ELECTRICAL SYSTEM

SECTION EL

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

NHEL0001

The Supplemental Restraint System such as “AIR BAG” and “SEAT BELT PRE-TENSIONER” used along with a seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. The SRS system composition which is available to INFINITI I30 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 front side air bag module (located in the outer side of front seat), satellite sensor, diagnosis sensor unit (one of components of air bags for a frontal collision), wiring harness, warning lamp (one of components of air bags for a frontal collision).

Information necessary to service the system safely is included in the **RS section** of this Service Manual.

WARNING:

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance should be performed by an authorized INFINITI dealer.**
- **Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by intentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the RS section.**
- **Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. Spiral cable and wiring harnesses covered with yellow insulation tape either just before the harness connectors or for the complete harness are related to the SRS.**

Wiring Diagrams and Trouble Diagnosis

NHEL0002

When you read wiring diagrams, refer to the following:

- Refer to GI-11, “HOW TO READ WIRING DIAGRAMS”
- Refer to EL-10, “POWER SUPPLY ROUTING” for power distribution circuit

When you perform trouble diagnosis, refer to the following:

- Refer to GI-36, “HOW TO FOLLOW TEST GROUP IN TROUBLE DIAGNOSIS”
- Refer to GI-25, “HOW TO PERFORM EFFICIENT DIAGNOSIS FOR AN ELECTRICAL INCIDENT”

Check for any Service bulletins before servicing the vehicle.

Description

NHEL0003

HARNESS CONNECTOR (TAB-LOCKING TYPE)

NHEL0003S01

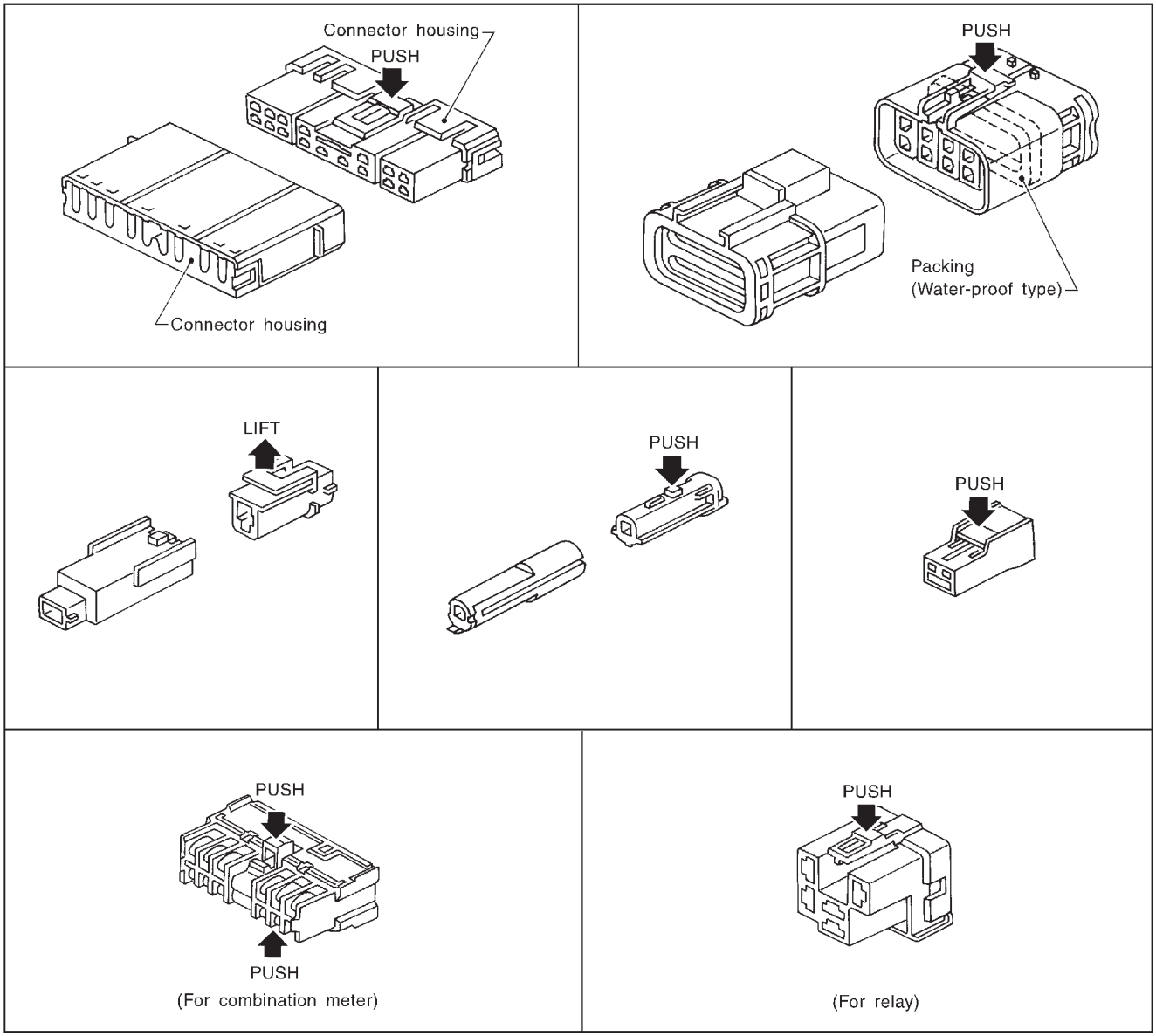
- The tab-locking type connectors help prevent accidental looseness or disconnection.
- The tab-locking type connectors are disconnected by pushing or lifting the locking tab(s). Refer to the illustration below.

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

CAUTION:

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

[Example]



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HARNESS CONNECTOR (SLIDE-LOCKING TYPE)

=NHEL0003S02

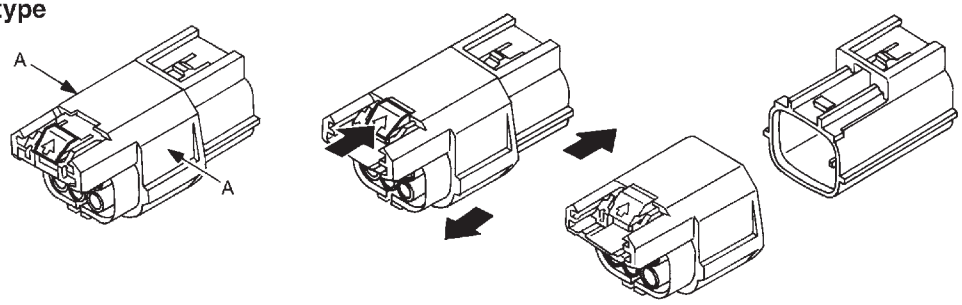
- A new style slide-locking type connector is used on certain systems and components, especially those related to OBD.
- The slide-locking type connectors help prevent incomplete locking and accidental looseness or disconnection.
- The slide-locking type connectors are disconnected by pushing or pulling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

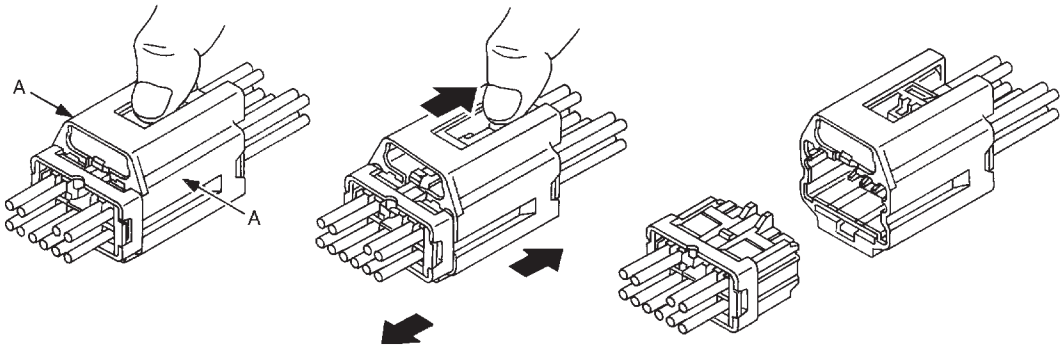


① Firmly grasp shell of connector housing at A.

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

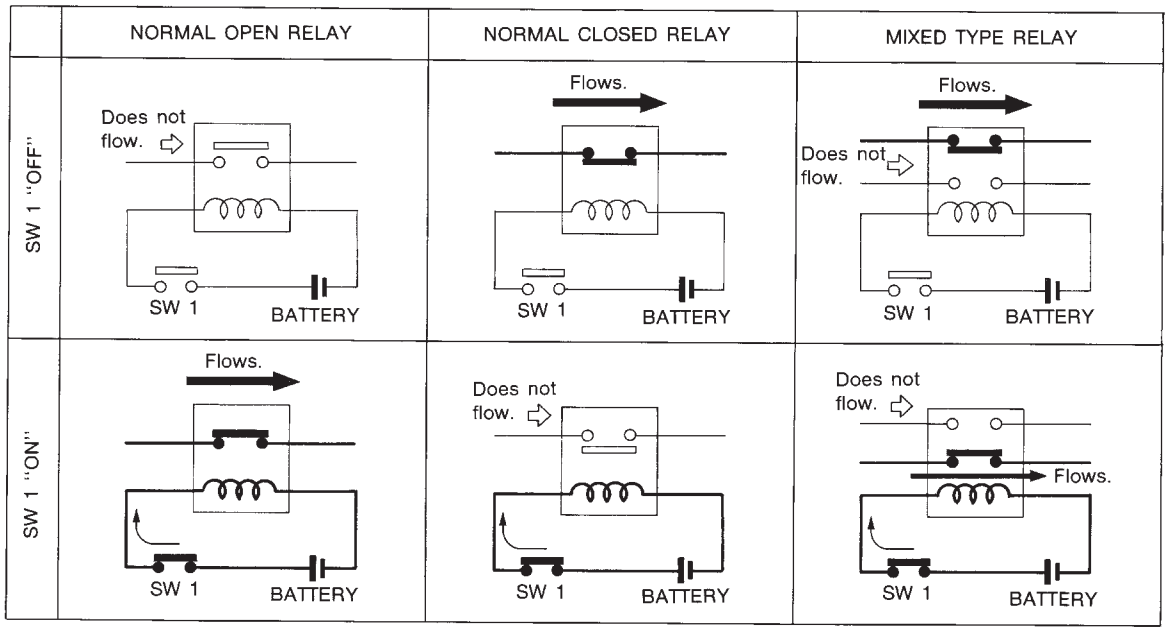
Description

NHEL0004

NORMAL OPEN, NORMAL CLOSED AND MIXED TYPE RELAYS

NHEL0004S01

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

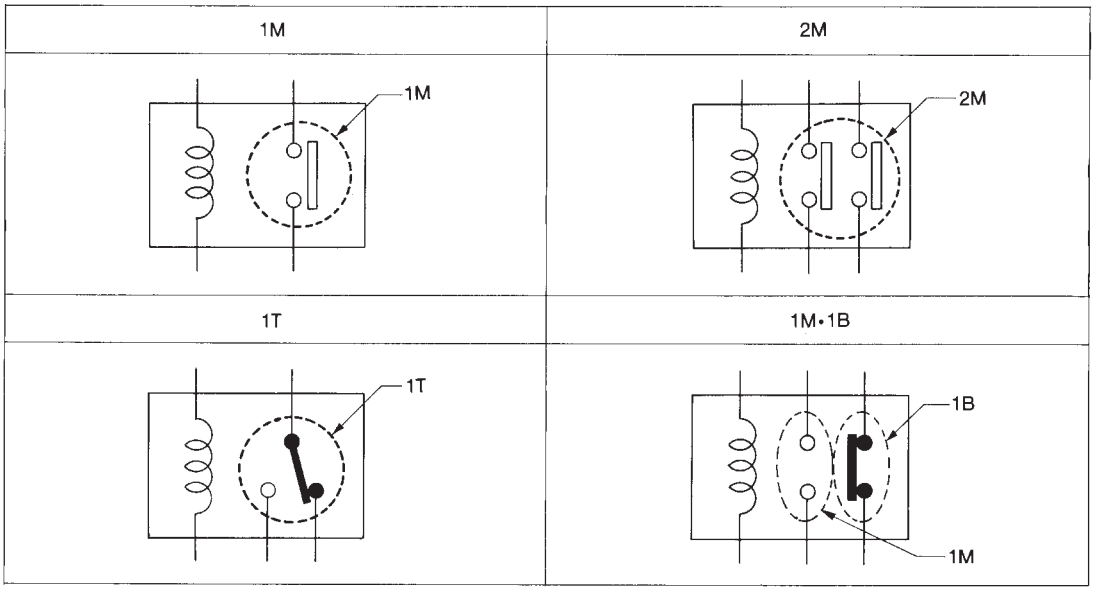


SEL881H

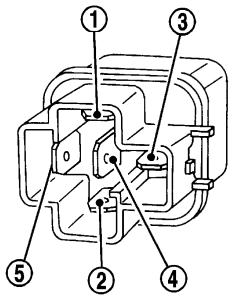
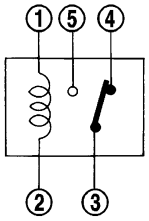
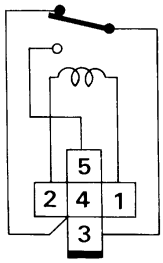
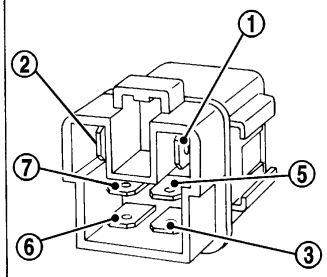
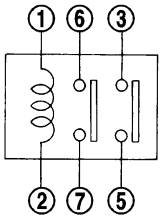
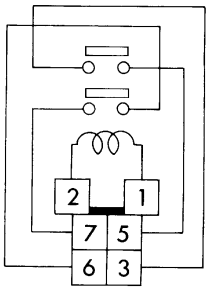
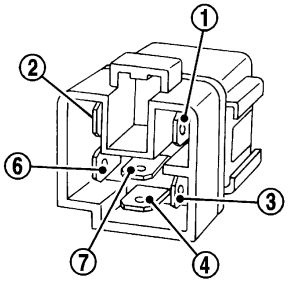
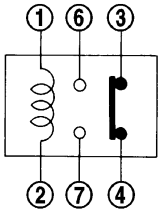
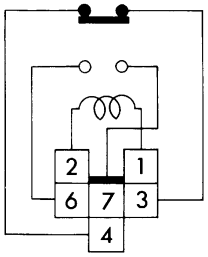
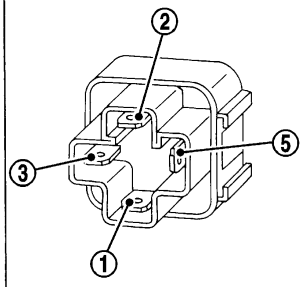
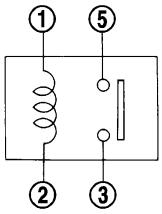
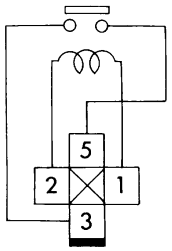
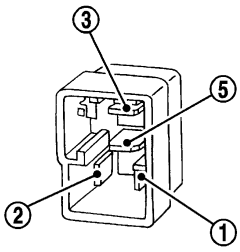
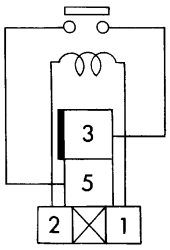
TYPE OF STANDARDIZED RELAYS

NHEL0004S02

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



SEL882H

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

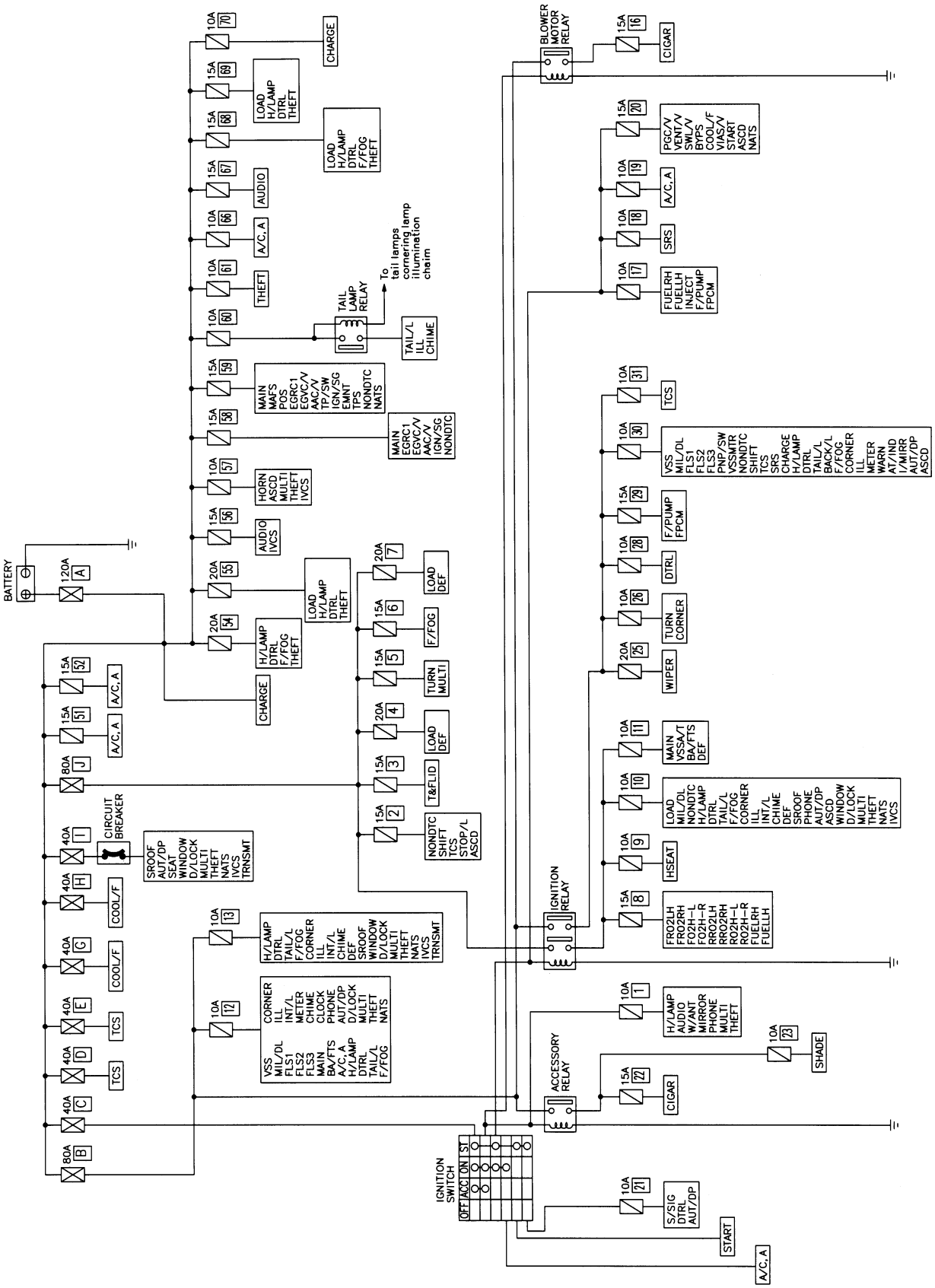
The arrangement of terminal numbers on the actual relays may differ from those shown above.

SEL188W

Schematic

NHEL0005

For detailed ground distribution information, refer to “GROUND DISTRIBUTION”, EL-19.



MEL154M

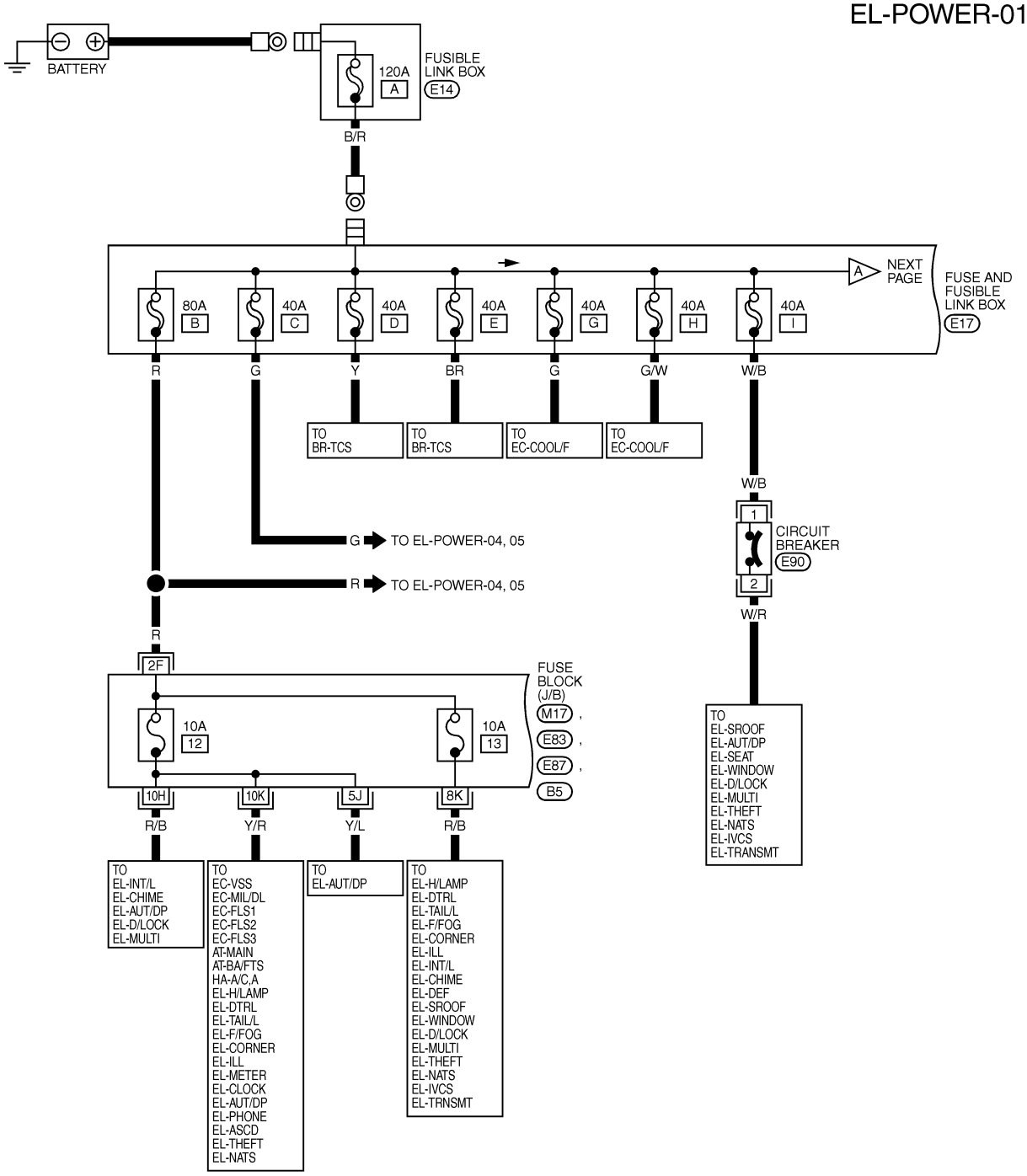
Wiring Diagram — POWER —

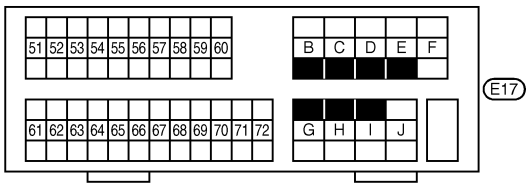
NHEL0006

BATTERY POWER SUPPLY — IGNITION SW. IN ANY POSITION

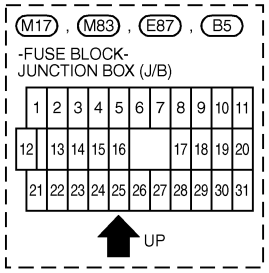
NHEL0006S01

EL-POWER-01





REFER TO THE FOLLOWING.



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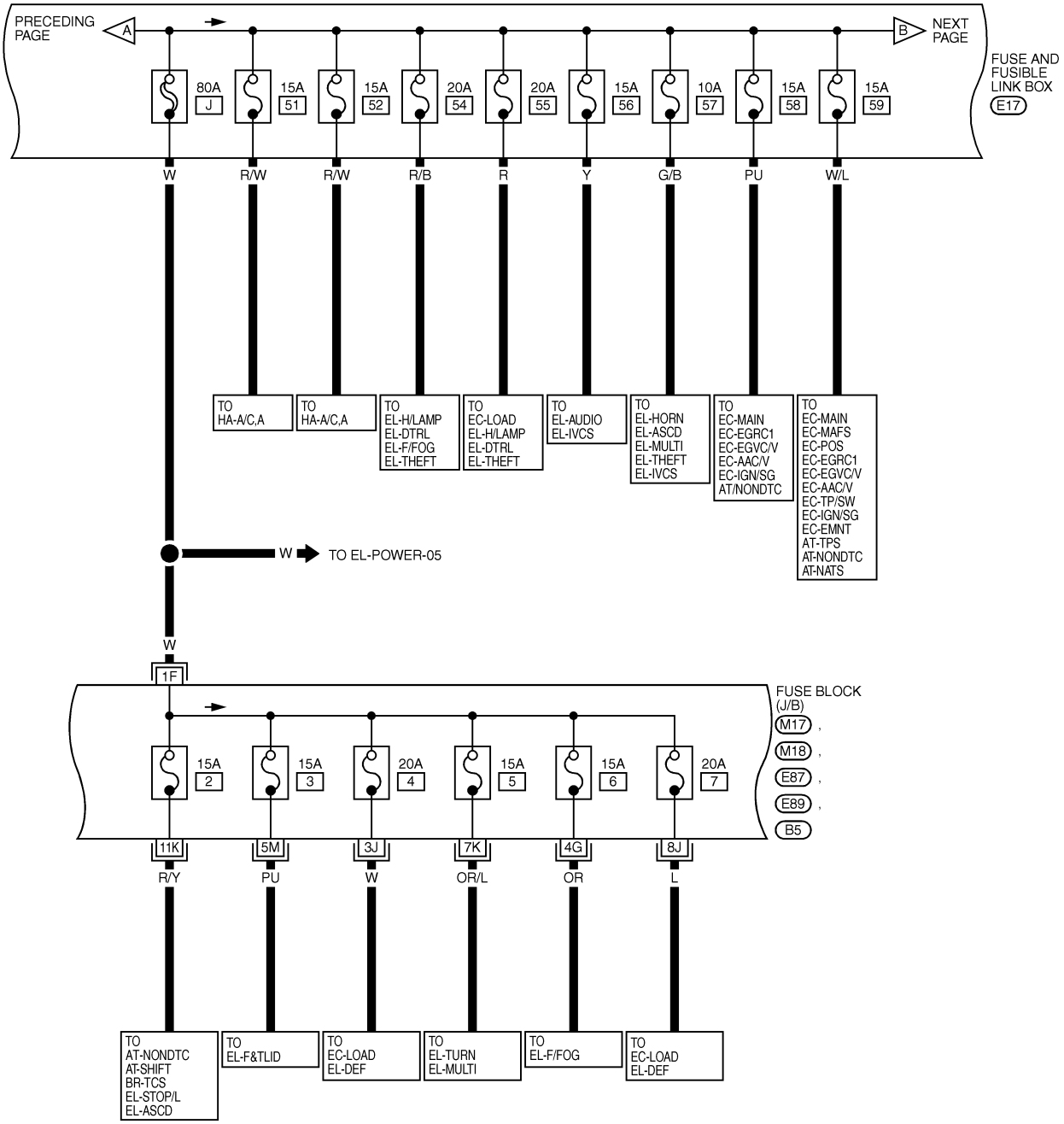
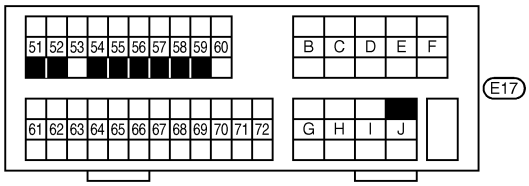
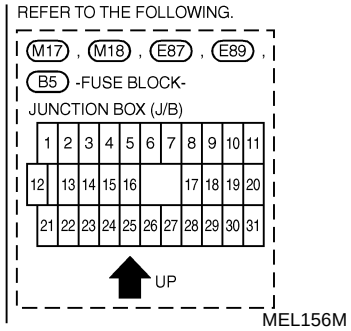
EL-POWER-02







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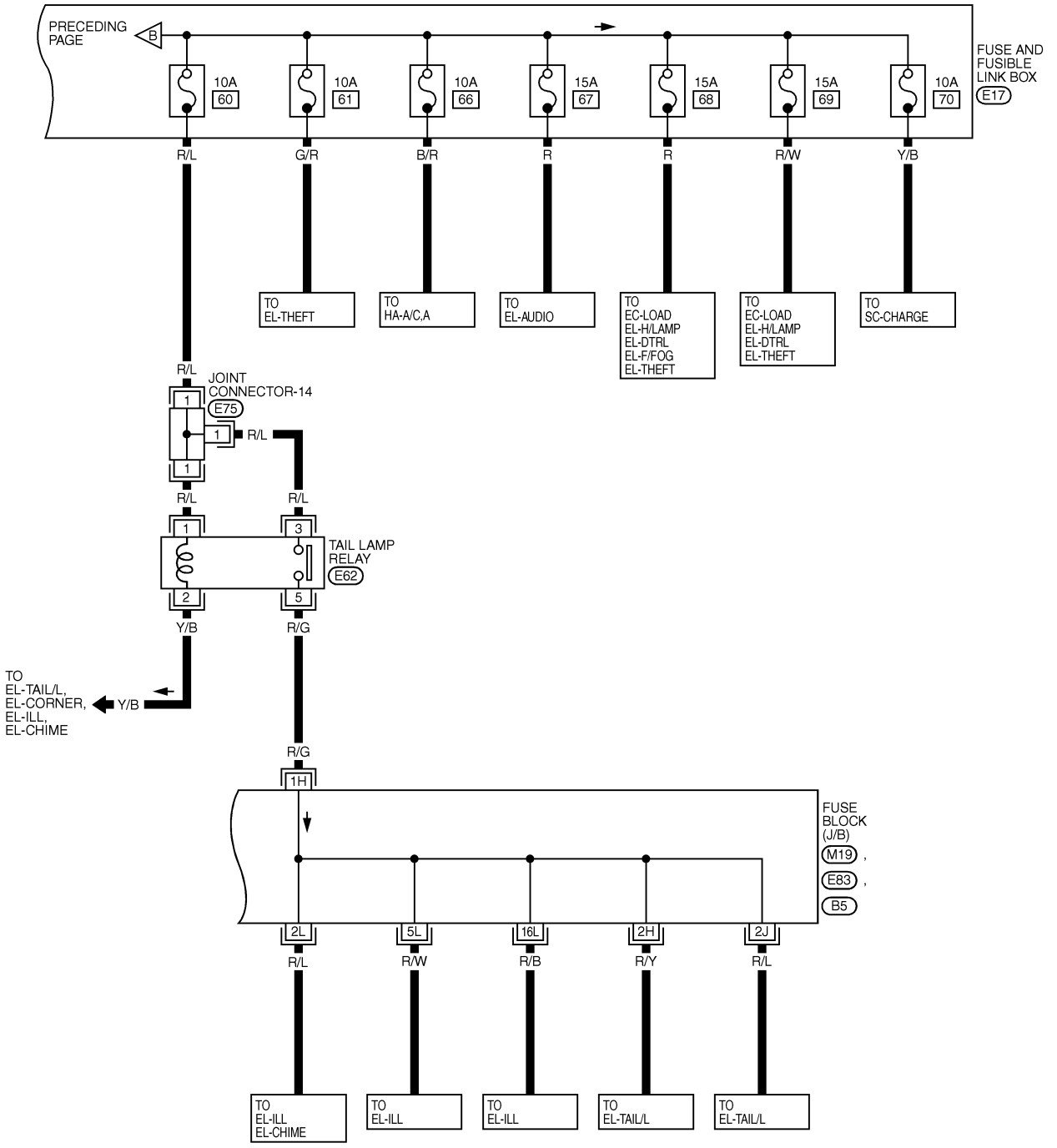
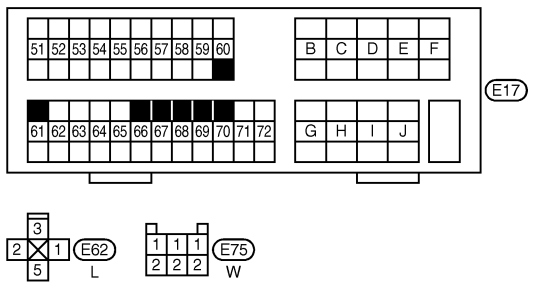
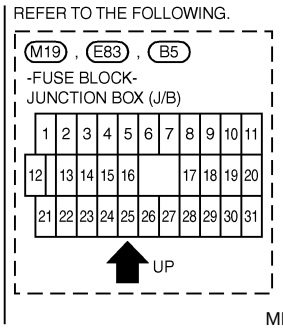
EL-POWER-03







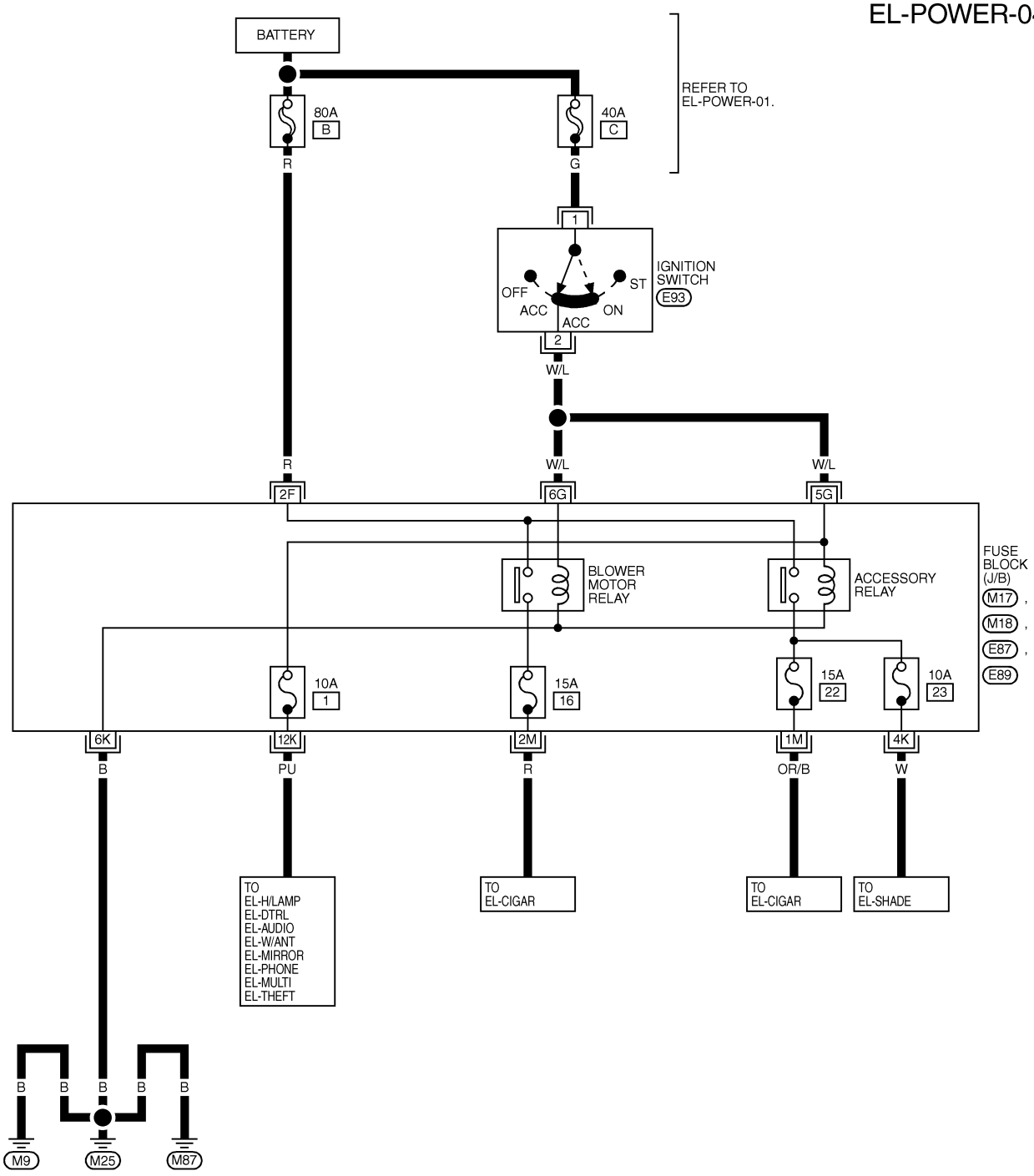
MEL150L

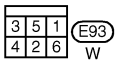
Wiring Diagram — POWER — (Cont'd)

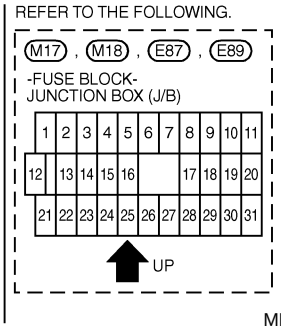
ACCESSORY POWER SUPPLY — IGNITION SW. IN "ACC" OR "ON"

NHEL0006S02

EL-POWER-04





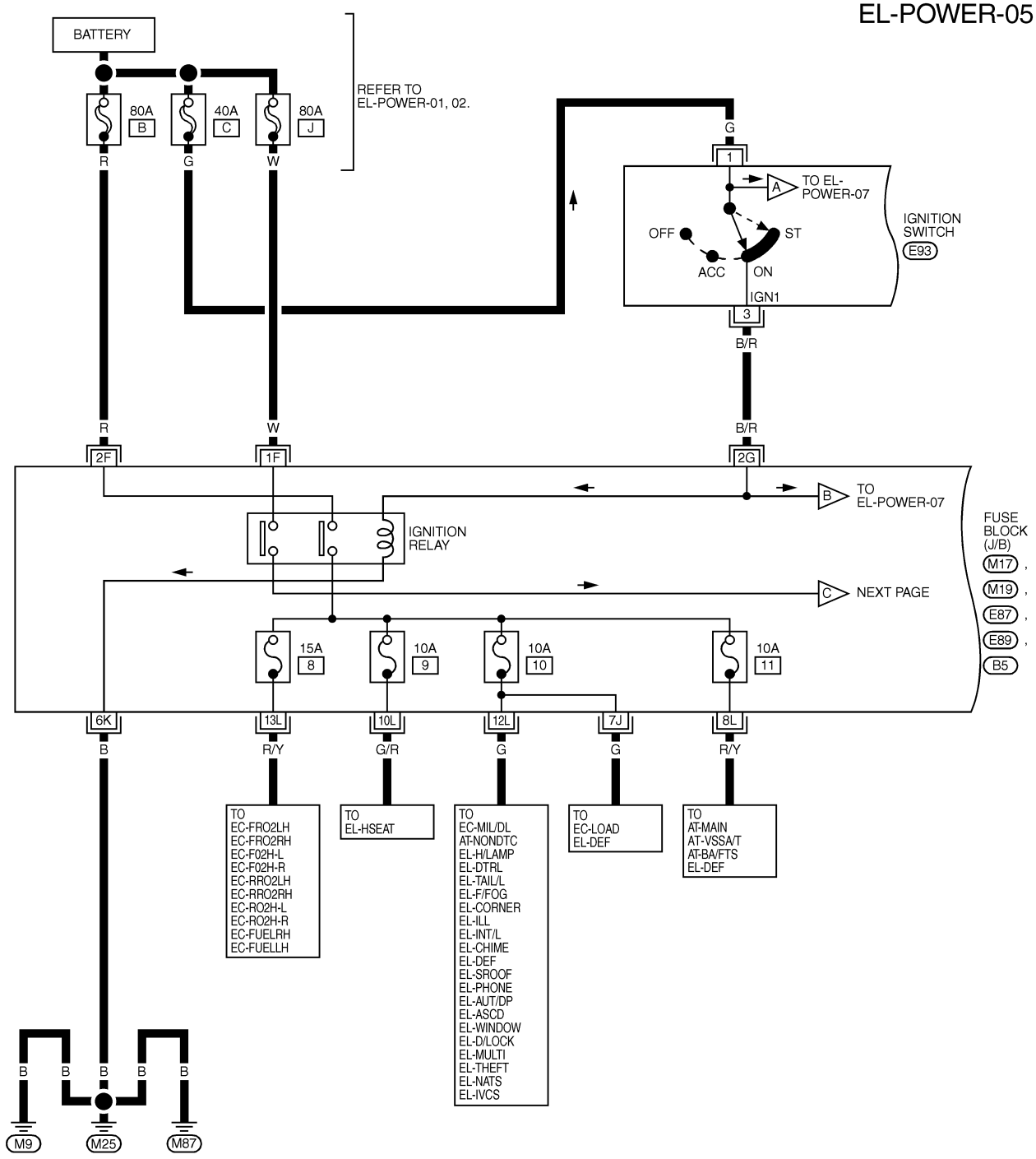


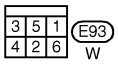
MEL399K

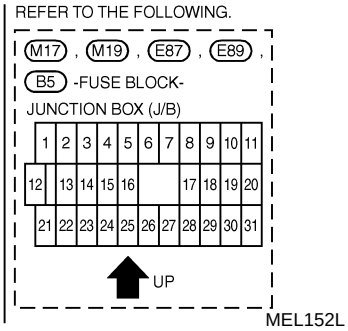
IGNITION POWER SUPPLY — IGNITION SW. IN "ON" AND/OR "START"

NHEL0006S03

EL-POWER-05

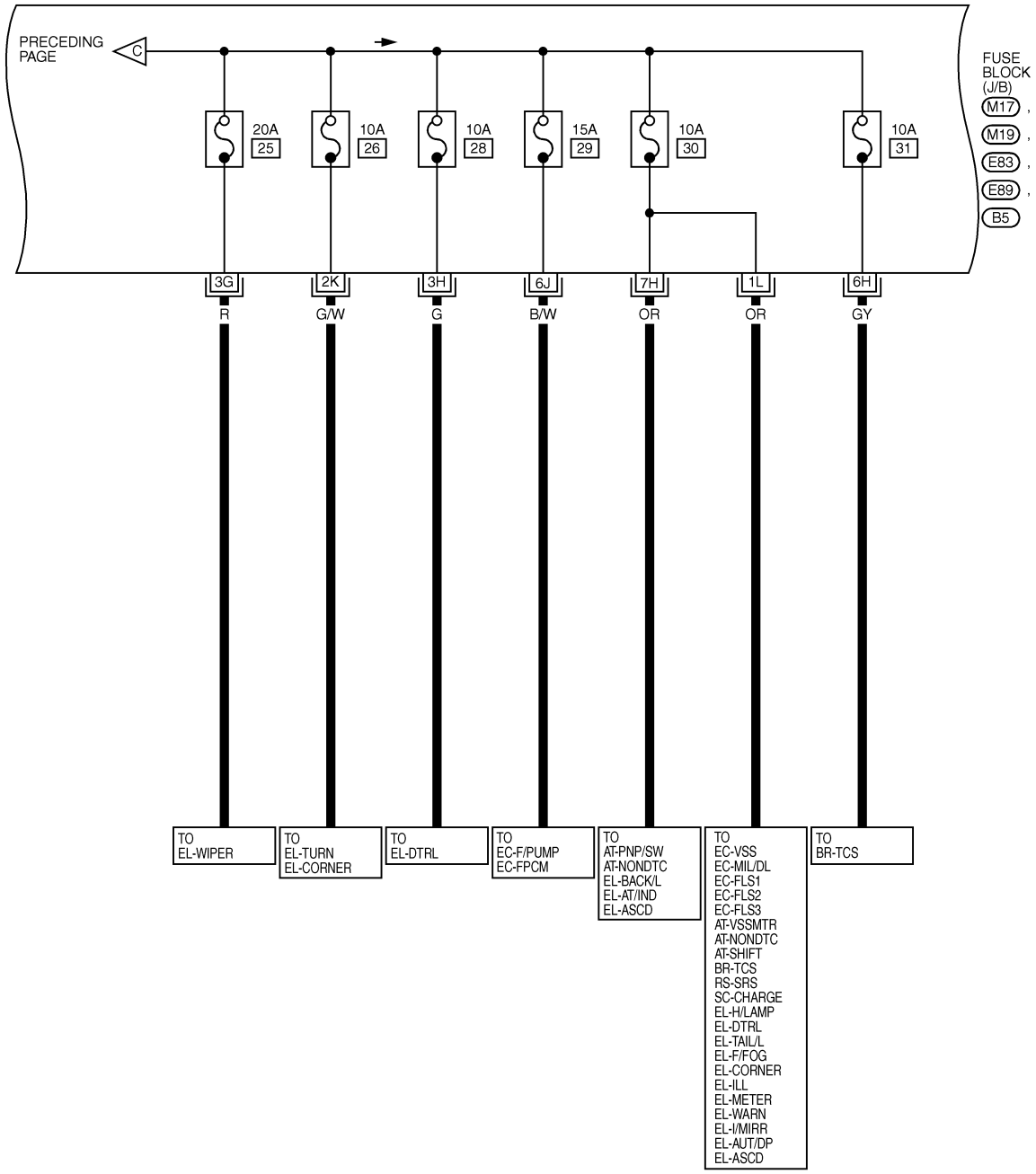






MEL152L

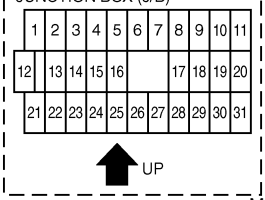
EL-POWER-06



REFER TO THE FOLLOWING.

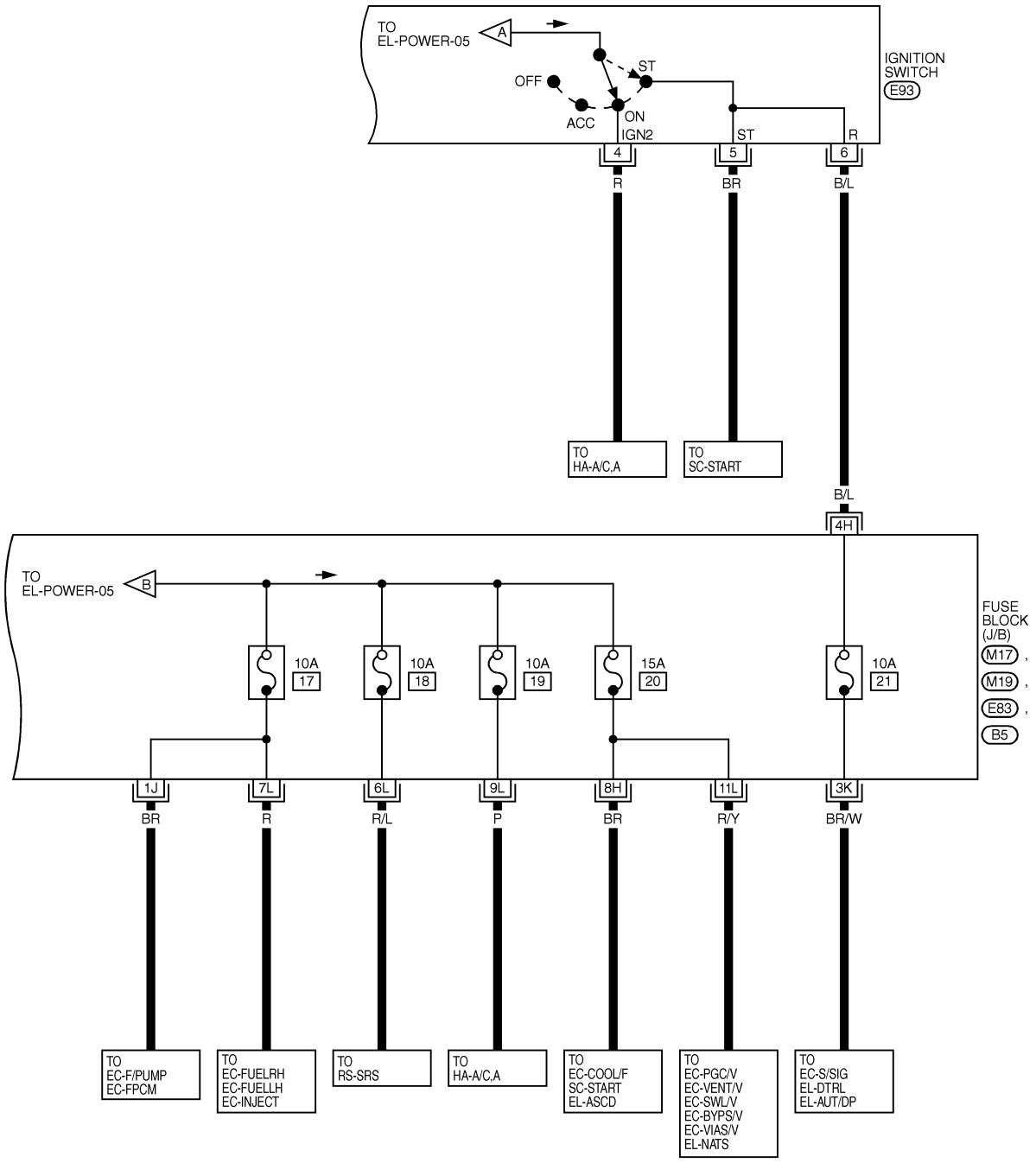
M17 , M19 , E83 , E89 , B5 -FUSE BLOCK-

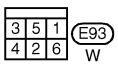
JUNCTION BOX (J/B)



MEL157M

EL-POWER-07





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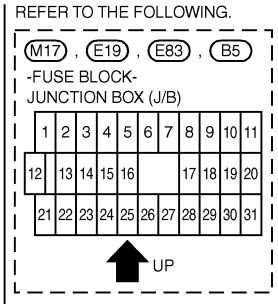
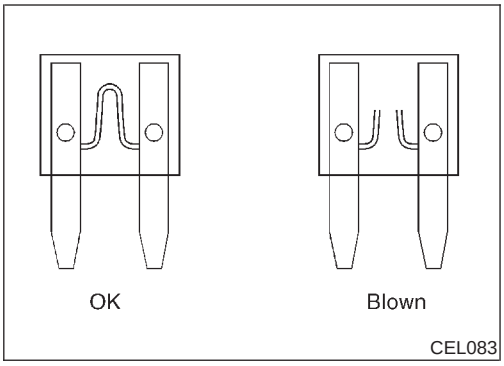


MEL402K



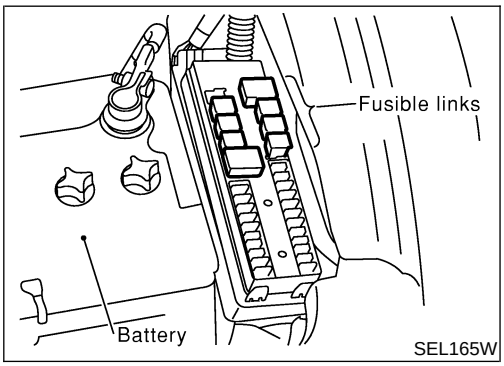
Inspection

NHEL0007

FUSE

NHEL0007S01

- **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.**



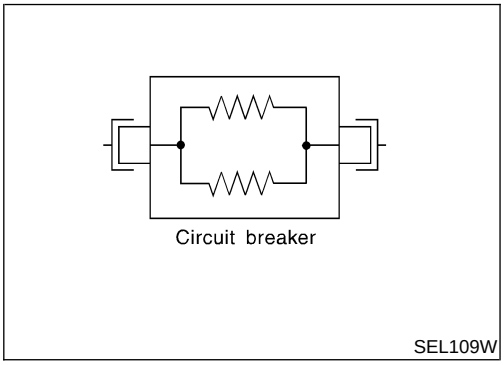
FUSIBLE LINK

NHEL0007S02

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)

NHEL0007S04

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

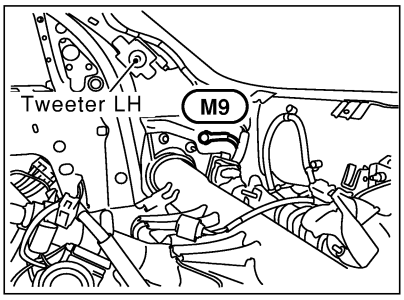
Reduced current flow will cause the element to cool. Resistance falls accordingly and normal circuit current flow is allowed to resume.

Ground Distribution

NHEL0008

MAIN HARNESS

NHEL0008S01



*1 M7 : IV — IV : With IVCS
M8 : OI — OI : Without IVCS
*2 R3 : IV
R2 : OI

M9
Body ground

CONNECTOR NUMBER	CONNECT TO
M20	Power window relay
M24	Door mirror remote control switch
M26	Headlamp battery saver control unit (Terminal No. 4)
M27	Headlamp battery saver control unit (Terminal No. 11)
M28	Data link connector (Terminal No. 4)
M76	A/T device (Terminal No. 2)
M101	Memory seat cancel switch
M111	Rear sunshade switch
M172	Auto light control unit
M522	ASCD steering switch

M36 M171 Main sub-harness-2
M103 M542 M521
Spiral cable
Steering wheel sub-harness*

M110 B43 Body harness
*1 *2 Room lamp harness

B39	Rear sunshade unit
R4	Vanity mirror LH (Illumination)
R5	Sunroof motor (With sunroof)
R7	Spot lamp (With sunroof)
R8	Vanity mirror RH (Illumination)
R11	Spot lamp (With IVCS)
R12	IVCS switch
R15	Auto anti-dazzling inside mirror

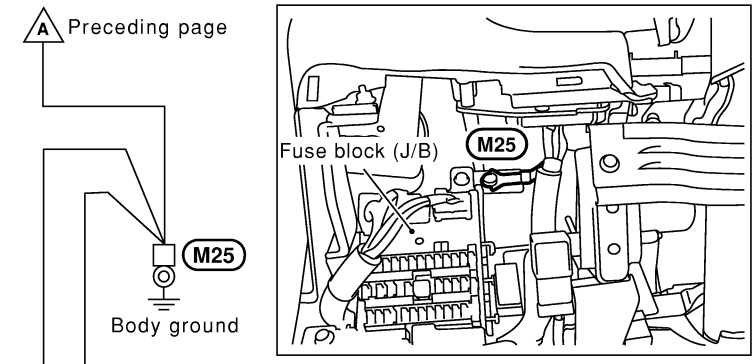
M4 D1 Front door harness LH

D6	Front door lock actuator LH
D7	Trunk and fuel lid opener switch (Terminal No. 2)
D7	Trunk and fuel lid opener switch (Terminal No. 4)
D8	Front door key cylinder switch LH (Without IVCS)
D9	Front door key cylinder switch LH (With IVCS) (Terminal No. 4)
D9	Front door key cylinder switch LH (With IVCS) (Terminal No. 6)
D10	Power window main switch
D11	Door mirror actuator LH (With door mirror defogger)
D12	Memory seat switch

A
Next page

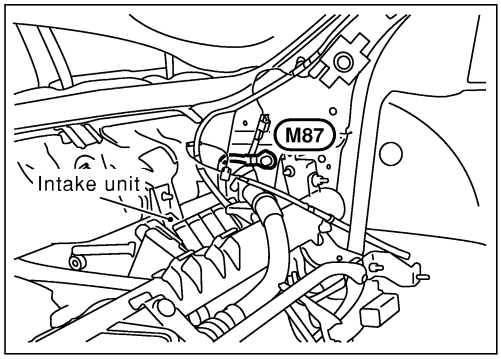
* : This sub-harness is not shown in “Harness Layout”, EL section.

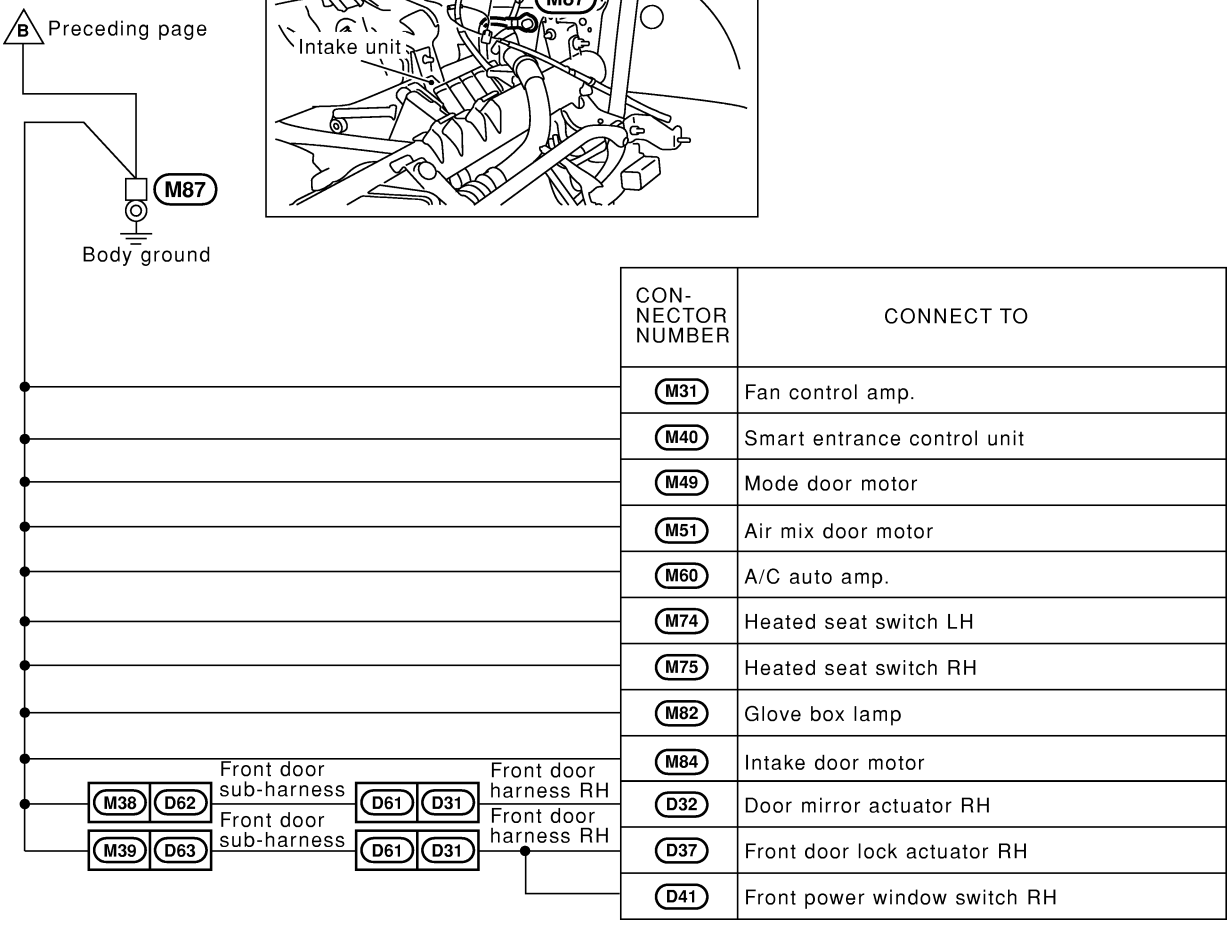
MEL151L



CON-NECTOR NUMBER	CONNECT TO
M16	Telephone
M17	Fuse block (J/B) (Terminal No. 6K) • Accessory relay • Blower motor relay • Ignition relay
M21	Combination flasher unit
M23	Illumination control switch
M32	Combination meter (Terminal No. 30) • A/T indicator • Turn signal indicator
M34	Combination meter (Terminal No. 59) • Air bag warning lamp • Fuel gauge • Water temp. gauge • Tachometer • Odo/trip meter
M34	Combinatioin meter (Terminal No. 65) Meter illumination
M45	TCS on/off switch (With TCS)
M52	ASCD control unit
M53	Cigarette lighter
M72	Ashtray illumination
M76	A/T device (Terminal No. 6)
M78	Power socket
M112	Air bag diagnosis sensor unit
M152	Clock

MEL169M



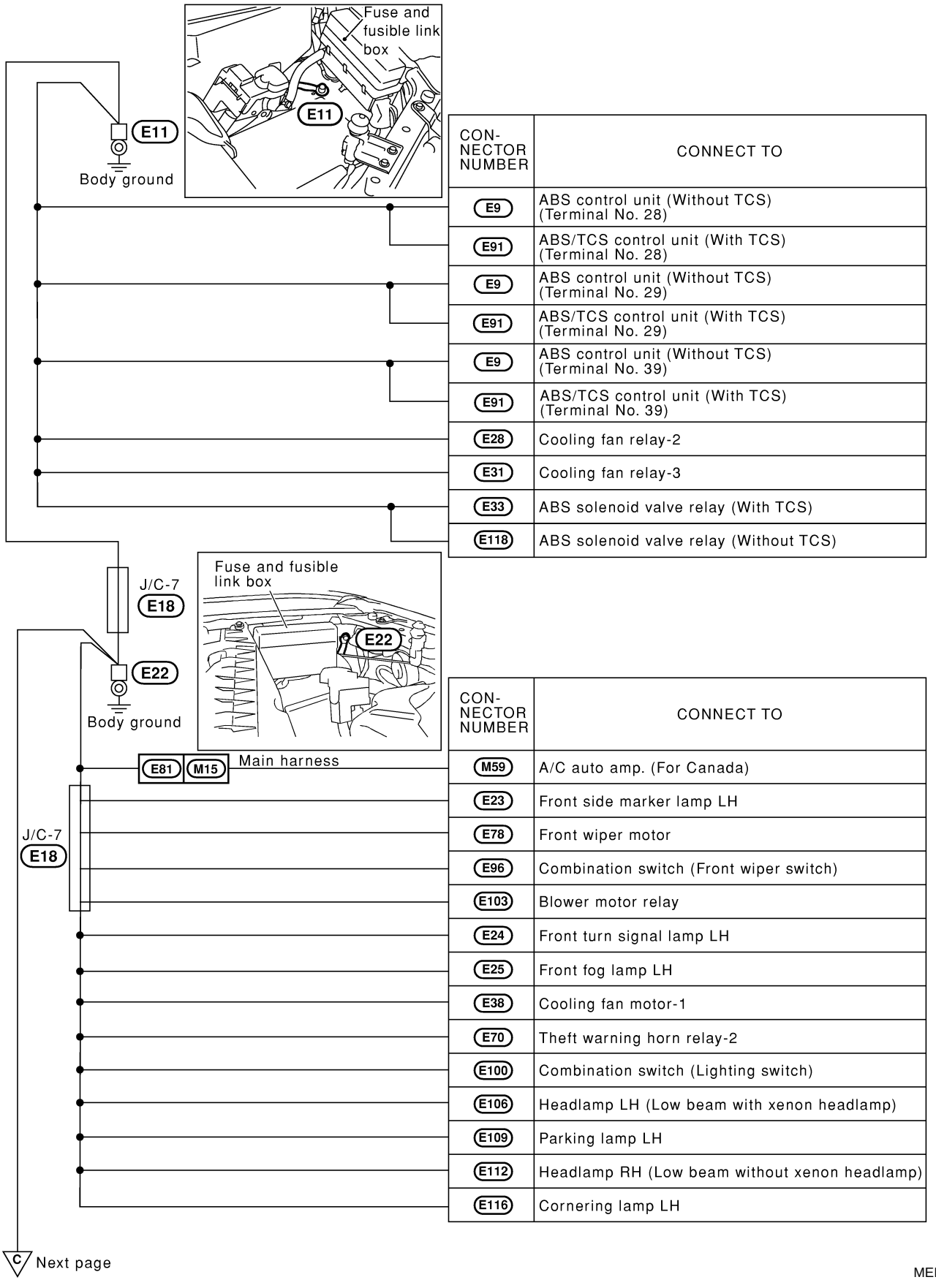


CON-NECTOR NUMBER	CONNECT TO
M31	Fan control amp.
M40	Smart entrance control unit
M49	Mode door motor
M51	Air mix door motor
M60	A/C auto amp.
M74	Heated seat switch LH
M75	Heated seat switch RH
M82	Glove box lamp
M84	Intake door motor
D32	Door mirror actuator RH
D37	Front door lock actuator RH
D41	Front power window switch RH

MEL614K

ENGINE ROOM HARNESS

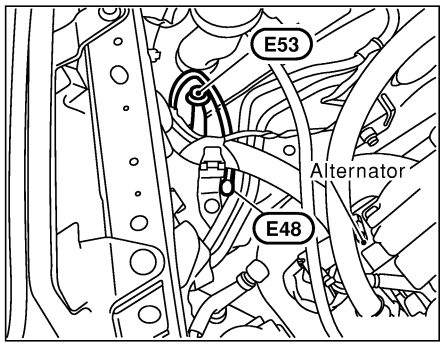
NHEL0008S02

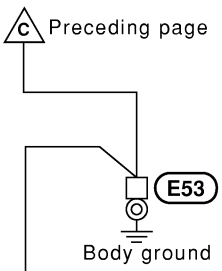


CON-NECTOR NUMBER	CONNECT TO
E9	ABS control unit (Without TCS) (Terminal No. 28)
E91	ABS/TCS control unit (With TCS) (Terminal No. 28)
E9	ABS control unit (Without TCS) (Terminal No. 29)
E91	ABS/TCS control unit (With TCS) (Terminal No. 29)
E9	ABS control unit (Without TCS) (Terminal No. 39)
E91	ABS/TCS control unit (With TCS) (Terminal No. 39)
E28	Cooling fan relay-2
E31	Cooling fan relay-3
E33	ABS solenoid valve relay (With TCS)
E118	ABS solenoid valve relay (Without TCS)

CON-NECTOR NUMBER	CONNECT TO
M59	A/C auto amp. (For Canada)
E23	Front side marker lamp LH
E78	Front wiper motor
E96	Combination switch (Front wiper switch)
E103	Blower motor relay
E24	Front turn signal lamp LH
E25	Front fog lamp LH
E38	Cooling fan motor-1
E70	Theft warning horn relay-2
E100	Combination switch (Lighting switch)
E106	Headlamp LH (Low beam with xenon headlamp)
E109	Parking lamp LH
E112	Headlamp RH (Low beam without xenon headlamp)
E116	Cornering lamp LH

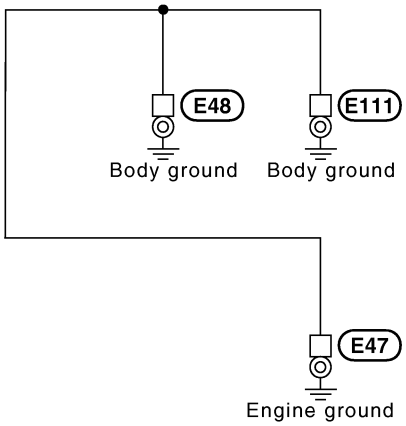
MEL615K

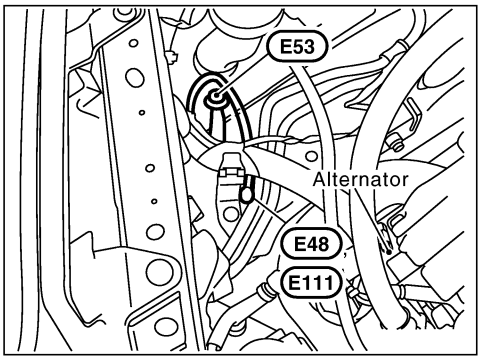


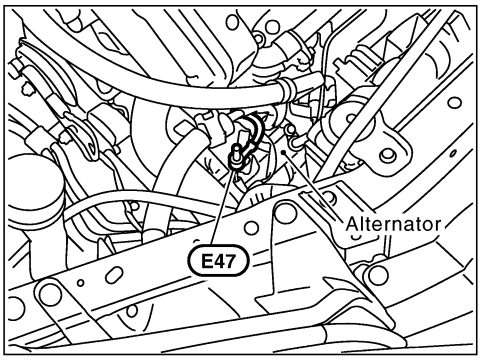


CON-NECTOR NUMBER	CONNECT TO
E1	Brake fluid level switch
E26	Hood switch
E42	Washer level switch
E43	Cooling fan motor-2
E44	Front fog lamp RH
E45	Front turn signal lamp RH
E49	Front side marker lamp RH
E59	Daytime light control unit (For Canada)
E69	Door mirror defogger relay
E97	Combination switch (Lighting switch)
E107	Headlamp LH (Low beam without xenon headlamp)
E113	Headlamp RH (Low beam with xenon headlamp)
E115	Parking lamp RH
E117	Cornering lamp RH
E126	Cornering lamp relay

MEL616K


E48
E111
Body ground
Body ground
E47
Engine ground

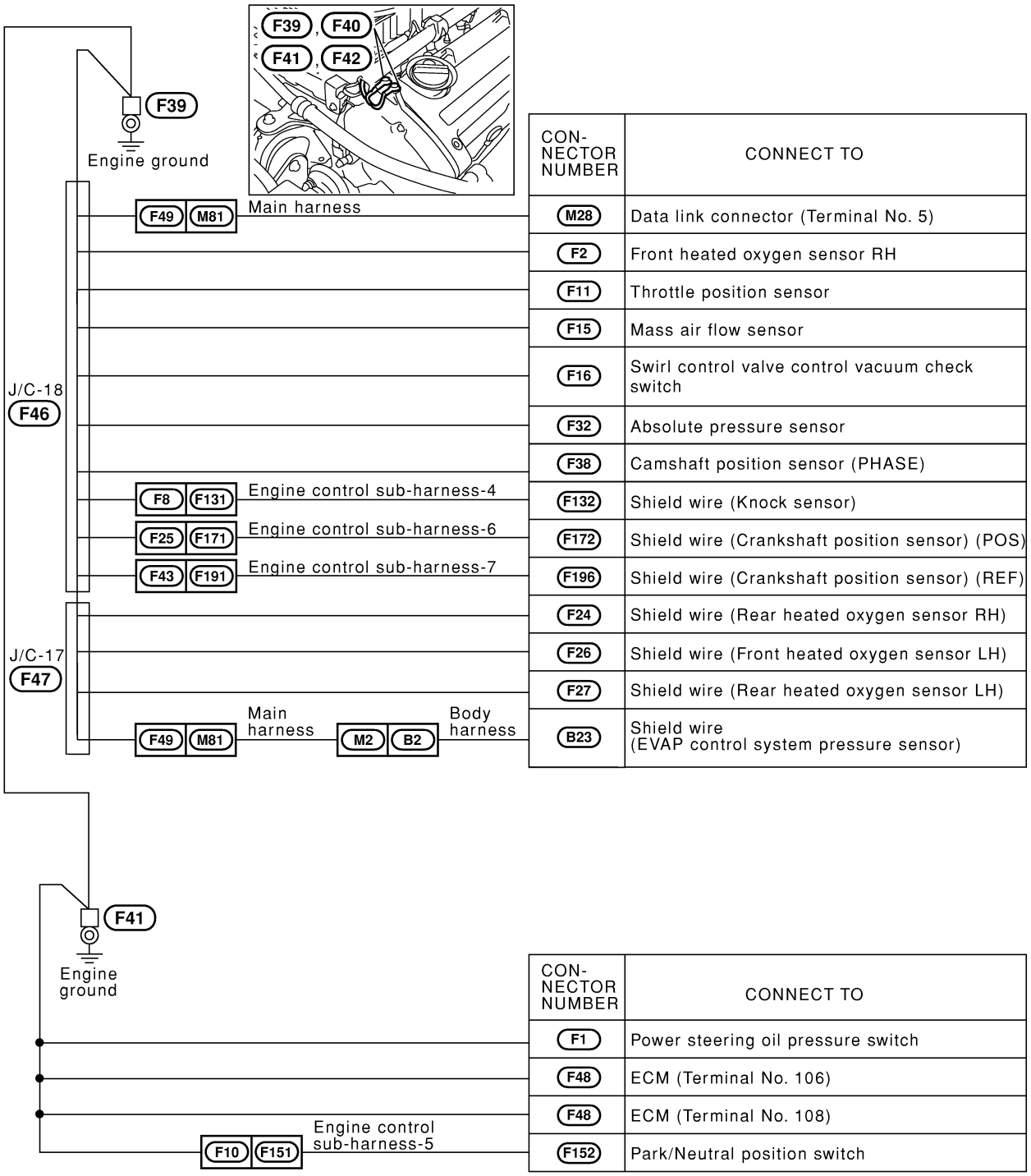

E53
Alternator
E48
E111


Alternator
E47

MEL343K

ENGINE CONTROL HARNESS

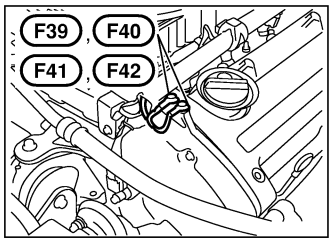
NHEL0008S03

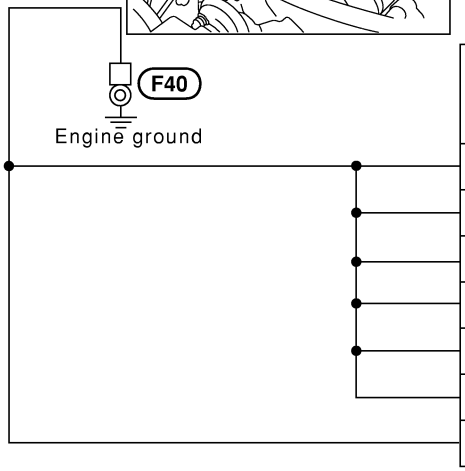


CON-NECTOR NUMBER	CONNECT TO
M28	Data link connector (Terminal No. 5)
F2	Front heated oxygen sensor RH
F11	Throttle position sensor
F15	Mass air flow sensor
F16	Swirl control valve control vacuum check switch
F32	Absolute pressure sensor
F38	Camshaft position sensor (PHASE)
F132	Shield wire (Knock sensor)
F172	Shield wire (Crankshaft position sensor) (POS)
F196	Shield wire (Crankshaft position sensor) (REF)
F24	Shield wire (Rear heated oxygen sensor RH)
F26	Shield wire (Front heated oxygen sensor LH)
F27	Shield wire (Rear heated oxygen sensor LH)
B23	Shield wire (EVAP control system pressure sensor)

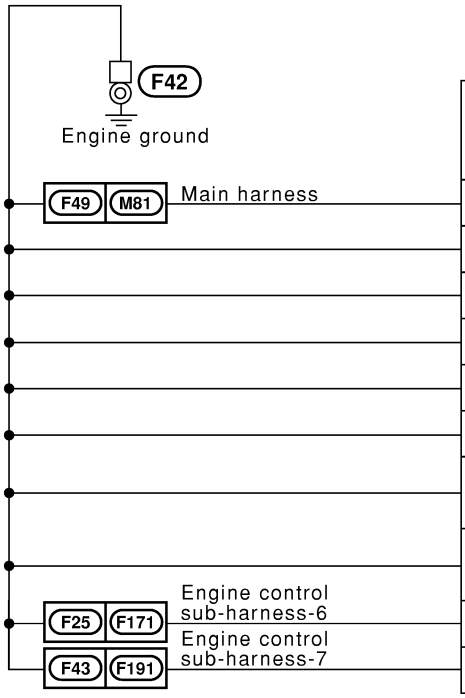
CON-NECTOR NUMBER	CONNECT TO
F1	Power steering oil pressure switch
F48	ECM (Terminal No. 106)
F48	ECM (Terminal No. 108)
F152	Park/Neutral position switch

MEL617K





CONNECTOR NUMBER	CONNECT TO
F3	Ignition coil No. 1
F5	Ignition coil No. 3
F6	Ignition coil No. 5
F30	Ignition coil No. 6
F31	Ignition coil No. 4
F35	Ignition coil No. 2
F34	Condenser

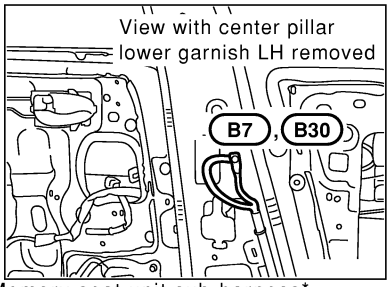


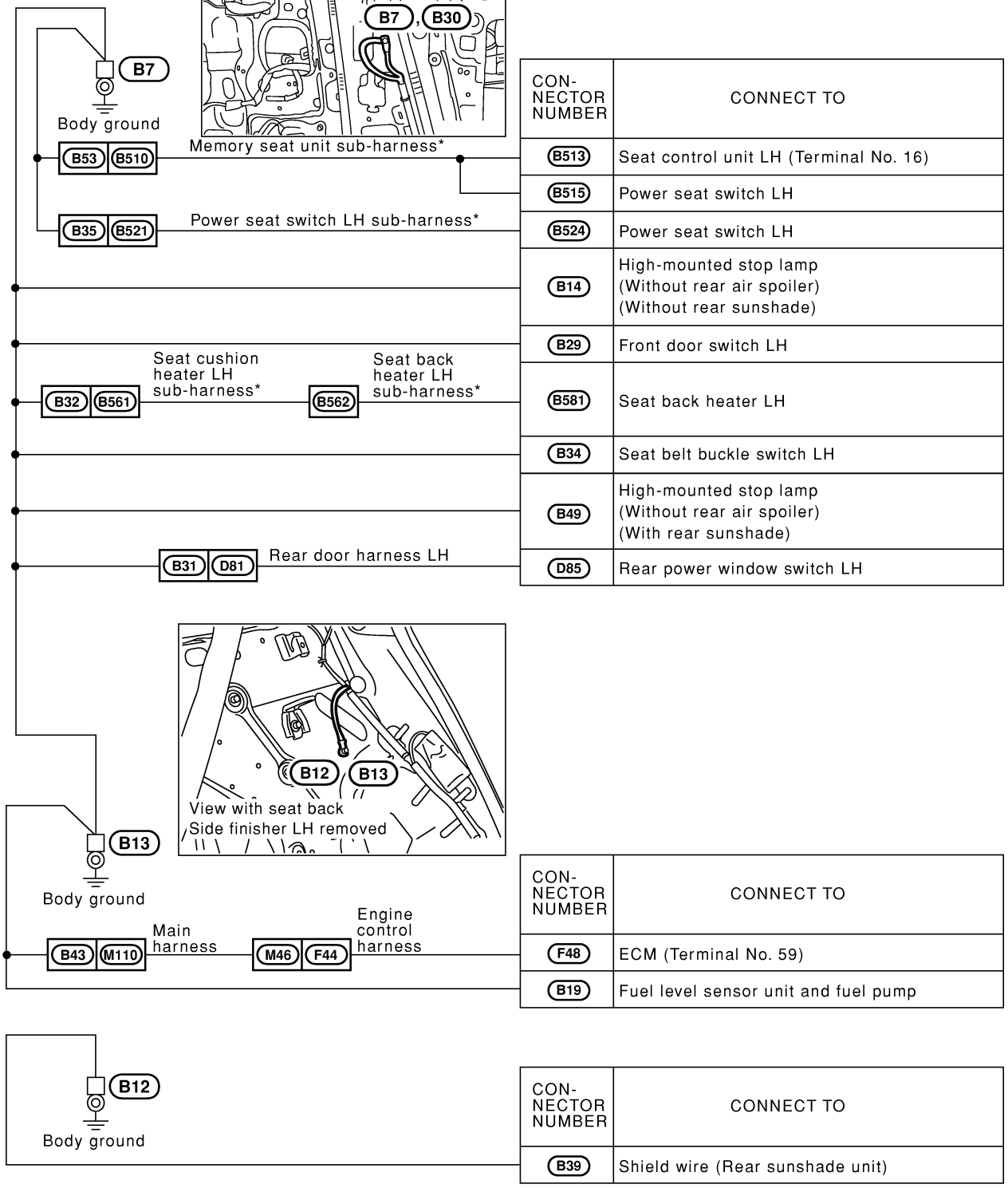
CONNECTOR NUMBER	CONNECT TO
M42	IVIS IMMU
F24	Rear heated oxygen sensor RH
F27	Rear heated oxygen sensor LH
F38	Camshaft position sensor (PHASE)
F48	ECM (Terminal No. 48)
F48	ECM (Terminal No. 57)
F50	TCM (Transmission control module) (Terminal No. 25)
F50	TCM (Transmission control module) (Terminal No. 48)
F172	Crankshaft position sensor (POS)
F196	Crankshaft position sensor (REF)

MEL649K

BODY HARNESS

NHEL0008S04





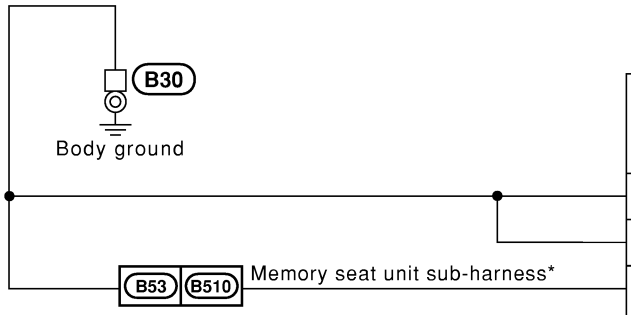
CONNECTOR NUMBER	CONNECT TO
B513	Seat control unit LH (Terminal No. 16)
B515	Power seat switch LH
B524	Power seat switch LH
B14	High-mounted stop lamp (Without rear air spoiler) (Without rear sunshade)
B29	Front door switch LH
B581	Seat back heater LH
B34	Seat belt buckle switch LH
B49	High-mounted stop lamp (Without rear air spoiler) (With rear sunshade)
D85	Rear power window switch LH

CONNECTOR NUMBER	CONNECT TO
F48	ECM (Terminal No. 59)
B19	Fuel level sensor unit and fuel pump

CONNECTOR NUMBER	CONNECT TO
B39	Shield wire (Rear sunshade unit)

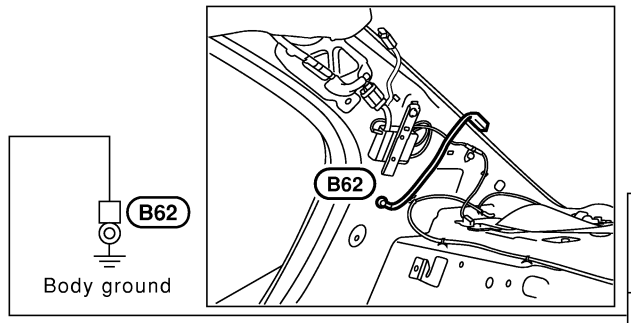
* : This sub-harness is not shown in "Harness Layout", EL-section.

MEL618K



CON-NECTOR NUMBER	CONNECT TO
B18	Fuel pump control module (FPCM)
B20	Dropping resistor
B512	Seat control unit LH (Terminal No. 33)

CON-NECTOR NUMBER	CONNECT TO
B42	Shield wire (Air bag diagnosis sensor unit) (Terminal No. 43)
B42	Shield wire (Air bag diagnosis sensor unit) (Terminal No. 44)



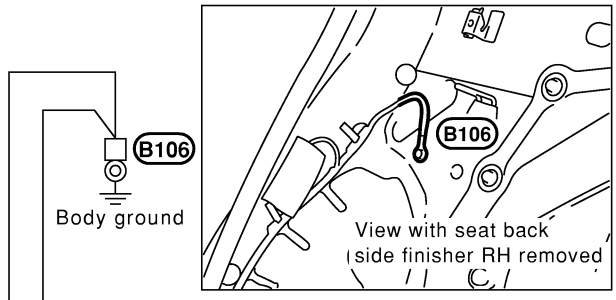
CON-NECTOR NUMBER	CONNECT TO
B61	Rear window defogger (–)

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

MEL653K

BODY NO. 2 HARNESS

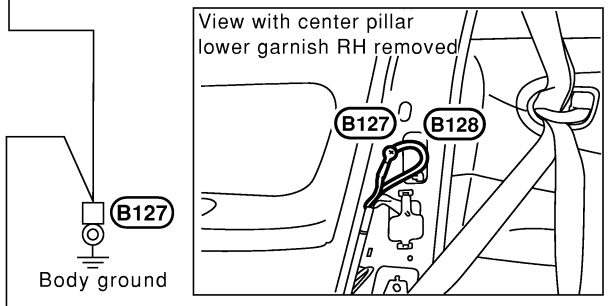
NHEL0008S05



B104 M92 Main harness

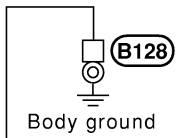
CONNECTOR NUMBER	CONNECT TO
M103	Shield wire (Spiral cable) (With IVCS)
B108	Trunk lid key cylinder switch
B110	License lamp RH
B111	License lamp LH
B115	Shield wire (IVCS unit)
B117	IVCS unit
B123	Woofer
B124	BOSE speaker amp.
B162	High-mounted stop lamp (With rear air spoiler)

B109 B161 Body No.2 sub-harness



Seat cushion heater RH sub-harness*: B136 B571
Seat back heater RH sub-harness*: B572
Power seat switch RH sub-harness*: B137 B541
B130 D101 Rear door harness RH

CONNECTOR NUMBER	CONNECT TO
B129	Front door switch RH
B591	Heated seat RH
B543	Power seat switch RH
B140	Trunk lid combination lamp RH (For stop and tail)
B141	Trunk lid combination lamp RH (For reverse)
B142	Trunk lid combination lamp LH (For reverse)
B143	Trunk lid combination lamp LH (For stop and tail)
D102	Rear power window switch RH



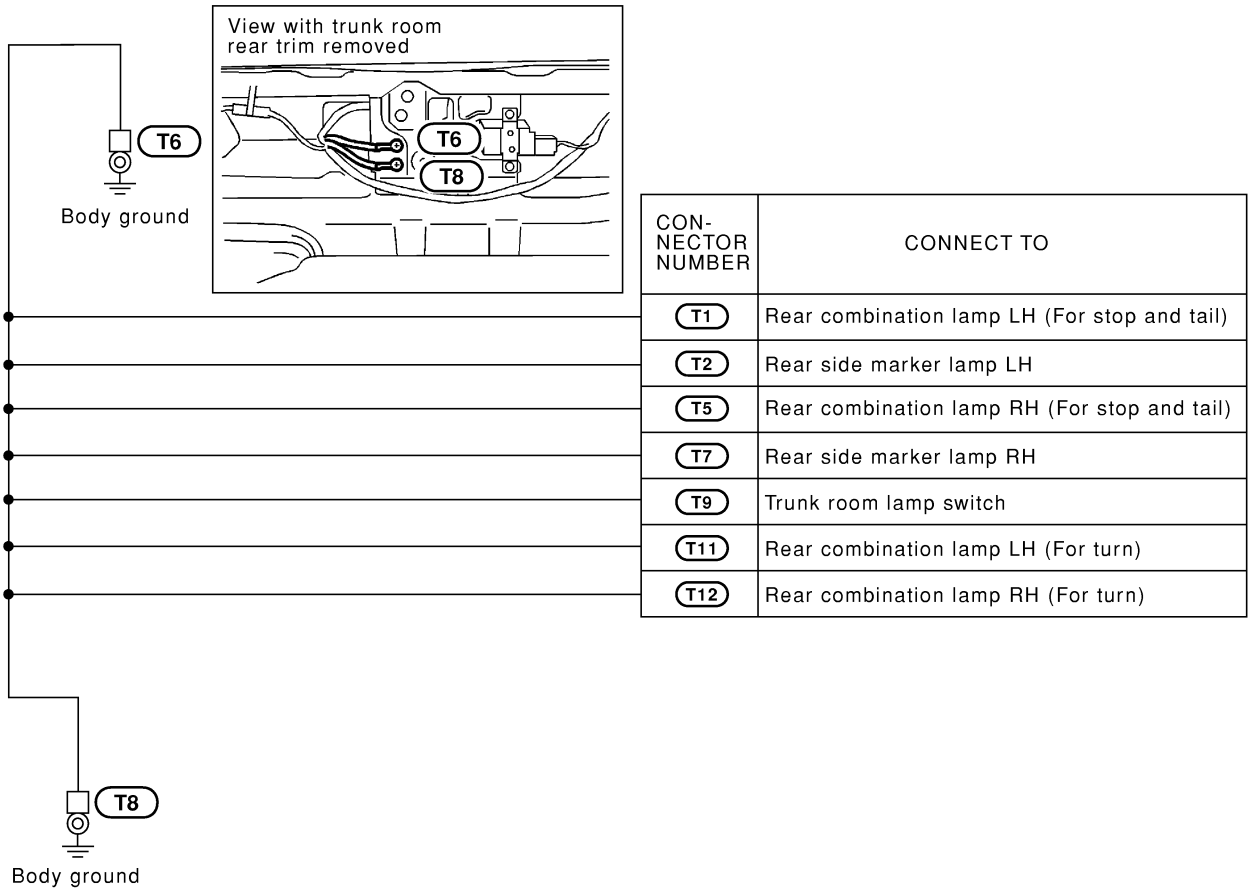
CONNECTOR NUMBER	CONNECT TO
B135	Shield wire (Air bag diagnosis sensor unit) (Terminal No. 39)
B135	Shield wire (Air bag diagnosis sensor unit) (Terminal No. 40)

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

MEL157L

TAIL HARNESS

NHEL0008S06

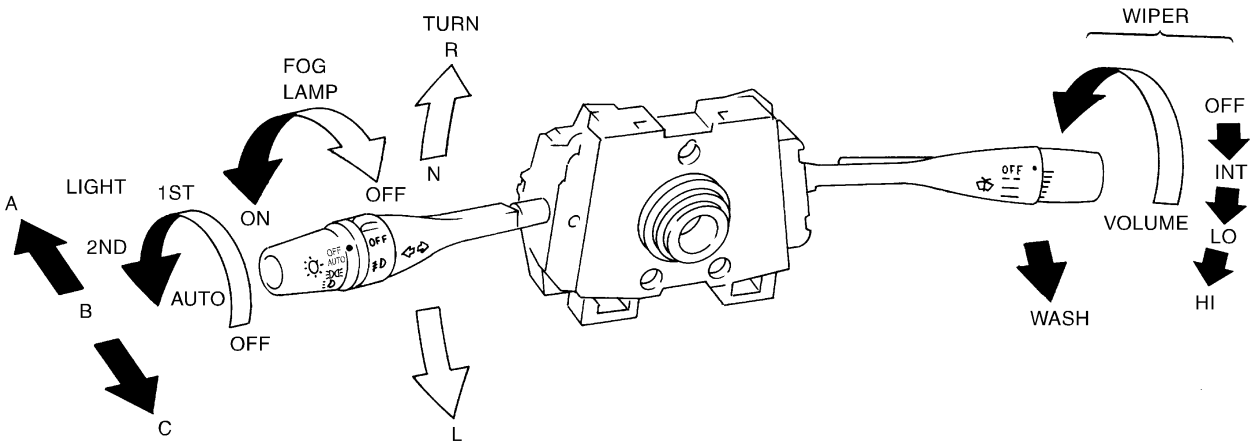


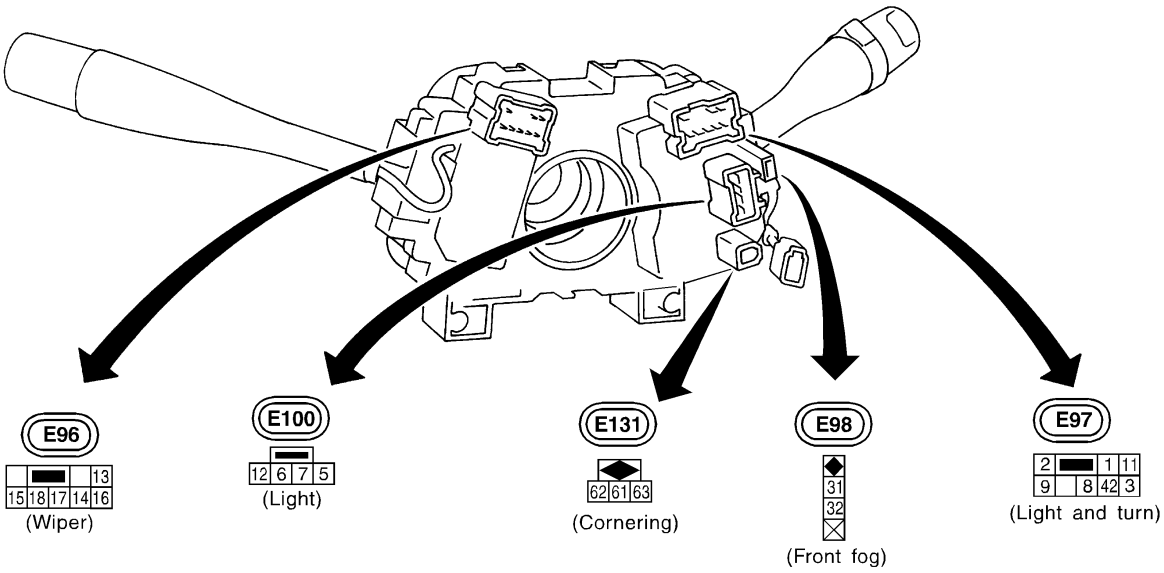
CON-NECTOR NUMBER	CONNECT TO
T1	Rear combination lamp LH (For stop and tail)
T2	Rear side marker lamp LH
T5	Rear combination lamp RH (For stop and tail)
T7	Rear side marker lamp RH
T9	Trunk room lamp switch
T11	Rear combination lamp LH (For turn)
T12	Rear combination lamp RH (For turn)

MEL620K

Check

NHEL0009





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

FRONT FOG LAMP SWITCH

	OFF	ON
31		○
32		○

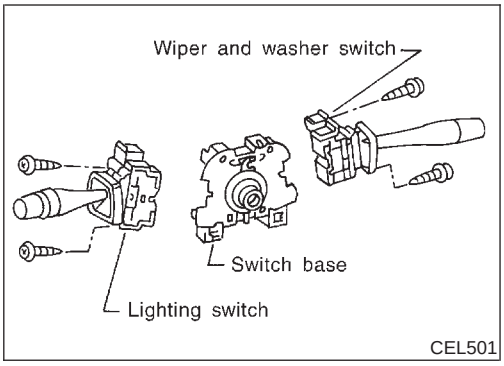
TURN SIGNAL LAMP SWITCH

	L	N	R
1	○		○
2			
3	○		

CORNERING LAMP SWITCH

	L	N	R
61	○		○
62			○
63	○		

MEL526K

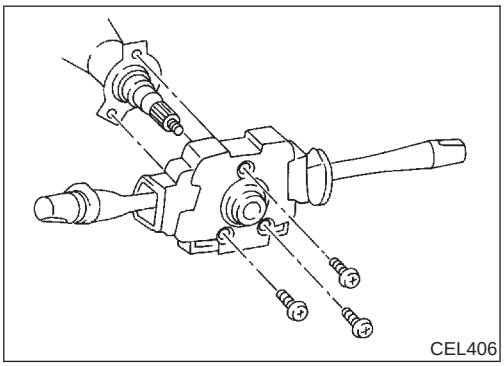


Replacement

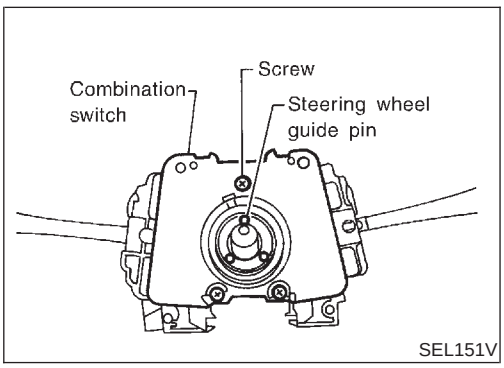
NHEL0010

For removal and installation of spiral cable, refer to RS-22, “Installation — Air Bag Module and Spiral Cable”.

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



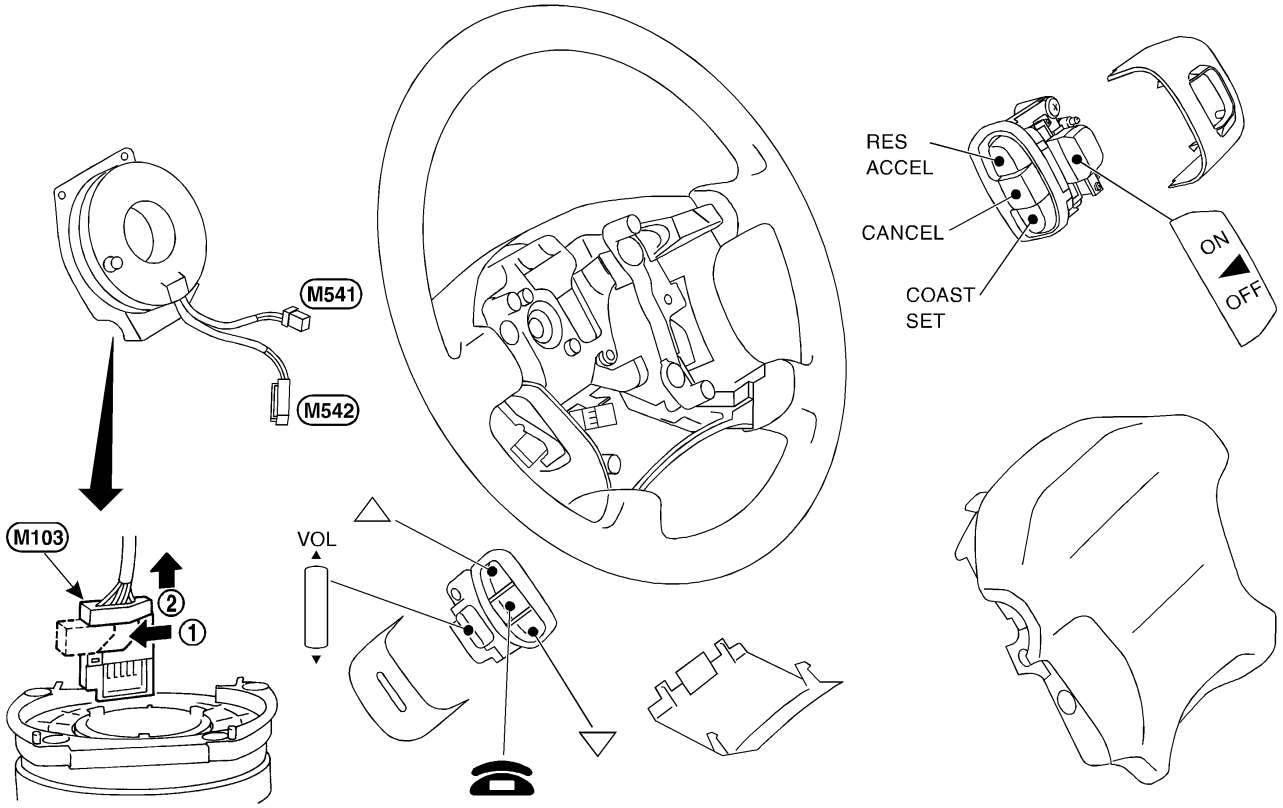
- To remove combination switch base, remove base attaching screw.

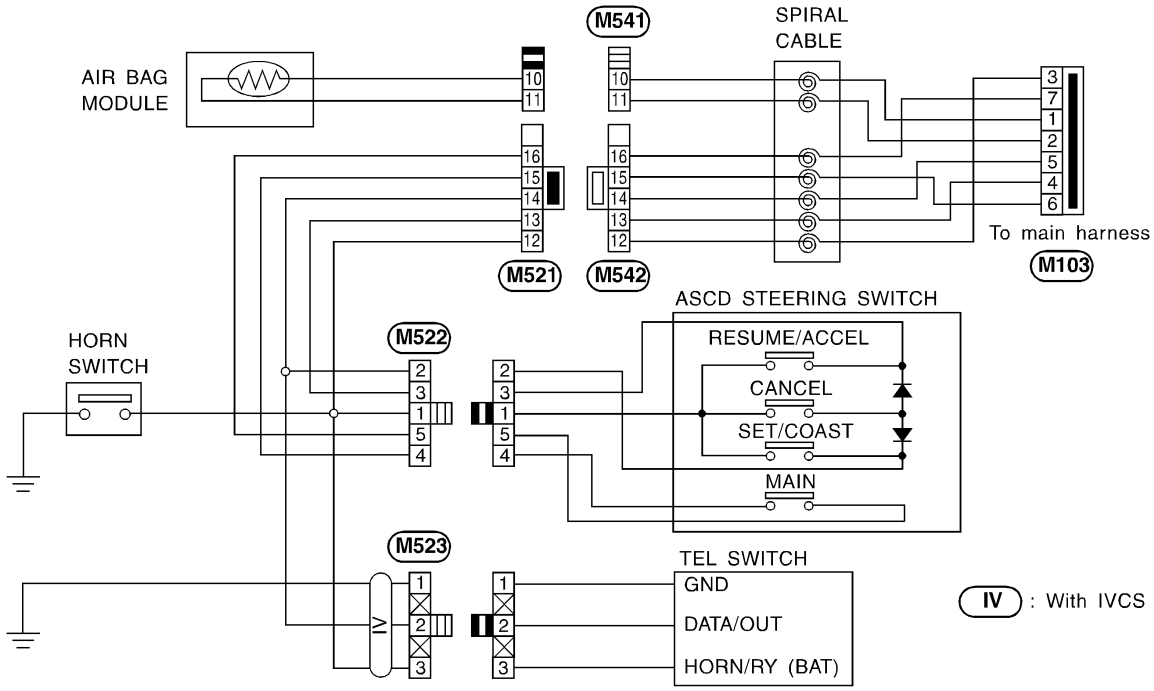


- Before installing the steering wheel, align the steering wheel guide pins with the screws which secure the combination switch as shown in the left figure.

Check

NHEL0011

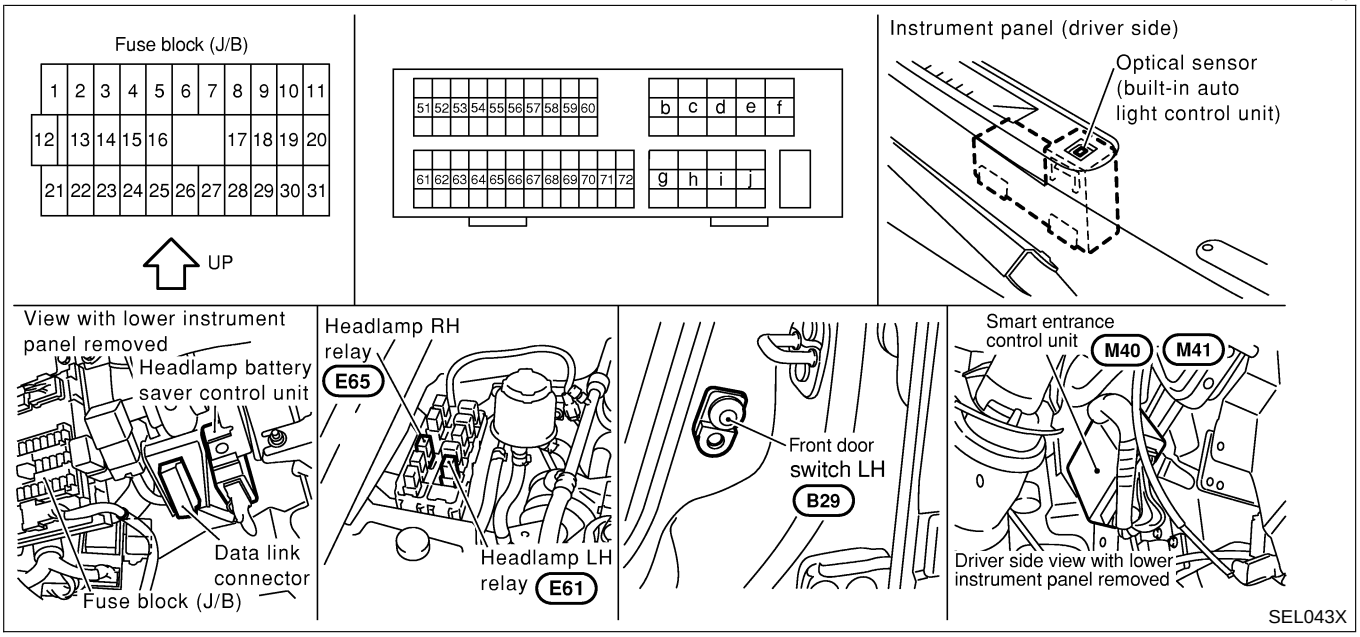




MEL527K

Component Parts and Harness Connector Location

NHEL0197



System Description

NHEL0198

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

OUTLINE

NHEL0198S01

Power is supplied at all times

- to headlamp LH relay terminals 1 and 3
- through 15A fuse (No. 68, located in the fuse and fusible link box), and
- to headlamp RH relay terminals 1 and 3
- through 15A fuse (No. 69, located in the fuse and fusible link box), and
- to headlamp battery saver control unit terminal 7
- through 10A fuse [No. 12, located in the fuse block (J/B)].

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

- to headlamp battery saver control unit terminal 1
- through 10A fuse [No. 30, located in the fuse block (J/B)], and
- to headlamp battery saver control unit terminal 10, and
- to smart entrance control unit terminal 33
- through 10A fuse [No. 10, located in the fuse block (J/B)].

Ground is supplied

- to headlamp battery saver control unit terminals 4 and 11
- through body grounds M9, M25 and M87.

Power Supply to Low Beam and High Beam

NHEL0198S0101

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

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

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

LOW BEAM OPERATION

NHEL0198S02

When the lighting switch is turned to the 2ND position, power is supplied

- from terminal 5 of each headlamp relay
- to terminal 3 of each headlamp

Ground is supplied

- to headlamp LH terminal 4
- through body grounds E11, E22 and E53, and
- to headlamp RH terminal 4
- through body grounds E11, E22 and E53.

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

HIGH BEAM OPERATION/FLASH-TO-PASS OPERATION

NHEL0198S03

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

Ground is supplied

- to headlamp LH terminal 2
- through lighting switch terminals 6 and 5
- through body grounds E11, E22 and E53, and
- to headlamp RH terminal 2
- to combination meter terminal 27 for the HIGH BEAM indicator
- through lighting switch terminals 9 and 8, and
- through body grounds E11, E22 and E53, and
- to headlamp RH terminal 4
- through body grounds E11, E22 and E53.

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

BATTERY SAVER CONTROL

NHEL0198S04

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

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

Then headlamps illuminate again.

AUTO LIGHT OPERATION

NHEL0198S06

The auto light control unit has an optical sensor inside it that detects outside brightness.
When lighting switch is in "AUTO" position, ground is supplied

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

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

- to headlamp relay LH and RH terminals 2
- through battery saver control unit
- from auto light control unit terminal 6, and
- to tail lamp relay terminal 2
- through battery saver control unit
- from auto light control unit terminal 7.

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

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

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

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

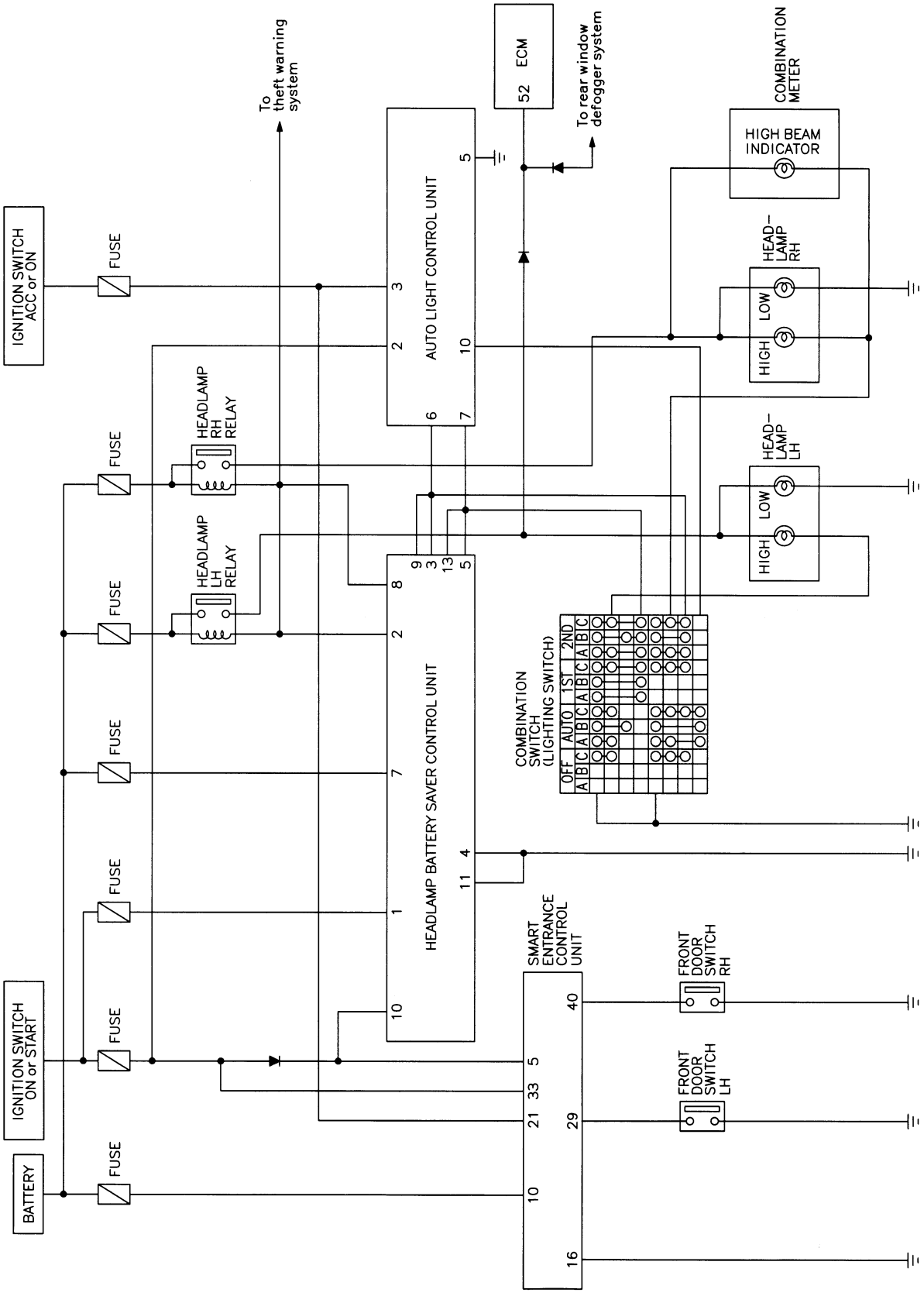
THEFT WARNING SYSTEM

NHEL0198S05

The theft warning system will flash the low beams if the system is triggered. Refer to "THEFT WARNING SYSTEM" (EL-359).

Schematic

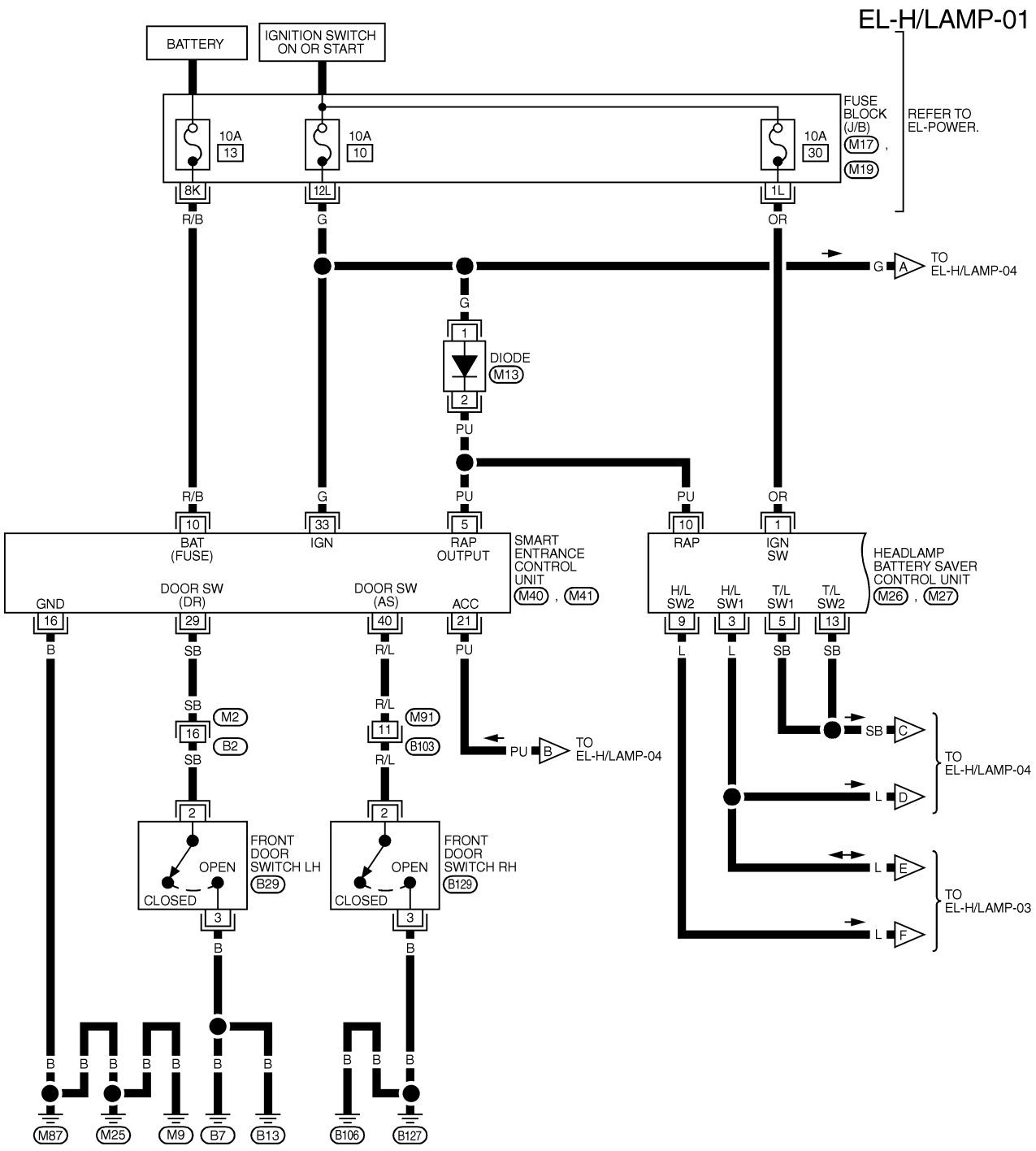
NHEL0199

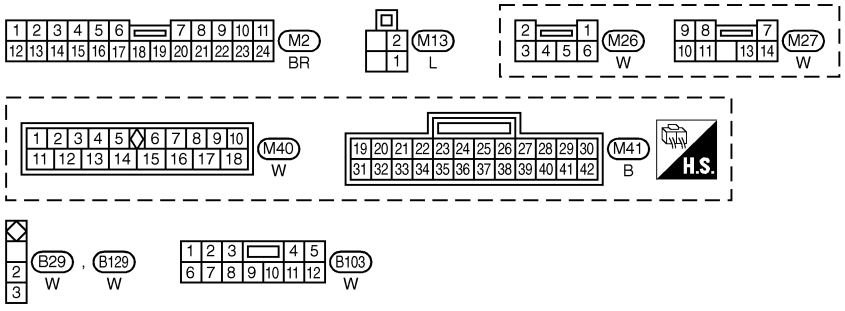


MEL158L

Wiring Diagram — H/LAMP —

NHEL0013

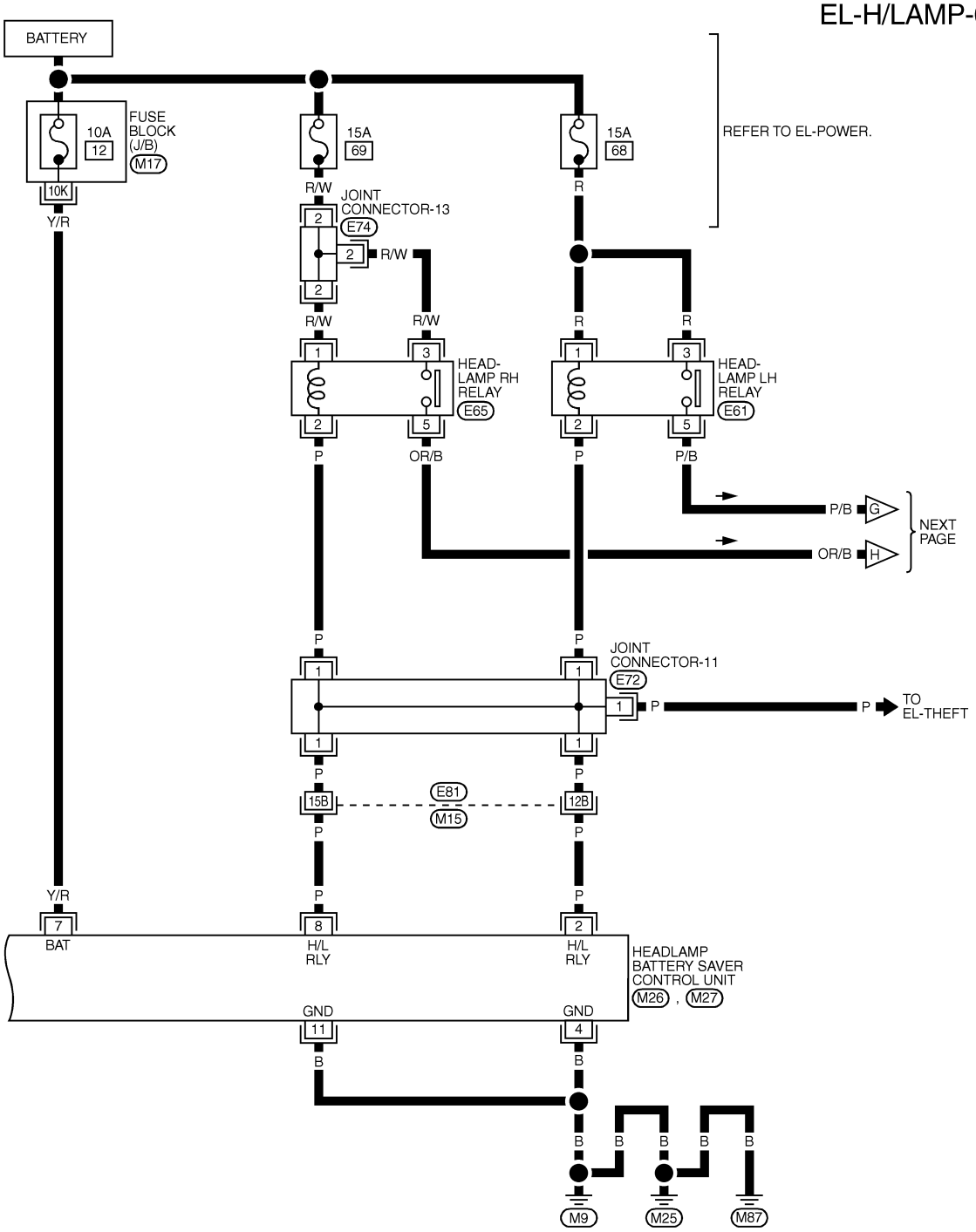


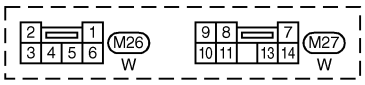


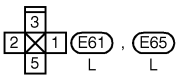
REFER TO THE FOLLOWING.
M17 , M19 -FUSE BLOCK-JUNCTION BOX (J/B)

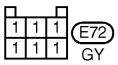
MEL158M

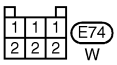
EL-H/LAMP-02







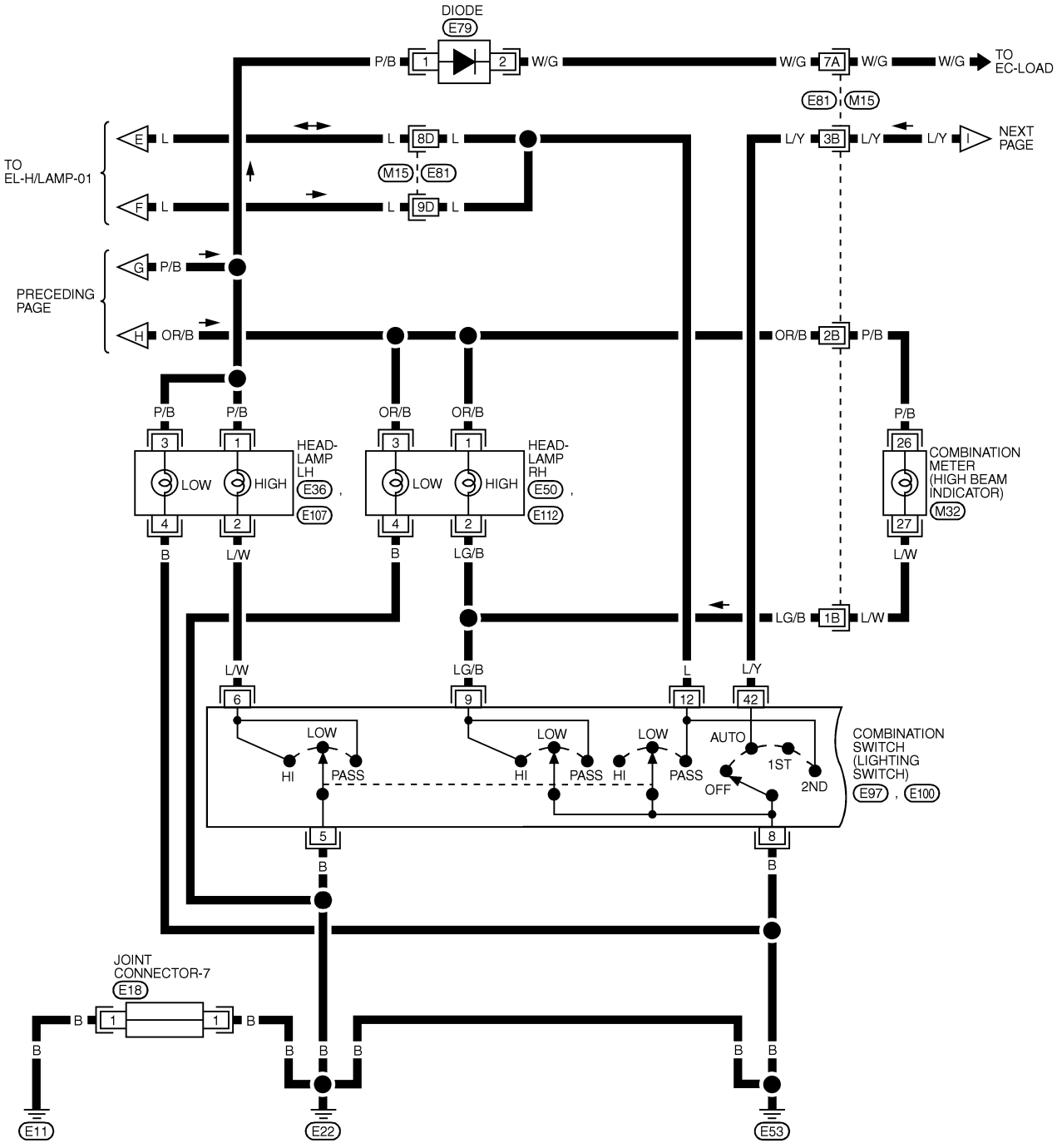


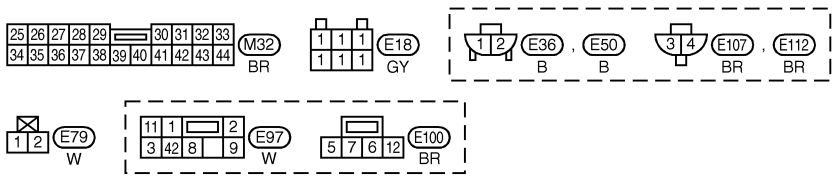


REFER TO THE FOLLOWING.
M15 -SUPER MULTIPLE JUNCTION (SMJ)
M17 -FUSE BLOCK-JUNCTION BOX (J/B)

MEL160L

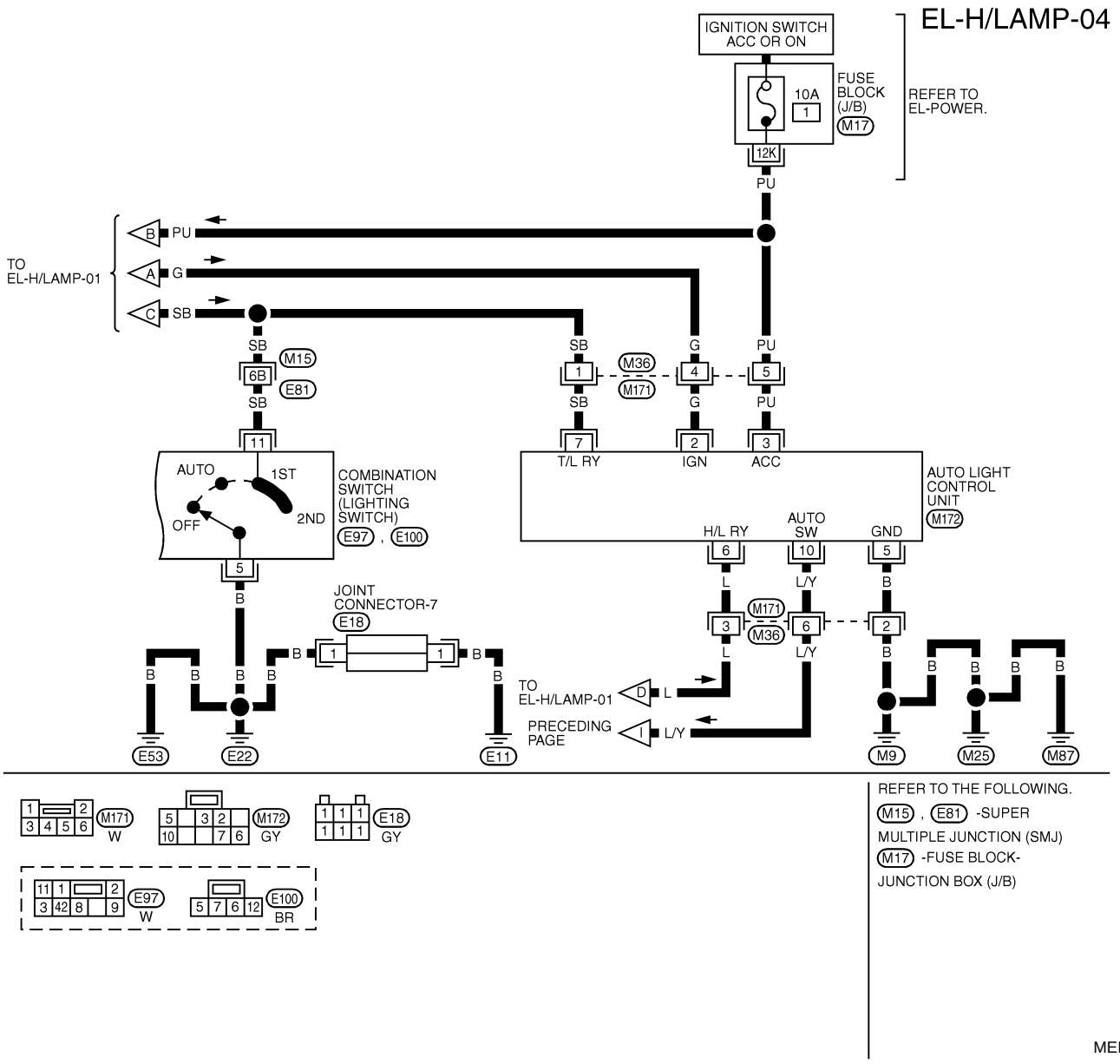
EL-H/LAMP-03





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

MEL161L

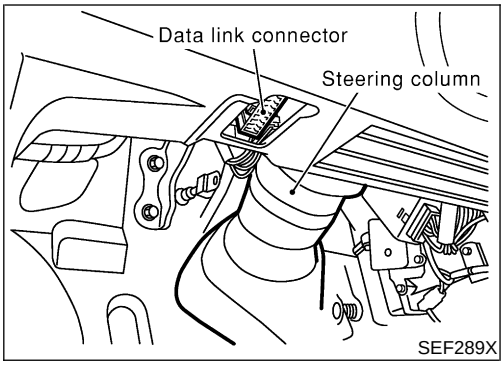


MEL407K

SMART ENTRANCE CONTROL UNIT TERMINALS AND REFERENCE VALUE BETWEEN EACH TERMINAL AND GROUND

TERMINAL	WIRE COLOR	ITEM	CONDITION	DATA (DC)
5	PU	HEADLAMP BATTERY SAVER CONTROL UNIT	WHEN HEADLAMP BATTERY SAVER TIMER IS OPERATED	12V
10	R/B	POWER SOURCE (FUSE)	–	12V
16	B	GROUND	–	–
29	SB	DRIVER DOOR SWITCH	OFF (CLOSED)→ ON (OPEN)	5V→0V
33	G	IGN ON	IGNITION KEY IS IN "ON" POSITION	12V
40	R/L	PASSENGER DOOR SWITCH	OFF (CLOSED)→ ON (OPEN)	5V→0V

SEL035X



SEF289X

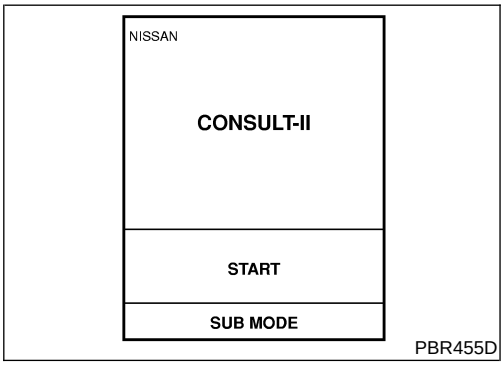
CONSULT-II Inspection Procedure

NHEL0200

“RETAINED PWR”

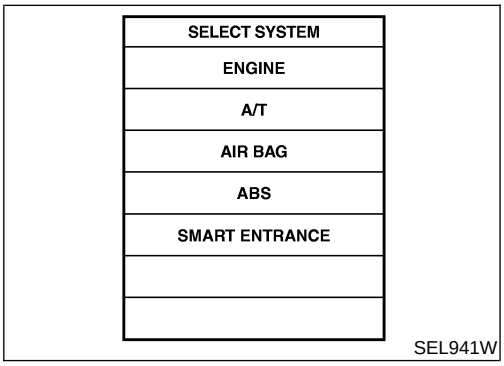
NHEL0200S01

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



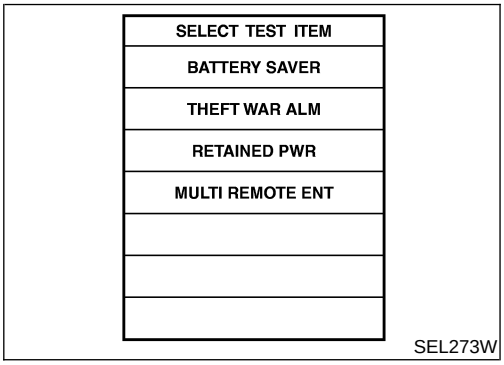
PBR455D

3. Turn ignition switch “ON”.
4. Touch “START”.



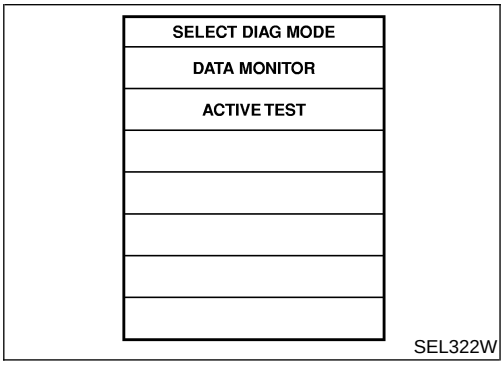
SEL941W

5. Touch “SMART ENTRANCE”.



SEL273W

6. Touch “RETAINED PWR”.



SEL322W

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

CONSULT-II Application Items

NHEL0201

"RETAINED PWR" Data Monitor

NHEL0201S01

NHEL0201S0101

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

NHEL0201S0102

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 "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.**

Trouble Diagnoses

NHEL0202

Symptom	Possible cause	Repair order
Neither headlamp operates.	1. 10A fuse 2. Lighting switch 3. Headlamp battery saver control unit	1. Check 10A fuse [No. 12, located in fuse block (J/B)]. Verify battery positive voltage is present at terminal 7 of headlamp battery saver control unit. 2. Check Lighting switch. 3. Check headlamp battery saver control unit.
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. Lighting switch 5. Headlamp battery saver control unit	1. Check 15A fuse (No. 68, 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 harness between headlamp LH relay and headlamp LH. Check harness between headlamp LH relay and headlamp battery saver control unit. 4. Check lighting switch. 5. Check headlamp battery saver control unit.
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. Lighting switch 5. Headlamp battery saver control unit	1. Check 15A fuse (No. 69, 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 harness between headlamp RH relay and headlamp RH. Check harness between headlamp RH relay and headlamp battery saver control unit. 4. Check lighting switch. 5. Check headlamp battery saver control unit.
LH high beam does not operate, but LH low beam does operate.	1. Bulb 2. Open in LH high beams circuit 3. Lighting switch	1. Check bulb. 2. Check the harness between lighting switch and LH headlamp for an open circuit. 3. Check lighting switch.
LH low beam does not operate, but LH high beam does operate.	1. Bulb 2. Open in LH low beams circuit	1. Check bulb. 2. Check harness between headlamp LH terminal 4 and ground.

Trouble Diagnoses (Cont'd)

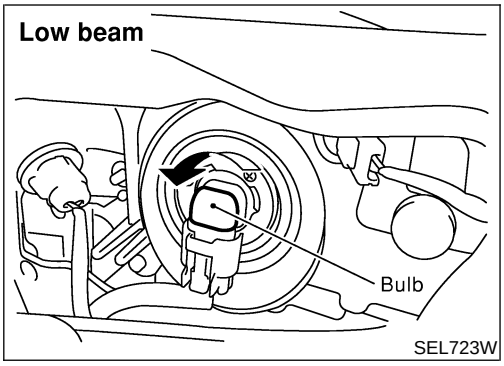
Symptom	Possible cause	Repair order
RH high beam does not operate, but RH low beam does operate.	1. Bulb 2. Open in RH high beams circuit 3. Lighting switch	1. Check bulb. 2. Check the harness between lighting switch and RH headlamp for an open circuit. 3. Check lighting switch.
RH low beam does not operate, but RH high beam does operate.	1. Bulb 2. Open in RH low beams circuit	1. Check bulb. 2. Check harness between headlamp RH terminal 4 and ground.
High beam indicator does not work.	1. Bulb 2. Open in high beam circuit	1. Check bulb in combination meter. 2. Check the harness between headlamp RH relay and combination meter for an open circuit. Check the harness between combination meter and combination switch for an open circuit.
Battery saver control does not operate properly.	1. RAP signal circuit 2. Door switch LH or RH circuit 3. Lighting switch circuit 4. Headlamp battery saver control unit 5. Smart entrance control unit	1. Check RAP signal. a. (With CONSULT-II) Check RAP signal with CONSULT-II. Use "ACTIVE TEST" mode, "RETAINED PWR" in "SMART ENTRANCE". (Refer to EL-42.) If NG, go to the step b. below. b. Verify 12 positive voltage from smart entrance control unit is present at terminal 10 of battery saver control unit: ● 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 LH or RH door switch for open or short circuit. Check LH or RH door switch ground circuit. Check LH or RH door switch. 3. Check harness between headlamp battery saver control unit terminals 5 or 13 and lighting switch terminal 11 for open or short circuit. Check harness between lighting switch terminal 5 and ground. Check lighting switch. 4. Check headlamp battery saver control unit. 5. Check smart entrance control unit. (EL-396)

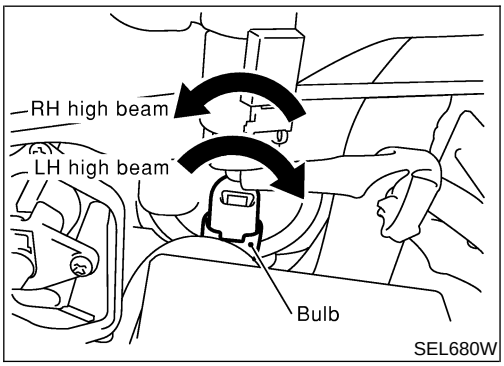
BATTERY SAVER CONTROL UNIT INSPECTION TABLE

NHEL0202S01

Terminal No.	Wire color	Item	Condition			Voltage (Approximate value)
1	OR	Ignition ON power supply	Ignition switch	OFF or ACC		Less than 1V
				ON or START		Battery voltage
2	P	Headlamp LH relay	Ignition switch (with lighting switch except OFF or 1ST)	OFF or ACC	More than 45 seconds after ignition switch is turned OFF or ACC	Battery voltage
					Within 45 seconds after ignition switch is turned OFF or ACC	Less than 1V
				ON or START		Less than 1V
			Headlamps illuminate by auto light control.			Less than 1V
3	L	Headlamp switch	Lighting switch	Except PASS or 2ND		Battery voltage
				PASS or 2ND		Less than 1V
			Headlamps illuminate by auto light control.			Less than 1V

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





Bulb Replacement

NHEL0015

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

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

1. Disconnect the battery cable.
2. Disconnect the harness connector from the back side of the bulb.
3. Turn the bulb clockwise (LH high beam) or counterclockwise (LH, RH low beam and RH high beam)
4. Remove the headlamp bulb carefully. Do not shake or rotate the bulb when removing it.
5. Install in the reverse order of removal.

CAUTION:

Do not leave headlamp reflector without bulb for a long period of time. Dust, moisture, smoke, etc. entering headlamp body may affect the performance of the headlamp. Remove headlamp bulb from the headlamp reflector just before a replacement bulb is installed.

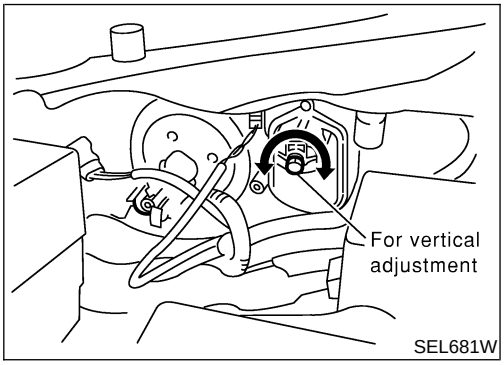
Aiming Adjustment

NHEL0016

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

Before performing aiming adjustment, check the following.

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

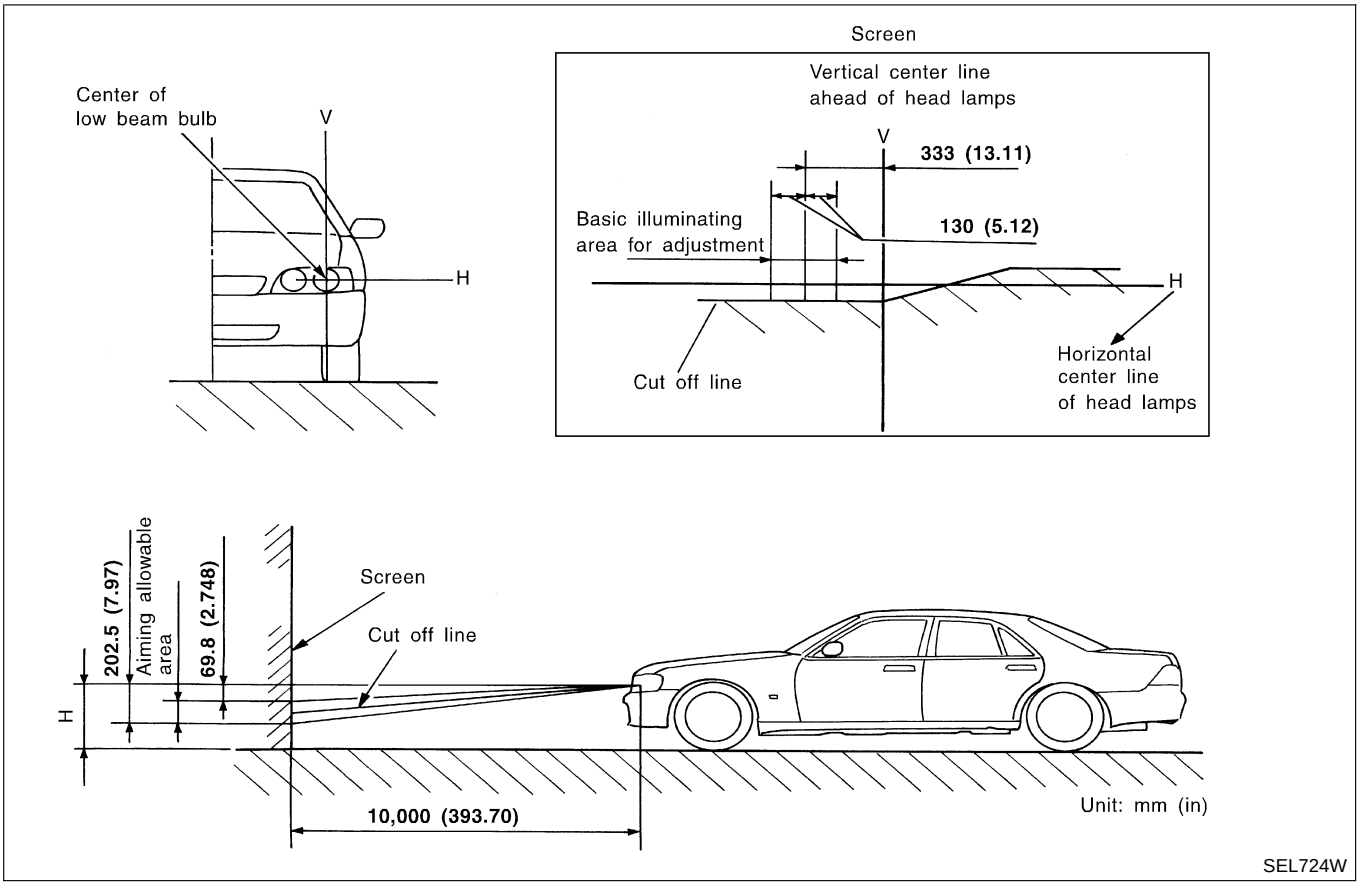


LOW BEAM

NHEL0016S02

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

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

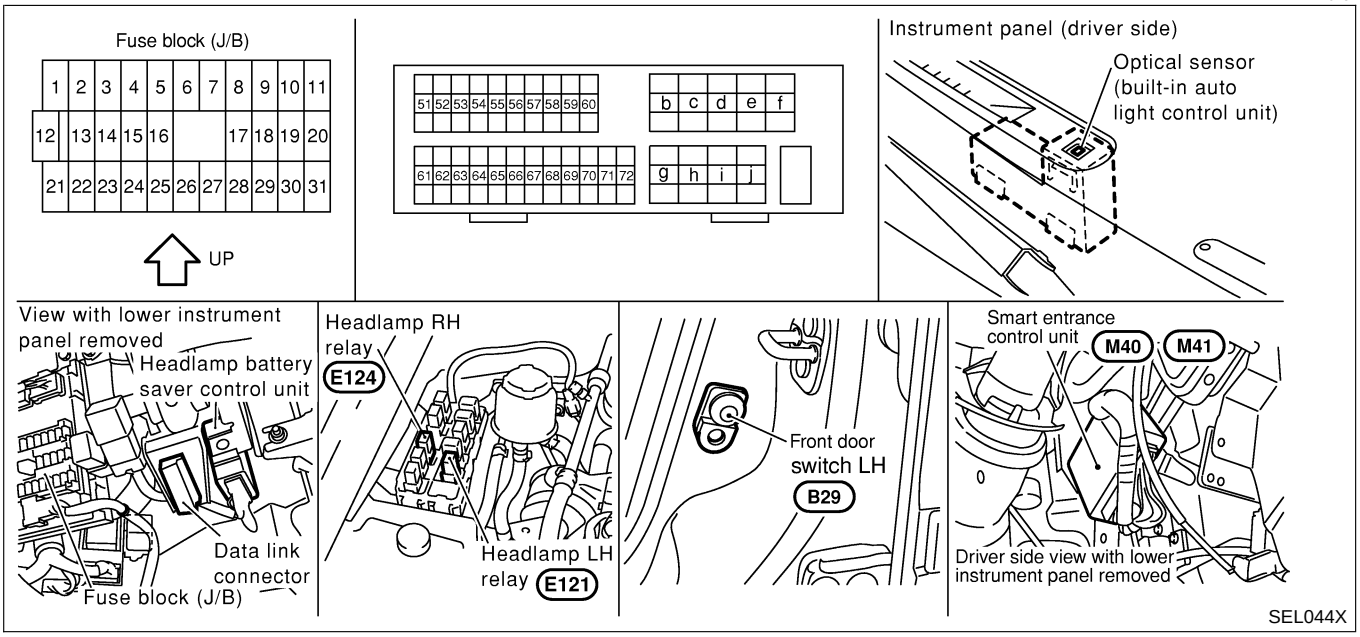


If the vehicle front body has been repaired and/or the headlamp assembly has been replaced, check aiming. Use the aiming chart shown in the figure.

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

Component Parts and Harness Connector Location

NHEL0252



System Description

NHEL0253

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

OUTLINE

NHEL0253S01

Power is supplied at all times

- to headlamp LH relay terminals 1 and 6
- through 20A fuse (No. 54, located in the fuse and fusible link box), and
- to headlamp LH relay terminal 3
- through 15A fuse (No. 68, located in the fuse and fusible link box), and
- to headlamp RH relay terminals 1 and 6
- through 20A fuse (No. 55, located in the fuse and fusible link box), and
- to headlamp RH relay terminal 3
- through 15A fuse (No. 69, located in the fuse and fusible link box), and
- to headlamp battery saver control unit terminal 7
- through 10A fuse [No. 12, located in the fuse block (J/B)].

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

- to headlamp battery saver control unit terminal 1
- through 10A fuse [No. 30, located in the fuse block (J/B)], and
- to headlamp battery saver control unit terminal 10, and
- to smart entrance control unit terminal 33
- through 10A fuse [No. 10, located in the fuse block (J/B)].

Ground is supplied

- to headlamp battery saver control unit terminals 4 and 11
- through body grounds M9, M25 and M87.

Power Supply to Low Beam and High Beam

NHEL0253S0101

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

- to headlamp LH relay terminal 2 from headlamp battery saver control unit terminal 2
- through headlamp battery saver control unit terminal 3,
- from lighting switch terminal 12, and

- to headlamp RH relay terminal 2 from headlamp battery saver control unit terminal 8
- through headlamp battery saver control unit terminal 9, and
- 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

NHEL0253S02

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

- from terminal 7 of each headlamp relay
- to terminal 3 of each headlamp

Ground is supplied

- to headlamp LH terminal 4
- through body grounds E11, E22 and E53, and
- to headlamp RH terminal 4
- through body grounds E11, E22 and E53.

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

HIGH BEAM OPERATION/FLASH-TO-PASS OPERATION

NHEL0253S03

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

Ground is supplied

- to headlamp LH terminal 2
- through lighting switch terminals 6 and 5
- through body grounds E11, E22 and E53, and
- to headlamp RH terminal 2
- to combination meter terminal 27 for the HIGH BEAM indicator
- through lighting switch terminals 9 and 8
- through body grounds E11, E22 and E53.

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

BATTERY SAVER CONTROL

NHEL0253S04

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

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

Then headlamps illuminate again.

AUTO LIGHT OPERATION

NHEL0253S05

The auto light control unit has an optical sensor inside it that detects outside brightness.
When lighting switch is in "AUTO" position, ground is supplied

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

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

- to headlamp relay LH and RH terminals 2
- through battery saver control unit
- from auto light control unit terminal 6, and
- to tail lamp relay terminal 2
- through battery saver control unit
- from auto light control unit terminal 7.

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

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

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

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

THEFT WARNING SYSTEM

NHEL0253S06

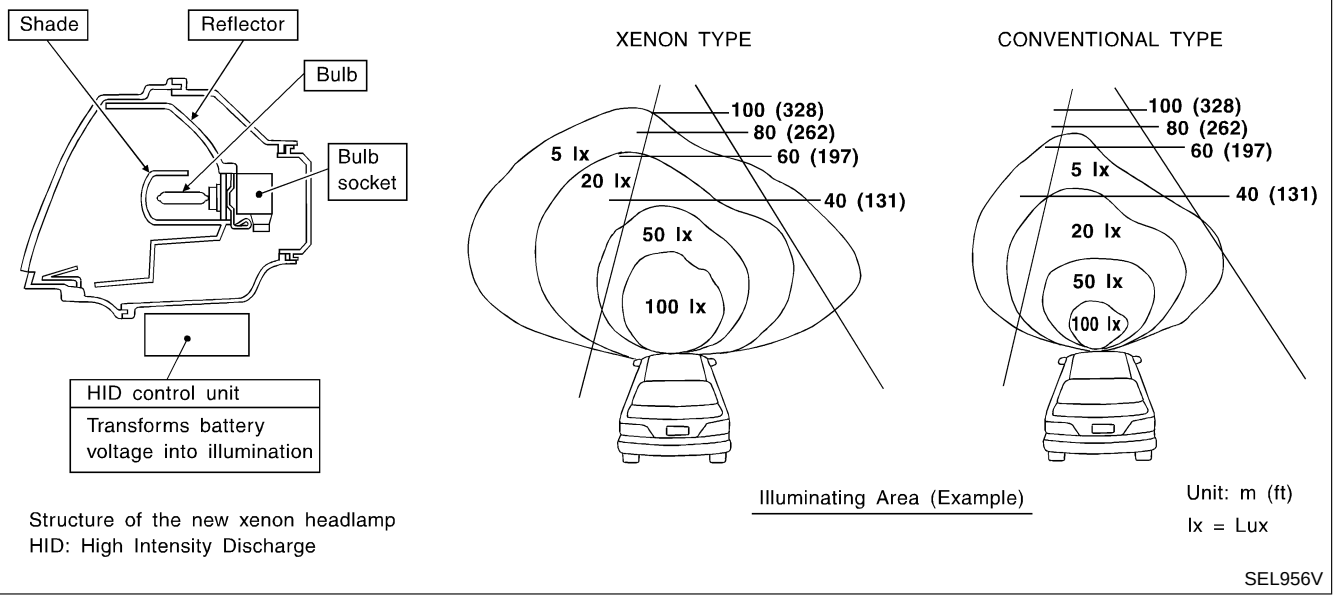
The theft warning system will flash the low beams if the system is triggered. Refer to "THEFT WARNING SYSTEM" (EL-359).

