	UNKWN	–	–	UNKWN	UNKWN
ABS	NG	UNKWN	UNKWN	UNKWN	UNKWN	–	UNKWN

PKIA8723E



PKIA8745E

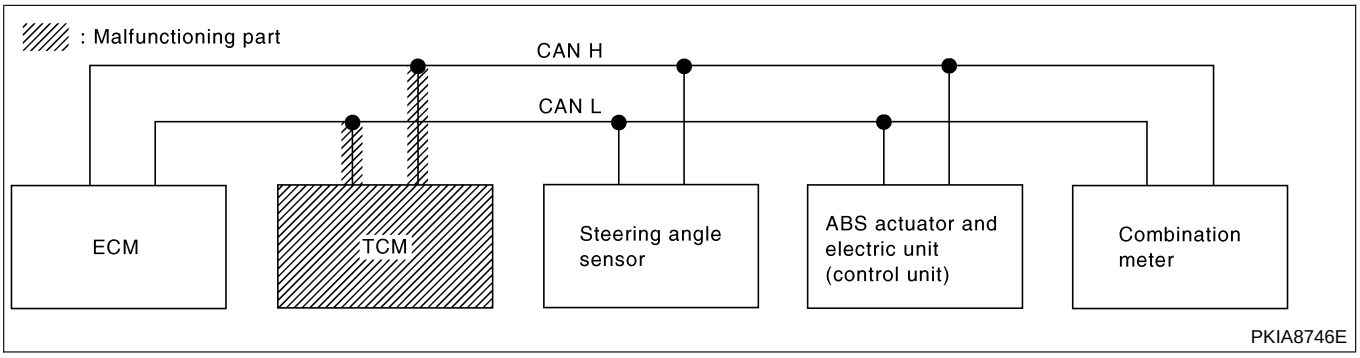
Case 4

=NAEL0472S0304

Check TCM circuit. Refer to "TCM CIRCUIT CHECK" (EL-451).

SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR						
	Initial diagnosis	Transmit diagnosis	Receive diagnosis				
			ECM	TCM	STRG	VDC/TCS/ ABS	METER/ M&A
ENGINE	NG	UNKWN	–	✓	–	UNKWN	UNKWN
A/T	NG	✓	✓	–	–	✓	✓
ABS	NG	UNKWN	UNKWN	✓	UNKWN	–	UNKWN

PKIA8724E



PKIA8746E

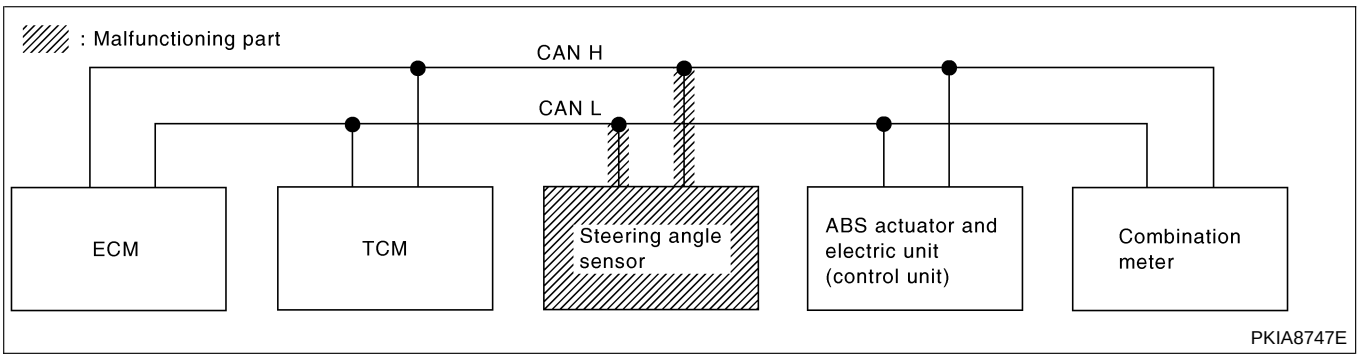
Case 5

NAEL0472S0305

Check steering angle sensor circuit. Refer to "STEERING ANGLE SENSOR CIRCUIT CHECK" (EL-452).

SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR						
	Initial diagnosis	Transmit diagnosis	Receive diagnosis				
			ECM	TCM	STRG	VDC/TCS/ ABS	METER/ M&A
ENGINE	NG	UNKWN	–	UNKWN	–	UNKWN	UNKWN
A/T	NG	UNKWN	UNKWN	–	–	UNKWN	UNKWN
ABS	NG	UNKWN	UNKWN	UNKWN	✓	–	UNKWN

PKIA8725E



PKIA8747E

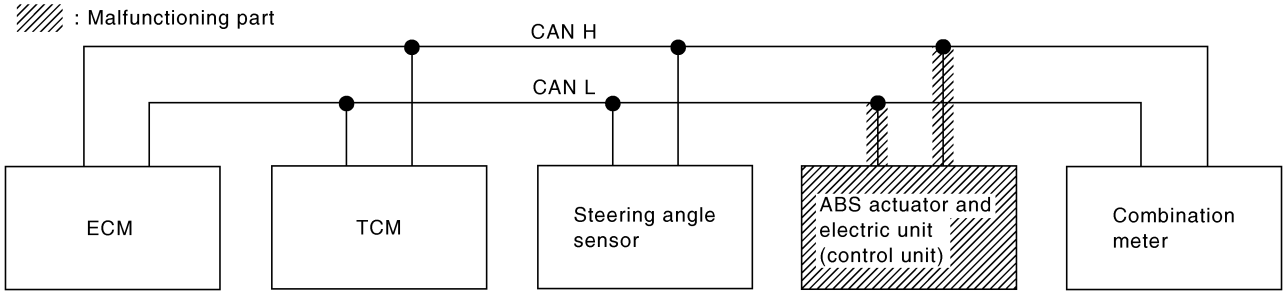
Case 6

=NAEL0472S0306

Check ABS actuator and electric unit (control unit) circuit. Refer to "ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) CIRCUIT CHECK" (EL-453).

SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR						
	Initial diagnosis	Transmit diagnosis	Receive diagnosis				
			ECM	TCM	STRG	VDC/TCS/ ABS	METER/ M&A
ENGINE	NG	UNKWN	–	UNKWN	–	UNKWN ✓	UNKWN
A/T	NG	UNKWN	UNKWN	–	–	UNKWN ✓	UNKWN
ABS	NG	UNKWN ✓	UNKWN ✓	UNKWN ✓	UNKWN ✓	–	UNKWN ✓

PKIA8726E



PKIA8748E

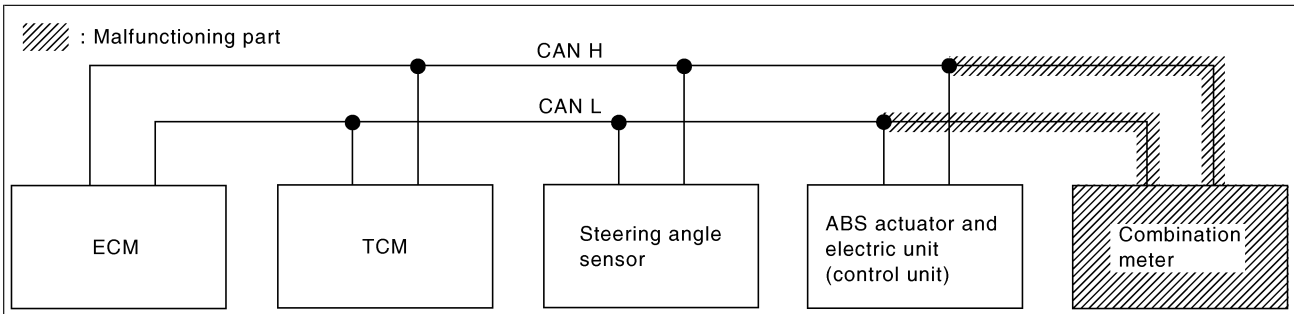
Case 7

NAEL0472S0307

Check combination meter circuit. Refer to "COMBINATION METER CIRCUIT CHECK" (EL-454).

SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR						
	Initial diagnosis	Transmit diagnosis	Receive diagnosis				
			ECM	TCM	STRG	VDC/TCS/ ABS	METER/ M&A
ENGINE	NG	UNKWN	–	UNKWN	–	UNKWN	UNKWN ✓
A/T	NG	UNKWN	UNKWN	–	–	UNKWN	UNKWN ✓
ABS	NG	UNKWN	UNKWN	UNKWN	UNKWN	–	UNKWN ✓

PKIA8727E



PKIA8749E

Case 8

=NAEL0472S0308

Check CAN communication circuit. Refer to "CAN COMMUNICATION CIRCUIT CHECK" (EL-455).

SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR						
	Initial diagnosis	Transmit diagnosis	Receive diagnosis				
			ECM	TCM	STRG	VDC/TCS/ ABS	METER/ M&A
ENGINE	NG	UNKWN	–	UNKWN	–	UNKWN	UNKWN
A/T	NG	UNKWN	UNKWN	–	–	UNKWN	UNKWN
ABS	NG	UNKWN	UNKWN	UNKWN	UNKWN	–	UNKWN

PKIA8728E

CIRCUIT CHECK BETWEEN TCM AND STEERING ANGLE SENSOR

=NAEL0472S06

1	CHECK CONNECTOR

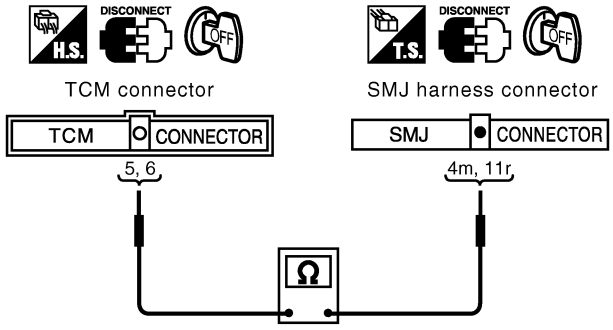
1. Turn ignition switch OFF.
2. Check following terminals and connector for damage, bend and loose connection (connector side and harness side).
- Harness connector M1
- Harness connector E1

OK or NG

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

2	CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect TCM connector and harness connector M1.
2. Check continuity between TCM harness connector M119 terminals 5 (L), 6 (R) and harness connector M1 terminals 4m (L), 11r (R).



Continuity should exist.

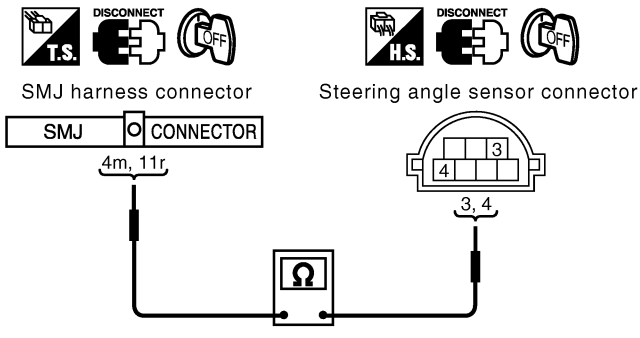
SEL728Y

OK or NG

OK	▶	GO TO 3.
NG	▶	Repair harness.

3	CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect steering angle sensor connector.
2. Check continuity between harness connector E1 terminals 4m (L), 11r (R) and steering angle sensor harness connector E136 terminals 3 (L), 4 (R).



Continuity should exist.

SEL709Y

OK or NG

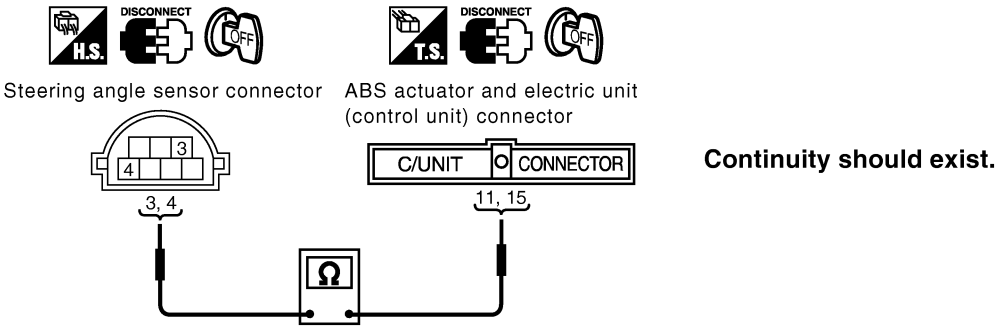
OK	▶	Connect all the connectors and diagnose again. Refer to "Work Flow" (EL-441).
NG	▶	Repair harness.

CIRCUIT CHECK BETWEEN STEERING ANGLE SENSOR AND ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

=NAEL0472S07

1	CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect steering angle sensor connector, ABS actuator and electric unit (control unit) connector and combination meter connector.
2. Check continuity between steering angle sensor harness connector E136 terminals 3 (L), 4 (R) and ABS actuator and electric unit (control unit) harness connector E142 terminals 11 (L), 15 (R).



Continuity should exist.

SEL710Y

OK or NG

OK	▶	Connect all the connectors and diagnose again. Refer to "Work Flow" (EL-441).
NG	▶	Repair harness.

ECM CIRCUIT CHECK

=NAEL0472S08

1	CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Check following terminals and connector for damage, bend and loose connection (control module side and harness side).

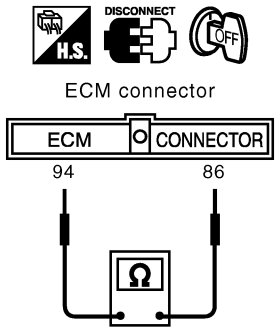
- ECM
- Harness connector F23
- Harness connector M32

OK or NG

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

2	CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ECM connector.
2. Check resistance between ECM harness connector F203 terminals 94 (L) and 86 (R).



Approx. 108 - 132 Ω

SEL711Y

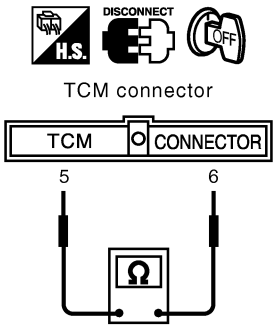
OK or NG

OK	▶	Replace ECM.
NG	▶	Repair harness between ECM and TCM.

TCM CIRCUIT CHECK

=NAEL0472S09

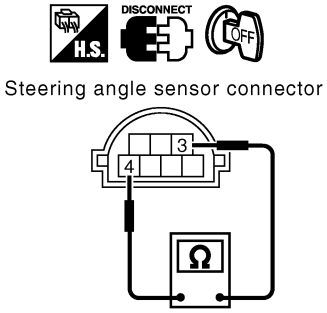
1	CHECK CONNECTOR	
1. Turn ignition switch OFF. 2. Check the terminals and connector of TCM for damage, bend and loose connection (control module side and harness side). **OK or NG**		
OK	▶	GO TO 2.
NG	▶	Repair terminal or connector.

2	CHECK HARNESS FOR OPEN CIRCUIT	
1. Disconnect TCM connector. 2. Check resistance between TCM harness connector M119 terminals 5 (L) and 6 (R).  **Approx. 54 - 66 Ω** SEL712Y **OK or NG**		
OK	▶	Replace TCM.
NG	▶	Repair harness between TCM and harness connector M1.

STEERING ANGLE SENSOR CIRCUIT CHECK

=NAEL0472S11

1	CHECK CONNECTOR	
1. Turn ignition switch OFF. 2. Check the terminals and connector of steering angle sensor for damage, bend and loose connection (sensor side and harness side). **OK or NG**		
OK	▶	GO TO 2.
NG	▶	Repair terminal or connector.

2	CHECK HARNESS FOR OPEN CIRCUIT	
1. Disconnect steering angle sensor connector. 2. Check resistance between steering angle sensor harness connector E136 terminals 3 (L) and 4 (R).  Steering angle sensor connector **Approx. 54 - 66 Ω** SEL714Y **OK or NG**		
OK	▶	Replace steering angle sensor.
NG	▶	Repair harness between steering angle sensor and ABS actuator and electric unit (control unit).

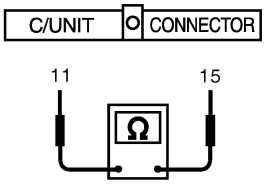
ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) CIRCUIT CHECK

=NAEL0472S12

1	CHECK CONNECTOR	
1. Turn ignition switch OFF. 2. Check the terminals and connector of ABS actuator and electric unit (control unit) for damage, bend and loose connection (control unit side and harness side). **OK or NG**		
OK	▶	GO TO 2.
NG	▶	Repair terminal or connector.

2	CHECK HARNESS FOR OPEN CIRCUIT	
1. Disconnect ABS actuator and electric unit (control unit) connector. 2. Check resistance between ABS actuator and electric unit (control unit) harness connector E142 terminals 11 (L) and 15 (R).		
OK	▶	Replace ABS actuator and electric unit (control unit).
NG	▶	Repair harness between ABS actuator and electric unit (control unit) and harness connector E1.

ABS actuator and electric unit (control unit) connector



Approx. 54 - 66 Ω

SEL715Y

OK or NG

COMBINATION METER CIRCUIT CHECK

=NAEL0472S13

1	CHECK CONNECTOR

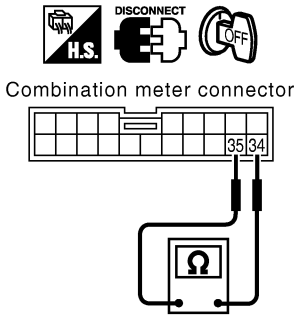
1. Turn ignition switch OFF.
2. Check following terminals and connector for damage, bend and loose connection (meter side and harness side).
- Combination meter.
- Harness connector M1.
- Harness connector E1.

OK or NG

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

2	CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M25 terminals 34 (Y) and 35 (L).



Approx. 108 - 132 Ω

SEL716Y

OK or NG

OK	▶	Replace combination meter.
NG	▶	Repair harness between combination meter and ABS actuator and electric unit (control unit).

CAN COMMUNICATION CIRCUIT CHECK

=NAEL0472S14

1	CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Check following terminals and connector for damage, bend and loose connection (meter side, control unit side, sensor side, control module side and harness side).

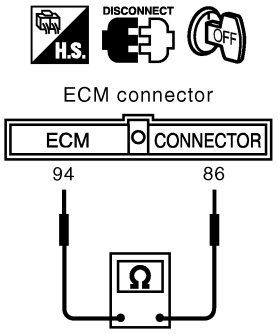
- Combination meter
- ABS actuator and electric unit (control unit)
- Steering angle sensor
- TCM
- ECM
- Between combination meter and ECM

OK or NG

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

2	CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ECM connector and harness connector F23.
2. Check continuity between ECM harness connector F203 terminals 94 (L) and 86 (R).



Continuity should not exist.

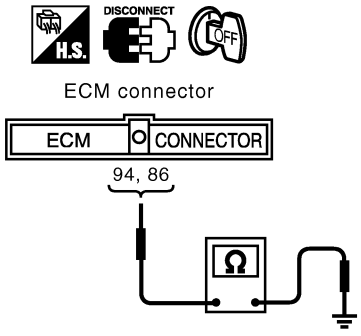
SEL717Y

OK or NG

OK	▶	GO TO 3.
NG	▶	Repair harness between ECM and harness connector F23.