XENON HEADLAMP

=NHEL0253S07

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

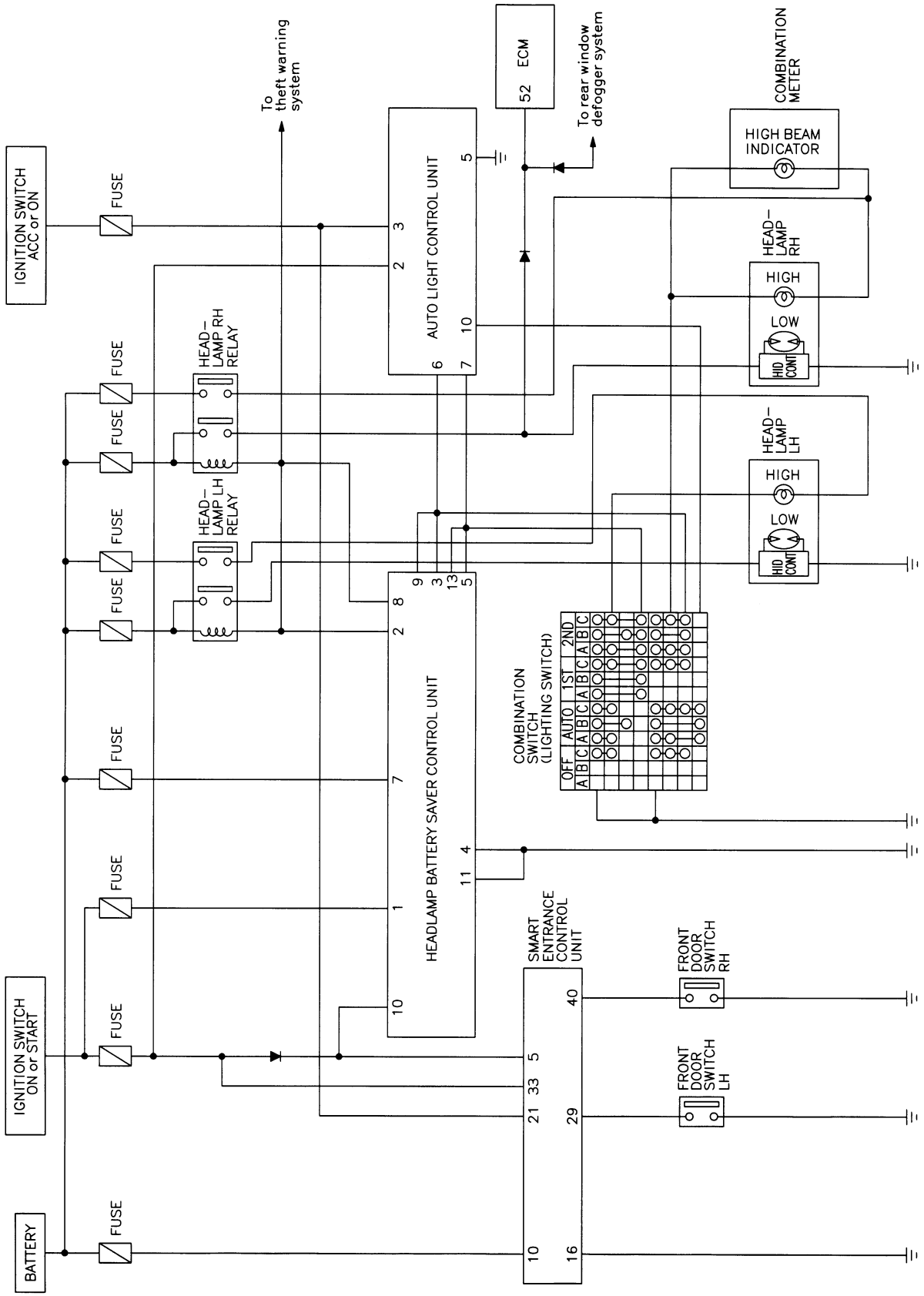
- The light produced by the headlamps is white color approximating sunlight that is easy on the eyes.
- Light output is nearly double that of halogen headlamps, affording increased area of illumination.
- The light features a high relative spectral distribution at wavelengths to the human eye is most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



Structure of the new xenon headlamp
HID: High Intensity Discharge

Schematic

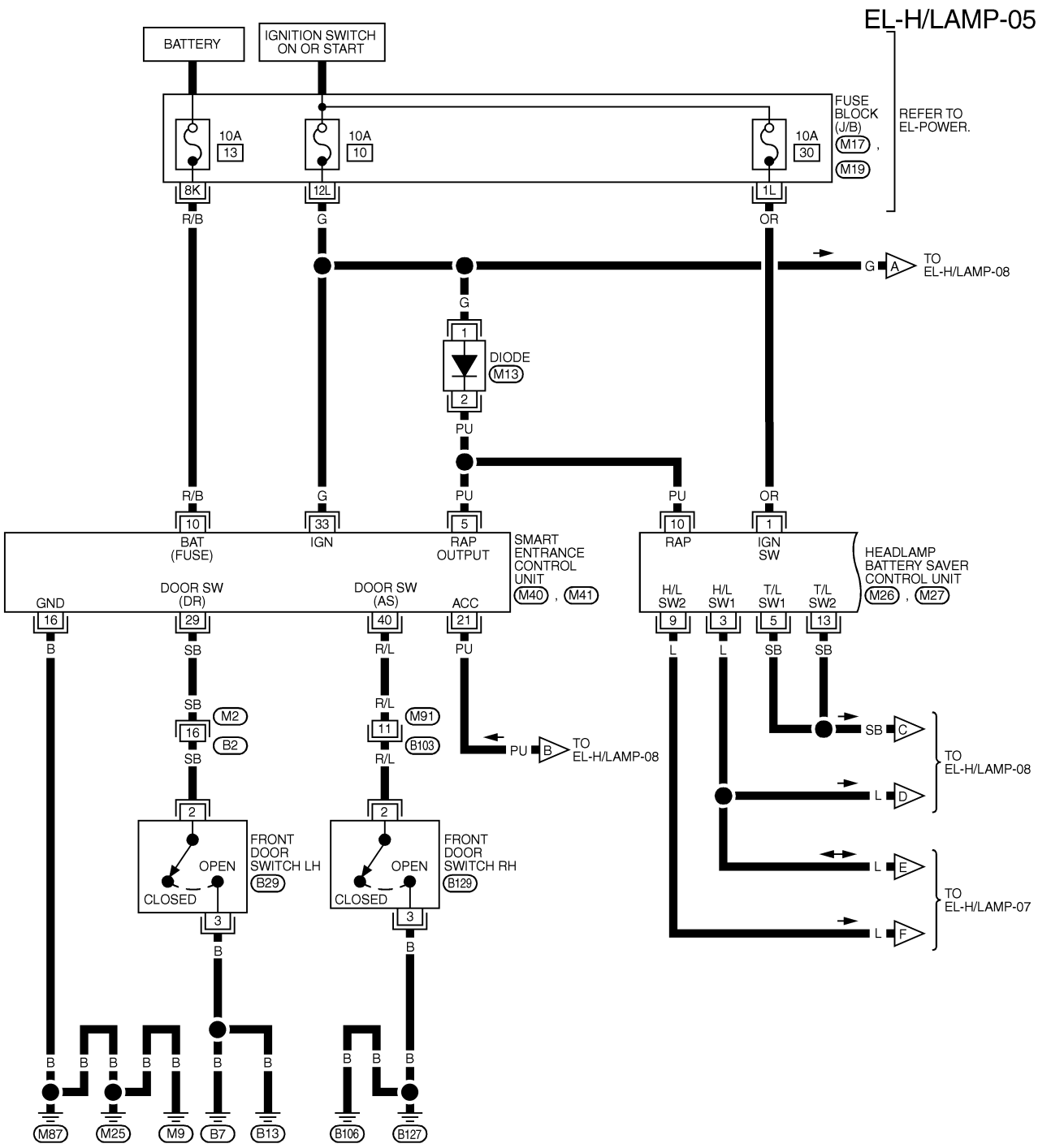
NHEL0254

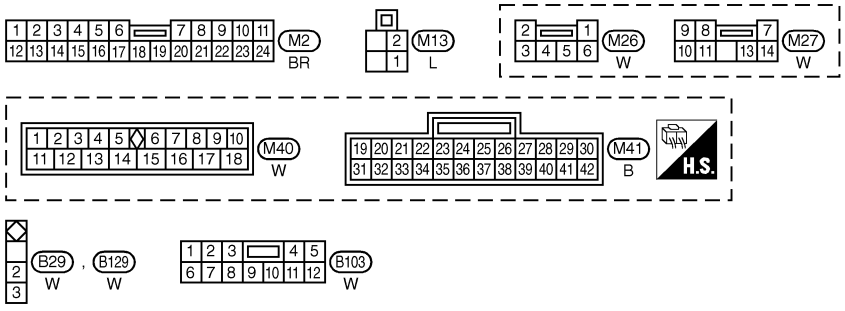


MEL163L

Wiring Diagram — H/LAMP —

NHEL0255

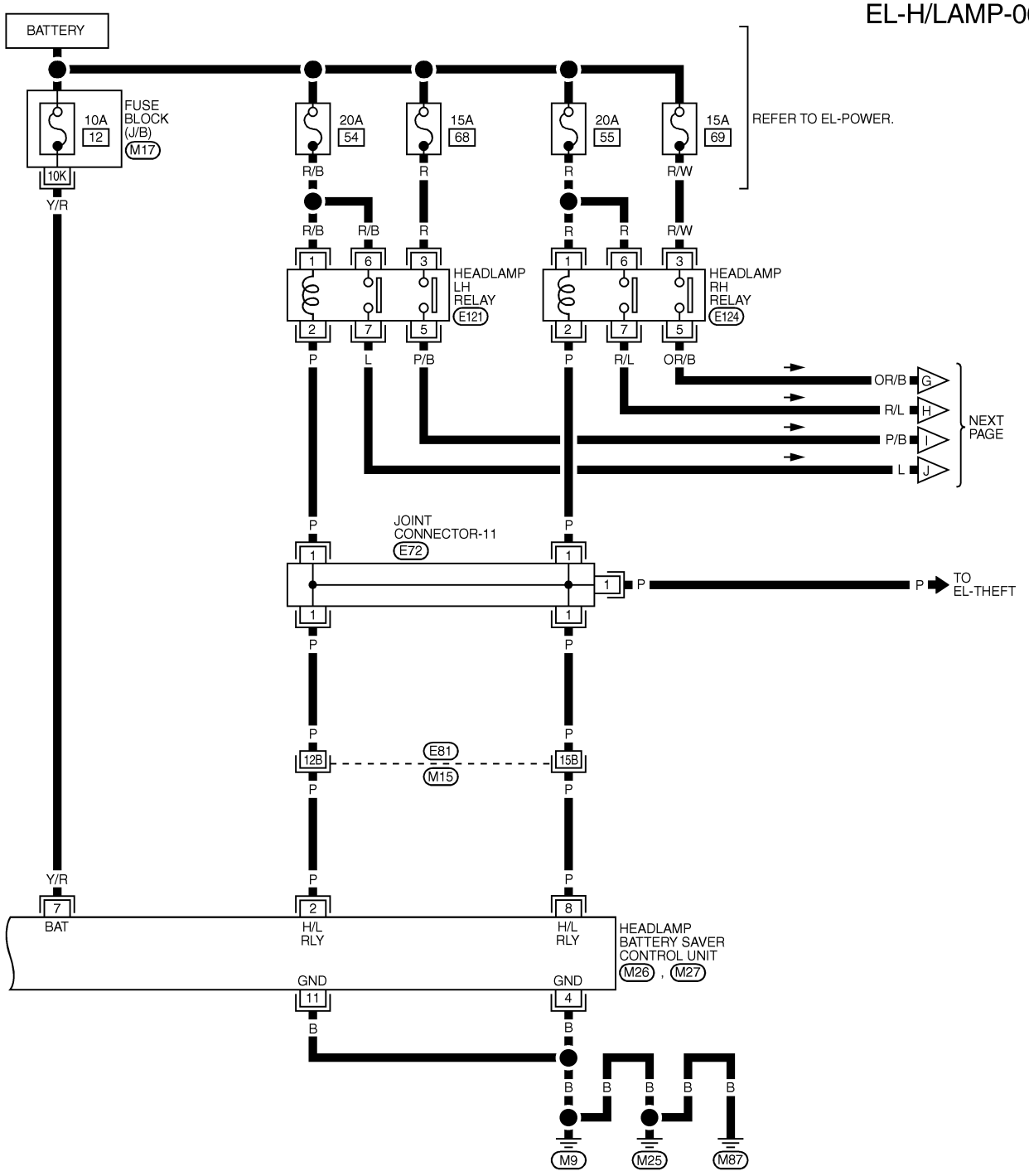


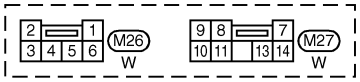


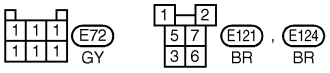
REFER TO THE FOLLOWING.
M17 , M19 -FUSE BLOCK-JUNCTION BOX (J/B)

MEL159M

EL-H/LAMP-06



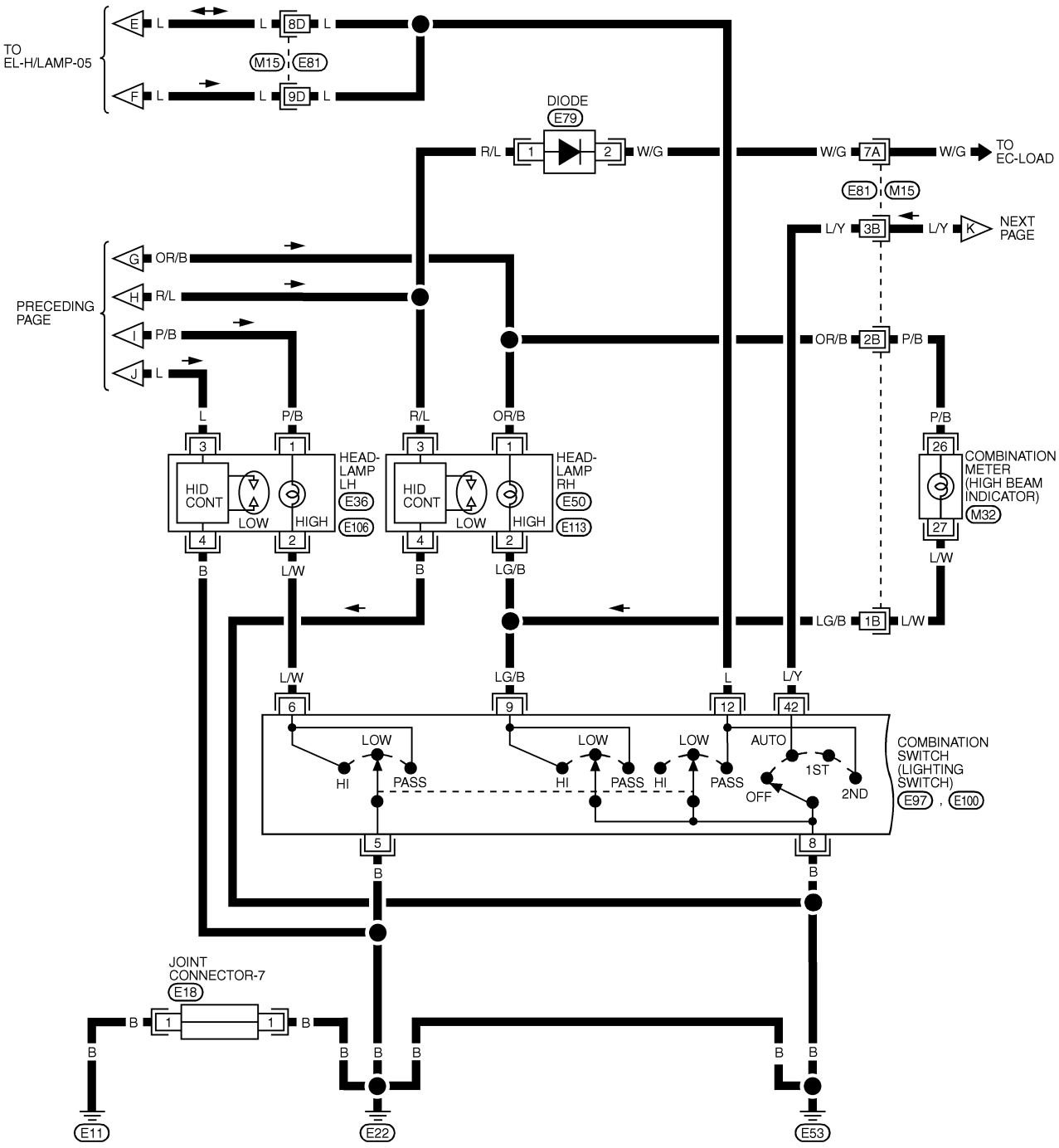


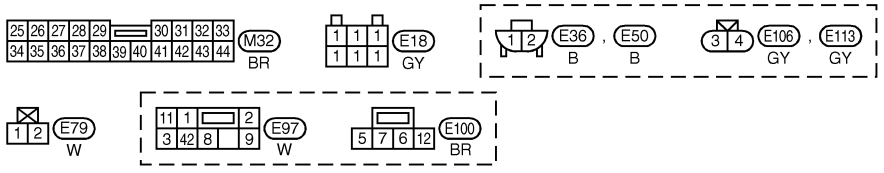


REFER TO THE FOLLOWING.
M15 -SUPER MULTIPLE JUNCTION (SMJ)
M17 -FUSE BLOCK-JUNCTION BOX (J/B)

MEL165L

EL-H/LAMP-07

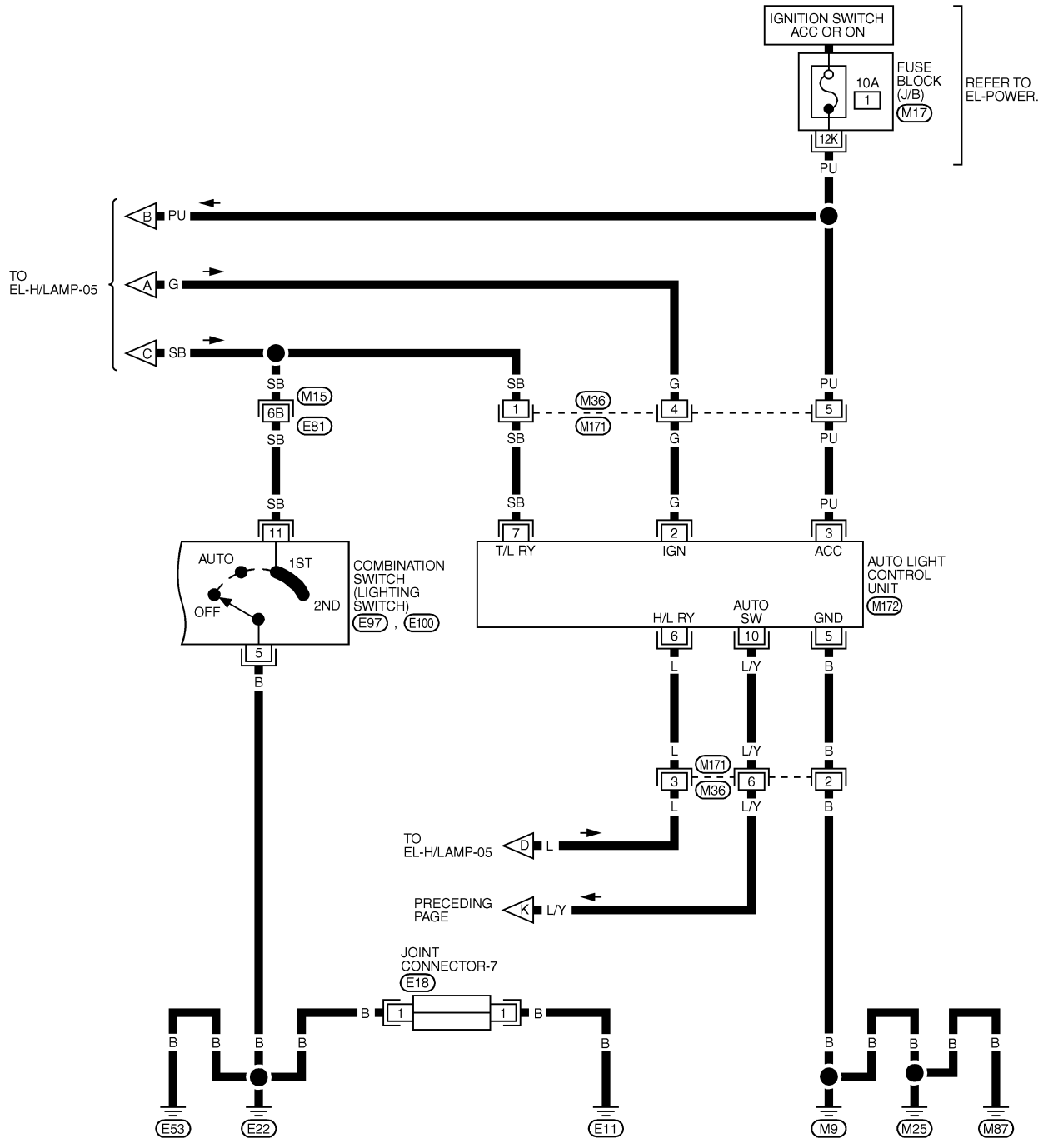


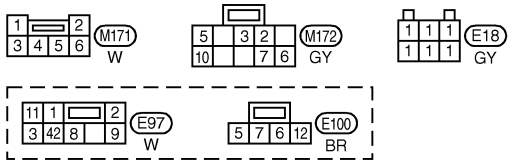


REFER TO THE FOLLOWING.
M15 -SUPER MULTIPLE JUNCTION (SMJ)

MEL166L

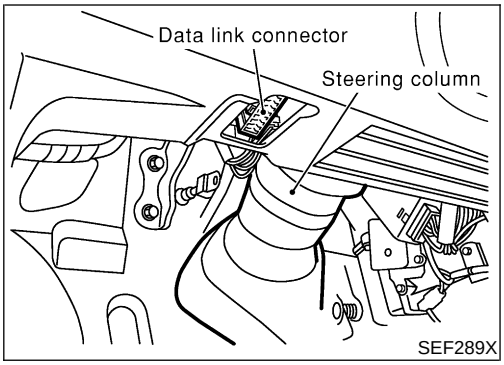
EL-H/LAMP-08





REFER TO THE FOLLOWING.
M15 , E81 -SUPER MULTIPLE JUNCTION (SMJ)
M17 -FUSE BLOCK-JUNCTION BOX (J/B)

MEL412K



SEF289X

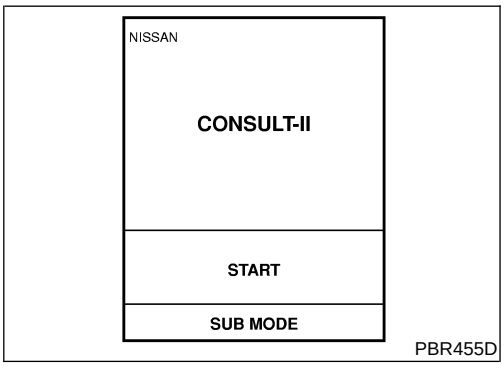
CONSULT-II Inspection Procedure

NHEL0256

“RETAINED PWR”

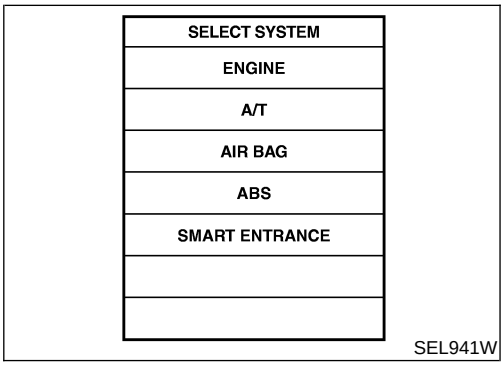
NHEL0256S01

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



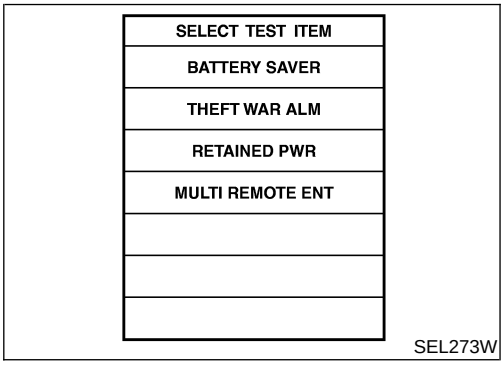
PBR455D

3. Turn ignition switch “ON”.
4. Touch “START”.



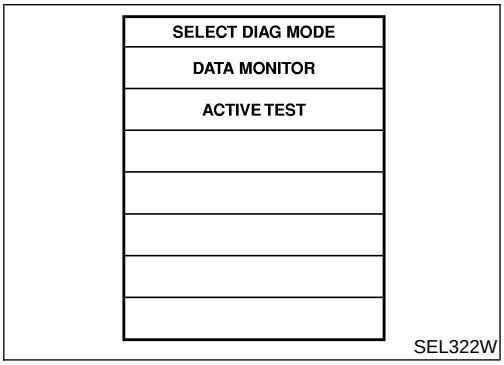
SEL941W

5. Touch “SMART ENTRANCE”.



SEL273W

6. Touch “RETAINED PWR”.



SEL322W

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

CONSULT-II Application Items

NHEL0257

"RETAINED PWR"
Data Monitor

NHEL0257S01

NHEL0257S0101

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

NHEL0257S0102

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 "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.**

Trouble Diagnoses

NHEL0258

WARNING:

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

CAUTION:

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

Symptom	Possible cause	Repair order
Neither headlamp operates.	1. 10A fuse 2. Lighting switch 3. Headlamp battery saver control unit	1. Check 10A fuse [No. 12, located in fuse block (J/B)]. Verify battery positive voltage is present at terminal 7 of headlamp battery saver control unit. 2. Check Lighting switch. 3. Check headlamp battery saver control unit.
LH headlamp (low and high beam) does not operate, but RH headlamp (low and high beam) does operate.	1. 20A fuse 2. Headlamp LH relay 3. Headlamp LH relay circuit 4. Headlamp battery saver control unit	1. Check 20A fuse (No. 54, located in fusible link and fuse box). Verify battery positive voltage is present at terminals 1 and 6 of headlamp LH relay. 2. Check headlamp LH relay. 3. Check harness between headlamp LH relay and headlamp battery saver control unit. 4. Check headlamp battery saver control unit.

Symptom	Possible cause	Repair order
RH headlamp (low and high beam) does not operate, but LH headlamp (low and high beam) does operate.	1. 20A fuse 2. Headlamp RH relay 3. Headlamp RH relay circuit 4. Headlamp battery saver control unit	1. Check 20A fuse (No. 55, located in fusible link and fuse box). Verify battery positive voltage is present at terminals 1 and 6 of headlamp RH relay. 2. Check headlamp RH relay. 3. Check harness between headlamp RH relay and headlamp battery saver control unit. 4. Check headlamp battery saver control unit.
LH high beam does not operate, but LH low beam operates.	1. Bulb 2. 15A fuse 3. Headlamp LH relay 4. Open in the LH high beams circuit 5. Lighting switch 6. Lighting switch ground circuit	1. Check bulb. 2. Check 15A fuse (No. 68, located in fusible link and fuse box). Verify battery positive voltage is present at terminal 3 of headlamp LH relay. 3. Check headlamp LH relay. 4. Check harness between headlamp relay LH terminal 5 and LH headlamp for open circuit. Check harness between LH headlamp and lighting switch for open circuit. 5. Check lighting switch. 6. Check harness between lighting switch and ground.
LH low beam does not operate, but LH high beam operates.	1. Headlamp relay LH 2. Open in the LH low beam circuit 3. LH low beam ground circuit 4. Xenon bulb 5. HID control unit 6. Booster	1. Check headlamp relay LH 2. Check harness between headlamp relay LH terminal 7 and LH headlamp for open circuit. 3. Check harness between LH headlamp and ground. 4. Replace the xenon bulb with other side bulb or new one. (If headlamps illuminate correctly, replace the bulb.) 5. Replace the HID control unit with other side control unit or new one. (If headlamps illuminate correctly, replace the control unit.) 6. Replace booster as a headlamp assembly.
RH high beam does not operate, but RH low beam operates.	1. Bulb 2. 15A fuse 3. Headlamp RH relay 4. Open in the RH high beams circuit 5. Lighting switch 6. Lighting switch ground circuit	1. Check bulb. 2. Check 15A fuse (No. 69, located in fusible link and fuse box). Verify battery positive voltage is present at terminal 3 of headlamp RH relay. 3. Check headlamp RH relay. 4. Check harness between headlamp relay RH terminal 5 and RH headlamp for open circuit. Check harness between RH headlamp and lighting switch for open circuit. 5. Check lighting switch. 6. Check harness between lighting switch and ground.
RH low beam does not operate, but RH high beam operates.	1. Headlamp relay RH 2. Open in the RH low beam circuit 3. RH low beam ground circuit 4. Xenon bulb 5. HID control unit 6. Booster	1. Check headlamp relay RH 2. Check harness between headlamp relay RH terminal 7 and RH headlamp for open circuit. 3. Check harness between RH headlamp and ground. 4. Replace the xenon bulb with other side bulb or new one. (If headlamps illuminate correctly, replace the bulb.) 5. Replace the HID control unit with other side control unit or new one. (If headlamps illuminate correctly, replace the control unit.) 6. Replace booster as a headlamp assembly.
High beam indicator does not work.	1. Bulb 2. Open in high beam circuit	1. Check bulb in combination meter. 2. Check the harness between headlamp RH relay and combination meter for an open circuit. Check harness between indicator and lighting switch.

Trouble Diagnoses (Cont'd)

Symptom	Possible cause	Repair order
Battery saver control does not operate properly.	1. RAP signal circuit 2. Door switch LH or RH circuit 3. Lighting switch circuit 4. Headlamp battery saver control unit 5. Smart entrance control unit	1. Check RAP signal. a. (With CONSULT-II) Check RAP signal with CONSULT-II. Use "ACTIVE TEST" mode, "RETAINED PWR" in "SMART ENTRANCE". (Refer to EL-57.) If NG, go to the step b. below. b. Verify 12 positive voltage from smart entrance control unit is present at terminal 10 of battery saver control unit: ● 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 LH or RH door switch for open or short circuit. Check LH or RH door switch ground circuit. Check LH or RH door switch. 3. Check harness between headlamp battery saver control unit terminals 5 or 13 and lighting switch terminal 11 for open or short circuit. Check harness between lighting switch terminal 5 and ground. Check lighting switch. 4. Check headlamp battery saver control unit. 5. Check smart entrance control unit. (EL-396)

BATTERY SAVER CONTROL UNIT INSPECTION TABLE

NHEL0258S01

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

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

Bulb Replacement/Xenon Type

NHEL0259

CAUTION:

- **After replacing a new xenon bulb, be sure to make aiming adjustments.**
- **Hold only the plastic base when handling the bulb. Never touch the glass envelope.**
- **Do not leave headlamp reflector without bulb for a long period of time. Dust, moisture, smoke, etc. entering headlamp body may affect the performance of the headlamp. Remove headlamp bulb from the headlamp reflector just before a replacement bulb is installed.**

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

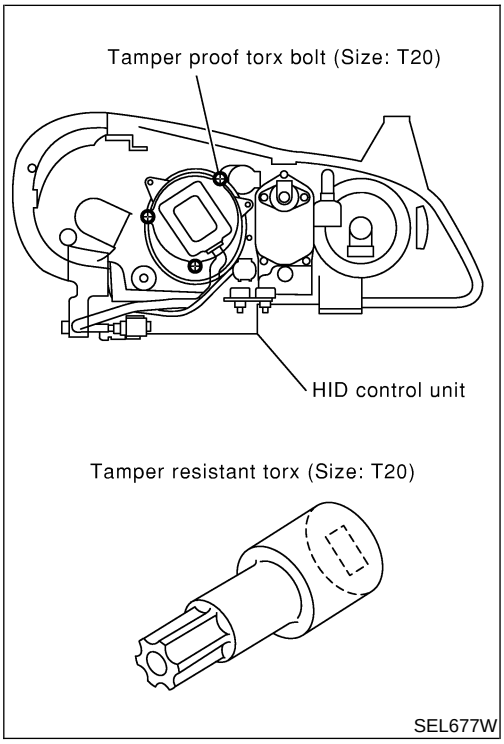
WARNING:

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

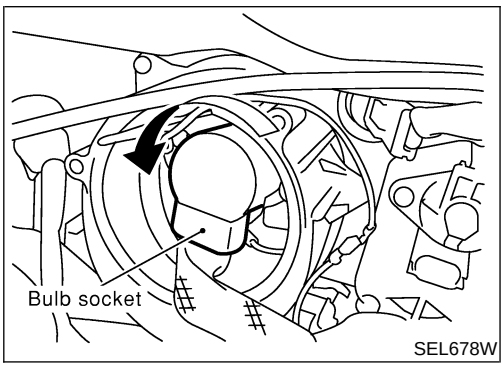
XENON BULB (LOW BEAM)

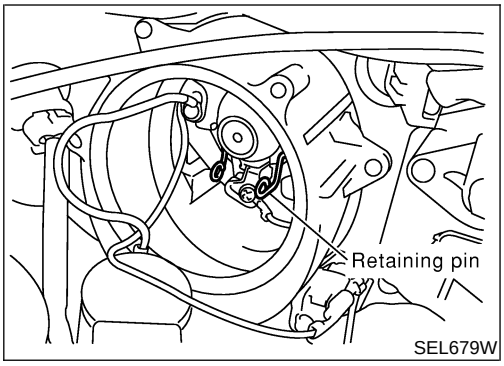
NHEL0259S01

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



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

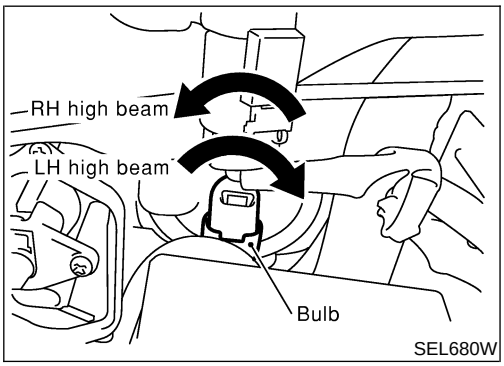




3. Release retaining pin.
4. Remove the xenon bulb.
5. Install in the reverse order of removal.

CAUTION:

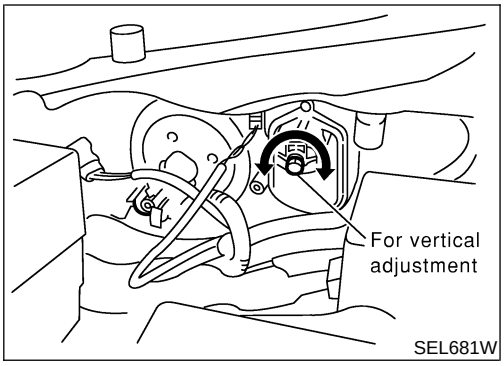
- **When disposing of the xenon bulb, do not break it; always dispose of it as is.**
- **Make sure to install the bulb securely; if the xenon bulb is improperly installed in its socket, high-tension current leaks occur. This may lead to a melted bulb and/or bulb socket.**



HIGH BEAM

NHEL0259S02

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



Aiming Adjustment/Xenon Type

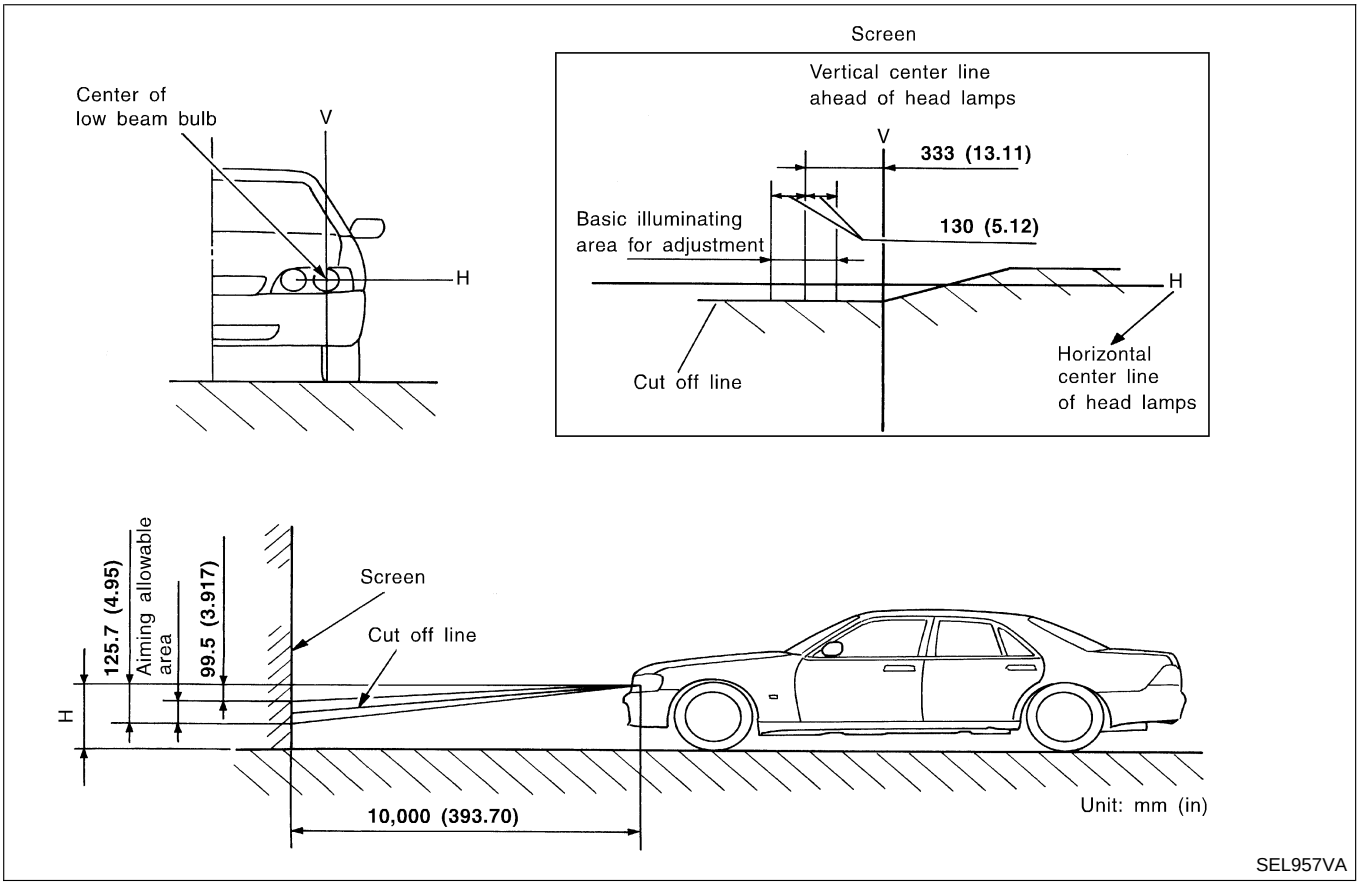
=NHEL0260

LOW BEAM

NHEL0260S01

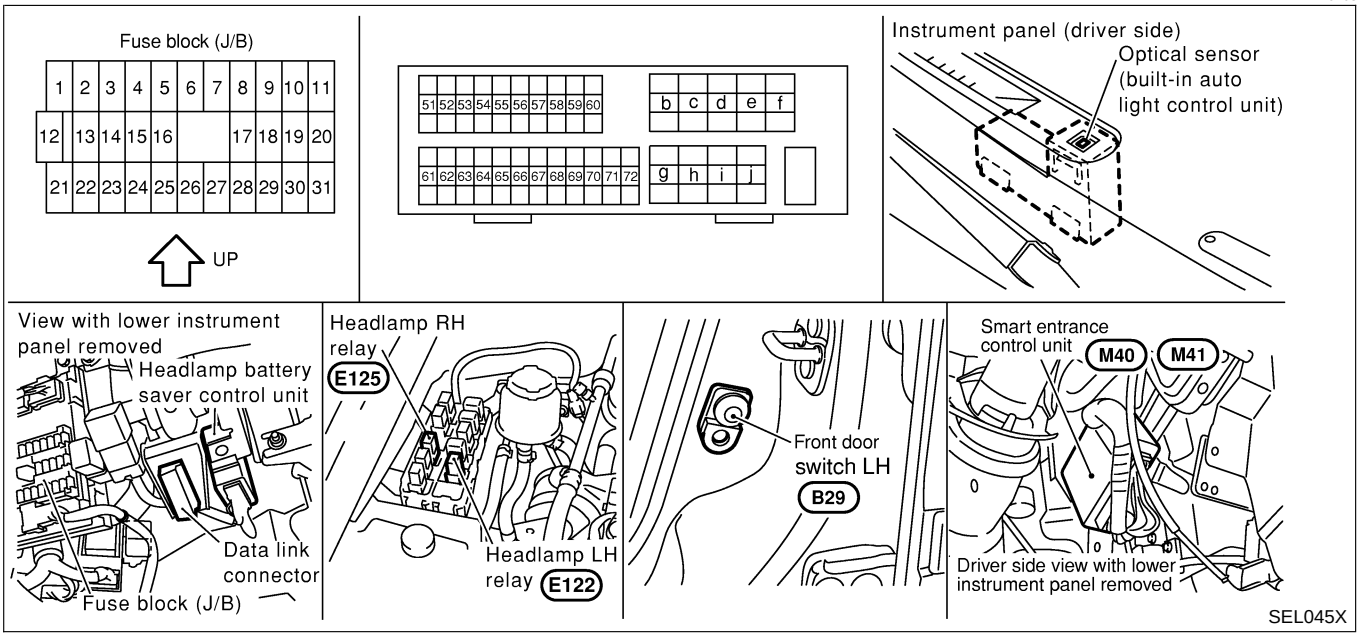
1. Turn headlamp low beam on.
2. Use adjusting screw to perform aiming adjustment.

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



Component Parts and Harness Connector Location

NHEL0203



System Description

NHEL0204

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

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

Power is supplied at all times

- to headlamp LH relay terminals 1 and 3
- through 15A fuse (No. 68, located in the fuse and fusible link box), and
- to headlamp RH relay terminals 1 and 3
- through 15A fuse (No. 69, located in the fuse and fusible link box), and
- to headlamp battery saver control unit terminal 7
- through 10A fuse [No. 12, located in the fuse block (J/B)].

Ground is supplied

- to daytime light control unit terminal 16 and
- to headlamp battery saver control unit terminals 4 and 11

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

- to daytime light control unit terminal 3
- through 10A fuse [No. 28, located in the fuse block (J/B)], and
- to headlamp battery saver control unit terminal 10,
- to smart entrance control unit terminal 33
- through 10A fuse [No. 10, located in the fuse block (J/B)], and
- to headlamp battery saver control unit terminal 1
- through 10A fuse [No. 30, 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 10A fuse [No. 21, located in the fuse block (J/B)].

HEADLAMP OPERATION

NHEL0204S01

Power Supply to Low Beam and High Beam

NHEL0204S0101

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

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

NHEL0204S0103

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

- to terminal 5 of headlamp LH relay
- through headlamp LH terminals 3 and 4
- through body grounds E11, E22 and E53.

Ground is also supplied

- to terminal 5 of headlamp RH relay
- through headlamp RH terminals 3 and 4
- through body grounds E11, E22 and E53.

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

High Beam Operation/Flash-to-pass Operation

NHEL0204S0104

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

- to terminal 2 of LH headlamp
- through daytime light control unit terminals 10 and 13, and
- through lighting switch terminals 6 and 5
- through body grounds E11, E22 and E53.

Ground is also supplied

- to terminal 2 of RH headlamp
- through daytime light control unit terminals 9 and 14
- to combination meter terminal 27 for the HIGH BEAM indicator
- through lighting switch terminals 9 and 8
- through body grounds E11, E22 and E53.

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

BATTERY SAVER CONTROL

NHEL0204S02

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

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

Then headlamps illuminate again.

AUTO LIGHT OPERATION

NHEL0204S05

For auto light operation, refer to "HEADLAMP" (EL-35).

DAYTIME LIGHT OPERATION

NHEL0204S03

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 1 of RH headlamp
- through terminal 2 of RH headlamp
- to daytime light control unit terminal 9
- through daytime light control unit terminal 6
- to terminal 1 of LH headlamp.

Ground is supplied to terminal 2 of LH headlamp.

- through daytime light control unit terminals 10 and 16
- through body grounds E11, E22 and E53.

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

OPERATION

NHEL0204S04

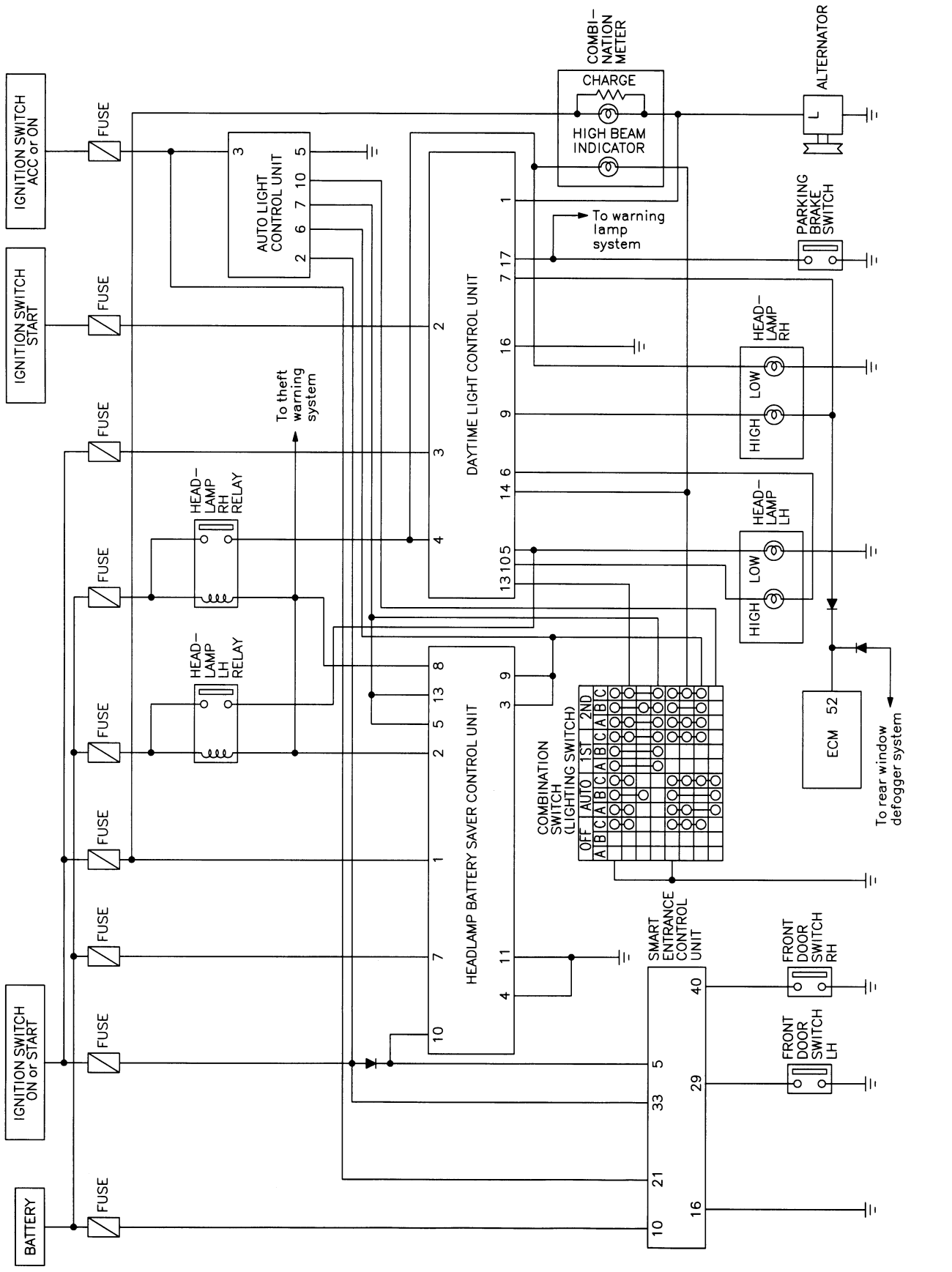
After starting the engine with the lighting switch in the "OFF" or "1ST" position, the headlamp high beam automatically turns on. Lighting switch operations other than the above are the same as conventional light systems.

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

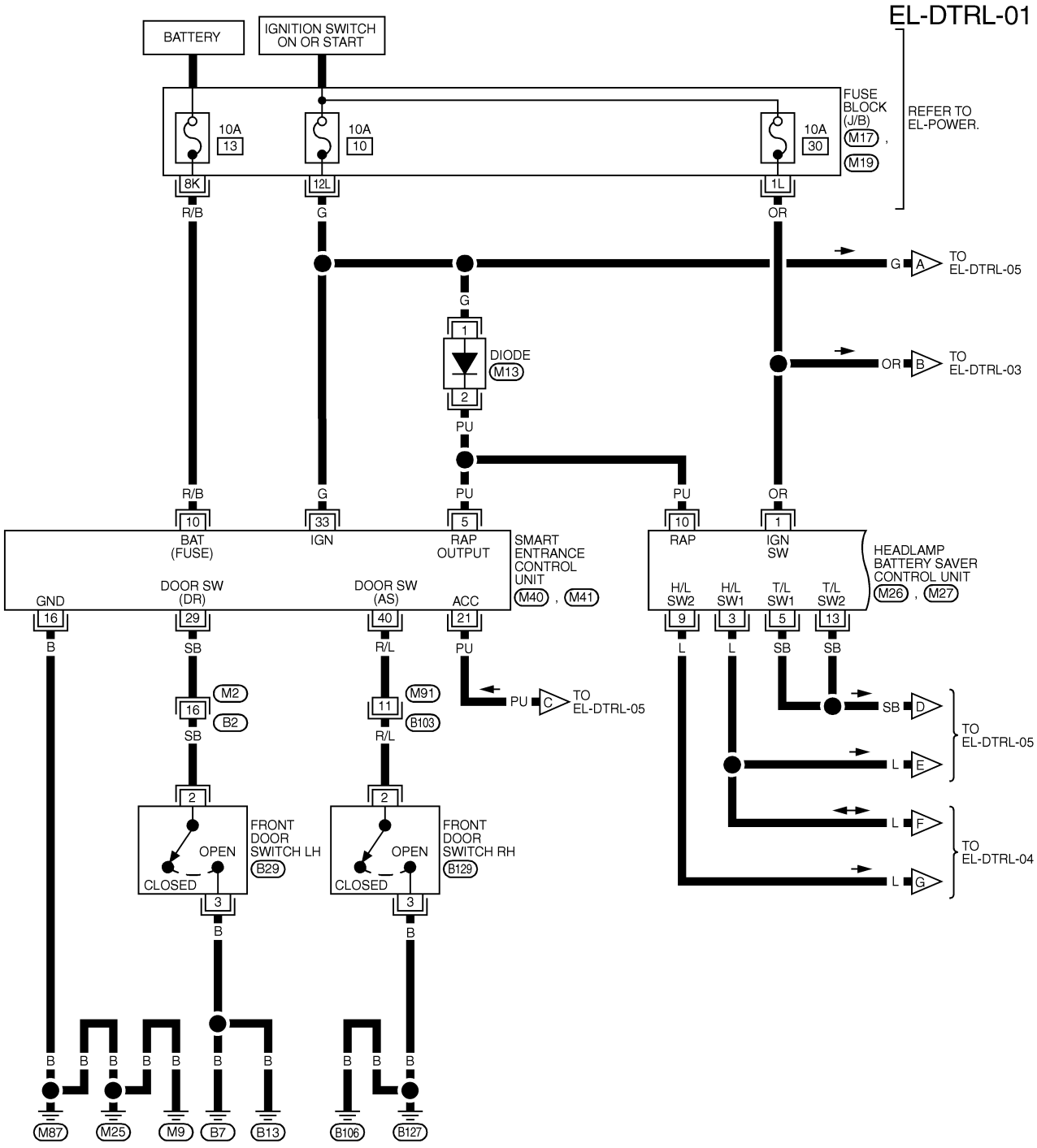
NHEL0205

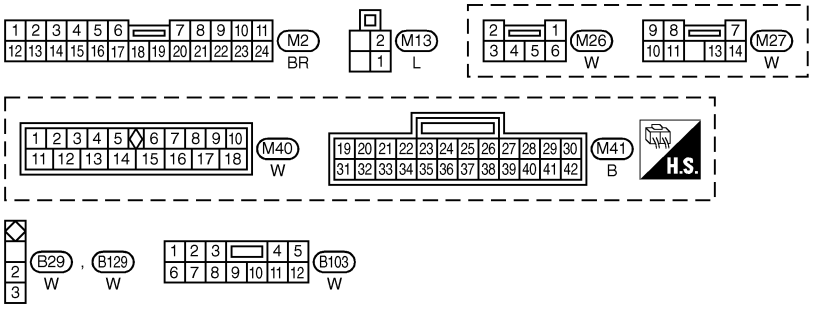


MEL168L

Wiring Diagram — DTRL —

NHEL0020

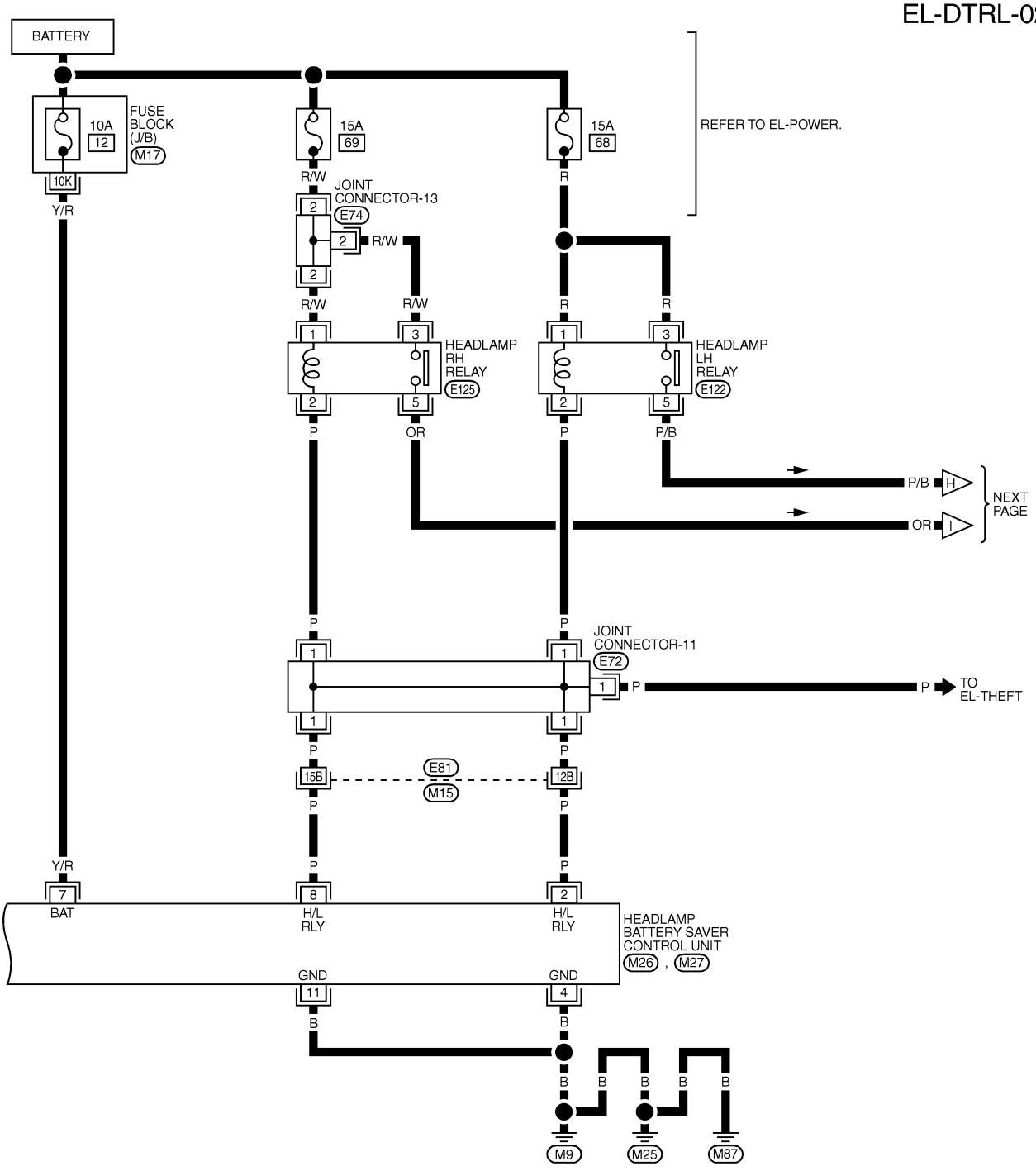


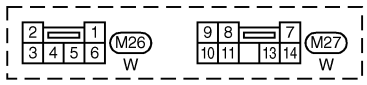


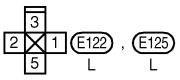
REFER TO THE FOLLOWING.
M17 , M19 -FUSE BLOCK-JUNCTION BOX (J/B)

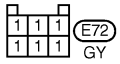
MEL160M

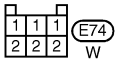
EL-DTRL-02







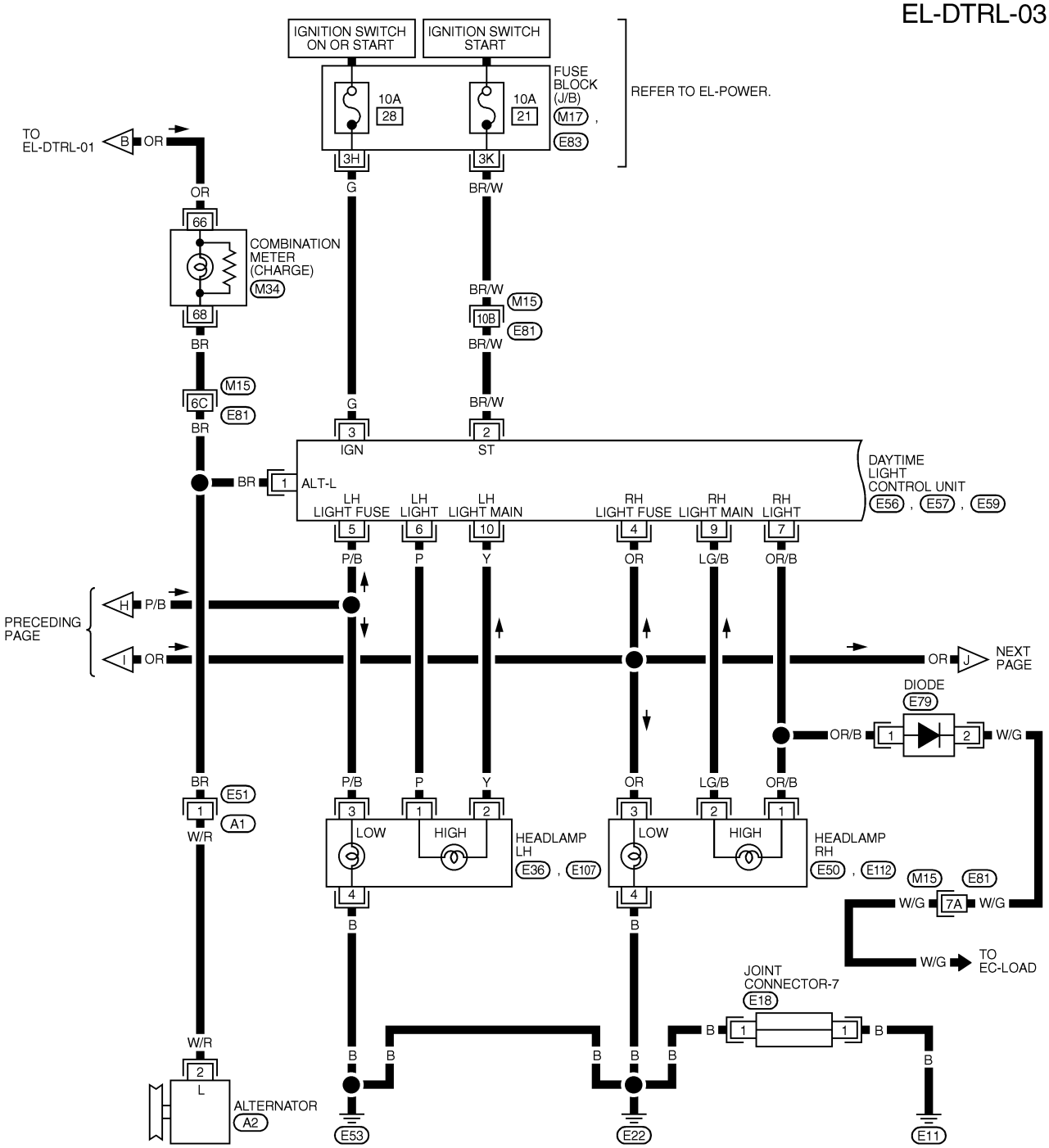


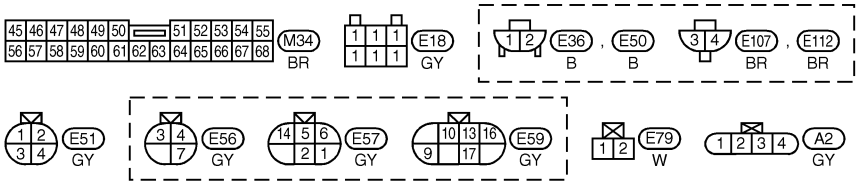


REFER TO THE FOLLOWING.
M15 -SUPER MULTIPLE JUNCTION (SMJ)
M17 -FUSE BLOCK- JUNCTION BOX (J/B)

MEL170L

EL-DTRL-03

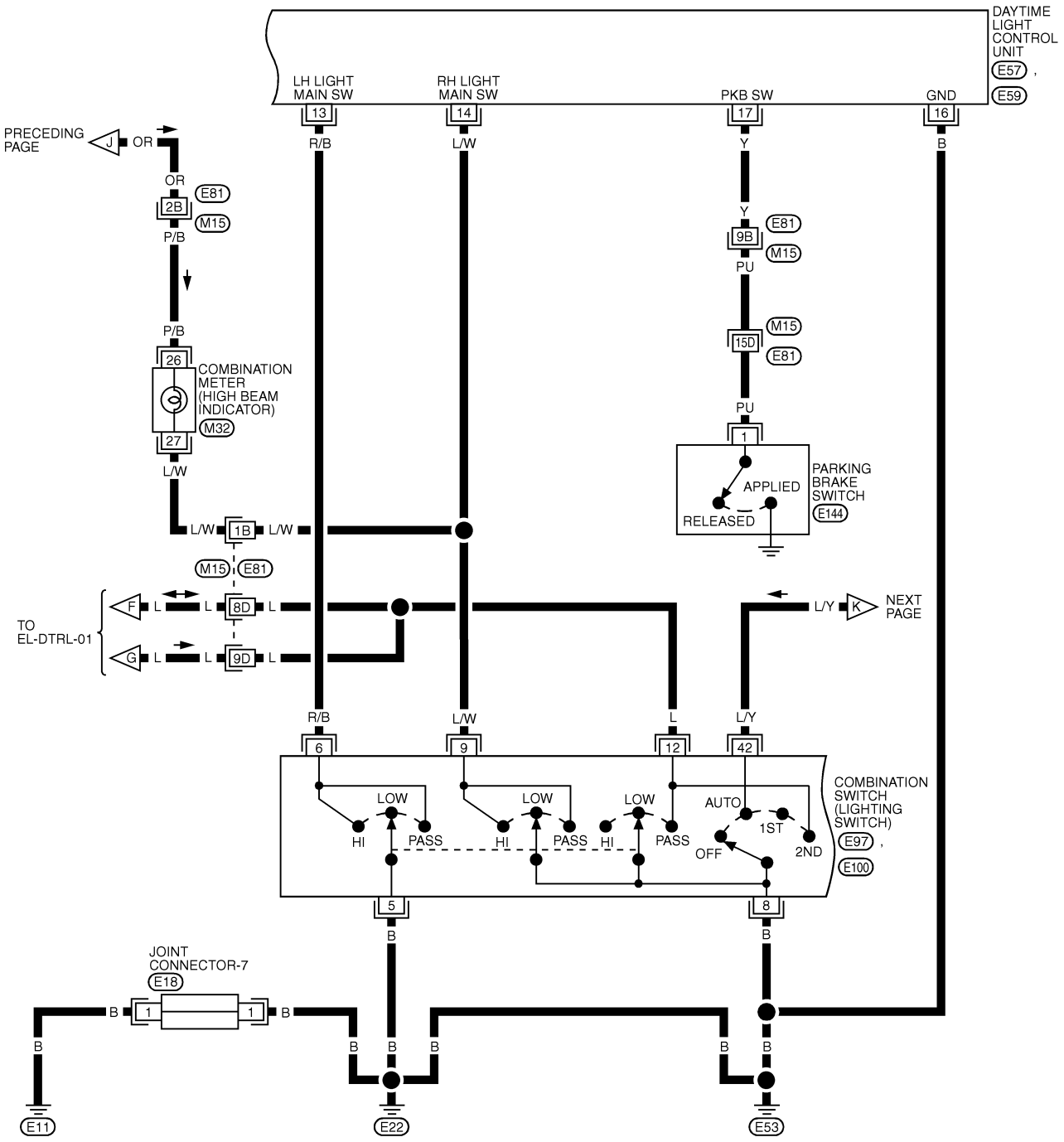


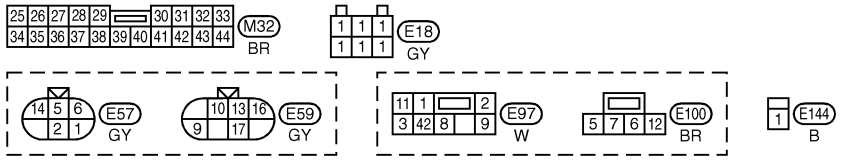


REFER TO THE FOLLOWING.
M15 -SUPER MULTIPLE JUNCTION (SMJ)
M17 , E83 -FUSE BLOCK-JUNCTION BOX (J/B)

MEL171L

EL-DTRL-04

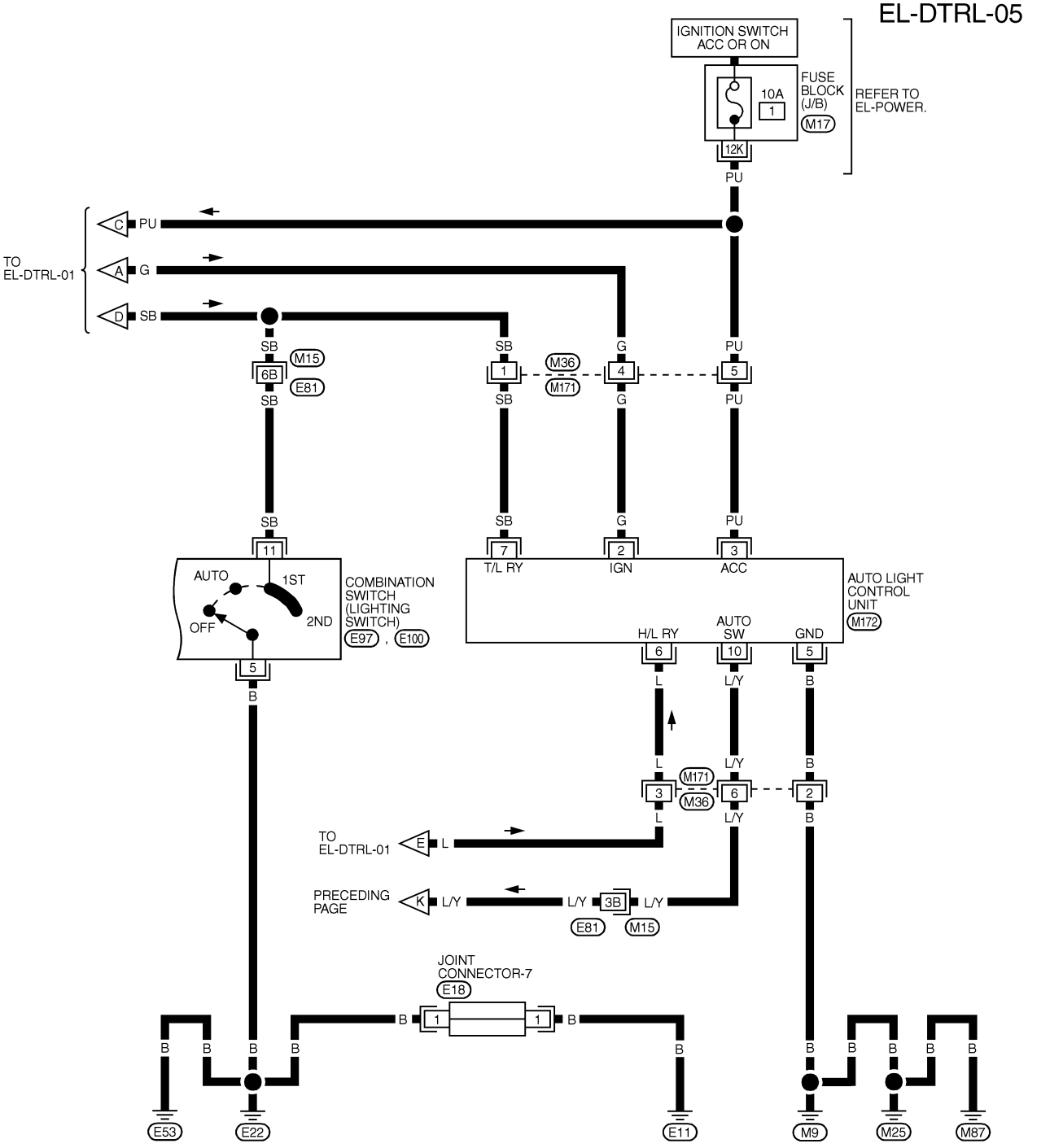


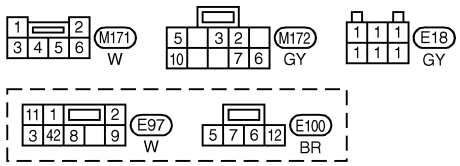


REFER TO THE FOLLOWING.
M15, E81 -SUPER MULTIPLE JUNCTION (SMJ)

MEL417K

EL-DTRL-05





REFER TO THE FOLLOWING.
M15 , E81 -SUPER MULTIPLE JUNCTION (SMJ)
M17 -FUSE BLOCK-JUNCTION BOX (J/B)

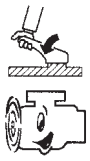
MEL418K

Trouble Diagnoses

NHEL0206

DAYTIME LIGHT CONTROL UNIT INSPECTION TABLE

NHEL0206S01

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

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

BATTERY SAVER CONTROL UNIT INSPECTION TABLE

NHEL0206S02

Refer to "HEADLAMP (FOR USA)" EL-44.

Bulb Replacement

NHEL0022

Refer to "HEADLAMP (FOR USA)" (EL-46).

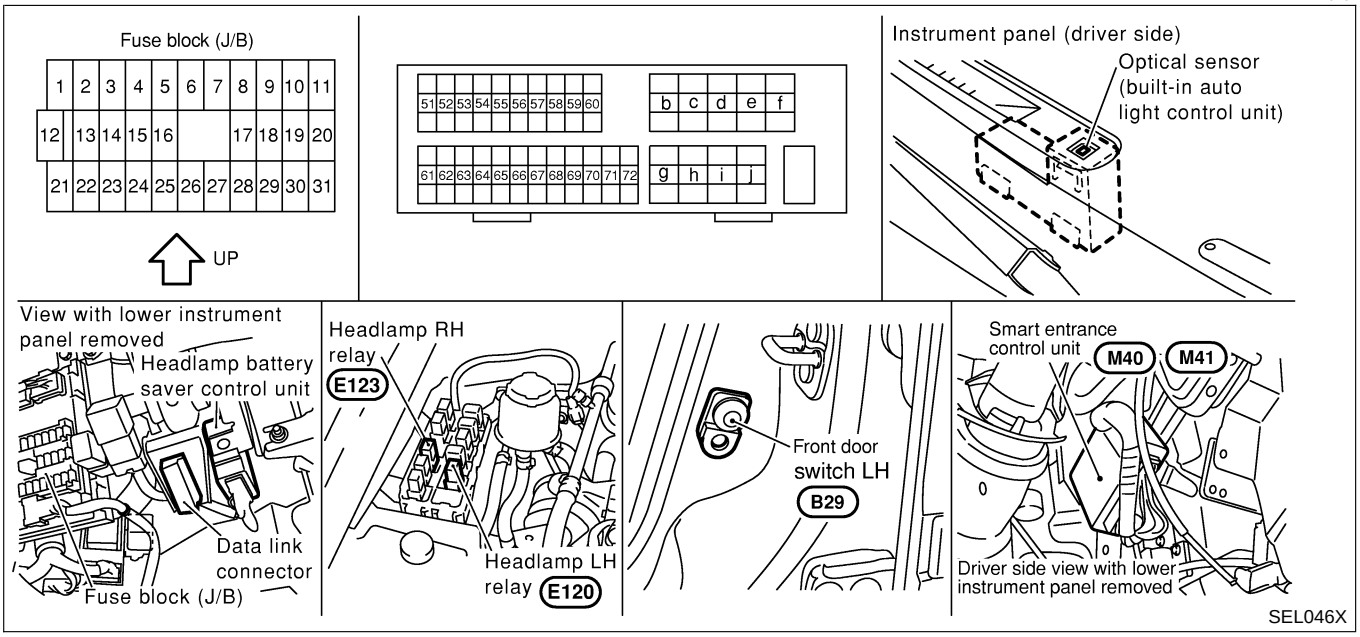
Aiming Adjustment

NHEL0023

Refer to “HEADLAMP (FOR USA)” (EL-46).

Component Parts and Harness Connector Location

NHEL0261



SEL046X

System Description

NHEL0262

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

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

Power is supplied at all times

- to headlamp LH relay terminals 1 and 6
- through 20A fuse (No. 54, located in the fuse and fusible link box), and
- to headlamp RH relay terminals 1 and 6
- through 20A fuse (No. 55, located in the fuse and fusible link box), and
- to headlamp battery saver control unit terminal 7
- through 10A fuse [No. 12, located in the fuse block (J/B)].

Ground is supplied

- to daytime light control unit terminal 16 and
- to headlamp battery saver control unit terminals 4 and 11

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

- to daytime light control unit terminal 3,
- through 10A fuse [No. 28, located in the fuse block (J/B)], and
- to headlamp battery saver control unit terminal 10, and
- to smart entrance control unit terminal 33
- through 10A fuse [No. 10, located in the fuse block (J/B)], and
- to headlamp battery saver control unit terminal 1
- through 10A fuse [No. 30, 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 10A fuse [No. 21, located in the fuse block (J/B)].

HEADLAMP OPERATION

NHEL0262S01

Power Supply to Low Beam and High Beam

NHEL0262S0101

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

- to headlamp LH relay terminal 2 from headlamp battery saver control unit terminal 2
- through headlamp battery saver control unit terminal 3, and
- fom lighting switch terminal 12, and
- to headlamp RH relay terminal 2 from headlamp battery saver control unit terminal 8
- through headlamp battery saver control unit terminal 9, and
- 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

NHEL0262S0103

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

- to terminal 4 of the headlamp LH
- through body grounds E11, E22 and E53.

Ground is also supplied

- to terminal 4 of the headlamp RH
- through body grounds E11, E22 and E53.

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

High Beam Operation/Flash-to-pass Operation

NHEL0262S0104

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

- to terminal 2 of LH headlamp
- through daytime light control unit terminals 10 and 13, and
- through lighting switch terminals 6 and 5
- through body grounds E11, E22 and E53.

Ground is also supplied

- to terminal 2 of RH headlamp
- through daytime light control unit terminals 9 and 14
- to combination meter terminal 27 for the HIGH BEAM indicator
- through lighting switch terminals 9 and 8
- through body grounds E11, E22 and E53.

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

BATTERY SAVER CONTROL

NHEL0262S02

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

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

Then headlamps illuminate again.

AUTO LIGHT OPERATION

NHEL0262S03

For auto light operation, refer to "HEADLAMP" (EL-35).

DAYTIME LIGHT OPERATION

NHEL0262S04

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 1 of RH headlamp
- through terminal 2 of RH headlamp
- to daytime light control unit terminal 9
- through daytime light control unit terminal 6
- to terminal 1 of LH headlamp.

Ground is supplied to terminal 2 of LH headlamp.

- through daytime light control unit terminals 10 and 16
- through body grounds E11, E22 and E53.

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

OPERATION

NHEL0262S05

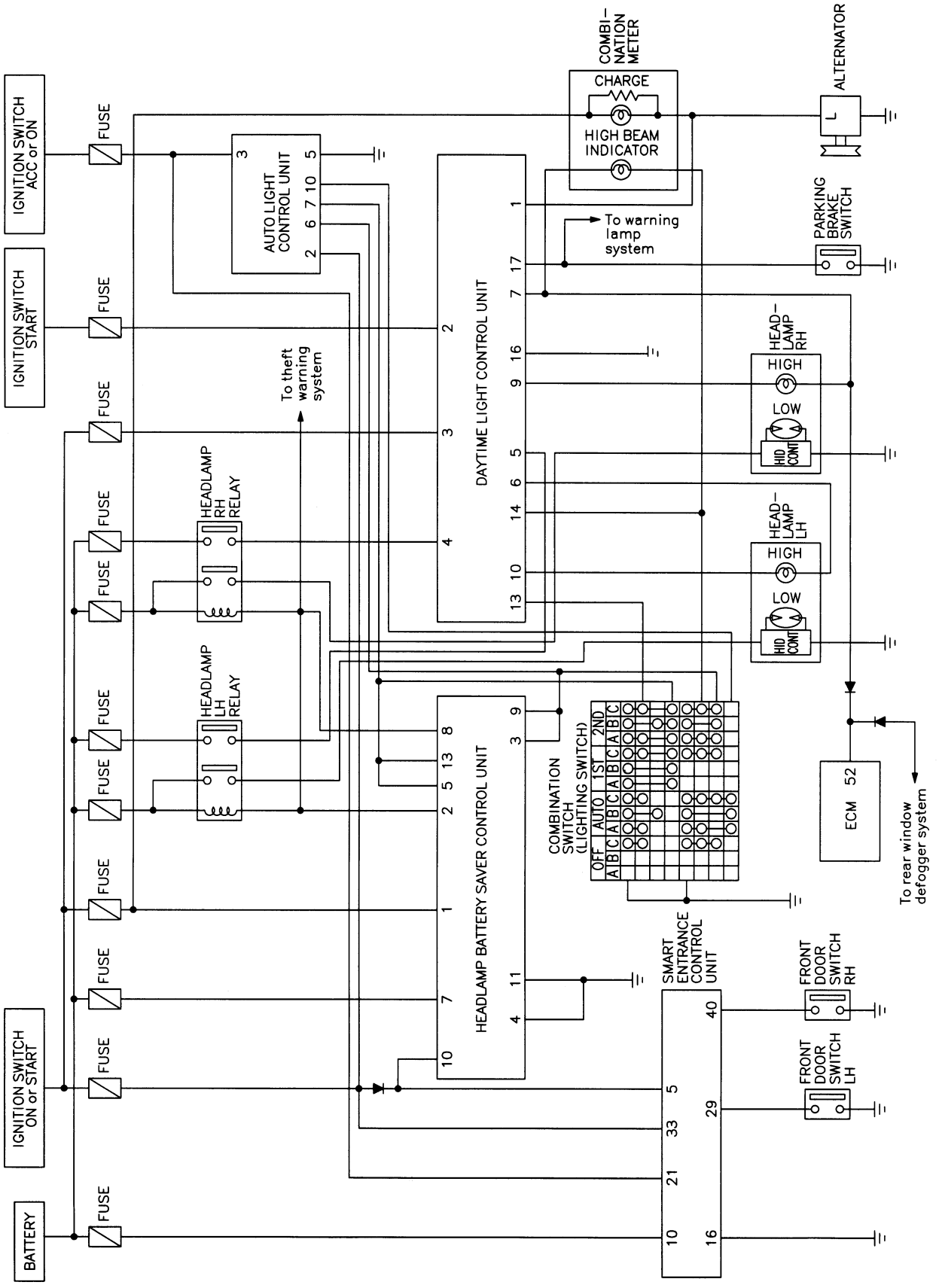
After starting the engine with the lighting switch in the "OFF" or "1ST" position, the headlamp high beam automatically turns on. Lighting switch operations other than the above are the same as conventional light systems.

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

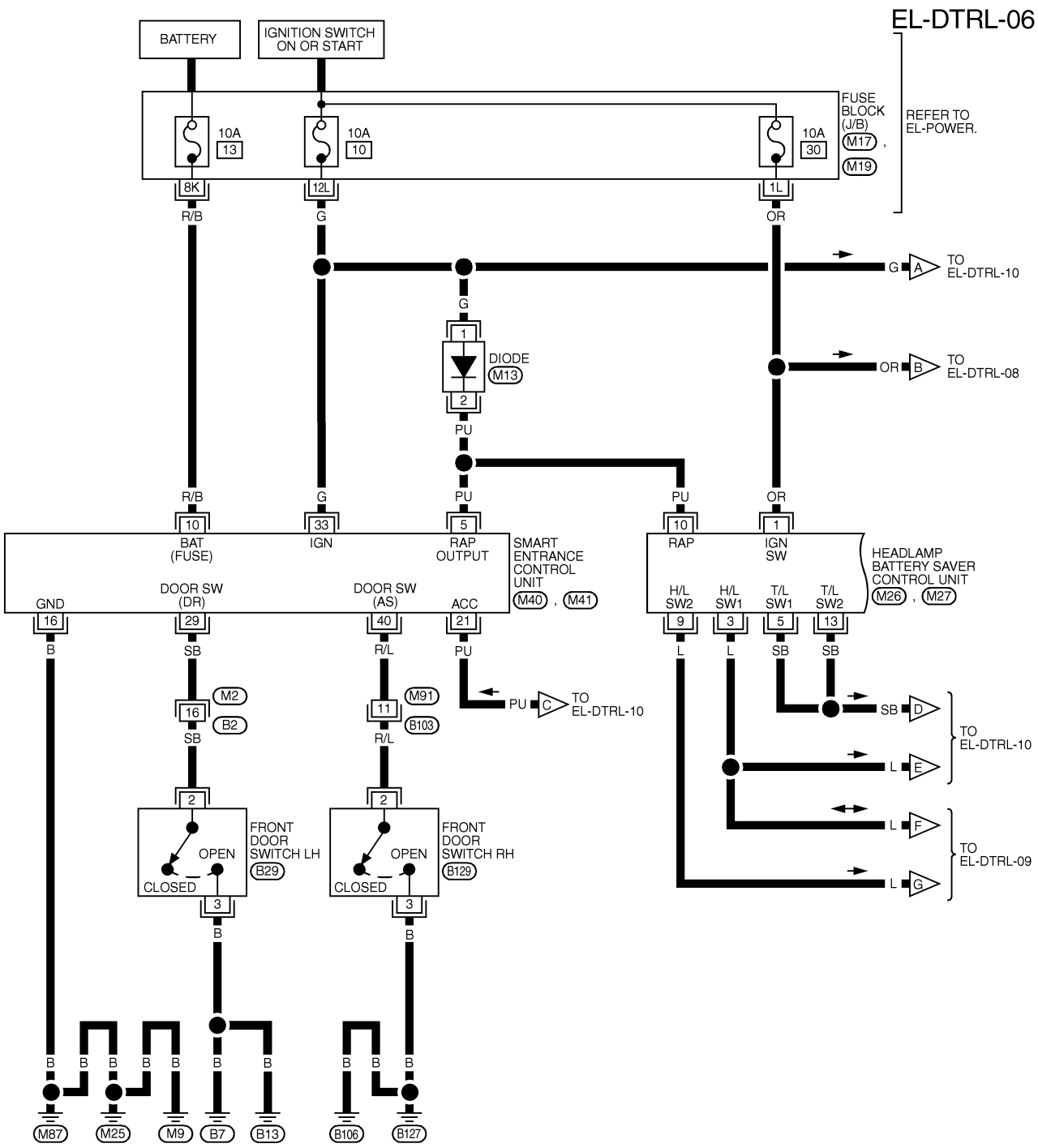
NHEL0263

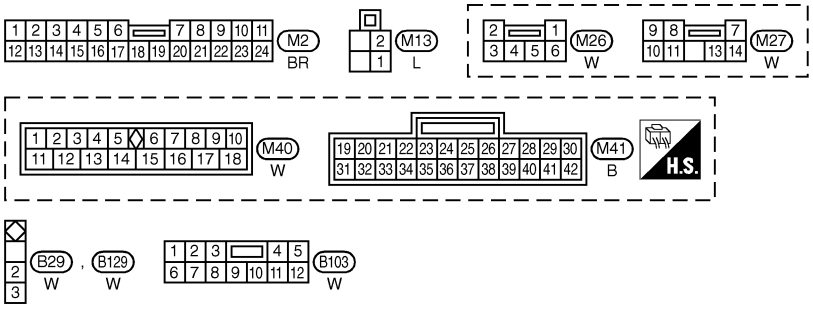


MEL174L

Wiring Diagram — DTRL —

NHEL0264

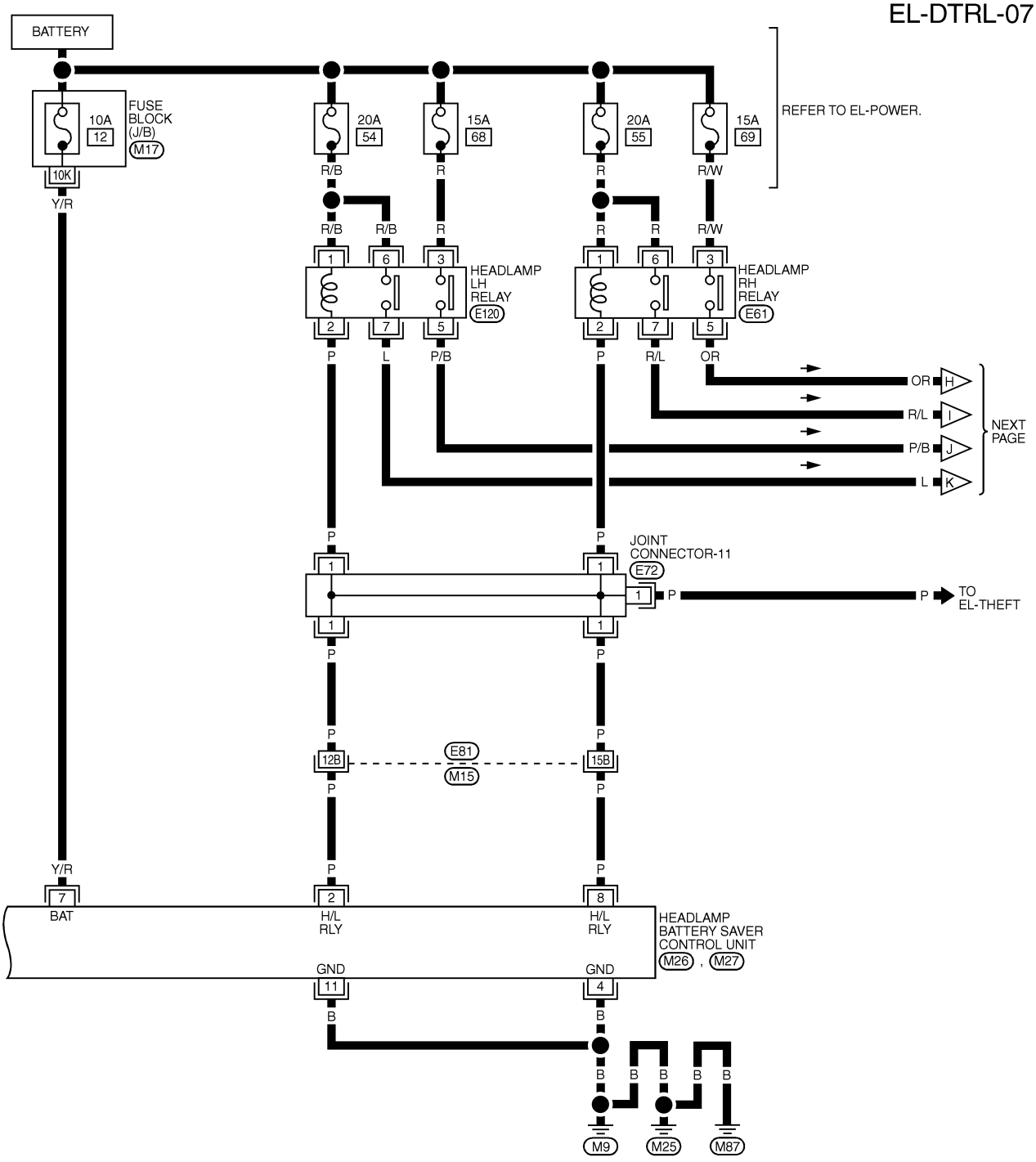


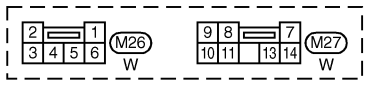


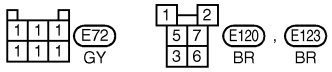
REFER TO THE FOLLOWING.
M17 , M19 -FUSE BLOCK-JUNCTION BOX (J/B)

MEL161M

EL-DTRL-07



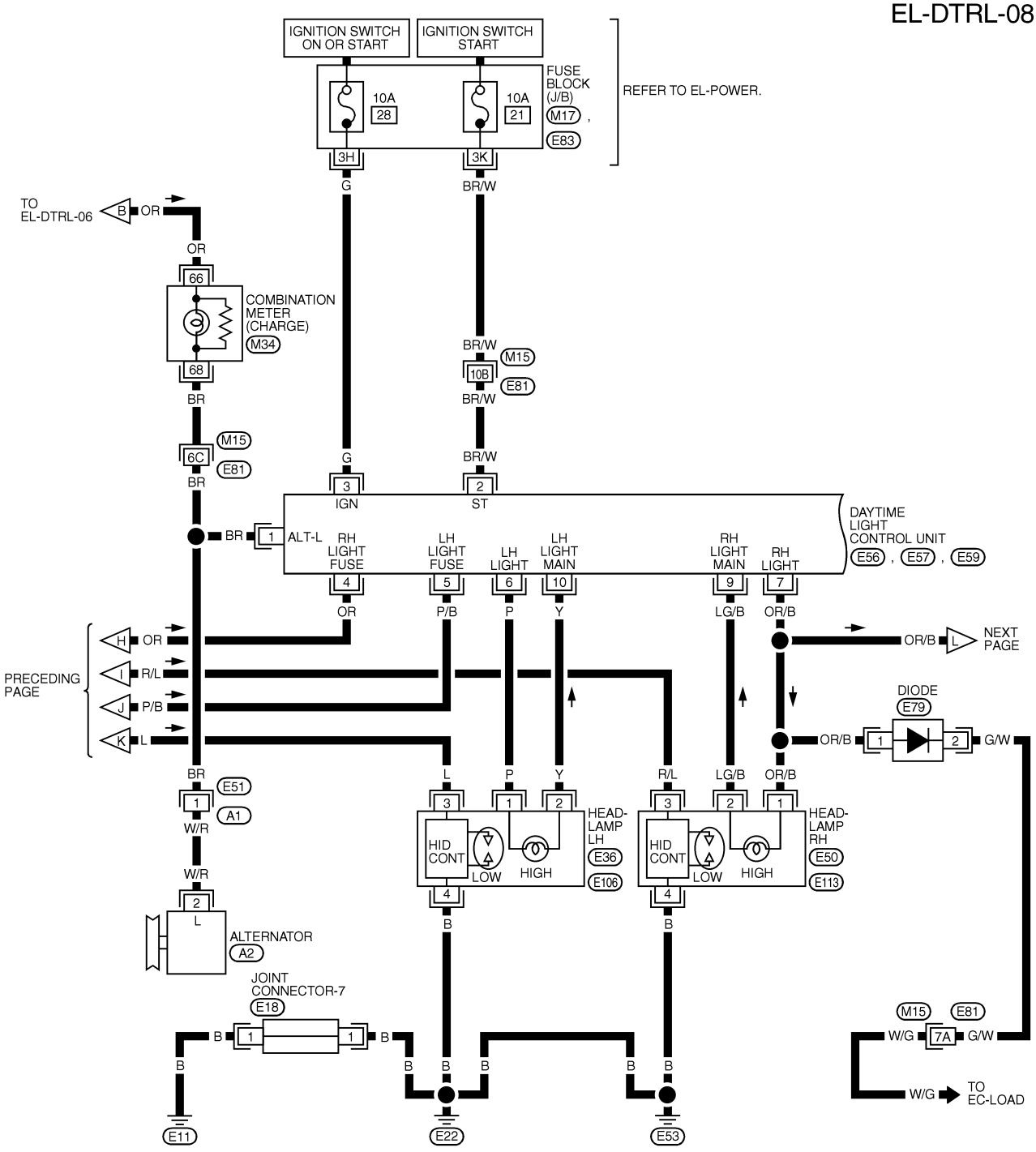


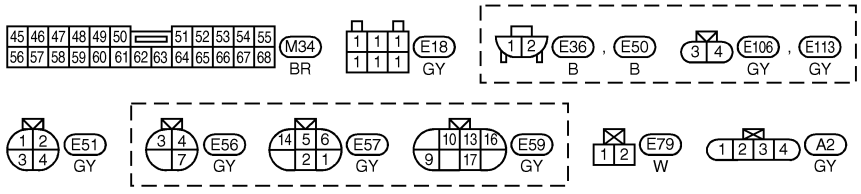


REFER TO THE FOLLOWING.
M15 -SUPER MULTIPLE JUNCTION (SMJ)
M17 -FUSE BLOCK- JUNCTION BOX (J/B)

MEL174M

EL-DTRL-08

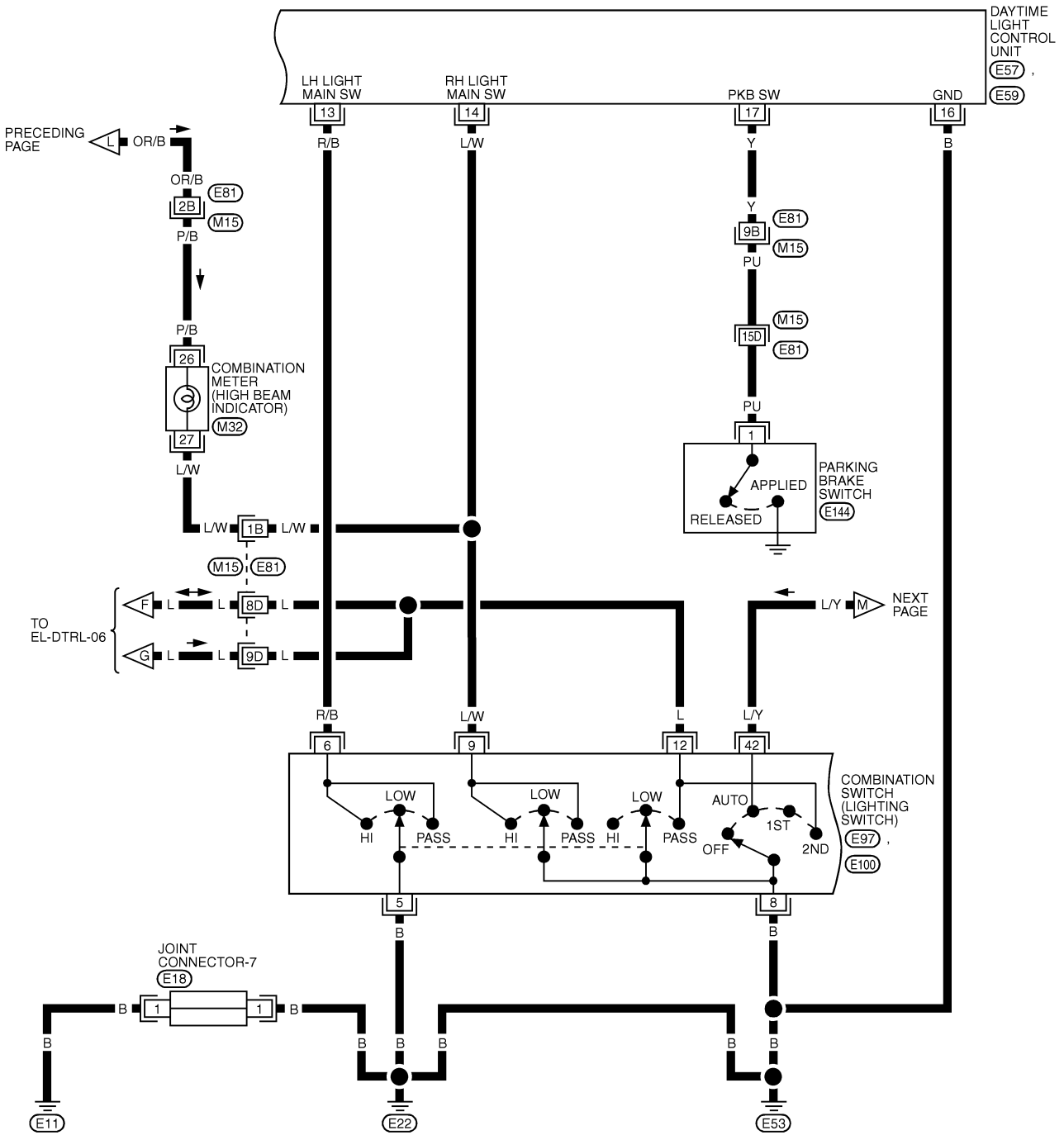


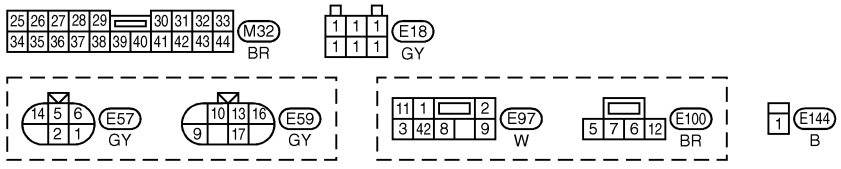


REFER TO THE FOLLOWING.
M15 -SUPER MULTIPLE JUNCTION (SMJ)
M17 , E83 -FUSE BLOCK-JUNCTION BOX (J/B)

MEL177L

EL-DTRL-09

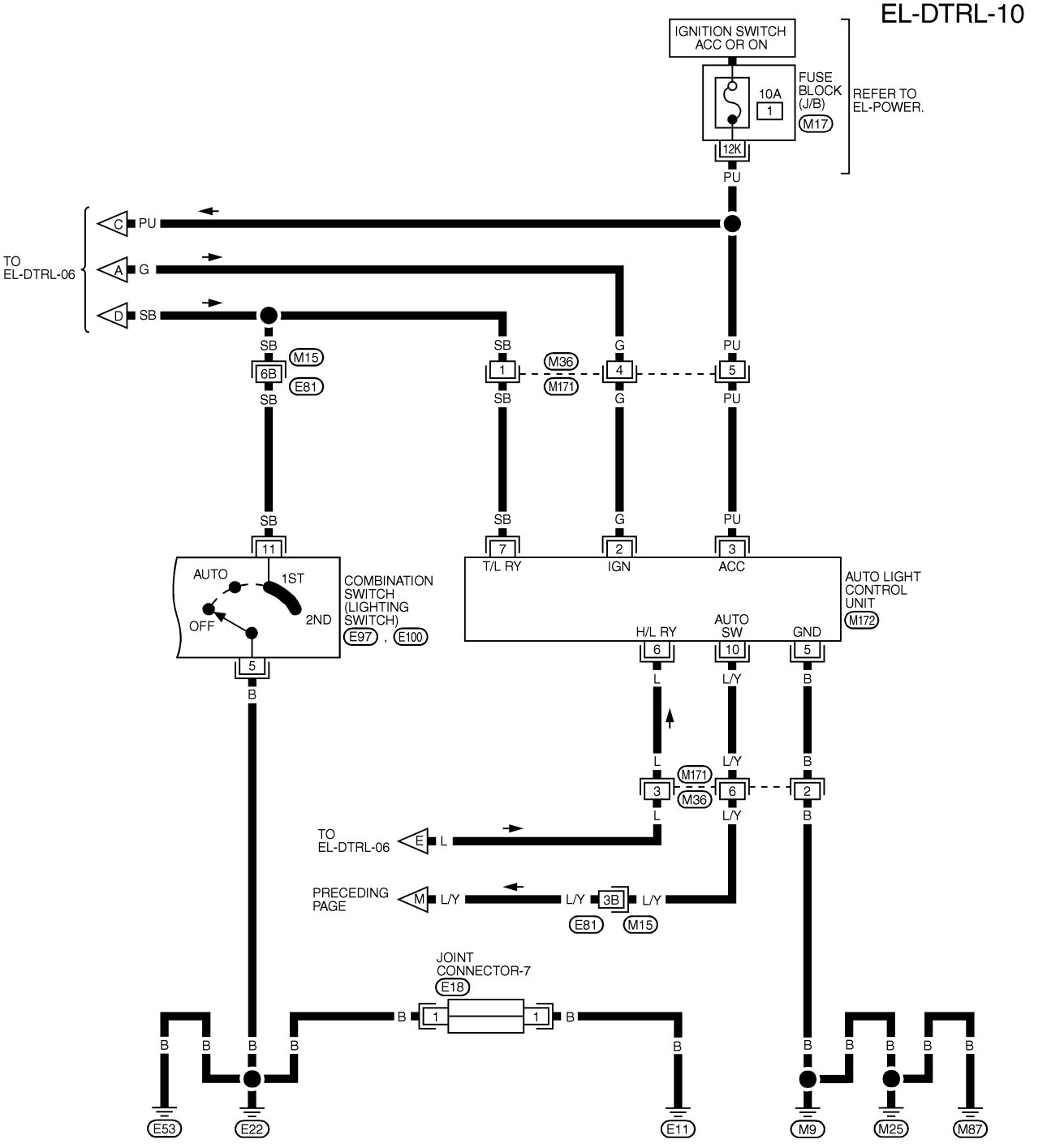


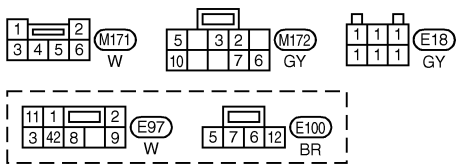


REFER TO THE FOLLOWING.
M15 , E81 -SUPER MULTIPLE JUNCTION (SMJ)

MEL423K

EL-DTRL-10





REFER TO THE FOLLOWING.
M15 , E81 -SUPER MULTIPLE JUNCTION (SMJ)
M17 -FUSE BLOCK-JUNCTION BOX (J/B)

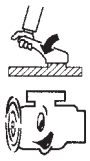
MEL424K

Trouble Diagnoses

NHEL0265

DAYTIME LIGHT CONTROL UNIT INSPECTION TABLE

NHEL0265S01

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

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

BATTERY SAVER CONTROL UNIT INSPECTION TABLE

NHEL0265S02

Refer to "HEADLAMP (FOR USA)" EL-44.

Bulb Replacement

NHEL0266

Refer to "HEADLAMP (FOR USA)" (EL-46).

Aiming Adjustment

NHEL0267

Refer to “HEADLAMP (FOR USA)” (EL-46).

System Description

NHEL0207

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

Power is supplied at all times

- to tail lamp relay terminals 1 and 3
- through 10A fuse (No. 60, located in the fuse and fusible link box), and
- to headlamp battery saver control unit terminal 7
- through 10A fuse [No. 12, located in the fuse block (J/B)].

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

- to headlamp battery saver control unit terminal 1
- through 10A fuse [No. 30, located in the fuse block (J/B)], and
- to headlamp battery saver control unit terminal 10, and
- to smart entrance control unit terminal 33
- through 10A fuse [No. 10, located in the fuse block (J/B)].

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

LIGHTING OPERATION BY LIGHTING SWITCH

NHEL0207S01

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

- to tail lamp relay terminal 2 from headlamp battery saver control unit terminals 6 and 14
- through headlamp battery saver control unit terminals 5 and 13, and
- through lighting switch and body grounds E11, E22 and E53.

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

LIGHTING OPERATION BY AUTO LIGHT CONTROL SYSTEM

NHEL0207S03

When lighting switch is in AUTO position, ground is supplied

- to tail lamp relay terminal 2 from headlamp battery saver control unit terminals 6 and 14
- through headlamp battery saver control unit terminals 5 and 13, and
- through auto light control unit terminal 7.

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

BATTERY SAVER CONTROL

NHEL0207S02

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

After counting 45 seconds by the RAP signal from the smart entrance control unit to headlamp battery saver control unit, the ground supply to terminal 2 of the tail lamp relay from headlamp battery saver control unit terminals 6 and 14 is terminated.

Then the parking, license side marker and tail lamps are turned off.

The parking, license side marker and tail lamps are turned off when driver or passenger side door is opened even if 45 seconds have not passed after the ignition switch is turned from ON (or START) to OFF (or ACC) positions while parking, license side marker and tail lamps are illuminated.

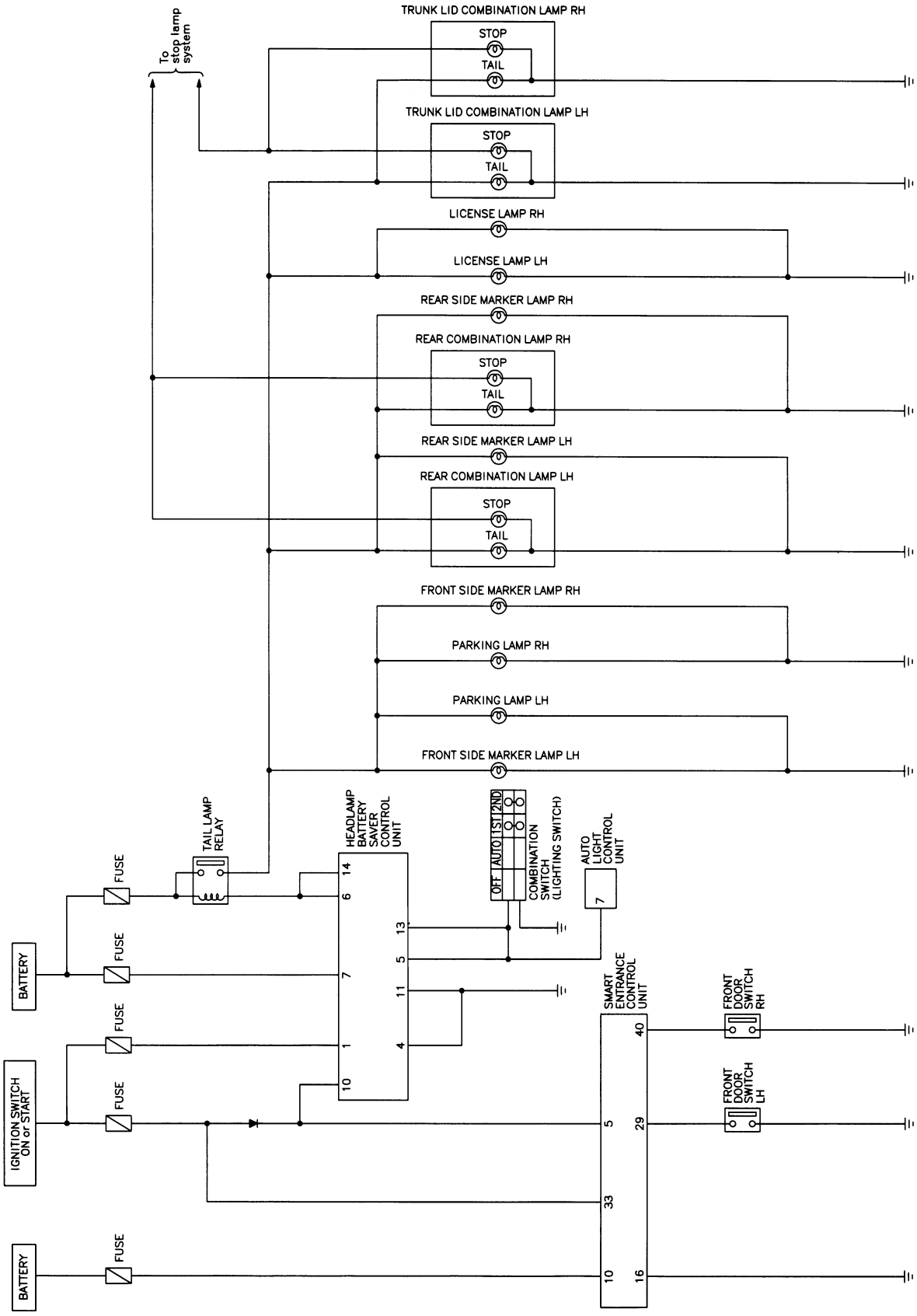
When the lighting switch is turned from OFF to 1ST (or 2ND) after the parking, license and tail lamps are turned off by the battery saver control, ground is supplied.

- to headlamp battery saver control unit terminals 5 and 13 from lighting switch terminal 11 or auto light control unit terminal 7, and
- to tail lamp relay terminal 2 from headlamp battery saver control unit terminals 6 and 14.

Then the parking, license, side marker and tail lamps illuminate again.

Schematic

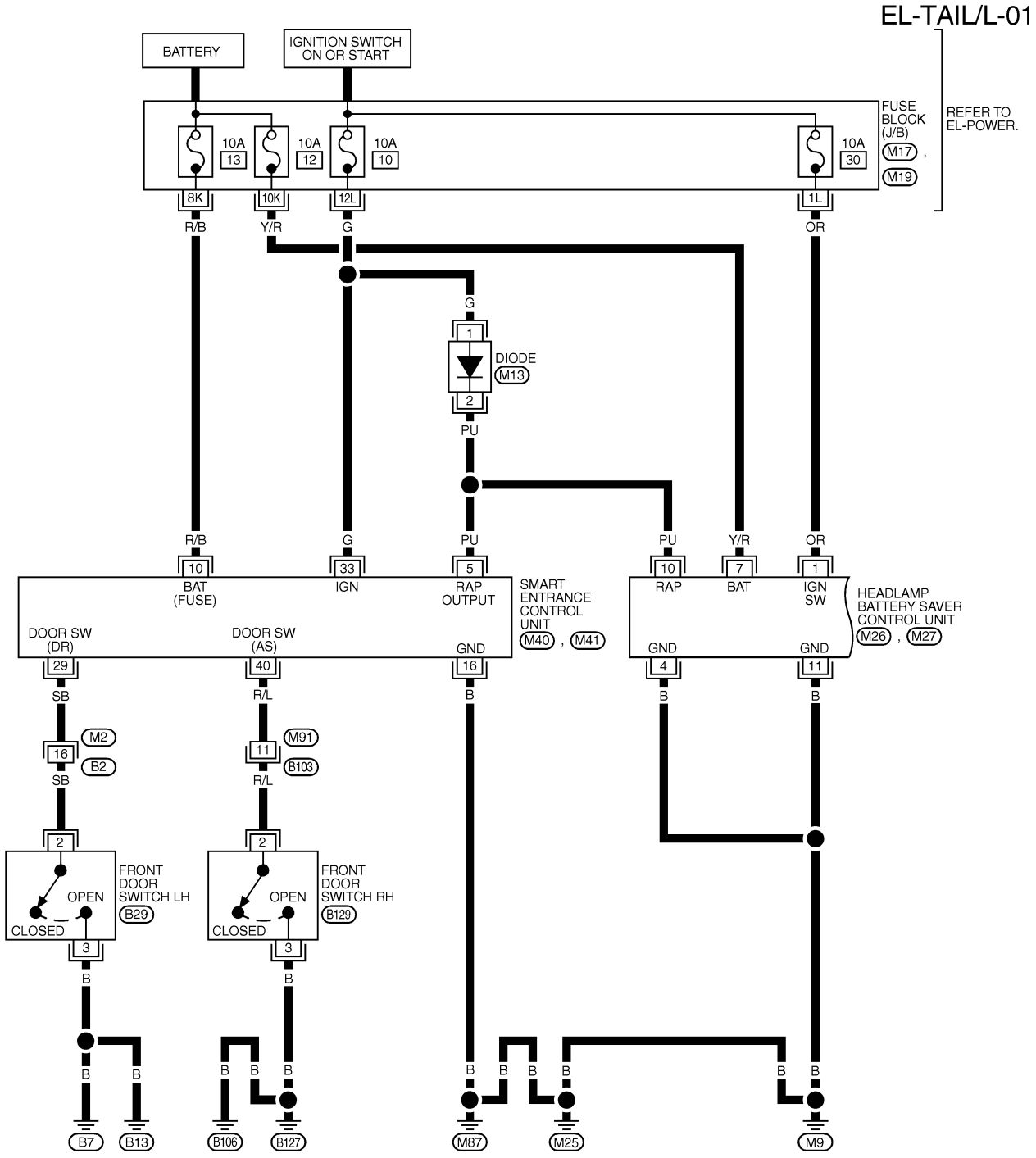
NHEL0208

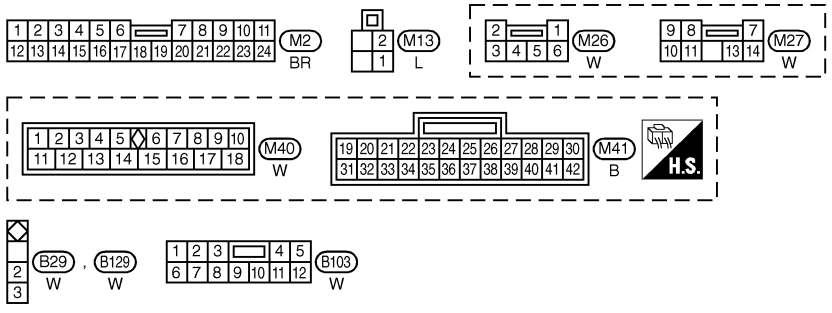


MEL180L

Wiring Diagram — TAIL/L —

NHEL0024

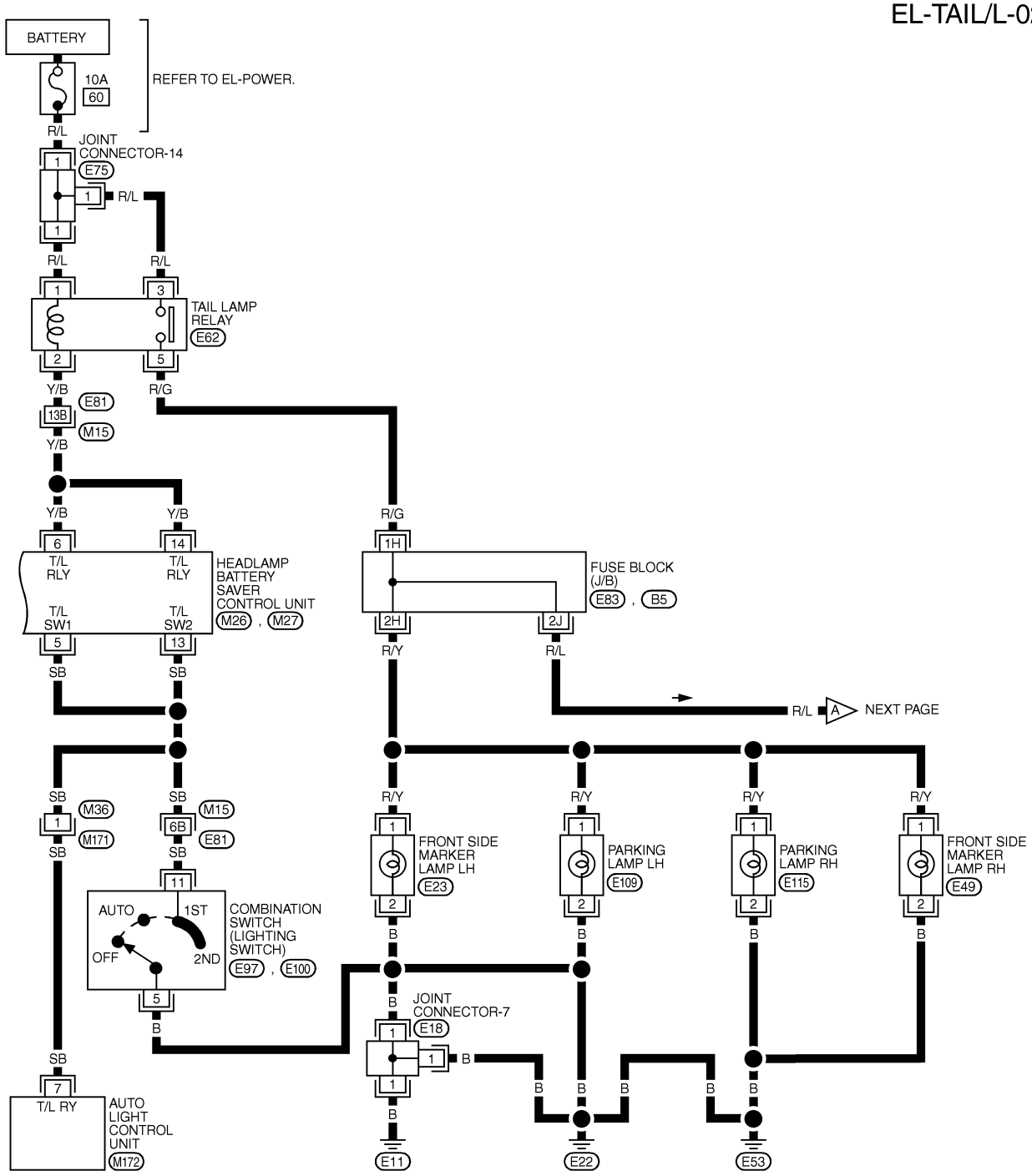


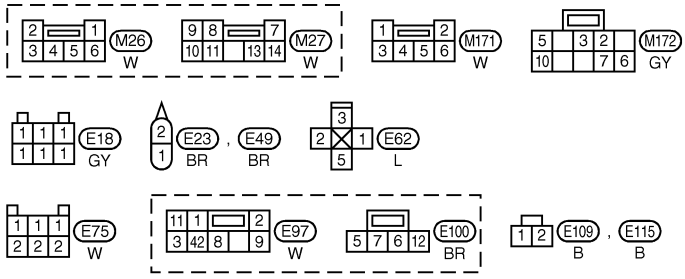


REFER TO THE FOLLOWING.
M17 , M19 -FUSE BLOCK-JUNCTION BOX (J/B)

MEL162M

EL-TAIL/L-02

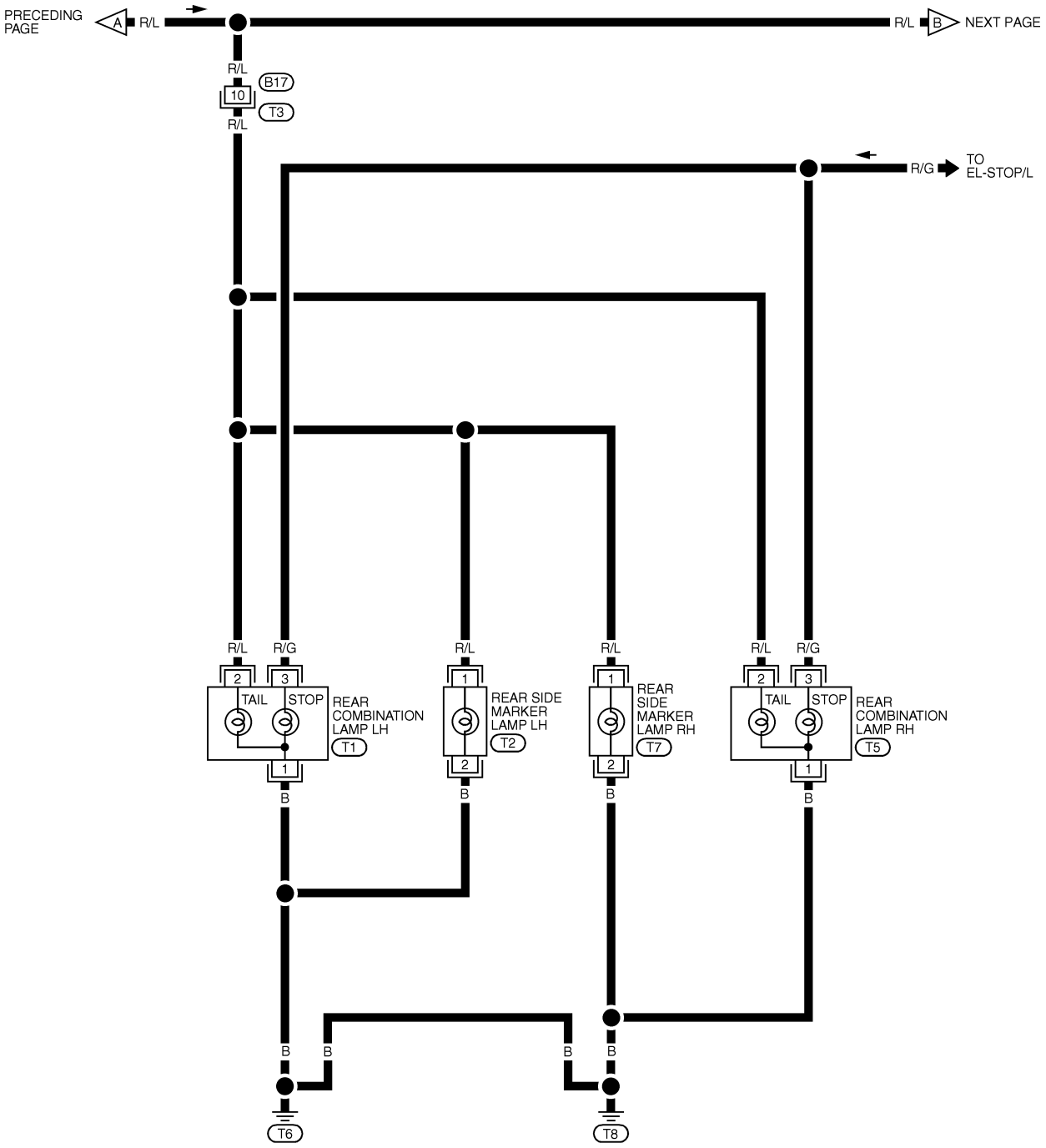


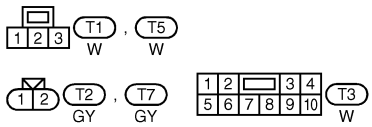


REFER TO THE FOLLOWING.
M15 , E81 -SUPER MULTIPLE JUNCTION (SMJ)
E83 -FUSE BLOCK-JUNCTION BOX (J/B)
B5 -FUSE BLOCK-JUNCTION BOX (J/B)

MEL433K

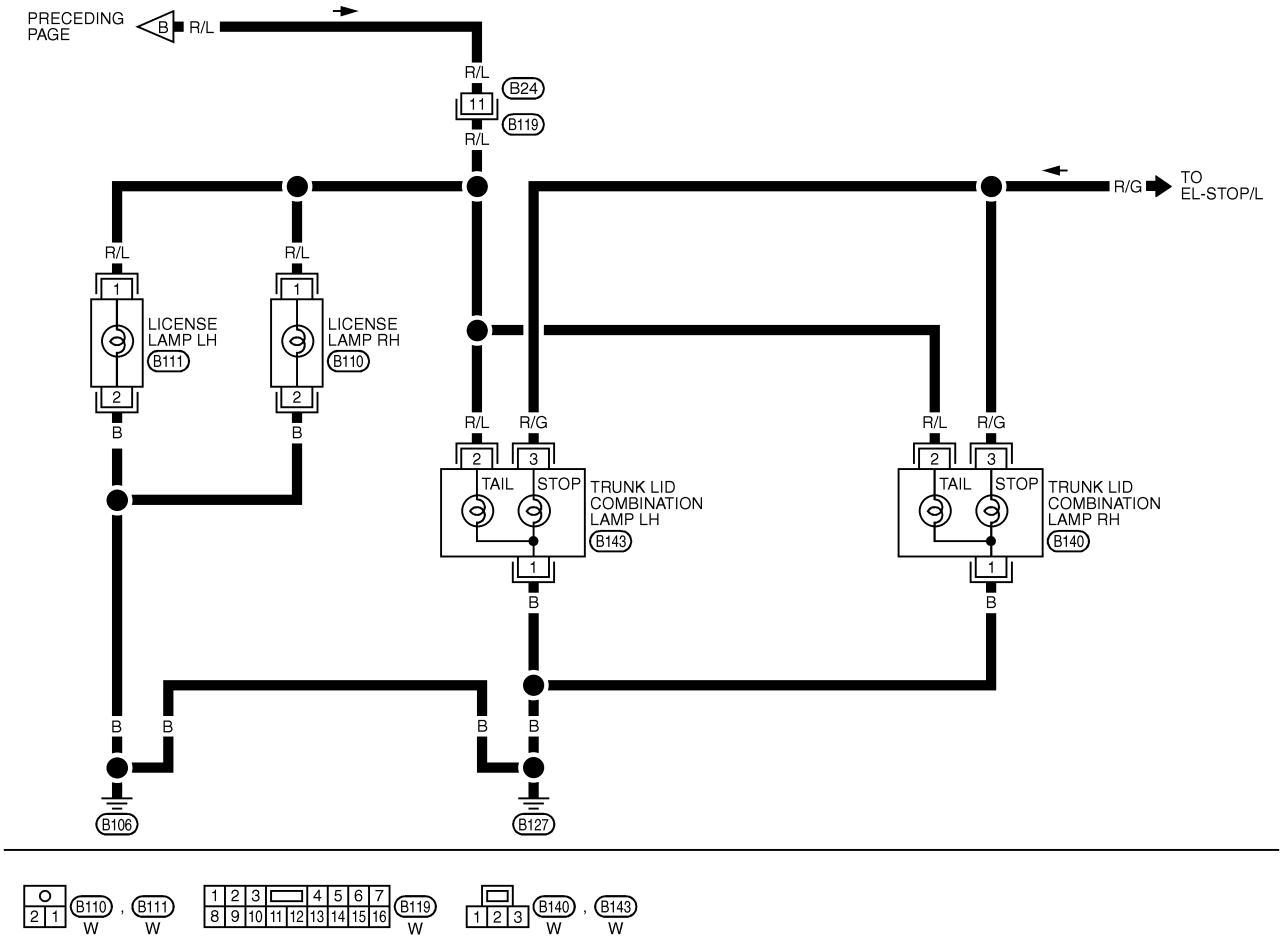
EL-TAIL/L-03





MEL434K

EL-TAIL/L-04

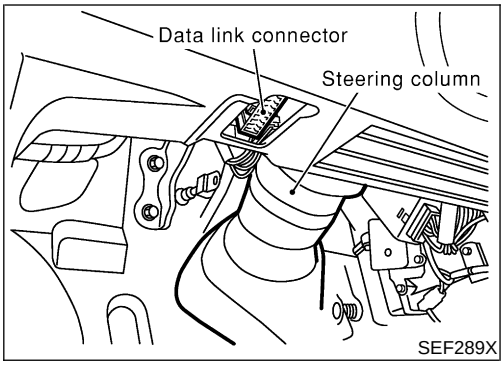


MEL435K

SMART ENTRANCE CONTROL UNIT TERMINALS AND REFERENCE VALUE BETWEEN EACH TERMINAL AND GROUND

TERMINAL	WIRE COLOR	ITEM	CONDITION	DATA (DC)
5	PU	HEADLAMP BATTERY SAVER CONTROL UNIT	WHEN HEADLAMP BATTERY SAVER TIMER IS OPERATED	12V
10	R/B	POWER SOURCE (FUSE)	–	12V
16	B	GROUND	–	–
29	SB	DRIVER DOOR SWITCH	OFF (CLOSED)→ ON (OPEN)	5V→0V
33	G	IGN ON	IGNITION KEY IS IN "ON" POSITION	12V
40	R/L	PASSENGER DOOR SWITCH	OFF (CLOSED)→ ON (OPEN)	5V→0V

SEL035X



SEF289X

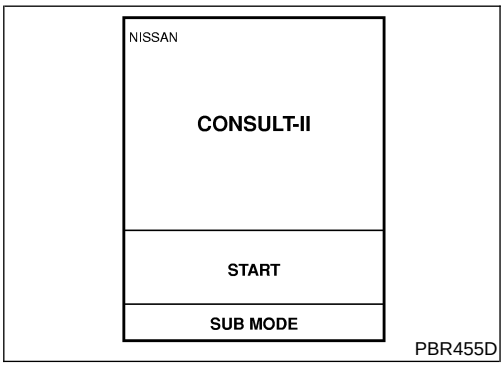
CONSULT-II Inspection Procedure

NHEL0209

“RETAINED PWR”

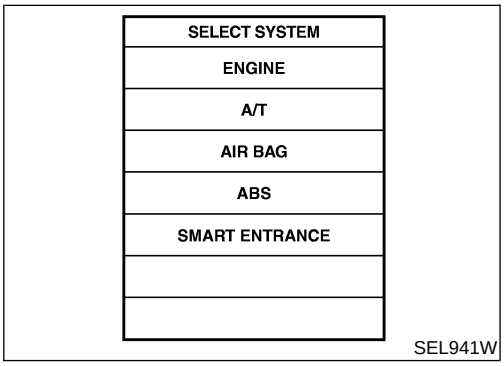
NHEL0209S01

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



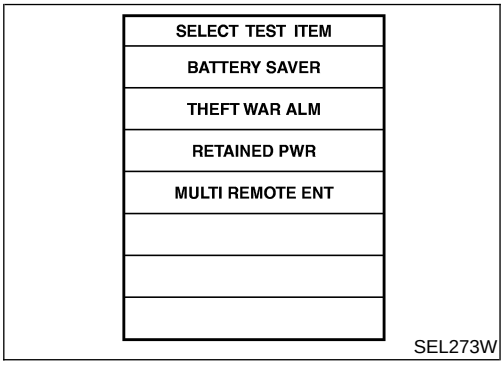
PBR455D

3. Turn ignition switch “ON”.
4. Touch “START”.



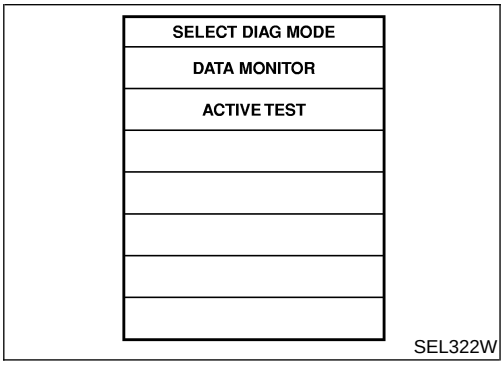
SEL941W

5. Touch “SMART ENTRANCE”.



SEL273W

6. Touch “RETAINED PWR”.



SEL322W

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

CONSULT-II Application Items

NHEL0210

“RETAINED PWR” Data Monitor

NHEL0210S01

NHEL0210S0101

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

NHEL0210S0102

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 “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.**

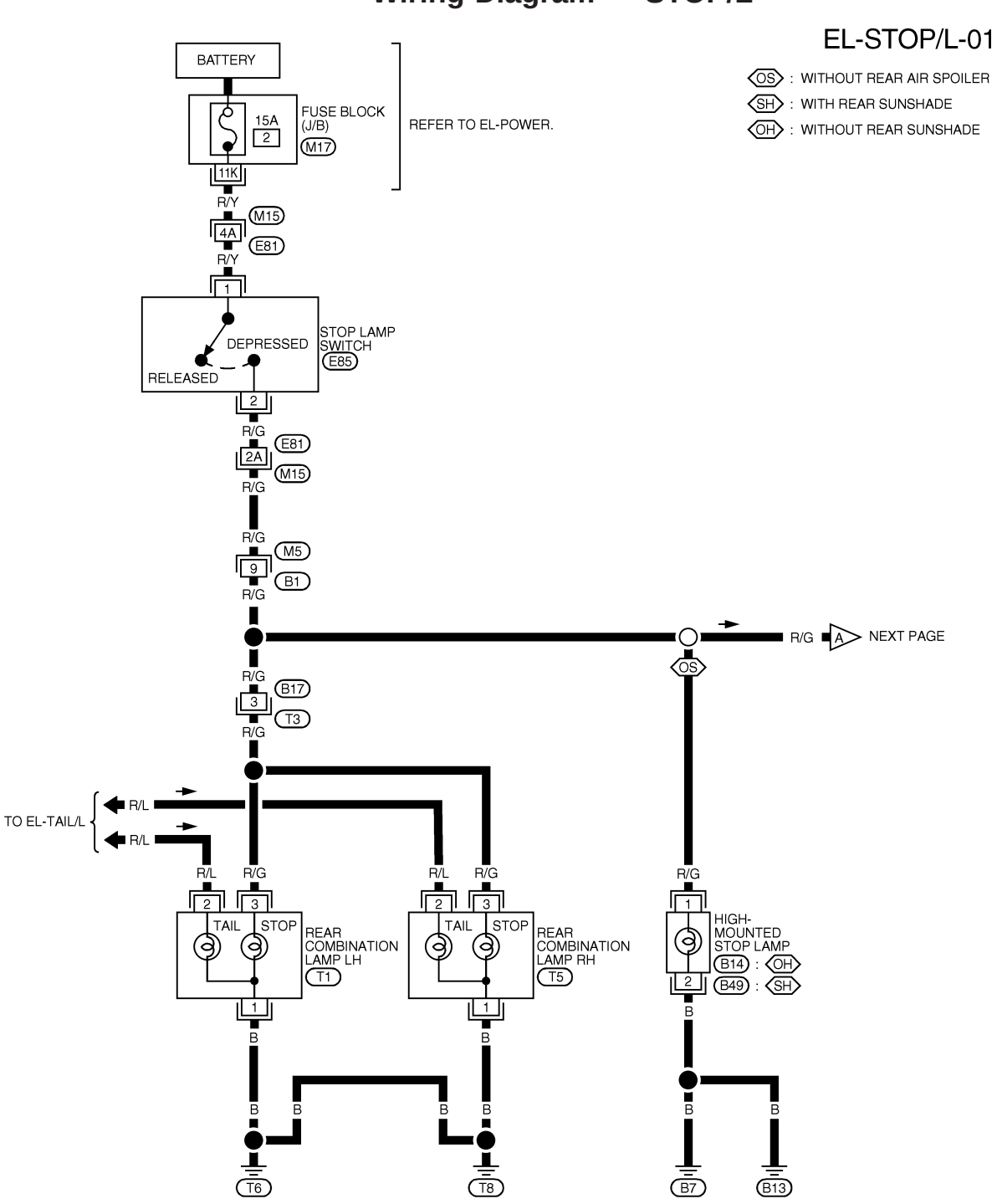
Trouble Diagnoses

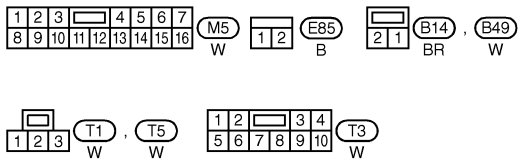
=NHEL0211

Symptom	Possible cause	Repair order
No lamps operate (including headlamps).	1. 10A fuse 2. Lighting switch 3. Headlamp battery saver control unit	1. Check 10A fuse [No. 12, lacated in fuse block (J/B)]. Verify battery positive voltage is present at terminal 7 of headlamp battery saver control unit. 2. Check lighting switch. 3. Check headlamp battery saver control unit. (EL-44)
No parking, side marker, license and tail lamps operate, but headlamps do operate.	1. 10A fuse 2. Tail lamp relay 3. Tail lamp relay circuit 4. Lighting switch 5. Lighting switch circuit 6. Headlamp battery saver control unit	1. Check 10A fuse (No. 60, 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 harness between headlamp battery saver control unit terminals 6 and 14 and tail lamp relay terminal 2. Check harness between tail lamp relay terminal 5 and fuse block. 4. Check lighting switch. 5. Check harness between lighting switch terminal 11 and headlamp battery saver control unit terminals 5 and 13. Check harness between lighting switch terminal 5 and ground. 6. Check headlamp battery saver control unit. (EL-44)
Battery saver control does not operate properly.	1. RAP signal circuit 2. Driver or passenger side door switch circuit 3. Lighting switch circuit 4. Headlamp battery saver control unit 5. Smart entrance control unit	1. Check RAP signal. a. (With CONSULT-II) Check RAP signal with CONSULT-II. Use “ACTIVE TEST” mode, “RETAINED PWR” in “SMART ENTRANCE”. (Refer to EL-95.) If NG, go to the step b. below. b. Verify 12 positive voltage from smart entrance control unit is present at terminal 10 of battery saver control unit: ● 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 for open or short circuit. Check driver or passenger side door switch ground circuit. Check driver or passenger side door switch. 3. Check harness between headlamp battery saver control unit terminals 5 or 13 and lighting switch terminal 11 for open or short circuit. Check harness between lighting switch terminal 5 and ground. Check lighting switch. 4. Check headlamp battery saver control unit. (EL-44) 5. Check smart entrance control unit. (EL-396)

Wiring Diagram — STOP/L —

NHEL0025

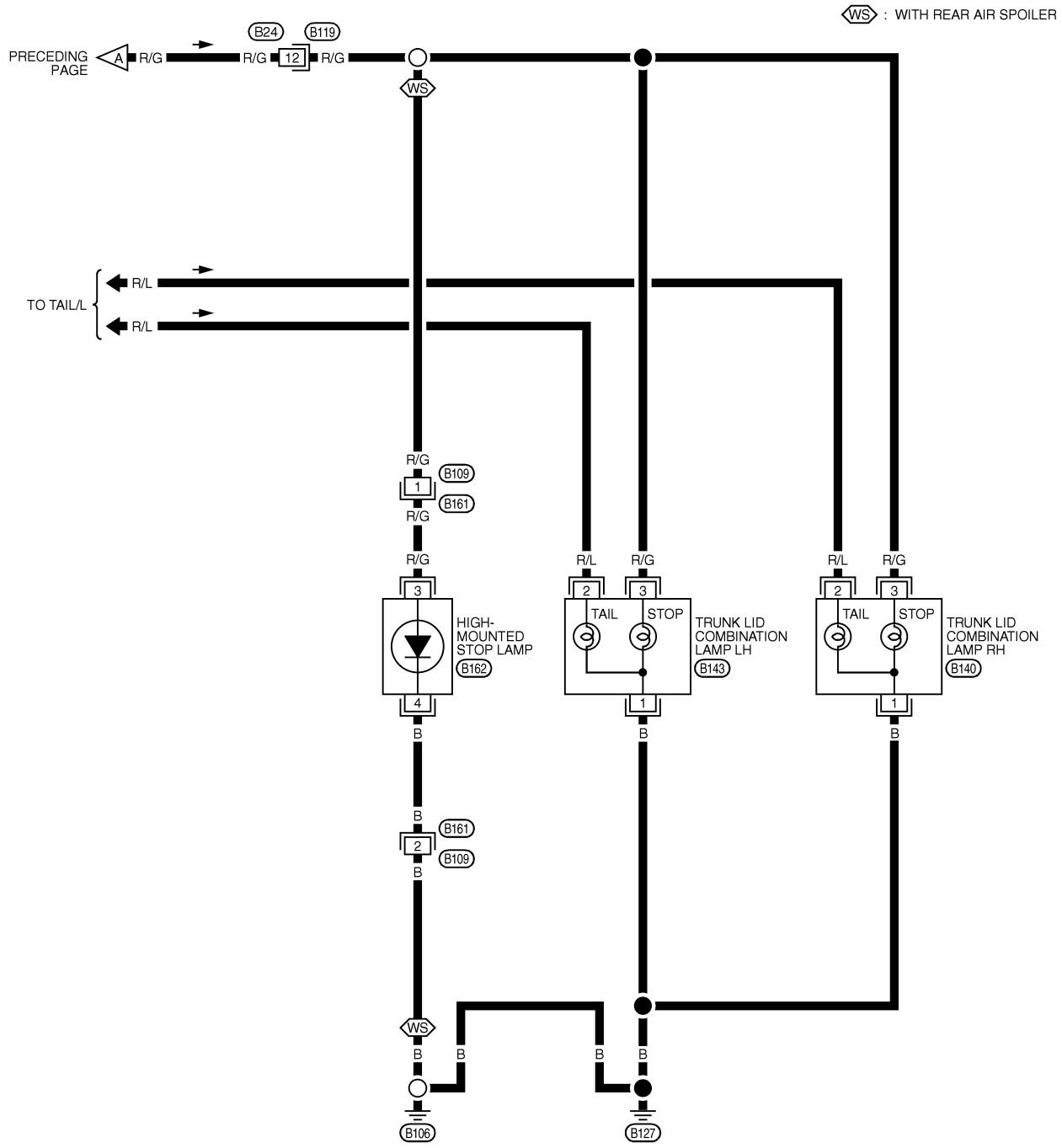


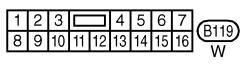


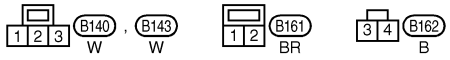
REFER TO THE FOLLOWING.
M15 , E81 -SUPER MULTIPLE JUNCTION (SMJ)
M17 -FUSE BLOCK-JUNCTION BOX (J/B)

MEL436K

EL-STOP/L-02





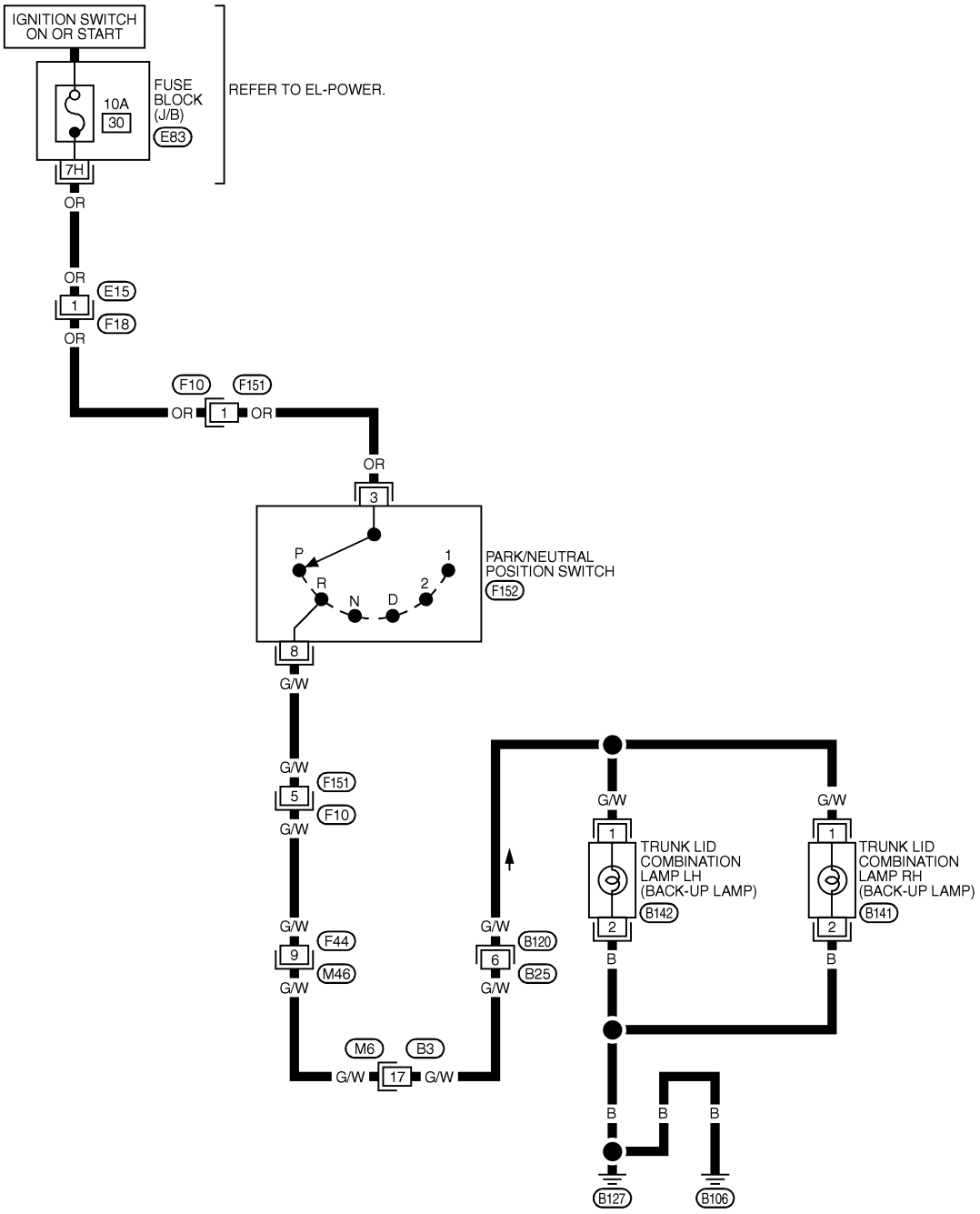


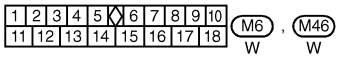
MEL437K

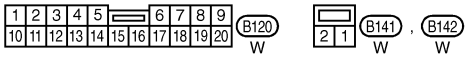
Wiring Diagram — BACK/L —

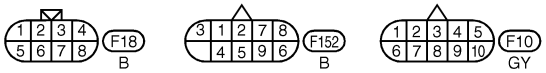
NHEL0026

EL-BACK/L-01









REFER TO THE FOLLOWING.

E83 -FUSE BLOCK-JUNCTION BOX (J/B)

MEL438K

System Description

NHEL0164

OUTLINE

NHEL0164S01

Power is supplied at all times

- to headlamp LH relay terminals 1 and 3
- through 15A fuse (No. 68, located in the fuse and fusible link box) (without xenon headlamp), or
- to headlamp LH relay terminals 1 and 6
- through 20A fuse (No. 54, located in the fuse and fusible link box) (with xenon headlamp), and
- to headlamp battery saver control unit terminal 7
- through 10A fuse [No. 12, located in the fuse block (J/B)], and
- to front fog lamp relay terminal 3
- through 15A fuse (No. 6, located in the fuse and fusible link box).

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

- to headlamp battery saver control unit terminal 1
- through 10A fuse [No. 30, located in the fuse block (J/B)], and
- to headlamp battery saver control unit terminal 10, and
- to smart entrance control unit terminal 33
- through 10A fuse [No. 10, located in the fuse block (J/B)].

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

- to headlamp LH relay terminal 2 from headlamp battery saver control unit terminal 2.
- through headlamp battery saver control unit terminal 3, and
- through lighting switch, and body grounds E11, E22 and E53.

Headlamp LH relay is then energized.

FOG LAMP OPERATION

NHEL0164S02

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

- to fog lamp relay terminal 2
- through the fog lamp switch, lighting switch and body grounds E11, E22 and E53.

The fog lamp relay is energized and power is supplied

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

Ground is supplied to terminal 2 of each fog lamp through body grounds E11, E22 and E53.
With power and ground supplied, the fog lamps illuminate.

BATTERY SAVER CONTROL

NHEL0164S03

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

- to headlamp battery saver control unit terminals 5 and 13 from lighting switch terminal 11, and then
- to headlamp LH relay terminal 2 from headlamp battery saver control unit terminal 2
- through headlamp battery saver control unit terminal 3 from lighting switch terminal 12.

Then the fog lamps illuminate again.

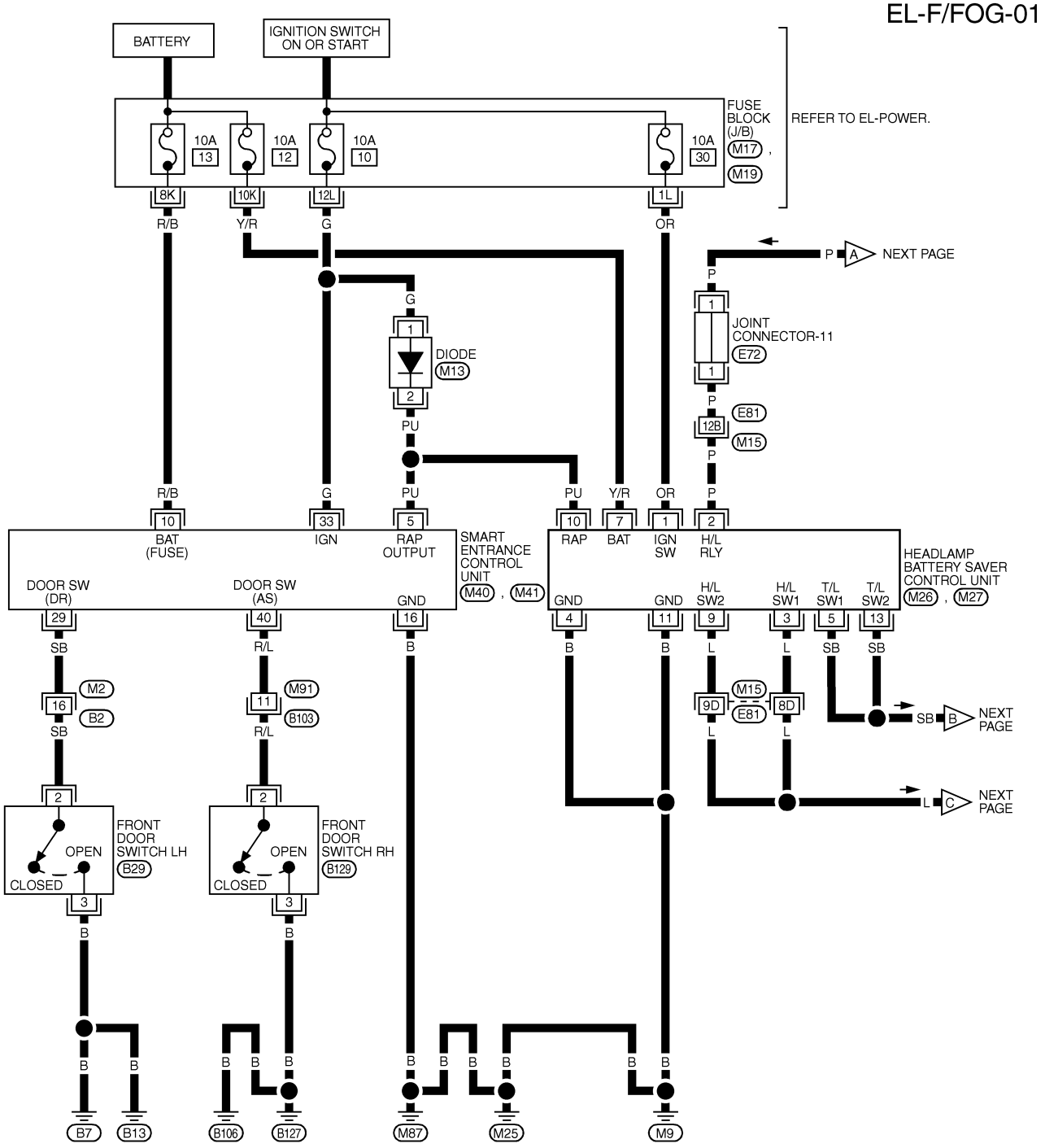
Wiring Diagram — F/FOG —

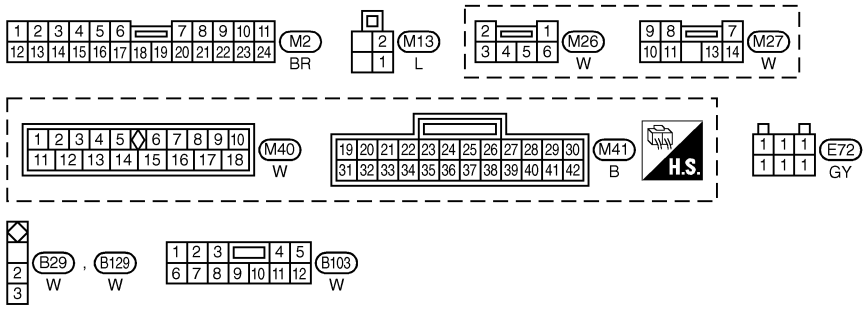
NHEL0028

WITHOUT XENON HEADLAMP

NHEL0028S01

EL-F/FOG-01

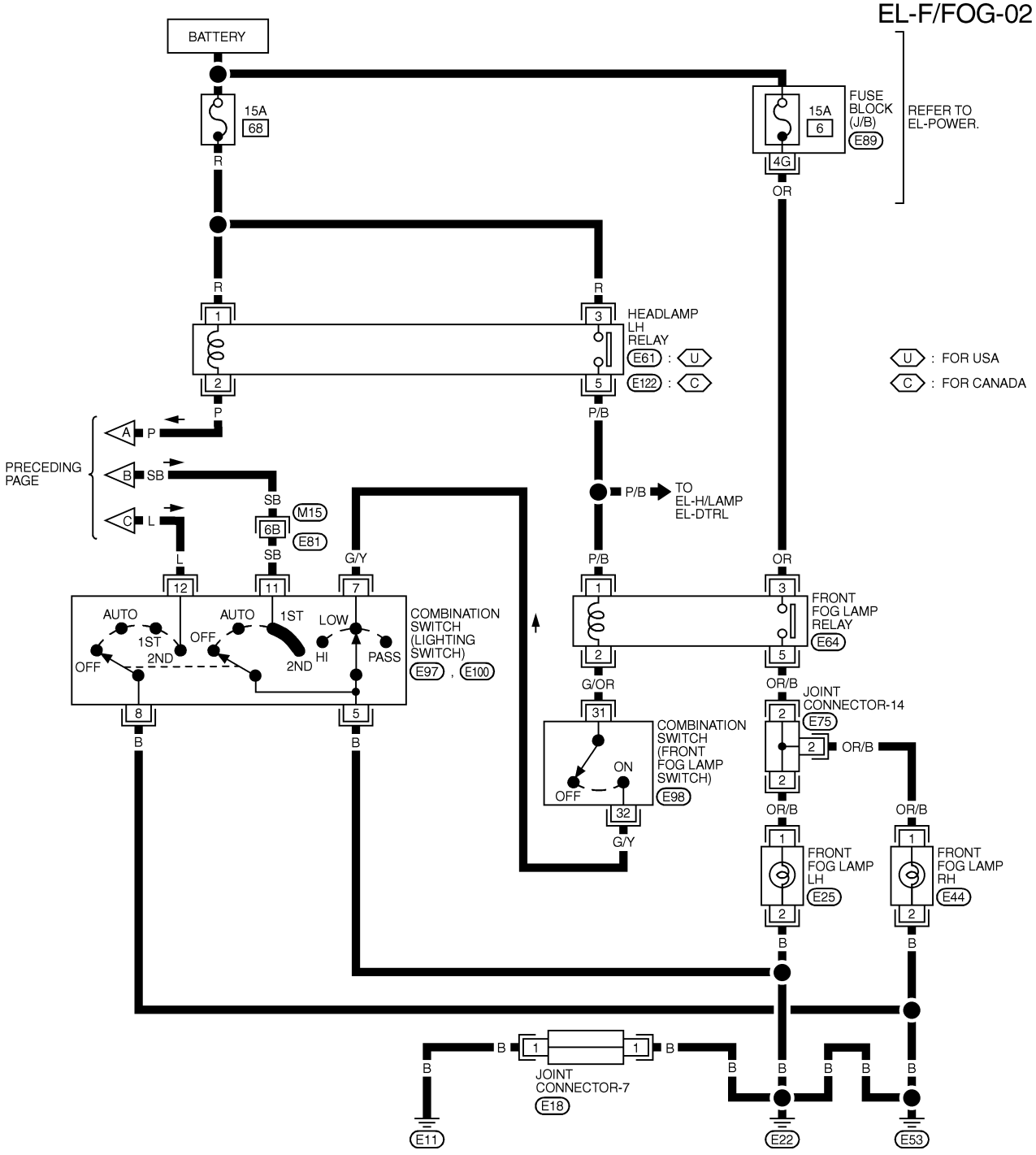


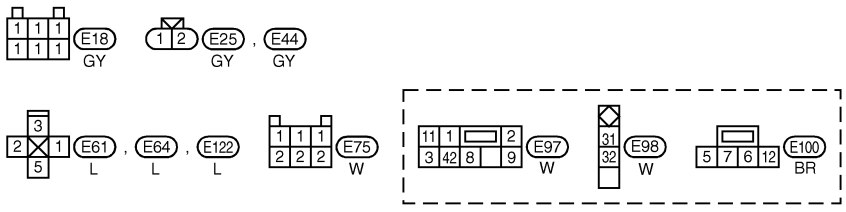


REFER TO THE FOLLOWING.
M15 -SUPER MULTIPLE JUNCTION (SMJ)
M17 , M19 -FUSE BLOCK-JUNCTION BOX (J/B)

MEL163M

EL-F/FOG-02





REFER TO THE FOLLOWING.
M15 -SUPER MULTIPLE JUNCTION (SMJ)
E89 -FUSE BLOCK-JUNCTION BOX (J/B)

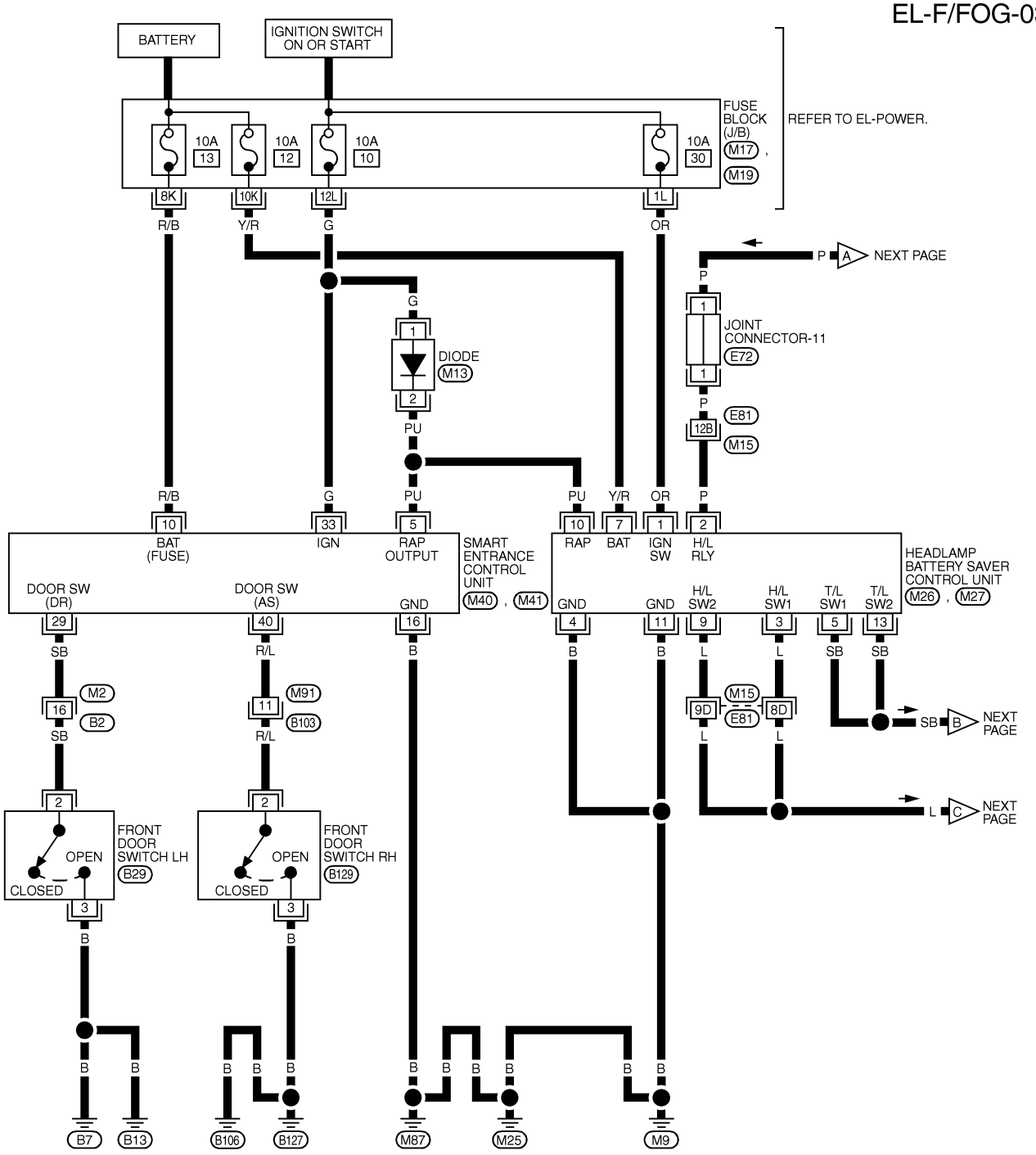
MEL632L

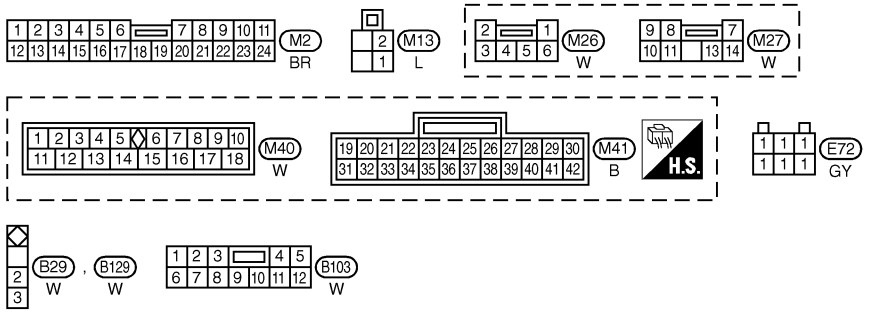
Wiring Diagram — F/FOG — (Cont'd)

WITH XENON HEADLAMP

NHEL0028S02

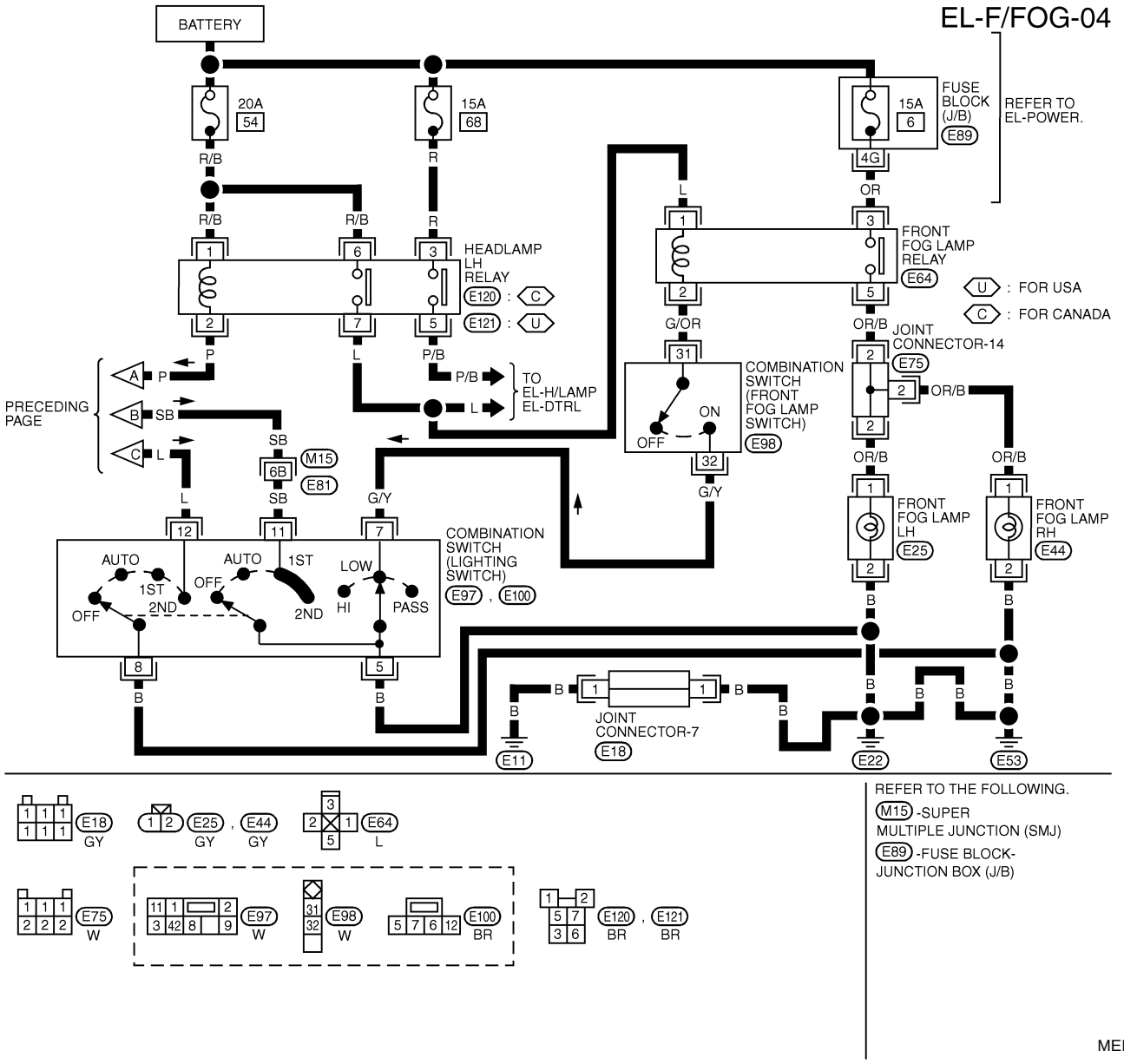
EL-F/FOG-03





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

MEL164M



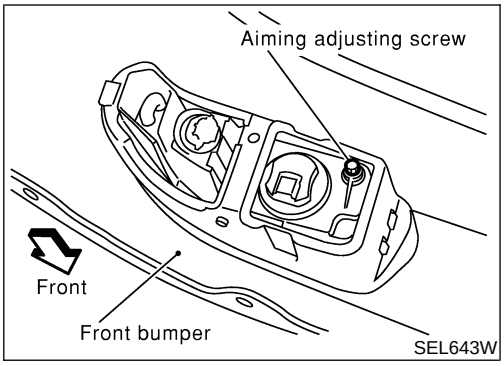
SMART ENTRANCE CONTROL UNIT TERMINALS AND REFERENCE VALUE BETWEEN EACH TERMINAL AND GROUND

TERMINAL	WIRE COLOR	ITEM	CONDITION	DATA (DC)
5	PU	HEADLAMP BATTERY SAVER CONTROL UNIT	WHEN HEADLAMP BATTERY SAVER TIMER IS OPERATED	12V
10	R/B	POWER SOURCE (FUSE)	–	12V
16	B	GROUND	–	–
29	SB	DRIVER DOOR SWITCH	OFF (CLOSED)→ ON (OPEN)	5V→0V
33	G	IGN ON	IGNITION KEY IS IN "ON" POSITION	12V
40	R/L	PASSENGER DOOR SWITCH	OFF (CLOSED)→ ON (OPEN)	5V→0V

SEL035X

Wiring Diagram — F/FOG — (Cont'd)

NOTE:
For CONSULT-II Inspection Procedure, refer to "HEADLAMP (FOR USA)" (EL-42).
For CONSULT-II Application Items, refer to "HEADLAMP (FOR USA)" (EL-43).
Trouble Diagnoses for battery saver control, refer to "HEADLAMP (FOR USA)" (EL-43).



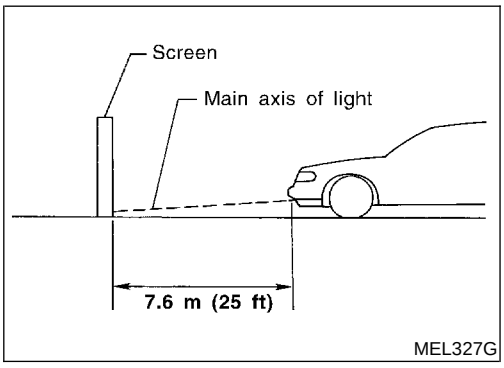
Aiming Adjustment

=NHEL0029

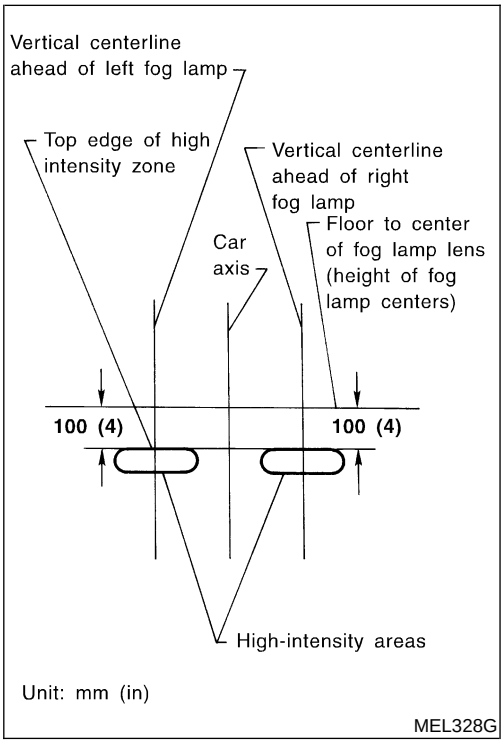
Before performing aiming adjustment, make sure of the following.

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

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



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



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

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

System Description

NHEL0030

TURN SIGNAL OPERATION

NHEL0030S01

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

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

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

LH Turn

NHEL0030S0101

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 1
- combination meter terminal 25
- rear combination lamp LH terminal 1.

Ground is supplied to the front turn signal lamp LH terminal 2 through body grounds E11, E22 and E53.
Ground is supplied to the rear combination lamp LH terminal 2 through body grounds T6 and T8.
Ground is supplied to combination meter terminal 30 through body grounds M9, M25 and M87.
With power and ground supplied, the combination flasher unit controls the flashing of the LH turn signal lamps.

RH Turn

NHEL0030S0102

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 1
- combination meter terminal 29
- rear combination lamp RH terminal 1.

Ground is supplied to the front turn signal lamp RH terminal 2 through body grounds E11, E22 and E53.
Ground is supplied to the rear combination lamp RH terminal 2 through body grounds T6 and T8.
Ground is supplied to combination meter terminal 30 through body grounds M9, M25 and M87.
With power and ground supplied, the combination flasher unit controls the flashing of the RH turn signal lamps.

HAZARD LAMP OPERATION

NHEL0030S02

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

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

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

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

Ground is supplied to combination flasher unit terminal 2 through body grounds M9, M25 and M87.
Power is supplied through terminal 5 of the hazard switch to

- front turn signal lamp LH terminal 1
- combination meter terminal 25
- rear combination lamp LH terminal 1.

Power is supplied through terminal 6 of the hazard switch to

- front turn signal lamp RH terminal 1
- combination meter terminal 29
- rear combination lamp RH terminal 1.

Ground is supplied to terminal 2 of each front turn signal lamp through body grounds E11, E22 and E53.
Ground is supplied to terminal 2 of each rear combination lamp through body grounds T6 and T8.
Ground is supplied to combination meter terminal 30 through body grounds M9, M25 and M87.
With power and ground supplied, the combination flasher unit controls the flashing of the hazard warning lamps.

MULTI-REMOTE CONTROL SYSTEM OPERATION

NHEL0030S03

Power is supplied at all times

- through 15A fuse [No. 5, located in the fuse block (J/B)]
- to multi-remote control relay terminals 1, 6 and 3.

Ground is supplied to multi-remote control relay terminal 2, when the multi-remote control system is triggered through the smart entrance control unit.
Refer to "MULTI-REMOTE CONTROL SYSTEM", EL-326.
The multi-remote control relay is energized.
Power is supplied through terminal 7 of the multi-remote control relay

- to front turn signal lamp LH terminal 1
- to combination meter terminal 25
- to rear combination lamp LH terminal 1.

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

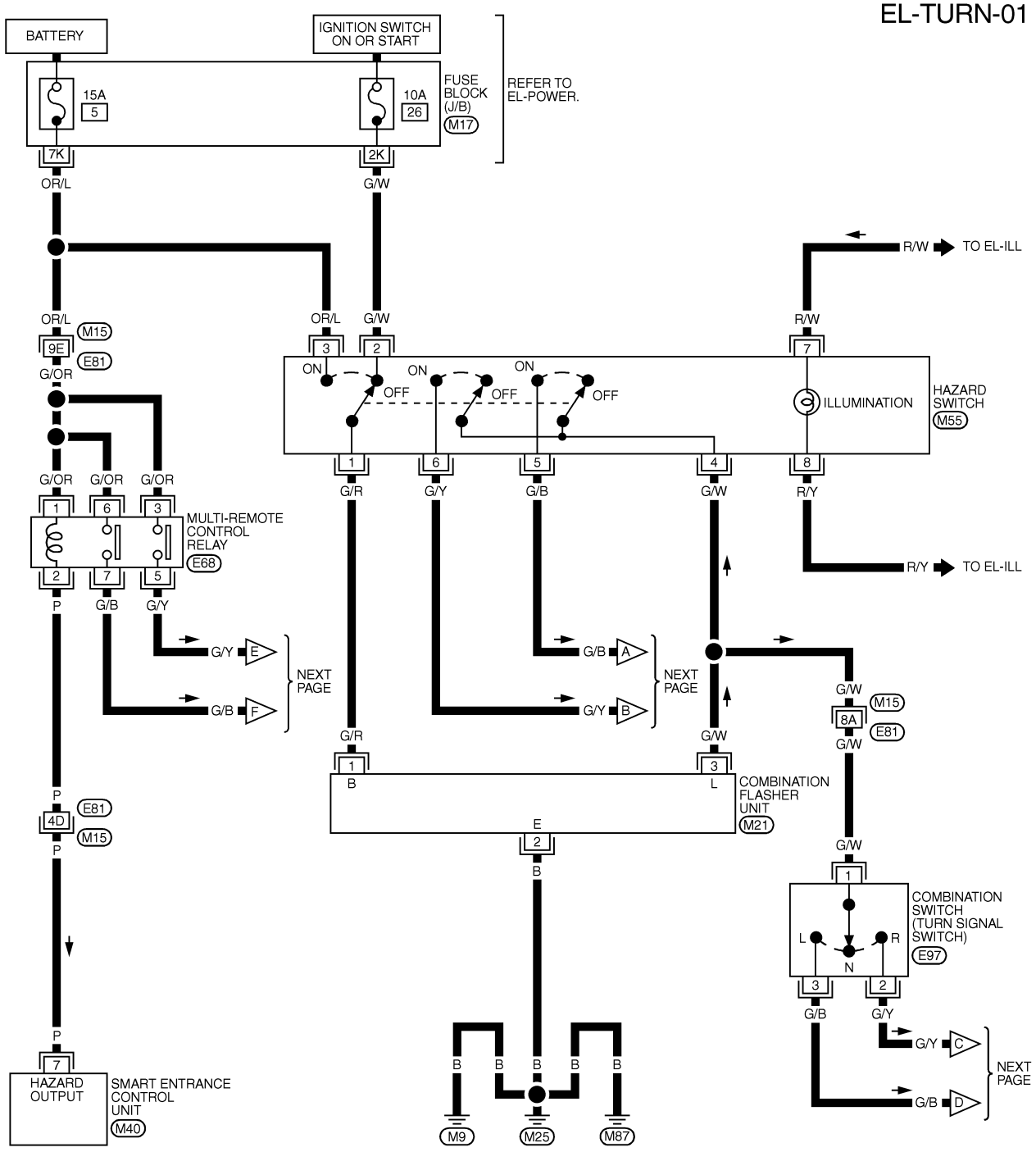
- to front turn signal lamp RH terminal 1
- to combination meter terminal 29
- to rear combination lamp RH terminal 1.

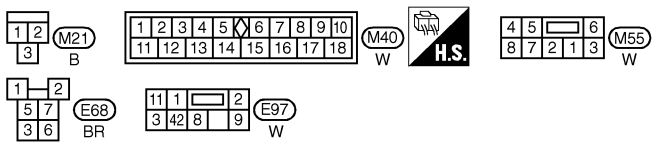
Ground is supplied to terminal 2 of each front turn signal lamp through body grounds E11, E22 and E53.
Ground is supplied to terminal 2 of each rear combination lamp through body grounds T6 and T8.
Ground is supplied to combination meter terminal 30 through body grounds M9, M25 and M87.
With power and ground supplied, the smart entrance control unit controls the flashing of the hazard warning lamps.

Wiring Diagram — TURN —

NHEL0032

EL-TURN-01

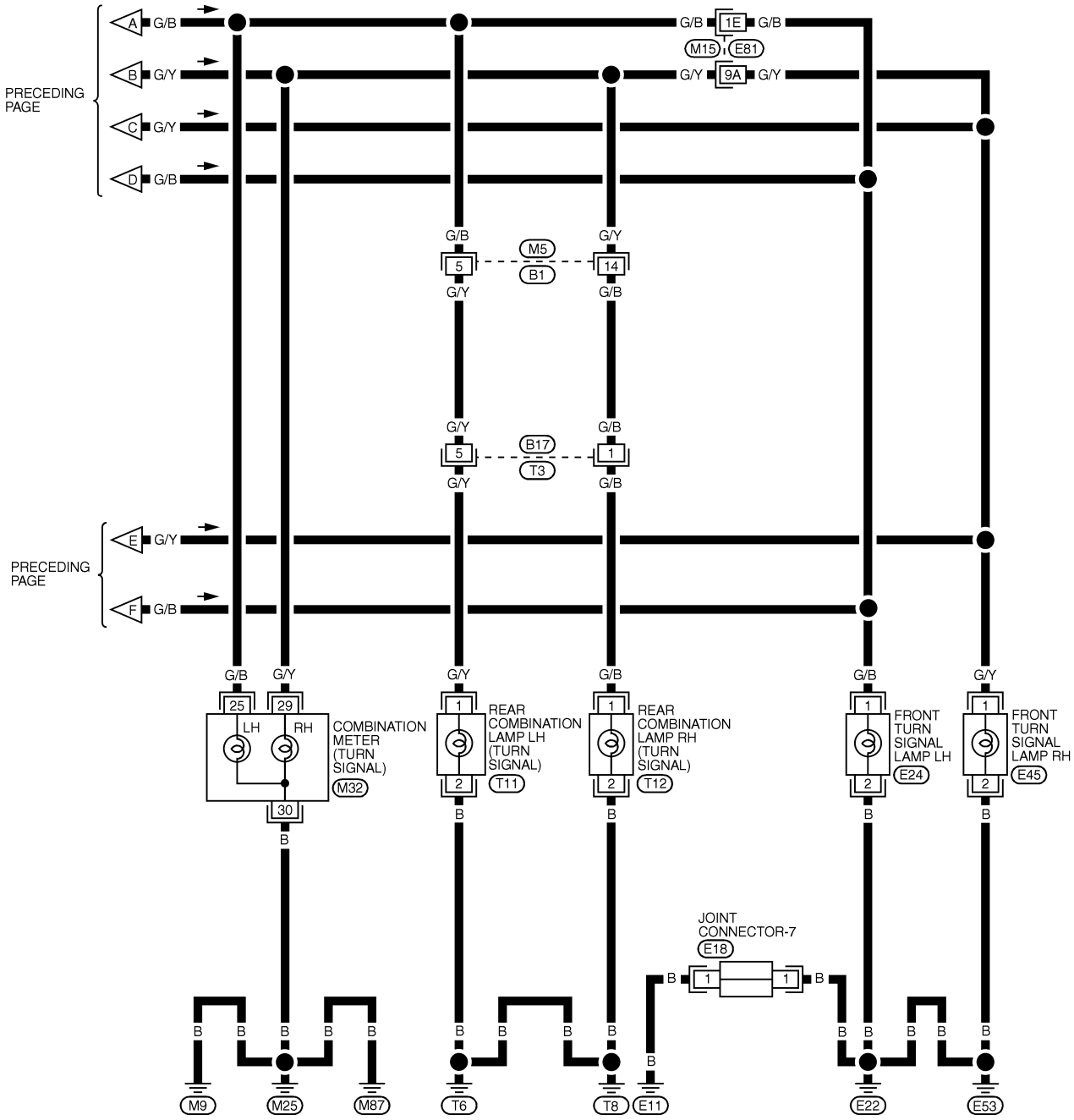




REFER TO THE FOLLOWING.
M15 , E81 -SUPER MULTIPLE JUNCTION (SMJ)
M17 -FUSE BLOCK-JUNCTION BOX (J/B)

MEL429K

EL-TURN-02



M5 W
M32 BR
E18 GY
E24 BR , E45 BR
T3 W
T11 BR , T12 BR

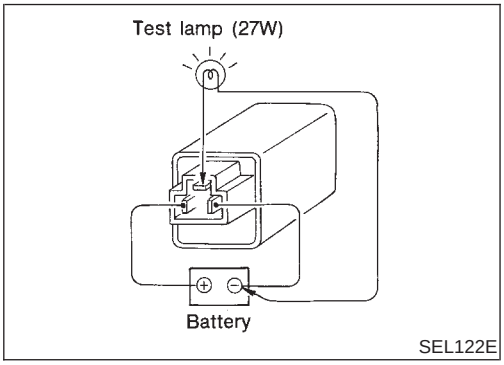
REFER TO THE FOLLOWING.
M15 , E81 -SUPER MULTIPLE JUNCTION (SMJ)

MEL430K

Trouble Diagnoses

NHEL0033

Symptom	Possible cause	Repair order
Turn signal and hazard warning lamps do not operate.	1. Hazard switch 2. Combination flasher unit 3. Open in combination flasher unit circuit	1. Check hazard switch. 2. Refer to combination flasher unit check. 3. Check wiring to combination flasher unit for open circuit.
Turn signal lamps do not operate but hazard warning lamps operate.	1. 10A fuse 2. Hazard switch 3. Turn signal switch 4. Open in turn signal switch circuit	1. Check 10A fuse [No. 26, located in fuse block (J/B)]. Turn ignition switch ON and verify battery positive voltage is present at terminal 2 of hazard switch. 2. Check hazard switch. 3. Check turn signal switch. 4. Check the wire between combination flasher unit terminal 3 and turn signal switch terminal 1 for open circuit.
Hazard warning lamps do not operate but turn signal lamps operate.	1. 15A fuse 2. Hazard switch 3. Open in hazard switch circuit	1. Check 15A fuse [No. 5, located in fuse block (J/B)]. Verify battery positive voltage is present at terminal 3 of hazard switch. 2. Check hazard switch. 3. Check the wire between combination flasher unit terminal 3 and hazard switch terminal 4 for open circuit.
Front turn signal lamp LH or RH does not operate.	1. Bulb 2. Grounds E11, E22 and E53 3. Front turn signal lamp circuit	1. Check bulb. 2. Check grounds E11, E22 and E53. 3. Check the wire between combination switch and front turn signal lamp.
Rear turn signal lamp LH or RH does not operate.	1. Bulb 2. Grounds T6 and T8 3. Rear turn signal lamp circuit	1. Check bulb. 2. Check grounds T6 and T8. 3. Check the wire between combination switch and rear turn signal lamp.
LH and RH turn indicators do not operate.	1. Ground	1. Check grounds M9, M25 and M87.
LH or RH turn indicator does not operate.	1. Bulb	1. Check bulb in combination meter.



Electrical Components Inspection

NHEL0034

COMBINATION FLASHER UNIT CHECK

NHEL0034S01

- 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

NHEL0268

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

Power is supplied at all times

- to tail lamp relay terminals 1 and 3
- through 10A fuse (No. 60, located in the fuse and fusible link box), and
- to headlamp battery saver control unit terminal 7
- through 10A fuse [No. 12, located in the fuse block (J/B)].

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

- to headlamp battery saver control unit terminal 1
- through 10A fuse [No. 30, located in the fuse block (J/B)], and
- to headlamp battery saver control unit terminal 10, and
- to smart entrance control unit terminal 33
- through 10A fuse [No. 10, located in the fuse block (J/B)].

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

LIGHTING OPERATION BY LIGHTING SWITCH

NHEL0268S01

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

- to tail lamp relay terminal 2 from headlamp battery saver control unit terminals 6 and 14
- through headlamp battery saver control unit terminals 5 and 13, and
- through lighting switch and body grounds E11, E22 and E53.

Tail lamp relay is then energized.

The lighting switch must be in the 1ST or 2ND position for the cornering lamps to operate.

With the ignition switch in the ON or START position, power is supplied to cornering lamp relay terminal 5

- through 10A fuse [No. 26, located in the fuse block (J/B)].

Power is supplied to cornering lamp relay terminal 1

- through tail lamp relay terminal 5, when the lighting switch in the 1ST or 2ND position.

Ground is supplied to cornering lamp relay terminal 2 through body grounds E11, E22 and E53.

With power and ground supplied, the cornering lamp relay is energized.

Power is supplied

- from terminal 3 of the cornering lamp relay
- to cornering lamp switch terminal 61.

RH turn

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

- from terminal 61 of the cornering lamp switch
- through terminal 62 of the cornering lamp switch
- to cornering lamp RH terminal 1.

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

The RH cornering lamp illuminates until the turn signal lever returns to NEUTRAL position.

LH turn

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

- from terminal 61 of the cornering lamp switch
- through terminal 63 of the cornering lamp switch
- to cornering lamp LH terminal 1.

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

The LH cornering lamp illuminates until the turn signal lever returns to NEUTRAL position.

BATTERY SAVER CONTROL

NHEL0268S02

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

After counting 45 seconds by the RAP signal from the smart entrance control unit to headlamp battery saver control unit, the ground supply to terminal 2 of the tail lamp relay from headlamp battery saver control unit teminals 6 and 14 is terminated.

System Description (Cont'd)

Then cornering lamp is turned off.
Cornering lamp is turned off when driver or passenger side door is opened even if 45 seconds have not passed after the ignition switch is turned from ON (or START) to OFF (or ACC) positions while illumination lamps are illuminated.
When the lighting switch is turned from OFF to 1ST (or 2ND) after cornering lamp is turned off by the battery saver control, ground is supplied

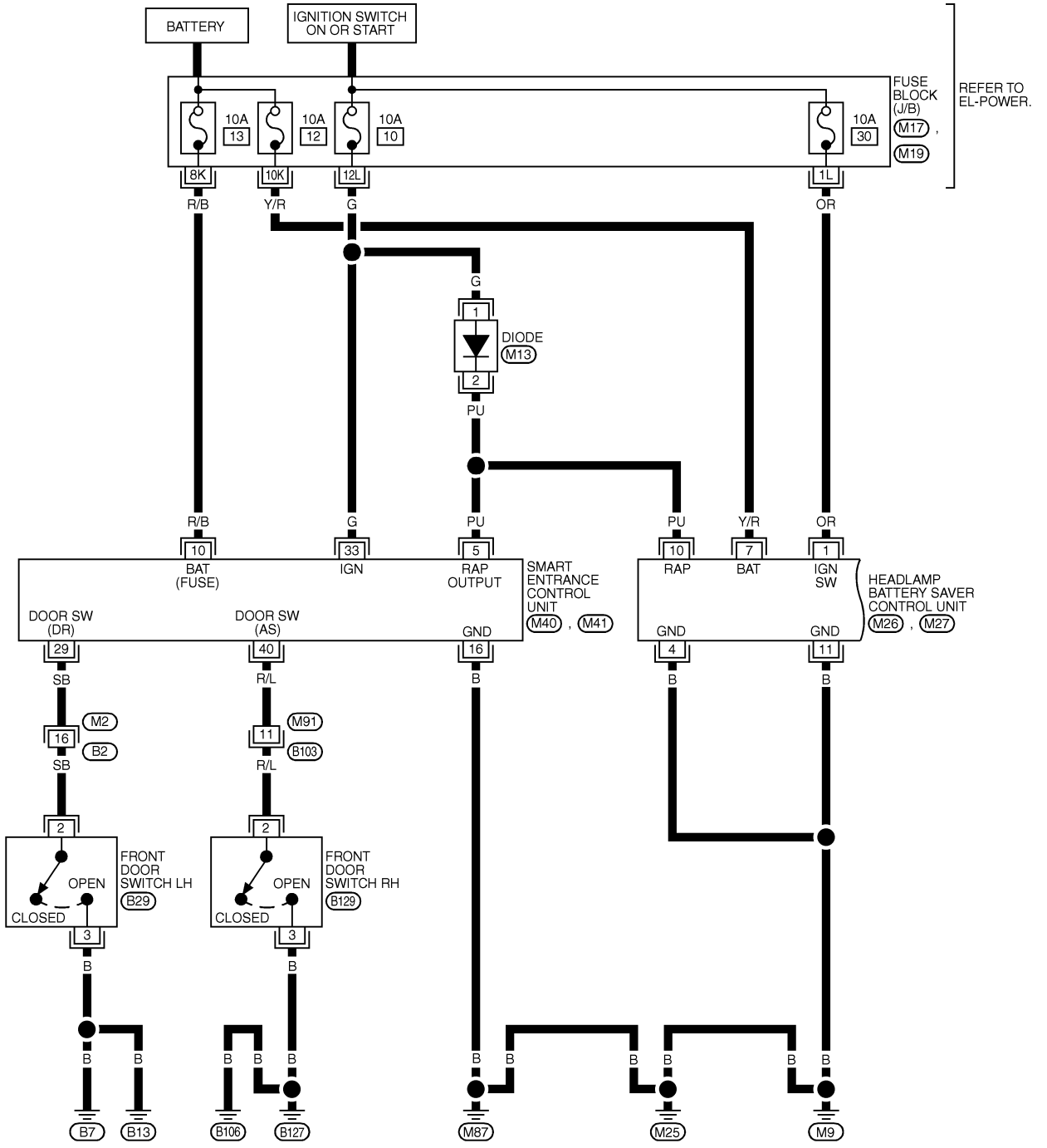
- to headlamp battery saver control unit terminals 5 and 13 from lighting switch terminal 11, and
- to tail lamp relay terminal 2 from headlamp battery saver control unit terminals 6 and 14.

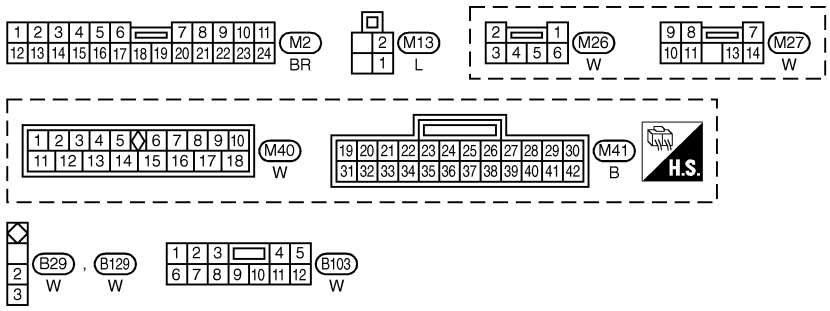
Then cornering lamp illuminates again.

Wiring Diagram — CORNER —

NHEL0270

EL-CORNER-01

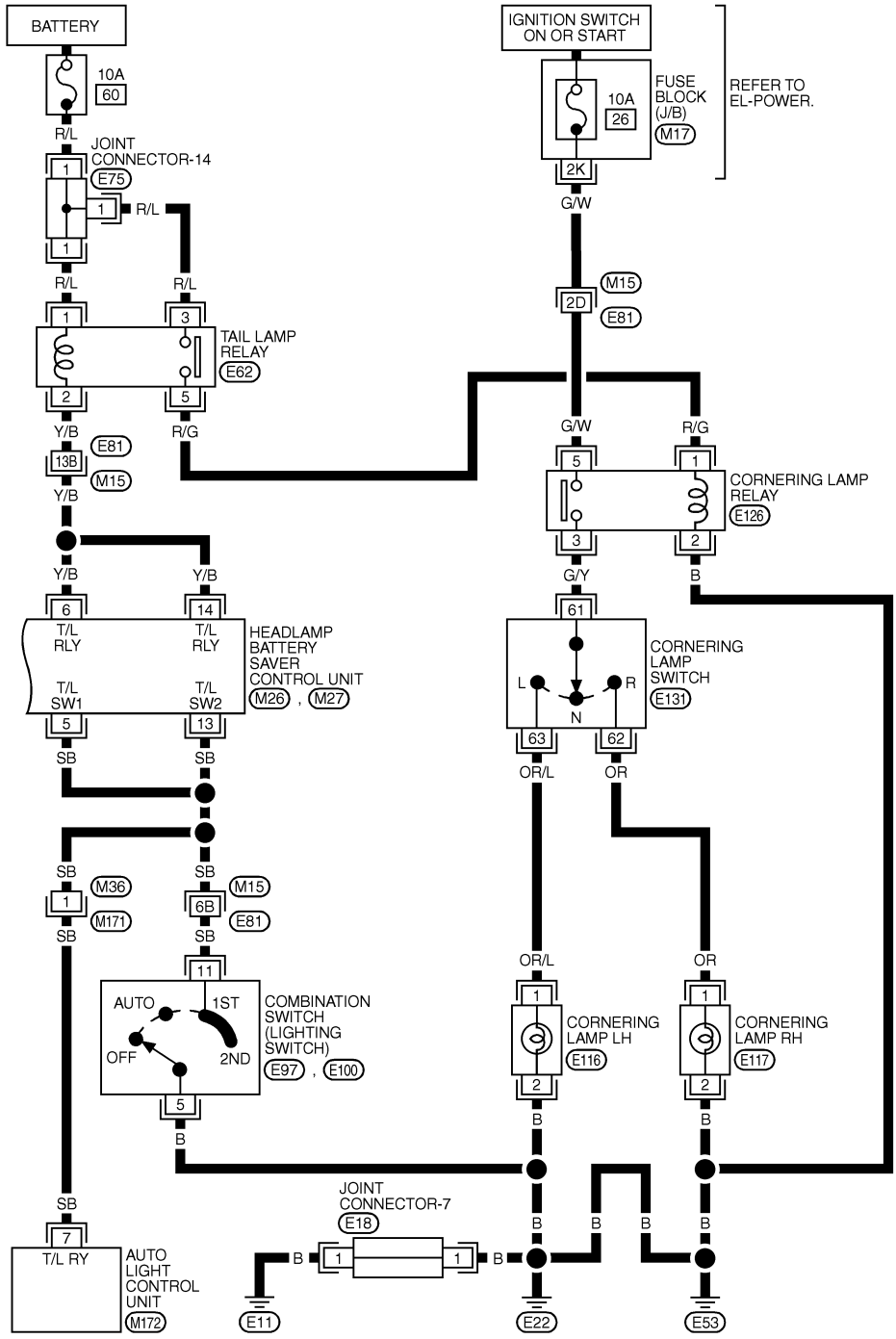


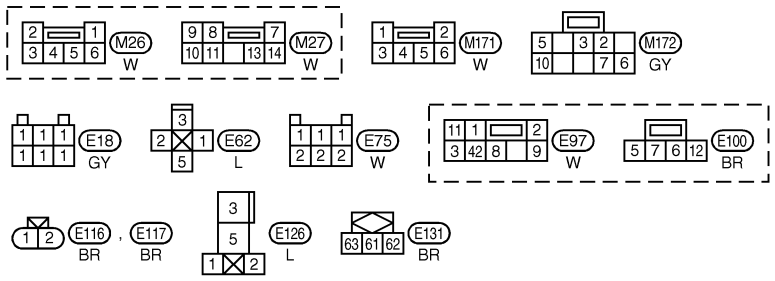


REFER TO THE FOLLOWING.
M17 , M19 -FUSE BLOCK-JUNCTION BOX (J/B)

MEL165M

EL-CORNER-02





REFER TO THE FOLLOWING.
M15 , E81 -SUPER MULTIPLE JUNCTION (SMJ)
M17 -FUSE BLOCK-JUNCTION BOX (J/B)

MEL444K

System Description

NHEL0035

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

Power is supplied at all times

- to tail lamp relay terminals 1 and 3
- through 10A fuse (No. 60, located in the fuse and fusible link box), and
- to headlamp battery saver control unit terminal 7
- through 10A fuse [No. 12, located in the fuse block (J/B)].

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

- to headlamp battery saver control unit terminal 1
- through 10A fuse [No. 30, located in the fuse block (J/B)], and
- to headlamp battery saver control unit terminal 10, and
- to smart entrance control unit terminal 33
- through 10A fuse [No. 10, located in the fuse block (J/B)].

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

LIGHTING OPERATION BY LIGHTING SWITCH

NHEL0035S01

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

- to tail lamp relay terminal 2 from headlamp battery saver control unit terminals 6 and 14
- through headlamp battery saver control unit terminals 5 and 13, and
- through lighting switch and body grounds E11, E22 and E53.

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 door mirror remote control switch, grove box lamp, ashtray and rear power window switch are controlled through terminals 2 and 3 of the illumination control switch and body grounds M9, M25 and M87.

BATTERY SAVER CONTROL

NHEL0035S02

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

After counting 45 seconds by the RAP signal from the smart entrance control unit to headlamp battery saver control unit, the ground supply to terminal 2 of the tail lamp relay from headlamp battery saver control unit teminals 6 and 14 is terminated.

Then illumination lamps are turned off.

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

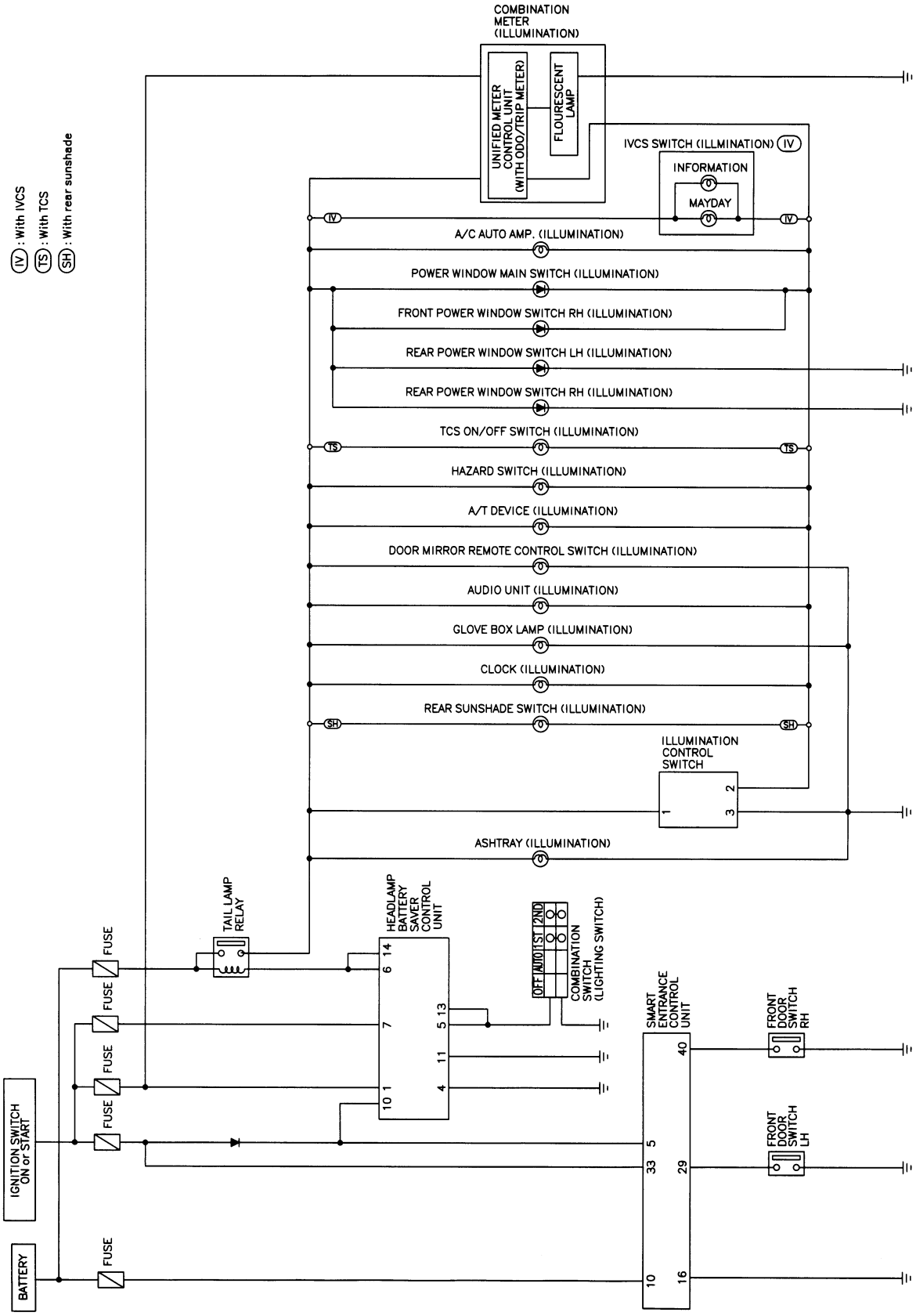
When the lighting switch is turned from OFF to 1ST (or 2ND) after illumination lamps are turned off by the battery saver control, ground is supplied

- to headlamp battery saver control unit terminals 5 and 13 from lighting switch terminal 11, and
- to tail lamp relay terminal 2 from headlamp battery saver control unit terminals 6 and 14.

Then illumination lamps illuminate again.

Schematic

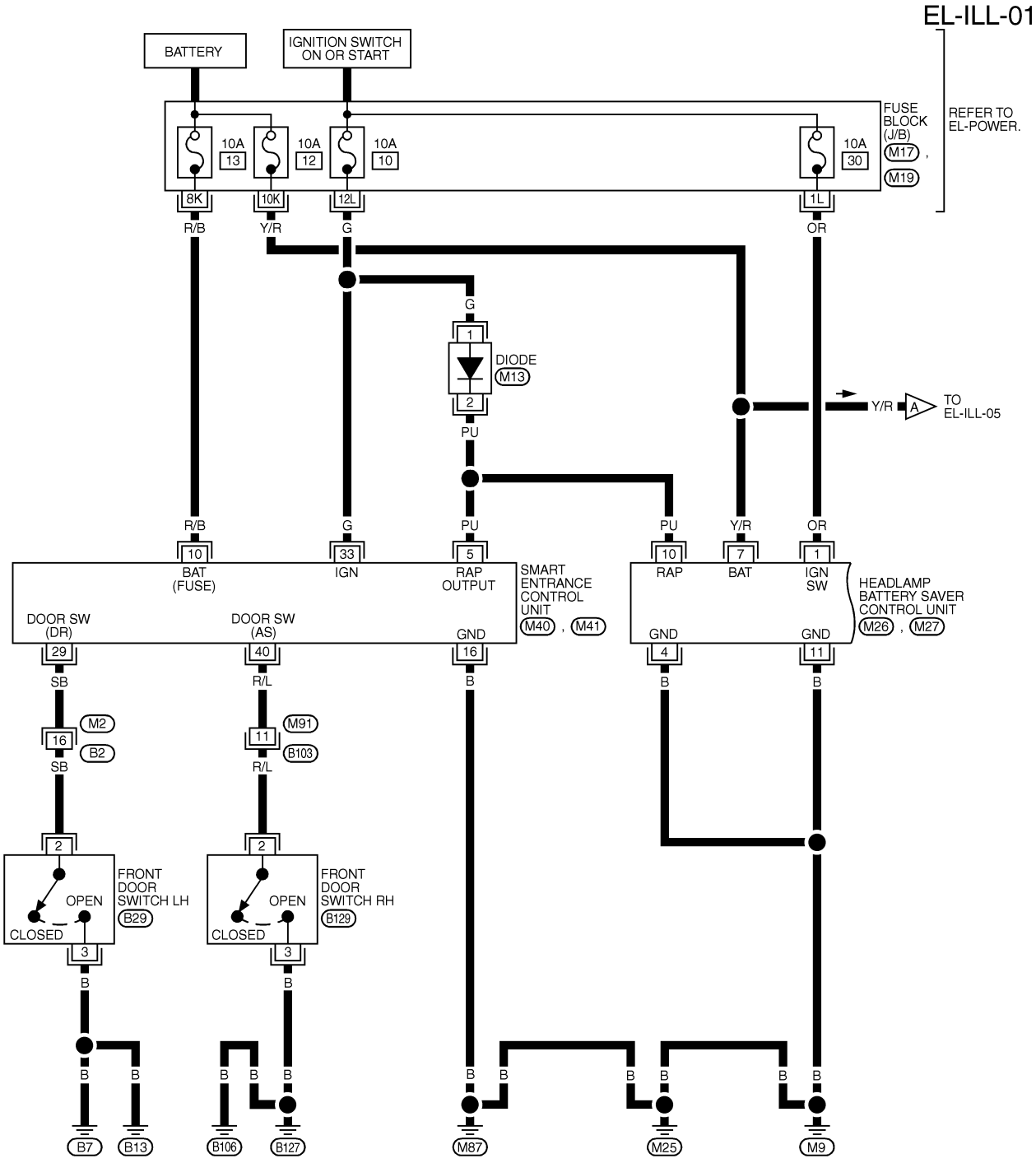
NHEL0036

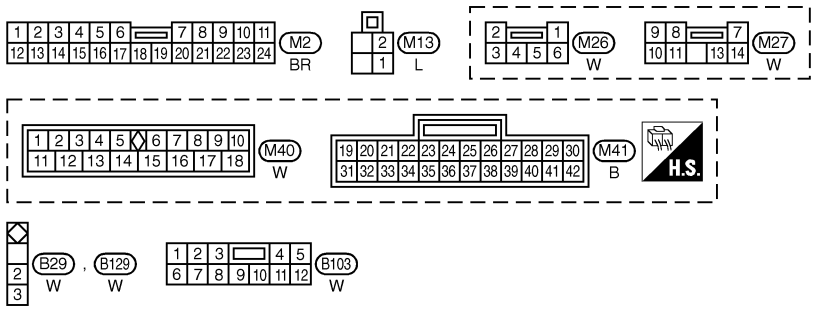


MEL191L

Wiring Diagram — ILL —

NHEL0037



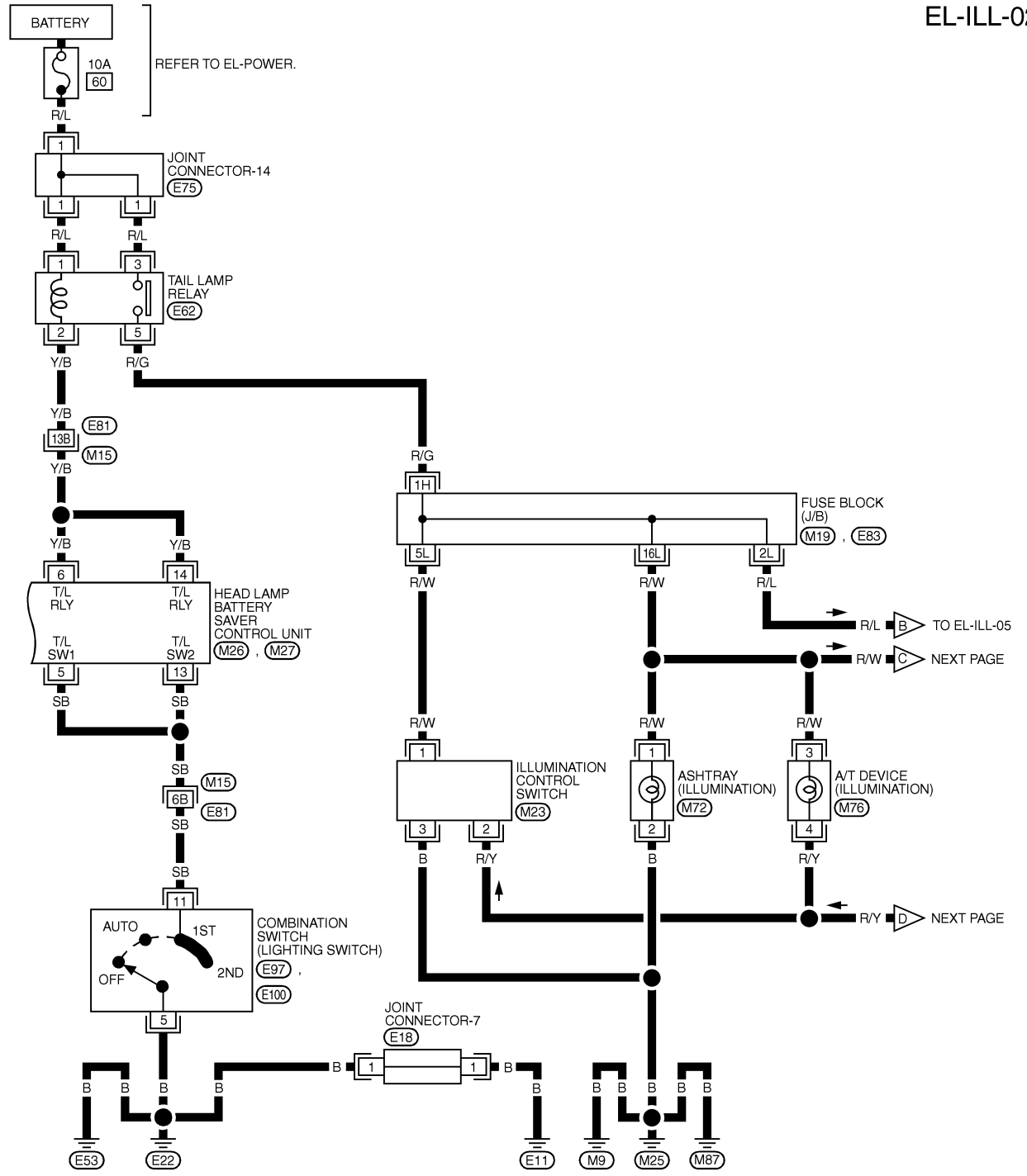


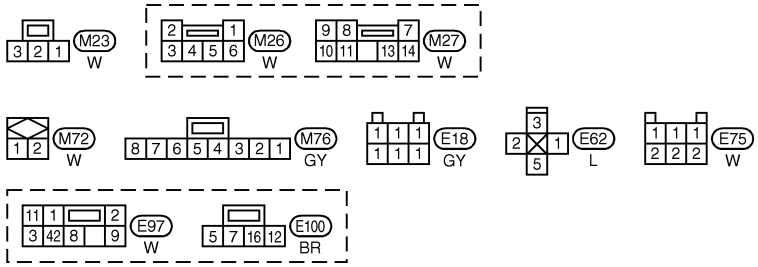
REFER TO THE FOLLOWING.
M17 , M19 -FUSE BLOCK-JUNCTION BOX (J/B)

MEL166M

Wiring Diagram — ILL — (Cont'd)

EL-ILL-02

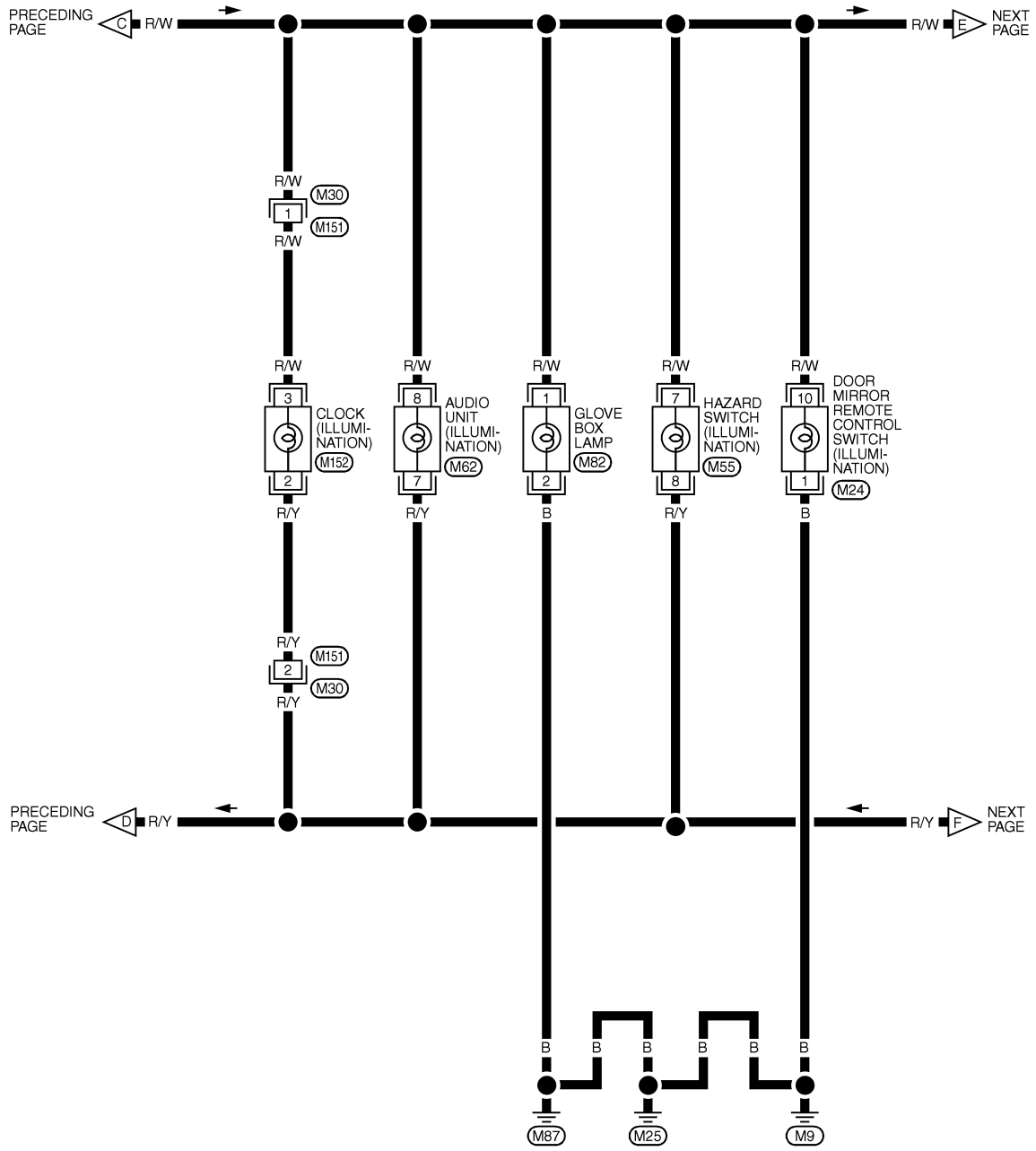


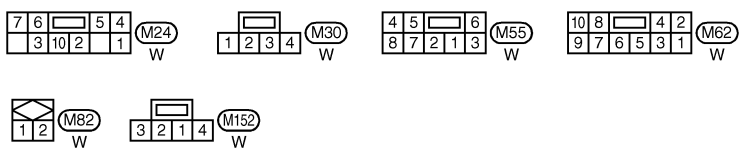


REFER TO THE FOLLOWING.
M15 , E81 -SUPER MULTIPLE JUNCTION (SMJ)
M19 -FUSE BLOCK-JUNCTION BOX (J/B)
E83 -FUSE BLOCK-JUNCTION BOX (J/B)

MEL447K

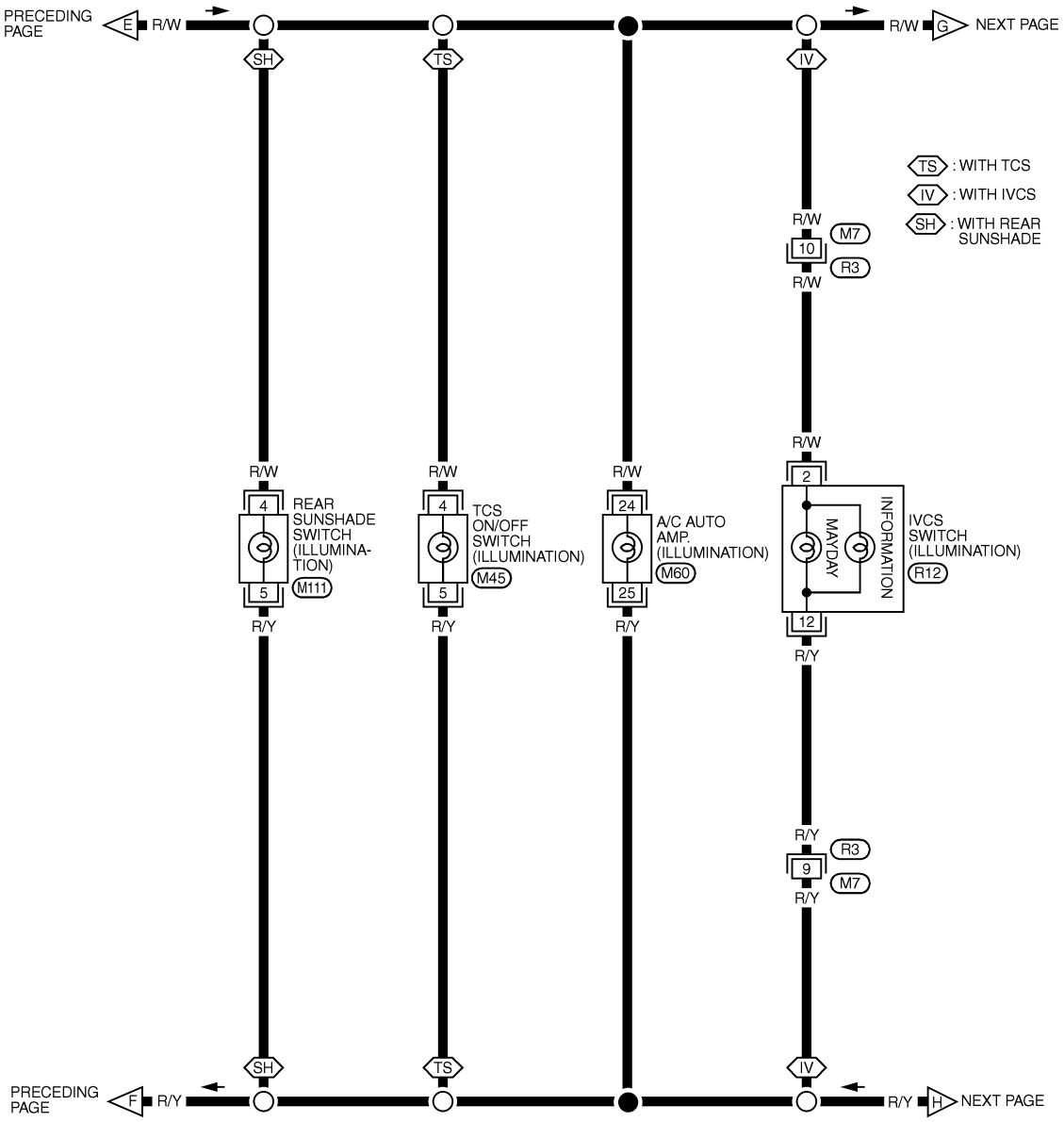
EL-ILL-03

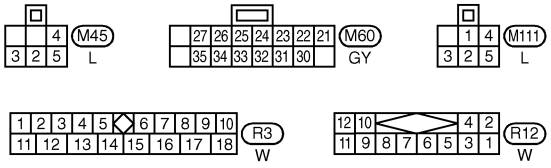




MEL448K

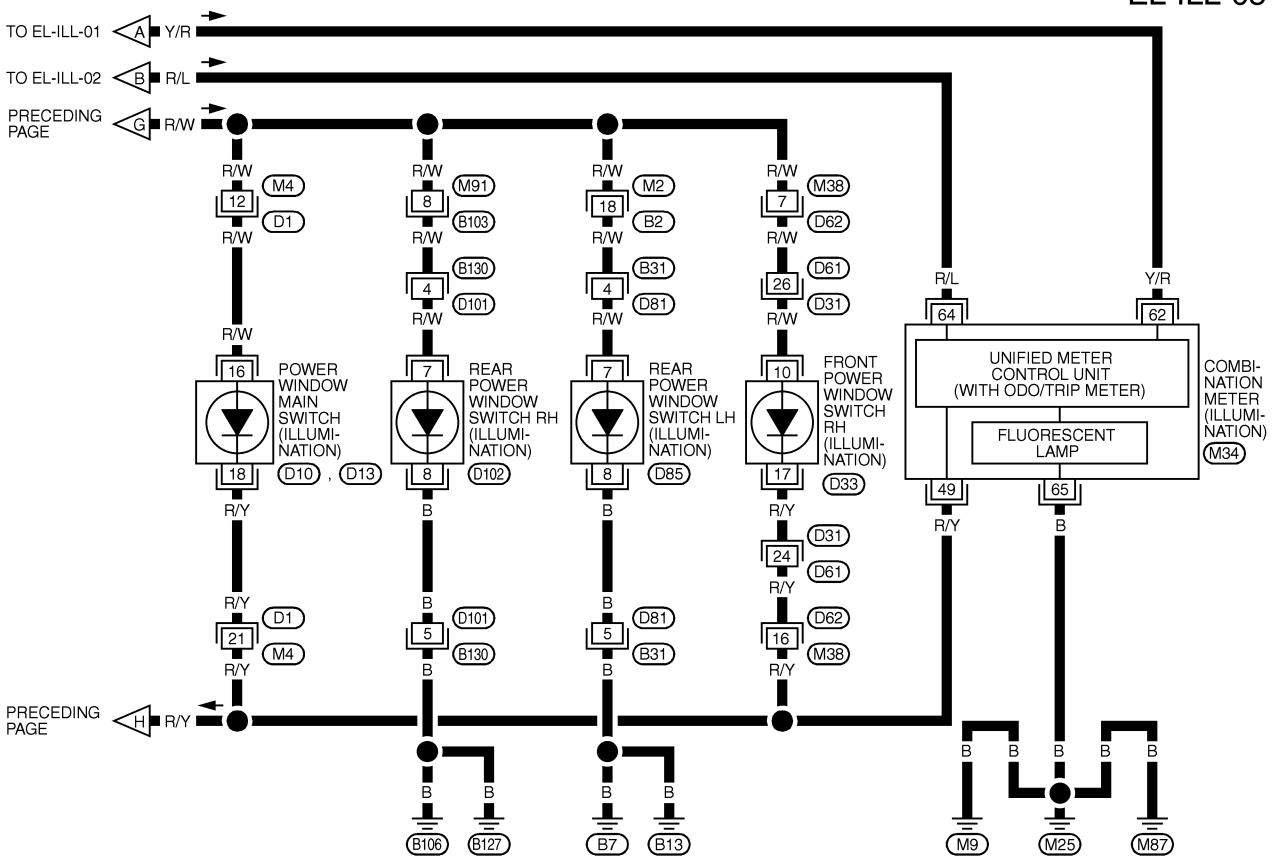
EL-ILL-04

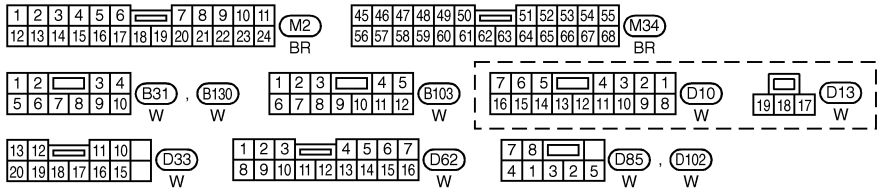




MEL449K

EL-ILL-05





REFER TO THE FOLLOWING.
M4 , D1 -SUPER MULTIPLE JUNCTION (SMJ)
D31 , D61 -SUPER MULTIPLE JUNCTION (SMJ)

MEL450K

SMART ENTRANCE CONTROL UNIT TERMINALS AND REFERENCE VALUE BETWEEN EACH TERMINAL AND GROUND

TERMINAL	WIRE COLOR	ITEM	CONDITION	DATA (DC)
5	PU	HEADLAMP BATTERY SAVER CONTROL UNIT	WHEN HEADLAMP BATTERY SAVER TIMER IS OPERATED	12V
10	R/B	POWER SOURCE (FUSE)	–	12V
16	B	GROUND	–	–
29	SB	DRIVER DOOR SWITCH	OFF (CLOSED)→ ON (OPEN)	5V→0V
33	G	IGN ON	IGNITION KEY IS IN "ON" POSITION	12V
40	R/L	PASSENGER DOOR SWITCH	OFF (CLOSED)→ ON (OPEN)	5V→0V

SEL035X

Wiring Diagram — ILL — (Cont'd)

NOTE:
For CONSULT-II Inspection Procedure, refer to "PARKING, LICENSE AND TAIL LAMPS" (EL-95).
For CONSULT-II Application Items, refer to "PARKING, LICENSE AND TAIL LAMPS" (EL-96).
Trouble Diagnoses for battery saver control, refer to "PARKING, LICENSE AND TAIL LAMPS" (EL-97).

System Description

NHEL0165

POWER SUPPLY AND GROUND

NHEL0165S01

Power is supplied at all times:
- through 10A fuse [No. 12, located in the fuse block (J/B)]
- to key switch terminal 2 and
- through 10A fuse [No. 13, located in the fuse block (J/B)]
- to smart entrance control unit terminal 10.

When the key is removed from ignition key cylinder, power is interrupted:
- through key switch terminal 1
- to smart entrance control unit terminal 32.

With the ignition key switch in the ON or START position, power is supplied:
- through 10A fuse [No. 10, located in the fuse block (J/B)]
- to smart entrance control unit terminal 33.

Ground is supplied:
- to smart entrance control unit terminal 16
- through body grounds terminals M9, M25 and M87.

When the front driver side door is opened, ground is supplied:
- through body grounds B7 and B13
- to front door switch LH terminal 3
- from front door switch LH terminal 2
- to smart entrance control unit terminal 29.

When the front passenger side door is opened, ground is supplied:
- through body grounds B106 and B127
- to front door switch RH terminal 3
- from front door switch RH terminal 2
- to smart entrance control unit terminal 40.

When any other door (except front door) is opened, ground is supplied to smart entrance control unit terminal 28 in the same manner as the front door switch.
When the front driver side door is unlocked, the smart entrance control unit receives a ground signal:
- through body grounds terminals M9, M25 and M87
- to front door lock actuator LH (door unlock sensor) terminal 4
- from front door lock actuator LH (door unlock sensor) terminal 2
- to smart entrance control unit terminal 36.

When a signal, or combination of signals is received by the smart entrance control unit, ground is supplied:
- through smart entrance control unit terminal 8
- to interior lamp terminal 2.

With power and ground supplied, the interior lamp illuminates.

SWITCH OPERATION

NHEL0165S02

When interior lamp switch is ON, ground is supplied:
- through case grounds of interior lamp
- to interior lamp.

And power is supplied:
- to interior lamp terminal 1
- from smart entrance control unit terminal 17.

When spot lamp (LH and/or RH) is ON, ground is supplied:
- through body grounds M9, M25 and M87
- to spot lamp terminal 2.

And power is supplied:
- to spot lamp terminal 1
- from smart entrance control unit terminal 17.

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

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

And power is supplied:

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

When rear door switch LH and/or RH is ON (door is opened), ground is supplied:

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

And power is supplied:

- to front step lamp LH and RH terminals 2
- from smart entrance control unit terminal 17.

When front door switch LH and/or RH is ON (door is opened), ground is supplied:

- through body grounds B7 and B13, and/or B106 and B127
- to the front door switch terminal 3
- from the front door switch terminal 2
- to smart entrance control unit terminal 29 and/or 40
- from smart entrance control unit terminal 28
- to front step lamp LH and RH terminals 1.

And power is supplied:

- to front step lamp LH and RH terminals 2
- from smart entrance control unit terminal 17.

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

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

And power is supplied:

- to trunk room lamp terminal 2
- from smart entrance control unit terminal 17.

With power and ground supplied, interior lamps turn ON.

INTERIOR LAMP TIMER OPERATION

NHEL0165S03

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

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

The timer is canceled when:

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

When driver's door is locked, interior room lamp timer is canceled as described before.
However, ignition key hole illumination remains on for about 30 seconds after driver's door has been locked.

ON-OFF CONTROL

NHEL0165S04

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.
When any door is opened, step lamps turn ON.

BATTERY SAVER

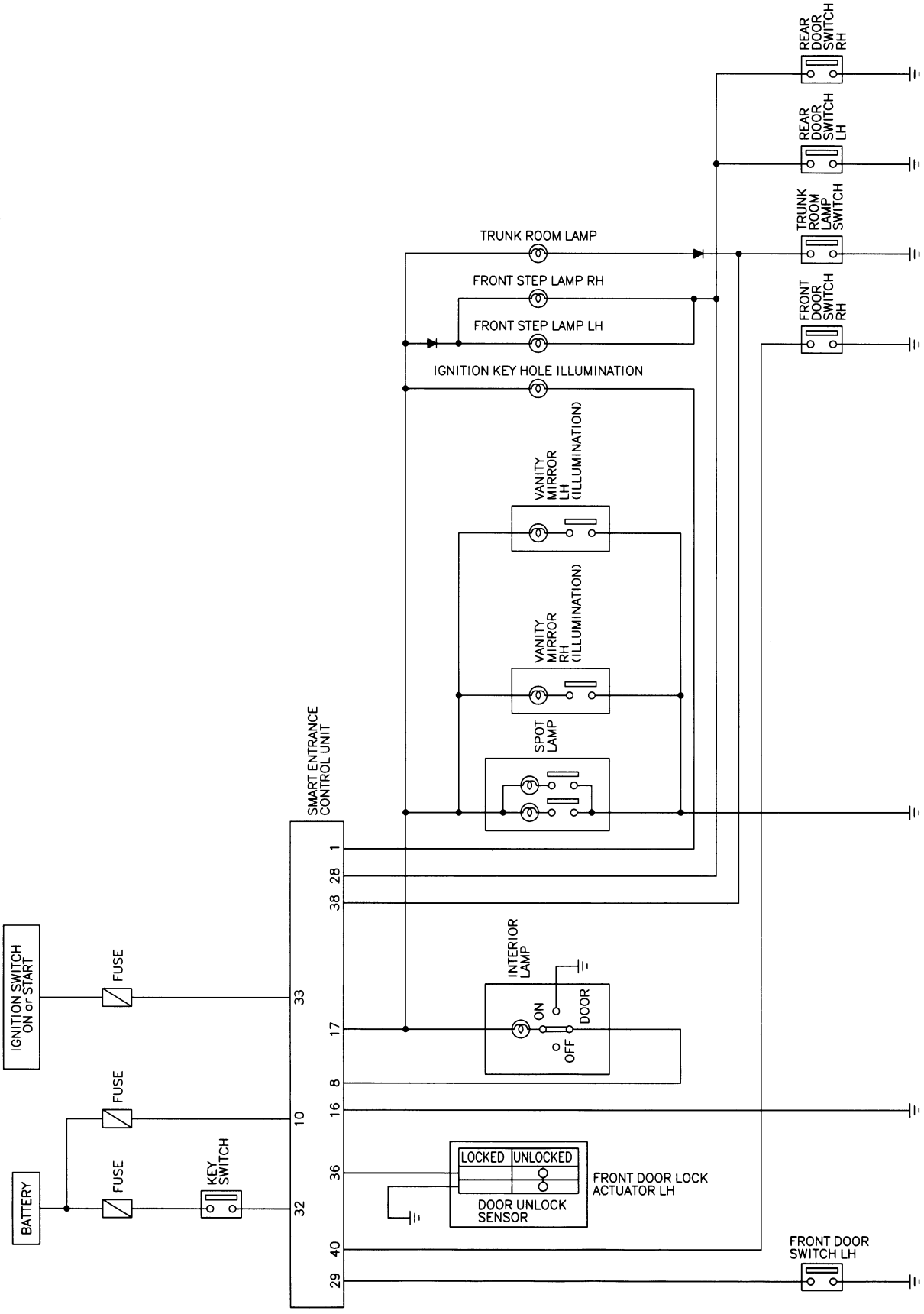
NHEL0165S05

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

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

Schematic

NHEL0212

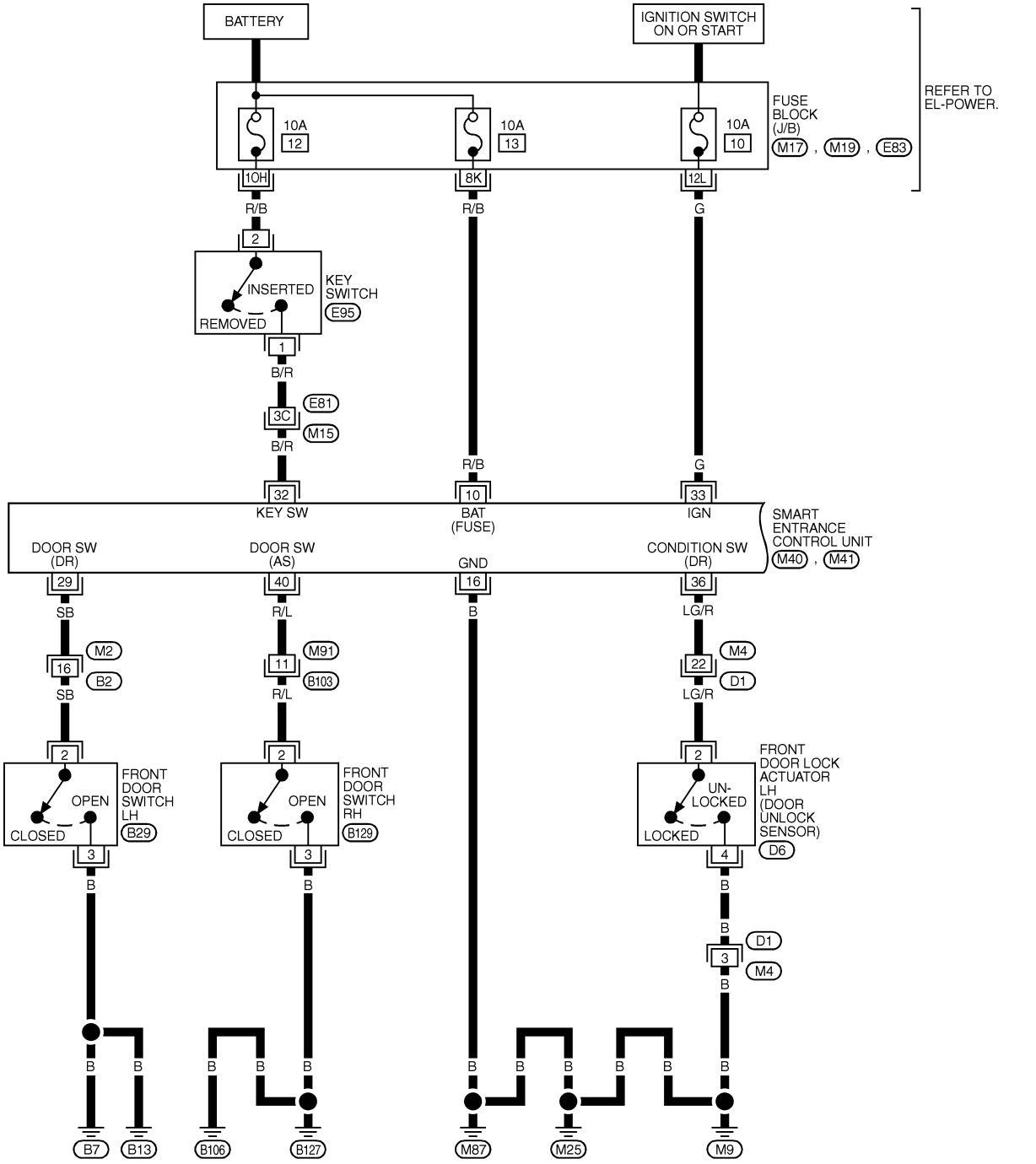


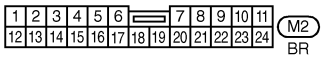
MEL196L

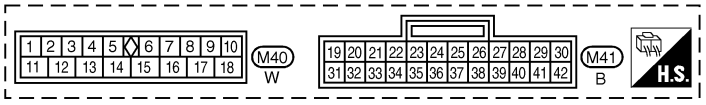
Wiring Diagram — INT/L —

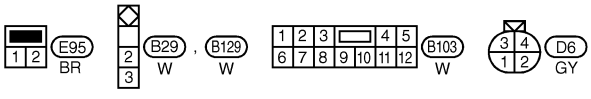
NHEL0163

EL-INT/L-01



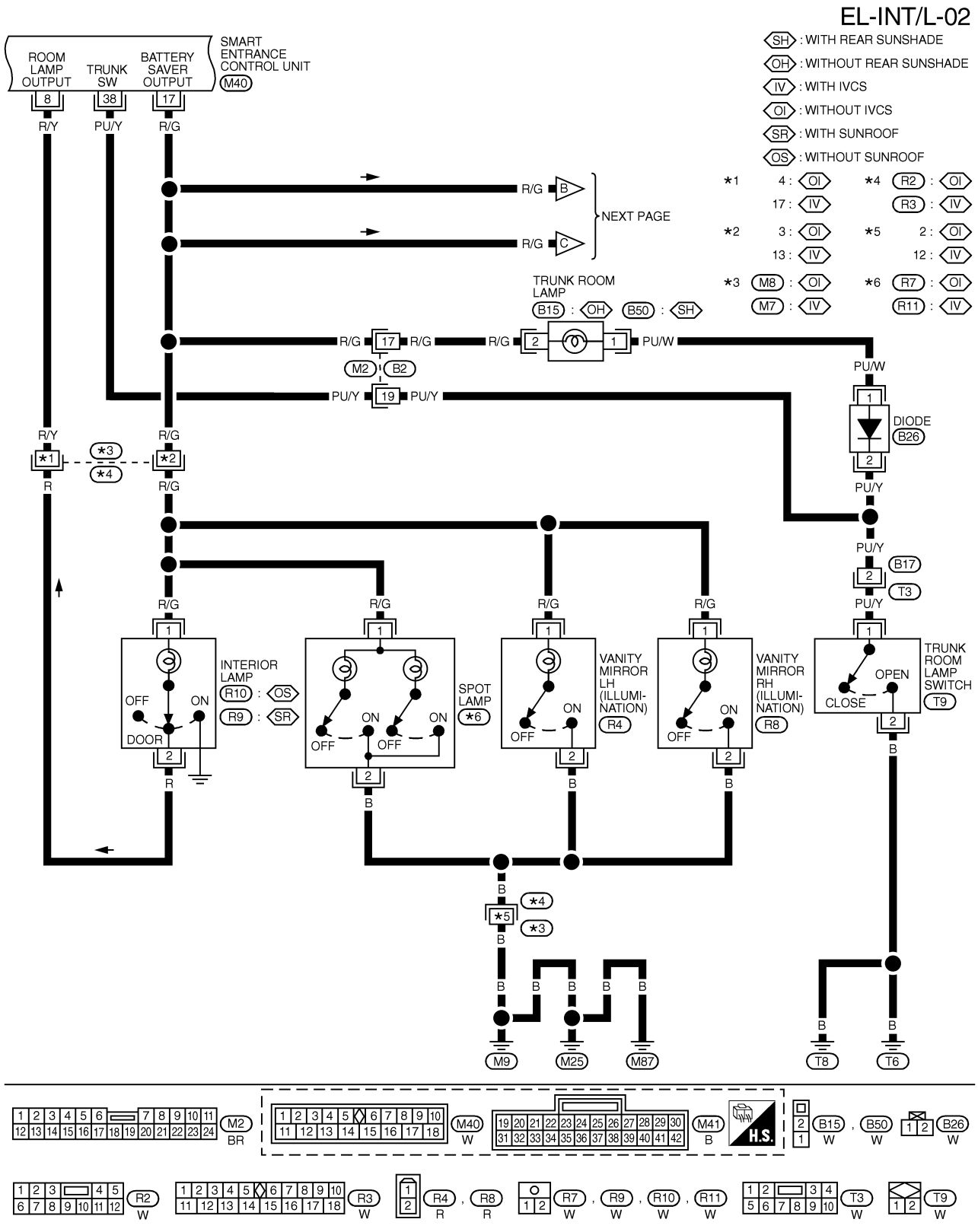






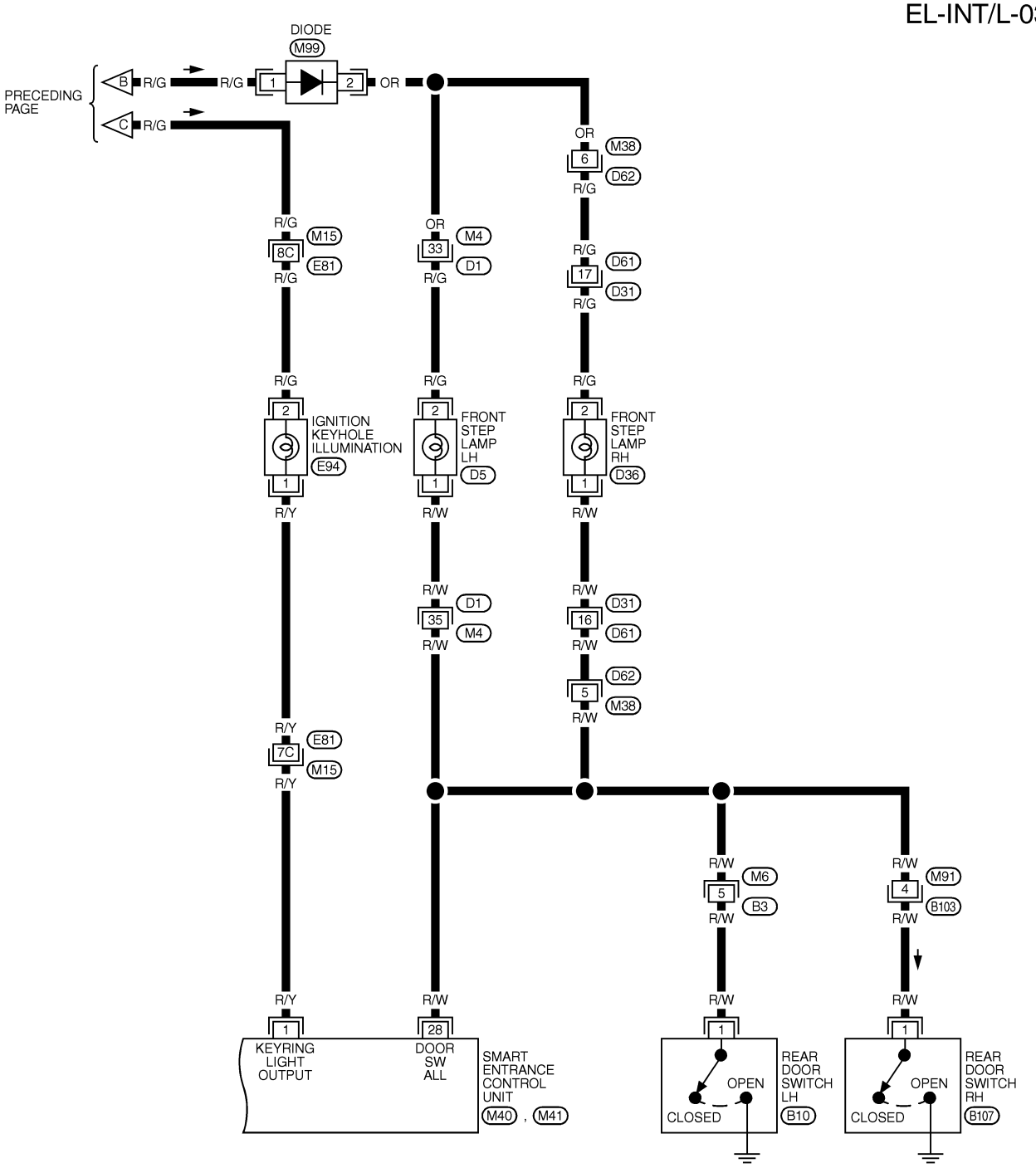
REFER TO THE FOLLOWING.
M15 , D1 -SUPER MULTIPLE JUNCTION (SMJ)
M17 , M19 , E83 -FUSE BLOCK-JUNCTION BOX (J/B)

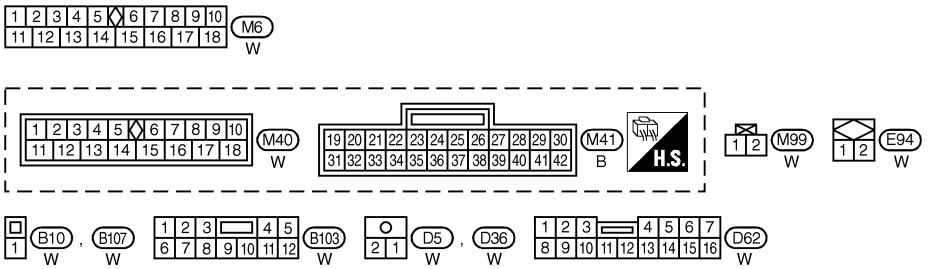
MEL197L


EL-INT/L-02
SH : WITH REAR SUNSHADE
OH : WITHOUT REAR SUNSHADE
IV : WITH IVCS
OI : WITHOUT IVCS
SR : WITH SUNROOF
OS : WITHOUT SUNROOF
*1 4 : OI 17 : IV
*2 3 : OI 13 : IV
*3 M8 : OI M7 : IV
*4 R2 : OI R3 : IV
*5 2 : OI 12 : IV
*6 R7 : OI R11 : IV
SMART ENTRANCE CONTROL UNIT M40
ROOM LAMP OUTPUT 8
TRUNK SW 38
BATTERY SAVER OUTPUT 17
R/Y
PU/Y
R/G
NEXT PAGE
TRUNK ROOM LAMP
B15 : OH B50 : SH
M2 B2
PU/W
DIODE B26
INTERIOR LAMP R10 : OS R9 : SR
DOOR
SPOT LAMP *6
VANITY MIRROR LH (ILLUMI-NATION) R4
VANITY MIRROR RH (ILLUMI-NATION) R8
TRUNK ROOM LAMP SWITCH T9
OPEN
CLOSE
M9
M25
M87
T8
T6
M2 BR
M40 W
M41 B
B15 W
B50 W
B26 W
R2 W
R3 W
R4 R
R8 R
R7 W
R9 W
R10 W
R11 W
T3 W
T9 W

MEL634L

EL-INT/L-03





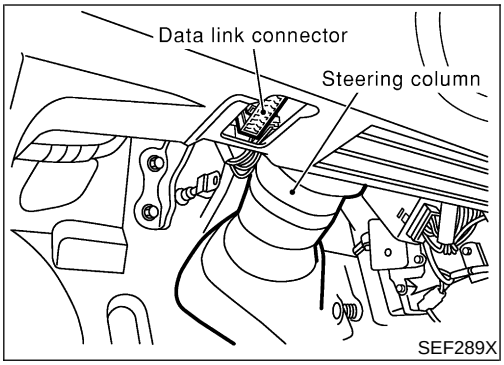
REFER TO THE FOLLOWING.
M15 , D1 , D31 -SUPER MULTIPLE JUNCTION (SMJ)

MEL654L

SMART ENTRANCE CONTROL UNIT TERMINALS AND REFERENCE VALUE BETWEEN EACH TERMINAL AND GROUND

TERMINAL	WIRE COLOR	ITEM	CONDITION	DATA (DC)
1	R/Y	IGNITION KEY HOLE ILLUMINATION	FOR 30 SECONDS AFTER DRIVER DOOR IS LOCKED	0V
			30 SECONDS PASSED AFTER DRIVER DOOR IS LOCKED	12V
8	R/Y	INTERIOR LAMP	WHEN INTERIOR LAMP IS OPERATED USING REMOTE CONTROLLER. (LAMP SWITCH IN "DOOR" POSITION)	0V → 12V
10	R/B	POWER SOURCE (FUSE)	–	12V
16	B	GROUND	–	–
17	R/G	BATTERY SAVER (INTERIOR LAMP)	BATTERY SAVER DOES NOT OPERATE → OPERATE	12V → 0V
28	R/W	REAR DOOR SWITCHES	OFF (CLOSED) → ON (OPEN)	5V → 0V
29	SB	DRIVER DOOR SWITCH	OFF (CLOSED) → ON (OPEN)	5V → 0V
32	B/R	IGNITION KEY SWITCH (INSERT)	KEY INSERTED → KEY REMOVED FROM IGN KEY CYLINDER	12V → 0V
33	G	IGN ON	IGNITION KEY IS IN "ON" POSITION	12V
36	LG/R	DOOR LOCK SWITCH	DRIVER DOOR: LOCKED → UNLOCKED	5V → 0V
38	PU/Y	TRUNK ROOM LAMP SWITCH	ON (OPEN) → OFF (CLOSED)	0V → 12V
40	R/L	PASSENGER DOOR SWITCH	OFF (CLOSED) → ON (OPEN)	5V → 0V

SEL055X



SEF289X

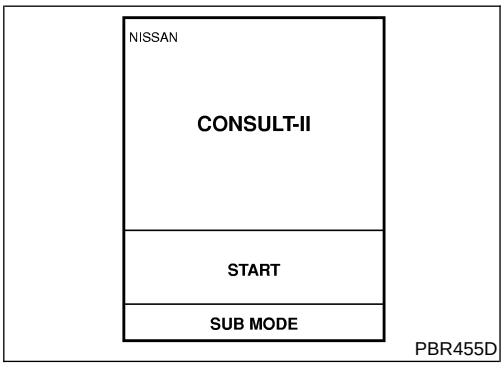
CONSULT-II Inspection Procedure

=NHEL0213

"INT LAMP"/"BATTERY SAVER"

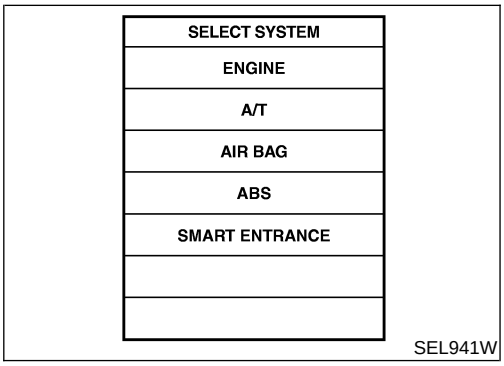
NHEL0213S01

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



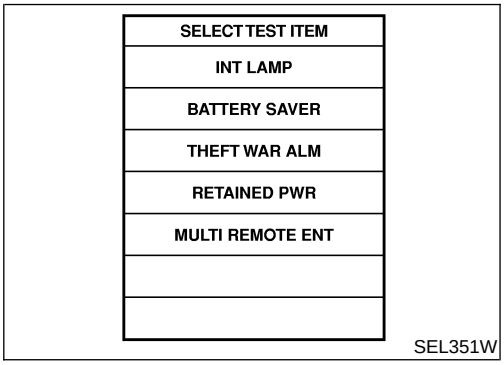
PBR455D

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



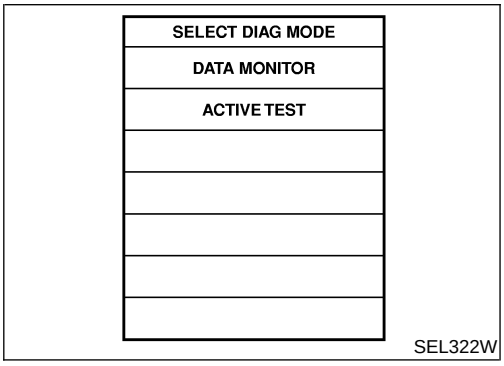
SEL941W

5. Touch "SMART ENTRANCE".



SEL351W

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



SEL322W

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

CONSULT-II Application Items

NHEL0214

"INT LAMP"
Data Monitor

NHEL0214S01

NHEL0214S0101

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.
DOOR SW-ALL	Indicates [ON/OFF] condition of door switch (All).
LOCK SIG DR	Indicates [ON/OFF] condition of front door unlock sensor LH.
UN BUTTON/SIG	Indicates [ON/OFF] condition of unlock signal from remote controller.

Active Test

NHEL0214S0102

Test Item	Description
INT LAMP	This test enables to check interior lamp operation. When touch "ON" on CONSULT-II screen. ● Interior lamp turns on when the switch is in 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 touch "ON" on CONSULT-II screen.

"BATTERY SAVER"
Data Monitor

NHEL0214S02

NHEL0214S0201

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.
DOOR SW-ALL	Indicates [ON/OFF] condition of door switch (ALL).
LOCK SIG DR	Indicates [ON/OFF] condition of front door unlock sensor LH.
TRUNK SW	Indicates [ON/OFF] condition of trunk switch.

Active Test

NHEL0214S0202

Test Item	Description
BATTERY SAVER	This test enables to check interior lamp, front step lamps, spot lamp, vanity mirror illuminations and trunk room lamp 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.) ● Front step lamps turn on when any doors are open. (Smart entrance control unit supplies power to front step lamps.) ● Spot lamp, vanity mirror illuminations, trunk room lamp turn on when the switch is in ON. (Smart entrance control unit supplies power to Spot lamp, vanity mirror illuminations, trunk room lamp.)

Trouble Diagnoses for Interior Lamp Timer

=NHEL0215

DIAGNOSTIC PROCEDURE 1

NHEL0215S01

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

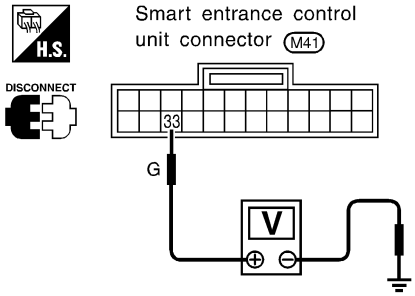
When ignition switch is ON:
IGN ON SW ON

When ignition switch is OFF:
IGN ON SW OFF

SEL318W

Without CONSULT-II

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



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

SEL380W

OK or NG

OK	▶	GO TO 2.
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

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

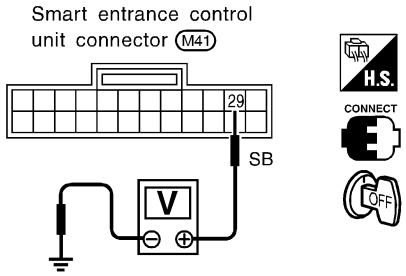
When driver's door is open:
DOOR SW-DR ON

When driver's door is closed:
DOOR SW-DR OFF

SEL319W

Without CONSULT-II

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



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

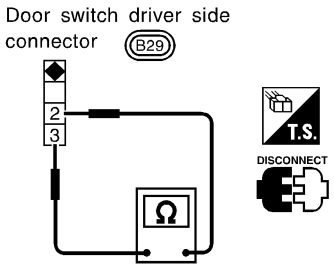
SEL324W

OK or NG

OK	▶	GO TO 4.
NG	▶	GO TO 3.

3	CHECK DRIVER SIDE DOOR SWITCH

Check continuity between door switch terminals 2 and 3.



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

SEL325W

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 driver side door switch
NG	▶	Replace driver side door switch.

4	CHECK FRONT LH DOOR UNLOCK SENSOR INPUT SIGNAL

With CONSULT-II

Check door unlock sensor LH signal ("LOCK SIG DR") in "DATA MONITOR" mode with CONSULT-II.

DATA MONITOR	
MONITOR	
LOCK SIG DR	OFF

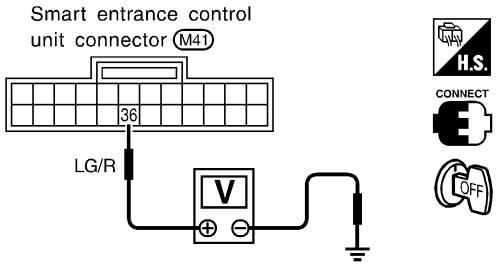
When front LH door is locked:
LOCK SIG DR OFF

When front LH door is unlocked:
LOCK SIG DR ON

SEL344W

Without CONSULT-II

Check voltage between smart entrance control unit harness connector terminal 36 and ground.



	Terminals (+)	Terminals (–)	Condition	Voltage [V]
Front LH door	36	Ground	Locked	Approx. 5
			Unlocked	0

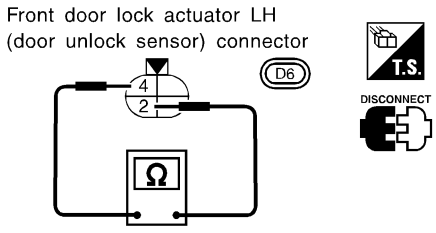
SEL223W

OK or NG

OK	▶	GO TO 6.
NG	▶	GO TO 5.

5	CHECK FRONT LH DOOR UNLOCK SENSOR

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



Continuity:
Condition: Locked
No
Condition: Unlocked
Yes

SEL224W

OK or NG

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

6 CHECK DOOR SWITCHES INPUT SIGNAL

With CONSULT-II

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

DATA MONITOR	
MONITOR	
DOOR SW-ALL	OFF

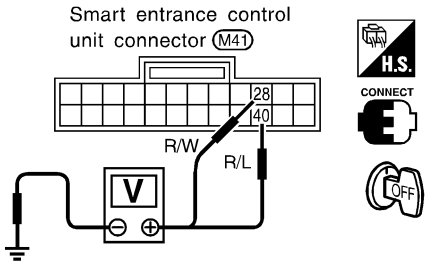
When any doors are open:
DOOR SW-ALL ON

When all doors are closed:
DOOR SW-ALL OFF

SEL323W

Without CONSULT-II

Check voltage between smart entrance control unit harness connector terminals 28 or 40 and ground.



	Terminals (+)	Terminals (–)	Condition	Voltage [V]
Front RH door switch	40	Ground	Open	0
			Closed	Approx. 5
Rear door switches	28	Ground	Open	0
			Closed	Approx. 5

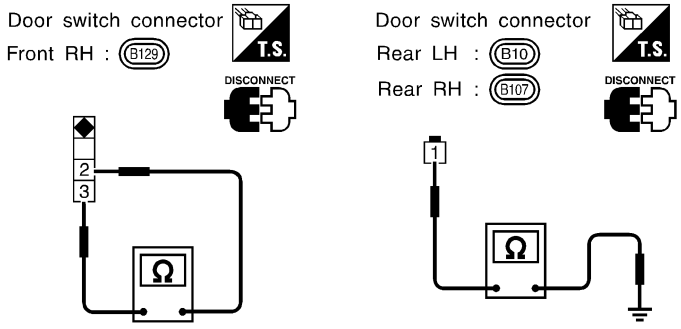
SEL328W

OK or NG

OK	▶	GO TO 8.
NG	▶	GO TO 7.

7 CHECK DOOR SWITCHES

1. Disconnect door switch harness connector.
2. Check continuity between door switch terminals 2 and 3, 1 and ground.



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

SEL329W

OK or NG

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

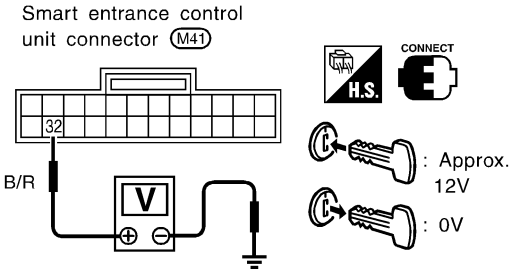
When key is removed from ignition key cylinder:

KEY ON SW OFF

SEL315W

Without CONSULT-II

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



Voltage [V]:

Condition of key switch: Key is inserted.
Approx. 12
Condition of key switch: Key is removed.
0

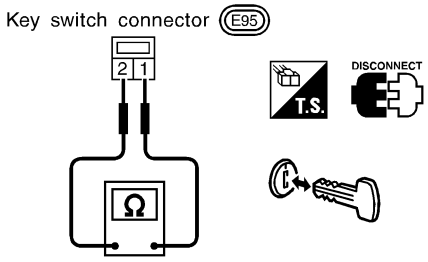
SEL193W

OK or NG

OK	▶	Replace smart entrance control unit.
NG	▶	GO TO 9.

9	CHECK KEY SWITCH (INSERT)

Check continuity between terminals 1 and 2.



Continuity:

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

SEL311W

OK or NG

OK	▶	**Check the following.** • 10A fuse [No. 12, located in fuse block (J/B)] • Harness for open or short between key switch and fuse • Harness for open or short between smart entrance control unit and key switch
NG	▶	Replace key switch.

DIAGNOSTIC PROCEDURE 2

NHEL0215S02

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

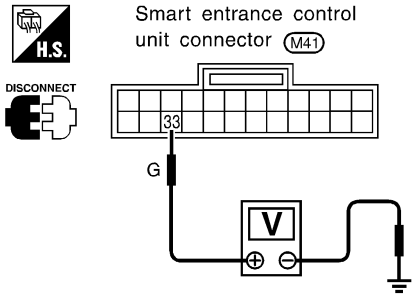
When ignition switch is ON:
IGN ON SW ON

When ignition switch is OFF:
IGN ON SW OFF

SEL318W

Without CONSULT-II

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



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

SEL380W

OK or NG

OK	▶	GO TO 2.
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

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

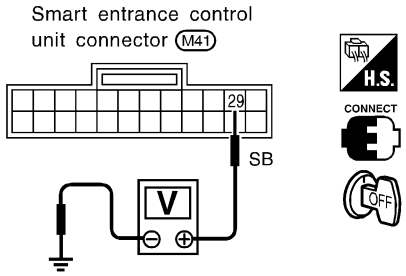
When driver's door is open:
DOOR SW-DR ON

When driver's door is closed:
DOOR SW-DR OFF

SEL319W

Without CONSULT-II

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



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

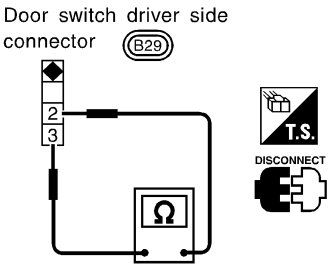
SEL324W

OK or NG

OK	▶	GO TO 4.
NG	▶	GO TO 3.

3	CHECK DRIVER SIDE DOOR SWITCH

Check continuity between terminals 2 and 3.



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

SEL325W

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 side door switch
NG	▶	Replace driver side door switch.

4	CHECK FRONT LH DOOR UNLOCK SENSOR INPUT SIGNAL

With CONSULT-II

Check door unlock sensor LH signal ("LOCK SIG DR") in "DATA MONITOR" mode with CONSULT-II.

DATA MONITOR	
MONITOR	
LOCK SIG DR	OFF

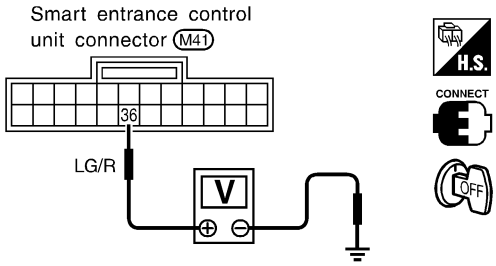
When front LH door is locked:
LOCK SIG DR OFF

When front LH door is unlocked:
LOCK SIG DR ON

SEL344W

Without CONSULT-II

Check voltage between smart entrance control unit harness connector terminal 36 and ground.



	Terminals (+)	Terminals (–)	Condition	Voltage [V]
Front LH door	36	Ground	Locked	Approx. 5
			Unlocked	0

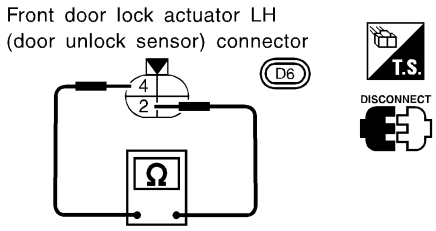
SEL223W

OK or NG

OK	▶	Replace smart entrance control unit.
NG	▶	GO TO 5.

5	CHECK FRONT LH DOOR UNLOCK SENSOR

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



Continuity:
Condition: Locked
No
Condition: Unlocked
Yes

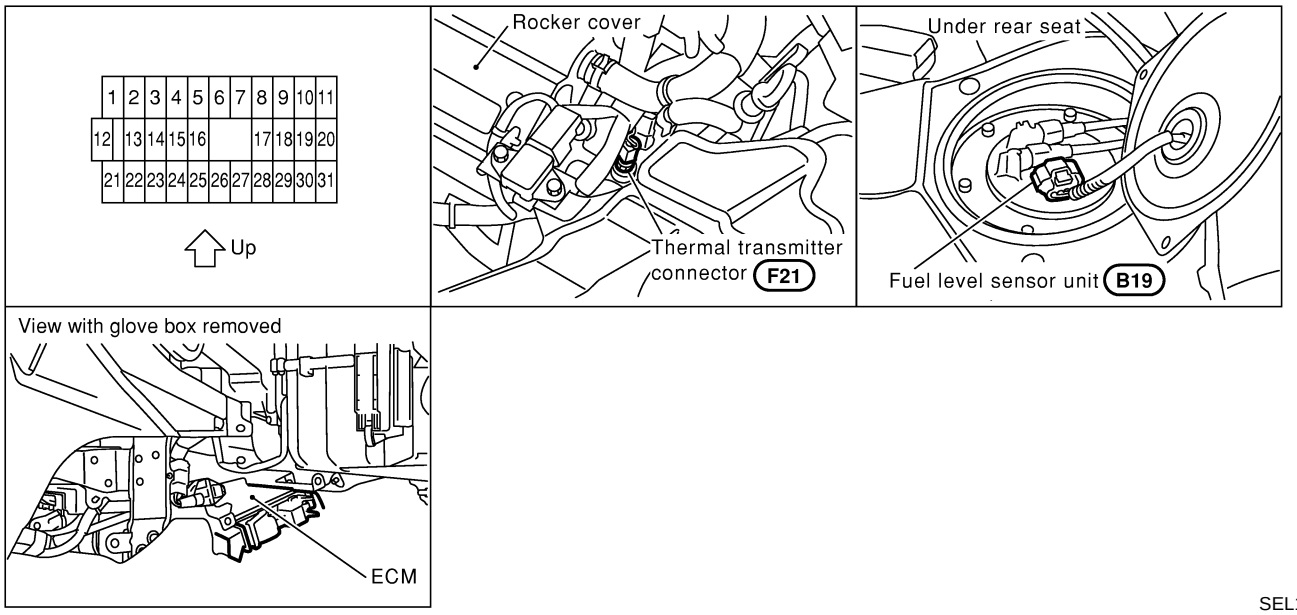
SEL224W

OK or NG

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

Component Parts and Harness Connector Location

NHEL0041



SEL168W

System Description

NHEL0042

UNIFIED CONTROL METER

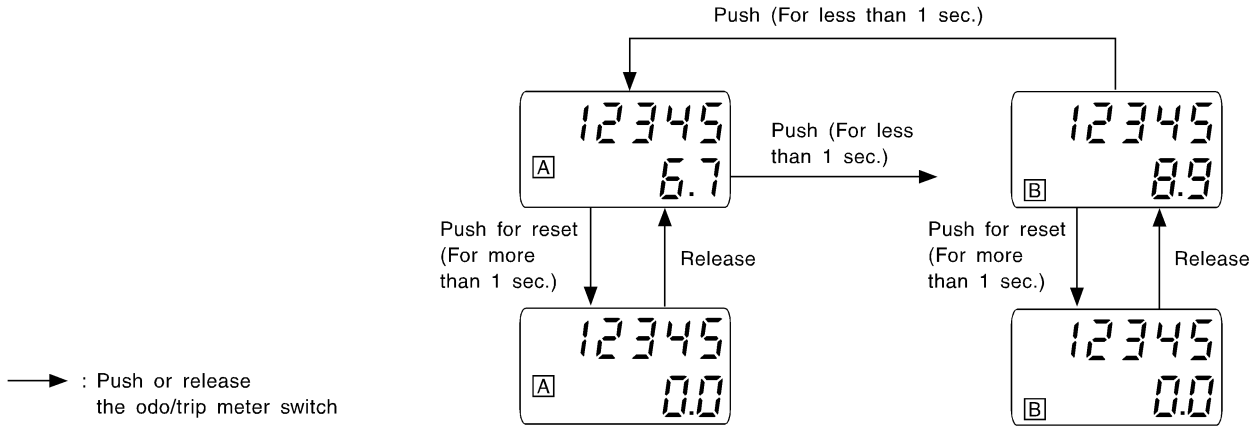
NHEL0042S06

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

HOW TO CHANGE THE DISPLAY FOR ODO/TRIP METER

NHEL0042S07

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



SEL175W

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

System Description (Cont'd)

POWER SUPPLY AND GROUND CIRCUIT

NHEL0042S08

Power is supplied at all times

- through 10A fuse [No. 12, 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. 30, located in the fuse block (J/B)]
- to combination meter terminal 66.

Ground is supplied

- to combination meter terminal 59
- through body grounds M9, M25 and M87.

WATER TEMPERATURE GAUGE

NHEL0042S01

The water temperature gauge indicates the engine coolant temperature. The reading on the gauge is based on the resistance of the thermal transmitter.

As the temperature of the coolant increases, the resistance of the thermal transmitter decreases. A variable ground is supplied to terminal 18 of the combination meter for the water temperature gauge. The needle on the gauge moves from "C" to "H".

TACHOMETER

NHEL0042S02

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

The tachometer is regulated by a signal

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

FUEL GAUGE

NHEL0042S03

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

The fuel gauge is regulated by a variable ground signal supplied

- to combination meter terminal 17 for the fuel gauge
- from terminal 2 of the fuel level sensor unit
- through terminal 5 of the fuel level sensor unit and
- through body ground B13.

SPEEDOMETER

NHEL0042S04

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

The voltage is supplied

- from combination meter terminal 15 for the speedometer
- to terminal 1 of the vehicle speed sensor.

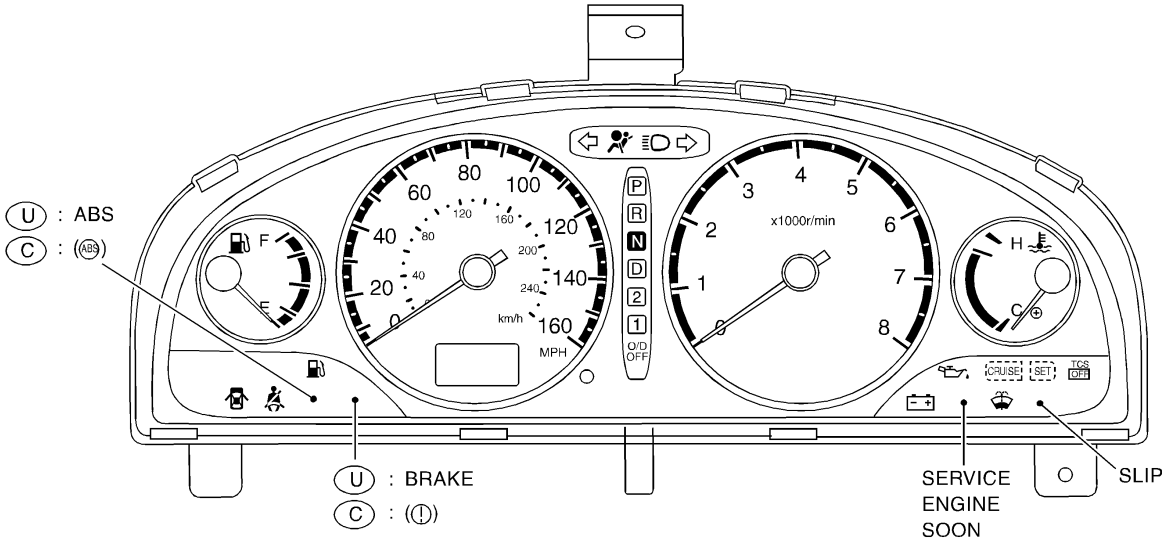
The speedometer converts the voltage into the vehicle speed displayed.

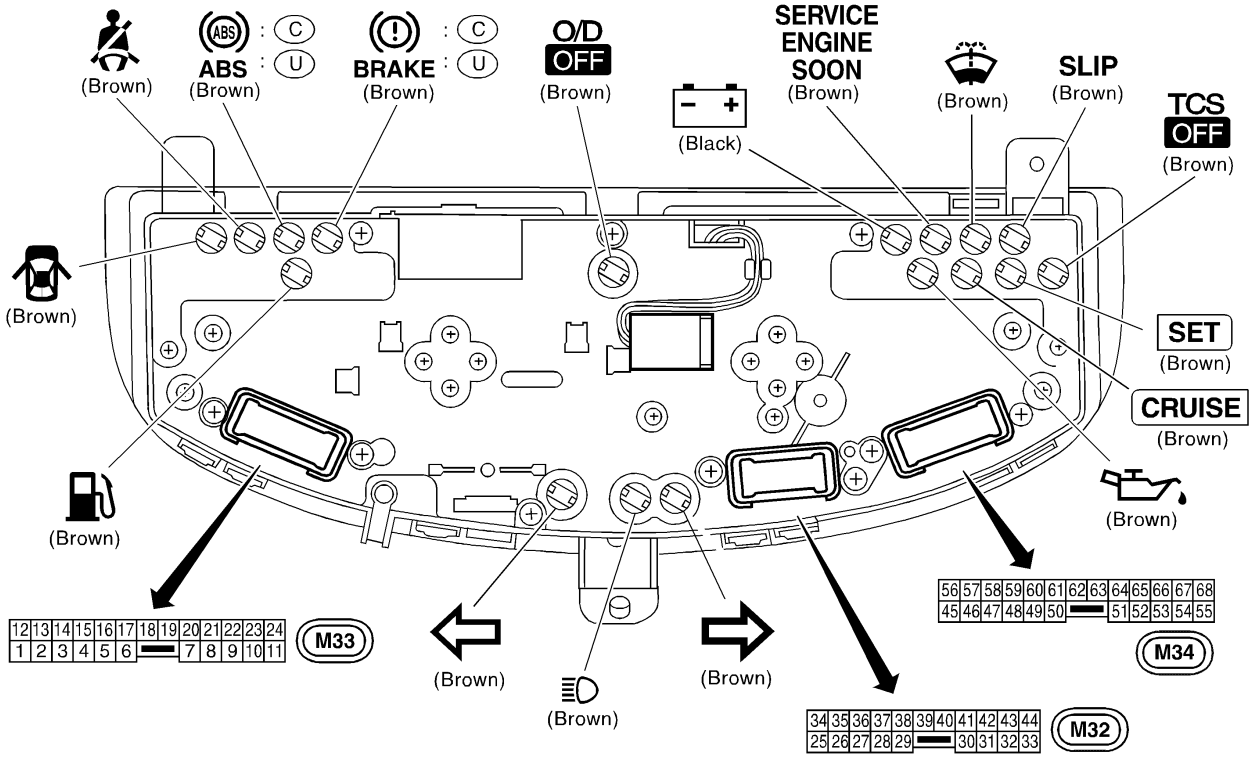
Combination Meter

CHECK

NHEL0043

NHEL0043S01





Bulb socket color	Bulb wattage
Brown	1.4W
Black	3.0W

( ): Warning bulb socket color

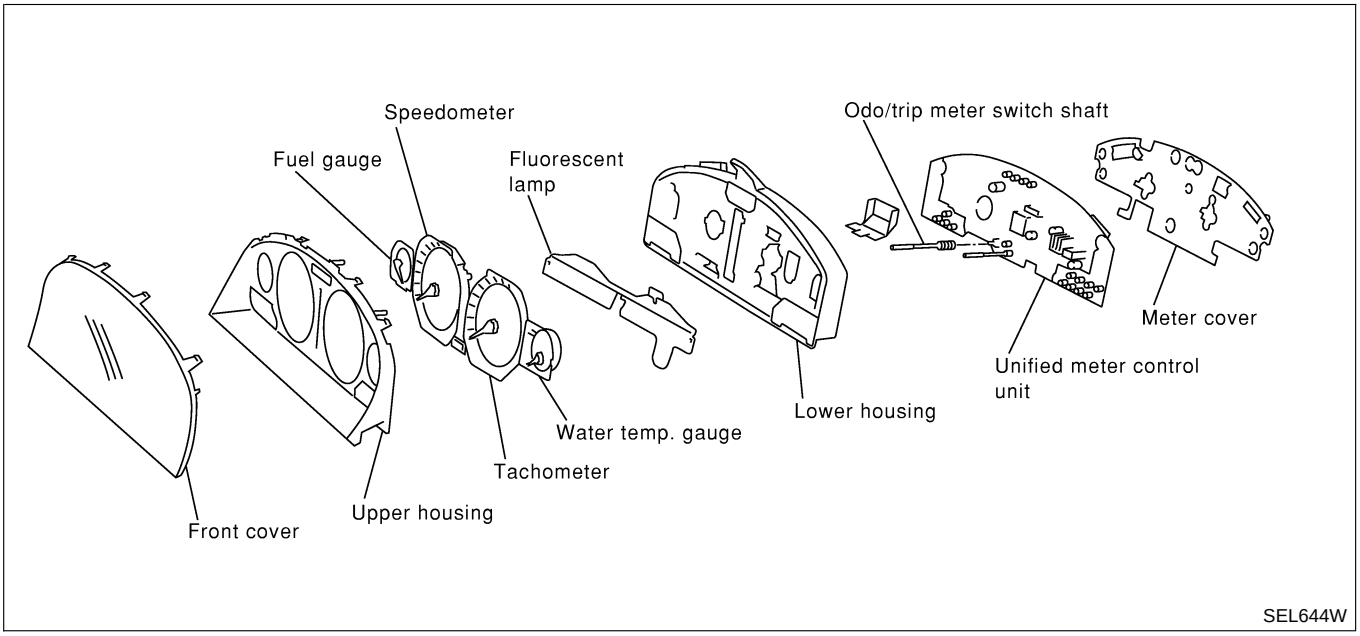
U : For USA
C : For Canada

MEL199L

Combination Meter (Cont'd)

CONSTRUCTION

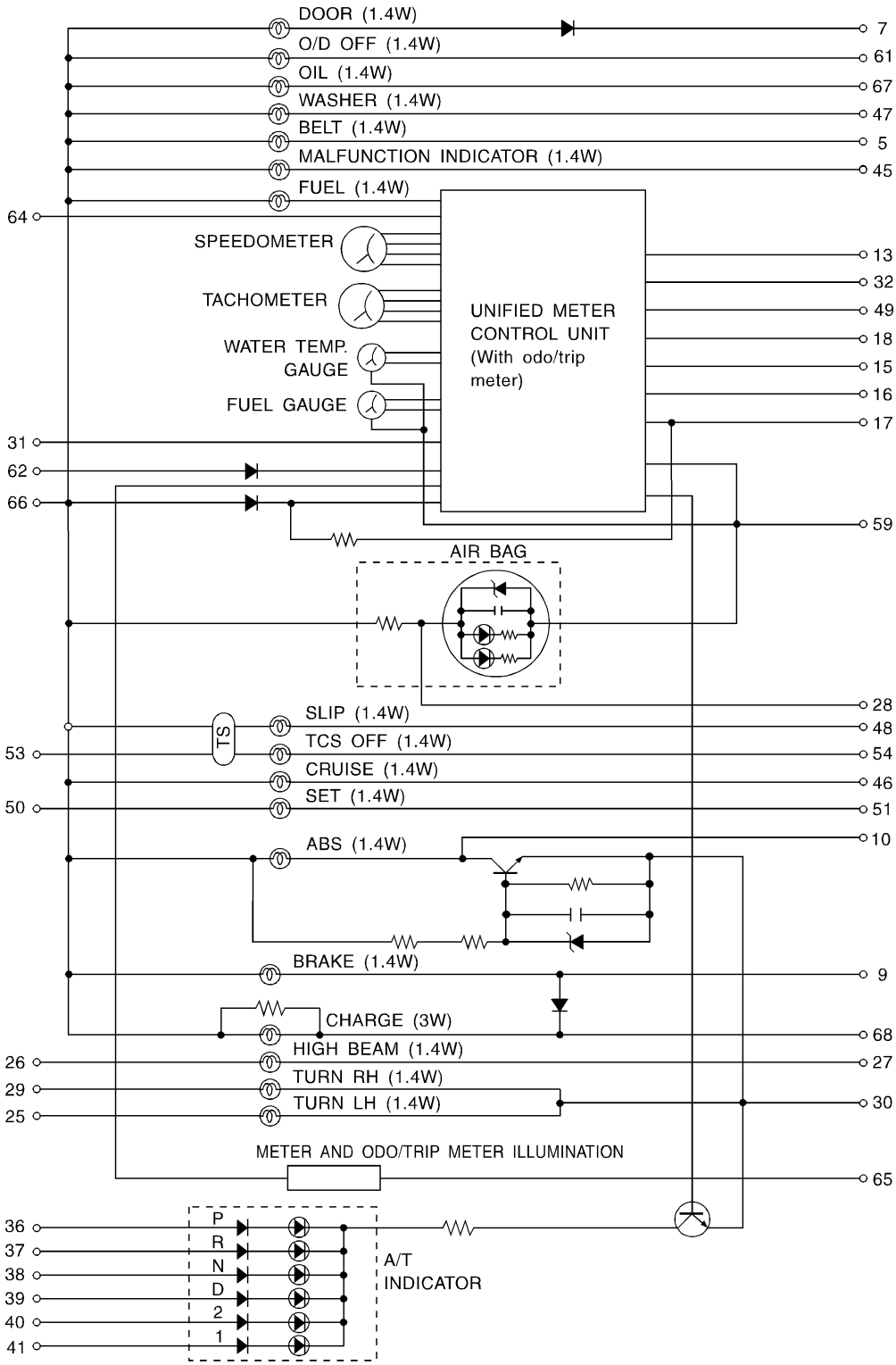
NHEL0043S02



Schematic

NHEL0293

TS : With TCS

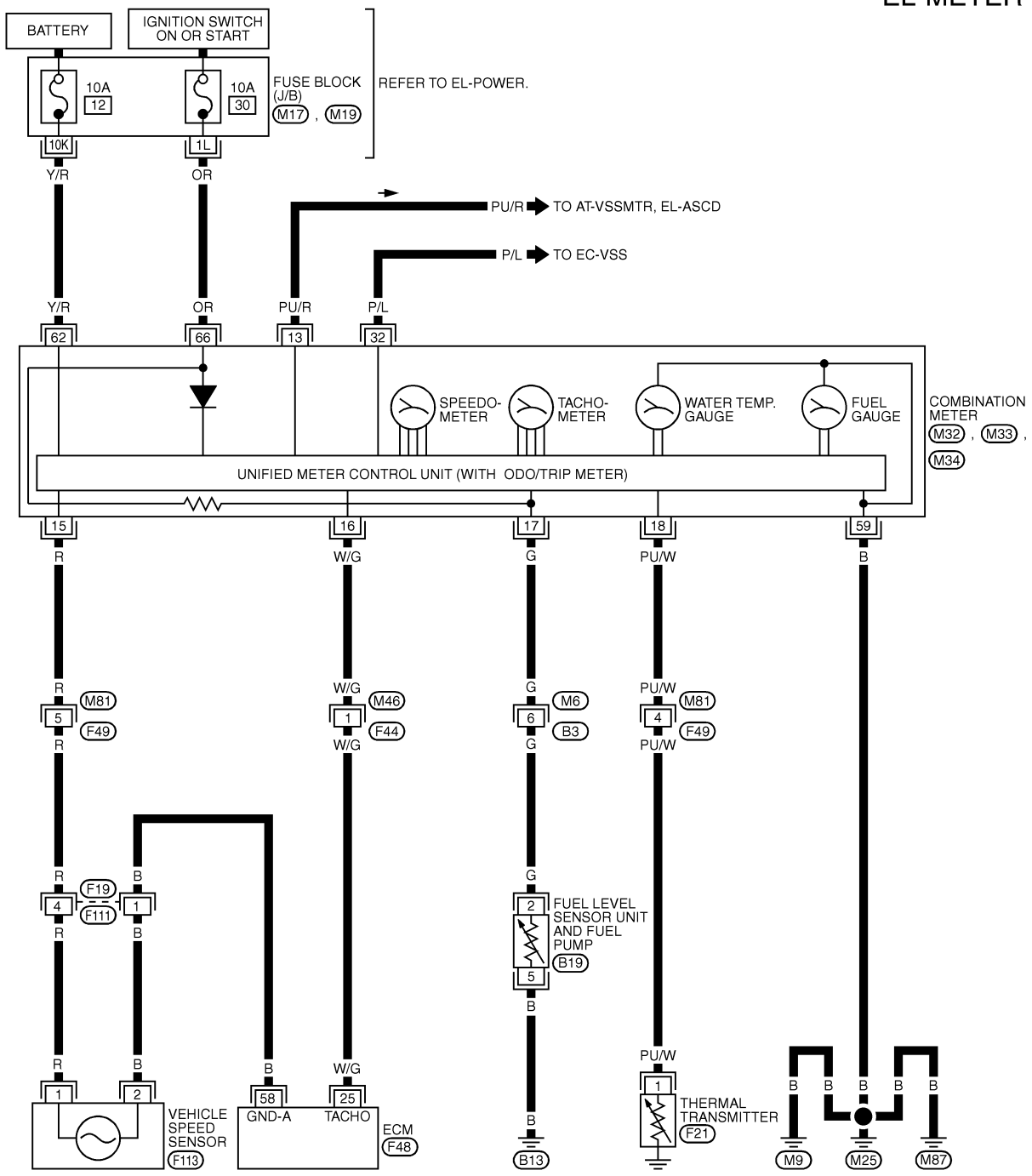


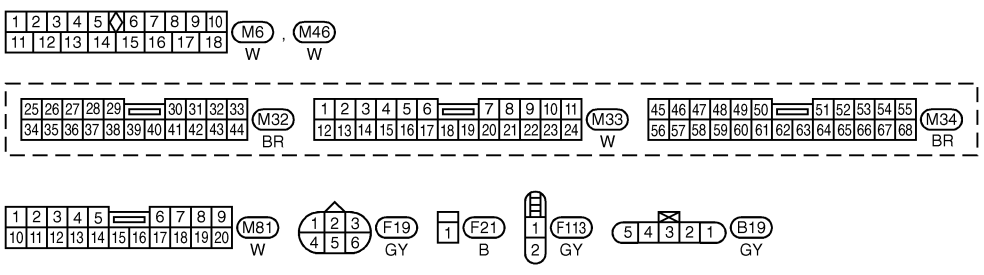
MEL198L

Wiring Diagram — METER —

NHEL0045

EL-METER-01





REFER TO FOLLOWING.
M17 -FUSE BLOCK-JUNCTION BOX (J/B)
M19 -FUSE BLOCK-JUNCTION BOX (J/B)
F48 -ELECTRICAL UNITS-

MEL455K

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

NHEL0151

DIAGNOSIS FUNCTION

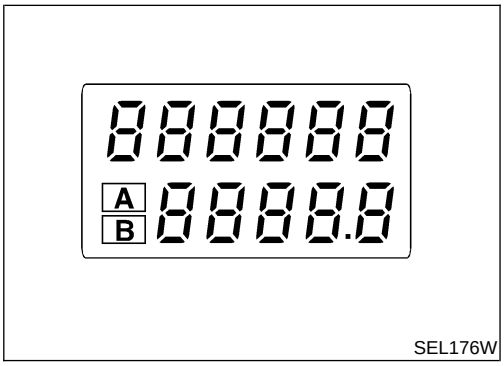
NHEL0151S01

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

HOW TO ALTERNATE DIAGNOSIS MODE

NHEL0151S02

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

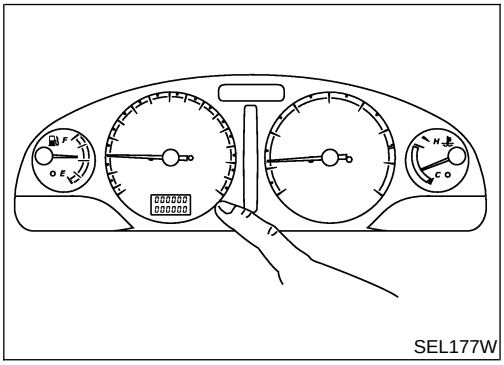


SEL176W

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

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

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


SEL177W

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

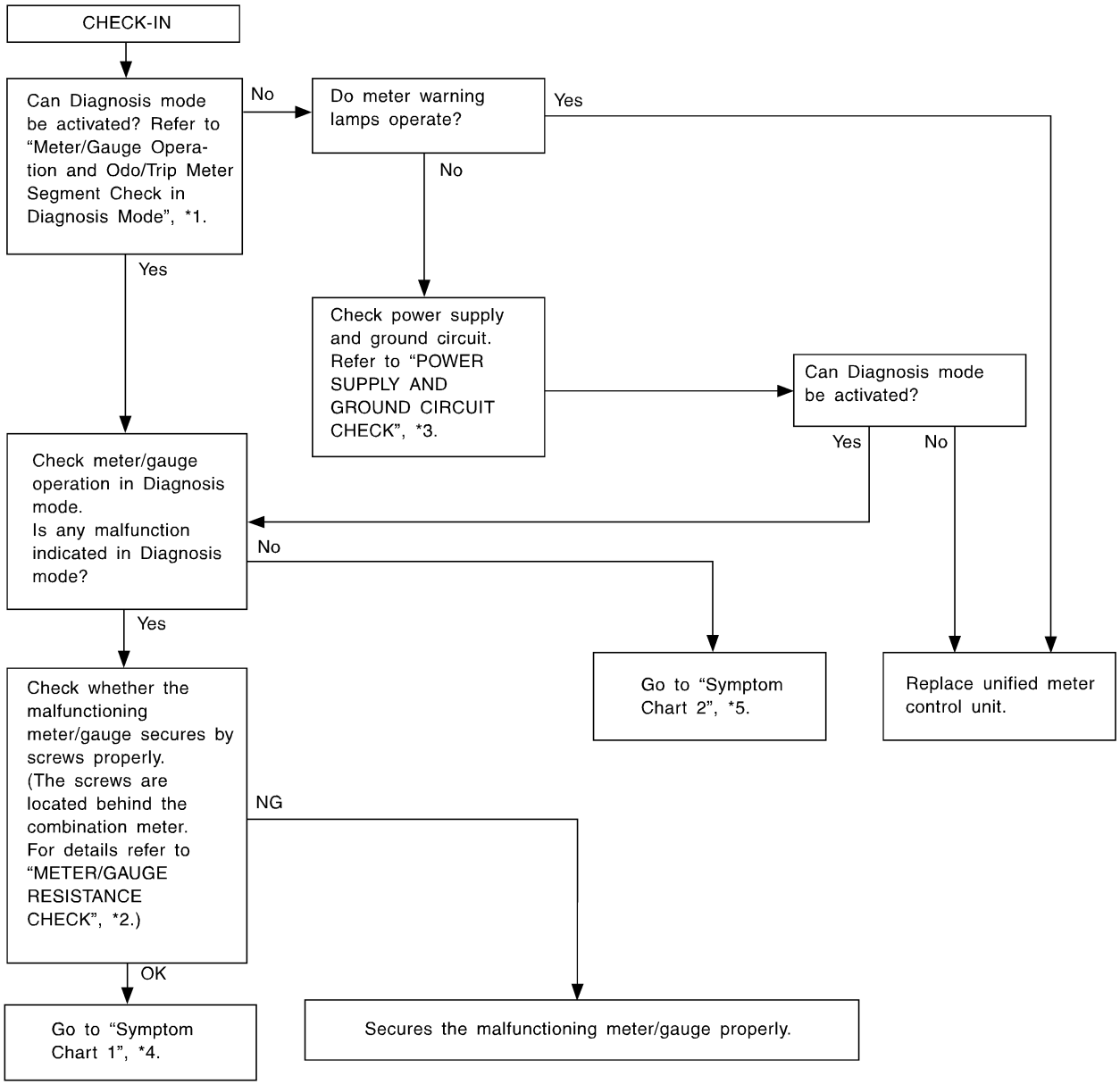
NOTE:
It takes about a few seconds for indication of fuel gauge and water temperature gauge to become stable.

Trouble Diagnoses

PRELIMINARY CHECK

NHEL0046

NHEL0046S04



SEL361W

*1: Meter/Gauge Operation and Odo/Trip Meter Segment Check in Diagnosis Mode (EL-149)

*2: METER/GAUGE RESISTANCE CHECK (EL-157)

*3: POWER SUPPLY AND GROUND CIRCUIT CHECK (EL-152)

*4: Symptom Chart 1 (EL-151)

*5: Symptom Chart 2 (EL-151)

SYMPTOM CHART

NHEL0046S10

Symptom Chart 1 (Malfunction is Indicated in Diagnosis Mode)

NHEL0046S1001

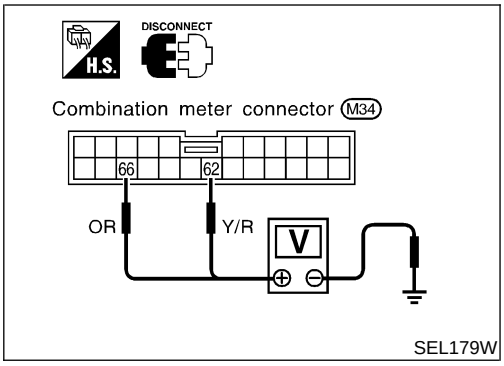
Symptom	Possible causes	Repair order
Odo/trip meter indicate(s) malfunction in Diagnosis mode.	Unified meter control unit	Replace unified meter control unit.
Multiple meter/gauge indicate malfunction in Diagnosis mode.		
One of speedometer/ tachometer/fuel gauge/ water temp. gauge indicates malfunction in Diagnosis mode.	1. Meter/Gauge 2. Unified meter control unit	1. Check resistance of meter/gauge indicating malfunction. If the resistance is NG, replace the meter/ gauge. Refer to "METER/GAUGE RESISTANCE CHECK", EL-157. 2. If the resistance of meter/gauge is OK, replace unified meter control unit.

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

NHEL0046S1002

Symptom	Possible causes	Repair order
One of speedometer/ tachometer/fuel gauge/ water temp. gauge is malfunctioning.	1. Sensor signal - Vehicle speed signal - Engine revolution signal - Fuel gauge - Water temp. gauge 2. Unified meter control unit	1. Check the sensor for malfunctioning meter/gauge. INSPECTION/VEHICLE SPEED SENSOR (Refer to EL-153.) INSPECTION/ENGINE REVOLUTION SIGNAL (Refer to EL-154.) INSPECTION/FUEL LEVEL SENSOR UNIT (Refer to EL-155.) INSPECTION/THERMAL TRANSMITTER (Refer to EL-156.) 2. Replace unified meter control unit.
Multiple meter/gauge are malfunctioning. (except odo/trip meter)		

Before starting trouble diagnoses below, perform PRELIMINARY CHECK, EL-150.



POWER SUPPLY AND GROUND CIRCUIT CHECK

=NHEL0046S07

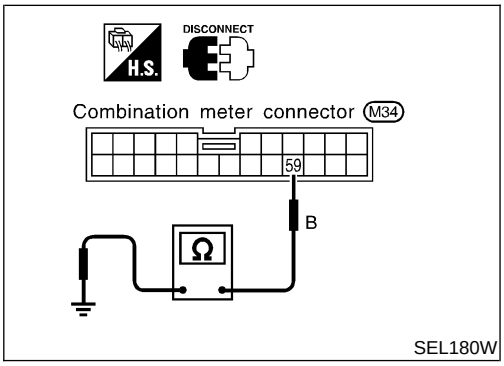
Power Supply Circuit Check

NHEL0046S0701

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

If NG, check the following.

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



Ground Circuit Check

NHEL0046S0702

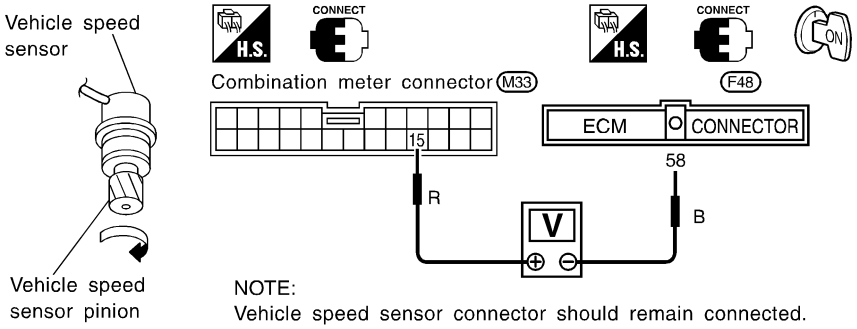
Terminals	Continuity
59 - Ground	Yes

INSPECTION/VEHICLE SPEED SENSOR

=NHEL0046S03

1	CHECK VEHICLE SPEED SENSOR OUTPUT

1. Remove vehicle speed sensor from transmission.
2. Check voltage between combination meter terminal 15 and ECM terminal 58 while quickly turning speed sensor pinion.



Voltage: Approx. 0.5V

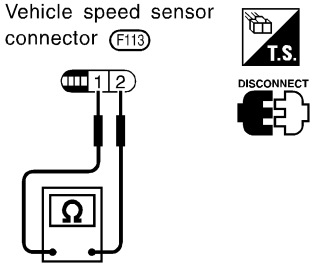
SEL181W

OK or NG

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

2	CHECK VEHICLE SPEED SENSOR

Check resistance between vehicle speed sensor terminals 1 and 2.



Resistance: Approx. 250 Ω

SEL645W

OK or NG

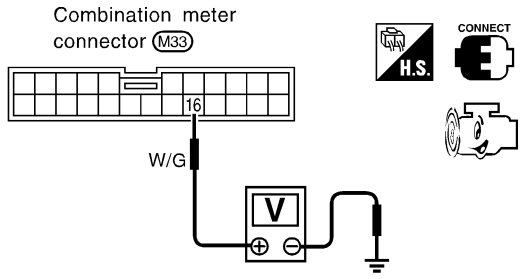
OK	▶	Check harness or connector between speedometer, vehicle speed sensor and ECM.
NG	▶	Replace vehicle speed sensor.

INSPECTION/ENGINE REVOLUTION SIGNAL

NHEL0046S02

1	CHECK ECM OUTPUT

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



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

SEL364W

OK or NG

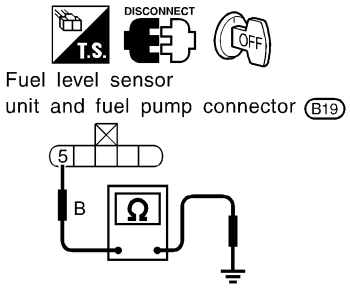
OK	▶	Engine revolution signal is OK.
NG	▶	Harness for open or short between ECM and combination meter

INSPECTION/FUEL LEVEL SENSOR UNIT

=NHEL0046S08

1	CHECK GROUND CIRCUIT FOR FUEL LEVEL SENSOR UNIT

Check harness continuity between fuel level sensor unit and fuel pump connector terminal 5 and ground.



Continuity should exist.

SEL182W

OK or NG

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

2	CHECK FUEL LEVEL SENSOR UNIT

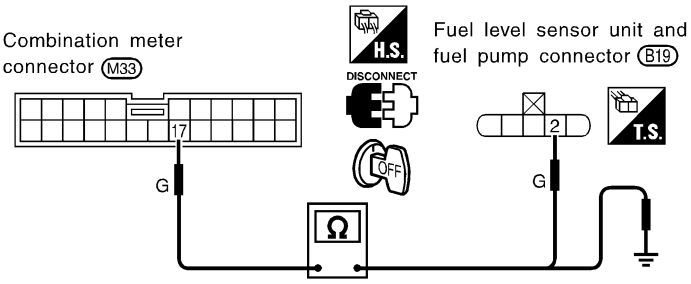
Refer to "FUEL LEVEL SENSOR UNIT CHECK" (EL-157).

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 and fuel pump connector.
2. Check continuity between combination meter terminal 17 and fuel level sensor unit and fuel pump connector terminal 2.
   Continuity should exist.
3. Check continuity between combination meter terminal 17 and ground.
   Continuity should not exist.



SEL183W

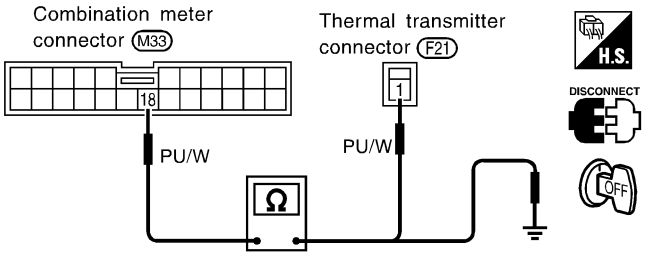
OK or NG

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

INSPECTION/THERMAL TRANSMITTER

=NHEL0046S09

1	CHECK THERMAL TRANSMITTER	
Refer to "THERMAL TRANSMITTER CHECK" (EL-157).		
OK or NG		
OK	▶	GO TO 2.
NG	▶	Replace.

2	CHECK HARNESS FOR OPEN OR SHORT	
1. Disconnect combination meter connector and thermal transmitter connector. 2. Check continuity between combination meter terminal 18 and thermal transmitter terminal 1. **Continuity should exist.** 3. Check continuity between combination meter terminal 18 and ground. **Continuity should not exist.**  SEL184W		
OK or NG		
OK	▶	Thermal transmitter is OK.
NG	▶	Repair harness or connector.

Electrical Components Inspection

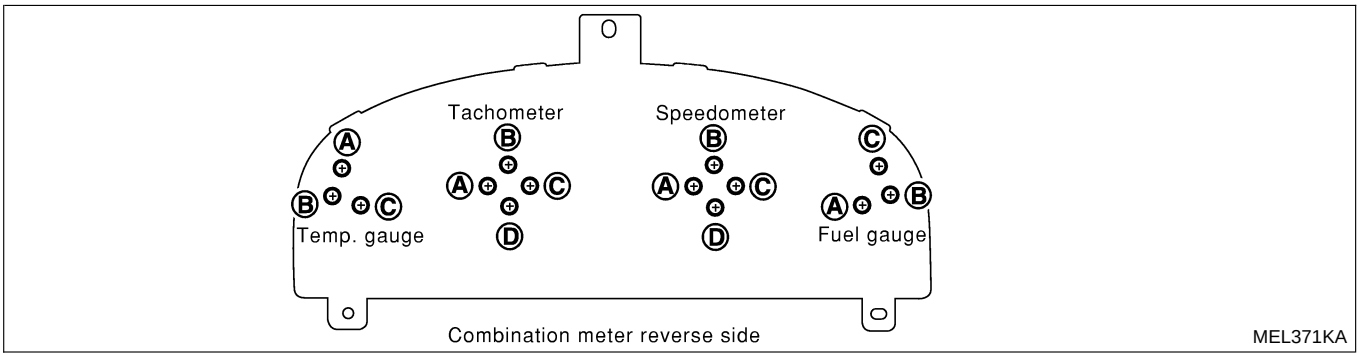
=NHEL0047

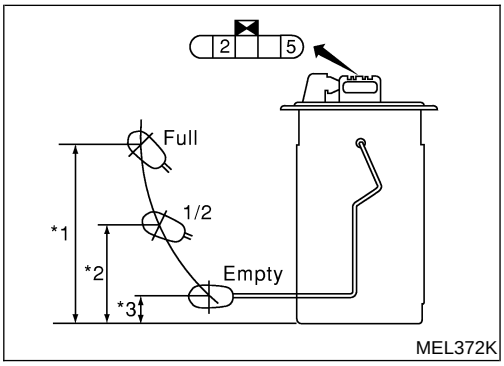
METER/GAUGE RESISTANCE CHECK

NHEL0047S04

Check resistance between installation screws of meter/gauge.

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





FUEL LEVEL SENSOR UNIT CHECK

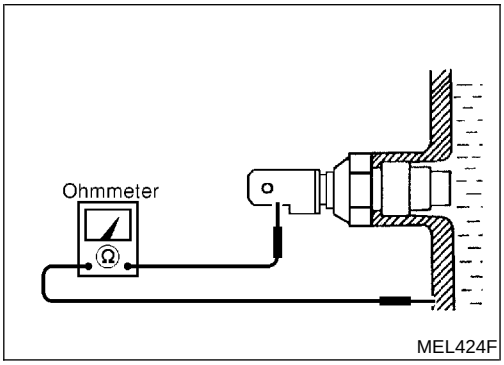
NHEL0047S01

- For removal, refer to FE section.

Check the resistance between terminals 2 and 5.

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

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

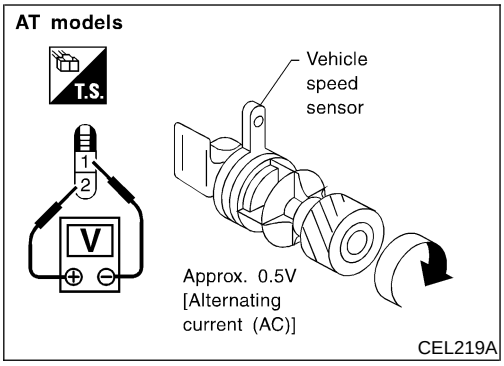


THERMAL TRANSMITTER CHECK

NHEL0047S02

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

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



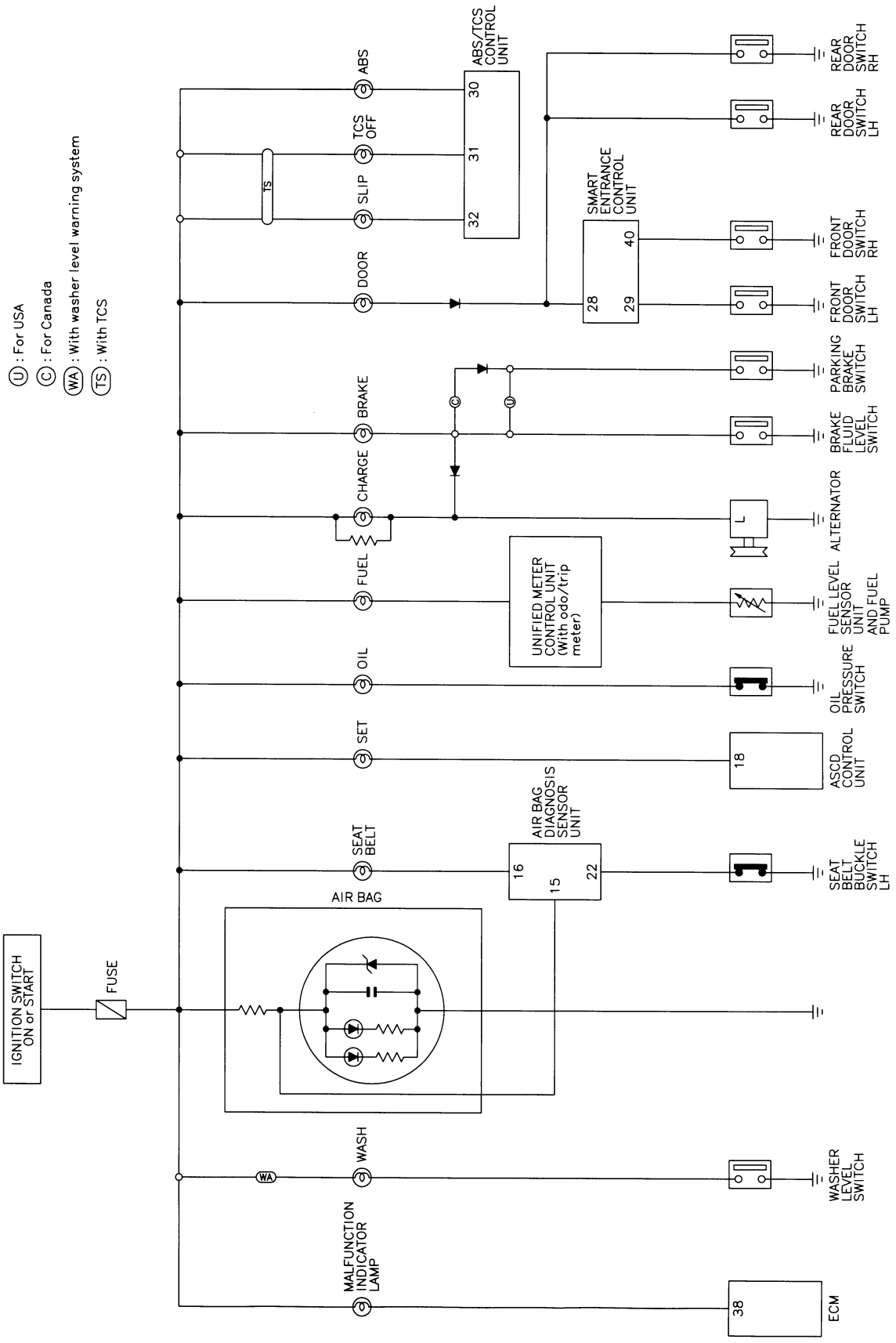
VEHICLE SPEED SENSOR SIGNAL CHECK

NHEL0047S03

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

Schematic

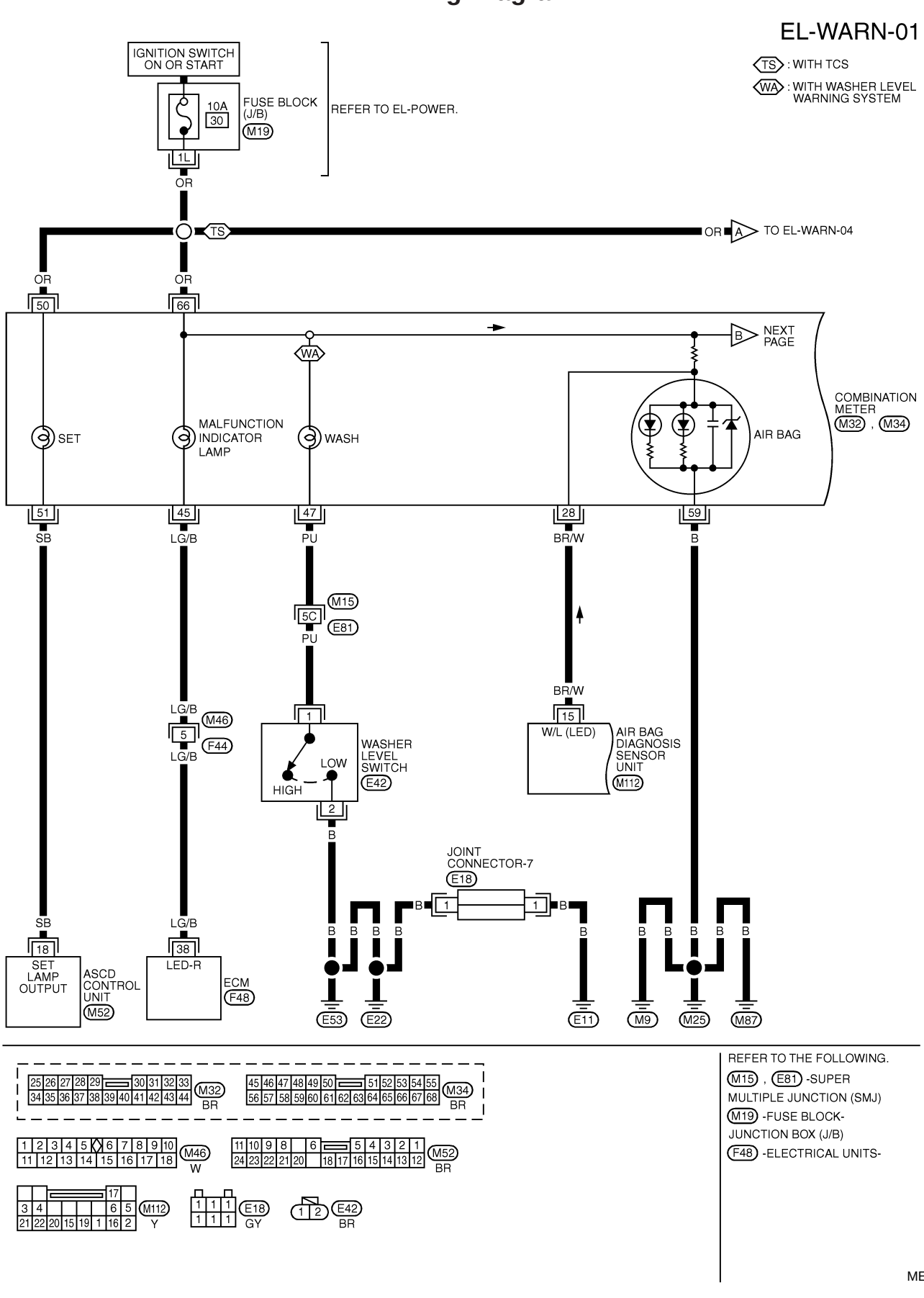
NHEL0049



MEL456K

Wiring Diagram — WARN —

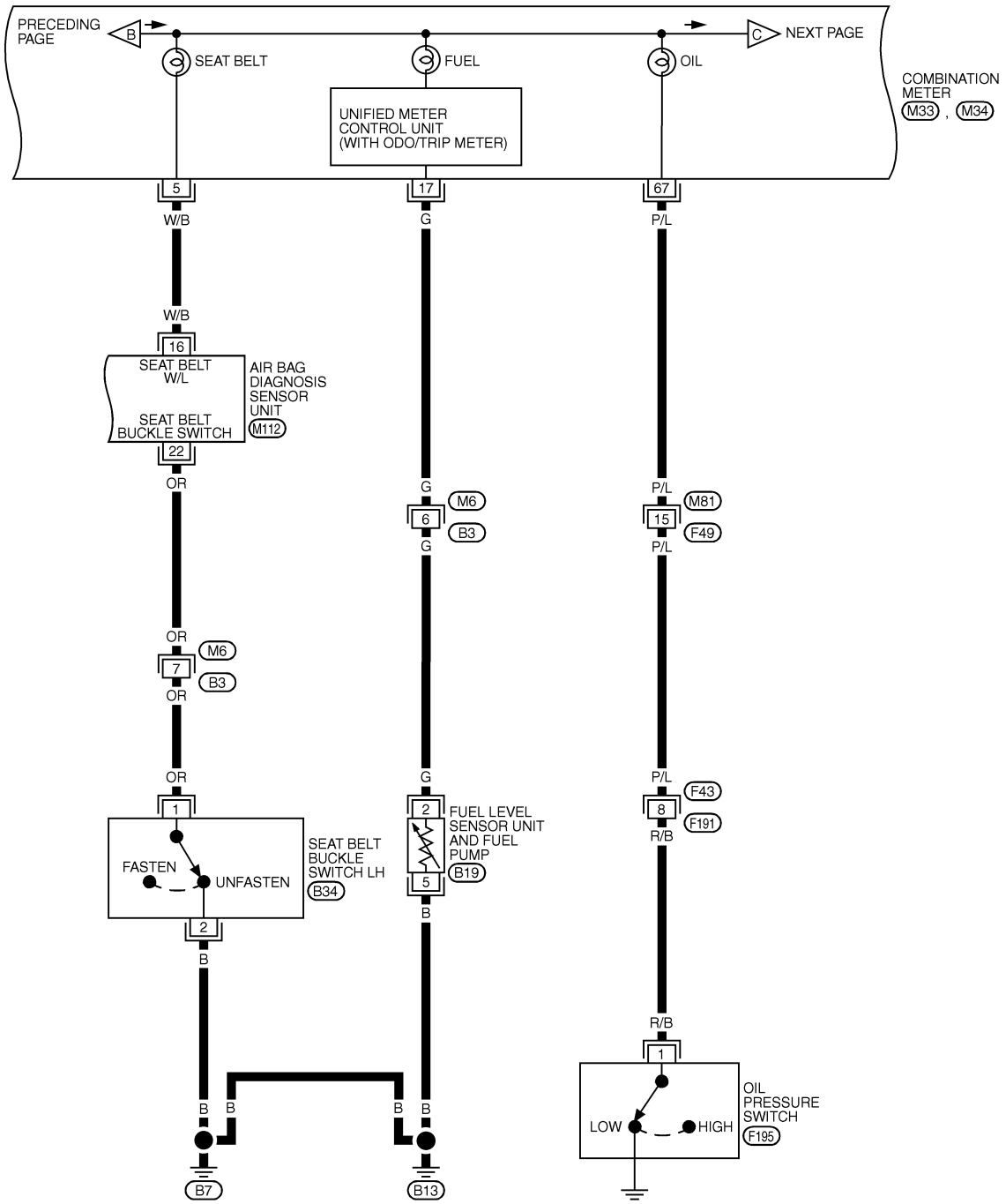
NHEL0050

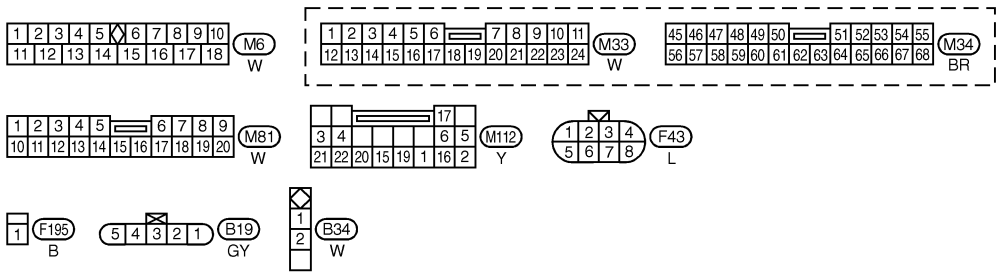


REFER TO THE FOLLOWING.
M15 , E81 -SUPER MULTIPLE JUNCTION (SMJ)
M19 -FUSE BLOCK-JUNCTION BOX (J/B)
F48 -ELECTRICAL UNITS-

MEL457K

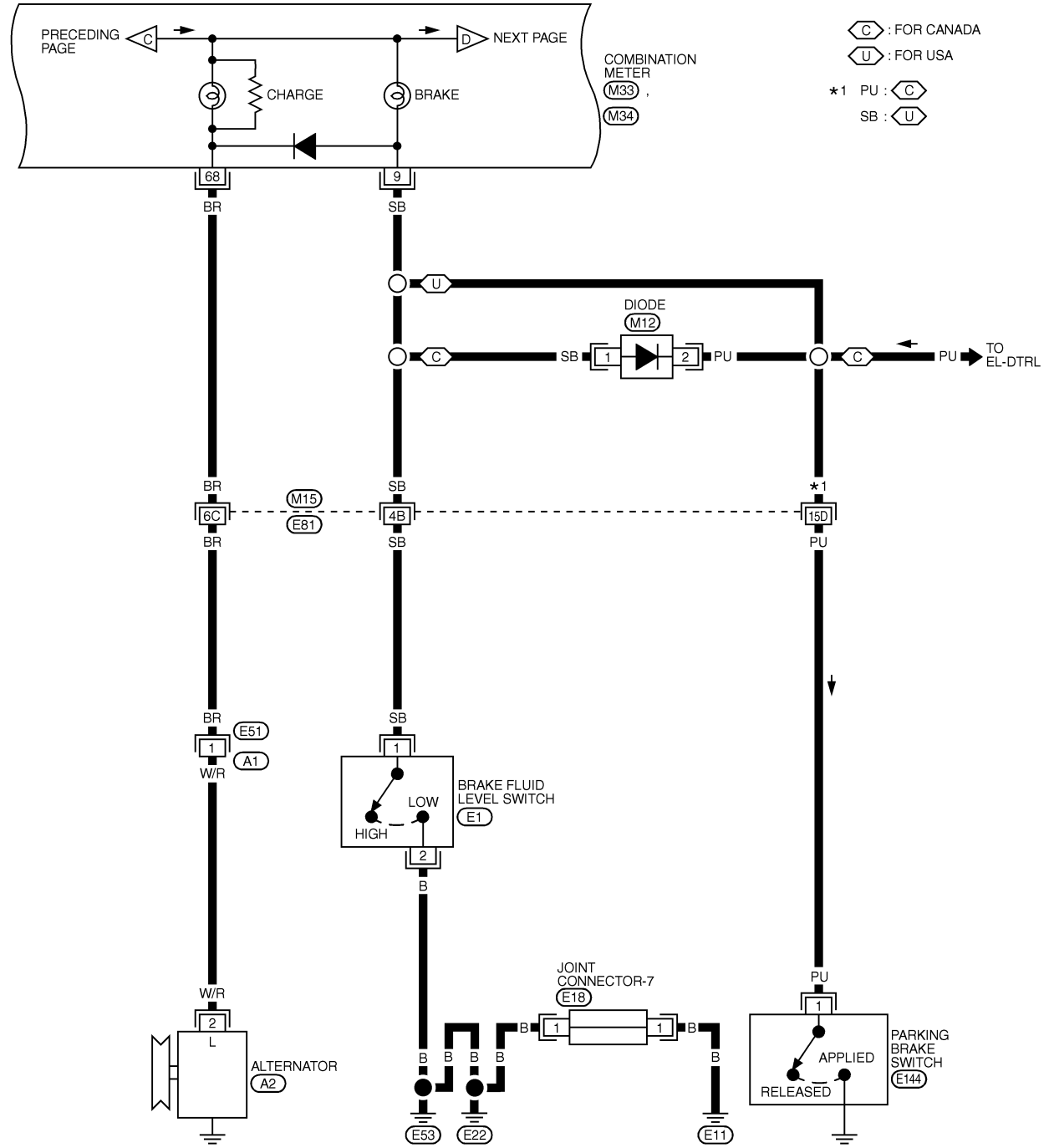
EL-WARN-02

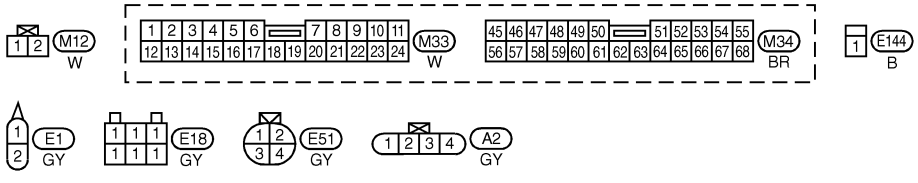




MEL458K

EL-WARN-03

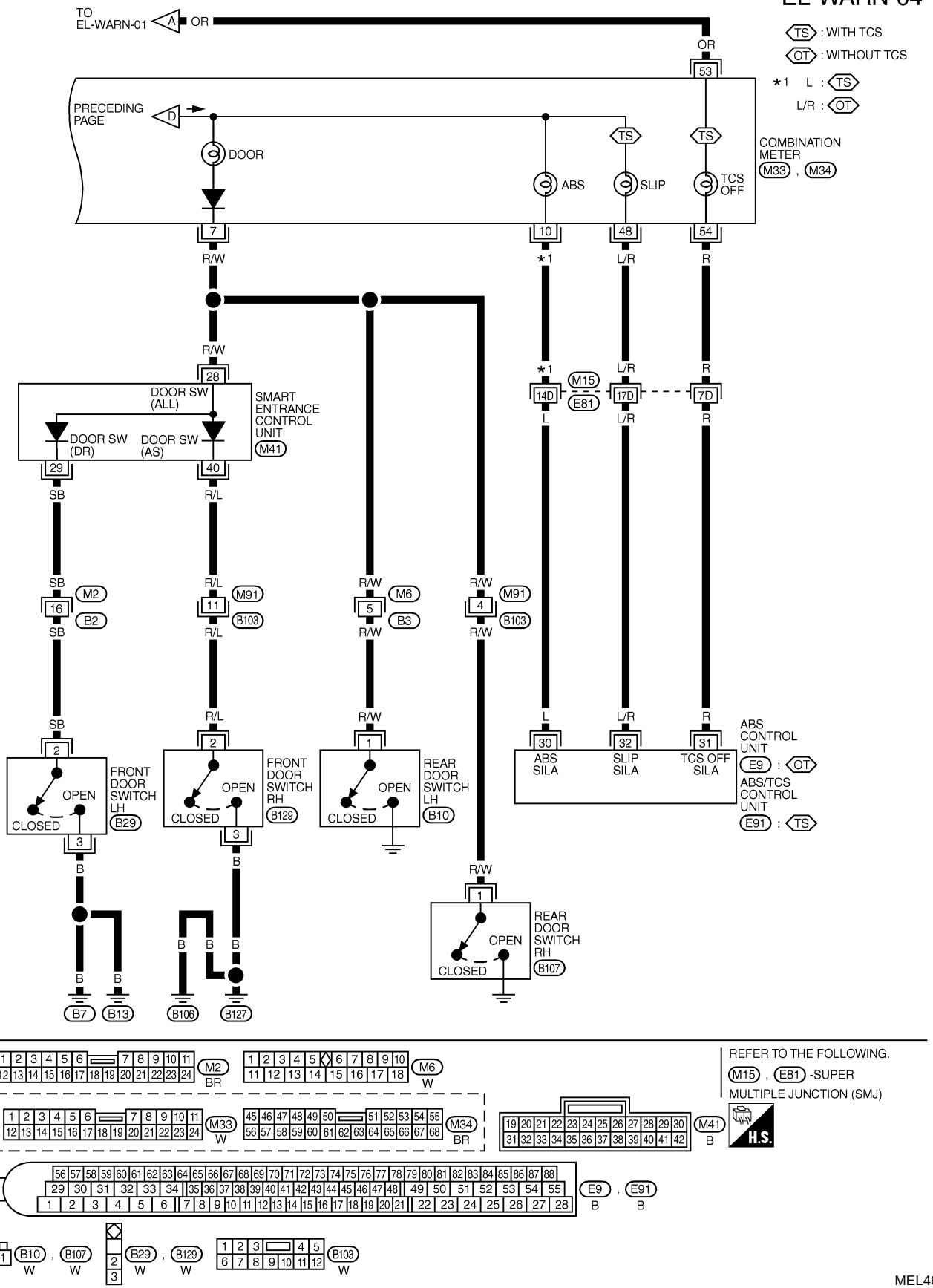




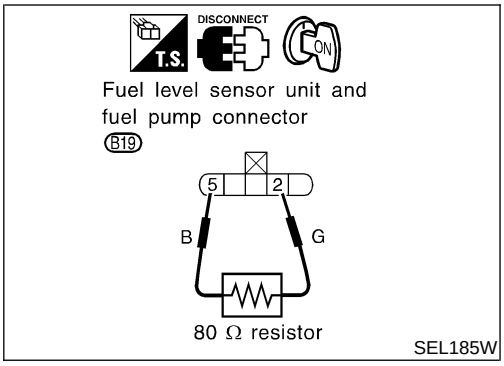
REFER TO THE FOLLOWING.
M15 , E81 -SUPER MULTIPLE JUNCTION (SMJ)

MEL459K

EL-WARN-04



MEL460K



SEL185W

Electrical Components Inspection

NHEL0051

FUEL WARNING LAMP OPERATION CHECK

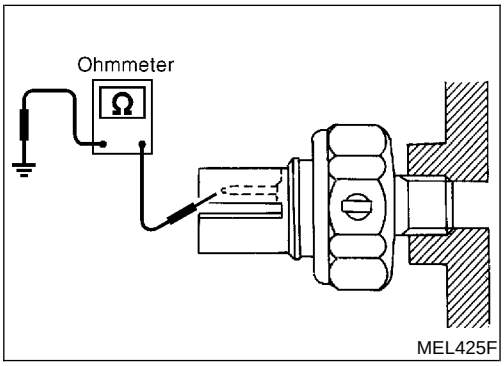
NHEL0051S01

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

The fuel warning lamp should come on.

NOTE:

ECM might store the 1st trip DTC P0180 and the 1st trip DTC P0464 during this inspection.
If the DTC is stored in ECM memory, erase the DTC after reconnecting fuel level sensor unit and fuel pump harness connector.
Refer to EC-82, “HOW TO ERASE EMISSION-RELATED DIAGNOSTIC INFORMATION” “Emission-related Diagnostic Information” “ON BOARD DIAGNOSTIC SYSTEM DESCRIPTION”.



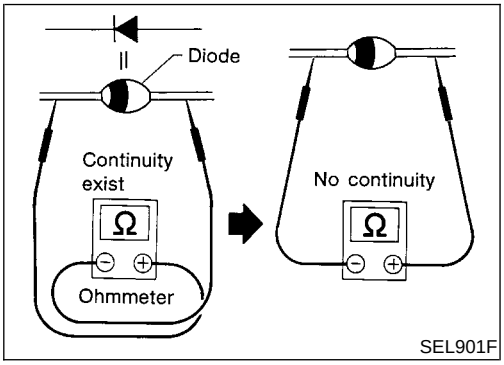
MEL425F

OIL PRESSURE SWITCH CHECK

NHEL0051S02

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

NHEL0051S03

- Check continuity using an ohmmeter.
- Diode is functioning properly if test results are as shown in the figure at left.
- Check diodes at the combination meter harness connector instead of on the combination assembly. Refer to EL-160, “WARNING LAMP” wiring diagrams.

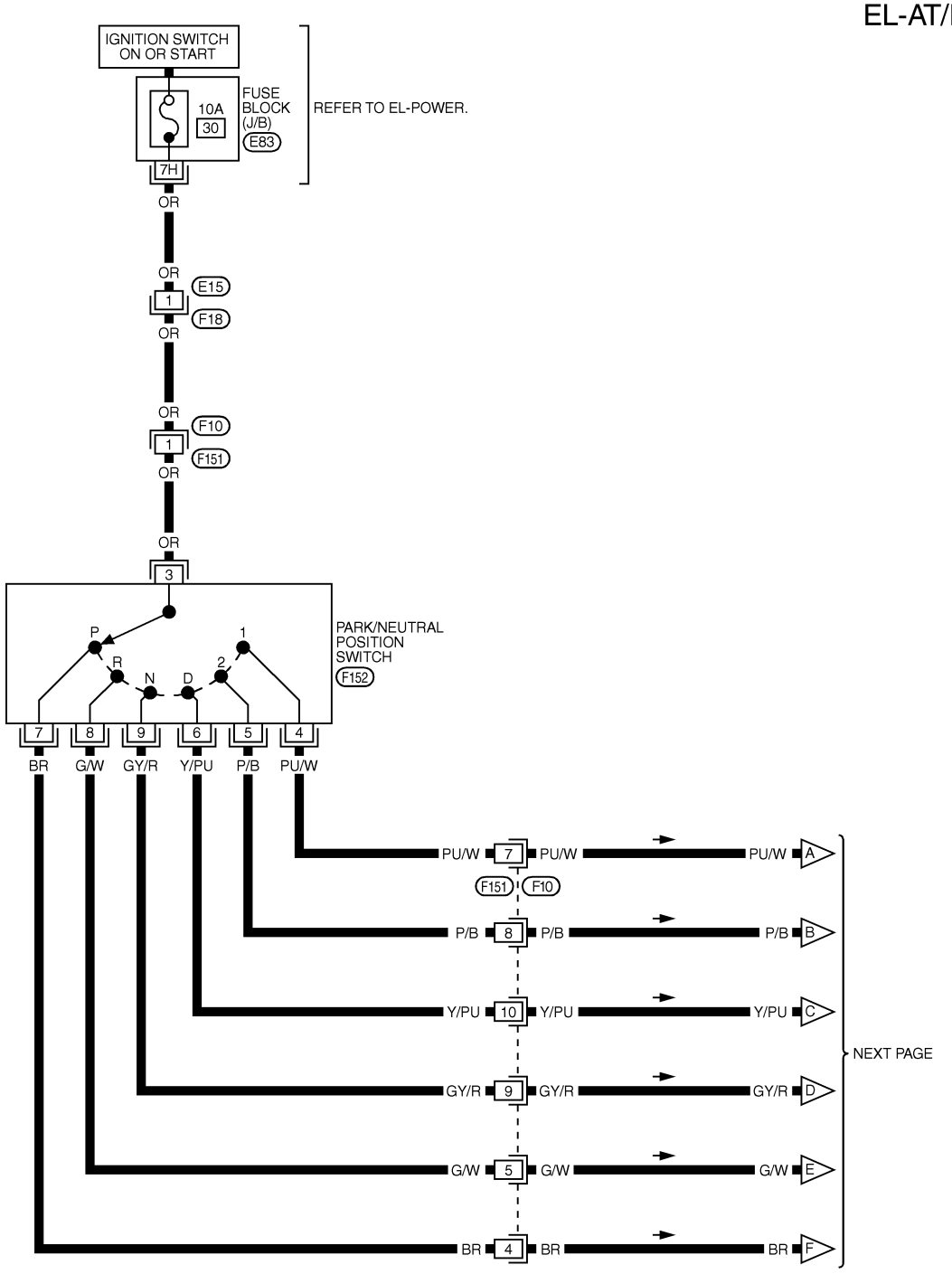
NOTE:

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.

Wiring Diagram — AT/IND —

NHEL0159

EL-AT/IND-01



F10 GY

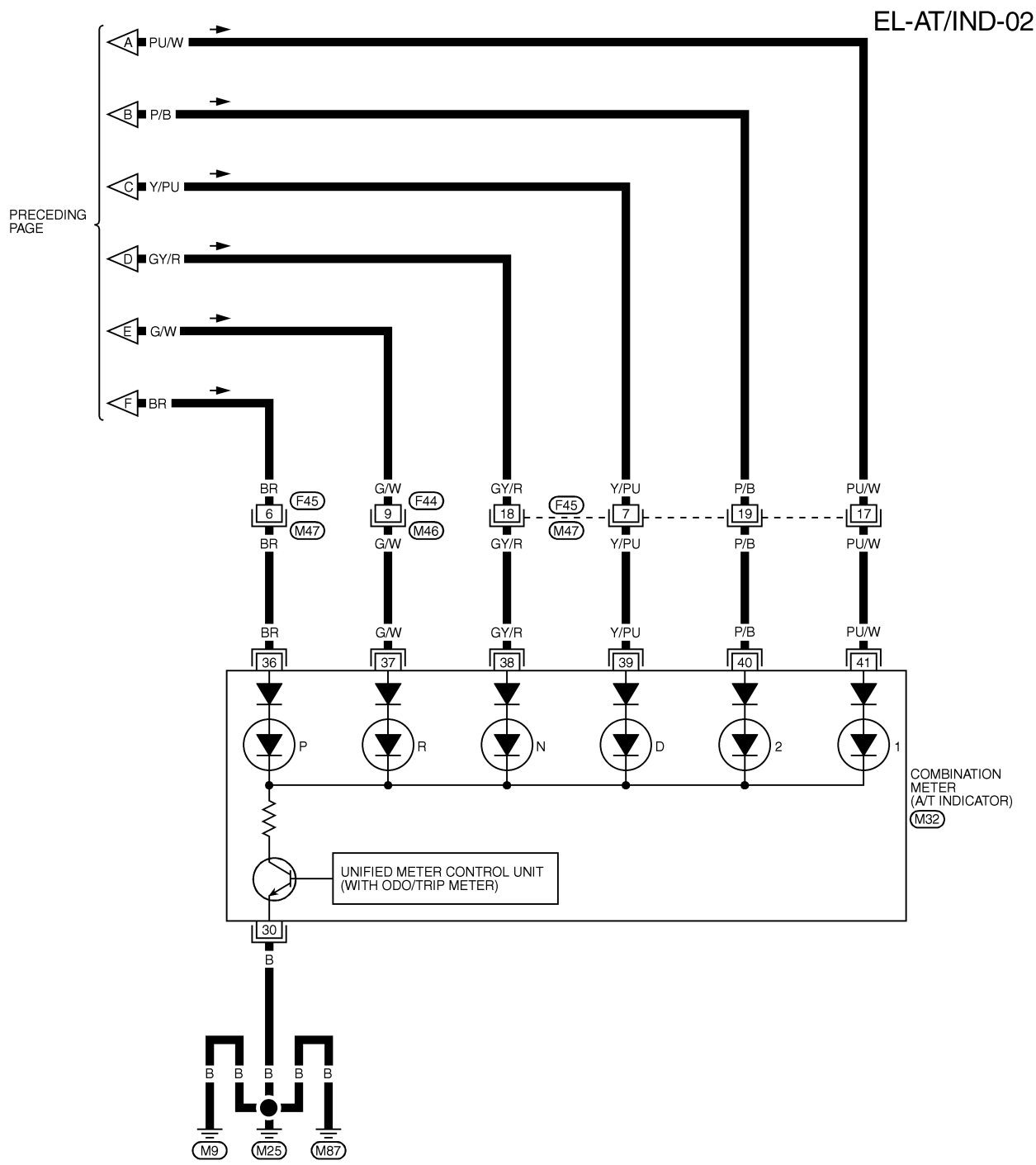
F18 B

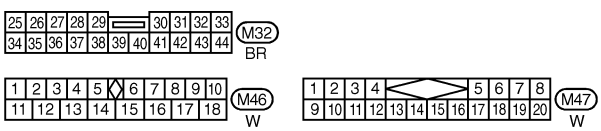
F152 B

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

MEL270K

Wiring Diagram — AT/IND — (Cont'd)

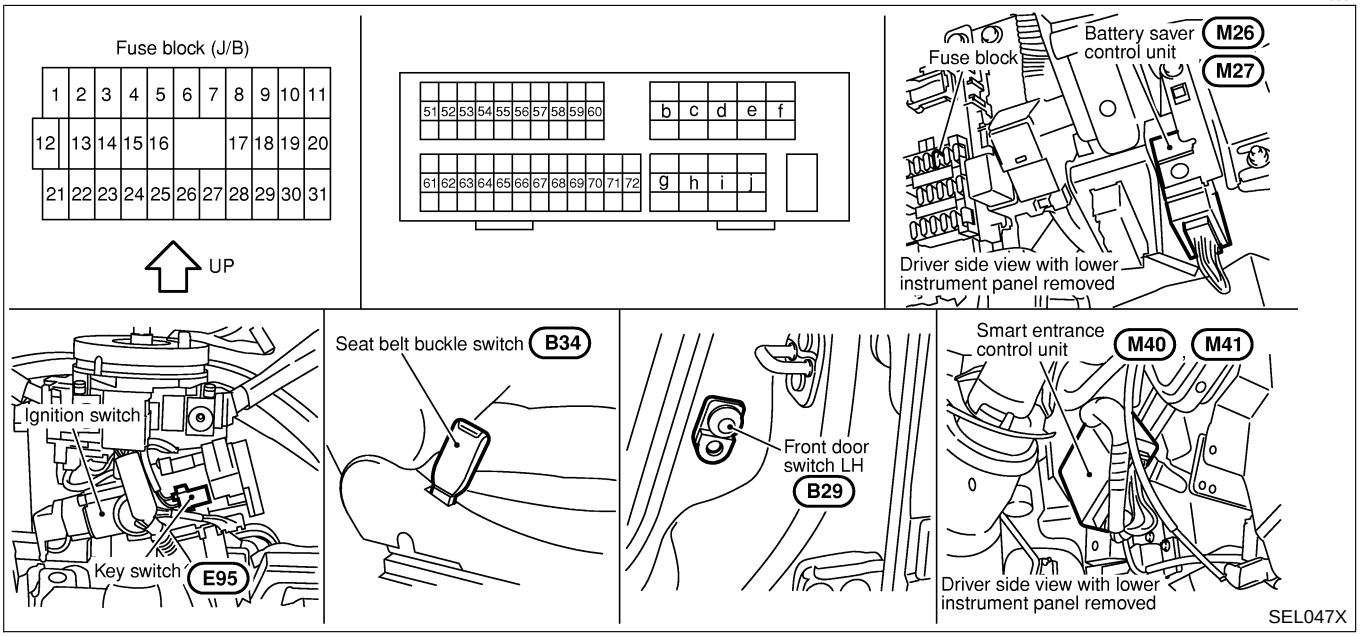




MEL461K

Component Parts and Harness Connector Location

NHEL0052



System Description

NHEL0053

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 10A fuse [No. 13, located in fuse block (J/B)]
- to smart entrance control unit terminal 10,
- through 10A fuse [No. 12, located in the fuse block (J/B)]
- to key switch terminal 2,
- through 10A fuse (No. 60, located in the fuse and fusible link box
- to tail lamp relay terminals 1 and 3.