3	CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector F203 terminals 94 (L), 86 (R) and ground.



Continuity should not exist.

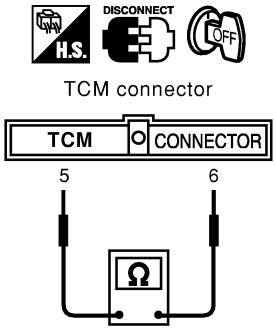
SEL718Y

OK or NG

OK	▶	GO TO 4.
NG	▶	Repair harness between ECM and harness connector F23.

4	CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect TCM connector and harness connector M1.
2. Check continuity between TCM harness connector M119 terminals 5 (L) and 6 (R).



Continuity should not exist.

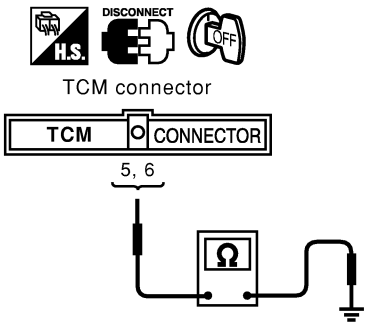
SEL440Y

OK or NG

OK	▶	GO TO 5.
NG	▶	● Repair harness between TCM and harness connector M1. ● Repair harness between TCM and harness connector M32.

5	CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between TCM harness connector M119 terminals 5 (L), 6 (R) and ground.



Continuity should not exist.

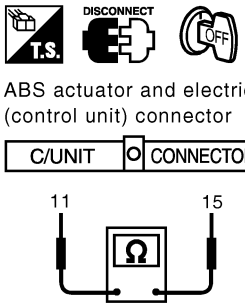
SEL441Y

OK or NG

OK	▶	GO TO 6.
NG	▶	● Repair harness between TCM and harness connector M1. ● Repair harness between TCM and harness connector M32.

6	CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect steering angle sensor connector and ABS actuator and electric unit (control unit) connector.
2. Check continuity between ABS actuator and electric unit (control unit) harness connector E142 terminals 11 (L) and 15 (R).



Continuity should not exist.

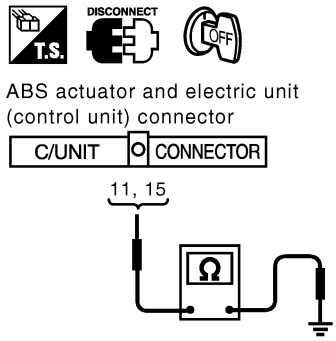
SEL719Y

OK or NG

OK	▶	GO TO 7.
NG	▶	• Repair harness between ABS actuator and electric unit (control unit) and harness connector E1. • Repair harness between ABS actuator and electric unit (control unit) and steering angle sensor.

7	CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ABS actuator and electric unit (control unit) harness connector E142 terminals 11 (L), 15 (R) and ground.



Continuity should not exist.

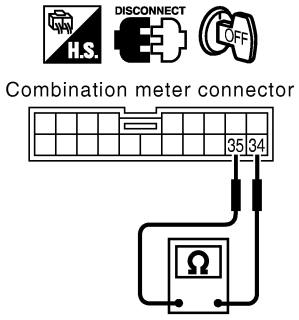
SEL720Y

OK or NG

OK	▶	GO TO 8.
NG	▶	• Repair harness between ABS actuator and electric unit (control unit) and harness connector E1. • Repair harness between ABS actuator and electric unit (control unit) and steering angle sensor.

8	CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect combination meter connector.
2. Check continuity between combination meter harness connector M25 terminals 34 (Y) and 35 (L).



Continuity should not exist.

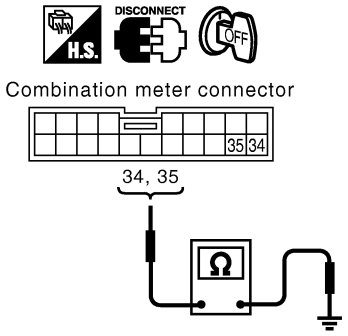
SEL721Y

OK or NG

OK	▶	GO TO 9.
NG	▶	Repair harness between combination meter and harness connector M1.

9	CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between combination meter harness connector M25 terminals 34 (Y), 35 (L) and ground.



Continuity should not exist.

SEL722Y

OK or NG

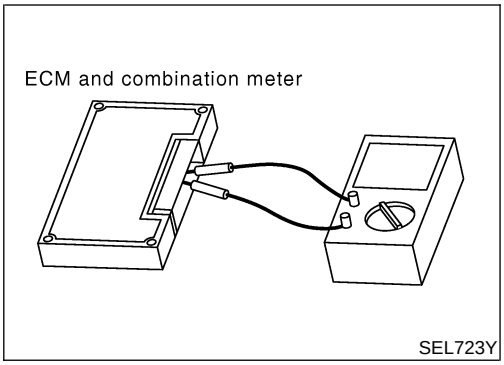
OK	▶	GO TO 10.
NG	▶	Repair harness between combination meter and harness connector M1.

10	ECM/COMBINATION METER INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to "ECM/COMBINATION METER INTERNAL CIRCUIT INSPECTION" (EL-459).

OK or NG

OK	▶	Connect all the connectors and diagnose again. Refer to "Work Flow" (EL-441).
NG	▶	Replace ECM and/or combination meter.



Component Inspection

=NAEL0473

ECM/COMBINATION METER INTERNAL CIRCUIT INSPECTION

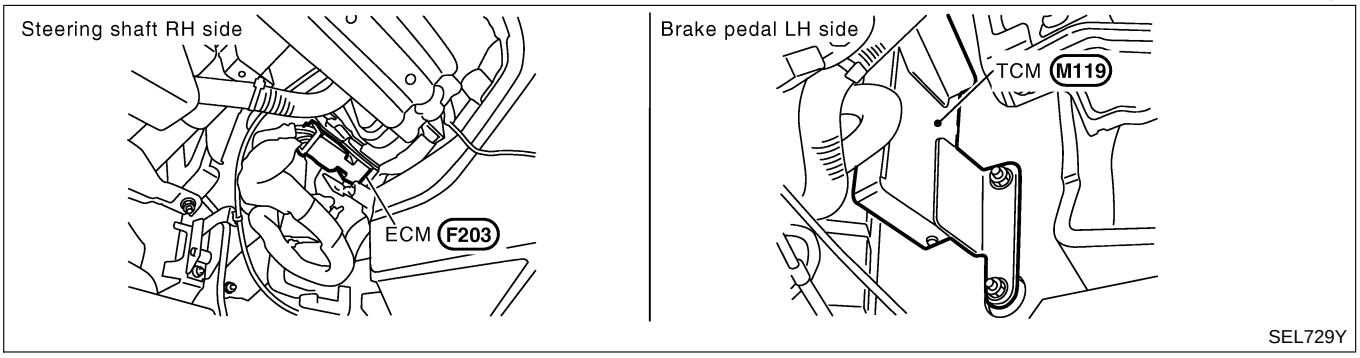
NAEL0473S01

- Remove ECM and combination meter from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between combination meter terminals 34 and 35.

Unit	Terminal	Resistance value (Ω)
ECM	94 - 86	Approx. 108 - 132
Combination meter	34 - 35	

Component Parts and Harness Connector Location

NAEL0474



System Description

NAEL0475

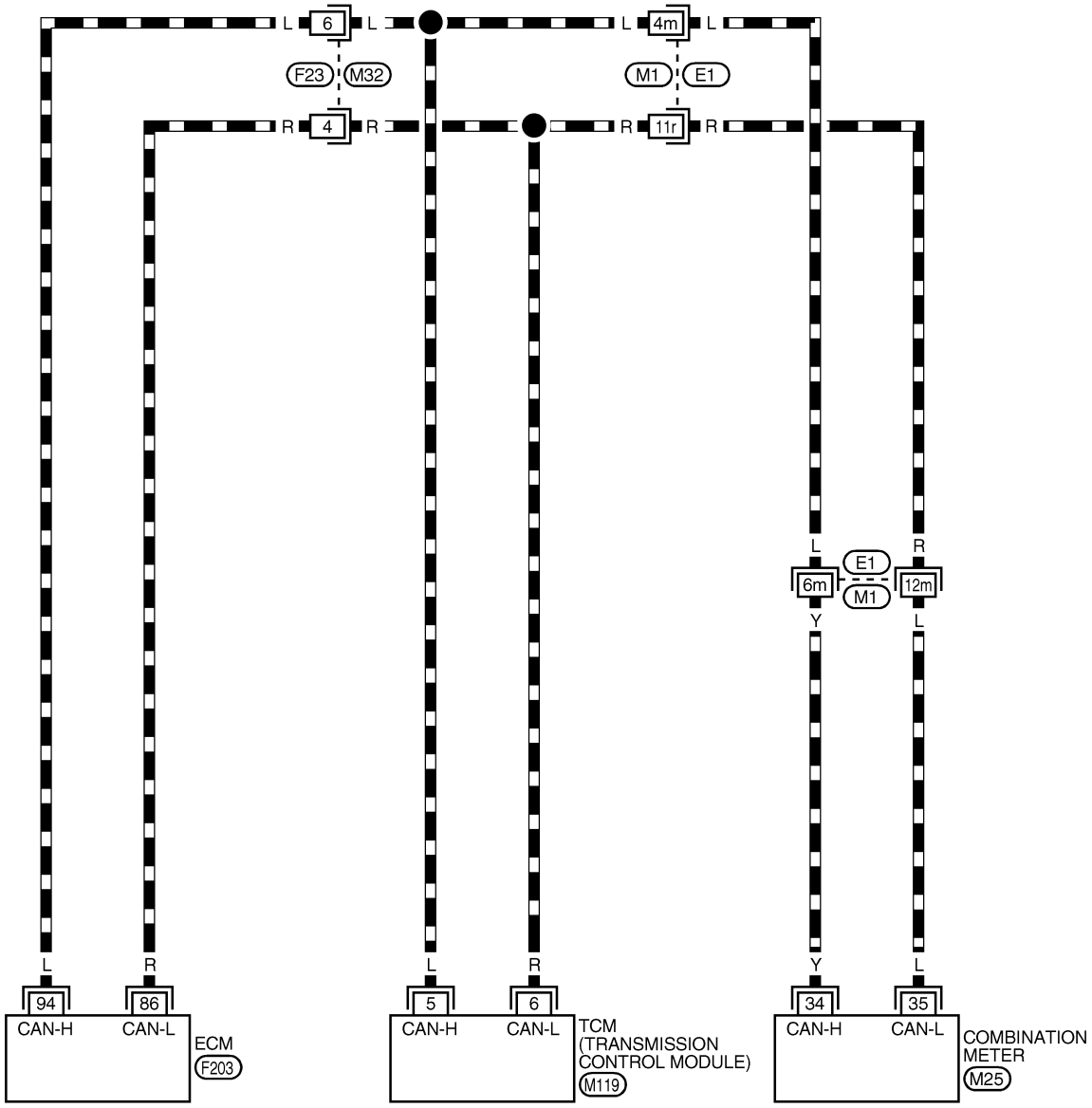
CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electonic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

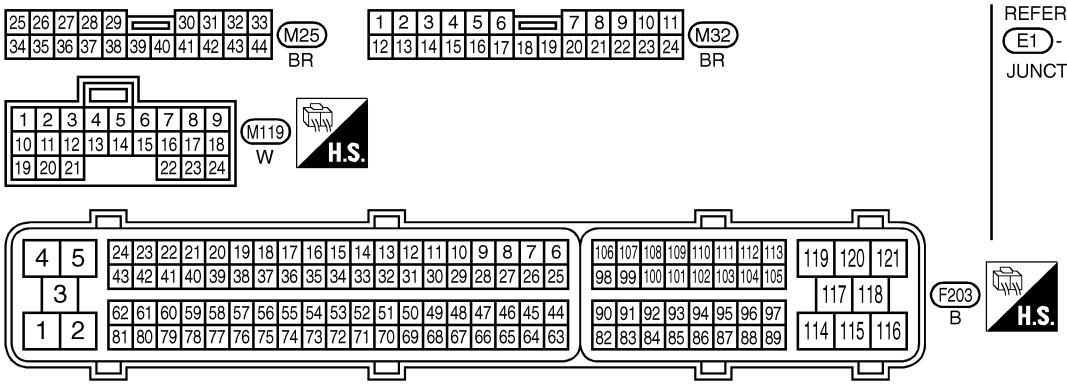
Wiring Diagram — CAN —

NAEL0476

EL-CAN-05

: DATA LINE





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

MEL580Q

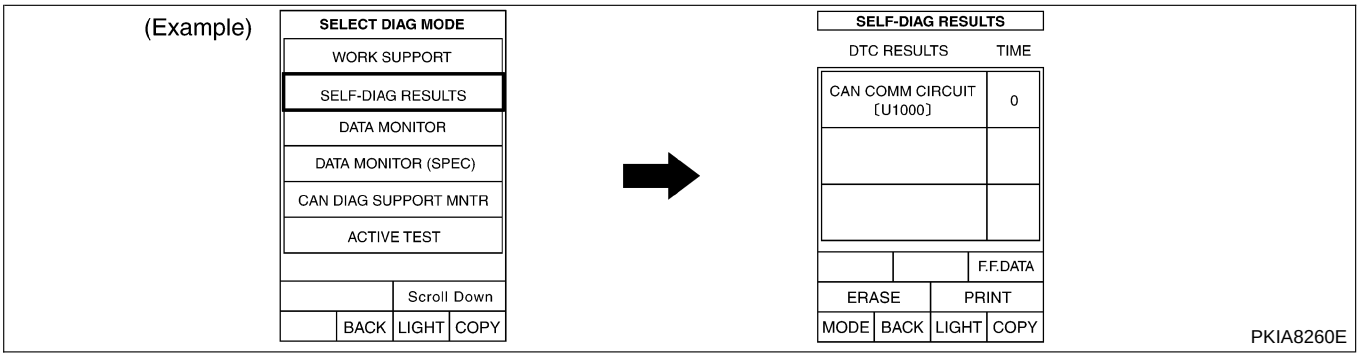
Trouble Diagnoses

NAEL0477

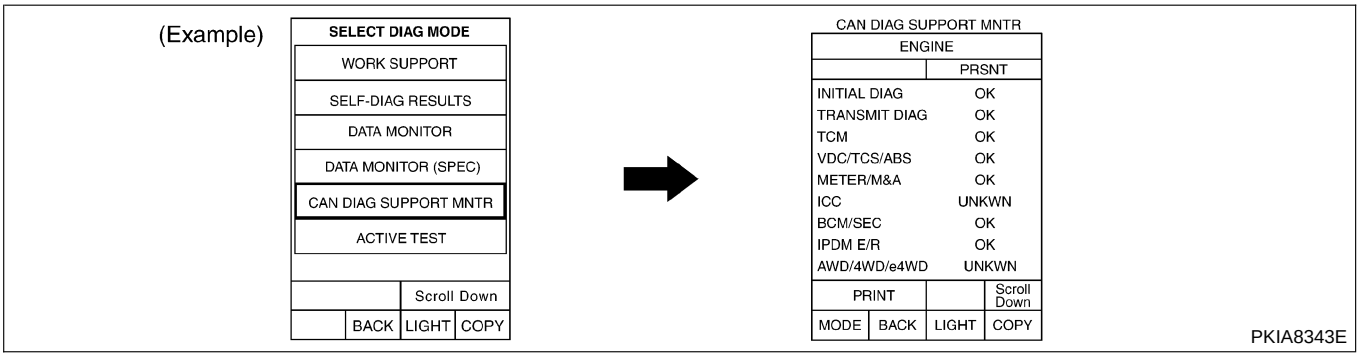
WORK FLOW

NAEL0477S01

1. Print all the data of “SELF-DIAG RESULTS” for “ENGINE” and “A/T” displayed on CONSULT-II.



2. Print all the data of “CAN DIAG SUPPORT MNTR” for “ENGINE” and “A/T” displayed on CONSULT-II.



3. Attach the printed sheet of “SELF-DIAG RESULTS” and “CAN DIAG SUPPORT MNTR” onto the check sheet. Refer to “CHECK SHEET” (EL-463).
4. Based on the “CAN DIAG SUPPORT MNTR” results, put “v” marks onto the items with “UNKWN” or “NG” in the check sheet table. Refer to “CHECK SHEET” (EL-463).

NOTE:
If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” as “CAN DIAG SUPPORT MNTR” for the diagnosed control unit, replace the control unit.

5. According to the check sheet results (example), start inspection. Refer to “CHECK SHEET RESULTS (EXAMPLE)” (EL-464).

CHECK SHEET

=NAEL0477S02

NOTE:

If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.

Check sheet table

SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR				
	Initial diagnosis	Transmit diagnosis	Receive diagnosis		
			ECM	TCM	METER/M&A
ENGINE	NG	UNKWN	–	UNKWN	UNKWN
A/T	NG	UNKWN	UNKWN	–	UNKWN

Symptoms:

Attach copy of ENGINE SELF-DIAG RESULTS	Attach copy of A/T SELF-DIAG RESULTS
Attach copy of ENGINE CAN DIAG SUPPORT MNTR	Attach copy of A/T CAN DIAG SUPPORT MNTR

PKIA8709E

CHECK SHEET RESULTS (EXAMPLE)

=NAEL0477S03

NOTE:

If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.

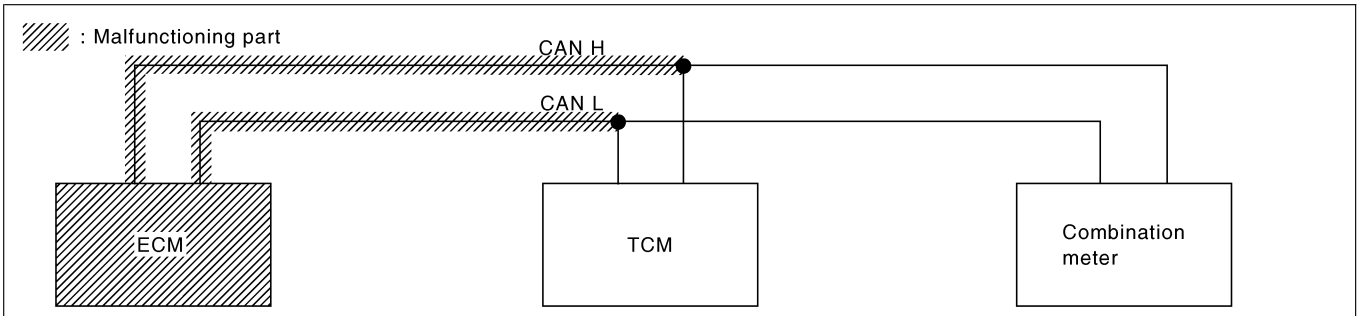
Case 1

NAEL0477S0301

Check ECM circuit. Refer to "ECM CIRCUIT CHECK" (EL-466).

SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR				
	Initial diagnosis	Transmit diagnosis	Receive diagnosis		
			ECM	TCM	METER/M&A
ENGINE	NG	UNKWN	–	UNKWN	UNKWN
A/T	NG	UNKWN	UNKWN	–	UNKWN

PKIA8729E



PKIA8750E

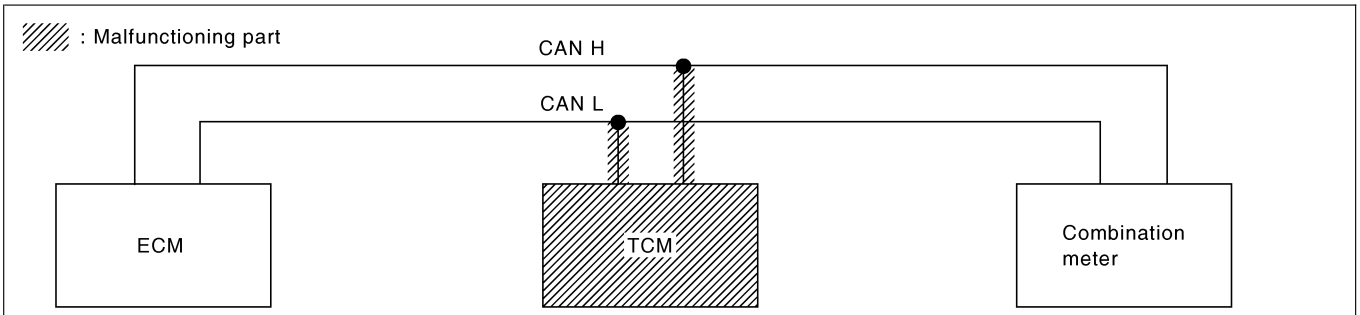
Case 2

NAEL0477S0302

Check TCM circuit. Refer to "TCM CIRCUIT CHECK" (EL-467).

SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR				
	Initial diagnosis	Transmit diagnosis	Receive diagnosis		
			ECM	TCM	METER/M&A
ENGINE	NG	UNKWN	–	UNKWN	UNKWN
A/T	NG	UNKWN	UNKWN	–	UNKWN

PKIA8730E



PKIA8751E

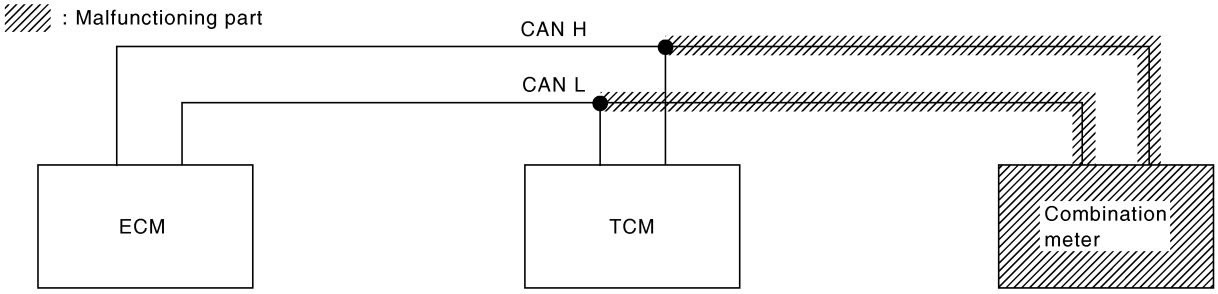
Case 3

NAEL0477S0303

Check combination meter circuit. Refer to "COMBINATION METER CIRCUIT CHECK" (EL-468).

SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR				
	Initial diagnosis	Transmit diagnosis	Receive diagnosis		
			ECM	TCM	METER/M&A
ENGINE	NG	UNKWN	–	UNKWN	UNKWN
A/T	NG	UNKWN	UNKWN	–	UNKWN

PKIA8731E



PKIA8752E

Case 4

NAEL0477S0304

Check CAN communication circuit. Refer to "CAN COMMUNICATION CIRCUIT CHECK" (EL-469).

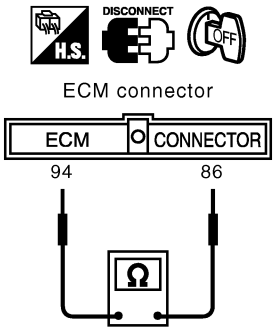
SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR				
	Initial diagnosis	Transmit diagnosis	Receive diagnosis		
			ECM	TCM	METER/M&A
ENGINE	NG	UNKWN	–	UNKWN	UNKWN
A/T	NG	UNKWN	UNKWN	–	UNKWN

PKIA8732E

ECM CIRCUIT CHECK

=NAEL0477S07

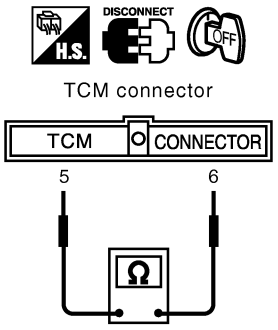
1	CHECK CONNECTOR	
1. Turn ignition switch OFF. 2. Check following terminals and connector for damage, bend and loose connection (control module side and harness side). ● ECM ● Harness connector F23 ● Harness connector M32		
OK or NG		
OK	▶	GO TO 2.
NG	▶	Repair terminal or connector.

2	CHECK HARNESS FOR OPEN CIRCUIT	
1. Disconnect ECM connector. 2. Check resistance between ECM harness connector F203 terminals 94 (L) and 86 (R).  **Approx. 108 - 132 Ω** SEL711Y		
OK or NG		
OK	▶	Replace ECM.
NG	▶	Repair harness between ECM and TCM.

TCM CIRCUIT CHECK

=NAEL0477S08

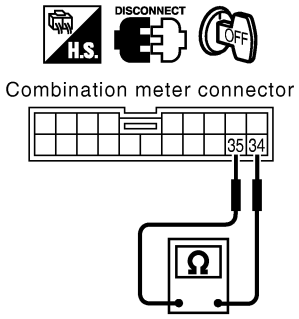
1	CHECK CONNECTOR	
1. Turn ignition switch OFF. 2. Check the terminals and connector of TCM for damage, bend and loose connection (control module side and harness side). **OK or NG**		
OK	▶	GO TO 2.
NG	▶	Repair terminal or connector.

2	CHECK HARNESS FOR OPEN CIRCUIT	
1. Disconnect TCM connector. 2. Check resistance between TCM harness connector M119 terminals 5 (L) and 6 (R).  **Approx. 54 - 66 Ω** SEL712Y **OK or NG**		
OK	▶	Replace TCM.
NG	▶	Repair harness between TCM and harness connector M1.

COMBINATION METER CIRCUIT CHECK

=NAEL0477S11

1	CHECK CONNECTOR	
1. Turn ignition switch OFF. 2. Check following terminals and connector for damage, bend and loose connection (meter side and harness side). ● Combination meter ● Harness connector M1 ● Harness connector E1		
OK or NG		
OK	▶	GO TO 2.
NG	▶	Repair terminal or connector.

2	CHECK HARNESS FOR OPEN CIRCUIT	
1. Disconnect combination meter connector. 2. Check resistance between combination meter harness connector M25 terminals 34 (Y) and 35 (L).		
 **Approx. 108 - 132 Ω** SEL716Y		
OK or NG		
OK	▶	Replace combination meter.
NG	▶	Repair harness between combination meter and TCM.

CAN COMMUNICATION CIRCUIT CHECK

=NAEL0477S12

1	CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Check following terminals and connector for damage, bend and loose connection (meter side, control module side and harness side).

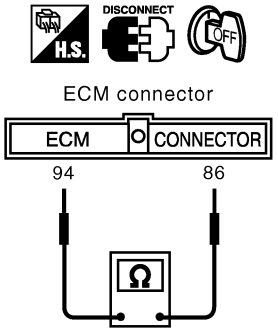
- Combination meter
- TCM
- ECM
- Between combination meter and ECM

OK or NG

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

2	CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ECM connector and harness connector F23.
2. Check continuity between ECM harness connector F203 terminals 94 (L) and 86 (R).



Continuity should not exist.

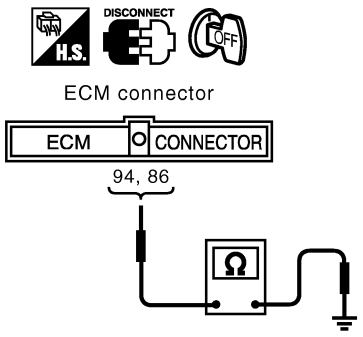
SEL717Y

OK or NG

OK	▶	GO TO 3.
NG	▶	Repair harness between ECM and harness connector F23.

3	CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector F203 terminals 94 (L), 86 (R) and ground.



Continuity should not exist.

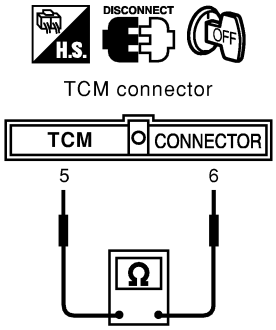
SEL718Y

OK or NG

OK	▶	GO TO 4.
NG	▶	Repair harness between ECM and harness connector F23.

4	CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect TCM connector and harness connector M1.
2. Check continuity between TCM harness connector M119 terminals 5 (L) and 6 (R).



Continuity should not exist.

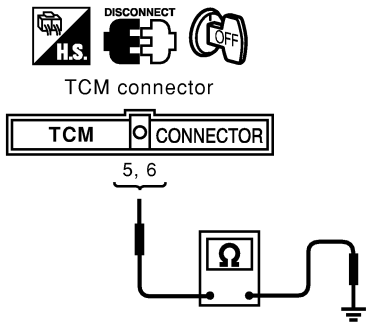
SEL440Y

OK or NG

OK	▶	GO TO 5.
NG	▶	● Repair harness between TCM and harness connector M1. ● Repair harness between TCM and harness connector M32.

5	CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between TCM harness connector M119 terminals 5 (L), 6 (R) and ground.



Continuity should not exist.

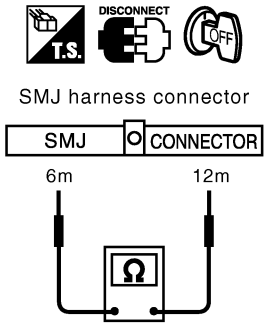
SEL441Y

OK or NG

OK	▶	GO TO 6.
NG	▶	● Repair harness between TCM and harness connector M1. ● Repair harness between TCM and harness connector M32.

6	CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between harness connector E1 terminals 6m (L) and 12m (R).



Continuity should not exist.

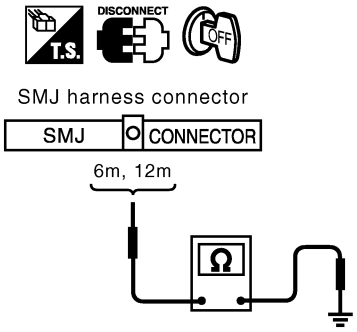
SEL732Y

OK or NG

OK	▶	GO TO 7.
NG	▶	Repair harness between harness connector E1 and harness connector E1.

7	CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between harness connector E1 terminals 6m (L), 12m (R) and ground.



Continuity should not exist.

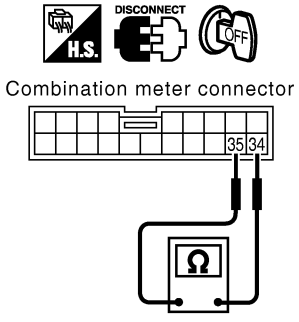
SEL733Y

OK or NG

OK	▶	GO TO 8.
NG	▶	Repair harness between harness connector E1 and harness connector E1.

8	CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect combination meter connector.
2. Check continuity between combination meter harness connector M25 terminals 34 (Y) and 35 (L).



Continuity should not exist.

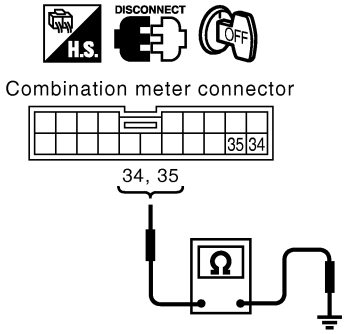
SEL721Y

OK or NG

OK	▶	GO TO 9.
NG	▶	Repair harness between combination meter and harness connector M1.

9	CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between combination meter harness connector M25 terminals 34 (Y), 35 (L) and ground.



Continuity should not exist.

SEL722Y

OK or NG

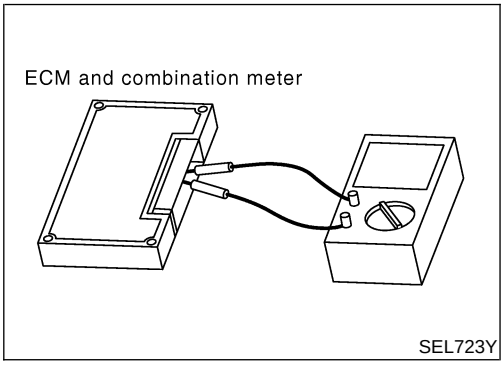
OK	▶	GO TO 10.
NG	▶	Repair harness between combination meter and harness connector M1.

10	ECM/COMBINATION METER INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to "ECM/COMBINATION METER INTERNAL CIRCUIT INSPECTION" (EL-472).

OK or NG

OK	▶	Connect all the connectors and diagnose again. Refer to "Work Flow" (EL-462).
NG	▶	Replace ECM and/or combination meter.



Component Inspection

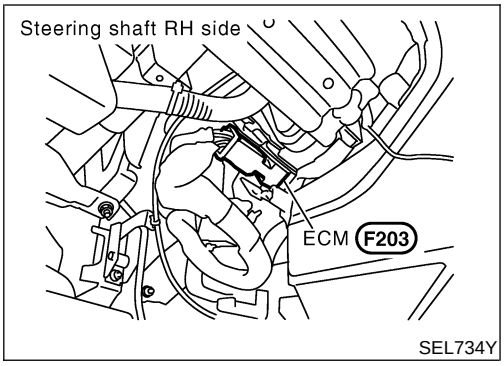
NAEL0478

ECM/COMBINATION METER INTERNAL CIRCUIT INSPECTION

NAEL0478S01

- Remove ECM and combination meter from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between combination meter terminals 34 and 35.

Unit	Terminal	Resistance value (Ω)
ECM	94 - 86	Approx. 108 - 132
Combination meter	34 - 35	



Component Parts and Harness Connector Location

NAEL0479

System Description

NAEL0480

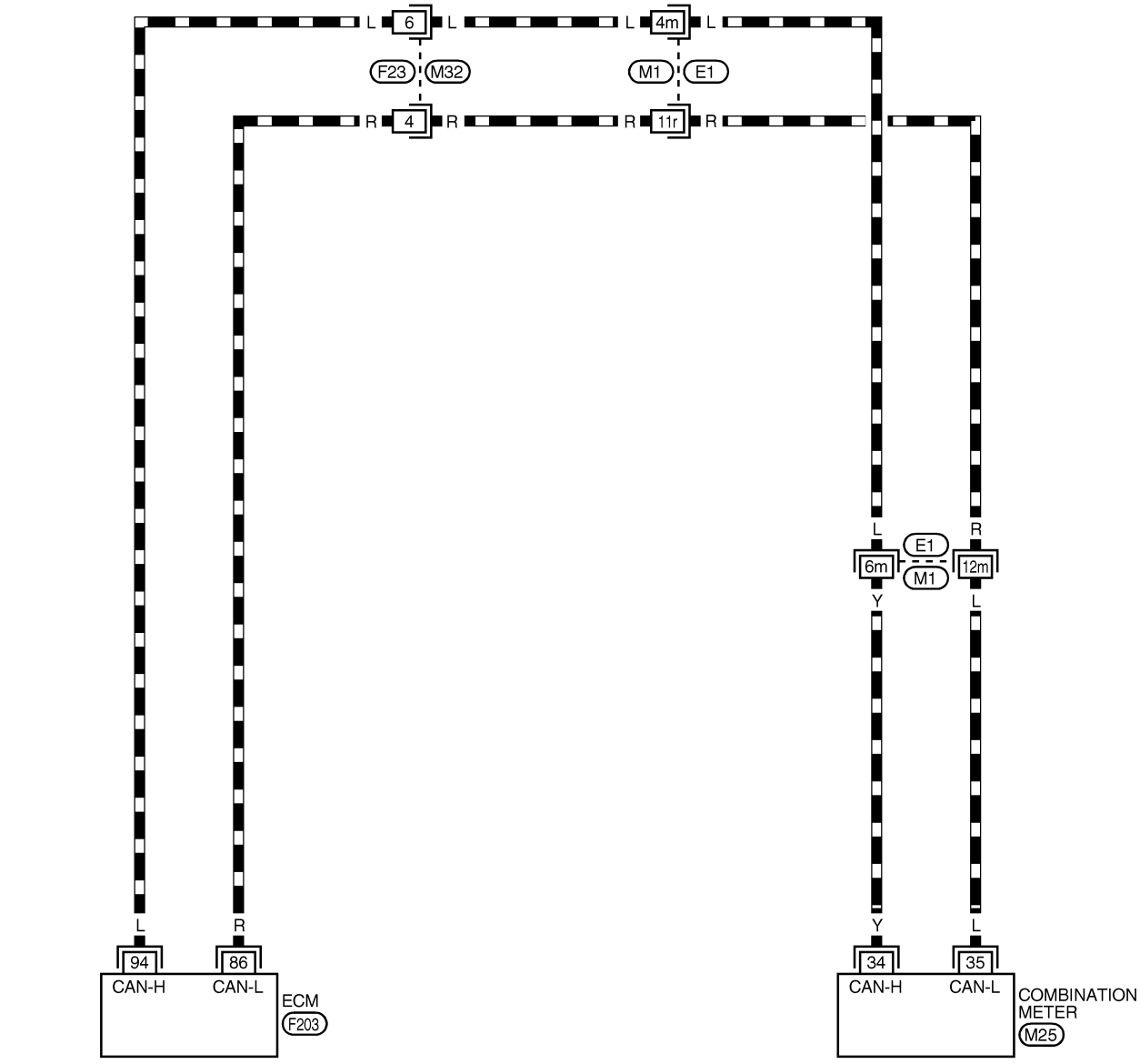
CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