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

- through 10A fuse [No. 10, located in the fuse block (J/B)]
- to smart entrance control unit terminal 33.

Ground is supplied to smart entrance control unit terminal 16 through body grounds M9, M25 and M87.
When a signal, or combination of signals, is received by the smart entrance control unit, the warning chime will sound.

IGNITION KEY WARNING CHIME

NHEL0053S01

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

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

Ground is supplied

- from front door switch (driver side) terminal 2
- to smart entrance control unit terminal 29.

Front door switch (driver side) terminal 3 is grounded through body grounds B7 and B13.

LIGHT WARNING CHIME

NHEL0053S02

With 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 5
- to smart entrance control unit terminal 34.

Ground is supplied

- from front door switch (driver side) terminal 2
- to smart entrance control unit terminal 29.

Front door switch (driver side) terminal 3 is grounded through body grounds B7 and B13.

SEAT BELT WARNING CHIME

NHEL0053S03

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

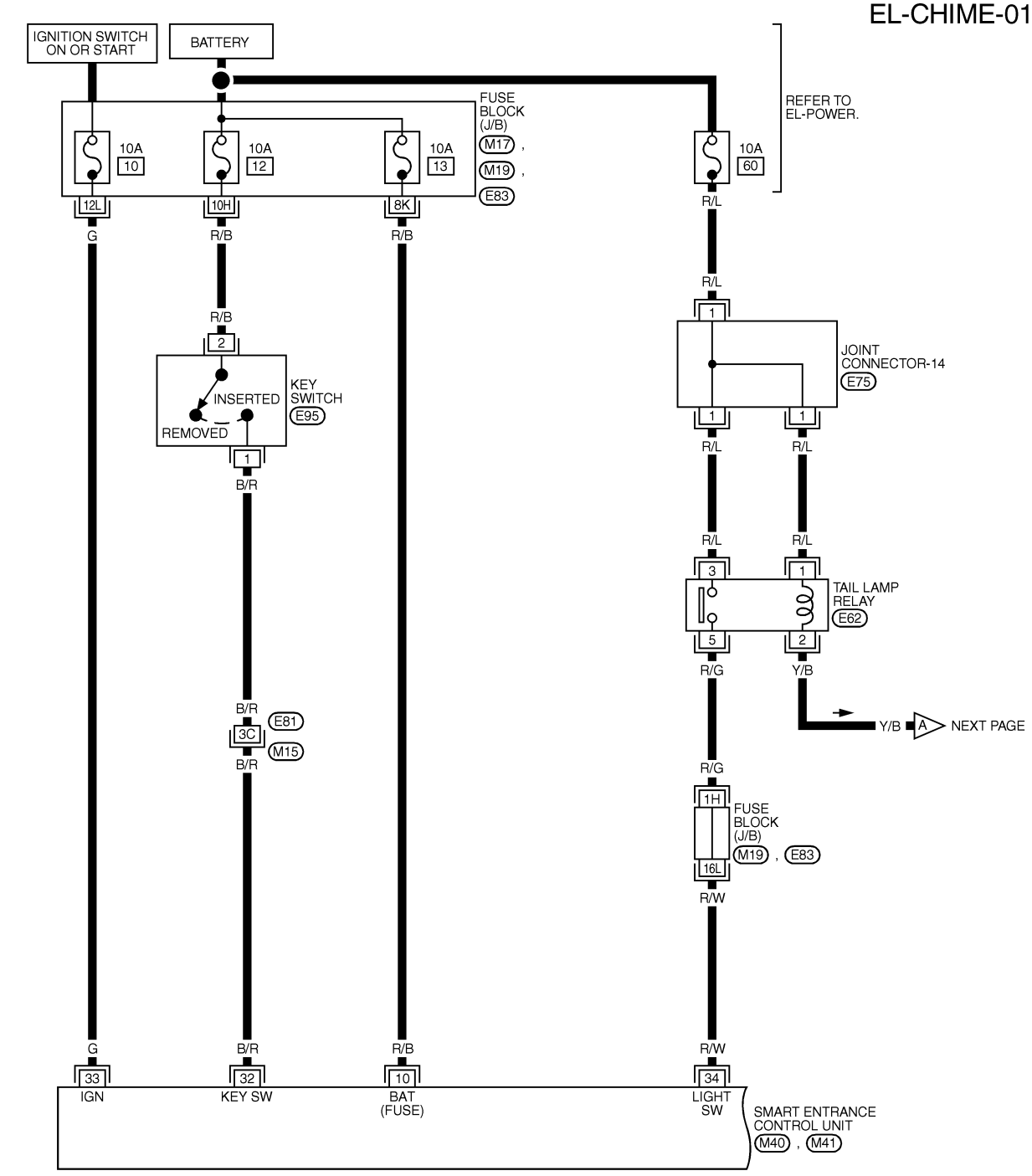
- from seat belt switch terminal 1
- to smart entrance control unit terminal 22.

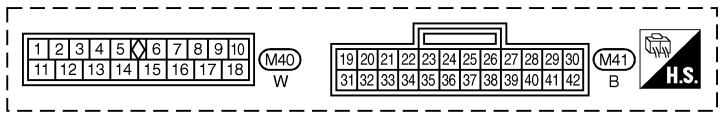
Seat belt switch terminal 2 is grounded through body grounds B7 and B13.

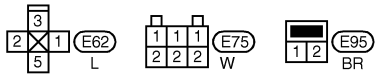
Wiring Diagram — CHIME —

NHEL0054

EL-CHIME-01





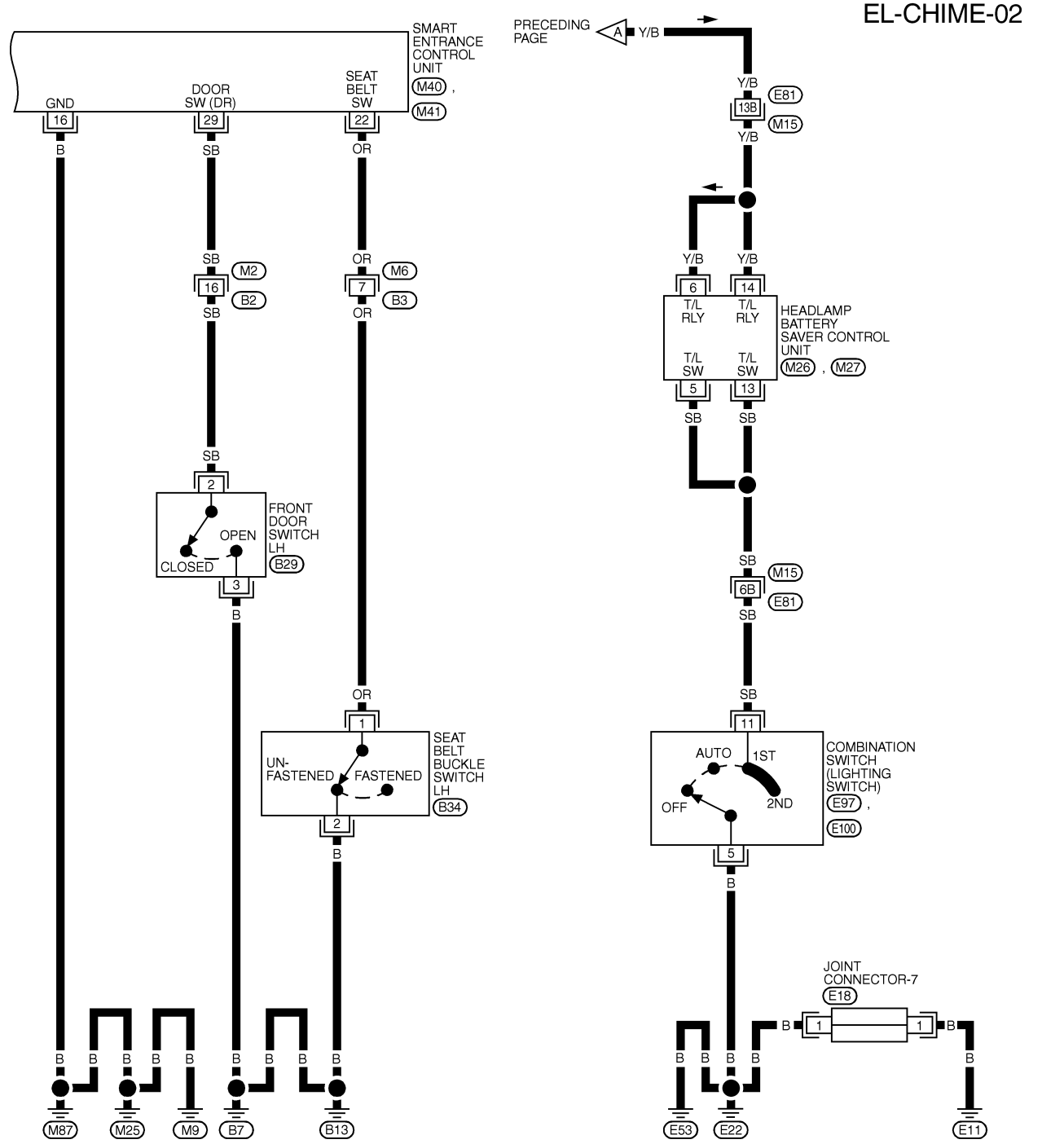


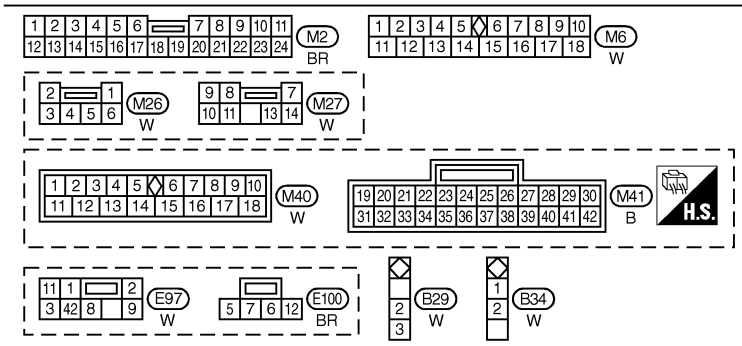
REFER TO THE FOLLOWING.
M15 -SUPER MULTIPLE JUNCTION (SMJ)
M17 , M19 , E83
-FUSE BLOCK- JUNCTION BOX (J/B)

MEL206L

Wiring Diagram — CHIME — (Cont'd)

EL-CHIME-02





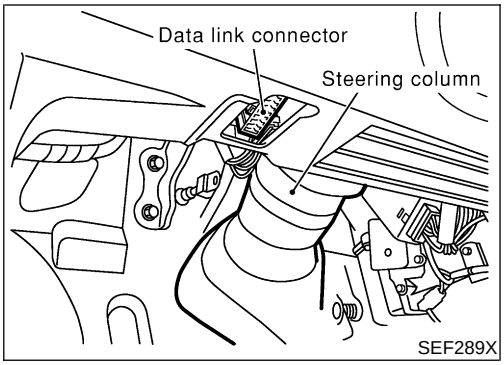
REFER TO THE FOLLOWING.
M15 , E81 -SUPER MULTIPLE JUNCTION (SMJ)

MEL463K

SMART ENTRANCE CONTROL UNIT TERMINALS AND REFERENCE VALUE BETWEEN EACH TERMINAL AND GROUND

TERMINAL	WIRE COLOR	ITEM	CONDITION	DATA (DC)
10	R/B	POWER SOURCE (FUSE)	–	12V
16	B	GROUND	–	–
22	OR	SEAT BELT BUCKLE SWITCH	UNFASTEN → FASTEN (IGNITION KEY IS IN "ON" POSITION)	0V → 5V
29	SB	DRIVER DOOR SWITCH	OFF (CLOSED) → ON (OPEN)	5V → 0V
32	B/R	IGNITION KEY SWITCH (INSERT)	KEY INSERTED → KEY REMOVED FROM IGN KEY CYLINDER	12V → 0V
33	G	IGN ON	IGNITION KEY IS IN "ON" POSITION	12V
34	R/W	TAIL LAMP RELAY	1ST, 2ND POSITIONS: ON → OFF	12V → 0V

SEL049X



SEF289X

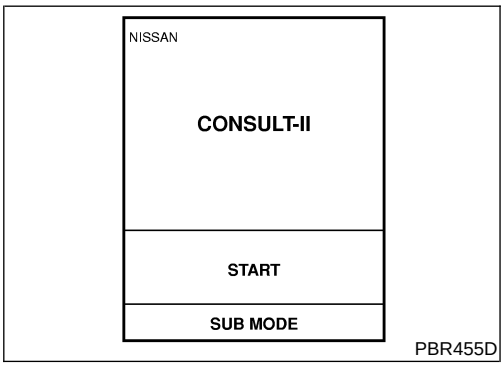
CONSULT-II Inspection Procedure

=NHEL0216

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

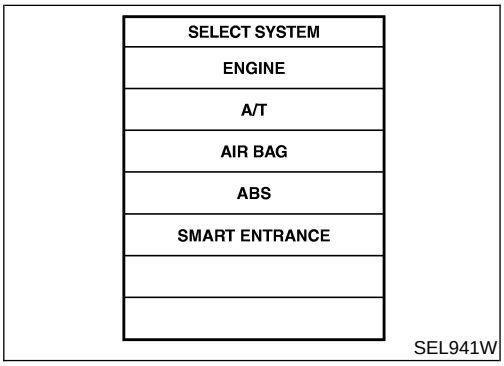
NHEL0216S01

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



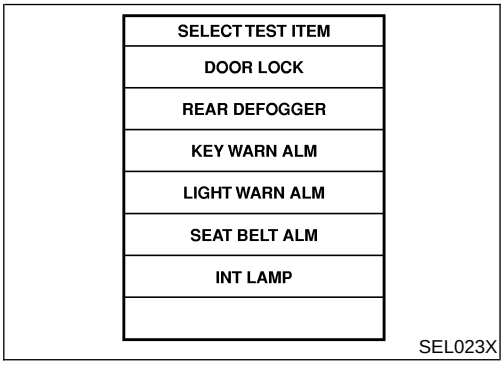
PBR455D

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



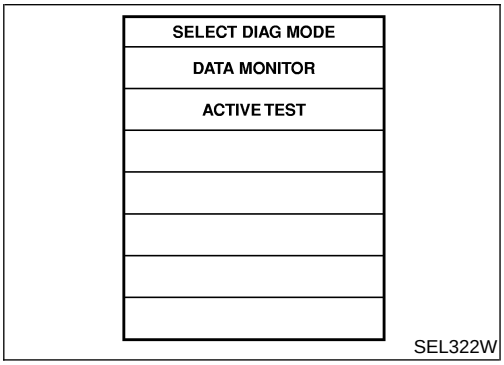
SEL941W

5. Touch "SMART ENTRANCE".



SEL023X

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



SEL322W

- DATA MONITOR and ACTIVE TEST are available for the warning chime.

CONSULT-II Application Items

NHEL0217

"KEY WARNING ALARM"

NHEL0217S01

Data Monitor

NHEL0217S0101

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

NHEL0217S0102

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"

NHEL0217S02

Data Monitor

NHEL0217S0201

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

Active Test

NHEL0217S0202

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"

NHEL0217S03

Data Monitor

NHEL0217S0301

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

NHEL0217S0302

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

NHEL0055

SYMPTOM CHART

NHEL0055S01

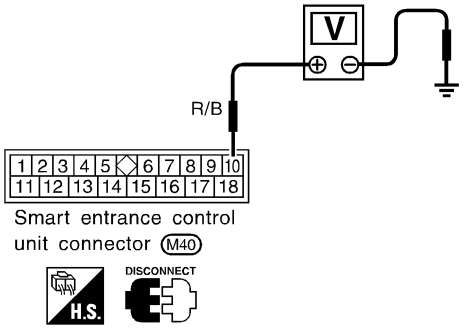
REFERENCE PAGE (EL-)	174	175	176	177	178
SYMPTOM	POWER SUPPLY AND GROUND CIRCUIT CHECK	DIAGNOSTIC PROCEDURE 1 (LIGHTING SWITCH INPUT SIGNAL CHECK)	DIAGNOSTIC PROCEDURE 2 (KEY SWITCH INSERT SIGNAL CHECK)	DIAGNOSTIC PROCEDURE 3 (SEAT BELT BUCKLE SWITCH CHECK)	DIAGNOSTIC PROCEDURE 4
Light warning chime 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

NHEL0055S02

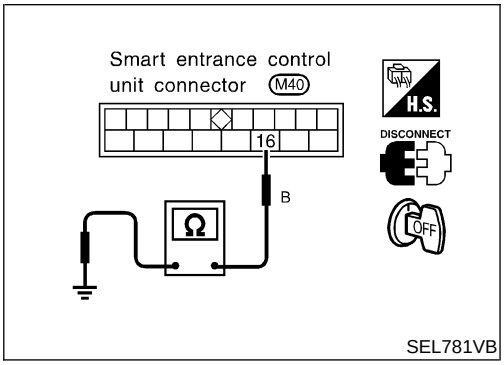
Power Supply Circuit Check

NHEL0055S0201



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

SEL326WA



SEL781VB

Ground Circuit Check

NHEL0055S0202

Terminals	Continuity
16 - Ground	Yes

DIAGNOSTIC PROCEDURE 1 (LIGHTING SWITCH INPUT SIGNAL CHECK)

=NHEL0055S03

1	CHECK LIGHTING SWITCH INPUT SIGNAL

With CONSULT-II

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

DATA MONITOR	
MONITOR	
HD/LMP 1ST SW	OFF

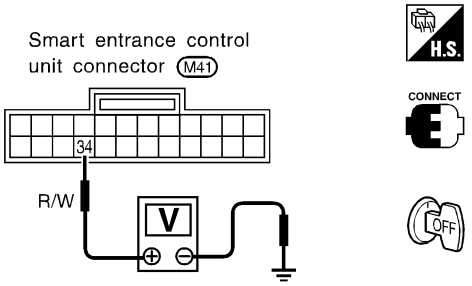
When lighting switch is in 1st or 2nd position:
HD/LMP 1ST SW ON

When lighting switch is in OFF position:
HD/LMP 1ST SW OFF

SEL316W

Without CONSULT-II

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



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

SEL309WA

OK or NG

OK	▶	Lighting switch is OK.
NG	▶	**Check the following.** ● 10A fuse (No. 60, 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)

=NHEL0055S04

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

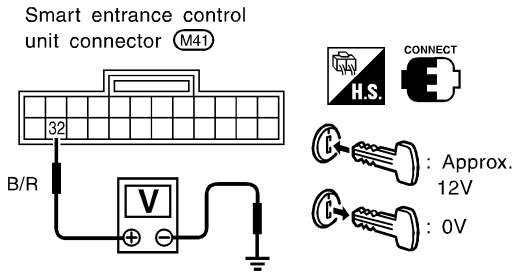
When key is removed from ignition key cylinder:

KEY ON SW OFF

SEL315W

Without CONSULT-II

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



Voltage [V]:

Condition of key switch: Key is inserted.

Approx. 12

Condition of key switch: Key is withdrawn.

0

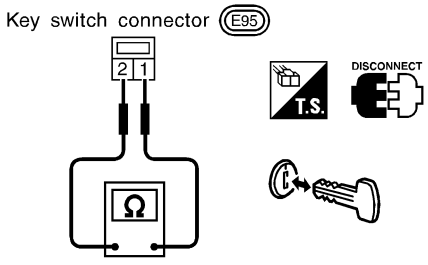
SEL310W

OK or NG

OK	▶	Key switch is OK.
NG	▶	GO TO 2.

2	CHECK KEY SWITCH (INSERT)

Check continuity between terminals 1 and 2.



Continuity:

Condition of key switch: Key is inserted.

Yes

Condition of key switch: Key is removed.

No

SEL311W

OK or NG

OK	▶	**Check the following.** • 10A fuse [No. 12, located in fuse block (J/B)] • Harness for open or short between key switch and fuse • Harness for open or short between smart entrance control unit and key switch
NG	▶	Replace key switch.

DIAGNOSTIC PROCEDURE 3 (SEAT BELT BUCKLE SWITCH CHECK)

=NHEL0055S05

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

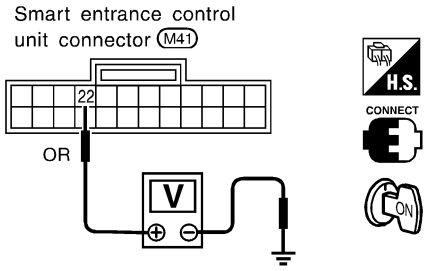
When seat belt is fastened:
SEAT BELT SW ON

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 terminal 22 and ground.



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

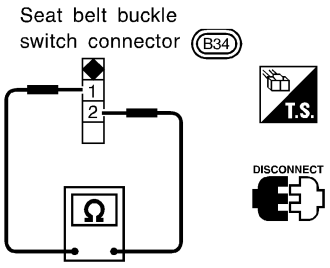
SEL312W

OK or NG

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

2 CHECK SEAT BELT BUCKLE SWITCH

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



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

SEL313W

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

NHEL0055S06

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

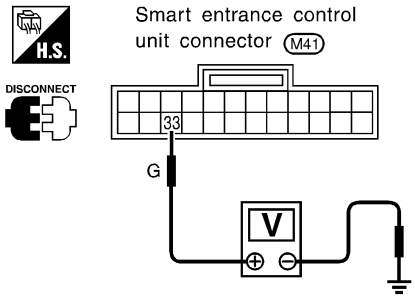
When ignition switch is ON:
IGN ON SW ON

When ignition switch is OFF:
IGN ON SW OFF

SEL318W

Without CONSULT-II

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



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

SEL380W

OK or NG

OK	▶	GO TO 2.
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

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

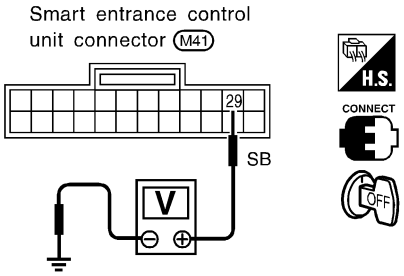
When driver's door is open:
DOOR SW-DR ON

When driver's door is closed:
DOOR SW-DR OFF

SEL319W

Without CONSULT-II

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



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

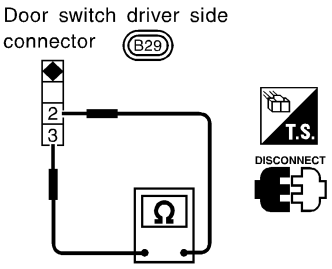
SEL324W

OK or NG

OK	▶	GO TO 4.
NG	▶	GO TO 3.

3	CHECK DRIVER SIDE DOOR SWITCH

Check continuity between terminals 2 and 3.



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

SEL325W

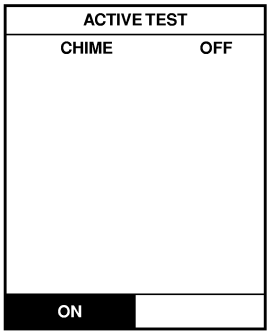
OK or NG

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

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

NHEL0057

WIPER OPERATION

NHEL0057S01

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

- LO speed
- HI speed
- INT (Intermittent)

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

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

Low and High Speed Wiper Operation

NHEL0057S0101

Ground is supplied to wiper switch terminal 17 through body grounds E11, E22 and E53.
When the wiper switch is placed in the LO position, ground is supplied

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

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

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

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

Auto Stop Operation

NHEL0057S0102

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

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

Ground is also supplied

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

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

Intermittent Operation

NHEL0057S0103

The wiper motor operates the wiper arms one time at low speed at a set interval of approximately 3 to 13 seconds. This feature is controlled by the wiper amplifier (INT SW) combined with wiper switch.
When the wiper switch is placed in the INT position, ground is supplied to wiper amplifier.
The desired interval time is input to wiper amplifier (INT VR) from wiper volume switch combined with wiper switch.
Then intermittent ground is supplied

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

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

WASHER OPERATION

NHEL0057S02

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

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

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

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

System Description (Cont'd)

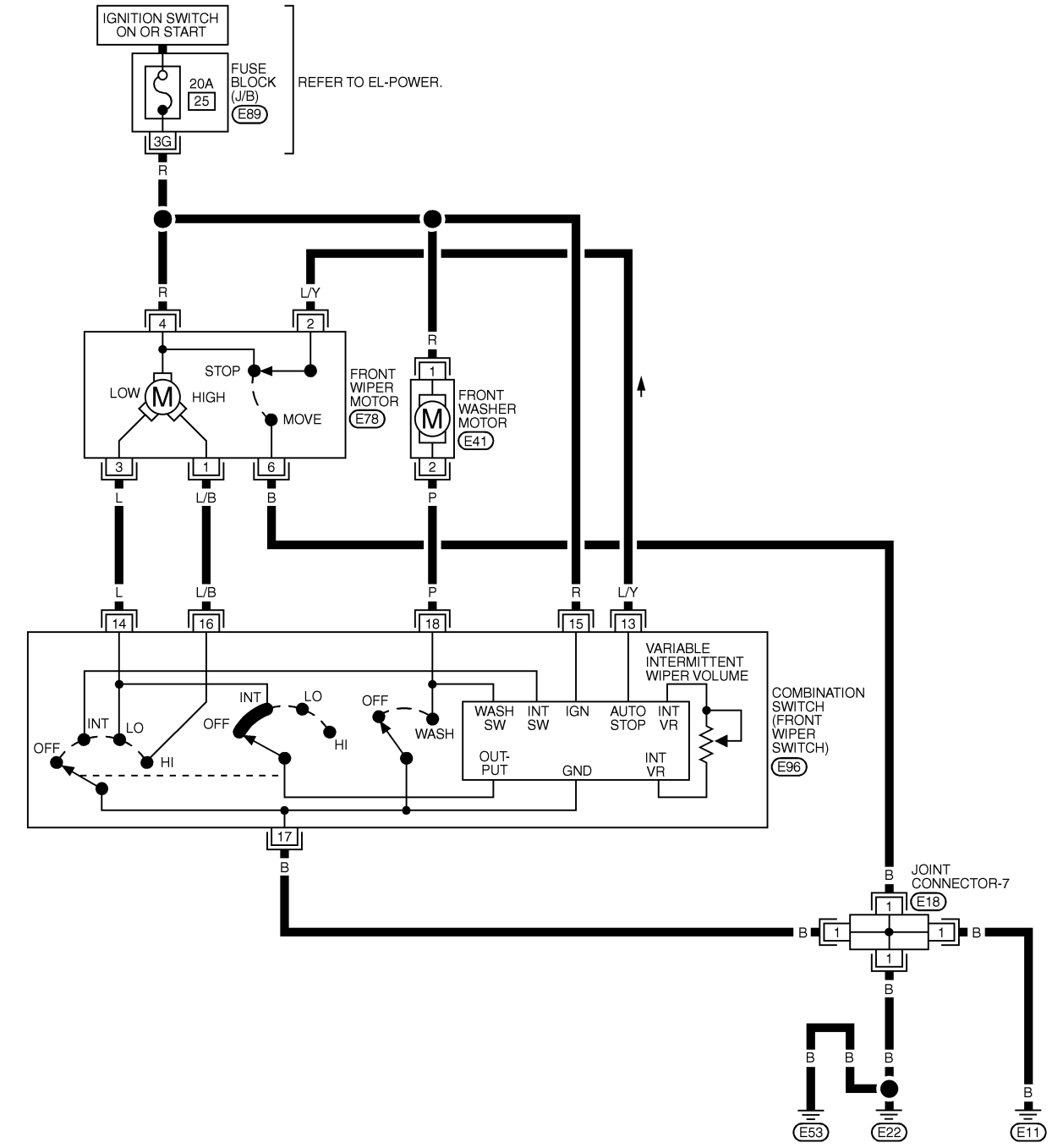
- through body grounds E11, E22 and E53.

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

Wiring Diagram — WIPER —

NHEL0058

EL-WIPER-01



E18 GY

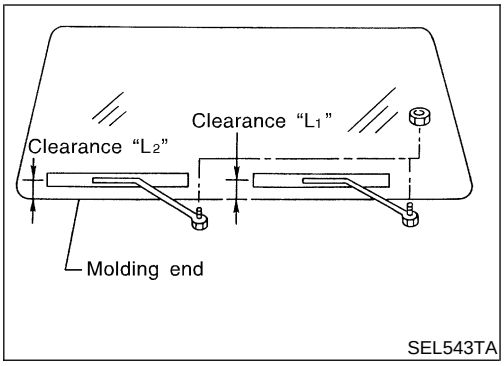
E41 GY

E78 GY

E96 GY

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

MEL274K



SEL543TA

Removal and Installation

NHEL0060

WIPER ARMS

NHEL0060S01

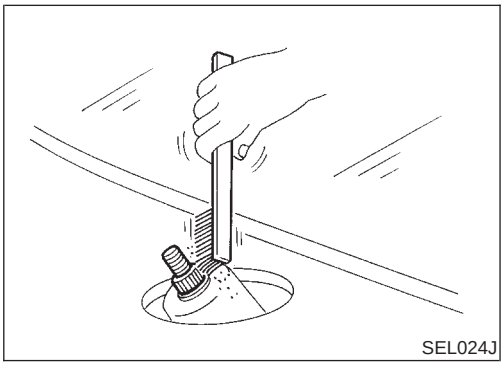
1. Prior to wiper arm installation, turn on wiper switch to operate wiper motor and then turn it "OFF" (Auto Stop).
2. Lift the blade up and then set it down onto glass surface to set the blade center to clearance "L_1" & "L_2" immediately before tightening nut.
3. Eject washer fluid. Turn on wiper switch to operate wiper motor and then turn it "OFF".
4. Ensure that wiper blades stop within clearance "L_1" & "L_2".

Clearance "L_1": 48 - 64 mm (1.89 - 2.52 in)

Clearance "L_2": 40 - 56 mm (1.57 - 2.20 in)

- Tighten wiper arm nuts to specified torque.

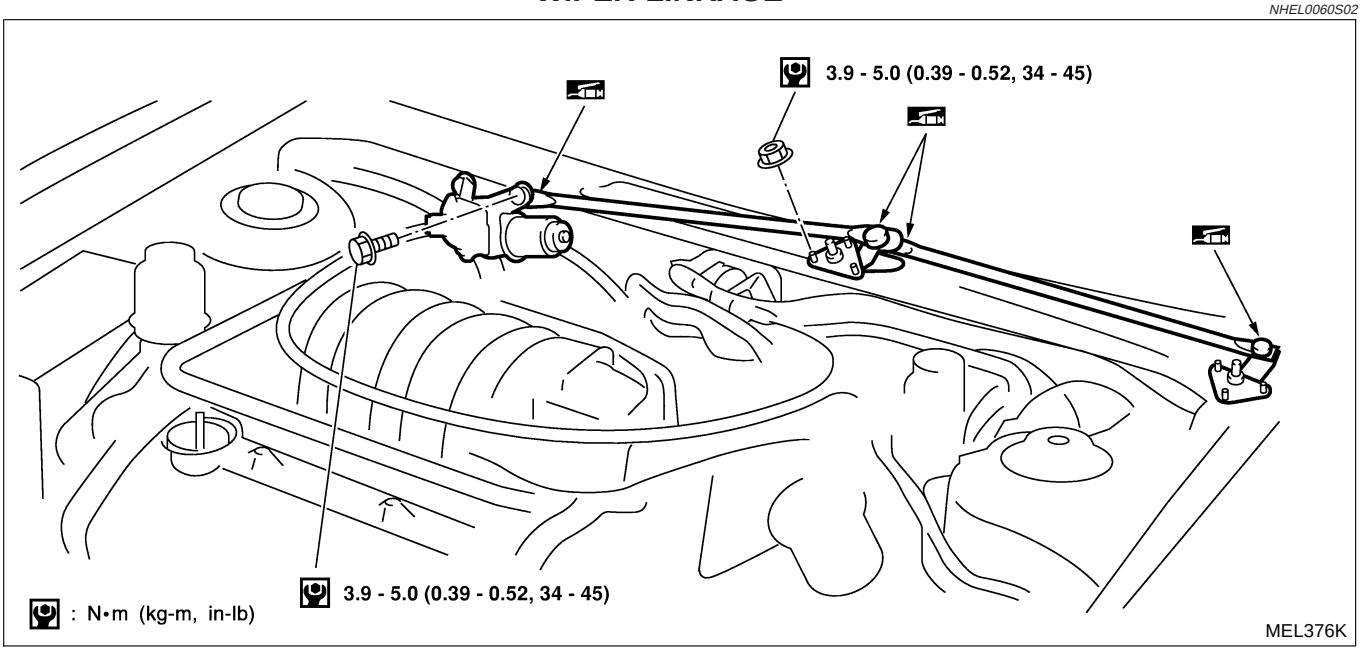
Front wiper: 21 - 26 N·m (2.1 - 2.7 kg-m, 16 - 19 ft-lb)


SEL024J

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

WIPER LINKAGE

NHEL0060S02



MEL376K

Removal

NHEL0060S0201

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

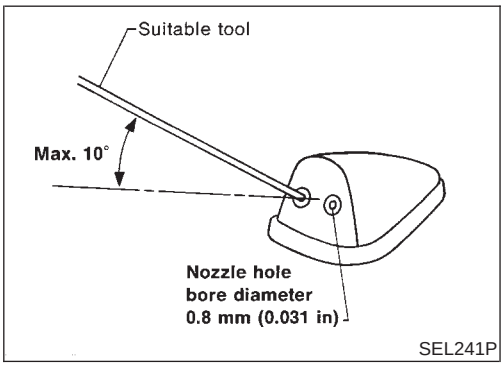
Be careful not to break ball joint rubber boot.

Installation

NHEL0060S0202

- Grease ball joint portion before installation.

1. Installation is the reverse order of removal.



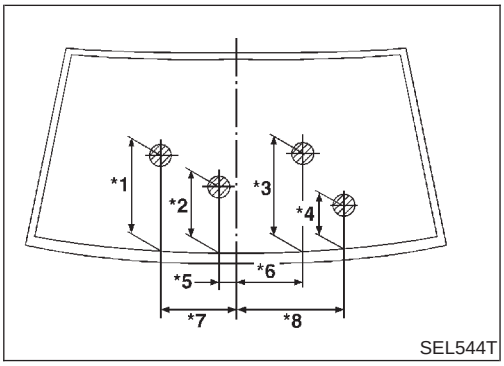
SEL241P

Washer Nozzle Adjustment

NHEL0061

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

Adjustable range: ±10°



SEL544T

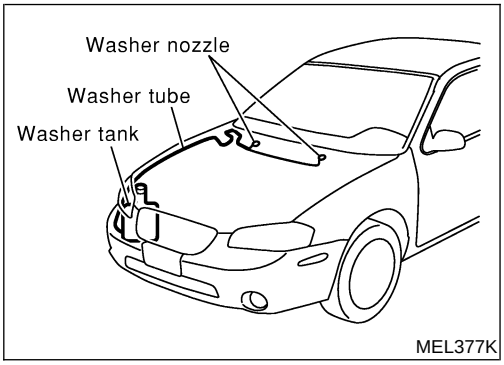
Unit: mm (in)

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

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

Washer Tube Layout

NHEL0062

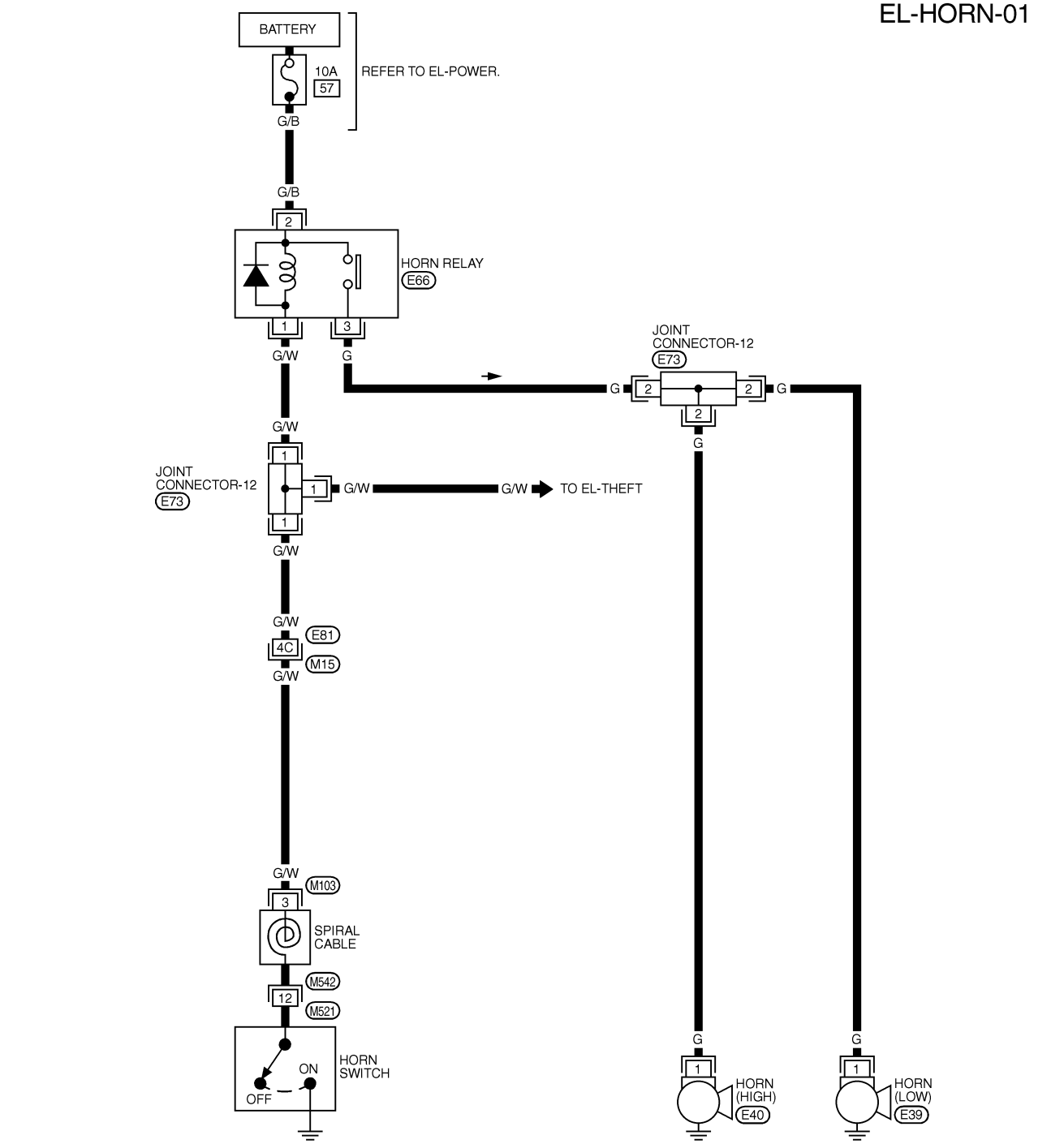


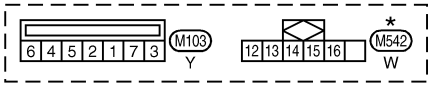
MEL377K

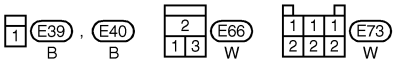
Wiring Diagram — HORN —

NHEL0071

EL-HORN-01







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

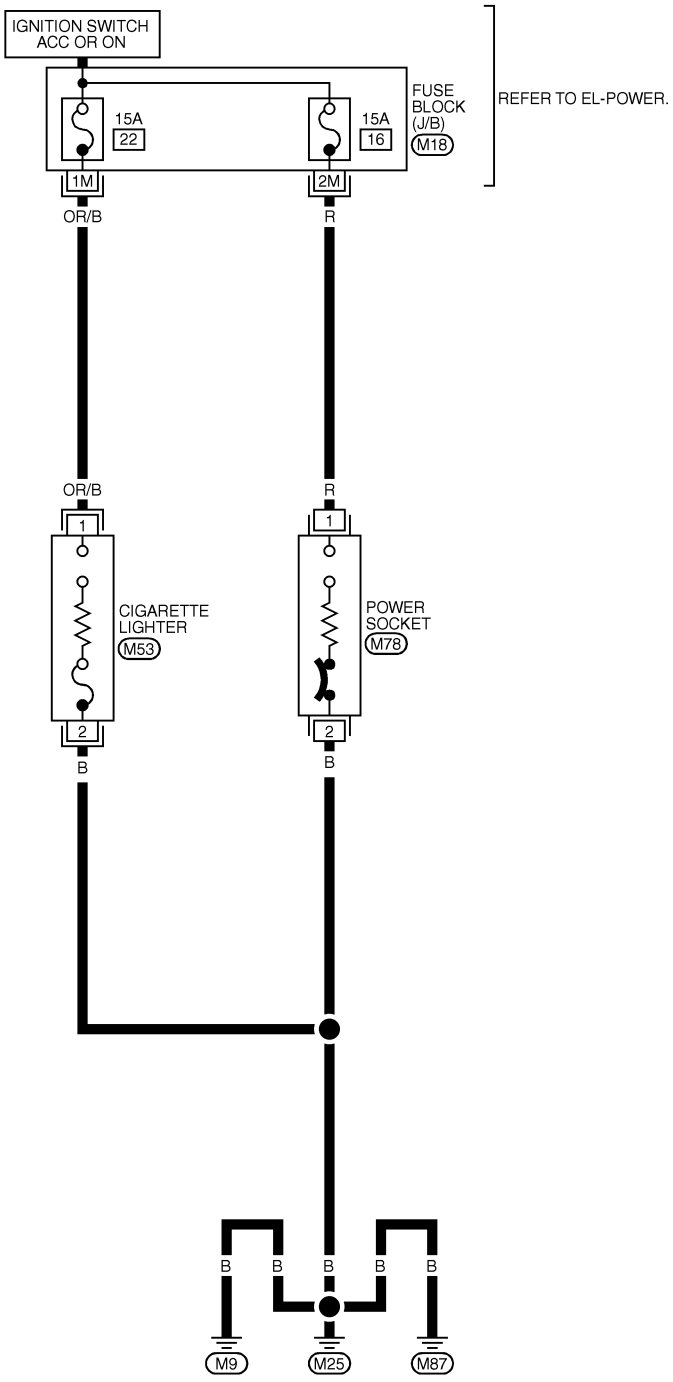
REFER TO THE FOLLOWING.
M15 , E81 -SUPER MULTIPLE JUNCTION (SMJ)

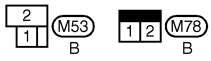
MEL464K

Wiring Diagram — CIGAR —

NHEL0156

EL-CIGAR-01





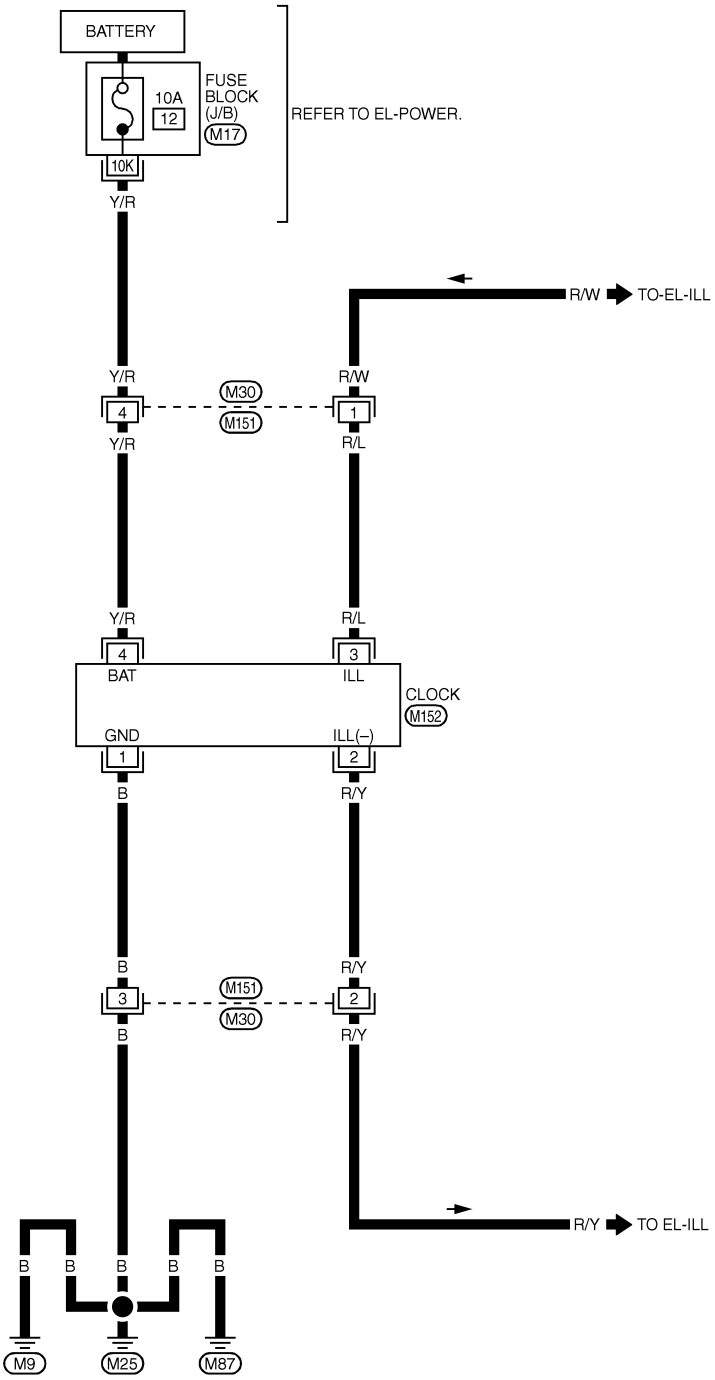
REFER TO THE FOLLOWING.
M18 -FUSE BLOCK -
JUNCTION BOX (J/B)

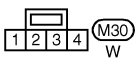
MEL465K

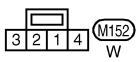
Wiring Diagram — CLOCK —

NHEL0166

EL-CLOCK-01





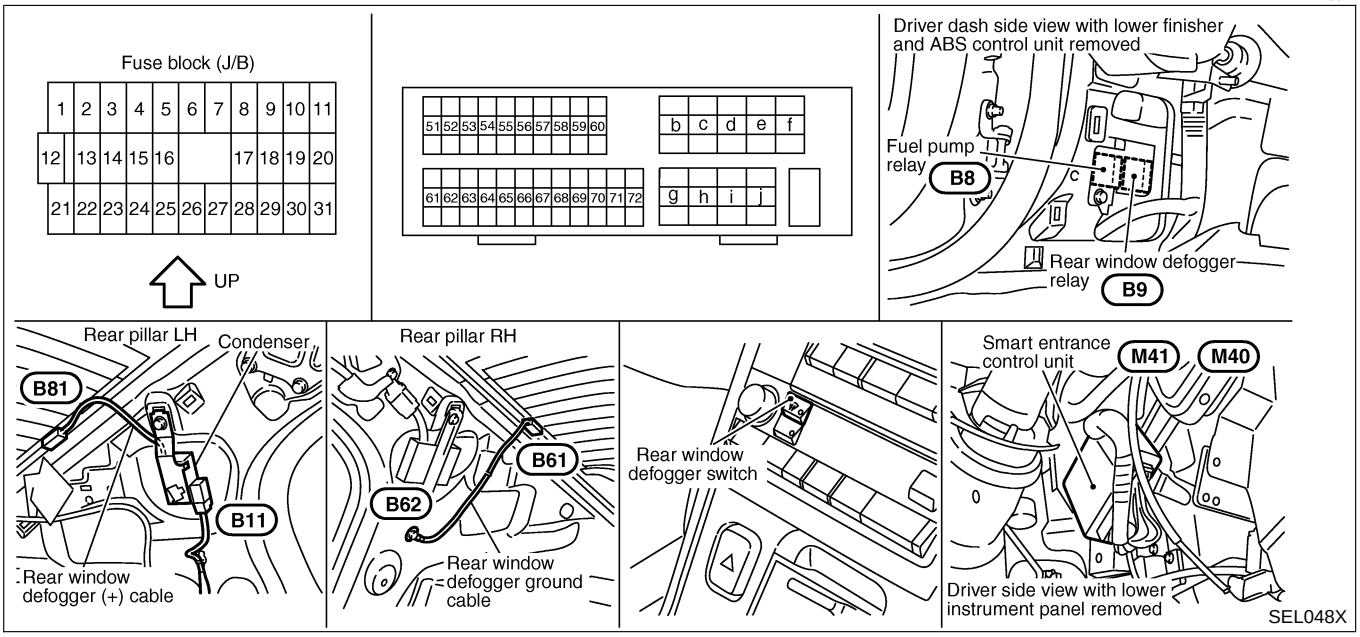


REFER TO THE FOLLOWING.
M17 - FUSE BLOCK - JUNCTION BOX (J/B)

MEL466K

Component Parts and Harness Connector Location

NHEL0072



System Description

NHEL0073

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. 7, located in the fuse and fusible link box) and
- to rear window defogger relay terminal 6
- through 20A fuse (No. 4, located in the fuse and fusible link box).
- to smart entrance control unit terminal 10
- through 10A fuse (No. 13, located in the fuse and fusible link box).

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

- through 10A fuse [No. 10, located in the fuse block (J/B)]
- to the rear window defogger relay terminal 1 and
- to smart entrance control unit terminal 33.

Ground is supplied to terminal 32 of the rear defogger switch (built-in A/C control unit or A/C auto amp.) through body grounds M9, M25 and M87.
When the rear defogger switch is turned ON, ground is supplied

- through terminal 31 of the rear defogger switch
- to smart entrance control unit terminal 39.

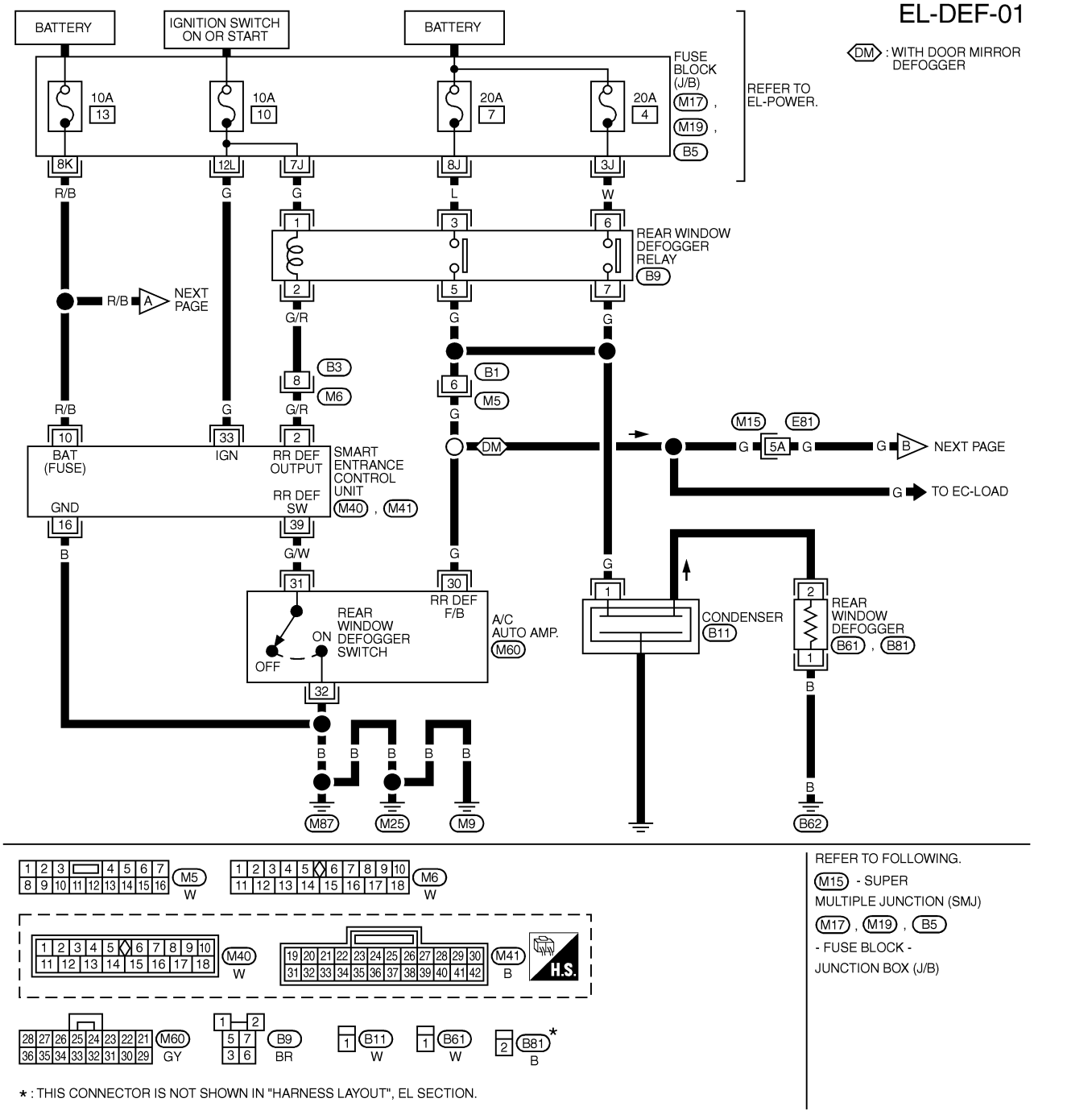
Terminal 2 of the smart entrance control unit then supplies ground to the rear window defogger relay terminal 2.
With power and ground supplied, the rear window defogger relay is energized.
Power is supplied

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

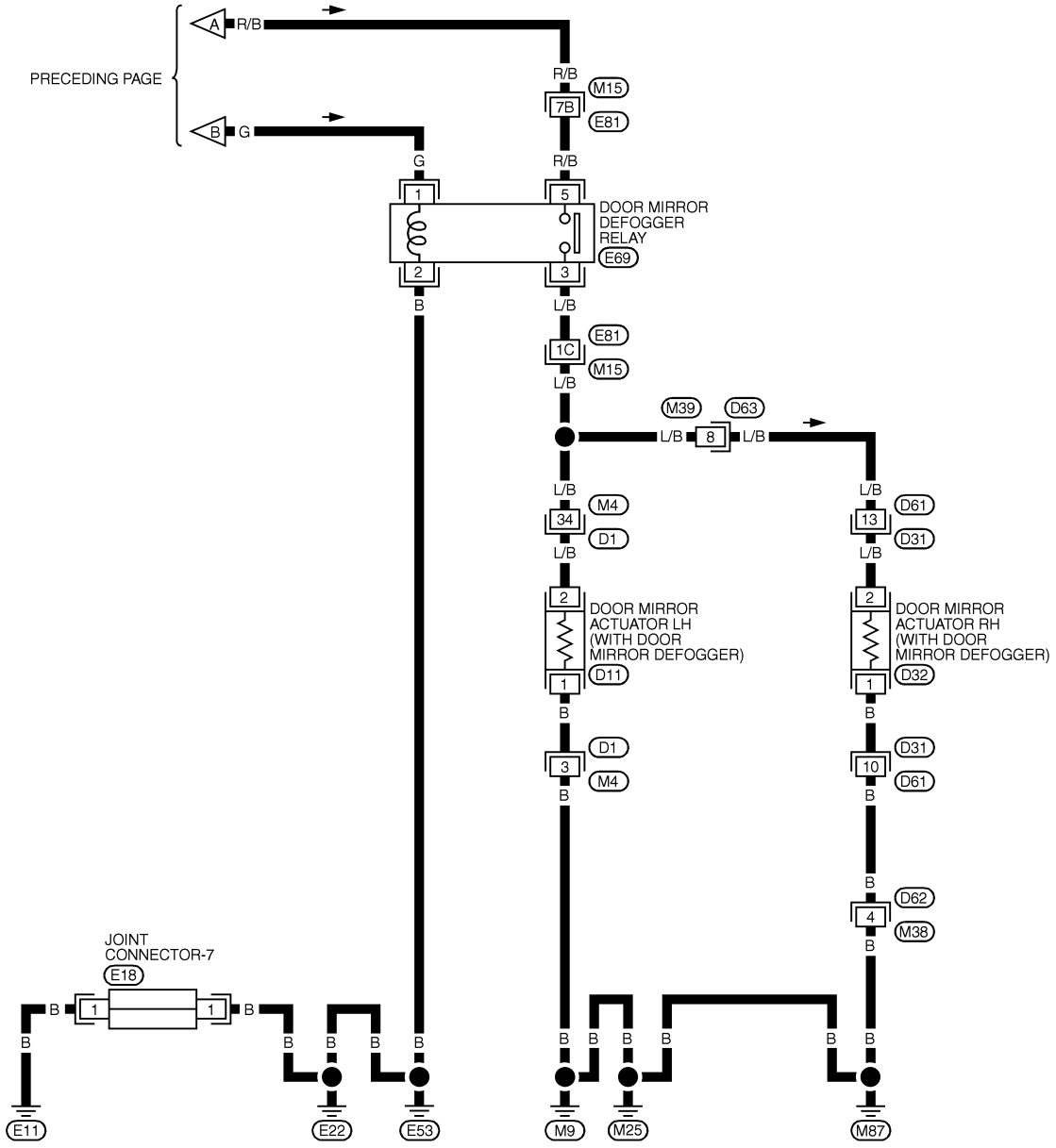
The rear window defogger has an independent ground.
With power and ground supplied, the rear window defogger filaments heat and defog the rear window.
When the system is activated, the rear window defogger indicator illuminates in the rear window defogger switch.

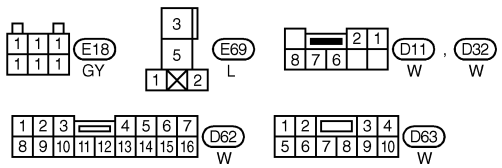
Wiring Diagram — DEF —

=NHEL0074



MEL209L





REFER TO THE FOLLOWING.
M4 , D1 -SUPER MULTIPLE JUNCTION (SMJ)
M15 , E81 -SUPER MULTIPLE JUNCTION (SMJ)
D31 , D61 -SUPER MULTIPLE JUNCTION (SMJ)

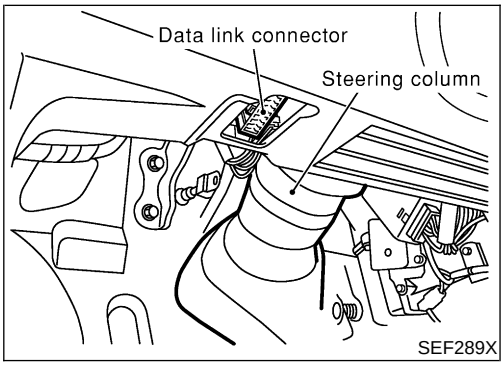
MEL468K

Wiring Diagram — DEF — (Cont'd)

SMART ENTRANCE CONTROL UNIT TERMINALS AND REFERENCE VALUE BETWEEN EACH TERMINAL AND GROUND

TERMINAL	WIRE COLOR	ITEM	CONDITION	DATA (DC)
2	G/R	REAR WINDOW DEFOGGER RELAY	OFF → ON (IGNITION KEY IS IN "ON" POSITION)	0V → 12V
10	R/B	POWER SOURCE (FUSE)	–	12V
16	B	GROUND	–	–
33	G	IGN ON	IGNITION KEY IS IN "ON" POSITION	12V
39	G/W	REAR WINDOW DEFOGGER SWITCH	OFF → ON	5V → 0V

SEL372WC



SEF289X

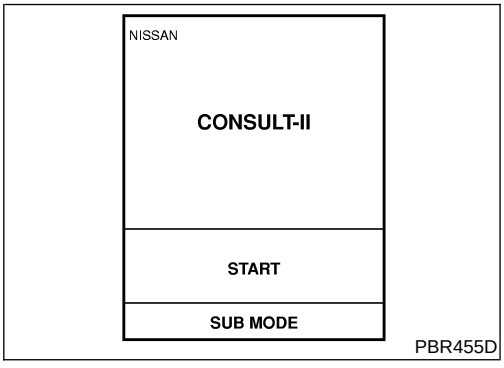
CONSULT-II Inspection Procedure

NHEL0218

"REAR DEFOGGER"

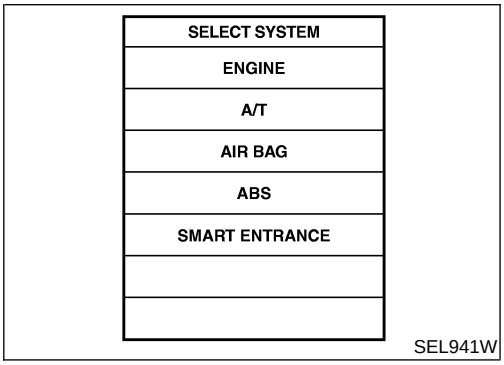
NHEL0218S01

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



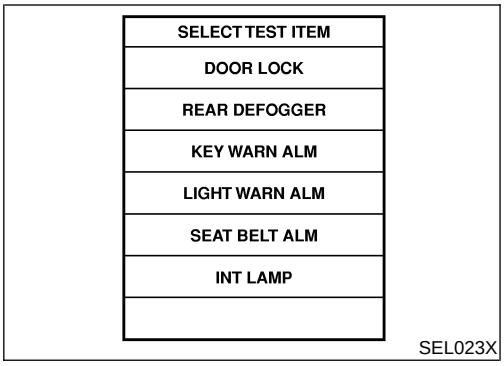
PBR455D

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

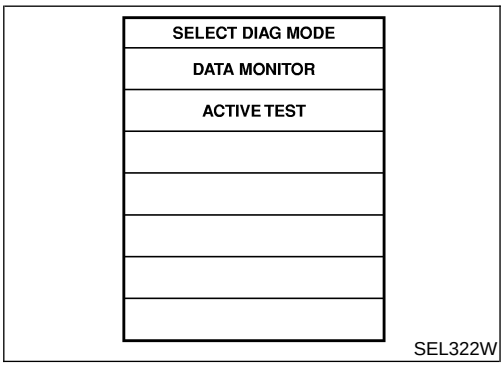


SEL941W

5. Touch "SMART ENTRANCE".



6. Touch "REAR DEFOGGER".



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

CONSULT-II Application Items

NHEL0219

NHEL0219S01

NHEL0219S0101

"REAR DEFOGGER"
Data Monitor

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

NHEL0219S0102

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

NHEL0075

DIAGNOSTIC PROCEDURE

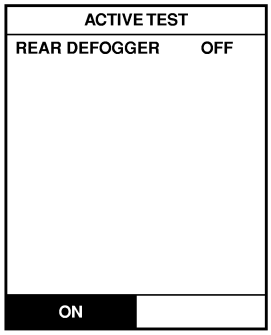
NHEL0075S01

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.

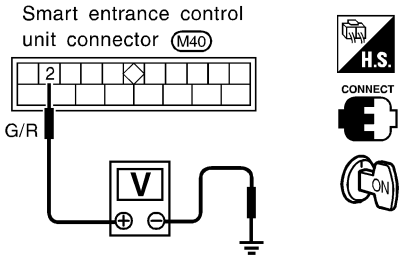


Rear window defogger and rear window defogger switch indicator should operate when the “ON” button on the CONSULT-II screen is touched.

SEL353W

Without CONSULT-II

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



Voltage [V]:

Rear window defogger switch is “OFF”.

Approx. 12

Rear window defogger switch is “ON”.

0

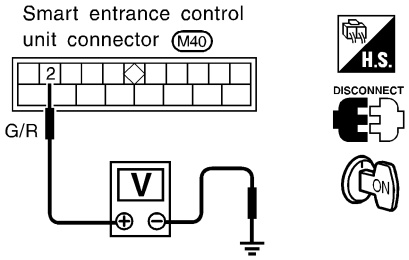
SEL335W

OK or NG

OK	▶	**Check the following.** ● Rear window defogger relay (Refer to EL-197.) ● Rear window defogger circuit ● Rear window defogger filament (Refer to EL-198.)
NG	▶	GO TO 2.

2	CHECK DEFOGGER RELAY COIL SIDE CIRCUIT

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



Battery voltage should exist.

SEL336W

OK or NG

OK	▶	GO TO 3.
NG	▶	**Check the following.** ● 10A fuse [No. 10, located in the fuse block (J/B)] ● Rear window defogger relay ● Harness for open or short between 10A fuse [No. 10, located in the fuse block (J/B)] 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.

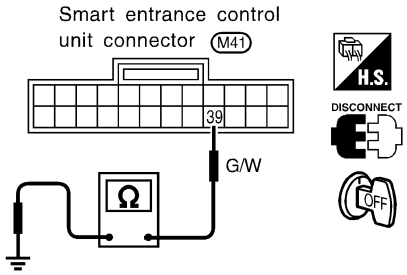
DATA MONITOR	
MONITOR	
REAR DEF SW	ON

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

SEL352W

Without CONSULT-II

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



Continuity:
Rear window defogger switch is pushed.
Continuity should exist.
Rear window defogger switch is released.
Continuity should not exist.

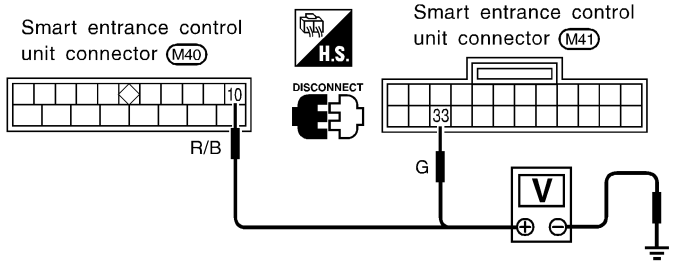
SEL090X

OK or NG

OK	▶	GO TO 4.
NG	▶	**Check the following.** • Rear window defogger switch (Refer to EL-197.) • 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 terminals 10, 33 and ground.



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

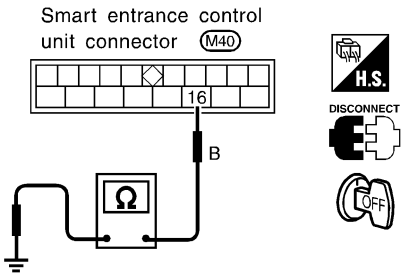
SEL338W

OK or NG

OK	▶	GO TO 5.
NG	▶	**Check the following.** • 10A fuse [No. 10 or No. 13, 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

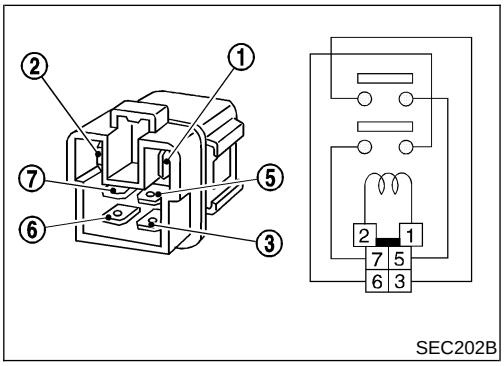
Check continuity between smart entrance control unit terminal 16 and ground.



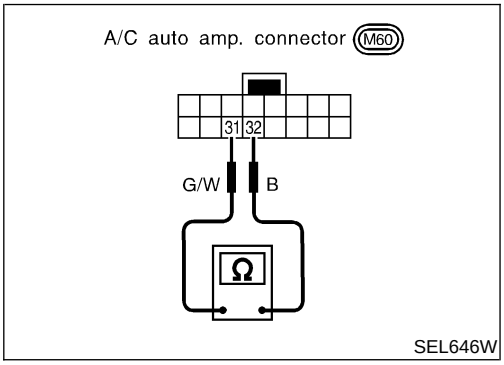
Continuity should exist.

SEL339W

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



SEC202B



SEL646W

Electrical Components Inspection

NHEL0076

REAR WINDOW DEFOGGER RELAY

NHEL0076S01

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

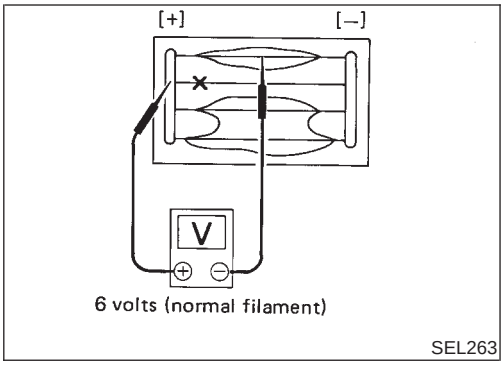
Condition	Continuity
12V direct current supply between terminals 1 and 2	Yes
No current supply	No

REAR WINDOW DEFOGGER SWITCH

NHEL0076S02

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

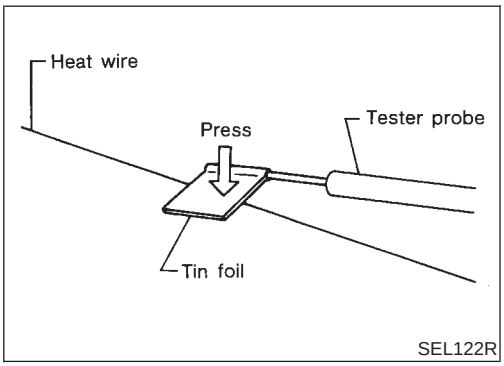
Terminals	Condition	Continuity
31 - 32	Rear window defogger switch is pushed.	Yes
	Rear window defogger switch is released.	No



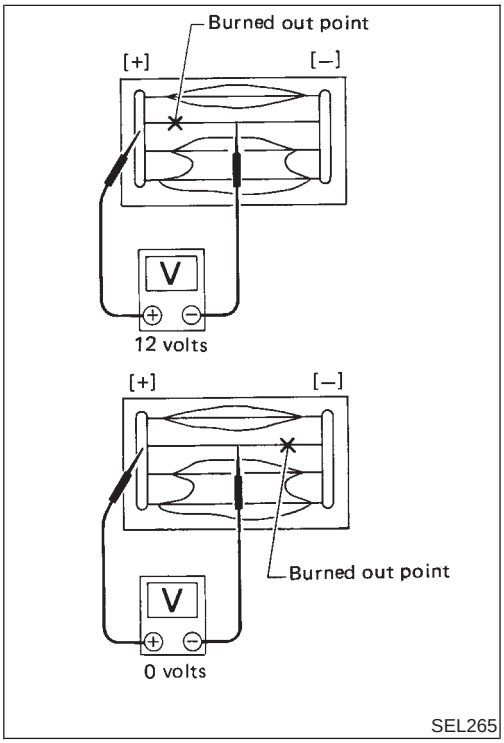
Filament Check

=NHEL0077

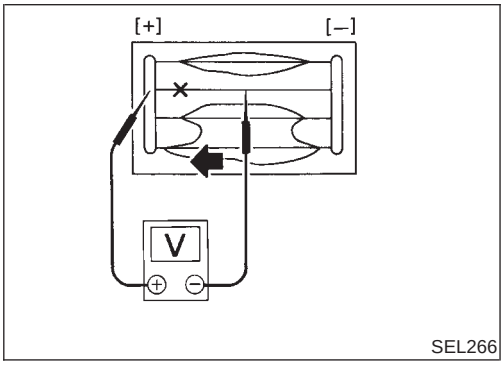
1. Attach probe circuit tester (in volt range) to middle portion of each filament.



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



2. If a filament is burned out, circuit tester registers 0 or 12 volts.



3. To locate burned out point, move probe to left and right along filament. Test needle will swing abruptly when probe passes the point.

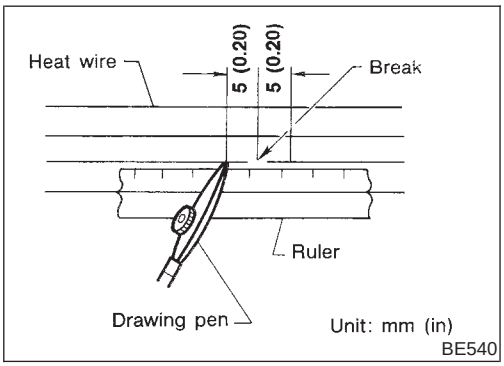
Filament Repair

NHEL0078

REPAIR EQUIPMENT

NHEL0078S01

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



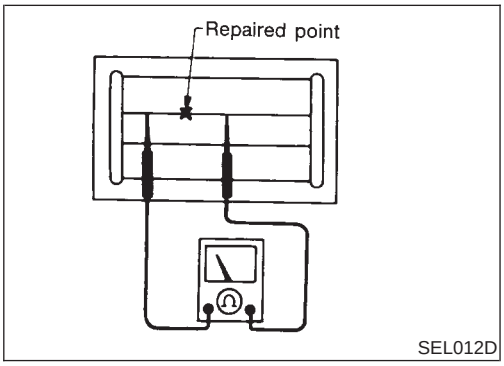
REPAIRING PROCEDURE

NHEL0078S02

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.

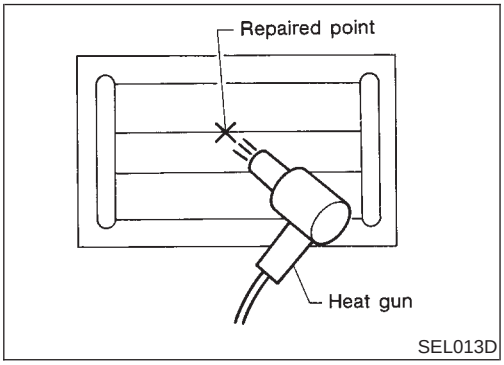
Shake silver composition container before use.

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

NHEL0079

Refer to Owner's Manual for audio system operating instructions.
Power is supplied at all times

- through 15A fuse [No. 56, located in the fuse block (J/B)]
- to speaker amp. terminal 27, and
- to audio unit terminal 6.
- through 15A fuse [No. 67, located in the fuse block (J/B)]
- to woofer terminal 48.

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

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

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

- to speaker amp. terminal 40, and
- to woofer terminal 47
- through body grounds B106 and B127.

Audio signals are supplied

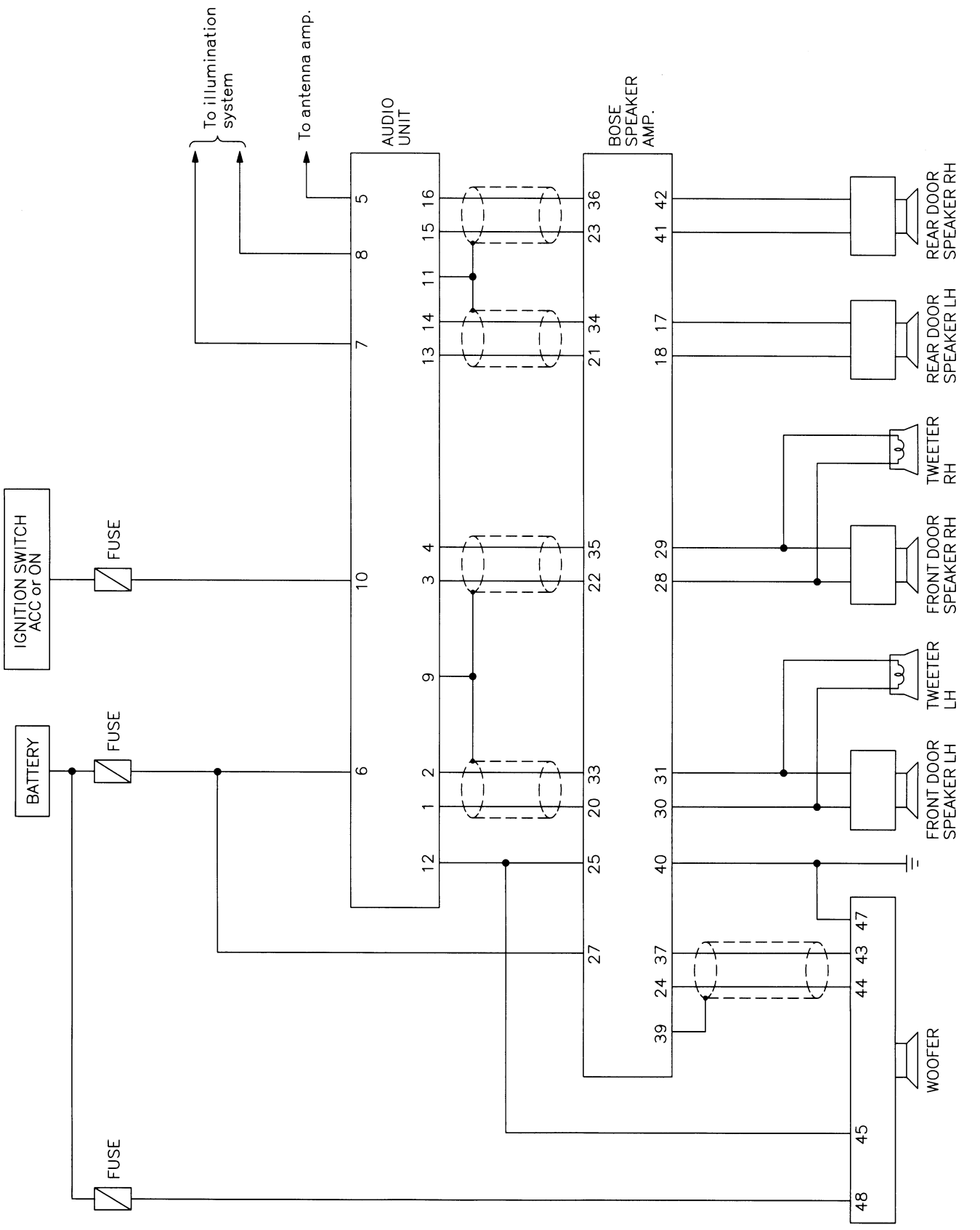
- through audio unit terminals 1, 2, 3, 4, 13, 14, 15 and 16
- to speaker amp. terminals 20, 21, 22, 23, 25, 33, 34, 35 and 36.

Audio signals are amplified by the speaker amp.
The amplified audio signals are supplied

- through speaker amp. terminals 17, 18, 24, 28, 29, 30, 31, 37, 41 and 42
- to terminals 1 and 2 of the front door speaker LH and RH
- to terminals 1 and 2 of the tweeter LH and RH
- to terminals 1 and 2 of the rear speaker LH and RH
- to terminals 43 and 44 of the woofer.

Schematic

NHEL0167

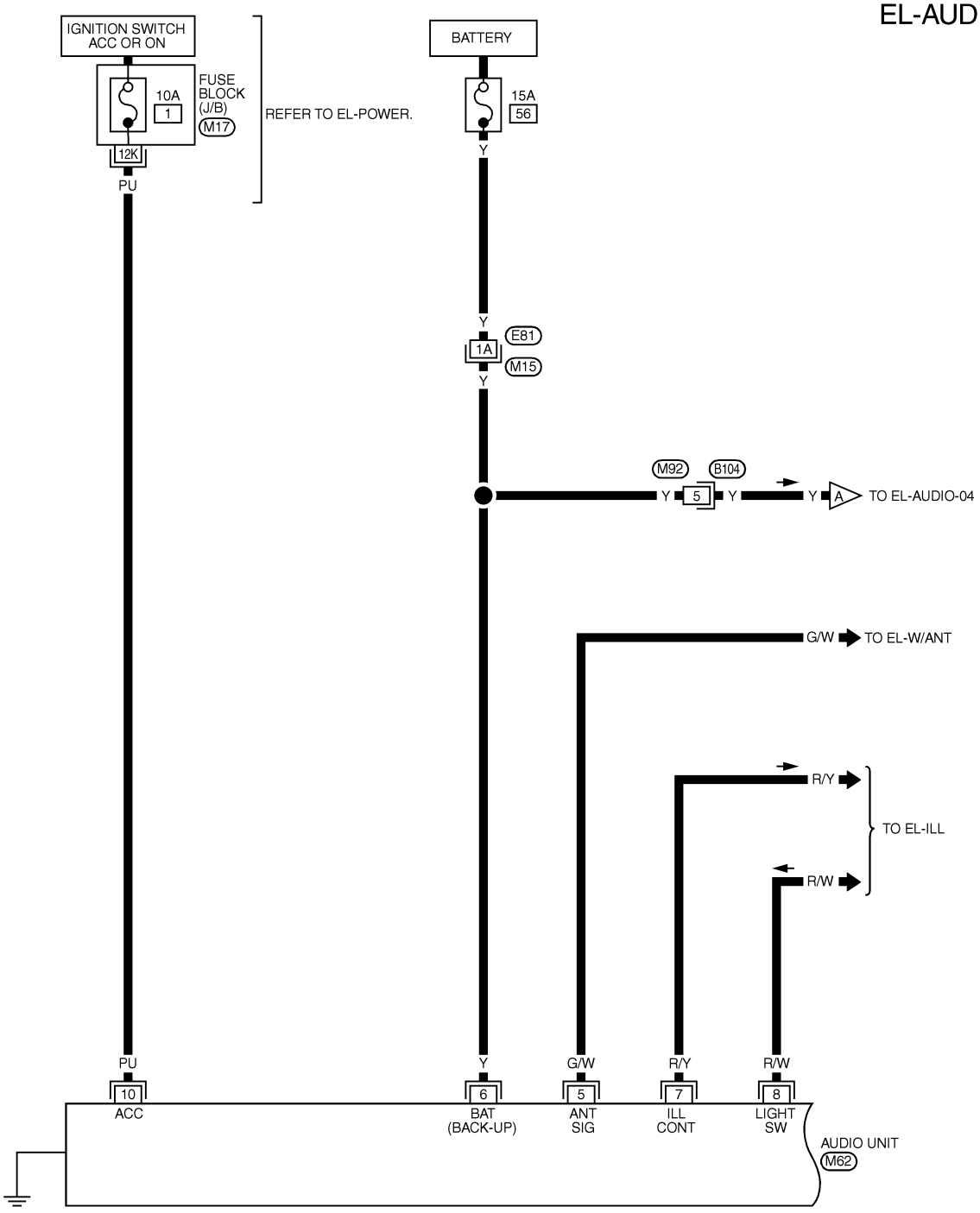


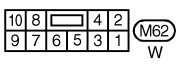
MEL469K

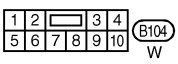
Wiring Diagram — AUDIO —

NHEL0081

EL-AUDIO-01



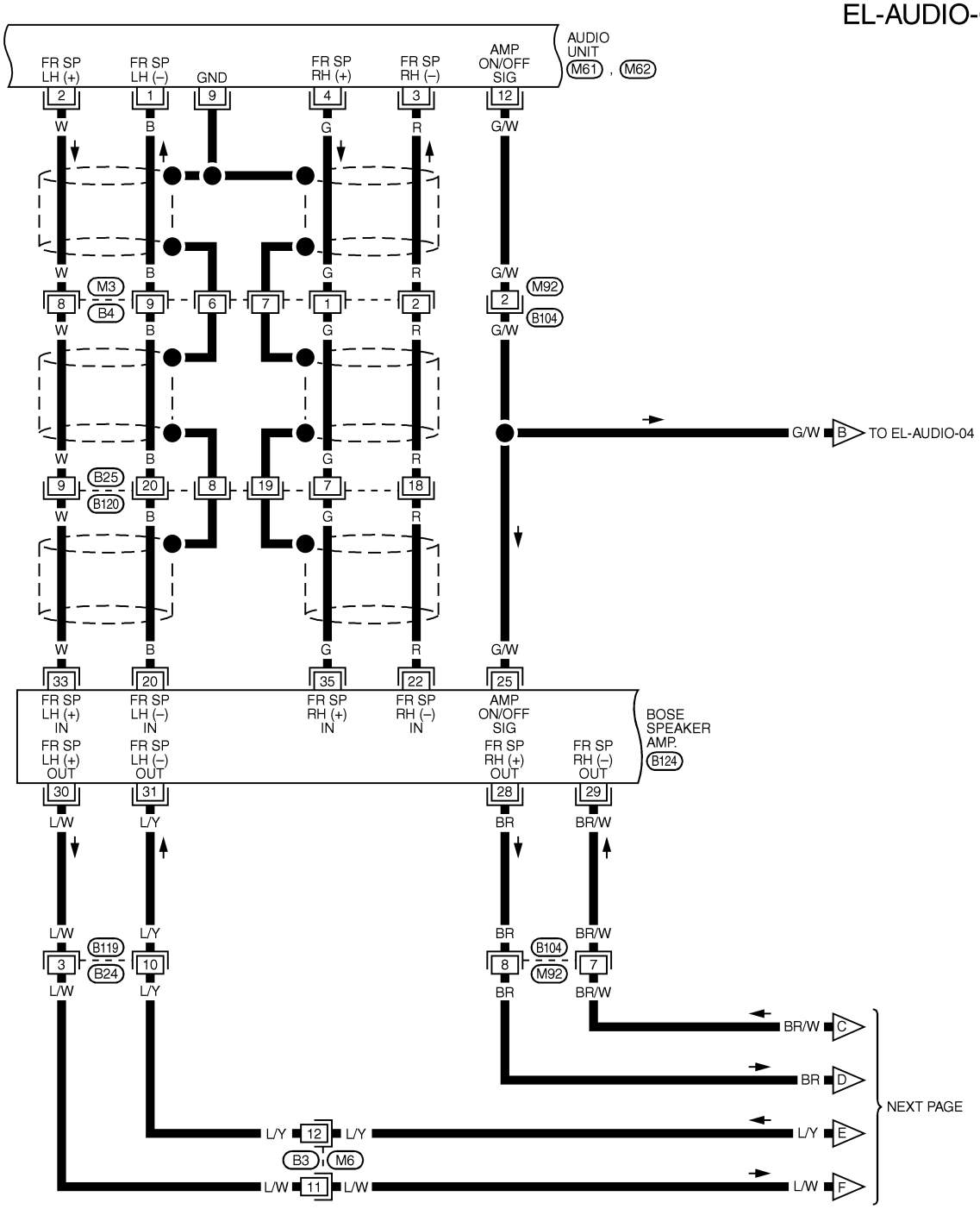


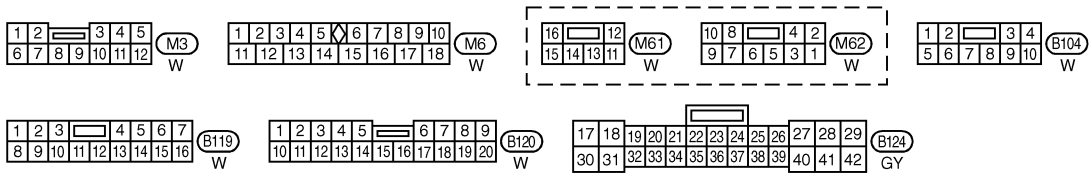


REFER TO THE FOLLOWING.
M15 , E81 -SUPER MULTIPLE JUNCTION (SMJ)
M17 -FUSE BLOCK-JUNCTION BOX (J/B)

MEL470K

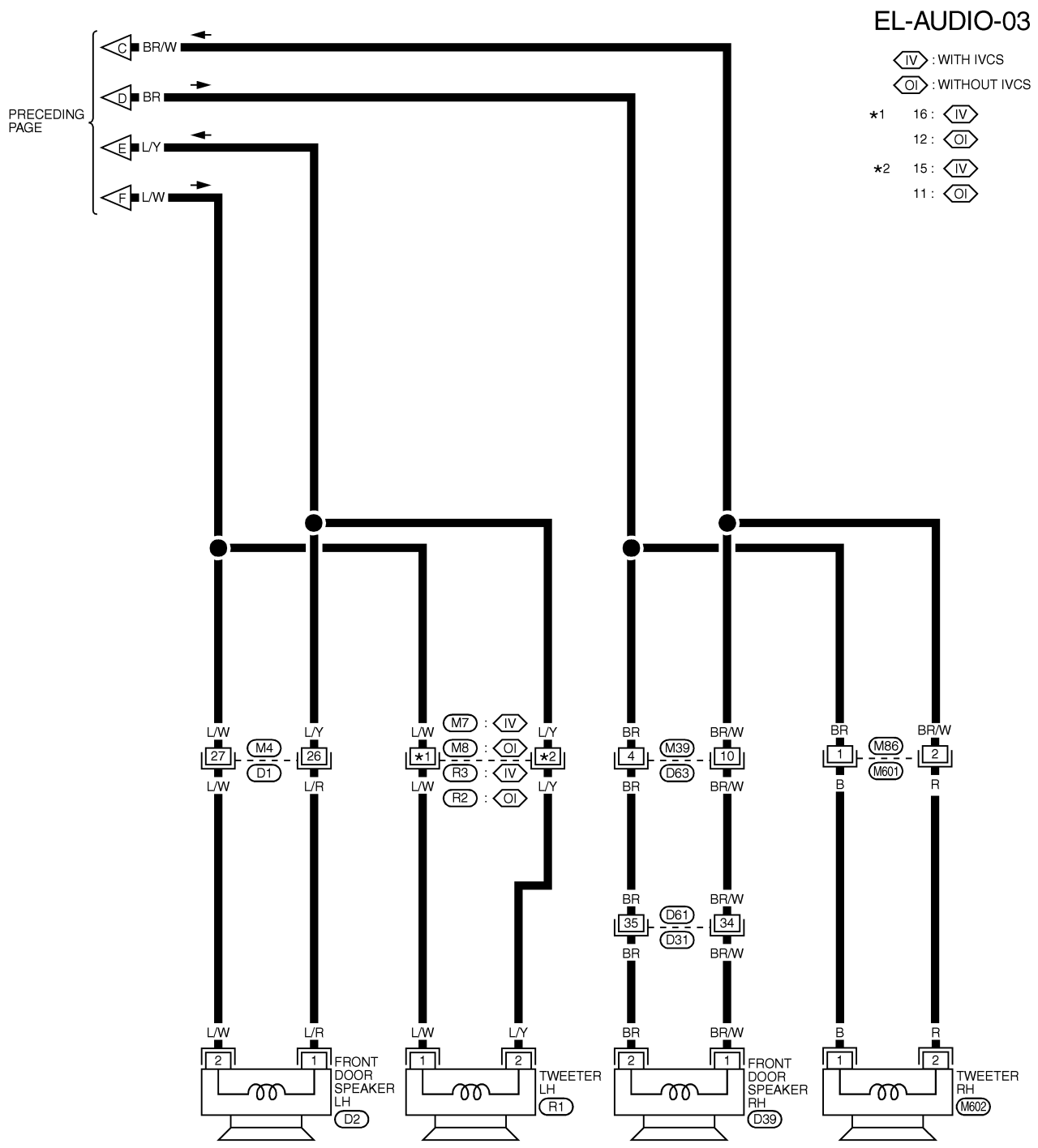
EL-AUDIO-02

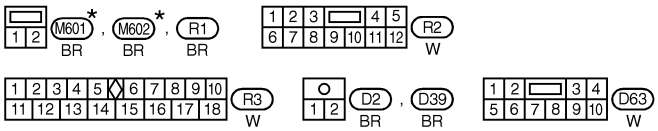




MEL471K

Wiring Diagram — AUDIO — (Cont'd)



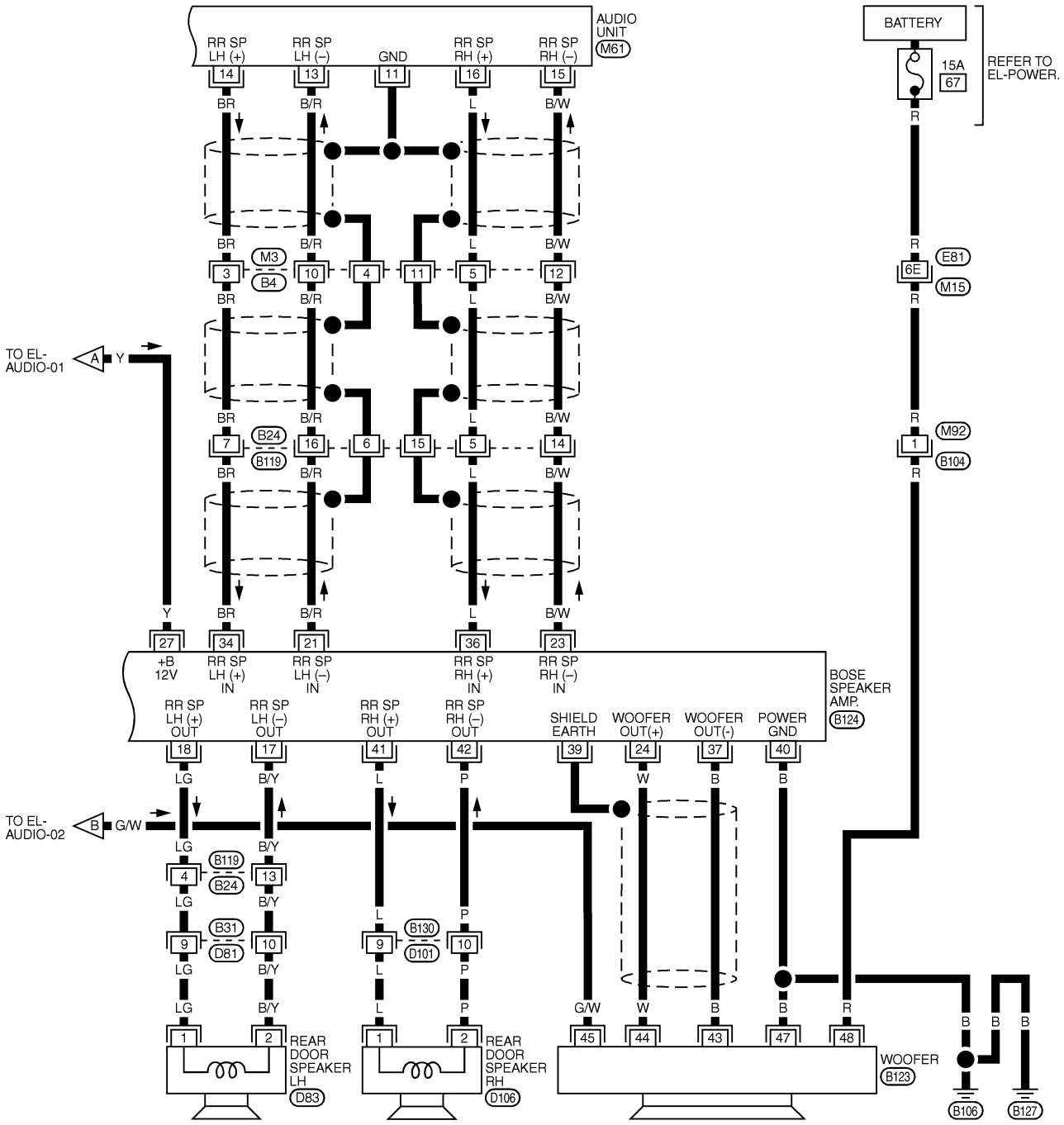


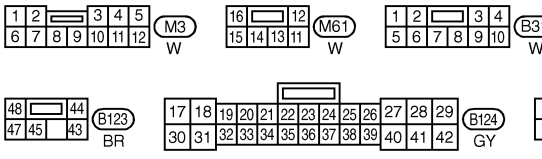
REFER TO THE FOLLOWING.
D1 , D31 - SUPER MULTIPLE JUNCTION (SMJ)

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

MEL212L

EL-AUDIO-04





REFER TO THE FOLLOWING.
M15 , E81 -SUPER MULTIPLE JUNCTION (SMJ)

MEL473K

Trouble Diagnoses

NHEL0220

AUDIO UNIT

NHEL0220S01

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. 1, 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. 56, 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.
Audio unit controls are operational, but no sound is heard from any speaker.	1. 15A fuse 2. Amp. ON/OFF signal circuit 3. Speaker amp. ground	1. Check 15A fuse [No. 56, located in fuse block (J/B)]. Verify battery positive voltage is present at terminal 27 of speaker amp. 2. Check harness continuity between audio unit terminal 12 and speaker amp. terminal 25. 3. Check harness continuity between speaker amp. terminal 40 and ground.
Individual speaker is noisy or inoperative.	1. Each speaker 2. Output circuit to each speaker	1. Check speaker. 2. Check the output circuits to each speaker ● between audio unit and speaker amp. ● between speaker amp. and each speaker.
Woofer does not operate.	1. Power supply to woofer 2. Amp. ON/OFF signal circuit 3. Speaker amp. ground 4. Output circuit to woofer	1. Check 15A fuse [No. 67, located in fuse block (J/B)]. Verify battery positive voltage is present at terminal 48 of woofer. 2. Check harness continuity between audio unit terminal 12 and woofer terminal 45. 3. Check harness continuity between woofer terminal 47 and ground. 4. Check the output circuits to woofer from speaker amp.
AM/FM stations are weak or noisy.	1. Window antenna 2. Audio unit ground 3. Audio unit	1. Check window antenna. 2. Check audio unit ground condition. 3. 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. Ignition coil or secondary wiring 5. 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 ignition coil and secondary wiring. 5. 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.

Inspection

=NHEL0221

AUDIO UNIT AND AMP.

NHEL0221S01

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

NHEL0221S02

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.

System Description

NHEL0084

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

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

Ground is supplied through the case of antenna amp.
When the radio switch is turned ON, antenna signal is supplied

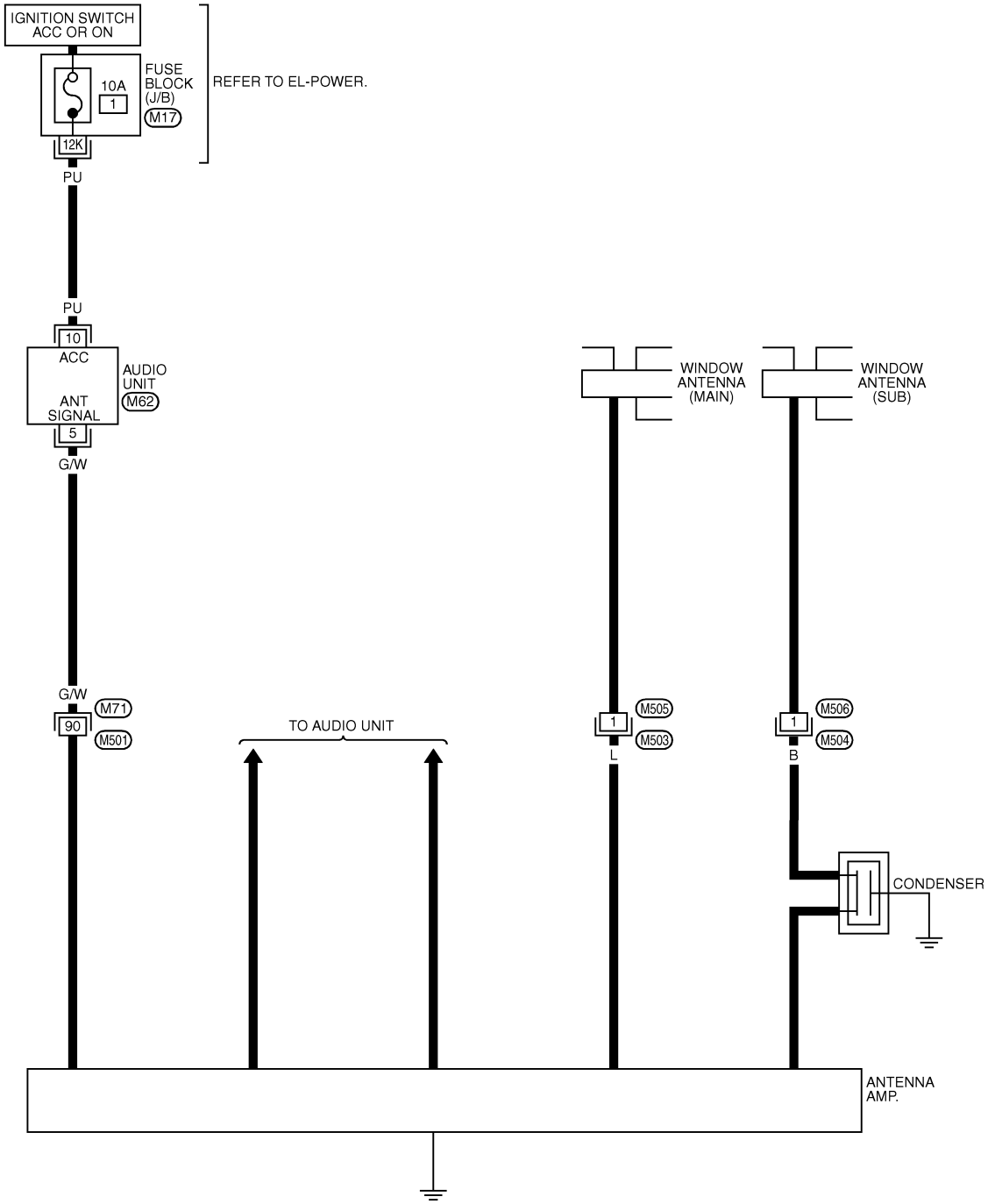
- through audio unit terminal 5
- to the antenna amp.

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

Wiring Diagram — W/ANT —

NHEL0085

EL-W/ANT-01



M62 W

M71 W

M503 B , M504 B

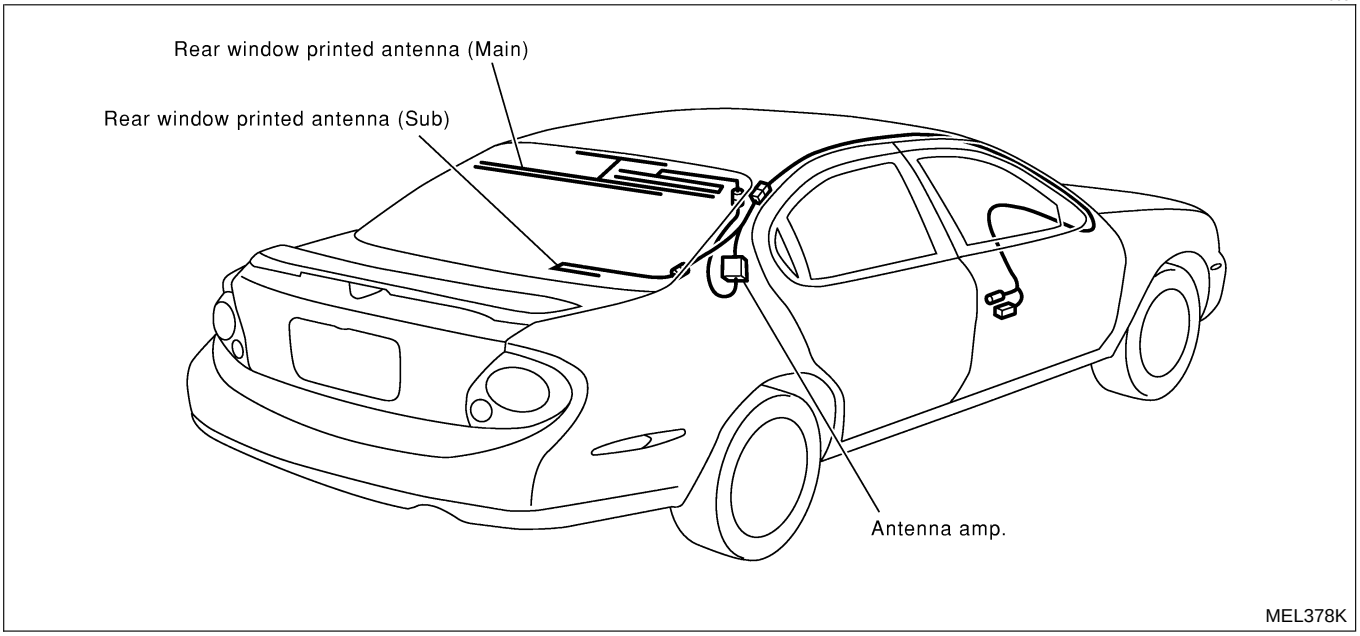
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", EL SECTION.

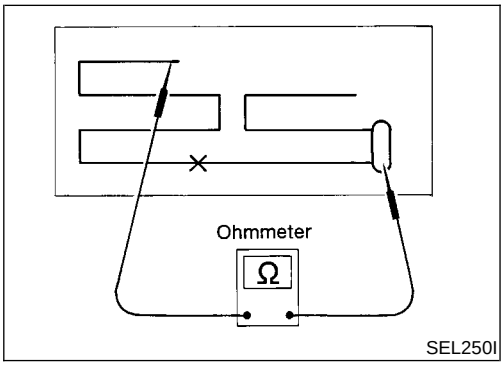
REFER TO THE FOLLOWING.
M17 -FUSE BLOCK-JUNCTION BOX (J/B)

MEL624L

Location of Antenna

NHEL0087





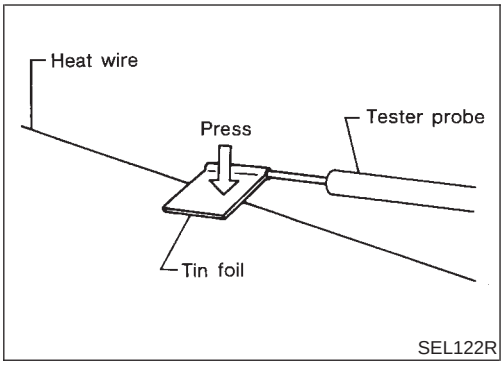
Window Antenna Repair

NHEL0250

ELEMENT CHECK

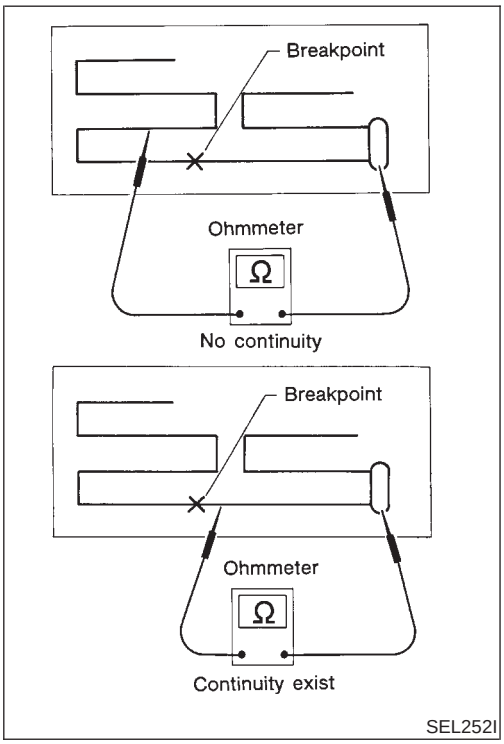
NHEL0250S01

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



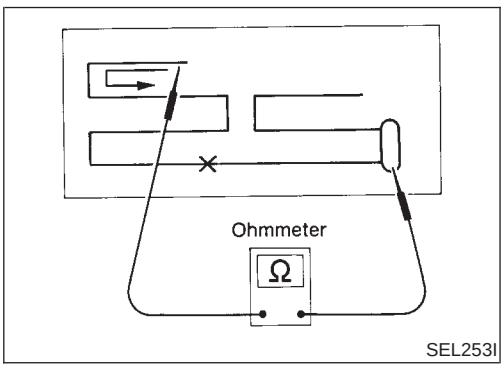
SEL122R

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



SEL252I

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



SEL253I

ELEMENT REPAIR

NHEL0250S02

Refer to "Filament Repair", "REAR WINDOW DEFOGGER" (EL-198).

System Description

NHEL0222

OUTLINE

NHEL0222S01

Electric sunroof system consists of

- Sunroof switch
- Sunroof motor
- Smart entrance control unit

Smart entrance control unit controls retained power operation.

OPERATION

NHEL0222S03

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

AUTO OPERATION

NHEL0222S05

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

RETAINED POWER OPERATION

NHEL0222S02

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

- to sunroof motor terminal 6
- from smart entrance control unit terminal 5.

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.

INTERRUPTION DETECTION FUNCTION

NHEL0222S04

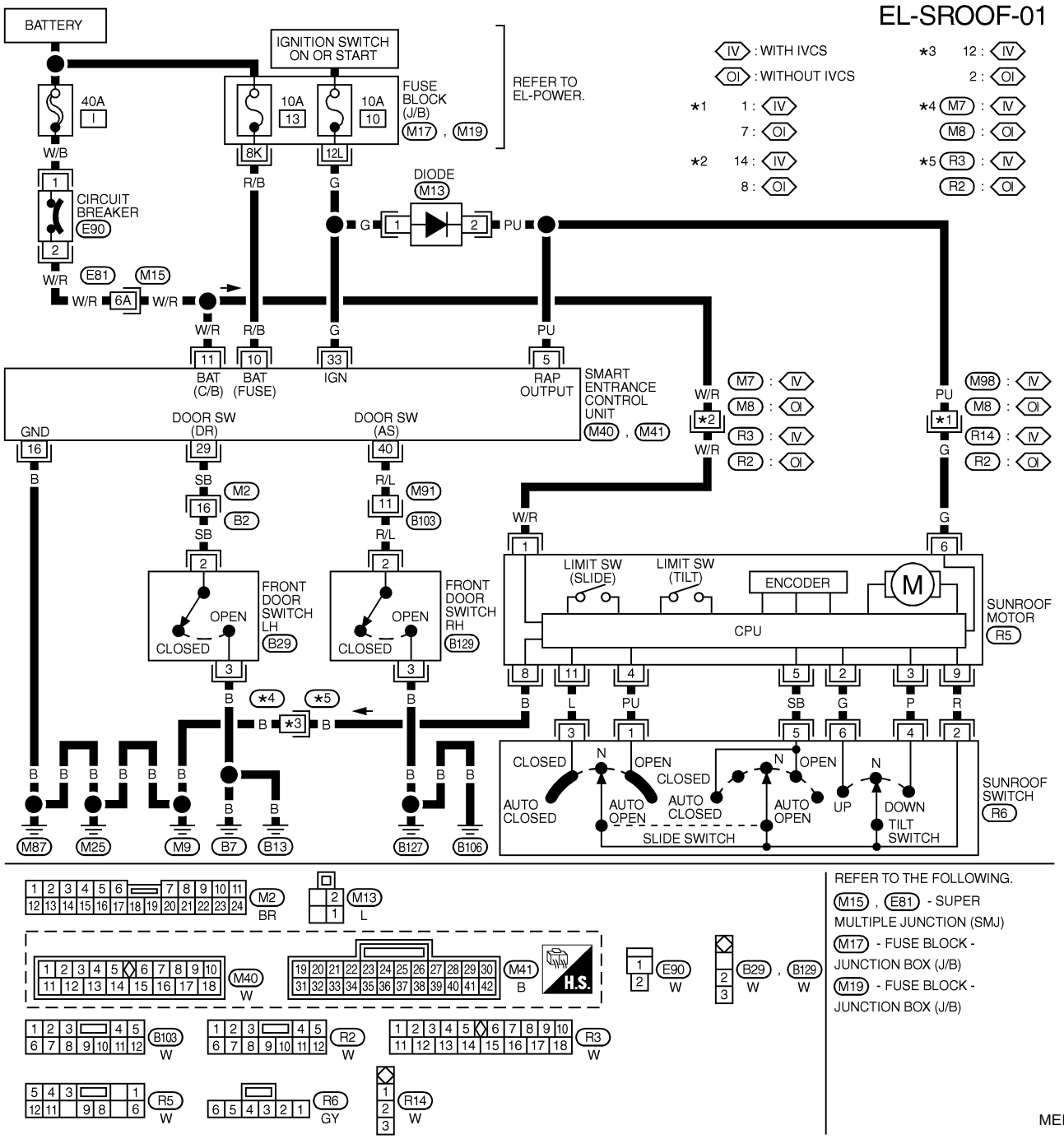
The CPU of sunroof motor monitors the sunroof motor operation and the sunroof position (full closed or other) for sunroof by the signals from encoder and limit switch in sunroof motor.
When sunroof motor detects interruption during the following close operation,

- 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 —

NHEL0089

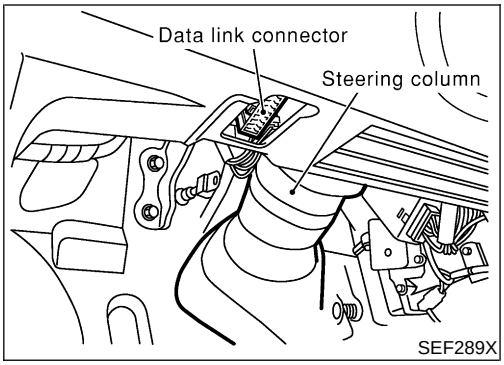


MEL475K

SMART ENTRANCE CONTROL UNIT TERMINALS AND REFERENCE VALUE BETWEEN EACH TERMINAL AND GROUND

TERMINAL	WIRE COLOR	ITEM	CONDITION	DATA (DC)
5	PU	HEADLAMP BATTERY SAVER CONTROL UNIT	WHEN HEADLAMP BATTERY SAVER TIMER IS OPERATED	12V
10	R/B	POWER SOURCE (FUSE)	–	12V
11	W/R	POWER SOURCE (C/B)	–	12V
16	B	GROUND	–	–
29	SB	DRIVER DOOR SWITCH	OFF (CLOSED)→ ON (OPEN)	5V→0V
33	G	IGN ON	IGNITION KEY IS IN “ON” POSITION	12V
40	R/L	PASSENGER DOOR SWITCH	OFF (CLOSED)→ ON (OPEN)	5V→0V

SEL369WC



SEF289X

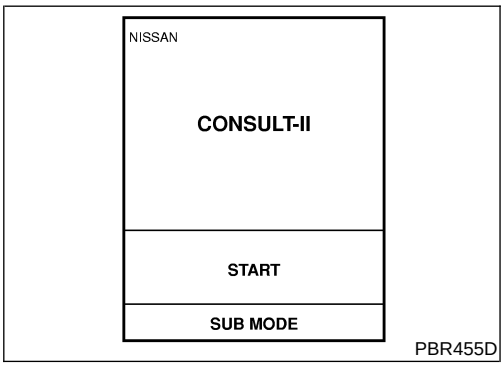
CONSULT-II Inspection Procedure

=NHEL0223

“RETAINED PWR”

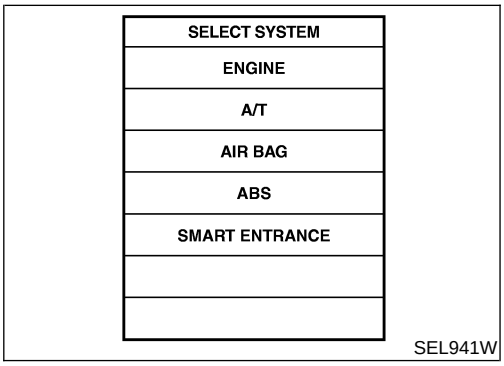
NHEL0223S01

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



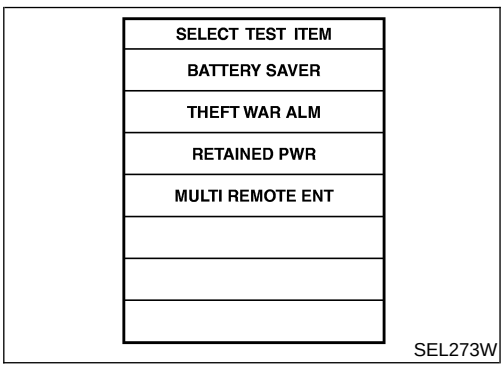
PBR455D

3. Turn ignition switch “ON”.
4. Touch “START”.



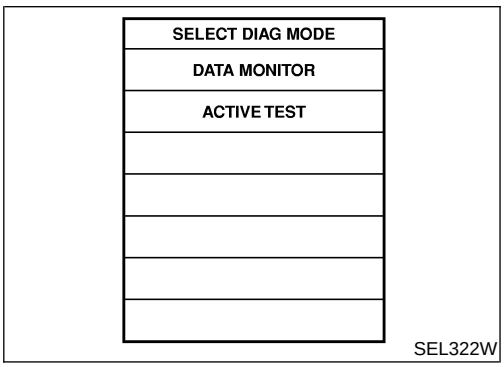
SEL941W

5. Touch “SMART ENTRANCE”.



SEL273W

6. Touch “RETAINED PWR”.



SEL322W

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

CONSULT-II Application Items

NHEL0224

"RETAINED PWR" Data Monitor

NHEL0224S01

NHEL0224S0101

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

NHEL0224S0102

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 "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.**

Trouble Diagnoses

NHEL0225

Symptom	Possible cause	Repair order
Power sunroof cannot be operated using any switch.	1. 10A fuse, 40A fusible link and E90 circuit breaker 2. Grounds M9, M25 and M87 3. Sunroof switch 4. Sunroof switch circuit 5. Sunroof motor	1. Check 10A fuse [No. 10, located in fuse block (J/B)], 40A fusible link (letter **i**, located in fuse and fusible link box) and E90 circuit breaker. Turn ignition switch "ON" and verify battery positive voltage is present at terminals 1 and 6 of sunroof motor. 2. Check grounds M9, M25, M87. 3. Check sunroof switch. 4. Check harness between sunroof switch and sunroof motor. 5. Replace sunroof motor.
Power sunroof cannot be operated using one of the sunroof switches.	1. Sunroof switch 2. Sunroof switch circuit	1. Check sunroof switch. 2. Check the harness between sunroof motor and sunroof switch.
Power sunroof auto function cannot be operated properly.	1. Sunroof slide mechanism 2. Sunroof switch 3. Sunroof switch circuit 4. Sunroof motor	1. Check the following. a. Check obstacles in sunroof, etc. b. Check worn or deformed sunroof. c. Check sunroof sash tilted too far inward or outward. 2. Check sunroof switch. 3. Check harness between sunroof motor and sunroof switch. 4. Replace sunroof motor.

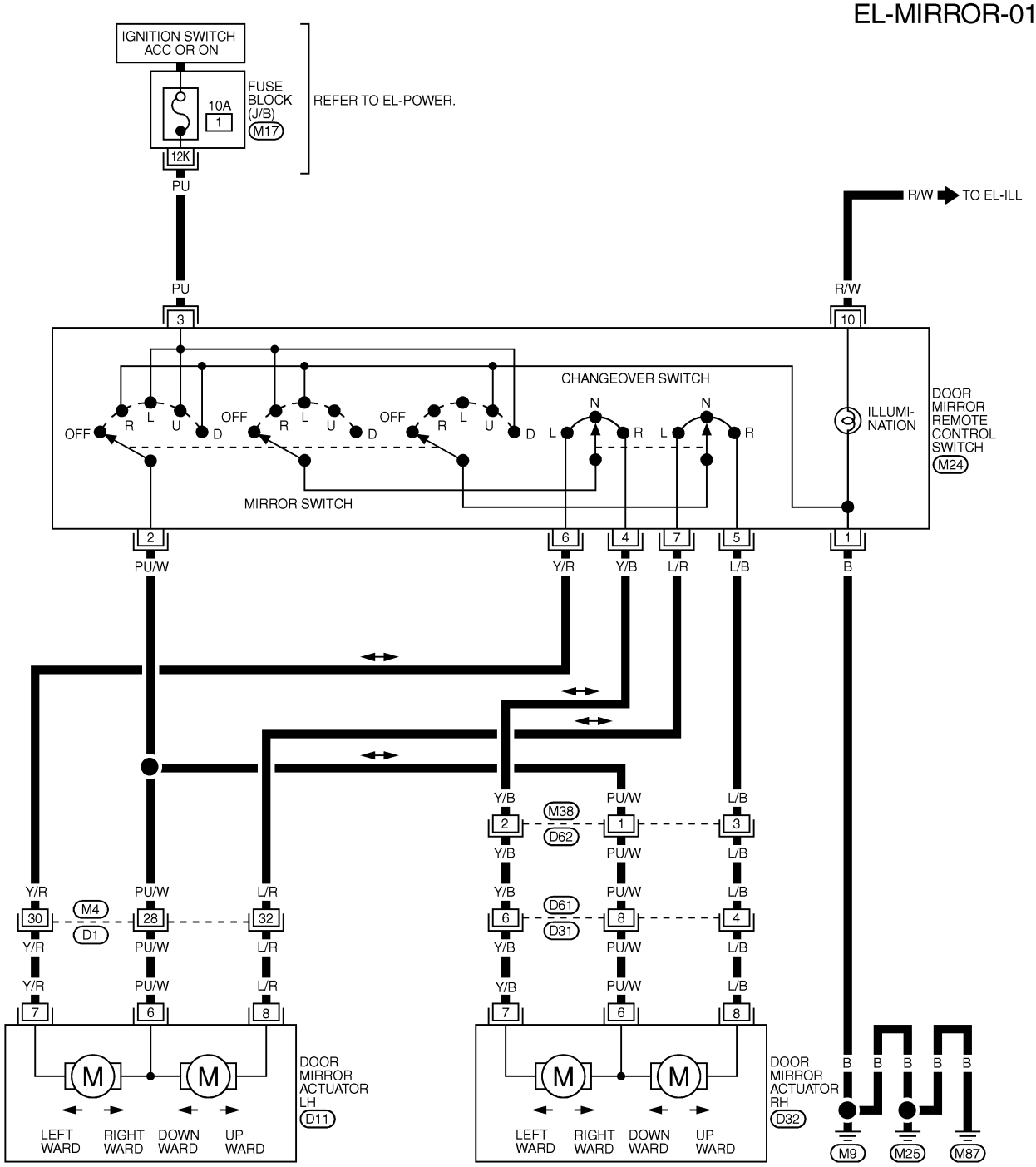
Trouble Diagnoses (Cont'd)

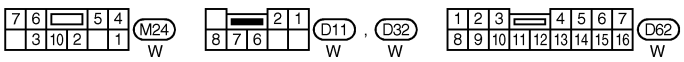
Symptom	Possible cause	Repair order
Retained power operation does not operate properly.	1. RAP signal circuit 2. Driver or passenger side door switch circuit 3. Smart entrance control unit	1. Check RAP signal. a. (With CONSULT-II) Check RAP signal with CONSULT-II. Use "ACTIVE TEST" mode, "RETAINED PWR" in "SMART ENTRANCE". (Refer to EL-214.) If NG, go to the step b. below. b. Verify 12 positive voltage from smart entrance control unit is present at terminal 6 of sunroof motor: ● 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-396)

Wiring Diagram — MIRROR —

NHEL0090

EL-MIRROR-01



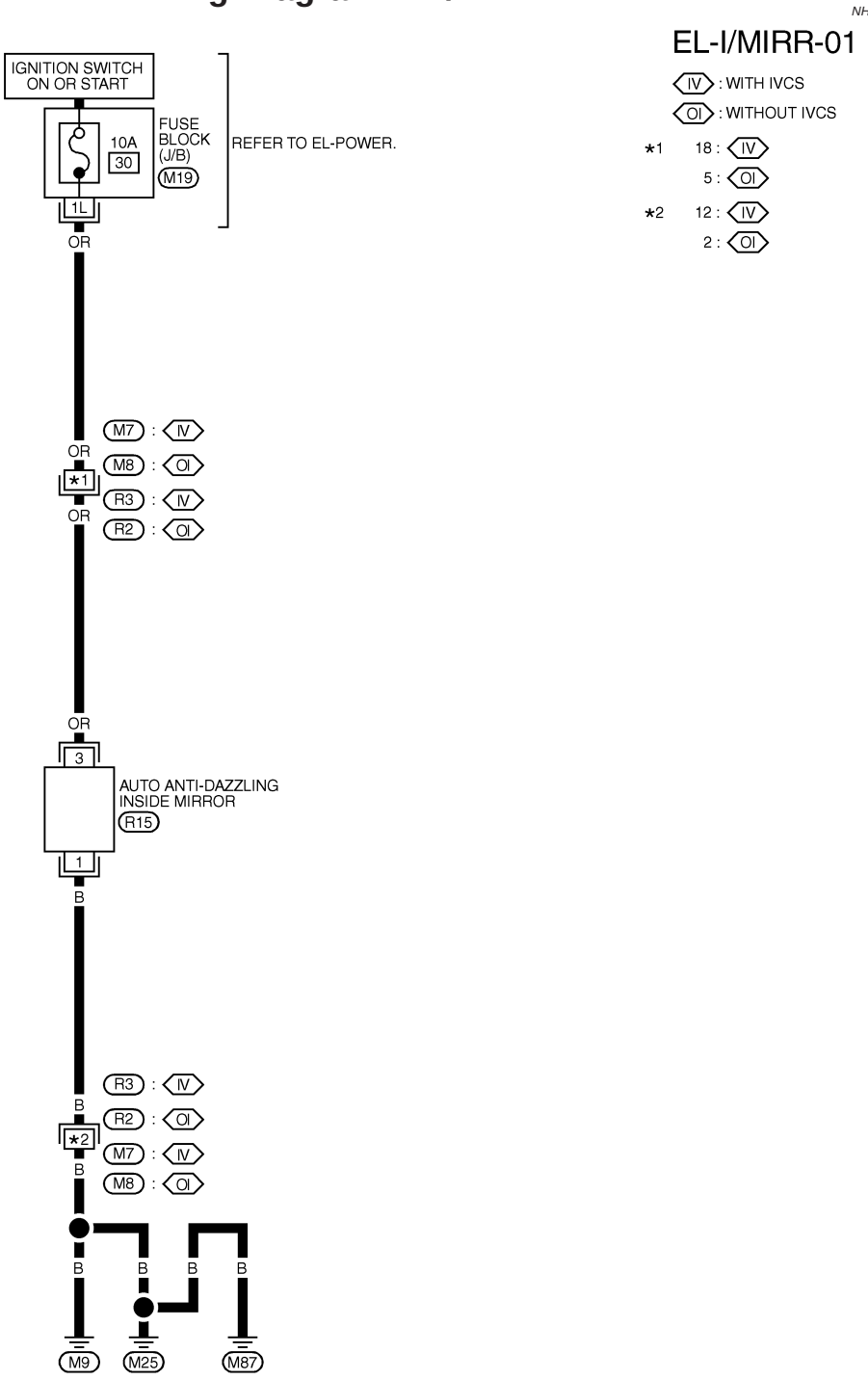


REFER TO THE FOLLOWING.
M4 , D1 -SUPER MULTIPLE JUNCTION (SMJ)
D31 , D61 -SUPER MULTIPLE JUNCTION (SMJ)
M17 -FUSE BLOCK-JUNCTION BOX (J/B)

MEL291K

Wiring Diagram — I/MIRR —

NHEL0271

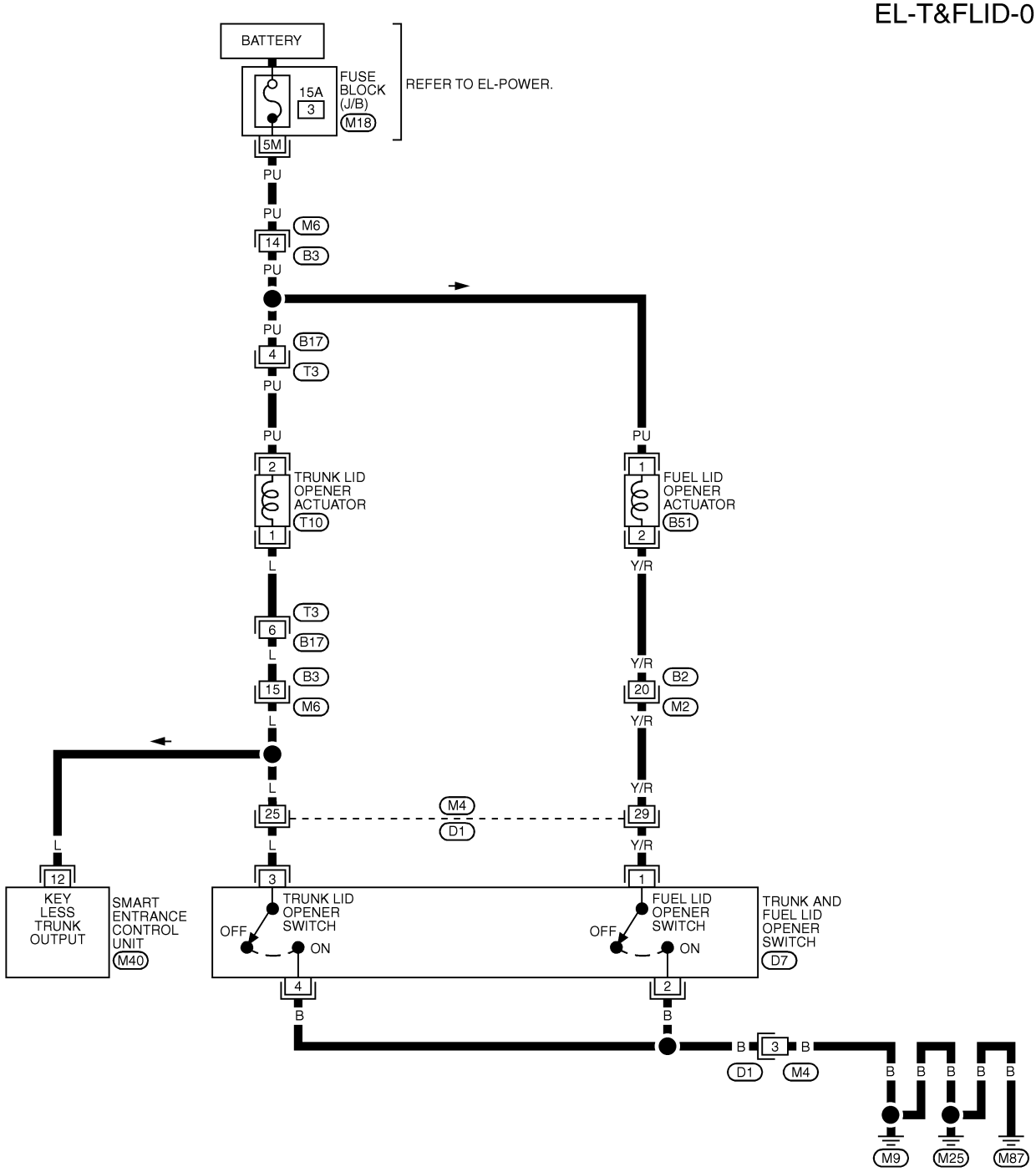


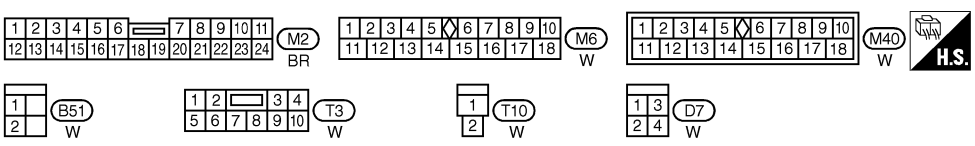
MEL477K

Wiring Diagram — T&FLID —

NHEL0168

EL-T&FLID-01



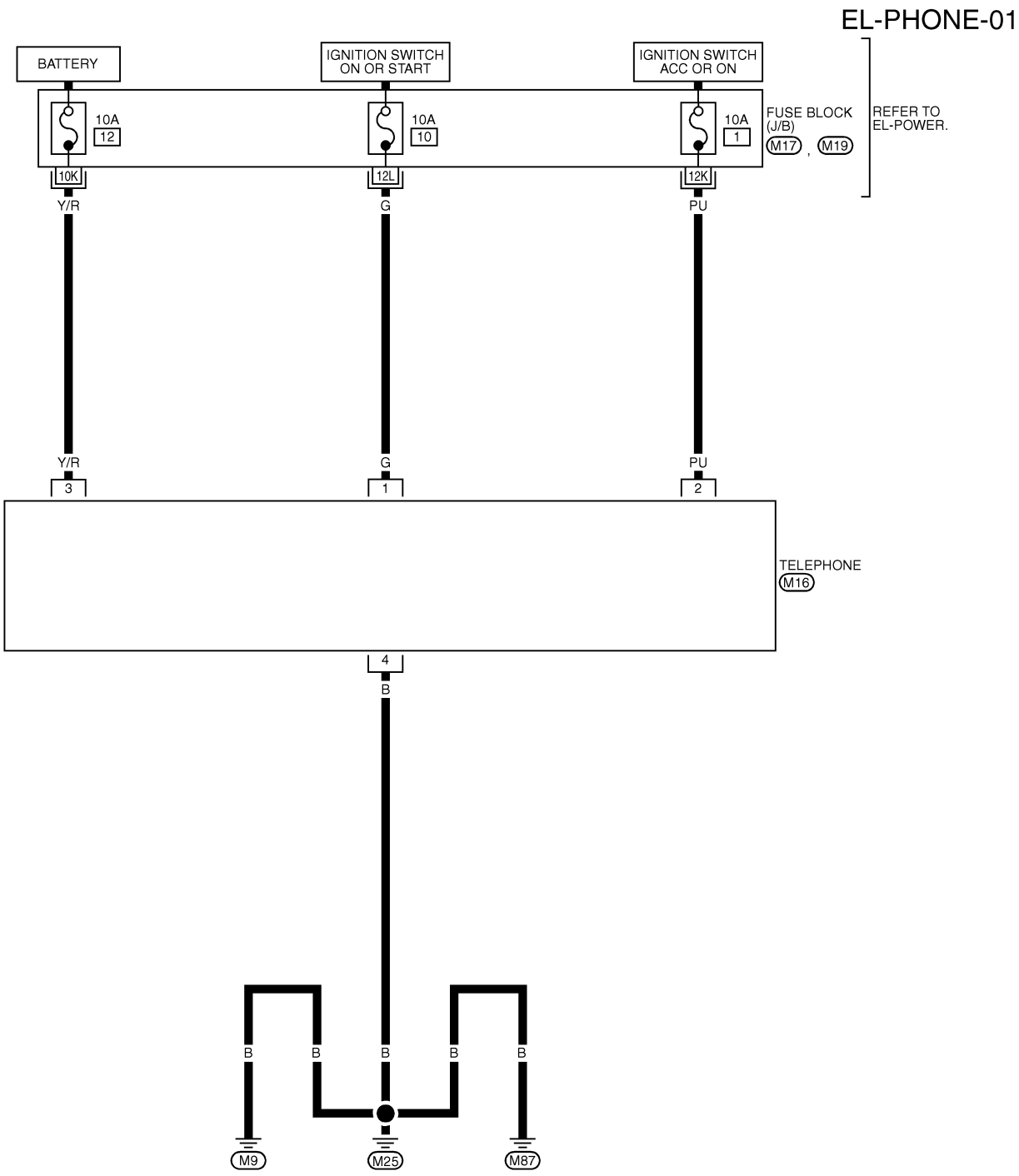


REFER TO THE FOLLOWING.
M4 , D1 -SUPER MULTIPLE JUNCTION (SMJ)
M18 -FUSE BLOCK-JUNCTION BOX (J/B)

MEL292K

Wiring Diagram — PHONE —

NHEL0170

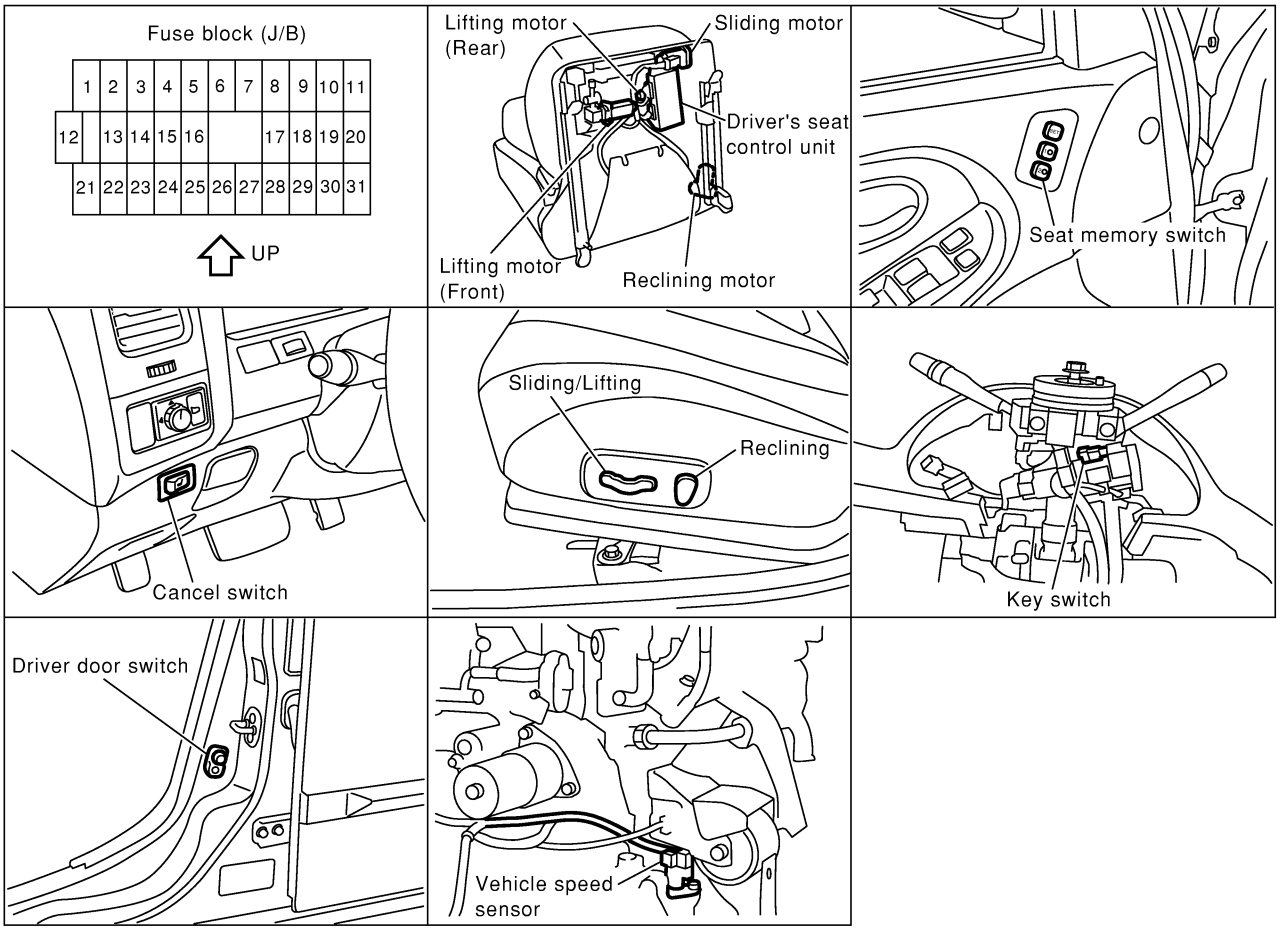


REFER TO THE FOLLOWING.
M17 -FUSE BLOCK-JUNCTION BOX (J/B)
M19 -FUSE BLOCK-JUNCTION BOX (J/B)

MEL295K

Component Parts and Harness Connector Location

NHEL0272



SEL591W

System Description

=NHEL0273

OPERATIVE CONDITION

NHEL0273S01

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

Manual Operation

NHEL0273S0101

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

NHEL0273S0102

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

NHEL0273S02

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

NHEL0273S03

Output Failure

NHEL0273S0301

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

NHEL0273S0302

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

INITIALIZATION

NHEL0273S04

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

=NHEL0273S05

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

System Description (Cont'd)

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.

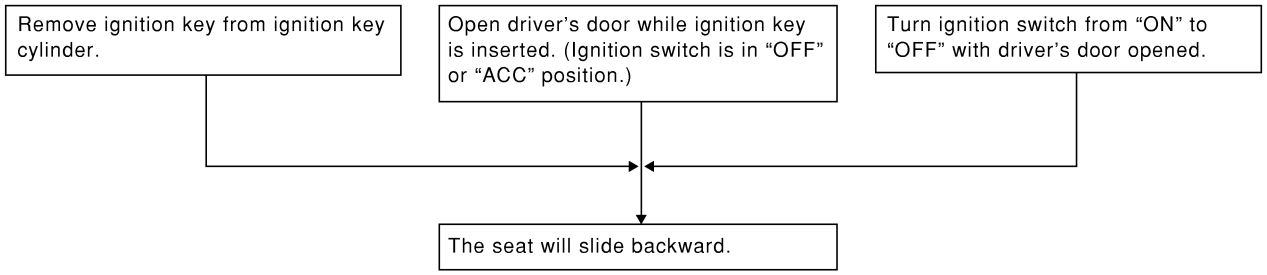
The order of priority	Operated portion
1	Seat sliding
2	Seat reclining
3	Seat front lifting
4	Seat rear lifting

AUTOMATIC EXITING SETTING

NHEL0273S06

"Exiting" positions:

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

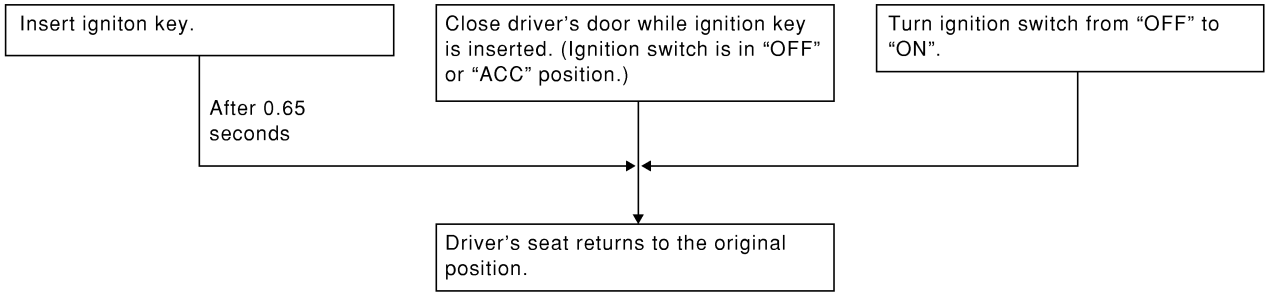


SEL594W

AUTOMATIC SET RETURN

NHEL0273S07

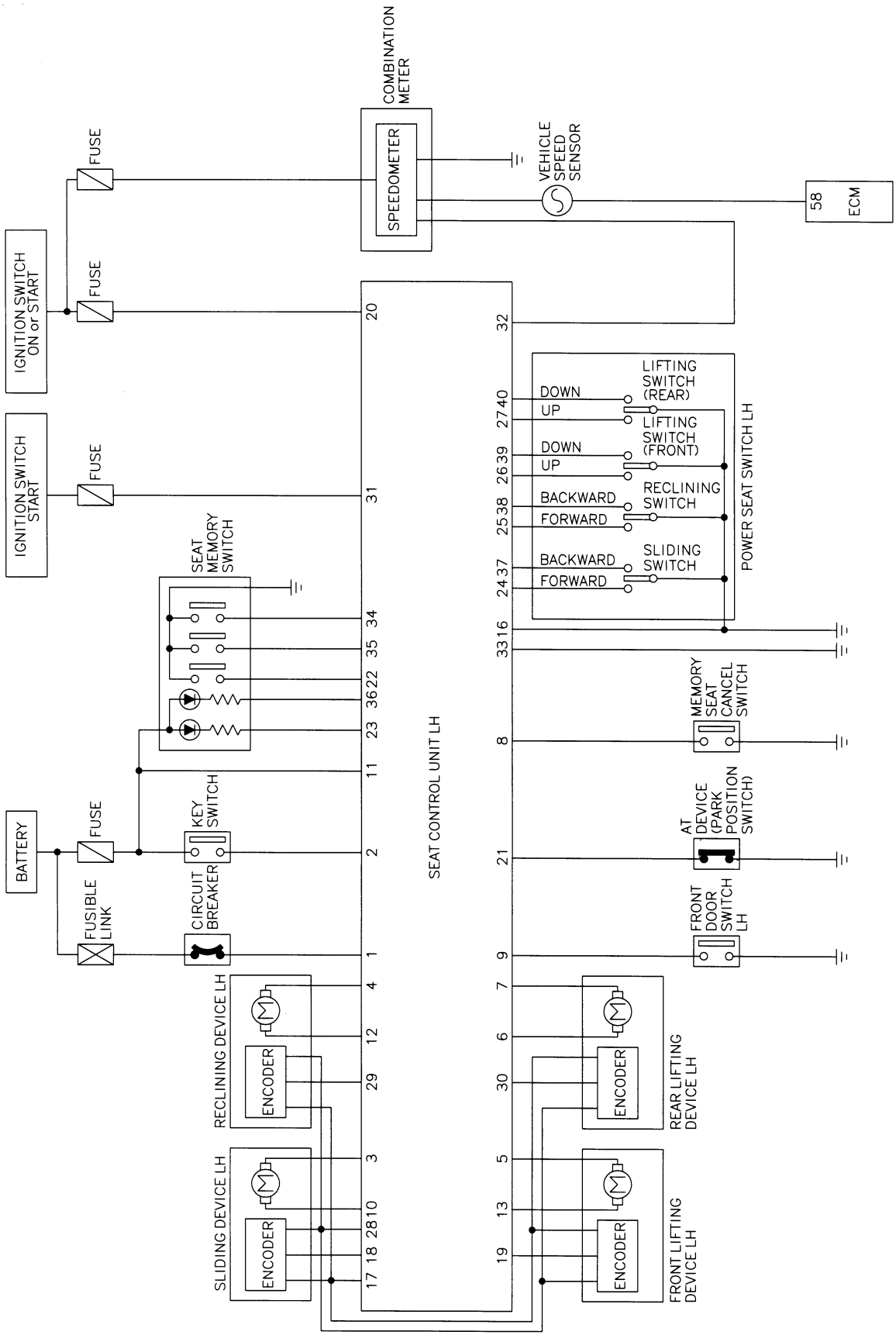
With driver's seat set to the "exiting" position, operating one of the following procedures moves it to the position previously retained in memory.



SEL595W

Schematic

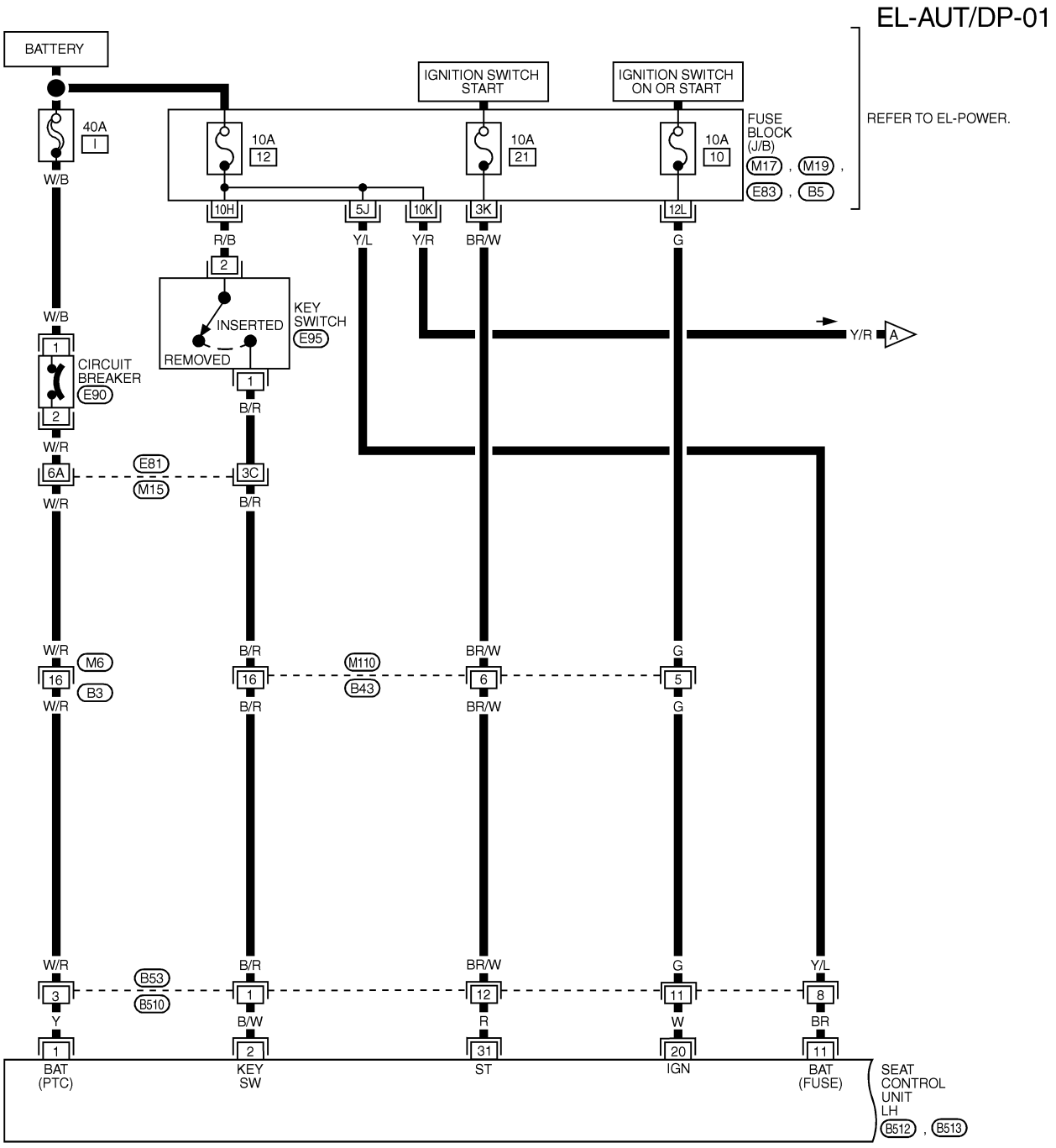
NHEL0274

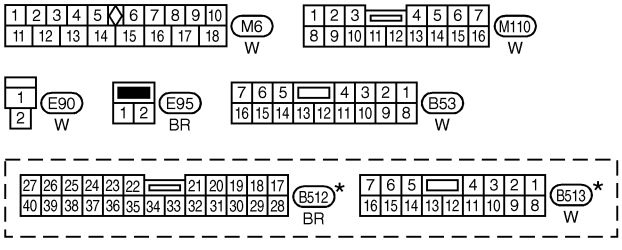


MEL167M

Wiring Diagram — AUT/DP —

NHEL0275





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

REFER TO THE FOLLOWING.

M15 , E81 -SUPER MULTIPLE JUNCTION (SMJ)

M17 -FUSE BLOCK-JUNCTION BOX (J/B)

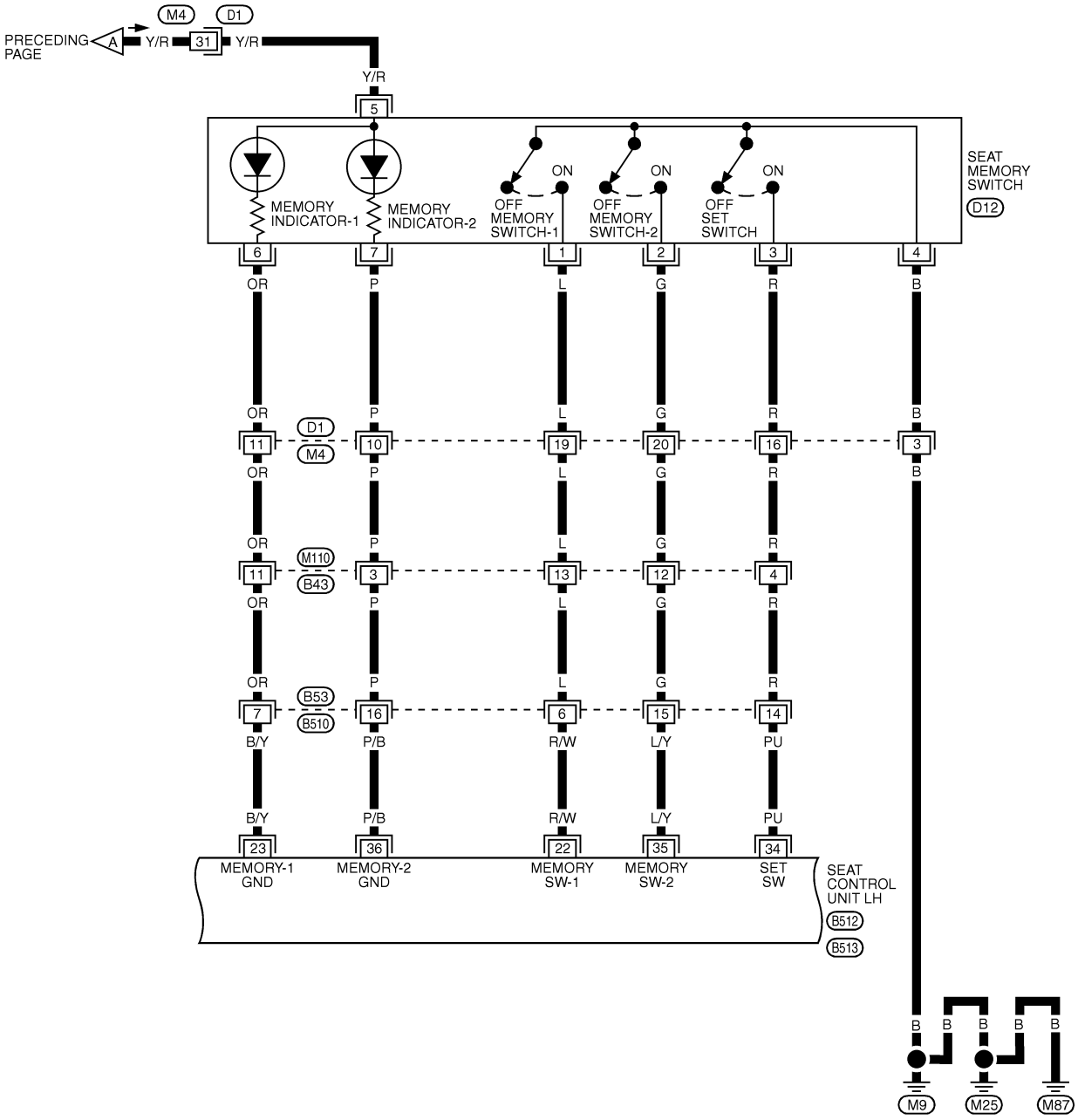
M19 -FUSE BLOCK-JUNCTION BOX (J/B)

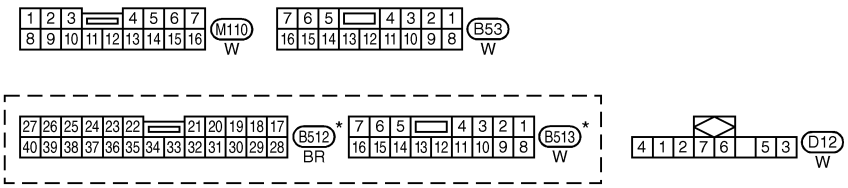
E83 -FUSE BLOCK-JUNCTION BOX (J/B)

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

MEL484K

EL-AUT/DP-02



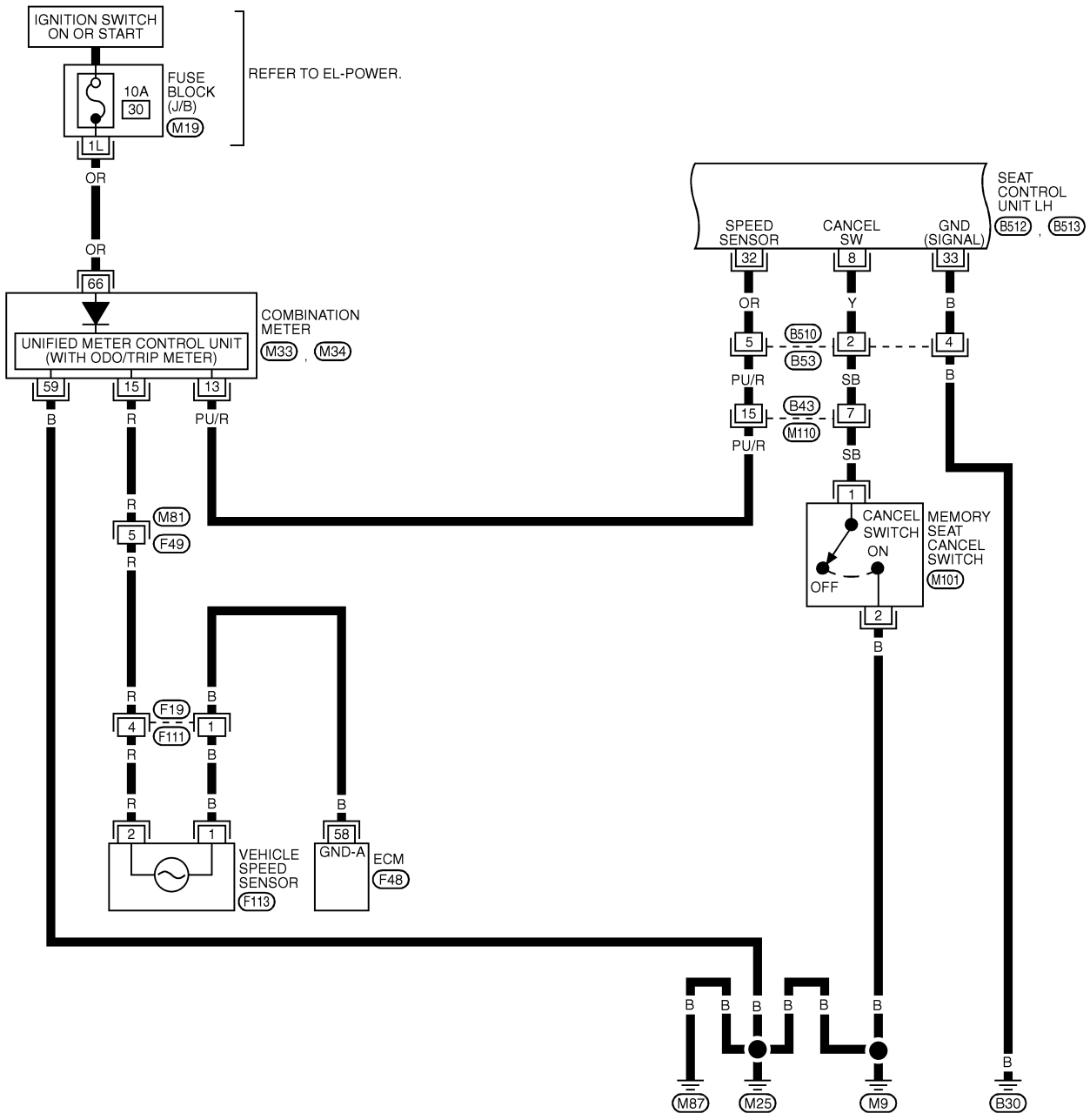


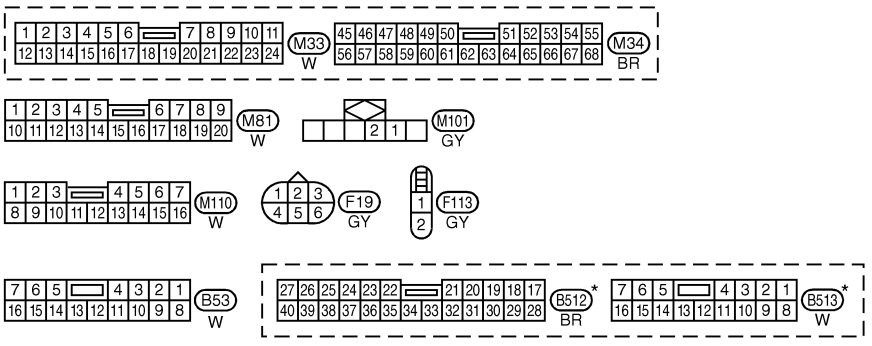
* : THIS CONNECTOR IS NOT SHOWN IN " HARNESS LAYOUT " , EL SECTION.

REFER TO THE FOLLOWING.
M4 , D1 -SUPER MULTIPLE JUNCTION (SMJ)

MEL485K

EL-AUT/DP-03

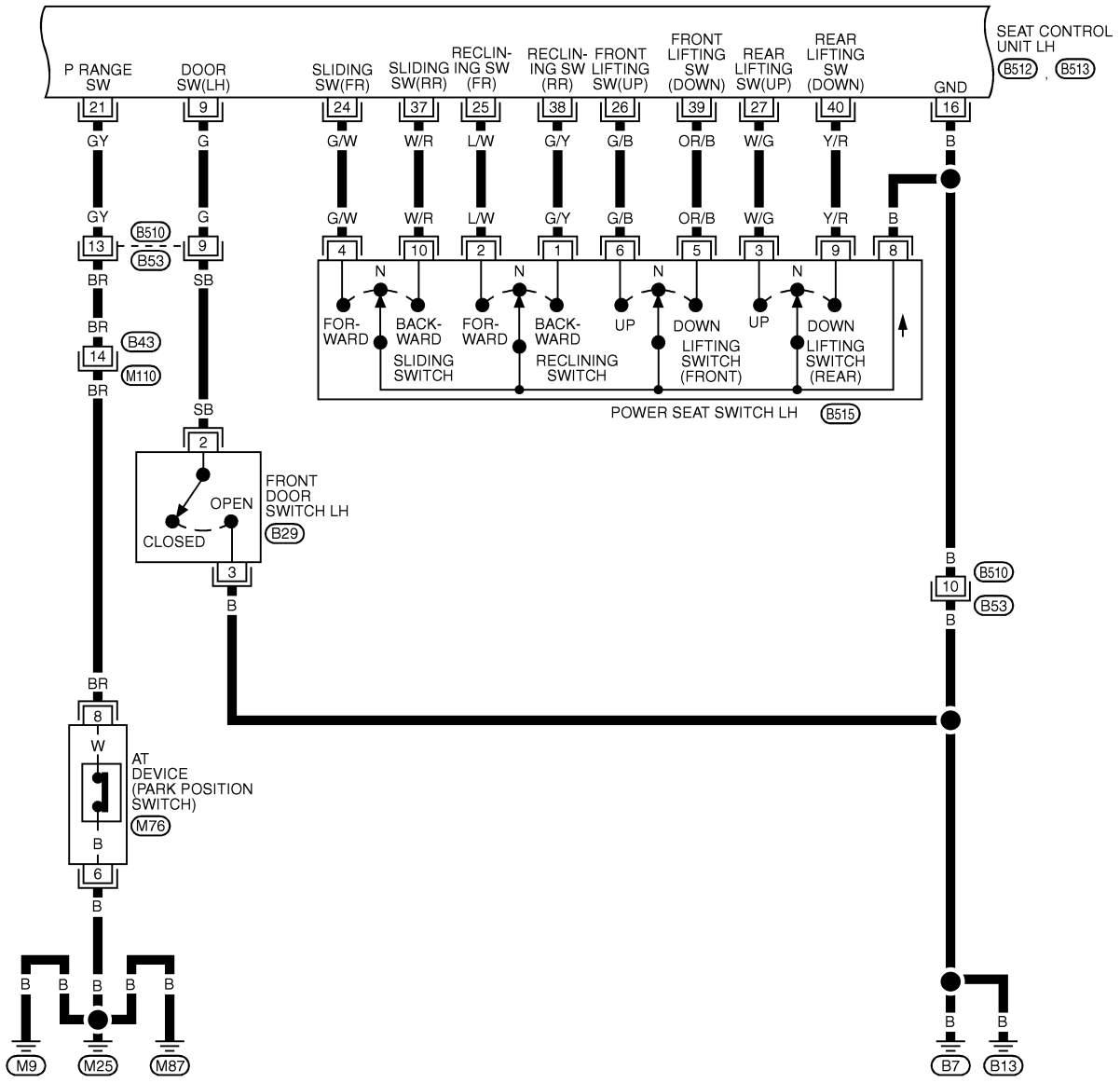


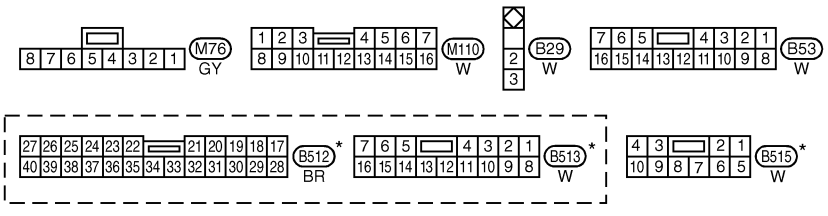


*: THIS CONNECTOR IS NOT SHOWN IN " HARNESS LAYOUT " , EL SECTION.

REFER TO THE FOLLOWING.
M19 -FUSE BLOCK- JUNCTION BOX (J/B)
F48 -ELECTRICAL UNIT-

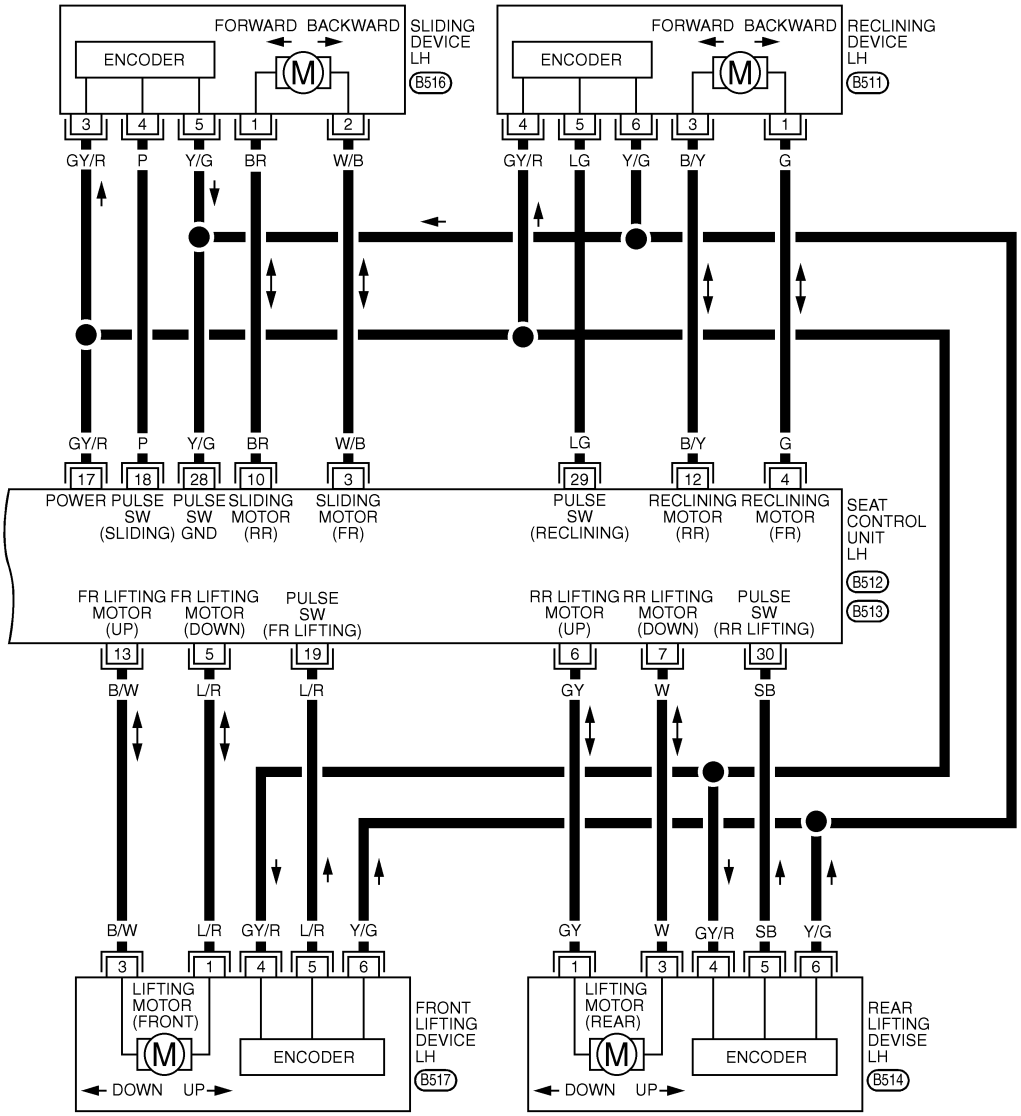
MEL486K

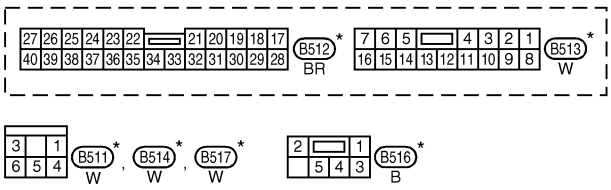

SEAT CONTROL UNIT LH
B512 , B513
P RANGE SW
DOOR SW(LH)
SLIDING SW(FR)
SLIDING SW(RR)
RECLINING SW (FR)
RECLINING SW (RR)
FRONT LIFTING SW(UP)
FRONT LIFTING SW (DOWN)
REAR LIFTING SW(UP)
REAR LIFTING SW (DOWN)
GND
21 9 24 37 25 38 26 39 27 40 16
GY G G/W W/R L/W G/Y G/B OR/B W/G Y/R B
B510 B53
13 9 4 10 2 1 6 5 3 9 8
BR SB
B43 M110
14
FOR-WARD
BACK-WARD
SLIDING SWITCH
RECLINING SWITCH
UP
DOWN
LIFTING SWITCH (FRONT)
LIFTING SWITCH (REAR)
POWER SEAT SWITCH LH B515
FRONT DOOR SWITCH LH B29
OPEN
CLOSED
2
3
B510 B53
10
8
W
AT DEVICE (PARK POSITION SWITCH) M76
6
M9 M25 M87
B7 B13


M76 GY
M110 W
B29 W
B53 W
B512 BR
B513 W
B515 W
* : THIS CONNECTOR IS NOT SHOWN IN " HARNESS LAYOUT " , EL SECTION.

MEL650K

EL-AUT/DP-05



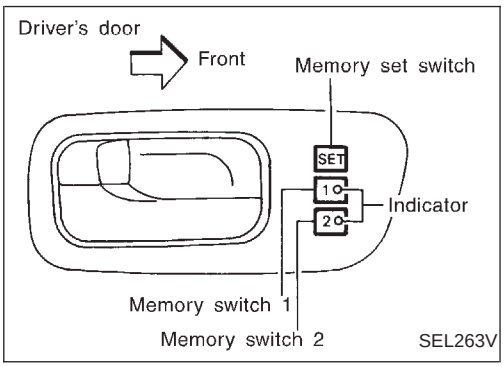


*: THIS CONNECTOR IS NOT SHOWN IN " HARNESS LAYOUT " , EL SECTION.

MEL651K

On Board Diagnosis

NHEL0276



HOW TO PERFORM SELF-DIAGNOSIS

NHEL0276S01

Condition
- Ignition switch: OFF
- Selector lever: "P" range

↓

Turn ignition switch "ON".

↓ Within 5 seconds

Push memory set switch and two memory switches at the same time for more than 2 seconds.

↓

Self-diagnosis should be performed.
– Two indicator lamps should go on. (At the same time, driver's seat move automatically.)

↓

As soon as the indicator lamps go on and off by turns, start engine.

↓ Within 15 seconds

Drive the vehicle more than 7 km/h (4 MPH) and stop.
Do not stop engine.

↓

If a circuit malfunctions, a malfunction code should be indicated.*1

↓

Turn ignition switch "OFF".
or
Touch front driver's side power seat switch.

↓

DIAGNOSIS END*2

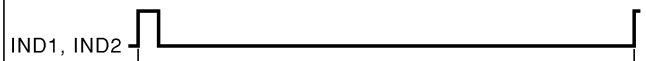
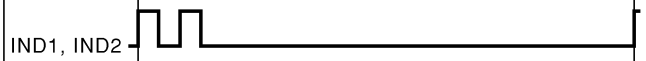
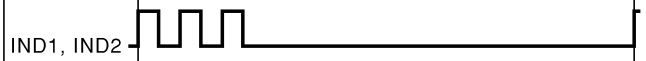
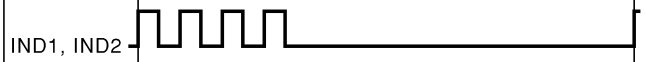
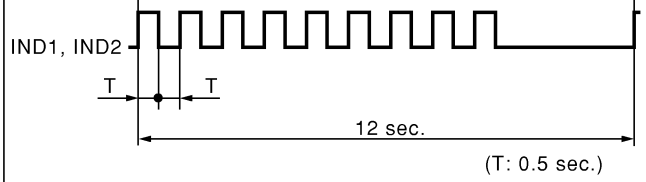
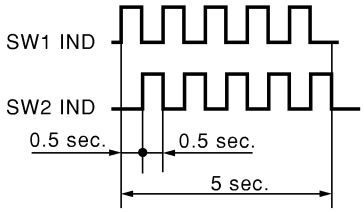
SEL596W

*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

=NHEL0276S02

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

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

SEL597W

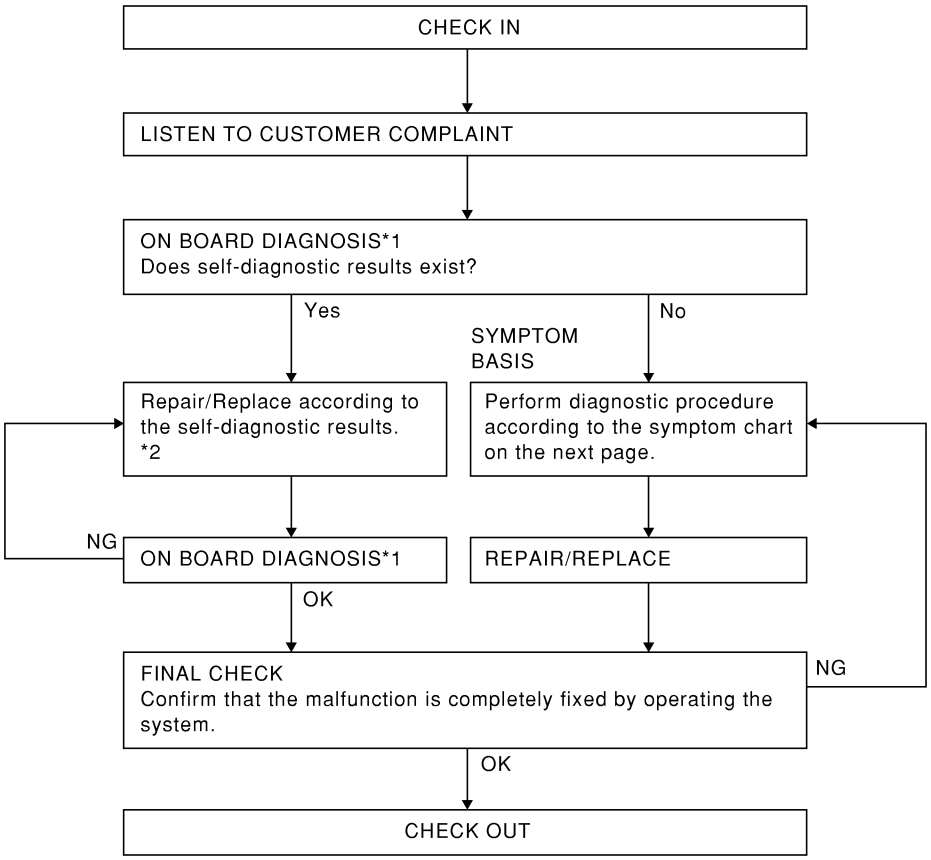
Code No.	Detected items	Diagnostic procedure	Reference page	Code No.	Detected items	Diagnostic procedure	Reference page
1	Seat sliding	PROCEDURE 2 (Sliding encoder check) PROCEDURE 6 (Sliding motor check)	EL-239 EL-247	4	Seat lifting rear	PROCEDURE 5 [Lifting encoder (rear) check] PROCEDURE 9 [Lifting motor (rear) check]	EL-245 EL-250
2	Seat reclining	PROCEDURE 3 (Reclining encoder check) PROCEDURE 7 (Reclining motor check)	EL-241 EL-248	9	Vehicle speed sensor	PROCEDURE 12 (Vehicle speed sensor check)	EL-253
3	Seat lifting front	PROCEDURE 4 [Lifting encoder (front) check] PROCEDURE 8 [Lifting motor (front) check]	EL-243 EL-249				

Trouble Diagnoses

NHEL0277

WORK FLOW

NHEL0277S01

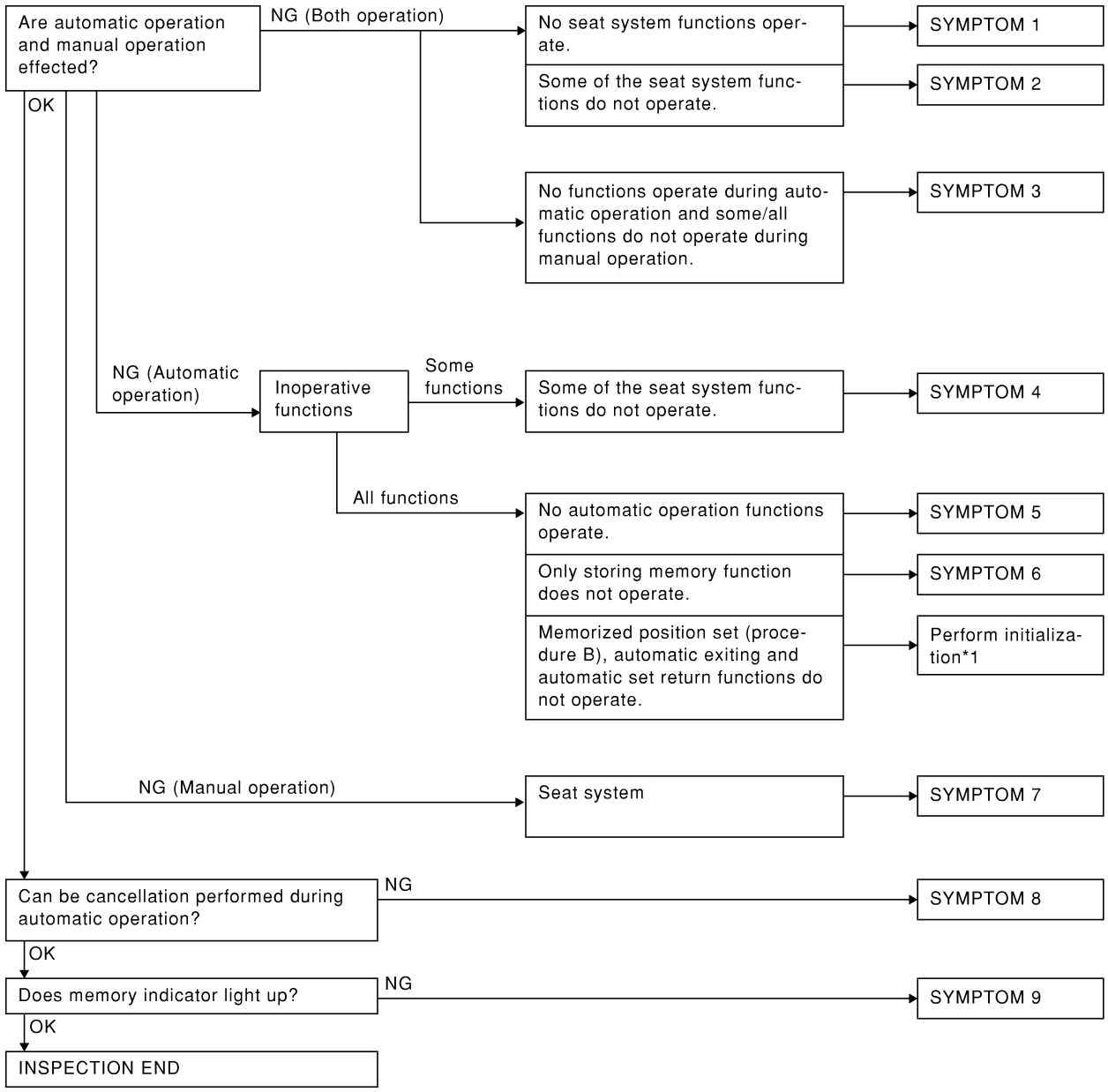


SEL599W

*1 EL-231 *2 EL-232

PRELIMINARY CHECK

NHEL0277S02



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 25 km/h (16 MPH).

2) End

After performing preliminary check, go to symptom chart below.

Before starting trouble diagnoses below, perform preliminary check, EL-234. Symptom numbers in the symptom chart correspond with those of preliminary check.

Trouble Diagnoses (Cont'd)

SYMPTOM CHART

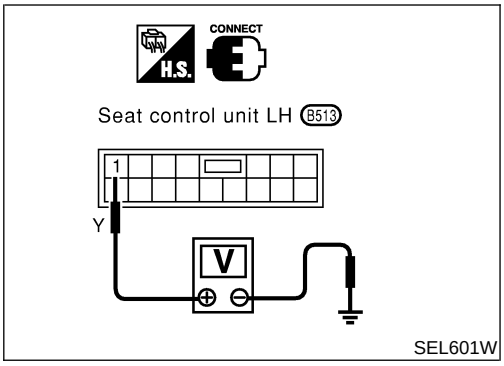
=NHEL0277S03

PROCEDURE			Diagnostic procedure						
REFERENCE PAGE (EL-)			238	239	241	243	245	247	248
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-)			249	250	251	252	253	256	256
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 (Cencel 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

=NHEL0277S04

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

Power Supply Circuit Check

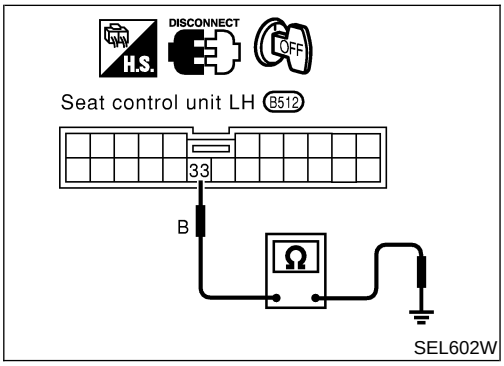
NHEL0277S0401

Check voltage between seat control unit LH terminal 1 and ground.
(Refer to wiring diagram in EL-226.)

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

If NG, check the following.

- Circuit breaker
- Harness for open or short between circuit breaker and seat control unit LH



Ground Circuit Check

NHEL0277S0402

Check continuity between seat control unit LH terminal 33 and ground.
(Refer to wiring diagram in EL-226.)

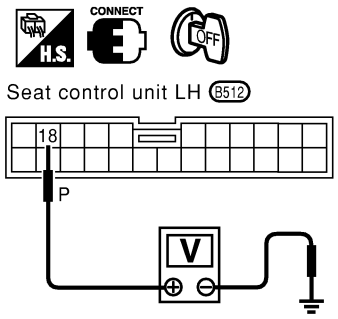
Terminals	Continuity
33 - Ground	Yes

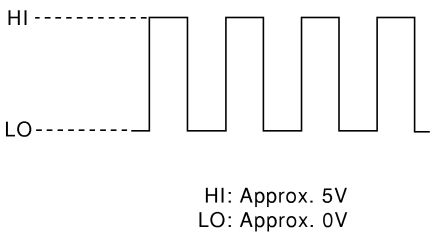
DIAGNOSTIC PROCEDURE 2
(Sliding encoder check)

=NHEL0277S05

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

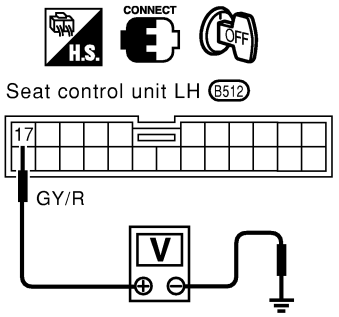
SEL603W

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.

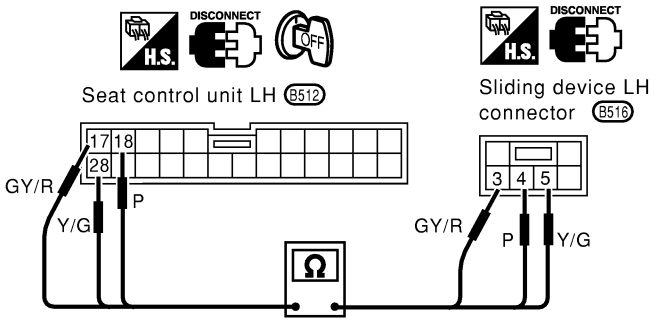
SEL604W

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	

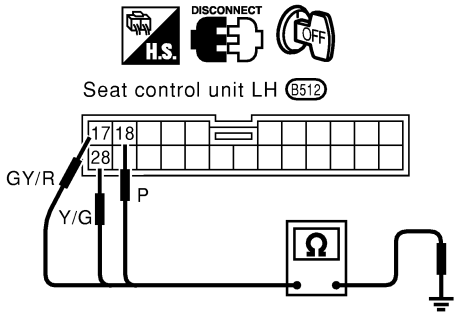
SEL605W

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

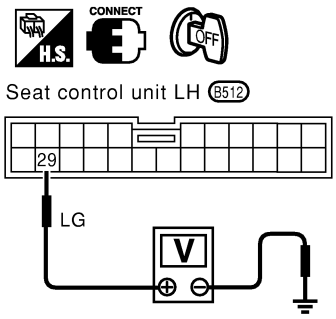
OK	▶	Replace sliding encoder.
NG	▶	Repair harness.

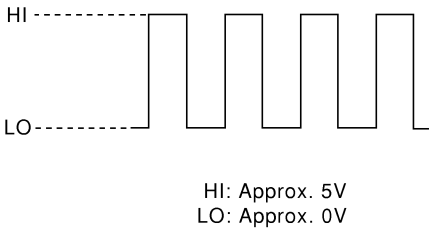
DIAGNOSTIC PROCEDURE 3
(Reclining encoder check)

=NHEL0277S06

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

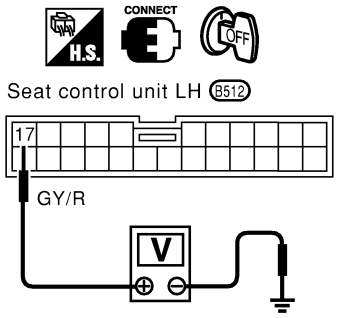
SEL607W

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.

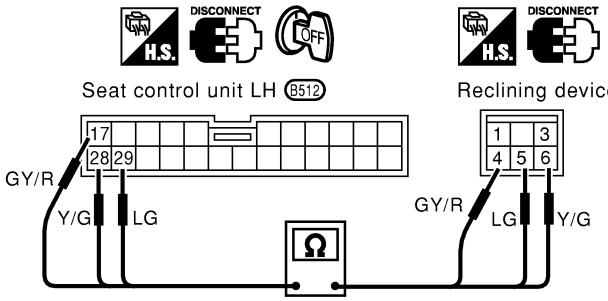
SEL608W

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	

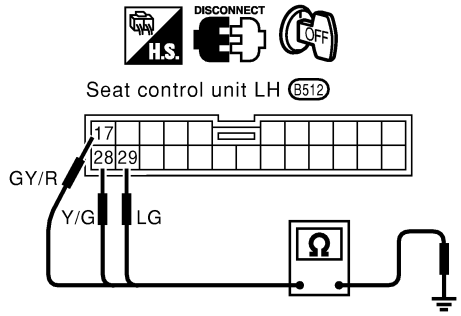
SEL609W

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.

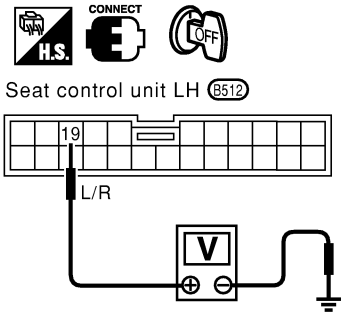
DIAGNOSTIC PROCEDURE 4

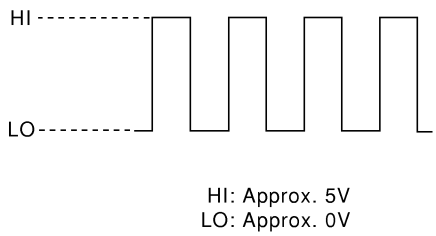
=NHEL0277S07

[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

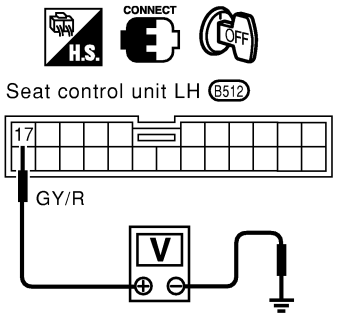
SEL611W

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.

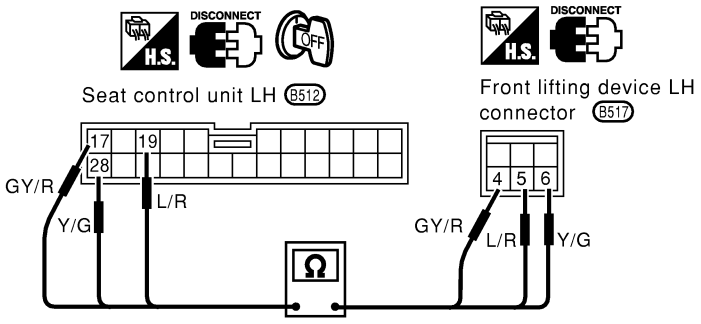
SEL612W

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	

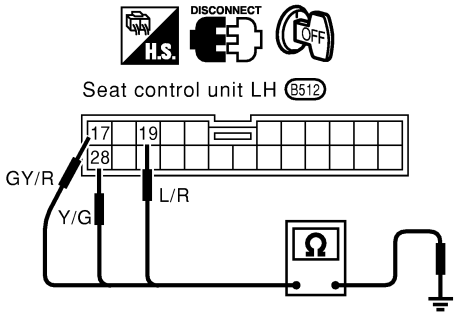
SEL613W

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.

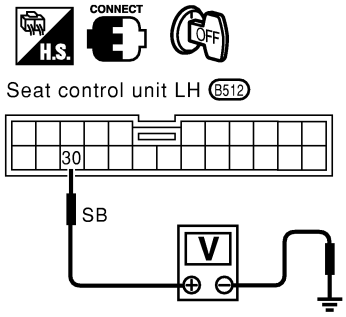
DIAGNOSTIC PROCEDURE 5

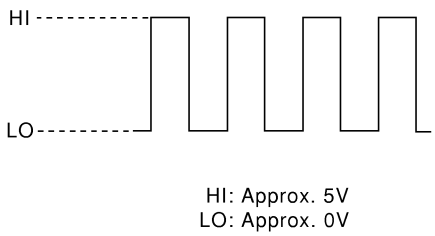
=NHEL0277S08

[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.





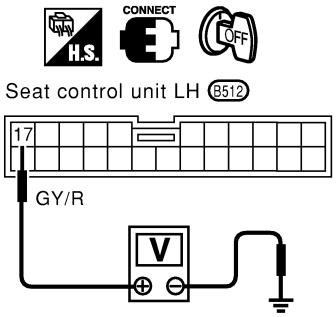
SEL615W

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.

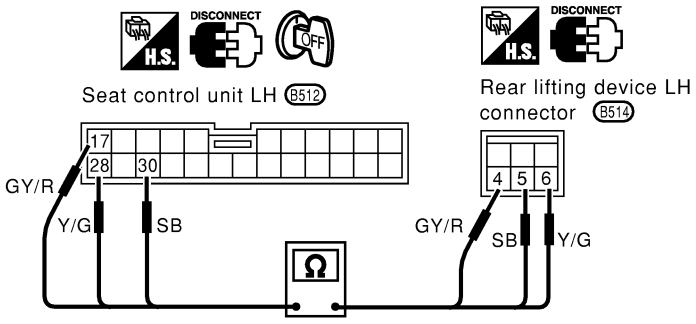
SEL616W

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	

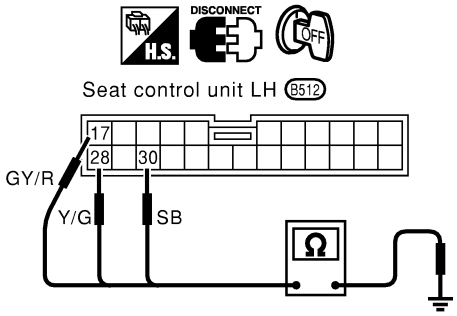
SEL617W

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

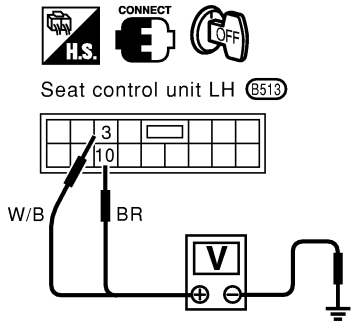
OK	▶	Replace lifting encoder (rear).
NG	▶	Repair harness.

DIAGNOSTIC PROCEDURE 6
(Sliding motor check)

=NHEL0277S09

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 +	Terminals −	Voltage [V]
Forward	3	Ground	Approx. 12
Backward	10	Ground	Approx. 12

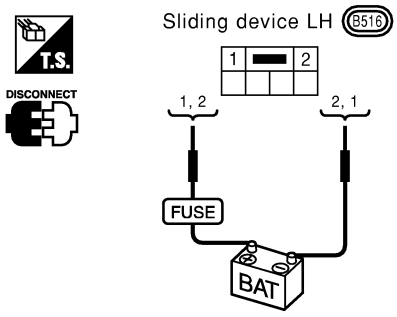
SEL619W

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 +	Terminals −	Operation
2	1	Forward
1	2	Backward

SEL620W

OK or NG

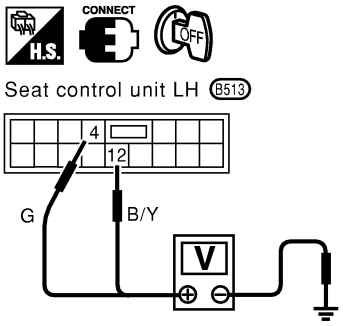
OK	▶	Check harness for operation between seat control unit LH and sliding motor.
NG	▶	Replace sliding motor.

DIAGNOSTIC PROCEDURE 7
(Reclining motor check)

=NHEL0277S10

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

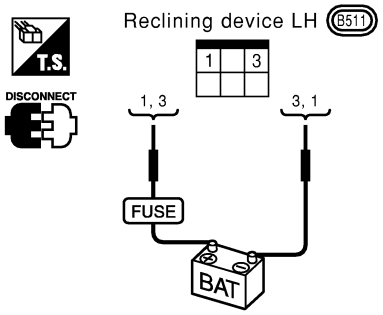
SEL621W

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

SEL622W

OK or NG

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

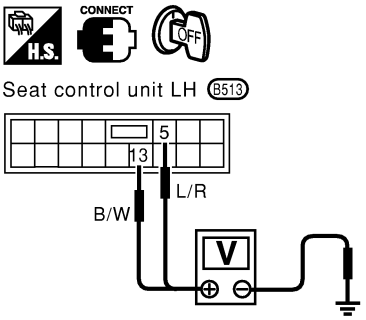
DIAGNOSTIC PROCEDURE 8

=NHEL0277S11

[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 +	Terminals –	Voltage [V]
Up	13	Ground	Approx. 12
Down	5	Ground	Approx. 12

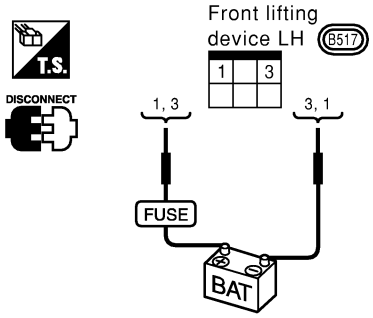
SEL623W

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 +	Terminals –	Operation
3	1	Up
1	3	Down

SEL624W

OK or NG

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

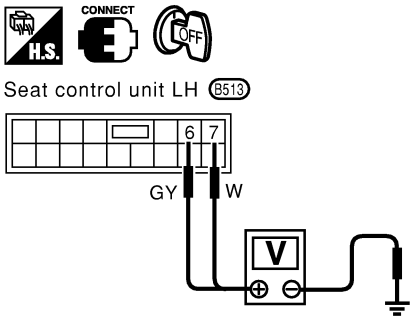
DIAGNOSTIC PROCEDURE 9

=NHEL0277S12

[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

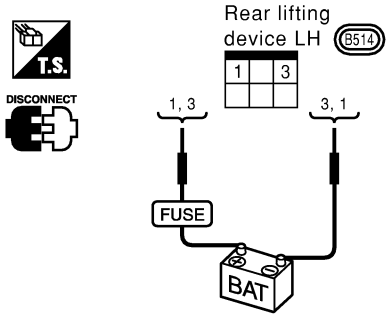
SEL625W

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

SEL626W

OK or NG

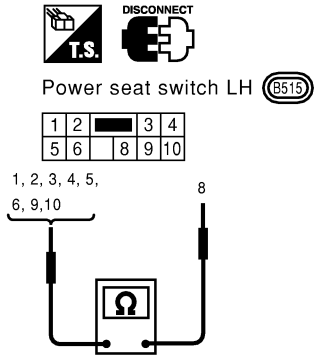
OK	▶	Check harness for operation between seat control unit LH and lifting motor (rear).
NG	▶	Replace lifting motor (rear).

DIAGNOSTIC PROCEDURE 10
(Power seat switch check)

=NHEL0277S13

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	○							○	

SEL627W

OK or NG

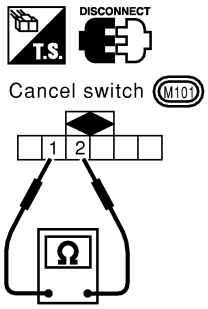
OK	▶	**Check the following.** ● Ground circuit for power seat switch ● Harness for open or short between seat control unit LH and power seat switch
NG	▶	Replace power seat switch.

DIAGNOSTIC PROCEDURE 11
(Cancel switch check)

=NHEL0277S14

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

SEL628W

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.

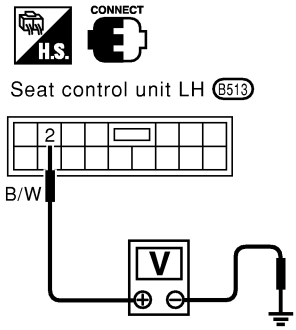
DIAGNOSTIC PROCEDURE 12

=NHEL0277S15

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

1 CHECK KEY SWITCH INPUT SIGNAL

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



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

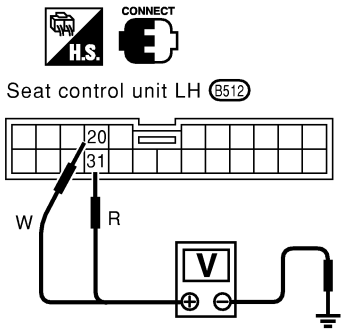
SEL629W

OK or NG

OK	▶	GO TO 2.
NG	▶	**Check the following.** ● 10A fuse [No. 12, 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

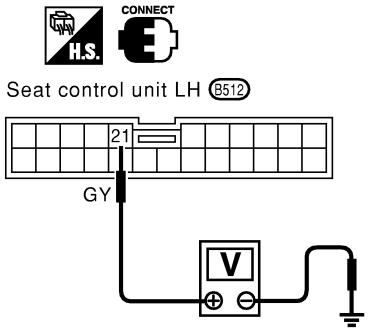
SEL630W

OK or NG

OK	▶	GO TO 3.
NG	▶	**Check the following.** ● 10A fuse [No. 10, located in fuse block (J/B)] ● 10A fuse [No. 21, located in fuse block (J/B)] ● Harness for open or short between seat control unit LH and fuse

3	CHECK PARK POSITION SWITCH INPUT SIGNAL

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



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

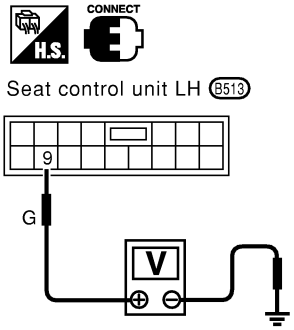
SEL631W

OK or NG

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

4	CHECK DRIVER DOOR SWITCH INPUT SIGNAL

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



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

SEL632W

OK or NG

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

5	CHECK VEHICLE SPEED SENSOR

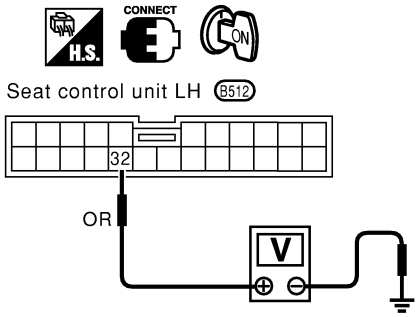
Does speedometer operate normally?

Yes or No

OK	▶	GO TO 6.
NG	▶	Check speedometer and vehicle speed sensor circuit. Refer to EL-153.

6	CHECK VEHICLE SPEED SENSOR PULL UP VOLTAGE

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



SEL633W

Approx. 5V should exist.

OK or NG

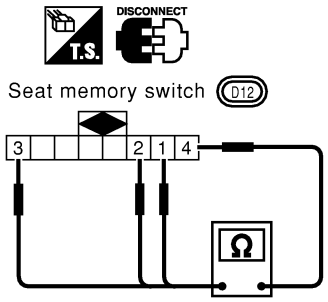
OK	▶	Harness for open or short between seat control unit LH and combination meter.
NG	▶	Repair harness.

DIAGNOSTIC PROCEDURE 13
(Seat memory switch check)

=NHEL0277S16

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			○	○

SEL634W

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
(Memory indicator check)

NHEL0277S17

1	CHECK INDICATOR LAMP

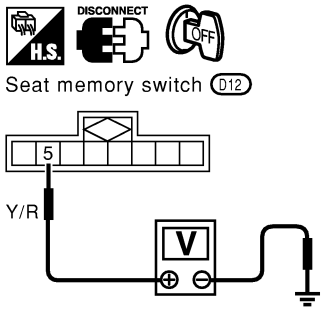
Check indicator lamp illumination.

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.

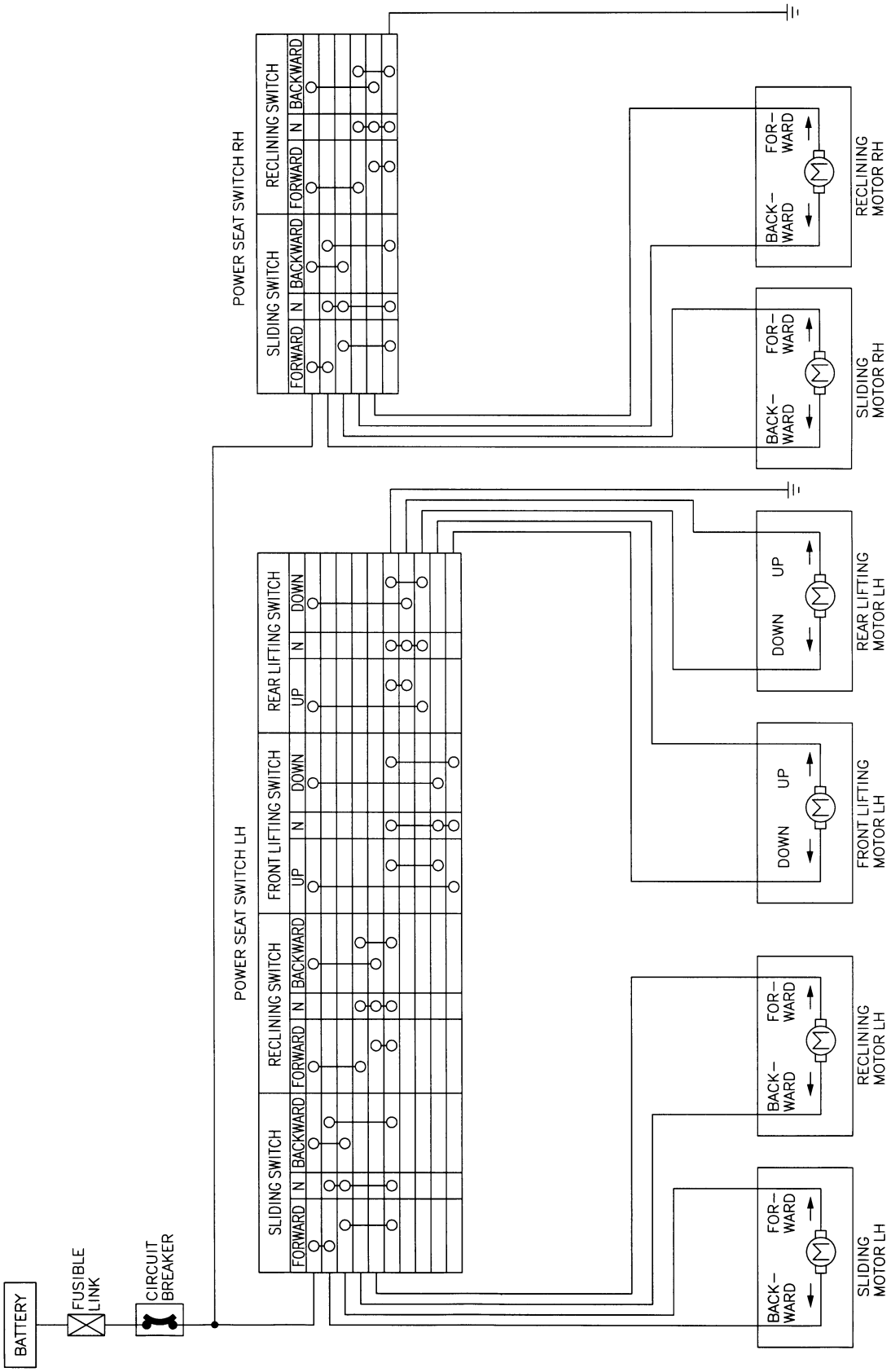
SEL635W

OK or NG

OK	▶	Check harness for open or short between seat control unit LH and seat memory switch
NG	▶	**Check the following.** ● 10A fuse [No. 12 located in the fuse block (J/B)] ● Harness for open or short between fuse and indicator lamp

Schematic

NHEL0251

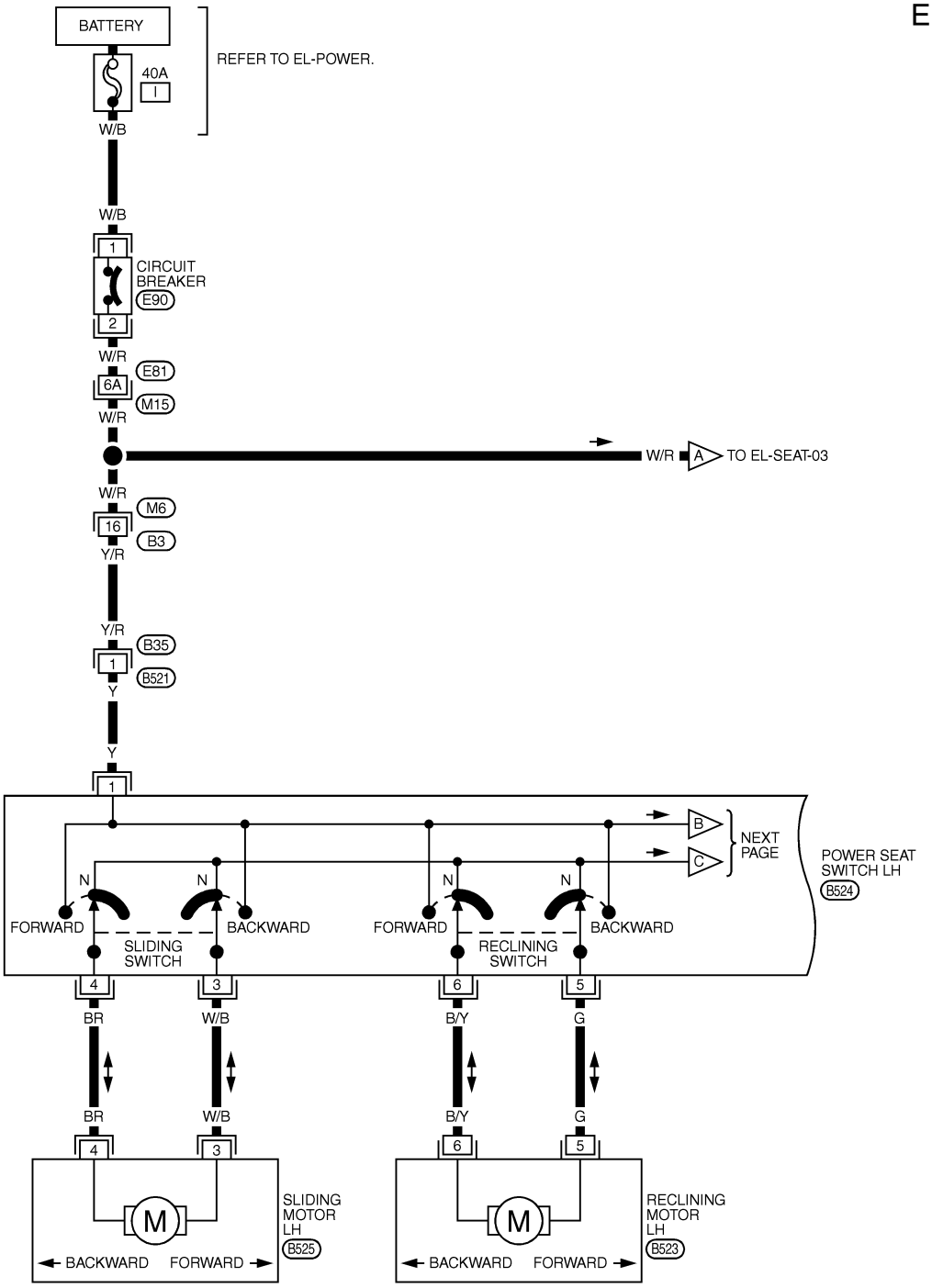


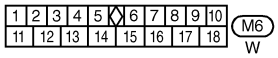
MEL647K

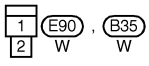
Wiring Diagram — SEAT —

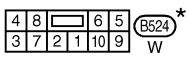
NHEL0092

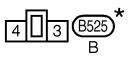
EL-SEAT-01







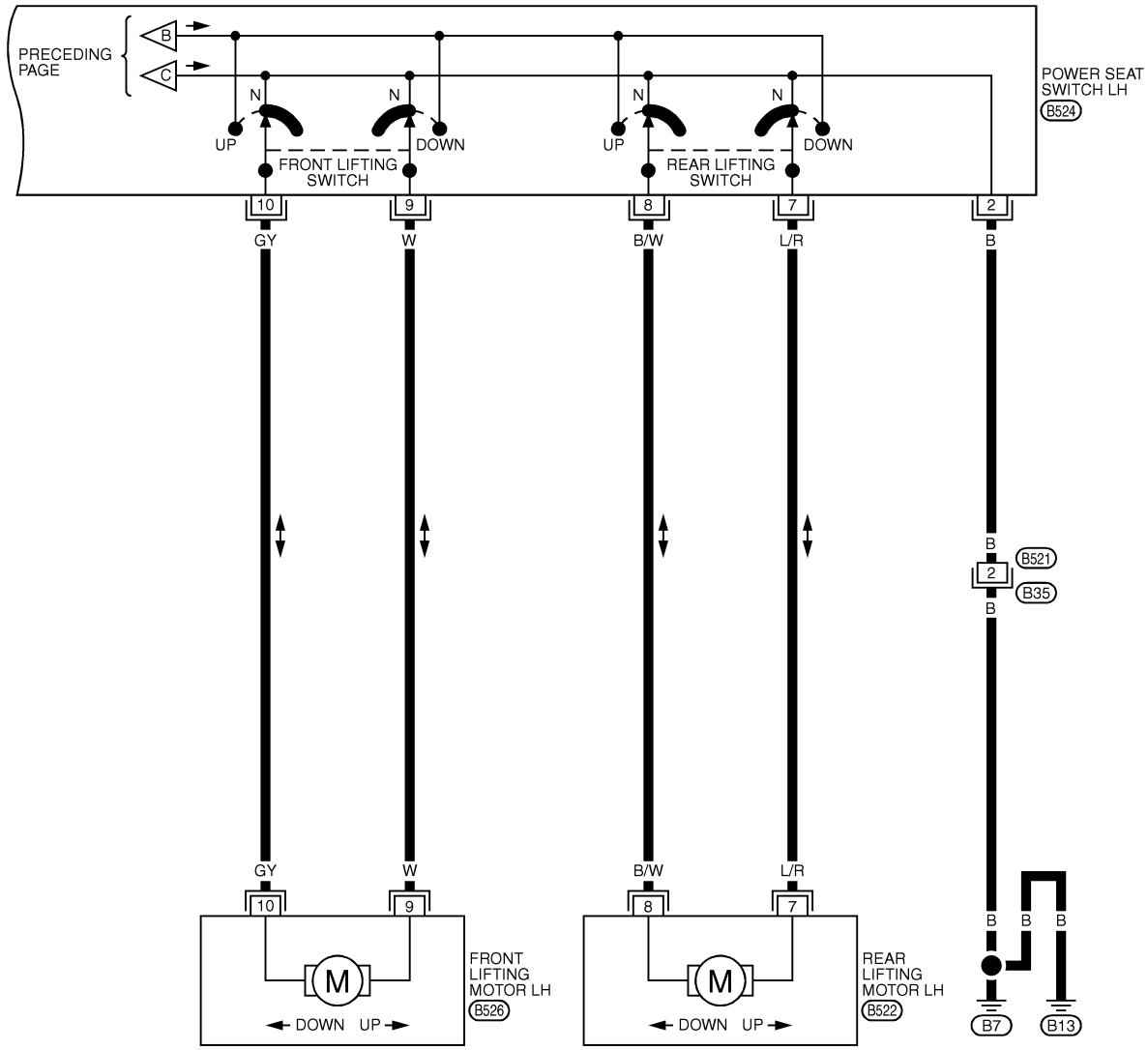


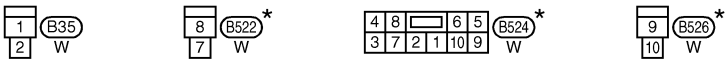


∗ : THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", EL SECTION.

REFER TO THE FOLLOWING.
M15 , E81
MULTIPLE JUNCTION (SMJ)

MEL487K

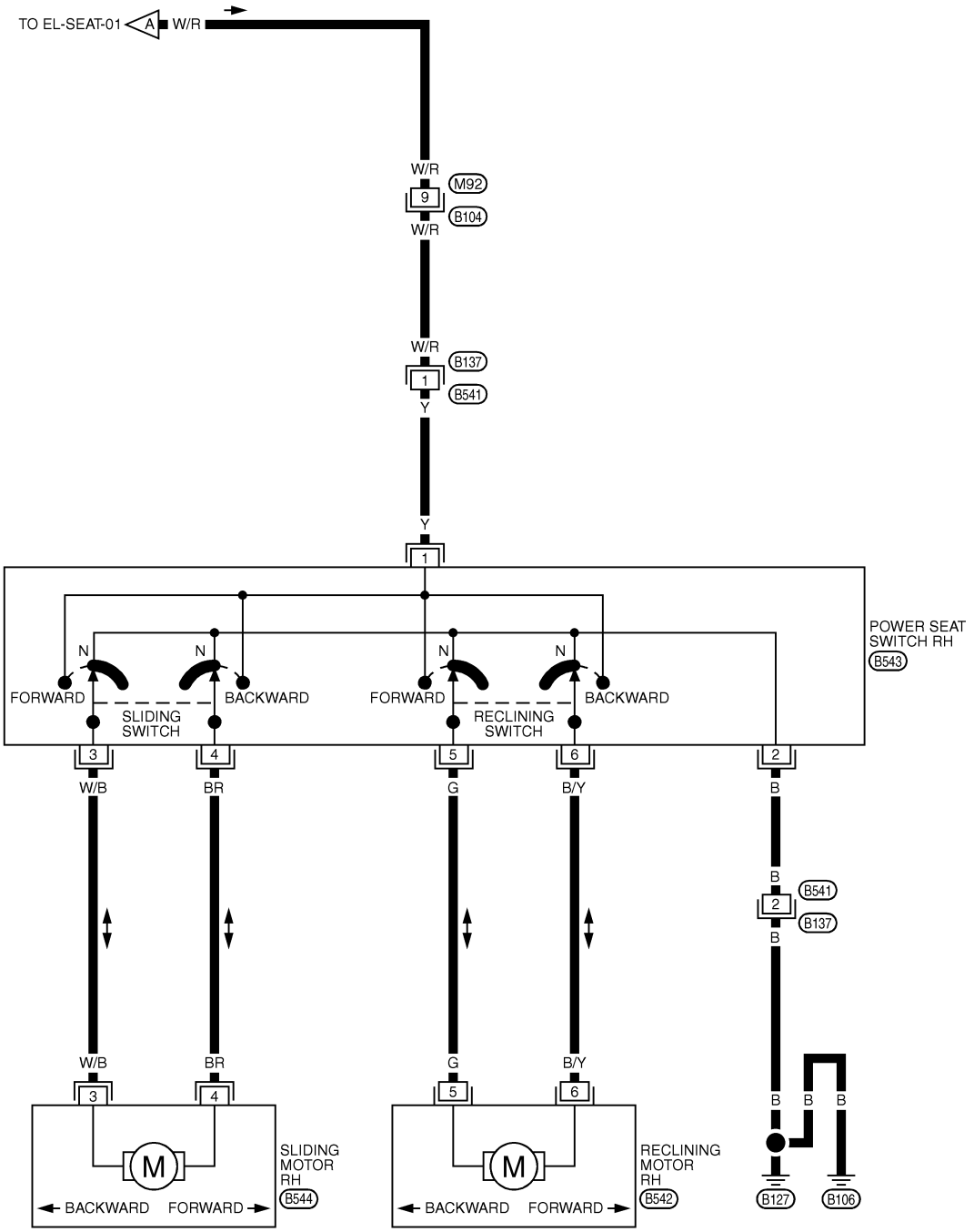


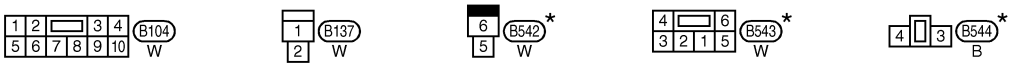


* : THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", EL SECTION.

MEL297K

EL-SEAT-03





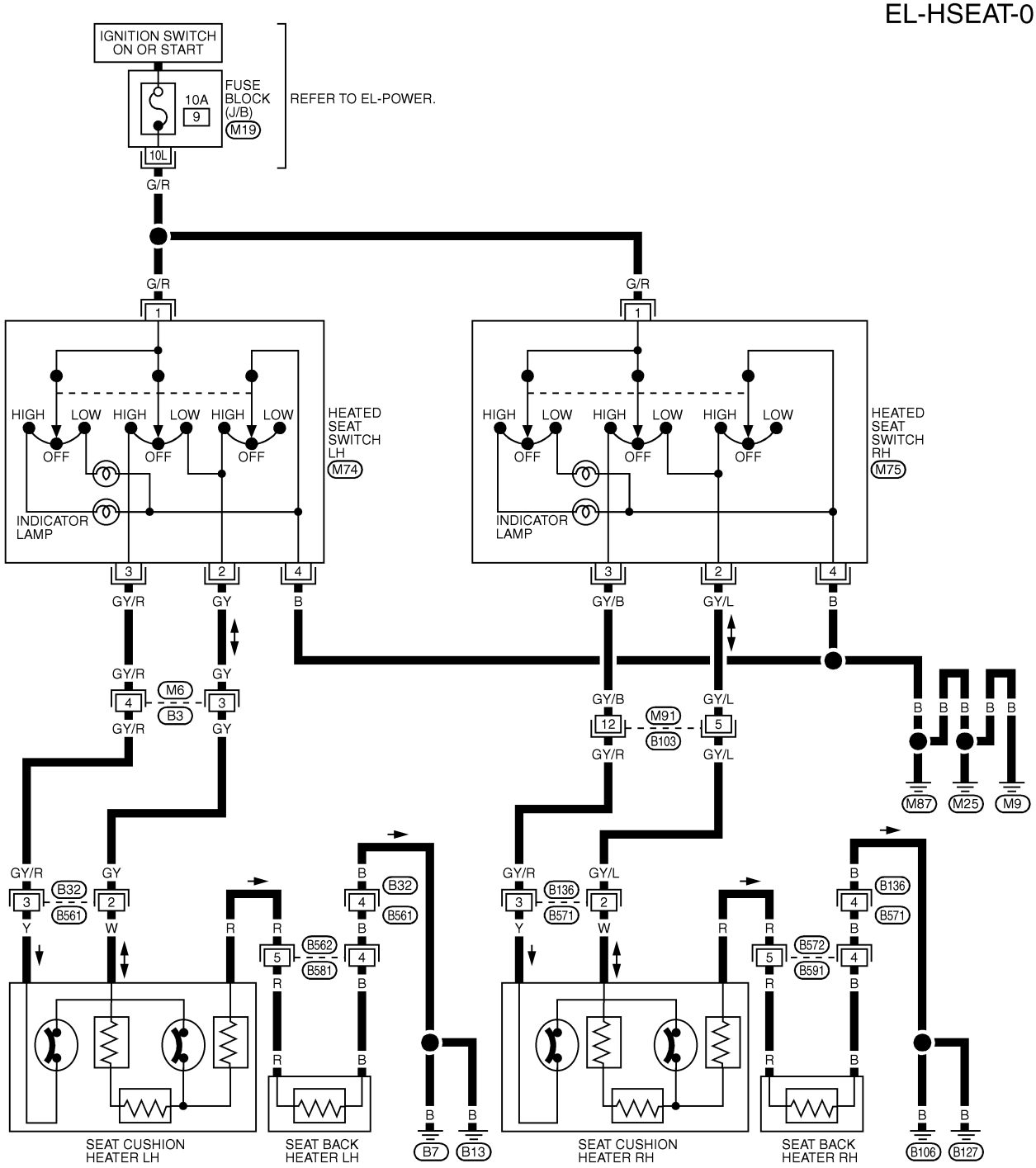
* : THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", EL SECTION.

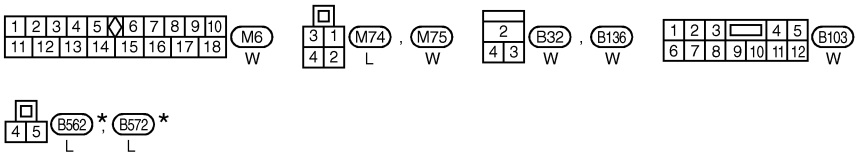
MEL648K

Wiring Diagram — HSEAT —

NHEL0093

EL-HSEAT-01





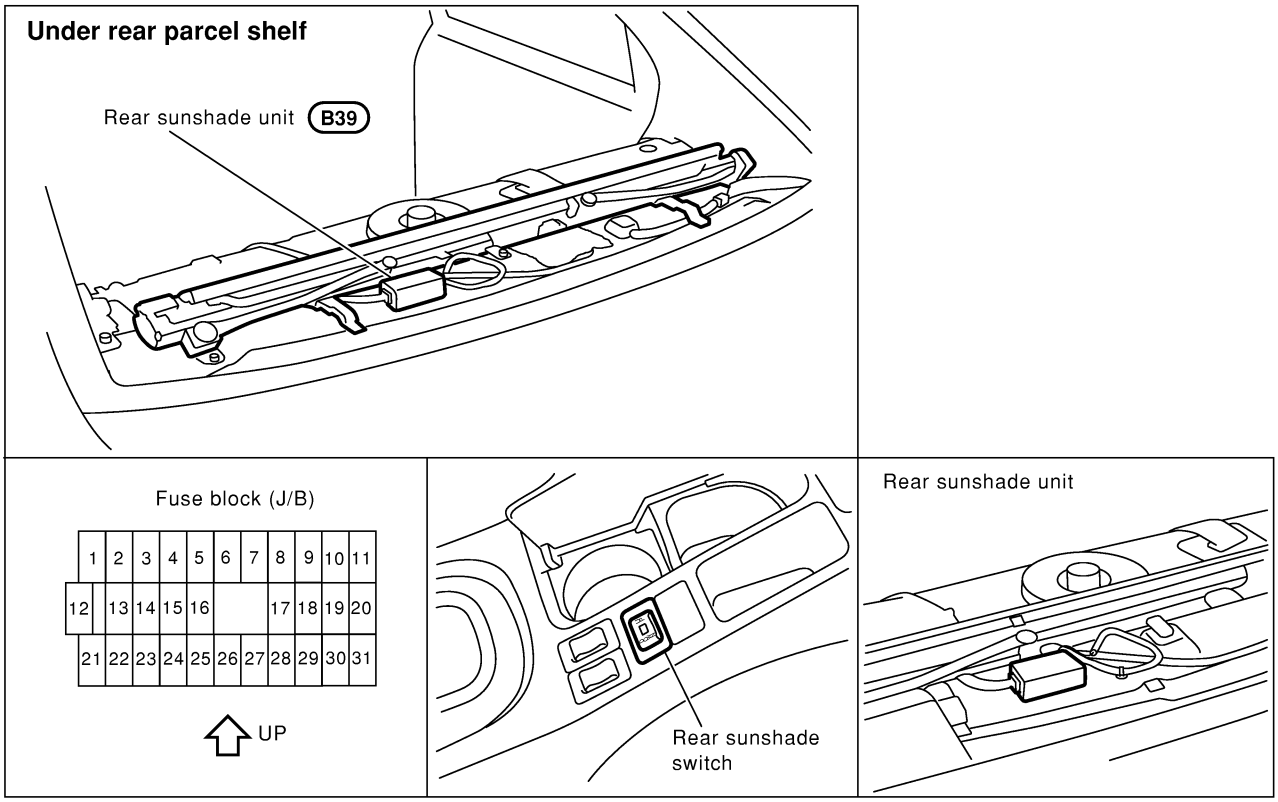
∗ : THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", EL SECTION.

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

MEL652K

Component Parts and Harness Connector Location

NHEL0278



SEL636W

System Description

=NHEL0279

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

- through 10A fuse [No. 23, located in the fuse block (J/B)]
- to rear sunshade unit terminal 5.

Ground is supplied at all times

- to rear sunshade unit terminal 6
- through body ground M9, M25 and M87.

OPEN OPERATION

NHEL0279S01

When rear sunshade switch is turned to “UP”, the ground is supplied to rear sunshade unit terminal 1. Based on the ground signal to control unit terminal 6 through rear sunshade unit terminal 1,
power is supplied

- to motor terminal 2
- from control unit terminal 9

and ground is supplied

- to motor terminal 1
- from control unit terminal 8.

When sunshade is fully up, control unit stops to supply power to motor based on the signal from UP/DOWN limit switch.

CLOSE OPERATION

NHEL0279S02

When rear sunshade switch is turned to “DOWN”, ground is supplied to rear sunshade unit terminal 2. Based on the ground signal to control unit terminal 7 through rear sunshade unit terminal 2,
power is supplied

- to motor terminal 1
- from control unit terminal 8

and ground is supplied

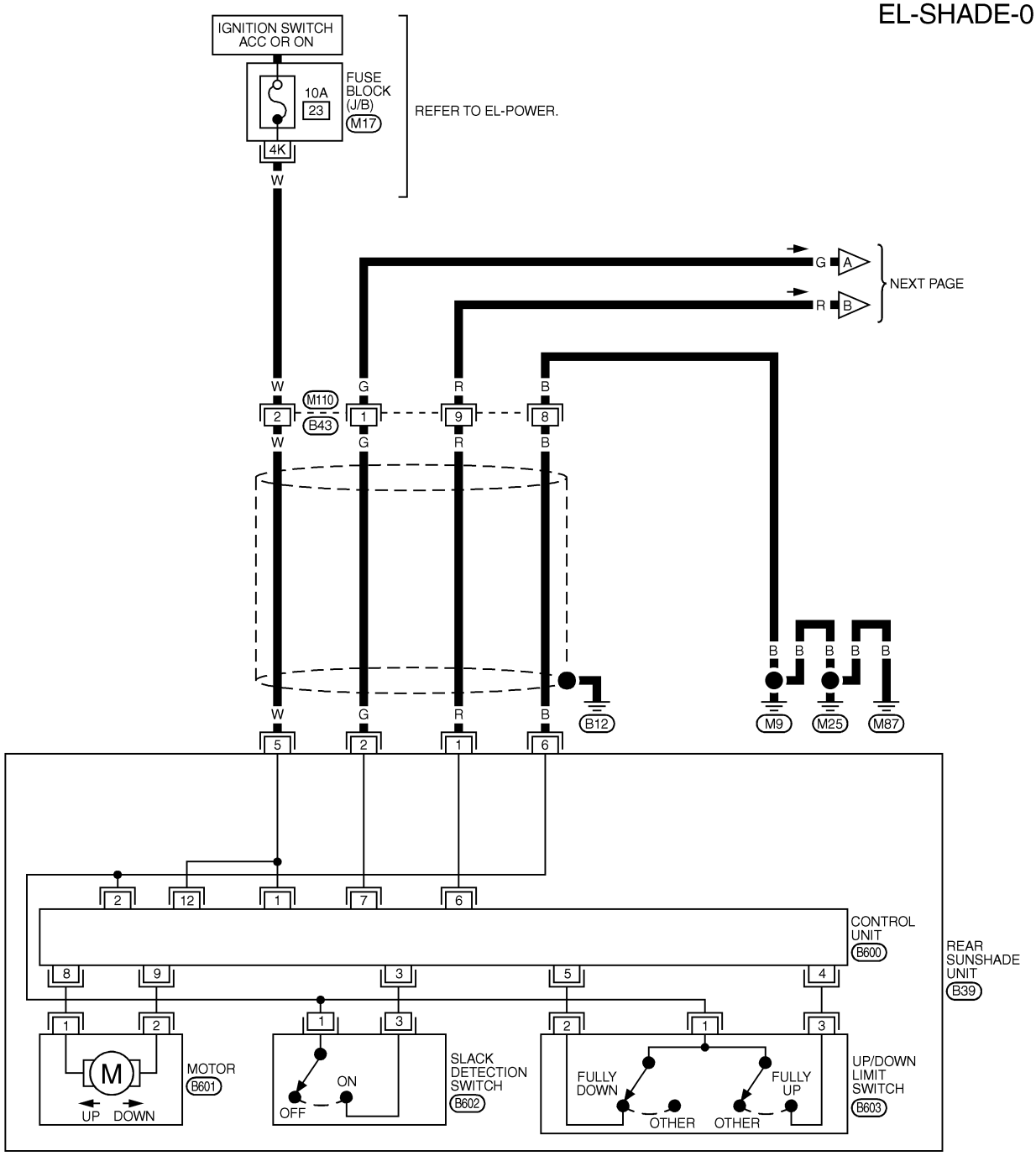
- to motor terminal 2
- from control unit terminal 9.

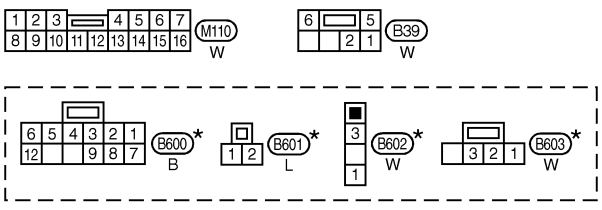
When sunshade is fully down, control unit stops to supply power to motor based on the signal from UP/DOWN limit switch.
Once the sunshade switch is pushed, the open or close operation will be continued until the control unit detects full open or full close based on the signal from UP/DOWN limit switch. During open or close operation of sunshade, the input signal from sunshade switch is ignored.
When control unit detects the slack of sunshade based on the signal from slack detection switch, the motor will be stopped. When control unit detects no slack of sunshade based on the signal from slack detection switch, power is supplied again to motor after 1 sec. after no slack is detected.

Wiring Diagram — SHADE —

NHEL0280

EL-SHADE-01

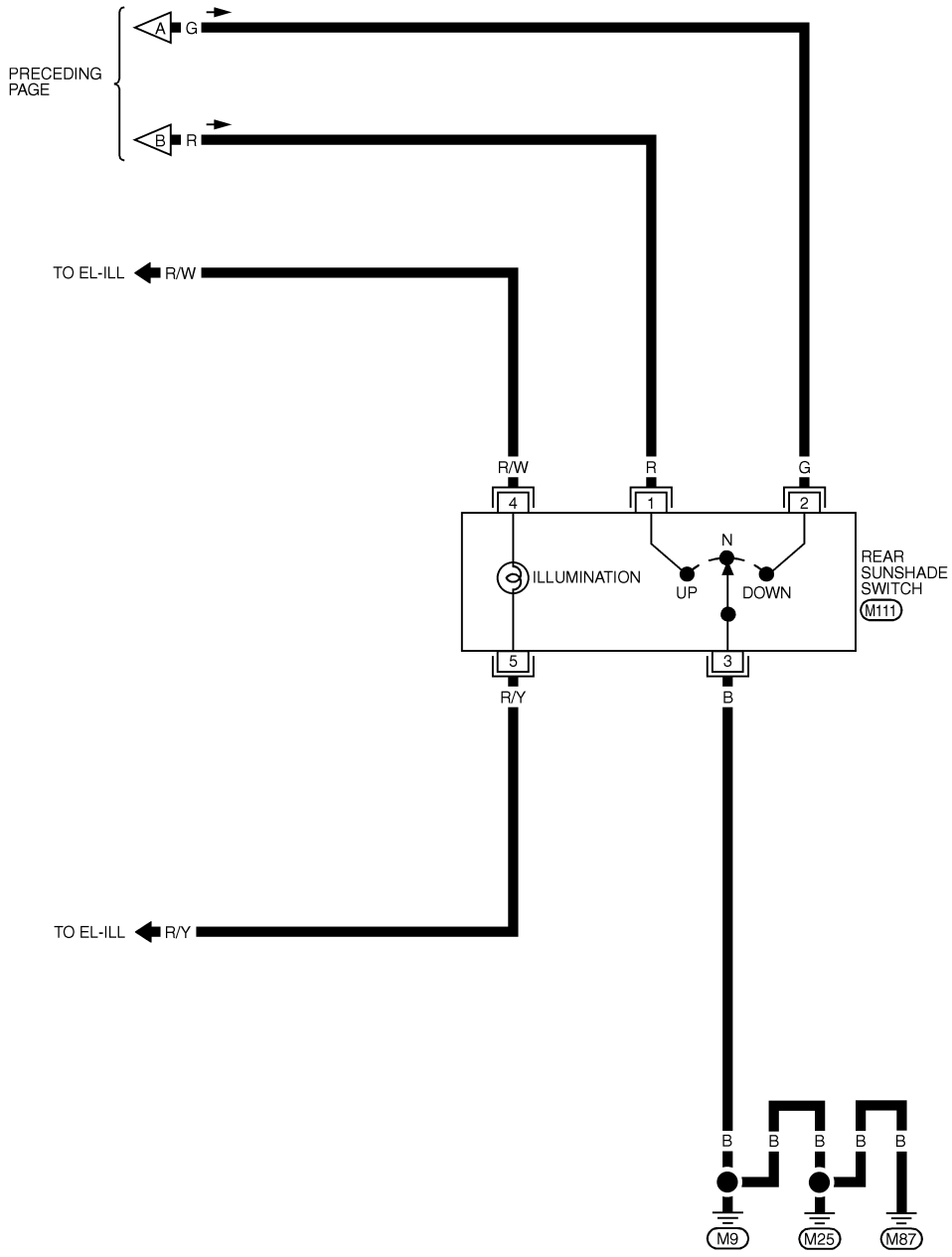


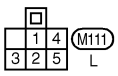


★ : THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", EL SECTION.

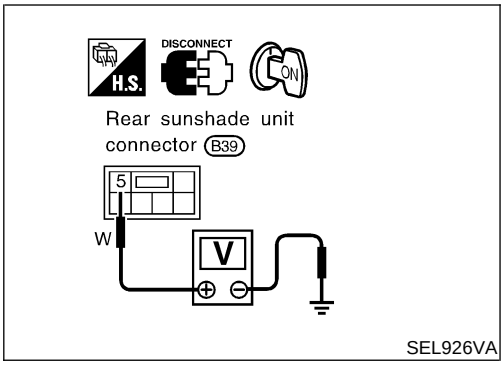
REFER TO THE FOLLOWING.
M17 -FUSE BLOCK-JUNCTION BOX (J/B)

MEL478K


PRECEDING PAGE
A
G
B
R
TO EL-ILL
R/W
R/W
R
G
4
1
2
ILLUMINATION
N
UP
DOWN
REAR SUNSHADE SWITCH
M111
5
3
R/Y
B
TO EL-ILL
R/Y
B
B
B
B
B
M9
M25
M87


1
4
3
2
5
M111
L

MEL479K



Trouble Diagnoses

NHEL0281

POWER SUPPLY CIRCUIT CHECK

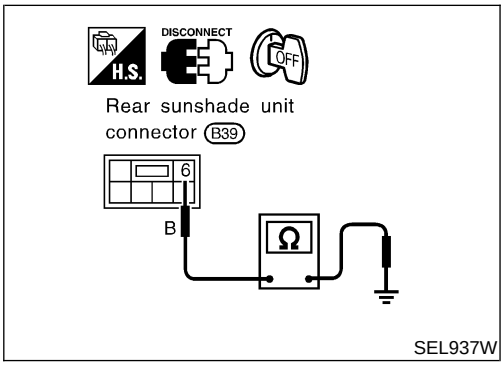
NHEL0281S01

Check voltage between rear sunshade unit terminal 5 and ground.

Terminals	Ignition switch position			
	OFF	ACC	ON	START
5 - Ground	0V	Battery voltage		

If NG, check the following.

- 10A fuse [No. 23, located in fuse block (J/B)]
- Harness for open or short between 10A fuse [No. 23, located in fuse block (J/B)] and rear sunshade unit.



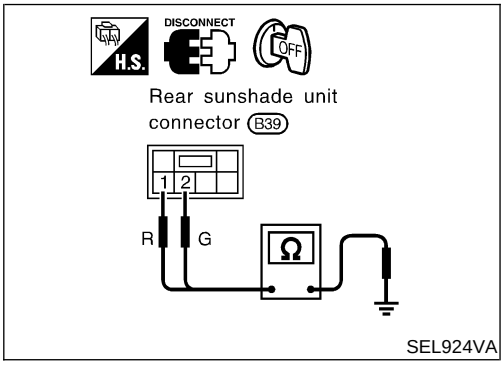
GROUND CIRCUIT CHECK

NHEL0281S02

Check continuity between rear sunshade unit terminal 6 and ground.

Terminals	Continuity
6 - Ground	Yes

If NG, check harness for open between rear sunshade unit terminal 6 and body ground M9, M25 and M87.



REAR SUNSHADE SIGNAL CIRCUIT CHECK

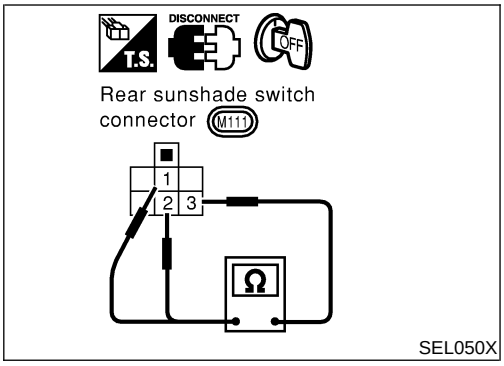
NHEL0281S03

1. Disconnect rear sunshade unit connector.
2. Check the following continuity.

Terminals	Switch position	Continuity
1 - Ground	Up	Yes
	Neutral	No
	Down	No
2 - Ground	Up	No
	Neutral	No
	Down	Yes

If NG, check the following.

- Harness for open or short between rear sunshade unit and rear sunshade switch
- Harness for open or short between rear sunshade switch and ground
- Rear sunshade switch



REAR SUNSHADE SWITCH CHECK

NHEL0281S04

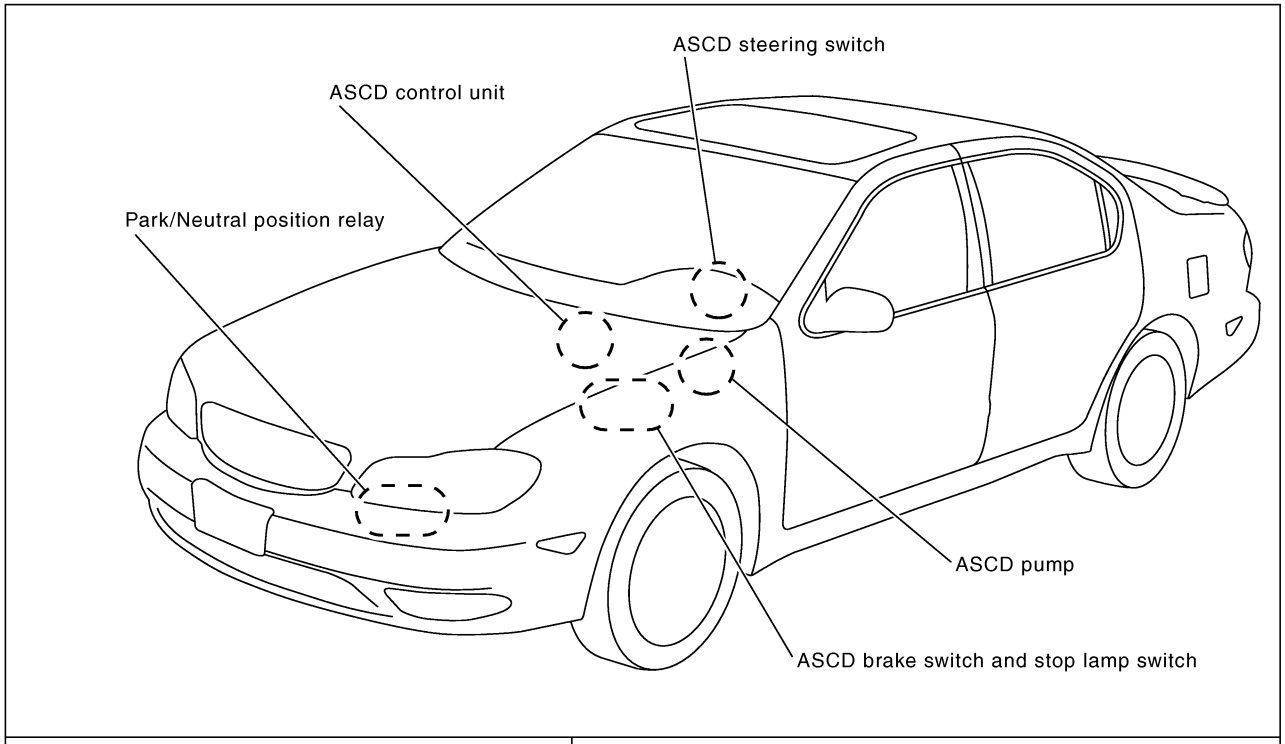
1. Disconnect rear sunshade switch.
2. Check continuity between rear sunshade switch terminals.

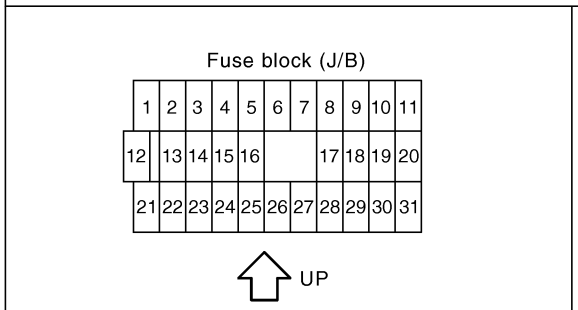
Terminals	Switch position	Continuity
1 - 3	Up	Yes
	Neutral	No
	Down	No
2 - 3	Up	No
	Neutral	No
	Down	Yes

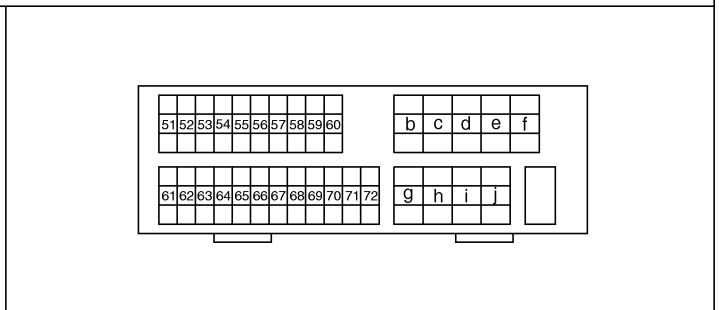
If NG, replace rear sunshade switch.

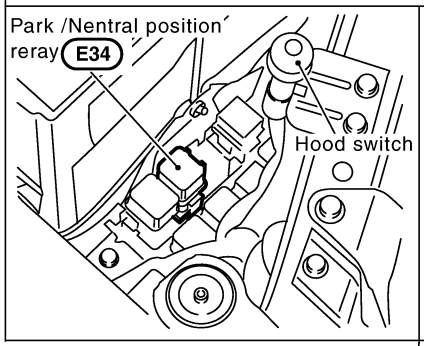
Component Parts and Harness Connector Location

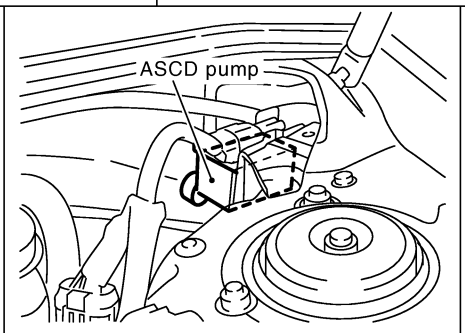
NHEL0094

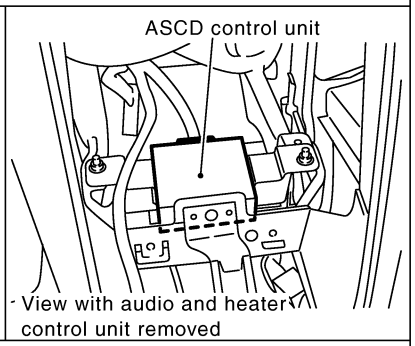


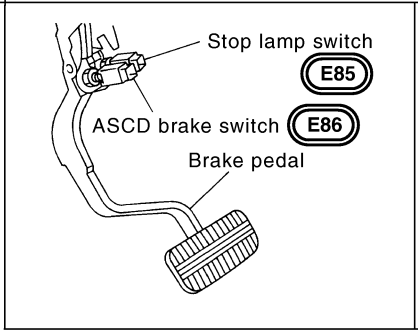


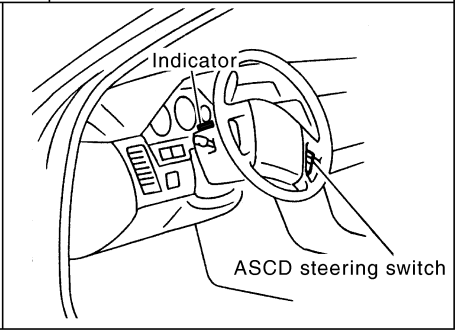












SEL051X

System Description

NHEL0190

Refer to Owner's Manual for ASCD operating instructions.

POWER SUPPLY AND GROUND

NHEL0190S01

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

- through 10A fuse [No. 30, located in the fuse block (J/B)]
- to ASCD brake switch terminal 1 and
- to combination meter terminals 50 and 66,
- through 15A fuse [No. 20, located in the fuse block (J/B)]
- to park/neutral position relay terminal 1,
- through 10A fuse [No. 10, located in the fuse block (J/B)]
- to ASCD control unit terminal 5, and

Power is supplied at all times:

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

When park/neutral position is in the P or N position, ground is supplied:

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

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

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

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

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

OPERATION

NHEL0190S02

Set Operation

NHEL0190S0201

To activate the ASCD, all of following conditions must exist.
Ground is supplied to ASCD control unit terminal 9.

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

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

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

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

- to combination meter terminals 51 to illuminate SET indicator.

A/T Overdrive Control during Cruise Control Driving

NHEL0190S0202

When the vehicle speed is approximately 8 km/h (5 MPH) below set speed, a signal is sent

- from ASCD control unit terminal 10
- to TCM (transmission control module) terminal 24.

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

ASCD Shifting Control

NHEL0190S0207

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

- Throttle position sensor from ECM

- A/T shift solenoid valve A

Coast Operation

NHEL0190S0203

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

Accel Operation

NHEL0190S0204

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

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

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

Cancel Operation

NHEL0190S0205

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

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

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

Resume Operation

NHEL0190S0206

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

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

ASCD PUMP OPERATION

NHEL0190S03

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

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

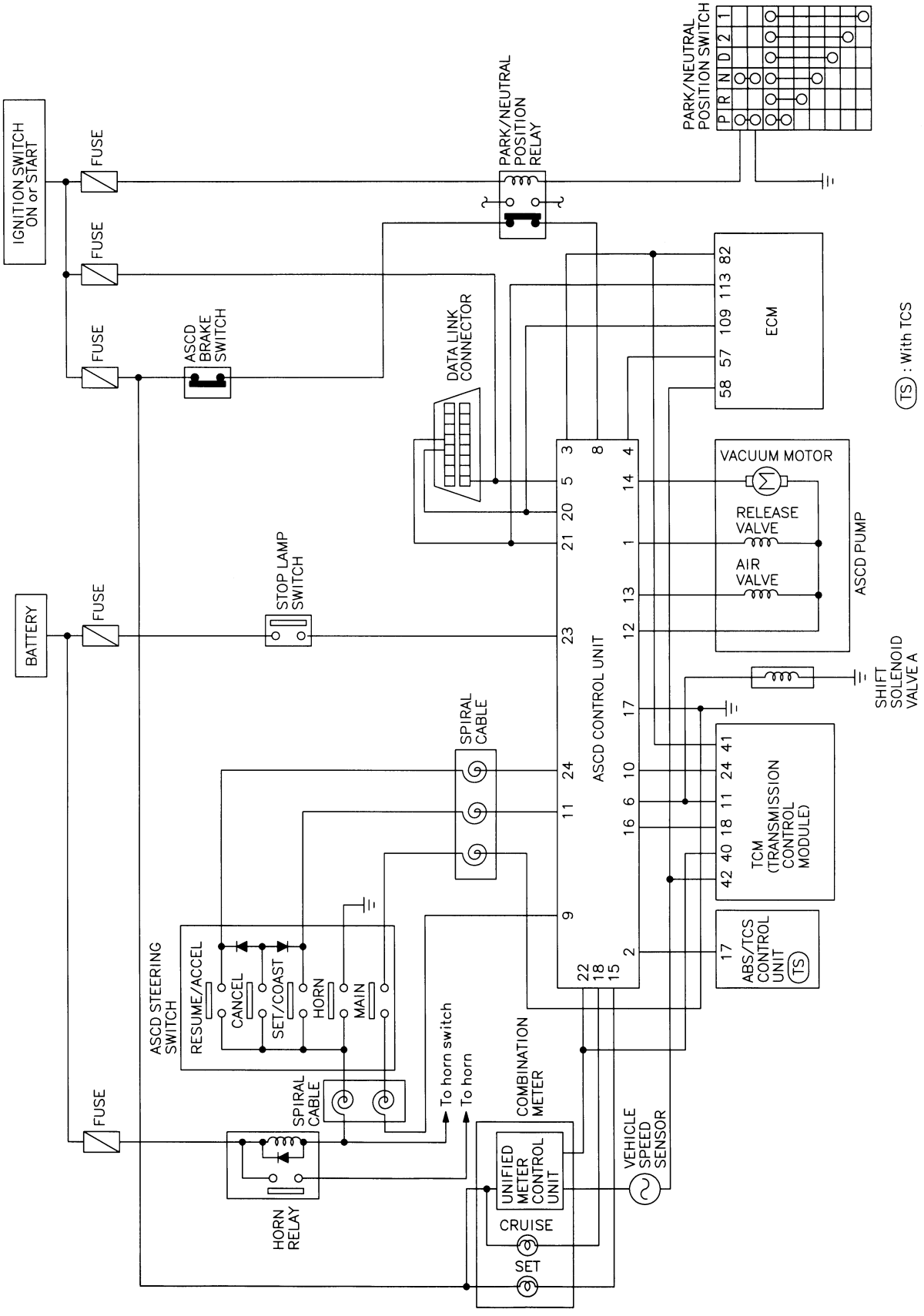
Ground is supplied to vacuum motor, air valve and release valve from ASCD control unit depending on the operated condition as shown in the below table.
The pump is connected to ASCD actuator by vacuum hose. When the ASCD pump is activated, the ASCD pump vacuum the diaphragm of ASCD actuator to control throttle cable.

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

*1: When power and ground is supplied, valve is closed.
*2: Set position held.

Schematic

NHEL0096



MEL488K

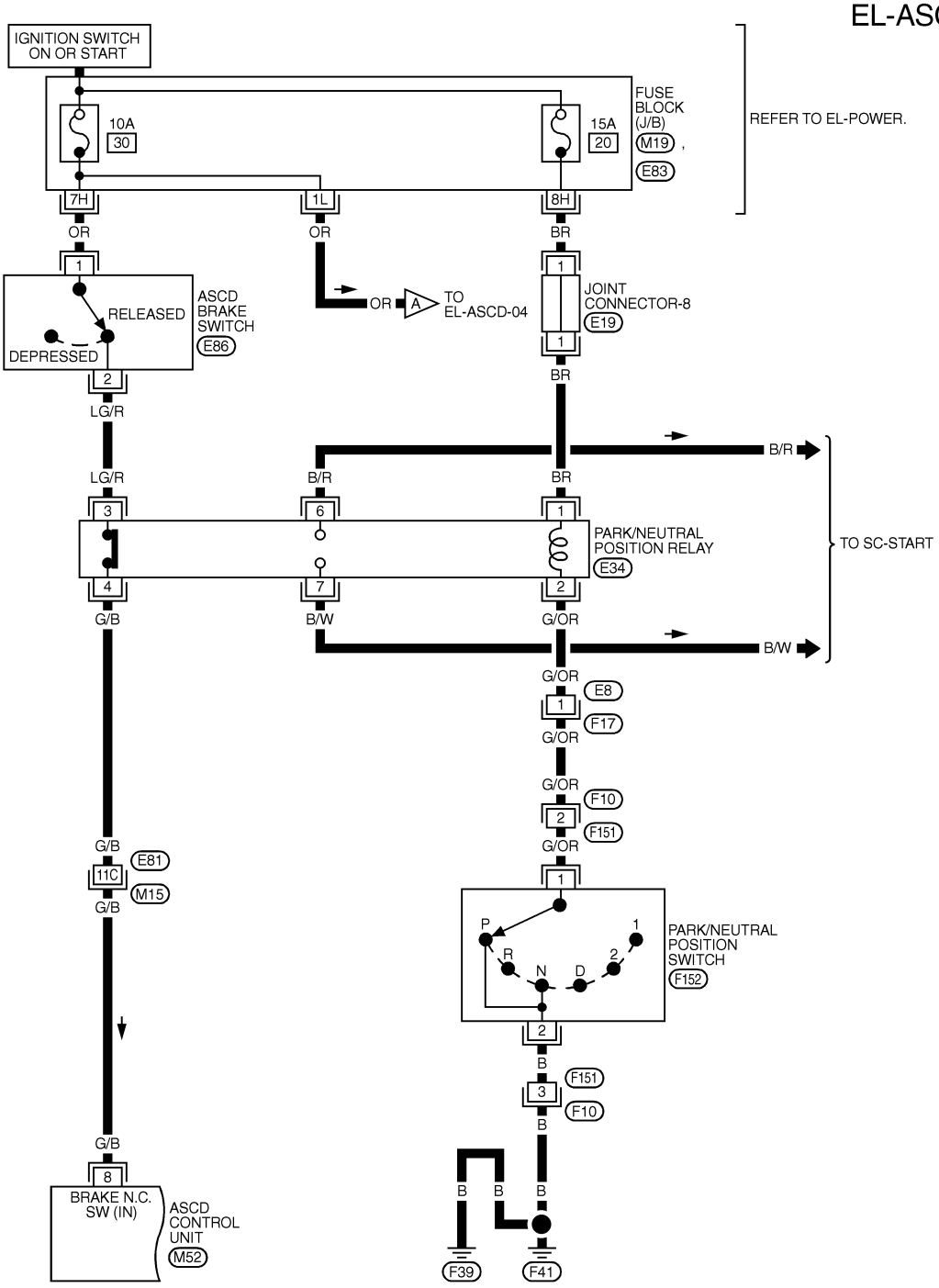
Wiring Diagram — ASCD —

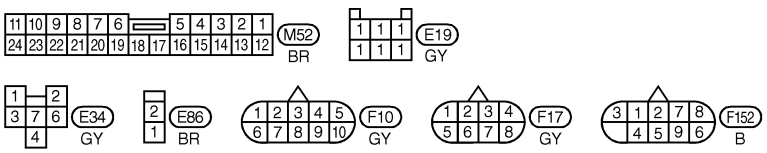
NHEL0097

FIG. 1

NHEL0097S01

EL-ASCD-01



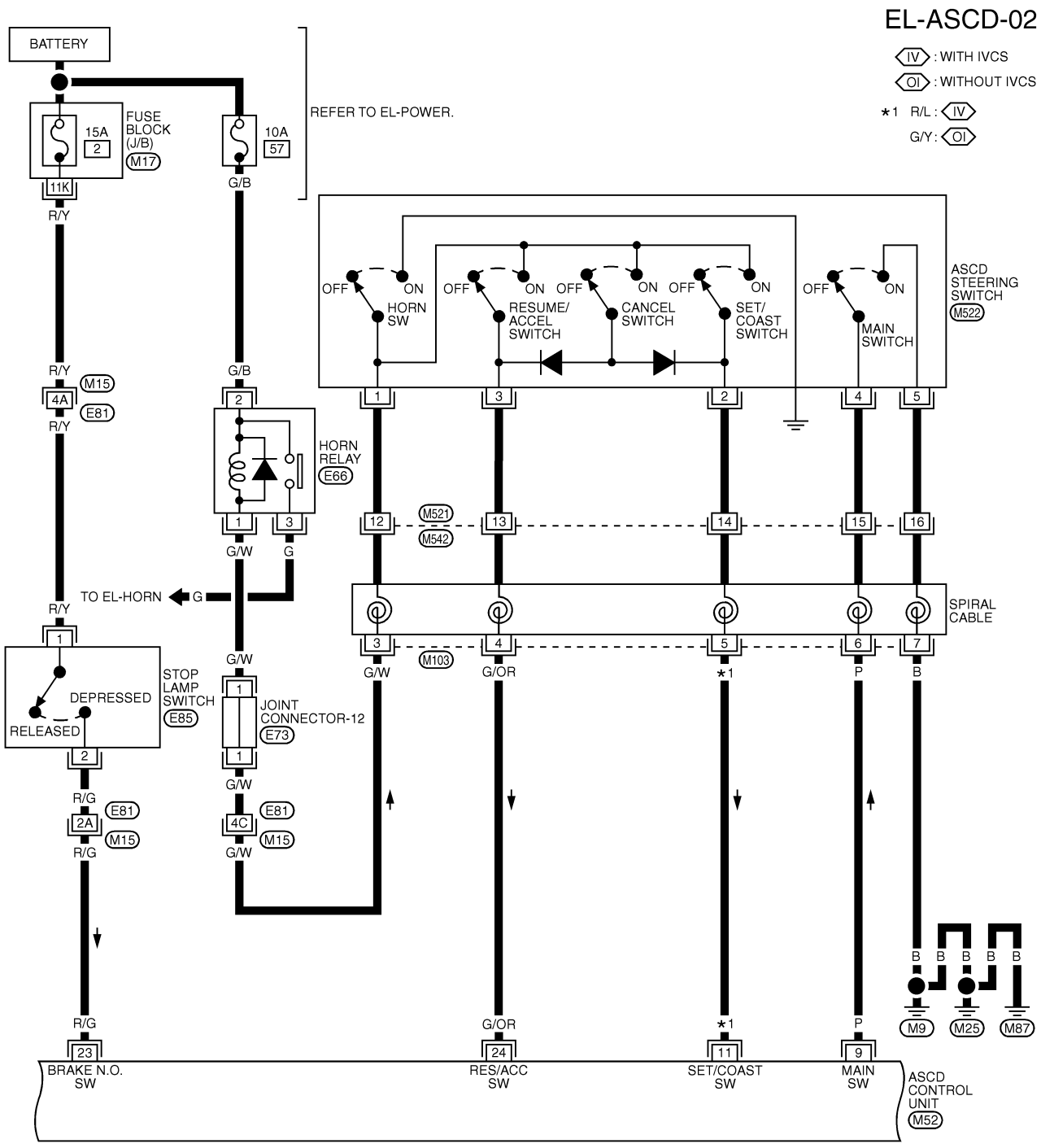


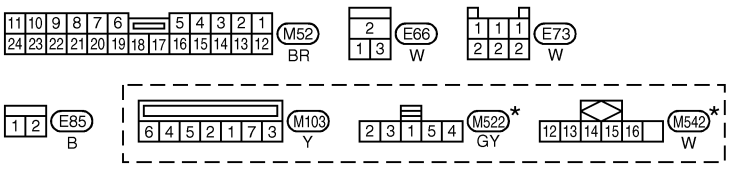
REFER TO THE FOLLOWING.
M15 , E81 -SUPER MULTIPLE JUNCTION (SMJ)
M19 -FUSE BLOCK-JUNCTION BOX (J/B)
E83 -FUSE BLOCK-JUNCTION BOX (J/B)

MEL489K

FIG. 2

NHEL0097S02





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

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

MEL225L

FIG. 3

NHEL0097S03

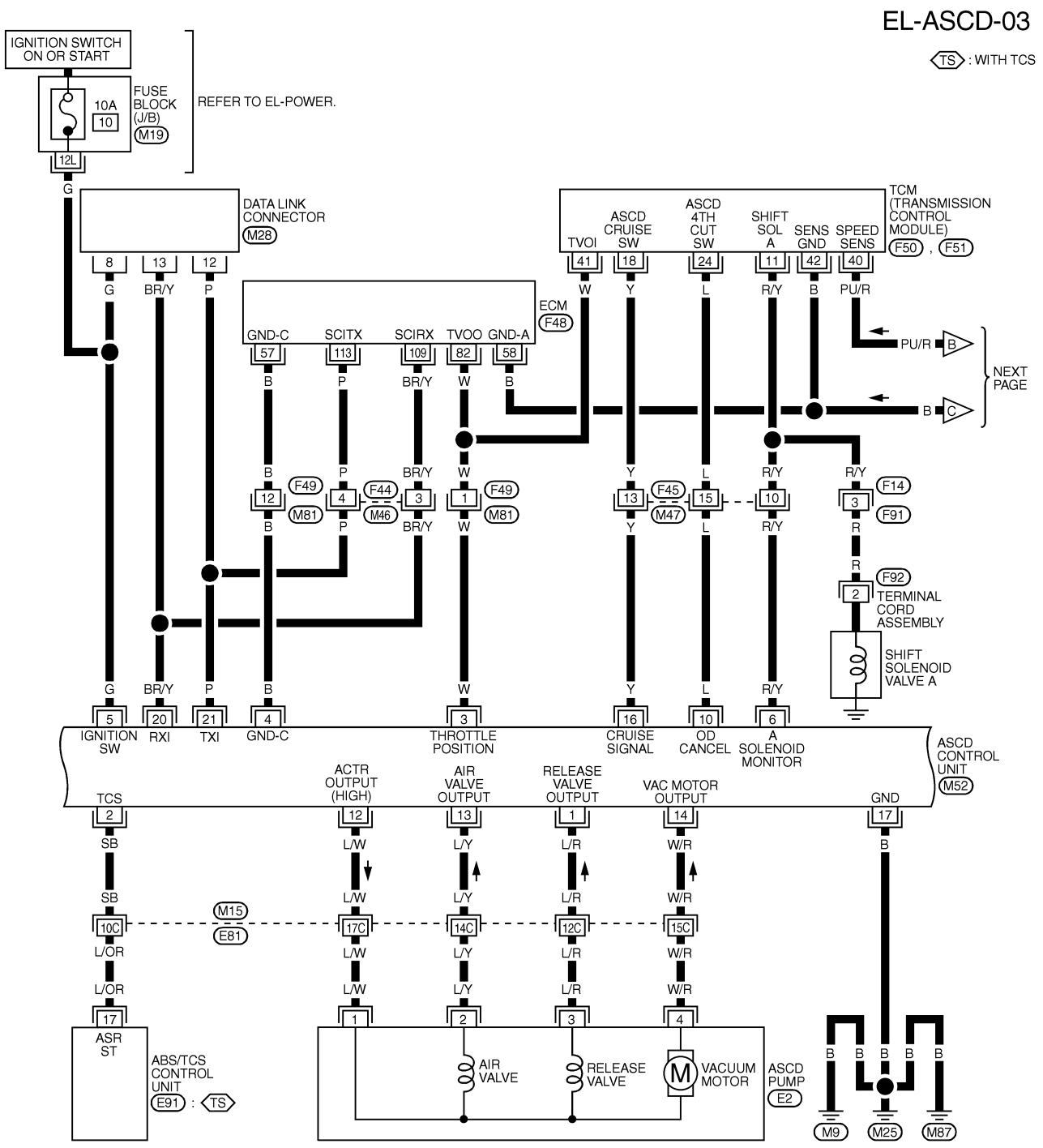
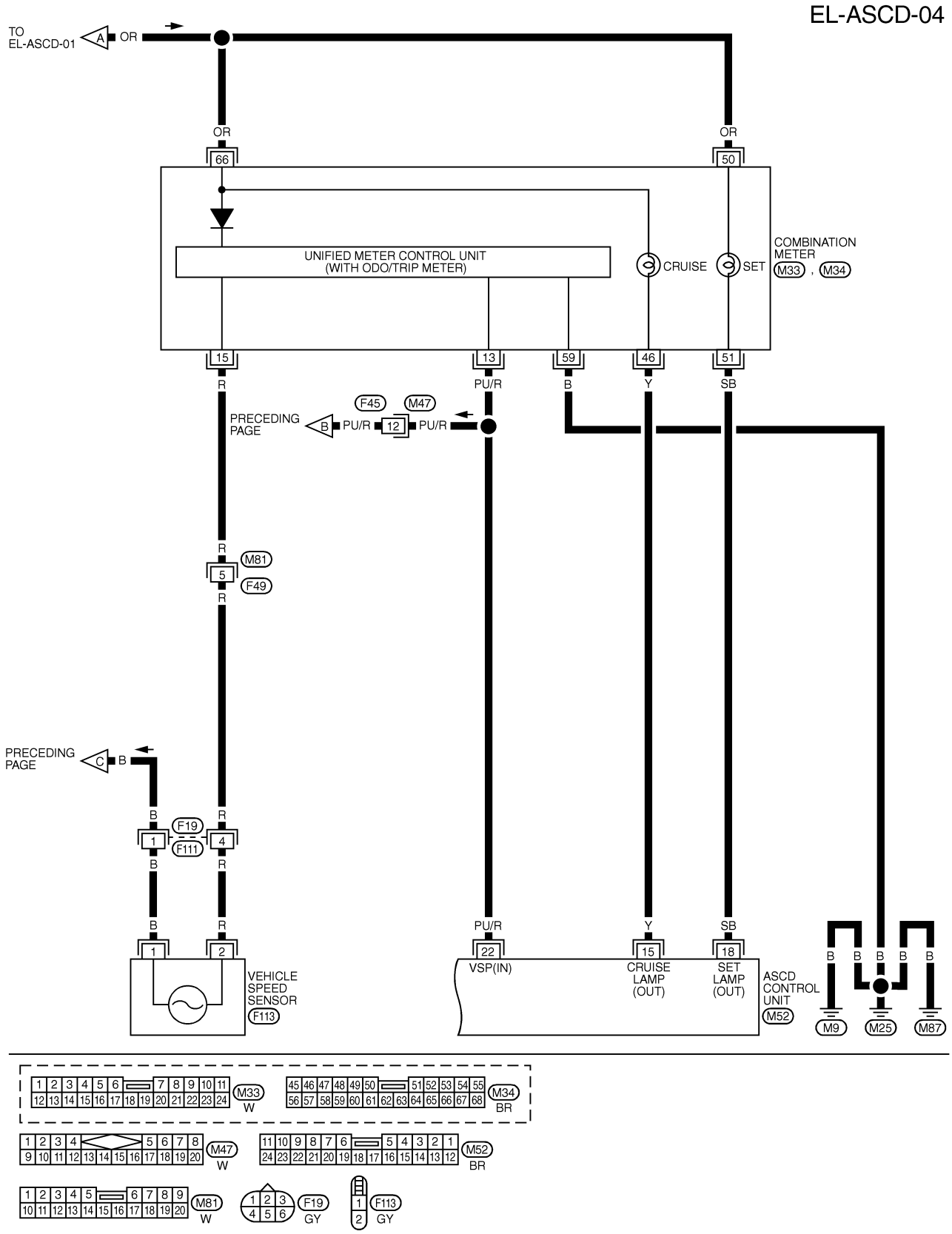
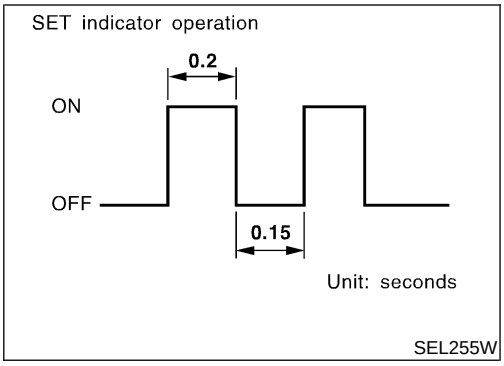


FIG. 4

NHEL0097S04



MEL492K



Fail-safe System

NHEL0228

DESCRIPTION

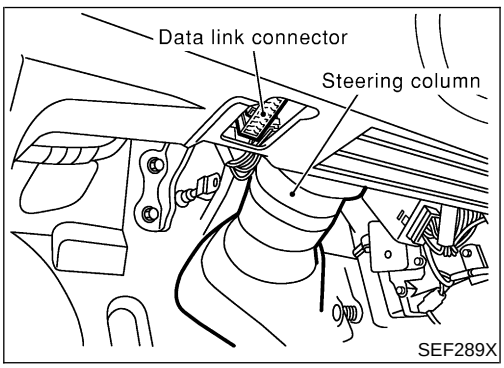
NHEL0228S01

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

MALFUNCTION DETECTION CONDITIONS

NHEL0228S02

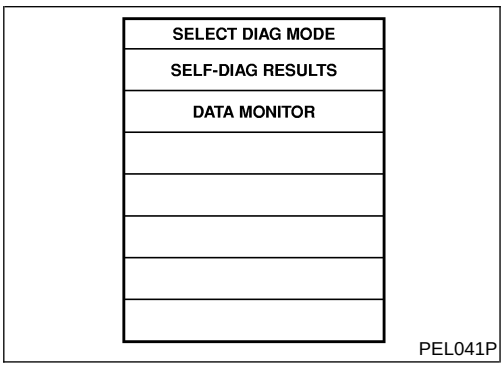
Detection conditions	ASCD operation during malfunction detection
• ASCD steering (RESUME/ACCEL, CANCEL, SET/COAST) switch is stuck. • Vacuum motor ground circuit or power circuit is open or shorted. • Air valve ground circuit or power circuit is open or shorted. • Release valve ground circuit or power circuit is open or shorted. • Vehicle speed sensor is faulty. • ASCD control unit internal circuit is malfunctioning.	• ASCD is deactivated. • Vehicle speed memory is canceled.
• ASCD brake switch or stop lamp switch is faulty.	• ASCD is deactivated. • Vehicle speed memory is not canceled.



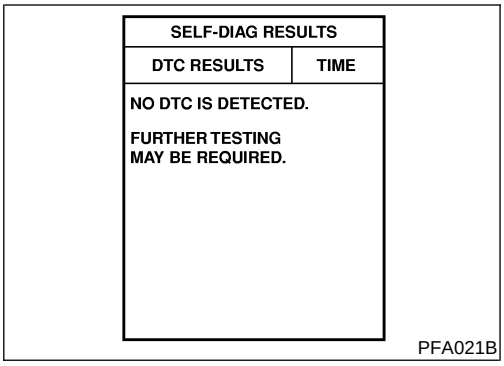
CONSULT-II Inspection Procedure

NHEL0229

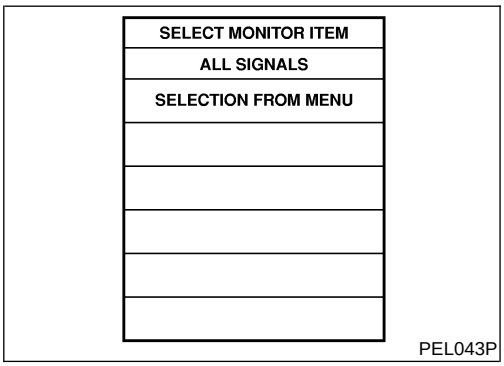
1. Turn ignition switch OFF.
2. Connect CONSULT-II to data link connector.



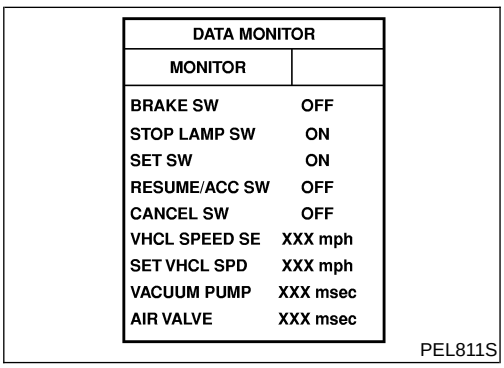
3. Turn ignition switch ON.
4. Turn ASCD main switch ON.
5. Touch START (on CONSULT-II display).
6. Touch ASCD.
7. Touch SELF-DIAG RESULTS.



- Self-diagnostic results are shown on display.
  Refer to "CONSULT-II self-diagnostic Results" table (EL-277).



8. Touch DATA MONITOR.



- Touch START.
- Data monitor results are shown on display.
  Refer to "CONSULT-II Data Monitor " table (EL-278).

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

CONSULT-II Self-diagnostic Results

NHEL0230

Diagnostic item	Description	Repair/Check order
NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED.	• Even if no malfunction is indicated, further testing may be required as far as the customer complains.	—
POWER SUPPLY-VALVE	• The power supply circuit for the ASCD pump is open. (An abnormally high voltage is entered.)	ASCD PUMP CIRCUIT CHECK (EL-287)
VACUUM PUMP	• The vacuum motor circuit is open or shorted. (An abnormally high or low voltage is entered.)	ASCD PUMP CIRCUIT CHECK (EL-287)
AIR VALVE	• The air valve circuit is open or shorted. (An abnormally high or low voltage is entered.)	ASCD PUMP CIRCUIT CHECK (EL-287)
RELEASE VALVE	• The release valve circuit is open or shorted. (An abnormally high or low voltage is entered.)	ASCD PUMP CIRCUIT CHECK (EL-287)
VHCL SP·S/FAILSAFE	• The vehicle speed sensor is malfunctioning.	VEHICLE SPEED SENSOR CHECK (EL-286)
CONTROL UNIT	• The ASCD control unit is malfunctioning.	Replace ASCD control unit.
BRAKE SW/STOP/L SW	• The brake switch or stop lamp switch circuit is malfunctioning.	ASCD BRAKE/STOP LAMP SWITCH CHECK (EL-282)

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

Diagnostic item	Description	Repair/Check order
COMMAND SW	• The steering switch (set/coast switch, resume/accel switch or cancel switch) is malfunctioning.	ASCD STEERING SWITCH CHECK (EL-284)
ECM	• ECM is malfunctioning.	THROTTLE POSITION SENSOR SIGNAL CHECK (EL-290)

CONSULT-II Data Monitor

NHEL0231

Monitored item	Description
BRAKE SW	• Indicates [ON/OFF] condition of the brake switch and park/neutral position relay.
AT OD MONITOR	• Indicates [ON/OFF] condition of A/T O/D (shift solenoid valve A).
STOP LAMP SW	• Indicates [ON/OFF] condition of the stop lamp switch.
MAIN SW	• Indicates [ON/OFF] condition of main switch.
SET SW	• Indicates [ON/OFF] condition of the set switch.
RESUME/ACC SW	• Indicates [ON/OFF] condition of the resume/accelerate switch.
CANCEL SW	• Indicates [ON/OFF] condition of the cancel.
VHCL SPEED SE	• The present vehicle speed computed from the vehicle speed sensor signal is displayed.
SET VHCL SPD	• The preset vehicle speed is displayed.
VACUUM PUMP	• The operation time of the vacuum pump is displayed.
AIR VALVE	• The operation time of the air valve is displayed.
PW SUP-VALVE	• Indicates [ON/OFF] condition of the circuit for the air valve and the release valve.
CRUISE LAMP	• Indicates [ON/OFF] condition of the set lamp.
MAIN LAMP	• Indicates [ON/OFF] condition of cruise lamp.
A/T·OD CANCEL	• Indicates [ON/OFF] condition of the OD cancel.
FAIL SAFE·LOW	• The fail-safe (LOW) circuit function is displayed.
FAIL SAFE·SPD	• The fail-safe (SPEED) circuit function is displayed.
TCS MONITOR	• Indicates [ON/OFF] condition of TCS.
THRTL POS SEN	• The voltage of throttle position sensor is displayed.
R/LORD ESTMT	• The present road/load computed by ASCD control unit is displayed.

Trouble Diagnoses

NHEL0232

SYMPTOM CHART

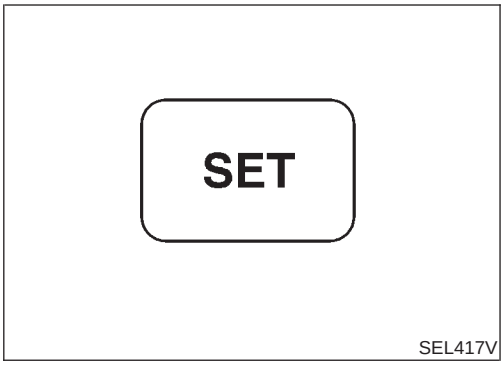
NHEL0232S01

PROCEDURE	Diagnostic procedure						
REFERENCE PAGE (EL-)	280	281	282	284	286	287	289
SYMPTOM	FAIL-SAFE SYSTEM CHECK	POWER SUPPLY AND GROUND CIRCUIT CHECK	ASCD BRAKE/STOP LAMP SWITCH CHECK	ASCD STEERING SWITCH CHECK	VEHICLE SPEED SENSOR CHECK	ASCD PUMP CIRCUIT CHECK	ASCD ACTUATOR/PUMP CHECK
ASCD cannot be set. (“CRUISE” indicator lamp does not ON.)		X		X★3			
ASCD cannot be set. (“SET” indicator lamp does not blink.)			X	X	X		
ASCD cannot be set. (“SET” indicator lamp blinks.★1)	X		X	X	X	X	
Vehicle speed does not decrease after SET/COAST switch has been pressed.				X			X
Vehicle speed does not return to the set speed after RESUME/ACCEL switch has been pressed.★2				X			X
Vehicle speed does not increase after RESUME/ACCEL switch has been pressed.				X			X
System is not released after CANCEL switch (steering) has been pressed.				X			X
Large difference between set speed and actual vehicle speed.					X	X	X
Deceleration is greatest immediately after ASCD has been set.					X	X	X

★1: It indicates that system is in fail-safe. After completing diagnostic procedures, perform “FAIL-SAFE SYSTEM CHECK” (EL-280) to verify repairs.

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

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

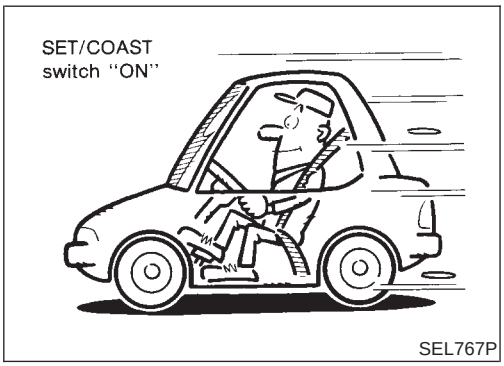


SEL417V

FAIL-SAFE SYSTEM CHECK

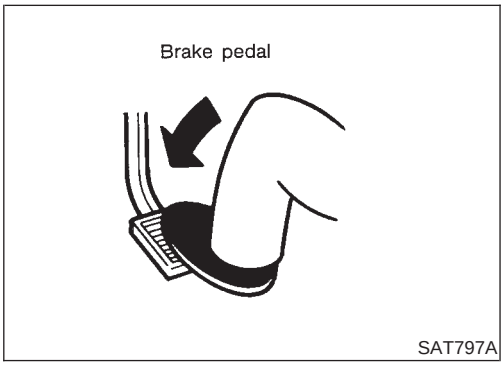
=NHEL0232S02

1. Turn ignition switch to ON position.
2. Turn ASCD main switch to ON and check if the "set indicator" blinks.
   If the indicator lamp blinks, check the following.
- ASCD steering switch. Refer to EL-284.



SEL767P

3. Drive the vehicle at more than 40 km/h (25 MPH) and push SET/COAST switch.
   If the indicator lamp blinks, check the following.
- Vehicle speed sensor. Refer to EL-286.
- ASCD pump circuit. Refer to EL-287.
- Replace control unit.



SAT797A

4. Depress brake pedal slowly (brake pedal should be depressed more than 5 seconds).
   If the indicator lamp blinks, check the following.
- ASCD brake/stop lamp switch. Refer to EL-282.

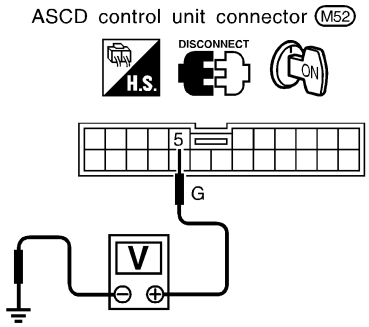
5. END. (System is OK.)

POWER SUPPLY AND GROUND CIRCUIT CHECK

=NHEL0232S03

1	CHECK POWER SUPPLY CIRCUIT FOR ASCD CONTROL UNIT

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



Does battery voltage exist?

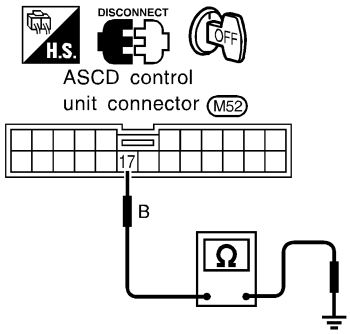
SEL256W

Refer to wiring diagram in EL-274.

Yes	▶	GO TO 2.
No	▶	**Check the following.** ● 10A fuse (No. 10 located in the fuse block) ● Harness for open or short

2	CHECK GROUND CIRCUIT FOR ASCD CONTROL UNIT

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



Does continuity exist?

SEL257W

Refer to wiring diagram in EL-274.

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

ASCD BRAKE/STOP LAMP SWITCH CHECK

=NHEL0232S06

1 CHECK ASCD BRAKE SWITCH CIRCUIT

With CONSULT-II

See "BRAKE SW" in "DATA MONITOR" mode.

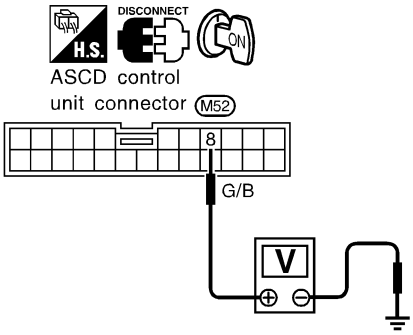
DATA MONITOR	
MONITOR	
BRAKE SW	OFF

When brake pedal is depressed or
A/T selector lever is in "N" or "P" range:
BRAKE SW OFF
When brake pedal is released and
A/T selector lever is not in "N" or "P" range:
BRAKE SW ON

SEL286WA

Without CONSULT-II

1. Disconnect ASCD control unit harness connector.
2. Turn ignition switch ON.
3. Check voltage between ASCD control unit harness connector terminal 8 and ground.



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

SEL258WC

OK or NG

OK	▶	GO TO 2.
NG	▶	**Check the following.** ● ASCD brake switch Refer to "Electrical Component Inspection" (EL-291). ● Park/neutral position switch Refer to "Electrical Component Inspection" (EL-291). ● Park/neutral position relay ● Harness for open or short

2	CHECK STOP LAMP SWITCH CIRCUIT

With CONSULT-II

See "STOP LAMP" in "DATA MONITOR" mode.

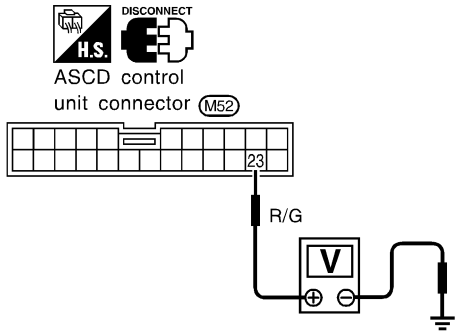
DATA MONITOR	
MONITOR	
STOP LAMP SW	OFF

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

SEL287W

Without CONSULT-II

1. Disconnect ASCD control unit harness connector.
2. Check voltage between ASCD control unit harness connector terminal 23 and ground.



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

SEL259W

Refer to wiring diagram in EL-273.

OK or NG

OK	▶	ASCD brake/stop lamp switch is OK.
NG	▶	**Check the following.** ● 15A fuse [No. 2, located in the fuse block (J/B)] ● Harness for open or short between ASCD control unit and stop lamp switch ● Harness for open or short between fuse and stop lamp switch ● Stop lamp switch Refer to "Electrical Component Inspection" (EL-291).

ASCD STEERING SWITCH CHECK

=NHEL0232S07

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

With CONSULT-II

See "MAIN SW", "RESUME/ACC SW", "SET SW" and "CANCEL SW" in "DATA MONITOR" mode.

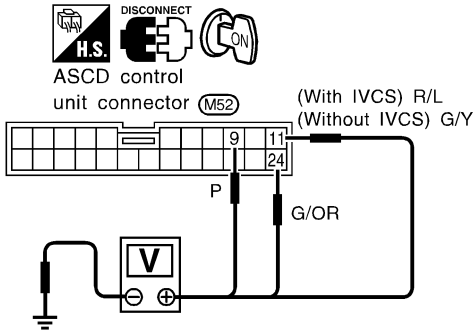
DATA MONITOR	
MONITOR	
MAIN SW	OFF
SET SW	OFF
RESUME/ACC SW	OFF
CANCEL SW	OFF

MAIN SW, RESUME/ACC SW,
SET SW and CANCEL SW
When switch is pressed:
ON
When switch is released:
OFF

SEL288W

Without CONSULT-II

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



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

SEL260WB

Refer to wiring diagram in EL-273.

OK or NG

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

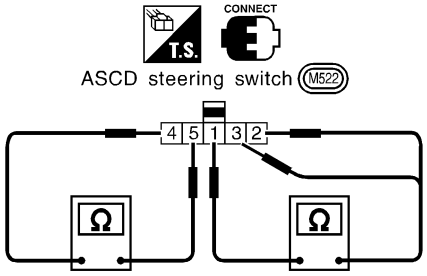
2 **CHECK POWER SUPPLY FOR ASCD STEERING SWITCH**

Does horn work?

Yes	▶	GO TO 3.
No	▶	**Check the following.** ● 10A fuse (No. 57, located in the relay box) ● Horn relay ● Harness for open or short

3	CHECK ASCD STEERING SWITCH

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



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

SEL764W

OK or NG

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

VEHICLE SPEED SENSOR CHECK

=NHEL0232S08

1	CHECK SPEEDOMETER OPERATION	
Refer to wiring diagram in EL-275. **Does speedometer operate normally?**		
Yes	▶	GO TO 2.
No	▶	Check speedometer and vehicle speed sensor circuit. Refer to EL-153.

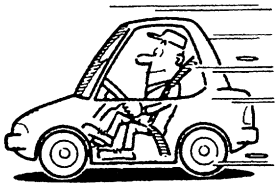
2	CHECK VEHICLE SPEED INPUT	

With CONSULT-II

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

NOTE:

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



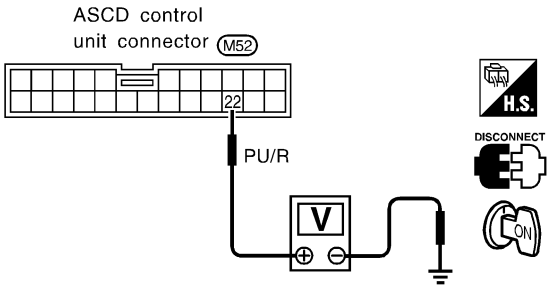
DATA MONITOR	
MONITOR	
VHCL SPEED SE	0 km/h

Is actual vehicle speed indicated?

SEL289W

Without CONSULT-II

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



Does voltage pointer deflect?

SEL263W

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

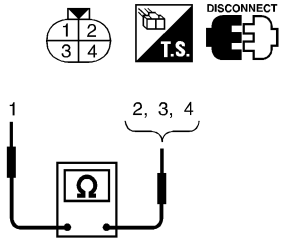
ASCD PUMP CIRCUIT CHECK

NHEL0232S09

1 CHECK ASCD PUMP

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

ASCD pump connector (E2)



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

SEL262W

Refer to wiring diagram in EL-274.

OK or NG

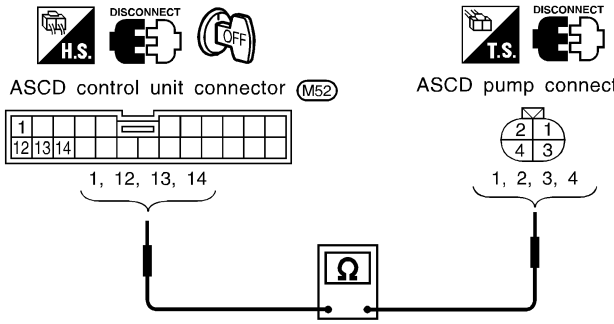
OK	▶	GO TO 2.
NG	▶	Replace ASCD pump.

2 CHECK ASCD PUMP CIRCUIT

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

ASCD control unit connector (M52)

ASCD pump connector (E2)



Circuit	Terminal	
	ASCD control unit	ASCD pump
ASCD pump power suply	12	1
Air valve	13	2
Release valve	1	3
Vacuum motor	14	4

Continuity should exist.

SEL269W

OK or NG

OK	▶	GO TO 3.
NG	▶	Repair harness.

3	CHECK ASCD PUMP POWER SUPPLY

With CONSULT-II

1. Jack up the drive wheels.
2. See "PW SUP-VALVE" in "DATA MONITOR" mode.
3. Maintain the conditions below.

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

DATA MONITOR	
MONITOR	
PW SUP-VALVE	OFF

"PW SUP-VALVE" should be ON.

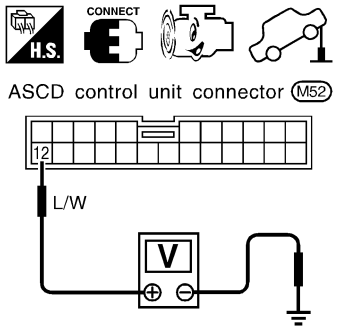
SEL290W

Without CONSULT-II

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

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

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



Battery voltage should exist.

SEL381W

OK or NG

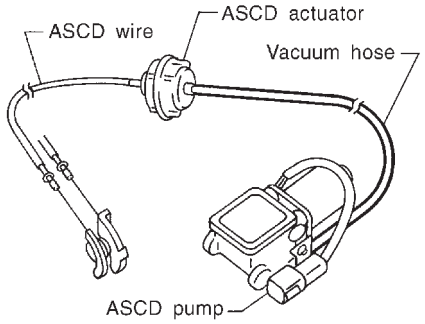
OK	▶	ASCD pump power supply is OK.
NG	▶	Replace ASCD control unit.

ASCD ACTUATOR/PUMP CHECK

=NHEL0232S10

1	CHECK VACUUM HOSE

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



MEL402G

OK or NG

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

2	CHECK ASCD WIRE

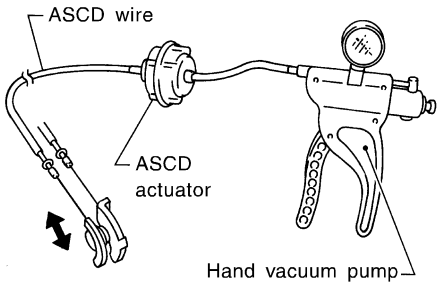
Check wire for improper installation, rust formation or breaks.

OK or NG

OK	▶	GO TO 3.
NG	▶	Repair or replace wire. Refer to "ASCD Wire Adjustment" (EL-292).

3	CHECK ASCD ACTUATOR

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



Apply –40 kPa (–0.41 kg/cm^2, –5.8 psi) vacuum to ASCD actuator with hand vacuum pump.
ASCD wire should move to pull throttle drum.
Wait 10 seconds and check for decrease in vacuum pressure.

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

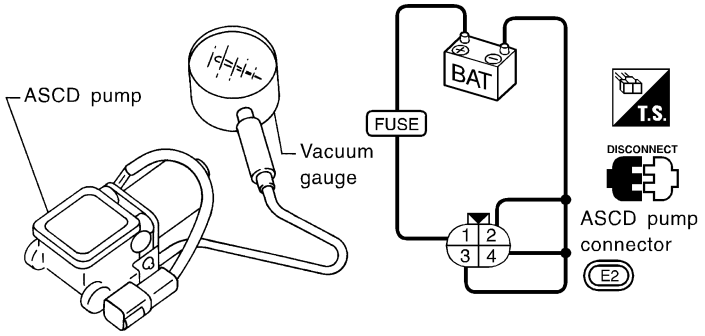
SEL264W

OK or NG

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

4	CHECK ASCD PUMP

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



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

A vacuum pressure of at least −40 kPa (−0.41 kg/cm², −5.8 psi) should be generated.

SEL265W

OK or NG

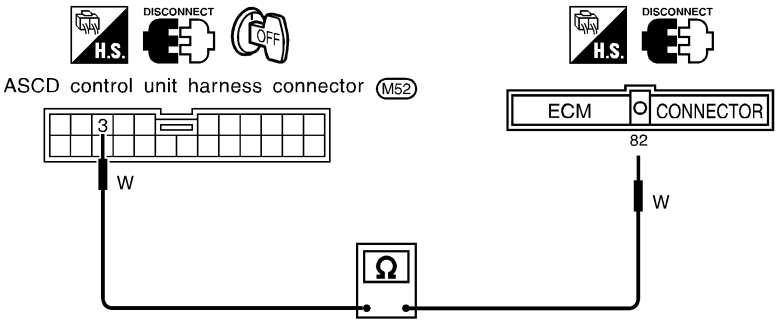
OK	▶	INSPECTION END
NG	▶	Replace ASCD pump.

THROTTLE POSITION SENSOR SIGNAL CHECK

NHEL0232S11

1	CHECK THROTTLE POSITION SENSOR SIGNAL CIRCUIT

1. Disconnect ECM harness connector and ASCD control unit harness connector.
2. Check continuity between ECM terminal 82 and ASCD control unit terminal 3.

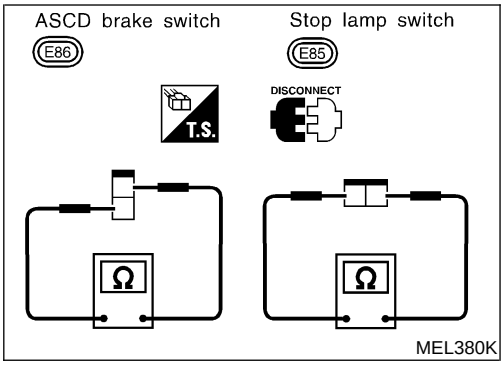


Continuity should exist.

SEL268W

OK or NG

OK	▶	Refer to "TROUBLE DIAGNOSIS FOR INTERMITTENT INCIDENT" in EC section. (EC-157)
NG	▶	Repair harness.



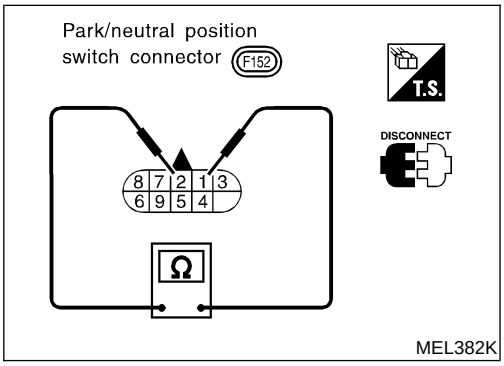
Electrical Component Inspection

ASCD BRAKE SWITCH AND STOP LAMP SWITCH

=NHEL0100
NHEL0100S02

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

Check each switch after adjusting brake pedal — refer to BR section.



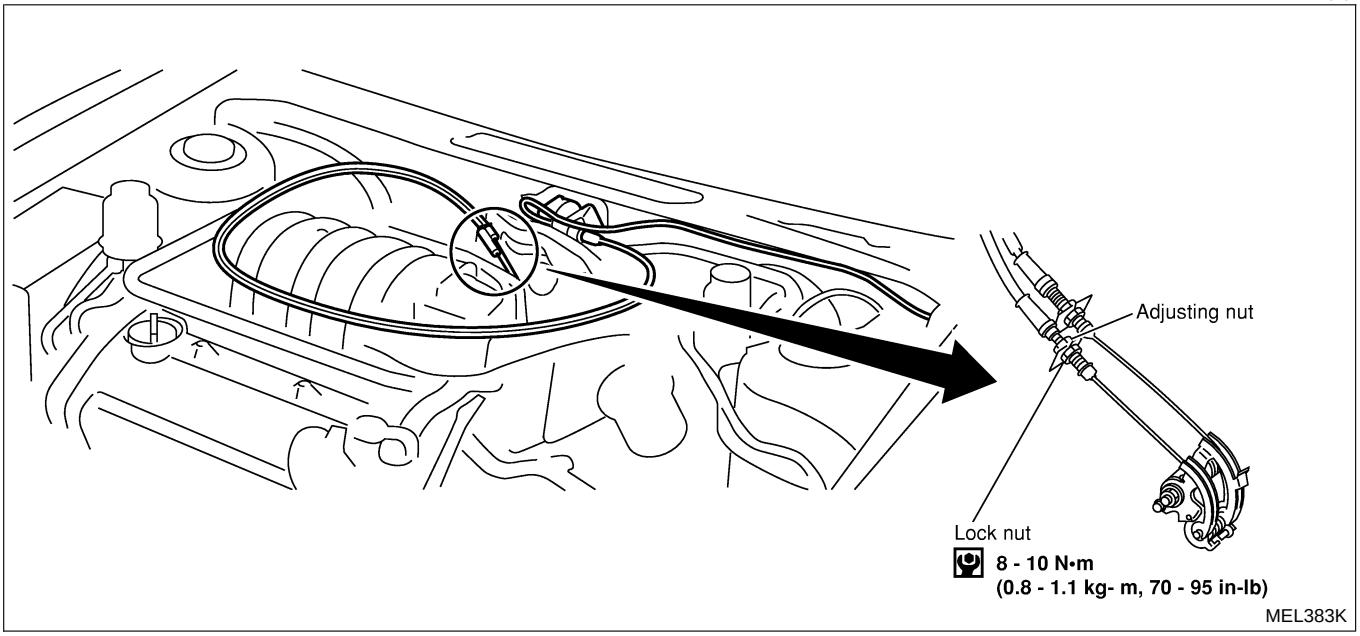
PARK/NEUTRAL POSITION SWITCH

NHEL0100S03

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

ASCD Wire Adjustment

=NHEL0101



CAUTION:

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

Adjust the tension of ASCD wire in the following manner.

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

System Description

NHEL0191

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

With ignition switch in ON or START position, power is supplied
- through 10A fuse [No. 10, located in the fuse block (J/B)]
- to power window relay terminal 2, and
- to smart entrance control unit terminal 33.

Ground is supplied to power window relay terminal 1
- through body grounds M9, M25 and M87.

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

MANUAL OPERATION

NHEL0191S01

Front Door LH

NHEL0191S0101

Ground is supplied
- to front power window main switch terminal 5
- through body grounds M9, M25 and M87.

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

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

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

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

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

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

Front Door RH

NHEL0191S0102

Ground is supplied
- to front power window main switch terminal 5
- through body grounds M9, M25 and M87.

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

FRONT POWER WINDOW MAIN SWITCH OPERATION
Signal is received
- through front power window main switch terminal 8

- to front power window switch RH terminal 11.

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

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

Ground is supplied

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

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

Rear Door LH

NHEL0191S0104

Ground is supplied

- to front power window main switch terminal 5
- through body grounds the M9, M25 and M87.

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

FRONT POWER WINDOW MAIN SWITCH OPERATION
Power is supplied

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

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

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

Ground is supplied

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

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

Rear Door RH

NHEL0191S0103

Rear door windows will raise and lower in the same manner as front door LH window.

AUTO OPERATION

NHEL0191S02

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

POWER WINDOW LOCK

NHEL0191S03

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, ground of the front and rear power window switches in the front power window main switch is disconnected. This prevents the power window motors from operating.

RETAINED POWER OPERATION

NHEL0191S04

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

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

Ground is always supplied

- to power window relay terminal 1

- through body grounds M9, M25 and M87.

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

INTERRUPTION DETECTION FUNCTION

NHEL0191S05

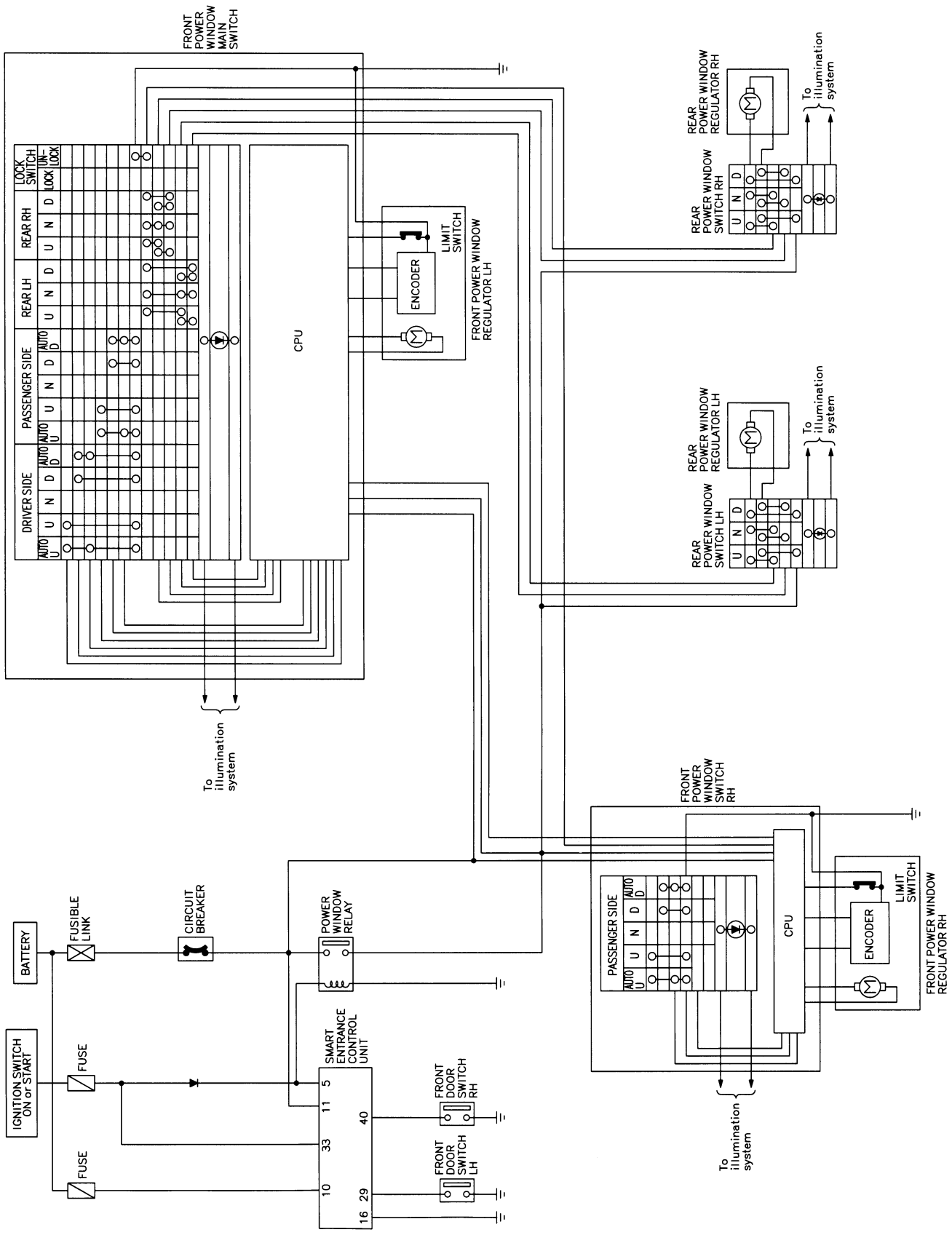
Front power window main switch and front power window switch RH monitor the power window regulator motor operation and the power window position (full closed or other) for driver's and passenger's power window by the signals from encoder and limit switch in front power window regulator.
When front power window main switch or front power window switch RH detects interruption during the following close operation in the driver's or passenger's side door,

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

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

Schematic

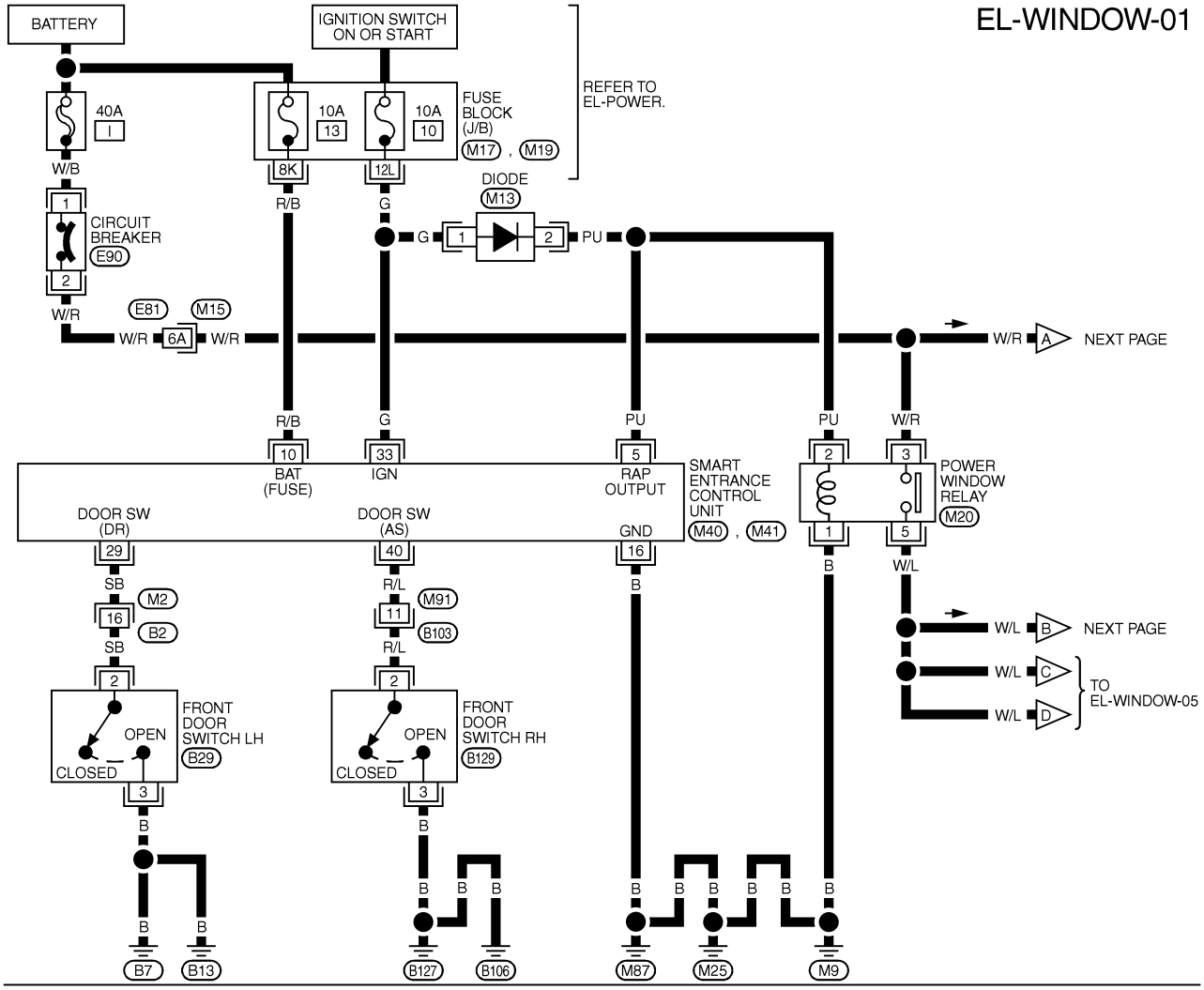
NHEL0103

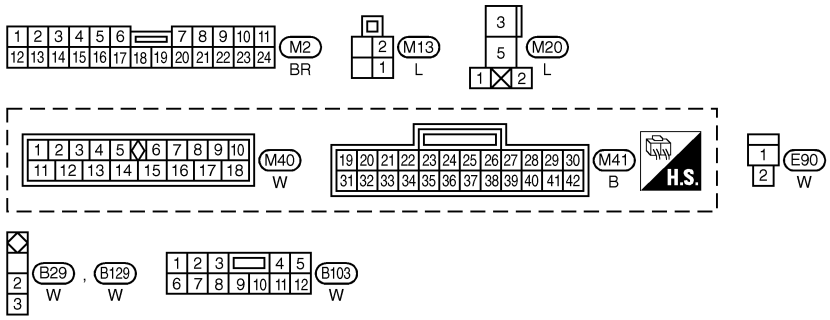


MEL498K

Wiring Diagram — WINDOW —

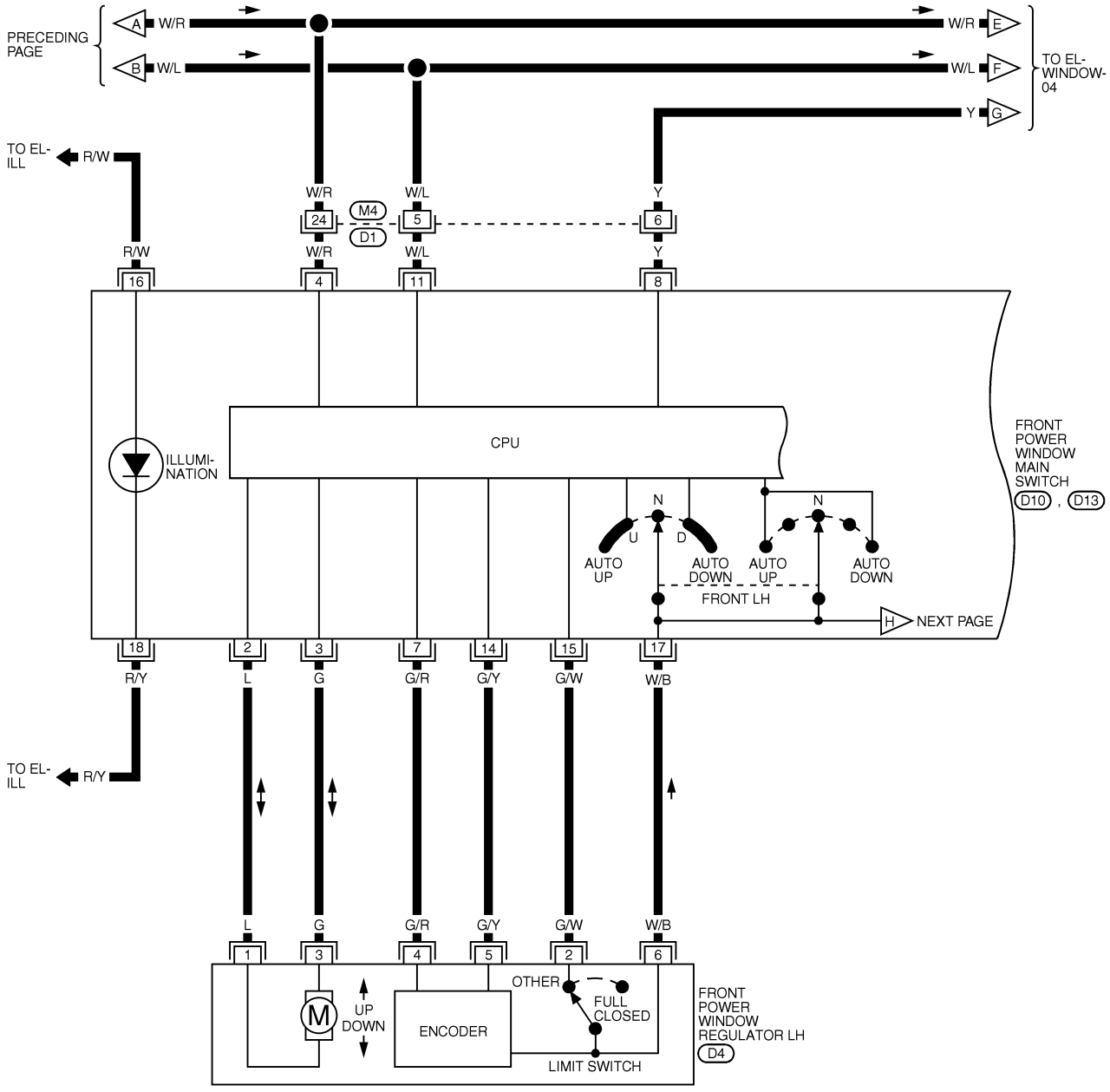
NHEL0104

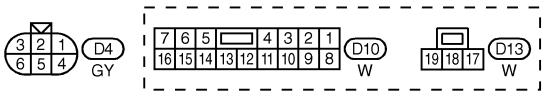




REFER TO THE FOLLOWING.
M15 -SUPER MULTIPLE JUNCTION (SMJ)
M17 , M19 -FUSE BLOCK-JUNCTION BOX (J/B)

MEL168M

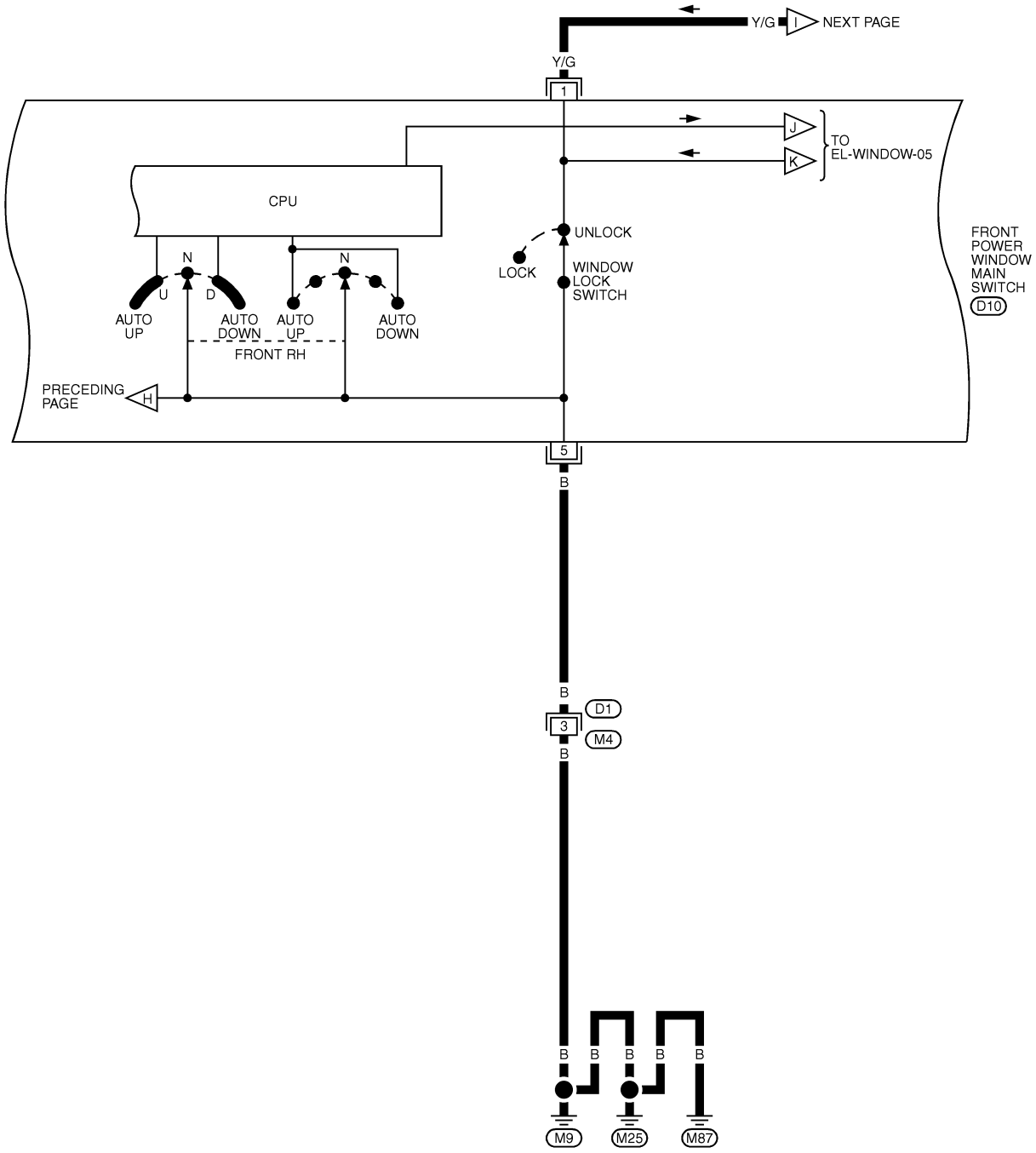


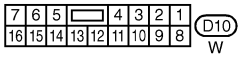


REFER TO THE FOLLOWING.
M4 , D1 -SUPER MULTIPLE JUNCTION (SMJ)

MEL500K

EL-WINDOW-03

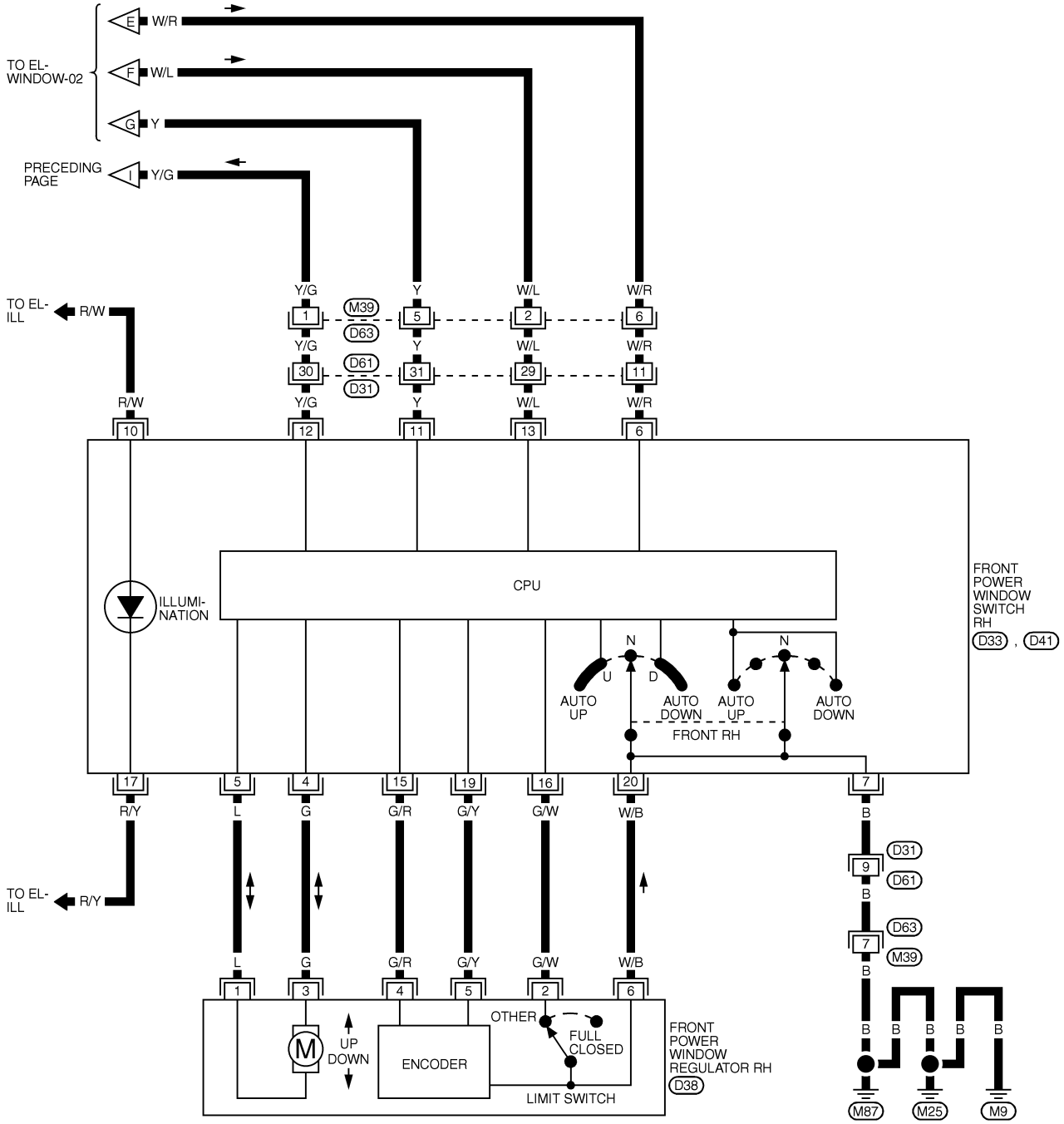


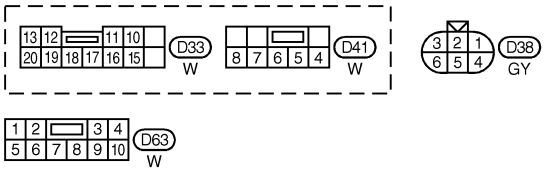


REFER TO THE FOLLOWING.
(M4) , (D1) -SUPER MULTIPLE JUNCTION (SMJ)

MEL501K

EL-WINDOW-04

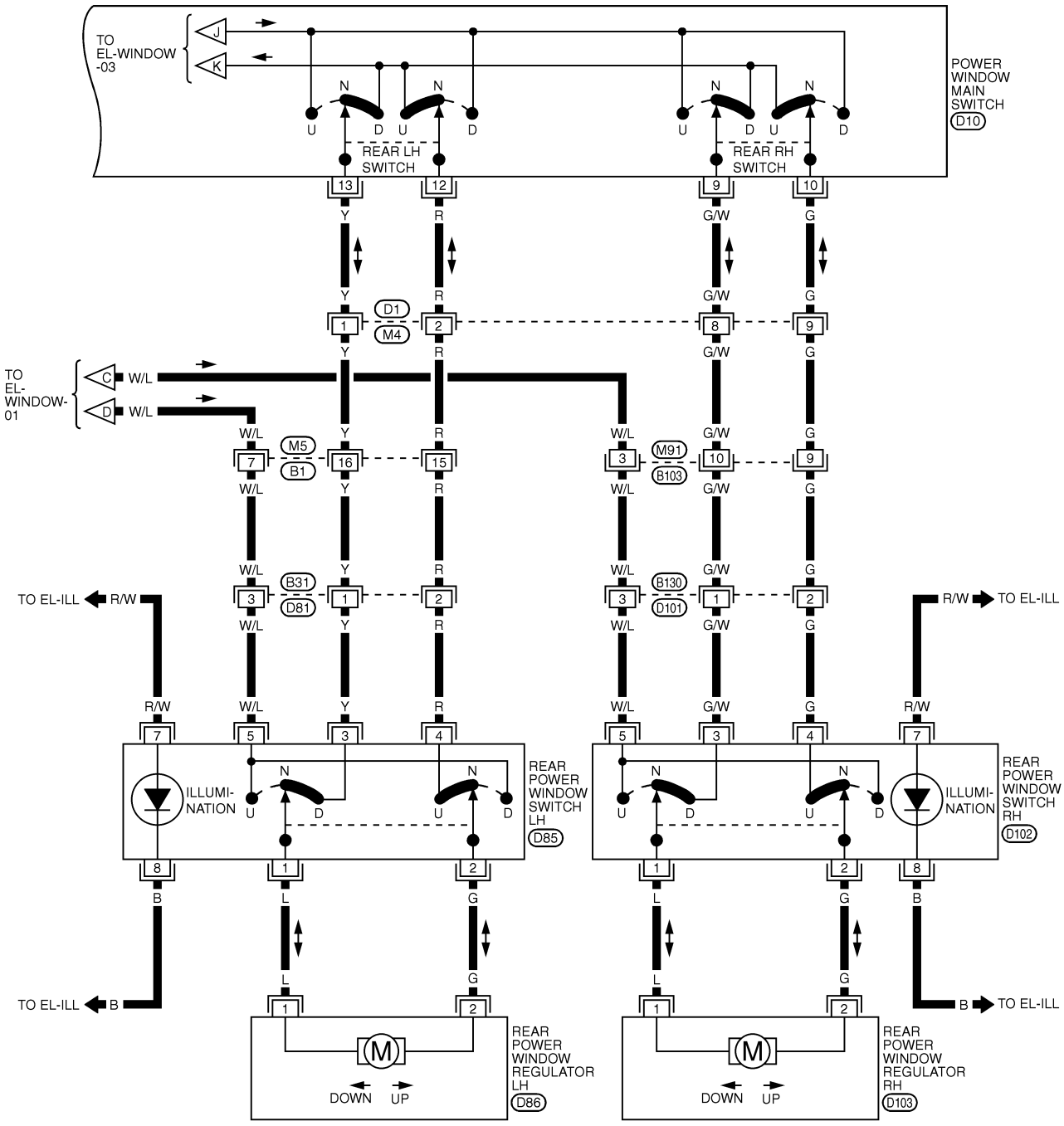


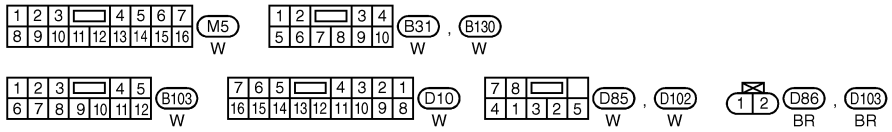


REFER TO THE FOLLOWING.
D31 , D61 -SUPER MULTIPLE JUNCTION (SMJ)

MEL502K

EL-WINDOW-05





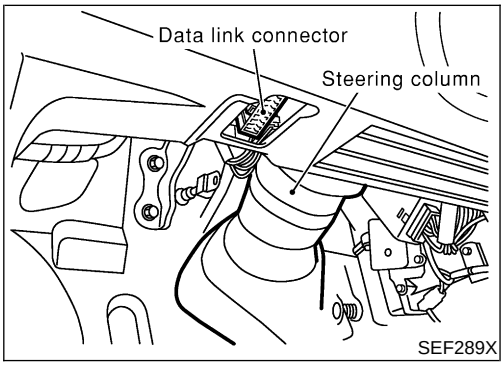
REFER TO THE FOLLOWING.
M4 , D1 -SUPER MULTIPLE JUNCTION (SMJ)

MEL503K

SMART ENTRANCE CONTROL UNIT TERMINALS AND REFERENCE VALUE BETWEEN EACH TERMINAL AND GROUND

TERMINAL	WIRE COLOR	ITEM	CONDITION	DATA (DC)
5	PU	HEADLAMP BATTERY SAVER CONTROL UNIT	WHEN HEADLAMP BATTERY SAVER TIMER IS OPERATED	12V
10	R/B	POWER SOURCE (FUSE)	–	12V
11	W/R	POWER SOURCE (C/B)	–	12V
16	B	GROUND	–	–
29	SB	DRIVER DOOR SWITCH	OFF (CLOSED)→ ON (OPEN)	5V→0V
33	G	IGN ON	IGNITION KEY IS IN "ON" POSITION	12V
40	R/L	PASSENGER DOOR SWITCH	OFF (CLOSED)→ ON (OPEN)	5V→0V

SEL369WC



SEF289X

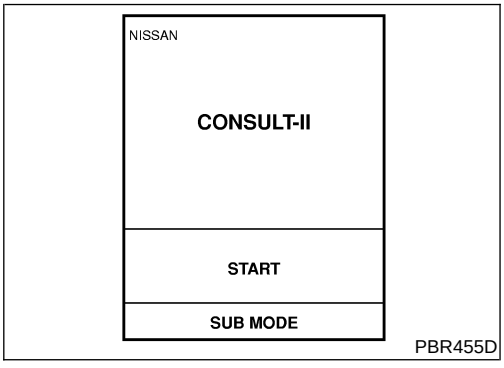
CONSULT-II Inspection Procedure

NHEL0235

"RETAINED PWR"

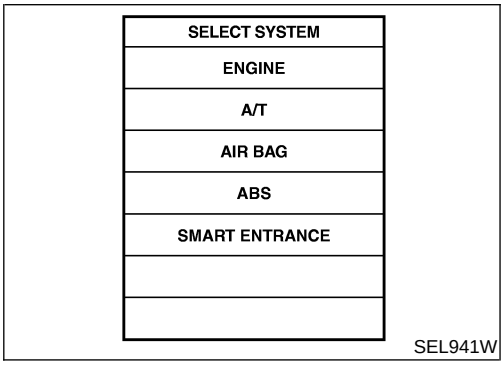
NHEL0235S01

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



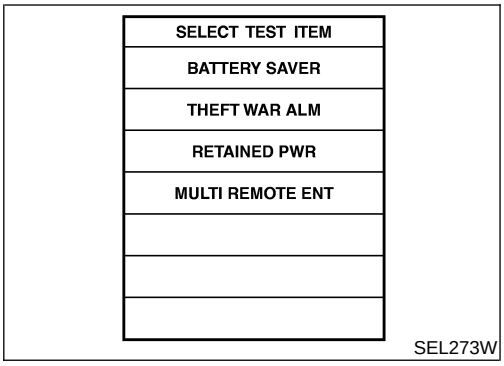
PBR455D

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

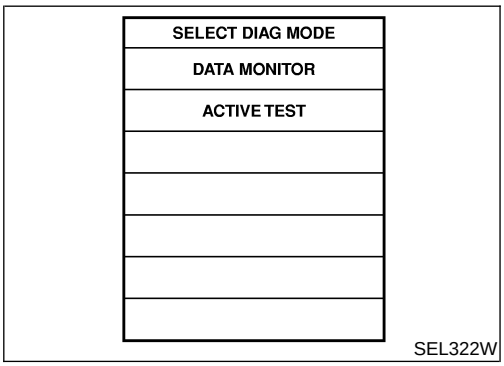


SEL941W

5. Touch "SMART ENTRANCE".



6. Touch "RETAINED PWR".



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

CONSULT-II Application Items

NHEL0236

NHEL0236S01

NHEL0236S0101

"RETAINED PWR"
Data Monitor

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

NHEL0236S0102

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.**

Trouble Diagnoses

NHEL0105

Symptom	Possible cause	Repair order
None of the power windows can be operated using any switch.	1. 10A fuse, 40A fusible link 2. E90 circuit breaker 3. Power window relay 4. E90 circuit breaker circuit 5. Power window relay circuit 6. Ground circuit 7. Front power window main switch	1. Check 10A fuse [No. 10, located in fuse block (J/B)], 40A fusible link (letter **I**, located in fuse and fusible link box). 2. Check E90 circuit breaker. 3. Check power window relay. 4. Check the following. a. Check harness between E90 circuit breaker and 40A fusible link (letter **I**, located in fuse and fusible link box). b. Check harness between E90 circuit breaker and front power window main switch. 5. Check the following. a. Check harness between E90 circuit breaker and power window relay. b. Check harness between fuse and power window relay. 6. Check the following. a. Check ground circuit of front power window main switch terminal 5. b. Check power window relay ground circuit. 7. Check front power window main switch.
Driver side power window cannot be operated but other windows can be operated.	1. Driver side power window regulator circuit 2. Driver side power window regulator 3. Power window main switch	1. Check harness between front power window main switch and front power window regulator LH for open or short circuit. 2. Check front power window regulator LH. 3. Check front power window main switch.
Passenger side power window cannot be operated but other windows can be operated.	1. Front power window regulator RH circuit 2. Front power window regulator RH 3. Front power window main switch 4. Front power window switch RH	1. Check harness between front power window switch RH and power window regulator RH for open or short circuit. 2. Check front power window regulator RH. 3. Check front power window main switch. 4. Check front power window switch RH.
One or more rear power windows cannot be operated.	1. Rear power window switches 2. Rear power window regulators 3. Power window main switch 4. Rear power window circuit	1. Check rear power window switch. 2. Check rear power window regulator. 3. Check front power window main switch. 4. Check the following. a. Check harness between the rear power window switch terminal 5 and power window relay. b. Check harnesses between front power window main switch and rear power window switch for open/short circuit. c. Check harnesses between rear power window switch and rear power window regulator for open/short circuit.
Power windows except driver's side window cannot be operated using power window main switch but can be operated by each power window switch.	1. Front power window main switch	1. Check front power window main switch.
Driver side power window automatic operation does not function properly.	1. Front power window main switch 2. Encoder and limit switch	1. Check front power window main switch. 2. Check encoder and limit switch. (EL-306)
Passenger side power window automatic operation does not function properly.	1. Front power window switch RH 2. Front power window main switch 3. Encoder and limit switch	1. Check front power window switch RH. 2. Check front power window main switch. 3. Check encoder and limit switch. (EL-306)

Symptom	Possible cause	Repair order
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-302.) 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 ground circuit. Check driver or passenger side door switch. 3. Check smart entrance control unit. (EL-396)

ENCODER AND LIMIT SWITCH CHECK

=NHEL0105S01

1	CHECK DOOR WINDOW SLIDE MECHANISM

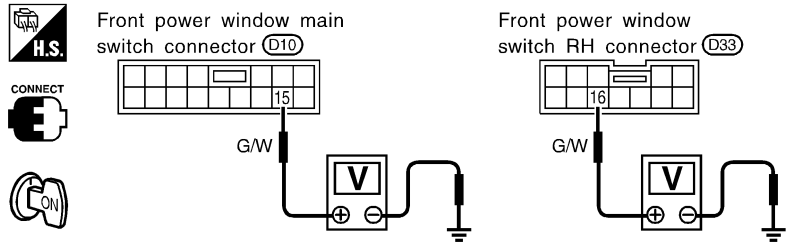
Check the following.
- Obstacles in window, glass molding, etc.
- Worn or deformed glass molding
- Door sash tilted too far inward or outward
- Door window regulator

OK or NG

OK	▶	GO TO 2.
NG	▶	Remove obstacles or repair door window slide mechanism.