Wiring Diagram — CAN —

NAEL0481

EL-CAN-06

: DATA LINE



MEL581Q

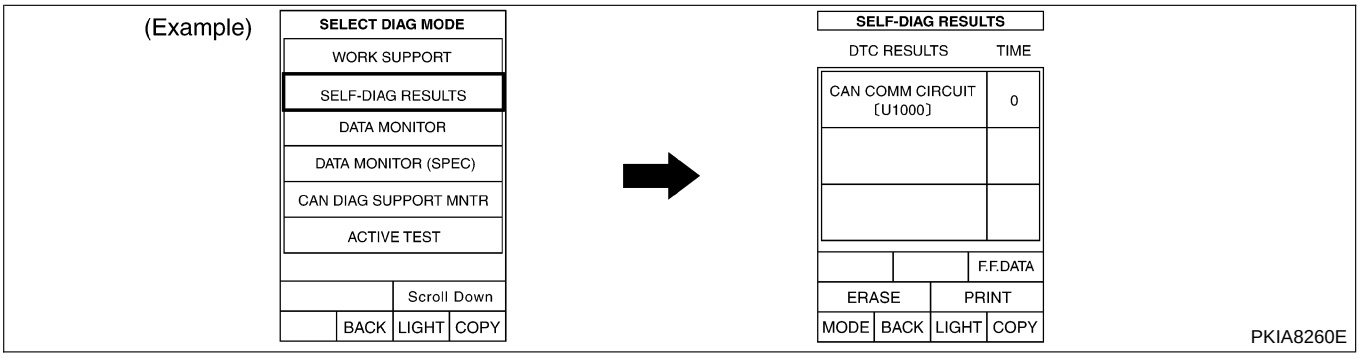
Trouble Diagnoses

NAEL0482

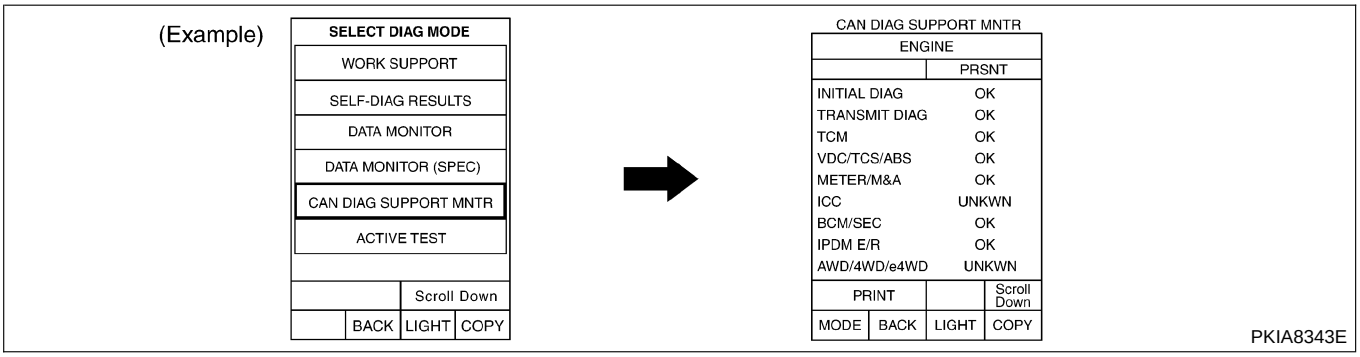
WORK FLOW

NAEL0482S01

1. Print all the data of “SELF-DIAG RESULTS” for “ENGINE” displayed on CONSULT-II.



2. Print all the data of “CAN DIAG SUPPORT MNTR” for “ENGINE” displayed on CONSULT-II.



3. Attach the printed sheet of “SELF-DIAG RESULTS” and “CAN DIAG SUPPORT MNTR” onto the check sheet. Refer to “CHECK SHEET” (EL-476).
4. Based on the “CAN DIAG SUPPORT MNTR” results, put “v” marks onto the items with “UNKWN” or “NG” in the check sheet table. Refer to “CHECK SHEET” (EL-476).

NOTE:
If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” as “CAN DIAG SUPPORT MNTR” for the diagnosed control unit, replace the control unit.

5. According to the check sheet results (example), start inspection. Refer to “CHECK SHEET RESULTS (EXAMPLE)” (EL-476).

CHECK SHEET

=NAEL0482S02

NOTE:

If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.

Check sheet table

SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR			
	Initial diagnosis	Transmit diagnosis	Receive diagnosis	
			ECM	METER/M&A
ENGINE	NG	UNKWN	–	UNKWN

Symptoms:

Attach copy of
ENGINE
SELF-DIAG RESULTS

Attach copy of
ENGINE
CAN DIAG SUPPORT MNTR

PKIA8710E

CHECK SHEET RESULTS (EXAMPLE)

NAEL0482S03

NOTE:

If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.

Case 1

NAEL0482S0301

Check CAN communication circuit. Refer to "CAN COMMUNICATION CIRCUIT CHECK" (EL-477).

SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR			
	Initial diagnosis	Transmit diagnosis	Receive diagnosis	
			ECM	METER/M&A
ENGINE	NG	UNKWN ✓	–	UNKWN ✓

PKIA8733E

CAN COMMUNICATION CIRCUIT CHECK

NAEL0482S08

1	CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Check following terminals and connector for damage, bend and loose connection (meter side, control module side and harness side).

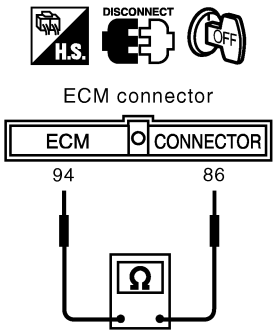
- Combination meter
- ECM
- Between combination meter and ECM

OK or NG

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

2	CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ECM connector and combination meter connector.
2. Check continuity between ECM harness connector F203 terminals 94 (L) and 86 (R).



Continuity should not exist.

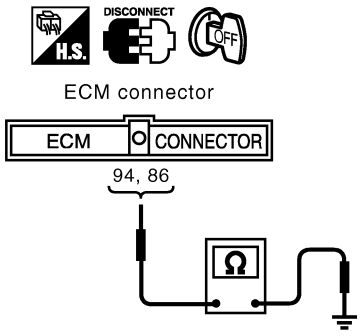
SEL717Y

OK or NG

OK	▶	GO TO 3.
NG	▶	Repair harness between ECM and combination meter.

3	CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector F203 terminals 94 (L), 86 (R) and ground.



Continuity should not exist.

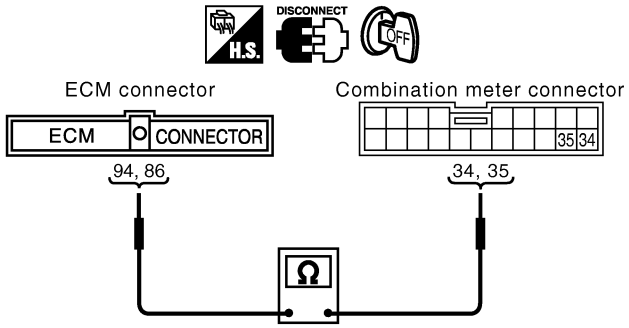
SEL718Y

OK or NG

OK	▶	GO TO 4.
NG	▶	Repair harness between ECM and combination meter.

4	CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between ECM harness connector F203 terminals 94 (L), 86 (R) and combination meter harness connector M25 terminals 34 (Y), 35 (L).



Continuity should exist.

SEL737Y

OK or NG

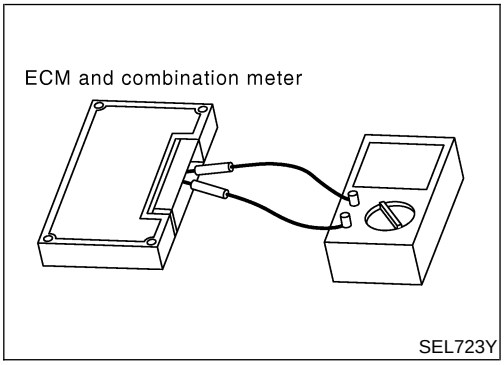
OK	▶	GO TO 5.
NG	▶	Repair harness.

5	ECM/COMBINATION METER INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to "ECM/COMBINATION METER INTERNAL CIRCUIT INSPECTION" (EL-478).

OK or NG

OK	▶	Connect all the connectors and diagnose again. Refer to "Work Flow" (EL-475).
NG	▶	Replace ECM and/or combination meter.



Component Inspection

NAEL0483

ECM/COMBINATION METER INTERNAL CIRCUIT INSPECTION

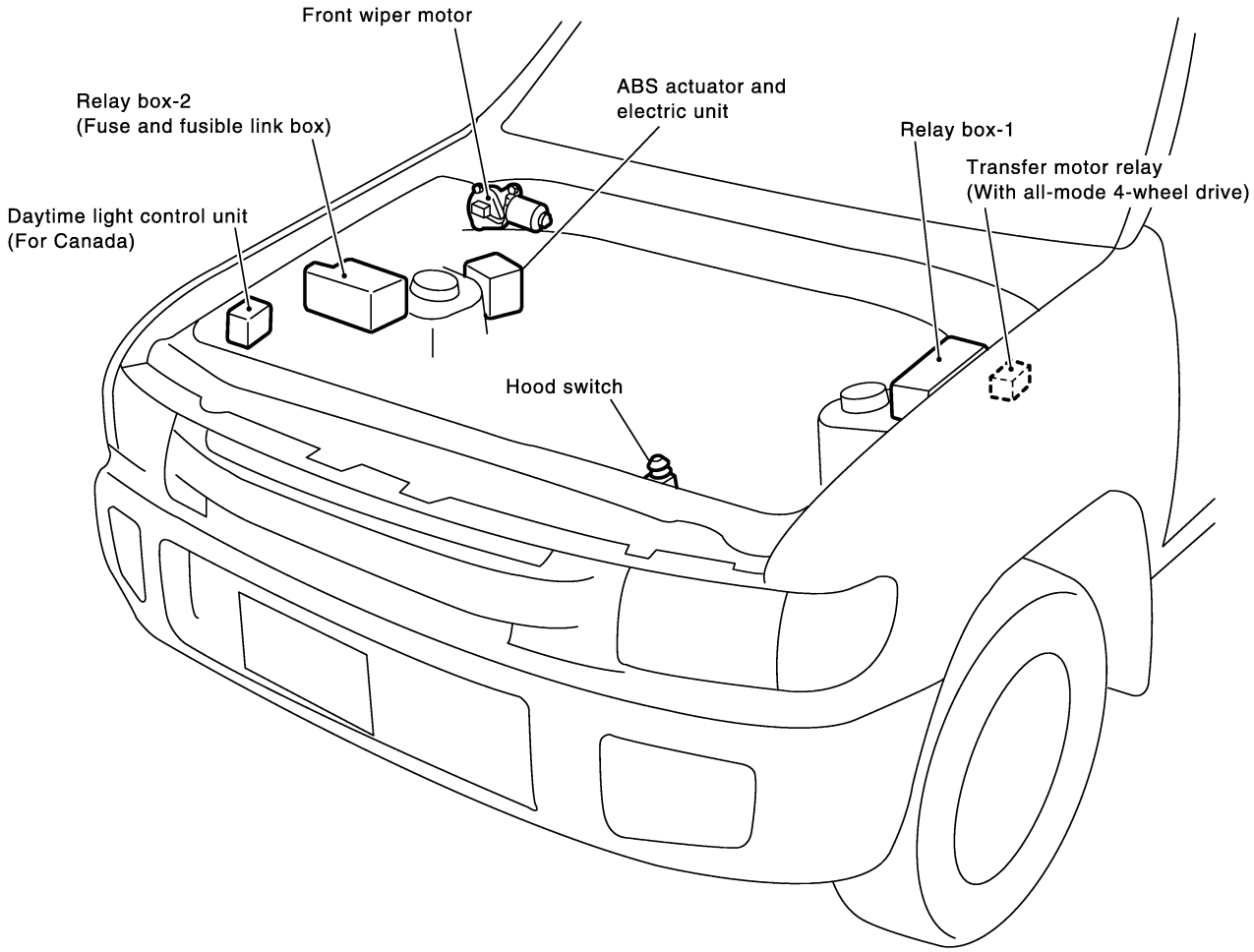
NAEL0483S01

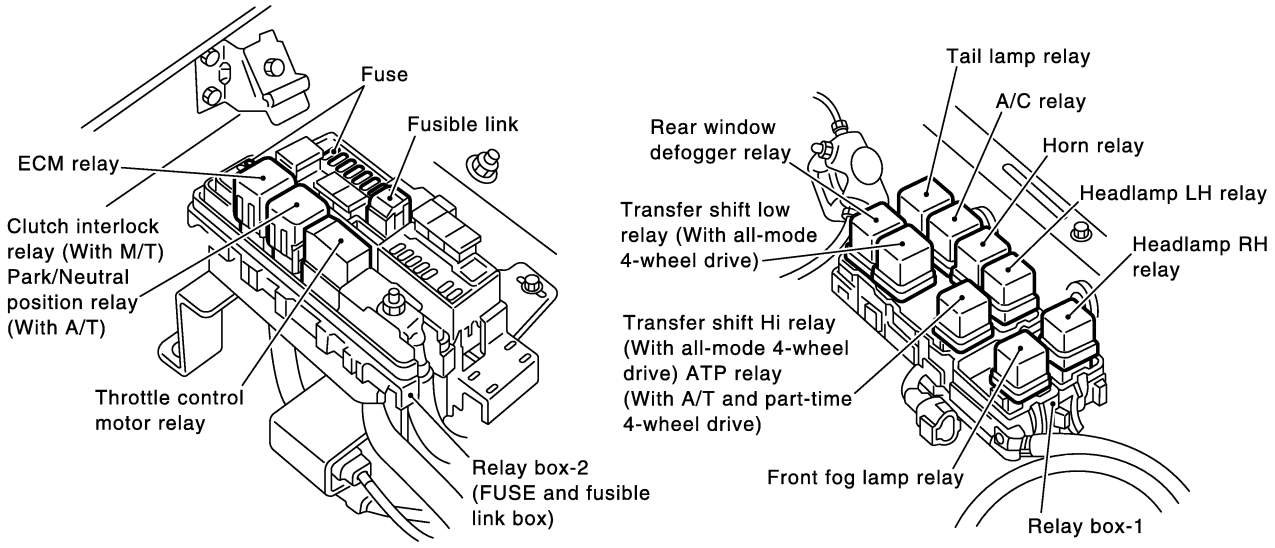
- Remove ECM and combination meter from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between combination meter terminals 34 and 35.

Unit	Terminal	Resistance value (Ω)
ECM	94 - 86	Approx. 108 - 132
Combination meter	34 - 35	

Engine Compartment

NAEL0431

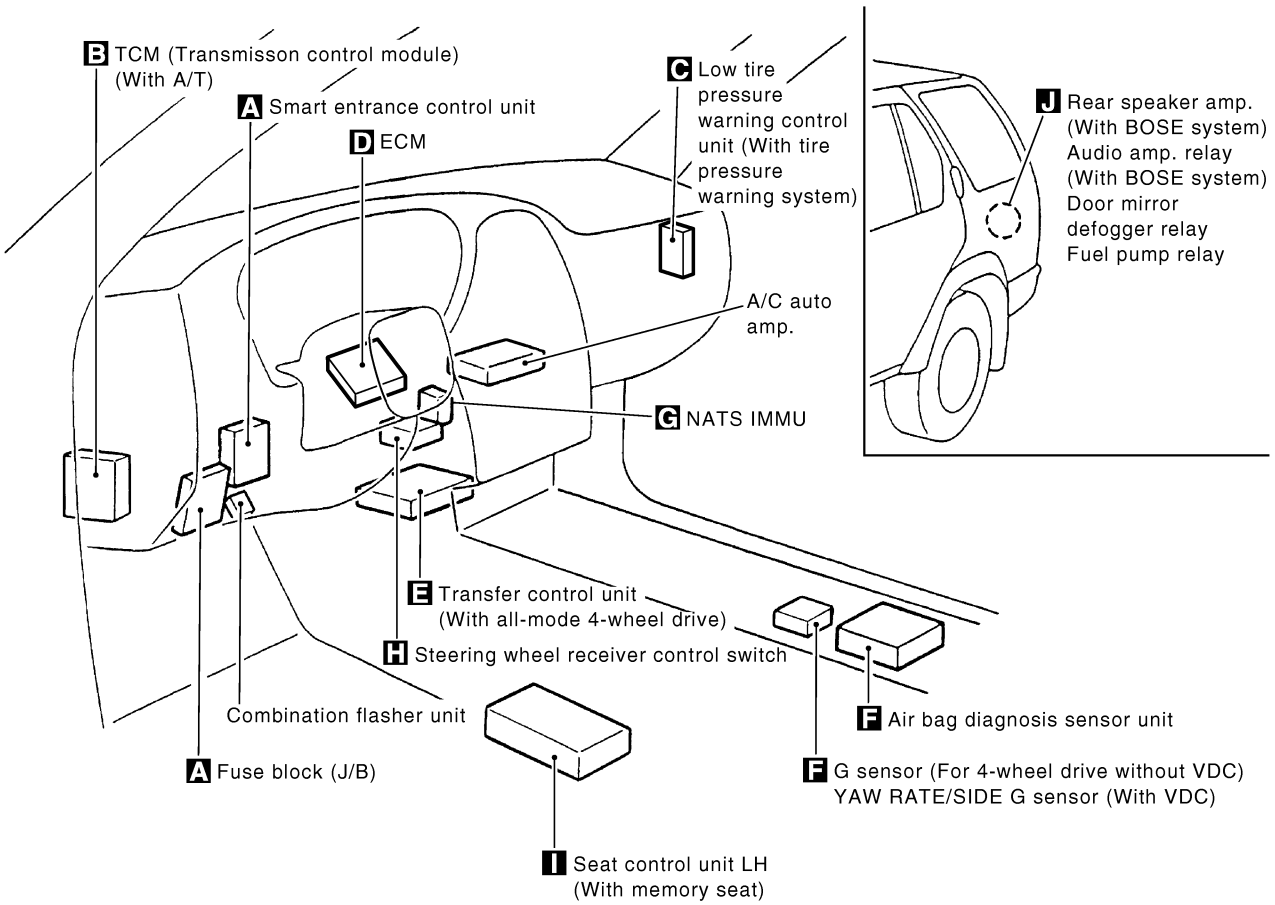




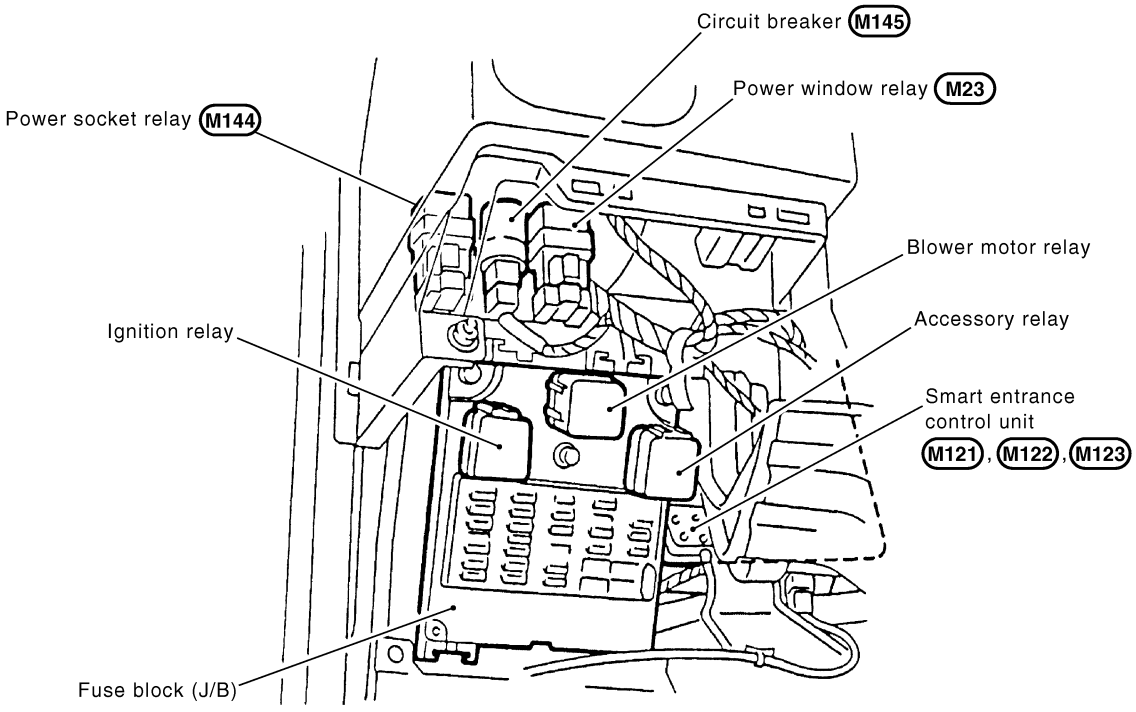
MEL063Q

Passenger Compartment

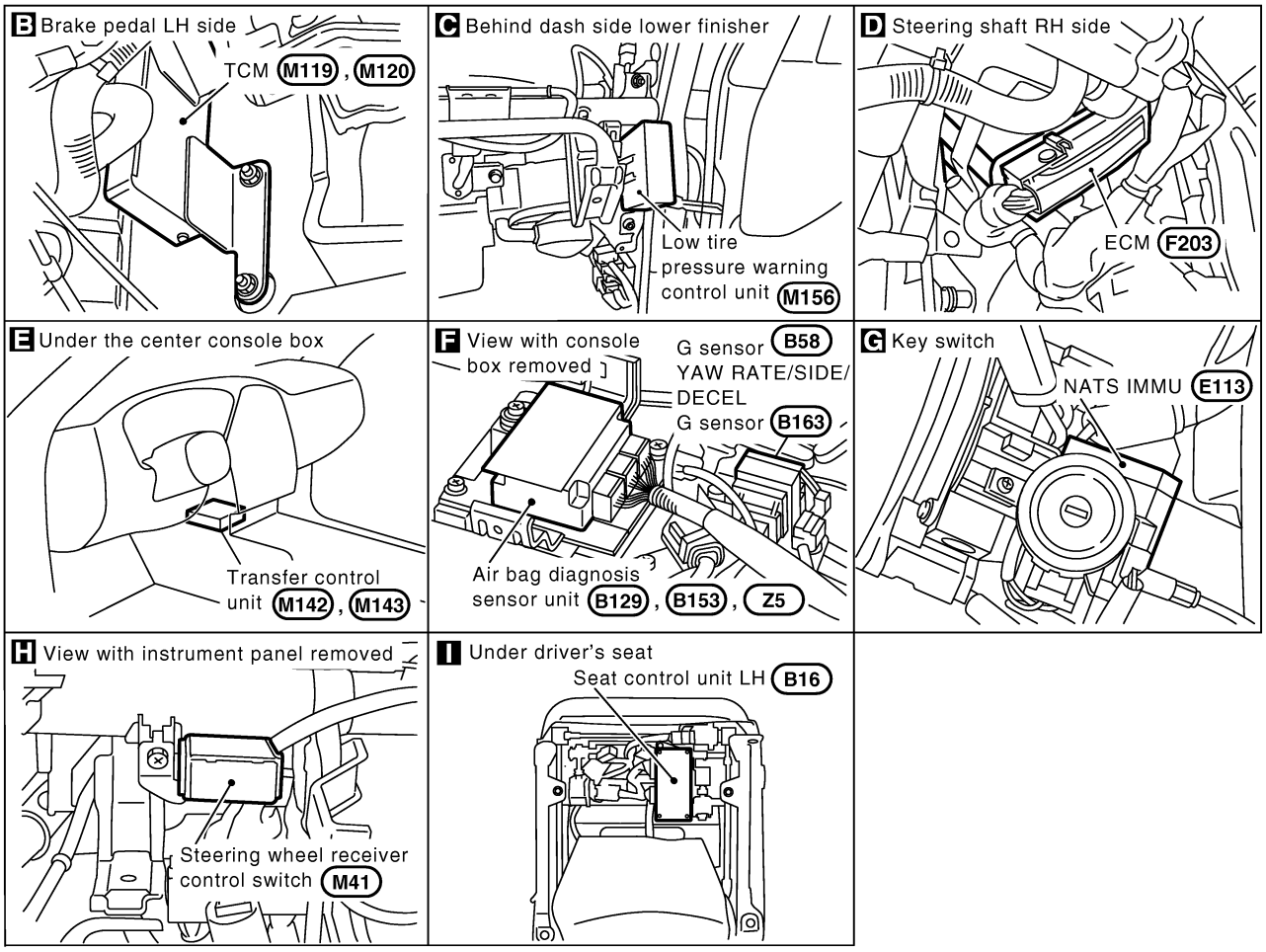
NAEL0432

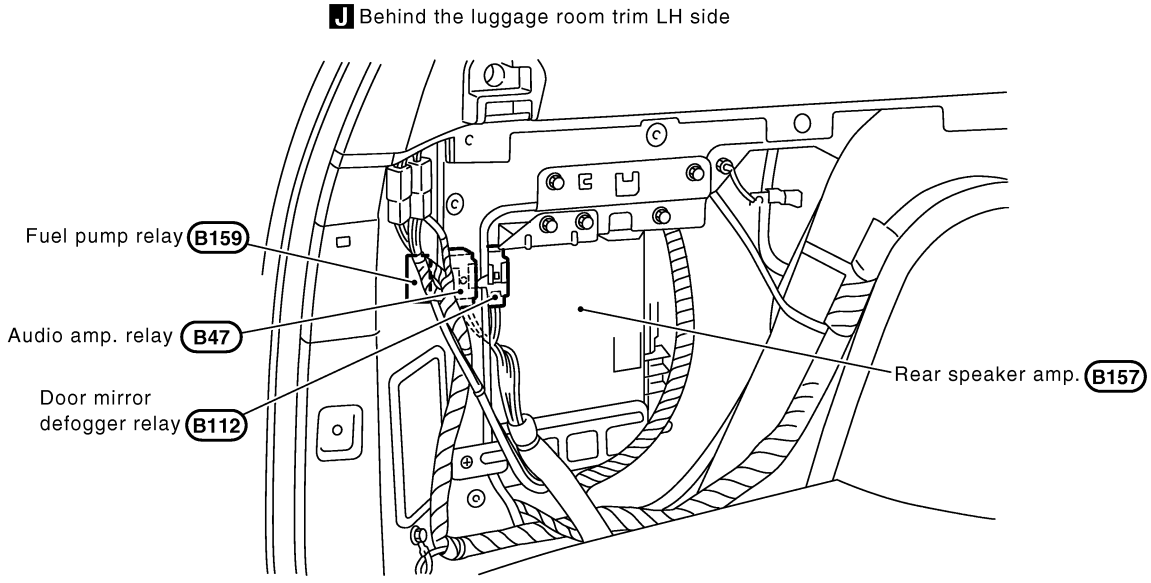


A Instrument panel LH side



MEL113S

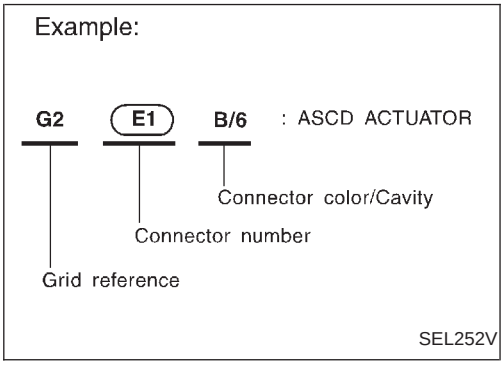

B Brake pedal LH side
TCM M119, M120
C Behind dash side lower finisher
Low tire pressure warning control unit M156
D Steering shaft RH side
ECM F203
E Under the center console box
Transfer control unit M142, M143
F View with console box removed
G sensor B58
YAW RATE/SIDE/ DECEL G sensor B163
Air bag diagnosis sensor unit B129, B153, Z5
G Key switch
NATS IMMU E113
H View with instrument panel removed
Steering wheel receiver control switch M41
I Under driver's seat
Seat control unit LH B16


J Behind the luggage room trim LH side
Fuel pump relay B159
Audio amp. relay B47
Door mirror defogger relay B112
Rear speaker amp. B157

MEL114S

How to Read Harness Layout

NAEL0433



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

NAEL0433S01

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

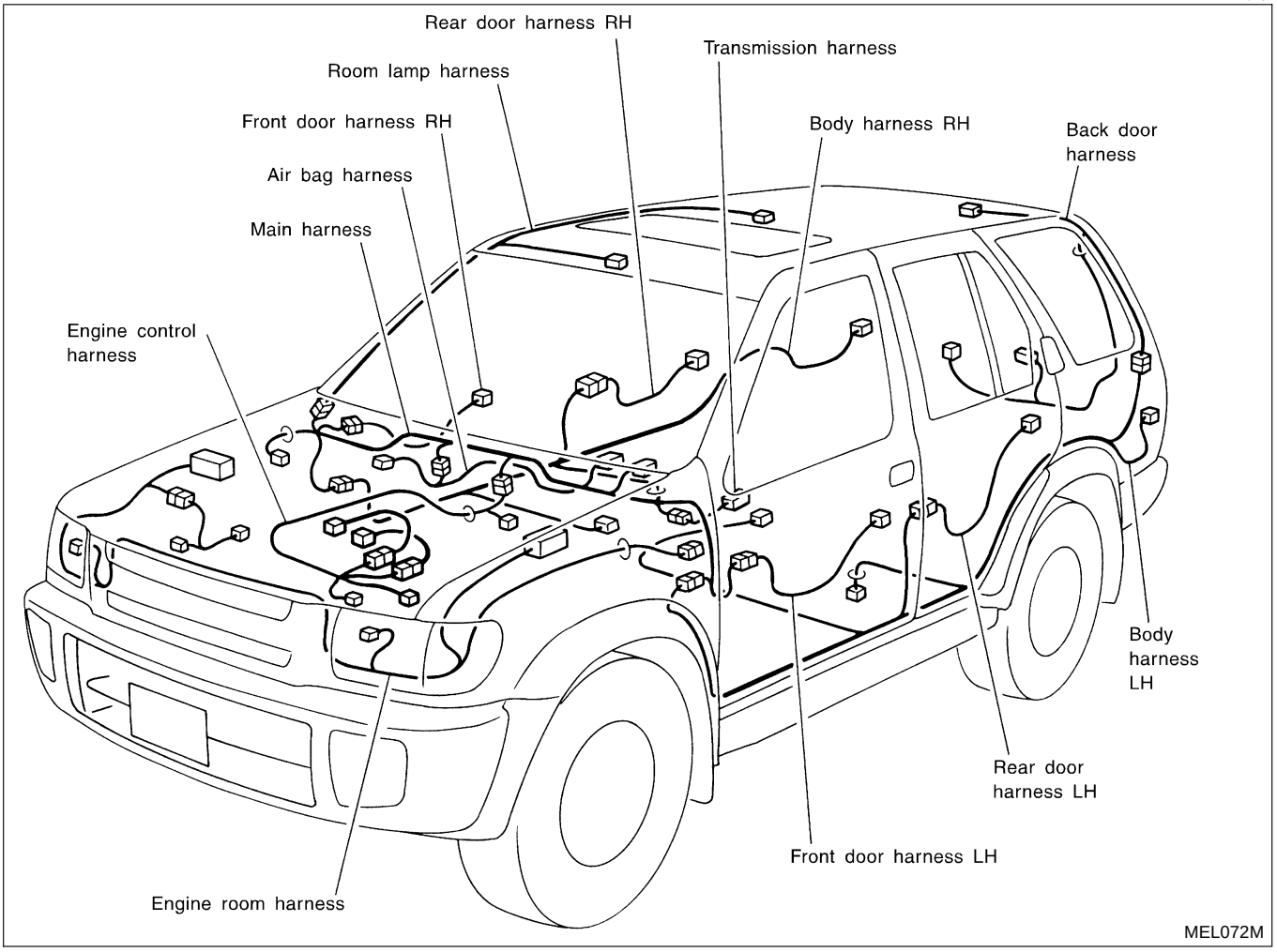
NAEL0433S02

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.	—			

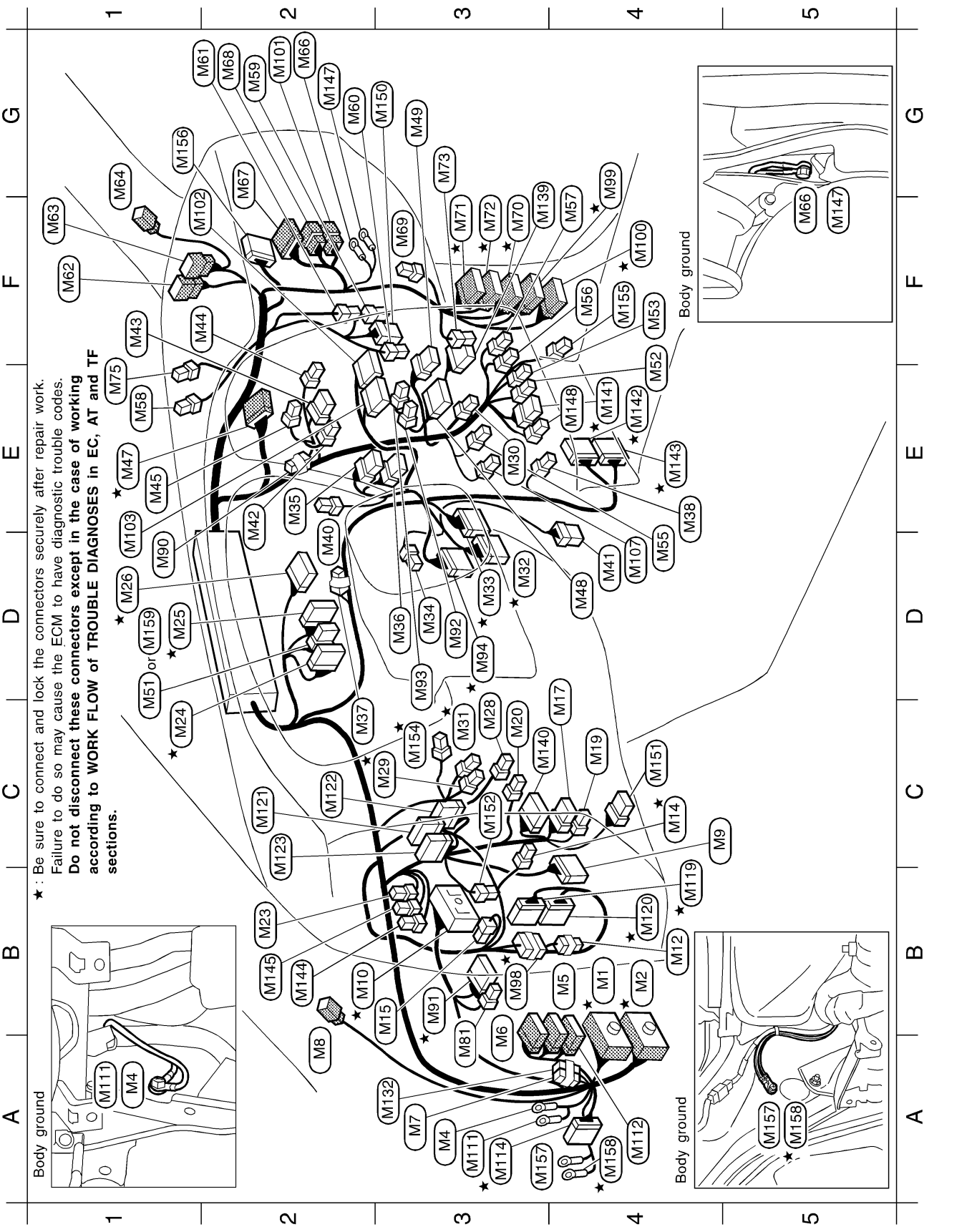
Outline

NAEL0434



Main Harness

NAEL0435



MEL100S

B4★ M1 SMJ : To E1
B4★ M2 SMJ : To B1
A3 M4 — : Body ground
B4 M5 BR/16 : To D3
A3 M6 W/10 : To D4
A3 M7 B/2 : Diode (For Canada)
A2 M8 BR/2 : Tweeter LH
C4 M9 W/16 : Data link connector
B2★ M10 SMJ : Fuse block (J/B)
B4 M12 GY/3 : Diode
C4★ M14 L/2 : ASCD clutch switch (With M/T)
B3 M15 B/3 : Combination flasher unit
C4 M17 GY/6 : Memory seat cancel switch
C4 M19 W/3 : Illumination control switch
C3 M20 W/2 : Security indicator lamp
B2 M23 L/4 : Power window relay
C1★ M24 W/24 : Combination meter
D1★ M25 BR/20 : Combination meter
D1★ M26 BR/24 : Combination meter
C3 M28 L/2 : Clutch interlock switch (With M/T)
C3★ M29 BR/2 : ASCD brake switch
E3 M30 W/2 : Glove box lamp
C3★ M31 B/2 : Stop lamp switch (With M/T)
D3★ M32 BR/24 : To F23
D3★ M33 GY/16 : To F22
D3 M34 W/2 : In-vehicle sensor (With auto A/C)
E2 M35 W/8 : Hazard switch
D3 M36 W/6 : Rear window defogger switch (With auto A/C and normal meter, with manual A/C)
C2 M37 B/2 : Diode
E4 M38 W/3 : Mode door motor (With auto A/C)
D2 M40 W/4 : Clock
D4 M41 W/8 : Steering wheel receiver control switch
E2 M42 W/4 : Recirculation switch (With manual A/C)
F1 M43 W/6 : Fan switch (With manual A/C)
F2 M44 W/3 : A/C switch (With manual A/C)
E1 M45 W/3 : A/C switch illumination (With manual A/C)

E1★ M47 W/20 : To Z1
D4 M48 W/10 : Audio unit
G3 M49 W/6 : Audio unit
D1 M51 W/8 : Combination meter (With all-mode 4-wheel drive and normal meter)
E4 M52 L/4 : Heated seat switch LH (With heated seat, without woody instrument finisher)
F4 M53 W/4 : Heated seat switch RH (With heated seat, without woody instrument finisher)
D4 M55 W/3 : Air mix door motor (With auto A/C)
F4 M56 B/2 : Cigarette lighter socket
F4 M57 W/2 : Cigarette lighter illumination (For Canada)
E1 M58 B/2 : Sunload sensor (With auto A/C)
G2 M59 W/8 : Intake door motor (With auto A/C)
G2 M60 W/4 : Fan control amp. (With auto A/C)
G1 M61 BR/4 : Fan resistor (With manual A/C)
F1 M62 W/6 : To R1
F1 M63 W/6 : To R2
F1 M64 BR/2 : Tweeter RH
G2 M66 — : Body ground
F2 M67 BR/16 : To D33
G2 M68 W/6 : To D34
F3 M69 W/3 : Power antenna
F3★ M70 W/20 : To B50
F3★ M71 W/24 : To B51
F3★ M72 W/16 : To B52
G3 M73 W/2 : Blower motor
E1 M75 W/3 : Auto light sensor
A3 M81 B/2 : Fuse block (J/B)
D1 M90 B/2 : Diode (With manual A/C)
B3★ M91 W/12 : Fuse block (J/B)
D3 M92 B/2 : CD player (Without BOSE system)
D3 M93 W/4 : CD player (Without BOSE system)
D3★ M94 W/18 : To F27
B3★ M98 GY/6 : Joint connector

★ : 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.