2	CHECK POWER SUPPLY TO LIMIT SWITCH

1. Disconnect front power window regulator LH or RH harness connector.
2. Check voltage between front power window main switch terminal 15 or front power window switch RH terminal 16 and ground.



Voltage: 5V

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

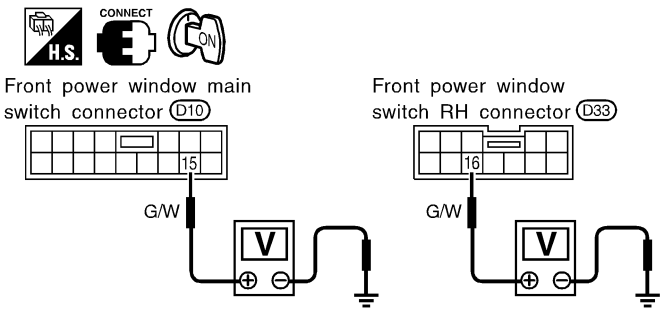
SEL725W

OK or NG

OK	▶	GO TO 3.
NG	▶	Replace power window main switch or front power window switch RH.

3	CHECK LIMIT SWITCH OPERATION

1. Connect front power window regulator LH or RH.
2. Check voltage between front power window main switch terminal 15 or front power window switch RH terminal 16 and ground during power window closing operation.



Terminal No.	Condition	Voltage (DCV)
Front power window main switch: 15 Front power window switch RH: 16	Approx.15 mm (0.59 in) below the full closed position to full closed position	Approx. 5
	Other positions	Approx. 0

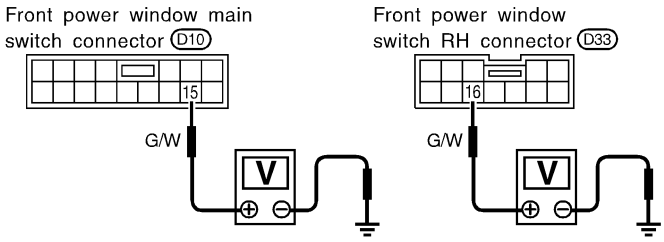
SEL726W

OK or NG

OK	▶	GO TO 5.
NG	▶	GO TO 4.

4	RESET LIMIT SWITCH

Reset limit switch. Refer to BT-21, "Front Door Glass Limit Switch Reset". Then check voltage between front power window main switch terminal 15 or front power window switch RH terminal 16 and ground during power window closing operation at least ten times.



Terminal No.	Condition	Voltage (DCV)
Front power window main switch: 15 Front power window switch RH: 16	Approx.15 mm (0.59 in) below the full closed position to full closed position	Approx. 5
	Other positions	Approx. 0

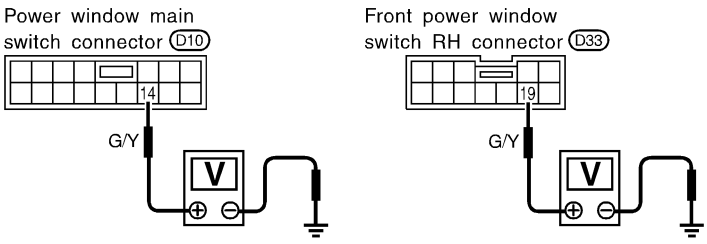
SEL726W

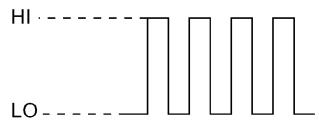
OK or NG

OK	▶	GO TO 5.
NG	▶	Replace power window regulator.

5	CHECK ENCODER

Measure voltage between front power window main switch terminal 14 or front power window switch RH terminal 19 and ground with oscilloscope when power window is in automatic closing operation.





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

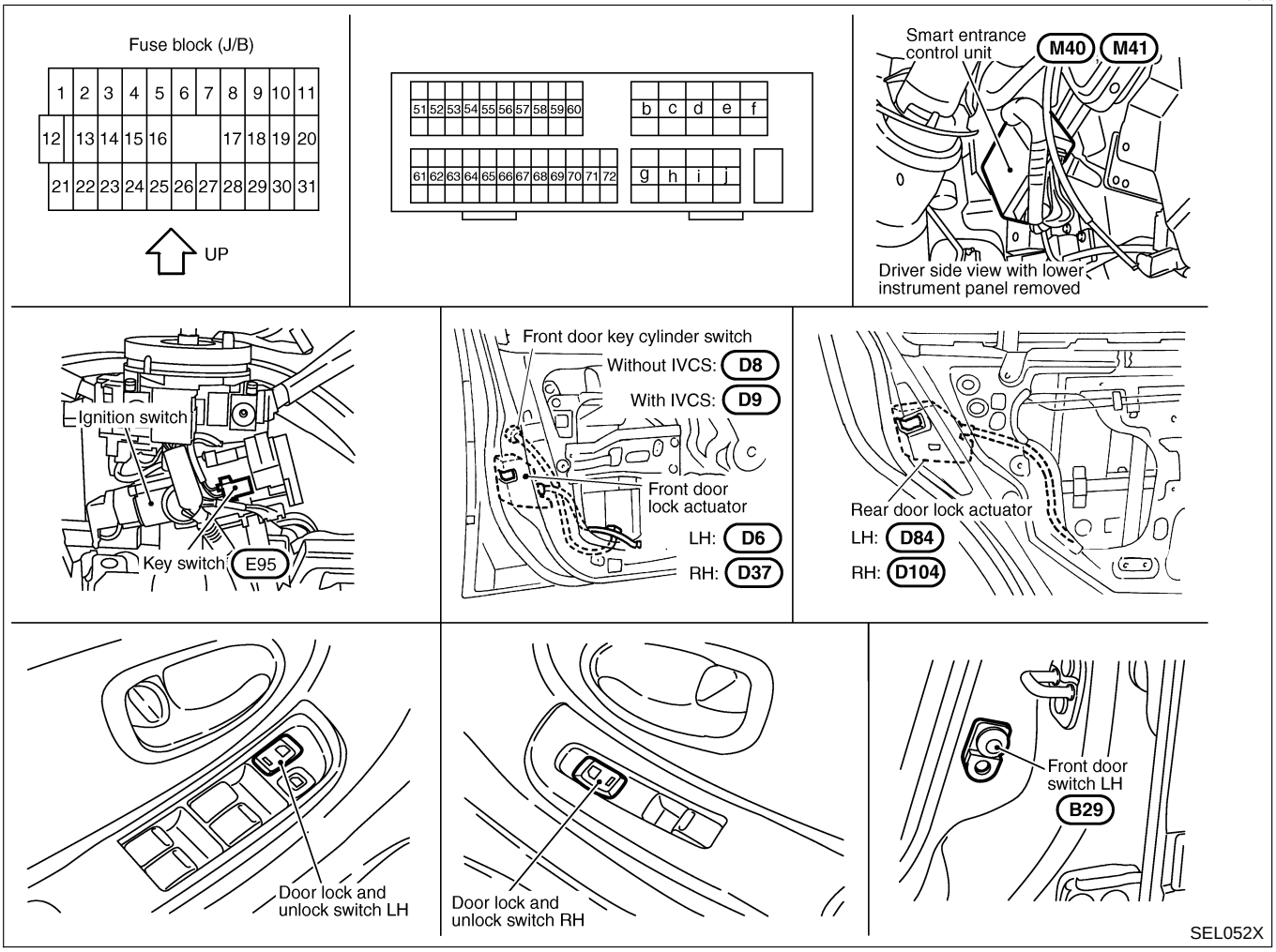
SEL727W

OK or NG

OK	▶	Replace power window main switch or front power window switch RH.
NG	▶	Replace power window regulator.

Component Parts and Harness Connector Location

NHEL0106



System Description

NHEL0107

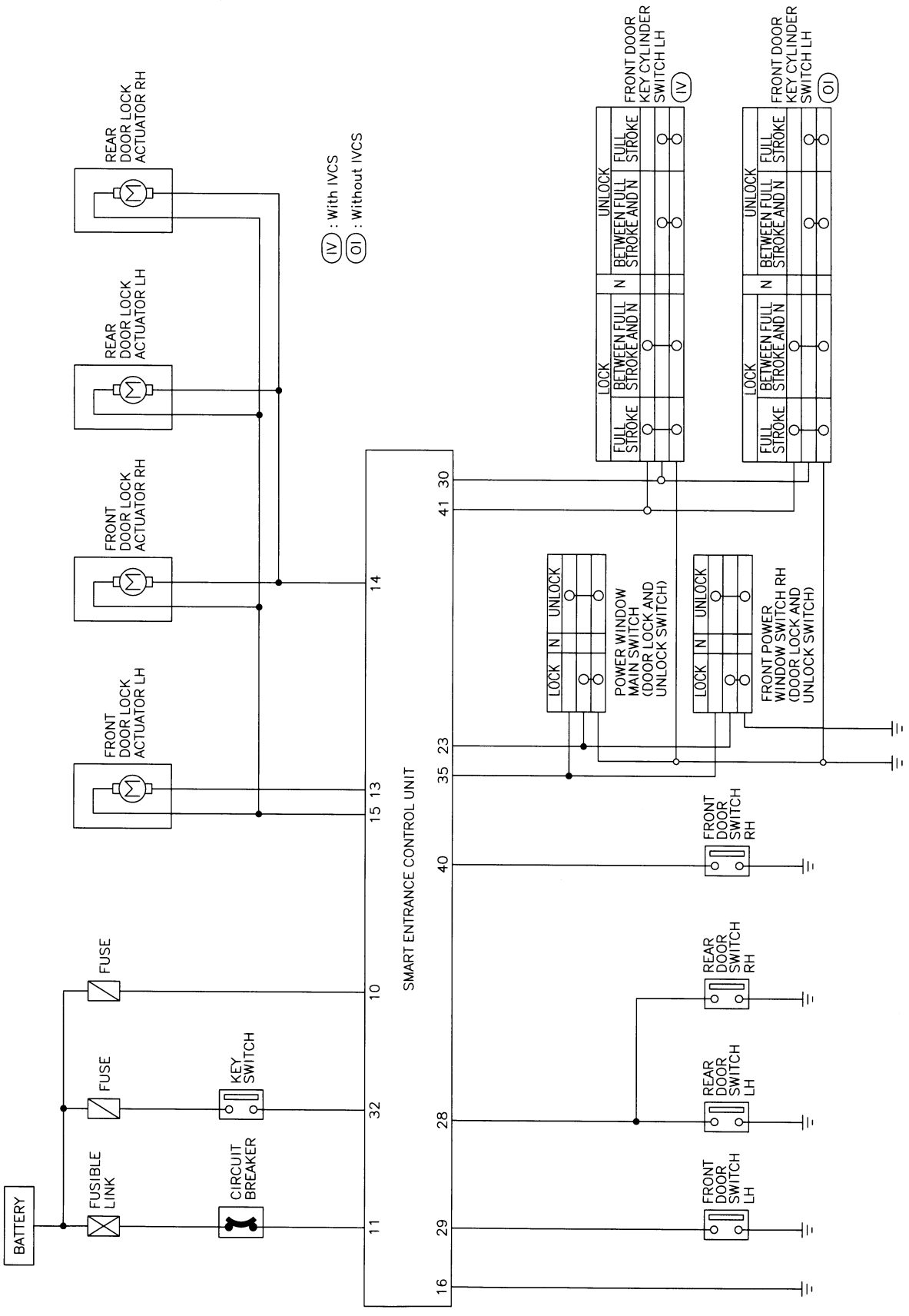
OPERATION

NHEL0107S04

- The lock/unlock switches (LH and RH) on door trim can lock and unlock all doors.
- With the door key inserted in the key cylinder on front LH, 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 the doors are open, setting the lock/unlock switch to “LOCK” locks the doors once but then immediately unlocks them. (KEY REMINDER DOOR SYSTEM)

Schematic

NHEL0108



MEL505K

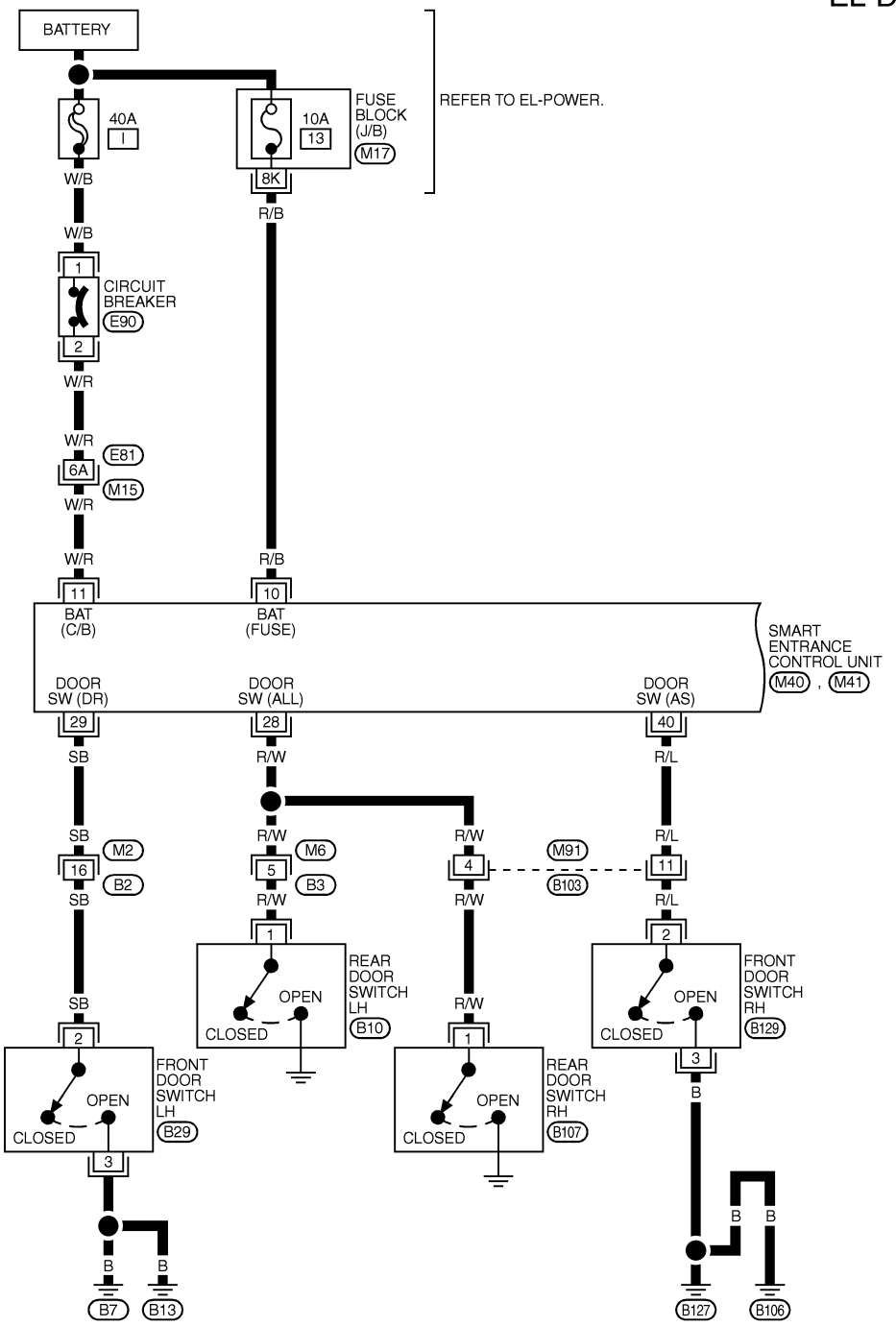
Wiring Diagram — D/LOCK —

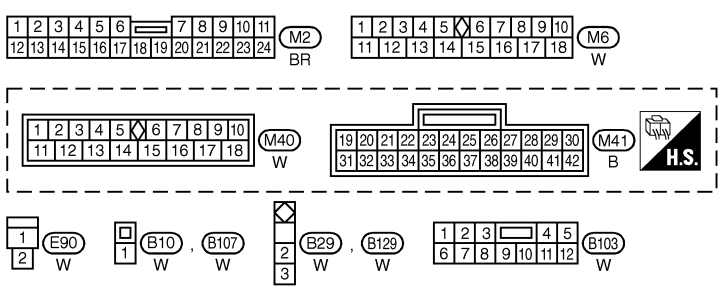
NHEL0109

FIG. 1

NHEL0109S01

EL-D/LOCK-01





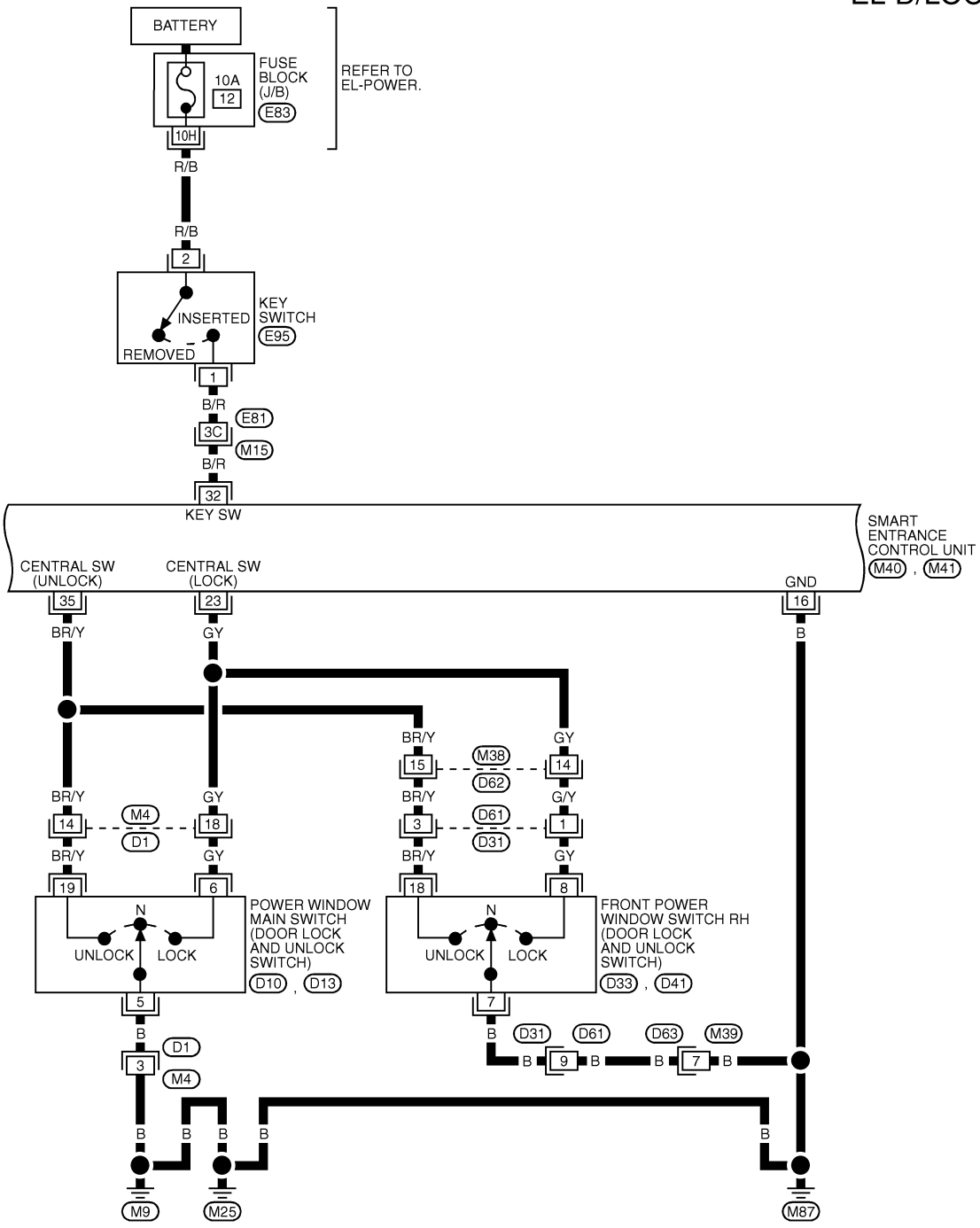
REFER TO THE FOLLOWING.
M15 , E81 -SUPER MULTIPLE JUNCTION (SMJ)
M17 -FUSE BLOCK-JUNCTION BOX (J/B)

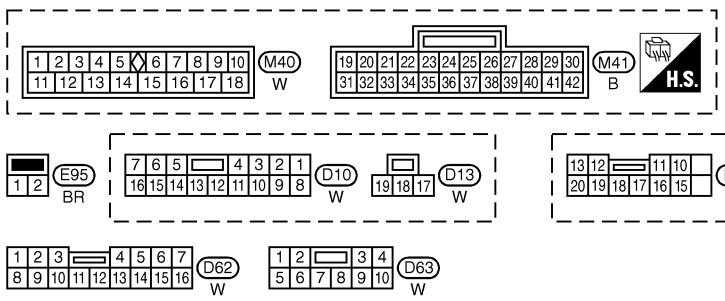
MEL506K

FIG. 2

NHEL0109S02

EL-D/LOCK-02





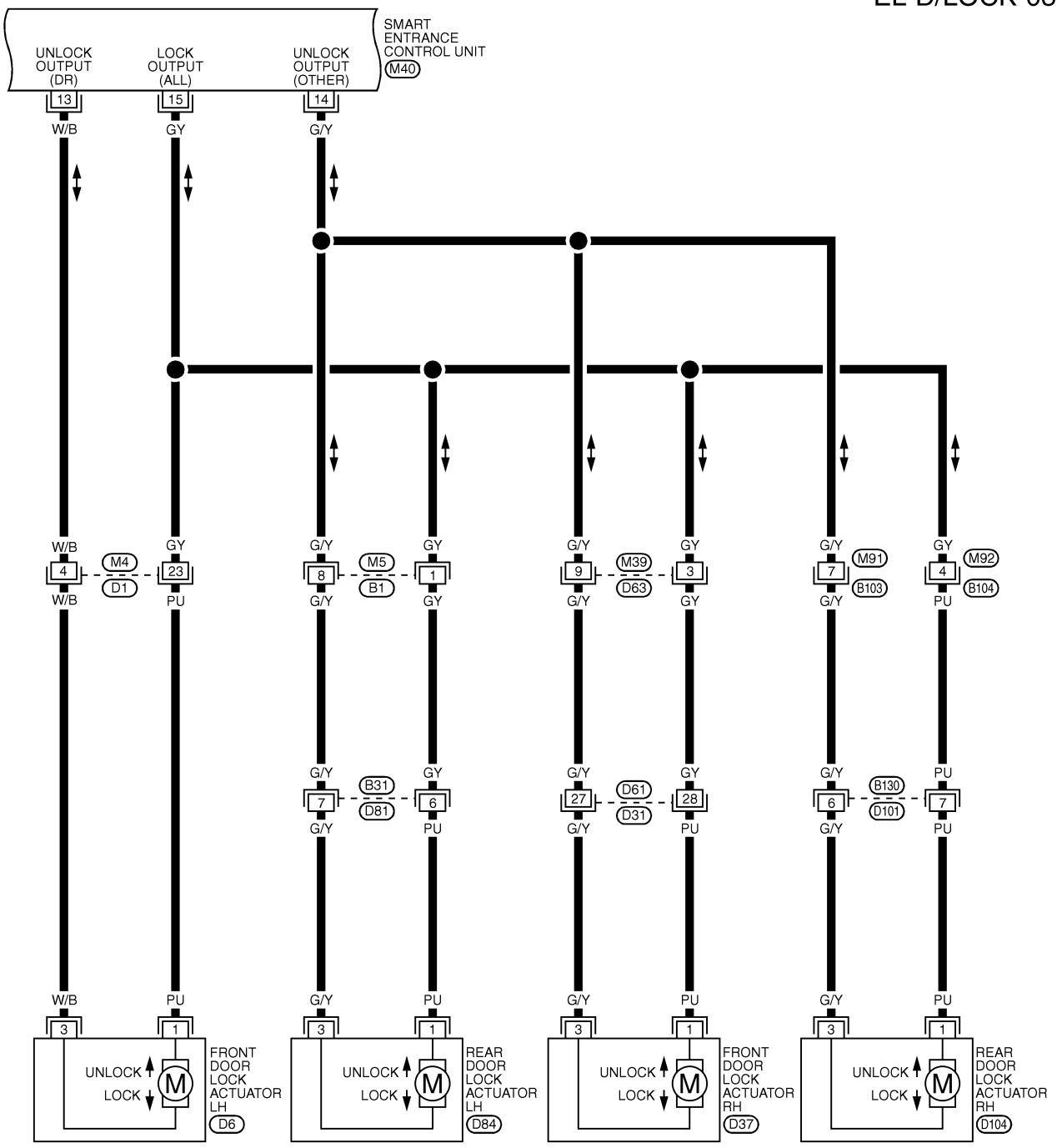
REFER TO THE FOLLOWING.
M4 , D1 -SUPER MULTIPLE JUNCTION (SMJ)
M15 , E81 -SUPER MULTIPLE JUNCTION (SMJ)
D31 , D61 -SUPER MULTIPLE JUNCTION (SMJ)
E83 -FUSE BLOCK-JUNCTION BOX (J/B)

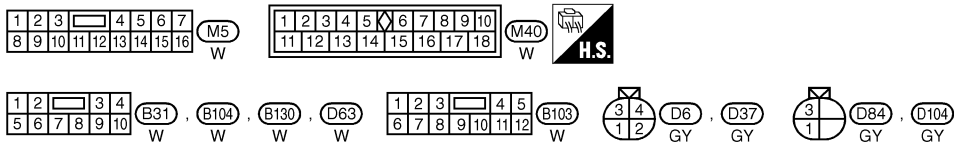
MEL507K

FIG. 3

NHEL0109S03

EL-D/LOCK-03





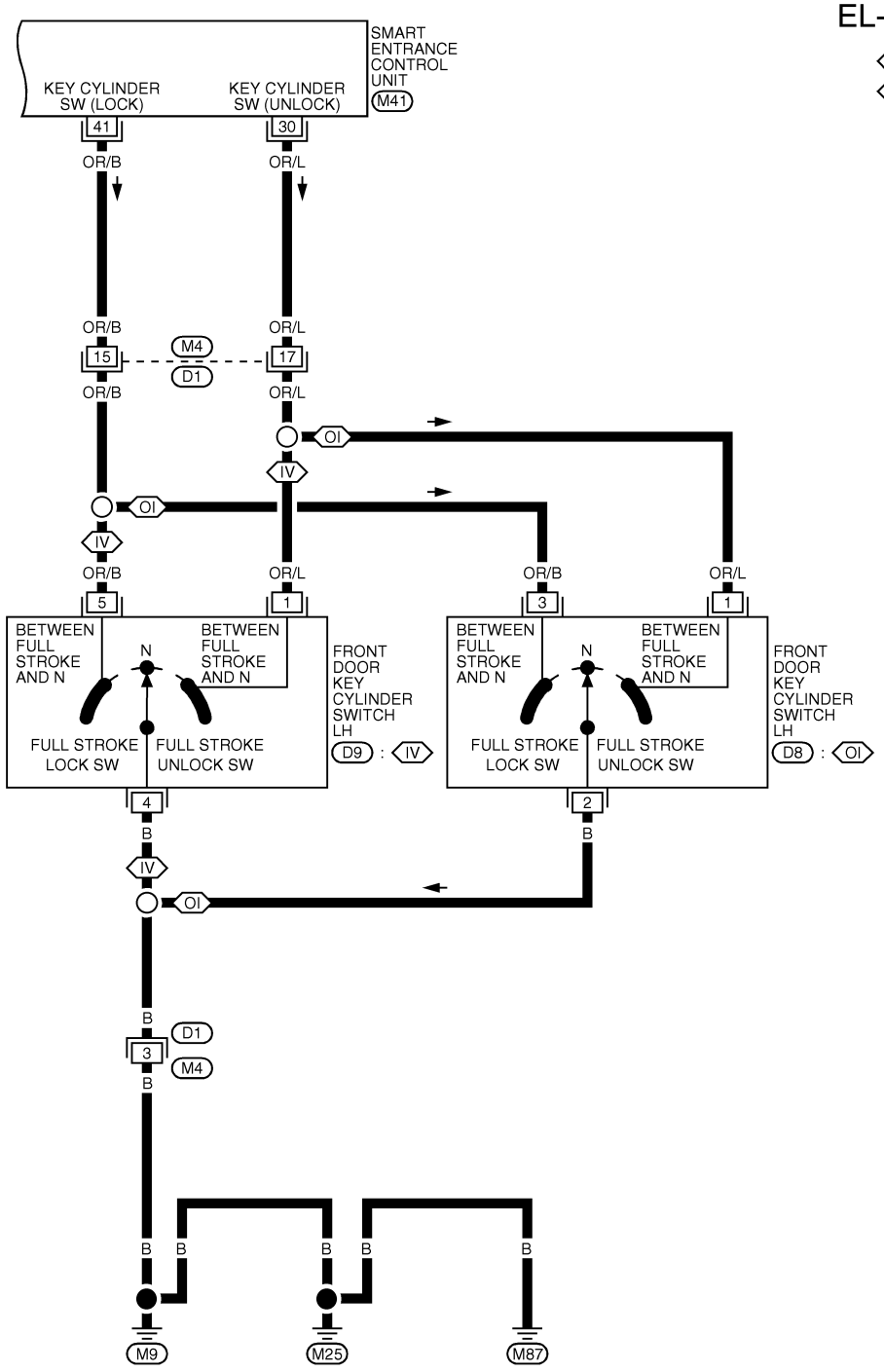
REFER TO THE FOLLOWING.
M4 , D1 -SUPER MULTIPLE JUNCTION (SMJ)
D31 , D61 -SUPER MULTIPLE JUNCTION (SMJ)

MEL508K

FIG. 4

NHEL0109S05

EL-D/LOCK-04



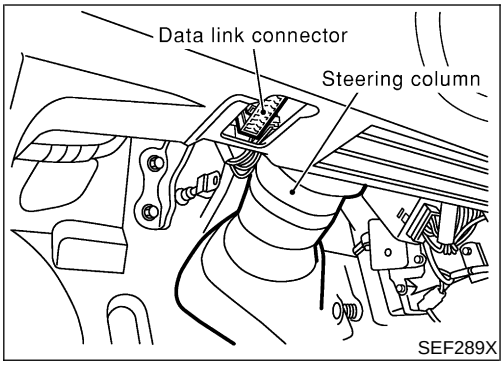
REFER TO THE FOLLOWING.
M4 , D1 -SUPER MULTIPLE JUNCTION (SMJ)

MEL509K

SMART ENTRANCE CONTROL UNIT TERMINALS AND REFERENCE VALUE BETWEEN EACH TERMINAL AND GROUND

TERMINAL	WIRE COLOR	ITEM	CONDITION		DATA (DC)
10	R/B	POWER SOURCE (FUSE)	–		12V
11	W/R	POWER SOURCE (C/B)	–		12V
13	W/B	DRIVER DOOR LOCK ACTUATOR	DOOR LOCK & UNLOCK SWITCH	FREE	0V
14	G/Y	PASSENGER AND REAR DOOR LOCK ACTUATOR		UNLOCKED	12V
15	GY	DOOR LOCK ACTUATORS	DOOR LOCK & UNLOCK SWITCH	FREE	0V
				LOCKED	12V
16	B	GROUND	–		–
23	GY	DOOR LOCK & UNLOCK SWITCHES	NEUTRAL→LOCKS		5V→0V
28	R/W	REAR DOOR SWITCHES	OFF (CLOSED)→ON (OPEN)		5V→0V
29	SB	DRIVER DOOR SWITCH	OFF (CLOSED)→ON (OPEN)		5V→0V
30	OR/L	DOOR KEY CYLINDER UNLOCK SWITCH	OFF (NEUTRAL)→ON (UNLOCKED)		5V→0V
32	B/R	IGNITION KEY SWITCH (INSERT)	KEY INSERTED→KEY REMOVED FROM IGN KEY CYLINDER		12V→0V
35	BR/Y	DOOR LOCK & UNLOCK SWITCHES	NEUTRAL→UNLOCKS		5V→0V
40	R/L	PASSENGER DOOR SWITCH	OFF (CLOSED)→ON (OPEN)		5V→0V
41	OR/B	DOOR KEY CYLINDER LOCK SWITCH	OFF (NEUTRAL)→ON (LOCKED)		5V→0V

SEL373WE



SEF289X

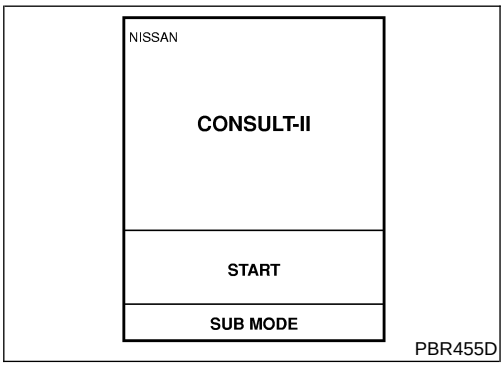
CONSULT-II Inspection Procedure

=NHEL0238

“DOOR LOCK”

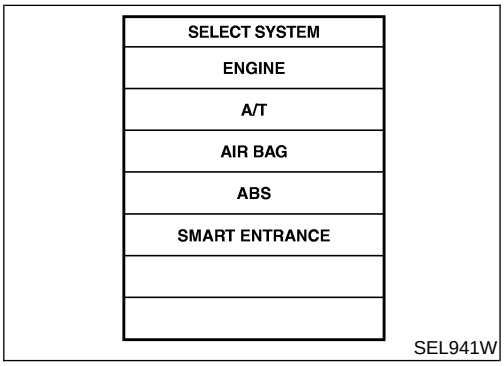
NHEL0238S01

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



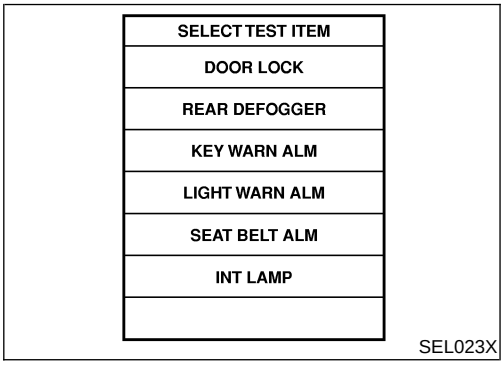
PBR455D

3. Turn ignition switch “ON”.
4. Turn “START”.



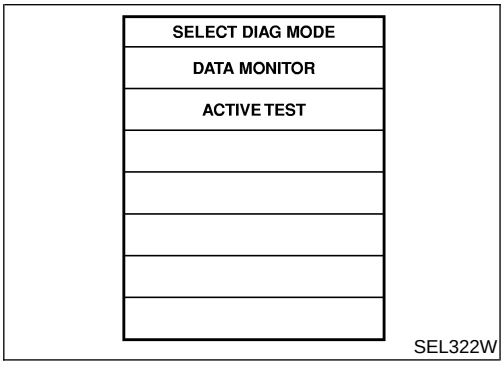
SEL941W

5. Touch “SMART ENTRANCE”.



SEL023X

6. Touch “DOOR LOCK”.



SEL322W

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

CONSULT-II Application Items

NHEL0239

“DOOR LOCK”

NHEL0239S01

Data Monitor

NHEL0239S0101

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.
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.
DOOR SW-ALL	Indicates [ON/OFF] condition of door switch (All).
LK BUTTON/SIG	Indicates [ON/OFF] condition of lock signal from remote controller.
UN BUTTON/SIG	Indicates [ON/OFF] condition of unlock signal from remote controller.
UN BUTTON ON	Indicates [ON/OFF] condition of second unlock signal from remote controller within 5 seconds after first unlock operation.

Active Test

NHEL0239S0102

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.

Trouble Diagnoses

SYMPTOM CHART

=NHEL0193

NHEL0193S01

REFERENCE PAGE (EL-)	318	319	320	321	323	324
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	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	

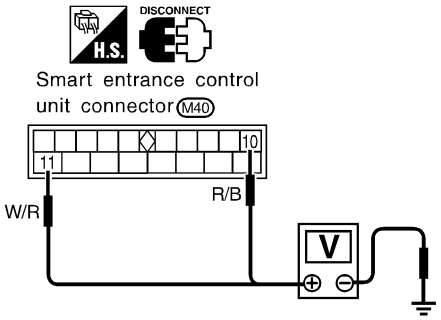
Trouble Diagnoses (Cont'd)

MAIN POWER SUPPLY AND GROUND CIRCUIT CHECK

=NHEL0193S02

Main Power Supply Circuit Check

NHEL0193S0201

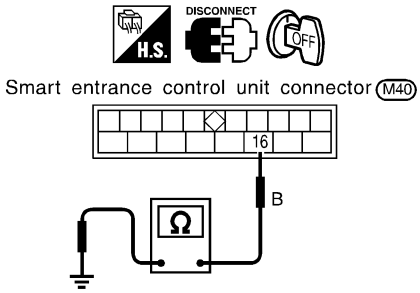


Terminals		Ignition switch		
(+)	(–)	OFF	ACC	ON
10	Ground	Battery voltage	Battery voltage	Battery voltage
11				

SEL190W

Ground Circuit Check

NHEL0193S0202



Terminals	Continuity
16 - Ground	Yes

SEL234W

DOOR SWITCH CHECK

=NHEL0193S03

1 CHECK DOOR SWITCHES INPUT SIGNAL

With CONSULT-II

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

DATA MONITOR	
MONITOR	
DOOR SW-ALL	OFF

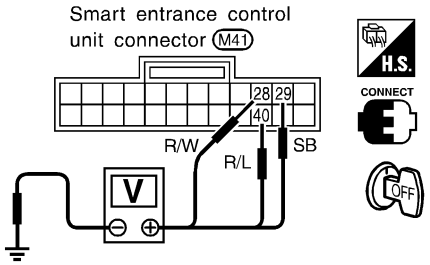
When any doors are open:
DOOR SW-ALL ON

When all doors are closed:
DOOR SW-ALL OFF

SEL323W

Without CONSULT-II

Check voltage between smart entrance control unit harness connector terminals 28, 29 or 40 and ground.



	Terminals (+)	Terminals (−)	Condition	Voltage [V]
Front LH door switch	29	Ground	Open	0
			Closed	Approx. 5
Front RH door switch	40	Ground	Open	0
			Closed	Approx. 5
Rear door switches	28	Ground	Open	0
			Closed	Approx. 5

SEL191W

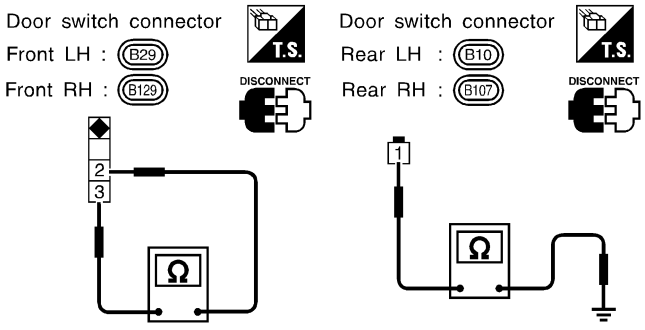
Refer to wiring diagram in EL-310.

OK or NG

OK	▶	Door switch is OK.
NG	▶	GO TO 2.

2 CHECK DOOR SWITCHES

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



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

SEL192W

OK or NG

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

KEY SWITCH (INSERT) CHECK

=NHEL0193S04

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

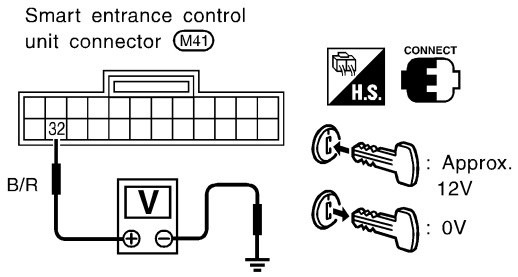
When key is removed from ignition key cylinder:

KEY ON SW OFF

SEL315W

Without CONSULT-II

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



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

SEL193W

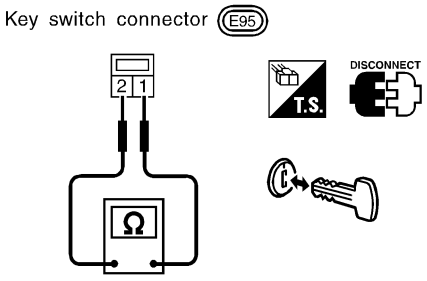
Refer to wiring diagram in EL-311.

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

SEL194W

OK or NG

OK	▶	**Check the following.** • 10A fuse [No. 12, located in fuse block (J/B)] • Harness for open or short between key switch and fuse • Harness for open or short between smart entrance control unit and key switch
NG	▶	Replace key switch.

DOOR LOCK/UNLOCK SWITCH CHECK

=NHEL0193S05

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

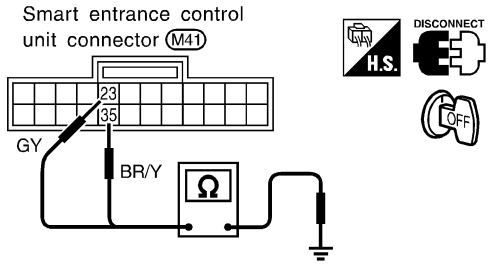
When lock/unlock switch is turned to LOCK:
LOCK SW DR/AS ON

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

SEL341W

Without CONSULT-II

1. Disconnect smart entrance control unit harness connector .
2. Check continuity between smart entrance control unit harness connector terminal 23 or 35 and ground.



Terminals	Door lock/unlock switch (LH or RH) condition	Continuity
23 - Ground	Lock	Yes
	N and Unlock	No
35 - Ground	Unlock	Yes
	N and Lock	No

SEL195W

Refer to wiring diagram in EL-311.

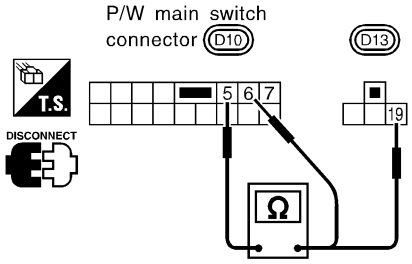
OK or NG

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

2	CHECK DOOR LOCK/UNLOCK SWITCH

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

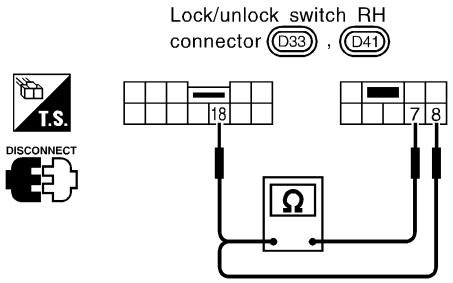
- Power window main switch (Door lock/unlock switch LH)



Condition	Terminals		
	19	6	5
Lock		○	○
N	No continuity		
Unlock	○		○

SEL648W

- Door lock/unlock switch RH



Condition	Terminals		
	18	8	7
Lock		○	○
N	No continuity		
Unlock	○		○

SEL649W

OK or NG

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

FRONT DOOR KEY CYLINDER SWITCH CHECK

=NHEL0193S06

1 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.

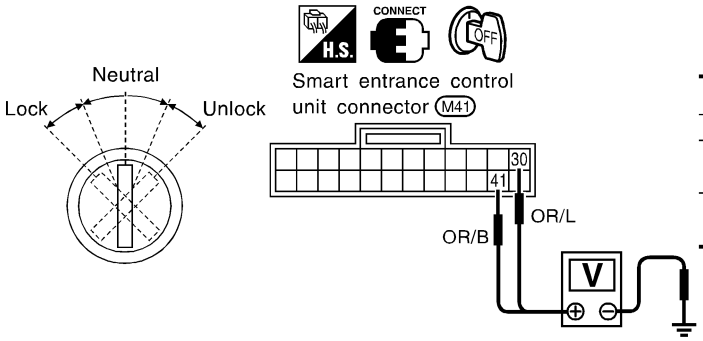
DATA MONITOR	
MONITOR	
KEY CYL LK-SW	OFF
KEY CYL UN-SW	OFF

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

Check voltage between smart entrance control unit harness connector terminals 30 or 41 and ground.



Terminals (+)	Terminals (−)	Key position	Voltage V
41	Ground	Neutral/Unlock	Approx. 5
		Lock	0
30	Ground	Neutral/Lock	Approx. 5
		Unlock	0

SEL198W

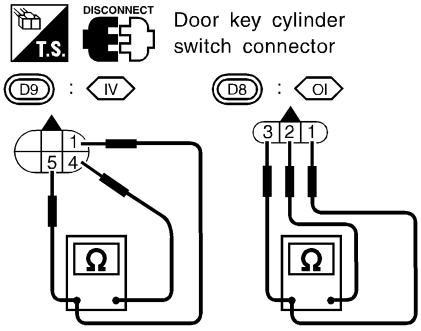
Refer to wiring diagram in EL-313.

OK or NG

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

2 CHECK DOOR KEY CYLINDER SWITCH

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



IV OI
① ① : Door unlock switch terminal
④ ② : Ground terminal
⑤ ③ : Door lock switch terminal

IV : With IVCS
OI : Without IVCS

Terminals	Key position	Continuity
⑤ - ④ : IV	Neutral/Unlock	No
③ - ② : OI	Lock	Yes
① - ④ : IV	Neutral/Lock	No
① - ② : OI	Unlock	Yes

SEL650W

OK or NG

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

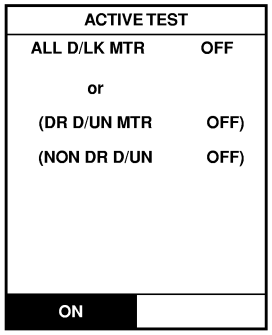
DOOR LOCK ACTUATOR CHECK

=NHEL0193S08

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.

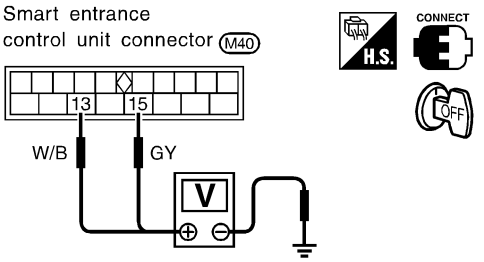
OK or NG

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

2 CHECK DOOR LOCK ACTUATOR CIRCUIT

Check voltage for door lock actuator.

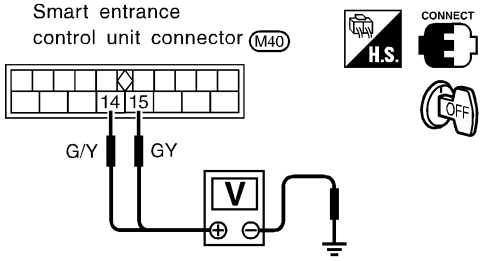
- Door lock actuator front LH



Door lock/unlock switch condition	Terminal No. (+)	Terminal No. (–)	Voltage V
Lock	15	Ground	Approx. 12
Unlock	13	Ground	

SEL200WA

- Door lock actuator front RH and rear



Door lock/unlock switch condition	Terminal No. (+)	Terminal No. (–)	Voltage V
Lock	15	Ground	Approx. 12
Unlock	14	Ground	

SEL221WA

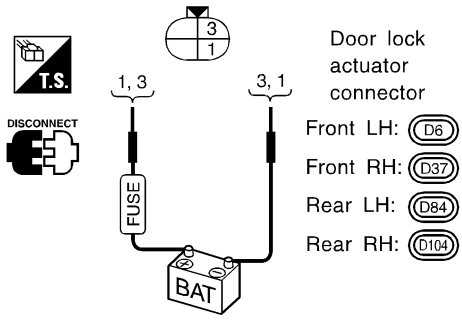
Refer to wiring diagram in EL-312.

OK or NG

OK	▶	GO TO 3.
NG	▶	Replace smart entrance control unit. (Before replacing the control unit, perform "DOOR LOCK/UNLOCK SWITCH CHECK".)

3 CHECK DOOR LOCK ACTUATOR

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



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

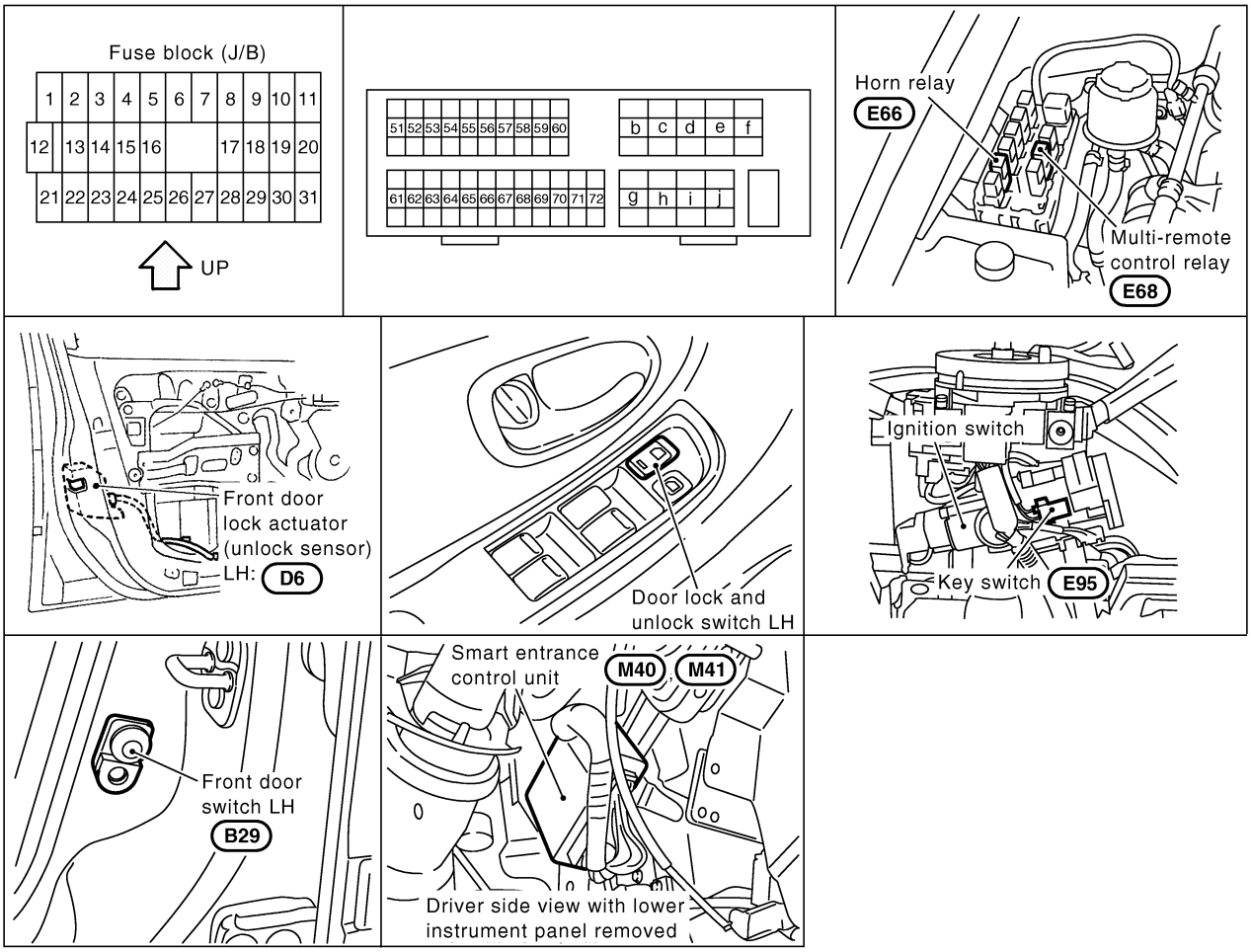
SEL222W

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

NHEL0111



SEL053X

System Description

NHEL0194

NHEL0194S01

INPUTS

Power is supplied at all times

- to key switch terminal 2
- through 10A fuse [No. 12, located in the fuse block (J/B)].

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

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

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

- to smart entrance control unit terminal 29
- through front door switch LH terminal 2
- to front door switch LH terminal 3
- through body grounds B7 and B13.

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

- to smart entrance control unit terminal 40
- through front door switch RH terminal 2, and
- to front door switch RH terminal 3
- through body grounds B127 and B106.

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

- to smart entrance control unit terminal 28

- through rear door switches terminal 1
- to rear door switchs case grounds.

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

- to smart entrance control unit terminal 23
- through lock/unlock switch LH terminal 6, and
- through body grounds M9, M25 and M87.

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

- to smart entrance control unit terminal 35
- through lock/unlock switch LH terminal 19, and
- through body grounds M9, M25 and M87.

When front door unlock sensor LH is UNLOCKED, ground is supplied

- to smart entrance control unit terminal 36,
- through front door unlock sensor LH terminal 2, and
- through body grounds M9, M25 and M87.

Remote controller signal is inputted to smart entrance control unit (The antenna of the system is combined with smart entrance control unit).
The multi-remote control system controls operation of the

- power door lock
- trunk lid opener
- interior lamp
- panic alarm
- hazard and horn reminder

OPERATED PROCEDURE

NHEL0194S02

Power Door Lock Operation

NHEL0194S0201

Smart entrance control unit receives a LOCK signal from remote controller. Smart entrance control unit locks all doors with input of LOCK signal from remote controller.
When an UNLOCK signal is sent from remote controller once, driver's door will be unlocked.
Then, if an UNLOCK signal is sent from remote controller again within 5 seconds, all other door will be unlocked.

Hazard and Horn Reminder

NHEL0194S0202

Power is supplied at all times

- to multi-remote control relay terminals 1, 3 and 6
- through 10A fuse [No. 5, located in the fuse block (J/B)], and
- to horn relay terminal 2
- through 10A fuse (No. 57, located in the fusible link and fuse box)

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

- to multi-remote control relay terminal 2
- through smart entrance control unit terminal 7, and
- to horn relay terminal 1
- through smart entrance control unit terminal 19

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

Operating function of hazard and horn reminder

	C mode (Horn chirp mode)		S mode (Non-horn chirp mode)	
	Hazard warning lamp flash	Horn sound	Hazard warning lamp flash	Horn sound
Lock	Twice	Once	Twice	—
Unlock	Once	—	—	—

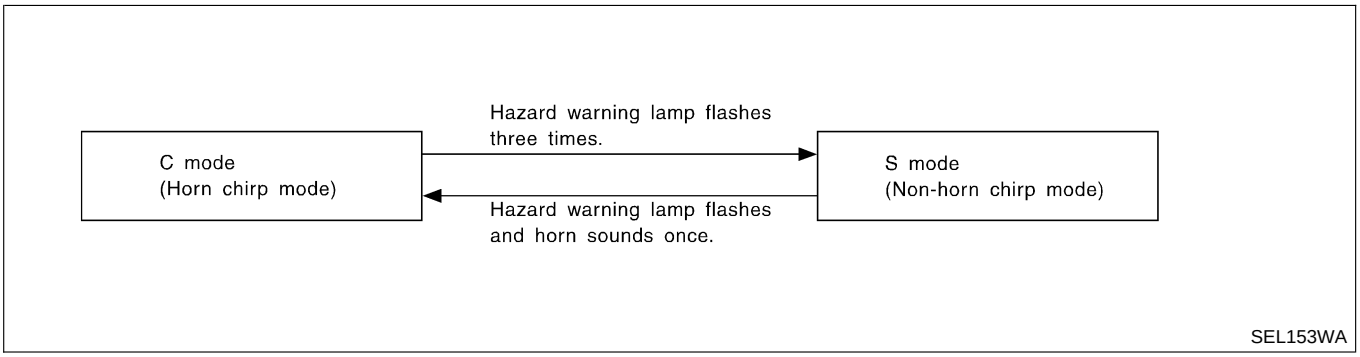
How to change hazard and horn reminder mode

With CONSULT-II

Hazard and horn reminder can be changed using "WORK SUPPORT" mode in "MULTI REMOTE ENT".

Without CONSULT-II

When LOCK and UNLOCK signals are sent from the remote controller for more than 2 seconds at the same time, the hazard and horn reminder mode is changed and hazard warning lamp flashes and horn sounds as follows:



Interior Lamp Operation

NHEL0194S0203

When the following input signals are both supplied:

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

multi-remote control system turns on interior lamp and key hole illumination (for 30 seconds) with input of UNLOCK signal from remote controller.

For detailed description, refer to "INTERIOR, STEP, SPOT, VANITY MIRROR AND TRUNK ROOM LAMPS" (EL-125).

Panic Alarm Operation

NHEL0194S0204

When key switch is OFF (when ignition key is not inserted in key cylinder), multi-remote control system turns on and off horn and headlamp intermittently with input of PANIC ALARM signal from remote controller.

The alarm automatically turns off after 25 seconds or when smart entrance control unit receives any signal from multi-remote controller.

For detailed description, refer to "THEFT WARNING SYSTEM" (EL-359).

Trunk Lid Opener Operation

NHEL0194S0205

Power is supplied at all times

- through 15A fuse [No. 3, located in the fuse block (J/B)]
- to trunk lid opener actuator terminal 2.

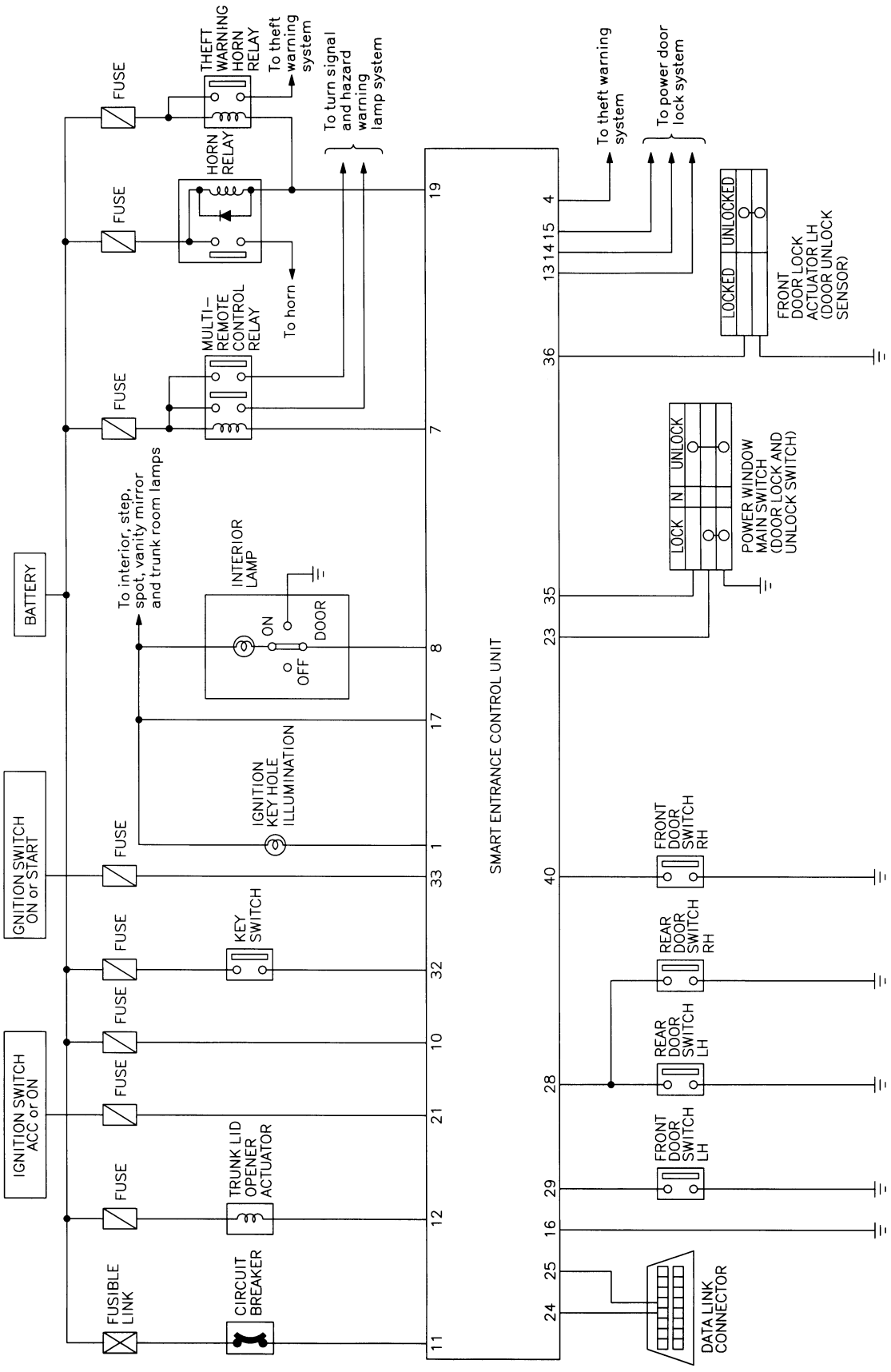
When a TRUNK OPEN signal is sent with key OFF (ignition key removed from key cylinder) from remote controller, ground is supplied

- to trunk lid opener actuator terminal 1
- through smart entrance control unit terminal 12.

Then power and ground are supplied, trunk lid opener actuator opens trunk lid.

Schematic

NHEL0171



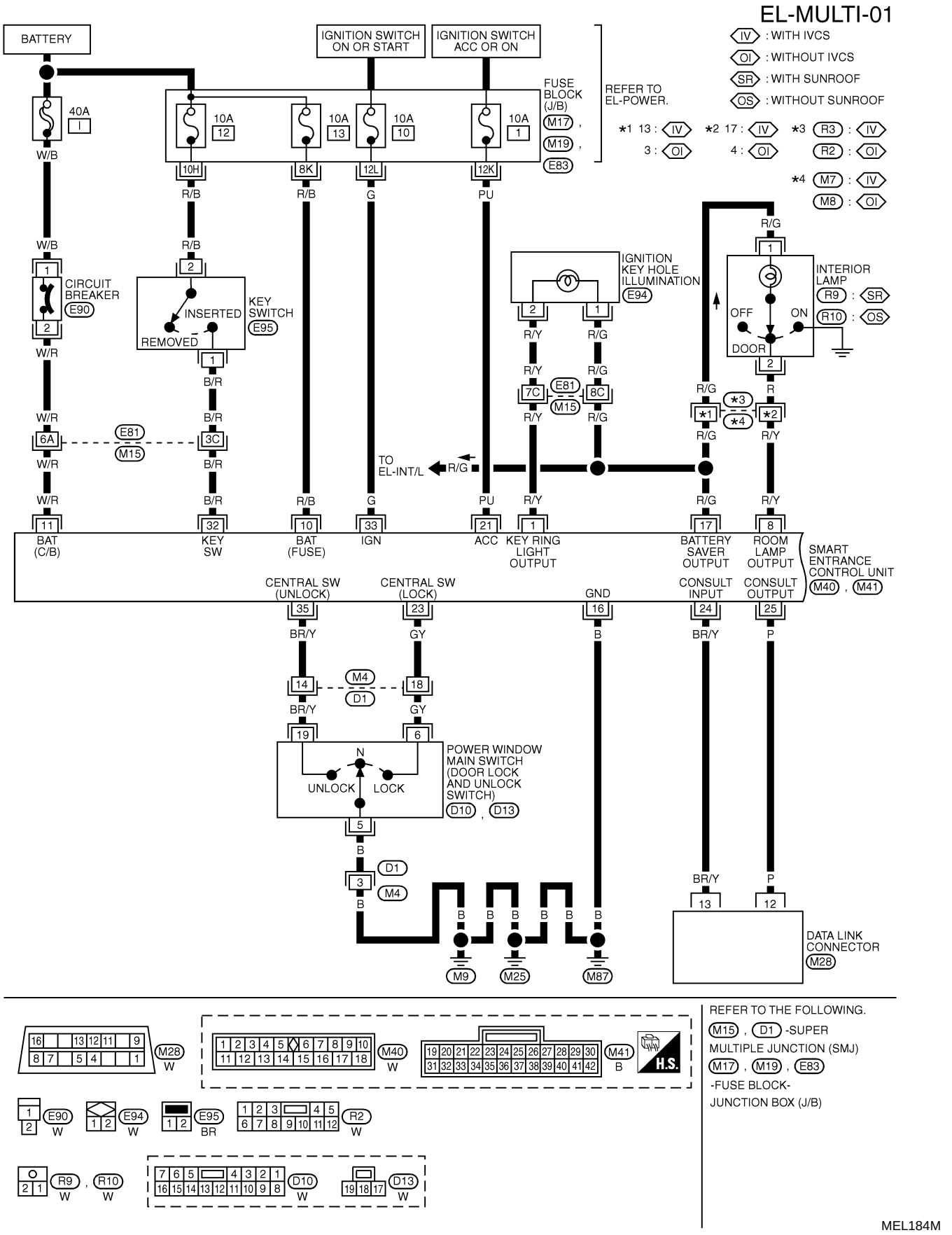
MEL510K

Wiring Diagram — MULTI —

NHEL0114

FIG. 1

NHEL0114S01

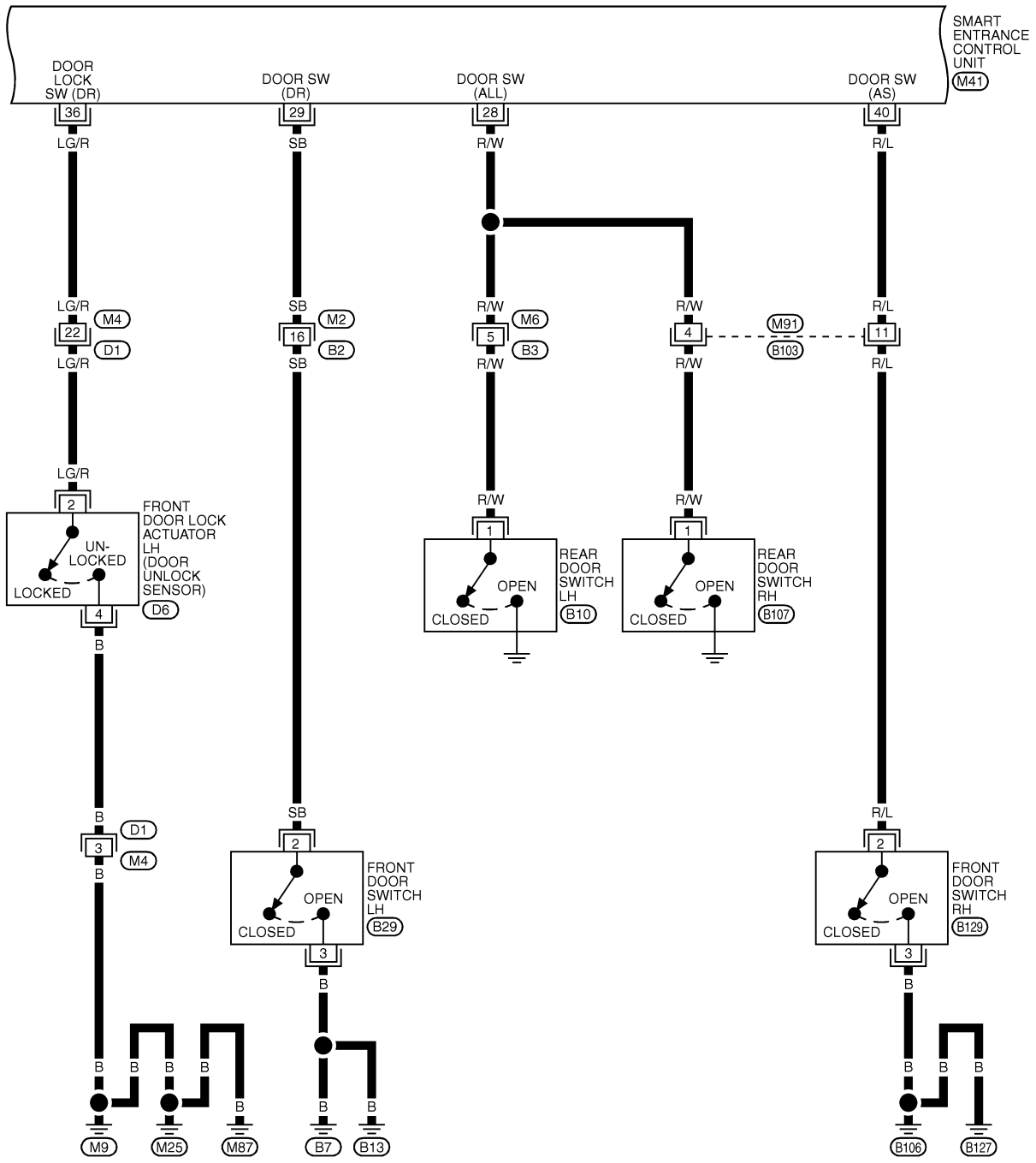


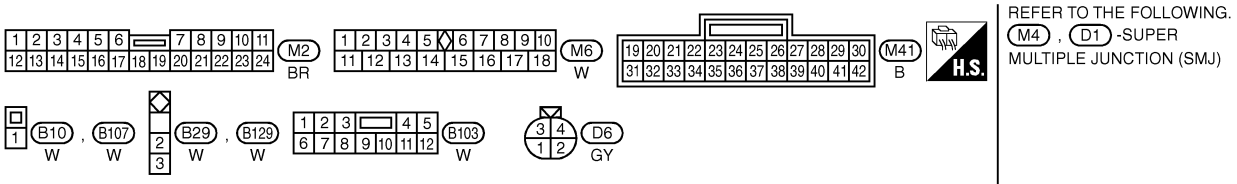
MEL184M

FIG. 2

NHEL0114S02

EL-MULTI-02



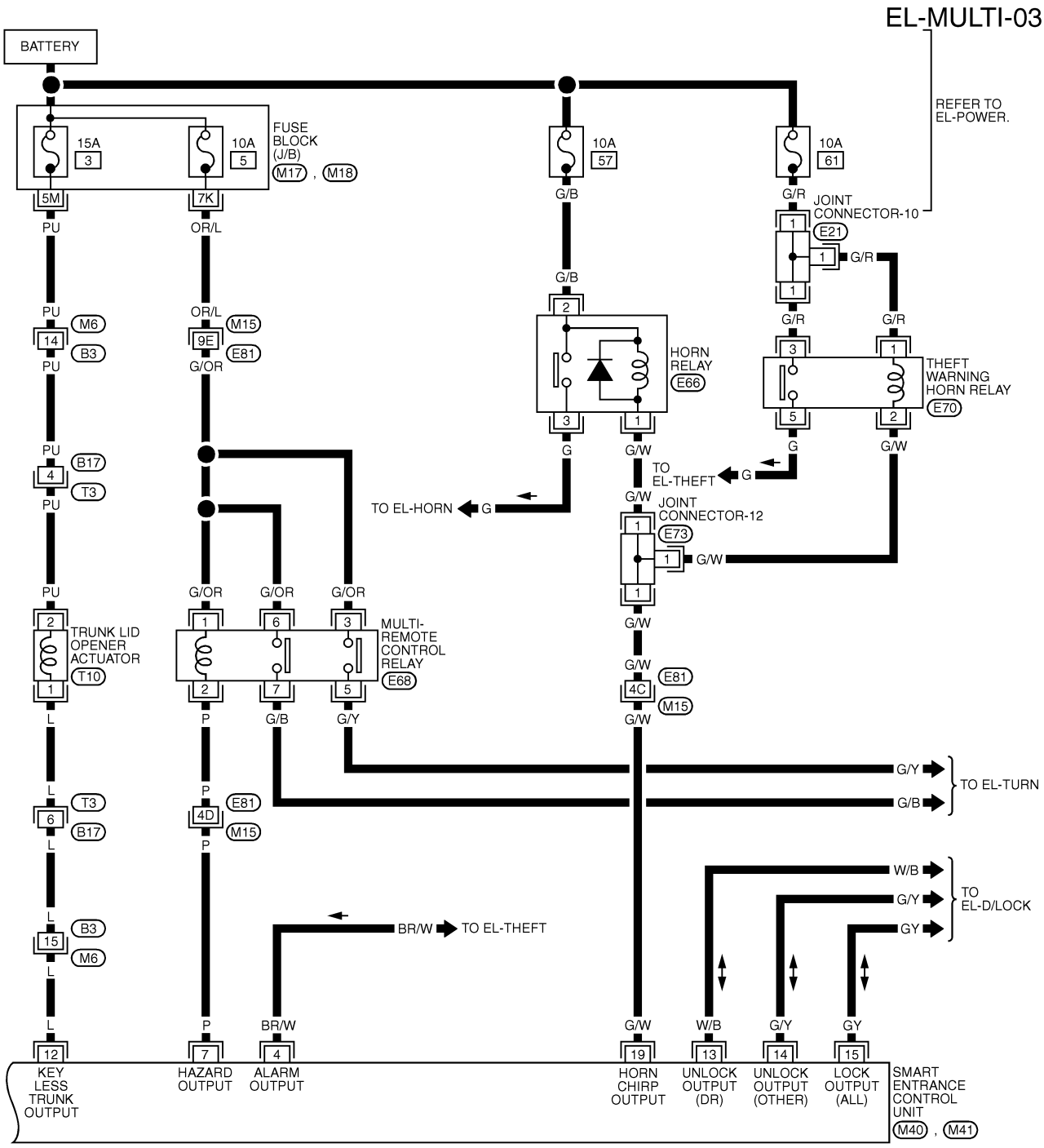


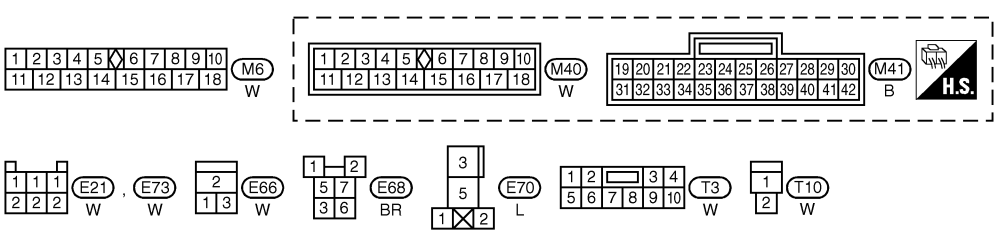
REFER TO THE FOLLOWING.
M4 , D1 -SUPER MULTIPLE JUNCTION (SMJ)

MEL512K

FIG. 3

NHEL0114S05





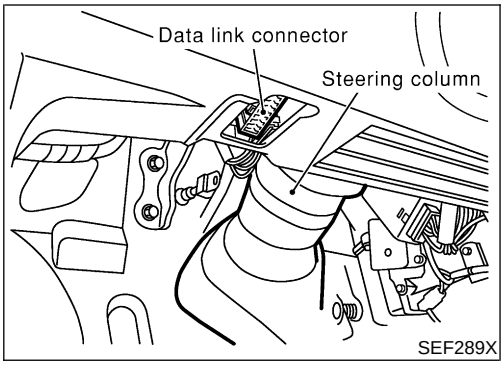
REFER TO THE FOLLOWING.
M15 -SUPER MULTIPLE JUNCTION (SMJ)
M17 , M18 -FUSE BLOCK-JUNCTION BOX (J/B)

MEL247L

SMART ENTRANCE CONTROL UNIT TERMINALS AND REFERENCE VALUE BETWEEN EACH TERMINAL AND GROUND

TERMINAL	WIRE COLOR	ITEM	CONDITION		DATA (DC)
1	R/Y	IGNITION KEY HOLE ILLUMINATION	FOR 30 SECONDS AFTER DRIVER DOOR IS LOCKED		0V
			30 SECONDS PASSED AFTER DRIVER DOOR IS LOCKED		12V
4	BR/W	THEFT WARNING HORN/LAMP RELAY	WHEN PANIC ALARM IS OPERATED USING REMOTE CONTROLLER		12V→0V
7	P	MULTI-REMOTE CONTROL RELAY	WHEN DOORS ARE LOCKED USING REMOTE CONTROLLER		12V→0V
8	R/Y	INTERIOR LAMP	WHEN INTERIOR LAMP IS OPERATED USING REMOTE CONTROLLER (LAMP SWITCH IN "DOOR" POSITION)		0V→12V
10	R/B	POWER SOURCE (FUSE)	–		12V
11	W/R	POWER SOURCE (C/B)	–		12V
12	L	TRUNK LID OPENER SWITCH	ON (OPEN)→OFF (CLOSED)		0V→12V
13	W/B	DRIVER DOOR LOCK ACTUATOR	DOOR LOCK & UNLOCK SWITCH	FREE	0V
14	G/Y	PASSENGER AND REAR DOOR LOCK ACTUATOR		UNLOCKED	12V
15	GY	DOOR LOCK ACTUATORS	DOOR LOCK & UNLOCK SWITCH	FREE	0V
				LOCKED	12V
16	B	GROUND	–		–
17	R/G	BATTERY SAVER (INTERIOR LAMP)	BATTERY SAVER DOES NOT OPERATE→OPERATE		12V→0V
19	G/W	HORN RELAY	WHEN DOORS ARE LOCKED USING REMOTE CONTROLLER WITH HORN CHIRP MODE		12V→0V
21	PU	IGNITION SWITCH (ACC)	"ACC" POSITION		12V
23	GY	DOOR LOCK & UNLOCK SWITCHES	NEUTRAL→LOCKS		5V→0V
28	R/W	REAR DOOR SWITCHES	OFF (CLOSED)→ON (OPEN)		5V→0V
29	SB	DRIVER DOOR SWITCH	OFF (CLOSED)→ON (OPEN)		5V→0V
32	B/R	IGNITION KEY SWITCH (INSERT)	KEY INSERTED→KEY REMOVED FROM IGN KEY CYLINDER		12V→0V
33	G	IGN ON	IGNITION KEY IS IN "ON" POSITION		12V
35	BR/Y	DOOR LOCK & UNLOCK SWITCHES	NEUTRAL→UNLOCKS		5V→0V
40	R/L	PASSENGER DOOR SWITCH	OFF (CLOSED)→ON (OPEN)		5V→0V

SEL374WB



SEF289X

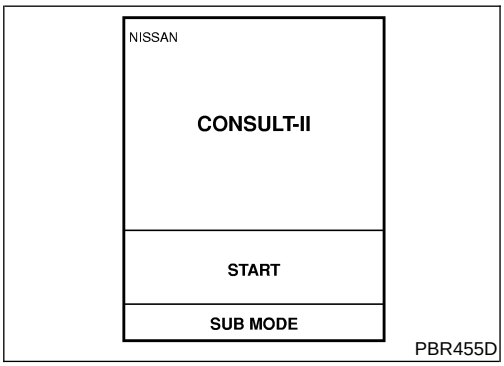
CONSULT-II Inspection Procedure

NHEL0241

“MULTI REMOTE ENT”

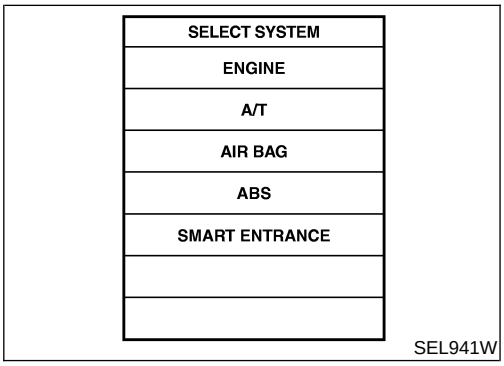
NHEL0241S01

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



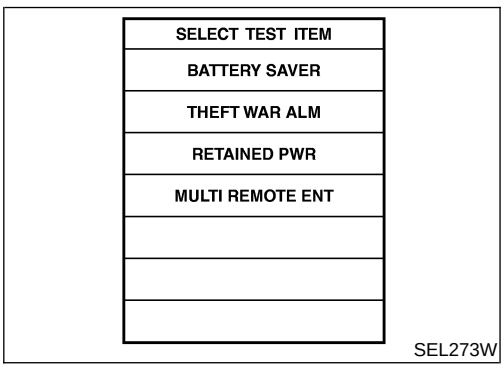
PBR455D

3. Turn ignition switch “ON”.
4. Touch “START”.



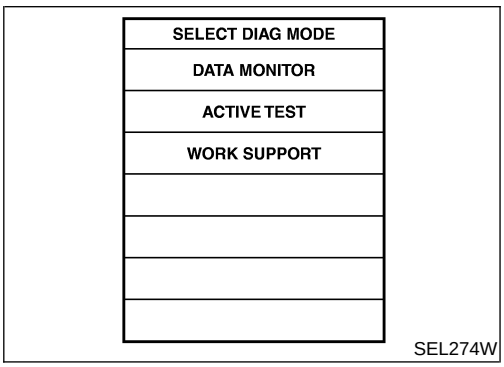
SEL941W

5. Touch “SMART ENTRANCE”.



SEL273W

6. Touch “MULTI REMOTE ENT”.



SEL274W

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

CONSULT-II Application Items

NHEL0242

"MULTI REMOTE ENT"

NHEL0242S01

Data Monitor

NHEL0242S0101

Monitored Item	Description
ACC ON SW	Indicates [ON/OFF] condition of ignition switch in ACC position.
KEY ON SW	Indicates [ON/OFF] condition of key switch.
DOOR SW-DR	Indicates [ON/OFF] condition of front door switch LH.
DOOR SW-ALL	Indicates [ON/OFF] condition of door switch (All).
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.
KEY CYL UN SW	Indicates [ON/OFF] condition of unlock signal from key cylinder switch.
LK BUTTON/SIG	Indicates [ON/OFF] condition of lock signal from remote controller.
UN BUTTON/SIG	Indicates [ON/OFF] condition of unlock signal from remote controller.
TRUNK BTN/SIG	Indicates [ON/OFF] condition of trunk open signal from remote controller.
PANIC BTN	Indicates [ON/OFF] condition of panic signal from remote controller.
UN BUTTON ON	Indicates [ON/OFF] condition of second unlock signal from remote controller within 5 seconds after first unlock operation.
LK/UN BTN ON	Indicates [ON/OFF] condition of lock/unlock signal at the same time from remote controller.

Active Test

NHEL0242S0102

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.
ALARM	This test is able to check panic alarm operation. The alarm activate for 0.5 seconds after "ON" on CONSULT-II screen is touched.
MULTI REM HRN	This test is able to check horn reminder operation. The horn sounds for 0.02 seconds after "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.

Work Support

NHEL0242S0103

Test Item	Description
REMO CONT ID CONFIR	It can be checked whether remote controller ID code is registered or not in this mode.
REMO CONT ID REGIST	Remote controller ID code can be registered.
REMO CONT ID ERASUE	Remote controller ID code can be erased.
HZRD REM SET	Hazard and horn reminder mode can be changed in this mode. The reminder mode will be changed when "MODE SET" on CONSULT-II screen is touched.

Trouble Diagnoses

NHEL0195

SYMPTOM CHART

NHEL0195S01

NOTE:

- Always check remote controller battery before replacing remote controller.
- The panic alarm operation and trunk lid opener operation of multi-remote control system do not activate with the ignition key inserted in the ignition key cylinder.

Symptom	Diagnoses/service procedure	Reference page (EL-)
All function of multi-remote control system do not operate.	1. Remote controller battery and function check	338
	2. Power supply and ground circuit for smart entrance control unit check	339
	3. Replace remote controller. Refer to ID Code Entry Procedure. NOTE: If the result of remote controller function check with CONSULT-II is OK, remote controller is not malfunctioning.	351
The new ID of remote controller cannot be entered.	1. Remote controller battery and function check	338
	2. Key switch (insert) check	342
	3. Door switch check	341
	4. Door lock/unlock switch LH check	343
	5. Power supply and ground circuit for smart entrance control unit check	339
	6. Replace remote controller. Refer to ID Code Entry Procedure. NOTE: If the result of remote controller function check with CONSULT-II is OK, remote controller is not malfunctioning.	351
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-317.)	1. Remote controller battery and function check	338
	2. Replace remote controller. Refer to ID Code Entry Procedure. NOTE: If the result of remote controller function check with CONSULT-II is OK, remote controller is not malfunctioning.	351
Hazard and horn reminder does not activate properly when pressing lock or unlock button of remote controller.	1. Remote controller battery and function check	338
	2. Hazard reminder check	346
	3. Horn reminder check* *: Horn chirp can be activated or deactivated. First check the horn chirp setting. Refer to “System Description”, EL-326.	348
	4. Door switch check	341
	5. Replace remote controller. Refer to ID Code Entry Procedure. NOTE: If the result of remote controller function check with CONSULT-II is OK, remote controller is not malfunctioning.	351
Interior lamp and key hole illumination operation do not activate properly.	1. Interior lamp operation check	349
	2. Key hole illumination operation check	350
	3. Door switch check	341
	4. Front LH door unlock sensor check	344

Symptom	Diagnoses/service procedure	Reference page (EL-)
Panic alarm (horn and headlamp) does not activate when panic alarm button is continuously pressed.	1. Remote controller battery and function check	338
	2. Theft warning operation check. Refer to "PRELIMINARY CHECK" in "THEFT WARNING SYSTEM".	371
	3. Key switch (insert) check	342
	4. Replace remote controller. Refer to ID Code Entry Procedure. NOTE: If the result of remote controller function check with CONSULT-II is OK, remote controller is not malfunctioning.	351
Trunk lid does not open when trunk opener button is continuously pressed.	1. Remote controller battery and function check	338
	2. Trunk lid opener actuator check	345
	3. Key switch (insert) check	342
	4. Replace remote controller. Refer to ID Code Entry Procedure. NOTE: If the result of remote controller function check with CONSULT-II is OK, remote controller is not malfunctioning.	351

REMOTE CONTROLLER BATTERY AND FUNCTION CHECK

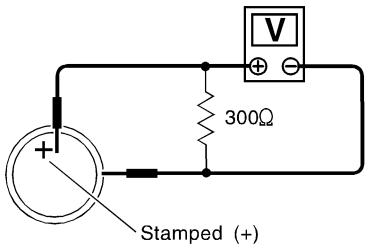
=NHEL0195S02

1	CHECK REMOTE CONTROLLER BATTERY

Remove battery (refer to EL-355) and measure voltage across battery positive and negative terminals, (+) and (−).

Voltage [V]:
2.5 - 3.0

NOTE:
Remote controller does not function if battery is not set correctly.



SEL237W

OK or NG

OK	▶	GO TO 2.
NG	▶	Replace battery.

2	CHECK REMOTE CONTROLLER FUNCTION

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

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

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

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 within 5 seconds after first pushing UNLOCK	UN BUTTON ON	ON
Pushing LOCK and UNLOCK at the same time	LK/UN BTN ON	ON

SEL346W

OK or NG

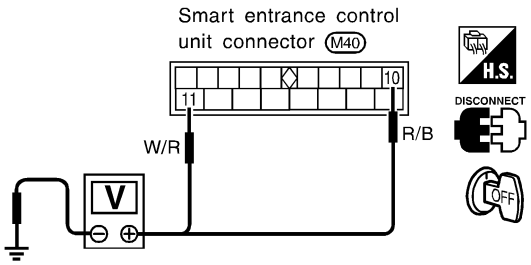
OK	▶	Remote controller is OK. Further inspection is necessary. Refer to "SYMPTOM CHART", EL-336.
NG	▶	Replace remote controller. Refer to ID Code Entry Procedure.

POWER SUPPLY AND GROUND CIRCUIT CHECK

=NHEL0195S03

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 terminal 10 or 11 and ground.



Battery voltage should exist.

SEL226W

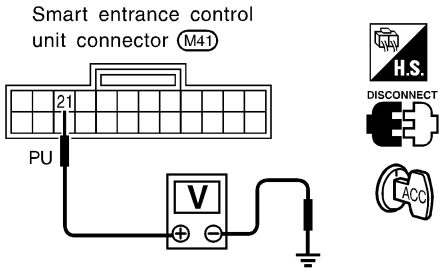
Refer to wiring diagram in EL-330.

OK or NG

OK	▶	GO TO 2.
NG	▶	**Check the following.** ● 40A fusible link (letter **I**, located in fuse and fusible link box) ● 10A fuse [No. 13, located in fuse block (J/B)] ● E90 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 terminal 21 and ground while ignition switch is "ACC".



Battery voltage should exist.

SEL227W

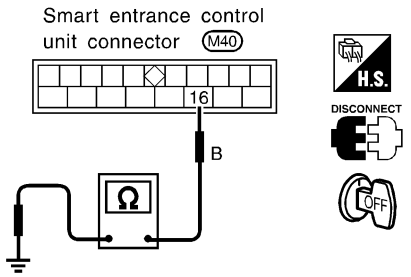
Refer to wiring diagram in EL-330.

OK or NG

OK	▶	GO TO 3.
NG	▶	**Check the following.** ● 10A fuse [No. 1, 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 terminal 16 and ground.



Continuity should exist.

SEL228W

Refer to wiring diagram in EL-330.

OK or NG

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

DOOR SWITCH CHECK

=NHEL0195S04

1 CHECK DOOR SWITCH INPUT SIGNAL

With CONSULT-II

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

DATA MONITOR	
MONITOR	
DOOR SW-ALL	OFF

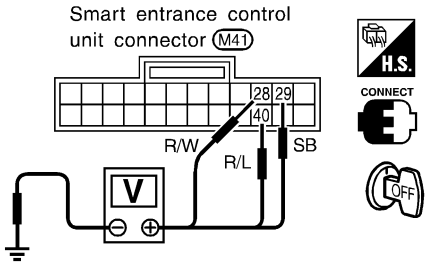
When any doors are open:
DOOR SW-ALL ON

When all doors are closed:
DOOR SW-ALL OFF

SEL323W

Without CONSULT-II

Check voltage between smart entrance control unit harness connector terminals 28, 29 or 40 and ground.



	Terminals (+)	Terminals (−)	Condition	Voltage [V]
Front LH door switch	29	Ground	Open	0
			Closed	Approx. 5
Front RH door switch	40	Ground	Open	0
			Closed	Approx. 5
Rear door switches	28	Ground	Open	0
			Closed	Approx. 5

SEL191W

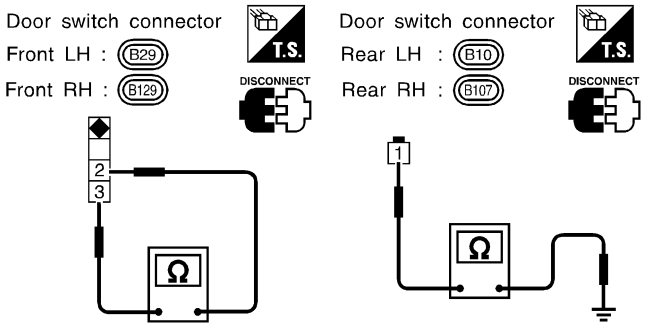
Refer to wiring diagram in EL-331.

OK or NG

OK	▶	Door switch is OK.
NG	▶	GO TO 2.

2 CHECK DOOR SWITCH

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



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

SEL192W

OK or NG

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

KEY SWITCH (INSERT) CHECK

=NHEL0195S05

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

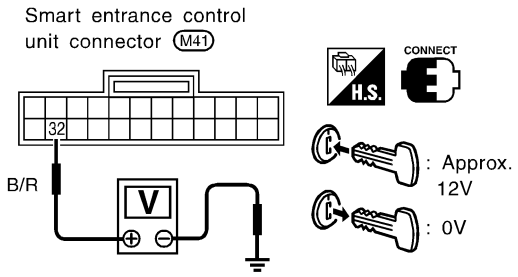
When key is removed from ignition key cylinder:

KEY ON SW OFF

SEL315W

Without CONSULT-II

Check voltage between control unit terminal 32 and ground.



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

SEL193W

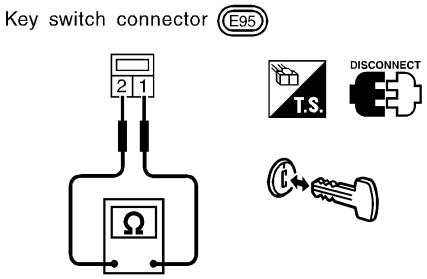
Refer to wiring diagram in EL-330.

OK or NG

OK	▶	Key switch is OK.
NG	▶	GO TO 2.

2	CHECK KEY SWITCH (INSERT)

Check continuity between key switch terminals 1 and 2.



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

SEL194W

OK or NG

OK	▶	**Check the following.** • 10A fuse [No. 12, located in fuse block (J/B)] • Harness for open or short between key switch and fuse • Harness for open or short between smart entrance control unit and key switch
NG	▶	Replace key switch.

DOOR LOCK/UNLOCK SWITCH LH CHECK

=NHEL0195S06

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

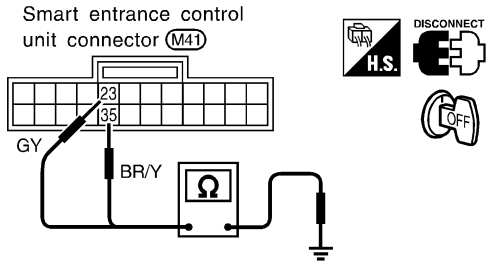
When lock/unlock switch is turned to LOCK:
LOCK SW DR/AS ON

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

SEL341W

Without CONSULT-II

1. Disconnect smart entrance control unit harness connector.
2. Check continuity between smart entrance control unit harness connector terminal 23 or 35 and ground.



Terminals	Door lock/unlock switch (LH or RH) condition	Continuity
23 - Ground	Lock	Yes
	N and Unlock	No
35 - Ground	Unlock	Yes
	N and Lock	No

SEL195W

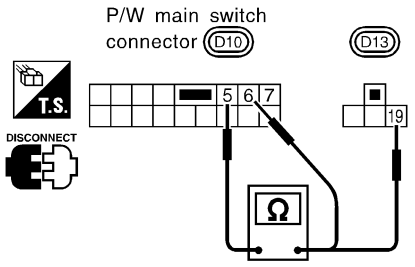
Refer to wiring diagram in EL-330.

OK or NG

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

2 CHECK DOOR LOCK/UNLOCK SWITCH

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



Condition	Terminals		
	19	6	5
Lock		○	○
N	No continuity		
Unlock	○		○

SEL648W

OK or NG

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

FRONT LH DOOR UNLOCK SENSOR CHECK

=NHEL0195S07

1 CHECK FRONT LH DOOR UNLOCK SENSOR INPUT SIGNAL

With CONSULT-II

1. Select "DATA MONITOR" mode in "INT LAMP" with CONSULT-II.
2. Check front LH door unlock sensor ("LOCK SIG DR") in "DATA MONITOR" mode.

DATA MONITOR	
MONITOR	
LOCK SIG DR	OFF

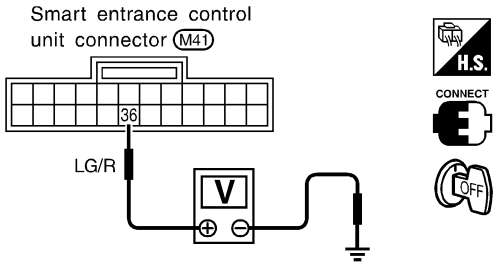
When front LH door is locked:
LOCK SIG DR OFF

When front LH door is unlocked:
LOCK SIG DR ON

SEL344W

Without CONSULT-II

Check voltage between smart entrance control unit harness connector terminal 36 and ground.



	Terminals (+)	Terminals (–)	Condition	Voltage [V]
Front LH door	36	Ground	Locked	Approx. 5
			Unlocked	0

SEL223W

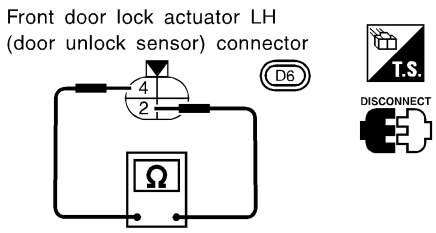
Refer to wiring diagram in EL-331.

OK or NG

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

2 CHECK FRONT LH DOOR UNLOCK SENSOR

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



Continuity:
Condition: Locked
No
Condition: Unlocked
Yes

SEL224W

OK or NG

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

TRUNK LID OPENER ACTUATOR CHECK

=NHEL0195S12

1	CHECK TRUNK LID OPENER

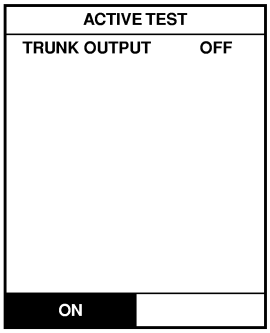
Check trunk lid opener operation with trunk lid opener switch.
NOTE: First check trunk lid opener cancel lever position.

Does trunk lid open?

Yes	▶	GO TO 2.
No	▶	Check trunk lid opener actuator and the circuit.

2	CHECK TRUNK LID OPENER ACTUATOR OPERATION

With CONSULT-II
1. Select "ACTIVE TEST" in "MULTI REMOTE ENT" with CONSULT-II.
2. Select "TRUNK OUTPUT" and touch "ON".



Trunk lid opener should operate.

SEL345W

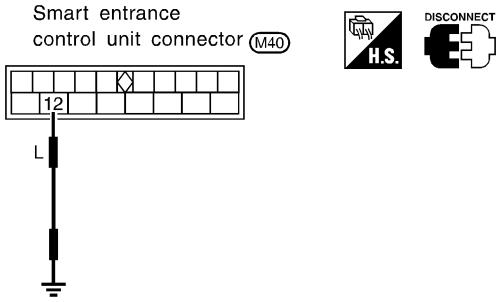
NOTE: If CONSULT-II is not available, skip this procedure and go to the next step.

OK or NG

OK	▶	Trunk lid opener actuator circuit is OK.
NG	▶	Check harness for open or short between smart entrance control unit and trunk lid opener actuator.

3	CHECK TRUNK LID OPENER ACTUATOR CIRCUIT

Without CONSULT-II
1. Disconnect smart entrance control unit harness connector.
2. Apply ground to smart entrance control unit harness connector terminal 12.



SEL232W

Refer to wiring diagram in EL-332.

Does trunk lid open?

Yes	▶	Replace smart entrance control unit.
No	▶	Check harness for open or short between smart entrance control unit and trunk lid opener actuator.

HAZARD REMINDER CHECK

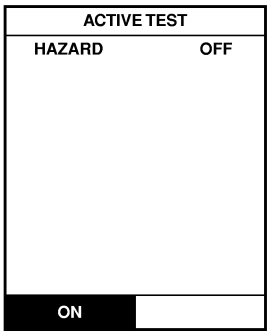
=NHEL0195S08

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.

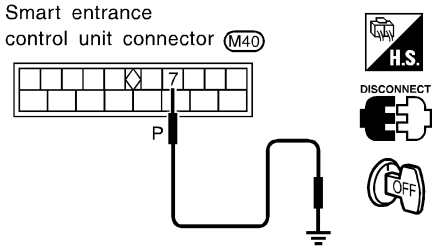
OK or NG

OK	▶	Hazard reminder operation is OK.
NG	▶	GO TO 4.

3	CHECK HAZARD 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 terminal 7.



Hazard indicator should illuminate.

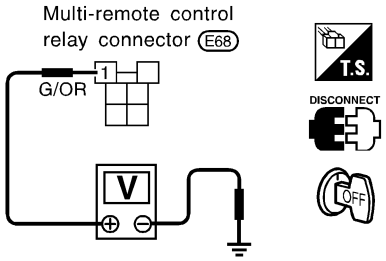
SEL225W

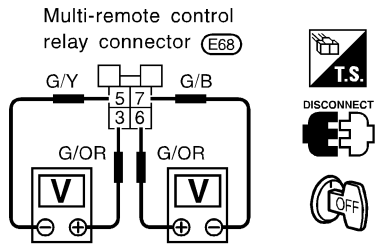
Refer to wiring diagram in EL-332.

OK or NG

OK	▶	Replace smart entrance control unit.
NG	▶	GO TO 4.

4	CHECK MULTI-REMOTE CONTROL RELAY	
Check multi-remote control relay. **OK or NG**		
OK	▶	GO TO 5.
NG	▶	Replace multi-remote control relay.

5	CHECK POWER SUPPLY FOR MULTI-REMOTE CONTROL RELAY	
1. Disconnect multi-remote control relay harness connector. 2. Check voltage between terminal 1 and ground.  SEL235W **Does battery voltage exist?**		
Yes	▶	GO TO 6.
No	▶	**Check the following.** ● 15A fuse [No. 5, located in fuse block (J/B)] ● Harness for open or short between multi-remote control relay and fuse

6	CHECK MULTI-REMOTE CONTROL RELAY CIRCUIT	
1. Disconnect multi-remote control relay harness connector. 2. Check voltage between terminals 3 and 5. 3. Check voltage between terminals 6 and 7.  **Battery voltage should exist.** SEL236W **OK or NG**		
OK	▶	Check harness for open or short between smart entrance control unit and multi-remote control relay.
NG	▶	**Check the following.** ● Harness for open or short between multi-remote control relay and fuse ● Harness for open or short between multi-remote control relay and turn signal lamps

HORN REMINDER CHECK

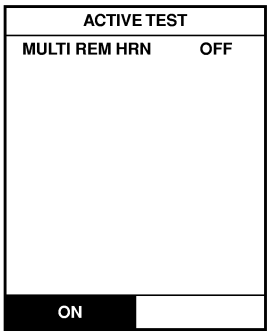
=NHEL0195S09

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 "MULTI REM HRN" and touch "ON".



Horn should sound.

SEL348W

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

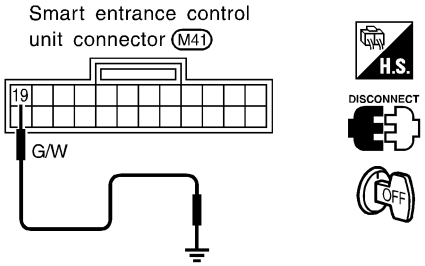
OK or NG

OK	▶	Horn reminder operation is OK.
NG	▶	Check harness for open or short between smart entrance control unit and horn relay.

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 terminal 19.



SEL229W

Refer to wiring diagram in EL-332.

Does horn sound?

Yes	▶	Replace smart entrance control unit.
No	▶	Check harness for open or short between smart entrance control unit and horn relay.

INTERIOR LAMP OPERATION CHECK

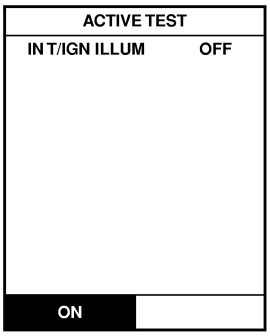
=NHEL0195S10

1	CHECK INTERIOR LAMP	
Check if the interior lamp switch is in the "ON" position and the lamp illuminates. **Does interior lamp illuminate?**		
Yes	▶	GO TO 2.
No	▶	**Check the following.** ● Harness for open or short between smart entrance control unit and interior lamp ● Interior lamp

2	CHECK INTERIOR LAMP OPERATION

With CONSULT-II

1. Select "ACTIVE TEST" in "MULTI REMOTE ENT" with CONSULT-II.
2. Select "INT/IGN ILLUM" and touch "ON".

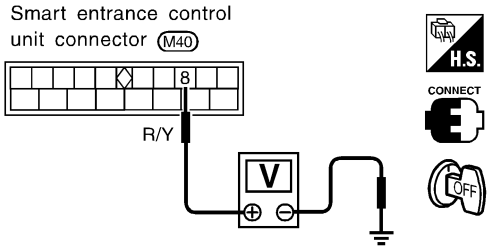


Interior lamp should illuminate.

SEL349W

Without CONSULT-II

Push unlock button of remote controller with all doors closed and driver's door locked, and check voltage between smart entrance control unit harness connector terminal 8 and ground.



Voltage [V]:
Unlock button is pushed.
0 (For approx. 30 seconds.)
Unlock button is not pushed.
Battery voltage

SEL231WA

Refer to wiring diagram in EL-330.

OK or NG

OK	▶	System is OK.
NG	▶	Check harness open or short between smart entrance control unit and interior lamp.

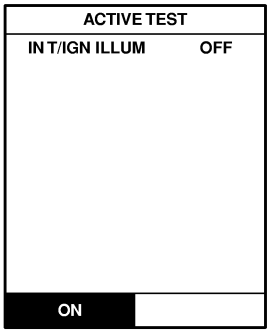
KEY HOLE ILLUMINATION OPERATION CHECK

NHEL0195S13

1	CHECK KEY HOLE ILLUMINATION OPERATION

With CONSULT-II

1. Select "ACTIVE TEST" IN "MULTI REMOTE ENT" with CONSULT-II.
2. Select "INT/IGN ILLUM" and touch "ON".

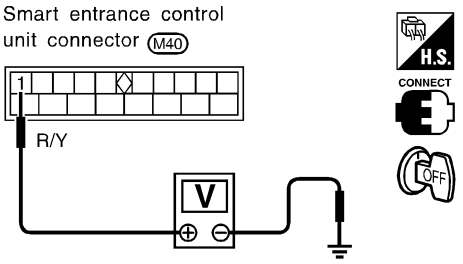


Key hole illuminate should illuminate.

SEL350W

Without CONSULT-II

Push unlock button of remote controller with all doors closed and driver's door locked, and check voltage between smart entrance control unit harness connector terminal 1 and ground.



Voltage [V]:
Unlock button is pushed.
0 (For approx. 30 seconds)
Unlock button is not pushed.
Battery voltage

SEL330WA

Refer to wiring diagram in EL-330.

OK or NG

OK	▶	System is OK.
NG	▶	**Check the following.** ● Harness for open or short between smart entrance control unit and key hole illumination. ● Key hole illumination

ID Code Entry Procedure

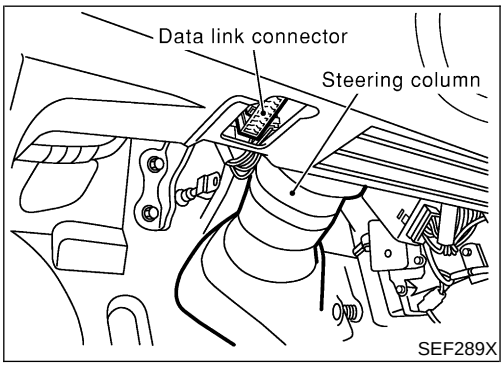
=NHEL0117

REMOTE CONTROLLER ID SET UP WITH CONSULT-II

NHEL0117S01

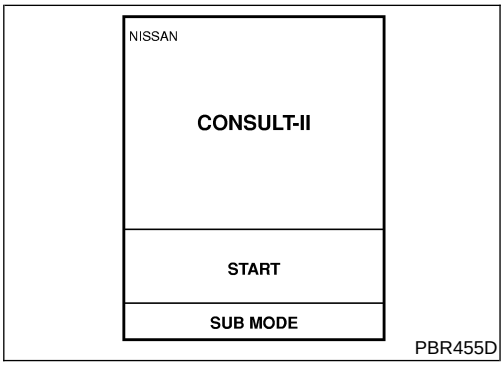
NOTE:

If a remote controller is lost, the ID code of the lost remote controller must be erased to prevent unauthorized use. When the ID code of a lost remote controller is not known, all controller ID codes should be erased. After all ID codes are erased, the ID codes of all remaining and/or new remote controllers must be re-registered.



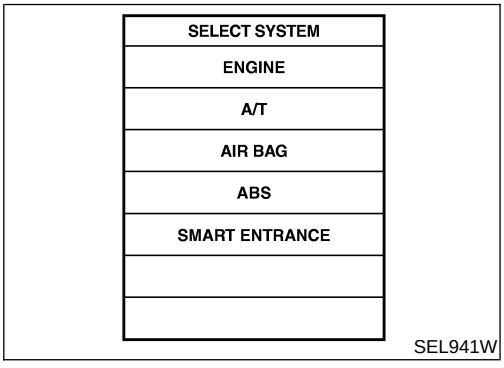
SEF289X

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



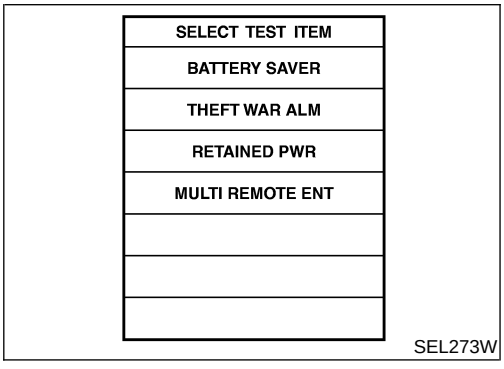
PBR455D

3. Turn ignition switch “ON”.
4. Touch “START”.



SEL941W

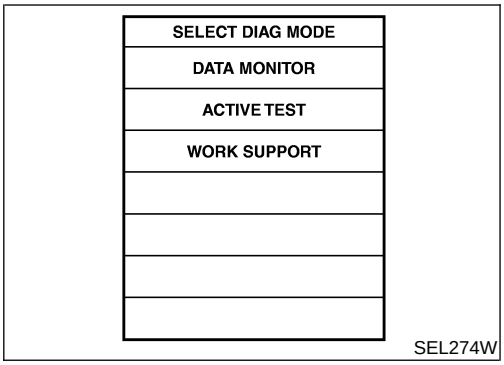
5. Touch “SMART ENTRANCE”.



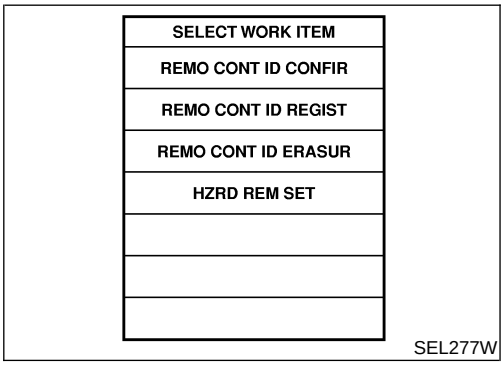
SEL273W

6. Touch “MULTI REMOTE ENT”.

ID Code Entry Procedure (Cont'd)



7. Touch "WORK SUPPORT".



8. The items are shown on the figure at left can be set up.

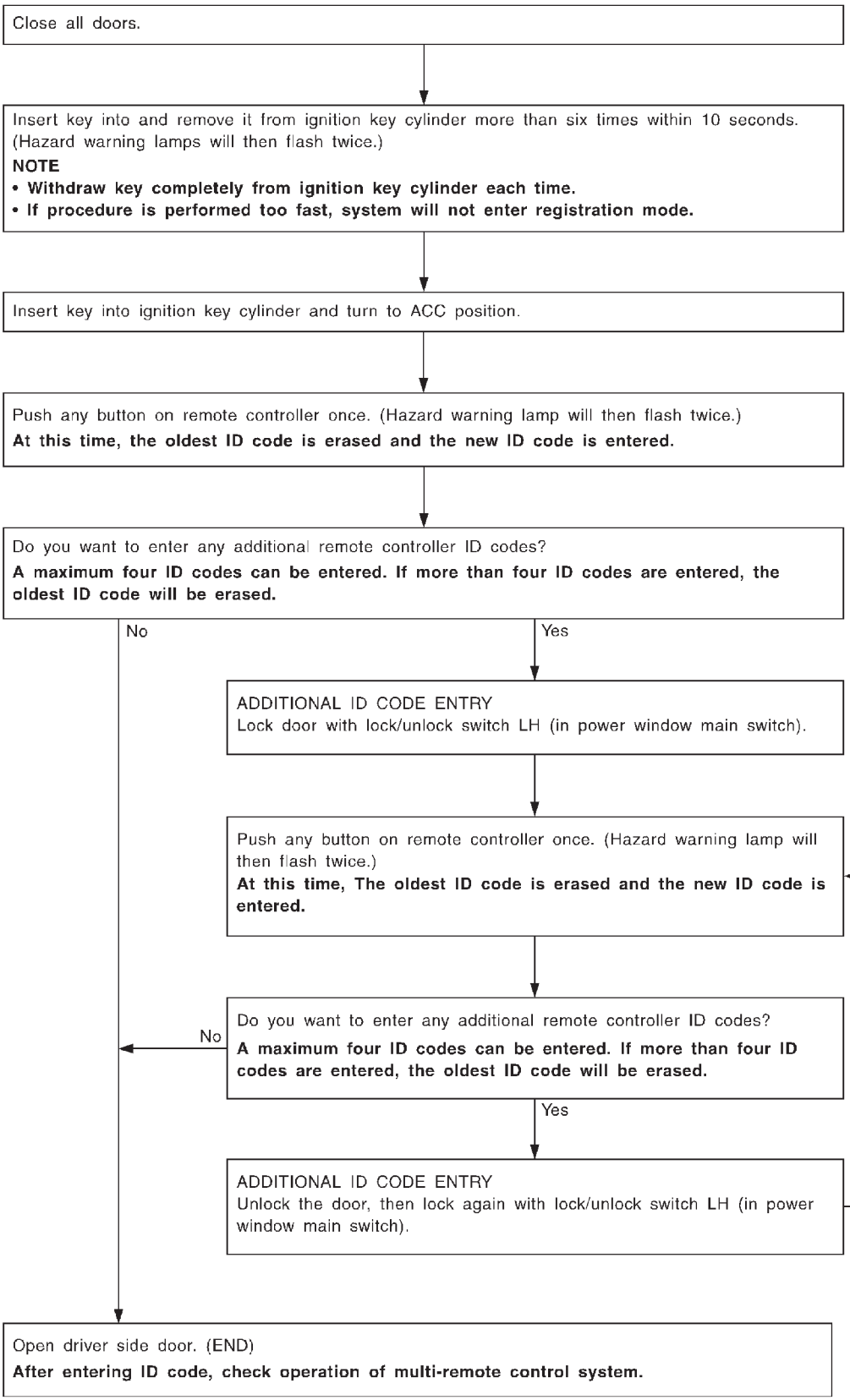
- "REMO CONT ID CONFIR"
  Use this mode to confirm if a remote controller ID code is registered or not.
- "REMO CONT ID REGIST"
  Use this mode to register a remote controller ID code.

NOTE:
Register the ID code when remote controller or smart entrance control unit is replaced, or when additional remote controller is required.

- "REMO CONT ID ERASUR"
  Use this mode to erase a remote controller ID code.
- "HZRD REM SET"
  Use this mode to activate or deactivate the hazard and horn reminder.

REMOTE CONTROLLER ID SET UP WITHOUT CONSULT-II

NHEL0117S02



SEL332WE

NOTE:

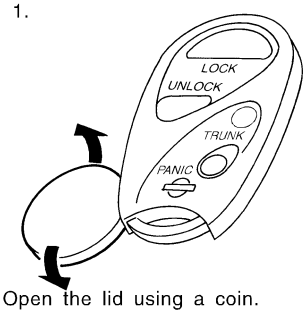
- If a remote controller is lost, the ID code of the lost remote controller must be erased to prevent unauthorized use. A specific ID code can be erased with CONSULT-II. However, when the ID code of a lost remote controller is not known, all controller ID codes should be erased. After all ID codes are erased, the ID codes of all remaining and/or new remote controllers must be re-registered.
  To erase all ID codes in memory, register one ID code (remote controller) four times. After all ID codes are erased, the ID codes of all remaining and/or new remote controllers must be re-registered.
- When registering an additional remote controller, the existing ID codes in memory may or may not be erased. If four ID codes are stored in memory, when an additional code is registered, only the oldest code is erased. If less than four ID codes are stored in memory, when an additional ID code is registered, the new ID code is added and no ID codes are erased.
- If you need to activate more than two additional new remote controllers, repeat the procedure "Additional ID code entry" for each new remote controller.
- Entry of maximum four ID codes is allowed. When more than four ID codes are entered, the oldest ID code will be erased.
- Even if same ID code that is already in the memory is input, the same ID code can be entered. The code is counted as an additional code.

Remote Controller Battery Replacement

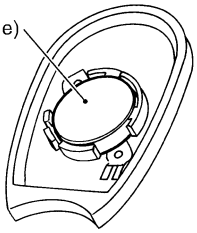
NHEL0118

NOTE:

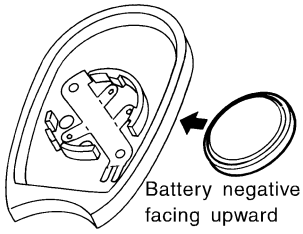
- Be careful not to touch the circuit board or battery terminal.
- The remote controller is water-resistant. However, if it does get wet, immediately wipe it dry.

1. 

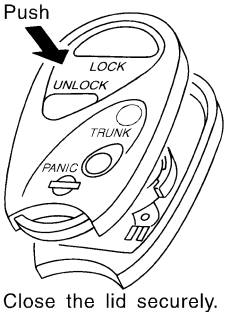
Open the lid using a coin.

2. 

Remove the battery.

3. 

Insert the new battery.

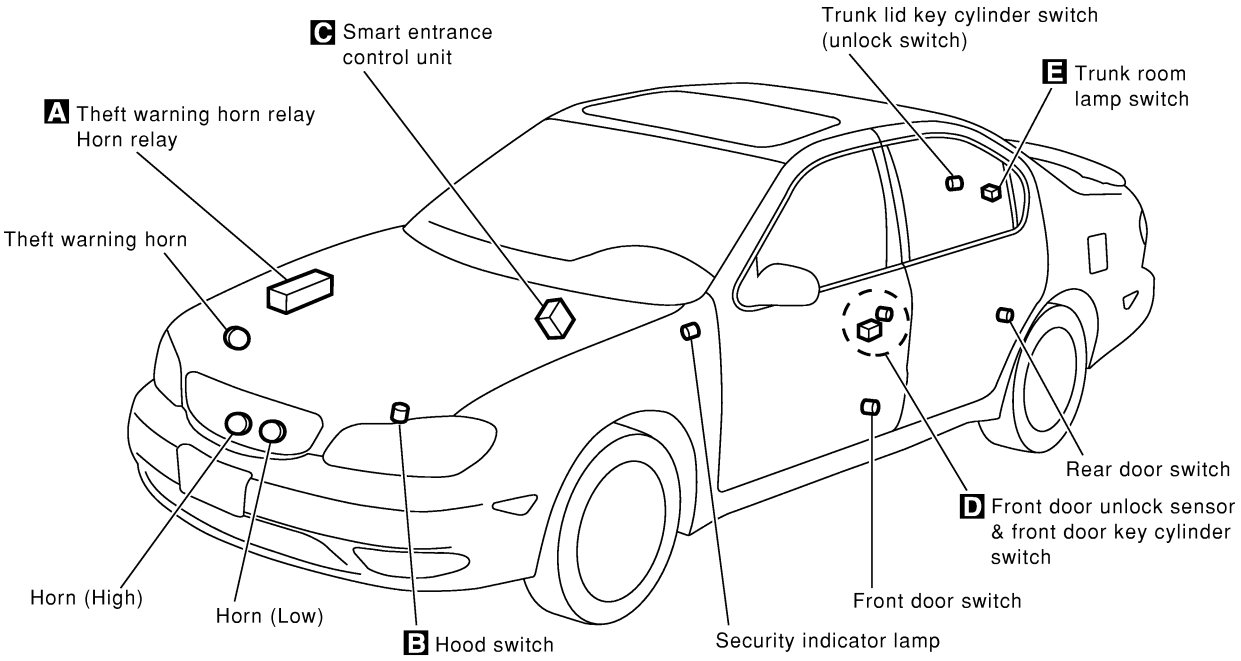
4. 

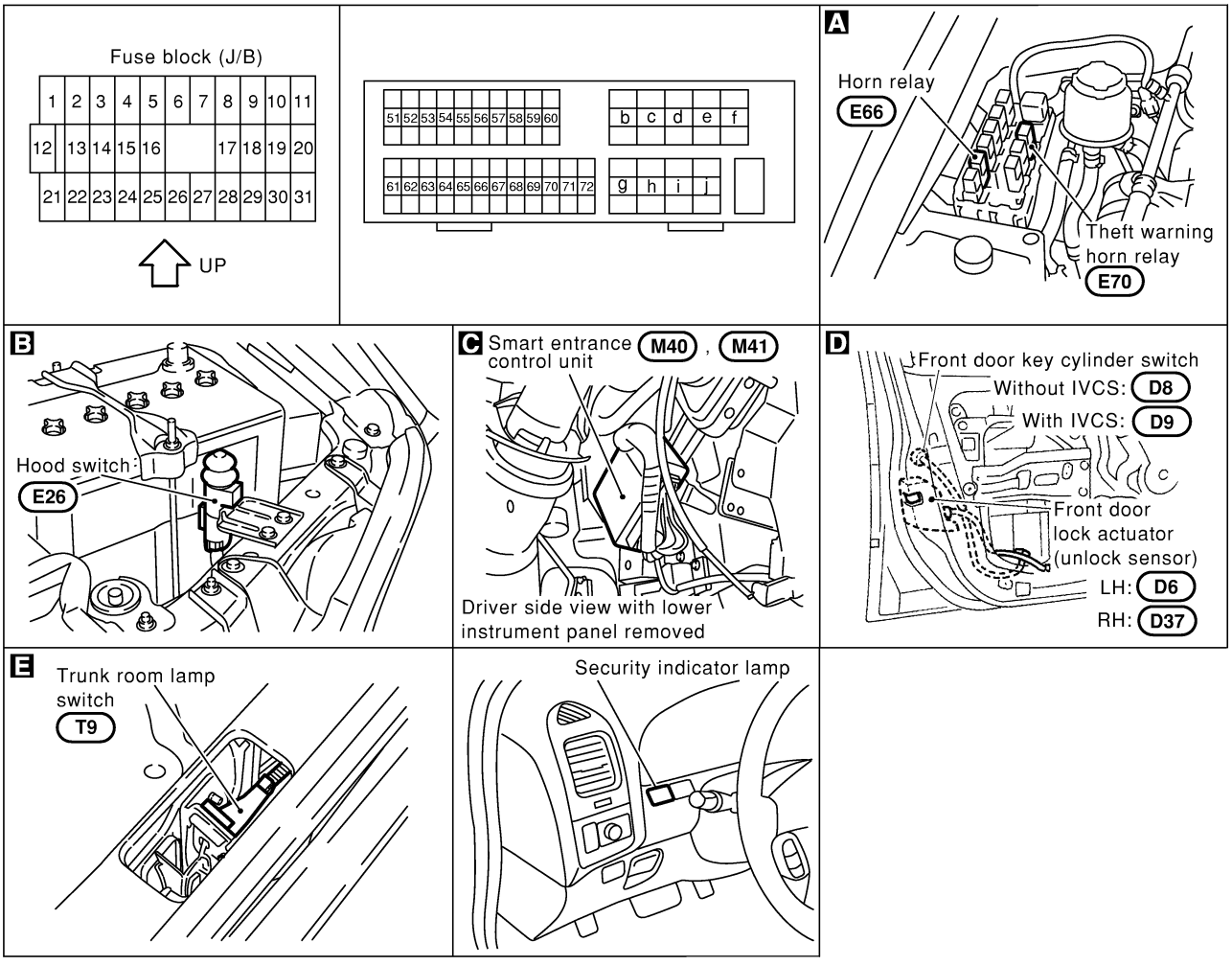
Close the lid securely.
Push the remote controller button two or three times to check its operation.

SEL366W

Component Parts and Harness Connector Location

NHEL0119





SEL063X

System Description

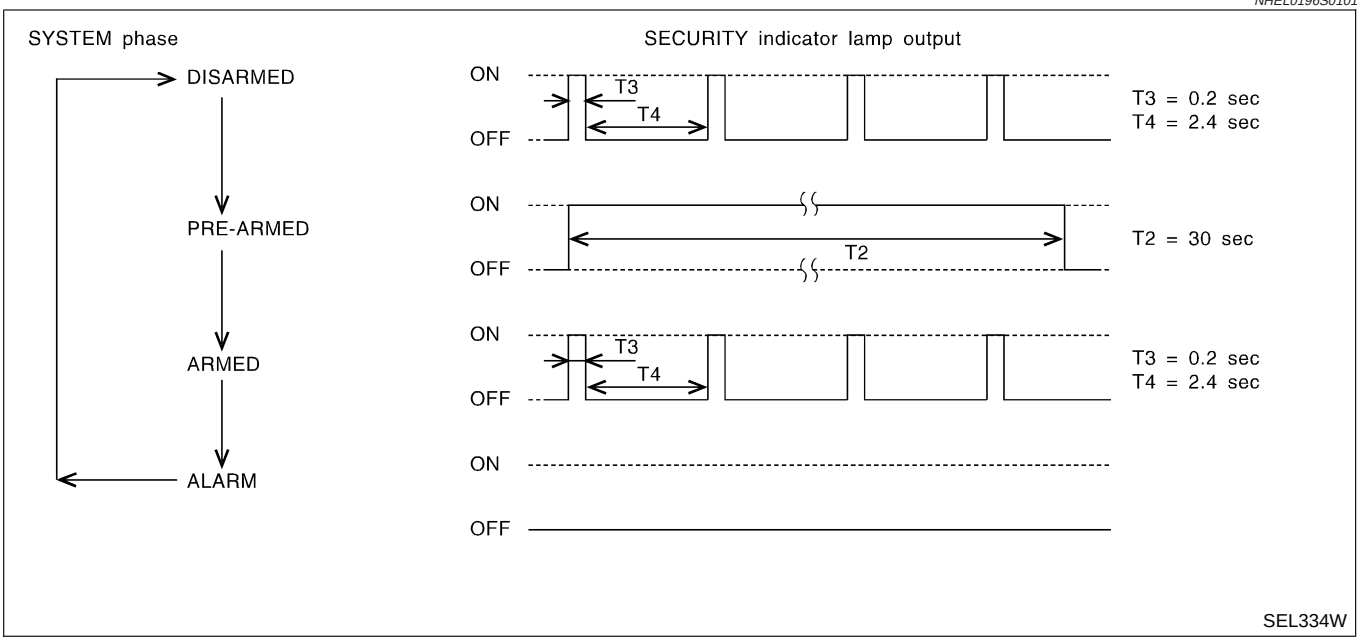
NHEL0196

DESCRIPTION

NHEL0196S01

1. Operation Flow

NHEL0196S0101



2. Setting The Theft Warning System

NHEL0196S0102

Initial condition

1) Ignition switch is in OFF position.

Disarmed phase

When the theft warning system is in the disarmed phase, the security indicator lamp blinks every 2.6 seconds.

Pre-armed phase and armed phase

When the following operation 1) or 2) is performed, the theft warning 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 multi-remote controller after hood, trunk lid and all doors are closed.
2) Hood, trunk lid 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 Theft Warning System

NHEL0196S0103

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

1) Unlock the doors with the key or multi-remote controller.
2) Open the trunk lid with the key or multi-remote controller.

4. Activating The Alarm Operation of The Theft Warning System

NHEL0196S0104

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, trunk lid or any door is opened during armed phase.
2) Disconnecting and connecting the battery connector before canceling armed phase.

POWER SUPPLY AND GROUND

NHEL0196S02

Power is supplied at all times

- through 10A fuse [No. 12, located in the fuse block (J/B)]
- to security indicator lamp terminal 1.

Power is supplied at all times

- through 10A fuse [No. 13, located in the fuse block (J/B)]

- to smart entrance control unit terminal 10.

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

- through 10A fuse [No. 10, located in the fuse block (J/B)]
- to smart entrance control unit terminal 33.

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

- through 10A fuse [No. 1, located in the fuse block (J/B)]
- to smart entrance control unit terminal 21.

Ground is supplied

- to smart entrance control unit terminal 16
- through body grounds M9, M25 and M87.

INITIAL CONDITION TO ACTIVATE THE SYSTEM

NHEL0196S03

The operation of the theft warning system is controlled by the doors, hood and trunk lid.

Pattern A

NHEL0196S0301

To activate the theft warning system, the smart entrance control unit must receive signals indicating the doors, hood and trunk lid are closed.
When a door is open, smart entrance control unit terminal 28, 29 or 40 receives a ground signal from each door switch.
When the hood is open, smart entrance control unit terminal 27 receives a ground signal

- from terminal 1 of the hood switch
- through body grounds E11, E22 and E53.

When the trunk lid is open, smart entrance control unit terminal 38 receives a ground signal

- from terminal 1 of the trunk room lamp switch
- through body grounds T6 and T8.

When smart entrance control unit receives LOCK signal from key cylinder switch or multi-remote controller and none of the described conditions exist, the theft warning system will automatically shift to armed mode.

Pattern B

NHEL0196S0302

To activate the theft warning system, the smart entrance control unit must receive signal indicating any door (including hood and trunk lid) is opened.
When the front doors are locked with key, lock/unlock switch or multi-remote controller and then all doors are closed, the theft warning system will automatically shift to armed mode.

THEFT WARNING SYSTEM ACTIVATION

NHEL0196S04

Pattern A

NHEL0196S0401

With all doors (including hood and trunk lid) close if the key is used to lock doors, terminal 41 receives a ground signal

- from terminal 5 (with IVCS) or 3 (without IVCS) of the key cylinder switch LH
- through body grounds M9, M25 and M87.

If this signal, or lock signal from remote controller is received by the smart entrance control unit, the theft warning system will activate automatically.

NOTE:
Theft warning system can be set even though all doors are not locked.

Pattern B

NHEL0196S0402

With any door (including hood and trunk lid) open if lock/unlock switch is used to lock doors, terminal 23 receives a ground signal

- from terminal 6 of lock/unlock switch LH, or
- from terminal 8 of lock/unlock switch RH
- through body grounds M9, M25 and M87, or

With any door (including hood and trunk lid) open if the key is used to lock doors, terminal 41 receives a ground signal

- from terminal 5 (with IVCS) or 3 (without IVCS) of the key cylinder switch LH
- through body grounds M9, M25 and M87.

If these signals and lock signal from remote controller are received by the smart entrance control unit, ground signals of terminals 36 and 37 are interrupted and all doors are closed, the theft warning system will activate automatically.

NOTE:
Theft warning system can be set even though the rear door is not locked.

Once the theft warning system has been activated, smart entrance control unit terminal 31 supplies ground to terminal 2 of the security indicator lamp.
The security lamp will illuminate for approximately 30 seconds and then blinks every 2.6 seconds.
Now the theft warning system is in armed phase.

THEFT WARNING SYSTEM ALARM OPERATION

NHEL0196S05

The theft warning system is triggered by

- opening a door
- opening the hood or the trunk lid
- detection of battery disconnect and connect.

Once the theft warning system is in armed phase, if the smart entrance control unit receives a ground signal at terminal 28, 29, 40 (door switch), 38 (trunk room lamp switch) or 27 (hood switch), the theft warning system will be triggered. The headlamps flash and the horn sounds intermittently.
Power is supplied at all times

- through 15A fuse (No. 68, located in fuse and fusible link box)
- to headlamp relay LH terminals 1 and 3,
- through 15A fuse (No. 69, located in fuse and fusible link box)
- to headlamp relay RH terminals 1 and 3,
- through 10A fuse (No, 61 located in fuse and fusible link box)
- to theft warning horn relay terminals 1 and 3,
- through 10A fuse (No. 57, located in fuse and fusible link box)
- to horn relay terminal 2.

When the theft warning system is triggered, ground is supplied intermittently

- from smart entrance control unit terminal 4
- to theft warning horn relay terminal 2.
- to horn relay terminal 1,
- to headlamp relay LH terminal 2 and
- to headlamp relay RH terminal 2.
- through body grounds E11, E22 and E53.

The headlamps flash and the horn sounds intermittently.
The alarm automatically turns off after 50 seconds but will reactivate if the vehicle is tampered with again.

THEFT WARNING SYSTEM DEACTIVATION

NHEL0196S06

To deactivate the theft warning system, a door or trunk lid must be unlocked with the key or remote controller.
When the key is used to unlock the door, smart entrance control unit terminal 30 receives a ground signal

- from terminal 1 of the LH key cylinder switch.

When the key is used to open the trunk lid, smart entrance control unit terminal 42 receives a ground signal from terminal 1 of the trunk lid key cylinder switch.
When the smart entrance control unit receives either one of these signals or unlock signal from remote controller, the theft warning system is deactivated. (Disarmed phase)

PANIC ALARM OPERATION

NHEL0196S07

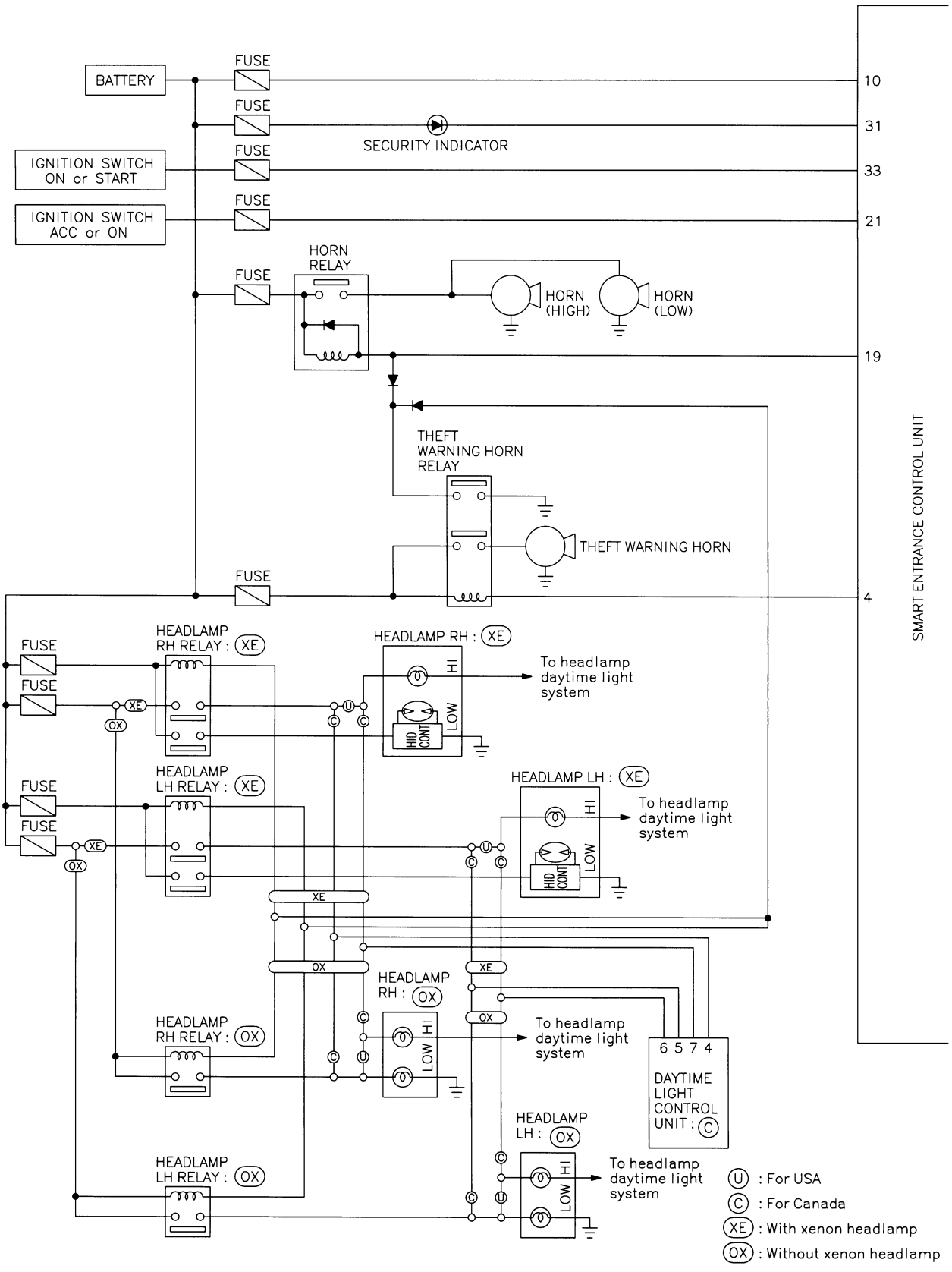
Multi-remote control system may or may not operate theft warning system (horn and headlamps) as required.
When the multi-remote control system (panic alarm) is triggered, ground is supplied intermittently

- from smart entrance control unit terminal 4
- to theft warning horn relay terminal 2.

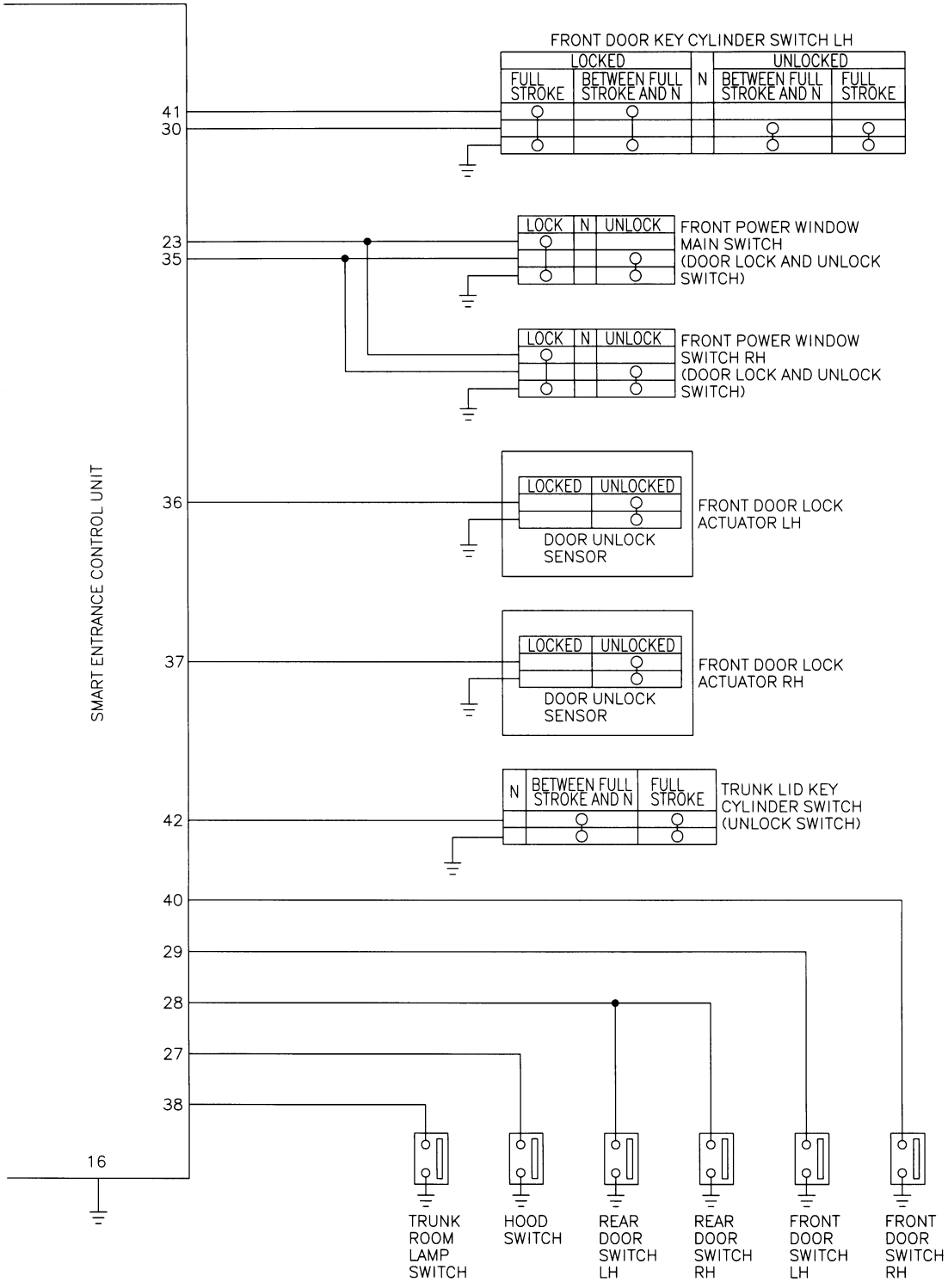
The headlamp flashes and the horn sounds intermittently.
The alarm automatically turns off after 25 seconds or when smart entrance control unit receives any signal from multi-remote controller.