F4★ M99 W/12 : To B77
F4★ M100 GY/20 : To B88
G2 M101 BR/6 : To D41
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
A3 M111 — : Body ground
A4 M112 GY/12 : To D13
A3★ M114 W/18 : To E116
B4★ M119 W/24 : TCM (Transmission control module)
B4★ M120 GY/24 : TCM (With A/T)
C2 M121 W/24 : Smart entrance control unit
C2 M122 GY/24 : Smart entrance control unit
C2 M123 GY/16 : Smart entrance control unit
A3 M132 B/2 : Diode
F3 M139 W/16 : Audio unit (With steering receiver control)
C3 M140 W/10 : Door mirror remote control switch
E4★ M141 W/8 : 4WD shift switch
E4★ M142 L/24 : Transfer control unit (With all-mode 4-wheel drive)
E4★ M143 G/24 : Transfer control unit
B2 M144 W/4 : Power socket relay
B2 M145 W/2 : Circuit breaker
G2 M147 — : Body ground
E4 M148 W/4 : Rear TV switch (With rear TV, without woody instrument finisher)
G3 M150 W/4 : Intake door motor (With manual A/C)
C4 M151 L/6 : VDC off switch (With VDC)
C3 M152 W/2 : Tire pressure warning check switch (With low tire pressure warning system)
C3★ M154 W/4 : Stop lamp switch (With A/T)
F4 M155 W/2 : Ashtray illumination (With woody instrument finisher)
G1 M156 W/16 : Low tire pressure warning control unit (With low tire pressure warning system)
A3 M157 — : Body ground
A4★ M158 — : Body ground
D1 M159 W/6 : Combination meter (With all-mode 4-wheel drive and fine vision meter)

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

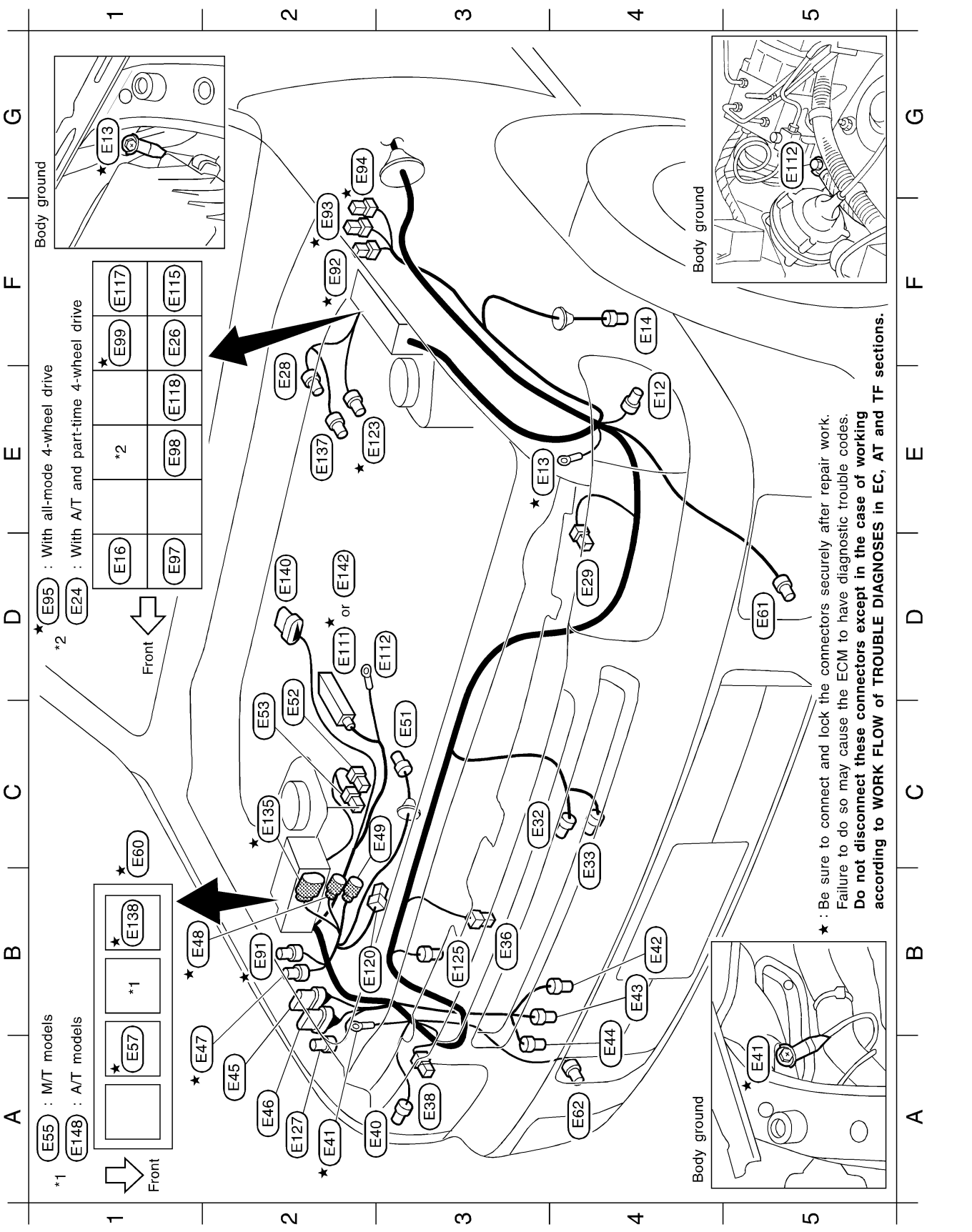
Diode M90
Fuse block (J/B) — Recirculation switch

Diode M132
Fuse block (J/B) — Smart entrance control unit — Power window relay

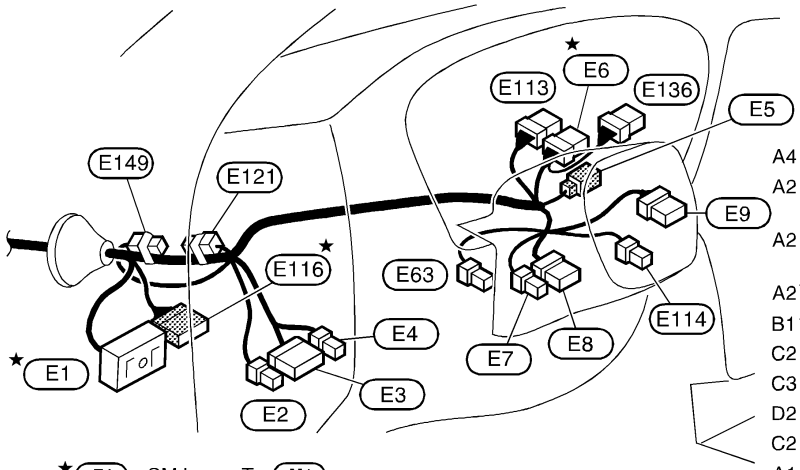
MEL101S

Engine Room Harness

NAEL0436



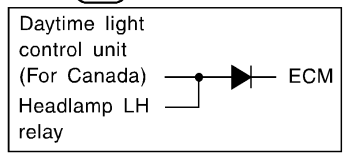
MEL102S



★: 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 and turn signal switch)
	E9	GY/8	:	Combination switch (Front wiper switch)
E4	E12	GY/3	:	Front turn signal and parking lamp LH
E3 ★	E13	—	:	Body ground
F4	E14	BR/2	:	Front wheel sensor LH
D1	E16	L/4	:	Front fog lamp relay (Relay box-1)
D1	E24	B/5	:	ATP relay (With A/T and part-time 4-wheel drive) (Relay box-1)
F1	E26	L/4	:	A/C relay (Relay box-1)
E2	E28	GY/2	:	Brake fluid level switch
D4	E29	B/3	:	Headlamp LH
C3	E32	B/2	:	Ambient sensor (With auto A/C)
C4	E33	B/2	:	Ambient air temperature sensor (For thermometer)
B3	E36	B/1	:	Horn (Low)
A3	E38	B/3	:	Headlamp RH
A3	E40	GY/3	:	Front turn signal and parking lamp RH
A2 ★	E41	—	:	Body ground
B4	E42	BR/2	:	Washer level switch (For Canada)
B4	E43	GY/2	:	Rear washer motor
A4	E44	GY/2	:	Front washer motor
A2	E45	GY/8	:	Daytime light control unit (For Canada)
A2	E46	GY/6	:	Daytime light control unit (For Canada)
A2 ★	E47	GY/2	:	A/T dropping resistor (With A/T)
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
C2	E53	B/1	:	Battery
A1	E55	L/4	:	Clutch interlock relay (With M/T) (Relay box-2)
B1 ★	E57	BR/6	:	ECM relay (Relay box-2)
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)
F2 ★	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)
D1 ★	E95	B/5	:	Transfer shift Hi relay (With all-mode 4-wheel drive) (Relay box-1)
D1	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 (With all-mode 4-wheel drive) (Relay box-1)
D2 ★	E111	SMJ	:	ABS actuator and electric unit (Without VDC)
D3	E112	–	:	Body ground
	E113	W/8	:	NATS IMMU
	E114	W/4	:	Combination switch (Rear wiper switch)
F1	E115	L/4	:	Tail lamp relay (Relay box-1)
★	E116	W/18	:	To M114
F1	E117	BR/6	:	Rear window defogger relay (Relay box-1)
E1	E118	BR/6	:	Horn relay (Relay box-1)
B2	E120	B/1	:	Horn (High)
	E121	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 (For Canada)
C2 ★	E135	GY/8	:	To E132
	E136	W/7	:	Steering angle sensor (With VDC)
E2	E137	—/3	:	VDC pressure sensor
B1 ★	E138	L/4	:	Throttle conrol motor relay (Relay box-2)
D2	E140	GY/6	:	Front wiper motor
D2	E142	SMJ	:	ABS actuator and electric unit (With VDC)
A1	E148	L/4	:	Park/Neutral position relay (With A/T) (Relay box-2)
	E149	W/2	:	To B170 (With trailer)

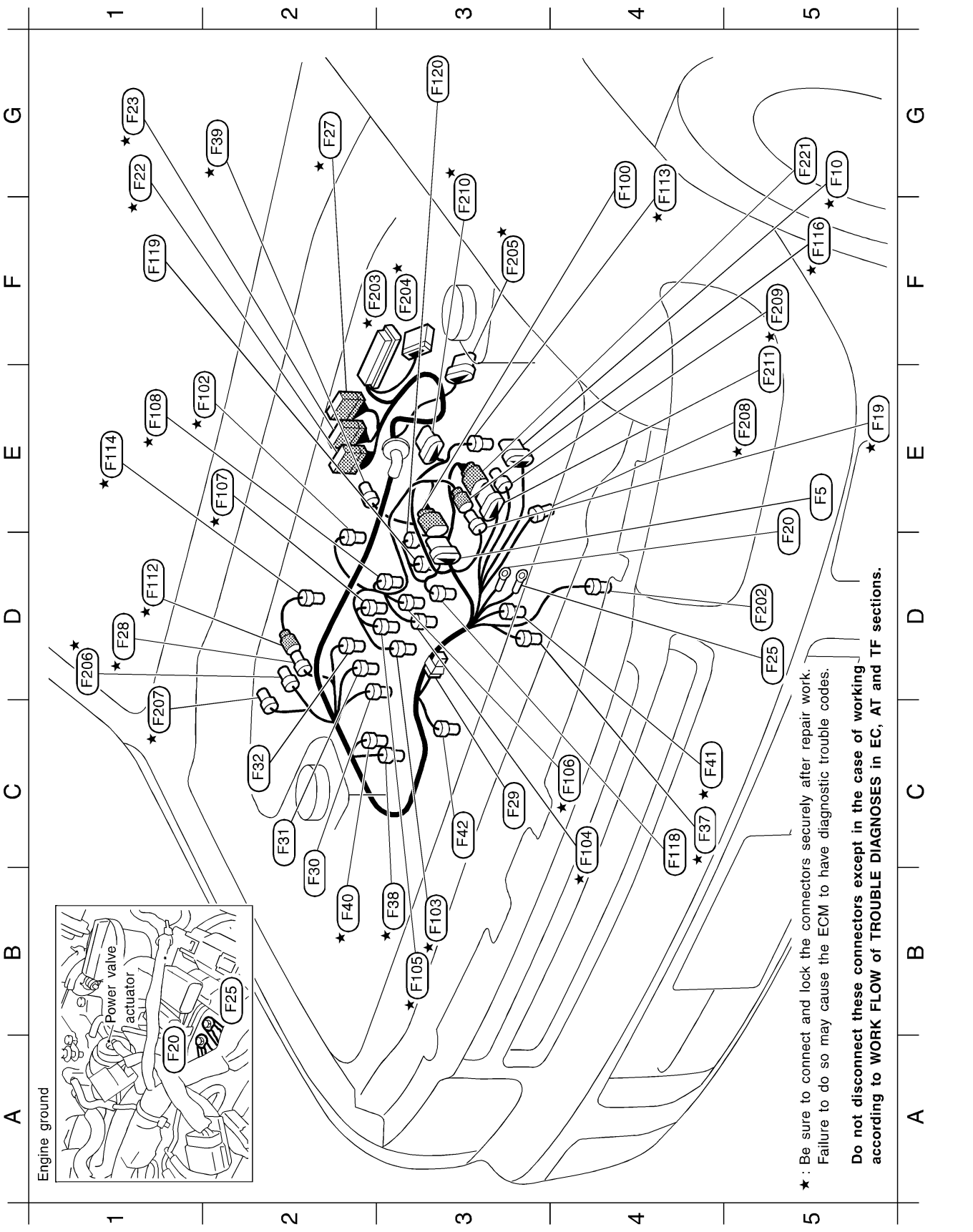
Diode E121



MEL103S

Engine Control Harness

NAEL0437



MEL104S

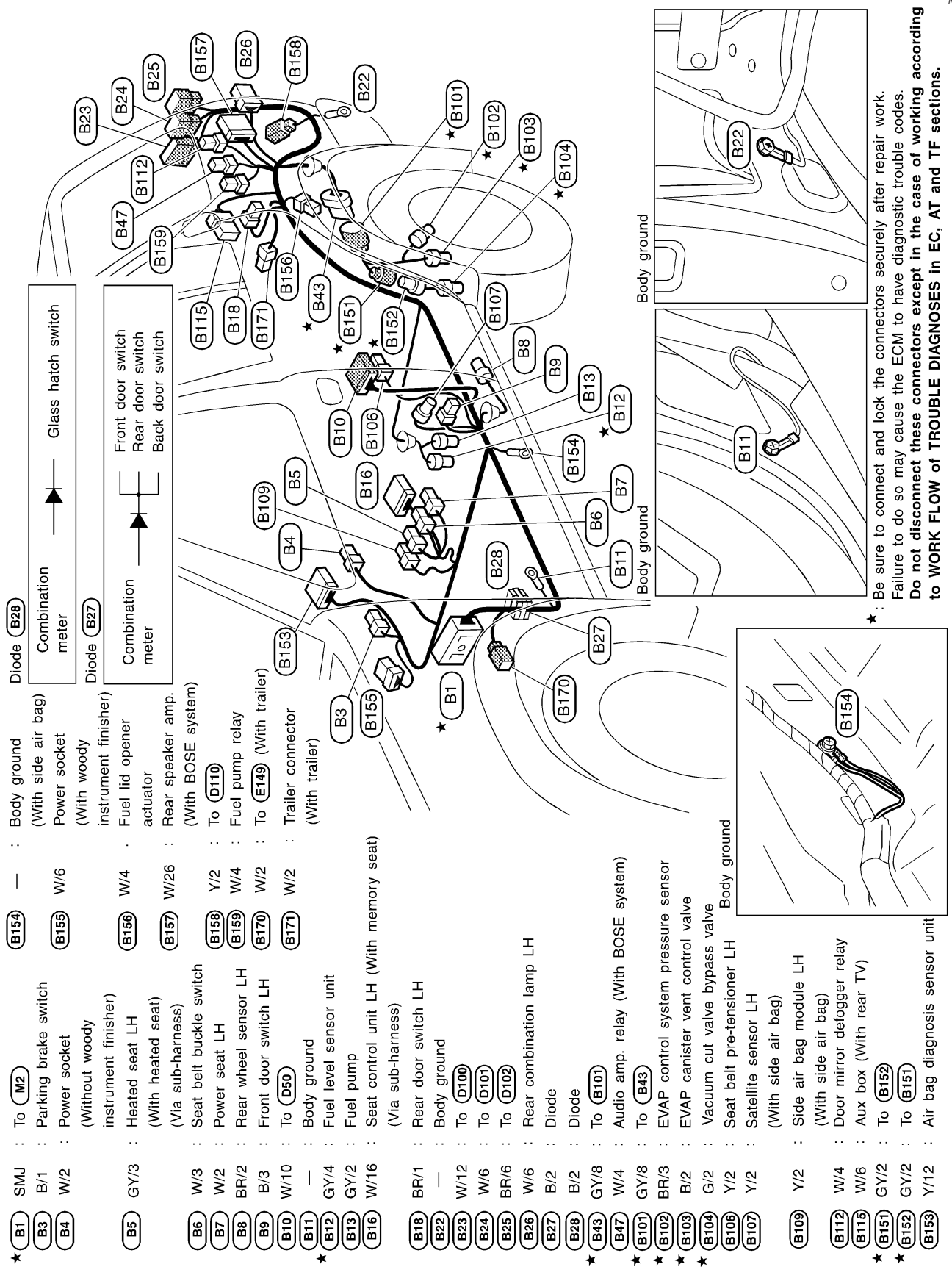
E5 (F5) L/8 : To (F100)
G5★ (F10) B/6 : Mass air flow sensor
E5★ (F19) SB/2 : To (F116)
D5 (F20) — : Engine ground
G1★ (F22) GY/16 : To (M33)
G1★ (F23) BR/24 : To (M32)
D5 (F25) — : Engine ground
G2★ (F27) W/18 : To (M94)
D1★ (F28) SB/3 : To (F112)
C3 (F29) W/2 : Condenser
B2 (F30) GY/3 : Ignition coil No. 1
C2 (F31) GY/3 : Ignition coil No. 3
C2 (F32) GY/3 : Ignition coil No. 5
C4★ (F37) B/3 : Camshaft position sensor (PHASE) (BANK 2)
B3★ (F38) B/3 : Camshaft position sensor (PHASE) (BANK 1)
G2★ (F39) G/2 : Intake valve timing control solenoid valve (BANK 2)
B2★ (F40) SB/2 : Intake valve timing control solenoid valve (BANK 1)
C4★ (F41) G/2 : Swirl control valve control solenoid valve
C3 (F42) BR/2 : VIAS control solenoid valve (With A/T)
G4 (F100) L/8 : To (F5)
E2★ (F102) L/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
D1★ (F112) SB/3 : To (F28)
G4★ (F113) L/2 : EVAP canister purge volume control solenoid valve
E1★ (F114) GY/2 : Engine coolant temperature sensor
F5★ (F116) SB/2 : To (F19)
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)
F2★ (F203) SMJ : ECM
F3★ (F204) P/20 : Joint connector
F3★ (F205) GY/6 : Accelerator pedal position sensor
D1★ (F206) L/4 : Heated oxygen sensor 2 (BANK 1)
C1★ (F207) G/4 : Heated oxygen sensor 1 (BANK 1)
E5★ (F208) L/4 : Heated oxygen sensor 2 (BANK 2)
F5★ (F209) G/4 : Heated oxygen sensor 1 (BANK 2)
G3★ (F210) G/6 : Electric throttle control actuator
E5 (F211) G/6 : To (F221)
G5 (F221) G/6 : To (F211)

★ : 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.**

MEL105S

Body Harness LH

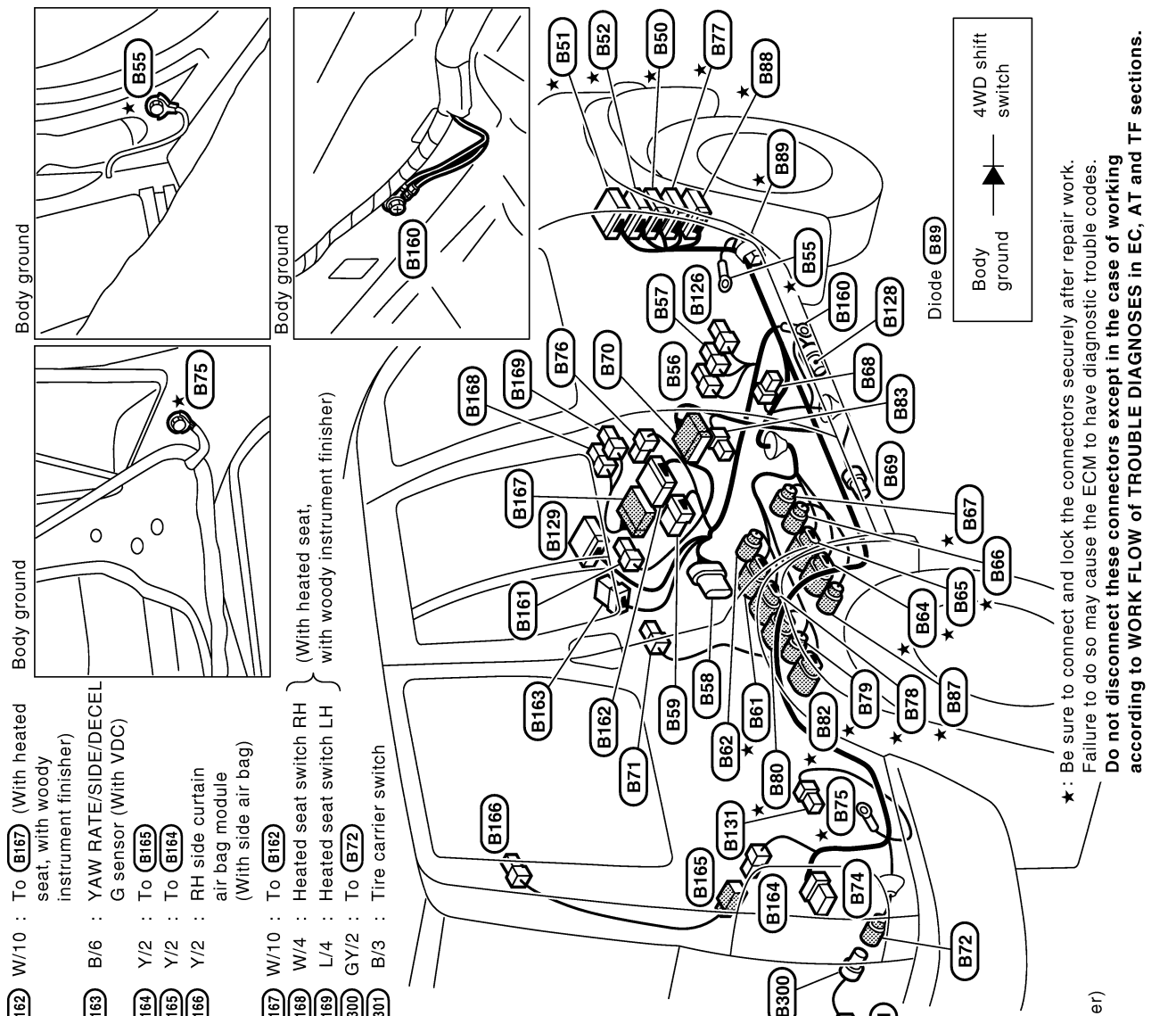
NAEL0438



MEL106S

Body Harness RH

NAEL0439



★★★★	B50	W/20	To M70	B162	W/10	To B167	(With heated seat, with woody instrument finisher)
★★★★	B51	W/24	To M71				
★★★★	B52	W/16	To M72				
★★★★	B55	–	Body ground	B163	B/6	YAW RATE/SIDE/DECEL G sensor (With VDC)	
	B56	GY/3	Heated seat RH (With heated seat) (Via sub-harness)	B164	Y/2	To B165	
	B57	W/2	Power seat RH	B165	Y/2	To B164	
	B58	GY/5	G sensor (For 4-wheel drive model with ABS)	B166	Y/2	RH side curtain air bag module (With side air bag)	
	B59	GY/8	A/T device (With A/T) (Via sub-harness)				
★	B61	B/6	To B200 (With M/T)	B167	W/10	To B162	
	B62	B/4	To B201 (With A/T and part-time 4-wheel drive)	B168	W/4	Heated seat switch RH	(With heated seat, with woody instrument finisher)
				B169	L/4	Heated seat switch LH	
★★★★★	B64	BR/8	Terminal cord assembly (With A/T)	B300	GY/2	To B72	
★★★★★	B65	GY/8	Park/neutral position switch (With A/T)	B301	B/3	Tire carrier switch	
★★★★★	B66	GY/2	Park/neutral position switch (With A/T)				
★★★★★	B67	GY/3	Rear revolution sensor				
	B68	B/3	Front door switch RH				
	B69	BR/2	Rear wheel sensor RH				
	B70	W/10	To D70				
	B71	BR/1	Rear door switch RH				
	B72	GY/2	To B300				
	B74	W/6	Rear combination lamp RH				
★	B75	–	Body ground				
	B76	W/3	Ashtray illumination (Without woody instrument finisher)				
★★★★★	B77	W/12	To M99				
★★★★★	B78	GY/8	To B206 (With all-mode 4-wheel drive)				
★★★★★	B79	B/4	To B208 (With all-mode 4-wheel drive)				
★★★★★	B80	B/8	To B207 (With all-mode 4-wheel drive)				
★★★★★	B82	GY/6	To B251 (With all-mode 4-wheel drive)				
	B83	Y/2	Seat belt pre-tensioner RH				
★★★★★	B87	BR/4	Turbine revolution sensor (With A/T)				
★★★★★	B88	GY/20	To M100				
★★★★★	B89	W/2	Diode (With all-mode 4-wheel drive)				
	B126	Y/2	Side air bag module RH (With side air bag)				
	B128	Y/2	Satellite sensor RH (With side air bag)				
	B129	Y/12	Air bag diagnosis sensor unit				
	B131	B/2	Rear power socket				
	B160	–	Body ground (With side air bag)				
	B161	W/4	Rear TV switch (With rear TV, with woody instrument finisher)				

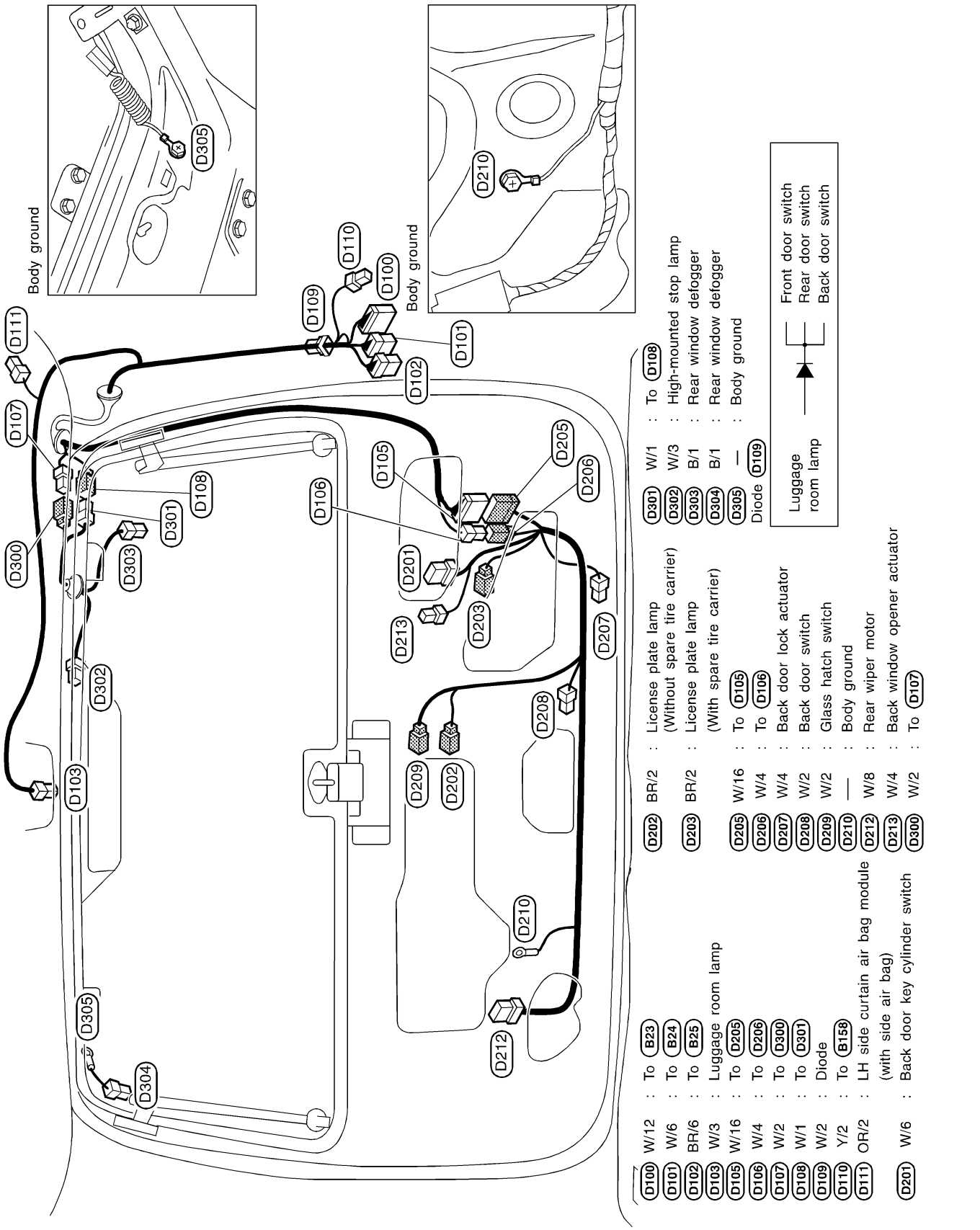
★: Be sure to connect and lock the connectors securely after repair work. Failure to do so may cause the ECM to have diagnostic trouble codes.

Do not disconnect these connectors except in the case of working according to WORK FLOW of TROUBLE DIAGNOSES in EC, AT and TF sections.

MEL107S

Back Door Harness

NAEL0440

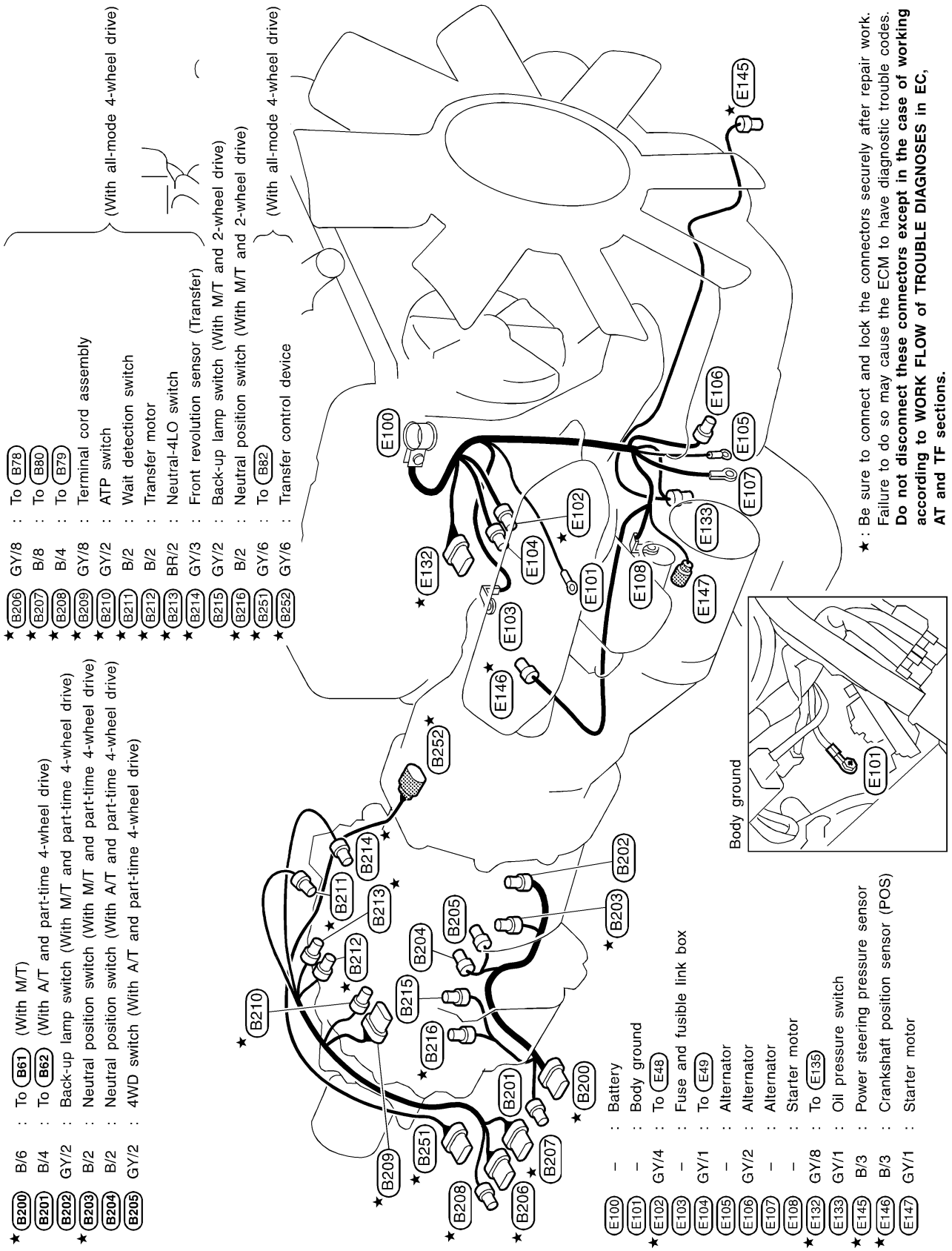


D100	W/12	:	To	B23	D202	BR/2	:	License plate lamp (Without spare tire carrier)	
D101	W/6	:	To	B24					
D102	BR/6	:	To	B25	D203	BR/2	:	License plate lamp (With spare tire carrier)	
D103	W/3	:	Luggage room lamp						
D105	W/16	:	To	D205	D205	W/16	:	To	D105
D106	W/4	:	To	D206	D206	W/4	:	To	D106
D107	W/2	:	To	D300	D207	W/4	:	Back door lock actuator	
D108	W/1	:	To	D301	D208	W/2	:	Back door switch	
D109	W/2	:	Diode		D209	W/2	:	Glass hatch switch	
D110	Y/2	:	To	B158	D210	—	:	Body ground	
D111	OR/2	:	LH side curtain air bag module (with side air bag)		D212	W/8	:	Rear wiper motor	
					D213	W/4	:	Back window opener actuator	
D201	W/6	:	Back door key cylinder switch		D300	W/2	:	To	D107
					D301	W/1	:	To	D108
					D302	W/3	:	High-mounted stop lamp	
					D303	B/1	:	Rear window defogger	
					D304	B/1	:	Rear window defogger	
					D305	—	:	Body ground	
					Diode	D109			