Schematic

NHEL0121



MEL514K


SMART ENTRANCE CONTROL UNIT
41
30
23
35
36
37
42
40
29
28
27
38
16
FRONT DOOR KEY CYLINDER SWITCH LH
LOCKED
UNLOCKED
FULL STROKE
BETWEEN FULL STROKE AND N
N
BETWEEN FULL STROKE AND N
FULL STROKE
LOCK
N
UNLOCK
FRONT POWER WINDOW MAIN SWITCH (DOOR LOCK AND UNLOCK SWITCH)
FRONT POWER WINDOW SWITCH RH (DOOR LOCK AND UNLOCK SWITCH)
LOCKED
UNLOCKED
DOOR UNLOCK SENSOR
FRONT DOOR LOCK ACTUATOR LH
FRONT DOOR LOCK ACTUATOR RH
TRUNK LID KEY CYLINDER SWITCH (UNLOCK SWITCH)
TRUNK ROOM LAMP SWITCH
HOOD SWITCH
REAR DOOR SWITCH LH
REAR DOOR SWITCH RH
FRONT DOOR SWITCH LH
FRONT DOOR SWITCH RH

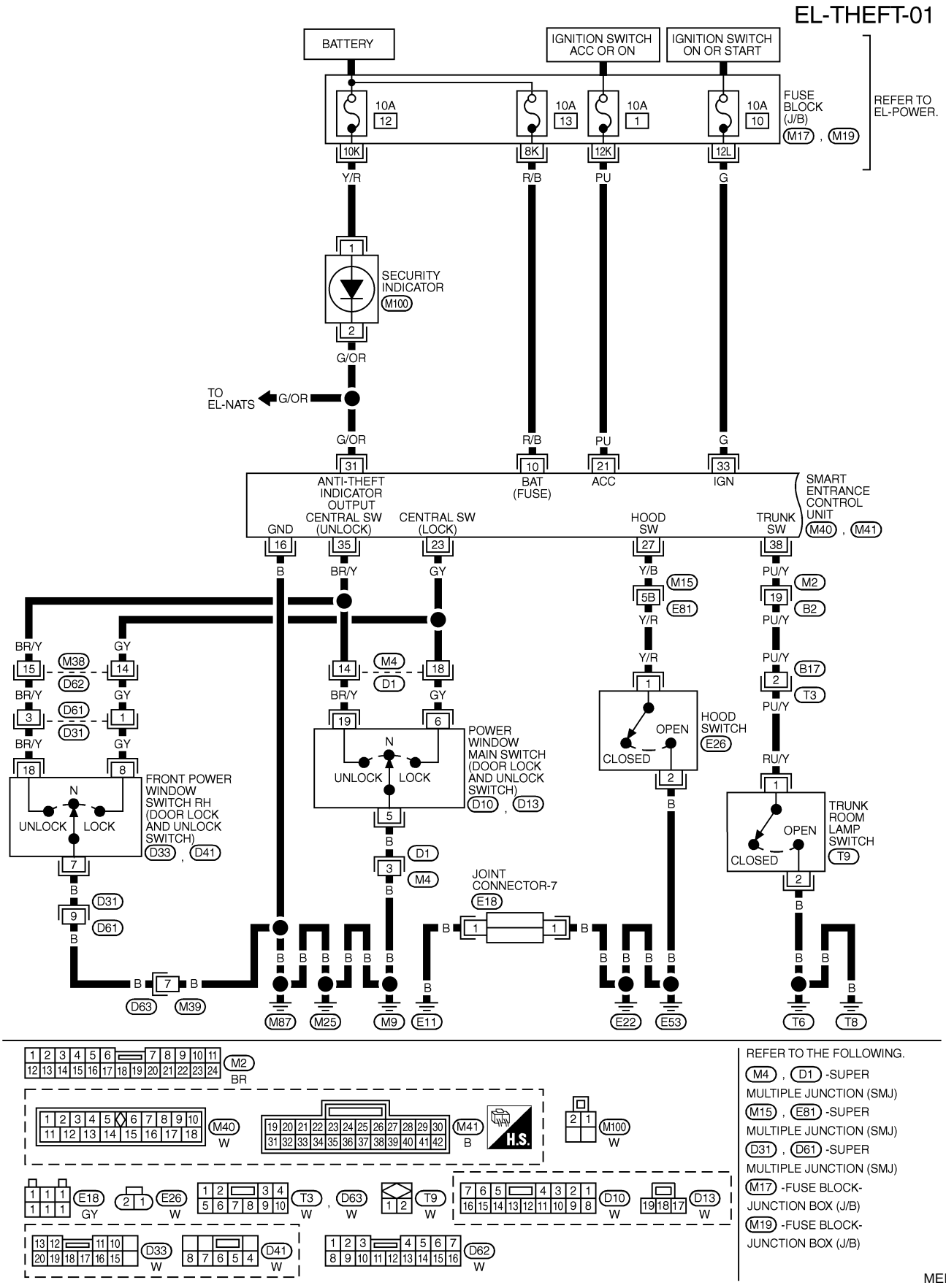
MEL532K

Wiring Diagram — THEFT —

NHEL0122

FIG. 1

NHEL0122S01

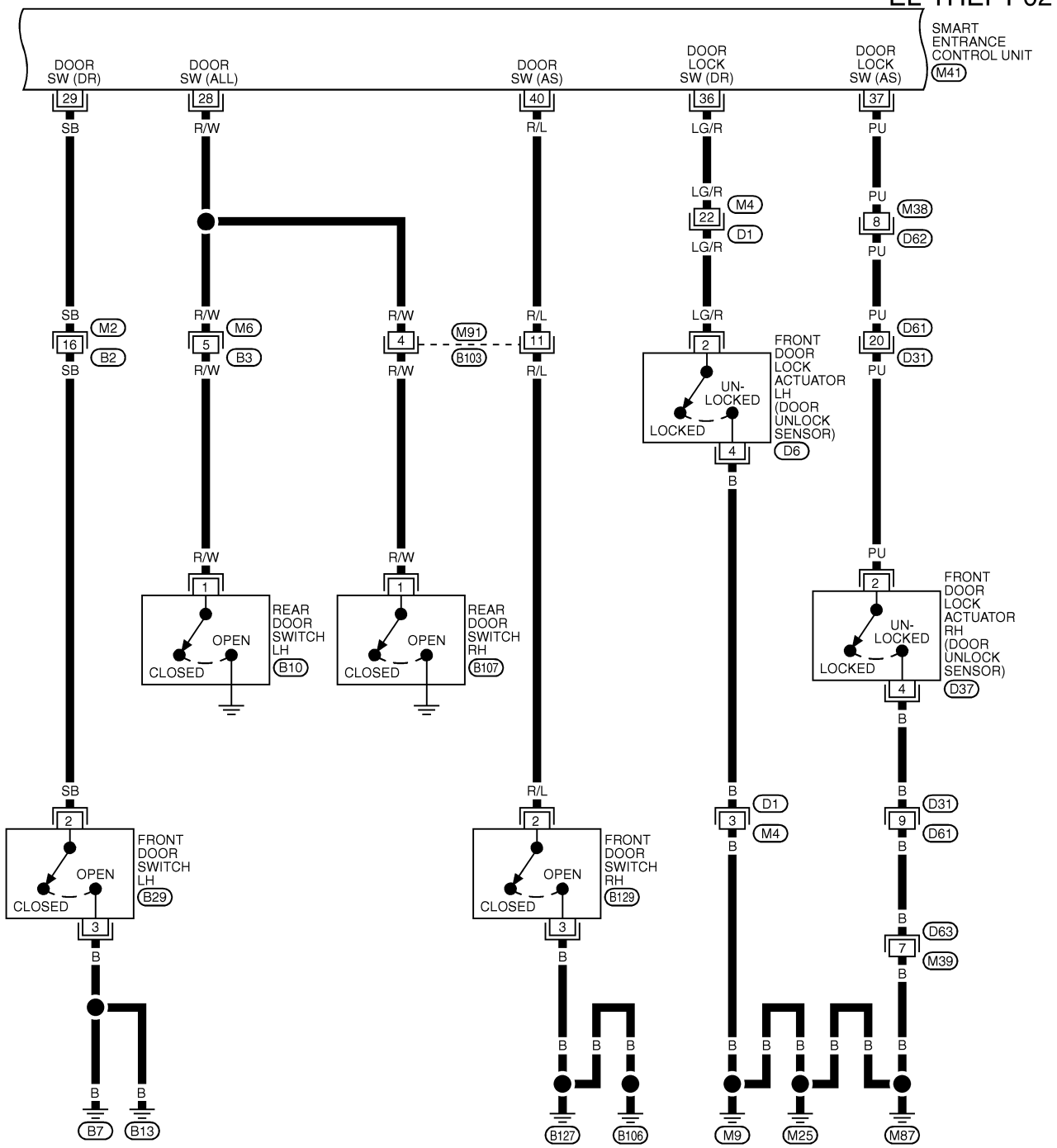


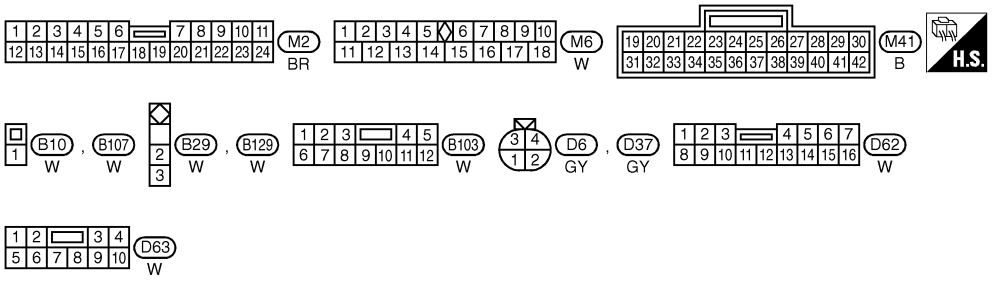
MEL515K

FIG. 2

NHEL0122S02

EL-THEFT-02





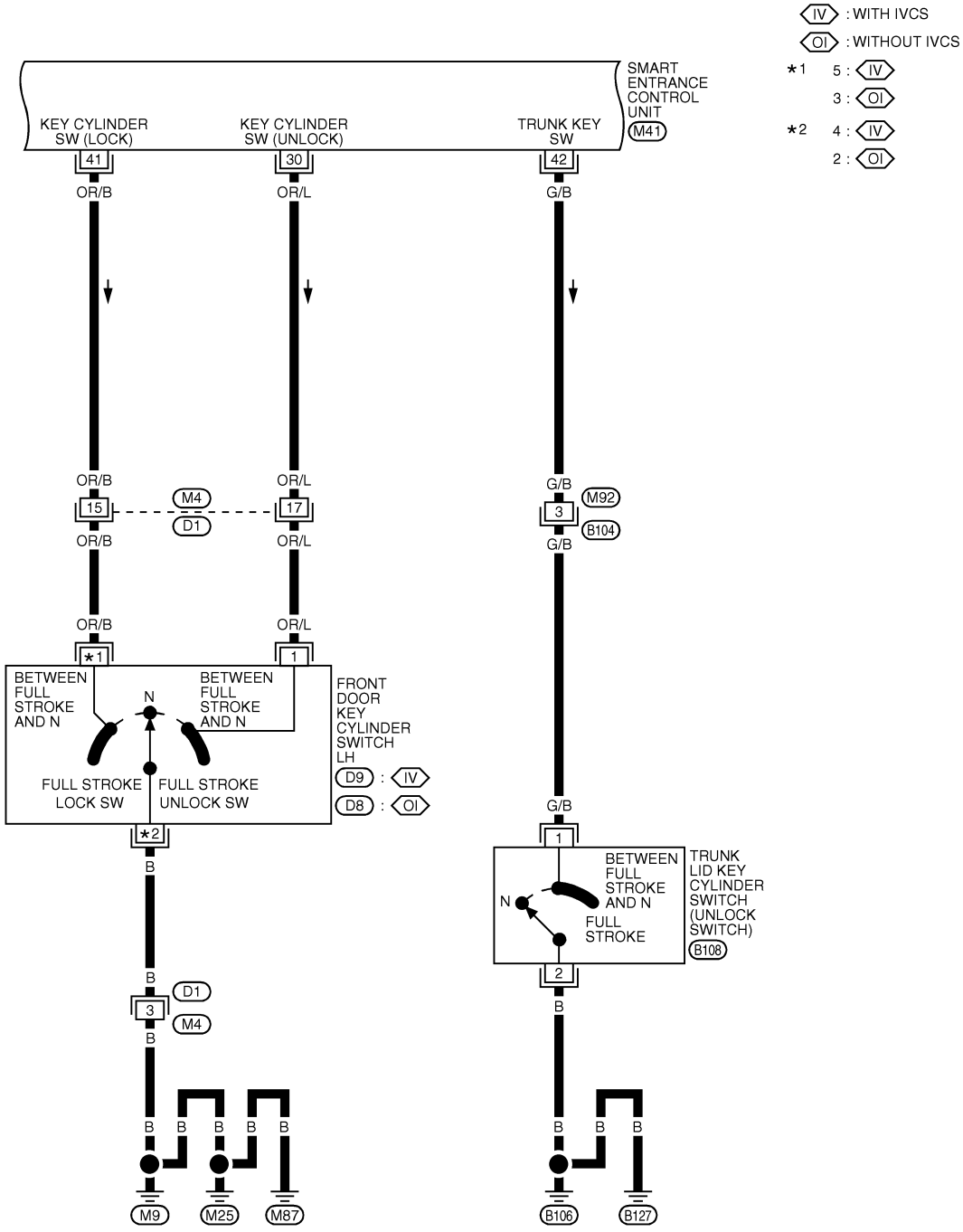
REFER TO THE FOLLOWING.
M4 , D1 -SUPER MULTIPLE JUNCTION (SMJ)
D31 , D61 -SUPER MULTIPLE JUNCTION (SMJ)

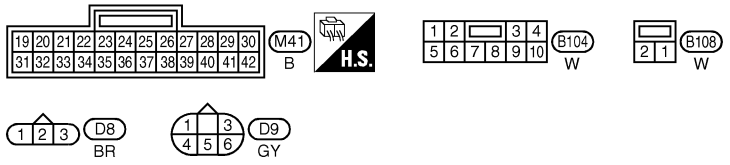
MEL516K

FIG. 3

NHEL0122S03

EL-THEFT-03



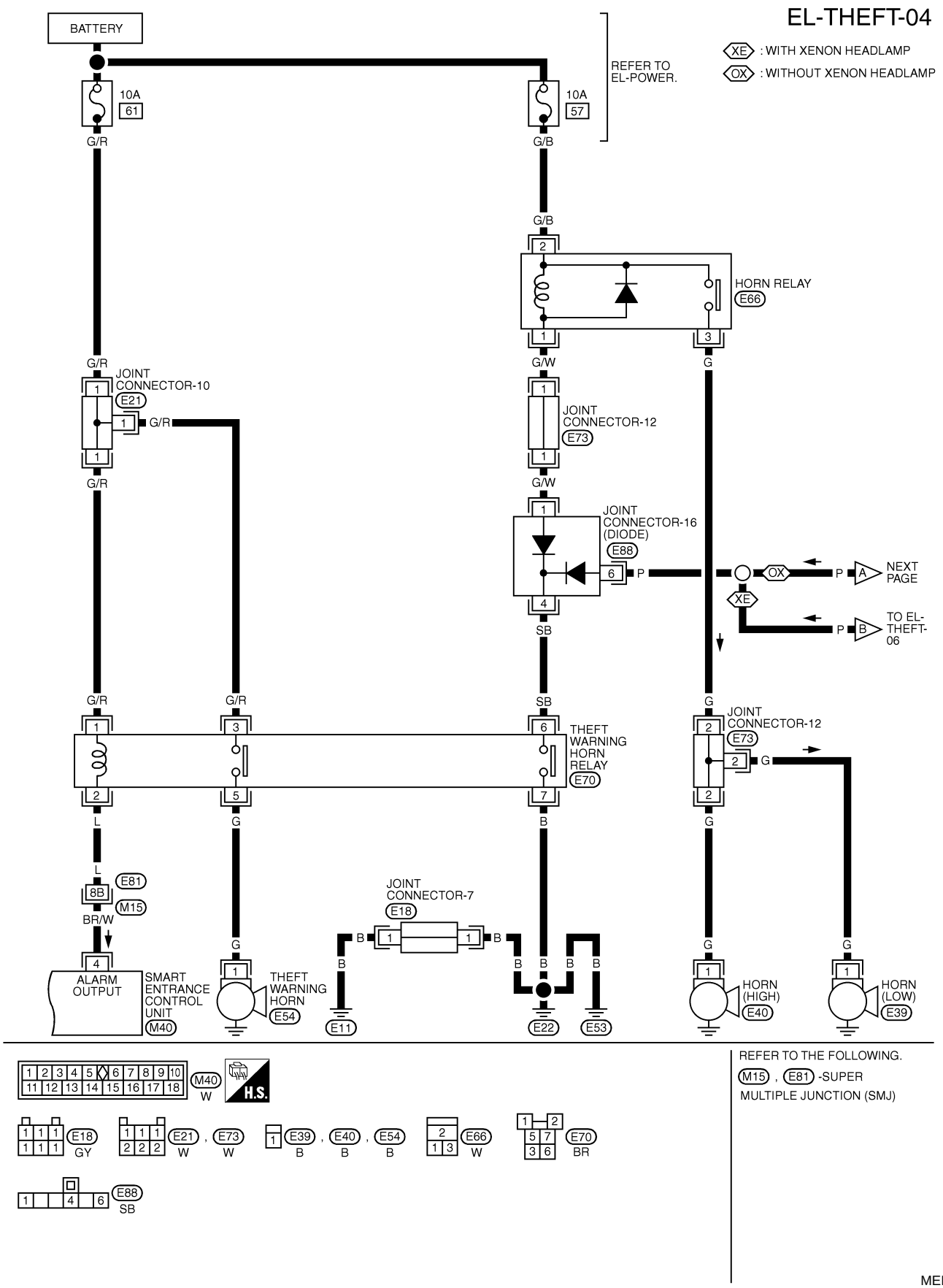


REFER TO THE FOLLOWING.
M4 , D1 -SUPER MULTIPLE JUNCTION (SMJ)

MEL517K

FIG. 4

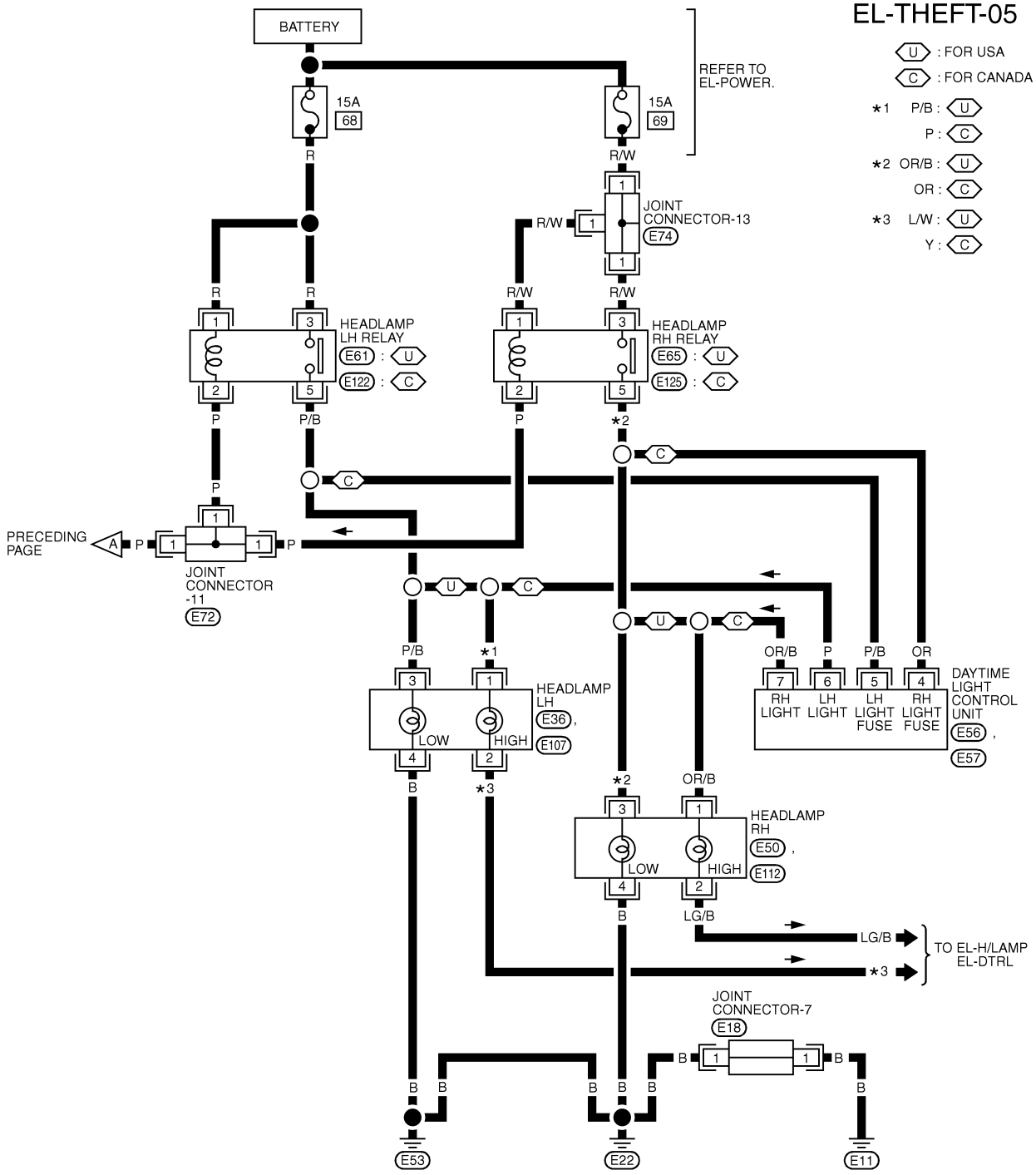
NHEL0122S04



MEL518K

FIG. 5

NHEL0122S07



E18 GY, E72 GY

E36 B, E50 B, E107 BR, E112 BR

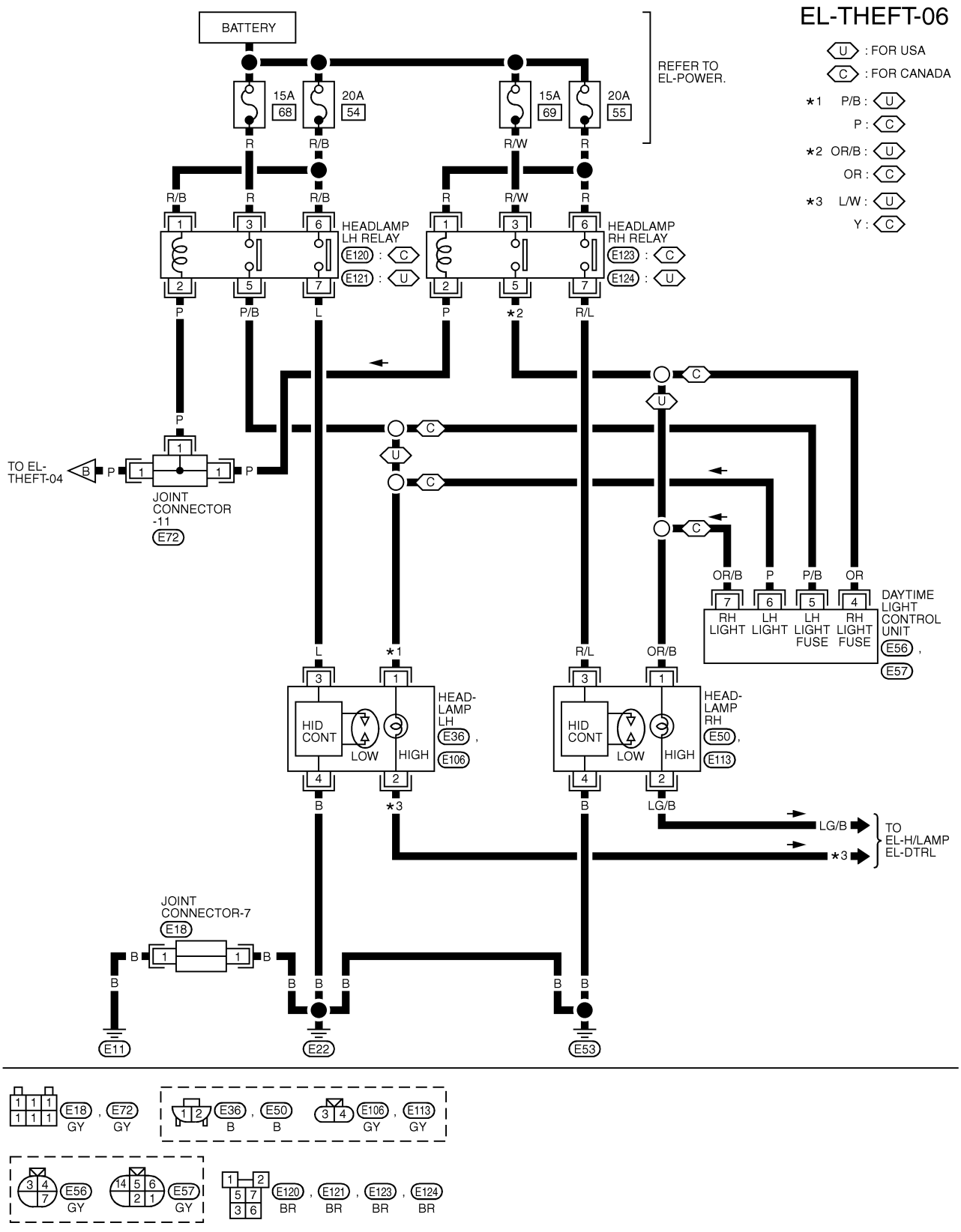
E56 GY, E57 GY

E61 L, E65 L, E122 L, E125 L, E74 W

REFER TO THE FOLLOWING.

M15, E81 -SUPER MULTIPLE JUNCTION (SMJ)

MEL519K


EL-THEFT-06
BATTERY
REFER TO EL-POWER.
15A 68
20A 54
15A 69
20A 55
U : FOR USA
C : FOR CANADA
*1 P/B : U
P : C
*2 OR/B : U
OR : C
*3 L/W : U
Y : C
HEADLAMP LH RELAY
E120 : C
E121 : U
HEADLAMP RH RELAY
E123 : C
E124 : U
TO EL-THEFT-04
JOINT CONNECTOR -11
E72
DAYTIME LIGHT CONTROL UNIT
E56 , E57
RH LIGHT
LH LIGHT
LH LIGHT FUSE
RH LIGHT FUSE
HEAD-LAMP LH
E36 , E106
HEAD-LAMP RH
E50 , E113
HID CONT
LOW
HIGH
TO EL-H/LAMP EL-DTRL
JOINT CONNECTOR-7
E18
E11
E22
E53

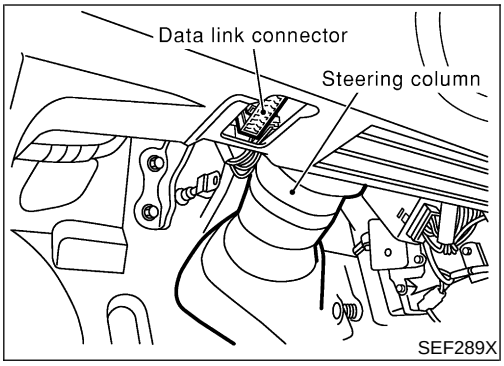
E18 , E72
GY GY
E36 , E50 , E106 , E113
B B GY GY
E56 E57
GY GY
E120 , E121 , E123 , E124
BR BR BR BR

MEL520K

SMART ENTRANCE CONTROL UNIT TERMINALS AND REFERENCE VALUE BETWEEN EACH TERMINAL AND GROUND

TERMINAL	WIRE COLOR	ITEM	CONDITION	DATA (DC)
4	BR/W	THEFT WARNING HORN RELAY-2	WHEN PANIC ALARM IS OPERATED USING REMORT CONTROLLER	12V→0V
10	R/B	POWER SOURCE (FUSE)	–	12V
16	B	GROUND	–	–
21	PU	IGNITION SWITCH (ACC)	"ACC" POSITION	12V
23	GY	DOOR LOCK & UNLOCK SWITCHES	NEUTRAL→LOCKS	5V→0V
27	Y/B	HOOD OPEN SIGNAL	ON (OPEN)→OFF (CLOSED)	0V→5V
28	R/W	REAR DOOR SWITCHES	OFF (CLOSED)→ON (OPEN)	5V→0V
29	SB	DRIVER DOOR SWITCH	OFF (CLOSED)→ON (OPEN)	5V→0V
30	OR/L	DOOR KEY CYLINDER UNLOCK SWITCH	OFF (NEUTRAL)→ON (UNLOCKED)	5V→0V
31	G/OR	THEFT WARNING INDICATOR	GOES OFF→ILLUMINATES	12V→0V
33	G	IGN ON	INGITION KEY IS IN "ON" POSITION	12V
35	BR/Y	DOOR LOCK & UNLOCK SWITCHES	NEUTRAL→UNLOCKS	5V→0V
36	LG/R	DRIVER DOOR UNLOCK SENSOR	DRIVER DOOR: LOCKED→UNLOCKED	5V→0V
37	PU	PASSENGER DOOR UNLOCK SENSOR	PASSENGER DOOR: LOCKED→UNLOCKED	5V→0V
38	PU/Y	TRUNK ROOM LAMP SWITCH	ON (OPEN)→OFF (CLOSED)	0V→12V
40	R/L	PASSENGER DOOR SWITCH	OFF (CLOSED)→ON (OPEN)	5V→0V
41	OR/B	DOOR KEY CYLINDER LOCK SWITCH	OFF (NEUTRAL)→ON (LOCKED)	5V→0V
42	G/B	TRUNK LID KEY CYLINDER SWITCH	OFF (NEUTRAL)→ON (UNLOCK)	5V→0V

SEL375WE



SEF289X

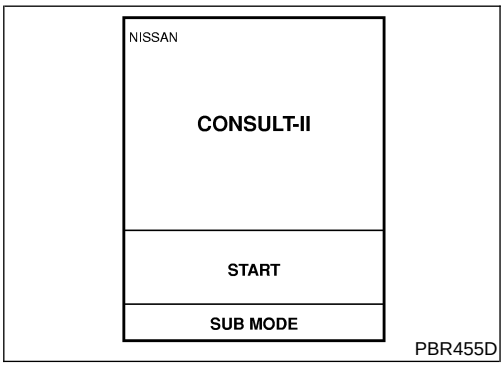
CONSULT-II Inspection Procedure

=NHEL0244

"THEFT WAR ALM"

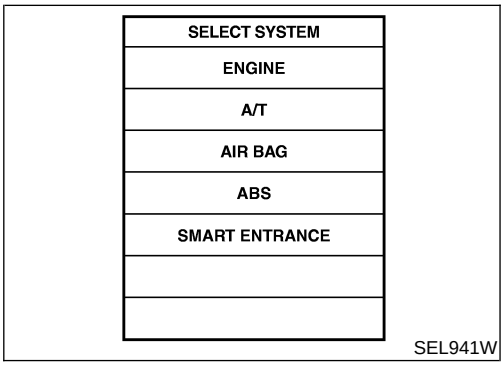
NHEL0244S01

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



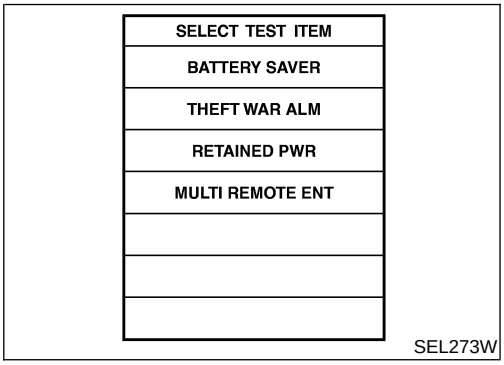
PBR455D

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



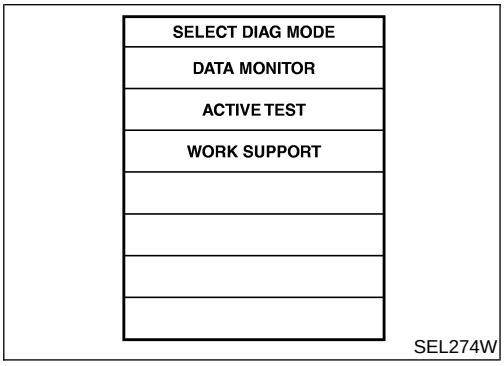
SEL941W

5. Touch "SMART ENTRANCE".



SEL273W

6. Touch "THEFT WAR ALM".



SEL274W

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

CONSULT-II Application Item

NHEL0245

NHEL0245S01

“THEFT WAR ALM”
Data Monitor

NHEL0245S0101

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.
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-ALL	Indicates [ON/OFF] condition of door switch (All).
LOCK SIG DR	Indicates [ON/OFF] condition of front door unlock sensor LH.
LOCK SIG AS	Indicates [ON/OFF] condition of front door unlock sensor RH.
TRUNK SW	Indicates [ON/OFF] condition of trunk switch.
TRUNK KEY SW	Indicates [ON/OFF] condition of trunk 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 remote controller.
UN BUTTON/SIG	Indicates [ON/OFF] condition of unlock signal from remote controller.
TRUNK BTN/SIG	Indicates [ON/OFF] condition of trunk open signal from remote controller.

Active Test

NHEL0245S0102

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.
THEFT WAR ALM	This test is able to check theft waning alarm operation. The alarm will be activated for 0.5 seconds after “ON” on CONSULT-II screen is touched.

Work Support

NHEL0245S0103

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.

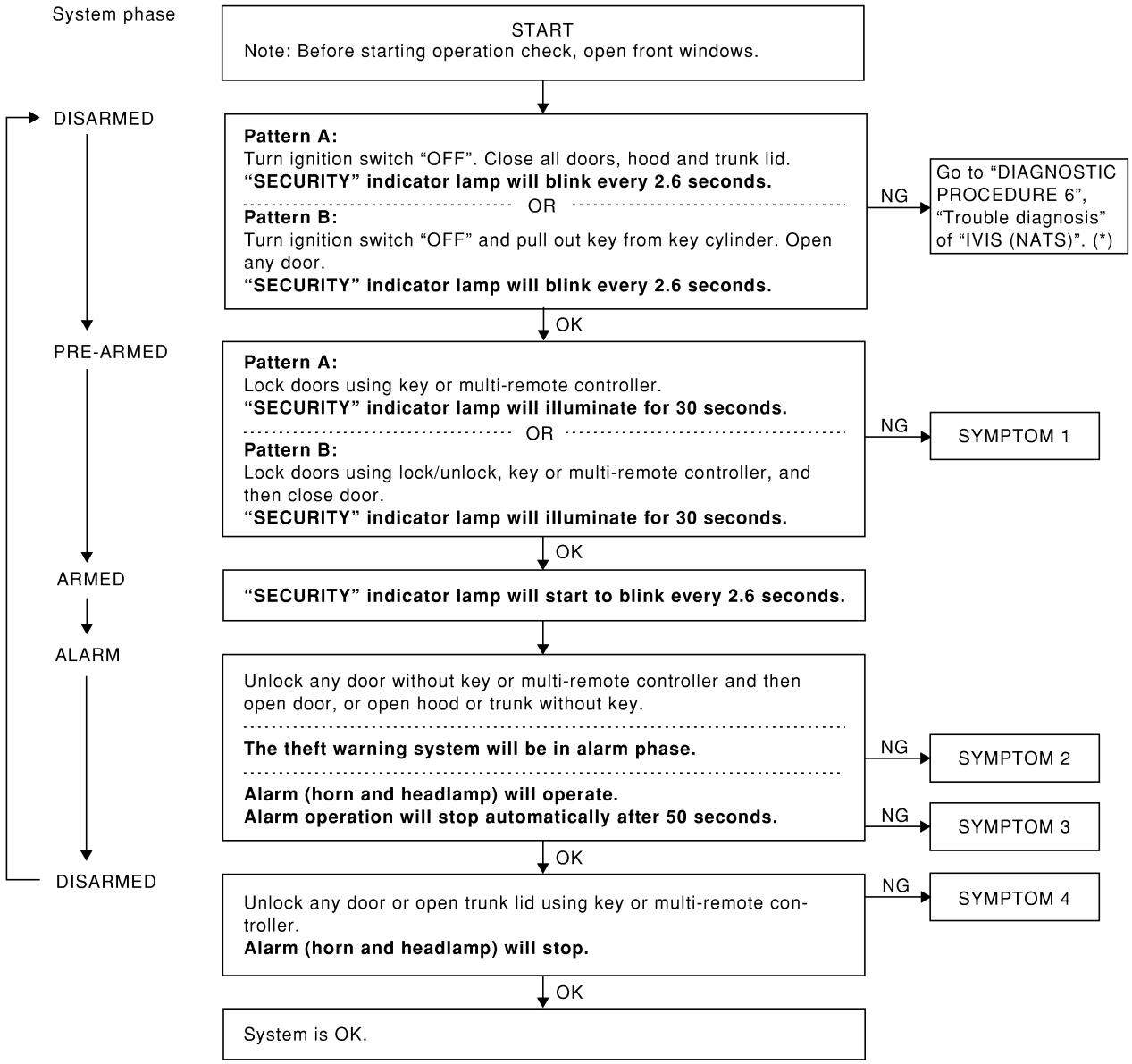
Trouble Diagnoses

=NHEL0123

PRELIMINARY CHECK

NHEL0123S01

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



SEL731W

For details of "Pattern A" and "Pattern B" about theft warning system setting, refer to EL-358.
*: Refer to EL-417.
After performing preliminary check, go to symptom chart on next page.

SYMPTOM CHART

NHEL0123S02

REFERENCE PAGE (EL-)			371	373	374	380	382	383	384	385	387	336
SYMPTOM			PRELIMINARY CHECK	POWER SUPPLY AND GROUND CIRCUIT CHECK	DOOR, HOOD AND TRUNK ROOM LAMP SWITCH CHECK	SECURITY INDICATOR LAMP CHECK	FRONT DOOR UNLOCK SENSOR CHECK	DOOR KEY CYLINDER SWITCH CHECK	TRUNK LID KEY CYLINDER SWITCH CHECK	DOOR LOCK/UNLOCK SWITCH CHECK	THEFT WARNING HORN AND HEADLAMP ALARM CHECK	Check "MULTI-REMOTE CONTROL" system.
	Theft warning indicator does not illuminate for 30 seconds.		X	X		X						
1	Theft warning system cannot be set by	All items	X	X	X		X					
		Door outside key	X					X				
		Lock/unlock switch	X							X		
		Multi-remote control	X									X
2	*1 Theft warning system does not alarm when ...	One of the door is opened	X		X							
3	Theft warning alarm does not activate.	Horn or headlamp alarm	X		X						X	
4	Theft warning system cannot be canceled by	Door outside key	X					X				
		Trunk lid 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-371.

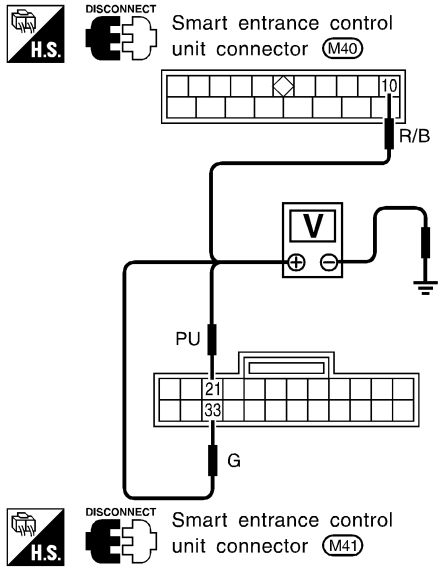
Symptom numbers in the symptom chart correspond with those of preliminary check.

POWER SUPPLY AND GROUND CIRCUIT CHECK

NHEL0123S03

Power Supply Circuit Check

NHEL0123S0301

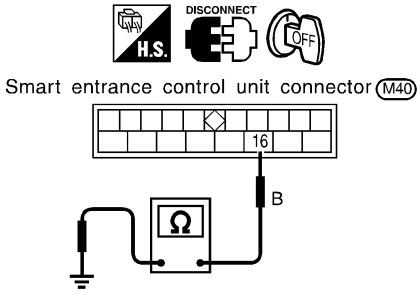


Terminals		Ignition switch position		
(+)	(−)	OFF	ACC	ON
10	Ground	Battery voltage	Battery voltage	Battery voltage
33	Ground	0V	0V	Battery voltage
21	Ground	0V	Battery voltage	Battery voltage

SEL238W

Ground Circuit Check

NHEL0123S0302



Terminals	Continuity
16 - Ground	Yes

SEL234W

DOOR, HOOD AND TRUNK ROOM LAMP SWITCH CHECK

=NHEL0123S04

Door Switch Check

NHEL0123S0401

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 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-ALL") in "DATA MONITOR" mode with CONSULT-II.

DATA MONITOR	
MONITOR	
DOOR SW-ALL	OFF

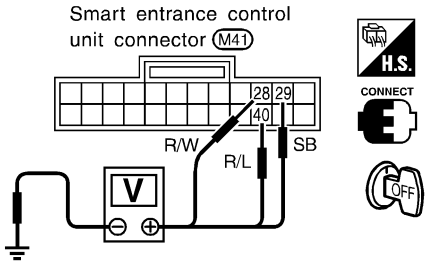
When any doors are open:
DOOR SW-ALL ON

When all doors are closed:
DOOR SW-ALL OFF

SEL323W

Without CONSULT-II

Check voltage between smart entrance control unit harness connector terminals 28, 29 or 40 and ground.



	Terminals (+)	Terminals (−)	Condition	Voltage [V]
Front LH door switch	29	Ground	Open	0
			Closed	Approx. 5
Front RH door switch	40	Ground	Open	0
			Closed	Approx. 5
Rear door switches	28	Ground	Open	0
			Closed	Approx. 5

SEL191W

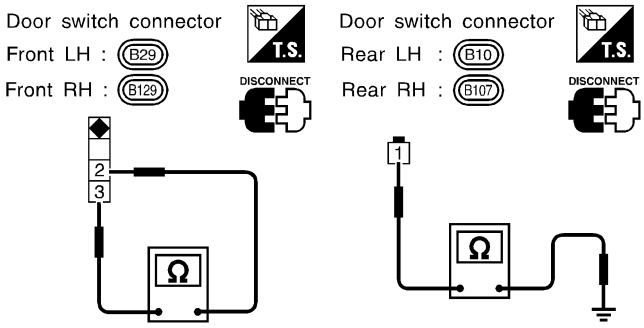
Refer to wiring diagram in EL-363.

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 continuity between door switch terminals.



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

SEL192W

OK or NG

OK	▶	**Check the following.** ● Door switch ground circuit 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

=NHEL0123S0402

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.

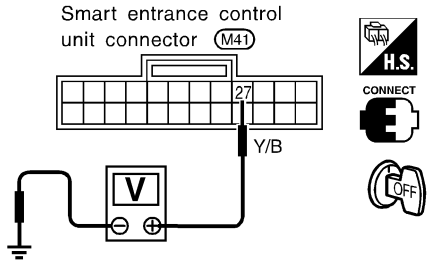
DATA MONITOR	
MONITOR	
HOOD SWITCH	OFF

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 terminal 27 and ground.



Voltage [V]:
Engine hood is open.
0
Engine hood is closed.
Approx. 5

SEL239WA

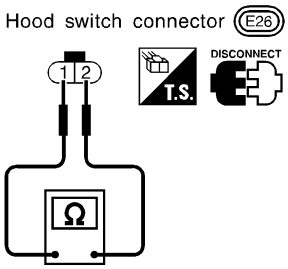
Refer to wiring diagram in EL-362.

OK or NG

OK	▶	Hood switch is OK, and go to trunk room lamp switch check.
NG	▶	GO TO 4.

4	CHECK HOOD SWITCH

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



Continuity:
Condition: Pushed
No
Condition: Released
Yes

SEL240W

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.

Trunk Room Lamp Switch Check

=NHEL0123S0403

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. Open trunk lid with trunk lid opener switch (on driver side door trim) within 30 seconds after door is locked.
   "SECURITY" indicator lamp should turn off.

OK or NG

OK	▶	Trunk room lamp switch is OK.
NG	▶	GO TO 2.

2	CHECK TRUNK ROOM LAMP SWITCH INPUT SIGNAL

With CONSULT-II

Check trunk room lamp switch ("TRUNK SW"), in "DATA MONITOR" mode with CONSULT-II.

DATA MONITOR	
MONITOR	
TRUNK SW	OFF

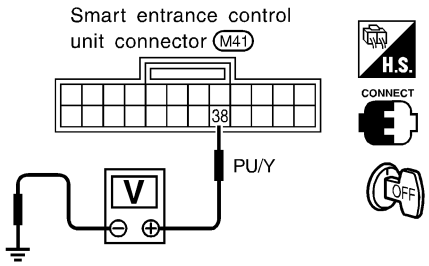
When trunk lid is open:
TRUNK SW ON

When trunk lid is closed:
TRUNK SW OFF

SEL355W

Without CONSULT-II

Check voltage between smart entrance control unit harness connector terminal 38 and ground.



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

SEL241W

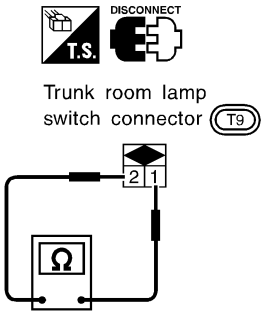
Refer to wiring diagram in EL-362.

OK or NG

OK	▶	Trunk room lamp switch is OK.
NG	▶	GO TO 3.

3	CHECK TRUNK ROOM LAMP SWITCH

1. Disconnect trunk room lamp switch connector.
2. Check continuity between trunk room lamp switch terminals 1 and 2.



Continuity:
Condition: Closed
No
Condition: Open
Yes

SEL242W

OK or NG

OK	▶	**Check the following.** ● Trunk room lamp switch ground circuit ● Harness for open or short between smart entrance control unit and trunk room lamp switch
NG	▶	Replace trunk room lamp switch.

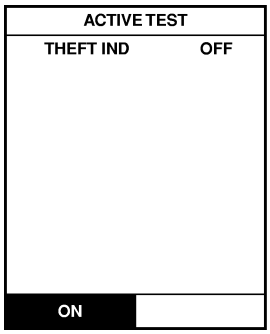
SECURITY INDICATOR LAMP CHECK

=NHEL0123S05

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".

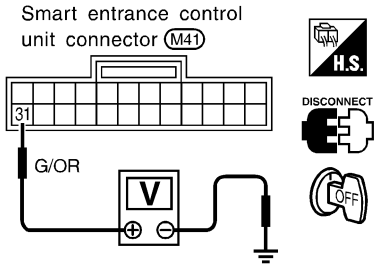


Security indicator lamp should illuminate.

SEL356W

Without CONSULT-II

1. Disconnect smart entrance control unit harness connector.
2. Check voltage between smart entrance control unit harness connector terminal 31 and ground.



Battery voltage should exist.

SEL243W

Refer to wiring diagram in EL-362.

OK or NG

OK	▶	Security indicator lamp is OK.
NG	▶	GO TO 2.

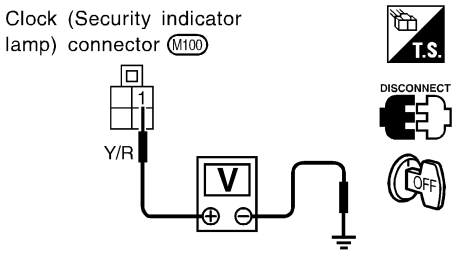
2	CHECK INDICATOR LAMP

OK or NG

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

3	CHECK POWER SUPPLY CIRCUIT FOR INDICATOR LAMP

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



Battery voltage should exist.

SEL653W

OK or NG

OK	▶	Check harness for open or short between security indicator lamp and smart entrance control unit.
NG	▶	**Check the following.** ● 10A fuse [No. 12, located in fuse block (J/B)] ● Harness for open or short between security indicator lamp and fuse

FRONT DOOR UNLOCK SENSOR CHECK

=NHEL0123S06

1 CHECK FRONT DOOR UNLOCK SENSOR INPUT SIGNAL

With CONSULT-II

Check front unlock sensor ("LOCK SIG DR", "LOCK SIG AS") in "DATA MONITOR" with CONSULT-II.

DATA MONITOR	
MONITOR	
LOCK SIG DR	OFF
LOCK SIG AS	OFF

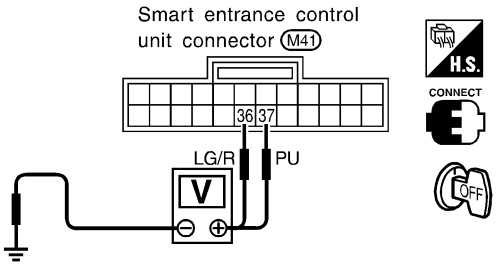
When door is locked:
LOCK SIG DR OFF
LOCK SIG AS OFF

When door is unlocked:
LOCK SIG DR ON
LOCK SIG AS ON

SEL357W

Without CONSULT-II

Check voltage between smart entrance control unit harness connector terminal 36 or 37 and ground.



	Terminals (+)	Terminals (–)	Condition	Voltage [V]
Front LH door	36	Ground	Locked	Approx. 5
			Unlocked	0
Front RH door	37	Ground	Locked	Approx. 5
			Unlocked	0

SEL245W

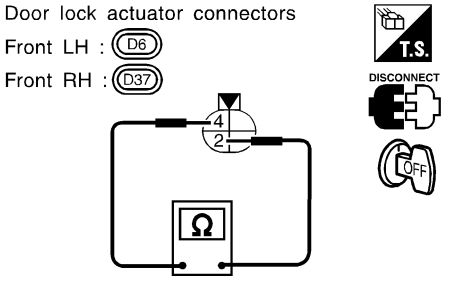
Refer to wiring diagram in EL-363.

OK or NG

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

2 CHECK FRONT DOOR UNLOCK SENSOR

1. Disconnect door lock actuator connector.
2. Check continuity between door lock actuator terminals.



Continuity:
Condition: Locked
No
Condition: Unlocked
Yes

SEL246W

OK or NG

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

DOOR KEY CYLINDER SWITCH CHECK

=NHEL0123S07

1 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.

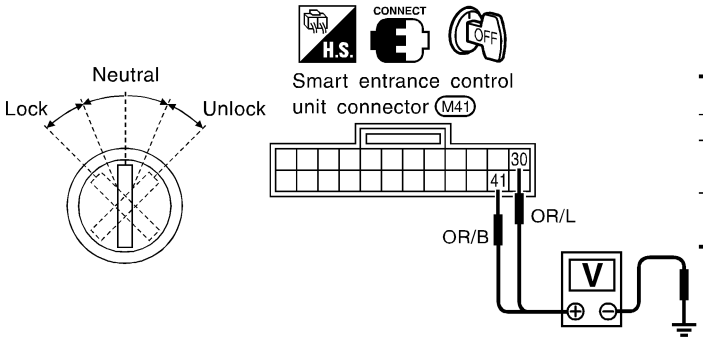
DATA MONITOR	
MONITOR	
KEY CYL LK-SW	OFF
KEY CYL UN-SW	OFF

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

Check voltage between smart entrance control unit harness connector terminal 30 or 41 and ground.



Terminals (+)	Terminals (−)	Key position	Voltage V
41	Ground	Neutral/Unlock	Approx. 5
		Lock	0
30	Ground	Neutral/Lock	Approx. 5
		Unlock	0

SEL198W

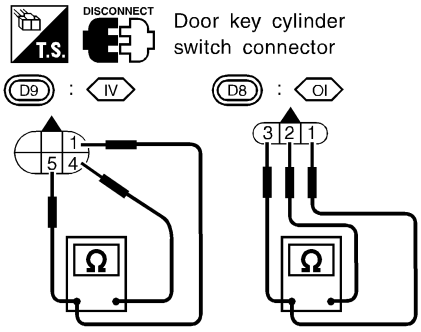
Refer to wiring diagram in EL-364.

OK or NG

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

2 CHECK DOOR KEY CYLINDER SWITCH

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



IV OI
① ① : Door unlock switch terminal
④ ② : Ground terminal
⑤ ③ : Door lock switch terminal

IV : With IVCS
OI : Without IVCS

Terminals	Key position	Continuity
⑤ - ④ : IV	Neutral/Unlock	No
③ - ② : OI	Lock	Yes
① - ④ : IV	Neutral/Lock	No
① - ② : OI	Unlock	Yes

SEL650W

OK or NG

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

TRUNK LID KEY CYLINDER SWITCH CHECK

=NHEL0123S08

1 **CHECK TRUNK LID KEY CYLINDER SWITCH INPUT SIGNAL (UNLOCK SIGNAL)**

With CONSULT-II

Check trunk lid key cylinder switch ("TRUNK KEY SW") in "DATA MONITOR" mode with CONSULT-II.

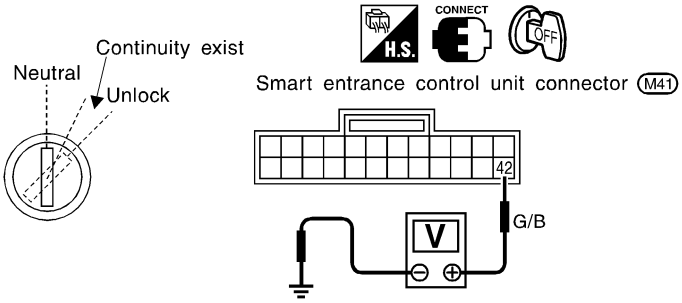
DATA MONITOR	
MONITOR	
TRUNK KEY SW	OFF

When key in key cylinder is at Neutral position:
TRUNK KEY SW OFF
When key in key cylinder is at Unlock position:
TRUNK KEY SW ON

SEL358W

Without CONSULT-II

Check voltage between smart entrance control unit harness connector terminal 42 and ground.



Terminal (+)	Terminal (−)	Key position	Voltage [V]
42	Ground	Neutral	Approx. 5
		Unlock	0

SEL247W

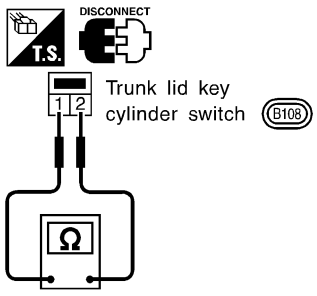
Refer to wiring diagram in EL-364.

OK or NG

OK	▶	Trunk lid key cylinder switch is OK.
NG	▶	GO TO 2.

2 **CHECK TRUNK LID KEY CYLINDER SWITCH**

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



Key position	Continuity
Neutral	No
Unlock	Yes

SEL248W

OK or NG

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

DOOR LOCK/UNLOCK SWITCH CHECK

NHEL0123S13

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

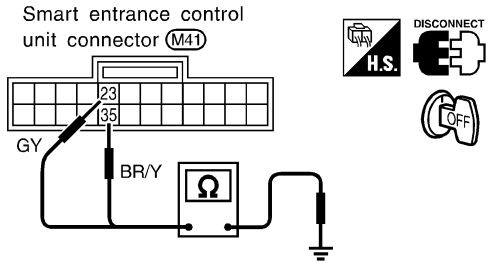
When lock/unlock switch is turned to LOCK:
LOCK SW DR/AS ON

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

SEL341W

Without CONSULT-II

1. Disconnect smart entrance control unit harness connector .
2. Check continuity between smart entrance control unit harness connector terminal 23 or 35 and ground.



Terminals	Door lock/unlock switch (LH or RH) condition	Continuity
23 - Ground	Lock	Yes
	N and Unlock	No
35 - Ground	Unlock	Yes
	N and Lock	No

SEL195W

Refer to wiring diagram in EL-362.

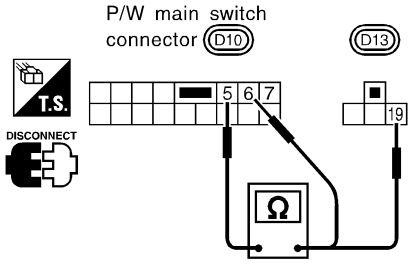
OK or NG

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

2	CHECK DOOR LOCK/UNLOCK SWITCH

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

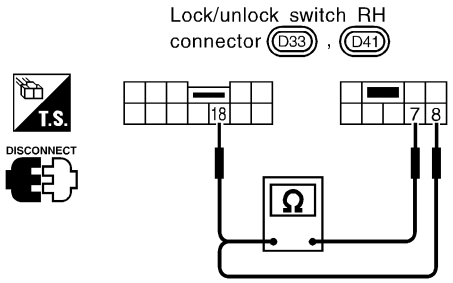
- Power window main switch (Door lock/unlock switch LH)



Condition	Terminals		
	19	6	5
Lock		○	○
N	No continuity		
Unlock	○		○

SEL648W

- Door lock/unlock switch RH



Condition	Terminals		
	18	8	7
Lock		○	○
N	No continuity		
Unlock	○		○

SEL649W

OK or NG

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

THEFT WARNING HORN AND HEADLAMP ALARM CHECK

=NHEL0123S09

1	CHECK THEFT WARNING HORN AND HEADLAMP ALARM OPERATION

With CONSULT-II

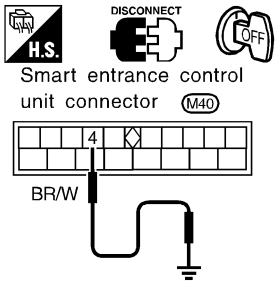
1. Select "ACTIVE TEST" in "THEFT WAR ALM" with CONSULT-II.
2. Select "THEFT WAR ALM" and touch "ON".

Theft warning horn and headlamp alarm should operate.

SEL359W

Without CONSULT-II

1. Disconnect smart entrance control unit harness connector.
2. Apply ground to smart entrance control unit harness connector terminal 4.



Theft warning horn and headlamp alarm should operate.

SEL249WA

Refer to wiring diagram in EL-365.

OK or NG

OK	▶	Horn and headlamp alarm is OK.
NG	▶	GO TO 2.

2	CHECK THEFT WARNING HORN RELAY

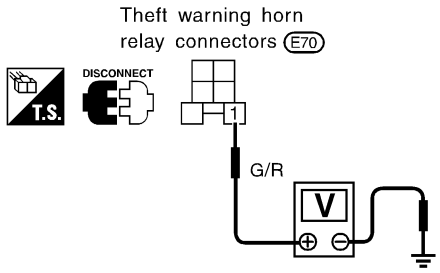
Check theft warning horn relay.

OK or NG

OK	▶	GO TO 3.
NG	▶	Replace.

3	CHECK POWER SUPPLY FOR THEFT WARNING HORN RELAYS

1. Disconnect theft warning horn relay connectors.
2. Check voltage between terminal 1 and ground.



Battery voltage should exist.

SEL654W

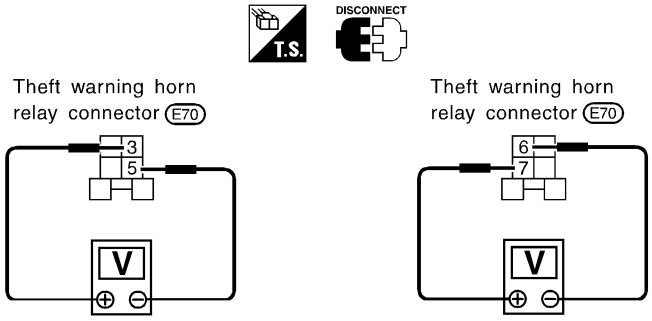
OK or NG

OK	▶	GO TO 4.
NG	▶	**Check the following.** ● 10A fuse (No. 61 located in the fuse and fusible link box) ● Harness for open or short between theft warning horn relay and fuse

4	CHECK THEFT WARNING HORN RELAYS CIRCUIT

1. Disconnect theft warning horn relay connector.
2. Check voltage between terminals of relay.

Battery voltage should exist.



SEL655W

OK or NG

OK	▶	Check harness for open or short between theft warning horn relay and headlamp relays.
NG	▶	**Check the following.** ● Harness for open or short between theft warning horn relay and fuses

Description

NHEL0124

OUTLINE

NHEL0124S01

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

- Warning chime
- Rear defogger and door mirror defogger
- Power door lock
- Multi-remote control system
- Theft warning 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

NHEL0124S02

Headlamps/Parking Lamps/License Lamps/Tail Lamps/Fog Lamps/Illumination Lamps

NHEL0124S0201

When the ignition switch is turned OFF (or ACC) from ON (or START) while headlamps illuminate, the headlamps (including parking, license, tail, fog and illumination lamps) are turned off after 45 seconds which are counted by the RAP (Retained Accessary Power) signal from the smart entrance control unit terminal 5 to the headlamp battery saver control unit.
The headlamps (including parking, license, tail, fog and illumination lamps) are turned off when the driver or passenger side door is opened even if 45 seconds have not passed after the ignition switch is turned OFF (or ACC) from ON (or START).

Interior Lamp/Trunk Room Lamp/Spot Lamp/Vanity Mirror Illumination

NHEL0124S0202

The lamps turn off automatically when the interior lamp, trunk room 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 10 minutes.
After lamps are turned off by the battery saver system, the lamps illuminate again when:

- Driver's door is locked or unlocked,
- Door is opened or closed,
- Key is inserted into ignition key cylinder.

Rear Window Defogger/Door Mirror Defogger

NHEL0124S0203

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

NHEL0124S03

When the ignition switch is turned to OFF 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 5.

- Electric sunroof
- Power window

The retained power operation is canceled when the driver or passenger side door is opened.

INPUT/OUTPUT

NHEL0124S04

System	Input	Output
Power door lock	Door lock and unlock switch LH and RH Key switch (Insert) Door switches Door key cylinder switches	Door lock actuator
Multi-remote control	Key switch (Insert) Ignition switch (ACC) Door switches Front door unlock sensor LH Remote controller signal Door lock/unlock switch LH	Horn relay Theft warning horn relay Multi-remote control relay Interior lamp Ignition key hole illumination Door lock actuator

Description (Cont'd)

System	Input	Output
Warning chime	Key switch (Insert) Ignition switch (ON) Lighting switch (1st) Seat belt switch Front door switch LH	Warning chime (located in smart entrance control unit)
Rear window defogger and door mirror defogger	Ignition switch (ON) Rear window defogger switch	Rear window defogger relay
Theft warning	Ignition switch (ACC, ON) Door switches Hood switch Door lock/unlock switches Door key cylinder switches (lock/unlock) Trunk lid key cylinder switch (unlock) Door unlock sensores	Theft warning horn relay Security indicator
Interior lamp	Door switches Front door unlock sensor LH Ignition switch (ON) Key switch (Insert)	Interior lamp Key hole illumination
Battery saver control for headlamps/parking lamps/ licence lamps/tail lamps/fog lamps/illumination lamps	Ignition switch (ON) Front door switches	Headlamp battery saver control unit
Battery saver control for interior lamp/trunk room lamp/spot lamp/vanity mirror illumination	Ignition switch (ON) Front door switches Lamp switches	Interior lamp Trunk room 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

CONSULT-II

=NHEL0247

DIAGNOSTIC ITEMS APPLICATION

NHEL0247S01

Item (CONSULT-II screen terms)	Diagnosed system	DATA MONITOR	ACTIVE TEST	WORK SUPPORT
DOOR LOCK	Power door lock	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	
BATTERY SAVER	Battery saver control for interior lamp	X	X	
THEFT WAR ALM	Theft warning system	X	X	X
RETAINED PWR	Retained power control	X	X	
MULTI REMOTE ENT	Multi-remote control system	X	X	X

X: Applicable

For diagnostic item in each control system, refer to the relevant pages for each system.

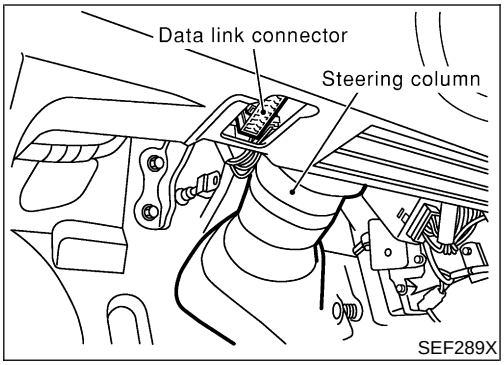
DIAGNOSTIC ITEMS DESCRIPTION

NHEL0247S02

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 THEFT WAR ALM	The recorded trigger signal when theft warning system was activated can be checked.
WORK SUPPORT for MULTI REMOTE ENT	ID code of multi-remote controller can be registered and erased.

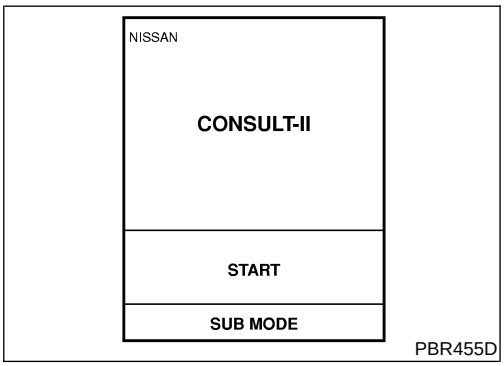
CONSULT-II INSPECTION PROCEDURE

=NHEL0247S03



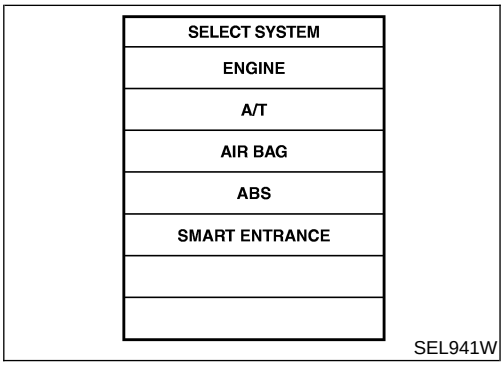
SEF289X

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



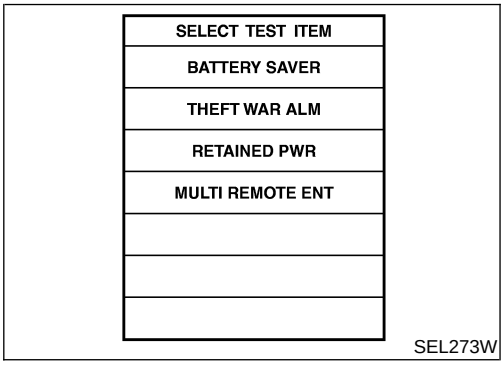
PBR455D

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



SEL941W

5. Touch "SMART ENTRANCE".



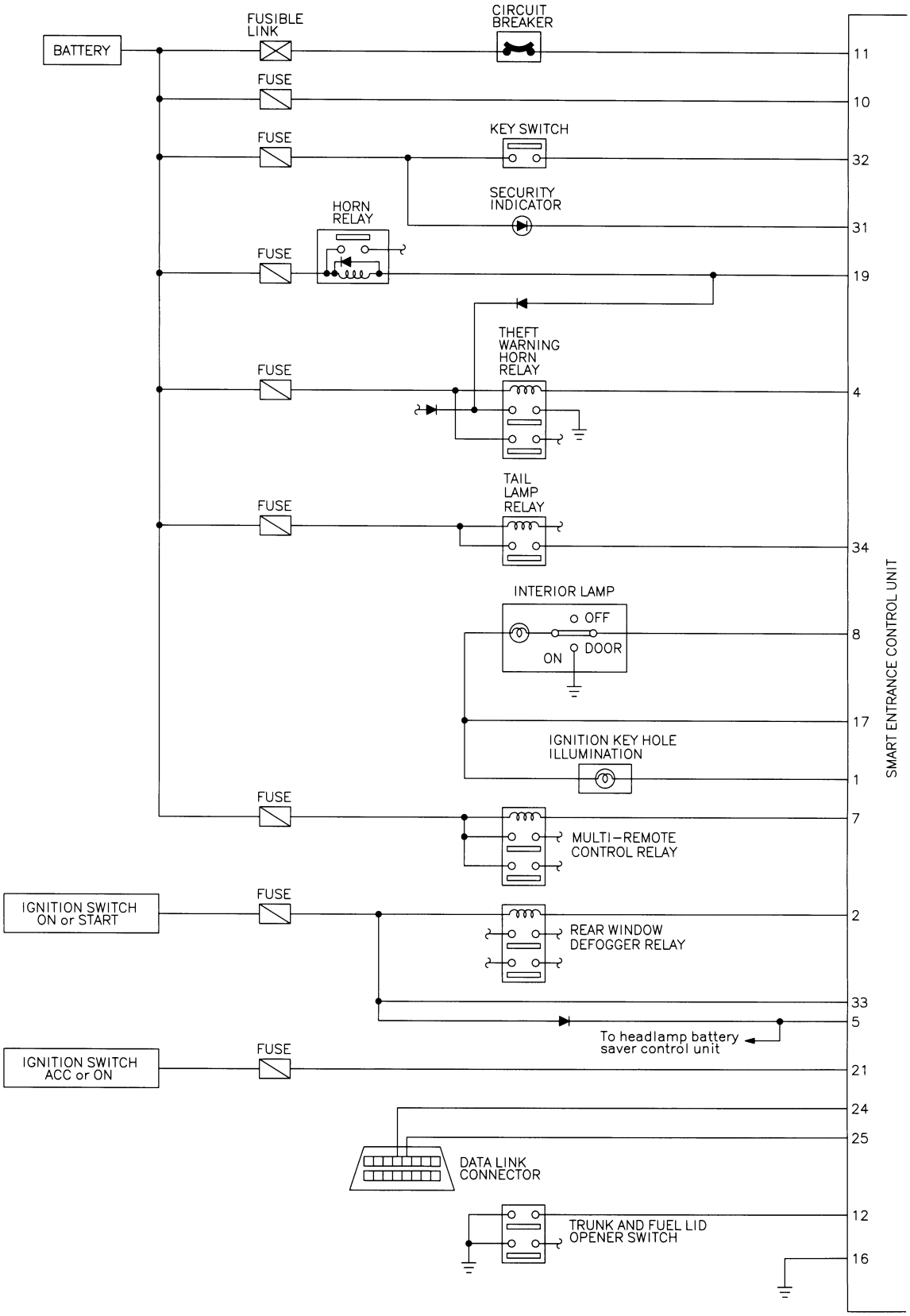
SEL273W

6. Perform each diagnostic item according to "DIAGNOSTIC ITEMS APPLICATION". Refer to EL-391.

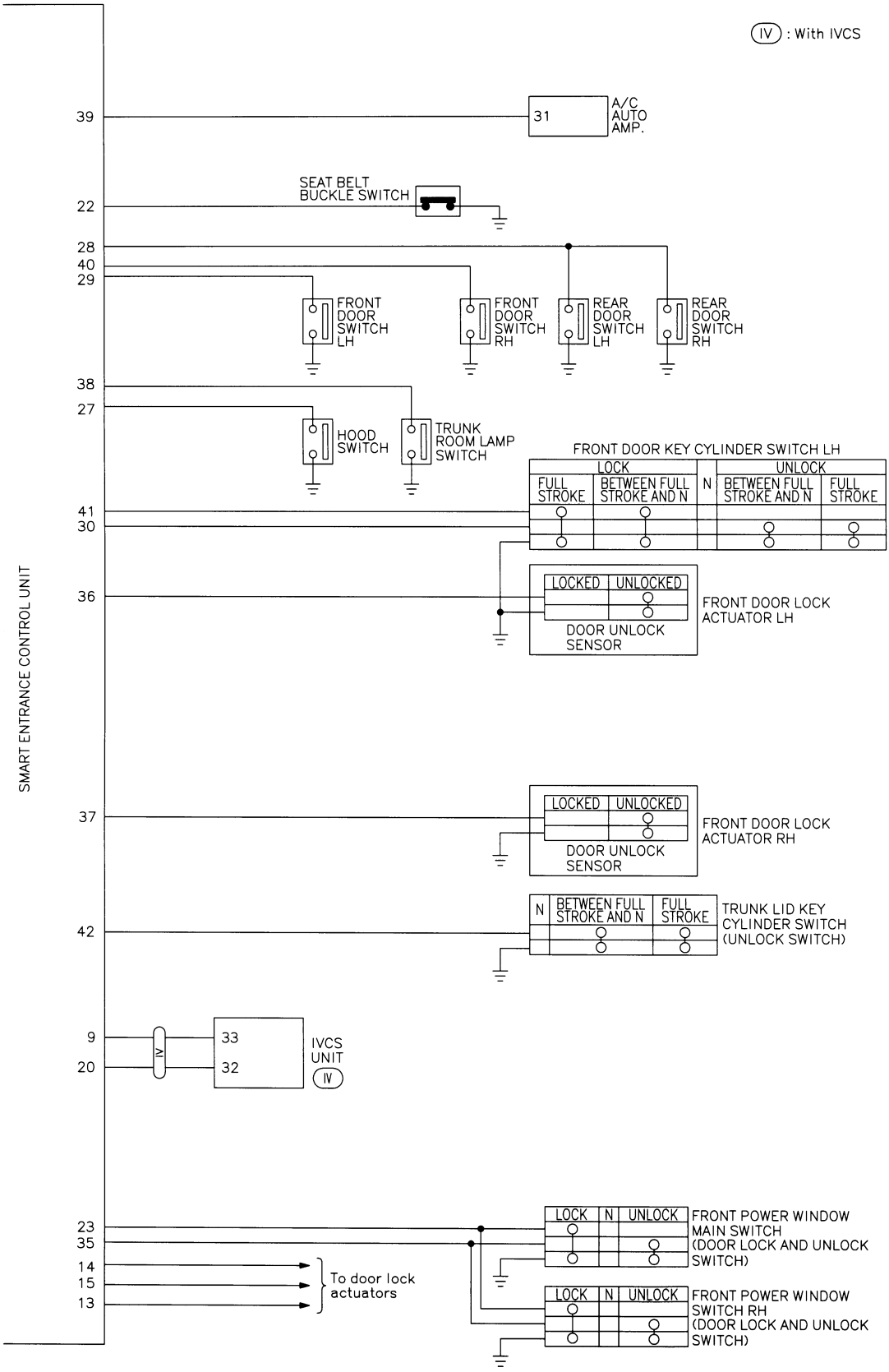
NOTE:

Schematic

NHEL0125



MEL521K


IV : With IVCS
SMART ENTRANCE CONTROL UNIT
39
31
A/C AUTO AMP.
SEAT BELT BUCKLE SWITCH
22
28
40
29
FRONT DOOR SWITCH LH
FRONT DOOR SWITCH RH
REAR DOOR SWITCH LH
REAR DOOR SWITCH RH
38
27
HOOD SWITCH
TRUNK ROOM LAMP SWITCH
FRONT DOOR KEY CYLINDER SWITCH LH
LOCK
UNLOCK
FULL STROKE
BETWEEN FULL STROKE AND N
N
BETWEEN FULL STROKE AND N
FULL STROKE
41
30
36
LOCKED
UNLOCKED
DOOR UNLOCK SENSOR
FRONT DOOR LOCK ACTUATOR LH
37
LOCKED
UNLOCKED
DOOR UNLOCK SENSOR
FRONT DOOR LOCK ACTUATOR RH
42
N
BETWEEN FULL STROKE AND N
FULL STROKE
TRUNK LID KEY CYLINDER SWITCH (UNLOCK SWITCH)
9
20
IV
33
32
IVCS UNIT
IV
23
35
14
15
13
To door lock actuators
LOCK
N
UNLOCK
FRONT POWER WINDOW MAIN SWITCH (DOOR LOCK AND UNLOCK SWITCH)
LOCK
N
UNLOCK
FRONT POWER WINDOW SWITCH RH (DOOR LOCK AND UNLOCK SWITCH)

MEL522K

Smart Entrance Control Unit Inspection Table

NHEL0126

Terminal No.	Wire color	Connections	Operated condition		Voltage (Approximate values)
1	R/Y	Ignition key hole illumination	For 30 seconds after driver door is locked		0V
			30 seconds passed after driver door is locked		12V
2	G/R	Rear window defogger relay	OFF → ON (Ignition key is in “ON” position)		0V → 12V
4	BR/W	Theft warning horn relay	When panic alarm is operated using remote controller		12V → 0V
5	PU	Headlamp battery saver control unit	When headlamp battery saver timer is operated		12V
7	P	Multi-remote control relay	When doors are locked using remote controller		12V → 0V
8	R/Y	Interior lamp	When interior lamp is operated using remote controller. (Lamp switch in “DOOR” position)		0V → 12V
10	R/B	Power source (Fuse)	—		12V
11	W/R	Power source (C/B)	—		12V
12	L	Trunk lid opener switch	ON (Open) → OFF (Closed)		0V → 12V
13	W/B	Driver door lock actuator	Door lock & unlock switch	Free	0V
14	G/Y	Passenger and rear doors lock actuator		Unlocked	12V
15	GY	Door lock actuators	Door lock & unlock switch	Free	0V
				Locked	12V
16	B	Ground	—		—
17	R/G	Battery saver (Interior lamp)	Battery saver does not operate → Operate		12V → 0V
19	G/W	Horn relay	When doors are locked using remote controller with horn chirp mode.		12V → 0V
21	PU	Ignition switch (ACC)	“ACC” position		12V
22	OR	Seat belt buckle switch	Unfasten → Fasten (Ignition key is in “ON” position)		0V → 5V
23	GY	Door lock & unlock switches	Neutral → Locks		5V → 0V
27	Y/B	Hood switch	ON (Open) → OFF (Closed)		0V → 5V
28	R/W	Rear door switches	OFF (Closed) → ON (Open)		5V → 0V
29	SB	Driver door switch	OFF (Closed) → ON (Open)		5V → 0V
30	OR/L	Door key cylinder unlock switch	OFF (Neutral) → ON (Unlocked)		5V → 0V
31	G/OR	Security indicator	Goes off → Illuminates		12V → 0V
32	B/R	Ignition key switch (Insert)	key inserted → key removed from IGN key cylinder		12V → 0V
33	G	Ignition switch (ON)	Ignition key is in “ON” position		12V
34	R/W	Tail lamp relay	1ST, 2ND positions: ON → OFF		12V → 0V
35	BR/Y	Door lock & unlock switches	Neutral → Unlocks		5V → 0V
36	LG/R	Driver door unlock sensor	Driver door: Locked → Unlocked		5V → 0V
37	PU	Passenger door unlock sensor	Passenger door: Locked → Unlocked		5V → 0V
38	PU/Y	Trunk room lamp switch	ON (Open) → OFF (Closed)		0V → 12V
39	G/W	Rear window defogger switch	OFF → ON		5V → 0V

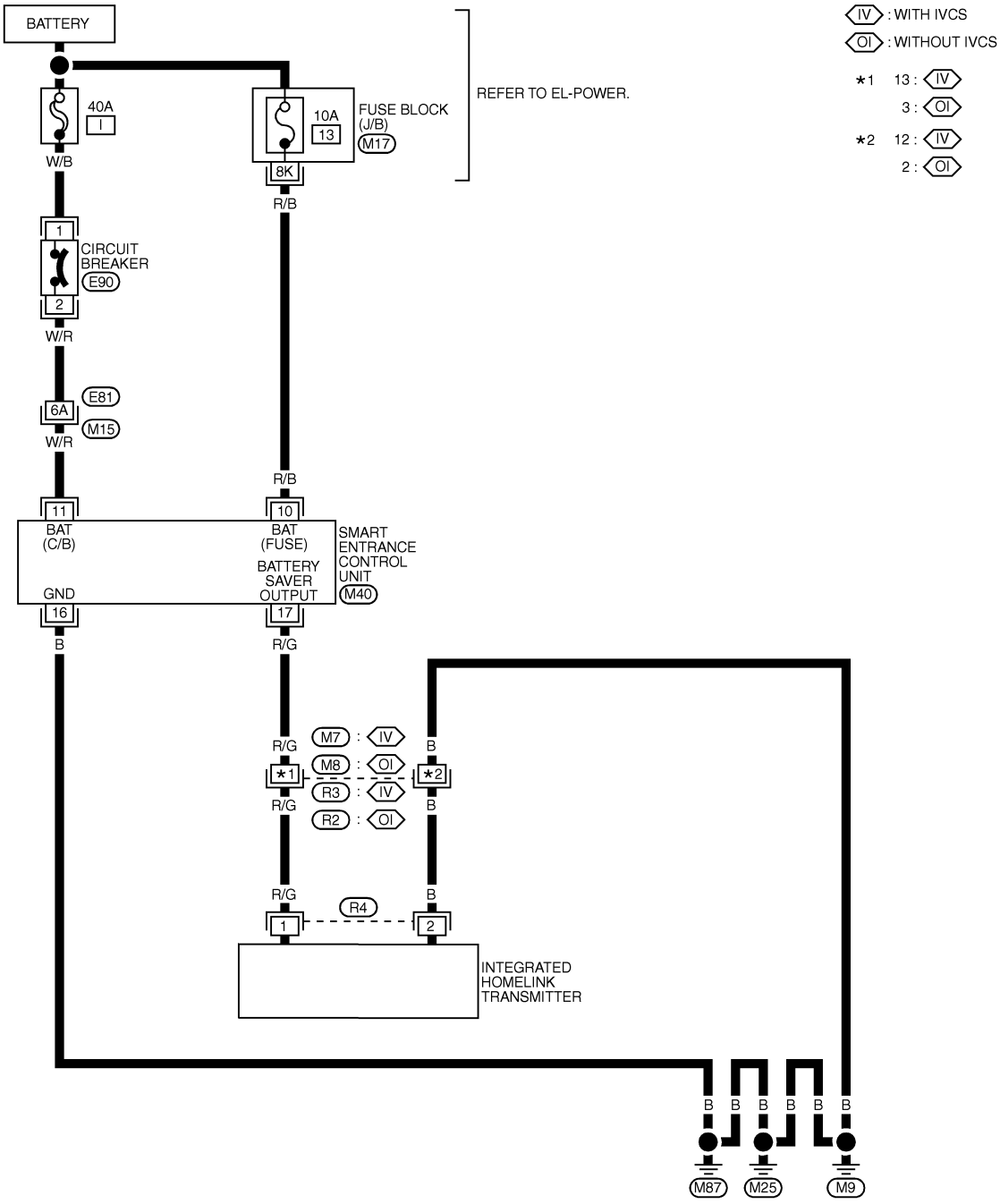
Smart Entrance Control Unit Inspection Table (Cont'd)

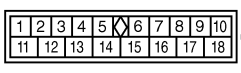
Terminal No.	Wire color	Connections	Operated condition	Voltage (Approximate values)
40	R/L	Passenger door switch	OFF (Closed) → ON (Open)	5V → 0V
41	OR/B	Door key cylinder lock switch	OFF (Neutral) → ON (Locked)	5V → 0V
42	G/B	Trunk lid key cylinder switch	OFF (Neutral) → ON (Unlock)	5V → 0V

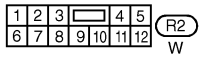
Wiring Diagram — TRNSMT —

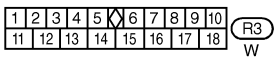
NHEL0127

EL-TRNSMT-01









REFER TO THE FOLLOWING.
M15 , E81 – SUPER MULTIPLE JUNCTION (SMJ)
M17 – FUSE BLOCK – JUNCTION BOX (J/B)

MEL592K

Trouble Diagnoses

NHEL0128

DIAGNOSTIC PROCEDURE

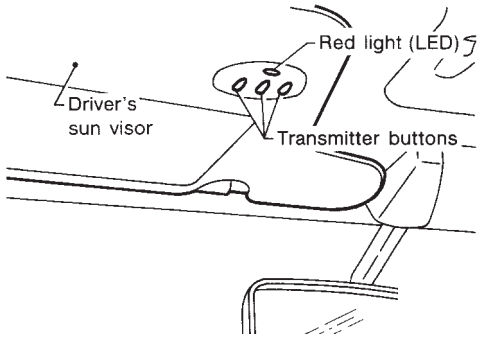
NHEL0128S01

SYMPTOM: Transmitter does not activate receiver.

Before conducting the procedure given below, make sure that system receiver (garage door opener, etc.) operates with original, hand-held transmitter. If NG, receiver or hand-held transmitter is at fault, not vehicle related.

1	PRELIMINARY CHECK

1. Turn ignition switch “OFF”.
2. Does red light (LED) of transmitter illuminate when any button is pressed?



SEL442U

Yes or No

Yes	▶	GO TO 2.
No	▶	GO TO 3.

2	CHECK TRANSMITTER FUNCTION

Check transmitter with Tool.
For details, refer to Technical Service Bulletin.

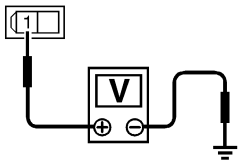
OK or NG

OK	▶	Receiver or handheld transmitter fault, not vehicle related.
NG	▶	Replace transmitter with sun visor assembly.

3	CHECK POWER SUPPLY

1. Disconnect transmitter connector.
2. Turn ignition switch “OFF”.
3. Check voltage between terminal 1 and body ground. (Within 10 minutes after turn ignition switch “OFF”.)

Integrated homelink transmitter connector



Battery voltage should exist.

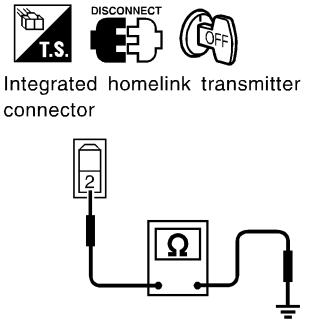
SEL367W

OK or NG

OK	▶	GO TO 4.
NG	▶	Check fuse (10A) and repair harness.

4	CHECK GROUND CIRCUIT

Check continuity between terminal 2 and ground.



Integrated homelink transmitter connector

Continuity should exist.

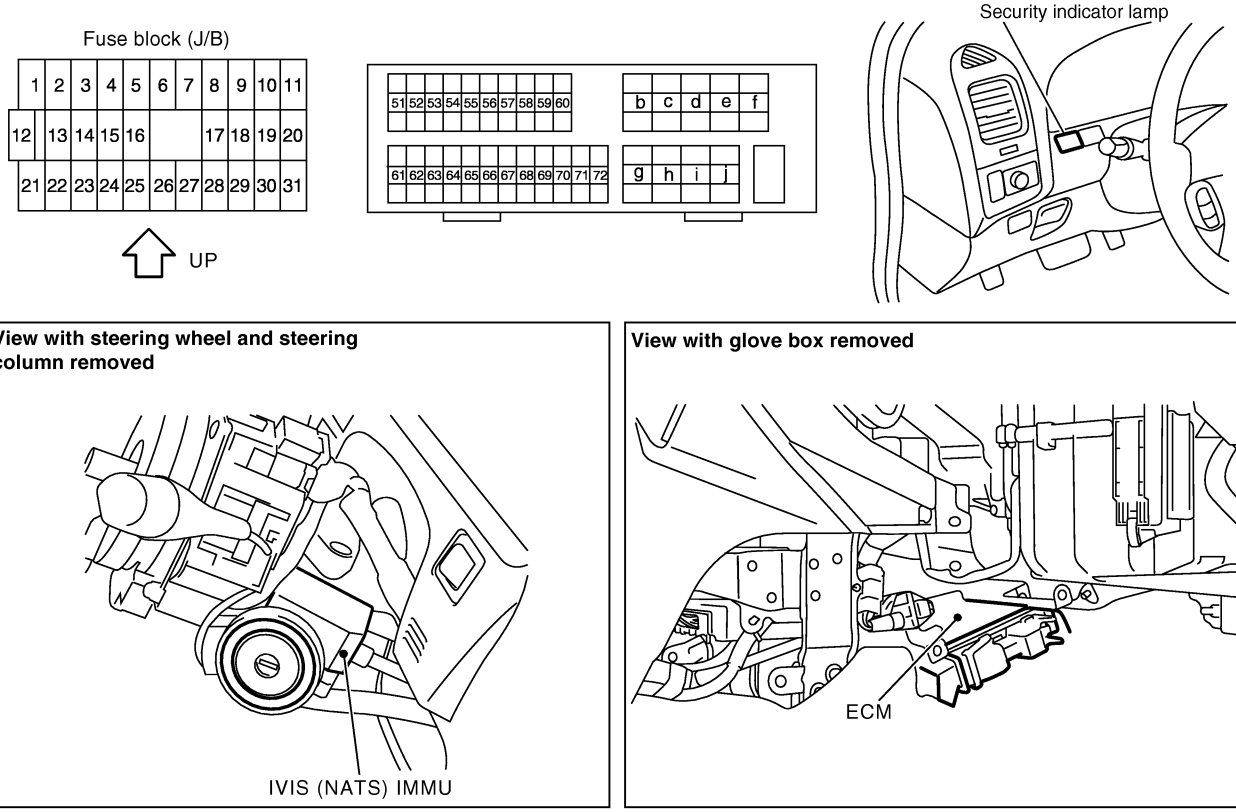
SEL368W

OK or NG

OK	▶	Replace transmitter with sun visor assembly.
NG	▶	Repair harness.

Component Parts and Harness Connetor Location

NHEL0172



SEL054X

NOTE:
If customer reports a “No Start” condition, request ALL KEYS to be brought to an INFINITI dealer in case of an IVIS (NATS) malfunction.

System Description

=NHEL0173

IVIS (Infiniti Vehicle Immobilizer System — NATS) has the following immobilizer functions:

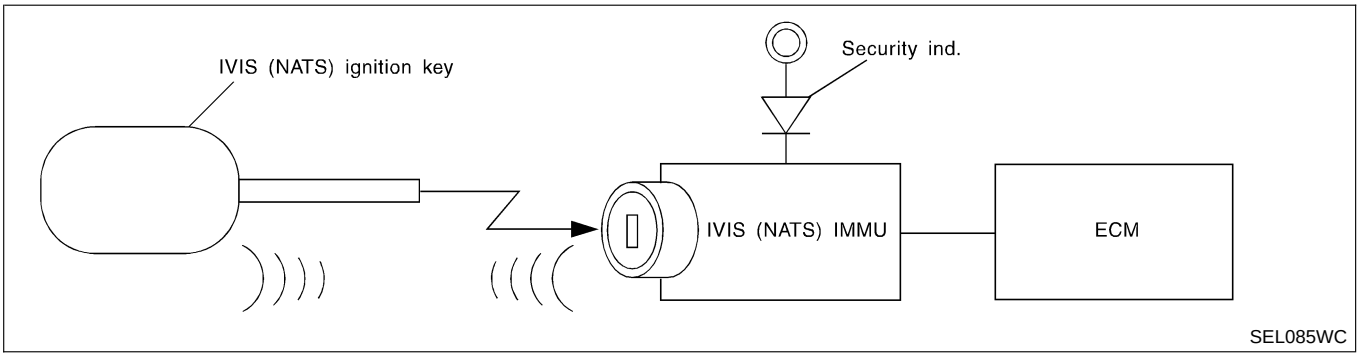
- Since only IVIS (NATS) ignition keys, whose ID nos. have been registered into the ECM and IMMU of IVIS (NATS), allow the engine to run, operation of a stolen vehicle without a IVIS (NATS) registered key is prevented by IVIS (NATS).
  That is to say, IVIS (NATS) will immobilize the engine if someone tries to start it without the registered key of IVIS (NATS).
- All of the originally supplied ignition key IDs (except for card plate key) have been IVIS (NATS) registered. If requested by the vehicle owner, a maximum of five key IDs can be registered into the IVIS (NATS) components.
- The security indicator blinks when the ignition switch is in “OFF” or “ACC” position. Therefore, IVIS (NATS) warns outsiders that the vehicle is equipped with the anti-theft system.
- When IVIS (NATS) detects trouble, the security indicator lamp lights up while ignition key is in the “ON” position.
- IVIS (NATS) trouble diagnoses, system initialization and additional registration of other IVIS (NATS) ignition key IDs must be carried out using CONSULT-II hardware and CONSULT-II IVIS (NATS) software.
  Regarding the procedures of IVIS (NATS) initialization and IVIS (NATS) ignition key ID registration, refer to CONSULT-II operation manual, IVIS/NVIS.
- **When servicing a malfunction of the IVIS (indicated by lighting up of Security Indicator Lamp) or registering another IVIS 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

NHEL0174

The immobilizer function of the IVIS (NATS) consists of the following:

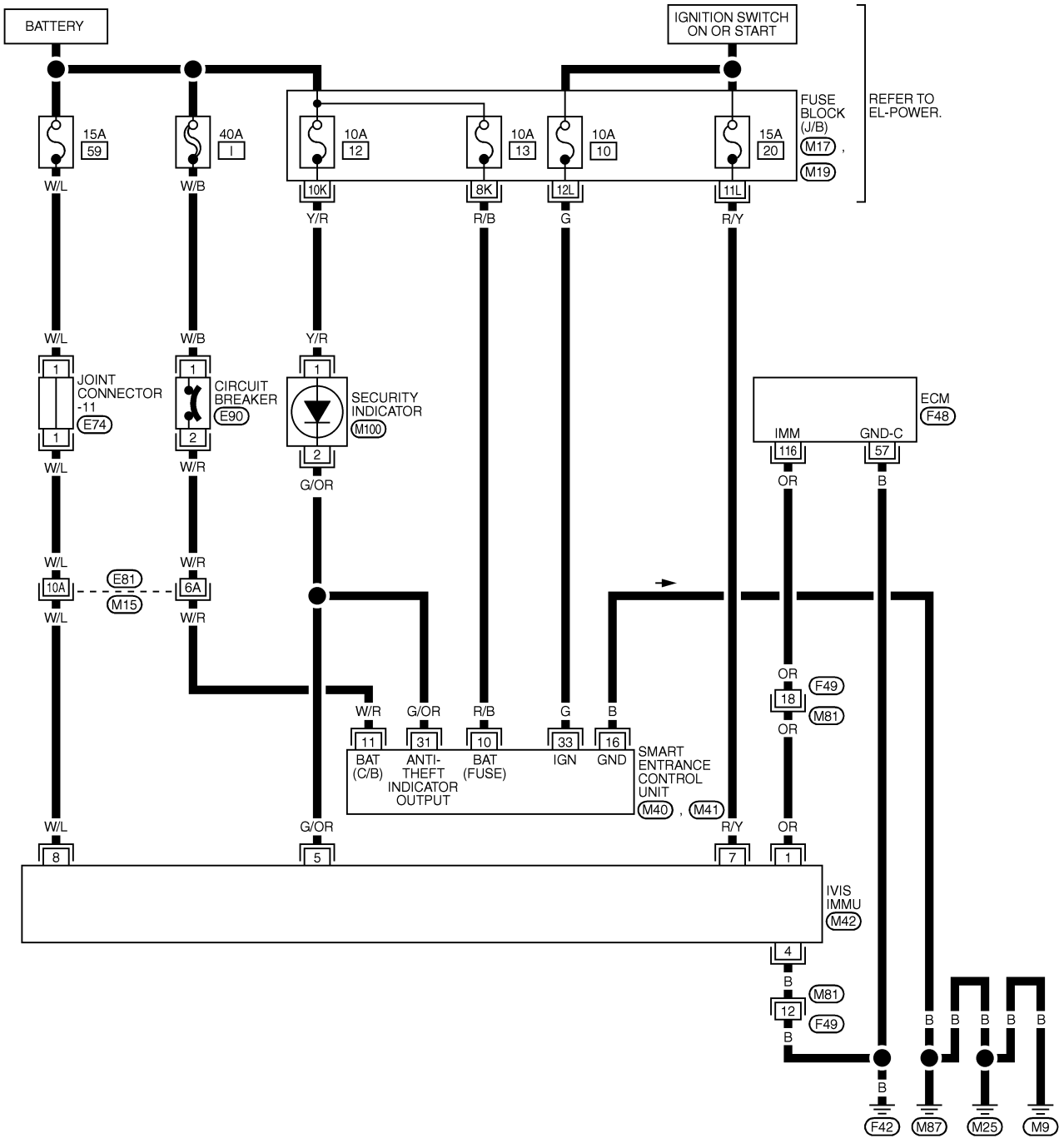
- IVIS (NATS) ignition key
- IVIS (NATS) immobilizer control unit (IMMU) located in the ignition key cylinder
- Engine control module (ECM)
- Security indicator

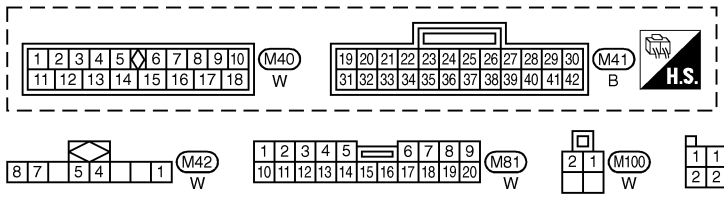


Wiring Diagram — NATS —

NHEL0175

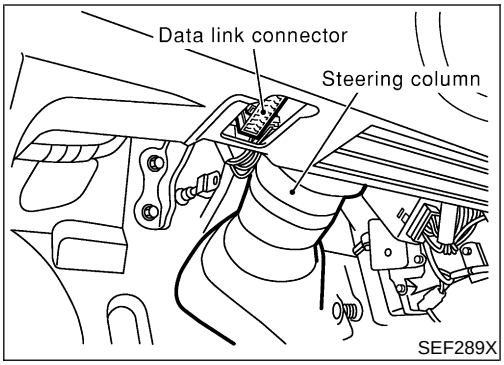
EL-NATS-01





REFER TO THE FOLLOWING.
M15, E81 -SUPER MULTIPLE JUNCTION (SMJ)
M17 -FUSE BLOCK- JUNCTION BOX (J/B)
M19 -FUSE BLOCK- JUNCTION BOX (J/B)
F48 -ELECTRICAL UNITS-

MEL523K



SEF289X

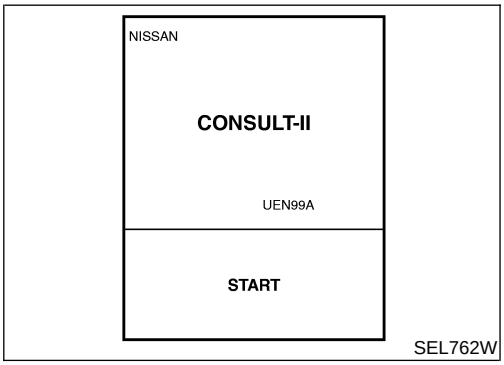
CONSULT-II

NHEL0176

CONSULT-II INSPECTION PROCEDURE

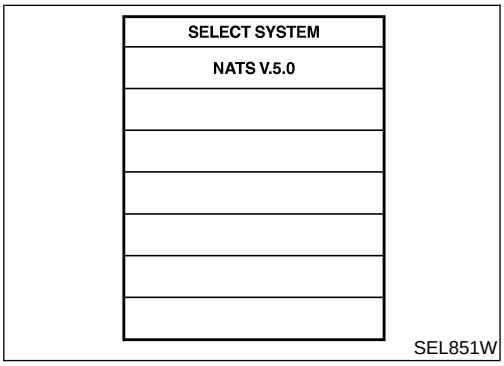
NHEL0176S01

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



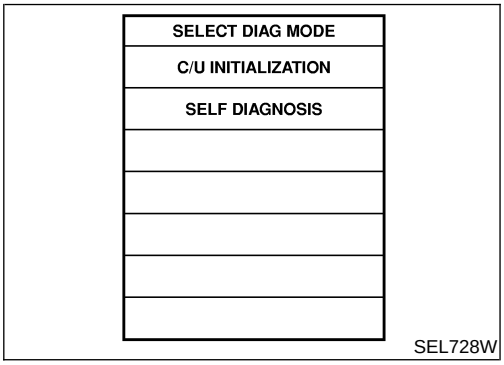
SEL762W

3. Insert IVIS (NATS) program card into CONSULT-II.
   : Program card
   NATS (UEN99A)
4. Turn ignition switch ON.
5. Touch “START”.



SEL851W

6. Select “NATS V.5.0”.



SEL728W

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

NHEL0176S02

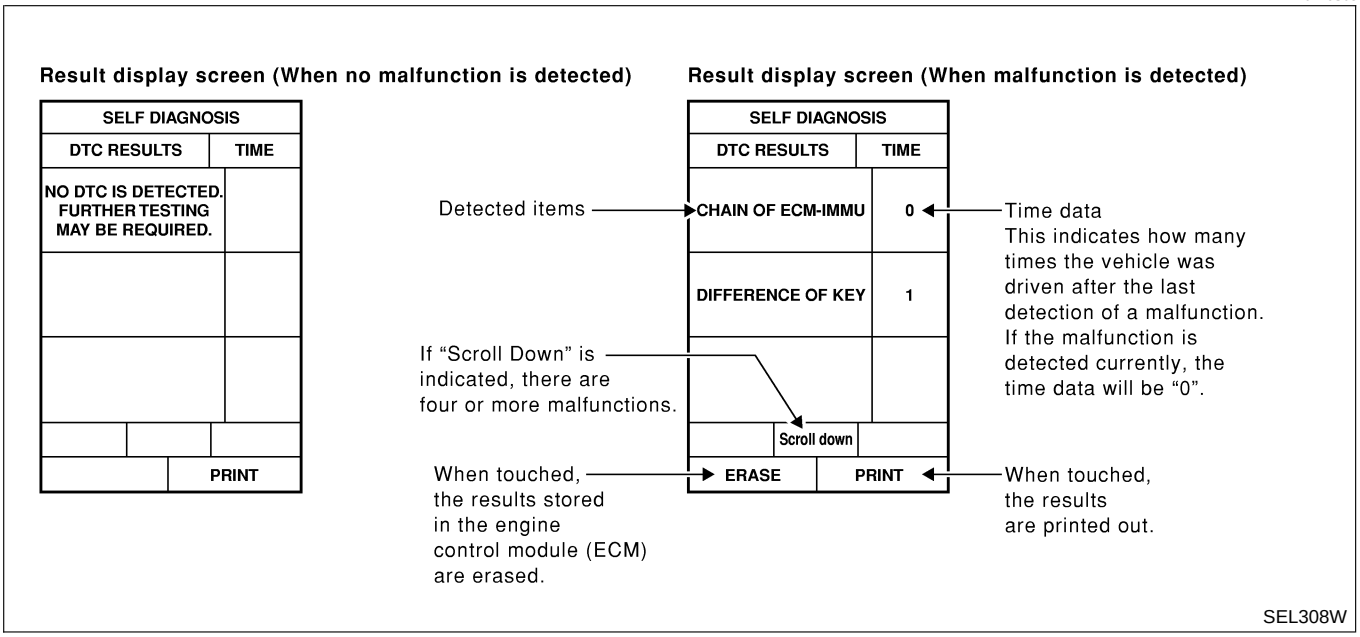
CONSULT-II DIAGNOSTIC TEST MODE	Description
C/U INITIALIZATION	When replacing any of the following three components, C/U initialization and re-registration of all IVIS (NATS) ignition keys are necessary. [IVIS (NATS) ignition key/IMMU/ECM]
SELF DIAGNOSIS	Detected items (screen terms) are as shown in the chart EL-405.

NOTE:

- **When any initialization is performed, all ID previously registered will be erased and all IVIS (NATS) ignition keys must be registered again.**
- The engine cannot be started with an unregistered key. In this case, the system may show "DIFFERENCE OF KEY" or "LOCK MODE" as a self-diagnostic result on the CONSULT-II screen.
- 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

NHEL0176S03



SEL308W

IVIS (NATS) SELF-DIAGNOSTIC RESULTS ITEM CHART

NHEL0176S04

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-409
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-410
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-414
CHAIN OF IMMU-KEY	NATS MALFUNCTION P1614	IMMU cannot receive the key ID signal.	EL-415
ID DISCORD, IMM-ECM	NATS MALFUNCTION P1611	The result of ID verification between IMMU and ECM is NG. System initialization is required.	EL-416

CONSULT-II (Cont'd)

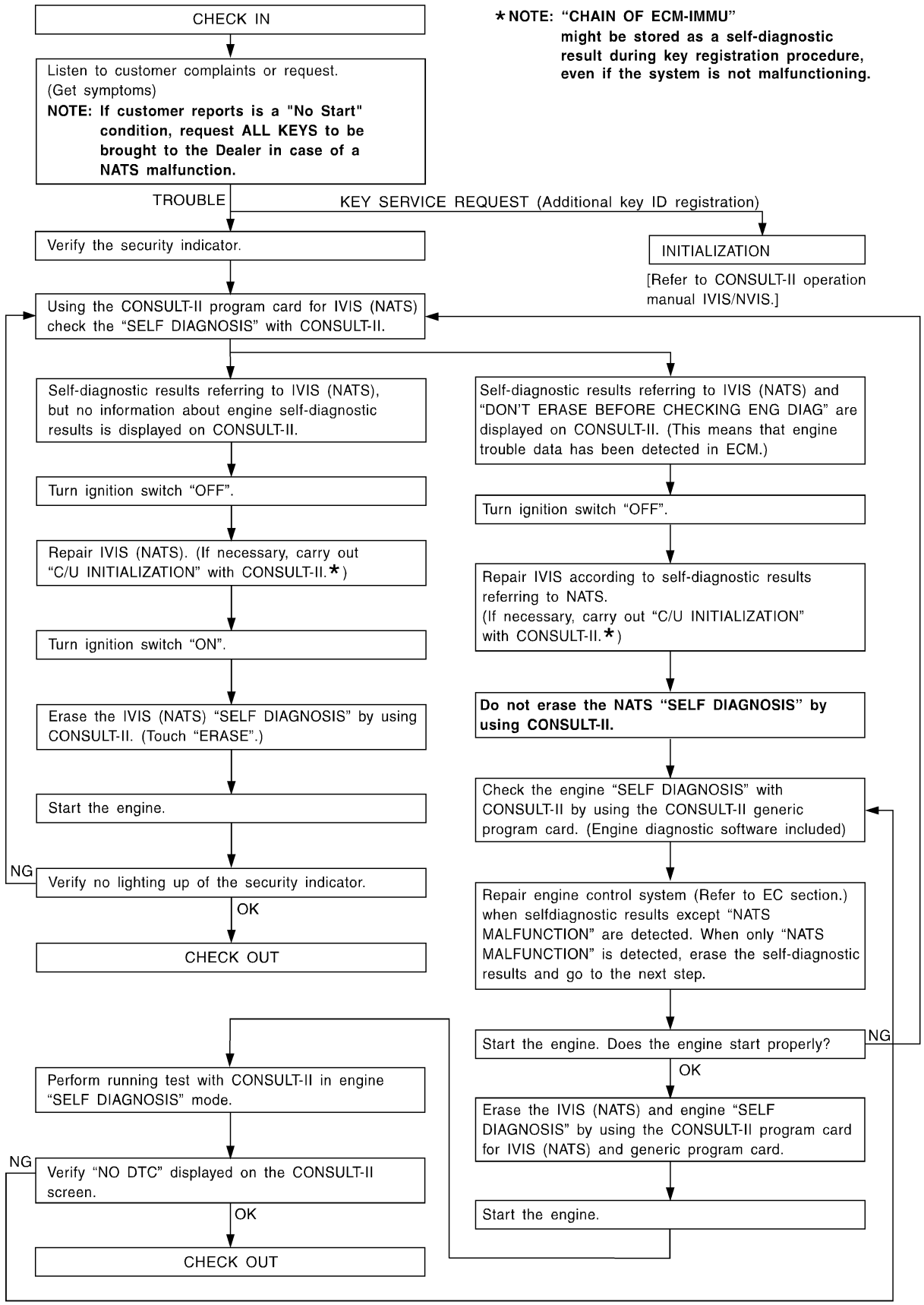
Detected items (NATS program card screen terms)	P No. Code (Self-diagnostic result of "ENGINE"	Malfunction is detected when	Reference page
LOCK MODE	NATS MALFUNCTION P1610	When the starting operation is carried out five or more times consecutively under the following conditions, IVIS (NATS) will shift the mode to one which prevents the engine from being started. ● Unregistered ignition key is used. ● IMMU or ECM's malfunctioning.	EL-419
DON'T ERASE BEFORE CHECKING ENG DIAG	—	All engine trouble codes except IVIS (NATS) trouble code has been detected in ECM.	EL-407

Trouble Diagnoses

NHEL0177

WORK FLOW

NHEL0177S01



SEL004X

SYMPTOM MATRIX CHART 1
(Self-diagnosis related item)

NHEL0177S02

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 hard to start	ECM INT CIRC-IMMU	PROCEDURE 1 (EL-409)	ECM	B
	CHAIN OF ECM-IMMU	PROCEDURE 2 (EL-410)	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-414)	Unregistered key	D
			IMMU	A
	CHAIN OF IMMU-KEY	PROCEDURE 4 (EL-415)	Malfunction of key ID chip	E
			IMMU	A
	ID DISCORD, IMM-ECM	PROCEDURE 5 (EL-416)	System initialization has not yet been completed.	F
			ECM	F
	LOCK MODE	PROCEDURE 7 (EL-419)	LOCK MODE	D
• MIL staying ON • Security indicator lighting up*	DON'T ERASE BEFORE CHECKING ENG DIAG	WORK FLOW (EL-407)	Engine trouble data and IVIS (NATS) trouble data have been detected in ECM	—

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

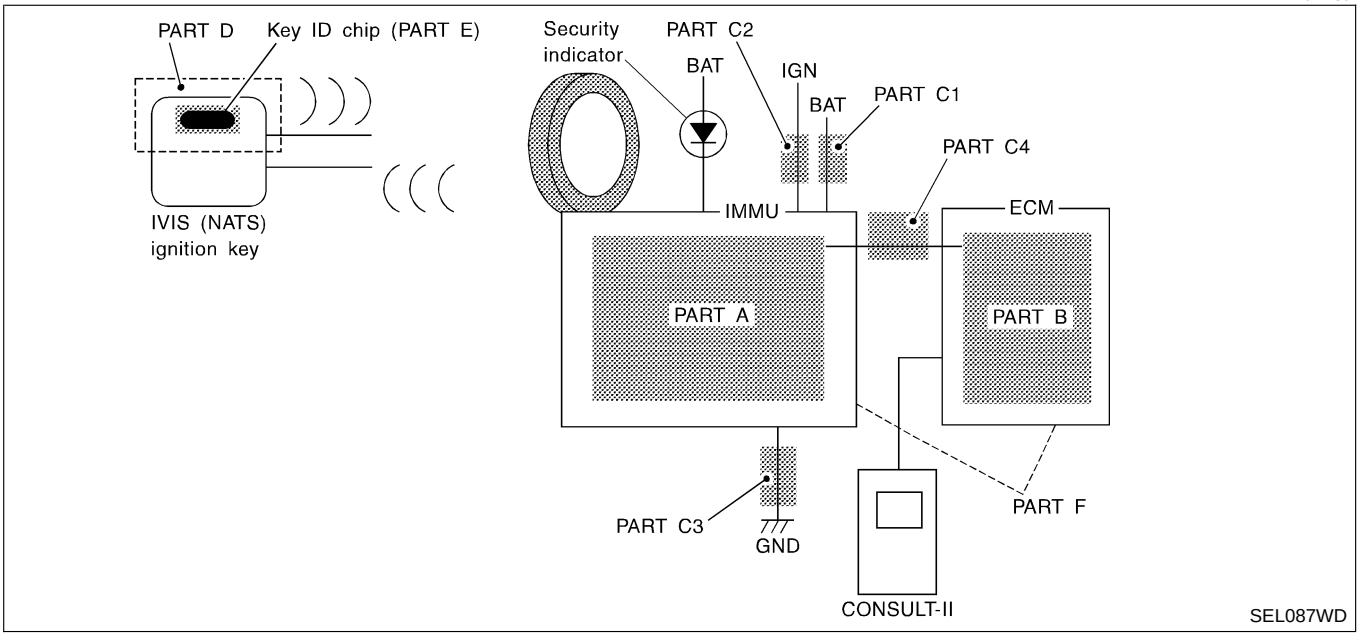
SYMPTOM MATRIX CHART 2
(Non self-diagnosis related item)

NHEL0177S03

SYMPTOM	DIAGNOSTIC PROCEDURE (Reference page)	SYSTEM (Malfunctioning part or mode)
Security ind. does not light up.	PROCEDURE 6 (EL-417)	Security ind.
		Open circuit between Fuse and IMMU
		Continuation of initialization mode
		IMMU

DIAGNOSTIC SYSTEM DIAGRAM

NHEL0177S04



SELF DIAGNOSIS	
DTC RESULTS	TIME
ECM INT CIRC-IMMU	0

SEL314W

DIAGNOSTIC PROCEDURE 1

NHEL0177S06

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

=NHEL0177S07

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 DIAGNOSIS	
DTC RESULTS	TIME
CHAIN OF ECM-IMMU	0

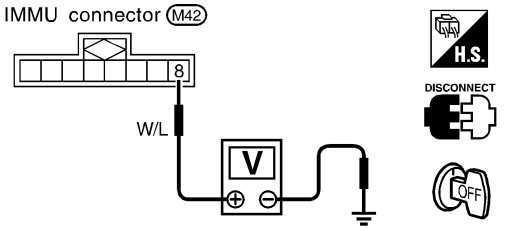
SEL292W

Is CONSULT-II screen displayed as above?

Yes	▶	GO TO 2.
No	▶	GO TO SYMPTOM MATRIX CHART 1.

2	CHECK POWER SUPPLY CIRCUIT FOR IMMU

1. Disconnect IMMU connector.
2. Check voltage between terminal 8 of IMMU and ground with CONSULT-II or tester.



Battery voltage should exist.

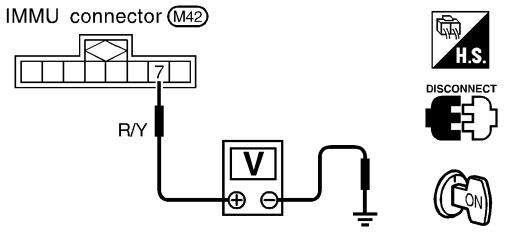
SEL302W

OK or NG

OK	▶	GO TO 3.
NG	▶	**Check the following** ● 15A fuse (No. 59, located in the fuse and fusible link box) ● Harness for open or short between fuse and IMMU connector **Ref. Part No. C1**

3	CHECK IGN SW. ON SIGNAL

1. Turn ignition switch ON.
2. Check voltage between terminal 7 of IMMU and ground with CONSULT-II or tester.



Battery voltage should exist.

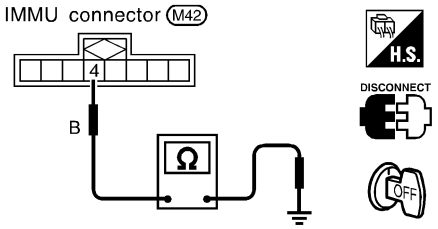
SEL303W

OK or NG

OK	▶	GO TO 4.
NG	▶	**Check the following** ● 15A fuse [No. 20, located in the fuse block (J/B)] ● Harness for open or short between fuse and IMMU connector **Ref. part No. C2**

4	CHECK GROUND CIRCUIT FOR IMMU

1. Turn ignition OFF.
2. Check harness continuity between IMMU terminal 4 and ground.



Continuity should exist.

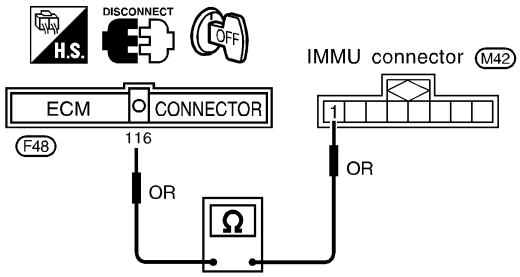
SEL304W

OK or NG

OK	▶	GO TO 5.
NG	▶	Repair harness. **Ref. part No. C3**

5	CHECK COMMUNICATION LINE OPEN CIRCUIT

1. Disconnect ECM connector.
2. Check harness continuity between ECM terminal 116 and IMMU terminal 1.



Continuity should exist.

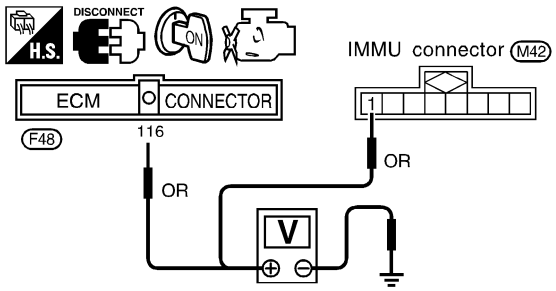
SEL305W

OK or NG

OK	▶	GO TO 6.
NG	▶	Repair harness or connector. **Ref. part No. C4**

6	CHECK COMMUNICATION LINE BATTERY SHORT CIRCUIT

1. Turn ignition ON.
2. Check voltage between ECM terminal 116 or IMMU terminal 1 and ground.



Voltage: 0V

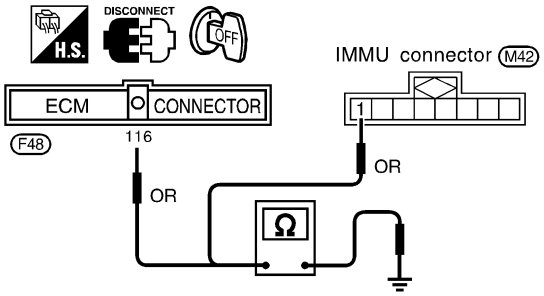
SEL306W

OK or NG

OK	▶	GO TO 7.
NG	▶	Communication line is short-circuited with battery voltage line or ignition switch ON line. Repair harness or connectors. **Ref. part No. C4**

7	CHECK COMMUNICATION LINE GROUND SHORT CIRCUIT

1. Turn ignition switch OFF.
2. Check continuity between ECM terminal 116 or IMMU terminal 1 and ground.



SEL307W

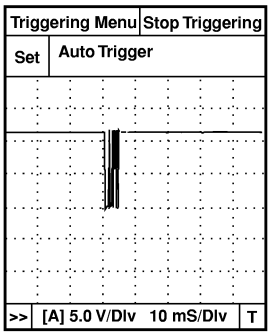
Continuity should not exist.

OK or NG

OK	▶	GO TO 8.
NG	▶	Communication line is short-circuited with ground line. Repair harness or connectors. **Ref. part No. C4**

8	SIGNAL FROM ECM TO IMMU CHECK

1. Check the signal between ECM terminal 116 and ground with CONSULT-II or oscilloscope when ignition switch is turned "ON".
2. Make sure signals which are shown in the figure below can be detected during 750 msec. just after ignition switch is turned "ON".



SEL730W

OK or NG

OK	▶	IMMU is malfunctioning. Replace IMMU. **Ref. part No. A** Perform initialization with CONSULT-II. For the operation of initialization, refer to "CONSULT-II Operation Manual IVIS/NVIS".
NG	▶	ECM is malfunctioning. Replace ECM. **Ref. part No. B** Perform initialization with CONSULT-II. For the operation of initialization, refer to "CONSULT-II Operation Manual IVIS/NVIS".

DIAGNOSTIC PROCEDURE 3

=NHEL0177S08

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 DIAGNOSIS	
DTC RESULTS	TIME
DIFFERENCE OF KEY	0

SEL293W

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 IVIS (NATS) ignition key IDs.
For initialization and registration of IVIS (NATS) ignition key IDs, 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 and can the engine be started with re-registered IVIS (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

=NHEL0177S09

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 DIAGNOSIS	
DTC RESULTS	TIME
CHAIN OF IMMU-KEY	0

SEL294W

Is CONSULT-II screen displayed as above?

Yes	▶	GO TO 2.
No	▶	GO TO SYMPTOM MATRIX CHART 1.

2	CHECK IVIS (NATS) IGNITION KEY ID CHIP

Start engine with another registered IVIS (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-420.

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

=NHEL0177S10

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 DIAGNOSIS	
DTC RESULTS	TIME
ID DISCORD, IMM-ECM	0

SEL298W

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 IVIS (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?

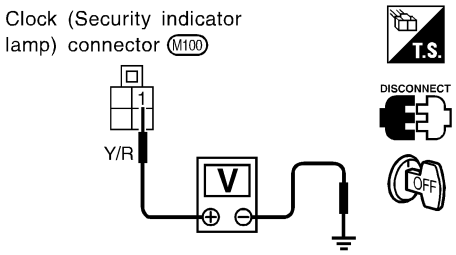
Yes	▶	Start engine. (END) (System initialization had not been completed. **Ref. part No. F**)
No	▶	ECM is malfunctioning. Replace ECM. **Ref. part No. F** Perform initialization with CONSULT-II. For initialization, refer to "CONSULT-II operation manual IVIS/NVIS".

DIAGNOSTIC PROCEDURE 6
"SECURITY INDICATOR LAMP DOES NOT LIGHT UP"

=NHEL0177S12

1	CHECK FUSE
Check 10A fuse [No. 12, located in the fuse block (J/B)]. **Is 10A fuse OK?**	
Yes ▶	GO TO 2.
No ▶	Replace fuse.

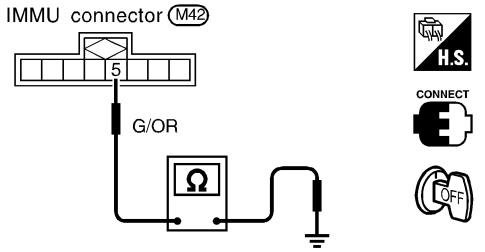
2	CHECK SECURITY INDICATOR LAMP
1. Install 10A fuse. 2. Perform initialization with CONSULT-II. For initialization, refer to "CONSULT-II Operation Manual IVIS/NVIS". 3. Turn ignition switch OFF. 4. Start engine and turn ignition switch OFF. 5. Check the security indicator lamp lighting. **Security indicator lamp should be blinking.** **OK or NG**	
OK ▶	INSPECTION END
NG ▶	GO TO 3.

3	CHECK SECURITY INDICATOR LAMP POWER SUPPLY CIRCUIT
1. Disconnect security indicator lamp connector. 2. Check voltage between security indicator lamp connector terminal 1 and ground.  **Battery voltage should exist.** SEL653W **OK or NG**	
OK ▶	GO TO 4.
NG ▶	Check harness for open or short between fuse and security indicator lamp.

4	CHECK SECURITY INDICATOR LAMP
Check security Indicator Lamp. **Is security indicator lamp OK?**	
Yes ▶	GO TO 5.
No ▶	Replace security indicator lamp.

5	CHECK IMMU FUNCTION

1. Connect IMMU connector.
2. Disconnect security indicator lamp connector.
3. Check continuity between IMMU terminal 5 and ground.



Cotinuity should exist intermittently.

SEL300W

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

=NHEL0177S13

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 DIAGNOSIS	
DTC RESULTS	TIME
LOCK MODE	0

SEL295W

Is CONSULT-II screen displayed as above?

Yes	▶	GO TO 2.
No	▶	GO TO SYMPTOM MATRIX CHART 1.

2	ESCAPE FROM LOCK MODE

1. Turn ignition switch OFF.
2. Turn ignition switch ON with registered key. (Do not start engine.) Wait 5 seconds.
3. Return the key to OFF position.
4. Repeat steps 2 and 3 twice (total of three cycles).
5. Start the engine.

Does engine start?

Yes	▶	System is OK. (Now system is escaped from "LOCK MODE".)
No	▶	GO TO 3.

3	CHECK IMMU ILLUSTRATION

Check IMMU installation. Refer to "How to Replace IMMU" in EL-420.

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".

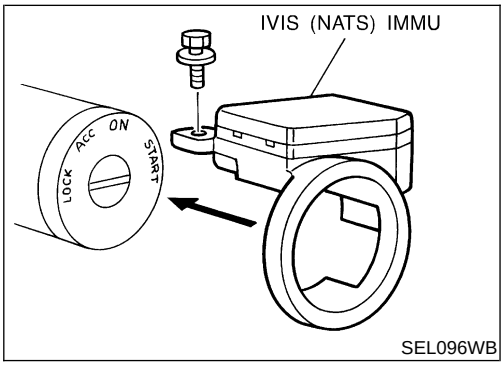
IMMU INITIALIZATION
INITIALIZATION FAIL
THEN IGN KEY SW 'OFF' AND 'ON', AFTER CONFIRMING SELF-DIAG AND PASSWORD, PERFORM C/U INITIALIZATION AGAIN.

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 5 to check "CHAIN OF IMMU-KEY", refer to EL-415.



SEL096WB

How to Replace IVIS (NATS) IMMU

NHEL0178

NOTE:

- **If IVIS (NATS) IMMU is not installed correctly, IVIS (NATS) system will not operate properly and SELF-DIAG RESULTS on CONSULT-II screen will show "LOCK MODE" or "CHAIN OF IMMU-KEY".**

Precaution

NHEL0282

CAUTION:

- **Use CONSULT-II to set the system “Demonstration mode” if INFINITI Communicator needs to be activated during service procedures. (For details of the demonstration mode, refer to EL-451.)**
- **Make sure to turn the demonstration mode OFF before returning the vehicle to the owner.**
- **In the demonstration mode, no service from the Communicator Response Center is available. Therefore, even if the customer encounters an emergency, no service will be dispatched.**
- **If the theft warning system is activated for more than 7 seconds, INFINITI Communicator will dial to the Communicator Response Center automatically. The operator will contact the customer to confirm whether the vehicle has been stolen or not.**
- **When “Mayday” emergency dialing is activated (if the system is not in the demonstration mode), the Communicator Response Center operator will come online. If there is no emergency, the operator will ask the occupant for the user password (option). Failure to provide the correct password results in a police response.**
- **IVCS unit memory includes VIN (Vehicle Identification Number) and other such vehicle specific data. Therefore, the IVCS unit cannot be transferred to another vehicle. When the IVCS unit is replaced, the new unit must be set up and programmed. The INFINITI Communicator system automatically contacts the Communicator Response Center the first time the vehicle is started after a phone number has been changed or a module (IVCS unit) is replaced. The VIN will be written in the memory of the new unit by transmitting data from the Communicator Response Center. For details, refer to “System Setting”, EL-453.**
- **Before servicing the vehicle, confirm that the VIN memorized by the IVCS unit is the same as the VIN on the vehicle’s identification plate.**

Communicator Response Center Telephone Number for Technicians

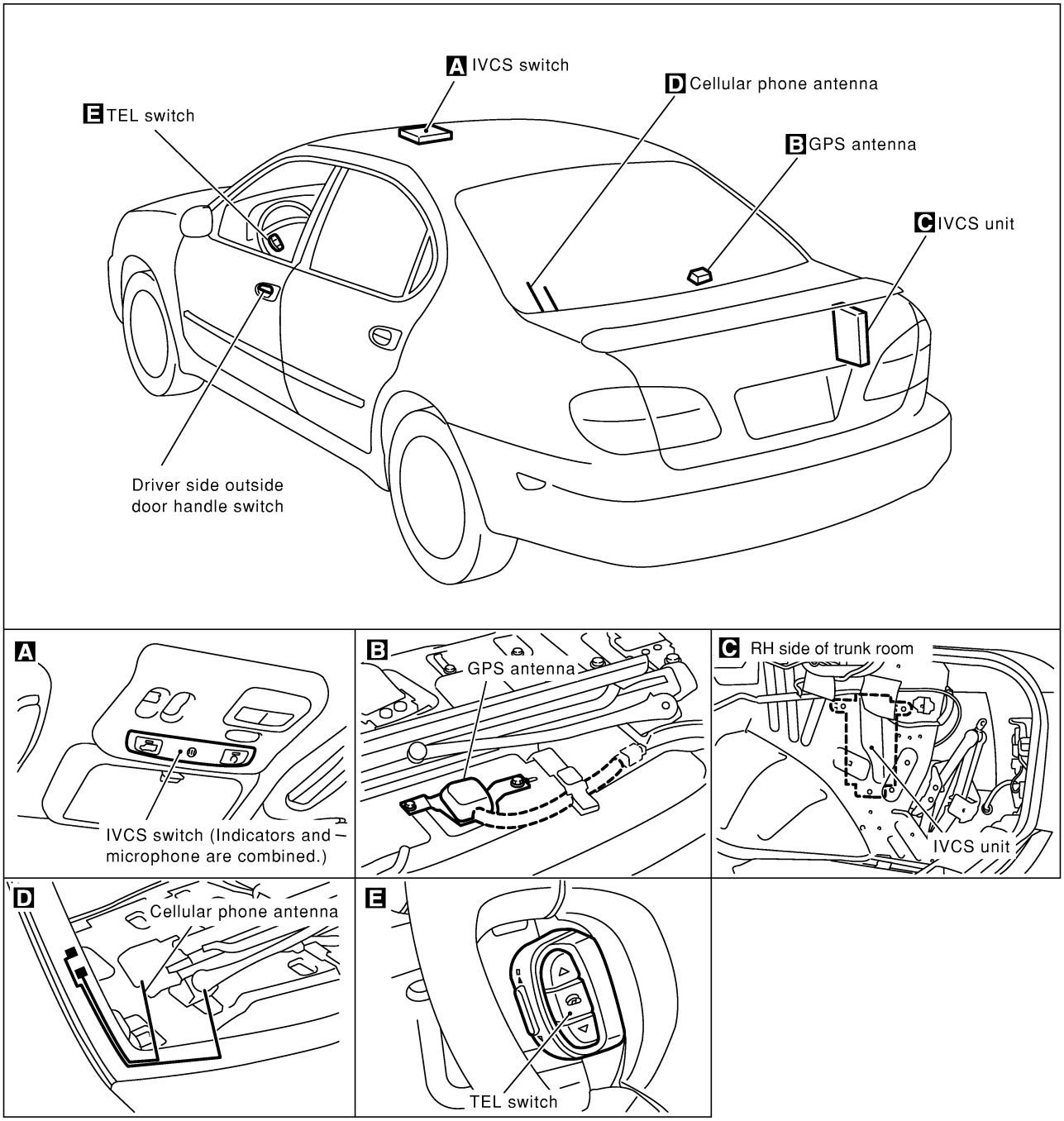
NHEL0283

The Communicator Response Center telephone number for technicians is **1-888-427-4812**.
Whenever an INFINITI dealer technician dials the above number, the following information will be required by the Communicator Response Center operator.

- Customer name
- Unit ID number of old IVCS unit (For details, refer to EL-438.)
- Unit ID number of new IVCS unit
- VIN
- Dealer name and code (For security purposes)
- Dealer contact person (technician)
- Dealer phone and fax numbers

Component Parts and Harness Connector Location

NHEL0284



SEL435W

System Description

NHEL0285

OUTLINE

NHEL0285S01

INFINITI Communicator system uses the Global Positioning System (GPS), cellular phone technology and the Communicator Response Center to provide the following functions.

- One touch “Information” dialing
- One touch “Mayday” emergency dialing
- Automatic air bag inflation notification
- Stolen vehicle tracking
- Alarm notification

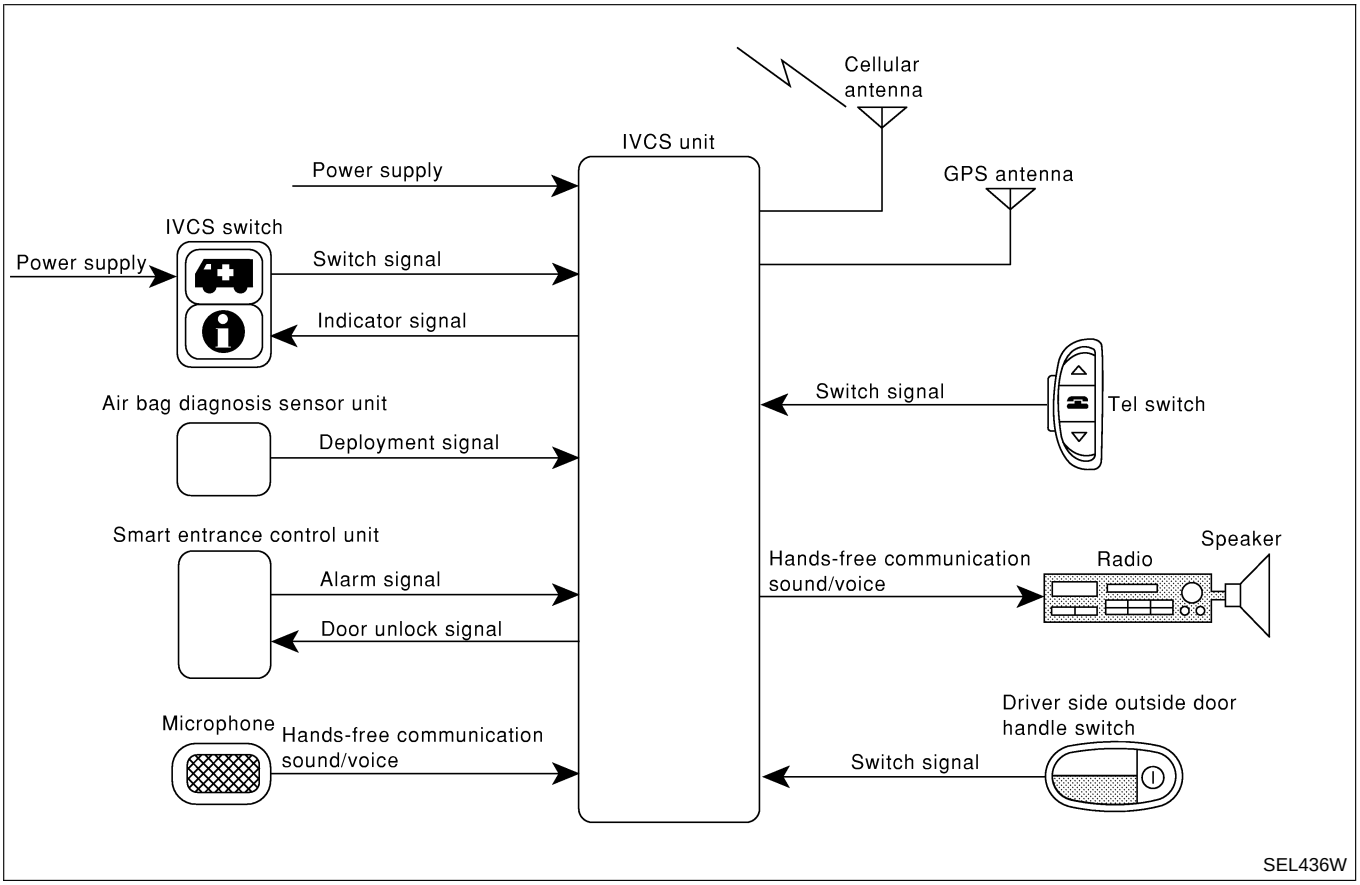
- Remote door unlock

There are limitations to the INFINITI Communicator system. To understand the system, read SYSTEM LIMITATIONS (EL-423) thoroughly.

SYSTEM COMPOSITION

NHEL0285S02

- The INFINITI Communicator system is controlled by the IVCS (In Vehicle Communication System) unit. System status ("May-day"-emergency dialing, or re-dialing, etc.) is displayed by the indicators in the IVCS switch.
- The INFINITI Communicator system can only make calls to the Communicator Response Center and receive calls from the center.



SYSTEM LIMITATIONS

NHEL0285S03

Service Area

NHEL0285S0301

Depending on the cellular provider chosen, service is provided in the 48 contiguous states. Service is not available in Alaska, Hawaii, Canada, or Mexico. The Communicator Response Center will not be able to locate the customer's vehicle outside of the continental United States.

Inoperative if Cellular Phone is Inactive or Inoperative

NHEL0285S0302

INFINITI Communicator will be inoperative if the customer does not have an active account with cellular provider, since INFINITI Communicator relies on the cellular network. When the INFINITI Communicator system is outside of cellular service, the "NO SERVICE" indicator will illuminate. If you try to activate INFINITI Communicator, the REQUEST will be cancelled. Cellular phone transmission may become temporarily disabled, or interrupted by

environmental factors like tunnels, bridges, or tall buildings. In such cases, INFINITI Communicator will re-dial up to four times. After several failed attempts, the system will quit dialing and return to normal mode.

Inoperative if The System is in The Demonstraiton Mode

NHEL0285S0303

The INFINITI Communicator system remains in the demonstration mode until the setup procedures are completed. If the system is activated in this mode, the Communicator Response Center will recognize this operation as a demonstration and will not provide any service. The system can be changed to the demonstration mode by using CONSULT-II to check the system operation. Do not forget to turn off the demonstration mode after confirmation.

Battery

NHEL0285S0304

Since INFINITI Communicator is powered by the vehicle's battery, if the battery is removed, damaged or discharged, the system will not work.

Inopertive if Cellular System is Busy

NHEL0285S0305

When INFINITI Communicator tries to contact the Communicator Response Center, but the cellular network is busy, the system attempts to re-dial for up to two hours. This time varies greatly depending on the cellular network and cellular signal strength. The system resets to ready when the system completes the re-dialing attempts.

Roaming

NHEL0285S0306

If the customer's cellular provider does not have a roaming agreement with the provider where the vehicle locates, it may not be possible to use the lines of a different cellular provider. Therefore, it is impossible that INFINITI Communicator will contact the Communicator Response Center.

Special Cellular Features

NHEL0285S0307

Some cellular carriers offer custom phone numbers that are assigned a Personal Identification Number (PIN). The cellular phone user is required to enter the PIN anytime a phone call is made. The INFINITI Communicator system is not compatible with the PIN feature. A PIN requirement on the cellular phone will cause the INFINITI Communicator system to be inoperative.

Other special features such as call waiting, voice mail, call forwarding, etc. can interfere with INFINITI Communicator system operation.

Cellular Airwave Interference

NHEL0285S0308

At times someone other than the Communicator Response Center operator may be heard. This is caused by Cellular Airwave Interference and is not caused by an INFINITI Communicator system malfunction.

Possibility of Positioning Capability Degraded

NHEL0285S0309

Vehicle positioning is accomplished using the GPS (Global Positioning System). If the signal from the GPS satellite is obstructed by a tunnel or building, positioning capability may be degraded or lost. In this case, the last valid position obtained before the obstruction is transmitted to the Communicator Response Center. The precision is also influenced by the location of GPS satellites.

Once the battery cable is disconnected, it will take about 5 minutes to determine the vehicle location. This is because the memory related to GPS is lost when the battery cable is disconnected.

OPERATION

NHEL0285S04

One Touch "Information" Dialing

NHEL0285S0401

- If the vehicle becomes disabled due to problems such as engine trouble, press the "Information" switch to connect to the Communicator Response Center and receive the desired service.
- When the indicator lamp on the switch lights up, it means that the system has started to contact the Communicator Response Center. (Voice communication with Communicator Response Center operator is not available while DATA is being transmitted even if the indicator lamp is lit.)
- When the indicator lamp blinks, it means that the system is preparing for cellular connection or attempting to re-dial.

One Touch "Mayday" Emergency Dialing

NHEL0285S0402

- When an emergency occurs, press the "Mayday" emergency switch to connect to the Communicator Response Center. With this report, the Communicator Response Center recognizes that an emergency has occurred and provides necessary service.
- The operator will request a password (if the customer chooses to establish a password). If the wrong password or if no password is provided, the Communicator Response Center will assume the customer is in a duress situation and dispatch police.
- When no voice reply is heard from the vehicle or the sound heard indicates an emergency situation, the Communicator Response Center will have the police rush to the scene.
- Other operations are the same as service dialing.

Automatic Air Bag Inflation Notification

NHEL0285S0403

- When an air bag inflates, the air bag diagnosis sensor unit sends the air bag inflation signal to the IVCS unit, and the system automatically dials the Communicator Response Center to report the occurrence of an accident.

Stolen Vehicle Tracking

NHEL0285S0404

- When a vehicle is stolen, the owner can contact the Communicator Response Center to attempt to locate the stolen vehicle. The Communicator Response Center will activate the stolen vehicle tracking to locate the vehicle. If the Communicator Response Center successfully locates the vehicle, they will contact the police to provide the location.
- The vehicle location data is calculated using GPS.
- The vehicle ignition switch must be turned to the ON position to obtain the vehicle location. (This is because the system is in the sleep mode when the ignition switch is OFF.)
- Once this function starts up, regardless of the ignition switch position, the system keeps transmitting the vehicle location until the cancel signal is transmitted from the Communicator Response Center.
- While this function is operating, the operator can covertly monitor what is happening inside the vehicle through the hands-free microphone.

Alarm Notification

NHEL0285S0405

- When theft warning system sounds an alarm for more than 7 seconds because of improper access, the alarm signal is transmitted from the smart entrance control unit to the IVCS

unit, and the system executes automatic dialing to the Communicator Response Center.
If the alarm is reset before 7 seconds has elapsed, the INFINITI Communicator will not place a call to the Communicator Response Center.

- This function operates regardless of ignition switch position.
- While this function is operating, the operator can covertly monitor what is happening inside the vehicle through the hands-free microphone.

Remote Door Unlock

NHEL0285S0406

- When the door is locked with the key inside the vehicle, the door can be unlocked by contacting the Communicator Response Center (Proof that the person calling is the owner must be received by the Communicator Response Center.)
- When the ignition key is in the "OFF" position, the system is in the sleep mode. Therefore, driver side outside door handle must be pulled for more than 10 seconds to wake up the system.
- To perform remote door unlock, call the Communicator Response Center and follow the operator's instructions.

NOTE:

- **When the system contacts the Communicator Response Center, data including the vehicle location is transmitted to the Communicator Response Center.**
- **Communication with the Communicator Response Center is not completed until the completion signal is transmitted from the Communicator Response Center. (Any calls to the Communicator Response Center can only be terminated by Communicator Response Center.)**
- **Functions other than alarm notification and remote door unlock operate while the ignition switch is ON and only for three minutes after the switch is turned OFF.**
- **Once a call to the Communicator Response Center is made, the communication continues regardless of the ignition key switch position.**
- **All the voice communication with the Communicator Response Center is made through the hands-free telephone.**

DATA TRANSMITTING

NHEL0285S05

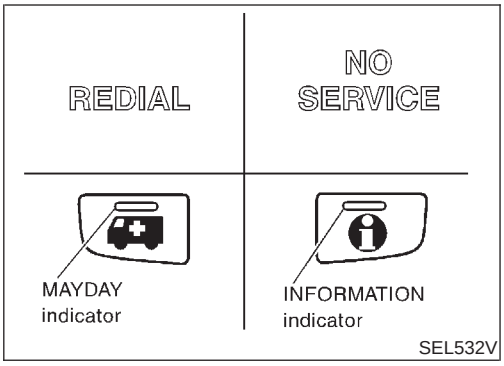
When contact to the Communicator Response Center is made, vehicle sends electrical data including type of activation (i.e., emergency call or alarm notification), vehicle location, time, etc.

SLEEP/WAKE UP CONTROL

NHEL0285S06

3 minutes after the ignition switch is turned OFF, the system goes into the SLEEP MODE to save battery power supply. Communication with Communicator Response Center is not available in the SLEEP MODE.
To wake up the system, perform either of the following operations.

- Turn Ignition switch ON.
- Pull driver side outside door handle for more than 10 seconds. (Operation for door unlock function)



INDICATOR LAMPS OPERATION

NHEL0285S07

The system status is displayed as below by the indicator lamps.

Indicator	Condition	Description
MAYDAY	Blinks.	System is trying to acquire an available cellular channel by "Mayday" switch operation.
	Lights up. (See NOTE.)	System is connected to a cellular channel and is communicating information to the Communicator Response Center.
INFORMATION	Blinks.	System is trying to acquire an available cellular channel by "Information" switch operation.
	Lights up. (See NOTE.)	System is connected to a cellular channel and is communicating information to the Communicator Response Center.
REDIAL	Lights up.	Re-dialing
	Blinks.	Waiting for re-dial
NO SERVICE	Lights up.	Out of CELLULAR PHONE service area or signal is too weak.

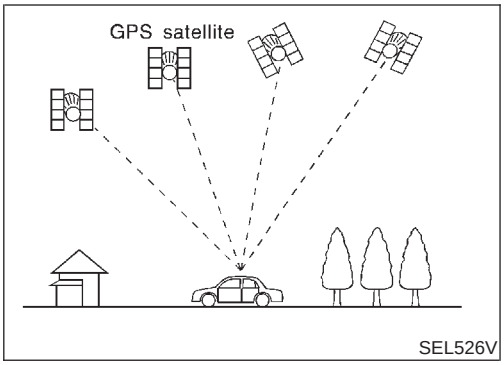
NOTE:

- **When connection to Communicator Response Center by re-dial ends in failure, all the indicators are turned off.**
- **All indicators illuminate for up to 30 seconds or more when ignition switch is turned from OFF to ON and the system performs a self check.**
- **If both of MAYDAY and INFORMATION indicators do not turn off 30 seconds or more after the ignition switch is turned to ON, the system is malfunctioning.**

AUTOMATIC RE-DIAL/AUTO RESET TO READY

NHEL0285S08

- When INFINITI Communicator tries to contact the Communicator Response Center, but the cellular network is busy, the system attempts to dial for up to 2 hours. This time varies greatly depending on the cellular network and cellular signal strength. The system resets to ready when the system completes the dialing attempts. The vehicle owner can press the button again if he or she still needs to contact the Communicator Response Center.
- INFINITI Communicator automatically redials if communication between the vehicle owner and Communicator Response Center is lost for some reason.
- The only way for a transmission to be officially terminated is for the Communicator Response Center to send an end transmission signal, which turns off the indicator in the switch. (Communication with Communicator Response Center can not be terminated by the occupant.)
- If the vehicle owner start the engine during a call, the conversation may be interrupted. When this happens the system may try to resume transmission once after the engine has been started.



GPS (GLOBAL POSITIONING SYSTEM)

NHEL0285S09

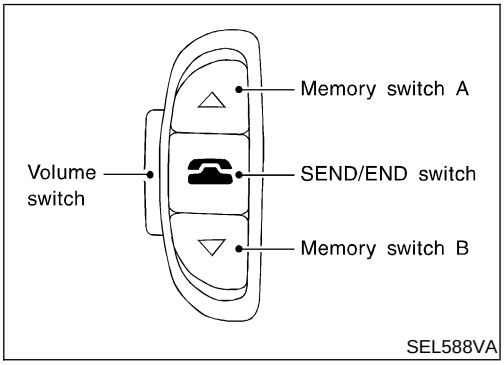
GPS is the global positioning system developed and operated by the US Department of Defense. GPS satellites (NAVSTAR) transmit radio waves and orbit around the earth at an altitude of approximately 21,000 km (13,000 miles).

GPS receiver calculates the three-dimensional position of the vehicle (latitude, longitude, and altitude from the sea level) by the time difference of the radio wave arriving from more than four GPS satellites (three-dimensional positioning).

When the radio wave is received from only three GPS satellites, the two-dimensional position (latitude and longitude) is calculated, using the altitude from the sea level data calculated by using four GPS satellites (two-dimensional positioning).

Positioning capability is degraded in the following cases.

- In two-dimensional positioning, when the vehicle's altitude from the sea level changes, the precision becomes lower.
- The location detection performance can have an error of about 100 m (300 ft) even in three-dimensional positioning with high precision. Because the precision is influenced by the location of GPS satellites used for positioning, the location detection performance may drop depending on the location of GPS satellites.
- When the radio wave from GPS satellites cannot be received, for example, when the vehicle is in a tunnel, in a parking lot inside building, under an elevated superhighway or near strong power lines, the location may not be detected. Turbulent/ electric weather conditions may also affect positioning performance. If something is placed on the antenna, the radio wave from GPS satellites may not be received.



TEL SWITCH

NHEL0285S11

When any of the TEL switches is pressed, the TEL switch which is combined with the multiplex transmitting unit sends operational commands to the IVCS unit. TEL switch has following three functions.

- Volume adjust
- Placing re-dial call

VOLUME Switch

NHEL0285S1101

Voice volume from the front RH speaker can be adjusted by using the VOLUME switch.

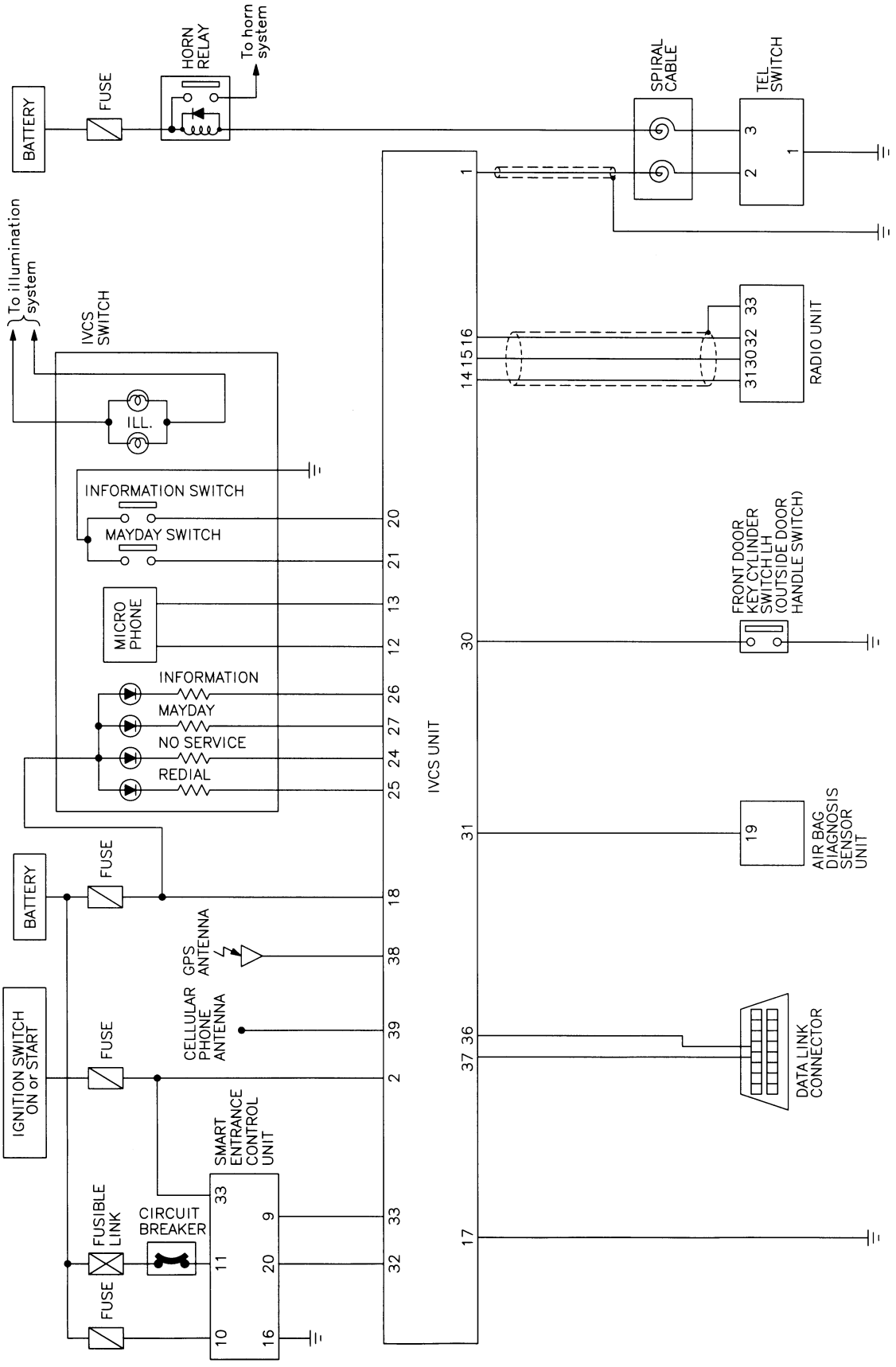
SEND/END Switch Operation

NHEL0285S1102

- When a call is received, press SEND/END switch to permit conversation.
- At the completion of the conversation, press the SEND/END switch to terminate the call.
- To re-dial the last phone number, press SEND/END switch.

Schematic

NHEL0286

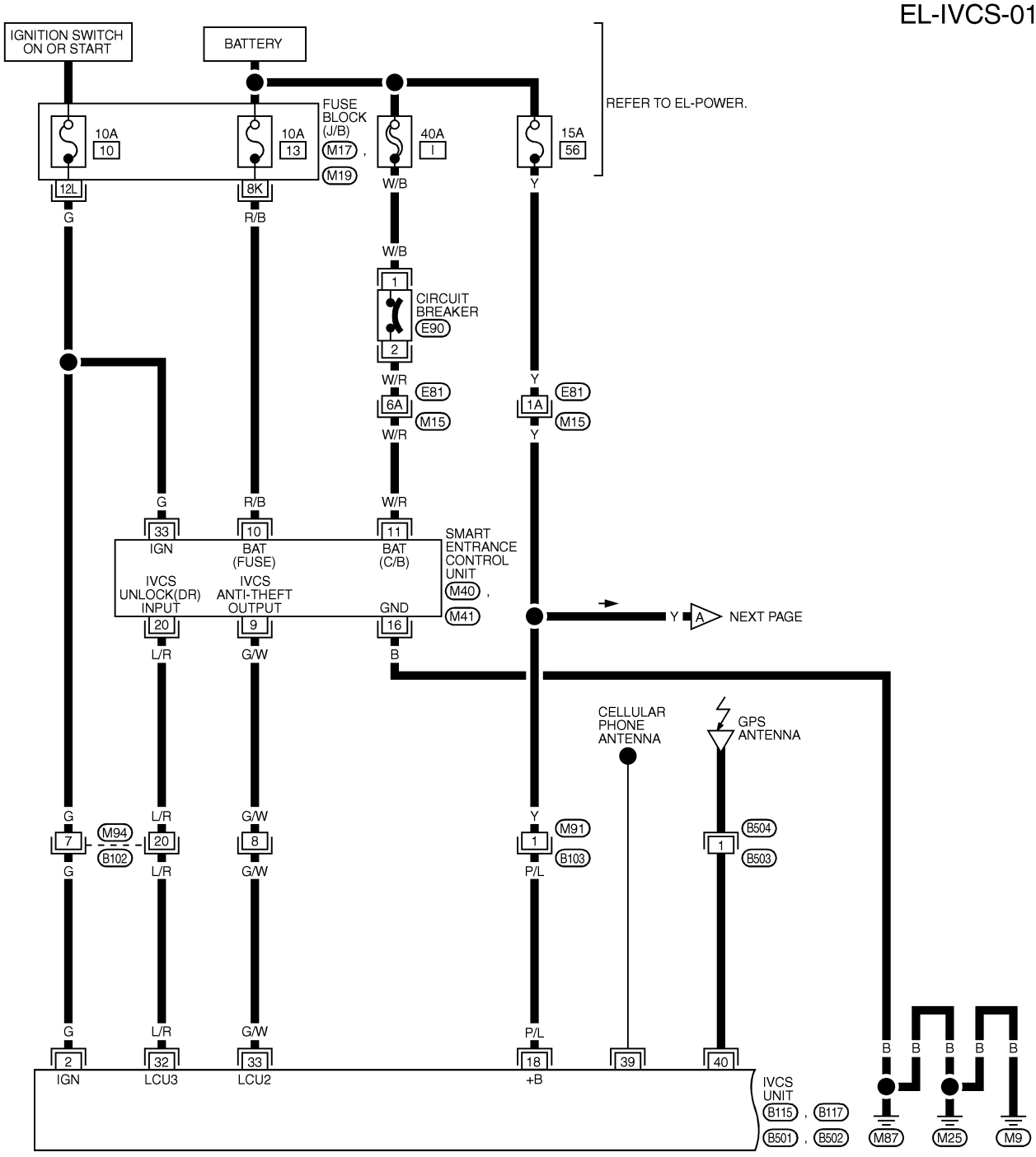


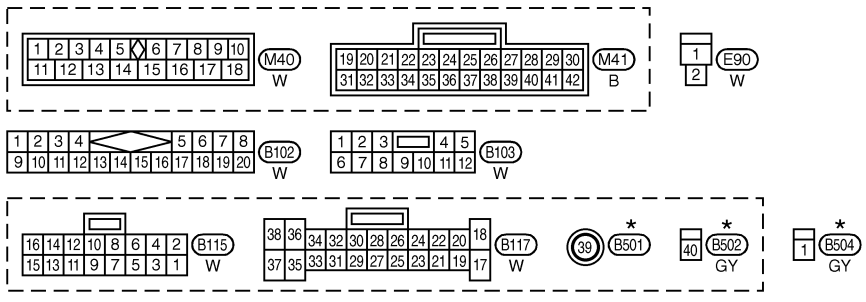
MEL661K

Wiring Diagram — IVCS —

NHEL0287

EL-IVCS-01



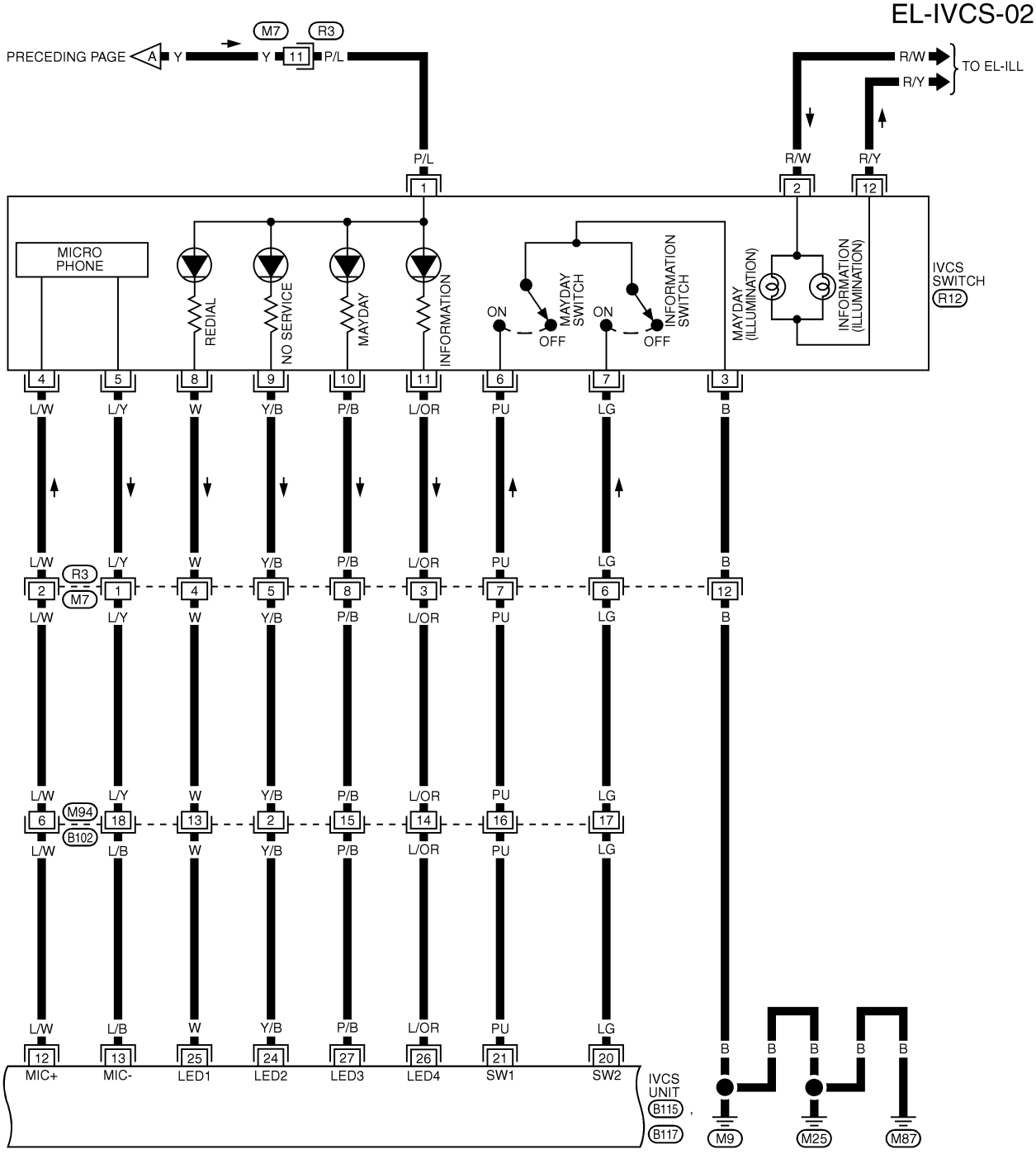


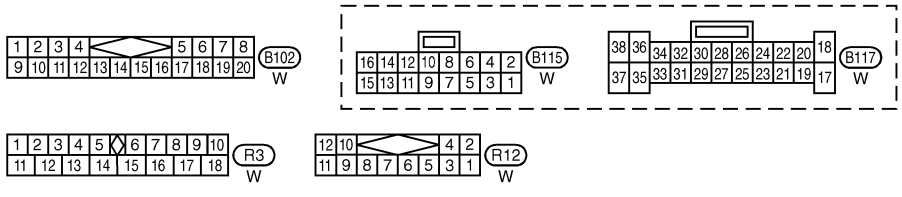
* : THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT" OF EL SECTION.

REFER TO THE FOLLOWING.
M15 , E81 -SUPER MULTIPLE JUNCTION (SMJ)
M17 -FUSE BLOCK-JUNCTION BOX (J/B)
M19 -FUSE BLOCK-JUNCTION BOX (J/B)

MEL330K

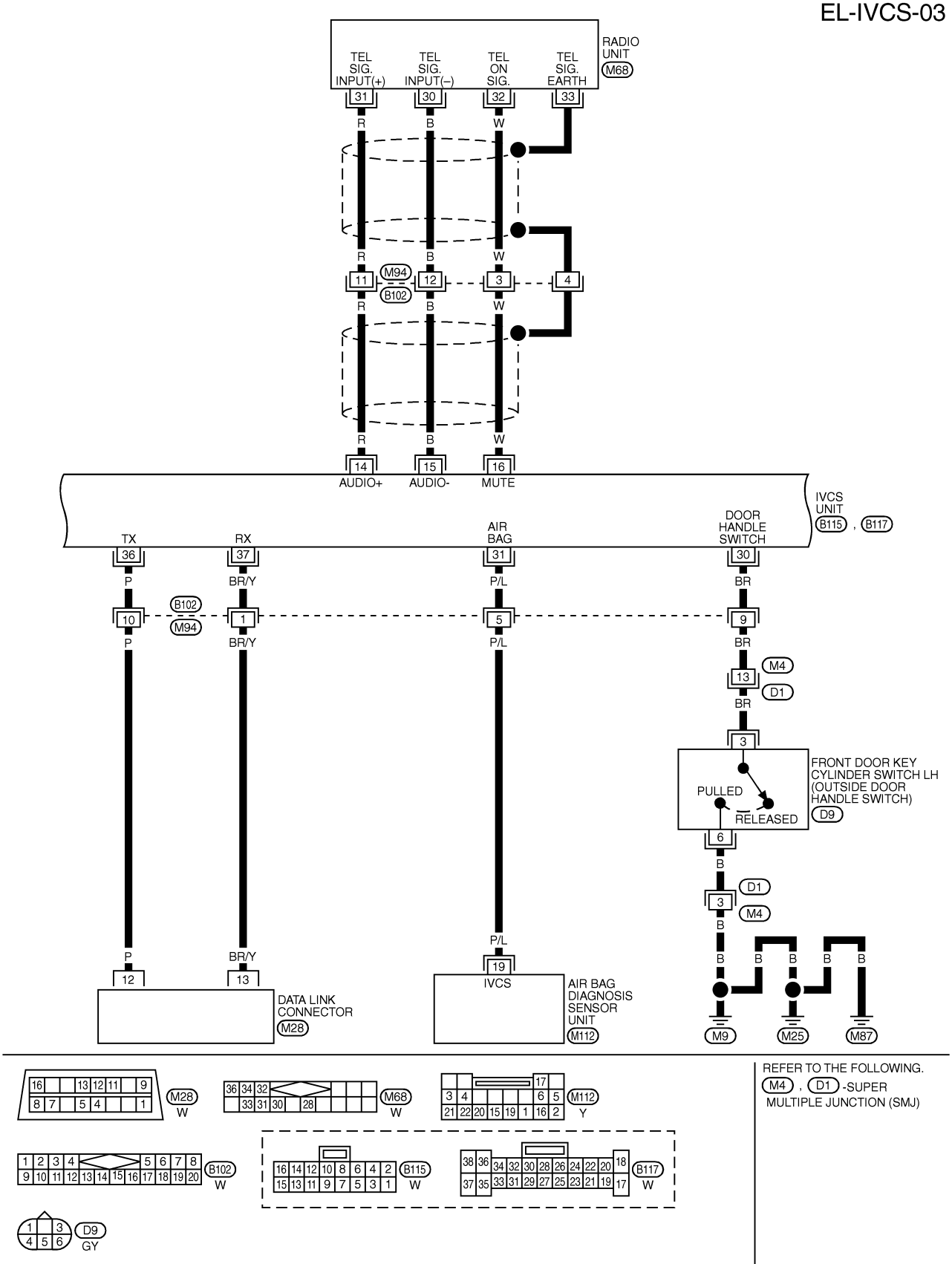
EL-IVCS-02





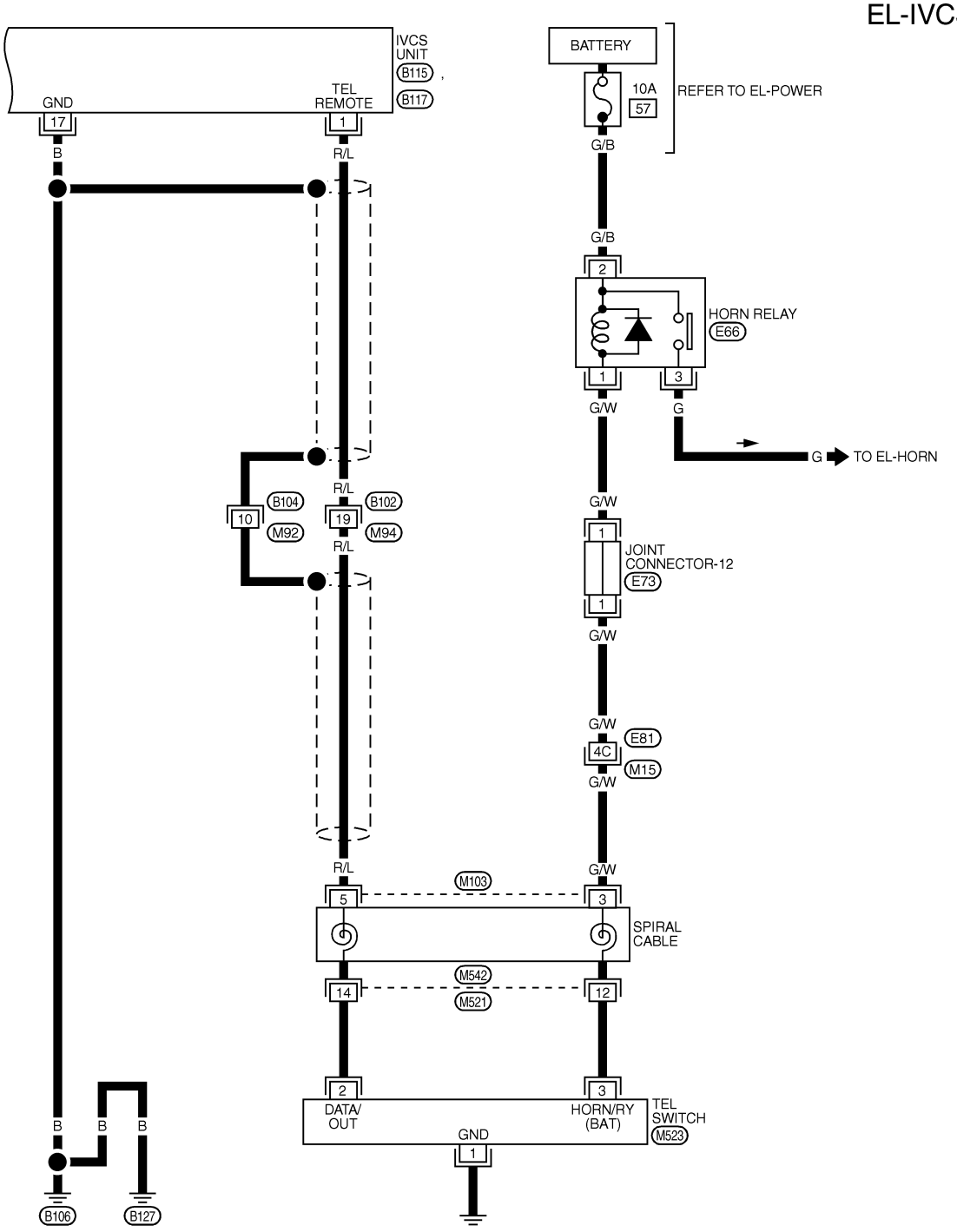
MEL525K

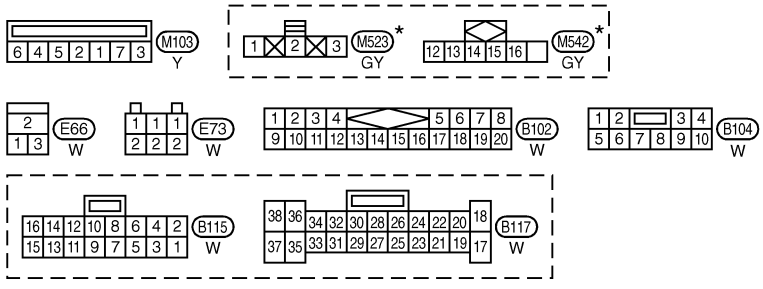
EL-IVCS-03



MEL662K

EL-IVCS-04

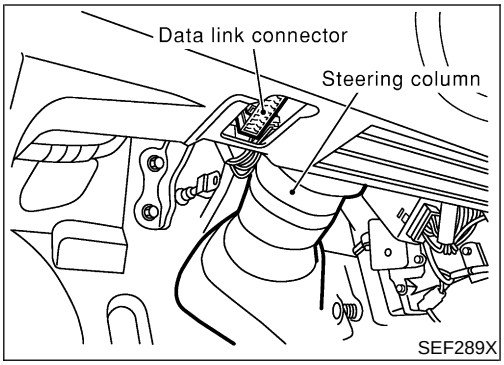




* : THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", EL SECTION.