MEL108S

Engine and Transmission Harness

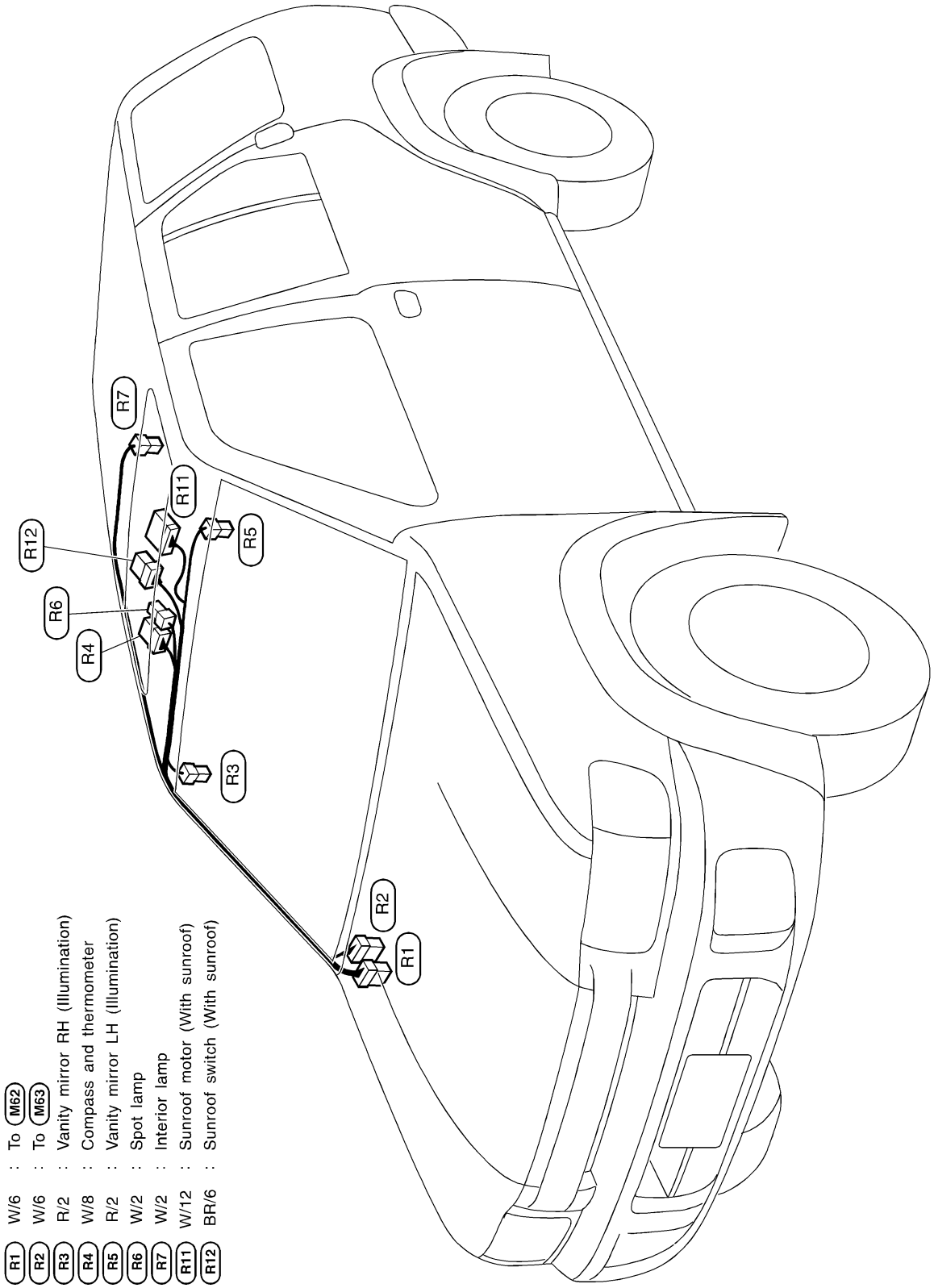
NAEL0441



MEL109S

Room Lamp Harness

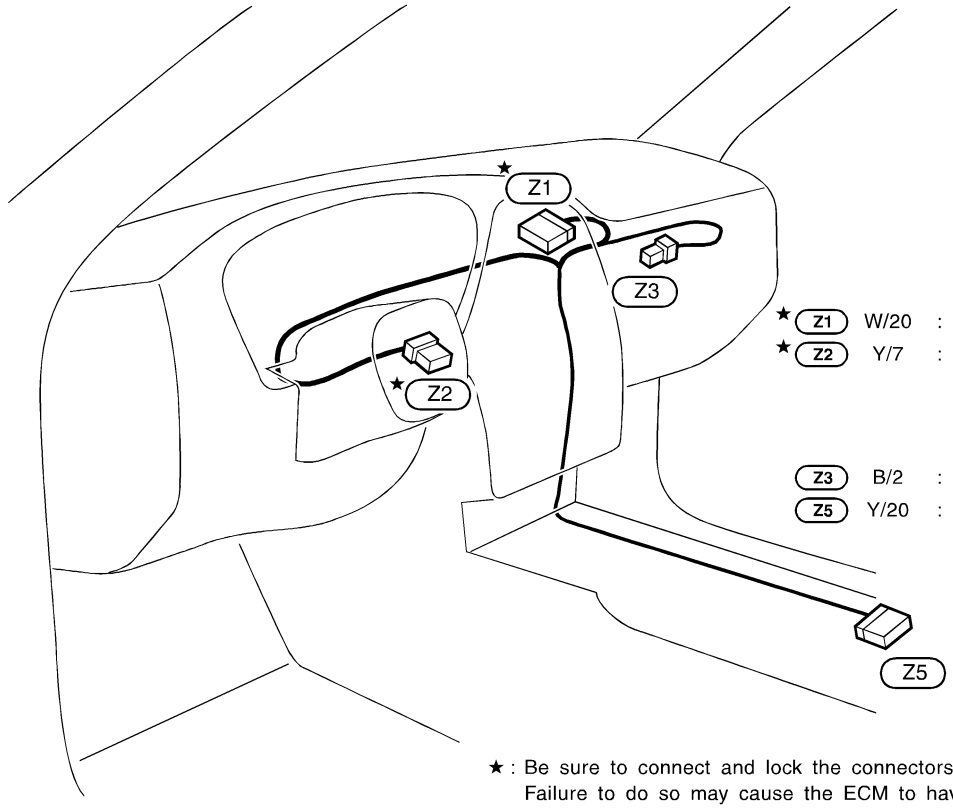
NAEL0442



MEL061Q

Air Bag Harness

NAEL0443



★ 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

★ : 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.**

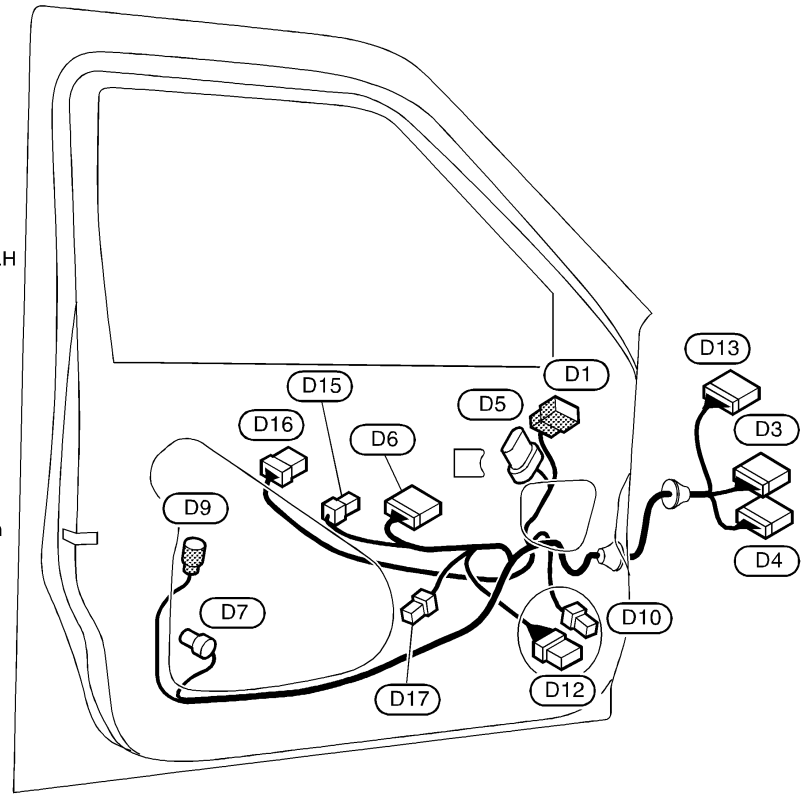
MEL110S

Front Door Harness

NAEL0444

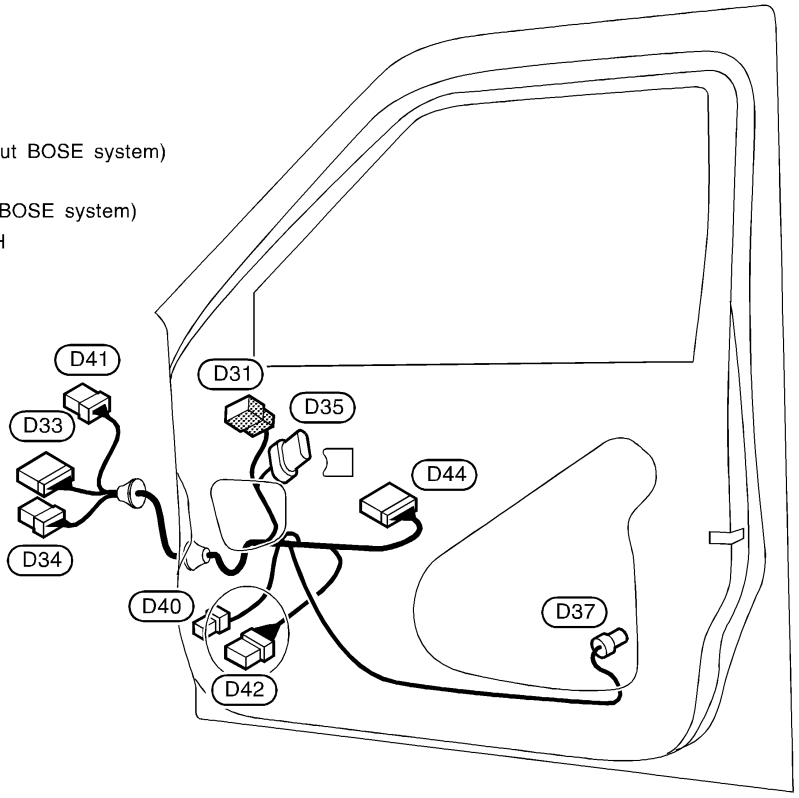
LH side

D1	W/8	:	Door mirror LH
D3	BR/16	:	To M5
D4	W/10	:	To M6
D5	GY/6	:	Front power window motor 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 (With seat memory)
D17	W/4	:	Trunk and fuel lid opener switch



RH side

D31	W/8	:	Door mirror RH
D33	BR/16	:	To M67
D34	W/6	:	To M68
D35	GY/6	:	Front power window motor RH
D37	GY/4	:	Front door lock actuator RH
D40	BR/2	:	Front door speaker RH (Without BOSE system)
D41	BR/6	:	To M101 (With BOSE system)
D42	W/6	:	Front door speaker RH (With BOSE system)
D44	W/16	:	Front power window switch RH

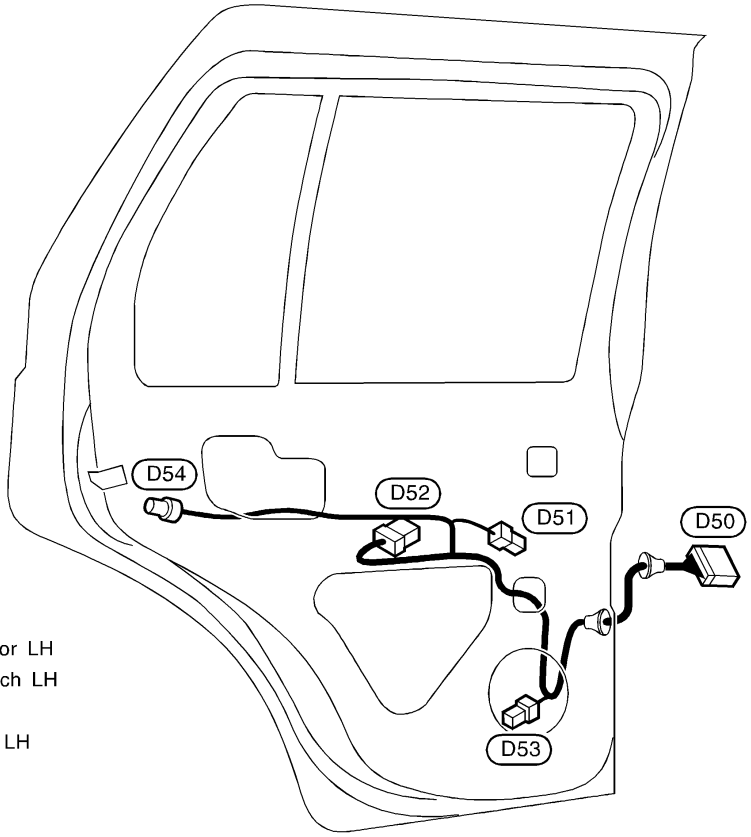


MEL111S

Rear Door Harness

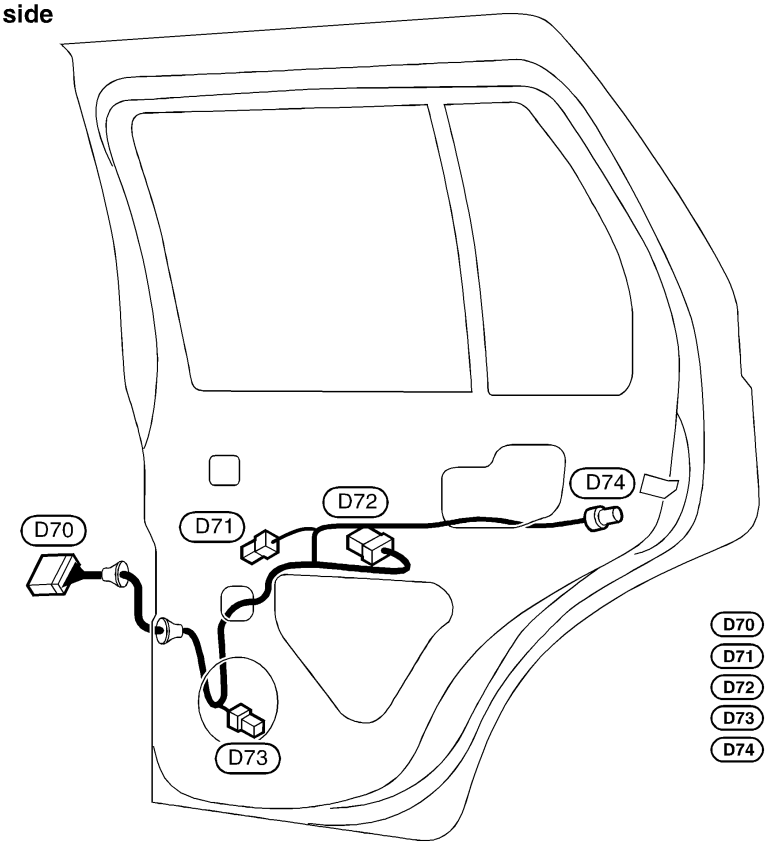
NAEL0445

LH side



D50	W/10	:	To B10
D51	B/2	:	Rear power window motor 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 motor RH
D72	W/8	:	Rear power window switch RH
D73	BR/2	:	Rear door speaker RH
D74	GY/4	:	Rear door lock actuator RH

MEL112S

BULB SPECIFICATIONS

Headlamp

Headlamp

NAEL0446S01

Item	Wattage W
High/Low (Semi-sealed beam)	60/55 (HB2)

Exterior Lamp

NAEL0446S02

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

NAEL0446S03

Item	Wattage W
Interior lamp	10
Vanity mirror lamp	1.4
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
A/C, M	HA	Manual Air Conditioner
ABS	BR	Anti-lock Brake System
APPS1	EC	Accelerator Pedal Position Sensor 1
APPS2	EC	Accelerator Pedal Position Sensor 2
APPS	EC	Accelerator Pedal Position Sensor
ASC/BS	EC	Automatic Speed Control Device Brake Switch
ASC/SW	EC	Automatic Speed Control Device Steering Switch
ASCIND	EC	Automatic Speed Control Device Indicator
ASCBOF	EC	Automatic Speed Control Device Brake Switch (Off)
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
BRK/SW	EC	Brake Switch
BYPS/V	EC	Vacuum Cut Valve Bypass Valve
CAN	AT	CAN Communication Line
CAN	EC	CAN Communication Line
CAN	EL	CAN System
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 —
ECM/PW	EC	ECM Power supply (Back-up)
ECTS	EC	Engine Coolant Temperature Sensor
ENGSS	AT	Engine Speed Signal
ETC1	EC	Electric Throttle Control Function
ETC2	EC	Electric Throttle Control Motor Relay
ETC3	EC	Electric Throttle Control Motor
F/FOG	EL	Front Fog Lamp
F/PUMP	EC	Fuel Pump Control
FTS	AT	A/T Fluid Temperature Sensor
FTTS	EC	Fuel Tank Temperature Sensor
FUELB1	EC	Fuel Injection System Function (Bank 1)
FUELB2	EC	Fuel Injection System Function (Bank 2)
H/LAMP	EL	Headlamp
HEATER	HA	Heater
HORN	EL	Horn
HSEAT	EL	Heated Seat
IATS	EC	Intake Air Temperature Sensor
IGNSYS	EC	Ignition Signal
ILL	EL	Illumination
INJECT	EC	Injector
INT/L	EL	Interior, Spot, Vanity Mirror, and Luggage Room Lamps
IVCB1	EC	Intake Valve Timing Control Solenoid Valve Bank 1
IVCB2	EC	Intake Valve Timing Control Solenoid Valve Bank 2
KEYLES	EL	Remote Keyless Entry System
KS	EC	Knock Sensor
LOAD	EC	Electrical Load Signal
LPSV	AT	Line Pressure Solenoid Valve
MAFS	EC	Mass Air Flow Sensor
MAIN	AT	Main Power Supply and Ground Circuit
MAIN	EC	Main Power Supply and Ground Circuit

WIRING DIAGRAM CODES (CELL CODES)

Code	Section	Wiring Diagram Name
METER	EL	Speedometer, Tachometer, Temp., and Fuel Gauges
MIL/DL	EC	MIL and Data Link Connectors
MIRROR	EL	Door Mirror
NATS	EL	NVIS (NISSAN Vehicle Immobilizer System)
NONDTC	AT	Non-detectable Items
O2H1B1	EC	Heated Oxygen Sensor 1 Heater (Bank 1)
O2H1B2	EC	Heated Oxygen Sensor 1 Heater (Bank 2)
O2H2B1	EC	Heated Oxygen Sensor 2 Heater (Bank 1)
O2H2B2	EC	Heated Oxygen Sensor 2 Heater (Bank 2)
O2S1B1	EC	Heated Oxygen Sensor 1 (Bank 1)
O2S1B2	EC	Heated Oxygen Sensor 1 (Bank 2)
O2S2B1	EC	Heated Oxygen Sensor 2 (Bank 1)
O2S2B2	EC	Heated Oxygen Sensor 2 (Bank 2)
OVRCSV	AT	Overrun Clutch Solenoid Valve
P/ANT	EL	Power Antenna
PHSB1	EC	Camshaft Position Sensor (PHASE) Bank 1
PHSB2	EC	Camshaft Position Sensor (PHASE) Bank 2
PGC/V	EC	EVAP Canister Purge Volume Control Solenoid Valve
PNP/SW	EC	Park/Neutral Position PNP Switch
PNP/SW	AT	Park/Neutral Position PNP Switch
POS	EC	Crankshaft Position Sensor (CKPS) (POS)
POWER	EL	Power Supply Routing
PRE/SE	EC	EVAP Control System Pressure Sensor
PS/SEN	EC	Power Steering Pressure Sensor
REMOTE	EL	Audio (Remote Control Switch)
RP/SEN	EC	Refrigerant Pressure Sensor
S/VCSW	EC	Swirl Control Valve Control Vacuum Check Switch
SEAT	EL	Power Seat

Code	Section	Wiring Diagram Name
SEN/PW	EC	Sensor Power Supply
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
T&FLID	EL	Trunk Lid and Fuel Lid Opener
T/F	TF	Transfer
T/WARN	SU	Low Tire Pressure Warning
TAIL/L	EL	Parking, License and Tail Lamps
TCCSIG	AT	A/T TCC Signal (Lock up)
TCV	AT	Torque Converter Clutch Solenoid Valve
TPS	AT	Throttle Position Sensor
TPS1	EC	Electric Throttle Control Actuator (Throttle Position Sensor 1)
TPS2	EC	Electric Throttle Control Actuator (Throttle Position Sensor 2)
TPS3	EC	Electric Throttle Control Actuator (Throttle Position Sensor)
TRNSCV	EL	Homelink Universal Transceiver
TRSA/T	AT	Turbine Revolution Sensor
TURN	EL	Turn Signal and Hazard Warning Lamps
VDC	BR	Vehicle Dynamics Control System
VEHSEC	EL	Vehicle Security System
VENT/V	EC	EVAP Canister Vent Control Valve
VIAS/V	EC	Variable Induction Air Control System
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