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

MEL259L



SEF289X

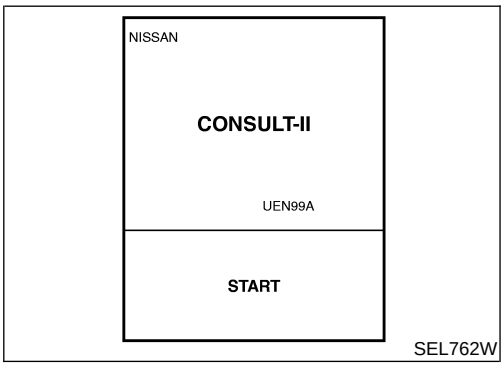
CONSULT-II

NHEL0288

CONSULT-II INSPECTION PROCEDURE

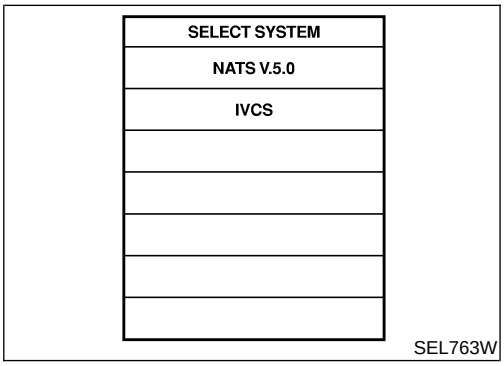
NHEL0288S01

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



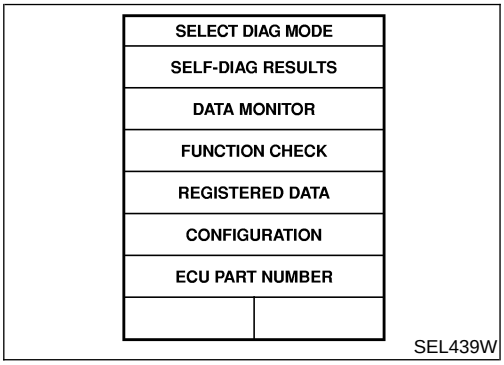
SEL762W

3. Insert UEN99A program card into CONSULT-II.
4. Turn ignition switch “ON”.
5. Touch “START”.



SEL763W

6. Touch “IVCS”.



SEL439W

7. Perform each diagnostic item according to the item application chart as follows:

8. When CONSULT-II inspection is terminated, follow the procedure shown below.

a. Touch “BACK” key of CONSULT-II until “SELECT SYSTEM” appears, then turn off CONSULT-II.
b. Turn ignition switch to OFF position.
c. Disconnect CONSULT-II DDL connector.

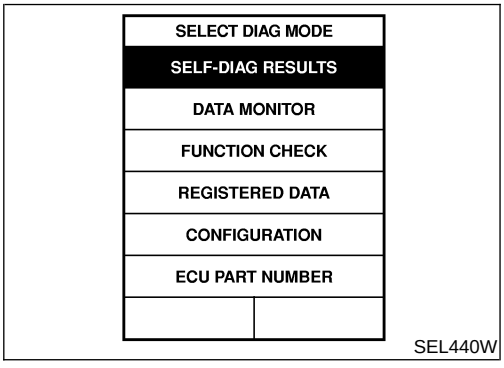
NOTE:
If the DDL connector is disconnected before turning ignition switch to “OFF” position, INFINITI communicator may not operate properly.

APPLICATION ITEMS

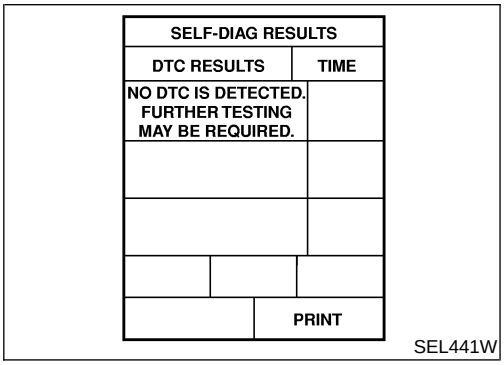
NHEL0288S02

Mode	Description	Reference page
SELF DIAG RESULTS	Displays the result of self-diagnosis.	EL-435
DATA MONITOR	Two modes, "GPS MONITOR" and "SWITCH MONITOR" can be selected in this mode. ● Displays current data related to GPS in "GPS MONITOR" mode. ● Displays IVCS switch and outside door handle switch condition in "SWITCH MONITOR" mode.	EL-437
FUNCTION CHECK	In this mode, "Remote door unlock function" can be checked using CONSULT-II. Door can be unlocked according to the commands to the smart entrance control unit by the IVCS unit. This check verifies communication circuit between smart entrance control unit and IVCS unit.	EL-446
REGISTERED DATA	Displays the following data registered in the IVCS unit. In this mode the data cannot be re-written. ● Unit ID ● Cellular phone number ● VIN (Vehicle Identification Number)	EL-438
CONFIGURATION (See Note.)	In this mode, the system can be set up in the demonstration mode to confirm system operation.	EL-451
	Various data related to both the Communicator Response Center contract and cellular provider can be written/updated in this mode. ● Phone number ● NAM (Number Assignment Module) ● Stolen vehicle tracking setting (Default should always be on.) ● Alarm notification setting (Default should always be on.)	EL-453
ECU PART NUMBER	Displays the part number of the IVCS unit.	—

NOTE:
Data must not be rewritten without prior approval from the customer.



SEL440W



SEL441W

"SELF-DIAG RESULTS" MODE

NHEL0288S03

How to Perform Self-diagnosis

NHEL0288S0301

1. Touch "SELF-DIAG RESULTS".
2. Touch "START".
3. If no malfunction is detected, CONSULT-II will show "NO DTC IS DETECTED."

SELF-DIAG RESULTS	
DTC RESULTS	TIME
CONNECTION ERROR [GPS ANTENNA]	0
CONNECTION ERROR [AIR BAG]	0
PRINT	

SEL442W

- If trouble codes are displayed with "TIME = 0", repair/replace the system according to "SYMPTOM CHART 1 (SELF-DIAGNOSIS ITEM)", EL-440.
- In this case, both "MAYDAY" and "INFORMATION" indicator lamps illuminate for more than 30 seconds while the ignition switch is in the ON position.

NOTE:
The time data in CONSULT-II "SELF-DIAG RESULTS" mode displays the number of ignition switch cycles without the same malfunctioning occurring.

SELF-DIAG RESULTS	
DTC RESULTS	TIME
CONNECTION ERROR [GPS ANTENNA]	1
CONNECTION ERROR [AIR BAG]	1
PRINT	

SEL443W

- If trouble codes are displayed with "TIME = 1 or greater", it means that the trouble code is historical data. So no further diagnosis is required.

NOTE:
If trouble codes are displayed with "TIME = 1 or greater" even though the INFINITI Communicator has never been serviced. Intermittent incidents may occur. Check the system, refer to "Trouble Diagnoses for Intermittent Incident", EL-449.

- If the system does not detect any trouble, the IVCS indicators will turn off after bulb check (self-diagnosis) is completed while the ignition switch is in the ON position.

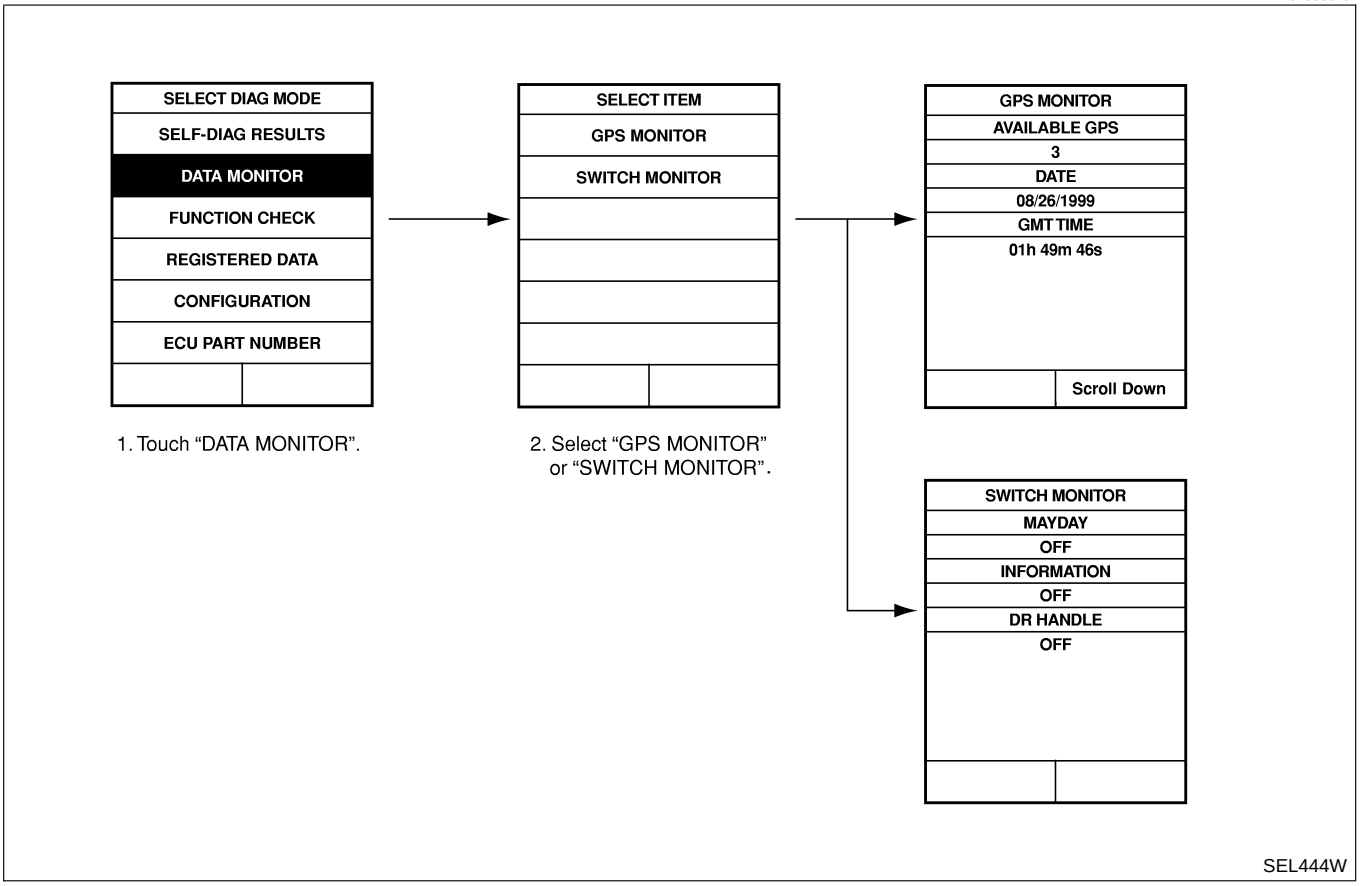
NOTE:
- **The trouble codes cannot be erased by CONSULT-II.**
- **After 50 ignition cycles, the trouble codes are no longer displayed in the CONSULT-II " SELF-DIAG RESULTS" mode.**
- **The IVCS unit does not count the ignition switch cycles unless the ignition switch is OFF for more than 3 minutes between each ignition switch cycle.**

"DATA MONITOR" MODE

NHEL0288S04

How to Perform Data Monitor

NHEL0288S0401

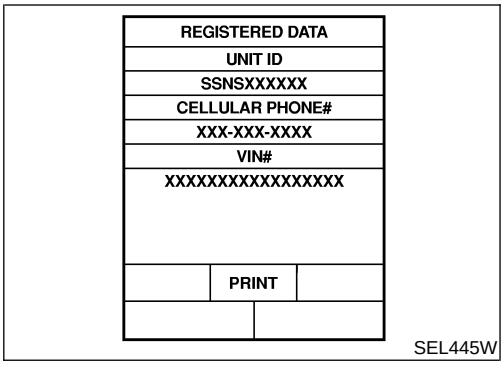


Data Monitor Item Chart

NHEL0288S0402

Mode	Monitor item	Description
GPS MONITOR	AVAILABLE GPS	The number of GPS satellites captured by GPS antenna
	DATE	Date of Greenwich mean time
	GMT TIME	Greenwich mean time (Different from local time)
	LAT.	Latitude
	LONG.	Longitude
	DOP	Index of precision (an index of location status of GPS satellites. The smaller the value is, the higher the positioning precision is.)
SWITCH MONITOR	MAYDAY	"MAYDAY" emergency switch condition
	INFORMATION	"INFORMATION" switch condition
	DR HANDLE	Driver side outside door handle switch condition

CONSULT-II (Cont'd)



SEL445W

"REGISTERED DATA" MODE

NHEL0288S05

Item	Description
UNIT ID	ID number of the IVCS unit. ID number is unique to each unit and differs for each unit.
CELLULAR PHONE #	—
VIN #	Vehicle Identification Number. When the IVCS unit is replaced, VIN # is written in the memory of the replaced unit by transmitting data from the Communicator Response Center.

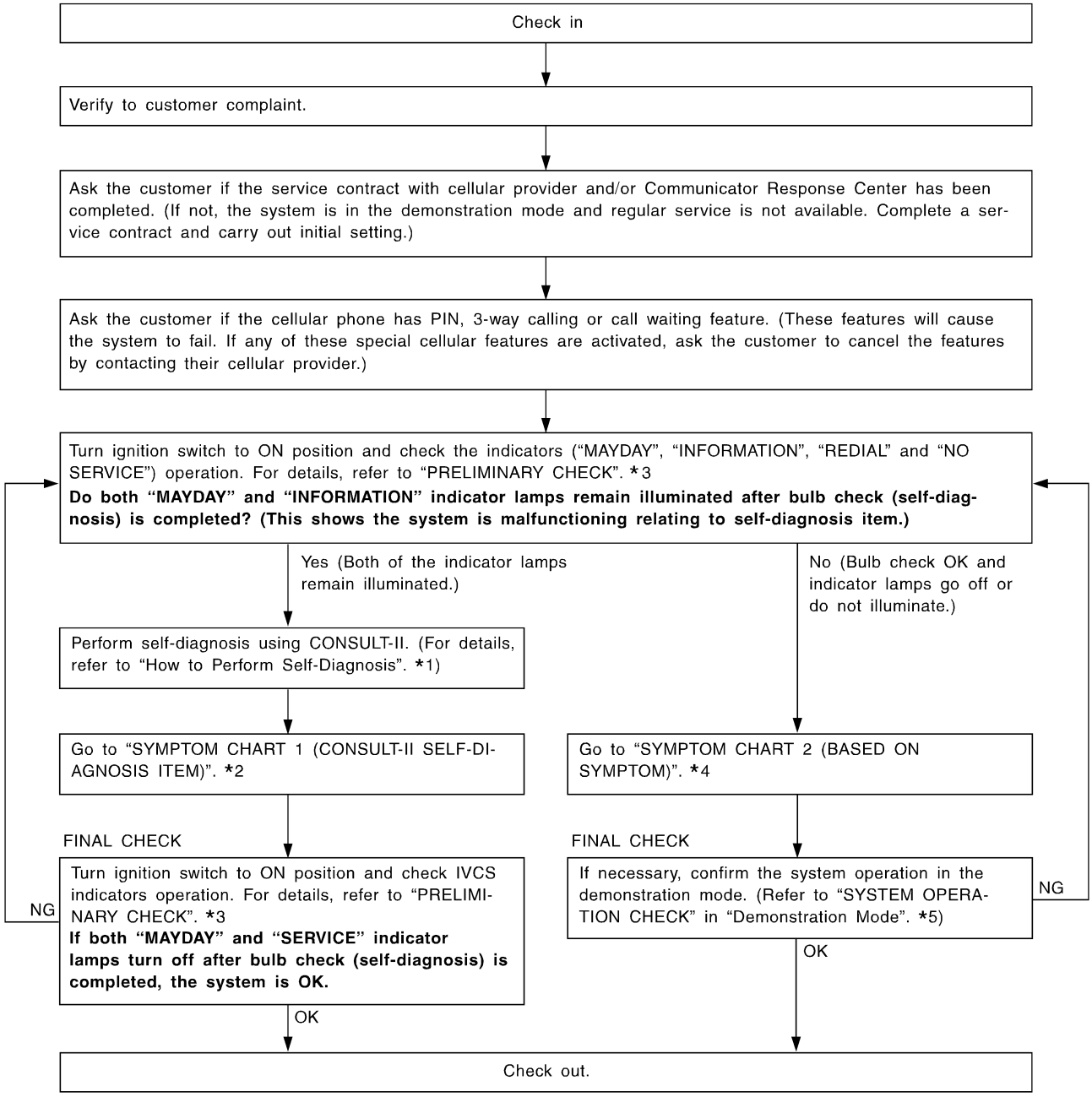
NOTE:
No data can be changed in this CONSULT-II mode.

Trouble Diagnoses

WORK FLOW

NHEL0289

NHEL0289S01

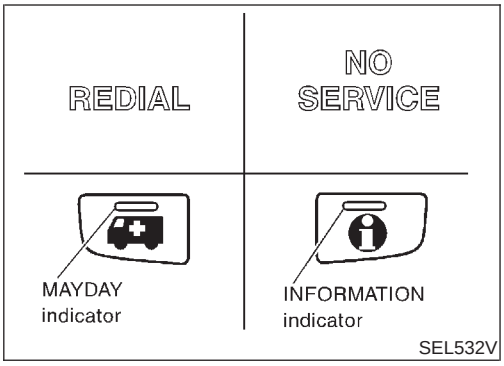


SEL101WA

*1 EL-435
*2 EL-440
*3 EL-440
*4 EL-441
*5 EL-451

WARNING:

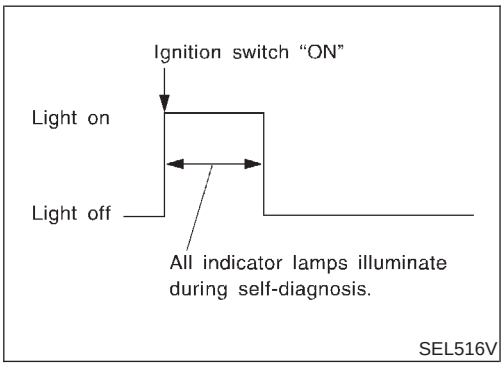
- **Whenever possible, set the system to “Demonstration mode” if INFINITI Communicator system needs to be activated during service procedures. (For details of the demonstration mode, refer to EL-451.)**
- **If you activate the INFINITI Communicator system (when the system is not in the demonstration mode), the Communicator Response Center operator may dispatch police.**



PRELIMINARY CHECK

NHEL0289S02

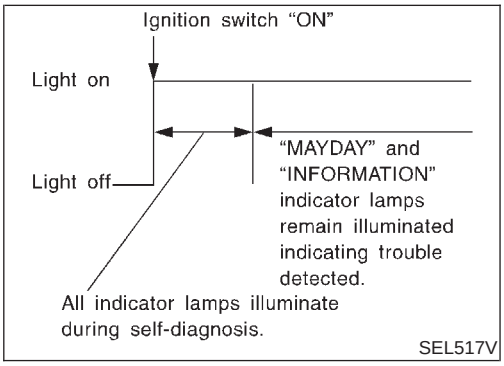
1. Turn ignition switch ON.
2. Check "MAYDAY", "INFORMATION", "REDIAL" and "NO SERVICE" indicator lamps operation.



- If no malfunction is detected, indicator lamps will turn off after the bulb check (self-diagnosis) is terminated for about 30 seconds or more.

NOTE:

- Bulb check (self-diagnosis) is not performed unless the ignition switch has been turned off for at least 3 minutes.
- Bulb check is not performed during contact with Communicator Response Center.



- If the system detects malfunctions, both "MAYDAY" and "INFORMATION" indicator lamps remain illuminated. Perform self-diagnosis using CONSULT-II and repair or replace the system. Refer to "How to Perform Self-diagnosis", EL-435.

NOTE:
For details of indicator lamps operation, refer to "INDICATOR LAMPS OPERATION", EL-427.

SYMPTOM CHART 1 (CONSULT-II SELF-DIAGNOSIS ITEM)

NHEL0289S03

Detected items (Screen items)	Description	Service procedure
CONNECTION ERROR [GPS ANTENNA]	Connection error between GPS antenna and IVCS unit.	Go to GPS ANTENNA CHECK, EL-448.
CELLULAR PHONE [TWB ERROR]	Communication error between CPU in the IVCS unit and transceiver	Replace IVCS unit.
MEMORY ERROR	Inner memory error of the IVCS unit	Replace IVCS unit.
CONNECTION ERROR [AIR BAG]	Connection error between air bag diagnosis sensor unit and IVCS unit.	Go to AIR BAG DIAGNOSIS SENSOR COMMUNICATION CHECK, EL-448.
CONNECTION ERROR [IVMS or S/ENT]	Connection error between smart entrance control unit and IVCS unit. If this error occurs, alarm notification and auto door unlock may not operate.	Go to SMART ENTRANCE CONTROL UNIT COMMUNICATION CHECK, EL-448.

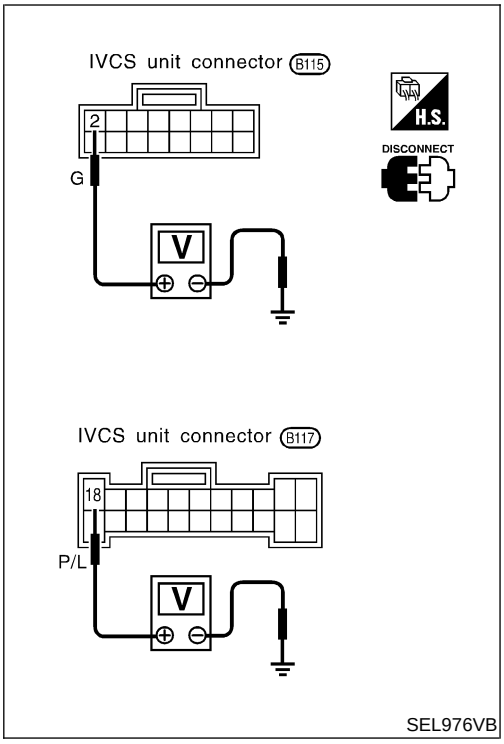
NOTE:
After replacing IVCS unit, set up the replaced IVCS unit. Refer to "System Setting (When IVCS Unit is Replaced.)" in EL-453.

SYMPTOM CHART 2 (BASED ON SYMPTOM)

NHEL0289S04

Before referencing this chart, confirm the operation of the indicator lamps. Refer to "PRELIMINARY CHECK" in EL-440. If the indicators show the system is malfunctioning, perform the self-diagnosis using CONSULT-II.

Symptom	Diagnoses/service procedure	Reference page
"MAYDAY", "INFORMATION", "RE-DIAL", "NO SERVICE" indicator lamps do not illuminate when ignition switch is turned to ON position. (Bulb check is NG.)	1. Power supply and ground circuit for IVCS unit check	EL-442
	2. Indicator lamps check	EL-443
Mayday/Information call does not operate.	1. IVCS switch check	EL-444
	2. INFINITI Communicator operation check in demonstration mode	EL-451
Remote door unlocking function does not operate.	1. Driver side outside door handle switch check	EL-445
	2. Remote door unlock function check	EL-446
	3. INFINITI Communicator operation check in demonstration mode	EL-451
Stolen vehicle tracking function does not operate.	1. Stolen vehicle tracking setting check (Check whether the function is disabled or not.)	EL-447
	2. INFINITI Communicator operation check in demonstration mode	EL-451
Alarm notification function does not operate.	1. Alarm notification setting check (Check whether the function is disabled or not.)	EL-447
	2. INFINITI Communicator operation check in demonstration mode	EL-451
Hands free telephone cannot be operated by using steering switch.	1. Telephone steering switch check	EL-449
No sounds related to the telephone are heard from Front RH speaker. (If the audio does not operate properly, check the audio system.)	1. Check harness for open or short between IVCS unit and audio unit.	—
The "NO SERVICE" indicator lamp is not turned off. (Even if a contract with telephone carrier has not been made, the indicator lamp remains illuminated.)	1. Make sure the vehicle is in an area with cellular service.	—
	2. Check cellular phone antenna feeder cable connection.	—
No sound is transmitted to the other party by hands free telephone.	1. Check harness for open or short between IVCS unit and microphone.	—
	2. Replace microphone. (IVCS switch assembly)	—



POWER SUPPLY AND GROUND CIRCUIT FOR IVCS UNIT CHECK

NHEL0289S05

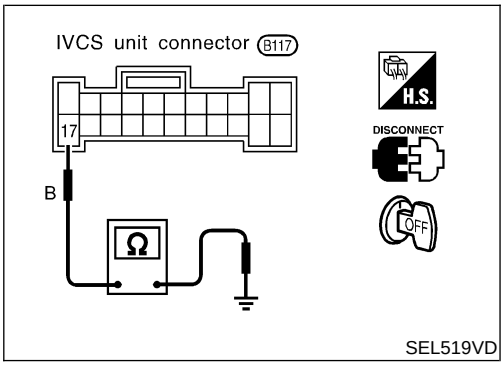
Main Power Supply Circuit Check

NHEL0289S0501

Terminal		Ignition switch		
(+)	(−)	OFF	ACC	ON
18	Ground	Battery voltage	Battery voltage	Battery voltage
2	Ground	0V	0V	Battery voltage

If NG, check the following:

- 15A fuse [No. 56, located in fuse and fusible link box]
- 10A fuse [No. 10, located in fuse block (J/B)]
- Harness for open or short between fuse and IVCS unit



Ground Circuit Check

NHEL0289S0502

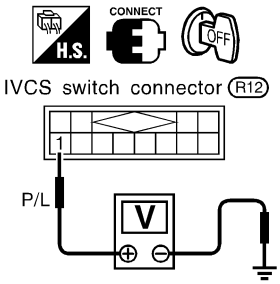
Terminals	Continuity
17 - Ground	Yes

INDICATOR LAMPS CHECK

=NHEL0289S06

1	CHECK POWER SUPPLY FOR INDICATOR LAMPS

Check voltage between IVCS switch terminal 1 and ground.



Does battery voltage exist?

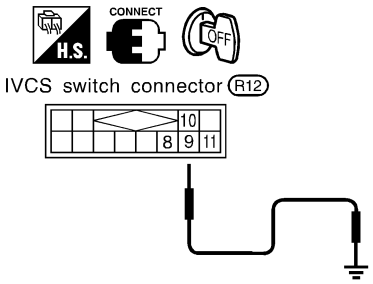
SEL446WA

Yes or No

Yes	▶	GO TO 2.
No	▶	**Check the following.** ● 15A fuse [No. 56, located in fuse and fusible link box] ● Harness for open or short between fuse and IVCS switch

2	CHECK INDICATOR LAMPS

1. Disconnect IVCS unit connector (Control unit connector).
2. Apply ground to IVCS switch each terminal and check illumination.



Indicator	Terminal
REDIAL	8
NO SERVICE	9
MAYDAY	10
INFORMATION	11

SEL447W

OK or NG

OK	▶	Check harness for open or short between indicators and IVCS unit.
NG	▶	Replace IVCS switch assembly.

IVCS SWITCH CHECK

=NHEL0289S07

1	CHECK IVCS SWITCH INPUT SIGNAL

1. Turn ignition switch "ON".
2. Select "SWITCH MONITOR" in "DATA MONITOR" mode.
3. Check each switch signal.

Condition:

When MAYDAY/INFORMATION switch is pushed:

MAYDAY/INFORMATION ON

When MAYDAY/INFORMATION switch is released:

MAYDAY/INFORMATION OFF

NOTE:

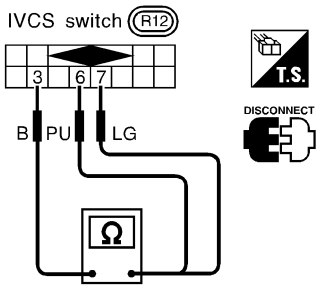
When CONSULT-II "DATA MONITOR" mode is operating, INFINITI Communicator does not dial to Communicator Response Center when the switches are operated.

OK or NG

OK	▶	IVCS switch is OK.
NG	▶	GO TO 2.

2	CHECK IVCS SWITCH.

1. Disconnect IVCS switch.
2. Check continuity between IVCS switch terminals.



Terminals	Condition	Continuity
6 - 3	Mayday switch is turned ON.	Yes
	Mayday switch is OFF.	No
7 - 3	Information switch is turned ON.	Yes
	Information switch is OFF.	No

SEL448W

OK or NG

OK	▶	**Check the following.** ● IVCS switch ground circuit ● Harness for open or short between IVCS switch and IVCS unit
NG	▶	Replace IVCS switch assembly.

DRIVER SIDE OUTSIDE DOOR HANDLE SWITCH CHECK

=NHEL0289S08

1 **CHECK DRIVER SIDE OUTSIDE DOOR HANDLE SWITCH INPUT SIGNAL**

1. Turn ignition switch ON.
2. Select "SWITCH MONITOR" in "DATA MONITOR" mode.
3. Check the switch operation.

SWITCH MONITOR
MAYDAY
OFF
INFORMATION
OFF
DR HANDLE
OFF

SEL468W

Condition:

When driver side outside door handle switch is pushed:

DR HANDLE ON

When driver side outside door handle switch is released:

DR HANDLE OFF

NOTE:

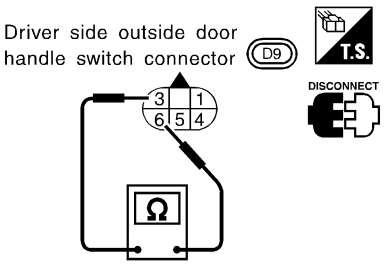
When CONSULT-II "DATA MONITOR" mode is operating, INFINITI Communicator does not dial to Communicator Response Center when the switches are operated.

OK or NG

OK	▶	Driver side outside door handle switch is OK.
NG	▶	GO TO 2.

2 **CHECK DRIVER SIDE OUTSIDE DOOR HANDLE SWITCH**

1. Disconnect driver side outside door handle switch connector.
2. Check continuity between driver side outside door handle switch terminals 3 and 6.



Driver side outside door handle switch condition	Continuity
Pulled	Yes
Released	No

SEL449W

OK or NG

OK	▶	**Check the following.** ● Driver side outside door handle switch ground circuit ● Harness for open or short between driver side outside door handle switch and IVCS unit
NG	▶	Replace driver side outside door handle switch.

REMOTE DOOR UNLOCK FUNCTION CHECK (CONSULT-II "FUNCTION CHECK" MODE)

NHEL0289S09

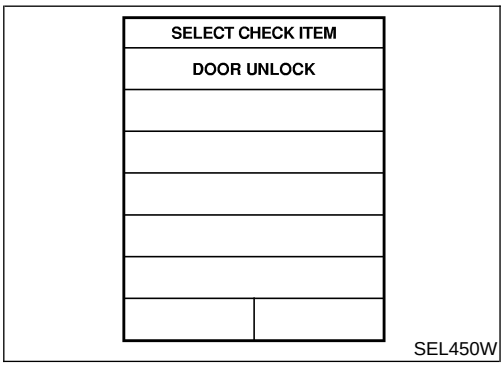
Description

NHEL0289S0901

"Remote door unlock function" can be checked using CONSULT-II. Driver side door can be unlocked according to the commands to the smart entrance control unit by the IVCS unit.

NOTE:

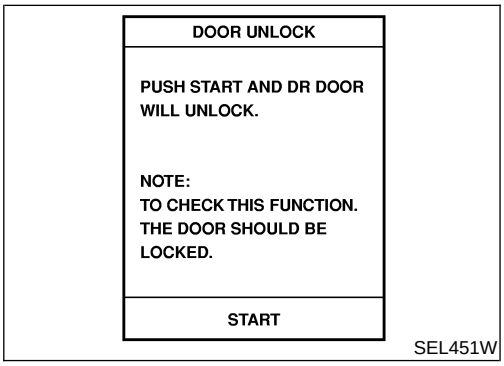
Before performing the function check, confirm that power door lock system operates properly.



SEL450W

How to perform function check.

1. Lock the doors with door lock/unlock switch on driver's door trim.
2. Touch "FUNCTION CHECK".
3. Touch "DOOR UNLOCK".



SEL451W

4. Touch "START". Then driver side door will be unlocked.

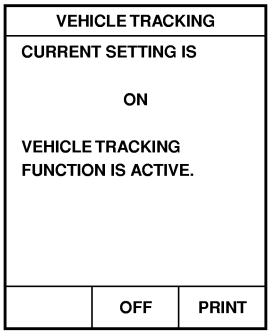
- If the door cannot be unlocked using CONSULT-II, check harness for open or short between smart entrance control unit terminal 20 and IVCS unit terminal 32.

STOLEN VEHICLE TRACKING/ALARM NOTIFICATION SETTING CHECK (CONSULT-II "CONFIGURATION" MODE)

NHEL0289S10

1	CHECK SYSTEM SETTING

1. Turn ignition switch ON.
2. Select "VHCL TRACKING" or "ALARM NOTIFICATION" in "CONFIGURATION" mode.
3. Check the function setting.



SEL452W

- ON shows the function is activated.
- OFF shows the function is deactivated.

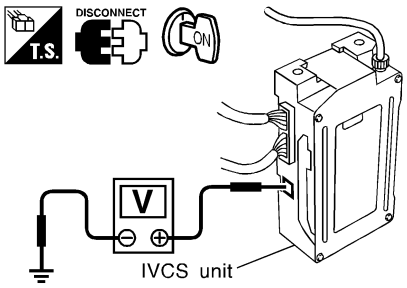
Does the system setting comply with the customer's contract?
NOTE:
Setting of "VEHICLE TRACKING" must be ON at all times.

OK or NG

OK	▶	System setting is OK.
NG	▶	If either setting is OFF, contact the Communicator Response Center at 1-888-427-4812 to verify the system setting. **NOTE:** **Whenever dialing the above number, some information about the vehicle will be required by the operator. For details, refer to EL-421.**

GPS ANTENNA CHECK

=NHEL0289S11

1	CHECK VOLTAGE FOR GPS ANTENNA	
1. Disconnect GPS feeder cable connector from IVCS unit. 2. Turn ignition switch ON. 3. Check voltage at IVCS unit GPS feeder cable terminal.  SEL106W **Does approx. 5V exist?**		
Yes	▶	Replace GPS antenna.
No	▶	Replace IVCS unit.

AIR BAG DIAGNOSES SENSOR UNIT COMMUNICATION CHECK

NHEL0289S12

1	AIR BAG OPERATION CHECK	
Turn ignition switch ON and check air bag warning lamp operation. (For details, refer to RS-42, "SRS Operation Check"). **Does air bag warning lamp operate properly?**		
Yes	▶	Check harness connector connection between air bag diagnosis sensor unit and IVCS unit.
No	▶	Check supplemental restraint system. Refer to RS-42, "SRS Operation Check" in the Service Manual.

SMART ENTRANCE CONTROL UNIT COMMUNICATION CHECK

NHEL0289S13

1	CHECK SMART ENTRANCE CONTROL UNIT OPERATION	
Check the system related smart entrance control unit operation. (e.g.: power door lock, power window) **Does the system operate properly?**		
Yes	▶	Check harness for open or short between smart entrance control unit and IVCS unit.
No	▶	Check smart entrance control unit. Refer to EL-389, "SMART ENTRANCE CONTROL UNIT".

TELEPHONE STEERING SWITCH CHECK

=NHEL0289S14

1	CHECK POWER SUPPLY FOR STEERING SWITCH	
Check power supply for steering switch. **Does horn work?**		
Yes	▶	**Check the following.** ● 10A fuse (No. 57, located in fuse and fusible link box) ● Horn relay ● Harness for open or short
No	▶	GO TO 2.

2	CHECK STEERING SWITCH SUB-HARNESS	
1. Remove driver's air bag module. For removal procedure, refer to RS-20, "REMOVAL AND INSTALLATION". 2. Check steering switch sub-harness for open or short and ground screw. For details of the harness circuit, refer to "STEERING SWITCH", EL-33. **OK or NG**		
OK	▶	Check harness for open or short between telephone steering switch and IVCS unit. If the circuit is OK, replace telephone steering switch.
NG	▶	Replace or repair the harness.

Trouble Diagnoses for Intermittent Incident

NHEL0290

DESCRIPTION

NHEL0290S01

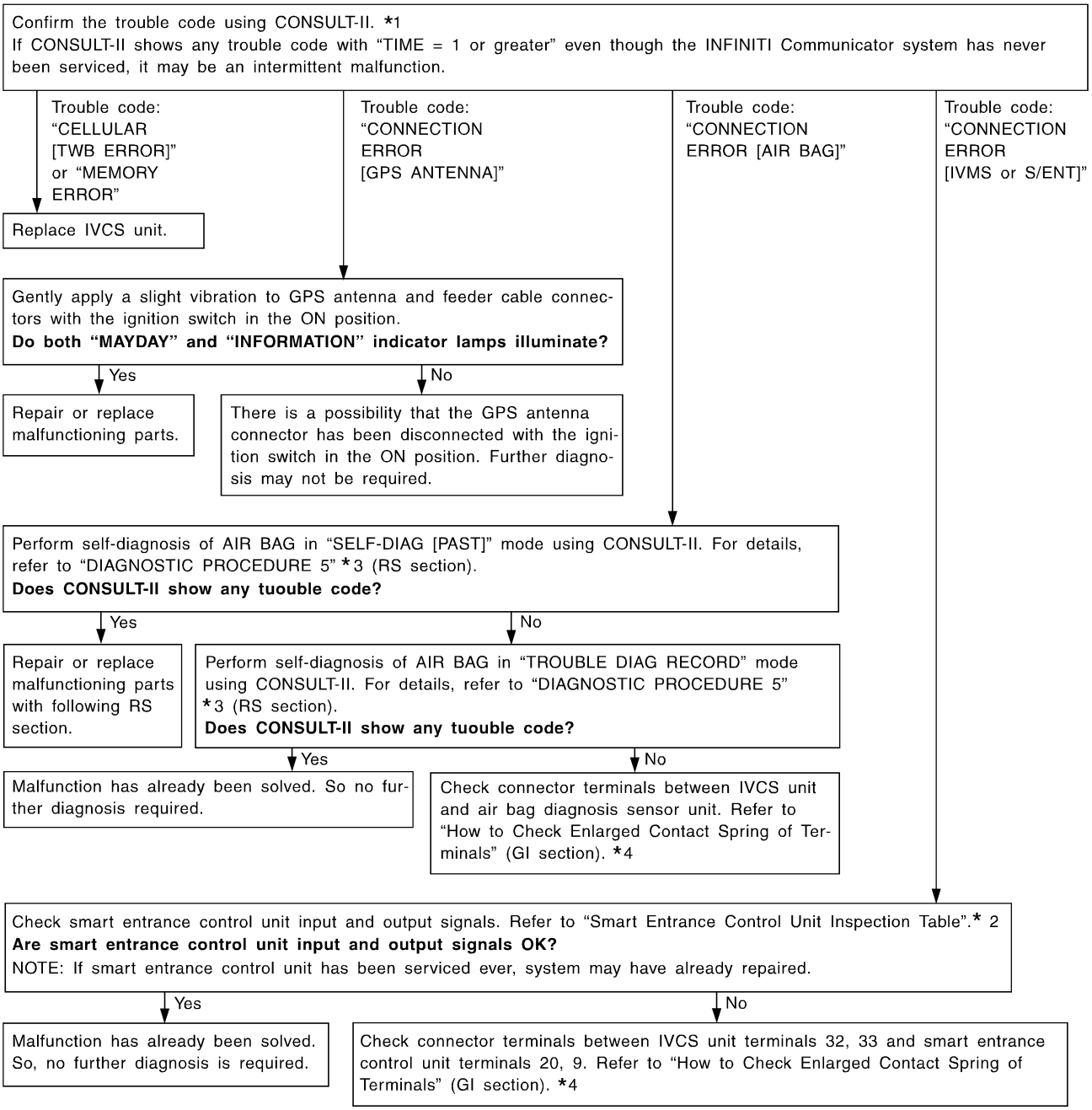
An intermittent incident may be occurring if all of the following conditions exist.

- Both "MAYDAY" emergency and "INFORMATION" indicators have shown that the system is malfunctioning.
- CONSULT-II self-diagnosis result screen indicates a trouble code with "TIME = 1 or greater".
- The INFINITI Communicator system has not been previously serviced.

To find out the cause of a malfunction, follow the procedures shown below.

DIAGNOSTIC PROCEDURE

NHEL0290S02



SEL107WE

*1 EL-435
*2 EL-396
*3 RS-49
*4 GI-23

NOTE:
Enlarged spring contact of terminals may be cause of intermittent malfunction for "CONNECTION ERROR [AIR BAG]/[IVMS or S/ENT]". When you inspect terminals for enlarged contact, refer to GI-23, "How to Check Enlarged Contact Spring of Terminals".

Demonstration Mode

NHEL0291

DESCRIPTION

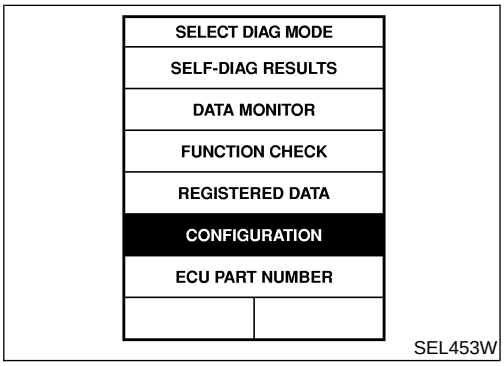
NHEL0291S01

By setting up the system in the demonstration mode, automatic dialing operation can be confirmed by “MAYDAY” emergency and “INFORMATION” switch operation.
Automatic dialing in this mode is connected to the demonstration center of Communicator Response Center, and is different from the normal service.
When the contract with Communicator Response Center is not concluded, all the INFINITI Communicator operations are connected to the demonstration center.
Connection to Communicator Response Center in this mode will not be charged by Communicator Response Center nor will the call be handled as an emergency.

SYSTEM OPERATION CHECK

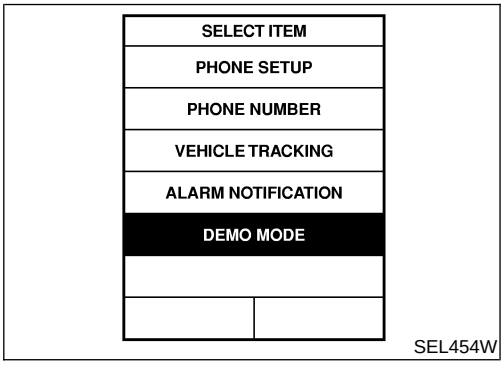
NHEL0291S02

1. Touch “CONFIGURATION”.



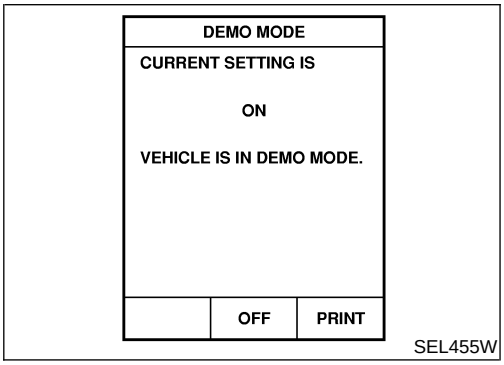
SEL453W

2. Touch “DEMO MODE”.

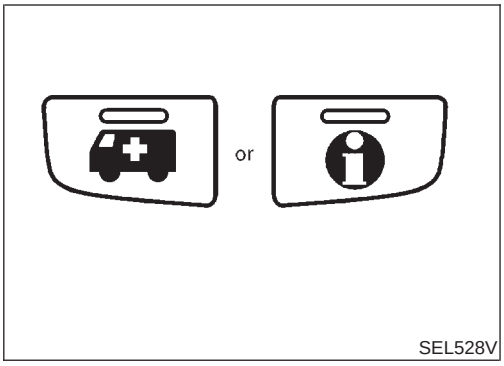


SEL454W

3. Touch “ON”. Now, the system is in demonstration mode. (To return to normal mode, touch “OFF”.)

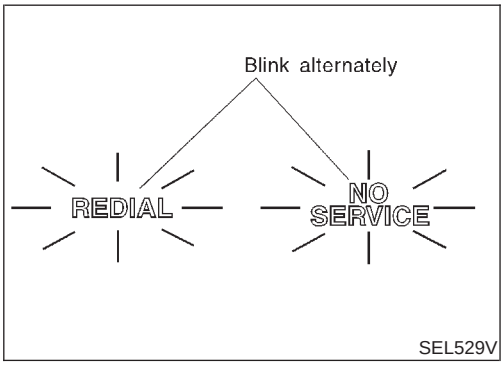


SEL455W



SEL528V

4. Touch "BACK" key of CONSULT-II until "SELECT SYSTEM" appears, then turn off CONSULT-II.
5. Turn ignition switch to the OFF position.
6. Disconnect CONSULT-II DDL connector.
7. Start the engine.
8. Touch the "MAYDAY" or "INFORMATION" switches. Then the system will call the demonstration center.

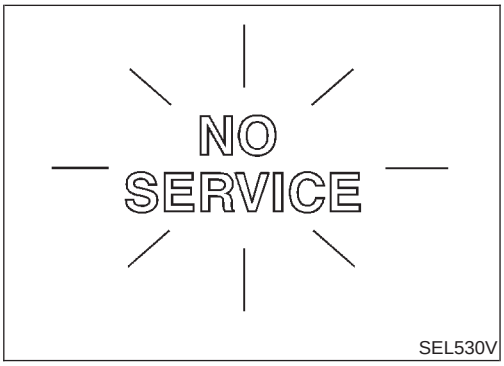


SEL529V

9. Check INFINITI Communicator operation.

- If contact with Communicator Response Center is successful, system is OK.

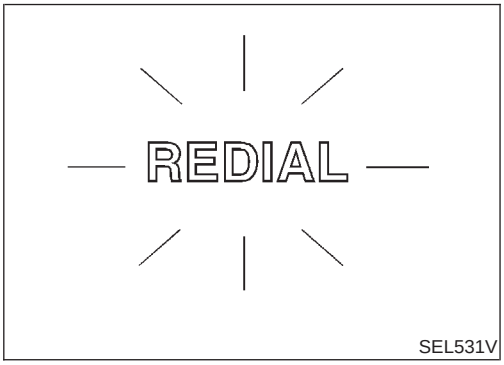
NOTE:
During the system contact to Communicator Response Center in demonstration mode, "REDIAL" and "NO SERVICE" indicators blink alternately.



SEL530V

- If "NO SERVICE" indicator illuminates and the contact to Communicator Response Center is unsuccessful, retry from other location where the cellular connection seems good. (e.g.; move the vehicle outside of the workshop and retry.)

NOTE:
If "NO SERVICE" indicator frequently illuminates from a location where the cellular connection seems good, check the connection of the feeder cable for the cellular phone antenna.



SEL531V

- If "REDIAL" indicator lamp illuminates and the contact to Communicator Response Center is unsuccessful, the cellular network is busy or there are no open cellular channels. The system will redial automatically.

NOTE:
If redial fails several times, confirm whether the roaming agreement of customer's cellular provider at the vehicle location is available or not.

WARNING:

- **Make sure to turn the demonstration mode OFF before returning the vehicle to the owner.**
- **In the demonstration mode, any service from Communicator Response Center is not available. Therefore, even if the customer encounters an emergency, no service will be dispatched.**

System Setting (When IVCS Unit is Replaced)

NHEL0292

DESCRIPTION

NHEL0292S01

When the IVCS unit is replaced, carry out the following data settings.

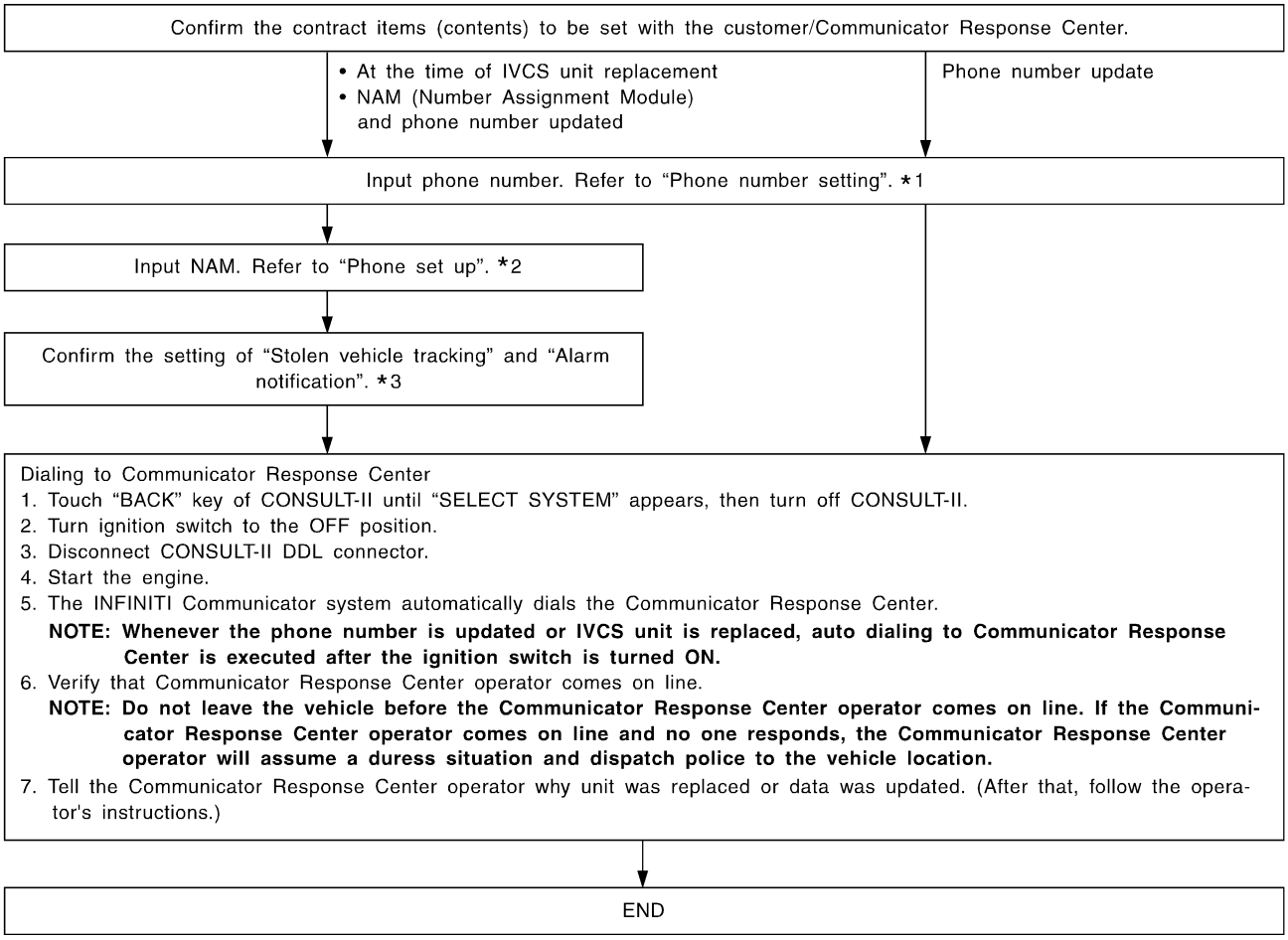
- Phone setup — Data setting regarding NAM (Number Assignment Module)
- Phone number — Phone number setting

NOTE:

- **Data must not be updated without prior approval from the customer.**
- **The IVCS unit does not permit updating of NAM more than 15 times.**

WORK FLOW

NHEL0292S02



SEL108WB

*1 EL-454 *2 EL-455 *3 EL-456

NOTE:

- **If a Communicator Response Center operator does not come on line even though the system activates, the system may not be properly configured. Call the Communicator Response Center at 1-888-427-4812 to verify the configuration information.**
- **Whenever dialing the above number, information about**

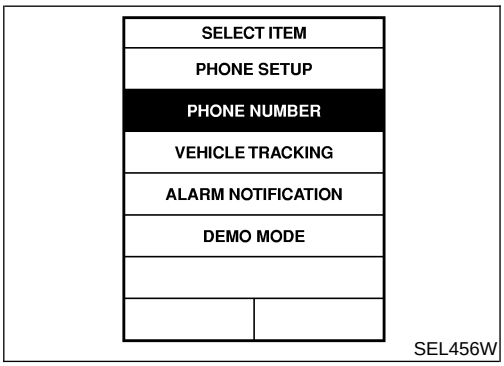
the vehicle is required by the operator. For details, refer to EL-421.

- **Never release the vehicle to the customer unless INFINITI Communicator system operation is verified by a Communicator Response Center operator coming on line.**

PHONE NUMBER SETTING

NHEL0292S03

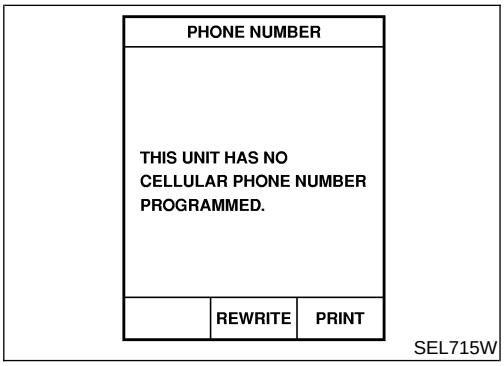
1. Touch "CONFIGURATION".
2. Touch "PHONE NUMBER".



SEL456W

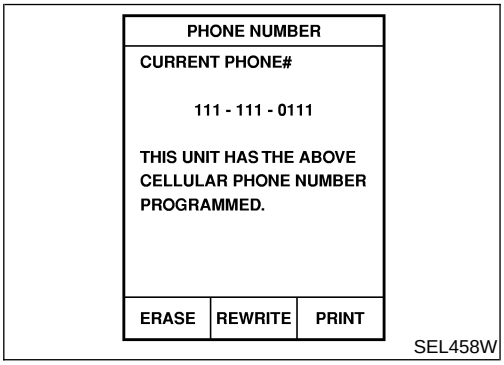
3. Touch "WRITE" or "REWRITE".

- If no phone number is previously memorized, the display shows "This unit has no cellular phone number programmed".



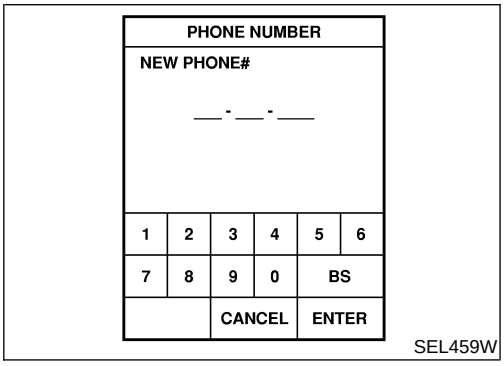
SEL715W

- If the phone number is previously memorized, the display shows the current phone number.
- To erase the phone number, touch "ERASE".

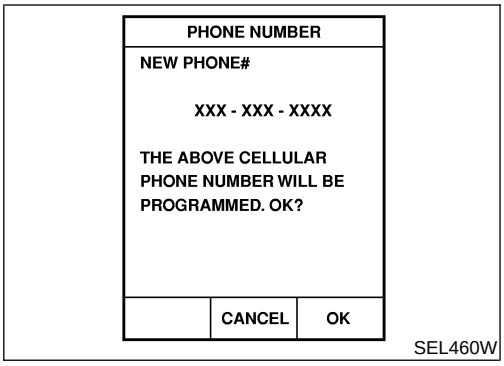


SEL458W

4. Input new phone number.
5. Touch "ENTER".



SEL459W



SEL460W

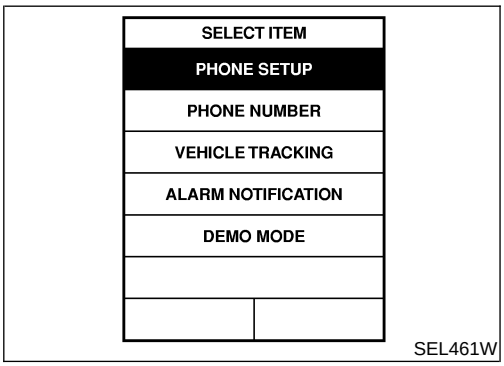
6. Touch "OK".
7. Carry out the next system setting or contact Communicator Response Center and information them that data has been updated or the IVCS unit has been replaced. For details, refer to EL-453.

NOTE:
Whenever the phone number is updated or the IVCS unit is replaced, the INFINITI Communicator system automatically contacts the Communicator Response Center the first time the vehicle is started.

PHONE SET UP

NHEL0292S04

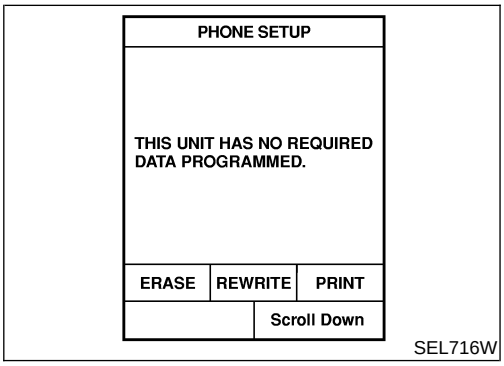
1. Touch "CONFIGURATION".
2. Touch "PHONE SET UP".



SEL461W

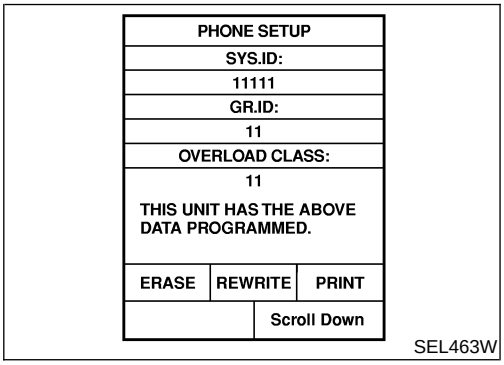
3. Touch "WRITE" or "REWRITE".

- If no data is previously memorized, the display shows "This unit has no required data programmed".



SEL716W

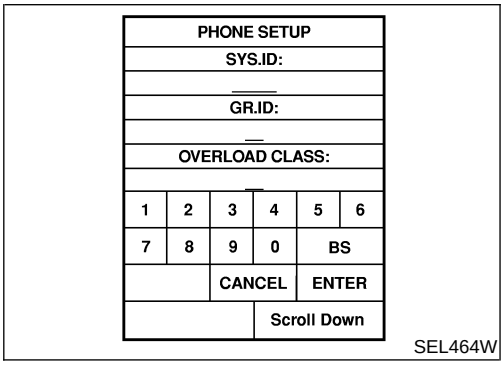
- If NAM (Number Assignment Module) data is previously memorized, the display shows the current NAM data.
- To erase the NAM, touch "ERASE".



SEL463W

4. Input new NAM data.

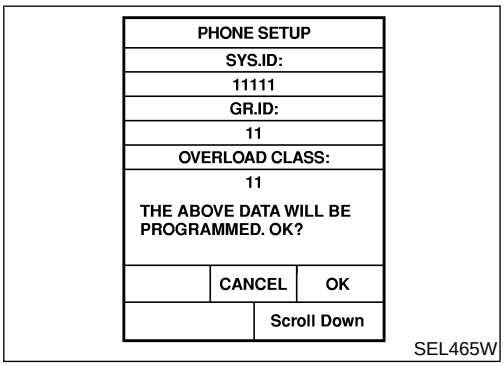
- SYS ID (Carrier system ID number) — Available number: 0 to 32765
- GR ID (Group ID mark) — Available number: 0 to 15
- OVERLOAD CLASS (Access overload class) — Available number: 0 to 15
- SECURITY CODE (User security code)
- UNLOCK CODE
- INIT PAGE CH (Initial paging channel)



SEL464W

NOTE:
If an unavailable number is input as "SYS ID", "GR ID" or "OVERLOAD CLASS", CONSULT-II may be locked. In such cases, disconnect the vehicle battery cable once and then setup the system again.

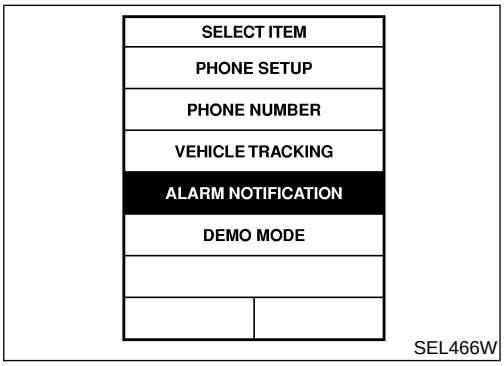
5. Touch "ENTER".



SEL465W

6. Touch "OK".
7. Carry out the next system setting or contact Communicator Response Center and inform them that data has been updated or IVCS unit has been replaced. For details, refer to EL-453.

NOTE:
Whenever the phone number is updated or the IVCS unit is replaced, the INFINITI Communicator system automatically contacts the Communicator Response Center the first time the vehicle is stared.

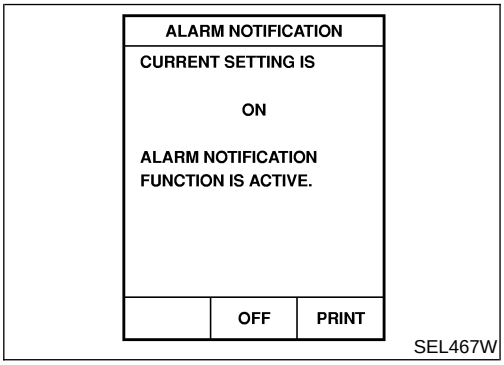


SEL466W

STOLEN VEHICLE TRACKING/ALARM NOTIFICATION SETTING CHECK

NHEL0292S05

1. Touch "CONFIGURATION".
2. Touch "VEHICLE TRACKING" or "ALARM NOTIFICATION".



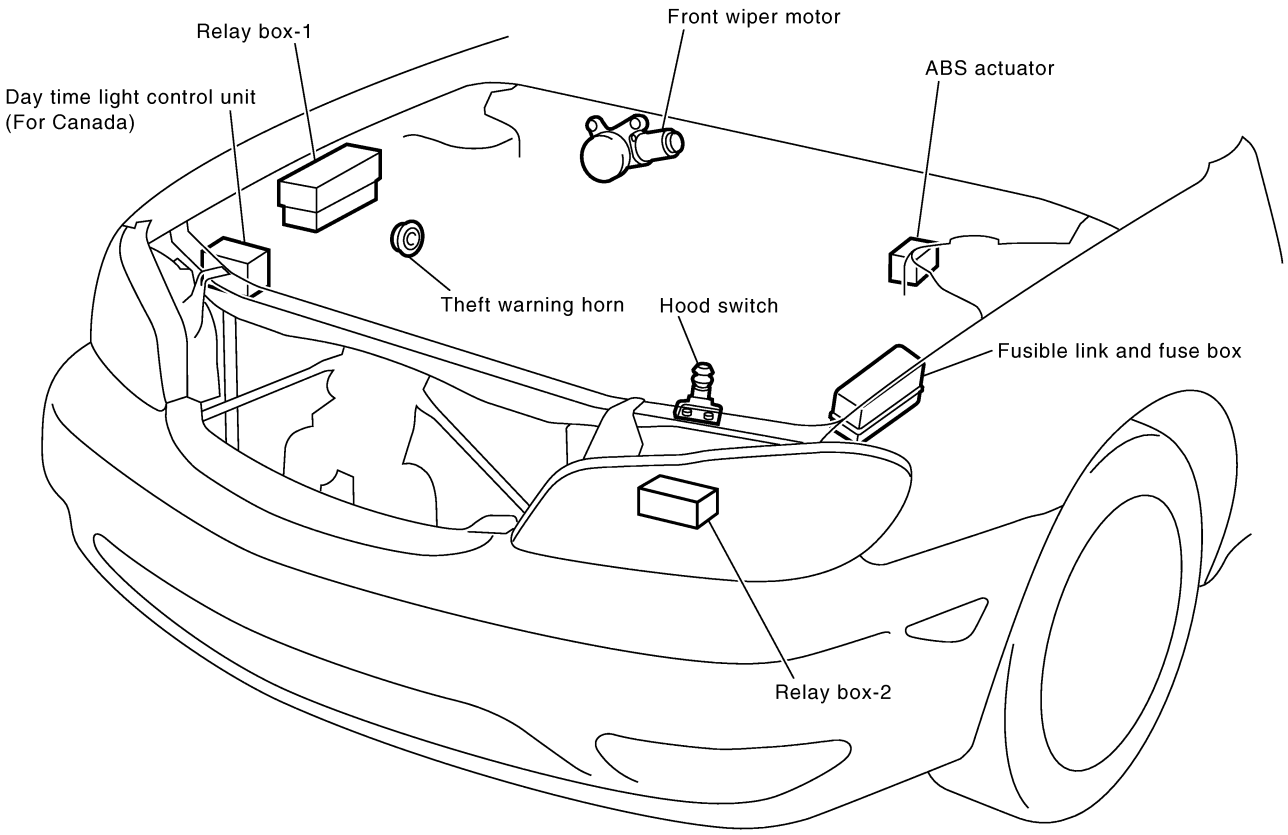
SEL467W

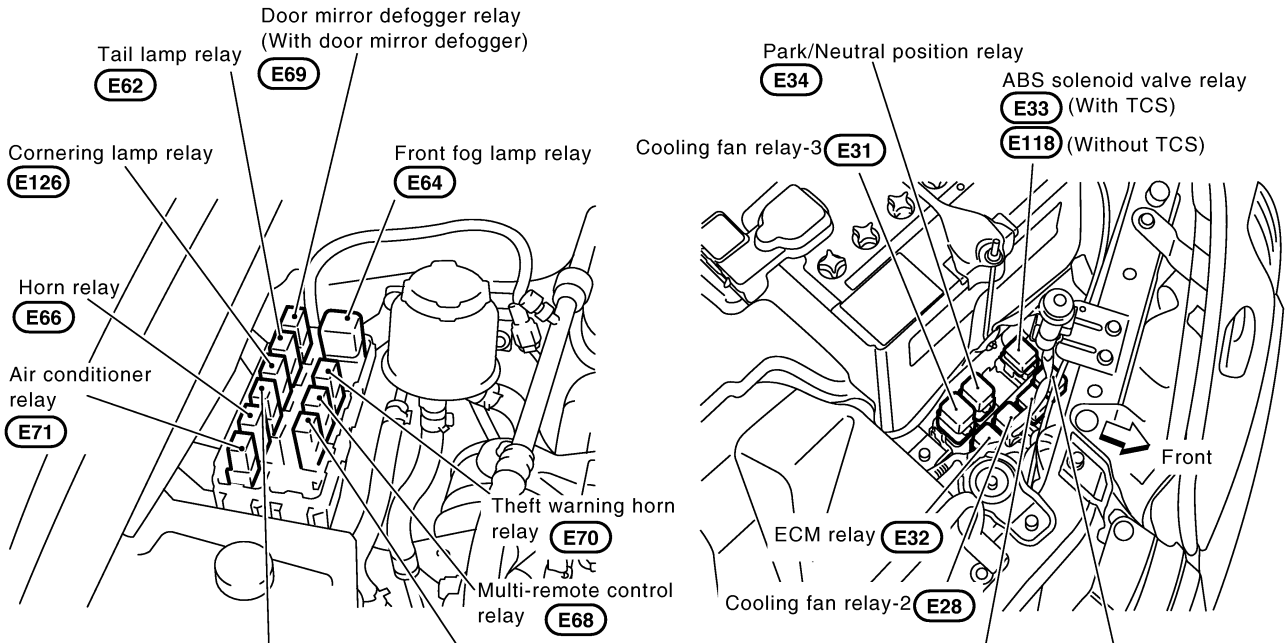
3. This function should always be "ON" (function activate).

NOTE:
- **If either setting is "OFF", contact the Communicator Response Center at 1-888-427-4812 to verify the system setting.**
- **Whenever dialing the above number, information about the vehicle is required by the operator. For details, refer to EL-421.**

Engine Compartment

NHEL0129

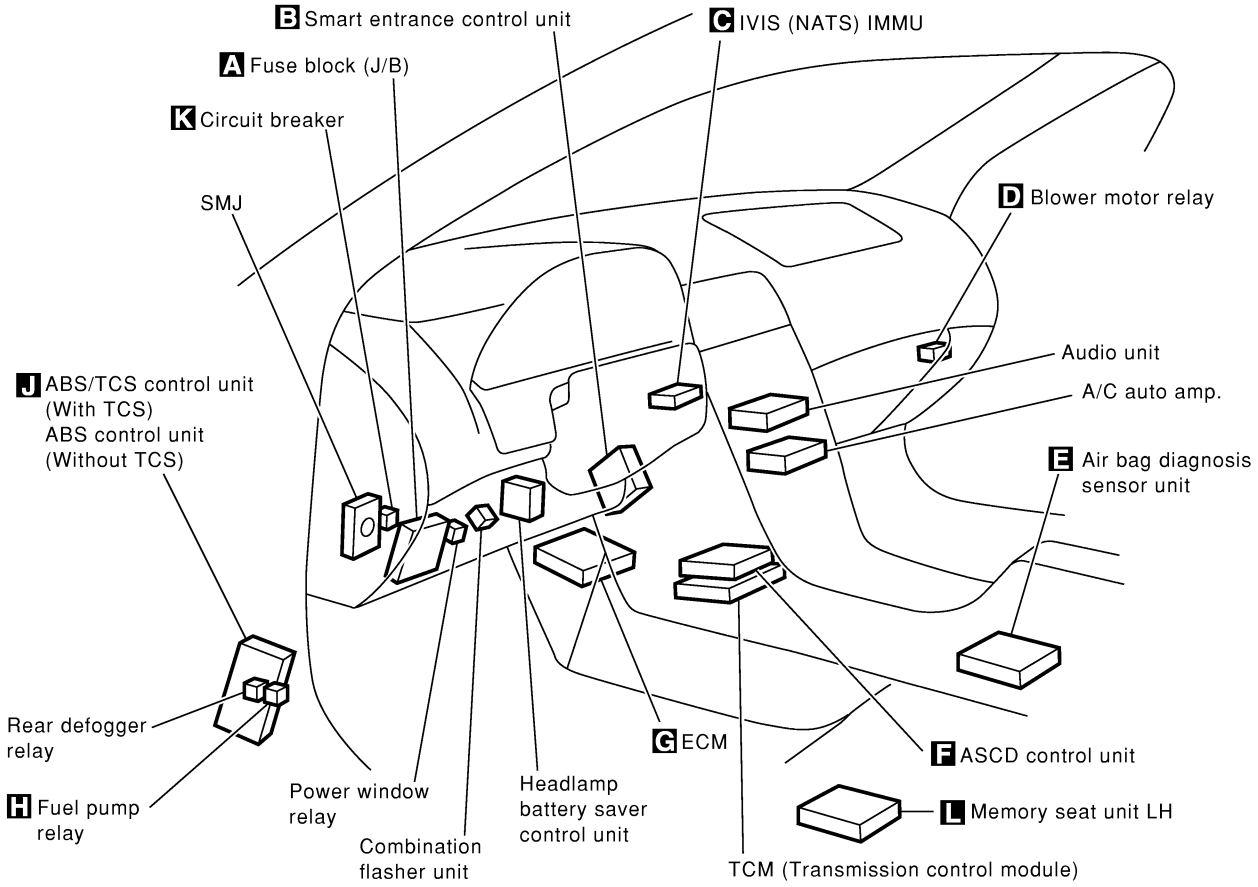




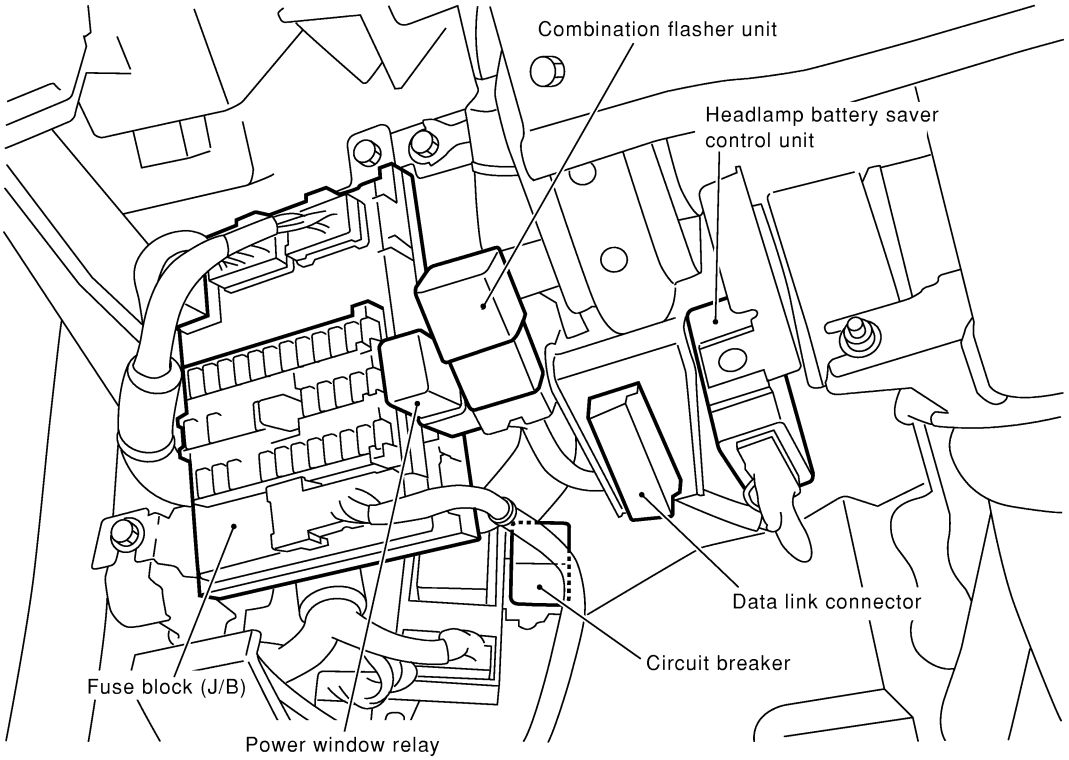
MEL621K

Passenger Compartment

NHEL0130

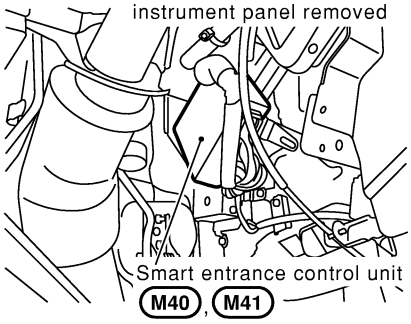


A Instrument panel LH side

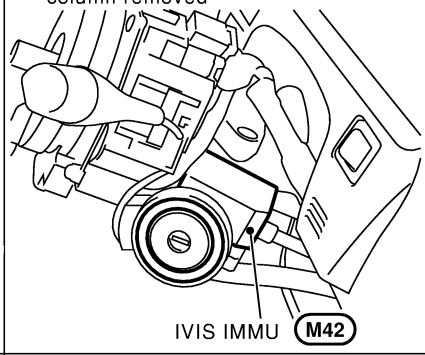


MEL622K

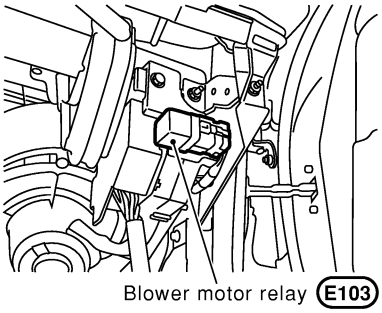
B Driver side view with lower instrument panel removed



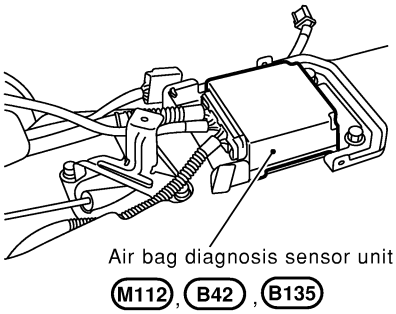
C View with steering wheel and steering column removed



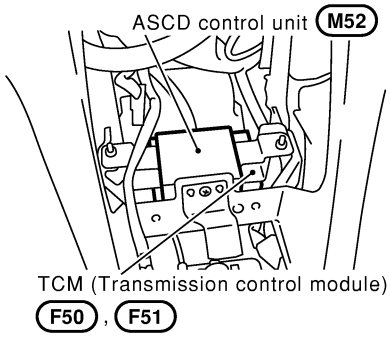
D Passenger side view with dash side lower finisher removed



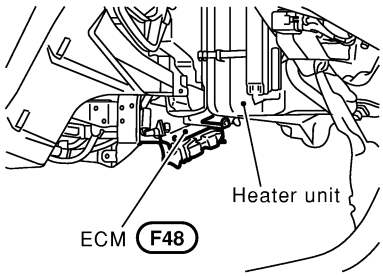
E Rear of parking brake



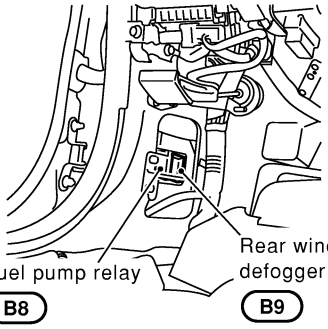
F View with lower instrument center panel removed



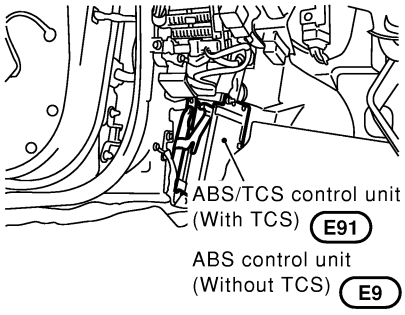
G Passenger side view with lower instrument panel removed



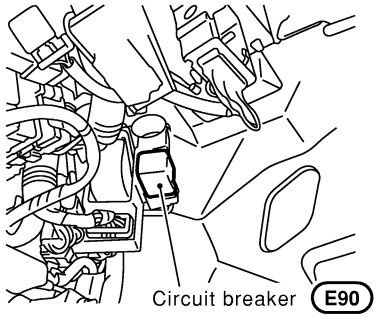
H Driver side view with dash side lower finisher removed



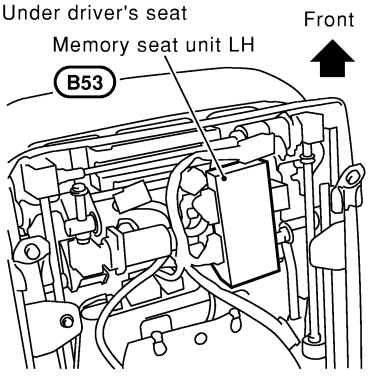
J Driver side view with dash side lower finisher removed



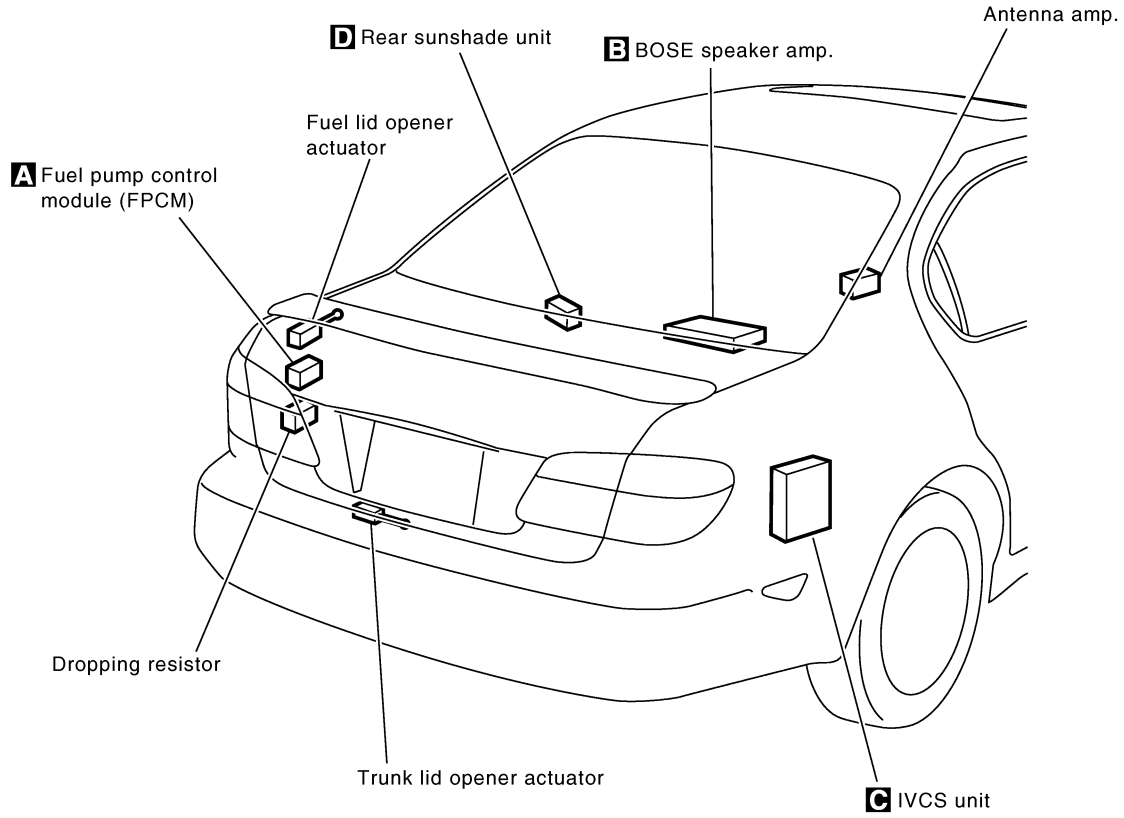
K Driver side view with lower instrument panel removed

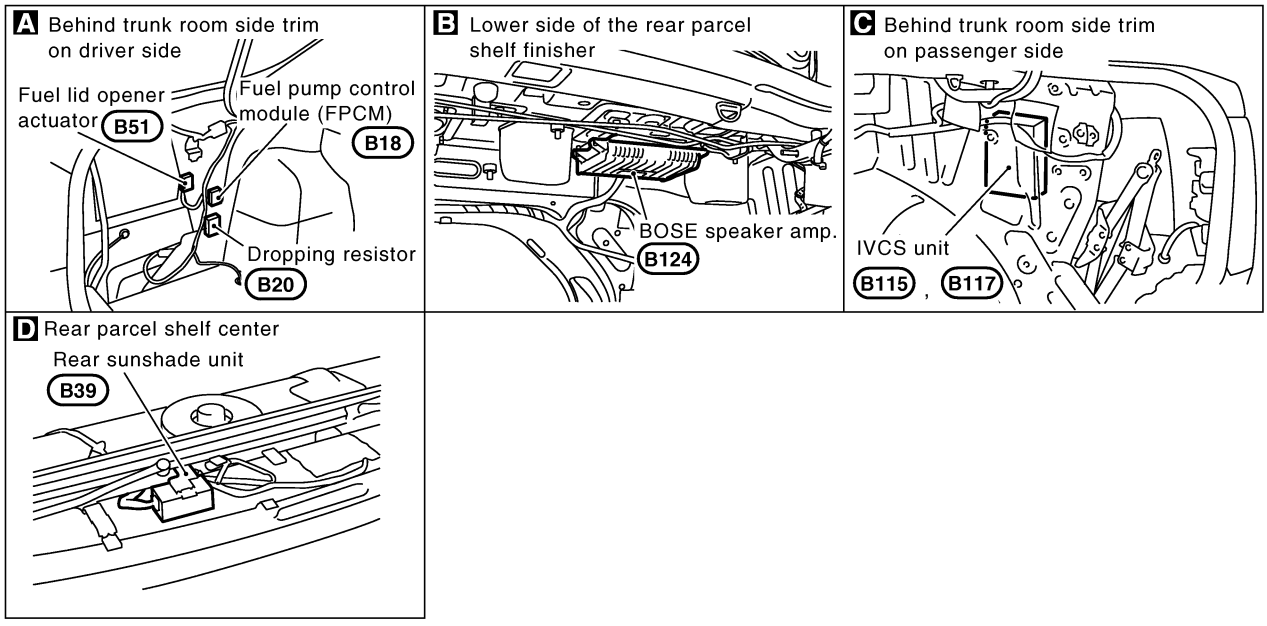


L Under driver's seat



MEL623K

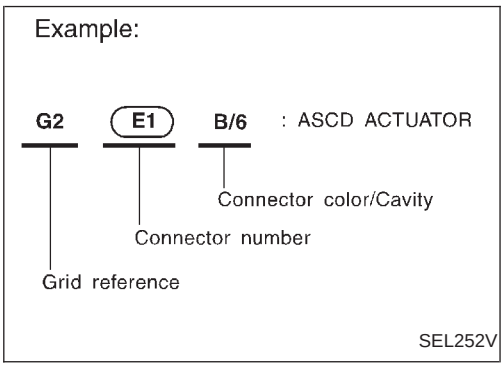

D Rear sunshade unit
B BOSE speaker amp.
Antenna amp.
Fuel lid opener actuator
A Fuel pump control module (FPCM)
Dropping resistor
Trunk lid opener actuator
C IVCS unit


A Behind trunk room side trim on driver side
Fuel lid opener actuator
B51
Fuel pump control module (FPCM)
B18
Dropping resistor
B20
B Lower side of the rear parcel shelf finisher
BOSE speaker amp.
B124
C Behind trunk room side trim on passenger side
IVCS unit
B115
B117
D Rear parcel shelf center
Rear sunshade unit
B39

MEL624K

How to Read Harness Layout

NHEL0131



The following Harness Layouts use a map style grid to help locate connectors on the drawings:

- Main Harness
- Engine Room Harness (Engine Compartment)

TO USE THE GRID REFERENCE

NHEL0131S01

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

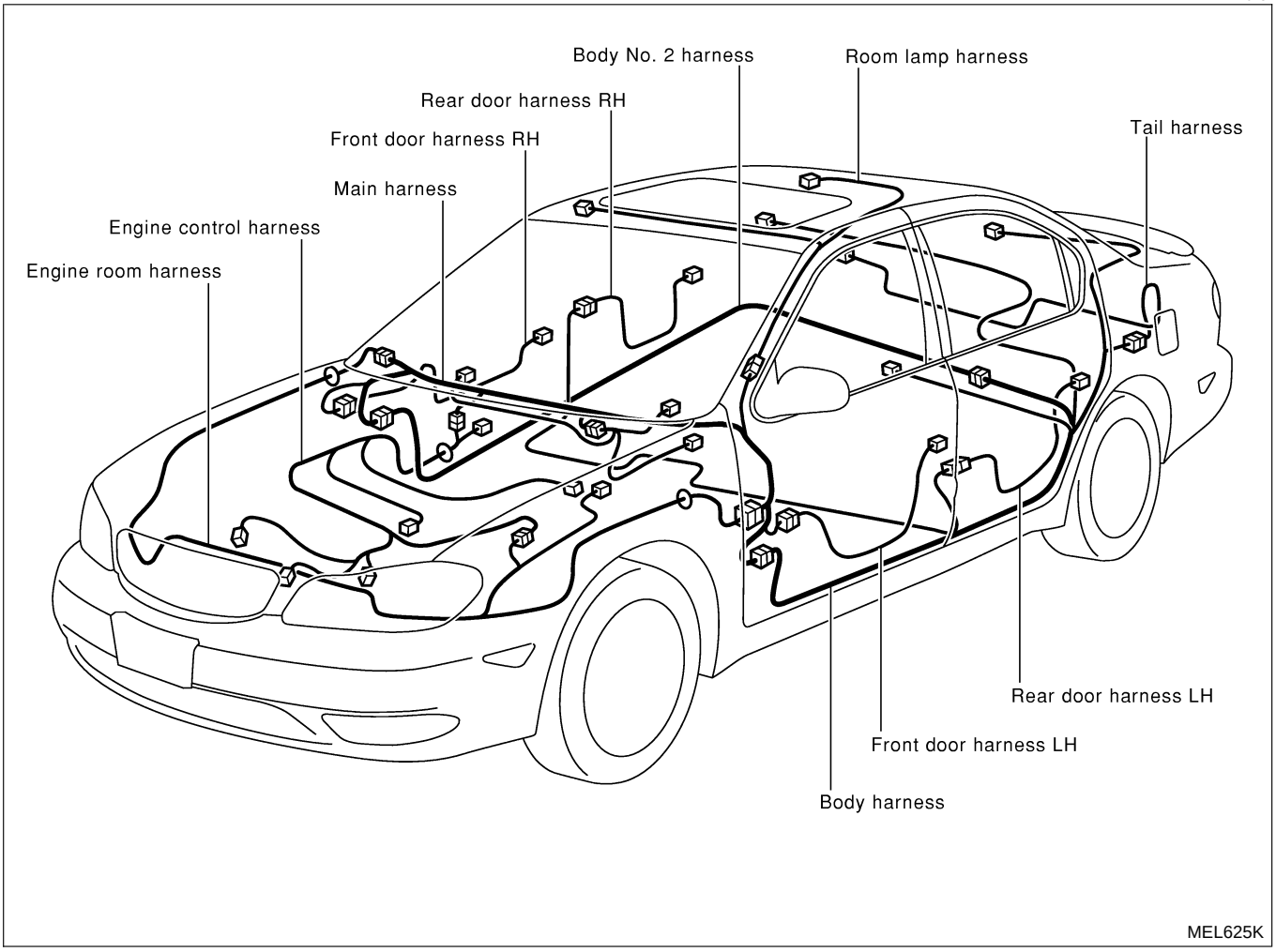
NHEL0131S02

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

NHEL0132

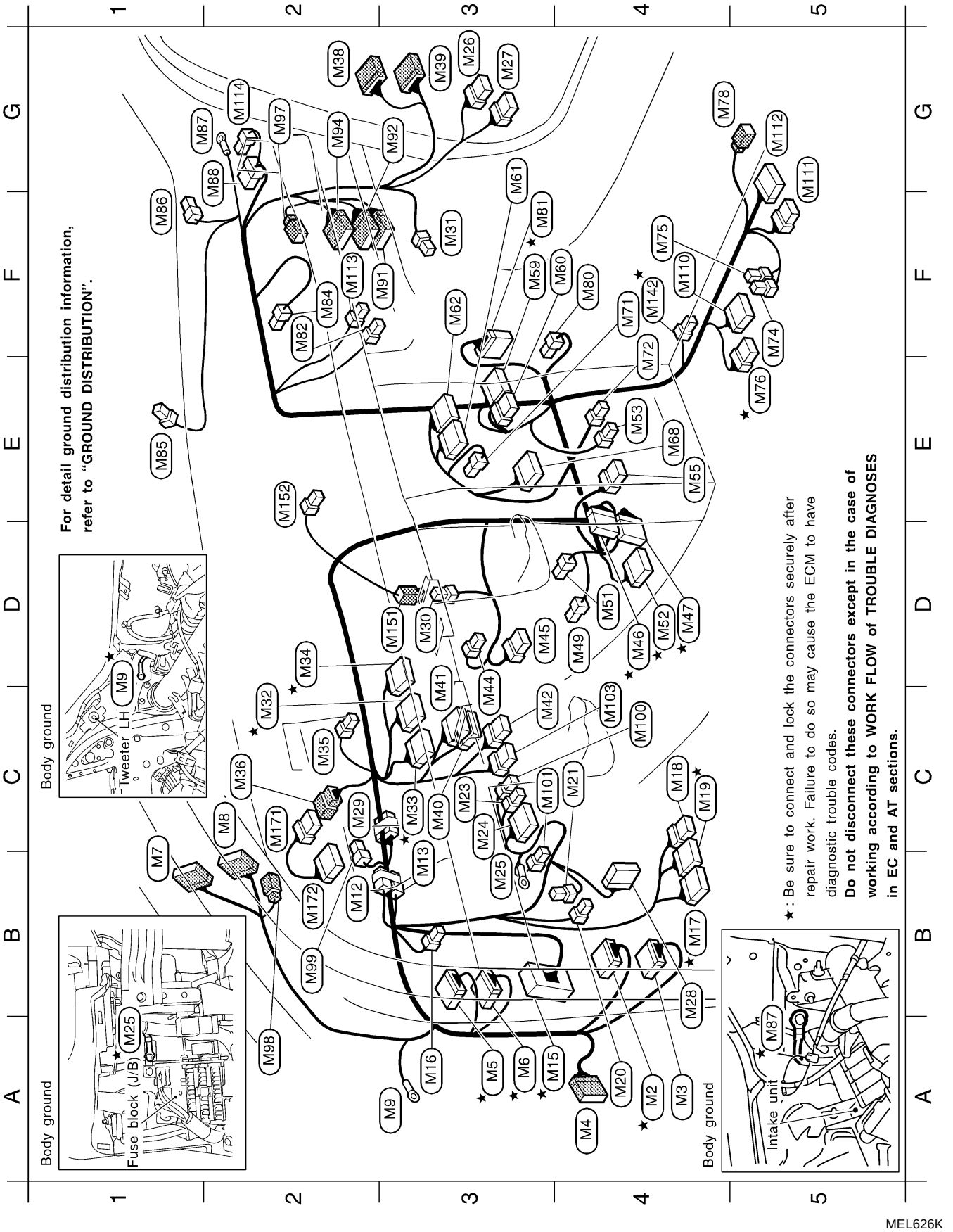


NOTE:
For detailed ground distribution information, refer to “Ground Distribution”, “GROUND”, EL-19.

NOTE:

Main Harness

NHEL0133

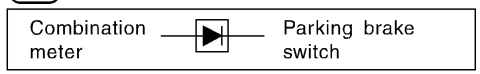


MEL626K

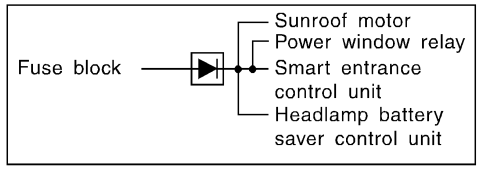
Main harness

A4 ★	M2	BR/24	:	To B2
A4	M3	W/12	:	To B4
A4	M4	SMJ	:	To D1
A3 ★	M5	W/16	:	To B1
A3 ★	M6	W/18	:	To B3
C1	M7	W/18	:	To R3 (With IVCS)
C2	M8	W/12	:	To R2 (Without IVCS)
A3 ★	M9	–	:	Body ground
B2	M12	W/2	:	Diode
B3	M13	L/4	:	Diode
A3 ★	M15	SMJ	:	To E81
A3	M16	W/4	:	Telephone
B4 ★	M17	W/12	:	Fuse block (J/B)
C4	M18	W/6	:	Fuse block (J/B)
C4 ★	M19	W/16	:	Fuse block (J/B)
B4	M20	L/4	:	Power window relay
C4	M21	B/3	:	Combination flasher unit
C3	M23	W/3	:	Illumination control switch
C3	M24	W/10	:	Door mirror remote control switch
B3 ★	M25	–	:	Body ground
G3	M26	W/6	:	Headlamp battery saver control unit
G3	M27	W/8	:	Headlamp battery saver control unit
A4	M28	W/16	:	Data link connector
C2	M29	SB/6	:	Joint connector-3 (Diode)
D3	M30	W/4	:	To M151
F3	M31	W/4	:	Fan control amp.
C2 ★	M32	BR/20	:	Combination meter
C3 ★	M33	W/24	:	Combination meter
D2 ★	M34	BR/24	:	Combination meter
C2	M35	W/2	:	Diode
C2	M36	W/6	:	To M171
G2	M38	W/16	:	To D62
G3	M39	W/10	:	To D63
C3	M40	W/18	:	Smart entrance control unit
C3	M41	B/24	:	Smart entrance control unit
C3	M42	W/8	:	IVIS IMMU
D3	M44	W/2	:	In-vehicle sensor
D3	M45	L/6	:	TCS on/off switch (With TCS)
D4 ★	M46	W/18	:	To F44
D4 ★	M47	W/20	:	To F45
D4	M49	W/3	:	Mode door motor
D4	M51	W/3	:	Air mix door motor
D4 ★	M52	BR/24	:	ASCD control unit
E4	M53	B/2	:	Cigarette lighter
E4	M55	W/8	:	Hazard switch
F3	M59	GY/20	:	A/C auto amp.
F4	M60	GY/16	:	A/C auto amp.

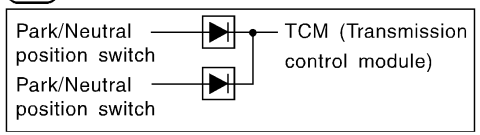
M12 : Diode



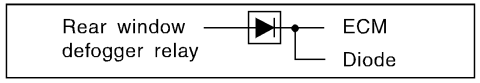
M13 : Diode



M29 : Diode



M35 : Diode



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

MEL627K

EXIT

Main harness

G3	M61	W/6	:	Audio unit
F3	M62	W/10	:	Audio unit
E4	M68	W/16	:	Audio unit (With IVCS)
F4	M71	W/2	:	To M501
F4	M72	W/2	:	Ashtray illumination
F5	M74	L/4	:	Heated seat switch LH
F4	M75	W/4	:	Heated seat switch RH
E5	★M76	GY/8	:	A/T device
G4	M78	B/2	:	Power socket
F4	M80	W/3	:	Intake sensor
F3	★M81	W/20	:	To F49
F2	M82	W/2	:	Glove box lamp
F2	M84	W/3	:	Intake door motor
E1	M85	B/2	:	Sunload sensor
F1	M86	BR/2	:	Tweeter RH
G1	★M87	–	:	Body ground
G2	M88	SB/6	:	Joint connector-4 (Diode) (With TCS)
F3	M91	W/12	:	To B103
G3	M92	W/10	:	To B104
G2	M94	W/20	:	To B102 (With IVCS)
G2	M97	G/2	:	To E105
A2	M98	W/3	:	To R14 (With IVCS)
B2	M99	W/2	:	Diode
C4	M100	W/4	:	Security indicator
C4	M101	GY/6	:	Memory seat cancel switch
C4	M103	Y/7	:	Spiral cable (Via sub-harness)
F4	M110	W/16	:	To B43
G5	M111	L/6	:	Rear sunshade switch
G5	M112	Y/20	:	Air bag diagnosis sensor unit
F2	M113	Y/2	:	Passenger air bag module
G2	M114	W/2	:	Diode (Without TCS)
F4	★M142	W/2	:	Diode

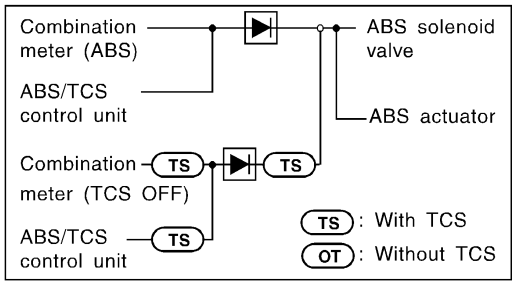
Main sub-harness-1

D3	M151	W/4	:	To M30
E2	M152	W/4	:	Clock

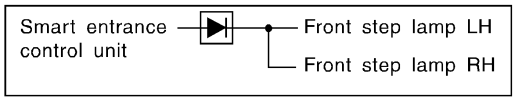
Main sub-harness-2

C2	M171	W/6	:	To M36
B2	M172	GY/10	:	Auto light control unit

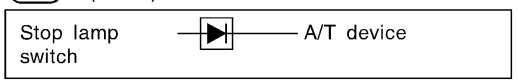
M88 : TS , M114 : OT : (Diode)



M99 : (Diode)



M142 : (Diode)



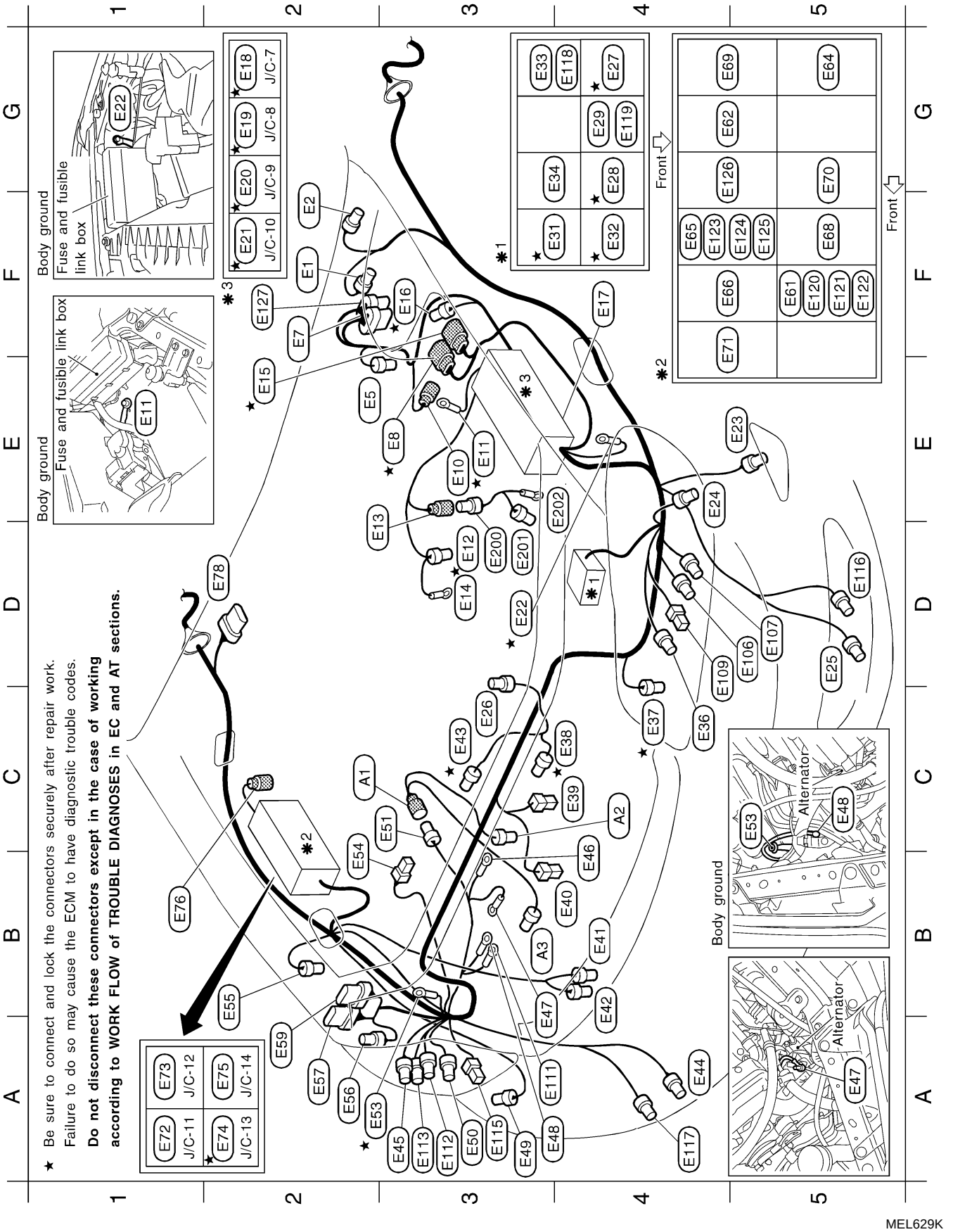
★ : Be sure to connect and lock the connectors securely after repair work. Failure to do so may cause the ECM to have diagnostic trouble codes. **Do not disconnect these connectors except in the case of working according to WORK FLOW of TROUBLE DIAGNOSES in EC and AT sections.**

MEL628K

NOTE:

Engine Room Harness

NHEL0134



MEL629K

Engine room harness

F2	E1	GY/2	:	Brake fluid level switch
F2	E2	GY/4	:	ASCD pump
E2	E5	W/2	:	ABS actuator
F2	E7	GY/8	:	ABS actuator (With TCS)
E3★	E8	GY/8	:	To F17
E3	E10	BR/2	:	Front wheel sensor LH
E3★	E11	–	:	Body ground
D3★	E12	GY/2	:	Intake air temperature sensor
D3	E13	GY/1	:	To E200
D3	E14	–	:	Battery (Fusible link 120A)
E2★	E15	B/8	:	To F18
F3★	E16	GY/2	:	Dropping resistor
F4	E17	–	:	Fuse and fusible link box
G2★	E18	GY/6	:	Joint connector-7
G2★	E19	GY/6	:	Joint connector-8
G2★	E20	W/6	:	Joint connector-9
F2★	E21	W/6	:	Joint connector-10
D3★	E22	–	:	Body ground
E5	E23	BR/2	:	Front side marker lamp LH
E4	E24	BR/2	:	Front turn signal lamp LH
D5	E25	GY/2	:	Front fog lamp LH
C3	E26	W/2	:	Hood switch
G4★	E27	BR/6	:	Cooling fan relay-1
G4★	E28	BR/6	:	Cooling fan relay-2
G4	E29	B/5	:	ABS motor relay (With TCS)
F4★	E31	BR/6	:	Cooling fan relay-3
F4★	E32	BR/6	:	ECM relay
G4	E33	B/5	:	ABS solenoid valve relay (With TCS)
G4	E34	GY/6	:	Park/Neutral position relay
D4	E36	B/2	:	Headlamp LH (Highbeam)
C4★	E37	B/3	:	Refrigerant pressure sensor
C4★	E38	GY/4	:	Cooling fan motor-1
C4	E39	B/1	:	Horn (Low)
B4	E40	B/1	:	Horn (High)
B4	E41	GY/2	:	Front washer motor
B4	E42	BR/2	:	Washer level switch
C3★	E43	GY/4	:	Cooling fan motor-2
A4	E44	GY/2	:	Front fog lamp RH
A3	E45	BR/2	:	Front turn signal lamp RH
C4	E46	–	:	Alternator
B3	E47	–	:	Alternator
A3	E48	–	:	Body ground
A3	E49	BR/2	:	Front side marker lamp RH
A3	E50	B/2	:	Headlamp RH (High beam)
C3	E51	GY/4	:	To A1
A2★	E53	–	:	Body ground
B2	E54	B/1	:	Theft warning horn
B2	E55	B/2	:	Ambient sensor
A2	E56	GY/4	:	Daytime light control unit (For Canada)
A2	E57	GY/6	:	Daytime light control unit (For Canada)
A2	E59	GY/8	:	Daytime light control unit (For Canada)
F5	E61	L/4	:	Headlamp LH relay (For USA without xenon headlamp)
G5	E62	L/4	:	Tail lamp relay
G5	E64	L/4	:	Front fog lamp relay
F5	E65	L/4	:	Headlamp RH relay (For USA without xenon headlamp)
F5	E66	W/3	:	Horn relay
F5	E68	BR/6	:	Multi-remote control relay
G5	E69	L/4	:	Door mirror defogger relay
G5	E70	BR/6	:	Theft warning horn relay
F5	E71	L/4	:	Air conditioner relay
A1	E72	GY/6	:	Joint connector-11
A1	E73	W/6	:	Joint connector-12
A1★	E74	W/6	:	Joint connector-13
A1	E75	W/6	:	Joint connector-14
B1	E76	GY/2	:	Front wheel sensor RH
D2	E78	GY/6	:	Front wiper moter
D4	E106	GY/2	:	Headlamp LH (Low beam with xenon headlamp)
D4	E107	BR/2	:	Headlamp LH (Low beam without xenon headlamp)
D4	E109	B/2	:	Parking lamp LH
A3	E111	–	:	Body ground
A3	E112	BR/2	:	Headlamp RH (Low beam without xenon headlamp)
A3	E113	GY/2	:	Headlamp RH (Low beam with xenon headlamp)
A3	E115	B/2	:	Parking lamp RH
D5	E116	BR/2	:	Cornering lamp LH
A4	E117	BR/2	:	Cornering lamp RH
G4	E118	B/5	:	ABS solenoid valve relay (Without TCS)
G4	E119	B/5	:	ABS motor relay (Without TCS)
F5	E120	BR/6	:	Headlamp LH relay (For Canada with xenon headlamp)
F5	E121	BR/6	:	Headlamp LH relay (For USA with xenon headlamp)
F5	E122	L/4	:	Headlamp LH relay (For Canada without xenon headlamp)
F5	E123	BR/6	:	Headlamp RH relay (For Canada with xenon headlamp)
F5	E124	BR/6	:	Headlamp RH relay (For USA with xenon headlamp)
F5	E125	L/4	:	Headlamp RH relay (For Canada without xenon headlamp)
G5	E126	L/4	:	Cornering lamp relay
F2	E127	GY/8	:	ABS actuator (Without TCS)

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

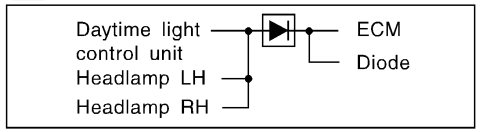
Engine room sub-harness

D3	E200	GY/1	:	To E13
D3	E201	GY/1	:	Starter motor
E4	E202	–	:	Starter motor

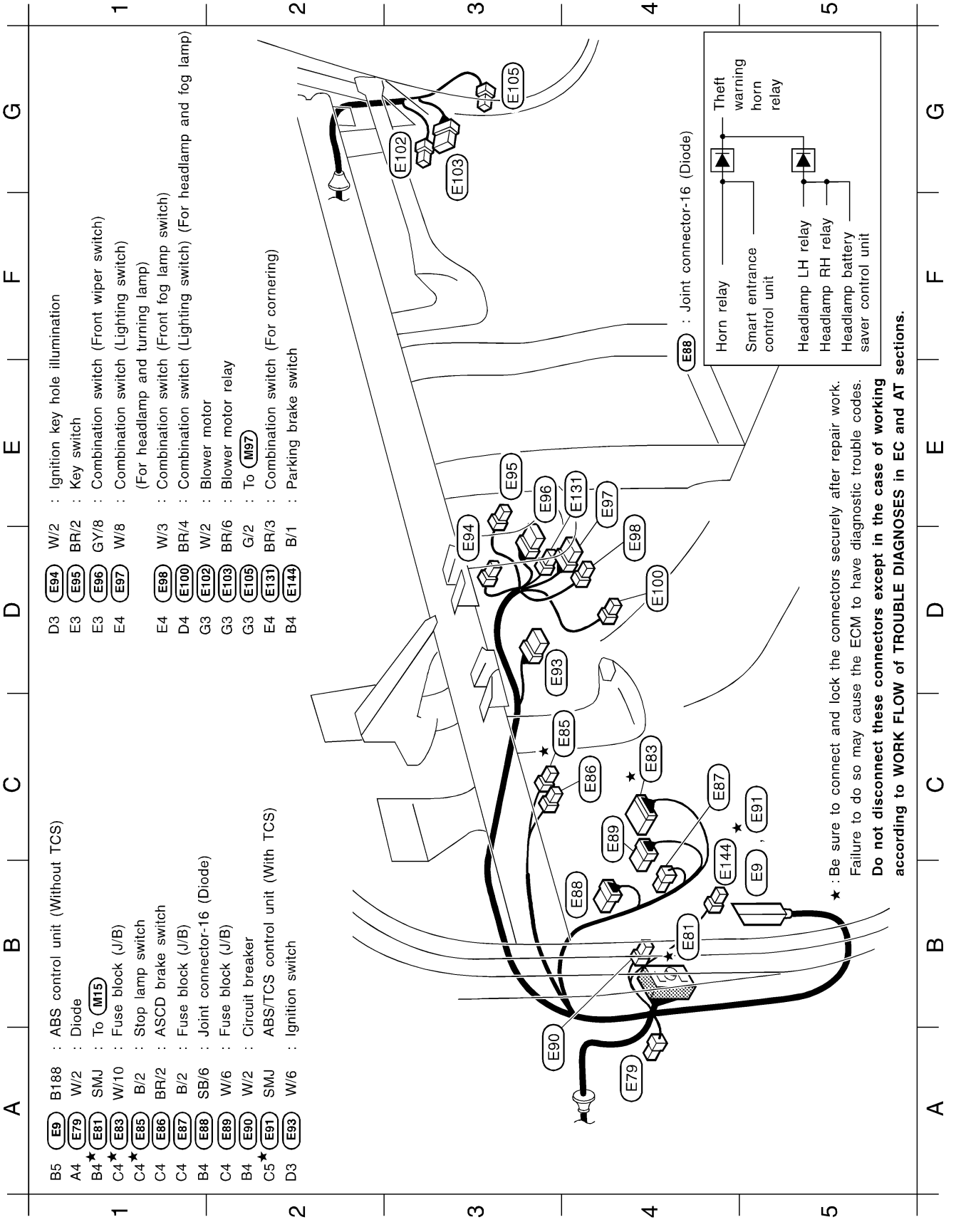
Alternater harness

C2	A1	GY/4	:	To E51
C4	A2	GY/4	:	Alternator
B3	A3	B/1	:	Compressor

E79 : Diode



MEL630K

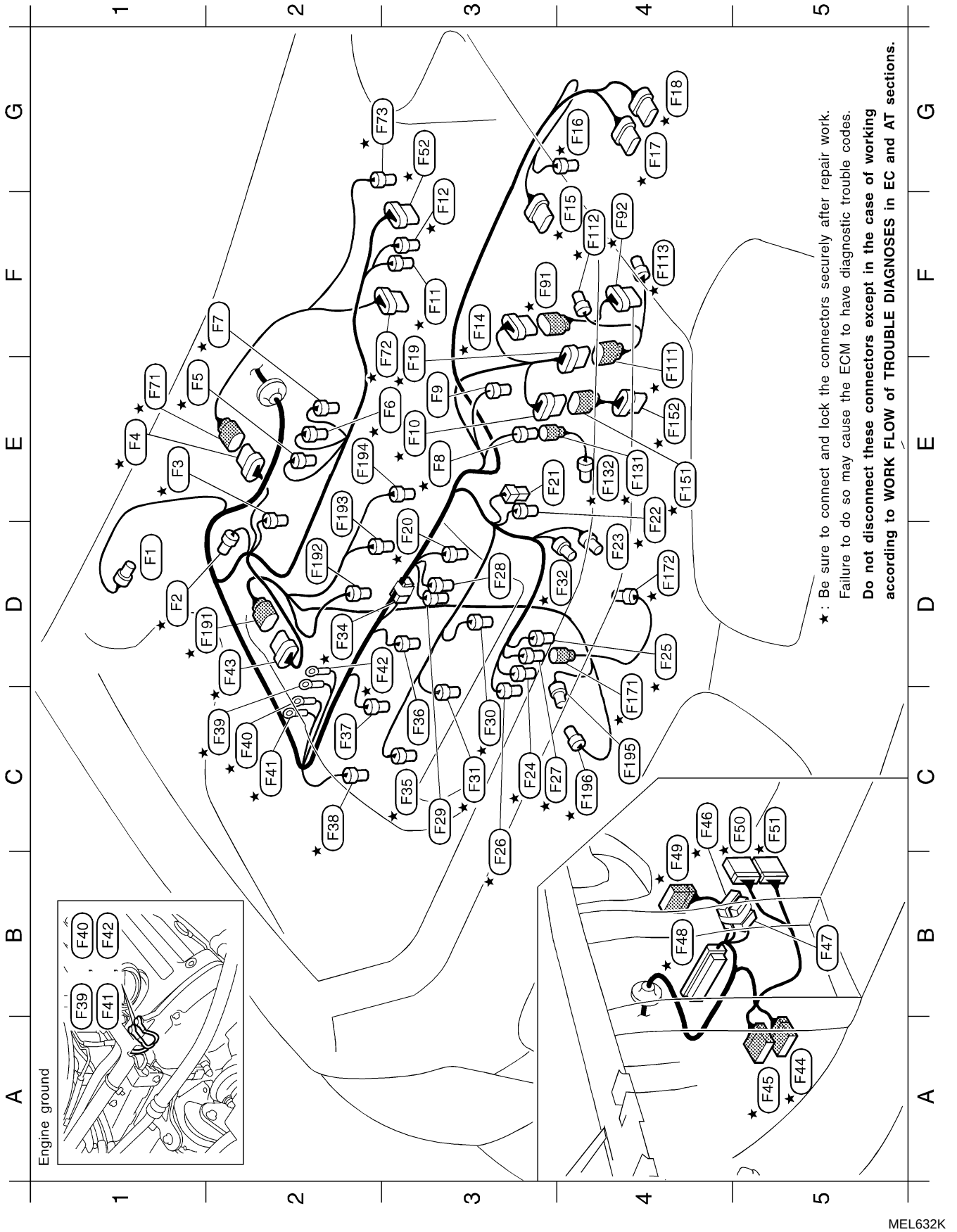

B5 E9 B188 : ABS control unit (Without TCS)
A4 E79 W/2 : Diode
B4★ E81 SMJ : To M15
C4★ E83 W/10 : Fuse block (J/B)
C4★ E85 B/2 : Stop lamp switch
C4 E86 BR/2 : ASCD brake switch
C4 E87 B/2 : Fuse block (J/B)
B4 E88 SB/6 : Joint connector-16 (Diode)
C4 E89 W/6 : Fuse block (J/B)
B4 E90 W/2 : Circuit breaker
C5★ E91 SMJ : ABS/TCS control unit (With TCS)
D3 E93 W/6 : Ignition switch
D3 E94 W/2 : Ignition key hole illumination
E3 E95 BR/2 : Key switch
E3 E96 GY/8 : Combination switch (Front wiper switch)
E4 E97 W/8 : Combination switch (Lighting switch)
(For headlamp and turning lamp)
E4 E98 W/3 : Combination switch (Front fog lamp switch)
D4 E100 BR/4 : Combination switch (Lighting switch) (For headlamp and fog lamp)
G3 E102 W/2 : Blower motor
G3 E103 BR/6 : Blower motor relay
G3 E105 G/2 : To M97
E4 E131 BR/3 : Combination switch (For cornering)
B4 E144 B/1 : Parking brake switch
E88 : Joint connector-16 (Diode)
Horn relay
Smart entrance control unit
Theft warning horn relay
Headlamp LH relay
Headlamp RH relay
Headlamp battery saver control unit
★ : Be sure to connect and lock the connectors securely after repair work. Failure to do so may cause the ECM to have diagnostic trouble codes.
Do not disconnect these connectors except in the case of working according to WORK FLOW of TROUBLE DIAGNOSES in EC and AT sections.
E79
E81
E83
E85
E86
E87
E88
E89
E90
E91
E9
E144
E93
E94
E95
E96
E131
E97
E98
E100
E102
E103
E105
A
B
C
D
E
F
G
1
2
3
4
5

MEL631K

NOTE:

Engine Control Harness

NHEL0135



MEL632K

Engine control harness

D1	F1	B/2	:	Power steering oil pressure switch
D1★	F2	GY/3	:	Front heated oxygen sensor RH
E1★	F3	GY/3	:	Ignition coil No. 1
E1★	F4	G/8	:	To F71
E1★	F5	GY/3	:	Ignition coil No. 3
E3★	F6	GY/3	:	Ignition coil No. 5
F2★	F7	L/2	:	EVAP canister purge volume control solenoid valve
E3★	F8	B/2	:	To F131
E3	F9	BR/3	:	Rear electronic controlled engine mount
E3★	F10	GY/10	:	To F151
F3★	F11	BR/3	:	Throttle position sensor
F3★	F12	GY/3	:	Throttle position switch
F3★	F14	BR/8	:	To F91
F4★	F15	GY/5	:	Mass air flow sensor
G4★	F16	SB/2	:	Swirl control valve control vacuum check switch
G4★	F17	GY/8	:	To E8
G4★	F18	B/8	:	To E15
F3★	F19	GY/6	:	To F111
D3★	F20	BR/2	:	Swirl control valve control solenoid valve
E3	F21	B/1	:	Thermal transmitter
E4★	F22	GY/2	:	Engine coolant temperature sensor
D4	F23	BR/3	:	Front electronic controlled engine mount
C3★	F24	B/4	:	Rear heated oxygen sensor RH
D4★	F25	G/4	:	To F171
C3★	F26	GY/3	:	Front heated oxygen sensor LH
C3★	F27	GY/4	:	Rear heated oxygen sensor LH
D3	F28	GY/2	:	Injector No. 6
C3	F29	B/2	:	VIAS control solenoid valve
C3★	F30	GY/3	:	Ignition coil No. 6
C3★	F31	GY/3	:	Ignition coil No. 4
D3★	F32	GY/3	:	Absolute pressure sensor
D2★	F34	W/2	:	Condenser
C3★	F35	GY/3	:	Ignition coil No. 2
C3	F36	GY/2	:	Injector No. 4
C2	F37	GY/2	:	Injector No. 2
C2★	F38	GY/2	:	Camshaft position sensor (PHASE)
C2★	F39	–	:	Engine ground
C2★	F40	–	:	Engine ground
C2★	F41	–	:	Engine ground
D3★	F42	–	:	Engine ground

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

D2★	F43	L/8	:	To F191
A5★	F44	W/18	:	To M46
A5★	F45	W/20	:	To M47
C4★	F46	L/12	:	Joint connector-18
B5	F47	GY/6	:	Joint connector-17
B4★	F48	GY/111	:	ECM
B4★	F49	W/20	:	To M81
C5★	F50	GY/24	:	TCM (Transmission control module)
C5★	F51	W/24	:	TCM (Transmission control module)
G3★	F52	GY/6	:	IACV-AAC valve

Engine control sub-harness-1

E1★	F71	G/8	:	To F4
F3★	F72	GY/6	:	EGR volume control valve
G3★	F73	SB/2	:	EGR temperature sensor

Engine control sub-harness-2

F3★	F91	BR/8	:	To F14
F4★	F92	B/8	:	Terminal cord assembly

Engine control sub-harness-3

F4★	F111	GY/6	:	To F19
F4★	F112	B/3	:	Revolution sensor
F4★	F113	GY/2	:	Vehicle speed sensor (With TCS)

Engine control sub-harness-4

E4★	F131	B/2	:	To F8
E4★	F132	GY/2	:	Knock sensor

Engine control sub-harness-5

E4★	F151	GY/10	:	To F10
E4★	F152	B/10	:	Park/Neutral position switch

Engine control sub-harness-6

C4★	F171	G/4	:	To F25
D4★	F172	GY/3	:	Crankshaft position sensor (POS)

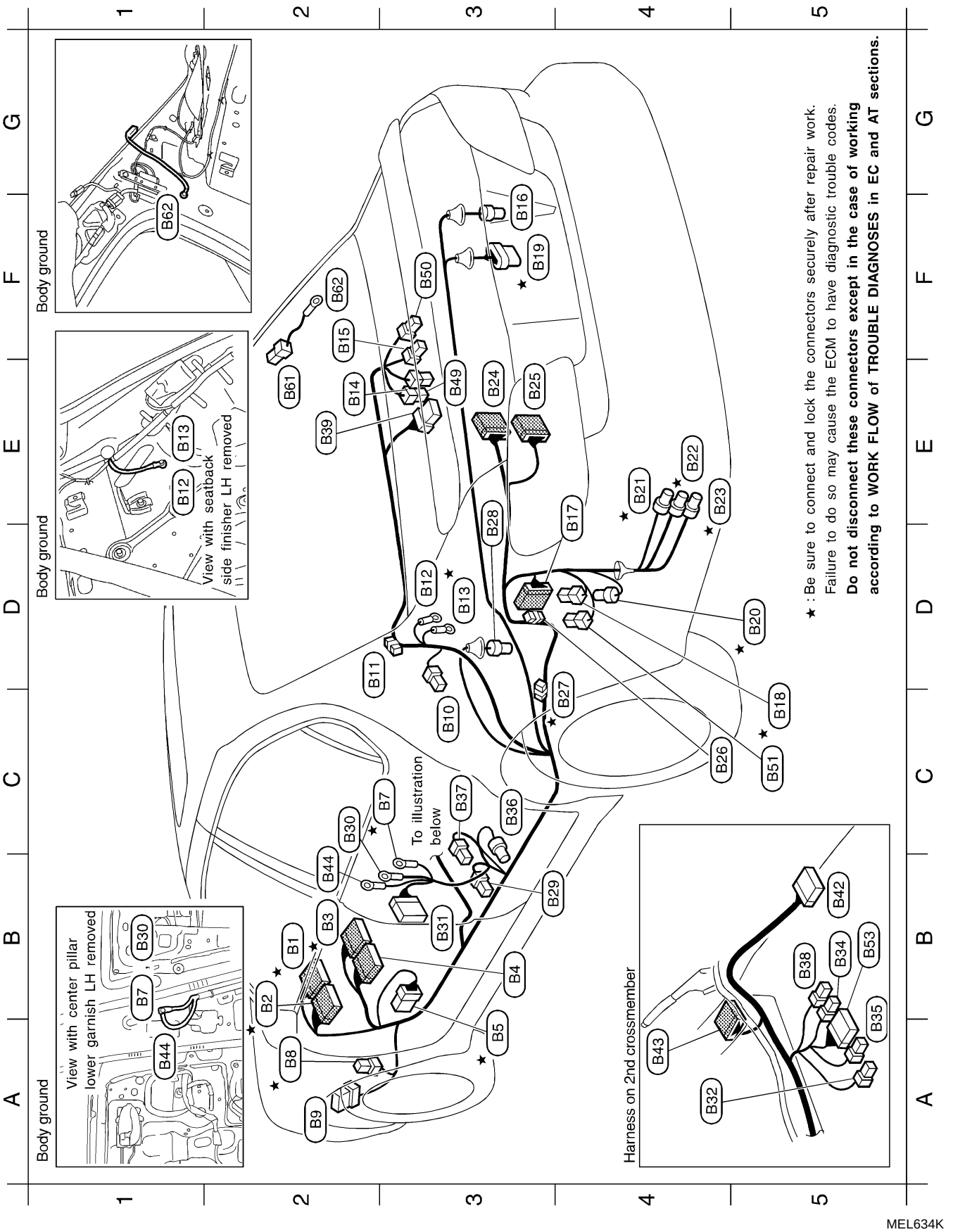
Engine control sub-harness-7

D2★	F191	L/8	:	To F43
D2	F192	GY/2	:	Injector No. 1
E2	F193	GY/2	:	Injector No. 3
E2	F194	GY/2	:	Injector No. 5
C4	F195	B/1	:	Oil pressure switch
C4★	F196	GY/2	:	Crankshaft position sensor (REF)

MEL633K

Body Harness

NHEL0136



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

MEL634K

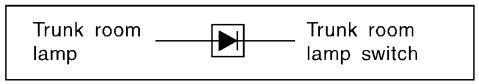
Body harness

B2★	B1	W/16	:	To M5
B2★	B2	BR/24	:	To M2
B2★	B3	W/18	:	To M6
B3	B4	W/12	:	To M3
B3	B5	W/8	:	Fuse block (J/B)
C3	B7	–	:	Body ground
A2★	B8	L/4	:	Fuel pump relay
A2	B9	BR/6	:	Rear window defogger relay
C3	B10	W/1	:	Rear door switch LH
D3	B11	W/1	:	Condenser (Rear window defogger)
D3	B12	–	:	Body ground
D3★	B13	–	:	Body ground
E2	B14	BR/2	:	High-mounted stop lamp (Without rear air spoiler) (Without rear sunshade)
F2	B15	W/2	:	Trunk room lamp (Without rear sunshade)
G3	B16	GY/2	:	Rear wheel sensor RH
E4	B17	W/10	:	To T3
C5★	B18	W/4	:	Fuel pump control module (FPCM)
F3★	B19	GY/5	:	Fuel level sensor unit and fuel pump
D5★	B20	W/2	:	Dropping resistor
E4★	B21	G/2	:	Vacuum cut valve bypass valve
E4★	B22	B/2	:	EVAP canister vent control valve
E4★	B23	GY/3	:	EVAP control system pressure sensor
E3	B24	W/16	:	To B119
E3	B25	W/20	:	To B120
C4	B26	W/2	:	Diode
C4★	B27	W/2	:	Condenser
E3	B28	BR/2	:	Rear wheel sensor LH
B4	B29	W/3	:	Front door switch LH
C2★	B30	–	:	Body ground
B3	B31	W/10	:	To D81
A4	B32	W/3	:	Heated seat LH
B5	B34	W/3	:	Seat belt buckle switch LH
A5	B35	W/2	:	Power seat LH (Via sub-harness)
C3	B36	OR/2	:	Satellite sensor LH
C3	B37	W/4	:	Seat belt pre-tensioner LH
B5	B38	Y/2	:	Side air bag module LH
E2	B39	W/6	:	Rear sunshade unit
B5	B42	Y/12	:	Side air bag diagnosis sensor unit LH
A4	B43	W/16	:	To M110
B2	B44	–	:	Body ground
E3	B49	W/2	:	High-mounted stop lamp (Without rear air spoiler) (With rear sunshade)
F3	B50	W/2	:	Trunk room lamp (With rear sunshade)
C5	B51	W/4	:	Fuel lid opener actuator
B5	B53	W/16	:	Memory seat unit LH (Via sub-harness)

Defogger harness

E2	B61	B/1	:	Rear window defogger
F2	B62	–	:	Body ground

B26 : Diode



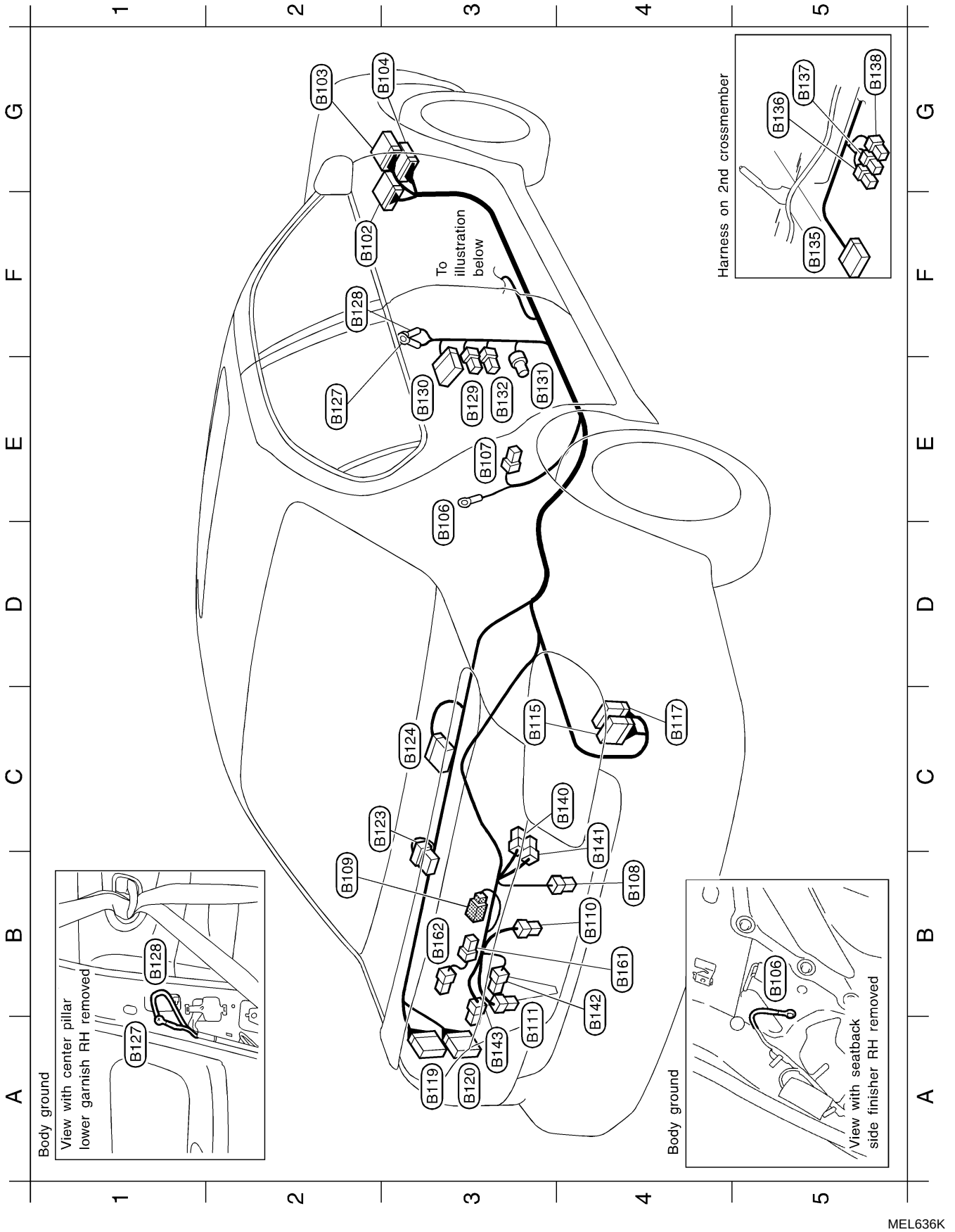
★ : Be sure to connect and lock the connectors securely after repair work. Failure to do so may cause the ECM to have diagnostic trouble codes. **Do not disconnect these connectors except in the case of working according to WORK FLOW of TROUBLE DIAGNOSES in EC and AT sections.**

MEL635K

EXIT

Body No. 2 Harness

NHEL0137



MEL636K

Body No. 2 harness

F2	B102	W/20	: To M94 (With IVCS)
G2	B103	W/12	: To M91
G3	B104	W/10	: To M92
D3	B106	–	: Body ground
E3	B107	W/1	: Rear door switch RH
B4	B108	W/2	: Trunk lid key cylinder switch
B2	B109	BR/2	: To B161
B4	B110	W/2	: Licence lamp RH
A3	B111	W/2	: Licence lamp LH
C3	B115	W/16	: IVCS unit (Via sub-harness)
C4	B117	W/22	: IVCS unit (Via sub-harness)
A3	B119	W/16	: To B24
A3	B120	W/20	: To B25
C2	B123	BR/6	: Woofer
C3	B124	GY/26	: BOSE speaker amp.
E2	B127	–	: Body ground
F2	B128	–	: Body ground
E3	B129	W/3	: Front door switch RH
E3	B130	W/10	: To D101
E3	B131	Y/2	: Satellite sensor RH
E3	B132	W/4	: Seat belt pre-tensioner RH
F5	B135	Y/12	: Side air bag diagnosis sensor unit RH
G5	B136	W/3	: Heated seat RH (Via sub-harness)
G5	B137	W/2	: Power seat RH (Via sub-harness)
G5	B138	Y/2	: Side air bag module RH
C4	B140	W/3	: Trunk lid combination lamp RH (For stop and tail)
B4	B141	W/2	: Trunk lid combination lamp RH (For back-up)
B4	B142	W/2	: Trunk lid combination lamp LH (For back-up)
A3	B143	W/3	: Trunk lid combination lamp LH (For stop and tail)

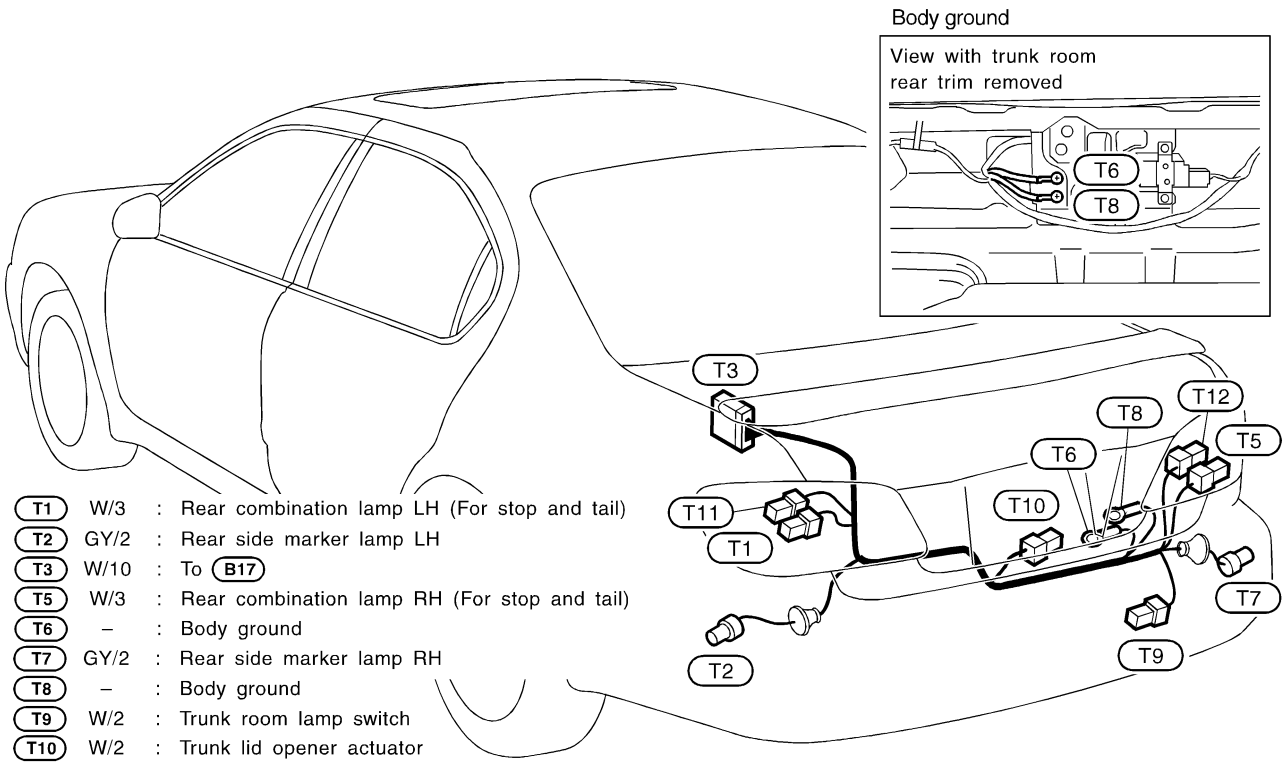
Body No. 2 sub-harness

B4	B161	BR/2	: To B109
B3	B162	B/2	: High-mounted stop lamp (With rear air spoiler)

MEL637K

Tail Harness

NHEL0138



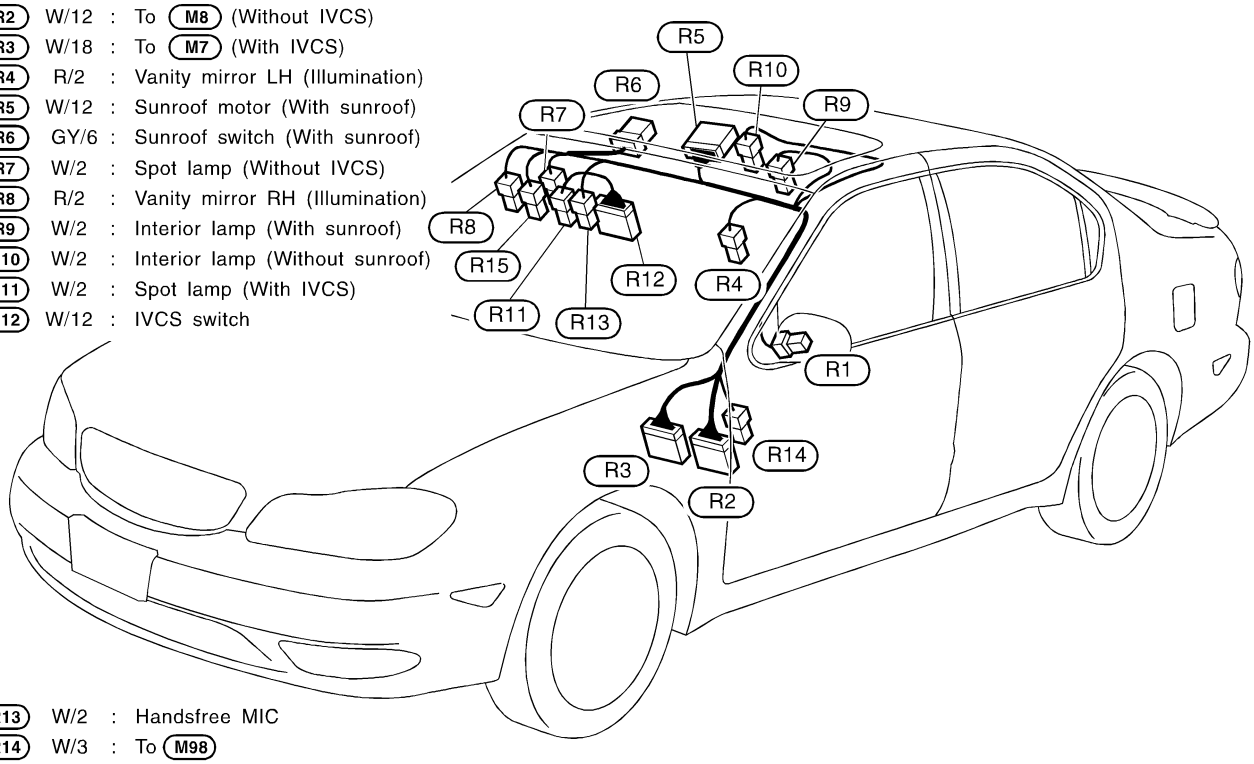
T1	W/3	:	Rear combination lamp LH (For stop and tail)
T2	GY/2	:	Rear side marker lamp LH
T3	W/10	:	To B17
T5	W/3	:	Rear combination lamp RH (For stop and tail)
T6	–	:	Body ground
T7	GY/2	:	Rear side marker lamp RH
T8	–	:	Body ground
T9	W/2	:	Trunk room lamp switch
T10	W/2	:	Trunk lid opener actuator
T11	BR/2	:	Rear combination lamp LH (For turn)
T12	BR/2	:	Rear combination lamp RH (For turn)

MEL638K

Room Lamp Harness

NHEL0140

(R1) BR/2 : Tweeter LH
(R2) W/12 : To (M8) (Without IVCS)
(R3) W/18 : To (M7) (With IVCS)
(R4) R/2 : Vanity mirror LH (Illumination)
(R5) W/12 : Sunroof motor (With sunroof)
(R6) GY/6 : Sunroof switch (With sunroof)
(R7) W/2 : Spot lamp (Without IVCS)
(R8) R/2 : Vanity mirror RH (Illumination)
(R9) W/2 : Interior lamp (With sunroof)
(R10) W/2 : Interior lamp (Without sunroof)
(R11) W/2 : Spot lamp (With IVCS)
(R12) W/12 : IVCS switch



(R13) W/2 : Handsfree MIC
(R14) W/3 : To (M98)
(R15) W/3 : Auto anti-dazzling inside mirror

MEL639K

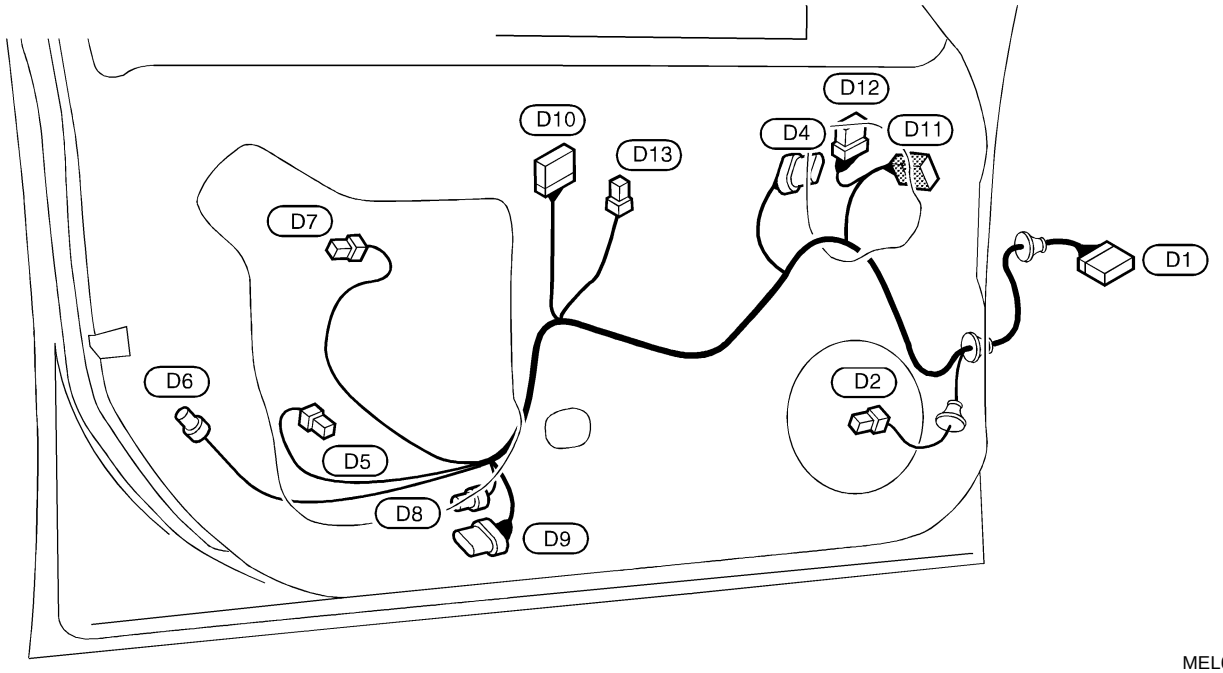
Front Door Harness

NHEL0142

LH SIDE

NHEL0142S03

D1	SMJ	: To M4	D8	BR/3	:	Front door key cylinder switch LH (Without IVCS)
D2	BR/2	: Front door speaker LH	D9	GY/6	:	Front door key cylinder switch LH (With IVCS)
D4	GY/6	: Front power window regulator LH	D10	W/16	:	Power window main switch
D5	W/2	: Front step lamp LH	D11	W/8	:	Door mirror actuator LH (With door mirror deffoger)
D6	GY/4	: Front door lock actuator LH	D12	W/8	:	Memory seat switch
D7	W/4	: Trunk and fuel lid opener switch	D13	W/3	:	Power window main switch



MEL640K

RH SIDE

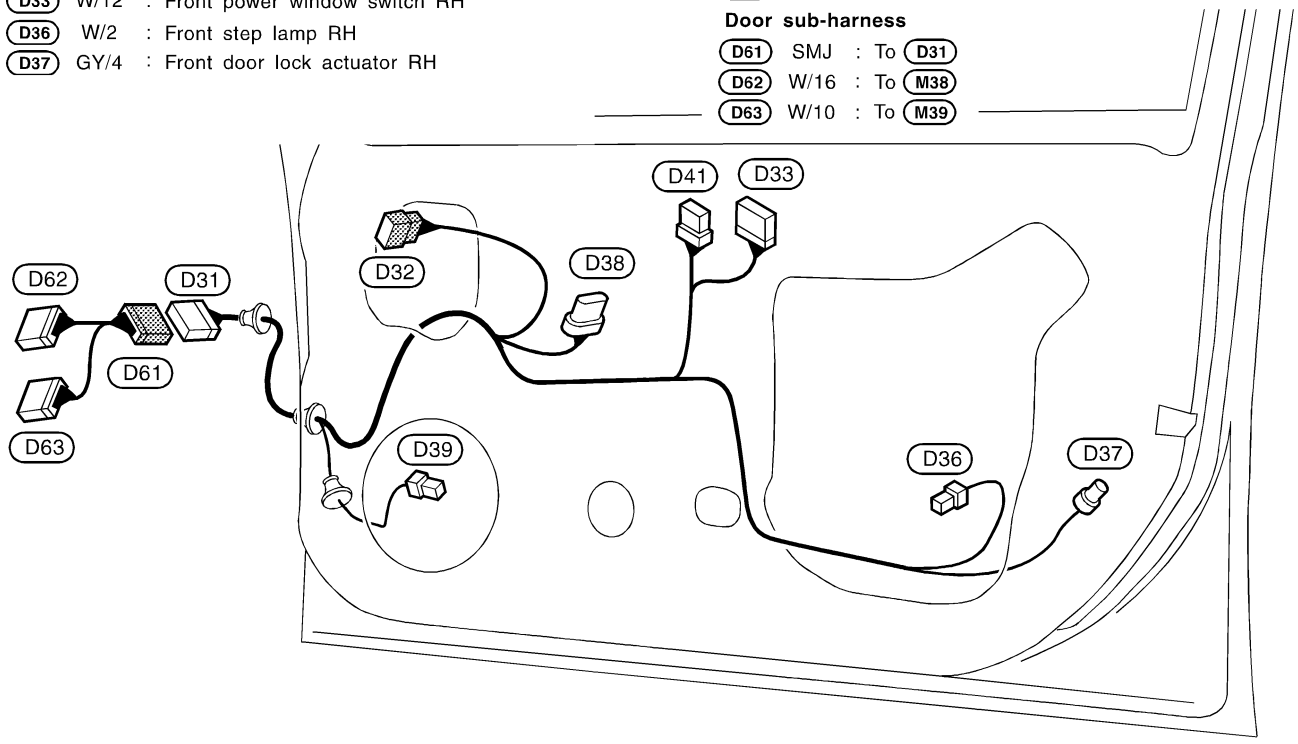
NHEL0142S04

Door harness front RH

- D31 SMJ : To D61
- D32 W/8 : Door mirror actuator RH (With door mirror defogger)
- D33 W/12 : Front power window switch RH
- D36 W/2 : Front step lamp RH
- D37 GY/4 : Front door lock actuator RH
- D38 GY/6 : Front power window regulator RH
- D39 BR/2 : Front door speaker RH
- D41 W/8 : Front power window switch RH

Door sub-harness

- D61 SMJ : To D31
- D62 W/16 : To M38
- D63 W/10 : To M39



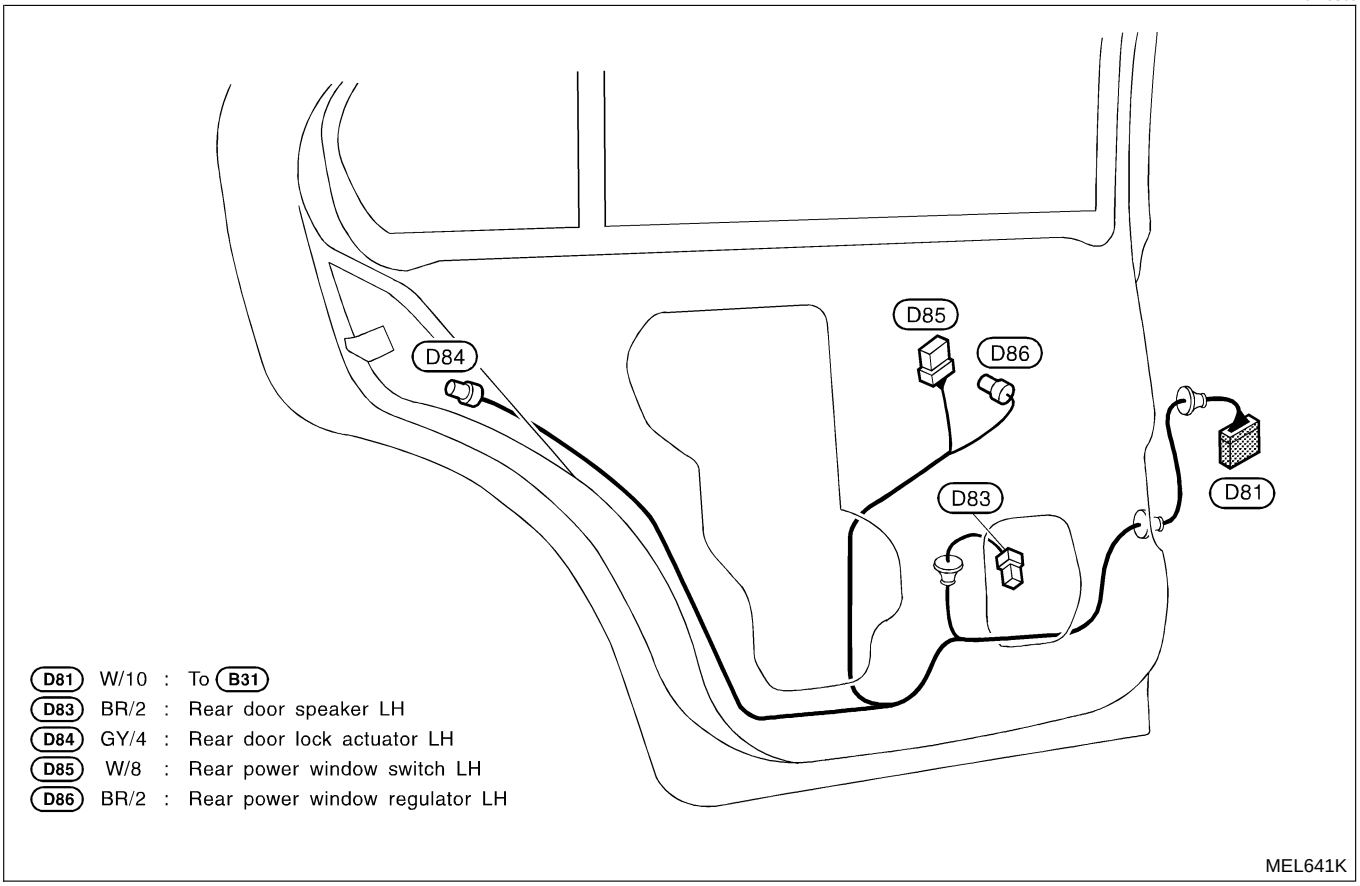
MEL642K

Rear Door Harness

NHEL0143

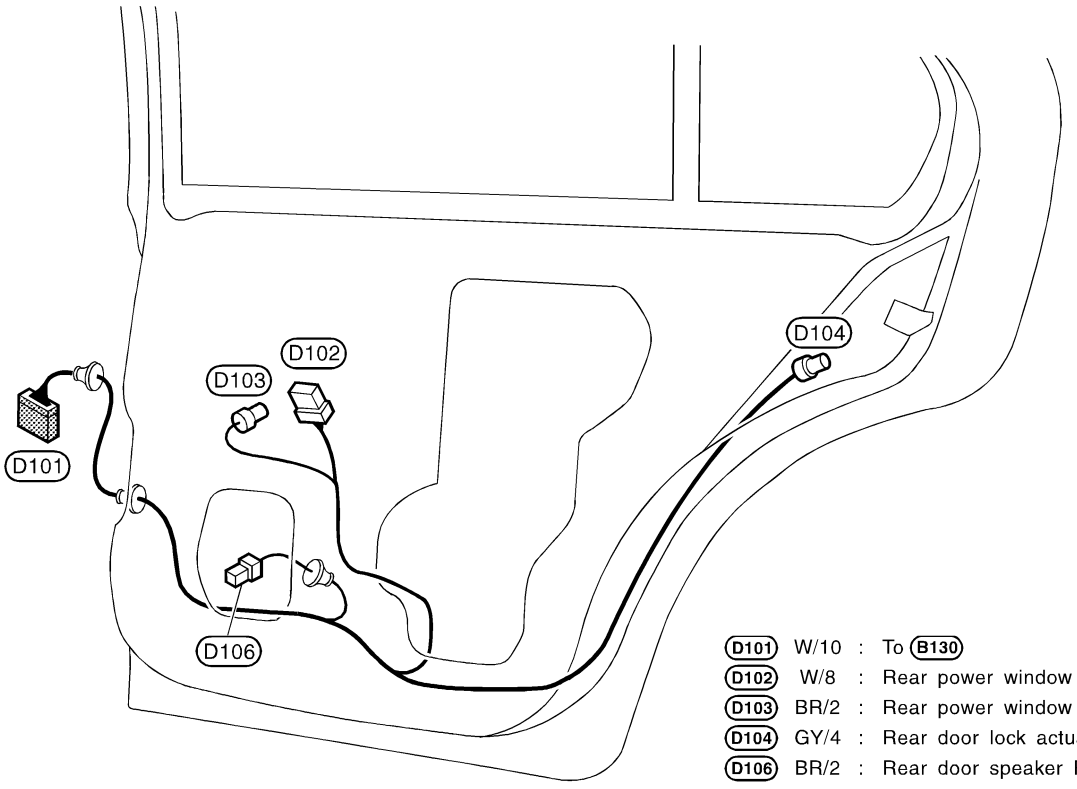
LH SIDE

NHEL0143S03



RH SIDE

NHEL0143S04



D101	W/10	:	To B130
D102	W/8	:	Rear power window switch RH
D103	BR/2	:	Rear power window regulator RH
D104	GY/4	:	Rear door lock actuator RH
D106	BR/2	:	Rear door speaker RH

MEL643K

BULB SPECIFICATIONS

Headlamp

Headlamp

NHEL0144S03

Item	Wattage (W)
High/Low	60/55 (HB2)

Exterior Lamp

NHEL0144S01

Item		Wattage (W)
Front fog lamp		35 (H3)
Front turn signal lamp		21
Side turn signal lamp		5
Parking lamp		5
Front side marker lamp		3.8
Rear combination lamp	Turn signal	21
	Stop/Tail	21/5
	Back-up	13
Rear side marker lamp		3.8
License lamp		5
High-mounted stop lamp (without rear spoiler)		21

Interior Lamp

NHEL0144S02

Item		Wattage (W)
Interior room lamp		8
Map lamp	With sunroof	5
	Without sunroof	8
Vanity mirror lamp		8
Trunk room lamp		3.4

WIRING DIAGRAM CODES (CELL CODES)

Use the chart below to find out what each wiring diagram code stands for.
Refer to the wiring diagram code in the alphabetical index to find the location (page number) of each wiring diagram.

Code	Section	Wiring Diagram Name
1STSIG	AT	A/T 1ST Signal
2NDSIG	AT	A/T 2ND Signal
3RDSIG	AT	A/T 3RD Signal
4THSIG	AT	A/T 4TH Signal
AAC/V	EC	IACV-AAC Valve
A/C, A	HA	Auto Air Conditioner
AP/SEN	EC	Absolute Pressure Sensor
ASCD	EL	Automatic Speed Control Device (ASCD)
AT/C	EC	A/T Communication Line
ATDIAG	EC	A/T Diagnosis Communication Line
AT/IND	EL	A/T Indicator Lamp
AUDIO	EL	Audio
AUT/DP	EL	Automatic Drive Position
BACK/L	EL	Back-up Lamp
BA/FTS	AT	A/T Fluid Temperature Sensor and TCM Power Supply
BYPS/V	EC	Vacuum Cut Valve Bypass Valve
CHARGE	SC	Charging System
CHIME	EL	Warning Chime
CIGAR	EL	Cigarette Lighter
CLOCK	EL	Clock
COOL/F	EC	Cooling Fan Control
CORNER	EL	Cornering Lamp
DEF	EL	Rear Window Defogger
D/LOCK	EL	Power Door Lock
DTRL	EL	Headlamp - With Daytime Light System
ECTS	EC	Engine Coolant Temperature Sensor
EGRCI	EC	EGR Function
EGVC/V	EC	EGR Volume Control Valve
EGR/TS	EC	EGR Temperature Sensor
EMNT	EC	Engine Mount
ENGSS	AT	Engine Speed Signal
F/FOG	EL	Front Fog Lamp
FLS1	EC	Fuel Gauge
FLS2	EC	Fuel Gauge
FLS3	EC	Fuel Gauge
FO2H-L	EC	Front Heated Oxygen Sensor Heater (Left Bank)
FO2H-R	EC	Front Heated Oxygen Sensor Heater (Right Bank)
FPCM	EC	Fuel Pump Control
F/PUMP	EC	Fuel Pump Control
FRO2LH	EC	Front Heated Oxygen Sensor (Front HO2S) (Left Bank)
FRO2RH	EC	Front Heated Oxygen Sensor (Front HO2S) (Right Bank)
FTS	AT	A/T Fluid Temperature Sensor
FUELLH	EC	Fuel Injection System Function (Left Bank)
FUELRH	EC	Fuel Injection System Function (Right Bank)
H/LAMP	EL	Headlamp
HORN	EL	Horn
HSEAT	EL	Heated Seat
I/MIRR	EL	Inside Mirror (Auto Anti-dazzling Mirror)
IATS	EC	Intake Air Temperature Sensor
IGN/SG	EC	Ignition Signal
ILL	EL	Illumination
INJECT	EC	Injector
INT/L	EL	Interior, Step, Spot, Vanity Mirror and Trunk Room Lamps
IVCS	EL	Infiniti Communicator (IVCS)
KS	EC	Knock Sensor
LAN	AT	A/T Communication Line
LOAD	EC	Electrical Load Signal
LPSV	AT	Line Pressure Solenoid Valve
MAFS	EC	Mass Air Flow Sensor
MAIN	AT	Main Power Supply and Ground Circuit
MAIN	EC	Main Power Supply and Ground Circuit
METER	EL	Speedometer, Tachometer, Temp., Oil, and Fuel Gauges
MIL/DL	EC	MIL & Data Link Connector

Code	Section	Wiring Diagram Name
MIRROR	EL	Power Door Mirror
MULTI	EL	Multi-remote Control System
NATS	EL	IVIS (Infiniti Vehicle Immobilizer System — NATS)
NONDTC	AT	Non-detectable Items
OVRCSV	AT	Overrun Clutch Solenoid Valve
PHONE	EL	Telephone (Pre-wire)
PGC/V	EC	EVAP Canister Purge Volume Control Solenoid Valve
PHASE	EC	Camshaft Position Sensor (PHASE)
PNP/SW	AT	Park/Neutral Position Switch
PNP/SW	EC	Park/Neutral Position Switch
POS	EC	Crankshaft Position Sensor (CKPS) (POS)
POWER	EL	Power Supply Routing
PRE/SE	EC	EVAP Control System Pressure Sensor
PST/SW	EC	Power Steering Oil Pressure Switch
REF	EC	Crankshaft Position Sensor (CKPS) (REF)
RO2H-L	EC	Rear Heated Oxygen Sensor Heater (Left Bank)
RO2H-R	EC	Rear Heated Oxygen Sensor Heater (Right Bank)
RP/SEN	EC	Refrigerant Pressure Sensor
RRO2LH	EC	Rear Heated Oxygen Sensor (Rear HO2S) (Left Bank)
RRO2RH	EC	Rear heated Oxygen Sensor (Rear HO2S) (Right Bank)
SEAT	EL	Power Seat
SHADE	EL	Rear Sunshade
SHIFT	AT	A/T Shift Lock System
SROOF	EL	Sunroof
SRS	RS	Supplemental Restraint System
S/SIG	EC	Start Signal
SSV/A	AT	Shift Solenoid Valve A
SSV/B	AT	Shift Solenoid Valve B
START	SC	Starting System
STOP/L	EL	Stop Lamp
S/VCSW	EC	Swirl Control Valve Control Vacuum Check Switch
SWL/V	EC	Swirl Control Valve Control Solenoid Valve
TAIL/L	EL	Parking, License and Tail Lamps
TCCSIG	AT	A/T TCC Signal (Lock Up)
TCS	EC	ABS/TCS Communication Line
TCS	BR	Traction Control System
TCV	AT	Torque Converter Clutch Solenoid Valve
TFTS	EC	Tank Fuel Temperature Sensor
T&FLID	EL	Trunk Lid and Fuel Filler Lid Opener
THEFT	EL	Theft Warning System
TPS	AT	Throttle Position Sensor
TPS	EC	Throttle Position Sensor
TP/SW	EC	Closed Throttle Position Switch
TRNSMT	EL	Integrated HOMELINK (TM) Transmitter
TURN	EL	Turn Signal and Hazard Warning Lamps
VENT/V	EC	EVAP Canister Vent Control Valve
VIAS/V	EC	Variable Induction Air Control System
VSS	EC	Vehicle Speed Sensor
VSSA/T	AT	Vehicle Speed Sensor A/T (Revolution Sensor)
VSSMTR	AT	Vehicle Speed Sensor MTR
W/ANT	EL	Audio Antenna
WARN	EL	Warning Lamps
WINDOW	EL	Power Window
WIPER	EL	Front Wiper and Washer